[redacted]

Z65-11847

AUG 20 1964
M.A
DOCUMENT
CENTER

CLASSIFICATION CHANGE

To UNCLASSIFIED
By authority of GDS-EO 11652
Changed by O. H. Weckhaeser Date 12/31/72
Classified Document Master Control Station, NASA
Scientific and Technical Information Facility Accession No. 65489-64

Copy No. 34

SID 63-650

DATA REPORT FOR THE APOLLO PRESSURE MODEL (PS-3) WITH STRAKES IN TUNNELS A AND C OF THE AEDC VON KARMAN GAS DYNAMICS FACILITY (U)

NAS9-150

Volume II

Appendix B - Tabulated Data

July 1964

Exhibit I, Paragraph 5.5

Prepared by

Apollo Engineering
Aerodynamics Section

[redacted]

[redacted] the national defense of the United States within the meaning of the Espionage Laws, [redacted] U.S.C. Section 793 and 794. Its transmission [redacted] in any [redacted] person is prohibited by law.

NORTH AMERICAN AVIATION, INC.
SPACE and INFORMATION SYSTEMS DIVISION

[redacted]

[redacted]

[redacted]

TABULATED DATA KEY

The following orifice numbers are arranged so that the position of the data on each tabulated sheet corresponds to the position of the respective orifice number in the array below. Listed in the tabulated data for each orifice are the local pressure (P), the pressure coefficient (C_p), the pressure ratio P/P_o, and the orifice s/r value. A different array is used for each command module pressure instrumentation hookup.

Orifice Numbers for the Command Module With or Without the Escape Tower in Tunnel A in the α -Range 0 to 60 Degrees

1	190	20	250	30	40	450	50	550
60	70	80	90	100	110	120	130	41
451	51	551	61	71	81	22	252	32
42	452	52	552	62	72	82	92	102
112	122	43	453	53	553	63	73	83
194	24	254	84	94	104	114	124	45
455	55	555	65	75	85	26	256	36
46	456	56	556	66	76	86	96	106
116	126	47	457	57	557	67	77	87
97	199	29	259	39	49	459	59	559
69	79	89	99	109	1069	119	1159	129
34	354	2	3	4	5	6	7	
8	9	10	11	12	13	14		

[redacted]

Orifice Numbers for the Command Module With or Without the Escape Tower in Tunnel A in the α -Range 60 to 120 Degrees

1	190	20	250	30	40	450	50	550
60	70	80	90	100	1060	110	120	130
140	41	451	51	551	61	71	81	22
252	32	42	452	52	552	62	72	82
92	102	112	122	43	453	53	553	63
73	83	194	24	254	34	44	48	74
84	94	104	114	124	45	455	55	555
65	75	85	26	256	36	46	456	56
556	66	76	86	96	106	116	126	47
457	57	67	77	87	199	29	259	39
49	69	79	89	99	109	119	129	139
354	2	3	4	5	454	6	7	
458	8	9	10	11	12	13		

Orifice Numbers for the Command Module Alone in Tunnel A in the α -Range 120 to 180 Degrees

1	190	20	250	30	40	450	50	60
70	80	90	100	1030	1060	110	120	130
140	78	88	98	108	118	41	451	51
61	71	81	22	252	32	42	452	52
62	72	82	92	102	112	122	43	453
53	63	73	83	194	24	254	34	44
48	74	84	94	104	114	124	45	455
55	65	75	85	26	256	36	46	456
56	66	76	86	96	106	116	126	47
457	57	67	77	87	199	29	259	39
59	69	79	89	99	109	119	129	139
354	2	3	4	5	454	6	7	
458	8	9	10	11	12	13		

Orifice Numbers for the Command Module Alone in Tunnel C in the α -Range 0 to 60 Degrees

1	190	20	250	30	40	450	50	550
60	70	80	-	100	110	120	130	22
252	32	42	452	-	552	62	72	82
92	102	112	122	43	453	53	553	63
73	-	194	24	254	34	354	2	3
4	5	6	7	8	9	10	11	12
13	74	52	94	104	114	124	45	455
55	555	65	75	85	26	256	36	46
456	56	556	66	76	86	96	106	116
126	199	29	259	39	49	459	59	559
69	79	89	99	109	1159	119	83	-

Orifice Numbers for the Command Module Alone in Tunnel C in the α -Range 60 to 120 Degrees

1	196	20	30	40	450	50	60	70
80	90	100	1030	1060	110	1150	120	130
140	22	32	42	52	62	72	82	92
102	112	122	43	453	53	63	73	83
24	-	354	44	454	48	74	84	94
104	114	124	45	455	55	65	75	85
26	36	46	456	56	66	76	86	96
106	34	126	199	29	39	49	69	79
89	99	250	119	129	139	2	3	4
5	6	7	8	9	10	11	12	13
458	41	252	88	194	108	87	452	1350

[redacted]

Orifice Numbers for the Command Module Alone in Tunnel C in the α -Range 120 to 180 Degrees

1	190	20	40	450	60	70	80	90
100	1030	1060	1150	120	1350	140	78	88
98	108	118	22	32	42	452	62	72
82	92	102	122	43	453	63	73	83
194	24	34	44	454	48	458	354	2
4	6	8	10	12	3	5	7	9
11	13	74	84	94	104	124	45	455
65	75	85	26	36	46	456	66	76
86	96	106	126	14	15	16	17	18
19	21	23	25	27	28	31	33	35
37	199	29	69	79	89	99	109	129

[redacted]

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	1.	301244	1.49	3	-4.00	-.03	-.00	161.00	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3811 TO = 531.

P	3.2869+00	3.1966+00	3.2065+00	3.2421+00	3.1869+00	3.2516+00	3.2266+00	3.2754+00	3.2994+00
CP	-1.2070-01	-1.3506-01	-1.3349-01	-1.2764-01	-1.3661-01	-1.2631-01	-1.3029-01	-1.2254-01	-1.1871-01
P/PO1	2.4068-01	2.3406-01	2.3479-01	2.3739-01	2.3335-01	2.3809-01	2.3626-01	2.3983-01	2.4159-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.7 Q-INF = 6.308 P-INF =4.0588 RE = .3823 TO = 531.

P	3.4583+00	3.2886+00	4.7307+00	1.0246+01	1.2092+01	1.2676+01	1.2963+01	1.3583+01	1.3397+01
CP	-9.5203-02	-1.2210-01	1.0653-01	9.8087-01	1.2736+00	1.3661+00	1.4117+00	1.5100+00	1.4505+00
P/PO1	2.5241-01	2.4003-01	3.4529-01	7.4782-01	8.8257-01	9.2518-01	9.4615-01	9.9142-01	9.7786-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.6 Q-INF = 6.253 P-INF =4.0238 RE = .3796 TO = 531.

P	1.2967+01	3.3807+00	3.2445+00	4.9008+00	1.0226+01	1.2926+01	3.2138+00	3.2916+00	3.2619+00
CP	1.4302+00	-1.0285-01	-1.2463-01	1.4024-01	9.9178-01	1.4236+00	-1.2953-01	-1.1869-01	-1.2184-01
P/PO1	9.5469-01	2.4889-01	2.3887-01	3.6081-01	7.5204-01	9.5165-01	2.3661-01	2.4169-01	2.4015-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.304 P-INF =4.0562 RE = .3821 TO = 531.

P	3.4773+00	3.4114+00	3.2951+00	3.2232+00	3.1869+00	3.2590+00	3.2266+00	3.3375+00	3.3182+00
CP	-9.1833-02	-1.0230-01	-1.2074-01	-1.3214-01	-1.3791-01	-1.2663-01	-1.3161-01	-1.1461-01	-1.1798-01
P/PO1	2.5396-01	2.4915-01	2.4065-01	2.3541-01	2.3275-01	2.3794-01	2.3565-01	2.4375-01	2.4234-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.304 P-INF =4.0562 RE = .3821 TO = 531.

P	3.5090+00	3.4482+00	3.4216+00	3.8955+00	9.3944+00	1.2331+01	1.3072+01	3.2629+00	3.2994+00
CP	-8.6800-02	-9.6457-02	-1.0068-01	-2.5494-02	8.4685-01	1.3128+00	1.4303+00	-1.2584-01	-1.2005-01
P/PO1	2.5628-01	2.5184-01	2.4989-01	2.8451-01	6.8612-01	9.0062-01	9.5472-01	2.3831-01	2.4097-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3815 TO = 531.

P	3.5027+00	4.9698+00	3.5164+00	3.4997+00	3.1869+00	3.2580+00	3.2330+00	3.2940+00	3.2494+00
CP	-8.6917-02	1.4619-01	-8.4735-02	-8.7400-02	-1.3710-01	-1.2580-01	-1.2977-01	-1.2008-01	-1.2716-01
P/PO1	2.5623-01	3.6355-01	2.5723-01	2.5600-01	2.3312-01	2.3833-01	2.3650-01	2.4096-01	2.3770-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.6 Q-INF = 6.271 P-INF =4.0355 RE = .3801 TO = 531.

P	3.5090+00	3.5893+00	3.5734+00	3.1718+00	7.6849+00	1.0923+01	1.2044+01	3.3997+00	3.4119+00
CP	-8.3940-02	-7.1145-02	-7.3685-02	-1.3453-01	5.8192-01	1.0983+00	1.2770+00	-1.0138-01	-9.9430-02
P/PO1	2.5760-01	2.6349-01	2.6232-01	2.3431-01	5.6415-01	8.0186-01	8.8414-01	2.4957-01	2.5047-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.7 Q-INF = 6.330 P-INF =4.0730 RE = .3837 TO = 531.

P	3.5661+00	3.5893+00	3.5987+00	3.6002+00	3.2626+00	3.3467+00	3.3290+00	3.3872+00	3.3494+00
CP	-8.0079-02	-7.6424-02	-7.4944-02	-7.4702-02	-1.2804-01	-1.1475-01	-1.1754-01	-1.0834-01	-1.1432-01
P/PO1	2.5938-01	2.6106-01	2.6174-01	2.6185-01	2.3730-01	2.4341-01	2.4213-01	2.4636-01	2.4361-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.6 Q-INF 6.275 P-INF =4.0381 RE = .3854 TO = 531.

P	3.5217+00	3.5341+00	3.5607+00	3.5902+00	3.3[illegible]	6.7[illegible]	9.6756+00	1.1283+01	3.3117+00
CP	-8.2277-02	-8.0312-02	-7.6067-02	-7.6784-02	-1.0647-01	4.1137-01	8.[illegible]35-01	1.1545+00	-1.1571-01
P/PO1	2.5836-01	2.5927-01	2.6122-01	2.6091-01	2.4722-01	4.8563-01	7.[illegible]63-01	8.2775-01	2.4[illegible]7-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7770+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.8 Q-INF = 6.340 P-INF =4.0795 RE = .3843 TO = 531.

P	3.4392+00	3.3745+00	3.4279+00	3.4425+00	3.4454+00	3.2833+00	3.2778+00	3.3313+00	3.2869+00
CP	-1.0099-01	-1.1120-01	-1.0278-01	-9.7406-02	-9.9997-02	-1.2553-01	-1.2645-01	-1.1802-01	-1.2502-01
P/PO1	2.4975-01	2.4505-01	2.4892-01	2.5140-01	2.5021-01	2.3843-01	2.3803-01	2.4191-01	2.3869-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7770+00	6.4900-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3815 TO = 531.

P	3.3821+00	3.3807+00	3.3363+00	3.3323+00	3.3607+00	5.5257+00	7.3351+00	1.1017+01	1.2023+01
CP	-1.0607-01	-1.0631-01	-1.0383-01	-1.0437-01	-1.5715-01	3.9341-01	8.4935-01	1.1570+00	1.2570+00
P/PO1	2.4741-01	2.4730-01	2.4844-01	2.4814-01	2.2389-01	4.7734-01	6.8727-01	8.0591-01	8.7953-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7770+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	3.3305+00	3.3281+00	3.4711+00	3.3984+00	3.6891+00	3.3773+00	3.3867+00	3.4992+00
CP	-1.1428-01	-1.1466-01	-9.1939-02	-1.0348-01	-5.7305-02	-1.0683-01	-1.0535-01	-8.7470-02
P/PO1	2.4363-01	2.4346-01	2.5392-01	2.4860-01	2.6336-01	2.4706-01	2.4774-01	2.5597-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.9164+00	3.4031+00	3.5438+00	3.4711+00	3.6047+00	3.5555+00	3.6047+00
CP	-2.1182-02	-1.0274-01	-8.0394-02	-9.1939-02	-7.0712-02	-7.8532-02	-7.0712-02
P/PO1	2.8649-01	2.4894-01	2.5923-01	2.5392-01	2.6369-01	2.6009-01	2.6369-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN [illegible]
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN [illegible]
40 - INCH CONTINUOUS SS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	2.	301244	1.49	3	5.05	-.03	.00	170.05	.0

VALVE POS 2 PO = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3610 TO = 531.

P	3.1918+00	3.1230+00	3.1243+00	3.1478+00	3.1238+00	3.1439+00	3.1114+00	3.1573+00	3.1867+00
CP	-1.3502-01	-1.4598-01	-1.4577-01	-1.4202-01	-1.4585-01	-1.4265-01	-1.4793-01	-1.4051-01	-1.3679-01
P/PO1	2.3468-01	2.2904-01	2.2913-01	2.3086-01	2.2909-01	2.3057-01	2.2918-01	2.3155-01	2.3427-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.5 Q-INF = 6.211 P-INF =3.9466 RE = .3776 TO = 531.

P	3.3060+00	3.2518+00	3.2761+00	8.9924+00	1.1010+01	1.1737+01	1.2106+01	1.3161+01	1.3366+01
CP	-1.1119-01	-1.1991-01	-1.1600-01	8.0436-01	1.1292+00	1.2462+00	1.3057+00	1.4755+00	1.5086+00
P/PO1	2.4505-01	2.4104-01	2.4284-01	6.6655-01	8.1609-01	8.6997-01	8.9735-01	9.7553-01	9.9176-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.5 Q-INF = 6.231 P-INF =4.0096 RE = .3782 TO = 531.

P	1.3423+01	3.2518+00	3.2065+00	3.4117+00	9.0337+00	1.2144+01	3.1114+00	3.1573+00	3.1369+00
CP	1.5108+00	-1.2166-01	-1.2887-01	-9.5947-02	8.0630-01	1.3054+00	-1.4414-01	-1.3678-01	-1.4704-01
P/PO1	9.9176-01	2.4026-01	2.3691-01	2.5207-01	6.6745-01	8.9723-01	2.2998-01	2.3327-01	2.3177-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.5 Q-INF = 6.243 P-INF =4.0173 RE = .3789 TO = 531.

P	3.3123+00	3.2702+00	3.2255+00	3.1227+00	3.0859+00	3.1439+00	3.1178+00	3.1821+00	3.1682+00
CP	-1.1292-01	-1.1966-01	-1.2683-01	-1.4330-01	-1.4919-01	-1.3730-01	-1.4409-01	-1.3377-01	-1.3601-01
P/PO1	2.4426-01	2.4115-01	2.3785-01	2.3027-01	2.2756-01	2.3183-01	2.2991-01	2.3465-01	2.3363-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1900-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3760 TO = 531.

P	3.3314+00	3.3009+00	3.2824+00	3.0995+00	8.6730+00	1.1846+01	1.2885+01	3.1511+00	3.1619+00
CP	-1.0641-01	-1.1132-01	-1.1430-01	-1.5829-01	7.5473-01	1.2663+00	1.4338+00	-1.3548-01	-1.3372-01
P/PO1	2.4725-01	2.4499-01	2.4362-01	2.2337-01	6.4371-01	8.7923-01	9.5634-01	2.3387-01	2.3468-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.5 Q-INF = 6.209 P-INF =3.9953 RE = .3763 TO = 531.

P	3.3187+00	4.8593+00	3.3393+00	3.3300+00	3.1111+00	3.1375+00	3.1179+00	3.1635+00	3.1120+00
CP	-1.0898-01	1.3916-01	-1.0565-01	-1.0715-01	-1.4240-01	-1.3815-01	-1.4133-01	-1.3397-01	-1.4227-01
P/PO1	2.4607-01	3.6031-01	2.4760-01	2.4691-01	2.3068-01	2.3264-01	2.3118-01	2.3457-01	2.3074-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3774 TO = 531.

P	3.3631+00	3.4175+00	3.3963+00	3.1790+00	7.8418+00	1.1205+01	1.2402+01	3.2629+00	3.2744+00
CP	-1.0340-01	-9.4663-02	-9.8071-02	-1.4100-01	6.1582-01	1.1559+00	1.3482+00	-1.1948-01	-1.1764-01
P/PO1	2.4864-01	2.5266-01	2.5109-01	2.3133-01	5.7376-01	8.2839-01	9.1692-01	2.4124-01	2.4208-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3815 TO = 531.

P	3.4519+00	3.4788+00	3.4911+00	3.4808+00	3.1490+00	3.2326+00	3.2202+00	3.2878+00	3.2994+00
CP	-9.4983-02	-9.0707-02	-8.8754-02	-9.0395-02	-1.4312-01	-1.2983-01	-1.3180-01	-1.2106-01	-1.1922-01
P/PO1	2.5251-01	2.5448-01	2.5538-01	2.5463-01	2.3035-01	2.3647-01	2.3556-01	2.4051-01	2.4136-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

von KARMAN [illegible] FACILITY

40 - INCH CONTINUOUS WIND TUNNEL

VALVE POS 10 PO = 14.6 Q-INF = 6.275 P-INF =4.0381 RE = .3799 TO = 532.

P	3.4837+00	3.5279+00	3.5354+00	3.5374+00	3.2247+00	7.3239+00	1.0579+01	1.2112+01	3.2969+00
CP	-8.8344-02	-8.1790-02	-8.0098-02	-7.9787-02	-1.2960-01	5.2359-01	1.0424+00	1.2867+00	-1.1969-01
P/PO1	2.5557-01	2.5882-01	2.5937-01	2.5951-01	2.3657-01	5.3729-01	7.7612-01	8.8860-01	2.4114-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.5 Q-INF = 6.245 P-INF =4.0186 RE = .3785 TO = 531.

P	3.4139+00	3.3684+00	3.4785+00	3.5122+00	3.4898+00	3.2073+00	3.1946+00	3.2443+00	3.2369+00
CP	-9.6836-02	-1.0411-01	-8.6488-02	-8.1086-02	-8.4679-02	-1.2992-01	-1.3195-01	-1.2399-01	-1.2517-01
P/PO1	2.5166-01	2.4831-01	2.5642-01	2.5891-01	2.5726-01	2.3643-01	2.3550-01	2.3916-01	2.3862-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8400-01

VALVE POS 12 PO = 14.7 Q-INF = 6.330 P-INF =4.0730 RE = .3837 TO = 531.

P	3.3123+00	3.3745+00	3.3963+00	3.4054+00	3.1806+00	7.3081+00	1.0408+01	1.1972+01	1.2867+01
CP	-1.2018-01	-1.1035-01	-1.0692-01	-1.0547-01	-1.4100-01	5.1109-01	1.0108+00	1.2478+00	1.3892+00
P/PO1	2.4091-01	2.4544-01	2.4702-01	2.4768-01	2.3133-01	5.3154-01	7.5699-01	8.7072-01	9.3582-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	3.2063+00	3.1992+00	3.3633+00	3.2719+00	3.3492+00	3.2156+00	3.2273+00	3.4078+00
CP	-1.3694-01	-1.3805-01	-1.1213-01	-1.2657-01	-1.1435-01	-1.3546-01	-1.3360-01	-1.0509-01
P/PO1	2.3320-01	2.3269-01	2.4462-01	2.3797-01	2.4360-01	2.3386-01	2.3473-01	2.4786-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.8109+00	3.2156+00	3.4148+00	3.2414+00	3.4805+00	3.3492+00	3.4453+00
CP	-4.1407-02	-1.3546-01	-1.0398-01	-1.3138-01	-9.3615-02	-1.1435-01	-9.9169-02
P/PO1	2.7718-01	2.3388-01	2.4837-01	2.3576-01	2.5314-01	2.4360-01	2.5059-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	3.	301244	1.49	3	14.67	19.99	-4.97	178.82	.0

VALVE POS 2 PO = 14.7 Q-INF = 6.310 P-INF =4.0601 RE = .3825 TO = 531.

P	3.0458+00	2.9880+00	3.0041+00	3.0033+00	2.9723+00	2.9981+00	2.9577+00	3.0143+00	3.0370+00
CP	-1.6075-01	-1.6991-01	-1.6735-01	-1.6749-01	-1.7240-01	-1.6831-01	-1.7471-01	-1.6574-01	-1.6215-01
P/PO1	2.2224-01	2.1802-01	2.1920-01	2.1913-01	2.1687-01	2.1875-01	2.1581-01	2.1994-01	2.2159-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.7 Q-INF = 6.328 P-INF =4.0717 RE = .3835 TO = 531.

P	3.1727+00	3.1230+00	2.4919+00	8.1774+00	1.0351+01	1.1033+01	1.1452+01	1.2801+01	1.3382+01
CP	-1.4207-01	-1.4994-01	-2.4967-01	6.4890-01	9.9235-01	1.1001+00	1.1663+00	1.3795+00	1.4713+00
P/PO1	2.3083-01	2.2721-01	1.8130-01	5.9498-01	7.5310-01	9.0269-01	8.3318-01	9.3134-01	9.7361-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9780+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3805 TO = 531.

P	1.3690+01	3.1414+00	3.1306+00	2.5886+00	8.1866+00	1.1408+01	2.9705+00	3.0268+00	2.9995+00
CP	1.5374+00	-1.4305-01	-1.4476-01	-2.3110-01	6.6069-01	1.1739+00	-1.7026-01	-1.6131-01	-1.6565-01
P/PO1	1.0040+00	2.3039-01	2.2960-01	1.8985-01	6.0041-01	8.3667-01	2.1786-01	2.2198-01	2.1998-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.332 P-INF =4.0743 RE = .3838 TO = 531.

P	3.1981+00	3.1659+00	3.1243+00	3.0159+00	2.9912+00	3.0361+00	2.9951+00	3.0765+00	3.0682+00
CP	-1.3838-01	-1.4347-01	-1.5004-01	-1.6717-01	-1.7106-01	-1.6397-01	-1.7028-01	-1.5759-01	-1.5890-01
P/PO1	2.3253-01	2.3019-01	2.2717-01	2.1929-01	2.1749-01	2.2076-01	2.1785-01	2.2369-01	2.2309-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00

VALVE POS 6 PO = 14.8 Q-INF = 6.336 P-INF =4.0769 RE = .3840 TO = 531.

P	3.2367+00	3.2089+00	3.1939+00	2.6012+00	7.9986+00	1.1205+01	1.2496+01	3.0641+00	3.0995+00
CP	-1.3270-01	-1.3700-01	-1.3937-01	-2.3792-01	6.1897-01	1.1250+00	1.3288+00	-1.5986-01	-1.5428-01
P/PO1	2.3515-01	2.3317-01	2.3208-01	1.8901-01	5.8120-01	8.1417-01	9.0798-01	2.2264-01	2.2522-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3834 TO = 531.

P	3.2616+00	4.8164+00	3.2824+00	3.2798+00	2.9912+00	3.0425+00	3.0217+00	3.0827+00	3.0370+00
CP	-1.2787-01	1.1792-01	-1.2457-01	-1.2500-01	-1.7060-01	-1.6251-01	-1.6578-01	-1.5615-01	-1.6338-01
P/PO1	2.3737-01	3.5053-01	2.3889-01	2.3870-01	2.1776-01	2.2143-01	2.1992-01	2.2436-01	2.2103-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.8 Q-INF = 6.350 P-INF =4.0860 RE = .3849 TO = 531.

P	3.2235+00	3.3623+00	3.3330+00	3.1290+00	7.7320+00	1.1048+01	1.2402+01	3.1386+00	3.1682+00
CP	-1.3583-01	-1.1397-01	-1.1858-01	-1.5072-01	5.7418-01	1.0964+00	1.3097+00	-1.4919-01	-1.4454-01
P/PO1	2.3371-01	2.4377-01	2.4165-01	2.2686-01	5.6058-01	8.0102-01	8.9919-01	2.2756-01	2.2970-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.8 Q-INF = 6.360 P-INF =4.0925 RE = .3855 TO = 531.

P	3.3441+00	3.3868+00	3.3836+00	3.3803+00	3.0480+00	3.0995+00	3.0730+00	3.1386+00	3.1557+00
CP	-1.1767-01	-1.1095-01	-1.1145-01	-1.1198-01	-1.6422-01	-1.5613-01	-1.6030-01	-1.4997-01	-1.4729-01
P/PO1	2.4207-01	2.4516-01	2.4493-01	2.4469-01	2.2064-01	2.2436-01	2.2244-01	2.2720-01	2.2843-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.7 Q-INF = 6.328 P-INF =4.0717 RE = .3835 TO = 531.

P	3.3060+00	3.3623+00	3.3583+00	3.3614+00	3.1301+00	7.6993+00	1.1031+01	1.2519+01	3.1120+00
CP	-1.2101-01	-1.1212-01	-1.1274-01	-1.1225-01	-1.4881-01	5.7328-01	1.0798+00	1.3350+00	-1.5168-01
P/PO1	2.4053-01	2.4462-01	2.4434-01	2.4456-01	2.2773-01	5.6017-01	8.0258-01	9.1085-01	2.2641-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.8 Q-INF = 6.338 P-INF =4.0782 RE = .3842 TO = 531.

P	3.2298+00	3.1598+00	3.2698+00	3.3049+00	3.3131+00	3.0298+00	3.0025+00	3.0454+00	3.0120+00
CP	-1.3386-01	-1.4491-01	-1.2756-01	-1.2202-01	-1.2072-01	-1.6542-01	-1.6972-01	-1.6296-01	-1.6823-01
P/PO1	2.3462-01	2.2953-01	2.3752-01	2.4007-01	2.4066-01	2.2008-01	2.1810-01	2.2122-01	2.1879-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.8 Q-INF = 6.350 P-INF =4.0860 RE = .3849 TO = 531.

P	3.1220+00	3.1966+00	3.2065+00	3.1981+00	2.8272+00	8.1532+00	1.1312+01	1.2738+01	1.3382+01
CP	-1.5182-01	-1.4006-01	-1.3850-01	-1.3983-01	-1.9824-01	6.4051-01	1.1379+00	1.3626+00	1.4639+00
P/PO1	2.2635-01	2.3176-01	2.3248-01	2.3187-01	2.0498-01	5.9112-01	8.2011-01	9.2356-01	9.7021-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	3.0867+00	3.0867+00	3.1781+00	3.1641+00	3.1805+00	3.1594+00	3.1523+00	3.2484+00
CP	-1.5737-01	-1.5737-01	-1.4297-01	-1.4519-01	-1.4260-01	-1.4593-01	-1.4703-01	-1.3190-01
P/PO1	2.2379-01	2.2379-01	2.3042-01	2.2940-01	2.3059-01	2.2906-01	2.2855-01	2.3552-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6516+00	3.1711+00	3.2836+00	3.2531+00	3.3445+00	3.3258+00	3.3609+00
CP	-6.8414-02	-1.4408-01	-1.2636-01	-1.3116-01	-1.1677-01	-1.1972-01	-1.1418-01
P/PO1	2.6475-01	2.2991-01	2.3807-01	2.3586-01	2.4249-01	2.4113-01	2.4367-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	4.	301244	1.49	3	14.67	-17.38	4.94	173.83	.0

PROPULSION ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH HYPERSONIC GAS DYNAMICS TUNNEL

VALVE POS 2 PO = 14.7 Q-INF = 6.328 P-INF =4.0717 RE = .3835 TO = 531.

P	3.2743+00	3.1107+00	3.0737+00	3.0213+00	3.0796+00	3.1185+00	3.1306+00	3.1884+00	3.2307+00
CP	-1.2603-01	-1.5187-01	-1.5772-01	-1.5475-01	-1.5672-01	-1.5554-01	-1.4874-01	-1.3960-01	-1.3242-01
P/PO1	2.3822-01	2.2632-01	2.2363-01	2.2471-01	2.2406-01	2.2644-01	2.2777-01	2.3197-01	2.3505-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.7 Q-INF = 6.314 P-INF =4.0627 RE = .3827 TO = 531.

P	3.3885+00	3.3377+00	2.5488+00	8.1935+00	1.0414+01	1.1049+01	1.1452+01	1.2785+01	1.3366+01
CP	-1.0678-01	-1.1482-01	-2.3978-01	6.5426-01	1.0059+00	1.1044+00	1.1703+00	1.3815+00	1.4736+00
P/PO1	2.4708-01	2.4338-01	1.8585-01	5.9745-01	7.5936-01	8.0562-01	8.3504-01	9.3228-01	9.7464-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9730+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3834 TO = 531.

P	1.3769+01	3.3439+00	3.3267+00	2.6871+00	8.5315+00	1.1612+01	3.1178+00	3.1946+00	3.2057+00
CP	1.5332+00	-1.1486-01	-1.1757-01	-2.1836-01	7.0527-01	1.1721+00	-1.5060-01	-1.3846-01	-1.3670-01
P/PO1	1.0021+00	2.4336-01	2.4211-01	1.9571-01	6.2094-01	8.4526-01	2.2671-01	2.3250-01	2.3331-01
S/R	2.8900+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3829 TO = 532.

P	3.4202+00	3.3929+00	3.3393+00	3.1541+00	3.1553+00	3.1946+00	3.1754+00	3.2816+00	3.2619+00
CP	-1.0279-01	-1.0710-01	-1.1557-01	-1.4486-01	-1.4467-01	-1.3946-01	-1.4149-01	-1.2471-01	-1.2781-01
P/PO1	2.4892-01	2.4693-01	2.4303-01	2.2959-01	2.2964-01	2.3250-01	2.3119-01	2.3883-01	2.3740-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.320 P-INF =4.0666 RE = .3831 TO = 531.

P	3.3694+00	3.3377+00	3.3204+00	2.7960+00	8.6887+00	1.1794+01	1.2979+01	3.1386+00	3.1494+00
CP	-1.1031-01	-1.1533-01	-1.1807-01	-2.0105-01	7.3138-01	1.2211+00	1.4102+00	-1.4683-01	-1.4512-01
P/PO1	2.4546-01	2.4315-01	2.4188-01	2.0368-01	6.3296-01	8.5843-01	9.4548-01	2.2864-01	2.2943-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.7 Q-INF = 6.306 P-INF =4.0575 RE = .3822 TO = 531.

P	3.3187+00	4.8777+00	3.3710+00	3.3426+00	3.0796+00	3.0932+00	3.0922+00	3.1511+00	3.1369+00
CP	-1.1717-01	1.3008-01	-1.0887-01	-1.1338-01	-1.5508-01	-1.5293-01	-1.5309-01	-1.4375-01	-1.4599-01
P/PO1	2.4230-01	3.5613-01	2.4612-01	2.4405-01	2.2494-01	2.2584-01	2.2576-01	2.3006-01	2.2903-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0600-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.7 Q-INF = 6.310 P-INF =4.0601 RE = .3825 TO = 531.

P	3.3123+00	3.4114+00	3.3899+00	2.9153+00	8.6887+00	1.1909+01	1.3072+01	3.2070+00	3.2244+00
CP	-1.1851-01	-1.0281-01	-1.0621-01	-1.8143-01	7.3357-01	1.2439+00	1.4283+00	-1.3520-01	-1.3244-01
P/PO1	2.4168-01	2.4891-01	2.4735-01	2.1272-01	6.3397-01	8.6893-01	9.5381-01	2.3400-01	2.3527-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3810 TO = 531.

P	3.3758+00	3.4052+00	3.4216+00	3.4180+00	3.1175+00	3.1566+00	3.1242+00	3.1697+00	3.2057+00
CP	-1.0640-01	-1.0171-01	-9.9112-02	-9.9683-02	-1.4750-01	-1.4127-01	-1.4643-01	-1.3918-01	-1.3346-01
P/PO1	2.4726-01	2.4942-01	2.5061-01	2.5035-01	2.2834-01	2.3120-01	2.2883-01	2.3217-01	2.3480-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.6 Q-INF = 6.283 P-INF =4.0432 RE = .3839 TO = 531.

P	3.4202+00	3.4543+00	3.4595+00	3.4900+00	3.0417+00	8.3254+00	1.1670+01	1.2942+01	3.2367+00
CP	-9.9154-02	-9.3728-02	-9.2898-02	-8.9509-02	-1.5939-01	6.8148-01	1.2138+00	1.4162+00	-1.2832-01
P/PO1	2.5059-01	2.5309-01	2.5347-01	2.5503-01	2.2286-01	6.0998-01	8.5504-01	9.4823-01	2.3717-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3812 TO = 531.

P	3.2552+00	3.2518+00	3.3583+00	3.3991+00	3.4014+00	3.2199+00	3.1562+00	3.2132+00	3.1994+00
CP	-1.2591-01	-1.2645-01	-1.0952-01	-1.0303-01	-1.0266-01	-1.3152-01	-1.4165-01	-1.3259-01	-1.3478-01
P/PO1	2.3828-01	2.3903-01	2.4582-01	2.4861-01	2.4898-01	2.3569-01	2.3103-01	2.3520-01	2.3419-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1600-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3834 TO = 531.

P	3.2425+00	3.3316+00	3.3583+00	3.3614+00	3.0165+00	8.1362+00	1.1265+01	1.2676+01	1.3319+01
CP	-1.3088-01	-1.1680-01	-1.1257-01	-1.1208-01	-1.6661-01	6.3799-01	1.1373+00	1.3604+00	1.4621+00
P/PO1	2.3599-01	2.4247-01	2.4441-01	2.4464-01	2.1954-01	5.8996-01	8.1984-01	9.2253-01	9.6937-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	3.2836+00	3.1875+00	3.2578+00	3.2719+00	3.2742+00	3.2813+00	3.2859+00	3.3281+00
CP	-1.2439-01	-1.3958-01	-1.2846-01	-1.2624-01	-1.2587-01	-1.2476-01	-1.2402-01	-1.1735-01
P/PO1	2.3898-01	2.3198-01	2.3710-01	2.3812-01	2.3829-01	2.3881-01	2.3915-01	2.4222-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.7172+00	3.2930+00	3.3445+00	3.3398+00	3.4031+00	3.3938+00	3.4055+00
CP	-5.5844-02	-1.2291-01	-1.1475-01	-1.1550-01	-1.0549-01	-1.0697-01	-1.0512-01
P/PO1	2.7053-01	2.3966-01	2.4341-01	2.4307-01	2.4768-01	2.4699-01	2.4785-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	5.	301244	1.49	3	14.01	.02	-.00	179.01	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 14.6 Q-INF = 6.292 P-INF =4.0484 RE = .3814 TO = 531.

P	3.1473+00	3.0739+00	3.0547+00	3.0599+00	3.0796+00	3.0805+00	3.0539+00	3.1013+00	3.1369+00
CP	-1.4322-01	-1.5489-01	-1.5794-01	-1.5713-01	-1.5399-01	-1.5395-01	-1.5810-01	-1.5053-01	-1.4427-01
P/PO1	2.3031-01	2.2493-01	2.2353-01	2.2390-01	2.2535-01	2.2541-01	2.2346-01	2.2694-01	2.2955-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.7 Q-INF = 6.296 P-INF =4.0510 RE = .3816 TO = 531.

P	3.2679+00	3.2212+00	2.5045+00	8.1465+00	1.0382+01	1.0986+01	1.1389+01	1.2738+01	1.3351+01
CP	-1.2439-01	-1.3182-01	-2.4565-01	6.5053-01	1.0057+00	1.1015+00	1.1657+00	1.3799+00	1.4772+00
P/PO1	2.3898-01	2.3556-01	1.8315-01	5.9573-01	7.5925-01	8.0336-01	8.3289-01	9.3153-01	9.7631-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.7 Q-INF = 6.302 P-INF =4.0549 RE = .3820 TO = 531.

P	1.3769+01	3.2396+00	3.2382+00	2.6577+00	8.4534+00	1.1533+01	3.0602+00	3.1200+00	3.1120+00
CP	1.5415+00	-1.2939-01	-1.2961-01	-2.2172-01	6.9800-01	1.1868+00	-1.5786-01	-1.4836-01	-1.4964-01
P/PO1	1.0059+00	2.3668-01	2.3657-01	1.9417-01	6.1759-01	8.4260-01	2.2357-01	2.2794-01	2.2735-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3811 TO = 531.

P	3.2996+00	3.2641+00	3.2129+00	3.0787+00	3.0670+00	3.1122+00	3.0794+00	3.1635+00	3.1619+00
CP	-1.1868-01	-1.2433-01	-1.3248-01	-1.5382-01	-1.5568-01	-1.4849-01	-1.5371-01	-1.4033-01	-1.4058-01
P/PO1	2.4161-01	2.3966-01	2.3525-01	2.2543-01	2.2457-01	2.2788-01	2.2548-01	2.3164-01	2.3152-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.314 P-INF =4.0627 RE = .3827 TO = 531.

P	3.3567+00	3.3255+00	3.3077+00	2.6514+00	8.3436+00	1.1486+01	1.2698+01	3.1511+00	3.1932+00
CP	-1.1181-01	-1.1676-01	-1.1957-01	-2.2352-01	6.7805-01	1.1758+00	1.3678+00	-1.4439-01	-1.3771-01
P/PO1	2.4477-01	2.4249-01	2.4119-01	1.9334-01	6.0840-01	8.3757-01	9.2593-01	2.2977-01	2.3234-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.6 Q-INF = 6.269 P-INF =4.0342 RE = .3795 TO = 532.

P	3.3504+00	4.8839+00	3.3710+00	3.3803+00	3.1616+00	3.1439+00	3.1306+00	3.1635+00	3.1369+00
CP	-1.0906-01	1.3553-01	-1.0578-01	-1.0430-01	-1.3917-01	-1.4201-01	-1.4413-01	-1.3888-01	-1.4311-01
P/PO1	2.4603-01	3.5864-01	2.4754-01	2.4823-01	2.3217-01	2.3087-01	2.2989-01	2.3231-01	2.3036-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.7 Q-INF = 6.318 P-INF =4.0653 RE = .3825 TO = 532.

P	3.3250+00	3.4543+00	3.4216+00	3.0913+00	8.2025+00	1.1439+01	1.2714+01	3.2381+00	3.2494+00
CP	-1.1717-01	-9.6706-02	-1.0189-01	-1.5417-01	6.5486-01	1.1672+00	1.3689+00	-1.3093-01	-1.2913-01
P/PO1	2.4230-01	2.5172-01	2.4934-01	2.2527-01	5.9773-01	8.3361-01	9.2648-01	2.3596-01	2.3679-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.7 Q-INF = 6.320 P-INF =4.0666 RE = .3831 TO = 531.

P	3.4139+00	3.4666+00	3.4658+00	3.4620+00	3.1238+00	3.1692+00	3.1626+00	3.2194+00	3.2119+00
CP	-1.0328-01	-9.4938-02	-9.5055-02	-9.5668-02	-1.4918-01	-1.4199-01	-1.4304-01	-1.3404-01	-1.3523-01
P/PO1	2.4869-01	2.5253-01	2.5248-01	2.5220-01	2.2756-01	2.3087-01	2.3039-01	2.3453-01	2.3398-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.7 Q-INF = 6.302 P-INF =4.0549 RE = .3820 TO = 531.

P	3.3631+00	3.4175+00	3.4342+00	3.4243+00	3.1490+00	7.9816+00	1.1327+01	1.2691+01	3.2119+00
CP	-1.0978-01	-1.0115-01	-9.8496-02	-1.0908-01	-1.4376-01	6.2304-01	1.1540+00	1.3705+00	-1.3377-01
P/PO1	2.4570-01	2.4967-01	2.5090-01	2.5017-01	2.3006-01	5.8303-01	8.2754-01	9.2721-01	2.3466-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.7 Q-INF = 6.300 P-INF =4.0536 RE = .3814 TO = 532.

P	3.2616+00	3.2273+00	3.3457+00	3.3866+00	3.4014+00	3.0995+00	3.0730+00	3.1076+00	3.0932+00
CP	-1.2573-01	-1.3117-01	-1.1238-01	-1.0589-01	-1.0353-01	-1.5149-01	-1.5567-01	-1.5017-01	-1.5245-01
P/PO1	2.3836-01	2.3585-01	2.4451-01	2.4749-01	2.4858-01	2.2652-01	2.2458-01	2.2710-01	2.2606-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.328 P-INF =4.0717 RE = .3831 TO = 532.

P	3.1854+00	3.2764+00	3.2888+00	3.2923+00	2.8966+00	8.1845+00	1.1358+01	1.2770+01	1.3413+01
CP	-1.4007-01	-1.2569-01	-1.2374-01	-1.2317-01	-1.8571-01	6.4995-01	1.1515+00	1.3746+00	1.4763+00
P/PO1	2.3176-01	2.3837-01	2.3928-01	2.3953-01	2.1074-01	5.9547-01	8.2638-01	9.2907-01	9.7588-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	3.1875+00	3.1758+00	3.2672+00	3.2695+00	3.2625+00	3.2461+00	3.2484+00	3.3211+00
CP	-1.3974-01	-1.4159-01	-1.2715-01	-1.2678-01	-1.2789-01	-1.3948-01	-1.3011-01	-1.1863-01
P/PO1	2.3191-01	2.3106-01	2.3771-01	2.3788-01	2.3737-01	2.3617-01	2.3634-01	2.4163-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.7289+00	3.2695+00	3.3586+00	3.3328+00	3.4219+00	3.4008+00	3.4430+00
CP	-5.4179-02	-1.2678-01	-1.1270-01	-1.1677-01	-1.0270-01	-1.0603-01	-9.9367-02
P/PO1	2.7130-01	2.3788-01	2.4436-01	2.4248-01	2.4896-01	2.4743-01	2.5050-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	6.	301244	2.00	3	-4.00	.03	.00	161.00	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 20.4 Q-INF = 7.293 P-INF =2.6048 RE = .4443 TO = 533.

P	7.1335-01	7.0559-01	9.8234-01	1.0891+00	1.0959+00	1.0561+00	8.2854-01	6.9154-01	6.5214-01
CP	-2.5934-01	-2.6040-01	-2.2246-01	-2.0782-01	-2.0688-01	-2.1234-01	-2.4354-01	-2.6233-01	-2.6773-01
P/PO1	4.8552-02	4.8025-02	6.6861-02	7.4125-02	7.4593-02	7.1882-02	5.6393-02	4.7068-02	4.4387-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 20.3 Q-INF = 7.277 P-INF =2.5988 RE = .4433 TO = 533.

P	6.5796-01	1.2249+00	4.9837+00	1.1154+01	1.3425+01	1.3834+01	1.4163+01	1.4616+01	1.4459+01
CP	-2.6672-01	-1.8881-01	3.2774-01	1.1757+00	1.4878+00	1.5440+00	1.5892+00	1.6515+00	1.6249+00
P/PO1	4.4886-02	8.3565-02	3.3999-01	7.6095-01	9.1586-01	9.4374-01	9.6619-01	9.9712-01	9.8641-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 20.2 Q-INF = 7.231 P-INF =2.5826 RE = .4405 TO = 533.

P	1.3895+01	6.7347-01	1.2962+00	5.1018+00	1.1198+01	1.4053+01	1.0026+00	7.5977-01	6.3185-01
CP	1.5643+00	-2.6401-01	-1.7790-01	3.4837-01	1.1914+00	1.5862+00	-2.1850-01	-2.5208-01	-2.6977-01
P/PO1	9.5384-01	4.6232-02	8.8979-02	3.5023-01	7.6871-01	9.6469-01	6.8822-02	5.2156-02	4.3375-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 20.3 Q-INF = 7.253 P-INF =2.5904 RE = .4418 TO = 533.

P	7.2799-01	6.4135-01	1.2554+00	6.8319-01	8.5892-01	8.8222-01	8.7269-01	7.1978-01	6.7448-01
CP	-2.5678-01	-2.6872-01	-1.8407-01	-2.6295-01	-2.3872-01	-2.3551-01	-2.3683-01	-2.5791-01	-2.6415-01
P/PO1	4.9824-02	4.3894-02	8.5917-02	4.6758-02	5.8785-02	6.0380-02	5.9729-02	4.9262-02	4.6162-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1900-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1950+00

VALVE POS 6 PO = 20.3 Q-INF = 7.280 P-INF =2.6000 RE = .4435 TO = 533.

P	6.8565-01	6.9230-01	8.1904-01	4.0400+00	1.0618+01	1.3302+01	1.4116+01	7.9476-01	6.7197-01
CP	-2.6296-01	-2.6205-01	-2.4464-01	1.9780-01	1.1013+00	1.4705+00	1.5819+00	-2.4797-01	-2.6484-01
P/PO1	4.6754-02	4.7207-02	5.5849-02	2.7548-01	7.2401-01	9.0702-01	9.6255-01	5.4193-02	4.5820-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 20.2 Q-INF = 7.226 P-INF =2.5809 RE = .4402 TO = 533.

P	7.9185-01	3.6077+00	7.1145-01	5.6243-01	7.4932-01	7.0578-01	5.8615-01	6.4175-01	8.6754-01
CP	-2.4757-01	1.4210-01	-2.5869-01	-2.7931-01	-2.5345-01	-2.5948-01	-2.7603-01	-2.6834-01	-2.3709-01
P/PO1	5.4396-02	2.4783-01	4.8873-02	3.8636-02	5.1475-02	4.8483-02	4.0266-02	4.4085-02	5.9596-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 20.3 Q-INF = 7.268 P-INF =2.5958 RE = .4427 TO = 533.

P	8.2505-01	7.6898-01	7.5015-01	2.2109+00	8.6573+00	1.1518+01	1.2838+01	7.5477-01	6.9955-01
CP	-2.4363-01	-2.5134-01	-2.5393-01	-5.2959-02	8.3396-01	1.2275+00	1.4092+00	-2.5330-01	-2.6090-01
P/PO1	5.6350-02	5.2520-02	5.1234-02	1.5100-01	5.9128-01	7.8664-01	8.7685-01	5.1549-02	4.7778-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.3 Q-INF = 7.257 P-INF =2.5916 RE = .4420 TO = 533.

P	8.0206-01	7.7637-01	7.8332-01	7.7898-01	6.9835-01	7.2112-01	7.2464-01	7.5227-01	6.9203-01
CP	-2.4661-01	-2.5015-01	-2.4920-01	-2.4979-01	-2.6091-01	-2.5777-01	-2.5728-01	-2.5348-01	-2.6178-01
P/PO1	5.4868-02	5.3111-02	5.3586-02	5.3290-02	4.7773-02	4.9331-02	4.9572-02	5.1462-02	4.7341-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.3 Q-INF = 7.248 P-INF =2.5886 RE = .4415 TO = 533.

P	8.1228-01	7.8869-01	7.9608-01	7.9411-01	1.7025+00	6.9169+00	1.0174+01	1.1831+01	7.2462-01
CP	-2.4508-01	-2.4833-01	-2.4731-01	-2.4758-01	-1.2225-01	5.9715-01	1.0465+00	1.2751+00	-2.5717-01
P/PO1	5.5632-02	5.4016-02	5.4522-02	5.4387-02	1.1660-01	4.7373-01	6.9681-01	8.1026-01	4.9628-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 20.2 Q-INF = 7.236 P-INF =2.5844 RE = .4408 TO = 533.

P	8.8125-01	7.9116-01	7.8077-01	7.9159-01	8.1814-01	7.3646-01	7.2464-01	7.3227-01	6.8952-01
CP	-2.3536-01	-2.4781-01	-2.4925-01	-2.4775-01	-2.4408-01	-2.5537-01	-2.5700-01	-2.5595-01	-2.6186-01
P/PO1	6.0453-02	5.4273-02	5.3560-02	5.4302-02	5.6124-02	5.0521-02	4.9710-02	5.0234-02	4.7301-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 20.3 Q-INF = 7.247 P-INF =2.5880 RE = .4414 TO = 533.

P	8.3271-01	7.7144-01	7.8587-01	7.8403-01	1.6669+00	6.8074+00	9.8158+00	1.1486+01	1.2742+01
CP	-2.4273-01	-2.5069-01	-2.4869-01	-2.4895-01	-1.2712-01	5.8225-01	9.9741-01	1.2280+00	1.4012+00
P/PO1	5.7044-02	5.2847-02	5.3835-02	5.3709-02	1.1419-01	4.6633-01	6.7242-01	7.8687-01	8.7286-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	7.4063-01	8.8125-01	7.3828-01	7.8281-01	7.4297-01	7.1719-01	7.0781-01	7.4063-01
CP	-2.5494-01	-2.3553-01	-2.5526-01	-2.4912-01	-2.5462-01	-2.5817-01	-2.5947-01	-2.5494-01
P/PO1	5.0736-02	6.0369-02	5.0575-02	5.3626-02	5.0896-02	4.9130-02	4.8488-02	5.0736-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	9.8906-01	6.9141-01	7.5469-01	7.1016-01	7.5469-01	7.0781-01	7.3359-01	
CP	-2.2065-01	-2.6173-01	-2.5300-01	-2.5914-01	-2.5300-01	-2.5947-01	-2.5591-01	
P/PO1	6.7755-02	4.7364-02	5.1699-02	4.8649-02	5.1699-02	4.8488-02	5.0254-02	
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	7.	301244	2.00	3	5.02	.03	-.00	170.02	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 20.4 Q-INF = 7.287 P-INF =2.6024 RE = .4439 TO = 533.

P	8.1525-01	8.1082-01	8.0628-01	8.0924-01	8.2069-01	8.1573-01	8.0374-01	8.1225-01	7.7477-01
CP	-2.4526-01	-2.4587-01	-2.4649-01	-2.4609-01	-2.4452-01	-2.4520-01	-2.4684-01	-2.4567-01	-2.5082-01
P/PO1	5.5540-02	5.5238-02	5.4928-02	5.5130-02	5.5910-02	5.5572-02	5.4755-02	5.5335-02	5.2782-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 20.3 Q-INF = 7.262 P-INF =2.5934 RE = .4423 TO = 533.

P	8.6081-01	6.1919-01	3.4342+00	9.8071+00	1.2186+01	1.2879+01	1.3275+01	1.4366+01	1.4297+01
CP	-2.3860-01	-2.7187-01	1.1578-01	9.9340-01	1.3210+00	1.4165+00	1.4709+00	1.6212+00	1.6255+00
P/PO1	5.8847-02	4.2329-02	2.3477-01	6.7043-01	8.3306-01	8.8044-01	9.0748-01	9.8207-01	9.8419-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6760+00

VALVE POS 4 PO = 20.3 Q-INF = 7.258 P-INF =2.5922 RE = .4421 TO = 533.

P	1.4586+01	8.1827-01	7.1443-01	3.5499+00	1.0053+01	1.3302+01	8.1036-01	8.2225-01	7.7978-01
CP	1.6525+00	-2.4441-01	-2.5871-01	1.3194-01	1.0279+00	1.4755+00	-2.4550-01	-2.4386-01	-2.4971-01
P/PO1	9.9761-01	5.5964-02	4.8862-02	2.4279-01	6.8757-01	9.0975-01	5.5423-02	5.6236-02	5.3332-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 20.2 Q-INF = 7.215 P-INF =2.5767 RE = .4395 TO = 533.

P	9.0168-01	8.2073-01	6.9264-01	8.1176-01	8.0540-01	8.3875-01	8.0256-01	8.1475-01	7.7978-01
CP	-2.3216-01	-2.4338-01	-2.6114-01	-2.4463-01	-2.4551-01	-2.4089-01	-2.4590-01	-2.4421-01	-2.4906-01
P/PO1	6.2042-02	5.6472-02	4.7658-02	5.5854-02	5.5417-02	5.7711-02	5.5222-02	5.6060-02	5.3654-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 20.3 Q-INF = 7.270 P-INF =2.5964 RE = .4428 TO = 533.

P	8.9913-01	8.2566-01	7.9608-01	3.0850+00	9.6140+00	1.2895+01	1.4069+01	8.2475-01	7.7477-01
CP	-2.3347-01	-2.4357-01	-2.4764-01	6.7201-02	9.6528-01	1.4166+00	1.5781+00	-2.4370-01	-2.5057-01
P/PO1	6.1395-02	5.6379-02	5.4358-02	2.1065-01	6.5647-01	8.8050-01	9.6069-01	5.6316-02	5.2903-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 20.4 Q-INF = 7.287 P-INF =2.6024 RE = .4439 TO = 533.

P	8.7614-01	3.6200+00	8.2159-01	8.1176-01	8.4108-01	8.4396-01	8.3633-01	8.3474-01	7.9232-01
CP	-2.3691-01	1.3964-01	-2.4439-01	-2.4574-01	-2.4172-01	-2.4134-01	-2.4237-01	-2.4259-01	-2.4841-01
P/PO1	5.9687-02	2.4661-01	5.5971-02	5.5301-02	5.7299-02	5.7489-02	5.6975-02	5.6867-02	5.3977-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 20.4 Q-INF = 7.283 P-INF =2.6012 RE = .4437 TO = 533.

P	8.7869-01	8.2073-01	8.1139-01	2.2966+00	8.5318+00	1.2018+01	1.3446+01	8.1225-01	7.6975-01
CP	-2.3650-01	-2.4446-01	-2.4574-01	-4.1821-02	8.1426-01	1.2930+00	1.4890+00	-2.4562-01	-2.5146-01
P/PO1	5.9889-02	5.5939-02	5.5302-02	1.5653-01	5.8150-01	8.1914-01	9.1645-01	5.5360-02	5.2464-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.2 Q-INF = 7.233 P-INF =2.5832 RE = .4406 TO = 533.

P	8.7103-01	8.1334-01	8.1649-01	8.1680-01	8.1049-01	8.3875-01	8.2074-01	8.1725-01	7.6975-01
CP	-2.3672-01	-2.4470-01	-2.4426-01	-2.4422-01	-2.4509-01	-2.4118-01	-2.4367-01	-2.4416-01	-2.5072-01
P/PO1	5.9780-02	5.5820-02	5.6037-02	5.6058-02	5.5625-02	5.7564-02	5.6329-02	5.6089-02	5.2829-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.3 Q-INF = 7.258 P-INF =2.5922 RE = .4421 TO = 533.

P	8.6592-01	8.1586-01	8.1904-01	8.2184-01	2.0849+00	7.7619+00	1.1265+01	1.2910+01	7.9483-01
CP	-2.3784-01	-2.4475-01	-2.4430-01	-2.4391-01	-6.9904-02	7.1225-01	1.1949+00	1.4216+00	-2.4764-01
P/PO1	5.9223-02	5.5795-02	5.6017-02	5.6208-02	1.4259-01	5.3086-01	7.7044-01	8.8299-01	5.4361-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 20.3 Q-INF = 7.278 P-INF =2.5994 RE = .4434 TO = 533.

P	8.4804-01	7.9855-01	8.2669-01	8.3949-01	8.6911-01	8.2341-01	7.8698-01	8.1975-01	7.8480-01
CP	-2.4063-01	-2.4743-01	-2.4356-01	-2.4180-01	-2.3773-01	-2.4401-01	-2.4902-01	-2.4452-01	-2.4932-01
P/PO1	5.7840-02	5.4464-02	5.6384-02	5.7257-02	5.9277-02	5.6160-02	5.3675-02	5.5910-02	5.3526-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 20.4 Q-INF = 7.297 P-INF =2.6060 RE = .4445 TO = 533.

P	8.3527-01	8.1334-01	8.2925-01	8.2940-01	2.0721+00	7.7932+00	1.1109+01	1.2770+01	1.3819+01
CP	-2.4267-01	-2.4568-01	-2.4350-01	-2.4348-01	-7.3169-02	7.1089-01	1.1653+00	1.3929+00	1.5367+00
P/PO1	5.6825-02	5.5333-02	5.6415-02	5.6426-02	1.4097-01	5.3019-01	7.5576-01	8.6874-01	9.4014-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	8.5313-01	7.9922-01	7.8516-01	8.3438-01	7.8984-01	8.0625-01	7.9219-01	8.1094-01
CP	-2.4023-01	-2.4761-01	-2.4954-01	-2.4280-01	-2.4890-01	-2.4665-01	-2.4858-01	-2.4601-01
P/PO1	5.8039-02	5.4372-02	5.3415-02	5.6764-02	5.3734-02	5.4850-02	5.3894-02	5.5169-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.1789+00	7.9688-01	7.9922-01	8.0625-01	8.0391-01	8.1094-01	7.8984-01
CP	-1.9558-01	-2.4793-01	-2.4761-01	-2.4665-01	-2.4697-01	-2.4601-01	-2.4890-01
P/PO1	8.0203-02	5.4213-02	5.4372-02	5.4850-02	5.4691-02	5.5169-02	5.3734-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	8.	301244	2.00	3	14.65	19.89	-4.94	178.41	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 20.2 Q-INF = 7.241 P-INF =2.5862 RE = .4405 TO = 533.

P	9.9580-01	1.0845+00	1.0691+00	1.0689+00	1.0952+00	1.0817+00	1.1168+00	1.1147+00	1.1509+00
CP	-2.1963-01	-2.0739-01	-2.0951-01	-2.0954-01	-2.0591-01	-2.0777-01	-2.0292-01	-2.0322-01	-1.9822-01
P/PO1	6.8264-02	7.4341-02	7.3288-02	7.3275-02	7.5075-02	7.4151-02	7.6561-02	7.6412-02	7.8894-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 20.1 Q-INF = 7.210 P-INF =2.5749 RE = .4380 TO = 534.

P	1.2159+00	1.1806+00	2.5108+00	8.6791+00	1.0947+01	1.1737+01	1.2215+01	1.3693+01	1.4303+01
CP	-1.8850-01	-1.9339-01	-8.8807-03	8.4668-01	1.1613+00	1.2708+00	1.3372+00	1.5421+00	1.6268+00
P/PO1	8.3718-02	8.1288-02	1.7288-01	5.9760-01	7.5376-01	8.0813-01	8.4108-01	9.4282-01	9.8484-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9730+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 20.2 Q-INF = 7.243 P-INF =2.5868 RE = .4401 TO = 534.

P	1.4586+01	1.1978+00	1.1839+00	2.4944+00	9.1435+00	1.2159+01	1.0935+00	1.1147+00	1.1408+00
CP	1.6567+00	-1.9177-01	-1.9369-01	-1.2767-02	9.0522-01	1.3216+00	-2.0618-01	-2.0325-01	-1.9964-01
P/PO1	9.9969-01	8.2094-02	8.1140-02	1.7095-01	6.2666-01	8.3335-01	7.4741-02	7.6394-02	7.8188-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 20.3 Q-INF = 7.247 P-INF =2.5880 RE = .4403 TO = 534.

P	1.2389+00	1.2028+00	1.1558+00	1.0613+00	1.1826+00	1.0842+00	1.0805+00	1.1097+00	1.1408+00
CP	-1.8618-01	-1.9117-01	-1.9764-01	-2.1068-01	-1.9395-01	-2.0752-01	-2.0804-01	-2.0401-01	-1.9971-01
P/PO1	8.4867-02	8.2394-02	7.9180-02	7.2706-02	8.1013-02	7.4274-02	7.4017-02	7.6016-02	7.8152-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 20.3 Q-INF = 7.267 P-INF =2.5952 RE = .4415 TO = 534.

P	1.2363+00	1.2200+00	1.1992+00	2.2235+00	8.7200+00	1.1878+01	1.3353+01	1.0747+00	1.1082+00
CP	-1.8701-01	-1.8925-01	-1.9211-01	-5.1154-02	8.4287-01	1.2774+00	1.4804+00	-2.0925-01	-2.0463-01
P/PO1	8.4457-02	8.3344-02	8.1924-02	1.5190-01	5.9570-01	8.1141-01	9.1218-01	7.3415-02	7.5709-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 20.3 Q-INF = 7.250 P-INF =2.5892 RE = .4405 TO = 534.

P	1.1673+00	3.7243+00	1.1865+00	1.1849+00	1.1214+00	1.0689+00	1.0727+00	1.0647+00	1.0882+00
CP	-1.9613-01	1.5656-01	-1.9349-01	-1.9371-01	-2.0246-01	-2.0971-01	-2.0918-01	-2.1029-01	-2.0705-01
P/PO1	7.9930-02	2.5501-01	8.1240-02	8.1130-02	7.6787-02	7.3190-02	7.3449-02	7.2901-02	7.4511-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 20.3 Q-INF = 7.260 P-INF =2.5928 RE = .4411 TO = 534.

P	1.1009+00	1.1633+00	1.1507+00	1.9638+00	8.1084+00	1.1596+01	1.3150+01	1.0622+00	1.0757+00
CP	-2.0550-01	-1.9690-01	-1.9864-01	-8.6638-02	7.5972-01	1.2401+00	1.4542+00	-2.1084-01	-2.0898-01
P/PO1	7.5278-02	7.9545-02	7.8685-02	1.3428-01	5.5443-01	7.9290-01	8.9917-01	7.2629-02	7.3550-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.2 Q-INF = 7.245 P-INF =2.5874 RE = .4402 TO = 534.

P	1.1111+00	1.1239+00	1.1201+00	1.1244+00	1.1138+00	1.0714+00	1.0779+00	1.0622+00	1.0757+00
CP	-2.0377-01	-2.0201-01	-2.0253-01	-2.0195-01	-2.0341-01	-2.0925-01	-2.0836-01	-2.1053-01	-2.0867-01
P/PO1	7.6135-02	7.7009-02	7.6751-02	7.7041-02	7.6317-02	7.3416-02	7.3856-02	7.2780-02	7.3703-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.1 Q-INF = 7.205 P-INF =2.5731 RE = .4377 TO = 534.

P	1.0933+00	1.1017+00	1.0921+00	1.0741+00	2.2352+00	7.9810+00	1.1609+01	1.3223+01	1.0656+00
CP	-2.0540-01	-2.0423-01	-2.0557-01	-2.0523-01	-4.6892-02	7.5063-01	1.2540+00	1.4783+00	-2.0923-01
P/PO1	7.5328-02	7.5911-02	7.5245-02	7.5387-02	1.5401-01	5.4992-01	7.9980-01	9.1113-01	7.3424-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 20.4 Q-INF = 7.293 P-INF =2.6048 RE = .4431 TO = 534.

P	1.0958+00	1.0894+00	1.0767+00	1.0940+00	1.1291+00	1.0740+00	1.0909+00	1.0697+00	1.0681+00
CP	-2.0690-01	-2.0778-01	-2.0951-01	-2.0851-01	-2.0234-01	-2.0989-01	-2.0758-01	-2.1048-01	-2.1069-01
P/PO1	7.4584-02	7.4146-02	7.3286-02	7.3782-02	7.6849-02	7.3100-02	7.4247-02	7.2805-02	7.2700-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 20.3 Q-INF = 7.258 P-INF =2.5922 RE = .4410 TO = 534.

P	1.0881+00	1.0943+00	1.0793+00	1.0765+00	2.5684+00	8.6226+00	1.2106+01	1.3583+01	1.4303+01
CP	-2.0722-01	-2.0638-01	-2.0844-01	-2.0883-01	-3.2798-03	8.3083-01	1.3108+00	1.5143+00	1.6135+00
P/PO1	7.4422-02	7.4843-02	7.3816-02	7.3623-02	1.7566-01	5.8973-01	8.2798-01	9.2901-01	9.7824-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0711+00	1.0922+00	1.0805+00	1.1039+00	1.0711+00	1.1203+00	1.1320+00	1.0734+00
CP	-2.0957-01	-2.0667-01	-2.0828-01	-2.0505-01	-2.0957-01	-2.0279-01	-2.0118-01	-2.0925-01
P/PO1	7.3256-02	7.4698-02	7.3897-02	7.5500-02	7.3256-02	7.6622-02	7.7423-02	7.3416-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	7.3359-01	1.1461+00	1.0617+00	1.1602+00	1.0758+00	1.1391+00	1.1039+00
CP	-2.5607-01	-1.9924-01	-2.1087-01	-1.9730-01	-2.0893-01	-2.0021-01	-2.0505-01
P/PO1	5.0173-02	7.8385-02	7.2614-02	7.9347-02	7.3576-02	7.7904-02	7.5500-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	9.	301244	2.00	3	14.65	-19.91	4.94	178.81	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC SS WIND TUNNEL

VALVE POS 2 PO = 20.2 Q-INF = 7.240 P-INF =2.5856 RE = .4398 TO = 534.

P	1.0524+00	1.0352+00	1.0206+00	1.0250+00	1.0705+00	1.0356+00	1.0387+00	1.0372+00	1.0606+00
CP	-2.1178-01	-2.1416-01	-2.1617-01	-2.1542-01	-2.0928-01	-2.1409-01	-2.1364-01	-2.1388-01	-2.1065-01
P/PO1	7.2160-02	7.0378-02	6.9981-02	7.0353-02	7.3399-02	7.1012-02	7.1236-02	7.1117-02	7.2723-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 20.3 Q-INF = 7.258 P-INF =2.5922 RE = .4410 TO = 534.

P	1.0754+00	1.0746+00	2.4413+00	8.6635+00	1.1026+01	1.1757+01	1.2231+01	1.3724+01	1.4397+01
CP	-2.0898-01	-2.0909-01	-2.0800-02	8.3646-01	1.1619+00	1.2620+00	1.3279+00	1.5337+00	1.6264+00
P/PO1	7.3548-02	7.3495-02	1.6697-01	5.9252-01	7.5407-01	8.0379-01	8.3651-01	9.3865-01	9.8465-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6760+00

VALVE POS 4 PO = 20.3 Q-INF = 7.267 P-INF =2.5952 RE = .4415 TO = 534.

P	1.4618+01	1.0721+00	1.0538+00	2.6263+00	8.9396+00	1.2394+01	1.0493+00	1.0397+00	1.0456+00
CP	1.6545+00	-2.0960-01	-2.1213-01	4.2777-03	8.7308-01	1.3485+00	-2.1274-01	-2.1407-01	-2.1326-01
P/PO1	9.9861-01	7.3242-02	7.1988-02	1.7941-01	6.1070-01	8.4669-01	7.1683-02	7.1025-02	7.1427-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 20.3 Q-INF = 7.262 P-INF =2.5934 RE = .4412 TO = 534.

P	1.0805+00	1.0672+00	1.0385+00	1.0260+00	1.0654+00	1.0433+00	1.0415+00	1.0347+00	1.0431+00
CP	-2.0835-01	-2.1018-01	-2.1413-01	-2.1585-01	-2.1043-01	-2.1347-01	-2.1372-01	-2.1466-01	-2.1350-01
P/PO1	7.3864-02	7.2956-02	7.0992-02	7.0142-02	7.2830-02	7.1323-02	7.1200-02	7.0732-02	7.1305-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00

VALVE POS 6 PO = 20.3 Q-INF = 7.275 P-INF =2.5982 RE = .4420 TO = 534.

P	1.0677+00	1.0672+00	1.0461+00	2.7520+00	9.2376+00	1.2644+01	1.4007+01	1.0347+00	1.0405+00
CP	-2.1038-01	-2.1045-01	-2.1335-01	2.1134-02	9.1262-01	1.3809+00	1.5682+00	-2.1492-01	-2.1411-01
P/PO1	7.2856-02	7.2821-02	7.1383-02	1.8778-01	6.3033-01	8.6280-01	9.5578-01	7.0602-02	7.1002-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 20.3 Q-INF = 7.258 P-INF =2.5922 RE = .4410 TO = 534.

P	1.0575+00	3.6875+00	1.0487+00	1.0412+00	1.0654+00	1.0382+00	1.0415+00	1.0322+00	1.0405+00
CP	-2.1145-01	1.5089-01	-2.1266-01	-2.1370-01	-2.1036-01	-2.1410-01	-2.1365-01	-2.1493-01	-2.1378-01
P/PO1	7.2326-02	2.5220-01	7.1722-02	7.1209-02	7.2864-02	7.1006-02	7.1233-02	7.0594-02	7.1166-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 20.3 Q-INF = 7.250 P-INF =2.5892 RE = .4405 TO = 534.

P	1.0524+00	1.0623+00	1.0308+00	2.8022+00	9.1278+00	1.2754+01	1.4069+01	1.0297+00	1.0355+00
CP	-2.1198-01	-2.1062-01	-2.1496-01	2.9380-02	9.0189-01	1.4021+00	1.5835+00	-2.1512-01	-2.1431-01
P/PO1	7.2059-02	7.2736-02	7.0582-02	1.9188-01	6.2500-01	8.7330-01	9.6336-01	7.0505-02	7.0905-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.3 Q-INF = 7.273 P-INF =2.5976 RE = .4419 TO = 534.

P	1.0473+00	1.0549+00	1.0334+00	1.0286+00	1.0552+00	1.0484+00	1.0519+00	1.0322+00	1.0305+00
CP	-2.1315-01	-2.1211-01	-2.1507-01	-2.1573-01	-2.1207-01	-2.1300-01	-2.1252-01	-2.1523-01	-2.1546-01
P/PO1	7.1478-02	7.1997-02	7.0529-02	7.0201-02	7.2017-02	7.1557-02	7.1794-02	7.0448-02	7.0334-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.4 Q-INF = 7.314 P-INF =2.6120 RE = .4443 TO = 534.

P	1.0422+00	1.0524+00	1.0359+00	1.0311+00	2.8082+00	8.9043+00	1.2636+01	1.3990+01	1.0456+00
CP	-2.1465-01	-2.1325-01	-2.1550-01	-2.1416-01	2.6831-02	8.6036-01	1.3706+00	1.5558+00	-2.1418-01
P/PO1	7.0738-02	7.1433-02	7.0314-02	6.9785-02	1.9061-01	6.0439-01	8.5767-01	9.4960-01	7.0968-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 20.3 Q-INF = 7.278 P-INF =2.5994 RE = .4422 TO = 534.

P	1.0524+00	1.0450+00	1.0232+00	1.0111+00	1.0475+00	1.0561+00	1.0675+00	1.0472+00	1.0405+00
CP	-2.1255-01	-2.1356-01	-2.1657-01	-2.1548-01	-2.1322-01	-2.1204-01	-2.1048-01	-2.1327-01	-2.1418-01
P/PO1	7.1777-02	7.1274-02	6.9784-02	7.0324-02	7.1445-02	7.2031-02	7.2807-02	7.1422-02	7.0970-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 20.3 Q-INF = 7.273 P-INF =2.5976 RE = .4419 TO = 534.

P	1.0447+00	1.0549+00	1.0385+00	1.0361+00	2.6631+00	8.7635+00	1.2278+01	1.3740+01	1.4397+01
CP	-2.1351-01	-2.1211-01	-2.1437-01	-2.1469-01	9.0003-03	8.4773-01	1.3309+00	1.5319+00	1.6223+00
P/PO1	7.1304-02	7.1997-02	7.0877-02	7.0717-02	1.8176-01	5.9812-01	8.3796-01	9.3776-01	9.8260-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0406+00	1.0383+00	1.0477+00	1.0570+00	1.0383+00	1.0453+00	1.0523+00	1.0430+00
CP	-2.1407-01	-2.1439-01	-2.1310-01	-2.1181-01	-2.1439-01	-2.1342-01	-2.1246-01	-2.1375-01
P/PO1	7.1024-02	7.0864-02	7.1504-02	7.2144-02	7.0864-02	7.1344-02	7.1824-02	7.1184-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.0688+00	1.0477+00	1.0219+00	1.0500+00	1.0359+00	1.0359+00	1.0641+00
CP	-2.1020-01	-2.1310-01	-2.1665-01	-2.1278-01	-2.1471-01	-2.1471-01	-2.1085-01
P/PO1	7.2944-02	7.1504-02	6.9744-02	7.1664-02	7.0704-02	7.0704-02	7.2624-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	10.	301244	2.00	4	13.81	.00	.00	178.81	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] TESTS FACILITY

VALVE POS 2	PO = 20.3	Q-INF = 7.268		P-INF =2.5958		RE = .4410		TO = 534.	
P	1.0856+00	1.0499+00	1.0283+00	1.0437+00	1.0501+00	1.0510+00	1.0779+00	1.0922+00	1.1358+00
CP	-2.0778-01	-2.1269-01	-2.1567-01	-2.1355-01	-2.1267-01	-2.1254-01	-2.0884-01	-2.0550-01	-2.0587-01
P/PO1	7.4144-02	7.1710-02	7.0229-02	7.1282-02	7.1718-02	7.1781-02	7.3617-02	7.5276-02	7.7575-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00
VALVE POS 3	PO = 20.3	Q-INF = 7.260		P-INF =2.5928		RE = .4405		TO = 534.	
P	1.1648+00	1.1633+00	2.4729+00	8.7574+00	1.1088+01	1.1831+01	1.2293+01	1.3802+01	1.4491+01
CP	-1.9670-01	-1.9690-01	-1.6522-02	8.4913-01	1.1702+00	1.2724+00	1.3361+00	1.5440+00	1.6388+00
P/PO1	7.9645-02	7.9545-02	1.6909-01	5.9881-01	7.5814-01	8.0895-01	8.4057-01	9.4378-01	9.9083-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00
VALVE POS 4	PO = 20.4	Q-INF = 7.285		P-INF =2.6018		RE = .4420		TO = 534.	
P	1.4618+01	1.1559+00	1.1533+00	2.5760+00	9.0180+00	1.2363+01	1.0363+00	1.0772+00	1.0907+00
CP	1.6494+00	-1.9847-01	-1.9883-01	-3.5374-03	8.8073-01	1.3399+00	-2.1489-01	-2.0928-01	-2.0743-01
P/PO1	9.9608-01	7.8766-02	7.8587-02	1.7554-01	6.1450-01	8.4241-01	7.0816-02	7.3400-02	7.4321-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00
VALVE POS 5	PO = 20.3	Q-INF = 7.253		P-INF =2.5904		RE = .4401		TO = 534.	
P	1.1546+00	1.1362+00	1.1099+00	1.0311+00	1.0581+00	1.0484+00	1.0207+00	1.0572+00	1.0706+00
CP	-1.9796-01	-2.0049-01	-2.0412-01	-2.1477-01	-2.1237-01	-2.1261-01	-2.1641-01	-2.1139-01	-2.0953-01
P/PO1	7.9019-02	7.7763-02	7.5963-02	7.0568-02	7.1868-02	7.1756-02	6.9860-02	7.2354-02	7.3275-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00
VALVE POS 6	PO = 20.3	Q-INF = 7.258		P-INF =2.5922		RE = .4404		TO = 534.	
P	1.1214+00	1.1239+00	1.1150+00	2.4755+00	9.0808+00	1.2331+01	1.3727+01	1.0397+00	1.0506+00
CP	-2.0265-01	-2.0230-01	-2.0352-01	-1.6080-02	8.9395-01	1.3418+00	1.5340+00	-2.1390-01	-2.1240-01
P/PO1	7.6693-02	7.6866-02	7.6260-02	1.6931-01	6.2106-01	8.4339-01	9.3880-01	7.1107-02	7.1852-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01
VALVE POS 7	PO = 20.2	Q-INF = 7.221		P-INF =2.5791		RE = .4382		TO = 534.	
P	1.0728+00	3.6813+00	1.0946+00	1.0991+00	1.0628+00	1.0382+00	1.0389+00	1.0347+00	1.0330+00
CP	-2.0858-01	1.5264-01	-2.0556-01	-2.0493-01	-2.0997-01	-2.1337-01	-2.1328-01	-2.1386-01	-2.1409-01
P/PO1	7.3749-02	2.5306-01	7.5246-02	7.5559-02	7.3061-02	7.1369-02	7.1418-02	7.1127-02	7.1013-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01
VALVE POS 8	PO = 20.4	Q-INF = 7.305		P-INF =2.6090		RE = .4432		TO = 534.	
P	1.0447+00	1.0943+00	1.0767+00	2.2840+00	8.3907+00	1.2238+01	1.3680+01	1.0347+00	1.0355+00
CP	-2.1413-01	-2.0734-01	-2.0975-01	-4.4488-02	7.9144-01	1.3180+00	1.5155+00	-2.1551-01	-2.1539-01
P/PO1	7.0993-02	7.4362-02	7.3169-02	1.5521-01	5.7018-01	8.3159-01	9.2959-01	7.0310-02	7.0368-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01
VALVE POS 9	PO = 20.3	Q-INF = 7.253		P-INF =2.5904		RE = .4401		TO = 534.	
P	1.0498+00	1.0721+00	1.0640+00	1.0664+00	1.0093+00	1.0459+00	1.0415+00	1.0347+00	1.0330+00
CP	-2.1240-01	-2.0933-01	-2.1045-01	-2.1012-01	-2.1799-01	-2.1295-01	-2.1355-01	-2.1449-01	-2.1472-01
P/PO1	7.1851-02	7.3377-02	7.2820-02	7.2984-02	6.9077-02	7.1581-02	7.1282-02	7.0814-02	7.0701-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.2 Q-INF = 7.243 P-INF =2.5868 RE = .4395 TO = 534.

P	1.0473+00	1.0697+00	1.0563+00	1.0613+00	2.3958+00	8.4349+00	1.2091+01	1.3630+01	1.0405+00
CP	-2.1255-01	-2.0946-01	-2.1130-01	-2.1061-01	-2.6376-02	8.0738-01	1.3121+00	1.5247+00	-2.1348-01
P/PO1	7.1776-02	7.3310-02	7.2397-02	7.2739-02	1.6420-01	5.7809-01	8.2864-01	9.3417-01	7.1315-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 20.3 Q-INF = 7.263 P-INF =2.5940 RE = .4407 TO = 534.

P	1.0498+00	1.0549+00	1.0487+00	1.0639+00	1.0399+00	1.0587+00	1.0415+00	1.0447+00	1.0405+00
CP	-2.1260-01	-2.1191-01	-2.1276-01	-2.1067-01	-2.1397-01	-2.1139-01	-2.1375-01	-2.1331-01	-2.1388-01
P/PO1	7.1752-02	7.2096-02	7.1673-02	7.2710-02	7.1071-02	7.2355-02	7.1183-02	7.1399-02	7.1117-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 20.3 Q-INF = 7.282 P-INF =2.6006 RE = .4418 TO = 534.

P	1.0396+00	1.0647+00	1.0589+00	1.0563+00	2.5432+00	8.7165+00	1.2200+01	1.3693+01	1.4459+01
CP	-2.1437-01	-2.1092-01	-2.1173-01	-2.1208-01	-7.8876-03	8.3990-01	1.3182+00	1.5233+00	1.6286+00
P/PO1	7.0873-02	7.2586-02	7.2187-02	7.2010-02	1.7336-01	5.9423-01	8.3168-01	9.3348-01	9.8573-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0664+00	1.0336+00	1.0477+00	1.0453+00	1.0313+00	1.0523+00	1.0734+00	1.0266+00
CP	-2.1069-01	-2.1520-01	-2.1327-01	-2.1359-01	-2.1552-01	-2.1262-01	-2.0973-01	-2.1617-01
P/PO1	7.2700-02	7.0463-02	7.1421-02	7.1262-02	7.0303-02	7.1741-02	7.3179-02	6.9983-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	6.3984-01	1.0805+00	1.0289+00	1.0875+00	1.0430+00	1.0594+00	1.0688+00
CP	-2.6927-01	-2.0876-01	-2.1584-01	-2.0780-01	-2.1391-01	-2.1166-01	-2.1037-01
P/PO1	4.3620-02	7.3658-02	7.0143-02	7.4138-02	7.1102-02	7.2220-02	7.2860-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	11.	301244	2.99	3	-3.99	.00	.00	161.01	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.3 Q-INF = 5.243 P-INF = .8379 RE = .3952 TO = 541.

P	1.7417-01	1.7766-01	3.3890-01	3.8992-01	4.0520-01	4.1546-01	3.5425-01	2.9633-01	1.6702-01
CP	-1.2658-01	-1.2591-01	-9.5160-02	-8.5441-02	8.2517-02	8.0554-02	-9.2233-02	-1.0290-01	-1.2794-01
P/PO1	1.7346-02	1.7694-02	3.3752-02	3.8833-02	4.0354-02	4.1377-02	3.5289-02	2.9712-02	1.6634-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.3 Q-INF = 5.245 P-INF = .8381 RE = .3953 TO = 541.

P	1.3424-01	8.1858-01	3.4152+00	7.5825+00	9.1435+00	9.3582+00	9.4730+00	9.9528+00	9.6187+00
CP	-1.3420-01	-3.7278-03	4.9134-01	1.2858+00	1.5835+00	1.6244+00	1.6463+00	1.7378+00	1.6741+00
P/PO1	1.3365-02	8.1498-02	3.4003-01	7.5492-01	9.1034-01	9.3171-01	9.4315-01	9.9091-01	9.5765-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9770+00	2.0340+00	2.0850+00	2.3540+00	2.6760+00

VALVE POS 4 PO = 30.4 Q-INF = 5.253 P-INF = .8394 RE = .3954 TO = 541.

P	9.1479+00	1.8178-01	8.9303-01	3.5436+00	7.6536+00	9.6085+00	4.8291-01	3.6734-01	3.2387-01
CP	1.5816+00	-1.2519-01	1.0265-02	5.1478-01	1.2971+00	1.6693+00	-6.7467-02	-8.9866-02	-9.6142-02
P/PO1	9.0937-01	1.8071-02	8.8774-02	3.5225-01	7.6082-01	9.5516-01	4.8005-02	3.6517-02	3.2195-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.3 Q-INF = 5.240 P-INF = .8374 RE = .3944 TO = 541.

P	2.4757-01	1.4180-01	8.6497-01	2.4432-01	3.0465-01	3.2458-01	3.2383-01	2.0193-01	1.8180-01
CP	-1.1255-01	-1.3273-01	5.2701-03	-1.1317-01	-1.0166-01	-9.7853-02	-9.8569-02	-1.2126-01	-1.2510-01
P/PO1	2.4671-02	1.4131-02	8.6197-02	2.4347-02	3.0359-02	3.2346-02	3.1972-02	2.0123-02	1.8117-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.3 Q-INF = 5.234 P-INF = .8363 RE = .3939 TO = 541.

P	1.7334-01	1.3606-01	5.5876-01	2.7834+00	6.9164+00	8.9982+00	9.3951+00	2.7640-01	1.9165-01
CP	-1.2667-01	-1.3380-01	-5.3032-02	3.7203-01	1.1617+00	1.5595+00	1.6353+00	-1.0698-01	-1.2317-01
P/PO1	1.7296-02	1.3575-02	5.5752-02	2.7772-01	6.9010-01	8.9782-01	9.3742-01	2.7579-02	1.9123-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.3 Q-INF = 5.235 P-INF = .8366 RE = .3935 TO = 542.

P	1.7267-01	3.5341+00	1.9276-01	3.6062-01	2.0060-01	1.9441-01	1.8457-01	1.9417-01	5.6622-01
CP	-1.2681-01	5.1525-01	-1.2297-01	-9.0912-02	-1.2148-01	-1.2266-01	-1.2454-01	-1.2271-01	-5.1640-02
P/PO1	1.7223-02	3.5251-01	1.9227-02	3.5970-02	2.0009-02	1.9392-02	1.8410-02	1.9367-02	5.6478-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.3 Q-INF = 5.243 P-INF = .8379 RE = .3935 TO = 542.

P	1.7795-01	1.9873-01	2.3311-01	1.4672+00	5.5660+00	7.6993+00	8.4759+00	1.9234-01	1.9479-01
CP	-1.2586-01	-1.2189-01	-1.1534-01	1.2003-01	9.0172-01	1.3086+00	1.4567+00	-1.2311-01	-1.2264-01
P/PO1	1.7723-02	1.9792-02	2.3216-02	1.4612-01	5.5433-01	7.6679-01	8.4413-01	1.9156-02	1.9399-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.3 Q-INF = 5.240 P-INF = .8374 RE = .3933 TO = 542.

P	1.7749-01	1.9552-01	1.9545-01	1.5957-01	1.9209-01	1.9708-01	2.0172-01	1.9188-01	1.9255-01
CP	-1.2592-01	-1.2248-01	-1.2250-01	-1.2934-01	-1.2314-01	-1.2218-01	-1.2130-01	-1.2318-01	-1.2305-01
P/PO1	1.7688-02	1.9484-02	1.9477-02	1.5902-02	1.9143-02	1.9637-02	2.0102-02	1.9122-02	1.9188-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3910 TO = 540.

P	1.7611-01	1.9506-01	1.9545-01	1.4557-01	1.0705+00	4.4876+00	6.5595+00	7.7619+00	1.9882-01	
CP	-1.2575-01	-1.2209-01	-1.2201-01	-1.3165-01	4.7142-02	7.6773-01	1.1082+00	1.3407+00	-1.2136-01	
P/PO1	1.7778-02	1.9692-02	1.9731-02	1.4696-02	1.0806-01	4.5303-01	6.6218-01	7.8357-01	2.0071-02	
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	

VALVE POS 11 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3904 TO = 540.

P	1.7136-01	1.8682-01	1.8604-01	1.8482-01	1.5708-01	1.9264-01	2.0488-01	2.1016-01	1.9703-01	
CP	-1.2662-01	-1.2363-01	-1.2378-01	-1.2402-01	-1.2939-01	-1.2250-01	-1.2013-01	-1.1911-01	-1.2165-01	
P/PO1	1.7323-02	1.8886-02	1.8807-02	1.8684-02	1.5879-02	1.9474-02	2.0712-02	2.1245-02	1.9918-02	
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1400-01	2.0800-01	2.8900-01	

VALVE POS 12 PO = 29.9 Q-INF = 5.168 P-INF = .8258 RE = .3906 TO = 540.

P	1.7211-01	1.8865-01	1.8873-01	1.5111-01	1.0246+00	4.3735+00	6.2311+00	7.3864+00	8.1822+00	
CP	-1.2649-01	-1.2329-01	-1.2328-01	-1.3055-01	3.8460-02	6.8647-01	1.0401+00	1.2694+00	1.4234+00	
P/PO1	1.7391-02	1.9062-02	1.9070-02	1.5269-02	1.0353-01	4.4192-01	6.2659-01	7.4635-01	8.2677-01	
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	

CEC	1.7891-01	4.3734-01	1.8750-01	2.3297-01	1.8422-01	1.9438-01	1.9500-01	1.8594-01	
CP	-1.2518-01	-7.5169-02	-1.2351-01	-1.1472-01	-1.2415-01	-1.2218-01	-1.2206-01	-1.2382-01	
P/PO1	1.8078-02	4.4191-02	1.8946-02	2.3540-02	1.8614-02	1.9641-02	1.9704-02	1.8788-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	1.5641-01	1.8094-01	1.6953-01	1.9609-01	1.8516-01	1.7422-01	2.0391-01
CP	-1.2953-01	-1.2478-01	-1.2699-01	-1.2185-01	-1.2397-01	-1.2608-01	-1.2034-01
P/PO1	1.5804-02	1.8283-02	1.7130-02	1.9814-02	1.8709-02	1.7604-02	2.0604-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL	ARNOLD ENGINEERING DEVELOPMENT CENTER
1.	12.	301244	2.99	3	5.03	.00	.00	170.03	.0	VON KARMAN GAS DYNAMICS FACILITY

VALVE POS 2 PO = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3933 TO = 540.

P	1.7211-01	1.7308-01	2.0352-01	2.0420-01	1.9709-01	1.7400-01	1.7103-01	1.6813-01	1.6882-01
CP	-1.2672-01	-1.2654-01	-1.2069-01	-1.2356-01	-1.2192-01	-1.2636-01	-1.2693-01	-1.2749-01	-1.2736-01
P/PO1	1.7269-02	1.7367-02	2.0421-02	2.0489-02	1.9776-02	1.7458-02	1.7161-02	1.6869-02	1.6938-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3933 TO = 540.

P	1.4624-01	4.2447-01	2.2734+00	6.6768+00	8.2025+00	8.5913+00	8.8031+00	9.7181+00	9.8961+00
CP	-1.3170-01	-7.8236-02	2.7702-01	1.1135+00	1.4162+00	1.4909+00	1.5316+00	1.7074+00	1.7244+00
P/PO1	1.4673-02	4.2590-02	2.2811-01	6.6491-01	8.2301-01	8.6203-01	8.8327-01	9.7508-01	9.8391-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3921 TO = 540.

P	9.6352+00	1.5706-01	4.6139-01	2.3497+00	6.7125+00	8.9513+00	1.8096-01	1.7498-01	1.7553-01
CP	1.6973+00	-1.2952-01	-7.0864-02	2.9412-01	1.1340+00	1.5655+00	-1.2492-01	-1.2607-01	-1.2596-01
P/PO1	9.6978-01	1.5808-02	4.6439-02	2.3651-01	6.7562-01	9.0095-01	1.8214-02	1.7612-02	1.7667-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.1 Q-INF = 5.200 P-INF = .8310 RE = .3930 TO = 540.

P	1.6320-01	1.6293-01	4.5697-01	1.8887-01	1.9910-01	1.8554-01	1.7284-01	1.7185-01	1.7116-01
CP	-1.2841-01	-1.2844-01	-7.1923-02	-1.2348-01	-1.2151-01	-1.2412-01	-1.2656-01	-1.2675-01	-1.2707-01
P/PO1	1.6388-02	1.6361-02	4.5896-02	1.8966-02	1.9992-02	1.8631-02	1.7355-02	1.7256-02	1.7087-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.2 Q-INF = 5.222 P-INF = .8345 RE = .3947 TO = 540.

P	1.5523-01	1.6275-01	3.3756-01	2.0849+00	6.6028+00	8.7165+00	9.4107+00	1.6943-01	1.6658-01
CP	-1.3007-01	-1.2863-01	-9.5157-02	2.3942-01	1.1045+00	1.5093+00	1.6422+00	-1.2735-01	-1.2790-01
P/PO1	1.5523-02	1.6274-02	3.3754-02	2.0847-01	6.6024-01	8.7160-01	9.4102-01	1.6942-02	1.6657-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.5 Q-INF = 5.270 P-INF = .8421 RE = .3983 TO = 540.

P	1.6142-01	3.5279+00	1.7124-01	2.8309-01	1.9559-01	1.8820-01	1.9179-01	1.8503-01	1.7464-01
CP	-1.2916-01	5.0962-01	-1.2730-01	-1.0608-01	-1.2268-01	-1.2408-01	-1.2340-01	-1.2468-01	-1.2666-01
P/PO1	1.5995-02	3.4957-01	1.6968-02	2.8050-02	1.9381-02	1.8644-02	1.9004-02	1.8334-02	1.7304-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.2 Q-INF = 5.230 P-INF = .8358 RE = .3953 TO = 540.

P	1.5861-01	1.8133-01	2.3490-01	1.5378+00	5.8186+00	8.1219+00	9.0056+00	1.6888-01	1.6747-01
CP	-1.2947-01	-1.2513-01	-1.1488-01	1.3421-01	9.5265-01	1.3930+00	1.5620+00	-1.2751-01	-1.2778-01
P/PO1	1.5835-02	1.8103-02	2.3452-02	1.5353-01	5.8092-01	8.1088-01	8.9911-01	1.6860-02	1.6720-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3946 TO = 540.

P	1.5748-01	1.7629-01	1.7573-01	1.9428-01	2.0260-01	1.9042-01	1.8728-01	1.7073-01	1.6747-01
CP	-1.2963-01	-1.2603-01	-1.2613-01	-1.2258-01	-1.2099-01	-1.2332-01	-1.2392-01	-1.2709-01	-1.2772-01
P/PO1	1.5752-02	1.7633-02	1.7577-02	1.9433-02	2.0265-02	1.9047-02	1.8733-02	1.7078-02	1.6751-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3918 TO = 540.

P	1.5880-01	1.8224-01	1.7842-01	1.6645-01	1.3457+00	5.1405+00	7.3852+00	8.6696+00	1.7105-01
CP	-1.2916-01	-1.2464-01	-1.2537-01	-1.2768-01	9.9825-02	8.4192-01	1.2650+00	1.5128+00	-1.2679-01
P/PO1	1.5998-02	1.8360-02	1.7974-02	1.6769-02	1.3557-01	5.1788-01	7.4402-01	8.7341-01	1.7233-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3914 TO = 540.

P	1.5673-01	1.6812-01	1.7080-01	1.7174-01	2.0316-01	1.9308-01	1.9360-01	1.8594-01	1.8270-01
CP	-1.2953-01	-1.2733-01	-1.2682-01	-1.2663-01	-1.2058-01	-1.2251-01	-1.2242-01	-1.2389-01	-1.2452-01
P/PO1	1.5803-02	1.6951-02	1.7220-02	1.7316-02	2.0477-02	1.9467-02	1.9519-02	1.8747-02	1.8420-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3913 TO = 540.

P	1.5149-01	1.7629-01	1.7080-01	1.4816-01	1.2998+00	5.0644+00	7.1204+00	8.4036+00	9.0722+00
CP	-1.3053-01	-1.2574-01	-1.2680-01	-1.3117-01	9.1289-02	8.1847-01	1.2156+00	1.4635+00	1.5926+00
P/PO1	1.5280-02	1.7782-02	1.7228-02	1.4945-02	1.3112-01	5.1085-01	7.1824-01	8.4767-01	9.1512-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.7422-01	1.6469-01	1.5859-01	1.6547-01	1.6391-01	1.6781-01	1.6953-01	1.6578-01
CP	-1.2614-01	-1.2798-01	-1.2916-01	-1.2783-01	-1.2813-01	-1.2738-01	-1.2705-01	-1.2777-01
P/PO1	1.7574-02	1.6612-02	1.5997-02	1.6691-02	1.6533-02	1.6927-02	1.7101-02	1.6722-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.3281-01	1.6391-01	1.5469-01	1.8047-01	1.7266-01	1.5781-01	1.8125-01
CP	-1.3414-01	-1.2813-01	-1.2991-01	-1.2693-01	-1.2644-01	-1.2931-01	-1.2478-01
P/PO1	1.3397-02	1.6533-02	1.5603-02	1.8204-02	1.7416-02	1.5919-02	1.8283-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	13.	301244	2.99	3	14.67	19.89	-4.94	178.83	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY

VALVE POS 2 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3915 TO = 540.

P	2.3696-01	2.5194-01	2.5014-01	2.5108-01	2.6113-01	2.5434-01	2.6219-01	2.6498-01	2.7584-01
CP	-1.1405-01	-1.1116-01	-1.1151-01	-1.1132-01	-1.0939-01	-1.1070-01	-1.0918-01	-1.0864-01	-1.0655-01
P/PO1	2.3888-02	2.5388-02	2.5216-02	2.5311-02	2.6323-02	2.5639-02	2.6431-02	2.6712-02	2.7806-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3911 TO = 540.

P	2.5310-01	2.2483-01	1.5896+00	5.8181+00	7.4340+00	7.8089+00	8.0285+00	9.2017+00	9.5875+00
CP	-1.1088-01	-1.1635-01	1.4740-01	9.6458-01	1.2769+00	1.3493+00	1.3879+00	1.6185+00	1.6930+00
P/PO1	2.5542-02	2.2689-02	1.6042-01	5.8715-01	7.5022-01	7.8806-01	8.0820-01	9.2862-01	9.6755-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3925 TO = 540.

P	9.7452+00	2.8161-01	2.4162-01	1.5933+00	5.8058+00	8.0593+00	2.7122-01	2.7366-01	2.7439-01
CP	1.7167+00	-1.0557-01	-1.1327-01	1.4701-01	9.5817-01	1.3921+00	-1.0757-01	-1.0710-01	-1.0698-01
P/PO1	9.7994-01	2.8317-02	2.4297-02	1.6021-01	5.8381-01	8.1041-01	2.7272-02	2.7518-02	2.7582-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3925 TO = 540.

P	2.6647-01	2.8618-01	2.3669-01	2.5018-01	2.6013-01	2.6055-01	2.6670-01	[illegible].7549-01	2.8211-01
CP	-1.0848-01	-1.0469-01	-1.1422-01	-1.1162-01	-1.0970-01	-1.0962-01	-1.0844-01	-1.0675-01	-1.0547-01
P/PO1	2.6795-02	2.8778-02	2.3801-02	2.5157-02	2.6157-02	2.6200-02	2.6819-02	2.7702-02	2.8367-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3925 TO = 540.

P	2.7062-01	2.9397-01	2.3356-01	1.4823+00	5.6733+00	7.9497+00	8.8187+00	2.6224-01	2.7673-01
CP	-1.0768-01	-1.0319-01	-1.1482-01	1.2565-01	9.3265-01	1.3710+00	1.5383+00	-1.0930-01	-1.0651-01
P/PO1	2.7212-02	2.3560-02	2.3485-02	1.4906-01	5.7048-01	7.9939-01	8.8677-01	2.6370-02	2.7927-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.1 Q-INF = 5.255 P-INF = .8318 RE = .3934 TO = 540.

P	2.6370-01	3.5216+00	2.9856-01	2.5108-01	2.5612-01	2.5434-01	2.5858-01	2.5584-01	2.6778-01
CP	-1.0913-01	5.1678-01	-1.0244-01	-1.1156-01	-1.1059-01	-1.1093-01	-1.1012-01	-1.1064-01	-1.0835-01
P/PO1	2.6455-02	3.5331-01	2.9951-02	2.5189-02	2.5695-02	2.5515-02	2.5941-02	2.5667-02	2.6864-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.213 P-INF = .8329 RE = .3940 TO = 540.

P	2.3881-01	3.0267-01	2.4476-01	1.3084+00	5.3640+00	7.7619+00	9.7252+00	2.5584-01	2.6375-01
CP	-1.1398-01	-1.0173-01	-1.1284-01	9.1210-02	8.6925-01	1.3293+00	1.5141+00	-1.1071-01	-1.0920-01
P/PO1	2.3924-02	3.0322-02	2.4520-02	1.3108-01	5.3737-01	7.7760-01	8.7409-01	2.5631-02	2.6422-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.2 Q-INF = 5.218 P-INF = .8337 RE = .3943 TO = 540.

P	2.5264-01	2.9168-01	2.9228-01	2.3756-01	2.5862-01	2.5656-01	2.5993-01	2.6224-01	2.6957-01
CP	-1.1137-01	-1.0389-01	-1.0377-01	-1.1426-01	-1.1023-01	-1.1062-01	-1.0997-01	-1.0953-01	-1.0813-01
P/PO1	2.5286-02	2.9193-02	2.9253-02	2.3776-02	2.5885-02	2.5678-02	2.6016-02	2.6247-02	2.6980-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3944 TO = 540.

P	2.4711-01	2.8161-01	2.8242-01	2.1592-01	1.4451+00	5.4067+00	7.7280+00	9.0139+00	2.7942-01
CP	-1.1244-01	-1.0583-01	-1.0567-01	-1.1842-01	1.1714-01	8.7631-01	1.3211+00	1.5676+00	-1.0625-01
P/PO1	2.4728-02	2.8181-02	2.8262-02	2.1607-02	1.4462-01	5.4106-01	7.7335-01	9.0203-01	2.7962-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.2 Q-INF = 5.222 P-INF = .8345 RE = .3947 TO = 540.

P	2.4526-01	2.6329-01	2.6987-01	2.7182-01	2.6713-01	2.6055-01	2.6219-01	2.5950-01	2.6016-01
CP	-1.1283-01	-1.0938-01	-1.0812-01	-1.0775-01	-1.0864-01	-1.0990-01	-1.0959-01	-1.1010-01	-1.0998-01
P/PO1	2.4525-02	2.6327-02	2.6985-02	2.7180-02	2.6711-02	2.6053-02	2.6217-02	2.5948-02	2.6015-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.2 Q-INF = 5.223 P-INF = .8346 RE = .3948 TO = 540.

P	2.3374-01	2.6512-01	2.6762-01	2.3395-01	1.6745+00	5.8187+00	7.9929+00	9.2173+00	9.6343+00
CP	-1.1504-01	-1.0904-01	-1.0856-01	-1.1500-01	1.6080-01	9.5422-01	1.3705+00	1.6049+00	1.6847+00
P/PO1	2.3369-02	2.6506-02	2.6757-02	2.3390-02	1.6741-01	5.8175-01	7.9912-01	9.2153-01	9.6323-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.5188-01	2.6000-01	2.5953-01	2.6672-01	2.5703-01	2.7375-01	2.7703-01	2.5750-01
CP	-1.1157-01	-1.1002-01	-1.1011-01	-1.0873-01	-1.1058-01	-1.0738-01	-1.0675-01	-1.1049-01
P/PO1	2.5187-02	2.5994-02	2.5948-02	2.6666-02	2.5698-02	2.7369-02	2.7697-02	2.5744-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	2.6359-01	2.7766-01	2.4297-01	2.9844-01	2.7734-01	2.8594-01	3.0391-01
CP	-1.0933-01	-1.0664-01	-1.1328-01	-1.0266-01	-1.0670-01	-1.0505-01	-1.0161-01
P/PO1	2.6354-02	2.7760-02	2.4292-02	2.9837-02	2.7728-02	2.8588-02	3.0384-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	14.	301244	2.99	3	14.68	-19.91	4.95	178.84	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3942 TO = 540.

P	2.4203-01	2.5825-01	2.5776-01	2.5929-01	2.6213-01	2.5478-01	2.6309-01	2.6909-01	2.6524-01
CP	-1.1339-01	-1.1028-01	-1.1037-01	-1.1027-01	-1.0954-01	-1.1095-01	-1.0935-01	-1.0820-01	-1.0511-01
P/PO1	2.4232-02	2.5850-02	2.5807-02	2.5860-02	2.6244-02	2.5508-02	2.6340-02	2.6941-02	2.8558-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3924 TO = 540.

P	2.5725-01	2.2895-01	1.6126+00	5.8435+00	7.3556+00	7.8089+00	8.0396+00	9.2486+00	9.6187+00
CP	-1.1024-01	-1.1569-01	1.5032-01	9.6579-01	1.2570+00	1.3444+00	1.3888+00	1.6217+00	1.6930+00
P/PO1	2.5876-02	2.3029-02	1.6220-01	5.8778-01	7.3988-01	7.8546-01	8.0868-01	9.3029-01	9.6752-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9730+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.1 Q-INF = 5.203 P-INF = .8314 RE = .3932 TO = 540.

P	9.7767+00	2.8344-01	2.7031-01	1.7445+00	5.9441+00	8.2784+00	2.5452-01	2.5310-01	2.6240-01
CP	1.7193+00	-1.0532-01	-1.0784-01	1.7550-01	9.8265-01	1.4313+00	-1.1088-01	-1.1115-01	-1.0936-01
P/PO1	9.8126-01	2.8448-02	2.7131-02	1.7509-01	5.9659-01	8.3088-01	2.5545-02	2.5403-02	2.6337-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3929 TO = 540.

P	2.5817-01	2.8161-01	2.9228-01	2.5649-01	2.6363-01	2.5922-01	2.4955-01	2.4715-01	2.6016-01
CP	-1.1013-01	-1.0562-01	-1.0356-01	-1.1045-01	-1.0908-01	-1.0993-01	-1.1178-01	-1.1224-01	-1.0974-01
P/PO1	2.5936-02	2.8291-02	2.9363-02	2.5767-02	2.6484-02	2.6042-02	2.5071-02	2.4830-02	2.6137-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.0 Q-INF = 5.187 P-INF = .8286 RE = .3920 TO = 540.

P	2.4388-01	2.7016-01	2.5597-01	1.8353+00	6.1636+00	8.5131+00	9.2861+00	2.4122-01	2.4001-01
CP	-1.1277-01	-1.0771-01	-1.1044-01	1.9405-01	1.0286+00	1.4815+00	1.6306+00	-1.1329-01	-1.1352-01
P/PO1	2.4554-02	2.7200-02	2.5771-02	1.8478-01	6.2056-01	8.5711-01	9.3494-01	2.4287-02	2.4165-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3919 TO = 540.

P	2.4342-01	3.5157+00	2.8690-01	2.9841-01	2.6513-01	2.5922-01	2.6400-01	2.6041-01	2.6375-01
CP	-1.1285-01	5.1824-01	-1.0446-01	-1.0224-01	-1.0866-01	-1.0980-01	-1.0988-01	-1.0957-01	-1.0893-01
P/PO1	2.4515-02	3.5407-01	2.8895-02	3.0054-02	2.6702-02	2.6107-02	2.6588-02	2.6227-02	2.6563-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3911 TO = 540.

P	2.4296-01	2.8252-01	3.1604-01	1.8403+00	6.1950+00	8.5913+00	9.3796+00	2.5584-01	2.5210-01
CP	-1.1285-01	-1.0520-01	-9.8727-02	1.9580-01	1.0372+00	1.5003+00	1.6526+00	-1.1036-01	-1.1108-01
P/PO1	2.4515-02	2.8507-02	3.1889-02	1.8569-01	6.2509-01	8.6689-01	9.4642-01	2.5815-02	2.5438-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3921 TO = 540.

P	2.3604-01	2.6650-01	2.6852-01	3.0923-01	2.6863-01	2.6233-01	2.6490-01	2.5859-01	2.5479-01
CP	-1.1430-01	-1.0843-01	-1.0804-01	-1.0019-01	-1.0802-01	-1.0923-01	-1.0874-01	-1.0995-01	-1.1069-01
P/PO1	2.3758-02	2.6823-02	2.7027-02	3.1124-02	2.7038-02	2.6403-02	2.6662-02	2.6027-02	2.5645-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3924 TO = 540.

P	2.3558-01	2.6375-01	2.6449-01	2.8038-01	1.8402+00	5.8997+00	8.2889+00	9.4207+00	2.6016-01
CP	-1.1442-01	-1.0900-01	-1.0886-01	-1.0580-01	1.9461-01	9.7643-01	1.4366+00	1.6546+00	-1.0969-01
P/PO1	2.3693-02	2.6526-02	2.6600-02	2.8198-02	1.8507-01	5.9334-01	8.3363-01	9.4746-01	2.6165-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3936 TO = 540.

P	2.3512-01	2.5505-01	2.6359-01	2.6596-01	3.2266-01	2.6632-01	2.6806-01	2.6544-01	2.6419-01
CP	-1.1465-01	-1.1082-01	-1.0918-01	-1.0872-01	-9.7837-02	-1.0865-01	-1.0832-01	-1.0882-01	-1.0906-01
P/PO1	2.3576-02	2.5575-02	2.6431-02	2.6669-02	3.2354-02	2.6705-02	2.6879-02	2.6617-02	2.6492-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3935 TO = 540.

P	2.3235-01	2.6604-01	2.7121-01	2.2584-01	1.6720+00	5.7617+00	7.9150+00	9.1391+00	9.5875+00
CP	-1.1516-01	-1.0869-01	-1.0770-01	-1.1641-01	1.6136-01	9.4691-01	1.3605+00	1.5956+00	1.6818+00
P/PO1	2.3306-02	2.6685-02	2.7204-02	2.2653-02	1.6771-01	5.7793-01	7.9392-01	9.1670-01	9.6168-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.5688-01	2.5578-01	1.5859-01	2.5453-01	2.5281-01	2.6141-01	2.6625-01	2.5313-01
CP	-1.1045-01	-1.1066-01	-1.2933-01	-1.1090-01	-1.1123-01	-1.0958-01	-1.0865-01	-1.1117-01
P/PO1	2.5766-02	2.5656-02	1.5908-02	2.5531-02	2.5358-02	2.6220-02	2.6706-02	2.5390-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	2.5828-01	2.6484-01	2.3750-01	2.7656-01	2.6875-01	2.6016-01	2.8594-01
CP	-1.1018-01	-1.0892-01	-1.1417-01	-1.0667-01	-1.0917-01	-1.0982-01	-1.0487-01
P/PO1	2.5907-02	2.6565-02	2.3823-02	2.7741-02	2.6957-02	2.6095-02	2.8681-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	15.	301244	2.99	3	13.84	-.02	.00	178.84	.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - IN HYPERSONIC WIND TUNNEL

VALVE POS 2 PO = 30.2 Q-INF = 5.223 P-INF = .8346 RE = .3948 TO = 540.

P	2.9828-01	3.2785-01	3.0394-01	2.9390-01	2.9314-01	2.8097-01	2.9333-01	3.0016-01	3.2241-01
CP	-1.0269-01	-9.7025-02	-1.0160-01	-1.0352-01	-1.0367-01	-1.0660-01	-1.0363-01	-1.0233-01	-9.8067-02
P/PO1	2.9821-02	3.2778-02	3.0387-02	2.9384-02	2.9308-02	2.8091-02	2.9326-02	3.0010-02	3.2234-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.2 Q-INF = 5.229 P-INF = .8355 RE = .3952 TO = 540.

P	3.0197-01	2.5367-01	1.6279+00	5.9062+00	7.6065+00	7.9341+00	8.1331+00	9.3425+00	9.7289+00
CP	-1.0204-01	-1.1128-01	1.5153-01	9.6974-01	1.2949+00	1.3576+00	1.3756+00	1.6269+00	1.7507+00
P/PO1	3.0157-02	2.5334-02	1.6258-01	5.8985-01	7.5966-01	7.9238-01	8.1225-01	9.3304-01	9.7154-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3942 TO = 540.

P	9.8710+00	3.3564-01	2.6449-01	1.6941+00	5.9597+00	8.2784+00	2.9378-01	2.9874-01	3.1616-01
CP	1.7327+00	-9.5445-02	-1.0909-01	1.6500-01	9.8282-01	1.4274+00	-1.0347-01	-1.0252-01	-9.9179-02
P/PO1	9.8826-01	3.3603-02	2.6480-02	1.6961-01	5.9666-01	8.2882-01	2.9413-02	2.9910-02	3.1653-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.2 Q-INF = 5.219 P-INF = .8340 RE = .3944 TO = 540.

P	3.0572-01	3.4251-01	2.7435-01	2.9120-01	2.9964-01	2.9162-01	2.8791-01	3.1158-01	3.2778-01
CP	-1.0122-01	-9.4169-02	-1.0723-01	-1.0400-01	-1.0238-01	-1.0392-01	-1.0463-01	-1.0009-01	-9.6990-02
P/PO1	3.0589-02	3.4270-02	2.7450-02	2.9136-02	2.9981-02	2.9173-02	2.8807-02	3.1176-02	3.2796-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3937 TO = 540.

P	3.1949-01	3.5075-01	2.8062-01	1.6639+00	5.9754+00	8.2784+00	9.1614+00	2.8280-01	3.1435-01
CP	-9.8465-02	-9.2464-02	-1.0592-01	1.5960-01	9.8725-01	1.4293+00	1.5938+00	-1.0551-01	-9.9451-02
P/PO1	3.2026-02	3.5160-02	2.8131-02	1.6679-01	5.9839-01	8.2985-01	9.1837-01	2.8349-02	3.1511-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.1 Q-INF = 5.213 P-INF = .8331 RE = .3940 TO = 540.

P	3.0565-01	3.5157+00	3.5100-01	2.8489-01	3.0415-01	2.8363-01	2.9288-01	2.9057-01	2.8972-01
CP	-1.0117-01	5.1455-01	-9.2467-02	-1.0515-01	-1.0145-01	-1.0539-01	-1.0362-01	-1.0406-01	-1.0422-01
P/PO1	3.0616-02	3.5215-01	3.5158-02	2.8536-02	3.0465-02	2.8410-02	2.9336-02	2.9105-02	2.9020-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3936 TO = 540.

P	2.4803-01	3.1183-01	2.3893-01	1.5252+00	5.8343+00	8.2158+00	9.1147+00	2.6589-01	2.7360-01
CP	-1.1217-01	-9.9916-02	-1.1391-01	1.3308-01	9.6051-01	1.4178+00	1.5704+00	-1.0874-01	-1.0776-01
P/PO1	2.4871-02	3.1268-02	2.3959-02	1.5294-01	5.8503-01	8.2383-01	9.1397-01	2.6662-02	2.7435-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.1 Q-INF = 5.200 P-INF = .8310 RE = .3930 TO = 540.

P	2.9090-01	3.3655-01	3.3666-01	2.6100-01	2.8264-01	2.8718-01	2.9558-01	2.8645-01	2.8569-01
CP	-1.0386-01	-9.5078-02	-9.5057-02	-1.0961-01	-1.0545-01	-1.0457-01	-1.0296-01	-1.0471-01	-1.0486-01
P/PO1	2.9211-02	3.3795-02	3.3806-02	2.6208-02	2.8381-02	2.8837-02	2.9681-02	2.8764-02	2.8687-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.210 P-INF = .8326 RE = .3436 TO = 540.

P	2.7431-01	3.2282-01	3.2052-01	2.5014-01	1.6363+00	5.7546+00	8.0396+00	9.2799+00	3.0897-01
CP	-1.0715-01	-9.7835-02	-9.8276-02	-1.1178-01	1.5426-01	9.3510-01	1.3833+00	1.6213+00	-1.0049-01
P/PO1	2.7493-02	3.2355-02	3.2125-02	2.5075-02	1.6400-01	5.7176-01	8.0579-01	9.3010-01	3.0968-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.2 Q-INF = 5.222 P-INF = .8345 RE = .3947 TO = 540.

P	2.5679-01	2.7840-01	3.0169-01	3.0833-01	2.9464-01	2.7155-01	2.6580-01	2.7138-01	2.7942-01
CP	-1.1062-01	-1.0648-01	-1.0202-01	-1.0075-01	-1.0337-01	-1.0778-01	-1.0890-01	-1.0783-01	-1.0629-01
P/PO1	2.5677-02	2.7838-02	3.0168-02	3.0831-02	2.9462-02	2.7161-02	2.6578-02	2.7136-02	2.7940-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.2 Q-INF = 5.229 P-INF = .8355 RE = .3952 TO = 540.

P	2.4618-01	2.8664-01	2.9318-01	2.3440-01	1.6771+00	5.8251+00	8.0240+00	9.2643+00	9.6812+00
CP	-1.1271-01	-1.0497-01	-1.0372-01	-1.1497-01	1.6094-01	9.5423-01	1.3748+00	1.6120+00	1.6917+00
P/PO1	2.4586-02	2.8627-02	2.9280-02	2.3410-02	1.6749-01	5.8175-01	8.0136-01	9.2522-01	9.6686-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	3.5281-01	2.7672-01	2.6766-01	2.9188-01	2.8688-01	3.1375-01	3.1734-01	3.0484-01
CP	-9.2319-02	-1.0687-01	-1.0861-01	-1.0397-01	-1.0493-01	-9.9790-02	-9.9103-02	-1.0149-01
P/PO1	3.5235-02	2.7636-02	2.6731-02	2.9150-02	2.8650-02	3.1334-02	3.1693-02	3.0445-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	2.7359-01	3.2391-01	2.9922-01	3.4453-01	3.2656-01	3.2891-01	3.5078-01
CP	-1.0747-01	-9.7848-02	-1.0257-01	-9.3903-02	-9.7340-02	-9.6891-02	-9.2708-02
P/PO1	2.7324-02	3.2349-02	2.9883-02	3.4408-02	3.2614-02	3.2848-02	3.5033-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	16.	301244	2.99	3	5.02	180.00	.00	179.98	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

VALVE POS 2 PO = 30.0 Q-INF = 5.176 P-INF = .8302 RE = .3883 TO = 544.

P	1.1211-01	3.2831-01	1.2018+00	1.3991+00	1.5088+00	1.6673+00	1.9428+00	2.0769+00	2.3183+00
CP	-1.3822-01	-9.6604-02	7.1511-02	1.0756-01	1.3061-01	1.6111-01	2.1413-01	2.3994-01	2.8642-01
P/PO1	1.1768-02	3.2998-02	1.2079-01	1.3961-01	1.5165-01	1.6758-01	1.9527-01	2.0874-01	2.3301-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3873 TO = 544.

P	2.2887+00	5.9558+00	9.2367+00	9.8071+00	9.5042+00	9.0452+00	8.6317+00	7.3238+00	6.0117+00
CP	2.8126-01	9.8794-01	1.6202+00	1.7301+00	1.6713+00	1.5933+00	1.5036+00	1.2514+00	9.9872-01
P/PO1	2.3032-01	5.9935-01	9.2953-01	9.8693-01	9.5645-01	9.1026-01	8.6865-01	7.3702-01	6.0498-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0350+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.0 Q-INF = 5.181 P-INF = .8279 RE = .3867 TO = 544.

P	4.9875+00	2.1073+00	5.8536+00	8.9454+00	9.6767+00	8.5757+00	1.4259+00	1.6595+00	1.8103+00
CP	8.0286-01	2.4694-01	9.7002-01	1.5568+00	1.7079+00	1.4154+00	1.1543-01	1.6051-01	1.8962-01
P/PO1	5.0270-01	2.1240-01	5.8999-01	9.0163-01	9.7534-01	8.6436-01	1.4372-01	1.6726-01	1.8246-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3893 TO = 541.

P	2.0486+00	1.8017+00	5.1608+00	5.9772-01	8.2069-01	1.0229+00	1.1688+00	1.0572+00	1.1634+00
CP	2.3629-01	1.8855-01	8.3802-01	-4.4227-02	-1.1179-03	3.7972-02	6.6184-02	4.4606-02	6.5145-02
P/PO1	2.0684-01	1.8191-01	5.2106-01	6.0349-02	8.2861-02	1.0327-01	1.1801-01	1.0674-01	1.1746-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3902 TO = 542.

P	1.2618+00	1.0204+00	2.7195+00	5.4663+00	7.1517+00	5.9638+00	6.2323+00	1.2371+00	1.1684+00
CP	8.2922-02	3.6475-02	3.6331-01	8.9164-01	1.2158+00	1.1797+00	1.0390+00	7.8166-02	6.4952-02
P/PO1	1.2675-01	1.0249-01	2.7317-01	5.4906-01	7.1836-01	6.9949-01	6.2601-01	1.2426-01	1.1736-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3915 TO = 542.

P	8.9913-01	3.4911+00	3.0538-01	9.5293-01	1.2152-01	1.8998-01	3.1528-01	3.3415-01	1.6849+00
CP	1.2589-02	5.0953-01	-1.0125-01	2.2905-02	-1.3649-01	-1.2337-01	-9.9348-02	-9.5730-02	1.6325-01
P/PO1	9.0019-02	3.4952-01	3.0574-02	9.5406-02	1.2167-02	1.9020-02	3.1565-02	3.3455-02	1.6869-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.3 Q-INF = 5.238 P-INF = .8370 RE = .3937 TO = 542.

P	1.1549-01	1.9369-01	2.0352-01	9.5041-01	2.3912+00	4.2214+00	4.6607+00	1.2572-01	1.3255-01
CP	-1.3774-01	-1.2281-01	-1.2094-01	2.1660-02	4.1130-01	6.4616-01	7.3002-01	-1.3589-01	-1.3449-01
P/PO1	1.1514-02	1.9311-02	2.0291-02	9.4756-02	2.9823-01	4.2088-01	4.6467-01	1.2484-02	1.3215-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.3 Q-INF = 5.241 P-INF = .8375 RE = .3939 TO = 542.

P	9.8615-02	1.3884-01	1.3909-01	1.3703-01	1.3957-01	1.4248-01	1.4441-01	1.2150-01	1.3755-01
CP	-1.4098-01	-1.3330-01	-1.3326-01	-1.3365-01	-1.3316-01	-1.3261-01	-1.3224-01	-1.3661-01	-1.3355-01
P/PO1	9.8259-03	1.3833-02	1.3858-02	1.3654-02	1.3906-02	1.4197-02	1.4389-02	1.2106-02	1.3705-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.2 Q-INF = 5.230 P-INF = .8358 RE = .3931 TO = 542.

P	1.0293-01	1.3326-01	1.2787-01	1.3449-01	3.6267-01	1.7517+00	2.6184+00	3.3872+00	1.2961-01
CP	-1.4012-01	-1.3431-01	-1.3535-01	-1.3408-01	-9.0455-02	1.7510-01	3.4081-01	4.8780-01	-1.3501-01
P/PO1	1.0276-02	1.3306-02	1.2767-02	1.3427-02	3.6209-02	1.7488-01	2.6142-01	3.3818-01	1.2941-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.3 Q-INF = 5.239 P-INF = .8371 RE = .3943 TO = 541.

P	1.4286-01	1.5515-01	1.3945-01	1.4557-01	1.4873-01	1.2473-01	1.2636-01	1.2290-01	1.4764-01
CP	-1.3252-01	-1.3018-01	-1.3317-01	-1.3201-01	-1.3140-01	-1.3598-01	-1.3567-01	-1.3633-01	-1.3161-01
P/PO1	1.4241-02	1.5466-02	1.3901-02	1.4511-02	1.4826-02	1.2433-02	1.2596-02	1.2251-02	1.4718-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.3 Q-INF = 5.232 P-INF = .8361 RE = .3938 TO = 541.

P	1.3649-01	1.4903-01	1.6495-01	1.6515-01	2.9114-01	1.4704+00	2.1921+00	2.9708+00	3.9118+00
CP	-1.3371-01	-1.3131-01	-1.2827-01	-1.2923-01	-1.0415-01	1.2123-01	2.5918-01	4.0602-01	5.8786-01
P/PO1	1.3622-02	1.4875-02	1.6463-02	1.6484-02	2.9058-02	1.4675-01	2.1879-01	2.9651-01	3.9043-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	8.9063-02	1.3656+00	1.2422-01	1.3063+00	1.3750-01	1.2273+00	1.1070+00	6.7188-02	
CP	-1.4277-01	1.0122-01	-1.3605-01	8.9867-02	-1.3351-01	7.4786-02	5.1791-02	-1.4695-01	
P/PO1	8.8892-03	1.3630-01	1.2398-02	1.3037-01	1.3724-02	1.2250-01	1.1049-01	6.7059-03	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	2.5000-01	1.3430+00	8.2813-02	1.4203+00	7.7344-02	1.1875-01	8.1250-02
CP	-1.1201-01	9.6885-02	-1.4397-01	1.1167-01	-1.4501-01	-1.3710-01	-1.4426-01
P/PO1	2.4952-02	1.3404-01	8.2654-03	1.4176-01	7.7195-03	1.1852-02	8.1094-03
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	17.	301244	2.99	3	-4.00	180.00	.00	139.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER

VALVE POS 2 PO = 30.2 Q-INF = 5.229 P-INF = .8355 RE = .3935 TO = 541.

P	1.2618-01	2.3946-01	8.2159-01	9.1808-01	9.6596-01	1.0561+00	1.2545+00	1.3571+00	1.4116+00
CP	-1.3566-01	-1.1339-01	-2.6671-03	1.4255-02	2.4944-02	4.2193-02	8.0124-02	9.4744-02	1.1[illegible]13-01
P/PO1	1.2601-02	2.3917-02	8.2052-02	9.0889-02	9.6471-02	1.0547-01	1.2529-01	1.3553-01	1.4[illegible]98-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.2 Q-INF = 5.226 P-INF = .8350 RE = .3933 TO = 541.

P	1.3487+00	3.9451+00	7.8677+00	9.7601+00	1.0006+01	9.7337+00	9.4730+00	8.5131+00	7.3702+00
CP	9.8299-02	5.9517-01	1.3458+00	1.7073+00	1.7550+00	1.7029+00	1.6530+00	1.4693+00	1.2506+00
P/PO1	1.3478-01	3.9425-01	7.8624-01	9.7534-01	9.9993-01	9.7271-01	9.4666-01	8.5073-01	7.3652-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.2 Q-INF = 5.214 P-INF = .8332 RE = .3924 TO = 541.

P	6.3815+00	1.2767+00	3.9402+00	7.7078+00	9.8022+00	9.4364+00	9.0646-01	1.1022+00	1.1935+00
CP	1.0641+00	8.5054-02	5.9586-01	1.3164+00	1.7201+00	1.6499+00	1.4049-02	5.1581-02	6.9097-02
P/PO1	6.3911-01	1.2786-01	3.9461-01	7.7193-01	9.8168-01	9.4505-01	9.0781-02	1.1038-01	1.1953-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0350+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.2 Q-INF = 5.222 P-INF = .8344 RE = .3930 TO = 541.

P	1.2312+00	1.0943+00	3.4405+00	5.2383-01	7.7226-01	9.1802-01	9.1425-01	7.4727-01	8.2241-01
CP	7.5997-02	4.9782-02	4.9912-01	-5.9472-02	-1.1895-02	1.6020-02	1.5297-02	-1.6681-02	-2.2910-03
P/PO1	1.2313-01	1.0944-01	3.4409-01	5.2388-02	7.7234-02	9.1811-02	9.1433-02	7.4734-02	8.2249-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.203 P-INF = .8314 RE = .3916 TO = 541.

P	6.6350-01	5.4830-01	1.7759+00	4.8065+00	7.3242+00	7.9028+00	7.3852+00	1.0947+00	8.1233-01
CP	-3.2269-02	-5.4416-02	1.8153-01	7.6402-01	1.2479+00	1.3591+00	1.2597+00	5.0601-02	-3.6542-03
P/PO1	6.6594-02	5.5032-02	1.7824-01	4.8242-01	7.3511-01	7.9319-01	7.4124-01	1.0987-01	8.1537-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.1 Q-INF = 5.209 P-INF = .8323 RE = .3920 TO = 541.

P	5.0510-01	3.4482+00	1.7080-01	7.0336-01	1.7508-01	2.2548-01	2.9107-01	3.0062-01	9.9040-01
CP	-6.2819-02	5.0222-01	-1.2700-01	-2.4756-02	-1.2618-01	-1.1650-01	-1.0391-01	-1.0208-01	3.0354-02
P/PO1	5.0641-02	3.4571-01	1.7124-02	7.0517-02	1.7554-02	2.2607-02	2.9182-02	3.0139-02	9.9296-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3920 TO = 541.

P	1.2168-01	1.7492-01	1.9500-01	1.0739+00	4.8432+00	5.2726+00	5.7960+00	1.2057-01	1.1642-01
CP	-1.3643-01	-1.2621-01	-1.2235-01	4.6425-02	5.7818-01	8.5650-01	9.5316-01	-1.3664-01	-1.3744-01
P/PO1	1.2201-02	1.7540-02	1.9554-02	1.0769-01	3.8537-01	5.3071-01	5.8119-01	1.2090-02	1.1674-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3910 TO = 541.

P	1.4005-01	1.4143-01	1.4379-01	1.2667-01	1.5958-01	1.5447-01	1.5930-01	1.2057-01	1.0906-01
CP	-1.3280-01	-1.3253-01	-1.3208-01	-1.3538-01	-1.2904-01	-1.3002-01	-1.2909-01	-1.3655-01	-1.3877-01
P/PO1	1.4096-02	1.4235-02	1.4472-02	1.2749-02	1.6061-02	1.5547-02	1.6034-02	1.2136-02	1.0977-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.162 P-INF = .8248 RE = .3890 TO = 541.

P	1.2524-01	1.4069-01	1.3746-01	1.4114-01	5.2656-01	2.4657+00	3.6619+00	4.5495+00	1.3430-01
CP	-1.3553-01	-1.3254-01	-1.3316-01	-1.3245-01	-5.7777-02	3.1790-01	5.4967-01	7.2162-01	-1.3377-01
P/PO1	1.2671-02	1.4234-02	1.3907-02	1.4279-02	5.3274-02	2.4946-01	3.7049-01	4.6028-01	1.3588-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 29.7 Q-INF = 5.128 P-INF = .8195 RE = .3865 TO = 541.

P	1.2674-01	1.3253-01	1.4162-01	1.4834-01	1.4853-01	1.5092-01	1.5434-01	1.5077-01	1.3358-01
CP	-1.3508-01	-1.3395-01	-1.3218-01	-1.3087-01	-1.3083-01	-1.3037-01	-1.2970-01	-1.3040-01	-1.3375-01
P/PO1	1.2905-02	1.3496-02	1.4421-02	1.5105-02	1.5124-02	1.5367-02	1.5716-02	1.5352-02	1.3602-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 29.7 Q-INF = 5.136 P-INF = .8208 RE = .3871 TO = 541.

P	1.2374-01	1.5274-01	1.6947-01	1.7014-01	4.6322-01	2.2068+00	3.1498+00	4.0958+00	5.1241+00
CP	-1.3570-01	-1.3006-01	-1.2680-01	-1.2667-01	-6.9610-02	2.6985-01	4.5343-01	6.3760-01	8.3780-01
P/PO1	1.2580-02	1.5529-02	1.7230-02	1.7298-02	4.7094-02	2.2436-01	3.2023-01	4.1640-01	5.2095-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.1719-01	8.6484-01	1.1484-01	8.3828-01	1.1484-01	1.2438+00	1.0328+00	8.8281-02
CP	-1.3698-01	8.5807-03	-1.3744-01	3.4093-03	-1.3744-01	8.2349-02	4.1282-02	-1.4261-01
P/PO1	1.1914-02	8.7926-02	1.1676-02	8.5225-02	1.1676-02	1.2645-01	1.0500-01	8.9753-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	2.7500-01	1.4438+00	9.7656-02	4.6484-01	1.2422-01	1.4531-01	1.3125-01
CP	-1.0625-01	1.2129-01	-1.4078-01	-6.9294-02	-1.3561-01	-1.3150-01	-1.3424-01
P/PO1	2.7958-02	1.4678-01	9.9284-03	4.7259-02	1.2629-02	1.4773-02	1.3344-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	18.	301244	2.99	3	8.00	.00	.00	143.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 29.8 Q-INF = 5.156 P-INF = .8239 RE = .3897 TO = 540.

P	1.5205-01	2.2831-01	7.5304-01	8.6529-01	8.8656-01	8.6317-01	1.0480+00	1.1762+00	1.0949+00
CP	-1.3030-01	-1.1551-01	-1.3740-02	8.0314-03	1.2157-02	7.6206-03	4.3466-02	5.8636-02	5.2572-02
P/PO1	1.5400-02	2.3124-02	7.6270-02	8.7639-02	8.9774-02	8.7425-02	1.0614-01	1.1407-01	1.1090-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 29.7 Q-INF = 5.143 P-INF = .8218 RE = .3887 TO = 540.

P	9.9265-01	3.0839+00	7.0940+00	9.3808+00	9.6300+00	9.6979+00	9.5783+00	8.7518+00	7.7476+00
CP	3.3218-02	4.3984-01	1.2196+00	1.6642+00	1.7127+00	1.7259+00	1.7126+00	1.5808+00	1.3467+00
P/PO1	1.0079-01	3.1313-01	7.2032-01	9.5251-01	9.7782-01	9.8471-01	9.7257-01	9.0896-01	7.8668-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 29.7 Q-INF = 5.140 P-INF = .8214 RE = .3885 TO = 540.

P	6.7026+00	9.5141-01	3.1383+00	7.0083+00	9.2100+00	9.5108+00	7.9698-01	9.5889-01	1.0349+00
CP	1.1441+00	2.5288-02	4.5071-01	1.2036+00	1.6317+00	1.6904+00	-4.7531-03	2.6744-02	4.1537-02
P/PO1	6.8089-01	9.6651-02	3.1881-01	7.1195-01	9.3561-01	9.6617-01	8.0963-02	9.7411-02	1.0514-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 29.8 Q-INF = 5.151 P-INF = .8231 RE = .3893 TO = 540.

P	9.4949-01	8.3310-01	2.7959+00	5.5626-01	7.1193-01	7.6670-01	9.8588-01	6.7422-01	7.3995-01
CP	2.4536-02	1.9409-03	3.8300-01	-5.1804-02	-2.1582-02	-1.0950-02	3.1601-02	-2.8903-02	-1.6142-02
P/PO1	9.6258-02	8.4459-02	2.8345-01	5.6393-02	7.2179-02	7.7727-02	9.9947-02	6.8352-02	7.5016-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 29.8 Q-INF = 5.158 P-INF = .8241 RE = .3898 TO = 540.

P	5.4364-01	4.1371-01	1.5258+00	4.4787+00	7.2186+00	8.2167+00	7.8807+00	1.0538+00	6.7496-01
CP	-5.4387-02	-7.9579-02	1.3604-01	7.0858-01	1.2398+00	1.4334+00	1.3682+00	4.4526-02	-2.8925-02
P/PO1	5.5044-02	4.1888-02	1.5449-01	4.5347-01	7.3090-01	8.3196-01	7.9793-01	1.0670-01	6.8341-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3913 TO = 540.

P	4.9462-01	2.1827-01	1.3893-01	6.5161-01	1.4612-01	2.2720-01	2.5708-01	2.5881-01	9.5494-01
CP	-6.4766-02	-1.1764-01	-1.3296-01	-3.3946-02	-1.3157-01	-1.1591-01	-1.1014-01	-1.0981-01	2.4637-02
P/PO1	4.9885-02	2.2013-02	1.4012-02	6.5719-02	1.4737-02	2.2914-02	2.5928-02	2.6102-02	9.6311-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3922 TO = 540.

P	1.3669-01	2.1187-01	2.0344-01	1.1487+00	3.9826+00	5.7944+00	6.3232+00	1.2509-01	1.3112-01
CP	-1.3349-01	-1.1902-01	-1.2064-01	6.1262-02	6.0661-01	9.5529-01	1.0370+00	-1.3572-01	-1.3456-01
P/PO1	1.3736-02	2.1292-02	2.0444-02	1.1544-01	4.0022-01	5.8230-01	6.3544-01	1.2571-02	1.3177-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.3 Q-INF = 5.237 P-INF = .8368 RE = .3952 TO = 540.

P	1.4633-01	1.4281-01	1.4282-01	1.1236-01	1.5519-01	1.5460-01	1.6621-01	1.3115-01	1.2933-01
CP	-1.3185-01	-1.3252-01	-1.3252-01	-1.3834-01	-1.3016-01	-1.3027-01	-1.2806-01	-1.3475-01	-1.3510-01
P/PO1	1.4592-02	1.4240-02	1.4242-02	1.1204-02	1.5475-02	1.5416-02	1.6574-02	1.3078-02	1.2896-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3938 TO = 540.

P	1.3776-01	1.4169-01	1.3859-01	1.3552-01	5.7982-01	2.8121+00	4.2200+00	5.2155+00	1.5960-01
CP	-1.3339-01	-1.3264-01	-1.3324-01	-1.3382-01	-4.8681-02	3.7910-01	6.4690-01	8.3967-01	-1.2921-01
P/PO1	1.3786-02	1.4179-02	1.3869-02	1.3562-02	5.8023-02	2.9141-01	4.2230-01	5.2193-01	1.5971-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.1 Q-INF = 5.213 P-INF = .8331 RE = .3935 TO = 540.

P	1.3376-01	1.3159-01	1.3675-01	1.4126-01	1.3543-01	1.6401-01	1.6667-01	1.6135-01	1.4455-01
CP	-1.3414-01	-1.3455-01	-1.3356-01	-1.3270-01	-1.3382-01	-1.2833-01	-1.2782-01	-1.2884-01	-1.3207-01
P/PO1	1.3398-02	1.3181-02	1.3697-02	1.4149-02	1.3565-02	1.6428-02	1.6694-02	1.6162-02	1.4479-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	[illegible]	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3929 TO = 540.

P	1.3166-01	1.4094-01	1.4871-01	1.4624-01	5.0376-01	2.5095+00	3.6565+00	4.6871+00	5.7003+00
CP	-1.3450-01	-1.3272-01	-1.3123-01	-1.3170-01	-6.3032-02	3.2222-01	5.4255-01	7.4051-01	9.3512-01
P/PO1	1.3207-02	1.4137-02	1.4917-02	1.4668-02	5.0529-02	2.5171-01	3.6677-01	4.7014-01	5.7177-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.3438-01	7.9844-01	1.3359-01	8.4688-01	1.2344-01	1.3219+00	1.1039+00	1.0859-01
CP	-1.3398-01	-6.4295-03	-1.3413-01	2.8744-03	-1.3608-01	9.4113-02	5.2245-02	-1.3893-01
P/PO1	1.3479-02	8.0088-02	1.3400-02	8.4946-02	1.2381-02	1.3259-01	1.1073-01	1.0893-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	2.6484-01	1.2977+00	1.2422-01	2.7188-01	1.2188-01	1.6641-01	1.1250-01
CP	-1.0892-01	8.9461-02	-1.3593-01	-1.0757-01	-1.3638-01	-1.2783-01	-1.3818-01
P/PO1	2.6565-02	1.3016-01	1.2460-02	2.7271-02	1.2225-02	1.6691-02	1.1284-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	19.	301244	2.99	3	10.02	.00	.00	145.02	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER

VALVE POS 2 PO = 30.2 Q-INF = 5.223 P-INF = .8346 RE = .3942 TO = 540.

P	1.5377-01	2.5890-01	7.8200-01	9.5307-01	9.8180-01	8.1747-01	9.7553-01	1.0413+00	9.6494-01
CP	-1.3035-01	-1.1023-01	-1.0077-02	2.2676-02	2.8176-02	-3.2850-03	2.6976-02	3.9567-02	2.4947-02
P/PO1	1.5373-02	2.5885-02	7.8183-02	9.5287-02	9.8158-02	8.1730-02	9.7532-02	1.0411-01	9.6473-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.1 Q-INF = 5.211 P-INF = .8327 RE = .3933 TO = 540.

P	8.6063-01	2.7644+00	6.7645+00	9.3340+00	9.7545+00	9.8383+00	9.7496+00	9.2497+00	8.0743+00
CP	5.3624-03	3.7070-01	1.1383+00	1.6314+00	1.7121+00	1.7232+00	1.7112+00	1.6152+00	1.3897+00
P/PO1	8.6245-02	2.7703-01	6.7788-01	9.3537-01	9.7752-01	9.8591-01	9.7703-01	9.2693-01	8.0914-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.2 Q-INF = 5.218 P-INF = .8337 RE = .3938 TO = 540.

P	7.0628+00	8.2817-01	2.7896+00	6.7429+00	9.1944+00	9.6973+00	8.7720-01	8.9397-01	9.5494-01
CP	1.1939+00	-1.0645-03	3.7487-01	1.1326+00	1.6024+00	1.6989+00	8.3328-03	1.1546-02	2.3233-02
P/PO1	7.0689-01	9.2889-02	2.7920-01	6.7488-01	9.2024-01	9.7074-01	8.7797-02	8.9475-02	9.5577-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.2 Q-INF = 5.215 P-INF = .8333 RE = .3936 TO = 540.

P	8.3524-01	7.0763-01	2.5297+00	5.7442-01	7.0679-01	7.5147-01	9.5742-01	6.1914-01	6.8996-01
CP	3.6594-04	-2.4105-02	3.2527-01	-4.9648-02	-2.4265-02	-1.5639-02	2.3793-02	-4.1072-02	-2.7493-02
P/PO1	8.3636-02	7.0857-02	2.5330-01	5.7519-02	7.0774-02	7.5247-02	9.5870-02	6.1997-02	6.9088-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.2 Q-INF = 5.224 P-INF = .8348 RE = .3943 TO = 540.

P	4.7791-01	3.8630-01	1.3933+00	4.3221+00	7.2964+00	8.4662+00	8.2233+00	1.0113+00	6.2996-01
CP	-6.8310-02	-8.5846-02	1.0692-01	6.6756-01	1.2369+00	1.4608+00	1.4144+00	3.3850-02	-3.9203-02
P/PO1	4.7773-02	3.8616-02	1.3928-01	4.3205-01	7.2937-01	8.4631-01	8.2203-01	1.0110-01	6.2973-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.2 Q-INF = 5.225 P-INF = .8349 RE = .3943 TO = 540.

P	4.3892-01	1.9315-01	1.2630-01	6.1529-01	1.4310-01	2.2630-01	2.6119-01	2.7398-01	8.6495-01
CP	-7.5787-02	-1.2283-01	-1.3562-01	-4.2031-02	-1.3241-01	-1.1648-01	-1.0980-01	-1.0735-01	5.7529-03
P/PO1	4.3869-02	1.9305-02	1.2624-02	6.1496-02	1.4302-02	2.2618-02	2.6105-02	2.7384-02	8.6447-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.2 Q-INF = 5.229 P-INF = .8355 RE = .3941 TO = 541.

P	1.5608-01	1.8128-01	2.0389-01	1.1838+00	4.1613+00	6.0183+00	6.6347+00	1.4459-01	1.4419-01
CP	-1.2994-01	-1.2512-01	-1.2080-01	6.6607-02	6.3603-01	9.9119-01	1.1091+00	-1.3214-01	-1.3222-01
P/PO1	1.5588-02	1.8104-02	2.0362-02	1.1823-01	4.1559-01	6.0105-01	6.6261-01	1.4440-02	1.4400-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.3 Q-INF = 5.242 P-INF = .8376 RE = .3951 TO = 541.

P	1.4595-01	1.4748-01	1.4669-01	1.1408-01	1.5972-01	1.5908-01	1.6695-01	1.4894-01	1.4345-01
CP	-1.3195-01	-1.3166-01	-1.3181-01	-1.3803-01	-1.2932-01	-1.2944-01	-1.2756-01	-1.3138-01	-1.3243-01
P/PO1	1.4540-02	1.4693-02	1.4613-02	1.1365-02	1.5912-02	1.5848-02	1.6831-02	1.4838-02	1.4291-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3933 TO = 541.

P	1.4462-01	1.4730-01	1.4429-01	1.3686-01	6.2346-01	3.0013+00	4.5082+00	5.5139+00	1.7438-01
CP	-1.3208-01	-1.3157-01	-1.3214-01	-1.3357-01	-4.0318-02	4.1535-01	7.0412-01	8.9685-01	-1.2638-01
P/PO1	1.4472-02	1.4740-02	1.4440-02	1.3696-02	6.2391-02	3.0034-01	4.5114-01	5.5179-01	1.7450-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.2 Q-INF = 5.220 P-INF = .8341 RE = .3934 TO = 541.

P	1.4348-01	1.4281-01	1.4669-01	1.4949-01	1.3275-01	1.5595-01	1.6119-01	1.5262-01	1.5152-01
CP	-1.3231-01	-1.3244-01	-1.3169-01	-1.3116-01	-1.3436-01	-1.2992-01	-1.2991-01	-1.3056-01	-1.3077-01
P/PO1	1.4353-02	1.4287-02	1.4675-02	1.4955-02	1.3281-02	1.5601-02	1.6125-02	1.5268-02	1.5159-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.3 Q-INF = 5.232 P-INF = .8361 RE = .3943 TO = 541.

P	1.4081-01	1.4973-01	1.5221-01	1.4892-01	5.5987-01	2.7238+00	3.9703+00	5.0042+00	5.9585+00
CP	-1.3288-01	-1.3118-01	-1.3070-01	-1.3133-01	-5.2787-02	3.6981-01	5.9964-01	7.9664-01	9.7904-01
P/PO1	1.4054-02	1.4944-02	1.5192-02	1.4863-02	5.5879-02	2.7186-01	3.9627-01	4.9946-01	5.9471-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5234-01	7.9063-01	1.4922-01	9.5781-01	1.4063-01	1.4148+00	1.2742+00	1.2422-01
CP	-1.3068-01	-8.6831-03	-1.3127-01	2.3271-02	-1.3292-01	1.1062-01	8.3745-02	-1.3605-01
P/PO1	1.5205-02	7.8911-02	1.4893-02	9.5597-02	1.4036-02	1.4121-01	1.2718-01	1.2398-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.3203-01	1.4758+00	1.5234-01	2.2969-01	1.4297-01	1.7578-01	1.2656-01
CP	-1.3456-01	1.2227-01	-1.3068-01	-1.1589-01	-1.3247-01	-1.2620-01	-1.3560-01
P/PO1	1.3178-02	1.4729-01	1.5205-02	2.2925-02	1.4269-02	1.7544-02	1.2632-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL	[illegible]	[illegible]	[illegible]
3.	20.	301244	2.99	3	12.01	.02	-.00	147.01	180.0	[illegible]	[illegible]	[illegible]

VALVE POS 2 PO = 30.1 Q-INF = 5.213 P-INF = .8331 RE = .3929 TO = 541.

P	1.6367-01	2.7123-01	7.4124-01	9.0241-01	9.3810-01	7.8447-01	8.3273-01	9.2593-01	8.1945-01
CP	-1.2840-01	-1.0777-01	-1.7615-02	1.3395-02	2.0146-02	-9.3234-03	1.1442-02	1.8365-02	-2.5177-03
P/PO1	1.6394-02	2.7168-02	7.4247-02	9.0440-02	9.3965-02	7.8576-02	8.9420-02	9.3046-02	8.2130-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3921 TO = 541.

P	7.2076-01	2.4327+00	6.3721+00	9.1457+00	9.6612+00	9.8227+00	9.7363+00	9.4065+00	8.3077+00
CP	-2.1241-02	3.0784-01	1.0651+00	1.5385+00	1.6974+00	1.7284+00	1.7234+00	1.6484+00	1.4372+00
P/PO1	7.2353-02	2.4420-01	6.3965-01	9.1817-01	9.6982-01	9.8603-01	9.8339-01	9.4426-01	8.3375-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9780+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3921 TO = 541.

P	7.3446+00	6.8433-01	2.4789+00	6.3683+00	8.9766+00	9.7135+00	8.1769-01	8.1406-01	8.5995-01
CP	1.2521+00	-2.8244-02	3.1673-01	1.0644+00	1.5654+00	1.7174+00	-2.6100-03	-3.3067-03	5.5141-03
P/PO1	7.3728-01	6.8696-02	2.4884-01	6.3728-01	9.3111-01	9.7598-01	8.2082-02	8.1718-02	8.6325-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3922 TO = 541.

P	6.9291-01	6.0780-01	2.2543+00	5.5739-01	6.5962-01	7.1846-01	9.0825-01	5.7468-01	6.1996-01
CP	-2.6636-02	-4.2392-02	2.7341-01	-5.2680-02	-3.3034-02	-2.1727-02	1.4745-02	-4.9357-02	-4.0655-02
P/PO1	6.9535-02	6.0995-02	2.2622-01	5.5935-02	6.6195-02	7.2099-02	9.1145-02	5.7670-02	6.2215-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.200 P-INF = .8310 RE = .3919 TO = 541.

P	4.1883-01	3.3242-01	1.2532+00	4.1028+00	7.2186+00	8.5538+00	8.4102+00	9.6638-01	5.3800-01
CP	-7.9257-02	-9.5872-02	8.1191-02	6.2914-01	1.2283+00	1.4872+00	1.4574+00	2.6332-02	-5.6342-02
P/PO1	4.2057-02	3.3380-02	1.2584-01	4.1198-01	7.2486-01	8.5953-01	8.4451-01	9.7039-02	5.4023-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3926 TO = 541.

P	4.0082-01	1.7306-01	1.1558-01	5.7215-01	1.6073-01	2.2496-01	2.7671-01	2.6617-01	9.0245-01
CP	-8.2852-02	-1.2657-01	-1.3761-01	-4.9964-02	-1.2894-01	-1.1661-01	-1.0668-01	-1.0870-01	1.3440-02
P/PO1	4.0180-02	1.7348-02	1.1586-02	5.7354-02	1.6112-02	2.2550-02	2.7739-02	2.6681-02	9.0464-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.213 P-INF = .8331 RE = .3929 TO = 541.

P	1.6716-01	1.6375-01	2.0524-01	1.2114+00	4.3144+00	6.2210+00	6.8839+00	1.5462-01	1.5005-01
CP	-1.2773-01	-1.2839-01	-1.2043-01	7.2567-02	6.6777-01	1.0335+00	1.1606+00	-1.3014-01	-1.3101-01
P/PO1	1.6744-02	1.6402-02	2.0558-02	1.2134-01	4.3216-01	6.2313-01	6.8953-01	1.5487-02	1.5029-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.1 Q-INF = 5.210 P-INF = .8326 RE = .3927 TO = 541.

P	1.5529-01	1.5290-01	1.5331-01	1.1810-01	1.7131-01	1.6446-01	1.6849-01	1.5670-01	1.5042-01
CP	-1.2999-01	-1.3045-01	-1.3037-01	-1.3713-01	-1.2691-01	-1.2823-01	-1.2745-01	-1.2972-01	-1.3092-01
P/PO1	1.5564-02	1.5325-02	1.5366-02	1.1837-02	1.7170-02	1.6483-02	1.6888-02	1.5705-02	1.5077-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.3 Q-INF = 5.242 P-INF = .8376 RE = .3945 TO = 541.

P	1.5605-01	1.5571-01	1.5166-01	1.4069-01	6.6835-01	3.1904+00	4.7771+00	5.8163+00	1.7843-01
CP	-1.3002-01	-1.3009-01	-1.3086-01	-1.3295-01	-3.2290-02	4.4885-01	7.5156-01	9.4981-01	-1.2575-01
P/PO1	1.5546-02	1.5512-02	1.5108-02	1.4016-02	6.6583-02	3.1784-01	4.7591-01	5.7944-01	1.7776-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.2 Q-INF = 5.230 P-INF = .8357 RE = .3936 TO = 541.

P	1.5129-01	1.5066-01	1.5313-01	1.5543-01	1.3728-01	1.7073-01	1.7808-01	1.6871-01	1.5771-01
CP	-1.3086-01	-1.3098-01	-1.3051-01	-1.3007-01	-1.3354-01	-1.2715-01	-1.2574-01	-1.2753-01	-1.2964-01
P/PO1	1.5107-02	1.5044-02	1.5291-02	1.5520-02	1.3708-02	1.7049-02	1.7782-02	1.6846-02	1.5748-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1[illegible]-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.2 Q-INF = 5.222 P-INF = .8345 RE = .3931 TO = 541.

P	1.5377-01	1.6001-01	1.5736-01	1.5275-01	6.1099-01	2.9445+00	4.2584+00	5.3025+00	6.2852+00
CP	-1.3035-01	-1.2915-01	-1.2966-01	-1.3055-01	-4.2798-02	4.0403-01	6.5563-01	8.5556-01	1.0437+00
P/PO1	1.5376-02	1.6000-02	1.5735-02	1.5274-02	6.1095-02	2.9443-01	4.2582-01	5.3022-01	6.2848-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5938-01	8.3984-01	1.6563-01	9.6328-01	1.5078-01	1.3383+00	1.4367+00	1.2969-01
CP	-1.2928-01	1.0230-03	-1.2808-01	2.4659-02	-1.3092-01	9.6466-02	1.1532-01	-1.3496-01
P/PO1	1.5937-02	8.3979-02	1.6562-02	9.6322-02	1.5077-02	1.3382-01	1.4366-01	1.2968-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.1484-01	5.4766-01	1.5703-01	2.2734-01	1.4063-01	1.6875-01	1.5234-01
CP	-9.9506-02	-5.4926-02	-1.2972-01	-1.1626-01	-1.3287-01	-1.2748-01	-1.3062-01
P/PO1	3.1482-02	5.4762-02	1.5702-02	2.2733-02	1.4062-02	1.6874-02	1.5233-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	21.	301244	2.99	3	14.02	.02	-.00	149.02	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER

VALVE POS 2 PO = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3927 TO = 541.

P	1.7549-01	2.6347-01	7.1947-01	8.8786-01	9.2268-01	7.1846-01	8.0718-01	8.3404-01	6.9996-01
CP	-1.2616-01	-1.0930-01	-2.1920-02	1.0350-02	1.7023-02	-2.2113-02	-5.1113-03	3.5126-05	-2.5659-02
P/PO1	1.7561-02	2.6366-02	7.1999-02	8.8850-02	9.2334-02	7.1898-02	8.0776-02	8.3463-02	7.0046-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5790+00

VALVE POS 3 PO = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3919 TO = 541.

P	6.0602-01	2.1493+00	5.3954+00	8.9594+00	9.6300+00	9.7915+00	9.8113+00	9.5319+00	8.5255+00
CP	-4.3407-02	2.5298-01	9.9163-01	1.5609+00	1.6897+00	1.7207+00	1.7246+00	1.6708+00	1.4775+00
P/PO1	6.0778-02	2.1555-01	6.0128-01	8.9853-01	9.6579-01	9.8199-01	9.8403-01	9.5595-01	8.5502-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3918 TO = 541.

P	7.6109+00	5.7120-01	2.1906+00	6.0749+00	8.7744+00	9.7447+00	7.6852-01	7.4414-01	7.6995-01
CP	1.3021+00	-5.0077-02	2.6098-01	9.9746-01	1.5256+00	1.7120+00	-1.2176-02	-1.6859-02	-1.1901-02
P/PO1	7.6341-01	5.7295-02	2.1973-01	6.0433-01	8.8012-01	9.7745-01	7.7087-02	7.4641-02	7.7230-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.1 Q-INF = 5.200 P-INF = .8310 RE = .3914 TO = 541.

P	5.8485-01	5.0909-01	1.9843+00	5.6080-01	6.4715-01	7.4385-01	9.0566-01	5.2799-01	5.3684-01
CP	-4.7332-02	-6.1909-02	2.2177-01	-5.1958-02	-3.5353-02	-1.6759-02	1.4356-02	-5.8266-02	-5.6556-02
P/PO1	5.8728-02	5.1120-02	1.9925-01	5.6312-02	6.4984-02	7.4693-02	9.0942-02	5.3018-02	5.3911-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3902 TO = 541.

P	3.4726-01	2.8128-01	1.1233+00	3.8836+00	7.1564+00	8.6271+00	8.5659+00	9.3392-01	4.8242-01
CP	-9.2811-02	-1.0554-01	5.6886-02	5.8932-01	1.2206+00	1.5033+00	1.4925+00	2.0352-02	-6.6739-02
P/PO1	3.4979-02	2.8333-02	1.1315-01	3.9119-01	7.2086-01	8.6850-01	8.6284-01	9.4073-02	4.8594-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.0 Q-INF = 5.187 P-INF = .8286 RE = .3904 TO = 541.

P	3.6157-01	1.6487-01	1.0546-01	5.3015-01	1.6678-01	2.1196-01	2.6484-01	2.4318-01	9.3994-01
CP	-9.0083-02	-1.2801-01	-1.3946-01	-5.7581-02	-1.2764-01	-1.1893-01	-1.0573-01	-1.1291-01	2.1428-02
P/PO1	3.6404-02	1.6599-02	1.0618-02	5.3376-02	1.6791-02	2.1341-02	2.6665-02	2.4484-02	9.4635-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3898 TO = 541.

P	1.7132-01	1.6767-01	2.0885-01	1.2340+00	4.4357+00	6.3769+00	7.0864+00	1.6067-01	1.5500-01
CP	-1.2672-01	-1.2742-01	-1.1947-01	7.8453-02	6.9662-01	1.0714+00	1.2084+00	-1.2877-01	-1.2987-01
P/PO1	1.7273-02	1.6905-02	2.1057-02	1.2441-01	4.4722-01	6.4294-01	7.1447-01	1.6199-02	1.5628-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3901 TO = 541.

P	1.6120-01	1.5945-01	1.5883-01	1.2097-01	1.7484-01	1.7253-01	1.7900-01	1.5821-01	1.5593-01
CP	-1.2869-01	-1.2903-01	-1.2915-01	-1.3645-01	-1.2606-01	-1.2650-01	-1.2526-01	-1.2927-01	-1.2971-01
P/PO1	1.6242-02	1.6066-02	1.6004-02	1.2189-02	1.7617-02	1.7384-02	1.8036-02	1.5941-02	1.5711-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3904 TO = 541.

P	1.6120-01	1.6206-01	1.5920-01	1.4719-01	7.0825-01	3.3354+00	5.0077+00	6.0672+00	1.8564-01
CP	-1.2872-01	-1.2855-01	-1.2910-01	-1.3142-01	-2.3263-02	4.8318-01	8.0554-01	1.0093+00	-1.2401-01
P/PO1	1.6227-02	1.6314-02	1.6026-02	1.4818-02	7.1297-02	3.3576-01	5.0410-01	6.1076-01	1.8688-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3907 TO = 541.

P	1.5910-01	1.5814-01	1.5957-01	1.6212-01	1.3502-01	1.7746-01	1.8311-01	1.7101-01	1.6942-01
CP	-1.2915-01	-1.2933-01	-1.2906-01	-1.2857-01	-1.3379-01	-1.2561-01	-1.2452-01	-1.2685-01	-1.2716-01
P/PO1	1.6004-02	1.5907-02	1.6051-02	1.6308-02	1.3581-02	1.7850-02	1.8418-02	1.7201-02	1.7042-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3900 TO = 541.

P	1.5853-01	1.6412-01	1.6141-01	1.5523-01	6.6336-01	3.1337+00	4.5338+00	5.5636+00	6.5341+00
CP	-1.2920-01	-1.2812-01	-1.2864-01	-1.2984-01	-3.1777-02	4.4435-01	7.1515-01	9.1389-01	1.1012+00
P/PO1	1.5976-02	1.6539-02	1.6266-02	1.5644-02	6.6851-02	3.1580-01	4.5690-01	5.6068-01	6.5848-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.6641-01	8.6094-01	1.6484-01	8.9609-01	1.5938-01	1.2648+00	1.1508+00	1.3828-01
CP	-1.2768-01	6.3517-03	-1.2798-01	1.3136-02	-1.2904-01	8.4298-02	6.2286-02	-1.3311-01
P/PO1	1.6770-02	8.6762-02	1.6612-02	9.0305-02	1.6061-02	1.2747-01	1.1597-01	1.3935-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.9219-01	3.7500-01	1.5703-01	1.8984-01	1.4531-01	1.7578-01	1.5234-01
CP	-1.2270-01	-8.7425-02	-1.2949-01	-1.2316-01	-1.3175-01	-1.2587-01	-1.3039-01
P/PO1	1.9368-02	3.7791-02	1.5825-02	1.9132-02	1.4644-02	1.7715-02	1.5353-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	22.	301244	2.44	3	14.65	37.35	-8.83	146.74	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3919 TO = 541.

P	1.9533-01	1.7215-01	5.1806-01	6.7718-01	7.3506-01	8.3846-01	8.7791-01	9.2144-01	8.0245-01
CP	-1.2228-01	-1.2673-01	-6.0299-02	-2.9741-02	-1.8625-02	1.2335-03	8.8089-03	1.7169-02	-5.6825-03
P/PO1	1.9590-02	1.7265-02	5.1956-02	6.7914-02	7.3719-02	8.4089-02	8.8045-02	9.2411-02	8.0478-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3915 TO = 541.

P	7.1519-01	2.3713+00	6.2465+00	8.9750+00	9.4745+00	9.6356+00	9.6250+00	9.2340+00	8.1210+00
CP	-2.2312-02	2.9603-01	1.0410+00	1.5655+00	1.6615+00	1.6925+00	1.6904+00	1.6153+00	1.4013+00
P/PO1	7.1794-02	2.3803-01	6.2705-01	9.0094-01	9.5108-01	9.6725-01	9.6619-01	9.2695-01	8.1521-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0450+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3927 TO = 541.

P	7.2037+00	5.9339-01	2.1932+00	5.8689+00	8.5255+00	9.3237+00	6.1296-01	6.9170-01	7.3995-01
CP	1.2207+00	-4.6081-02	2.6049-01	9.6487-01	1.4740+00	1.6269+00	-4.2330-02	-2.7241-02	-1.7994-02
P/PO1	7.2089-01	5.9381-02	2.1947-01	5.8731-01	8.5316-01	9.3304-01	6.1340-02	6.9220-02	7.4049-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3929 TO = 541.

P	5.5366-01	4.5696-01	1.6735+00	2.2514-01	4.8006-01	5.7386-01	6.2419-01	4.1573-01	4.6019-01
CP	-5.3743-02	-7.2265-02	1.6076-01	-1.1667-01	-6.7840-02	-4.9874-02	-4.0234-02	-8.0164-02	-7.1648-02
P/PO1	5.5380-02	4.5708-02	1.6739-01	2.2520-02	4.8018-02	5.7400-02	6.2435-02	4.1583-02	4.6030-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.2 Q-INF = 5.222 P-INF = .8344 RE = .3930 TO = 541.

P	2.5352-01	1.9132-01	7.9219-01	2.9315+00	6.1607+00	7.6710+00	7.8028+00	6.4915-01	4.1128-01
CP	-1.1124-01	-1.2315-01	-8.0789-03	4.0163-01	1.0201+00	1.3093+00	1.3346+00	-3.5472-02	-8.1028-02
P/PO1	2.5354-02	1.9134-02	7.9226-02	2.9318-01	6.1613-01	7.6718-01	7.8035-01	6.4922-02	4.1132-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.2 Q-INF = 5.226 P-INF = .8351 RE = .3934 TO = 541.

P	3.2925-01	1.8219-01	1.7908-01	2.9448-01	1.9449-01	1.8507-01	2.1735-01	2.2250-01	6.0025-01
CP	-9.6797-02	-1.2493-01	-1.2553-01	-1.0345-01	-1.2258-01	-1.2438-01	-1.1871-01	-1.1722-01	-4.4945-02
P/PO1	3.2897-02	1.8204-02	1.7893-02	2.9424-02	1.9433-02	1.8492-02	2.1717-02	2.2231-02	5.9974-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.3 Q-INF = 5.232 P-INF = .8361 RE = .3938 TO = 541.

P	1.5377-01	1.8402-01	1.3785-01	8.5526-01	3.6443+00	5.5044+00	6.2454+00	1.4988-01	1.4869-01
CP	-1.3040-01	-1.2462-01	-1.3345-01	3.6696-03	5.3673-01	8.9225-01	1.0339+00	-1.3115-01	-1.3137-01
P/PO1	1.5347-02	1.8367-02	1.3759-02	8.5361-02	3.6373-01	5.4938-01	6.2334-01	1.4960-02	1.4841-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.2 Q-INF = 5.231 P-INF = .8359 RE = .3937 TO = 541.

P	1.6939-01	1.7534-01	1.7231-01	1.6828-01	1.9802-01	2.1375-01	1.5982-01	1.4610-01	1.5666-01
CP	-1.2741-01	-1.2628-01	-1.2685-01	-1.2763-01	-1.2194-01	-1.1893-01	-1.2924-01	-1.3187-01	-1.2985-01
P/PO1	1.6909-02	1.7503-02	1.7201-02	1.6798-02	1.9767-02	2.1338-02	1.5954-02	1.4584-02	1.5638-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.4 Q-INF = 5.256 P-INF = .8398 RE = .3956 TO = 541.

P	1.6482-01	1.7141-01	1.6951-01	1.7170-01	5.8605-01	2.9067+00	4.3097+00	5.3834+00	1.4125-01
CP	-1.2843-01	-1.2718-01	-1.2754-01	-1.2712-01	-4.8284-02	3.9327-01	6.6022-01	8.6451-01	-1.3292-01
P/PO1	1.6376-02	1.7032-02	1.6843-02	1.7060-02	5.8231-02	2.8881-01	4.2822-01	5.3490-01	1.4035-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.4 Q-INF = 5.249 P-INF = .8388 RE = .3945 TO = 542.

P	1.6691-01	1.6823-01	1.7502-01	1.8261-01	1.7635-01	1.8866-01	1.9269-01	1.8572-01	1.6131-01
CP	-1.2800-01	-1.2774-01	-1.2645-01	-1.2501-01	-1.2620-01	-1.2385-01	-1.2308-01	-1.2441-01	-1.2906-01
P/PO1	1.6605-02	1.6736-02	1.7412-02	1.8167-02	1.7544-02	1.8769-02	1.9170-02	1.8476-02	1.6048-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.4 Q-INF = 5.255 P-INF = .8397 RE = .3955 TO = 541.

P	1.7825-01	1.8174-01	1.8585-01	1.8446-01	5.9977-01	2.8815+00	4.1880+00	5.2155+00	6.1607+00
CP	-1.2587-01	-1.2521-01	-1.2443-01	-1.2469-01	-4.5656-02	3.8855-01	6.3719-01	8.3273-01	1.0126+00
P/PO1	1.7713-02	1.8060-02	1.8469-02	1.8331-02	5.9603-02	2.8635-01	4.1619-01	5.1830-01	6.1223-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.3516-01	5.4922-01	-6.2500-03	5.8750-01	1.4609-01	9.0469-01	5.7188-01	1.3672-01
CP	-1.3407-01	-5.5276-02	-1.6098-01	-4.7991-02	-1.3199-01	1.2371-02	-5.0964-02	-1.3378-01
P/PO1	1.3431-02	5.4580-02	-6.2111-04	5.8384-02	1.4518-02	8.9905-02	5.6831-02	1.3587-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.9141-01	2.0469-01	1.3828-01	1.8750-01	1.7813-01	1.9219-01	1.8516-01
CP	-1.2337-01	-1.2084-01	-1.3348-01	-1.2411-01	-1.2590-01	-1.2322-01	-1.2456-01
P/PO1	1.9021-02	2.0341-02	1.3742-02	1.8633-02	1.7702-02	1.9099-02	1.8400-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	23.	301244	2.99	3	12.99	22.85	-5.01	147.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.2 Q-INF = 5.219 P-INF = .8340 RE = .3928 TO = 541.

P	1.9164-01	1.9954-01	5.7960-01	7.1405-01	7.6561-01	8.5301-01	8.8015-01	9.2643-01	8.6495-01
CP	-1.2308-01	-1.2156-01	-4.8740-02	-2.2979-02	-1.3100-02	3.6466-03	8.8463-03	1.7713-02	-5.5626-03
P/PO1	1.9174-02	1.9966-02	5.7993-02	7.1445-02	7.6604-02	8.5349-02	8.8065-02	9.2695-02	8.0540-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3929 TO = 541.

P	7.1742-01	2.4020+00	6.3407+00	9.1154+00	9.6300+00	9.7915+00	9.7808+00	9.3751+00	8.2610+00
CP	-2.2376-02	3.0029-01	1.0547+00	1.5862+00	1.6848+00	1.7157+00	1.7136+00	1.6360+00	1.4225+00
P/PO1	7.1760-02	2.4026-01	6.3423-01	9.1177-01	9.6324-01	9.7939-01	9.7832-01	9.3775-01	8.2631-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3929 TO = 541.

P	7.3290+00	6.3331-01	2.3180+00	6.1030+00	8.7433+00	9.5576+00	7.0642-01	7.4164-01	7.7745-01
CP	1.2440+00	-3.8486-02	2.8420-01	1.0092+00	1.5149+00	1.6709+00	-2.4484-02	-1.7737-02	-1.0878-02
P/PO1	7.3308-01	6.3347-02	2.3186-01	6.1045-01	8.7455-01	9.5600-01	7.0659-02	7.4183-02	7.7765-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.2 Q-INF = 5.218 P-INF = .8337 RE = .3927 TO = 541.

P	6.1716-01	5.1686-01	1.9257+00	3.6213-01	5.9104-01	7.8701-01	8.1510-01	4.7575-01	5.1132-01
CP	-4.1507-02	-6.0732-02	2.0929-01	-9.0386-02	-4.6513-02	-8.9537-03	-3.5699-03	-6.8610-02	-6.1793-02
P/PO1	6.1770-02	5.1731-02	1.9274-01	3.6245-02	5.9156-02	7.8769-02	8.1581-02	4.7616-02	5.1177-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3912 TO = 541.

P	3.1262-01	2.4110-01	9.7813-01	3.4201+00	6.5963+00	8.0764+00	8.0987+00	7.6911-01	5.0910-01
CP	-9.9651-02	-1.1341-01	2.8380-02	4.9816-01	1.1092+00	1.3939+00	1.3982+00	-1.1832-02	-6.1854-02
P/PO1	3.1407-02	2.4221-02	9.8265-02	3.4359-01	6.6268-01	8.1137-01	8.1361-01	7.7266-02	5.1145-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.0 Q-INF = 5.195 P-INF = .8301 RE = .3910 TO = 541.

P	4.0313-01	1.6580-01	1.5202-01	3.8824-01	1.9298-01	1.7835-01	2.3653-01	2.3767-01	7.0996-01
CP	-8.2191-02	-1.2788-01	-1.3053-01	-8.5057-02	-1.2265-01	-1.2546-01	-1.1426-01	-1.1404-01	-2.3127-02
P/PO1	4.0524-02	1.6667-02	1.5281-02	3.9028-02	1.9399-02	1.7929-02	2.3777-02	2.3891-02	7.1368-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3913 TO = 541.

P	1.4638-01	1.7169-01	1.4650-01	9.8317-01	3.8996+00	5.8197+00	6.5101+00	1.4648-01	1.5861-01
CP	-1.3164-01	-1.2677-01	-1.3161-01	2.9319-02	5.9029-01	9.5962-01	1.0924+00	-1.3162-01	-1.2929-01
P/PO1	1.4704-02	1.7246-02	1.4716-02	9.8755-02	3.9170-01	5.8456-01	6.5392-01	1.4713-02	1.5931-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3915 TO = 541.

P	1.6196-01	1.6805-01	1.6785-01	1.5395-01	1.9651-01	1.8866-01	1.7032-01	1.4648-01	1.5545-01
CP	-1.2866-01	-1.2749-01	-1.2753-01	-1.3020-01	-1.2202-01	-1.2353-01	-1.2705-01	-1.3164-01	-1.2991-01
P/PO1	1.6258-02	1.6869-02	1.6850-02	1.5454-02	1.9726-02	1.8938-02	1.7097-02	1.4704-02	1.5605-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3903 TO = 541.

P	1.6444-01	1.6805-01	1.6730-01	1.6423-01	6.1972-01	3.0202+00	4.4054+00	5.5450+00	1.4015-01
CP	-1.2809-01	-1.2739-01	-1.2753-01	-1.2812-01	-4.0242-02	4.2259-01	7.0706-01	9.0945-01	-1.2313-01
P/PO1	1.6558-02	1.6922-02	1.6847-02	1.6538-02	6.2404-02	3.0412-01	4.5267-01	5.5637-01	1.4147-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3905 TO = 541.

P	1.6005-01	1.5963-01	1.7061-01	1.7572-01	1.6123-01	1.8687-01	1.9178-01	1.8204-01	1.5771-01
CP	-1.2894-01	-1.2903-01	-1.2691-01	-1.2593-01	-1.2872-01	-1.2378-01	-1.2283-01	-1.2471-01	-1.2940-01
P/PO1	1.6109-02	1.6067-02	1.7172-02	1.7686-02	1.6228-02	1.8808-02	1.9303-02	1.8323-02	1.5573-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 29.9 Q-INF = 5.162 P-INF = .8249 RE = .3885 TO = 541.

P	1.6425-01	1.7032-01	1.7186-01	1.7380-01	6.0600-01	2.9004+00	4.2072+00	5.2280+00	6.1919+00
CP	-1.2798-01	-1.2680-01	-1.2650-01	-1.2613-01	-4.2405-02	4.0204-01	6.5518-01	8.5291-01	1.0396+00
P/PO1	1.6614-02	1.7229-02	1.7385-02	1.7581-02	6.1301-02	2.9339-01	4.2558-01	5.2884-01	6.2634-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.3281-01	5.9844-01	1.3594-01	7.2188-01	1.5000-01	1.2648+00	8.1250-01	1.4297-01
CP	-1.3407-01	-4.3871-02	-1.3346-01	-1.9960-02	-1.3074-01	8.5218-02	-2.4049-03	-1.3210-01
P/PO1	1.3435-02	6.0536-02	1.3751-02	7.3022-02	1.5173-02	1.2795-01	8.2189-02	1.4462-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.9609-01	3.5703-01	1.7578-01	1.8984-01	1.4531-01	1.9453-01	1.4063-01
CP	-1.2181-01	-9.0633-02	-1.2574-01	-1.2302-01	-1.3165-01	-1.2211-01	-1.3755-01
P/PO1	1.9836-02	3.6116-02	1.7781-02	1.9204-02	1.4699-02	1.9678-02	1.4225-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	FOR NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	24.	391244	2.44	3	13.43	42.42	-9.01	145.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3918 TO = 541.

P	1.9395-01	1.8356-01	5.6953-01	7.2[illegible]	7.[illegible]	8.7596-01	9.4[illegible]	1.0063+00	9.[illegible]
CP	-1.2254-01	-1.2453-01	-5.0337-02	-1.9586-02	-7.[illegible]	8.4425-03	2.1773-02	3.3504-02	1.4[illegible]
P/PO1	1.9454-02	1.9412-02	5.7127-02	7.3217-02	7.[illegible]	[illegible]	9.4[illegible]	1.[illegible]	4.1[illegible]
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.3700-01	9.3[illegible]	1.1550+00	1.5[illegible]

VALVE POS 3 PO = 30.0 Q-INF = 5.176 P-INF = .8302 RE = .3[illegible] TO = 541.

P	8.4286-01	2.6231+00	6.5290+00	9.0666+00	9.5524+00	7.5883+00	4.5527+00	9.0302+00	7.[illegible]
CP	2.4316-03	3.4508-01	1.0968+00	1.5356+00	1.6787+00	1.5[illegible]	1.6[illegible]	1.[illegible]783+00	1.3613+00
P/PO1	8.4715-02	2.6365-01	6.5623-01	9.1148-01	9.6[illegible]	9.6377-01	4.7114-01	9.5762-01	7.7434-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.[illegible]	2.0[illegible]	2.[illegible]	2.3540+00	2.6[illegible]

VALVE POS 4 PO = 30.1 Q-INF = 5.211 P-INF = .8327 RE = .3917 TO = 542.

P	6.9531+00	6.3433-01	2.4002+00	6.1030+00	8.6493+00	9.2302+00	6.4443-01	7.3715-01	7.8695-01
CP	1.1745+00	-2.8469-02	3.0253-01	1.0114+00	1.5001+00	1.6115+00	-3.6133-02	-1.7751-02	-3.1[illegible]
P/PO1	6.9679-01	6.9578-02	2.4143-01	6.1159-01	8.6642-01	9.2437-01	6.4576-02	7.[illegible]71-02	7.8961-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0[illegible]	4.9700-01	9.3[illegible]-01	1.1[illegible]

VALVE POS 5 PO = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3914 TO = 542.

P	6.3833-01	5.2246-01	1.8467+00	1.9971-01	4.1897-01	5.4535-01	6.4449-01	4.4127-01	4.7353-01
CP	-3.7222-02	-5.3482-02	1.9482-01	-1.2144-01	-7.9344-02	-5.4960-02	-3.6256-02	-7.5[illegible]57-02	-[illegible]-02
P/PO1	6.4008-02	5.2383-02	1.8516-01	2.0026-02	4.2011-02	5.4745-02	6.4614-02	4.4[illegible]-02	4.7453-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1909-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3910 TO = 542.

P	2.9138-01	2.1142-01	8.5841-01	3.0442+00	6.3941+00	7.5463+00	7.6[illegible]3+00	6.2915-01	5.0[illegible]20-01
CP	-1.0378-01	-1.1915-01	5.2195-03	4.2540-01	1.0673+00	1.2909+00	1.3[illegible]12+00	-3.5853-02	-6.3[illegible]-02
P/PO1	2.9250-02	2.1223-02	8.6171-02	3.0559-01	6.4186-01	7.5752-01	7.6295-01	6.3156-02	5.0212-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.2 Q-INF = 5.229 P-INF = .8355 RE = .3932 TO = 542.

P	3.8327-01	1.6823-01	1.6013-01	3.0310-01	1.9399-01	1.8366-01	2.0546-01	2.1560-01	5.6469-01
CP	-8.6494-02	-1.2762-01	-1.2917-01	-1.0183-01	-1.2269-01	-1.2371-01	-1.2146-01	-1.1856-01	-5.1801-02
P/PO1	3.8278-02	1.6801-02	1.5993-02	3.0271-02	1.9373-02	1.8841-02	2.0920-02	2.1532-02	5.6394-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3922 TO = 542.

P	1.4407-01	1.7260-01	1.2883-01	8.2516-01	3.6060+00	5.2837+00	6.0117+00	1.4250-01	1.5395-01
CP	-1.3218-01	-1.2672-01	-1.3510-01	-1.6663-03	5.3123-01	8.5274-01	9.9225-01	-1.3249-01	-1.3987-01
P/PO1	1.4418-02	1.7273-02	1.2893-02	8.2575-02	3.6086-01	5.2875-01	6.0160-01	1.4261-02	1.5105-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.3 Q-INF = 5.246 P-INF = .8383 RE = .3943 TO = 542.

P	1.6405-01	1.7328-01	1.7209-01	1.6227-01	2.0104-01	1.9404-01	1.5936-01	1.4004-01	1.5336-01
CP	-1.2852-01	-1.2676-01	-1.2699-01	-1.2886-01	-1.2147-01	-1.2281-01	-1.2942-01	-1.3310-01	-1.3056-01
P/PO1	1.6331-02	1.7249-02	1.7130-02	1.6153-02	2.0013-02	1.9315-02	1.5864-02	1.3941-02	1.5266-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.3 Q-INF = 5.234 P-INF = .8363 RE = .3934 TO = 542.

P	1.6253-01	1.6896-01	1.6877-01	1.6729-01	5.5613-01	2.7364+00	4.0663+00	5.1098+00	1.4162-01
CP	-1.2874-01	-1.2751-01	-1.2755-01	-1.2783-01	-5.3535-02	3.8363-01	6.1716-01	8.1654-01	-1.3273-01
P/PO1	1.6217-02	1.6860-02	1.6840-02	1.6692-02	5.5489-02	2.7303-01	4.0573-01	5.0985-01	1.4130-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.2 Q-INF = 5.226 P-INF = .8351 RE = .3934 TO = 541.

P	1.5948-01	1.6412-01	1.6998-01	1.7763-01	1.6980-01	1.8597-01	1.8767-01	1.7285-01	1.4180-01
CP	-1.2928-01	-1.2839-01	-1.2729-01	-1.2581-01	-1.2730-01	-1.2421-01	-1.2389-01	-1.2672-01	-1.3266-01
P/PO1	1.5935-02	1.6398-02	1.6974-02	1.7748-02	1.6966-02	1.8581-02	1.8751-02	1.7270-02	1.4168-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.2 Q-INF = 5.227 P-INF = .8353 RE = .3934 TO = 541.

P	1.7358-01	1.7347-01	1.7141-01	1.7610-01	5.5862-01	2.6860+00	3.9190+00	4.9358+00	5.8807+00
CP	-1.2659-01	-1.2661-01	-1.2700-01	-1.2611-01	-5.2926-02	3.5405-01	5.8994-01	7.8445-01	9.6522-01
P/PO1	1.7341-02	1.7329-02	1.7124-02	1.7592-02	5.5807-02	2.6833-01	3.9152-01	4.9309-01	5.8749-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6760+00

CEC	1.3203-01	5.2813-01	1.3906-01	5.4453-01	1.4453-01	1.1008+00	7.0391-01	1.4219-01
CP	-1.3454-01	-5.8760-02	-1.3319-01	-5.5622-02	-1.3214-01	5.0792-02	-2.5132-02	-1.3259-01
P/PO1	1.3190-02	5.2760-02	1.3892-02	5.4399-02	1.4439-02	1.0997-01	7.0321-02	1.4205-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.9922-01	3.8203-01	1.7344-01	1.8750-01	1.4531-01	1.8984-01	1.6875-01
CP	-1.2168-01	-8.6709-02	-1.2661-01	-1.2392-01	-1.3199-01	-1.2348-01	-1.2751-01
P/PO1	1.9902-02	3.8165-02	1.7327-02	1.8731-02	1.4517-02	1.8966-02	1.6858-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	25.	301244	2.99	3	12.03	49.73	-9.01	143.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.2 Q-INF = 5.214 P-INF = .8332 RE = .3924 TO = 541.

P	1.7640-01	2.0183-01	6.2884-01	7.9238-01	8.5586-01	9.4635-01	1.0325+00	1.1087+00	1.0599+00
CP	-1.2596-01	-1.2109-01	-3.9194-02	-7.8296-03	4.3445-03	7.1814-02	3.8213-02	5.2639-02	4.3663-02
P/PO1	1.7666-02	2.0213-02	6.2978-02	7.9356-02	8.5714-02	9.4836-02	1.0340-01	1.1104-01	1.0615-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5350+00

VALVE POS 3 PO = 30.1 Q-INF = 5.212 P-INF = .8326 RE = .3923 TO = 541.

P	9.7995-01	2.9426+00	6.8900+00	9.2463+00	9.6523+00	9.5886+00	9.4048+00	8.8735+00	7.7165+00
CP	2.8231-02	4.0480-01	1.1622+00	1.6132+00	1.6997+00	1.6800+00	1.6591+00	1.5428+00	1.3208+00
P/PO1	9.8187-02	2.9483-01	6.9035-01	9.2584-01	9.7113-01	9.6076-01	9.5034-01	8.8909-01	7.7316-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3917 TO = 541.

P	6.7026+00	8.1831-01	2.7072+00	6.4308+00	8.9390+00	9.1678+00	6.6124-01	8.0657-01	8.6745-01
CP	1.1280+00	-2.5633-03	3.6036-01	1.0758+00	1.5560+00	1.6017+00	-3.2743-02	-4.8194-03	6.8779-03
P/PO1	6.7251-01	8.2107-02	2.7163-01	6.4524-01	8.9600-01	9.1987-01	6.6346-02	8.0928-02	8.7037-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.2 Q-INF = 5.217 P-INF = .8336 RE = .3926 TO = 541.

P	7.6924-01	6.1779-01	2.0836+00	2.1682-01	3.5537-01	5.1469-01	6.3429-01	4.7353-01	5.4244-01
CP	-1.2337-02	-4.1369-02	2.3962-01	-1.1823-01	-9.1671-02	-6.1132-02	-3.8204-02	-6.9022-02	-5.5811-02
P/PO1	7.7003-02	6.1842-02	2.0856-01	2.1704-02	3.5574-02	5.1522-02	6.3446-02	4.7401-02	5.4300-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	2.0890-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3912 TO = 541.

P	3.5187-01	2.4977-01	9.5266-01	3.1883+00	6.1763+00	7.3904+00	7.3667+00	6.3248-01	5.2244-01
CP	-9.2100-02	-1.1174-01	2.3479-02	4.5357-01	1.0284+00	1.2626+00	1.2574+00	-3.8117-02	-5.9288-02
P/PO1	3.5350-02	2.5093-02	9.5706-02	3.2030-01	6.2048-01	7.4245-01	7.4007-01	6.3540-02	5.2485-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3902 TO = 541.

P	4.0729-01	1.6954-01	1.6013-01	3.2013-01	1.7988-01	1.7477-01	1.8265-01	2.1100-01	6.0469-01
CP	-8.1244-02	-1.2710-01	-1.2891-01	-9.8053-02	-1.2510-01	-1.2609-01	-1.2457-01	-1.1910-01	-4.3172-02
P/PO1	4.1019-02	1.7075-02	1.6128-02	3.2241-02	1.8116-02	1.7601-02	1.8395-02	2.1251-02	6.0900-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.201 P-INF = .8311 RE = .3915 TO = 541.

P	1.4805-01	1.7808-01	1.3675-01	7.9255-01	3.3571+00	5.0441+00	5.8722+00	1.4307-01	1.5140-01
CP	-1.3133-01	-1.2556-01	-1.3350-01	-7.4173-03	4.8564-01	8.0999-01	9.6919-01	-1.3229-01	-1.3069-01
P/PO1	1.4864-02	1.7879-02	1.3729-02	7.9572-02	3.3705-01	5.0643-01	5.8956-01	1.4364-02	1.5200-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.0 Q-INF = 5.196 P-INF = .8302 RE = .3910 TO = 541.

P	1.6444-01	1.6879-01	1.7043-01	1.6227-01	1.7383-01	1.6804-01	1.5434-01	1.4175-01	1.5336-01
CP	-1.2814-01	-1.2731-01	-1.2699-01	-1.2856-01	-1.2634-01	-1.2745-01	-1.3009-01	-1.3251-01	-1.3028-01
P/PO1	1.6527-02	1.6965-02	1.7130-02	1.6309-02	1.7472-02	1.6890-02	1.5512-02	1.4247-02	1.5414-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3913 TO = 541.

P	1.5986-01	1.7272-01	1.7043-01	1.7399-01	5.0251-01	2.5416+00	3.7718+00	4.7990+00	1.4529-01
CP	-1.2905-01	-1.2658-01	-1.2702-01	-1.2833-01	-6.3151-02	3.2889-01	5.6559-01	7.6315-01	-1.3185-01
P/PO1	1.6055-02	1.7346-02	1.7116-02	1.7474-02	5.0467-02	2.5514-01	3.7880-01	4.8197-01	1.4591-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3912 TO = 541.

P	1.5453-01	1.6244-01	1.6859-01	1.7514-01	1.6728-01	1.7253-01	1.7626-01	1.6457-01	1.4345-01
CP	-1.3067-01	-1.2854-01	-1.2736-01	-1.2610-01	-1.2761-01	-1.2660-01	-1.2589-01	-1.2813-01	-1.3220-01
P/PO1	1.5524-02	1.6319-02	1.6937-02	1.7595-02	1.6809-02	1.7332-02	1.7707-02	1.6533-02	1.4412-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1860-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.1 Q-INF = 5.197 P-INF = .8305 RE = .3912 TO = 541.

P	1.6158-01	1.6449-01	1.6583-01	1.6557-01	4.9752-01	2.4715+00	3.6117+00	4.6187+00	5.6131+00
CP	-1.2870-01	-1.2814-01	-1.2789-01	-1.2794-01	-6.4066-02	3.1577-01	5.3513-01	7.2890-01	9.2022-01
P/PO1	1.6235-02	1.6528-02	1.6662-02	1.6636-02	4.9996-02	2.4834-01	3.6289-01	4.6408-01	5.6399-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.3359-01	5.5313-01	1.3516-01	5.5703-01	1.4531-01	8.9297-01	6.8984-01	1.2969-01
CP	-1.3409-01	-5.3367-02	-1.3379-01	-5.2615-02	-1.3183-01	1.2022-02	-2.7061-02	-1.3484-01
P/PO1	1.3423-02	5.5577-02	1.3580-02	5.5969-02	1.4601-02	8.9723-02	6.9314-02	1.3031-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.0938-01	8.7422-01	1.6641-01	2.0156-01	1.4766-01	1.8047-01	1.5000-01
CP	-1.0027-01	8.4148-03	-1.2778-01	-1.2101-01	-1.3138-01	-1.2507-01	-1.3093-01
P/PO1	3.1085-02	8.7839-02	1.6720-02	2.0252-02	1.4836-02	1.8133-02	1.5072-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS GG WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	26.	301244	2.99	3	11.16	25.78	-5.01	145.01	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.2 Q-INF = 5.215 P-INF = .8333 RE = .3925 TO = 541.

P	1.8563-01	2.1379-01	6.2548-01	7.4992-01	7.7161-01	9.0071-01	9.5483-01	1.0230+00	7.2494-01
CP	-1.2420-01	-1.1882-01	-3.9937-02	-1.5396-02	-8.0018-03	1.2536-02	2.3297-02	3.6325-02	1.7566-02
P/PO1	1.8588-02	2.1399-02	6.2632-02	7.5092-02	7.9267-02	8.9992-02	9.5611-02	1.0252-01	9.2618-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.2 Q-INF = 5.222 P-INF = .8344 RE = .3932 TO = 541.

P	8.5555-01	2.7091+00	6.6703+00	9.2559+00	9.6767+00	9.7603+00	9.6873+00	9.1713+00	8.0121+00
CP	4.0566-03	3.5304-01	1.1177+00	1.6123+00	1.6934+00	1.7094+00	1.6955+00	1.5765+00	1.3746+00
P/PO1	8.5563-02	2.7094-01	6.6709-01	9.2569-01	9.6776-01	9.7612-01	9.6882-01	9.1722-01	8.0128-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3921 TO = 541.

P	7.0314+00	7.5423-01	2.5994+00	6.3795+00	8.8366+00	9.4797+00	7.3438-01	8.0907-01	8.4995-01
CP	1.1900+00	-1.5012-02	3.3919-01	1.0687+00	1.5365+00	1.6599+00	-1.8725-02	-4.4848-03	3.3631-03
P/PO1	7.0485-01	7.5606-02	2.6057-01	6.4151-01	8.8581-01	9.5027-01	7.3667-02	8.1103-02	8.5201-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3919 TO = 541.

P	7.5147-01	6.0226-01	2.1651+00	3.6327-01	5.9353-01	7.8447-01	8.0733-01	5.0020-01	5.6912-01
CP	-1.5474-02	-4.4129-02	2.5602-01	-9.0028-02	-4.5805-02	-9.1360-03	-4.7446-03	-6.3723-02	-5.0494-02
P/PO1	7.5364-02	6.0400-02	2.1714-01	3.6432-02	5.9525-02	7.8674-02	8.0967-02	5.0165-02	5.7077-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.2 Q-INF = 5.220 P-INF = .8341 RE = .3929 TO = 541.

P	3.7358-01	2.7991-01	1.0800+00	3.5767+00	6.5963+00	7.9517+00	7.8651+00	7.9908-01	5.3355-01
CP	-8.8226-02	-1.0617-01	4.7110-02	5.2540-01	1.1039+00	1.3635+00	1.3469+00	-6.7118-03	-5.7579-02
P/PO1	3.7373-02	2.8002-02	1.0805-01	3.5781-01	6.5990-01	7.9549-01	7.8683-01	7.9940-02	5.3377-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3918 TO = 541.

P	3.7958-01	1.6019-01	1.4074-01	4.1549-01	1.9348-01	1.8194-01	2.2877-01	2.3077-01	7.0746-01
CP	-8.6884-02	-1.2902-01	-1.3276-01	-7.9986-02	-1.2263-01	-1.2485-01	-1.1585-01	-1.1547-01	-2.3905-02
P/PO1	3.8074-02	1.6068-02	1.4117-02	4.1676-02	1.9407-02	1.8249-02	2.2947-02	2.3147-02	7.0962-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.2 Q-INF = 5.215 P-INF = .8333 RE = .3925 TO = 541.

P	1.4119-01	1.7291-01	1.4356-01	9.5307-01	3.7656+00	5.6116+00	6.2609+00	1.3891-01	1.5320-01
CP	-1.3272-01	-1.2664-01	-1.3227-01	2.2959-02	5.6226-01	9.1624-01	1.0408+00	-1.3316-01	-1.3042-01
P/PO1	1.4138-02	1.7314-02	1.4375-02	9.5439-02	3.7706-01	5.6191-01	6.2693-01	1.3909-02	1.5340-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.2 Q-INF = 5.217 P-INF = .8336 RE = .3926 TO = 541.

P	1.5948-01	1.5851-01	1.6215-01	1.4609-01	1.8844-01	1.7925-01	1.5251-01	1.4364-01	1.5519-01
CP	-1.2922-01	-1.2941-01	-1.2871-01	-1.3179-01	-1.2367-01	-1.2543-01	-1.3056-01	-1.3226-01	-1.3004-01
P/PO1	1.5965-02	1.5867-02	1.6231-02	1.4624-02	1.8864-02	1.7943-02	1.5267-02	1.4379-02	1.5535-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.2 Q-INF = 5.217 P-INF = .8336 RE = .3926 TO = 541.

P	1.5815-01	1.6935-01	1.7025-01	1.7036-01	5.7857-01	2.8499+00	4.2392+00	5.2839+00	1.6627-01
CP	-1.2948-01	-1.2733-01	-1.2716-01	-1.2714-01	-4.8886-02	3.8652-01	6.5283-01	8.5309-01	-1.2792-01
P/PO1	1.5831-02	1.6953-02	1.7042-02	1.7053-02	5.7917-02	2.8529-01	4.2436-01	5.2893-01	1.6644-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.2 Q-INF = 5.229 P-INF = .8355 RE = .3935 TO = 541.

P	1.5529-01	1.5683-01	1.6877-01	1.7533-01	1.6375-01	1.8238-01	1.8539-01	1.7101-01	1.4639-01
CP	-1.3010-01	-1.2980-01	-1.2752-01	-1.2626-01	-1.2848-01	-1.2491-01	-1.2434-01	-1.2709-01	-1.3180-01
P/PO1	1.5509-02	1.5663-02	1.6855-02	1.7510-02	1.6354-02	1.8215-02	1.8515-02	1.7079-02	1.4620-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3929 TO = 541.

P	1.5948-01	1.6337-01	1.6675-01	1.6545-01	5.5737-01	2.7238+00	3.9447+00	4.9855+00	5.9118+00
CP	-1.2925-01	-1.2850-01	-1.2785-01	-1.2801-01	-5.3032-02	3.6194-01	5.9578-01	7.9515-01	9.7258-01
P/PO1	1.5952-02	1.6341-02	1.6679-02	1.6549-02	5.5751-02	2.7245-01	3.9457-01	4.9868-01	5.9133-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2266-01	6.1797-01	1.3359-01	7.0859-01	1.4609-01	8.1016-01	1.0969+00	1.3438-01
CP	-1.3630-01	-4.1426-02	-1.3420-01	-2.4067-02	-1.3181-01	-4.6135-03	5.0306-02	-1.3406-01
P/PO1	1.2269-02	6.1812-02	1.3363-02	7.0877-02	1.4613-02	8.1036-02	1.0971-01	1.3441-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.9219-01	8.8516-01	1.7109-01	2.0156-01	1.4297-01	1.7813-01	1.5469-01
CP	-1.2298-01	9.7523-03	-1.2702-01	-1.2119-01	-1.3241-01	-1.2567-01	-1.3016-01
P/PO1	1.9224-02	8.8538-02	1.7114-02	2.0161-02	1.4300-02	1.7817-02	1.5473-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	27.	301244	2.99	3	9.43	32.19	-5.01	143.06	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.1 Q-INF = 5.213 P-INF = .8329 RE = .3923 TO = 541.

P	1.7606-01	2.2055-01	6.6800-01	7.8252-01	8.4558-01	9.4695-01	1.0428+00	1.1267+00	1.0799+00
CP	-1.2602-01	-1.1748-01	-3.1644-02	-9.6737-03	2.4233-03	2.1870-02	4.0260-02	5.6737-02	4.7382-02
P/PO1	1.7638-02	2.2095-02	6.6921-02	7.8393-02	8.4711-02	9.4866-02	1.0447-01	1.1307-01	1.0819-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.2 Q-INF = 5.228 P-INF = .8354 RE = .3935 TO = 541.

P	1.0053+00	3.0531+00	7.0470+00	9.4276+00	9.6757+00	9.7447+00	9.6250+00	8.9984+00	7.7943+00
CP	3.2504-02	4.2420-01	1.1881+00	1.6435+00	1.6911+00	1.7141+00	1.6812+00	1.5615+00	1.3311+00
P/PO1	1.0042-01	3.0490-01	7.0389-01	9.4168-01	9.6656-01	9.7335-01	9.6140-01	8.9846-01	7.7853-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3926 TO = 541.

P	6.7809+00	8.9225-01	2.9354+00	6.7585+00	8.9922+00	9.4329+00	7.2194-01	8.8148-01	9.3494-01
CP	1.1403+00	1.1271-02	4.0299-01	1.1360+00	1.5642+00	1.6487+00	-2.1381-02	9.2059-03	1.9456-02
P/PO1	6.7889-01	8.9331-02	2.9389-01	6.7665-01	9.0028-01	9.4440-01	7.2280-02	8.8252-02	9.3605-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.2 Q-INF = 5.220 P-INF = .8341 RE = .3929 TO = 541.

P	8.7332-01	7.1650-01	2.4726+00	3.2013-01	5.8231-01	7.8193-01	8.3839-01	5.5245-01	6.2996-01
CP	7.5120-03	-2.2531-02	3.1389-01	-9.8465-02	-4.8248-02	-9.9967-03	8.1872-04	-5.3959-02	-3.9110-02
P/PO1	8.7368-02	7.1679-02	2.4736-01	3.2026-02	5.8255-02	7.8225-02	8.3873-02	5.5267-02	6.3022-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3929 TO = 541.

P	4.3446-01	3.3014-01	1.2048+00	3.7771+00	6.6741+00	7.8425+00	7.6626+00	8.2904-01	6.5746-01
CP	-7.6575-02	-9.6558-02	7.0985-02	5.6369-01	1.1186+00	1.3424+00	1.3079+00	-9.9594-04	-3.3661-02
P/PO1	4.3457-02	3.3022-02	1.2051-01	3.7781-01	6.6758-01	7.8445-01	7.6645-01	8.2925-02	6.5762-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.2 Q-INF = 5.223 P-INF = .8346 RE = .3931 TO = 541.

P	4.3224-01	1.6164-01	1.2721-01	4.4955-01	1.8290-01	1.7029-01	2.3379-01	2.4318-01	7.1496-01
CP	-7.7040-02	-1.2885-01	-1.3544-01	-7.3726-02	-1.2478-01	-1.2719-01	-1.1503-01	-1.1324-01	-2.2912-02
P/PO1	4.3214-02	1.6161-02	1.2718-02	4.4945-02	1.8286-02	1.7025-02	2.3374-02	2.4313-02	7.1480-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3927 TO = 541.

P	1.3992-01	1.7306-01	1.4282-01	9.2799-01	3.6443+00	5.4161+00	6.0429+00	1.4023-01	1.4869-01
CP	-1.3298-01	-1.2663-01	-1.3242-01	1.8040-02	5.3857-01	8.7811-01	9.9822-01	-1.3292-01	-1.3130-01
P/PO1	1.4002-02	1.7318-02	1.4292-02	9.2865-02	3.6469-01	5.4200-01	6.0472-01	1.4033-02	1.4880-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.2 Q-INF = 5.226 P-INF = .8351 RE = .3934 TO = 541.

P	1.5796-01	1.5776-01	1.5902-01	1.4470-01	1.7282-01	1.6580-01	1.4886-01	1.4080-01	1.5556-01
CP	-1.2957-01	-1.2961-01	-1.2937-01	-1.3211-01	-1.2673-01	-1.2807-01	-1.3131-01	-1.3285-01	-1.3003-01
P/PO1	1.5783-02	1.5763-02	1.5889-02	1.4458-02	1.7268-02	1.6567-02	1.4873-02	1.4068-02	1.5543-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.3 Q-INF = 5.232 P-INF = .8361 RE = .3934 TO = 541.

P	1.5491-01	1.6655-01	1.6877-01	1.7150-01	5.3867-01	2.6734+00	3.9767+00	5.0104+00	1.5373-01
CP	-1.3019-01	-1.2796-01	-1.2754-01	-1.2701-01	-5.6833-02	3.5117-01	6.0026-01	7.9783-01	-1.3041-01
P/PO1	1.5461-02	1.6623-02	1.6845-02	1.7117-02	5.3764-02	2.6683-01	3.9690-01	5.0008-01	1.5343-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.2 Q-INF = 5.230 P-INF = .8358 RE = .3937 TO = 541.

P	1.5453-01	1.5176-01	1.6380-01	1.7342-01	1.6325-01	1.6849-01	1.7578-01	1.5814-01	1.4015-01
CP	-1.3025-01	-1.3077-01	-1.2848-01	-1.2664-01	-1.2858-01	-1.2758-01	-1.2714-01	-1.2956-01	-1.3300-01
P/PO1	1.5428-02	1.5154-02	1.6354-02	1.7314-02	1.6299-02	1.6822-02	1.7550-02	1.5788-02	1.3993-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4090-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.2 Q-INF = 5.218 P-INF = .8337 RE = .3927 TO = 541.

P	1.6729-01	1.7066-01	1.7186-01	1.7744-01	5.0750-01	2.5158+00	3.6629+00	4.6871+00	5.6941+00
CP	-1.2773-01	-1.2708-01	-1.2685-01	-1.2579-01	-6.2525-02	3.2238-01	5.4225-01	7.3855-01	9.3155-01
P/PO1	1.6744-02	1.7081-02	1.7201-02	1.7759-02	5.0794-02	2.5180-01	3.6661-01	4.6912-01	5.6990-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2422-01	6.3125-01	1.3672-01	6.7891-01	1.4141-01	1.1773+00	1.0055+00	1.3438-01
CP	-1.3599-01	-3.8807-02	-1.3359-01	-2.9673-02	-1.3269-01	6.5859-02	3.2917-02	-1.3404-01
P/PO1	1.2433-02	6.3180-02	1.3684-02	6.7950-02	1.4153-02	1.1784-01	1.0063-01	1.3449-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.3906-01	2.6430+00	1.6172-01	2.0156-01	1.4297-01	1.8047-01	1.5469-01
CP	-1.3314-01	3.4676-01	-1.2880-01	-1.2116-01	-1.3239-01	-1.2520-01	-1.3015-01
P/PO1	1.3918-02	2.6453-01	1.6186-02	2.0174-02	1.4309-02	1.8063-02	1.5487-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH HYPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

ARNOLD ENGI... NG DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	28.	301244	2.99	3	9.43	-32.17	5.00	143.[illegible]	180.[illegible]

VALVE POS 2 PO = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3918 TO = 541.

P	1.7110-01	2.3425-01	7.4073-01	8.5[illegible]-01	9.1[illegible]-01	8.7[illegible]-01	1.0557+00	1.1437+00	1.[illegible]924+00
CP	-1.2692-01	-1.1479-01	-1.7492-02	4.0[illegible]-03	-2.2869-03	8.4[illegible]-03	4.3[illegible]-02	5.9917-02	5.[illegible]74-02
P/PO1	1.7165-02	2.3500-02	7.4311-02	8.5545-02	8.2251-02	8.7667-02	1.0541-01	1.1474-01	1.[illegible]959-01
S/R	.0000+00	6.4000-02	1.1600-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5[illegible]+00

VALVE POS 3 PO = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3917 TO = 541.

P	1.0053+00	3.0839+00	7.0940+00	9.4125+00	9.6456+00	9.7447+00	9.6[illegible]+00	8.9675+00	7.7476+00
CP	3.3372-02	4.3274-01	1.2333+00	1.6466+00	1.6935+00	1.7126+00	1.6966+00	1.5532+00	1.3284+00
P/PO1	1.0087-01	3.0942-01	7.1179-01	9.4437-01	9.6781-01	9.7775-01	9.6614-01	8.7777-01	7.7737-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3920 TO = 541.

P	6.7182+00	1.0106+00	3.3222+00	7.2736+00	9.5211+00	9.6823+00	8.7720-01	1.0413+00	1.[illegible]999+00
CP	1.1302+00	3.4255-02	4.7813-01	1.2367+00	1.6685+00	1.6944+00	8.6669-03	4.[illegible]157-02	5.1415-02
P/PO1	6.7367-01	1.0133-01	3.3313-01	7.2936-01	9.5472-01	9.7089-01	8.7751-02	1.0442-01	1.1027-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.1 Q-INF = 5.200 P-INF = .8310 RE = .3914 TO = 541.

P	1.0739+00	9.3416-01	3.1193+00	6.6366-01	8.7899-01	1.0469+00	1.1282+00	7.4904-01	8.4975-01
CP	4.6704-02	1.9835-02	4.4001-01	-3.1025-02	9.2274-03	4.1334-02	5.7148-02	-6.1391-03	3.6427-03
P/PO1	1.0783-01	9.3803-02	3.1322-01	6.7244-02	8.8264-02	1.0503-01	1.1327-01	8.0237-02	9.5347-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3919 TO = 541.

P	7.0851-01	5.7564-01	1.9181+00	5.3493+00	7.9137+00	8.7001+00	8.1766+00	1.1986+00	7.6445-01
CP	-2.3724-02	-4.9242-02	2.0857-01	8.6755-01	1.3610+00	1.5111+00	1.4105+00	7.0401-02	-1.2984-02
P/PO1	7.1056-02	5.7731-02	1.9236-01	5.3648-01	7.9417-01	8.7293-01	8.2003-01	1.2021-01	7.6717-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3918 TO = 541.

P	5.5923-01	3.3699-01	2.1201-01	9.2799-01	1.4461-01	2.6170-01	3.1209-01	2.6111-01	1.1649+00
CP	-5.2376-02	-9.5065-02	-1.1907-01	1.8455-02	-1.3202-01	-1.0953-01	-9.9846-02	-1.0964-01	6.3966-02
P/PO1	5.6094-02	3.3802-02	2.1266-02	9.3082-02	1.4505-02	2.6250-02	3.1305-02	2.6191-02	1.1685-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.209 P-INF = .8323 RE = .3920 TO = 541.

P	1.0575-01	2.4247-01	3.1711-01	1.4998+00	4.4166+00	6.1587+00	6.5724+00	8.5919-02	9.9060-02
CP	-1.3949-01	-1.1324-01	-9.8911-02	1.2423-01	6.8814-01	1.0226+00	1.1021+00	-1.4330-01	-1.4078-01
P/PO1	1.0602-02	2.4309-02	3.1793-02	1.4937-01	4.4280-01	6.1746-01	6.5894-01	8.6141-03	9.9316-03
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3912 TO = 541.

P	1.6939-01	1.6337-01	1.5968-01	1.2442-01	1.6972-01	1.5639-01	1.5206-01	9.1218-02	1.5629-01
CP	-1.2721-01	-1.2836-01	-1.2907-01	-1.3586-01	-1.2907-01	-1.2971-01	-1.3054-01	-1.4225-01	-1.2973-01
P/PO1	1.7017-02	1.6413-02	1.6042-02	1.2499-02	1.6046-02	1.5712-02	1.5276-02	9.1639-03	1.5702-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY RECORD DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3713 TO = 541.

P	1.6234-01	1.6057-01	1.5626-01	1.5389-01	6.0725-01	2.8815+00	4.3481+00	5.2901+00	1.3905-01
CP	-1.2857-01	-1.2891-01	-1.2974-01	-1.3014-01	-4.2989-02	3.9445-01	6.7656-01	8.5776-01	-1.3305-01
P/PO1	1.6306-02	1.6128-02	1.5695-02	1.5454-02	6.0936-02	2.8943-01	4.3675-01	5.3137-01	1.3967-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3908 TO = 541.

P	1.6101-01	1.5758-01	1.5718-01	1.6423-01	1.4914-01	1.6356-01	1.6575-01	1.5308-01	1.3245-01
CP	-1.2879-01	-1.2945-01	-1.2952-01	-1.2816-01	-1.3107-01	-1.2829-01	-1.2787-01	-1.3031-01	-1.3429-01
P/PO1	1.6193-02	1.5848-02	1.5808-02	1.6517-02	1.4999-02	1.6450-02	1.6670-02	1.5396-02	1.3320-02
S/R	9.3500-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	7.8900-01

VALVE POS 12 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3896 TO = 541.

P	1.6482-01	1.7160-01	1.7322-01	1.7859-01	4.7376-01	2.4573+00	3.5861+00	4.5939+00	5.5819+00
CP	-1.2796-01	-1.2665-01	-1.2633-01	-1.2530-01	6.4613-02	3.1526-01	5.4290-01	7.2758-01	9.1843-01
P/PO1	1.6625-02	1.7309-02	1.7472-02	1.8014-02	4.9806-02	2.4804-01	3.6173-01	4.6339-01	5.6306-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.5313-02	9.7344-01	8.5156-02	9.7734-01	8.3594-02	1.4164+00	1.0945+00	6.6406-02
CP	-1.4138-01	2.8239-02	-1.4334-01	2.8993-02	-1.4365-01	1.1386-01	5.1630-02	-1.4697-01
P/PO1	9.6143-03	9.8191-02	8.5898-03	9.8585-02	8.4322-03	1.4287-01	1.1041-01	6.6985-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	7.2656-02	1.4008+00	1.0313-01	5.0625-01	8.6719-02	1.7813-01	1.2188-01
CP	-1.4576-01	1.1079-01	-1.3987-01	-6.2005-02	-1.4304-01	-1.2533-01	-1.3625-01
P/PO1	7.3289-03	1.4130-01	1.0402-02	5.1066-02	8.7474-03	1.7968-02	1.2294-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	29.	301244	2.99	3	12.03	-48.72	4.01	173.0	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH HYPERSONIC SS WIND TUNNEL

VALVE POS 2 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3911 TO = 541.

P	1.6901-01	2.1735-01	6.8702-01	8.1513-01	8.9441-01	8.5899-01	1.0402+00	1.1287+00	1.0749+00
CP	-1.2727-01	-1.1797-01	-2.7583-02	-2.9398-03	1.2327-02	5.3376-03	4.0386-02	5.7413-02	4.7967-02
P/PO1	1.6984-02	2.1842-02	6.9041-02	8.1915-02	8.9882-02	8.6232-02	1.0453-01	1.1343-01	1.0802-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3903 TO = 541.

P	9.7741-01	2.3856+00	6.9371+00	9.2247+00	9.5367+00	9.5732+00	9.4381+00	8.8264+00	7.5720+00
CP	2.8682-02	4.1592-01	1.1779+00	1.6190+00	1.6792+00	1.6862+00	1.6607+00	1.5422+00	1.3542+00
P/PO1	9.8423-02	3.0064-01	6.9855-01	9.2940-01	9.6032-01	9.6400-01	9.5039-01	8.8880-01	7.6450-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3904 TO = 541.

P	6.5773+00	1.0500+00	3.3982+00	7.3205+00	9.4589+00	9.6200+00	1.0480+00	1.0987+00	1.1549+00
CP	1.1081+00	4.2616-02	4.9529-01	1.2514+00	1.6636+00	1.6947+00	4.2277-02	5.2610-02	6.2843-02
P/PO1	6.6211-01	1.0570-01	3.4209-01	7.3692-01	9.5219-01	9.6840-01	1.0550-01	1.1060-01	1.1626-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.0 Q-INF = 5.198 P-INF = .8289 RE = .3904 TO = 541.

P	1.1348+00	1.0204+00	3.3539+00	6.8972-01	9.3039-01	1.1729+00	1.4387+00	9.2893-01	9.4744-01
CP	5.8965-02	3.6914-02	4.8673-01	-2.6835-02	1.9559-02	6.6306-02	1.1755-01	1.9276-02	2.2846-02
P/PO1	1.1424-01	1.0272-01	3.3762-01	6.9431-02	9.3659-02	1.1807-01	1.4483-01	9.3511-02	9.5375-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8806-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3904 TO = 541.

P	8.6825-01	7.2218-01	2.2950+00	5.9313+00	8.3543+00	8.9495+00	8.2545+00	1.1062+00	9.0245-01
CP	7.6052-03	-2.0556-02	2.8269-01	9.8376-01	1.4509+00	1.5657+00	1.4317+00	5.3487-02	1.4199-02
P/PO1	8.7417-02	7.2711-02	2.3107-01	5.9717-01	8.4113-01	9.0105-01	8.3107-01	1.1138-01	9.0860-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3909 TO = 541.

P	6.7732-01	4.4587-01	3.0178-01	1.2239+00	1.5166-01	2.3835-01	3.6710-01	2.8409-01	1.4949+00
CP	-2.9369-02	-7.3937-02	-1.0168-01	7.5889-02	-1.3059-01	-1.1380-01	-8.9104-02	-1.0509-01	1.2807-01
P/PO1	6.8108-02	4.4835-02	3.0345-02	1.2307-01	1.5250-02	2.4018-02	3.6915-02	2.8567-02	1.5032-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.162 P-INF = .8248 RE = .3885 TO = 541.

P	8.5552-02	2.7352-01	4.5652-01	1.8610+00	4.7995+00	6.4237+00	6.7126+00	8.5351-02	7.7780-02
CP	-1.4322-01	-1.0680-01	-7.1347-02	2.0075-01	7.7006-01	1.0847+00	1.1407+00	-1.4326-01	-1.4472-01
P/PO1	8.6555-03	2.7672-02	4.6187-02	1.8828-01	4.8557-01	6.4990-01	6.7913-01	8.6351-03	7.8692-03
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3898 TO = 541.

P	1.7644-01	1.5963-01	1.5788-01	1.4331-01	1.6476-01	1.6132-01	1.5662-01	9.2542-02	1.2181-01
CP	-1.2573-01	-1.2897-01	-1.2931-01	-1.3212-01	-1.2798-01	-1.2865-01	-1.2955-01	-1.4193-01	-1.3628-01
P/PO1	1.7789-02	1.6095-02	1.5918-02	1.4449-02	1.6612-02	1.6265-02	1.5791-02	9.3304-03	1.2281-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.171 P-INF = .8263 RE = .3892 TO = 541.

P	1.6710-01	1.5945-01	1.5902-01	1.5083-01	6.3718-01	2.9193+00	4.4377+00	5.3398+00	1.4914-01
CP	-1.2748-01	-1.2896-01	-1.2904-01	-1.3063-01	-3.6579-02	4.0472-01	6.9836-01	8.7280-01	-1.3095-01
P/PO1	1.6874-02	1.6101-02	1.6058-02	1.5231-02	6.4343-02	2.0477-01	4.4813-01	5.3923-01	1.5360-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 29.9 Q-INF = 5.164 P-INF = .8252 RE = .3887 TO = 541.

P	1.6253-01	1.5702-01	1.5681-01	1.6461-01	1.5065-01	1.6177-01	1.6621-01	1.5446-01	1.3612-01
CP	-1.2832-01	-1.2939-01	-1.2943-01	-1.2792-01	-1.3062-01	-1.2847-01	-1.2761-01	-1.2988-01	-1.3344-01
P/PO1	1.6436-02	1.5878-02	1.5857-02	1.6646-02	1.5235-02	1.6359-02	1.6808-02	1.5620-02	1.3765-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0000-01	2.8900-01

VALVE POS 12 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3896 TO = 541.

P	1.6348-01	1.7085-01	1.7096-01	1.7495-01	4.8381-01	2.4149+00	3.5284+00	4.5193+00	5.5010+00
CP	-1.2822-01	-1.2680-01	-1.2678-01	-1.2601-01	-6.6369-02	3.0653-01	5.2155-01	7.1289-01	9.0246-01
P/PO1	1.6486-02	1.7228-02	1.7240-02	1.7642-02	4.8787-02	2.4351-01	3.5580-01	4.5572-01	5.5471-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.0625-02	1.0984+00	7.8906-02	1.1320+00	7.3438-02	1.6523+00	1.2227+00	6.2500-02
CP	-1.4229-01	5.2318-02	-1.4456-01	5.8805-02	-1.4561-01	1.5928-01	7.6305-02	-1.4772-01
P/PO1	9.1386-03	1.1077-01	7.9568-03	1.1415-01	7.4054-03	1.6662-01	1.2329-01	6.3025-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	8.7500-02	1.4797+00	7.5000-02	7.3359-01	6.0938-02	2.2031-01	8.9063-02
CP	-1.4290-01	1.2594-01	-1.4531-01	-1.8135-02	-1.4803-01	-1.1725-01	-1.4260-01
P/PO1	8.8234-03	1.4921-01	7.5629-03	7.3975-02	6.1449-03	2.2216-02	8.9810-03
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[redacted]

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	30.	301244	2.99	3	13.43	-42.40	9.01	145.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON [illegible] FACILITIES FACILITY
40 - [illegible] 6T TUNNEL

VALVE POS 2 PO = 30.0 Q-INF = 5.196 P-INF = .8302 RE = .3910 TO = 541.

P	1.9164-01	2.0868-01	6.2996-01	7.8754-01	8.6871-01	7.9462-01	9.5224-01	1.0313+00	9.2994-01
CP	-1.2291-01	-1.1963-01	-3.8546-02	-8.2164-03	7.4069-03	-6.8524-03	2.3484-02	3.8702-02	1.9193-02
P/PO1	1.9261-02	2.0974-02	6.3316-02	7.9154-02	8.7313-02	7.9867-02	9.5709-02	1.0366-01	9.3468-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3905 TO = 541.

P	8.4540-01	2.6600+00	6.5604+00	9.0842+00	9.5056+00	9.6044+00	9.5204+00	8.9832+00	7.8409+00
CP	3.1490-03	3.5289-01	1.1047+00	1.5911+00	1.6723+00	1.6914+00	1.6713+00	1.5716+00	1.3515+00
P/PO1	8.5090-02	2.6773-01	6.6031-01	9.1433-01	9.5674-01	9.6668-01	9.5622-01	9.0416-01	7.8419-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3912 TO = 541.

P	6.8592+00	9.0211-01	3.0369+00	7.0083+00	9.3811+00	9.6979+00	9.9623-01	1.0198+00	1.0599+00
CP	1.1598+00	1.3755-02	4.2444-01	1.1885+00	1.6449+00	1.7059+00	3.1861-02	3.6208-02	4.4117-02
P/PO1	6.8909-01	9.0628-02	3.0509-01	7.0406-01	9.4244-01	9.7427-01	1.0098-01	1.0235-01	1.0648-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3909 TO = 541.

P	1.0003+00	8.8486-01	3.0369+00	6.2096-01	8.4044-01	1.0917+00	1.3947+00	8.6400-01	8.7745-01
CP	3.2817-02	1.0595-02	4.2498-01	-4.0221-02	2.0412-03	5.0416-02	1.0877-01	6.5787-03	9.1676-03
P/PO1	1.0058-01	8.8978-02	3.0537-01	6.2441-02	8.4511-02	1.0977-01	1.4025-01	8.6881-02	8.8232-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3909 TO = 541.

P	7.4416-01	6.2222-01	2.0938+00	5.7377+00	8.2765+00	9.0743+00	8.4725+00	9.8386-01	8.2495-01
CP	-1.6499-02	-3.9978-02	2.4339-01	9.4506-01	1.4339+00	1.5875+00	1.4717+00	2.9659-02	-9.4120-04
P/PO1	7.4829-02	6.2568-02	2.1055-01	5.7696-01	8.3226-01	9.1247-01	8.5196-01	9.8933-02	8.2954-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3898 TO = 541.

P	6.1048-01	4.0320-01	2.7020-01	1.1487+00	1.8744-01	2.4601-01	3.3455-01	2.5927-01	1.3447+00
CP	-4.1409-02	-8.1935-02	-1.0767-01	6.2024-02	-1.2360-01	-1.1211-01	-9.5192-02	-1.0973-01	1.0378-01
P/PO1	6.1560-02	4.0658-02	2.7247-02	1.1583-01	1.8901-02	2.4699-02	3.3736-02	2.6145-02	1.3764-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3911 TO = 541.

P	8.8601-02	2.7900-01	4.4645-01	1.8811+00	4.9910+00	6.6732+00	7.0085+00	9.0082-02	1.5500-01
CP	-1.4274-01	-1.0610-01	-7.3879-02	2.0220-01	8.0067-01	1.1244+00	1.1889+00	-1.4246-01	-1.2997-01
P/PO1	8.9038-03	2.8037-02	4.4865-02	1.8903-01	5.0156-01	6.7061-01	7.0431-01	9.0526-03	1.5577-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3913 TO = 541.

P	1.7547-01	1.6636-01	1.6419-01	1.5117-01	1.8391-01	1.7656-01	1.6438-01	9.1407-02	1.5629-01
CP	-1.2604-01	-1.2779-01	-1.2821-01	-1.3072-01	-1.2442-01	-1.2583-01	-1.2817-01	-1.4221-01	-1.2973-01
P/PO1	1.7626-02	1.6711-02	1.6493-02	1.5185-02	1.8473-02	1.7735-02	1.6512-02	9.1815-03	1.5699-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

[redacted]

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3919 TO = 541.

P	1.6748-01	1.6244-01	1.6546-01	1.5389-01	6.9079-01	3.1211+00	4.7387+00	5.6693+00	1.5455-01
CP	-1.2763-01	-1.2860-01	-1.2802-01	-1.3024-01	-2.7126-02	4.3761-01	7.5028-01	9.2900-01	-1.3011-01
P/PO1	1.6797-02	1.6291-02	1.6594-02	1.5434-02	6.9280-03	3.1301-01	4.7525-01	5.6857-01	1.5500-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.1 Q-INF = 5.205 P-INF .8318 RE = .3918 TO = 541.

P	1.6539-01	1.6019-01	1.6362-01	1.7112-01	1.5519-01	1.8014-01	1.8950-01	1.7009-01	1.4070-01
CP	-1.2802-01	-1.2902-01	-1.2836-01	-1.2692-01	-1.2998-01	-1.2519-01	-1.2339-01	-1.2712-01	-1.3276-01
P/PO1	1.6592-02	1.6071-02	1.6414-02	1.7167-02	1.5569-02	1.8072-02	1.9011-02	1.7064-02	1.4115-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3918 TO = 541.

P	1.7587-01	1.7626-01	1.7953-01	1.7752-01	5.3493-01	2.6293+00	3.8230+00	4.8363+00	5.7718+00
CP	-1.2601-01	-1.2594-01	-1.2531-01	-1.2570-01	-5.7044-02	3.4523-01	5.7453-01	7.6917-01	9.4886-01
P/PO1	1.7641-02	1.7679-02	1.8008-02	1.7806-02	5.3656-02	2.6373-01	3.8347-01	4.8511-01	5.7894-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	7.3438-02	1.1039+00	7.9688-02	1.2438+00	7.1094-02	1.7109+00	1.3555+00	4.8438-02
CP	-1.4569-01	5.2245-02	-1.4449-01	7.9106-02	-1.4614-01	1.6884-01	1.0057-01	-1.5049-01
P/PO1	7.3662-03	1.1073-01	7.9931-03	1.2475-01	7.1311-03	1.7162-01	1.3596-01	4.8585-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.4141-01	1.4383+00	8.4375-02	5.8359-01	7.7344-02	1.9219-01	1.2656-01
CP	-1.3263-01	1.1647-01	-1.4359-01	-4.7697-02	-1.4494-01	-1.2788-01	-1.3548-01
P/PO1	1.4184-02	1.4427-01	8.4633-03	5.8538-02	7.7580-03	1.9277-02	1.2695-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	31.	301244	2.99	3	11.17	-26.76	5.00	145.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.2 Q-INF = 5.214 P-INF = .8332 RE = .3724 TO = 541.

P	1.8240-01	2.3470-01	6.8814-01	7.7750-01	7.9414-01	8.1747-01	9.7294-01	1.0436+00	9.3994-01
CP	-1.2481-01	-1.1478-01	-2.7821-02	-1.0982-02	-7.4853-03	-3.0173-03	2.6799-02	4.0387-02	2.0473-02
P/PO1	1.8267-02	2.3505-02	6.8917-02	7.7867-02	7.9536-02	3.1869-02	9.7440-02	1.0454-01	9.4135-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.2 Q-INF = 5.226 P-INF = .8351 RE = .3734 TO = 541.

P	8.6317-01	2.7337+00	6.7331+00	9.2715+00	9.6923+00	9.7759+00	9.6873+00	9.1870+00	7.9465+00
CP	5.3614-03	3.6326-01	1.1285+00	1.6142+00	1.6947+00	1.7107+00	1.6937+00	1.5380+00	1.3762+00
P/PO1	8.6245-02	2.7314-01	6.7274-01	9.2638-01	9.6842-01	9.7677-01	9.6792-01	9.1793-01	7.9508-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0345+00	2.0850+00	2.3540+00	2.6200+00

VALVE POS 4 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3718 TO = 541.

P	7.0001+00	8.7747-01	2.9608+00	6.9615+00	9.3811+00	9.7759+00	9.4965-01	9.6389-01	1.0049+00
CP	1.1848+00	9.7503-03	4.0891-01	1.1774+00	1.6421+00	1.7180+00	2.2616-02	2.5350-02	3.3235-02
P/PO1	7.0215-01	8.8015-02	2.9698-01	6.9827-01	9.4098-01	9.8657-01	9.5255-02	9.6683-02	1.0080-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.2 Q-INF = 5.218 P-INF = .8337 RE = .3727 TO = 541.

P	9.3679-01	8.1092-01	2.8150+00	6.1529-01	7.7104-01	9.1902-01	1.1161+00	7.4664-01	7.7745-01
CP	1.9754-02	-4.3714-03	3.7973-01	-4.1866-02	-1.2013-02	1.6348-02	5.2768-02	-1.6691-02	-1.0785-02
P/PO1	9.3761-02	8.1162-02	2.8174-01	6.1582-02	7.7172-02	9.1982-02	1.1111-01	7.4729-02	7.7813-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3719 TO = 541.

P	6.1270-01	4.9576-01	1.7448+00	5.1552+00	7.8876+00	8.8560+00	8.4102+00	1.0813+00	6.9496-01
CP	-4.2123-02	-6.4578-02	1.7531-01	8.3026-01	1.3550+00	1.5410+00	1.4554+00	4.7861-02	-2.6327-02
P/PO1	6.1448-02	4.9722-02	1.7499-01	5.1701-01	7.9105-01	8.8817-01	8.4346-01	1.0844-01	6.9697-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.1 Q-INF = 5.210 P-INF = .8326 RE = .3721 TO = 541.

P	4.9685-01	2.8950-01	1.9036-01	8.7783-01	1.7182-01	2.3437-01	3.1434-01	2.4824-01	1.1599+00
CP	-6.4433-02	-1.0423-01	-1.2326-01	8.6987-03	-1.2682-01	-1.1481-01	-9.9462-02	-1.1215-01	6.2833-02
P/PO1	4.9798-02	2.9016-02	1.9079-02	8.7982-02	1.7221-02	2.3490-02	3.1505-02	2.4880-02	1.1626-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3718 TO = 541.

P	9.6413-02	2.3470-01	3.1756-01	1.5174+00	4.6272+00	6.3925+00	6.8528+00	8.9893-02	1.0994-01
CP	-1.4127-01	-1.1471-01	-9.8796-02	1.3167-01	7.2900-01	1.0681+00	1.1565+00	-1.4253-01	-1.3868-01
P/PO1	9.6708-03	2.3542-02	3.1853-02	1.5220-01	4.6413-01	6.4120-01	6.8737-01	9.0167-03	1.1028-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3904 TO = 541.

P	1.6329-01	1.5907-01	1.5810-01	1.2390-01	1.7333-01	1.6625-01	1.5343-01	9.0271-02	1.5629-01
CP	-1.2832-01	-1.2913-01	-1.2932-01	-1.3591-01	-1.2638-01	-1.2775-01	-1.3022-01	-1.4239-01	-1.2966-01
P/PO1	1.6438-02	1.6013-02	1.5915-02	1.2472-02	1.7448-02	1.6736-02	1.5445-02	9.0872-03	1.5734-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3913 TO = 541.

P	1.5910-01	1.5851-01	1.5718-01	1.4934-01	6.5464-01	3.0643+00	4.6170+00	5.5885+00	1.3032-01
CP	-1.2920-01	-1.2931-01	-1.2957-01	-1.3126-01	-3.3894-02	4.2453-01	7.2816-01	9.1479-01	-1.3319-01
P/PO1	1.5979-02	1.5919-02	1.5785-02	1.4998-02	6.5745-02	3.0775-01	4.6369-01	5.6126-01	1.3891-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3916 TO = 541.

P	1.5643-01	1.5253-01	1.5460-01	1.6117-01	1.4259-01	1.7611-01	1.7854-01	1.6411-01	1.4052-01
CP	-1.2973-01	-1.3048-01	-1.3008-01	-1.2982-01	-1.3239-01	-1.2595-01	-1.2548-01	-1.2826-01	-1.3279-01
P/PO1	1.5698-02	1.5307-02	1.5515-02	1.6174-02	1.4309-02	1.7673-02	1.7917-02	1.6469-02	1.4101-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3913 TO = 541.

P	1.6253-01	1.6636-01	1.6690-01	1.7304-01	5.4366-01	2.6734+00	3.8678+00	4.8985+00	5.8185+00
CP	-1.2854-01	-1.2780-01	-1.2770-01	-1.2652-01	-5.5237-02	3.5435-01	5.8407-01	7.8228-01	9.5922-01
P/PO1	1.6323-02	1.6708-02	1.6762-02	1.7378-02	5.4600-02	2.6949-01	3.8845-01	4.9196-01	5.8435-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00
CEC	8.5156-02	9.5938-01	8.5156-02	1.0273+00	7.3438-02	1.4211+00	1.1313+00	6.3281-02	
CP	-1.4342-01	2.4713-02	-1.4342-01	3.7785-02	-1.4567-01	1.1351-01	5.7768-02	-1.4762-01	
P/PO1	8.5523-03	9.6351-02	8.5523-03	1.0318-01	7.3754-03	1.4272-01	1.1361-01	6.3554-03	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	
CEC	2.3672-01	1.3984+00	9.8438-02	4.0547-01	1.0547-01	1.7813-01	1.1484-01		
CP	-1.1427-01	1.0915-01	-1.4086-01	-8.1814-02	-1.3951-01	-1.2554-01	-1.3771-01		
P/PO1	2.3774-02	1.4045-01	9.8861-03	4.0721-02	1.0592-02	1.7889-02	1.1534-02		
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00		

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	32.	301244	2.99	3	14.66	-37.32	8.83	146.75	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3917 TO = 541.

P	1.9949-01	1.8722-01	5.8520-01	7.7500-01	8.2245-01	7.4634-01	8.7779-01	9.4341-01	8.1245-01
CP	-1.2146-01	-1.2382-01	-4.7353-02	-1.0586-02	-1.7685-03	-1.6393-02	9.2490-03	2.1564-02	-3.6892-03
P/PO1	2.0016-02	1.8785-02	5.8717-02	7.7761-02	8.2522-02	7.4890-02	8.8275-02	9.4709-02	8.1519-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3901 TO = 541.

P	7.1631-01	2.4020+00	6.2465+00	8.9574+00	9.4745+00	9.6200+00	9.5627+00	9.1713+00	8.0587+00
CP	-2.1603-02	3.0360-01	1.0453+00	1.5687+00	1.6680+00	1.6961+00	1.6851+00	1.6096+00	1.3949+00
P/PO1	7.2164-02	2.4199-01	6.2930-01	9.0261-01	9.5450-01	9.6916-01	9.6339-01	9.2396-01	8.1187-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3905 TO = 541.

P	7.1254+00	7.8627-01	2.7389+00	6.7117+00	9.1944+00	9.7447+00	9.4965-01	9.4141-01	9.6494-01
CP	1.2153+00	-8.0581-03	3.6876-01	1.1354+00	1.6146+00	1.7208+00	2.3472-02	2.1882-02	2.6423-02
P/PO1	7.1807-01	7.7237-02	2.7601-01	6.7639-01	9.2658-01	9.8203-01	9.5782-02	9.4872-02	9.7243-02
S/R	2.8900+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3918 TO = 541.

P	8.9871-01	7.6901-01	2.7642+00	5.3582-01	7.6076-01	1.0003+00	1.3378+00	8.0407-01	8.0745-01
CP	1.2831-02	-1.2081-02	3.7116-01	-5.6873-02	-1.3766-02	3.2337-02	9.7171-02	-5.3473-03	-4.6982-03
P/PO1	9.0146-02	7.7136-02	2.7727-01	5.3746-02	7.6397-02	1.0033-01	1.3419-01	8.0653-02	8.0992-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3913 TO = 541.

P	6.5281-01	5.4791-01	1.9181+00	5.5435+00	8.2921+00	9.1834+00	8.6750+00	9.2393-01	7.5945-01
CP	-3.4245-02	-5.4419-02	2.0909-01	9.0633-01	1.4349+00	1.6064+00	1.5086+00	1.7897-02	-1.3639-02
P/PO1	6.5562-02	5.5027-02	1.9263-01	5.5674-01	8.3278-01	9.2229-01	8.7123-01	9.2791-02	7.6323-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3911 TO = 541.

P	5.6592-01	3.5571-01	2.4133-01	1.0735+00	1.9902-01	2.5095-01	3.0985-01	2.4272-01	1.2899+00
CP	-5.0889-02	-9.1341-02	-1.1335-01	4.6783-02	-1.2149-01	-1.1150-01	-1.0017-01	-1.1308-01	8.8439-02
P/PO1	5.6871-02	3.5746-02	2.4252-02	1.0788-01	2.0001-02	2.5218-02	3.1138-02	2.4392-02	1.2963-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3916 TO = 541.

P	8.8601-02	2.5982-01	4.3414-01	1.8735+00	5.1314+00	6.8603+00	7.2577+00	9.1596-02	1.8564-01
CP	-1.4277-01	-1.0986-01	-7.6364-02	2.0024-01	8.2630-01	1.1585+00	1.2349+00	-1.4219-01	-1.2412-01
P/PO1	8.8913-03	2.6073-02	4.3567-02	1.8801-01	5.1494-01	6.8844-01	7.2833-01	9.1919-03	1.8630-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.1 Q-INF = 5.197 P-INF = .8305 RE = .3912 TO = 541.

P	1.8379-01	1.8356-01	1.8404-01	1.5949-01	1.9852-01	1.8687-01	1.5708-01	8.7811-02	1.6762-01
CP	-1.2443-01	-1.2447-01	-1.2438-01	-1.2911-01	-1.2160-01	-1.2384-01	-1.2957-01	-1.4290-01	-1.2754-01
P/PO1	1.8466-02	1.8444-02	1.8492-02	1.6025-02	1.9947-02	1.8776-02	1.5783-02	8.8230-03	1.6842-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3920 TO = 541.

P	1.7187-01	1.7352-01	1.7412-01	1.7112-01	7.3942-01	3.2850+00	4.9757+00	5.9574+00	1.3575-01
CP	-1.2679-01	-1.2647-01	-1.2636-01	-1.2693-01	-1.7804-02	4.7099-01	7.9563-01	9.8416-01	-1.3373-01
P/PO1	1.7234-02	1.7399-02	1.7460-02	1.7159-02	7.4145-02	3.2945-01	4.9893-01	5.9738-01	1.3612-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.1 Q-INF = 5.203 P-INF = .8314 RE = .3916 TO = 541.

P	1.7396-01	1.6730-01	1.7277-01	1.8122-01	1.6980-01	1.9493-01	2.0000-01	1.9353-01	1.6657-01
CP	-1.2636-01	-1.2764-01	-1.2659-01	-1.2496-01	-1.2716-01	-1.2233-01	-1.2135-01	-1.2260-01	-1.2778-01
P/PO1	1.7460-02	1.6791-02	1.7340-02	1.8189-02	1.7043-02	1.9565-02	2.0074-02	1.9425-02	1.6718-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3917 TO = 541.

P	1.8887-01	1.9452-01	2.0028-01	2.0017-01	5.8356-01	2.8121+00	4.0727+00	5.0974+00	6.0207+00
CP	-1.2350-01	-1.2242-01	-1.2131-01	-1.2133-01	-4.7668-02	3.8052-01	6.2274-01	8.1962-01	9.9703-01
P/PO1	1.8950-02	1.9518-02	2.0096-02	2.0085-02	5.8552-02	2.8216-01	4.0964-01	5.1146-01	6.0410-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	7.3438-02	1.1672+00	7.4219-02	1.3211+00	6.9531-02	1.7703+00	1.4828+00	5.7031-02
CP	-1.4568-01	6.4470-02	-1.4553-01	9.4042-02	-1.4643-01	1.8035-01	1.2511-01	-1.4884-01
P/PO1	7.3685-03	1.1711-01	7.4469-03	1.3255-01	6.9765-03	1.7763-01	1.4878-01	5.7223-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	2.2656-01	1.5234+00	1.0078-01	4.6406-01	1.1719-01	2.1563-01	1.5703-01
CP	-1.1626-01	1.3292-01	-1.4043-01	-7.0629-02	-1.3728-01	-1.1836-01	-1.2962-01
P/PO1	2.2733-02	1.5286-01	1.0112-02	4.6562-02	1.1758-02	2.1635-02	1.5756-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	33.	301244	2.99	3	13.00	-22.83	5.01	147.01	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 30.0 Q-INF = 5.194 P-INF = .8396 RE = .3909 TO = 541.

P	1.9302-01	2.1964-01	6.2772-01	8.0254-01	7.4731-01	7.6724-01	8.7720-01	9.3642-01	1.0245-01
CP	-1.2263-01	-1.1751-01	-3.8939-02	-5.2714-03	-1.579[illegible]-02	-1.1691-02	9.0938-03	2.0495-02	-5.2977-03
P/PO1	1.9407-02	2.2082-02	6.3111-02	8.0692-02	7.5135-02	7.7340-02	8.8194-02	9.4149-02	8.0579-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3[illegible]0-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3913 TO = 541.

P	7.1519-01	2.4081+00	6.3093+00	9.0842+00	9.5678+00	9.7603+00	9.7145+00	9.3281+00	8.1988+00
CP	-2.2248-02	3.0333-01	1.0536+00	1.5973+00	1.6803+00	1.7173+00	1.7093+00	1.6342+00	1.4170+00
P/PO1	7.1827-02	2.4185-01	6.3365-01	9.1233-01	9.6030-01	9.8023-01	9.7603-01	9.3683-01	8.2341-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9780+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 30.1 Q-INF = 5.209 P-INF = .8323 RE = .3920 TO = 541.

P	7.2663+00	7.3944-01	2.6121+00	6.5712+00	9.1478+00	9.8671+00	9.1601-01	8.7898-01	9.0494-01
CP	1.2353+00	-1.7829-02	3.4170-01	1.1918+00	1.5965+00	1.7231+00	1.6073-02	8.9633-03	1.3947-02
P/PO1	7.2851-01	7.4135-02	2.6188-01	6.5882-01	9.1714-01	9.8324-01	9.1838-02	8.8126-02	9.0729-02
S/R	2.8800+00	1.7420+00	1.7970+00	1.9540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3920 TO = 541.

P	8.1493-01	6.7879-01	2.5233+00	5.9145-01	7.5819-01	9.6980-01	1.1774+00	6.9170-01	7.0996-01
CP	-3.3[illegible]96-03	-2.9452-02	3.2474-01	-4.6224-02	-1.4205-02	2.6427-02	6.6284-02	-2.6973-02	-2.3467-02
P/PO1	8.1717-02	6.8065-02	2.5302-01	5.9307-02	7.6027-02	9.7246-02	1.1806-01	6.9360-02	7.1190-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3917 TO = 541.

P	5.1801-01	4.2258-01	1.5742+00	4.9046+00	7.7476+00	8.9495+00	8.5971+00	9.8386-01	6.3496-01
CP	-6.0262-02	-7.8599-02	1.4267-01	7.8258-01	1.3283+00	1.5598+00	1.4921+00	2.9246-02	-3.7792-02
P/PO1	5.1976-02	4.2400-02	1.5795-01	4.9211-01	7.7737-01	8.9797-01	8.6260-01	9.8718-02	6.3710-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3907 TO = 541.

P	4.6900-01	2.5160-01	1.7096-01	8.2265-01	1.8391-01	2.1106-01	3.1209-01	2.3996-01	1.1149+00
CP	-6.9441-02	-1.1132-01	-1.2686-01	-1.3098-03	-1.2436-01	-1.1913-01	-9.9668-02	-1.1356-01	5.4998-02
P/PO1	4.7183-02	2.5312-02	1.7199-02	8.2761-02	1.8502-02	2.1234-02	3.1398-02	2.4141-02	1.1217-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3921 TO = 541.

P	1.0461-01	2.1461-01	3.1486-01	1.5425+00	4.7484+00	6.6108+00	7.1175+00	9.5192-02	1.5185-01
CP	-1.3971-01	-1.1860-01	-9.9353-02	1.3630-01	7.5172-01	1.1092+00	1.2065+00	-1.4152-01	-1.3064-01
P/PO1	1.0486-02	2.1513-02	3.1562-02	1.5462-01	4.7600-01	6.6269-01	7.1348-01	9.5423-03	1.5222-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3921 TO = 541.

P	1.6653-01	1.6375-01	1.6059-01	1.2852-01	1.8038-01	1.7163-01	1.5434-01	9.6706-02	1.5816-01
CP	-1.2783-01	-1.2836-01	-1.2897-01	-1.3512-01	-1.2517-01	-1.2685-01	-1.3017-01	-1.4123-01	-1.2943-01
P/PO1	1.6694-02	1.6414-02	1.6098-02	1.2883-02	1.8082-02	1.7205-02	1.5471-02	9.6941-03	1.5854-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40-INCH SUPERSONIC WIND TUNNEL

VALVE POS 10 PO = 30. Q-INF = 5.194 P-INF = .8300 RE = .3467 TO = 541.

P	1.6310-01	1.6412-01	1.6252-01	1.5102-01	7.0202-01	3.2594+00	4.3652+00	5.0261+00	1.5761-01
CP	-1.2839-01	-1.2826-01	-1.2850-01	-1.3072-01	-2.4634-02	4.6731-01	7.8461-01	9.8116-01	-1.3086-01
P/PO1	1.6398-02	1.6501-02	1.6339-02	1.5184-02	7.0581-02	3.2774-01	4.9317-01	5.9581-01	1.5142-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3416 TO = 541.

P	1.6101-01	1.5776-01	1.6178-01	1.6906-01	1.4310-01	1.8552-01	1.8950-01	1.7836-01	1.6161-01
CP	-1.2881-01	-1.2943-01	-1.2866-01	-1.2745-01	-1.3226-01	-1.2429-01	-1.2333-01	-1.2547-01	-1.2869-01
P/PO1	1.6180-02	1.5854-02	1.6258-02	1.6889-02	1.4336-02	1.8544-02	1.9043-02	1.7924-02	1.6241-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01

VALVE POS 12 PO = 30.0 Q-INF = 5.195 P-INF = .8301 RE = .3415 TO = 541.

P	1.6634-01	1.7352-01	1.7547-01	1.4655-01	5.9478-01	2.8341+00	4.1688+00	5.2155+00	6.1607+00
CP	-1.2777-01	-1.2639-01	-1.2602-01	-1.3158-01	-4.5298-02	3.9731-01	6.4270-01	8.4419-01	1.0261+00
P/PO1	1.6721-02	1.7443-02	1.7639-02	1.4732-02	5.9790-02	2.9092-01	4.1907-01	5.2429-01	6.1931-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.0625-02	1.0923+00	8.9844-02	1.1453+00	7.7344-02	1.5680+00	1.4414+00	6.6406-02	
CP	-1.4735-01	3.3156-02	-1.4250-01	6.0679-02	-1.4490-01	1.4204-01	1.1768-01	-1.4701-01	
P/PO1	9.1100-03	1.0076-01	9.0315-03	1.1513-01	7.7749-03	1.5766-01	1.4490-01	6.6755-03	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	2.2813-01	1.0641+00	1.2188-01	3.2344-01	1.2656-01	1.7813-01	1.3594-01	
CP	-1.1588-01	4.5038-02	-1.3633-01	-9.7532-02	-1.3543-01	-1.2550-01	-1.3363-01	
P/PO1	2.2932-02	1.0696-01	1.2251-02	3.2513-02	1.2723-02	1.7906-02	1.3665-02	
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	34.	301244	1.99	3	8.02	.06	-.01	143.02	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] FACILITY
[illegible] WIND TUNNEL

VALVE POS 2 PO = 20.1 Q-INF = 7.248 P-INF =2.6146 RE = .4381 TO = 535.

P	5.4698-01	7.5421-01	2.3256+00	2.7874+00	2.7380+00	2.3707+00	2.6575+00	2.7165+00	1.9562+00
CP	-2.6527-01	-2.5668-01	-3.9073-02	2.3843-02	1.7026-02	-3.3647-02	5.9213-03	1.4065-02	-9.0645-02
P/PO1	3.7428-02	5.1609-02	1.5414-01	1.9074-01	1.3735-01	1.6222-01	1.8195-01	1.8589-01	1.3386-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4329 TO = 535.

P	1.5182+00	4.3739+00	9.9662+00	1.3501+01	1.4002+01	1.4313+01	1.4360+01	1.3483+01	1.2010+01
CP	-1.4651-01	2.5070-01	1.0325+00	1.5267+00	1.5966+00	1.6401+00	1.6966+00	1.5240+00	1.3182+00
P/PO1	1.0526-01	3.0325-01	6.9096-01	9.3607-01	9.7075-01	9.9233-01	9.7357-01	9.3476-01	8.3269-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4312 TO = 535.

P	1.0633+01	1.4271+00	4.4126+00	9.7398+00	1.3099+01	1.4064+01	2.1451+00	2.3995+00	2.3798+00
CP	1.1317+00	-1.6044-01	2.5860-01	1.0063+00	1.4778+00	1.6132+00	-5.9060-02	-2.3956-02	-2.6722-02
P/PO1	7.4018-01	9.9341-02	3.0716-01	6.7774-01	9.1184-01	9.7696-01	1.4932-01	1.6703-01	1.6566-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.7 Q-INF = 7.086 P-INF =2.5562 RE = .4289 TO = 535.

P	1.6908+00	1.2324+00	3.9181+00	1.5450+00	2.0587+00	2.3102+00	3.0966+00	1.7929+00	1.7999+00
CP	-1.2213-01	-1.8682-01	1.9220-01	-1.4271-01	-7.0210-02	-3.4709-02	7.4949-02	-1.0772-01	-1.0673-01
P/PO1	1.1634-01	8.6257-02	2.7423-01	1.0813-01	1.4409-01	1.6177-01	2.1603-01	1.2549-01	1.2598-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8900-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.8 Q-INF = 7.120 P-INF =2.5584 RE = .4309 TO = 535.

P	1.0231+00	6.3553-01	2.1600+00	6.4152+00	1.0423+01	1.2237+01	1.2132+01	2.4306+00	2.5231+00
CP	-2.1704-01	-2.7148-01	-5.7350-02	5.4030-01	1.1033+00	1.3583+00	1.3433+00	-1.9351-02	-6.3590-03
P/PO1	7.1269-02	4.4271-02	1.5047-01	4.4688-01	7.2609-01	8.5258-01	8.4514-01	1.6931-01	1.7576-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.9540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4310 TO = 535.

P	1.1856+00	6.3664-01	6.4786-01	1.0183+00	5.3992-01	5.7163-01	7.7087-01	9.4391-01	2.3673+00
CP	-1.9426-01	-2.7134-01	-2.6977-01	-2.1775-01	-2.8492-01	-2.8047-01	-2.5137-01	-2.2820-01	-2.8313-02
P/PO1	8.2568-02	4.4338-02	4.5119-02	7.0916-02	3.7601-02	3.9816-02	5.4243-02	6.5737-02	1.6487-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.7 Q-INF = 7.098 P-INF =2.5605 RE = .4296 TO = 535.

P	5.8263-01	6.3110-01	6.1989-01	1.8610+00	6.1607+00	9.0275+00	9.9832+00	5.5801-01	5.5134-01
CP	-2.7866-01	-2.7183-01	-2.7341-01	-9.8546-02	5.0724-01	9.1114-01	1.0458+00	-2.8212-01	-2.8306-01
P/PO1	4.0711-02	4.4098-02	4.3314-02	1.3004-01	4.3048-01	6.3077-01	6.9757-01	3.8990-02	3.8524-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.8 Q-INF = 7.110 P-INF =2.5647 RE = .4303 TO = 535.

P	5.7928-01	5.9782-01	6.1429-01	6.1529-01	5.0126-01	5.3813-01	5.8490-01	5.5578-01	5.7134-01
CP	-2.7926-01	-2.7665-01	-2.7434-01	-2.7420-01	-2.9024-01	-2.8505-01	-2.7847-01	-2.8257-01	-2.8038-01
P/PO1	4.0410-02	4.1703-02	4.2852-02	4.2921-02	3.4967-02	3.7539-02	4.0802-02	3.8771-02	3.9856-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS WIND TUNNEL

VALVE POS 10 PO = 19.7 Q-INF = 7.096 P-INF =2.5598 RE = .4295 TO = 535.

P	5.6703-01	5.8008-01	5.8408-01	6.0166-01	9.5609-01	4.6973+00	6.9151+00	8.5129+00	6.1496-01
CP	-2.8083-01	-2.7900-01	-2.7843-01	-2.7595-01	-2.2601-01	3.0122-01	6.1375-01	8.3892-01	-2.7408-01
P/PO1	3.9630-02	4.0542-02	4.0822-02	4.2051-02	6.6823-02	3.2830-01	4.8330-01	5.9497-01	4.2983-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.8 Q-INF = 7.118 P-INF =2.5678 RE = .4308 TO = 535.

P	5.9154-01	6.0004-01	6.4898-01	6.6297-01	6.6461-01	5.1915-01	5.1866-01	5.3355-01	5.3133-01
CP	-2.7764-01	-2.7644-01	-2.6957-01	-2.6760-01	-2.6737-01	-2.8781-01	-2.8788-01	-2.8578-01	-2.8610-01
P/PO1	4.1216-02	4.1808-02	4.5218-02	4.6193-02	4.6307-02	3.6173-02	3.6138-02	3.7176-02	3.7021-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4299 TO = 535.

P	6.1159-01	6.5550-01	6.9762-01	6.7475-01	9.4067-01	4.5271+00	6.3886+00	7.7171+00	9.2255+00
CP	-2.7464-01	-2.6845-01	-2.6323-01	-2.6293-01	-2.2830-01	2.7663-01	5.3169-01	7.5391-01	9.3812-01
P/PO1	4.2704-02	4.5770-02	4.8362-02	4.8511-02	6.5682-02	3.1610-01	4.4261-01	5.5281-01	6.4417-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	5.9531-01	2.0063+00	5.9766-01	2.3789+00	5.9297-01	3.6563+00	3.0375+00	5.7656-01
CP	-2.7693-01	-7.8283-02	-2.7660-01	-2.5817-02	-2.7726-01	1.5402-01	6.6906-02	-2.7957-01
P/PO1	4.1568-02	1.4009-01	4.1731-02	1.6611-01	4.1404-02	2.5530-01	2.1209-01	4.0258-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	7.0078-01	2.5289+00	5.8828-01	6.4219-01	5.9063-01	6.4453-01	6.3281-01
CP	-2.6208-01	-4.6985-03	-2.7792-01	-2.7033-01	-2.7759-01	-2.7000-01	-2.7165-01
P/PO1	4.8932-02	1.7658-01	4.1077-02	4.4841-02	4.1240-02	4.5004-02	4.4186-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	35.	301244	1.99	3	10.00	.06	-.01	145.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4326 TO = 535.

P	5.3918-01	7.5643-01	2.2619+00	2.8439+00	2.9869+00	2.2011+00	2.4206+00	2.4119+00	1.6747+00
CP	-2.8531-01	-2.5492-01	-4.4314-02	3.7083-02	5.7106-02	-5.2827-02	-2.2120-02	-2.3327-02	-1.2644-01
P/PO1	3.7408-02	5.2481-02	1.5693-01	1.9730-01	2.0723-01	1.5271-01	1.6794-01	1.6734-01	1.1620-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4328 TO = 535.

P	1.3100+00	3.8886+00	9.4797+00	1.3267+01	1.4048+01	1.4329+01	1.4406+01	1.3733+01	1.2321+01
CP	-1.7757-01	1.8299-01	9.6476-01	1.4744+00	1.6036+00	1.6428+00	1.6536+00	1.5596+00	1.3621+00
P/PO1	9.0844-02	2.6366-01	6.5739-01	9.2003-01	9.7421-01	9.9365-01	9.9704-01	9.5238-01	8.5446-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4324 TO = 535.

P	1.1025+01	1.2225+00	3.9435+00	9.3028+00	1.2928+01	1.4142+01	2.1011+00	2.2274+00	1.1799+00
CP	1.1823+00	-1.8964-01	1.9118-01	9.4126-01	1.4487+00	1.6185+00	-6.6669-02	-4.8994-02	-5.5651-02
P/PO1	7.6526-01	8.4859-02	2.7373-01	6.4573-01	8.9738-01	9.8160-01	1.4585-01	1.5461-01	1.5131-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4320 TO = 535.

P	1.4522+00	1.0648+00	3.5441+00	1.6152+00	2.1409+00	2.3140+00	3.0994+00	1.6881+00	1.6599+00
CP	-1.5731-01	-2.1157-01	1.3575-01	-1.3447-01	-6.0817-02	-3.6573-02	7.3453-02	-1.2426-01	-1.2921-01
P/PO1	1.0089-01	7.3980-02	2.4623-01	1.1722-01	1.4875-01	1.6577-01	2.1534-01	1.1728-01	1.1533-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4336 TO = 535.

P	8.7586-01	5.5013-01	1.9690+00	6.1342+00	1.0517+01	1.2458+01	1.2444+01	2.0776+00	2.2274+00
CP	-2.3847-01	-2.8395-01	-8.5876-02	4.9557-01	1.1074+00	1.3783+00	1.3764+00	-7.0717-02	-4.9811-02
P/PO1	6.0639-02	3.8087-02	1.3632-01	4.2469-01	7.2811-01	8.6248-01	8.6153-01	1.4384-01	1.5421-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4334 TO = 535.

P	1.0739+00	6.1113-01	6.2884-01	9.5307-01	5.4116-01	5.5488-01	8.2545-01	9.0146-01	2.5667+00
CP	-2.1080-01	-2.7541-01	-2.7294-01	-2.2767-01	-2.8519-01	-2.8326-01	-2.4549-01	-2.3487-01	-2.3565-03
P/PO1	7.4366-02	4.2320-02	4.3546-02	6.5999-02	3.7475-02	3.8425-02	5.7162-02	6.2425-02	1.7774-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.118 P-INF =2.5670 RE = .4303 TO = 535.

P	5.9377-01	6.2001-01	6.0981-01	1.9011+00	6.3941+00	9.3549+00	1.0310+01	5.6801-01	5.8246-01
CP	-2.7732-01	-2.7364-01	-2.7507-01	-9.3654-02	5.3756-01	9.5352-01	1.0877+00	-2.8094-01	-2.7891-01
P/PO1	4.1371-02	4.3199-02	4.2489-02	1.3246-01	4.4551-01	6.5181-01	7.1838-01	3.9577-02	4.0583-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4360 TO = 535.

P	5.8151-01	5.8340-01	6.0310-01	6.0393-01	5.1747-01	5.6046-01	5.9714-01	5.6468-01	5.7579-01
CP	-2.8002-01	-2.7976-01	-2.7702-01	-2.7691-01	-2.8891-01	-2.8294-01	-2.7924-01	-2.8236-01	-2.8081-01
P/PO1	4.0034-02	4.0164-02	4.1520-02	4.1577-02	3.5625-02	3.8584-02	4.0421-02	3.8674-02	3.9640-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.189 P-INF =2.5433 RE = .4351 TO = 535.

P	5.6369-01	5.7120-01	5.8744-01	5.9712-01	1.0332+00	4.9874+00	7.3511+00	8.9362+00	6.3746-01
CP	-2.8233-01	-2.8128-01	-2.7903-01	-2.7768-01	-2.1702-01	3.3363-01	6.6184-01	8.8232-01	-2.7207-01
P/PO1	3.8888-02	3.9407-02	4.0527-02	4.1195-02	7.1289-02	3.4408-01	5.0715-01	6.1650-01	4.3978-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 Q-INF = 7.177 P-INF =2.5491 RE = .4344 TO = 535.

P	5.7037-01	5.9560-01	6.3331-01	6.4594-01	6.4965-01	5.1632-01	5.6020-01	5.4689-01	5.4467-01
CP	-2.8127-01	-2.7775-01	-2.7250-01	-2.7074-01	-2.7022-01	-2.8872-01	-2.8269-01	-2.5454-01	-2.8485-01
P/PO1	3.9414-02	4.1156-02	4.3764-02	4.4636-02	4.4892-02	3.5721-02	3.9711-02	3.7792-02	3.7638-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.9 Q-INF = 7.170 P-INF =2.5466 RE = .4340 TO = 535.

P	6.3721-01	6.6326-01	6.9262-01	6.9589-01	1.0152+00	4.8171+00	6.7905+00	8.3561+00	9.6456+00
CP	-2.7187-01	-2.6824-01	-2.6415-01	-2.6367-01	-2.1916-01	3.1108-01	5.8629-01	8.0464-01	9.8448-01
P/PO1	4.4075-02	4.5876-02	4.7907-02	4.8133-02	7.0220-02	3.3319-01	4.6968-01	5.7797-01	6.6716-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	6.1406-01	2.0484+00	6.0938-01	2.5805+00	6.0234-01	4.5422+00	3.4922+00	5.9297-01	
CP	-2.7510-01	-7.5057-02	-2.7576-01	-8.5759-04	-2.7674-01	2.7273-01	1.2629-01	-2.7604-01	
P/PO1	4.2473-02	1.4169-01	4.2149-02	1.7849-01	4.1663-02	3.1417-01	2.4155-01	4.1014-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	1.1578+00	1.3734+00	5.7422-01	6.1172-01	5.8125-01	6.5391-01	6.0703-01	
CP	-1.9927-01	-1.6920-01	-2.8066-01	-2.7543-01	-2.7968-01	-2.6954-01	-2.7608-01	
P/PO1	8.0083-02	9.4998-02	3.9717-02	4.2311-02	4.0204-02	4.5229-02	4.1987-02	
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

CONFIDENTIAL

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	36.	301244	1.99	3	12.00	.06	-.01	147.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4313 TO = 535.

P	5.4141-01	7.3646-01	2.1651+00	2.8125+00	3.0317+00	2.9965+00	2.2279+00	2.1695+00	1.4249+00
CP	-2.8477-01	-2.5740-01	-5.6923-02	3.3912-02	6.4660-02	-7.0769-02	-4.8112-02	-5.6310-02	-1.6074-01
P/PO1	3.7678-02	5.1253-02	1.5068-01	1.9573-01	2.1098-01	1.4382-01	1.5565-01	1.5098-01	9.9165-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 20.0 Q-INF = 7.180 P-INF =2.5703 RE = .4346 TO = 535.

P	1.1120+00	3.4709+00	8.9617+00	1.3049+01	1.3939+01	1.4344+01	-1.0269-02	1.3937+01	1.2648+01
CP	-2.0588-01	1.2264-01	8.8734-01	1.4565+00	1.5806+00	1.6369+00	-3.6217-01	1.5303+00	1.4007+00
P/PO1	7.6804-02	2.3973-01	6.1699-01	9.0129-01	9.6280-01	9.9076-01	-7.0431-04	9.6265-01	8.7361-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9780+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4314 TO = 535.

P	1.1369+01	1.0475+00	3.5377+00	8.8501+00	1.2664+01	1.4173+01	1.3773+00	2.0376+00	1.9494+00
CP	1.2343+00	-2.1375-01	1.3556-01	8.8384-01	1.4158+00	1.6275+00	-7.4288-02	-7.4881-02	-8.7193-02
P/PO1	7.9104-01	7.2884-02	2.4614-01	6.1576-01	8.8110-01	9.8609-01	1.3215-01	1.4177-01	1.3567-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4312 TO = 535.

P	1.2338+00	9.0211-01	3.1827+00	1.6553+00	2.2257+00	2.3332+00	2.9649+00	1.5782+00	1.5149+00
CP	-1.8757-01	-2.3412-01	8.5966-02	-1.2841-01	-4.8344-02	-3.2419-02	5.5400-02	-1.3923-01	-1.4911-01
P/PO1	8.5886-02	6.2796-02	2.2155-01	1.1523-01	1.5493-01	1.6293-01	2.0639-01	1.0986-01	1.0545-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4314 TO = 535.

P	6.9291-01	4.8247-01	1.7907+00	5.8129+00	1.0361+01	1.2536+01	1.2646+01	2.0277+00	1.6674+00
CP	-2.6353-01	-2.9306-01	-1.0952-01	4.5474-01	1.0328+00	1.3979+00	1.4134+00	-7.6282-02	-1.2782-01
P/PO1	4.8211-02	3.3569-02	1.2459-01	4.0444-01	7.2090-01	8.7219-01	8.7990-01	1.4108-01	1.1601-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.8 Q-INF = 7.120 P-INF =2.5684 RE = .4309 TO = 535.

P	9.7487-01	6.2001-01	6.4562-01	8.7281-01	5.8860-01	5.6381-01	8.9014-01	8.9397-01	2.8470+00
CP	-2.2381-01	-2.7366-01	-2.7006-01	-2.3815-01	-2.8088-01	-2.8155-01	-2.3572-01	-2.3518-01	3.9142-02
P/PO1	6.7909-02	4.3189-02	4.4973-02	6.0799-02	3.9608-02	3.9279-02	6.2006-02	6.2273-02	1.9832-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4316 TO = 535.

P	6.0491-01	6.4441-01	6.3891-01	1.9137+00	6.5808+00	9.6044+00	1.0606+01	5.8579-01	6.1246-01
CP	-2.7597-01	-2.7038-01	-2.7115-01	-9.2401-02	5.6204-01	9.8602-01	1.1265+00	-2.7860-01	-2.7486-01
P/PO1	4.2068-02	4.4815-02	4.4432-02	1.3308-01	4.5765-01	6.6793-01	7.3760-01	4.0739-02	4.2593-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.7 Q-INF = 7.094 P-INF =2.5592 RE = .4294 TO = 535.

P	6.0156-01	6.0559-01	6.2548-01	6.2664-01	5.4241-01	5.8726-01	6.0735-01	5.7801-01	5.8913-01
CP	-2.7595-01	-2.7538-01	-2.7258-01	-2.7241-01	-2.8426-01	-2.7796-01	-2.7513-01	-2.7927-01	-2.7770-01
P/PO1	4.2054-02	4.2335-02	4.3726-02	4.3807-02	3.7917-02	4.1054-02	4.2458-02	4.0408-02	4.1185-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

B78

CONFIDENTIAL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4313 TO = 535.

P	5.7483-01	5.8340-01	5.9751-01	6.1075-01	1.0949+00	5.1765+00	7.6315+00	9.2654+00	6.3996-01
CP	-2.8008-01	-2.7888-01	-2.7690-01	-2.7504-01	-2.0710-01	3.6564-01	7.1613-01	9.3940-01	-2.7094-01
P/PO1	4.0004-02	4.0601-02	4.1583-02	4.2504-02	7.6197-02	3.6625-01	5.3110-01	6.4481-01	4.4537-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4313 TO = 535.

P	5.7594-01	6.0226-01	6.4114-01	6.5956-01	6.6710-01	5.3702-01	6.0961-01	5.6356-01	5.6579-01
CP	-2.7992-01	-2.7623-01	-2.7077-01	-2.6819-01	-2.6713-01	-2.8539-01	-2.7646-01	-2.8166-01	-2.8135-01
P/PO1	4.0082-02	4.1913-02	4.4619-02	4.5901-02	4.6426-02	3.7373-02	4.1799-02	3.9220-02	3.9375-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4313 TO = 535.

P	6.4724-01	6.7768-01	7.0716-01	7.1178-01	1.0799+00	5.0504+00	7.1642+00	8.7010+00	9.9256+00
CP	-2.6992-01	-2.6565-01	-2.6151-01	-2.6086-01	-2.0927-01	3.4795-01	6.4457-01	8.6071-01	1.0320+00
P/PO1	4.5044-02	4.7162-02	4.9214-02	4.9535-02	7.5123-02	3.5148-01	4.9858-01	6.0553-01	6.9076-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	6.2344-01	2.2313+00	6.0938-01	2.6250+00	6.1641-01	4.1555+00	5.7023+00	6.0469-01
CP	-2.7326-01	-4.7646-02	-2.7523-01	7.6058-03	-2.7425-01	2.2237-01	4.3943-01	-2.7589-01
P/PO1	4.3387-02	1.5528-01	4.2408-02	1.8268-01	4.2898-02	2.8919-01	3.9685-01	4.2082-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	7.8984-01	1.0383+00	6.0469-01	6.1172-01	5.9766-01	6.7031-01	6.3047-01	
CP	-2.4991-01	-2.1505-01	-2.7589-01	-2.7490-01	-2.7688-01	-2.6668-01	-2.7227-01	
P/PO1	5.4968-02	7.2257-02	4.2082-02	4.2572-02	4.1593-02	4.6649-02	4.3876-02	
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	37.	301244	1.99	3	14.01	.06	-.02	149.01	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
TUNNEL A
[illegible] WIND TUNNEL

VALVE POS 2 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4322 TO = 535.

P	5.9934-01	7.0097-01	2.0964+00	2.7185+00	2.8082+00	1.9218+00	2.0132+00	1.9278+00	1.1799+00
CP	-2.7682-01	-2.6259-01	-6.7199-02	1.9917-02	3.2477-02	-9.1634-02	-7.8849-02	-9.0806-02	-1.9552-01
P/PO1	4.1621-02	4.8679-02	1.4558-01	1.8879-01	1.9502-01	1.3346-01	1.3980-01	1.3388-01	8.1941-02
S/R	.0000+00	6.4000-02	1.1600-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.8 Q-INF = 7.108 P-INF =2.5641 RE = .4302 TO = 535.

P	9.3425-01	3.0531+00	8.3810+00	1.2690+01	1.3753+01	1.4204+01	1.4360+01	1.4016+01	1.2819+01
CP	-2.2930-01	6.8802-02	8.1838-01	1.4246+00	1.5741+00	1.6376+00	1.6595+00	1.6111+00	1.4428+00
P/PO1	6.5188-02	2.1303-01	5.8479-01	8.8543-01	9.5960-01	9.9108-01	1.0019+00	9.7794-01	8.9447-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4316 TO = 535.

P	1.1714+01	8.7254-01	3.1446+00	8.3662+00	1.2446+01	1.4188+01	1.7389+00	1.8628+00	1.7199+00
CP	1.2818+00	-2.3839-01	8.0209-02	8.1240-01	1.3845+00	1.6288+00	-1.1691-01	-9.9527-02	-1.1957-01
P/PO1	8.1463-01	6.0680-02	2.1869-01	5.8182-01	8.6554-01	9.8671-01	1.2093-01	1.2955-01	1.1961-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4318 TO = 535.

P	1.0383+00	7.6655-01	2.8340+00	1.6804+00	2.1898+00	2.2442+00	2.6959+00	1.4583+00	1.3249+00
CP	-2.1521-01	-2.5330-01	3.6460-02	-1.2522-01	-5.3831-02	-4.6196-02	1.7114-02	-1.5635-01	-1.7504-01
P/PO1	7.2176-02	5.3284-02	1.9699-01	1.1681-01	1.5221-01	1.5600-01	1.8740-01	1.0137-01	9.2097-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4331 TO = 535.

P	6.9180-01	6.3271-01	1.6175+00	5.5122+00	1.0361+01	1.2676+01	1.2896+01	2.3498+00	9.8494-01
CP	-2.6408-01	-2.7240-01	-1.3473-01	4.0946-01	1.0870+00	1.4104+00	1.4411+00	-3.2412-02	-2.2312-01
P/PO1	4.7940-02	4.3811-02	1.1209-01	3.8198-01	7.1801-01	8.7842-01	8.9364-01	1.6284-01	6.8255-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4324 TO = 535.

P	6.6172-01	6.5550-01	6.7919-01	8.1763-01	6.2346-01	6.3080-01	8.9273-01	8.2904-01	3.1398+00
CP	-2.6813-01	-2.6900-01	-2.6568-01	-2.4631-01	-2.7348-01	-2.7246-01	-2.3580-01	-2.4471-01	7.8706-02
P/PO1	4.5932-02	4.5500-02	4.7144-02	5.6754-02	4.3276-02	4.3786-02	6.1966-02	5.7546-02	2.1794-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.7 Q-INF = 7.099 P-INF =2.5611 RE = .4297 TO = 535.

P	6.4390-01	6.7657-01	6.7471-01	1.9513+00	6.8453+00	9.7915+00	1.0902+01	6.2692-01	6.4496-01
CP	-2.7004-01	-2.6544-01	-2.6570-01	-8.5891-02	6.0346-01	1.0184+00	1.1749+00	-2.7244-01	-2.6989-01
P/PO1	4.4981-02	4.7264-02	4.7134-02	1.3631-01	4.7820-01	6.8401-01	7.6160-01	4.3796-02	4.5056-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4321 TO = 535.

P	6.4055-01	6.3997-01	6.6129-01	6.6297-01	5.9728-01	6.1182-01	6.2756-01	6.2248-01	6.2915-01
CP	-2.7103-01	-2.7111-01	-2.6812-01	-2.6789-01	-2.7709-01	-2.7505-01	-2.7285-01	-2.7356-01	-2.7262-01
P/PO1	4.4494-02	4.4453-02	4.5934-02	4.6051-02	4.1488-02	4.2498-02	4.3591-02	4.3238-02	4.3702-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4312 TO = 535.

P	6.1493-01	6.2001-01	6.3443-01	6.5046-01	1.1540+00	5.4098+00	7.9897+00	9.6417+00	6.6246-01
CP	-2.7443-01	-2.7372-01	-2.7170-01	-2.6944-01	-1.9877-01	3.9856-01	7.6066-01	9.9252-01	-2.6776-01
P/PO1	4.2805-02	4.3158-02	4.4163-02	4.5260-02	8.0329-02	3.7658-01	5.5616-01	6.7115-01	4.6114-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4319 TO = 535.

P	6.1605-01	6.3442-01	6.7695-01	6.9589-01	7.0326-01	6.3862-01	5.9500-01	5.7134-01	6.0691-01
CP	-2.7442-01	-2.7194-01	-2.6588-01	-2.6323-01	-2.6220-01	-2.7126-01	-2.7737-01	-2.8068-01	-2.7570-01
P/PO1	4.2812-02	4.4089-02	4.7044-02	4.8360-02	4.8873-02	4.4380-02	4.1349-02	3.9705-02	4.2177-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4338 TO = 535.

P	7.4385-01	7.5669-01	7.6671-01	7.4992-01	1.1411+00	5.2963+00	7.5380+00	9.0929+00	1.0330+01
CP	-2.5695-01	-2.5516-01	-2.5376-01	-2.5611-01	-2.0152-01	3.7826-01	6.9104-01	9.0800-01	1.0806+00
P/PO1	5.1475-02	5.2363-02	5.3057-02	5.1894-02	7.8968-02	3.6651-01	5.2163-01	6.2923-01	7.1485-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	6.3750-01	2.4047+00	6.5156-01	2.1750+00	6.4453-01	2.1492+00	2.2898+00	6.4688-01	
CP	-2.7179-01	-2.5215-02	-2.6983-01	-5.7263-02	-2.7081-01	-6.0861-02	-4.1239-02	-2.7048-01	
P/PO1	4.4115-02	1.6641-01	4.5088-02	1.5051-01	4.4602-02	1.4873-01	1.5846-01	4.4764-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	1.2023+00	8.2500-01	6.4453-01	6.5156-01	6.4922-01	7.0547-01	6.7266-01
CP	-1.9298-01	-2.4563-01	-2.7081-01	-2.6983-01	-2.7016-01	-2.6231-01	-2.6689-01
P/PO1	8.3203-02	5.7090-02	4.4602-02	4.5088-02	4.4926-02	4.8819-02	4.6548-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	38.	301244	1.99	3	14.66	37.35	-8.83	146.75	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH HYPERSONIC SS WIND TUNNEL

VALVE POS 2 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4328 TO = 535.

P	5.9265-01	6.2001-01	1.5589+00	2.1923+00	2.4234+00	2.1529+00	2.2642+00	2.2724+00	1.4697+00
CP	-2.7787-01	-2.7405-01	-1.4277-01	-5.4193-02	-1.9834-02	-5.9717-02	-4.4152-02	-4.3064-02	-1.5521-01
P/PO1	4.1039-02	4.2996-02	1.0811-01	1.5203-01	1.6397-01	1.4924-01	1.5701-01	1.5754-01	1.0193-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4322 TO = 535.

P	1.1627+00	3.5139+00	8.9460+00	1.2562+01	1.3768+01	1.4064+01	1.4173+01	1.3655+01	1.2790+01
CP	-1.9793-01	1.3129-01	8.9192-01	1.4402+00	1.5672+00	1.6[illegible]95+00	1.6235+00	1.5514+00	1.3602+00
P/PO1	8.0747-02	2.4402-01	6.2126-01	8.9317-01	9.5615-01	9.7665-01	9.8423-01	9.4828-01	8.5351-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.9 Q-INF = 7.149 P-INF =2.5787 RE = .4326 TO = 535.

P	1.1134+01	9.5141-01	3.2334+00	8.3033+00	1.2135+01	1.3683+01	1.5693+00	1.8579+00	1.7899+00
CP	1.1969+00	-2.2765-01	9.1566-02	8.0090-01	1.3368+00	1.5543+00	-1.4246-01	-1.0084-01	-1.1035-01
P/PO1	7.7250-01	6.6909-02	2.2433-01	5.7612-01	8.4191-01	9.4977-01	1.0826-01	1.2890-01	1.2418-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4341 TO = 535.

P	1.0358+00	6.9210-01	2.4916+00	5.0404-01	9.6124-01	1.8101+00	1.8036+00	1.2560+00	1.2224+00
CP	-2.1632-01	-2.6424-01	-1.3331-02	-2.9046-01	-2.2671-01	-1.0835-01	-1.0927-01	-1.8561-01	-1.9[illegible]30-01
P/PO1	7.1627-02	4.7860-02	1.7230-01	3.4855-02	6.6471-02	1.2517-01	1.2472-01	8.6859-02	8.4533-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4328 TO = 535.

P	6.9626-01	6.8544-01	1.1768+00	4.2970+00	9.1322+00	1.1475+01	1.1821+01	1.7680+00	1.2599+00
CP	-2.6339-01	-2.6490-01	-1.9619-01	2.4009-01	9.1616-01	1.2438+00	1.2921+00	-1.1353-01	-1.8457-01
P/PO1	4.8283-02	4.7534-02	8.1609-02	2.9793-01	6.3329-01	7.9578-01	8.1975-01	1.2260-01	8.7372-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.9 Q-INF = 7.175 P-INF =2.5984 RE = .4343 TO = 535.

P	5.9377-01	6.5550-01	6.8143-01	5.8904-01	5.3368-01	5.7498-01	7.3747-01	8.2904-01	1.9599+00
CP	-2.7799-01	-2.6939-01	-2.6577-01	-2.7877-01	-2.8636-01	-2.8061-01	-2.5796-01	-2.4520-01	-9.4568-02
P/PO1	4.1041-02	4.5307-02	4.7099-02	4.0445-02	3.6884-02	3.9742-02	5.0773-02	5.7303-02	1.3701-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4329 TO = 535.

P	6.3498-01	6.6881-01	6.7919-01	1.3970+00	5.7407+00	8.6377+00	9.7963+00	6.2248-01	6.2996-01
CP	-2.7197-01	-2.6725-01	-2.6580-01	-1.6545-01	4.4177-01	8.4675-01	1.0087+00	-2.7372-01	-2.7268-01
P/PO1	4.4024-02	4.6369-02	4.7089-02	9.6855-02	3.9801-01	5.9886-01	6.7919-01	4.3157-02	4.3676-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.0 Q-INF = 7.182 P-INF =2.5909 RE = .4347 TO = 535.

P	6.2496-01	6.2888-01	6.5345-01	6.5842-01	5.3742-01	7.7178-01	6.2756-01	5.9469-01	5.9358-01
CP	-2.7373-01	-2.7318-01	-2.6976-01	-2.6907-01	-2.8591-01	-2.5328-01	-2.7336-01	-2.7794-01	-2.7809-01
P/PO1	4.3156-02	4.3427-02	4.5124-02	4.5467-02	3.7111-02	5.3294-02	4.3335-02	4.1066-02	4.0989-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4350 TO = 535.

P	5.8820-01	6.1779-01	6.4562-01	6.6970-01	1.0101+00	4.9054+00	7.0708+00	8.7324+00	5.6023-01
CP	-2.7890-01	-2.7476-01	-2.7091-01	-2.6881-01	-2.2020-01	3.2178-01	6.2307-01	8.5425-01	-2.8279-01
P/PO1	4.0589-02	4.2631-02	4.4551-02	4.5592-02	6.9700-02	3.3850-01	4.8792-01	6.0258-01	3.8659-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4336 TO = 535.

P	6.4390-01	6.8323-01	7.5143-01	7.4490-01	7.4534-01	5.6493-01	6.6461-01	7.0668-01	6.0025-01
CP	-2.7086-01	-2.6537-01	-2.5584-01	-2.5676-01	-2.5669-01	-2.8188-01	-2.6797-01	-2.6209-01	-2.7695-01
P/PO1	4.4579-02	4.7302-02	5.2024-02	5.1572-02	5.1602-02	3.9112-02	4.6013-02	4.8926-02	4.1557-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4343 TO = 535.

P	7.4893-01	7.7148-01	7.6671-01	7.5493-01	1.0512+00	4.9054+00	6.9029+00	8.4658+00	9.6612+00
CP	-2.5637-01	-2.5322-01	-2.5389-01	-2.5553-01	-2.1424-01	3.2291-01	6.1384-01	8.1911-01	9.8570-01
P/PO1	5.1765-02	5.3324-02	5.2995-02	5.2180-02	7.2657-02	3.3906-01	4.8334-01	5.8515-01	6.6777-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	6.2344-01	1.5867+00	6.4688-01	1.8023+00	6.3984-01	2.1141+00	1.3758+00	6.3750-01
CP	-2.7386-01	-1.3961-01	-2.7059-01	-1.0956-01	-2.7157-01	-6.6113-02	-1.6900-01	-2.7190-01
P/PO1	4.3091-02	1.0967-01	4.4711-02	1.2456-01	4.4225-02	1.4612-01	9.5093-02	4.4063-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	7.6875-01	7.6641-01	6.4688-01	6.5391-01	6.4922-01	6.8438-01	6.7031-01
CP	-2.5360-01	-2.5393-01	-2.7059-01	-2.6961-01	-2.7026-01	-2.6536-01	-2.6732-01
P/PO1	5.3135-02	5.2973-02	4.4711-02	4.5197-02	4.4873-02	4.7303-02	4.6331-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	39.	301244	1.99	3	12.98	22.85	-5.00	146.99	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4333 TO = 535.

P	6.0156-01	5.8451-01	1.6124+00	2.2772+00	2.5848+00	2.0868+00	2.2460+00	2.1819+00	1.4349+00
CP	-2.7673-01	-2.7911-01	-1.3555-01	-4.9690-02	2.6068-04	-6.9290-02	-4.7055-02	-5.6008-02	-1.6234-01
P/PO1	4.1668-02	4.0487-02	1.1168-01	1.5427-01	1.7904-01	1.4455-01	1.5557-01	1.5113-01	9.9390-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4320 TO = 535.

P	1.1475+00	3.4832+00	8.9303+00	1.2955+01	1.3924+01	1.4219+01	1.4328+01	1.3812+01	1.2477+01
CP	-1.9999-01	1.2722-01	8.9031-01	1.4542+00	1.5899+00	1.6313+00	1.6465+00	1.5742+00	1.3872+00
P/PO1	7.9727-02	2.4200-01	6.2046-01	9.0010-01	9.6741-01	9.8794-01	9.9552-01	9.5962-01	8.6688-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4312 TO = 535.

P	1.1291+01	9.8592-01	3.3475+00	8.5379+00	1.2524+01	1.3954+01	1.6819+00	1.9328+00	1.8349+00
CP	1.2240+00	-2.2236-01	1.0910-01	8.3761-01	1.3970+00	1.5978+00	-1.2467-01	-8.9466-02	-1.0320-01
P/PO1	7.8597-01	6.8629-02	2.3302-01	5.9432-01	8.7177-01	9.7137-01	1.1708-01	1.3454-01	1.2773-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4319 TO = 535.

P	1.1348+00	7.9613-01	2.8276+00	9.5307-01	1.9610+00	2.2874+00	2.3573+00	1.3834+00	1.3149+00
CP	-2.0173-01	-2.4918-01	3.5478-02	-2.2719-01	-8.5956-02	-4.0272-02	-3.0426-02	-1.6689-01	-1.7649-01
P/PO1	7.8864-02	5.5327-02	1.9651-01	6.6233-02	1.3628-01	1.5896-01	1.6382-01	9.6139-02	9.1380-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4327 TO = 535.

P	7.7685-01	7.3451-01	1.4468+00	4.9234+00	9.7078+00	1.2005+01	1.2242+01	2.0876+00	1.2799+00
CP	-2.5209-01	-2.5801-01	-1.5839-01	3.2784-01	9.9699-01	1.3183+00	1.3513+00	-6.8773-02	-1.8173-01
P/PO1	5.3885-02	5.0948-02	1.0036-01	3.4150-01	6.7337-01	8.3274-01	8.4912-01	1.4480-01	8.8780-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4334 TO = 535.

P	6.4501-01	6.8433-01	7.2596-01	6.2096-01	5.8730-01	5.6158-01	8.4097-01	8.3903-01	2.2749+00
CP	-2.7068-01	-2.6519-01	-2.5938-01	-2.7404-01	-2.7874-01	-2.8233-01	-2.4332-01	-2.4359-01	-4.3105-02
P/PO1	4.4666-02	4.7390-02	5.0272-02	4.3001-02	4.0670-02	3.8889-02	5.8237-02	5.8102-02	1.5753-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4330 TO = 535.

P	6.0936-01	7.0430-01	7.1164-01	1.5976+00	6.0516+00	9.0899+00	1.0186+01	5.9913-01	6.3746-01
CP	-2.7558-01	-2.6231-01	-2.6128-01	-1.3745-01	4.8507-01	9.0966-01	1.0628+00	-2.7701-01	-2.7165-01
P/PO1	4.2238-02	4.8818-02	4.9327-02	1.1074-01	4.1948-01	6.3006-01	7.0602-01	4.1529-02	4.4185-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4356 TO = 535.

P	6.5169-01	6.7435-01	6.9485-01	6.9725-01	5.7608-01	7.2354-01	6.1858-01	5.8802-01	6.2581-01
CP	-2.7019-01	-2.6705-01	-2.6420-01	-2.6386-01	-2.8070-01	-2.6021-01	-2.7480-01	-2.7904-01	-2.7379-01
P/PO1	4.4907-02	4.6469-02	4.7881-02	4.8046-02	3.9697-02	4.9858-02	4.2625-02	4.0519-02	4.3124-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GS WIND TUNNEL

VALVE POS 10 PO = 19.9 O-INF = 7.162 P-INF =2.5836 RE = .4334 TO = 535.

P	6.2719-01	6.4884-01	6.6464-01	6.8681-01	1.0409+00	5.1567+00	7.3667+00	8.9987+00	5.8468-01
CP	-2.7317-01	-2.7014-01	-2.6794-01	-2.6484-01	-2.1540-01	3.4532-01	6.6786-01	8.9576-01	-2.7910-01
P/PO1	4.3432-02	4.4932-02	4.6026-02	4.7561-02	7.2082-02	3.5017-01	5.1014-01	6.2316-01	4.0489-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 O-INF = 7.172 P-INF =2.5872 RE = .4341 TO = 535.

P	6.3053-01	6.8323-01	7.5653-01	7.5493-01	7.5562-01	5.1915-01	6.5787-01	6.8920-01	5.9024-01
CP	-2.7283-01	-2.6548-01	-2.5526-01	-2.5548-01	-2.5538-01	-2.8835-01	-2.6901-01	-2.6464-01	-2.7844-01
P/PO1	4.3602-02	4.7246-02	5.2315-02	5.2205-02	5.2252-02	3.5400-02	4.5493-02	4.7659-02	4.0816-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.9 O-INF = 7.165 P-INF =2.5848 RE = .4337 TO = 535.

P	6.3610-01	7.2648-01	7.7181-01	7.6246-01	1.0640+00	5.0000+00	7.1020+00	8.5756+00	9.8012+00
CP	-2.7197-01	-2.5935-01	-2.5303-01	-2.5433-01	-2.1224-01	3.3707-01	6.3043-01	8.3609-01	1.0071+00
P/PO1	4.4029-02	5.0285-02	5.3422-02	5.2775-02	7.3649-02	3.4608-01	4.9157-01	5.9357-01	6.7840-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	6.0938-01	1.8117+00	6.3750-01	1.9781+00	6.3047-01	2.3766+00	1.8938+00	6.6328-01
CP	-2.7570-01	-1.0789-01	-2.7177-01	-8.4668-02	-2.7275-01	-2.9061-02	-9.6444-02	-2.6817-01
P/PO1	4.2179-02	1.2540-01	4.4126-02	1.3692-01	4.3639-02	1.6450-01	1.3108-01	4.5910-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	6.6563-01	8.5313-01	6.7734-01	6.8203-01	6.8203-01	7.3359-01	7.0078-01
CP	-2.6784-01	-2.4168-01	-2.6621-01	-2.6555-01	-2.6555-01	-2.5836-01	-2.6294-01
P/PO1	4.6072-02	5.9050-02	4.6883-02	4.7208-02	4.7208-02	5.0777-02	4.8506-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	40.	301244	1.99	3	13.42	42.42	-9.01	144.99	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4332 TO = 535.

P	6.2719-01	6.4884-01	1.5614+00	2.1795+00	2.5721+00	2.1935+00	2.4398+00	2.4368+00	1.7074+00
CP	-2.7313-01	-2.7010-01	-1.4262-01	-5.6274-02	-1.4374-03	-5.3617-02	-1.9715-02	-2.0332-02	-1.2223-01
P/PO1	4.3453-02	4.4953-02	1.0816-01	1.5100-01	1.7526-01	1.5232-01	1.6903-01	1.6883-01	1.1924-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4352 TO = 535.

P	1.3430+00	3.9132+00	9.4169+00	1.3111+01	1.3768+01	1.4142+01	1.4173+01	1.3498+01	1.2073+01
CP	-1.7397-01	1.8347-01	9.4888-01	1.4627+00	1.5540+00	1.6054+00	1.6103+00	1.5165+00	1.3182+00
P/PO1	9.2630-02	2.6990-01	6.4951-01	9.0432-01	9.4964-01	9.7538-01	9.7754-01	9.3102-01	8.3268-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4321 TO = 534.

P	1.0884+01	1.1067+00	3.5758+00	8.6940+00	1.2337+01	1.3643+01	1.6457+00	1.9877+00	1.9647+00
CP	1.1658+00	-2.0552-01	1.4078-01	8.5865-01	1.3696+00	1.5527+00	-1.2492-01	-8.1953-02	-8.5154-02
P/PO1	7.5709-01	7.6982-02	2.4873-01	6.0476-01	8.5817-01	9.4878-01	1.1448-01	1.3827-01	1.3668-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4330 TO = 535.

P	1.2135+00	8.5528-01	2.8086+00	5.3809-01	7.9932-01	1.4344+00	1.4491+00	1.3310+00	1.3349+00
CP	-1.9114-01	-2.4121-01	3.1792-02	-2.8554-01	-2.4903-01	-1.6077-01	-1.5872-01	-1.7473-01	-1.7417-01
P/PO1	8.4114-02	5.9283-02	1.9468-01	3.7298-02	5.5404-02	9.9424-02	1.0244-01	9.2255-02	9.2529-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3700-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4329 TO = 534.

P	6.8957-01	6.6992-01	1.3118+00	4.4974+00	9.0389+00	1.1351+01	1.1603+01	1.7854+00	1.6474+00
CP	-2.6421-01	-2.6696-01	-1.7710-01	2.6886-01	9.0462-01	1.2282+00	1.2636+00	-1.1080-01	-1.3012-01
P/PO1	4.7876-02	4.6512-02	9.1078-02	3.1225-01	6.2750-01	7.8806-01	8.0558-01	1.2396-01	1.1438-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4334 TO = 534.

P	6.7397-01	6.3553-01	6.6576-01	5.3469-01	5.8730-01	5.9061-01	6.3542-01	7.9908-01	1.7699+00
CP	-2.6650-01	-2.7188-01	-2.6765-01	-2.8598-01	-2.7862-01	-2.7916-01	-2.7189-01	-2.4901-01	-1.1326-01
P/PO1	4.6738-02	4.4072-02	4.6169-02	3.7079-02	4.0728-02	4.0957-02	4.4064-02	5.5414-02	1.2274-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.182 P-INF =2.5909 RE = .4352 TO = 534.

P	6.1270-01	6.4441-01	6.5905-01	1.3594+00	5.6228+00	8.3882+00	9.5004+00	5.8579-01	6.1996-01
CP	-2.7543-01	-2.7102-01	-2.6898-01	-1.7147-01	4.2215-01	8.0720-01	9.6205-01	-2.7918-01	-2.7442-01
P/PO1	4.2310-02	4.4499-02	4.5510-02	9.3871-02	3.8828-01	5.7924-01	6.5604-01	4.0451-02	4.2811-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4312 TO = 534.

P	6.1605-01	6.1668-01	6.4114-01	6.4594-01	5.3119-01	7.0577-01	6.1409-01	5.5022-01	5.9358-01
CP	-2.7415-01	-2.7406-01	-2.7062-01	-2.6995-01	-2.8608-01	-2.6154-01	-2.7443-01	-2.8340-01	-2.7731-01
P/PO1	4.2944-02	4.2988-02	4.4693-02	4.5028-02	3.7029-02	4.9198-02	4.2807-02	3.8356-02	4.1377-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS-SS WIND TUNNEL

VALVE POS 10 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4337 TO = 534.

P	5.8820-01	6.1002-01	6.3779-01	6.5275-01	9.5609-01	4.6847+00	6.7282+00	8.3561+00	5.4522-01
CP	-2.7855-01	-2.7550-01	-2.7162-01	-2.6953-01	-2.2715-01	2.9384-01	5.7937-01	8.0683-01	-2.8526-01
P/PO1	4.0761-02	4.2273-02	4.4198-02	4.5234-02	6.6256-02	3.2464-01	4.6625-01	5.7906-01	3.7436-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4346 TO = 534.

P	6.3498-01	6.7768-01	7.3870-01	7.3236-01	7.2992-01	5.6493-01	6.4440-01	6.6423-01	5.4467-01
CP	-2.7220-01	-2.6625-01	-2.5774-01	-2.5863-01	-2.5897-01	-2.8197-01	-2.7089-01	-2.6813-01	-2.8480-01
P/PO1	4.3910-02	4.6863-02	5.1082-02	5.0644-02	5.0475-02	3.9066-02	4.4561-02	4.5933-02	3.7665-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4310 TO = 535.

P	7.1846-01	7.4190-01	7.4124-01	7.3236-01	9.8951-01	4.6595+00	6.6036+00	8.1209+00	9.3189+00
CP	-2.5985-01	-2.5656-01	-2.5665-01	-2.5790-01	-2.2179-01	2.9356-01	5.6655-01	7.7962-01	9.4784-01
P/PO1	5.0036-02	5.1668-02	5.1622-02	5.1004-02	6.8912-02	3.2450-01	4.5989-01	5.6556-01	6.4899-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	6.1172-01	1.5891+00	6.3281-01	1.7109+00	6.5625-01	2.6766+00	1.5984+00	6.4922-01
CP	-2.7484-01	-1.3760-01	-2.7188-01	-1.2049-01	-2.6859-01	1.5108-02	-1.3628-01	-2.6958-01
P/PO1	4.2602-02	1.1067-01	4.4071-02	1.1915-01	4.5703-02	1.8640-01	1.1132-01	4.5213-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	6.7266-01	8.7656-01	6.3516-01	6.2813-01	6.3750-01	6.6797-01	6.5156-01
CP	-2.6629-01	-2.3765-01	-2.7155-01	-2.7254-01	-2.7122-01	-2.6694-01	-2.6925-01
P/PO1	4.6846-02	6.1046-02	4.4234-02	4.3744-02	4.4397-02	4.6519-02	4.5377-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	41.	301244	1.99	3	12.03	48.75	-9.02	143.00	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4316 TO = 535.

P	5.8708-01	5.2018-01	1.7015+00	2.2999+00	2.6423+00	2.3458+00	2.6639+00	2.6917+00	1.9949+00
CP	-2.7842-01	-2.8780-01	-1.2215-01	-3.8241-02	9.7667-03	-3.1807-02	1.2803-02	1.6695-02	-8.1013-02
P/PO1	4.0828-02	3.6176-02	1.1833-01	1.5994-01	1.8375-01	1.6314-01	1.8526-01	1.8719-01	1.3873-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4337 TO = 535.

P	1.5842+00	4.4108+00	9.6877+00	1.3299+01	1.3862+01	1.4095+01	1.4079+01	1.3247+01	1.1730+01
CP	-1.3965-01	2.5484-01	1.0192+00	1.4952+00	1.5738+00	1.6064+00	1.6042+00	1.4881+00	1.2764+00
P/PO1	1.0965-01	3.0530-01	6.8439-01	9.2048-01	9.5946-01	9.7559-01	9.7452-01	9.1694-01	8.1193-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4331 TO = 534.

P	1.0524+01	1.3137+00	4.0069+00	9.1467+00	1.2555+01	1.3580+01	1.7648+00	2.1575+00	2.1849+00
CP	1.1118+00	-1.7692-01	1.9992-01	9.1911-01	1.3960+00	1.5395+00	-1.1381-01	-5.8851-02	-5.5023-02
P/PO1	7.3030-01	9.1168-02	2.7806-01	6.3474-01	8.7126-01	9.4242-01	1.2247-01	1.4972-01	1.5162-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4338 TO = 534.

P	1.4547+00	1.0056+00	3.2207+00	5.3582-01	8.3273-01	1.2059+00	1.3119+00	1.4134+00	1.4549+00
CP	-1.5753-01	-2.2026-01	8.9175-02	-2.8589-01	-2.4441-01	-1.9228-01	-1.7747-01	-1.6330-01	-1.5750-01
P/PO1	1.0078-01	6.9672-02	2.2314-01	3.7123-02	5.7693-02	8.3547-02	9.0892-02	9.7921-02	1.0080-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4332 TO = 534.

P	6.8177-01	6.4441-01	1.4519+00	4.7292+00	9.1011+00	1.1179+01	1.1323+01	1.8254+00	1.8699+00
CP	-2.6537-01	-2.7059-01	-1.5763-01	3.0084-01	9.1243-01	1.2031+00	1.2232+00	-1.0538-01	-9.9159-02
P/PO1	4.7301-02	4.4709-02	1.0073-01	3.2811-01	6.3143-01	7.7561-01	7.8556-01	1.2665-01	1.2973-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4329 TO = 534.

P	8.2994-01	6.3664-01	6.6240-01	5.3696-01	5.8107-01	5.7498-01	5.7255-01	7.2167-01	1.7299+00
CP	-2.4456-01	-2.7162-01	-2.6801-01	-2.8557-01	-2.7940-01	-2.8025-01	-2.8059-01	-2.5971-01	-1.1857-01
P/PO1	5.7622-02	4.4201-02	4.5990-02	3.7280-02	4.0343-02	3.9920-02	3.9751-02	5.0105-02	1.2010-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4313 TO = 534.

P	6.0156-01	6.4219-01	6.5457-01	1.3243+00	5.4952+00	8.1076+00	9.1734+00	5.8691-01	6.1496-01
CP	-2.7621-01	-2.7050-01	-2.6876-01	-1.7465-01	4.1145-01	7.7856-01	9.2832-01	-2.7827-01	-2.7433-01
P/PO1	4.1924-02	4.4756-02	4.5619-02	9.2291-02	3.8297-01	5.6504-01	6.3931-01	4.0903-02	4.2858-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4342 TO = 535.

P	6.1827-01	6.2444-01	6.4562-01	6.4934-01	5.1373-01	6.1964-01	6.0398-01	5.7246-01	6.0914-01
CP	-2.7455-01	-2.7369-01	-2.7074-01	-2.7022-01	-2.8913-01	-2.7436-01	-2.7655-01	-2.8094-01	-2.7583-01
P/PO1	4.2745-02	4.3171-02	4.4635-02	4.4892-02	3.5517-02	4.2839-02	4.1756-02	3.9577-02	4.2113-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

VALVE POS 10 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4334 TO = 534.

P	6.0713-01	6.1113-01	6.3443-01	6.4480-01	8.9441-01	4.4514+00	6.3855+00	7.9798+00	5.7579-01
CP	-2.7585-01	-2.7529-01	-2.7203-01	-2.7058-01	-2.3568-01	2.6169-01	5.3212-01	7.5505-01	-2.8023-01
P/PO1	4.2103-02	4.2380-02	4.3996-02	4.4715-02	6.2025-02	3.0869-01	4.4282-01	5.5338-01	3.9929-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4343 TO = 534.

P	6.1939-01	6.6881-01	7.2506-01	7.3236-01	7.4067-01	5.2809-01	6.1184-01	6.0691-01	5.7357-01
CP	-2.7432-01	-2.6742-01	-2.5957-01	-2.5856-01	-2.5740-01	-2.8706-01	-2.7537-01	-2.7606-01	-2.8071-01
P/PO1	4.2862-02	4.6282-02	5.0175-02	5.0679-02	5.1255-02	3.6544-02	4.2340-02	4.1999-02	3.9691-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4319 TO = 534.

P	6.4390-01	6.6770-01	7.0157-01	7.0728-01	9.2268-01	4.4010+00	6.2298+00	7.7760+00	8.9611+00
CP	-2.7039-01	-2.6705-01	-2.6230-01	-2.6149-01	-2.3177-01	2.5682-01	5.1344-01	7.3041-01	8.9670-01
P/PO1	4.4811-02	4.6467-02	4.8824-02	4.9722-02	6.4213-02	3.0628-01	4.3355-01	5.4116-01	6.2363-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	6.0000-01	1.6289+00	6.3750-01	1.7461+00	6.2813-01	2.9438+00	1.7859+00	6.4453-01
CP	-2.7655-01	-1.3217-01	-2.7129-01	-1.1572-01	-2.7260-01	5.2334-02	-1.1013-01	-2.7030-01
P/PO1	4.1756-02	1.1336-01	4.4366-02	1.2152-01	4.3713-02	2.0487-01	1.2429-01	4.4855-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	9.7500-01	9.3516-01	6.3984-01	6.0938-01	6.3750-01	6.7031-01	6.4453-01
CP	-2.2393-01	-2.2952-01	-2.7096-01	-2.7523-01	-2.7129-01	-2.6668-01	-2.7030-01
P/PO1	6.7854-02	6.5081-02	4.4529-02	4.2408-02	4.4366-02	4.6649-02	4.4855-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	42.	301244	1.99	3	11.18	26.79	-5.01	145.01	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4318 TO = 534.

P	5.7817-01	5.2684-01	1.6786+00	2.1921+00	2.6295+00	2.1877+00	2.4398+00	2.4363+00	1.6774+00
CP	-2.7959-01	-2.8680-01	-1.2514-01	-5.3072-02	8.326[illegible]	-5.3659-02	-1.8301-02	-1.8721-02	-1.2531-01
P/PO1	4.0246-02	3.6673-02	1.1685-01	1.5259-01	1.8304-01	1.5230-01	1.6983-01	1.6963-01	1.1676-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.9 Q-INF = 7.169 P-INF =2.5960 RE = .4344 TO = 534.

P	1.3379+00	3.9009+00	9.4012+00	1.3221+01	1.3955+01	1.4251+01	1.4266+01	1.3592+01	1.2166+01
CP	-1.7411-01	1.8342-01	9.5070-01	1.4835+00	1.5859+00	1.6272+00	1.6294+00	1.5354+00	1.3364+00
P/PO1	9.2562-02	2.6988-01	6.5041-01	9.1465-01	9.6546-01	9.8592-01	9.8699-01	9.4035-01	8.4164-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4323 TO = 534.

P	1.0931+01	1.1511+00	3.7279+00	8.9906+00	1.2633+01	1.3908+01	1.7829+00	2.0851+00	2.0274+00
CP	1.1717+00	-1.9937-01	1.6188-01	8.9[illegible]-01	1.4102+00	1.5890+00	-1.1080-01	-6.8432-02	-7.6523-02
P/PO1	7.5999-01	8.0030-02	2.5919-01	6.2509-01	8.7832-01	9.6696-01	1.2396-01	1.4497-01	1.4096-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.9 Q-INF = 7.113 P-INF =2.5659 RE = .4311 TO = 534.

P	1.3328+00	9.3662-01	3.1954+00	7.8754-01	1.6500+00	2.2138+00	2.2849+00	1.4833+00	1.4599+00
CP	-1.7336-01	-2.2906-01	8.8490-02	-2.5002-01	-1.2876-01	-4.4509-02	-3.9515-02	-1.5221-01	-1.5549-01
P/PO1	9.2932-02	6.5306-02	2.2280-01	5.4911-02	1.1505-01	1.5436-01	1.5931-01	1.0342-01	1.0179-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.8 Q-INF = 7.120 P-INF =2.5684 RE = .4315 TO = 534.

P	7.1965-01	6.7103-01	1.5971+00	5.1677+00	9.5834+00	1.1787+01	1.1714+01	2.2799+00	1.8[illegible]49+00
CP	-2.5966-01	-2.6649-01	-1.3642-01	3.6509-01	9.8530-01	1.2948+00	1.3127+00	-4.0521-02	-1.0723-01
P/PO1	5.0130-02	4.6743-02	1.1125-01	3.5998-01	6.6757-01	8.2109-01	8.2[illegible]5-01	1.5881-01	1.2573-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4316 TO = 534.

P	8.8348-01	6.7546-01	7.1577-01	6.5615-01	6.3593-01	6.2857-01	8.3580-01	8.9147-01	1.9849+00
CP	-2.3668-01	-2.6589-01	-2.6023-01	-2.6860-01	-2.7144-01	-2.7248-01	-2.4338-01	-2.3556-01	-8.2020-02
P/PO1	6.1528-02	4.7041-02	4.9848-02	4.5696-02	4.4288-02	4.3775-02	5.8207-02	6.2085-02	1.3823-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4323 TO = 534.

P	6.0268-01	6.9210-01	7.0157-01	1.5500+00	5.8496+00	8.7313+00	9.7963+00	5.8802-01	6.3746-01
CP	-2.7625-01	-2.6372-01	-2.6239-01	-1.4345-01	4.5931-01	8.6329-01	1.0126+00	-2.7831-01	-2.7138-01
P/PO1	4.1903-02	4.8120-02	4.8778-02	1.0777-01	4.0571-01	6.0706-01	6.8111-01	4.0863-02	4.4321-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4328 TO = 534.

P	6.5169-01	6.6215-01	6.8255-01	6.8471-01	5.8481-01	5.8391-01	5.8377-01	5.7134-01	6.3582-01
CP	-2.6949-01	-2.6802-01	-2.6517-01	-2.6487-01	-2.7885-01	-2.7898-01	-2.7900-01	-2.8074-01	-2.7171-01
P/PO1	4.5257-02	4.5983-02	4.7400-02	4.7550-02	4.0612-02	4.0550-02	4.0541-02	3.9677-02	4.4154-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4316 TO = 534.

P	6.4278-01	6.5772-01	6.8366-01	6.8708-01	9.7923-01	4.8108+00	6.9929+00	8.6069+00	5.9135-01
CP	-2.7048-01	-2.6838-01	-2.6474-01	-2.6398-01	-2.2324-01	3.1481-01	6.2122-01	8.4787-01	-2.7770-01
P/PO1	4.4765-02	4.5805-02	4.7612-02	4.7989-02	6.8196-02	3.3504-01	4.8701-01	5.9941-01	4.1183-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4304 TO = 534.

P	6.4501-01	6.6770-01	7.4124-01	7.3988-01	7.2478-01	5.3479-01	5.9500-01	6.0914-01	5.6468-01
CP	-2.6993-01	-2.6674-01	-2.5638-01	-2.5657-01	-2.5870-01	-2.8545-01	-2.7697-01	-2.7498-01	-2.8124-01
P/PO1	4.5038-02	4.6622-02	5.1757-02	5.1662-02	5.0608-02	3.7341-02	4.1546-02	4.2533-02	3.9428-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4316 TO = 534.

P	6.5169-01	6.7213-01	7.0828-01	7.0979-01	9.9722-01	4.7163+00	6.6659+00	8.1993+00	9.4278+00
CP	-2.6923-01	-2.6636-01	-2.6128-01	-2.6107-01	-2.2071-01	3.0153-01	5.7530-01	7.9063-01	9.6313-01
P/PO1	4.5386-02	4.6809-02	4.9327-02	4.9432-02	6.9449-02	3.2845-01	4.6473-01	5.7102-01	6.5658-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	5.9531-01	1.6711+00	6.3516-01	2.0461+00	6.4688-01	3.2461+00	2.7680+00	6.4922-01
CP	-2.7715-01	-1.2608-01	-2.7155-01	-7.3424-02	-2.6991-01	9.5083-02	2.7944-02	-2.6958-01
P/PO1	4.1459-02	1.1638-01	4.4234-02	1.4250-01	4.5050-02	2.2607-01	1.9277-01	4.5213-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	7.2656-01	1.0688+00	6.7500-01	6.6563-01	6.7500-01	7.1953-01	6.9375-01
CP	-2.5872-01	-2.1066-01	-2.6596-01	-2.6727-01	-2.6596-01	-2.5970-01	-2.6332-01
P/PO1	5.0600-02	7.4431-02	4.7009-02	4.6356-02	4.7009-02	5.0110-02	4.8315-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS S3 WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	43.	301244	1.99	3	9.42	32.20	-5.00	142.99	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC WIND TUNNEL

VALVE POS 2 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4337 TO = 534.

P	5.4364-01	5.2906-01	1.7932+00	2.3150+00	2.7252+00	2.3616+00	2.6511+00	2.7165+00	1.9699+00
CP	-2.8478-01	-2.8682-01	-1.1018-01	-3.7278-02	2.0050-02	-3.0842-02	9.6930-03	1.8835-02	-8.5495-02
P/PO1	3.7673-02	3.6663-02	1.2427-01	1.6042-01	1.8885-01	1.6361-01	1.8372-01	1.8829-01	1.3651-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4328 TO = 534.

P	1.5766+00	4.4783+00	9.9348+00	1.3392+01	1.3977+01	1.4198+01	1.4173+01	1.3326+01	1.1839+01
CP	-1.3967-01	2.6723-01	1.0323+00	1.5172+00	1.5892+00	1.6288+00	1.6266+00	1.5079+00	1.2994+00
P/PO1	1.0964-01	3.1144-01	6.9091-01	9.3135-01	9.6508-01	9.8671-01	9.8563-01	9.2673-01	8.2334-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4331 TO = 534.

P	1.0618+01	1.3852+00	4.2415+00	9.4744+00	1.2804+01	1.3861+01	1.9174+00	2.2824+00	2.2849+00
CP	1.1249+00	-1.6692-01	2.3275-01	9.6497-01	1.4306+00	1.5787+00	-9.2446-02	-4.1381-02	-4.1031-02
P/PO1	7.3682-01	9.6129-02	2.9434-01	6.5749-01	8.8853-01	9.6189-01	1.3306-01	1.5839-01	1.5856-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4336 TO = 534.

P	1.5816+00	1.1141+00	3.5758+00	7.3487-01	1.4162+00	2.0538+00	2.2849+00	1.5907+00	1.5949+00
CP	-1.3969-01	-2.0504-01	1.3901-01	-2.5804-01	-1.6282-01	-7.3696-02	-4.1408-02	-1.3843-01	-1.3784-01
P/PO1	1.0963-01	7.7222-02	2.4785-01	5.0937-02	9.8160-02	1.4236-01	1.5837-01	1.1026-01	1.1055-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4332 TO = 534.

P	7.6978-01	5.0687-01	1.7983+00	5.5185+00	9.7389+00	1.1772+01	1.1743+01	2.2699+00	2.0799+00
CP	-2.5306-01	-2.8983-01	-1.0917-01	4.1125-01	1.0017+00	1.2860+00	1.2820+00	-4.3203-02	-6.9783-02
P/PO1	5.3407-02	3.5167-02	1.2477-01	3.8287-01	6.7569-01	8.1671-01	8.1474-01	1.5748-01	1.4430-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4312 TO = 534.

P	1.0231+00	6.5772-01	7.0303-01	7.1731-01	5.8107-01	5.8949-01	7.5299-01	8.2405-01	1.9399+00
CP	-2.1694-01	-2.6830-01	-2.6193-01	-2.5992-01	-2.7907-01	-2.7788-01	-2.5490-01	-2.4492-01	-8.8080-02
P/PO1	7.1320-02	4.5849-02	4.9008-02	5.0003-02	4.0505-02	4.1093-02	5.2490-02	5.7443-02	1.3523-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4321 TO = 534.

P	6.0045-01	6.7103-01	6.8366-01	1.5799+00	5.8334+00	8.5598+00	9.5471+00	5.9246-01	6.1496-01
CP	-2.7652-01	-2.6663-01	-2.6485-01	-1.4616-01	4.5743-01	8.3982-01	9.7831-01	-2.7764-01	-2.7449-01
P/PO1	4.1768-02	4.6677-02	4.7556-02	1.0642-01	4.0578-01	5.9542-01	6.6410-01	4.1212-02	4.2777-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4340 TO = 534.

P	6.2496-01	6.3886-01	6.6017-01	6.6297-01	5.4740-01	5.6605-01	5.8265-01	5.8691-01	6.1692-01
CP	-2.7348-01	-2.7154-01	-2.6856-01	-2.6817-01	-2.8431-01	-2.8170-01	-2.7939-01	-2.7879-01	-2.7460-01
P/PO1	4.3278-02	4.4241-02	4.5716-02	4.5910-02	3.7907-02	3.9198-02	4.0348-02	4.0643-02	4.2721-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4313 TO = 534.

P	6.2050-01	6.3331-01	6.5681-01	6.6524-01	9.3296-01	4.5838+00	6.6503+00	8.2307+00	6.0469-01
CP	-2.7355-01	-2.7175-01	-2.6844-01	-2.6726-01	-2.2964-01	2.8339-01	5.7377-01	7.9585-01	-2.7577-01
P/PO1	4.3244-02	4.4137-02	4.5775-02	4.6362-02	6.5020-02	3.1946-01	4.6347-01	5.7362-01	4.2142-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4348 TO = 534.

P	6.1605-01	6.2333-01	7.0269-01	7.1982-01	7.2696-01	4.8454-01	5.5795-01	6.0247-01	5.8468-01
CP	-2.7489-01	-2.7387-01	-2.6281-01	-2.6042-01	-2.5943-01	-2.9321-01	-2.8298-01	-2.7678-01	-2.7926-01
P/PO1	4.2580-02	4.3084-02	4.8569-02	4.9753-02	5.0246-02	3.3491-02	3.8565-02	4.1642-02	4.0413-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4328 TO = 534.

P	6.3833-01	6.4330-01	6.8590-01	6.9021-01	9.4067-01	4.4704+00	6.2921+00	7.8701+00	9.1322+00
CP	-2.7136-01	-2.7066-01	-2.6470-01	-2.6409-01	-2.2902-01	2.6522-01	5.2030-01	7.4126-01	9.1799-01
P/PO1	4.4329-02	4.4674-02	4.7633-02	4.7932-02	6.5326-02	3.1045-01	4.3696-01	5.4654-01	6.3419-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	5.9063-01	1.6852+00	6.0469-01	1.9383+00	6.2578-01	3.5789+00	2.3180+00	6.3984-01	
CP	-2.7804-01	-1.2478-01	-2.7607-01	-8.9335-02	-2.7312-01	1.4039-01	-3.6169-02	-2.7115-01	
P/PO1	4.1016-02	1.1703-01	4.1993-02	1.3460-01	4.3458-02	2.4854-01	1.6097-01	4.4434-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	9.2578-01	1.1813+00	6.3516-01	6.3984-01	6.4922-01	6.9844-01	6.5859-01
CP	-2.3111-01	-1.9534-01	-2.7180-01	-2.7115-01	-2.6983-01	-2.6294-01	-2.6852-01
P/PO1	6.4291-02	8.2032-02	4.4109-02	4.4434-02	4.5085-02	4.8503-02	4.5736-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

ARNOLD ENGINEERING DEVELOPMENT CENTER

VON KARMAN [illegible]

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	44.	301244	1.99	3	9.42	-32.17	5.00	142.99	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS WIND TUNNEL

VALVE POS 2 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4332 TO = 534.

P	5.9488-01	6.0226-01	1.8315+00	2.3427+00	2.6937+00	2.3518+00	2.6319+00	2.6668+00	1.9949+00
CP	-2.7752-01	-2.7649-01	-1.0453-01	-3.3018-02	1.6928-02	-3.1739-02	7.4426-03	1.2325-02	-9.4263-02
P/PO1	4.1273-02	4.1785-02	1.2707-01	1.6254-01	1.8731-01	1.6317-01	1.8260-01	1.3502-01	1.3216-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4334 TO = 534.

P	1.5105+00	4.3493+00	9.8249+00	1.3377+01	1.3939+01	1.4235+01	1.4266+01	1.3498+01	1.1979+01
CP	-1.4953-01	2.4741-01	1.0130+00	1.5097+00	1.5884+00	1.6297+00	1.6340+00	1.5267+00	1.3143+00
P/PO1	1.0475-01	3.0161-01	6.8133-01	9.2763-01	9.6666-01	9.8716-01	9.8932-01	9.3607-01	8.3072-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4338 TO = 534.

P	1.0743+01	1.5183+00	4.6092+00	1.0021+01	1.3333+01	1.4266+01	3.3235+00	2.5984+00	2.5106+00
CP	1.1400+00	-1.4864-01	2.8313-01	1.0391+00	1.5018+00	1.6322+00	1.0353-01	2.2458-03	-1.0020-02
P/PO1	7.4429-01	1.0519-01	3.1933-01	6.9426-01	9.2371-01	9.8839-01	2.3026-01	1.8002-01	1.7394-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4330 TO = 534.

P	1.8914+00	1.3951+00	4.3683+00	1.6127+00	2.1101+00	2.6356+00	3.7782+00	2.1101+00	2.1049+00
CP	-9.6030-02	-1.6549-01	2.5063-01	-1.3503-01	-6.5417-02	8.1266-03	1.6804-01	-6.5420-02	-6.6147-02
P/PO1	1.3128-01	9.6836-02	3.0321-01	1.1194-01	1.4647-01	1.8294-01	2.6225-01	1.4647-01	1.4610-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 20.0 Q-INF = 7.185 P-INF =2.5721 RE = .4354 TO = 534.

P	1.3278+00	8.9718-01	2.8530+00	7.5078+00	1.1341+01	1.2925+01	1.2522+01	2.2674+00	2.6975+00
CP	-1.7596-01	-2.3588-01	3.6310-02	6.8411-01	1.2176+00	1.4381+00	1.3819+00	-4.5190-02	1.4673-02
P/PO1	9.1644-02	6.1925-02	1.9692-01	5.1820-01	7.8280-01	8.9213-01	8.6428-01	1.5650-01	1.8619-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4346 TO = 534.

P	1.4775+00	6.8101-01	6.5233-01	1.4371+00	5.7982-01	5.6381-01	8.5132-01	7.2666-01	3.3392+00
CP	-1.5472-01	-2.6579-01	-2.6979-01	-1.6036-01	-2.7990-01	-2.8213-01	-2.4204-01	-2.5942-01	1.0485-01
P/PO1	1.0217-01	4.7093-02	4.5110-02	9.9380-02	4.0095-02	3.8989-02	5.8370-02	5.0250-02	2.3091-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4331 TO = 534.

P	4.4672-01	6.8655-01	6.1765-01	2.3928+00	6.8919+00	9.6667+00	1.0466+01	4.1684-01	4.0461-01
CP	-2.9823-01	-2.6468-01	-2.7432-01	-2.5929-02	6.0361-01	9.9188-01	1.1037+00	-3.0242-01	-3.0413-01
P/PO1	3.1001-02	4.7644-02	4.2862-02	1.6605-01	4.7827-01	6.7084-01	7.2630-01	2.8927-02	2.8078-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4362 TO = 534.

P	6.4278-01	6.0559-01	6.3443-01	6.3572-01	5.6486-01	5.8726-01	5.7816-01	4.3129-01	5.4689-01
CP	-2.7143-01	-2.7660-01	-2.7259-01	-2.7241-01	-2.8226-01	-2.7915-01	-2.8041-01	-3.0082-01	-2.8476-01
P/PO1	4.4293-02	4.1730-02	4.3718-02	4.3806-02	3.8923-02	4.0467-02	3.9840-02	2.9719-02	3.7685-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH [illegible] SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4342 TO = 534.

P	6.1827-01	6.0004-01	6.1765-01	6.1983-01	1.0332+00	4.8865+00	7.2577+00	8.8264+00	5.4911-01
CP	-2.7445-01	-2.7700-01	-2.7454-01	-2.7424-01	-2.1654-01	3.2123-01	6.5216-01	8.7110-01	-2.8411-01
P/PO1	4.2795-02	4.1533-02	4.2751-02	4.2902-02	7.1515-02	3.3823-01	5.0235-01	6.1093-01	3.8008-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4346 TO = 534.

P	6.5949-01	6.1557-01	6.2548-01	6.3118-01	6.3094-01	5.4372-01	5.9612-01	6.6174-01	5.9802-01
CP	-2.6879-01	-2.7491-01	-2.7353-01	-2.7273-01	-2.7277-01	-2.8493-01	-2.7762-01	-2.6847-01	-2.7736-01
P/PO1	4.5605-02	4.2567-02	4.3253-02	4.3647-02	4.3631-02	3.7599-02	4.1223-02	4.5760-02	4.1354-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4600-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4351 TO = 534.

P	6.3944-01	6.4441-01	6.8590-01	6.8681-01	9.4838-01	4.5334+00	6.3855+00	7.9798+00	9.2878+00
CP	-2.7169-01	-2.7100-01	-2.6522-01	-2.6507-01	-2.2866-01	2.7062-01	5.2856-01	7.5059-01	9.3275-01
P/PO1	4.4166-02	4.4509-02	4.7375-02	4.7438-02	6.5505-02	3.1312-01	4.4105-01	5.5117-01	6.4151-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	5.0859-01	2.5406+00	4.4531-01	3.1898+00	4.2422-01	5.3086+00	4.4203+00	4.2891-01	
CP	-2.8991-01	-6.9138-03	-2.9872-01	8.3502-02	-3.0166-01	3.7858-01	2.5487-01	-3.0101-01	
P/PO1	3.5129-02	1.7548-01	3.0758-02	2.2032-01	2.9301-02	3.6667-01	3.0531-01	2.9625-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	4.2656-01	2.9109+00	4.1016-01	9.7969-01	5.8359-01	6.3750-01	6.0469-01
CP	-3.0133-01	4.4659-02	-3.0362-01	-2.2430-01	-2.7947-01	-2.7196-01	-2.7653-01
P/PO1	2.9463-02	2.0106-01	2.8330-02	6.7667-02	4.0309-02	4.4032-02	4.1766-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	45.	391244	1.99	3	12.03	-48.73	9.01	143.00	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.199 P-INF =2.5970 RE = .4363 TO = 534.

P	5.7260-01	5.2795-01	1.6684+00	2.1544+00	2.5785+00	2.3203+00	2.6127+00	2.6917+00	1.8874+00
CP	-2.8170-01	-2.8740-01	-1.2898-01	-6.1470-02	-2.5713-03	-3.8431-02	2.1860-03	1.3157-02	-9.8567-02
P/PO1	3.9448-02	3.6371-02	1.1494-01	1.4842-01	1.7764-01	1.5785-01	1.7999-01	1.8544-01	1.3003-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4357 TO = 534.

P	1.4877+00	4.2511+00	9.6680+00	1.3236+01	1.3846+01	1.4142+01	1.4157+01	1.3404+01	1.1948+01
CP	-1.5380-01	2.3060-01	9.8412-01	1.4905+00	1.5653+00	1.6054+00	1.6086+00	1.5038+00	1.3013+00
P/PO1	1.0264-01	2.9328-01	6.6699-01	9.1313-01	9.5523-01	9.7561-01	9.7669-01	9.2475-01	8.2429-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9780+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4341 TO = 534.

P	1.0680+01	1.5651+00	4.7487+00	1.0099+01	1.3302+01	1.4173+01	3.4964+00	2.7476+00	2.6851+00
CP	1.1302+00	-1.4225-01	3.0215-01	1.0490+00	1.4961+00	1.6177+00	1.2734-01	2.2816-02	1.4083-02
P/PO1	7.3943-01	1.0836-01	3.2876-01	6.9917-01	9.2091-01	9.8122-01	2.4207-01	1.9023-01	1.8589-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4358 TO = 534.

P	2.0437+00	1.5331+00	4.7043+00	1.5475+00	2.0690+00	2.6608+00	3.8614+00	2.3498+00	2.3237+00
CP	-7.6523-02	-1.4753-01	2.9349-01	-1.4553-01	-7.3006-02	9.2978-03	1.7627-01	-3.3953-02	-3.7573-02
P/PO1	1.4096-01	1.0574-01	3.2447-01	1.0673-01	1.4270-01	1.8352-01	2.6633-01	1.6207-01	1.6028-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1300-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4364 TO = 534.

P	1.5969+00	1.1141+00	3.3095+00	8.3506+00	1.1995+01	1.3346+01	1.2787+01	2.7974+00	3.1087+00
CP	-1.3897-01	-2.0602-01	9.8867-02	7.9896-01	1.3050+00	1.4928+00	1.4150+00	2.7746-02	7.0483-02
P/PO1	1.0999-01	7.6734-02	2.2794-01	5.7516-01	8.2615-01	9.1924-01	8.8069-01	1.9267-01	2.1411-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4353 TO = 534.

P	1.7162+00	8.6268-01	5.4604-01	1.8610+00	5.5862-01	7.0831-01	9.2119-01	7.5413-01	3.7192+00
CP	-1.2184-01	-2.4065-01	-2.8473-01	-1.0169-01	-2.8298-01	-2.6214-01	-2.3251-01	-2.5576-01	1.5698-01
P/PO1	1.1848-01	5.9557-02	3.7697-02	1.2848-01	4.8566-02	4.8900-02	6.3597-02	5.2061-02	2.5677-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4337 TO = 534.

P	3.7765-01	7.2426-01	7.5907-01	2.9064+00	7.4831+00	1.0103+01	1.0762+01	3.5949-01	3.8238-01
CP	-3.0797-01	-2.5954-01	-2.5468-01	4.5367-02	6.8486-01	1.0510+00	1.1430+00	-3.1051-01	-3.0731-01
P/PO1	2.6170-02	5.0190-02	5.2602-02	2.0141-01	5.1857-01	7.0014-01	7.4578-01	2.4912-02	2.6498-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4354 TO = 534.

P	6.1605-01	6.0891-01	6.4562-01	6.4480-01	5.2495-01	6.2745-01	6.2307-01	4.0270-01	5.5356-01
CP	-2.7501-01	-2.7600-01	-2.7089-01	-2.7100-01	-2.8768-01	-2.7342-01	-2.7403-01	-3.0470-01	-2.8370-01
P/PO1	4.2521-02	4.2028-02	4.4562-02	4.4505-02	3.6233-02	4.3308-02	4.3005-02	2.7795-02	3.8208-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS AS WIND TUNNEL

VALVE POS 10 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4357 TO = 534.

P	6.2162-01	6.1335-01	6.3107-01	6.3345-01	1.1129+00	5.0063+00	7.4602+00	8.9832+00	5.3022-01
CP	-2.7427-01	-2.7542-01	-2.7296-01	-2.7263-01	-2.0594-01	3.3566-01	6.7700-01	8.8886-01	-2.8699-01
P/PO1	4.2885-02	4.2315-02	4.3537-02	4.3701-02	7.6776-02	3.4538-01	5.1467-01	6.1974-01	3.6579-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4342 TO = 534.

P	6.3833-01	6.2888-01	6.3331-01	6.3913-01	6.4092-01	5.1134-01	5.8714-01	6.0469-01	5.6023-01
CP	-2.7165-01	-2.7297-01	-2.7235-01	-2.7154-01	-2.7129-01	-2.8938-01	-2.7880-01	-2.7635-01	-2.8255-01
P/PO1	4.4183-02	4.3529-02	4.3836-02	4.4238-02	4.4362-02	3.5393-02	4.0649-02	4.1855-02	3.8777-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4346 TO = 534.

P	6.4167-01	6.4108-01	6.7247-01	6.7318-01	9.5095-01	4.4893+00	6.3388+00	7.9642+00	9.1944+00
CP	-2.7127-01	-2.7135-01	-2.6698-01	-2.6688-01	-2.2815-01	2.6521-01	5.2309-01	7.4971-01	9.2125-01
P/PO1	4.4372-02	4.4332-02	4.6503-02	4.6552-02	6.5760-02	3.1044-01	4.3834-01	5.5073-01	6.3581-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	4.7344-01	2.8594+00	3.8906-01	3.5320+00	3.7500-01	5.4445+00	4.4648+00	3.4219-01
CP	-2.9473-01	3.7946-02	-3.0649-01	1.3174-01	-3.0845-01	3.9840-01	2.6180-01	-3.1303-01
P/PO1	3.2739-02	1.9773-01	2.6904-02	2.4425-01	2.5932-02	3.7650-01	3.0875-01	2.3663-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.3984-01	5.0648+00	2.7656-01	1.3641+00	4.8516-01	6.4219-01	6.3281-01
CP	-3.1336-01	3.4546-01	-3.2218-01	-1.7055-01	-2.9310-01	-2.7120-01	-2.7251-01
P/PO1	2.3501-02	3.5024-01	1.9125-02	9.4327-02	3.3549-02	4.4408-02	4.3760-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	46.	301244	1.99	3	13.43	-42.40	9.01	145.00	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4358 TO = 534.

P	6.2719-01	6.1446-01	1.5462+00	2.0190+00	2.4891+00	2.1782+00	2.4142+00	2.3871+00	1.6124+00
CP	-2.7352-01	-2.7529-01	-1.4571-01	-7.9955-02	-1.4578-02	-5.7810-02	-2.4996-02	-2.8766-02	-1.3650-01
P/PO1	4.3259-02	4.2381-02	1.0664-01	1.3926-01	1.7168-01	1.5024-01	1.6651-01	1.6464-01	1.1121-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4360 TO = 534.

P	1.2668+00	3.7965+00	9.1658+00	1.3018+01	1.3753+01	1.4142+01	1.4173+01	1.3608+01	1.2228+01
CP	-1.8464-01	1.6699-01	9.1336-01	1.4488+00	1.5510+00	1.6050+00	1.6094+00	1.5309+00	1.3390+00
P/PO1	8.7336-02	2.6173-01	6.3189-01	8.9744-01	9.4812-01	9.7493-01	9.7708-01	9.3815-01	8.4302-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6760+00

VALVE POS 4 PO = 20.0 Q-INF = 7.214 P-INF =2.6024 RE = .4372 TO = 534.

P	1.1025+01	1.3482+00	4.2668+00	9.6774+00	1.3177+01	1.4282+01	3.3107+00	2.5425+00	2.4296+00
CP	1.1675+00	-1.7385-01	2.3071-01	9.8970-01	1.4658+00	1.6190+00	9.8177-02	-8.3101-03	-2.3952-02
P/PO1	7.5792-01	9.2688-02	2.9333-01	6.6529-01	9.0589-01	9.8184-01	2.2760-01	1.7479-01	1.6703-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4318 TO = 534.

P	1.7619+00	1.3187+00	4.2478+00	1.3517+00	1.8711+00	2.4779+00	3.7374+00	2.1975+00	2.1474+00
CP	-1.1345-01	-1.7566-01	2.3546-01	-1.7100-01	-9.8126-02	-1.2950-02	1.7224-01	-5.2314-02	-5.9345-02
P/PO1	1.2264-01	9.1792-02	2.9569-01	9.4102-02	1.3024-01	1.7249-01	2.6434-01	1.5296-01	1.4948-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4343 TO = 534.

P	1.3861+00	9.6620-01	3.0115+00	8.0541+00	1.1824+01	1.3409+01	1.3665+01	2.7041+00	2.3673+00
CP	-1.6733-01	-2.2593-01	5.9453-02	7.6304-01	1.2877+00	1.5102+00	1.4538+00	1.6564-02	-3.0426-02
P/PO1	9.5922-02	6.6861-02	2.0840-01	5.5734-01	8.1820-01	9.2789-01	8.9993-01	1.8713-01	1.6382-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4366 TO = 534.

P	1.5867+00	7.6162-01	7.1068-01	1.7155+00	5.9229-01	6.5760-01	8.9273-01	7.5413-01	3.5822+00
CP	-1.4049-01	-2.5502-01	-2.6209-01	-1.2261-01	-2.7852-01	-2.6946-01	-2.3682-01	-2.5606-01	1.3650-01
P/PO1	1.0924-01	5.2433-02	4.8926-02	1.1810-01	4.0775-02	4.5271-02	6.1459-02	5.1917-02	2.4661-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4344 TO = 534.

P	3.8099-01	7.2648-01	7.4379-01	2.9315+00	7.6698+00	1.0368+01	1.1058+01	3.6132-01	6.7746-01
CP	-3.0759-01	-2.5940-01	-2.5698-01	4.8193-02	7.0918-01	1.0856+00	1.1818+00	-3.1034-01	-2.6624-01
P/PO1	2.6358-02	5.0261-02	5.1458-02	2.0281-01	5.3063-01	7.1733-01	7.6503-01	2.4998-02	4.6869-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4337 TO = 534.

P	6.2719-01	6.2666-01	6.7136-01	6.7217-01	5.7109-01	6.2299-01	6.2419-01	3.8569-01	6.0914-01
CP	-2.7311-01	-2.7318-01	-2.6693-01	-2.6682-01	-2.8094-01	-2.7369-01	-2.7352-01	-3.0685-01	-2.7563-01
P/PO1	4.3463-02	4.3426-02	4.6524-02	4.6580-02	3.9575-02	4.3172-02	4.3255-02	2.6728-02	4.2212-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 INCH CONTOURED NOZZLE WIND TUNNEL

VALVE POS 10 PO = 20.0 Q-INF = 7.185 P-INF =2.5721 RE = .4354 TO = 534.

P	6.1493-01	6.2001-01	6.4450-01	6.4821-01	1.1720+00	5.2081+00	7.7561+00	9.3281+00	5.0020-01
CP	-2.7516-01	-2.7446-01	-2.7105-01	-2.7053-01	-1.9764-01	3.6406-01	7.1867-01	9.3745-01	-2.9113-01
P/PO1	4.2444-02	4.2794-02	4.4485-02	4.4740-02	8.0892-02	3.5947-01	5.3534-01	6.4384-01	3.4525-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 20.0 Q-INF = 7.182 P-INF =2.5409 RE = .4352 TO = 534.

P	6.3387-01	6.2111-01	6.3891-01	6.5161-01	6.5588-01	5.6158-01	6.4664-01	6.7922-01	5.7134-01
CP	-2.7248-01	-2.7428-01	-2.7178-01	-2.7001-01	-2.6942-01	-2.8255-01	-2.7671-01	-2.6617-01	-2.8119-01
P/PO1	4.3771-02	4.2890-02	4.4119-02	4.4997-02	4.5291-02	3.8779-02	4.4653-02	4.6903-02	3.9454-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4349 TO = 534.

P	6.4501-01	6.7103-01	7.0269-01	7.0497-01	1.0101+00	4.7352+00	6.7282+00	8.2934+00	9.5523+00
CP	-2.7087-01	-2.6725-01	-2.6283-01	-2.6252-01	-2.2001-01	2.9903-01	5.7672-01	7.9480-01	9.7021-01
P/PO1	4.4572-02	4.6370-02	4.8557-02	4.8715-02	6.9798-02	3.2721-01	4.6493-01	5.7310-01	6.6009-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	4.4297-01	3.2813+00	3.9141-01	4.0172+00	3.4219-01	5.2641+00	5.1867+00	2.6953-01
CP	-2.9902-01	9.6446-02	-3.0621-01	1.9899-01	-3.1306-01	3.7272-01	3.6194-01	-3.2319-01
P/PO1	3.0610-02	2.2674-01	2.7047-02	2.7760-01	2.3646-02	3.6376-01	3.5842-01	1.8625-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	7.8984-01	3.0750+00	3.8203-01	1.1273+00	5.9531-01	6.8438-01	6.6094-01
CP	-2.5069-01	6.7709-02	-3.0751-01	-2.0366-01	-2.7779-01	-2.6538-01	-2.6865-01
P/PO1	5.4580-02	2.1249-01	2.6399-02	7.7903-02	4.1138-02	4.7292-02	4.5673-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	47.	301244	1.99	3	11.18	-26.74	5.01	145.01	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

VALVE POS 2 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4335 TO = 534.

P	6.0825-01	5.8784-01	1.7347+00	2.2422+00	2.6295+00	2.1884+00	2.4678+00	2.3871+00	1.6124+00
CP	-2.7571-01	-2.7857-01	-1.1825-01	-4.7293-02	6.8466-03	-5.4819-02	-2.4150-02	-2.7044-02	-1.3534-01
P/PO1	4.2170-02	4.0755-02	1.2027-01	1.5546-01	1.8231-01	1.5172-01	1.6693-01	1.6550-01	1.1179-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4344 TO = 534.

P	1.2821+00	3.8517+00	9.3227+00	1.3174+01	1.3893+01	1.4251+01	1.4313+01	1.3686+01	1.2290+01
CP	-1.8190-01	1.7657-01	9.3975-01	1.4770+00	1.5773+00	1.6272+00	1.6459+00	1.5485+00	1.3537+00
P/PO1	8.8698-02	2.6648-01	6.4498-01	9.1141-01	9.6116-01	9.8592-01	9.9023-01	9.4688-01	8.5030-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4324 TO = 534.

P	1.1025+01	1.2891+00	4.1210+00	9.5057+00	1.3053+01	1.4235+01	2.9649+00	2.3871+00	2.2824+00
CP	1.1845+00	-1.8007-01	2.1684-01	9.7154-01	1.4687+00	1.6344+00	5.4810-02	-2.6176-02	-4.0953-02
P/PO1	7.6635-01	8.9606-02	2.8645-01	6.6075-01	9.0731-01	9.8950-01	2.0609-01	1.6593-01	1.5965-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4340 TO = 534.

P	1.6146+00	1.1954+00	3.9181+00	1.5375+00	2.0099+00	2.5536+00	3.7333+00	1.9652+00	1.8849+00
CP	-1.3529-01	-1.9383-01	1.8634-01	-1.4607-01	-8.0108-02	-4.1871-03	1.6054-01	-8.6339-02	-9.7557-02
P/PO1	1.1181-01	8.2782-02	2.7133-01	1.0647-01	1.3918-01	1.7683-01	2.5853-01	1.3609-01	1.3053-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4333 TO = 534.

P	1.1374+00	7.7394-01	2.5297+00	7.1956+00	1.1232+01	1.3035+01	1.2802+01	2.3473+00	1.7824+00
CP	-2.0167-01	-2.5256-01	-6.9454-03	6.4563-01	1.2102+00	1.4623+00	1.4298+00	-3.2451-02	-1.1146-01
P/PO1	7.8891-02	5.3684-02	1.7547-01	4.9911-01	7.7912-01	9.0412-01	8.8801-01	1.6282-01	1.2363-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4326 TO = 535.

P	1.3506+00	6.5328-01	6.4674-01	1.3468+00	5.6984-01	5.5153-01	8.3062-01	7.0169-01	3.3703+00
CP	-1.7180-01	-2.6935-01	-2.7027-01	-1.7233-01	-2.8102-01	-2.8359-01	-2.4454-01	-2.6258-01	1.1074-01
P/PO1	9.3705-02	4.5324-02	4.4871-02	9.3444-02	3.9536-02	3.8265-02	5.7629-02	4.8683-02	2.3383-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.7 Q-INF = 7.105 P-INF =2.5629 RE = .4305 TO = 534.

P	4.4115-01	6.9543-01	6.2548-01	2.4053+00	7.1409+00	9.9162+00	1.0746+01	4.0016-01	4.8909-01
CP	-2.9865-01	-2.6286-01	-2.7270-01	-2.2178-02	6.4438-01	1.0350+00	1.1519+00	-3.0442-01	-2.9190-01
P/PO1	3.0796-02	4.8546-02	4.3664-02	1.6791-01	4.9849-01	6.9223-01	7.5018-01	2.7935-02	3.4142-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4325 TO = 534.

P	6.3944-01	6.3442-01	6.6129-01	6.6464-01	5.8730-01	6.3973-01	6.0960-01	4.2573-01	6.3470-01
CP	-2.7114-01	-2.7184-01	-2.6808-01	-2.6761-01	-2.7845-01	-2.7110-01	-2.7532-01	-3.0109-01	-2.7180-01
P/PO1	4.4438-02	4.4089-02	4.5956-02	4.6189-02	4.0814-02	4.4458-02	4.2364-02	2.9586-02	4.4109-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4322 TO = 534.

P	6.2941-01	6.2886-01	6.4898-01	6.5275-01	1.1077+00	5.1009+00	7.5692+00	9.1713+00	5.5578-01
CP	-2.7248-01	-2.7256-01	-2.6974-01	-2.6921-01	-2.0541-01	3.5452-01	7.0063-01	9.2529-01	-2.8281-01
P/PO1	4.3772-02	4.3735-02	4.5132-02	4.5395-02	7.7036-02	3.5474-01	5.2639-01	6.3781-01	3.8651-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4332 TO = 534.

P	6.5058-01	6.3664-01	6.4562-01	6.5956-01	6.6461-01	5.4372-01	6.2756-01	6.6423-01	5.8357-01
CP	-2.6973-01	-2.7168-01	-2.7042-01	-2.6847-01	-2.6777-01	-2.8468-01	-2.7295-01	-2.6782-01	-2.7910-01
P/PO1	4.5137-02	4.4170-02	4.4793-02	4.5760-02	4.6111-02	3.7723-02	4.3540-02	4.6084-02	4.0488-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4312 TO = 534.

P	6.5726-01	6.8433-01	7.3870-01	7.2484-01	1.0203+00	4.7856+00	6.7593+00	8.3404+00	9.5834+00
CP	-2.6836-01	-2.6455-01	-2.5691-01	-2.5886-01	-2.1733-01	3.1190-01	5.8932-01	8.1155-01	9.8625-01
P/PO1	4.5817-02	4.7704-02	5.1494-02	5.0527-02	7.1127-02	3.3360-01	4.7118-01	5.8140-01	6.6805-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0950+00	2.3540+00	2.6260+00

CEC	4.8281-01	2.8875+00	4.4766-01	3.5320+00	4.2422-01	5.0930+00	5.7023+00	3.2344-01
CP	-2.9288-01	4.5113-02	-2.9782-01	1.3571-01	-3.0111-01	3.5510-01	4.4075-01	-3.1528-01
P/PO1	3.3656-02	2.0128-01	3.1206-02	2.4621-01	2.9572-02	3.5503-01	3.9750-01	2.2546-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.2813-01	2.0977+00	5.1797-01	8.0156-01	6.2109-01	6.7266-01	6.4688-01
CP	-3.1462-01	-6.5904-02	-2.8794-01	-2.4808-01	-2.7344-01	-2.6620-01	-2.6982-01
P/PO1	2.2873-02	1.4623-01	3.6107-02	5.5876-02	4.3296-02	4.6890-02	4.5093-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	48.	301244	1.99	3	14.65	-37.33	8.82	146.74	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.170 P-INF =2.5466 RE = .4345 TO = 534.

P	5.7483-01	5.7342-01	1.4647+00	1.9613+00	2.4125+00	2.0361+00	2.2721+00	2.1446+00	1.3899+00
CP	-2.8057-01	-2.8077-01	-1.5647-01	-8.7207-02	-2.4292-02	-7.6783-02	-5.0841-02	-6.1640-02	-1.6690-01
P/PO1	3.9760-02	3.9662-02	1.0131-01	1.3566-01	1.6687-01	1.4083-01	1.5370-01	1.4834-01	9.6137-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4343 TO = 534.

P	1.0840+00	3.4033+00	8.7263+00	1.2783+01	1.3675+01	1.4079+01	1.4173+01	1.3718+01	1.2446+01
CP	-2.0949-01	1.1412-01	8.5684-01	1.4229+00	1.5473+00	1.6037+00	1.6168+00	1.5533+00	1.3758+00
P/PO1	7.5016-02	2.3551-01	6.0386-01	8.8462-01	9.4631-01	9.7428-01	9.8076-01	9.4928-01	8.6126-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4329 TO = 534.

P	1.1244+01	1.1609+00	3.8674+00	9.2403+00	1.2924+01	1.4266+01	2.8048+00	2.3373+00	2.2374+00
CP	1.2133+00	-1.9822-01	1.8066-01	9.3282-01	1.4491+00	1.6374+00	3.1708-02	-3.3533-02	-4.7530-02
P/PO1	7.8066-01	8.0601-02	2.6851-01	6.4155-01	8.9759-01	9.9049-01	1.9474-01	1.6228-01	1.5534-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4325 TO = 534.

P	1.5182+00	1.1437+00	3.8103+00	1.3017+00	1.8634+00	2.5156+00	3.5476+00	2.0576+00	1.9449+00
CP	-1.4801-01	-2.0049-01	1.7318-01	-1.7834-01	-9.9641-02	-8.2240-03	1.3637-01	-7.2419-02	-8.8217-02
P/PO1	1.0550-01	7.9478-02	2.6480-01	9.0461-02	1.2949-01	1.7483-01	2.4654-01	1.4299-01	1.3516-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4313 TO = 534.

P	1.1983+00	8.4789-01	2.7516+00	7.6638+00	1.1699+01	1.3409+01	1.3114+01	2.6792+00	1.6274+00
CP	-1.9236-01	-2.4159-01	2.5914-02	7.1620-01	1.2833+00	1.5235+00	1.4820+00	1.5753-02	-1.3205-01
P/PO1	8.3511-02	5.9091-02	1.9176-01	5.3411-01	8.1534-01	9.3448-01	9.1392-01	1.8672-01	1.1342-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4326 TO = 534.

P	1.4471+00	7.7887-01	7.5143-01	1.5926+00	5.4989-01	6.0736-01	9.1343-01	8.2904-01	3.9622+00
CP	-1.5773-01	-2.5147-01	-2.5532-01	-1.3731-01	-2.8360-01	-2.7554-01	-2.3260-01	-2.4444-01	1.9511-01
P/PO1	1.0068-01	5.4192-02	5.2282-02	1.1081-01	3.8260-02	4.2258-02	6.3553-02	5.7682-02	2.7568-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4326 TO = 534.

P	3.7653-01	7.4866-01	7.0045-01	2.9190+00	7.7165+00	1.0509+01	1.1229+01	3.8063-01	6.8496-01
CP	-3.0799-01	-2.5586-01	-2.6262-01	4.8177-02	7.2026-01	1.1114+00	1.2124+00	-3.0742-01	-2.6479-01
P/PO1	2.6161-02	5.2016-02	4.8666-02	2.0280-01	5.3613-01	7.3013-01	7.8018-01	2.6446-02	4.7590-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4329 TO = 534.

P	6.7843-01	6.8655-01	7.3105-01	7.1480-01	6.2970-01	6.1964-01	5.9725-01	4.0729-01	6.5496-01
CP	-2.6577-01	-2.6463-01	-2.5840-01	-2.6068-01	-2.7259-01	-2.7400-01	-2.7713-01	-3.0372-01	-2.6905-01
P/PO1	4.7103-02	4.7667-02	5.0756-02	4.9628-02	4.3719-02	4.3021-02	4.1466-02	2.8278-02	4.5473-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4322 TO = 534.

P	6.5504-01	6.6992-01	6.9038-01	6.9475-01	1.2285+00	5.3972+00	7.9741+00	9.5946+00	4.0461-01
CP	-2.6889-01	-2.6680-01	-2.6393-01	-2.6332-01	-1.8847-01	3.9607-01	7.5741-01	9.8465-01	-3.0401-01
P/PO1	4.5554-02	4.6589-02	4.8012-02	4.8316-02	8.5437-02	3.7534-01	5.5455-01	6.6725-01	2.8138-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4312 TO = 534.

P	6.6618-01	6.5439-01	6.7695-01	6.9475-01	7.0326-01	5.3255-01	6.5787-01	7.2416-01	6.1136-01
CP	-2.6711-01	-2.6876-01	-2.6559-01	-2.6309-01	-2.6189-01	-2.8589-01	-2.6927-01	-2.5896-01	-2.7481-01
P/PO1	4.6438-02	4.5617-02	4.7189-02	4.8430-02	4.9024-02	3.7124-02	4.5859-02	5.0481-02	4.2617-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4325 TO = 534.

P	7.3116-01	7.8134-01	7.8455-01	7.6998-01	1.0666+00	4.9306+00	7.0397+00	8.6069+00	9.8167+00
CP	-2.5829-01	-2.5126-01	-2.5081-01	-2.5285-01	-2.1128-01	3.3016-01	6.2568-01	8.4529-01	1.0148+00
P/PO1	5.0811-02	5.4299-02	5.4522-02	5.3510-02	7.4124-02	3.4265-01	4.8922-01	5.9814-01	6.8221-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	4.2188-01	3.5813+00	3.9609-01	4.1859+00	3.5859-01	4.7906+00	4.8234+00	2.8125-01
CP	-3.0163-01	1.4108-01	-3.0524-01	2.2581-01	-3.1049-01	3.1054-01	3.1514-01	-3.2133-01
P/PO1	2.9318-02	2.4888-01	2.7526-02	2.9090-01	2.4920-02	3.3292-01	3.3520-01	1.9545-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	2.6016-01	2.1609+00	5.5547-01	9.3984-01	6.7266-01	7.3828-01	6.8438-01
CP	-3.2429-01	-5.7943-02	-2.8291-01	-2.2905-01	-2.6649-01	-2.5729-01	-2.6484-01
P/PO1	1.8079-02	1.5017-01	3.8602-02	6.5314-02	4.6746-02	5.1307-02	4.7560-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	49.	301244	1.99	3	12.99	-22.83	5.00	147.00	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4319 TO = 534.

P	5.7260-01	5.6566-01	1.6837+00	2.2422+00	2.5721+00	2.0513+00	2.2072+00	2.1625+00	1.3699+00
CP	-2.8039-01	-2.8137-01	-1.2448-01	-4.6106-02	1.7841-04	-7.2898-02	-5.1016-02	-5.7293-02	-1.6851-01
P/PO1	3.9849-02	3.9366-02	1.1718-01	1.5604-01	1.7900-01	1.4276-01	1.5361-01	1.5050-01	9.5337-02
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.8 Q-INF = 7.118 P-INF =2.5678 RE = .4314 TO = 534.

P	1.0815+00	3.4217+00	8.7734+00	1.2830+01	1.3753+01	1.4126+01	1.4251+01	1.3796+01	1.2477+01
CP	-2.0880-01	1.1997-01	8.7182-01	1.4418+00	1.5714+00	1.6238+00	1.6413+00	1.5775+00	1.3921+00
P/PO1	7.5354-02	2.3841-01	6.1129-01	8.9396-01	9.5823-01	9.8424-01	9.9292-01	9.6126-01	8.6935-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.8 Q-INF = 7.113 P-INF =2.5659 RE = .4311 TO = 534.

P	1.1291+01	1.0966+00	3.6835+00	9.0218+00	1.2757+01	1.4204+01	2.3470+00	2.1975+00	2.0399+00
CP	1.2267+00	-2.0654-01	1.5712-01	9.0762-01	1.4328+00	1.6362+00	-3.0784-02	-5.1603-02	-7.3957-02
P/PO1	7.8727-01	7.6477-02	2.5684-01	6.2905-01	8.8949-01	9.9037-01	1.6364-01	1.5322-01	1.4223-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.8 Q-INF = 7.120 P-INF =2.5694 RE = .4315 TO = 534.

P	1.3608+00	1.0254+00	3.4997+00	1.5048+00	2.0073+00	2.5914+00	3.4068+00	1.8279+00	1.7299+00
CP	-1.6961-01	-2.1672-01	1.3081-01	-1.4938-01	-7.8807-02	3.2383-03	1.1776-01	-1.0400-01	-1.1777-01
P/PO1	9.4790-02	7.1425-02	2.4379-01	1.0483-01	1.3983-01	1.8052-01	2.3731-01	1.2733-01	1.2050-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4328 TO = 534.

P	9.5710-01	6.1890-01	2.2721+00	6.8522+00	1.1077+01	1.3066+01	1.2974+01	2.2149+00	1.2549+00
CP	-2.2672-01	-2.7408-01	-4.2588-02	5.9873-01	1.1903+00	1.4698+00	1.4559+00	-5.0595-02	-1.8502-01
P/PO1	6.6466-02	4.2980-02	1.5779-01	4.7585-01	7.6924-01	9.0735-01	9.0095-01	1.5382-01	8.7149-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4304 TO = 534.

P	1.1907+00	6.4330-01	6.6129-01	1.2540+00	5.3119-01	5.2627-01	8.5909-01	8.0907-01	3.8687+00
CP	-1.9311-01	-2.7017-01	-2.6764-01	-1.8419-01	-2.8596-01	-2.8749-01	-2.3979-01	-2.4683-01	1.8394-01
P/PO1	8.3138-02	4.4918-02	4.6174-02	8.7563-02	3.7090-02	3.6328-02	5.9986-02	5.6493-02	2.7013-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4342 TO = 534.

P	4.8125-01	7.0652-01	6.1205-01	2.4116+00	7.3431+00	1.0181+01	1.1011+01	4.6352-01	5.6468-01
CP	-2.9358-01	-2.6214-01	-2.7532-01	-2.4173-02	6.6408-01	1.0602+00	1.1760+00	-2.9605-01	-2.8193-01
P/PO1	3.3311-02	4.8903-02	4.2364-02	1.6692-01	5.0826-01	7.0471-01	7.6215-01	3.2083-02	3.9085-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4351 TO = 534.

P	6.5169-01	6.6659-01	6.9038-01	6.9223-01	5.6984-01	6.0624-01	6.0174-01	4.7575-01	6.4996-01
CP	-2.6998-01	-2.6791-01	-2.6459-01	-2.6434-01	-2.8138-01	-2.7631-01	-2.7694-01	-2.9448-01	-2.7022-01
P/PO1	4.5013-02	4.6041-02	4.7685-02	4.7813-02	3.9359-02	4.1873-02	4.1562-02	3.2860-02	4.4893-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

B104

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GS WIND TUNNEL

VALVE POS 10 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4334 TO = 534.

P	6.3944-01	6.4662-01	6.6464-01	6.7545-01	1.1720+00	5.3152+00	7.8807+00	9.5006+00	5.2021-01
CP	-2.7133-01	-2.7033-01	-2.6781-01	-2.6630-01	-1.9687-01	3.8247-01	7.4118-01	9.6769-01	-2.8800-01
P/PO1	4.4343-02	4.4842-02	4.6091-02	4.6841-02	8.1274-02	3.6846-01	5.4650-01	6.5884-01	3.6075-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4336 TO = 534.

P	6.6172-01	6.5217-01	6.7024-01	6.9021-01	7.0077-01	5.0464-01	6.4440-01	6.9170-01	6.3137-01
CP	-2.6826-01	-2.6959-01	-2.6707-01	-2.6428-01	-2.6280-01	-2.9021-01	-2.7068-01	-2.6407-01	-2.7250-01
P/PO1	4.5867-02	4.5205-02	4.6457-02	4.7842-02	4.8574-02	3.4979-02	4.4666-02	4.7945-02	4.3763-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4322 TO = 534.

P	6.5058-01	7.4312-01	7.9219-01	7.7750-01	1.0872+00	5.0252+00	7.1487+00	8.7167+00	9.9256+00
CP	-2.6951-01	-2.5654-01	-2.4966-01	-2.5172-01	-2.0829-01	3.4391-01	6.4167-01	8.6154-01	1.0311+00
P/PO1	4.5244-02	5.1679-02	5.5092-02	5.4071-02	7.5606-02	3.4947-01	4.9715-01	6.0619-01	6.9027-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	5.1094-01	3.2016+00	4.8750-01	3.9000+00	4.5000-01	4.0805+00	3.7523+00	4.0078-01
CP	-2.8910-01	8.8192-02	-2.9238-01	1.8613-01	-2.9764-01	2.1143-01	1.6542-01	-3.0454-01
P/PO1	3.5533-02	2.2265-01	3.3903-02	2.7122-01	3.1295-02	2.8377-01	2.6095-01	2.7872-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	7.7578-01	1.4789+00	5.9297-01	7.1953-01	6.7500-01	7.2188-01	6.6797-01
CP	-2.5196-01	-1.5336-01	-2.7759-01	-2.5985-01	-2.6609-01	-2.5952-01	-2.6708-01
P/PO1	5.3951-02	1.0285-01	4.1237-02	5.0039-02	4.6942-02	5.0202-02	4.6453-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	50.	301244	1.99	3	5.01	-180.16	-.01	179.99	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4337 TO = 534.

P	5.2915-01	7.7887-01	2.7135+00	3.0943+00	3.2677+00	3.7137+00	4.3665+00	4.6876+00	4.5428+00
CP	-2.8680-01	-2.5191-01	1.8411-02	7.1624-02	9.5852-02	1.5817-01	2.5218-01	2.9424-01	2.7401-01
P/PO1	3.6669-02	5.3975-02	1.8804-01	2.1443-01	2.2645-01	2.5736-01	3.0398-01	3.2484-01	3.1481-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4335 TO = 534.

P	3.6587+00	8.6193+00	1.3121+01	1.4235+01	1.3831+01	1.3658+01	1.3347+01	1.1664+01	9.7389+00
CP	1.5072-01	8.4418-01	1.4735+00	1.6292+00	1.5727+00	1.5486+00	1.5051+00	1.2698+00	1.0007+00
P/PO1	2.5366-01	5.9758-01	9.0968-01	9.8693-01	9.5888-01	9.4693-01	9.2538-01	8.0868-01	6.7521-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4349 TO = 534.

P	8.3626+00	3.3296+00	8.6164+00	1.2799+01	1.3924+01	1.3206+01	3.3643+00	3.9474+00	4.1304+00
CP	8.0444-01	1.0318-01	8.3982-01	1.4226+00	1.5793+00	1.4733+00	9.9657-02	1.8926-01	2.1476-01
P/PO1	5.7788-01	2.3008-01	5.9542-01	8.8445-01	9.6218-01	9.1257-01	2.2834-01	2.7277-01	2.8542-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4356 TO = 534.

P	4.0568+00	2.8934+00	7.7532+00	1.4547+00	1.8017+00	2.1681+00	2.2719+00	2.8036+00	2.9841+00
CP	2.0371-01	4.1841-02	7.1802-01	-1.5834-01	-1.1006-01	-5.9081-02	-4.4632-02	2.3340-02	5.4458-02
P/PO1	2.7994-01	1.9366-01	5.3501-01	1.0038-01	1.2433-01	1.4961-01	1.5677-01	1.9346-01	2.0592-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4327 TO = 534.

P	2.6666+00	1.7771+00	4.4507+00	8.4443+00	1.0750+01	1.1117+01	1.0248+01	3.4998+00	3.1897+00
CP	1.2741-02	-1.1184-01	2.6261-01	8.2194-01	1.1449+00	1.1962+00	1.0746+00	1.2943-01	8.5998-02
P/PO1	1.8523-01	1.2344-01	3.0915-01	5.8656-01	7.4673-01	7.7219-01	7.1184-01	2.4310-01	2.2156-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .434[illegible] TO = 534.

P	1.7949+00	1.2472+00	6.0198-01	1.7456+00	5.2869-01	5.1581-01	9.3672-01	1.0288+00	3.7379+00
CP	-1.1012-01	-1.8660-01	-2.7669-01	-1.1700-01	-2.8692-01	-2.8872-01	-2.2395-01	-2.1709-01	1.6118-01
P/PO1	1.2429-01	8.6366-02	4.1687-02	1.2088-01	3.6612-02	3.5719-02	6.4867-02	7.1244-02	2.5885-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4341 TO = 534.

P	6.3164-01	6.2222-01	6.5681-01	1.7983+00	5.1888+00	7.3124+00	7.8807+00	6.0247-01	6.2996-01
CP	-2.7257-01	-2.7388-01	-2.6905-01	-1.0971-01	3.6360-01	6.6004-01	7.3937-01	-2.7664-01	-2.7280-01
P/PO1	4.3730-02	4.3078-02	4.5473-02	1.2450-01	3.5924-01	5.0626-01	5.4560-01	4.1711-02	4.3614-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4340 TO = 534.

P	6.3276-01	4.1703-01	5.2030-01	5.4150-01	5.0176-01	4.7785-01	4.9284-01	5.5578-01	6.4026-01
CP	-2.7239-01	-3.0251-01	-2.8809-01	-2.8513-01	-2.9075-01	-2.9402-01	-2.9193-01	-2.8314-01	-2.7134-01
P/PO1	4.3818-02	2.8879-02	3.6030-02	3.7498-02	3.4712-02	3.3990-02	3.4129-02	3.8487-02	4.4338-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS S3 WIND TUNNEL

VALVE POS 10 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4335 TO = 534.

P	6.8177-01	5.6899-01	6.0981-01	6.3118-01	6.5962-01	3.2913+00	4.9500+00	6.1769+00	6.2136-01
CP	-2.6543-01	-2.8120-01	-2.7549-01	-2.7251-01	-2.6853-01	9.9359-02	3.3124-01	5.0275-01	-2.7388-01
P/PO1	4.7268-02	3.9448-02	4.2279-02	4.3760-02	4.5732-02	2.2819-01	3.4319-01	4.2825-01	4.3080-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4328 TO = 534.

P	6.7732-01	6.6659-01	6.4338-01	6.6637-01	6.7708-01	5.2250-01	5.0743-01	4.8575-01	4.9576-01
CP	-2.6590-01	-2.6740-01	-2.7065-01	-2.6743-01	-2.6593-01	-2.8758-01	-2.8969-01	-2.9272-01	-2.9132-01
P/PO1	4.7037-02	4.6292-02	4.4680-02	4.6276-02	4.7020-02	3.6286-02	3.5239-02	3.3733-02	3.4428-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4353 TO = 534.

P	7.8701-01	7.3944-01	6.9709-01	7.0837-01	5.9977-01	2.8752+00	4.2136+00	5.4766+00	6.7364+00
CP	-2.5119-01	-2.5781-01	-2.6370-01	-2.6213-01	-2.7725-01	3.9487-02	2.2580-01	4.0162-01	5.7698-01
P/PO1	5.4333-02	5.1049-02	4.8126-02	4.8905-02	4.1407-02	1.9849-01	2.9090-01	3.7809-01	4.6506-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	5.9531-01	3.4148+00	6.7500-01	3.3820+00	6.9844-01	3.4641+00	3.2602+00	6.6797-01
CP	-2.7787-01	1.1461-01	-2.6678-01	1.1005-01	-2.6352-01	1.2146-01	9.3081-02	-2.6776-01
P/PO1	4.1099-02	2.3575-01	4.6601-02	2.3349-01	4.8219-02	2.3415-01	2.2507-01	4.6115-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.1977+00	3.1219+00	4.8984-01	4.1602+00	4.7109-01	5.7656-01	5.1094-01
CP	-1.9402-01	7.3832-02	-2.9255-01	2.1836-01	-2.9516-01	-2.8048-01	-2.8962-01
P/PO1	8.2684-02	2.1553-01	3.3818-02	2.8721-01	3.2523-02	3.9805-02	3.5274-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GS WIND TUNNEL

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	51.	301244	1.99	3	-3.99	-180.16	.01	133.99	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.207 P-INF =2.6900 RE = .4368 TO = 534.

P	5.3027-01	6.7657-01	2.1936+00	2.2926+00	2.3934+00	2.7175+00	3.0730+00	3.2387+00	2.5978+00
CP	-2.8717-01	-2.6687-01	-5.6382-02	-4.2655-02	-2.8671-02	1.6335-02	6.8398-02	8.8619-02	-2.9922-04
P/PO1	3.6489-02	4.6556-02	1.5095-01	1.5776-01	1.6469-01	1.8700-01	2.1283-01	2.2286-01	1.7876-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4337 TO = 535.

P	2.1275+00	5.8035+00	1.1175+01	1.4001+01	1.4157+01	1.4313+01	1.4219+01	1.3075+01	1.1450+01
CP	-6.3927-02	4.4922-01	1.1988+00	1.5933+00	1.6151+00	1.6368+00	1.6238+00	1.4640+00	1.2373+00
P/PO1	1.4726-01	4.0170-01	7.7347-01	9.6916-01	9.7992-01	9.9070-01	9.8422-01	9.0501-01	7.9255-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 19.9 Q-INF = 7.128 P-INF =2.5714 RE = .4320 TO = 534.

P	1.0023+01	2.0088+00	5.8391+00	1.0926+01	1.3613+01	1.3970+01	2.4142+00	2.8533+00	2.8969+00
CP	1.0453+00	-7.8927-02	4.5843-01	1.1721+00	1.5490+00	1.5991+00	-2.2056-02	3.9547-02	4.5661-02
P/PO1	6.9734-01	1.3977-01	4.0627-01	7.6020-01	9.4713-01	9.7199-01	1.6797-01	1.9852-01	2.0156-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4341 TO = 534.

P	2.3380+00	1.7820+00	5.1037+00	1.4948+00	1.9764+00	2.3707+00	2.3649+00	2.1201+00	2.1699+00
CP	-3.4360-02	-1.1198-01	3.5171-01	-1.5207-01	-8.4838-02	-2.9796-02	5.3147-02	-6.4791-02	-5.7937-02
P/PO1	1.6187-01	1.2338-01	3.5334-01	1.0347-01	1.3683-01	1.6413-01	2.0527-01	1.4678-01	1.5323-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4346 TO = 534.

P	1.5207+00	9.9824-01	2.8657+00	7.3673+00	1.0844+01	1.2224+01	1.1743+01	2.7663+00	2.8346+00
CP	-1.4871-01	-2.2155-01	3.8825-02	6.6649-01	1.1512+00	1.3436+00	1.2766+00	2.4965-02	3.4487-02
P/PO1	1.0516-01	6.9030-02	1.9817-01	5.0946-01	7.4985-01	8.4529-01	8.1206-01	1.9124-01	1.9602-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4353 TO = 534.

P	1.4014+00	6.6215-01	6.5345-01	1.2440+00	5.3244-01	5.0129-01	7.6593-01	8.9397-01	2.5106+00
CP	-1.6567-01	-2.6957-01	-2.6978-01	-1.8757-01	-2.8662-01	-2.9096-01	-2.5412-01	-2.3630-01	-1.1255-02
P/PO1	9.6748-02	4.5714-02	4.5113-02	8.5884-02	3.6758-02	3.4608-02	5.2878-02	6.1718-02	1.7333-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 20.1 Q-INF = 7.224 P-INF =2.6055 RE = .4377 TO = 534.

P	5.4141-01	6.3442-01	6.1653-01	1.9036+00	6.0052+00	8.7157+00	9.5004+00	5.1621-01	4.5796-01
CP	-2.8578-01	-2.7290-01	-2.7538-01	-9.7174-02	4.7070-01	8.4598-01	9.5464-01	-2.9010-01	-2.9733-01
P/PO1	3.7177-02	4.3564-02	4.2335-02	1.3072-01	4.1236-01	5.9848-01	6.5236-01	3.5034-02	3.1447-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 20.0 Q-INF = 7.207 P-INF =2.6900 RE = .4368 TO = 534.

P	5.0687-01	5.7786-01	5.9639-01	5.9939-01	4.9129-01	4.9013-01	5.5234-01	5.1132-01	4.7353-01
CP	-2.9041-01	-2.8057-01	-2.7799-01	-2.7758-01	-2.9258-01	-2.9274-01	-2.8411-01	-2.8980-01	-2.9504-01
P/PO1	3.4879-02	3.9763-02	4.1038-02	4.1245-02	3.3806-02	3.3776-02	3.8007-02	3.5185-02	3.2584-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GG WIND TUNNEL

VALVE POS 10 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4356 TO = 534.

P	5.7706-01	5.8340-01	5.8856-01	6.0280-01	9.0212-01	4.3253+00	6.3544+00	7.9015+00	5.7134-01
CP	-2.8045-01	-2.7957-01	-2.7885-01	-2.7687-01	-2.3522-01	2.4107-01	5.2339-01	7.3864-01	-2.8125-01
P/PO1	3.9820-02	4.0256-02	4.0613-02	4.1596-02	6.2251-02	2.9847-01	4.3849-01	5.4524-01	3.9426-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4362 TO = 534.

P	6.3164-01	5.9339-01	6.1429-01	6.4934-01	6.5713-01	5.1134-01	5.0294-01	5.0687-01	5.1132-01
CP	-2.7298-01	-2.7830-01	-2.7539-01	-2.7052-01	-2.6944-01	-2.8969-01	-2.9086-01	-2.9032-01	-2.8970-01
P/PO1	4.3525-02	4.0889-02	4.2330-02	4.4745-02	4.5282-02	3.5236-02	3.4657-02	3.4928-02	3.5234-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4351 TO = 534.

P	6.1159-01	6.4995-01	7.4124-01	7.2734-01	8.3787-01	4.0164+00	5.7761+00	7.1960+00	8.4632+00
CP	-2.7557-01	-2.7022-01	-2.5751-01	-2.5945-01	-2.4405-01	1.9861-01	4.4369-01	6.4143-01	8.1792-01
P/PO1	4.2243-02	4.4892-02	5.1198-02	5.0238-02	5.7872-02	2.7741-01	3.9896-01	4.9703-01	5.8456-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	5.7188-01	2.3766+00	5.5078-01	2.3977+00	4.8516-01	3.7617+00	2.6203+00	4.7344-01	
CP	-2.8110-01	-2.9762-02	-2.8404-01	-2.6825-02	-2.9317-01	1.6315-01	4.1841-03	-2.9481-01	
P/PO1	3.9500-02	1.6415-01	3.8043-02	1.6561-01	3.3510-02	2.5982-01	1.8099-01	3.2700-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	1.0242+00	3.5813+00	4.8516-01	1.0617+00	4.9922-01	6.3047-01	6.0469-01
CP	-2.1810-01	1.3801-01	-2.9317-01	-2.1288-01	-2.9122-01	-2.7294-01	-2.7653-01
P/PO1	7.0743-02	2.4736-01	3.3510-02	7.3333-02	3.4481-02	4.3547-02	4.1766-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

10

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	52.	301244	1.49	3	8.01	.05	-.01	143.01	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 3 PO = 14.9 Q-INF = 6.378 P-INF =4.1041 RE = .3832 TO = 535.

P	1.5232+00	4.1958+00	9.2285+00	1.2674+01	1.3302+01	1.3627+01	1.3690+01	1.3153+01	1.1886+01
CP	-4.0465-01	1.4368-02	8.0344-01	1.3437+00	1.4420+00	1.4931+00	1.5029+00	1.4188+00	1.2201+00
P/POI	1.0995-01	3.0286-01	6.6613-01	9.1485-01	9.6013-01	9.8362-01	9.8816-01	9.4943-01	8.5794-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.9 Q-INF = 6.390 P-INF =4.1054 RE = .3833 TO = 535.

P	1.0821+01	1.4715+00	4.2858+00	9.2247+00	1.2477+01	1.3596+01	3.0353+00	3.3755+00	3.2208+00
CP	1.0526+00	-4.1284-01	2.8278-02	8.0238-01	1.3121+00	1.4875+00	-1.6772-01	-1.1441-01	-1.3865-01
P/POI	7.8085-01	1.0618-01	3.0926-01	6.6564-01	9.0033-01	9.8106-01	2.1903-01	2.4357-01	2.3241-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.8 Q-INF = 6.370 P-INF =4.0989 RE = .3827 TO = 535.

P	1.9193+00	1.2916+00	3.9054+00	2.2573+00	2.8912+00	3.3102+00	4.0727+00	2.6668+00	2.5667+00
CP	-3.4217-01	-4.4072-01	-3.0378-02	-2.8911-01	-1.8960-01	-1.2382-01	-4.1139-03	-2.2482-01	-2.4054-01
P/POI	1.3871-01	9.3344-02	2.8226-01	1.6314-01	2.0895-01	2.3924-01	2.9435-01	1.9274-01	1.8550-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.8 Q-INF = 6.362 P-INF =4.0938 RE = .3827 TO = 534.

P	1.3074+00	1.2472+00	2.3052+00	6.5400+00	1.0283+01	1.2099+01	1.2055+01	3.8231+00	3.5074+00
CP	-4.3796-01	-4.4743-01	-2.8113-01	3.8451-01	9.7292-01	1.2583+00	1.2513+00	-4.2550-02	-9.2165-02
P/POI	9.4613-02	9.0252-02	1.6682-01	4.7326-01	7.4415-01	8.7554-01	8.7232-01	2.7665-01	2.5381-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.9 Q-INF = 6.396 P-INF =4.1158 RE = .3848 TO = 534.

P	1.7441+00	1.1535+00	1.2150+00	1.1512+00	1.1360+00	1.0053+00	1.3404+00	1.7130+00	3.9560+00
CP	-3.7079-01	-4.6313-01	-4.5351-01	-4.6349-01	-4.6587-01	-4.8629-01	-4.3391-01	-3.7565-01	-2.4988-02
P/POI	1.2554-01	8.3027-02	8.7454-02	8.2861-02	8.1766-02	7.2361-02	9.6477-02	1.2330-01	2.8474-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.8 Q-INF = 6.362 P-INF =4.0938 RE = .3827 TO = 534.

P	1.2694+00	1.3754+00	1.3704+00	2.0566+00	6.5341+00	9.2614+00	1.0108+01	1.2511+00	1.2649+00
CP	-4.4395-01	-4.2729-01	-4.2807-01	-3.2020-01	3.8358-01	8.1226-01	9.4531-01	-4.4683-01	-4.4465-01
P/POI	9.1857-02	9.9576-02	9.9169-02	1.4883-01	4.7284-01	6.7619-01	7.3145-01	9.0532-02	9.1535-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.8 Q-INF = 6.340 P-INF =4.0795 RE = .3809 TO = 535.

P	1.3151+00	1.3532+00	1.3500+00	1.3293+00	1.0435+00	1.0993+00	1.1722+00	1.2186+00	1.2299+00
CP	-4.3604-01	-4.3003-01	-4.3053-01	-4.3380-01	-4.7888-01	-4.7008-01	-4.5858-01	-4.5126-01	-4.4947-01
P/POI	9.5496-02	9.8263-02	9.8035-02	9.6529-02	7.5774-02	7.9826-02	8.5121-02	8.8491-02	8.9314-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

VALVE POS 10 PO = 14.8 Q-INF = 6.346 P-INF =4.0834 RE = .3813 TO = 535.

P	1.2694+00	1.3063+00	1.3118+00	1.2841+00	1.1257+00	5.0000+00	7.3511+00	8.8735+00	1.2199+00
CP	-4.4344-01	-4.3762-01	-4.3675-01	-4.4111-01	-4.6608-01	1.4444-01	5.1494-01	7.5483-01	-4.5123-01
P/POI	9.2090-02	9.4772-02	9.5170-02	9.3162-02	8.1669-02	3.6274-01	5.3331-01	6.4375-01	8.8503-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
FOR KAPTAN GAS DYNAMICS FACILITY
40 - [illegible]

~~CONFIDENTIAL~~

VALVE POS 11 PO = 14.8 Q-INF = 6.356 P-INF =4.0899 RE = .3819 TO = 535.

P	1.2465+00	1.3113+00	1.3653+00	1.3694+00	1.4110+00	1.0307+00	1.1670+00	1.1437+00	1.0799+00
CP	-4.4735-01	-4.3717-01	-4.2866-01	-4.2802-01	-4.2147-01	-4.8136-01	-4.5086-01	-4.6353-01	-4.7356-01
P/PO1	9.0289-02	9.4979-02	9.8894-02	9.9191-02	1.0220-01	7.4654-02	8.4530-02	8.2840-02	7.8223-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.8 Q-INF = 6.366 P-INF =4.0964 RE = .3825 TO = 535.

P	1.3684+00	1.4764+00	1.4952+00	1.4697+00	1.4162+00	4.8550+00	6.9151+00	8.3091+00	9.4278+00
CP	-4.2852-01	-4.1155-01	-4.0860-01	-4.1760-01	-4.2102-01	1.1917-01	4.4277-01	6.6175-01	8.3748-01
P/PO1	9.8959-02	1.0677-01	1.0813-01	1.0629-01	1.0241-01	3.5116-01	5.0009-01	6.0090-01	6.8180-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.1953+00	3.2391+00	1.2633+00	3.7195+00	1.2703+00	5.5406+00	4.2961+00	1.3031+00
CP	-4.5571-01	-1.3467-01	-4.4503-01	-5.9192-02	-4.4393-01	2.2687-01	3.1376-02	-4.3877-01
P/PO1	8.6443-02	2.3424-01	9.1359-02	2.6899-01	9.1867-02	4.0069-01	3.1069-01	9.4240-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.3477+00	1.8492+00	1.3008+00	1.2656+00	1.3289+00	1.3688+00	1.3523+00
CP	-4.3178-01	-3.5299-01	-4.3914-01	-4.4466-01	-4.3472-01	-4.7846-01	-4.3104-01
P/PO1	9.7461-02	1.3373-01	9.4071-02	9.1528-02	9.6105-02	9.8986-02	9.7800-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH COLLIMATED SUPERSONIC

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	53.	301244	1.49	3	10.02	.05	-.01	145.02	180.0

VALVE POS 2 PO = 14.7 Q-INF = 6.332 P-INF =4.0743 RE = .3804 TO = 535.

P	1.2719+00	1.1313+00	3.1510+00	3.5704+00	3.1912+00	3.1084+00	3.3171+00	3.2263+00	1.8499+00
CP	-4.4260-01	-4.6480-01	-1.4583-01	-7.9587-02	-1.3948-01	-1.5255-01	-1.1959-01	-1.3393-01	-3.5131-01
P/PO1	9.2480-02	8.2259-02	2.2911-01	2.5960-01	2.3203-01	2.2601-01	2.4118-01	2.3458-01	1.3450-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.8 Q-INF = 6.358 P-INF =4.0912 RE = .3820 TO = 535.

P	1.2871+00	3.7289+00	8.7106+00	1.2440+01	1.3317+01	1.3596+01	1.3674+01	1.3326+01	1.2104+01
CP	-4.4103-01	-5.6981-02	7.2656-01	1.3131+00	1.4511+00	1.4949+00	1.5073+00	1.4525+00	1.2602+00
P/PO1	9.3202-02	2.7001-01	6.3074-01	9.0079-01	9.6430-01	9.8448-01	9.9016-01	9.6493-01	8.7643-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.8 Q-INF = 6.366 P-INF =4.0964 RE = .3825 TO = 535.

P	1.1056+01	1.2275+00	3.8167+00	8.7252+00	1.2181+01	1.3533+01	2.8432+00	3.1268+00	2.8969+00
CP	1.0933+00	-4.5066-01	-4.3933-02	7.2712-01	1.2700+00	1.4824+00	-1.9685-01	-1.5230-01	-1.8842-01
P/PO1	7.9956-01	8.8769-02	2.7602-01	6.3100-01	8.8095-01	9.7872-01	2.0562-01	2.2613-01	2.0950-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.330 P-INF =4.0730 RE = .3803 TO = 535.

P	1.6299+00	1.1018+00	3.4807+00	2.2924+00	2.8784+00	3.2661+00	3.9959+00	2.4865+00	2.2988+00
CP	-3.8598-01	-4.6941-01	-9.3586-02	-2.8131-01	-1.8873-01	-1.2749-01	-1.2187-02	-2.5064-01	-2.8030-01
P/PO1	1.1854-01	8.0134-02	2.5316-01	1.6673-01	2.0935-01	2.3755-01	2.9063-01	1.8085-01	1.6720-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8900-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3800 TO = 535.

P	1.2567+00	1.2472+00	2.0633+00	6.1810+00	1.0175+01	1.2177+01	1.2226+01	3.5993+00	2.7598+00
CP	-4.4481-01	-4.4631-01	-3.1730-01	3.3365-01	9.6496-01	1.2815+00	1.2993+00	-7.4485-02	-2.0719-01
P/PO1	9.1459-02	9.0769-02	1.5016-01	4.4985-01	7.4049-01	8.8623-01	8.8979-01	2.6195-01	2.0086-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3800 TO = 535.

P	1.5867+00	1.2225+00	1.2838+00	1.0885+00	1.2748+00	1.1399+00	1.5396+00	1.8179+00	4.6786+00
CP	-3.9264-01	-4.5021-01	-4.4052-01	-4.7140-01	-4.4195-01	-4.6327-01	-4.0608-01	-3.5609-01	9.6143-02
P/PO1	1.1548-01	8.8975-02	9.3434-02	7.9720-02	9.2778-02	8.2960-02	1.1205-01	1.3230-01	3.4050-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.8 Q-INF = 6.360 P-INF =4.0925 RE = .3821 TO = 535.

P	1.3176+00	1.4099+00	1.4086+00	2.0616+00	6.6897+00	9.4952+00	1.0404+01	1.2935+00	1.2949+00
CP	-4.3630-01	-4.2179-01	-4.2199-01	-3.1931-01	4.0837-01	8.4950-01	9.9234-01	-4.4009-01	-4.3987-01
P/PO1	9.5378-02	1.0206-01	1.0197-01	1.4924-01	4.8425-01	6.8733-01	7.5310-01	9.3633-02	9.3736-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.8 Q-INF = 6.358 P-INF =4.0912 RE = .3820 TO = 535.

P	1.3455+00	1.3803+00	1.3806+00	1.3619+00	1.1694+00	1.1551+00	1.2084+00	1.2560+00	1.2649+00
CP	-4.3184-01	-4.2638-01	-4.2633-01	-4.2927-01	-4.5954-01	-4.6179-01	-4.5341-01	-4.4592-01	-4.4452-01
P/PO1	9.7430-02	9.9946-02	9.9969-02	9.8614-02	8.4678-02	8.3643-02	8.7501-02	9.0951-02	9.1593-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 14.8 Q-INF = 6.356 P-INF =4.0899 RE = .3817 TO = 535.

P	1.3024+00	1.3433+00	1.3475+00	1.3218+00	1.1668+00	5.1639+00	7.6003+00	9.1870+00	1.2349+00
CP	-4.3857-01	-4.3212-01	-4.3147-01	-4.3552-01	-4.5989-01	1.6898-01	5.5231-01	8.0195-01	-4.4918-01
P/PO1	9.4335-02	9.7300-02	9.7602-02	9.5739-02	8.4518-02	3.7404-01	5.5057-01	6.6544-01	8.9449-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.8 Q-INF = 6.368 P-INF =4.0976 RL = .3826 TO = 535.

P	1.2922+00	1.3507+00	1.4137+00	1.4171+00	1.4496+00	1.2059+00	1.3067+00	1.2011+00	1.1399+00
CP	-4.4055-01	-4.3136-01	-4.2147-01	-4.2094-01	-4.1584-01	-4.5410-01	-4.3827-01	-4.5486-01	-4.6446-01
P/PO1	9.3422-02	9.7650-02	1.0221-01	1.0245-01	1.0480-01	8.7181-02	9.4472-02	8.6835-02	8.2412-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1400-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.314 P-INF =4.0627 RL = .3793 TO = 535.

P	1.3861+00	1.5134+00	1.5334+00	1.5099+00	1.4393+00	5.0189+00	7.1642+00	8.6226+00	9.6923+00
CP	-4.2392-01	-4.0377-01	-4.0060-01	-4.0433-01	-4.1551-01	1.5145-01	4.9125-01	7.2223-01	8.9165-01
P/PO1	1.0108-01	1.1035-01	1.1181-01	1.1010-01	1.0495-01	3.6597-01	5.2240-01	6.2874-01	7.0674-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2305+00	3.4945+00	1.3055+00	3.6352+00	1.3125+00	4.0523+00	2.9883+00	1.3430+00	
CP	-4.4858-01	-8.9985-02	-4.3670-01	-6.7712-02	-4.3559-01	-1.6353-03	-1.7017-01	-4.3076-01	
P/PO1	8.9723-02	2.5481-01	9.5192-02	2.6507-01	9.5705-02	2.9549-01	2.1790-01	9.7927-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	1.5797+00	1.5984+00	1.3430+00	1.3195+00	1.3617+00	1.4063+00	1.3828+00
CP	-3.9327-01	-3.9030-01	-4.3076-01	-4.3448-01	-4.2779-01	-4.2074-01	-4.2445-01
P/PO1	1.1519-01	1.1656-01	9.7927-02	9.6218-02	9.9294-02	1.0254-01	1.0083-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	54.	301244	1.49	3	12.01	.02	-.00	147.01	180.0

VALVE POS 2 PO = 14.7 Q-INF = 6.332 P-INF =4.0743 RE = .3804 TO = 535.

P	1.3354+00	1.2423+00	3.0052+00	3.1445+00	2.7699+00	2.9256+00	3.0930+00	2.9217+00	1.5499+00
CP	-4.3257-01	-4.4728-01	-1.6886-01	-1.4686-01	-2.0601-01	-1.8142-01	-1.5499-01	-1.8204-01	-3.9869-01
P/PO1	9.7094-02	9.0324-02	2.1850-01	2.2863-01	2.0140-01	2.1272-01	2.2489-01	2.1243-01	1.1269-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.8 Q-INF = 6.368 P-INF =4.0976 RE = .3826 TO = 535.

P	1.0866+00	3.3296+00	8.2241+00	1.2222+01	1.3302+01	1.3549+01	1.3659+01	1.3451+01	1.2337+01
CP	-4.7284-01	-1.2061-01	6.4799-01	1.2757+00	1.4453+00	1.4842+00	1.5014+00	1.4688+00	1.2939+00
P/PO1	7.8555-02	2.4071-01	5.9456-01	8.8357-01	9.6165-01	9.7954-01	9.8747-01	9.7247-01	8.9191-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.7 Q-INF = 6.316 P-INF =4.0640 RE = .3794 TO = 535.

P	1.1244+01	1.0574+00	3.3982+00	8.2726+00	1.1946+01	1.3440+01	2.7088+00	2.8906+00	2.6165+00
CP	1.1369+00	-4.7605-01	-1.0541-01	6.6638-01	1.2483+00	1.4845+00	-2.1458-01	-1.8579-01	-2.2918-01
P/PO1	8.1963-01	7.7079-02	2.4771-01	6.0303-01	8.7095-01	9.7970-01	1.9745-01	2.1071-01	1.9073-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.322 P-INF =4.0679 RE = .3798 TO = 535.

P	1.4496+00	1.0352+00	3.1763+00	2.7121+00	2.7699+00	3.1715+00	3.5348+00	2.3298+00	2.0649+00
CP	-4.1416-01	-4.7372-01	-1.4102-01	-2.9355-01	-2.0531-01	-1.4179-01	-8.4316-02	-2.7493-01	-3.1684-01
P/PO1	1.0557-01	7.5396-02	2.3132-01	1.6110-01	2.0172-01	2.3096-01	2.5742-01	1.6967-01	1.5037-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3809 TO = 535.

P	1.3455+00	1.3359+00	1.8875+00	5.8191+00	1.0143+01	1.2208+01	1.2366+01	3.6676+00	1.7449+00
CP	-4.3077-01	-4.3228-01	-3.4509-01	2.7644-01	9.6004-01	1.2864+00	1.3114+00	-6.3675-02	-3.6763-01
P/PO1	9.7926-02	9.7227-02	1.3737-01	4.2351-01	7.3823-01	8.8850-01	8.9999-01	2.6693-01	1.2699-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.7 Q-INF = 6.310 P-INF =4.0601 RE = .3791 TO = 535.

P	1.4775+00	1.4074+00	1.4748+00	1.3995+00	1.3442+00	1.1729+00	1.4361+00	1.6456+00	4.3422+00
CP	-4.0930-01	-4.2042-01	-4.0973-01	-4.2167-01	-4.3043-01	-4.5758-01	-4.1586-01	-3.8266-01	4.4714-02
P/PO1	1.0781-01	1.0269-01	1.0761-01	1.0211-01	9.8078-02	8.5580-02	1.0479-01	1.2007-01	3.1683-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.8 Q-INF = 6.342 P-INF =4.0808 RE = .3810 TO = 535.

P	1.4369+00	1.5331+00	1.5360+00	2.0667+00	6.8453+00	9.6979+00	1.0637+01	1.4259+00	1.4149+00
CP	-4.1689-01	-4.0173-01	-4.0128-01	-3.1760-01	4.3591-01	8.8572-01	1.0339+00	-4.1864-01	-4.2036-01
P/PO1	1.0431-01	1.1129-01	1.1150-01	1.5003-01	4.9693-01	7.0401-01	7.7221-01	1.0351-01	1.0271-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.8 Q-INF = 6.376 P-INF =4.1028 RE = .3831 TO = 535.

P	1.4598+00	1.4961+00	1.5029+00	1.4823+00	1.3005+00	1.3481+00	1.3507+00	1.3884+00	1.3749+00
CP	-4.1453-01	-4.0882-01	-4.0777-01	-4.1100-01	-4.3951-01	-4.3705-01	-4.3163-01	-4.2572-01	-4.2784-01
P/PO1	1.0540-01	1.0803-01	1.0851-01	1.0703-01	9.3901-02	9.7336-02	9.7529-02	1.0025-01	9.9275-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY

VALVE POS 10 PO = 14.7 Q-INF = 6.308 P-INF =4.0588 RE = .3790 TO = 535.

P	1.4242+00	1.4715+00	1.4748+00	1.4497+00	1.2362+00	5.3216+00	7.8495+00	9.4378+00	1.3224+00
CP	-4.1768-01	-4.1019-01	-4.0965-01	-4.1364-01	-4.4748-01	2.0020-01	6.0098-01	8.5279-01	-4.3382-01
P/PO1	1.0395-01	1.0740-01	1.0765-01	1.0581-01	9.0231-02	3.8841-01	5.7292-01	6.8885-01	9.6521-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7370+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3773 TO = 535.

P	1.4039+00	1.4641+00	1.5436+00	1.5525+00	1.5858+00	1.3354+00	1.3895+00	1.3884+00	1.3199+00
CP	-4.1990-01	-4.1032-01	-3.9765-01	-3.9624-01	-3.9094-01	-4.3081-01	-4.2219-01	-4.2237-01	-4.3327-01
P/PO1	1.0293-01	1.0734-01	1.1317-01	1.1382-01	1.1626-01	9.7904-02	1.0188-01	1.0179-01	9.6771-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.8 Q-INF = 6.342 P-INF =4.0808 RE = .3810 TO = 535.

P	1.4928+00	1.6292+00	1.6582+00	1.6303+00	1.5909+00	5.1891+00	7.4446+00	8.9205+00	9.9879+00
CP	-4.0809-01	-3.8657-01	-3.8200-01	-3.8641-01	-3.9261-01	1.7477-01	5.3041-01	7.6313-01	9.3144-01
P/PO1	1.0837-01	1.1827-01	1.2038-01	1.1835-01	1.1549-01	3.7670-01	5.4043-01	6.4757-01	7.2506-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.3477+00	3.4336+00	1.4273+00	4.0195+00	1.4180+00	2.5734+00	2.1961+00	1.4555+00
CP	-4.3097-01	-1.0205-01	-4.1840-01	-9.6619-03	-4.1988-01	-2.3769-01	-2.9719-01	-4.1397-01
P/PO1	9.7832-02	2.4926-01	1.0362-01	2.9179-01	1.0294-01	1.8682-01	1.5942-01	1.0566-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.9969+00	1.5258+00	1.4836+00	1.4836+00	1.5023+00	1.5305+00	1.4836+00
CP	-3.2860-01	-4.0288-01	-4.0953-01	-4.0953-01	-4.0658-01	-4.0214-01	-4.0953-01
P/PO1	1.4496-01	1.1076-01	1.0770-01	1.0770-01	1.0906-01	1.1110-01	1.0770-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	55.	301244	1.49	3	14.02	.07	-.00	149.02	180.0

VALVE POS 2 PO = 14.7 Q-INF = 6.324 P-INF =4.0691 RE = .3799 TO = 535.

P	2.4707+00	2.4757+00	2.4346+00	2.6872+00	2.7699+00	2.8436+00	2.7088+00	2.6482+00	2.4857+00
CP	-2.5276-01	-2.5198-01	-2.5848-01	-2.1853-01	-2.0545-01	-1.9380-01	-2.1512-01	-2.2471-01	-2.5040-01
P/PO1	1.7988-01	1.8023-01	1.7724-01	1.9563-01	2.0166-01	2.0702-01	1.9720-01	1.9279-01	1.8096-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.7 Q-INF = 6.308 P-INF =4.0588 RE = .3790 TO = 535.

P	2.5655+00	2.9303+00	7.7532+00	1.1878+01	1.2897+01	1.3440+01	1.3581+01	1.3530+01	1.2477+01
CP	-2.3674-01	-1.7891-01	5.8571-01	1.2377+00	1.4012+00	1.4873+00	1.5096+00	1.5015+00	1.3346+00
P/PO1	1.8725-01	2.1387-01	5.6589-01	8.6696-01	9.4133-01	9.8095-01	9.9124-01	9.8750-01	9.1067-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.7 Q-INF = 6.314 P-INF =4.0627 RE = .3793 TO = 535.

P	1.1526+01	2.6108+00	3.0432+00	7.8511+00	1.1730+01	1.3455+01	2.8176+00	2.7165+00	2.5854+00
CP	1.1821+00	-2.2995-01	-1.6147-01	6.0004-01	1.2144+00	1.4877+00	-1.9720-01	-2.1321-01	-2.3398-01
P/PO1	8.4045-01	1.9038-01	2.2190-01	5.7249-01	8.5535-01	9.8115-01	2.0546-01	1.9809-01	1.8852-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.332 P-INF =4.0743 RE = .3804 TO = 535.

P	2.5403+00	2.5003+00	2.8023+00	2.1469+00	2.4125+00	2.5662+00	2.6767+00	2.6668+00	2.5854+00
CP	-2.4228-01	-2.4860-01	-2.0090-01	-3.0440-01	-2.6246-01	-2.3818-01	-2.2073-01	-2.2229-01	-2.3515-01
P/PO1	1.8470-01	1.8179-01	2.0375-01	1.5610-01	1.7541-01	1.8659-01	1.9462-01	1.9390-01	1.8798-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.310 P-INF =4.0601 RE = .3791 TO = 535.

P	2.6098+00	2.6231+00	2.5614+00	5.4683+00	9.9101+00	1.2239+01	1.2491+01	2.6792+00	2.5854+00
CP	-2.2986-01	-2.2774-01	-2.3753-01	2.2319-01	9.2715-01	1.2963+00	1.3362+00	-2.1884-01	-2.3372-01
P/PO1	1.9042-01	1.9140-01	1.8689-01	3.9900-01	7.2309-01	8.9304-01	9.1138-01	1.9549-01	1.8864-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.6 Q-INF = 6.281 P-INF =4.0412 RE = .3774 TO = 535.

P	2.6287+00	2.6477+00	2.6565+00	2.6371+00	2.4253+00	2.4527+00	2.5038+00	2.6295+00	2.6726+00
CP	-2.2498-01	-2.2196-01	-2.2057-01	-2.2365-01	-2.5737-01	-2.5300-01	-2.4486-01	-2.2486-01	-2.1800-01
P/PO1	1.9266-01	1.9405-01	1.9470-01	1.9328-01	1.7775-01	1.7976-01	1.8351-01	1.9272-01	1.9588-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.8 Q-INF = 6.356 P-INF =4.0899 RE = .3819 TO = 535.

P	2.6666+00	2.6846+00	2.6755+00	2.4241+00	6.8608+00	9.8227+00	1.0824+01	2.6855+00	2.6228+00
CP	-2.2392-01	-2.2110-01	-2.2253-01	-2.6208-01	4.3596-01	9.0196-01	1.0595+00	-2.2096-01	-2.3082-01
P/PO1	1.9315-01	1.9445-01	1.9379-01	1.7559-01	4.9695-01	7.1149-01	7.8403-01	1.9452-01	1.8998-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.7 Q-INF = 6.306 P-INF =4.0575 RE = .3788 TO = 535.

P	2.6224+00	2.6600+00	2.6628+00	2.6246+00	2.5146+00	2.5599+00	2.5807+00	2.6171+00	2.5605+00
CP	-2.2759-01	-2.2163-01	-2.2118-01	-2.2725-01	-2.4468-01	-2.3750-01	-2.3420-01	-2.2843-01	-2.3741-01
P/PO1	1.9146-01	1.9421-01	1.9441-01	1.9162-01	1.8360-01	1.8690-01	1.8842-01	1.9108-01	1.8694-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.8 Q-INF = 6.338 P-INF =4.0792 RE = .3608 TO = 535.

P	2.6161+00	2.6661+00	2.6818+00	2.6246+00	2.6167+00	5.5107+00	8.1299+00	9.7357+00	2.5231+00
CP	-2.3070-01	-2.2280-01	-2.2033-01	-2.2936-01	-2.3059-01	2.2602-01	6.3728-01	8.9266-01	-2.4537-01
P/PO1	1.9003-01	1.9367-01	1.9481-01	1.9065-01	1.9008-01	4.0030-01	5.9055-01	7.0720-01	1.8328-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.7 Q-INF = 6.306 P-INF =4.0575 RE = .3788 TO = 535.

P	2.6287+00	2.6723+00	2.7135+00	2.6809+00	2.6870+00	2.5095+00	2.5935+00	2.6419+00	2.5729+00
CP	-2.2659-01	-2.1968-01	-2.1314-01	-2.1831-01	-2.1735-01	-2.4550-01	-2.3217-01	-2.2449-01	-2.3543-01
P/PO1	1.9193-01	1.9511-01	1.9812-01	1.9574-01	1.9618-01	1.8322-01	1.8935-01	1.9289-01	1.8785-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.314 P-INF =4.0627 RE = .3793 TO = 535.

P	2.6414+00	2.7153+00	2.7135+00	2.6684+00	2.6550+00	5.3468+00	7.6938+00	9.2340+00	1.0268+01
CP	-2.2512-01	-2.1341-01	-2.1369-01	-2.2083-01	-2.2295-01	2.0339-01	5.7512-01	8.1907-01	9.8282-01
P/PO1	1.9260-01	1.9799-01	1.9786-01	1.9457-01	1.9360-01	3.8988-01	5.6102-01	6.7333-01	7.4872-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.6156+00	2.6359+00	2.6414+00	2.6273+00	2.6273+00	2.6016+00	2.5992+00	2.6578+00
CP	-2.2919-01	-2.1806-01	-2.2511-01	-2.2734-01	-2.2734-01	-2.3142-01	-2.3179-01	-2.2251-01
P/PO1	1.9073-01	1.9585-01	1.9261-01	1.9158-01	1.9158-01	1.8970-01	1.8953-01	1.9380-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	2.6672+00	2.6625+00	2.6531+00	2.5992+00	2.6602+00	2.6016+00	2.6250+00
CP	-2.2103-01	-2.2177-01	-2.2325-01	-2.3179-01	-2.2214-01	-2.3142-01	-2.2771-01
P/PO1	1.9449-01	1.9414-01	1.9346-01	1.8953-01	1.9397-01	1.8970-01	1.9141-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	56.	301244	1.49	3	14.67	37.35	-8.84	146.76	180.0

VALVE POS 2 PO = 14.7 Q-INF = 6.306 P-INF =4.0575 RE = .3784 TO = 535.

P	1.2516+00	1.3606+00	2.2317+00	2.8501+00	3.2422+00	2.9319+00	3.1186+00	2.9528+00	1.5649+00
CP	-4.4498-01	-4.2770-01	-2.6955-01	-1.9149-01	-1.2929-01	-1.7851-01	-1.4699-01	-1.7520-01	-3.9530-01
P/PO1	9.1381-02	9.9337-02	1.6294-01	2.0964-01	2.3672-01	2.1406-01	2.2769-01	2.1559-01	1.1426-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.6 Q-INF = 6.263 P-INF =4.0303 RE = .3763 TO = 535.

P	1.0942+00	3.3050+00	8.1456+00	1.1894+01	1.2913+01	1.3190+01	1.3337+01	1.3122+01	1.1979+01
CP	-4.6877-01	-1.1580-01	6.5705-01	1.2555+00	1.4182+00	1.4625+00	1.4851+00	1.4516+00	1.2691+00
P/PO1	8.0428-02	2.4293-01	5.9873-01	8.7424-01	9.4913-01	9.6955-01	9.7994-01	9.6452-01	8.8052-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.7 Q-INF = 6.312 P-INF =4.0614 RE = .3792 TO = 535.

P	1.1072+01	9.3169-01	3.0622+00	7.7263+00	1.1372+01	1.3019+01	2.3117+00	2.5984+00	2.3362+00
CP	1.1107+00	-4.9586-01	-1.5839-01	5.8066-01	1.1583+00	1.4192+00	-2.7721-01	-2.3178-01	-2.7333-01
P/PO1	8.0759-01	6.7959-02	2.2336-01	5.6357-01	8.2952-01	9.4962-01	1.6862-01	1.8953-01	1.7041-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.312 P-INF =4.0614 RE = .3792 TO = 535.

P	1.3531+00	1.1979+00	2.4916+00	1.1412+00	1.7091+00	2.5158+00	2.5102+00	1.9053+00	1.6174+00
CP	-4.2908-01	-4.5368-01	-2.4871-01	-4.6267-01	-3.7268-01	-2.4488-01	-2.4576-01	-3.4160-01	-3.8722-01
P/PO1	9.8700-02	8.7376-02	1.8174-01	8.3239-02	1.2467-01	1.8350-01	1.8310-01	1.3894-01	1.1798-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.330 P-INF =4.0730 RE = .3803 TO = 535.

P	1.4369+00	1.4493+00	1.2813+00	4.3596+00	8.9144+00	1.1273+01	1.1681+01	2.6109+00	1.4249+00
CP	-4.1646-01	-4.1451-01	-4.4105-01	4.5280-02	7.6486-01	1.1374+00	1.2019+00	-2.3100-01	-4.1836-01
P/PO1	1.0451-01	1.0541-01	9.3189-02	3.1709-01	6.4837-01	8.1989-01	8.4958-01	1.8990-01	1.0364-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.7 Q-INF = 6.302 P-INF =4.0549 RE = .3786 TO = 535.

P	1.4420+00	1.4542+00	1.4596+00	1.4421+00	1.0435+00	1.2694+00	1.6509+00	1.5457+00	3.4949+00
CP	-4.1464-01	-4.1270-01	-4.1185-01	-4.1462-01	-4.7788-01	-4.4204-01	-3.8149-01	-3.9818-01	-8.8658-02
P/PO1	1.0535-01	1.0624-01	1.0663-01	1.0536-01	7.6234-02	9.2737-02	1.2061-01	1.1293-01	2.5533-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3773 TO = 535.

P	1.4623+00	1.4912+00	1.4876+00	1.5099+00	5.9118+00	8.7313+00	9.8431+00	1.4683+00	1.3974+00
CP	-4.1060-01	-4.0600-01	-4.0658-01	-4.0303-01	2.9798-01	7.4698-01	9.2403-01	-4.0964-01	-4.2093-01
P/PO1	1.0771-01	1.0933-01	1.0906-01	1.1070-01	4.3343-01	6.4014-01	7.2165-01	1.0765-01	1.0245-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3777 TO = 535.

P	1.4141+00	1.4493+00	1.4672+00	1.4547+00	1.4084+00	1.5232+00	1.4646+00	1.4583+00	1.3824+00
CP	-4.1857-01	-4.1297-01	-4.1012-01	-4.1211-01	-4.1947-01	-4.0121-01	-4.1054-01	-4.1153-01	-4.2360-01
P/PO1	1.0354-01	1.0612-01	1.0743-01	1.0651-01	1.0313-01	1.1153-01	1.0724-01	1.0678-01	1.0122-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.7 Q-INF = 6.334 P-INF =4.0756 RE = .3805 TO = 535.

P	1.4522+00	1.5331+00	1.5411+00	1.5199+00	1.4393+00	5.1609+00	7.4290+00	8.9832+00	1.3949+00
CP	-4.1420-01	-4.0142-01	-4.0616-01	-4.0351-01	-4.1623-01	1.6187-01	5.2944-01	7.7482-01	-4.2324-01
P/PO1	1.0555-01	1.1144-01	1.1291-01	1.1048-01	1.0462-01	3.7076-01	5.3799-01	6.5296-01	1.0139-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.7 Q-INF = 6.324 P-INF =4.0691 RE = .3799 TO = 535.

P	1.4775+00	1.5356+00	1.6277+00	1.6252+00	1.6603+00	1.2922+00	1.4620+00	1.4733+00	1.3649+00
CP	-4.0982-01	-4.0065-01	-3.8608-01	-3.8647-01	-3.8092-01	-4.3913-01	-4.1228-01	-4.1049-01	-4.2763-01
P/PO1	1.0757-01	1.1179-01	1.1850-01	1.1832-01	1.2087-01	9.4076-02	1.0644-01	1.0726-01	9.9369-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.332 P-INF =4.0743 RE = .3804 TO = 535.

P	1.5105+00	1.6268+00	1.6481+00	1.6177+00	1.5884+00	5.1198+00	7.3356+00	8.8107+00	9.8634+00
CP	-4.0491-01	-3.8655-01	-3.8319-01	-3.8798-01	-3.9262-01	1.6511-01	5.1506-01	7.4804-01	9.1429-01
P/PO1	1.0983-01	1.1826-01	1.1983-01	1.1762-01	1.1549-01	3.7226-01	5.3337-01	6.4062-01	7.1716-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.3734+00	2.4047+00	1.4461+00	2.4867+00	1.4367+00	1.7953+00	1.6336+00	1.4555+00
CP	-4.2656-01	-2.6369-01	-4.1509-01	-2.5074-01	-4.1657-01	-3.5993-01	-3.9547-01	-4.1360-01
P/PO1	9.9862-02	1.7484-01	1.0514-01	1.8081-01	1.0446-01	1.3054-01	1.1878-01	1.0583-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.4742+00	1.5445+00	1.4695+00	1.4063+00	1.4648+00	1.4813+00	1.4461+00
CP	-4.1064-01	-3.9954-01	-4.1138-01	-4.2138-01	-4.1212-01	-4.0953-01	-4.1509-01
P/PO1	1.0719-01	1.1230-01	1.0685-01	1.0225-01	1.0651-01	1.0770-01	1.0514-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	57.	301244	1.49	3	13.00	22.83	-5.01	147.01	180.0

VALVE POS 2 PO = 14.7 Q-INF = 6.312 P-INF =4.0614 RE = .3792 TO = 535.

P	1.2897+00	1.4000+00	2.5106+00	2.9879+00	3.0763+00	2.9313+00	3.1314+00	2.9155+00	1.5324+00
CP	-4.3914-01	-4.7166-01	-2.4569-01	-1.7008-01	-1.5608-01	-1.7895-01	-1.4734-01	-1.8155-01	-4.0068-01
P/PO1	9.4071-02	1.0212-01	1.8313-01	2.1794-01	2.2439-01	2.1396-01	2.2841-01	2.1266-01	1.1178-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.6 Q-INF = 6.283 P-INF =4.0432 RE = .3775 TO = 535.

P	1.0815+00	3.2866+00	8.2084+00	1.2050+01	1.3006+01	1.3378+01	1.3519+01	1.3310+01	1.2150+01
CP	-4.7135-01	-1.2042-01	6.6287-01	1.2742+00	1.4264+00	1.4855+00	1.5080+00	1.4748+00	1.2902+00
P/PO1	7.9240-02	2.4080-01	6.0142-01	8.8288-01	9.5293-01	9.8015-01	9.9049-01	9.7522-01	8.9024-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.8 Q-INF = 6.346 P-INF =4.0834 RE = .3813 TO = 535.

P	1.1275+01	9.6620-01	3.2144+00	8.0228+00	1.1761+01	1.3346+01	2.4910+00	2.7041+00	2.4110+00
CP	1.1333+00	-4.9122-01	-1.3694-01	6.2077-01	1.2099+00	1.4597+00	-2.5093-01	-2.1735-01	-2.6355-01
P/PO1	8.1800-01	7.0096-02	2.3320-01	5.8204-01	8.5327-01	9.6825-01	1.8072-01	1.9618-01	1.7491-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.8 Q-INF = 6.350 P-INF =4.0860 RE = .3815 TO = 535.

P	1.4750+00	1.2570+00	2.7696+00	1.5500+00	2.3870+00	2.6860+00	2.6383+00	2.0851+00	1.7499+00
CP	-4.1118-01	-4.4551-01	-2.0416-01	-3.9937-01	-2.6756-01	-2.2047-01	-2.2728-01	-3.1511-01	-3.6789-01
P/PO1	1.0694-01	9.1138-02	2.0225-01	1.1238-01	1.7306-01	1.9474-01	1.9128-01	1.5117-01	1.2687-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.8 Q-INF = 6.346 P-INF =4.0834 RE = .3813 TO = 535.

P	1.5029+00	1.5011+00	1.5156+00	4.9547+00	9.4589+00	1.1709+01	1.2008+01	3.1144+00	1.5399+00
CP	-4.0664-01	-4.0693-01	-4.0464-01	1.3730-01	8.4709-01	1.2017+00	1.2488+00	-1.5270-01	-4.0081-01
P/PO1	1.0903-01	1.0890-01	1.0995-01	3.5945-01	6.8622-01	8.4948-01	8.7115-01	2.2594-01	1.1172-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.8 Q-INF = 6.350 P-INF =4.0860 RE = .3815 TO = 535.

P	1.5156+00	1.5331+00	1.5564+00	1.5324+00	1.2645+00	1.4014+00	1.6431+00	1.5407+00	4.0432+00
CP	-4.0479-01	-4.0204-01	-3.9837-01	-4.0214-01	-4.4433-01	-4.2278-01	-3.8471-01	-4.0084-01	-6.7425-03
P/PO1	1.0989-01	1.1115-01	1.1284-01	1.1110-01	9.1680-02	1.0160-01	1.1913-01	1.1171-01	2.9314-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.8 Q-INF = 6.368 P-INF =4.0976 RE = .3826 TO = 535.

P	1.5258+00	1.5799+00	1.5844+00	1.7306+00	6.2541+00	9.2302+00	1.0310+01	1.5332+00	1.4849+00
CP	-4.0387-01	-3.9537-01	-3.9467-01	-3.7171-01	3.3863-01	8.0599-01	9.7560-01	-4.0270-01	-4.1029-01
P/PO1	1.1031-01	1.1422-01	1.1454-01	1.2511-01	4.5214-01	6.6730-01	7.4539-01	1.1089-01	1.0735-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.8 Q-INF = 6.374 P-INF =4.1015 RE = .3825 TO = 535.

P	1.5156+00	1.5331+00	1.5538+00	1.5349+00	1.5112+00	1.5309+00	1.5138+00	1.5232+00	1.4749+00
CP	-4.0569-01	-4.0295-01	-3.9970-01	-4.0266-01	-4.0638-01	-4.0330-01	-4.0599-01	-4.0450-01	-4.1208-01
P/PO1	1.0947-01	1.1073-01	1.1223-01	1.1086-01	1.0915-01	1.1057-01	1.0933-01	1.1002-01	1.0653-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 14.9 Q-INF = 6.378 P-INF =4.1041 RE = .3832 TO = 535.

P	1.5232+00	1.5972+00	1.6175+00	1.5901+00	1.5138+00	5.2585+00	7.6938+00	9.3124+00	1.4749+00
CP	-4.0465-01	-3.9305-01	-3.8987-01	-3.9416-01	-4.0613-01	1.8099-01	5.6281-01	8.1659-01	-4.1223-01
P/PO1	1.0995-01	1.1529-01	1.1675-01	1.1478-01	1.0927-01	3.7957-01	5.5535-01	6.7219-01	1.0646-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.8 Q-INF = 6.358 P-INF =4.0912 RE = .3820 TO = 535.

P	1.5385+00	1.5849+00	1.6965+00	1.6955+00	1.7143+00	1.4192+00	1.5267+00	1.5432+00	1.4774+00
CP	-4.0150-01	-3.9420-01	-3.7665-01	-3.7680-01	-3.7384-01	-4.2026-01	-4.0335-01	-4.0075-01	-4.1110-01
P/PO1	1.1140-01	1.1476-01	1.2284-01	1.2277-01	1.2413-01	1.0276-01	1.1055-01	1.1174-01	1.0698-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.8 Q-INF = 6.374 P-INF =4.1015 RE = .3829 TO = 535.

P	1.5588+00	1.6835+00	1.7041+00	1.6729+00	1.6372+00	5.2018+00	7.4602+00	8.9518+00	9.9567+00
CP	-3.9892-01	-3.7936-01	-3.7612-01	-3.8102-01	-3.8662-01	1.7261-01	5.2692-01	7.6094-01	9.1860-01
P/PO1	1.1259-01	1.2159-01	1.2308-01	1.2083-01	1.1825-01	3.7571-01	5.3883-01	6.4657-01	7.1915-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.4320+00	2.9438+00	-1.8750-02	2.7844+00	1.5117+00	1.9008+00	1.7273+00	1.5305+00
CP	-4.1881-01	-1.8164-01	-6.4641-01	-2.0664-01	-4.0630-01	-3.4527-01	-3.7248-01	-4.0336-01
P/PO1	1.0343-01	2.1762-01	-1.3543-03	2.0111-01	1.0919-01	1.3729-01	1.2476-01	1.1054-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.9266+00	1.6078+00	1.5492+00	1.5375+00	1.5469+00	1.5703+00	1.5422+00
CP	-3.4122-01	-3.9123-01	-4.0042-01	-4.0226-01	-4.0079-01	-3.9711-01	-4.0152-01
P/PO1	1.3915-01	1.1613-01	1.1190-01	1.1105-01	1.1173-01	1.1342-01	1.1139-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	50.	301244	1.49	3	13.42	42.42	-9.01	144.99	180.0

VALVE POS 2 PO = 14.7 Q-INF = 6.313 P-INF =4.0653 RE = .3796 TO = 535.

P	1.2059+00	1.3236+00	2.2380+00	2.9064+00	3.4209+00	3.1652+00	3.3235+00	3.2325+00	1.8199+00
CP	-4.5260-01	-4.3397-01	-2.8923-01	-1.8343-01	-1.0199-01	-1.4247-01	-1.1741-01	-1.3181-01	-3.5541-01
P/PO1	8.7876-02	9.6452-02	1.6309-01	2.1180-01	2.4929-01	2.3065-01	2.4219-01	2.3556-01	1.3262-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.8 Q-INF = 6.376 P-INF =4.1028 RE = .3831 TO = 535.

P	1.2719+00	3.6675+00	8.6635+00	1.2346+01	1.3162+01	1.3487+01	1.3534+01	1.3185+01	1.1995+01
CP	-4.4399-01	-6.8282-02	7.1528-01	1.2929+00	1.4207+00	1.4717+00	1.4792+00	1.4244+00	1.2377+00
P/PO1	9.1837-02	2.6481-01	6.2554-01	8.9147-01	9.5032-01	9.7380-01	9.7723-01	9.5200-01	8.6607-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.8 Q-INF = 6.338 P-INF =4.0782 RE = .3808 TO = 535.

P	1.0868+01	1.0722+00	3.3729+00	6.1165+00	1.1684+01	1.3066+01	2.4334+00	2.7787+00	2.6352+00
CP	1.0713+00	-4.7430-01	-1.1129-01	6.3717-01	1.2300+00	1.4181+00	-2.5952-01	-2.0504-01	-2.2768-01
P/PO1	7.8947-01	7.7884-02	2.4501-01	5.8954-01	8.4870-01	9.4409-01	1.7676-01	2.0185-01	1.9142-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.8 Q-INF = 6.336 P-INF =4.0769 RE = .3802 TO = 535.

P	1.3963+00	1.1511+00	2.8023+00	1.1086+00	1.6860+00	2.5977+00	2.3780+00	2.0451+00	1.8549+00
CP	-4.2309-01	-4.6180-01	-2.0118-01	-4.6850-01	-3.7736-01	-2.3347-01	-2.6814-01	-3.2068-01	-3.5071-01
P/PO1	1.0146-01	8.3640-02	2.0362-01	8.0552-02	1.2251-01	1.8876-01	1.7279-01	1.4861-01	1.3478-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.324 P-INF =4.0691 RE = .3799 TO = 535.

P	1.3430+00	1.3606+00	1.3831+00	4.5538+00	9.1011+00	1.1144+01	1.1494+01	2.8575+00	1.8074+00
CP	-4.3110-01	-4.2832-01	-4.2475-01	7.6644-02	7.9572-01	1.1219+00	1.1741+00	-1.3128-01	-3.5766-01
P/PO1	9.7772-02	9.9052-02	1.0070-01	3.3153-01	6.6258-01	8.1273-01	8.3678-01	2.0818-01	1.3158-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.6 Q-INF = 6.291 P-INF =4.0419 RE = .3774 TO = 535.

P	1.3354+00	1.3581+00	1.3704+00	1.3569+00	1.0075+00	1.1780+00	1.4465+00	1.5133+00	2.9841+00
CP	-4.3088-01	-4.2726-01	-4.2530-01	-4.2746-01	-4.8308-01	-4.5594-01	-4.1319-01	-4.0256-01	-1.6841-01
P/PO1	9.7872-02	9.9538-02	1.0044-01	9.9448-02	7.3842-02	8.6336-02	1.0602-01	1.1091-01	2.1871-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.7 Q-INF = 6.320 P-INF =4.0666 RE = .3797 TO = 535.

P	1.3811+00	1.4000+00	1.4035+00	1.4848+00	5.8651+00	8.6221+00	9.6873+00	1.3884+00	1.3049+00
CP	-4.2494-01	-4.2194-01	-4.2139-01	-4.0853-01	2.8460-01	7.2085-01	8.8940-01	-4.2378-01	-4.3699-01
P/PO1	1.0061-01	1.0199-01	1.0224-01	1.0816-01	4.2727-01	6.2811-01	7.0571-01	1.0114-01	9.5061-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.8 Q-INF = 6.350 P-INF =4.0860 RE = .3815 TO = 535.

P	1.3151+00	1.3778+00	1.3984+00	1.3845+00	1.3108+00	1.4522+00	1.3740+00	1.3759+00	1.2949+00
CP	-4.3637-01	-4.2649-01	-4.2324-01	-4.2544-01	-4.3705-01	-4.1478-01	-4.2709-01	-4.2679-01	-4.3954-01
P/PO1	9.5345-02	9.9895-02	1.0139-01	1.0038-01	9.5034-02	1.0528-01	9.9619-02	9.9756-02	9.3884-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

VALVE POS 10 PO = 14.8 Q-INF = 6.352 P-INF =4.0873 RE = .3819 TO = 535.

P	1.3861+00	1.4986+00	1.5003+00	1.4823+00	1.4239+00	4.9685+00	7.1954+00	8.7324+00	1.2924+00
CP	-4.2525-01	-4.0754-01	-4.0727-01	-4.1011-01	-4.1931-01	1.3873-01	4.8932-01	7.3129-01	-4.4200-01
P/PO1	1.0947-01	1.0862-01	1.0874-01	1.0743-01	1.0320-01	3.6011-01	5.2152-01	6.3291-01	9.3673-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.7 Q-INF = 6.300 P-INF =4.0536 RE = .3785 TO = 535.

P	1.4014+00	1.4567+00	1.5462+00	1.5500+00	1.5832+00	1.1957+00	1.4077+00	1.4234+00	1.2899+00
CP	-4.2102-01	-4.1224-01	-3.9803-01	-3.9742-01	-3.9215-01	-4.5366-01	-4.2907-01	-4.1753-01	-4.3871-01
P/PO1	1.0241-01	1.0646-01	1.1300-01	1.1328-01	1.1570-01	8.7386-02	1.0287-01	1.0402-01	9.4269-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.328 P-INF =4.0717 RE = .3802 TO = 535.

P	1.4395+00	1.5085+00	1.5436+00	1.5149+00	1.4521+00	4.9811+00	7.1020+00	8.5442+00	9.6145+00
CP	-4.1599-01	-4.0509-01	-3.9953-01	-4.0407-01	-4.1399-01	1.4371-01	4.7888-01	7.0680-01	8.7594-01
P/PO1	1.0473-01	1.0775-01	1.1231-01	1.1022-01	1.0565-01	3.6240-01	5.1671-01	6.2164-01	6.9951-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.3078+00	2.4469+00	-1.8750-02	2.7445+00	1.3641+00	2.3391+00	1.7039+00	1.3570+00
CP	-4.3679-01	-2.5678-01	-6.4643-01	-2.0974-01	-4.2790-01	-2.7382-01	-3.7420-01	-4.2901-01
P/PO1	9.5151-02	1.7802-01	-1.3642-03	1.9968-01	9.9243-02	1.7018-01	1.2397-01	9.8732-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.7836+00	1.4953+00	1.3664+00	1.3031+00	1.3664+00	1.3781+00	1.3734+00
CP	-3.6160-01	-4.0716-01	-4.2753-01	-4.3753-01	-4.2753-01	-4.2568-01	-4.2642-01
P/PO1	1.2977-01	1.0879-01	9.9414-02	9.4810-02	9.9414-02	1.0027-01	9.9925-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	59.	301244	1.49	3	12.03	44.75	-9.02	143.00	180.0

VALVE POS 2 PO = 14.6 Q-INF = 6.281 P-INF =4.0419 RE = .3774 TO = 535.

P	1.0967+00	1.2225+00	2.3256+00	2.9941+00	3.5932+00	3.4048+00	3.5412+00	3.4874+00	2.0899+00
CP	-4.6887-01	-4.4885-01	-2.7324-01	-1.6681-01	-7.1433-02	-1.0143-01	-7.9712-02	-8.8286-02	-3.1077-01
P/PO1	8.0382-02	8.9602-02	1.7045-01	2.1945-01	2.6336-01	2.4954-01	2.5954-01	2.5560-01	1.5317-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.6 Q-INF = 6.281 P-INF =4.0419 RE = .3769 TO = 535.

P	1.4725+00	4.0360+00	9.0716+00	1.2393+01	1.3053+01	1.3331+01	1.3374+01	1.2903+01	1.1606+01
CP	-4.0906-01	-9.3895-04	8.0071-01	1.3795+00	1.4345+00	1.4788+00	1.4888+00	1.4106+00	1.2042+00
P/PO1	1.0792-01	2.9581-01	6.6488-01	9.0833-01	9.5666-01	9.7704-01	9.8168-01	9.4566-01	8.5062-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.7 Q-INF = 6.332 P-INF =4.0743 RE = .3799 TO = 535.

P	1.0586+01	1.2595+00	3.8103+00	8.5223+00	1.1839+01	1.3035+01	2.5551+00	2.9901+00	2.9093+00
CP	1.0285+00	-4.4455-01	-4.1693-02	7.0249-01	1.2263+00	1.4151+00	-2.3794-01	-1.7124-01	-1.8399-01
P/PO1	7.6972-01	9.1578-02	2.7705-01	6.1965-01	8.6082-01	9.4773-01	1.8578-01	2.1741-01	2.1154-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.324 P-INF =4.0691 RE = .3799 TO = 535.

P	1.5258+00	1.0032+00	3.1573+00	9.9320-01	1.4162+00	2.2722+00	2.6255+00	2.1625+00	2.0824+00
CP	-4.0219-01	-4.8484-01	-1.4419-01	-4.8641-01	-4.1953-01	-2.8416-01	-2.2829-01	-3.0151-01	-3.1418-01
P/PO1	1.1108-01	7.3033-02	2.2986-01	7.2307-02	1.0310-01	1.6542-01	1.9114-01	1.5743-01	1.5160-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.320 P-INF =4.0666 RE = .3797 TO = 535.

P	1.2922+00	1.3063+00	1.5360+00	4.8232+00	9.1166+00	1.1086+01	1.1307+01	2.9030+00	2.3237+00
CP	-4.3900-01	-4.3676-01	-4.0043-01	1.1972-01	7.7910-01	1.1107+00	1.1457+00	-1.8411-01	-2.7578-01
P/PO1	9.4136-02	9.5165-02	1.1189-01	3.5136-01	6.6413-01	8.0757-01	8.2370-01	2.1148-01	1.6928-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.7 Q-INF = 6.314 P-INF =4.0627 RE = .3788 TO = 535.

P	1.2643+00	1.2718+00	1.2940+00	1.2841+00	9.6124-01	1.0967+00	1.2757+00	1.5307+00	2.8595+00
CP	-4.4323-01	-4.4203-01	-4.3852-01	-4.4008-01	-4.9123-01	-4.6976-01	-4.4142-01	-4.0102-01	-1.9057-01
P/PO1	9.2190-02	9.2740-02	9.4355-02	9.3637-02	7.0091-02	7.9972-02	9.3021-02	1.1162-01	2.0851-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.7 Q-INF = 6.324 P-INF =4.0691 RE = .3799 TO = 535.

P	1.3125+00	1.3359+00	1.3347+00	1.4497+00	5.7632+00	8.3882+00	9.4070+00	1.3135+00	1.2774+00
CP	-4.3592-01	-4.3722-01	-4.3240-01	-4.1423-01	2.6789-01	6.8300-01	8.4409-01	-4.3576-01	-4.4147-01
P/PO1	9.5555-02	9.7257-02	9.7172-02	1.0554-01	4.1957-01	6.1068-01	6.8485-01	9.5624-02	9.2999-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.7 Q-INF = 6.328 P-INF =4.0717 RE = .3802 TO = 535.

P	1.2871+00	1.2891+00	1.3042+00	1.2942+00	1.0640+00	1.3379+00	1.3249+00	1.2935+00	1.2549+00
CP	-4.4006-01	-4.3975-01	-4.3737-01	-4.3895-01	-4.7532-01	-4.3204-01	-4.3410-01	-4.3905-01	-4.4515-01
P/PO1	9.3647-02	9.3788-02	9.4887-02	9.4158-02	7.7415-02	9.7341-02	9.6391-02	9.4110-02	9.1303-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GD WIND TUNNEL

VALVE POS 10 PO = 14.6 Q-INF = 6.240 P-INF =4.0471 RE = .3779 TO = 535.

P	1.3100+00	1.4123+00	1.4163+00	1.3945+00	1.3159+00	4.7415+00	6.8839+00	8.3718+00	1.2224+00
CP	-4.3519-01	-4.1892-01	-4.1829-01	-4.2175-01	-4.3425-01	1.1040-01	4.5103-01	6.8760-01	-4.4911-01
P/PO1	9.5889-02	1.0338-01	1.0367-01	1.0207-01	9.6323-02	3.4707-01	5.0389-01	6.1280-01	8.9479-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.6 Q-INF = 6.269 P-INF =4.0342 RE = .3767 TO = 535.

P	1.3227+00	1.3803+00	1.4978+00	1.4898+00	1.5190+00	1.0460+00	1.2990+00	1.3310+00	1.2424+00
CP	-4.3250-01	-4.2331-01	-4.0457-01	-4.0584-01	-4.0119-01	-4.7664-01	-4.3628-01	-4.3118-01	-4.4530-01
P/PO1	9.7129-02	1.0136-01	1.0999-01	1.0940-01	1.1154-01	7.6808-02	9.5388-02	9.7737-02	9.1235-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1600-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.322 P-INF =4.0679 RE = .3798 TO = 535.

P	1.3785+00	1.4518+00	1.4850+00	1.4597+00	1.3982+00	4.7730+00	6.7905+00	8.1836+00	9.3033+00
CP	-4.2541-01	-4.1383-01	-4.0856-01	-4.1257-01	-4.2230-01	1.1154-01	4.3068-01	6.5106-01	8.2817-01
P/PO1	1.0039-01	1.0572-01	1.0815-01	1.0630-01	1.0182-01	3.4760-01	4.9452-01	5.9598-01	6.7752-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2469+00	2.5336+00	1.3055+00	2.7305+00	1.3102+00	3.6117+00	2.2781+00	1.3289+00
CP	-4.4624-01	-2.4270-01	-4.3697-01	-2.1155-01	-4.3623-01	-7.2153-02	-2.8311-01	-4.3326-01
P/PO1	9.0804-02	1.8451-01	9.5071-02	1.9885-01	9.5412-02	2.6302-01	1.6591-01	9.6778-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.5727+00	1.6763+01	1.3359+00	1.2563+00	1.3008+00	1.3125+00	1.3125+00
CP	-3.9470-01	2.0081+00	-4.3215-01	-4.4475-01	-4.3771-01	-4.3585-01	-4.3585-01
P/PO1	1.1453-01	1.2207+00	9.7290-02	9.1487-02	9.4730-02	9.5583-02	9.5583-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	60.	301244	1.49	3	11.17	26.78	-5.01	145.00	180.0

VALVE POS 2 PO = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3781 TO = 535.

P	1.2186+00	1.3211+00	2.5297+00	3.0881+00	3.3699+00	3.0517+00	3.2851+00	3.1641+00	1.7824+00
CP	-4.4985-01	-4.3355-01	-2.4153-01	-1.5280-01	-1.0802-01	-1.5858-01	-1.2149-01	-1.4071-01	-3.6026-01
P/PO1	8.9142-02	9.6642-02	1.8505-01	2.2590-01	2.4651-01	2.2374-01	2.4031-01	2.3146-01	1.3038-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.6 Q-INF = 6.292 P-INF =4.0484 RE = .3780 TO = 535.

P	1.2668+00	3.6306+00	8.6635+00	1.2300+01	1.3084+01	1.3424+01	1.3487+01	1.3138+01	1.1948+01
CP	-4.4212-01	-6.6410-02	7.3354-01	1.3119+00	1.4361+00	1.4902+00	1.5003+00	1.4447+00	1.2556+00
P/PO1	9.2700-02	2.6567-01	6.3395-01	9.0002-01	9.5740-01	9.8232-01	9.8694-01	9.6135-01	8.7430-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.7 Q-INF = 6.300 P-INF =4.0536 RE = .3785 TO = 535.

P	1.0931+01	1.1239+00	3.5758+00	8.3662+00	1.1808+01	1.3222+01	2.5871+00	2.8906+00	2.6913+00
CP	1.0917+00	-4.6506-01	-7.5853-02	6.8459-01	1.2310+00	1.4553+00	-2.3280-01	-1.8461-01	-2.1625-01
P/PO1	7.9884-01	8.2139-02	2.6132-01	6.1141-01	8.6295-01	9.6625-01	1.8907-01	2.1125-01	1.9668-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.308 P-INF =4.0588 RE = .3790 TO = 535.

P	1.4369+00	1.0549+00	3.1129+00	1.6453+00	2.6678+00	2.9634+00	2.9969+00	2.2124+00	2.0074+00
CP	-4.1566-01	-4.7622-01	-1.4995-01	-3.8263-01	-2.2052-01	-1.7366-01	-1.6835-01	-2.9271-01	-3.2523-01
P/PO1	1.0488-01	7.6997-02	2.2721-01	1.2009-01	1.9472-01	2.1620-01	2.1874-01	1.6148-01	1.4651-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3776 TO = 535.

P	1.3658+00	1.3803+00	1.6582+00	5.1965+00	9.4434+00	1.1538+01	1.1728+01	3.3693+00	1.6299+00
CP	-4.2617-01	-4.2387-01	-3.7965-01	1.8168-01	8.5893-01	1.1921+00	1.2223+00	-1.0743-01	-3.8416-01
P/PO1	1.0004-01	1.0110-01	1.2146-01	3.7388-01	6.9168-01	8.4508-01	8.5899-01	2.4678-01	1.1938-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3771 TO = 535.

P	1.3735+00	1.3778+00	1.4137+00	1.3845+00	1.2260+00	1.2161+00	1.4982+00	1.5582+00	3.4638+00
CP	-4.2468-01	-4.2398-01	-4.1827-01	-4.2293-01	-4.4818-01	-4.4975-01	-4.0480-01	-3.9525-01	-9.1686-02
P/PO1	1.0073-01	1.0105-01	1.0368-01	1.0154-01	8.9911-02	8.9184-02	1.0988-01	1.1428-01	2.5403-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.6 Q-INF = 6.249 P-INF =4.0212 RE = .3754 TO = 535.

P	1.3861+00	1.4466+00	1.4519+00	1.6879+00	6.0363+00	8.8872+00	9.9365+00	1.3959+00	1.3524+00
CP	-4.2166-01	-4.1195-01	-4.1114-01	-3.7337-01	3.2245-01	7.7865-01	9.4656-01	-4.2010-01	-4.2706-01
P/PO1	1.0212-01	1.0659-01	1.0696-01	1.2435-01	4.4469-01	6.5472-01	7.3202-01	1.0283-01	9.9632-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3779 TO = 535.

P	1.3887+00	1.4049+00	1.4163+00	1.4020+00	1.3313+00	1.4065+00	1.3895+00	1.3859+00	1.3374+00
CP	-4.2268-01	-4.2009-01	-4.1829-01	-4.2056-01	-4.3180-01	-4.1985-01	-4.2254-01	-4.2312-01	-4.3083-01
P/PO1	1.0165-01	1.0284-01	1.0367-01	1.0263-01	9.7451-02	1.0295-01	1.0171-01	1.0145-01	9.7897-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.5 Q-INF = 6.245 P-INF =4.0186 RE = .3752 TO = 535.

P	1.3861+00	1.4394+00	1.4621+00	1.4396+00	1.2851+00	5.0000+00	7.3200+00	8.8735+00	1.3199+00
CP	-4.2152-01	-4.1299-01	-4.0936-01	-4.1295-01	-4.3770-01	1.5714-01	5.2862-01	7.7737-01	-4.3212-01
P/PO1	1.0218-01	1.0611-01	1.0778-01	1.0613-01	9.4732-02	3.6859-01	5.3961-01	6.5413-01	9.7301-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.5 Q-INF = 6.241 P-INF =4.0160 RE = .3750 TO = 535.

P	1.3887+00	1.4173+00	1.5538+00	1.5525+00	1.5781+00	1.2110+00	1.4284+00	1.4234+00	1.3274+00
CP	-4.2097-01	-4.1639-01	-3.9451-01	-3.9472-01	-3.9062-01	-4.4944-01	-4.1461-01	-4.1541-01	-4.3078-01
P/PO1	1.0244-01	1.0454-01	1.1462-01	1.1452-01	1.1641-01	8.9328-02	1.0535-01	1.0499-01	9.7917-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.6 Q-INF = 6.251 P-INF =4.0225 RE = .3756 TO = 535.

P	1.4039+00	1.5479+00	1.5640+00	1.5400+00	1.4907+00	4.9748+00	7.0964+00	8.5286+00	9.5834+00
CP	-4.1889-01	-3.9586-01	-3.9328-01	-3.9713-01	-4.0501-01	1.5233-01	4.9012-01	7.2082-01	8.8956-01
P/PO1	1.0339-01	1.1400-01	1.1518-01	1.1341-01	1.0978-01	3.6647-01	5.2188-01	6.2809-01	7.0578-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2891+00	2.8125+00	1.3734+00	3.2180+00	1.3781+00	2.6367+00	1.9383+00	1.3852+00
CP	-4.3726-01	-1.9356-01	-4.2377-01	-1.2870-01	-4.2302-01	-2.2168-01	-3.3341-01	-4.2189-01
P/PO1	9.4934-02	2.0713-01	1.0115-01	2.3699-01	1.0149-01	1.9418-01	1.4275-01	1.0201-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.5000+00	1.6891+01	1.4156+00	1.3875+00	1.4086+00	1.4344+00	1.4227+00
CP	-4.0352-01	2.0586+00	-4.1702-01	-4.2152-01	-4.1814-01	-4.1402-01	-4.1589-01
P/PO1	1.1047-01	1.2440+00	1.0426-01	1.0218-01	1.0374-01	1.0564-01	1.0477-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	61.	301244	1.49	3	9.43	32.20	-5.01	143.00	180.0

VALVE POS 2 PO = 14.5 Q-INF = 6.215 P-INF =3.9992 RE = .3734 TO = 535.

P	1.0866+00	1.1067+00	2.6057+00	3.2321+00	3.6124+00	3.2292+00	3.5528+00	3.4812+00	2.0824+00
CP	-4.6864-01	-4.6540-01	-2.2421-01	-1.2342-01	-6.2237-02	-1.2405-01	-7.9868-02	-8.3352-02	-3.0842-01
P/PO1	8.0489-02	8.1979-02	1.9302-01	2.3942-01	2.6759-01	2.3913-01	2.5947-01	2.5787-01	1.5425-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.6 Q-INF = 6.249 P-INF =4.0212 RE = .3754 TO = 535.

P	1.4775+00	4.0668+00	9.0873+00	1.2424+01	1.3239+01	1.3346+01	1.3394+01	1.2918+01	1.1621+01
CP	-4.0704-01	7.2882-03	8.1067-01	1.3447+00	1.4751+00	1.4922+00	1.4998+00	1.4237+00	1.2162+00
P/PO1	1.0885-01	2.9960-01	6.6946-01	9.1531-01	9.7534-01	9.8322-01	9.8674-01	9.5169-01	8.5615-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.5 Q-INF = 6.247 P-INF =4.0199 RE = .3753 TO = 535.

P	1.0602+01	1.3359+00	3.9942+00	8.7877+00	1.2197+01	1.3159+01	2.7088+00	3.1206+00	2.9716+00
CP	1.0536+00	-4.2963-01	-4.1174-03	7.6313-01	1.3089+00	1.4629+00	-2.0789-01	-1.4395-01	-1.6780-01
P/PO1	7.8130-01	9.9449-02	2.9435-01	6.4759-01	8.9004-01	9.6779-01	1.9962-01	2.2997-01	2.1899-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3779 TO = 535.

P	1.7010+00	1.1141+00	3.4046+00	1.5450+00	2.5338+00	3.0706+00	3.3555+00	2.3498+00	2.2549+00
CP	-3.7303-01	-4.6634-01	-1.0216-01	-3.9783-01	-2.4061-01	-1.5526-01	-1.0996-01	-2.6987-01	-2.8496-01
P/PO1	1.2451-01	8.1549-02	2.4921-01	1.1309-01	1.8547-01	2.2476-01	2.4562-01	1.7200-01	1.6505-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3771 TO = 535.

P	1.2973+00	1.3088+00	1.8518+00	5.4871+00	9.5989+00	1.1475+01	1.1587+01	3.2263+00	2.7598+00
CP	-4.3681-01	-4.3498-01	-3.4847-01	2.3063-01	8.8564-01	1.1846+00	1.2024+00	-1.2752-01	-2.0383-01
P/PO1	9.5142-02	9.5986-02	1.3581-01	4.0242-01	7.0398-01	8.4159-01	8.4981-01	2.3661-01	2.0240-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.6 Q-INF = 6.269 P-INF =4.0342 RE = .3767 TO = 535.

P	1.3938+00	1.2792+00	1.3195+00	1.2791+00	1.0769+00	1.1348+00	1.3999+00	1.5232+00	3.4202+00
CP	-4.2116-01	-4.3943-01	-4.3301-01	-4.3744-01	-4.7170-01	-4.6246-01	-4.2018-01	-4.0051-01	-9.7933-02
P/PO1	1.0235-01	9.3936-02	9.6892-02	9.3930-02	7.9080-02	8.3333-02	1.0280-01	1.1186-01	2.5116-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.7 Q-INF = 6.314 P-INF =4.0627 RE = .3793 TO = 535.

P	1.3176+00	1.3729+00	1.3755+00	1.6754+00	6.0052+00	8.7468+00	9.7185+00	1.3210+00	1.2724+00
CP	-4.3478-01	-4.2602-01	-4.2561-01	-3.7811-01	3.0766-01	7.4191-01	8.9580-01	-4.3425-01	-4.4194-01
P/PO1	9.6077-02	1.0011-01	1.0030-01	1.2217-01	4.3789-01	6.3780-01	7.0865-01	9.6323-02	9.2783-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.7 Q-INF = 6.330 P-INF =4.0730 RE = .3803 TO = 535.

P	1.3125+00	1.3482+00	1.3551+00	1.3393+00	1.1437+00	1.3151+00	1.3016+00	1.3085+00	1.2549+00
CP	-4.3611-01	-4.3047-01	-4.2938-01	-4.3188-01	-4.6278-01	-4.3571-01	-4.3785-01	-4.3675-01	-4.4521-01
P/PO1	9.5463-02	9.8061-02	9.8562-02	9.7412-02	8.3185-02	9.5648-02	9.4666-02	9.5170-02	9.1274-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 14.7 Q-INF = 6.320 P-INF =4.0666 RE = .3797 TO = 535.

P	1.3100+00	1.3803+00	1.3908+00	1.3669+00	1.2285+00	4.8676+00	7.1020+00	8.6226+00	1.2549+00
CP	-4.3619-01	-4.2506-01	-4.2340-01	-4.2718-01	-4.4908-01	1.2675-01	4.8031-01	7.2093-01	-4.4490-01
P/PO1	9.5431-02	1.0055-01	1.0132-01	9.9577-02	8.9497-02	3.5460-01	5.1737-01	6.2814-01	9.1419-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3776 TO = 535.

P	1.3024+00	1.3162+00	1.4799+00	1.4647+00	1.5344+00	1.0307+00	1.2809+00	1.3160+00	1.2474+00
CP	-4.3627-01	-4.3407-01	-4.0802-01	-4.1044-01	-3.9936-01	-4.7949-01	-4.3969-01	-4.3410-01	-4.4501-01
P/PO1	9.5392-02	9.6405-02	1.0840-01	1.0728-01	1.1239-01	7.5496-02	9.3817-02	9.6389-02	9.1368-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.328 P-INF =4.0717 RE = .3802 TO = 535.

P	1.3303+00	1.4419+00	1.4621+00	1.4396+00	1.3904+00	4.8108+00	6.8372+00	8.2150+00	9.3656+00
CP	-4.3324-01	-4.1560-01	-4.1241-01	-4.1596-01	-4.2373-01	1.1680-01	4.3703-01	6.5478-01	8.3660-01
P/PO1	9.6787-02	1.0491-01	1.0638-01	1.0474-01	1.0116-01	3.5002-01	4.9744-01	5.9769-01	6.8140-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2375+00	2.8078+00	-1.8750-02	3.2250+00	1.2984+00	4.3383+00	2.6977+00	1.3148+00
CP	-4.4790-01	-1.9974-01	-6.4643-01	-1.3381-01	-4.3827-01	4.2123-02	-2.1715-01	-4.3568-01
P/PO1	9.0035-02	2.0428-01	-1.3642-03	2.3464-01	9.4469-02	3.1563-01	1.9627-01	9.5662-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.8820+00	1.6891+01	1.3430+00	1.3172+00	1.3477+00	1.3547+00	1.3523+00
CP	-3.4605-01	2.0259+00	-4.3124-01	-4.3531-01	-4.3050-01	-4.2939-01	-4.2976-01
P/PO1	1.3693-01	1.2289+00	9.7709-02	9.5833-02	9.8050-02	9.8561-02	9.8391-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	62.	301244	1.49	3	9.42	-32.17	5.00	142.99	180.0

VALVE POS 2 PC = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3776 TO = 535.

P	1.1500+00	1.1757+00	2.6818+00	3.2196+00	3.5358+00	3.2598+00	3.5668+00	3.5495+00	2.1549+00
CP	-4.6050-01	-4.5642-01	-2.1680-01	-1.3124-01	-8.0938-02	-1.2485-01	-7.5398-02	-7.8752-02	-3.0064-01
P/PO1	8.4235-02	8.6115-02	1.9643-01	2.3582-01	2.5898-01	2.3876-01	2.6125-01	2.5999-01	1.5783-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PC = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3779 TO = 535.

P	1.5131+00	4.1528+00	9.1501+00	1.2471+01	1.3208+01	1.3440+01	1.3456+01	1.2981+01	1.1668+01
CP	-4.0290-01	1.6790-02	8.1134-01	1.3394+00	1.4566+00	1.4934+00	1.4960+00	1.4204+00	1.2117+00
P/PO1	1.1076-01	3.0397-01	6.6977-01	9.1288-01	9.6682-01	9.8378-01	9.8498-01	9.5018-01	8.5408-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3777 TO = 535.

P	1.0649+01	1.5454+00	4.4760+00	9.3964+00	1.2617+01	1.3518+01	3.7205+00	3.5744+00	3.3953+00
CP	1.0502+00	-3.9768-01	6.8423-02	8.5099-01	1.3632+00	1.5065+00	-5.1736-02	-7.4978-02	-1.0347-01
P/PO1	7.7973-01	1.1316-01	3.2774-01	6.8802-01	9.2384-01	9.8980-01	2.7242-01	2.6172-01	2.4861-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PC = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3776 TO = 535.

P	2.1224+00	1.4468+00	4.2985+00	2.2999+00	3.0571+00	3.6192+00	4.4826+00	2.9838+00	2.8595+00
CP	-3.0581-01	-4.1329-01	4.0408-02	-2.7756-01	-1.5709-01	-6.7675-02	6.9691-02	-1.6875-01	-1.8853-01
P/PO1	1.5545-01	1.0597-01	3.1485-01	1.6846-01	2.2392-01	2.6509-01	3.2833-01	2.1855-01	2.0944-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00

VALVE POS 6 PC = 14.8 Q-INF = 6.336 P-INF =4.0769 RE = .3802 TO = 535.

P	1.4725+00	1.1782+00	2.6403+00	7.3985+00	1.1264+01	1.2520+01	1.2257+01	3.9536+00	3.9310+00
CP	-4.1107-01	-4.5752-01	-1.9518-01	5.2425-01	1.1343+00	1.3326+00	1.2911+00	-1.9464-02	-2.3025-02
P/PO1	1.0699-01	8.5610-02	2.0639-01	5.3760-01	8.1845-01	9.0974-01	8.9064-01	2.8728-01	2.8564-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PC = 14.8 Q-INF = 6.366 P-INF =4.0964 RE = .3825 TO = 535.

P	2.0843+00	1.1609+00	1.2303+00	1.5124+00	1.1746+00	9.6980-01	1.3766+00	1.5632+00	4.7098+00
CP	-3.1606-01	-4.6111-01	-4.5021-01	-4.0590-01	-4.5897-01	-4.9113-01	-4.2723-01	-3.9792-01	9.6358-02
P/PO1	1.5073-01	8.3956-02	8.8974-02	1.0937-01	8.4942-02	7.0134-02	9.9554-02	1.1305-01	3.4060-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PC = 14.9 Q-INF = 6.378 P-INF =4.1041 RE = .3832 TO = 535.

P	1.1475+00	1.4468+00	1.4570+00	2.5557+00	7.1564+00	9.7291+00	1.0482+01	1.1387+00	9.2994-01
CP	-4.6356-01	-4.1663-01	-4.1503-01	-2.4278-01	4.7856-01	8.8192-01	9.9990-01	-4.6494-01	-4.9767-01
P/PO1	8.2829-02	1.0443-01	1.0517-01	1.8447-01	5.1656-01	7.0226-01	7.5658-01	8.2192-02	6.7125-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PC = 14.8 Q-INF = 6.348 P-INF =4.0847 RE = .3814 TO = 535.

P	1.3887+00	1.4123+00	1.4214+00	1.4045+00	1.2131+00	1.3176+00	1.2162+00	1.1437+00	1.3449+00
CP	-4.2471-01	-4.2098-01	-4.1956-01	-4.2221-01	-4.5237-01	-4.3591-01	-4.5188-01	-4.6331-01	-4.3160-01
P/PO1	1.0071-01	1.0243-01	1.0308-01	1.0186-01	8.7981-02	9.5559-02	8.8203-02	8.2945-02	9.7540-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 14.8 Q-INF = 6.368 P-INF =4.0976 RE = .3326 TO = 535.

P	1.3861+00	1.3901+00	1.3959+00	1.3669+00	1.2157+00	5.0693+00	7.4913+00	8.9989+00	1.1399+00
CP	-4.2580-01	-4.2517-01	-4.2427-01	-4.2882-01	-4.5257-01	1.5259-01	5.3292-01	7.6966-01	-4.6446-01
P/PO1	1.0021-01	1.0050-01	1.0092-01	9.8821-02	8.7888-02	3.6649-01	5.4159-01	6.5058-01	8.2412-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3781 TO = 535.

P	1.4217+00	1.4049+00	1.3959+00	1.3995+00	1.4727+00	1.0917+00	1.3456+00	1.3759+00	1.2899+00
CP	-4.1757-01	-4.2024-01	-4.2168-01	-4.2110-01	-4.0947-01	-4.7002-01	-4.2967-01	-4.2485-01	-4.3851-01
P/PO1	1.0400-01	1.0277-01	1.0211-01	1.0238-01	1.0773-01	7.9856-02	9.8429-02	1.0065-01	9.4360-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3800 TO = 535.

P	1.3988+00	1.5060+00	1.5232+00	1.4998+00	1.5292+00	4.8108+00	6.8216+00	8.2307+00	9.3189+00
CP	-4.2234-01	-4.0540-01	-4.0267-01	-4.0637-01	-4.0172-01	1.1704-01	4.3492-01	6.5767-01	8.2970-01
P/PO1	1.0181-01	1.0960-01	1.1086-01	1.0916-01	1.1130-01	3.5013-01	4.9647-01	5.9902-01	6.7822-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.1320+00	4.0266+00	-1.8750-02	4.4297+00	1.0383+00	5.6766+00	4.6805+00	8.7656-01
CP	-4.6452-01	-6.9366-03	-6.4644-01	5.6791-02	-4.7934-01	2.5390-01	9.6436-02	-5.0490-01
P/PO1	8.2388-02	2.9305-01	-1.3646-03	3.2239-01	7.5565-02	4.1313-01	3.4064-01	6.3795-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.3922+00	1.6891+01	1.1156+00	1.4273+00	1.3758+00	1.4320+00	1.4063+00
CP	-4.2339-01	2.0268+00	-4.6711-01	-4.1783-01	-4.2598-01	-4.1709-01	-4.2117-01
P/PO1	1.0132-01	1.2293+00	8.1194-02	1.0388-01	1.0013-01	1.0422-01	1.0235-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	63.	301244	1.49	3	12.05	-48.73	9.03	143.01	180.0

VALVE POS 2 PO = 14.8 Q-INF = 6.352 P-INF =4.0873 RE = .3811 TO = 535.

P	1.1577+00	1.2423+00	2.4092+00	3.0442+00	3.5613+00	3.3228+00	3.5925+00	3.6055+00	2.1493+00
CP	-4.6122-01	-4.4790-01	-2.6419-01	-1.6421-01	-8.2803-02	-1.2035-01	-7.7901-02	-7.5851-02	-3.0510-01
P/PO1	8.3906-02	9.0037-02	1.7462-01	2.2064-01	2.5812-01	2.4083-01	2.6038-01	2.6132-01	1.5578-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.8 Q-INF = 6.336 P-INF =4.0769 RE = .3802 TO = 535.

P	1.4928+00	4.1220+00	9.0716+00	1.2424+01	1.3255+01	1.3378+01	1.3410+01	1.2934+01	1.1668+01
CP	-4.0786-01	7.1226-03	7.8832-01	1.3175+00	1.4486+00	1.4679+00	1.4730+00	1.3979+00	1.1981+00
P/PO1	1.0847-01	2.9952-01	6.5917-01	9.0280-01	9.6315-01	9.7206-01	9.7439-01	9.3982-01	8.4784-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3781 TO = 535.

P	1.0524+01	1.5923+00	4.6028+00	9.5057+00	1.2617+01	1.3502+01	4.3545+00	3.7485+00	3.5759+00
CP	1.0287+00	-3.9047-01	8.7887-02	8.6691-01	1.3613+00	1.5019+00	4.8428-02	-4.7867-02	-7.5280-02
P/PO1	7.6982-01	1.1648-01	3.3670-01	6.9535-01	9.2296-01	9.8771-01	3.1854-01	2.7421-01	2.6158-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.316 P-INF =4.0640 RE = .3794 TO = 535.

P	2.3077+00	1.5725+00	4.6155+00	2.2924+00	3.0890+00	3.7705+00	4.8348+00	3.2574+00	3.1461+00
CP	-2.7808-01	-3.9448-01	8.7330-02	-2.8050-01	-1.5437-01	-4.6469-02	1.2205-01	-1.2771-01	-1.4533-01
P/PO1	1.6872-01	1.1463-01	3.3645-01	1.6710-01	2.2517-01	2.7485-01	3.5243-01	2.3745-01	2.2933-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.306 P-INF =4.0575 RE = .3788 TO = 535.

P	1.7619+00	1.1585+00	3.3222+00	8.0228+00	1.1497+01	1.2738+01	1.2335+01	4.1836+00	4.2051+00
CP	-3.6406-01	-4.5975-01	-1.1662-01	6.2886-01	1.1798+00	1.3767+00	1.3127+00	2.0001-02	2.3418-02
P/PO1	1.2864-01	8.4580-02	2.4255-01	5.8576-01	8.3941-01	9.3004-01	9.0059-01	3.0545-01	3.0702-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.7 Q-INF = 6.304 P-INF =4.0562 RE = .3787 TO = 535.

P	2.3823+00	1.1979+00	1.2278+00	1.9463+00	1.1566+00	1.0155+00	1.4801+00	1.5882+00	5.7407+00
CP	-2.6555-01	-4.5344-01	-4.4870-01	-3.3472-01	-4.5999-01	-4.8237-01	-4.0867-01	-3.9153-01	2.6723-01
P/PO1	1.7399-01	8.7487-02	8.9669-02	1.4215-01	8.4469-02	7.4166-02	1.0810-01	1.1599-01	4.1927-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.7 Q-INF = 6.308 P-INF =4.0588 RE = .3790 TO = 535.

P	1.0637+00	1.4887+00	1.4748+00	3.0943+00	7.8409+00	9.9942+00	1.0606+01	1.0288+00	8.6495-01
CP	-4.7483-01	-4.0745-01	-4.0965-01	-1.5290-01	5.9962-01	9.4099-01	1.0380+00	-4.8037-01	-5.0634-01
P/PO1	7.7639-02	1.0866-01	1.0765-01	2.2585-01	5.7229-01	7.2945-01	7.7413-01	7.5091-02	6.3131-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.7 Q-INF = 6.316 P-INF =4.0640 RE = .3794 TO = 535.

P	1.4445+00	1.4518+00	1.4596+00	1.4447+00	1.2774+00	1.2592+00	1.2446+00	1.0513+00	1.3374+00
CP	-4.1475-01	-4.1361-01	-4.1237-01	-4.1473-01	-4.4122-01	-4.4409-01	-4.4640-01	-4.7702-01	-4.3171-01
P/PO1	1.0530-01	1.0583-01	1.0639-01	1.0531-01	9.3113-02	9.1790-02	9.0728-02	7.6633-02	9.7491-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 14.7 Q-INF = 6.308 P-INF =4.0588 RE = .3790 TO = 535.

P	1.3938+00	1.4173+00	1.4290+00	1.3995+00	1.2697+00	5.1072+00	7.5536+00	9.0302+00	1.0799+00
CP	-4.2251-01	-4.1878-01	-4.1692-01	-4.2160-01	-4.4218-01	1.6621-01	5.5406-01	7.8816-01	-4.7226-01
P/PO1	1.0173-01	1.0344-01	1.0430-01	1.0215-01	9.2669-02	3.7276-01	5.5132-01	6.5910-01	7.8822-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.6 Q-INF = 6.281 P-INF =4.0419 RE = .3769 TO = 535.

P	1.4115+00	1.3901+00	1.3984+00	1.4020+00	1.4727+00	1.0587+00	1.3249+00	1.3634+00	1.2699+00
CP	-4.1876-01	-4.2216-01	-4.2084-01	-4.2027-01	-4.0902-01	-4.7494-01	-4.3256-01	-4.2642-01	-4.4130-01
P/PO1	1.0345-01	1.0189-01	1.0249-01	1.0276-01	1.0794-01	7.7591-02	9.7102-02	9.9928-02	9.3075-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.310 P-INF =4.0601 RE = .3786 TO = 535.

P	1.4344+00	1.4937+00	1.5258+00	1.4948+00	1.5035+00	4.7541+00	6.7437+00	8.1209+00	9.2100+00
CP	-4.1614-01	-4.0674-01	-4.0165-01	-4.0656-01	-4.0518-01	1.0999-01	4.2533-01	6.4360-01	8.1620-01
P/PO1	1.0466-01	1.0898-01	1.1133-01	1.0907-01	1.0971-01	3.4688-01	4.9205-01	5.9254-01	6.7200-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0594+00	4.7063+00	-1.8750-02	5.3063+00	9.2813-01	5.8406+00	5.2078+00	7.1250-01
CP	-4.7557-01	1.0241-01	-6.4644-01	1.9750-01	-4.9638-01	2.8219-01	1.8190-01	-5.3055-01
P/PO1	7.7297-02	3.4339-01	-1.3681-03	3.8717-01	6.7720-02	4.2616-01	3.7999-01	5.1987-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	7.1016-01	1.6891+01	1.0992+00	1.8914+00	1.3852+00	1.4813+00	1.4484+00
CP	-5.3092-01	2.0336+00	-4.6926-01	-3.4371-01	-4.2394-01	-4.0871-01	-4.1391-01
P/PO1	5.1816-02	1.2325+00	8.0204-02	1.3801-01	1.0107-01	1.0808-01	1.0568-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	64.	301244	1.49	3	13.43	-42.35	9.00	145.01	180.0

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 2 PO = 14.7 Q-INF = 6.304 P-INF =4.0562 RE = .3782 TO = 535.

P	1.2973+00	1.4271+00	2.3458+00	2.9190+00	3.4145+00	3.0882+00	3.3107+00	3.2574+00	1.8399+00
CP	-4.3767-01	-4.1708-01	-2.7134-01	-1.8041-01	-1.0179-01	-1.5435-01	-1.1826-01	-1.2672-01	-3.5159-01
P/PO1	9.4747-02	1.0423-01	1.7132-01	2.1318-01	2.4938-01	2.2518-01	2.4180-01	2.3790-01	1.3438-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.7 Q-INF = 6.300 P-INF =4.0536 RE = .3785 TO = 535.

P	1.2795+00	3.6797+00	8.5850+00	1.2175+01	1.3084+01	1.3346+01	1.3394+01	1.3059+01	1.1886+01
CP	-4.4036-01	-5.9347-02	7.1933-01	1.2892+00	1.4335+00	1.4751+00	1.4827+00	1.4296+00	1.2433+00
P/PO1	9.3509-02	2.6892-01	6.2741-01	8.8975-01	9.5618-01	9.7537-01	9.7885-01	9.5437-01	8.6863-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.7 Q-INF = 6.302 P-INF =4.0549 RE = .3781 TO = 535.

P	1.0774+01	1.3778+00	4.1210+00	9.0530+00	1.2368+01	1.3487+01	3.7910+00	3.4998+00	3.2582+00
CP	1.0663+00	-4.2483-01	1.0489-02	7.9315-01	1.3192+00	1.4967+00	-4.1882-02	-8.8087-02	-1.2643-01
P/PO1	7.8714-01	1.0066-01	3.0107-01	6.6139-01	9.0359-01	9.8531-01	2.7696-01	2.5569-01	2.3804-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3796 TO = 535.

P	2.0031+00	1.3581+00	4.1717+00	2.2924+00	3.0316+00	3.6444+00	4.5087+00	3.0833+00	2.9093+00
CP	-3.2682-01	-4.2878-01	1.6010-02	-2.8109-01	-1.6423-01	-6.7353-02	6.9201-02	-1.5605-01	-1.8355-01
P/PO1	1.4578-01	9.8841-02	3.0361-01	1.6684-01	2.2064-01	2.6523-01	3.2810-01	2.2440-01	2.1174-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.8 Q-INF = 6.348 P-INF =4.0847 RE = .3809 TO = 535.

P	1.5258+00	1.1609+00	3.0369+00	7.7575+00	1.1575+01	1.2910+01	1.2584+01	4.3701+00	3.7815+00
CP	-4.0311-01	-4.6059-01	-1.6507-01	5.7859-01	1.1799+00	1.3902+00	1.3389+00	4.4960-02	-4.7760-02
P/PO1	1.1066-01	8.4195-02	2.2025-01	5.6261-01	8.3946-01	9.3628-01	9.1267-01	3.1694-01	2.7425-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.8 Q-INF = 6.338 P-INF =4.0782 RE = .3803 TO = 535.

P	2.2569+00	1.3113+00	1.3882+00	1.8058+00	1.4084+00	1.2237+00	1.5509+00	1.8379+00	5.7562+00
CP	-2.8737-01	-4.3658-01	-4.2443-01	-3.5854-01	-4.2124-01	-4.5040-01	-3.9891-01	-3.5349-01	2.6476-01
P/PO1	1.6394-01	9.5251-02	1.0084-01	1.3117-01	1.0231-01	8.8888-02	1.1259-01	1.3350-01	4.1813-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.8 Q-INF = 6.344 P-INF =4.0821 RE = .3806 TO = 535.

P	1.2161+00	1.6095+00	1.5997+00	3.0943+00	7.9343+00	1.0275+01	1.0887+01	1.1986+00	1.3099+00
CP	-4.5178-01	-3.8976-01	-3.9131-01	-1.5570-01	6.0723-01	9.7617-01	1.0726+00	-4.5453-01	-4.3699-01
P/PO1	8.8250-02	1.1680-01	1.1609-01	2.2456-01	5.7580-01	7.4565-01	7.9005-01	8.6985-02	9.5062-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.8 Q-INF = 6.340 P-INF =4.0795 RE = .3804 TO = 535.

P	1.5537+00	1.5972+00	1.6022+00	1.5776+00	1.4213+00	1.2516+00	1.3533+00	1.2086+00	1.5174+00
CP	-3.9840-01	-3.9154-01	-3.9075-01	-3.9464-01	-4.1929-01	-4.4605-01	-4.3001-01	-4.5284-01	-4.0413-01
P/PO1	1.1283-01	1.1598-01	1.1635-01	1.1456-01	1.0321-01	9.0887-02	9.8274-02	8.7765-02	1.1019-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3768 TO = 535.

P	1.5283+00	1.5651+00	1.5665+00	1.5425+00	1.3570+00	5.3216+00	7.8807+00	9.3908+00	1.0749+00
CP	-4.0009-01	-3.9422-01	-3.9400-01	-3.9783-01	-4.2736-01	2.0398-01	6.1152-01	8.5201-01	-4.7229-01
P/PO1	1.1205-01	1.1475-01	1.1485-01	1.1309-01	9.9492-02	3.9015-01	5.7778-01	6.8849-01	7.8803-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.7 Q-INF = 6.312 P-INF =4.0614 RE = .3787 TO = 535.

P	1.5359+00	1.5454+00	1.5614+00	1.5575+00	1.6166+00	1.3379+00	1.5138+00	1.5332+00	1.3999+00
CP	-4.0012-01	-3.9862-01	-3.9608-01	-3.9670-01	-3.8734-01	-4.3150-01	-4.0364-01	-4.0055-01	-4.2167-01
P/PO1	1.1203-01	1.1273-01	1.1389-01	1.1361-01	1.1792-01	9.7589-02	1.1042-01	1.1184-01	1.0211-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4800-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3777 TO = 535.

P	1.5639+00	1.6243+00	1.6531+00	1.6202+00	1.6218+00	4.9432+00	7.0552+00	8.4972+00	9.4900+00
CP	-3.9475-01	-3.8513-01	-3.8055-01	-3.8578-01	-3.8554-01	1.4273-01	4.7863-01	7.0797-01	8.6588-01
P/PO1	1.1451-01	1.1893-01	1.2105-01	1.1864-01	1.1875-01	3.6195-01	5.1660-01	6.2218-01	6.9488-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2094+00	4.5375+00	-1.8750-02	4.7320+00	9.7266-01	5.0086+00	4.3745+00	1.0336+00
CP	-4.5113-01	7.8198-02	-6.4645-01	1.0914-01	-4.8877-01	1.5312-01	5.5460-02	-4.7908-01
P/PO1	8.8552-02	3.3224-01	-1.3729-03	3.4649-01	7.1220-02	3.6674-01	3.2177-01	7.5681-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	9.7734-01	1.6891+01	1.3828+00	1.5773+00	1.5750+00	1.6055+00	1.6008+00
CP	-4.8803-01	2.0430+00	-4.2354-01	-3.9260-01	-3.9297-01	-3.8813-01	-3.8887-01
P/PO1	7.1563-02	1.2368+00	1.0125-01	1.1550-01	1.1532-01	1.1756-01	1.1721-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	SI-ROLL
3.	65.	391244	1.49	3	11.19	-26.76	5.00	145.00	180.00

VALVE POS 2	PO = 14.8	Q-INF = 6.336	P-INF =4.0769	RE = .3332	TO = 535.				
P	1.3024+00	1.4345+00	2.3460+00	2.7315+00	3.3443+00	3.7954+00	3.3171+00	3.2633+00	1.3449+00
CP	-4.3791-01	-4.1706-01	-2.7320-01	-1.8772-01	-1.1564-01	-1.5495-01	-1.1797-01	-1.2537-01	-3.5120-01
P/PO1	9.4634-02	1.0424-01	1.7047-01	2.1331-01	2.4301-01	2.2431-01	2.4103-01	2.3714-01	1.3543-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8800-01	4.9700-01	4.3600-01	1.1550+00	1.5890+00

VALVE POS 3	PO = 14.9	Q-INF = 6.338	P-INF =4.1106	RE = .3333	TO = 535.				
P	1.2770+00	3.7289+00	8.7420+00	1.2424+01	1.3343+01	1.3504+01	1.3002+01	1.3390+01	1.2773+01
CP	-4.4357-01	-5.3754-02	7.2550-01	1.3215+00	1.4661+00	1.4733+00	1.4947+00	1.4376+00	1.2455+00
P/PO1	9.2029-02	2.6873-01	6.3082-01	8.9541-01	9.6191-01	9.7757-01	9.9436-01	9.5811-01	8.7164-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9130+00	1.9730+00	2.0347+00	2.0950+00	2.3540+00	2.6260+00

VALVE POS 4	PO = 14.8	Q-INF = 6.342	P-INF =4.0495	RE = .3325	TO = 535.				
P	1.0931+01	1.3162+00	4.0132+00	8.9907+00	1.2415+01	1.3580+01	1.3425+00	1.6730+00	1.1997+01
CP	1.0801+00	-4.3593-01	-1.6658-02	7.7414-01	1.3141+00	1.4774+00	-1.3254-01	-1.1520-01	-1.5323-01
P/PO1	7.9351-01	9.5548-02	2.9134-01	6.5266-01	9.0124-01	9.9594-01	2.3522-01	2.4459-01	2.2567-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9130+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5	PO = 14.9	Q-INF = 6.352	P-INF =4.0873	RE = .3311	TO = 535.				
P	1.8253+00	1.2423+00	3.6801+00	2.2297+00	2.9550+00	3.4861+00	4.3329+00	2.7474+00	2.0227+00
CP	-3.5610-01	-4.4790-01	-3.2621-02	-2.3245-01	-1.7826-01	-4.6549-02	4.9117-02	-2.6380-01	-2.3056-01
P/PO1	1.3230-01	9.0037-02	2.8122-01	1.6141-01	2.1418-01	2.5272-01	3.1639-01	2.0377-01	1.9013-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	2.0850+00	2.6000+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 6	PO = 14.8	Q-INF = 6.346	P-INF =4.0334	RE = .3325	TO = 535.				
P	1.4522+00	1.2792+00	2.5931+00	7.1014+00	1.1047+01	1.2595+01	1.2444+01	3.5977+00	3.3766+00
CP	-4.1464-01	-4.4189-01	-2.3485-01	4.7567-01	1.3971+00	1.3417+00	1.3175+00	-2.9277-02	-1.1133-01
P/PO1	1.0535-01	9.2805-02	1.8812-01	5.1523-01	8.0135-01	9.1396-01	9.0277-01	2.8277-01	2.4995-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7	PO = 14.8	Q-INF = 6.342	P-INF =4.0308	RE = .3325	TO = 535.				
P	1.9497+00	1.3507+00	1.4494+00	1.4294+00	1.3622+00	1.1120+00	1.5655+00	1.4221+00	5.6606+00
CP	-3.3603-01	-4.3049-01	-4.1493-01	-4.1805-01	-4.2865-01	-4.6914-01	-3.9662-01	-3.4343-01	2.3365-01
P/PO1	1.4154-01	9.8053-02	1.0522-01	1.0378-01	9.8896-02	8.0722-02	1.1365-01	1.0315-01	4.0657-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8700-01	4.9700-01

VALVE POS 8	PO = 14.8	Q-INF = 6.340	P-INF =4.0795	RE = .3334	TO = 535.				
P	1.2948+00	1.5898+00	1.5997+00	2.5807+00	7.2964+00	9.9162+00	1.0700+01	1.2710+00	1.2097+00
CP	-4.3925-01	-3.9271-01	-3.9115-01	-2.3641-01	5.6741-01	7.2764-01	1.0442+00	-4.4299-01	-4.3785-01
P/PO1	9.4021-02	1.1545-01	1.1616-01	1.8740-01	5.2985-01	7.2600-01	7.7698-01	9.2299-02	9.5123-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9	PO = 14.7	Q-INF = 6.296	P-INF =4.0510	RE = .3378	TO = 535.				
P	1.5105+00	1.5504+00	1.5614+00	1.5450+00	1.3109+00	1.2844+00	1.3740+00	1.2610+00	1.4549+00
CP	-4.0353-01	-3.9721-01	-3.9545-01	-3.9806-01	-4.3527-01	-4.3942-01	-4.2522-01	-4.4316-01	-4.1237-01
P/PO1	1.1046-01	1.1337-01	1.1419-01	1.1298-01	9.5854-02	9.3940-02	1.0048-01	9.2218-02	1.0639-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8700-01	4.9700-01	9.3600-01

B136

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER

VALVE POS 10 PO = 14.7 Q-INF = 6.302 P-INF =4.0549 RE = .3791 TO = 535.

P	1.5029+00	1.5158+00	1.5258+00	1.4[illegible]+00	1.3286+00	5.2585+00	7.7717+00	9.3281+00	1.2624+00
CP	-4.0497-01	-4.0292-01	-4.0134-01	-4.0544-01	-4.3261-01	1.91[illegible]-01	5.8[illegible]-01	8.3081-01	-4.4031-01
P/PO1	1.0980-01	1.1074-01	1.1147-01	1.0457-01	9.7077-02	3.841-01	5.677[illegible]-01	6.0147-01	9.0769-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.91[illegible]+00	2.[illegible]56+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.8 Q-INF = 6.342 P-INF =4.0808 RE = .3905 TO = 535.

P	1.4953+00	1.4986+00	1.5207+00	1.5249+00	1.5936+00	1.2521+00	1.4756+00	1.[illegible]37+00	1.3794+00
CP	-4.0769-01	-4.0717-01	-4.0368-01	-4.0302-01	-3.9140-01	-4.4131-01	-4.0764-01	-4.0643-01	-4.2431-01
P/PO1	1.0855-01	1.0879-01	1.1039-01	1.1076-01	1.1605-01	9.307-02	1.0857-01	1.0913-01	1.0[illegible]-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4005-02	1.1809-01	2.040[illegible]-01	2.8900-01

VALVE POS 12 PO = 14.6 Q-INF = 6.283 P-INF =4.0432 RE = .3770 TO = 535.

P	1.5029+00	1.6317+00	1.6481+00	1.6202+00	1.6295+00	5.900[illegible]+00	7.1331+00	3.5756+00	9.6300+00
CP	-4.0428-01	-3.8379-01	-3.8119-01	-3.8562-01	-3.8414-01	1.5227-01	4.9174-01	7.2131-01	8.8913-01
P/PO1	1.1012-01	1.1955-01	1.2075-01	1.1971-01	1.1939-01	3.6634-01	5.2263-01	6.2832-01	7.0553-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.91[illegible]+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2633+00	4.1250+00	-1.8750-02	4.2539+00	1.1836+00	4.5656+00	3.7758+00	1.1672+00	
CP	-4.4242-01	1.3013-02	-6.4646-01	3.3528-02	-4.5511-01	8.3137-02	-4.2565-02	-4.5772-01	
P/PO1	9.2559-02	3.0223-01	-1.3738-03	3.1166-01	8.6720-02	3.3452-01	2.7665-01	8.5519-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.360[illegible]-01	9.360[illegible]-01	9.360[illegible]-01	

CEC	1.5797+00	1.6891+01	1.4203+00	1.5023+00	1.5516+00	1.5[illegible]+00	1.5727+00	
CP	-3.9207-01	2.0448+00	-4.1743-01	-4.0438-01	-3.9654-01	-3.9983-01	-3.3319-01	
P/PO1	1.1574-01	1.2376+00	1.0406-01	1.1507-01	1.1368-01	1.1677-01	1.1523-01	
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	66.	301244	1.49	3	14.67	-37.33	8.83	146.76	180.0

VALVE POS 2 PO = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3777 TO = 535.

P	1.3735+00	1.5134+00	2.3078+00	2.8563+00	3.1975+00	2.9508+00	3.1314+00	3.0398+00	1.5674+00
CP	-4.2503-01	-4.0277-01	-2.7643-01	-1.8919-01	-1.3492-01	-1.7416-01	-1.4544-01	-1.6001-01	-3.9418-01
P/PO1	1.0057-01	1.1081-01	1.6898-01	2.0914-01	2.3413-01	2.1606-01	2.2729-01	2.2258-01	1.1477-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.7 Q-INF = 6.310 P-INF =4.0601 RE = .3786 TO = 535.

P	1.1094+00	3.3173+00	8.1927+00	1.1941+01	1.3115+01	1.3268+01	1.3378+01	1.3200+01	1.2041+01
CP	-4.6764-01	-1.1772-01	6.5497-01	1.2490+00	1.4351+00	1.4594+00	1.4768+00	1.4486+00	1.2649+00
P/PO1	8.0949-02	2.4205-01	5.9778-01	8.7124-01	9.5692-01	9.6812-01	9.7615-01	9.6317-01	8.7863-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.8 Q-INF = 6.370 P-INF =4.0989 RE = .3822 TO = 535.

P	1.1119+01	1.1831+00	3.7343+00	8.7408+00	1.2306+01	1.3611+01	3.3299+00	3.3071+00	3.0464+00
CP	1.1020+00	-4.5774-01	-5.7250-02	7.2971-01	1.2884+00	1.4933+00	-1.2073-01	-1.2431-01	-1.6523-01
P/PO1	8.0358-01	8.5506-02	2.6989-01	6.3173-01	8.8938-01	9.8373-01	2.4066-01	2.3901-01	2.2017-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.322 P-INF =4.0679 RE = .3793 TO = 535.

P	1.7543+00	1.1757+00	3.7786+00	2.2598+00	2.9678+00	3.5309+00	4.2584+00	2.8968+00	2.6726+00
CP	-3.6597-01	-4.5749-01	-4.5749-02	-2.8601-01	-1.7402-01	-8.4939-02	3.0149-02	-1.8524-01	-2.2071-01
P/PO1	1.2775-01	8.5621-02	2.7518-01	1.6457-01	2.1613-01	2.5714-01	3.1012-01	2.1096-01	1.9463-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.7 Q-INF = 6.328 P-INF =4.0717 RE = .3797 TO = 535.

P	1.5943+00	1.3261+00	2.7706+00	7.4297+00	1.1372+01	1.2910+01	1.2709+01	4.1277+00	2.8907+00
CP	-3.9151-01	-4.3391-01	-2.0563-01	5.3067-01	1.1538+00	1.3967+00	1.3649+00	8.8373-03	-1.8665-01
P/PO1	1.1600-01	9.6478-02	2.0158-01	5.4055-01	8.2741-01	9.3926-01	9.2463-01	3.0031-01	2.1031-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.7 Q-INF = 6.334 P-INF =4.0756 RE = .3800 TO = 535.

P	2.1402+00	1.5577+00	1.6684+00	1.6603+00	1.5138+00	1.3278+00	1.6276+00	2.0327+00	5.7190+00
CP	-3.0558-01	-3.9753-01	-3.8005-01	-3.8133-01	-4.0447-01	-4.3384-01	-3.8650-01	-3.2255-01	2.5946-01
P/PO1	1.5556-01	1.1323-01	1.2127-01	1.2068-01	1.1003-01	9.6510-02	1.1830-01	1.4775-01	4.1569-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.8 Q-INF = 6.346 P-INF =4.0834 RE = .3808 TO = 535.

P	1.3735+00	1.7820+00	1.7729+00	3.0568+00	7.9498+00	1.0446+01	1.1105+01	1.3185+00	1.5824+00
CP	-4.2704-01	-3.6265-01	-3.6410-01	-1.6178-01	6.0928-01	1.0027+00	1.1064+00	-4.3570-01	-3.9411-01
P/PO1	9.9641-02	1.2928-01	1.2862-01	2.2176-01	5.7674-01	7.5786-01	8.0562-01	9.5653-02	1.1480-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.7 Q-INF = 6.312 P-INF =4.0614 RE = .3787 TO = 535.

P	1.7111+00	1.7500+00	1.7576+00	1.7356+00	1.4804+00	1.3709+00	1.4775+00	1.3484+00	1.6324+00
CP	-3.7237-01	-3.6621-01	-3.6501-01	-3.6849-01	-4.0892-01	-4.2627-01	-4.0938-01	-4.2983-01	-3.8484-01
P/PO1	1.2481-01	1.2765-01	1.2820-01	1.2660-01	1.0798-01	9.9997-02	1.0777-01	9.8357-02	1.1907-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN [illegible]
40 [illegible]

VALVE POS 10 PO = 14.6 Q-INF = 6.338 P-INF =4.0782 RE = .3803 TO = 535.

P	1.6832+00	1.7081+00	1.7245+00	1.6904+00	1.5369+00	5.4918+00	8.1299+00	9.6260+00	1.3449+00
CP	-3.7789-01	-3.7396-01	-3.7138-01	-3.7675-01	-4.0097-01	2.2304-01	6.3928-01	8.7534-01	-4.3127-01
P/PO1	1.2227-01	1.2408-01	1.2527-01	1.2279-01	1.1164-01	3.9892-01	5.9055-01	6.9923-01	9.7695-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.7 Q-INF = 6.300 P-INF =4.0536 RE = .3780 TO = 535.

P	1.6806+00	1.6711+00	1.7117+00	1.7130+00	1.7785+00	1.4623+00	1.6069+00	1.6181+00	1.5074+00
CP	-3.7669-01	-3.7820-01	-3.7175-01	-3.7155-01	-3.6114-01	-4.1134-01	-3.8839-01	-3.8661-01	-4.0418-01
P/PO1	1.2282-01	1.2213-01	1.2510-01	1.2519-01	1.2998-01	1.0697-01	1.1743-01	1.1826-01	1.1016-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.7 Q-INF = 6.296 P-INF =4.0510 RE = .3778 TO = 535.

P	1.6959+00	1.8116+00	1.8187+00	1.7883+00	1.8120+00	5.0820+00	7.2888+00	8.7637+00	9.7856+00
CP	-3.7410-01	-3.5571-01	-3.5458-01	-3.5942-01	-3.5566-01	1.6376-01	5.1431-01	7.4858-01	9.1090-01
P/PO1	1.2402-01	1.3248-01	1.3300-01	1.3077-01	1.3250-01	3.7163-01	5.3302-01	6.4087-01	7.1560-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.3898+00	4.8188+00	-1.8750-02	4.6453+00	1.1391+00	4.0641+00	3.5461+00	1.3594+00	
CP	-4.2271-01	1.2195-01	-6.4645-01	9.4401-02	-4.6254-01	2.0734-03	-8.0202-02	-4.2755-01	
P/PO1	1.0164-01	3.5239-01	-1.3712-03	3.3979-01	8.3297-02	2.9720-01	2.5932-01	9.9408-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	1.8609+00	1.6891+01	1.6617+00	1.7227+00	1.7531+00	1.7648+00	1.7578+00
CP	-3.4788-01	2.0396+00	-3.7952-01	-3.6984-01	-3.6500-01	-3.6314-01	-3.6426-01
P/PO1	1.3609-01	1.2352+00	1.2152-01	1.2597-01	1.2820-01	1.2906-01	1.2855-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA - ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	67.	301244	1.49	3	12.92	-22.83	4.98	146.94	180.0

VALVE POS 2 PO = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3773 TO = 535.

P	1.3608+00	1.4986+00	2.4990+00	2.9440+00	3.0827+00	2.9697+00	3.1058+00	2.9901+00	1.5324+00
CP	-4.2705-01	-4.0513-01	-2.4618-01	-1.7924-01	-1.5319-01	-1.7115-01	-1.4951-01	-1.6791-01	-3.9975-01
P/PO1	9.9637-02	1.0973-01	1.8290-01	2.1557-01	2.2572-01	2.1745-01	2.2741-01	2.1894-01	1.1221-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.7 Q-INF = 6.302 P-INF =4.0549 RE = .3781 TO = 535.

P	1.0917+00	3.3050+00	8.1770+00	1.2050+01	1.3130+01	1.3393+01	1.3472+01	1.3279+01	1.2166+01
CP	-4.7024-01	-1.1900-01	6.5413-01	1.2687+00	1.4402+00	1.4819+00	1.4944+00	1.4637+00	1.2871+00
P/PO1	7.9754-02	2.4146-01	5.9739-01	8.8034-01	9.5928-01	9.7847-01	9.8423-01	9.7012-01	8.8882-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.6 Q-INF = 6.273 P-INF =4.0368 RE = .3764 TO = 535.

P	1.1119+01	1.1092+00	3.5314+00	8.4911+00	1.2290+01	1.3471+01	2.9585+00	3.1393+00	2.8408+00
CP	1.1289+00	-4.6667-01	-8.0560-02	7.1004-01	1.3156+00	1.5039+00	-1.7188-01	-1.4306-01	-1.9064-01
P/PO1	8.1596-01	8.1377-02	2.5915-01	6.2313-01	9.0194-01	9.8859-01	2.1711-01	2.3038-01	2.0848-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.5 Q-INF = 6.245 P-INF =4.0186 RE = .3747 TO = 535.

P	1.5283+00	1.0574+00	3.4616+00	2.2824+00	3.0124+00	3.4300+00	3.9511+00	2.5922+00	2.3300+00
CP	-3.9875-01	-4.7416-01	-8.9186-02	-2.7802-01	-1.6111-01	-9.4251-02	-1.0817-02	-2.2640-01	-2.7039-01
P/PO1	1.1266-01	7.7948-02	2.5518-01	1.6825-01	2.2207-01	2.5285-01	2.9126-01	1.9109-01	1.7176-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.5 Q-INF = 6.243 P-INF =4.0173 RE = .3746 TO = 535.

P	1.5842+00	1.4764+00	2.3154+00	6.7429+00	1.0797+01	1.2551+01	1.2522+01	4.0158+00	2.0649+00
CP	-3.8973-01	-4.0699-01	-2.7260-01	4.3657-01	1.0859+00	1.3669+00	1.3622+00	-2.5038-04	-3.1273-01
P/PO1	1.1682-01	1.0887-01	1.7074-01	4.9723-01	7.9617-01	9.2554-01	9.2338-01	2.9613-01	1.5227-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.6 Q-INF = 6.255 P-INF =4.0251 RE = .3753 TO = 535.

P	1.7720+00	1.6095+00	1.6863+00	1.4421+00	1.4933+00	1.2313+00	1.7673+00	2.0027+00	5.3016+00
CP	-3.6019-01	-3.8617-01	-3.7390-01	-4.1342-01	-4.0475-01	-4.4663-01	-3.6094-01	-3.2331-01	2.0407-01
P/PO1	1.3042-01	1.1846-01	1.2411-01	1.0614-01	1.0990-01	9.0621-02	1.3007-01	1.4740-01	3.9019-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.5 Q-INF = 6.247 P-INF =4.0199 RE = .3749 TO = 535.

P	1.6502+00	1.7746+00	1.7703+00	2.5807+00	7.5920+00	1.0625+01	1.0840+01	1.6331+00	1.6149+00
CP	-3.7933-01	-3.5946-01	-3.6009-01	-2.3038-01	5.7179-01	9.6130-01	1.0917+00	-3.8206-01	-3.8497-01
P/PO1	1.2161-01	1.3078-01	1.3046-01	1.9018-01	5.5948-01	7.3880-01	7.9883-01	1.2035-01	1.1901-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3767 TO = 535.

P	1.7162+00	1.7475+00	1.7474+00	1.7281+00	1.7091+00	1.6197+00	1.6224+00	1.6081+00	1.6249+00
CP	-3.7008-01	-3.6509-01	-3.6511-01	-3.6819-01	-3.7120-01	-3.8545-01	-3.8502-01	-3.8729-01	-3.8462-01
P/PO1	1.2586-01	1.2816-01	1.2815-01	1.2673-01	1.2535-01	1.1879-01	1.1899-01	1.1794-01	1.1917-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40-INCH SUPERSONIC WIND TUNNEL

VALVE POS 10 PO = 14.6 Q-INF = 6.292 P-INF =4.0484 RE = .3775 TO = 535.

P	1.6857+00	1.7130+00	1.7143+00	1.6904+00	1.6809+00	5.4098+00	8.0053+00	9.5633+00	1.5649+00
CP	-3.7554-01	-3.7120-01	-3.7100-01	-3.7479-01	-3.7631-01	2.1639-01	6.2892-01	8.7655-01	-3.9474-01
P/PO1	1.2335-01	1.2535-01	1.2544-01	1.2370-01	1.2300-01	3.9586-01	5.8578-01	6.9979-01	1.1451-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3771 TO = 535.

P	1.6654+00	1.6908+00	1.7372+00	1.7331+00	1.8377+00	1.5842+00	1.6457+00	1.6706+00	1.5999+00
CP	-3.7851-01	-3.7446-01	-3.6709-01	-3.6774-01	-3.5111-01	-3.9144-01	-3.8164-01	-3.7769-01	-3.8893-01
P/PO1	1.2198-01	1.2385-01	1.2724-01	1.2694-01	1.3460-01	1.1603-01	1.2054-01	1.2236-01	1.1719-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.6 Q-INF = 6.249 P-INF =4.0212 RE = .3750 TO = 535.

P	1.7086+00	1.8412+00	1.8518+00	1.8209+00	1.8968+00	5.1199+00	7.3356+00	8.8264+00	9.8167+00
CP	-3.7007-01	-3.4884-01	-3.4714-01	-3.5210-01	-3.3995-01	1.7579-01	5.3036-01	7.6893-01	9.2739-01
P/PO1	1.2587-01	1.3564-01	1.3642-01	1.3414-01	1.3973-01	3.7717-01	5.4041-01	6.5024-01	7.2320-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6760+00

CEC	1.6008+00	4.2844+00	-1.8750-02	4.5820+00	1.6102+00	2.9578+00	2.8336+00	1.6172+00	
CP	-3.8732-01	4.2111-02	-6.4647-01	8.9742-02	-3.8582-01	-1.7016-01	-1.9004-01	-3.8469-01	
P/PO1	1.1793-01	3.1563-01	-1.3813-03	3.3756-01	1.1862-01	2.1790-01	2.0875-01	1.1914-01	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	2.1938+00	1.6891+01	1.7227+00	1.7320+00	1.7484+00	1.7625+00	1.7461+00
CP	-2.9243-01	2.0595+00	-3.6781-01	-3.6631-01	-3.6369-01	-3.6144-01	-3.6406-01
P/PO1	1.6161-01	1.2444+00	1.2691-01	1.2760-01	1.2881-01	1.2984-01	1.2863-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	68.	301244	1.49	3	5.00	-180.14	-.01	130.00	180.0

VALVE POS 2 PO = 14.6 Q-INF = 6.249 P-INF =4.0212 RE = .3750 TO = 535.

P	1.1145+00	1.0771+00	3.3982+00	3.8335+00	4.1613+00	4.5523+00	5.2330+00	5.7693+00	5.0562+00
CP	-4.6513-01	-4.7111-01	-9.9688-02	-3.0041-02	2.2411-02	8.4788-02	1.9391-01	2.7973-01	1.6561-01
P/PO1	8.2105-02	7.9351-02	7.5045-01	2.8241-01	3.0656-01	3.3537-01	3.8552-01	4.2502-01	3.7249-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.6 Q-INF = 6.255 P-INF =4.0251 RE = .3753 TO = 535.

P	3.4376+00	7.9310+00	1.1928+01	1.3299+01	1.3473+01	1.3066+01	1.2849+01	1.1570+01	9.8634+00
CP	-9.3927-02	6.2442-01	1.2634+00	1.4825+00	1.5103+00	1.4453+00	1.4106+00	1.2062+00	9.3334-01
P/PO1	2.5300-01	5.8371-01	8.7789-01	9.7876-01	9.9158-01	9.6162-01	9.4566-01	8.5154-01	7.2593-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3771 TO = 535.

P	8.6288+00	3.1269+00	7.8474+00	1.1644+01	1.3270+01	1.2723+01	4.0535+00	4.9047+00	5.1645+00
CP	7.2934-01	-1.4600-01	6.0502-01	1.2091+00	1.4678+00	1.3807+00	1.4310-03	1.3685-01	1.7819-01
P/PO1	6.3202-01	2.2903-01	5.7478-01	8.5287-01	9.7200-01	9.3187-01	2.9690-01	3.5925-01	3.7828-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.5 Q-INF = 6.245 P-INF =4.0186 RE = .3747 TO = 535.

P	4.7014+00	2.7398+00	7.1097+00	1.9914+00	2.5848+00	2.9508+00	3.0930+00	3.6863+00	3.9186+00
CP	1.0932-01	-2.0476-01	4.9496-01	-3.2460-01	-2.2958-01	-1.7098-01	-1.4822-01	-5.3213-02	-1.6020-02
P/PO1	3.4657-01	2.0197-01	5.2411-01	1.4685-01	1.9055-01	2.1753-01	2.2801-01	2.7174-01	2.8887-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.6 Q-INF = 6.281 P-INF =4.0419 RE = .3769 TO = 535.

P	3.0963+00	1.7401+00	4.2732+00	8.0228+00	1.0626+01	1.1023+01	1.0326+01	4.4136+00	4.4668+00
CP	-1.5054-01	-3.6644-01	3.6809-02	6.3375-01	1.0481+00	1.1114+00	1.0004+00	5.9169-02	6.7638-02
P/PO1	2.2694-01	1.2754-01	3.1319-01	5.8801-01	7.7878-01	8.0791-01	7.5680-01	3.2348-01	3.2738-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.5 Q-INF = 6.243 P-INF =4.0173 RE = .3746 TO = 535.

P	2.5403+00	1.4444+00	1.1743+00	1.7908+00	1.1643+00	1.0333+00	1.3792+00	1.6281+00	4.5789+00
CP	-2.3659-01	-4.1212-01	-4.5538-01	-3.5664-01	-4.5698-01	-4.7797-01	-4.2256-01	-3.8269-01	8.9956-02
P/PO1	1.8732-01	1.0651-01	8.6592-02	1.3205-01	8.5855-02	7.6194-02	1.0170-01	1.2006-01	3.3766-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.6 Q-INF = 6.273 P-INF =4.0368 RE = .3764 TO = 535.

P	1.3506+00	1.3261+00	1.5258+00	1.9588+00	5.5526+00	7.5931+00	8.1610+00	1.2785+00	1.3649+00
CP	-4.2818-01	-4.3209-01	-4.0026-01	-3.3123-01	2.4163-01	5.6689-01	6.5742-01	-4.3967-01	-4.2590-01
P/PO1	9.9116-02	9.7314-02	1.1197-01	1.4375-01	4.0748-01	5.5723-01	5.9891-01	9.3826-02	1.0017-01
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.6 Q-INF = 6.281 P-INF =4.0419 RE = .3769 TO = 535.

P	1.3963+00	1.2817+00	1.3144+00	1.3193+00	1.0718+00	1.0282+00	1.0609+00	1.1861+00	1.2724+00
CP	-4.2118-01	-4.3943-01	-4.3423-01	-4.3345-01	-4.7285-01	-4.7979-01	-4.7457-01	-4.5464-01	-4.4090-01
P/PO1	1.0234-01	9.3938-02	9.6333-02	9.6691-02	7.8551-02	7.5358-02	7.7757-02	8.6934-02	9.3258-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 14.7 Q-INF = 6.298 P-INF =4.0523 RE = .3779 TO = 535.

P	1.3582+00	1.2916+00	1.3526+00	1.3410+00	1.3904+00	3.6570+00	5.4751+00	6.6629+00	1.1499+00
CP	-4.2780-01	-4.3838-01	-4.2869-01	-4.3040-01	-4.2268-01	-6.2773-02	2.2593-01	4.1455-01	-4.6087-01
P/PO1	9.9292-02	9.4418-02	9.8880-02	9.8093-02	1.0165-01	2.6734-01	4.0626-01	4.8709-01	8.4065-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.5 Q-INF = 6.239 P-INF =4.0147 RE = .3744 TO = 535.

P	1.3506+00	1.4222+00	1.2991+00	1.3193+00	1.3879+00	1.0510+00	1.0454+00	1.1412+00	1.0549+00
CP	-4.2700-01	-4.1553-01	-4.3526-01	-4.3203-01	-4.2103-01	-4.7501-01	-4.7592-01	-4.6057-01	-4.7439-01
P/PO1	9.9660-02	1.0494-01	9.5858-02	9.7346-02	1.0241-01	7.7555-02	7.7138-02	8.4206-02	7.7842-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3736 TO = 535.

P	1.5816+00	1.3408+00	1.3246+00	1.3142+00	1.3647+00	3.3543+00	4.7964+00	6.0829+00	7.1409+00
CP	-3.8948-01	-4.2815-01	-4.3076-01	-4.3242-01	-4.2431-01	-1.0480-01	1.2677-01	3.3337-01	5.0327-01
P/PO1	1.1693-01	9.9131-02	9.7927-02	9.7164-02	1.0090-01	2.4799-01	3.5460-01	4.4972-01	5.2794-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2633+00	4.3805+00	-1.8750-02	4.3570+00	1.4438+00	5.1516+00	4.3875+00	1.5117+00
CP	-4.4060-01	5.9981-02	-6.4648-01	5.6217-02	-4.1162-01	1.8381-01	6.1110-02	-4.0071-01
P/PO1	9.3397-02	3.2386-01	-1.3862-03	3.2212-01	1.0674-01	3.8086-01	3.2438-01	1.1176-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.8258+00	1.6891+01	1.4203+00	5.7398+00	1.2258+00	1.2984+00	1.2563+00
CP	-3.5027-01	2.0691+00	-4.1539-01	2.7828-01	-4.4663-01	-4.3496-01	-4.4173-01
P/PO1	1.3498-01	1.2488+00	1.0501-01	4.2436-01	9.0624-02	9.5996-02	9.2877-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	69.	301244	1.49	3	-4.08	-180.14	.01	139.08	180.0

VALVE POS 2 PO = 14.6 Q-INF = 6.292 P-INF =4.0484 RE = .3775 TO = 535.

P	1.0967+00	1.0673+00	3.1954+00	3.3637+00	3.4209+00	3.5813+00	4.0791+00	4.1712+00	2.8221+00
CP	-4.6915-01	-4.7384-01	-1.3559-01	-1.0883-01	-9.9738-02	-7.4241-02	4.8832-03	1.9511-02	-1.9491-01
P/PO1	8.0253-02	7.8096-02	2.3382-01	2.4614-01	2.5032-01	2.6206-01	2.9849-01	3.0522-01	2.0651-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00

VALVE POS 3 PO = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3768 TO = 535.

P	2.0208+00	5.2032+00	1.0029+01	1.2924+01	1.3566+01	1.3487+01	1.3425+01	1.2683+01	1.1279+01
CP	-3.2165-01	1.8514-01	9.5364-01	1.4147+00	1.5169+00	1.5043+00	1.4945+00	1.3763+00	1.1527+00
P/PO1	1.4816-01	3.8146-01	7.3528-01	9.4753-01	9.9460-01	9.8878-01	9.8427-01	9.2987-01	8.2694-01
S/R	1.7420+00	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PO = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3771 TO = 535.

P	1.0085+01	1.9176+00	5.2939+00	9.9115+00	1.2866+01	1.3284+01	3.2275+00	3.7671+00	3.7379+00
CP	9.6311-01	-3.3800-01	1.9985-01	9.3544-01	1.4061+00	1.4727+00	-1.2934-01	-4.3368-02	-4.8020-02
P/PO1	7.3964-01	1.4064-01	3.8825-01	7.2690-01	9.4358-01	9.7424-01	2.3670-01	2.7628-01	2.7413-01
S/R	2.8800+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	4.9700-01	9.3600-01	1.1550+00

VALVE POS 5 PO = 14.7 Q-INF = 6.310 P-INF =4.0601 RE = .3786 TO = 535.

P	2.4581+00	1.6761+00	4.6536+00	2.1218+00	2.7444+00	3.1274+00	3.7910+00	2.9466+00	2.9405+00
CP	-2.5389-01	-3.7784-01	9.4059-02	-3.0719-01	-2.0852-01	-1.4782-01	-4.2649-02	-1.7648-01	-1.7744-01
P/PO1	1.7936-01	1.2229-01	3.3955-01	1.5482-01	2.0024-01	2.2819-01	2.7661-01	2.1499-01	2.1455-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3200-01	1.1550+00

VALVE POS 6 PO = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3767 TO = 535.

P	1.5943+00	1.0377+00	2.7072+00	6.9146+00	1.0501+01	1.1756+01	1.1494+01	3.7547+00	3.8687+00
CP	-3.8949-01	-4.7817-01	-2.1222-01	4.5803-01	1.0294+00	1.2293+00	1.1875+00	-4.5349-02	-2.7179-02
P/PO1	1.1693-01	7.6102-02	1.9854-01	5.0711-01	7.7015-01	8.6218-01	8.4296-01	2.7536-01	2.8373-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 7 PO = 14.6 Q-INF = 6.292 P-INF =4.0484 RE = .3775 TO = 535.

P	2.0183+00	1.1092+00	1.1437+00	1.2440+00	1.1437+00	1.0409+00	1.1515+00	1.3859+00	3.6320+00
CP	-3.2268-01	-4.6718-01	-4.6169-01	-4.4574-01	-4.6168-01	-4.7803-01	-4.6045-01	-4.2319-01	-6.6187-02
P/PO1	1.4769-01	8.1162-02	8.3690-02	9.1030-02	8.3691-02	7.6166-02	8.4260-02	1.0141-01	2.6577-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 8 PO = 14.7 Q-INF = 6.308 P-INF =4.0588 RE = .3785 TO = 535.

P	1.0840+00	1.3310+00	1.3271+00	1.9989+00	6.1607+00	8.7468+00	9.5316+00	1.0413+00	9.2994-01
CP	-4.7161-01	-4.3246-01	-4.3308-01	-3.2656-01	3.3324-01	7.4324-01	8.6764-01	-4.7839-01	-4.9604-01
P/PO1	7.9122-02	9.7146-02	9.6863-02	1.4590-01	4.4966-01	6.3841-01	6.9569-01	7.6002-02	6.7875-02
S/R	4.9700-01	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 14.7 Q-INF = 6.332 P-INF =4.0743 RE = .3799 TO = 535.

P	1.3861+00	1.2792+00	1.2914+00	1.2766+00	1.0178+00	1.0815+00	1.1256+00	1.0413+00	9.6494-01
CP	-4.2455-01	-4.4144-01	-4.3951-01	-4.4185-01	-4.8273-01	-4.7267-01	-4.6570-01	-4.7902-01	-4.9108-01
P/PO1	1.0079-01	9.3012-02	9.3900-02	9.2822-02	7.4002-02	7.8635-02	8.1843-02	7.5712-02	7.0160-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01

PRELIMINARY UNCHECKED DATA ~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

VALVE POS 10 PO = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3796 TO = 535.

P	1.2389+00	1.2694+00	1.2660+00	1.2390+00	1.0775+00	4.5838+00	6.7282+00	8.1680+00	1.0799+00
CP	-4.4762-01	-4.4281-01	-4.4334-01	-4.4761-01	-4.7283-01	8.1161-02	4.2014-01	6.4775-01	-4.7275-01
P/PO1	9.0166-02	9.2383-02	9.2136-02	9.0172-02	7.8562-02	3.3361-01	4.8967-01	5.9446-01	7.8596-02
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PO = 14.8 Q-INF = 6.344 P-INF =4.0821 RE = .3806 TO = 535.

P	1.3912+00	1.2989+00	1.3016+00	1.3193+00	1.3827+00	9.9011-01	1.0532+00	1.1587+00	1.0799+00
CP	-4.2417-01	-4.3872-01	-4.3829-01	-4.3552-01	-4.2551-01	-4.8746-01	-4.7746-01	-4.6083-01	-4.7324-01
P/PO1	1.0096-01	9.4266-02	9.4461-02	9.5739-02	1.0035-01	7.1853-02	7.6429-02	8.4085-02	7.8372-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 14.8 Q-INF = 6.342 P-INF =4.0808 RE = .3805 TO = 535.

P	1.2643+00	1.4000+00	1.4494+00	1.4246+00	1.4316+00	4.4388+00	6.1831+00	7.6506+00	8.7433+00
CP	-4.4412-01	-4.2272-01	-4.1493-01	-4.1884-01	-4.1774-01	5.6454-02	3.3149-01	5.6290-01	7.3519-01
P/PO1	9.1780-02	1.0163-01	1.0522-01	1.0342-01	1.0392-01	3.2223-01	4.4885-01	5.5539-01	6.3471-01
S/R	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0664+00	3.2484+00	-1.8750-02	3.5133+00	9.7734-01	5.3883+00	3.8953+00	9.7969-01
CP	-4.7532-01	-1.3125-01	-6.4643-01	-8.9489-02	-4.8936-01	2.0617-01	-2.9249-02	-4.8899-01
P/PO1	7.7415-02	2.3582-01	-1.3611-03	2.5504-01	7.0949-02	3.9116-01	2.8278-01	7.1119-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	1.3266+00	1.6891+01	8.8125-01	1.3758+00	1.1789+00	1.3148+00	1.3172+00
CP	-4.3430-01	2.0200+00	-5.0451-01	-4.2654-01	-4.5758-01	-4.3614-01	-4.3577-01
P/PO1	9.6301-02	1.2262+00	6.3974-02	9.9874-02	8.5582-02	9.5450-02	9.5620-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
40 - 1963

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	70.	301244	2.99	2	-4.01	179.98	-.00	79.01	180.0

VALVE POS 2 PC = 30.1 Q-INF = 5.211 P-INF = .8327 RE = .3906 TO = 543.

P	6.5823-01	2.8829+00	6.2547+00	7.4702+00	7.6341+00	8.0506+00	8.5370+00	8.9806+00	9.3169+00
CP	-3.3478-02	3.9344-01	1.0405+00	1.2718+00	1.3652+00	1.3851+00	1.4785+00	1.5636+00	1.6281+00
P/PO1	6.5963-02	2.8890-01	6.2679-01	7.4700-01	7.6503-01	8.0670-01	8.5551-01	8.9996-01	9.3366-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.1 Q-INF = 5.209 P-INF = .8323 RE = .3904 TO = 543.

P	9.7356+00	1.0057+01	8.5590+00	5.5798+00	1.4010+00	1.3987+00	1.3490+00	1.0189+00	6.5809-01
CP	1.7093+00	1.7711+00	1.4835+00	9.1147-01	1.0518-01	1.0875-01	9.9199-02	3.5830-02	-3.3446-02
P/PO1	9.7607-01	1.0083+00	8.5811-01	5.5942-01	1.4046-01	1.4024-01	1.3525-01	1.0216-01	6.5979-02
S/R	1.5850+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3897 TO = 543.

P	4.1140-01	7.1754+00	7.4774+00	7.7055+00	7.9547+00	8.3174+00	8.3185+00	7.2191+00	3.7949+00
CP	-8.0602-02	1.2212+00	1.2785+00	1.3232+00	1.3780+00	1.4401+00	1.4403+00	1.2288+00	5.7016-01
P/PO1	4.1323-02	7.2114-01	7.5107-01	7.7443-01	8.0304-01	8.3545-01	8.3557-01	7.2513-01	3.8119-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3902 TO = 543.

P	4.6879+00	4.9034+00	5.3322+00	4.9417+00	5.0625+00	5.2354+00	5.2956+00	5.2059+00	4.0892+00
CP	7.4066-01	7.8205-01	8.6441-01	7.8941-01	8.1262-01	8.4582-01	8.5739-01	8.4017-01	6.2567-01
P/PO1	4.7022-01	4.9184-01	5.3484-01	4.9568-01	5.0780-01	5.2514-01	5.3118-01	5.2218-01	4.1017-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3902 TO = 542.

P	2.3039+00	7.2561-01	9.1388-01	7.7443-01	6.3901+00	5.6865+00	3.3787+00	2.5624+00	2.5174+00
CP	2.8337-01	-2.0222-02	1.5992-02	-1.0831-02	1.0874+00	9.3400-01	4.9010-01	3.3309-01	3.2443-01
P/PO1	2.3142-01	7.2885-02	9.1796-02	7.7789-02	6.4085-01	5.7119-01	3.3938-01	2.5739-01	2.5287-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.0 Q-INF = 5.196 P-INF = .8302 RE = .3900 TO = 542.

P	2.3794+00	1.4660+00	7.0694-01	7.6691-01	1.4862+00	2.3730+00	7.7255+00	2.9325-01	1.0349+00
CP	2.9741-01	1.2237-01	-2.3729-02	-1.2108-02	1.2626-01	2.9694-01	1.3271+00	-1.0335-01	3.9387-02
P/PO1	2.3875-01	1.4735-01	7.1054-02	7.7082-02	1.4938-01	2.3851-01	7.7648-01	2.9475-02	1.0401-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.0 Q-INF = 5.195 P-INF = .8301 RE = .3899 TO = 542.

P	2.4449-01	1.3658-01	1.9793-01	5.1807-01	4.3652-01	1.1274-01	1.6227-01	2.7633-01	2.5246-01
CP	-1.1273-01	-1.3343-01	-1.2169-01	-6.0065-02	-7.5763-02	-1.3809-01	-1.2856-01	-1.0660-01	-1.1119-01
P/PO1	2.4578-02	1.3769-02	1.9897-02	5.2075-02	4.3881-02	1.1333-02	1.6312-02	2.7778-02	2.5379-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3900 TO = 542.

P	3.1640-01	2.9869-01	1.8704-01	1.3483-01	1.7367-01	1.6246-01	9.6942-02	2.2727-01	2.2848-01
CP	-9.8905-02	-1.0231-01	-1.2380-01	-1.3385-01	-1.2637-01	-1.2853-01	-1.4114-01	-1.1606-01	-1.1582-01
P/PO1	3.1796-02	3.0016-02	1.8796-02	1.3549-02	1.7453-02	1.6326-02	9.7420-03	2.2839-02	2.2961-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

40

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 G-INF = 5.200 F-INF = .8310 RE = .3903 TO = 542.

P	2.6537-01	2.7075-01	2.5649-01	2.4658-01	2.4789-01	2.5240-01	3.4017-01	3.3928-01	8.7913-02
CP	-1.0877-01	-1.0773-01	-1.1047-01	-1.1238-01	-1.1213-01	-1.1126-01	-9.4383-02	-9.4554-02	-1.4289-01
P/PO1	2.6647-02	2.7187-02	2.5756-02	2.4760-02	2.4892-02	2.5344-02	3.4158-02	3.4069-02	8.8278-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.2 G-INF = 5.217 F-INF = .8336 RE = .3915 TO = 542.

P	2.3197-01	2.9319-01	2.9372-01	2.9961-01	2.9786-01	1.4388-01	1.6181-01	1.9811-01	1.8098-01
CP	-1.1533-01	-1.0359-01	-1.0349-01	-1.0255-01	-1.0270-01	-1.3221-01	-1.2878-01	-1.2182-01	-1.2510-01
P/PO1	2.3220-02	2.9349-02	2.9402-02	2.9892-02	2.9817-02	1.4403-02	1.6198-02	1.9831-02	1.8116-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 G-INF = 5.211 F-INF = .8327 RE = .3911 TO = 542.

P	1.8372-01	3.1472-01	3.1188-01	3.4431-01	3.4388-01	3.3113-01	3.4155-01	3.4437-01	3.0630-01
CP	-1.2454-01	-9.9398-02	-9.9944-02	-9.3721-02	-9.3803-02	-9.6249-02	-9.4250-02	-9.3708-02	-1.0101-01
P/PO1	1.8411-02	3.1535-02	3.1254-02	3.4504-02	3.4460-02	3.3183-02	3.4227-02	3.4510-02	3.0695-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0858+00	6.7031+00	7.7344-02	5.7867+00	8.2031-02	5.6133+00	3.5414+00	6.3281-02
CP	4.9349-02	1.1265+00	-1.4495-01	9.5068-01	-1.4405-01	9.1740-01	5.1981-01	-1.4765-01
P/PO1	1.0922-01	6.7173-01	7.7508-03	5.7990-01	8.2205-03	5.6252-01	3.5489-01	6.3415-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.5813+00	4.9875+00	1.4063-01	4.7039+00	1.7344-01	2.6344+00	6.9375-01
CP	5.2745-01	7.9731-01	-1.3281-01	7.4289-01	-1.2651-01	3.4575-01	-2.6662-02
P/PO1	3.5888-01	4.9981-01	1.4092-02	4.7139-01	1.7380-02	2.6400-01	6.9522-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

40 - INCH CONTINUOUS [illegible] WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	71.	301244	2.99	2	5.00	179.98	.00	70.00	180.0

VALVE POS 2 PC = 30.1 Q-INF = 5.209 P-INF = .8323 RE = .3909 TO = 542.

P	1.1801+00	3.9671+00	7.1012+00	8.3498+00	8.6531+00	8.9451+00	9.2862+00	9.6412+00	9.8023+00
CP	6.6766-02	6.0185-01	1.2036+00	1.4433+00	1.5015+00	1.5576+00	1.6231+00	1.6912+00	1.7222+00
P/P01	1.1831-01	3.9773-01	7.1195-01	8.3713-01	8.6754-01	8.9682-01	9.3102-01	9.6661-01	9.8276-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.1 Q-INF = 5.213 P-INF = .8329 RE = .3912 TO = 542.

P	1.0003+01	9.6194+00	6.9444+00	3.7157+00	7.3433-01	7.3389-01	7.1068-01	5.5405-01	3.7915-01
CP	1.7592+00	1.6856+00	1.1724+00	5.5302-01	-1.8918-02	-1.9003-02	-2.3456-02	-5.3504-02	-8.7057-02
P/P01	1.0021+00	9.6368-01	6.9569-01	3.7224-01	7.3566-02	7.3522-02	7.1196-02	5.5505-02	3.7984-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.2 Q-INF = 5.224 P-INF = .8348 RE = .3921 TO = 542.

P	2.6259-01	8.1804+00	8.2298+00	8.3810+00	8.5120+00	8.5999+00	7.9596+00	5.8350+00	4.5527+00
CP	-1.0953-01	1.4061+00	1.4156+00	1.4445+00	1.4696+00	1.4864+00	1.3639+00	9.5718-01	7.1170-01
P/P01	2.6249-02	8.1774-01	8.2268-01	8.3779-01	8.5088-01	8.5967-01	7.9566-01	5.8329-01	4.5510-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3908 TO = 542.

P	5.5148+00	5.9124+00	6.3174+00	5.8049+00	5.9412+00	5.7627+00	5.6739+00	5.0875+00	3.2188+00
CP	8.9932-01	9.7569-01	1.0535+00	9.5505-01	9.8121-01	9.4694-01	9.2988-01	8.1726-01	4.5838-01
P/P01	5.5308-01	5.9296-01	6.3357-01	5.8218-01	5.9584-01	5.7794-01	5.6903-01	5.1022-01	3.2281-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3902 TO = 542.

P	1.4150+00	3.1584-01	4.1880-01	4.2730-01	7.5558+00	6.3087+00	4.0967+00	3.0737+00	2.8493+00
CP	1.1239-01	-9.9042-02	-7.9237-02	-7.7603-02	1.2938+00	1.0537+00	6.2822-01	4.3143-01	3.8827-01
P/P01	1.4214-01	3.1725-02	4.2067-02	4.2921-02	7.5895-01	6.3368-01	4.1150-01	3.0874-01	2.8620-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3898 TO = 542.

P	2.5061+00	1.0761+00	1.1710+00	1.0852+00	1.8220+00	2.7066+00	8.2249+00	3.2012-01	1.6930+00
CP	3.2271-01	4.7384-02	6.5658-02	4.9142-02	1.9101-01	3.6132-01	1.4237+00	-9.8161-02	1.6615-01
P/P01	2.5197-01	1.0819-01	1.1773-01	1.0911-01	1.8319-01	2.7213-01	8.2693-01	3.2185-02	1.7021-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3884 TO = 542.

P	3.8582-01	8.6522-02	8.6923-02	7.6956-02	2.6422-01	1.3362-01	1.2243-01	2.9531-01	2.8730-01
CP	-8.5244-02	-1.4308-01	-1.4300-01	-1.4492-01	-1.0874-01	-1.3397-01	-1.3614-01	-1.0273-01	-1.0428-01
P/P01	3.8930-02	8.7303-03	8.7708-03	7.7651-03	2.6660-02	1.3483-02	1.2354-02	2.9797-02	2.8989-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 29.9 Q-INF = 5.165 P-INF = .8253 RE = .3876 TO = 542.

P	2.9785-01	2.7716-01	1.3911-01	2.1400-01	2.4937-01	2.0111-01	1.2150-01	1.8098-01	2.1446-01
CP	-1.0213-01	-1.0613-01	-1.3286-01	-1.1836-01	-1.1151-01	-1.2086-01	-1.3627-01	-1.2475-01	-1.1827-01
P/P01	3.0115-02	2.8023-02	1.4066-02	2.1638-02	2.5214-02	2.0334-02	1.2285-02	1.8299-02	2.1683-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARO [illegible] CENTER
V [illegible]
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3886 TO = 542.

P	1.8926-01	2.1257-01	1.7569-01	1.8098-01	1.8287-01	1.6246-01	1.9858-01	2.9068-01	1.1978-01
CP	-1.2324-01	-1.1874-01	-1.2586-01	-1.2484-01	-1.2448-01	-1.2842-01	-1.2144-01	-1.0365-01	-1.3666-01
P/PO1	1.9090-02	2.1438-02	1.7719-02	1.8252-02	1.8443-02	1.6385-02	2.0028-02	2.9316-02	1.2081-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3886 TO = 542.

P	2.4032-01	2.6800-01	2.8237-01	2.6513-01	2.8005-01	2.6589-01	2.3628-01	3.7399-01	4.8478-01
CP	-1.1338-01	-1.0803-01	-1.0526-01	-1.0859-01	-1.0571-01	-1.0844-01	-1.1416-01	-8.7563-02	-6.6167-02
P/PO1	2.4237-02	2.7029-02	2.8479-02	2.6740-02	2.8244-02	2.6817-02	2.3830-02	3.7719-02	4.8892-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7570+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3891 TO = 543.

P	3.8878-01	2.8724-01	2.7057-01	2.7644-01	3.0132-01	3.0279-01	2.8684-01	2.8559-01	2.7780-01
CP	-8.4856-02	-1.0446-01	-1.0767-01	-1.0654-01	-1.0174-01	-1.0146-01	-1.0453-01	-1.0478-01	-1.0628-01
P/PO1	3.9112-02	2.8897-02	2.7220-02	2.7811-02	3.0314-02	3.0461-02	2.8857-02	2.8731-02	2.7947-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.1602+00	7.6219+00	-1.2500-03	7.0359+00	6.0313-02	6.5367+00	4.1602+00	3.1719-02
CP	6.3711-02	1.3086+00	-1.6003-01	1.1957+00	-1.4817-01	1.0995+00	6.4166-01	-1.5368-01
P/PO1	1.1672-01	7.6678-01	-1.2575-04	7.0784-01	6.0676-03	6.5761-01	4.1857-01	3.1910-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.5156+00	5.0109+00	1.4297-01	5.5266+00	1.5469-01	3.7641+00	2.8594-01
CP	5.1749-01	8.0557-01	-1.3225-01	9.0490-01	-1.2999-01	5.6535-01	-1.0471-01
P/PO1	3.5368-01	5.0412-01	1.4383-02	5.5599-01	1.5562-02	3.7868-01	2.8766-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

40 - INCH CONTINUOUS [illegible] TUNNEL

~~CONFIDENTIAL~~

11

RUN	GRCUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	72.	301244	2.99	2	10.01	179.98	.00	64.99	180.0

VALVE POS 2 PC = 30.1 Q-INF = 5.199 F-INF = .8307 RE = .3897 TO = 543.

P	1.5785+00	4.7925+00	7.5714+00	8.7399+00	9.4996+00	9.2904+00	9.5359+00	9.7985+00	9.8962+00
CP	1.4383-01	7.6205-01	1.2966+00	1.5213+00	1.6674+00	1.6272+00	1.6744+00	1.7249+00	1.7437+00
P/PO1	1.5856-01	4.8135-01	7.6052-01	8.7789-01	9.5420-01	9.3318-01	9.5784-01	9.8422-01	9.9404-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.0 Q-INF = 5.192 F-INF = .8297 RE = .3892 TO = 543.

P	9.8771+00	9.1502+00	5.9568+00	2.8024+00	4.9595-01	4.7458-01	4.6476-01	3.8168-01	2.6907-01
CP	1.7424+00	1.6024+00	9.8743-01	3.7992-01	-6.3508-02	-6.8354-02	-7.0285-02	-8.6286-02	-1.0797-01
P/PO1	9.9336-01	9.2025-01	5.9509-01	2.8184-01	5.0281-02	4.7729-02	4.6742-02	3.8386-02	2.7061-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.1 Q-INF = 5.200 F-INF = .8309 RE = .3897 TO = 543.

P	2.6908-01	8.5245+00	8.5120+00	8.5839+00	8.7315+00	8.5685+00	7.5850+00	4.9379+00	5.0035+00
CP	-1.0804-01	1.4796+00	1.4772+00	1.4911+00	1.5194+00	1.4881+00	1.2990+00	7.8985-01	8.0249-01
P/PO1	2.7024-02	8.5612-01	8.5486-01	8.6208-01	8.7690-01	8.6054-01	7.6177-01	4.9591-01	5.0251-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.1 Q-INF = 5.213 F-INF = .8329 RE = .3907 TO = 543.

P	5.8193+00	6.2722+00	6.5995+00	6.1960+00	6.0509+00	5.9320+00	5.7893+00	4.9940+00	2.7429+00
CP	5.5659-01	1.0435+00	1.1063+00	1.0289+00	1.0010+00	9.7821-01	9.5083-01	7.9826-01	3.6640-01
P/PO1	5.8298-01	6.2835-01	6.6115-01	6.2072-01	6.0618-01	5.9427-01	5.7998-01	5.0030-01	2.7478-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.2 Q-INF = 5.215 F-INF = .8333 RE = .3909 TO = 543.

P	1.0600+00	2.0798-01	2.4605-01	2.8866-01	7.5244+00	6.1831+00	4.6673+00	3.7096+00	3.1186+00
CP	4.3465-02	-1.1991-01	-1.1261-01	-1.0444-01	1.2830+00	1.0258+00	7.3518-01	5.5153-01	4.3820-01
P/PO1	1.0614-01	2.0826-02	2.4638-02	2.8904-02	7.5345-01	6.1914-01	4.6736-01	3.7146-01	3.1228-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.1 Q-INF = 5.206 F-INF = .8319 RE = .3902 TO = 543.

P	2.6588+00	9.5021-01	1.5299+00	1.3183+00	1.7819+00	2.9671+00	8.3654+00	3.3019-01	1.7156+00
CP	3.5091-01	2.2723-02	1.3408-01	9.3424-02	1.8248-01	4.1014-01	1.4470+00	-9.6370-02	1.6973-01
P/PO1	2.6669-01	9.5311-02	1.5346-01	1.3223-01	1.7874-01	2.9742-01	8.3909-01	3.3128-02	1.7208-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.1 Q-INF = 5.202 F-INF = .8313 RE = .3899 TO = 543.

P	3.9694-01	8.7825-02	9.4641-02	9.2533-02	2.0039-01	1.4892-01	1.4342-01	2.7031-01	2.9354-01
CP	-8.3490-02	-1.4291-01	-1.4160-01	-1.4201-01	-1.2127-01	-1.3117-01	-1.3222-01	-1.0783-01	-1.0337-01
P/PO1	3.9846-02	8.8162-03	9.5004-03	9.2888-03	2.0116-02	1.4949-02	1.4397-02	2.7135-02	2.9466-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.1 Q-INF = 5.199 F-INF = .8307 RE = .3897 TO = 543.

P	3.2290-01	2.8357-01	1.4095-01	2.9273-01	2.9093-01	2.7219-01	1.2963-01	1.9487-01	2.9001-01
CP	-9.7684-02	-1.0525-01	-1.3268-01	-1.0349-01	-1.0383-01	-1.0744-01	-1.3486-01	-1.2231-01	-1.0401-01
P/PO1	3.2434-02	2.8484-02	1.4158-02	2.9403-02	2.9223-02	2.7341-02	1.3021-02	1.9574-02	2.9131-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3897 TO = 543.

P	2.0599-01	2.0203-01	1.6907-01	1.6650-01	1.5651-01	1.6017-01	2.0686-01	2.4115-01	1.2235-01
CP	-1.2018-01	-1.2094-01	-1.2728-01	-1.2777-01	-1.2969-01	-1.2899-01	-1.2001-01	-1.1342-01	-1.3626-01
P/PO1	2.0687-02	2.0290-02	1.6980-02	1.6721-02	1.5719-02	1.6086-02	2.0775-02	2.4219-02	1.2287-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.0 Q-INF = 5.166 P-INF = .8287 RE = .3887 TO = 543.

P	3.2475-01	3.3534-01	3.1733-01	2.3617-01	2.4294-01	3.8467-01	2.5375-01	3.9343-01	8.6406-01
CP	-9.7171-02	-9.5130-02	-9.8603-02	-1.1425-01	-1.1295-01	-8.5617-02	-1.1086-01	-8.3927-02	6.8243-03
P/PO1	3.2702-02	3.3768-02	3.1954-02	2.3782-02	2.4463-02	3.8735-02	2.5552-02	3.9618-02	8.7009-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3888 TO = 543.

P	4.5253-01	2.7120-01	2.7102-01	2.5337-01	2.4492-01	2.5330-01	2.5191-01	2.5458-01	2.5608-01
CP	-7.2545-02	-1.0751-01	-1.0754-01	-1.1094-01	-1.1257-01	-1.1096-01	-1.1123-01	-1.1071-01	-1.1042-01
P/PO1	4.5562-02	2.7305-02	2.7287-02	2.5509-02	2.4659-02	2.5502-02	2.5363-02	2.5631-02	2.5783-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.3617+00	7.7906+00	-1.2500-03	6.9328+00	7.6406-02	6.7383+00	4.5656+00	4.6719-02
CP	1.0275-01	1.3422+00	-1.6003-01	1.1769+00	-1.4506-01	1.1394+00	7.2046-01	-1.5079-01
P/PO1	1.3710-01	7.8437-01	-1.2585-04	6.9801-01	7.6927-03	6.7842-01	4.5967-01	4.7037-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.5531+00	4.9523+00	1.4531-01	5.6273+00	1.5938-01	3.6586+00	3.2344-01	
CP	5.2525-01	7.9502-01	-1.3178-01	9.2516-01	-1.2907-01	5.4559-01	-9.7435-02	
P/PO1	3.5773-01	4.9861-01	1.4630-02	5.6657-01	1.6046-02	3.6835-01	3.2564-02	
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01	

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

40 - INCH CONTINUOUS US WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	73.	301244	2.99	2	13.42	222.40	-9.00	65.01	180.0

VALVE POS 2 PC = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3882 TO = 543.

P	1.5581+00	4.6385+00	7.3520+00	8.5058+00	8.7471+00	9.0863+00	9.3330+00	9.5783+00	9.6457+00
CP	1.4061-01	7.3451-01	1.2577+00	1.4801+00	1.5267+00	1.5921+00	1.6396+00	1.6869+00	1.6999+00
P/P01	1.5687-01	4.6701-01	7.4021-01	8.5638-01	8.8068-01	9.1483-01	9.3966-01	9.6436-01	9.7114-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3873 TO = 543.

P	9.5626+00	8.7748+00	5.7117+00	2.5960+00	4.7259-01	4.4212-01	4.2754-01	3.6489-01	2.6784-01
CP	1.6882+00	1.5360+00	9.4401-01	3.4189-01	-6.8464-02	-7.4352-02	-7.7170-02	-8.9277-02	-1.0803-01
P/P01	9.6504-01	8.8554-01	5.7641-01	2.6198-01	4.7693-02	4.4618-02	4.3146-02	3.6824-02	2.7030-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.0 Q-INF = 5.181 P-INF = .8279 RE = .3878 TO = 543.

P	2.1341-01	9.3223+00	9.2958+00	9.3330+00	9.4682+00	9.2433+00	8.2249+00	5.4740+00	6.2165+00
CP	-1.1860-01	1.6395+00	1.6384+00	1.6416+00	1.6677+00	1.6243+00	1.4277+00	8.9676-01	1.0401+00
P/P01	2.1510-02	9.3961-01	9.3694-01	9.4069-01	9.5432-01	9.3165-01	8.2900-01	5.5174-01	6.2657-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.0 Q-INF = 5.181 P-INF = .8279 RE = .3878 TO = 543.

P	7.1405+00	7.7112+00	8.0731+00	7.6006+00	7.5087+00	7.2659+00	6.9451+00	6.2912+00	3.7135+00
CP	1.2164+00	1.3286+00	1.3584+00	1.3072+00	1.2695+00	1.2476+00	1.1807+00	1.0545+00	5.5696-01
P/P01	7.1970-01	7.7723-01	8.1370-01	7.6608-01	7.5682-01	7.3235-01	7.0001-01	6.3410-01	3.7429-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.0 Q-INF = 5.195 P-INF = .8301 RE = .3888 TO = 543.

P	1.4559+00	2.8586-01	3.0235-01	3.0996-01	8.3239+00	7.3444+00	5.9775+00	5.2496+00	4.6215+00
CP	1.2047-01	-1.0476-01	-1.0159-01	-1.0013-01	1.4426+00	1.2540+00	9.9087-01	8.5075-01	7.2985-01
P/P01	1.4636-01	2.8736-02	3.0393-02	3.1158-02	8.3675-01	7.3829-01	6.0088-01	5.2771-01	4.6458-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 29.9 Q-INF = 5.174 P-INF = .8267 RE = .3872 TO = 543.

P	3.8801+00	1.6191+00	2.0111+00	2.1529+00	2.9241+00	3.6470+00	9.1925+00	2.9214-01	2.0823+00
CP	5.9016-01	1.5314-01	2.2891-01	2.5632-01	4.0538-01	5.4511-01	1.6170+00	-1.0333-01	2.4268-01
P/P01	3.9163-01	1.6342-01	2.0298-01	2.1730-01	2.9514-01	3.6810-01	9.2784-01	2.9486-02	2.1017-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3885 TO = 543.

P	4.9701-01	1.1387-01	9.6112-02	9.6056-02	2.0088-01	1.9931-01	2.2709-01	3.7075-01	3.7137-01
CP	-6.4045-02	-1.3786-01	-1.4128-01	-1.4129-01	-1.2109-01	-1.2140-01	-1.1605-01	-8.8368-02	-8.8250-02
P/P01	5.0001-02	1.1456-02	9.6691-03	9.6635-03	2.0209-02	2.0051-02	2.2845-02	3.7299-02	3.7361-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3892 TO = 543.

P	4.5476-01	4.2444-01	1.5510-01	4.8818-01	4.0968-01	3.0954-01	3.2132-01	3.5502-01	3.6150-01
CP	-7.2335-02	-7.8165-02	-1.2996-01	-6.5906-02	-8.1003-02	-1.0020-01	-9.7997-02	-9.1517-02	-9.0270-02
P/P01	4.5672-02	4.2627-02	1.5577-02	4.9028-02	4.1145-02	3.1087-02	3.2270-02	3.5655-02	3.6306-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GO WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3895 TO = 543.

P	2.3707-01	1.9012-01	1.2404-01	1.2053-01	1.0662-01	1.0892-01	1.1183-01	2.2773-01	3.3707-01
CP	-1.1424-01	-1.2326-01	-1.3596-01	-1.3663-01	-1.3931-01	-1.3887-01	-1.3831-01	-1.1604-01	-9.5029-02
P/PO1	2.3787-02	1.9076-02	1.2446-02	1.2094-02	1.0698-02	1.0928-02	1.1220-02	2.2850-02	3.3820-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3888 TO = 543.

P	4.5031-01	3.1014-01	2.7420-01	2.1989-01	1.8166-01	3.9727-01	2.8730-01	3.0179-01	2.9409-01
CP	-7.3095-02	-1.0008-01	-1.0700-01	-1.1746-01	-1.2482-01	-8.3308-02	-1.0448-01	-1.0169-01	-1.0317-01
P/PO1	4.5274-02	3.1182-02	2.7568-02	2.2107-02	1.8264-02	3.9941-02	2.8886-02	3.0342-02	2.9567-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 Q-INF = 5.209 P-INF = .8323 RE = .3899 TO = 543.

P	3.5955-01	2.4692-01	2.5332-01	2.5337-01	2.2958-01	2.3125-01	2.2571-01	2.3375-01	2.3708-01
CP	-9.0764-02	-1.1239-01	-1.1116-01	-1.1115-01	-1.1572-01	-1.1540-01	-1.1646-01	-1.1492-01	-1.1428-01
P/PO1	3.6048-02	2.4756-02	2.5397-02	2.5402-02	2.3017-02	2.3185-02	2.2629-02	2.3435-02	2.3769-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0992+00	9.0797+00	1.3672-01	8.3203+00	1.7297-01	7.3406+00	5.2477+00	9.8594-02
CP	5.1246-02	1.5834+00	-1.3354-01	1.4376+00	-1.2659-01	1.2495+00	8.4771-01	-1.4086-01
P/PO1	1.1021-01	9.1032-01	1.3707-02	8.3418-01	1.7342-02	7.3596-01	5.2612-01	9.8849-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6164+00	6.9961+00	1.9219-01	6.7125+00	1.9688-01	4.4250+00	3.2813-01
CP	5.3452-01	1.1834+00	-1.2290-01	1.1289+00	-1.2200-01	6.8977-01	-9.6797-02
P/PO1	3.6258-01	7.0142-01	1.9268-02	6.7259-01	1.9738-02	4.4364-01	3.2897-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	74.	3C1244	2.99	2	11.16	206.76	-5.00	65.01	180.0

VALVE POS 2 PC = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3877 TO = 543.

P	1.5657+C0	4.7555+0C	7.5401+00	8.6619+CC	9.0920+0C	9.2433+0C	9.5671+00	9.7356+0C	9.8336+00
CP	1.4251-C1	7.5837-01	1.2960+00	1.5126+0C	1.5956+C0	1.6248+CC	1.6874+00	1.7199+00	1.7388+00
P/PO1	1.5786-C1	4.7947-01	7.6022-01	8.7332-01	9.1669-01	9.3194-01	9.6459-01	9.8157-01	9.9146-01
S/R	.00CC+C0	6.4CCC-02	1.1800-01	2.0800-01	2.8500-01	4.970C-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.C Q-INF = 5.182 P-INF = .828C RE = .3878 TO = 543.

P	9.7513+C0	9.0094+0C	5.8471+00	2.7148+0C	5.0741-01	4.5555-01	4.4671-01	3.7272-01	2.7130-01
CP	1.722C+C0	1.5789+C0	9.6859-01	3.6412-01	-6.1872-02	-7.188C-02	-7.3586-02	-8.7865-02	-1.0744-01
P/PO1	9.827C-C1	9.0794-01	5.8925-01	2.7359-01	5.1135-02	4.5909-02	4.5018-02	3.7562-02	2.7340-02
S/R	1.589C+C0	1.7420+00	1.7970+C0	1.854C+0C	1.918C+C0	2.C34C+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.1 Q-INF = 5.200 P-INF = .831C RE = .3892 TO = 543.

P	2.2733-C1	9.0251+C0	8.9979+00	9.0365+0C	9.2C17+0C	8.9608+CC	8.0064+00	5.2433+C0	5.7988+00
CP	-1.1608-01	1.5756+00	1.5704+00	1.5778+CC	1.6C96+0C	1.5633+0C	1.3798+00	8.4845-01	9.5527-01
P/PO1	2.2827-02	9.0625-01	9.0353-01	9.074C-01	9.2399-01	8.99PC-01	8.0396-01	5.2651-01	5.8229-01
S/R	2.88CC+C0	4.970C-01	9.3600-01	1.155C+0C	1.372C+C0	1.589C+CC	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3882 TO = 543.

P	6.6372+00	7.1481+00	7.5087+00	7.0076+0C	7.4460+00	6.6696+0C	6.3989+C0	5.6611+00	3.2313+00
CP	1.1199+C0	1.21E4+C0	1.2879+0C	1.1913+0C	1.2758+0C	1.1261+CC	1.0739+00	9.3167-01	4.6321-01
P/PO1	6.6824-C1	7.1968-01	7.5599-01	7.0553-01	7.4968-01	6.7151-01	6.4425-01	5.6997-01	3.2533-01
S/R	-2.08CC-01	2.890C-01	4.9700-01	1.046C+0C	1.1550+00	1.372C+0C	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3895 TO = 543.

P	1.2541+C0	2.4876-01	2.7238-01	2.9446-01	8.2612+0C	6.8736+0C	5.5905+00	4.5887+00	3.9515+00
CP	8.1175-02	-1.120C-01	-1.0746-01	-1.0322-01	1.4275+0C	1.160C+00	9.1438-01	7.2188-01	5.9944-01
P/PO1	1.2584-01	2.4959-02	2.7330-02	2.9545-02	8.2890-01	6.8967-01	5.6094-01	4.6042-01	3.9648-01
S/R	1.854C+C0	1.918C+C0	2.0850+00	2.354C+0C	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.1 Q-INF = 5.210 P-INF = .8326 RE = .3900 TO = 543.

P	3.3267+C0	1.3007+00	1.8329+00	1.787C+0C	2.5999+00	3.4754+0C	8.9896+00	2.5458-01	1.9240+00
CP	4.787C-01	8.9846-02	1.9199-01	1.8318-01	3.392C-01	5.0725-01	1.5656+00	-1.1093-01	2.0949-01
P/PO1	3.3342-01	1.3036-01	1.8370-01	1.791C-01	2.6C58-01	3.4833-01	9.0101-01	2.5515-02	1.9284-01
S/R	1.742C+00	1.797C+C0	6.4000-02	1.180C-01	2.080C-01	2.890C-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3895 TO = 543.

P	4.4698-C1	1.0271-01	9.2620-02	9.1420-02	2.1C28-01	1.7321-01	2.0226-01	3.4807-01	3.3356-01
CP	-7.3912-02	-1.4CC6-01	-1.4200-01	-1.4223-01	-1.1939-01	-1.2651-01	-1.2093-01	-9.2915-02	-9.5703-02
P/PO1	4.4848-02	1.03C6-02	9.2932-03	9.1728-03	2.1C99-02	1.738C-02	2.0294-02	3.4925-02	3.3469-02
S/R	1.797C+C0	1.854C+00	1.918C+00	2.0850+00	2.354C+00	4.970C-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3895 TO = 543.

P	3.8089-C1	3.6145-01	1.4132-01	4.1896-01	3.7406-01	2.9379-01	2.2433-01	2.9160-01	3.7010-01
CP	-8.661C-C2	-9.0344-02	-1.3264-01	-7.9295-02	-8.7922-02	-1.0335-01	-1.1669-01	-1.0376-01	-8.8683-02
P/PO1	3.8217-02	3.6267-02	1.4179-02	4.2037-02	3.7532-02	2.9478-02	2.2508-02	2.9259-02	3.7134-02
S/R	1.589C+00	1.7420+0C	1.7970+00	1.1800-01	2.C800-01	2.890C-01	4.9700-01	1.0460+00	1.1550+00

PRELIMINARY UNCHECKED DATA

ARNOLD [illegible]
[illegible] DYNAMICS [illegible]
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3896 TO = 543.

P	2.3707-01	1.9424-01	1.3819-01	1.3741-01	1.0904-01	1.0655-01	1.1597-01	2.4347-01	2.4884-01
CP	-1.1425-01	-1.2248-01	-1.3325-01	-1.3340-01	-1.3885-01	-1.3932-01	-1.3752-01	-1.1302-01	-1.1199-01
P/PO1	2.3783-02	1.9486-02	1.3864-02	1.3785-02	1.0939-02	1.0689-02	1.1629-02	2.4425-02	2.4964-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3889 TO = 543.

P	3.9898-01	3.9077-01	2.3425-01	2.0767-01	2.1523-01	3.8782-01	2.4271-01	2.6476-01	3.2349-01
CP	-8.3013-02	-8.4594-02	-1.1471-01	-1.1983-01	-1.1837-01	-8.5162-02	-1.1309-01	-1.0884-01	-9.7540-02
P/PO1	4.0095-02	3.9270-02	2.3541-02	2.0869-02	2.1629-02	3.8973-02	2.4391-02	2.6606-02	3.2509-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3875 TO = 543.

P	4.4920-01	2.5380-01	2.6512-01	2.7870-01	2.9242-01	2.7309-01	2.4225-01	2.3745-01	2.3844-01
CP	-7.3039-02	-1.1078-01	-1.0859-01	-1.0597-01	-1.0332-01	-1.0705-01	-1.1301-01	-1.1393-01	-1.1374-01
P/PO1	4.5304-02	2.5597-02	2.6739-02	2.8109-02	2.9492-02	2.7543-02	2.4433-02	2.3948-02	2.4047-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.1813+00	8.5992+00	-1.2500-03	7.7203+00	1.3234-01	6.9891+00	4.8797+00	8.0781-02
CP	6.8345-02	1.5010+00	-1.6004-01	1.3313+00	-1.3423-01	1.1900+00	7.8264-01	-1.4419-01
P/PO1	1.1914-01	8.6727-01	-1.2607-04	7.7863-01	1.3348-02	7.0488-01	4.9214-01	8.1472-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.5906+00	6.0234+00	1.6406-01	6.2297+00	1.7813-01	4.1250+00	3.2578-01	
CP	5.3367-01	1.0035+00	-1.2811-01	1.0434+00	-1.2539-01	6.3688-01	-9.6875-02	
P/PO1	3.6213-01	6.0749-01	1.6547-02	6.2830-01	1.7565-02	4.1603-01	3.2857-02	
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01	

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	75.	301244	2.99	2	10.23	241.23	-8.96	70.04	180.0

VALVE POS 2 PC = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3881 TO = 543.

P	1.1826+00	3.8808+00	6.8660+00	8.1000+00	8.3239+00	8.7568+00	9.0677+00	9.3895+00	9.5204+00
CP	6.8266-02	5.8867-01	1.1644+00	1.4024+00	1.4456+00	1.5291+00	1.5890+00	1.6511+00	1.6763+00
P/P01	1.1910-01	3.9085-01	6.9150-01	8.1578-01	8.3832-01	8.8192-01	9.1323-01	9.4565-01	9.5883-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3880 TO = 543.

P	9.5468+00	9.0876+00	6.5055+00	3.4029+00	6.5423-01	6.6038-01	6.5315-01	5.2159-01	3.6470-01
CP	1.6820+00	1.5934+00	1.0953+00	4.9670-01	-2.5861-02	-3.2392-02	-3.3787-02	-5.9168-02	-8.9436-02
P/P01	9.6179-01	9.1553-01	6.5539-01	3.4282-01	6.9540-02	6.6530-02	6.5801-02	5.2547-02	3.6741-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3880 TO = 543.

P	2.5795-01	8.9312+00	8.9979+00	9.0833+00	1.0127+01	9.2433+00	8.5995+00	6.3698+00	5.7237+00
CP	-1.1004-01	1.5630+00	1.5758+00	1.5923+00	1.7935+00	1.6232+00	1.4990+00	1.0689+00	9.4426-01
P/P01	2.5983-02	8.9963-01	9.0635-01	9.1495-01	1.0200+00	9.3106-01	8.6622-01	6.4162-01	5.7654-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3878 TO = 543.

P	6.7473+00	7.3045+00	7.7125+00	7.2261+00	7.4931+00	6.5835+00	6.7891+00	6.4012+00	4.3210+00
CP	1.1423+00	1.2498+00	1.3286+00	1.2347+00	1.2842+00	1.1879+00	1.1504+00	1.0755+00	6.7407-01
P/P01	6.7996-01	7.3612-01	7.7724-01	7.2821-01	7.5512-01	7.0377-01	6.8418-01	6.4509-01	4.3545-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3882 TO = 543.

P	1.9131+00	4.1890-01	4.8246-01	4.5387-01	8.1828+00	7.2659+00	5.8470+00	4.8381+00	4.2082+00
CP	2.0906-01	-7.9029-02	-6.6775-02	-7.2288-02	1.4179+00	1.2411+00	9.6751-01	7.7300-01	6.5156-01
P/P01	1.9262-01	4.2176-02	4.8575-02	4.5696-02	8.2386-01	7.3155-01	5.8869-01	4.8711-01	4.2369-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3889 TO = 543.

P	3.6320+00	1.8288+00	1.5732+00	1.8371+00	2.9241+00	3.3611+00	9.2862+00	2.8542-01	2.1099+00
CP	5.3915-01	1.9215-01	1.4295-01	1.9374-01	4.0291-01	4.8701-01	1.6272+00	-1.0487-01	2.4624-01
P/P01	3.6499-01	1.8379-01	1.5810-01	1.8461-01	2.9385-01	3.3776-01	9.3320-01	2.8683-02	2.1203-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.0 Q-INF = 5.196 P-INF = .8302 RE = .3889 TO = 543.

P	5.4149-01	1.3972-01	9.0782-02	1.5383-01	2.9535-01	1.6332-01	2.3904-01	3.0549-01	3.4691-01
CP	-5.5574-02	-1.3290-01	-1.4232-01	-1.3019-01	-1.0294-01	-1.2836-01	-1.1379-01	-1.0100-01	-9.3025-02
P/P01	5.4424-02	1.4044-02	9.1244-03	1.5461-02	2.9689-02	1.6415-02	2.4025-02	3.0704-02	3.4867-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3894 TO = 543.

P	4.4920-01	4.1890-01	1.5510-01	3.6557-01	3.3542-01	2.4880-01	2.2984-01	3.0318-01	2.3165-01
CP	-7.3444-02	-7.9268-02	-1.2998-01	-8.9520-02	-9.4546-02	-1.1197-01	-1.1561-01	-1.0151-01	-1.1526-01
P/P01	4.5092-02	4.2051-02	1.5570-02	3.6697-02	3.4072-02	2.4975-02	2.3072-02	3.0434-02	2.3254-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3897 TO = 543.

P	1.6562-01	1.5393-01	1.1872-01	1.2461-01	1.0602-01	1.0509-01	1.1146-01	2.7355-01	2.3165-01
CP	-1.2794-01	-1.3019-01	-1.3696-01	-1.3583-01	-1.3540-01	-1.3558-01	-1.3836-01	-1.0718-01	-1.1524-01
P/PO1	1.6634-02	1.5459-02	1.1923-02	1.2515-02	1.0648-02	1.0554-02	1.1194-02	2.7473-02	2.3265-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.2 Q-INF = 5.214 P-INF = .8332 RE = .3903 TO = 543.

P	3.3867-01	2.9594-01	2.2971-01	2.1310-01	2.2463-01	2.7444-01	1.9215-01	1.7311-01	2.0269-01
CP	-9.4843-02	-1.0304-01	-1.1574-01	-1.1893-01	-1.1671-01	-1.0716-01	-1.2294-01	-1.2659-01	-1.2092-01
P/PO1	3.3918-02	2.9638-02	2.3005-02	2.1342-02	2.2497-02	2.7485-02	1.9244-02	1.7337-02	2.0300-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.2 Q-INF = 5.225 P-INF = .8349 RE = .3911 TO = 543.

P	3.6651-01	2.8541-01	2.8010-01	2.7418-01	2.6026-01	2.6679-01	2.6846-01	2.7263-01	2.7418-01
CP	-8.9646-02	-1.0517-01	-1.0618-01	-1.0732-01	-1.0998-01	-1.0873-01	-1.0841-01	-1.0761-01	-1.0732-01
P/PO1	3.6631-02	2.8526-02	2.7995-02	2.7403-02	2.6012-02	2.6665-02	2.6832-02	2.7248-02	2.7403-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0406+00	9.3891+00	-1.2500-03	7.9078+00	1.4016-01	7.2281+00	5.2383+00	6.9063-02
CP	3.9377-02	1.6372+00	-1.6003-01	1.3537+00	-1.3297-01	1.2236+00	8.4279-01	-1.4658-01
P/PO1	1.0401-01	9.3841-01	-1.2493-04	7.9037-01	1.4008-02	7.2243-01	5.2355-01	6.9026-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6070+00	7.2844+00	1.6172-01	6.6563+00	1.6875-01	4.0969+00	4.1953-01
CP	5.3057-01	1.2344+00	-1.2884-01	1.1142+00	-1.2750-01	6.2433-01	-7.9498-02
P/PO1	3.6051-01	7.2805-01	1.6163-02	6.6528-01	1.6866-02	4.0947-01	4.1931-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	76.	301244	2.99	2	7.06	225.15	-5.00	70.01	180.0

VALVE POS 2 PC = 30.3 Q-INF = 5.235 P-INF = .8366 RE = .3919 TO = 543.

P	1.2056+00	4.0102+00	7.1012+00	8.3654+00	9.0763+00	8.9922+00	9.3174+00	9.5940+00	9.7553+00
CP	7.0487-02	6.0619-01	1.1966+00	1.4381+00	1.5739+00	1.5578+00	1.6199+00	1.6728+00	1.7036+00
P/PO1	1.2025-01	4.0000-01	7.0831-01	8.3441-01	9.0533-01	8.9694-01	9.2938-01	9.5697-01	9.7305-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.2 Q-INF = 5.231 P-INF = .8359 RE = .3916 TO = 543.

P	9.8259+00	9.4317+00	6.7563+00	3.5655+00	7.0927-01	7.0321-01	6.7007-01	5.3390-01	3.6914-01
CP	1.7193+00	1.6432+00	1.1317+00	5.2179-01	-2.4211-02	-2.5370-02	-3.1705-02	-5.7734-02	-8.9229-02
P/PO1	9.8126-01	9.4151-01	6.7444-01	3.5592-01	7.0802-02	7.0197-02	6.6889-02	5.3296-02	3.6843-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.2 Q-INF = 5.219 P-INF = .8340 RE = .3906 TO = 543.

P	2.5609-01	8.7435+00	8.7471+00	8.8492+00	9.0136+00	8.9922+00	8.3185+00	6.1496+00	5.2979+00
CP	-1.1073-01	1.5155+00	1.5162+00	1.5357+00	1.5672+00	1.5631+00	1.4341+00	1.0185+00	8.5529-01
P/PO1	2.5623-02	8.7484-01	8.7520-01	8.8541-01	9.0187-01	8.9972-01	8.3232-01	6.1531-01	5.3008-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.2 Q-INF = 5.222 P-INF = .8344 RE = .3908 TO = 543.

P	6.3226+00	6.8822+00	7.2266+00	6.6642+00	7.8223+00	6.4499+00	6.2740+00	5.8350+00	3.8074+00
CP	1.0511+00	1.1582+00	1.2242+00	1.1165+00	1.3383+00	1.0754+00	1.0418+00	9.5770-01	5.6938-01
P/PO1	6.3232-01	6.8829-01	7.2273-01	6.6648-01	7.8230-01	6.4505-01	6.2746-01	5.8356-01	3.8078-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.2 Q-INF = 5.225 P-INF = .8349 RE = .3911 TO = 543.

P	1.6807+00	3.7238-01	4.4784-01	4.3837-01	8.5433+00	6.9050+00	5.1995+00	4.1086+00	3.5820+00
CP	1.6188-01	-8.8526-02	-7.4079-02	-7.5892-02	1.4754+00	1.1618+00	8.3536-01	6.2658-01	5.2578-01
P/PO1	1.6798-01	3.7216-02	4.4761-02	4.3814-02	8.5389-01	6.9014-01	5.1967-01	4.1065-01	3.5801-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3904 TO = 543.

P	3.1231+00	1.4660+00	1.4205+00	1.5238+00	2.3318+00	3.1450+00	9.0521+00	2.9437-01	1.9492+00
CP	4.3898-01	1.2128-01	1.1254-01	1.3235-01	2.8726-01	4.4318-01	1.5757+00	-1.0336-01	2.1390-01
P/PO1	3.1268-01	1.4678-01	1.4221-01	1.5256-01	2.3345-01	3.1488-01	9.0628-01	2.9472-02	1.9515-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.1 Q-INF = 5.211 P-INF = .8327 RE = .3900 TO = 543.

P	4.6921-01	1.1685-01	9.3906-02	1.2623-01	2.6566-01	1.3857-01	1.9491-01	3.3882-01	2.9910-01
CP	-6.9751-02	-1.3737-01	-1.4177-01	-1.3557-01	-1.0805-01	-1.3320-01	-1.2239-01	-9.4774-02	-1.0240-01
P/PO1	4.7021-02	1.1710-02	9.4105-03	1.2650-02	2.7023-02	1.3886-02	1.9532-02	3.3953-02	2.9973-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.2 Q-INF = 5.215 P-INF = .8333 RE = .3903 TO = 543.

P	3.7625-01	3.6099-01	1.4297-01	3.0630-01	2.9786-01	2.3125-01	1.7323-01	3.0410-01	2.5970-01
CP	-8.7647-02	-9.0572-02	-1.3238-01	-1.0106-01	-1.0268-01	-1.1545-01	-1.2658-01	-1.0148-01	-1.1000-01
P/PO1	3.7675-02	3.6148-02	1.4316-02	3.0671-02	2.9826-02	2.3156-02	1.7346-02	3.0451-02	2.6005-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

PRELIMINARY UNCORRECTED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V [illegible] FACILITY
40 - [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 Q-INF = 5.210 F-INF = .8326 RE = .3900 TO = 543.

P	1.8836-01	1.7683-01	1.3434-01	1.3166-01	1.2231-01	1.1857-01	1.3055-01	2.8003-01	1.8505-01
CP	-1.2364-01	-1.2585-01	-1.3401-01	-1.3452-01	-1.3632-01	-1.3704-01	-1.3474-01	-1.0605-01	-1.2428-01
P/PO1	1.8879-02	1.7723-02	1.3464-02	1.3196-02	1.2259-02	1.1884-02	1.3085-02	2.8067-02	1.8547-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.1 Q-INF = 5.204 F-INF = .8315 RE = .3895 TO = 543.

P	3.2939-01	3.5092-01	2.5105-01	2.3979-01	2.5284-01	2.7309-01	1.9169-01	2.3838-01	3.0132-01
CP	-9.6494-02	-9.2358-02	-1.1155-01	-1.1371-01	-1.1121-01	-1.0731-01	-1.2296-01	-1.1399-01	-1.0189-01
P/PO1	3.3055-02	3.5215-02	2.5193-02	2.4064-02	2.5373-02	2.7406-02	1.9236-02	2.3921-02	3.0239-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.0 Q-INF = 5.191 F-INF = .8294 RE = .3885 TO = 543.

P	3.7115-01	2.9182-01	2.6330-01	2.6875-01	2.9291-01	2.9424-01	2.7627-01	2.7540-01	2.7418-01
CP	-8.8292-02	-1.0357-01	-1.0907-01	-1.0802-01	-1.0336-01	-1.0311-01	-1.0657-01	-1.0674-01	-1.0697-01
P/PO1	3.7338-02	2.9358-02	2.6489-02	2.7037-02	2.9468-02	2.9601-02	2.7794-02	2.7706-02	2.7583-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0992+00	8.5641+00	9.2344-02	7.5797+00	1.1031-01	6.7383+00	4.5609+00	5.8594-02
CP	5.1971-02	1.4901+00	-1.4200-01	1.3004+00	-1.3854-01	1.1383+00	7.1887-01	-1.4851-01
P/PO1	1.1058-01	8.6157-01	9.2901-03	7.6254-01	1.1098-02	6.7789-01	4.5884-01	5.8947-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.5414+00	6.4148+00	1.5234-01	6.1945+00	1.5703-01	3.9469+00	3.7969-01
CP	5.2246-01	1.0760+00	-1.3044-01	1.0336+00	-1.2954-01	6.0057-01	-8.6647-02
P/PO1	3.5628-01	6.4535-01	1.5326-02	6.2319-01	1.5798-02	3.9707-01	3.8198-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	77.	301244	2.99	2	10.23	118.75	8.96	70.04	180.0

VALVE POS 2 PC = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3879 TO = 543.

P	1.106C+C0	3.5913+00	6.6622+00	7.8347+0C	8.2525+00	8.5999+0C	9.0365+00	9.3895+00	9.5517+C0
CP	5.36C8-C2	5.3315-01	1.1257+00	1.3519+0C	1.4403+00	1.4996+0C	1.5838+00	1.6519+00	1.6832+00
P/P01	1.1144-01	3.6186-C1	6.7129-C1	7.8943-01	8.3556-01	8.6652-01	9.1052-01	9.4609-01	9.6244-01
S/R	.0000+C0	6.4000-02	1.1800-01	2.0800-01	2.8900-C1	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3877 TO = 543.

P	9.6569+C0	9.2753+C0	6.6309+C0	3.4780+0C	7.0676-01	7.1088-C1	7.1980-01	5.4398-01	3.7804-01
CP	1.7044+C0	1.6307+00	1.12C2+C0	5.1160-01	-2.3358-02	-2.2564-C2	-2.C841-02	-5.4783-02	-8.6816-02
P/P01	9.7349-C1	9.35C2-01	6.6844-C1	3.5061-01	7.1247-02	7.1662-02	7.2562-02	5.4837-C2	3.8109-02
S/R	1.589C+C0	1.742C+00	1.7970+00	1.854C+00	1.918C+00	2.034C+0C	2.0850+00	2.354C+00	2.6260+C0

VALVE POS 4 PC = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3878 TO = 543.

P	2.6862-C1	7.023C+0C	7.1952+00	7.3353+0C	8.0260+CC	7.5013+0C	6.8827+00	4.7508+00	3.2501+00
CP	-1.0796-C1	1.1955+0C	1.2288+C0	1.2558+0C	1.3891+00	1.2878+CC	1.1684+00	7.5703-01	4.6742-01
P/P01	2.707C-C2	7.0775-01	7.2511-01	7.3922-01	8.0883-01	7.5596-C1	6.9361-01	4.7877-01	3.2753-01
S/R	2.88CC+C0	4.970C-01	9.3600-C1	1.1550+0C	1.3720+C0	1.589C+CC	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3871 TO = 543.

P	3.9818+CC	4.2258+00	4.9526+C0	4.4768+0C	4.5949+CC	4.5619+0C	4.4494+00	3.8967+00	2.2883+00
CP	6.1007-C1	6.5724-01	7.9778-01	7.0616-01	7.2662-01	7.2223-01	7.0047-C1	5.9361-01	2.8263-C1
P/P01	4.0203-C1	4.2666-01	5.0009-01	4.5271-01	4.6393-C1	4.6060-01	4.4923-01	3.9343-C1	2.3104-C1
S/R	2.08CC-01	2.89CC-C1	4.9700-C1	1.0460+0C	1.155C+00	1.372C+0C	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 29.9 Q-INF = 5.174 P-INF = .8267 RE = .3872 TO = 543.

P	9.8083-C1	2.3868-01	3.3504-01	3.8966-01	5.3057+00	4.3459+0C	3.0902+00	2.4190+00	2.0748+00
CP	2.9785-C2	-1.1366-C1	-9.5035-02	-8.4478-02	8.6571-C1	6.8020-01	4.3749-01	3.0777-C1	2.4122-C1
P/P01	9.8999-C2	2.4091-02	3.3817-02	3.9330-02	5.3553-01	4.3665-C1	3.1191-01	2.4416-01	2.0941-01
S/R	1.854C+C0	1.918C+00	2.0850+C0	2.354C+00	4.970C-01	9.360C-01	1.1550+C0	1.3720+00	1.5890+00

VALVE POS 7 PC = 29.8 Q-INF = 5.161 P-INF = .8247 RE = .3863 TO = 543.

P	1.8058+CC	6.2946-C1	8.6297-01	6.0220-01	7.5940-01	1.3911+0C	6.0243+00	2.6152-01	1.1253+00
CP	1.9013-C1	-3.7823-C2	7.4242-03	-4.3105-02	-1.2646-02	1.0975-C1	1.0075+00	-1.0912-01	5.8254-02
P/P01	1.8273-C1	6.3694-C2	8.7322-02	6.0936-02	7.6842-02	1.4076-01	6.0959-01	2.6462-02	1.1387-01
S/R	1.742C+C0	1.797C+00	6.4000-02	1.1800-01	2.0800-01	2.89CC-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3874 TO = 543.

P	2.3893-01	1.0141-01	7.1854-02	9.7354-02	2.3597-C1	1.1984-01	1.3147-01	2.0227-01	2.0541-01
CP	-1.1363-01	-1.4020-01	-1.4591-01	-1.4098-01	-1.1343-01	-1.3664-01	-1.3439-01	-1.2071-01	-1.2010-01
P/P01	2.4108-02	1.0232-02	7.2502-03	9.8233-03	2.4214-02	1.2092-02	1.3266-02	2.0410-02	2.0726-02
S/R	1.797C+C0	1.854C+00	1.9180+00	2.085C+0C	2.354C+00	4.970C-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3875 TO = 543.

P	2.6119-01	2.4876-01	1.5290-01	1.5299-01	1.2030-01	1.3004-01	1.2597-01	2.1801-01	2.5789-01
CP	-1.0934-01	-1.1174-01	-1.3026-01	-1.3024-01	-1.3656-01	-1.3467-01	-1.3546-01	-1.1768-01	-1.0998-01
P/P01	2.6347-02	2.5092-02	1.5423-02	1.5432-02	1.2135-02	1.3118-02	1.2707-02	2.1991-02	2.6014-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.180C-01	2.0800-01	2.89CC-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.0 Q-INF = 5.190 P-INF = .8293 RE = .3885 TO = 543.

P	2.4635-01	2.3639-01	2.1655-01	2.3074-01	2.4442-01	2.5375-01	2.6570-01	2.7957-01	1.0348-01
CP	-1.1233-01	-1.1425-01	-1.1807-01	-1.1533-01	-1.1270-01	-1.1090-01	-1.0860-01	-1.0593-01	-1.3985-01
P/PO1	2.4787-02	2.3785-02	2.1788-02	2.3217-02	2.4594-02	2.5532-02	2.6734-02	2.8130-02	1.0412-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3882 TO = 543.

P	2.1063-01	2.6433-01	2.5967-01	2.6468-01	2.7065-01	2.6454-01	1.8525-01	1.6478-01	1.7781-01
CP	-1.1918-01	-1.0882-01	-1.0972-01	-1.0876-01	-1.0760-01	-1.0878-01	-1.2407-01	-1.2802-01	-1.2551-01
P/PO1	2.1209-02	2.6618-02	2.6148-02	2.6652-02	2.7254-02	2.6635-02	1.8655-02	1.6593-02	1.7905-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7570+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 Q-INF = 5.201 P-INF = .8311 RE = .3893 TO = 543.

P	1.5560-01	2.8449-01	2.7511-01	2.7101-01	2.8203-01	2.7804-01	2.7857-01	2.8651-01	2.8775-01
CP	-1.2988-01	-1.0510-01	-1.0690-01	-1.0769-01	-1.0557-01	-1.0634-01	-1.0624-01	-1.0471-01	-1.0447-01
P/PO1	1.5623-02	2.8562-02	2.7621-02	2.7209-02	2.8315-02	2.7915-02	2.7968-02	2.8766-02	2.8890-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2914+00	5.2102+00	-1.2500-03	4.9477+00	5.5469-02	5.3133+00	3.1922+00	3.3906-02
CP	8.6492-02	8.4191-01	-1.6003-01	7.9144-01	-1.4913-01	8.6174-01	4.5394-01	-1.5327-01
P/PO1	1.2966-01	5.2310-01	-1.2550-04	4.9674-01	5.5690-03	5.3345-01	3.2049-01	3.4042-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6164+00	3.9328+00	1.1484-01	3.0164+00	1.4063-01	2.7445+00	3.1172-01
CP	5.3550-01	5.9633-01	-1.3771-01	4.2014-01	-1.3276-01	3.6787-01	-9.9863-02
P/PO1	3.6308-01	3.9485-01	1.1530-02	3.0284-01	1.4119-02	2.7555-01	3.1296-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	78.	301244	2.99	2	7.07	134.85	5.01	70.00	180.0

VALVE POS 2 PC = 30.1 Q-INF = 5.203 P-INF = .8314 RE = .3894 TO = 543.

P	1.1264+00	3.7823+00	6.8817+00	8.1313+00	9.5152+00	8.8039+00	9.2238+00	9.5468+00	9.7553+00
CP	5.6704-02	5.6716-01	1.1629+00	1.4030+00	1.6690+00	1.5323+00	1.6130+00	1.6751+00	1.7152+00
P/P01	1.1306-01	3.7962-01	6.9070-01	8.1612-01	9.5503-01	8.8363-01	9.2577-01	9.5819-01	9.7912-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3894 TO = 543.

P	9.8928+00	9.5412+00	6.8503+00	3.6406+00	7.3183-01	7.2360-01	7.2239-01	5.4621-01	3.8026-01
CP	1.7419+00	1.6743+00	1.1570+00	5.4004-01	-1.9115-02	-2.0084-02	-2.0928-02	-5.4795-02	-8.6696-02
P/P01	9.9308-01	9.5778-01	6.8766-01	3.6546-01	7.3463-02	7.2644-02	7.2516-02	5.4831-02	3.8172-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3874 TO = 543.

P	2.6351-01	7.4922+00	7.6968+00	7.8191+00	8.0104+00	8.0500+00	7.4133+00	5.2995+00	3.7699+00
CP	-1.0888-01	1.2877+00	1.3272+00	1.3508+00	1.3878+00	1.3955+00	1.2724+00	8.6403-01	5.6852-01
P/P01	2.6585-02	7.5586-01	7.7651-01	7.8984-01	8.0814-01	8.1220-01	7.4791-01	5.3464-01	3.8033-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3880 TO = 543.

P	4.5734+00	4.8479+00	5.5093+00	5.0793+00	4.9940+00	5.1083+00	5.0135+00	4.4453+00	2.7053+00
CP	7.2251-01	7.7548-01	9.0306-01	8.2012-01	8.0365-01	8.2571-01	8.0743-01	6.9780-01	3.6212-01
P/P01	4.6074-01	4.8840-01	5.5503-01	5.1171-01	5.0311-01	5.1463-01	5.0509-01	4.4784-01	2.7254-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3877 TO = 543.

P	1.1852+00	2.8403-01	3.7748-01	4.0848-01	6.3330+00	5.3942+00	3.3338+00	2.5687+00	2.3984+00
CP	6.9029-02	-1.0496-01	-8.6912-02	-8.0927-02	1.0629+00	8.8168-01	4.8387-01	3.3615-01	3.0328-01
P/P01	1.1949-01	2.8637-02	3.8059-02	4.1184-02	6.3852-01	5.4386-01	3.3613-01	2.5898-01	2.4182-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3873 TO = 543.

P	2.1149+00	8.3421-01	9.8262-01	7.5689-01	1.0677+00	2.0406+00	7.0388+00	2.9325-01	1.3463+00
CP	2.4892-01	1.4207-03	3.0101-02	-1.3522-02	4.6537-02	2.3456-01	1.2005+00	-1.0312-01	1.0039-01
P/P01	2.1343-01	8.4187-02	9.9164-02	7.6384-02	1.0775-01	2.0593-01	7.1034-01	2.9595-02	1.3587-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3872 TO = 543.

P	2.8764-01	1.0364-01	7.6816-02	7.2320-02	2.5086-01	1.4127-01	1.2001-01	2.3884-01	2.5789-01
CP	-1.0419-01	-1.3976-01	-1.4494-01	-1.4581-01	-1.1130-01	-1.3248-01	-1.3659-01	-1.1362-01	-1.0994-01
P/P01	2.9037-02	1.0463-02	7.7545-03	7.3007-03	2.5324-02	1.4261-02	1.2115-02	2.4111-02	2.6034-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3879 TO = 543.

P	2.7650-01	2.6433-01	1.4683-01	1.5966-01	1.6858-01	1.6720-01	9.6198-02	1.6663-01	2.1129-01
CP	-1.0644-01	-1.0879-01	-1.3146-01	-1.2859-01	-1.2726-01	-1.2753-01	-1.4123-01	-1.2764-01	-1.1903-01
P/P01	2.7861-02	2.6634-02	1.4795-02	1.6088-02	1.6987-02	1.6847-02	9.6929-03	1.6790-02	2.1290-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von K[illegible]
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3904 TO = 543.

P	1.9207-01	2.2493-01	2.2517-01	2.3753-01	2.5333-01	2.3890-01	2.7489-01	2.8327-01	9.8719-02
CP	-1.2297-01	-1.1667-01	-1.1662-01	-1.1425-01	-1.1122-01	-1.1399-01	-1.0709-01	-1.0548-01	-1.4087-01
P/PO1	1.9230-02	2.2520-02	2.2544-02	2.3781-02	2.5363-02	2.3918-02	2.7522-02	2.8361-02	9.8836-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3906 TO = 543.

P	2.0227-01	2.7716-01	2.6694-01	2.6151-01	2.7015-01	2.6814-01	1.9858-01	1.6941-01	2.2215-01
CP	-1.2103-01	-1.0668-01	-1.0864-01	-1.0968-01	-1.0802-01	-1.0841-01	-1.2174-01	-1.2733-01	-1.1722-01
P/PO1	2.0242-02	2.7736-02	2.6713-02	2.6170-02	2.7035-02	2.6834-02	1.9873-02	1.6953-02	2.2231-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3904 TO = 543.

P	3.7254-01	2.7853-01	2.4378-01	2.4567-01	2.7510-01	2.8974-01	2.8041-01	2.8327-01	2.8142-01
CP	-8.8370-02	-1.0639-01	-1.1305-01	-1.1269-01	-1.0705-01	-1.0424-01	-1.0603-01	-1.0548-01	-1.0584-01
P/PO1	3.7298-02	2.7886-02	2.4407-02	2.4597-02	2.7543-02	2.9008-02	2.8074-02	2.8361-02	2.8175-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.2375+00	6.2508+00	-1.2500-03	5.9227+00	4.8438-02	6.0234+00	3.6422+00	2.3594-02
CP	7.7463-02	1.0386+00	-1.6003-01	9.7571-01	-1.5051-01	9.9503-01	5.3849-01	-1.5527-01
P/PO1	1.2390-01	6.2582-01	-1.2515-04	5.9297-01	4.8495-03	6.0306-01	3.6465-01	2.3622-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6234+00	4.2328+00	1.2656-01	4.5328+00	1.5234-01	3.0773+00	2.4375-01
CP	5.3490-01	6.5173-01	-1.3553-01	7.0925-01	-1.3059-01	4.3020-01	-1.1306-01
P/PO1	3.6277-01	4.2378-01	1.2671-02	4.5382-01	1.5252-02	3.0810-01	2.4404-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	79.	301244	2.99	2	11.17	153.22	5.01	65.00	180.0

VALVE POS 2 PC = 30.2 Q-INF = 5.222 P-INF = .8344 RE = .3908 TO = 543.

P	1.5121+00	4.6447+00	7.4304+00	8.5683+00	8.9196+00	9.1805+00	9.5047+00	9.7670+00	9.8649+00
CP	1.298C-01	7.2972-01	1.2632+00	1.4811+00	1.5484+00	1.5984+00	1.6605+00	1.7107+00	1.7295+00
P/P01	1.5123-01	4.6451-01	7.4311-01	8.5691-01	8.9204-01	9.1814-01	9.5056-01	9.7679-01	9.8659-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.2 Q-INF = 5.226 P-INF = .8351 RE = .3912 TO = 543.

P	9.8928+00	9.1502+00	5.9568+00	2.7899+00	4.9622-01	4.7234-01	4.6589-01	3.8056-01	2.7130-01
CP	1.7331+00	1.5910+00	9.7996-01	3.7401-01	-6.4849-02	-6.9418-02	-7.0652-02	-8.6979-02	-1.0788-01
P/P01	9.8846-01	9.1426-01	5.9518-01	2.7875-01	4.9580-02	4.7195-02	4.6550-02	3.8024-02	2.7107-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.2 Q-INF = 5.230 P-INF = .8358 RE = .3915 TO = 543.

P	2.1851-01	7.9302+00	7.9790+00	8.0844+00	8.2612+00	8.0663+00	7.1480+00	4.4578+00	4.2646+00
CP	-1.1802-01	1.3564+00	1.3657+00	1.3858+00	1.4196+00	1.3824+00	1.2068+00	6.9248-01	6.5554-01
P/P01	2.1816-02	7.9174-01	7.9662-01	8.0714-01	8.2479-01	8.0533-01	7.1365-01	4.4506-01	4.2577-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.2 Q-INF = 5.223 P-INF = .8346 RE = .3909 TO = 543.

P	4.9677+00	5.2483+00	5.7623+00	5.4046+00	5.3493+00	5.2926+00	5.1225+00	4.3830+00	2.3084+00
CP	7.9130-01	8.4503-01	9.4342-01	8.7494-01	8.6436-01	8.5349-01	8.2094-01	6.7934-01	2.8215-01
P/P01	4.9667-01	5.2472-01	5.7610-01	5.4034-01	5.3482-01	5.2914-01	5.1214-01	4.3820-01	2.3079-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3908 TO = 543.

P	8.7355-01	1.8920-00	2.2108-01	2.7916-01	6.6309+00	5.6102+00	3.6031+00	2.7869+00	2.5675+00
CP	7.5290-03	-1.2355-01	-1.1745-01	-1.0632-01	1.1103+00	9.1481-01	5.3035-01	3.7402-01	3.3200-01
P/P01	8.7377-02	1.8925-02	2.2114-02	2.7922-02	6.6325-01	5.6116-01	3.6040-01	2.7876-01	2.5682-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.2 Q-INF = 5.229 P-INF = .8355 RE = .3914 TO = 543.

P	2.2120+00	7.0925-01	1.2932+00	9.6740-01	1.0802+00	2.0713+00	7.4758+00	3.3131-01	1.4644+00
CP	2.6324-01	-2.4151-02	8.7523-02	2.4262-02	4.6790-02	2.3633-01	1.2699+00	-9.6432-02	1.2026-01
P/P01	2.2091-01	7.0833-02	1.2915-01	9.6115-02	1.0788-01	2.0686-01	7.4660-01	3.3088-02	1.4625-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.2 Q-INF = 5.222 P-INF = .8345 RE = .3909 TO = 543.

P	3.3579-01	8.7767-02	7.8837-02	7.6400-02	2.0187-01	1.3092-01	1.4940-01	1.8885-01	2.4884-01
CP	-9.5496-02	-1.4308-01	-1.4470-01	-1.4516-01	-1.2114-01	-1.3472-01	-1.3119-01	-1.2363-01	-1.1214-01
P/P01	3.3577-02	8.7261-03	7.8833-03	7.6395-03	2.0186-02	1.3091-02	1.4939-02	1.8884-02	2.4883-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3904 TO = 543.

P	2.7418-01	2.6342-01	1.4205-01	2.3165-01	2.6075-01	2.6275-01	1.4904-01	2.1245-01	2.3165-01
CP	-1.0723-01	-1.0929-01	-1.3256-01	-1.1538-01	-1.0980-01	-1.0942-01	-1.3122-01	-1.1906-01	-1.1538-01
P/P01	2.7451-02	2.6373-02	1.4222-02	2.3192-02	2.6106-02	2.6306-02	1.4922-02	2.1271-02	2.3192-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS DC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10	PC =	30.1	Q-INF = 5.200	P-INF = .8309		RE = .3892	TO = 543.		
P	2.5887-01	2.1715-01	1.6870-01	1.7283-01	1.7100-01	1.7501-01	1.9399-01	2.3514-01	1.3095-01
CP	-1.1001-01	-1.1803-01	-1.2735-01	-1.2655-01	-1.2691-01	-1.2614-01	-1.2249-01	-1.1457-01	-1.3461-01
P/PO1	2.5959-02	2.1808-02	1.6943-02	1.7358-02	1.7173-02	1.7577-02	1.9482-02	2.3615-02	1.3152-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01
VALVE POS 11	PC =	30.0	Q-INF = 5.196	P-INF = .8302		RE = .3889	TO = 543.		
P	2.0552-01	3.0739-01	2.6694-01	2.2622-01	2.1771-01	3.9232-01	2.8547-01	2.7772-01	2.9544-01
CP	-1.2024-01	-1.0063-01	-1.0842-01	-1.1625-01	-1.1789-01	-8.4284-02	-1.0485-01	-1.0634-01	-1.0293-01
P/PO1	2.0657-02	3.0896-02	2.6829-02	2.2737-02	2.1881-02	3.9431-02	2.8692-02	2.7913-02	2.9695-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01
VALVE POS 12	PC =	30.0	Q-INF = 5.190	P-INF = .8293		RE = .3885	TO = 543.		
P	4.2140-01	2.5150-01	2.4015-01	2.4341-01	2.5531-01	2.6095-01	2.3996-01	2.3884-01	2.4160-01
CP	-7.8558-02	-1.1133-01	-1.1352-01	-1.1289-01	-1.1060-01	-1.0951-01	-1.1356-01	-1.1377-01	-1.1324-01
P/PO1	4.2401-02	2.5306-02	2.4164-02	2.4492-02	2.5689-02	2.6256-02	2.4144-02	2.4032-02	2.4310-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00
CEC	1.4578+00	6.5602+00	-1.2500-03	6.0188+00	6.5469-02	6.0469+00	4.1484+00	3.8125-02	
CP	1.2110-01	1.1042+00	-1.6003-01	9.9990-01	-1.4718-01	1.0053+00	6.3953-01	-1.5245-01	
P/PO1	1.4668-01	6.6007-01	-1.2577-04	6.0560-01	6.5874-03	6.0843-01	4.1741-01	3.8361-03	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	
CEC	3.6141+00	4.6219+00	1.2656-01	4.7484+00	1.3028-01	3.4336+00	2.4141-01		
CP	5.3657-01	7.3075-01	-1.3541-01	7.5514-01	-1.3315-01	5.0179-01	-1.1328-01		
P/PO1	3.6364-01	4.6505-01	1.2735-02	4.7778-01	1.3914-02	3.4548-01	2.4290-02		
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01		

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	8C.	3C1244	2.99	2	13.41	137.57	9.00	65.02	180.0

VALVE POS 2 PC = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3891 TO = 543.

P	1.4585+00	4.4106+00	7.1325+00	8.2873+00	9.3428+00	8.9294+00	9.2706+00	9.5468+00	9.6770+00
CP	1.2074-01	6.8858-01	1.2121+00	1.4343+00	1.6373+00	1.5578+00	1.6234+00	1.6765+00	1.7016+00
P/PO1	1.4650-01	4.4303-01	7.1643-01	8.3243-01	9.3845-01	8.9692-01	9.3119-01	9.5894-01	9.7202-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3880 TO = 543.

P	9.6412+00	8.9156+00	5.8192+00	2.6960+00	4.9746-01	4.6115-01	4.5799-01	3.7832-01	2.6784-01
CP	1.7002+00	1.5602+00	9.6286-01	3.6033-01	-6.3822-02	-7.0828-02	-7.1437-02	-8.6607-02	-1.0812-01
P/PO1	9.7130-01	8.9820-01	5.8625-01	2.7161-01	5.0117-02	4.6458-02	4.6140-02	3.8114-02	2.6984-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3883 TO = 543.

P	2.1666-01	7.3045+00	7.4304+00	7.5070+00	7.6812+00	7.5013+00	6.6018+00	4.0027+00	3.6446+00
CP	-1.1804-01	1.2481+00	1.2723+00	1.2871+00	1.3207+00	1.2860+00	1.1126+00	6.1168-01	5.4267-01
P/PO1	2.1807-02	7.3520-01	7.4787-01	7.5558-01	7.7311-01	7.5501-01	6.6447-01	4.0287-01	3.6683-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.0 Q-INF = 5.190 P-INF = .8293 RE = .3885 TO = 543.

P	4.2808+00	4.5461+00	5.0981+00	4.7791+00	4.8194+00	4.6890+00	4.5199+00	3.8530+00	1.9240+00
CP	6.6503-01	7.1615-01	8.2252-01	7.6104-01	7.6881-01	7.4368-01	7.1110-01	5.8261-01	2.1093-01
P/PO1	4.3073-01	4.5742-01	5.1297-01	4.8086-01	4.8492-01	4.7180-01	4.5478-01	3.8769-01	1.9359-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3884 TO = 543.

P	6.6157-01	1.4980-01	1.9158-01	2.6513-01	5.9882+00	4.7525+00	2.9876+00	2.3567+00	2.1853+00
CP	-3.2303-02	-1.3092-01	-1.2287-01	-1.0870-01	9.9419-01	7.5606-01	4.1595-01	2.9437-01	2.6133-01
P/PO1	6.6577-02	1.5075-02	1.9279-02	2.6681-02	6.0262-01	4.7827-01	3.0066-01	2.3717-01	2.1991-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3879 TO = 543.

P	1.9004+00	5.6629-01	1.1252+00	7.8696-01	8.2456-01	1.4473+00	6.3677+00	2.3884-01	1.2082+00
CP	2.0688-01	-5.0526-02	5.7310-02	-7.9475-03	-6.9373-04	1.1947-01	1.0689+00	-1.1371-01	7.3327-02
P/PO1	1.9148-01	5.7060-02	1.1337-01	7.9295-02	8.3083-02	1.4583-01	6.4161-01	2.4065-02	1.2174-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3880 TO = 543.

P	2.7418-01	9.9733-02	8.2513-02	8.0294-02	2.1078-01	1.1602-01	1.4848-01	1.6110-01	1.9636-01
CP	-1.0691-01	-1.4056-01	-1.4388-01	-1.4431-01	-1.1914-01	-1.3741-01	-1.3115-01	-1.2872-01	-1.2192-01
P/PO1	2.7618-02	1.0046-02	8.3114-03	8.0879-03	2.1232-02	1.1686-02	1.4956-02	1.6227-02	1.9779-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3878 TO = 543.

P	2.3568-01	2.4784-01	1.7311-01	2.5925-01	2.7955-01	2.4880-01	1.4480-01	2.4486-01	2.3436-01
CP	-1.1431-01	-1.1197-01	-1.2639-01	-1.0976-01	-1.0584-01	-1.1178-01	-1.3185-01	-1.1254-01	-1.1457-01
P/PO1	2.3751-02	2.4976-02	1.7445-02	2.6126-02	2.8172-02	2.5073-02	1.4593-02	2.4676-02	2.3618-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3866 TO = 543.

P	2.765C-01	2.4876-01	1.7017-01	1.6605-01	1.6496-01	1.6826-01	2.0410-01	2.3143-01	1.1850-01
CP	-1.0627-01	-1.1164-01	-1.2685-01	-1.2765-01	-1.2786-01	-1.2722-01	-1.2028-01	-1.1499-01	-1.3685-01
P/PO1	2.7952-02	2.5147-02	1.7203-02	1.6786-02	1.6677-02	1.701C-02	2.0633-02	2.3396-02	1.1979-02
S/R	1.372C+C0	1.5890+00	1.7420+00	1.7970+0C	1.854C+00	1.9180+0C	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3876 TO = 543.

P	1.5674-01	2.2814-01	2.3334-01	2.4432-01	2.2265-01	3.7837-01	2.9466-01	3.0919-01	3.1490-01
CP	-1.2953-C1	-1.1574-01	-1.1473-01	-1.1262-01	-1.1680-01	-8.6729-02	-1.0289-01	-1.0009-01	-9.8986-02
P/PO1	1.58C6-02	2.3006-02	2.3530-02	2.4637-02	2.2452-02	3.8155-02	2.9713-02	3.1179-02	3.1754-02
S/R	9.36CC-C1	1.155C+00	1.5890+00	1.742C+0C	1.757C+00	6.400C-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 3C.C Q-INF = 5.192 P-INF = .8296 RE = .3886 TO = 543.

P	3.3264-01	2.3C43-01	2.2744-01	2.2848-01	2.2612-C1	2.236C-01	2.2249-01	2.3791-01	2.4341-01
CP	-9.572C-02	-1.1541-01	-1.1598-01	-1.1578-01	-1.1624-01	-1.1672-01	-1.1694-01	-1.1397-01	-1.1291-01
P/PO1	3.3459-02	2.3178-02	2.2878-02	2.2982-02	2.2745-02	2.2492-02	2.2380-02	2.3931-02	2.4484-02
S/R	4.97CC-01	1.5896+00	1.7420+00	1.7970+0C	1.854C+C0	1.918C+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5984+00	5.5336+00	-1.2500-03	5.0156+00	6.C781-02	5.1586+C0	3.4383+00	3.0625-02
CP	1.481C-01	9.0609-01	-1.6003-01	8.0632-01	-1.4809-01	8.3386-01	5.0249-01	-1.5389-01
P/PO1	1.6078-01	5.5661-01	-1.2573-04	5.0451-01	6.1138-03	5.1889-C1	3.4585-01	3.0805-03
S/R	3.84CC-C1	4.970C-C1	4.9700-01	7.17CC-01	7.170C-01	9.360C-01	9.3600-01	9.3600-01

CEC	3.6141+00	4.4039+00	1.1250-01	3.8039+00	1.3359-01	2.7867+0C	2.6953-01
CP	5.3635-01	6.8849-01	-1.3812-01	5.7292-01	-1.3406-01	3.7698-01	-1.0788-01
P/PO1	3.6353-01	4.4298-01	1.1316-02	3.8262-01	1.3438-02	2.8031-01	2.7111-02
S/R	9.36CC-C1	1.155C+00	1.1550+0C	1.3720+00	1.3720+0C	1.589C+0C	1.5890-01

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

PRELIMINARY UNCHECKED DATA

CONFIDENTIAL

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	81.	301244	1.99	2	-3.98	179.98	-.00	78.98	180.0

VALVE POS 2 PC = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4345 TO = 536.

P	1.3537+00	4.7863+00	9.2331+00	1.1034+01	1.1537+01	1.2147+01	1.3016+01	1.3432+01	1.3983+01
CP	-1.7291-01	3.0335-01	9.2032-01	1.1702+00	1.2400+00	1.3245+00	1.4452+00	1.5028+00	1.5794+00
P/P01	9.3153-02	3.2936-01	6.3534-01	7.5928-01	7.9391-01	8.3582-01	8.9567-01	9.2425-01	9.6220-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4322 TO = 536.

P	1.4454+01	1.4343+01	1.2023+01	7.8035+00	2.2944+00	2.4652+00	2.6222+00	2.2944+00	1.7281+00
CP	1.6579+00	1.6424+00	1.3185+00	7.2911-01	-4.0308-02	-1.6447-02	5.4755-03	-4.0308-02	-1.1939-01
P/P01	1.0012+00	9.9348-01	8.3281-01	5.4051-01	1.5892-01	1.7075-01	1.8163-01	1.5892-01	1.1970-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4334 TO = 536.

P	1.3129+00	1.1152+01	1.1584+01	1.1893+01	1.2776+01	1.2790+01	1.2626+01	1.0475+01	6.0129+00
CP	-1.7790-01	1.1924+00	1.2526+00	1.2955+00	1.4185+00	1.4205+00	1.3977+00	1.0981+00	4.7666-01
P/P01	9.0681-02	7.7029-01	8.0014-01	8.2142-01	8.8243-01	8.8340-01	8.7209-01	7.2349-01	4.1531-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.0 Q-INF = 7.182 P-INF =2.5909 RE = .4330 TO = 536.

P	7.7381+00	8.5402+00	9.0606+00	8.4902+00	8.5433+00	8.7097+00	8.8024+00	8.6661+00	6.7175+00
CP	7.1668-01	8.2835-01	9.0082-01	8.2140-01	8.2879-01	8.5196-01	8.6486-01	8.4588-01	5.7458-01
P/P01	5.3435-01	5.8973-01	6.2567-01	5.8628-01	5.8595-01	6.0144-01	6.0784-01	5.9843-01	4.6387-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4324 TO = 536.

P	3.7910+00	1.2266+00	1.9194+00	1.9198+00	1.1130+01	9.8710+00	6.9295+00	4.9379+00	4.8846+00
CP	1.6785-01	-1.8971-01	-9.3115-02	-9.3061-02	1.1911+00	1.0156+00	6.0545-01	3.2775-01	3.2032-01
P/P01	2.6215-01	8.4824-02	1.3273-01	1.3276-01	7.6965-01	6.8259-01	4.7919-01	3.4146-01	3.3777-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4344 TO = 536.

P	4.5734+00	2.8336+00	1.4867+00	1.6190+00	2.8804+00	3.9456+00	1.2330+01	8.3116-01	3.0873+00
CP	2.7395-01	3.2505-02	-1.5443-01	-1.3605-01	3.8999-02	1.8682-01	1.3503+00	-2.4539-01	6.7709-02
P/P01	3.1478-01	1.9503-01	1.0232-01	1.1143-01	1.9825-01	2.7157-01	8.4861-01	5.7207-02	2.1249-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.1 Q-INF = 7.231 P-INF =2.6085 RE = .4365 TO = 536.

P	8.3779-01	3.1564-01	3.6999-01	1.5113+00	1.3058+00	6.3912-01	5.3696-01	5.2942-01	5.8374-01
CP	-2.4488-01	-3.1709-01	-3.0957-01	-1.5174-01	-1.8016-01	-2.7236-01	-2.8648-01	-2.8753-01	-2.8001-01
P/P01	5.7461-02	2.1649-02	2.5376-02	1.0365-01	8.9558-02	4.3835-02	3.6828-02	3.6312-02	4.0037-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4337 TO = 536.

P	5.7707-01	5.3416-01	4.1085-01	3.0992-01	3.3200-01	2.8389-01	6.1931-01	6.2345-01	7.2340-01
CP	-2.8043-01	-2.8640-01	-3.0356-01	-3.1761-01	-3.1454-01	-3.2123-01	-2.7455-01	-2.7398-01	-2.6007-01
P/P01	3.9830-02	3.6868-02	2.8357-02	2.1391-02	2.2915-02	1.9595-02	4.2746-02	4.3031-02	4.9930-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

CONFIDENTIAL

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GD WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4350 TO = 536.

P	8.0203-01	8.2434-01	7.7730-01	7.7945-01	8.0701-01	6.9956-01	8.6221-01	8.2114-01	6.3800-01
CP	-2.4944-01	-2.4634-01	-2.5287-01	-2.5257-01	-2.4874-01	-2.6366-01	-2.4108-01	-2.4678-01	-2.7220-01
P/PO1	5.5202-02	5.6737-02	5.3500-02	5.3647-02	5.5545-02	4.8149-02	5.9344-02	5.6518-02	4.3912-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 Q-INF = 7.214 P-INF =2.6024 RE = .4355 TO = 536.

P	6.5156-01	7.5691-01	8.4261-01	8.9223-01	8.9473-01	3.0774-01	2.8363-01	5.0592-01	6.8824-01
CP	-2.7042-01	-2.5582-01	-2.4394-01	-2.3706-01	-2.3672-01	-3.1808-01	-3.2143-01	-2.9061-01	-2.6534-01
P/PO1	4.4793-02	5.2035-02	5.7927-02	6.1338-02	6.1510-02	2.1156-02	1.9499-02	3.4781-02	4.7314-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4322 TO = 536.

P	8.3779-01	9.1319-01	9.2916-01	9.4486-01	9.1478-01	9.1033-01	5.7870-01	6.1113-01	8.9420-01
CP	-2.4373-01	-2.3320-01	-2.3097-01	-2.2878-01	-2.3298-01	-2.3360-01	-2.7992-01	-2.7539-01	-2.3586-01
P/PO1	5.8030-02	6.3252-02	6.4359-02	6.5446-02	6.3363-02	6.3055-02	4.0084-02	4.2330-02	6.1937-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5539+00	1.1215+01	5.7500-01	1.0280+01	5.7891-01	9.8250+00	7.2867+00	4.5859-01
CP	-1.4372-01	1.2055+00	-2.8044-01	1.0749+00	-2.7989-01	1.0114+00	6.5693-01	-2.9669-01
P/PO1	1.0763-01	7.7680-01	3.9828-02	7.1203-01	4.0098-02	6.8053-01	5.0472-01	3.1765-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.2008+00	9.8320+00	4.8281-01	8.4820+00	4.7813-01	4.8586+00	1.2773+00
CP	3.6561-01	1.0124+00	-2.9331-01	8.2387-01	-2.9397-01	3.1782-01	-1.8235-01
P/PO1	3.6023-01	6.8102-01	3.3442-02	5.8751-01	3.3118-02	3.3653-01	8.8476-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	SI-ROLL
4.	82.	301244	1.99	2	4.99	179.98	.00	70.01	180.0

VALVE POS 2 PC = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4343 TO = 536.

P	2.1379+00	6.4599+00	1.0377+01	1.2074+01	1.2823+01	1.3182+01	1.3937+01	1.4187+01	1.4500+01
CP	-6.3560-02	5.3723-01	1.0818+00	1.3163+00	1.4217+00	1.4717+00	1.5766+00	1.6113+00	1.6548+00
P/PO1	1.4739-01	4.4535-01	7.1543-01	8.3172-01	8.8402-01	9.0879-01	9.6083-01	9.7803-01	9.9963-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4344 TO = 535.

P	1.4548+01	1.3561+01	9.7974+00	5.3483+00	1.1804+00	1.2607+00	1.3101+00	1.2993+00	1.0248+00
CP	1.6635+00	1.5261+00	1.0024+00	3.8341-01	-1.9650-01	-1.8534-01	-1.7845-01	-1.7996-01	-2.1815-01
P/PO1	1.0035+00	9.3579-01	6.7607-01	3.6906-01	8.1457-02	8.6992-02	9.0407-02	8.9659-02	7.0718-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.1 Q-INF = 7.223 P-INF =2.6055 RE = .4360 TO = 536.

P	8.3779-01	1.2294+01	1.2650+01	1.2813+01	1.3121+01	1.3072+01	1.1955+01	8.5717+00	7.2030+00
CP	-2.4475-01	1.3414+00	1.3908+00	1.4133+00	1.4559+00	1.4492+00	1.2945+00	8.2605-01	6.3654-01
P/PO1	5.7528-02	8.4420-01	8.6867-01	8.7986-01	9.0096-01	8.9764-01	8.2091-01	5.8859-01	4.9461-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.2 Q-INF = 7.256 P-INF =2.6177 RE = .4386 TO = 535.

P	8.6346+00	9.4005+00	9.9542+00	9.6451+00	1.0346+01	9.4544+00	9.2238+00	8.3987+00	5.2478+00
CP	8.2920-01	9.3475-01	1.0111+00	9.6847-01	1.0651+00	9.4769-01	9.1039-01	7.9669-01	3.6246-01
P/PO1	5.9016-01	6.4250-01	6.8035-01	6.5922-01	7.0713-01	6.4892-01	6.3042-01	5.7403-01	3.5867-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.1 Q-INF = 7.224 P-INF =2.6061 RE = .4367 TO = 535.

P	2.3344+00	5.3416-01	8.7061-01	1.0601+00	1.2274+01	1.0185+01	7.8503+00	6.5113+00	5.6485+00
CP	-3.7608-02	-2.8680-01	-2.4023-01	-2.1399-01	1.3383+00	1.0491+00	7.2592-01	5.4057-01	4.2114-01
P/PO1	1.6026-01	3.6670-02	5.9768-02	7.2780-02	8.4264-01	6.9920-01	5.3893-01	4.4701-01	3.8778-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4356 TO = 535.

P	4.9359+00	2.1349+00	2.2758+00	2.1103+00	3.3106+00	4.8160+00	1.3188+01	9.5633-01	2.9433+00
CP	3.2410-01	-6.4534-02	-4.4982-02	-6.7949-02	9.8593-02	3.0747-01	1.4690+00	-2.2805-01	4.7625-02
P/PO1	3.3965-01	1.4690-01	1.5660-01	1.4521-01	2.2781-01	3.3140-01	9.0748-01	6.5807-02	2.0253-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.1 Q-INF = 7.231 P-INF =2.6085 RE = .4371 TO = 535.

P	7.5605-01	3.5019-01	3.4063-01	3.3099-01	7.7443-01	2.1326-01	2.5926-01	4.0630-01	4.0139-01
CP	-2.5618-01	-3.1231-01	-3.1363-01	-3.1497-01	-2.5364-01	-3.3125-01	-3.2489-01	-3.0455-01	-3.0523-01
P/PO1	5.1855-02	2.4019-02	2.3363-02	2.2702-02	5.3116-02	1.4627-02	1.7782-02	2.7867-02	2.7530-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.1 Q-INF = 7.241 P-INF =2.6122 RE = .4377 TO = 535.

P	4.8923-01	4.6988-01	4.2129-01	5.0257-01	4.7383-01	3.6712-01	1.8204-01	4.1078-01	6.5809-01
CP	-2.9318-01	-2.9585-01	-3.0256-01	-2.9134-01	-2.9530-01	-3.1004-01	-3.3560-01	-3.0401-01	-2.6986-01
P/PO1	3.3508-02	3.2183-02	2.8854-02	3.4422-02	3.2453-02	2.5145-02	1.2468-02	2.8135-02	4.5073-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 Q-INF = 7.199 P-INF =2.5970 RE = .4351 TO = 535.

P	6.2376-01	6.7712-01	5.8521-01	5.6235-01	5.6462-01	4.8241-01	4.0360-01	5.4062-01	2.1084-01
CP	-2.7409-01	-2.6668-01	-2.7945-01	-2.8263-01	-2.8231-01	-2.9373-01	-3.0468-01	-2.8564-01	-3.3145-01
P/PO1	4.2972-02	4.6648-02	4.0316-02	3.8742-02	3.8898-02	3.3235-02	2.7805-02	3.7244-02	1.4525-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.2 Q-INF = 7.253 P-INF =2.6164 RE = .4384 TO = 535.

P	5.3704-01	7.4139-01	8.0951-01	7.9950-01	8.1203-01	5.5293-01	3.8338-01	1.1191+00	1.4267+00
CP	-2.8670-01	-2.5852-01	-2.4913-01	-2.5051-01	-2.4878-01	-2.8451-01	-3.0788-01	-2.0645-01	-1.6403-01
P/PO1	3.6722-02	5.0696-02	5.5354-02	5.4669-02	5.5526-02	3.7809-02	2.6215-02	7.6521-02	9.7558-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.1 Q-INF = 7.243 P-INF =2.6128 RE = .4378 TO = 535.

P	7.7393-01	8.0212-01	7.9424-01	8.3208-01	8.6716-01	8.5152-01	6.4413-01	4.2085-01	5.5038-01
CP	-2.5389-01	-2.4999-01	-2.5108-01	-2.4586-01	-2.4101-01	-2.4317-01	-2.7181-01	-3.0263-01	-2.8475-01
P/PO1	5.2995-02	5.4926-02	5.4386-02	5.6977-02	5.9379-02	5.8308-02	4.4107-02	2.8818-02	3.7687-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5375+00	1.2797+01	1.4844-01	1.1405+01	1.6875-01	1.0277+01	7.4320+00	1.3125-01
CP	-1.4846-01	1.4061+00	-3.4025-01	1.2139+00	-3.3744-01	1.0582+00	6.6538-01	-3.4262-01
P/PO1	1.0528-01	8.7627-01	1.0164-02	7.8094-01	1.1555-02	7.0374-01	5.0891-01	8.9874-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.1117+00	9.4570+00	2.2031-01	9.1219+00	2.2266-01	6.3023+00	5.4375-01
CP	3.4502-01	9.4497-01	-3.3032-01	8.9870-01	-3.3000-01	5.0941-01	-2.8567-01
P/PO1	3.5003-01	6.4757-01	1.5086-02	6.2462-01	1.5246-02	4.3155-01	3.7233-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	83.	301244	1.99	2	9.99	179.98	.00	65.01	180.0

VALVE POS 2 PC = 20.0 Q-INF = 7.209 P-INF =2.6006 RE = .4357 TO = 535.

P	2.6906+00	7.7112+00	1.1130+01	1.2673+01	1.3183+01	1.3700+01	1.4312+01	1.4454+01	1.4641+01
CP	1.2482-02	7.0891-01	1.1831+00	1.3972+00	1.4680+00	1.5397+00	1.6245+00	1.6442+00	1.6701+00
P/P01	1.8510-01	5.3050-01	7.6568-01	8.7184-01	9.0696-01	9.4251-01	9.8458-01	9.9436-01	1.0072+00
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.1 Q-INF = 7.239 P-INF =2.6116 RE = .4376 TO = 535.

P	1.4438+01	1.3092+01	8.5433+00	4.1473+00	7.7945-01	8.3362-01	8.6739-01	8.8874-01	7.3094-01
CP	1.6336+00	1.4477+00	8.1937-01	2.1213-01	-2.5307-01	-2.4559-01	-2.4093-01	-2.3798-01	-2.5978-01
P/P01	9.8912-01	8.9688-01	5.8528-01	2.8412-01	5.3397-02	5.7109-02	5.9422-02	6.0885-02	5.0074-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.0 Q-INF = 7.212 P-INF =2.6018 RE = .4359 TO = 535.

P	5.4704-01	1.2670+01	1.2995+01	1.3047+01	1.3513+01	1.2931+01	1.1471+01	7.4393+00	7.9546+00
CP	-2.8489-01	1.3959+00	1.4410+00	1.4483+00	1.5128+00	1.4322+00	1.2297+00	6.7071-01	7.4215-01
P/P01	3.7617-02	8.7120-01	8.9360-01	8.9719-01	9.2917-01	8.8919-01	7.8880-01	5.1155-01	5.4698-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.0 Q-INF = 7.212 P-INF =2.6018 RE = .4359 TO = 535.

P	9.0907+00	9.8071+00	1.0346+01	1.0129+01	1.0095+01	9.7925+00	9.3642+00	8.2100+00	4.5088+00
CP	8.9968-01	9.9901-01	1.0737+00	1.0436+00	1.0390+00	9.9698-01	9.3760-01	7.7756-01	2.6440-01
P/P01	6.2511-01	6.7437-01	7.1143-01	6.9650-01	6.9418-01	6.7337-01	6.4391-01	5.6454-01	3.1004-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.1 Q-INF = 7.229 P-INF =2.6079 RE = .4370 TO = 535.

P	1.7675+00	6.0730-01	6.0866-01	7.2932-01	1.2102+01	9.9652+00	8.0220+00	6.9203+00	6.0129+00
CP	-1.1625-01	-2.7674-01	-2.7655-01	-2.5986-01	1.3132+00	1.0177+00	7.4891-01	5.9651-01	4.7100-01
P/P01	1.2126-01	4.1662-02	4.1756-02	5.0033-02	8.3022-01	6.8364-01	5.5033-01	4.7475-01	4.1250-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.1 Q-INF = 7.223 P-INF =2.6055 RE = .4366 TO = 535.

P	5.1268+00	1.9152+00	2.7515+00	2.5146+00	3.3854+00	5.1528+00	1.3360+01	9.6885-01	2.8681+00
CP	3.4908-01	-9.5569-02	2.0213-02	-1.2577-02	1.0799-01	3.5269-01	1.4890+00	-2.2660-01	3.6362-02
P/P01	3.5204-01	1.3151-01	1.8894-01	1.7267-01	2.3247-01	3.5383-01	9.1736-01	6.6528-02	1.9694-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.1 Q-INF = 7.223 P-INF =2.6055 RE = .4366 TO = 535.

P	6.6046-01	6.2614-01	6.0196-01	5.9778-01	5.9820-01	2.1865-01	3.3842-01	4.8241-01	4.6699-01
CP	-2.6930-01	-2.7405-01	-2.7740-01	-2.7798-01	-2.7792-01	-3.3047-01	-3.1389-01	-2.9395-01	-2.9608-01
P/P01	4.5352-02	4.2995-02	4.1335-02	4.1047-02	4.1077-02	1.5014-02	2.3238-02	3.3126-02	3.2067-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.1 Q-INF = 7.248 P-INF =2.6146 RE = .4381 TO = 535.

P	5.0035-01	5.3748-01	6.0308-01	6.4870-01	6.0317-01	4.6451-01	2.1973-01	4.6115-01	7.4098-01
CP	-2.9171-01	-2.8658-01	-2.7753-01	-2.7124-01	-2.7752-01	-2.9665-01	-3.3042-01	-2.9712-01	-2.5851-01
P/P01	3.4237-02	3.6778-02	4.1267-02	4.4389-02	4.1274-02	3.1785-02	1.5036-02	3.1555-02	5.0703-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH HYPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.1 Q-INF = 7.229 P-INF =2.6079 RE = .4370 TO = 535.

P	8.3524-01	7.4536-01	6.1983-01	5.7121-01	5.8549-01	5.9322-01	6.0916-01	5.7644-01	2.1717-01
CP	-2.4521-01	-2.5764-01	-2.7500-01	-2.8173-01	-2.7920-01	-2.7868-01	-2.7648-01	-2.8101-01	-3.3070-01
P/P01	5.7300-02	5.1134-02	4.2522-02	3.9186-02	4.0441-02	4.0697-02	4.1790-02	3.9545-02	1.4899-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4344 TO = 535.

P	7.7138-01	7.8978-01	6.2430-01	5.1586-01	5.9544-01	7.7736-01	5.0989-01	1.2668+00	2.1375+00
CP	-2.5341-01	-2.5085-01	-2.7388-01	-2.8897-01	-2.7734-01	-2.5258-01	-2.8980-01	-1.8449-01	-6.3329-02
P/P01	5.3229-02	5.4499-02	4.3080-02	3.5597-02	4.1365-02	5.3642-02	3.5185-02	8.7414-02	1.4750-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.211 P-INF =2.6012 RE = .4358 TO = 535.

P	1.0064+00	6.6493-01	7.1476-01	7.5689-01	7.4185-01	8.0038-01	8.1043-01	4.5443-01	4.3141-01
CP	-2.2118-01	-2.6853-01	-2.6162-01	-2.5577-01	-2.5786-01	-2.4974-01	-2.4835-01	-2.9772-01	-3.0091-01
P/P01	6.9217-02	4.5733-02	4.9161-02	5.2058-02	5.1024-02	5.5049-02	5.5741-02	3.1256-02	2.9672-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.6242+00	1.3155+01	2.1172-01	1.1590+01	2.3750-01	1.0038+01	7.3828+00	1.9141-01
CP	-1.3549-01	1.4637+00	-3.3138-01	1.2466+00	-3.2780-01	1.0314+00	6.6312-01	-3.3420-01
P/P01	1.1171-01	9.0483-01	1.4562-02	7.9714-01	1.6335-02	6.9043-01	5.0779-01	1.3165-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.1000+00	8.8242+00	2.5781-01	9.1945+00	2.5078-01	5.9203+00	6.5391-01
CP	3.4653-01	8.6301-01	-3.2499-01	9.1437-01	-3.2596-01	4.6030-01	-2.7006-01.
P/P01	3.5078-01	6.0692-01	1.7732-02	6.3239-01	1.7249-02	4.0720-01	4.4975-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	84.	301244	1.99	2	13.41	222.42	-9.00	65.02	180.0

VALVE POS 2 PC = 20.1 Q-INF = 7.238 P-INF =2.6110 RE = .4375 TO = 535.

P	2.5252+00	7.1637+00	1.0644+01	1.2220+01	1.2948+01	1.3323+01	1.3968+01	1.4187+01	1.4390+01
CP	-1.1846-02	6.2903-01	1.1059+00	1.3277+00	1.4282+00	1.4801+00	1.5692+00	1.5993+00	1.6275+00
P/PO1	1.7304-01	4.9088-01	7.2935-01	8.3737-01	8.8725-01	9.1297-01	9.5715-01	9.7210-01	9.8606-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4338 TO = 535.

P	1.4187+01	1.2810+01	8.2925+00	4.0097+00	7.7694-01	8.3106-01	8.5962-01	9.1628-01	7.3345-01
CP	1.6159+00	1.4242+00	7.9468-01	1.9794-01	-2.5249-01	-2.4495-01	-2.4097-01	-2.3307-01	-2.5855-01
P/PO1	9.8033-01	8.8523-01	5.7304-01	2.7708-01	5.3689-02	5.7429-02	5.9402-02	6.3317-02	5.0683-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4325 TO = 535.

P	5.4149-01	1.3499+01	1.3904+01	1.3984+01	1.4249+01	1.3598+01	1.2610+01	8.4144+00	9.1759+00
CP	-2.8506-01	1.5258+00	1.5826+00	1.5937+00	1.6308+00	1.5957+00	1.4017+00	8.1526-01	9.2169-01
P/PO1	3.7533-02	9.3564-01	9.6378-01	9.6929-01	9.8769-01	9.7028-01	8.7409-01	5.8324-01	6.3603-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4327 TO = 535.

P	1.0585+01	1.1434+01	1.2055+01	1.1768+01	1.1522+01	1.1519+01	1.1143+01	9.9243+00	6.0129+00
CP	1.1179+00	1.2365+00	1.3232+00	1.2831+00	1.2488+00	1.2484+00	1.1959+00	1.0256+00	4.7923-01
P/PO1	7.3334-01	7.9216-01	8.3517-01	8.1529-01	7.9825-01	7.9804-01	7.7204-01	6.8737-01	4.1658-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4344 TO = 535.

P	2.4107+00	5.0756-01	6.2318-01	7.7193-01	1.2494+01	1.1221+01	9.5671+00	8.7290+00	7.8919+00
CP	-2.5320-02	-2.9012-01	-2.7403-01	-2.5334-01	1.3776+00	1.2005+00	9.7040-01	8.5378-01	7.3732-01
P/PO1	1.6635-01	3.5024-02	4.3003-02	5.3267-02	8.6213-01	7.7428-01	6.6018-01	6.0235-01	5.4459-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4335 TO = 535.

P	6.6843+00	2.9938+00	3.3840+00	3.5530+00	4.7633+00	5.5213+00	1.3765+01	8.6120-01	3.3127+00
CP	5.7127-01	5.6686-02	1.1109-01	1.3466-01	3.0341-01	4.0910-01	1.5586+00	-2.4066-01	1.0116-01
P/PO1	4.6223-01	2.0702-01	2.3401-01	2.4570-01	3.2939-01	3.8181-01	9.5190-01	5.9553-02	2.2908-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4355 TO = 535.

P	9.0420-01	6.2835-01	5.9526-01	5.9003-01	6.0815-01	4.8018-01	5.4373-01	5.8763-01	6.8321-01
CP	-2.3526-01	-2.7354-01	-2.7813-01	-2.7886-01	-2.7634-01	-2.9410-01	-2.8528-01	-2.7919-01	-2.6593-01
P/PO1	6.2234-02	4.3248-02	4.0970-02	4.0610-02	4.1857-02	3.3049-02	3.7424-02	4.0445-02	4.7024-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4340 TO = 535.

P	8.8377-01	7.8238-01	6.0866-01	9.0476-01	7.0391-01	8.4385-01	8.0784-01	7.7358-01	8.0629-01
CP	-2.3766-01	-2.5178-01	-2.7597-01	-2.3474-01	-2.6271-01	-2.4322-01	-2.4824-01	-2.5301-01	-2.4845-01
P/PO1	6.1042-02	5.4039-02	4.2040-02	6.2492-02	4.8619-02	5.8285-02	5.5798-02	5.3431-02	5.5691-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN [illegible]
40 - INCH CONTINUOUS [illegible] TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4314 TO = 535.

P	7.816C-01	7.3795-01	6.1760-01	5.9556-01	6.0566-01	5.9546-01	5.9223-01	5.8763-01	8.3392-01
CP	-2.5122-01	-2.5734-01	-2.7420-01	-2.7729-01	-2.7587-01	-2.7730-01	-2.7776-01	-2.7840-01	-2.4389-01
P/PO1	5.4317-02	5.1284-02	4.2920-02	4.1388-02	4.2090-02	4.1382-02	4.1157-02	4.0837-02	5.7953-02
S/R	1.372C+00	1.589C+00	1.7420+00	1.797C+0C	1.854C+0C	1.918C+0C	2.0850+00	2.354C+00	4.9700-01

VALVE POS 11 PC = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4338 TO = 535.

P	9.8083-01	7.4289-01	6.1313-01	5.4021-01	6.1934-01	7.5179-01	7.7936-01	7.6356-01	7.9373-01
CP	-2.2408-01	-2.5723-01	-2.7531-01	-2.8547-01	-2.7445-01	-2.5599-01	-2.5215-01	-2.5435-01	-2.5015-01
P/PO1	6.7778-02	5.1336-02	4.2369-02	3.7330-02	4.2798-02	5.1951-02	5.3856-02	5.2764-02	5.4849-02
S/R	9.36CC-01	1.155C+00	1.5890+00	1.7420+0C	1.757C+00	6.4CCC-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4354 TO = 535.

P	8.15C1-01	6.8155-01	6.4887-01	6.498C-01	6.6163-01	6.6486-01	6.5653-01	4.5219-01	4.2696-01
CP	-2.4745-01	-2.660C-01	-2.7054-01	-2.7041-01	-2.6877-01	-2.6832-01	-2.6948-01	-2.9788-01	-3.0139-01
P/PO1	5.6187-02	4.6986-02	4.4733-02	4.4798-02	4.5613-02	4.5836-02	4.5262-02	3.1175-02	2.9435-02
S/R	4.970C-01	1.5890+00	1.7420+00	1.7970+0C	1.854C+00	1.918C+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.4555+00	1.3924+01	-6.2500-03	1.2495+01	4.6016-01	1.1198+01	8.7961+00	3.6875-01
CP	-1.5842-01	1.5748+00	-3.6161-01	1.3761+0C	-2.9678-01	1.1959+0C	8.6197-01	-3.0948-01
P/PO1	1.0034-01	9.5995-01	-4.3088-04	8.6138-01	3.1723-02	7.7203-01	6.0641-01	2.5422-02
S/R	3.840C-01	4.970C-01	4.9700-01	7.170C-01	7.170C-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.1422+00	1.1435+01	4.5703-01	1.0463+01	4.3125-01	6.457C+0C	5.9531-01
CP	3.5406-01	1.2288+0C	-2.9721-01	1.0936+0C	-3.0C79-01	5.3683-01	-2.7799-01
P/PO1	3.5451-01	7.8835-01	3.1508-02	7.2129-01	2.9731-02	4.4515-01	4.1041-02
S/R	9.36CC-01	1.155C+00	1.1550+00	1.3720+0C	1.372C+00	1.589C+0C	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	85.	301244	1.99	2	11.16	206.76	-5.00	65.01	180.0

VALVE POS 2 PC = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4346 TO = 535.

P	2.5952+00	7.4296+00	1.0895+01	1.2439+01	1.3105+01	1.3496+01	1.4154+01	1.4328+01	1.4484+01
CP	6.8509-04	6.7397-01	1.1565+00	1.3716+00	1.4044+00	1.5188+00	1.6107+00	1.6347+00	1.6564+00
P/P01	1.7925-01	5.1317-01	7.5250-01	8.5915-01	9.0517-01	9.3218-01	9.7773-01	9.8965-01	1.0004+00
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4338 TO = 535.

P	1.4344+01	1.2951+01	8.4179+00	4.1160+00	7.8696-01	8.4641-01	8.7257-01	9.0376-01	7.2340-01
CP	1.6407+00	1.4463+00	8.1381-01	2.1357-01	-2.5094-01	-2.4264-01	-2.3899-01	-2.3464-01	-2.5981-01
P/P01	9.9260-01	8.9622-01	5.8252-01	2.8483-01	5.4458-02	5.8571-02	6.0382-02	6.2540-02	5.0060-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4323 TO = 535.

P	5.4482-01	1.3217+01	1.3497+01	1.3578+01	1.3748+01	1.3575+01	1.2127+01	7.9111+00	8.6749+00
CP	-2.8447-01	1.4895+00	1.5287+00	1.5401+00	1.5638+00	1.5396+00	1.3369+00	7.4675-01	8.5366-01
P/P01	3.7826-02	9.1764-01	9.3708-01	9.4272-01	9.5449-01	9.4247-01	8.4194-01	5.4926-01	6.0229-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8800-01

VALVE POS 5 PC = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4343 TO = 535.

P	9.9872+00	1.0761+01	1.1396+01	1.1081+01	1.0879+01	1.0734+01	1.0347+01	9.1064+00	5.3855+00
CP	1.0311+00	1.1390+00	1.2275+00	1.1836+00	1.1554+00	1.1352+00	1.0813+00	9.0839-01	3.8982-01
P/P01	6.9031-01	7.4381-01	7.8770-01	7.6591-01	7.5195-01	7.4193-01	7.1521-01	6.2943-01	3.7224-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.0 Q-INF = 7.182 P-INF =2.5909 RE = .4347 TO = 535.

P	2.1124+00	4.6212-01	5.7851-01	7.5188-01	1.2760+01	1.0718+01	8.8180+00	7.8954+00	6.9994+00
CP	-6.6627-02	-2.9640-01	-2.8019-01	-2.5605-01	1.4159+00	1.1316+00	8.6703-01	7.3858-01	6.1382-01
P/P01	1.4587-01	3.1911-02	3.9948-02	5.1920-02	8.8114-01	7.4015-01	6.0892-01	5.4521-01	4.8334-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4325 TO = 535.

P	5.9451+00	2.4763+00	3.1373+00	3.1152+00	4.1523+00	5.3116+00	1.3406+01	7.1850-01	3.0936+00
CP	4.7113-01	-1.4240-02	7.8248-02	7.5147-02	2.2027-01	3.8249-01	1.5152+00	-2.6020-01	7.2125-02
P/P01	4.1257-01	1.7185-01	2.1772-01	2.1618-01	2.8815-01	3.6861-01	9.3036-01	4.9861-02	2.1468-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4362 TO = 535.

P	8.0203-01	6.0397-01	5.6287-01	5.5682-01	5.6338-01	3.8727-01	4.6702-01	5.4957-01	5.4927-01
CP	-2.4946-01	-2.7694-01	-2.8264-01	-2.8348-01	-2.8257-01	-3.0701-01	-2.9594-01	-2.8449-01	-2.8453-01
P/P01	5.5189-02	4.1560-02	3.8732-02	3.8315-02	3.8767-02	2.6649-02	3.2136-02	3.7817-02	3.7796-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.0 Q-INF = 7.179 P-INF =2.5897 RE = .4345 TO = 535.

P	6.4267-01	6.2835-01	5.7739-01	8.1203-01	6.5665-01	4.8130-01	5.8885-01	6.1785-01	7.8620-01
CP	-2.7122-01	-2.7321-01	-2.8031-01	-2.4763-01	-2.6527-01	-2.9370-01	-2.7871-01	-2.7467-01	-2.5122-01
P/P01	4.4400-02	4.3411-02	3.9890-02	5.6100-02	4.5366-02	3.3251-02	4.0682-02	4.2685-02	5.4315-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4316 TO = 535.

P	6.9826-01	7.015C-01	6.0419-01	5.5460-01	5.6586-01	5.5517-01	5.5614-01	5.4398-01	6.0931-01
CP	-2.6283-01	-2.6238-01	-2.7602-01	-2.8297-01	-2.8139-01	-2.8289-01	-2.8276-01	-2.8446-01	-2.7530-01
P/PO1	4.856C-02	4.8785-02	4.2018-02	3.8569-02	3.9352-02	3.8609-02	3.8676-02	3.7830-02	4.2374-02
S/R	1.372C+00	1.589C+00	1.7420+00	1.7970+0C	1.854C+00	1.918C+0C	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4341 TO = 535.

P	9.655C-01	9.1812-01	6.0C84-01	4.7822-01	6.0C69-01	7.6202-01	6.0690-01	6.1113-01	8.2890-01
CP	-2.2612-01	-2.3273-01	-2.7696-01	-2.9406-01	-2.7699-01	-2.5449-01	-2.7612-01	-2.7553-01	-2.4517-01
P/PO1	6.6766-02	6.349C-02	4.1549-02	3.307C-02	4.1538-02	5.2695-02	4.1968-02	4.2261-02	5.7319-02
S/R	9.36CC-01	1.155C+00	1.5890+00	1.7420+0C	1.797C+00	6.4CCC-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 19.8 Q-INF = 7.126 P-INF =2.57C8 RE = .4313 TO = 535.

P	1.0013+C0	6.5384-01	6.6450-01	7.0927-01	7.3433-01	7.3645-01	5.5050-01	3.6335-01	4.2029-01
CP	-2.2024-01	-2.6899-01	-2.675C-01	-2.6121-01	-2.577C-01	-2.5746-01	-2.8349-01	-3.0976-01	-3.0176-01
P/PO1	6.9681-02	4.5503-02	4.6245-02	4.9361-02	5.1105-02	5.1252-02	3.8311-02	2.5287-02	2.9249-02
S/R	4.97C0-01	1.589C+C0	1.7420+00	1.7970+0C	1.854C+0C	1.918C+0C	2.0850+00	2.3540+00	2.6260+00

CEC	1.5141+00	1.3226+01	2.9844-01	1.2131+01	3.6953-01	1.0638+01	8.1141+00	3.0313-01
CP	-1.4828-01	1.4951+00	-3.1886-01	1.3415+0C	-3.0889-01	1.1321+0C	7.7785-01	-3.1821-01
P/PO1	1.0537-01	9.2043-01	2.0769-02	8.4425-01	2.5717-02	7.4035-01	5.6469-01	2.1095-02
S/R	3.84CC-01	4.970C-01	4.9700-01	7.17CC-01	7.170C-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.13C5+00	1.0467+01	3.6797-01	9.9633+0C	3.2344-01	6.1992+0C	5.3203-01
CP	3.5918-01	1.1C8C+C0	-3.0911-01	1.0373+0C	-3.1536-01	5.0915-01	-2.8609-01
P/PO1	3.57C5-01	7.2845-01	2.5608-02	6.9338-01	2.2509-02	4.3142-01	3.7026-02
S/R	9.36CC-01	1.155C+00	1.1550+00	1.3720+0C	1.3720+00	1.589C+0C	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS DYNAMIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	86.	301244	1.99	2	10.23	241.23	-8.96	70.04	180.0

VALVE POS 2 PC = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4331 TO = 535.

P	1.9464+00	5.9750+00	9.8915+00	1.1518+01	1.2039+01	1.2743+01	1.3563+01	1.3841+01	-1.0623-02
CP	-8.8777-02	4.7413-01	1.0214+00	1.2486+00	1.3214+00	1.4198+00	1.5343+00	1.5732+00	-3.6223-01
P/P01	1.3488-01	4.1406-01	6.8546-01	7.9818-01	8.3428-01	8.8306-01	9.3986-01	9.5912-01	-7.3614-04
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.179 P-INF =2.5897 RE = .4345 TO = 535.

P	1.4281+01	1.3405+01	9.6563+00	5.2670+00	1.1579+00	1.2581+00	1.3257+00	1.3168+00	1.0248+00
CP	1.6286+00	1.5065+00	9.8439-01	3.7295-01	-1.9545-01	-1.8549-01	-1.7607-01	-1.7731-01	-2.1798-01
P/P01	9.8662-01	9.2608-01	6.6712-01	3.6388-01	7.9595-02	8.6918-02	9.1587-02	9.0976-02	7.0801-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.0 Q-INF = 7.179 P-INF =2.5897 RE = .4345 TO = 535.

P	8.2246-01	1.3045+01	1.3497+01	1.3703+01	-1.1467-02	1.4014+01	1.3047+01	9.5154+00	8.4400+00
CP	-2.4617-01	1.4564+00	1.5194+00	1.5481+00	-3.6234-01	1.5914+00	1.4568+00	9.6476-01	8.1495-01
P/P01	5.6821-02	9.0123-01	9.3245-01	9.4669-01	-7.9221-04	9.6818-01	9.0140-01	6.5738-01	5.8309-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4348 TO = 535.

P	9.9715+00	1.0808+01	1.1522+01	1.1346+01	1.1130+01	1.1174+01	1.0987+01	1.0129+01	6.9837+00
CP	1.0273+00	1.1438+00	1.2431+00	1.2187+00	1.1886+00	1.1946+00	1.1687+00	1.0492+00	6.1141-01
P/P01	6.8841-01	7.4617-01	7.9544-01	7.8332-01	7.6838-01	7.7140-01	7.5854-01	6.9927-01	4.8214-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4360 TO = 535.

P	3.0595+00	7.5523-01	1.0310+00	1.1454+00	1.1835+01	1.0985+01	9.3018+00	8.3515+00	7.5161+00
CP	6.3955-02	-2.5591-01	-2.1763-01	-2.0175-01	1.2621+00	1.1641+00	9.3045-01	7.9854-01	6.8258-01
P/P01	2.1063-01	5.1993-02	7.0977-02	7.8851-02	8.1479-01	7.5626-01	6.4037-01	5.7495-01	5.1744-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4353 TO = 535.

P	6.6057+00	3.4065+00	2.6503+00	3.0151+00	4.5139+00	5.2481+00	1.3313+01	7.9110-01	3.4442+00
CP	5.5771-01	1.1290-01	7.7499-03	5.8472-02	2.6687-01	3.6895-01	1.4903+00	-2.5075-01	1.1814-01
P/P01	4.5551-01	2.3490-01	1.8275-01	2.0791-01	3.1126-01	3.6189-01	9.1801-01	5.4552-02	2.3750-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4360 TO = 535.

P	1.0166+00	4.2001-01	3.9647-01	3.9852-01	8.7468-01	4.1861-01	4.9522-01	4.7346-01	6.1288-01
CP	-2.1963-01	-3.0244-01	-3.0571-01	-3.0542-01	-2.3933-01	-3.0263-01	-2.9200-01	-2.9502-01	-2.7567-01
P/P01	6.9986-02	2.8915-02	2.7294-02	2.7435-02	6.0217-02	2.8819-02	3.4093-02	3.2595-02	4.2193-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4334 TO = 535.

P	8.2757-01	7.4783-01	4.0585-01	6.4870-01	5.7954-01	6.7941-01	5.9223-01	6.9347-01	7.2340-01
CP	-2.4519-01	-2.5632-01	-3.0407-01	-2.7016-01	-2.7582-01	-2.6588-01	-2.7805-01	-2.6391-01	-2.5973-01
P/P01	5.7309-02	5.1786-02	2.8105-02	4.4922-02	4.0133-02	4.7049-02	4.1012-02	4.8022-02	5.0095-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
10 - INCH CONTINUOUS SUPERSONIC

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 C-INF = 7.191 P-INF =2.5939 RE = .4352 TO = 535.

P	7.8415-01	7.8485-01	4.9251-01	4.6936-01	4.8503-01	4.2533-01	4.5799-01	7.0348-01	6.5056-01
CP	-2.5169-01	-2.5159-01	-2.9225-01	-2.9547-01	-2.9329-01	-3.0159-01	-2.9705-01	-2.6291-01	-2.7027-01
P/P01	5.4085-02	5.4133-02	3.3970-02	3.2373-02	3.3454-02	2.9336-02	3.1589-02	4.8521-02	4.4871-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 C-INF = 7.202 P-INF =2.5982 RE = .4359 TO = 535.

P	5.8374-01	7.6910-01	8.0188-01	7.6190-01	8.1453-01	5.4621-01	6.2720-01	5.7644-01	5.9152-01
CP	-2.7969-01	-2.5396-01	-2.4941-01	-2.5496-01	-2.4765-01	-2.8490-01	-2.7366-01	-2.8071-01	-2.7861-01
P/P01	4.0196-02	5.2960-02	5.5217-02	5.2465-02	5.6089-02	3.7612-02	4.3189-02	3.9693-02	4.0732-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 C-INF = 7.206 P-INF =2.5994 RE = .4361 TO = 535.

P	5.5928-01	7.3363-01	6.9354-01	6.9076-01	7.1137-01	7.4668-01	6.9038-01	5.1935-01	5.4816-01
CP	-2.8313-01	-2.5893-01	-2.6449-01	-2.6488-01	-2.6202-01	-2.5712-01	-2.6493-01	-2.8867-01	-2.8467-01
P/P01	3.8494-02	5.0494-02	4.7735-02	4.7544-02	4.8562-02	5.1392-02	4.7517-02	3.5746-02	3.7728-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.4227+00	1.3223+01	3.2969-01	1.1934+01	3.8281-01	1.1391+01	9.3563+00	2.9453-01	
CP	-1.6331-01	1.4744+00	-3.1499-01	1.2955+00	-3.0761-01	1.2200+00	9.3771-01	-3.1987-01	
P/P01	9.7918-02	9.1014-01	2.2692-02	8.2142-01	2.6348-02	7.8399-01	6.4397-01	2.0272-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	5.0766+00	1.1677+01	3.9609-01	1.0373+01	3.7031-01	6.7406+00	8.3203-01		
CP	3.4378-01	1.2597+00	-3.0577-01	1.0789+00	-3.0935-01	5.7472-01	-2.4527-01		
P/P01	3.4941-01	8.0367-01	2.7262-02	7.1398-01	2.5488-02	4.6394-01	5.7267-02		
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01		

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	87.	301244	1.99	2	7.07	225.15	-5.01	70.00	180.0

VALVE POS 2 PC = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4338 TO = 535.

P	2.0383+00	6.2409+00	1.0174+01	1.1846+01	-1.1467-02	1.3025+01	1.3828+01	1.4108+01	1.4359+01
CP	-7.6340-02	5.1005-01	1.0588+00	1.2921+00	-3.6234-01	1.4567+00	1.5687+00	1.6077+00	1.6428+00
P/PO1	1.4105-01	4.3187-01	7.0402-01	8.1973-01	-7.9352-04	9.0136-01	9.5689-01	9.7627-01	9.9364-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.1 Q-INF = 7.223 P-INF =2.6055 RE = .4371 TO = 535.

P	-1.1358-02	1.3624+01	9.8444+00	5.3546+00	1.2281+00	1.2632+00	1.3231+00	1.3243+00	1.0298+00
CP	-3.6231-01	1.5255+00	1.0023+00	3.8062-01	-1.9071-01	-1.8584-01	-1.7755-01	-1.7738-01	-2.1815-01
P/PO1	-7.7992-04	9.3549-01	6.7599-01	3.6768-01	8.4328-02	8.6741-02	9.0853-02	9.0939-02	7.0716-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4334 TO = 535.

P	8.1736-01	1.2685+01	1.3152+01	1.3313+01	-1.1467-02	1.3622+01	1.2626+01	9.1851+00	7.9859+00
CP	-2.4661-01	1.4105+00	1.4757+00	1.4981+00	-3.6234-01	1.5412+00	1.4022+00	9.2176-01	7.5432-01
P/PO1	5.6601-02	8.7844-01	9.1077-01	9.2190-01	-7.9408-04	9.4329-01	8.7435-01	6.3606-01	5.5302-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4356 TO = 535.

P	9.4682+00	1.0308+01	1.0942+01	1.0644+01	1.1459+01	1.0452+01	1.0191+01	9.3266+00	6.1695+00
CP	9.5478-01	1.0714+00	1.1595+00	1.1182+00	1.2214+00	1.0914+00	1.0553+00	9.3512-01	4.9646-01
P/PO1	6.5244-01	7.1028-01	7.5398-01	7.3346-01	7.8962-01	7.2021-01	7.0227-01	6.4268-01	4.2513-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4334 TO = 535.

P	2.7542+00	6.6936-01	9.4952-01	1.0927+00	1.1726+01	1.0593+01	8.5058+00	7.5966+00	6.6392+00
CP	2.3825-02	-2.6728-01	-2.2816-01	-2.0817-01	1.2765+00	1.1183+00	8.2692-01	6.9996-01	5.6629-01
P/PO1	1.9073-01	4.6353-02	6.5754-02	7.5670-02	8.1198-01	7.3355-01	5.8902-01	5.2606-01	4.5976-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.0 Q-INF = 7.202 P-INF =2.5982 RE = .4359 TO = 535.

P	5.8265+00	2.7905+00	2.4732+00	2.6460+00	4.6760+00	5.0194+00	1.3594+01	7.9861-01	3.1562+00
CP	4.4823-01	2.6702-02	-1.7358-02	6.6402-03	2.8649-01	3.3617-01	1.5267+00	-2.4986-01	7.7474-02
P/PO1	4.0121-01	1.9215-01	1.7030-01	1.8220-01	3.2199-01	3.4563-01	9.3606-01	5.4992-02	2.1733-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.202 P-INF =2.5982 RE = .4359 TO = 535.

P	8.6333-01	3.3246-01	3.0416-01	2.9114-01	8.0701-01	3.1564-01	4.0385-01	4.3429-01	4.8256-01
CP	-2.4087-01	-3.1458-01	-3.1851-01	-3.2032-01	-2.4869-01	-3.1692-01	-3.0467-01	-3.0044-01	-2.9374-01
P/PO1	5.9449-02	2.2893-02	2.0945-02	2.0048-02	5.5571-02	2.1735-02	2.7809-02	2.9905-02	3.3229-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4337 TO = 535.

P	6.1932-01	6.1506-01	2.9417-01	6.0331-01	5.1239-01	3.7792-01	4.6928-01	6.1113-01	7.0331-01
CP	-2.7431-01	-2.7490-01	-3.1969-01	-2.7654-01	-2.8923-01	-3.0800-01	-2.9525-01	-2.7545-01	-2.6259-01
P/PO1	4.2867-02	4.2572-02	2.0362-02	4.1759-02	3.5466-02	2.6158-02	3.2482-02	4.2301-02	4.8680-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4349 TO = 535.

P	6.4823-01	7.1258-01	4.5454-01	4.6715-01	4.3294-01	3.6442-01	3.3557-01	6.2904-01	4.8923-01
CP	-2.7053-01	-2.6157-01	-2.9748-01	-2.9573-01	-3.0049-01	-3.1002-01	-3.1404-01	-2.7320-01	-2.9266-01
P/PO1	4.4742-02	4.9183-02	3.1373-02	3.2243-02	2.9882-02	2.5153-02	2.3162-02	4.3417-02	3.3767-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4327 TO = 535.

P	6.4267-01	8.2340-01	7.0694-01	6.8855-01	7.0888-01	5.3054-01	4.3543-01	4.0518-01	6.7316-01
CP	-2.7086-01	-2.4558-01	-2.6187-01	-2.6444-01	-2.6160-01	-2.8054-01	-2.9984-01	-3.0407-01	-2.6659-01
P/PO1	4.4578-02	5.7114-02	4.9036-02	4.7760-02	4.9171-02	3.6800-02	3.0203-02	2.8105-02	4.6693-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4344 TO = 535.

P	7.7649-01	7.5523-01	7.2805-01	7.5438-01	7.7694-01	7.9782-01	5.9562-01	3.9991-01	5.5038-01
CP	-2.5255-01	-2.5551-01	-2.5930-01	-2.5563-01	-2.5249-01	-2.4958-01	-2.7775-01	-3.0502-01	-2.8405-01
P/PO1	5.3657-02	5.2189-02	5.0310-02	5.2130-02	5.3689-02	5.5132-02	4.1159-02	2.7635-02	3.8033-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.4531+00	1.3814+01	2.3516-01	1.1573+01	3.1953-01	1.0596+01	8.2078+00	2.2266-01
CP	-1.5827-01	1.5640+00	-3.2798-01	1.2518+00	-3.1622-01	1.1156+00	7.8288-01	-3.2972-01
P/PO1	1.0041-01	9.5459-01	1.6250-02	7.9976-01	2.2080-02	7.3222-01	5.6718-01	1.5386-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.0906+00	1.0945+01	3.0469-01	9.5578+00	3.0469-01	6.2672+00	6.6797-01
CP	3.4855-01	1.1643+00	-3.1829-01	9.7098-01	-3.1829-01	5.1249-01	-2.6767-01
P/PO1	3.5178-01	7.5635-01	2.1055-02	6.6047-01	2.1055-02	4.3308-01	4.6158-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
V. D. KAPPES CALIBRATION FACILITY
40 PROPULSION WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	S1-ROLL
4.	88.	301244	1.99	2	10.23	118.75	8.96	70.04	180.0

VALVE POS 2 PC = 20.1 Q-INF = 7.221 P-INF =2.6049 RE = .4370 TO = 535.

P	1.9846+00	6.1314+00	1.0017+01	1.1658+01	1.2447+01	1.2853+01	1.3625+01	1.3856+01	-1.0623-02
CP	-8.5906-02	4.8838-01	1.0265+00	1.2538+00	1.3030+00	1.4192+00	1.5261+00	1.5582+00	-3.6221-01
P/P01	1.3631-01	4.2112-01	6.8799-01	8.0074-01	8.5487-01	8.8276-01	9.3580-01	9.5169-01	-7.2961-04
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4353 TO = 535.

P	1.4076+01	1.3217+01	9.4525+00	5.0918+00	1.1505+00	1.2376+00	1.3127+00	1.3018+00	1.0148+00
CP	1.5964+00	1.4769+00	9.5353-01	3.4722-01	-1.9522-01	-1.8866-01	-1.7822-01	-1.7974-01	-2.1965-01
P/P01	9.7067-01	9.1140-01	6.5182-01	3.5112-01	8.2091-02	8.5344-02	9.0522-02	8.9769-02	6.9975-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.0 Q-INF = 7.212 P-INF =2.6018 RE = .4365 TO = 535.

P	8.3779-01	1.0667+01	1.1130+01	1.1284+01	1.1663+01	1.1409+01	1.0379+01	7.0461+00	5.3041+00
CP	-2.4458-01	1.1183+00	1.1824+00	1.2038+00	1.2563+00	1.2211+00	1.0783+00	6.1619-01	3.7467-01
P/P01	5.7609-02	7.3353-01	7.6533-01	7.7592-01	8.0198-01	7.8452-01	7.1367-01	4.8451-01	3.6473-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4358 TO = 535.

P	6.2912+00	6.8978+00	7.3833+00	7.5226+00	7.5163+00	7.5641+00	7.3353+00	6.5113+00	3.6947+00
CP	5.1255-01	5.9721-01	6.6463-01	6.8397-01	7.3865-01	6.8973-01	6.5796-01	5.4353-01	1.5237-01
P/P01	4.3331-01	4.7510-01	5.0853-01	5.1813-01	5.4524-01	5.2099-01	5.0523-01	4.4848-01	2.5448-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4362 TO = 535.

P	1.5683+00	4.0782-01	6.4663-01	9.8245-01	1.0001+01	8.2860+00	5.7444+00	3.9964+00	3.8325+00
CP	-1.4315-01	-3.0416-01	-2.7102-01	-2.2443-01	1.0269+00	7.8891-01	4.3628-01	1.9375-01	1.7100-01
P/P01	1.0792-01	2.8063-02	4.4496-02	6.7604-02	6.8820-01	5.7017-01	3.9528-01	2.7500-01	2.6372-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.1 Q-INF = 7.223 P-INF =2.6055 RE = .4371 TO = 535.

P	3.3712+00	1.2587+00	1.6496+00	1.1654+00	1.4862+00	3.0879+00	1.1237+01	7.0598-01	2.1652+00
CP	1.0602-01	-1.8647-01	-1.3235-01	-1.9938-01	-1.5497-01	6.6787-02	1.1951+00	-2.6299-01	-6.0962-02
P/P01	2.3149-01	8.6432-02	1.1327-01	8.0025-02	1.0205-01	2.1203-01	7.7162-01	4.8478-02	1.4868-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4336 TO = 535.

P	3.8805-01	2.8174-01	1.9430-01	2.1717-01	7.3183-01	3.7384-01	4.3092-01	5.7755-01	5.6928-01
CP	-3.0657-01	-3.2141-01	-3.3362-01	-3.3043-01	-2.5858-01	-3.0855-01	-3.0059-01	-2.8012-01	-2.8127-01
P/P01	2.6866-02	1.9506-02	1.3452-02	1.5035-02	5.0666-02	2.5882-02	2.9834-02	3.9986-02	3.9413-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4360 TO = 535.

P	4.6143-01	4.4328-01	3.9314-01	6.5534-01	6.5292-01	4.5443-01	2.5605-01	4.7346-01	5.8707-01
CP	-2.9669-01	-2.9921-01	-3.0617-01	-2.6977-01	-2.7011-01	-2.9766-01	-3.2520-01	-2.9502-01	-2.7925-01
P/P01	3.1767-02	3.0517-02	2.7065-02	4.5116-02	4.4950-02	3.1285-02	1.7627-02	3.2595-02	4.0416-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 Q-INF = 7.196 F-INF =2.5957 RE = .4355 TO = 535.

P	6.6490-01	7.6245-01	7.8065-01	7.9699-01	8.3208-01	8.1828-01	5.0312-01	4.7682-01	2.6739-01
CP	-2.6834-01	-2.5478-01	-2.5225-01	-2.4998-01	-2.4510-01	-2.4702-01	-2.9082-01	-2.9448-01	-3.2358-01
P/PO1	4.5828-02	5.2551-02	5.3806-02	5.4932-02	5.7351-02	5.6399-02	3.4677-02	3.2864-02	1.8430-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 Q-INF = 7.207 F-INF =2.6000 RE = .4362 TO = 535.

P	5.9152-01	7.1701-01	6.9577-01	7.5188-01	8.8721-01	5.6636-01	6.5879-01	6.1561-01	6.2043-01
CP	-2.7867-01	-2.6126-01	-2.6421-01	-2.5642-01	-2.3764-01	-2.8216-01	-2.6934-01	-2.7533-01	-2.7466-01
P/PO1	4.0703-02	4.9339-02	4.7877-02	5.1738-02	6.1051-02	3.8972-02	4.5332-02	4.2361-02	4.2693-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 19.9 Q-INF = 7.170 F-INF =2.5866 RE = .4340 TO = 535.

P	5.8485-01	7.6134-01	7.4333-01	7.3684-01	7.6441-01	8.1316-01	6.6556-01	5.3278-01	5.7039-01
CP	-2.7918-01	-2.5456-01	-2.5707-01	-2.5798-01	-2.5413-01	-2.4733-01	-2.6792-01	-2.8644-01	-2.8119-01
P/PO1	4.0453-02	5.2660-02	5.1414-02	5.0966-02	5.2872-02	5.6245-02	4.6035-02	3.6851-02	3.9453-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.0367+00	9.5953+00	3.2344-01	8.5523+00	3.5391-01	8.8195+00	6.3375+00	4.1172-01
CP	-7.6691-02	9.7746-01	-3.1563-01	8.3201-01	-3.1138-01	8.6927-01	5.2311-01	-3.0332-01
P/PO1	1.4088-01	6.6369-01	2.2371-02	5.9155-01	2.4479-02	6.1003-01	4.3835-01	2.8478-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.1516+00	7.2141+00	3.3281-01	6.9680+00	3.2578-01	3.8391+00	7.7813-01
CP	3.5772-01	6.4536-01	-3.1433-01	6.1104-01	-3.1531-01	1.7467-01	-2.5222-01
P/PO1	3.5632-01	4.9898-01	2.3020-02	4.8196-01	2.2534-02	2.6554-01	5.3821-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	89.	301244	1.99	2	7.07	134.85	5.01	70.00	180.0

VALVE POS 2 PC = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4356 TO = 535.

P	2.0817+00	6.4130+00	1.0268+01	1.1939+01	-1.1668-02	1.3072+01	1.3797+01	1.4045+01	1.4343+01
CP	-7.1506-02	5.3029-01	1.0659+00	1.2981+00	-3.6236-01	1.4556+00	1.5562+00	1.5907+00	1.6321+00
P/PO1	1.4345-01	4.4151-01	7.0753-01	8.2277-01	-8.0403-04	9.0080-01	9.5070-01	9.6782-01	9.8837-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.209 P-INF =2.6006 RE = .4363 TO = 535.

P	1.4407+01	1.3452+01	9.6250+00	5.1665+00	1.1754+00	1.2274+00	1.2972+00	1.3294+00	1.0097+00
CP	1.6377+00	1.5052+00	9.7438-01	3.5598-01	-1.9769-01	-1.9048-01	-1.8080-01	-1.7634-01	-2.2068-01
P/PO1	9.9112-01	9.2541-01	6.6216-01	3.5546-01	8.0865-02	8.4441-02	8.9242-02	9.1454-02	6.9466-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.1 Q-INF = 7.216 P-INF =2.6030 RE = .4367 TO = 535.

P	8.2757-01	1.1403+01	1.1804+01	1.1955+01	1.2290+01	1.2147+01	1.1050+01	7.7224+00	6.0442+00
CP	-2.4605-01	1.2195+00	1.2751+00	1.2960+00	1.3424+00	1.3226+00	1.1706+00	7.0946-01	4.7689-01
P/PO1	5.6880-02	7.8371-01	8.1130-01	8.2168-01	8.4470-01	8.3484-01	7.5946-01	5.3077-01	4.1543-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4349 TO = 535.

P	7.2663+00	7.9615+00	8.3552+00	8.4122+00	8.6217+00	8.3958+00	8.1313+00	7.3292+00	4.3585+00
CP	6.5051-01	7.4725-01	8.0205-01	8.0998-01	8.3914-01	8.0771-01	7.7088-01	6.5926-01	2.4583-01
P/PO1	5.0153-01	5.4951-01	5.7669-01	5.8062-01	5.9509-01	5.7949-01	5.6123-01	5.0587-01	3.0083-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.0 Q-INF = 7.214 P-INF =2.6024 RE = .4366 TO = 535.

P	1.9004+00	4.7653-01	7.4333-01	9.9248-01	1.2227+01	9.3688+00	7.0232+00	5.1685+00	4.5527+00
CP	-9.7321-02	-2.9469-01	-2.5770-01	-2.2317-01	1.3341+00	9.3793-01	6.1279-01	3.5570-01	2.7033-01
P/PO1	1.3064-01	3.2760-02	5.1102-02	6.8230-02	8.4058-01	6.4408-01	4.8282-01	3.5532-01	3.1298-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4333 TO = 535.

P	3.9818+00	1.6092+00	1.8965+00	1.5188+00	2.4502+00	4.3840+00	1.2626+01	6.9347-01	2.4611+00
CP	1.9537-01	-1.3600-01	-9.5873-02	-1.4962-01	-1.8539-02	2.5153-01	1.4025+00	-2.6389-01	-1.7025-02
P/PO1	2.7580-01	1.1146-01	1.3136-01	1.0520-01	1.6972-01	3.0366-01	8.7455-01	4.8033-02	1.7047-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.1 Q-INF = 7.224 P-INF =2.6061 RE = .4372 TO = 535.

P	5.9597-01	3.0006-01	2.3516-01	2.3436-01	7.5940-01	3.5705-01	3.8580-01	4.6786-01	4.4253-01
CP	-2.7825-01	-3.1921-01	-3.2819-01	-3.2830-01	-2.5562-01	-3.1132-01	-3.0734-01	-2.9598-01	-2.9949-01
P/PO1	4.0914-02	2.0600-02	1.6144-02	1.6089-02	5.2133-02	2.4512-02	2.6485-02	3.2119-02	3.0380-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.1 Q-INF = 7.239 P-INF =2.6116 RE = .4387 TO = 534.

P	4.3141-01	4.6102-01	3.4048-01	4.5276-01	4.3442-01	3.4373-01	2.1008-01	4.6115-01	6.0041-01
CP	-3.0115-01	-2.9706-01	-3.1371-01	-2.9820-01	-3.0073-01	-3.1326-01	-3.3172-01	-2.9704-01	-2.7780-01
P/PO1	2.9555-02	3.1583-02	2.3325-02	3.1017-02	2.9761-02	2.3548-02	1.4392-02	3.1592-02	4.1133-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible]
40 - INCH CONTINUOUS [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4356 TO = 534.

P	7.9948-01	7.4042-01	6.9801-01	6.8191-01	7.5438-01	6.9508-01	4.2415-01	4.9249-01	2.1265-01
CP	-2.4950-01	-2.5772-01	-2.6362-01	-2.6586-01	-2.5578-01	-2.6403-01	-3.0173-01	-2.9222-01	-3.3115-01
P/PO1	5.5168-02	5.1093-02	4.8166-02	4.7055-02	5.2057-02	4.7464-02	2.9269-02	3.3984-02	1.4674-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4362 TO = 535.

P	4.9256-01	7.1479-01	6.8014-01	7.3484-01	8.8471-01	5.7308-01	5.2117-01	5.1375-01	6.0820-01
CP	-2.9240-01	-2.6157-01	-2.6637-01	-2.5851-01	-2.3799-01	-2.8123-01	-2.8843-01	-2.8946-01	-2.7636-01
P/PO1	3.3894-02	4.9186-02	4.6801-02	5.0703-02	6.0878-02	3.9434-02	3.5862-02	3.5352-02	4.1851-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4367 TO = 534.

P	5.9152-01	7.2699-01	6.9912-01	7.4185-01	7.6190-01	7.5691-01	5.4034-01	4.6339-01	5.5816-01
CP	-2.7865-01	-2.5985-01	-2.6372-01	-2.5779-01	-2.5501-01	-2.5570-01	-2.8575-01	-2.9643-01	-2.8328-01
P/PO1	4.0713-02	5.0037-02	4.8119-02	5.1060-02	5.2440-02	5.2096-02	3.7191-02	3.1894-02	3.8417-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.7297+00	1.2602+01	2.9844-01	1.0132+01	3.2891-01	9.5648+00	6.6680+00	3.0781-01
CP	-1.2070-01	1.3049+00	-3.1932-01	1.0454+00	-3.1510-01	9.6666-01	5.6463-01	-3.1802-01
P/PO1	1.1905-01	8.2609-01	2.0541-02	6.9736-01	2.2638-02	6.5833-01	4.5894-01	2.1186-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.1469+00	7.7531+00	3.0469-01	7.8328+00	2.8828-01	4.4977+00	8.0391-01
CP	3.5354-01	7.1523-01	-3.1846-01	7.2629-01	-3.2073-01	2.6344-01	-2.4918-01
P/PO1	3.5425-01	5.3363-01	2.0971-02	5.3911-01	1.9842-02	3.0956-01	5.5331-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V. S. NAVAL GAS [illegible]
40 - [illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	90.	301244	1.99	2	11.16	153.24	5.00	65.01	180.0

VALVE POS 2 PC = 20.0 Q-INF = 7.212 P-INF =2.6018 RE = .4371 TO = 534.

P	2.6206+00	7.5704+00	1.0989+01	1.2548+01	1.3810+01	1.3559+01	1.4156+01	1.4328+01	1.4500+01
CP	2.6068-03	6.8889-01	1.1028+00	1.3790+00	1.5541+00	1.5192+00	1.6019+00	1.6258+00	1.6497+00
P/PO1	1.8020-01	5.2057-01	7.5562-01	8.6285-01	9.4565-01	9.3235-01	9.7338-01	9.8525-01	9.9706-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4360 TO = 534.

P	1.4312+01	1.2904+01	8.3552+00	3.9784+00	7.8446-01	8.1828-01	8.9069-01	1.0490+00	7.1838-01
CP	1.6268+00	1.4330+00	8.0069-01	1.9228-01	-2.5170-01	-2.4700-01	-2.3693-01	-2.1493-01	-2.6088-01
P/PO1	9.8670-01	8.8962-01	5.7602-01	2.7427-01	5.4081-02	5.6413-02	6.1405-02	7.2316-02	4.9525-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4362 TO = 534.

P	5.5038-01	1.1841+01	1.2149+01	1.2220+01	1.2494+01	1.2084+01	1.0660+01	6.6214+00	6.7958+00
CP	-2.8427-01	1.2844+00	1.3272+00	1.3372+00	1.3751+00	1.3182+00	1.1203+00	5.5925-01	5.8348-01
P/PO1	3.7926-02	8.1591-01	8.3715-01	8.4208-01	8.6092-01	8.3267-01	7.3454-01	4.5627-01	4.6829-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.1 Q-INF = 7.224 P-INF =2.6061 RE = .4378 TO = 534.

P	7.8482+00	8.4620+00	8.9196+00	8.9116+00	9.0763+00	8.6469+00	8.2561+00	7.1719+00	3.7949+00
CP	7.2563-01	8.1059-01	8.7393-01	8.7283-01	8.9563-01	8.3619-01	7.8209-01	6.3201-01	1.6456-01
P/PO1	5.3879-01	5.8092-01	6.1234-01	6.1179-01	6.2310-01	5.9362-01	5.6679-01	4.9236-01	2.6053-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4351 TO = 534.

P	1.4329+00	5.7516-01	5.4612-01	6.8421-01	1.1631+01	9.3845+00	7.1636+00	6.0238+00	5.1037+00
CP	-1.6118-01	-2.8064-01	-2.8468-01	-2.6545-01	1.2592+00	9.4622-01	6.3692-01	4.7818-01	3.5004-01
P/PO1	9.8973-02	3.9726-02	3.7721-02	4.7258-02	8.0339-01	6.4819-01	4.9479-01	4.1606-01	3.5252-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4359 TO = 534.

P	4.2808+00	1.4833+00	2.3267+00	1.8872+00	2.7308+00	4.5873+00	1.2829+01	5.8091-01	2.4673+00
CP	2.3446-01	-1.5450-01	-3.7237-02	-9.8345-02	1.8945-02	2.7707-01	1.4230+00	-2.7997-01	-1.7686-02
P/PO1	2.9519-01	1.0728-01	1.6044-01	1.3014-01	1.8831-01	3.1633-01	8.8465-01	4.0058-02	1.7014-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.214 P-INF =2.6024 RE = .4372 TO = 534.

P	5.5594-01	5.8513-01	5.4165-01	5.3357-01	6.0193-01	3.1452-01	3.4519-01	5.1711-01	5.0479-01
CP	-2.8368-01	-2.7963-01	-2.8566-01	-2.8678-01	-2.7730-01	-3.1714-01	-3.1289-01	-2.8906-01	-2.9077-01
P/PO1	3.8219-02	4.0226-02	3.7237-02	3.6681-02	4.1381-02	2.1622-02	2.3731-02	3.5550-02	3.4703-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4343 TO = 534.

P	4.5476-01	5.3083-01	5.7516-01	6.1549-01	6.3427-01	4.4100-01	2.0778-01	3.9482-01	4.6921-01
CP	-2.9729-01	-2.8667-01	-2.8049-01	-2.7486-01	-2.7224-01	-2.9921-01	-3.3175-01	-3.0565-01	-2.9527-01
P/PO1	3.1469-02	3.6734-02	3.9801-02	4.2592-02	4.3891-02	3.0517-02	1.4378-02	2.7322-02	3.2470-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4362 TC = 534.

P	6.6713-01	7.7685-01	6.2430-01	5.0700-01	5.4099-01	5.4509-01	5.5352-01	4.6898-01	1.9183-01
CP	-2.6805-01	-2.5280-01	-2.7400-01	-2.9030-01	-2.8558-01	-2.8500-01	-2.8300-01	-2.9558-01	-3.3409-01
P/PO1	4.5971-02	5.3532-02	4.3019-02	3.4937-02	3.7279-02	3.7562-02	3.8556-02	3.2317-02	1.3219-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4357 TC = 534.

P	4.0548-01	6.0952-01	6.1089-01	6.4095-01	6.7655-01	8.0038-01	7.0053-01	7.2351-01	7.4852-01
CP	-3.0434-01	-2.7595-01	-2.7576-01	-2.7158-01	-2.6663-01	-2.4941-01	-2.6329-01	-2.6010-01	-2.5662-01
P/PO1	2.7974-02	4.2050-02	4.2145-02	4.4219-02	4.6675-02	5.5217-02	4.8329-02	4.9914-02	5.1640-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4364 TC = 534.

P	9.5018-01	6.4941-01	6.6562-01	7.1428-01	7.6441-01	7.5946-01	6.1367-01	4.5107-01	4.4142-01
CP	-2.2878-01	-2.7055-01	-2.6830-01	-2.6154-01	-2.5458-01	-2.5527-01	-2.7552-01	-2.9810-01	-2.9944-01
P/PO1	6.5444-02	4.4729-02	4.5845-02	4.9197-02	5.2649-02	5.2309-02	4.2267-02	3.1068-02	3.0403-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.8609+00	1.2417+01	2.2734-01	1.0664+01	2.5938-01	9.6652+00	6.8766+00	2.6641-01	
CP	-1.0230-01	1.3637+00	-3.2917-01	1.1202+00	-3.2472-01	9.8159-01	5.9425-01	-3.2374-01	
P/PO1	1.2817-01	8.5525-01	1.5659-02	7.3450-01	1.7865-02	6.6573-01	4.7363-01	1.8349-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	5.1070+00	7.7578+00	2.6484-01	7.8281+00	2.5781-01	4.5844+00	6.8203-01
CP	3.4850-01	7.1664-01	-3.2396-01	7.2640-01	-3.2494-01	2.7592-01	-2.6607-01
P/PO1	3.5175-01	5.3433-01	1.8241-02	5.3917-01	1.7757-02	3.1575-01	4.6976-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	91.	301244	1.99	2	13.42	137.57	9.01	65.01	180.0

VALVE POS 2 PC = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4357 TO = 534.

P	2.5125+00	7.3202+00	1.0675+01	1.2220+01	1.3011+01	1.3261+01	1.3906+01	1.4045+01	1.4202+01
CP	-1.1241-02	6.5753-01	1.1242+00	1.3392+00	1.4491+00	1.4839+00	1.5736+00	1.5930+00	1.6149+00
P/P01	1.7334-01	5.0501-01	7.3648-01	8.4307-01	8.9762-01	9.1485-01	9.5935-01	9.6895-01	9.7981-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4351 TO = 534.

P	1.4014+01	1.2591+01	8.1358+00	3.8470+00	7.5438-01	7.9782-01	8.3632-01	8.8373-01	7.1838-01
CP	1.5909+00	1.3928+00	7.7231-01	1.7503-01	-2.5568-01	-2.4963-01	-2.4427-01	-2.3767-01	-2.6069-01
P/P01	9.6792-01	8.6968-01	5.6194-01	2.6572-01	5.2105-02	5.5106-02	5.7765-02	6.1040-02	4.9618-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.0 Q-INF = 7.202 P-INF =2.5982 RE = .4365 TO = 534.

P	5.3370-01	1.1043+01	1.1396+01	1.1487+01	1.2055+01	1.1362+01	9.9573+00	5.9137+00	5.8250+00
CP	-2.8664-01	1.1725+00	1.2216+00	1.2341+00	1.3130+00	1.2168+00	1.0218+00	4.6034-01	4.4802-01
P/P01	3.6751-02	7.6041-01	7.8475-01	7.9058-01	8.3009-01	7.8238-01	6.8566-01	4.0722-01	4.0111-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4343 TO = 534.

P	6.7787+00	7.2732+00	7.5401+00	7.8815+00	8.8412+00	7.7053+00	7.3509+00	6.4012+00	3.1687+00
CP	5.8509-01	6.5409-01	6.9133-01	7.3997-01	8.7287-01	7.1439-01	6.6493-01	5.3243-01	8.1387-02
P/P01	4.6909-01	5.0331-01	5.2178-01	5.4541-01	6.1181-01	5.3321-01	5.0869-01	4.4297-01	2.1927-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4351 TO = 534.

P	1.1801+00	5.6297-01	5.2490-01	6.3320-01	1.1443+01	8.5528+00	6.1804+00	4.7882+00	4.1331+00
CP	-1.9640-01	-2.8234-01	-2.8764-01	-2.7256-01	1.2330+00	8.3039-01	4.9999-01	3.0610-01	2.1486-01
P/P01	8.1507-02	3.8884-02	3.6255-02	4.3735-02	7.9040-01	5.9074-01	4.2688-01	3.3072-01	2.8547-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4349 TO = 534.

P	3.5620+00	1.1625+00	2.0569+00	1.4812+00	1.5535+00	3.5390+00	1.2002+01	5.5853-01	2.2330+00
CP	1.3557-01	-1.9877-01	-7.4150-02	-1.5436-01	-1.4423-01	1.3235-01	1.3115+00	-2.8292-01	-4.9610-02
P/P01	2.4615-01	8.0329-02	1.4214-01	1.0235-01	1.0738-01	2.4455-01	8.2936-01	3.8596-02	1.5431-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4351 TO = 534.

P	4.8256-01	5.6629-01	5.1820-01	5.1032-01	5.2607-01	3.0781-01	3.5308-01	5.4286-01	6.1288-01
CP	-2.9354-01	-2.8187-01	-2.8857-01	-2.8967-01	-2.8748-01	-3.1787-01	-3.1157-01	-2.8514-01	-2.7539-01
P/P01	3.3330-02	3.9114-02	3.5792-02	3.5248-02	3.6330-02	2.1260-02	2.4388-02	3.7495-02	4.2332-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4366 TO = 534.

P	4.9367-01	5.1421-01	5.4165-01	9.0225-01	8.7468-01	5.5629-01	1.9215-01	3.3373-01	3.9027-01
CP	-2.9221-01	-2.8936-01	-2.8555-01	-2.3550-01	-2.3533-01	-2.8352-01	-3.3407-01	-3.1442-01	-3.0657-01
P/P01	3.3986-02	3.5400-02	3.7289-02	6.2114-02	6.0217-02	3.8297-02	1.3228-02	2.2975-02	2.6868-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4330 TO = 534.

P	5.6595-01	6.7268-01	5.9303-01	5.1143-01	5.4970-01	5.6412-01	5.5050-01	4.2757-01	1.5111-01
CP	-2.8153-01	-2.6659-01	-2.7774-01	-2.8916-01	-2.8381-01	-2.8179-01	-2.8369-01	-3.0090-01	-3.3959-01
P/PO1	3.9284-02	4.6693-02	4.1164-02	3.5500-02	3.8156-02	3.9157-02	3.8211-02	2.9679-02	1.0489-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 19.9 Q-INF = 7.170 P-INF =2.5866 RE = .4345 TO = 534.

P	3.3264-01	6.1173-01	5.8856-01	6.7748-01	7.3433-01	7.9782-01	9.0882-01	8.9875-01	8.8918-01
CP	-3.1435-01	-2.7543-01	-2.7866-01	-2.6626-01	-2.5833-01	-2.4947-01	-2.3399-01	-2.3540-01	-2.3673-01
P/PO1	2.3008-02	4.2312-02	4.0709-02	4.6860-02	5.0792-02	5.5183-02	6.2861-02	6.2165-02	6.1503-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4336 TO = 534.

P	9.2208-01	6.5163-01	6.3323-01	6.4427-01	6.6660-01	6.6150-01	5.7757-01	4.1414-01	4.4920-01
CP	-2.3187-01	-2.6967-01	-2.7224-01	-2.7070-01	-2.6758-01	-2.6829-01	-2.8002-01	-3.0286-01	-2.9796-01
P/PO1	6.3913-02	4.5167-02	4.3892-02	4.4657-02	4.6205-02	4.5852-02	4.0034-02	2.8706-02	3.1136-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.2594+00	1.0676+01	-6.2500-03	8.9578+00	2.5391-01	8.6883+00	6.1009+00	2.6641-01
CP	-4.4970-02	1.1313+00	-3.6161-01	8.9121-01	-3.2526-01	8.5354-01	4.9191-01	-3.2351-01
P/PO1	1.5661-01	7.3999-01	-4.3322-04	6.2091-01	1.7599-02	6.0222-01	4.2287-01	1.8466-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.1492+00	7.3359+00	2.7188-01	6.9141+00	2.7891-01	4.1320+00	6.0000-01
CP	3.5892-01	6.6453-01	-3.2274-01	6.0557-01	-3.2176-01	2.1675-01	-2.7689-01
P/PO1	3.5692-01	5.0849-01	1.8845-02	4.7924-01	1.9332-02	2.8641-01	4.1589-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	92.	301244	1.49	2	-4.01	180.00	.00	79.01	180.0

VALVE POS 2 PC = 14.6 Q-INF = 6.251 P-INF =4.0225 RE = .3760 TO = 534.

P	1.5121+00	4.8048+00	8.7001+00	1.0363+01	1.1302+01	1.1550+01	1.2408+01	1.2771+01	1.3185+01
CP	-4.0158-01	1.2515-01	7.4826-01	1.0143+00	1.1645+00	1.2642+00	1.3413+00	1.3995+00	1.4656+00
P/P01	1.1136-01	3.5380-01	6.4073-01	7.6320-01	8.3237-01	8.5063-01	9.1377-01	9.4054-01	9.7099-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.269 P-INF =4.0342 RE = .3771 TO = 534.

P	1.3455+01	1.3373+01	1.1067+01	7.2885+00	2.1454+00	2.6876+00	2.9684+00	2.9615+00	2.3984+00
CP	1.5090+00	1.4897+00	1.1219+00	5.1908-01	-3.0128-01	-2.1479-01	-1.7000-01	-1.7110-01	-2.6091-01
P/P01	9.9095-01	9.8205-01	8.1270-01	5.3522-01	1.5354-01	1.9736-01	2.1798-01	2.1707-01	1.7613-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0650+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.249 P-INF 4.0212 RE = .3759 TO = 534.

P	1.9208+00	1.0652+01	1.1161+01	1.1424+01	1.2384+01	1.2084+01	1.1752+01	9.7041+00	5.7624+00
CP	-3.3411-01	1.0410+00	1.1425+00	1.1846+00	1.3382+00	1.2502+00	1.2371+00	9.0937-01	2.7862-01
P/P01	1.4150-01	7.8471-01	8.2224-01	8.4163-01	9.1232-01	8.9021-01	8.6578-01	7.1490-01	4.2451-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.6 Q-INF = 6.271 P-INF =4.0355 RE = .3773 TO = 534.

P	7.2977+00	8.1492+00	8.7315+00	8.5214+00	8.5904+00	8.6940+00	8.7087+00	8.4773+00	6.6706+00
CP	5.2018-01	6.5595-01	7.4880-01	7.1531-01	7.2630-01	7.4283-01	7.4517-01	7.0827-01	4.2018-01
P/P01	5.3572-01	5.9823-01	6.4037-01	6.2556-01	6.3062-01	6.3822-01	6.3930-01	6.2232-01	4.8968-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.5 Q-INF = 6.247 P-INF =4.0199 RE = .3758 TO = 534.

P	3.7465+00	1.2686+00	2.2249+00	2.6335+00	1.2744+01	9.5101+00	7.3509+00	6.0081+00	5.4356+00
CP	-4.3769-02	-4.4041-01	-2.8733-01	-2.2193-01	1.3565+00	8.7881-01	5.3320-01	3.1824-01	2.2661-01
P/P01	2.7609-01	9.3487-02	1.6396-01	1.9407-01	9.3919-01	7.0083-01	5.4172-01	4.4275-01	4.0057-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.5 Q-INF = 6.239 P-INF =4.0147 RE = .3753 TO = 534.

P	4.9996+00	3.2155+00	1.6343+00	1.6742+00	3.1610+00	4.0028+00	1.1612+01	1.3569+00	3.0560+00
CP	1.5784-01	-1.2809-01	-3.8153-01	-3.7514-01	-1.3684-01	-1.9164-03	1.2176+00	-4.2599-01	-1.5367-01
P/P01	3.6891-01	2.3727-01	1.2059-01	1.2354-01	2.3324-01	2.9536-01	8.5681-01	1.0012-01	2.2550-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.6 Q-INF = 6.267 P-INF =4.0329 RE = .3770 TO = 534.

P	1.0345+00	8.2681-01	8.1460-01	2.2130+00	2.2258+00	1.1584+00	1.1315+00	1.1766+00	1.2207+00
CP	-4.7842-01	-5.1155-01	-5.1350-01	-2.9937-01	-2.8833-01	-4.5865-01	-4.6293-01	-4.5573-01	-4.4869-01
P/P01	7.5989-02	6.0735-02	5.9838-02	1.6256-01	1.6350-01	8.5090-02	8.3116-02	8.6432-02	8.9672-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PO = 14.6 Q-INF = 6.261 P-INF =4.0290 RE = .3766 TO = 534.

P	1.3946+00	1.2785+00	7.6878-01	1.1504+00	1.2331+00	1.0638+00	1.1470+00	1.1917+00	1.2810+00
CP	-4.2074-01	-4.3929-01	-5.2069-01	-4.5975-01	-4.4654-01	-4.7358-01	-4.6028-01	-4.5315-01	-4.3888-01
P/P01	1.0254-01	9.4003-02	5.6527-02	8.4584-02	9.0665-02	7.8216-02	8.4338-02	8.7620-02	9.4191-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.6 Q-INF = 6.249 P-INF =4.0212 RE = .3759 TO = 534.

P	1.3793+00	1.4290+00	1.4281+00	1.3985+00	1.5163+00	1.1788+00	1.3127+00	1.4220+00	1.1102+00
CP	-4.2276-01	-4.1480-01	-4.1495-01	-4.1069-01	-4.0084-01	-4.5484-01	-4.3341-01	-4.1593-01	-4.6582-01
P/PO1	1.0161-01	1.0528-01	1.0521-01	1.0303-01	1.1170-01	8.6844-02	9.6709-02	1.0476-01	8.1790-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3781 TO = 534.

P	1.2465+00	1.4216+00	1.4205+00	1.5890+00	1.8246+00	1.1712+00	1.1626+00	1.0765+00	1.0675+00
CP	-4.4516-01	-4.1730-01	-4.1748-01	-3.9067-01	-3.5319-01	-4.5714-01	-4.5851-01	-4.7220-01	-4.7363-01
P/PO1	9.1298-02	1.0413-01	1.0404-01	1.1638-01	1.3364-01	8.5782-02	8.5152-02	7.8648-02	7.8190-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3746 TO = 534.

P	1.2414+00	1.5154+00	1.5376+00	1.5589+00	1.6792+00	1.6084+00	9.3989-01	1.1090+00	1.4543+00
CP	-4.4412-01	-4.0012-01	-3.9656-01	-3.9313-01	-3.7381-01	-3.8518-01	-4.9254-01	-4.6537-01	-4.0992-01
P/PO1	9.1776-02	1.1204-01	1.1367-01	1.1525-01	1.2415-01	1.1891-01	6.9488-02	8.1994-02	1.0752-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.7578+00	1.0992+01	7.9375-01	1.0010+01	1.0836+00	9.5789+00	7.2234+00	1.1156+00
CP	-3.6119-01	1.1217+00	-5.1600-01	9.6404-01	-4.6946-01	8.9479-01	5.1653-01	-4.6432-01
P/PO1	1.2996-01	8.1267-01	5.8683-02	7.4007-01	8.0112-02	7.0819-01	5.3404-01	8.2480-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.4492+00	9.6633+00	1.2117+00	8.1703+00	1.0547+00	5.3789+00	1.1320+00
CP	2.3161-01	9.0834-01	-4.4888-01	6.6859-01	-4.7410-01	2.2032-01	-4.6168-01
P/PO1	4.0287-01	7.1442-01	8.9585-02	6.0405-01	7.7975-02	3.9767-01	8.3693-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	93.	301244	1.49	2	5.00	180.00	.00	70.00	180.0

VALVE POS 2 PC = 14.6 Q-INF = 6.249 P-INF =4.0212 RE = .3759 TO = 534.

P	2.2298+00	6.3973+00	9.7034+00	1.1253+01	1.2415+01	1.2351+01	1.3001+01	1.3259+01	1.3498+01
CP	-2.8665-01	3.8022-01	9.0925-01	1.1572+00	1.3432+00	1.3328+00	1.4369+00	1.4782+00	1.5164+00
P/P01	1.6427-01	4.7129-01	7.1484-01	8.2898-01	9.1463-01	9.0986-01	9.5776-01	9.7676-01	9.9437-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.265 P-INF =4.0316 RE = .3769 TO = 534.

P	1.3479+01	1.2591+01	9.0763+00	5.0668+00	1.2406+00	1.3808+00	1.5043+00	1.7519+00	1.5071+00
CP	1.5079+00	1.3662+00	8.0518-01	1.6523-01	-4.4546-01	-4.2308-01	-4.0337-01	-3.6385-01	-4.0293-01
P/P01	9.9043-01	9.2521-01	6.6693-01	3.7231-01	9.1160-02	1.0146-01	1.1054-01	1.2873-01	1.1074-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.265 P-INF =4.0316 RE = .3769 TO = 534.

P	1.3461+00	1.1590+01	1.1945+01	1.2080+01	1.2917+01	1.2209+01	1.1143+01	8.0055+00	6.8585+00
CP	-4.2863-01	1.2064+00	1.2630+00	1.2846+00	1.4182+00	1.3052+00	1.1351+00	6.3427-01	4.5119-01
P/P01	9.8911-02	8.5166-01	8.7772-01	8.8763-01	9.4914-01	8.9714-01	8.1882-01	5.8825-01	5.0396-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.5 Q-INF = 6.237 P-INF =4.0134 RE = .3752 TO = 534.

P	8.0212+00	8.8530+00	9.4369+00	9.3642+00	1.0409+01	9.2119+00	8.9740+00	8.1470+00	5.2227+00
CP	6.4256-01	7.7593-01	8.6953-01	8.5789-01	1.0254+00	8.3346-01	7.9533-01	6.6274-01	1.9388-01
P/P01	5.9207-01	6.5346-01	6.9656-01	6.9120-01	7.6830-01	6.7995-01	6.6240-01	6.0135-01	3.8550-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.6 Q-INF = 6.259 P-INF =4.0277 RE = .3765 TO = 534.

P	2.3471+00	1.3772+00	1.3186+00	1.6090+00	1.0957+01	9.6199+00	7.7255+00	6.8259+00	6.0442+00
CP	-2.6849-01	-4.2345-01	-4.3280-01	-3.8641-01	1.1071+00	8.9342-01	5.9077-01	4.4705-01	3.2216-01
P/P01	1.7263-01	1.0129-01	9.6988-02	1.1835-01	8.0593-01	7.0756-01	5.6822-01	5.0205-01	4.4456-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.5 Q-INF = 6.229 P-INF =4.0083 RE = .3747 TO = 534.

P	5.2222+00	2.4209+00	2.3420+00	2.1704+00	3.4540+00	4.6064+00	1.2220+01	1.3093+00	2.8243+00
CP	1.9488-01	-2.5483-01	-2.6750-01	-2.9504-01	-8.8978-02	9.6019-02	1.3183+00	-4.3328-01	-1.9007-01
P/P01	3.8596-01	1.7892-01	1.7309-01	1.6041-01	2.5528-01	3.4045-01	9.0318-01	9.6770-02	2.0874-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1900-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.6 Q-INF = 6.283 P-INF =4.0432 RE = .3780 TO = 534.

P	1.6041+00	1.5870+00	1.5681+00	1.5388+00	1.5890+00	1.0024+00	9.6578-01	1.0339+00	1.0826+00
CP	-3.8819-01	-3.9091-01	-3.9391-01	-3.9857-01	-3.9059-01	-4.8394-01	-4.8977-01	-4.7892-01	-4.7118-01
P/P01	1.1753-01	1.1628-01	1.1489-01	1.1275-01	1.1642-01	7.3444-02	7.0761-02	7.5755-02	7.9320-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.6 Q-INF = 6.259 P-INF =4.0277 RE = .3765 TO = 534.

P	1.2107+00	1.5648+00	1.5885+00	6.3873-01	5.7954-01	6.1449-01	9.8132-01	1.0690+00	1.1630+00
CP	-4.5005-01	-3.9348-01	-3.8969-01	-5.4143-01	-5.5088-01	-5.4530-01	-4.8669-01	-4.7269-01	-4.5767-01
P/P01	8.9049-02	1.1509-01	1.1683-01	4.6980-02	4.2626-02	4.5197-02	7.2177-02	7.8626-02	8.5538-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.7 Q-INF = 6.308 P-INF =4.0588 RE = .3794 TO = 534.

P	1.3027+00	1.4068+00	1.4816+00	1.4962+00	1.5113+00	1.5445+00	1.5509+00	1.5472+00	9.9468-01
CP	-4.3695-01	-4.2044-01	-4.0859-01	-4.0626-01	-4.0388-01	-3.9861-01	-3.9759-01	-3.9819-01	-4.8578-01
P/PO1	9.5079-02	1.0268-01	1.0814-01	1.0921-01	1.1030-01	1.1273-01	1.1320-01	1.1292-01	7.2599-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.5 Q-INF = 6.219 P-INF =4.0018 RE = .3741 TO = 534.

P	1.1213+00	1.3007+00	1.4026+00	1.4862+00	1.4937+00	6.9809-01	7.5864-01	8.5369-01	1.5096+00
CP	-4.6317-01	-4.3433-01	-4.1793-01	-4.0449-01	-4.0329-01	-5.3122-01	-5.2148-01	-5.0620-01	-4.0073-01
P/PO1	8.3008-02	9.6286-02	1.0383-01	1.1062-01	1.1058-01	5.1678-02	5.6161-02	6.3197-02	1.1175-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.6 Q-INF = 6.265 P-INF =4.0316 RE = .3769 TO = 534.

P	1.3589+00	1.4068+00	1.3594+00	1.3358+00	1.3333+00	1.4703+00	1.6752+00	1.8000+00	1.1655+00
CP	-4.2659-01	-4.1893-01	-4.2651-01	-4.3026-01	-4.3066-01	-4.0879-01	-3.7609-01	-3.5618-01	-4.5745-01
P/PO1	9.9849-02	1.0337-01	9.9887-02	9.8158-02	9.7974-02	1.0804-01	1.2310-01	1.3227-01	8.5640-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.7273+00	1.1824+01	7.9375-01	1.0418+01	9.8359-01	9.6586+00	7.1086+00	9.1797-01
CP	-3.6777-01	1.2438+00	-5.1678-01	1.0193+00	-4.8648-01	8.9812-01	4.9112-01	-4.9696-01
P/PO1	1.2693-01	8.6885-01	5.8325-02	7.6552-01	7.2275-02	7.0972-01	5.2234-01	6.7453-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3813+00	9.3070+00	1.0500+00	8.6859+00	9.2344-01	5.3859+00	9.3750-01
CP	2.1542-01	8.4200-01	-4.7588-01	7.4287-01	-4.9608-01	2.1617-01	-4.9384-01
P/PO1	3.9542-01	6.8389-01	7.7155-02	6.3825-01	6.7855-02	3.9576-01	6.8888-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	94.	301244	1.49	2	9.99	180.00	.00	65.01	180.0

VALVE POS 2 PC = 14.6 Q-INF = 6.267 P-INF =4.0329 RE = .3770 TO = 534.

P	2.7606+00	7.3671+00	1.0330+01	1.1752+01	1.3372+01	1.2759+01	1.3297+01	1.3463+01	1.3592+01
CP	-2.0300-01	5.3200-01	1.0048+00	1.2317+00	1.4900+00	1.3922+00	1.4782+00	1.5047+00	1.5252+00
P/P01	2.0278-01	5.4116-01	7.5884-01	8.6327-01	9.8223-01	9.3720-01	9.7677-01	9.8895-01	9.9840-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3777 TO = 534.

P	1.3369+01	1.2122+01	7.9477+00	3.9471+00	1.4062+00	1.3608+00	1.3930+00	6.1586-01	1.5850+00
CP	1.4855+00	1.2870+00	6.2219-01	-1.4895-02	-4.0999-01	-4.2357-01	-4.2164-01	-5.4540-01	-3.9107-01
P/P01	9.8013-01	8.8874-01	5.8269-01	2.8938-01	1.0749-01	1.0124-01	1.0213-01	4.5152-02	1.1620-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.5 Q-INF = 6.207 P-INF =3.9940 RE = .3734 TO = 534.

P	1.6781+00	1.1841+01	1.2117+01	1.2158+01	1.3324+01	1.1990+01	1.0582+01	6.9045+00	7.4222+00
CP	-3.7311-01	1.2641+00	1.3088+00	1.3153+00	1.5032+00	1.2882+00	1.0613+00	4.6891-01	5.5231-01
P/P01	1.2447-01	8.7823-01	8.9877-01	9.0177-01	9.8830-01	8.8929-01	7.8485-01	5.1212-01	5.5052-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3746 TO = 534.

P	8.4459+00	9.1815+00	9.7974+00	9.6920+00	1.0205+01	9.4002+00	8.9896+00	7.9740+00	4.4712+00
CP	7.1284-01	8.3097-01	9.2988-01	9.1295-01	9.9533-01	8.6609-01	8.0016-01	6.3707-01	7.4558-02
P/P01	6.2442-01	6.7880-01	7.2434-01	7.1655-01	7.5447-01	6.9497-01	6.6462-01	5.8954-01	3.3057-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.5 Q-INF = 6.217 P-INF =4.0005 RE = .3740 TO = 534.

P	1.7982+00	1.6339+00	1.5834+00	1.5439+00	1.1679+01	9.5101+00	7.8972+00	7.0933+00	6.3417+00
CP	-3.5424-01	-3.8067-01	-3.8879-01	-3.9515-01	1.2350+00	8.8621-01	6.2677-01	4.9747-01	3.7659-01
P/P01	1.3316-01	1.2099-01	1.1725-01	1.1432-01	8.6481-01	7.0423-01	5.8480-01	5.2527-01	4.6962-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.5 Q-INF = 6.247 P-INF =4.0199 RE = .3758 TO = 534.

P	5.2794+00	2.1201+00	2.7894+00	2.5647+00	3.7159+00	4.8605+00	1.2470+01	1.4821+00	2.7429+00
CP	2.0161-01	-3.0411-01	-1.9697-01	-2.3294-01	-4.8671-02	1.3456-01	1.3526+00	-4.0624-01	-2.0442-01
P/P01	3.8906-01	1.5624-01	2.0556-01	1.8900-01	2.7383-01	3.5819-01	9.1896-01	1.0922-01	2.0213-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.5 Q-INF = 6.231 P-INF =4.0096 RE = .3748 TO = 534.

P	1.6858+00	1.6660+00	1.6470+00	1.6140+00	1.6266+00	7.1855-01	7.3016-01	8.9375-01	1.0449+00
CP	-3.7293-01	-3.7611-01	-3.7915-01	-3.8444-01	-3.8243-01	-5.2816-01	-5.2629-01	-5.0004-01	-4.7578-01
P/P01	1.2455-01	1.2309-01	1.2169-01	1.1925-01	1.2018-01	5.3089-02	5.3947-02	6.6034-02	7.7202-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.5 Q-INF = 6.241 P-INF =4.0160 RE = .3754 TO = 534.

P	1.3256+00	1.6388+00	1.6114+00	7.6691-01	7.3684-01	3.8168-01	5.7080-01	8.3116-01	1.0499+00
CP	-4.3107-01	-3.8089-01	-3.8529-01	-5.2059-01	-5.2541-01	-5.8232-01	-5.5201-01	-5.1030-01	-4.7524-01
P/P01	9.7786-02	1.2089-01	1.1886-01	5.6571-02	5.4353-02	2.8154-02	4.2105-02	6.1310-02	7.7448-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.5 Q-INF = 6.245 P-INF =4.0186 RE = .3757 TO = 534.

P	1.3589+00	1.5055+00	1.5885+00	1.5975+00	1.7418+00	1.6417+00	1.6286+00	1.6373+00	5.4704-01
CP	-4.2589-01	-4.0240-01	-3.8912-01	-3.8784-01	-3.6456-01	-3.8060-01	-3.8269-01	-3.8131-01	-5.5588-01
P/PO1	1.0017-01	1.1098-01	1.1710-01	1.1769-01	1.2840-01	1.2102-01	1.2006-01	1.2070-01	4.0327-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.5 Q-INF = 6.243 P-INF =4.0173 RE = .3756 TO = 534.

P	8.6078-01	1.0317+00	1.7565+00	1.5990+00	1.5915+00	9.2056-01	6.2946-01	1.9502+00	2.4924+00
CP	-5.0560-01	-4.7823-01	-3.6213-01	-3.8735-01	-3.8856-01	-4.9602-01	-5.4265-01	-3.3110-01	-2.4426-01
P/PO1	6.3475-02	7.6075-02	1.2953-01	1.1791-01	1.1736-01	6.7883-02	4.6417-02	1.4381-01	1.8379-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.6 Q-INF = 6.259 P-INF =4.0277 RE = .3765 TO = 534.

P	1.3614+00	1.3821+00	1.6954+00	1.6967+00	1.7694+00	1.7695+00	1.7167+00	1.6748+00	1.6477+00
CP	-4.2597-01	-4.2266-01	-3.7261-01	-3.7240-01	-3.6079-01	-3.6077-01	-3.6922-01	-3.7590-01	-3.8022-01
P/PO1	1.0013-01	1.0166-01	1.2470-01	1.2480-01	1.3014-01	1.3015-01	1.2626-01	1.2319-01	1.2119-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.6383+00	1.2563+01	6.2500-01	1.0847+01	6.4219-01	9.4898+00	6.9727+00	6.5469-01
CP	-3.8174-01	1.3635+00	-5.4362-01	1.0894+00	-5.4087-01	8.7264-01	4.7049-01	-5.3888-01
P/PO1	1.2050-01	9.2399-01	4.5970-02	7.9780-01	4.7234-02	6.9799-01	5.1285-01	4.8153-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3414+00	8.7234+00	7.8047-01	8.5523+00	7.0313-01	5.6250+00	7.3125-01	
CP	2.0988-01	7.5020-01	-5.1878-01	7.2287-01	-5.3114-01	2.5519-01	-5.2665-01	
P/PO1	3.9287-01	6.4162-01	5.7405-02	6.2904-01	5.1716-02	4.1373-01	5.3784-02	
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01	

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS 65 WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	95.	301244	1.49	2	13.44	222.40	-9.02	64.99	180.0

VALVE POS 2 PC = 14.5 Q-INF = 6.235 P-INF =4.0121 RE = .3751 TO = 534.

P	2.7224+00	7.1168+00	1.0033+01	1.1378+01	1.3873+01	1.2398+01	1.2985+01	1.3164+01	1.3278+01
CP	-2.0685-01	4.9793-01	9.6556-01	1.1813+00	1.5815+00	1.3449+00	1.4391+00	1.4678+00	1.4861+00
P/P01	2.0101-01	5.2548-01	7.4077-01	8.4008-01	1.0243+00	9.1539-01	9.5877-01	9.7200-01	9.8044-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.5 Q-INF = 6.231 P-INF =4.0096 RE = .3748 TO = 534.

P	1.3070+01	1.1841+01	7.7282+00	3.7845+00	1.4486+00	1.1865+00	1.2195+00	1.5797+00	1.4870+00
CP	1.4540+00	1.2567+00	5.9679-01	-3.6122-02	-4.1099-01	-4.5306-01	-4.4776-01	-3.8995-01	-4.0483-01
P/P01	9.6500-01	8.7483-01	5.7099-01	2.7961-01	1.0703-01	8.7664-02	9.0104-02	1.1671-01	1.0986-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.255 P-INF =4.0251 RE = .3763 TO = 534.

P	1.6245+00	1.2623+01	1.3027+01	1.3094+01	1.4171+01	1.2963+01	1.1549+01	7.7067+00	8.6435+00
CP	-3.8327-01	1.3744+00	1.4390+00	1.4498+00	1.6220+00	1.4288+00	1.2028+00	5.8855-01	7.3833-01
P/P01	1.1956-01	9.2901-01	9.5874-01	9.6372-01	1.0430+00	9.5403-01	8.5001-01	5.6720-01	6.3615-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.6 Q-INF = 6.251 P-INF =4.0225 RE = .3760 TO = 534.

P	9.8771+00	1.0620+01	1.1255+01	1.1706+01	1.1412+01	1.0954+01	1.0566+01	9.4053+00	5.7738+00
CP	9.3655-01	1.0555+00	1.1570+00	1.1491+00	1.1821+00	1.1098+00	1.0467+00	8.6107-01	2.8015-01
P/P01	7.2741-01	7.8216-01	8.2891-01	8.2527-01	8.4045-01	8.0671-01	7.7814-01	6.9266-01	4.2522-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.6 Q-INF = 6.273 P-INF =4.0368 RE = .3774 TO = 534.

P	2.3471+00	1.5993+00	1.5503+00	1.5138+00	1.2572+01	1.0546+01	9.1613+00	8.6032+00	7.8293+00
CP	-2.6933-01	-3.8854-01	-3.9635-01	-4.0217-01	1.3605+00	1.0376+00	8.1687-01	7.2790-01	6.0454-01
P/P01	1.7225-01	1.1737-01	1.1377-01	1.1109-01	9.2261-01	7.7392-01	6.7231-01	6.3135-01	5.7456-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.5 Q-INF = 6.217 P-INF =4.0065 RE = .3740 TO = 534.

P	6.6529+00	3.1170+00	3.4852+00	3.5530+00	5.5336+00	5.3688+00	1.2735+01	1.6648+00	3.2438+00
CP	4.2664-01	-1.4211-01	-8.2883-02	-7.1973-02	2.4660-01	2.2009-01	1.4050+00	-3.7569-01	-1.2170-01
P/P01	4.9266-01	2.3082-01	2.5808-01	2.6311-01	4.0977-01	3.9757-01	9.4307-01	1.2328-01	2.4021-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.6 Q-INF = 6.253 P-INF =4.0238 RE = .3762 TO = 534.

P	1.6[illegible]+00	1.6437+00	1.6165+00	1.5865+00	1.7895+00	1.0075+00	1.1315+00	1.1090+00	1.2408+00
CP	-3.7[illegible]-01	-3.8061-01	-3.8497-01	-3.8977-01	-3.5731-01	-4.8236-01	-4.6253-01	-4.6612-01	-4.4504-01
P/P01	1.2186-01	1.2102-01	1.1901-01	1.1680-01	1.3174-01	7.4175-02	8.3303-02	8.1651-02	9.1353-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.5 Q-INF = 6.247 P-INF =4.0199 RE = .3758 TO = 534.

P	1.4559+00	1.3871+00	1.6139+00	1.1429+00	1.3133+00	1.3092+00	1.1859+00	1.1491+00	1.2760+00
CP	-4.1042-01	-4.2144-01	-3.8513-01	-4.6053-01	-4.3325-01	-4.3390-01	-4.5365-01	-4.5953-01	-4.3922-01
P/P01	1.0729-01	1.0222-01	1.1894-01	8.4221-02	9.6780-02	9.6483-02	8.7391-02	8.4681-02	9.4033-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.5 Q-INF = 6.231 P-INF =4.0096 RE = .3748 TO = 534.

P	1.4815+00	1.5944+00	1.6165+00	1.6115+00	1.6591+00	1.6187+00	1.6131+00	1.6323+00	1.1755+00
CP	-4.0572-01	-3.8760-01	-3.8405-01	-3.8485-01	-3.7720-01	-3.8370-01	-3.8460-01	-3.8152-01	-4.5482-01
P/PO1	1.0946-01	1.1780-01	1.1943-01	1.1907-01	1.2258-01	1.1959-01	1.1918-01	1.2060-01	8.6853-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.5 Q-INF = 6.247 P-INF =4.0199 RE = .3758 TO = 534.

P	1.4406+00	1.5648+00	1.6114+00	1.5890+00	1.6616+00	1.2479+00	1.2920+00	1.2643+00	1.2408+00
CP	-4.1288-01	-3.9300-01	-3.8554-01	-3.8912-01	-3.7749-01	-4.4372-01	-4.3666-01	-4.4110-01	-4.4485-01
P/PO1	1.0616-01	1.1531-01	1.1875-01	1.1710-01	1.2245-01	9.1940-02	9.5214-02	9.3168-02	9.1441-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.5 Q-INF = 6.221 P-INF =4.0031 RE = .3742 TO = 534.

P	1.4059+00	1.2266+00	1.5757+00	1.6416+00	1.7193+00	1.7005+00	1.6623+00	1.6373+00	1.6025+00
CP	-4.1683-01	-4.4630-01	-3.9018-01	-3.7959-01	-3.6711-01	-3.7013-01	-3.7627-01	-3.8029-01	-3.8587-01
P/PO1	1.0434-01	9.0775-02	1.1661-01	1.2148-01	1.2723-01	1.2584-01	1.2301-01	1.2116-01	1.1859-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.7484+00	1.3219+01	7.9375-01	1.1756+01	9.7578-01	1.0559+01	8.3344+00	9.9609-01
CP	-3.6242-01	1.4814+00	-5.1588-01	1.2463+00	-4.8662-01	1.0538+00	6.9623-01	-4.8336-01
P/PO1	1.2935-01	9.7824-01	5.8740-02	8.7001-01	7.2211-02	7.8137-01	6.1677-01	7.3715-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3813+00	1.0786+01	1.0781+00	9.8203+00	1.0570+00	6.4664+00	1.0102+00
CP	2.2153-01	1.0903+00	-4.7017-01	9.3509-01	-4.7356-01	3.9597-01	-4.8109-01
P/PO1	3.9823-01	7.9820-01	7.9785-02	7.2674-01	7.8224-02	4.7854-01	7.4755-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	96.	301244	1.49	2	11.14	206.76	-4.99	65.03	180.0

VALVE POS 2 PC = 14.4 Q-INF = 6.199 P-INF =3.9888 RE = .3729 TO = 534.

P	2.7542+00	7.2732+00	1.0205+01	1.1549+01	1.2227+01	1.2570+01	1.3141+01	1.3306+01	1.3372+01
CP	-1.9917-01	5.2984-01	1.0028+00	1.2196+00	1.3290+00	1.3843+00	1.4764+00	1.5030+00	1.5138+00
P/PO1	2.0455-01	5.4017-01	7.5790-01	8.5774-01	9.0809-01	9.3357-01	9.7597-01	9.8819-01	9.9314-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3746 TO = 534.

P	1.3227+01	1.1997+01	7.8536+00	3.8658+00	1.4862+00	1.4216+00	1.4396+00	1.6397+00	1.5950+00
CP	1.4807+00	1.2831+00	6.1773-01	-2.2670-02	-4.0480-01	-4.1515-01	-4.1229-01	-3.8015-01	-3.8733-01
P/PO1	9.7791-01	8.8696-01	5.8063-01	2.8581-01	1.0988-01	1.0511-01	1.0643-01	1.2123-01	1.1792-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3716 TO = 534.

P	1.6832+00	1.2310+01	1.2603+01	1.2642+01	1.2666+01	1.2507+01	1.1128+01	7.3764+00	8.0955+00
CP	-3.7096-01	1.3494+00	1.3970+00	1.4032+00	1.4071+00	1.3814+00	1.1581+00	5.5074-01	6.6716-01
P/PO1	1.2546-01	9.1750-01	9.3938-01	9.4224-01	9.4406-01	9.3223-01	8.2940-01	5.4979-01	6.0339-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3722 TO = 534.

P	9.2637+00	9.9010+00	1.0613+01	1.0519+01	1.0450+01	1.0232+01	9.8324+00	8.7447+00	5.1476+00
CP	8.5386-01	9.5686-01	1.0719+00	1.0568+00	1.0465+00	1.0104+00	9.4578-01	7.6997-01	1.8855-01
P/PO1	6.8934-01	7.3676-01	7.8971-01	7.8276-01	7.7805-01	7.6139-01	7.3166-01	6.5072-01	3.8305-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.4 Q-INF = 6.175 P-INF =3.9733 RE = .3714 TO = 534.

P	2.1072+00	1.6437+00	1.5987+00	1.5639+00	1.1788+01	1.0075+01	8.5214+00	7.8482+00	7.0620+00
CP	-3.0220-01	-3.7727-01	-3.8457-01	-3.9020-01	1.2656+00	9.8817-01	7.3657-01	6.2754-01	5.0022-01
P/PO1	1.5711-01	1.2255-01	1.1919-01	1.1660-01	8.7892-01	7.5118-01	6.3535-01	5.8515-01	5.2653-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.5 Q-INF = 6.231 P-INF =4.0096 RE = .3748 TO = 534.

P	5.9766+00	2.6242+00	3.1753+00	3.1089+00	4.2022+00	5.1337+00	1.2408+01	1.6673+00	3.0121+00
CP	3.1568-01	-2.2233-01	-1.3389-01	-1.4454-01	3.0911-02	1.8041-01	1.3478+00	-3.7589-01	-1.6007-01
P/PO1	4.4158-01	1.9388-01	2.3460-01	2.2970-01	3.1047-01	3.7930-01	9.1672-01	1.2319-01	2.2755-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.5 Q-INF = 6.239 P-INF =4.0147 RE = .3753 TO = 534.

P	1.6960+00	1.6783+00	1.6547+00	1.6291+00	1.7193+00	7.7481-01	8.3632-01	9.2879-01	1.0700+00
CP	-3.7164-01	-3.7448-01	-3.7827-01	-3.8237-01	-3.6791-01	-5.1929-01	-5.0943-01	-4.9461-01	-4.7197-01
P/PO1	1.2515-01	1.2384-01	1.2210-01	1.2021-01	1.2686-01	5.7172-02	6.1711-02	6.8535-02	7.8956-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.5 Q-INF = 6.233 P-INF =4.0108 RE = .3750 TO = 534.

P	1.3231+00	1.6511+00	1.6394+00	9.0977-01	7.4436-01	6.8613-01	8.8293-01	9.5884-01	1.1454+00
CP	-4.3120-01	-3.7857-01	-3.8046-01	-4.9751-01	-5.2405-01	-5.3339-01	-5.0182-01	-4.8964-01	-4.5971-01
P/PO1	9.7724-02	1.2195-01	1.2109-01	6.7196-02	5.4978-02	5.0677-02	6.5213-02	7.0820-02	8.4598-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.6 Q-INF = 6.257 P-INF =4.0264 RE = .3764 TO = 534.

P	1.3793+00	1.5302+00	1.6114+00	1.6015+00	1.7268+00	1.6391+00	1.6312+00	1.6398+00	7.6359-01
CP	-4.2304-01	-3.9892-01	-3.8595-01	-3.8753-01	-3.6750-01	-3.8152-01	-3.8278-01	-3.8141-01	-5.2144-01
P/PO1	1.0148-01	1.1259-01	1.1856-01	1.1783-01	1.2705-01	1.2060-01	1.2002-01	1.2065-01	5.6181-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.251 P-INF =4.0225 RE = .3760 TO = 534.

P	1.2695+00	1.3698+00	1.8125+00	1.6215+00	1.6466+00	9.2312-01	7.5088-01	8.8373-01	1.7482+00
CP	-4.4040-01	-4.2435-01	-3.5353-01	-3.8408-01	-3.8007-01	-4.9580-01	-5.2336-01	-5.0210-01	-3.6381-01
P/PO1	9.3490-02	1.0088-01	1.3348-01	1.1942-01	1.2127-01	6.7984-02	5.5299-02	6.5083-02	1.2875-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.5 Q-INF = 6.219 P-INF =4.0018 RE = .3741 TO = 534.

P	1.2567+00	1.2711+00	1.5350+00	1.6165+00	1.7293+00	1.7312+00	1.6752+00	1.6723+00	1.6327+00
CP	-4.4140-01	-4.3909-01	-3.9665-01	-3.8354-01	-3.6540-01	-3.6511-01	-3.7410-01	-3.7457-01	-3.8094-01
P/PO1	9.3029-02	9.4093-02	1.1363-01	1.1967-01	1.2802-01	1.2815-01	1.2401-01	1.2380-01	1.2086-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5773+00	1.2567+01	6.6250-01	1.1484+01	6.8203-01	1.0008+01	7.6406+00	6.9531-01
CP	-3.8984-01	1.3773+00	-5.3694-01	1.2032+00	-5.3380-01	9.6575-01	5.8511-01	-5.3167-01
P/PO1	1.1677-01	9.3032-01	4.9043-02	8.5016-01	5.0489-02	7.4085-01	5.6562-01	5.1472-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3203+00	9.9984+00	8.3906-01	9.0516+00	7.3828-01	6.1734+00	7.2891-01
CP	2.1202-01	9.6424-01	-5.0855-01	8.1199-01	-5.2476-01	3.4919-01	-5.2627-01
P/PO1	3.9385-01	7.4016-01	6.2114-02	6.7007-01	5.4653-02	4.5700-01	5.3959-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	97.	301244	1.49	2	10.23	241.25	-8.96	70.04	180.0

VALVE POS 2 PC = 14.4 Q-INF = 6.201 P-INF =3.9901 RE = .3730 TO = 534.

P	2.1915+00	6.1158+00	9.4525+00	1.0894+01	1.3277+01	1.2005+01	1.2720+01	1.3023+01	1.3169+01
CP	-2.9005-01	3.4280-01	8.8090-01	1.1133+00	1.4977+00	1.2926+00	1.4078+00	1.4566+00	1.4802+00
P/P01	1.6271-01	4.5406-01	7.0179-01	8.0879-01	9.8577-01	8.9132-01	9.4436-01	9.6686-01	9.7771-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.5 Q-INF = 6.225 P-INF =4.0057 RE = .3745 TO = 534.

P	1.3211+01	1.2325+01	8.7471+00	4.8291+00	1.1203+00	1.3220+00	1.4318+00	1.7457+00	1.4669+00
CP	1.4788+00	1.3365+00	7.6167-01	1.3228-01	-4.6351-01	-4.3110-01	-4.1346-01	-3.6304-01	-4.0783-01
P/P01	9.7706-01	9.1153-01	6.4690-01	3.5714-01	8.2852-02	9.7772-02	1.0589-01	1.2910-01	1.0849-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.5 Q-INF = 6.233 P-INF =4.0108 RE = .3750 TO = 534.

P	1.3512+00	1.2278+01	1.2713+01	1.2860+01	1.3685+01	1.3010+01	1.1939+01	8.7132+00	8.0798+00
CP	-4.2670-01	1.3264+00	1.3961+00	1.4197+00	1.5521+00	1.4437+00	1.2720+00	7.5442-01	6.5280-01
P/P01	9.9799-02	9.0689-01	9.3899-01	9.4986-01	1.0108+00	9.6089-01	8.8185-01	6.4356-01	5.9678-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.5 Q-INF = 6.217 P-INF =4.0005 RE = .3740 TO = 534.

P	9.3738+00	1.0183+01	1.0863+01	1.0916+01	1.0613+01	1.0718+01	1.0498+01	9.6412+00	6.6862+00
CP	8.6429-01	9.9437-01	1.1039+00	1.0962+00	1.0635+00	1.0806+00	1.0435+00	9.0730-01	4.3200-01
P/P01	6.9415-01	7.5403-01	8.0445-01	8.0092-01	7.8588-01	7.9372-01	7.7665-01	7.1395-01	4.9513-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3731 TO = 534.

P	2.9323+00	1.3031+00	1.3976+00	1.7043+00	1.1882+01	1.0295+01	8.9428+00	8.2571+00	7.5944+00
CP	-1.7074-01	-4.3335-01	-4.1817-01	-3.6872-01	1.2721+00	1.0162+00	7.9824-01	6.8769-01	5.8085-01
P/P01	2.1764-01	9.6719-02	1.0373-01	1.2649-01	8.8190-01	7.6407-01	6.6374-01	6.1284-01	5.6366-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.269 P-INF =4.0342 RE = .3771 TO = 534.

P	6.7001+00	3.5728+00	2.8906+00	3.0751+00	4.3830+00	5.0892+00	1.2486+01	1.4445+00	3.3440+00
CP	4.2523-01	-7.3587-02	-1.8240-01	-1.5457-01	5.5635-02	1.6829-01	1.3481+00	-4.1306-01	-1.1008-01
P/P01	4.9201-01	2.6236-01	2.1227-01	2.2508-01	3.2186-01	3.7372-01	9.1686-01	1.0608-01	2.4556-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.5 Q-INF = 6.229 P-INF =4.0083 RE = .3747 TO = 534.

P	1.5913+00	1.6092+00	1.5783+00	1.5413+00	1.5263+00	8.1572-01	8.8034-01	8.9625-01	1.1454+00
CP	-3.8801-01	-3.8514-01	-3.9010-01	-3.9603-01	-3.9844-01	-5.1252-01	-5.0215-01	-4.9959-01	-4.5960-01
P/P01	1.1761-01	1.1893-01	1.1665-01	1.1392-01	1.1281-01	6.0288-02	6.5064-02	6.6240-02	8.4653-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.5 Q-INF = 6.213 P-INF =3.9979 RE = .3737 TO = 534.

P	1.3716+00	1.3846+00	1.5859+00	9.0977-01	9.3233-01	1.0919+00	9.2953-01	1.0189+00	1.1353+00
CP	-4.2271-01	-4.2062-01	-3.8821-01	-4.9704-01	-4.9341-01	-4.6773-01	-4.9386-01	-4.7947-01	-4.6074-01
P/P01	1.0164-01	1.0260-01	1.1752-01	6.7414-02	6.9085-02	8.0908-02	6.8678-02	7.5502-02	8.4128-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

B200

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.5 Q-INF = 6.233 P-INF =4.0108 RE = .3750 TO = 534.

P	1.3691+00	1.5648+00	1.5783+00	1.5539+00	1.5263+00	1.5675+00	1.5665+00	1.5747+00	9.2434-01
CP	-4.2383-01	-3.9243-01	-3.9026-01	-3.9418-01	-3.9860-01	-3.9199-01	-3.9216-01	-3.9084-01	-4.9518-01
P/PO1	1.0112-01	1.1557-01	1.1657-01	1.1477-01	1.1273-01	1.1578-01	1.1570-01	1.1631-01	6.8272-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.5 Q-INF = 6.241 P-INF =4.0160 RE = .3754 TO = 534.

P	9.9871-01	1.2883+00	1.5783+00	1.5564+00	1.5138+00	1.0331+00	1.0305+00	9.7386-01	9.2434-01
CP	-4.8345-01	-4.3705-01	-3.9059-01	-3.9410-01	-4.0093-01	-4.7795-01	-4.7836-01	-4.8743-01	-4.9537-01
P/PO1	7.3669-02	9.5034-02	1.1642-01	1.1481-01	1.1166-01	7.6205-02	7.6016-02	7.1837-02	6.8184-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.6 Q-INF = 6.271 P-INF =4.0355 RE = .3773 TO = 534.

P	1.1571+00	1.4117+00	1.5197+00	1.5789+00	1.6140+00	1.6851+00	1.6260+00	1.5497+00	1.1755+00
CP	-4.5897-01	-4.1836-01	-4.0114-01	-3.9170-01	-3.8611-01	-3.7477-01	-3.8419-01	-3.9637-01	-4.5603-01
P/PO1	8.4940-02	1.0364-01	1.1156-01	1.1591-01	1.1849-01	1.2371-01	1.1937-01	1.1376-01	8.6295-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.6430+00	1.2502+01	7.7266-01	1.1241+01	7.6172-01	1.0716+01	8.7891+00	7.8047-01
CP	-3.8149-01	1.3500+00	-5.2027-01	1.1489+00	-5.2201-01	1.0652+00	7.5798-01	-5.1902-01
P/PO1	1.2061-01	9.1774-01	5.6720-02	8.2517-01	5.5918-02	7.8663-01	6.4520-01	5.7294-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3414+00	1.1060+01	8.9063-01	9.6422+00	7.9688-01	6.4969+00	8.2734-01
CP	2.0824-01	1.1201+00	-5.0146-01	8.9402-01	-5.1641-01	3.9248-01	-5.1155-01
P/PO1	3.9211-01	8.1192-01	6.5381-02	7.0783-01	5.8498-02	4.7693-01	6.0735-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	98.	301244	1.49	2	7.07	225.15	-5.01	70.00	180.0

VALVE POS 2 PC = 14.1 Q-INF = 6.072 P-INF = 3.9072 RE = .3653 TO = 534.

P	2.1915+00	6.1783+00	9.4369+00	1.0925+01	1.2415+01	1.1974+01	1.2626+01	1.2913+01	1.3091+01
CP	-2.8255-01	3.7403-01	9.1067-01	1.1557+00	1.4012+00	1.3285+00	1.4359+00	1.4831+00	1.5124+00
P/P01	1.6616-01	4.6844-01	7.1550-01	8.2832-01	9.4132-01	9.0785-01	9.5730-01	9.7902-01	9.9252-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.2 Q-INF = 6.106 P-INF = 3.9292 RE = .3673 TO = 534.

P	1.3101+01	1.2263+01	8.7471+00	4.7540+00	1.1053+00	1.3118+00	1.3956+00	1.6798+00	1.4418+00
CP	1.5021+00	1.3648+00	7.8900-01	1.3508-01	-4.6247-01	-4.2864-01	-4.1492-01	-3.6837-01	-4.0736-01
P/P01	9.8777-01	9.2455-01	6.5948-01	3.5843-01	8.3330-02	9.8902-02	1.0522-01	1.2665-01	1.0870-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.3 Q-INF = 6.141 P-INF = 3.9513 RE = .3698 TO = 534.

P	1.3537+00	1.1809+01	1.2211+01	1.2361+01	1.2306+01	1.2460+01	1.1409+01	8.1942+00	7.4535+00
CP	-4.2301-01	1.2797+00	1.3452+00	1.3695+00	1.3605+00	1.3957+00	1.2145+00	6.9098-01	5.7035-01
P/P01	1.0150-01	8.8539-01	9.1555-01	9.2674-01	9.2260-01	9.3421-01	8.5536-01	6.1436-01	5.5882-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.3 Q-INF = 6.157 P-INF = 3.9616 RE = .3713 TO = 533.

P	8.7919+00	9.5725+00	1.0205+01	1.0149+01	1.0315+01	9.9809+00	9.7076+00	8.9177+00	5.8876+00
CP	7.8456-01	9.1136-01	1.0141+00	1.0043+00	1.0319+00	9.7768-01	9.3329-01	8.0500-01	3.1284-01
P/P01	6.5744-01	7.1581-01	7.6311-01	7.5859-01	7.7131-01	7.4635-01	7.2591-01	6.6685-01	4.4027-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.4 Q-INF = 6.167 P-INF = 3.9681 RE = .3719 TO = 533.

P	2.6652+00	1.3574+00	1.2525+00	1.6491+00	1.1161+01	9.8867+00	8.2873+00	7.5337+00	6.7958+00
CP	-2.1129-01	-4.2335-01	-4.4037-01	-3.7605-01	1.1664+00	9.5977-01	7.0041-01	5.7820-01	4.5855-01
P/P01	1.9897-01	1.0134-01	9.3503-02	1.2312-01	8.3325-01	7.3816-01	6.1870-01	5.6243-01	5.0735-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.2 Q-INF = 6.108 P-INF = 3.9305 RE = .3684 TO = 533.

P	5.8980+00	2.9815+00	2.6629+00	2.6648+00	3.7096+00	4.7970+00	1.2345+01	1.3519+00	3.0810+00
CP	3.2209-01	-1.5537-01	-2.0752-01	-2.0722-01	-3.6165-02	1.4185-01	1.3776+00	-4.2215-01	-1.3907-01
P/P01	4.4453-01	2.2471-01	2.0070-01	2.0084-01	2.7959-01	3.6155-01	9.3045-01	1.0189-01	2.3222-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.3 Q-INF = 6.137 P-INF = 3.9487 RE = .3696 TO = 534.

P	1.6270+00	1.6166+00	1.5910+00	1.5564+00	1.5639+00	8.2851-01	8.4409-01	8.8123-01	1.0550+00
CP	-3.7833-01	-3.8003-01	-3.8420-01	-3.8984-01	-3.8862-01	-5.0846-01	-5.0592-01	-4.9987-01	-4.7156-01
P/P01	1.2207-01	1.2128-01	1.1936-01	1.1677-01	1.1733-01	6.2157-02	6.3326-02	6.6113-02	7.9147-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.2 Q-INF = 6.116 P-INF = 3.9357 RE = .3684 TO = 534.

P	1.2899+00	1.5845+00	1.5936+00	7.1679-01	7.5188-01	8.3362-01	8.1043-01	9.6384-01	1.0901+00
CP	-4.3258-01	-3.8441-01	-3.8293-01	-5.2628-01	-5.2054-01	-5.0718-01	-5.1097-01	-4.8589-01	-4.6524-01
P/P01	9.7090-02	1.1927-01	1.1995-01	5.3953-02	5.6594-02	6.2747-02	6.1001-02	7.2549-02	8.2054-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

B202

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.2 Q-INF = 6.110 P-INF =3.9318 RE = .3685 TO = 533.

P	1.3129+00	1.4882+00	1.5427+00	1.5288+00	1.5288+00	1.5701+00	1.5717+00	1.5722+00	8.2387-01
CP	-4.2861-01	-3.9951-01	-3.9100-01	-3.9327-01	-3.9327-01	-3.8652-01	-3.8626-01	-3.8617-01	-5.0864-01
P/PO1	9.8918-02	1.1213-01	1.1623-01	1.1519-01	1.1519-01	1.1830-01	1.1842-01	1.1846-01	6.2074-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.2 Q-INF = 6.108 P-INF =3.9305 RE = .3679 TO = 534.

P	8.4034-01	1.1921+00	1.4968+00	1.5439+00	1.4887+00	7.1344-01	8.1302-01	8.1363-01	1.0826+00
CP	-5.0590-01	-4.4831-01	-3.9842-01	-3.9073-01	-3.9975-01	-5.2667-01	-5.1037-01	-5.1027-01	-4.6624-01
P/PO1	6.3336-02	8.9847-02	1.1282-01	1.1636-01	1.1220-01	5.3771-02	6.1277-02	6.1323-02	8.1594-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3703 TO = 533.

P	1.3818+00	1.3871+00	1.3772+00	1.4586+00	1.6015+00	1.6647+00	1.6545+00	1.6748+00	1.2559+00
CP	-4.1844-01	-4.1759-01	-4.1919-01	-4.0593-01	-3.8266-01	-3.7237-01	-3.7403-01	-3.7072-01	-4.3894-01
P/PO1	1.0360-01	1.0399-01	1.0325-01	1.0936-01	1.2007-01	1.2481-01	1.2405-01	1.2557-01	9.4160-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.6078+00	1.2788+01	7.9375-01	1.0772+01	7.3828-01	9.6023+00	7.7039+00	7.4766-01
CP	-3.8164-01	1.4390+00	-5.1421-01	1.1108+00	-5.2324-01	9.2029-01	6.1113-01	-5.2171-01
P/PO1	1.2054-01	9.5873-01	5.9511-02	8.0761-01	5.5352-02	7.1993-01	5.7759-01	5.6055-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.2734+00	1.0193+01	9.6563-01	8.8242+00	7.5938-01	6.0445+00	8.0859-01
CP	2.1532-01	1.0165+00	-4.8622-01	7.9357-01	-5.1981-01	3.4089-01	-5.1179-01
P/PO1	3.9537-01	7.6421-01	7.2397-02	6.6159-01	5.6534-02	4.5318-01	6.0624-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	99.	301244	1.49	2	10.22	118.75	8.55	70.04	180.0

VALVE POS 2 PC = 14.4 Q-INF = 6.191 P-INF =3.9836 RE = .3734 TO = 533.

P	2.0536+00	6.0063+00	9.2644+00	1.0722+01	1.2196+01	1.1833+01	1.2579+01	1.2865+01	1.3028+01
CP	-3.1176-01	3.2671-01	8.5300-01	1.0884+00	1.3265+00	1.2678+00	1.3884+00	1.4347+00	1.4609+00
P/P01	1.5272-01	4.4666-01	6.8895-01	7.9734-01	9.0694-01	8.7993-01	9.3545-01	9.5673-01	9.6882-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.4 Q-INF = 6.195 P-INF =3.9862 RE = .3736 TO = 533.

P	1.3038+01	1.2278+01	8.8569+00	4.8541+00	1.2080+00	1.4039+00	1.4940+00	1.7706+00	1.5196+00
CP	1.4612+00	1.3386+00	7.8623-01	1.4010-01	-4.4847-01	-4.1686-01	-4.0231-01	-3.5765-01	-3.9817-01
P/P01	9.6897-01	9.1249-01	6.5821-01	3.6074-01	8.9775-02	1.0433-01	1.1103-01	1.3159-01	1.1293-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.5 Q-INF = 6.211 P-INF =3.9966 RE = .3750 TO = 533.

P	1.3486+00	1.0089+01	1.0550+01	1.0691+01	1.1961+01	1.0875+01	9.8792+00	6.9989+00	5.1914+00
CP	-4.2633-01	9.8085-01	1.0551+00	1.0778+00	1.2823+00	1.1075+00	9.4714-01	4.8339-01	1.9237-01
P/P01	9.9966-02	7.4781-01	7.8199-01	7.9244-01	8.8657-01	8.0612-01	7.3229-01	5.1878-01	3.8481-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.5 Q-INF = 6.217 P-INF =4.0005 RE = .3754 TO = 533.

P	6.1339+00	6.7101+00	7.1325+00	7.4602+00	8.3552+00	7.5013+00	7.2885+00	6.5900+00	3.9327+00
CP	3.4315-01	4.3584-01	5.0378-01	5.5648-01	7.0045-01	5.6311-01	5.2887-01	4.1652-01	-1.0904-02
P/P01	4.5422-01	4.9690-01	5.2817-01	5.5244-01	6.1872-01	5.5549-01	5.3972-01	4.8800-01	2.9122-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.4 Q-INF = 6.167 P-INF =3.9601 RE = .3719 TO = 533.

P	1.7854+00	1.2760+00	1.1863+00	1.4862+00	1.1271+01	8.2540+00	6.3989+00	5.0002+00	4.2709+00
CP	-3.5395-01	-4.3655-01	-4.5111-01	-4.0247-01	1.1842+00	6.9511-01	3.9418-01	1.6737-01	4.9095-02
P/P01	1.3329-01	9.5261-02	8.8562-02	1.1095-01	8.4144-01	6.1626-01	4.7771-01	3.7329-01	3.1884-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.5 Q-INF = 6.225 P-INF =4.0057 RE = .3754 TO = 533.

P	3.7020+00	1.5253+00	1.7438+00	1.2982+00	1.8847+00	3.8757+00	1.1440+01	1.3143+00	2.2832+00
CP	-4.8788-02	-3.9845-01	-3.6335-01	-4.3492-01	-3.4071-01	-2.0877-02	1.1942+00	-4.3234-01	-2.7669-01
P/P01	2.7378-01	1.1280-01	1.2896-01	9.6012-02	1.3938-01	2.8663-01	8.4605-01	9.7202-02	1.6886-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.5 Q-INF = 6.229 P-INF =4.0083 RE = .3761 TO = 533.

P	1.3818+00	1.3698+00	1.3416+00	1.3183+00	1.3835+00	1.0970+00	1.0745+00	1.1541+00	1.1956+00
CP	-4.2164-01	-4.2357-01	-4.2810-01	-4.3184-01	-4.2138-01	-4.6736-01	-4.7097-01	-4.5820-01	-4.5153-01
P/P01	1.0213-01	1.0124-01	9.9151-02	9.7432-02	1.0225-01	8.1077-02	7.9416-02	8.5298-02	8.8366-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.5 Q-INF = 6.217 P-INF =4.0005 RE = .3749 TO = 533.

P	1.3256+00	1.3451+00	1.3314+00	8.5714-01	7.9198-01	6.0330-01	9.6578-01	1.0440+00	1.1253+00
CP	-4.3024-01	-4.2711-01	-4.2932-01	-5.0560-01	-5.1608-01	-5.4643-01	-4.8813-01	-4.7555-01	-4.6247-01
P/P01	9.8166-02	9.9607-02	9.8590-02	6.3473-02	5.8647-02	4.4675-02	7.1518-02	7.7307-02	8.3329-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

B204

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.4 Q-INF = 6.195 P-INF = 3.9862 RE = .3741 TO = 533.

P	1.2873+00	1.3426+00	1.3517+00	1.3333+00	1.3556+00	1.3783+00	1.3852+00	1.1916+00	9.7960-01
CP	-4.3567-01	-4.2674-01	-4.2527-01	-4.2824-01	-4.2460-01	-4.2098-01	-4.1986-01	-4.5273-01	-4.8534-01
P/PO1	9.5670-02	9.9780-02	1.0046-01	9.9088-02	1.0076-01	1.0243-01	1.0295-01	8.7816-02	7.2801-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.4 Q-INF = 6.197 P-INF = 3.9875 RE = .3742 TO = 533.

P	1.2184+00	1.3426+00	1.3441+00	1.3665+00	1.3759+00	8.2083-01	8.5186-01	8.2866-01	8.0127-01
CP	-4.4686-01	-4.2681-01	-4.2657-01	-4.2386-01	-4.2144-01	-5.1101-01	-5.0601-01	-5.0975-01	-5.1417-01
P/PO1	9.0515-02	9.9747-02	9.9856-02	1.0116-01	1.0222-01	6.0982-02	6.3286-02	6.1563-02	5.9528-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.5 Q-INF = 6.235 P-INF = 4.0121 RE = .3765 TO = 533.

P	1.1213+00	1.3451+00	1.3568+00	1.4336+00	1.5689+00	1.5956+00	1.5742+00	1.2843+00	1.1152+00
CP	-4.6363-01	-4.2774-01	-4.2586-01	-4.1355-01	-3.9185-01	-3.8756-01	-3.9099-01	-4.3750-01	-4.6461-01
P/PO1	8.2793-02	9.9317-02	1.0018-01	1.0585-01	1.1584-01	1.1782-01	1.1624-01	9.4827-02	8.2345-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.8609+00	1.0880+01	1.0266+00	8.5664+00	1.0500+00	8.4188+00	6.0984+00	1.1813+00
CP	-3.4501-01	1.1014+00	-4.7883-01	7.3042-01	-4.7507-01	7.0674-01	3.3460-01	-4.5402-01
P/PO1	1.3740-01	8.0332-01	7.5798-02	6.3251-01	7.7528-02	6.2161-01	4.5029-01	8.7219-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.4000+00	7.4883+00	1.1438+00	6.7125+00	1.1203+00	4.3266+00	1.0453+00
CP	2.2259-01	5.5751-01	-4.6004-01	4.3305-01	-4.6379-01	5.0427-02	-4.7582-01
P/PO1	3.9872-01	5.5291-01	8.4450-02	4.9563-01	8.2720-02	3.1946-01	7.7182-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V D KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	100.	301244	1.49	2	7.00	134.86	5.00	70.01	180.0

VALVE POS 2 PC = 14.5 Q-INF = 6.215 P-INF =3.9952 RE = .3753 TO = 533.

P	2.1404+00	6.1627+00	9.4839+00	1.0972+01	1.2008+01	1.2084+01	1.2782+01	1.3054+01	1.3263+01
CP	-2.9907-01	3.4811-01	8.8249-01	1.1219+00	1.2886+00	1.3008+00	1.4132+00	1.4569+00	1.4905+00
P/PO1	1.5856-01	4.5651-01	7.0252-01	8.1274-01	8.8548-01	8.5511-01	9.4685-01	9.6699-01	9.8245-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.5 Q-INF = 6.241 P-INF =4.0160 RE = .3769 TO = 533.

P	1.3353+01	1.2529+01	9.1077+00	4.9918+00	1.2306+00	1.4090+00	1.5043+00	1.8081+00	1.5247+00
CP	1.4960+00	1.3640+00	8.1581-01	1.5634-01	-4.4630-01	-4.1772-01	-4.0244-01	-3.5378-01	-3.9918-01
P/PO1	9.8458-01	9.2418-01	6.7183-01	3.6822-01	9.0773-02	1.0393-01	1.1097-01	1.3337-01	1.1247-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.5 Q-INF = 6.237 P-INF =4.0134 RE = .3766 TO = 533.

P	1.3537+00	1.0746+01	1.1161+01	1.1284+01	1.2494+01	1.1456+01	1.0441+01	7.5022+00	5.8563+00
CP	-4.2643-01	1.0794+00	1.1460+00	1.1657+00	1.3596+00	1.1933+00	1.0305+00	5.5935-01	2.9547-01
P/PO1	9.9923-02	7.9316-01	8.2384-01	8.3289-01	9.2219-01	8.4560-01	7.7068-01	5.5376-01	4.3227-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3786 TO = 533.

P	7.1090+00	7.8207+00	8.3866+00	8.4122+00	1.0283+01	8.3488+00	8.0844+00	7.3921+00	4.5339+00
CP	4.8900-01	6.0237-01	6.9252-01	6.9660-01	9.9468-01	6.8649-01	6.4439-01	5.3410-01	7.8777-02
P/PO1	5.2137-01	5.7356-01	6.1506-01	6.1694-01	7.5417-01	6.1229-01	5.9291-01	5.4213-01	3.3251-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.5 Q-INF = 6.235 P-INF =4.0121 RE = .3760 TO = 533.

P	2.0562+00	1.3402+00	1.2575+00	1.5464+00	1.2008+01	8.9451+00	6.9919+00	5.9609+00	5.1476+00
CP	-3.1370-01	-4.2853-01	-4.4179-01	-3.9546-01	1.2823+00	7.9115-01	4.7790-01	3.1254-01	1.8210-01
P/PO1	1.5182-01	9.8953-02	9.2853-02	1.1418-01	8.8661-01	6.6047-01	5.1626-01	4.4013-01	3.8008-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.5 Q-INF = 6.231 P-INF =4.0096 RE = .3753 TO = 534.

P	4.3635+00	1.9177+00	1.9805+00	1.6717+00	2.5375+00	4.2061+00	1.1580+01	1.3744+00	2.5299+00
CP	5.6799-02	-3.3571-01	-3.2563-01	-3.7519-01	-2.3624-01	3.1542-02	1.2150+00	-4.2290-01	-2.3745-01
P/PO1	3.2239-01	1.4169-01	1.4633-01	1.2351-01	1.8748-01	3.1076-01	8.5561-01	1.0155-01	1.8692-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.5 Q-INF = 6.225 P-INF =4.0057 RE = .3749 TO = 534.

P	1.4968+00	1.4833+00	1.4586+00	1.4261+00	1.5088+00	1.0356+00	1.0046+00	1.1040+00	1.1906+00
CP	-4.0303-01	-4.0519-01	-4.0915-01	-4.1439-01	-4.0110-01	-4.7711-01	-4.8209-01	-4.6612-01	-4.5221-01
P/PO1	1.1070-01	1.0970-01	1.0788-01	1.0547-01	1.1158-01	7.6591-02	7.4297-02	8.1650-02	8.8051-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.5 Q-INF = 6.245 P-INF =4.0186 RE = .3757 TO = 534.

P	1.3486+00	1.4068+00	1.4179+00	8.7468-01	8.5213-01	5.7979-01	9.1659-01	1.0089+00	1.1002+00
CP	-4.2752-01	-4.1821-01	-4.1643-01	-5.0342-01	-5.0703-01	-5.5063-01	-4.9671-01	-4.8192-01	-4.6731-01
P/PO1	9.9418-02	1.0371-01	1.0453-01	6.4479-02	6.2817-02	4.2741-02	6.7568-02	7.4374-02	8.1102-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.4 Q-INF = 6.203 P-INF = 3.9914 RE = .3731 TO = 534.

P	1.3129+00	1.3871+00	1.4103+00	1.4010+00	1.5012+00	1.4524+00	1.4210+00	1.4145+00	9.2434-01
CP	-4.3182-01	-4.1986-01	-4.1611-01	-4.1761-01	-4.0145-01	-4.0932-01	-4.0471-01	-4.1544-01	-4.9445-01
P/PO1	9.7442-02	1.0295-01	1.0467-01	1.0398-01	1.1142-01	1.0780-01	1.0992-01	1.0499-01	6.8605-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.5 Q-INF = 6.223 P-INF = 4.0044 RE = .3743 TO = 534.

P	1.1009+00	1.3352+00	1.3696+00	1.3509+00	1.4230+00	7.8503-01	8.6221-01	8.4868-01	8.5401-01
CP	-4.6657-01	-4.2891-01	-4.2340-01	-4.2740-01	-4.1472-01	-5.1732-01	-5.0432-01	-5.0709-01	-5.0624-01
P/PO1	8.1442-02	9.8780-02	1.0132-01	9.9937-02	1.0531-01	5.8077-02	6.3766-02	6.2785-02	6.3180-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.4 Q-INF = 6.199 P-INF = 3.9888 RE = .3729 TO = 534.

P	1.2158+00	1.3624+00	1.3135+00	1.4000+00	1.5814+00	1.6212+00	1.6804+00	1.4045+00	1.1052+00
CP	-4.4734-01	-4.2369-01	-4.3157-01	-4.1666-01	-3.8835-01	-3.8194-01	-3.7239-01	-4.1691-01	-4.6518-01
P/PO1	9.0296-02	1.0118-01	9.7555-02	1.0442-01	1.1745-01	1.2040-01	1.2480-01	1.0431-01	8.2081-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.8258+00	1.0798+01	9.5781-01	9.3680+00	9.9063-01	9.2648+00	6.7031+00	1.0820+00
CP	-3.4894-01	1.0984+00	-4.8896-01	8.6776-01	-4.8367-01	8.5112-01	4.3787-01	-4.6892-01
P/PO1	1.3560-01	8.0192-01	7.1135-02	6.9574-01	7.3572-02	6.8808-01	4.9783-01	8.0360-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3789+00	7.8844+00	1.0875+00	7.4883+00	1.0359+00	4.8727+00	9.7969-01
CP	2.2425-01	6.2842-01	-4.6804-01	5.6453-01	-4.7636-01	1.4258-01	-4.8543-01
P/PO1	3.9948-01	5.8556-01	8.0766-02	5.5614-01	7.6537-02	3.6188-01	7.2759-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	101.	301244	1.49	2	11.17	153.22	5.01	65.00	180.0

VALVE POS 2 PC = 14.6 Q-INF = 6.267 P-INF =4.0329 RE = .3770 TO = 534.

P	2.6524+00	7.1950+00	1.0158+01	1.1549+01	1.4218+01	1.2586+01	1.3141+01	1.3290+01	1.3419+01
CP	-2.2026-01	5.0454-01	9.7730-01	1.1993+00	1.6251+00	1.3647+00	1.4533+00	1.4770+00	1.4977+00
P/P01	1.9484-01	5.2852-01	7.4617-01	8.4837-01	1.0444+00	9.2452-01	9.6531-01	9.7625-01	9.8575-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	-2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3777 TO = 534.

P	1.3290+01	1.2106+01	8.0104+00	3.9409+00	9.3233-01	1.1712+00	1.1885+00	1.5472+00	1.5272+00
CP	1.4730+00	1.2845+00	6.3218-01	-1.5891-02	-4.9500-01	-4.5696-01	-4.5421-01	-3.9709-01	-4.0027-01
P/P01	9.7437-01	8.8759-01	5.8728-01	2.8893-01	6.8354-02	8.5864-02	8.7132-02	1.1343-01	1.1197-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.5 Q-INF = 6.245 P-INF =4.0186 RE = .3757 TO = 534.

P	1.6730+00	1.1168+01	1.1459+01	1.1487+01	1.3567+01	1.1393+01	1.0051+01	6.4799+00	6.5453+00
CP	-3.7558-01	1.1448+00	1.1914+00	1.1958+00	1.5930+00	1.1808+00	9.6591-01	3.9410-01	4.0458-01
P/P01	1.2333-01	8.2327-01	8.4473-01	8.4677-01	1.0296+00	8.3988-01	7.4093-01	4.7768-01	4.8250-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.6 Q-INF = 6.259 P-INF =4.0277 RE = .3765 TO = 534.

P	7.5494+00	8.1961+00	8.7158+00	8.7359+00	1.0315+01	8.5371+00	8.1625+00	7.1405+00	3.9014+00
CP	5.6763-01	6.6555-01	7.4898-01	7.5284-01	1.0044+00	7.2043-01	6.6058-01	4.9730-01	-2.0180-02
P/P01	5.5527-01	6.0283-01	6.4106-01	6.4283-01	7.5866-01	6.2791-01	6.0036-01	5.2519-01	2.8695-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.5 Q-INF = 6.223 P-INF =4.0044 RE = .3743 TO = 534.

P	1.5428+00	1.5549+00	1.5019+00	1.4737+00	1.0589+01	8.9765+00	7.2885+00	6.3698+00	5.5108+00
CP	-3.9556-01	-3.9361-01	-4.0212-01	-4.0666-01	1.1223+00	7.9898-01	5.2773-01	3.8010-01	2.4207-01
P/P01	1.1413-01	1.1503-01	1.1111-01	1.0902-01	8.1295-01	6.6408-01	5.3920-01	4.7124-01	4.0769-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.271 P-INF =4.0355 RE = .3773 TO = 534.

P	4.5925+00	1.6980+00	2.3973+00	2.0125+00	2.6684+00	4.5746+00	1.2158+01	1.2217+00	2.4986+00
CP	8.8816-02	-3.7271-01	-2.6122-01	-3.2257-01	-2.1798-01	8.5968-02	1.2952+00	-4.4867-01	-2.4505-01
P/P01	3.3713-01	1.2465-01	1.7598-01	1.4774-01	1.9589-01	3.3582-01	8.9251-01	8.9685-02	1.8342-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.5 Q-INF = 6.241 P-INF =4.0160 RE = .3754 TO = 534.

P	1.5785+00	1.5549+00	1.5325+00	1.5063+00	1.5313+00	8.2339-01	7.7936-01	8.9124-01	1.0901+00
CP	-3.9055-01	-3.9434-01	-3.9793-01	-4.0213-01	-3.9811-01	-5.1154-01	-5.1860-01	-5.0067-01	-4.6881-01
P/P01	1.1644-01	1.1470-01	1.1304-01	1.1111-01	1.1296-01	6.0737-02	5.7489-02	6.5742-02	8.0413-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.6 Q-INF = 6.263 P-INF =4.0303 RE = .3768 TO = 534.

P	1.3231+00	1.5006+00	1.5248+00	1.0050+00	9.7995-01	5.5517-01	7.0617-01	8.2114-01	9.4444-01
CP	-4.3223-01	-4.0389-01	-4.0002-01	-4.8301-01	-4.8701-01	-5.5483-01	-5.3073-01	-5.1237-01	-4.9268-01
P/P01	9.7253-02	1.1030-01	1.1208-01	7.3872-02	7.2030-02	4.0807-02	5.1906-02	6.0357-02	6.9420-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.5 Q-INF = 6.233 P-INF =4.0108 RE = .3750 TO = 534.

P	1.2976+00	1.4340+00	1.5045+00	1.5338+00	1.5664+00	1.5598+00	1.5587+00	1.5847+00	5.9930-01
CP	-4.3530-01	-4.1342-01	-4.0211-01	-3.9740-01	-3.9217-01	-3.9322-01	-3.9340-01	-3.8923-01	-5.4732-01
P/P01	9.5837-02	1.0591-01	1.1112-01	1.1329-01	1.1570-01	1.1521-01	1.1513-01	1.1705-01	4.4265-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.261 P-INF =4.0290 RE = .3766 TO = 534.

P	9.1952-01	1.1106+00	1.8099+00	1.7544+00	1.4737+00	9.2823-01	1.0098+00	1.0089+00	1.0625+00
CP	-4.9661-01	-4.6609-01	-3.5440-01	-3.6328-01	-4.0811-01	-4.9522-01	-4.8220-01	-4.8234-01	-4.7378-01
P/P01	6.7611-02	8.1662-02	1.3308-01	1.2900-01	1.0836-01	6.8251-02	7.4248-02	7.4183-02	7.8123-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3786 TO = 534.

P	1.2107+00	1.2587+00	1.5757+00	1.6541+00	1.8697+00	1.7491+00	1.6701+00	1.6423+00	1.6025+00
CP	-4.5110-01	-4.4347-01	-3.9310-01	-3.8064-01	-3.4639-01	-3.6556-01	-3.7811-01	-3.8252-01	-3.8884-01
P/P01	8.8565-02	9.2077-02	1.1527-01	1.2100-01	1.3677-01	1.2795-01	1.2217-01	1.2014-01	1.1723-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.7883+00	1.1965+01	7.3906-01	9.8438+00	7.5156-01	9.1523+00	6.6117+00	8.1484-01
CP	-3.5933-01	1.2577+00	-5.2604-01	9.2063-01	-5.2405-01	8.1677-01	4.0708-01	-5.1400-01
P/P01	1.3082-01	8.7524-01	5.4063-02	7.2008-01	5.4978-02	6.6951-01	4.8366-01	5.9607-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3508+00	7.8961+00	9.0469-01	7.4719+00	8.4375-01	5.0414+00	8.1563-01
CP	2.0673-01	6.1116-01	-4.9972-01	5.4376-01	-5.0941-01	1.5757-01	-5.1387-01
P/P01	3.9142-01	5.7761-01	6.6179-02	5.4658-01	6.1721-02	3.6879-01	5.9664-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

A. OLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	102.	301244	1.49	2	13.42	137.57	9.01	65.01	180.0

VALVE POS 2 PC = 14.5 Q-INF = 6.217 P-INF =4.0005 RE = .3740 TO = 534.

P	2.5634+00	7.0073+00	9.8758+00	1.1253+01	1.1569+01	1.2272+01	1.2860+01	1.3054+01	1.3153+01
CP	-2.3116-01	4.8365-01	9.4503-01	1.1665+00	1.2173+00	1.3305+00	1.4251+00	1.4563+00	1.4722+00
P/P01	1.8982-01	5.1890-01	7.3132-01	8.3328-01	8.5669-01	9.0876-01	9.5232-01	9.6668-01	9.7402-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.259 P-INF =4.0277 RE = .3765 TO = 534.

P	1.3070+01	1.1934+01	7.8850+00	3.9158+00	8.4962-01	1.0638+00	1.0823+00	1.4771+00	1.4167+00
CP	1.4446+00	1.2632+00	6.1624-01	-1.7870-02	-5.0773-01	-4.7352-01	-4.7056-01	-4.0749-01	-4.1714-01
P/P01	9.6131-01	8.7779-01	5.7995-01	2.8802-01	6.2491-02	7.8241-02	7.9604-02	1.0864-01	1.0420-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3776 TO = 534.

P	1.6194+00	1.0542+01	1.0879+01	1.0956+01	1.2572+01	1.0891+01	9.5671+00	6.0081+00	5.8114+00
CP	-3.8550-01	1.0359+00	1.0896+00	1.1018+00	1.3593+00	1.0915+00	8.8058-01	3.1362-01	2.8228-01
P/P01	1.1876-01	7.7316-01	7.9786-01	8.0351-01	9.2202-01	7.9874-01	7.0164-01	4.4062-01	4.2620-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.6 Q-INF = 6.255 P-INF =4.0251 RE = .3763 TO = 534.

P	6.5900+00	7.1168+00	7.5714+00	7.8191+00	7.9320+00	7.7053+00	7.3821+00	6.4799+00	3.3816+00
CP	4.1003-01	4.9426-01	5.6693-01	6.0653-01	6.2457-01	5.8834-01	5.3667-01	3.9243-01	-1.0287-01
P/P01	4.8501-01	5.2379-01	5.5725-01	5.7548-01	5.8378-01	5.6710-01	5.4332-01	4.7691-01	2.4888-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.6 Q-INF = 6.259 P-INF =4.0277 RE = .3765 TO = 534.

P	1.3291+00	1.2563+00	1.1939+00	1.1779+00	1.0393+01	8.4115+00	6.6486+00	5.5738+00	4.7468+00
CP	-4.3209-01	-4.4277-01	-4.5273-01	-4.5528-01	1.0169+00	7.0037-01	4.1872-01	2.4701-01	1.1488-01
P/P01	9.7315-02	9.2399-02	8.7813-02	8.6639-02	7.6443-01	6.1868-01	4.8901-01	4.0996-01	3.4913-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.255 P-INF =4.0251 RE = .3763 TO = 534.

P	3.9437+00	1.3871+00	2.1205+00	1.5865+00	2.0702+00	3.9901+00	1.1658+01	1.1591+00	2.2757+00
CP	-1.3018-02	-4.2173-01	-3.0448-01	-3.8985-01	-3.1252-01	-5.5998-03	1.2203+00	-4.5817-01	-2.7967-01
P/P01	2.9025-01	1.0209-01	1.5607-01	1.1676-01	1.5236-01	2.9366-01	8.5805-01	8.5309-02	1.6749-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.6 Q-INF = 6.281 P-INF =4.0419 RE = .3779 TO = 534.

P	1.3410+00	1.3105+00	1.2601+00	1.1905+00	1.3308+00	8.4129-01	8.0784-01	9.8387-01	1.1253+00
CP	-4.2999-01	-4.3483-01	-4.4287-01	-4.5395-01	-4.3161-01	-5.0954-01	-5.1486-01	-4.8684-01	-4.6433-01
P/P01	9.8283-02	9.6053-02	9.2355-02	8.7252-02	9.7539-02	6.1660-02	5.9208-02	7.2110-02	8.2475-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.5 Q-INF = 6.241 P-INF =4.0160 RE = .3754 TO = 534.

P	1.3589+00	1.4512+00	1.4052+00	1.3684+00	1.3634+00	6.2009-01	6.4977-01	7.9361-01	9.4946-01
CP	-4.2575-01	-4.1095-01	-4.1832-01	-4.2422-01	-4.2502-01	-5.4412-01	-5.3936-01	-5.1632-01	-4.9134-01
P/P01	1.0024-01	1.0705-01	1.0365-01	1.0094-01	1.0057-01	4.5741-02	4.7930-02	5.8540-02	7.0037-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.5 Q-INF = 6.245 P-INF =4.0186 RE = .3757 TO = 534.

P	1.1928+00	1.3797+00	1.4103+00	1.4336+00	1.4486+00	1.4678+00	1.4992+00	1.5472+00	6.9326-01
CP	-4.5247-01	-4.2256-01	-4.1765-01	-4.1392-01	-4.1152-01	-4.0845-01	-4.0342-01	-3.9574-01	-5.3247-01
P/PO1	8.7932-02	1.0170-01	1.0396-01	1.0568-01	1.0679-01	1.0820-01	1.1051-01	1.1405-01	5.1105-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.263 P-INF =4.0303 RE = .3768 TO = 534.

P	1.0242+00	1.1230+00	1.6241+00	1.6366+00	1.5840+00	1.3706+00	1.3645+00	1.3268+00	1.2710+00
CP	-4.7994-01	-4.6418-01	-3.8417-01	-3.8218-01	-3.9058-01	-4.2464-01	-4.2561-01	-4.3163-01	-4.4055-01
P/PO1	7.5286-02	8.2543-02	1.1938-01	1.2030-01	1.1643-01	1.0075-01	1.0030-01	9.7529-02	9.3422-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.5 Q-INF = 6.223 P-INF =4.0044 RE = .3743 TO = 534.

P	1.3129+00	1.3599+00	1.6318+00	1.6491+00	1.6667+00	1.6826+00	1.6364+00	1.6298+00	1.5824+00
CP	-4.3250-01	-4.2494-01	-3.8126-01	-3.7847-01	-3.7565-01	-3.7309-01	-3.8052-01	-3.8158-01	-3.8919-01
P/PO1	9.7126-02	1.0061-01	1.2072-01	1.2200-01	1.2330-01	1.2448-01	1.2106-01	1.2057-01	1.1707-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.0742+00	1.0730+01	7.6250-01	9.1102+00	7.5469-01	8.4680+00	5.8477+00	8.9531-01
CP	-3.1016-01	1.0807+00	-5.2094-01	8.2046-01	-5.2220-01	7.1727-01	2.9620-01	-4.9960-01
P/PO1	1.5345-01	7.9378-01	5.6410-02	6.7397-01	5.5832-02	6.2646-01	4.3261-01	6.6235-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3719+00	7.2750+00	9.9609-01	6.8227+00	9.7031-01	4.2938+00	9.2344-01
CP	2.1975-01	5.2556-01	-4.8341-01	4.5288-01	-4.8755-01	4.6501-02	-4.9508-01
P/PO1	3.9741-01	5.3820-01	7.3691-02	5.0474-01	7.1783-02	3.1765-01	6.8316-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

12

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
5.	103.	301244	1.49	2	5.04	.00	.00	110.04	.0

VALVE POS 2 PC = 14.6 Q-INF = 6.261 P-INF =4.0290 RE = .3776 TO = 533.

P	1.8876+00	2.1522+00	5.3764+00	6.0555+00	6.7876+00	6.8893+00	7.9440+00	8.6503+00	9.2386+00
CP	-3.4201-01	-2.9975-01	2.1520-01	3.2366-01	4.4059-01	4.5682-01	6.2527-01	7.3808-01	8.3203-01
P/P01	1.3879-01	1.5824-01	3.9532-01	4.4525-01	4.9508-01	5.0655-01	5.8410-01	6.3604-01	6.7929-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.273 P-INF =4.0368 RE = .3783 TO = 533.

P	1.0097+01	1.0605+01	1.2400+01	1.3563+01	1.2525+01	1.1032+01	1.0488+01	8.6661+00	7.3439+00
CP	9.6607-01	1.0470+00	1.3331+00	1.5184+00	1.3531+00	1.1151+00	1.0283+00	7.3793-01	5.2717-01
P/P01	7.4100-01	7.7825-01	9.0996-01	9.9530-01	9.1916-01	8.0962-01	7.6967-01	6.3597-01	5.3894-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.271 P-INF =4.0355 RE = .3782 TO = 533.

P	5.7120+00	6.3504+00	7.3049+00	7.7567+00	9.1077+00	9.1177+00	9.3330+00	1.1151+01	3.7073+00
CP	2.6732-01	3.6913-01	5.2133-01	5.9337-01	8.0879-01	8.1039-01	8.4472-01	1.1346+00	-5.2335-02
P/P01	4.1931-01	4.6618-01	5.3625-01	5.6942-01	6.6859-01	6.6933-01	6.8513-01	8.1860-01	2.7215-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.7 Q-INF = 6.298 P-INF =4.0523 RE = .3798 TO = 533.

P	4.9932+00	5.5687+00	4.9463+00	5.4421+00	6.1449+00	6.2930+00	6.8203+00	7.0618+00	7.8136+00
CP	1.4941-01	2.4079-01	1.4196-01	2.2069-01	3.3229-01	3.5580-01	4.3953-01	4.7789-01	5.9727-01
P/P01	3.6503-01	4.0710-01	3.6160-01	3.9785-01	4.4922-01	4.6004-01	4.9859-01	5.1625-01	5.7121-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.6 Q-INF = 6.267 P-INF =4.0329 RE = .3780 TO = 533.

P	9.5468+00	9.7133+00	8.7315+00	7.5850+00	6.9131+00	5.9006+00	5.3790+00	3.7595+00	4.4024+00
CP	8.7979-01	9.0635-01	7.4969-01	5.6677-01	4.5955-01	2.9801-01	2.1478-01	-4.3618-02	5.8954-02
P/P01	7.0128-01	7.1351-01	6.4139-01	5.5717-01	5.0781-01	4.3344-01	3.9512-01	2.7616-01	3.2338-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3786 TO = 533.

P	4.5861+00	4.4968+00	1.8354+00	1.7619+00	2.0752+00	2.3763+00	8.9740+00	1.7199+00	1.8110+00
CP	8.7098-02	7.2876-02	-3.5109-01	-3.6280-01	-3.1289-01	-2.6493-01	7.8610-01	-3.6949-01	-3.5498-01
P/P01	3.3634-01	3.2979-01	1.3461-01	1.2922-01	1.5219-01	1.7427-01	6.5815-01	1.2614-01	1.3282-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PO = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3786 TO = 533.

P	1.7062+00	2.5934+00	4.5289+00	5.4609+00	6.0509+00	1.8232+00	1.7348+00	1.7199+00	1.7407+00
CP	-3.7167-01	-2.3035-01	7.7979-02	2.2645-01	3.2044-01	-3.5303-01	-3.6712-01	-3.6949-01	-3.6618-01
P/P01	1.2513-01	1.9020-01	3.3214-01	4.0050-01	4.4377-01	1.3371-01	1.2723-01	1.2614-01	1.2766-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTOUR NOZZLE TUNNEL

~~CONFIDENTIAL~~

VALVE POS 9 PC = 14.6 Q-INF = 6.283 P-INF =4.0432 RE = .3789 TO = 533.

P	1.5657+00	7.0093-01	8.5788-01	1.6642+00	1.7469+00	1.8437+00	1.8073+00	1.7449+00	1.7407+00
CP	-3.9429-01	-5.3192-01	-5.0694-01	-3.7863-01	-3.6546-01	-3.5005-01	-3.5585-01	-3.6577-01	-3.6645-01
P/PO1	1.1472-01	5.1356-02	6.2856-02	1.2193-01	1.2799-01	1.3508-01	1.3242-01	1.2785-01	1.2754-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

VALVE POS 10 PC = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3791 TO = 533.

P	1.7880+00	1.7894+00	1.6139+00	1.6165+00	1.6792+00	2.4334+00	3.2505+00	4.0276+00	1.8185+00
CP	-3.5901-01	-3.5879-01	-3.8670-01	-3.8629-01	-3.7632-01	-2.5632-01	-1.2633-01	-2.6952-03	-3.5415-01
P/PO1	1.3096-01	1.3106-01	1.1021-01	1.1040-01	1.2299-01	1.7824-01	2.3808-01	2.9500-01	1.3320-01
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.263 P-INF =4.0303 RE = .3777 TO = 533.

P	1.7956+00	1.7671+00	1.7081+00	1.7218+00	1.7519+00	1.7977+00	1.7503+00	1.8476+00	1.8512+00
CP	-3.5678-01	-3.6133-01	-3.7075-01	-3.6857-01	-3.6377-01	-3.5646-01	-3.6402-01	-3.4849-01	-3.4791-01
P/PO1	1.3199-01	1.2989-01	1.2555-01	1.2656-01	1.2877-01	1.3213-01	1.2866-01	1.3580-01	1.3607-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.7 Q-INF = 6.304 P-INF =4.0562 RE = .3801 TO = 533.

P	1.8569+00	1.9522+00	1.9500+00	1.9875+00	2.0426+00	1.9690+00	2.5965+00	3.4166+00	4.4900+00
CP	-3.4889-01	-3.3377-01	-3.3413-01	-3.2818-01	-3.1944-01	-3.3111-01	-2.3156-01	-1.0147-01	6.8824-02
P/PO1	1.3562-01	1.4258-01	1.4241-01	1.4515-01	1.4918-01	1.4380-01	1.8964-01	2.4953-01	3.2793-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.2734+00	8.0438+00	1.8281+00	6.3867+00	1.6781+00	7.5305+00	4.2914+00	1.6570+00
CP	-2.8281-01	6.3258-01	-3.5346-01	3.6971-01	-3.7725-01	5.5116-01	3.7314-02	-3.8060-01
P/PO1	1.6604-01	5.8747-01	1.3352-01	4.6645-01	1.2256-01	5.4998-01	3.1342-01	1.2102-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.5148+00	5.3789+00	1.6781+00	5.4914+00	1.6336+00	4.5352+00	1.8539+00
CP	2.3140-01	2.0983-01	-3.7725-01	2.2768-01	-3.8432-01	7.5983-02	-3.4937-01
P/PO1	4.0277-01	3.9285-01	1.2256-01	4.0106-01	1.1931-01	3.3122-01	1.3540-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
5.	104.	301244	1.49	2	14.03	.00	.00	119.03	.0

VALVE POS 2 PC = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3792 TO = 533.

P	1.7931+00	1.6067+00	4.1557+00	4.8979+00	5.2357+00	5.6025+00	6.5706+00	7.1247+00	7.6571+00
CP	-3.5829-01	-3.8793-01	1.7470-02	1.3552-01	1.8925-01	2.4758-01	4.0155-01	4.8969-01	5.7435-01
P/P01	1.3129-01	1.1765-01	3.0429-01	3.5863-01	3.8337-01	4.1027-01	4.8111-01	5.2168-01	5.6066-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3792 TO = 533.

P	8.2571+00	6.6007+00	9.8131+00	1.3110+01	1.4390+01	1.2445+01	1.1955+01	1.0239+01	8.9724+00
CP	6.6979-01	4.0633-01	9.1726-01	1.4416+00	1.6453+00	1.3358+00	1.2579+00	9.8497-01	7.8355-01
P/P01	6.0460-01	4.8331-01	7.1853-01	9.5993-01	1.0537+00	9.1122-01	8.7536-01	7.4971-01	6.5697-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3795 TO = 533.

P	7.1719+00	5.1313+00	6.0195+00	6.4769+00	6.8574+00	7.5170+00	5.4623+00	8.7762+00	2.9620+00
CP	4.9610-01	1.7186-01	3.1299-01	3.8567-01	4.5247-01	5.5093-01	2.2445-01	7.5100-01	-1.7282-01
P/P01	5.2464-01	3.7536-01	4.4034-01	4.7380-01	5.0455-01	5.4988-01	3.9958-01	6.4199-01	2.1668-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.7 Q-INF = 6.296 P-INF =4.0510 RE = .3797 TO = 533.

P	4.0264+00	4.6385+00	4.6680+00	4.5852+00	5.1685+00	5.3815+00	5.8214+00	3.7283+00	5.3354+00
CP	-3.9157-03	9.3319-02	9.8006-02	8.4845-02	1.7751-01	2.1134-01	2.8121-01	-5.1256-02	2.0402-01
P/P01	2.9444-01	3.3920-01	3.4136-01	3.3530-01	3.7796-01	3.9354-01	4.2570-01	2.7265-01	3.9017-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.5 Q-INF = 6.239 P-INF =4.0147 RE = .3763 TO = 533.

P	9.0435+00	1.0527+01	1.0033+01	8.9896+00	6.4898+00	5.2989+00	3.9813+00	3.3480+00	3.8826+00
CP	8.0600-01	1.0437+00	9.6452-01	7.9737-01	3.9670-01	2.0583-01	-5.3520-03	-1.0686-01	-2.1179-02
P/P01	6.6731-01	7.7675-01	7.4029-01	6.6333-01	4.7687-01	3.9100-01	2.9378-01	2.4705-01	2.8649-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.7 Q-INF = 6.306 P-INF =4.0575 RE = .3798 TO = 534.

P	2.2579+00	2.7412+00	1.7081+00	1.6165+00	1.7544+00	2.0022+00	6.5550+00	1.6373+00	1.1228+00
CP	-2.8535-01	-2.0875-01	-3.7258-01	-3.8711-01	-3.6525-01	-3.2594-01	3.9607-01	-3.8382-01	-4.6541-01
P/P01	1.6486-01	2.0014-01	1.2471-01	1.1803-01	1.2809-01	1.4618-01	4.7859-01	1.1954-01	8.1975-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.5 Q-INF = 6.229 P-INF =4.0083 RE = .3752 TO = 534.

P	1.0958+00	2.0954+00	5.1487+00	6.6330+00	7.2893+00	1.7593+00	1.6908+00	1.7049+00	1.7206+00
CP	-4.6756-01	-3.0708-01	1.8309-01	4.2136-01	5.2672-01	-3.6104-01	-3.7204-01	-3.6978-01	-3.6725-01
P/P01	8.0986-02	1.5487-01	3.8053-01	4.9023-01	5.3874-01	1.3003-01	1.2496-01	1.2600-01	1.2717-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3788 TO = 534.

P	8.7866-01	9.6749-01	1.0386+00	1.4937+00	1.8471+00	1.7925+00	1.7244+00	1.6974+00	1.6904+00
CP	-5.0377-01	-4.8965-01	-4.7834-01	-4.0598-01	-3.4979-01	-3.5847-01	-3.6930-01	-3.7360-01	-3.7470-01
P/P01	6.4316-02	7.0818-02	7.6025-02	1.0934-01	1.3521-01	1.3121-01	1.2622-01	1.2424-01	1.2374-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.6 Q-INF = 6.290 F-INF =4.0471 RE = .3788 TO = 534.

P	1.7088+00	1.6437+00	1.6445+00	1.6491+00	1.6792+00	3.2658+00	4.3275+00	5.3182+00	1.7558+00
CP	-3.7178-01	-3.8213-01	-3.8201-01	-3.8127-01	-3.7649-01	-1.2423-01	4.4586-02	2.0209-01	-3.6432-01
P/PO1	1.2508-01	1.2032-01	1.2037-01	1.2071-01	1.2291-01	2.3905-01	3.1677-01	3.8928-01	1.2852-01
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.7 Q-INF = 6.314 F-INF =4.0627 RE = .3803 TO = 534.

P	1.7394+00	1.7005+00	1.5961+00	1.5940+00	1.6266+00	1.6033+00	1.6882+00	1.8200+00	1.8060+00
CP	-3.6797-01	-3.7413-01	-3.9067-01	-3.9101-01	-3.8585-01	-3.8953-01	-3.7609-01	-3.5520-01	-3.5743-01
P/PO1	1.2684-01	1.2400-01	1.1639-01	1.1623-01	1.1861-01	1.1691-01	1.2310-01	1.3271-01	1.3169-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.6 Q-INF = 6.259 F-INF =4.0277 RE = .3770 TO = 534.

P	1.7982+00	1.8733+00	1.8354+00	1.8020+00	1.8647+00	2.7638+00	3.5774+00	4.6386+00	5.8093+00
CP	-3.5619-01	-3.4419-01	-3.5024-01	-3.5558-01	-3.4557-01	-2.0192-01	-7.1933-02	9.7598-02	2.8464-01
P/PO1	1.3226-01	1.3778-01	1.3500-01	1.3254-01	1.3715-01	2.0328-01	2.6313-01	3.4117-01	4.2728-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.2453+00	5.1375+00	1.7742+00	5.3813+00	1.6875+00	5.5641+00	3.6680+00	1.6688+00
CP	-2.8476-01	1.7731-01	-3.6007-01	2.1425-01	-3.7387-01	2.4545-01	-5.7470-02	-3.7687-01
P/PO1	1.6515-01	3.7787-01	1.3050-01	3.9580-01	1.2412-01	4.0924-01	2.6978-01	1.2274-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.5453+00	4.9945+00	1.6664+00	5.1398+00	1.6078+00	4.7953+00	1.3945+00
CP	2.4246-01	1.5446-01	-3.7724-01	1.7768-01	-3.8660-01	1.2264-01	-4.2068-01
P/PO1	4.0787-01	3.6735-01	1.2257-01	3.7804-01	1.1826-01	3.5270-01	1.0257-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	SE-ROLL
5.	105.	301244	1.49	2	14.04	180.16	.04	90.96	.0

VALVE POS 2 PC = 14.7 Q-INF = 6.316 P-INF =4.0640 RE = .3804 TO = 534.

P	1.5606+00	3.3880+00	7.5087+00	9.0989+00	1.1616+01	1.0044+01	1.0925+01	1.1497+01	1.2104+01
CP	-3.9637-01	-1.0703-01	5.4543-01	7.9721-01	1.1957+00	9.4680-01	1.0863+00	1.1769+00	1.2730+00
P/PO1	1.1376-01	2.4697-01	5.4735-01	6.6376-01	8.4673-01	7.3213-01	7.9637-01	8.3808-01	8.8233-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.265 P-INF =4.0316 RE = .3774 TO = 534.

P	1.2818+01	1.3545+01	1.3183+01	1.0207+01	4.6324+00	7.2189+00	7.0232+00	5.3556+00	4.1080+00
CP	1.4024+00	1.5185+00	1.4607+00	9.8565-01	9.5889-02	5.0871-01	4.7748-01	2.1132-01	1.2203-02
P/PO1	9.4189-01	9.9532-01	9.6872-01	7.5001-01	3.4039-01	5.3044-01	5.1607-01	3.9353-01	3.0186-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3786 TO = 534.

P	3.2313+00	9.3379+00	9.8758+00	1.0254+01	1.1020+01	1.1503+01	1.2111+01	1.1780+01	4.8846+00
CP	-1.2939-01	8.4216-01	9.2773-01	9.8788-01	1.1098+00	1.1866+00	1.2834+00	1.2307+00	1.3364-01
P/PO1	2.3667-01	6.8396-01	7.2335-01	7.5104-01	8.0717-01	8.4254-01	8.8708-01	8.6284-01	3.5777-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3788 TO = 534.

P	6.5113+00	7.3984+00	8.1878+00	7.1480+00	7.6568+00	7.8466+00	8.1937+00	8.7919+00	8.3304+00
CP	3.9180-01	5.3283-01	6.5755-01	4.9303-01	5.8029-01	6.0409-01	6.5928-01	7.5439-01	6.8101-01
P/PO1	4.7662-01	5.4155-01	5.9897-01	5.2322-01	5.6340-01	5.7436-01	5.9976-01	6.4355-01	6.0977-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.7 Q-INF = 6.312 P-INF =4.0614 RE = .3802 TO = 534.

P	6.3855+00	4.4907+00	5.6800+00	4.6039+00	9.8288+00	8.8509+00	6.6330+00	4.5326+00	4.8720+00
CP	3.6823-01	6.8016-02	2.5646-01	8.5960-02	9.1377-01	7.5884-01	4.0744-01	7.4660-02	1.2844-01
P/PO1	4.6577-01	3.2756-01	4.1431-01	3.3582-01	7.1692-01	6.4560-01	4.8382-01	3.3061-01	3.5537-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.5 Q-INF = 6.237 P-INF =4.0134 RE = .3757 TO = 534.

P	5.2413+00	4.8849+00	1.5274+00	1.3484+00	2.8492+00	3.1641+00	1.0098+01	1.5146+00	3.3691+00
CP	1.9686-01	1.3972-01	-3.9859-01	-4.2729-01	-1.8666-01	-1.3617-01	9.7549-01	-4.0064-01	-1.0331-01
P/PO1	3.8687-01	3.6057-01	1.1274-01	9.9526-02	2.1031-01	2.3355-01	7.4534-01	1.1180-01	2.4868-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.7 Q-INF = 6.298 P-INF =4.0523 RE = .3793 TO = 534.

P	3.3585+00	3.9178+00	3.9722+00	3.3904+00	3.3044+00	1.5471+00	1.5043+00	1.4871+00	1.5046+00
CP	-1.1017-01	-2.1361-02	-1.2714-02	-1.0511-01	-1.1877-01	-3.9781-01	-4.0460-01	-4.0734-01	-4.0456-01
P/PO1	2.4552-01	2.8641-01	2.9039-01	2.4785-01	2.4156-01	1.1310-01	1.0997-01	1.0871-01	1.0999-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3787 TO = 534.

P	1.5121+00	1.5722+00	1.9296+00	1.5213+00	1.4787+00	1.4243+00	1.5328+00	1.5071+00	1.5021+00
CP	-4.0298-01	-3.9343-01	-3.3658-01	-4.0152-01	-4.0829-01	-4.1694-01	-3.9968-01	-4.0377-01	-4.0458-01
P/PO1	1.1072-01	1.1512-01	1.4129-01	1.1139-01	1.0827-01	1.0429-01	1.1224-01	1.1035-01	1.0998-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE PCS 10 PC = 14.6 Q-INF = 6.267 P-INF =4.0329 RE = .3775 TO = 534.

P	1.5504+00	1.5524+00	1.6623+00	1.5368+00	1.0376+00	1.5343+00	2.0584+00	2.1580+00	1.5021+00
CP	-3.9609-01	-3.9577-01	-3.7824-01	-3.9794-01	-4.7792-01	-3.9867-01	-3.1503-01	-2.9915-01	-4.0381-01
P/P01	1.1389-01	1.1404-01	1.2211-01	1.1304-01	7.6218-02	1.1270-01	1.5121-01	1.5852-01	1.1034-01
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE PCS 11 PC = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3786 TO = 534.

P	1.5632+00	1.5574+00	1.5325+00	1.5413+00	1.4887+00	1.5419+00	1.5251+00	1.5046+00	1.5121+00
CP	-3.9509-01	-3.9602-01	-3.9997-01	-3.9856-01	-4.0692-01	-3.9847-01	-4.0115-01	-4.0440-01	-4.0321-01
P/P01	1.1435-01	1.1392-01	1.1210-01	1.1275-01	1.0890-01	1.1280-01	1.1156-01	1.1006-01	1.1061-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7570+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE PCS 12 PC = 14.6 Q-INF = 6.271 P-INF =4.0355 RE = .3777 TO = 534.

P	1.5377+00	1.7351+00	1.6572+00	1.6065+00	1.6441+00	1.3144+00	1.3464+00	1.7975+00	2.4047+00
CP	-3.9829-01	-3.6681-01	-3.7922-01	-3.8731-01	-3.8131-01	-4.3389-01	-4.2878-01	-3.5685-01	-2.6003-01
P/P01	1.1288-01	1.2737-01	1.2166-01	1.1793-01	1.2069-01	9.6487-02	9.8039-02	1.3195-01	1.7653-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.0016+00	9.1734+00	1.5234+00	9.4383+00	1.4484+00	8.9273+00	6.7875+00	1.4602+00
CP	-3.2431-01	8.1927-01	-4.0055-01	8.6150-01	-4.1251-01	7.8003-01	4.3882-01	-4.1064-01
P/P01	1.4693-01	6.7342-01	1.1184-01	6.9286-01	1.0633-01	6.5535-01	4.9827-01	1.0719-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.4961+00	8.6016+00	1.4602+00	6.5297+00	1.3242+00	4.1602+00	1.6219+00
CP	2.3290-01	7.2808-01	-4.1064-01	3.9771-01	-4.3232-01	1.9883-02	-3.8486-01
P/P01	4.0347-01	6.3144-01	1.0719-01	4.7934-01	9.7211-02	3.0540-01	1.1906-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
5.	106.	301244	1.49	2	5.00	180.16	.01	100.00	.0

VALVE POS 2 PC = 14.7 Q-INF = 6.328 P-INF =4.0717 RE = .3811 TO = 534.

P	1.9387+00	2.7227+00	6.5995+00	8.0844+00	8.9979+00	8.5685+00	9.5359+00	1.0223+01	1.0914+01
CP	-3.3710-01	-2.1319-01	3.9948-01	6.3414-01	7.7851-01	7.1063-01	8.6352-01	9.7213-01	1.0813+00
P/P01	1.4105-01	1.9809-01	4.8015-01	5.8819-01	6.5465-01	6.2341-01	6.9379-01	7.4379-01	7.9406-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.7 Q-INF = 6.310 P-INF =4.0601 RE = .3800 TO = 534.

P	1.1812+01	1.2857+01	1.3638+01	1.2501+01	1.0221+01	9.0706+00	8.5683+00	6.9832+00	5.4795+00
CP	1.2285+00	1.3942+00	1.5180+00	1.3378+00	9.7638-01	7.9411-01	7.1449-01	4.6328-01	2.2496-01
P/P01	8.6183-01	9.3812-01	9.9509-01	9.1215-01	7.4575-01	6.6184-01	6.2518-01	5.0953-01	3.9981-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.8 Q-INF = 6.340 P-INF =4.0795 RE = .3819 TO = 534.

P	4.2959+00	7.9302+00	8.6217+00	9.1301+00	1.0409+01	1.0593+01	1.1440+01	1.2283+01	4.3335+00
CP	3.4758-02	6.0738-01	7.1645-01	7.9664-01	9.9833-01	1.0274+00	1.1610+00	1.2940+00	4.0059-02
P/P01	3.1224-01	5.7587-01	6.2608-01	6.6300-01	7.5585-01	7.6922-01	8.3074-01	8.9199-01	3.1468-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3788 TO = 534.

P	5.8392+00	6.7258+00	7.6185+00	6.2116+00	7.1795+00	7.1247+00	7.6474+00	8.5088+00	8.9097+00
CP	2.8493-01	4.2589-01	5.6783-01	3.4414-01	4.9804-01	4.8932-01	5.7243-01	7.0938-01	7.7313-01
P/P01	4.2742-01	4.9232-01	5.5766-01	4.5468-01	5.2553-01	5.2152-01	5.5978-01	6.2283-01	6.5218-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3781 TO = 534.

P	8.6661+00	7.8989+00	7.0385+00	5.9307+00	8.4023+00	7.2189+00	5.8526+00	4.1024+00	4.6591+00
CP	7.3704-01	6.1483-01	4.7776-01	3.0129-01	6.9502-01	5.0650-01	2.8886-01	1.0045-02	9.8729-02
P/P01	6.3556-01	5.7930-01	5.1619-01	4.3495-01	6.1621-01	5.2942-01	4.2923-01	3.0087-01	3.4170-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.7 Q-INF = 6.310 P-INF =4.0601 RE = .3800 TO = 534.

P	5.3454+00	5.7717+00	1.9041+00	1.8346+00	2.5313+00	2.8591+00	9.3954+00	1.7524+00	4.3084+00
CP	2.0434-01	2.7127-01	-3.4169-01	-3.5271-01	-2.4230-01	-1.9034-01	8.4559-01	-3.6573-01	3.9360-02
P/P01	3.9032-01	4.2113-01	1.3893-01	1.3386-01	1.8469-01	2.0862-01	6.8553-01	1.2787-01	3.1436-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.7 Q-INF = 6.306 P-INF =4.0575 RE = .3790 TO = 534.

P	3.7020+00	3.3942+00	3.9722+00	4.2786+00	4.4952+00	1.8948+00	1.7633+00	1.7825+00	1.8010+00
CP	-5.6383-02	-1.0519-01	-1.3519-02	3.5073-02	6.9415-02	-3.4297-01	-3.6384-01	-3.6079-01	-3.5786-01
P/P01	2.7028-01	2.4781-01	2.9002-01	3.1239-01	3.2820-01	1.3834-01	1.2874-01	1.3014-01	1.3149-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3791 TO = 534.

P	1.9923+00	2.1793+00	2.0645+00	1.7870+00	1.6592+00	1.9102+00	1.8746+00	1.8376+00	1.8085+00
CP	-3.2691-01	-2.9719-01	-3.1544-01	-3.5954-01	-3.7347-01	-3.3996-01	-3.4561-01	-3.5150-01	-3.5611-01
P/P01	1.4574-01	1.5942-01	1.5102-01	1.3072-01	1.2430-01	1.3973-01	1.3713-01	1.3442-01	1.3229-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.7 Q-INF = 6.308 P-INF =4.0588 RE = .3799 TO = 534.

P	1.8390+00	1.8437+00	1.5401+00	1.3784+00	1.5138+00	1.7619+00	2.3795+00	2.9303+00	1.8989+00
CP	-3.5191-01	-3.5118-01	-3.9931-01	-4.2494-01	-4.0348-01	-3.6415-01	-2.6623-01	-1.7891-01	-3.4242-01
P/PO1	1.3423-01	1.3456-01	1.1241-01	1.0061-01	1.1049-01	1.2859-01	1.7367-01	2.1388-01	1.3860-01
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.275 P-INF =4.0381 RE = .3780 TO = 534.

P	1.9157+00	1.8905+00	1.7234+00	1.7143+00	1.6817+00	1.8744+00	1.8073+00	1.9027+00	1.9291+00
CP	-3.3820-01	-3.4221-01	-3.6885-01	-3.7030-01	-3.7549-01	-3.4479-01	-3.5548-01	-3.4028-01	-3.3607-01
P/PO1	1.4054-01	1.3870-01	1.2643-01	1.2576-01	1.2337-01	1.3751-01	1.3259-01	1.3958-01	1.4152-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.7 Q-INF = 6.324 P-INF =4.0691 RE = .3809 TO = 534.

P	1.9489+00	1.8739+00	1.7489+00	1.8246+00	1.8471+00	1.4499+00	1.8384+00	2.4565+00	3.2752+00
CP	-3.3529-01	-3.5505-01	-3.6692-01	-3.5495-01	-3.5138-01	-4.1420-01	-3.5277-01	-2.5502-01	-1.2556-01
P/PO1	1.4188-01	1.3278-01	1.2732-01	1.3783-01	1.3447-01	1.0555-01	1.3384-01	1.7884-01	2.3844-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.2617+00	8.2852+00	1.8797+00	8.0016+00	1.7484+00	9.1406+00	8.0883+00	1.6992+00
CP	-2.8582-01	6.6670-01	-3.4623-01	6.2185-01	-3.6698-01	8.0197-01	6.3556-01	-3.7477-01
P/PO1	1.6466-01	6.0318-01	1.3685-01	5.8253-01	1.2729-01	6.6546-01	5.8884-01	1.2371-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.5266+00	5.4633+00	1.6734+00	5.4094+00	1.6172+00	4.5422+00	1.8305+00
CP	2.3047-01	2.2046-01	-3.7884-01	2.1194-01	-3.8774-01	7.4804-02	-3.5401-01
P/PO1	4.0235-01	3.9774-01	1.2183-01	3.9381-01	1.1773-01	3.3068-01	1.3326-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
5.	107.	301244	1.99	2	5.00	180.20	.02	100.00	.0

VALVE POS 2 PC = 20.0 Q-INF = 7.199 P-INF =2.5970 RE = .4374 TO = 533.

P	8.5615-01	2.4332+00	6.2390+00	7.3197+00	7.9006+00	8.2389+00	9.3954+00	1.0144+01	1.0820+01
CP	-2.4181-01	-2.2746-02	5.0591-01	6.5603-01	7.3673-01	7.8372-01	9.4437-01	1.0484+00	1.1423+00
P/PO1	5.8962-02	1.6763-01	4.2982-01	5.0427-01	5.4429-01	5.6760-01	6.4727-01	6.9888-01	7.4542-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4365 TO = 533.

P	1.1937+01	1.3217+01	1.4563+01	1.3313+01	9.7661+00	8.6155+00	8.1157+00	6.1811+00	4.6591+00
CP	1.3010+00	1.4791+00	1.6664+00	1.4924+00	9.9872-01	8.3856-01	7.6898-01	4.9968-01	2.8782-01
P/PO1	8.2414-01	9.1247-01	1.0054+00	9.1909-01	6.7423-01	5.9480-01	5.6029-01	4.2673-01	3.2165-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.1 Q-INF = 7.245 P-INF =2.6134 RE = .4402 TO = 533.

P	3.5366+00	7.5391+00	8.4650+00	9.0209+00	1.0519+01	1.0561+01	1.1596+01	1.2881+01	4.1769+00
CP	1.2743-01	6.7993-01	8.0773-01	8.8446-01	1.0912+00	1.0971+00	1.2399+00	1.4173+00	2.1582-01
P/PO1	2.4211-01	5.1612-01	5.7950-01	6.1756-01	7.2009-01	7.2303-01	7.9385-01	8.8183-01	2.8595-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.0 Q-INF = 7.209 P-INF =2.6006 RE = .4380 TO = 533.

P	5.4639+00	6.1627+00	6.5525+00	5.9463+00	6.6466+00	6.7167+00	7.2417+00	8.2257+00	8.8001+00
CP	3.9718-01	4.9411-01	5.4818-01	4.6409-01	5.6123-01	5.7095-01	6.4378-01	7.8028-01	8.5996-01
P/PO1	3.7589-01	4.2397-01	4.5078-01	4.0908-01	4.5725-01	4.6208-01	4.9819-01	5.6589-01	6.0541-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.1 Q-INF = 7.248 P-INF =2.6146 RE = .4404 TO = 533.

P	8.6032+00	7.5391+00	6.3958+00	5.2420+00	8.1044+00	5.9163+00	3.7890+00	3.5288+00	3.9953+00
CP	8.2625-01	6.7944-01	5.2169-01	3.6250-01	7.5744-01	4.5554-01	1.6203-01	1.2613-01	1.9050-01
P/PO1	5.8869-01	5.1588-01	4.3764-01	3.5869-01	5.5456-01	4.0484-01	2.5927-01	2.4147-01	2.7339-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.1 Q-INF = 7.226 P-INF =2.6067 RE = .4391 TO = 533.

P	4.6434+00	4.9034+00	8.0442-01	1.0125+00	2.0551+00	2.2375+00	8.7555+00	8.8624-01	3.2564+00
CP	2.8185-01	3.1784-01	-2.4942-01	-2.2062-01	-7.6332-02	-5.1097-02	8.5094-01	-2.3810-01	8.9908-02
P/PO1	3.1870-01	3.3654-01	5.5211-02	7.9495-02	1.4105-01	1.5357-01	6.0094-01	6.0827-02	7.2350-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.1 Q-INF = 7.248 P-INF =2.6146 RE = .4404 TO = 533.

P	2.5379+00	2.6242+00	3.1626+00	3.5468+00	3.6597+00	7.6969-01	7.7936-01	8.3617-01	8.9169-01
CP	-1.0578-02	1.3200-03	7.5609-02	1.2861-01	1.4420-01	-2.5455-01	-2.5321-01	-2.4537-01	-2.3771-01
P/PO1	1.7366-01	1.7957-01	2.1641-01	2.4270-01	2.5043-01	5.2668-02	5.3329-02	5.7217-02	6.1016-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.1 Q-INF = 7.223 P-INF =2.6055 RE = .4388 TO = 533.

P	9.7061-01	1.2908+00	1.1277+00	8.8721-01	8.8471-01	7.5946-01	8.0266-01	9.1628-01	9.1430-01
CP	-2.2636-01	-1.8202-01	-2.0460-01	-2.3790-01	-2.3825-01	-2.5559-01	-2.4961-01	-2.3388-01	-2.3415-01
P/PO1	6.6649-02	8.8636-02	7.7437-02	6.0922-02	6.0750-02	5.2150-02	5.5116-02	6.2918-02	6.2782-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4378 TO = 533.

P	1.0089+00	9.9957-01	7.6878-01	7.2431-01	7.3433-01	1.2453+00	1.7141+00	2.1730+00	8.2387-01
CP	-2.2072-01	-2.2202-01	-2.5405-01	-2.6022-01	-2.5883-01	-1.8792-01	-1.2286-01	-5.9171-02	-2.4641-01
P/PO1	6.9442-02	6.8798-02	5.2914-02	4.9852-02	5.0542-02	8.5712-02	1.1798-01	1.4956-01	5.6705-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4375 TO = 533.

P	5.6550-01	9.4280-01	8.7315-01	8.7218-01	8.7468-01	8.9243-01	8.8293-01	8.5619-01	8.2890-01
CP	-2.2666-01	-2.2981-01	-2.3948-01	-2.3962-01	-2.3927-01	-2.3680-01	-2.3812-01	-2.4184-01	-2.4563-01
P/PO1	6.6500-02	6.4937-02	6.0139-02	6.0072-02	6.0245-02	6.1467-02	6.0812-02	5.8971-02	5.7091-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4377 TO = 533.

P	8.7610-01	1.1008+00	1.0361+00	1.0050+00	1.0226+00	9.1545-01	1.2506+00	1.7825+00	2.5112+00
CP	-2.3913-01	-2.0794-01	-2.1692-01	-2.2123-01	-2.1880-01	-2.3367-01	-1.8714-01	-1.1331-01	-1.2163-02
P/PO1	6.0314-02	7.5781-02	7.1327-02	6.9189-02	7.0396-02	6.3073-02	8.6096-02	1.2271-01	1.7288-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5305+00	7.1508+00	7.6641-01	6.6352+00	6.4922-01	8.7727+00	7.8070+00	9.0703-01
CP	-1.4829-01	6.3187-01	-2.5436-01	5.6029-01	-2.7062-01	8.5700-01	7.2296-01	-2.3483-01
P/PO1	1.0536-01	4.9229-01	5.2762-02	4.5679-01	4.4695-02	6.0394-01	5.3747-01	6.2444-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.0977+00	4.5539+00	6.4922-01	4.6055+00	6.3750-01	3.5695+00	9.9844-01
CP	3.4687-01	2.7139-01	-2.7062-01	2.7855-01	-2.7225-01	1.3475-01	-2.2215-01
P/PO1	3.5094-01	3.1351-01	4.4695-02	3.1706-01	4.3888-02	2.4574-01	6.8736-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
5.	108.	301244	1.99	2	14.02	180.20	.05	90.98	.0

VALVE POS 2 PC = 20.1 Q-INF = 7.228 P-INF =2.6073 RE = .4392 TO = 533.

P	7.3817-01	3.2340+00	7.6498+00	9.2081+00	1.1631+01	9.9024+00	1.1034+01	1.1717+01	1.2402+01
CP	-2.5861-01	8.6711-02	6.9767-01	9.1328-01	1.2486+00	1.0093+00	1.1659+00	1.2604+00	1.3551+00
P/P01	5.0653-02	2.2191-01	5.2492-01	6.3185-01	7.9814-01	6.7949-01	7.5715-01	8.0403-01	8.5098-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4363 TO = 533.

P	1.3322+01	1.4312+01	1.4359+01	1.1284+01	4.9753+00	5.7246+00	5.7572+00	4.4079+00	3.2125+00
CP	1.4945+00	1.6324+00	1.6390+00	1.2107+00	3.3215-01	4.3651-01	4.4106-01	2.5314-01	8.6661-02
P/P01	9.2012-01	9.8852-01	9.9179-01	7.7938-01	3.4364-01	3.9540-01	3.9765-01	3.0446-01	2.2189-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4364 TO = 534.

P	2.3789+00	8.9938+00	9.9228+00	1.0332+01	1.2447+01	1.1786+01	1.2704+01	1.2645+01	4.9722+00
CP	-2.9978-02	8.8975-01	1.0189+00	1.0758+00	1.3698+00	1.2779+00	1.4056+00	1.3974+00	3.3059-01
P/P01	1.6404-01	6.2018-01	6.8425-01	7.1245-01	8.5828-01	8.1270-01	8.7604-01	8.7197-01	3.4287-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.1 Q-INF = 7.231 P-INF =2.6085 RE = .4388 TO = 534.

P	6.4484+00	7.1794+00	7.9320+00	6.9295+00	7.9633+00	7.7053+00	8.0688+00	8.8076+00	8.5026+00
CP	5.3103-01	6.3212-01	7.3620-01	5.9757-01	7.4053-01	7.0486-01	7.5512-01	8.5729-01	8.1511-01
P/P01	4.4228-01	4.9241-01	5.4403-01	4.7527-01	5.4618-01	5.2849-01	5.5342-01	6.0409-01	5.8317-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.1 Q-INF = 7.223 P-INF =2.6055 RE = .4388 TO = 533.

P	6.4799+00	3.3079+00	4.7945+00	3.7282+00	9.8515+00	7.8466+00	5.1802+00	4.0027+00	4.3147+00
CP	5.3643-01	9.7259-02	3.0308-01	1.5544-01	1.0088+00	7.2566-01	3.5649-01	1.9345-01	2.3665-01
P/P01	4.4495-01	2.2715-01	3.2923-01	2.5600-01	6.7922-01	5.3880-01	3.5571-01	2.7485-01	2.9628-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.0 Q-INF = 7.212 P-INF =2.6018 RE = .4377 TO = 534.

P	4.6497+00	4.2689+00	8.9097-01	1.1980+00	2.3442+00	2.8337+00	1.0020+01	8.3116-01	2.3922+00
CP	2.8394-01	2.3114-01	-2.3721-01	-1.9464-01	-3.5716-02	3.2150-02	1.0285+00	-2.4550-01	-2.9068-02
P/P01	3.1973-01	2.9354-01	6.1266-02	8.2378-02	1.6120-01	1.9486-01	6.8899-01	5.7153-02	1.6449-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4359 TO = 534.

P	2.4743+00	2.9753+00	2.6819+00	2.6272+00	2.8617+00	6.0554-01	5.6854-01	6.0554-01	6.5056-01
CP	-1.6308-02	5.3427-02	1.2585-02	4.9768-03	3.7616-02	-2.7645-01	-2.8160-01	-2.7645-01	-2.7018-01
P/P01	1.7082-01	2.0541-01	1.8515-01	1.8138-01	1.9757-01	4.1805-02	3.9251-02	4.1805-02	4.4913-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PO = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4372 TO = 534.

P	7.4073-01	9.6008-01	1.1404+00	6.1881-01	6.3551-01	5.9434-01	6.2269-01	7.2852-01	8.2638-01
CP	-2.5794-01	-2.2750-01	-2.0247-01	-2.7486-01	-2.7255-01	-2.7826-01	-2.7432-01	-2.5964-01	-2.4606-01
P/P01	5.0983-02	6.6080-02	7.8494-02	4.2591-02	4.3741-02	4.0907-02	4.2858-02	5.0142-02	5.6878-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.1 Q-INF = 7.238 P-INF =2.6110 RE = .4392 TO = 534.

P	8.9398-01	9.0085-01	9.9025-01	6.0995-01	4.3690-01	9.7938-01	1.2195+00	1.4771+00	6.2488-01
CP	-2.3722-01	-2.3628-01	-2.2392-01	-2.7647-01	-3.0038-01	-2.2543-01	-1.9225-01	-1.5666-01	-2.7441-01
P/PO1	6.1258-02	6.1729-02	6.7855-02	4.1796-02	2.9537-02	6.7110-02	8.3565-02	1.0121-01	4.2818-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4361 TO = 534.

P	7.4564-01	7.9719-01	8.5788-01	7.7443-01	7.1386-01	6.2792-01	6.1254-01	5.7308-01	5.8040-01
CP	-2.5697-01	-2.4982-01	-2.4138-01	-2.5299-01	-2.6142-01	-2.7337-01	-2.7551-01	-2.8100-01	-2.7999-01
P/PO1	5.1467-02	5.5010-02	5.9198-02	5.3440-02	4.9260-02	4.3330-02	4.2269-02	3.9545-02	4.0051-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.182 P-INF =2.5909 RE = .4358 TO = 534.

P	6.2488-01	9.0085-01	8.9352-01	9.6992-01	9.8746-01	8.3362-01	8.2337-01	1.1816+00	1.7005+00
CP	-2.7374-01	-2.3531-01	-2.3633-01	-2.2569-01	-2.2325-01	-2.4467-01	-2.4610-01	-1.9621-01	-1.2397-01
P/PO1	4.3150-02	6.2207-02	6.1701-02	6.6977-02	6.8188-02	5.7565-02	5.6857-02	8.1597-02	1.1743-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5000+00	8.5898+00	6.2344-01	8.3555+00	5.2266-01	8.1422+00	6.1766+00	4.2422-01
CP	-1.5189-01	8.3527-01	-2.7394-01	8.0263-01	-2.8797-01	7.7294-01	4.9229-01	-3.0168-01
P/PO1	1.0358-01	5.9316-01	4.3051-02	5.7698-01	3.6092-02	5.6225-01	4.2306-01	2.9294-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.1234+00	6.2578+00	5.0156-01	4.7883+00	4.9522-01	3.5719+00	8.6016-01
CP	3.5262-01	5.1057-01	-2.9091-01	3.0596-01	-2.9123-01	1.3659-01	-2.4098-01
P/PO1	3.5379-01	4.3213-01	3.4635-02	3.3065-01	3.4473-02	2.4665-01	5.9397-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
5.	109.	3C1244	1.99	2	14.03	.CC	.CO	119.03	.0

VALVE POS 2 PC = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4352 TO = 534.

P	9.45C7-C1	1.0884+CC	3.4472+C0	4.3075+0C	4.7655+C0	4.9747+0C	5.7122+00	6.3698+00	6.8115+00
CP	-2.2897-C1	-2.C898-C1	1.1991-01	2.3987-01	3.0371-01	3.3289-01	4.3572-01	5.2741-01	5.8900-01
P/P01	6.5353-02	7.5266-C2	2.3838-01	2.9787-01	3.2954-01	3.4401-01	3.9501-01	4.4048-01	4.7102-01
S/R	.0CCC+C0	6.4CCC-C2	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 2C.0 Q-INF = 7.202 P-INF =2.5982 RE = .4370 TO = 534.

P	7.5179+C0	5.5502+00	1.0613+01	1.4249+01	1.4265+01	1.2837+01	1.2267+01	1.0176+01	8.5653+00
CP	6.83C8-C1	4.0987-C1	1.1127+00	1.6177+0C	1.6199+C0	1.4216+0C	1.3425+00	1.0521+00	8.2849-01
P/P01	5.1768-C1	3.8219-01	7.3C78-01	9.8120-01	9.8229-01	8.8396-C1	8.4471-01	7.0071-01	5.8980-01
S/R	1.589C+C0	1.742C+0C	1.7970+00	1.854C+0C	1.918C+0C	2.C34C+CC	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 2C.C Q-INF = 7.179 P-INF =2.5897 RE = .4356 TO = 534.

P	6.6214+C0	4.3675+00	5.1361+00	5.5860+0C	6.2233+00	6.5754+00	4.4558+00	9.2165+00	1.9416+00
CP	5.6163-C1	2.4765-01	3.5472-01	4.1739-01	5.0617-01	5.5522-01	2.5995-01	9.2313-01	-9.0271-02
P/P01	4.5745-C1	3.0173-01	3.5483-01	3.8592-01	4.2995-01	4.5427-01	3.0783-01	6.3674-01	1.3414-01
S/R	2.88CC+C0	4.97CC-C1	9.3600-01	1.155C+00	1.372C+00	1.589C+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 2C.1 Q-INF = 7.221 P-INF =2.6049 RE = .4382 TO = 534.

P	2.6397+00	3.1231+00	3.2765+C0	3.6156+0C	4.0338+0C	4.3205+0C	4.7379+00	2.5999+00	5.1476+00
CP	4.8251-C3	7.1773-02	9.3C07-02	1.3997-01	1.9789-C1	2.3759-C1	2.9539-01	-6.9501-04	3.5213-01
P/P01	1.8130-01	2.1451-01	2.2504-01	2.4833-01	2.7706-01	2.9674-01	3.2541-01	1.7857-01	3.5355-01
S/R	2.08CC-C1	2.89CC-01	4.9700-01	1.0460+0C	1.155C+0C	1.372C+0C	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 2C.1 Q-INF = 7.229 P-INF =2.6079 RE = .4387 TO = 534.

P	9.2CC8+CC	1.0652+01	9.9855+0C	8.7555+00	4.3580+0C	3.8122+0C	2.4298+00	2.4315+00	2.8681+00
CP	9.1197-01	1.1127+00	1.0205+00	8.5037-01	2.4209-01	1.6658-01	-2.4633-02	-2.4400-02	3.5992-02
P/P01	6.3120-C1	7.3C74-01	6.8504-01	6.0066-01	2.9897-01	2.6153-01	1.6669-01	1.6681-01	1.9676-01
S/R	1.854C+C0	1.918C+C0	2.C85C+00	2.354C+0C	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.2 Q-INF = 7.256 P-INF =2.6177 RE = .4403 TO = 534.

P	1.22C9+C0	2.3839+C0	9.2152-01	8.6967-01	1.2431+00	1.345C+00	5.2379+00	8.1864-01	4.8700-01
CP	-1.9248-C1	-3.22C9-02	-2.3375-01	-2.4089-01	-1.8943-01	-1.7538-01	3.6110-01	-2.4792-01	-2.9363-01
P/P01	8.3447-C2	1.6294-01	6.2984-02	5.944C-02	8.4963-02	9.1931-02	3.5800-01	5.5952-02	3.3286-02
S/R	1.742C+C0	1.797C+C0	6.4C00-02	1.18CC-01	2.C800-01	2.89CC-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 2C.C Q-INF = 7.212 P-INF =2.6018 RE = .4377 TO = 534.

P	5.3593-C1	1.6783+00	4.5795+00	6.1648+CC	6.5682+CC	8.6431-01	8.2078-01	8.0362-01	8.0629-01
CP	-2.8644-01	-1.2805-01	2.7420-01	4.9400-01	5.4993-01	-2.4091-01	-2.4694-01	-2.4932-01	-2.4895-01
P/P01	3.6852-C2	1.154C-01	3.1490-01	4.2391-01	4.5165-01	5.9433-02	5.6440-02	5.5260-02	5.5443-02
S/R	1.797C+00	1.854C+C0	1.9180+00	2.0850+0C	2.354C+00	4.970C-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 2C.1 Q-INF = 7.246 P-INF =2.6140 RE = .4397 TO = 534.

P	5.6372-C1	5.0978-01	6.0419-01	8.5213-01	8.0952-01	8.6686-01	8.4668-01	8.3617-01	8.4146-01
CP	-2.8295-01	-2.9039-01	-2.7736-01	-2.4314-01	-2.4902-01	-2.4111-01	-2.4390-01	-2.4535-01	-2.4462-01
P/P01	3.8583-02	3.4891-02	4.1353-02	5.8322-02	5.5406-02	5.9331-02	5.7949-02	5.7230-02	5.7592-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.C800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.1 Q-INF = 7.243 P-INF =2.6128 RE = .4395 TO = 534.

P	9.0675-01	8.0706-01	7.5831-01	7.7443-01	7.1635-01	2.7511+00	3.6608+00	4.6386+00	8.7160-01
CP	-2.3555-01	-2.4931-01	-2.5604-01	-2.5382-01	-2.6184-01	1.9099-02	1.4470-01	2.7970-01	-2.4040-01
P/P01	6.2090-02	5.5264-02	5.1926-02	5.3029-02	4.9052-02	1.8838-01	2.5067-01	3.1763-01	5.9683-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4353 TO = 534.

P	8.8377-01	8.4902-01	8.1206-01	8.0952-01	8.1453-01	8.8732-01	8.4409-01	8.8373-01	9.0425-01
CP	-2.3755-01	-2.4239-01	-2.4754-01	-2.4789-01	-2.4720-01	-2.3705-01	-2.4308-01	-2.3755-01	-2.3469-01
P/P01	6.1099-02	5.8697-02	5.6142-02	5.5966-02	5.6313-02	6.1345-02	5.8356-02	6.1097-02	6.2516-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.212 P-INF =2.6018 RE = .4377 TO = 534.

P	9.1697-01	1.0662+00	1.1124+00	1.0952+00	1.1353+00	2.2093+00	2.9620+00	3.9278+00	5.2102+00
CP	-2.3360-01	-2.1291-01	-2.0650-01	-2.0889-01	-2.0333-01	-5.4417-02	4.9932-02	1.8385-01	3.6165-01
P/P01	6.3054-02	7.3316-02	7.6495-02	7.5312-02	7.8069-02	1.5192-01	2.0367-01	2.7009-01	3.5827-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.6406+00	3.7547+00	8.8125-01	4.1086+00	7.8984-01	4.1133+00	2.5242+00	7.6641-01	
CP	-1.3327-01	1.5984-01	-2.3856-01	2.0891-01	-2.5123-01	2.0956-01	-1.0761-02	-2.5448-01	
P/P01	1.1281-01	2.5818-01	6.0598-02	2.8252-01	5.4312-02	2.8284-01	1.7357-01	5.2701-02	
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01	

CEC	5.2055+00	3.8250+00	7.6641-01	3.7617+00	6.9141-01	3.1969+00	5.2266-01	
CP	3.6059-01	1.6959-01	-2.5448-01	1.6082-01	-2.6488-01	8.2502-02	-2.8828-01	
P/P01	3.5795-01	2.6302-01	5.2701-02	2.5867-01	4.7543-02	2.1983-01	3.5940-02	
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01	

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
5.	110.	301244	1.99	2	5.03	.00	.00	110.03	.0

VALVE POS 2 PC = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4365 TO = 534.

P	9.9615-01	1.5376+00	4.6048+00	5.6798+00	6.3487+00	6.5127+00	7.4758+00	8.1942+00	8.8158+00
CP	-2.2227-01	-1.4700-01	2.7935-01	4.2879-01	5.2177-01	5.4456-01	6.7844-01	7.7831-01	8.6471-01
P/P01	6.8675-02	1.0600-01	3.1746-01	3.9157-01	4.3769-01	4.4899-01	5.1538-01	5.6492-01	6.0777-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.1 Q-INF = 7.216 P-INF =2.6030 RE = .4379 TO = 534.

P	9.6726+00	1.0104+01	1.2948+01	1.4530+01	1.2776+01	1.1048+01	1.0394+01	8.2414+00	6.5296+00
CP	9.7974-01	1.0396+00	1.4337+00	1.6529+00	1.4098+00	1.1703+00	1.0797+00	7.8139-01	5.4416-01
P/P01	6.6481-01	6.9448-01	8.8995-01	9.9867-01	8.7810-01	7.5934-01	7.1441-01	5.6644-01	4.4879-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4337 TO = 534.

P	4.9296+00	5.8029+00	6.5839+00	7.1636+00	7.8066+00	8.4743+00	8.5058+00	1.1183+01	2.7178+00
CP	3.2903-01	4.5124-01	5.6051-01	6.4163-01	7.3160-01	8.2503-01	8.2944-01	1.2040+00	1.9550-02
P/P01	3.4209-01	4.0270-01	4.5690-01	4.9713-01	5.4175-01	5.8809-01	5.9027-01	7.7603-01	1.8861-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4365 TO = 534.

P	3.6320+00	4.2011+00	3.8457+00	4.6164+00	5.2246+00	5.4133+00	5.8370+00	5.9923+00	6.9054+00
CP	1.4413-01	2.2325-01	1.7384-01	2.8097-01	3.6552-01	3.9174-01	4.5064-01	4.7223-01	5.9916-01
P/P01	2.5039-01	2.8963-01	2.6513-01	3.1826-01	3.6019-01	3.7320-01	4.0241-01	4.1311-01	4.7607-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4361 TO = 534.

P	9.3738+00	9.4943+00	8.3082+00	6.8983+00	5.6433+00	4.6127+00	3.0710+00	2.8866+00	3.4067+00
CP	9.4350-01	9.6027-01	7.9524-01	5.9907-01	4.2445-01	2.8106-01	6.6543-02	4.0899-02	1.1325-01
P/P01	6.4684-01	6.5516-01	5.7331-01	4.7602-01	3.8542-01	3.1830-01	2.1191-01	1.9919-01	2.3508-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4363 TO = 534.

P	3.4921+00	3.4250+00	9.6989-01	8.4210-01	1.6491+00	1.6545+00	7.9908+00	8.7121-01	1.0625+00
CP	1.2491-01	1.1558-01	-2.2586-01	-2.4363-01	-1.3140-01	-1.3065-01	7.5055-01	-2.3958-01	-2.1298-01
P/P01	2.4086-01	2.3623-01	6.6896-02	5.8082-02	1.1374-01	1.1411-01	5.5115-01	6.0090-02	7.3283-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4341 TO = 534.

P	1.0217+00	1.8733+00	3.8331+00	4.7290+00	4.8381+00	9.1033-01	8.2078-01	8.3366-01	8.7913-01
CP	-2.1792-01	-9.8871-02	1.7510-01	3.0035-01	3.1559-01	-2.3348-01	-2.4600-01	-2.4420-01	-2.3784-01
P/P01	7.0835-02	1.2988-01	2.6575-01	3.2787-01	3.3543-01	6.3114-02	5.6906-02	5.7798-02	6.0951-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4331 TO = 534.

P	7.4941-01	3.4404-01	5.2825-01	9.3483-01	8.5714-01	7.7992-01	8.9587-01	8.7372-01	8.7160-01
CP	-2.5573-01	-3.1253-01	-2.8672-01	-2.2975-01	-2.4064-01	-2.5146-01	-2.3521-01	-2.3831-01	-2.3861-01
P/P01	5.2080-02	2.3909-02	3.6711-02	6.4966-02	5.9567-02	5.4200-02	6.2258-02	6.0719-02	6.0571-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 19.9 Q-INF = 7.148 F-INF =2.5787 RE = .4338 TO = 534.

P	9.3230-01	8.8110-01	8.1206-01	7.5438-01	8.2205-01	1.8872+00	2.5324+00	3.2607+00	9.1179-01
CP	-2.3032-01	-2.3748-01	-2.4714-01	-2.5521-01	-2.4574-01	-9.6743-02	-6.4759-03	9.5409-02	-2.3319-01
P/PO1	6.4683-02	6.1131-02	5.6340-02	5.2339-02	5.7034-02	1.3093-01	1.7570-01	2.2623-01	6.3260-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 19.9 Q-INF = 7.172 F-INF =2.5872 RE = .4352 TO = 534.

P	9.3230-01	8.9838-01	8.6042-01	8.6466-01	9.0726-01	9.6148-01	9.3212-01	9.0877-01	9.1681-01
CP	-2.3075-01	-2.3548-01	-2.4077-01	-2.4018-01	-2.3424-01	-2.2668-01	-2.3077-01	-2.3403-01	-2.3291-01
P/PO1	6.4470-02	6.2124-02	5.9500-02	5.9792-02	6.2735-02	6.6487-02	6.4458-02	6.2843-02	6.3399-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.197 F-INF =2.5964 RE = .4367 TO = 534.

P	9.4251-01	1.0144+00	1.0488+00	1.0576+00	1.1028+00	1.4320+00	1.9833+00	2.7245+00	3.7386+00
CP	-2.2979-01	-2.1980-01	-2.1502-01	-2.1379-01	-2.0752-01	-1.6178-01	-8.5172-02	1.7811-02	1.5870-01
P/PO1	6.4947-02	6.9899-02	7.2271-02	7.2880-02	7.5989-02	9.8676-02	1.3667-01	1.8774-01	2.5762-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.6383+00	7.0852+00	9.2109-01	5.4961+00	6.9844-01	6.0633+00	3.4242+00	7.3828-01
CP	-1.3312-01	6.2368-01	-2.3276-01	4.0289-01	-2.6370-01	4.8170-01	1.1502-01	-2.5816-01
P/PO1	1.1289-01	4.8823-01	6.3471-02	3.7873-01	4.8128-02	4.1781-01	2.3596-01	5.0874-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.1422+00	4.0594+00	7.4297-01	4.2094+00	7.2656-01	3.4336+00	1.1742+00
CP	3.5372-01	2.0327-01	-2.5751-01	2.2412-01	-2.5979-01	1.1633-01	-1.9759-01
P/PO1	3.5434-01	2.7972-01	5.1197-02	2.9006-01	5.0066-02	2.3660-01	8.0914-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
5.	111.	301244	2.99	2	5.02	.00	.00	110.02	.0

VALVE POS 2 PC = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3930 TO = 538.

P	2.0042-01	7.1812-01	2.6945+00	3.3841+00	3.7159+00	3.8757+00	4.4878+00	4.7196+00	5.0599+00
CP	-1.2103-01	-2.0905-02	3.6135-01	4.9472-01	5.5887-01	5.8979-01	7.0818-01	7.5301-01	8.1882-01
P/P01	2.0242-02	7.2528-02	2.7214-01	3.4179-01	3.7529-01	3.9144-01	4.5326-01	4.7667-01	5.1104-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3950 TO = 537.

P	5.4639+00	5.5872+00	8.6844+00	9.8480+00	7.9477+00	6.4970+00	6.0867+00	4.6386+00	3.4129+00
CP	8.9447-01	9.1826-01	1.5159+00	1.7404+00	1.3737+00	1.0938+00	1.0147+00	7.3523-01	4.9874-01
P/P01	5.5054-01	5.6296-01	8.7505-01	9.9229-01	8.0081-01	6.5464-01	6.1330-01	4.6739-01	3.4389-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.0 Q-INF = 5.181 P-INF = .8279 RE = .3949 TO = 537.

P	2.5125+00	3.3387+00	3.8584+00	4.0284+00	4.7009+00	4.6381+00	4.6096+00	7.5179+00	1.4443+00
CP	3.2515-01	4.8462-01	5.8492-01	6.1774-01	7.4754-01	7.3542-01	7.2992-01	1.2913+00	1.1897-01
P/P01	2.5324-01	3.3652-01	3.8889-01	4.0603-01	4.7382-01	4.6749-01	4.6461-01	7.5775-01	1.4557-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3941 TO = 537.

P	1.8135+00	1.9819+00	2.1485+00	2.4146+00	2.7245+00	2.7257+00	2.9171+00	2.8430+00	4.1644+00
CP	1.9045-01	2.2297-01	2.5516-01	3.0654-01	3.6641-01	3.6663-01	4.0359-01	3.8928-01	6.4449-01
P/P01	1.8290-01	1.9988-01	2.1669-01	2.4352-01	2.7478-01	2.7490-01	2.9420-01	2.8673-01	4.2000-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3937 TO = 537.

P	5.8980+00	5.6056+00	4.7882+00	3.8533+00	3.1423+00	2.1531+00	1.5458+00	1.2342+00	1.3966+00
CP	9.8037-01	9.2386-01	7.6583-01	5.8510-01	4.4765-01	2.5643-01	1.3903-01	7.8799-02	1.1018-01
P/P01	5.9540-01	5.6589-01	4.8337-01	3.8899-01	3.1721-01	2.1735-01	1.5605-01	1.2459-01	1.4098-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3941 TO = 537.

P	1.2822+00	1.6857+00	1.8704-01	2.6196-01	7.2431-01	7.5435-01	4.0006+00	2.1755-01	4.3808-01
CP	8.7847-02	1.6577-01	-1.2367-01	-1.0920-01	-1.9906-02	-1.4104-02	6.1285-01	-1.1778-01	-7.5186-02
P/P01	1.2932-01	1.7001-01	1.8864-02	2.6420-02	7.3050-02	7.6080-02	4.0348-01	2.1941-02	4.4183-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3957 TO = 538.

P	3.7207-01	7.4804-01	1.8558+00	2.3208+00	2.5375+00	1.4712-01	1.6457-01	1.4692-01	1.4840-01
CP	-8.8337-02	-1.6132-02	1.9661-01	2.8592-01	3.2754-01	-1.3154-01	-1.2819-01	-1.3158-01	-1.3129-01
P/P01	3.7315-02	7.5021-02	1.8611-01	2.3275-01	2.5449-01	1.4755-02	1.6504-02	1.4734-02	1.4883-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.1 Q-INF = 5.211 P-INF = .8327 RE = .3955 TO = 538.

P	1.9624-01	1.4705-01	2.1291-01	2.1400-01	2.1375-01	2.0201-01	1.7192-01	1.9625-01	2.1084-01
CP	-1.2213-01	-1.3157-01	-1.1894-01	-1.1873-01	-1.1878-01	-1.2103-01	-1.2680-01	-1.2213-01	-1.1933-01
P/P01	1.9666-02	1.4737-02	2.1336-02	2.1446-02	2.1420-02	2.0244-02	1.7229-02	1.9667-02	2.1128-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3955 TO = 539.

P	2.2686-01	1.7866-01	2.0565-01	2.1581-01	1.8609-01	8.0545-01	1.1108+00	1.5046+00	1.9183-01
CP	-1.1632-01	-1.2556-01	-1.2038-01	-1.1844-01	-1.2413-01	-5.4351-03	5.3068-02	1.2854-01	-1.2303-01
P/PO1	2.2703-02	1.7879-02	2.0580-02	2.1597-02	1.8622-02	8.0607-02	1.1116-01	1.5057-01	1.9197-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.2 Q-INF = 5.225 P-INF = .8349 RE = .3960 TO = 539.

P	2.1573-01	1.9516-01	2.2381-01	2.4206-01	2.5630-01	2.1775-01	2.1697-01	2.0042-01	1.9002-01
CP	-1.1850-01	-1.2244-01	-1.1696-01	-1.1347-01	-1.1074-01	-1.1812-01	-1.1827-01	-1.2143-01	-1.2342-01
P/PO1	2.1562-02	1.9505-02	2.2369-02	2.4193-02	2.5616-02	2.1764-02	2.1686-02	2.0031-02	1.8992-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7570+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PO = 30.2 Q-INF = 5.222 P-INF = .8345 RE = .3958 TO = 539.

P	1.9671-01	2.5700-01	2.8328-01	2.8006-01	2.9737-01	5.5517-01	8.0769-01	1.2167+00	1.7909+00
CP	-1.2213-01	-1.1058-01	-1.0555-01	-1.0617-01	-1.0285-01	-5.3488-02	-5.1330-03	7.3184-02	1.8314-01
P/PO1	1.9670-02	2.5699-02	2.8326-02	2.8004-02	2.9735-02	5.5514-02	8.0765-02	1.2166-01	1.7908-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0008+00	2.8195+00	1.6406-01	2.5477+00	1.1484-01	2.6953+00	1.3383+00	9.8438-02
CP	3.1840-02	3.8010-01	-1.2838-01	3.2804-01	-1.3780-01	3.5632-01	9.6466-02	-1.4094-01
P/PO1	1.0007-01	2.8194-01	1.6405-02	2.5475-01	1.1484-02	2.6952-01	1.3382-01	9.8432-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.5039+00	1.7836+00	1.3125-01	1.6852+00	1.3359-01	1.3805+00	4.1250-01
CP	5.1115-01	1.8174-01	-1.3466-01	1.6289-01	-1.3421-01	1.0454-01	-8.0806-02
P/PO1	3.5037-01	1.7835-01	1.3124-02	1.6851-01	1.3359-02	1.3804-01	4.1248-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
5.	112.	301244	2.99	2	14.01	.00	.00	119.01	.0

VALVE POS 2 PC = 30.2 Q-INF = 5.214 P-INF = .8332 RE = .3946 TO = 539.

P	1.865C-C1	4.7321-01	1.8343+00	2.3332+0C	2.6622+00	2.6939+00	3.1158+00	3.2670+00	3.4755+00
CP	-1.24C3-01	-6.9042-02	1.9199-01	2.8768-01	3.5C77-01	3.5685-01	4.3777-01	4.6675-01	5.0675-01
P/P01	1.8678-C2	4.7391-C2	1.8371-01	2.3367-01	2.6662-01	2.698C-01	3.1205-01	3.2718-01	3.4807-01
S/R	.00CC+C0	6.4C0C-02	1.18C0-01	2.08CC-01	2.85CC-01	4.97CC-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3941 TO = 539.

P	3.7401+00	3.5174+C0	7.3677+00	9.8949+0C	9.6C93+00	8.C663+C0	7.5538+00	6.1496+00	4.8219+00
CP	5.5839-01	5.1562-01	1.2549+00	1.7402+00	1.6854+0C	1.3891+00	1.2907+00	1.C211+00	7.6612-01
P/P01	3.7504-01	3.527C-01	7.3879-01	9.922C-01	9.6356-01	8.C884-01	7.5745-01	6.1665-01	4.8352-01
S/R	1.5890+00	1.742C+00	1.7970+00	1.854C+0C	1.918C+00	2.034C+0C	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.1 Q-INF = 5.211 P-INF = .8327 RE = .3944 TO = 539.

P	3.67C2+C0	2.2915+CC	2.6819+00	2.8212+00	3.4353+00	3.1641+CC	2.8145+00	6.4327+00	9.6705-01
CP	5.4451-C1	2.7995-01	3.5486-01	3.8159-01	4.9944-01	4.474C-01	3.8031-01	1.0746+00	2.5783-02
P/P01	3.6779-01	2.2964-01	2.6876-01	2.8271-01	3.4426-01	3.17C8-01	2.8205-01	6.4463-01	9.6909-02
S/R	2.88CC+00	4.970C-01	9.3600-C1	1.155C+0C	1.372C+CC	1.589C+CC	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.1 Q-INF = 5.207 P-INF = .832C RE = .3941 TO = 539.

P	1.2363+00	1.3254+00	1.4026+00	1.6892+0C	1.7769+00	1.9C25+00	2.0248+00	1.5947+00	3.4067+00
CP	7.7629-C2	9.4742-C2	1.0959-01	1.6462-01	1.8147-C1	2.C558-01	2.2907-01	1.4647-01	4.9446-01
P/P01	1.2398-C1	1.3292-C1	1.4C67-01	1.6941-01	1.7821-01	1.908C-01	2.0306-01	1.5993-01	3.4165-01
S/R	2.C8CC-C1	2.89CC-01	4.9700-01	1.046C+0C	1.155C+00	1.372C+CC	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3940 TO = 539.

P	6.1024+C0	6.8978+00	6.0666+00	5.1294+0C	2.C276+0C	1.4550+00	1.1211+00	1.1516+00	1.0097+00
CP	1.C125+C0	1.1654+00	1.0C57+00	8.2561-01	2.2972-01	1.1973-01	5.5588-02	6.1442-02	3.4189-02
P/P01	6.122C-01	6.92CC-01	6.0860-01	5.1458-01	2.0341-01	1.4597-01	1.1247-01	1.1553-01	1.0130-01
S/R	1.854C+C0	1.918C+00	2.0850+00	2.3540+00	4.9700-01	9.36CC-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3921 TO = 540.

P	5.7C39-01	1.3895+00	1.7478-01	1.8143-01	4.8C05-01	5.1375-01	2.5452+00	1.7635-C1	2.2215-01
CP	-4.9856-C2	1.08C2-01	-1.2611-01	-1.2483-01	-6.7268-02	-6.0772-02	3.3078-01	-1.2580-01	-1.1698-01
P/P01	5.741C-02	1.3986-01	1.7592-02	1.8261-02	4.8317-02	5.171C-02	2.5618-01	1.775C-02	2.2359-02
S/R	1.742C+C0	1.797C+00	6.4C00-02	1.18CC-01	2.C8CC-01	2.89CC-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3933 TO = 540.

P	2.6351-01	8.7617-01	2.5111+00	3.3216+0C	4.1211+0C	1.4532-01	1.8663-01	1.1723-01	1.5066-01
CP	-1.C915-01	8.5795-03	3.2277-01	4.7851-01	6.3216-01	-1.3187-01	-1.2393-01	-1.3727-01	-1.3084-01
P/P01	2.6444-02	8.7925-02	2.520C-01	3.3333-01	4.1356-01	1.4583-02	1.8729-02	1.1764-02	1.5119-02
S/R	1.797C+C0	1.854C+00	1.9180+00	2.0850+0C	2.354C+00	4.970C-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.0 Q-INF = 5.194 P-INF = .83C0 RE = .3925 TO = 540.

P	1.9253-01	1.6904-01	2.2608-01	1.8731-01	1.9643-01	1.6756-01	1.5686-01	1.7093-01	1.9591-01
CP	-1.2273-01	-1.2725-01	-1.1627-01	-1.2373-01	-1.2197-01	-1.2753-01	-1.2959-01	-1.2688-01	-1.2208-01
P/P01	1.9357-02	1.6996-02	2.2730-02	1.8832-02	1.9749-02	1.6847-02	1.5770-02	1.7185-02	1.9696-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.C800-01	2.89CC-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3916 TC = 540.

P	2.2408-01	2.0111-01	2.1791-01	2.2034-01	2.6916-01	1.3118+00	1.7866+00	2.3442+00	1.6605-01
CP	-1.1661-01	-1.2104-01	-1.1780-01	-1.1733-01	-1.0792-01	9.3004-02	1.8450-01	2.9196-01	-1.2779-01
P/PO1	2.2550-02	2.0239-02	2.1929-02	2.2174-02	2.7087-02	1.3201-01	1.7979-01	2.3591-01	1.6710-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.1 Q-INF = 5.210 P-INF = .8326 RE = .3927 TO = 541.

P	1.8604-01	1.5797-01	1.9339-01	2.0496-01	2.5333-01	1.8581-01	1.8433-01	1.6895-01	1.6288-01
CP	-1.2409-01	-1.2947-01	-1.2268-01	-1.2046-01	-1.1117-01	-1.2413-01	-1.2441-01	-1.2737-01	-1.2853-01
P/PO1	1.8646-02	1.5833-02	1.9383-02	2.0542-02	2.5391-02	1.8623-02	1.8475-02	1.6933-02	1.6325-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 Q-INF = 5.213 P-INF = .8329 RE = .3929 TO = 541.

P	1.7861-01	1.9836-01	2.1700-01	2.1943-01	2.0929-01	9.8193-01	1.3619+00	1.9627+00	2.7429+00
CP	-1.2553-01	-1.2174-01	-1.1816-01	-1.1770-01	-1.1964-01	2.8582-02	1.0148-01	2.1674-01	3.6640-01
P/PO1	1.7894-02	1.9872-02	2.1739-02	2.1983-02	2.0967-02	9.8371-02	1.3644-01	1.9663-01	2.7478-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0125+00	1.9500+00	1.6875-01	1.8773+00	1.1484-01	1.8094+00	8.4609-01	8.6719-02
CP	3.4446-02	2.1430-01	-1.2742-01	2.0036-01	-1.3776-01	1.8732-01	2.5222-03	-1.4316-01
P/PO1	1.0143-01	1.9535-01	1.6905-02	1.8807-01	1.1505-02	1.8126-01	8.4762-02	8.6875-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.5695+00	1.3992+00	1.1953-01	1.6195+00	1.0313-01	6.3516-01	1.3594-01
CP	5.2499-01	1.0863-01	-1.3686-01	1.5090-01	-1.4001-01	-3.7944-02	-1.3372-01
P/PO1	3.5760-01	1.4017-01	1.1975-02	1.6225-01	1.0331-02	6.3630-02	1.3618-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
6.	113.	301244	1.49	2	5.02	-.05	.00	110.02	.0

VALVE POS 2 PC = 14.6 Q-INF = 6.273 P-INF =4.0368 RE = .3812 TO = 530.

P	1.9176+00	2.1548+00	5.4684+00	6.0926+00	6.3063+00	6.8978+00	7.9319+00	8.6620+00	9.2453+00
CP	-3.3780-01	-2.9999-01	2.2821-01	3.2771-01	3.6177-01	4.5606-01	6.2089-01	7.3728-01	8.3025-01
P/P01	1.4072-01	1.5813-01	4.0130-01	4.4711-01	4.6279-01	5.0620-01	5.8209-01	6.3567-01	6.7847-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.7 Q-INF = 6.302 P-INF =4.0549 RE = .3829 TO = 530.

P	1.0180+01	1.0736+01	1.2492+01	1.3610+01	1.2218+01	1.1087+01	1.0492+01	7.5693+00	7.2047+00
CP	9.7201-01	1.0603+00	1.3390+00	1.5164+00	1.2955+00	1.1159+00	1.0214+00	5.5771-01	4.9985-01
P/P01	7.4374-01	7.8438-01	9.1267-01	9.9435-01	8.9265-01	8.0998-01	7.6649-01	5.5300-01	5.2636-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.261 P-INF =4.0290 RE = .3805 TO = 530.

P	5.6743+00	6.4009+00	7.2755+00	7.7528+00	8.4189+00	9.1655+00	9.3223+00	1.1180+01	3.7707+00
CP	2.6277-01	3.7882-01	5.1850-01	5.9473-01	7.0111-01	8.2036-01	8.4540-01	1.1421+00	-4.1251-02
P/P01	4.1722-01	4.7064-01	5.3495-01	5.7005-01	6.1902-01	6.7392-01	6.8545-01	8.2203-01	2.7725-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.7 Q-INF = 6.302 P-INF =4.0549 RE = .3824 TO = 531.

P	5.0225+00	5.6198+00	5.0010+00	5.4672+00	5.8279+00	6.2993+00	6.7784+00	7.0784+00	7.7698+00
CP	1.5355-01	2.4834-01	1.5014-01	2.2411-01	2.8136-01	3.5617-01	4.3220-01	4.7981-01	5.8952-01
P/P01	3.6693-01	4.1057-01	3.6536-01	3.9942-01	4.2577-01	4.6022-01	4.9522-01	5.1714-01	5.6764-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3815 TO = 531.

P	9.6119+00	9.8063+00	8.7526+00	7.5492+00	6.7792+00	5.8899+00	5.4066+00	3.8001+00	4.4013+00
CP	8.8575-01	9.1667-01	7.4903-01	5.5758-01	4.3508-01	2.9359-01	2.1670-01	-3.8887-02	5.6753-02
P/P01	7.0402-01	7.1826-01	6.4108-01	5.5294-01	4.9655-01	4.3141-01	3.9601-01	2.7834-01	3.2237-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.292 P-INF =4.0464 RE = .3818 TO = 531.

P	4.4730+00	4.5642+00	1.8579+00	1.7804+00	2.1202+00	2.4082+00	8.8325+00	1.7467+00	1.7990+00
CP	6.7481-02	8.1978-02	-3.4818-01	-3.6049-01	-3.0648-01	-2.6070-01	7.6040-01	-3.6584-01	-3.5752-01
P/P01	3.2731-01	3.3398-01	1.3595-01	1.3028-01	1.5515-01	1.7622-01	6.4632-01	1.2781-01	1.3165-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.6 Q-INF = 6.283 P-INF =4.0432 RE = .3813 TO = 531.

P	1.7230+00	2.6081+00	4.5371+00	5.4735+00	5.5909+00	1.8543+00	1.7473+00	1.7518+00	1.7531+00
CP	-3.6926-01	-2.2840-01	7.8600-02	2.2762-01	2.4631-01	-3.4836-01	-3.6539-01	-3.6468-01	-3.6447-01
P/P01	1.2624-01	1.9109-01	3.3243-01	4.0103-01	4.0564-01	1.3586-01	1.2802-01	1.2835-01	1.2845-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.6 Q-INF = 6.287 P-INF =4.0458 RE = .3816 TO = 531.

P	1.5984+00	6.7980-01	8.6442-01	1.6736+00	1.7366+00	1.8725+00	1.8162+00	1.7722+00	1.7480+00
CP	-3.8925-01	-5.3535-01	-5.0599-01	-3.7730-01	-3.6727-01	-3.4566-01	-3.5461-01	-3.6162-01	-3.6546-01
P/P01	1.1704-01	4.9776-02	6.3294-02	1.2254-01	1.2716-01	1.3711-01	1.3299-01	1.2976-01	1.2799-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.7 Q-INF = 6.296 P-INF =4.0510 RE = .3821 TO = 531.

P	1.8190+00	1.7973+00	1.6101+00	1.6354+00	1.6874+00	2.4601+00	3.2531+00	4.1473+00	1.8450+00
CP	-3.5454-01	-3.5798-01	-3.8771-01	-3.8370-01	-3.7545-01	-2.5270-01	-1.2675-01	1.5294-02	-3.5041-01
P/PO1	1.3302-01	1.3144-01	1.1775-01	1.1959-01	1.2339-01	1.7991-01	2.3789-01	3.0328-01	1.3492-01
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.259 P-INF =4.0277 RE = .3799 TO = 531.

P	1.8216+00	1.7772+00	1.7237+00	1.7448+00	1.7599+00	1.8127+00	1.7500+00	1.8817+00	1.8577+00
CP	-3.5245-01	-3.5953-01	-3.6809-01	-3.6472-01	-3.6230-01	-3.5387-01	-3.6389-01	-3.4285-01	-3.4668-01
P/PO1	1.3398-01	1.3072-01	1.2678-01	1.2833-01	1.2945-01	1.3333-01	1.2871-01	1.3840-01	1.3664-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3817 TO = 531.

P	1.8891+00	1.9505+00	1.9249+00	1.9533+00	1.9880+00	1.9869+00	2.5699+00	3.4719+00	4.5021+00
CP	-3.4312-01	-3.3336-01	-3.3742-01	-3.3290-01	-3.2739-01	-3.2756-01	-2.3487-01	-9.1464-02	7.2346-02
P/PO1	1.3828-01	1.4277-01	1.4090-01	1.4298-01	1.4552-01	1.4544-01	1.8811-01	2.5413-01	3.2955-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.2336+00	7.8961+00	1.7953+00	6.4336+00	1.6852+00	7.6477+00	4.3945+00	1.7039+00
CP	-2.8834-01	6.1197-01	-3.5803-01	3.7944-01	-3.7554-01	5.7247-01	5.5236-02	-3.7256-01
P/PO1	1.6350-01	5.7798-01	1.3141-01	4.7093-01	1.2335-01	5.5979-01	3.2167-01	1.2472-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.6555+00	5.4094+00	1.6805+00	5.5383+00	1.6523+00	4.5914+00	1.8680+00
CP	2.5572-01	2.1659-01	-3.7629-01	2.3709-01	-3.8076-01	8.6538-02	-3.4647-01
P/PO1	4.1397-01	3.9596-01	1.2301-01	4.0539-01	1.2095-01	3.3608-01	1.3673-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
6.	114.	301244	2.99	2	5.02	-.05	.00	110.02	.0

VALVE POS 2 PC = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3973 TO = 537.

P	1.8662-01	8.0869-01	2.7261+00	3.4075+00	3.6504+00	3.9682+00	4.5153+00	4.8164+00	5.0949+00
CP	-1.2405-01	-4.8937-03	3.6237-01	4.9290-01	5.3942-01	6.0028-01	7.0508-01	7.6276-01	8.1609-01
P/PO1	1.8667-02	8.0890-02	2.7268-01	3.4084-01	3.6513-01	3.9692-01	4.5164-01	4.8176-01	5.0961-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.3 Q-INF = 5.234 P-INF = .8363 RE = .3983 TO = 537.

P	5.5529+00	5.8018+00	8.8154+00	9.9612+00	7.5833+00	6.5828+00	6.1306+00	3.3330+00	3.4176+00
CP	9.0119-01	9.4875-01	1.5246+00	1.7435+00	1.2891+00	1.0980+00	1.0116+00	4.7704-01	4.9320-01
P/PO1	5.5405-01	5.7888-01	8.7958-01	9.9390-01	7.5664-01	6.5681-01	6.1169-01	3.3256-01	3.4100-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.3 Q-INF = 5.241 P-INF = .8375 RE = .3972 TO = 539.

P	2.5688+00	3.4092+00	3.9080+00	4.0941+00	4.4638+00	4.7222+00	4.6584+00	7.6485+00	1.4571+00
CP	3.3033-01	4.9069-01	5.8587-01	6.2137-01	6.9191-01	7.4121-01	7.2904-01	1.2996+00	1.1823-01
P/PO1	2.5595-01	3.3968-01	3.8939-01	4.0793-01	4.4476-01	4.7051-01	4.6416-01	7.6209-01	1.4518-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.3 Q-INF = 5.246 P-INF = .8383 RE = .3959 TO = 540.

P	1.8787+00	2.0559+00	2.1649+00	2.4501+00	2.5873+00	2.7796+00	2.9343+00	2.9101+00	4.1995+00
CP	1.9833-01	2.3211-01	2.5290-01	3.0727-01	3.3342-01	3.7008-01	3.9956-01	3.9494-01	6.4074-01
P/PO1	1.8701-01	2.0465-01	2.1551-01	2.4390-01	2.5756-01	2.7670-01	2.9209-01	2.8968-01	4.1804-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.2 Q-INF = 5.214 P-INF = .8332 RE = .3930 TO = 541.

P	5.9502+00	5.8018+00	4.8358+00	3.9240+00	3.0420+00	2.1924+00	1.5935+00	1.2706+00	1.3959+00
CP	9.8135-01	9.5288-01	7.6762-01	5.9276-01	4.2361-01	2.6067-01	1.4582-01	8.3877-02	1.0791-01
P/PO1	5.9591-01	5.8104-01	4.8430-01	3.9299-01	3.0466-01	2.1957-01	1.5959-01	1.2725-01	1.3979-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3904 TO = 541.

P	1.3000+00	1.7095+00	1.7480-01	2.8636-01	7.3870-01	7.4900-01	4.0403+00	2.3811-01	4.5346-01
CP	9.0852-02	1.6979-01	-1.2609-01	-1.0458-01	-1.7371-02	-1.5386-02	6.1918-01	-1.1389-01	-7.2366-02
P/PO1	1.3089-01	1.7211-01	1.7599-02	2.8831-02	7.4374-02	7.5411-02	4.0679-01	2.3973-02	4.5655-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3893 TO = 542.

P	3.9225-01	8.3721-01	1.8837+00	2.3746+00	2.4528+00	1.3392-01	1.7501-01	1.6330-01	1.5637-01
CP	-8.4179-02	1.5957-03	2.0332-01	2.9795-01	3.1304-01	-1.3398-01	-1.2606-01	-1.2831-01	-1.2965-01
P/PO1	3.9486-02	8.4278-02	1.8962-01	2.3904-01	2.4692-01	1.3482-02	1.7617-02	1.6439-02	1.5741-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3887 TO = 542.

P	2.0027-01	1.7592-01	2.1437-01	2.0647-01	2.0438-01	1.9044-01	1.8214-01	1.8921-01	2.1633-01
CP	-1.2107-01	-1.2578-01	-1.1835-01	-1.1987-01	-1.2028-01	-1.2297-01	-1.2458-01	-1.2321-01	-1.1797-01
P/PO1	2.0220-02	1.7762-02	2.1644-02	2.0846-02	2.0635-02	1.9228-02	1.8390-02	1.9104-02	2.1842-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 C-INF = 5.209 P-INF = .8324 RE = .3915 TO = 542.

P	2.4217-01	2.1954-01	2.2238-01	2.3920-01	2.1081-01	8.1922-01	1.1057+00	1.5583+00	1.8659-01
CP	-1.1331-01	-1.1765-01	-1.1710-01	-1.1388-01	-1.1933-01	-2.5356-03	5.2449-02	1.3934-01	-1.2398-01
P/PO1	2.4276-02	2.2007-02	2.2292-02	2.3978-02	2.1132-02	8.2121-02	1.1083-01	1.5621-01	1.8705-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.2 C-INF = 5.225 P-INF = .8349 RE = .3921 TO = 542.

P	2.2219-01	2.1905-01	2.4542-01	2.6230-01	2.7089-01	2.0849-01	2.0691-01	2.0388-01	1.8659-01
CP	-1.1727-01	-1.1787-01	-1.1282-01	-1.0959-01	-1.0795-01	-1.1989-01	-1.2019-01	-1.2077-01	-1.2408-01
P/PO1	2.2208-02	2.1893-02	2.4530-02	2.6716-02	2.7075-02	2.0838-02	2.0680-02	2.0378-02	1.8649-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.2 C-INF = 5.222 P-INF = .8345 RE = .3920 TO = 542.

P	1.9198-01	3.1215-01	3.1855-01	3.2438-01	3.4760-01	5.7145-01	8.3106-01	1.2527+00	1.7965+00
CP	-1.2303-01	-1.0002-01	-9.8796-02	-9.7680-02	-9.3234-02	-5.0371-02	-6.5914-04	8.0086-02	1.8421-01
P/PO1	1.9197-02	3.1214-02	3.1853-02	3.2436-02	3.4758-02	5.7141-02	8.3101-02	1.2527-01	1.7964-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.7031-01	2.8477+00	1.1719-01	2.6391+00	1.1250-01	2.7492+00	1.3523+00	1.0078-01
CP	2.6006-02	3.8549-01	-1.3735-01	3.4554-01	-1.3825-01	3.6664-01	9.9159-02	-1.4050-01
P/PO1	9.7025-02	2.8475-01	1.1718-02	2.6389-01	1.1249-02	2.7491-01	1.3523-01	1.0078-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6375+00	1.8094+00	1.1250-01	1.6945+00	1.1484-01	1.3875+00	4.0547-01
CP	5.3673-01	1.8667-01	-1.3825-01	1.6468-01	-1.3780-01	1.0589-01	-8.2153-02
P/PO1	3.6373-01	1.8093-01	1.1249-02	1.6944-01	1.1484-02	1.3874-01	4.0544-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
.6.	115.	301244	2.99	2	14.01	-.05	.01	119.01	.0

VALVE POS 2 PC = 30.2 Q-INF = 5.226 P-INF = .8351 RE = .3923 TO = 542.

P	1.9588-01	5.2468-01	1.8656+00	2.3431+00	2.4720+00	2.7157+00	3.1099+00	3.3330+00	3.4680+00
CP	-1.2231-01	-5.9404-02	1.9716-01	2.8852-01	3.1320-01	3.5982-01	4.3525-01	4.7793-01	5.0377-01
P/P01	1.9572-02	5.2424-02	1.8640-01	2.3411-01	2.4700-01	2.7135-01	3.1073-01	3.3302-01	3.4651-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.2 Q-INF = 5.230 P-INF = .8358 RE = .3926 TO = 542.

P	3.7829+00	3.5644+00	7.4640+00	9.9455+00	9.3018+00	8.1262+00	7.5842+00	3.1436+00	4.8048+00
CP	5.6344-01	5.2168-01	1.2672+00	1.7417+00	1.6186+00	1.3938+00	1.2902+00	4.4122-01	7.5882-01
P/P01	3.7768-01	3.5587-01	7.4520-01	9.9295-01	9.2868-01	8.1131-01	7.5720-01	3.1386-01	4.7971-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3918 TO = 542.

P	3.7062+00	2.3349+00	2.6689+00	2.8470+00	3.0164+00	3.2014+00	2.8237+00	6.5242+00	9.5694-01
CP	5.5010-01	2.8744-01	3.5142-01	3.8552-01	4.1798-01	4.5341-01	3.8106-01	1.0899+00	2.3502-02
P/P01	3.7071-01	2.3355-01	2.6696-01	2.8477-01	3.0172-01	3.2022-01	2.8244-01	6.5258-01	9.5718-02
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.2 Q-INF = 5.226 P-INF = .8351 RE = .3917 TO = 543.

P	1.2689+00	1.3555+00	1.4373+00	1.7219+00	1.8014+00	1.9453+00	2.0443+00	1.6372+00	3.4176+00
CP	8.2989-02	9.9567-02	1.1521-01	1.6967-01	1.8488-01	2.1242-01	2.3135-01	1.5346-01	4.9411-01
P/P01	1.2678-01	1.3544-01	1.4361-01	1.7205-01	1.7999-01	1.9437-01	2.0426+01	1.6358-01	3.4147-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3899 TO = 543.

P	6.1712+00	6.9842+00	6.1127+00	5.1900+00	2.0373+00	1.4928+00	1.1216+00	1.1585+00	9.9012-01
CP	1.0265+00	1.1828+00	1.0152+00	8.3789-01	2.3183-01	1.2717-01	5.5805-02	6.2910-02	3.0536-02
P/P01	6.1949-01	7.0110-01	6.1361-01	5.2099-01	2.0451-01	1.4985-01	1.1259-01	1.1630-01	9.9391-02
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3900 TO = 543.

P	5.9214-01	1.4108+00	1.7731-01	1.9299-01	4.8788-01	5.4179-01	2.6805+00	1.8873-01	2.5327-01
CP	-4.6001-02	1.1131-01	-1.2572-01	-1.2271-01	-6.6037-02	-5.5678-02	3.5533-01	-1.2353-01	-1.1112-01
P/P01	5.9423-02	1.4157-01	1.7793-02	1.9367-02	4.8960-02	5.4370-02	2.6900-01	1.8939-02	2.5416-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3894 TO = 543.

P	2.8944-01	8.7941-01	2.5799+00	3.4327+00	3.5800+00	1.4580-01	1.6775-01	1.3359-01	1.7220-01
CP	-1.0416-01	9.2556-03	3.3615-01	5.0008-01	5.2839-01	-1.3177-01	-1.2755-01	-1.3411-01	-1.2669-01
P/P01	2.9055-02	8.8278-02	2.5898-01	3.4459-01	3.5937-01	1.4636-02	1.6840-02	1.3410-02	1.7286-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3892 TO = 543.

P	2.0124-01	1.8867-01	2.1838-01	1.9299-01	1.9687-01	1.8522+01	1.7896-01	2.0429-01	2.1201-01
CP	-1.2109-01	-1.2351-01	-1.1780-01	-1.2268-01	-1.2193-01	-1.2417-01	-1.2538-01	-1.2050-01	-1.1902-01
P/P01	2.0211-02	1.8948-02	2.1932-02	1.9382-02	1.9771-02	1.8601-02	1.7973-02	2.0517-02	2.1293-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3890 TO = 544.

P	2.3730-01	2.3326-01	2.2689-01	2.3342-01	2.6070-01	1.3342+00	1.7950+00	2.4240+00	1.7364-01
CP	-1.1419-01	-1.1497-01	-1.1619-01	-1.1494-01	-1.0969-01	9.6592-02	1.8516-01	3.0602-01	-1.2643-01
P/PO1	2.3814-02	2.3408-02	2.2769-02	2.3424-02	2.6162-02	1.3389-01	1.8014-01	2.4325-01	1.7425-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.1 Q-INF = 5.210 P-INF = .8326 RE = .3894 TO = 544.

P	1.9003-01	1.9279-01	2.0035-01	2.1561-01	2.2505-01	1.9851-01	1.9531-01	1.8775-01	1.7172-01
CP	-1.2332-01	-1.2279-01	-1.2134-01	-1.1841-01	-1.1583-01	-1.2169-01	-1.2231-01	-1.2376-01	-1.2683-01
P/PO1	1.9047-02	1.9323-02	2.0080-02	2.1610-02	2.2957-02	1.9896-02	1.9575-02	1.8817-02	1.7211-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3881 TO = 544.

P	1.8955-01	2.2688-01	2.2589-01	2.3005-01	2.0358-01	9.9607-01	1.3549+00	2.0013+00	2.7114+00
CP	-1.2334-01	-1.1616-01	-1.1635-01	-1.1555-01	-1.2064-01	3.1770-02	1.0078-01	2.2510-01	3.6166-01
P/PO1	1.9036-02	2.2786-02	2.2686-02	2.3104-02	2.0445-02	1.0004-01	1.3607-01	2.0099-01	2.7230-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.8672-01	2.1164+00	-5.1563-02	1.8820+00	1.1250-01	1.8234+00	8.4609-01	8.6719-02
CP	2.9972-02	2.4723-01	-1.6971-01	2.0216-01	-1.3816-01	1.9089-01	2.9271-03	-1.4312-01
P/PO1	9.9097-02	2.1255-01	-5.1784-03	1.8901-01	1.1298-02	1.8313-01	8.4974-02	8.7092-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6516+00	1.4344+00	1.0078-01	1.6500+00	1.0781-01	5.2734-01	1.1016-01
CP	5.4247-01	1.1607-01	-1.4041-01	1.5753-01	-1.3906-01	-5.8375-02	-1.3861-01
P/PO1	3.6673-01	1.4405-01	1.0122-02	1.6571-01	1.0828-02	5.2961-02	1.1063-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
6.	116.	301244	2.99	2	14.01	180.17	.04	90.99	.0

VALVE POS 2 PC = 30.2 Q-INF = 5.226 P-INF = .8350 RE = .3900 TO = 544.

P	3.3134-01	1.8300+00	4.8358+00	5.8107+00	6.0225+00	6.4253+00	7.0470+00	7.5852+00	7.8954+00
CP	-9.6386-02	1.9040-01	7.6561-01	9.5217-01	9.9270-01	1.0698+00	1.1088+00	1.2917+00	1.3511+00
P/P01	3.3112-02	1.8287-01	4.8325-01	5.8067-01	6.0184-01	6.4210-01	7.0422-01	7.5800-01	7.8900-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.2 Q-INF = 5.218 P-INF = .8339 RE = .3895 TO = 544.

P	8.6649+00	9.7590+00	1.0010+01	7.9877+00	3.2213+00	3.0480+00	2.8237+00	4.5197+00	1.3372+00
CP	1.5007+00	1.7103+00	1.7584+00	1.3709+00	4.5752-01	4.2431-01	3.8131-01	7.0634-01	9.6451-02
P/P01	8.6711-01	9.7660-01	1.0017+00	7.9934-01	3.2237-01	3.0502-01	2.8257-01	4.5230-01	1.3381-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.2 Q-INF = 5.229 P-INF = .8355 RE = .3898 TO = 545.

P	9.8085-01	5.8175+00	6.2227+00	6.4372+00	6.8265+00	7.3702+00	7.9951+00	8.5511+00	2.7240+00
CP	2.7791-02	9.5279-01	1.0303+00	1.0713+00	1.1458+00	1.2497+00	1.3692+00	1.4756+00	3.6116-01
P/P01	9.7958-02	5.8100-01	6.2146-01	6.4288-01	6.8177-01	7.3606-01	7.9847-01	8.5400-01	2.7204-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.2 Q-INF = 5.219 P-INF = .8340 RE = .3890 TO = 545.

P	3.3739+00	3.5334+00	3.7428+00	4.0122+00	4.1820+00	4.3516+00	4.5933+00	5.0942+00	4.9814+00
CP	4.8666-01	5.1721-01	5.5734-01	6.0896-01	6.4149-01	6.7398-01	7.2030-01	8.1626-01	7.9465-01
P/P01	3.3758-01	3.5353-01	3.7449-01	4.0144-01	4.1843-01	4.3540-01	4.5959-01	5.0970-01	4.9842-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.2 Q-INF = 5.219 P-INF = .8340 RE = .3890 TO = 545.

P	3.9258+00	1.9580+00	2.1417+00	1.5998+00	4.9825+00	3.4825+00	2.7456+00	2.0242+00	2.0951+00
CP	5.9317-01	2.1536-01	2.5056-01	1.4673-01	7.9487-01	5.0747-01	3.6627-01	2.2806-01	2.4163-01
P/P01	3.9320-01	1.9591-01	2.1429-01	1.6007-01	4.9853-01	3.4845-01	2.7471-01	2.0254-01	2.0962-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3876 TO = 545.

P	2.3198+00	2.1463+00	3.6687-01	4.7014-01	1.2338+00	1.5630+00	5.5758+00	2.6989-01	9.0846-01
CP	2.8635-01	2.5297-01	-8.9237-02	-6.9377-02	7.7484-02	1.4081-01	9.1254-01	-1.0789-01	1.4921-02
P/P01	2.3298-01	2.1555-01	3.6845-02	4.7216-02	1.2391-01	1.5697-01	5.5998-01	2.7105-02	9.1237-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3900 TO = 542.

P	8.9782-01	1.0518+00	1.0218+00	9.7921-01	9.2791-01	1.2974-01	1.8951-01	1.7308-01	2.1969-01
CP	1.2983-02	4.2613-02	3.6846-02	2.8646-02	1.8774-02	-1.3483-01	-1.2332-01	-1.2649-01	-1.1752-01
P/P01	9.0225-02	1.0570-01	1.0269-01	9.8404-02	9.3249-02	1.3038-02	1.9044-02	1.7393-02	2.2077-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3893 TO = 542.

P	2.2366-01	3.3176-01	3.5762-01	1.2272-01	1.4146-01	1.1681-01	1.4690-01	1.9802-01	2.4655-01
CP	-1.1668-01	-9.5841-02	-9.0855-02	-1.3614-01	-1.3252-01	-1.3728-01	-1.3147-01	-1.2162-01	-1.1227-01
P/P01	2.2515-02	3.3397-02	3.6000-02	1.2353-02	1.4241-02	1.1758-02	1.4788-02	1.9933-02	2.4819-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.0 Q-INF = 5.193 F-INF = .8298 RE = .3903 TO = 542.

P	2.7726-01	2.7246-01	2.3541-01	1.9278-01	1.8870-01	2.8732-01	3.9014-01	4.9329-01	1.5146-01
CP	-1.0641-01	-1.0733-01	-1.1446-01	-1.2267-01	-1.2346-01	-1.0447-01	-8.4669-02	-6.4806-02	-1.3063-01
P/P01	2.7880-02	2.7398-02	2.3672-02	1.9385-02	1.8975-02	2.8892-02	3.9230-02	4.9603-02	1.5230-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.1 Q-INF = 5.209 F-INF = .8324 RE = .3921 TO = 541.

P	2.0173-01	2.3571-01	2.7447-01	2.5989-01	2.6016-01	1.1389-01	1.3204-01	1.6428-01	1.6262-01
CP	-1.2107-01	-1.1455-01	-1.0711-01	-1.0990-01	-1.0985-01	-1.3793-01	-1.3445-01	-1.2826-01	-1.2858-01
P/P01	2.0222-02	2.3628-02	2.7514-02	2.6052-02	2.6080-02	1.1416-02	1.3236-02	1.6468-02	1.6302-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 Q-INF = 5.202 F-INF = .8313 RE = .3915 TO = 541.

P	1.5581-01	2.9402-01	3.0102-01	2.9695-01	3.0737-01	3.0917-01	2.6154-01	4.0190-01	6.0386-01
CP	-1.2984-01	-1.0327-01	-1.0193-01	-1.0271-01	-1.0071-01	-1.0036-01	-1.0952-01	-8.2537-02	-4.3714-02
P/P01	1.5641-02	2.9515-02	3.0217-02	2.9809-02	3.0855-02	3.1035-02	2.6254-02	4.0344-02	6.0617-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.9141-01	4.5023+00	-5.1563-02	4.3688+00	8.6719-02	4.5633+00	2.6367+00	5.6250-02
CP	3.0784-02	7.0569-01	-1.6971-01	6.8001-01	-1.4312-01	7.1741-01	3.4706-01	-1.4898-01
P/P01	9.9521-02	4.5196-01	-5.1760-03	4.3855-01	8.7051-03	4.5808-01	2.6468-01	5.6466-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6234+00	2.7492+00	1.0781-01	2.6648+00	1.4766-01	1.5984+00	3.6797-01
CP	5.3674-01	3.6869-01	-1.3907-01	3.5247-01	-1.3141-01	1.4747-01	-8.9059-02
P/P01	3.6373-01	2.7598-01	1.0823-02	2.6751-01	1.4822-02	1.6046-01	3.6938-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
6.	117.	301244	2.99	2	5.01	180.17	.02	99.99	.0

VALVE POS 2 PC = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3931 TO = 541.

P	2.0465-01	1.2777+00	3.8000+00	4.6484+00	4.9057+00	5.2127+00	5.8146+00	6.3342+00	6.6396+00
CP	-1.2056-01	8.5172-02	5.6875-01	7.3140-01	7.8073-01	8.3960-01	9.5499-01	1.0546+00	1.1132+00
P/PO1	2.0489-02	1.2792-01	3.8045-01	4.6539-01	4.9115-01	5.2189-01	5.8215-01	6.3417-01	6.6475-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.2 Q-INF = 5.214 P-INF = .8332 RE = .3930 TO = 541.

P	7.3351+00	8.2928+00	9.8525+00	9.2250+00	5.2707+00	4.6391+00	4.4047+00	3.7812+00	2.2329+00
CP	1.2477+00	1.4306+00	1.7297+00	1.6094+00	8.5103-01	7.2990-01	6.8494-01	5.6537-01	2.6843-01
P/PO1	7.3501-01	8.3051-01	9.8673-01	9.2388-01	5.2786-01	4.6461-01	4.4112-01	3.7868-01	2.2362-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.2 Q-INF = 5.220 P-INF = .8341 RE = .3934 TO = 541.

P	1.6088+00	4.5766+00	5.0836+00	5.3727+00	5.7510+00	6.2049+00	6.7626+00	8.4086+00	2.0746+00
CP	1.4841-01	7.1696-01	8.1409-01	8.6947-01	9.4195-01	1.0289+00	1.1357+00	1.4511+00	2.3765-01
P/PO1	1.6095-01	4.5785-01	5.0857-01	5.3749-01	5.7534-01	6.2074-01	6.7654-01	8.4120-01	2.0755-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.2 Q-INF = 5.222 P-INF = .8344 RE = .3935 TO = 541.

P	2.5752+00	2.7385+00	2.9866+00	3.2501+00	3.3879+00	3.5720+00	3.8191+00	4.3493+00	4.8742+00
CP	3.3338-01	3.6467-01	4.1219-01	4.6264-01	4.8903-01	5.2429-01	5.7162-01	6.7316-01	7.7368-01
P/PO1	2.5754-01	2.7388-01	2.9869-01	3.2504-01	3.3882-01	3.5723-01	3.8195-01	4.3497-01	4.8746-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.2 Q-INF = 5.220 P-INF = .8341 RE = .3940 TO = 540.

P	5.0161+00	3.7880+00	3.2789+00	2.5698+00	4.0091+00	3.0288+00	1.9674+00	1.6118+00	1.7480+00
CP	8.0116-01	5.6588-01	4.6836-01	3.3252-01	6.0824-01	4.2045-01	2.1710-01	1.4898-01	1.7508-01
P/PO1	5.0182-01	3.7895-01	3.2803-01	2.5709-01	4.0107-01	3.0301-01	1.9682-01	1.6124-01	1.7487-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.3 Q-INF = 5.235 P-INF = .8366 RE = .3951 TO = 540.

P	2.0785+00	2.2216+00	2.5694-01	3.5317-01	1.0031+00	1.0897+00	4.7235+00	2.3273-01	1.0820+00
CP	2.3722-01	2.6455-01	-1.1071-01	-9.2335-02	3.1804-02	4.8348-02	7.4243-01	-1.1534-01	4.6875-02
P/PO1	2.0732-01	2.2159-01	2.5629-02	3.5227-02	1.0005-01	1.0869-01	4.7115-01	2.3214-02	1.0792-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.3 Q-INF = 5.235 P-INF = .8364 RE = .3951 TO = 540.

P	1.0717+00	9.3883-01	1.3082+00	1.5032+00	1.5344+00	1.2640-01	1.4745-01	1.8477-01	1.5973-01
CP	4.4938-02	1.9560-02	9.0132-02	1.2737-01	1.3334-01	-1.3565-01	-1.3163-01	-1.2450-01	-1.2928-01
P/PO1	1.0691-01	9.3659-02	1.3051-01	1.4996-01	1.5308-01	1.2610-02	1.4710-02	1.8433-02	1.5935-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.3 Q-INF = 5.235 P-INF = .8366 RE = .3951 TO = 540.

P	2.2853-01	3.8419-01	3.3608-01	2.0551-01	2.0759-01	1.9899-01	1.6775-01	2.4104-01	2.4367-01
CP	-1.1614-01	-8.6410-02	-9.5599-02	-1.2054-01	-1.2014-01	-1.2179-01	-1.2775-01	-1.1375-01	-1.1325-01
P/PO1	2.2795-02	3.8322-02	3.3523-02	2.0498-02	2.0707-02	1.9848-02	1.6733-02	2.4043-02	2.4305-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.3 C-INF = 5.242 P-INF = .8376 RE = .3962 TO = 540.

P	2.2999-01	2.4306-01	2.4893-01	2.4497-01	2.1403-01	4.4558-01	6.3444-01	8.9372-01	1.8899-01
CP	-1.1592-01	-1.1342-01	-1.1230-01	-1.1306-01	-1.1896-01	-7.4713-02	-3.8759-02	1.0705-02	-1.2374-01
P/PO1	2.2912-02	2.4214-02	2.4799-02	2.4405-02	2.1322-02	4.4430-02	6.3205-02	8.9035-02	1.8828-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.3 C-INF = 5.241 P-INF = .8375 RE = .3961 TO = 540.

P	1.9978-01	2.2689-01	2.2639-01	2.4401-01	2.4890-01	2.0041-01	2.1706-01	2.1122-01	1.9667-01
CP	-1.2168-01	-1.1650-01	-1.1660-01	-1.1324-01	-1.1230-01	-1.2155-01	-1.1838-01	-1.1949-01	-1.2227-01
P/PO1	1.9906-02	2.2607-02	2.2557-02	2.4313-02	2.4800-02	1.9969-02	2.1628-02	2.1045-02	1.9595-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.3 C-INF = 5.239 P-INF = .8372 RE = .3960 TO = 540.

P	1.8809-01	2.6903-01	2.7698-01	2.9165-01	2.9342-01	3.0299-01	4.3553-01	6.8056-01	1.0335+00
CP	-1.2390-01	-1.0845-01	-1.0693-01	-1.0413-01	-1.0379-01	-1.0196-01	-7.6667-02	-2.9902-02	3.7461-02
P/PO1	1.8746-02	2.6814-02	2.7606-02	2.9069-02	2.9245-02	3.0199-02	4.3409-02	6.7830-02	1.0301-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.6328-01	3.5977+00	-5.1563-02	3.3328+00	8.4375-02	3.5766+00	1.6219+00	7.0313-02
CP	2.4060-02	5.2686-01	-1.6963-01	4.7631-01	-1.4369-01	5.2284-01	1.4976-01	-1.4637-01
P/PO1	9.6009-02	3.5858-01	-5.1392-03	3.3218-01	8.4096-03	3.5647-01	1.6165-01	7.0080-03
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6375+00	2.9273+00	1.0078-01	2.1141+00	1.3594-01	1.4109+00	3.3984-01
CP	5.3447-01	2.8441-01	-1.4056-01	2.4370-01	-1.3385-01	1.0950-01	-9.4930-02
P/PO1	3.6255-01	2.3196-01	1.0045-02	2.1071-01	1.3549-02	1.4063-01	3.3872-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW.	ALPHA	ST-ROLL
7.	118.	301244	2.99	4	.01	-.02	.00	105.01	.0

VALVE POS 2 PC = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3918 TO = 540.

P	7.1332-01	2.7634+00	3.5585+00	5.9203+00	2.3276+00	7.2127+00	5.2309+00	5.5613+00	5.7920+00
CP	-2.2395-02	3.7248-01	5.2565-01	9.8058-01	2.8854-01	1.2295+00	8.4779-01	9.1142-01	9.5587-01
P/P01	7.1751-02	2.7796-01	3.5794-01	5.9551-01	2.3412-01	7.2551-01	5.2617-01	5.5940-01	5.8260-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.1 Q-INF = 5.201 P-INF = .8311 RE = .3931 TO = 540.

P	6.4868+00	7.0788+00	9.3811+00	9.6479+00	6.4009+00	5.6296+00	5.3741+00	2.6323+00	2.7997+00
CP	1.0874+00	1.2012+00	1.6438+00	1.6951+00	1.0708+00	9.2255-01	8.7343-01	3.4629-01	3.7847-01
P/P01	6.5127-01	7.1071-01	9.4186-01	9.6864-01	6.4264-01	5.6520-01	5.3955-01	2.6428-01	2.8108-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3940 TO = 539.

P	2.0733+00	7.4256+00	4.5244+00	4.7554+00	5.1746+00	5.5593+00	5.8946+00	8.0602+00	1.4265+00
CP	2.3851-01	1.2667+00	7.0939-01	7.5377-01	8.3431-01	9.0820-01	9.7261-01	1.3887+00	1.1425-01
P/P01	2.0799-01	7.4495-01	4.5389-01	4.7707-01	5.1913-01	5.5771-01	5.9135-01	8.0861-01	1.4311-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.1 Q-INF = 5.203 P-INF = .8314 RE = .3938 TO = 539.

P	2.3354+00	3.2726+00	4.8739+00	2.8533+00	3.0228+00	3.2014+00	3.4352+00	3.7749+00	4.6030+00
CP	2.8906-01	4.6919-01	7.7697-01	3.8460-01	4.2119-01	4.5551-01	5.0046-01	5.6573-01	7.2491-01
P/P01	2.3440-01	3.2846-01	4.8918-01	2.8638-01	3.0339-01	3.2132-01	3.4479-01	3.7887-01	4.6200-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.2 Q-INF = 5.220 P-INF = .8341 RE = .3951 TO = 539.

P	5.6615+00	4.8933+00	4.0859+00	3.2375+00	2.4972+00	3.1566+00	1.7181+00	1.4488+00	1.5796+00
CP	9.2480-01	7.7763-01	6.2297-01	4.6042-01	4.1439-01	4.4494-01	1.6936-01	1.1776-01	1.4281-01
P/P01	5.6638-01	4.8953-01	4.0876-01	3.2388-01	2.9984-01	3.1579-01	1.7188-01	1.4494-01	1.5802-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.2 Q-INF = 5.220 P-INF = .8341 RE = .3956 TO = 539.

P	1.8709+00	2.0383+00	8.2571-01	8.5713-01	4.5459-01	1.2821+00	4.3331+00	3.7453-01	7.7321-01
CP	1.9862-01	2.3069-01	-1.6089-03	4.4096-03	-7.2706-02	8.5831-02	6.7031-01	-8.8043-02	-1.1668-02
P/P01	1.8716-01	2.0391-01	8.2605-02	8.5748-02	4.5478-02	1.2827-01	4.3349-01	3.7469-02	7.7352-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3944 TO = 539.

P	9.1858-01	8.9113-01	1.5947+00	1.9661+00	1.9958+00	2.8305-01	3.2579-01	3.4567-01	3.6215-01
CP	1.6702-02	1.1429-02	1.4660-01	2.1797-01	2.2368-01	-1.0541-01	-9.7196-02	-9.3376-02	-9.0710-02
P/P01	9.2167-02	8.9413-02	1.6000-01	1.9727-01	2.0025-01	2.8400-02	3.2689-02	3.4683-02	3.6337-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.2 Q-INF = 5.231 P-INF = .8359 RE = .3959 TO = 539.

P	3.4255-01	2.9451-01	3.4660-01	8.0881-01	6.1978-01	5.4407-01	3.4179-01	3.7892-01	3.9285-01
CP	-9.4313-02	-1.0350-01	-9.3539-02	-5.1843-03	-4.1318-02	-5.5790-02	-9.4458-02	-8.7361-02	-8.4697-02
P/P01	3.4194-02	2.9399-02	3.4599-02	8.0738-02	6.1869-02	5.4311-02	3.4119-02	3.7825-02	3.9216-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.2 Q-INF = 5.227 F-INF = .8353 RE = .3956 TO = 539.

P	4.1613-01	4.2437-01	4.3074-01	4.3948-01	5.1221-01	6.0681-01	8.7678-01	1.2095+00	1.3527-01
CP	-8.0186-02	-7.8608-02	-7.7390-02	-7.5719-02	-6.1804-02	-4.3708-02	7.9403-03	7.1582-02	-1.3392-01
P/PO1	4.1571-02	4.2395-02	4.3032-02	4.3904-02	5.1171-02	6.0620-02	8.7592-02	1.2083-01	1.3513-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.2 Q-INF = 5.220 F-INF = .8341 RE = .3951 TO = 539.

P	3.5376-01	4.1506-01	4.0670-01	4.1005-01	4.2109-01	7.5940-01	9.3066-01	1.8791+00	1.6459+00
CP	-9.2023-02	-8.0279-02	-8.1880-02	-8.1239-02	-7.9124-02	-1.4312-02	1.8496-02	2.0019-01	1.5552-01
P/PO1	3.5350-02	4.1523-02	4.0687-02	4.1022-02	4.2126-02	7.5971-02	9.3104-02	1.8799-01	1.6466-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 Q-INF = 5.206 F-INF = .8319 RE = .3940 TO = 539.

P	1.7086-01	4.3115-01	4.5078-01	4.4470-01	4.6186-01	4.2089-01	6.0929-01	9.4719-01	1.3550+00
CP	-1.2698-01	-7.6978-02	-7.3208-02	-7.4375-02	-7.1080-02	-7.8950-02	-4.2761-02	2.2144-02	1.0048-01
P/PO1	1.7138-02	4.3247-02	4.5216-02	4.4606-02	4.6327-02	4.2217-02	6.1115-02	9.5009-02	1.3592-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.9844-01	4.3570+00	1.1828-01	3.2789+00	2.3438-01	3.5578+00	1.6641+00	2.9063-01
CP	3.1987-02	6.7711-01	-1.3707-01	4.7002-01	-1.1477-01	5.2359-01	1.5984-01	-1.0397-01
P/PO1	1.0015-01	4.3703-01	1.1864-02	3.2889-01	2.3509-02	3.5687-01	1.6691-01	2.9151-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6328+00	2.4539+00	2.2969-01	1.9898+00	2.3203-01	1.3828+00	4.1016-01
CP	5.3800-01	2.5393-01	-1.1568-01	2.2242-01	-1.1523-01	1.0582-01	-8.1011-02
P/PO1	3.6439-01	2.1605-01	2.3039-02	1.9959-01	2.3274-02	1.3870-01	4.1141-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
6.	119.	301744	2.99	4	5.01	-.02	.00	110.01	.0

VALVE POS 2 PC = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3940 TO = 539.

P	5.5785-01	2.3100+00	3.3425+00	5.1774+00	1.9465+00	6.2993+00	4.4632+00	4.7722+00	5.0066+00
CP	-5.2642-02	2.8392-01	4.8223-01	8.3469-01	2.1410-01	1.0502+00	6.9750-01	7.5686-01	8.0187-01
P/PO1	5.5955-02	2.3171-01	3.3527-01	5.1932-01	1.9525-01	6.3186-01	4.4769-01	4.7868-01	5.0219-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.2 Q-INF = 5.215 P-INF = .8333 RE = .3947 TO = 539.

P	5.4954+00	5.6385+00	8.7526+00	9.9142+00	7.6206+00	6.5986+00	6.1464+00	2.6323+00	3.5059+00
CP	8.9396-01	9.2140-01	1.5185+00	1.7413+00	1.3034+00	1.1055+00	1.0188+00	3.4496-01	5.1246-01
P/PO1	5.5027-01	5.6460-01	8.7643-01	9.9774-01	7.6408-01	6.6074-01	6.1546-01	2.6358-01	3.5106-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3933 TO = 539.

P	2.5815+00	6.5428+00	3.8572+00	4.0248+00	4.3597+00	4.6455+00	4.5943+00	7.5693+00	1.1024+00
CP	3.3700-01	1.0993+00	5.8248-01	6.1474-01	6.8689-01	7.3419-01	7.1664-01	1.2969+00	5.2352-02
P/PO1	2.5943-01	6.5750-01	3.8762-01	4.0446-01	4.4214-01	4.6684-01	4.5768-01	7.6067-01	1.1078-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3940 TO = 539.

P	2.1693+00	2.6578+00	4.2003+00	2.4187+00	2.5553+00	2.7477+00	2.8822+00	2.8532+00	4.1238+00
CP	2.5689-01	3.5071-01	6.4701-01	3.0476-01	3.3103-01	3.6798-01	3.9383-01	3.8826-01	6.3231-01
P/PO1	2.1759-01	2.6659-01	4.2132-01	2.4260-01	2.5631-01	2.7561-01	2.8910-01	2.8620-01	4.1364-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3929 TO = 539.

P	5.9976+00	5.8018+00	4.8358+00	3.9240+00	2.7090+00	2.5432+00	1.6200+00	1.3546+00	1.3550+00
CP	9.9546-01	9.5775-01	7.7168-01	5.9605-01	3.6202-01	3.3008-01	1.5226-01	1.0113-01	1.0121-01
P/PO1	6.0328-01	5.8359-01	4.8642-01	3.9471-01	2.7249-01	2.5581-01	1.6296-01	1.3625-01	1.3630-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.0 Q-INF = 5.190 P-INF = .8293 RE = .3928 TO = 539.

P	1.2948+00	1.7145+00	8.3604-01	7.2487-01	4.3522-01	1.0689+00	3.8321+00	3.4420-01	5.4689-01
CP	8.9695-02	1.7056-01	1.2940-03	-2.0125-02	-7.5164-02	4.6160-02	5.7858-01	-9.3472-02	-5.4419-02
P/PO1	1.3028-01	1.7251-01	8.4121-02	7.2936-02	4.4194-02	1.0755-01	3.8558-01	3.4633-02	5.5027-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3935 TO = 539.

P	4.8698-01	8.5318-01	1.9069+00	2.4061+00	2.4913+00	2.5265-01	2.6638-01	3.0265-01	3.0939-01
CP	-6.6139-02	4.2893-03	2.0694-01	3.0294-01	3.1933-01	-1.1120-01	-1.0856-01	-1.0159-01	-1.0029-01
P/PO1	4.8907-02	8.5685-02	1.9151-01	2.4164-01	2.5020-01	2.5374-02	2.6752-02	3.0395-02	3.1072-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3927 TO = 539.

P	2.3632-01	2.4404-01	2.6396-01	6.8418-01	5.3511-01	5.1898-01	3.0843-01	3.3491-01	3.3913-01
CP	-1.1424-01	-1.1276-01	-1.0892-01	-2.7925-02	-5.5886-02	-5.9765-02	-1.0035-01	-9.5242-02	-9.4430-02
P/PO1	2.3786-02	2.4563-02	2.6567-02	6.8863-02	5.4261-02	5.2235-02	3.1044-02	3.3709-02	3.4133-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8000-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 Q-INF = 5.200 F-INF = .8309 RE = .3935 TO = 539.

P	3.6107-01	3.8419-01	3.8917-01	4.1919-01	4.5327-01	8.3482-01	1.1189+00	1.5736+00	1.6069-01
CP	-9.0354-02	-8.5906-02	-8.4948-02	-7.9174-02	-7.2620-02	7.5962-04	5.5396-02	1.4283-01	-1.2889-01
P/PO1	3.6262-02	3.8584-02	3.9085-02	4.2100-02	4.5523-02	8.3842-02	1.1237-01	1.5803-01	1.6138-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.1 Q-INF = 5.197 F-INF = .8305 RE = .3933 TO = 539.

P	3.0698-01	3.4940-01	3.5762-01	3.8984-01	4.1358-01	6.3190-01	7.6892-01	1.7569+00	1.6230+00
CP	-1.0073-01	-9.2566-02	-9.0984-02	-8.4785-02	-8.0217-02	-3.8210-02	-1.1845-02	1.7825-01	1.5248-01
P/PO1	3.0844-02	3.5107-02	3.5933-02	3.9170-02	4.1555-02	6.3492-02	7.7259-02	1.7653-01	1.6307-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 Q-INF = 5.210 F-INF = .8326 RE = .3943 TO = 539.

P	1.7590-01	4.2290-01	4.1472-01	4.2112-01	4.3289-01	5.8057-01	7.9279-01	1.2604+00	1.7837+00
CP	-1.2603-01	-7.8625-02	-8.0197-02	-7.8968-02	-7.6709-02	-4.8364-02	-7.6336-03	8.2112-02	1.8256-01
P/PO1	1.7630-02	4.2387-02	4.1566-02	4.2208-02	4.3387-02	5.8189-02	7.9459-02	1.2632-01	1.7878-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.9375-01	3.9305+00	8.4219-02	2.7469+00	1.8047-01	3.0234+00	1.4438+00	2.0625-01
CP	3.0938-02	5.9459-01	-1.4363-01	3.6742-01	-1.2516-01	4.2050-01	1.1731-01	-1.2021-01
P/PO1	9.9601-02	3.9394-01	8.4410-03	2.7531-01	1.8088-02	3.0303-01	1.4470-01	2.0672-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6445+00	1.7602+00	1.8750-01	1.6406+00	1.8584-01	1.4648+00	3.9141-01
CP	5.3970-01	1.7803-01	-1.2381-01	1.5509-01	-1.2336-01	1.2136-01	-8.4671-02
P/PO1	3.6528-01	1.7642-01	1.8793-02	1.6444-01	1.9028-02	1.4682-01	3.9230-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
7.	120.	301244	2.99	4	14.01	-.02	.00	119.01	.0

VALVE POS 2 PC = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3935 TO = 539.

P	3.578C-01	5.3152-01	2.8913+00	4.1571+00	1.5318+00	4.7861+00	3.0579+00	3.2762+00	3.3798+00
CP	-9.0971-02	-5.7555-02	3.9635-01	6.3982-01	1.3486-01	7.6081-01	4.2839-01	4.7038-01	4.9030-01
P/P01	3.594C-02	5.3390-02	2.9042-01	4.1756-01	1.5387-01	4.8074-01	3.0715-01	3.2908-01	3.3948-01
S/R	.00C0+00	6.400C-02	1.1800-01	2.080C-01	2.890C-01	4.970C-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3938 TO = 539.

P	3.75C9+C0	3.5147+00	7.4012+00	9.8828+00	9.2545+00	8.1104+00	7.5526+00	2.1337+00	4.8931+00
CP	5.61C2-01	5.1563-01	1.2625+00	1.7394+00	1.6186+00	1.3988+00	1.2916+00	2.5025-01	7.8051-01
P/P01	3.7641-01	3.5271-01	7.4273-01	9.9177-01	9.2871-01	8.1390-01	7.5792-01	2.1412-01	4.9103-01
S/R	1.5890+00	1.742C+C0	1.7970+00	1.854C+00	1.9180+00	2.034C+0C	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.1 Q-INF = 5.200 P-INF = .83C9 RE = .3935 TO = 539.

P	3.7445+00	4.5145+00	2.6498+C0	2.8092+00	2.9908+00	3.1694+0C	2.7781+00	6.4450+00	7.6811-01
CP	5.6035-C1	7.0844-C1	3.4982-01	3.8047-01	4.154C-01	4.4975-01	3.7450-01	1.0797+00	-1.2072-02
P/P01	3.76C6-C1	4.5339-01	2.6612-01	2.8213-01	3.0C37-01	3.1831-01	2.7901-01	6.4728-01	7.7141-02
S/R	2.88CC+00	4.97CC-C1	9.360C-01	1.155C+0C	1.372C+00	1.589C+0C	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3929 TO = 539.

P	1.6114+CC	2.310C+00	3.3488+00	1.7066+0C	1.7858+0C	1.9245+0C	1.9992+00	1.6092+00	3.3419+00
CP	1.506C-C1	2.8517-01	4.8526-01	1.6894-01	1.842C-01	2.1091-01	2.2529-01	1.5017-01	4.8393-01
P/P01	1.62C9-C1	2.3236-01	3.3685-01	1.7167-01	1.7963-01	1.9358-01	2.0109-01	1.6187-01	3.3616-01
S/R	2.08CC-01	2.890C-01	4.9700-01	1.0460+0C	1.155C+0C	1.372C+0C	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3929 TO = 539.

P	6.1396+00	6.9842+C0	6.1127+C0	5.1837+00	2.C295+0C	1.6748+C0	1.1348+00	1.2324+00	9.5439-01
CP	1.0228+CC	1.1855+00	1.0176+0C	8.3870-01	2.3113-01	1.6282-01	5.8796-02	7.7586-02	2.4041-02
P/P01	6.1757-C1	7.0252-01	6.1486-C1	5.2142-01	2.0414-01	1.6847-01	1.1415-01	1.2396-01	9.5999-02
S/R	1.854C+0C	1.918C+C0	2.0850+00	2.354C+0C	4.970C-01	9.3600-C1	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 3C.1 Q-INF = 5.206 P-INF = .8319 RE = .3940 TO = 539.

P	5.8186-01	1.4158+00	3.2358-01	3.1797-01	3.1327-01	7.8801-01	3.1230+00	3.7354-01	2.7725-01
CP	-4.8031-02	1.1215-01	-9.7641-02	-9.8718-02	-9.9621-C2	-8.4322-03	4.4006-01	-8.8044-02	-1.0654-01
P/P01	5.8363-C2	1.42C1-01	3.2456-02	3.1894-C2	3.1423-02	7.9C42-02	3.1325-01	3.7468-02	2.7810-02
S/R	1.742C+00	1.797C+C0	6.4C00-02	1.18CC-01	2.C8CC-01	2.89CC-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3929 TO = 539.

P	2.9285-01	8.874C-01	2.5799+00	3.4075+0C	3.5928+0C	2.7545-01	2.9683-01	3.2563-01	3.3961-01
CP	-1.0339-C1	1.1137-C2	3.3715-01	4.9657-01	5.3225-C1	-1.C674-01	-1.0262-01	-9.7072-02	-9.4378-02
P/P01	2.9457-02	8.9261-02	2.5951-01	3.4275-01	3.6139-01	2.7707-02	2.9858-02	3.2754-02	3.4160-02
S/R	1.797C+00	1.854C+00	1.9180+00	2.085C+0C	2.354C+0C	4.970C-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3927 TO = 539.

P	2.3486-01	2.5433-01	2.6396-01	3.1910-01	3.5599-01	3.6711-01	2.8523-01	3.3003-01	3.6215-01
CP	-1.1453-01	-1.1078-01	-1.0893-01	-9.8299-02	-9.1191-02	-8.9048-C2	-1.0483-01	-9.6194-02	-9.0003-02
P/P01	2.3635-C2	2.5594-02	2.6563-02	3.2113-02	3.5825-02	3.6944-02	2.8704-02	3.3212-02	3.6445-02
S/R	1.589C+00	1.7420+00	1.7970+00	1.18CC-01	2.C8CC-01	2.89C0-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3938 TO = 539.

P	3.8592-01	3.4156-01	3.1955-01	3.2794-01	2.8001-01	1.3550+00	1.8109+00	2.4303+00	1.8467-01
CP	-8.5632-02	-9.4157-02	-9.8385-02	-9.7735-02	-1.0598-01	1.0059-01	1.8822-01	3.0724-01	-1.2430-01
P/PO1	3.8728-02	3.4276-02	3.2068-02	3.2408-02	2.8100-02	1.3597-01	1.8173-01	2.4389-01	1.8532-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.0 Q-INF = 5.195 P-INF = .8301 RE = .3932 TO = 539.

P	3.3280-01	3.9056-01	3.9468-01	4.3893-01	4.5059-01	3.8183-01	3.8752-01	9.3192-01	1.0539+00
CP	-9.5729-02	-8.4611-02	-8.3817-02	-7.5300-02	-7.3055-02	-8.6292-02	-8.5196-02	1.9600-02	4.3084-02
P/PO1	3.3455-02	3.9261-02	3.9675-02	4.4123-02	4.5296-02	3.8383-02	3.8956-02	9.3600-02	1.0594-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3941 TO = 539.

P	1.6616-01	4.2878-01	4.2774-01	4.3315-01	4.3586-01	1.0117+00	1.3735+00	2.0141+00	2.7114+00
CP	-1.2789-01	-7.7458-02	-7.7659-02	-7.6620-02	-7.5331-02	3.4468-02	1.0394-01	2.2695-01	3.6085-01
P/PO1	1.6661-02	4.2996-02	4.2891-02	4.3434-02	4.4107-02	1.0144-01	1.3772-01	2.0196-01	2.7188-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.9375-01	3.1898+00	1.5656-01	2.2453+00	2.2266-01	2.2523+00	9.6797-01	2.4375-01
CP	3.1027-02	4.5272-01	-1.2973-01	2.7135-01	-1.1704-01	2.7270-01	2.6076-02	-1.1299-01
P/PO1	9.9647-02	3.1986-01	1.5699-02	2.2515-01	2.2327-02	2.2585-01	9.7062-02	2.4442-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6422+00	1.4063+00	2.2031-01	1.5563+00	2.0391-01	5.7656-01	1.4766-01
CP	5.3958-01	1.1024-01	-1.1749-01	1.3904-01	-1.2064-01	-4.9082-02	-1.3144-01
P/PO1	3.6522-01	1.4101-01	2.2092-02	1.5605-01	2.0447-02	5.7814-02	1.4806-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
7.	121.	301244	1.99	4	14.01	-.06	.02	119.01	.0

VALVE POS 2 PC = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4367 TO = 533.

P	1.0357+00	2.6702+00	3.7555+00	6.1396+00	2.2602+00	8.6931+00	5.8425+00	6.3500+00	6.7024+00
CP	-2.1664-01	1.0783-02	1.6179-01	4.9350-01	-4.6267-02	8.4879-01	4.5217-01	5.2278-01	5.7182-01
P/P01	7.1468-02	1.8426-01	2.5915-01	4.2366-01	1.5596-01	5.9987-01	4.0317-01	4.3819-01	4.6250-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8500-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.1 Q-INF = 7.218 P-INF =2.6037 RE = .4385 TO = 533.

P	7.4023+00	5.4957+00	1.0544+01	1.4190+01	1.4142+01	1.2851+01	1.2230+01	3.0868+00	8.5860+00
CP	6.6486-01	4.0069-01	1.1001+00	1.6053+00	1.5986+00	1.4197+00	1.3337+00	6.6941-02	8.2887-01
P/P01	5.0865-01	3.7763-01	7.2453-01	9.7506-01	9.7176-01	8.8303-01	8.4036-01	2.1211-01	5.8999-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.1 Q-INF = 7.231 P-INF =2.6085 RE = .4394 TO = 533.

P	6.7394+00	8.9076+00	5.1344+00	5.5868+00	5.9510+00	6.5513+00	4.3721+00	9.2004+00	1.3703+00
CP	5.7127-01	8.7112-01	3.4932-01	4.1188-01	4.6777-01	5.4526-01	2.4390-01	9.1161-01	-1.7123-01
P/P01	4.6223-01	6.1095-01	3.5216-01	3.8318-01	4.1090-01	4.4933-01	2.9987-01	6.3103-01	9.3987-02
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.0 Q-INF = 7.202 P-INF =2.5982 RE = .4376 TO = 533.

P	2.4793+00	2.6392+00	5.4331+00	3.6555+00	3.9642+00	4.3196+00	4.6584+00	2.6071+00	5.0696+00
CP	-1.6504-02	5.6892-03	3.9361-01	1.4735-01	1.8567-01	2.3901-01	2.8605-01	1.2319-03	3.4315-01
P/P01	1.7073-01	1.8173-01	3.7412-01	2.5199-01	2.7298-01	2.9745-01	3.2078-01	1.7952-01	3.4910-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.1 Q-INF = 7.231 P-INF =2.6085 RE = .4394 TO = 533.

P	9.2805+00	1.0768+01	1.0025+01	8.7708+00	4.8160+00	4.2366+00	3.0254+00	2.4619+00	2.8060+00
CP	9.2268-01	1.1284+00	1.0257+00	8.5221-01	3.0528-01	2.2515-01	5.7646-02	-2.0282-02	2.7304-02
P/P01	6.3652-01	7.3854-01	6.8761-01	6.0156-01	3.3032-01	2.9057-01	2.0750-01	1.6885-01	1.9245-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.1 Q-INF = 7.233 P-INF =2.6091 RE = .4395 TO = 533.

P	1.2585+00	2.3970+00	1.0012+00	1.3353+00	8.1646-01	1.4148+00	5.8555+00	1.1305+00	5.6170-01
CP	-1.8674-01	-2.9333-02	-2.2232-01	-1.7612-01	-2.4786-01	-1.6513-01	4.4885-01	-2.0443-01	-2.8308-01
P/P01	8.6297-02	1.6436-01	6.8652-02	9.1562-02	5.5985-02	9.7013-02	4.0152-01	7.7521-02	3.8516-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4379 TO = 533.

P	5.6699-01	1.7371+00	4.6960+00	6.1709+00	6.3693+00	8.5724-01	9.8369-01	1.0287+00	9.9522-01
CP	-2.8207-01	-1.1973-01	2.9081-01	4.9545-01	5.2298-01	-2.3625-01	-2.2426-01	-2.1802-01	-2.2266-01
P/P01	3.9016-02	1.1953-01	3.2314-01	4.2463-01	4.3828-01	6.1741-02	6.7689-02	7.0785-02	6.8483-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.1 Q-INF = 7.229 P-INF =2.6079 RE = .4393 TO = 533.

P	6.7902-01	6.2734-01	8.2571-01	1.0555+00	7.4389-01	8.4523-01	9.4922-01	1.0439+00	1.0029+00
CP	-2.6682-01	-2.7396-01	-2.4652-01	-2.1474-01	-2.5784-01	-2.4382-01	-2.2944-01	-2.1634-01	-2.2202-01
P/P01	4.6583-02	4.3037-02	5.6646-02	7.2411-02	5.1033-02	5.7985-02	6.5119-02	7.1618-02	6.8800-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4379 TO = 533.

P	1.2092+00	1.1698+00	1.1302+00	1.1267+00	1.1301+00	2.7796+00	3.6369+00	4.6523+00	8.9570-01
CP	-1.9297-01	-1.9844-01	-2.0393-01	-2.0441-01	-2.0395-01	2.4923-02	1.4387-01	2.8475-01	-2.3647-01
P/P01	8.3207-02	8.0494-02	7.7771-02	7.7532-02	7.7763-02	1.9127-01	2.5026-01	3.2013-01	6.1634-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.1 Q-INF = 7.229 P-INF =2.6079 RE = .4393 TO = 533.

P	1.1106+00	1.0894+00	1.1328+00	1.1394+00	1.1560+00	1.0013+00	1.4371+00	2.0319+00	1.3397+00
CP	-2.0712-01	-2.1004-01	-2.0405-01	-2.0313-01	-2.0084-01	-2.2224-01	-1.6196-01	-7.9680-02	-1.7542-01
P/P01	7.6190-02	7.4739-02	7.7712-02	7.8169-02	7.9305-02	6.8690-02	9.8589-02	1.3939-01	9.1909-02
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.1 Q-INF = 7.218 P-INF =2.6037 RE = .4385 TO = 533.

P	1.0665+00	1.2601+00	1.2463+00	1.2488+00	1.2701+00	2.2808+00	2.9668+00	4.0274+00	5.2966+00
CP	-2.1298-01	-1.8615-01	-1.8806-01	-1.8772-01	-1.8477-01	-4.4731-02	5.0315-02	1.9726-01	3.7312-01
P/P01	7.3284-02	8.6591-02	8.5640-02	8.5813-02	8.7272-02	1.5673-01	2.0386-01	2.7674-01	3.6396-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5773+00	6.0773+00	7.9656-01	4.1508+00	1.0242+00	4.9406+00	2.7961+00	1.0523+00
CP	-1.4220-01	4.8129-01	-2.5038-01	2.1436-01	-2.1883-01	3.2379-01	2.6663-02	-2.1494-01
P/P01	1.0839-01	4.1761-01	5.4736-02	2.8522-01	7.0379-02	3.3950-01	1.9213-01	7.2312-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3578+00	3.8016+00	9.2578-01	3.8344+00	8.7422-01	3.0820+00	5.2734-01
CP	3.8159-01	1.8597-01	-2.3247-01	1.7052-01	-2.3562-01	6.6280-02	-2.8768-01
P/P01	3.6816-01	2.6122-01	6.3615-02	2.6348-01	6.0072-02	2.1178-01	3.6236-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
7.	122.	301244	1.99	4	5.02	-.06	.01	110.02	.0

VALVE POS 2 PC = 20.0 Q-INF = 7.209 P-INF =2.6006 RE = .4380 TO = 533.

P	1.4791+00	3.4837+00	6.6155+00	7.1733+00	2.8547+00	1.1465+01	7.4578+00	8.1711+00	8.6802+00
CP	-1.5557-01	1.2249-01	5.5692-01	6.3429-01	4.0798-02	1.2298+00	6.7376-01	7.7270-01	8.4332-01
P/P01	1.0175-01	2.3966-01	4.5517-01	4.9349-01	1.9914-01	7.8873-01	5.1307-01	5.6213-01	5.9716-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4378 TO = 533.

P	9.7066+00	1.0106+01	1.2932+01	1.4519+01	1.2597+01	1.1150+01	1.0460+01	6.3025+00	6.5769+00
CP	9.8633-01	1.0417+00	1.4340+00	1.6542+00	1.3874+00	1.1866+00	1.0909+00	5.1391-01	5.5199-01
P/P01	6.6808-01	6.9556-01	8.9011-01	9.9930-01	8.6701-01	7.6742-01	7.1993-01	4.3379-01	4.5267-01
S/R	1.5850+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.1 Q-INF = 7.243 P-INF =2.6128 RE = .4401 TO = 533.

P	5.0736+00	1.1682+01	6.6469+00	7.1733+00	7.7252+00	8.5041+00	8.4375+00	1.1259+01	2.7870+00
CP	3.3976-01	1.2522+00	5.5699-01	6.2966-01	7.0586-01	8.1340-01	8.0420-01	1.1938+00	2.4059-02
P/P01	3.4742-01	7.9995-01	4.5515-01	4.9119-01	5.2898-01	5.8232-01	5.7776-01	7.7096-01	1.9084-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.1 Q-INF = 7.219 P-INF =2.6043 RE = .4386 TO = 533.

P	2.6646+00	3.8873+00	7.0083+00	4.6673+00	4.9553+00	5.4315+00	5.9336+00	5.9541+00	6.7966+00
CP	8.3602-03	1.7773-01	6.1005-01	2.8576-01	3.3121-01	3.9162-01	4.6118-01	4.6402-01	5.8072-01
P/P01	1.8306-01	2.6706-01	4.8147-01	3.2064-01	3.4317-01	3.7314-01	4.0763-01	4.0904-01	4.6692-01
S/R	2.0800+00	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.1 Q-INF = 7.228 P-INF =2.6073 RE = .4392 TO = 533.

P	9.4698+00	9.6801+00	8.4383+00	6.9697+00	5.2323+00	5.4443+00	3.5068+00	2.9227+00	3.3545+00
CP	9.4949-01	9.7858-01	8.0676-01	6.0357-01	3.6319-01	3.9251-01	1.2445-01	4.3634-02	1.0339-01
P/P01	6.4981-01	6.6424-01	5.7903-01	4.7825-01	3.5903-01	3.7358-01	2.4063-01	2.0055-01	2.3018-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4366 TO = 533.

P	3.4570+00	3.4154+00	1.3624+00	1.4065+00	1.9336+00	1.6748+00	6.2886+00	1.1636+00	1.0845+00
CP	1.2037-01	1.1458-01	-1.7113-01	-1.6500-01	-9.1644-02	-1.2765-01	5.1444-01	-1.9880-01	-2.0981-01
P/P01	2.3861-01	2.3573-01	9.4037-02	9.7079-02	1.3346-01	1.1560-01	4.3405-01	8.0315-02	7.4856-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.209 P-INF =2.6006 RE = .4380 TO = 533.

P	1.0587+00	1.9003+00	3.8572+00	4.7554+00	4.8529+00	1.0455+00	1.0844+00	1.0720+00	1.0794+00
CP	-2.1388-01	-9.7150-02	1.7430-01	2.9890-01	3.1797-01	-2.1572-01	-2.1031-01	-2.1205-01	-2.1101-01
P/P01	7.2834-02	1.3073-01	2.6536-01	3.2715-01	3.3661-01	7.1924-02	7.4605-02	7.3746-02	7.4260-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4378 TO = 533.

P	9.9902-01	5.4293-01	7.5862-01	1.4599+00	1.3660+00	8.6603-01	1.0553+00	1.1483+00	1.1049+00
CP	-2.2210-01	-2.8539-01	-2.5546-01	-1.5814-01	-1.7118-01	-2.4055-01	-2.1429-01	-2.0138-01	-2.0740-01
P/P01	6.8760-02	3.7369-02	5.2214-02	1.0048-01	9.4015-02	5.9607-02	7.2632-02	7.9038-02	7.6051-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.1 C-INF = 7.221 P-INF =2.6049 RE = .4387 TO = 533.

P	1.2767+00	1.3480+00	1.3573+00	1.3455+00	1.3634+00	1.9583+00	2.5569+00	3.3709+00	1.0080+00
CP	-1.8354-01	-1.7406-01	-1.7278-01	-1.7441-01	-1.7193-01	-8.9539-02	-6.6411-03	1.0608-01	-2.2115-01
P/PO1	8.7685-02	9.2585-02	9.3221-02	9.2411-02	9.3640-02	1.3450-01	1.7562-01	2.3152-01	6.9231-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.1 C-INF = 7.216 P-INF =2.6030 RE = .4384 TO = 533.

P	1.2040+00	1.1723+00	1.1947+00	1.2183+00	1.2415+00	1.3160+00	2.0045+00	2.9353+00	2.4150+00
CP	-1.9388-01	-1.9828-01	-1.9517-01	-1.9190-01	-1.8868-01	-1.7837-01	-8.2949-02	4.6045-02	-2.6058-02
P/PO1	8.2753-02	8.0572-02	8.2113-02	8.3735-02	8.5332-02	9.0447-02	1.3777-01	2.0175-01	1.6599-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.1 C-INF = 7.239 P-INF =2.6116 RE = .4399 TO = 533.

P	1.1755+00	1.3882+00	1.3521+00	1.3404+00	1.3711+00	1.4876+00	2.0337+00	2.8154+00	3.8148+00
CP	-1.9837-01	-1.6899-01	-1.7397-01	-1.7559-01	-1.7134-01	-1.5526-01	-7.9826-02	2.8151-02	1.6621-01
P/PO1	8.0528-02	9.5099-02	9.2629-02	9.1825-02	9.3532-02	1.0191-01	1.3932-01	1.9287-01	2.6134-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5984+00	5.7047+00	9.3266-01	5.5875+00	1.0500+00	6.5438+00	3.7383+00	1.2000+00
CP	-1.3955-01	4.2726-01	-2.3191-01	4.1107-01	-2.1570-01	5.4316-01	1.5564-01	-1.9498-01
P/PO1	1.0950-01	3.9081-01	6.3893-02	3.8278-01	7.1937-02	4.4829-01	2.5610-01	8.2208-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3906+00	4.0898+00	9.7031-01	4.2047+00	9.5391-01	3.4453+00	1.1836+00
CP	3.8388-01	2.0420-01	-2.2671-01	2.2006-01	-2.2898-01	1.1517-01	-1.9725-01
P/PO1	3.6930-01	2.8018-01	6.6473-02	2.8805-01	6.5349-02	2.3603-01	8.1084-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
7.	123.	301244	1.99	4	.02	-.06	.00	105.02	.0

VALVE POS 2 PC = 20.1 Q-INF = 7.245 P-INF =2.6134 RE = .4408 TO = 533.

P	1.7411+00	3.7942+00	7.4012+00	8.1757+00	4.1051+00	1.2410+01	8.3743+00	9.1846+00	9.7476+00
CP	-1.2040-01	1.0299-01	6.6089-01	7.6779-01	2.0591-01	1.3522+00	7.9521-01	9.0706-01	9.8477-01
P/P01	1.1920-01	2.5975-01	5.0668-01	5.5970-01	2.8103-01	8.4956-01	5.7330-01	6.2877-01	6.6731-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.1 Q-INF = 7.243 P-INF =2.6128 RE = .4407 TO = 533.

P	1.0890+01	1.1998+01	1.4080+01	1.4253+01	1.1131+01	1.0032+01	9.3223+00	5.9066+00	5.4858+00
CP	1.1429+00	1.2958+00	1.5832+00	1.6071+00	1.1760+00	1.0243+00	9.2637-01	4.5477-01	3.9667-01
P/P01	7.4572-01	8.2154-01	9.6410-01	9.7595-01	7.6217-01	6.8692-01	6.3834-01	4.0446-01	3.7564-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.0 Q-INF = 7.214 P-INF =2.6024 RE = .4389 TO = 533.

P	4.1918+00	1.2218+01	7.4040+00	7.9721+00	8.6396+00	9.4333+00	1.0112+01	1.2177+01	3.3482+00
CP	2.2031-01	1.3329+00	6.7390-01	7.4432-01	8.3685-01	9.4687-01	1.0410+00	1.3273+00	1.0338-01
P/P01	2.8818-01	8.3998-01	5.1313-01	5.4806-01	5.9395-01	6.4851-01	6.9519-01	8.3717-01	2.3018-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.1 Q-INF = 7.233 P-INF =2.6091 RE = .4400 TO = 533.

P	3.3164+00	5.1100+00	7.5898+00	5.2467+00	5.5653+00	5.9529+00	6.4150+00	7.2685+00	7.9895+00
CP	9.7787-02	3.4586-01	6.8863-01	3.6468-01	4.0872-01	4.6231-01	5.2620-01	6.4421-01	7.4390-01
P/P01	2.2741-01	3.5044-01	5.2044-01	3.5977-01	3.8162-01	4.0819-01	4.3988-01	4.9841-01	5.4785-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.1 Q-INF = 7.221 P-INF =2.6049 RE = .4393 TO = 533.

P	9.1700+00	8.7815+00	7.4483+00	6.0456+00	5.9910+00	4.2621+00	4.5738+00	3.1815+00	3.6194+00
CP	9.0918-01	8.5538-01	6.7076-01	4.7650-01	4.6893-01	2.2951-01	2.7267-01	7.9854-02	1.4049-01
P/P01	6.2982-01	6.0314-01	5.1157-01	4.1523-01	4.1148-01	2.9273-01	3.1414-01	2.1851-01	2.4859-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.1 Q-INF = 7.233 P-INF =2.6091 RE = .4400 TO = 533.

P	4.2110+00	4.4462+00	1.6308+00	1.5489+00	2.3379+00	1.7633+00	6.4150+00	1.1152+00	2.8312+00
CP	2.2147-01	2.5399-01	-1.3527-01	-1.4658-01	-3.7497-02	-1.1695-01	5.2620-01	-2.0655-01	3.0701-02
P/P01	2.8875-01	3.0488-01	1.1182-01	1.0621-01	1.6031-01	1.2091-01	4.3988-01	7.6473-02	1.9414-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4383 TO = 533.

P	2.0603+00	2.1864+00	3.4378+00	4.0878+00	4.1179+00	1.0429+00	1.1083+00	1.1000+00	1.1049+00
CP	-7.4746-02	-5.7242-02	1.1646-01	2.0669-01	2.1088-01	-2.1598-01	-2.0690-01	-2.0805-01	-2.0736-01
P/P01	1.4184-01	1.5052-01	2.3667-01	2.8142-01	2.8349-01	7.1796-02	7.6300-02	7.5726-02	7.6069-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.1 Q-INF = 7.236 P-INF =2.6103 RE = .4402 TO = 533.

P	1.2559+00	1.0518+00	7.2766-01	1.6252+00	1.4748+00	9.6746-01	1.0341+00	1.1382+00	1.0896+00
CP	-1.8718-01	-2.1539-01	-2.6018-01	-1.3614-01	-1.5693-01	-2.2704-01	-2.1784-01	-2.0345-01	-2.1016-01
P/P01	8.6079-02	7.2089-02	4.9873-02	1.1139-01	1.0108-01	6.6309-02	7.0874-02	7.8008-02	7.4683-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.0 Q-INF = 7.211 P-INF =2.6012 RE = .4387 TO = 533.

P	1.2455+00	1.2576+00	1.2153+00	1.3124+00	1.4048+00	1.5760+00	2.1026+00	2.7712+00	8.8549-01
CP	-1.8801-01	-1.8633-01	-1.9220-01	-1.7874-01	-1.6592-01	-1.4218-01	-6.9149-02	2.3570-02	-2.3794-01
P/PO1	8.5667-02	8.6499-02	8.3591-02	9.0266-02	9.6024-02	1.0840-01	1.4462-01	1.9060-01	6.0903-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.1 Q-INF = 7.218 P-INF =2.6037 RE = .4391 TO = 533.

P	1.1910+00	1.1648+00	1.1044+00	1.1674+00	1.2234+00	1.5448+00	2.3041+00	3.4214+00	3.0897+00
CP	-1.9572-01	-1.9936-01	-2.0773-01	-1.9899-01	-1.9124-01	-1.4670-01	-4.1502-02	1.1329-01	6.7343-02
P/PO1	8.1842-02	8.0036-02	7.5888-02	8.0220-02	8.4066-02	1.0615-01	1.5833-01	2.3510-01	2.1231-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.1 Q-INF = 7.226 P-INF =2.6067 RE = .4396 TO = 533.

P	8.2516-01	1.3329+00	1.3134+00	1.3099+00	1.3323+00	1.1859+00	1.5988+00	2.2814+00	3.1023+00
CP	-2.4655-01	-1.7628-01	-1.7898-01	-1.7947-01	-1.7637-01	-1.9662-01	-1.3948-01	-4.5017-02	6.8589-02
P/PO1	5.6635-02	9.1486-02	9.0145-02	8.9902-02	9.1439-02	8.1395-02	1.0974-01	1.5658-01	2.1293-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5539+00	5.8078+00	8.6375-01	6.7734+00	1.0266+00	1.0057+01	6.1688+00	1.1719+00
CP	-1.4570-01	4.4300-01	-2.4121-01	5.7664-01	-2.1868-01	1.0311+00	4.9295-01	-1.9857-01
P/PO1	1.0665-01	3.9862-01	5.9283-02	4.6489-01	7.0458-02	6.9026-01	4.2339-01	8.0432-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3672+00	3.8391+00	9.8438-01	4.3500+00	9.3584-01	3.5977+00	1.1578+00
CP	3.8202-01	1.7055-01	-2.2451-01	2.4126-01	-2.3068-01	1.3714-01	-2.0051-01
P/PO1	3.6838-01	2.6349-01	6.7563-02	2.9856-01	6.4506-02	2.4692-01	7.9466-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
7.	124.	301244	1.49	4	.01	.00	.00	105.01	.0

VALVE POS 2 PC = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3803 TO = 532.

P	2.2731+00	3.3346+00	6.9298+00	7.8311+00	5.0402+00	1.1402+01	9.5593+00	9.7705+00	1.0156+01
CP	-2.8206-01	-1.1328-01	4.5833-01	6.0163-01	1.5789-01	1.1694+00	8.7641-01	9.0998-01	9.7123-01
P/P01	1.6639-01	2.4409-01	5.0725-01	5.7322-01	3.6893-01	8.3459-01	6.9972-01	7.1518-01	7.4338-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.7 Q-INF = 6.296 P-INF =4.0510 RE = .3806 TO = 532.

P	1.1127+01	1.2124+01	1.3325+01	1.3282+01	1.1020+01	1.0173+01	9.5593+00	5.6875+00	6.1217+00
CP	1.1240+00	1.2823+00	1.4731+00	1.4662+00	1.1070+00	9.7250-01	8.7495-01	2.5995-01	3.2891-01
P/P01	8.1370-01	8.8659-01	9.7445-01	9.7125-01	8.0589-01	7.4396-01	6.9905-01	4.1592-01	4.4766-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3797 TO = 532.

P	4.9522+00	1.1194+01	8.9097+00	8.8022+00	9.3175+00	9.9845+00	1.0618+01	1.2003+01	3.7833+00
CP	1.4517-01	1.1391+00	7.7540-01	7.5827-01	8.4034-01	9.4655-01	1.0474+00	1.2680+00	-4.0980-02
P/P01	3.6308-01	8.2067-01	6.5322-01	6.4534-01	6.8312-01	7.3202-01	7.7846-01	8.8003-01	2.7738-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.5 Q-INF = 6.241 P-INF =4.0160 RE = .3773 TO = 532.

P	4.0640+00	4.8126+00	7.3698+00	6.6878+00	6.6531+00	6.9135+00	7.3156+00	8.0127+00	8.5546+00
CP	7.6893-03	1.2763-01	5.3735-01	4.2808-01	4.2253-01	4.6425-01	5.2868-01	6.4038-01	7.2720-01
P/P01	2.9978-01	3.5500-01	5.4363-01	4.9322-01	4.9077-01	5.0998-01	5.3964-01	5.9106-01	6.3103-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.6 Q-INF = 6.273 P-INF =4.0368 RE = .3793 TO = 532.

P	9.4225+00	9.0653+00	7.9669+00	6.7661+00	7.0946+00	7.1340+00	6.1148+00	4.2357+00	4.6535+00
CP	8.5850-01	8.0156-01	6.2647-01	4.3506-01	4.8742-01	4.9371-01	3.3125-01	3.1707-02	9.8306-02
P/P01	6.9148-01	6.6527-01	5.8466-01	4.9654-01	5.2064-01	5.2354-01	4.4874-01	3.1084-01	3.4150-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.290 P-INF =4.0471 RE = .3803 TO = 532.

P	5.2653+00	5.5205+00	2.1004+00	1.9025+00	1.9595+00	2.0519+00	7.0154+00	2.1948+00	3.9473+00
CP	1.9369-01	2.3426-01	-3.0952-01	-3.4099-01	-3.3192-01	-3.1722-01	4.7194-01	-2.9450-01	-1.5878-02
P/P01	3.8541-01	4.0409-01	1.5375-01	1.3926-01	1.4343-01	1.5020-01	5.1352-01	1.6066-01	2.8893-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.7 Q-INF = 6.298 P-INF =4.0523 RE = .3807 TO = 532.

P	2.8180+00	3.1421+00	4.3147+00	4.9066+00	4.9313+00	2.1144+00	2.1609+00	2.1592+00	2.1155+00
CP	-1.9600-01	-1.4453-01	4.1668-02	1.3565-01	1.3957-01	-3.0773-01	-3.0033-01	-3.0061-01	-3.0755-01
P/P01	2.0601-01	2.2971-01	3.1543-01	3.5869-01	3.6050-01	1.5457-01	1.5797-01	1.5785-01	1.5465-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.6 Q-INF = 6.267 P-INF =4.0329 RE = .3789 TO = 532.

P	2.2731+00	2.1764+00	1.1250+00	2.0093+00	2.2498+00	2.1196+00	2.1344+00	2.1897+00	2.1282+00
CP	-2.8078-01	-2.9622-01	-4.6396-01	-3.2288-01	-2.8450-01	-3.0528-01	-3.0291-01	-2.9408-01	-3.0390-01
P/P01	1.6697-01	1.5987-01	8.2642-02	1.4760-01	1.6526-01	1.5570-01	1.5679-01	1.6085-01	1.5633-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.6 C-INF = 6.279 F-INF =4.0466 RE = .3757 TO = 532.

P	2.2420+00	2.2642+00	2.2010+00	2.2713+00	2.3613+00	2.1482+00	2.7781+00	3.5097+00	2.1512+00
CP	-2.8644-01	-2.8289-01	-2.9296-01	-2.8177-01	-2.6744-01	-3.0138-01	-2.0106-01	-8.4547-02	-3.0089-01
P/P01	1.6437-01	1.6600-01	1.6137-01	1.6652-01	1.7312-01	1.5749-01	2.0368-01	2.5732-01	1.5772-01
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.269 F-INF =4.0342 RE = .3790 TO = 532.

P	2.2264+00	2.2291+00	2.1727+00	2.1848+00	2.2317+00	2.0962+00	2.5439+00	3.8064+00	3.3798+00
CP	-2.8835-01	-2.8792-01	-2.9692-01	-2.9459-01	-2.8751-01	-3.0912-01	-2.3770-01	-3.6327-02	-1.0438-01
P/P01	1.6349-01	1.6369-01	1.5955-01	1.6044-01	1.6388-01	1.5393-01	1.8681-01	2.7952-01	2.4819-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.7 Q-INF = 6.316 F-INF =4.0640 RE = .3814 TO = 533.

P	2.2731+00	2.3659+00	2.3378+00	2.3069+00	2.3587+00	1.7815+00	2.2246+00	2.9479+00	3.8716+00
CP	-2.8356-01	-2.6886-01	-2.7331-01	-2.7821-01	-2.7001-01	-3.6140-01	-2.9124-01	-1.7671-01	-3.0460-02
P/P01	1.6570-01	1.7246-01	1.7041-01	1.6816-01	1.7193-01	1.2986-01	1.6216-01	2.1489-01	2.8222-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.2336+00	6.1922+00	1.5828+00	6.7805+00	2.1000+00	9.1664+00	5.5875+00	2.1844+00
CP	-2.8981-01	3.3697-01	-3.9286-01	4.3012-01	-3.1097-01	8.0790-01	2.4123-01	-2.9761-01
P/P01	1.6282-01	4.5138-01	1.1538-01	4.9426-01	1.5308-01	6.6818-01	4.0730-01	1.5923-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.8313+00	6.5414+00	2.0883+00	5.9578+00	2.0063+00	4.6945+00	2.2102+00
CP	2.7982-01	3.9227-01	-3.1282-01	2.9986-01	-3.2581-01	9.9841-02	-2.9352-01
P/P01	4.2507-01	4.7684-01	1.5223-01	4.3429-01	1.4625-01	3.4221-01	1.6111-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
7.	125.	301244	1.49	4	5.02	.00	.00	110.02	.0

VALVE POS 2 PC = 14.6 Q-INF = 6.269 P-INF =4.0342 RE = .3790 TO = 532.

P	2.2783+00	3.2229+00	6.5841+00	7.3456+00	3.8538+00	1.1071+01	8.4059+00	8.7253+00	9.1668+00
CP	-2.8007-01	-1.2941-01	4.0672-01	5.2819-01	-2.2390-02	1.1224+00	6.9731-01	7.4827-01	8.1868-01
P/P01	1.6730-01	2.3667-01	4.8349-01	5.3941-01	2.8593-01	8.1299-01	6.1727-01	6.4073-01	6.7315-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.7 Q-INF = 6.300 P-INF =4.0536 RE = .3809 TO = 532.

P	1.0133+01	1.0673+01	1.2414+01	1.3555+01	1.2266+01	1.1166+01	1.0539+01	5.1636+00	7.1419+00
CP	9.6501-01	1.0508+00	1.3271+00	1.5146+00	1.3036+00	1.1290+00	1.0295+00	1.7620-01	4.9024-01
P/P01	7.4051-01	7.8002-01	9.0722-01	9.9352-01	8.9639-01	8.1599-01	7.7020-01	3.7736-01	5.2194-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.7 Q-INF = 6.300 P-INF =4.0536 RE = .3804 TO = 533.

P	5.6487+00	1.0894+01	7.8412+00	7.8154+00	8.3874+00	9.1498+00	9.2591+00	1.1132+01	3.2536+00
CP	2.5321-01	1.0859+00	6.0124-01	5.9716-01	6.8794-01	8.0897-01	8.2632-01	1.1237+00	-1.2698-01
P/P01	4.1282-01	7.9615-01	5.7304-01	5.7116-01	6.1296-01	6.6868-01	6.7667-01	8.1356-01	2.3778-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3800 TO = 533.

P	3.3739+00	4.7691+00	7.0241+00	5.8136+00	5.9175+00	6.2993+00	6.7310+00	6.9993+00	7.6599+00
CP	-1.0738-01	1.1431-01	4.7260-01	2.8027-01	2.9678-01	3.5745-01	4.2604-01	4.6806-01	5.7364-01
P/P01	2.4681-01	3.4887-01	5.1382-01	4.2527-01	4.3288-01	4.6081-01	4.9238-01	5.1201-01	5.6033-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.7 Q-INF = 6.326 P-INF =4.0704 RE = .3820 TO = 533.

P	9.6750+00	9.9166+00	8.8311+00	7.6432+00	7.1261+00	6.9608+00	5.9792+00	3.8190+00	4.3571+00
CP	8.8600-01	9.2419-01	7.5259-01	5.6479-01	4.8305-01	4.5691-01	3.0174-01	-3.9742-02	4.5319-02
P/P01	7.0414-01	7.2172-01	6.4272-01	5.5626-01	5.1863-01	5.0660-01	4.3516-01	2.7795-01	3.1711-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.253 P-INF =4.0238 RE = .3781 TO = 532.

P	4.4219+00	4.4524+00	2.0488+00	1.7219+00	1.9414+00	1.8543+00	7.1418+00	2.0981+00	1.8297+00
CP	6.3656-02	6.8541-02	-3.1583-01	-3.6811-01	-3.3302-01	-3.4694-01	4.9862-01	-3.0795-01	-3.5088-01
P/P01	3.2555-01	3.2780-01	1.5084-01	1.2677-01	1.4293-01	1.3652-01	5.2580-01	1.5447-01	1.3470-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.6 Q-INF = 6.259 P-INF =4.0277 RE = .3784 TO = 532.

P	1.7593+00	2.5833+00	4.5498+00	5.5113+00	5.6614+00	2.0728+00	2.0840+00	2.0879+00	2.0389+00
CP	-3.6240-01	-2.3076-01	8.3418-02	2.3702-01	2.6100-01	-3.1232-01	-3.1052-01	-3.0991-01	-3.1773-01
P/P01	1.2940-01	1.9000-01	3.3465-01	4.0536-01	4.1640-01	1.5245-01	1.5328-01	1.5357-01	1.4997-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.7 Q-INF = 6.314 P-INF =4.0627 RE = .3812 TO = 533.

P	1.9877+00	9.3632-01	1.0631+00	2.0220+00	2.1072+00	2.1222+00	2.1000+00	2.1286+00	2.0644+00
CP	-3.2865-01	-4.9517-01	-4.7509-01	-3.2321-01	-3.0971-01	-3.0735-01	-3.1087-01	-3.0632-01	-3.1649-01
P/P01	1.4494-01	6.8275-02	7.7520-02	1.4744-01	1.5366-01	1.5474-01	1.5312-01	1.5522-01	1.5054-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS [illegible] WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.7 Q-INF = 6.318 P-INF =4.0653 RE = .3815 TO = 533.

P	2.1693+00	2.1814+00	2.1443+00	2.1314+00	2.1565+00	2.4857+00	3.2596+00	4.0968+00	2.1104+00
CP	-3.0010-01	-2.9819-01	-3.0406-01	-3.0611-01	-3.0213-01	-2.5002-01	-1.2753-01	4.9916-03	-3.0943-01
P/P01	1.5808-01	1.5896-01	1.5626-01	1.5532-01	1.5715-01	1.8114-01	2.3753-01	2.9854-01	1.5379-01
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.257 P-INF =4.0264 RE = .3778 TO = 533.

P	2.1797+00	2.1538+00	2.0746+00	2.0627+00	2.0543+00	2.0441+00	2.7716+00	3.1184+00	2.4592+00
CP	-2.9513-01	-2.9927-01	-3.1192-01	-3.1382-01	-3.0878-01	-3.1675-01	-2.0053-01	-1.4512-01	-2.5047-01
P/P01	1.6037-01	1.5846-01	1.5264-01	1.5176-01	1.5409-01	1.5040-01	2.0192-01	2.2943-01	1.8093-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3792 TO = 533.

P	2.2290+00	2.3162+00	2.3610+00	2.3577+00	2.4183+00	2.0441+00	2.6025+00	3.4971+00	4.5148+00
CP	-2.8851-01	-2.7461-01	-2.6748-01	-2.6800-01	-2.5836-01	-3.1794-01	-2.2903-01	-8.6558-02	7.5502-02
P/P01	1.6342-01	1.6982-01	1.7310-01	1.7286-01	1.7730-01	1.4987-01	1.9080-01	2.5639-01	3.3100-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.2148+00	6.0352+00	1.9906+00	6.5531+00	2.0531+00	8.7258+00	5.1633+00	2.1141+00
CP	-2.9076-01	3.1763-01	-3.2647-01	4.0011-01	-3.1651-01	7.4611-01	1.7878-01	-3.0681-01
P/P01	1.6238-01	4.4247-01	1.4594-01	4.8045-01	1.5053-01	6.3974-01	3.7855-01	1.5499-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.8055+00	5.5477+00	2.0156+00	5.4398+00	1.9664+00	4.6102+00	2.1328+00
CP	2.8105-01	2.3999-01	-3.2248-01	2.2282-01	-3.3032-01	9.0694-02	-3.0382-01
P/P01	4.2563-01	4.0673-01	1.4778-01	3.9883-01	1.4417-01	3.3800-01	1.5637-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
7.	126.	301244	1.49	4	14.01	.00	.00	119.01	.0

VALVE POS 2 PC = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3795 TO = 532.

P	2.1693+00	2.9000+00	5.3584+00	5.9673+00	2.4464+00	1.0173+01	6.4940+00	7.1260+00	7.5500+00
CP	-2.9790-01	-1.8150-01	2.1013-01	3.0712-01	-2.5375-01	9.7716-01	3.9103-01	4.9170-01	5.5926-01
P/P01	1.5909-01	2.1268-01	3.9298-01	4.3764-01	1.7542-01	7.4611-01	4.7626-01	5.2261-01	5.5371-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3797 TO = 532.

P	8.2388+00	6.4166+00	9.7897+00	1.3078+01	1.3448+01	1.2536+01	1.1977+01	5.9211+00	8.8058+00
CP	6.6855-01	3.7838-01	9.1553-01	1.4392+00	1.4981+00	1.3528+00	1.2638+00	2.9946-01	7.5884-01
P/P01	6.0403-01	4.7044-01	7.1774-01	9.5882-01	9.8596-01	9.1906-01	8.7808-01	4.3411-01	6.4560-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.273 P-INF =4.0368 RE = .3793 TO = 532.

P	7.1497+00	9.8063+00	5.9869+00	6.4842+00	6.9842+00	7.4962+00	5.2570+00	8.7412+00	3.1023+00
CP	4.9622-01	9.1968-01	3.1087-01	3.9012-01	4.6583-01	5.5145-01	1.9451-01	7.4990-01	-1.4895-01
P/P01	5.2469-01	7.1964-01	4.3936-01	4.7585-01	5.1254-01	5.5012-01	3.8579-01	6.4148-01	2.2767-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3800 TO = 532.

P	2.5943+00	3.2601+00	6.2541+00	4.5665+00	4.9121+00	5.3676+00	5.7645+00	3.6423+00	5.2210+00
CP	-2.3072-01	-1.2480-01	3.5153-01	8.3039-02	1.3802-01	2.1049-01	2.7363-01	-6.3994-02	1.8717-01
P/P01	1.9002-01	2.3879-01	4.5808-01	3.3447-01	3.5979-01	3.9315-01	4.2222-01	2.6678-01	3.8241-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.6 Q-INF = 6.257 P-INF =4.0264 RE = .3778 TO = 533.

P	9.0753+00	1.0642+01	1.0073+01	9.0371+00	6.5585+00	5.8213+00	5.0227+00	3.3645+00	3.8211+00
CP	8.0688-01	1.0572+00	9.6625-01	8.0078-01	4.0467-01	2.8684-01	1.5923-01	-1.0577-01	-3.2801-02
P/P01	6.6771-01	7.8297-01	7.4109-01	6.6490-01	4.8254-01	4.2830-01	3.6955-01	2.4755-01	2.8114-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.259 P-INF =4.0277 RE = .3780 TO = 533.

P	2.2316+00	2.7261+00	1.9353+00	1.3709+00	1.5759+00	1.6801+00	7.0944+00	1.8867+00	1.2351+00
CP	-2.8695-01	-2.0795-01	-3.3429-01	-4.2445-01	-3.9170-01	-3.7506-01	4.8995-01	-3.4204-01	-4.4615-01
P/P01	1.6414-01	2.0051-01	1.4234-01	1.0083-01	1.1591-01	1.2357-01	5.2180-01	1.3877-01	9.0843-02
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.6 Q-INF = 6.281 P-INF =4.0419 RE = .3793 TO = 533.

P	1.1833+00	2.1287+00	5.2043+00	6.7034+00	6.9842+00	1.9583+00	1.9700+00	1.9988+00	1.9496+00
CP	-4.5510-01	-3.0459-01	1.8505-01	4.2370-01	4.6840-01	-3.3171-01	-3.2985-01	-3.2527-01	-3.3310-01
P/P01	8.6723-02	1.5602-01	3.8144-01	4.9131-01	5.1189-01	1.4353-01	1.4439-01	1.4649-01	1.4289-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.7 Q-INF = 6.312 P-INF =4.0614 RE = .3816 TO = 532.

P	1.3182+00	1.3882+00	1.5637+00	1.8694+00	1.8792+00	1.8933+00	1.9303+00	1.9402+00	1.8807+00
CP	-4.3462-01	-4.2354-01	-3.9572-01	-3.4729-01	-3.4574-01	-3.4350-01	-3.3765-01	-3.3607-01	-3.4550-01
P/P01	9.6150-02	1.0125-01	1.1406-01	1.3636-01	1.3707-01	1.3810-01	1.4080-01	1.4152-01	1.3718-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.6 Q-INF = 6.292 P-INF =4.0484 RE = .3799 TO = 533.

P	1.9695+00	1.9254+00	1.9146+00	1.8948+00	1.9180+00	3.3483+00	4.3656+00	5.2772+00	1.9573+00
CP	-3.3043-01	-3.3745-01	-3.3915-01	-3.4230-01	-3.3861-01	-1.1127-01	5.0419-02	1.9531-01	-3.3238-01
P/PO1	1.4412-01	1.4089-01	1.4010-01	1.3865-01	1.4035-01	2.4501-01	3.1945-01	3.8616-01	1.4322-01
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.271 P-INF =4.0355 RE = .3787 TO = 533.

P	2.0837+00	1.9605+00	1.8372+00	1.8160+00	1.8377+00	2.0385+00	2.2140+00	2.1286+00	1.9420+00
CP	-3.1122-01	-3.3086-01	-3.5052-01	-3.5390-01	-3.5044-01	-3.1835-01	-2.9045-01	-3.0405-01	-3.3382-01
P/PO1	1.5296-01	1.4392-01	1.3487-01	1.3331-01	1.3490-01	1.4968-01	1.6253-01	1.5626-01	1.4256-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.6 Q-INF = 6.265 P-INF =4.0316 RE = .3783 TO = 533.

P	1.9695+00	2.0960+00	2.1159+00	2.0780+00	2.1228+00	2.8180+00	3.5849+00	4.6902+00	5.7920+00
CP	-3.2912-01	-3.0893-01	-3.0576-01	-3.1181-01	-3.0466-01	-1.9370-01	-7.1295-02	1.0512-01	2.8098-01
P/PO1	1.4472-01	1.5402-01	1.5548-01	1.5269-01	1.5598-01	2.0707-01	2.6342-01	3.4464-01	4.2560-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.1680+00	6.3820+00	1.8547+00	5.9016+00	2.0180+00	6.5977+00	3.9047+00	2.0859+00
CP	-2.9745-01	3.7515-01	-3.4745-01	2.9846-01	-3.2139-01	4.0957-01	-2.0253-02	-3.1054-01
P/PO1	1.5930-01	4.6895-01	1.3628-01	4.3365-01	1.4828-01	4.8480-01	2.8692-01	1.5328-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.8219+00	5.0133+00	1.9688+00	5.1656+00	1.9078+00	4.4156+00	1.5141+00
CP	2.8575-01	1.5669-01	-3.2924-01	1.8100-01	-3.3897-01	6.1297-02	-4.0182-01
P/PO1	4.2779-01	3.6838-01	1.4466-01	3.7957-01	1.4019-01	3.2446-01	1.1125-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
8.	127.	301244	1.49	4	-3.98	179.95	-.00	78.98	180.0

VALVE POS 2 PC = 14.5 Q-INF = 6.221 P-INF =4.0031 RE = .3738 TO = 535.

P	2.5432+00	6.1644+00	9.5697+00	1.0838+01	1.0374+01	1.2788+01	1.2925+01	1.3143+01	1.3264+01
CP	-2.3467-01	3.4742-01	8.9480-01	1.0987+00	1.0241+00	1.4121+00	1.4341+00	1.4693+00	1.4886+00
P/PO1	1.8821-01	4.5619-01	7.0819-01	8.0207-01	7.6770-01	9.4633-01	9.5648-01	9.7266-01	9.8155-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.6 Q-INF = 6.253 P-INF =4.0238 RE = .3755 TO = 531.

P	1.3652+01	1.3354+01	1.0654+01	6.6721+00	1.9699+00	2.4537+00	2.7326+00	7.7277+00	2.3709+00
CP	1.5398+00	1.4920+00	1.0603+00	4.2351-01	-3.2846-01	-2.5108-01	-2.0649-01	5.9231-01	-2.6433-01
P/PO1	1.0051+00	9.8312-01	7.8437-01	4.9122-01	1.4503-01	1.8065-01	2.0118-01	5.6893-01	1.7455-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.263 P-INF =4.0303 RE = .3801 TO = 531.

P	2.0940+00	1.2155+01	1.1880+01	1.1794+01	1.2077+01	1.2189+01	1.1645+01	9.4221+00	6.2629+00
CP	-3.0914-01	1.2972+00	1.2532+00	1.2395+00	1.2847+00	1.3027+00	1.2158+00	8.6085-01	3.5646-01
P/PO1	1.5392-01	8.9347-01	8.7320-01	8.6688-01	8.8767-01	8.9596-01	8.5595-01	6.9256-01	4.6035-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.6 Q-INF = 6.269 P-INF =4.0342 RE = .3805 TO = 531.

P	6.8814+00	7.3153+00	8.6740+00	9.0528+00	9.0337+00	9.0081+00	8.9115+00	8.5511+00	6.3257+00
CP	4.5415-01	5.2336-01	7.4008-01	8.0049-01	7.9746-01	7.9336-01	7.7796-01	7.2048-01	3.6551-01
P/PO1	5.0533-01	5.3719-01	6.3696-01	6.6477-01	6.6338-01	6.6149-01	6.5440-01	6.2794-01	4.6452-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3820 TO = 531.

P	3.5337+00	1.1396+00	2.0720+00	2.5887+00	7.0473+00	7.5592+00	6.5098+00	5.8264+00	5.5489+00
CP	-8.1958-02	-4.6239-01	-3.1424-01	-2.3214-01	4.7629-01	5.5763-01	3.9089-01	2.8231-01	2.3820-01
P/PO1	2.5849-01	8.3367-02	1.5157-01	1.8937-01	5.1552-01	5.5297-01	4.7620-01	4.2621-01	4.0591-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.267 P-INF =4.0329 RE = .3804 TO = 531.

P	5.1311+00	3.0676+00	2.5926+00	2.8155+00	2.7666+00	3.7062+00	8.2479+00	1.5048+00	2.9951+00
CP	1.7524-01	-1.5401-01	-2.2980-01	-1.9425-01	-2.0204-01	-5.2125-02	6.7253-01	-4.0337-01	-1.6558-01
P/PO1	3.7692-01	2.2534-01	1.9045-01	2.0682-01	2.0323-01	2.7224-01	6.0586-01	1.1054-01	2.2001-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3820 TO = 531.

P	9.9123-01	6.5471-01	6.4943-01	2.2382+00	2.0658+00	1.8777+00	1.0712+00	1.2553+00	1.2504+00
CP	-4.8597-01	-5.3944-01	-5.4028-01	-2.8784-01	-3.1523-01	-3.4512-01	-4.7327-01	-4.4402-01	-4.4479-01
P/PO1	7.2510-02	4.7893-02	4.7507-02	1.6373-01	1.5111-01	1.3736-01	7.8359-02	9.1826-02	9.1469-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.5 Q-INF = 6.237 P-INF =4.0134 RE = .3781 TO = 531.

P	1.4375+00	1.2727+00	9.2119-01	3.2690+00	3.3302+00	3.5848+00	1.9276+00	1.2298+00	1.2734+00
CP	-4.1299-01	-4.3942-01	-4.9578-01	-1.1936-01	-1.0954-01	-6.8728-02	-3.3442-01	-4.4630-01	-4.3931-01
P/PO1	1.0611-01	9.3941-02	6.7595-02	2.4129-01	2.4581-01	2.6460-01	1.4228-01	9.0776-02	9.3991-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3805 TO = 531.

P	1.4401+00	1.4861+00	1.5069+00	1.5006+00	1.5241+00	1.2509+00	1.2966+00	1.5863+00	9.5694-01
CP	-4.1406-01	-4.0674-01	-4.0342-01	-4.0442-01	-4.0069-01	-4.4420-01	-4.3693-01	-3.9077-01	-4.9103-01
P/P01	1.0562-01	1.0899-01	1.1052-01	1.1005-01	1.1177-01	9.1742-02	9.5089-02	1.1634-01	7.0181-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.6 Q-INF = 6.275 P-INF =4.0381 RE = .3804 TO = 531.

P	1.2741+00	1.4986+00	1.5379+00	1.5591+00	1.6485+00	3.3547+00	2.8952+00	5.4792+00	7.4245+00
CP	-4.4045-01	-4.0466-01	-3.9841-01	-3.9502-01	-3.8078-01	-1.0889-01	-1.8211-01	2.2965-01	5.3963-01
P/P01	9.3469-02	1.0994-01	1.1282-01	1.1438-01	1.2094-01	2.4611-01	2.1240-01	4.0197-01	5.4468-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.6 Q-INF = 6.265 P-INF =4.0316 RE = .3798 TO = 531.

P	9.5750-01	1.6919+00	1.6747+00	1.6965+00	1.7496+00	1.6983+00	1.0208+00	1.2095+00	1.4979+00
CP	-4.9065-01	-3.7343-01	-3.7618-01	-3.7270-01	-3.6423-01	-3.7242-01	-4.8054-01	-4.5043-01	-4.0439-01
P/P01	7.0358-02	1.2432-01	1.2305-01	1.2466-01	1.2856-01	1.2479-01	7.5010-02	8.8871-02	1.1007-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5211+00	8.4773+00	-5.1563-02	7.9172+00	1.0055+00	9.0727+00	6.9516+00	9.8906-01
CP	-4.0069-01	7.0958-01	-6.5170-01	6.2017-01	-4.8299-01	8.0460-01	4.6605-01	-4.8561-01
P/P01	1.1171-01	6.2292-01	-3.7888-03	5.8176-01	7.3882-02	6.6666-01	5.1080-01	7.2677-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.5758+00	9.2813+00	1.1883+00	7.2398+00	1.1297+00	5.4000+00	1.2023+00
CP	2.4647-01	8.3789-01	-4.5381-01	5.1206-01	-4.6316-01	2.1841-01	-4.5157-01
P/P01	4.0971-01	6.8199-01	8.7315-02	5.3199-01	8.3010-02	3.9679-01	8.8349-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
8.	128.	301244	1.49	4	5.03	179.95	.00	69.97	180.0

VALVE POS 2 PC = 14.6 Q-INF = 6.253 P-INF =4.0238 RE = .3790 TO = 531.

P	2.9394+00	7.0946+00	9.9468+00	1.2013+01	1.1146+01	1.3134+01	1.3336+01	1.3476+01	1.3452+01
CP	-1.7342-01	4.9106-01	9.4719-01	1.2776+00	1.1390+00	1.4569+00	1.4891+00	1.5116+00	1.5077+00
P/P01	2.1640-01	5.2232-01	7.3231-01	8.8442-01	8.2062-01	9.6697-01	9.8180-01	9.9213-01	9.9036-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 14.5 Q-INF = 6.239 P-INF =4.0147 RE = .3782 TO = 531.

P	1.3510+01	1.2471+01	8.5797+00	4.4972+00	2.6898+00	2.6774+00	2.6220+00	7.2843+00	2.6168+00
CP	1.5219+00	1.3553+00	7.3166-01	7.7327-02	-2.1236-01	-2.1435-01	-2.2323-01	5.2404-01	-2.2406-01
P/P01	9.9691-01	9.2019-01	6.3309-01	3.3184-01	1.9848-01	1.9756-01	1.9347-01	5.3750-01	1.9309-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 14.6 Q-INF = 6.261 P-INF =4.0290 RE = .3795 TO = 531.

P	2.7413+00	1.2376+01	1.2351+01	1.2248+01	1.2376+01	1.2189+01	1.0918+01	7.5535+00	6.9379+00
CP	-2.0566-01	1.3331+00	1.3291+00	1.3126+00	1.3231+00	1.3033+00	1.1003+00	5.6290-01	4.6458-01
P/P01	2.0156-01	9.0998-01	9.0814-01	9.0056-01	9.0598-01	8.9625-01	8.0279-01	5.5539-01	5.1013-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 14.7 Q-INF = 6.304 P-INF =4.0562 RE = .3821 TO = 531.

P	7.9231+00	8.1824+00	9.3340+00	9.4913+00	9.5047+00	9.3703+00	9.0695+00	8.1394+00	4.8489+00
CP	6.1344-01	6.5458-01	8.3727-01	8.6222-01	8.6467-01	8.4302-01	7.9531-01	6.4776-01	1.2576-01
P/P01	5.7866-01	5.9760-01	6.8170-01	6.9319-01	6.9432-01	6.8435-01	6.6239-01	5.9446-01	3.5414-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 14.5 Q-INF = 6.229 P-INF =4.0083 RE = .3776 TO = 531.

P	2.6646+00	2.7696+00	2.7261+00	2.7021+00	7.7252+00	8.0632+00	6.9206+00	6.6509+00	6.0589+00
CP	-2.1570-01	-1.9886-01	-2.0584-01	-2.0969-01	5.9670-01	6.5096-01	4.6754-01	4.2424-01	3.2920-01
P/P01	1.9694-01	2.0469-01	2.0148-01	1.9971-01	5.7095-01	5.9593-01	5.1149-01	4.9155-01	4.4780-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 14.6 Q-INF = 6.279 P-INF =4.0406 RE = .3806 TO = 531.

P	5.3420+00	2.4653+00	2.9548+00	3.0674+00	3.1381+00	4.2493+00	9.0537+00	2.6639+00	2.8816+00
CP	2.0724-01	-2.5088-01	-1.7291-01	-1.5499-01	-1.4373-01	3.3233-02	7.9833-01	-2.1925-01	-1.8457-01
P/P01	3.9165-01	1.8074-01	2.1664-01	2.2489-01	2.3007-01	3.1154-01	6.6378-01	1.9530-01	2.1127-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 14.6 Q-INF = 6.277 P-INF =4.0393 RE = .3805 TO = 531.

P	2.7860+00	2.8130+00	2.7833+00	2.7525+00	2.7602+00	2.5176+00	2.5699+00	2.6639+00	2.5727+00
CP	-1.9966-01	-1.9535-01	-2.0009-01	-2.0500-01	-2.0376-01	-2.4241-01	-2.3408-01	-2.1912-01	-2.3365-01
P/P01	2.0432-01	2.0630-01	2.0412-01	2.0186-01	2.0243-01	1.8464-01	1.8848-01	1.9537-01	1.8868-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 14.7 Q-INF = 6.306 P-INF =4.0575 RE = .3822 TO = 531.

P	2.6391+00	2.7075+00	2.7007+00	3.7980+00	3.9514+00	4.0385+00	2.9993+00	2.6260+00	2.5474+00
CP	-2.2495-01	-2.1410-01	-2.1518-01	-4.1144-02	-1.6819-02	-3.0172-03	-1.6781-01	-2.2702-01	-2.3948-01
P/P01	1.9268-01	1.9768-01	1.9718-01	2.7730-01	2.8850-01	2.9485-01	2.1899-01	1.9173-01	1.8599-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 14.6 Q-INF = 6.271 P-INF =4.0355 RE = .3801 TO = 531.

P	2.6582+00	2.6764+00	2.6244+00	2.6391+00	2.6962+00	2.6966+00	2.6480+00	2.7144+00	1.6766+00
CP	-2.1961-01	-2.1671-01	-2.2500-01	-2.2765-01	-2.1355-01	-2.1349-01	-2.2124-01	-2.1065-01	-3.7614-01
P/PO1	1.9514-01	1.9647-01	1.9266-01	1.9374-01	1.9793-01	1.9795-01	1.9439-01	1.9926-01	1.2308-01
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 14.7 Q-INF = 6.294 P-INF =4.0497 RE = .3815 TO = 531.

P	2.6199+00	2.6888+00	2.6625+00	2.6391+00	2.6770+00	3.8340+00	3.4548+00	5.8517+00	7.9268+00
CP	-2.2719-01	-2.1623-01	-2.2041-01	-2.2414-01	-2.1812-01	-3.4278-02	-9.4533-02	2.8632-01	6.1604-01
P/PO1	1.9165-01	1.9669-01	1.9477-01	1.9365-01	1.9583-01	2.8046-01	2.5272-01	4.2806-01	5.7985-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 14.6 Q-INF = 6.285 P-INF =4.0445 RE = .3805 TO = 532.

P	1.9228+00	2.7075+00	2.6498+00	2.6454+00	2.6642+00	2.6518+00	2.6155+00	2.7017+00	2.6420+00
CP	-3.3756-01	-2.1272-01	-2.2189-01	-2.2260-01	-2.1961-01	-2.2157-01	-2.2736-01	-2.1363-01	-2.2314-01
P/PO1	1.4083-01	1.9831-01	1.9409-01	1.9376-01	1.9514-01	1.9423-01	1.9157-01	1.9789-01	1.9351-01
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	2.2172+00	9.2555+00	1.8375+00	8.4094+00	2.5430+00	8.9977+00	7.1625+00	2.6086+00
CP	-2.9072-01	8.2904-01	-3.5113-01	6.9443-01	-2.3889-01	7.8803-01	4.9606-01	-2.2845-01
P/PO1	1.6240-01	6.7792-01	1.3459-01	6.1595-01	1.8626-01	6.5903-01	5.2462-01	1.9107-01
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.9484+00	1.0486+01	2.6133+00	7.7883+00	2.5875+00	5.5547+00	2.4281+00
CP	3.0291-01	1.0248+00	-2.2771-01	5.9562-01	-2.3181-01	2.4026-01	-2.5716-01
P/PO1	4.3569-01	7.6804-01	1.9141-01	5.7045-01	1.8952-01	4.0685-01	1.7785-01
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
8.	129.	301244	1.99	4	5.04	179.95	.00	69.96	180.0

VALVE POS 2 PC = 20.1 Q-INF = 7.239 P-INF =2.6116 RE = .4428 TO = 531.

P	2.9777+00	7.5518+00	1.0701+01	1.2984+01	1.1503+01	1.4205+01	1.4410+01	1.4521+01	1.4582+01
CP	5.0579-02	6.8240-01	1.1174+00	1.4328+00	1.2835+00	1.6014+00	1.6298+00	1.6451+00	1.6535+00
P/P01	2.0400-01	5.1735-01	7.3310-01	8.8949-01	8.1545-01	9.7314-01	9.8719-01	9.9480-01	9.9898-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.1 Q-INF = 7.221 P-INF =2.6049 RE = .4411 TO = 531.

P	1.4694+01	1.3700+01	9.6011+00	4.9696+00	1.1145+00	1.1573+00	1.2409+00	7.5377+00	9.8756-01
CP	1.6742+00	1.5366+00	9.6889-01	3.2748-01	-2.0639-01	-2.0047-01	-1.8890-01	6.8313-01	-2.2398-01
P/P01	1.0092+00	9.4098-01	6.5943-01	3.4133-01	7.6550-02	7.9488-02	8.5228-02	5.1771-01	6.7829-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.1 Q-INF = 7.248 P-INF =2.6146 RE = .4427 TO = 531.

P	9.3415-01	1.3290+01	1.3200+01	1.3078+01	1.3259+01	1.3150+01	1.1914+01	8.2661+00	7.3931+00
CP	-2.3186-01	1.4730+00	1.4604+00	1.4436+00	1.4686+00	1.4536+00	1.2830+00	7.7975-01	6.5929-01
P/P01	6.3921-02	9.0943-01	9.0321-01	8.9489-01	9.0727-01	8.9981-01	8.1521-01	5.6563-01	5.0589-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 20.1 Q-INF = 7.229 P-INF =2.6075 RE = .4416 TO = 531.

P	8.3966+00	8.5923+00	9.7740+00	9.8828+00	9.8378+00	9.7010+00	9.4013+00	8.4720+00	5.0507+00
CP	8.0072-01	8.2779-01	9.9125-01	1.0063+00	1.0001+00	9.8115-01	9.3970-01	8.1115-01	3.3790-01
P/P01	5.7603-01	5.8946-01	6.7052-01	6.7759-01	6.7490-01	6.6552-01	6.4496-01	5.8120-01	3.4649-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.1 Q-INF = 7.245 P-INF =2.6134 RE = .4419 TO = 532.

P	2.2290+00	4.8818-01	8.0249-01	1.0479+00	7.8513+00	8.1734+00	6.3992+00	6.0333+00	5.6371+00
CP	-5.3063-02	-2.9335-01	-2.4997-01	-2.1610-01	7.2302-01	7.6748-01	5.2258-01	4.7207-01	4.1738-01
P/P01	1.5259-01	3.3420-02	5.4938-02	7.1727-02	5.3749-01	5.5954-01	4.3808-01	4.1304-01	3.8591-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.1 Q-INF = 7.231 P-INF =2.6085 RE = .4411 TO = 532.

P	4.9203+00	2.1186+00	2.8849+00	2.9059+00	3.0420+00	4.2366+00	9.3065+00	7.1039-01	2.7240+00
CP	3.1970-01	-6.7747-02	3.8228-02	4.1685-02	5.9951-02	2.2515-01	9.2628-01	-2.6250-01	1.5968-02
P/P01	3.3747-01	1.4531-01	1.9787-01	1.9958-01	2.0864-01	2.9057-01	6.3830-01	4.8724-02	1.8683-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4383 TO = 532.

P	6.9731-01	3.9465-01	3.7713-01	3.9178-01	8.1905-01	2.1404+00	6.2872-01	5.9606-01	6.8900-01
CP	-2.6370-01	-3.0582-01	-3.0826-01	-3.0622-01	-2.4675-01	-6.2866-02	-2.7324-01	-2.7779-01	-2.6485-01
P/P01	4.8130-02	2.7239-02	2.6030-02	2.7041-02	5.6532-02	1.4773-01	4.3396-02	4.1141-02	4.7556-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4392 TO = 532.

P	7.7962-01	6.4901-01	4.3275-01	3.6343+00	3.7849+00	3.8276+00	2.6935+00	4.7959-01	4.6941-01
CP	-2.5247-01	-2.7061-01	-3.0064-01	1.4397-01	1.6489-01	1.7082-01	1.3329-02	-2.9414-01	-2.9555-01
P/P01	5.3697-02	4.4701-02	2.9806-02	2.5032-01	2.6069-01	2.6363-01	1.8552-01	3.3032-02	3.2331-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 20.1 Q-INF = 7.216 P-INF =2.6030 RE = .4402 TO = 532.

P	4.5039-01	6.5243-01	6.7222-01	5.4395-01	5.9417-01	5.4065-01	4.2868-01	5.7094-01	5.9816-01
CP	-2.9832-01	-2.7032-01	-2.6758-01	-2.8536-01	-2.7840-01	-2.8582-01	-3.0133-01	-2.8162-01	-2.7785-01
P/PO1	3.0956-02	4.4842-02	4.6202-02	3.7386-02	4.0838-02	3.7159-02	2.9463-02	3.9241-02	4.1112-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 Q-INF = 7.214 P-INF =2.6024 RE = .4401 TO = 532.

P	9.6529-01	9.0118-01	6.3576-01	7.6557-01	8.3201-01	3.7126+00	3.2336+00	5.4350+00	7.7384+00
CP	-2.2694-01	-2.3582-01	-2.7261-01	-2.5462-01	-2.4541-01	1.5388-01	8.7484-02	3.9265-01	7.1193-01
P/PO1	6.6361-02	6.1953-02	4.3707-02	5.2631-02	5.7199-02	2.5523-01	2.2230-01	3.7364-01	5.3199-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4392 TO = 532.

P	5.2013-01	1.0317+00	9.9086-01	1.0046+00	1.0264+00	9.6746-01	8.9354-01	7.8678-01	5.7879-01
CP	-2.8851-01	-2.1746-01	-2.2313-01	-2.2122-01	-2.1820-01	-2.2638-01	-2.3665-01	-2.5148-01	-2.8036-01
P/PO1	3.5824-02	7.1060-02	6.8246-02	6.9196-02	7.0695-02	6.6635-02	6.1544-02	5.4190-02	3.9865-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.5023+00	9.4594+00	-5.1563-02	8.4961+00	9.8672-01	9.1078+00	7.2211+00	7.7813-01
CP	-1.5210-01	9.5294-01	-3.6790-01	8.1917-01	-2.2371-01	9.0412-01	6.4210-01	-2.5268-01
P/PO1	1.0348-01	6.5152-01	-3.5514-03	5.8518-01	6.7961-02	6.2731-01	4.9736-01	5.3594-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3297+00	1.1044+01	8.2266-01	7.4859+00	8.9297-01	5.1727+00	1.1977+00
CP	3.7943-01	1.1730+00	-2.4649-01	6.7888-01	-2.3673-01	3.5762-01	-1.9442-01
P/PO1	3.6709-01	7.6065-01	5.6661-02	5.1560-01	6.1504-02	3.5627-01	8.2490-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
8.	130.	301244	1.99	4	-3.98	179.95	-.00	78.98	180.0

VALVE POS 2 PC = 20.0 Q-INF = 7.212 P-INF =2.6018 RE = .4400 TO = 532.

P	2.4985+00	6.1959+00	1.0151+01	1.1058+01	1.0831+01	1.3717+01	1.3667+01	1.3840+01	1.4080+01
CP	-1.4330-02	4.9832-01	1.0467+00	1.1724+00	1.1410+00	1.5411+00	1.5342+00	1.5582+00	1.5914+00
P/P01	1.7180-01	4.2605-01	6.9802-01	7.6035-01	7.4478-01	9.4321-01	9.3982-01	9.5170-01	9.6817-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 20.0 Q-INF = 7.202 P-INF =2.5982 RE = .4393 TO = 532.

P	1.4694+01	1.4536+01	1.2052+01	7.5022+00	2.1565+00	2.3962+00	2.5504+00	7.3318+00	1.7225+00
CP	1.6794+00	1.6575+00	1.3127+00	6.8089-01	-6.1325-02	-2.8038-02	-6.6322-03	6.5724-01	-1.2158-01
P/P01	1.0118+00	1.0009+00	8.2993-01	5.1660-01	1.4850-01	1.6500-01	1.7562-01	5.0487-01	1.1861-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4396 TO = 532.

P	1.4635+00	1.3038+01	1.2524+01	1.2404+01	1.2723+01	1.2945+01	1.2640+01	1.0436+01	6.3728+00
CP	-1.5764-01	1.4487+00	1.3773+00	1.3607+00	1.4049+00	1.4358+00	1.3935+00	1.0875+00	5.2367-01
P/P01	1.0073-01	8.9739-01	8.6199-01	8.5377-01	8.7569-01	8.9098-01	8.7001-01	7.1826-01	4.3863-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 19.9 Q-INF = 7.170 P-INF =2.5866 RE = .4374 TO = 532.

P	6.9130+00	7.3310+00	8.9097+00	9.3033+00	9.2072+00	9.1498+00	9.0379+00	8.7087+00	6.5455+00
CP	6.0337-01	6.6168-01	8.8185-01	9.3675-01	9.2333-01	9.1533-01	8.9972-01	8.6497-01	5.5212-01
P/P01	4.7816-01	5.0707-01	6.1626-01	6.4349-01	6.3684-01	6.3287-01	6.2513-01	6.0789-01	4.5273-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 20.0 Q-INF = 7.209 P-INF =2.6006 RE = .4398 TO = 532.

P	3.7254+00	1.1924+00	1.9146+00	1.9813+00	6.7792+00	6.9293+00	6.0832+00	5.2583+00	5.1138+00
CP	1.5602-01	-1.9534-01	-9.5156-02	-8.5905-02	5.7564-01	6.0045-01	4.8308-01	3.6866-01	3.4861-01
P/P01	2.5629-01	8.2029-02	1.3172-01	1.3631-01	4.6638-01	4.7670-01	4.1850-01	3.6175-01	3.5180-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4396 TO = 532.

P	4.7541+00	2.8689+00	2.4910+00	2.6139+00	2.6770+00	3.4698+00	8.1847+00	1.0516+00	2.4655+00
CP	2.9903-01	3.7404-02	-1.5048-02	2.0146-03	1.0767-02	1.2079-01	7.7512-01	-2.1480-01	-1.8588-02
P/P01	3.2722-01	1.9746-01	1.7145-01	1.7991-01	1.8425-01	2.3882-01	5.6333-01	7.2378-02	1.6969-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4387 TO = 532.

P	8.0440-01	4.6537-01	4.4663-01	1.5235+00	1.4100+00	1.5162+00	5.8757-01	7.7405-01	8.1659-01
CP	-2.4890-01	-2.9604-01	-2.9864-01	-1.4891-01	-1.6469-01	-1.4993-01	-2.7905-01	-2.5312-01	-2.4720-01
P/P01	5.5469-02	3.2090-02	3.0798-02	1.0506-01	9.7230-02	1.0455-01	4.0517-02	5.3376-02	5.6309-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4385 TO = 532.

P	7.4875-01	6.6384-01	4.6486-01	3.1241+00	3.1445+00	3.3611+00	1.5723+00	6.5201-01	6.9155-01
CP	-2.5659-01	-2.6840-01	-2.9608-01	7.3835-02	7.6672-02	1.0681-01	-1.4203-01	-2.7004-01	-2.6454-01
P/P01	5.1656-02	4.5797-02	3.2070-02	2.1553-01	2.1694-01	2.3188-01	1.0847-01	4.4982-02	4.7709-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 19.9 Q-INF = 7.170 P-INF =2.5866 RE = .4374 TO = 532.

P	9.0269-01	1.0744+00	1.1018+00	1.0682+00	1.1145+00	1.0143+00	8.1665-01	9.0136-01	4.7625-01
CP	-2.2648-01	-2.1090-01	-2.0708-01	-2.1176-01	-2.0530-01	-2.1929-01	-2.4685-01	-2.3503-01	-2.9432-01
P/P01	6.6587-02	7.4313-02	7.6210-02	7.3887-02	7.7090-02	7.0155-02	5.6486-02	6.2345-02	3.2941-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4397 TO = 532.

P	8.2257-01	1.0669+00	1.0708+00	1.0962+00	1.1638+00	3.2397+00	2.7196+00	5.0563+00	6.9850+00
CP	-2.4661-01	-2.1272-01	-2.1216-01	-2.0865-01	-1.9927-01	8.8758-02	1.6590-02	3.4080-01	6.0840-01
P/P01	5.6602-02	7.3412-02	7.3687-02	7.5432-02	8.0082-02	2.2293-01	1.8714-01	3.4793-01	4.8065-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4390 TO = 532.

P	4.2344-01	1.1547+00	1.1405+00	1.1827+00	1.1549+00	1.1781+00	9.5718-01	8.9257-01	8.9825-01
CP	-3.0191-01	-2.0030-01	-2.0228-01	-1.9642-01	-1.9472-01	-1.9705-01	-2.2775-01	-2.6451-01	-2.3594-01
P/P01	2.9178-02	7.9569-02	7.8591-02	8.1497-02	8.2338-02	8.1182-02	6.5957-02	4.7724-02	6.1897-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.4464+00	8.5383+00	-5.1563-02	7.7508+00	6.5625-01	9.0609+00	7.3266+00	4.1953-01
CP	-1.5949-01	8.2558-01	-3.6791-01	7.1616-01	-2.6956-01	8.9820-01	6.5722-01	-3.0245-01
P/P01	9.9809-02	5.8836-01	-3.5531-03	5.3409-01	4.5221-02	6.2437-01	5.0486-01	2.8909-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	5.3297+00	9.3305+00	8.4609-01	5.8359+00	8.2734-01	4.4156+00	1.0336+00
CP	3.7977-01	9.3565-01	-2.4318-01	4.5011-01	-2.4579-01	2.5277-01	-2.1713-01
P/P01	3.6726-01	6.4295-01	5.8303-02	4.0714-01	5.7011-02	3.0427-01	7.1223-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
8.	131.	3C1244	2.99	4	-3.99	179.95	-.00	78.99	180.0

VALVE POS 2 PC = 30.0 Q-INF = 5.195 P-INF = .8301 RE = .3943 TO = 538.

P	1.5751+00	3.8935+00	6.7776+00	7.0167+00	7.2207+00	9.5120+00	9.0537+00	9.2796+00	9.4807+00
CP	1.4341-01	5.8971-01	1.1439+00	1.1909+00	1.2302+00	1.6713+00	1.5830+00	1.6265+00	1.6652+00
P/P01	1.5833-01	3.914C-01	6.8082-01	7.0535-01	7.2586-01	9.5619-01	9.1012-01	9.3283-01	9.5304-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3965 TO = 537.

P	9.8644+00	1.0200+01	8.6426+00	5.4546+00	1.4555+00	1.4278+00	1.4026+00	5.7380+00	6.3796-01
CP	1.7338+00	1.7983+00	1.4992+00	8.8727-01	1.2729-01	1.1428-01	1.0945-01	9.4169-01	-3.7330-02
P/P01	9.8884-01	1.0225+00	8.6636-01	5.4678-01	1.4592-01	1.4313-01	1.4060-01	5.7520-01	6.3951-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.1 Q-INF = 5.212 P-INF = .8328 RE = .3967 TO = 537.

P	4.5382-01	9.2229+00	8.2654+00	8.0817+00	8.2455+00	8.4411+00	8.3743+00	7.2210+00	4.0103+00
CP	-7.2718-02	1.6098+00	1.4261+00	1.3909+00	1.4223+00	1.4598+00	1.4470+00	1.2257+00	6.0967-01
P/P01	4.5471-02	9.2410-01	8.2817-01	8.0976-01	8.2610-01	8.4577-01	8.3907-01	7.2351-01	4.0182-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01

VALVE POS 5 PC = 30.1 Q-INF = 5.200 P-INF = .8310 RE = .3958 TO = 537.

P	4.3324+00	4.4959+00	5.8770+00	5.9047+00	5.7446+00	5.5401+00	5.4522+00	5.2835+00	4.0229+00
CP	6.7328-01	7.0472-01	9.7029-01	9.7561-01	9.4484-01	9.0551-01	8.8860-01	8.5618-01	6.1377-01
P/P01	4.3504-01	4.5145-01	5.9013-01	5.9291-01	5.7685-01	5.5631-01	5.4748-01	5.3055-01	4.0396-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.1 Q-INF = 5.200 P-INF = .8310 RE = .3958 TO = 537.

P	2.3250+00	7.3801-01	9.7021-01	7.9863-01	3.9706+00	3.0672+00	3.5263+00	2.9227+00	2.6735+00
CP	2.8728-01	-1.7882-02	2.6769-02	-6.2748-03	6.0372-01	4.3000-01	5.1829-01	4.0221-01	3.5430-01
P/P01	2.3346-01	7.4107-02	9.7424-02	8.0194-02	3.9871-01	3.0799-01	3.5410-01	2.9348-01	2.6846-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 30.1 Q-INF = 5.201 P-INF = .8311 RE = .3958 TO = 537.

P	2.4857+00	1.5187+00	1.5637+00	1.6456+00	1.6459+00	2.0311+00	5.0748+00	3.4485-01	1.4265+00
CP	3.1811-01	1.3219-01	1.4084-01	1.5659-01	1.5664-01	2.3071-01	8.1589-01	-9.3494-02	1.1446-01
P/P01	2.4956-01	1.5248-01	1.5699-01	1.6522-01	1.6525-01	2.0393-01	5.0951-01	3.4622-02	1.4322-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3942 TO = 537.

P	2.8262-01	1.6318-01	1.9784-01	5.2692-01	4.7252-01	7.6981-01	3.2390-01	3.0998-01	3.6004-01
CP	-1.0515-01	-1.2824-01	-1.2154-01	-5.7917-02	-6.8435-02	-1.0956-02	-9.7168-02	-9.9861-02	-9.0183-02
P/P01	2.8534-02	1.6476-02	1.9975-02	5.3201-02	4.7708-02	7.7724-02	3.2703-02	3.1297-02	3.6351-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3951 TO = 538.

P	3.8104-01	3.4989-01	1.9484-01	1.8084+00	1.8325+00	1.9843+00	7.1903-01	2.5473-01	2.7005-01
CP	-8.6489-02	-9.2482-02	-1.2231-01	1.8810-01	1.9274-01	2.2195-01	-2.1466-02	-1.1079-01	-1.0784-01
P/P01	3.8280-02	3.5150-02	1.9574-02	1.8167-01	1.8410-01	1.9935-01	7.2235-02	2.5591-02	2.7130-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.0 Q-INF = 5.183 F-INF = .8282 RE = .3933 TO = 538.

P	3.3621-01	3.4646-01	3.2406-01	3.4845-01	3.8032-01	3.5143-01	3.1551-01	3.1487-01	2.3504-01
CP	-9.4920-02	-9.2944-02	-9.7266-02	-9.2560-02	-8.6410-02	-9.1984-02	-9.8916-02	-9.9039-02	-1.1444-01
P/P01	3.3877-02	3.4909-02	3.2652-02	3.5110-02	3.8321-02	3.5411-02	3.1790-02	3.1726-02	2.3683-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.1 Q-INF = 5.209 F-INF = .8323 RE = .3947 TO = 539.

P	3.4596-01	3.9448-01	3.3758-01	3.3353-01	3.4277-01	1.9037+00	1.6359+00	2.9732+00	4.0183+00
CP	-9.3373-02	-8.4057-02	-9.4981-02	-9.5760-02	-9.3585-02	2.0570-01	1.5429-01	4.1103-01	6.1015-01
P/P01	3.4685-02	3.9550-02	3.3846-02	3.3439-02	3.4366-02	1.9086-01	1.6402-01	2.9809-01	4.0207-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.1 Q-INF = 5.209 F-INF = .8323 RE = .3947 TO = 539.

P	2.1586-01	3.6410-01	3.2406-01	3.3016-01	3.5565-01	3.4675-01	3.3494-01	3.0145-01	2.8598-01
CP	-1.1835-01	-8.9890-02	-9.7577-02	-9.6407-02	-9.1513-02	-9.3222-02	-9.5489-02	-1.0192-01	-1.0489-01
P/P01	2.1642-02	3.6504-02	3.2490-02	3.3101-02	3.5657-02	3.4764-02	3.3580-02	3.0223-02	2.8672-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	9.8438-01	4.9617+00	2.7656-01	4.5703+00	3.6797-01	5.2102+00	3.9633+00	2.0391-01
CP	2.9197-02	7.9281-01	-1.0670-01	7.1766-01	-8.9147-02	8.4051-01	6.0112-01	-1.2065-01
P/P01	9.8692-02	4.9745-01	2.7728-02	4.5821-01	3.6892-02	5.2236-01	3.9735-01	2.0443-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6023+00	4.2281+00	4.0547-01	3.9586+00	3.6563-01	2.6672+00	5.1563-01
CP	5.3182-01	6.5197-01	-8.1947-02	6.0022-01	-8.9597-02	3.5228-01	-6.0798-02
P/P01	3.6117-01	4.2391-01	4.0652-02	3.9688-01	3.6657-02	2.8741-01	5.1696-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS 55 WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
8.	132.	301244	2.99	4	5.01	179.95	.00	69.99	180.0

VALVE POS 2 PC = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3938 TO = 539.

P	2.0032+00	4.9927+00	7.3069+00	8.7238+00	7.9301+00	9.6380+00	9.5593+00	9.7863+00	9.7790+00
CP	2.2517-01	7.9965-01	1.2444+00	1.5167+00	1.3641+00	1.6923+00	1.6772+00	1.7208+00	1.7194+00
P/P01	2.0103-01	5.0102-01	7.3326-01	8.7546-01	7.9581-01	9.6719-01	9.5930-01	9.8208-01	9.8134-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PC = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3940 TO = 539.

P	1.0038+01	9.6486+00	6.8826+00	3.5461+00	7.8277-01	7.2299-01	7.2589-01	5.3656+00	4.1245-01
CP	1.7686+00	1.6938+00	1.1624+00	5.2145-01	-9.4162-03	-2.0899-02	-2.0343-02	8.7099-01	-8.0559-02
P/P01	1.0070+00	9.6796-01	6.9047-01	3.5575-01	7.8528-02	7.2531-02	7.2822-02	5.3828-01	4.1377-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.3540+00	2.6260+00

VALVE POS 4 PC = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3930 TO = 539.

P	3.4980-01	9.1283+00	8.7054+00	8.5672+00	8.6869+00	8.6301+00	7.8686+00	5.7380+00	4.9057+00
CP	-9.2436-02	1.5980+00	1.5165+00	1.4899+00	1.5130+00	1.5020+00	1.3554+00	9.4512-01	7.8485-01
P/P01	3.5174-02	9.1791-01	8.7538-01	8.6149-01	8.7352-01	8.6781-01	7.9124-01	5.7699-01	4.9330-01
S/R	2.8800+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8800-01

VALVE POS 5 PC = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3940 TO = 539.

P	5.4826+00	5.4646+00	6.2227+00	6.2179+00	6.1013+00	5.9371+00	5.7645+00	5.1573+00	3.0771+00
CP	8.9347-01	8.9001-01	1.0356+00	1.0347+00	1.0123+00	9.8079-01	9.4762-01	8.3098-01	4.3135-01
P/P01	5.5002-01	5.4821-01	6.2426-01	6.2379-01	6.1209-01	5.9562-01	5.7830-01	5.1738-01	3.0870-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC = 30.1 Q-INF = 5.198 P-INF = .8300 RE = .3929 TO = 540.

P	1.3908+00	3.3192-01	4.0105-01	4.4288-01	4.6543+00	4.6136+00	3.2140+00	3.2130+00	2.9636+00
CP	1.0778-01	-9.5939-02	-8.2639-02	-7.4592-02	7.4330-01	7.2776-01	4.5852-01	-4.5833-01	4.1034-01
P/P01	1.3973-01	3.3345-02	4.0290-02	4.4493-02	4.7160-01	4.6349-01	3.2283-01	3.2279-01	2.9773-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 7 PC = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3914 TO = 540.

P	2.6518+00	1.0920+00	1.8656+00	1.8948+00	1.9699+00	2.5113+00	5.6343+00	2.4495-01	1.3908+00
CP	3.5228-01	5.1066-02	2.0046-01	2.0611-01	2.2059-01	3.7514-01	9.2821-01	-1.1249-01	1.0876-01
P/P01	2.6741-01	1.1011-01	1.8813-01	1.9107-01	1.9864-01	2.5323-01	5.6816-01	2.4701-02	1.4024-01
S/R	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.3720+00	1.7420+00

VALVE POS 8 PC = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3909 TO = 540.

P	3.4637-01	1.1286-01	9.1959-02	8.7098-02	2.9181-01	1.1287+00	3.5894-01	3.5496-01	3.8852-01
CP	-9.2919-02	-1.3800-01	-1.4204-01	-1.4394-01	-1.0345-01	5.8128-02	-9.0491-02	-9.1260-02	-8.4781-02
P/P01	3.4922-02	1.1379-02	9.2716-03	8.7774-03	2.9421-02	1.1380-01	3.6190-02	3.5788-02	3.9172-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 9 PC = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3905 TO = 541.

P	4.1564-01	4.0477-01	1.4776-01	2.2051+00	2.2628+00	2.2704+00	1.5352+00	2.8553-01	2.4559-01
CP	-7.9583-02	-8.1680-02	-1.3128-01	2.6576-01	2.7688-01	2.7835-01	1.3647-01	-1.0469-01	-1.1240-01
P/P01	4.1887-02	4.0751-02	1.4891-02	2.2223-01	2.2803-01	2.2880-01	1.5471-01	2.8775-02	2.4750-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 [illegible] TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PC = 30.0 Q-INF = 5.190 P-INF = .8293 RE = .3912 TO = 541.

P	2.3291-01	2.9402-01	2.2238-01	2.4305-01	2.3524-01	2.2368-01	3.1907-01	3.3736-01	3.5879-01
CP	-1.1492-01	-1.0314-01	-1.1694-01	-1.1296-01	-1.1370-01	-1.1669-01	-9.8315-02	-9.4791-02	-9.0661-02
P/PO1	2.3435-02	2.9584-02	2.2376-02	2.4455-02	2.4072-02	2.2507-02	3.2104-02	3.3945-02	3.6101-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 11 PC = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3915 TO = 541.

P	4.4829-01	4.2773-01	2.0401-01	2.7529-01	3.1595-01	2.2496+00	1.9886+00	3.0110+00	4.4517+00
CP	-7.3620-02	-7.7571-02	-1.2019-01	-1.0687-01	-9.9058-02	2.7265-01	2.2247-01	4.1902-01	6.9596-01
P/PO1	4.5001-02	4.2937-02	2.0680-02	2.7635-02	3.1716-02	2.2582-01	1.9962-01	3.0226-01	4.4688-01
S/R	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01

VALVE POS 12 PC = 30.2 Q-INF = 5.218 P-INF = .8337 RE = .3927 TO = 541.

P	3.0016-01	3.6900-01	3.6563-01	3.7299-01	3.8139-01	3.3676-01	3.2351-01	3.1287-01	3.1902-01
CP	-1.0226-01	-8.9670-02	-8.9716-02	-8.8305-02	-8.6695-02	-9.4866-02	-9.7789-02	-9.9828-02	-9.8650-02
P/PO1	3.0042-02	3.6932-02	3.6595-02	3.7332-02	3.8173-02	3.3906-02	3.2379-02	3.1315-02	3.1930-02
S/R	4.9700-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00

CEC	1.0734+00	5.7047+00	-5.1563-02	5.0977+00	5.3203-01	5.2781+00	3.7805+00	4.6406-01
CP	4.5944-02	9.3358-01	-1.6968-01	8.1724-01	-5.7823-02	8.5183-01	5.6478-01	-7.0850-02
P/PO1	1.0744-01	5.7097-01	-5.1607-03	5.1021-01	5.3250-02	5.2827-01	3.7838-01	4.6447-02
S/R	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	9.3600-01

CEC	3.6000+00	6.8227+00	4.8750-01	4.8281+00	5.0391-01	2.7281+00	6.8672-01
CP	5.3019-01	1.1479+00	-6.6358-02	7.6558-01	-6.3214-02	3.6309-01	-2.8175-02
P/PO1	3.6031-01	6.8286-01	4.8793-02	4.8323-01	5.0435-02	2.7305-01	6.8732-02
S/R	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890-01

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	133.	301244	2.99	1	.00	180.00	.00	15.00	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3974 TO = 535.

P	9.4274+00	9.4430+00	6.8407+00	6.5841+00	6.6528+00	6.7160+00	6.8027+00	6.8946+00	6.7095+00
CP	1.6581+00	1.6611+00	1.1593+00	1.1098+00	1.1231+00	1.1353+00	1.1526+00	1.1697+00	1.1340+00
P/PO1	9.4931-01	9.5086-01	6.8884-01	6.6301-01	6.6992-01	6.7629-01	6.8501-01	6.9427-01	6.7563-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.2 Q-INF = 5.230 P-INF = .8358 RE = .3992 TO = 536.

P	6.8095+00	5.5541+00	1.6891+00	1.9794-01	1.6223-01	1.5746-01	1.5616-01	1.5466-01	6.4920+00
CP	1.1421+00	9.0207-01	1.6315-01	-1.2791-01	-1.2878-01	-1.2969-01	-1.3032-01	-1.3022-01	1.0014+00
P/PO1	6.7986-01	5.5451-01	1.6864-01	1.9263-02	1.6197-02	1.5720-02	1.5391-02	1.5441-02	6.4816-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3975 TO = 536.

P	6.8407+00	6.9030+00	6.5758+00	6.5841+00	5.4486+00	1.6704+00	6.1014+00	5.7319+00	5.7776+00
CP	1.1538+00	1.1657+00	1.1029+00	1.1045+00	8.8645-01	1.6096-01	1.0277+00	9.4086-01	9.4963-01
P/PO1	6.8595-01	6.9220-01	6.5938-01	6.6022-01	5.4635-01	1.6750-01	6.1984-01	5.7477-01	5.7935-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3971 TO = 536.

P	5.8746+00	6.2642+00	5.9681+00	5.8993+00	5.9656+00	5.2332+00	1.3424+00	1.9133-01	1.8894-01
CP	9.6913-01	1.0440+00	9.8709-01	9.7387-01	9.8662-01	8.4586-01	1.0587-01	-1.2303-01	-1.2348-01
P/PO1	5.8953-01	6.2862-01	5.9891-01	5.9200-01	5.9866-01	5.2516-01	1.3673-01	1.9200-02	1.8961-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3953 TO = 537.

P	1.6127-01	1.5436-01	6.7005+00	5.1970+00	5.0387+00	4.9867+00	5.0219+00	4.2523+00	1.1574+00
CP	-1.2874-01	-1.3007-01	1.1302+00	8.2346-01	8.1031-01	8.0029-01	8.0707-01	6.5891-01	6.3032-02
P/PO1	1.6214-02	1.5520-02	6.7367-01	5.1346-01	5.0659-01	5.0136-01	5.0490-01	4.2753-01	1.1636-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.190 P-INF = .8293 RE = .3950 TO = 537.

P	7.3705+00	4.2634+00	3.9052+00	9.8989-01	1.3274-01	1.6023-01	1.5787-01	1.5090-01	3.3857+00
CP	1.2604+00	6.6168-01	5.9266-01	3.0938-02	-1.3422-01	-1.2892-01	-1.2938-01	-1.3072-01	4.9256-01
P/PO1	7.4161-01	4.2898-01	3.9294-01	9.9601-02	1.3356-02	1.6122-02	1.5885-02	1.5183-02	3.4066-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3940 TO = 538.

P	3.5024+00	3.7190+00	3.6729+00	3.7256+00	3.2729+00	9.2346-01	2.9529+00	2.5054+00	2.5330+00
CP	5.1579-01	5.5757-01	5.4868-01	5.5983-01	4.7153-01	1.8334-02	4.0980-01	3.2347-01	3.2880-01
P/PO1	3.5279-01	3.7461-01	3.6997-01	3.7527-01	3.2968-01	9.3019-02	2.9744-01	2.5237-01	2.5515-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3936 TO = 538.

P	2.7969+00	2.6730+00	2.8630+00	2.8567+00	2.8693+00	2.6229+00	5.9970-01	1.5654-01	1.6136-01
CP	3.8021-01	3.5630-01	3.9297-01	3.9175-01	3.9420-01	3.4662-01	-4.4007-02	-1.2957-01	-1.2864-01
P/PO1	2.8199-01	2.6951-01	2.8866-01	2.8802-01	2.8930-01	2.6445-01	6.0464-02	1.5783-02	1.6269-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3939 TO = 539.

P	1.4070-01	1.4354-01	2.3760+00	2.4004+00	2.3074+00	2.4333+00	2.4917+00	2.2896+00	5.9310-01
CP	-1.3276-01	-1.3221-01	2.9673-01	3.0141-01	2.8354-01	3.0774-01	3.1397-01	2.8014-01	-4.5836-02
P/PO1	1.4118-02	1.4402-02	2.3840-01	2.4284-01	2.3151-01	2.4415-01	2.5001-01	2.2973-01	5.9510-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.1 Q-INF = 5.209 P-INF = .8323 RE = .3937 TO = 540.

P	1.2646-01	5.4868+00	2.4172+00	2.0453+00	2.1413+00	2.2639+00	2.4469+00	2.4246+00	2.3152+00
CP	-1.3552-01	8.9361-01	3.0429-01	2.3288-01	2.5131-01	2.7485-01	3.0999-01	3.0570-01	2.8470-01
P/PO1	1.2678-02	5.5010-01	2.4235-01	2.0505-01	2.1468-01	2.2697-01	2.4532-01	2.4308-01	2.3212-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.1 Q-INF = 5.209 P-INF = .8323 RE = .3931 TO = 540.

P	2.3099+00	2.0112+00	4.8049-01	1.3543-01	1.4663-01	1.3853-01	1.3790-01	1.3492-01	1.3470-01
CP	2.8368-01	2.2634-01	-6.7544-02	-1.3379-01	-1.3164-01	-1.3320-01	-1.3332-01	-1.3389-01	-1.3393-01
P/PO1	2.3158-01	2.0164-01	4.8173-02	1.3578-02	1.4701-02	1.3888-02	1.3826-02	1.3527-02	1.3504-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.9234+00	1.4808+01	7.2000+00	1.0078+00	5.1141+00	1.4273+00	4.8305+00	2.0719+00
CP	5.9347-01	2.6832+00	1.2225+00	3.3697-02	8.2206-01	1.1424-01	7.6761-01	2.3799+01
P/PO1	3.9336-01	1.4846+00	7.2186-01	1.0104-01	5.1273-01	1.4310-01	4.8430-01	2.0772-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.3336+00	2.4938+00	4.0852+00	3.0234+00	3.7359+00	3.4102+00	3.3000+00
CP	6.7222-01	3.1898-01	6.2452-01	4.2068-01	5.5747-01	4.9492-01	4.7378-01
P/PO1	4.3448-01	2.5002-01	4.0957-01	3.0313-01	3.7456-01	3.4190-01	3.3085-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	134.	301244	2.99	1	-4.01	180.00	.00	19.01	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3915 TO = 541.

P	9.0846+00	9.7390+00	7.5887+00	7.3157+00	7.3711+00	7.4017+00	7.4395+00	7.4731+00	7.3618+00
CP	1.5893+00	1.7153+00	1.3013+00	1.2487+00	1.2594+00	1.2653+00	1.2725+00	1.2790+00	1.2576+00
P/PO1	9.1337-01	9.7917-01	7.6297-01	7.3552-01	7.4110-01	7.4417-01	7.4796-01	7.5135-01	7.4016-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3904 TO = 541.

P	7.4328+00	5.7188+00	1.7477+00	2.1011-01	1.7887-01	1.7270-01	1.7227-01	1.6547-01	7.0201+00
CP	1.2751+00	9.4417-01	1.7758-01	-1.1923-01	-1.2526-01	-1.2646-01	-1.2654-01	-1.2785-01	1.1954+00
P/PO1	7.4929-01	5.7650-01	1.7618-01	2.1180-02	1.8032-02	1.7409-02	1.7366-02	1.6681-02	7.0768-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3901 TO = 541.

P	7.3549+00	7.3705+00	7.1212+00	7.1445+00	5.5495+00	1.7241+00	6.5386+00	6.2224+00	6.2125+00
CP	1.2594+00	1.2624+00	1.2143+00	1.2187+00	9.1099-01	1.7288-01	1.1318+00	1.0408+00	1.0389+00
P/PO1	7.4109-01	7.4266-01	7.1753-01	7.1988-01	5.5917-01	1.7372-01	6.5884-01	6.2697-01	6.2597-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3902 TO = 541.

P	6.3109+00	6.6381+00	6.3421+00	6.2573+00	6.3248+00	5.3027+00	1.4188+00	1.7064-01	1.7193-01
CP	1.0575+00	1.1206+00	1.0635+00	1.0472+00	1.0602+00	8.6305-01	1.1398-01	-1.2688-01	-1.2663-01
P/PO1	6.3569-01	6.6865-01	6.3883-01	6.3029-01	6.3709-01	5.3413-01	1.4292-01	1.7184-02	1.7314-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3896 TO = 542.

P	1.6828-01	1.6284-01	7.2614+00	5.3383+00	5.3162+00	5.1447+00	5.1692+00	4.2648+00	1.1850+00
CP	-1.2733-01	-1.2838-01	1.2409+00	8.6992-01	8.6565-01	8.3257-01	8.3730-01	6.6284-01	6.8777-02
P/PO1	1.6951-02	1.6402-02	7.3144-01	5.3772-01	5.3549-01	5.1822-01	5.2069-01	4.2958-01	1.1935-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.190 P-INF = .8293 RE = .3901 TO = 542.

P	7.1212+00	4.1594+00	3.8299+00	8.2868-01	1.5183-01	1.7639-01	1.7552-01	1.6547-01	2.8753+00
CP	1.2123+00	6.4165-01	5.7815-01	-1.2761-04	-1.3054-01	-1.2581-01	-1.2598-01	-1.2791-01	3.9422-01
P/PO1	7.1653-01	4.1852-01	3.8536-01	8.3381-02	1.5277-02	1.7748-02	1.7660-02	1.6650-02	2.8931-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3896 TO = 542.

P	3.2882+00	3.3948+00	3.4092+00	3.6068+00	3.1784+00	7.9044-01	2.5366+00	2.1894+00	2.2068+00
CP	4.7458-01	4.9514-01	4.9792-01	5.3603-01	4.5338-01	-7.3005-03	3.2956-01	2.6259-01	2.6594-01
P/PO1	3.3127-01	3.4201-01	3.4346-01	3.6336-01	3.2020-01	7.9633-02	2.5554-01	2.2057-01	2.2232-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3890 TO = 542.

P	2.4063+00	2.3427+00	2.4737+00	2.4379+00	2.4090+00	2.2537+00	5.0941-01	1.6218-01	1.6228-01
CP	3.0451-01	2.9224-01	3.1751-01	3.1060-01	3.0503-01	2.7505-01	-6.1501-02	-1.2850-01	-1.2848-01
P/PO1	2.4246-01	2.3605-01	2.4925-01	2.4564-01	2.4273-01	2.2708-01	5.1329-02	1.6341-02	1.6351-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
40 - INCH CONTI

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3893 TO = 542.

P	1.5473-01	1.6613-01	1.9970+00	1.8790+00	1.8960+00	2.0567+00	2.0789+00	1.8813+00	4.8113-01
CP	-1.2997-01	-1.2777-01	2.2516-01	2.0243-01	2.0569-01	2.3667-01	2.4095-01	2.0287-01	-6.7046-02
P/PO1	1.5576-02	1.6724-02	2.0103-01	1.8915-01	1.9086-01	2.0704-01	2.0927-01	1.8938-01	4.8433-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.183 P-INF = .8292 RE = .3884 TO = 543.

P	1.5238-01	4.8139+00	1.9995+00	1.6775+00	1.7810+00	1.8725+00	2.0425+00	1.9489+00	1.8603+00
CP	-1.3039-01	7.6906-01	2.2601-01	1.6389-01	1.8385-01	2.0151-01	2.3431-01	2.1626-01	1.9916-01
P/PO1	1.5354-02	4.8505-01	2.0147-01	1.6903-01	1.7945-01	1.8867-01	2.0580-01	1.9638-01	1.8745-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3885 TO = 543.

P	1.8744+00	1.6563+00	3.9818-01	1.4842-01	1.5703-01	1.4868-01	1.5091-01	1.4761-01	1.4573-01
CP	2.0182-01	1.5974-01	-8.2975-02	-1.3116-01	-1.2950-01	-1.3111-01	-1.3068-01	-1.3132-01	-1.3168-01
P/PO1	1.8883-01	1.6686-01	4.0115-02	1.4952-02	1.5820-02	1.4979-02	1.5203-02	1.4871-02	1.4681-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00
CEC	3.8461+00	1.3908+01	7.6617+00	6.9766-01	5.7047+00	9.6094-01	5.1539+00	1.4063+00	
CP	5.8220-01	2.5233+00	1.3183+00	-2.5201-02	9.4076-01	2.5592-02	8.3451-01	1.1150-01	
P/PO1	3.8747-01	1.4011+00	7.7188-01	7.0285-02	5.7472-01	9.6809-02	5.1923-01	1.4167-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	
CEC	4.5820+00	1.9383+00	4.1297+00	2.5453+00	3.5813+00	2.9320+00	2.9859+00		
CP	7.2418-01	2.1414-01	6.3691-01	3.3125-01	5.3111-01	4.0586-01	4.1626-01		
P/PO1	4.6162-01	1.9527-01	4.1604-01	2.5643-01	3.6079-01	2.9539-01	3.0082-01		
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00		

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
AEDC - TECHNICAL DATA MANAGEMENT

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	135.	301244	2.99	1	5.00	180.00	.00	10.00	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3892 TO = 543.

P	9.7079+00	8.9599+00	5.9681+00	5.6191+00	5.7314+00	5.8590+00	5.8087+00	6.0504+00	5.9327+00
CP	1.7096+00	1.5655+00	9.8942-01	9.2222-01	9.4384-01	9.6842-01	9.5873-01	1.0053+00	9.8265-01
P/PO1	9.7618-01	9.0097-01	6.0013-01	5.6503-01	5.7632-01	5.8916-01	5.8410-01	6.0840-01	5.9659-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3877 TO = 543.

P	5.9525+00	4.9546+00	1.4678+00	1.6048-01	1.5859-01	1.5145-01	1.5276-01	1.5560-01	5.7009+00
CP	9.8929-01	7.9666-01	1.2356-01	-1.2881-01	-1.2918-01	-1.3056-01	-1.3030-01	-1.2976-01	9.4071-01
P/PO1	6.0006-01	4.9946-01	1.4797-01	1.6177-02	1.5987-02	1.5268-02	1.5400-02	1.5686-02	5.7469-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3888 TO = 543.

P	5.9681+00	6.1083+00	5.8278+00	5.8059+00	4.9126+00	1.4530+00	5.7329+00	5.0667+00	5.2279+00
CP	9.8924-01	1.0162+00	9.6224-01	9.5801-01	7.8602-01	1.1995-01	9.4396-01	8.1571-01	8.4673-01
P/PO1	6.0003-01	6.1413-01	5.8593-01	5.8372-01	4.9391-01	1.4608-01	5.7639-01	5.0941-01	5.2561-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3894 TO = 543.

P	5.4111+00	5.5908+00	5.4372+00	5.3508+00	5.4108+00	4.8287+00	1.2239+00	1.3774-01	1.5584-01
CP	8.8038-01	9.1492-01	8.8539-01	8.6879-01	8.8032-01	7.6842-01	7.5482-02	-1.3332-01	-1.2984-01
P/PO1	5.4318-01	5.6122-01	5.4580-01	5.3713-01	5.4315-01	4.8472-01	1.2286-01	1.3827-02	1.5644-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3884 TO = 543.

P	1.5099-01	1.4636-01	5.9837+00	4.7695+00	4.6792+00	4.7149+00	4.8233+00	4.1093+00	1.0620+00
CP	-1.3070-01	-1.3159-01	9.9332-01	7.5933-01	7.4195-01	7.4882-01	7.6971-01	6.3712-01	4.4857-02
P/PO1	1.5195-02	1.4729-02	6.0216-01	4.7997-01	4.7089-01	4.7448-01	4.8539-01	4.1354-01	1.0687-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3895 TO = 542.

P	7.5731+00	4.3552+00	3.9617+00	1.0277+00	1.3494-01	1.4961-01	1.4998-01	1.4197-01	4.1201+00
CP	1.2996+00	6.7949-01	6.0367-01	3.8249-02	-1.3379-01	-1.3096-01	-1.3089-01	-1.3244-01	6.3418-01
P/PO1	7.6211-01	4.3828-01	3.9869-01	1.0342-01	1.3580-02	1.5056-02	1.5093-02	1.4287-02	4.1462-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3893 TO = 542.

P	3.8741+00	4.0249+00	4.0936+00	4.0631+00	3.5820+00	1.0028+00	3.4846+00	2.9530+00	3.0247+00
CP	5.8713-01	6.1620-01	6.2945-01	6.2358-01	5.3081-01	3.3539-02	5.1203-01	4.0955-01	4.2337-01
P/PO1	3.9005-01	4.0523-01	4.1215-01	4.0908-01	3.6064-01	1.0096-01	3.5083-01	2.9731-01	3.0453-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3898 TO = 542.

P	3.3638+00	3.1196+00	3.4092+00	3.4380+00	3.4432+00	3.1348+00	7.7438-01	1.2445-01	1.4297-01
CP	4.8784-01	4.4082-01	4.9658-01	5.0213-01	5.0313-01	4.4376-01	-1.0703-02	-1.3583-01	-1.3227-01
P/PO1	3.3820-01	3.1364-01	3.4276-01	3.4566-01	3.4618-01	3.1518-01	7.7856-02	1.2513-02	1.4374-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS 55 WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3911 TO = 542.

P	1.3743-01	1.3742-01	2.9948+00	3.1317+00	2.9702+00	3.0211+00	3.0874+00	2.8100+00	7.5567-01
CP	-1.3338-01	-1.3339-01	4.1572-01	4.4203-01	4.1100-01	4.2077-01	4.3352-01	3.8021-01	-1.4576-02
P/PO1	1.3792-02	1.3791-02	3.0054-01	3.1428-01	2.9807-01	3.0417-01	3.0983-01	2.8199-01	7.5833-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3914 TO = 542.

P	1.0172-01	6.4667+00	3.0262+00	2.6004+00	2.7180+00	2.8757+00	3.0490+00	3.1022+00	3.0185+00
CP	-1.4026-01	1.0921+00	4.2139-01	3.3961-01	3.6220-01	3.9249-01	4.2577-01	4.3599-01	4.1990-01
P/PO1	1.0201-02	6.4855-01	3.0350-01	2.6079-01	2.7259-01	2.8840-01	3.0578-01	3.1112-01	3.0272-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.1 Q-INF = 5.210 P-INF = .8326 RE = .3921 TO = 541.

P	2.9607+00	2.5691+00	6.0840-01	1.2523-01	1.4403-01	1.3298-01	1.3326-01	1.2786-01	1.2918-01
CP	4.0845-01	3.3329-01	-4.3023-02	-1.3576-01	-1.3215-01	-1.3427-01	-1.3422-01	-1.3525-01	-1.3500-01
P/PO1	2.9674-01	2.5749-01	6.0978-02	1.2551-02	1.4436-02	1.3329-02	1.3356-02	1.2816-02	1.2947-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.0383+00	1.5241+01	4.8000+00	1.8297+00	4.5844+00	2.3141+00	4.4836+00	2.5359+00
CP	6.1528-01	2.7655+00	7.6148-01	1.9138-01	7.2009-01	2.8435-01	7.0075-01	3.2693-01
P/PO1	4.0475-01	1.5276+00	4.8109-01	1.8338-01	4.5948-01	2.3193-01	4.4938-01	2.5417-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.3336+00	3.2953+00	4.0477+00	3.5953+00	3.9891+00	3.7922+00	3.5578+00
CP	6.7196-01	4.7268-01	6.1708-01	5.3026-01	6.0583-01	5.6804-01	5.2306-01
P/PO1	4.3434-01	3.3028-01	4.0569-01	3.6035-01	3.9981-01	3.8008-01	3.5659-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	136.	301244	2.99	1	9.99	180.00	.00	5.01	180.0

VALVE POS 2 PO = 30.2 Q-INF = 5.215 P-INF = .8333 RE = .3925 TO = 541.

P	9.8793+00	8.4301+00	5.0793+00	4.7007+00	4.8747+00	5.0562+00	5.0859+00	5.1351+00	5.1532+00
CP	1.7346+00	1.4567+00	8.1417-01	7.4158-01	7.7495-01	8.0974-01	8.1544-01	8.2488-01	8.2834-01
P/PO1	9.8925-01	8.4414-01	5.0861-01	4.7070-01	4.8813-01	5.0630-01	5.0927-01	5.1420-01	5.1601-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.1 Q-INF = 5.203 P-INF = .8314 RE = .3916 TO = 541.

P	5.1339+00	4.2573+00	1.2109+00	1.4656-01	3.1823-01	1.7639-01	1.7552-01	1.9180-01	4.9042+00
CP	8.2695-01	6.5846-01	7.2941-02	-1.3162-01	-9.8631-02	-1.2589-01	-1.2606-01	-1.2293-01	7.6280-01
P/PO1	5.1528-01	4.2730-01	1.2154-01	1.4710-02	3.1940-02	1.7704-02	1.7616-02	1.9250-02	4.9223-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.1 Q-INF = 5.209 P-INF = .8323 RE = .3920 TO = 541.

P	5.1717+00	5.1565+00	5.0291+00	5.0508+00	4.2946+00	1.2125+00	5.1116+00	4.4886+00	4.6428+00
CP	8.3313-01	8.3020-01	8.0574-01	8.0991-01	6.6472-01	7.2999-02	8.2158-01	7.0197-01	7.3159-01
P/PO1	5.1851-01	5.1698-01	5.0421-01	5.0638-01	4.3057-01	1.2157-01	5.1248-01	4.5002-01	4.6548-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3918 TO = 541.

P	4.9323+00	4.9485+00	4.8658+00	4.8070+00	4.8747+00	4.3673+00	1.0680+00	1.4432-01	1.7699-01
CP	7.8776-01	7.9086-01	7.7498-01	7.6368-01	7.7669-01	6.7921-01	4.5383-02	-1.3207-01	-1.2579-01
P/PO1	4.9482-01	4.9644-01	4.8814-01	4.8224-01	4.8904-01	4.3813-01	1.0714-01	1.4478-02	1.7756-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.1 Q-INF = 5.203 P-INF = .8314 RE = .3916 TO = 541.

P	1.6221-01	1.5531-01	5.4434+00	4.4382+00	4.4585+00	4.5063+00	4.5863+00	4.0161+00	1.0318+00
CP	-1.2862-01	-1.2994-01	8.8644-01	6.9322-01	6.9714-01	7.0632-01	7.2170-01	6.1210-01	3.8524-02
P/PO1	1.6280-02	1.5588-02	5.4635-01	4.4545-01	4.4749-01	4.5229-01	4.6032-01	4.0309-01	1.0356-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3909 TO = 541.

P	7.7133+00	4.4224+00	4.0371+00	1.1183+00	1.4715-01	1.6438-01	1.6576-01	1.5701-01	4.7362+00
CP	1.3255+00	6.9179-01	6.1758-01	5.5555-02	-1.3146-01	-1.2814-01	-1.2787-01	-1.2956-01	7.5721-01
P/PO1	7.7562-01	4.4470-01	4.0595-01	1.1246-01	1.4797-02	1.6530-02	1.6669-02	1.5788-02	4.7625-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3904 TO = 541.

P	4.2016+00	4.2512+00	4.2882+00	4.2506+00	3.8153+00	1.1000+00	4.0418+00	3.5063+00	3.6222+00
CP	6.5028-01	6.5984-01	6.6698-01	6.5973-01	5.7580-01	5.2281-02	6.1948-01	5.1623-01	5.3856-01
P/PO1	4.2303-01	4.2802-01	4.3174-01	4.2796-01	3.8413-01	1.1075-01	4.0694-01	3.5302-01	3.6468-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3904 TO = 541.

P	3.9434+00	3.7129+00	3.9868+00	3.9631+00	3.9919+00	3.6721+00	8.8092-01	1.3069-01	1.5814-01
CP	6.0049-01	5.5606-01	6.0887-01	6.0429-01	6.0984-01	5.4818-01	1.0048-02	-1.3460-01	-1.2930-01
P/PO1	3.9702-01	3.7382-01	4.0140-01	3.9901-01	4.0191-01	3.6971-01	8.8692-02	1.3158-02	1.5922-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3903 TO = 541.

P	1.4678-01	1.4260-01	3.6729+00	3.8943+00	3.7396+00	3.7226+00	3.7664+00	3.4441+00	9.3894-01
CP	-1.3149-01	-1.3230-01	5.4846-01	5.9116-01	5.6132-01	5.5804-01	5.6649-01	5.0434-01	2.1263-02
P/PO1	1.4780-02	1.4359-02	3.6985-01	3.9215-01	3.7657-01	3.7486-01	3.7927-01	3.4682-01	9.4549-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3904 TO = 541.

P	1.1696-01	7.2303+00	3.7420+00	3.2755+00	3.4306+00	3.6405+00	3.7536+00	3.8296+00	3.7840+00
CP	-1.3724-01	1.2342+00	5.6166-01	4.7172-01	5.0163-01	5.4209-01	5.6390-01	5.7855-01	5.6976-01
P/PO1	1.1775-02	7.2796-01	3.7675-01	3.2978-01	3.4540-01	3.6653-01	3.7792-01	3.8557-01	3.8098-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3898 TO = 541.

P	3.7292+00	3.3092+00	8.7510-01	1.2708-01	1.5183-01	1.4130-01	1.4255-01	1.3774-01	1.3837-01
CP	5.6021-01	4.7912-01	9.1643-03	-1.3526-01	-1.3048-01	-1.3251-01	-1.3227-01	-1.3320-01	-1.3308-01
P/PO1	3.7599-01	3.3364-01	8.8231-02	1.2813-02	1.5308-02	1.4246-02	1.4372-02	1.3887-02	1.3951-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.0758+00	1.5499+01	4.6008+00	2.9398+00	4.0922+00	3.3086+00	4.3781+00	3.7102+00
CP	6.2713-01	2.8327+00	7.2849-01	4.0781-01	6.3030-01	4.7900-01	6.8550-01	5.5654-01
P/PO1	4.1093-01	1.5627+00	4.6387-01	2.9641-01	4.1259-01	3.3358-01	4.4142-01	3.7407-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.3617+00	3.9539+00	4.2023+00	4.2516+00	4.1930+00	4.1813+00	3.7641+00
CP	6.8233-01	6.0360-01	6.5156-01	6.6107-01	6.4975-01	6.4749-01	5.6694-01
P/PO1	4.3976-01	3.9865-01	4.2369-01	4.2866-01	4.2275-01	4.2157-01	3.7951-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

WOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	137.	301244	2.99	1	13.99	180.00	.00	1.01	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3891 TO = 541.

P	9.8325+00	7.8691+00	4.3573+00	3.9631+00	4.0991+00	4.3167+00	4.3477+00	4.4140+00	4.4312+00
CP	1.7422+00	1.3624+00	6.8306-01	6.0681-01	6.3311-01	6.7522-01	6.8895-01	6.9403-01	6.9737-01
P/PO1	9.9322-01	7.9489-01	4.4014-01	4.0032-01	4.1406-01	4.3605-01	4.4322-01	4.4587-01	4.4761-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3903 TO = 541.

P	4.4095+00	3.6640+00	1.0125+00	2.7921-01	2.9015-01	2.7567-01	2.5213-01	2.2987-01	4.2570+00
CP	6.9050-01	5.4673-01	3.5442-02	-1.0595-01	-1.0384-01	-1.0664-01	-1.1118-01	-1.1547-01	6.6103-01
P/PO1	4.4403-01	3.6895-01	1.0195-01	2.8116-02	2.9217-02	2.7759-02	2.5389-02	2.3148-02	4.2867-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3900 TO = 541.

P	4.5292+00	4.4469+00	4.3447+00	4.3882+00	3.7585+00	1.0386+00	4.6055+00	3.9974+00	4.1138+00
CP	7.1426-01	6.9838-01	6.7866-01	6.8704-01	5.6553-01	4.0632-02	7.2899-01	6.1164-01	6.3410-01
P/PO1	4.5643-01	4.4814-01	4.3784-01	4.4222-01	3.7877-01	1.0466-01	4.6413-01	4.0285-01	4.1458-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3902 TO = 541.

P	4.4725+00	4.3613+00	4.3447+00	4.3382+00	4.4207+00	3.9881+00	9.5887-01	2.6184-01	2.6525-01
CP	7.0399-01	6.8251-01	6.7931-01	6.7805-01	6.9399-01	6.1043-01	2.5397-02	-1.0922-01	-1.0856-01
P/PO1	4.5107-01	4.3986-01	4.3819-01	4.3752-01	4.4585-01	4.0222-01	9.6707-02	2.6406-02	2.6752-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3905 TO = 541.

P	2.5242-01	2.3766-01	5.2300+00	4.1944+00	4.3576+00	4.3926+00	4.3813+00	3.8669+00	9.6154-01
CP	-1.1108-01	-1.1393-01	8.4950-01	6.4965-01	6.8115-01	6.8789-01	6.8572-01	5.8644-01	2.5765-02
P/PO1	2.5438-02	2.3951-02	5.2706-01	4.2269-01	4.3914-01	4.4267-01	4.4153-01	3.8969-01	9.6900-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3904 TO = 541.

P	7.7133+00	4.3980+00	4.0559+00	1.1536+00	1.7055-01	2.1887-01	2.2566-01	2.2000-01	5.2154+00
CP	1.3292+00	6.8920-01	6.2317-01	6.2901-02	-1.2687-01	-1.1754-01	-1.1623-01	-1.1732-01	8.4700-01
P/PO1	7.7756-01	4.4335-01	4.0887-01	1.1629-01	1.7193-02	2.2064-02	2.2749-02	2.2178-02	5.2575-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3906 TO = 541.

P	4.3465+00	4.3980+00	4.4012+00	4.4507+00	3.9729+00	1.1690+00	4.4966+00	3.9539+00	4.1201+00
CP	6.7887-01	6.8880-01	6.8943-01	6.9897-01	6.0679-01	6.5774-02	7.0784-01	6.0312-01	6.3518-01
P/PO1	4.3796-01	4.4314-01	4.4347-01	4.4845-01	4.0032-01	1.1779-01	4.5308-01	3.9840-01	4.1514-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3902 TO = 541.

P	4.4662+00	4.3001+00	4.4514+00	4.3819+00	4.4018+00	4.0513+00	9.9006-01	2.2188-01	2.3170-01
CP	7.0291-01	6.7083-01	7.0006-01	6.8663-01	6.9047-01	6.2276-01	3.1449-02	-1.1693-01	-1.1504-01
P/PO1	4.5051-01	4.3376-01	4.4902-01	4.4201-01	4.4401-01	4.0866-01	9.9868-02	2.2382-02	2.3371-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3904 TO = 541.

P	2.2017-01	2.1790-01	4.2945+00	4.5069+00	4.3955+00	4.3673+00	4.4[illegible]5+00	4.0845+00	1.0770+00
CP	-1.1728-01	-1.1772-01	6.6935-01	7.1037-01	6.8885-01	6.8341-01	6.8983-01	6.2881-01	4.8149-02
P/PO1	2.2198-02	2.1969-02	4.3298-01	4.5440-01	4.4317-01	4.4032-01	4.4368-01	4.1181-01	1.0859-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3908 TO = 541.

P	1.9586-01	7.8847+00	4.3887+00	3.9131+00	4.1180+00	4.3167+00	4.4070+00	4.4824+00	4.4686+00
CP	-1.2202-01	1.3609+00	6.8661-01	5.9489-01	6.3441-01	6.7273-01	6.9014-01	7.0468-01	7.0202-01
P/PO1	1.9726-02	7.9410-01	4.4200-01	3.9410-01	4.1474-01	4.3475-01	4.4384-01	4.5143-01	4.5004-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3911 TO = 541.

P	4.4473+00	3.8291+00	1.0074+00	2.2819-01	2.4023-01	2.2672-01	2.2757-01	2.2235-01	2.2112-01
CP	6.9725-01	5.7812-01	3.4340-02	-1.1582-01	-1.1350-01	-1.1610-01	-1.1595-01	-1.1694-01	-1.1718-01
P/PO1	4.4755-01	3.8534-01	1.0138-01	2.2964-02	2.4175-02	2.2816-02	2.2896-02	2.2376-02	2.2253-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.1227+00	1.5717+01	2.4000+00	3.8797+00	3.6656+00	3.7898+00	4.3711+00	4.1992+00
CP	6.3469-01	2.8691+00	3.0271-01	5.8786-01	5.4661-01	5.7055-01	6.8256-01	6.4944-01
P/PO1	4.1488-01	1.5817+00	2.4152-01	3.9043-01	3.6889-01	3.8139-01	4.3988-01	4.2259-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.4531+00	4.2305+00	4.3547+00	4.4414+00	4.2492+00	4.2961+00	3.8344+00
CP	6.9837-01	6.5546-01	6.7940-01	6.9611-01	6.5908-01	6.6811-01	5.7913-01
P/PO1	4.4814-01	4.2573-01	4.3823-01	4.4696-01	4.2762-01	4.3234-01	3.8587-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	138.	301244	2.99	1	14.64	199.89	-4.93	1.20	180.0

VALVE POS 2 PO = 30.1 Q-INF = 5.200 P-INF = .8310 RE = .3919 TO = 541.

P	9.9105+00	7.9315+00	4.4012+00	3.9631+00	4.0865+00	4.2598+00	4.4582+00	4.3145+00	4.3068+00
CP	1.7459+00	1.3654+00	6.8652-01	6.0227-01	6.2599-01	6.5933-01	6.9747-01	6.6984-01	6.6835-01
P/PO1	9.9516-01	7.9644-01	4.4195-01	3.9795-01	4.1034-01	4.2775-01	4.4767-01	4.3324-01	4.3246-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.1 Q-INF = 5.210 P-INF = .8326 RE = .3927 TO = 541.

P	4.3843+00	3.6701+00	1.0201+00	2.5138-01	2.6415-01	2.4981-01	2.3402-01	2.1906-01	3.9831+00
CP	6.8169-01	5.4461-01	3.5996-02	-1.1155-01	-1.0910-01	-1.1185-01	-1.1488-01	-1.1775-01	6.0669-01
P/PO1	4.3943-01	3.6784-01	1.0224-01	2.5196-02	2.6475-02	2.5038-02	2.3455-02	2.1956-02	3.9922-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3916 TO = 541.

P	4.1701+00	4.2834+00	4.1564+00	4.0819+00	3.4671+00	9.5672-01	4.0611+00	3.4628+00	3.5164+00
CP	6.4271-01	6.6066-01	6.4005-01	6.2572-01	5.0646-01	2.4317-02	6.2172-01	5.0659-01	5.1699-01
P/PO1	4.1907-01	4.2844-01	4.1768-01	4.1020-01	3.4792-01	9.6143-02	4.0811-01	3.4799-01	3.5337-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.1 Q-INF = 5.212 P-INF = .8328 RE = .3928 TO = 541.

P	3.7796+00	3.8536+00	3.8048+00	3.8006+00	3.8657+00	3.4382+00	8.4194-01	2.3552-01	2.3859-01
CP	5.6540-01	5.7960-01	5.7023-01	5.6943-01	5.8193-01	4.9990-01	1.7501-03	-1.1460-01	-1.1401-01
P/PO1	3.7870-01	3.8611-01	3.8122-01	3.8080-01	3.8733-01	3.4450-01	8.4359-02	2.3598-02	2.3906-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.2 Q-INF = 5.215 P-INF = .8333 RE = .3930 TO = 541.

P	2.3513-01	2.2449-01	3.8738+00	3.5630+00	3.6009+00	3.6468+00	3.7024+00	3.2203+00	8.1090-01
CP	-1.1471-01	-1.1675-01	5.8302-01	5.2343-01	5.3068-01	5.3948-01	5.5014-01	4.5771-01	-4.3014-03
P/PO1	2.3544-02	2.2479-02	3.8790-01	3.5678-01	3.6057-01	3.6517-01	3.7073-01	3.2246-01	8.1199-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3926 TO = 541.

P	7.0433+00	3.6517+00	3.2836+00	9.2943-01	1.8147-01	2.0964-01	2.1313-01	2.0684-01	3.7715+00
CP	1.1922+00	5.4120-01	4.7054-01	1.8621-02	-1.2496-01	-1.1955-01	-1.1888-01	-1.2009-01	5.6419-01
P/PO1	7.0604-01	3.6606-01	3.2916-01	9.3169-02	1.8191-02	2.1014-02	2.1364-02	2.0734-02	3.7807-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.2 Q-INF = 5.216 P-INF = .8335 RE = .3931 TO = 541.

P	3.5780+00	3.6456+00	3.6604+00	3.7006+00	3.2982+00	9.6951-01	3.9522+00	3.3695+00	3.4541+00
CP	5.2619-01	5.3915-01	5.4198-01	5.4968-01	4.7254-01	2.6082-02	5.9792-01	4.8622-01	5.0244-01
P/PO1	3.5822-01	3.6499-01	3.6647-01	3.7049-01	3.3021-01	9.7065-02	3.9568-01	3.3735-01	3.4582-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3924 TO = 541.

P	3.7292+00	3.7251+00	3.7985+00	3.8068+00	3.8279+00	3.5014+00	8.4194-01	2.0543-01	2.1101-01
CP	5.5640-01	5.5562-01	5.6971-01	5.7131-01	5.7536-01	5.1265-01	1.9010-03	-1.2034-01	-1.1927-01
P/PO1	3.7400-01	3.7359-01	3.8095-01	3.8179-01	3.8390-01	3.5116-01	8.4438-02	2.0603-02	2.1162-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

AEROSPACE ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3921 TO = 541.

P	2.0381-01	2.0331-01	3.9743+00	4.1131+00	4.1810+00	4.1082+00	4.0290+00	3.6431+00	9.5149-01
CP	-1.2062-01	-1.2071-01	6.0418-01	6.3087-01	6.4393-01	6.2992-01	6.1471-01	5.4052-01	2.3112-02
P/PO1	2.0459-02	2.0409-02	3.9895-01	4.1789-01	4.1971-01	4.1239-01	4.0445-01	3.6570-01	9.5514-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3906 TO = 541.

P	1.7950-01	7.8380+00	4.3698+00	3.8756+00	4.0360+00	4.2156+00	4.4134+00	4.3269+00	4.2881+00
CP	-1.2516-01	1.3526+00	6.8337-01	5.8801-01	6.1896-01	6.5361-01	6.9177-01	6.7510-01	6.6760-01
P/PO1	1.8087-02	7.8976-01	4.4030-01	3.9051-01	4.0667-01	4.2477-01	4.4469-01	4.3598-01	4.3207-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3904 TO = 541.

P	4.3465+00	3.8719+00	1.0201+00	1.9712-01	2.1215-01	2.0132-01	2.0338-01	1.9979-01	2.0273-01
CP	6.7940-01	5.8777-01	3.7160-02	-1.2174-01	-1.1883-01	-1.2092-01	-1.2053-01	-1.2122-01	-1.2065-01
P/PO1	4.3823-01	3.9038-01	1.0285-01	1.9874-02	2.1390-02	2.0298-02	2.0505-02	2.0143-02	2.0440-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.2859+00	1.3463+01	2.4000+00	2.4594+00	3.0281+00	3.0508+00	3.5180+00	3.4281+00
CP	4.7463-01	2.4394+00	3.0358-01	3.1504-01	4.2485-01	4.2923-01	5.1943-01	5.0208-01
P/PO1	3.3130-01	1.3573+00	2.4198-01	2.4796-01	3.0531-01	3.0759-01	3.5469-01	3.4564-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	3.6141+00	3.4055+00	3.5250+00	3.6281+00	3.4500+00	3.4922+00	3.1242+00
CP	5.3798-01	4.9771-01	5.2079-01	5.4070-01	5.0631-01	5.1445-01	4.4341-01
P/PO1	3.6438-01	3.4335-01	3.5540-01	3.6580-01	3.4784-01	3.5209-01	3.1499-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	139.	301244	2.99	1	13.42	227.40	-9.00	5.01	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.163 P-INF = .8250 RE = .3891 TO = 541.

P	9.6923+00	8.2743+00	5.0228+00	4.6007+00	4.7297+00	4.8287+00	4.8617+00	4.7932+00	4.7611+00
CP	1.7174+00	1.4428+00	8.1301-01	7.3126-01	7.5625-01	7.7542-01	7.8182-01	7.6855-01	7.6233-01
P/PO1	9.8028-01	8.3686-01	5.0800-01	4.6531-01	4.7836-01	4.8837-01	4.9172-01	4.8478-01	4.8154-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3888 TO = 541.

P	4.8253+00	4.0310+00	1.1676+00	1.4517-01	1.9447-01	1.8193-01	1.8341-01	1.7910-01	4.1698+00
CP	7.7549-01	6.2153-01	6.5547-02	-1.3165-01	-1.2210-01	-1.2453-01	-1.2424-01	-1.2508-01	6.4845-01
P/PO1	4.8841-01	4.0801-01	1.1767-01	1.4694-02	1.9684-02	1.8415-02	1.8565-02	1.8129-02	4.2207-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.153 P-INF = .8235 RE = .3884 TO = 541.

P	4.3150+00	4.3246+00	4.2882+00	4.2944+00	3.6261+00	1.0283+00	3.9714+00	3.3385+00	3.4043+00
CP	6.7751-01	6.7937-01	6.7231-01	6.7351-01	5.4383-01	3.9750-02	6.1083-01	4.8801-01	5.0080-01
P/PO1	4.3724-01	4.3821-01	4.3453-01	4.3516-01	3.6744-01	1.0420-01	4.0242-01	3.3829-01	3.4496-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.8 Q-INF = 5.155 P-INF = .8237 RE = .3885 TO = 541.

P	3.6914+00	3.9943+00	3.8424+00	3.7506+00	3.7522+00	3.2865+00	7.7957-01	1.9603-01	2.0090-01
CP	5.5627-01	6.1503-01	5.8557-01	5.6775-01	5.6808-01	4.7774-01	-8.5696-03	-1.2177-01	-1.2082-01
P/PO1	3.7393-01	4.0462-01	3.8923-01	3.7993-01	3.8010-01	3.3292-01	7.8970-02	1.9857-02	2.0350-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.154 P-INF = .8236 RE = .3885 TO = 541.

P	1.9540-01	1.9154-01	3.5034+00	3.3380+00	3.1468+00	3.1475+00	3.1771+00	2.8038+00	6.8036-01
CP	-1.2188-01	-1.2263-01	5.1991-01	4.8782-01	4.5073-01	4.5086-01	4.5661-01	3.8418-01	-2.7795-02
P/PO1	1.9797-02	1.9406-02	3.5495-01	3.3819-01	3.1882-01	3.1889-01	3.2189-01	2.8407-01	6.8930-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.153 P-INF = .8234 RE = .3883 TO = 541.

P	6.3732+00	3.0339+00	2.6746+00	7.6319-01	1.5235-01	1.7731-01	1.8155-01	1.7628-01	2.9189+00
CP	1.0771+00	4.2902-01	3.5929-01	-1.1677-02	-1.3023-01	-1.2538-01	-1.2456-01	-1.2558-01	4.0669-01
P/PO1	6.4591-01	3.0748-01	2.7107-01	7.7347-02	1.5441-02	1.7970-02	1.8400-02	1.7866-02	2.9582-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3888 TO = 541.

P	2.7213+00	2.9177+00	2.9572+00	2.9692+00	2.6360+00	7.8533-01	3.0938+00	2.5738+00	2.6139+00
CP	3.6768-01	4.0575-01	4.1340-01	4.1573-01	3.5115-01	-7.5733-03	4.3989-01	3.3908-01	3.4687-01
P/PO1	2.7545-01	2.9533-01	2.9932-01	3.0054-01	2.6682-01	7.9490-02	3.1316-01	2.6052-01	2.6458-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.162 P-INF = .8248 RE = .3890 TO = 541.

P	2.8347+00	2.9911+00	2.9320+00	2.8754+00	2.9576+00	2.6671+00	6.7550-01	1.6876-01	1.7515-01
CP	3.8940-01	4.1970-01	4.0826-01	3.9729-01	4.1322-01	3.5694-01	-2.8922-02	-1.2710-01	-1.2586-01
P/PO1	2.8679-01	3.0262-01	2.9664-01	2.9091-01	2.9923-01	2.6984-01	6.8342-02	1.7074-02	1.7720-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3900 TO = 541.

P	1.6595-01	1.6801-01	3.0827+00	3.2942+00	1.3236+00	3.2296+00	3.2091+00	2.8722+00	7.3308-01
CP	-1.2772-01	-1.2732-01	4.3596-01	4.7683-01	9.5998-02	4.6435-01	4.6038-01	3.9527-01	-1.8124-02
P/P01	1.6747-02	1.6955-02	3.1110-01	3.3245-01	1.3358-01	3.2593-01	3.2386-01	2.8986-01	7.3981-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3897 TO = 541.

P	1.5693-01	7.1212+00	3.6855+00	3.2630+00	3.3738+00	3.4888+00	3.5486+00	3.5125+00	3.5288+00
CP	-1.2944-01	1.2175+00	5.5300-01	4.7129-01	4.9273-01	5.1495-01	5.2653-01	5.1955-01	5.2270-01
P/P01	1.5850-02	7.1922-01	3.7222-01	3.2955-01	3.4075-01	3.5236-01	3.5840-01	3.5476-01	3.5640-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.190 P-INF = .8293 RE = .3912 TO = 541.

P	3.6221+00	3.1624+00	8.3694-01	1.5677-01	1.7419-01	1.6531-01	1.6855-01	1.6547-01	1.6688-01
CP	5.3811-01	4.4954-01	1.4688-03	-1.2959-01	-1.2623-01	-1.2794-01	-1.2732-01	-1.2791-01	-1.2764-01
P/P01	3.6445-01	3.1820-01	8.4212-02	1.5774-02	1.7527-02	1.6633-02	1.6959-02	1.6650-02	1.6791-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.7000+00	1.1611+01	3.8016+00	1.6289+00	3.0000+00	2.3891+00	2.9836+00	2.6156+00
CP	3.6044-01	2.0774+00	5.7269-01	1.5406-01	4.1825-01	3.0053-01	4.1509-01	3.4419-01
P/P01	2.7167-01	1.1683+00	3.8251-01	1.6390-01	3.0186-01	2.4038-01	3.0021-01	2.6318-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	2.9906+00	2.6039+00	2.8969+00	2.8898+00	2.8383+00	2.8148+00	2.5570+00
CP	4.1644-01	3.4193-01	3.9838-01	3.9702-01	3.8709-01	3.8257-01	3.3290-01
P/P01	3.0091-01	2.6200-01	2.9148-01	2.9077-01	2.8558-01	2.8323-01	2.5729-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	140.	301244	2.99	1	11.17	206.76	-5.00	5.00	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RL = .3908 TO = 541.

P	9.8637+00	8.4145+00	5.1044+00	4.6444+00	4.7801+00	4.9235+00	4.9706+00	4.9548+00	4.9416+00
CP	1.7422+00	1.4628+00	8.2449-01	7.3580-01	7.6197-01	7.8960-01	7.9870-01	7.9565-01	7.9309-01
P/PO1	9.9325-01	8.4732-01	5.1400-01	4.6768-01	4.8135-01	4.9576-01	5.0053-01	4.9894-01	4.9760-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3919 TO = 541.

P	5.0394+00	4.1961+00	1.1829+00	1.7393-01	2.1319-01	2.0132-01	2.0105-01	1.9556-01	4.5557+00
CP	8.0939-01	6.4720-01	6.7704-02	-1.2634-01	-1.1879-01	-1.2108-01	-1.2113-01	-1.2218-01	7.1636-01
P/PO1	5.0611-01	4.2142-01	1.1880-01	1.7468-02	2.1411-02	2.0219-02	2.0192-02	1.9640-02	4.5753-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3910 TO = 541.

P	4.7371+00	4.8139+00	4.7214+00	4.6632+00	3.9540+00	1.1179+00	4.5094+00	3.7985+00	3.9227+00
CP	7.5337-01	7.6819-01	7.5036-01	7.3914-01	6.0243-01	5.5700-02	7.0949-01	5.7245-01	5.9244-01
P/PO1	4.7686-01	4.8460-01	4.7529-01	4.6943-01	3.9804-01	1.1253-01	4.5395-01	3.8238-01	3.9282-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.1 Q-INF = 5.207 P-INF = .8320 RE = .3924 TO = 541.

P	4.1575+00	4.3919+00	4.2945+00	4.2256+00	4.2441+00	3.7542+00	9.0171-01	2.0261-01	2.1193-01
CP	6.3866-01	6.8367-01	6.6496-01	6.5174-01	6.5529-01	5.6121-01	1.3379-02	-1.2088-01	-1.1909-01
P/PO1	4.1696-01	4.4046-01	4.3069-01	4.2379-01	4.2564-01	3.7651-01	9.0432-02	2.0320-02	2.1254-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3926 TO = 541.

P	2.0334-01	2.0096-01	4.2317+00	3.8381+00	3.7081+00	3.7416+00	3.7920+00	3.3198+00	7.9584-01
CP	-1.2076-01	-1.2122-01	6.5253-01	5.7697-01	5.5201-01	5.5844-01	5.6813-01	4.7748-01	-7.0236-03
P/PO1	2.0384-02	2.0144-02	4.2420-01	3.8474-01	3.7171-01	3.7507-01	3.8012-01	3.3279-01	7.9777-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.2 Q-INF = 5.214 P-INF = .8332 RE = .3930 TO = 541.

P	6.9965+00	3.6028+00	3.2397+00	9.1684-01	1.4507-01	1.8055-01	1.8480-01	1.7863-01	3.5350+00
CP	1.1820+00	5.3116-01	4.6152-01	1.6040-02	-1.3197-01	-1.2517-01	-1.2435-01	-1.2553-01	5.1816-01
P/PO1	7.0070-01	3.6082-01	3.2445-01	9.1821-02	1.4529-02	1.8082-02	1.8508-02	1.7890-02	3.5403-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.212 P-INF = .8328 RE = .3928 TO = 541.

P	3.3512+00	3.4866+00	3.5411+00	3.5505+00	3.1468+00	9.1323-01	3.5230+00	2.9779+00	3.0807+00
CP	4.8321-01	5.0918-01	5.1963-01	5.2145-01	4.4399-01	1.5429-02	5.1617-01	4.1157-01	4.3130-01
P/PO1	3.3578-01	3.4934-01	3.5480-01	3.5575-01	3.1530-01	9.1502-02	3.5299-01	2.9837-01	3.0867-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.2 Q-INF = 5.221 P-INF = .8342 RE = .3935 TO = 541.

P	3.3575+00	3.2174+00	3.3088+00	3.4068+00	3.4369+00	3.1412+00	7.7438-01	1.6735-01	1.7745-01
CP	4.8332-01	4.5649-01	4.7398-01	4.9275-01	4.9852-01	4.4188-01	-1.1467-02	-1.2774-01	-1.2580-01
P/PO1	3.3584-01	3.2182-01	3.3096-01	3.4076-01	3.4378-01	3.1419-01	7.7457-02	1.6739-02	1.7749-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.206 P-INF = .8319 RE = .3924 TO = 541.

P	1.6969-01	1.6895-01	3.4029+00	3.5755+00	3.6387+00	3.5330+00	3.4525+00	3.1209+00	8.2095-01
CP	-1.2720-01	-1.2734-01	4.9384-01	5.2700-01	5.3913-01	5.1883-01	5.0337-01	4.3966-01	-2.1062-03
P/PO1	1.7020-02	1.6947-02	3.4133-01	3.5865-01	3.6498-01	3.5438-01	3.4631-01	3.1304-01	8.2345-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.2 Q-INF = 5.215 P-INF = .8333 RE = .3930 TO = 541.

P	1.4704-01	7.2614+00	3.7671+00	3.2880+00	3.4243+00	3.5836+00	3.7728+00	3.7177+00	3.6533+00
CP	-1.3160-01	1.2326+00	5.6255-01	4.7069-01	4.9682-01	5.2736-01	5.6365-01	5.5308-01	5.4073-01
P/PO1	1.4723-02	7.2712-01	3.7721-01	3.2924-01	3.4289-01	3.5884-01	3.7779-01	3.7227-01	3.6582-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.1 Q-INF = 5.205 P-INF = .8317 RE = .3923 TO = 541.

P	3.7166+00	3.2664+00	8.7001-01	1.6001-01	1.7731-01	1.6623-01	1.6762-01	1.6265-01	1.6228-01
CP	5.5431-01	4.6781-01	7.1709-03	-1.2905-01	-1.2572-01	-1.2785-01	-1.2759-01	-1.2854-01	-1.2861-01
P/PO1	3.7291-01	3.2774-01	8.7294-02	1.6055-02	1.7791-02	1.6679-02	1.6819-02	1.6320-02	1.6283-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.2602+00	1.3343+01	2.4000+00	1.8469+00	3.4477+00	2.6875+00	3.5766+00	3.0125+00	
CP	4.6661-01	2.4039+00	3.0134-01	1.9507-01	5.0264-01	3.5658-01	5.2741-01	4.1903-01	
P/PO1	3.2711-01	1.3388+00	2.4081-01	1.8531-01	3.4593-01	2.6965-01	3.5886-01	3.0226-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	3.5813+00	3.1219+00	3.4102+00	3.4289+00	3.3797+00	3.3750+00	3.0703+00
CP	5.2831-01	4.4004-01	4.9543-01	4.9904-01	4.8958-01	4.8868-01	4.3014-01
P/PO1	3.5933-01	3.1324-01	3.4216-01	3.4404-01	3.3911-01	3.3864-01	3.0806-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

AEDC ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	141.	301244	2.99	1	10.22	241.23	-8.95	10.04	180.0

VALVE POS 2 PO = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3923 TO = 541.

P	9.5832+00	8.8976+00	5.9058+00	5.5883+00	5.6819+00	5.7325+00	5.6880+00	5.5765+00	5.5515+00
CP	1.6817+00	1.5495+00	9.7476-01	9.1378-01	9.3177-01	9.4147-01	9.3294-01	9.1151-01	9.0670-01
P/PO1	9.6140-01	8.9262-01	5.9247-01	5.6063-01	5.7002-01	5.7509-01	5.7063-01	5.5944-01	5.5693-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3914 TO = 541.

P	5.6820+00	4.7222+00	1.3890+00	1.5120-01	1.5911-01	1.5238-01	1.5694-01	1.5137-01	4.9291+00
CP	9.3433-01	7.4951-01	1.0767-01	-1.3068-01	-1.2915-01	-1.3045-01	-1.2957-01	-1.3065-01	7.8936-01
P/PO1	5.7135-01	4.7484-01	1.3967-01	1.5204-02	1.6000-02	1.5323-02	1.5781-02	1.5221-02	4.9565-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3921 TO = 541.

P	5.0142+00	5.0097+00	4.9349+00	4.9570+00	4.1937+00	1.2304+00	4.5607+00	3.8793+00	3.9458+00
CP	8.0409-01	8.0321-01	7.8884-01	7.9309-01	6.4635-01	7.6732-02	7.1691-01	5.8593-01	5.9671-01
P/PO1	5.0335-01	5.0289-01	4.9538-01	4.9760-01	4.2097-01	1.2351-01	4.5782-01	3.8942-01	3.9609-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3910 TO = 541.

P	4.1953+00	4.5203+00	4.4200+00	4.3382+00	4.2756+00	3.7289+00	9.1730-01	1.2606-01	1.5492-01
CP	6.4882-01	7.1145-01	6.9213-01	6.7634-01	6.6430-01	5.5893-01	1.7007-02	-1.3550-01	-1.2993-01
P/PO1	4.2226-01	4.5497-01	4.4488-01	4.3664-01	4.3034-01	3.7532-01	9.2326-02	1.2688-02	1.5593-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3910 TO = 541.

P	1.5099-01	1.5107-01	3.6855+00	3.8318+00	3.5567+00	3.4382+00	3.3629+00	2.9468+00	7.2052-01
CP	-1.3069-01	-1.3067-01	5.5066-01	5.7887-01	5.2584-01	5.0299-01	4.8847-01	4.0826-01	-2.0898-02
P/PO1	1.5199-02	1.5208-02	3.7100-01	3.8573-01	3.5804-01	3.4611-01	3.3853-01	2.9664-01	7.2532-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.1 Q-INF = 5.197 P-INF = .8305 RE = .3917 TO = 541.

P	6.3109+00	3.0095+00	2.6872+00	7.1786-01	1.2768-01	1.5053-01	1.5369-01	1.4902-01	2.5206+00
CP	1.0545+00	4.1926-01	3.5725-01	-2.1671-02	-1.3523-01	-1.3083-01	-1.3022-01	-1.3112-01	3.2519-01
P/PO1	6.3410-01	3.0238-01	2.7000-01	7.2128-02	1.2829-02	1.5125-02	1.5443-02	1.4973-02	2.5326-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3912 TO = 541.

P	2.5890+00	2.7159+00	2.7751+00	2.8192+00	2.4910+00	6.7663-01	2.6647+00	2.2045+00	2.2921+00
CP	3.3898-01	3.6342-01	3.7483-01	3.8332-01	3.2009-01	-2.9441-02	3.5356-01	2.6489-01	2.8178-01
P/PO1	2.6046-01	2.7322-01	2.7918-01	2.8362-01	2.5060-01	6.8071-02	2.6807-01	2.2177-01	2.3059-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3904 TO = 541.

P	2.4693+00	2.3978+00	2.3795+00	2.5129+00	2.5793+00	2.3534+00	5.9190-01	1.4197-01	1.4987-01
CP	3.1696-01	3.0315-01	2.9963-01	3.2537-01	3.3819-01	2.9459-01	-4.5514-02	-1.3238-01	-1.3086-01
P/PO1	2.4897-01	2.4175-01	2.3991-01	2.5336-01	2.6005-01	2.3728-01	5.9678-02	1.4314-02	1.5110-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3915 TO = 541.

P	1.4211-01	1.4307-01	2.4926+00	2.6692+00	2.6865+00	2.6292+00	2.5494+00	2.2946+00	6.1416-01
CP	-1.3243-01	-1.3225-01	3.2010-01	3.5410-01	3.5743-01	3.4641-01	3.3104-01	2.8199-01	-4.1549-02
P/PO1	1.4287-02	1.4384-02	2.5060-01	2.6836-01	2.7010-01	2.6434-01	2.5631-01	2.3070-01	6.1748-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3908 TO = 541.

P	1.2527-01	6.3576+00	2.9823+00	2.6066+00	2.6739+00	2.7683+00	2.8056+00	2.8100+00	2.8255+00
CP	-1.3563-01	1.0664+00	4.1537-01	3.4293-01	3.5589-01	3.7410-01	3.8130-01	3.8215-01	3.8514-01
P/PO1	1.2616-02	6.4030-01	3.0035-01	2.6252-01	2.6929-01	2.7880-01	2.8256-01	2.8301-01	2.8457-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3906 TO = 541.

P	2.8977+00	2.5385+00	5.7614-01	1.2987-01	1.4507-01	1.3483-01	1.3837-01	1.3445-01	1.3286-01
CP	3.9932-01	3.3001-01	-4.8626-02	-1.3474-01	-1.3180-01	-1.3378-01	-1.3310-01	-1.3385-01	-1.3416-01
P/PO1	2.9197-01	2.5578-01	5.8052-02	1.3085-02	1.4618-02	1.3586-02	1.3942-02	1.3547-02	1.3387-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.6719+00	1.1611+01	4.8000+00	1.1477+00	3.6844+00	1.9289+00	3.3258+00	1.6367+00
CP	3.5575-01	2.0806+00	7.6637-01	6.1649-02	5.5111-01	2.1239-01	4.8192-01	1.5601-01
P/PO1	2.6922-01	1.1699+00	4.8365-01	1.1564-01	3.7124-01	1.9436-01	3.3511-01	1.6492-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	3.0305+00	2.1258+00	2.8313+00	2.3555+00	2.6648+00	2.5172+00	2.3906+00
CP	4.2494-01	2.5038-01	3.8650-01	2.9470-01	3.5439-01	3.2590-01	3.0148-01
P/PO1	3.0535-01	2.1419-01	2.8528-01	2.3734-01	2.6851-01	2.5363-01	2.4088-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	142.	301244	2.99	1	7.06	225.14	-5.00	10.01	180.0

VALVE POS 2 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3918 TO = 541.

P	9.7079+00	8.9911+00	6.0148+00	5.6035+00	5.6533+00	5.7344+00	5.6378+00	5.7533+00	5.6068+00
CP	1.7078+00	1.5699+00	9.9734-01	9.1821-01	9.2779-01	9.4338-01	9.2481-01	9.4703-01	9.1884-01
P/PO1	9.7527-01	9.0326-01	6.0426-01	5.6294-01	5.6794-01	5.7608-01	5.6639-01	5.7799-01	5.6327-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3914 TO = 541.

P	5.7701+00	4.8751+00	1.3991+00	1.4517-01	1.5339-01	1.4453-01	1.4673-01	1.4573-01	5.3150+00
CP	9.5131-01	7.7895-01	1.0963-01	-1.3184-01	-1.3076-01	-1.3196-01	-1.3154-01	-1.3173-01	8.6366-01
P/PO1	5.8022-01	4.9022-01	1.4069-01	1.4598-02	1.5425-02	1.4533-02	1.4754-02	1.4654-02	5.3445-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3910 TO = 541.

P	5.4678+00	5.5174+00	5.4623+00	5.4133+00	4.5531+00	1.3404+00	5.0859+00	4.3767+00	4.4935+00
CP	8.9474-01	9.0379-01	8.9317-01	8.8374-01	7.1791-01	9.8601-02	8.2063-01	6.8390-01	7.0742-01
P/PO1	5.5042-01	5.5541-01	5.4986-01	5.4494-01	4.5834-01	1.3494-01	5.1198-01	4.4058-01	4.5234-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3903 TO = 541.

P	4.7308+00	5.0647+00	4.9286+00	4.7757+00	4.7738+00	4.1966+00	1.0394+00	1.2365-01	1.5217-01
CP	7.5373-01	8.1822-01	7.9193-01	7.6241-01	7.6205-01	6.5059-01	4.0923-02	-1.3592-01	-1.3641-01
P/PO1	4.7705-01	5.1072-01	4.9700-01	4.8158-01	4.8139-01	4.2319-01	1.0482-01	1.2469-02	1.5344-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3903 TO = 541.

P	1.4959-01	1.4683-01	4.5770+00	4.2631+00	3.9982+00	3.9691+00	3.9650+00	3.4814+00	8.6613-01
CP	-1.3091-01	-1.3144-01	7.2404-01	6.6343-01	6.1226-01	6.0665-01	6.0585-01	5.1248-01	7.4593-03
P/PO1	1.5084-02	1.4807-02	4.6154-01	4.2989-01	4.0317-01	4.0024-01	3.9983-01	3.5107-01	8.7340-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3901 TO = 541.

P	6.8875+00	3.5416+00	3.2020+00	8.4883-01	1.3208-01	1.5607-01	1.5694-01	1.5090-01	2.9625+00
CP	1.1710+00	5.2453-01	4.5891-01	4.2211-03	-1.3427-01	-1.2964-01	-1.2947-01	-1.3064-01	4.1262-01
P/PO1	6.9496-01	3.5736-01	3.2309-01	8.5649-02	1.3327-02	1.5748-02	1.5836-02	1.5226-02	2.9892-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3902 TO = 541.

P	3.1622+00	3.2786+00	3.3150+00	3.3568+00	2.9387+00	8.0835-01	3.0106+00	2.5116+00	2.5641+00
CP	4.5104-01	4.7351-01	4.8055-01	4.8861-01	4.0786-01	-3.6506-03	4.2174-01	3.2536-01	3.3550-01
P/PO1	3.1898-01	3.3072-01	3.3439-01	3.3860-01	2.9643-01	8.1539-02	3.0368-01	2.5335-01	2.5865-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3913 TO = 541.

P	2.7780+00	2.5691+00	2.8128+00	2.9254+00	2.9639+00	2.6924+00	6.3983-01	1.3868-01	1.4941-01
CP	3.7522-01	3.3498-01	3.8192-01	4.0362-01	4.1103-01	3.5874-01	-3.6568-02	-1.3309-01	-1.3102-01
P/PO1	2.7939-01	2.5837-01	2.8288-01	2.9422-01	2.9809-01	2.7078-01	6.4349-02	1.3947-02	1.5026-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH [illegible] TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3914 TO = 541.

P	1.4211-01	1.4730-01	2.6872+00	2.9504+00	2.9261+00	2.8062+00	2.7543+00	2.5054+00	6.7533-01
CP	-1.3243-01	-1.3143-01	3.5765-01	4.0834-01	4.0366-01	3.8057-01	3.7058-01	3.2265-01	-2.9751-02
P/PO1	1.4290-02	1.4812-02	2.7021-01	2.9668-01	2.9424-01	2.8218-01	2.7697-01	2.5193-01	6.7909-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3927 TO = 540.

P	1.0924-01	6.4667+00	3.0137+00	2.6129+00	2.6991+00	2.8062+00	2.9913+00	2.9530+00	2.8878+00
CP	-1.3880-01	1.0829+00	4.1934-01	3.4233-01	3.5889-01	3.7947-01	4.1505-01	4.0769-01	3.9515-01
P/PO1	1.0962-02	6.4895-01	3.0243-01	2.6221-01	2.7086-01	2.8161-01	3.0019-01	2.9634-01	2.8479-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3914 TO = 540.

P	2.9670+00	2.6119+00	6.0617-01	1.2424-01	1.4198-01	1.2980-01	1.2815-01	1.2316-01	1.1907-01
CP	4.1233-01	3.4386-01	-4.2904-02	-1.3584-01	-1.3241-01	-1.3476-01	-1.3508-01	-1.3604-01	-1.3683-01
P/PO1	2.9877-01	2.6301-01	6.1040-02	1.2511-02	1.4297-02	1.3071-02	1.2905-02	1.2402-02	1.1990-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.2133+00	1.3235+01	4.8000+00	1.2594+00	4.0594+00	2.0055+00	3.7875+00	1.8969+00
CP	4.5983-01	2.3924+00	7.6580-01	8.3053-02	6.2298-01	2.2692-01	5.7055-01	2.0598-01
P/PO1	3.2357-01	1.3327+00	4.8335-01	1.2682-01	4.0877-01	2.0195-01	3.8139-01	1.9101-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	3.5906+00	2.5500+00	3.2797+00	2.8391+00	3.1922+00	2.9945+00	2.8180+00
CP	5.3259-01	3.3193-01	4.7263-01	3.8767-01	4.5576-01	4.1765-01	3.8360-01
P/PO1	3.6157-01	2.5678-01	3.3026-01	2.8589-01	3.2144-01	3.0154-01	2.8376-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	143.	301244	2.99	1	9.00	-89.91	-9.00	15.01	180.0

VALVE POS 2 PO = 30.1 Q-INF = 5.197 P-INF = .8305 RE = .3922 TO = 540.

P	9.2872+00	9.3651+00	6.7940+00	6.5219+00	6.4966+00	6.5758+00	6.2125+00	6.3474+00	6.3057+00
CP	1.6271+00	1.6421+00	1.1474+00	1.0951+00	1.0902+00	1.1055+00	1.0356+00	1.0615+00	1.0535+00
P/PO1	9.3315-01	9.4098-01	6.8264-01	6.5530-01	6.5276-01	6.6072-01	6.2421-01	6.3777-01	6.3358-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3914 TO = 540.

P	6.4356+00	5.2299+00	1.5874+00	1.7810-01	1.6639-01	1.6023-01	1.6391-01	1.5936-01	5.6386+00
CP	1.0812+00	8.4869-01	1.4630-01	-1.2545-01	-1.2771-01	-1.2890-01	-1.2819-01	-1.2906-01	9.2751-01
P/PO1	6.4804-01	5.2663-01	1.5985-01	1.7934-02	1.6755-02	1.6135-02	1.6505-02	1.6047-02	5.6779-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3918 TO = 540.

P	5.6064+00	5.5846+00	5.5439+00	5.5696+00	4.6225+00	1.4121+00	5.0667+00	4.3704+00	4.4437+00
CP	9.2011-01	9.1592-01	9.0807-01	9.1302-01	7.3059-01	1.1220-01	8.1616-01	6.8204-01	6.9615-01
P/PO1	5.6393-01	5.6174-01	5.5765-01	5.6023-01	4.6496-01	1.4203-01	5.0965-01	4.3961-01	4.4698-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3920 TO = 540.

P	4.6237+00	4.8812+00	4.8030+00	4.7320+00	4.6792+00	4.0323+00	1.0498+00	1.2551-01	1.6550-01
CP	7.3040-01	7.7999-01	7.6493-01	7.5125-01	7.4110-01	6.1655-01	4.2329-02	-1.3563-01	-1.2793-01
P/PO1	4.6487-01	4.9076-01	4.8290-01	4.7575-01	4.7045-01	4.0541-01	1.0555-01	1.2619-02	1.6639-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3919 TO = 540.

P	1.6548-01	1.6331-01	3.8550+00	4.2506+00	3.8973+00	3.6721+00	3.5358+00	3.0587+00	7.9333-01
CP	-1.2793-01	-1.2835-01	5.8252-01	6.5871-01	5.9066-01	5.4730-01	5.2106-01	4.2919-01	-7.0301-03
P/PO1	1.6640-02	1.6421-02	3.8764-01	4.2743-01	3.9189-01	3.6925-01	3.5555-01	3.0757-01	7.9774-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3915 TO = 540.

P	6.0772+00	2.9116+00	2.6495+00	6.5217-01	1.5807-01	1.6854-01	1.6669-01	1.6171-01	2.0713+00
CP	1.0117+00	4.0148-01	3.5096-01	-3.4074-02	-1.2932-01	-1.2730-01	-1.2766-01	-1.2862-01	2.4334-01
P/PO1	6.1176-01	2.9310-01	2.6672-01	6.5652-02	1.5913-02	1.6966-02	1.6780-02	1.6279-02	2.1052-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3913 TO = 540.

P	2.4063+00	2.5813+00	2.5177+00	2.5754+00	2.3074+00	5.8881-01	2.2738+00	1.8537+00	1.8955+00
CP	3.0437-01	3.3811-01	3.2584-01	3.3698-01	2.8528-01	-4.6216-02	2.7879-01	1.9778-01	2.0582-01
P/PO1	2.4239-01	2.6001-01	2.5360-01	2.5942-01	2.3242-01	5.9311-02	2.2903-01	1.8673-01	1.9093-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.190 P-INF = .8293 RE = .3917 TO = 540.

P	2.1036+00	1.8560+00	1.9995+00	2.1914+00	2.2563+00	2.0234+00	5.2168-01	1.5701-01	1.6044-01
CP	2.4553-01	1.9781-01	2.2547-01	2.6244-01	2.7494-01	2.3008-01	-5.9277-02	-1.2954-01	-1.2888-01
P/PO1	2.1166-01	1.8674-01	2.0119-01	2.2049-01	2.2702-01	2.0359-01	5.2490-02	1.5798-02	1.6143-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

[illegible] DEVELOPMENT CENTER
[illegible] CAD [illegible] FACILITY
[illegible] CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3913 TO = 540.

P	1.5893-01	1.6142-01	2.0453+00	2.1863+00	2.1515+00	2.0618+00	2.0087+00	1.8237+00	4.9776-01
CP	-1.2914-01	-1.2866-01	2.3466-01	2.6186-01	2.5515-01	2.3785-01	2.2761-01	1.9192-01	-6.3795-02
P/PO1	1.6007-02	1.6257-02	2.0599-01	2.2017-01	2.1668-01	2.0765-01	2.0230-01	1.8367-01	5.0131-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3920 TO = 540.

P	1.5643-01	5.4134+00	2.3921+00	2.0679+00	2.1362+00	2.2562+00	2.1776+00	2.1844+00	2.2319+00
CP	-1.2958-01	8.8244-01	3.6076-01	2.3835-01	2.5148-01	2.7459-01	2.5946-01	2.6077-01	2.6991-01
P/PO1	1.5778-02	5.4426-01	2.4050-01	2.0791-01	2.1477-01	2.2684-01	2.1894-01	2.1962-01	2.2439-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3915 TO = 540.

P	2.2920+00	1.9915+00	4.4601-01	1.5491-01	1.6275-01	1.5469-01	1.5834-01	1.5466-01	1.4941-01
CP	2.8205-01	2.2411-01	-7.3816-02	-1.2993-01	-1.2842-01	-1.2997-01	-1.2927-01	-1.2998-01	-1.3099-01
P/PO1	2.3073-01	2.0048-01	4.4898-02	1.5594-02	1.6384-02	1.5572-02	1.5939-02	1.5569-02	1.5040-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.6086+00	1.1447+01	5.2828+00	8.0469-01	4.3359+00	1.2609+00	3.7383+00	9.1797-01
CP	3.4307-01	2.0468+00	8.5858-01	-4.6734-03	6.7605-01	8.3278-02	5.6084-01	1.7164-02
P/PO1	2.6260-01	1.1523+00	5.3180-01	8.1005-02	4.3648-01	1.2693-01	3.7632-01	9.2408-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	3.1758+00	1.5492+00	2.8453+00	1.7750+00	2.4789+00	2.1898+00	2.1883+00
CP	4.5240-01	1.3885-01	3.8870-01	1.8237-01	3.1807-01	2.6234-01	2.6204-01
P/PO1	3.1969-01	1.5595-01	2.8643-01	1.7868-01	2.4954-01	2.2044-01	2.2029-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	144.	301244	2.99	1	4.98	-89.91	-4.98	15.01	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3904 TO = 540.

P	9.3962+00	9.4586+00	6.8875+00	6.5841+00	6.6215+00	6.5914+00	6.4455+00	6.5038+00	6.3989+00
CP	1.6566+00	1.6687+00	1.1717+00	1.1130+00	1.1202+00	1.1144+00	1.0962+00	1.0975+00	1.0772+00
P/PO1	9.4855-01	9.5484-01	6.9529-01	6.6467-01	6.6844-01	6.6540-01	6.5067-01	6.5656-01	6.4596-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3918 TO = 540.

P	6.4979+00	5.4195+00	1.6306+00	1.7532-01	1.6327-01	1.5515-01	1.5741-01	1.5043-01	5.9640+00
CP	1.0920+00	8.8427-01	1.5435-01	-1.2602-01	-1.2834-01	-1.2990-01	-1.2947-01	-1.3081-01	9.8917-01
P/PO1	6.5371-01	5.4522-01	1.6405-01	1.7638-02	1.6426-02	1.5608-02	1.5836-02	1.5134-02	6.0000-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3912 TO = 540.

P	6.0772+00	6.2642+00	6.0772+00	6.0238+00	4.9882+00	1.5374+00	5.6752+00	4.9611+00	5.0349+00
CP	1.0126+00	1.0487+00	1.0126+00	1.0023+00	8.0255-01	1.3680-01	9.3508-01	7.9730-01	8.1155-01
P/PO1	6.1224-01	6.3108-01	6.1224-01	6.0686-01	5.0254-01	1.5488-01	5.7175-01	4.9980-01	5.0724-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3908 TO = 540.

P	5.2410+00	5.7811+00	5.3995+00	5.2383+00	5.1900+00	4.5063+00	1.1668+00	1.3868-01	1.6458-01
CP	8.5226-01	9.5655-01	8.8286-01	8.5173-01	8.4242-01	7.1039-01	6.5511-02	-1.3301-01	-1.2801-01
P/PO1	5.2850-01	5.8296-01	5.4448-01	5.2822-01	5.2336-01	4.5442-01	1.1766-01	1.3984-02	1.6596-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3908 TO = 540.

P	1.5847-01	1.5719-01	5.0605+00	4.6569+00	4.3576+00	4.2093+00	4.1315+00	3.5436+00	9.1635-01
CP	-1.2919-01	-1.2944-01	8.1739-01	7.3948-01	6.8168-01	6.5303-01	6.3801-01	5.2449-01	1.7155-02
P/PO1	1.5980-02	1.5851-02	5.1029-01	4.6960-01	4.3942-01	4.2446-01	4.1662-01	3.5733-01	9.2404-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3915 TO = 540.

P	6.7005+00	3.4743+00	3.1769+00	7.9594-01	1.4559-01	1.6808-01	1.7087-01	1.6453-01	2.4521+00
CP	1.1319+00	5.0996-01	4.5262-01	-6.3599-03	-1.3173-01	-1.2739-01	-1.2685-01	-1.2808-01	3.1290-01
P/PO1	6.7451-01	3.4975-01	3.1981-01	8.0124-02	1.4656-02	1.6920-02	1.7201-02	1.6563-02	2.4694-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3910 TO = 540.

P	2.9670+00	3.0400+00	3.0262+00	3.0380+00	2.7432+00	7.2392-01	2.5430+00	2.1293+00	2.1591+00
CP	4.1296-01	4.2706-01	4.2440-01	4.2666-01	3.6976-01	-2.0047-02	3.3111-01	2.5125-01	2.5700-01
P/PO1	2.9909-01	3.0646-01	3.0507-01	3.0625-01	2.7654-01	7.2976-02	2.5635-01	2.1465-01	2.1765-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3920 TO = 540.

P	2.4126+00	2.0704+00	2.4360+00	2.5066+00	2.5225+00	2.3202+00	5.5177-01	1.6124-01	1.6274-01
CP	3.0471-01	2.3882-01	3.0922-01	3.2281-01	3.2586-01	2.8691-01	-5.3561-02	-1.2875-01	-1.2846-01
P/PO1	2.4257-01	2.0816-01	2.4492-01	2.5202-01	2.5361-01	2.3327-01	5.5475-02	1.6211-02	1.6362-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3906 TO = 540.

P	1.5473-01	1.6425-01	2.1699+00	2.4066+00	2.2869+00	2.2127+00	2.2348+00	2.0391+00	5.7204-01
CP	-1.2990-01	-1.2806-01	2.5949-01	3.0522-01	2.8209-01	2.6776-01	2.7202-01	2.3421-01	-4.9263-02
P/PO1	1.5612-02	1.6573-02	7.1895-01	2.4283-01	2.3076-01	2.2427-01	2.2549-01	2.0575-01	5.7720-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3917 TO = 540.

P	1.4466-01	5.4807+00	2.4109+00	2.0604+00	2.1515+00	2.2153+00	2.3465+00	2.3047+00	2.2771+00
CP	-1.3193-01	8.9573-01	3.0453-01	2.3701-01	2.5456-01	2.6685-01	2.9212-01	2.8406-01	2.7874-01
P/PO1	1.4549-02	5.5120-01	2.4247-01	2.0722-01	2.1638-01	2.2279-01	2.3599-01	2.3178-01	2.2901-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3911 TO = 540.

P	2.3430+00	2.0482+00	4.7159-01	1.4193-01	1.5079-01	1.4130-01	1.4487-01	1.4103-01	1.3745-01
CP	2.9229-01	2.3541-01	-6.8799-02	-1.3241-01	-1.3070-01	-1.3253-01	-1.3184-01	-1.3258-01	-1.3327-01
P/PO1	2.3608-01	2.0638-01	4.7518-02	1.4300-02	1.5194-02	1.4237-02	1.4597-02	1.4210-02	1.3850-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.1500+00	1.2994+01	5.2828+00	8.7969-01	4.6922+00	1.2633+00	4.1484+00	1.1797+00
CP	4.4800-01	2.3474+00	8.5953-01	9.9436-03	7.4557-01	8.3959-02	6.4065-01	6.7829-02
P/PO1	3.1740-01	1.3093+00	5.3230-01	8.8638-02	4.7279-01	1.2729-01	4.1800-01	1.1887-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	3.6703+00	1.9594+00	3.3672+00	2.2891+00	2.9859+00	2.6555+00	2.6328+00
CP	5.4840-01	2.1827-01	4.8991-01	2.8188-01	4.1635-01	3.5258-01	3.4821-01
P/PO1	3.6982-01	1.9743-01	3.3928-01	2.3065-01	3.0086-01	2.6757-01	2.6528-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

40 - [illegible] CONTINUOUS [illegible] TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	145.	301244	2.99	1	4.98	89.91	4.98	15.01	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3914 TO = 540.

P	9.2092+00	9.3339+00	6.8095+00	6.4908+00	6.5435+00	6.5602+00	6.4920+00	6.5819+00	6.5231+00
CP	1.6160+00	1.6401+00	1.1533+00	1.0918+00	1.1020+00	1.1052+00	1.0921+00	1.1094+00	1.0981+00
P/PO1	9.2735-01	9.3996-01	6.8570-01	6.5360-01	6.5891-01	6.6060-01	6.5373-01	6.6278-01	6.5686-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3908 TO = 540.

P	6.6849+00	5.4807+00	1.6434+00	1.8645-01	1.6795-01	1.5884-01	1.5973-01	1.5372-01	6.7716+00
CP	1.1313+00	8.9870-01	1.5759-01	-1.2378-01	-1.2736-01	-1.2912-01	-1.2894-01	-1.3011-01	1.1480+00
P/PO1	6.7420-01	5.5275-01	1.6574-01	1.8805-02	1.6939-02	1.6020-02	1.6109-02	1.5503-02	6.8295-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3908 TO = 540.

P	6.8719+00	7.0121+00	6.7940+00	6.8488+00	5.6252+00	1.7344+00	6.6629+00	6.4100+00	6.3989+00
CP	1.1672+00	1.1943+00	1.1521+00	1.1627+00	9.2644-01	1.7512-01	1.1268+00	1.0780+00	1.0758+00
P/PO1	6.9295-01	7.0710-01	6.8510-01	6.9062-01	5.6724-01	1.7489-01	6.7188-01	6.4638-01	6.4526-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.183 P-INF = .8282 RE = .3911 TO = 540.

P	6.9654+00	6.8095+00	6.4511+00	6.4908+00	6.5591+00	5.6756+00	1.5046+00	1.7534-01	1.5630-01
CP	1.1942+00	1.1541+00	1.0850+00	1.0926+00	1.1058+00	9.3532-01	1.3052-01	-1.2596-01	-1.2963-01
P/PO1	7.0183-01	6.8613-01	6.5002-01	6.5401-01	6.6089-01	5.7187-01	1.5160-01	1.7668-02	1.5749-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3909 TO = 540.

P	1.5052-01	1.4778-01	7.5419+00	5.4946+00	5.7891+00	5.7577+00	5.6752+00	4.8367+00	1.3356+00
CP	-1.3073-01	-1.3126-01	1.2963+00	9.0106-01	9.5793-01	9.5187-01	9.3594-01	7.7404-01	9.8075-02
P/PO1	1.5176-02	1.4999-02	7.6040-01	5.5398-01	5.8368-01	5.8052-01	5.7220-01	4.8765-01	1.3466-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3907 TO = 540.

P	7.8536+00	5.0280+00	4.6649+00	1.1081+00	1.4507-01	1.4684-01	1.4905-01	1.4338-01	3.5661+00
CP	1.3572+00	8.1143-01	7.4129-01	5.4283-02	-1.3177-01	-1.3143-01	-1.3100-01	-1.3210-01	5.2965-01
P/PO1	7.9220-01	5.0718-01	4.7055-01	1.1179-01	1.4634-02	1.4812-02	1.5035-02	1.4463-02	3.5972-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.181 P-INF = .8279 RE = .3910 TO = 540.

P	4.1953+00	4.3552+00	4.4452+00	4.4319+00	3.9351+00	1.2074+00	3.2540+00	2.8287+00	2.8131+00
CP	6.4996-01	6.8081-01	6.9818-01	6.9562-01	5.9973-01	7.3250-02	4.6826-01	3.8617-01	3.8317-01
P/PO1	4.2285-01	4.3896-01	4.4804-01	4.4670-01	3.9663-01	1.2170-01	3.2797-01	2.8511-01	2.8354-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3918 TO = 540.

P	3.2945+00	3.1807+00	3.2271+00	3.2442+00	3.2666+00	2.9579+00	7.2500-01	1.2928-01	1.4849-01
CP	4.7490-01	4.5298-01	4.6192-01	4.6521-01	4.6953-01	4.1004-01	-2.0122-02	-1.3489-01	-1.3119-01
P/PO1	3.3144-01	3.1999-01	3.2466-01	3.2638-01	3.2863-01	2.9757-01	7.2937-02	1.3005-02	1.4938-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS 25 WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3909 TO = 540.

P	1.3743-01	1.4119-01	2.5742+00	2.2921+00	2.5351+00	2.6166+00	2.6262+00	2.4246+00	6.2414-01
CP	-1.3326-01	-1.3253-01	3.3721-01	2.8275-01	3.2967-01	3.4540-01	3.4726-01	3.0832-01	-3.9290-02
P/PO1	1.3856-02	1.4235-02	2.5954-01	2.3110-01	2.5560-01	2.6381-01	2.6479-01	2.4445-01	6.2928-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3916 TO = 540.

P	1.2784-01	5.3155+00	2.3582+00	1.9898+00	2.0774+00	2.1692+00	2.2945+00	2.2946+00	2.3022+00
CP	-1.3515-01	8.6472-01	2.9473-01	2.2373-01	2.4060-01	2.5831-01	2.8246-01	2.8248-01	2.8393-01
P/PO1	1.2867-02	5.3501-01	2.3735-01	2.0028-01	2.0909-01	2.1833-01	2.3095-01	2.3096-01	2.3171-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3918 TO = 540.

P	2.3685+00	2.1098+00	4.7270-01	1.4285-01	1.5131-01	1.4130-01	1.4533-01	1.4150-01	1.3837-01
CP	2.9643-01	2.4660-01	-6.8741-02	-1.3228-01	-1.3065-01	-1.3258-01	-1.3180-01	-1.3254-01	-1.3314-01
P/PO1	2.3824-01	2.1222-01	4.7548-02	1.4369-02	1.5220-02	1.4213-02	1.4619-02	1.4233-02	1.3919-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.6734+00	1.4904+01	5.2828+00	1.9656+00	5.3297+00	1.3242+00	5.5641+00	2.7523+00
CP	7.4041-01	2.7110+00	8.5778-01	2.1883-01	8.6681-01	9.5278-02	9.1196-01	3.7036-01
P/PO1	4.7009-01	1.4991+00	5.3138-01	1.9772-01	5.3610-01	1.3320-01	5.5967-01	2.7685-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.2313+00	3.0844+00	4.7633+00	3.6852+00	4.4531+00	4.0531+00	3.7953+00
CP	8.4785-01	4.3432-01	7.5771-01	5.5004-01	6.9797-01	6.2092-01	5.7126-01
P/PO1	5.2620-01	3.1025-01	4.7913-01	3.7068-01	4.4793-01	4.0769-01	3.8176-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	146.	301244	2.99	1	9.01	89.91	9.01	15.01	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3919 TO = 540.

P	9.0846+00	9.2092+00	6.7628+00	6.4785+00	6.4498+00	6.5914+00	6.2591+00	6.4256+00	6.4610+00
CP	1.5895+00	1.6135+00	1.1425+00	1.0781+00	1.0872+00	1.1094+00	1.0455+00	1.0775+00	1.0843+00
P/PO1	9.1351-01	9.2604-01	6.8004-01	6.4642-01	6.4856-01	6.6280-01	6.2939-01	6.4613-01	6.4969-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3916 TO = 540.

P	6.5758+00	5.2482+00	1.6001+00	1.8877-01	1.7263-01	1.6623-01	1.6994-01	1.6453-01	7.2686+00
CP	1.1074+00	8.5159-01	1.4856-01	-1.2342-01	-1.2653-01	-1.2776-01	-1.2704-01	-1.2809-01	1.2409+00
P/PO1	6.6175-01	5.2815-01	1.6103-01	1.8997-02	1.7373-02	1.6729-02	1.7102-02	1.6558-02	7.3147-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3919 TO = 540.

P	6.9342+00	7.1524+00	7.0277+00	7.1289+00	5.6882+00	1.7446+00	7.1910+00	6.9728+00	6.9580+00
CP	1.1757+00	1.2177+00	1.1937+00	1.2137+00	9.3571-01	1.7620-01	1.2251+00	1.1831+00	1.1802+00
P/PO1	6.9738-01	7.1932-01	7.0679-01	7.1697-01	5.7208-01	1.7546-01	7.2321-01	7.0127-01	6.9978-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3918 TO = 540.

P	7.6822+00	7.1835+00	7.0433+00	7.0355+00	7.1213+00	5.8434+00	1.6397+00	2.0073-01	1.6872-01
CP	1.3202+00	1.2241+00	1.1971+00	1.1956+00	1.2121+00	9.6594-01	1.5610-01	-1.2112-01	-1.2729-01
P/PO1	7.7285-01	7.2268-01	7.0858-01	7.0780-01	7.1642-01	5.8787-01	1.6496-01	2.0194-02	1.6973-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.192 P-INF = .8296 RE = .3918 TO = 540.

P	1.6688-01	1.6566-01	7.8224+00	6.3662+00	6.4029+00	6.4200+00	6.2746+00	5.2222+00	1.5139+00
CP	-1.2765-01	-1.2788-01	1.3470+00	1.0665+00	1.0735+00	1.0768+00	1.0488+00	8.4610-01	1.3181-01
P/PO1	1.6786-02	1.6663-02	7.8683-01	6.4036-01	6.4405-01	6.4577-01	6.3115-01	5.2528-01	1.5227-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3919 TO = 540.

P	8.3522+00	5.9058+00	5.4246+00	1.1889+00	1.5495-01	1.6300-01	1.6437-01	1.5654-01	3.3359+00
CP	1.4488+00	9.7760-01	8.8493-01	6.9171-02	-1.2995-01	-1.2840-01	-1.2814-01	-1.2965-01	4.8266-01
P/PO1	8.3999-01	5.9395-01	5.4556-01	1.1957-01	1.5584-02	1.6393-02	1.6531-02	1.5744-02	3.3549-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3919 TO = 540.

P	4.8001+00	5.0647+00	5.0918+00	5.1320+00	4.3576+00	1.3583+00	3.6383+00	3.2141+00	3.2238+00
CP	7.6465-01	8.1562-01	8.2085-01	8.2858-01	6.7944-01	1.0181-01	5.4091-01	4.5921-01	4.6109-01
P/PO1	4.8275-01	5.0937-01	5.1209-01	5.1614-01	4.3825-01	1.3661-01	3.6591-01	3.2325-01	3.2423-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.196 P-INF = .8302 RE = .3921 TO = 540.

P	3.4709+00	3.5233+00	3.5787+00	3.6068+00	3.6135+00	3.2802+00	8.1335-01	1.4573-01	1.6458-01
CP	5.0825-01	5.1833-01	5.2900-01	5.3441-01	5.3569-01	4.7155-01	-3.2474-03	-1.3175-01	-1.2812-01
P/PO1	3.4886-01	3.5412-01	3.5969-01	3.6251-01	3.6319-01	3.2969-01	8.1749-02	1.4647-02	1.6542-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.203 P-INF = .8314 RL = .3927 TO = 540.

P	1.7296-01	1.7460-01	2.7563+00	2.3526+00	2.6549+00	2.7303+00	2.7287+00	2.4867+00	6.6529-01
CP	-1.2655-01	-1.2624-01	3.6996-01	2.9237-01	3.5048-01	3.6498-01	3.6467-01	3.1816-01	-3.1924-02
P/PO1	1.7359-02	1.7524-02	2.7664-01	2.3612-01	2.6647-01	2.7404-01	2.7388-01	2.4959-01	6.6774-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3926 TO = 540.

P	1.4842-01	5.2604+00	2.3556+00	2.0050+00	2.0697+00	2.2076+00	2.1490+00	2.1819+00	2.2620+00
CP	-1.3126-01	8.5142-01	2.9303-01	2.2562-01	2.3807-01	2.6457-01	2.5331-01	2.5963-01	2.7503-01
P/PO1	1.4899-02	5.2806-01	2.3647-01	2.0126-01	2.0777-01	2.2161-01	2.1573-01	2.1903-01	2.2707-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3923 TO = 540.

P	2.3532+00	2.0827+00	4.7048-01	1.6372-01	1.7263-01	1.6392-01	1.6762-01	1.6406-01	1.6136-01
CP	2.9291-01	2.4088-01	-6.9283-02	-1.2830-01	-1.2658-01	-1.2826-01	-1.2755-01	-1.2823-01	-1.2875-01
P/PO1	2.3640-01	2.0923-01	4.7265-02	1.6448-02	1.7343-02	1.6468-02	1.6840-02	1.6482-02	1.6210-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.4633+00	1.3805+01	5.2828+00	2.1789+00	6.2203+00	1.5789+00	6.1477+00	3.3281+00
CP	8.9123-01	2.4960+00	8.5651-01	2.5938-01	1.0369+00	1.4396-01	1.0229+00	4.8047-01
P/PO1	5.4885-01	1.3868+00	5.3072-01	2.1890-01	6.2490-01	1.5862-01	6.1760-01	3.3435-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.0891+00	3.8977+00	5.5305+00	4.4391+00	5.1570+00	4.7500+00	4.2156+00
CP	1.0116+00	5.9004-01	9.0416-01	6.9419-01	8.3232-01	7.5401-01	6.5121-01
P/PO1	6.1172-01	3.9157-01	5.5560-01	4.4596-01	5.1808-01	4.7719-01	4.2351-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	147.	301244	2.99	1	7.07	134.83	5.01	10.00	180.0

VALVE POS 2 PO = 30.1 Q-INF = 5.197 P-INF = .8305 RE = .3922 TO = 540.

P	9.5832+00	8.8976+00	5.9837+00	5.5724+00	5.6689+00	5.7344+00	5.7465+00	5.8159+00	5.7776+00
CP	1.6841+00	1.5522+00	9.9152-01	9.1239-01	9.3096-01	9.4355-01	9.4590-01	9.5924-01	9.5188-01
P/PO1	9.6290-01	8.9401-01	6.0122-01	5.5990-01	5.6960-01	5.7617-01	5.7740-01	5.8436-01	5.8052-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.4600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3916 TO = 540.

P	5.8746+00	4.9179+00	1.4602+00	1.5630-01	1.5911-01	1.4868-01	1.5091-01	1.5043-01	5.9640+00
CP	9.7248-01	7.8809-01	1.2165-01	-1.2967-01	-1.2913-01	-1.3114-01	-1.3071-01	-1.3080-01	9.8971-01
P/PO1	5.9128-01	4.9499-01	1.4697-01	1.5732-02	1.6015-02	1.4965-02	1.5189-02	1.5141-02	6.0028-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3919 TO = 540.

P	6.2174+00	6.2797+00	6.0460+00	6.0861+00	5.1964+00	1.5527+00	6.1348+00	5.8002+00	5.8708+00
CP	1.0376+00	1.0496+00	1.0046+00	1.0123+00	8.4097-01	1.3925-01	1.0217+00	9.5728-01	9.7046-01
P/PO1	6.2529-01	6.3156-01	6.0806-01	6.1208-01	5.2261-01	1.5616-01	6.1699-01	5.8334-01	5.9044-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3926 TO = 540.

P	6.2486+00	6.2174+00	5.9681+00	5.9615+00	6.0437+00	5.4291+00	1.4032+00	1.5513-01	1.4573-01
CP	1.0414+00	1.0354+00	9.8745-01	9.8619-01	1.0020+00	8.8384-01	1.0995-01	-1.2997-01	-1.3178-01
P/PO1	6.2725-01	6.2413-01	5.9910-01	5.9844-01	6.0669-01	5.4499-01	1.4086-01	1.5573-02	1.4629-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3915 TO = 540.

P	1.4351-01	1.4213-01	6.9654+00	5.3758+00	5.5558+00	5.5365+00	5.5407+00	4.8367+00	1.2979+00
CP	-1.3213-01	-1.3240-01	1.1829+00	8.7651-01	9.1120-01	9.0749-01	9.0830-01	7.7258-01	9.0413-02
P/PO1	1.4446-02	1.4307-02	7.0117-01	5.4116-01	5.5928-01	5.5734-01	5.5776-01	4.8687-01	1.3066-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3909 TO = 540.

P	8.1496+00	5.2115+00	4.8093+00	1.2241+00	1.4871-01	1.3760-01	1.4069-01	1.3445-01	4.4188+00
CP	1.4137+00	8.4641-01	7.6875-01	7.6553-02	-1.3108-01	-1.3323-01	-1.3263-01	-1.3384-01	6.9335-01
P/PO1	8.2167-01	5.2544-01	4.8489-01	1.2342-01	1.4394-02	1.3874-02	1.4185-02	1.3555-02	4.4552-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3909 TO = 540.

P	4.6930+00	4.9424+00	4.9977+00	4.8820+00	4.2946+00	1.1818+00	3.8881+00	3.3820+00	3.4230+00
CP	7.4629-01	7.9444-01	8.0512-01	7.8278-01	6.6937-01	6.8384-02	5.9089-01	4.9317-01	5.0109-01
P/PO1	4.7316-01	4.9831-01	5.0388-01	4.9222-01	4.3299-01	1.1916-01	3.9201-01	3.4098-01	3.4512-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3910 TO = 540.

P	4.0567+00	3.7802+00	3.8989+00	3.8756+00	3.8468+00	3.4698+00	8.3154-01	1.0636-01	1.3378-01
CP	6.2333-01	5.6994-01	5.9287-01	5.8836-01	5.8280-01	5.1003-01	7.2948-04	-1.3926-01	-1.3397-01
P/PO1	4.0895-01	3.8107-01	3.9304-01	3.9069-01	3.8779-01	3.4978-01	8.3826-02	1.0722-02	1.3486-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.171 P-INF = .8263 RE = .3903 TO = 540.

P	1.3259-01	1.3454-01	3.2020+00	3.0005+00	3.0964+00	3.1980+00	3.2719+00	2.9592+00	7.4563-01
CP	-1.3415-01	-1.3378-01	4.5940-01	4.2042-01	4.3897-01	4.5863-01	4.6325-01	4.1245-01	-1.5608-02
P/PO1	1.3389-02	1.3586-02	3.2335-01	3.0299-01	3.1268-01	3.2294-01	3.2536-01	2.9883-01	7.5295-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3908 TO = 540.

P	9.7365-02	6.3109+00	2.9509+00	2.5316+00	2.6171+00	2.7367+00	2.8825+00	2.8598+00	2.8131+00
CP	-1.4099-01	1.0590+00	4.1012-01	3.2915-01	3.4565-01	3.6875-01	3.9690-01	3.9252-01	3.8351-01
P/PO1	9.8197-03	6.3649-01	2.9761-01	2.5533-01	2.6395-01	2.7601-01	2.9071-01	2.8842-01	2.8371-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8400-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3916 TO = 540.

P	2.9229+00	2.5935+00	6.0284-01	1.2616-01	1.4351-01	1.3021-01	1.3465-01	1.3022-01	1.2734-01
CP	4.0347-01	3.4001-01	-4.3621-02	-1.3548-01	-1.3214-01	-1.3470-01	-1.3384-01	-1.3470-01	-1.3525-01
P/PO1	2.9414-01	2.6100-01	6.0666-02	1.2696-02	1.4442-02	1.3104-02	1.3551-02	1.3104-02	1.2815-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.8797+00	1.5670+01	5.2828+00	2.6922+00	5.0086+00	2.4438+00	5.2922+00	3.2836+00
CP	7.8057-01	2.8600+00	8.5826-01	3.5902-01	8.0542-01	3.1114-01	8.6007-01	4.7299-01
P/PO1	4.9106-01	1.5770+00	5.3163-01	2.7093-01	5.0404-01	2.4593-01	5.3258-01	3.3044-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.1211+00	4.0125+00	4.8016+00	4.3352+00	4.8031+00	4.6016+00	4.2469+00
CP	8.2710-01	6.1346-01	7.6552-01	6.7564-01	7.6582-01	7.2698-01	6.5867-01
P/PO1	5.1536-01	4.0380-01	4.8320-01	4.3627-01	4.8336-01	4.6308-01	4.2738-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] GAS [illegible]
40 - INCH CONTINUOUS [illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S ROLL	YAW	ALPHA	ST-ROLL
9.	148.	301244	2.99	1	10.23	118.75	8.96	10.04	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3911 TO = 540.

P	9.3806+00	8.7418+00	5.9213+00	5.5133+00	5.6252+00	5.7072+00	5.7329+00	5.6439+00	5.5757+00
CP	1.6505+00	1.5272+00	9.8292-01	9.0418-01	9.2576-01	9.4159-01	9.4655-01	9.2938-01	9.1622-01
P/PO1	9.4535-01	8.8096-01	5.9673-01	5.5561-01	5.6688-01	5.7515-01	5.7774-01	5.6877-01	5.6190-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3919 TO = 540.

P	5.7575+00	4.7589+00	1.4348+00	1.5816-01	1.6483-01	1.5838-01	1.6205-01	1.5748-01	6.3989+00
CP	9.4905-01	7.5672-01	1.1653-01	-1.2933-01	-1.2805-01	-1.2929-01	-1.2858-01	-1.2946-01	1.0726+00
P/PO1	5.7905-01	4.7861-01	1.4430-01	1.5906-02	1.6577-02	1.5929-02	1.6298-02	1.5838-02	6.4354-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3919 TO = 540.

P	6.2330+00	6.4356+00	6.2642+00	6.2884+00	5.3162+00	1.6065+00	6.6163+00	6.4100+00	6.4299+00
CP	1.0404+00	1.0794+00	1.0464+00	1.0511+00	8.6389-01	1.4955-01	1.1142+00	1.0745+00	1.0784+00
P/PO1	6.2676-01	6.4713-01	6.2990-01	6.3234-01	5.3457-01	1.6154-01	6.6531-01	6.4456-01	6.4657-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3913 TO = 540.

P	7.1835+00	6.5914+00	6.4511+00	6.4752+00	6.5591+00	5.7388+00	1.5280+00	1.7722-01	1.6044-01
CP	1.2256+00	1.1114+00	1.0844+00	1.0890+00	1.1052+00	9.4699-01	1.3489-01	-1.2561-01	-1.2885-01
P/PO1	7.2347-01	6.6384-01	6.4971-01	6.5214-01	6.6058-01	5.7797-01	1.5389-01	1.7849-02	1.6158-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3922 TO = 540.

P	1.5706-01	1.5625-01	7.4796+00	5.8059+00	6.1530+00	6.2330+00	6.1348+00	5.3278+00	1.4737+00
CP	-1.2957-01	-1.2973-01	1.2796+00	9.5749-01	1.0243+00	1.0397+00	1.0208+00	8.6550-01	1.2380-01
P/PO1	1.5784-02	1.5702-02	7.5165-01	5.8345-01	6.1834-01	6.2637-01	6.1651-01	5.3541-01	1.4810-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3927 TO = 540.

P	8.6171+00	6.0304+00	5.5816+00	1.4004+00	1.7211-01	1.5053-01	1.5416-01	1.4855-01	4.2321+00
CP	1.4962+00	9.9907-01	9.1282-01	1.0933-01	-1.2672-01	-1.3087-01	-1.3017-01	-1.3125-01	6.5349-01
P/PO1	8.6475-01	6.0517-01	5.6012-01	1.4054-01	1.7272-02	1.5106-02	1.5470-02	1.4907-02	4.2470-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3919 TO = 540.

P	5.3796+00	5.8590+00	5.7574+00	5.5258+00	4.8180+00	1.3967+00	4.2724+00	3.7861+00	3.8275+00
CP	8.7610-01	9.6842-01	9.4884-01	9.0426-01	7.6796-01	1.0916-01	6.6291-01	5.6925-01	5.7724-01
P/PO1	5.4095-01	5.8916-01	5.7894-01	5.5565-01	4.8448-01	1.4045-01	4.2962-01	3.8071-01	3.8488-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.1 Q-INF = 5.208 P-INF = .8322 RE = .3925 TO = 541.

P	4.3591+00	4.2267+00	4.2945+00	4.2069+00	4.1747+00	3.7037+00	9.5108-01	1.2222-01	1.4849-01
CP	6.7724-01	6.5182-01	6.6483-01	6.4801-01	6.4184-01	5.5139-01	2.2833-02	-1.3632-01	-1.3128-01
P/PO1	4.3711-01	4.2383-01	4.3063-01	4.2184-01	4.1862-01	3.7138-01	9.5369-02	1.2256-02	1.4889-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

40 - INCH CONTI

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.203 P-INF = .8314 RE = .3921 TO = 541.

P	1.4351-01	1.4730-01	3.5034+00	3.0005+00	3.3297+00	3.3940+00	3.3757+00	3.0898+00	7.8580-01
CP	-1.3221-01	-1.3148-01	5.1356-01	4.1689-01	4.8018-01	4.9253-01	4.8901-01	4.3406-01	-8.7633-03
P/PO1	1.4404-02	1.4785-02	3.5163-01	3.0115-01	3.3420-01	3.4065-01	3.3881-01	3.1011-01	7.8869-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3921 TO = 541.

P	1.1062-01	6.2018+00	2.9195+00	2.5254+00	2.5982+00	2.7430+00	2.7351+00	2.7478+00	2.7882+00
CP	-1.3853-01	1.0324+00	4.0142-01	3.2566-01	3.3965-01	3.6749-01	3.6598-01	3.6843-01	3.7618-01
P/PO1	1.1105-02	6.2256-01	2.9307-01	2.5351-01	2.6081-01	2.7535-01	2.7456-01	2.7584-01	2.7989-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.1 Q-INF = 5.204 P-INF = .8315 RE = .3922 TO = 541.

P	2.8977+00	2.5752+00	5.9283-01	1.4193-01	1.5651-01	1.4730-01	1.5183-01	1.4808-01	1.4619-01
CP	3.9705-01	3.3508-01	-4.5870-02	-1.3252-01	-1.2972-01	-1.3149-01	-1.3062-01	-1.3134-01	-1.3170-01
P/PO1	2.9079-01	2.5842-01	5.9492-02	1.4243-02	1.5706-02	1.4782-02	1.5237-02	1.4860-02	1.4670-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.6391+00	1.4632+01	4.8000+00	2.7984+00	5.6320+00	2.6930+00	6.0680+00	4.2664+00
CP	9.2387-01	2.6520+00	7.6262-01	3.7798-01	9.2251-01	3.5771-01	1.0063+00	6.6008-01
P/PO1	5.6589-01	1.4684+00	4.8169-01	2.8083-01	5.6519-01	2.7025-01	6.0893-01	4.2814-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.0211+00	4.7578+00	5.5547+00	5.1125+00	5.5820+00	5.4336+00	4.7563+00
CP	9.9728-01	7.5452-01	9.0765-01	8.2268-01	9.1791-01	8.8436-01	7.5422-01
P/PO1	6.0423-01	4.7746-01	5.5743-01	5.1305-01	5.6017-01	5.4527-01	4.7730-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	149.	301244	2.99	1	11.17	153.24	5.00	5.00	180.0

VALVE POS 2 PO = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3923 TO = 541.

P	9.7702+00	8.3366+00	5.0955+00	4.6194+00	4.7864+00	4.9298+00	5.1180+00	5.0046+00	4.9665+00
CP	1.7172+00	1.4418+00	8.1910-01	7.2765-01	7.5973-01	7.8727-01	8.2342-01	8.0164-01	7.9432-01
P/PO1	9.8016-01	8.3634-01	5.1118-01	4.6343-01	4.8018-01	4.9456-01	5.1344-01	5.0206-01	4.9824-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3913 TO = 541.

P	5.0583+00	4.2145+00	1.2109+00	1.6836-01	2.1267-01	1.9994-01	2.0012-01	1.9791-01	5.2154+00
CP	8.1439-01	6.5187-01	7.3413-02	-1.2737-01	-1.1884-01	-1.2129-01	-1.2125-01	-1.2168-01	8.4464-01
P/PO1	5.0872-01	4.2386-01	1.2178-01	1.6933-02	2.1389-02	2.0108-02	2.0127-02	1.9904-02	5.2452-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.1 Q-INF = 5.205 P-INF = .8318 RE = .3923 TO = 541.

P	5.3670+00	5.3400+00	5.2990+00	5.3008+00	4.5657+00	1.3174+00	5.7009+00	5.1600+00	5.3025+00
CP	8.7126-01	8.6607-01	8.5821-01	8.5854-01	7.1733-01	9.3293-02	9.3540-01	8.3149-01	8.5888-01
P/PO1	5.3842-01	5.3571-01	5.3160-01	5.3178-01	4.5804-01	1.3216-01	5.7192-01	5.1766-01	5.3196-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3912 TO = 541.

P	5.7324+00	5.4684+00	5.3869+00	5.3821+00	5.4991+00	4.9487+00	1.2473+00	1.4714-01	1.9814-01
CP	9.4455-01	8.9370-01	8.7800-01	8.7706-01	8.9960-01	7.9358-01	8.0502-02	-1.3145-01	-1.2162-01
P/PO1	5.7669-01	5.5014-01	5.4194-01	5.4145-01	5.5322-01	4.9786-01	1.2548-01	1.4803-02	1.9933-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.1 Q-INF = 5.200 P-INF = .8310 RE = .3919 TO = 541.

P	1.9212-01	1.8872-01	6.4667+00	5.2258+00	5.2973+00	5.3785+00	5.3806+00	4.7310+00	1.2327+00
CP	-1.2285-01	-1.2350-01	1.0837+00	8.4507-01	8.5882-01	8.7444-01	8.7484-01	7.4994-01	7.7237-02
P/PO1	1.9292-02	1.8950-02	6.4936-01	5.2475-01	5.3192-01	5.4008-01	5.4029-01	4.7507-01	1.2378-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3916 TO = 541.

P	8.3055+00	5.2849+00	4.8972+00	1.3450+00	1.7003-01	1.8562-01	1.8852-01	1.8099-01	5.2092+00
CP	1.4385+00	8.5724-01	7.8263-01	9.9045-02	-1.2707-01	-1.2407-01	-1.2352-01	-1.2496-01	8.4766-01
P/PO1	8.3464-01	5.3110-01	4.9214-01	1.3517-01	1.7087-02	1.8654-02	1.8945-02	1.8188-02	5.2349-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3918 TO = 541.

P	5.0142+00	5.1503+00	5.0981+00	5.0008+00	4.4144+00	1.3788+00	4.5158+00	4.0037+00	4.1076+00
CP	8.0469-01	8.3087-01	8.2083-01	8.0210-01	6.8931-01	1.0542-01	7.0883-01	6.1031-01	6.3030-01
P/PO1	5.0366-01	5.1733-01	5.1209-01	5.0231-01	4.4341-01	1.3849-01	4.5360-01	4.0215-01	4.1259-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.196 P-INF = .8302 RE = .3916 TO = 541.

P	4.6111+00	4.4102+00	4.6021+00	4.5382+00	4.5342+00	4.1334+00	1.0446+00	1.3586-01	1.7745-01
CP	7.2770-01	6.8904-01	7.2598-01	7.1367-01	7.1290-01	6.3577-01	4.1266-02	-1.3365-01	-1.2564-01
P/PO1	4.6345-01	4.4327-01	4.6255-01	4.5613-01	4.5573-01	4.1545-01	1.0499-01	1.3655-02	1.7835-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
40 - INCH CONTINUOUS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3905 TO = 541.

P	1.6875-01	1.6801-01	3.9994+00	3.8568+00	3.9036+00	3.9691+00	3.9906+00	3.7923+00	9.7409-01
CP	-1.2723-01	-1.2737-01	6.1202-01	5.8450-01	5.9353-01	6.0617-01	6.1032-01	5.7205-01	2.8188-02
P/PO1	1.7006-02	1.6932-02	4.0404-01	3.8868-01	3.9339-01	3.9994-01	4.0216-01	3.8217-01	9.8165-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.195 P-INF = .8301 RE = .3915 TO = 541.

P	1.3219-01	7.1212+00	3.7169+00	3.2192+00	3.3486+00	3.5141+00	3.6511+00	3.6058+00	3.5413+00
CP	-1.3435-01	1.2110+00	5.5570-01	4.5991-01	4.8482-01	5.1666-01	5.4305-01	5.3432-01	5.2190-01
P/PO1	1.3289-02	7.1585-01	3.7364-01	3.2361-01	3.3662-01	3.5325-01	3.6703-01	3.6247-01	3.5598-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3912 TO = 541.

P	3.6221+00	3.1930+00	8.5729-01	1.6141-01	1.7835-01	1.6531-01	1.6855-01	1.6359-01	1.6412-01
CP	5.3800-01	4.5533-01	5.3643-03	-1.2870-01	-1.2543-01	-1.2795-01	-1.2732-01	-1.2828-01	-1.2818-01
P/PO1	3.6439-01	3.2122-01	8.6246-02	1.6238-02	1.7943-02	1.6630-02	1.6957-02	1.6458-02	1.6511-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.9734+00	1.6233+01	5.2828+00	3.5719+00	4.8398+00	4.0336+00	5.2078+00	4.4969+00
CP	7.9834-01	2.9675+00	8.5794-01	5.2833-01	7.7260-01	6.1728-01	8.4349-01	7.0653-01
P/PO1	5.0034-01	1.6331+00	5.3147-01	3.5934-01	4.8690-01	4.0579-01	5.2392-01	4.5240-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.3063+00	4.8234+00	5.0914+00	5.1117+00	5.0906+00	5.0141+00	4.4961+00
CP	8.6246-01	7.6944-01	8.2107-01	8.2498-01	8.2092-01	8.0617-01	7.0638-01
P/PO1	5.3382-01	4.8525-01	5.1221-01	5.1425-01	5.1213-01	5.0443-01	4.5232-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	150.	301244	2.99	1	13.41	137.57	9.00	5.02	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3904 TO = 541.

P	9.5832+00	8.1652+00	5.0291+00	4.5757+00	4.7171+00	4.8223+00	4.8874+00	4.8118+00	4.8047+00
CP	1.6902+00	1.4164+00	8.1103-01	7.2351-01	7.5080-01	7.7112-01	7.8367-01	7.6910-01	7.6771-01
P/PO1	9.6606-01	8.2312-01	5.0697-01	4.6126-01	4.7552-01	4.8613-01	4.9268-01	4.8507-01	4.8435-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3908 TO = 541.

P	4.9008+00	4.0799+00	1.1905+00	1.5491-01	2.0695-01	1.9394-01	1.9455-01	1.9086-01	5.5515+00
CP	7.8574-01	6.2694-01	6.9780-02	-1.2992-01	-1.1989-01	-1.2240-01	-1.2228-01	-1.2299-01	9.1071-01
P/PO1	4.9350-01	4.1084-01	1.1988-01	1.5599-02	2.0839-02	1.9529-02	1.9591-02	1.9213-02	5.5902-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3914 TO = 541.

P	5.5056+00	5.4807+00	5.4246+00	5.4821+00	4.7108+00	1.3916+00	5.9950+00	5.6200+00	5.7465+00
CP	9.0036-01	8.9556-01	8.8477-01	8.9584-01	7.4731-01	1.0817-01	9.9461-01	9.2240-01	9.4676-01
P/PO1	5.5362-01	5.5111-01	5.4548-01	5.5125-01	4.7370-01	1.3993-01	6.0284-01	5.6513-01	5.7785-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5490+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3907 TO = 541.

P	6.4667+00	5.9681+00	5.8278+00	5.8526+00	5.9500+00	5.3153+00	1.3850+00	1.5654-01	1.9630-01
CP	1.0876+00	9.9140-01	9.6435-01	9.6912-01	9.8791-01	8.6549-01	1.0737-01	-1.2960-01	-1.2193-01
P/PO1	6.5139-01	6.0116-01	5.8703-01	5.8952-01	5.9934-01	5.3541-01	1.3951-01	1.5768-02	1.9773-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3902 TO = 541.

P	1.9306-01	1.8919-01	6.2642+00	5.7696+00	5.9188+00	6.0148+00	5.9129+00	5.2408+00	1.4260+00
CP	-1.2251-01	-1.2125-01	1.0500+00	9.5451-01	9.8112-01	1.0019+00	9.8605-01	8.5248-01	1.1561-01
P/PO1	1.9471-02	1.9081-02	6.3177-01	5.8189-01	5.9694-01	6.0663-01	5.9817-01	5.2856-01	1.4382-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3903 TO = 541.

P	8.7573+00	6.0927+00	5.6381+00	1.5138+00	1.8979-01	1.8701-01	1.8898-01	1.8193-01	5.0287+00
CP	1.5313+00	1.0167+00	9.2893-01	1.3252-01	-1.2314-01	-1.2388-01	-1.2330-01	-1.2466-01	8.1176-01
P/PO1	8.8308-01	6.1439-01	5.6854-01	1.5265-01	1.9138-02	1.8858-02	1.9057-02	1.8345-02	5.0709-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3908 TO = 541.

P	5.7135+00	5.8590+00	5.7071+00	5.5758+00	4.9252+00	1.4274+00	4.9450+00	4.4451+00	4.5308+00
CP	9.4211-01	9.7018-01	9.4089-01	9.1557-01	7.9008-01	1.1550-01	7.9391-01	6.9748-01	7.1402-01
P/PO1	5.7542-01	5.9008-01	5.7478-01	5.6156-01	4.9603-01	1.4376-01	4.9803-01	4.4768-01	4.5631-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3905 TO = 541.

P	5.2725+00	4.8934+00	5.0165+00	4.8820+00	4.8747+00	4.5063+00	1.1590+00	1.4150-01	1.8067-01
CP	8.5770-01	7.8455-01	8.0830-01	7.8234-01	7.8094-01	7.0985-01	6.3865-02	-1.3249-01	-1.2493-01
P/PO1	5.3134-01	4.9314-01	5.0554-01	4.9199-01	4.9126-01	4.5413-01	1.1680-01	1.4260-02	1.8207-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

40

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3901 TO = 541.

P	1.6922-01	1.6801-01	4.2317+00	3.8006+00	4.0675+00	4.1271+00	4.1059+00	3.7612+00	1.0268+00
CP	-1.2710-01	-1.2733-01	6.5787-01	5.7457-01	6.2615-01	6.3766-01	6.3356-01	5.6696-01	3.8610-02
P/PO1	1.7075-02	1.6953-02	4.2699-01	3.8349-01	4.1042-01	4.1644-01	4.1430-01	3.7951-01	1.0361-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3901 TO = 541.

P	1.3655-01	6.9809+00	3.6290+00	3.1817+00	3.2982+00	3.4825+00	3.4397+00	3.4317+00	3.4417+00
CP	-1.3341-01	1.1889+00	5.4130-01	4.5490-01	4.7739-01	5.1299-01	5.0474-01	5.0319-01	5.0512-01
P/PO1	1.3776-02	7.0428-01	3.6611-01	3.2099-01	3.3274-01	3.5133-01	3.4702-01	3.4621-01	3.4722-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3908 TO = 541.

P	3.5465+00	3.1257+00	8.3440-01	1.6836-01	1.8355-01	1.7131-01	1.7598-01	1.7064-01	1.7101-01
CP	5.2419-01	4.4303-01	1.1295-03	-1.2732-01	-1.2439-01	-1.2675-01	-1.2585-01	-1.2688-01	-1.2681-01
P/PO1	3.5718-01	3.1480-01	8.4035-02	1.6956-02	1.8486-02	1.7253-02	1.7723-02	1.7186-02	1.7223-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.7000+00	1.4984+01	5.2828+00	3.7992+00	5.5336+00	4.4609+00	5.8758+00	5.2109+00
CP	9.3952-01	2.7300+00	8.5906-01	5.7293-01	9.0742-01	7.0055-01	9.7342-01	8.4519-01
P/PO1	5.7406-01	1.5090+00	5.3205-01	3.8263-01	5.5731-01	4.4927-01	5.9177-01	5.2481-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.0656+00	5.5664+00	5.7914+00	5.7773+00	5.8313+00	5.7703+00	5.0320+00
CP	1.0100+00	9.1375-01	9.5714-01	9.5443-01	9.6483-01	9.5308-01	8.1069-01
P/PO1	6.1089-01	5.6061-01	5.8327-01	5.8185-01	5.8728-01	5.8115-01	5.0679-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

40 INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	151.	301244	2.99	1	14.62	160.09	4.93	1.22	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	9.7390+00	7.8068+00	4.3761+00	3.9318+00	4.0738+00	4.2472+00	4.4262+00	4.3083+00	4.2881+00
CP	1.7229+00	1.3494+00	6.8617-01	6.0029-01	6.2774-01	6.6125-01	6.9585-01	6.7306-01	6.6916-01
P/PO1	9.8316-01	7.8810-01	4.4177-01	3.9692-01	4.1125-01	4.2875-01	4.4682-01	4.3492-01	4.3298-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.171 P-INF = .8263 RE = .3897 TO = 541.

P	4.3969+00	3.6701+00	1.0328+00	2.5510-01	2.6831-01	2.5166-01	2.4006-01	2.2611-01	4.6242+00
CP	6.9046-01	5.4991-01	3.9929-02	-1.1046-01	-1.0791-01	-1.1113-01	-1.1337-01	-1.1607-01	7.3441-01
P/PO1	4.4401-01	3.7061-01	1.0430-01	2.5760-02	2.7094-02	2.5413-02	2.4241-02	2.2833-02	4.6686-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.171 P-INF = .8263 RE = .3897 TO = 541.

P	4.6237+00	4.6916+00	4.6712+00	4.6757+00	4.0486+00	1.1409+00	5.1884+00	4.5632+00	4.6902+00
CP	7.3431-01	7.4744-01	7.4350-01	7.4437-01	6.2311-01	6.0827-02	8.4352-01	7.2261-01	7.4524-01
P/PO1	4.6691-01	4.7376-01	4.7170-01	4.7216-01	4.0884-01	1.1521-01	5.2393-01	4.6080-01	4.7261-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3901 TO = 541.

P	5.1465+00	4.9057+00	4.9349+00	4.9507+00	5.0513+00	4.5443+00	1.1226+00	2.3270-01	2.4733-01
CP	8.3448-01	7.8795-01	7.9359-01	7.9666-01	8.1609-01	7.1813-01	5.7082-02	-1.1484-01	-1.1201-01
P/PO1	5.1921-01	4.9492-01	4.9786-01	4.9946-01	5.0961-01	4.5845-01	1.1325-01	2.3476-02	2.4952-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3902 TO = 541.

P	2.3606-01	2.2875-01	5.8902+00	5.0133+00	5.1837+00	5.2205+00	5.1756+00	4.5632+00	1.1624+00
CP	-1.1420-01	-1.1571-01	9.7779-01	8.0843-01	8.4136-01	8.4846-01	8.3979-01	7.2151-01	6.4700-02
P/PO1	2.3808-02	2.3020-02	5.9405-01	5.0561-01	5.2281-01	5.2652-01	5.2199-01	4.6022-01	1.1723-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3900 TO = 541.

P	8.3055+00	5.2421+00	4.9223+00	1.3702+00	1.7627-01	2.1287-01	2.1916-01	2.1107-01	5.8087+00
CP	1.4453+00	8.5376-01	7.9147-01	1.0501-01	-1.2573-01	-1.1866-01	-1.1744-01	-1.1900-01	9.6276-01
P/PO1	8.3817-01	5.2902-01	4.9675-01	1.3828-01	1.7789-02	2.1482-02	2.2117-02	2.1301-02	5.8620-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3902 TO = 541.

P	5.1213+00	5.2054+00	5.2300+00	5.1883+00	4.6162+00	1.4274+00	5.0219+00	4.4761+00	4.6055+00
CP	8.2930-01	8.4554-01	8.5029-01	8.4223-01	7.3174-01	1.1588-01	8.1010-01	7.0470-01	7.2968-01
P/PO1	5.1651-01	5.2499-01	5.2747-01	5.2326-01	4.6557-01	1.4396-01	5.0648-01	4.5144-01	4.6449-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3896 TO = 541.

P	5.0772+00	4.8445+00	5.0102+00	4.9257+00	4.9693+00	4.6580+00	1.1642+00	1.8052-01	2.1607-01
CP	8.2248-01	7.7745-01	8.0952-01	7.9317-01	8.0160-01	7.4138-01	6.5432-02	-1.2487-01	-1.1799-01
P/PO1	5.1295-01	4.8944-01	5.0618-01	4.9764-01	5.0205-01	4.7059-01	1.1761-01	1.8237-02	2.1829-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.162 P-INF = .8249 RE = .3891 TO = 541.

P	2.0755-01	2.0802-01	4.6021+00	4.4882+00	4.5027+00	4.5695+00	4.5863+00	4.2399+00	1.1071+00
CP	-1.1959-01	-1.1950-01	7.3168-01	7.0961-01	7.1241-01	7.2537-01	7.2862-01	6.6151-01	5.4671-02
P/PO1	2.0995-02	2.1042-02	4.6553-01	4.5401-01	4.5547-01	4.6224-01	4.6393-01	4.2889-01	1.1199-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.167 P-INF = .8257 RE = .3894 TO = 541.

P	1.6821-01	7.6822+00	4.2819+00	3.7881+00	3.9603+00	4.1334+00	4.2788+00	4.2150+00	4.1449+00
CP	-1.2724-01	1.3269+00	6.6887-01	5.7330-01	6.0664-01	6.4014-01	6.6828-01	6.5593-01	6.4236-01
P/PO1	1.7009-02	7.7636-01	4.3273-01	3.8283-01	4.0023-01	4.1773-01	4.3242-01	4.2597-01	4.1889-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.167 P-INF = .8257 RE = .3894 TO = 541.

P	4.2331+00	3.7924+00	1.0074+00	2.0593-01	2.1839-01	2.0687-01	2.0941-01	2.0590-01	2.1009-01
CP	6.5943-01	5.7414-01	3.5162-02	-1.1994-01	-1.1753-01	-1.1976-01	-1.1977-01	-1.1995-01	-1.1914-01
P/PO1	4.2780-01	3.8326-01	1.0181-01	2.0812-02	2.2071-02	2.0906-02	2.1163-02	2.0808-02	2.1232-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.0109+00	1.6479+01	4.8000+00	4.2703+00	4.5656+00	4.6648+00	5.2383+00	4.8641+00
CP	8.0996-01	3.0293+00	7.6914-01	6.6663-01	7.2378-01	7.4298-01	8.5395-01	7.8153-01
P/PO1	5.0641-01	1.6654+00	4.8509-01	4.3156-01	4.6141-01	4.7143-01	5.2938-01	4.9157-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.3438+00	5.0320+00	5.7914+00	5.2594+00	5.0672+00	5.1023+00	4.4742+00
CP	8.7437-01	8.1404-01	9.6100-01	8.5804-01	8.2084-01	8.2765-01	7.0609-01
P/PO1	5.4004-01	5.0854-01	5.8528-01	5.3152-01	5.1209-01	5.1565-01	4.5217-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

A[illegible] ENGINEERING DE[illegible] CENTER
V[illegible] [illegible]
40 - INCH CONTINUOUS [illegible] WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	152.	301244	2.99	1	14.62	179.98	.00	.38	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3906 TO = 540.

P	9.8325+00	7.7601+00	4.2317+00	3.8506+00	3.9982+00	4.2093+00	4.2660+00	4.3021+00	4.3005+00
CP	1.7401+00	1.3396+00	6.5787-01	5.8423-01	6.1275-01	6.5354-01	6.6451-01	6.7147-01	6.7117-01
P/PO1	9.9213-01	7.8301-01	4.2699-01	3.8853-01	4.0342-01	4.2473-01	4.3045-01	4.3409-01	4.3393-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3902 TO = 540.

P	4.3024+00	3.5600+00	9.8958-01	2.8014-01	2.9067-01	2.7428-01	2.5027-01	2.3034-01	4.1201+00
CP	6.7232-01	5.2873-01	3.1596-02	-1.0561-01	-1.0358-01	-1.0675-01	-1.1139-01	-1.1524-01	6.3705-01
P/PO1	4.3453-01	3.5955-01	9.9945-02	2.8293-02	2.9357-02	2.7702-02	2.5277-02	2.3264-02	4.1611-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.160 P-INF = .8245 RE = .3894 TO = 540.

P	4.4284+00	4.3123+00	4.2380+00	4.2756+00	3.6765+00	1.0232+00	4.5030+00	3.9042+00	3.9956+00
CP	6.9843-01	6.7594-01	6.6153-01	6.6883-01	5.5272-01	3.8508-02	7.1290-01	5.9684-01	6.1455-01
P/PO1	4.4817-01	4.3642-01	4.2890-01	4.3271-01	3.7208-01	1.0355-01	4.5572-01	3.9512-01	4.0437-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3901 TO = 540.

P	4.3843+00	4.2573+00	4.2694+00	4.2694+00	4.4081+00	3.9249+00	9.3029-01	2.6278-01	2.6525-01
CP	6.8842-01	6.6385-01	6.6618-01	6.6619-01	6.9302-01	5.9954-01	2.0186-02	-1.0895-01	-1.0848-01
P/PO1	4.4294-01	4.3011-01	4.3133-01	4.3133-01	4.4534-01	3.9653-01	9.3986-02	2.6549-02	2.6798-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.174 P-INF = .8267 RE = .3905 TO = 540.

P	2.5149-01	2.3813-01	5.1986+00	4.1756+00	4.3261+00	4.3673+00	4.3493+00	3.8482+00	9.3141-01
CP	-1.1118-01	-1.1377-01	8.4501-01	6.4729-01	6.7637-01	6.8433-01	6.8086-01	5.8401-01	2.0233-02
P/PO1	2.5384-02	2.4036-02	5.2471-01	4.2146-01	4.3665-01	4.4081-01	4.3899-01	3.8842-01	9.4011-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3914 TO = 540.

P	7.6977+00	4.3857+00	4.0433+00	1.1586+00	1.6483-01	2.1564-01	2.2427-01	2.1953-01	5.0909+00
CP	1.3246+00	6.8591-01	6.1989-01	6.3629-02	-1.2801-01	-1.1821-01	-1.1655-01	-1.1746-01	8.2190-01
P/PO1	7.7514-01	4.4163-01	4.0715-01	1.1667-01	1.6598-02	2.1714-02	2.2583-02	2.2106-02	5.1264-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3904 TO = 540.

P	4.3528+00	4.4163+00	4.4389+00	4.4757+00	3.9982+00	1.1895+00	4.5479+00	4.0099+00	4.1698+00
CP	6.8167-01	6.9395-01	6.9831-01	7.0542-01	6.1311-01	7.0154-02	7.1938-01	6.1537-01	6.4630-01
P/PO1	4.3942-01	4.4583-01	4.4810-01	4.5182-01	4.0361-01	1.2008-01	4.5911-01	4.0480-01	4.2094-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3906 TO = 540.

P	4.5355+00	4.4041+00	4.5268+00	4.4382+00	4.4774+00	4.1145+00	9.9525-01	2.2329-01	2.3307-01
CP	7.1657-01	6.9118-01	7.1489-01	6.9777-01	7.0535-01	6.3522-01	3.2513-02	-1.1665-01	-1.1476-01
P/PO1	4.5764-01	4.4438-01	4.5676-01	4.4782-01	4.5178-01	4.1516-01	1.0042-01	2.2531-02	2.3518-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3908 TO = 540.

P	2.2251-01	2.2166-01	4.3949+00	4.5694+00	4.4964+00	4.4684+00	4.4710+00	4.1591+00	1.0820+00
CP	-1.1682-01	-1.1698-01	6.8901-01	7.2272-01	7.0860-01	7.0320-01	7.0371-01	6.4346-01	4.9184-02
P/PO1	2.2441-02	2.2356-02	4.4325-01	4.6085-01	4.5348-01	4.5066-01	4.5092-01	4.1946-01	1.0913-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3905 TO = 540.

P	1.9680-01	7.9315+00	4.4828+00	4.0069+00	4.2252+00	4.4242+00	4.4902+00	4.5694+00	4.5370+00
CP	-1.2176-01	1.3730+00	7.0653-01	6.1455-01	6.5674-01	6.9519-01	7.0796-01	7.2326-01	7.1701-01
P/PO1	1.9860-02	8.0043-01	4.5240-01	4.0436-01	4.2640-01	4.4648-01	4.5315-01	4.6113-01	4.5787-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3905 TO = 540.

P	4.6111+00	3.9148+00	1.0379+00	2.2773-01	2.4075-01	2.2580-01	2.2706-01	2.2782-01	1.1447-01
CP	7.3132-01	5.9675-01	4.0787-02	-1.1578-01	-1.1327-01	-1.1616-01	-1.1591-01	-1.1673-01	-1.3767-01
P/PO1	4.6534-01	3.9507-01	1.0474-01	2.2982-02	2.4296-02	2.2787-02	2.2914-02	2.2487-02	1.1552-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.1227+00	1.5677+01	4.8328+00	4.0000+00	3.6188+00	3.8484+00	4.3383+00	4.2531+00
CP	6.3693-01	2.8699+00	7.7417-01	6.1322-01	5.3954-01	5.8393-01	6.7860-01	6.6214-01
P/PO1	4.1605-01	1.5821+00	4.8772-01	4.0367-01	3.6520-01	3.8838-01	4.3781-01	4.2922-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.4484+00	4.2164+00	5.7914+00	4.4414+00	4.2281+00	4.2844+00	3.8086+00
CP	6.9988-01	6.5504-01	9.5942-01	6.9853-01	6.5731-01	6.6818-01	5.7623-01
P/PO1	4.4893-01	4.2551-01	5.8446-01	4.4822-01	4.2669-01	4.3237-01	3.8436-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] KAPTAN GAS [illegible]
40 - INCH CONTINUOUS [illegible] WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	153.	301244	1.99	1	-.03	179.98	-.01	15.03	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.209 P-INF =2.6006 RE = .4380 TO = 533.

P	1.3853+01	1.3946+01	1.1702+01	1.1534+01	1.1681+01	1.1640+01	1.1136+01	1.1100+01	1.0841+01
CP	1.5608+00	1.5738+00	1.2625+00	1.2392+00	1.2596+00	1.2539+00	1.1840+00	1.1790+00	1.1430+00
P/PO1	9.5301-01	9.5944-01	8.0508-01	7.9348-01	8.0363-01	8.0079-01	7.6610-01	7.6364-01	7.4580-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4366 TO = 533.

P	1.0378+01	7.6510+00	2.4172+00	1.0302+00	1.0579+00	1.0258+00	9.9006-01	9.8198-01	1.1353+01
CP	1.0836+00	7.0405-01	-2.4338-02	-2.1737-01	-2.1352-01	-2.1798-01	-2.2296-01	-2.2408-01	1.2193+00
P/PO1	7.1630-01	5.2808-01	1.6684-01	7.1105-02	7.3015-02	7.0801-02	6.8335-02	6.7778-02	7.8362-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 20.0 Q-INF = 7.202 P-INF =2.5982 RE = .4376 TO = 533.

P	1.0986+01	1.1032+01	1.0627+01	1.0133+01	7.4336+00	2.4017+00	1.0453+01	1.0334+01	1.0453+01
CP	1.1645+00	1.1710+00	1.1148+00	1.0462+00	6.7137-01	-2.7281-02	1.0905+00	1.0741+00	1.0905+00
P/PO1	7.5647-01	7.5969-01	7.3179-01	6.9776-01	5.1188-01	1.6538-01	7.1976-01	7.1161-01	7.1976-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4367 TO = 533.

P	1.0986+01	1.0222+01	9.9572+00	9.7283+00	9.4482+00	7.3082+00	2.0087+00	1.0246+00	9.8915-01
CP	1.1678+00	1.0615+00	1.0247+00	9.9283-01	9.5385-01	6.5610-01	-8.1257-02	-2.1819-01	-2.2311-01
P/PO1	7.5807-01	7.0538-01	6.8710-01	6.7131-01	6.5198-01	5.0430-01	1.3861-01	7.0701-02	6.8257-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.196 P-INF =2.5957 RE = .4372 TO = 533.

P	1.0416+00	1.0303+00	1.0923+01	8.9034+00	8.9484+00	8.6950+00	8.1849+00	6.5038+00	1.8528+00
CP	-2.1598-01	-2.1756-01	1.1573+00	8.7660-01	8.8286-01	8.4764-01	7.7675-01	5.4311-01	-1.0325-01
P/PO1	7.1792-02	7.1010-02	7.5288-01	6.1366-01	6.1677-01	5.9930-01	5.6414-01	4.4827-01	1.2770-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 20.0 Q-INF = 7.212 P-INF =2.6018 RE = .4382 TO = 533.

P	1.1235+01	7.9626+00	7.6977+00	1.6977+00	9.8887-01	9.6951-01	9.1990-01	9.2437-01	4.9105+00
CP	1.1970+00	7.4327-01	7.0654-01	-1.2536-01	-2.2364-01	-2.2632-01	-2.3320-01	-2.3258-01	3.2009-01
P/PO1	7.7255-01	5.4754-01	5.2932-01	1.1674-01	6.7998-02	6.6666-02	6.3255-02	6.3563-02	3.3766-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4370 TO = 533.

P	6.9030+00	7.4796+00	7.4173+00	7.6115+00	6.3717+00	1.9492+00	5.4446+00	5.4646+00	5.8087+00
CP	5.9905-01	6.7921-01	6.7055-01	6.9755-01	5.2517-01	-8.9720-02	3.9628-01	3.9905-01	4.4689-01
P/PO1	4.7601-01	5.1577-01	5.1147-01	5.2486-01	4.3937-01	1.3441-01	3.7545-01	3.7682-01	4.0055-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4370 TO = 533.

P	5.6757+00	6.2953+00	6.2642+00	6.2417+00	6.0593+00	5.3406+00	1.4006+00	9.2437-01	8.8622-01
CP	4.2840-01	5.1456-01	5.1022-01	5.0710-01	4.8174-01	3.8181-01	-1.6600-01	-2.3222-01	-2.3752-01
P/PO1	3.9138-01	4.3411-01	4.3196-01	4.3041-01	4.1783-01	3.6827-01	9.6583-02	6.3741-02	6.1111-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

ARNOLD [illegible] DEVELOPMENT CENTER
[illegible]
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4350 TO = 533.

P	9.3465-01	9.3167-01	5.9213+00	5.2820+00	5.5747+00	5.6313+00	5.6560+00	4.9859+00	1.4185+00
CP	-2.3018-01	-2.3059-01	4.6644-01	3.7713-01	4.1802-01	4.2592-01	4.2937-01	3.3576-01	-1.6259-01
P/PO1	6.4754-02	6.4548-02	4.1024-01	3.6595-01	3.8623-01	3.9015-01	3.9186-01	3.4543-01	9.8273-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.170 P-INF =2.5866 RE = .4357 TO = 533.

P	9.3465-01	8.9288+00	4.5833+00	4.7382+00	5.3225+00	6.0927+00	5.1500+00	5.2035+00	5.4457+00
CP	-2.3039-01	8.8450-01	2.7846-01	3.0007-01	3.8156-01	4.8898-01	3.5750-01	3.6496-01	3.9874-01
P/PO1	6.4647-02	6.1758-01	3.1702-01	3.2773-01	3.6814-01	4.2142-01	3.5621-01	3.5991-01	3.7667-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.178 P-INF =2.5714 RE = .4331 TO = 533.

P	5.6190+00	4.7344+00	1.4373+00	8.9921-01	9.3265-01	9.0555-01	8.7312-01	8.8429-01	8.5358-01
CP	4.2754-01	3.0345-01	-1.5910-01	-2.3459-01	-2.2990-01	-2.3370-01	-2.3825-01	-2.3669-01	-2.4099-01
P/PO1	3.9095-01	3.2941-01	1.0000-01	6.2564-02	6.4891-02	6.3006-02	6.0749-02	6.1526-02	5.9390-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	8.2289+00	1.4897+01	4.8000+00	1.8797+00	8.5711+00	2.5828+00	8.6508+00	4.9797+00
CP	7.9369-01	1.7291+00	3.1265-01	-9.7041-02	8.4169-01	1.6002-03	8.5287-01	3.3786-01
P/PO1	5.7254-01	1.0365+00	3.3397-01	1.3078-01	5.9635-01	1.7970-01	6.0189-01	3.4647-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.4492+00	5.8688+00	5.7914+00	6.5156+00	7.2680+00	6.9234+00	5.7141+00
CP	8.2460-01	4.6258-01	4.5173-01	5.5333-01	6.5888-01	6.1054-01	4.4088-01
P/PO1	5.8787-01	4.0833-01	4.0295-01	4.5334-01	5.0568-01	4.8171-01	3.9757-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	154.	301244	1.99	1	-4.01	179.98	-.00	19.01	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4368 TO = 533.

P	1.3276+01	1.4320+01	1.2871+01	1.2530+01	1.2587+01	1.2388+01	1.1804+01	1.1679+01	1.1307+01
CP	1.4860+00	1.6313+00	1.4297+00	1.3923+00	1.3902+00	1.3625+00	1.2817+00	1.2638+00	1.2121+00
P/PO1	9.1592-01	9.8795-01	8.8797-01	8.6444-01	8.6838-01	8.5464-01	8.1433-01	8.0570-01	7.8004-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4350 TO = 533.

P	1.0705+01	7.8847+00	2.5867+00	8.7150-01	9.1477-01	8.9276-01	8.6533-01	8.7928-01	1.1944+01
CP	1.1347+00	7.4071-01	6.1091-04	-2.3900-01	-2.3295-01	-2.3603-01	-2.3986-01	-2.3791-01	1.3077+00
P/PO1	7.4167-01	5.4627-01	1.7921-01	6.0379-02	6.3377-02	6.1852-02	5.9951-02	6.0918-02	8.2747-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4359 TO = 533.

P	1.1484+01	1.1469+01	1.0939+01	1.0289+01	7.4648+00	2.5091+00	1.1198+01	1.0850+01	1.0934+01
CP	1.2402+00	1.2380+00	1.1641+00	1.0735+00	6.7985-01	-1.0971-02	1.2002+00	1.1517+00	1.1634+00
P/PO1	7.9397-01	7.9289-01	7.5626-01	7.1131-01	5.1608-01	1.7347-01	7.7418-01	7.5012-01	7.5592-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4343 TO = 533.

P	1.1313+01	1.0565+01	1.0207+01	9.8684+00	9.4638+00	7.2147+00	2.0399+00	8.8178-01	8.5609-01
CP	1.2218+00	1.1172+00	1.0671+00	1.0198+00	9.6317-01	6.4854-01	-7.5378-02	-2.3739-01	-2.4098-01
P/PO1	7.8489-01	7.3299-01	7.0813-01	6.8467-01	6.5660-01	5.0055-01	1.4153-01	6.1178-02	5.9396-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4346 TO = 533.

P	9.2191-01	9.2181-01	1.1235+01	9.1369+00	8.8547+00	8.4769+00	7.9365+00	6.2224+00	1.7775+00
CP	-2.3186-01	-2.3188-01	1.2098+00	9.1653-01	8.7709-01	8.2427-01	7.4872-01	5.0910-01	-1.1226-01
P/PO1	6.3917-02	6.3910-02	7.7893-01	6.3347-01	6.1391-01	5.8771-01	5.5024-01	4.3140-01	1.2323-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4330 TO = 533.

P	1.0830+01	8.0094+00	7.6666+00	1.4156+00	9.3521-01	9.1067-01	8.7312-01	8.7677-01	3.7529+00
CP	1.1589+00	7.6316-01	7.1505-01	-1.6211-01	-2.2951-01	-2.3295-01	-2.3822-01	-2.3771-01	1.6587-01
P/PO1	7.5368-01	5.5740-01	5.3354-01	9.8514-02	6.5084-02	6.3377-02	6.0763-02	6.1017-02	2.6117-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4335 TO = 533.

P	6.3109+00	7.2147+00	7.0744+00	7.0044+00	5.4738+00	1.5400+00	4.8938+00	5.0232+00	5.6697+00
CP	5.2377-01	6.5045-01	6.3079-01	6.2097-01	4.0645-01	-1.4491-01	3.2515-01	3.4330-01	4.3391-01
P/PO1	4.3868-01	5.0150-01	4.9175-01	4.8688-01	3.8049-01	1.0704-01	3.4017-01	3.4917-01	3.9411-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4331 TO = 533.

P	4.5985+00	5.4440+00	5.7260+00	5.5633+00	5.4801+00	4.7591+00	1.2057+00	9.1685-01	8.8120-01
CP	2.8438-01	4.0299-01	4.4255-01	4.1974-01	4.0806-01	3.0692-01	-1.9159-01	-2.3212-01	-2.3712-01
P/PO1	3.1995-01	3.7877-01	3.9840-01	3.8708-01	3.8129-01	3.3113-01	8.3892-02	6.3792-02	6.1311-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.094 P-INF =2.5592 RE = .4311 TO = 533.

P	9.2701-01	9.3167-01	5.3367+00	4.6757+00	4.9000+00	4.9551+00	4.9899+00	4.4264+00	1.2427+00
CP	-2.3007-01	-2.2942-01	3.9150-01	2.9833-01	3.2994-01	3.3771-01	3.4261-01	2.6319-01	-1.8557-01
P/PO1	6.4805-02	6.5131-02	3.7308-01	3.2687-01	3.4255-01	3.4640-01	3.4883-01	3.0944-01	8.6875-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4352 TO = 533.

P	9.1682-01	7.9782+00	3.8738+00	4.2444+00	4.9693+00	5.7261+00	4.4519+00	4.5756+00	4.8420+00
CP	-2.3273-01	7.5325-01	1.8016-01	2.3190-01	3.3312-01	4.3977-01	2.6086-01	2.7814-01	3.1534-01
P/PO1	6.3489-02	5.5249-01	2.6826-01	2.9392-01	3.4412-01	3.9653-01	3.0828-01	3.1686-01	3.3530-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4344 TO = 533.

P	5.0205+00	4.2328+00	1.2898+00	8.7906-01	9.0966-01	8.7742-01	8.4454-01	8.5423-01	8.1592-01
CP	3.4143-01	2.3126-01	-1.8036-01	-2.3780-01	-2.3352-01	-2.3803-01	-2.4262-01	-2.4127-01	-2.4663-01
P/PO1	3.4824-01	2.9360-01	8.9462-02	6.0975-02	6.3097-02	6.0861-02	5.8580-02	5.9252-02	5.6595-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	8.2852+00	1.3444+01	4.8000+00	1.1602+00	9.1195+00	1.7328+00	8.8523+00	3.5891+00	
CP	7.9801-01	1.5195+00	3.1058-01	-1.9848-01	9.1471-01	-1.1839-01	8.7734-01	1.4122-01	
P/PO1	5.7469-01	9.3251-01	3.3294-01	8.0473-02	6.3256-01	1.2019-01	6.1403-01	2.4895-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	8.4539+00	4.6336+00	5.7914+00	5.6133+00	6.6516+00	5.9297+00	5.0039+00
CP	8.2162-01	2.8731-01	4.4924-01	4.2433-01	5.6954-01	4.6858-01	3.3910-01
P/PO1	5.8639-01	3.2140-01	4.0171-01	3.8936-01	4.6138-01	4.1130-01	3.4709-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	155.	301244	1.99	1	4.99	179.98	.00	10.01	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4345 TO = 533.

P	1.4164+01	1.3230+01	1.0035+01	9.9463+00	1.0213+01	1.0487+01	9.9866+00	1.0193+01	9.9710+00
CP	1.6226+00	1.4917+00	1.0444+00	1.0320+00	1.0694+00	1.1077+00	1.0376+00	1.0066+00	1.0354+00
P/PO1	9.8366-01	9.1873-01	6.9689-01	6.9072-01	7.0927-01	7.2827-01	6.9352-01	7.0789-01	6.9244-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4342 TO = 533.

P	9.8949+00	7.4484+00	2.3099+00	9.5966-01	9.9653-01	9.6439-01	9.4328-01	9.2437-01	1.0359+01
CP	1.0258+00	6.8296-01	-3.7075-02	-2.2627-01	-2.2110-01	-2.2561-01	-2.2857-01	-2.3122-01	1.0908+00
P/PO1	6.8764-01	5.1763-01	1.6052-01	6.6691-02	6.9254-02	6.7020-02	6.5553-02	6.4239-02	7.1992-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4359 TO = 533.

P	9.9260+00	1.0113+01	9.8793+00	9.6816+00	7.2931+00	2.3074+00	9.2100+00	9.2085+00	9.3498+00
CP	1.0246+00	1.0507+00	1.0180+00	9.9046-01	6.5710-01	-3.8718-02	9.2463-01	9.2442-01	9.4414-01
P/PO1	6.8705-01	6.9999-01	6.8381-01	6.7013-01	5.0480-01	1.5971-01	6.3749-01	6.3738-01	6.4716-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4338 TO = 533.

P	1.0284+01	9.5521+00	9.3495+00	9.3081+00	9.3076+00	7.4173+00	2.0243+00	9.9451-01	9.5902-01
CP	1.0817+00	9.7899-01	9.5058-01	9.4478-01	9.4471-01	6.7958-01	-7.6822-02	-2.2126-01	-2.2623-01
P/PO1	7.1539-01	6.6445-01	6.5035-01	6.4747-01	6.4744-01	5.1595-01	1.4081-01	6.9178-02	6.6710-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4330 TO = 533.

P	1.0365+00	1.0105+00	1.0207+01	8.4053+00	8.6047+00	8.6639+00	8.4490+00	6.8946+00	1.9607+00
CP	-2.1509-01	-2.1874-01	1.0735+00	8.2037-01	8.4844-01	8.5672-01	8.2653-01	6.3811-01	-8.5215-02
P/PO1	7.2237-02	7.0427-02	7.1132-01	5.8578-01	5.9969-01	6.0380-01	5.8883-01	4.8050-01	1.3665-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4366 TO = 533.

P	1.1438+01	7.7445+00	7.5887+00	1.9843+00	9.9398-01	9.8230-01	9.4328-01	9.3439-01	6.1814+00
CP	1.2333+00	7.1858-01	6.9686-01	-8.4126-02	-2.2221-01	-2.2384-01	-2.2928-01	-2.3052-01	5.0074-01
P/PO1	7.9055-01	5.3529-01	5.2452-01	1.3719-01	6.8703-02	6.7895-02	6.5199-02	6.4584-02	4.2725-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4350 TO = 533.

P	7.2926+00	7.7289+00	7.7601+00	7.6582+00	6.4810+00	2.0439+00	5.9640+00	6.1598+00	6.2901+00
CP	6.5920-01	7.2022-01	7.2458-01	7.1032-01	5.4568-01	-7.4884-02	4.7338-01	5.0077-01	5.1899-01
P/PO1	5.0584-01	5.3610-01	5.3827-01	5.3120-01	4.4954-01	1.4177-01	4.1368-01	4.2727-01	4.3631-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4350 TO = 533.

P	6.7784+00	7.0589+00	7.0277+00	7.0200+00	6.8246+00	5.9213+00	1.6189+00	9.2186-01	8.8622-01
CP	5.8728-01	6.2651-01	6.2215-01	6.2107-01	5.9374-01	4.6741-01	-1.3432-01	-2.3181-01	-2.3680-01
P/PO1	4.7017-01	4.8963-01	4.8747-01	4.8693-01	4.7338-01	4.1073-01	1.1229-01	6.3944-02	6.1471-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4352 TO = 533.

P	9.5247-01	9.4153-01	6.7005+00	6.1327+00	6.4341+00	6.4356+00	6.3678+00	5.6884+00	1.6645+00
CP	-2.2759-01	-2.2912-01	5.7594-01	4.9658-01	5.3871-01	5.3891-01	5.2943-01	4.3446-01	-1.7806-01
P/PO1	6.6036-02	6.5277-02	4.6455-01	4.2519-01	4.4608-01	4.4618-01	4.4148-01	3.9438-01	1.1540-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4342 TO = 533.

P	9.4993-01	1.0004+01	5.5753+00	5.5946+00	6.0906+00	6.5602+00	6.0106+00	6.1598+00	6.2591+00
CP	-2.2763-01	1.0410+00	4.2049-01	4.2319-01	4.9269-01	5.5850-01	4.8148-01	5.0240-01	5.1630-01
P/PO1	6.6015-02	6.9522-01	3.8745-01	3.8879-01	4.2326-01	4.5590-01	4.1770-01	4.2808-01	4.3497-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4347 TO = 533.

P	6.4356+00	5.4011+00	1.6408+00	8.8662-01	9.2243-01	8.9021-01	8.6533-01	8.6425-01	8.4103-01
CP	5.3997-01	3.9519-01	-1.3110-01	-2.3665-01	-2.3164-01	-2.3615-01	-2.3463-01	-2.3978-01	-2.4303-01
P/PO1	4.4671-01	3.7491-01	1.1389-01	6.1542-02	6.4029-02	6.1792-02	6.0065-02	5.9990-02	5.8378-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	7.7602+00	1.5443+01	4.8000+00	3.5805+00	7.8094+00	5.6656+00	8.3672+00	6.0305+00
CP	7.2536-01	1.8006+00	3.1106-01	1.4038-01	7.3225-01	4.3271-01	8.1032-01	4.8327-01
P/PO1	5.3865-01	1.0719+00	3.3318-01	2.4853-01	5.4207-01	3.9327-01	5.8079-01	4.1859-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.3789+00	6.9703+00	5.7914+00	7.3594+00	7.9313+00	7.7484+00	6.3141+00
CP	8.1196-01	6.1481-01	4.4981-01	6.6926-01	7.4930-01	7.2372-01	5.2296-01
P/PO1	5.8160-01	4.8383-01	4.0200-01	5.1083-01	5.5053-01	5.3784-01	4.3828-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	156.	301244	1.99	1	10.00	179.98	.00	5.00	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4340 TO = 533.

P	1.4398+01	1.2419+01	8.6015+00	8.6388+00	8.8391+00	9.2872+00	8.9770+00	8.9271+00	8.8994+00
CP	1.6577+00	1.3803+00	8.4511-01	8.5033-01	8.7842-01	9.4122-01	8.9775-01	8.9074-01	8.8686-01
P/PO1	1.0011+00	8.6348-01	5.9804-01	6.0063-01	6.1456-01	6.4571-01	6.2415-01	6.2068-01	6.1875-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4362 TO = 532.

P	9.1781+00	7.2147+00	2.2310+00	1.0906+00	1.1269+00	1.0744+00	1.0342+00	1.0546+00	9.2877+00
CP	9.2108-01	6.4687-01	-4.9157-02	-2.0842-01	-2.0336-01	-2.1069-01	-2.1630-01	-2.1345-01	9.3639-01
P/PO1	6.3572-01	4.9973-01	1.5453-01	7.5544-02	7.8052-02	7.4418-02	7.1637-02	7.3049-02	6.4331-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4374 TO = 533.

P	8.8976+00	9.1157+00	8.9288+00	9.0279+00	7.1525+00	7.2895+00	8.3247+00	8.3799+00	8.4490+00
CP	8.7695-01	9.0730-01	8.8129-01	8.9508-01	6.3420-01	-4.2266-02	7.9727-01	8.0494-01	8.1455-01
P/PO1	6.1384-01	6.2889-01	6.1599-01	6.2283-01	4.9345-01	1.5795-01	5.7437-01	5.7812-01	5.8289-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4372 TO = 532.

P	9.4118+00	8.8664+00	8.7106+00	8.6699+00	8.9172+00	7.3861+00	2.0815+00	1.0822+00	1.0519+00
CP	9.5064-01	8.7465-01	8.5294-01	8.4726-01	8.8172-01	6.6839-01	-7.0725-02	-2.0996-01	-2.1417-01
P/PO1	6.5038-01	6.1269-01	6.0193-01	5.9911-01	6.1620-01	5.1040-01	1.4383-01	7.4782-02	7.2690-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4349 TO = 532.

P	1.1155+00	1.0943+00	9.2248+00	8.0784+00	8.3550+00	8.3522+00	8.4024+00	7.0666+00	2.0210+00
CP	-2.0448-01	-2.0743-01	9.3157-01	7.7097-01	8.0972-01	8.0932-01	8.1635-01	6.2922-01	-7.7621-02
P/PO1	7.7500-02	7.6033-02	6.4092-01	5.6127-01	5.8049-01	5.8030-01	5.8378-01	4.9098-01	1.4041-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4362 TO = 532.

P	1.1593+01	7.7133+00	7.6977+00	2.0453+00	1.0809+00	1.0590+00	1.0160+00	1.0120+00	7.3618+00
CP	1.2584+00	7.1651-01	7.1434-01	-7.5097-02	-2.0979-01	-2.1283-01	-2.1884-01	-2.1940-01	6.6742-01
P/PO1	8.0302-01	5.3427-01	5.3319-01	1.4167-01	7.4866-02	7.3355-02	7.0377-02	7.0100-02	5.0992-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.170 P-INF =2.5866 RE = .4368 TO = 532.

P	7.7757+00	8.1496+00	8.1185+00	7.8916+00	6.6215+00	2.1999+00	6.7716+00	7.0353+00	7.2065+00
CP	7.2369-01	7.7584-01	7.7150-01	7.3986-01	5.6273-01	-5.3929-02	5.8366-01	6.2044-01	6.4431-01
P/PO1	5.3782-01	5.6369-01	5.6154-01	5.4585-01	4.5800-01	1.5216-01	4.6838-01	4.8662-01	4.9846-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4349 TO = 533.

P	7.8691+00	7.8380+00	7.7601+00	7.7515+00	7.5585+00	6.4823+00	1.7982+00	1.0171+00	9.8162-01
CP	7.4009-01	7.3573-01	7.2483-01	7.2364-01	6.9664-01	5.4608-01	-1.0919-01	-2.1846-01	-2.2342-01
P/PO1	5.4596-01	5.4380-01	5.3839-01	5.3780-01	5.2441-01	4.4974-01	1.2476-01	7.0563-02	6.8105-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

10 - INCH CONTINUOUS

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4379 TO = 532.

P	1.0467+00	1.0352+00	7.5263+00	7.1756+00	7.3555+00	7.4328+00	7.2841+00	6.4100+00	1.9356+00
CP	-2.1514-01	-2.1674-01	6.8621-01	6.3742-01	6.6245-01	6.7320-01	6.5252-01	5.3091-01	-9.1487-02
P/PO1	7.2211-02	7.1417-02	5.1924-01	4.9504-01	5.0745-01	5.1279-01	5.0253-01	4.4222-01	1.3354-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4383 TO = 532.

P	1.0442+00	1.1079+01	6.6693+00	6.6775+00	7.1057+00	7.3549+00	7.0512+00	7.2542+00	7.2165+00
CP	-2.1560-01	1.1793+00	5.6634-01	5.6748-01	6.2699-01	6.6164-01	6.1942-01	6.4764-01	6.4101-01
P/PO1	7.1985-02	7.6380-01	4.5979-01	4.6035-01	4.8987-01	5.0705-01	4.8611-01	5.0011-01	4.9682-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4369 TO = 532.

P	7.4796+00	6.2953+00	1.8825+00	9.8485-01	1.0170+00	9.8997-01	9.6407-01	9.6695-01	9.3894-01
CP	6.8215-01	5.1703-01	-9.8263-02	-2.2342-01	-2.1894-01	-2.2271-01	-2.2632-01	-2.2592-01	-2.2982-01
P/PO1	5.1722-01	4.3533-01	1.3018-01	6.8104-02	7.0325-02	6.8458-02	6.6667-02	6.6866-02	6.4929-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	7.7977+00	1.5612+01	5.2828+00	5.6320+00	7.5000+00	7.6430+00	8.2875+00	9.1055+00
CP	7.2650-01	1.8160+00	3.7585-01	4.2454-01	6.8500-01	7.0493-01	7.9480-01	9.0885-01
P/PO1	5.3922-01	1.0796+00	3.6531-01	3.8946-01	5.1864-01	5.2852-01	5.7309-01	6.2966-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.4023+00	7.8492+00	8.1586+00	8.1914+00	8.2102+00	8.1656+00	6.6188+00
CP	8.1081-01	7.3369-01	7.7682-01	7.8140-01	7.8401-01	7.7781-01	5.6212-01
P/PO1	5.8103-01	5.4278-01	5.6418-01	5.6645-01	5.6774-01	5.6466-01	4.5770-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	157.	301244	1.99	1	13.99	179.98	.00	1.01	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4376 TO = 532.

P	1.4461+01	1.1827+01	7.6042+00	7.6737+00	7.8709+00	8.3678+00	7.8743+00	8.2079+00	8.0452+00
CP	1.6522+00	1.2856+00	6.9779-01	7.0746-01	7.3491-01	8.0408-01	7.3538-01	7.8182-01	7.5917-01
P/PO1	9.9832-01	8.1652-01	5.2498-01	5.2978-01	5.4339-01	5.7769-01	5.4363-01	5.6665-01	5.5542-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4390 TO = 532.

P	8.2587+00	6.7940+00	2.0962+00	1.0881+00	1.1217+00	1.0769+00	1.0290+00	1.0421+00	8.4024+00
CP	7.8539-01	5.8212-01	-6.9837-02	-2.0973-01	-2.0507-01	-2.1128-01	-2.1793-01	-2.1612-01	8.0533-01
P/PO1	5.6843-01	4.6761-01	1.4427-01	7.4893-02	7.7207-02	7.4124-02	7.0826-02	7.1726-02	5.7832-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4369 TO = 532.

P	8.0406+00	8.3055+00	8.1341+00	8.1718+00	6.6840+00	2.1309+00	7.6569+00	7.7076+00	7.7811+00
CP	7.6037-01	7.9730-01	7.7340-01	7.7867-01	5.7122-01	-6.3631-02	7.0687-01	7.1394-01	7.2420-01
P/PO1	5.5602-01	5.7433-01	5.6248-01	5.6509-01	4.6221-01	1.4735-01	5.2949-01	5.3299-01	5.3808-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.182 P-INF =2.5909 RE = .4375 TO = 532.

P	8.5859+00	8.2899+00	8.3210+00	8.1718+00	8.4019+00	7.0433+00	1.9489+00	1.0672+00	1.0394+00
CP	8.3472-01	7.9350-01	7.9784-01	7.7706-01	8.0909-01	6.1393-01	-8.9382-02	-2.1216-01	-2.1603-01
P/PO1	5.9289-01	5.7245-01	5.7460-01	5.6430-01	5.8018-01	4.8637-01	1.3458-01	7.3691-02	7.1772-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4378 TO = 532.

P	1.1053+00	1.0820+00	8.3210+00	8.0162+00	8.2145+00	8.1652+00	8.1694+00	6.9572+00	1.9708+00
CP	-2.0696-01	-2.1019-01	7.9702-01	7.5460-01	7.8219-01	7.7534-01	7.7593-01	6.0726-01	-8.6534-02
P/PO1	7.6270-02	7.4665-02	5.7420-01	5.5316-01	5.6684-01	5.6344-01	5.6373-01	4.8009-01	1.3599-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4348 TO = 532.

P	1.1562+01	7.6198+00	7.7289+00	2.0377+00	1.0987+00	1.0744+00	1.0316+00	1.0296+00	8.2315+00
CP	1.2594+00	7.0698-01	7.2226-01	-7.5211-02	-2.0678-01	-2.1019-01	-2.1618-01	-2.1647-01	7.9269-01
P/PO1	8.0351-01	5.2954-01	5.3712-01	1.4161-01	7.6357-02	7.4664-02	7.1693-02	7.1550-02	5.7205-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4377 TO = 532.

P	7.9626+00	8.4613+00	8.3055+00	8.1251+00	6.8558+00	2.2971+00	7.5171+00	7.7545+00	7.8899+00
CP	7.4742-01	8.1681-01	7.9513-01	7.7003-01	5.9338-01	-4.1049-02	6.8541-01	7.1845-01	7.3729-01
P/PO1	5.4959-01	5.8401-01	5.7326-01	5.6081-01	4.7320-01	1.5855-01	5.1884-01	5.3523-01	5.4457-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4360 TO = 532.

P	8.6015+00	8.3522+00	8.3834+00	8.2963+00	8.1676+00	6.9654+00	1.9359+00	1.0546+00	1.0218+00
CP	8.4113-01	8.0629-01	8.1065-01	7.9848-01	7.8050-01	6.1251-01	-9.0238-02	-2.1338-01	-2.1797-01
P/PO1	5.9607-01	5.7879-01	5.8095-01	5.7492-01	5.6600-01	4.8269-01	1.3416-01	7.3084-02	7.0808-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4366 TO = 532.

P	1.0849+00	1.0845+00	8.2899+00	8.0317+00	8.1988+00	8.3678+00	8.1694+00	7.1604+00	2.1114+00
CP	-2.0936-01	-2.0942-01	7.9595-01	7.5993-01	7.8324-01	8.0682-01	7.7914-01	6.3635-01	-6.6143-02
P/PO1	7.5076-02	7.5047-02	5.7366-01	5.5580-01	5.6736-01	5.7905-01	5.6533-01	4.9550-01	1.4611-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.202 P-INF =2.5982 RE = .4388 TO = 532.

P	1.0900+00	1.1889+01	7.6042+00	7.6115+00	7.9958+00	8.2275+00	7.9365+00	8.0672+00	8.0762+00
CP	-2.0940-01	1.2900+00	6.9506-01	6.9606-01	7.4943-01	7.8160-01	7.4119-01	7.5934-01	7.6059-01
P/PO1	7.5057-02	8.1871-01	5.2363-01	5.2412-01	5.5059-01	5.6655-01	5.4650-01	5.5551-01	5.5613-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 20.0 Q-INF = 7.214 P-INF =2.6024 RE = .4395 TO = 532.

P	8.2743+00	6.9030+00	2.0580+00	1.0453+00	1.0809+00	1.0437+00	1.0160+00	1.0171+00	9.7911-01
CP	7.8621-01	5.9613-01	-7.5466-02	-2.1585-01	-2.1092-01	-2.1607-01	-2.1990-01	-2.1976-01	-2.2502-01
P/PO1	5.6883-01	4.7456-01	1.4148-01	7.1861-02	7.4306-02	7.1751-02	6.9850-02	6.9920-02	6.7311-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	7.8422+00	1.5640+01	5.2828+00	6.9258+00	7.6781+00	7.9383+00	8.2969+00	9.1055+00
CP	7.2632-01	1.8072+00	3.7154-01	5.9929-01	7.0357-01	7.3964-01	7.8934-01	9.0143-01
P/PO1	5.3913-01	1.0752+00	3.6318-01	4.7613-01	5.2785-01	5.4574-01	5.7039-01	6.2598-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.5125+00	8.2031+00	8.3156+00	8.5313+00	8.2055+00	8.2875+00	6.7406+00
CP	8.1923-01	7.7635-01	7.9194-01	8.2183-01	7.7667-01	7.8804-01	5.7362-01
P/PO1	5.8521-01	5.6394-01	5.7168-01	5.8650-01	5.6410-01	5.6974-01	4.6340-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S ROLL	YAW	ALPHA	SI-ROLL
9.	158.	301244	1.99	1	14.64	199.89	-4.93	1.20	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4377 TO = 532.

P	-1.1874-02	1.1780+01	7.6977+00	7.6115+00	7.9177+00	8.1964+00	7.9520+00	8.1297+00	7.9830+00
CP	-3.6239-01	1.2787+00	7.1055-01	6.9854-01	7.4117-01	7.7995-01	7.4593-01	7.7067-01	7.5026-01
P/PO1	-8.1955-04	8.1310-01	5.3131-01	5.2535-01	5.4649-01	5.6573-01	5.4886-01	5.6113-01	5.5100-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 20.1 Q-INF = 7.224 P-INF =2.6061 RE = .4401 TO = 532.

P	8.2120+00	6.7160+00	2.0707+00	1.1058+00	1.1371+00	1.0897+00	1.0420+00	1.0722+00	7.7811+00
CP	7.7598-01	5.6891-01	-7.4105-02	-2.0768-01	-2.0335-01	-2.0990-01	-2.1650-01	-2.1733-01	7.1634-01
P/PO1	5.6376-01	4.6106-01	1.4216-01	7.5911-02	7.8061-02	7.4811-02	7.1536-02	7.3605-02	5.3418-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4381 TO = 532.

P	7.7133+00	7.9626+00	6.6977+00	7.7671+00	6.3248+00	2.0209+00	6.8648+00	6.9103+00	7.0201+00
CP	7.1197-01	7.4664-01	7.0980-01	7.1945-01	5.1886-01	-7.9695-02	5.9396-01	6.0028-01	6.1556-01
P/PO1	5.3201-01	5.4921-01	5.3094-01	5.3572-01	4.3624-01	1.3939-01	4.7349-01	4.7662-01	4.8420-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.196 P-INF =2.5957 RE = .4384 TO = 532.

P	7.9159+00	7.5263+00	7.3861+00	7.3780+00	7.4961+00	6.4044+00	1.7748+00	1.0822+00	1.0569+00
CP	7.3936-01	6.8522-01	6.6573-01	6.6461-01	6.8102-01	5.2930-01	-1.1409-01	-2.1035-01	-2.1385-01
P/PO1	5.4560-01	5.1875-01	5.0908-01	5.0852-01	5.1666-01	4.4142-01	1.2233-01	7.4589-02	7.2849-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4372 TO = 532.

P	1.1155+00	1.0870+00	7.6354+00	6.9733+00	7.1681+00	7.2303+00	7.0978+00	6.2224+00	1.7699+00
CP	-2.0532-01	-2.0929-01	7.0313-01	6.1087-01	6.3802-01	6.4668-01	6.2821-01	5.0624-01	-1.1413-01
P/PO1	7.7081-02	7.5111-02	5.2763-01	4.8187-01	4.9534-01	4.9963-01	4.9047-01	4.2998-01	1.2231-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4367 TO = 532.

P	1.0658+01	6.4044+00	6.5758+00	1.8135+00	1.1064+00	1.0795+00	1.0316+00	1.0321+00	7.5326+00
CP	1.1261+00	5.3265-01	5.5657-01	-1.0776-01	-2.0640-01	-2.1015-01	-2.1683-01	-2.1677-01	6.9604-01
P/PO1	7.3739-01	4.4308-01	4.5494-01	1.2547-01	7.6546-02	7.4684-02	7.1373-02	7.1404-02	5.2114-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.199 P-INF =2.5970 RE = .4386 TO = 532.

P	6.9654+00	7.3549+00	7.3393+00	7.1445+00	6.0593+00	2.0439+00	6.6163+00	6.8008+00	6.9735+00
CP	6.0681-01	6.6092-01	6.5876-01	6.3169-01	4.8095-01	-7.6826-02	5.5832-01	5.8395-01	6.0794-01
P/PO1	4.7986-01	5.0670-01	5.0562-01	4.9220-01	4.1744-01	1.4081-01	4.5581-01	4.6852-01	4.8042-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4382 TO = 532.

P	7.8380+00	7.5887+00	7.5731+00	7.4247+00	7.2931+00	6.2642+00	1.7488+00	1.0571+00	1.0268+00
CP	7.2905-01	6.9438-01	6.9221-01	6.7158-01	6.5328-01	5.1022-01	-1.1758-01	-2.1376-01	-2.1797-01
P/PO1	5.4048-01	5.2329-01	5.2222-01	5.1198-01	5.0291-01	4.3196-01	1.2059-01	7.2897-02	7.0806-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4354 TO = 532.

P	1.0874+00	1.0894+00	7.7445+00	7.6476+00	7.6522+00	7.6822+00	7.3929+00	6.5350+00	1.9457+00
CP	-2.0858-01	-2.0830-01	7.2291-01	7.0865-01	7.1000-01	7.1419-01	6.7371-01	5.5368-01	-8.8494-02
P/PO1	7.5465-02	7.5601-02	5.3744-01	5.3037-01	5.3104-01	5.3311-01	5.1304-01	4.5351-01	1.3502-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.196 P-INF =2.5957 RE = .4384 TO = 532.

P	1.0925+00	1.1749+01	7.6510+00	7.5336+00	7.8084+00	8.1029+00	7.9054+00	8.0984+00	8.0762+00
CP	-2.0891-01	1.2721+00	7.0255-01	6.8624-01	7.2443-01	7.6535-01	7.3790-01	7.6473-01	7.6165-01
P/PO1	7.5303-02	8.0981-01	5.2734-01	5.1925-01	5.3819-01	5.5849-01	5.4488-01	5.5818-01	5.5665-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4376 TO = 532.

P	8.0094+00	6.7160+00	1.9893+00	1.0377+00	1.0732+00	1.0437+00	1.0160+00	1.0171+00	9.8162-01
CP	7.5419-01	5.7415-01	-8.3822-02	-2.1628-01	-2.1135-01	-2.1546-01	-2.1931-01	-2.1916-01	-2.2410-01
P/PO1	5.5295-01	4.6366-01	1.3734-01	7.1643-02	7.4091-02	7.2054-02	7.0145-02	7.0215-02	6.7769-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	6.7945+00	1.4888+01	5.2828+00	6.4828+00	6.7172+00	7.0008+00	7.3336+00	9.1055+00
CP	5.8507-01	1.7116+00	3.7464-01	5.4168-01	5.7431-01	6.1378-01	6.6011-01	9.0676-01
P/PO1	4.6908-01	1.0278+00	3.6471-01	4.4756-01	4.6374-01	4.8332-01	5.0630-01	6.2862-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.2844+00	7.0594+00	7.1531+00	7.3594+00	7.1555+00	7.2422+00	6.0305+00
CP	6.5326-01	6.2194-01	6.3499-01	6.6370-01	6.3532-01	6.4739-01	4.7871-01
P/PO1	5.0290-01	4.8736-01	4.9384-01	5.0808-01	4.9400-01	4.9998-01	4.1633-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	159.	301244	1.99	1	13.41	222.40	-9.00	5.01	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4374 TO = 532.

P	1.4180+01	1.2326+01	8.7885+00	8.7477+00	8.7923+00	8.8041+00	8.6975+00	8.8332+00	8.7133+00
CP	1.6141+00	1.3558+00	8.6322-01	8.5754-01	8.6374-01	8.6539-01	8.5054-01	8.6945-01	8.5270-01
P/PO1	9.7942-01	8.5134-01	6.0702-01	6.0421-01	6.0728-01	6.0810-01	6.0074-01	6.1011-01	6.0181-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4389 TO = 532.

P	8.7729+00	6.8407+00	2.0987+00	1.0226+00	1.0604+00	1.0258+00	1.0030+00	9.6445-01	7.9675+00
CP	8.5704-01	5.8883-01	-6.9416-02	-2.1879-01	-2.1354-01	-2.1835-01	-2.2151-01	-2.2686-01	7.4524-01
P/PO1	6.0396-01	4.7094-01	1.4448-01	7.0402-02	7.3003-02	7.0619-02	6.9054-02	6.6396-02	5.4851-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 20.0 Q-INF = 7.204 P-INF =2.5988 RE = .4389 TO = 532.

P	8.1652+00	8.2899+00	7.9159+00	7.8916+00	6.2155+00	1.9748+00	6.9735+00	6.8477+00	6.9735+00
CP	7.7268-01	7.8999-01	7.3808-01	7.3471-01	5.0204-01	-8.6613-02	6.0726-01	5.8980-01	6.0726-01
P/PO1	5.6212-01	5.7071-01	5.4496-01	5.4329-01	4.2790-01	1.3595-01	4.8008-01	4.7142-01	4.8008-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.199 P-INF =2.5970 RE = .4386 TO = 532.

P	7.5263+00	7.3705+00	7.0589+00	7.0511+00	7.1994+00	6.1551+00	1.6917+00	9.8950-01	9.4698-01
CP	6.8473-01	6.6309-01	6.1980-01	6.1872-01	6.3931-01	4.9425-01	-1.2575-01	-2.2329-01	-2.2892-01
P/PO1	5.1851-01	5.0777-01	4.8630-01	4.8577-01	4.9598-01	4.2404-01	1.1654-01	6.8169-02	6.5378-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4385 TO = 532.

P	1.0340+00	1.0081+00	7.9003+00	6.1172+00	6.5278+00	6.5914+00	6.4610+00	5.6946+00	1.5917+00
CP	-2.1708-01	-2.2068-01	7.3694-01	4.8919-01	5.4625-01	5.5508-01	5.3696-01	4.3048-01	-1.3959-01
P/PO1	7.1249-02	6.9465-02	5.4440-01	4.2153-01	4.4982-01	4.5420-01	4.4522-01	3.9241-01	1.0968-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4383 TO = 532.

P	9.8481+00	5.4929+00	5.7636+00	1.6700+00	9.6076-01	9.4392-01	9.1470-01	9.0683-01	6.2125+00
CP	1.0082+00	4.0281-01	4.4044-01	-1.2861-01	-2.2719-01	-2.2953-01	-2.3359-01	-2.3469-01	5.0284-01
P/PO1	6.7894-01	3.7868-01	3.9735-01	1.1513-01	6.6236-02	6.5075-02	6.3060-02	6.2518-02	4.2829-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4379 TO = 532.

P	6.2174+00	6.4511+00	6.4044+00	6.3040+00	5.4612+00	1.8213+00	5.6496+00	5.6200+00	5.9174+00
CP	5.0413-01	5.3664-01	5.3014-01	5.1617-01	3.9894-01	-1.0738-01	4.2515-01	4.2103-01	4.6739-01
P/PO1	4.2893-01	4.4506-01	4.4183-01	4.3491-01	3.7677-01	1.2565-01	3.8976-01	3.8772-01	4.0824-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 20.0 Q-INF = 7.187 P-INF =2.5909 RE = .4375 TO = 532.

P	6.6693+00	6.5135+00	6.5446+00	6.4129+00	6.2780+00	5.4860+00	1.5410+00	9.2417-01	8.9174-01
CP	5.6786-01	5.4616-01	5.5050-01	5.3216-01	5.1337-01	4.0310-01	-1.4619-01	-2.3204-01	-2.3665-01
P/PO1	4.6054-01	4.4978-01	4.5193-01	4.4284-01	4.3357-01	3.7883-01	1.0641-01	6.3831-02	6.1544-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4371 TO = 532.

P	9.6775-01	9.5632-01	6.5135+00	6.5374+00	6.6372+00	6.5602+00	6.3367+00	5.6138+00	1.6795+00
CP	-2.2587-01	-2.2746-01	5.4702-01	5.5036-01	5.6425-01	5.5353-01	5.2238-01	4.2163-01	-1.2667-01
P/PO1	6.6890-02	6.6100-02	4.5020-01	4.5186-01	4.5875-01	4.5344-01	4.3799-01	3.8802-01	1.1607-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.182 P-INF =2.5909 RE = .4375 TO = 532.

P	9.7539-01	1.0877+01	6.7628+00	6.6775+00	6.9495+00	6.9186+00	6.9269+00	7.3480+00	7.0201+00
CP	-2.2493-01	1.1537+00	5.8088-01	5.6901-01	6.0687-01	6.0257-01	6.0373-01	6.6236-01	6.1670-01
P/PO1	6.7355-02	7.5107-01	4.6700-01	4.6111-01	4.7989-01	4.7776-01	4.7833-01	5.0741-01	4.8477-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4379 TO = 532.

P	6.9030+00	5.8278+00	1.7477+00	9.2188-01	9.6332-01	9.3369-01	9.0690-01	9.0934-01	8.8120-01
CP	5.9950-01	4.4994-01	-1.1763-01	-2.3250-01	-2.2674-01	-2.3086-01	-2.3459-01	-2.3425-01	-2.3816-01
P/PO1	4.7623-01	4.0206-01	1.2057-01	6.3600-02	6.6458-02	6.4415-02	6.2566-02	6.2734-02	6.0793-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.9742+00	1.4257+01	5.2828+00	4.4859+00	5.9719+00	6.1313+00	6.4477+00	9.1055+00
CP	4.7030-01	1.6225+00	3.7412-01	2.6327-01	4.6997-01	4.9214-01	5.3616-01	9.0587-01
P/PO1	4.1216-01	9.8358-01	3.6446-01	3.0948-01	4.1199-01	4.2299-01	4.4482-01	6.2818-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.6258+00	6.0820+00	6.3000+00	6.3000+00	6.3258+00	6.2789+00	5.3625+00
CP	5.6093-01	4.8530-01	5.1562-01	5.1562-01	5.1920-01	5.1268-01	3.8521-01
P/PO1	4.5711-01	4.1959-01	4.3463-01	4.3463-01	4.3641-01	4.3318-01	3.6995-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	160.	301244	1.99	1	11.16	206.76	-5.00	5.01	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4370 TO = 532.

P	1.4336+01	1.2388+01	8.7262+00	8.6388+00	8.9016+00	9.0846+00	8.8528+00	8.9271+00	8.8528+00
CP	1.6377+00	1.3661+00	8.5568-01	8.4349-01	8.8013-01	9.0564-01	8.7333-01	8.8368-01	8.7333-01
P/PO1	9.9111-01	8.5645-01	6.0329-01	5.9724-01	6.1541-01	6.2806-01	6.1204-01	6.1717-01	6.1204-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4377 TO = 532.

P	9.1002+00	7.1212+00	2.1903+00	1.1032+00	1.1422+00	1.0923+00	1.0602+00	1.0446+00	8.5422+00
CP	9.0573-01	6.3031-01	-5.5918-02	-2.0720-01	-2.0178-01	-2.0873-01	-2.1319-01	-2.1536-01	8.2807-01
P/PO1	6.2811-01	4.9152-01	1.5118-01	7.6147-02	7.8835-02	7.5392-02	7.3178-02	7.2101-02	5.8959-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4387 TO = 532.

P	8.5859+00	8.6327+00	8.3990+00	8.4987+00	6.7152+00	2.1462+00	7.6258+00	7.5200+00	7.6103+00
CP	8.3164-01	8.3814-01	8.0568-01	8.1952-01	5.7185-01	-6.2683-02	6.9831-01	6.8361-01	6.9615-01
P/PO1	5.9137-01	5.9459-01	5.7849-01	5.8536-01	4.6252-01	1.4782-01	5.2524-01	5.1795-01	5.2417-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4370 TO = 532.

P	8.5236+00	7.9315+00	7.7133+00	7.8294+00	8.0895+00	6.8407+00	1.8944+00	1.1298+00	1.0946+00
CP	8.2912-01	7.4646-01	7.1601-01	7.3221-01	7.6852-01	5.9419-01	-9.6296-02	-2.0303-01	-2.0794-01
P/PO1	5.9011-01	5.4912-01	5.3402-01	5.4205-01	5.6006-01	4.7360-01	1.3115-01	7.8218-02	7.5782-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4397 TO = 532.

P	1.1664+00	1.1387+00	8.5392+00	6.8643+00	7.3555+00	7.3861+00	7.2065+00	6.3787+00	1.8402+00
CP	-1.9891-01	-2.0275-01	8.2404-01	5.9166-01	6.5981-01	6.6405-01	6.3913-01	5.2428-01	-1.0542-01
P/PO1	8.0262-02	7.8357-02	5.8760-01	4.7234-01	5.0615-01	5.0825-01	4.9589-01	4.3893-01	1.2663-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4366 TO = 532.

P	1.0643+01	6.4667+00	6.5914+00	1.8765+00	1.1269+00	1.1000+00	1.0576+00	1.0521+00	6.7095+00
CP	1.1743+00	5.4156-01	5.5896-01	-9.8913-02	-2.0151-01	-2.0726-01	-2.1117-01	-2.1194-01	5.7543-01
P/PO1	7.3649-01	4.4750-01	4.5613-01	1.2985-01	7.7978-02	7.6118-02	7.3188-02	7.2807-02	4.6430-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4357 TO = 532.

P	6.9342+00	7.1212+00	7.1368+00	7.0200+00	5.9812+00	1.9799+00	6.0416+00	6.2693+00	6.5231+00
CP	6.0884-01	6.3499-01	6.3717-01	6.2084-01	4.7559-01	-8.3894-02	4.8404-01	5.1587-01	5.5136-01
P/PO1	4.8087-01	4.9383-01	4.9492-01	4.8682-01	4.1478-01	1.3730-01	4.1897-01	4.3476-01	4.5236-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4364 TO = 532.

P	7.1835+00	7.1212+00	7.1056+00	6.9421+00	6.8246+00	5.9058+00	1.6293+00	1.0471+00	1.0117+00
CP	6.4205-01	6.3335-01	6.3117-01	6.0835-01	5.9194-01	4.6368-01	-1.3330-01	-2.1457-01	-2.1951-01
P/PO1	4.9734-01	4.9302-01	4.9194-01	4.8062-01	4.7248-01	4.0887-01	1.1280-01	7.2495-02	7.0046-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4374 TO = 532.

P	1.0722+00	1.0574+00	7.0744+00	6.8643+00	6.9963+00	7.0277+00	6.7561+00	5.9722+00	1.7724+00
CP	-2.1142-01	-2.1348-01	6.2450-01	5.9524-01	6.1362-01	6.1799-01	5.8016-01	4.7100-01	-1.1390-01
P/PO1	7.4055-02	7.3033-02	4.8863-01	4.7412-01	4.8324-01	4.8540-01	4.6664-01	4.1250-01	1.2242-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4369 TO = 532.

P	1.0747+00	1.1017+01	6.7005+00	6.6620+00	6.9339+00	7.3393+00	7.0667+00	7.3167+00	7.2375+00
CP	-2.1089-01	1.1754+00	5.7352-01	5.6815-01	6.0606-01	6.6260-01	6.2458-01	6.5944-01	6.4840-01
P/PO1	7.4318-02	7.6183-01	4.6335-01	4.6068-01	4.7949-01	5.0753-01	4.8867-01	5.0596-01	5.0049-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 20.0 Q-INF = 7.179 P-INF =2.5897 RE = .4379 TO = 532.

P	7.2147+00	6.0927+00	1.8113+00	1.0079+00	1.0476+00	1.0130+00	9.8746-01	9.8699-01	9.4898-01
CP	6.4427-01	4.8798-01	-1.0843-01	-2.2039-01	-2.1480-01	-2.1963-01	-2.2319-01	-2.2325-01	-2.2855-01
P/PO1	4.9844-01	4.2093-01	1.2513-01	6.9606-02	7.2378-02	6.9984-02	6.8220-02	6.8188-02	6.5562-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	6.7766+00	1.4899+01	5.2828+00	5.1023+00	6.6609+00	6.7922+00	7.1438+00	9.1055+00
CP	5.7627-01	1.7147+00	3.7516-01	3.5002-01	5.6713-01	5.8541-01	6.3439-01	9.0766-01
P/PO1	4.6471-01	1.0293+00	3.6497-01	3.5250-01	4.6018-01	4.6925-01	4.9354-01	6.2906-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.3336+00	6.7922+00	7.0430+00	7.0453+00	7.0898+00	7.0570+00	5.8992+00
CP	6.6083-01	5.8541-01	6.2035-01	6.2068-01	6.2688-01	6.2231-01	4.6102-01
P/PO1	5.0665-01	4.6925-01	4.8657-01	4.8674-01	4.8981-01	4.8755-01	4.0756-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DA...

40 - INCH CONTINUOUS ... TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	161.	301244	1.99	1	10.22	241.23	-8.95	10.04	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4380 TO = 532.

P	1.4040+01	1.3214+01	1.0253+01	1.0133+01	1.0182+01	9.9728+00	9.8779+00	9.8807+00	9.6604+00
CP	1.5946+00	1.4795+00	1.0672+00	1.0505+00	1.0573+00	1.0281+00	1.0149+00	1.0153+00	9.8464-01
P/PO1	9.6973-01	9.1269-01	7.0820-01	6.9989-01	7.0329-01	6.8882-01	6.8227-01	6.8246-01	6.6725-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4367 TO = 532.

P	9.4430+00	7.0900+00	2.2259+00	9.9240-01	1.0374+00	9.9509-01	9.5368-01	9.0433-01	8.9304+00
CP	9.5839-01	6.2970-01	-4.9794-02	-2.2211-01	-2.1582-01	-2.2173-01	-2.2752-01	-2.3441-01	8.8677-01
P/PO1	6.5423-01	4.9121-01	1.5422-01	6.8756-02	7.1874-02	6.8941-02	6.6072-02	6.2653-02	6.1672-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4384 TO = 532.

P	9.1157+00	9.1157+00	8.7262+00	8.5454+00	6.4498+00	2.0362+00	8.0141+00	7.7545+00	7.8588+00
CP	9.0760-01	9.0760-01	8.5340-01	8.2824-01	5.3666-01	-7.7428-02	7.5432-01	7.1820-01	7.3271-01
P/PO1	6.2904-01	6.2904-01	6.0215-01	5.8968-01	4.4507-01	1.4051-01	5.5302-01	5.3510-01	5.4230-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4384 TO = 532.

P	8.0094+00	8.1029+00	7.7289+00	7.5648+00	7.6210+00	6.2330+00	1.6969+00	9.8198-01	9.4145-01
CP	7.5366-01	7.6667-01	7.1464-01	6.9180-01	6.9962-01	5.0650-01	-1.2464-01	-2.2411-01	-2.2975-01
P/PO1	5.5269-01	5.5914-01	5.3334-01	5.2201-01	5.2589-01	4.3011-01	1.1709-01	6.7762-02	6.4965-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.182 P-INF =2.5909 RE = .4381 TO = 532.

P	1.0289+00	9.9083-01	8.8353+00	6.6464+00	6.6840+00	6.7005+00	6.6008+00	5.5703+00	1.5641+00
CP	-2.1749-01	-2.2278-01	8.6944-01	5.6467-01	5.6991-01	5.7220-01	5.5832-01	4.1484-01	-1.4297-01
P/PO1	7.1048-02	6.8421-02	6.1011-01	4.5896-01	4.6156-01	4.6269-01	4.5581-01	3.8465-01	1.0800-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4371 TO = 532.

P	9.8014+00	5.5541+00	5.8139+00	1.6070+00	9.3265-01	9.1323-01	8.8611-01	8.7928-01	5.4021+00
CP	1.0072+00	4.1440-01	4.5066-01	-1.3646-01	-2.3058-01	-2.3329-01	-2.3707-01	-2.3803-01	3.9319-01
P/PO1	6.7842-01	3.8443-01	4.0242-01	1.1123-01	6.4555-02	6.3211-02	6.1334-02	6.0860-02	3.7392-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4392 TO = 532.

P	6.0616+00	6.1862+00	6.1083+00	6.1327+00	5.5054+00	1.7420+00	4.9770+00	5.0481+00	5.5266+00
CP	4.8107-01	4.9838-01	4.8756-01	4.9095-01	4.0382-01	-1.1881-01	3.3045-01	3.4032-01	4.0677-01
P/PO1	4.1750-01	4.2608-01	4.2072-01	4.2240-01	3.7919-01	1.1998-01	3.4280-01	3.4769-01	3.8065-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4382 TO = 532.

P	6.2486+00	5.9213+00	5.9681+00	5.8993+00	5.9969+00	5.2332+00	1.4526+00	8.8178-01	8.5107-01
CP	5.0908-01	4.6352-01	4.7003-01	4.6045-01	4.7404-01	3.6773-01	-1.5854-01	-2.3800-01	-2.4227-01
P/PO1	4.3139-01	4.0880-01	4.1202-01	4.0727-01	4.1401-01	3.6129-01	1.0028-01	6.0876-02	5.8756-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] VAN GAS DYNAMIC [illegible]
40 - TASK CONTINUOUS [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4384 TO = 532.

P	9.1937-01	8.9963-01	5.9837+00	5.7134+00	5.6882+00	5.8434+00	5.8674+00	5.0667+00	1.4963+00
CP	-2.3282-01	-2.3557-01	4.7181-01	4.3420-01	4.3070-01	4.5230-01	4.5563-01	3.4423-01	-1.5255-01
P/PO1	6.3441-02	6.2079-02	4.1291-01	3.9425-01	3.9252-01	4.0323-01	4.0488-01	3.4963-01	1.0325-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4376 TO = 532.

P	9.2446-01	9.8949+00	5.5878+00	5.7384+00	6.0281+00	5.9525+00	5.9950+00	6.3787+00	6.0416+00
CP	-2.3187-01	1.0186+00	4.1820-01	4.3918-01	4.7957-01	4.6903-01	4.7496-01	5.2844-01	4.8146-01
P/PO1	6.3913-02	6.8408-01	3.8632-01	3.9672-01	4.1675-01	4.1153-01	4.1447-01	4.4099-01	4.1769-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 20.1 Q-INF = 7.216 P-INF =2.6030 RE = .4402 TO = 532.

P	5.9213+00	4.9791+00	1.4958+00	8.7402-01	9.1732-01	8.7997-01	8.5233-01	8.5423-01	8.2346-01
CP	4.5986-01	3.2928-01	-1.5345-01	-2.3962-01	-2.3361-01	-2.3879-01	-2.4262-01	-2.4236-01	-2.4662-01
P/PO1	4.0698-01	3.4222-01	1.0281-01	6.0073-02	6.3049-02	6.0482-02	5.8582-02	5.8712-02	5.6597-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.9203+00	1.4269+01	5.2828+00	2.8266+00	6.6656+00	4.6430+00	6.5297+00	9.1055+00
CP	4.5972-01	1.6167+00	3.7137-01	3.0976-02	5.6301-01	2.8270-01	5.4417-01	9.0113-01
P/PO1	4.0691-01	9.8071-01	3.6309-01	1.9427-01	4.5814-01	3.1912-01	4.4879-01	6.2583-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.7688+00	5.2641+00	6.2484+00	5.6133+00	6.0539+00	5.8664+00	5.0531+00
CP	5.7730-01	3.6877-01	5.0519-01	4.1717-01	4.7823-01	4.5225-01	3.3954-01
P/PO1	4.6522-01	3.6181-01	4.2946-01	3.8581-01	4.1609-01	4.0321-01	3.4731-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS [illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	162.	301244	1.99	1	7.07	225.15	-5.01	10.00	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4388 TO = 532.

P	1.4211+01	1.3307+01	1.0175+01	1.0133+01	1.0354+01	1.0362+01	1.0033+01	1.0068+01	9.9089+00
CP	1.6147+00	1.4891+00	1.0537+00	1.0478+00	1.0785+00	1.0797+00	1.0339+00	1.0388+00	1.0167+00
P/PO1	9.7973-01	9.1742-01	7.0150-01	6.9858-01	7.1381-01	7.1439-01	6.9169-01	6.9412-01	6.8313-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4373 TO = 532.

P	9.7390+00	7.3393+00	2.2870+00	1.0478+00	1.0936+00	1.0488+00	1.0005+00	9.4441-01	9.6138+00
CP	9.9783-01	6.6308-01	-4.1716-02	-2.1457-01	-2.0818-01	-2.1444-01	-2.2118-01	-2.2900-01	9.8036-01
P/PO1	6.7379-01	5.0777-01	1.5822-01	7.2492-02	7.5662-02	7.2561-02	6.9215-02	6.5338-02	6.6512-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 20.0 Q-INF = 7.196 P-INF =2.5957 RE = .4389 TO = 532.

P	9.5365+00	9.6144+00	9.3339+00	9.1836+00	6.9495+00	2.1974+00	8.5732+00	8.4580+00	8.6354+00
CP	9.6458-01	9.7541-01	9.3643-01	9.1553-01	6.0506-01	-5.5363-02	8.3072-01	8.1471-01	8.3935-01
P/PO1	6.5730-01	6.6267-01	6.4333-01	6.3297-01	4.7899-01	1.5145-01	5.9091-01	5.8297-01	5.9519-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4387 TO = 532.

P	9.4274+00	8.5859+00	8.3834+00	8.3897+00	8.5268+00	6.8563+00	1.8632+00	1.0621+00	1.0293+00
CP	9.5004-01	8.3304-01	8.0488-01	8.0576-01	8.2482-01	5.9255-01	-1.0169-01	-2.1306-01	-2.1763-01
P/PO1	6.5008-01	5.9206-01	5.7809-01	5.7853-01	5.8798-01	4.7279-01	1.2848-01	7.3242-02	7.0979-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4392 TO = 532.

P	1.1053+00	1.0500+00	9.7235+00	7.1912+00	7.5742+00	7.5419+00	7.4084+00	6.2067+00	1.7549+00
CP	-2.0724-01	-2.1492-01	9.8962-01	6.3795-01	6.9113-01	6.8665-01	6.6811-01	5.0123-01	-1.1703-01
P/PO1	7.6127-02	7.2319-02	6.6971-01	4.9530-01	5.2168-01	5.1946-01	5.1026-01	4.2750-01	1.2087-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4370 TO = 532.

P	1.0580+01	6.5135+00	6.5602+00	1.7984+00	1.0144+00	9.9253-01	9.6147-01	9.3439-01	5.7155+00
CP	1.1163+00	5.4851-01	5.5504-01	-1.0969-01	-2.1913-01	-2.2219-01	-2.2652-01	-2.3030-01	4.3712-01
P/PO1	7.3252-01	4.5095-01	4.5418-01	1.2451-01	7.0231-02	6.8716-02	6.6566-02	6.4690-02	3.9570-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4390 TO = 532.

P	6.6381+00	6.8251+00	6.7784+00	7.0044+00	5.9812+00	1.9032+00	5.5023+00	5.5392+00	5.8397+00
CP	5.6157-01	5.8755-01	5.8106-01	6.1246-01	4.7030-01	-9.6308-02	4.0375-01	4.0889-01	4.5064-01
P/PO1	4.5742-01	4.7031-01	4.6709-01	4.8266-01	4.1216-01	1.3115-01	3.7915-01	3.8170-01	4.0241-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4373 TO = 532.

P	6.5291+00	6.4356+00	6.3576+00	6.3662+00	6.3404+00	5.5681+00	1.5332+00	9.3689-01	8.9626-01
CP	5.5004-01	5.3700-01	5.2613-01	5.2733-01	5.2373-01	4.1600-01	-1.4687-01	-2.3005-01	-2.3572-01
P/PO1	4.5171-01	4.4524-01	4.3985-01	4.4044-01	4.3866-01	3.8523-01	1.0607-01	6.4818-02	6.2007-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4387 TO = 532.

P	9.7285-01	9.5139-01	6.4823+00	5.8526+00	6.1686+00	6.1862+00	5.9640+00	5.2843+00	1.5590+00
CP	-2.2548-01	-2.2846-01	5.4055-01	4.5300-01	4.9694-01	4.9939-01	4.6849-01	3.7399-01	-1.4397-01
P/PO1	6.7084-02	6.5605-02	4.4700-01	4.0357-01	4.2537-01	4.2658-01	4.1126-01	3.6439-01	1.0751-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4396 TO = 532.

P	9.8558-01	1.0020+01	5.6192+00	5.6696+00	5.9656+00	6.3732+00	6.1038+00	6.3943+00	6.2125+00
CP	-2.2396-01	1.0298+00	4.1909-01	4.2608-01	4.6716-01	5.2373-01	4.8633-01	5.2666-01	5.0142-01
P/PO1	6.7835-02	6.8962-01	3.8676-01	3.9023-01	4.1060-01	4.3865-01	4.2011-01	4.4011-01	4.2759-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4371 TO = 532.

P	6.2018+00	5.2054+00	1.5772+00	9.2188-01	9.6843-01	9.3369-01	9.0690-01	9.0433-01	8.7116-01
CP	5.0480-01	3.6574-01	-1.4062-01	-2.3208-01	-2.2558-01	-2.3043-01	-2.3417-01	-2.3453-01	-2.3916-01
P/PO1	4.2927-01	3.6030-01	1.0917-01	6.3809-02	6.7031-02	6.4627-02	6.2773-02	6.2594-02	6.0298-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	6.6234+00	1.4939+01	5.2828+00	3.1055+00	7.0148+00	5.0180+00	7.2000+00	9.1031+00
CP	5.6365-01	1.7242+00	3.7654-01	7.2667-02	6.1827-01	3.3958-01	6.4411-01	9.0972-01
P/PO1	4.5845-01	1.0340+00	3.6566-01	2.1495-01	4.8554-01	3.4733-01	4.9836-01	6.3009-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.4391+00	5.9953+00	6.9680+00	6.2531+00	6.8297+00	6.6422+00	5.6508+00
CP	6.7748-01	4.7598-01	6.1173-01	5.1196-01	5.9243-01	5.6626-01	4.2790-01
P/PO1	5.1491-01	4.1498-01	4.8230-01	4.3282-01	4.7273-01	4.5975-01	3.9113-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	163.	301244	1.99	1	8.99	-89.91	-8.99	15.01	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4370 TO = 532.

P	1.3681+01	1.3884+01	1.1796+01	1.1363+01	1.1322+01	1.1064+01	1.0794+01	1.0725+01	1.0390+01
CP	1.5491+00	1.5774+00	1.2859+00	1.2254+00	1.2198+00	1.1837+00	1.1461+00	1.1364+00	1.0897+00
P/PO1	9.4770-01	9.6123-01	8.1667-01	7.8667-01	7.8387-01	7.6596-01	7.4731-01	7.4252-01	7.1936-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4384 TO = 532.

P	9.9577+00	7.3082+00	2.3544+00	9.6722-01	1.0119+00	9.6183-01	9.1730-01	8.8429-01	9.7225+00
CP	1.0247+00	6.5610-01	-3.3153-02	-2.2617-01	-2.1995-01	-2.2691-01	-2.3311-01	-2.3770-01	9.9203-01
P/PO1	6.8710-01	5.0430-01	1.6247-01	6.6743-02	6.9824-02	6.6372-02	6.3298-02	6.1021-02	6.7091-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4378 TO = 532.

P	9.7702+00	9.7390+00	9.3027+00	8.8878+00	6.5278+00	2.1053+00	8.9304+00	8.3799+00	8.3558+00
CP	1.0006+00	9.9623-01	9.3544-01	8.7763-01	5.4880-01	-6.7405-02	8.8357-01	8.0685-01	8.0350-01
P/PO1	6.7515-01	6.7299-01	6.4284-01	6.1417-01	4.5109-01	1.4548-01	6.1712-01	5.7907-01	5.7741-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4382 TO = 532.

P	9.0534+00	8.6015+00	8.1964+00	7.9539+00	7.7303+00	6.0927+00	1.6553+00	1.0196+00	9.8162-01
CP	8.9952-01	8.3661-01	7.8022-01	7.4646-01	7.1534-01	4.8738-01	-1.3032-01	-2.1882-01	-2.2410-01
P/PO1	6.2503-01	5.9383-01	5.6586-01	5.4912-01	5.3369-01	4.2063-01	1.1428-01	7.0388-02	6.7769-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4377 TO = 532.

P	1.0645+00	1.0032+00	9.7858+00	7.1601+00	6.9026+00	6.6849+00	6.4610+00	5.2222+00	1.4486+00
CP	-2.1238-01	-2.2094-01	1.0031+00	6.3713-01	6.0125-01	5.7090-01	5.3970-01	3.6705-01	-1.5866-01
P/PO1	7.3579-02	6.9337-02	6.7638-01	4.9490-01	4.7710-01	4.6205-01	4.4658-01	3.6095-01	1.0012-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4386 TO = 532.

P	9.6456+00	5.5235+00	5.7260+00	1.4181+00	9.8376-01	9.6183-01	9.2769-01	9.0182-01	4.4935+00
CP	9.8068-01	4.0742-01	4.3558-01	-1.6353-01	-2.2393-01	-2.2698-01	-2.3173-01	-2.3532-01	2.6417-01
P/PO1	6.6528-01	3.8097-01	3.9494-01	9.7809-02	6.7853-02	6.6340-02	6.3986-02	6.2201-02	3.0993-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4362 TO = 532.

P	5.8079+00	5.8746+00	5.9213+00	5.9460+00	5.3792+00	1.6090+00	4.3429+00	4.4637+00	4.9789+00
CP	4.5155-01	4.6087-01	4.6741-01	4.7086-01	3.9159-01	-1.3570-01	2.4665-01	2.6355-01	3.3561-01
P/PO1	4.0286-01	4.0748-01	4.1073-01	4.1243-01	3.7312-01	1.1161-01	3.0124-01	3.0962-01	3.4536-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4353 TO = 532.

P	5.7009+00	5.1993+00	5.4246+00	5.3133+00	5.5117+00	4.8097+00	1.3669+00	8.8178-01	8.4605-01
CP	4.3808-01	3.6780-01	3.9937-01	3.8378-01	4.1157-01	3.1321-01	-1.6921-01	-2.3718-01	-2.4219-01
P/PO1	3.9618-01	3.6132-01	3.7698-01	3.6925-01	3.8303-01	3.3425-01	9.4989-02	6.1279-02	5.8796-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.199 P-INF =2.5970 RE = .4391 TO = 532.

P	9.1173-01	8.8731-01	5.6443+00	4.8382+00	4.9315+00	5.3216+00	5.3422+00	4.6564+00	1.3959+00
CP	-2.3409-01	-2.3749-01	4.2331-01	3.1133-01	3.2429-01	3.7848-01	3.8133-01	2.8608-01	-1.6684-01
P/PO1	6.2811-02	6.1129-02	3.8885-01	3.3332-01	3.3974-01	3.6662-01	3.6803-01	3.2079-01	9.6164-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4380 TO = 532.

P	9.2191-01	8.9132+00	4.6272+00	4.9757+00	5.3351+00	5.1384+00	5.3229+00	5.2719+00	5.2341+00
CP	-2.3235-01	8.8058-01	2.8368-01	3.3222-01	3.8227-01	3.5487-01	3.8357-01	3.7346-01	3.6820-01
P/PO1	6.3677-02	6.1564-01	3.1960-01	3.4368-01	3.6856-01	3.5491-01	3.6766-01	3.6413-01	3.6152-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4380 TO = 532.

P	5.3166+00	4.4958+00	1.3355+00	8.4883-01	8.9688-01	8.5951-01	8.3414-01	8.3418-01	8.0086-01
CP	3.7969-01	2.6539-01	-1.7474-01	-2.4253-01	-2.3583-01	-2.4104-01	-2.4457-01	-2.4457-01	-2.4921-01
P/PO1	3.6722-01	3.1053-01	9.2247-02	5.8629-02	6.1948-02	5.9366-02	5.7614-02	5.7617-02	5.5316-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.7234+00	1.4217+01	5.2828+00	1.2234+00	7.3969+00	2.1047+00	6.8344+00	9.1055+00
CP	4.3635-01	1.6193+00	3.7498-01	-1.9036-01	6.6941-01	-6.7626-02	5.9107-01	9.0736-01
P/PO1	3.9532-01	9.8198-01	3.6489-01	8.4503-02	5.1090-01	1.4537-01	4.7205-01	6.2892-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.9656+00	4.5117+00	6.2016+00	4.9477+00	5.6297+00	5.3859+00	4.7297+00
CP	6.0935-01	2.6760-01	5.0294-01	3.2831-01	4.2329-01	3.8935-01	2.9795-01
P/PO1	4.8112-01	3.1163-01	4.2834-01	3.4174-01	3.8884-01	3.7201-01	3.2668-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS W. T.

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	164.	301244	1.99	1	5.00	-89.93	-5.00	15.01	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4361 TO = 532.

P	1.3884+01	1.4009+01	1.1796+01	1.1503+01	1.1635+01	1.1484+01	1.1058+01	1.0959+01	1.0623+01
CP	1.5815+00	1.5990+00	1.2894+00	1.2484+00	1.2668+00	1.2458+00	1.1862+00	1.1724+00	1.1254+00
P/PO1	9.6327-01	9.7192-01	8.1840-01	7.9806-01	8.0720-01	7.9678-01	7.6722-01	7.6037-01	7.3705-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4376 TO = 532.

P	1.0238+01	7.5419+00	2.4235+00	1.0176+00	1.0681+00	1.0232+00	9.8226-01	9.4691-01	1.0685+01
CP	1.0664+00	6.9059-01	-2.2909-02	-2.1889-01	-2.1185-01	-2.1810-01	-2.2382-01	-2.2874-01	1.1288+00
P/PO1	7.0778-01	5.2141-01	1.6755-01	7.0351-02	7.3842-02	7.0741-02	6.7909-02	6.5465-02	7.3874-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4370 TO = 532.

P	1.0394+01	1.0347+01	9.9416+00	9.4637+00	6.9651+00	2.2460+00	9.5983+00	9.2866+00	9.2566+00
CP	1.0901+00	1.0836+00	1.0271+00	9.6036-01	6.1156-01	-4.7212-02	9.7914-01	9.3563-01	9.3144-01
P/PO1	7.1957-01	7.1634-01	6.8829-01	6.5520-01	4.8221-01	1.5550-01	6.6452-01	6.4294-01	6.4086-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4386 TO = 532.

P	1.0222+01	9.3806+00	9.0067+00	8.7944+00	8.5893+00	6.7160+00	1.8294+00	1.0421+00	1.0042+00
CP	1.0609+00	9.4384-01	8.9183-01	8.6232-01	8.3378-01	5.7327-01	-1.0632-01	-2.1581-01	-2.2108-01
P/PO1	7.0505-01	6.4701-01	6.2122-01	6.0658-01	5.9243-01	4.6323-01	1.2618-01	7.1877-02	6.9764-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4387 TO = 532.

P	1.0900+00	1.0598+00	1.0394+01	7.8447+00	7.7928+00	7.6822+00	7.1444+00	5.8315+00	1.6293+00
CP	-2.0919-01	-2.1338-01	1.0844+00	7.3001-01	7.2776-01	7.0738-01	6.3260-01	4.5907-01	-1.3420-01
P/PO1	7.5163-02	7.3083-02	7.1670-01	5.4096-01	5.3737-01	5.2974-01	4.9265-01	4.0212-01	1.1235-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4373 TO = 532.

P	1.0487+01	6.6849+00	6.5758+00	1.5617+00	1.0093+00	9.8230-01	9.4848-01	9.3689-01	4.7362+00
CP	1.1022+00	5.7178-01	5.5657-01	-1.4290-01	-2.1995-01	-2.2371-01	-2.2843-01	-2.3005-01	2.9994-01
P/PO1	7.2553-01	4.6249-01	4.5494-01	1.0804-01	6.9828-02	6.7959-02	6.5620-02	6.4818-02	3.2767-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.170 P-INF =2.5866 RE = .4374 TO = 532.

P	6.3732+00	6.6226+00	6.6070+00	6.7087+00	5.8719+00	1.8034+00	4.8361+00	4.8367+00	5.2528+00
CP	5.2810-01	5.6287-01	5.6070-01	5.7488-01	4.5818-01	-1.0923-01	3.1373-01	3.1381-01	3.7183-01
P/PO1	4.4082-01	4.5807-01	4.5699-01	4.6402-01	4.0615-01	1.2474-01	3.3450-01	3.3454-01	3.6332-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4367 TO = 532.

P	5.8205+00	5.9213+00	5.8139+00	5.7134+00	5.8081+00	5.1194+00	1.3435+00	9.2186-01	8.7618-01
CP	4.5236-01	4.6644-01	4.5142-01	4.3738-01	4.5061-01	3.5441-01	-1.7307-01	-2.3196-01	-2.3834-01
P/PO1	4.0326-01	4.1024-01	4.0280-01	3.9583-01	4.0239-01	3.5468-01	9.3078-02	6.3868-02	6.0703-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS F[illegible]
40 - INCH CONTINUOUS GG WIND [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4367 TO = 532.

P	9.4483-01	9.7181-01	6.0927+00	4.8882+00	5.4791+00	5.4796+00	5.6112+00	4.8740+00	1.4787+00
CP	-2.2882-01	-2.3203-01	4.8998-01	3.2180-01	4.0708-01	4.0437-01	4.2774-01	3.1981-01	-1.5427-01
P/PO1	6.5429-02	6.3835-02	4.2192-01	3.3851-01	3.8081-01	3.7746-01	3.8857-01	3.3752-01	1.5240-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4388 TO = 532.

P	9.4993-01	9.0378+00	4.6147+00	4.8195+00	5.3225+00	5.7009+00	5.2909+00	5.2657+00	5.4517+00
CP	-2.2870-01	8.9558-01	2.8073-01	3.0920-01	3.7912-01	4.3172-01	3.7473-01	3.7122-01	3.9711-01
P/PO1	6.5489-02	6.2307-01	3.1814-01	3.3226-01	3.6694-01	3.9302-01	3.6476-01	3.6302-01	3.7586-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4367 TO = 532.

P	5.6001+00	4.6732+00	1.4398+00	8.9165-01	9.4032-01	9.0555-01	8.7052-01	8.7427-01	8.4103-01
CP	4.2119-01	2.9178-01	-1.5970-01	-2.3624-01	-2.2945-01	-2.3430-01	-2.3919-01	-2.3867-01	-2.4331-01
P/PO1	3.8780-01	3.2362-01	9.9708-02	6.1746-02	6.5116-02	6.2709-02	6.0283-02	6.0542-02	5.8741-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	6.5977+00	1.4756+01	4.8000+00	1.5070+00	7.8469+00	2.1117+00	7.6055+00	9.1031+00
CP	5.6048-01	1.6997+00	3.0948-01	-1.5032-01	7.3491-01	-6.5885-02	7.0120-01	9.1032-01
P/PO1	4.5688-01	1.0219+00	3.3240-01	1.0436-01	5.4339-01	1.4623-01	5.2667-01	6.3038-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.7320+00	5.0695+00	7.0289+00	5.6133+00	6.3234+00	6.0375+00	5.2336+00
CP	7.1887-01	3.4711-01	6.2070-01	4.2303-01	5.2219-01	4.8277-01	3.7002-01
P/PO1	5.3544-01	3.5106-01	4.8675-01	3.8872-01	4.3789-01	4.1809-01	3.6242-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

B335

PRELIMINARY UNCORRECTED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	165.	301244	1.99	1	4.99	84.90	4.99	15.01	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4370 TO = 532.

P	1.3900+01	1.3884+01	1.1578+01	1.1300+01	1.1400+01	1.1328+01	1.0465+01	1.0666+01	1.0623+01
CP	1.5796+00	1.5774+00	1.2555+00	1.2169+00	1.2307+00	1.2207+00	1.1699+00	1.1561+00	1.1222+00
P/PO1	9.6231-01	9.6123-01	8.0156-01	7.8236-01	7.8927-01	7.8430-01	7.5914-01	7.5226-01	7.3549-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4375 TO = 532.

P	1.0269+01	7.5263+00	2.3921+00	1.0302+00	1.0783+00	1.0309+00	1.0005+00	9.6695-01	1.1586+01
CP	1.0711+00	6.8867-01	-2.7207-02	-2.1710-01	-2.1039-01	-2.1700-01	-2.2125-01	-2.2592-01	1.2548+00
P/PO1	7.1011-01	5.2046-01	1.6542-01	7.1239-02	7.4566-02	7.1288-02	6.9183-02	6.6866-02	8.0171-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4373 TO = 532.

P	1.1328+01	1.1375+01	1.0939+01	1.0351+01	7.6366+00	2.4775+00	1.1431+01	1.1335+01	1.1447+01
CP	1.2195+00	1.2261+00	1.1652+00	1.0932+00	7.0455-01	-1.5132-02	1.2338+00	1.2204+00	1.2360+00
P/PO1	7.8375-01	7.8698-01	7.5680-01	7.1612-01	5.2833-01	1.7141-01	7.9084-01	7.8418-01	7.9141-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4375 TO = 532.

P	1.1547+01	1.1001+01	1.0705+01	1.0429+01	1.0073+01	7.7289+00	2.1936+00	9.8697-01	9.4647-01
CP	1.2492+00	1.1732+00	1.1319+00	1.0934+00	1.0437+00	7.1691-01	-5.5303-02	-2.2412-01	-2.2777-01
P/PO1	7.9847-01	7.6075-01	7.4029-01	7.2117-01	6.7655-01	5.3447-01	1.5148-01	6.8252-02	6.5930-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4376 TO = 532.

P	1.0365+00	1.0007+00	1.1438+01	9.8840+00	9.8074+00	9.4741+00	9.0051+00	6.9728+00	2.0710+00
CP	-2.1625-01	-2.2125-01	1.2336+00	1.0171+00	1.0064+00	9.5994-01	8.9998-01	6.1126-01	-7.9717-02
P/PO1	7.1660-02	6.9183-02	7.9074-01	6.8333-01	6.7803-01	6.5500-01	6.2278-01	4.8207-01	1.3972-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4357 TO = 532.

P	1.2201+01	9.3027+00	9.1625+00	1.7178+00	1.0042+00	9.7206-01	9.3549-01	9.1685-01	5.1034+00
CP	1.3473+00	9.4156-01	9.2193-01	-1.2026-01	-2.2016-01	-2.2466-01	-2.2978-01	-2.3239-01	3.5369-01
P/PO1	8.4711-01	6.4588-01	6.3614-01	1.1927-01	6.9721-02	6.7489-02	6.4950-02	6.3656-02	3.5432-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4367 TO = 532.

P	7.8847+00	8.5236+00	8.4457+00	8.2341+00	6.5747+00	2.0260+00	6.1659+00	6.3943+00	6.8649+00
CP	7.4071-01	8.2996-01	8.1908-01	7.8951-01	5.5771-01	-7.7722-02	5.0060-01	5.3251-01	5.9823-01
P/PO1	5.4627-01	5.9053-01	5.8513-01	5.7047-01	4.5551-01	1.4036-01	4.2718-01	4.4301-01	4.7561-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 20.0 Q-INF = 7.179 P-INF =2.5897 RE = .4379 TO = 532.

P	5.6694+00	6.5291+00	6.6226+00	6.5530+00	6.3873+00	5.4860+00	1.4474+00	9.2687-01	8.9124-01
CP	4.2900-01	5.4876-01	5.6178-01	5.5210-01	5.2901-01	4.0346-01	-1.5912-01	-2.3163-01	-2.3659-01
P/PO1	3.9168-01	4.5107-01	4.5753-01	4.5272-01	4.4127-01	3.7901-01	9.9996-02	6.4034-02	6.1573-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4388 TO = 532.

P	9.7794-01	9.6125-01	5.5941+00	5.4633+00	5.8095+00	5.8525+00	5.6368+00	4.9362+00	1.4760+00
CP	-2.2480-01	-2.2712-01	4.1688-01	3.9870-01	4.4681-01	4.5280-01	4.2281-01	3.2542-01	-1.6252-01
P/PO1	6.7420-02	6.6269-02	3.8566-01	3.7665-01	4.0051-01	4.0348-01	3.8860-01	3.4030-01	9.8308-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4369 TO = 532.

P	9.7794-01	9.0067+00	4.6963+00	4.8057+00	5.4675+00	5.6503+00	5.2333+00	5.1600+00	5.2901+00
CP	-2.2416-01	8.9714-01	2.9515-01	3.0973-01	4.0286-01	4.2839-01	3.7314-01	3.5991-01	3.7808-01
P/PO1	6.7737-02	6.2385-01	3.2529-01	3.3252-01	3.7871-01	3.9137-01	3.6248-01	3.5741-01	3.6642-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4368 TO = 532.

P	5.4174+00	4.5448+00	1.3737+00	9.1936-01	9.6843-01	9.3369-01	9.0430-01	9.0182-01	8.6613-01
CP	3.9586-01	2.7399-01	-1.6889-01	-2.3234-01	-2.2549-01	-2.3034-01	-2.3444-01	-2.3479-01	-2.3978-01
P/PO1	3.7524-01	3.1480-01	9.5150-02	6.3680-02	6.7079-02	6.4673-02	6.2637-02	6.2465-02	5.9993-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.7406+00	1.4953+01	5.2828+00	2.7984+00	9.4734+00	3.5625+00	9.5578+00	9.1031+00
CP	9.9965-01	1.7276+00	3.7706-01	3.0093-02	9.6233-01	1.3680-01	9.7412-01	9.1062-01
P/PO1	6.7469-01	1.0357+00	3.6592-01	1.9384-01	6.5618-01	2.4676-01	6.6203-01	6.3053-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.2695+00	6.7617+00	8.8758+00	7.6031+00	8.0039+00	7.6125+00	6.0000+00
CP	9.3386-01	5.8361-01	8.7886-01	7.0112-01	7.5710-01	7.0243-01	4.7723-01
P/PO1	6.4206-01	4.6835-01	6.1479-01	5.2663-01	5.5439-01	5.2728-01	4.1559-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY -
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	166.	301244	1.99	1	9.00	89.90	9.00	15.02	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4390 TO = 532.

P	1.3713+01	1.3790+01	1.1609+01	1.1223+01	1.1182+01	1.0939+01	1.0717+01	1.0662+01	1.0359+01
CP	1.5445+00	1.5553+00	1.2522+00	1.1985+00	1.1929+00	1.1591+00	1.1282+00	1.1207+00	1.0786+00
P/PO1	9.4491-01	9.5028-01	7.9995-01	7.7334-01	7.7051-01	7.5378-01	7.3846-01	7.3473-01	7.1384-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	9.9416+00	7.2770+00	2.3302+00	9.5210-01	9.9909-01	9.4648-01	8.9131-01	8.7677-01	1.1079+01
CP	1.0290+00	6.5654-01	-3.4993-02	-2.2764-01	-2.2108-01	-2.2843-01	-2.3614-01	-2.3817-01	1.2720+00
P/PO1	6.8926-01	5.0452-01	1.6156-01	6.6010-02	6.9268-02	6.5620-02	6.1795-02	6.0787-02	8.0775-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4377 TO = 532.

P	1.1469+01	1.1515+01	1.1048+01	1.0413+01	7.6991+00	2.5028+00	1.2301+01	1.2101+01	1.2114+01
CP	1.2376+00	1.2441+00	1.1790+00	1.0905+00	7.1225-01	-1.1934-02	1.3536+00	1.3257+00	1.3276+00
P/PO1	7.9270-01	7.9594-01	7.6362-01	7.1975-01	5.3215-01	1.7299-01	8.5021-01	8.3639-01	8.3733-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4384 TO = 532.

P	1.2092+01	1.1640+01	1.1313+01	1.0974+01	1.0495+01	8.0250+00	2.3335+00	9.0934-01	8.7367-01
CP	1.3217+00	1.2586+00	1.2133+00	1.1661+00	1.0994+00	7.5583-01	-3.6062-02	-2.3422-01	-2.3918-01
P/PO1	8.3441-01	8.0323-01	7.8065-01	7.5724-01	7.2418-01	5.5377-01	1.6103-01	6.2749-02	6.0288-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4386 TO = 532.

P	9.4738-01	9.1935-01	1.1999+01	1.0693+01	1.0588+01	1.0222+01	9.5983+00	7.3636+00	2.1967+00
CP	-2.2899-01	-2.3289-01	1.3079+00	1.1264+00	1.1118+00	1.0609+00	9.7411-01	6.6333-01	-5.5240-02
P/PO1	6.5344-02	6.3410-02	8.2757-01	7.3756-01	7.3030-01	7.0505-01	6.6202-01	5.0789-01	1.5151-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4367 TO = 532.

P	1.2902+01	1.0549+01	1.0316+01	1.7833+00	9.4543-01	9.0555-01	8.6792-01	8.4671-01	5.5017+00
CP	1.4408+00	1.1122+00	1.0796+00	-1.1174-01	-2.2873-01	-2.3430-01	-2.3955-01	-2.4252-01	4.0745-01
P/PO1	8.9347-01	7.3053-01	7.1435-01	1.2349-01	6.5470-02	6.2709-02	6.0103-02	5.8634-02	3.8099-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4354 TO = 532.

P	9.0378+00	9.2092+00	9.1313+00	8.3897+00	6.5591+00	2.0669+00	7.1133+00	7.0979+00	7.2065+00
CP	9.0537-01	9.2939-01	9.1847-01	8.1458-01	5.5812-01	-7.1186-02	6.3576-01	6.3360-01	6.4882-01
P/PO1	6.2793-01	6.3984-01	6.3443-01	5.8290-01	4.5571-01	1.4361-01	4.9422-01	4.9315-01	5.0069-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4370 TO = 532.

P	5.6505+00	6.8875+00	6.9809+00	6.8176+00	6.5435+00	5.5492+00	1.4838+00	8.5172-01	8.1090-01
CP	4.2804-01	6.0072-01	6.1377-01	5.9097-01	5.5270-01	4.1390-01	-1.5361-01	-2.4184-01	-2.4754-01
P/PO1	3.9120-01	4.7684-01	4.8331-01	4.7200-01	4.5302-01	3.8419-01	1.0273-01	5.8967-02	5.6141-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	-1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED D

ARNOLD ENGINEERING DEVELOPMENT CENTER

40

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RL = .4373 TO = 532.

P	8.9644-01	8.8977-01	5.2865+00	5.5258+00	5.8875+00	5.8336+00	5.5984+00	4.8802+00	1.3858+00
CP	-2.3569-01	-2.3662-01	3.7671-01	4.1010-01	4.6056-01	4.5303-01	4.2022-01	3.2004-01	-1.6742-01
P/PO1	6.2020-02	6.1558-02	3.6574-01	3.8730-01	4.0732-01	4.0359-01	3.8732-01	3.3763-01	9.5876-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4386 TO = 532.

P	8.9899-01	8.8976+00	4.7151+00	4.9320+00	5.3729+00	5.1447+00	5.2525+00	5.1849+00	5.1283+00
CP	-2.3572-01	8.7666-01	2.9500-01	3.2516-01	3.8648-01	3.5474-01	3.6973-01	3.6033-01	3.5246-01
P/PO1	6.2006-02	6.1369-01	3.2522-01	3.4017-01	3.7059-01	3.5484-01	3.6228-01	3.5762-01	3.5371-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4372 TO = 532.

P	5.1843+00	4.3796+00	1.2923+00	8.4631-01	8.9433-01	8.5695-01	8.2895-01	8.3169-01	7.9082-01
CP	3.6263-01	2.5035-01	-1.8043-01	-2.4265-01	-2.3596-01	-2.4117-01	-2.4508-01	-2.4470-01	-2.5040-01
P/PO1	3.5876-01	3.0307-01	8.9428-02	5.8565-02	6.1888-02	5.9301-02	5.7363-02	5.7552-02	5.4725-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0573+01	1.4534+01	5.2828+00	3.2695+00	1.0320+01	3.9797+00	1.0352+01	9.1055+00
CP	1.1145+00	1.6671+00	3.7637-01	9.5457-02	1.0791+00	1.9454-01	1.0837+00	9.0975-01
P/PO1	7.3163-01	1.0057+00	3.6557-01	2.2625-01	7.1411-01	2.7540-01	7.1639-01	6.3010-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.9961+00	7.7813+00	9.5461+00	8.1633+00	8.4750+00	8.0063+00	6.2367+00
CP	1.0340+00	7.2498-01	9.7123-01	7.7828-01	8.2178-01	7.5637-01	5.0947-01
P/PO1	6.9173-01	5.3846-01	6.6059-01	5.6490-01	5.8647-01	5.5403-01	4.3158-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	167.	301244	1.99	1	7.07	134.83	5.01	10.00	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4377 TO = 532.

P	1.4258+01	1.3245+01	1.0113+01	9.9930+00	1.0276+01	1.0284+01	1.0002+01	1.0053+01	9.9969+00
CP	1.6263+00	1.4852+00	1.0487+00	1.0319+00	1.0714+00	1.0726+00	1.0332+00	1.0403+00	1.0202+00
P/PO1	9.8550-01	9.1549-01	6.9900-01	6.9070-01	7.1026-01	7.1085-01	6.9133-01	6.9483-01	6.8487-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4372 TO = 532.

P	9.7858+00	7.3549+00	2.2844+00	1.0529+00	1.1039+00	1.0565+00	1.0056+00	9.5443-01	1.0530+01
CP	1.0047+00	6.6549-01	-4.1996-02	-2.1384-01	-2.0672-01	-2.1333-01	-2.2042-01	-2.2757-01	1.1085+00
P/PO1	6.7718-01	5.0896-01	1.5808-01	7.2858-02	7.6387-02	7.3109-02	6.9591-02	6.6047-02	7.2869-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 20.0 Q-INF = 7.196 P-INF =2.5957 RE = .4389 TO = 532.

P	1.0456+01	1.0612+01	1.0331+01	9.9930+00	7.5273+00	2.3816+00	1.0313+01	1.0318+01	1.0530+01
CP	1.0923+00	1.1140+00	1.0750+00	1.0280+00	6.8536-01	-2.9767-02	1.0725+00	1.0733+00	1.1027+00
P/PO1	7.2066-01	7.3140-01	7.1207-01	6.8876-01	5.1882-01	1.6415-01	7.1080-01	7.1120-01	7.2579-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4370 TO = 532.

P	1.0783+01	1.0503+01	1.0300+01	1.0149+01	9.9635+00	7.8068+00	2.1906+00	1.0045+00	9.6154-01
CP	1.1445+00	1.1054+00	1.0771+00	1.0560+00	1.0301+00	7.2706-01	-5.4943-02	-2.2051-01	-2.2651-01
P/PO1	7.4654-01	7.2712-01	7.1310-01	7.0262-01	6.8980-01	5.4049-01	1.5166-01	6.9546-02	6.6570-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4382 TO = 532.

P	1.0416+00	1.0105+00	1.0674+01	9.6038+00	9.8542+00	9.5988+00	9.3187+00	7.3167+00	2.1114+00
CP	-2.1575-01	-2.2007-01	1.1251+00	9.7613-01	1.0110+00	9.7544-01	9.3645-01	6.5777-01	-6.6835-02
P/PO1	7.1910-02	6.9766-02	7.3691-01	6.6303-01	6.8031-01	6.6268-01	6.4334-01	5.0513-01	1.4576-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4362 TO = 532.

P	1.2388+01	9.1157+00	9.0067+00	2.0150+00	9.9142-01	9.7206-01	9.3029-01	9.1194-01	6.3773+00
CP	1.3718+00	9.1418-01	8.9892-01	-7.8320-02	-2.2208-01	-2.2479-01	-2.3063-01	-2.3321-01	5.2485-01
P/PO1	8.5928-01	6.3230-01	6.2473-01	1.3977-01	6.8769-02	6.7426-02	6.4528-02	6.3243-02	4.4169-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4388 TO = 532.

P	8.5080+00	8.8197+00	8.8664+00	8.6076+00	6.9807+00	2.2716+00	6.8959+00	7.0197+00	7.3463+00
CP	8.2193-01	8.6525-01	8.7175-01	8.3578-01	6.0963-01	-4.4979-02	5.9783-01	6.1504-01	6.6044-01
P/PO1	5.8655-01	6.0803-01	6.1126-01	5.9342-01	4.8126-01	1.5660-01	4.7541-01	4.8394-01	5.0646-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4365 TO = 532.

P	6.8719+00	7.5108+00	7.6042+00	7.4402+00	7.5117+00	6.3576+00	1.7203+00	9.3689-01	8.9626-01
CP	5.9967-01	6.8896-01	7.0203-01	6.7911-01	6.8910-01	5.2781-01	-1.2032-01	-2.2980-01	-2.3548-01
P/PO1	4.7632-01	5.2060-01	5.2708-01	5.1572-01	5.2067-01	4.4068-01	1.1924-01	6.4940-02	6.2124-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHE

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.184 P-INF =2.5915 RE = .4382 TO = 532.

P	9.8813-01	9.6618-01	6.6693+00	6.3662+00	6.7309+00	6.7316+00	6.4920+00	5.7846+00	1.6595+00
CP	-2.2319-01	-2.2625-01	5.6764-01	5.2545-01	5.7621-01	5.7632-01	5.4297-01	4.4449-01	-1.2974-01
P/PO1	6.8218-02	6.6703-02	4.6043-01	4.3951-01	4.6468-01	4.6474-01	4.4820-01	3.9936-01	1.1457-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4383 TO = 532.

P	9.8303-01	1.0051+01	5.6883+00	5.6634+00	5.9969+00	6.3088+00	6.0261+00	6.1911+00	6.0572+00
CP	-2.2373-01	1.0380+00	4.3090-01	4.2743-01	4.7384-01	5.2837-01	4.7791-01	5.0687-01	4.8223-01
P/PO1	6.7851-02	6.9372-01	3.9262-01	3.9089-01	4.1391-01	4.4097-01	4.1593-01	4.2732-01	4.1804-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4371 TO = 532.

P	6.1239+00	5.2421+00	1.6077+00	9.2943-01	9.8120-01	9.4392-01	9.1210-01	9.1184-01	8.7367-01
CP	4.9393-01	3.7086-01	-1.3636-01	-2.3103-01	-2.2380-01	-2.2900-01	-2.3345-01	-2.3348-01	-2.3881-01
P/PO1	4.2388-01	3.6284-01	1.1128-01	6.4332-02	6.7916-02	6.5335-02	6.3132-02	6.3115-02	6.0472-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.5016+00	1.5600+01	5.2828+00	4.1625+00	9.0352+00	6.1031+00	9.4242+00	9.1055+00
CP	9.6532-01	1.8164+00	3.7654-01	2.2019-01	9.0023-01	4.9103-01	9.5453-01	9.1004-01
P/PO1	6.5767-01	1.0798+00	3.6566-01	2.8811-01	6.2538-01	4.2244-01	6.5231-01	6.3025-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.3914+00	8.0273+00	9.1430+00	8.5289+00	8.7867+00	8.6742+00	6.7570+00
CP	9.4995-01	7.5958-01	9.1528-01	8.2958-01	8.6556-01	8.4986-01	5.8229-01
P/PO1	6.5004-01	5.5563-01	6.3285-01	5.9034-01	6.0819-01	6.0040-01	4.6770-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.201 P-INF =2.5976 RE = .4392 TO = 532.

P	9.3210-01	9.1195-01	6.4511+00	6.4908+00	6.9495+00	6.7628+00	6.4299+00	5.7846+00	1.6770+00
CP	-2.3129-01	-2.3409-01	5.3517-01	5.4067-01	6.0438-01	5.7845-01	5.3222-01	4.4260-01	-1.2784-01
P/PO1	6.4199-02	6.2812-02	4.4443-01	4.4706-01	4.7865-01	4.6579-01	4.4287-01	3.9842-01	1.1551-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.206 P-INF =2.5994 RE = .4396 TO = 532.

P	9.2446-01	9.9884+00	5.6695+00	5.7821+00	6.0281+00	5.9993+00	5.9329+00	6.1911+00	5.9329+00
CP	-2.3245-01	1.0254+00	4.2606-01	4.4169-01	4.7583-01	4.7183-01	4.6262-01	4.9845-01	4.6262-01
P/PO1	6.3628-02	6.8748-01	3.9022-01	3.9797-01	4.1490-01	4.1291-01	4.0835-01	4.2612-01	4.0835-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4372 TO = 532.

P	5.8590+00	5.0953+00	1.5162+00	8.7402-01	9.2243-01	8.8253-01	8.5493-01	8.5423-01	8.1592-01
CP	4.5677-01	3.5021-01	-1.4919-01	-2.3879-01	-2.3203-01	-2.3760-01	-2.4145-01	-2.4155-01	-2.4690-01
P/PO1	4.0545-01	3.5260-01	1.0492-01	6.0483-02	6.3833-02	6.1071-02	5.9161-02	5.9113-02	5.6462-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0570+01	1.5202+01	5.2828+00	4.9266+00	9.9469+00	6.0000+00	1.0273+01	9.1055+00	
CP	1.1141+00	1.7603+00	3.7637-01	3.2666-01	1.0271+00	4.7644-01	1.0726+00	9.0975-01	
P/PO1	7.3147-01	1.0520+00	3.6557-01	3.4092-01	6.8833-01	4.1520-01	7.1087-01	6.3010-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	1.0139+01	8.9039+00	9.8531+00	9.2508+00	9.2391+00	9.1219+00	6.9211+00
CP	1.0540+00	8.8162-01	1.0141+00	9.3002-01	9.2839-01	9.1203-01	6.0496-01
P/PO1	7.0163-01	6.1615-01	6.8184-01	6.4016-01	6.3935-01	6.3124-01	4.7894-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	169.	301244	1.99	1	11.17	153.24	5.00	5.00	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.192 P-INF =2.5909 RE = .4381 TO = 532.

P	1.4383+01	1.2388+01	8.6950+00	8.5921+00	8.8391+00	9.0690+00	8.8217+00	8.9427+00	8.8839+00
CP	1.6418+00	1.3641+00	8.4991-01	8.3558-01	8.6998-01	9.0198-01	8.6755-01	8.8440-01	8.7620-01
P/PO1	9.9318-01	8.5545-01	6.0043-01	5.9332-01	6.1038-01	6.2625-01	6.0918-01	6.1753-01	6.1347-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4378 TO = 532.

P	9.0534+00	7.1056+00	2.1928+00	1.1083+00	1.1575+00	1.1000+00	1.0628+00	1.0571+00	9.4274+00
CP	9.0070-01	6.2931-01	-5.5206-02	-2.0632-01	-1.9946-01	-2.0748-01	-2.1266-01	-2.1345-01	9.5282-01
P/PO1	6.2562-01	4.9102-01	1.5153-01	7.6584-02	7.9987-02	7.6011-02	7.3444-02	7.3051-02	6.5146-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4373 TO = 532.

P	9.3027+00	9.5832+00	9.3806+00	9.3548+00	7.2931+00	2.2767+00	9.1634+00	9.2866+00	9.4740+00
CP	9.3697-01	9.7609-01	9.4783-01	9.4422-01	6.5662-01	-4.3151-02	9.1753-01	9.3472-01	9.6086-01
P/PO1	6.4360-01	6.6301-01	6.4899-01	6.4720-01	5.0456-01	1.5751-01	6.3396-01	6.4249-01	6.5545-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4372 TO = 532.

P	9.7235+00	9.7390+00	9.5988+00	9.5727+00	9.6356+00	7.7445+00	2.1256+00	1.0772+00	1.0419+00
CP	9.9597-01	9.9815-01	9.7858-01	9.7494-01	9.8371-01	7.1985-01	-6.4151-02	-2.1044-01	-2.1537-01
P/PO1	6.7287-01	6.7394-01	6.6424-01	6.6243-01	6.6679-01	5.3592-01	1.4709-01	7.4541-02	7.2398-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4384 TO = 532.

P	1.1206+00	1.0943+00	9.6767+00	9.3236+00	9.5419+00	9.5365+00	9.4119+00	7.5669+00	7.1214+00
CP	-2.0483-01	-2.0848-01	9.8565-01	9.3652-01	9.6689-01	9.6614-01	9.4881-01	6.9209-01	-6.5575-02
P/PO1	7.7324-02	7.5516-02	6.6775-01	6.4338-01	6.5844-01	6.5807-01	6.4947-01	5.2216-01	1.4639-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4376 TO = 532.

P	1.2513+01	8.9911+00	8.9755+00	2.1485+00	1.0962+00	1.0667+00	1.0212+00	1.0095+00	7.5637+00
CP	1.3835+00	8.9261-01	8.9043-01	-6.1239-02	-2.0793-01	-2.1204-01	-2.1838-01	-2.2001-01	6.9363-01
P/PO1	8.6507-01	6.2160-01	6.2052-01	1.4854-01	7.5785-02	7.3747-02	7.0604-02	6.9795-02	5.2292-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4384 TO = 532.

P	8.8976+00	9.1781+00	9.0690+00	8.9345+00	7.2931+00	2.3713+00	7.7035+00	7.8639+00	7.9986+00
CP	8.7724-01	9.1627-01	9.0109-01	8.8738-01	6.5399-01	-3.0802-02	7.1110-01	7.3342-01	7.5216-01
P/PO1	6.1398-01	6.3334-01	6.2581-01	6.1653-01	5.0326-01	1.6363-01	5.3158-01	5.4265-01	5.5194-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4385 TO = 532.

P	8.0406+00	8.6171+00	8.5080+00	8.2963+00	8.4175+00	7.0589+00	1.9489+00	1.0271+00	9.8162-01
CP	7.5774-01	8.3794-01	8.2276-01	7.9332-01	8.1017-01	6.2118-01	-8.9636-02	-2.1787-01	-2.2419-01
P/PO1	5.5471-01	5.9449-01	5.8696-01	5.7236-01	5.8071-01	4.8699-01	1.3446-01	7.0857-02	6.7721-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V. D. KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.179 P-INF =2.5897 RE = .4379 TO = 532.

P	1.0645+00	1.0500+00	7.7912+00	7.4247+00	7.7928+00	7.7445+00	7.6414+00	6.7227+00	1.9507+00
CP	-2.1245-01	-2.1448-01	7.2458-01	6.7352-01	7.2480-01	7.1807-01	7.0370-01	5.7573-01	-8.9010-02
P/PO1	7.3544-02	7.2539-02	5.3827-01	5.1294-01	5.3838-01	5.3504-01	5.2791-01	4.6444-01	1.3477-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4368 TO = 532.

P	1.0620+00	1.1110+01	6.7005+00	6.7398+00	6.9807+00	7.3861+00	7.0822+00	7.2386+00	7.1754+00
CP	-2.1242-01	1.1909+00	5.7506-01	5.8055-01	6.1420-01	6.7081-01	6.2837-01	6.5021-01	6.4139-01
P/PO1	7.3559-02	7.6956-01	4.6411-01	4.6684-01	4.8352-01	5.1160-01	4.9055-01	5.0138-01	4.9701-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4376 TO = 532.

P	7.1368+00	6.0927+00	1.8316+00	1.0151+00	1.0630+00	1.0232+00	9.9525-01	9.9200-01	9.4647-01
CP	6.3412-01	4.8858-01	-1.0542-01	-2.1924-01	-2.1256-01	-2.1810-01	-2.2200-01	-2.2246-01	-2.2880-01
P/PO1	4.9340-01	4.2122-01	1.2663-01	7.0177-02	7.3489-02	7.0741-02	6.8807-02	6.8582-02	6.5435-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.3586+00	1.5877+01	4.8000+00	7.3148+00	8.7797+00	8.1750+00	9.3938+00	9.1031+00
CP	9.4384-01	1.8524+00	3.0837-01	6.5894-01	8.6314-01	7.7884-01	9.4874-01	9.0822-01
P/PO1	6.4701-01	1.0976+00	3.3185-01	5.0571-01	6.0699-01	5.6518-01	6.4944-01	6.2935-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.5016+00	8.9039+00	9.3516+00	9.2813+00	9.1781+00	9.0891+00	7.1484+00
CP	9.6377-01	8.8045-01	9.4286-01	9.3305-01	9.1868-01	9.0626-01	6.3574-01
P/PO1	6.5689-01	6.1557-01	6.4652-01	6.4166-01	6.3453-01	6.2837-01	4.9421-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4348 TO = 532.

P	9.9322-01	9.8097-01	7.6822+00	7.5959+00	7.9490+00	7.8536+00	7.5637+00	6.5819+00	1.9030+00
CP	-2.2140-01	-2.2312-01	7.1698-01	7.0488-01	7.5442-01	7.4103-01	7.0037-01	5.6264-01	-9.3772-02
P/PO1	6.9105-02	6.8253-02	5.3450-01	5.2850-01	5.5306-01	5.4643-01	5.7626-01	4.5795-01	1.3240-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4355 TO = 532.

P	9.8813-01	1.0954+01	6.7316+00	6.7398+00	6.9963+00	7.0121+00	6.9114+00	7.2229+00	6.9269+00
CP	-2.2235-01	1.1735+00	5.8207-01	5.8322-01	6.1915-01	6.2136-01	6.0725-01	6.5089-01	6.0943-01
P/PO1	6.8637-02	7.6092-01	4.6759-01	4.6816-01	4.8598-01	4.8707-01	4.8008-01	5.0172-01	4.8116-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	6.8563+00	5.9369+00	1.7604+00	9.2692-01	9.7609-01	9.4137-01	9.1210-01	9.0934-01	8.6613-01
CP	5.9931-01	4.7057-01	-1.1425-01	-2.3095-01	-2.2406-01	-2.2833-01	-2.3303-01	-2.3341-01	-2.3946-01
P/PO1	4.7614-01	4.1229-01	1.2225-01	6.4370-02	6.7785-02	6.5374-02	6.3341-02	6.3149-02	6.0149-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0502+01	1.5511+01	4.8000+00	6.7219+00	9.7500+00	8.8875+00	1.0137+01	9.1055+00
CP	1.1098+00	1.8112+00	3.1138-01	5.8049-01	1.0045+00	8.8373-01	1.0586+00	9.1425-01
P/PO1	7.2934-01	1.0772+00	3.3334-01	4.6680-01	6.7709-01	6.1720-01	7.0395-01	6.3233-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0277+01	9.7500+00	1.0092+01	9.9609+00	9.6680+00	9.5930+00	7.3453+00
CP	1.0783+00	1.0045+00	1.0524+00	1.0340+00	9.9301-01	9.8251-01	6.6778-01
P/PO1	7.1371-01	6.7709-01	7.0086-01	6.9174-01	6.7140-01	6.6619-01	5.1010-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED

CONFIDENTIAL

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	171.	301244	1.99	1	14.65	160.09	4.94	1.19	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	1.4383+01	1.1749+01	7.6977+00	7.6270+00	7.8553+00	8.1964+00	7.9209+00	8.0984+00	7.9830+00
CP	1.6499+00	1.2817+00	7.1535-01	7.0547-01	7.3737-01	7.8506-01	7.4655-01	7.7137-01	7.5523-01
P/PO1	9.9716-01	8.1458-01	5.3369-01	5.2879-01	5.4461-01	5.6826-01	5.4916-01	5.6147-01	5.5347-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4363 TO = 532.

P	8.2120+00	6.7460+00	2.0758+00	1.0932+00	1.1422+00	1.0872+00	1.0368+00	1.0546+00	8.4956+00
CP	7.8751-01	5.7834-01	-7.0487-02	-2.0784-01	-2.0103-01	-2.0873-01	-2.1577-01	-2.1328-01	8.2716-01
P/PO1	5.6948-01	4.6574-01	1.4395-01	7.5807-02	7.9207-02	7.5393-02	7.1901-02	7.3136-02	5.8914-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4355 TO = 532.

P	8.4301+00	8.7729+00	8.5704+00	8.6076+00	6.9339+00	2.1846+00	8.4490+00	8.6613+00	8.8217+00
CP	8.1996-01	8.6797-01	8.3960-01	8.4482-01	6.1040-01	-5.4774-02	8.2260-01	8.5234-01	8.7481-01
P/PO1	5.8557-01	6.0938-01	5.9531-01	5.9790-01	4.8164-01	1.5175-01	5.8688-01	6.0163-01	6.1277-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4388 TO = 532.

P	8.8353+00	9.1781+00	8.9911+00	8.9968+00	9.1046+00	7.5108+00	2.0373+00	1.1072+00	1.0670+00
CP	8.6742-01	9.1507-01	8.8909-01	8.8987-01	9.0486-01	6.8330-01	-7.7545-02	-2.0683-01	-2.1742-01
P/PO1	6.0911-01	6.3274-01	6.1985-01	6.2024-01	6.2768-01	5.1780-01	1.4045-01	7.6334-02	7.3558-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4366 TO = 532.

P	1.1409+00	1.1067+00	8.5236+00	9.1057+00	9.4170+00	9.3806+00	9.1945+00	7.5044+00	2.0667+00
CP	-2.0132-01	-2.0611-01	8.3024-01	9.1158-01	9.5506-01	9.4999-01	9.2398-01	6.8782-01	-7.2041-02
P/PO1	7.9064-02	7.6690-02	5.9067-01	6.3101-01	6.5258-01	6.5006-01	6.3716-01	5.2004-01	1.4318-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4385 TO = 532.

P	1.2497+01	8.9288+00	8.9599+00	2.1813+00	1.1550+00	1.1255+00	1.0680+00	1.0596+00	8.4490+00
CP	1.3777+00	8.8129-01	8.8562-01	-5.7316-02	-2.0038-01	-2.0417-01	-2.1218-01	-2.1334-01	8.1455-01
P/PO1	8.6217-01	6.1599-01	6.1814-01	1.5048-01	7.9680-02	7.7651-02	7.3681-02	7.3104-02	5.8289-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4376 TO = 532.

P	9.0846+00	9.4586+00	9.3339+00	9.1836+00	7.4961+00	2.4459+00	8.3403+00	8.5987+00	8.7596+00
CP	9.0564-01	9.5777-01	9.4039-01	9.1944-01	6.8420-01	-1.9781-02	8.0188-01	8.3791-01	8.6034-01
P/PO1	6.2806-01	6.5392-01	6.4530-01	6.3491-01	5.1824-01	1.6910-01	5.7661-01	5.9448-01	6.0560-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4368 TO = 532.

P	8.8353+00	9.1313+00	9.1002+00	8.9656+00	8.9797+00	7.4328+00	2.0763+00	1.0772+00	1.0318+00
CP	8.7321-01	9.1455-01	9.1020-01	8.9141-01	8.9337-01	6.7734-01	-7.0767-02	-2.1030-01	-2.1663-01
P/PO1	6.1198-01	6.3249-01	6.3033-01	6.2101-01	6.2198-01	5.1484-01	1.4381-01	7.4611-02	7.1470-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

CONFIDENTIAL

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4378 TO = 532.

P	1.1053+00	1.0943+00	8.5859+00	8.2341+00	8.5580+00	8.4763+00	8.4024+00	7.2229+00	2.1214+00
CP	-2.0674-01	-2.0826-01	8.3557-01	7.8654-01	8.3168-01	8.2037-01	8.0999-01	6.4566-01	-6.5159-02
P/PO1	7.6378-02	7.5622-02	5.9331-01	5.6900-01	5.9138-01	5.8577-01	5.8063-01	4.9912-01	1.4659-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.194 P-INF =2.5951 RE = .4388 TO = 532.

P	1.1053+00	1.1796+01	7.5731+00	7.6115+00	7.8397+00	8.1808+00	7.8899+00	8.0672+00	7.3986+00
CP	-2.0710-01	1.2790+00	6.9197-01	6.9730-01	7.2902-01	7.7644-01	7.3600-01	7.6065-01	7.5111-01
P/PO1	7.6198-02	8.1322-01	5.2209-01	5.2474-01	5.4047-01	5.6399-01	5.4393-01	5.5616-01	5.5143-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4372 TO = 532.

P	7.9626+00	6.6849+00	1.9944+00	1.0453+00	1.0885+00	1.0462+00	1.0134+00	1.0120+00	9.5902-01
CP	7.5029-01	5.7200-01	-8.2460-02	-2.1489-01	-2.0886-01	-2.1476-01	-2.1934-01	-2.1953-01	-2.2693-01
P/PO1	5.5102-01	4.6260-01	1.3801-01	7.2335-02	7.5326-02	7.2401-02	7.0131-02	7.0034-02	6.6365-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.3328+00	1.5921+01	4.8000+00	8.4047+00	8.7258+00	8.7867+00	9.3469+00	9.1031+00
CP	9.4147-01	1.8607+00	3.0900-01	8.1197-01	8.5677-01	8.6527-01	9.4343-01	9.0942-01
P/PO1	6.4583-01	1.1017+00	3.3216-01	5.8161-01	6.0183-01	6.0804-01	6.4681-01	6.2994-01
S/R	2.8900-01	1.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.4688+00	9.1617+00	9.4734+00	9.5414+00	9.2133+00	9.2695+00	7.2422+00
CP	9.6043-01	9.1759-01	9.6109-01	9.7057-01	9.2479-01	9.3264-01	6.4976-01
P/PO1	6.5524-01	6.3399-01	6.5556-01	6.6027-01	6.3756-01	6.4145-01	5.0116-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	172.	301244	1.99	1	14.65	180.00	.00	.35	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4372 TO = 532.

P	1.4429+01	1.1687+01	7.4328+00	7.5181+00	7.7303+00	8.1029+00	7.7345+00	7.9265+00	7.9054+00
CP	1.6576+00	1.2699+00	6.7636-01	6.8825-01	7.1787-01	7.6986-01	7.1846-01	7.4524-01	7.4230-01
P/PO1	9.9852-01	8.0873-01	5.1435-01	5.2025-01	5.3494-01	5.6072-01	5.3523-01	5.4851-01	5.4706-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4350 TO = 532.

P	8.0717+00	6.6537+00	2.0707+00	1.0906+00	1.1320+00	1.0872+00	1.0316+00	1.0471+00	8.0918+00
CP	7.7110-01	5.7226-01	-7.0377-02	-2.0781-01	-2.0201-01	-2.0829-01	-2.1608-01	-2.1391-01	7.7391-01
P/PO1	5.6134-01	4.6273-01	1.4401-01	7.5847-02	7.8721-02	7.5607-02	7.1744-02	7.2821-02	5.6273-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.111 P-INF =2.5653 RE = .4338 TO = 532.

P	7.9003+00	8.1185+00	8.0094+00	8.0317+00	6.5903+00	2.1078+00	7.5326+00	7.5625+00	7.6414+00
CP	7.5077-01	7.8090-01	7.6556-01	7.6870-01	5.6600-01	-6.4332-02	6.9852-01	7.0553-01	7.1380-01
P/PO1	5.5098-01	5.6620-01	5.5859-01	5.6015-01	4.5962-01	1.4701-01	5.2534-01	5.2882-01	5.3292-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4372 TO = 532.

P	8.4613+00	8.2120+00	8.1029+00	8.1095+00	8.1832+00	6.9965+00	1.9307+00	1.0697+00	1.0268+00
CP	8.1986-01	7.8507-01	7.6986-01	7.7078-01	7.8106-01	6.1549-01	-9.1345-02	-2.1149-01	-2.1747-01
P/PO1	5.8552-01	5.6827-01	5.6072-01	5.6118-01	5.6628-01	4.8416-01	1.3361-01	7.4021-02	7.1055-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.177 P-INF =2.5891 RE = .4378 TO = 532.

P	1.1027+00	1.0796+00	8.1652+00	8.0317+00	8.1832+00	8.1496+00	8.2626+00	6.9415+00	1.9457+00
CP	-2.0709-01	-2.1032-01	7.7695-01	7.5835-01	7.7945-01	7.7477-01	7.9052-01	6.0644-01	-8.9645-02
P/PO1	7.6202-02	7.4600-02	5.6424-01	5.5501-01	5.6548-01	5.6316-01	5.7097-01	4.7968-01	1.3445-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4368 TO = 532.

P	1.1609+01	7.6198+00	7.7289+00	2.0327+00	1.1090+00	1.0821+00	1.0264+00	1.0296+00	8.3869+00
CP	1.2606+00	7.0346-01	7.1869-01	-7.6856-02	-2.0586-01	-2.0962-01	-2.1739-01	-2.1695-01	8.1058-01
P/PO1	8.0410-01	5.2779-01	5.3535-01	1.4079-01	7.6813-02	7.4949-02	7.1097-02	7.1314-02	5.8092-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4363 TO = 532.

P	7.9626+00	8.4457+00	8.3522+00	8.1407+00	6.8714+00	2.3150+00	7.6414+00	7.8483+00	7.9520+00
CP	7.5265-01	8.2019-01	8.0712-01	7.7754-01	6.0006-01	-3.7037-02	7.0772-01	7.3666-01	7.5115-01
P/PO1	5.5219-01	5.8569-01	5.7920-01	5.6453-01	4.7651-01	1.6054-01	5.2991-01	5.4426-01	5.5145-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4334 TO = 536.

P	8.7106+00	8.4301+00	8.4457+00	8.3586+00	8.2145+00	7.0121+00	1.9489+00	1.0496+00	1.0067+00
CP	8.5237-01	8.1330-01	8.1547-01	8.0334-01	7.8327-01	6.1582-01	-8.9318-02	-2.1456-01	-2.2054-01
P/PO1	6.0164-01	5.8227-01	5.8335-01	5.7733-01	5.6737-01	4.8433-01	1.3461-01	7.2498-02	6.9535-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

VALVE POS 10 PO = 20.0 Q-INF = 7.192 P-INF =2.5945 RE = .4387 TO = 532.

P	1.0849+00	1.0845+00	8.4301+00	8.1407+00	8.4331+00	8.3834+00	8.1384+00	7.0979+00	2.1164+00
CP	-2.0990-01	-2.0996-01	8.1138-01	7.7113-01	8.1179-01	8.0488-01	7.7081-01	6.2614-01	-6.6481-02
P/PO1	7.4811-02	7.4783-02	5.8131-01	5.6136-01	5.8152-01	5.7809-01	5.6120-01	4.8945-01	1.4594-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 20.0 Q-INF = 7.191 P-INF =2.5939 RE = .4386 TO = 532.

P	1.0900+00	1.1952+01	7.7757+00	7.7671+00	8.1676+00	8.3678+00	8.2005+00	8.2079+00	8.1849+00
CP	-2.0915-01	1.3014+00	7.2063-01	7.1945-01	7.7514-01	8.0298-01	7.7971-01	7.8074-01	7.7756-01
P/PO1	7.5180-02	8.2435-01	5.3631-01	5.3572-01	5.6334-01	5.7715-01	5.6561-01	5.6612-01	5.6454-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 20.0 Q-INF = 7.196 P-INF =2.5957 RE = .4389 TO = 532.

P	8.3834+00	6.9654+00	2.0885+00	1.0428+00	1.0911+00	1.0488+00	1.0108+00	1.0145+00	9.6154-01
CP	8.0433-01	6.0726-01	-7.0488-02	-2.1582-01	-2.0911-01	-2.1498-01	-2.2026-01	-2.1975-01	-2.2711-01
P/PO1	5.7782-01	4.8008-01	1.4395-01	7.1873-02	7.5202-02	7.2288-02	6.9672-02	6.9927-02	6.6273-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	7.8234+00	1.5581+01	4.8000+00	7.2164+00	7.6852+00	7.8820+00	8.2547+00	9.1055+00
CP	7.2651-01	1.8046+00	3.0633-01	6.4215-01	7.0730-01	7.3466-01	7.8645-01	9.0468-01
P/PO1	5.3923-01	1.0739+00	3.3084-01	4.9739-01	5.2970-01	5.4327-01	5.6895-01	6.2759-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.4773+00	8.1773+00	8.2969+00	8.5078+00	8.1539+00	8.2242+00	6.7031+00
CP	8.1739-01	7.7570-01	7.9231-01	8.2162-01	7.7244-01	7.8221-01	5.7082-01
P/PO1	5.8430-01	5.6362-01	5.7186-01	5.8640-01	5.6200-01	5.6685-01	4.6701-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	173.	301244	1.49	1	-.02	180.00	.00	15.02	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3680 TO = 535.

P	1.2341+01	1.3307+01	1.2544+01	1.2110+01	1.2009+01	1.1593+01	1.0934+01	1.0678+01	1.0188+01
CP	1.3690+00	1.5265+00	1.4020+00	1.3312+00	1.3148+00	1.2470+00	1.1395+00	1.0978+00	1.0179+00
P/PO1	9.2650-01	9.9902-01	9.4170-01	9.0912-01	9.0157-01	8.7034-01	8.2084-01	8.0163-01	7.6488-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3750 TO = 531.

P	9.6611+00	7.0121+00	2.5993+00	2.8754+00	2.9198+00	2.8315+00	2.7928+00	2.7852+00	1.1431+01
CP	9.1809-01	4.8992-01	-2.2334-01	-1.7871-01	-1.7153-01	-1.8581-01	-1.9206-01	-1.9330-01	1.2042+00
P/PO1	7.1891-01	5.2179-01	1.9342-01	2.1397-01	2.1727-01	2.1070-01	2.0782-01	2.0725-01	8.5061-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.191 P-INF =3.9836 RE = .3753 TO = 531.

P	1.0892+01	1.0736+01	1.0175+01	9.4326+00	6.8558+00	2.5723+00	1.1664+01	1.1319+01	1.1214+01
CP	1.1159+00	1.0907+00	1.0001+00	8.8016-01	4.6393-01	-2.2797-01	1.2406+00	1.1849+00	1.1678+00
P/PO1	8.0999-01	7.9840-01	7.5669-01	7.0145-01	5.0983-01	1.9129-01	8.6738-01	8.4174-01	8.3389-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.5 Q-INF = 6.209 P-INF =3.9953 RE = .3763 TO = 531.

P	1.1110+01	1.0362+01	9.9416+00	9.5104+00	9.0265+00	6.8095+00	2.6455+00	2.9033+00	2.8504+00
CP	1.1459+00	1.0255+00	9.5770-01	8.8825-01	8.1031-01	4.5325-01	-2.1740-01	-1.7588-01	-1.8439-01
P/PO1	8.2380-01	7.6834-01	7.3715-01	7.0518-01	6.6930-01	5.0491-01	1.9615-01	2.1527-01	2.1135-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.183 P-INF =3.9785 RE = .3748 TO = 531.

P	2.9229+00	2.8504+00	1.0814+01	9.4326+00	9.1983+00	8.8508+00	8.2005+00	6.1911+00	2.8006+00
CP	-1.7073-01	-1.8245-01	1.1056+00	8.8215-01	8.4425-01	7.8805-01	6.8286-01	3.5787-01	-1.9050-01
P/PO1	2.1764-01	2.1225-01	8.0524-01	7.0237-01	6.8492-01	6.5905-01	6.1062-01	4.6100-01	2.0854-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3760 TO = 531.

P	1.1126+01	9.6144+00	9.4118+00	2.8879+00	3.0081+00	2.9073+00	2.8376+00	2.8225+00	5.1470+00
CP	1.1502+00	9.0650-01	8.7384-01	-1.7790-01	-1.5853-01	-1.7477-01	-1.8601-01	-1.8845-01	1.8629-01
P/PO1	8.2576-01	7.1358-01	6.9854-01	2.1434-01	2.2326-01	2.1578-01	2.1061-01	2.0948-01	3.8201-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3742 TO = 531.

P	8.5080+00	8.7729+00	8.5236+00	8.0317+00	6.1999+00	2.7683+00	7.1910+00	8.1297+00	7.7190+00
CP	7.3485-01	7.7777-01	7.3738-01	6.5769-01	3.6093-01	-1.9501-01	5.2148-01	6.7356-01	6.0703-01
P/PO1	6.3455-01	6.5431-01	6.3572-01	5.9903-01	4.6241-01	2.0647-01	5.3632-01	6.0634-01	5.7571-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.5 Q-INF = 6.221 P-INF =4.0031 RE = .3771 TO = 531.

P	6.1239+00	7.9938+00	7.6510+00	7.3468+00	7.1994+00	5.7811+00	2.8312+00	2.8473+00	2.7882+00
CP	3.4091-01	6.4149-01	5.8638-01	5.3749-01	5.1378-01	2.8581-01	-1.8837-01	-1.8578-01	-1.9529-01
P/PO1	4.5319-01	5.9157-01	5.6620-01	5.4369-01	5.3278-01	4.2782-01	2.0952-01	2.1071-01	2.0634-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.5 Q-INF = 6.233 P-INF =4.0108 RE = .3778 TO = 531.

P	2.8788+00	2.8871+00	6.6070+00	7.3001+00	7.3711+00	7.1835+00	6.9735+00	5.7630+00	2.7011+00
CP	-1.8162-01	-1.8028-01	4.1650-01	5.2771-01	5.3910-01	5.0900-01	4.7531-01	2.6111-01	-2.1613-01
P/PO1	2.1263-01	2.1324-01	4.8799-01	5.3919-01	5.4443-01	5.3058-01	5.1507-01	4.2566-01	1.9959-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.5 Q-INF = 6.223 P-INF =4.0044 RE = .3772 TO = 531.

P	2.8473+00	8.7729+00	6.7005+00	7.9695+00	7.7772+00	6.6693+00	7.2065+00	7.3480+00	7.1133+00
CP	-1.8594-01	7.6627-01	4.3324-01	6.3716-01	6.0626-01	4.2823-01	5.1455-01	5.3730-01	4.9958-01
P/PO1	2.1064-01	6.4902-01	4.9570-01	5.8958-01	5.7535-01	4.9339-01	5.3313-01	5.4360-01	5.2624-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3760 TO = 531.

P	7.0900+00	5.5174+00	2.7625+00	2.7629+00	2.8000+00	2.7240+00	2.6903+00	2.6732+00	2.6133+00
CP	4.9954-01	2.4600-01	-1.9811-01	-1.9805-01	-1.9208-01	-2.0432-01	-2.0976-01	-2.1251-01	-2.2207-01
P/PO1	5.2622-01	4.0950-01	2.0503-01	2.0506-01	2.0781-01	2.0218-01	1.9967-01	1.9841-01	1.9401-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.4172+00	1.1578+01	4.8000+00	3.2016+00	9.5297+00	4.1906+00	9.3680+00	9.1055+00
CP	8.7471-01	1.2231+00	1.3035-01	-1.2734-01	8.9285-01	3.2115-02	8.6677-01	8.2446-01
P/PO1	6.9894-01	8.5933-01	3.5626-01	2.3762-01	7.0729-01	3.1103-01	6.9529-01	6.7581-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.9883+00	7.2258+00	8.4820+00	7.5633+00	7.3641+00	7.0430+00	5.4141+00
CP	8.0556-01	5.2142-01	7.2395-01	5.7583-01	5.4372-01	4.9195-01	2.2935-01
P/PO1	6.6711-01	5.3630-01	6.2953-01	5.6135-01	5.4656-01	5.2273-01	4.0183-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DAT

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	174.	301244	1.49	1	-4.00	180.00	.00	19.00	180.0

VALVE POS 2 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3755 TO = 532.

P	1.1827+01	1.3432+01	1.3058+01	1.2655+01	1.2603+01	1.2139+01	1.1447+01	1.1194+01	1.0685+01
CP	1.2632+00	1.5220+00	1.4617+00	1.3966+00	1.3883+00	1.3135+00	1.2019+00	1.1612+00	1.0792+00
P/PO1	8.7781-01	9.9693-01	9.6917-01	9.3922-01	9.3538-01	9.0094-01	8.4956-01	8.3082-01	7.9307-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.191 P-INF =3.9836 RE = .3753 TO = 531.

P	1.0020+01	7.3082+00	2.5616+00	2.7879+00	2.8378+00	2.7430+00	2.6583+00	2.6981+00	1.1819+01
CP	9.7497-01	5.3701-01	-2.2970-01	-1.9314-01	-1.8508-01	-2.0040-01	-2.1409-01	-2.0765-01	1.2657+00
P/PO1	7.4510-01	5.4347-01	1.9049-01	2.0732-01	2.1103-01	2.0398-01	1.9768-01	2.0064-01	8.7893-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.205 P-INF =3.9927 RE = .3761 TO = 531.

P	1.1266+01	1.1079+01	1.0487+01	9.6972+00	7.0588+00	2.4649+00	1.1850+01	1.1475+01	1.1338+01
CP	1.1722+00	1.1421+00	1.0466+00	9.1935-01	4.9414-01	-2.4623-01	1.2663+00	1.2059+00	1.1837+00
P/PO1	8.3590-01	8.2202-01	7.7809-01	7.1949-01	5.2373-01	1.8288-01	8.7924-01	8.5143-01	8.4122-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.5 Q-INF = 6.213 P-INF =3.9979 RE = .3761 TO = 532.

P	1.1360+01	1.0534+01	1.0082+01	9.6816+00	9.0890+00	6.8251+00	2.3828+00	2.7665+00	2.7260+00
CP	1.1849+00	1.0520+00	9.7923-01	9.1482-01	8.1943-01	4.5505-01	-2.5995-01	-1.9820-01	-2.0472-01
P/PO1	8.4174-01	7.8055-01	7.4706-01	7.1741-01	6.7349-01	5.0574-01	1.7657-01	2.0500-01	2.0199-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.5 Q-INF = 6.231 P-INF =4.0096 RE = .3772 TO = 532.

P	2.8095+00	2.7403+00	1.1079+01	9.4793+00	9.1671+00	8.6015+00	7.9209+00	6.0348+00	2.6637+00
CP	-1.9259-01	-2.0369-01	1.1346+00	8.7781-01	8.2770-01	7.3694-01	6.2771-01	3.2501-01	-2.1599-01
P/PO1	2.0758-01	2.0247-01	8.1857-01	7.0037-01	6.7730-01	6.3552-01	5.8523-01	4.4587-01	1.9681-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.201 P-INF =3.9901 RE = .3754 TO = 532.

P	1.0612+01	9.3495+00	8.8820+00	2.7567+00	2.8189+00	2.7809+00	2.6839+00	2.7043+00	3.9582+00
CP	1.0678+00	8.6428-01	7.8890-01	-1.9891-01	-1.8888-01	-1.9501-01	-2.1065-01	-2.0735-01	-5.1420-03
P/PO1	7.8785-01	6.9414-01	6.5944-01	2.0467-01	2.0929-01	2.0647-01	1.9926-01	2.0078-01	2.9387-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.5 Q-INF = 6.211 P-INF =3.9966 RE = .3760 TO = 532.

P	8.2275+00	8.4769+00	8.3366+00	7.3624+00	5.5432+00	2.6729+00	6.3679+00	7.4887+00	7.0022+00
CP	6.8120-01	7.2134-01	6.9876-01	5.4191-01	2.4901-01	-2.2117-01	3.8177-01	5.6225-01	4.9680-01
P/PO1	6.0986-01	6.2834-01	6.1794-01	5.4573-01	4.1088-01	1.9442-01	4.7200-01	5.5509-01	5.2496-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.5 Q-INF = 6.211 P-INF =3.9966 RE = .3760 TO = 532.

P	5.2347+00	7.0900+00	7.0744+00	6.8176+00	6.4810+00	5.3975+00	2.6455+00	2.6732+00	2.6015+00
CP	1.9934-01	4.9806-01	4.9555-01	4.5420-01	4.0000-01	2.2555-01	-2.1754-01	-2.1307-01	-2.2462-01
P/PO1	3.8802-01	5.2554-01	5.2438-01	5.0535-01	4.8039-01	4.0008-01	1.9609-01	1.9815-01	1.9283-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DAT

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.5 Q-INF = 6.223 P-INF =4.0044 RE = .3767 TO = 532.

P	2.6583+00	2.7281+00	5.9525+00	6.5841+00	6.7933+00	6.6381+00	6.3678+00	5.3900+00	2.5144+00
CP	-2.1630-01	-2.0509-01	3.1305-01	4.1455-01	4.4816-01	4.2323-01	3.7978-01	2.2266-01	-2.3943-01
P/PO1	1.9466-01	2.0182-01	4.4036-01	4.8709-01	5.0257-01	4.9109-01	4.7109-01	3.9875-01	1.8601-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.5 Q-INF = 6.231 P-INF =4.0096 RE = .3772 TO = 532.

P	2.6646+00	7.8691+00	5.8902+00	7.6426+00	7.4180+00	6.0460+00	6.5386+00	6.7852+00	6.5852+00
CP	-2.1584-01	6.1941-01	3.0181-01	5.8305-01	5.4700-01	3.2682-01	4.0588-01	4.4545-01	4.1336-01
P/PO1	1.9687-01	5.8140-01	4.3519-01	5.6467-01	5.4807-01	4.4670-01	4.8310-01	5.0132-01	4.8654-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.5 Q-INF = 6.235 P-INF =4.0121 RE = .3775 TO = 532.

P	6.6070+00	5.2299+00	2.5616+00	2.5691+00	2.5856+00	2.5218+00	2.4725+00	2.4681+00	2.4023+00
CP	4.1616-01	1.9530-01	-2.3264-01	-2.3143-01	-2.2880-01	-2.3903-01	-2.4693-01	-2.4764-01	-2.5818-01
P/PO1	4.8783-01	3.8615-01	1.8914-01	1.8970-01	1.9091-01	1.8620-01	1.8256-01	1.8223-01	1.7738-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.0984+00	1.0195+01	5.2828+00	2.2195+00	9.7641+00	2.7352+00	9.4852+00	9.1055+00
CP	8.1574-01	9.9166-01	2.0379-01	-2.8750-01	9.2250-01	-2.0480-01	8.7777-01	8.1687-01
P/PO1	6.7180-01	7.5278-01	3.9006-01	1.6388-01	7.2094-01	2.0195-01	7.0035-01	6.7231-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.8945+00	6.2883+00	8.2594+00	6.9000+00	6.8133+00	6.0328+00	4.9570+00
CP	7.8304-01	3.6505-01	6.8118-01	4.6316-01	4.4925-01	3.2408-01	1.5154-01
P/PO1	6.5674-01	4.6430-01	6.0984-01	5.0947-01	5.0307-01	4.4544-01	3.6601-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	175.	301244	1.49	1	5.00	180.00	.00	10.00	180.0

VALVE POS 2 PO = 14.5 Q-INF = 6.217 P-INF =4.0005 RE = .3764 TO = 532.

P	1.3105+01	1.3230+01	1.1936+01	1.1565+01	1.1510+01	1.1126+01	1.0468+01	1.0256+01	9.8157+00
CP	1.4644+00	1.4845+00	1.2764+00	1.2167+00	1.2078+00	1.1461+00	1.0403+00	1.0062+00	9.3537-01
P/P01	9.7044-01	9.7967-01	8.8389-01	8.5641-01	8.5230-01	8.2189-01	7.7517-01	7.5947-01	7.2687-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.5 Q-INF = 6.223 P-INF =4.0044 RE = .3767 TO = 532.

P	9.3339+00	6.8407+00	2.6809+00	2.8442+00	2.8946+00	2.7999+00	2.7223+00	2.7541+00	1.0965+01
CP	8.5641-01	4.5578-01	-2.1267-01	-1.8643-01	-1.7834-01	-1.9355-01	-2.0602-01	-2.0091-01	1.1185+00
P/P01	6.9052-01	5.0607-01	1.9833-01	2.1041-01	2.1414-01	2.0713-01	2.0140-01	2.0375-01	8.1119-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.5 Q-INF = 6.243 P-INF =4.0173 RE = .3779 TO = 532.

P	1.0471+01	1.0362+01	9.8481+00	9.1524+00	6.6684+00	2.6608+00	1.1276+01	1.1116+01	1.0981+01
CP	1.0338+00	1.0163+00	9.3394-01	8.2251-01	4.2463-01	-2.1728-01	1.1626+00	1.1370+00	1.1153+00
P/P01	7.7217-01	7.6413-01	7.2621-01	6.7491-01	4.9173-01	1.9621-01	8.3148-01	8.1969-01	8.0972-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.6 Q-INF = 6.255 P-INF =4.0251 RE = .3787 TO = 532.

P	1.0814+01	1.0191+01	9.8325+00	9.4482+00	8.9328+00	6.7940+00	2.5686+00	2.8473+00	2.7882+00
CP	1.0853+00	9.8570-01	9.2841-01	8.6696-01	7.8457-01	4.4264-01	-2.3284-01	-1.8829-01	-1.9774-01
P/P01	7.9591-01	7.5004-01	7.2366-01	6.9537-01	6.5744-01	5.0003-01	1.8904-01	2.0956-01	2.0521-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.6 Q-INF = 6.265 P-INF =4.0316 RE = .3793 TO = 532.

P	2.8536+00	2.7893+00	1.0627+01	9.5571+00	9.4170+00	8.9755+00	8.3558+00	6.4412+00	2.7011+00
CP	-1.8802-01	-1.9828-01	1.0527+00	8.8192-01	8.5955-01	7.8909-01	6.9018-01	3.8460-01	-2.1236-01
P/P01	2.0968-01	2.0496-01	7.8090-01	7.0226-01	6.9196-01	6.5952-01	6.1399-01	4.7331-01	1.9849-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.5 Q-INF = 6.241 P-INF =4.0160 RE = .3778 TO = 532.

P	1.1593+01	9.9884+00	9.9105+00	2.8067+00	2.9009+00	2.8567+00	2.7928+00	2.7852+00	7.2997+00
CP	1.2141+00	9.5692-01	9.4444-01	-1.9377-01	-1.7868-01	-1.8575-01	-1.9600-01	-1.9722-01	5.2612-01
P/P01	8.5518-01	7.3679-01	7.3104-01	2.0703-01	2.1398-01	2.1073-01	2.0601-01	2.0545-01	5.3846-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.5 Q-INF = 6.239 P-INF =4.0147 RE = .3777 TO = 532.

P	9.0223+00	9.0534+00	8.6483+00	8.2341+00	6.4029+00	2.6671+00	8.2160+00	8.8489+00	8.6043+00
CP	8.0259-01	8.0759-01	7.4265-01	6.7626-01	3.8277-01	-2.1599-01	6.7337-01	7.7481-01	7.3560-01
P/P01	6.6574-01	6.6804-01	6.3815-01	6.0758-01	4.7246-01	1.9680-01	6.0625-01	6.5295-01	6.3490-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.6 Q-INF = 6.253 P-INF =4.0238 RE = .3786 TO = 532.

P	8.0873+00	8.6483+00	8.3678+00	8.0629+00	7.8240+00	6.2018+00	2.7672+00	2.8100+00	2.7446+00
CP	6.4982-01	7.3953-01	6.9467-01	6.4591-01	6.0772-01	3.4830-01	-2.0096-01	-1.9410-01	-2.0456-01
P/P01	5.9541-01	6.3671-01	6.1606-01	5.9361-01	5.7602-01	4.5659-01	2.0372-01	2.0688-01	2.0207-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.6 Q-INF = 6.253 P-INF =4.0238 RE = .3786 TO = 532.

P	2.8473+00	2.8627+00	8.1964+00	8.1562+00	8.1676+00	7.9315+00	7.5948+00	6.2224+00	2.6762+00
CP	-1.8815-01	-1.8569-01	6.6726-01	6.6084-01	6.6266-01	6.2490-01	5.7105-01	3.5158-01	-2.1551-01
P/PO1	2.0962-01	2.1076-01	6.0344-01	6.0048-01	6.0132-01	5.8393-01	5.5914-01	4.5811-01	1.9703-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3770 TO = 532.

P	2.8158+00	9.9260+00	7.6977+00	8.4675+00	8.5112+00	8.1029+00	7.9986+00	8.1610+00	7.8277+00
CP	-1.9129-01	9.5053-01	5.9270-01	7.1632-01	7.2332-01	6.5776-01	6.4101-01	6.6709-01	6.1357-01
P/PO1	2.0818-01	7.3385-01	5.6911-01	6.2602-01	6.2925-01	5.9906-01	5.9135-01	6.0336-01	5.7872-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3755 TO = 532.

P	7.7133+00	5.9993+00	2.7437+00	2.7629+00	2.7811+00	2.7177+00	2.6711+00	2.6608+00	2.6015+00
CP	6.0002-01	3.2369-01	-2.0115-01	-1.9805-01	-1.9513-01	-2.0534-01	-2.1286-01	-2.1451-01	-2.2408-01
P/PO1	5.7248-01	4.4526-01	2.0364-01	2.0506-01	2.0641-01	2.0171-01	1.9825-01	1.9749-01	1.9308-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.9000+00	1.2659+01	5.2828+00	5.2992+00	9.4875+00	6.7969+00	9.5063+00	9.1031+00
CP	9.5255-01	1.3973+00	2.0819-01	2.1084-01	8.8604-01	4.5228-01	8.8907-01	8.2408-01
P/PO1	7.3478-01	9.3952-01	3.9209-01	3.9331-01	7.0416-01	5.0446-01	7.0555-01	6.7563-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.1453+00	8.1727+00	8.7539+00	8.2313+00	8.0813+00	8.0180+00	6.0375+00
CP	8.3088-01	6.7407-01	7.6778-01	6.8352-01	6.5934-01	6.4914-01	3.2986-01
P/PO1	6.7876-01	6.0657-01	6.4971-01	6.1092-01	5.9979-01	5.9509-01	4.4810-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	176.	301244	1.49	1	10.00	180.00	.00	5.00	180.0

VALVE POS 2 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3755 TO = 532.

P	1.3354+01	1.2513+01	1.0892+01	1.0756+01	1.0760+01	1.0409+01	9.8313+00	9.6931+00	9.3187+00
CP	1.5094+00	1.3738+00	1.1125+00	1.0905+00	1.0912+00	1.0346+00	9.4146-01	9.1919-01	8.5984-01
P/PO1	9.9114-01	9.2869-01	8.0841-01	7.9828-01	7.9861-01	7.7256-01	7.2967-01	7.1942-01	6.9161-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.4600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.5 Q-INF = 6.233 P-INF =4.0108 RE = .3773 TO = 532.

P	8.8976+00	6.5758+00	2.5239+00	2.6879+00	2.7180+00	2.6292+00	2.5494+00	2.5986+00	1.0359+01
CP	7.8399-01	4.1150-01	-2.3855-01	-2.1224-01	-2.0742-01	-2.2166-01	-2.3447-01	-2.2656-01	1.0185+00
P/PO1	6.5718-01	4.8569-01	1.8642-01	1.9853-01	2.0075-01	1.9419-01	1.8830-01	1.9194-01	7.6514-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.6 Q-INF = 6.249 P-INF =4.0212 RE = .3783 TO = 532.

P	9.9884+00	9.9260+00	9.4118+00	8.9501+00	6.4810+00	2.4775+00	1.0623+01	1.0709+01	1.0530+01
CP	9.5486-01	9.4489-01	8.6260-01	7.8871-01	3.9361-01	-2.4702-01	1.0565+00	1.0702+00	1.0416+00
P/PO1	7.3584-01	7.3125-01	6.9337-01	6.5935-01	4.7745-01	1.8252-01	7.8262-01	7.8696-01	7.7576-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.5 Q-INF = 6.219 P-INF =4.0018 RE = .3765 TO = 532.

P	1.0347+01	9.9416+00	9.6144+00	9.2303+00	8.7767+00	6.7472+00	2.3673+00	2.6857+00	2.6388+00
CP	1.0202+00	9.5510-01	9.0249-01	8.4072-01	7.6778-01	4.4146-01	-2.6282-01	-2.1162-01	-2.1916-01
P/PO1	7.6595-01	7.3595-01	7.1173-01	6.8329-01	6.4972-01	4.9948-01	1.7525-01	1.9881-01	1.9535-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.6 Q-INF = 6.271 P-INF =4.0355 RE = .3796 TO = 532.

P	2.6898+00	2.6425+00	1.0284+01	9.5727+00	9.4482+00	9.0690+00	8.4800+00	6.5663+00	2.5019+00
CP	-2.1457-01	-2.2212-01	9.9642-01	8.8293-01	8.6308-01	8.0262-01	7.0871-01	4.0355-01	-2.4453-01
P/PO1	1.9746-01	1.9398-01	7.5498-01	7.0273-01	6.9359-01	6.6575-01	6.2252-01	4.8203-01	1.8366-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.6 Q-INF = 6.251 P-INF =4.0225 RE = .3784 TO = 532.

P	1.1827+01	1.0175+01	1.0222+01	2.5816+00	2.7432+00	2.6987+00	2.6134+00	2.6173+00	8.9460+00
CP	1.2485+00	9.8426-01	9.9174-01	-2.3049-01	-2.0464-01	-2.1176-01	-2.2541-01	-2.2479-01	7.8760-01
P/PO1	8.7102-01	7.4938-01	7.5282-01	1.9013-01	2.0203-01	1.9875-01	1.9247-01	1.9275-01	6.5884-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.5 Q-INF = 6.233 P-INF =4.0108 RE = .3773 TO = 532.

P	9.3495+00	9.3495+00	8.8820+00	8.4209+00	6.4810+00	2.3457+00	9.1945+00	9.6462+00	9.4740+00
CP	8.5649-01	8.5649-01	7.8149-01	7.0751-01	3.9629-01	-2.6714-01	8.3162-01	9.0410-01	8.7648-01
P/PO1	6.9056-01	6.9056-01	6.5603-01	6.2197-01	4.7869-01	1.7326-01	6.7911-01	7.1247-01	6.9975-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.5 Q-INF = 6.245 P-INF =4.0186 RE = .3781 TO = 532.

P	9.2248+00	9.2716+00	8.9755+00	8.6076+00	8.3082+00	6.4667+00	2.5109+00	2.6546+00	2.6015+00
CP	8.3363-01	8.4112-01	7.9371-01	7.3480-01	6.8685-01	3.9200-01	-2.4141-01	-2.1841-01	-2.7692-01
P/PO1	6.8003-01	6.8348-01	6.6165-01	6.3453-01	6.1246-01	4.7671-01	1.8510-01	1.9569-01	1.9177-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED U.

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.5 Q-INF = 6.211 P-INF =3.9966 RE = .3760 TO = 532.

P	2.6583+00	2.6914+00	9.2248+00	8.8567+00	8.8235+00	8.5080+00	8.1694+00	6.4881+00	2.4210+00
CP	-2.1547-01	-2.1014-01	8.4177-01	7.8250-01	7.7716-01	7.2636-01	6.7184-01	4.0115-01	-2.5368-01
P/PO1	1.9704-01	1.9950-01	6.8378-01	6.5649-01	6.5403-01	6.3065-01	6.0555-01	4.8092-01	1.7945-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.5 Q-INF = 6.225 P-INF =4.0057 RE = .3768 TO = 532.

P	2.6772+00	1.1095+01	8.9288+00	9.3392+00	9.4326+00	9.1313+00	8.7596+00	8.7863+00	8.4490+00
CP	-2.1341-01	1.1388+00	7.9085-01	8.5678-01	8.7178-01	8.2339-01	7.6367-01	7.6797-01	7.1378-01
P/PO1	1.9799-01	8.2052-01	6.6033-01	6.9069-01	6.9759-01	6.7531-01	6.4782-01	6.4980-01	6.2485-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.5 Q-INF = 6.213 P-INF =3.9979 RE = .3761 TO = 532.

P	8.1808+00	6.3265+00	2.5491+00	2.6004+00	2.6360+00	2.5660+00	2.5237+00	2.5240+00	2.4521+00
CP	6.7325-01	3.7479-01	-2.3319-01	-2.2493-01	-2.1920-01	-2.3046-01	-2.3727-01	-2.3722-01	-2.4880-01
P/PO1	6.0619-01	4.6879-01	1.8888-01	1.9269-01	1.9533-01	1.9014-01	1.8701-01	1.8703-01	1.8170-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0148+01	1.2834+01	5.2828+00	7.5070+00	9.4594+00	8.8266+00	9.5156+00	9.1031+00
CP	9.8995-01	1.4223+00	2.0681-01	5.6480-01	8.7904-01	7.7719-01	8.8809-01	8.2170-01
P/PO1	7.5199-01	9.5102-01	3.9145-01	5.5627-01	7.0094-01	6.5404-01	7.0510-01	6.7454-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.2719+00	8.8359+00	8.9250+00	8.8617+00	8.3742+00	8.3297+00	6.3211+00
CP	8.4886-01	7.7870-01	7.9303-01	7.8285-01	7.0438-01	6.9721-01	3.7393-01
P/PO1	6.8704-01	6.5474-01	6.6134-01	6.5665-01	6.2053-01	6.1723-01	4.6839-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	177.	301244	1.49	1	14.00	180.02	-.00	1.00	180.0

VALVE POS 2 PO = 14.5 Q-INF = 6.221 P-INF =4.0031 RE = .3761 TO = 532.

P	1.3432+01	1.1889+01	9.9260+00	1.0086+01	1.0088+01	9.8014+00	9.3032+00	9.2397+00	8.9149+00
CP	1.5157+00	1.2677+00	9.5208-01	9.7785-01	9.7819-01	9.3204-01	8.5196-01	8.4176-01	7.8955-01
P/PO1	9.9402-01	8.7986-01	7.3456-01	7.4643-01	7.4658-01	7.2534-01	6.8847-01	6.8377-01	6.5974-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.5 Q-INF = 6.241 P-INF =4.0160 RE = .3773 TO = 532.

P	8.5392+00	6.3421+00	2.4863+00	2.6191+00	2.6486+00	2.5660+00	2.4853+00	2.5551+00	9.7225+00
CP	7.2473-01	3.7269-01	-2.4511-01	-2.2382-01	-2.1909-01	-2.3233-01	-2.4576-01	-2.3407-01	9.1433-01
P/PO1	6.2989-01	4.6782-01	1.8340-01	1.9320-01	1.9538-01	1.8928-01	1.8333-01	1.8848-01	7.1718-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.5 Q-INF = 6.239 P-INF =4.0147 RE = .3772 TO = 532.

P	9.4897+00	9.4897+00	9.0223+00	8.5142+00	6.3248+00	2.4523+00	9.9400+00	1.0256+01	1.0064+01
CP	8.7752-01	8.7752-01	8.0259-01	7.2117-01	3.7025-01	-2.5043-01	9.4968-01	1.0003+00	9.6960-01
P/PO1	7.0023-01	7.0023-01	6.6574-01	6.2826-01	4.6670-01	1.8095-01	7.3346-01	7.5677-01	7.4263-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.5 Q-INF = 6.211 P-INF =3.9966 RE = .3755 TO = 532.

P	9.8793+00	9.5986+00	9.2872+00	8.9501+00	8.5893+00	6.6070+00	2.2504+00	2.6173+00	2.5641+00
CP	9.4714-01	9.0198-01	8.5181-01	7.9753-01	7.3944-01	4.2028-01	-2.8115-01	-2.2207-01	-2.3063-01
P/PO1	7.3229-01	7.1150-01	6.8840-01	6.6341-01	6.3667-01	4.8973-01	1.6681-01	1.9400-01	1.9006-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3770 TO = 532.

P	2.6079+00	2.5629+00	9.7858+00	9.4482+00	9.3545+00	8.9755+00	8.3869+00	6.5350+00	2.4397+00
CP	-2.2467-01	-2.3189-01	9.2801-01	8.7379-01	8.5875-01	7.9789-01	7.0336-01	4.0598-01	-2.5169-01
P/PO1	1.9281-01	1.8948-01	7.2348-01	6.9852-01	6.9159-01	6.6358-01	6.2006-01	4.8315-01	1.8037-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.205 P-INF =3.9927 RE = .3756 TO = 532.

P	1.1765+01	1.0113+01	1.0284+01	2.4879+00	2.6865+00	2.6482+00	2.5494+00	2.5676+00	9.5672+00
CP	1.2526+00	9.8636-01	1.0140+00	-2.4252-01	-2.1052-01	-2.1669-01	-2.3261-01	-2.2968-01	8.9840-01
P/PO1	8.7290-01	7.5034-01	7.6306-01	1.8459-01	1.9932-01	1.9648-01	1.8915-01	1.9050-01	7.0985-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.5 Q-INF = 6.223 P-INF =4.0044 RE = .3767 TO = 532.

P	9.4897+00	9.4741+00	9.0223+00	8.5142+00	6.5591+00	2.3023+00	9.8779+00	1.0225+01	1.0049+01
CP	8.8145-01	8.7895-01	8.0633-01	7.2470-01	4.1052-01	-2.7352-01	9.4382-01	9.9956-01	9.7128-01
P/PO1	7.0205-01	7.0089-01	6.6746-01	6.2988-01	4.8524-01	1.7032-01	7.3076-01	7.5642-01	7.4340-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.5 Q-INF = 6.237 P-INF =4.0134 RE = .3776 TO = 532.

P	9.8637+00	9.6300+00	9.3339+00	8.9501+00	8.5893+00	6.6226+00	2.4213+00	2.6049+00	2.5392+00
CP	9.3797-01	9.0049-01	8.5303-01	7.9149-01	7.3364-01	4.1832-01	-2.5527-01	-2.2584-01	-2.3636-01
P/PO1	7.2807-01	7.1081-01	6.8896-01	6.6063-01	6.3399-01	4.8883-01	1.7872-01	1.9227-01	1.8743-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3737 TO = 532.

P	2.5953+00	2.6302+00	9.8325+00	9.3548+00	9.3232+00	8.9288+00	8.3713+00	6.7070+00	2.2963+00
CP	-2.2303-01	-2.1737-01	9.4943-01	8.7203-01	8.6692-01	8.0301-01	7.1270-01	4.4308-01	-2.7244-01
P/PO1	1.9357-01	1.9617-01	7.3334-01	6.9771-01	6.9536-01	6.6593-01	6.2436-01	5.0023-01	1.7082-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.5 Q-INF = 6.207 P-INF =3.9940 RE = .3753 TO = 532.

P	2.6016+00	1.1874+01	9.8793+00	9.9930+00	1.0104+01	9.7702+00	9.3032+00	9.2554+00	8.8528+00
CP	-2.2433-01	1.2695+00	9.4817-01	9.6649-01	9.8439-01	9.3060-01	8.5536-01	8.4765-01	7.8280-01
P/PO1	1.9297-01	8.8070-01	7.3276-01	7.4119-01	7.4944-01	7.2467-01	6.9003-01	6.8649-01	6.5663-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.5 Q-INF = 6.225 P-INF =4.0057 RE = .3768 TO = 532.

P	8.5236+00	6.5291+00	2.4612+00	2.5441+00	2.5730+00	2.5155+00	2.4725+00	2.4743+00	2.3899+00
CP	7.2576-01	4.0536-01	-2.4811-01	-2.3478-01	-2.3015-01	-2.3939-01	-2.4629-01	-2.4600-01	-2.5956-01
P/PO1	6.3037-01	4.8286-01	1.8202-01	1.8815-01	1.9028-01	1.8603-01	1.8286-01	1.8299-01	1.7675-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0228+01	1.2809+01	5.2828+00	9.6656+00	9.4500+00	9.4289+00	9.5508+00	9.1031+00
CP	9.9958-01	1.4141+00	2.0516-01	9.0922-01	8.7458-01	8.7119-01	8.9077-01	8.1886-01
P/PO1	7.5643-01	9.4727-01	3.9069-01	7.1483-01	6.9888-01	6.9732-01	7.0634-01	6.7323-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.3188+00	9.0984+00	9.0375+00	9.1219+00	8.4727+00	8.5219+00	6.4219+00
CP	8.5350-01	8.1810-01	8.0832-01	8.2187-01	7.1758-01	7.2549-01	3.8814-01
P/PO1	6.8918-01	6.7288-01	6.6838-01	6.7462-01	6.2660-01	6.3024-01	4.7493-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	178.	301744	1.49	1	14.63	199.93	4.94	1.21	180.0

VALVE POS 2 PO = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3770 TO = 532.

P	1.3401+01	1.1874+01	9.9416+00	9.9930+00	1.0010+01	9.6923+00	9.2255+00	9.1928+00	8.8528+00
CP	1.5086+00	1.2633+00	9.5304-01	9.6128-01	9.6408-01	9.1300-01	8.3804-01	8.3279-01	7.7618-01
P/PO1	9.9076-01	8.7786-01	7.3500-01	7.3880-01	7.4009-01	7.1657-01	6.8206-01	6.7964-01	6.5450-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3765 TO = 532.

P	8.4769+00	6.3109+00	2.3149+00	2.4879+00	2.5414+00	2.4396+00	2.3933+00	2.4308+00	9.4119+00
CP	7.1781-01	3.6999-01	-2.7172-01	-2.4395-01	-2.3535-01	-2.5170-01	-2.5914-01	-2.5311-01	8.6797-01
P/PO1	6.2671-01	4.6658-01	1.7115-01	1.8393-01	1.8789-01	1.8037-01	1.7694-01	1.7971-01	6.9584-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.5 Q-INF = 6.209 P-INF =3.9953 RE = .3754 TO = 532.

P	9.1313+00	9.1157+00	8.6950+00	8.2496+00	6.1218+00	2.3432+00	9.1013+00	9.5837+00	9.4430+00
CP	8.2719-01	8.2468-01	7.5692-01	6.8519-01	3.4249-01	-2.6609-01	8.2236-01	9.0005-01	8.7739-01
P/PO1	6.7707-01	6.7591-01	6.4472-01	6.1169-01	4.5392-01	1.7374-01	6.7484-01	7.1061-01	7.0017-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3765 TO = 532.

P	9.3027+00	9.0534+00	8.7262+00	8.4675+00	8.1832+00	6.3421+00	2.2348+00	2.5116+00	2.4397+00
CP	8.5044-01	8.1040-01	7.5785-01	7.1632-01	6.7066-01	3.7499-01	-2.8459-01	-2.4014-01	-2.5169-01
P/PO1	6.8777-01	6.6934-01	6.4514-01	6.2602-01	6.0500-01	4.6888-01	1.6522-01	1.8569-01	1.8037-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.197 P-INF =3.9875 RE = .3751 TO = 532.

P	2.5134+00	2.4773+00	9.0534+00	8.7633+00	8.7142+00	8.3834+00	7.9830+00	6.2849+00	2.3276+00
CP	-2.3788-01	-2.4371-01	8.1749-01	7.7067-01	7.6275-01	7.0936-01	6.4476-01	3.7073-01	-2.6786-01
P/PO1	1.8673-01	1.8404-01	6.7260-01	6.5104-01	6.4740-01	6.2282-01	5.9308-01	4.6692-01	1.7293-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.6 Q-INF = 6.269 P-INF =4.0342 RE = .3795 TO = 532.

P	1.0861+01	8.9599+00	9.5053+00	2.3941+00	2.5856+00	2.5407+00	2.4597+00	2.4867+00	8.9149+00
CP	1.0889+00	7.8568-01	8.7268-01	-2.6160-01	-2.3106-01	-2.3821-01	-2.5114-01	-2.4682-01	7.7851-01
P/PO1	7.9756-01	6.5796-01	6.9801-01	1.7581-01	1.8987-01	1.8657-01	1.8062-01	1.8261-01	6.5465-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.5 Q-INF = 6.215 P-INF =3.9992 RE = .3762 TO = 532.

P	8.7729+00	8.7885+00	8.4145+00	8.1718+00	6.2780+00	2.2255+00	8.9770+00	9.5211+00	9.4119+00
CP	7.6810-01	7.7060-01	7.1043-01	6.7138-01	3.6666-01	-2.8539-01	8.0094-01	8.8849-01	8.7091-01
P/PO1	6.4986-01	6.5101-01	6.2331-01	6.0533-01	4.6504-01	1.6486-01	6.6498-01	7.0528-01	6.9719-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.5 Q-INF = 6.237 P-INF =4.0134 RE = .3776 TO = 532.

P	9.2560+00	9.0534+00	8.8041+00	8.4520+00	8.1832+00	6.4044+00	2.3647+00	2.5054+00	2.4334+00
CP	8.4053-01	8.0806-01	7.6808-01	7.1163-01	6.6854-01	3.8334-01	-2.6434-01	-2.4178-01	-2.5332-01
P/PO1	6.8321-01	6.6826-01	6.4985-01	6.2386-01	6.0402-01	4.7272-01	1.7454-01	1.8493-01	1.7962-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.199 P-INF =3.9888 RE = .3753 TO = 532.

P	2.4945+00	2.5079+00	9.4430+00	8.9968+00	8.9172+00	8.6015+00	8.1073+00	6.5038+00	2.1766+00
CP	-2.4106-01	-2.3890-01	8.7986-01	8.0787-01	7.9504-01	7.4411-01	6.6439-01	4.0571-01	-2.9234-01
P/PO1	1.8526-01	1.8626-01	7.0131-01	6.6817-01	6.6276-01	6.3882-01	6.0211-01	4.8302-01	1.6165-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.6 Q-INF = 6.255 P-INF =4.0251 RE = .3782 TO = 532.

P	2.5071+00	1.1889+01	9.8793+00	9.9151+00	9.9323+00	9.6300+00	9.1013+00	9.0990+00	8.8217+00
CP	-2.4267-01	1.2572+00	9.3588-01	9.4161-01	9.4435-01	8.9602-01	8.1150-01	8.1114-01	7.6681-01
P/PO1	1.8452-01	8.7505-01	7.2710-01	7.2974-01	7.3101-01	7.0875-01	6.6984-01	6.6968-01	6.4927-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.5 Q-INF = 6.247 P-INF =4.0199 RE = .3777 TO = 532.

P	8.4145+00	6.4511+00	2.2793+00	2.4129+00	2.4468+00	2.3764+00	2.3543+00	2.3251+00	2.2645+00
CP	7.0345-01	3.8917-01	-2.7862-01	-2.5724-01	-2.5181-01	-2.6308-01	-2.6662-01	-2.7129-01	-2.8099-01
P/PO1	6.2010-01	4.7541-01	1.6797-01	1.7781-01	1.8032-01	1.7513-01	1.7350-01	1.7135-01	1.6688-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.4969+00	1.2553+01	5.2828+00	8.8500+00	8.6977+00	8.7000+00	8.8383+00	9.1031+00
CP	8.7670-01	1.3659+00	2.0215-01	7.7316-01	7.4877-01	7.4914-01	7.7128-01	8.1367-01
P/PO1	6.9986-01	9.2509-01	3.8931-01	6.5219-01	6.4096-01	6.4113-01	6.5132-01	6.7084-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.6531+00	8.4563+00	8.4492+00	8.5219+00	8.0133+00	8.0719+00	6.1547+00
CP	7.4164-01	7.1013-01	7.0900-01	7.2063-01	6.3922-01	6.4860-01	3.4171-01
P/PO1	6.3768-01	6.2317-01	6.2265-01	6.2801-01	5.9053-01	5.9485-01	4.5356-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	179.	301244	1.49	1	13.41	222.40	-9.00	5.01	180.0

VALVE POS 2 PO = 14.5 Q-INF = 6.235 P-INF =4.0121 RE = .3770 TO = 532.

P	1.3120+01	1.2295+01	1.0534+01	1.0367+01	1.0276+01	9.9416+00	9.4119+00	9.3492+00	8.9770+00
CP	1.4608+00	1.3283+00	1.0459+00	1.0191+00	1.0046+00	9.5097-01	8.6602-01	8.5596-01	7.9628-01
P/PO1	9.6877-01	9.0779-01	7.7777-01	7.6543-01	7.5873-01	7.3405-01	6.9494-01	6.9031-01	6.6283-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3755 TO = 532.

P	8.5704+00	6.3109+00	2.0758+00	2.3173+00	2.3522+00	2.3074+00	2.2400+00	2.2445+00	9.3498+00
CP	7.3819-01	3.7393-01	-3.0882-01	-2.6989-01	-2.6426-01	-2.7149-01	-2.8236-01	-2.8162-01	8.6384-01
P/PO1	6.3609-01	4.6839-01	1.5407-01	1.7199-01	1.7458-01	1.7125-01	1.6625-01	1.6659-01	6.9394-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3739 TO = 532.

P	8.9288+00	8.9443+00	8.5080+00	8.0629+00	5.9656+00	2.0592+00	8.8217+00	9.1928+00	9.1013+00
CP	8.0207-01	8.0459-01	7.3395-01	6.6188-01	3.2235-01	-3.1009-01	7.8474-01	8.4482-01	8.3000-01
P/PO1	6.6550-01	6.6666-01	6.3414-01	6.0096-01	4.4464-01	1.5348-01	6.5752-01	6.8518-01	6.7836-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.5 Q-INF = 6.221 P-INF =4.0031 RE = .3761 TO = 532.

P	9.0690+00	8.6015+00	8.2899+00	8.0629+00	7.8084+00	6.0772+00	2.0867+00	2.3438+00	2.2779+00
CP	8.1432-01	7.3917-01	6.8908-01	6.5259-01	6.1169-01	3.3340-01	-3.0805-01	-2.6673-01	-2.7732-01
P/PO1	6.7114-01	6.3654-01	6.1348-01	5.9668-01	5.7785-01	4.4973-01	1.5442-01	1.7345-01	1.6857-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.201 P-INF =3.9901 RE = .3749 TO = 532.

P	2.3685+00	2.3366+00	8.8197+00	8.1095+00	8.1832+00	7.8068+00	7.4550+00	5.9253+00	2.1616+00
CP	-2.6151-01	-2.6665-01	7.7884-01	6.6432-01	6.7621-01	6.1550-01	5.5877-01	3.1208-01	-2.9488-01
P/PO1	1.7585-01	1.7348-01	6.5481-01	6.0708-01	6.0755-01	5.7961-01	5.5349-01	4.3992-01	1.6048-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.205 P-INF =3.9927 RE = .3752 TO = 532.

P	9.8325+00	8.0094+00	8.8353+00	2.2442+00	2.4279+00	2.3891+00	2.3543+00	2.3313+00	7.4239+00
CP	9.4116-01	6.4733-01	7.8043-01	-2.8179-01	-2.5219-01	-2.5845-01	-2.6405-01	-2.6775-01	5.5298-01
P/PO1	7.2953-01	5.9426-01	6.5554-01	1.6651-01	1.8014-01	1.7726-01	1.7468-01	1.7297-01	5.5082-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.201 P-INF =3.9901 RE = .3749 TO = 532.

P	8.0406+00	8.1185+00	7.7912+00	7.5803+00	6.0281+00	2.1130+00	7.5482+00	8.7238+00	8.6509+00
CP	6.5320-01	6.6576-01	6.1299-01	5.7898-01	3.2866-01	-3.0272-01	5.7379-01	7.6338-01	7.5162-01
P/PO1	5.9696-01	6.0775-01	5.7845-01	5.6279-01	4.4755-01	1.5687-01	5.6041-01	6.4769-01	6.4228-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3742 TO = 532.

P	8.0873+00	8.2120+00	7.9938+00	7.7048+00	7.6054+00	6.0304+00	2.2374+00	2.3686+00	2.3027+00
CP	6.6499-01	6.8515-01	6.4986-01	6.0311-01	5.8702-01	3.3220-01	-2.8148-01	-2.6025-01	-2.7091-01
P/PO1	6.0239-01	6.1167-01	5.9542-01	5.7390-01	5.6649-01	4.4918-01	1.6665-01	1.7643-01	1.7152-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.5 Q-INF = 6.217 P-INF =4.0005 RE = .3759 TO = 532.

P	2.3937+00	2.3733+00	8.4145+00	8.0784+00	8.0739+00	7.8068+00	7.4705+00	6.1286+00	2.0812+00
CP	-2.5844-01	-2.6173-01	7.0999-01	6.5593-01	6.5520-01	6.1224-01	5.5815-01	3.4230-01	-3.0871-01
P/PO1	1.7726-01	1.7575-01	6.2311-01	5.9822-01	5.9789-01	5.7811-01	5.5320-01	4.5383-01	1.5412-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.5 Q-INF = 6.217 P-INF =4.0005 RE = .3759 TO = 532.

P	2.3685+00	1.0861+01	8.7729+00	8.9656+00	8.9797+00	8.6950+00	8.2626+00	8.3173+00	7.9986+00
CP	-2.6250-01	1.1035+00	7.6764-01	7.9864-01	8.0090-01	7.5511-01	6.8556-01	6.9436-01	6.4309-01
P/PO1	1.7539-01	8.0427-01	6.4965-01	6.6392-01	6.6496-01	6.4388-01	6.1186-01	6.1591-01	5.9231-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.205 P-INF =4.9927 RE = .3752 TO = 532.

P	7.7445+00	5.9369+00	2.0967+00	2.2543+00	2.3201+00	2.2460+00	2.2010+00	2.1894+00	2.0988+00
CP	6.0464-01	3.1333-01	-3.0565-01	-2.8016-01	-2.6955-01	-2.8151-01	-2.8876-01	-2.9062-01	-3.0522-01
P/PO1	5.7461-01	4.4049-01	1.5553-01	1.6726-01	1.7214-01	1.6664-01	1.6330-01	1.6245-01	1.5572-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	8.8383+00	1.2288+01	5.2828+00	5.9648+00	7.9805+00	7.9383+00	8.1703+00	9.1055+00
CP	7.8092-01	1.3369+00	2.0791-01	3.1783-01	6.4267-01	6.3587-01	6.7327-01	8.2398-01
P/PO1	6.5576-01	9.1174-01	3.9196-01	4.4257-01	5.9212-01	5.8899-01	6.0620-01	6.7559-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.0250+00	7.6219+00	7.7859+00	7.7813+00	7.4625+00	7.4719+00	5.7328+00
CP	6.4985-01	5.8488-01	6.1132-01	6.1057-01	5.5920-01	5.6071-01	2.8044-01
P/PO1	5.9542-01	5.6551-01	5.7768-01	5.7734-01	5.5369-01	5.5438-01	4.2535-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	180.	301244	1.49	1	11.17	206.76	-5.00	5.00	180.0

VALVE POS 2 PO = 14.4 Q-INF = 6.195 P-INF =3.9862 RE = .3750 TO = 532.

P	1.3323+01	1.2450+01	1.0752+01	1.0616+01	1.0573+01	1.0222+01	9.6449+00	9.5368+00	9.1634+00
CP	1.5072+00	1.3663+00	1.0921+00	1.0701+00	1.0632+00	1.0066+00	9.1344-01	8.9599-01	8.3572-01
P/PO1	9.9012-01	9.2527-01	7.9904-01	7.8891-01	7.8572-01	7.5967-01	7.1677-01	7.0874-01	6.8099-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.5 Q-INF = 6.227 P-INF =4.0070 RE = .3765 TO = 532.

P	8.8820+00	6.4667+00	2.3230+00	2.5129+00	2.5666+00	2.4839+00	2.4341+00	2.4370+00	9.8468+00
CP	7.8288-01	3.9501-01	-2.7042-01	-2.3993-01	-2.3130-01	-2.4459-01	-2.5259-01	-2.5212-01	9.3781-01
P/PO1	6.5666-01	4.7810-01	1.7175-01	1.8578-01	1.8976-01	1.8364-01	1.7996-01	1.8017-01	7.2799-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	9.4586+00	9.4430+00	8.9755+00	8.4520+00	6.2311+00	2.3662+00	9.6449+00	9.8338+00	9.7070+00
CP	8.8684-01	8.8432-01	8.0869-01	7.2399-01	3.6467-01	-2.6064-01	9.1699-01	9.4756-01	9.2704-01
P/PO1	7.0453-01	7.0337-01	6.6855-01	6.2955-01	4.6413-01	1.7625-01	7.1841-01	7.3248-01	7.2303-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.199 P-INF =3.9888 RE = .3748 TO = 532.

P	9.6300+00	9.2092+00	8.8976+00	8.5921+00	8.4019+00	6.3888+00	2.2893+00	2.5551+00	2.4957+00
CP	9.1002-01	8.4215-01	7.9188-01	7.4259-01	7.1190-01	3.8716-01	-2.7416-01	-2.3128-01	-2.4087-01
P/PO1	7.1520-01	6.8395-01	6.6081-01	6.3812-01	6.2399-01	4.7448-01	1.7003-01	1.8976-01	1.8535-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.175 P-INF =3.9733 RE = .3733 TO = 532.

P	2.5701+00	2.5324+00	9.4274+00	8.7322+00	8.6673+00	8.3522+00	7.9054+00	6.2224+00	2.3276+00
CP	-2.2724-01	-2.3336-01	8.8329-01	7.7070-01	7.6020-01	7.0917-01	6.3680-01	3.6424-01	-2.6651-01
P/PO1	1.9162-01	1.8881-01	7.0289-01	6.5106-01	6.4623-01	6.2273-01	5.8941-01	4.6393-01	1.7355-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3741 TO = 532.

P	1.0690+01	8.8820+00	9.3027+00	2.4316+00	2.5982+00	2.5597+00	2.4981+00	2.4992+00	8.0762+00
CP	1.0843+00	7.9216-01	8.6016-01	-2.5044-01	-2.2352-01	-2.2974-01	-2.3969-01	-2.3952-01	6.6192-01
P/PO1	7.9544-01	6.6094-01	6.9224-01	1.8094-01	1.9334-01	1.9047-01	1.8589-01	1.8597-01	6.0098-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	8.6015+00	8.6327+00	8.2587+00	7.9383+00	6.2467+00	2.2127+00	8.2937+00	9.1616+00	9.0236+00
CP	7.4818-01	7.5322-01	6.9272-01	6.4088-01	3.6720-01	-2.8547-01	6.9837-01	8.3879-01	8.1648-01
P/PO1	6.4069-01	6.4301-01	6.1516-01	5.9129-01	4.6529-01	1.6482-01	6.1776-01	6.8241-01	6.7213-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.197 P-INF =3.9875 RE = .3747 TO = 532.

P	8.6483+00	8.7106+00	8.4457+00	8.1562+00	7.9334+00	6.2486+00	2.3444+00	2.5116+00	2.4397+00
CP	7.5211-01	7.6217-01	7.1942-01	6.7271-01	6.3674-01	3.6487-01	-2.6515-01	-2.3817-01	-2.4978-01
P/PO1	6.4250-01	6.4713-01	6.2745-01	6.0594-01	5.8939-01	4.6422-01	1.7417-01	1.8659-01	1.8125-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.183 P-INF =3.9785 RE = .3743 TO = 532.

P	2.5197+00	2.5079+00	8.8508+00	8.4987+00	8.4799+00	8.1964+00	7.7811+00	6.3474+00	2.2419+00
CP	-2.3594-01	-2.3785-01	7.8805-01	7.3109-01	7.2806-01	6.8220-01	6.1504-01	3.8315-01	-2.8087-01
P/PO1	1.8762-01	1.8674-01	6.5905-01	6.3282-01	6.3143-01	6.1031-01	5.7940-01	4.7264-01	1.6694-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.5 Q-INF = 6.207 P-INF =3.9940 RE = .3753 TO = 532.

P	2.5008+00	1.0986+01	8.8976+00	9.1991+00	9.2764+00	8.9755+00	8.6043+00	8.6144+00	8.2626+00
CP	-2.4057-01	1.1264+00	7.9001-01	8.3859-01	8.5104-01	8.0257-01	7.4276-01	7.4438-01	6.8771-01
P/PO1	1.8549-01	8.1482-01	6.5995-01	6.8731-01	6.8805-01	6.6573-01	6.3819-01	6.3894-01	6.1285-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.5 Q-INF = 6.213 P-INF =3.9979 RE = .3756 TO = 532.

P	8.0406+00	6.2174+00	2.3556+00	2.4254+00	2.4594+00	2.3954+00	2.3572+00	2.3438+00	2.2971+00
CP	6.5068-01	3.5724-01	-2.6432-01	-2.5310-01	-2.4762-01	-2.5793-01	-2.6407-01	-2.6624-01	-2.7374-01
P/PO1	5.9580-01	4.6071-01	1.7455-01	1.7972-01	1.8224-01	1.7750-01	1.7467-01	1.7367-01	1.7022-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.3727+00	1.2534+01	5.2828+00	6.6797+00	8.6273+00	8.3344+00	8.7563+00	9.1055+00
CP	8.6508-01	1.3740+00	2.0681-01	4.3164-01	7.4512-01	6.9797-01	7.6587-01	8.2208-01
P/PO1	6.9451-01	9.2879-01	3.9145-01	4.9496-01	6.3928-01	6.1757-01	6.4883-01	6.7471-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.5781+00	8.1656+00	8.2875+00	8.2641+00	7.8773+00	7.8563+00	6.0117+00
CP	7.3720-01	6.7081-01	6.9042-01	6.8665-01	6.2441-01	6.2101-01	3.2413-01
P/PO1	6.3564-01	6.0507-01	6.1410-01	6.1236-01	5.8371-01	5.8214-01	4.4547-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	181.	301244	1.49	1	10.21	241.25	-8.94	10.05	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3726 TO = 532.

P	1.2700+01	1.2762+01	1.1453+01	1.1067+01	1.0963+01	1.0580+01	9.9710+00	9.8495+00	9.4430+00
CP	1.4173+00	1.4274+00	1.2150+00	1.1523+00	1.1355+00	1.0734+00	9.7450-01	9.5477-01	8.8881-01
P/PO1	9.4873-01	9.5339-01	8.5560-01	8.2675-01	8.1899-01	7.9041-01	7.4488-01	7.3580-01	7.0544-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3755 TO = 532.

P	8.9594+00	6.5602+00	2.1572+00	2.2417+00	2.3176+00	2.2357+00	2.1698+00	2.1719+00	9.7536+00
CP	8.0049-01	4.1413-01	-2.9570-01	-2.8207-01	-2.6985-01	-2.8304-01	-2.9367-01	-2.9333-01	9.2894-01
P/PO1	6.6500-01	4.8690-01	1.6011-01	1.6638-01	1.7201-01	1.6594-01	1.6104-01	1.6120-01	7.2391-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.193 P-INF =3.9849 RE = .3744 TO = 532.

P	9.3651+00	9.3651+00	8.8353+00	8.3275+00	6.0593+00	2.0207+00	9.4430+00	9.4117+00	9.3187+00
CP	8.6876-01	8.6876-01	7.8321-01	7.0121-01	3.3496-01	-3.1715-01	8.8134-01	8.7629-01	8.6129-01
P/PO1	6.9620-01	6.9620-01	6.5682-01	6.1907-01	4.5045-01	1.5073-01	7.0200-01	6.9967-01	6.9276-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.5 Q-INF = 6.209 P-INF =3.9953 RE = .3754 TO = 532.

P	9.3962+00	8.7418+00	8.4145+00	8.1407+00	7.8397+00	5.9993+00	2.0191+00	2.2946+00	2.2620+00
CP	8.6986-01	7.6445-01	7.1175-01	6.6764-01	6.1916-01	3.2275-01	-3.1828-01	-2.7390-01	-2.7916-01
P/PO1	6.9671-01	6.4918-01	6.2392-01	6.0361-01	5.8129-01	4.4483-01	1.4971-01	1.7014-01	1.6772-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3728 TO = 532.

P	2.3150+00	2.2510+00	9.2404+00	7.9850+00	7.9021+00	7.5731+00	7.1910+00	5.6822+00	2.1013+00
CP	-2.6758-01	-2.7797-01	8.5692-01	6.5308-01	6.3962-01	5.8619-01	5.2415-01	2.7917-01	-3.0227-01
P/PO1	1.7305-01	1.6827-01	6.9075-01	5.9691-01	5.9071-01	5.6612-01	5.3755-01	4.2477-01	1.5708-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.197 P-INF =3.9875 RE = .3747 TO = 532.

P	9.7079+00	7.7445+00	8.4457+00	2.3123+00	2.4342+00	2.4017+00	2.3621+00	2.3172+00	6.0727+00
CP	9.2310-01	6.0626-01	7.1942-01	-2.7034-01	-2.5066-01	-2.5591-01	-2.6230-01	-2.6955-01	3.3649-01
P/PO1	7.2122-01	5.7535-01	6.2745-01	1.7178-01	1.8084-01	1.7843-01	1.7549-01	1.7215-01	4.5115-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.197 P-INF =3.9875 RE = .3747 TO = 532.

P	7.7601+00	7.8536+00	7.5419+00	7.3935+00	6.0125+00	2.1385+00	6.6940+00	8.4580+00	8.3247+00
CP	6.0878-01	6.2387-01	5.7357-01	5.4963-01	3.2677-01	-2.9837-01	4.3674-01	7.2141-01	6.9990-01
P/PO1	5.7651-01	5.8346-01	5.6031-01	5.4928-01	4.4668-01	1.5888-01	4.9731-01	6.2837-01	6.1846-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.5 Q-INF = 6.225 P-INF =4.0057 RE = .3764 TO = 532.

P	7.1679+00	7.9938+00	7.5731+00	7.3157+00	7.2931+00	5.8746+00	2.2686+00	2.3811+00	2.3152+00
CP	5.0799-01	6.4066-01	5.7307-01	5.3173-01	5.2809-01	3.0022-01	-2.7905-01	-2.6098-01	-2.7156-01
P/PO1	5.3011-01	5.9119-01	5.6007-01	5.4104-01	5.3936-01	4.3446-01	1.6777-01	1.7609-01	1.7122-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

ARNOLD ENGINEERING DEVELOPMENT
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTOUR

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3737 TO = 532.

P	2.3937+00	2.3305+00	7.5887+00	7.4747+00	7.4961+00	7.2926+00	7.0667+00	5.8628+00	2.0863+00
CP	-2.5568-01	-2.6592-01	5.8591-01	5.5934-01	5.7091-01	5.3795-01	5.0135-01	3.0631-01	-3.0547-01
P/POI	1.7853-01	1.7382-01	5.6598-01	5.5375-01	5.5908-01	5.4390-01	5.2706-01	4.3726-01	1.5560-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3724 TO = 532.

P	2.3532+00	9.7390+00	7.4952+00	8.1095+00	8.1676+00	7.7757+00	7.4860+00	7.5825+00	7.2997+00
CP	-2.6138-01	9.3789-01	5.7354-01	6.7330-01	6.8273-01	6.1909-01	5.7206-01	5.8773-01	5.4180-01
P/POI	1.7591-01	7.2803-01	5.6029-01	6.0622-01	6.1056-01	5.8126-01	5.5961-01	5.6682-01	5.4568-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3750 TO = 532.

P	7.2147+00	5.5296+00	2.0885+00	2.2065+00	2.2665+00	2.1948+00	2.1464+00	2.1393+00	2.0511+00
CP	5.1964-01	2.4797-01	-3.0677-01	-2.8776-01	-2.7808-01	-2.8964-01	-2.9744-01	-2.9858-01	-3.1780-01
P/POI	5.3547-01	4.1040-01	1.5501-01	1.6376-01	1.6822-01	1.6290-01	1.5931-01	1.5878-01	1.5223-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00
CEC	8.6813+00	1.2300+01	5.2828+00	3.8813+00	7.9078+00	6.5484+00	8.1563+00	9.1031+00	
CP	7.5607-01	1.3395+00	2.0819-01	-1.7760-02	6.3138-01	4.1223-01	6.7143-01	8.2408-01	
P/POI	6.4432-01	9.1290-01	3.9209-01	2.8807-01	5.8692-01	4.8602-01	6.0536-01	6.7563-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	
CEC	7.9313+00	6.9352+00	7.5727+00	7.1813+00	7.1250+00	7.0266+00	5.4867+00		
CP	6.3516-01	4.7457-01	5.7735-01	5.1425-01	5.0518-01	4.8931-01	2.4106-01		
P/POI	5.8866-01	5.1473-01	5.6204-01	5.3299-01	5.2882-01	5.2151-01	4.0722-01		
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00		

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	182.	301244	1.49	1	7.06	225.15	-5.00	10.01	180.0

VALVE POS 2 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	1.2949+01	1.3058+01	1.1702+01	1.1347+01	1.1260+01	1.0877+01	1.0220+01	1.0037+01	9.6294+00
CP	1.4516+00	1.4692+00	1.2499+00	1.1924+00	1.1783+00	1.1163+00	1.0100+00	9.8044-01	9.1448-01
P/PO1	9.6452-01	9.7264-01	8.7166-01	8.4520-01	8.3869-01	8.1015-01	7.6121-01	7.4762-01	7.1725-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.5 Q-INF = 6.215 P-INF =3.9992 RE = .3758 TO = 532.

P	9.1469+00	6.6849+00	2.2819+00	2.5379+00	2.5919+00	2.5091+00	2.4597+00	2.4432+00	1.0406+01
CP	8.2877-01	4.3213-01	-2.7632-01	-2.3513-01	-2.2644-01	-2.3975-01	-2.4771-01	-2.5036-01	1.0308+00
P/PO1	6.7756-01	4.9519-01	1.6903-01	1.8799-01	1.9199-01	1.8587-01	1.8220-01	1.8098-01	7.7032-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.5 Q-INF = 6.215 P-INF =3.9992 RE = .3758 TO = 532.

P	9.9416+00	9.8637+00	9.3495+00	8.7633+00	6.3404+00	2.3227+00	1.0282+01	1.0193+01	1.0095+01
CP	9.5614-01	9.4360-01	8.6087-01	7.6655-01	3.7671-01	-2.6974-01	1.0109+00	9.9665-01	9.8087-01
P/PO1	7.3643-01	7.3066-01	6.9257-01	6.4915-01	4.6967-01	1.7206-01	7.6162-01	7.5508-01	7.4781-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.197 P-INF =3.9875 RE = .3747 TO = 532.

P	9.9884+00	9.4274+00	9.0534+00	8.7322+00	8.3394+00	6.3576+00	2.3444+00	2.5924+00	2.5392+00
CP	9.6836-01	8.7784-01	8.1749-01	7.6565-01	7.0226-01	3.8247-01	-2.6515-01	-2.2513-01	-2.3371-01
P/PO1	7.4206-01	7.0038-01	6.7260-01	6.4873-01	6.1955-01	4.7232-01	1.7417-01	1.9260-01	1.8865-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.193 P-INF =3.9849 RE = .3744 TO = 532.

P	2.6331+00	2.6180+00	9.8481+00	8.7010+00	8.6205+00	8.3522+00	7.7501+00	6.0660+00	2.4521+00
CP	-2.1829-01	-2.2073-01	9.4676-01	7.6154-01	7.4853-01	7.0521-01	6.0798-01	3.3604-01	-2.4751-01
P/PO1	1.9575-01	1.9462-01	7.3211-01	6.4684-01	6.4085-01	6.2091-01	5.7614-01	4.5095-01	1.8229-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.5 Q-INF = 6.215 P-INF =3.9992 RE = .3758 TO = 532.

P	1.0627+01	8.8041+00	9.0690+00	2.5629+00	2.6739+00	2.6355+00	2.5878+00	2.5862+00	6.5386+00
CP	1.0665+00	7.7311-01	8.1574-01	-2.3110-01	-2.1325-01	-2.1941-01	-2.2709-01	-2.2735-01	4.0860-01
P/PO1	7.8722-01	6.5217-01	6.7179-01	1.8985-01	1.9807-01	1.9523-01	1.9169-01	1.9158-01	4.8435-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.5 Q-INF = 6.235 P-INF =4.0121 RE = .3770 TO = 532.

P	8.3055+00	8.3990+00	8.0717+00	7.7982+00	6.2311+00	2.3827+00	7.4395+00	8.6300+00	8.5732+00
CP	6.8857-01	7.0356-01	6.5108-01	6.0722-01	3.5588-01	-2.6133-01	5.4967-01	7.4062-01	7.3151-01
P/PO1	6.1324-01	6.2015-01	5.9599-01	5.7579-01	4.6008-01	1.7593-01	5.4930-01	6.3721-01	6.3302-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.5 Q-INF = 6.219 P-INF =4.0018 RE = .3760 TO = 532.

P	7.4328+00	8.2120+00	8.0873+00	7.7048+00	7.6054+00	6.0460+00	2.5045+00	2.6049+00	2.5455+00
CP	5.5170-01	6.7698-01	6.5694-01	5.9544-01	5.7945-01	3.2870-01	-2.4075-01	-2.2462-01	-2.3417-01
P/PO1	5.5024-01	6.0791-01	5.9868-01	5.7037-01	5.6301-01	4.4757-01	1.8540-01	1.9283-01	1.8844-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B37Q

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GD WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.5 Q-INF = 6.219 P-INF =4.0018 RE = .3760 TO = 532.

P	2.6331+00	2.5813+00	7.8380+00	7.8605+00	7.8709+00	7.6666+00	7.3929+00	6.0817+00	2.3276+00
CP	-2.2008-01	-2.2841-01	6.1685-01	6.2047-01	6.2214-01	5.8929-01	5.4527-01	3.3444-01	-2.6920-01
P/PO1	1.9492-01	1.9109-01	5.8023-01	5.8189-01	5.8266-01	5.6754-01	5.4728-01	4.5021-01	1.7231-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.199 P-INF =3.9888 RE = .3748 TO = 532.

P	2.5764+00	9.9260+00	7.7133+00	8.4209+00	8.4175+00	8.0250+00	7.8277+00	7.9108+00	7.6880+00
CP	-2.2785-01	9.5778-01	6.0083-01	7.1497-01	7.1442-01	6.5111-01	6.1929-01	6.3269-01	5.9674-01
P/PO1	1.9134-01	7.3719-01	5.7285-01	6.2540-01	6.2515-01	5.9600-01	5.8135-01	5.8752-01	5.7097-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	7.5575+00	5.8746+00	2.4172+00	2.4629+00	2.4910+00	2.4143+00	2.3700+00	2.3624+00	2.2871+00
CP	5.7927-01	3.0699-01	-2.5239-01	-2.4500-01	-2.4045-01	-2.5285-01	-2.6002-01	-2.6125-01	-2.7344-01
P/PO1	5.6293-01	4.3757-01	1.8005-01	1.8345-01	1.8554-01	1.7983-01	1.7653-01	1.7597-01	1.7036-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.2156+00	1.2478+01	5.2828+00	4.6336+00	8.5898+00	6.5531+00	8.7305+00	9.1031+00
CP	8.4754-01	1.3754+00	2.1124-01	1.0620-01	7.4629-01	4.1677-01	7.6904-01	8.2934-01
P/PO1	6.8643-01	9.2944-01	3.9349-01	3.4514-01	6.3982-01	4.8811-01	6.5030-01	6.7805-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.4633+00	7.4602+00	8.0906+00	7.6430+00	7.5375+00	7.4344+00	5.7445+00
CP	7.2582-01	5.6352-01	6.6552-01	5.9310-01	5.7603-01	5.5935-01	2.8594-01
P/PO1	6.3039-01	5.5568-01	6.0264-01	5.6929-01	5.6144-01	5.5376-01	4.2789-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
9.	183.	301244	1.49	1	9.01	270.09	-9.01	15.01	180.0

VALVE POS 2 PO = 14.4 Q-INF = 6.193 P-INF =3.9849 RE = .3744 TO = 532.

P	1.2201+01	1.3152+01	1.2232+01	1.1736+01	1.1635+01	1.1251+01	1.0592+01	1.0397+01	9.9244+00
CP	1.3267+00	1.4802+00	1.3317+00	1.2517+00	1.2352+00	1.1732+00	1.0669+00	1.0353+00	9.5909-01
P/PO1	9.0703-01	9.7770-01	9.0935-01	8.7248-01	8.6492-01	8.3637-01	7.8744-01	7.7289-01	7.3779-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.5 Q-INF = 6.225 P-INF =4.0057 RE = .3764 TO = 532.

P	9.3962+00	6.8719+00	2.2997+00	2.3723+00	2.3712+00	2.3074+00	2.2374+00	2.2120+00	1.0235+01
CP	8.6594-01	4.6043-01	-2.7405-01	-2.7041-01	-2.6257-01	-2.7281-01	-2.8406-01	-2.8814-01	1.0007+00
P/PO1	6.9491-01	5.0821-01	1.7007-01	1.7175-01	1.7536-01	1.7064-01	1.6547-01	1.6359-01	7.5694-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.5 Q-INF = 6.229 P-INF =4.0083 RE = .3766 TO = 532.

P	9.7858+00	9.6923+00	9.2248+00	8.6076+00	6.1999+00	2.0976+00	9.8002+00	9.4899+00	9.4274+00
CP	9.2751-01	9.1250-01	8.3745-01	7.3837-01	3.5184-01	-3.0673-01	9.2982-01	8.8000-01	8.6998-01
P/PO1	7.2325-01	7.1634-01	6.8179-01	6.3617-01	4.5822-01	1.5503-01	7.2431-01	7.0138-01	6.9676-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.5 Q-INF = 6.225 P-INF =4.0057 RE = .3764 TO = 532.

P	9.6611+00	8.8664+00	8.4769+00	8.1874+00	7.7928+00	5.9213+00	2.2296+00	2.3011+00	2.3276+00
CP	9.0850-01	7.8083-01	7.1825-01	6.7175-01	6.0837-01	3.0773-01	-2.8531-01	-2.6098-01	-2.6956-01
P/PO1	7.1450-01	6.5572-01	6.2691-01	6.0550-01	5.7632-01	4.3792-01	1.6489-01	1.7609-01	1.7214-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.5 Q-INF = 6.223 P-INF =4.0044 RE = .3762 TO = 532.

P	2.4189+00	2.3672+00	9.6300+00	7.9072+00	7.7147+00	7.3493+00	6.8959+00	5.3900+00	2.3276+00
CP	-2.5477-01	-2.6308-01	9.0399-01	6.2715-01	5.9622-01	5.3590-01	4.6464-01	2.2266-01	-2.6944-01
P/PO1	1.7895-01	1.7512-01	7.1242-01	5.8497-01	5.7073-01	5.4296-01	5.1015-01	3.9875-01	1.7220-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3741 TO = 532.

P	9.3339+00	7.3393+00	7.9782+00	2.3691+00	2.4657+00	2.4333+00	2.4085+00	2.3562+00	4.6366+00
CP	8.6520-01	5.4281-01	6.4608-01	-2.6054-01	-2.4492-01	-2.5017-01	-2.5419-01	-2.6263-01	1.0596-01
P/PO1	6.9456-01	5.4614-01	5.9368-01	1.7629-01	1.8348-01	1.8107-01	1.7922-01	1.7533-01	3.4502-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.179 P-INF =3.9759 RE = .3736 TO = 532.

P	7.3082+00	7.4952+00	7.2303+00	7.2068+00	6.0125+00	2.1334+00	5.8418+00	7.9108+00	7.7967+00
CP	5.3932-01	5.6958-01	5.2671-01	5.2290-01	3.2961-01	-2.9819-01	3.0199-01	6.3685-01	6.1837-01
P/PO1	5.4453-01	5.5847-01	5.3873-01	5.3698-01	4.4799-01	1.5896-01	4.3527-01	5.8944-01	5.8093-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.191 P-INF =3.9836 RE = .3743 TO = 532.

P	6.2486+00	7.2458+00	7.1056+00	6.8021+00	6.7933+00	5.6440+00	2.1984+00	2.3397+00	2.2821+00
CP	3.6585-01	5.2694-01	5.0429-01	4.5525-01	4.5384-01	2.6819-01	-2.8837-01	-2.6554-01	-2.7485-01
P/PO1	4.6467-01	5.3884-01	5.2841-01	5.0583-01	5.0518-01	4.1971-01	1.6348-01	1.7399-01	1.6971-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DAT

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.191 P-INF =3.9836 RE = .3743 TO = 532.

P	2.3379+00	2.2693+00	6.8875+00	6.7087+00	6.9807+00	6.7472+00	6.5542+00	5.5454+00	2.0561+00
CP	-2.6584-01	-2.7691-01	4.6905-01	4.4017-01	4.8411-01	4.4639-01	4.1521-01	2.5227-01	-3.1139-01
P/PO1	1.7386-01	1.6876-01	5.1218-01	4.9889-01	5.1912-01	5.0175-01	4.8740-01	4.1238-01	1.5290-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.195 P-INF =3.9862 RE = .3745 TO = 532.

P	2.2819+00	8.6483+00	6.1395+00	7.3935+00	7.4180+00	7.0277+00	6.5697+00	6.8477+00	6.6318+00
CP	-2.7513-01	7.5256-01	3.4759-01	5.5002-01	5.5397-01	4.9096-01	4.1703-01	4.6191-01	4.2706-01
P/PO1	1.6958-01	6.4271-01	4.5626-01	5.4946-01	5.5128-01	5.2227-01	4.8824-01	5.0890-01	4.9285-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.5 Q-INF = 6.211 P-INF =3.9966 RE = .3755 TO = 532.

P	6.6537+00	5.2360+00	2.1420+00	2.1914+00	2.2563+00	2.1948+00	2.1516+00	2.1443+00	2.0737+00
CP	4.2781-01	1.9955-01	-2.9861-01	-2.9065-01	-2.8020-01	-2.9010-01	-2.9705-01	-2.9822-01	-3.0960-01
P/PO1	4.9320-01	3.8811-01	1.5877-01	1.6243-01	1.6724-01	1.6269-01	1.5949-01	1.5895-01	1.5371-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	8.3016+00	1.1897+01	5.2828+00	1.9430+00	8.0414+00	4.1906+00	8.1258+00	9.1031+00	
CP	6.9312-01	1.2720+00	2.0709-01	-3.3064-01	6.5123-01	3.1239-02	6.6482-01	8.2218-01	
P/PO1	6.1534-01	8.8184-01	3.9158-01	1.4402-01	5.9606-01	3.1062-01	6.0231-01	6.7476-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	7.8305+00	6.1734+00	7.3195+00	6.4758+00	6.7313+00	6.6820+00	5.1844+00
CP	6.1727-01	3.5048-01	5.3501-01	3.9916-01	4.4029-01	4.3237-01	1.9124-01
P/PO1	5.8042-01	4.5760-01	5.4255-01	4.8001-01	4.9894-01	4.9530-01	3.8428-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
10.	184.	301244	1.49	1	4.99	270.09	-4.99	15.01	180.0

VALVE POS 2 PO = 14.4 Q-INF = 6.183 P-INF =3.9785 RE = .3738 TO = 532.

P	1.2371+01	1.3211+01	1.2329+01	1.1998+01	1.1830+01	1.1426+01	1.0786+01	1.0594+01	1.0171+01
CP	1.3575+00	1.4933+00	1.3506+00	1.2970+00	1.2698+00	1.2045+00	1.1011+00	1.0700+00	1.0017+00
P/PO1	9.2120-01	9.8372-01	9.1801-01	8.9337-01	8.8084-01	8.5078-01	8.0315-01	7.8886-01	7.5738-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3727 TO = 532.

P	9.4605+00	6.9061+00	2.3257+00	2.6005+00	2.6190+00	2.5451+00	2.5089+00	2.4950+00	1.0801+01
CP	8.9116-01	4.7680-01	-2.6621-01	-2.2164-01	-2.1863-01	-2.3062-01	-2.3649-01	-2.3875-01	1.1087+00
P/PO1	7.0651-01	5.1575-01	1.7368-01	1.9420-01	1.9559-01	1.9007-01	1.8737-01	1.8633-01	8.0666-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.191 P-INF =3.9836 RE = .3743 TO = 532.

P	1.0297+01	1.0143+01	9.5787+00	8.9675+00	6.4102+00	2.2760+00	1.0617+01	1.0317+01	1.0248+01
CP	1.0197+00	9.9498-01	9.0376-01	8.0504-01	3.9196-01	-2.7583-01	1.0715+00	1.0230+00	1.0119+00
P/PO1	7.6570-01	7.5431-01	7.1232-01	6.6687-01	4.7669-01	1.6926-01	7.8954-01	7.6722-01	7.6211-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3713 TO = 532.

P	1.0142+01	9.3880+00	9.0071+00	8.8445+00	8.3921+00	6.2364+00	2.4456+00	2.6482+00	2.6474+00
CP	1.0081+00	8.8539-01	8.2335-01	7.9687-01	7.2321-01	3.7214-01	-2.4521-01	-2.1220-01	-2.1233-01
P/PO1	7.6037-01	7.0386-01	6.7530-01	6.6311-01	6.2919-01	4.6757-01	1.8335-01	1.9855-01	1.9849-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.130 P-INF =3.9448 RE = .3706 TO = 532.

P	2.6474+00	2.5808+00	9.8877+00	8.6137+00	8.2838+00	7.8687+00	7.3597+00	5.7129+00	2.6351+00
CP	-2.1162-01	-2.2250-01	9.6941-01	7.6160-01	7.0777-01	6.4006-01	5.5705-01	2.8841-01	-2.1363-01
P/PO1	1.9882-01	1.9381-01	7.4254-01	6.4687-01	6.2209-01	5.9092-01	5.5270-01	4.2902-01	1.9789-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3708 TO = 532.

P	1.0095+01	8.4631+00	8.4972+00	2.7117+00	2.7569+00	2.6948+00	2.6610+00	2.6544+00	4.8516+00
CP	1.0027+00	7.3658-01	7.4214-01	-2.0129-01	-1.9392-01	-2.0403-01	-2.0956-01	-2.1063-01	1.4765-01
P/PO1	7.5788-01	6.3535-01	6.3791-01	2.0357-01	2.0697-01	2.0231-01	1.9977-01	1.9927-01	3.6422-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3727 TO = 532.

P	7.7728+00	8.0161+00	7.6939+00	7.5985+00	6.1160+00	2.6075+00	6.4532+00	8.0073+00	7.8821+00
CP	6.1739-01	6.5685-01	6.0458-01	5.8912-01	3.4864-01	-2.2050-01	4.0333-01	6.5542-01	6.3512-01
P/PO1	5.8047-01	5.9864-01	5.7458-01	5.6746-01	4.5675-01	1.9473-01	4.8193-01	5.9798-01	5.8864-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3708 TO = 532.

P	6.1160+00	7.3994+00	7.2613+00	7.0294+00	6.9676+00	5.7265+00	2.6863+00	2.7157+00	2.7028+00
CP	3.5385-01	5.6313-01	5.4060-01	5.0279-01	4.9272-01	2.9034-01	-2.0542-01	-2.0064-01	-2.0273-01
P/PO1	4.5915-01	5.5550-01	5.4512-01	5.2772-01	5.2308-01	4.2991-01	2.0167-01	2.0387-01	2.0291-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

40 - [illegible] TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.137 P-INF =3.9487 RE = .3710 TO = 532.

P	2.7351+00	2.6898+00	6.6433+00	7.0602+00	7.1380+00	6.9294+00	6.7759+00	5.6520+00	2.5428+00
CP	-1.9777-01	-2.0514-01	4.3911-01	5.0705-01	5.1973-01	4.8573-01	4.6072-01	2.7758-01	-2.2911-01
P/PO1	2.0519-01	2.0180-01	4.9840-01	5.2968-01	5.3551-01	5.1986-01	5.0835-01	4.2403-01	1.9077-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3728 TO = 532.

P	2.6600+00	8.7252+00	6.4733+00	7.7831+00	7.6334+00	6.9294+00	6.9449+00	7.0833+00	6.9295+00
CP	-2.1213-01	7.7141-01	4.0625-01	6.1865-01	5.9438-01	4.8020-01	4.8272-01	5.0517-01	4.8023-01
P/PO1	1.9858-01	6.5139-01	4.8327-01	5.8106-01	5.6988-01	5.1732-01	5.1848-01	5.2881-01	5.1733-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3713 TO = 532.

P	6.8593+00	5.3190+00	2.4820+00	2.5387+00	2.5251+00	2.4578+00	2.4329+00	2.4275+00	2.3519+00
CP	4.7357-01	2.2275-01	-2.3928-01	-2.3004-01	-2.3226-01	-2.4321-01	-2.4727-01	-2.4814-01	-2.6046-01
P/PO1	5.1427-01	3.9879-01	1.8608-01	1.9034-01	1.8931-01	1.8427-01	1.8240-01	1.8200-01	1.7633-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	8.7609+00	1.1770+01	1.0038+01	2.5336+00	8.6180+00	3.9398+00	8.6320+00	5.7797+00
CP	7.8327-01	1.2734+00	9.9129-01	-2.3087-01	7.5999-01	-1.8586-03	7.6228-01	2.9776-01
P/PO1	6.5684-01	8.8247-01	7.5261-01	1.8995-01	6.4613-01	2.9539-01	6.4718-01	4.3333-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.2430+00	6.6023+00	7.8258+00	6.9539+00	7.0430+00	6.9164+00	5.2031+00
CP	6.9892-01	4.3174-01	6.3098-01	4.8899-01	5.0349-01	4.8288-01	2.0387-01
P/PO1	6.1801-01	4.9501-01	5.8673-01	5.2136-01	5.2804-01	5.1855-01	3.9010-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
10.	185.	301244	1.49	1	4.99	89.91	4.99	15.01	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3705 TO = 532.

P	1.2232+01	1.3165+01	1.2360+01	1.1967+01	1.1860+01	1.1441+01	1.0832+01	1.0610+01	1.0171+01
CP	1.3525+00	1.5047+00	1.3733+00	1.3092+00	1.2918+00	1.2234+00	1.1241+00	1.0877+00	1.0162+00
P/PO1	9.1890-01	9.8897-01	9.2848-01	8.9898-01	8.9098-01	8.5948-01	8.1374-01	7.9702-01	7.6410-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3724 TO = 532.

P	9.4915+00	6.8753+00	2.3444+00	2.6870+00	2.7005+00	2.6262+00	2.5786+00	2.5685+00	1.1723+01
CP	8.9769-01	4.7290-01	-2.6280-01	-2.0718-01	-2.0498-01	-2.1704-01	-2.2477-01	-2.2641-01	1.2601+00
P/PO1	7.0952-01	5.1395-01	1.7525-01	2.0086-01	2.0187-01	1.9632-01	1.9276-01	1.9201-01	8.7636-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.189 P-INF =3.9823 RE = .3742 TO = 532.

P	1.1195+01	1.0991+01	1.0506+01	9.6751+00	6.9831+00	2.3892+00	1.2338+01	1.1980+01	1.1862+01
CP	1.1654+00	1.1325+00	1.0540+00	9.1984-01	4.8487-01	-2.5743-01	1.3501+00	1.2923+00	1.2731+00
P/PO1	8.3276-01	8.1763-01	7.8150-01	7.1972-01	5.1947-01	1.7773-01	9.1780-01	8.9118-01	8.8237-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.191 P-INF =3.9836 RE = .3743 TO = 532.

P	1.1597+01	1.0837+01	1.0444+01	1.0375+01	9.4141+00	7.1141+00	2.1938+00	2.6360+00	2.6351+00
CP	1.2298+00	1.1070+00	1.0435+00	9.8393-01	8.7717-01	5.0566-01	-2.8911-01	-2.1769-01	-2.1783-01
P/PO1	8.6243-01	8.0590-01	7.7665-01	7.4922-01	7.0007-01	5.2904-01	1.6314-01	1.9602-01	1.9596-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3719 TO = 532.

P	2.6662+00	2.5626+00	1.1263+01	1.0029+01	9.7702+00	9.2853+00	8.6657+00	6.5290+00	2.2735+00
CP	-2.0998-01	-2.2683-01	1.1877+00	9.8709-01	9.4502-01	8.6619-01	7.6546-01	4.1805-01	-2.7383-01
P/PO1	1.9957-01	1.9181-01	8.4303-01	7.5067-01	7.3131-01	6.9502-01	6.4864-01	4.8870-01	1.7018-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.137 P-INF =3.9487 RE = .3710 TO = 532.

P	1.1721+01	1.0405+01	9.9649+00	2.5264+00	2.6002+00	2.5888+00	2.5406+00	2.5072+00	5.5904+00
CP	1.2666+00	1.0522+00	9.8041-01	-2.3178-01	-2.1974-01	-2.2160-01	-2.2946-01	-2.3489-01	2.6753-01
P/PO1	8.7936-01	7.8065-01	7.4760-01	1.8954-01	1.9508-01	1.9422-01	1.9060-01	1.8810-01	4.1941-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3728 TO = 532.

P	9.1508+00	9.3110+00	8.8835+00	8.1369+00	6.2399+00	2.1978+00	7.6978+00	8.0689+00	7.6209+00
CP	8.4044-01	8.6641-01	7.9708-01	6.7602-01	3.6840-01	-2.8707-01	6.0481-01	6.6498-01	5.9235-01
P/PO1	6.8316-01	6.9512-01	6.6320-01	6.0747-01	4.6585-01	1.6408-01	5.7468-01	6.0239-01	5.6895-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3725 TO = 532.

P	6.6735+00	7.9698+00	7.6630+00	7.3678+00	7.1225+00	5.7265+00	2.5343+00	2.5808+00	2.5674+00
CP	4.3976-01	6.5019-01	6.0038-01	5.5247-01	5.1265-01	2.8606-01	-2.3211-01	-2.2456-01	-2.2673-01
P/PO1	4.9870-01	5.9558-01	5.7265-01	5.5059-01	5.3226-01	4.2794-01	1.8938-01	1.9286-01	1.9186-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3714 TO = 532.

P	2.5911+00	2.5262+00	7.1377+00	7.1217+00	7.1999+00	7.0525+00	6.7912+00	5.6643+00	2.5489+00
CP	-2.2164-01	-2.3220-01	5.1853-01	5.1594-01	5.2866-01	5.0468-01	4.6214-01	2.7867-01	-2.2851-01
P/PO1	1.9420-01	1.8934-01	5.3497-01	5.3377-01	5.3963-01	5.2859-01	5.0900-01	4.2454-01	1.9104-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3732 TO = 532.

P	2.6474+00	8.5864+00	6.2570+00	7.7677+00	7.5870+00	7.0371+00	7.1446+00	7.2681+00	7.1293+00
CP	-2.1458-01	7.4755-01	3.7019-01	6.1492-01	5.8564-01	4.9656-01	5.1398-01	5.3398-01	5.1149-01
P/PO1	1.9745-01	6.4040-01	4.6667-01	5.7934-01	5.6586-01	5.2485-01	5.3287-01	5.4208-01	5.3172-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3730 TO = 532.

P	6.8902+00	5.3251+00	2.5758+00	2.6190+00	2.6065+00	2.5389+00	2.5216+00	2.5134+00	2.4196+00
CP	4.7349-01	2.1977-01	-2.2592-01	-2.1891-01	-2.2094-01	-2.3190-01	-2.3470-01	-2.3603-01	-2.5123-01
P/PO1	5.1423-01	3.9742-01	1.9223-01	1.9546-01	1.9453-01	1.8948-01	1.8819-01	1.8758-01	1.8058-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.9258+00	1.1248+01	1.1245+01	4.0617+00	1.0111+01	4.3758+00	9.8953+00	7.2047+00
CP	9.6558-01	1.1799+00	1.1795+00	1.4967-02	9.9560-01	6.5879-02	9.6064-01	5.2447-01
P/PO1	7.4078-01	8.3943-01	8.3926-01	3.0313-01	7.5460-01	3.2657-01	7.3850-01	5.3770-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.4945+00	7.8000+00	8.9461+00	7.9172+00	7.7883+00	7.4063+00	5.6250+00
CP	8.9567-01	6.2097-01	8.0676-01	6.3997-01	6.1907-01	5.5714-01	2.6839-01
P/PO1	7.0859-01	5.8213-01	6.6766-01	5.9087-01	5.8125-01	5.5274-01	4.1980-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
7 - RAREFIED GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
10.	186.	301244	1.49	1	8.99	89.91	8.99	15.01	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3720 TO = 532.

P	1.2015+01	1.3011+01	1.2159+01	1.1736+01	1.1628+01	1.1256+01	1.0617+01	1.0517+01	9.9871+00
CP	1.3094+00	1.4712+00	1.3327+00	1.2640+00	1.2465+00	1.1861+00	1.0822+00	1.0659+00	9.7976-01
P/P01	8.9907-01	9.7355-01	9.0980-01	8.7819-01	8.7010-01	8.4228-01	7.9444-01	7.8697-01	7.4731-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3715 TO = 532.

P	9.3057+00	6.7674+00	2.2407+00	2.4028+00	2.4248+00	2.3455+00	2.3300+00	2.2859+00	1.1846+01
CP	8.7099-01	4.5790-01	-2.7881-01	-2.5242-01	-2.4885-01	-2.6175-01	-2.6428-01	-2.7145-01	1.2845+00
P/P01	6.9723-01	5.0705-01	1.6788-01	1.8003-01	1.8168-01	1.7574-01	1.7457-01	1.7127-01	8.8758-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3732 TO = 532.

P	1.1288+01	1.1115+01	1.0475+01	9.7674+00	7.0915+00	2.4141+00	1.2737+01	1.2427+01	1.2292+01
CP	1.1851+00	1.1571+00	1.0535+00	9.3887-01	5.0537-01	-2.5238-01	1.4200+00	1.3697+00	1.3478+00
P/P01	8.4186-01	8.2896-01	7.8124-01	7.2848-01	5.2891-01	1.8005-01	9.4999-01	9.2682-01	9.1676-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3705 TO = 532.

P	1.1972+01	1.1238+01	1.0815+01	1.0383+01	9.7237+00	7.3297+00	2.2428+00	2.3417+00	2.3150+00
CP	1.3019+00	1.1903+00	1.1212+00	1.0507+00	9.4318-01	5.5254-01	-2.7750-01	-2.6136-01	-2.6573-01
P/P01	8.9563-01	8.4421-01	8.1242-01	7.7996-01	7.3047-01	5.5062-01	1.6848-01	1.7591-01	1.7390-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.167 P-INF =3.9551 RE = .3716 TO = 532.

P	2.3595+00	2.2536+00	1.1757+01	1.0721+01	1.0359+01	9.8089+00	9.1574+00	7.0063+00	2.1446+00
CP	-2.5959-01	-2.7682-01	1.2693+00	1.1008+00	1.0418+00	9.5236-01	8.4637-01	4.9641-01	-2.9456-01
P/P01	1.7673-01	1.6880-01	8.8061-01	8.0301-01	7.7586-01	7.3469-01	6.8590-01	5.2478-01	1.6063-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3725 TO = 532.

P	1.2124+01	1.1099+01	1.0521+01	2.1294+00	2.3317+00	2.3139+00	2.2863+00	2.2267+00	6.2074+00
CP	1.3244+00	1.1581+00	1.0643+00	-2.9782-01	-2.6500-01	-2.6788-01	-2.7236-01	-2.8203-01	3.6411-01
P/P01	9.0599-01	8.2943-01	7.8623-01	1.5913-01	1.7424-01	1.7291-01	1.7085-01	1.6640-01	4.6387-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.2 Q-INF = 6.106 P-INF =3.9292 RE = .3692 TO = 532.

P	9.5844+00	9.6501+00	9.0534+00	8.3522+00	6.2864+00	2.1398+00	8.1433+00	7.8225+00	7.5748+00
CP	9.2612-01	9.3688-01	8.3916-01	7.2434-01	3.8602-01	-2.9305-01	6.9013-01	6.3758-01	5.9702-01
P/P01	7.2261-01	7.2756-01	6.8258-01	6.2971-01	4.7396-01	1.6133-01	6.1396-01	5.8977-01	5.7110-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3727 TO = 532.

P	7.5870+00	7.9544+00	7.8174+00	7.3524+00	7.0915+00	5.6704+00	2.2221+00	2.2760+00	2.2785+00
CP	5.8725-01	6.4685-01	6.2463-01	5.4920-01	5.0687-01	2.7635-01	-2.8302-01	-2.7427-01	-2.7387-01
P/P01	5.6660-01	5.9404-01	5.8381-01	5.4908-01	5.2960-01	4.2347-01	1.6595-01	1.6997-01	1.7016-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3730 TO = 532.

P	2.3139+00	2.2297+00	7.2304+00	6.8602+00	6.9367+00	6.8216+00	6.5761+00	5.4926+00	2.2789+00
CP	-2.6837-01	-2.8202-01	5.2863-01	4.6863-01	4.8102-01	4.6236-01	4.2257-01	2.4693-01	-2.8215-01
P/PO1	1.7269-01	1.6641-01	5.3961-01	5.1199-01	5.1770-01	5.0910-01	4.9079-01	4.0992-01	1.6635-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3714 TO = 532.

P	2.3265+00	8.4939+00	5.7829+00	7.3063+00	7.3702+00	7.0063+00	6.6222+00	6.8370+00	6.6991+00
CP	-2.6471-01	7.3933-01	2.9799-01	5.4599-01	5.5639-01	4.9716-01	4.3462-01	4.6958-01	4.4713-01
P/PO1	1.7437-01	6.3662-01	4.3343-01	5.4760-01	5.5239-01	5.2512-01	4.9633-01	5.1243-01	5.0209-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3715 TO = 532.

P	6.6425+00	5.1918+00	2.2280+00	2.2661+00	2.2861+00	2.2331+00	2.2272+00	2.2070+00	2.1719+00
CP	4.3756-01	2.0147-01	-2.8087-01	-2.7468-01	-2.7141-01	-2.8004-01	-2.8100-01	-2.8430-01	-2.9001-01
P/PO1	4.9769-01	3.8900-01	1.6693-01	1.6979-01	1.7129-01	1.6732-01	1.6687-01	1.6536-01	1.6273-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0140+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0453+01	1.1025+01	1.1693+01	4.7672+00	1.0695+01	5.1867+00	1.0434+01	7.9547+00
CP	1.0577+00	1.1508+00	1.2595+00	1.3237-01	1.0970+00	2.0064-01	1.0547+00	6.5112-01
P/PO1	7.8320-01	8.2605-01	8.7610-01	3.5718-01	8.0129-01	3.8862-01	7.8180-01	5.9601-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.9680+00	8.3063+00	9.3703+00	8.2078+00	8.1938+00	7.7625+00	5.8922+00
CP	9.7877-01	7.0833-01	8.8151-01	6.9231-01	6.9003-01	6.1984-01	3.1546-01
P/PO1	7.4685-01	6.2235-01	7.0207-01	6.1497-01	6.1392-01	5.8161-01	4.4147-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
10.	187.	301244	1.49	1	7.06	134.83	5.00	10.01	180.0

VALVE POS 2 PO = 14.4 Q-INF = 6.205 P-INF =3.9927 RE = .3752 TO = 532.

P	1.2867+01	1.2980+01	1.1680+01	1.1382+01	1.1272+01	1.0902+01	1.0294+01	1.0117+01	9.7106+00
CP	1.4302+00	1.4484+00	1.2389+00	1.1909+00	1.1732+00	1.1135+00	1.0156+00	9.8698-01	9.2150-01
P/PO1	9.5467-01	9.6305-01	8.6659-01	8.4453-01	8.3634-01	8.0890-01	7.6380-01	7.5063-01	7.2048-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3716 TO = 532.

P	9.1044+00	6.6133+00	2.6008+00	2.7796+00	2.7882+00	2.7136+00	2.6863+00	2.6666+00	1.1170+01
CP	8.3774-01	4.3245-01	-2.2035-01	-1.9125-01	-1.8985-01	-2.0200-01	-2.0643-01	-2.0963-01	1.1738+00
P/PO1	6.8192-01	4.9534-01	1.9480-01	2.0819-01	2.0884-01	2.0325-01	2.0171-01	1.9973-01	8.3665-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3714 TO = 532.

P	1.0591+01	1.0421+01	1.0011+01	9.2444+00	6.7509+00	2.3642+00	1.1846+01	1.1611+01	1.1462+01
CP	1.0807+00	1.0530+00	9.8635-01	8.6151-01	4.5556-01	-2.5858-01	1.2851+00	1.2467+00	1.2226+00
P/PO1	7.9378-01	7.8104-01	7.5034-01	6.9286-01	5.0598-01	1.7720-01	8.8787-01	8.7020-01	8.5908-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3724 TO = 532.

P	1.1226+01	1.0590+01	1.0243+01	9.8443+00	9.2747+00	7.0371+00	2.2452+00	2.7095+00	2.6967+00
CP	1.1793+00	1.0761+00	1.0197+00	9.5497-01	8.6249-01	4.9917-01	-2.7891-01	-2.0352-01	-2.0560-01
P/PO1	8.3916-01	7.9167-01	7.6570-01	7.3589-01	6.9332-01	5.2605-01	1.6784-01	2.0255-01	2.0159-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3741 TO = 532.

P	2.7225+00	2.6292+00	1.1093+01	1.0137+01	9.9095+00	9.4701+00	8.8962+00	6.7138+00	2.3273+00
CP	-2.0342-01	-2.1850-01	1.1495+00	9.9493-01	9.5824-01	8.8722-01	7.9446-01	4.4170-01	-2.6731-01
P/PO1	2.0259-01	1.9565-01	8.2544-01	7.5429-01	7.3740-01	7.0470-01	6.6199-01	4.9959-01	1.7318-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.201 P-INF =3.9901 RE = .3749 TO = 532.

P	1.2248+01	1.0837+01	1.0475+01	2.5696+00	2.6880+00	2.6699+00	2.6166+00	2.5624+00	8.0665+00
CP	1.3316+00	1.1042+00	1.0458+00	-2.2908-01	-2.0999-01	-2.1291-01	-2.2150-01	-2.3024-01	6.5739-01
P/PO1	9.0931-01	8.0459-01	7.7769-01	1.9078-01	1.9956-01	1.9822-01	1.9427-01	1.9024-01	5.9889-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3728 TO = 532.

P	9.4605+00	9.4497+00	8.9607+00	8.5368+00	6.3793+00	2.2735+00	8.8501+00	9.0390+00	8.8348+00
CP	8.9066-01	8.8890-01	8.0961-01	7.4087-01	3.9100-01	-2.7480-01	7.9168-01	8.2230-01	7.8918-01
P/PO1	7.0628-01	7.0548-01	6.6897-01	6.3733-01	4.7625-01	1.6973-01	6.6071-01	6.7481-01	6.5957-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3724 TO = 532.

P	8.3612+00	8.6789+00	8.5281+00	8.2600+00	7.7883+00	6.1132+00	2.5723+00	2.6298+00	2.6228+00
CP	7.1416-01	7.6576-01	7.4127-01	6.9772-01	6.2114-01	3.4915-01	-2.2580-01	-2.1646-01	-2.1760-01
P/PO1	6.2503-01	6.4878-01	6.3751-01	6.1746-01	5.8220-01	4.5699-01	1.9229-01	1.9659-01	1.9606-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.191 P-INF =3.9836 RE = .3743 TO = 532.

P	2.6725+00	2.5868+00	8.1419+00	8.0138+00	8.0360+00	7.7917+00	7.4366+00	6.1132+00	2.5859+00
CP	-2.1179-01	-2.2563-01	6.7167-01	6.5099-01	6.5457-01	6.1511-01	5.5774-01	3.4399-01	-2.2578-01
P/PO1	1.9874-01	1.9237-01	6.0547-01	5.9595-01	5.9760-01	5.7943-01	5.5302-01	4.5461-01	1.9230-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.205 P-INF =3.9927 RE = .3757 TO = 532.

P	2.6975+00	9.7272+00	7.5703+00	8.3061+00	8.3767+00	8.0227+00	7.8975+00	7.8687+00	7.7131+00
CP	-2.0874-01	9.2418-01	5.7656-01	6.9515-01	7.0652-01	6.4947-01	6.2930-01	6.2466-01	5.9959-01
P/PO1	2.0014-01	7.2172-01	5.6168-01	6.1628-01	6.2151-01	5.9525-01	5.8596-01	5.8382-01	5.7228-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3725 TO = 532.

P	7.5096+00	5.7808+00	2.6195+00	2.6561+00	2.6504+00	2.5888+00	2.5723+00	2.5563+00	2.4873+00
CP	5.7548-01	2.9487-01	-2.1827-01	-2.1234-01	-2.1326-01	-2.2326-01	-2.2594-01	-2.2854-01	-2.3973-01
P/PO1	5.6118-01	4.3200-01	1.9575-01	1.9849-01	1.9806-01	1.9346-01	1.9222-01	1.9103-01	1.8588-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0418+01	1.2476+01	1.0924+01	5.7352+00	1.0120+01	6.8625+00	1.0048+01	8.5547+00
CP	1.0476+00	1.3816+00	1.1297+00	2.8746-01	9.9926-01	4.7045-01	9.8747-01	7.4513-01
P/PO1	7.7853-01	9.3230-01	8.1636-01	4.2858-01	7.5628-01	5.1283-01	7.5085-01	6.3928-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.6563+00	8.6883+00	9.2250+00	8.7047+00	8.3859+00	8.3250+00	6.1125+00
CP	9.2393-01	7.6681-01	8.5393-01	7.6948-01	7.1774-01	7.0784-01	3.4871-01
P/PO1	7.2160-01	6.4927-01	6.8938-01	6.5049-01	6.2667-01	6.2212-01	4.5678-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
10.	188.	301244	1.49	1	10.22	118.75	8.95	10.04	180.0

VALVE POS 2 PO = 14.5 Q-INF = 6.211 P-INF =3.9966 RE = .3755 TO = 532.

P	1.2619+01	1.2718+01	1.1479+01	1.1106+01	1.0993+01	1.0625+01	1.0049+01	9.8705+00	9.4954+00
CP	1.3883+00	1.4042+00	1.2047+00	1.1446+00	1.1265+00	1.0672+00	9.7440-01	9.4572-01	8.8534-01
P/PO1	9.3538-01	9.4269-01	8.5086-01	8.2318-01	8.1487-01	7.8756-01	7.4484-01	7.3164-01	7.0384-01
S/R	.0000+00	6.4000-07	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3736 TO = 532.

P	8.9031+00	6.4437+00	2.2760+00	2.5572+00	2.5689+00	2.4890+00	2.4582+00	2.4643+00	1.1278+01
CP	7.9932-01	4.0076-01	-2.7463-01	-2.2906-01	-2.2717-01	-2.4012-01	-2.4510-01	-2.4411-01	1.1842+00
P/PO1	6.6424-01	4.8075-01	1.6981-01	1.9079-01	1.9166-01	1.8570-01	1.8340-01	1.8386-01	8.4140-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3715 TO = 532.

P	1.0699+01	1.0498+01	9.9649+00	9.2905+00	6.8128+00	2.2735+00	1.2323+01	1.2011+01	1.1831+01
CP	1.0978+00	1.0650+00	9.7828-01	8.6852-01	4.6528-01	-2.7347-01	1.3620+00	1.3112+00	1.2620+00
P/PO1	8.0164-01	7.8656-01	7.4662-01	6.9609-01	5.1045-01	1.7034-01	9.2327-01	8.9992-01	8.8643-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.189 P-INF =3.9823 RE = .3742 TO = 532.

P	1.1628+01	1.0976+01	1.0707+01	1.0306+01	9.5379+00	7.3605+00	2.1938+00	2.5195+00	2.5058+00
CP	1.2354+00	1.1300+00	1.0865+00	1.0217+00	8.9768-01	5.4585-01	-2.8899-01	-2.3637-01	-2.3858-01
P/PO1	8.6501-01	8.1648-01	7.9644-01	7.6563-01	7.0952-01	5.4754-01	1.6320-01	1.8742-01	1.8640-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.149 P-INF =3.9564 RE = .3717 TO = 532.

P	2.5598+00	2.4535+00	1.1479+01	1.0567+01	1.0374+01	9.8551+00	9.1267+00	6.9602+00	2.2487+00
CP	-2.2715-01	-2.4443-01	1.2235+00	1.0752+00	1.0438+00	9.5935-01	8.4089-01	4.8852-01	-2.7774-01
P/PO1	1.9167-01	1.8371-01	8.5950-01	7.9123-01	7.7677-01	7.3791-01	6.8337-01	5.2115-01	1.6838-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3725 TO = 532.

P	1.2619+01	1.1531+01	1.1046+01	2.2611+00	2.4937+00	2.4640+00	2.4202+00	2.3846+00	8.7733+00
CP	1.4049+00	1.2282+00	1.1496+00	-2.7645-01	-2.3869-01	-2.4351-01	-2.5062-01	-2.5640-01	7.8061-01
P/PO1	9.4302-01	8.6169-01	8.2549-01	1.6897-01	1.8635-01	1.8414-01	1.8086-01	1.7820-01	6.5562-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3730 TO = 532.

P	9.8940+00	9.8197+00	9.2697+00	8.5984+00	6.4412+00	2.2028+00	9.1574+00	9.0698+00	8.7887+00
CP	9.6044-01	9.4838-01	8.5922-01	7.5039-01	4.0070-01	-2.8637-01	8.4102-01	8.2681-01	7.8124-01
P/PO1	7.3841-01	7.3286-01	6.9181-01	6.4171-01	4.8072-01	1.6440-01	6.8343-01	6.7689-01	6.5591-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4. Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	8.8102+00	8.8947+00	8.4972+00	8.3061+00	7.7883+00	6.0670+00	2.3379+00	2.4398+00	2.4135+00
CP	7.8194-01	7.9562-01	7.3131-01	7.0038-01	6.1660-01	3.3812-01	-2.6523-01	-2.4873-01	-2.5299-01
P/PO1	6.5623-01	6.6253-01	6.3292-01	6.1869-01	5.8012-01	4.5191-01	1.7414-01	1.8173-01	1.7977-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.149 P-INF =3.9564 RE = .3717 TO = 532.

P	2.4597+00	2.3930+00	8.0337+00	7.8793+00	7.8192+00	7.5761+00	7.2215+00	5.9284+00	2.3519+00
CP	-2.4343-01	-2.5428-01	6.6313-01	6.2987-01	6.2824-01	5.8870-01	5.3102-01	3.2073-01	-2.6096-01
P/PO1	1.8417-01	1.7918-01	6.0153-01	5.8622-01	5.8547-01	5.6727-01	5.4071-01	4.4390-01	1.7610-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.149 P-INF =3.9564 RE = .3717 TO = 532.

P	2.4910+00	9.4651+00	7.1068+00	7.9369+00	8.0360+00	7.7917+00	7.4058+00	7.5145+00	7.3136+00
CP	-2.3834-01	8.9593-01	5.1237-01	6.4739-01	6.6350-01	6.2376-01	5.6101-01	5.7868-01	5.4601-01
P/PO1	1.8651-01	7.0871-01	5.3213-01	5.9429-01	6.0170-01	5.8341-01	5.5452-01	5.6266-01	5.4762-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3734 TO = 532.

P	7.1999+00	5.5068+00	2.4070+00	2.4461+00	2.4561+00	2.3892+00	2.3759+00	2.3601+00	2.3026+00
CP	5.2217-01	2.4807-01	-2.5379-01	-2.4746-01	-2.4583-01	-2.5667-01	-2.5883-01	-2.6138-01	-2.7068-01
P/PO1	5.3664-01	4.1045-01	1.7940-01	1.8232-01	1.8307-01	1.7808-01	1.7708-01	1.7591-01	1.7163-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0922+01	1.2441+01	1.1370+01	6.2039+00	1.0613+01	7.3758+00	1.0493+01	9.2297+00
CP	1.1247+00	1.3706+00	1.1972+00	3.6092-01	1.0747+00	5.5064-01	1.0553+00	8.5079-01
P/PO1	8.1405-01	9.2725-01	8.4742-01	4.6240-01	7.9100-01	5.4975-01	7.8209-01	6.8793-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0088+01	9.1430+00	9.6211+00	9.0844+00	8.6766+00	8.5781+00	6.3281+00
CP	9.8966-01	8.3675-01	9.1415-01	8.2726-01	7.6124-01	7.4530-01	3.8103-01
P/PO1	7.5186-01	6.8146-01	7.1710-01	6.7710-01	6.4670-01	6.3936-01	4.7166-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
10.	189.	301244	1.49	1	11.16	153.22	5.00	5.01	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3721 TO = 532.

P	1.3084+01	1.2240+01	1.0598+01	1.0506+01	1.0544+01	1.0275+01	9.5876+00	9.4547+00	9.2496+00
CP	1.4824+00	1.3453+00	1.0785+00	1.0635+00	1.0698+00	1.0178+00	9.1432-01	8.9273-01	8.5940-01
P/PO1	9.7869-01	9.1558-01	7.9278-01	7.8585-01	7.8874-01	7.6483-01	7.1718-01	7.0724-01	6.9189-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3705 TO = 532.

P	8.6244+00	6.3049+00	2.5507+00	2.6808+00	2.6880+00	2.6200+00	2.5723+00	2.5992+00	1.0449+01
CP	7.6380-01	3.8533-01	-2.2726-01	-2.0604-01	-2.0487-01	-2.1596-01	-2.2375-01	-2.1935-01	1.0614+00
P/PO1	6.4788-01	4.7364-01	1.9162-01	2.0139-01	2.0192-01	1.9682-01	1.9323-01	1.9526-01	7.8488-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.2 Q-INF = 6.110 P-INF =3.9318 RE = .3694 TO = 532.

P	9.9715+00	9.8351+00	9.3315+00	8.7829+00	6.4567+00	2.4391+00	1.1155+01	1.1087+01	1.0924+01
CP	9.8843-01	9.6611-01	8.8370-01	7.9392-01	4.1321-01	-2.4430-01	1.1821+00	1.1710+00	1.1444+00
P/PO1	7.5130-01	7.4102-01	7.0308-01	6.6175-01	4.8648-01	1.8377-01	8.4046-01	8.3534-01	8.2309-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3741 TO = 532.

P	1.0746+01	1.0220+01	9.8568+00	9.5213+00	9.0734+00	6.8524+00	2.2067+00	2.6544+00	2.6474+00
CP	1.0934+00	1.0085+00	9.4972-01	8.9548-01	8.2310-01	4.6410-01	-2.8680-01	-2.1444-01	-2.1556-01
P/PO1	7.9962-01	7.6054-01	7.3347-01	7.0851-01	6.7518-01	5.0991-01	1.6420-01	1.9752-01	1.9700-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3719 TO = 532.

P	2.6600+00	2.5565+00	1.0691+01	1.0044+01	9.8631+00	9.4393+00	8.7579+00	6.7446+00	2.4073+00
CP	-2.1100-01	-2.2782-01	1.0947+00	9.8958-01	9.6013-01	8.9123-01	7.8045-01	4.5310-01	-2.5208-01
P/PO1	1.9910-01	1.9136-01	8.0024-01	7.5183-01	7.3827-01	7.0655-01	6.5554-01	5.0484-01	1.8019-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3720 TO = 532.

P	1.2418+01	1.1022+01	1.0768+01	2.4708+00	2.6378+00	2.6200+00	2.5533+00	2.5379+00	9.5569+00
CP	1.3748+00	1.1480+00	1.1067+00	-2.4189-01	-2.1474-01	-2.1764-01	-2.2848-01	-2.3098-01	9.0984-01
P/PO1	9.2919-01	8.2475-01	8.0576-01	1.8488-01	1.9738-01	1.9605-01	1.9105-01	1.8990-01	7.1511-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.134 P-INF =3.9474 RE = .3709 TO = 532.

P	9.7392+00	9.6347+00	9.2697+00	8.7522+00	6.5341+00	2.2584+00	9.7413+00	9.8551+00	9.6798+00
CP	9.4414-01	9.2711-01	8.6761-01	7.8324-01	4.2167-01	-2.7533-01	9.4448-01	9.6303-01	9.3446-01
P/PO1	7.3091-01	7.2306-01	6.9567-01	6.5683-01	4.9037-01	1.6949-01	7.3106-01	7.3960-01	7.2645-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3719 TO = 532.

P	9.5070+00	9.3726+00	9.0534+00	8.8598+00	8.3147+00	6.4366+00	2.4456+00	2.5808+00	2.5612+00
CP	9.0223-01	8.8039-01	8.2848-01	7.9701-01	7.0838-01	4.0303-01	-2.4586-01	-2.2387-01	-2.2705-01
P/PO1	7.1161-01	7.0156-01	6.7766-01	6.6317-01	6.2237-01	4.8179-01	1.8305-01	1.9318-01	1.9171-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.201 P-INF =3.9901 RE = .3749 TO = 532.

P	2.6099+00	2.5444+00	9.1461+00	8.8291+00	8.8566+00	8.5770+00	8.0819+00	6.3904+00	2.4504+00
CP	-2.2258-01	-2.3314-01	8.3149-01	7.8036-01	7.8481-01	7.3971-01	6.5986-01	3.8708-01	-2.4830-01
P/PO1	1.9377-01	1.8891-01	6.7904-01	6.5551-01	6.5755-01	6.3679-01	6.0003-01	4.7445-01	1.8193-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3727 TO = 532.

P	2.6287+00	1.0775+01	8.7135+00	9.0752+00	9.0579+00	8.8542+00	8.6043+00	8.5154+00	8.3585+00
CP	-2.1706-01	1.1045+00	7.6999-01	8.2865-01	8.2585-01	7.9280-01	7.5227-01	7.3785-01	7.1239-01
P/PO1	1.9631-01	8.0471-01	6.5073-01	6.7774-01	6.7645-01	6.6123-01	6.4257-01	6.3593-01	6.2421-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3730 TO = 532.

P	7.9741+00	6.1045+00	2.5257+00	2.5819+00	2.5877+00	2.5327+00	2.5089+00	2.5072+00	2.4627+00
CP	6.4919-01	3.4613-01	-2.3403-01	-2.2492-01	-2.2398-01	-2.3291-01	-2.3676-01	-2.3703-01	-2.4424-01
P/PO1	5.9512-01	4.5559-01	1.8850-01	1.9269-01	1.9312-01	1.8902-01	1.8724-01	1.8712-01	1.8380-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0744+01	1.2818+01	1.0554+01	8.2031+00	1.0057+01	9.1477+00	1.0069+01	9.6047+00
CP	1.0982+00	1.4344+00	1.0674+00	6.8632-01	9.8686-01	8.3944-01	9.8876-01	9.1353-01
P/PO1	8.0182-01	9.5663-01	7.8766-01	6.1721-01	7.5057-01	6.8270-01	7.5145-01	7.1681-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.7688+00	9.3305+00	9.3820+00	9.2578+00	8.7141+00	8.6555+00	6.4875+00
CP	9.4012-01	8.6907-01	8.7743-01	8.5730-01	7.6915-01	7.5965-01	4.0821-01
P/PO1	7.2906-01	6.9635-01	7.0020-01	6.9093-01	6.5034-01	6.4597-01	4.8417-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
10.	190.	301244	1.49	1	13.41	137.57	9.00	5.02	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3718 TO = 532.

P	1.2836+01	1.2024+01	1.0398+01	1.0336+01	1.0266+01	9.8243+00	9.3111+00	9.2237+00	8.8655+00
CP	1.4462+00	1.3140+00	1.0492+00	1.0393+00	1.0278+00	9.5591-01	8.7238-01	8.5615-01	7.9982-01
P/PO1	9.6205-01	9.0120-01	7.7929-01	7.7472-01	7.6941-01	7.3633-01	6.9786-01	6.9132-01	6.6447-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3732 TO = 532.

P	8.5625+00	6.1662+00	2.3757+00	2.5449+00	2.5564+00	2.4765+00	2.4329+00	2.4582+00	1.0510+01
CP	7.4367-01	3.5547-01	-2.5860-01	-2.3119-01	-2.2933-01	-2.4227-01	-2.4934-01	-2.4524-01	1.0591+00
P/PO1	6.3861-01	4.5989-01	1.7719-01	1.8981-01	1.9066-01	1.8471-01	1.8145-01	1.8334-01	7.8383-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3732 TO = 532.

P	1.0049+01	9.8968+00	9.5169+00	8.8137+00	6.4412+00	2.2205+00	1.1662+01	1.1472+01	1.1293+01
CP	9.8447-01	9.5983-01	8.9829-01	7.8437-01	4.0002-01	-2.8374-01	1.2458+00	1.2150+00	1.1860+00
P/PO1	7.4948-01	7.3813-01	7.0980-01	6.5735-01	4.8040-01	1.6561-01	8.6978-01	8.5561-01	8.4227-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3727 TO = 532.

P	1.0978+01	1.0483+01	1.0258+01	9.7520+00	9.3057+00	7.1295+00	2.1013+00	2.5440+00	2.5243+00
CP	1.1373+00	1.0569+00	1.0206+00	9.3844-01	8.6604-01	5.1304-01	-3.0260-01	-2.3080-01	-2.3400-01
P/PO1	8.1983-01	7.8284-01	7.6611-01	7.2828-01	6.9495-01	5.3244-01	1.5693-01	1.8999-01	1.8851-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3716 TO = 532.

P	2.5536+00	2.4293+00	1.1124+01	1.0475+01	1.0281+01	9.8089+00	9.0960+00	6.9602+00	2.2636+00
CP	-2.2803-01	-2.4824-01	1.1663+00	1.0607+00	1.0292+00	9.5236-01	8.3637-01	4.8889-01	-2.7520-01
P/PO1	1.9126-01	1.8196-01	8.3317-01	7.8458-01	7.7006-01	7.3469-01	6.8129-01	5.2132-01	1.6955-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3728 TO = 532.

P	1.2929+01	1.1793+01	1.1402+01	2.2114+00	2.5313+00	2.5139+00	2.4456+00	2.4153+00	1.0079+01
CP	1.4531+00	1.2689+00	1.2054+00	-2.8487-01	-2.3299-01	-2.3581-01	-2.4690-01	-2.5181-01	9.9100-01
P/PO1	9.6522-01	8.8041-01	8.5121-01	1.6510-01	1.8898-01	1.8768-01	1.8258-01	1.8032-01	7.5248-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3703 TO = 532.

P	1.0095+01	9.9430+00	9.5478+00	8.8137+00	6.6270+00	2.2811+00	1.0171+01	1.0071+01	9.8335+00
CP	1.0049+00	9.8003-01	9.1550-01	7.9563-01	4.3859-01	-2.7102-01	1.0173+00	1.0009+00	9.6214-01
P/PO1	7.5888-01	7.4743-01	7.1772-01	6.6254-01	4.9816-01	1.7147-01	7.6461-01	7.5703-01	7.3920-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3704 TO = 532.

P	9.6773+00	9.4497+00	9.1616+00	8.8137+00	8.3767+00	6.4366+00	2.3043+00	2.4643+00	2.4381+00
CP	9.3612-01	8.9898-01	8.5194-01	7.9516-01	7.2382-01	4.0716-01	-2.6735-01	-2.4123-01	-2.4551-01
P/PO1	7.2722-01	7.1011-01	6.8846-01	6.6232-01	6.2948-01	4.8369-01	1.7316-01	1.8519-01	1.8321-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3701 TO = 533.

P	2.4972+00	2.4354+00	9.0534+00	8.6599+00	8.5934+00	8.2844+00	7.8053+00	6.2980+00	2.3150+00
CP	-2.3599-01	-2.4608-01	8.3380-01	7.6959-01	7.5875-01	7.0833-01	6.3015-01	3.8420-01	-2.6573-01
P/PO1	1.8760-01	1.8295-01	6.8011-01	6.5055-01	6.4555-01	6.2234-01	5.8635-01	4.7312-01	1.7390-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3722 TO = 533.

P	2.5273+00	1.0560+01	8.4818+00	8.7879+00	8.8102+00	8.5616+00	8.1587+00	8.2998+00	8.0512+00
CP	-2.3432-01	1.0694+00	7.3239-01	7.8124-01	7.8567-01	7.4534-01	6.7999-01	7.0288-01	6.6254-01
P/PO1	1.8836-01	7.8860-01	6.3342-01	6.5591-01	6.5795-01	6.3938-01	6.0930-01	6.1983-01	6.0126-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3724 TO = 533.

P	7.6799+00	5.8733+00	2.4070+00	2.4646+00	2.4812+00	2.4079+00	2.3949+00	2.3785+00	2.3150+00
CP	6.0191-01	3.0895-01	-2.5316-01	-2.4381-01	-2.4112-01	-2.5300-01	-2.5512-01	-2.5777-01	-2.6808-01
P/PO1	5.7335-01	4.3848-01	1.7969-01	1.8400-01	1.8574-01	1.7976-01	1.7879-01	1.7757-01	1.7283-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.1234+01	1.2879+01	1.1030+01	8.7750+00	1.0526+01	9.5297+00	1.0437+01	1.0205+01
CP	1.1782+00	1.4450+00	1.1451+00	7.7949-01	1.0634+00	9.0187-01	1.0490+00	1.0113+00
P/PO1	8.3865-01	9.6149-01	8.2343-01	6.5511-01	7.8581-01	7.1145-01	7.7916-01	7.6184-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0177+01	9.7594+00	9.7781+00	9.6563+00	9.0211+00	8.9789+00	6.6656+00
CP	1.0068+00	9.3912-01	9.4216-01	9.2240-01	8.1940-01	8.1256-01	4.3743-01
P/PO1	7.5974-01	7.2860-01	7.3000-01	7.2090-01	6.7348-01	6.7033-01	4.9763-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
10.	191.	301244	1.49	1	14.65	160.11	4.94	1.19	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3710 TO = 533.

P	1.3146+01	1.1608+01	9.7332+00	9.8135+00	9.7702+00	9.5471+00	9.1728+00	8.9928+00	8.8194+00
CP	1.4959+00	1.2457+00	9.4056-01	9.5363-01	9.4658-01	9.1028-01	8.4936-01	8.2006-01	7.9185-01
P/PO1	9.8494-01	8.6972-01	7.2926-01	7.3528-01	7.3203-01	7.1532-01	6.8727-01	6.7378-01	6.6079-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3720 TO = 533.

P	8.2992+00	6.1200+00	2.4820+00	2.5881+00	2.6065+00	2.5139+00	2.4709+00	2.5318+00	9.8642+00
CP	7.0366-01	3.4992-01	-2.4060-01	-2.2337-01	-2.2038-01	-2.3541-01	-2.4239-01	-2.3752-01	9.5769-01
P/PO1	6.2019-01	4.5734-01	1.8548-01	1.9341-01	1.9478-01	1.8786-01	1.8465-01	1.8920-01	7.3714-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.175 P-INF =3.9733 RE = .3729 TO = 533.

P	9.5224+00	9.4497+00	8.9298+00	8.5830+00	6.2089+00	2.3892+00	1.0540+01	1.0594+01	1.0448+01
CP	8.9869-01	8.8691-01	8.0271-01	7.4654-01	3.6207-01	-2.5654-01	1.0635+00	1.0723+00	1.0486+00
P/PO1	7.0998-01	7.0456-01	6.6579-01	6.3993-01	4.6293-01	1.7813-01	7.8587-01	7.8989-01	7.7899-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3709 TO = 533.

P	1.0142+01	9.8043+00	9.4551+00	9.2598+00	8.7792+00	6.6522+00	2.1579+00	2.5747+00	2.5612+00
CP	1.0076+00	9.5265-01	8.9581-01	8.6401-01	7.8578-01	4.3950-01	-2.9218-01	-2.2432-01	-2.2651-01
P/PO1	7.6012-01	7.3483-01	7.0866-01	6.9402-01	6.5800-01	4.9858-01	1.6173-01	1.9297-01	1.9196-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3732 TO = 533.

P	2.5849+00	2.4899+00	1.0289+01	1.0044+01	9.7237+00	9.3315+00	8.8194+00	6.7138+00	2.3827+00
CP	-2.2526-01	-2.4063-01	1.0213+00	9.8160-01	9.2975-01	8.6629-01	7.8343-01	4.4276-01	-2.5797-01
P/PO1	1.9253-01	1.8546-01	7.6641-01	7.4815-01	7.2428-01	6.9507-01	6.5692-01	5.0008-01	1.7748-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3709 TO = 533.

P	1.2402+01	1.0991+01	1.0815+01	2.3349+00	2.5940+00	2.5638+00	2.4962+00	2.4827+00	1.0141+01
CP	1.3756+00	1.1459+00	1.1171+00	-2.6336-01	-2.2118-01	-2.2608-01	-2.3709-01	-2.3929-01	1.0074+00
P/PO1	9.2956-01	8.2379-01	8.1055-01	1.7500-01	1.9442-01	1.9216-01	1.8709-01	1.8608-01	7.6005-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.122 P-INF =3.9396 RE = .3697 TO = 533.

P	9.9095+00	9.7888+00	9.3006+00	8.7676+00	6.6115+00	2.2785+00	1.0448+01	1.0502+01	1.0325+01
CP	9.7510-01	9.5538-01	8.7564-01	7.8857-01	4.3642-01	-2.7131-01	1.0631+00	1.0718+00	1.0430+00
P/PO1	7.4516-01	7.3608-01	6.9937-01	6.5929-01	4.9716-01	1.7134-01	7.8565-01	7.8970-01	7.7641-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3703 TO = 533.

P	1.0033+01	9.7426+00	9.4551+00	9.0752+00	8.6089+00	6.6214+00	2.3428+00	2.5379+00	2.5120+00
CP	9.9266-01	9.4522-01	8.9834-01	8.3438-01	7.6035-01	4.3625-01	-2.6144-01	-2.2963-01	-2.3385-01
P/PO1	7.5323-01	7.3140-01	7.0982-01	6.8130-01	6.4629-01	4.9708-01	1.7588-01	1.9053-01	1.8858-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT
VON KARMAN GAS DYNAMICS FACI
40 INCH CONTINUOUS 55 WIND TU

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.2 Q-INF = 6.108 P-INF = 3.9305 RE = .3688 TO = 533.

P	2.5285+00	2.4838+00	9.7641+00	9.3059+00	9.1973+00	8.8394+00	8.3892+00	6.5752+00	2.2438+00
CP	-2.2952-01	-2.3684-01	9.5502-01	8.8001-01	8.6223-01	8.0354-01	7.2993-01	4.3296-01	-2.7614-01
P/PO1	1.9057-01	1.8721-01	7.3591-01	7.0138-01	6.9320-01	6.6617-01	6.3229-01	4.9557-01	1.6911-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.122 P-INF = 3.9396 RE = .3697 TO = 533.

P	2.5473+00	1.1485+01	9.4860+00	9.7981+00	9.6928+00	9.3931+00	8.9730+00	8.9312+00	8.6197+00
CP	-2.2741-01	1.2324+00	9.0592-01	9.5690-01	9.3969-01	8.9075-01	8.2214-01	8.1530-01	7.6441-01
P/PO1	1.9155-01	8.6359-01	7.1331-01	7.3678-01	7.2886-01	7.0633-01	6.7474-01	6.7159-01	6.4816-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.2 Q-INF = 6.110 P-INF = 3.9318 RE = .3690 TO = 533.

P	8.2218+00	6.2433+00	2.4257+00	2.5016+00	2.5188+00	2.4578+00	2.4429+00	2.4337+00	2.3827+00
CP	7.0209-01	3.7829-01	-2.4649-01	-2.3406-01	-2.3125-01	-2.4123-01	-2.4531-01	-2.4518-01	-2.5353-01
P/PO1	6.1947-01	4.7040-01	1.8276-01	1.8849-01	1.8978-01	1.8518-01	1.8331-01	1.8336-01	1.7952-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0779+01	1.2731+01	1.0235+01	1.0226+01	9.9750+00	9.8883+00	1.0020+01	1.0057+01
CP	1.1206+00	1.4401+00	1.0316+00	1.0301+00	9.8901-01	9.7482-01	9.9630-01	1.0024+00
P/PO1	8.1213-01	9.5923-01	7.7117-01	7.7046-01	7.5156-01	7.4503-01	7.5492-01	7.5774-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.7172+00	9.5086+00	9.4008+00	9.4500+00	8.7539+00	8.7820+00	6.5438+00
CP	9.4682-01	9.1268-01	8.9503-01	9.0309-01	7.8917-01	7.9377-01	4.2746-01
P/PO1	7.3214-01	7.1642-01	7.0830-01	7.1201-01	6.5956-01	6.6168-01	4.9304-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
10.	192.	301244	1.49	1	14.65	179.98	.00	.35	180.0

VALVE POS 2 PO = 14.2 Q-INF = 6.102 P-INF =3.9266 RE = .3685 TO = 533.

P	1.3177+01	1.1515+01	9.5787+00	9.8289+00	9.8166+00	9.5471+00	9.0806+00	9.0236+00	8.8348+00
CP	1.5158+00	1.2436+00	9.2622-01	9.6722-01	9.6521-01	9.2105-01	8.4460-01	8.3525-01	8.0431-01
P/PO1	9.9410-01	8.6877-01	7.2266-01	7.4153-01	7.4061-01	7.2027-01	6.8508-01	6.8078-01	6.6653-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3710 TO = 533.

P	8.3612+00	6.1970+00	2.4132+00	2.5449+00	2.5564+00	2.4703+00	2.4207+00	2.4888+00	9.5569+00
CP	7.1727-01	3.6507-01	-2.5073-01	-2.2930-01	-2.2743-01	-2.4145-01	-2.4959-01	-2.3842-01	9.1187-01
P/PO1	6.2646-01	4.6431-01	1.8081-01	1.9068-01	1.9154-01	1.8509-01	1.8133-01	1.8648-01	7.1605-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3698 TO = 533.

P	9.2592+00	9.1722+00	8.7135+00	8.2907+00	6.1470+00	2.3580+00	9.6645+00	9.9937+00	9.8488+00
CP	8.6838-01	8.5418-01	7.7928-01	7.1024-01	3.6022-01	-2.5846-01	9.3455-01	9.8030-01	9.6465-01
P/PO1	6.9603-01	6.8949-01	6.5501-01	6.2327-01	4.6208-01	1.7725-01	7.2649-01	7.5124-01	7.4035-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3722 TO = 533.

P	9.7082+00	9.4035+00	9.0689+00	8.8137+00	8.3921+00	6.4982+00	2.1912+00	2.5624+00	2.5428+00
CP	9.3134-01	8.8190-01	8.2763-01	7.8624-01	7.1785-01	4.1063-01	-2.8802-01	-2.2781-01	-2.3100-01
P/PO1	7.2502-01	7.0225-01	6.7727-01	6.5821-01	6.2673-01	4.8529-01	1.6364-01	1.9136-01	1.8989-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.134 P-INF =3.9474 RE = .3704 TO = 533.

P	2.5536+00	2.4596+00	9.5014+00	9.2751+00	9.1354+00	8.7926+00	8.3738+00	6.4520+00	2.4073+00
CP	-2.2721-01	-2.4253-01	9.0539-01	8.6850-01	8.4571-01	7.8983-01	7.2157-01	4.0829-01	-2.5105-01
P/PO1	1.9164-01	1.8459-01	7.1306-01	6.9604-01	6.8559-01	6.5987-01	6.2844-01	4.8421-01	1.8066-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3718 TO = 533.

P	1.1737+01	1.0035+01	1.0166+01	2.4213+00	2.5814+00	2.5701+00	2.4836+00	2.5072+00	9.8027+00
CP	1.2629+00	9.8656-01	1.0077+00	-2.5018-01	-2.2418-01	-2.2602-01	-2.4007-01	-2.3623-01	9.4875-01
P/PO1	8.7764-01	7.5043-01	7.6018-01	1.8106-01	1.9304-01	1.9219-01	1.8572-01	1.8749-01	7.3303-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3699 TO = 533.

P	9.3986+00	9.3110+00	8.8526+00	8.4138+00	6.4567+00	2.2331+00	9.8488+00	1.0286+01	1.0064+01
CP	8.9063-01	8.7633-01	8.0151-01	7.2988-01	4.1043-01	-2.7897-01	9.6413-01	1.0355+00	9.9924-01
P/PO1	7.0627-01	6.9969-01	6.6524-01	6.3227-01	4.8520-01	1.6781-01	7.4011-01	7.7298-01	7.5627-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3709 TO = 533.

P	9.7857+00	9.4805+00	9.1770+00	8.8445+00	8.4231+00	6.5136+00	2.3252+00	2.5379+00	2.5058+00
CP	9.4754-01	8.9793-01	8.4858-01	7.9451-01	7.2601-01	4.1555-01	-2.6543-01	-2.3085-01	-2.3606-01
P/PO1	7.3247-01	7.0963-01	6.8691-01	6.6202-01	6.3048-01	4.8755-01	1.7404-01	1.8996-01	1.8756-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3715 TO = 533.

P	2.5285+00	2.5081+00	9.7177+00	9.2751+00	9.3057+00	8.8388+00	8.4199+00	6.6214+00	2.2487+00
CP	-2.3304-01	-2.3636-01	9.3391-01	8.6207-01	8.6703-01	7.9124-01	7.2325-01	4.3131-01	-2.7845-01
P/PO1	1.8895-01	1.8743-01	7.2620-01	6.9312-01	6.9541-01	6.6051-01	6.2921-01	4.9481-01	1.6805-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3709 TO = 533.

P	2.5473+00	1.1855+01	9.8877+00	1.0960+01	1.0064+01	9.7627+00	9.2803+00	9.2237+00	8.8962+00
CP	-2.2932-01	1.2839+00	9.6413-01	9.9208-01	9.9285-01	9.4380-01	8.6538-01	8.5618-01	8.0293-01
P/PO1	1.9067-01	8.8733-01	7.4011-01	7.5298-01	7.5333-01	7.3075-01	6.9465-01	6.9041-01	6.6590-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.139 P-INF =3.9500 RE = .3702 TO = 533.

P	8.4386+00	6.3666+00	2.3444+00	2.4646+00	2.4812+00	2.4266+00	2.4075+00	2.3908+00	2.3519+00
CP	7.3122-01	3.9369-01	-2.6155-01	-2.4198-01	-2.3927-01	-2.4816-01	-2.5127-01	-2.5400-01	-2.6033-01
P/PO1	6.3288-01	4.7749-01	1.7583-01	1.8484-01	1.8609-01	1.8199-01	1.8056-01	1.7930-01	1.7639-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0134+01	1.2600+01	9.4922+00	9.6164+00	9.3281+00	9.3375+00	9.4242+00	9.5297+00
CP	1.0075+00	1.4091+00	9.0286-01	9.2310-01	8.7613-01	8.7766-01	8.9179-01	9.0897-01
P/PO1	7.6007-01	9.4498-01	7.1190-01	7.2122-01	6.9960-01	7.0030-01	7.0680-01	7.1471-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.1828+00	8.9953+00	8.9109+00	8.9859+00	8.3672+00	8.4188+00	6.3188+00
CP	8.5246-01	8.2192-01	8.0817-01	8.2039-01	7.1959-01	7.2799-01	3.8589-01
P/PO1	6.8870-01	6.7464-01	6.6831-01	6.7393-01	6.2753-01	6.3140-01	4.7390-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER

PRELIMINARY UNCHECKED DATA

40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	193.	301244	1.49	1	5.00	-.03	.00	50.00	.0

VALVE POS 2 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3716 TO = 532.

P	5.2490+00	9.2956+00	1.1541+01	1.2598+01	1.2882+01	1.3120+01	1.3229+01	1.3150+01	1.2968+01
CP	2.1049-01	8.6884-01	1.2341+00	1.4061+00	1.4524+00	1.4910+00	1.5088+00	1.4960+00	1.4663+00
P/PO1	3.9315-01	6.9624-01	8.6441-01	9.4357-01	9.6490-01	9.8266-01	9.9087-01	9.8497-01	9.7130-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3741 TO = 532.

P	1.2464+01	1.0066+01	5.9944+00	1.6797+00	1.6286+00	1.6023+00	1.6164+00	1.5806+00	1.2792+01
CP	1.3712+00	9.8358-01	3.2543-01	-3.7198-01	-3.8023-01	-3.8449-01	-3.7898-01	-3.8799-01	1.3433+00
P/PO1	9.2751-01	7.4907-01	4.4606-01	1.2493-01	1.2119-01	1.1923-01	1.2177-01	1.1762-01	9.1467-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3721 TO = 532.

P	1.2356+01	1.2286+01	1.1742+01	1.1367+01	8.9650+00	5.3148+00	8.9730+00	9.5625+00	9.9257+00
CP	1.3641+00	1.3528+00	1.2643+00	1.2034+00	8.1316-01	2.2008-01	8.1446-01	9.1024-01	9.6925-01
P/PO1	9.2426-01	9.1904-01	8.7830-01	8.5028-01	6.7061-01	3.9756-01	6.7121-01	7.1530-01	7.4246-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3705 TO = 532.

P	1.0560+01	1.0251+01	9.7486+00	9.6135+00	9.1663+00	7.0679+00	3.4466+00	1.5979+00	1.6116+00
CP	1.0796+00	1.0293+00	9.4725-01	9.2520-01	8.5223-01	5.0983-01	-8.1079-02	-3.8274-01	-3.8051-01
P/PO1	7.9328-01	7.7010-01	7.3234-01	7.2219-01	6.8859-01	5.3096-01	2.5891-01	1.2004-01	1.2106-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3750 TO = 532.

P	1.6622+00	1.6132+00	1.0537+01	9.4290+00	8.5470+00	7.5453+00	6.7451+00	5.0390+00	1.8694+00
CP	-3.7551-01	-3.8340-01	1.0552+00	8.7661-01	7.3442-01	5.7294-01	4.4394-01	1.6888-01	-3.4210-01
P/PO1	1.2337-01	1.1973-01	7.8202-01	6.9982-01	6.3435-01	5.6001-01	5.0062-01	3.7399-01	1.3875-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.5 Q-INF = 6.213 P-INF =3.9979 RE = .3756 TO = 532.

P	4.7066+00	4.0650+00	4.2325+00	1.5455+00	1.5755+00	1.5644+00	1.5876+00	1.5856+00	3.9229-01
CP	1.1406-01	1.0801-02	3.7758-02	-3.9472-01	-3.8989-01	-3.9167-01	-3.8795-01	-3.8827-01	-5.8033-01
P/PO1	3.4875-01	3.0121-01	3.1363-01	1.1452-01	1.1674-01	1.1592-01	1.1764-01	1.1749-01	2.9069-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3722 TO = 532.

P	3.2650-01	5.8731-01	9.4982-01	9.2929-01	1.4845+00	1.5518+00	1.7366+00	1.4080+00	1.0562+00
CP	-5.9044-01	-5.4808-01	-4.8920-01	-4.9253-01	-4.0235-01	-3.9141-01	-3.6141-01	-4.1477-01	-4.7192-01
P/PO1	2.4415-02	4.3918-02	7.1025-02	6.9491-02	1.1101-01	1.1604-01	1.2986-01	1.0529-01	7.8980-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	4.5530-01	6.2226-01	4.2528-01	6.6470-01	1.1380+00	1.5544+00	1.5593+00	1.4795+00	1.5000+00
CP	-5.6981-01	-5.4280-01	-5.7466-01	-5.3593-01	-4.5935-01	-3.9199-01	-3.9119-01	-4.0410-01	-4.0079-01
P/PO1	3.3913-02	4.6349-02	3.1677-02	4.9511-02	8.4766-02	1.1578-01	1.1615-01	1.1020-01	1.1173-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3725 TO = 532.

P	1.5839+00	1.6278+00	5.0388-01	1.6722+00	1.9751+00	2.0514+00	2.2735+00	2.0196+00	1.5719+00
CP	-3.8638-01	-3.7924-01	-5.6168-01	-3.7204-01	-3.2288-01	-3.1048-01	-2.7444-01	-3.1566-01	-3.8832-01
P/PO1	1.1836-01	1.2165-01	3.7654-02	1.2496-01	1.4760-01	1.5330-01	1.6989-01	1.5092-01	1.1747-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.5 Q-INF = 6.221 P-INF =4.0031 RE = .3761 TO = 532.

P	1.6597+00	1.9397+00	1.5864+00	2.0449+00	5.1754+00	2.3341+00	1.1277+00	2.7647+00	2.6351+00
CP	-3.7669-01	-3.3167-01	-3.8847-01	-3.1476-01	1.8845-01	-2.6829-01	-4.6219-01	-1.9906-01	-2.1989-01
P/PO1	1.2282-01	1.4355-01	1.1740-01	1.5133-01	3.8300-01	1.7273-01	8.3456-02	2.0460-01	1.9501-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.199 P-INF =3.9888 RE = .3748 TO = 532.

P	2.6349+00	2.3990+00	1.5637+00	1.6176+00	1.6413+00	1.6174+00	1.6133+00	1.6102+00	1.5967+00
CP	-2.1841-01	-2.5647-01	-3.9122-01	-3.8253-01	-3.7871-01	-3.8255-01	-3.8322-01	-3.8371-01	-3.8590-01
P/PO1	1.9569-01	1.7817-01	1.1613-01	1.2013-01	1.2189-01	1.2012-01	1.1981-01	1.1959-01	1.1858-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.6977+00	6.8203-01	1.2942+01	2.3906-01	1.0980+01	3.3281-01	1.0062+01	3.7031-01
CP	2.7567-01	-5.3345-01	1.4443+00	-6.0491-01	1.1279+00	-5.8978-01	9.7967-01	-5.8373-01
P/PO1	4.2315-01	5.0653-02	9.6119-01	1.7755-02	8.1550-01	2.4717-02	7.4726-01	2.7502-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.4462+00	3.6563-01	8.1797+00	3.9375-01	5.7469+00	4.0781-01	2.1633+00
CP	7.1917-01	-5.8449-01	6.7606-01	-5.7995-01	2.8361-01	-5.7768-01	-2.9449-01
P/PO1	6.2733-01	2.7154-02	6.0749-01	2.9243-02	4.2681-01	3.0287-02	1.6066-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V D KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	194.	301244	1.49	1	10.02	-.03	.01	55.02	.0

VALVE POS 2 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3727 TO = 532.

P	4.3623+00	8.4631+00	1.0907+01	1.2305+01	1.2712+01	1.2996+01	1.3275+01	1.3320+01	1.3152+01
CP	6.4160-02	7.2937-01	1.1759+00	1.3526+00	1.4186+00	1.4647+00	1.5100+00	1.5172+00	1.4900+00
P/PO1	3.2578-01	6.3203-01	8.1456-01	9.1897-01	9.4934-01	9.7058-01	9.9140-01	9.9472-01	9.8222-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	1.2789+01	1.0668+01	6.9832+00	2.1617+00	1.4212+00	1.4004+00	1.4077+00	1.3661+00	1.2061+01
CP	1.4258+00	1.0824+00	4.8635-01	-2.9372-01	-4.1353-01	-4.1689-01	-4.1571-01	-4.2245-01	1.3380+00
P/PO1	9.5263-01	7.9458-01	5.2015-01	1.6102-01	1.0586-01	1.0431-01	1.0486-01	1.0176-01	8.9840-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.5 Q-INF = 6.215 P-INF =3.9992 RE = .3753 TO = 533.

P	1.2402+01	1.2363+01	1.1788+01	1.1705+01	9.5070+00	6.1132+00	8.3277+00	9.2237+00	9.6491+00
CP	1.3521+00	1.3458+00	1.2532+00	1.2399+00	8.8620-01	3.4015-01	6.9646-01	8.4063-01	9.0907-01
P/PO1	9.1871-01	9.1581-01	8.7320-01	8.6709-01	7.0423-01	4.5284-01	6.1688-01	6.8325-01	7.1476-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.5 Q-INF = 6.221 P-INF =4.0031 RE = .3761 TO = 532.

P	1.0420+01	1.0190+01	9.5478+00	9.6789+00	9.2283+00	7.2835+00	3.9028+00	1.2058+00	1.4132+00
CP	1.0316+00	9.9446-01	8.9128-01	9.0432-01	8.3992-01	5.2731-01	-1.6125-02	-4.4964-01	-4.1631-01
P/PO1	7.7115-01	7.5407-01	7.0657-01	7.1258-01	6.8292-01	5.3901-01	2.8082-01	8.9235-02	1.0458-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.5 Q-INF = 6.213 P-INF =3.9979 RE = .3752 TO = 533.

P	1.4576+00	1.3914+00	1.0969+01	9.4136+00	8.2992+00	7.3759+00	6.5761+00	5.0206+00	2.0479+00
CP	-4.0887-01	-4.1952-01	1.1220+00	8.7167-01	6.9231-01	5.4370-01	4.1497-01	1.6461-01	-3.1385-01
P/PO1	1.0800-01	1.0311-01	8.1281-01	6.9754-01	6.1497-01	5.4655-01	4.8729-01	3.7202-01	1.5175-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.203 P-INF =3.9914 RE = .3746 TO = 533.

P	3.9242+00	3.4652+00	3.7949+00	1.4163+00	1.4162+00	1.4004+00	1.3692+00	1.3686+00	2.2169-01
CP	-1.0833-02	-8.4826-02	-3.1688-02	-4.1514-01	-4.1516-01	-4.1770-01	-4.2274-01	-4.2284-01	-6.0773-01
P/PO1	2.9125-01	2.5719-01	2.8165-01	1.0512-01	1.0511-01	1.0394-01	1.0162-01	1.0158-01	1.6453-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.201 P-INF =3.9901 RE = .3744 TO = 533.

P	2.5303-01	5.1968-01	6.6204-01	7.6530-01	1.3353+00	1.3802+00	1.2690+00	1.0184+00	7.8595-01
CP	-6.0267-01	-5.5967-01	-5.3671-01	-5.2005-01	-4.2814-01	-4.2088-01	-4.3882-01	-4.7924-01	-5.1673-01
P/PO1	1.8786-02	3.8583-02	4.9153-02	5.6819-02	9.9135-02	1.0247-01	9.4217-02	7.5611-02	5.8352-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.5 Q-INF = 6.231 P-INF =4.0096 RE = .3763 TO = 533.

P	3.2302-01	2.2847-01	4.3691-01	9.1935-01	1.3681+00	1.4030+00	1.3949+00	1.4031+00	1.3835+00
CP	-5.9163-01	-6.0681-01	-5.7336-01	-4.9593-01	-4.2391-01	-4.1832-01	-4.1961-01	-4.1830-01	-4.2145-01
P/PO1	2.3866-02	1.6881-02	3.2280-02	6.7926-02	1.0108-01	1.0366-01	1.0306-01	1.0367-01	1.0222-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.2 Q-INF = 6.118 P-INF =3.9370 RE = .3694 TO = 533.

P	1.4500+00	1.4524+00	4.6885-01	1.1132+00	1.3858+00	1.3626+00	1.2844+00	1.2798+00	1.5769+00
CP	-4.0648-01	-4.0609-01	-5.6684-01	-4.6153-01	-4.1697-01	-4.2077-01	-4.3354-01	-4.3430-01	-3.8575-01
P/PO1	1.0910-01	1.0928-01	3.5279-02	8.3761-02	1.0428-01	1.0253-01	9.6648-02	9.6299-02	1.1865-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3715 TO = 533.

P	1.5965+00	1.4499+00	1.1393+00	1.7915+00	4.2544+00	1.7688+00	7.6295-01	1.7533+00	2.4997+00
CP	-3.8399-01	-4.0781-01	-4.5830-01	-3.5229-01	4.8002-02	-3.5598-01	-5.1947-01	-3.5851-01	-2.3720-01
P/PO1	1.1946-01	1.0849-01	8.5248-02	1.3405-01	3.1834-01	1.3236-01	5.7090-02	1.3119-01	1.8704-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3711 TO = 533.

P	2.0461+00	2.5384+00	1.5687+00	1.6424+00	1.5957+00	1.4660+00	1.4129+00	1.3957+00	1.3785+00
CP	-3.1058-01	-2.3050-01	-3.8825-01	-3.7626-01	-3.8386-01	-4.0496-01	-4.1361-01	-4.1640-01	-4.1920-01
P/PO1	1.5326-01	1.9012-01	1.1750-01	1.2302-01	1.1952-01	1.0981-01	1.0583-01	1.0454-01	1.0325-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.2453+00	9.4453-01	1.2356+01	1.8516-01	1.0814+01	2.0156-01	9.7102+00	3.0234-01
CP	2.0990-01	-4.8980-01	1.3668+00	-6.1335-01	1.1159+00	-6.1068-01	9.3630-01	-5.9428-01
P/PO1	3.9288-01	7.0746-02	9.2549-01	1.3868-02	8.0998-01	1.5097-02	7.2730-01	2.2646-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.3648+00	2.6953-01	8.3555+00	2.6016-01	5.7633+00	3.5859-01	2.2172+00
CP	7.1742-01	-5.9962-01	7.1590-01	-6.0115-01	2.9417-01	-5.8513-01	-2.8275-01
P/PO1	6.2653-01	2.0188-02	6.2583-01	1.9486-02	4.3167-01	2.6859-02	1.6607-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VACUUM GAS DYNAMICS FACILITY

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	195.	301244	1.49	1	14.01	-.02	.00	59.01	.0

VALVE POS 2 PO = 14.2 Q-INF = 6.114 P-INF =3.9344 RE = .3692 TO = 533.

P	3.5487+00	7.6923+00	1.0258+01	1.1813+01	1.2217+01	1.2642+01	1.2999+01	1.3120+01	1.3091+01
CP	-6.3084-02	6.1461-01	1.0343+00	1.2886+00	1.3545+00	1.4242+00	1.4824+00	1.5022+00	1.4975+00
P/PO1	2.6720-01	5.7920-01	7.7241-01	8.8947-01	9.1985-01	9.5190-01	9.7873-01	9.8784-01	9.8567-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3711 TO = 533.

P	1.2898+01	1.1115+01	7.4776+00	2.6622+00	1.0419+00	9.9671-01	9.8131-01	1.2206+00	1.1739+01
CP	1.4549+00	1.1648+00	5.7307-01	-2.1034-01	-4.7396-01	-4.8132-01	-4.8382-01	-4.4489-01	1.2663+00
P/PO1	9.6606-01	8.3249-01	5.6007-01	1.9940-01	7.8040-02	7.4654-02	7.3501-02	9.1425-02	8.7924-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3698 TO = 533.

P	1.2093+01	1.2194+01	1.1633+01	1.1675+01	9.7857+00	6.7292+00	7.6670+00	8.8234+00	9.2803+00
CP	1.3310+00	1.3475+00	1.2561+00	1.2628+00	9.5434-01	4.5527-01	6.0841-01	7.9722-01	8.7183-01
P/PO1	9.0903-01	9.1661-01	8.7450-01	8.7760-01	7.3560-01	5.0584-01	5.7634-01	6.6377-01	6.9762-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3709 TO = 533.

P	1.0049+01	9.8968+00	9.2697+00	9.3982+00	9.0734+00	7.3297+00	4.2512+00	1.2132+00	1.0016+00
CP	9.9248-01	9.6771-01	8.6563-01	8.8655-01	8.3367-01	5.4980-01	4.8623-02	-4.4596-01	-4.8040-01
P/PO1	7.5316-01	7.4176-01	6.9476-01	7.0439-01	6.8005-01	5.4936-01	3.1863-01	9.0930-02	7.5073-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.122 P-INF =3.9396 RE = .3697 TO = 533.

P	1.0003+00	9.5037-01	1.0815+01	9.2290+00	8.0825+00	7.1449+00	6.4225+00	4.9532+00	2.1917+00
CP	-4.8008-01	-4.8824-01	1.1229+00	8.6394-01	6.7667-01	5.2354-01	4.0554-01	1.6555-01	-2.8549-01
P/PO1	7.5221-02	7.1464-02	8.1322-01	6.9398-01	6.0777-01	5.3727-01	4.8295-01	3.7246-01	1.6481-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3698 TO = 533.

P	3.2733+00	3.0169+00	3.5573+00	1.1554+00	1.1886+00	1.1607+00	1.0584+00	1.0455+00	3.0887-01
CP	-1.0900-01	-1.5086-01	-6.2635-02	-4.5482-01	-4.4940-01	-4.5395-01	-4.7066-01	-4.7276-01	-5.9304-01
P/PO1	2.4606-01	2.2679-01	2.6741-01	8.6853-02	8.9348-02	8.7253-02	7.9559-02	7.8595-02	2.3219-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3699 TO = 533.

P	3.2989-01	5.1066-01	5.9087-01	6.7824-01	1.0621+00	1.1380+00	9.8131-01	8.0881-01	6.1662-01
CP	-5.8962-01	-5.6012-01	-5.4703-01	-5.3276-01	-4.7010-01	-4.5772-01	-4.8330-01	-5.1145-01	-5.4282-01
P/PO1	2.4790-02	3.8374-02	4.4402-02	5.0968-02	7.9816-02	8.5518-02	7.3742-02	6.0780-02	4.6337-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.122 P-INF =3.9396 RE = .3697 TO = 533.

P	2.7951-01	4.5655-01	6.1008-01	9.0941-01	1.1152+00	1.2112+00	1.1945+00	1.1861+00	1.1083+00
CP	-5.9782-01	-5.6890-01	-5.4383-01	-4.9493-01	-4.6131-01	-4.4564-01	-4.4836-01	-4.4974-01	-4.6245-01
P/PO1	2.1018-02	3.4331-02	4.5875-02	6.8384-02	8.3862-02	9.1076-02	8.9824-02	8.9190-02	8.3337-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3711 TO = 533.

P	1.1696+00	1.2184+00	3.8750-01	6.9066-01	1.0343+00	9.9671-01	1.1252+00	1.3119+00	1.4231+00
CP	-4.5319-01	-4.4524-01	-5.8043-01	-5.3111-01	-4.7519-01	-4.8132-01	-4.6042-01	-4.3004-01	-4.1194-01
P/PO1	8.7603-02	9.1261-02	2.9024-02	5.1731-02	7.7471-02	7.4654-02	8.4275-02	9.8259-02	1.0659-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.134 P-INF =3.9474 RE = .3704 TO = 533.

P	1.4550+00	1.1819+00	8.7403-01	1.7766+00	3.5651+00	1.4459+00	7.1966-01	1.0061+00	2.3273+00
CP	-4.0628-01	-4.5081-01	-5.0099-01	-3.5387-01	-6.2307-02	-4.0778-01	-5.2616-01	-4.7947-01	-2.6410-01
P/PO1	1.0920-01	8.8697-02	6.5594-02	1.3333-01	2.6756-01	1.0851-01	5.4009-02	7.5505-02	1.7466-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3716 TO = 533.

P	2.0386+00	1.9129+00	1.2782+00	1.3393+00	1.3226+00	1.3146+00	1.3153+00	1.2897+00	1.3388+00
CP	-3.1225-01	-3.3266-01	-4.3579-01	-4.2587-01	-4.2857-01	-4.2987-01	-4.2977-01	-4.3393-01	-4.2594-01
P/PO1	1.5249-01	1.4309-01	9.5613-02	1.0018-01	9.8935-02	9.8338-02	9.8385-02	9.6470-02	1.0015-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.0156+00	9.7031-01	1.2438+01	2.0859-01	1.1121+01	2.3438-01	9.6000+00	3.0000-01
CP	1.7146-01	-4.8582-01	1.3775+00	-6.0958-01	1.1635+00	-6.0539-01	9.1633-01	-5.9473-01
P/PO1	3.7518-01	7.2582-02	9.3041-01	1.5603-02	8.3189-01	1.7532-02	7.1810-01	2.2441-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.3484+00	2.6953-01	8.5266+00	2.7188-01	6.0961+00	3.8203-01	2.3109+00
CP	7.1298-01	-5.9968-01	7.4192-01	-5.9930-01	3.4702-01	-5.8140-01	-2.6799-01
P/PO1	6.2448-01	2.0162-02	6.3781-01	2.0337-02	4.5600-01	2.8577-02	1.7286-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	196.	301244	1.49	1	14.64	19.86	-4.93	58.80	.0

VALVE POS 2 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3696 TO = 533.

P	3.4486+00	7.7386+00	1.0274+01	1.1767+01	1.2232+01	1.2611+01	1.3060+01	1.3181+01	1.3091+01
CP	-8.0759-02	6.1926-01	1.0330+00	1.2766+00	1.3525+00	1.4144+00	1.4876+00	1.5073+00	1.4926+00
P/PO1	2.5906-01	5.8134-01	7.7180-01	8.8396-01	9.1890-01	9.4740-01	9.8110-01	9.9020-01	9.8341-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.134 P-INF =3.9474 RE = .3704 TO = 533.

P	1.2836+01	1.1068+01	7.4776+00	2.6499+00	9.8375-01	9.6390-01	1.0173+00	1.2921+00	1.2261+01
CP	1.4490+00	1.1608+00	5.7547-01	-2.1150-01	-4.8311-01	-4.8634-01	-4.7764-01	-4.3284-01	1.3552+00
P/PO1	9.6331-01	8.3066-01	5.6118-01	1.9887-01	7.3828-02	7.2339-02	7.6344-02	9.6972-02	9.2017-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3708 TO = 533.

P	1.2619+01	1.2687+01	1.2143+01	1.2167+01	1.0266+01	7.1449+00	8.4199+00	9.7165+00	1.0748+01
CP	1.4116+00	1.4726+00	1.3341+00	1.3379+00	1.0283+00	5.2010-01	7.2773-01	9.3888-01	1.0255+00
P/PO1	9.4611-01	9.5119-01	9.1043-01	9.1220-01	7.6966-01	5.3569-01	6.3128-01	7.2849-01	7.6836-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3717 TO = 533.

P	1.0931+01	1.0760+01	1.0150+01	1.0275+01	1.0064+01	8.2536+00	4.7961+00	1.3982+00	9.4958-01
CP	1.1303+00	1.1025+00	1.0036+00	1.0238+00	9.8965-01	6.9582-01	1.3478-01	-4.1660-01	-4.8939-01
P/PO1	8.1663-01	8.0383-01	7.5828-01	7.6759-01	7.5186-01	6.1659-01	3.5829-01	1.0445-01	7.0938-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3707 TO = 533.

P	9.4729-01	9.6743-01	1.0876+01	9.8596+00	8.7328+00	7.9149+00	7.2061+00	5.6398+00	2.6597+00
CP	-4.8935-01	-4.8608-01	1.1260+00	9.6062-01	7.7728-01	6.4422-01	5.2890-01	2.7407-01	-2.1075-01
P/PO1	7.0952-02	7.2461-02	8.1465-01	7.3849-01	6.5409-01	5.9283-01	5.3974-01	4.2242-01	1.9922-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3719 TO = 533.

P	3.6739+00	3.5804+00	4.1575+00	1.1256+00	1.1911+00	1.1607+00	1.0532+00	1.0283+00	1.9924-01
CP	-4.7717-02	-6.2877-02	3.0708-02	-4.6095-01	-4.5032-01	-4.5525-01	-4.7268-01	-4.7672-01	-6.1116-01
P/PO1	2.7428-01	2.6729-01	3.1038-01	8.4032-02	8.8924-02	8.6655-02	7.8630-02	7.6767-02	1.4874-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3721 TO = 533.

P	2.7762-01	5.4786-01	7.2752-01	8.5227-01	1.0343+00	1.1531+00	1.1277+00	8.7786-01	6.4706-01
CP	-5.9848-01	-5.5469-01	-5.2557-01	-5.0536-01	-4.7585-01	-4.5660-01	-4.6072-01	-5.0121-01	-5.3861-01
P/PO1	2.0712-02	4.0874-02	5.4278-02	6.3585-02	7.7168-02	8.6033-02	8.4137-02	6.5495-02	4.8275-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3706 TO = 533.

P	2.7573-01	4.1239-01	4.9145-01	6.7486-01	1.0394+00	1.1632+00	1.1740+00	1.1516+00	1.0711+00
CP	-5.9860-01	-5.7636-01	-5.6349-01	-5.3364-01	-4.7432-01	-4.5416-01	-4.5241-01	-4.5606-01	-4.6916-01
P/PO1	2.0659-02	3.0898-02	3.6822-02	5.0564-02	7.7876-02	8.7156-02	8.7960-02	8.6282-02	8.0250-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3696 TO = 533.

P	1.1443+00	1.1770+00	4.4853-01	9.4420-01	1.0166+00	1.0421+00	1.1842+00	1.3340+00	1.3884+00
CP	-4.5675-01	-4.5142-01	-5.7028-01	-4.8940-01	-4.7759-01	-4.7342-01	-4.5023-01	-4.2579-01	-4.1692-01
P/PO1	8.5964-02	8.8419-02	3.3695-02	7.0930-02	7.6371-02	7.8286-02	8.8963-02	1.0022-01	1.0430-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.201 P-INF =3.9901 RE = .3740 TO = 533.

P	1.4601+00	1.2087+00	8.7151-01	1.0411+00	2.6378+00	1.3702+00	8.2718-01	1.4105+00	2.0479+00
CP	-4.0801-01	-4.4855-01	-5.0293-01	-4.7558-01	-2.1808-01	-4.2251-01	-5.1008-01	-4.1601-01	-3.1321-01
P/PO1	1.0840-01	8.9737-02	6.4704-02	7.7296-02	1.9584-01	1.0173-01	6.1413-02	1.0472-01	1.5205-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3710 TO = 533.

P	2.2861+00	1.7521+00	1.3212+00	1.3467+00	1.3125+00	1.2743+00	1.2331+00	1.2108+00	1.2496+00
CP	-2.7190-01	-3.5870-01	-4.2874-01	-4.2458-01	-4.3015-01	-4.3636-01	-4.4306-01	-4.4668-01	-4.4037-01
P/PO1	1.7106-01	1.3110-01	9.8858-02	1.0077-01	9.8211-02	9.5350-02	9.2266-02	9.0597-02	9.3502-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.3836+00	6.2578-01	1.1991+01	1.7578-01	1.1552+01	2.2734-01	1.0163+01	3.0234-01
CP	2.3154-01	-5.4176-01	1.3054+00	-6.1490-01	1.2342+00	-6.0652-01	1.0083+00	-5.9433-01
P/PO1	4.0284-01	4.6825-02	8.9722-01	1.3153-02	8.6443-01	1.7011-02	7.6043-01	2.2623-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.4430+00	2.4141-01	9.2367+00	2.6250-01	6.6117+00	3.4453-01	2.4961+00
CP	8.9132-01	-6.0424-01	8.5780-01	-6.0081-01	4.3115-01	-5.8747-01	-2.3777-01
P/PO1	7.0659-01	1.8064-02	6.9116-01	1.9642-02	4.9473-01	2.5780-02	1.8678-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS US WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	197.	301244	1.49	1	13.42	42.37	-9.00	55.00	.0

VALVE POS 2 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3717 TO = 533.

P	3.9367+00	8.1548+00	1.0490+01	1.1859+01	1.2217+01	1.2596+01	1.2906+01	1.2996+01	1.2906+01
CP	-4.6683-03	6.7979-01	1.0587+00	1.2809+00	1.3389+00	1.4005+00	1.4508+00	1.4654+00	1.4508+00
P/PO1	2.9409-01	6.0970-01	7.8367-01	8.8594-01	9.1764-01	9.4098-01	9.6417-01	9.7089-01	9.6417-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3713 TO = 533.

P	1.2557+01	1.0637+01	6.7978+00	2.1468+00	1.3606+00	1.3601+00	1.3204+00	1.2971+00	1.2753+01
CP	1.3962+00	1.0842+00	4.6067-01	-2.9477-01	-4.2248-01	-4.2256-01	-4.2900-01	-4.3279-01	1.4279+00
P/PO1	9.3901-01	7.9539-01	5.0832-01	1.6053-01	1.0174-01	1.0170-01	9.8737-02	9.6992-02	9.5363-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3717 TO = 533.

P	1.3022+01	1.3072+01	1.2421+01	1.2382+01	1.0219+01	6.8370+00	9.3264+00	1.0456+01	1.0970+01
CP	1.4695+00	1.4777+00	1.3721+00	1.3658+00	1.0148+00	4.6594-01	8.6990-01	1.0531+00	1.1367+00
P/PO1	9.7279-01	9.7657-01	9.2794-01	9.2501-01	7.6342-01	5.1075-01	6.9673-01	7.8109-01	8.1955-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3723 TO = 533.

P	1.1690+01	1.1531+01	1.0876+01	1.0967+01	1.0529+01	8.5000+00	4.8404+00	1.3340+00	1.3388+00
CP	1.2504+00	1.2245+00	1.1185+00	1.1332+00	1.0622+00	7.3355-01	1.4069-01	-4.2735-01	-4.2658-01
P/PO1	8.7189-01	8.6000-01	8.1120-01	8.1796-01	7.8527-01	6.3396-01	3.6101-01	9.9497-02	9.9854-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.139 P-INF =3.9500 RE = .3702 TO = 533.

P	1.4096+00	1.3403+00	1.1108+01	1.0383+01	9.4605+00	8.6848+00	7.8668+00	6.1902+00	2.8383+00
CP	-4.1385-01	-4.2513-01	1.1661+00	1.0479+00	8.9770-01	7.7133-01	6.3807-01	3.6495-01	-1.8110-01
P/PO1	1.0572-01	1.0052-01	8.3310-01	7.7868-01	7.0953-01	6.5135-01	5.9000-01	4.6426-01	2.1287-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 , PO = 14.3 Q-INF = 6.139 P-INF =3.9500 RE = .3702 TO = 533.

P	4.4812+00	4.5194+00	4.9639+00	1.2945+00	1.3530+00	1.3348+00	1.3024+00	1.2872+00	3.5397-01
CP	8.6550-02	9.2759-02	1.6518-01	-4.3258-01	-4.2307-01	-4.2602-01	-4.3130-01	-4.3378-01	-5.8581-01
P/PO1	3.3609-01	3.3895-01	3.7229-01	9.7090-02	1.0147-01	1.0011-01	9.7680-02	9.6538-02	2.6547-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.149 P-INF =3.9564 RE = .3708 TO = 533.

P	4.1124-01	8.2609-01	1.0357+00	1.2399+00	1.1355+00	1.3096+00	1.5054+00	1.1047+00	7.8347-01
CP	-5.7659-01	-5.0912-01	-4.7503-01	-4.4182-01	-4.5880-01	-4.3048-01	-3.9864-01	-4.6380-01	-5.1605-01
P/PO1	3.0792-02	6.1855-02	7.7549-02	9.2838-02	8.5020-02	9.8057-02	1.1272-01	8.2717-02	5.8663-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3715 TO = 533.

P	5.1630-01	8.8945-01	7.7046-01	7.7772-01	7.3591-01	1.3222+00	1.3538+00	1.3661+00	1.2967+00
CP	-5.5967-01	-4.9910-01	-5.1841-01	-5.1723-01	-5.2402-01	-4.2885-01	-4.2372-01	-4.2173-01	-4.3299-01
P/PO1	3.8583-02	6.6468-02	5.7576-02	5.8119-02	5.4994-02	9.8808-02	1.0117-01	1.0209-01	9.6900-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3709 TO = 533.

P	1.3515+00	1.3793+00	6.0330-01	9.9390-01	1.0950+00	7.2671-01	1.3795+00	1.4721+00	1.5074+00
CP	-4.2374-01	-4.1922-01	-5.4538-01	-4.8188-01	-4.6544-01	-5.2532-01	-4.1919-01	-4.0412-01	-3.9838-01
P/PO1	1.0116-01	1.0324-01	4.5158-02	7.4395-02	8.1964-02	5.4395-02	1.0326-01	1.1019-01	1.1283-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.185 P-INF =3.9798 RE = .3730 TO = 533.

P	1.5081+00	1.4524+00	1.1418+00	8.4233-01	5.3839-01	1.4433+00	1.1226+00	1.6867+00	1.9091+00
CP	-3.9964-01	-4.0864-01	-4.5886-01	-5.0728-01	-5.5642-01	-4.1011-01	-4.6196-01	-3.7076-01	-3.3480-01
P/PO1	1.1226-01	1.0811-01	8.4992-02	6.2700-02	4.0076-02	1.0744-01	8.3563-02	1.2555-01	1.4211-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3725 TO = 533.

P	2.0967+00	2.3021+00	1.5056+00	1.4983+00	1.3985+00	1.3676+00	1.3255+00	1.3193+00	1.3041+00
CP	-3.0403-01	-2.7077-01	-3.9973-01	-4.0090-01	-4.1706-01	-4.2206-01	-4.2887-01	-4.2989-01	-4.3734-01
P/PO1	1.5627-01	1.7158-01	1.1222-01	1.1167-01	1.0424-01	1.0194-01	9.8798-02	9.8330-02	9.7202-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.8805+00	5.3906-01	1.3052+01	3.5391-01	1.1984+01	3.6094-01	1.0910+01	4.4766-01
CP	3.0856-01	-5.5620-01	1.4697+00	-5.8618-01	1.2966+00	-5.8504-01	1.1228+00	-5.7100-01
P/PO1	4.3830-01	4.0179-02	9.7285-01	2.6378-02	8.9319-01	2.6902-02	8.1318-01	3.3366-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.9609+00	4.1953-01	9.6375+00	4.6406-01	6.8977+00	4.1250-01	2.6648+00
CP	9.6917-01	-5.7555-01	9.1681-01	-5.6834-01	4.7324-01	-5.7669-01	-2.1204-01
P/PO1	7.4243-01	3.1269-02	7.1832-01	3.4589-02	5.1411-01	3.0745-02	1.9862-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40-INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	198.	301244	1.49	1	11.18	26.73	-5.00	55.01	.0

VALVE POS 2 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3727 TO = 533.

P	4.0995+00	8.4477+00	1.0722+01	1.2136+01	1.2511+01	1.2842+01	1.3137+01	1.3197+01	1.3091+01
CP	1.9787-02	7.2329-01	1.0912+00	1.3201+00	1.3807+00	1.4343+00	1.4820+00	1.4916+00	1.4745+00
P/PO1	3.0535-01	6.2923-01	7.9863-01	9.0397-01	9.3188-01	9.5658-01	9.7851-01	9.8296-01	9.7508-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.199 P-INF =3.9888 RE = .3738 TO = 533.

P	1.2743+01	1.0652+01	6.8287+00	2.1518+00	1.3934+00	1.3651+00	1.3692+00	1.3291+00	1.2553+01
CP	1.4122+00	1.0749+00	4.5812-01	-2.9635-01	-4.1869-01	-4.2325-01	-4.2259-01	-4.2906-01	1.3816+00
P/PO1	9.4640-01	7.9111-01	5.0715-01	1.5981-01	1.0349-01	1.0138-01	1.0169-01	9.8711-02	9.3229-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3719 TO = 533.

P	1.2774+01	1.2826+01	1.2174+01	1.2075+01	9.8940+00	6.4982+00	8.9730+00	1.0009+01	1.0463+01
CP	1.4280+00	1.4364+00	1.3307+00	1.3146+00	9.6096-01	4.1028-01	8.1161-01	9.7961-01	1.0533+00
P/PO1	9.5366-01	9.5752-01	9.0888-01	9.0144-01	7.3865-01	4.8513-01	6.6989-01	7.4724-01	7.8116-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.179 P-INF =3.9759 RE = .3726 TO = 533.

P	1.1195+01	1.0991+01	1.0305+01	1.0383+01	9.9715+00	8.0842+00	4.3843+00	1.1960+00	1.3636+00
CP	1.1683+00	1.1354+00	1.0243+00	1.0369+00	9.7035-01	6.6492-01	6.6097-02	-4.4991-01	-4.2278-01
P/PO1	8.3412-01	8.1896-01	7.6781-01	7.7361-01	7.4297-01	6.0236-01	3.2667-01	8.9111-02	1.0160-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3709 TO = 533.

P	1.4171+00	1.3744+00	1.1155+01	9.9827+00	8.9186+00	8.1150+00	7.2829+00	5.6704+00	2.4566+00
CP	-4.1306-01	-4.2002-01	1.1701+00	9.7958-01	8.0656-01	6.7592-01	5.4063-01	2.7846-01	-2.4407-01
P/PO1	1.0608-01	1.0287-01	8.3493-01	7.4722-01	6.6757-01	6.0742-01	5.4514-01	4.2444-01	1.8388-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3718 TO = 533.

P	4.2872+00	4.0468+00	4.4888+00	1.3542+00	1.3909+00	1.3903+00	1.3538+00	1.3340+00	2.7313-01
CP	5.1977-02	1.2981-02	8.4677-02	-4.2380-01	-4.1785-01	-4.1794-01	-4.2387-01	-4.2707-01	-5.9917-01
P/PO1	3.2017-01	3.0222-01	3.3523-01	1.0113-01	1.0387-01	1.0383-01	1.0110-01	9.9627-02	2.0398-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3721 TO = 533.

P	3.0694-01	6.5720-01	8.5382-01	9.8644-01	1.2518+00	1.3525+00	1.3975+00	1.0677+00	7.7355-01
CP	-5.9373-01	-5.3697-01	-5.0510-01	-4.8361-01	-4.4061-01	-4.2429-01	-4.1700-01	-4.7044-01	-5.1811-01
P/PO1	2.2900-02	4.9032-02	6.3701-02	7.3596-02	9.3394-02	1.0091-01	1.0426-01	7.9661-02	5.7712-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3731 TO = 533.

P	3.9254-01	3.8537-01	6.0669-01	7.5785-01	1.0975+00	1.3550+00	1.3666+00	1.3636+00	1.3339+00
CP	-5.8002-01	-5.8118-01	-5.4541-01	-5.2098-01	-4.6607-01	-4.2446-01	-4.2258-01	-4.2306-01	-4.2787-01
P/PO1	2.9210-02	2.8677-02	4.5145-02	5.6394-02	8.1672-02	1.0083-01	1.0170-01	1.0147-01	9.9258-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.193 P-INF =3.9849 RE = .3739 TO = 533.

P	1.3919+00	1.4109+00	4.8919-01	1.2026+00	1.3934+00	8.6549-01	1.2998+00	1.4056+00	1.3785+00
CP	-4.1872-01	-4.1564-01	-5.6448-01	-4.4928-01	-4.1847-01	-5.0372-01	-4.3358-01	-4.1651-01	-4.2088-01
P/PO1	1.0347-01	1.0489-01	3.6367-02	8.9403-02	1.0359-01	6.4341-02	9.6631-02	1.0449-01	1.0248-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3720 TO = 533.

P	1.5030+00	1.4962+00	1.1266+00	1.2871+00	3.4900+00	1.7158+00	9.0167-01	1.6595+00	2.2965+00
CP	-3.9982-01	-4.0092-01	-4.6083-01	-4.3482-01	-7.7720-02	-3.6532-01	-4.9730-01	-3.7445-01	-2.7119-01
P/PO1	1.1217-01	1.1167-01	8.4083-02	9.6058-02	2.6046-01	1.2806-01	6.7293-02	1.2385-01	1.7139-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3710 TO = 533.

P	2.0487+00	2.0202+00	1.4752+00	1.5256+00	1.4693+00	1.4030+00	1.4000+00	1.4031+00	1.3438+00
CP	-3.1050-01	-3.1513-01	-4.0370-01	-3.9551-01	-4.0466-01	-4.1545-01	-4.1592-01	-4.1542-01	-4.2506-01
P/PO1	1.5330-01	1.5116-01	1.1039-01	1.1416-01	1.0994-01	1.0498-01	1.0476-01	1.0499-01	1.0055-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.6602+00	7.7109-01	1.3003+01	2.2734-01	1.1721+01	2.9063-01	1.0303+01	3.0000-01
CP	2.7649-01	-5.1814-01	1.4700+00	-6.0652-01	1.2616+00	-5.9674-01	1.0311+00	-5.9471-01
P/PO1	4.2353-01	5.7699-02	9.7298-01	1.7011-02	8.7705-01	2.1747-02	7.7095-01	2.2448-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.1922+00	3.0469-01	9.1453+00	3.2344-01	6.5227+00	3.6797-01	2.4469+00
CP	8.5056-01	-5.9395-01	8.4294-01	-5.9090-01	4.1667-01	-5.8366-01	-2.4577-01
P/PO1	6.8782-01	2.2799-02	6.8432-01	2.4202-02	4.8807-01	2.7534-02	1.8309-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	199.	301244	1.49	1	14.66	-19.94	4.95	58.87	.0

VALVE POS 2 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3707 TO = 533.

P	3.6175+00	7.7232+00	1.0274+01	1.1829+01	1.2217+01	1.2642+01	1.3045+01	1.3150+01	1.3122+01
CP	-5.4925-02	6.1303-01	1.0280+00	1.2809+00	1.3441+00	1.4133+00	1.4788+00	1.4960+00	1.4913+00
P/PO1	2.7096-01	5.7847-01	7.6952-01	8.8596-01	9.1503-01	9.4691-01	9.7706-01	9.8497-01	9.8281-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3709 TO = 533.

P	1.2820+01	1.1084+01	7.4467+00	2.6128+00	1.0267+00	1.0219+00	1.0866+00	1.3045+00	1.1078+01
CP	1.4410+00	1.1586+00	5.6725-01	-2.1866-01	-4.7654-01	-4.7732-01	-4.6680-01	-4.3139-01	1.1577+00
P/PO1	9.5963-01	8.2964-01	5.5739-01	1.9557-01	7.6853-02	7.6494-02	8.1336-02	9.7641-02	8.2921-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.179 P-INF =3.9759 RE = .3726 TO = 533.

P	1.1551+01	1.1685+01	1.1124+01	1.1182+01	9.2747+00	6.2210+00	6.9756+00	7.7917+00	8.2663+00
CP	1.2260+00	1.2477+00	1.1568+00	1.1663+00	8.5759-01	3.6336-01	4.8549-01	6.1757-01	6.9438-01
P/PO1	8.6065-01	8.7065-01	8.2882-01	8.3321-01	6.9106-01	4.6353-01	5.1975-01	5.8056-01	6.1592-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3695 TO = 533.

P	9.0424+00	8.9872+00	8.5436+00	8.5061+00	8.2683+00	6.4674+00	3.6493+00	1.0431+00	1.2099+00
CP	8.3250-01	8.2349-01	7.5107-01	7.4495-01	7.0613-01	4.1218-01	-4.7802-02	-4.7321-01	-4.4598-01
P/PO1	6.7951-01	6.7536-01	6.4202-01	6.3920-01	6.2133-01	4.8600-01	2.7424-01	7.8383-02	9.0921-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3714 TO = 533.

P	1.2403+00	1.1404+00	1.0413+01	8.6137+00	7.4631+00	6.4058+00	5.8288+00	4.3095+00	1.7578+00
CP	-4.4208-01	-4.5829-01	1.0473+00	7.5517-01	5.6834-01	3.9666-01	3.0297-01	5.6277-02	-3.5805-01
P/PO1	9.2718-02	8.5253-02	7.7841-01	6.4391-01	5.5789-01	4.7886-01	4.3572-01	3.2215-01	1.3140-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3706 TO = 533.

P	2.9416+00	2.3930+00	2.6883+00	1.2995+00	1.3176+00	1.2869+00	1.2125+00	1.2132+00	6.7933-01
CP	-1.6474-01	-2.5403-01	-2.0596-01	-4.3198-01	-4.2904-01	-4.3404-01	-4.4614-01	-4.4603-01	-5.3291-01
P/PO1	2.2040-01	1.7929-01	2.0142-01	9.7366-02	9.8718-02	9.6420-02	9.0847-02	9.0901-02	5.0899-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3720 TO = 533.

P	6.3267-01	6.1888-01	1.0357-01	9.8396-01	1.2796+00	1.2818+00	8.4259-01	8.6060-01	6.8429-01
CP	-5.4091-01	-5.4315-01	-6.2668-01	-4.8396-01	-4.3603-01	-4.3568-01	-5.0688-01	-5.0396-01	-5.3754-01
P/PO1	4.7217-02	4.6188-02	7.7296-03	7.3434-02	9.5501-02	9.5666-02	6.2884-02	6.4228-02	5.1070-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.130 P-INF =3.9448 RE = .3697 TO = 533.

P	6.0782-01	7.2259-01	7.6036-01	9.6408-01	1.1987+00	1.3045+00	1.3024+00	1.2699+00	1.2347+00
CP	-5.4432-01	-5.2560-01	-5.1944-01	-4.8621-01	-4.4794-01	-4.3067-01	-4.3102-01	-4.3632-01	-4.4207-01
P/PO1	4.5645-02	5.4264-02	5.7101-02	7.2400-02	9.0019-02	9.7968-02	9.7808-02	9.5369-02	9.2723-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B404

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3718 TO = 533.

P	1.3742+00	1.5035+00	3.0031-01	8.8954-01	1.0925+00	1.1683+00	1.2690+00	1.4894+00	1.6264+00
CP	-4.2056-01	-3.9958-01	-5.9476-01	-4.9918-01	-4.6625-01	-4.5396-01	-4.3762-01	-4.0187-01	-3.7964-01
P/PO1	1.0263-01	1.1228-01	2.2427-02	6.6431-02	8.1588-02	8.7248-02	9.4771-02	1.1123-01	1.2146-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3723 TO = 533.

P	1.6521+00	1.2062+00	8.4624-01	8.2742-01	1.8916+00	1.3096+00	8.6057-01	1.4919+00	1.9190+00
CP	-3.7583-01	-4.4806-01	-5.0638-01	-5.0943-01	-3.3702-01	-4.3131-01	-5.0406-01	-4.0179-01	-3.3259-01
P/PO1	1.2322-01	8.9965-02	6.3115-02	6.1711-02	1.4108-01	9.7673-02	6.4184-02	1.1127-01	1.4312-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3698 TO = 533.

P	1.8112+00	1.6108+00	1.3843+00	1.3741+00	1.2670+00	1.2389+00	1.1997+00	1.1861+00	1.2173+00
CP	-3.4812-01	-3.8081-01	-4.1774-01	-4.1941-01	-4.3687-01	-4.4144-01	-4.4785-01	-4.5006-01	-4.4496-01
P/PO1	1.3597-01	1.2092-01	1.0392-01	1.0315-01	9.5116-02	9.3011-02	9.0062-02	8.9043-02	9.1390-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.5633+00	1.3664+00	1.1991+01	7.0313-01	9.9633+00	6.9375-01	9.0070+00	7.4766-01
CP	1.0065-01	-4.2066-01	1.3118+00	-5.2882-01	9.8120-01	-5.3034-01	8.2527-01	-5.2155-01
P/PO1	3.4258-01	1.0258-01	9.0017-01	5.2785-02	7.4797-01	5.2082-02	6.7618-01	5.6129-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.6453+00	5.2266-01	7.6758+00	4.7578-01	5.3461+00	5.5781-01	2.0672+00
CP	6.0322-01	-5.5824-01	6.0819-01	-5.6589-01	2.2830-01	-5.5251-01	-3.0638-01
P/PO1	5.7395-01	3.9237-02	5.7624-01	3.5718-02	4.0135-01	4.1876-02	1.5519-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	200.	301244	1.49	1	13.42	-42.46	9.01	54.98	.0

VALVE POS 2 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3709 TO = 533.

P	4.1871+00	8.2165+00	1.0413+01	1.1782+01	1.2155+01	1.2488+01	1.2784+01	1.2827+01	1.2753+01
CP	3.7290-02	6.9241-01	1.0495+00	1.2722+00	1.3327+00	1.3869+00	1.4349+00	1.4420+00	1.4300+00
P/PO1	3.1341-01	6.1501-01	7.7943-01	8.8193-01	9.0979-01	9.3476-01	9.5687-01	9.6012-01	9.5456-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3719 TO = 533.

P	1.2480+01	1.0467+01	6.6587+00	2.1095+00	1.3656+00	1.3424+00	1.3076+00	1.2897+00	1.0602+01
CP	1.3803+00	1.0539+00	4.3632-01	-3.0139-01	-4.2202-01	-4.2579-01	-4.3144-01	-4.3434-01	1.0757+00
P/PO1	9.3169-01	7.8143-01	4.9711-01	1.5749-01	1.0195-01	1.0022-01	9.7617-02	9.6281-02	7.9148-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.2 Q-INF = 6.104 P-INF =3.9279 RE = .3681 TO = 533.

P	1.0931+01	1.1038+01	1.0444+01	1.0383+01	8.3612+00	5.2462+00	6.6837+00	7.2065+00	7.5441+00
CP	1.1473+00	1.1647+00	1.0674+00	1.0574+00	7.2625-01	2.1596-01	4.5145-01	5.3710-01	5.9240-01
P/PO1	8.2444-01	8.3244-01	7.8767-01	7.8305-01	6.3059-01	3.9567-01	5.0408-01	5.4351-01	5.6897-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3707 TO = 533.

P	8.3302+00	8.4015+00	7.8174+00	8.0292+00	7.6025+00	5.7952+00	2.8764+00	1.3193+00	1.3388+00
CP	7.1179-01	7.2338-01	6.2837-01	6.6282-01	5.9339-01	2.9936-01	-1.7551-01	-4.2884-01	-4.2565-01
P/PO1	6.2394-01	6.2927-01	5.8553-01	6.0139-01	5.6943-01	4.3406-01	2.1544-01	9.8813-02	1.0028-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.2 Q-INF = 6.108 P-INF =3.9305 RE = .3684 TO = 533.

P	1.3717+00	1.3305+00	9.7795+00	8.0446+00	7.0605+00	5.9746+00	5.3853+00	3.9723+00	1.4231+00
CP	-4.1891-01	-4.2565-01	9.5755-01	6.7352-01	5.1242-01	3.3464-01	2.3816-01	6.8463-03	-4.1049-01
P/PO1	1.0338-01	1.0028-01	7.3708-01	6.0632-01	5.3215-01	4.5031-01	4.0589-01	2.9939-01	1.0776-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.175 P-INF =3.9733 RE = .3724 TO = 533.

P	3.1919+00	2.3021+00	2.1598+00	1.3393+00	1.3530+00	1.3500+00	1.2767+00	1.3267+00	1.9830-01
CP	-1.2654-01	-2.7065-01	-2.9369-01	-4.2658-01	-4.2436-01	-4.2484-01	-4.3671-01	-4.2862-01	-6.1136-01
P/PO1	2.3799-01	1.7164-01	1.6103-01	9.9854-02	1.0088-01	1.0065-01	9.5191-02	9.8913-02	1.4785-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.191 P-INF =3.9836 RE = .3734 TO = 533.

P	1.9533-01	4.4077-01	5.8974-01	7.6781-01	1.3125+00	1.3500+00	1.0378+00	1.2182+00	9.6446-01
CP	-6.1192-01	-5.7228-01	-5.4821-01	-5.2026-01	-4.3146-01	-4.2541-01	-4.7583-01	-4.4671-01	-4.8768-01
P/PO1	1.4525-02	3.2777-02	4.3856-02	5.6726-02	9.7604-02	1.0039-01	7.7177-02	9.0587-02	7.1722-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.179 P-INF =3.9759 RE = .3726 TO = 533.

P	3.6086-01	4.5429-01	4.9032-01	8.4730-01	1.1886+00	1.0623+00	1.1509+00	1.2280+00	1.3339+00
CP	-5.8507-01	-5.6995-01	-5.6412-01	-5.0634-01	-4.5111-01	-4.7154-01	-4.5721-01	-4.4472-01	-4.2759-01
P/PO1	2.6887-02	3.3849-02	3.6534-02	6.3132-02	8.8562-02	7.9153-02	8.5750-02	9.1499-02	9.9387-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.5 Q-INF = 6.213 P-INF =3.9979 RE = .3747 TO = 533.

P	1.4702+00	1.4743+00	6.2476-01	7.8766-01	1.3226+00	1.4131+00	1.5619+00	1.2847+00	1.5892+00
CP	-4.0684-01	-4.0618-01	-5.4291-01	-5.1670-01	-4.3059-01	-4.1604-01	-3.9208-01	-4.3669-01	-3.8768-01
P/PO1	1.0894-01	1.0924-01	4.6295-02	5.8365-02	9.8006-02	1.0471-01	1.1573-01	9.5198-02	1.1776-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.179 P-INF =3.9759 RE = .3726 TO = 533.

P	1.6470+00	1.4962+00	1.1847+00	9.3923-01	4.3975-01	1.3903+00	1.3204+00	1.5954+00	1.8248+00
CP	-3.7691-01	-4.0132-01	-4.5173-01	-4.9146-01	-5.7230-01	-4.1845-01	-4.2977-01	-3.8526-01	-3.4814-01
P/PO1	1.2272-01	1.1148-01	8.8275-02	6.9982-02	3.2765-02	1.0359-01	9.8383-02	1.1888-01	1.3596-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.189 P-INF =3.9823 RE = .3732 TO = 533.

P	2.0992+00	2.2657+00	1.5232+00	1.5704+00	1.4718+00	1.3525+00	1.3255+00	1.3217+00	1.2992+00
CP	-3.0428-01	-2.7737-01	-3.9734-01	-3.8973-01	-4.0565-01	-4.2493-01	-4.2929-01	-4.2991-01	-4.3355-01
P/PO1	1.5616-01	1.6855-01	1.1331-01	1.1682-01	1.0949-01	1.0061-01	9.8605-02	9.8321-02	9.6643-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.4227+00	9.0000-01	1.2108+01	1.8047-01	9.0586+00	1.5938-01	8.4961+00	2.2266-01
CP	7.1145-02	-4.9805-01	1.3129+00	-6.1431-01	8.2022-01	-6.1772-01	7.2934-01	-6.0749-01
P/PO1	3.2900-01	6.6950-02	9.0069-01	1.3425-02	6.7386-01	1.1856-02	6.3201-01	1.6563-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.3313+00	2.9297-01	6.7734+00	2.7422-01	4.7648+00	3.8203-01	1.8492+00
CP	5.4112-01	-5.9613-01	4.5099-01	-5.9916-01	1.2644-01	-5.8174-01	-3.4467-01
P/PO1	5.4536-01	2.1794-02	5.0387-01	2.0399-02	3.5445-01	2.8419-02	1.3756-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING [illegible]
40 - INCH CONTI[illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	SI-ROLL
11.	201.	301244	1.49	1	11.17	-26.81	5.01	55.00	.0

VALVE POS 2 PO = 14.4 Q-INF = 6.201 P-INF =3.9901 RE = .3740 TO = 533.

P	4.3060+00	8.5094+00	1.0768+01	1.2213+01	1.2557+01	1.2889+01	1.3152+01	1.3166+01	1.3091+01
CP	5.0941-02	7.2880-01	1.0931+00	1.3261+00	1.3816+00	1.4350+00	1.4775+00	1.4797+00	1.4676+00
P/PO1	3.1969-01	6.3177-01	7.9948-01	9.0674-01	9.3230-01	9.5690-01	9.7648-01	9.7748-01	9.7191-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3721 TO = 533.

P	1.2666+01	1.0606+01	6.7978+00	2.1493+00	1.4061+00	1.3853+00	1.3615+00	1.3414+00	1.1339+01
CP	1.4091+00	1.0753+00	4.5815-01	-2.9517-01	-4.1561-01	-4.1898-01	-4.2283-01	-4.2608-01	1.1941+00
P/PO1	9.4495-01	7.9128-01	5.0716-01	1.6035-01	1.0490-01	1.0335-01	1.0158-01	1.0008-01	8.4599-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3714 TO = 533.

P	1.1644+01	1.1685+01	1.1093+01	1.1013+01	8.9186+00	5.6579+00	7.4827+00	8.1150+00	8.5736+00
CP	1.2472+00	1.2539+00	1.1577+00	1.1448+00	8.0467-01	2.7522-01	5.7151-01	6.7420-01	7.4865-01
P/PO1	8.7041-01	8.7349-01	8.2922-01	8.2328-01	6.6670-01	4.2295-01	5.5936-01	6.0663-01	6.4090-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3715 TO = 533.

P	9.3676+00	9.2339+00	8.7290+00	8.6906+00	8.3767+00	6.4212+00	3.3326+00	1.3464+00	1.3661+00
CP	8.7708-01	8.5538-01	7.7342-01	7.6720-01	7.1623-01	3.9882-01	-1.0253-01	-4.2493-01	-4.2172-01
P/PO1	7.0003-01	6.9004-01	6.5231-01	6.4944-01	6.2598-01	4.7985-01	2.4904-01	1.0061-01	1.0209-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3717 TO = 533.

P	1.4272+00	1.3622+00	1.0444+01	8.6445+00	7.6025+00	6.6060+00	5.8079+00	4.3953+00	1.6512+00
CP	-4.1188-01	-4.2243-01	1.0512+00	7.5925-01	5.9016-01	4.2846-01	2.9896-01	6.9746-02	-3.7553-01
P/PO1	1.0662-01	1.0176-01	7.8021-01	6.4579-01	5.6794-01	4.9350-01	4.3388-01	3.2835-01	1.2335-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3725 TO = 533.

P	3.4924+00	2.7625+00	2.8821+00	1.3666+00	1.3884+00	1.3676+00	1.3204+00	1.3636+00	2.0064-01
CP	-7.8068-02	-1.9623-01	-1.7687-01	-4.7222-01	-4.1870-01	-4.2206-01	-4.2970-01	-4.2270-01	-6.1099-01
P/PO1	2.6030-01	2.0590-01	2.1481-01	1.0186-01	1.0348-01	1.0194-01	9.8415-02	1.0164-01	1.4954-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3714 TO = 533.

P	2.3505-01	4.7909-01	5.8635-01	6.4777-01	1.3150+00	1.3525+00	1.0943+00	1.1836+00	8.5289-01
CP	-6.0531-01	-5.6568-01	-5.4826-01	-5.3829-01	-4.2995-01	-4.2386-01	-4.6578-01	-4.5128-01	-5.0499-01
P/PO1	1.7571-02	3.5814-02	4.3832-02	4.8423-02	9.8304-02	1.0110-01	8.1806-02	8.8481-02	6.3756-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3718 TO = 533.

P	3.4336-01	4.2724-01	5.3664-01	9.4420-01	1.2493+00	1.2793+00	1.2793+00	1.3365+00	1.3785+00
CP	-5.8777-01	-5.7417-01	-5.5642-01	-4.9031-01	-4.4082-01	-4.3595-01	-4.3595-01	-4.2667-01	-4.1986-01
P/PO1	2.5642-02	3.1906-02	4.0076-02	7.0513-02	9.3297-02	9.5540-02	9.5538-02	9.9811-02	1.0295-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible]
10 - INCH CONTINUOUS 55 [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3710 TO = 533.

P	1.4702+00	1.4621+00	3.6570-01	9.8893-01	1.5629+00	1.6275+00	1.7006+00	1.2108+00	1.5719+00
CP	-4.0452-01	-4.0583-01	-5.8403-01	-4.8274-01	-3.8945-01	-3.7894-01	-3.6707-01	-4.4668-01	-3.8799-01
P/PO1	1.1001-01	1.0941-01	2.7364-02	7.3998-02	1.1694-01	1.2178-01	1.2725-01	9.0597-02	1.1762-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3719 TO = 533.

P	1.6369+00	1.4865+00	1.1140+00	1.1057+00	2.7130+00	1.6679+00	9.6076-01	1.6793+00	2.1620+00
CP	-3.7803-01	-4.0242-01	-4.6282-01	-4.6417-01	-2.0352-01	-3.7300-01	-4.8767-01	-3.7116-01	-2.9288-01
P/PO1	1.2221-01	1.1097-01	8.3168-02	8.2548-02	2.0254-01	1.2452-01	7.1776-02	1.2537-01	1.6140-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.2 Q-INF = 6.114 P-INF =3.9344 RE = .3687 TO = 533.

P	2.0739+00	2.0933+00	1.4929+00	1.5480+00	1.4870+00	1.4181+00	1.3975+00	1.4080+00	1.3438+00
CP	-3.0428-01	-3.0112-01	-3.9930-01	-3.9030-01	-4.0027-01	-4.1154-01	-4.1492-01	-4.1319-01	-4.2369-01
P/PO1	1.5616-01	1.5761-01	1.1241-01	1.1656-01	1.1196-01	1.0678-01	1.0522-01	1.0602-01	1.0118-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.8328+00	9.0469-01	1.1714+01	1.5938-01	9.7781+00	1.6406-01	9.1898+00	3.0234-01
CP	1.4693-01	-4.9551-01	1.2724+00	-6.1741-01	9.5574-01	-6.1664-01	8.5952-01	-5.9402-01
P/PO1	3.6389-01	6.8119-02	8.8201-01	1.2000-02	7.3625-01	1.2353-02	6.9195-01	2.2765-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.8188+00	2.8594-01	7.4906+00	2.5781-01	5.1867+00	3.6797-01	1.9852+00
CP	6.3528-01	-5.9671-01	5.8162-01	-6.0131-01	2.0481-01	-5.8329-01	-3.1880-01
P/PO1	5.8871-01	2.1530-02	5.6401-01	1.9412-02	3.9053-01	2.7706-02	1.4947-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	202.	301244	1.49	1	14.65	180.14	.04	30.35	.0

VALVE POS 2 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3712 TO = 533.

P	9.3521+00	1.2425+01	8.9607+00	1.3244+01	1.3208+01	1.2996+01	1.2445+01	1.2211+01	1.1754+01
CP	8.7606-01	1.3753+00	8.1246-01	1.5083+00	1.5025+00	1.4682+00	1.3787+00	1.3406+00	1.2663+00
P/PO1	6.9956-01	9.2941-01	6.7028-01	9.9066-01	9.8796-01	9.7216-01	9.3775-01	9.1342-01	8.7923-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.2 Q-INF = 6.112 P-INF =3.9331 RE = .3686 TO = 533.

P	1.0900+01	8.0731+00	3.2760+00	1.8288+00	1.8714+00	1.8395+00	1.7879+00	1.7656+00	1.2353+01
CP	1.1399+00	6.8059-01	-1.0751-01	-3.4428-01	-3.3731-01	-3.4253-01	-3.5096-01	-3.5462-01	1.3776+00
P/PO1	8.2102-01	6.0957-01	2.4674-01	1.3774-01	1.4095-01	1.3855-01	1.3467-01	1.3298-01	9.3045-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.2 Q-INF = 6.098 P-INF =3.9241 RE = .3678 TO = 533.

P	1.1891+01	1.1670+01	1.0722+01	1.0321+01	7.5096+00	3.0255+00	1.1139+01	1.0979+01	1.1032+01
CP	1.3065+00	1.2701+00	1.1147+00	1.0490+00	5.8796-01	-1.4735-01	1.1837+00	1.1569+00	1.1656+00
P/PO1	8.9773-01	8.8098-01	8.0944-01	7.7919-01	5.6693-01	2.2840-01	8.4096-01	8.2886-01	8.3284-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.120 P-INF =3.9383 RE = .3691 TO = 533.

P	1.1303+01	1.0421+01	9.7950+00	9.7212+00	9.0734+00	6.7292+00	2.2221+00	1.8691+00	1.8496+00
CP	1.2033+00	1.0592+00	9.5691-01	9.4486-01	8.3902-01	4.5600-01	-2.8041-01	-3.3808-01	-3.4127-01
P/PO1	8.5023-01	7.8387-01	7.3679-01	7.3124-01	6.8251-01	5.0617-01	1.6715-01	1.4060-01	1.3913-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3713 TO = 533.

P	1.8996+00	1.8179+00	1.0598+01	9.3982+00	8.8102+00	8.0381+00	7.3597+00	5.4068+00	1.6859+00
CP	-3.3492-01	-3.4820-01	1.0780+00	8.8304-01	7.8754-01	6.6212-01	5.5194-01	2.3474-01	-3.6963-01
P/PO1	1.4205-01	1.3594-01	7.9252-01	7.0278-01	6.5881-01	6.0107-01	5.5035-01	4.0431-01	1.2607-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.112 P-INF =3.9331 RE = .3686 TO = 533.

P	8.4076+00	7.1836+00	6.5506+00	1.8809+00	1.9043+00	1.8799+00	1.8136+00	1.8198+00	1.4231+00
CP	7.3204-01	5.3179-01	4.2823-01	-3.3574-01	-3.3193-01	-3.3592-01	-3.4676-01	-3.4574-01	-4.1064-01
P/PO1	6.3326-01	5.4107-01	4.9339-01	1.4167-01	1.4343-01	1.4159-01	1.3660-01	1.3707-01	1.0719-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3693 TO = 533.

P	1.7834+00	1.5718+00	1.7733+00	2.4461+00	2.2077+00	1.6376+00	4.0611+00	4.1011+00	3.8049+00
CP	-3.5227-01	-3.8683-01	-3.5392-01	-2.4408-01	-2.8299-01	-3.7608-01	1.9636-02	2.6156-02	-2.2205-02
P/PO1	1.3406-01	1.1815-01	1.3330-01	1.8387-01	1.6596-01	1.2310-01	3.0528-01	3.0828-01	2.8602-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.137 P-INF =3.9487 RE = .3701 TO = 533.

P	2.3164+00	4.9131+00	4.8389+00	4.7315+00	4.5113+00	3.9549+00	1.8085+00	1.8322+00	1.7975+00
CP	-2.6599-01	1.5717-01	1.4507-01	1.2757-01	9.1680-02	1.0218-03	-3.4876-01	-3.4490-01	-3.5055-01
P/PO1	1.7379-01	3.6860-01	3.6303-01	3.5497-01	3.3845-01	2.9671-01	1.3568-01	1.3745-01	1.3486-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
40 - 1

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.2 Q-INF = 6.112 P-INF =3.9331 RE = .3686 TO = 533.

P	1.8314+00	1.8739+00	3.9512+00	4.2435+00	4.5050+00	4.5975+00	4.5490+00	3.9723+00	1.7777+00
CP	-3.4384-01	-3.3689-01	2.9503-03	5.0785-02	9.3561-02	1.0869-01	1.0076-01	6.4179-03	-3.5764-01
P/PO1	1.3794-01	1.4114-01	2.9760-01	3.1962-01	3.3932-01	3.4628-01	3.4263-01	2.9920-01	1.3389-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3715 TO = 533.

P	1.8617+00	4.7314+00	3.5760+00	5.4604+00	6.4876+00	4.5476+00	4.2259+00	4.8919+00	4.8885+00
CP	-3.4127-01	1.2453-01	-6.3008-02	2.4286-01	4.0960-01	9.4688-02	4.2474-02	1.5058-01	1.5003-01
P/PO1	1.3913-01	3.5357-01	2.6723-01	4.0805-01	4.8482-01	3.3983-01	3.1580-01	3.6557-01	3.6531-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3710 TO = 533.

P	4.8568+00	3.9923+00	1.7860+00	1.8288+00	1.8360+00	1.7865+00	1.7571+00	1.7730+00	1.7554+00
CP	1.4591-01	5.4082-03	-3.5320-01	-3.4624-01	-3.4506-01	-3.5311-01	-3.5788-01	-3.5530-01	-3.5817-01
P/PO1	3.6342-01	2.9873-01	1.3364-01	1.3684-01	1.3738-01	1.3368-01	1.3148-01	1.3267-01	1.3135-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	7.3898+00	3.0539+00	1.2138+01	7.6172-01	1.0446+01	8.1094-01	9.6961+00	1.6500+00
CP	5.5762-01	-1.4711-01	1.3294+00	-5.1967-01	1.0544+00	-5.1167-01	9.3246-01	-3.7529-01
P/PO1	5.5296-01	2.2851-01	9.0827-01	5.6997-02	7.8165-01	6.0680-02	7.2553-01	1.2346-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.7820+00	2.5336+00	7.7484+00	3.2484+00	5.4820+00	3.5320+00	3.0773+00
CP	7.8390-01	-2.3168-01	6.1590-01	-1.1549-01	2.4754-01	-6.9401-02	-1.4330-01
P/PO1	6.5713-01	1.8958-01	5.7979-01	2.4307-01	4.1020-01	2.6429-01	2.3027-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	203.	301744	1.49	1	5.01	180.14	.01	39.99	.0

VALVE POS 2 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3712 TO = 533.

P	7.2928+00	1.1022+01	1.2298+01	1.3121+01	1.3269+01	1.3258+01	1.2999+01	1.2827+01	1.2445+01
CP	5.4146-01	1.1474+00	1.3547+00	1.4884+00	1.5125+00	1.5107+00	1.4685+00	1.4407+00	1.3787+00
P/PO1	5.4552-01	8.2448-01	9.1991-01	9.8145-01	9.9259-01	9.9174-01	9.7233-01	9.5949-01	9.3095-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3703 TO = 533.

P	1.1706+01	8.9410+00	4.3388+00	1.7319+00	1.7829+00	1.7688+00	1.7468+00	1.7533+00	1.2507+01
CP	1.2628+00	8.1259-01	6.3107-02	-3.6143-01	-3.5312-01	-3.5541-01	-3.5900-01	-3.5795-01	1.3933+00
P/PO1	8.7762-01	6.7034-01	3.2530-01	1.2984-01	1.3367-01	1.3262-01	1.3097-01	1.3145-01	9.3770-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3717 TO = 533.

P	1.2387+01	1.2194+01	1.1340+01	1.0983+01	8.1908+00	3.8988+00	1.0264+01	1.0456+01	1.0725+01
CP	1.3665+00	1.3352+00	1.1966+00	1.1386+00	6.8563-01	-1.0825-02	1.0270+00	1.0531+00	1.0968+00
P/PO1	9.2536-01	9.1093-01	8.4715-01	8.2045-01	6.1190-01	2.9126-01	7.6675-01	7.8109-01	8.0118-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3719 TO = 533.

P	1.1148+01	1.0498+01	9.8259+00	9.7981+00	9.2283+00	6.8986+00	2.6356+00	1.7533+00	1.7380+00
CP	1.1643+00	1.0589+00	9.4991-01	9.4540-01	8.5299-01	4.7521-01	-2.1607-01	-3.5916-01	-3.6163-01
P/PO1	8.3228-01	7.8374-01	7.3356-01	7.3149-01	6.8894-01	5.1502-01	1.9677-01	1.3089-01	1.2975-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3712 TO = 533.

P	1.8062+00	1.7740+00	1.0475+01	9.5828+00	8.8102+00	7.8379+00	7.0371+00	5.2229+00	1.6934+00
CP	-3.5001-01	-3.5523-01	1.0585+00	9.1353-01	7.8800-01	6.3002-01	4.9991-01	2.0514-01	-3.6833-01
P/PO1	1.3511-01	1.3270-01	7.8354-01	7.1682-01	6.5902-01	5.8629-01	5.2639-01	3.9069-01	1.2667-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.112 P-INF =3.9331 RE = .3686 TO = 533.

P	6.5960+00	5.4887+00	5.3078+00	1.7393+00	1.7728+00	1.7562+00	1.7391+00	1.7434+00	9.0247-01
CP	4.3566-01	2.5449-01	2.2490-01	-3.5891-01	-3.5344-01	-3.5615-01	-3.5894-01	-3.5825-01	-4.9582-01
P/PO1	4.9681-01	4.1341-01	3.9978-01	1.3101-01	1.3352-01	1.3228-01	1.3099-01	1.3131-01	6.7974-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3720 TO = 533.

P	4.1914-01	1.0430+00	1.5308+00	1.7890+00	1.4819+00	1.6351+00	2.7560+00	2.4827+00	1.9934+00
CP	-5.7552-01	-4.7440-01	-3.9531-01	-3.5346-01	-4.0324-01	-3.7841-01	-1.9670-01	-2.4100-01	-3.2033-01
P/PO1	3.1281-02	7.7839-02	1.1425-01	1.3352-01	1.1060-01	1.2203-01	2.0569-01	1.8529-01	1.4877-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.193 P-INF =3.9849 RE = .3735 TO = 533.

P	1.5889+00	3.2229+00	3.3135+00	1.7170+00	1.6008+00	1.3651+00	1.6877+00	1.7286+00	1.7182+00
CP	-3.8690-01	-1.2305-01	-1.0843-01	-3.6622-01	-3.8498-01	-4.2304-01	-3.7094-01	-3.6435-01	-3.6603-01
P/PO1	1.1812-01	2.3959-01	2.4632-01	1.2764-01	1.1900-01	1.0148-01	1.2547-01	1.2850-01	1.2773-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3709 TO = 533.

P	1.7809+00	1.7618+00	1.7026+00	2.8290+00	3.0326+00	3.1939+00	3.3262+00	2.9854+00	1.7256+00
CP	-3.5392-01	-3.5702-01	-3.6665-01	-1.8351-01	-1.5042-01	-1.2419-01	-1.0268-01	-1.5809-01	-3.6291-01
P/PO1	1.3330-01	1.3188-01	1.2744-01	2.1176-01	2.2699-01	2.3907-01	2.4897-01	2.2346-01	1.2916-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3721 TO = 533.

P	1.7885+00	3.0048+00	2.5132+00	3.5208+00	5.7832+00	3.5432+00	2.5089+00	3.5678+00	3.6879+00
CP	-3.5364-01	-1.5652-01	-2.3619-01	-7.2901-02	2.9373-01	-6.9273-02	-2.3689-01	-6.5297-02	-4.5825-02
P/PO1	1.3343-01	2.2418-01	1.8751-01	2.6268-01	4.3147-01	2.6435-01	1.8718-01	2.6618-01	2.7515-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3707 TO = 533.

P	3.6864+00	3.1987+00	1.7253+00	1.7493+00	1.7829+00	1.7714+00	1.7494+00	1.7705+00	1.7554+00
CP	-4.3724-02	-1.2307-01	-3.6277-01	-3.5888-01	-3.5341-01	-3.5528-01	-3.5886-01	-3.5542-01	-3.5789-01
P/PO1	2.7611-01	2.3958-01	1.2923-01	1.3102-01	1.3354-01	1.3268-01	1.3103-01	1.3261-01	1.3148-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	6.5180+00	1.5164+00	1.2630+01	4.6172-01	1.0866+01	5.1094-01	9.9914+00	7.5000-01
CP	4.1695-01	-3.9676-01	1.4114+00	-5.6835-01	1.1243+00	-5.6035-01	9.8205-01	-5.2145-01
P/PO1	4.8820-01	1.1358-01	9.4603-01	3.4583-02	8.1384-01	3.8269-02	7.4836-01	5.6175-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.8195+00	8.1797-01	7.5000+00	1.1039+00	5.6578+00	1.2586+00	2.1445+00
CP	7.9140-01	-5.1039-01	5.7672-01	-4.6387-01	2.7701-01	-4.3871-01	-2.9457-01
P/PO1	6.6059-01	6.1266-02	5.6175-01	8.2683-02	4.2377-01	9.4269-02	1.6063-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	204.	301244	1.99	1	5.00	180.14	.01	40.00	.0

VALVE POS 2 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4352 TO = 533.

P	7.7728+00	1.2101+01	1.3534+01	1.4351+01	-1.1094-02	1.8416-01	1.4136+01	1.3628+01	1.3460+01
CP	7.2584-01	1.3309+00	1.5312+00	1.6454+00	-3.6729-01	-3.3500-01	1.6153+00	1.5723+00	1.5208+00
P/PO1	5.3889-01	8.3898-01	9.3831-01	9.9497-01	-7.6913-04	1.2768-02	9.8003-01	9.5870-01	9.3316-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4345 TO = 533.

P	1.2697+01	9.6039+00	4.4450+00	9.6656-01	7.4856-01	7.0905-01	7.4754-01	6.8059-01	1.3429+01
CP	1.4171+00	9.8403-01	2.6167-01	-2.2540-01	-2.5592-01	-2.6146-01	-2.5607-01	-2.6544-01	1.5196+00
P/PO1	8.8172-01	6.6694-01	3.0869-01	6.7123-02	5.1984-02	4.9240-02	5.1913-02	4.7264-02	9.3257-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4337 TO = 533.

P	1.3223+01	1.3011+01	1.2082+01	1.1644+01	8.7792+00	3.8801+00	1.1001+01	1.0964+01	1.1201+01
CP	1.4943+00	1.4645+00	1.3342+00	1.2728+00	8.7089-01	1.8359-01	1.1826+00	1.1774+00	1.2106+00
P/PO1	9.2002-01	9.0524-01	8.4059-01	8.1015-01	6.1083-01	2.6996-01	7.6543-01	7.6283-01	7.7933-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.179 P-INF =2.5897 RE = .4360 TO = 533.

P	1.1783+01	1.1022+01	1.0382+01	1.0321+01	9.8011+00	7.1603+00	2.6356+00	5.9087-01	6.7438-01
CP	1.2806+00	1.1746+00	1.0855+00	1.0770+00	1.0046+00	6.3670-01	6.4035-03	-2.7843-01	-2.6680-01
P/PO1	8.1405-01	7.6148-01	7.1726-01	7.1305-01	6.7713-01	4.9468-01	1.8209-01	4.0821-02	4.6590-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4348 TO = 533.

P	7.7046-01	7.0425-01	7.0141+00	9.9366+00	9.0115+00	8.0996+00	7.3751+00	5.3394+00	1.6314+00
CP	-2.5293-01	-2.6220-01	6.2071-01	1.0296+00	9.0019-01	7.7260-01	6.7122-01	3.8637-01	-1.3247-01
P/PO1	5.3467-02	4.8872-02	4.8675-01	6.8956-01	6.2536-01	5.6209-01	5.1180-01	3.7053-01	1.1321-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4340 TO = 533.

P	6.8128+00	5.3857+00	3.4573+00	5.9135-01	7.6626-01	7.3176-01	7.4497-01	6.8552-01	6.4462-01
CP	5.9435-01	3.9428-01	1.2393-01	-2.7784-01	-2.5332-01	-2.5816-01	-2.5630-01	-2.6464-01	-2.7037-01
P/PO1	4.7368-01	3.7445-01	2.4037-01	4.1115-02	5.3276-02	5.0877-02	5.1796-02	4.7662-02	4.4819-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4355 TO = 533.

P	3.0694-01	8.9432-01	1.2858+00	1.5231+00	1.2240+00	6.6324-01	2.4582+00	2.2440+00	1.9512+00
CP	-3.1786-01	-2.3581-01	-1.8112-01	-1.4797-01	-1.8976-01	-2.6809-01	-1.7340-02	-4.7272-02	-8.8165-02
P/PO1	2.1265-02	6.1960-02	8.9082-02	1.0553-01	8.4800-02	4.5950-02	1.7031-01	1.5547-01	1.3518-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4356 TO = 533.

P	1.1241+00	2.4778+00	1.6319+00	1.1007+00	1.0975+00	9.7904-01	7.6295-01	7.4717-01	7.1652-01
CP	-2.0375-01	-1.4692-02	-1.3283-01	-2.0701-01	-2.0746-01	-2.2401-01	-2.5419-01	-2.5639-01	-2.6067-01
P/PO1	7.7862-02	1.7162-01	1.1303-01	7.6243-02	7.6022-02	6.7814-02	5.2846-02	5.1753-02	4.9630-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4356 TO = 533.

P	7.7551-01	7.2375-01	1.2378+00	1.9754+00	2.4060+00	2.1877+00	2.2683+00	2.0664+00	6.4462-01
CP	-2.5243-01	-2.5966-01	-1.8787-01	-8.4858-02	-2.4715-02	-5.5203-02	-4.3945-02	-7.2142-02	-2.7071-01
P/PO1	5.3716-02	5.0131-02	8.5736-02	1.3682-01	1.6665-01	1.5153-01	1.5712-01	1.4313-01	4.4650-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4361 TO = 533.

P	8.0330-01	2.9382+00	1.5586+00	2.4831+00	4.5238+00	3.3810+00	1.6184+00	2.3724+00	2.6228+00
CP	-2.4868-01	4.9128-02	-1.4332-01	-1.4353-02	2.7032-01	1.1090-01	-1.3498-01	-2.9802-02	5.1312-03
P/PO1	5.5576-02	2.0328-01	1.0783-01	1.7179-01	3.1297-01	2.3391-01	1.1197-01	1.6413-01	1.8146-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4355 TO = 533.

P	2.6224+00	2.2663+00	6.0669-01	7.3797-01	7.7385-01	7.4437-01	7.5011-01	7.2990-01	7.0413-01
CP	5.5943-03	-4.4155-02	-2.7599-01	-2.5765-01	-2.5264-01	-2.5676-01	-2.5595-01	-2.5878-01	-2.6238-01
P/PO1	1.8168-01	1.5701-01	4.2032-02	5.1128-02	5.3614-02	5.1572-02	5.1969-02	5.0569-02	4.8783-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	6.6234+00	1.6453+00	1.3603+01	3.2813-01	1.1578+01	3.5625-01	1.0320+01	5.9766-01
CP	5.6452-01	-1.3090-01	1.5395+00	-3.1490-01	1.2567+00	-3.1098-01	1.0808+00	-2.7725-01
P/PO1	4.5888-01	1.1399-01	9.4245-01	2.2733-02	8.0215-01	2.4682-02	7.1496-01	4.1407-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.1148+00	6.7734-01	7.8094+00	5.5781-01	5.7914+00	7.2891-01	2.1422+00
CP	9.1255-01	-2.6612-01	7.3019-01	-2.8282-01	4.4829-01	-2.5892-01	-6.1489-02
P/PO1	6.3149-01	4.6928-02	5.4105-01	3.8646-02	4.0124-01	5.0500-02	1.4841-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] DYNAMIC [illegible] FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	205.	301244	1.99	1	14.67	180.14	.04	30.33	.0

VALVE POS 2 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4351 TO = 533.

P	1.0390+01	1.3797+01	1.3951+01	1.4228+01	1.4121+01	1.3874+01	1.3321+01	1.3012+01	1.2615+01
CP	1.0920+00	1.5684+00	1.5900+00	1.6287+00	1.6138+00	1.5792+00	1.5319+00	1.4586+00	1.4031+00
P/PO1	7.2048-01	9.5677-01	9.6746-01	9.8667-01	9.7926-01	9.6213-01	9.2379-01	9.0233-01	8.7478-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4350 TO = 533.

P	1.1830+01	8.6789+00	3.3635+00	7.1312-01	8.4971-01	8.1503-01	8.1176-01	7.8415-01	1.3091+01
CP	1.2937+00	8.5309-01	1.0967-01	-2.6100-01	-2.4190-01	-2.4675-01	-2.4721-01	-2.5107-01	1.4701+00
P/PO1	8.2054-01	6.0200-01	2.3330-01	4.9465-02	5.8939-02	5.6533-02	5.6307-02	5.4392-02	9.0802-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4349 TO = 533.

P	1.2712+01	1.2425+01	1.1541+01	1.1106+01	8.0205+00	3.0754+00	1.1892+01	1.1380+01	1.1447+01
CP	1.4176+00	1.3774+00	1.2537+00	1.1928+00	7.6127-01	6.9479-02	1.3029+00	1.2312+00	1.2406+00
P/PO1	8.8196-01	8.6204-01	8.0070-01	7.7050-01	5.5646-01	2.1337-01	8.2509-01	7.8951-01	7.9418-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4352 TO = 533.

P	1.1783+01	1.0960+01	1.0228+01	1.0121+01	9.5379+00	7.0371+00	2.2657+00	8.1621-01	7.9338-01
CP	1.2865+00	1.1715+00	1.0690+00	1.0541+00	9.7260-01	6.2300-01	-4.4005-02	-2.4664-01	-2.4983-01
P/PO1	8.1693-01	7.5990-01	7.0909-01	7.0171-01	6.6127-01	4.8789-01	1.5709-01	5.6589-02	5.5006-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4336 TO = 533.

P	8.7403-01	8.0172-01	1.1062+01	9.5982+00	8.9341+00	8.2228+00	7.4212+00	5.5539+00	1.6264+00
CP	-2.3809-01	-2.4824-01	1.1915+00	9.8610-01	8.9291-01	7.9311-01	6.8062-01	4.1860-01	-1.3752-01
P/PO1	6.0827-02	5.5795-02	7.6983-01	6.6797-01	6.2175-01	5.7226-01	5.1647-01	3.8652-01	1.1319-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4340 TO = 533.

P	8.9031+00	6.9832+00	6.1953+00	6.8827-01	8.5983-01	8.2260-01	8.1433-01	7.8169-01	1.4380+00
CP	8.8738-01	6.1824-01	5.0777-01	-2.6425-01	-2.4070-01	-2.4542-01	-2.4658-01	-2.5116-01	-1.5915-01
P/PO1	6.1901-01	4.8553-01	4.3074-01	4.7854-02	5.9782-02	5.7193-02	5.6619-02	5.4349-02	9.9781-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4333 TO = 533.

P	1.8794+00	1.4645+00	2.0133+00	2.9896+00	2.1597+00	6.8576-01	3.5226+00	3.4819+00	3.7064+00
CP	-9.6828-02	-1.5509-01	-7.8028-02	5.9069-02	-5.7472-02	-2.6445-01	1.3391-01	1.2820-01	1.5972-01
P/PO1	1.3089-01	1.0200-01	1.4021-01	2.0821-01	1.5041-01	4.7758-02	2.4533-01	2.4249-01	2.5812-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4342 TO = 533.

P	1.6773+00	3.4350+00	3.6511+00	3.7617+00	3.6717+00	3.1814+00	7.3213-01	8.3840-01	8.1818-01
CP	-1.2571-01	1.2058-01	1.5086-01	1.6637-01	1.5375-01	8.5050-02	-2.5815-01	-2.4326-01	-2.4610-01
P/PO1	1.1657-01	2.3871-01	2.5373-01	2.6142-01	2.5516-01	2.2109-01	5.0879-02	5.8265-02	5.6859-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4338 TO = 533.

P	8.7403-01	8.3584-01	3.6136+00	3.2738+00	3.2832+00	3.2001+00	3.1932+00	2.8199+00	7.4876-01
CP	-2.3815-01	-2.4351-01	1.4608-01	9.8425-02	9.9748-02	8.8097-02	8.7120-02	3.4764-02	-2.5572-01
P/PO1	6.0798-02	5.8141-02	2.5136-01	2.2772-01	2.2838-01	2.2260-01	2.2212-01	1.9615-01	5.2084-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.117 P-INF =2.5744 RE = .4342 TO = 533.

P	9.2203-01	4.7011+00	2.2609+00	3.4035+00	5.1190+00	4.3604+00	2.7117+00	3.2122+00	3.4909+00
CP	-2.3154-01	2.9799-01	-4.3941-02	1.1617-01	3.5656-01	2.5026-01	1.9226-02	8.9365-02	1.2842-01
P/PO1	6.4076-02	3.2670-01	1.5712-01	2.3652-01	3.5575-01	3.0303-01	1.8845-01	2.2323-01	2.4260-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.110 P-INF =2.5647 RE = .4325 TO = 533.

P	3.5800+00	3.0533+00	8.4372-01	8.3239-01	8.6742-01	8.2512-01	8.1433-01	8.0635-01	7.7355-01
CP	1.4280-01	6.8722-02	-2.4207-01	-2.4366-01	-2.3873-01	-2.4468-01	-2.4620-01	-2.4732-01	-2.5194-01
P/PO1	2.4973-01	2.1299-01	5.8857-02	5.8066-02	6.0510-02	5.7559-02	5.6807-02	5.6250-02	5.3962-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	7.3758+00	4.6148+00	1.2736+01	4.3594-01	1.0699+01	5.3438-01	9.8953+00	1.3688+00
CP	6.7670-01	2.8836-01	1.4306+00	-2.9942-01	1.1442+00	-2.8558-01	1.0311+00	-1.6822-01
P/PO1	5.1452-01	3.2192-01	8.8844-01	3.0410-02	7.4636-01	3.7277-02	6.9028-01	9.5482-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.9039+00	1.8375+00	8.0133+00	2.1938+00	5.5500+00	2.6367+00	2.4914+00
CP	8.9164-01	-1.0229-01	7.6637-01	-5.2178-02	4.1990-01	1.0128-02	-1.0311-02
P/PO1	6.2112-01	1.2818-01	5.5899-01	1.5303-01	3.8716-01	1.8393-01	1.7380-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	206.	301244	1.99	1	5.00	-.03	.00	50.00	.0

VALVE POS 2 PO = 19.8 Q-INF = 7.120 P-INF =2.5684 RE = .4332 TO = 533.

P	5.2698+00	9.9276+00	1.2452+01	1.3859+01	1.4090+01	1.4228+01	1.4289+01	1.4120+01	1.3936+01
CP	3.7944-01	1.0336+00	1.3883+00	1.5858+00	1.6183+00	1.6377+00	1.6463+00	1.6226+00	1.5966+00
P/PO1	3.6709-01	6.9155-01	8.6742-01	9.6540-01	9.8151-01	9.9113-01	9.9538-01	9.8362-01	9.7076-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4330 TO = 533.

P	1.3440+01	1.0760+01	6.1798+00	1.6871+00	5.8653-01	5.7878-01	5.7731-01	5.4116-01	1.3244+01
CP	1.5279+00	1.1513+00	5.0766-01	-1.2366-01	-2.7832-01	-2.7941-01	-2.7962-01	-2.8470-01	1.5[illegible]04+00
P/PO1	9.3665-01	7.4989-01	4.3068-01	1.1758-01	4.0876-02	4.0337-02	4.0234-02	3.7715-02	9.2304-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4347 TO = 533.

P	1.3393+01	1.3227+01	1.2499+01	1.2275+01	9.5379+00	5.5020+00	9.7106+00	1.0348+01	1.0740+01
CP	1.5138+00	1.4904+00	1.3885+00	1.3572+00	9.7417-01	4.0931-01	9.9833-01	1.0875+00	1.1424+00
P/PO1	9.2967-01	9.1809-01	8.6756-01	8.5201-01	6.6205-01	3.8191-01	6.7404-01	7.1827-01	7.4549-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4356 TO = 533.

P	1.1411+01	1.0883+01	1.0197+01	1.0152+01	9.5999+00	7.2219+00	3.3769+00	7.3730-01	5.8844-01
CP	1.2330+00	1.1592+00	1.0633+00	1.0571+00	9.7999-01	6.4788-01	1.1088-01	-2.5777-01	-2.7856-01
P/PO1	7.9042-01	7.5384-01	7.0628-01	7.0318-01	6.6494-01	5.0023-01	2.3390-01	5.1070-02	4.0759-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4341 TO = 533.

P	5.7957-01	5.6702-01	1.1212+01	9.8204+00	8.7637+00	7.7763+00	6.8527+00	5.0190+00	1.7155+00
CP	-2.7951-01	-2.8127-01	1.2135+00	1.0255+00	8.6756-01	7.2916-01	5.9971-01	3.4551-01	-1.1750-01
P/PO1	4.0287-02	3.9414-02	7.8073-01	6.8749-01	6.0918-01	5.4054-01	4.7634-01	3.5027-01	1.2064-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4343 TO = 533.

P	4.7441+00	4.0347+00	4.1387+00	5.9586-01	6.0553-01	5.8779-01	5.6375-01	5.4342-01	4.9375-01
CP	3.0386-01	2.0448-01	2.1905-01	-2.7727-01	-2.7591-01	-2.7840-01	-2.8176-01	-2.8461-01	-2.9157-01
P/PO1	3.2961-01	2.8092-01	2.8755-01	4.1399-02	4.2071-02	4.0839-02	3.9169-02	3.7756-02	3.4305-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4341 TO = 533.

P	2.6201-01	5.1179-01	7.7299-01	7.8518-01	6.6887-01	6.2383-01	1.5233+00	1.2157+00	9.9173-01
CP	-3.2402-01	-2.8901-01	-2.5240-01	-2.5069-01	-2.6699-01	-2.7331-01	-1.4723-01	-1.9035-01	-2.2174-01
P/PO1	1.8213-02	3.5575-02	5.3731-02	5.4579-02	4.6494-02	4.3363-02	1.0589-01	8.4504-02	6.8936-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4340 TO = 533.

P	4.7450-01	4.7120-01	3.6522-01	5.5749-01	7.4856-01	6.1594-01	6.7221-01	6.7812-01	6.2975-01
CP	-2.9422-01	-2.9468-01	-3.0954-01	-2.8259-01	-2.5580-01	-2.7439-01	-2.6650-01	-2.6568-01	-2.7246-01
P/PO1	3.2991-02	3.2762-02	2.5393-02	3.8761-02	5.2045-02	4.2825-02	4.6737-02	4.7148-02	4.3785-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.093 P-INF =2.5586 RE = .4315 TO = 533.

P	6.1120-01	6.7862-01	3.4003-01	1.1753+00	1.3884+00	1.3096+00	1.1509+00	8.4580-01	6.9917-01
CP	-2.7457-01	-2.6506-01	-3.1280-01	-1.9504-01	-1.6499-01	-1.7610-01	-1.9848-01	-2.4149-01	-2.6217-01
P/PO1	4.2738-02	4.7452-02	2.3776-02	8.2181-02	9.7081-02	9.1573-02	8.0473-02	5.9142-02	4.8889-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4330 TO = 533.

P	7.9067-01	1.7497+00	1.3110+00	1.3840+00	4.9749+00	2.1246+00	8.5030-01	1.5436+00	2.0157+00
CP	-2.4963-01	-1.1488-01	-1.7651-01	-1.6626-01	3.3835-01	-6.2185-02	-2.4126-01	-1.4382-01	-7.7492-02
P/PO1	5.5104-02	1.2194-01	9.1370-02	9.6454-02	3.4671-01	1.4807-01	5.9259-02	1.0758-01	1.4048-01
S/R	1.8540+00	6.4000-02	1.1600-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4351 TO = 533.

P	2.0234+00	1.4938+00	7.0478-01	6.9324-01	7.2580-01	6.8634-01	6.5640-01	6.5346-01	6.2975-01
CP	-7.7815-02	-1.5187-01	-2.6219-01	-2.6381-01	-2.5926-01	-2.6477-01	-2.6896-01	-2.6937-01	-2.7269-01
P/PO1	1.4032-01	1.0359-01	4.8875-02	4.8074-02	5.0332-02	4.7596-02	4.5519-02	4.5316-02	4.3671-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.9555+00	9.4922-01	1.3959+01	1.8047-01	1.1583+01	2.1328-01	1.0460+01	3.0000-01
CP	4.7199-01	-2.2802-01	1.5911+00	-3.3551-01	1.2588+00	-3.3092-01	1.1019+00	-3.1879-01
P/PO1	4.1299-01	6.5826-02	9.6804-01	1.2515-02	8.0324-01	1.4790-02	7.2538-01	2.0804-02
S/R	7.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.8031+00	3.1406-01	8.1867+00	3.0000-01	5.7773+00	3.8203-01	2.1633+00
CP	8.7017-01	-3.1683-01	7.8398-01	-3.1879-01	4.4708-01	-3.0732-01	-5.8258-02
P/PO1	6.1047-01	2.1779-02	5.6773-01	2.0804-02	4.0064-01	2.6493-02	1.5002-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	207.	301244	1.99	1	10.00	-.03	.01	55.00	.0

VALVE POS 2 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4355 TO = 533.

P	4.1370+00	8.9564+00	8.0028+00	1.3459+01	1.3796+01	1.4105+01	1.4351+01	1.4274+01	1.4228+01
CP	2.1718-01	8.9042-01	7.5721-01	1.5194+00	1.5665+00	1.6097+00	1.6440+00	1.6333+00	1.6268+00
P/P01	2.8662-01	6.2052-01	5.5445-01	9.3246-01	9.5581-01	9.7723-01	9.9424-01	9.8896-01	9.8573-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4366 TO = 533.

P	1.3920+01	1.1592+01	7.3385+00	2.2313+00	3.4981-01	3.9862-01	4.5304-01	5.1856-01	1.3091+01
CP	1.5792+00	1.2549+00	6.6200-01	-4.9774-02	-3.1199-01	-3.0519-01	-2.9760-01	-2.8847-01	1.4637+00
P/P01	9.6212-01	8.0126-01	5.0723-01	1.5422-01	2.4178-02	2.7552-02	3.1313-02	3.5843-02	9.0482-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4344 TO = 533.

P	1.3254+01	1.3196+01	1.2576+01	1.2490+01	1.0250+01	6.3904+00	8.9730+00	9.7935+00	1.0279+01
CP	1.4956+00	1.4874+00	1.4006+00	1.3886+00	1.0749+00	5.3428-01	8.9600-01	1.0109+00	1.0789+00
P/P01	9.2065-01	9.1660-01	8.7354-01	8.6757-01	7.1200-01	4.4389-01	6.2328-01	6.8027-01	7.1400-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.7 Q-INF = 7.091 P-INF =2.5580 RE = .4314 TO = 533.

P	1.1009+01	1.0714+01	9.9340+00	9.9212+00	9.5534+00	7.3913+00	3.8394+00	9.6910-01	4.0018-01
CP	1.1918+00	1.1502+00	1.0402+00	1.0384+00	9.8652-01	6.8161-01	1.8071-01	-2.2408-01	-3.0431-01
P/P01	7.6997-01	7.4933-01	6.9480-01	6.9190-01	6.6818-01	5.1696-01	2.6853-01	6.7780-02	2.7989-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4351 TO = 533.

P	4.0333-01	3.9906-01	1.1819+01	9.8443+00	8.6089+00	7.5299+00	6.5915+00	4.9287+00	1.8595+00
CP	-3.0435-01	-3.0494-01	1.2918+00	1.0157+00	8.4301-01	6.9214-01	5.6092-01	3.2841-01	-1.0074-01
P/P01	2.7970-02	2.7673-02	8.1961-01	6.8267-01	5.9700-01	5.2218-01	4.5710-01	3.4179-01	1.2895-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4347 TO = 533.

P	3.8241+00	3.4107+00	3.7761+00	6.2633-01	4.5098-01	4.3803-01	4.0785-01	3.7508-01	2.8248-01
CP	1.7447-01	1.1662-01	1.6776-01	-2.7308-01	-2.9762-01	-2.9944-01	-3.0366-01	-3.0825-01	-3.2121-01
P/P01	2.6544-01	2.3675-01	2.6211-01	4.3475-02	3.1304-02	3.0405-02	2.8310-02	2.6036-02	1.9608-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4335 TO = 533.

P	1.9391-01	4.3851-01	6.2363-01	6.8388-01	5.3965-01	4.9658-01	1.0712+00	8.9019-01	7.3388-01
CP	-3.3353-01	-2.9919-01	-2.7321-01	-2.6475-01	-2.8500-01	-2.9104-01	-2.1039-01	-2.3580-01	-2.5774-01
P/P01	1.3498-02	3.0525-02	4.3411-02	4.7605-02	3.7565-02	3.4567-02	7.4567-02	6.1966-02	5.1085-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4351 TO = 533.

P	3.3485-01	2.2990-01	2.6883-01	6.0827-01	4.6589-01	5.4838-01	5.9539-01	5.7053-01	4.5880-01
CP	-3.1392-01	-3.2860-01	-3.2315-01	-2.7569-01	-2.9560-01	-2.8406-01	-2.7749-01	-2.8097-01	-2.9659-01
P/P01	2.3221-02	1.5943-02	1.8642-02	4.2182-02	3.2308-02	3.8029-02	4.1288-02	3.9565-02	3.1817-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4361 TO = 533.

P	4.0390-01	5.2444-01	2.8723-01	5.7555-01	7.7132-01	7.3933-01	4.2818-01	5.4794-01	6.5946-01
CP	-3.0440-01	-2.8730-01	-3.2067-01	-2.8045-01	-2.5314-01	-2.5761-01	-3.0101-01	-2.8431-01	-2.4875-01
P/PO1	2.7943-02	3.6421-02	1.9872-02	3.9919-02	5.3363-02	5.1150-02	2.9623-02	3.7909-02	4.5624-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4349 TO = 533.

P	7.3510-01	1.3232+00	9.0940-01	1.1927+00	4.0413+00	1.6040+00	5.7731-01	8.6553-01	1.6611+00
CP	-2.5791-01	-1.7563-01	-2.3352-01	-1.9390-01	2.0461-01	-1.3624-01	-2.7998-01	-2.3966-01	-1.2836-01
P/PO1	5.1001-02	9.1804-02	6.3094-02	8.2748-02	2.8039-01	1.1134-01	4.0054-02	6.0050-02	1.1525-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4346 TO = 533.

P	1.6369+00	1.2599+00	7.3762-01	7.3051-01	7.8396-01	7.4690-01	7.3096-01	7.3484-01	7.1652-01
CP	-1.3159-01	-1.8437-01	-2.5748-01	-2.5848-01	-2.5099-01	-2.5618-01	-2.5841-01	-2.5787-01	-2.6043-01
P/PO1	1.1365-01	8.7470-02	5.1212-02	5.0719-02	5.4430-02	5.1856-02	5.0750-02	5.1019-02	4.9748-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.4773+00	1.1602+00	1.1991+01	1.4297-01	1.1433+01	1.4766-01	1.0280+01	2.2500-01
CP	4.0604-01	-1.9833-01	1.3178+00	-3.4073-01	1.2398+00	-3.4007-01	1.0783+00	-3.2924-01
P/PO1	3.8029-01	8.0549-02	8.3250-01	9.9262-03	7.9377-01	1.0252-02	7.1371-01	1.5622-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.6602+00	2.4844-01	8.5734+00	2.1797-01	5.7914+00	3.8906-01	2.2289+00
CP	8.5161-01	-3.2596-01	8.3947-01	-3.3023-01	4.5001-01	-3.0628-01	-4.8714-02
P/PO1	6.0127-01	1.7249-02	5.9525-01	1.5133-02	4.0209-01	2.7012-02	1.5475-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	208.	301244	1.99	1	14.00	-.03	.01	59.00	.0

VALVE POS 2 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4343 TO = 533.

P	3.4110+00	8.1702+00	1.1263+01	1.2998+01	1.3455+01	1.3813+01	-1.1379-02	1.4244+01	1.4259+01
CP	1.1711-01	7.8383-01	1.2171+00	1.4601+00	1.5242+00	1.5743+00	-3.6234-01	1.6347+00	1.6367+00
P/PO1	2.3699-01	5.6765-01	7.8251-01	9.0304-01	9.3485-01	9.5967-01	-7.9061-04	9.8963-01	9.9066-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4351 TO = 533.

P	1.4137+01	1.2147+01	8.2655+00	2.8414+00	4.8138-01	5.5514-01	6.3493-01	7.1758-01	1.2753+01
CP	1.6159+00	1.3378+00	7.9499-01	3.6558-02	-2.9343-01	-2.8312-01	-2.7196-01	-2.6041-01	1.4224+00
P/PO1	9.8033-01	8.4239-01	5.7319-01	1.9704-01	3.3382-02	3.8497-02	4.4031-02	4.9762-02	8.8437-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4335 TO = 533.

P	1.3084+01	1.3149+01	1.2560+01	1.2644+01	1.0606+01	7.1911+00	8.3585+00	9.4855+00	1.0033+01
CP	1.4756+00	1.4849+00	1.4022+00	1.4139+00	1.1279+00	6.4858-01	8.1242-01	9.7061-01	1.0475+00
P/PO1	9.1075-01	9.1533-01	8.7433-01	8.8013-01	7.3830-01	5.0057-01	5.8183-01	6.6029-01	6.9841-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4353 TO = 533.

P	1.0761+01	1.0405+01	9.7486+00	9.8135+00	9.5070+00	7.5453+00	4.2892+00	1.1762+00	2.0812-01
CP	1.1432+00	1.0935+00	1.0017+00	1.0108+00	9.6795-01	6.9379-01	2.3872-01	-1.9635-01	-3.3165-01
P/PO1	7.4590-01	7.2125-01	6.7572-01	6.8022-01	6.5897-01	5.2300-01	2.9731-01	8.1530-02	1.4426-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4361 TO = 533.

P	3.1747-01	4.6895-01	1.1742+01	9.7827+00	8.5779+00	7.2681+00	6.3764+00	4.8061+00	2.0132+00
CP	-3.1646-01	-2.9532-01	1.2772+00	1.0039+00	8.3586-01	6.5314-01	5.2875-01	3.0969-01	-7.9904-02
P/PO1	2.1964-02	3.2444-02	8.1233-01	6.7681-01	5.9346-01	5.0284-01	4.4114-01	3.3250-01	1.3928-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4353 TO = 533.

P	3.1732+00	2.9200+00	3.5510+00	6.4213-01	3.0223-01	2.9386-01	2.9676-01	3.5136-01	1.8240-01
CP	8.2742-02	4.7361-02	1.3555-01	-2.7100-01	-3.1850-01	-3.1967-01	-3.1927-01	-3.1164-01	-3.3525-01
P/PO1	2.1995-01	2.0240-01	2.4614-01	4.4509-02	2.0949-02	2.0369-02	2.0570-02	2.4354-02	1.2643-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4342 TO = 533.

P	2.0479-01	4.1597-01	5.6262-01	5.9586-01	4.8053-01	3.5254-01	8.4733-01	7.3237-01	6.1211-01
CP	-3.3205-01	-3.0245-01	-2.8190-01	-2.7725-01	-2.9341-01	-3.1134-01	-2.4201-01	-2.5812-01	-2.7497-01
P/PO1	1.4231-02	2.8907-02	3.9099-02	4.1409-02	3.3394-02	2.4500-02	5.8885-02	5.0896-02	4.2539-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4340 TO = 533.

P	2.2039-01	2.2089-01	3.6280-01	3.1828-01	4.2876-01	5.2473-01	5.4342-01	4.9484-01	4.2837-01
CP	-3.2984-01	-3.2977-01	-3.0988-01	-3.1612-01	-3.0063-01	-2.8718-01	-2.8456-01	-2.9137-01	-3.0069-01
P/PO1	1.5323-02	1.5358-02	2.5224-02	2.2129-02	2.9811-02	3.6484-02	3.7783-02	3.4405-02	2.9783-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V [illegible] UNIT
40 - INCH CONTINUOUS CS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4359 TO = 533.

P	2.4262-01	5.8055-01	2.7658-01	4.2704-01	6.3846-01	3.8488-01	5.1856-01	6.6543-01	6.7933-01
CP	-3.2688-01	-2.7972-01	-3.2214-01	-3.0114-01	-2.7164-01	-3.0703-01	-2.8837-01	-2.6787-01	-2.6593-01
P/PO1	1.6793-02	4.0184-02	1.9144-02	2.9558-02	4.4192-02	2.6640-02	3.5893-02	4.6059-02	4.7021-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4334 TO = 533.

P	6.7673-01	1.0235+00	6.6091-01	1.1678+00	3.1955+00	1.3121+00	4.3879-01	5.9313-01	1.2992+00
CP	-2.6574-01	-2.1706-01	-2.6796-01	-1.9679-01	8.7869-02	-1.7653-01	-2.9914-01	-2.7747-01	-1.7835-01
P/PO1	4.7118-02	7.1761-02	4.6017-02	8.1312-02	2.2249-01	9.1358-02	3.0552-02	4.1297-02	9.0456-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0860-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4351 TO = 533.

P	1.4247+00	9.8449-01	7.4267-01	7.4294-01	7.5867-01	7.4185-01	7.4226-01	7.3730-01	6.9917-01
CP	-1.6153-01	-2.2308-01	-2.5690-01	-2.5686-01	-2.5466-01	-2.5701-01	-2.5695-01	-2.5765-01	-2.6298-01
P/PO1	9.8801-02	6.8271-02	5.1502-02	5.1521-02	5.2612-02	5.1445-02	5.1473-02	5.1130-02	4.8485-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.2547+00	1.0992+00	1.1991+01	1.1484-01	1.1433+01	1.3594-01	1.0085+01	1.4531-01
CP	3.7400-01	-2.0704-01	1.3159+00	-3.4468-01	1.2379+00	-3.4173-01	1.0494+00	-3.4042-01
P/PO1	3.6440-01	7.6228-02	8.3152-01	7.9641-03	7.9283-01	9.4269-03	6.9938-01	1.0077-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.6156+00	2.0156-01	8.7445+00	2.0625-01	5.7961+00	4.3828-01	2.2828+00
CP	8.4395-01	-3.3256-01	8.6197-01	-3.3190-01	4.4970-01	-2.9946-01	-4.1544-02
P/PO1	5.9747-01	1.3978-02	6.0641-01	1.4303-02	4.0194-01	3.0394-02	1.5831-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	209.	301244	1.99	1	14.66	19.88	-4.94	58.82	.0

VALVE POS 2 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4355 TO = 533.

P	3.3609+00	8.2165+00	1.1216+01	1.2890+01	1.3347+01	1.3736+01	1.4120+01	1.4182+01	-1.1081-02
CP	1.0876-01	7.8705-01	1.2061+00	1.4399+00	1.5037+00	1.5580+00	1.6118+00	1.6204+00	-3.6229-01
P/PO1	2.3285-01	5.6925-01	7.7709-01	8.9303-01	9.2470-01	9.5162-01	9.7828-01	9.8256-01	-7.6770-04
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4357 TO = 533.

P	1.4028+01	1.2040+01	8.0801+00	2.7364+00	4.7631-01	5.5289-01	7.2442-01	7.3237-01	1.3383+01
CP	1.5980+00	1.3203+00	7.6747-01	2.1335-02	-2.9423-01	-2.8354-01	-2.5959-01	-2.5848-01	1.5079+00
P/PO1	9.7144-01	8.3373-01	5.5954-01	1.8949-01	3.2984-02	3.8287-02	5.0166-02	5.0716-02	9.2674-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4334 TO = 533.

P	1.3719+01	1.3689+01	1.3194+01	1.3290+01	1.1210+01	7.6993+00	9.2035+00	1.0471+01	1.1001+01
CP	1.5652+00	1.5610+00	1.4915+00	1.5050+00	1.2130+00	7.2015-01	9.3133-01	1.1093+00	1.1837+00
P/PO1	9.5517-01	9.5311-01	9.1864-01	9.2532-01	7.8052-01	5.3607-01	6.4081-01	7.2906-01	7.6597-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4372 TO = 533.

P	1.1845+01	1.1515+01	1.0815+01	1.0890+01	1.0513+01	8.5462+00	4.9291+00	1.4031+00	2.3805-01
CP	1.2877+00	1.2419+00	1.1443+00	1.1548+00	1.1024+00	8.2863-01	3.2525-01	-1.6547-01	-3.2761-01
P/PO1	8.1756-01	7.9481-01	7.4644-01	7.5166-01	7.2565-01	5.8987-01	3.4022-01	9.6844-02	1.6431-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4337 TO = 533.

P	3.6492-01	5.0840-01	1.1819+01	1.0490+01	9.2437+00	8.2998+00	7.3290+00	5.6030+00	2.5243+00
CP	-3.0955-01	-2.8942-01	1.2973+00	1.1109+00	9.3606-01	8.0364-01	6.6744-01	4.2530-01	-6.6107-03
P/PO1	2.5390-02	3.5373-02	8.2232-01	7.2988-01	6.4315-01	5.7748-01	5.0993-01	3.8984-01	1.7563-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4341 TO = 533.

P	3.6551+00	3.6712+00	4.3638+00	7.5039-01	3.4876-01	3.3669-01	3.3441-01	3.3780-01	1.7258-01
CP	1.5155-01	1.5381-01	2.5087-01	-2.5557-01	-3.1186-01	-3.1355-01	-3.1387-01	-3.1340-01	-1.3655-01
P/PO1	2.5407-01	2.5519-01	3.0333-01	5.2161-02	2.4243-02	2.3403-02	2.3245-02	2.3481-02	1.1996-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4344 TO = 533.

P	2.6296-01	5.2080-01	7.1236-01	7.5785-01	5.9666-01	3.7518-01	1.0198+00	8.5073-01	6.4480-01
CP	-3.2391-01	-2.8780-01	-2.6097-01	-2.5460-01	-2.7717-01	-3.0819-01	-2.1790-01	-2.4159-01	-2.7043-01
P/PO1	1.8266-02	3.6176-02	4.9482-02	5.2641-02	4.1445-02	2.6061-02	7.0840-02	5.9094-02	4.4789-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4353 TO = 533.

P	2.5728-01	3.5219-01	4.5756-01	3.5359-01	3.2419-01	4.7631-01	5.3438-01	5.0162-01	4.2724-01
CP	-3.2478-01	-3.1152-01	-2.9679-01	-3.1132-01	-3.1543-01	-2.9417-01	-2.8606-01	-2.9064-01	-3.0103-01
P/PO1	1.7833-02	2.4412-02	3.1715-02	2.4509-02	2.2471-02	3.3016-02	3.7040-02	3.4769-02	2.9614-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.113 P-INF =2.5659 RE = .4328 TO = 533.

P	3.9586-01	4.1523-01	3.2162-01	6.3197-01	5.9666-01	2.9478-01	5.6150-01	6.3041-01	6.4710-01
CP	-3.0509-01	-3.0236-01	-3.1552-01	-2.7189-01	-2.7686-01	-3.1930-01	-2.8180-01	-2.7211-01	-2.6977-01
P/PO1	2.7601-02	2.8952-02	2.2425-02	4.4065-02	4.1602-02	2.0554-02	3.9150-02	4.3956-02	4.5120-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4342 TO = 533.

P	6.5414-01	1.0600+00	7.4773-01	6.2746-01	8.2443-01	1.1506+00	5.9426-01	4.7789-01	1.2600+00
CP	-2.6908-01	-2.1221-01	-2.5597-01	-2.7282-01	-2.4522-01	-1.9951-01	-2.7747-01	-2.9378-01	-1.9259-01
P/PO1	4.5459-02	7.3667-02	5.1963-02	4.3605-02	5.7293-02	7.9962-02	4.1298-02	3.3211-02	8.3393-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4363 TO = 533.

P	1.2176+00	9.3088-01	7.4267-01	7.3300-01	7.4097-01	7.1914-01	7.0611-01	6.8305-01	6.7933-01
CP	-1.9097-01	-2.3095-01	-2.5719-01	-2.5854-01	-2.5743-01	-2.6047-01	-2.6229-01	-2.6550-01	-2.6602-01
P/PO1	8.4198-02	6.4372-02	5.1357-02	5.0688-02	5.1239-02	4.9730-02	4.8828-02	4.7234-02	4.6977-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.7375+00	6.5859-01	1.4093+01	1.4063-01	1.2413+01	1.4766-01	1.0671+01	2.2031-01	
CP	4.3925-01	-2.6891-01	1.6043+00	-3.4113-01	1.3700+00	-3.4015-01	1.1271+00	-3.3002-01	
P/PO1	3.9676-01	4.5543-02	9.7455-01	9.7244-03	8.5834-01	1.0211-02	7.3792-01	1.5235-02	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	9.7359+00	2.2266-01	9.5695+00	2.2031-01	6.6258+00	3.9141-01	2.5289+00
CP	9.9676-01	-3.2970-01	9.7355-01	-3.3002-01	5.6310-01	-3.0617-01	-8.1317-03
P/PO1	6.7325-01	1.5397-02	6.6175-01	1.5235-02	4.5818-01	2.7066-02	1.7488-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
U. S. AIR FORCE SYSTEMS COMMAND
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	210.	301244	1.99	1	13.40	42.37	-8.98	54.98	.0

VALVE POS 2 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4353 TO = 533.

P	3.9868+00	8.7868+00	1.1494+01	1.2998+01	1.3362+01	1.3720+01	1.3951+01	1.3967+01	1.3951+01
CP	1.9646-01	8.6731-01	1.2457+00	1.4558+00	1.5068+00	1.5568+00	1.5891+00	1.5912+00	1.5891+00
P/PO1	2.7634-01	6.0906-01	7.9673-01	9.0092-01	9.2621-01	9.5100-01	9.6707-01	9.6808-01	9.6702-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4346 TO = 533.

P	1.3610+01	1.1330+01	7.1686+00	2.1617+00	3.4772-01	4.5379-01	4.7563-01	5.3212-01	1.3921+01
CP	1.5446+00	1.2254+00	6.4280-01	-5.8119-02	-3.1206-01	-2.9721-01	-2.9416-01	-2.8625-01	1.5880+00
P/PO1	9.4494-01	7.8666-01	4.9771-01	1.5009-01	2.4142-02	3.1506-02	3.3023-02	3.6945-02	9.6649-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4342 TO = 533.

P	1.4137+01	1.4044+01	1.3472+01	1.3474+01	1.1086+01	7.2989+00	1.0264+01	1.1457+01	1.1985+01
CP	1.6201+00	1.6071+00	1.5270+00	1.5273+00	1.1927+00	6.6201-01	1.0774+00	1.2446+00	1.3186+00
P/PO1	9.8242-01	9.7595-01	9.3623-01	9.3640-01	7.7044-01	5.0724-01	7.1327-01	7.9617-01	8.3286-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4335 TO = 533.

P	1.2697+01	1.2302+01	1.1633+01	1.1675+01	1.1272+01	9.0390+00	4.9988+00	1.3193+00	4.3288-01
CP	1.4213+00	1.3659+00	1.2721+00	1.2779+00	1.2214+00	9.0793-01	3.4087-01	-1.7558-01	-2.9998-01
P/PO1	8.8381-01	8.5631-01	8.0980-01	8.1767-01	7.8465-01	6.2920-01	3.4797-01	9.1833-02	3.0132-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4334 TO = 533.

P	4.4739-01	4.3738-01	1.2020+01	1.1136+01	1.0018+01	9.1314+00	8.1741+00	6.3288+00	2.7582+00
CP	-2.9793-01	-2.9934-01	1.3267+00	1.2027+00	1.0457+00	9.2120-01	7.8681-01	5.2776-01	2.6486-02
P/PO1	3.1150-02	3.0453-02	8.3689-01	7.7538-01	6.9751-01	6.3578-01	5.6913-01	4.4065-01	1.9205-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4337 TO = 533.

P	4.6502+00	4.7496+00	5.2640+00	8.1996-01	4.9785-01	4.8870-01	4.4965-01	3.9542-01	2.7126-01
CP	2.9164-01	3.0557-01	3.7775-01	-2.4571-01	-2.9090-01	-2.9218-01	-2.9766-01	-3.0527-01	-3.2769-01
P/PO1	3.2355-01	3.3046-01	3.6626-01	5.7051-02	3.4639-02	3.4002-02	3.1285-02	2.7512-02	1.8873-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4338 TO = 533.

P	3.2876-01	6.7637-01	9.8013-01	1.0958+00	8.8006-01	5.2811-01	1.4411+00	1.1023+00	7.7851-01
CP	-3.1463-01	-2.6588-01	-2.2327-01	-2.0705-01	-2.3731-01	-2.8667-01	-1.5861-01	-2.0614-01	-2.5155-01
P/PO1	2.2869-02	4.7048-02	6.8178-02	7.6222-02	6.1217-02	3.6736-02	1.0025-01	7.6673-02	5.4153-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4355 TO = 533.

P	3.6984-01	7.7331-01	6.2815-01	5.6426-01	5.4219-01	5.2136-01	5.7053-01	5.4568-01	4.6782-01
CP	-3.0908-01	-2.5271-01	-2.7299-01	-2.8192-01	-2.8500-01	-2.8791-01	-2.8104-01	-2.8451-01	-2.9539-01
P/PO1	2.5623-02	5.3577-02	4.3519-02	3.9093-02	3.7564-02	3.6121-02	3.9528-02	3.7806-02	3.2412-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN CENTER, TENNESSEE
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.108 P-INF =2.5641 RE = .4324 TO = 533.

P	4.3558-01	4.9939-01	3.3180-01	9.1190-01	8.8765-01	4.8983-01	4.9597-01	7.5456-01	7.6859-01
CP	-2.9946-01	-2.9048-01	-3.1406-01	-2.3245-01	-2.3586-01	-2.9183-01	-2.9096-01	-2.5458-01	-2.5261-01
P/PO1	3.0393-02	3.4845-02	2.3151-02	6.3628-02	6.1936-02	3.4178-02	3.4606-02	5.2650-02	5.3628-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4330 TO = 533.

P	8.4624-01	1.3622+00	9.5992-01	6.9821-01	3.2837-01	9.6643-01	9.1766-01	1.1244+00	1.0835+00
CP	-2.4182-01	-1.6932-01	-2.2585-01	-2.6263-01	-3.1460-01	-2.2494-01	-2.3151-01	-2.0273-01	-2.0849-01
P/PO1	5.8977-02	9.4935-02	6.6889-02	4.8660-02	2.2885-02	6.7352-02	6.4093-02	7.8365-02	7.5509-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4329 TO = 533.

P	1.3212+00	1.1429+00	6.6317-01	6.8501-01	6.9167-01	6.7675-01	6.6995-01	6.6826-01	6.4462-01
CP	-1.7505-01	-2.0010-01	-2.6753-01	-2.6446-01	-2.6352-01	-2.6562-01	-2.6658-01	-2.6681-01	-2.7014-01
P/PO1	9.2096-02	7.9669-02	4.6229-02	4.7752-02	4.8216-02	4.7175-02	4.6702-02	4.6583-02	4.4936-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	6.3234+00	5.3203-01	1.4252+01	2.6016-01	1.2863+01	2.6484-01	1.1480+01	3.7266-01
CP	5.2805-01	-2.8596-01	1.6425+00	-3.2417-01	1.4472+00	-3.2352-01	1.2528+00	-3.0836-01
P/PO1	4.4080-01	3.7087-02	9.9351-01	1.8135-02	8.9663-01	1.8462-02	8.0024-01	2.5977-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0336+01	3.3047-01	1.0071+01	3.3281-01	7.1180+00	3.8203-01	2.7234+00
CP	1.0920+00	-3.1429-01	1.0548+00	-3.1396-01	6.3973-01	-3.0704-01	2.2053-02
P/PO1	7.2051-01	2.3037-02	7.0204-01	2.3200-02	4.9619-01	2.6631-02	1.8985-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	211.	301244	1.99	1	11.18	26.73	-5.00	55.01	.0

VALVE POS 2 PO = 19.7 Q-INF = 7.094 P-INF =2.5592 RE = .4316 TO = 533.

P	4.0557+00	8.8793+00	1.1680+01	1.3213+01	1.3595+01	1.3890+01	1.4120+01	1.4090+01	1.4013+01
CP	2.1093-01	8.9086-01	1.2856+00	1.5017+00	1.5555+00	1.5971+00	1.6296+00	1.6253+00	1.6144+00
P/PO1	2.8352-01	6.2073-01	8.1651-01	9.2368-01	9.5037-01	9.7098-01	9.8712-01	9.8498-01	9.7960-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4336 TO = 533.

P	1.3719+01	1.1407+01	7.2458+00	2.1891+00	3.4964-01	4.1889-01	4.5982-01	5.0727-01	1.3567+01
CP	1.5643+00	1.2400+00	6.5601-01	-5.3567-02	-3.1168-01	-3.0196-01	-2.9622-01	-2.8956-01	1.5430+00
P/PO1	9.5472-01	7.9388-01	5.0426-01	1.5234-01	2.4332-02	2.9152-02	3.2000-02	3.5302-02	9.4418-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4348 TO = 533.

P	1.3842+01	1.3735+01	1.3117+01	1.3090+01	1.0684+01	6.8832+00	9.7720+00	1.0825+01	1.1339+01
CP	1.5762+00	1.5612+00	1.4746+00	1.4709+00	1.1342+00	6.0239-01	1.0066+00	1.1540+00	1.2259+00
P/PO1	9.6061-01	9.5317-01	9.1025-01	9.0838-01	7.4141-01	4.7767-01	6.7814-01	7.5123-01	7.8690-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4346 TO = 533.

P	1.2077+01	1.1654+01	1.0938+01	1.0967+01	1.0498+01	8.3306+00	4.4856+00	1.1565+00	4.2611-01
CP	1.3300+00	1.2707+00	1.1705+00	1.1746+00	1.1089+00	8.0547-01	2.6721-01	-1.9884-01	-3.0109-01
P/PO1	8.3851-01	8.0913-01	7.5943-01	7.6144-01	7.2886-01	5.7839-01	3.1143-01	8.0295-02	2.9585-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.7 Q-INF = 7.099 P-INF =2.5611 RE = .4319 TO = 533.

P	4.3270-01	4.2273-01	1.2159+01	1.0552+01	9.5224+00	8.5308+00	7.4366+00	5.6398+00	2.3026+00
CP	-2.9979-01	-3.0120-01	1.3519+00	1.1255+00	9.8055-01	8.4088-01	6.8674-01	4.3365-01	-3.6400-02
P/PO1	3.0228-02	2.9531-02	8.4939-01	7.3713-01	6.6522-01	5.9594-01	5.1950-01	3.9398-01	1.6086-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.7 Q-INF = 7.106 P-INF =2.5635 RE = .4323 TO = 533.

P	4.3686+00	4.1619+00	4.6389+00	7.1560-01	4.8265-01	4.7181-01	4.4061-01	3.9994-01	2.7640-01
CP	2.5402-01	2.2494-01	2.9205-01	-2.6004-01	-2.9282-01	-2.9435-01	-2.9874-01	-3.0446-01	-3.2184-01
P/PO1	3.0489-01	2.9047-01	3.2175-01	4.9943-02	3.3685-02	3.2928-02	3.0751-02	2.7912-02	1.9291-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4329 TO = 533.

P	2.5586-01	5.4786-01	8.1593-01	8.7214-01	6.8660-01	5.1910-01	1.2767+00	1.0283+00	7.6363-01
CP	-3.2478-01	-2.8374-01	-2.4606-01	-2.3816-01	-2.6424-01	-2.8778-01	-1.8129-01	-2.1621-01	-2.5341-01
P/PO1	1.7836-02	3.8191-02	5.6878-02	6.0796-02	4.7862-02	3.6186-02	8.8999-02	7.1680-02	5.3232-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4341 TO = 533.

P	3.6464-01	3.2185-01	5.1066-01	5.6765-01	4.4811-01	5.1010-01	5.6714-01	5.4568-01	4.6444-01
CP	-3.0963-01	-3.1563-01	-2.8917-01	-2.8118-01	-2.9794-01	-2.8925-01	-2.8125-01	-2.8426-01	-2.9565-01
P/PO1	2.5347-02	2.2372-02	3.5496-02	3.9458-02	3.1149-02	3.5457-02	3.9423-02	3.7931-02	3.2284-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.088 P-INF =2.5568 RE = .4312 TO = 533.

P	4.3038-01	5.3771-01	3.8750-01	7.8766-01	8.6742-01	4.5830-01	4.2233-01	6.8059-01	7.0413-01
CP	-3.0002-01	-2.8487-01	-3.0607-01	-2.4961-01	-2.3836-01	-2.9608-01	-3.0115-01	-2.6472-01	-2.6140-01
P/PO1	3.0116-02	3.7626-02	2.7115-02	5.5116-02	6.0697-02	3.2069-02	2.9552-02	4.7624-02	4.9271-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4344 TO = 533.

P	7.7551-01	1.3476+00	9.7508-01	8.8208-01	1.0824+00	1.4383+00	7.6824-01	9.7156-01	1.3909+00
CP	-2.5212-01	-1.7200-01	-2.2417-01	-2.3720-01	-2.0915-01	-1.5930-01	-2.5314-01	-2.2467-01	-1.6594-01
P/PO1	5.3869-02	9.3605-02	6.7731-02	6.1271-02	7.5184-02	9.9906-02	5.3364-02	6.7487-02	9.6615-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.110 P-INF =2.5647 RE = .4325 TO = 533.

P	1.4601+00	1.2087+00	6.7447-01	6.9630-01	7.1315-01	7.0400-01	6.9368-01	7.0031-01	6.8677-01
CP	-1.5537-01	-1.9073-01	-2.6587-01	-2.6280-01	-2.6043-01	-2.6172-01	-2.6317-01	-2.6224-01	-2.6414-01
P/PO1	1.0185-01	8.4316-02	4.7050-02	4.8573-02	4.9748-02	4.9110-02	4.8390-02	4.8853-02	4.7908-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.9906+00	9.0000-01	1.3816+01	1.8516-01	1.2541+01	1.8984-01	1.0952+01	2.2031-01	
CP	4.8187-01	-2.3415-01	1.5826+00	-3.3470-01	1.4033+00	-3.3404-01	1.1798+00	-3.2975-01	
P/PO1	4.1790-01	6.2783-02	9.6381-01	1.2916-02	8.7487-01	1.3243-02	7.6402-01	1.5369-02	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	9.4570+00	2.8594-01	9.4219+00	2.7188-01	6.5297+00	3.9141-01	2.4891+00
CP	9.6944-01	-3.2052-01	9.6450-01	-3.2250-01	5.5770-01	-3.0569-01	-1.0641-02
P/PO1	6.5971-01	1.9947-02	6.5726-01	1.8966-02	4.5550-01	2.7304-02	1.7363-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	212.	301244	1.99	1	14.64	-19.93	4.94	58.80	.0

VALVE POS 2 PO = 19.7 Q-INF = 7.096 P-INF =2.5598 RE = .4317 TO = 533.

P	3.4235+00	8.0315+00	1.1062+01	1.2782+01	1.3177+01	1.3597+01	1.3967+01	1.4059+01	1.4074+01
CP	1.2171-01	7.7108-01	1.1981+00	1.4406+00	1.4961+00	1.5554+00	1.6075+00	1.6205+00	1.6226+00
P/PO1	2.3927-01	5.6133-01	7.7312-01	8.9336-01	9.2093-01	9.5031-01	9.7614-01	9.8259-01	9.8366-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.7 Q-INF = 7.076 P-INF =2.5525 RE = .4305 TO = 533.

P	1.3920+01	1.1978+01	8.0028+00	2.7240+00	4.7505-01	5.5401-01	7.1415-01	7.2744-01	1.1816+01
CP	1.6065+00	1.3320+00	7.7027-01	2.4234-02	-2.9360-01	-2.8244-01	-2.5981-01	-2.5794-01	1.3091+00
P/PO1	9.7565-01	8.3954-01	5.6093-01	1.9093-01	3.3297-02	3.8831-02	5.0055-02	5.0987-02	8.2816-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4333 TO = 533.

P	1.2294+01	1.2348+01	1.1834+01	1.1859+01	9.8321+00	6.4878+00	7.2829+00	8.2690+00	8.7579+00
CP	1.3656+00	1.3732+00	1.3011+00	1.3046+00	1.0199+00	5.4959-01	6.6194-01	8.0042-01	8.6907-01
P/PO1	8.5619-01	8.5994-01	8.2418-01	8.2591-01	6.8474-01	4.5148-01	5.0720-01	5.7588-01	6.0993-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.111 P-INF =2.5653 RE = .4327 TO = 533.

P	9.3986+00	9.2647+00	8.6208+00	8.8445+00	8.5625+00	6.4520+00	3.5480+00	9.4937-01	2.9084-01
CP	9.6091-01	9.4208-01	8.5154-01	8.8299-01	8.4333-01	5.4655-01	1.3818-01	-2.2724-01	-3.1984-01
P/PO1	6.5547-01	6.4614-01	6.0123-01	6.1683-01	5.9716-01	4.4998-01	2.4744-01	6.6211-02	2.0284-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.7 Q-INF = 7.083 P-INF =2.5550 RE = .4309 TO = 533.

P	3.1859-01	5.8055-01	1.0985+01	8.8291+00	7.5870+00	6.2826+00	5.4993+00	4.0091+00	1.5223+00
CP	-3.1576-01	-2.7877-01	1.1902+00	8.8585-01	7.1048-01	5.2631-01	4.1572-01	2.0531-01	-1.4580-01
P/PO1	2.2309-02	4.0653-02	7.6919-01	6.1825-01	5.3127-01	4.3994-01	3.8509-01	2.8074-01	1.0660-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.7 Q-INF = 7.084 P-INF =2.5556 RE = .4310 TO = 533.

P	2.8102+00	2.2657+00	2.3632+00	5.5749-01	3.4406-01	3.2768-01	3.2537-01	3.2537-01	1.8287-01
CP	3.5936-02	-4.0914-02	-2.7158-02	-2.8205-01	-3.1217-01	-3.1449-01	-3.1481-01	-3.1481-01	-3.3493-01
P/PO1	1.9673-01	1.5862-01	1.6544-01	3.9029-02	2.4087-02	2.2940-02	2.2779-02	2.2779-02	1.2802-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.7 Q-INF = 7.083 P-INF =2.5550 RE = .4309 TO = 533.

P	1.9677-01	3.2280-01	4.5643-01	4.9316-01	4.1151-01	4.2323-01	6.6769-01	6.6204-01	6.0873-01
CP	-3.3303-01	-3.1516-01	-2.9630-01	-2.9111-01	-3.0264-01	-3.0098-01	-2.6647-01	-2.6727-01	-2.7479-01
P/PO1	1.3744-02	2.2604-02	3.1961-02	3.4534-02	2.8816-02	2.9636-02	4.6755-02	4.6359-02	4.2626-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4339 TO = 533.

P	2.3032-01	2.0098-01	2.7609-01	3.2676-01	4.8314-01	5.5514-01	5.6262-01	5.2195-01	4.2386-01
CP	-3.2844-01	-3.3256-01	-3.2203-01	-3.1492-01	-2.9299-01	-2.8290-01	-2.8185-01	-2.8755-01	-3.0131-01
P/PO1	1.6018-02	1.3977-02	1.9201-02	2.2724-02	3.3600-02	3.8606-02	3.9127-02	3.6299-02	2.9477-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.118 P-INF =2.5678 RE = .4331 TO = 533.

P	4.0248-01	6.1099-01	2.1022-01	3.9785-01	5.8653-01	4.7406-01	5.1630-01	7.3977-01	7.5867-01
CP	-3.0420-01	-2.7490-01	-3.3121-01	-3.0485-01	-2.7834-01	-2.9414-01	-2.8821-01	-2.5681-01	-2.5416-01
P/PO1	2.8043-02	4.2571-02	1.4647-02	2.7721-02	4.0867-02	3.3031-02	3.5974-02	5.1544-02	5.2861-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4333 TO = 533.

P	8.3614-01	1.0552+00	6.6543-01	6.6357-01	7.4856-01	1.1506+00	5.9426-01	4.1463-01	1.2124+00
CP	-2.4333-01	-2.1257-01	-2.6730-01	-2.6756-01	-2.5563-01	-1.9917-01	-2.7729-01	-3.0252-01	-1.9049-01
P/PO1	5.8231-02	7.3484-02	4.6343-02	4.6213-02	5.2132-02	8.0133-02	4.1386-02	2.8876-02	8.4434-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4336 TO = 533.

P	1.1544+00	9.0895-01	7.5531-01	7.3300-01	7.4097-01	7.1157-01	6.9142-01	6.9045-01	6.7438-01
CP	-1.9875-01	-2.3320-01	-2.5475-01	-2.5789-01	-2.5677-01	-2.6089-01	-2.6372-01	-2.6386-01	-2.6611-01
P/PO1	8.0341-02	6.3257-02	5.2564-02	5.1012-02	5.1567-02	4.9521-02	4.8118-02	4.8051-02	4.6932-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.6031+00	1.5609+00	1.2342+01	1.3359-01	1.0008+01	1.2422-01	9.3023+00	1.5234-01
CP	2.8518-01	-1.4171-01	1.3711+00	-3.4700-01	1.0436+00	-3.4331-01	9.4459-01	-3.3936-01
P/PO1	3.2035-01	1.0863-01	8.5893-01	9.2972-03	6.9648-01	8.6448-03	6.4738-01	1.0602-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.9617+00	1.8984-01	7.5258+00	2.0156-01	5.0859+00	4.4063-01	2.0273+00
CP	7.5647-01	-3.3410-01	6.9530-01	-3.3246-01	3.5293-01	-2.9891-01	-7.6259-02
P/PO1	5.5408-01	1.3212-02	5.2374-01	1.4027-02	3.5395-01	3.0665-02	1.4109-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	213.	301744	1.99	1	13.41	-42.46	9.01	54.98	.0

VALVE POS 2 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4351 TO = 533.

P	4.0494+00	8.5864+00	1.1324+01	1.2921+01	1.3269+01	1.3597+01	1.3890+01	1.3920+01	1.3905+01
CP	2.0547-01	8.3987-01	1.2227+00	1.4459+00	1.4947+00	1.5405+00	1.5814+00	1.5857+00	1.5836+00
P/PO1	2.8081-01	5.9545-01	7.8532-01	8.9601-01	9.2020-01	9.4291-01	9.6322-01	9.6533-01	9.6428-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4357 TO = 533.

P	1.3579+01	1.1361+01	7.1531+00	2.1891+00	3.4667-01	4.5379-01	4.7111-01	5.3325-01	1.1308+01
CP	1.5353+00	1.2256+00	6.3804-01	-5.5087-02	-3.1234-01	-2.9738-01	-2.9496-01	-2.8628-01	1.2182+00
P/PO1	9.4035-01	7.8676-01	4.9535-01	1.5159-01	2.4007-02	3.1425-02	3.2624-02	3.6927-02	7.8310-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4353 TO = 533.

P	1.1721+01	1.1808+01	1.1185+01	1.1121+01	8.8102+00	5.4209+00	6.9142+00	7.4991+00	7.8053+00
CP	1.2774+00	1.2896+00	1.2025+00	1.1935+00	8.7057-01	3.9688-01	6.0558-01	6.8734-01	7.3013-01
P/PO1	8.1244-01	8.1848-01	7.7531-01	7.7084-01	6.1067-01	3.7575-01	4.7925-01	5.1980-01	5.4102-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4339 TO = 533.

P	8.4850+00	8.6481+00	8.0646+00	8.0446+00	7.8192+00	5.7577+00	2.7180+00	6.5100-01	4.3062-01
CP	8.2906-01	8.5192-01	7.7011-01	7.6730-01	7.3570-01	4.4663-01	2.0384-02	-2.6946-01	-3.0036-01
P/PO1	5.9008-01	6.0142-01	5.6085-01	5.5945-01	5.4378-01	4.0042-01	1.8902-01	4.5273-02	2.9947-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4345 TO = 533.

P	4.2705-01	4.1484-01	1.0243+01	8.3369+00	7.1689+00	5.9284+00	5.0939+00	3.6658+00	1.2198+00
CP	-3.0094-01	-3.0265-01	1.0735+00	8.0662-01	6.4308-01	4.6939-01	3.5252-01	1.5257-01	-1.8994-01
P/PO1	2.9657-02	2.8809-02	7.1133-01	5.7896-01	4.9785-01	4.1170-01	3.5375-01	2.5458-01	8.4711-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4341 TO = 533.

P	3.0543+00	2.1664+00	1.9325+00	4.8752-01	4.7758-01	4.6393-01	4.3722-01	4.2366-01	1.7866-01
CP	6.7334-02	-5.7111-02	-8.9892-02	-2.9241-01	-2.9380-01	-2.9572-01	-2.9946-01	-3.0136-01	-3.3570-01
P/PO1	2.1230-01	1.5059-01	1.3433-01	3.3888-02	3.3197-02	3.2248-02	3.0392-02	2.9449-02	1.2419-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4335 TO = 533.

P	1.9154-01	2.9815-01	3.6522-01	4.3458-01	4.7321-01	5.0672-01	8.4773-01	9.7649-01	7.3636-01
CP	-3.3386-01	-3.1889-01	-3.0948-01	-2.9975-01	-2.9432-01	-2.8962-01	-2.4176-01	-2.2368-01	-2.5739-01
P/PO1	1.3333-02	2.0754-02	2.5423-02	3.0251-02	3.2940-02	3.5273-02	5.9010-02	6.7974-02	5.1258-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4353 TO = 533.

P	2.8660-01	2.7967-01	2.2766-01	3.3570-01	5.4472-01	5.7203-01	6.0556-01	5.6714-01	4.8811-01
CP	-3.2069-01	-3.2166-01	-3.2892-01	-3.1382-01	-2.8461-01	-2.8079-01	-2.7611-01	-2.8148-01	-2.9252-01
P/PO1	1.9866-02	1.9385-02	1.5780-02	2.3269-02	3.7757-02	3.9650-02	4.1974-02	3.9311-02	3.3833-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4348 TO = 533.

P	4.5756-01	5.7604-01	4.2625-01	4.2233-01	7.2081-01	7.1391-01	8.4773-01	7.1018-01	6.5702-01
CP	-2.9672-01	-2.8014-01	-3.0110-01	-3.0165-01	-2.5986-01	-2.6085-01	-2.4212-01	-2.6137-01	-2.6881-01
P/PO1	3.1753-02	3.9975-02	2.9580-02	2.9308-02	5.0021-02	4.9543-02	5.8829-02	4.9284-02	4.5595-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4357 TO = 533.

P	6.6995-01	1.3500+00	9.8013-01	7.4045-01	3.3935-01	9.4624-01	9.6333-01	1.0653+00	1.1058+00
CP	-2.6720-01	-1.7724-01	-2.2389-01	-2.5735-01	-3.1336-01	-2.2862-01	-2.2623-01	-2.1200-01	-2.0634-01
P/PO1	4.6394-02	9.3488-02	6.7873-02	5.1276-02	2.3500-02	6.5526-02	6.6710-02	7.3769-02	7.6574-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4356 TO = 533.

P	1.3515+00	1.1575+00	6.4397-01	6.8276-01	6.8280-01	6.7675-01	6.7334-01	6.7319-01	6.4710-01
CP	-1.7199-01	-1.9908-01	-2.7080-01	-2.6539-01	-2.6538-01	-2.6623-01	-2.6670-01	-2.6672-01	-2.7037-01
P/PO1	9.3610-02	8.0175-02	4.4605-02	4.7291-02	4.7295-02	4.6875-02	4.6639-02	4.6629-02	4.4822-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.9586+00	9.8203-01	1.1991+01	1.0547-01	9.2602+00	9.8438-02	8.4750+00	1.5234-01
CP	1.9212-01	-2.2359-01	1.3139+00	-3.4601-01	9.3255-01	-3.4699-01	8.2289-01	-3.3946-01
P/PO1	2.7419-01	6.8021-02	8.3054-01	7.3053-03	6.4141-01	6.8183-03	5.8703-01	1.0552-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.7016+00	1.7813-01	6.7055+00	1.7813-01	4.6008+00	3.8438-01	1.8141+00
CP	7.1487-01	-3.3586-01	5.7576-01	-3.3586-01	2.8181-01	-3.0706-01	-1.0739-01
P/PO1	5.3345-01	1.2338-02	4.6446-01	1.2338-02	3.1868-01	2.6624-02	1.2565-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	214.	301244	1.99	1	11.17	-26.81	5.01	55.00	.0

VALVE POS 2 PO = 19.9 Q-INF = 7.174 P-INF =2.5878 RE = .4364 TO = 533.

P	4.1683+00	8.9718+00	1.1695+01	1.3336+01	1.3703+01	1.4013+01	1.4243+01	1.4244+01	1.4182+01
CP	2.2032-01	8.8992-01	1.2696+00	1.4983+00	1.5494+00	1.5926+00	1.6247+00	1.6248+00	1.6162+00
P/POI	2.8818-01	6.2027-01	8.0856-01	9.2198-01	9.4736-01	9.6877-01	9.8470-01	9.8474-01	9.8046-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4349 TO = 533.

P	1.3749+01	1.1500+01	7.2767+00	2.2313+00	3.5217-01	4.2790-01	4.6433-01	5.0501-01	1.2123+01
CP	1.5627+00	1.2480+00	6.5721-01	-4.8600-02	-3.1148-01	-3.0188-01	-2.9578-01	-2.9004-01	1.3351+00
P/POI	9.5394-01	7.9787-01	5.0486-01	1.5481-01	2.4433-02	2.9687-02	3.2216-02	3.5037-02	8.4108-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4363 TO = 533.

P	1.2542+01	1.2502+01	1.1896+01	1.1829+01	9.4915+00	5.8361+00	7.8821+00	8.5616+00	9.0760+00
CP	1.3880+00	1.3824+00	1.2980+00	1.2885+00	9.6267-01	4.5299-01	7.3328-01	8.3302-01	9.0752-01
P/POI	8.6728-01	8.6453-01	8.2263-01	8.1796-01	6.5635-01	4.0357-01	5.4506-01	5.9205-01	6.2900-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4350 TO = 533.

P	9.7082+00	9.5114+00	8.8680+00	8.9060+00	8.5625+00	6.3904+00	3.1742+00	7.8169-01	3.9004-01
CP	9.9705-01	9.6951-01	8.7953-01	8.8484-01	8.3680-01	5.3302-01	8.3194-02	-2.5141-01	-3.0619-01
P/POI	6.7340-01	6.5974-01	6.1512-01	6.1775-01	5.9392-01	4.4326-01	2.2017-01	5.4221-02	2.7054-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4336 TO = 533.

P	3.9203-01	3.7989-01	1.1093+01	8.9829+00	7.8038+00	6.6522+00	5.8415+00	4.2359+00	1.4901+00
CP	-3.0573-01	-3.0743-01	1.1958+00	8.9976-01	7.3430-01	5.7271-01	4.5895-01	2.3366-01	-1.5165-01
P/POI	2.7283-02	2.6438-02	7.7198-01	6.2515-01	5.4309-01	4.6295-01	4.0653-01	2.9479-01	1.0370-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4356 TO = 533.

P	3.3359+00	2.6050+00	2.5883+00	5.4395-01	4.2438-01	4.1776-01	3.8073-01	3.6492-01	1.7024-01
CP	1.0516-01	3.0762-03	7.3852-04	-2.8477-01	-3.0147-01	-3.0247-01	-3.0757-01	-3.0978-01	-3.3697-01
P/POI	2.3106-01	1.8044-01	1.7928-01	3.7677-02	2.9395-02	2.8936-02	2.6372-02	2.5276-02	1.1792-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4343 TO = 533.

P	1.7310-01	3.5960-01	4.7902-01	5.4282-01	4.5386-01	4.7181-01	8.7085-01	9.4690-01	7.4380-01
CP	-3.3649-01	-3.1036-01	-2.9363-01	-2.8470-01	-2.9716-01	-2.9465-01	-2.3874-01	-2.2809-01	-2.5554-01
P/POI	1.2027-02	2.4985-02	3.3282-02	3.7714-02	3.1534-02	3.2781-02	6.0505-02	6.5789-02	5.1678-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.169 P-INF =2.5860 RE = .4361 TO = 533.

P	2.8897-01	2.6071-01	2.4509-01	4.0444-01	4.4968-01	5.9342-01	5.7279-01	5.4907-01	4.6669-01
CP	-3.2043-01	-3.2437-01	-3.2655-01	-3.0432-01	-2.9801-01	-2.7796-01	-2.8084-01	-2.8415-01	-2.9564-01
P/POI	1.9992-02	1.8037-02	1.6957-02	2.7981-02	3.1111-02	4.1055-02	3.9628-02	3.7987-02	3.2288-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4343 TO = 533.

P	4.2281-01	4.7684-01	2.8336-01	5.9135-01	1.0141+00	8.2007-01	7.6739-01	6.5866-01	6.6942-01
CP	-3.0151-01	-2.9394-01	-3.2105-01	-2.7790-01	-2.1868-01	-2.4586-01	-2.5422-01	-2.6847-01	-2.6696-01
P/PO1	2.9376-02	3.3130-02	1.9687-02	4.1086-02	7.0457-02	5.6777-02	5.2830-02	4.5762-02	4.6510-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5390+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4352 TO = 533.

P	7.4267-01	1.3305+00	9.3466-01	8.9948-01	9.2811-01	1.4030+00	7.5011-01	9.9622-01	1.3091+00
CP	-2.5692-01	-1.7474-01	-2.3008-01	-2.3500-01	-2.3100-01	-1.6462-01	-2.5588-01	-2.2148-01	-1.7774-01
P/PO1	5.1490-02	9.2246-02	6.4801-02	6.2361-02	6.4347-02	9.7268-02	5.2006-02	6.9069-02	9.0760-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4341 TO = 533.

P	1.4247+00	1.2233+00	7.0731-01	7.0567-01	7.2833-01	7.1662-01	7.0498-01	7.1018-01	6.8925-01
CP	-1.6106-01	-1.8929-01	-2.6161-01	-2.6184-01	-2.5866-01	-2.6030-01	-2.6193-01	-2.6121-01	-2.6414-01
P/PO1	9.9034-02	8.5033-02	4.9166-02	4.9052-02	5.0627-02	4.9813-02	4.9004-02	4.9365-02	4.7911-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.8961+00	9.7969-01	1.1991+01	1.1250-01	1.0043+01	1.1484-01	9.3234+00	2.2500-01
CP	3.2548-01	-2.2343-01	1.3198+00	-3.4497-01	1.0468+00	-3.4465-01	9.4600-01	-3.2921-01
P/PO1	3.4033-01	6.8099-02	8.3348-01	7.8200-03	6.9810-01	7.9829-03	6.4808-01	1.5640-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.9289+00	2.1328-01	7.4063+00	1.9453-01	5.1258+00	3.8672-01	1.9758+00
CP	7.5055-01	-3.3085-01	6.7730-01	-3.3348-01	3.5767-01	-3.0654-01	-8.3822-02
P/PO1	5.5115-01	1.4825-02	5.1482-01	1.3522-02	3.5630-01	2.6881-02	1.3734-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	215.	301244	2.99	1	5.01	-.03	.00	50.01	.0

VALVE POS 2 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3920 TO = 539.

P	3.4235+00	6.9986+00	8.6981+00	9.5674+00	9.8011+00	9.7319+00	9.8027+00	9.7011+00	9.5415+00
CP	5.0213-01	1.1934+00	1.5219+00	1.6900+00	1.7352+00	1.7218+00	1.7355+00	1.7159+00	1.6850+00
P/PO1	3.4566-01	7.0662-01	8.7821-01	9.6598-01	9.8958-01	9.8259-01	9.8974-01	9.7948-01	9.6337-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3921 TO = 541.

P	9.3366+00	7.5382+00	4.2075+00	1.1107+00	1.5007-01	1.2799-01	1.5943-01	1.5725-01	8.9115+00
CP	1.6325+00	1.2872+00	6.4788-01	5.3413-02	-1.3099-01	-1.3523-01	-1.2919-01	-1.2961-01	1.5509+00
P/PO1	9.3593-01	7.5565-01	4.2177-01	1.1134-01	1.5043-02	1.2830-02	1.5982-02	1.5763-02	8.9332-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3909 TO = 539.

P	8.8721+00	8.8793+00	8.2964+00	8.3369+00	6.3638+00	3.5744+00	6.3918+00	6.6984+00	6.8634+00
CP	1.5577+00	1.5591+00	1.4463+00	1.4541+00	1.0722+00	5.3217-01	1.0776+00	1.1369+00	1.1728+00
P/PO1	8.9691-01	8.9763-01	8.3870-01	8.4279-01	6.4333-01	3.6135-01	6.4616-01	6.7716-01	6.9586-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.8 Q-INF = 5.160 P-INF = .8245 RE = .3884 TO = 541.

P	7.2928+00	6.8907+00	6.4115+00	6.4295+00	6.0541+00	4.5413+00	2.0037+00	4.1688-01	1.4031-01
CP	1.2536+00	1.1756+00	1.0828+00	1.0863+00	1.0135+00	7.2032-01	2.2853-01	-7.9001-02	-1.3260-01
P/PO1	7.3806-01	6.9737-01	6.4887-01	6.5069-01	6.1270-01	4.5960-01	2.0278-01	4.2190-02	1.4200-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.151 P-INF = .8231 RE = .3888 TO = 540.

P	1.5276-01	1.4789-01	7.2922+00	6.2911+00	5.5576+00	4.8158+00	4.2069+00	3.0712+00	1.0016+00
CP	-1.3014-01	-1.3108-01	1.2559+00	1.0615+00	9.1914-01	7.7512-01	6.5691-01	4.3644-01	3.4662-02
P/PO1	1.5487-02	1.4993-02	7.3927-01	6.3778-01	5.6343-01	4.8822-01	4.2649-01	3.1136-01	1.0155-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.174 P-INF = .8267 RE = .3889 TO = 542.

P	2.9479+00	2.3506+00	2.3240+00	3.6903-01	1.7517-01	1.6587-01	1.6131-01	1.4918-01	2.3712-01
CP	4.0998-01	2.9453-01	2.8940-01	-8.8467-02	-1.2594-01	-1.2773-01	-1.2861-01	-1.3096-01	-1.1396-01
P/PO1	2.9754-01	2.3725-01	2.3457-01	3.7247-02	1.7680-02	1.6742-02	1.6282-02	1.5057-02	2.3933-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3882 TO = 543.

P	1.2569-01	2.7493-01	3.6830-01	4.3110-01	3.7700-01	1.6949-01	7.5130-01	5.9200-01	5.7717-01
CP	-1.3556-01	-1.0679-01	-8.8784-02	-7.6678-02	-8.7108-02	-1.2712-01	-1.4943-02	-4.5656-02	-4.8515-02
P/PO1	1.2655-02	2.7680-02	3.7082-02	4.3403-02	3.7957-02	1.7064-02	7.5642-02	5.9603-02	5.8110-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3862 TO = 543.

P	3.3012-01	2.2231-01	1.8648-01	2.7826-01	3.0170-01	8.9440-02	2.0552-01	1.9478-01	1.8240-01
CP	-9.5807-02	-1.1670-01	-1.2365-01	-1.0586-01	-1.0131-01	-1.4246-01	-1.1996-01	-1.2204-01	-1.2444-01
P/PO1	3.3414-02	2.2502-02	1.8876-02	2.8165-02	3.0538-02	9.0531-03	2.0803-02	1.9716-02	1.8462-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - IN HYPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3862 TO = 543.

P	1.6255-01	1.9814-01	1.9327-01	3.6583-01	4.2249-01	4.4253-01	3.4991-01	1.8908-01	1.8895-01
CP	-1.2829-01	-1.2139-01	-1.2233-01	-8.8884-02	-7.7902-02	-7.4017-02	-9.1971-02	-1.2314-01	-1.2317-01
P/PO1	1.6454-02	2.0055-02	1.9562-02	3.7030-02	4.2764-02	4.4793-02	3.5417-02	1.9139-02	1.9125-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7770+00

VALVE POS 11 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3863 TO = 544.

P	1.8067-01	9.8449-01	5.9313-01	6.2407-01	1.6008+00	1.1279+00	3.7395-01	4.2592-01	4.6444-01
CP	-1.2484-01	3.0672-02	-4.5043-02	-3.9057-02	1.4991-01	5.8420-02	-8.7446-02	-7.7392-02	-6.9940-02
P/PO1	1.8252-02	9.9462-02	5.9923-02	6.3050-02	1.6173-01	1.1395-01	3.7780-02	4.3031-02	4.6922-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.8 Q-INF = 5.152 P-INF = .8232 RE = .3851 TO = 544.

P	7.2844-01	5.8506-01	1.5548-01	1.8786-01	2.0079-01	1.9221-01	1.9612-01	1.8766-01	1.9877-01
CP	-1.8787-02	-4.6231-02	-1.2961-01	-1.2333-01	-1.2082-01	-1.2248-01	-1.2173-01	-1.2337-01	-1.2121-01
P/PO1	7.3634-02	5.9303-02	1.5760-02	1.9042-02	2.0352-02	1.9483-02	1.9879-02	1.9021-02	2.0148-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00
	[redacted]								
CEC	3.5719+00	1.2492+00	1.6791+01	9.1406-02	7.4086+00	1.0781-01	6.7031+00	1.4531-01	
CP	5.3353-01	8.2687-02	3.0994+00	-1.4205-01	1.2783+00	-1.3887-01	1.1413+00	-1.3159-01	
P/PO1	3.6206-01	1.2662-01	1.7019+00	9.2652-03	7.5096-01	1.0928-02	6.7945-01	1.4729-02	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	
CEC	5.6414+00	1.7578-01	5.1773+00	1.6406-01	3.7945+00	2.2969-01	1.3969+00		
CP	9.3523-01	-1.2567-01	8.4516-01	-1.2795-01	5.7675-01	-1.1521-01	1.1135-01		
P/PO1	5.7183-01	1.7818-02	5.2479-01	1.6630-02	3.8462-01	2.3282-02	1.4159-01		
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00		

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	216.	301244	2.99	1	10.00	-.03	.01	55.00	.0

VALVE POS 2 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3062 TO = 543.

P	2.5849+00	6.1045+00	8.1573+00	9.2598+00	9.4450+00	9.5779+00	9.6184+00	9.7319+00	9.7720+00
CP	3.4123-01	1.0735+00	1.4214+00	1.6350+00	1.6709+00	1.6967+00	1.7045+00	1.7265+00	1.7343+00
P/PO1	2.6164-01	6.1790-01	8.2568-01	9.3727-01	9.5602-01	9.6947-01	9.7357-01	9.8506-01	9.8912-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.8 Q-INF = 5.158 P-INF = .8243 RE = .3861 TO = 543.

P	9.4760+00	7.9698+00	5.0202+00	1.4685+00	2.2379-01	1.9498-01	1.8718-01	2.1806-01	8.6504+00
CP	1.6772+00	1.3852+00	8.1343-01	1.2489-01	-1.1641-01	-1.2199-01	-1.2351-01	-1.1752-01	1.5172+00
P/PO1	9.5931-01	8.0683-01	5.0822-01	1.4866-01	2.2656-02	1.9739-02	1.8949-02	2.2076-02	8.7573-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.160 P-INF = .8245 RE = .3862 TO = 543.

P	8.7947+00	8.8639+00	8.3582+00	8.3676+00	6.7664+00	4.1733+00	5.7925+00	6.3596+00	6.5454+00
CP	1.5446+00	1.5580+00	1.4600+00	1.4619+00	1.1515+00	6.4899-01	9.6280-01	1.0727+00	1.1087+00
P/PO1	8.9006-01	8.9706-01	8.4588-01	8.4683-01	6.8478-01	4.2235-01	5.8623-01	6.4362-01	6.6242-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3869 TO = 543.

P	6.9986+00	6.7520+00	6.2107+00	6.2603+00	5.9767+00	4.5912+00	2.3094+00	5.5472-01	8.8251-02
CP	1.1942+00	1.1465+00	1.0418+00	1.0514+00	9.9649-01	7.2845-01	2.8700-01	-5.2475-02	-1.4272-01
P/PO1	7.0706-01	6.8215-01	6.2746-01	6.3248-01	6.0382-01	4.6385-01	2.3332-01	5.6042-02	8.9159-03
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3877 TO = 543.

P	1.1844-01	1.5121-01	7.4312+00	6.2603+00	5.3759+00	4.5663+00	3.9661+00	2.8567+00	1.0140+00
CP	-1.3690-01	-1.3056-01	1.2768+00	1.0504+00	8.7945-01	7.2293-01	6.0691-01	3.9244-01	3.6236-02
P/PO1	1.1957-02	1.5265-02	7.5018-01	6.3198-01	5.4270-01	4.6096-01	4.0038-01	2.8838-01	1.0237-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3875 TO = 543.

P	2.3240+00	1.9227+00	1.9906+00	3.8934-01	1.0672-01	1.1880-01	1.1559-01	1.1367-01	1.1714-01
CP	2.8975-01	2.1212-01	2.2525-01	-8.4481-02	-1.3915-01	-1.3681-01	-1.3743-01	-1.3780-01	-1.3713-01
P/PO1	2.3476-01	1.9422-01	2.0107-01	3.9329-02	1.0780-02	1.2000-02	1.1676-02	1.1483-02	1.1833-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3883 TO = 543.

P	1.3668-01	2.1188-01	3.5362-01	4.0444-01	3.1791-01	1.1586-01	5.2760-01	4.4739-01	4.7909-01
CP	-1.3341-01	-1.1889-01	-9.1531-02	-8.1719-02	-9.8423-02	-1.3743-01	-5.7944-02	-7.3429-02	-6.7308-02
P/PO1	1.3779-02	2.1359-02	3.5647-02	4.0771-02	3.2048-02	1.1680-02	5.3186-02	4.5100-02	4.8296-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3883 TO = 543.

P	1.9343-01	1.4979-01	1.8019-01	2.2506-01	1.4641-01	1.5756-01	1.6790-01	1.5583-01	1.3750-01
CP	-1.2245-01	-1.3088-01	-1.2501-01	-1.1635-01	-1.3153-01	-1.2938-01	-1.2738-01	-1.2971-01	-1.3325-01
P/PO1	1.9500-02	1.5100-02	1.8164-02	2.2687-02	1.4759-02	1.5883-02	1.6925-02	1.5708-02	1.3861-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] GAS [illegible]
40 - INCH CONTINUOUS [illegible] WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3879 TO = 543.

P	1.0837-01	1.2375-01	1.4457-01	2.3494-01	2.7765-01	2.4072-01	1.8342-01	2.1236-01	2.3946-01
CP	-1.3885-01	-1.3588-01	-1.3186-01	-1.1440-01	-1.0614-01	-1.1328-01	-1.2435-01	-1.1876-01	-1.1352-01
P/PO1	1.0935-02	1.2487-02	1.4588-02	2.3706-02	2.8016-02	2.4290-02	1.8507-02	2.1428-02	2.4162-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3677 TO = 543.

P	2.3363-01	7.0906-01	4.4272-01	4.6721-01	1.4339+00	8.6549-01	2.7325-01	3.7009-01	3.8725-01
CP	-1.1462-01	-2.2701-02	-7.4196-02	-6.9461-02	1.1744-01	7.5450-03	-1.0696-01	-8.8239-02	-8.4921-02
P/PO1	2.3589-02	7.1591-02	4.4699-02	4.7172-02	1.4477-01	8.7385-02	2.7588-02	3.7366-02	3.9099-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.8 Q-INF = 5.161 P-INF = .8247 RE = .3868 TO = 543.

P	5.6037-01	4.6895-01	2.2862-01	2.3494-01	2.4314-01	2.3610-01	2.3656-01	2.3184-01	2.3993-01
CP	-5.1212-02	-6.8925-02	-1.1549-01	-1.1427-01	-1.1268-01	-1.1404-01	-1.1395-01	-1.1487-01	-1.1330-01
P/PO1	5.6702-02	4.7452-02	2.3134-02	2.3773-02	2.4603-02	2.3891-02	2.3937-02	2.3459-02	2.4277-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.4031+00	5.2734-01	9.5906+00	7.7344-02	6.9164+00	8.6719-02	6.5859+00	1.5000-01
CP	4.9963-01	-5.7610-02	1.6986+00	-1.4481-01	1.1804+00	-1.4299-01	1.1164+00	-1.3073-01
P/PO1	3.4435-01	5.3361-02	9.7045-01	7.8262-03	6.9986-01	8.7749-03	6.6642-01	1.5178-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.7234+00	1.3594-01	5.5172+00	1.2422-01	3.8906+00	2.4844-01	1.4461+00
CP	9.4924-01	-1.3345-01	9.0927-01	-1.3572-01	5.9409-01	-1.1165-01	1.2042-01
P/PO1	5.7914-01	1.3755-02	5.5827-01	1.2569-02	3.9368-01	2.5139-02	1.4633-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GG WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	217.	301244	2.99	1	14.00	-.03	.01	59.00	.0

VALVE POS 2 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3880 TO = 543.

P	2.0716+00	5.4879+00	7.7248+00	8.9983+00	9.3521+00	9.4393+00	9.6645+00	9.7473+00	9.7566+00
CP	2.4043-01	9.0044-01	1.3326+00	1.5786+00	1.6470+00	1.6638+00	1.7073+00	1.7233+00	1.7251+00
P/PO1	2.0900-01	5.5366-01	7.7932-01	9.0781-01	9.4350-01	9.5230-01	9.7501-01	9.8337-01	9.8432-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3878 TO = 543.

P	9.6308+00	8.4323+00	5.6454+00	1.8412+00	3.2628-01	3.0495-01	2.7513-01	2.9261-01	8.4506+00
CP	1.7014+00	1.4698+00	9.3120-01	1.9602-01	-9.6739-02	-1.0086-01	-1.0662-01	-1.0325-01	1.4733+00
P/PO1	9.7193-01	8.5097-01	5.6972-01	1.8581-01	3.2928-02	3.0775-02	2.7765-02	2.9530-02	8.5282-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.160 P-INF = .8245 RE = .3867 TO = 543.

P	8.6708+00	8.8023+00	8.3427+00	8.4445+00	7.0605+00	4.7347+00	5.4360+00	6.0978+00	6.3457+00
CP	1.5206+00	1.5461+00	1.4570+00	1.4768+00	1.2085+00	7.5779-01	8.9370-01	1.0220+00	1.0700+00
P/PO1	8.7752-01	8.9082-01	8.4431-01	8.5462-01	7.1455-01	4.7917-01	5.5014-01	6.1712-01	6.4220-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.164 P-INF = .8254 RE = .3872 TO = 543.

P	6.8128+00	6.5516+00	6.0253+00	6.1219+00	5.9148+00	4.6598+00	2.5596+00	7.0031-01	1.2160-01
CP	1.1591+00	1.1085+00	1.0066+00	1.0253+00	9.8523-01	7.4229-01	3.3571-01	-2.4222-02	-1.3625-01
P/PO1	6.8872-01	6.6232-01	6.0911-01	6.1888-01	5.9794-01	4.7107-01	2.5876-01	7.0796-02	1.2293-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3872 TO = 543.

P	1.5182-01	2.1236-01	7.4467+00	6.1219+00	5.1128+00	4.2294+00	3.5606+00	2.6115+00	1.0512+00
CP	-1.3040-01	-1.1868-01	1.2818+00	1.0253+00	8.2997-01	6.5897-01	5.2950-01	3.4575-01	4.3712-02
P/PO1	1.5347-02	2.1468-02	7.5280-01	6.1888-01	5.1686-01	4.2756-01	3.5995-01	2.6400-01	1.0627-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.158 P-INF = .8241 RE = .3866 TO = 543.

P	1.8870+00	1.6595+00	1.8264+00	4.1191-01	1.3357-01	1.2983-01	1.0800-01	1.6438-01	1.1505-01
CP	2.0608-01	1.6197-01	1.9433-01	-7.9927-02	-1.3390-01	-1.3462-01	-1.3885-01	-1.2792-01	-1.3749-01
P/PO1	1.9106-01	1.6803-01	1.8492-01	4.1707-02	1.3524-02	1.3146-02	1.0935-02	1.6643-02	1.1649-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.168 P-INF = .8258 RE = .3874 TO = 543.

P	1.2972-01	2.4554-01	2.5139-01	3.6442-01	2.8027-01	1.1469-01	4.1434-01	3.7436-01	3.9847-01
CP	-1.3469-01	-1.1228-01	-1.1115-01	-8.9279-02	-1.0556-01	-1.3760-01	-7.9621-02	-8.7356-02	-8.2691-02
P/PO1	1.3108-02	2.4810-02	2.5402-02	3.6823-02	2.8319-02	1.1589-02	4.1867-02	3.7828-02	4.0264-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.165 P-INF = .8253 RE = .3871 TO = 543.

P	1.3979-01	1.6050-01	1.9617-01	1.3582-01	1.2403-01	1.5716-01	1.6037-01	1.4823-01	1.3376-01
CP	-1.3273-01	-1.2872-01	-1.2181-01	-1.3350-01	-1.3578-01	-1.2937-01	-1.2874-01	-1.3109-01	-1.3390-01
P/PO1	1.4134-02	1.6228-02	1.9835-02	1.3733-02	1.2540-02	1.5890-02	1.6215-02	1.4987-02	1.3524-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.153 P-INF = .8234 RE = .3862 TO = 543.

P	1.0353-01	1.2315-01	1.2186-01	1.7318-01	2.3530-01	1.8260-01	1.9047-01	1.9241-01	2.0485-01
CP	-1.3970-01	-1.3589-01	-1.3614-01	-1.2618-01	-1.1413-01	-1.2436-01	-1.2283-01	-1.2245-01	-1.2004-01
P/PO1	1.0493-02	1.2481-02	1.2350-02	1.7551-02	2.3847-02	1.8506-02	1.9306-02	1.9500-02	2.0761-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.8 Q-INF = 5.161 P-INF = .8247 RE = .3868 TO = 543.

P	2.2938-01	5.3546-01	3.2211-01	4.0538-01	1.0293+00	6.9364-01	2.0787-01	2.7222-01	3.1429-01
CP	-1.1535-01	-5.6038-02	-9.7379-02	-8.1242-02	3.9647-02	-2.5387-02	-1.1951-01	-1.0705-01	-9.8894-02
P/PO1	2.3210-02	5.4182-02	3.2593-02	4.1020-02	1.0415-01	7.0188-02	2.1034-02	2.7545-02	3.1802-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.8 Q-INF = 5.156 P-INF = .8239 RE = .3864 TO = 543.

P	4.1099-01	3.5835-01	2.4655-01	2.4766-01	2.3268-01	2.3610-01	2.3891-01	2.3564-01	2.3852-01
CP	-8.0081-02	-9.0290-02	-1.1198-01	-1.1176-01	-1.1466-01	-1.1400-01	-1.1346-01	-1.1409-01	-1.1353-01
P/PO1	4.1626-02	3.6295-02	2.4971-02	2.5083-02	2.3567-02	2.3913-02	2.4198-02	2.3866-02	2.4158-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.1453+00	1.0289+00	8.3109+00	7.5000-02	6.9703+00	8.4375-02	6.5367+00	7.2656-02
CP	4.5025-01	3.9766-02	1.4521+00	-1.4525-01	1.1921+00	-1.4343-01	1.1080+00	-1.4570-01
P/PO1	3.1857-01	1.0421-01	8.4176-01	7.5962-03	7.0598-01	8.5458-03	6.6206-01	7.3589-03
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.6438+00	1.3359-01	5.7094+00	1.2188-01	3.9844+00	2.7422-01	1.4695+00
CP	9.3483-01	-1.3388-01	9.4756-01	-1.3616-01	6.1299-01	-1.0661-01	1.2523-01
P/PO1	5.7162-01	1.3531-02	5.7826-01	1.2344-02	4.0355-01	2.7774-02	1.4884-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	218.	301244	2.99	1	14.64	19.85	-4.92	58.80	.0

VALVE POS 2 PO = 29.8 Q-INF = 5.154 P-INF = .8236 RE = .3863 TO = 543.

P	2.0285+00	5.3251+00	7.6321+00	8.8598+00	9.0889+00	9.3469+00	9.4954+00	9.7011+00	9.6952+00
CP	2.3376-01	8.7335-01	1.3209+00	1.5591+00	1.6036+00	1.6536+00	1.6825+00	1.7224+00	1.7212+00
P/PO1	2.0551-01	5.3951-01	7.7324-01	8.9764-01	9.2084-01	9.4699-01	9.6203-01	9.8287-01	9.8227-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.8 Q-INF = 5.152 P-INF = .8232 RE = .3861 TO = 543.

P	9.5999+00	8.4939+00	5.5891+00	1.8064+00	3.1478-01	2.9756-01	2.7042-01	2.9035-01	8.9269+00
CP	1.7036+00	1.4889+00	9.2509-01	1.9084-01	-9.8694-02	-1.0204-01	-1.0730-01	-1.0344-01	1.5730+00
P/PO1	9.7307-01	8.6097-01	5.6653-01	1.8310-01	3.1907-02	3.0161-02	2.7411-02	2.9431-02	9.0486-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.149 P-INF = .8228 RE = .3860 TO = 543.

P	9.1663+00	9.3110+00	8.8371+00	8.9675+00	7.5715+00	5.2213+00	5.9462+00	6.8370+00	7.1700+00
CP	1.6203+00	1.6484+00	1.5563+00	1.5817+00	1.3106+00	8.5416-01	9.9494-01	1.1679+00	1.2307+00
P/PO1	9.2956-01	9.4423-01	8.9618-01	9.0940-01	7.6783-01	5.2949-01	6.0301-01	6.9334-01	7.2610-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.7 Q-INF = 5.138 P-INF = .8210 RE = .3851 TO = 543.

P	7.6799+00	7.3378+00	6.8132+00	6.9218+00	6.6580+00	5.4271+00	3.0538+00	8.5813-01	1.4966-01
CP	1.3349+00	1.2683+00	1.1662+00	1.1874+00	1.1360+00	8.9647-01	4.3455-01	7.2211-03	-1.3067-01
P/PO1	7.8054-01	7.4577-01	6.9246-01	7.0349-01	6.7668-01	5.5158-01	3.1037-01	8.7216-02	1.5211-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.146 P-INF = .8223 RE = .3857 TO = 543.

P	1.7452-01	2.2231-01	7.8947+00	6.7987+00	5.7599+00	4.9842+00	4.3589+00	3.2735+00	1.3959+00
CP	-1.2588-01	-1.1659-01	1.3743+00	1.1613+00	9.5947-01	8.0874-01	6.8723-01	4.7631-01	1.1145-01
P/PO1	1.7709-02	2.2559-02	8.0111-01	6.8990-01	5,8449-01	5.0577-01	4.4232-01	3.3218-01	1.4164-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.7 Q-INF = 5.145 P-INF = .8221 RE = .3856 TO = 543.

P	2.1548+00	2.1396+00	2.5945+00	4.7285-01	8.5199-02	1.1253-01	1.0321-01	1.7008-01	1.3703-01
CP	2.5905-01	2.5609-01	3.4453-01	-6.7880-02	-1.4323-01	-1.3792-01	-1.3973-01	-1.2673-01	-1.3316-01
P/PO1	2.1872-01	2.1718-01	2.6336-01	4.7998-02	8.6482-03	1.1423-02	1.0477-02	1.7264-02	1.3910-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.7 Q-INF = 5.139 P-INF = .8212 RE = .3852 TO = 543.

P	1.3526-01	3.3987-01	3.9655-01	4.2207-01	3.4249-01	1.2486-01	5.1969-01	4.6772-01	4.0689-01
CP	-1.3347-01	-9.3657-02	-8.2627-02	-7.7661-02	-9.3147-02	-1.3550-01	-5.8664-02	-6.8777-02	-8.0615-02
P/PO1	1.3745-02	3.4537-02	4.0297-02	4.2890-02	3.4803-02	1.2689-02	5.2811-02	4.7530-02	4.1348-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.7 Q-INF = 5.139 P-INF = .8212 RE = .3852 TO = 543.

P	1.6920-01	1.5832-01	2.3056-01	1.4009-01	1.6308-01	1.4522-01	1.5567-01	1.5013-01	1.3657-01
CP	-1.2687-01	-1.2899-01	-1.1493-01	-1.3253-01	-1.2806-01	-1.3153-01	-1.2950-01	-1.3058-01	-1.3322-01
P/PO1	1.7194-02	1.6088-02	2.3429-02	1.4236-02	1.6572-02	1.4757-02	1.5819-02	1.5256-02	1.3878-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B442

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.7 Q-INF = 5.136 P-INF = .8208 RE = .3850 TO = 543.

P	1.1038-01	1.1326-01	1.6110-01	2.3118-01	1.9713-01	1.7327-01	1.6729-01	1.6460-01	1.6743-01
CP	-1.3830-01	-1.3774-01	-1.2843-01	-1.1479-01	-1.2142-01	-1.2606-01	-1.2722-01	-1.2775-01	-1.2720-01
P/PO1	1.1222-02	1.1514-02	1.6378-02	2.3503-02	2.0041-02	1.7615-02	1.7008-02	1.6735-02	1.7022-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.7 Q-INF = 5.137 P-INF = .8209 RE = .3850 TO = 543.

P	1.8652-01	5.3320-01	3.0806-01	3.4182-01	2.8236-01	5.1347-01	2.3844-01	2.2756-01	3.6152-01
CP	-1.2349-01	-5.6002-02	-9.9827-02	-9.3256-02	-1.0483-01	-5.9842-02	-1.1338-01	-1.1550-01	-8.9420-02
P/PO1	1.8960-02	5.4201-02	3.1315-02	3.4746-02	2.8702-02	5.2195-02	2.4238-02	2.3132-02	3.6749-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.7 Q-INF = 5.135 P-INF = .8205 RE = .3849 TO = 543.

P	4.5869-01	3.6309-01	2.2281-01	2.1658-01	2.1438-01	2.1069-01	2.0928-01	2.0428-01	2.0953-01
CP	-7.0465-02	-8.9082-02	-1.1640-01	-1.1761-01	-1.1804-01	-1.1876-01	-1.1904-01	-1.2001-01	-1.1899-01
P/PO1	4.6648-02	3.6926-02	2.2660-02	2.2026-02	2.1802-02	2.1427-02	2.1284-02	2.0776-02	2.1308-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.7102+00	7.4766-01	1.6791+01	7.7344-02	7.8305+00	9.1406-02	7.0219+00	1.4531-01
CP	5.6276-01	-1.4188-02	3.1102+00	-1.4473-01	1.3652+00	-1.4199-01	1.2077+00	-1.3149-01
P/PO1	3.7732-01	7.6036-02	1.7076+00	7.8658-03	7.9635-01	9.2959-03	7.1412-01	1.4778-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.2766+00	1.3594-01	6.3773+00	1.3594-01	4.4484+00	2.5078-01	1.5938+00
CP	1.0626+00	-1.3332-01	1.0822+00	-1.3332-01	7.0654-01	-1.1095-01	1.5059-01
P/PO1	6.3832-01	1.3825-02	6.4857-01	1.3825-02	4.5240-01	2.5504-02	1.6208-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	219.	301244	2.99	1	13.42	42.37	-9.00	55.00	.0

VALVE POS 2 PO = 29.8 Q-INF = 5.154 P-INF = .8236 RE = .3863 TO = 543.

P	2.4034+00	5.8733+00	7.8174+00	8.8906+00	9.0734+00	9.2699+00	9.3725+00	9.5471+00	9.4754+00
CP	3.0649-01	9.7971-01	1.3569+00	1.5651+00	1.6006+00	1.6387+00	1.6586+00	1.6925+00	1.6825+00
P/PO1	2.4350-01	5.9505-01	7.9203-01	9.0075-01	9.1927-01	9.3918-01	9.4958-01	9.6727-01	9.6203-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3872 TO = 543.

P	9.3212+00	7.9698+00	4.9327+00	1.4287+00	2.1909-01	1.9544-01	1.8671-01	2.2566-01	9.3725+00
CP	1.6447+00	1.3831+00	7.9511-01	1.1679-01	-1.1738-01	-1.2196-01	-1.2365-01	-1.1611-01	1.6546+00
P/PO1	9.4230-01	8.0569-01	4.9866-01	1.4443-01	2.2148-02	1.9758-02	1.8875-02	2.2813-02	9.4749-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.154 P-INF = .8236 RE = .3863 TO = 543.

P	9.5844+00	9.6809+00	9.2079+00	9.2444+00	7.5870+00	4.9780+00	6.7759+00	7.6685+00	8.0819+00
CP	1.6997+00	1.7184+00	1.6267+00	1.6337+00	1.3122+00	8.0600-01	1.1548+00	1.3280+00	1.4082+00
P/PO1	9.7104-01	9.8083-01	9.3290-01	9.3660-01	7.6868-01	5.0434-01	6.8650-01	7.7693-01	8.1882-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.167 P-INF = .8257 RE = .3878 TO = 542.

P	8.4541+00	8.1856+00	7.6321+00	7.7062+00	7.4012+00	5.9131+00	3.1805+00	8.4580-01	1.3095-01
CP	1.4763+00	1.4243+00	1.3172+00	1.3316+00	1.2725+00	9.8454-01	4.5572-01	3.8917-03	-1.3445-01
P/PO1	8.5437-01	8.2725-01	7.7130-01	7.7880-01	7.4797-01	5.9758-01	3.2142-01	8.5477-02	1.3234-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3887 TO = 542.

P	1.4094-01	1.8581-01	8.2809+00	7.3063+00	6.4412+00	5.8201+00	5.1762+00	3.8743+00	1.6611+00
CP	-1.3758-01	-1.2392-01	1.4390+00	1.2509+00	1.0838+00	9.6391-01	8.3959-01	5.8822-01	1.6093-01
P/PO1	1.4210-02	1.8734-02	8.3491-01	7.3665-01	6.4942-01	5.8680-01	5.2188-01	3.9062-01	1.6748-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3889 TO = 542.

P	2.8164+00	2.8231+00	3.2447+00	5.2138-01	1.0628-01	1.3076-01	1.3216-01	1.2040-01	1.6837-01
CP	3.8373-01	3.8501-01	4.6637-01	-5.9177-02	-1.3928-01	-1.3456-01	-1.3429-01	-1.3656-01	-1.2730-01
P/PO1	2.8383-01	2.8450-01	3.2699-01	5.2542-02	1.0710-02	1.3177-02	1.3318-02	1.2133-02	1.6968-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3892 TO = 542.

P	1.7877-01	3.4946-01	5.1404-01	5.6990-01	4.6066-01	1.6655-01	7.7615-01	6.4284-01	4.9375-01
CP	-1.2532-01	-9.2397-02	-6.0654-02	-4.9881-02	-7.0950-02	-1.2767-01	-1.0104-02	-3.5815-02	-6.4569-02
P/PO1	1.8005-02	3.5195-02	5.1771-02	5.7397-02	4.6395-02	1.6774-02	7.8169-02	6.4742-02	4.9727-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3893 TO = 542.

P	1.6598-01	3.3797-01	3.4003-01	2.7026-01	2.4105-01	1.9729-01	1.6743-01	1.6390-01	1.5200-01
CP	-1.2779-01	-9.4633-02	-9.4235-02	-1.0769-01	-1.1332-01	-1.2176-01	-1.2751-01	-1.2819-01	-1.3049-01
P/PO1	1.6711-02	3.4027-02	3.4235-02	2.7210-02	2.4269-02	1.9864-02	1.6857-02	1.6502-02	1.5304-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] FACILITIES
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3887 TO = 542.

P	1.2891-01	1.3163-01	1.7411-01	2.5378-01	3.1634-01	1.7881-01	1.7919-01	1.9051-01	1.9175-01
CP	-1.3490-01	-1.3438-01	-1.2618-01	-1.1080-01	-9.8716-02	-1.2527-01	-1.2520-01	-1.2301-01	-1.2277-01
P/PO1	1.2998-02	1.3271-02	1.7554-02	2.5587-02	3.1895-02	1.8028-02	1.8066-02	1.9208-02	1.9333-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.1 Q-INF = 5.201 P-INF = .8311 RE = .3904 TO = 542.

P	1.9722-01	7.1582-01	3.6231-01	3.5312-01	2.0236-01	2.1808-01	3.6260-01	4.3707-01	4.5768-01
CP	-1.2188-01	-2.2170-02	-9.0136-02	-9.1902-02	-1.2089-01	-1.1786-01	-9.0079-02	-7.5762-02	-7.1801-02
P/PO1	1.9801-02	7.1868-02	3.6376-02	3.5453-02	2.0316-02	2.1895-02	3.6405-02	4.3882-02	4.5950-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3892 TO = 542.

P	5.0275-01	4.1523-01	2.2475-01	2.1234-01	7.0026-01	1.9267-01	1.9094-01	1.8433-01	1.9129-01
CP	-6.2833-02	-7.9711-02	-1.1645-01	-1.1884-01	-1.2117-01	-1.2263-01	-1.2297-01	-1.2424-01	-1.2290-01
P/PO1	5.0633-02	4.1819-02	2.2635-02	2.1386-02	2.0169-02	1.9405-02	1.9230-02	1.8565-02	1.9265-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.1461+00	6.5156-01	9.3797+00	1.1750-01	8.3508+00	1.2422-01	7.8305+00	1.4531-01
CP	6.3983-01	-3.4133-02	1.6492+00	-1.3810-01	1.4507+00	-1.3584-01	1.3504+00	-1.3177-01
P/PO1	4.1757-01	6.5621-02	9.4466-01	1.1330-02	8.4103-01	1.2510-02	7.8863-01	1.4635-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.9773+00	1.7813-01	6.8789+00	1.5000-01	4.8305+00	2.6484-01	1.7273+00
CP	1.1859+00	-1.2544-01	1.1669+00	-1.3086-01	7.7182-01	-1.0872-01	1.7334-01
P/PO1	7.0271-01	1.7940-02	6.9280-01	1.5107-02	4.8649-01	2.6673-02	1.7397-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	220.	301744	2.99	1	11.18	26.73	-5.00	55.01	.0

VALVE POS 2 PO = 30.0 Q-INF = 5.191 P-INF = .8294 RE = .3896 TO = 542.

P	2.5160+00	6.0891+00	8.0801+00	9.3059+00	9.3676+00	9.5317+00	9.6184+00	9.7781+00	9.7106+00
CP	3.2492-01	1.0133+00	1.3968+00	1.6330+00	1.6449+00	1.6765+00	1.6932+00	1.7240+00	1.7109+00
P/PO1	2.5312-01	6.1258-01	8.1288-01	9.3620-01	9.4241-01	9.5892-01	9.6764-01	9.8371-01	9.7691-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3886 TO = 542.

P	9.5070+00	7.9698+00	5.0390+00	1.4610+00	2.2275-01	1.9591-01	1.8436-01	2.2044-01	9.1882+00
CP	1.6766+00	1.3797+00	8.1355-01	1.2242-01	-1.1677-01	-1.2195-01	-1.2418-01	-1.1721-01	1.6150+00
P/PO1	9.5897-01	8.0392-01	5.0829-01	1.4737-01	2.2469-02	1.9761-02	1.8596-02	2.2236-02	9.2662-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3886 TO = 542.

P	9.3212+00	9.4189+00	8.8989+00	8.9367+00	7.2618+00	4.6349+00	6.4071+00	7.1911+00	7.4673+00
CP	1.6407+00	1.6596+00	1.5591+00	1.5665+00	1.2429+00	7.3550-01	1.0778+00	1.2293+00	1.2826+00
P/PO1	9.4023-01	9.5009-01	8.9764-01	9.0146-01	7.3251-01	4.6752-01	6.4629-01	7.2538-01	7.5323-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.8 Q-INF = 5.153 P-INF = .8235 RE = .3868 TO = 542.

P	7.8812+00	7.5536+00	7.0141+00	7.0756+00	6.7818+00	5.3585+00	2.7623+00	7.1264-01	1.1397-01
CP	1.3695+00	1.3059+00	1.2012+00	1.2132+00	1.1562+00	8.7999-01	3.7622-01	-2.1509-02	-1.3768-01
P/PO1	7.9861-01	7.6541-01	7.1074-01	7.1697-01	6.8721-01	5.4298-01	2.7991-01	7.2213-02	1.1549-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.156 P-INF = .8239 RE = .3870 TO = 542.

P	1.3148-01	1.6827-01	8.0028+00	6.8602+00	5.9302+00	5.2213+00	4.5617+00	3.3839+00	1.3388+00
CP	-1.3429-01	-1.2716-01	1.3924+00	1.1709+00	9.9039-01	8.5289-01	7.2495-01	4.9651-01	9.9877-02
P/PO1	1.3317-02	1.7043-02	8.1055-01	6.9483-01	6.0063-01	5.2883-01	4.6202-01	3.4273-01	1.3560-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.7 Q-INF = 5.138 P-INF = .8210 RE = .3856 TO = 542.

P	2.5974+00	2.4232+00	2.7571+00	4.5705-01	1.1293-01	1.2799-01	1.2996-01	1.2305-01	1.4124-01
CP	3.4572-01	3.1183-01	3.7680-01	-7.0839-02	-1.3781-01	-1.3488-01	-1.3450-01	-1.3585-01	-1.3230-01
P/PO1	2.6398-01	2.4629-01	2.8021-01	4.6452-02	1.1478-02	1.3008-02	1.3209-02	1.2506-02	1.4355-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.7 Q-INF = 5.145 P-INF = .8221 RE = .3861 TO = 542.

P	1.5276-01	2.9199-01	4.4061-01	4.7398-01	3.7595-01	1.3250-01	6.6543-01	5.7166-01	4.8924-01
CP	-1.3010-01	-1.0304-01	-7.4148-02	-6.7661-02	-8.6716-02	-1.3404-01	-3.0446-02	-4.8673-02	-6.4695-02
P/PO1	1.5506-02	2.9639-02	4.4725-02	4.8112-02	3.8162-02	1.3449-02	6.7546-02	5.8028-02	4.9661-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.7 Q-INF = 5.134 P-INF = .8204 RE = .3853 TO = 542.

P	2.3458-01	1.6030-01	2.6689-01	2.4671-01	1.8837-01	1.6088-01	1.6037-01	1.5773-01	1.4639-01
CP	-1.1410-01	-1.2857-01	-1.0781-01	-1.1174-01	-1.2310-01	-1.2846-01	-1.2856-01	-1.2907-01	-1.3128-01
P/PO1	2.3860-02	1.6304-02	2.7147-02	2.5095-02	1.9160-02	1.6363-02	1.6312-02	1.6043-02	1.4890-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible]
10 - INCH CONE [illegible] 55 WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.149 P-INF = .8227 RE = .3864 TO = 542.

P	1.2569-01	1.4132-01	2.4219-01	3.2723-01	3.2628-01	1.7614-01	1.8718-01	1.9906-01	2.0859-01
CP	-1.3538-01	-1.3235-01	-1.1275-01	-9.6237-02	-9.6421-02	-1.2558-01	-1.2344-01	-1.2113-01	-1.1928-01
P/PO1	1.2749-02	1.4333-02	2.4564-02	3.3189-02	3.3093-02	1.7865-02	1.8985-02	2.0190-02	2.1157-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.8 Q-INF = 5.148 P-INF = .8226 RE = .3864 TO = 542.

P	2.1755-01	7.0680-01	4.2237-01	4.3448-01	3.9791-01	6.3621-01	3.1087-01	3.0025-01	4.4189-01
CP	-1.1753-01	-2.2491-02	-7.7744-02	-7.5392-02	-8.2495-02	-3.6204-02	-9.9405-02	-1.0147-01	-7.3952-02
P/PO1	2.2069-02	7.1700-02	4.2847-02	4.4075-02	4.0366-02	6.4539-02	3.1536-02	3.0458-02	4.4827-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.8 Q-INF = 5.150 P-INF = .8230 RE = .3866 TO = 542.

P	5.8409-01	4.4528-01	2.0925-01	2.1846-01	2.1961-01	2.1808-01	2.1775-01	2.1141-01	2.1794-01
CP	-4.6383-02	-7.3336-02	-1.1916-01	-1.1738-01	-1.1715-01	-1.1745-01	-1.1751-01	-1.1874-01	-1.1748-01
P/PO1	5.9224-02	4.5149-02	2.1217-02	2.2151-02	2.2267-02	2.2113-02	2.2079-02	2.1436-02	2.2098-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.9141+00	6.1875-01	9.5906+00	9.3750-02	7.9336+00	9.6094-02	7.1531+00	1.4766-01
CP	6.0019-01	-3.9653-02	1.7024+00	-1.4159-01	1.3806+00	-1.4114-01	1.2291+00	-1.3112-01
P/PO1	3.9687-01	6.2738-02	9.7244-01	9.5058-03	8.0443-01	9.7434-03	7.2529-01	1.4972-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.2531+00	1.4766-01	6.3328+00	1.3594-01	4.3898+00	2.6250-01	1.5773+00
CP	1.0544+00	-1.3112-01	1.0698+00	-1.3340-01	6.9257-01	-1.0882-01	1.4647-01
P/PO1	6.3403-01	1.4972-02	6.4211-01	1.3783-02	4.4511-01	2.6616-02	1.5993-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	221.	301244	2.99	1	14.66	-19.94	4.95	58.82	.0

VALVE POS 2 PO = 29.9 Q-INF = 5.162 P-INF = .8249 RE = .3875 TO = 542.

P	2.0842+00	5.3954+00	7.6166+00	8.8752+00	9.0734+00	9.3161+00	9.4033+00	9.5933+00	9.6030+00
CP	2.4393-01	8.8535-01	1.3156+00	1.5594+00	1.5978+00	1.6448+00	1.6617+00	1.6985+00	1.7004+00
P/PO1	2.1082-01	5.4578-01	7.7047-01	8.9778-01	9.1783-01	9.4238-01	9.5120-01	9.7042-01	9.7140-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.165 P-INF = .8253 RE = .3876 TO = 542.

P	9.5070+00	8.4015+00	5.5079+00	1.7741+00	3.0432-01	2.9247-01	2.6572-01	3.0310-01	7.8514+00
CP	1.6809+00	1.4669+00	9.0663-01	1.8370-01	-1.0087-01	-1.0317-01	-1.0835-01	-1.0111-01	1.3604+00
P/PO1	9.6123-01	8.4946-01	5.5689-01	1.7938-01	3.0769-02	2.9571-02	2.6867-02	3.0646-02	7.9384-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.164 P-INF = .8252 RE = .3876 TO = 542.

P	8.0825+00	8.2165+00	7.7557+00	7.8600+00	6.4567+00	4.2107+00	4.7137+00	5.2045+00	5.4549+00
CP	1.4054+00	1.4313+00	1.3421+00	1.3623+00	1.0905+00	6.5560-01	7.5301-01	8.4805-01	8.9654-01
P/PO1	8.1733-01	8.3088-01	7.8428-01	7.9484-01	6.5293-01	4.2580-01	4.7667-01	5.2630-01	5.5162-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3884 TO = 542.

P	5.9148+00	5.7037+00	5.3453+00	5.3863+00	5.2318+00	3.9986+00	2.1039+00	5.3777-01	9.8738-02
CP	9.8326-01	9.4248-01	8.7321-01	8.8112-01	8.5127-01	6.1295-01	2.4679-01	-5.5867-02	-1.4071-01
P/PO1	5.9691-01	5.7561-01	5.3944-01	5.4357-01	5.2799-01	4.0353-01	2.1232-01	5.4271-02	9.9645-03
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3887 TO = 542.

P	1.3012-01	2.0714-01	6.2725+00	5.2813+00	4.1353+00	3.3498+00	2.7370+00	2.0886+00	7.6611-01
CP	-1.3467-01	-1.1980-01	1.0513+00	8.5987-01	6.3862-01	4.8697-01	3.6865-01	2.4346-01	-1.1879-02
P/PO1	1.3119-02	2.0885-02	6.3242-01	5.3247-01	4.1694-01	3.3774-01	2.7595-01	2.1058-01	7.7242-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-04	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3886 TO = 542.

P	1.7152+00	1.3135+00	1.2403+00	3.3791-01	8.5421-02	1.0216-01	1.0022-01	1.3777-01	9.1813-02
CP	1.7147-01	9.3879-02	7.9753-02	-9.5497-02	-1.4330-01	-1.4006-01	-1.4044-01	-1.3319-01	-1.4206-01
P/PO1	1.7299-01	1.3247-01	1.2509-01	3.3576-02	8.6151-03	1.0304-02	1.0107-02	1.3895-02	9.2598-03
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.161 P-INF = .8247 RE = .3879 TO = 542.

P	1.4236-01	1.5121-01	2.9111-01	3.0416-01	2.3164-01	1.0255-01	3.4849-01	3.1118-01	3.6199-01
CP	-1.3221-01	-1.3049-01	-1.0339-01	-1.0086-01	-1.1491-01	-1.3992-01	-9.2266-02	-9.9497-02	-8.9650-02
P/PO1	1.4405-02	1.5301-02	2.9457-02	3.0777-02	2.3439-02	1.0377-02	3.5263-02	3.1487-02	3.6629-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3895 TO = 541.

P	1.3959-01	1.8960-01	1.7308-01	1.2709-01	1.3090-01	1.5872-01	1.6071-01	1.5442-01	1.3703-01
CP	-1.3282-01	-1.2316-01	-1.2635-01	-1.3524-01	-1.3450-01	-1.2912-01	-1.2874-01	-1.2996-01	-1.3332-01
P/PO1	1.4085-02	1.9132-02	1.7464-02	1.2824-02	1.3209-02	1.6015-02	1.6216-02	1.5581-02	1.3827-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS SS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3905 TO = 541.

P	1.0253-01	1.4859-01	1.2144-01	1.6932-01	2.2641-01	1.6957-01	1.8765-01	2.1474-01	2.3805-01
CP	-1.4003-01	-1.3116-01	-1.3639-01	-1.2716-01	-1.1616-01	-1.2711-01	-1.2363-01	-1.1841-01	-1.1391-01
P/PO1	1.0319-02	1.4955-02	1.2223-02	1.7042-02	2.2788-02	1.7067-02	1.8887-02	2.1613-02	2.3960-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.174 P-INF = .8267 RE = .3899 TO = 541.

P	2.5397-01	5.7040-01	3.7878-01	3.5642-01	3.5818-01	4.5267-01	2.4080-01	2.6652-01	3.3066-01
CP	-1.1070-01	-4.9544-02	-8.6581-02	-9.0904-02	-9.0564-02	-7.2300-02	-1.1325-01	-1.0828-01	-9.5883-02
P/PO1	2.5634-02	5.7573-02	3.8232-02	3.5975-02	3.6152-02	4.5690-02	2.4304-02	2.6901-02	3.3375-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3901 TO = 541.

P	4.3722-01	3.5930-01	2.4122-01	2.2835-01	2.2275-01	2.1577-01	2.1305-01	2.0951-01	2.1514-01
CP	-7.5312-02	-9.0368-02	-1.1318-01	-1.1567-01	-1.1675-01	-1.1810-01	-1.1863-01	-1.1931-01	-1.1822-01
P/PO1	4.4117-02	3.6254-02	2.4340-02	2.3041-02	2.2476-02	2.1772-02	2.1497-02	2.1140-02	2.1708-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.0555+00	9.6094-01	7.1906+00	6.5625-02	5.7820+00	7.0313-02	5.9016+00	7.7344-02
CP	2.3737-01	2.5882-02	1.2296+00	-1.4711-01	9.5743-01	-1.4621-01	9.8053-01	-1.4485-01
P/PO1	2.0740-01	9.6961-02	7.2555-01	6.6217-03	5.8342-01	7.0947-03	5.9548-01	7.8042-03
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.1352+00	1.0547-01	4.8258+00	1.3594-01	3.3961+00	2.9063-01	1.3172+00
CP	8.3244-01	-1.3941-01	7.7266-01	-1.3353-01	4.9641-01	-1.0364-01	9.4718-02
P/PO1	5.1815-01	1.0642-02	4.8693-01	1.3716-02	3.4267-01	2.9325-02	1.3291-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	222.	301244	2.99	1	13.42	-42.46	9.01	54.98	.0

VALVE POS 2 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3902 TO = 541.

P	2.5285+00	5.8887+00	8.0028+00	9.0906+00	9.2437+00	9.2853+00	9.4033+00	9.4393+00	9.3725+00
CP	3.2862-01	9.7769-01	1.3861+00	1.5962+00	1.6258+00	1.6338+00	1.6566+00	1.6635+00	1.6506+00
P/PO1	2.5505-01	5.9400-01	8.0725-01	9.1697-01	9.3242-01	9.3662-01	9.4851-01	9.5215-01	9.4541-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3900 TO = 541.

P	9.1354+00	7.7078+00	4.7639+00	1.3890+00	2.2170-01	2.0376-01	1.9753-01	2.3231-01	7.4519+00
CP	1.6056+00	1.3298+00	7.6085-01	1.0863-01	-1.1695-01	-1.2042-01	-1.2162-01	-1.1490-01	1.2803+00
P/PO1	9.2192-01	7.7785-01	4.8076-01	1.4017-01	2.2374-02	2.0563-02	1.9934-02	2.3445-02	7.5204-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.171 P-INF = .8263 RE = .3897 TO = 541.

P	7.6025+00	7.7386+00	7.2304+00	7.2448+00	5.7707+00	3.4559+00	4.4920+00	4.7570+00	4.9377+00
CP	1.3103+00	1.3367+00	1.2384+00	1.2412+00	9.5611-01	5.0849-01	7.0884-01	7.6009-01	7.9504-01
P/PO1	7.6771-01	7.8145-01	7.3013-01	7.3159-01	5.8273-01	3.4898-01	4.5361-01	4.8037-01	4.9862-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3904 TO = 540.

P	5.2761+00	5.0161+00	4.8139+00	4.8427+00	4.6804+00	3.4684+00	1.5773+00	3.5701-01	7.2025-02
CP	8.6031-01	8.1005-01	7.7095-01	7.7652-01	7.4514-01	5.1080-01	1.4517-01	-9.0768-02	-1.4587-01
P/PO1	5.3271-01	5.0646-01	4.8604-01	4.8895-01	4.7256-01	3.5019-01	1.5925-01	3.6045-02	7.2721-03
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3902 TO = 540.

P	1.0817-01	1.4505-01	5.3015+00	4.9539+00	3.7093+00	2.9631+00	2.4139+00	1.8519+00	5.9069-01
CP	-1.3887-01	-1.3174-01	8.6555-01	7.9831-01	5.5760-01	4.1328-01	3.0706-01	1.9837-01	-4.5550-02
P/PO1	1.0925-02	1.4649-02	5.3544-01	5.0033-01	3.7463-01	2.9926-01	2.4380-01	1.8704-01	5.9659-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.158 P-INF = .8241 RE = .3893 TO = 540.

P	1.8870+00	1.7769+00	1.2580+00	3.0086-01	1.3556-01	1.2660-01	1.2078-01	1.1693-01	1.6276-01
CP	2.0608-01	8.7789-02	8.4122-02	-1.0146-01	-1.3351-01	-1.3525-01	-1.3638-01	-1.3712-01	-1.2824-01
P/PO1	1.9106-01	1.2929-01	1.2737-01	3.0462-02	1.3726-02	1.2818-02	1.2229-02	1.1840-02	1.6479-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.145 P-INF = .8222 RE = .3883 TO = 540.

P	1.6317-01	1.6306-01	1.9714-01	2.3400-01	1.9817-01	1.3289-01	4.1481-01	3.8909-01	3.7462-01
CP	-1.2808-01	-1.2810-01	-1.2148-01	-1.1432-01	-1.2128-01	-1.3397-01	-7.9176-02	-8.4174-02	-8.6986-02
P/PO1	1.6560-02	1.6549-02	2.0008-02	2.3749-02	2.0113-02	1.3487-02	4.2099-02	3.9489-02	3.8020-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.153 P-INF = .8234 RE = .3889 TO = 540.

P	2.3316-01	1.9340-01	1.9375-01	1.7765-01	1.4422-01	1.5520-01	1.6250-01	1.4823-01	1.3423-01
CP	-1.1454-01	-1.2226-01	-1.2219-01	-1.2532-01	-1.3180-01	-1.2967-01	-1.2826-01	-1.3103-01	-1.3374-01
P/PO1	2.3630-02	1.9600-02	1.9636-02	1.8004-02	1.4616-02	1.5729-02	1.6469-02	1.5022-02	1.3604-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.158 P-INF = .8241 RE = .3893 TO = 540.

P	9.9708-02	1.8392-01	2.8772-01	1.6608-01	3.0118-01	2.8000-01	2.7042-01	2.3611-01	2.2543-01
CP	-1.4046-01	-1.2413-01	-1.0401-01	-1.2759-01	-1.0140-01	-1.0550-01	-1.0736-01	-1.1401-01	-1.1609-01
P/PO1	1.0096-02	1.8622-02	2.9132-02	1.6815-02	3.0495-02	2.8350-02	2.7381-02	2.3907-02	2.2875-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.8 Q-INF = 5.146 P-INF = .8223 RE = .3884 TO = 540.

P	2.1661-01	7.2935-01	4.2673-01	3.9126-01	2.0915-01	2.1670-01	3.7060-01	4.4061-01	4.3288-01
CP	-1.1770-01	-1.8067-02	-7.6871-02	-8.3764-02	-1.1915-01	-1.1768-01	-8.7779-02	-7.4175-02	-7.5677-02
P/PO1	2.1980-02	7.4011-02	4.3303-02	3.9703-02	2.1224-02	2.1989-02	3.7606-02	4.4711-02	4.3926-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.7 Q-INF = 5.145 P-INF = .8221 RE = .3883 TO = 540.

P	4.3496-01	3.9390-01	2.2378-01	2.1423-01	2.0340-01	1.9729-01	1.9282-01	1.8718-01	1.9737-01
CP	-7.5246-02	-8.3227-02	-1.1629-01	-1.1815-01	-1.2026-01	-1.2144-01	-1.2231-01	-1.2341-01	-1.2143-01
P/PO1	4.4151-02	3.9984-02	2.2715-02	2.1745-02	2.0647-02	2.0026-02	1.9573-02	1.9000-02	2.0034-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.0016+00	1.1602+00	8.2266+00	6.7969-02	5.3766+00	7.0313-02	4.9055+00	7.0313-02
CP	2.2927-01	6.5718-02	1.4393+00	-1.4658-01	8.8531-01	-1.4613-01	7.9374-01	-1.4613-01
P/PO1	2.0317-01	1.1776-01	8.3505-01	6.8993-03	5.4576-01	7.1372-03	4.9794-01	7.1372-03
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.0039+00	9.6094-02	4.3359+00	1.1016-01	2.9344+00	2.2031-01	1.1273+00
CP	8.1287-01	-1.4111-01	6.8303-01	-1.3838-01	4.1059-01	-1.1697-01	5.9340-02
P/PO1	5.0793-01	9.7542-03	4.4013-01	1.1182-02	2.9786-01	2.2363-02	1.1443-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	223.	301244	2.99	1	11.18	-26.81	5.02	55.00	.0

VALVE POS 2 PO = 29.8 Q-INF = 5.154 P-INF = .8236 RE = .3895 TO = 540.

P	2.6099+00	6.0583+00	8.0492+00	9.1367+00	9.2902+00	9.4393+00	9.4340+00	9.5779+00	9.5262+00
CP	3.4656-01	1.0156+00	1.4019+00	1.6129+00	1.6426+00	1.6716+00	1.6705+00	1.6985+00	1.6884+00
P/PO1	2.6442-01	6.1380-01	8.1550-01	9.2569-01	9.4124-01	9.5635-01	9.5581-01	9.7039-01	9.6515-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.8 Q-INF = 5.154 P-INF = .8236 RE = .3895 TO = 540.

P	9.3057+00	7.9698+00	4.8764+00	1.4188+00	2.1177-01	1.8713-01	1.7636-01	2.1426-01	7.9897+00
CP	1.6456+00	1.3865+00	7.8630-01	1.1547-01	-1.1871-01	-1.2349-01	-1.2558-01	-1.1822-01	1.3903+00
P/PO1	9.4280-01	8.0746-01	4.9406-01	1.4374-01	2.1455-02	1.8959-02	1.7868-02	2.1708-02	8.0948-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.154 P-INF = .8236 RE = .3895 TO = 540.

P	8.1289+00	8.2473+00	7.7248+00	7.7216+00	6.1160+00	3.7179+00	5.1889+00	5.4558+00	5.6766+00
CP	1.4173+00	1.4403+00	1.3389+00	1.3383+00	1.0268+00	5.6153-01	8.4692-01	8.9872-01	9.4154-01
P/PO1	8.2358-01	8.3558-01	7.8263-01	7.8231-01	6.1965-01	3.7668-01	5.2571-01	5.5276-01	5.7512-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.8 Q-INF = 5.158 P-INF = .8241 RE = .3898 TO = 540.

P	5.9612+00	5.8116+00	5.4453+00	5.4604+00	5.2631+00	3.9425+00	1.8573+00	4.2931-01	7.0834-02
CP	9.9604-01	9.6704-01	8.9601-01	8.9893-01	8.6069-01	6.0462-01	2.0032-01	-7.6554-02	-1.4706-01
P/PO1	6.0358-01	5.8844-01	5.5135-01	5.5287-01	5.3290-01	3.9918-01	1.8805-01	4.3468-02	7.1725-03
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.158 P-INF = .8243 RE = .3899 TO = 540.

P	1.0938-01	1.4505-01	6.1180+00	5.4789+00	4.5739+00	3.7803+00	3.1425+00	2.3155+00	7.7355-01
CP	-1.3859-01	-1.3167-01	1.0263+00	9.0236-01	7.2691-01	5.7305-01	4.4941-01	2.8909-01	-9.8323-03
P/PO1	1.1073-02	1.4684-02	6.1936-01	5.5466-01	4.6304-01	3.8270-01	3.1813-01	2.3441-01	7.8311-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.167 P-INF = .8257 RE = .3905 TO = 540.

P	2.0815+00	1.5182+00	1.3894+00	3.2840-01	1.0206-01	1.0921-01	1.0581-01	1.1082-01	1.1599-01
CP	2.4303-01	1.3401-01	1.0908-01	-9.6239-02	-1.4004-01	-1.3866-01	-1.3932-01	-1.3835-01	-1.3735-01
P/PO1	2.1036-01	1.5343-01	1.4041-01	3.3188-02	1.0314-02	1.1037-02	1.0693-02	1.1200-02	1.1722-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3912 TO = 540.

P	1.6931-01	1.8344-01	2.7706-01	3.1734-01	2.5308-01	1.1801-01	4.4400-01	4.2045-01	1.7650-01
CP	-1.2708-01	-1.2435-01	-1.0627-01	-9.8486-02	-1.1090-01	-1.3699-01	-7.4016-02	-7.8566-02	-1.2569-01
P/PO1	1.7082-02	1.8507-02	2.7952-02	3.2015-02	2.5532-02	1.1906-02	4.4794-02	4.2417-02	1.7807-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.162 P-INF = .8249 RE = .3902 TO = 540.

P	1.8208-01	1.7870-01	1.9327-01	1.9445-01	1.4666-01	1.7164-01	1.6414-01	1.5583-01	1.3797-01
CP	-1.2452-01	-1.2518-01	-1.2236-01	-1.2213-01	-1.3138-01	-1.2655-01	-1.2800-01	-1.2961-01	-1.3307-01
P/PO1	1.8419-02	1.8077-02	1.9550-02	1.9670-02	1.4835-02	1.7362-02	1.6603-02	1.5763-02	1.3956-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS [illegible]
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3914 TO = 540.

P	9.4470-02	1.2759-01	1.8697-01	2.1941-01	3.6131-01	2.8554-01	2.0364-01	2.1379-01	2.3104-01
CP	-1.4155-01	-1.3516-01	-1.2369-01	-1.1743-01	-9.0023-02	-1.0465-01	-1.2047-01	-1.1851-01	-1.1518-01
P/PO1	9.5263-03	1.2866-02	1.8854-02	2.2125-02	3.6434-02	2.8794-02	2.0535-02	2.1558-02	2.3298-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3914 TO = 540.

P	2.3222-01	7.3273-01	4.5756-01	4.8075-01	3.0118-01	5.1573-01	3.0288-01	3.6249-01	4.2386-01
CP	-1.1502-01	-1.8500-02	-7.1563-02	-6.7090-02	-1.0172-01	-6.0346-02	-1.0139-01	-8.9895-02	-7.8061-02
P/PO1	2.3384-02	7.3784-02	4.6075-02	4.8410-02	3.0328-02	5.1932-02	3.0499-02	3.6501-02	4.2681-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3922 TO = 540.

P	5.8635-01	4.5542-01	2.2330-01	2.2976-01	2.3059-01	2.3010-01	2.2857-01	2.2234-01	2.2917-01
CP	-4.6956-02	-7.2152-02	-1.1682-01	-1.1558-01	-1.1542-01	-1.1551-01	-1.1581-01	-1.1701-01	-1.1569-01
P/PO1	5.8924-02	4.5767-02	2.2440-02	2.3090-02	2.3173-02	2.3123-02	2.2969-02	2.2343-02	2.3030-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.6133+00	7.2891-01	1.6791+01	7.2656-02	6.0281+00	7.7344-02	5.5758+00	7.2656-02
CP	3.4311-01	-1.9523-02	3.0714+00	-1.4581-01	1.0003+00	-1.4491-01	9.1321-01	-1.4581-01
P/PO1	2.6262-01	7.3250-02	1.6873+00	7.3015-03	6.0579-01	7.7725-03	5.6033-01	7.3015-03
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.2430+00	1.0781-01	4.8422+00	1.2656-01	3.3703+00	2.3438-01	1.2469+00
CP	8.4916-01	-1.3905-01	7.7204-01	-1.3544-01	4.8879-01	-1.1469-01	8.0155-02
P/PO1	5.2688-01	1.0834-02	4.8661-01	1.2719-02	3.3869-01	2.3553-02	1.2530-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	224.	301244	2.99	1	14.65	180.14	.04	30.35	.0

VALVE POS 2 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3910 TO = 540.

P	7.4327+00	9.8813+00	9.2079+00	9.2598+00	9.1973+00	9.1160+00	8.7579+00	8.7464+00	8.5275+00
CP	1.2749+00	1.7477+00	1.6177+00	1.6277+00	1.6157+00	1.6000+00	1.5309+00	1.5286+00	1.4864+00
P/PO1	7.4922-01	9.9612-01	9.2823-01	9.3346-01	9.2716-01	9.1896-01	8.8287-01	8.8170-01	8.5963-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3920 TO = 540.

P	8.0515+00	5.9658+00	2.1194+00	3.2840-01	1.8615-01	1.8482-01	1.8483-01	1.7483-01	8.5736+00
CP	1.3904+00	9.8880-01	2.4825-01	-9.6567-02	-1.2395-01	-1.2421-01	-1.2421-01	-1.2613-01	1.4909+00
P/PO1	8.0950-01	5.9980-01	2.1309-01	3.3017-02	1.8715-02	1.8582-02	1.8583-02	1.7577-02	8.6199-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3909 TO = 541.

P	8.4231+00	8.4169+00	7.7557+00	7.5678+00	5.5576+00	1.9833+00	7.5441+00	7.1603+00	7.0832+00
CP	1.4642+00	1.4630+00	1.3355+00	1.2993+00	9.1172-01	2.2259-01	1.2947+00	1.2207+00	1.2058+00
P/PO1	8.4805-01	8.4742-01	7.8085-01	7.6194-01	5.5955-01	1.9968-01	7.5955-01	7.2091-01	7.1315-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3898 TO = 541.

P	7.5251+00	7.2299+00	6.7051+00	6.7218+00	6.3173+00	4.7659+00	1.4334+00	2.0428-01	1.8006-01
CP	1.2951+00	1.2381+00	1.1366+00	1.1398+00	1.0616+00	7.6167-01	1.1735-01	-1.2030-01	-1.2498-01
P/PO1	7.5977-01	7.2997-01	6.7698-01	6.7867-01	6.3783-01	4.8119-01	1.4473-01	2.0626-02	1.8180-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3901 TO = 541.

P	1.8492-01	1.7918-01	7.6166+00	6.1988+00	5.7393+00	5.3148+00	4.8911+00	3.7068+00	1.0636+00
CP	-1.2406-01	-1.2517-01	1.3119+00	1.0380+00	9.4918-01	8.6716-01	7.8529-01	5.5683-01	4.5725-02
P/PO1	1.8659-02	1.8079-02	7.6853-01	6.2548-01	5.7911-01	5.3628-01	4.9353-01	3.7422-01	1.0732-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3890 TO = 541.

P	5.9148+00	3.7803+00	3.3385+00	4.1755-01	1.9504-01	1.9129-01	1.8483-01	1.7435-01	1.2496+00
CP	9.8451-01	5.7156-01	4.8609-01	-7.9011-02	-1.2206-01	-1.2279-01	-1.2404-01	-1.2606-01	8.1958-02
P/PO1	5.9756-01	3.8192-01	3.3728-01	4.2185-02	1.9704-02	1.9325-02	1.8673-02	1.7615-02	1.2624-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	1.6597+00	4.3175-01	7.4520-01	1.1653+00	1.0874+00	3.3729-01	1.6210+00	1.4598+00	1.4405+00
CP	1.6104-01	-7.6330-02	-1.5735-02	6.5484-02	5.0423-02	-9.4590-02	1.5356-01	1.2241-01	1.1867-01
P/PO1	1.6754-01	4.3585-02	7.5228-02	1.1764-01	1.0978-01	3.4050-02	1.6364-01	1.4737-01	1.4542-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.153 P-INF = .8234 RE = .3883 TO = 541.

P	1.1014+00	1.4109+00	1.4374+00	1.4238+00	1.4364+00	1.3273+00	3.0099-01	2.0001-01	1.9596-01
CP	5.3957-02	1.1403-01	1.1916-01	1.1652-01	1.1898-01	9.7794-02	-1.0138-01	-1.2098-01	-1.2176-01
P/PO1	1.1162-01	1.4299-01	1.4567-01	1.4429-01	1.4558-01	1.3451-01	3.0505-02	2.0270-02	1.9860-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTOUR NOZZLE

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3896 TO = 541.

P	1.9438-01	1.9245-01	1.0786+00	8.4978-01	1.1886+00	1.2011+00	1.1406+00	1.0233+00	2.5910-01
CP	-1.2219-01	-1.2256-01	4.8888-02	4.6101-03	7.0158-02	7.2577-02	6.0870-02	3.8189-02	-1.0967-01
P/PO1	1.9638-02	1.9443-02	1.0897-01	8.5853-02	1.2008-01	1.2135-01	1.1523-01	1.0339-01	2.6177-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3898 TO = 541.

P	1.8587-01	2.8110+00	1.0332+00	1.0759+00	1.1684+00	1.6553+00	1.1431+00	9.5184-01	9.4710-01
CP	-1.2386-01	3.8369-01	3.9966-02	4.8224-02	6.6102-02	1.6025-01	6.1228-02	2.4239-02	2.3324-02
P/PO1	1.8766-02	2.8381-01	1.0432-01	1.0863-01	1.1796-01	1.6713-01	1.1542-01	9.6103-02	9.5625-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.8 Q-INF = 5.156 P-INF = .8239 RE = .3886 TO = 541.

P	1.1595+00	1.0357+00	3.1339-01	1.8315-01	1.8876-01	1.8620-01	1.8483-01	1.8101-01	1.8006-01
CP	6.5091-02	4.1076-02	-9.9011-02	-1.2427-01	-1.2318-01	-1.2368-01	-1.2395-01	-1.2469-01	-1.2487-01
P/PO1	1.1744-01	1.0490-01	3.1741-02	1.8550-02	1.9118-02	1.8859-02	1.8720-02	1.8333-02	1.8237-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.5273+00	7.1273+00	7.1906+00	2.1328-01	6.6023+00	2.5781-01	5.7938+00	3.7266-01
CP	5.2434-01	1.2226+00	1.2348+00	-1.1843-01	1.1208+00	-1.0979-01	9.6392-01	-8.7516-02
P/PO1	3.5726-01	7.2188-01	7.2829-01	2.1602-02	6.6871-01	2.6112-02	5.8681-01	3.7744-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.2781+00	6.7969-01	5.1234+00	9.0000-01	3.4758+00	1.6781+00	1.5727+00
CP	8.6391-01	-2.7966-02	8.3391-01	1.4764-02	5.1434-01	1.6568-01	1.4523-01
P/PO1	5.3459-01	6.8841-02	5.1892-01	9.1155-02	3.5204-01	1.6997-01	1.5928-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GA

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
11.	225.	301244	2.99	1	5.00	180.14	.01	40.00	.0

VALVE POS 2 PO = 29.8 Q-INF = 5.162 P-INF = .8248 RE = .3890 TO = 541.

P	5.3728+00	8.7098+00	9.5169+00	9.8289+00	9.8011+00	9.5471+00	9.3111+00	9.2699+00	9.0038+00
CP	8.8114-01	1.5276+00	1.6840+00	1.7445+00	1.7391+00	1.6899+00	1.6441+00	1.6362+00	1.5846+00
P/PO1	5.4358-01	8.8118-01	9.6284-01	9.9441-01	9.9160-01	9.6590-01	9.4202-01	9.3786-01	9.1093-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.8 Q-INF = 5.149 P-INF = .8228 RE = .3881 TO = 541.

P	8.5470+00	6.5053+00	2.8758+00	5.9473-01	1.1182-01	1.2799-01	1.3027-01	1.2400-01	8.8809+00
CP	1.5000+00	1.1035+00	3.9869-01	-4.4298-02	-1.3808-01	-1.3494-01	-1.3449-01	-1.3571-01	1.5648+00
P/PO1	8.6676-01	6.5971-01	2.9164-01	6.0312-02	1.1340-02	1.2979-02	1.3211-02	1.2575-02	9.0061-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.145 P-INF = .8222 RE = .3878 TO = 541.

P	8.9031+00	8.7252+00	8.2191+00	8.0138+00	5.8373+00	2.4952+00	7.3597+00	7.1911+00	7.2215+00
CP	1.5705+00	1.5359+00	1.4376+00	1.3977+00	9.7469-01	3.2515-01	1.2706+00	1.2378+00	1.2437+00
P/PO1	9.0358-01	8.8552-01	8.3417-01	8.1333-01	5.9243-01	2.5324-01	7.4694-01	7.2983-01	7.3291-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.7 Q-INF = 5.138 P-INF = .8210 RE = .3872 TO = 541.

P	7.6180+00	7.1066+00	6.7669+00	6.6449+00	6.2244+00	4.5850+00	1.6081+00	2.8077-01	1.3376-01
CP	1.3229+00	1.2233+00	1.1572+00	1.1335+00	1.0516+00	7.3256-01	1.5319-01	-1.0515-01	-1.3376-01
P/PO1	7.7425-01	7.2227-01	6.8775-01	6.7535-01	6.3262-01	4.6599-01	1.6344-01	2.8536-02	1.3595-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.147 P-INF = .8225 RE = .3879 TO = 541.

P	1.2911-01	1.3021-01	7.5085+00	6.3834+00	5.7832+00	5.1464+00	4.6694+00	3.4084+00	1.0165+00
CP	-1.3471-01	-1.3449-01	1.2990+00	1.0804+00	9.6382-01	8.4010-01	7.4741-01	5.0242-01	3.7706-02
P/PO1	1.3100-02	1.3211-02	7.6180-01	6.4765-01	5.8675-01	5.2215-01	4.7375-01	3.4581-01	1.0314-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.158 P-INF = .8243 RE = .3888 TO = 541.

P	4.5063+00	3.2108+00	2.8821+00	3.5887-01	1.4599-01	1.3769-01	1.3216-01	1.2352-01	4.9149-01
CP	7.1380-01	4.6766-01	3.9893-01	-9.0223-02	-1.3149-01	-1.3310-01	-1.3417-01	-1.3585-01	-6.4512-02
P/PO1	4.5620-01	3.2505-01	2.9177-01	3.6330-02	1.4780-02	1.3939-02	1.3379-02	1.2505-02	4.9757-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.162 P-INF = .8248 RE = .3890 TO = 541.

P	2.3080-01	4.3175-01	5.9991-01	7.1312-01	5.9413-01	2.2039-01	1.2022+00	9.7649-01	1.0636+00
CP	-1.1508-01	-7.6147-02	-4.3568-02	-2.1634-02	-4.4688-02	-1.1709-01	7.3126-02	2.9392-02	4.6274-02
P/PO1	2.3350-02	4.3681-02	6.0694-02	7.2148-02	6.0109-02	2.2298-02	1.2163-01	9.8794-02	1.0761-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.160 P-INF = .8245 RE = .3889 TO = 541.

P	4.4315-01	1.0698+00	1.0812+00	4.5367-01	5.5992-01	5.1235-01	1.4391-01	1.4395-01	1.3844-01
CP	-7.3911-02	4.7530-02	4.9738-02	-7.1873-02	-5.1280-02	-6.0500-02	-1.3190-01	-1.3190-01	-1.3296-01
P/PO1	4.4848-02	1.0827-01	1.0942-01	4.5913-02	5.6666-02	5.1852-02	1.4564-02	1.4568-02	1.4010-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V n [illegible] GAS [illegible] LIFE
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.168 P-INF = .6258 RE = .3895 TO = 541.

P	1.4362-01	1.3746-01	4.8919-01	6.4777-01	7.8649-01	7.2923-01	6.9933-01	5.9426-01	1.5810-01
CP	-1.3200-01	-1.3370-01	-6.5137-02	-3.4452-02	-7.6103-03	-1.8689-02	-2.4476-02	-4.4807-02	-1.2920-01
P/PO1	1.4512-02	1.3890-02	4.9430-02	6.5454-02	7.9471-02	7.3685-02	7.0663-02	6.0047-02	1.5975-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3907 TO = 541.

P	1.5107-01	1.7277+00	1.0155+00	1.0163+00	1.0520+00	1.7789+00	7.0046-01	6.1798-01	8.2809-01
CP	-1.3065-01	1.7352-01	3.6117-02	3.6264-02	4.3165-02	1.8340-01	-2.4660-02	-4.0571-02	-3.6397-05
P/PO1	1.5220-02	1.7406-01	1.0231-01	1.0238-01	1.0599-01	1.7922-01	7.0567-02	6.2259-02	8.3426-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3902 TO = 541.

P	9.3718-01	7.7005-01	1.9762-01	1.4219-01	1.4745-01	1.4601-01	1.5191-01	1.3920-01	1.4311-01
CP	2.1208-02	-1.1073-02	-1.2163-01	-1.3233-01	-1.3132-01	-1.3160-01	-1.3046-01	-1.3291-01	-1.3215-01
P/PO1	9.4520-02	7.7663-02	1.9931-02	1.4341-02	1.4871-02	1.4725-02	1.5321-02	1.4039-02	1.4434-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.7805+00	2.4141+00	8.8922+00	1.3828-01	7.0547+00	1.8516-01	6.2109+00	2.9766-01
CP	5.7034-01	3.0644-01	1.5576+00	-1.3309-01	1.2027+00	-1.2403-01	1.0397+00	-1.0231-01
P/PO1	3.8128-01	2.4347-01	8.9682-01	1.3946-02	7.1150-01	1.8674-02	6.2640-01	3.0020-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.0352+00	3.8203-01	5.1234+00	2.7188-01	3.6844+00	3.9844-01	1.3430+00
CP	1.0058+00	-8.6011-02	8.2971-01	-1.0729-01	5.5178-01	-8.2842-02	9.9578-02
P/PO1	6.0868-01	3.8530-02	5.1672-01	2.7420-02	3.7159-01	4.0184-02	1.3545-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	226.	301244	1.49	5	4.98	-.02	.00	49.98	.0

VALVE POS 2 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	4.4838+00	8.6902+00	1.0789+01	1.2754+01	1.2604+01	1.3596+01	1.3329+01	1.3123+01	1.2907+01
CP	8.1964-02	7.6254-01	1.1022+00	1.4200+00	1.3957+00	1.5562+00	1.5130+00	1.4797+00	1.4447+00
P/PO1	3.3398-01	6.4730-01	8.0365-01	9.5000-01	9.3881-01	1.0127+00	9.9281-01	9.7746-01	9.6138-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3726 TO = 532.

P	1.2164+01	9.6610+00	5.5684+00	1.7848+00	1.8973+00	1.9156+00	1.9984+00	1.9053+00	1.2617+01
CP	1.3304+00	9.2418-01	2.6009-01	-3.5386-01	-3.3560-01	-3.3264-01	-3.1920-01	-3.3430-01	1.4038+00
P/PO1	9.0872-01	7.2172-01	4.1598-01	1.3333-01	1.4174-01	1.4310-01	1.4929-01	1.4234-01	9.4252-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	1.2288+01	1.2234+01	1.1944+01	1.1349+01	8.7365+00	4.8593+00	7.3263+00	8.5808+00	9.1799+00
CP	1.3446+00	1.3359+00	1.2889+00	1.1927+00	7.7001-01	1.4273-01	5.4186-01	7.4484-01	8.4176-01
P/PO1	9.1528-01	9.1127-01	8.8964-01	8.4533-01	6.5074-01	3.6195-01	5.4570-01	6.3915-01	6.8377-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3713 TO = 532.

P	1.0818+01	9.9845+00	9.8966+00	9.6381+00	9.1833+00	7.0339+00	3.1739+00	1.9053+00	1.9135+00
CP	1.1182+00	9.8253-01	9.6822-01	9.2612-01	8.5205-01	5.0201-01	-1.2659-01	-3.3318-01	-3.3185-01
P/PO1	8.1105-01	7.4858-01	7.4199-01	7.2261-01	6.8851-01	5.2736-01	2.3796-01	1.4285-01	1.4346-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.130 P-INF =3.9448 RE = .3706 TO = 532.

P	1.9413+00	1.9446+00	8.9578+00	8.9508+00	8.1355+00	7.5363+00	6.9261+00	5.0504+00	1.7851+00
CP	-3.2681-01	-3.2626-01	8.1772-01	8.1658-01	6.8360-01	5.8584-01	4.8632-01	1.8035-01	-3.5228-01
P/PO1	1.4579-01	1.4604-01	6.7270-01	6.7218-01	6.1096-01	5.6595-01	5.2013-01	3.7927-01	1.3406-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3741 TO = 532.

P	3.6446+00	3.8522+00	4.1593+00	1.9013+00	1.8542+00	1.9033+00	1.9613+00	1.8748+00	2.3537+00
CP	-5.4377-02	-2.0819-02	2.8808-02	-3.3615-01	-3.4378-01	-3.3583-01	-3.2646-01	-3.4044-01	-2.6304-01
P/PO1	2.7121-01	2.8666-01	3.0950-01	1.4148-01	1.3797-01	1.4163-01	1.4594-01	1.3951-01	1.7514-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.199 P-INF =3.9888 RE = .3748 TO = 532.

P	5.1526-01	9.3666-01	1.0805+00	1.4333+00	1.7803+00	1.8666+00	4.2690+00	4.2931+00	3.9615+00
CP	-5.6035-01	-4.9237-01	-4.6916-01	-4.1226-01	-3.5628-01	-3.4235-01	4.5198-02	4.9090-02	-4.4036-03
P/PO1	3.8267-02	6.9564-02	8.0249-02	1.0645-01	1.3222-01	1.3863-01	3.1705-01	3.1884-01	2.9421-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3726 TO = 532.

P	3.6885+00	1.5775+00	8.4834-01	6.8745-01	1.5096+00	1.8115+00	1.9056+00	1.8504+00	1.8707+00
CP	-4.4955-02	-3.8749-01	-5.0581-01	-5.3192-01	-3.9852-01	-3.4952-01	-3.3426-01	-3.4322-01	-3.3991-01
P/PO1	2.7555-01	1.1785-01	6.3375-02	5.1356-02	1.1277-01	1.3533-01	1.4236-01	1.3823-01	1.3975-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3716 TO = 532.

P	1.8724+00	1.9879+00	1.2634+00	4.5780-01	6.1579-01	9.7398-01	1.8128+00	1.7710+00	1.7607+00
CP	-3.3884-01	-3.2006-01	-4.3793-01	-5.6899-01	-5.4329-01	-4.8501-01	-3.4855-01	-3.5534-01	-3.5702-01
P/PO1	1.4024-01	1.4889-01	9.4627-02	3.4290-02	4.6123-02	7.2952-02	1.3578-01	1.3265-01	1.3188-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3714 TO = 532.

P	1.7910+00	4.0745+00	3.9430+00	5.2440+00	7.8120+00	8.7803-01	9.0177-01	1.1140+00	1.7240+00
CP	-3.5190-01	1.9852-02	-1.5592-03	2.1025-01	6.2831-01	-5.0053-01	-4.9667-01	-4.6211-01	-3.6281-01
P/PO1	1.3423-01	3.0538-01	2.9552-01	3.9304-01	5.8550-01	6.5808-02	6.7587-02	8.3495-02	1.2921-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.175 P-INF =3.9733 RE = .3733 TO = 532.

P	2.3797+00	2.3583+00	1.6226+00	1.8891+00	1.8603+00	1.9033+00	1.9241+00	1.8870+00	1.8952+00
CP	-2.5809-01	-2.6155-01	-3.8069-01	-3.3754-01	-3.4219-01	-3.3523-01	-3.3186-01	-3.3787-01	-3.3655-01
P/PO1	1.7742-01	1.7583-01	1.2098-01	1.4085-01	1.3870-01	1.4191-01	1.4346-01	1.4069-01	1.4130-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.4813+00	5.6250-01	1.0392+01	6.0469-01	9.7078+00	1.1508+00	8.9766+00	1.1977+00
CP	8.2266-02	-5.5237-01	1.0395+00	-5.4554-01	9.2871-01	-4.5710-01	8.1028-01	-4.4951-01
P/PO1	3.3412-01	4.1939-02	7.7483-01	4.5085-02	7.2380-01	8.5801-02	6.6928-01	8.9296-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.3250+00	1.0547+00	8.0555+00	1.1203+00	5.4984+00	1.6336+00	2.1938+00
CP	7.0476-01	-4.7267-01	6.6111-01	-4.6204-01	2.4700-01	-3.7891-01	-2.8819-01
P/PO1	6.2070-01	7.8636-02	6.0060-01	8.3529-02	4.0996-01	1.2180-01	1.6356-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	227.	301244	1.49	5	14.64	.02	-.00	59.64	.0

VALVE POS 2 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3711 TO = 533.

P	3.7010+00	7.6271+00	1.0204+01	1.2388+01	1.1510+01	1.3215+01	1.3329+01	1.3290+01	1.3197+01
CP	-4.1349-02	5.9740-01	1.0167+00	1.3719+00	1.2291+00	1.5065+00	1.5250+00	1.5188+00	1.5036+00
P/PO1	2.7721-01	5.7127-01	7.6432-01	9.2783-01	8.6210-01	9.8982-01	9.9834-01	9.9546-01	9.6847-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.134 P-INF =3.9474 RE = .3704 TO = 533.

P	1.2768+01	1.0847+01	7.5110+00	2.4349+00	1.0875+00	1.0265+00	1.0577+00	1.1049+00	1.2281+01
CP	1.4378+00	1.1248+00	5.8092-01	-2.4655-01	-4.6619-01	-4.7614-01	-4.7105-01	-4.6336-01	1.3584+00
P/PO1	9.5819-01	8.1408-01	5.6368-01	1.8279-01	8.1617-02	7.7035-02	7.9381-02	8.2922-02	9.2164-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3714 TO = 533.

P	1.2226+01	1.2296+01	1.2190+01	1.1761+01	9.7226+00	6.4858+00	6.9261+00	8.2455+00	8.5537+00
CP	1.3443+00	1.3556+00	1.3384+00	1.2687+00	9.3728-01	4.1102-01	4.8262-01	6.9714-01	7.4723-01
P/PO1	9.1514-01	9.2036-01	9.1244-01	8.8035-01	7.2775-01	4.8547-01	5.1843-01	6.1719-01	6.4025-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3726 TO = 533.

P	1.0075+01	9.7380+00	9.6812+00	9.5465+00	9.1987+00	7.3993+00	4.1453+00	1.1031+00	1.1639+00
CP	9.8922-01	9.3462-01	9.2541-01	9.0359-01	8.4723-01	5.5562-01	2.8291-02	-4.6471-01	-4.5486-01
P/PO1	7.5166-01	7.2653-01	7.2229-01	7.1224-01	6.8629-01	5.5204-01	3.0927-01	8.2299-02	8.6833-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.175 P-INF =3.9733 RE = .3729 TO = 533.

P	1.1402+00	1.0642+00	8.6192+00	8.6606+00	7.7657+00	7.2775+00	6.6337+00	4.9954+00	2.1153+00
CP	-4.5882-01	-4.7112-01	7.5240-01	7.5911-01	6.1419-01	5.3511-01	4.3085-01	1.6554-01	-3.0091-01
P/PO1	8.5811-02	7.9347-02	6.4263-01	6.4572-01	5.7900-01	5.4260-01	4.9460-01	3.7245-01	1.5771-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3725 TO = 533.

P	3.1750+00	3.9202+00	3.8194+00	1.2213+00	1.2460+00	1.1967+00	1.1581+00	1.1213+00	2.2620+00
CP	-1.2878-01	-7.9821-03	-2.4320-02	-4.4549-01	-4.4149-01	-4.4948-01	-4.5573-01	-4.6170-01	-2.7679-01
P/PO1	2.3695-01	2.9257-01	2.8505-01	9.1149-02	9.2990-02	8.9308-02	8.6433-02	8.3685-02	1.6882-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3719 TO = 533.

P	5.3817-01	6.2140-01	8.1543-01	1.0421+00	1.1596+00	1.2148+00	4.1391+00	3.8229+00	3.8270+00
CP	-5.5609-01	-5.4257-01	-5.1107-01	-4.7426-01	-4.5519-01	-4.4623-01	2.8604-02	-2.2734-02	-2.2064-02
P/PO1	4.0230-02	4.6452-02	6.0956-02	7.7904-02	8.6681-02	9.0808-02	3.0941-01	2.8578-01	2.8608-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3719 TO = 533.

P	3.2564+00	7.3621-01	4.0984-01	9.2147-01	1.0785+00	1.2021+00	1.3159+00	1.2742+00	1.1460+00
CP	-1.1472-01	-5.2393-01	-5.7692-01	-4.9385-01	-4.6835-01	-4.4828-01	-4.2981-01	-4.3657-01	-4.5739-01
P/PO1	2.4343-01	5.5034-02	3.0637-02	6.8883-02	8.0624-02	8.9860-02	9.8368-02	9.5252-02	8.5668-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN [illegible]
40 - [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3726 TO = 533.

P	1.1748+00	1.4487+00	1.1738+00	4.4959-01	4.3424-01	9.5588-01	1.2711+00	1.2961+00	1.3245+00
CP	-4.5308-01	-4.0870-01	-4.5325-01	-5.7061-01	-5.7310-01	-4.8857-01	-4.3749-01	-4.3344-01	-4.2883-01
P/PO1	8.7652-02	1.0809-01	8.7572-02	3.3542-02	3.2397-02	7.1315-02	9.4832-02	9.6695-02	9.8819-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3720 TO = 533.

P	1.3190+00	3.9140+00	3.6278+00	5.2624+00	7.8428+00	8.1286-01	7.9241-01	1.0030+00	1.5284+00
CP	-4.2938-01	-8.1535-03	-5.4609-02	2.1072-01	6.2957-01	-5.1153-01	-5.1485-01	-4.8067-01	-3.9539-01
P/PO1	9.8565-02	2.9249-01	2.7110-01	3.9326-01	5.8608-01	6.0744-02	5.9216-02	7.4952-02	1.1421-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.130 P-INF =3.9448 RE = .3702 TO = 533.

P	2.0164+00	1.5125+00	1.3018+00	1.3475+00	1.3720+00	1.3397+00	1.3625+00	1.3543+00	1.4138+00
CP	-3.1455-01	-3.9675-01	-4.3113-01	-4.2367-01	-4.1967-01	-4.2494-01	-4.2122-01	-4.2256-01	-4.1286-01
P/PO1	1.5143-01	1.1358-01	9.7759-02	1.0119-01	1.0304-01	1.0061-01	1.0232-01	1.0170-01	1.0617-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.3453+00	5.8594-01	9.8391+00	6.0703-01	9.1430+00	1.0781+00	9.0211+00	9.7500-01
CP	6.5335-02	-5.4789-01	9.6147-01	-5.4445-01	8.4793-01	-4.6761-01	8.2805-01	-4.8443-01
P/PO1	3.2632-01	4.4002-02	7.3889-01	4.5586-02	6.8661-01	8.0964-02	6.7746-01	7.3220-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.6070+00	7.9688-01	8.0508+00	9.7266-01	5.7000+00	1.3477+00	2.2992+00
CP	9.2363-01	-5.1349-01	6.6977-01	-4.8481-01	2.8631-01	-4.2364-01	-2.6842-01
P/PO1	7.2146-01	5.9843-02	6.0459-01	7.3044-02	4.2805-01	1.0121-01	1.7267-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	228.	301244	1.49	5	14.64	180.16	.04	30.36	.0

VALVE POS 2 PO = 14.4 Q-INF = 6.175 P-INF =3.9733 RE = .3724 TO = 533.

P	6.2523+00	9.4144+00	1.0281+01	1.0753+01	1.3498+01	1.3261+01	1.2806+01	1.2559+01	1.2235+01
CP	3.6909-01	8.8119-01	1.0216+00	1.0980+00	1.5425+00	1.5041+00	1.4304+00	1.3904+00	1.3379+00
P/PO1	4.6616-01	7.0193-01	7.6657-01	8.0174-01	1.0064+00	9.8871-01	9.5477-01	9.3637-01	9.1221-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3719 TO = 533.

P	1.1298+01	8.3821+00	3.4238+00	1.8829+00	1.8603+00	1.8666+00	1.9489+00	1.8443+00	1.2494+01
CP	1.1885+00	7.1578-01	-8.8258-02	-3.3813-01	-3.4180-01	-3.4078-01	-3.2744-01	-3.4440-01	1.3826+00
P/PO1	8.4343-01	6.2577-01	2.5561-01	1.4057-01	1.3808-01	1.3935-01	1.4550-01	1.3769-01	9.3279-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3696 TO = 533.

P	1.2025+01	1.2018+01	1.1636+01	1.0799+01	7.8582+00	3.0906+00	7.6649+00	7.6054+00	1.0157+01
CP	1.3187+00	1.3176+00	1.2552+00	1.1186+00	6.3878-01	-1.3916-01	6.0724-01	5.9753-01	1.0140+00
P/PO1	9.0333-01	9.0285-01	8.7411-01	8.1124-01	5.9032-01	2.3217-01	5.7580-01	5.7133-01	7.6305-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3712 TO = 533.

P	1.1127+01	1.0385+01	1.0266+01	9.9436+00	9.3374+00	6.9425+00	2.3634+00	1.8565+00	1.8829+00
CP	1.1645+00	1.0439+00	1.0246+00	9.7216-01	8.7366-01	4.8454-01	-2.5946-01	-3.4183-01	-3.3753-01
P/PO1	8.3235-01	7.7683-01	7.6793-01	7.4381-01	6.9846-01	5.1932-01	1.7679-01	1.3887-01	1.4085-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3714 TO = 533.

P	1.9037+00	1.9446+00	9.3272+00	9.2563+00	8.6132+00	8.0387+00	7.3879+00	5.4351+00	1.7301+00
CP	-3.3436-01	-3.2771-01	8.7101-01	8.5950-01	7.5508-01	6.6180-01	5.5612-01	2.3905-01	-3.6255-01
P/PO1	1.4231-01	1.4537-01	6.9724-01	6.9194-01	6.4387-01	6.0092-01	5.5227-01	4.0629-01	1.2933-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3723 TO = 533.

P	5.3730+00	4.1301+00	3.0283+00	1.9013+00	1.8542+00	1.9033+00	1.9489+00	1.8504+00	2.6716+00
CP	2.2697-01	2.5607-02	-1.5288-01	-3.3545-01	-3.4309-01	-3.3512-01	-3.2775-01	-3.4370-01	-2.1067-01
P/PO1	4.0073-01	3.0803-01	2.2586-01	1.4181-01	1.3829-01	1.4196-01	1.4535-01	1.3801-01	1.9925-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3717 TO = 533.

P	1.8035+00	2.0743+00	2.3299+00	2.4963+00	1.8911+00	1.5952+00	3.5204+00	3.5237+00	3.2768+00
CP	-3.5082-01	-3.0688-01	-2.6540-01	-2.3841-01	-3.3660-01	-3.8463-01	-7.2229-02	-7.1696-02	-1.1175-01
P/PO1	1.3473-01	1.5496-01	1.7406-01	1.8648-01	1.4128-01	1.1917-01	2.6299-01	2.6323-01	2.4479-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3725 TO = 533.

P	3.6634+00	4.5684+00	4.3879+00	3.8211+00	3.3572+00	2.6867+00	1.7880+00	1.8198+00	1.8402+00
CP	-5.0376-02	9.6133-02	6.6924-02	-2.4852-02	-9.9948-02	-2.0850-01	-3.5399-01	-3.4884-01	-3.4556-01
P/PO1	2.7305-01	3.4050-01	3.2705-01	2.8480-01	2.5023-01	2.0025-01	1.3327-01	1.3564-01	1.3715-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SB WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3695 TO = 533.

P	1.8599+00	1.9261+00	2.7749+00	4.1216+00	4.2812+00	4.3147+00	4.1700+00	3.2183+00	1.7607+00
CP	-3.3989-01	-3.2908-01	-1.9053-01	2.9286-02	5.5340-02	6.0797-02	3.7187-02	-1.1815-01	-3.5608-01
P/PO1	1.3976-01	1.4474-01	2.0853-01	3.0972-01	3.2172-01	3.2423-01	3.1336-01	2.4185-01	1.3231-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3718 TO = 533.

P	1.8223+00	3.3831+00	3.5722+00	3.6309+00	5.4516+00	3.2498+00	4.5041+00	4.6290+00	4.6340+00
CP	-3.4787-01	-9.4691-02	-6.4016-02	-5.4482-02	2.4086-01	-1.1631-01	8.7159-02	1.0742-01	1.0623-01
P/PO1	1.3609-01	2.5265-01	2.6677-01	2.7116-01	4.0713-01	2.4269-01	3.3637-01	3.4570-01	3.4607-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.130 P-INF =3.9448 RE = .3697 TO = 533.

P	4.3898+00	3.3954+00	1.7243+00	1.8339+00	1.8172+00	1.8299+00	1.8870+00	1.8076+00	1.8279+00
CP	7.2598-02	-8.9613-02	-3.6221-01	-3.4433-01	-3.4705-01	-3.4498-01	-3.3566-01	-3.4861-01	-3.4530-01
P/PO1	3.2966-01	2.5499-01	1.2949-01	1.3772-01	1.3647-01	1.3742-01	1.4171-01	1.3575-01	1.3727-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.7641+00	9.4219-01	1.0931+01	1.4273+00	9.8719+00	1.7203+00	9.9023+00	2.0227+00
CP	-2.9478-02	-4.8978-01	1.1396+00	-4.1064-01	9.6683-01	-3.6285-01	9.7180-01	-3.1354-01
P/PO1	2.8267-01	7.0756-02	8.2091-01	1.0719-01	7.4135-01	1.2919-01	7.4364-01	1.5190-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.2758+00	2.1844+00	7.8914+00	2.2969+00	5.6461+00	2.3578+00	2.3250+00
CP	7.0647-01	-2.8716-01	6.4377-01	-2.6881-01	2.7752-01	-2.5887-01	-2.6422-01
P/PO1	6.2149-01	1.6404-01	5.9262-01	1.7249-01	4.2401-01	1.7707-01	1.7460-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S ROLL	YAW	ALPHA	SI-ROLL
12.	229.	301244	1.49	5	4.96	180.17	.01	40.04	.0

VALVE POS 2 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3725 TO = 533.

P	4.7976+00	8.6440+00	1.1082+01	1.2571+01	1.3498+01	1.4129+01	1.3652+01	1.3199+01	1.2708+01
CP	1.3374-01	7.5597-01	1.1506+00	1.3917+00	1.5417+00	1.6439+00	1.5668+00	1.4934+00	1.4140+00
P/PO1	3.5758-01	6.4428-01	8.2597-01	9.3696-01	1.0060+00	1.0531+00	1.0176+00	9.8378-01	9.4720-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3720 TO = 533.

P	1.1638+01	8.6902+00	3.7576+00	2.4227+00	2.4147+00	2.4297+00	2.4810+00	2.3939+00	1.3167+01
CP	1.2431+00	7.6529-01	-3.4339-02	-2.5074-01	-2.5202-01	-2.4960-01	-2.4129-01	-2.5540-01	1.4909+00
P/PO1	8.6856-01	6.4857-01	2.8043-01	1.8081-01	1.8022-01	1.8133-01	1.8516-01	1.7866-01	9.8764-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.137 P-INF =3.9487 RE = .3701 TO = 533.

P	1.2690+01	1.2434+01	1.2021+01	1.1104+01	8.1201+00	3.3416+00	7.5879+00	8.6875+00	9.8520+00
CP	1.4245+00	1.3828+00	1.3154+00	1.1661+00	6.7978-01	-9.8933-02	5.9305-01	7.7224-01	9.6200-01
P/PO1	9.5207-01	9.3287-01	9.0183-01	8.3310-01	6.0920-01	2.5070-01	5.6927-01	6.5177-01	7.3913-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3720 TO = 533.

P	1.1545+01	1.0678+01	1.0528+01	1.0127+01	9.4761+00	7.0339+00	2.4315+00	2.3878+00	2.4209+00
CP	1.2281+00	1.0875+00	1.0632+00	9.9819-01	8.9268-01	4.9677-01	-2.4931-01	-2.5639-01	-2.5102-01
P/PO1	8.6163-01	7.9691-01	7.8570-01	7.5579-01	7.0721-01	5.2495-01	1.8147-01	1.7820-01	1.8068-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3719 TO = 533.

P	2.4611+00	2.4817+00	9.5580+00	9.5312+00	8.7211+00	8.0844+00	7.3725+00	5.4046+00	2.3231+00
CP	-2.4438-01	-2.4103-01	9.0647-01	9.0212-01	7.7075-01	6.6750-01	5.5206-01	2.3294-01	-2.6675-01
P/PO1	1.8373-01	1.8528-01	7.1356-01	7.1156-01	6.5108-01	6.0355-01	5.5040-01	4.0348-01	1.7343-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3709 TO = 533.

P	4.1080+00	3.4201+00	3.7081+00	2.4043+00	2.4024+00	2.4297+00	2.4686+00	2.3756+00	2.7572+00
CP	2.4437-02	-8.7411-02	-4.0583-02	-2.5257-01	-2.5287-01	-2.4844-01	-2.4211-01	-2.5724-01	-1.9519-01
P/PO1	3.0749-01	2.5600-01	2.7756-01	1.7996-01	1.7982-01	1.8186-01	1.8478-01	1.7782-01	2.0638-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3718 TO = 533.

P	6.1844-01	1.2064+00	1.7119+00	2.2325+00	2.3223+00	2.3930+00	4.0896+00	4.4458+00	4.3039+00
CP	-5.4315-01	-4.4778-01	-3.6577-01	-2.8132-01	-2.6676-01	-2.5530-01	1.9917-02	7.7701-02	5.4679-02
P/PO1	4.6185-02	9.0091-02	1.2785-01	1.6673-01	1.7343-01	1.7871-01	3.0541-01	3.3201-01	3.2142-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3721 TO = 533.

P	4.1080+00	2.4817+00	1.8232+00	1.3383+00	2.1745+00	2.3685+00	2.4191+00	2.3695+00	2.3843+00
CP	2.2258-02	-2.4129-01	-3.4802-01	-4.2659-01	-2.9108-01	-2.5965-01	-2.5144-01	-2.5949-01	-2.5709-01
P/PO1	3.0649-01	1.8516-01	1.3602-01	9.9849-02	1.6223-01	1.7671-01	1.8048-01	1.7678-01	1.7788-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] FACILITY

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3709 TO = 533.

P	2.4047+00	2.4509+00	1.4005+00	1.7787+00	2.0205+00	2.6010+00	3.0007+00	2.3878+00	2.1581+00
CP	-2.5250-01	-2.4500-01	-4.1577-01	-3.5429-01	-3.1497-01	-2.2058-01	-1.5560-01	-2.5525-01	-2.9260-01
P/PO1	1.8000-01	1.8345-01	1.0483-01	1.3314-01	1.5124-01	1.9469-01	2.2461-01	1.7873-01	1.6153-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3718 TO = 533.

P	2.3170+00	3.9819+00	4.0913+00	5.4464+00	7.7349+00	1.4519+00	1.8499+00	2.1191+00	2.7633+00
CP	-2.6762-01	2.4472-03	2.0195-02	2.4001-01	6.1124-01	-4.0795-01	-3.4339-01	-2.9973-01	-1.9523-01
P/PO1	1.7304-01	2.9737-01	3.0554-01	4.0674-01	5.7765-01	1.0843-01	1.3815-01	1.5825-01	2.0636-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.139 P-INF =3.9500 RE = .3697 TO = 534.

P	3.2188+00	2.7966+00	2.0333+00	2.3245+00	2.3162+00	2.3501+00	2.3820+00	2.3389+00	2.3781+00
CP	-1.1911-01	-1.8789-01	-3.1224-01	-2.6479-01	-2.6615-01	-2.6062-01	-2.5543-01	-2.6245-01	-2.5606-01
P/PO1	2.4141-01	2.0974-01	1.5249-01	1.7434-01	1.7371-01	1.7626-01	1.7865-01	1.7542-01	1.7836-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.6570+00	5.7656-01	1.0833+01	8.4141-01	1.0296+01	1.2164+00	9.6258+00	1.3477+00
CP	1.1519-01	-5.4955-01	1.1213+00	-5.0640-01	1.0338+00	-4.4531-01	9.2462-01	-4.2393-01
P/PO1	3.4927-01	4.3241-02	8.1245-01	6.3104-02	7.7219-01	9.1229-02	7.2192-01	1.0107-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.5172+00	1.5141+00	8.2031+00	1.8563+00	5.5781+00	1.9711+00	2.2570+00
CP	7.4403-01	-3.9682-01	6.9287-01	-3.4108-01	2.6524-01	-3.2237-01	-2.7579-01
P/PO1	6.3878-01	1.1355-01	6.1522-01	1.3922-01	4.1835-01	1.4783-01	1.6927-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	230.	301244	1.99	5	4.95	180.17	.01	40.05	.0

VALVE POS 2 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4336 TO = 533.

P	7.3047+00	1.0062+01	1.0512+01	1.1547+01	1.3837+01	1.6088+01	1.5367+01	1.4260+01	1.3441+01
CP	6.6282-01	1.0491+00	1.1123+00	1.2573+00	1.5781+00	1.8935+00	1.7926+00	1.6375+00	1.5227+00
P/PO1	5.0764-01	6.9923-01	7.3055-01	8.0249-01	9.6157-01	1.1180+00	1.0679+00	9.9102-01	9.3411-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4316 TO = 533.

P	1.2489+01	9.2758+00	3.5474+00	5.8506-01	4.8386-01	4.2010-01	5.2890-01	4.4958-01	1.4547+01
CP	1.3976+00	9.4518-01	1.3870-01	-2.7837-01	-2.9262-01	-3.0160-01	-2.8628-01	-2.9745-01	1.6874+00
P/PO1	8.7205-01	6.4768-01	2.4770-01	4.0852-02	3.3786-02	2.9333-02	3.6930-02	3.1392-02	1.0158+00
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4339 TO = 533.

P	1.4279+01	1.3698+01	1.2698+01	1.1807+01	8.5978+00	3.0906+00	7.9112+00	7.5444+00	9.6687+00
CP	1.6387+00	1.5573+00	1.4173+00	1.2925+00	8.4316-01	7.2024-02	7.4701-01	6.9566-01	9.9311-01
P/PO1	9.9162-01	9.5126-01	8.8181-01	8.1995-01	5.9708-01	2.1463-01	5.4939-01	5.2393-01	6.7145-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4333 TO = 533.

P	1.2536+01	1.1741+01	1.1590+01	1.0814+01	9.9691+00	7.4906+00	2.1778+00	3.8894-01	4.4984-01
CP	1.3970+00	1.2856+00	1.2644+00	1.1557+00	1.0372+00	6.8961-01	-5.5362-02	-3.0620-01	-2.9766-01
P/PO1	8.7177-01	8.1652-01	8.0599-01	7.5207-01	6.9329-01	5.2093-01	1.5145-01	2.7049-02	3.1283-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4324 TO = 533.

P	4.4314-01	4.3156-01	9.9120+00	1.0249+01	9.4452+00	8.7543+00	8.0035+00	6.0203+00	1.6812+00
CP	-2.9847-01	-3.0010-01	1.0321+00	1.0795+00	9.6653-01	8.6943-01	7.6393-01	4.8525-01	-1.2449-01
P/PO1	3.0883-02	3.0077-02	6.9079-01	7.1428-01	6.5826-01	6.1010-01	5.5778-01	4.1957-01	1.1717-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.111 P-INF =2.5653 RE = .4321 TO = 533.

P	6.1749+00	4.5498+00	2.7749+00	6.4722-01	5.1856-01	4.8001-01	4.8115-01	4.3627-01	2.2008+00
CP	5.0759-01	2.7907-01	2.9473-02	-2.6973-01	-2.8782-01	-2.9324-01	-2.9308-01	-2.9939-01	-5.1253-02
P/PO1	4.3065-01	3.1732-01	1.9353-01	4.5139-02	3.6165-02	3.3477-02	3.3556-02	3.0426-02	1.5349-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.6 Q-INF = 7.062 P-INF =2.5477 RE = .4291 TO = 533.

P	8.5560-01	1.1189+00	1.3676+00	1.4096+00	1.1542+00	5.2384-01	3.4709+00	3.5176+00	3.5947+00
CP	-2.3959-01	-2.0231-01	-1.6710-01	-1.6114-01	-1.9732-01	-2.8657-01	1.3072-01	1.3733-01	1.4826-01
P/PO1	6.0084-02	7.8574-02	9.6038-02	9.8991-02	8.1050-02	3.6787-02	2.4374-01	2.4702-01	2.5244-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.7 Q-INF = 7.105 P-INF =2.5629 RE = .4317 TO = 533.

P	2.8869+00	1.6040+00	1.3054+00	1.1665+00	1.1578+00	9.1967-01	5.9162-01	5.4973-01	5.4623-01
CP	4.5606-02	-1.3497-01	-1.7700-01	-1.9655-01	-1.9778-01	-2.3129-01	-2.7747-01	-2.8336-01	-2.8386-01
P/PO1	2.0153-01	1.1197-01	9.1129-02	8.1429-02	8.0821-02	6.4200-02	4.1300-02	3.8376-02	3.8131-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V. D. [illegible] GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.106 P-INF =2.5635 RE = .4318 TO = 533.

P	5.0782-01	5.0189-01	1.4462+00	4.4660-01	6.3199-01	7.7484-01	1.0703+00	9.2107-01	4.9167-01
CP	-2.8928-01	-2.9011-01	-1.5723-01	-2.9789-01	-2.7181-01	-2.5170-01	-2.1013-01	-2.3113-01	-2.9155-01
P/PO1	3.5442-02	3.5028-02	1.0093-01	3.1169-02	4.4108-02	5.4077-02	7.4697-02	6.4283-02	3.4314-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.108 P-INF =2.5641 RE = .4319 TO = 533.

P	5.0931-01	3.1114+00	3.7761+00	3.5451+00	5.3408+00	6.7165-01	9.1252-01	1.0485+00	1.3962+00
CP	-2.8909-01	7.7003-02	1.7052-01	1.3801-01	3.9064-01	-2.6625-01	-2.3236-01	-2.1323-01	-1.6432-01
P/PO1	3.5537-02	2.1710-01	2.6348-01	2.4736-01	3.7265-01	4.6864-02	6.3671-02	7.3158-02	9.7417-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.7 Q-INF = 7.105 P-INF =2.5629 RE = .4317 TO = 533.

P	1.7973+00	1.8212+00	5.4844-01	4.9141-01	5.0235-01	4.8877-01	5.3066-01	5.1539-01	5.3195-01
CP	-1.0777-01	-1.0440-01	-2.8354-01	-2.9157-01	-2.9003-01	-2.9194-01	-2.8605-01	-2.8820-01	-2.8587-01
P/PO1	1.2546-01	1.2713-01	3.8286-02	3.4304-02	3.5068-02	3.4120-02	3.7045-02	3.5978-02	3.7134-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.7266+00	7.1953-01	1.1604+01	1.2375+00	1.1121+01	1.1742+00	1.0709+01	1.1227+00
CP	1.6379-01	-2.5946-01	1.2726+00	-1.8656-01	1.2046+00	-1.9546-01	1.1466+00	-2.0272-01
P/PO1	2.6014-01	5.0229-02	8.1005-01	8.6388-02	7.7634-01	8.1970-02	7.4755-01	7.8371-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.9133+00	1.1391+00	8.8969+00	1.1063+00	6.1570+00	1.4016+00	2.3953+00
CP	8.9385-01	-2.0041-01	8.9155-01	-2.0503-01	5.0590-01	-1.6346-01	-7.3387-02
P/PO1	6.2222-01	7.9516-02	6.2107-01	7.7225-02	4.2981-01	9.7841-02	1.6721-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	231.	301244	1.99	5	14.62	180.17	.04	30.38	.0

VALVE POS 2 PO = 19.7 Q-INF = 7.098 P-INF =2.5605 RE = .4313 TO = 533.

P	7.5987+00	1.3621+01	9.9582+00	9.6687+00	9.5069+00	1.5365+01	1.4071+01	1.3993+01	1.3625+01
CP	7.0984-01	1.5583+00	1.0423+00	1.0015+00	9.7868-01	1.8040+00	1.6217+00	1.6107+00	1.5588+00
P/PO1	5.3096-01	9.5175-01	6.9583-01	6.7559-01	6.6429-01	1.0736+00	9.8318-01	9.7774-01	9.5202-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.7 Q-INF = 7.084 P-INF =2.5556 RE = .4304 TO = 533.

P	1.2474+01	9.0446+00	3.2693+00	5.2107-01	6.6260-01	6.3725-01	6.8843-01	6.4621-01	1.3350+01
CP	1.4000+00	9.1598-01	1.0075-01	-2.8719-01	-2.6721-01	-2.7079-01	-2.6356-01	-2.6952-01	1.5237+00
P/PO1	8.7325-01	6.3319-01	2.2888-01	3.6479-02	4.6387-02	4.4612-02	4.8195-02	4.5239-02	9.3459-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4351 TO = 533.

P	1.3402+01	1.3313+01	1.2913+01	1.2051+01	8.6132+00	3.0723+00	8.6499+00	7.9560+00	7.4234+00
CP	1.5110+00	1.4985+00	1.4428+00	1.3724+00	8.4219-01	6.8338-02	8.4732-01	7.5040-01	6.7602-01
P/PO1	9.2831-01	9.2211-01	8.9445-01	8.3475-01	5.9660-01	2.1280-01	5.9914-01	5.5107-01	5.1418-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4330 TO = 533.

P	9.7809+00	1.1618+01	1.1313+01	1.0936+01	1.0339+01	7.7190+00	2.3634+00	6.3164-01	6.5333-01
CP	1.0117+00	1.2695+00	1.2267+00	1.1739+00	1.0900+00	7.2241-01	-2.9100-02	-2.7211-01	-2.6906-01
P/PO1	6.8068-01	8.0852-01	7.8729-01	7.6111-01	7.1952-01	5.3719-01	1.6448-01	4.3958-02	4.5468-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.113 P-INF =2.5659 RE = .4322 TO = 533.

P	6.4580-01	6.3780-01	7.6341+00	1.0875+01	9.8304+00	8.9065+00	8.0651+00	6.0356+00	1.6995+00
CP	-2.6995-01	-2.7107-01	7.1253-01	1.1682+00	1.0213+00	8.9141-01	7.7312-01	4.8779-01	-1.2180-01
P/PO1	4.5029-02	4.4471-02	5.3229-01	7.5829-01	6.8543-01	6.2101-01	5.6234-01	4.2083-01	1.1850-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.7 Q-INF = 7.106 P-INF =2.5635 RE = .4318 TO = 533.

P	6.2368+00	3.1546+00	4.1902+00	6.0700-01	6.9321-01	6.6260-01	6.8305-01	6.4803-01	1.6384+00
CP	5.1692-01	8.3188-02	2.2891-01	-2.7532-01	-2.6319-01	-2.6750-01	-2.6462-01	-2.6955-01	-1.3018-01
P/PO1	4.3528-01	2.2017-01	2.9244-01	4.2364-02	4.8380-02	4.6244-02	4.7671-02	4.5227-02	1.1435-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.7 Q-INF = 7.088 P-INF =2.5568 RE = .4306 TO = 533.

P	1.2423+00	1.5068+00	1.9035+00	2.3368+00	1.9897+00	6.7889-01	2.7037+00	2.3817+00	2.5187+00
CP	-1.8546-01	-1.4814-01	-9.2174-02	-3.1040-02	-8.0014-02	-2.6496-01	2.0726-02	-2.4708-02	-5.3590-03
P/PO1	8.6932-02	1.0544-01	1.3320-01	1.6352-01	1.3923-01	4.7505-02	1.8919-01	1.6666-01	1.7625-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4323 TO = 533.

P	2.7053+00	1.5422+00	1.6537+00	1.8339+00	1.8542+00	1.5201+00	6.2209-01	6.3892-01	6.4262-01
CP	1.9502-02	-1.4398-01	-1.2831-01	-1.0798-01	-1.0013-01	-1.4709-01	-2.7330-01	-2.7094-01	-2.7042-01
P/PO1	1.8858-01	1.0750-01	1.1527-01	1.2784-01	1.2925-01	1.0596-01	4.3365-02	4.4539-02	4.4797-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.106 P-INF =2.5635 RE = .4318 TO = 533.

P	6.3303-01	6.4874-01	1.2652+00	1.9749+00	2.1683+00	2.2705+00	2.2397+00	1.7099+00	6.4262-01
CP	-2.7166-01	-2.6945-01	-1.8270-01	-8.2824-02	-5.5608-02	-4.1224-02	-4.5568-02	-1.2012-01	-2.7031-01
P/PO1	4.4180-02	4.5276-02	8.8300-02	1.3783-01	1.5133-01	1.5847-01	1.5631-01	1.1934-01	4.4850-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4331 TO = 533.

P	6.2209-01	2.4941+00	2.8429+00	2.5821+00	2.8028+00	1.0627+00	2.0293+00	2.2412+00	2.4943+00
CP	-2.7347-01	-1.0848-02	3.8087-02	1.5053-03	3.2464-02	-2.1166-01	-7.6048-02	-4.6321-02	-1.0818-02
P/PO1	4.3283-02	1.7353-01	1.9780-01	1.7966-01	1.9501-01	7.3939-02	1.4119-01	1.5594-01	1.7355-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4330 TO = 533.

P	2.5174+00	2.0434+00	8.6114-01	6.2528-01	6.4280-01	6.2458-01	6.5078-01	6.2618-01	6.4084-01
CP	-7.4896-03	-7.4003-02	-2.3990-01	-2.7300-01	-2.7054-01	-2.7310-01	-2.6942-01	-2.7287-01	-2.7082-01
P/PO1	1.7520-01	1.4221-01	5.9929-02	4.3516-02	4.4734-02	4.3466-02	4.5290-02	4.3578-02	4.4598-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.5586+00	6.8672-01	9.6000+00	1.0992+00	1.2361+01	1.2375+00	1.1449+01	1.4203+00
CP	2.7893-01	-2.6438-01	9.8636-01	-2.0650-01	1.3738+00	-1.8709-01	1.2458+00	-1.6144-01
P/PO1	3.1725-01	4.7791-02	6.6810-01	7.6498-02	8.6024-01	8.6122-02	7.9679-01	9.8844-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.7164+00	1.4789+00	7.3945+00	1.4906+00	5.6977+00	1.6453+00	2.2289+00
CP	8.6237-01	-1.5322-01	6.7688-01	-1.5157-01	4.3877-01	-1.2987-01	-4.7975-02
P/PO1	6.0660-01	1.0292-01	5.1461-01	1.0374-01	3.9652-01	1.1450-01	1.5512-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	232.	301244	1.99	5	14.63	.00	.00	59.63	.0

VALVE POS 2 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4330 TO = 533.

P	4.1894+00	8.4129+00	1.1097+01	1.3329+01	1.2365+01	1.4262+01	1.4223+01	1.4260+01	1.4128+01
CP	2.2713-01	8.1978-01	1.1964+00	1.5096+00	1.3744+00	1.6406+00	1.6351+00	1.6403+00	1.6218+00
P/PO1	2.9156-01	5.8548-01	7.7229-01	9.2759-01	8.6053-01	9.9255-01	9.8984-01	9.9243-01	9.8324-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4345 TO = 533.

P	1.3990+01	1.2003+01	8.2959+00	2.6619+00	4.7438-01	5.3225-01	6.8843-01	7.4996-01	1.3380+01
CP	1.5955+00	1.3176+00	7.9925-01	1.1458-02	-2.9441-01	-2.8632-01	-2.6448-01	-2.5588-01	1.5102+00
P/PO1	9.7019-01	8.3237-01	5.7530-01	1.8459-01	3.2897-02	3.6910-02	4.7740-02	5.2008-02	9.2789-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4328 TO = 533.

P	1.3217+01	1.3251+01	1.3113+01	1.2678+01	1.0555+01	7.0795+00	7.4032+00	8.8399+00	9.1646+00
CP	1.4947+00	1.4996+00	1.4802+00	1.4191+00	1.1210+00	6.3315-01	6.7859-01	8.8029-01	9.2587-01
P/PO1	9.2022-01	9.2262-01	9.1304-01	8.8270-01	7.3488-01	4.9292-01	5.1546-01	6.1549-01	6.3810-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4352 TO = 533.

P	1.0895+01	1.0277+01	1.0158+01	9.9436+00	9.5993+00	7.6124+00	4.2257+00	1.1140+00	4.7126-01
CP	1.1605+00	1.0743+00	1.0576+00	1.0277+00	9.7960-01	7.0217-01	2.2929-01	-2.0519-01	-2.9494-01
P/PO1	7.5448-01	7.1169-01	7.0345-01	6.8859-01	6.6475-01	5.2715-01	2.9263-01	7.7145-02	3.2634-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4328 TO = 533.

P	4.7660-01	4.5007-01	9.0963+00	9.0577+00	7.9969+00	7.2927+00	6.5567+00	4.8672+00	1.9930+00
CP	-2.9383-01	-2.9756-01	9.1628-01	9.1086-01	7.6193-01	6.6307-01	5.5975-01	3.2256-01	-8.0947-02
P/PO1	3.3184-02	3.1337-02	6.3334-01	6.3066-01	5.5679-01	5.0776-01	4.5652-01	3.3888-01	1.3876-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4338 TO = 533.

P	3.4818+00	3.9881+00	4.0789+00	6.4357-01	5.6177-01	5.0147-01	4.6523-01	4.3331-01	2.3231+00
CP	1.2691-01	1.9782-01	2.1054-01	-2.7060-01	-2.8206-01	-2.9051-01	-2.9558-01	-3.0005-01	-3.5371-02
P/PO1	2.4185-01	2.7702-01	2.8333-01	4.4703-02	3.9022-02	3.4833-02	3.2316-02	3.0098-02	1.6137-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4339 TO = 533.

P	5.3087-01	6.5967-01	7.8435-01	9.2147-01	7.0222-01	5.9909-01	4.4113+00	4.1282+00	4.0349+00
CP	-2.8641-01	-2.6837-01	-2.5091-01	-2.3171-01	-2.6241-01	-2.7685-01	2.5695-01	2.1731-01	2.0424-01
P/PO1	3.6867-02	4.5811-02	5.4469-02	6.3992-02	4.8766-02	4.1604-02	3.0635-01	2.8669-01	2.8020-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4327 TO = 533.

P	3.5945+00	9.2573-01	3.6662-01	4.1598-01	4.2694-01	5.2749-01	6.5795-01	6.1344-01	5.3552-01
CP	1.4401-01	-2.3075-01	-3.0926-01	-3.0233-01	-3.0079-01	-2.8667-01	-2.6835-01	-2.7460-01	-2.8554-01
P/PO1	2.5033-01	6.4470-02	2.5533-02	2.8970-02	2.9733-02	3.6736-02	4.5821-02	4.2722-02	3.7295-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4331 TO = 533.

P	4.9816-01	6.8518-01	1.2652+00	4.8170-01	4.3278-01	4.0987-01	3.7624-01	6.5167-01	7.6044-01
CP	-2.9085-01	-2.6462-01	-1.8325-01	-2.9316-01	-3.0003-01	-3.0324-01	-3.0796-01	-2.6932-01	-2.5404-01
P/PO1	3.4660-02	4.7673-02	8.8028-02	3.3515-02	3.0111-02	2.8517-02	2.6177-02	4.5341-02	5.2909-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.7 Q-INF = 7.099 P-INF =2.5611 RE = .4314 TO = 533.

P	7.8262-01	4.2597+00	4.0913+00	5.2317+00	8.0893+00	8.5631-01	7.7806-01	9.3927-01	1.0282+00
CP	-2.5050-01	2.3926-01	2.1554-01	3.7618-01	7.7869-01	-2.4013-01	-2.5115-01	-2.2844-01	-2.1591-01
P/PO1	5.4672-02	2.9757-01	2.8581-01	3.6548-01	5.6510-01	5.9820-02	5.4354-02	6.5616-02	7.1828-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4337 TO = 533.

P	9.9424-01	8.4919-01	7.3133-01	7.2401-01	6.8781-01	6.3725-01	6.5616-01	6.0434-01	6.1406-01
CP	-2.2146-01	-2.4178-01	-2.5829-01	-2.5931-01	-2.6439-01	-2.7147-01	-2.6882-01	-2.7608-01	-2.7472-01
P/PO1	6.9078-02	5.9006-02	5.0811-02	5.0303-02	4.7788-02	4.4275-02	4.5589-02	4.1988-02	4.2664-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.5984+00	6.5156-01	1.0507+01	6.2578-01	9.6633+00	1.0781+00	9.2695+00	1.0477+00
CP	2.8346-01	-2.6946-01	1.1112+00	-2.7308-01	9.9299-01	-2.0971-01	9.3783-01	-2.1397-01
P/PO1	3.1949-01	4.5269-02	7.3001-01	4.3478-02	6.7139-01	7.4906-02	6.4403-01	7.2789-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0010+01	8.2734-01	8.1703+00	9.4219-01	5.6906+00	1.3781+00	2.3227+00
CP	1.0416+00	-2.4484-01	7.8384-01	-2.2875-01	4.3646-01	-1.6768-01	-3.5359-02
P/PO1	6.9549-01	5.7482-02	5.6766-01	6.5462-02	3.9537-01	9.5750-02	1.6137-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	233.	301244	1.99	5	4.97	.00	.00	49.97	.0

VALVE POS 2 PO = 19.7 Q-INF = 7.101 P-INF =2.5617 RE = .4315 TO = 533.

P	4.3210+00	9.2295+00	1.2236+01	1.4395+01	1.6921+01	1.7000+01	1.4147+01	1.4031+01	1.3854+01
CP	2.4775-01	9.3899-01	1.3624+00	1.6664+00	2.0221+00	2.0333+00	1.6315+00	1.6151+00	1.5902+00
P/PO1	3.0178-01	6.4460-01	8.5459-01	1.0254+00	1.1818+00	1.1873+00	9.8804-01	9.7745-01	9.6757-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.149 P-INF =2.5787 RE = .4343 TO = 533.

P	1.3201+01	1.0431+01	5.9103+00	1.4465+00	4.3132-01	4.1644-01	4.5365-01	3.8155-01	1.5423+01
CP	1.4860+00	1.0985+00	4.6606-01	-1.5838-01	-3.0040-01	-3.0248-01	-2.9728-01	-3.0737-01	1.7968+00
P/PO1	9.1589-01	7.2373-01	4.1006-01	1.0036-01	2.9925-02	2.8893-02	3.1475-02	2.6472-02	1.0701+00
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4342 TO = 533.

P	1.3232+01	1.3205+01	1.2821+01	1.2158+01	9.3374+00	5.0429+00	7.7726+00	9.7087+00	1.1334+01
CP	1.4908+00	1.4870+00	1.4332+00	1.3405+00	9.4579-01	3.4489-01	7.2685-01	9.9775-01	1.2251+00
P/PO1	9.1825-01	9.1637-01	8.8973-01	8.4375-01	6.4798-01	3.4996-01	5.3939-01	6.7375-01	7.8651-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4327 TO = 533.

P	1.3402+01	1.0832+01	1.0605+01	1.0219+01	9.6301+00	7.2927+00	3.1059+00	6.4074-01	4.3535-01
CP	1.5212+00	1.1603+00	1.1284+00	1.0742+00	9.9155-01	6.6331-01	7.5391-02	-2.7077-01	-2.9961-01
P/PO1	9.3337-01	7.5437-01	7.3854-01	7.1165-01	6.7067-01	5.0789-01	2.1630-01	4.4623-02	3.0319-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.7 Q-INF = 7.101 P-INF =2.5617 RE = .4315 TO = 533.

P	4.2529-01	4.0936-01	9.5273+00	9.2868+00	8.6594+00	7.8864+00	7.0031+00	5.0809+00	1.6873+00
CP	-3.0085-01	-3.0309-01	9.8091-01	9.4705-01	8.5870-01	7.4985-01	6.2545-01	3.5477-01	-1.2313-01
P/PO1	2.9703-02	2.8590-02	6.6540-01	6.4860-01	6.0479-01	5.5080-01	4.8910-01	3.5486-01	1.1784-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4323 TO = 533.

P	3.5570+00	3.6670+00	3.9986+00	5.5946-01	4.7511-01	4.3252-01	4.3123-01	4.0077-01	2.6416+00
CP	1.3921-01	1.5468-01	2.0128-01	-2.8211-01	-2.9396-01	-2.9995-01	-3.0013-01	-3.0441-01	1.0464-02
P/PO1	2.4795-01	2.5563-01	2.7874-01	3.9000-02	3.3119-02	3.0150-02	3.0060-02	2.7937-02	1.8410-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4333 TO = 533.

P	1.0271+00	9.7310-01	1.0915+00	1.2524+00	1.0191+00	4.9900-01	3.8669+00	3.6153+00	3.3380+00
CP	-2.1672-01	-2.2429-01	-2.0769-01	-1.8513-01	-2.1784-01	-2.9077-01	1.8148-01	1.4620-01	1.0732-01
P/PO1	7.1427-02	6.7674-02	7.5908-02	8.7097-02	7.0873-02	3.4703-02	2.6892-01	2.5162-01	2.3213-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.108 P-INF =2.5641 RE = .4319 TO = 533.

P	3.4192+00	1.4833+00	1.1025+00	1.1080+00	1.0047+00	7.5492-01	6.0596-01	5.6247-01	5.4623-01
CP	1.2030-01	-1.5205-01	-2.0564-01	-2.0486-01	-2.1939-01	-2.5453-01	-2.7549-01	-2.8161-01	-2.8389-01
P/PO1	2.3857-01	1.0350-01	7.6925-02	7.7308-02	7.0104-02	5.2675-02	4.2281-02	3.9246-02	3.8113-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4329 TO = 533.

P	4.8477-01	5.5963-01	1.0257+00	4.5033-01	4.3643-01	4.4567-01	4.9126-01	5.1539-01	5.9264-01
CP	-2.9270-01	-2.8219-01	-2.1678-01	-2.9753-01	-2.9949-01	-2.9819-01	-2.9179-01	-2.8640-01	-2.7756-01
P/PO1	3.3745-02	3.8956-02	7.1398-02	3.1348-02	3.0380-02	3.1023-02	3.4198-02	3.5876-02	4.1254-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.7 Q-INF = 7.098 P-INF =2.5605 RE = .4313 TO = 533.

P	5.9407-01	3.7535+00	3.6834+00	4.4221+00	7.2727+00	7.8208-01	7.4221-01	9.4473-01	9.9607-01
CP	-2.7704-01	1.6808-01	1.5821-01	2.6229-01	6.6390-01	-2.5055-01	-2.5617-01	-2.2764-01	-2.2741-01
P/PO1	4.1510-02	2.6227-01	2.5738-01	3.0899-01	5.0818-01	5.4647-02	5.1961-02	6.6013-02	6.9600-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0900-01	2.9900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.7 Q-INF = 7.084 P-INF =2.5556 RE = .4304 TO = 533.

P	9.9242-01	8.5830-01	5.3503-01	5.1531-01	5.4377-01	5.0996-01	5.3166-01	5.1317-01	5.5694-01
CP	-2.2065-01	-2.3959-01	-2.8522-01	-2.8800-01	-2.8398-01	-2.8876-01	-2.8583-01	-2.8830-01	-2.8212-01
P/PO1	6.9477-02	6.0088-02	3.7456-02	3.6075-02	3.8068-02	3.5701-02	3.7150-02	3.5726-02	3.8993-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.3523+00	8.9063-01	1.2134+01	6.9375-01	1.0383+01	1.2094+00	1.0017+01	1.0453+00
CP	2.5363-01	-2.3502-01	1.3520+00	-2.6281-01	1.1049+00	-1.9003-01	1.0533+00	-2.1319-01
P/PO1	3.0470-01	6.2351-02	8.4944-01	4.8564-02	7.2688-01	8.4665-02	7.0128-01	7.3180-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.3953+00	1.1508+00	7.3805+00	1.2656+00	5.6555+00	1.5516+00	2.1211+00
CP	8.2432-01	-1.9830-01	6.8107-01	-1.8209-01	4.3757-01	-1.4173-01	-6.1332-02
P/PO1	5.8774-01	8.0563-02	5.1669-01	8.8603-02	3.9593-01	1.0862-01	1.4849-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	SI-ROLL
12.	234.	301244	2.99	5	4.97	.00	.00	49.97	.0

VALVE POS 2 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3902 TO = 541.

P	4.0266+00	8.9214+00	1.1759+01	9.7756+00	1.5313+01	9.8961+00	9.7427+00	9.6477+00	9.5465+00
CP	6.1800-01	1.5635+00	2.1116+00	1.7285+00	2.7981+00	1.7518+00	1.7221+00	1.7038+00	1.6842+00
P/PO1	4.0617-01	8.9991-01	1.1861+00	9.8607-01	1.5446+00	9.9823-01	9.8276-01	9.7318-01	9.6296-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.8 Q-INF = 5.153 P-INF = .8234 RE = .3878 TO = 541.

P	9.0844+00	7.2110+00	4.0233+00	9.8180-01	1.4961-01	1.3881-01	1.7292-01	1.5158-01	9.1646+00
CP	1.6033+00	1.2397+00	6.2103-01	3.0750-02	-1.3076-01	-1.3285-01	-1.2623-01	-1.3038-01	1.6188+00
P/PO1	9.2068-01	7.3082-01	4.0775-01	9.9503-02	1.5163-02	1.4068-02	1.7525-02	1.5363-02	9.2881-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.147 P-INF = .8225 RE = .3874 TO = 541.

P	8.7594+00	8.7519+00	8.5884+00	8.1718+00	6.2866+00	3.2926+00	6.3874+00	5.7155+00	1.0203+01
CP	1.5421+00	1.5406+00	1.5088+00	1.4279+00	1.0616+00	4.7932-01	1.0812+00	9.5066-01	1.8224+00
P/PO1	8.8872-01	8.8795-01	8.7137-01	8.2910-01	6.3783-01	3.3406-01	6.4806-01	5.7989-01	1.0352+00
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.8 Q-INF = 5.147 P-INF = .8225 RE = .3874 TO = 541.

P	8.0785+00	6.8258+00	6.6645+00	6.4458+00	6.1017+00	4.4921+00	1.8470+00	3.8820-01	1.4223-01
CP	1.4098+00	1.1664+00	1.1350+00	1.0926+00	1.0257+00	7.1298-01	2.0683-01	-8.4370-02	-1.3816-01
P/PO1	8.1963-01	6.7254-01	6.7617-01	6.5398-01	6.1967-01	4.5577-01	1.9145-01	3.9387-02	1.4430-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3885 TO = 542.

P	1.4201-01	1.4139-01	7.0185+00	5.7890+00	5.2730+00	4.6819+00	4.1886+00	3.0473+00	9.7107-01
CP	-1.3232-01	-1.3244-01	1.1980+00	9.6018-01	8.6035-01	7.4599-01	6.5055-01	4.2976-01	2.8077-02
P/PO1	1.4347-02	1.4284-02	7.0907-01	5.8486-01	5.3273-01	4.7300-01	4.2317-01	3.0787-01	9.8107-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.166 P-INF = .8256 RE = .3872 TO = 543.

P	3.5382+00	2.5558+00	2.2743+00	3.7266-01	1.5983-01	1.5050-01	1.6135-01	1.3236-01	1.4423+00
CP	5.2504-01	3.3490-01	2.8042-01	-8.7662-02	-1.2886-01	-1.3066-01	-1.2856-01	-1.3417-01	1.1938-01
P/PO1	3.5763-01	2.5833-01	2.2988-01	3.7668-02	1.6155-02	1.5212-02	1.6308-02	1.3378-02	1.4577-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3875 TO = 543.

P	8.3918-01	5.3224-01	6.6551-01	6.4357-01	5.1525-01	2.0165-01	1.9365+00	1.8809+00	2.0297+00
CP	2.5077-03	-5.6856-02	-3.1081-02	-3.5324-02	-6.0142-02	-1.2079-01	2.1474-01	2.0399-01	2.3276-01
P/PO1	8.4755-02	5.3755-02	6.7214-02	6.4999-02	5.2038-02	2.0366-02	1.9558-01	1.8997-01	2.0499-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3878 TO = 543.

P	1.7803+00	7.1434-01	8.5565-01	8.0080-01	6.8241-01	4.7489-01	2.3370-01	2.1591-01	1.6678-01
CP	1.8425-01	-2.1745-02	5.5644-03	-5.0355-03	-2.7915-02	-6.8019-02	-1.1463-01	-1.1807-01	-1.2756-01
P/PO1	1.7966-01	7.2090-02	8.6351-02	8.0816-02	6.8868-02	4.7925-02	2.3585-02	2.1790-02	1.6831-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible] GAS [illegible] FACILITY
40 - INCH CONI[illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3877 TO = 543.

P	1.5465-01	1.8728-01	8.9953-01	2.0239-01	2.1675-01	1.9434-01	2.3515-01	2.0260-01	1.6822-01
CP	-1.2993-01	-1.2363-01	1.3881-02	-1.2072-01	-1.1794-01	-1.2227-01	-1.1439-01	-1.2068-01	-1.2731-01
P/PO1	1.5593-02	1.8882-02	9.0694-02	2.0405-02	2.1854-02	1.9594-02	2.3708-02	2.0427-02	1.6961-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3876 TO = 543.

P	1.9257-01	1.8957+00	2.0642+00	1.8891+00	2.9075+00	3.0539-01	2.9303-01	3.3127-01	3.3572-01
CP	-1.2261-01	2.0626-01	2.3881-01	2.0499-01	4.0166-01	-1.0082-01	-1.0321-01	-9.5825-02	-9.4965-02
P/PO1	1.9419-02	1.9116-01	2.0815-01	1.9047-01	2.9319-01	3.0795-02	2.9549-02	3.3405-02	3.3854-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.163 P-INF = .8250 RE = .3859 TO = 544.

P	3.9183-01	3.2941-01	1.6468-01	1.5758-01	1.8245-01	1.6585-01	1.8739-01	1.6711-01	3.3572-01
CP	-8.3904-02	-9.5994-02	-1.2790-01	-1.2927-01	-1.2446-01	-1.2767-01	-1.2350-01	-1.2743-01	-9.4772-02
P/PO1	3.9630-02	3.3317-02	1.6656-02	1.5938-02	1.8453-02	1.6774-02	1.8953-02	1.6902-02	3.3955-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.8539+00	2.4445+00	7.5094+00	4.2422-01	6.3141+00	5.1328-01	6.0211+00	5.9531-01
CP	1.9927-01	3.1366-01	1.2946+00	-7.7631-02	1.0631+00	-6.0382-02	1.0064+00	-4.4494-02
P/PO1	1.8750-01	2.4724-01	7.5950-01	4.2906-02	6.3860-01	5.1913-02	6.0897-01	6.0210-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.9102+00	6.3281-01	5.2523+00	4.8047-01	3.6141+00	8.2266-01	1.3477+00
CP	7.9120-01	-3.7231-02	8.5747-01	-6.6737-02	5.4017-01	-4.6257-04	1.0122-01
P/PO1	4.9661-01	6.4003-02	5.3122-01	4.8595-02	3.6553-01	8.3204-02	1.3630-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	235.	301244	2.99	5	14.66	.00	.00	59.66	.0

VALVE POS 2 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3883 TO = 542.

P	3.1499+00	6.2095+00	7.8188+00	9.1952+00	8.6286+00	9.6830+00	9.6966+00	9.7392+00	9.7603+00
CP	4.4913-01	1.0406+00	1.3517+00	1.6178+00	1.5082+00	1.7121+00	1.7147+00	1.7229+00	1.7270+00
P/PO1	3.1798-01	6.2685-01	7.8931-01	9.2925-01	8.7106-01	9.7749-01	9.7987-01	9.8317-01	9.8530-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.8 Q-INF = 5.153 P-INF = .8234 RE = .3867 TO = 542.

P	9.5332+00	8.2896+00	5.7291+00	1.8216+00	3.0192-01	3.0531-01	2.6332-01	3.1244-01	8.9355+00
CP	1.6904+00	1.4490+00	9.5207-01	1.9373-01	-1.0120-01	-1.0054-01	-1.0369-01	-9.9156-02	1.5744+00
P/PO1	9.6616-01	8.4013-01	5.8062-01	1.8461-01	3.0599-02	3.0942-02	2.6687-02	3.1665-02	9.0559-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3884 TO = 542.

P	8.7285+00	8.7519+00	8.6961+00	8.4620+00	7.1032+00	4.7247+00	5.1228+00	5.8984+00	6.0634+00
CP	1.5270+00	1.5315+00	1.5208+00	1.4755+00	1.2129+00	7.5327-01	8.3021-01	9.8009-01	1.0121+00
P/PO1	8.8086-01	8.8322-01	8.7760-01	8.5397-01	7.1684-01	4.7681-01	5.1698-01	5.9525-01	6.1196-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0600-01	2.8900-01

VALVE POS 5 PO = 29.8 Q-INF = 5.158 P-INF = .8241 RE = .3871 TO = 542.

P	7.0725+00	6.3790+00	6.2797+00	6.1403+00	5.9630+00	4.6268+00	2.5181+00	6.6034-01	1.6315-01
CP	1.2115+00	1.0770+00	1.0578+00	1.0308+00	9.9638-01	7.3730-01	3.2944-01	-3.1759-02	-1.2816-01
P/PO1	7.1610-01	6.4588-01	6.3583-01	6.2171-01	6.0376-01	4.6847-01	2.5496-01	6.6860-02	1.6523-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.152 P-INF = .8232 RE = .3867 TO = 542.

P	1.4050-01	2.1864-01	5.4757+00	5.3912+00	4.3428+00	3.7332+00	3.3348+00	2.5344+00	9.9682-01
CP	-1.3252-01	-1.1736-01	9.0306-01	8.8667-01	6.8317-01	5.6485-01	4.8750-01	3.3214-01	3.4182-02
P/PO1	1.4241-02	2.2162-02	5.5503-01	5.4647-01	4.4020-01	3.7841-01	3.3802-01	2.5683-01	1.0124-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.160 P-INF = .8245 RE = .3878 TO = 542.

P	2.4736+00	2.3397+00	2.6699+00	4.1183-01	1.6185-01	1.7059-01	1.2298-01	1.6102-01	1.1664+00
CP	3.1959-01	2.9365-01	3.5762-01	-7.9980-02	-1.2643-01	-1.2673-01	-1.3576-01	-1.2859-01	6.6328-02
P/PO1	2.5034-01	2.3679-01	2.7020-01	4.1679-02	1.6380-02	1.7264-02	1.2446-02	1.6296-02	1.1808-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3886 TO = 542.

P	3.2906-01	3.9960-01	4.3302-01	4.8943-01	3.6144-01	1.5448-01	2.5367+00	2.4977+00	2.2170+00
CP	-9.6152-02	-8.2508-02	-7.6044-02	-6.5136-02	-8.9890-02	-1.2992-01	3.3081-01	3.2328-01	2.6705-01
P/PO1	3.3234-02	4.0359-02	4.3734-02	4.9431-02	3.6504-02	1.5602-02	2.5620-01	2.5226-01	2.2290-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.166 P-INF = .8256 RE = .3883 TO = 542.

P	2.1667+00	5.6506-01	2.2208-01	2.0069-01	2.0031-01	2.0134-01	1.9315-01	1.9574-01	1.7465-01
CP	2.5959-01	-5.0422-02	-1.1681-01	-1.2095-01	-1.2102-01	-1.2082-01	-1.2241-01	-1.2191-01	-1.2599-01
P/PO1	2.1901-01	5.7114-02	2.2447-02	2.0285-02	2.0247-02	2.0351-02	1.9523-02	1.9785-02	1.7653-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible]
40 - INCH CONTINUOUS [illegible] WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

VALVE POS 10 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3882 TO = 542.

P	1.3014-01	1.2409-01	7.5404-01	3.4319-01	2.8959-01	2.3795-01	1.8013-01	2.0830-01	2.2784-01
CP	-1.3460-01	-1.3577-01	-1.3822-02	-9.3355-02	-1.0373-01	-1.1373-01	-1.2492-01	-1.1947-01	-1.1569-01
P/PO1	1.3157-02	1.2545-02	7.6227-02	3.4694-02	2.9275-02	2.4055-02	1.8210-02	2.1057-02	2.3033-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.166 P-INF = .8256 RE = .3883 TO = 542.

P	2.3811-01	2.4447+00	2.5895+00	2.6864+00	4.2196+00	5.3081-01	2.7056-01	4.7199-01	5.4265-01
CP	-1.1371-01	3.1339-01	3.4142-01	3.6018-01	6.5695-01	-5.7051-02	-1.0743-01	-6.8437-02	-5.4760-02
P/PO1	2.4067-02	2.4710-01	2.6174-01	2.7153-01	4.2651-01	5.3653-02	2.7347-02	4.7707-02	5.4849-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3888 TO = 542.

P	5.0209-01	4.1955-01	2.3694-01	2.3651-01	2.0902-01	2.1159-01	1.9388-01	2.2313-01	2.[illegible]53-01
CP	-6.2732-02	-7.8689-02	-1.1399-01	-1.1407-01	-1.1939-01	-1.1889-01	-1.2231-01	-1.2053-01	-1.2103-01
P/PO1	5.0686-02	4.2353-02	2.3919-02	2.3875-02	2.1101-02	2.1360-02	1.9572-02	2.0506-02	2.0243-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.8734+00	4.9688-01	6.4758+00	3.3750-01	5.7961+00	6.4688-01	5.5336+00	6.0234-01	
CP	3.9568-01	-6.3740-02	1.0921+00	-9.4550-02	9.6068-01	-3.4743-02	9.0793-01	-4.3352-02	
P/PO1	2.9007-01	5.0159-02	6.5373-01	3.4071-02	5.8511-01	6.5302-02	5.5862-01	6.0807-02	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	6.0844+00	5.2734-01	5.5922+00	4.5938-01	3.9258+00	7.5000-01	1.4906+00
CP	1.0164+00	-5.7850-02	9.2176-01	-7.0990-02	5.9912-01	-1.4808-02	1.2837-01
P/PO1	6.1422-01	5.3235-02	5.6453-01	4.6374-02	3.9631-01	7.5712-02	1.5048-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] ENGINEERING DEVELOPMENT [illegible]
[illegible] EXPANDED GAS DYNAMICS [illegible]
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	236.	301244	2.99	5	14.66	180.16	.04	30.34	.0

VALVE POS 2 PO = 29.8 Q-INF = 5.156 P-INF = .8239 RE = .3875 TO = 542.

P	7.5368+00	5.3004+00	6.9107+00	4.6434+00	5.0693+00	6.8207+00	1.2575+01	1.0166+01	8.8591+00
CP	1.3020+00	8.6824-01	1.1806+00	7.4081-01	8.2341-01	1.1631+00	2.2791+00	1.8119+00	1.5565+00
P/PO1	7.6335-01	5.3684-01	6.9994-01	4.7030-01	5.1344-01	6.9082-01	1.2736+00	1.0296+00	8.9728-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3887 TO = 542.

P	8.3725+00	6.2557+00	1.8479+00	1.8726-01	1.0233-01	1.1641-01	9.5491-02	1.0415-01	6.2472+00
CP	1.4590+00	1.0497+00	1.9749-01	-1.2359-01	-1.4001-01	-1.3729-01	-1.4133-01	-1.3966-01	1.0481+00
P/PO1	8.4534-01	6.3162-01	1.8657-01	1.8907-02	1.0332-02	1.1754-02	9.6413-03	1.0515-02	6.3076-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.167 P-INF = .8257 RE = .3884 TO = 542.

P	1.1669+01	1.0139+01	8.5268+00	8.0802+00	5.9784+00	1.7565+00	7.0954+00	2.3450+00	3.3746+00
CP	2.0985+00	1.8023+00	1.4904+00	1.4039+00	9.9719-01	1.8013-01	1.2134+00	2.9403-01	4.9329-01
P/PO1	1.1793+00	1.0246+00	8.6173-01	8.1659-01	6.0418-01	1.7751-01	7.1707-01	2.3699-01	3.4104-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3892 TO = 542.

P	3.8826+00	9.2141+00	9.4965+00	7.7441+00	7.0107+00	5.7854+00	1.3689+00	1.3665-01	1.0997-01
CP	5.9006-01	1.6198+00	1.6743+00	1.3359+00	1.1942+00	9.5756-01	1.0459-01	-1.3340-01	-1.3056-01
P/PO1	3.9158-01	9.2929-01	9.5777-01	7.8103-01	7.0707-01	5.8349-01	1.3806-01	1.3782-02	1.1091-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3892 TO = 542.

P	1.0278-01	1.1006-01	3.8256+00	5.6979+00	6.7950+00	7.0643+00	6.1104+00	4.9649+00	1.2525+00
CP	-1.3995-01	-1.3854-01	5.7893-01	9.4048-01	1.1523+00	1.2043+00	1.0201+00	7.9894-01	8.2976-02
P/PO1	1.0365-02	1.1098-02	3.8577-01	5.7457-01	6.8521-01	7.1236-01	6.1617-01	5.0066-01	1.2631-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.166 P-INF = .8256 RE = .3883 TO = 542.

P	4.0392+00	2.1360+00	1.5075+00	4.7973-01	1.0016-01	1.2447-01	1.0490-01	1.0710-01	1.0131+00
CP	6.2201-01	2.5365-01	1.3200-01	-6.6939-02	-1.4041-01	-1.3570-01	-1.3949-01	-1.3906-01	3.6302-02
P/PO1	4.0826-01	2.1590-01	1.5238-01	4.8489-02	1.0124-02	1.2581-02	1.0602-02	1.0826-02	1.0240-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3890 TO = 542.

P	1.0500+00	6.6289-01	7.7234-01	9.0411-01	7.4095-01	3.5217-01	1.1587+00	1.0653+00	1.2919+00
CP	4.3067-02	-3.1727-02	-1.0583-02	1.4875-02	-1.6647-02	-9.1758-02	6.4065-02	4.6015-02	8.9784-02
P/PO1	1.0593-01	6.6877-02	7.7918-02	9.1213-02	7.4752-02	3.5529-02	1.1690-01	1.0747-01	1.3033-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.166 P-INF = .8256 RE = .3883 TO = 542.

P	2.1855+00	8.1446-01	9.9013-01	1.0652+00	9.1000-01	6.7957-01	1.7362-01	1.0710-01	1.0565-01
CP	2.6323-01	-2.1484-03	3.1853-02	4.6377-02	1.6344-02	-2.8258-02	-1.2619-01	-1.3906-01	-1.3934-01
P/PO1	2.2091-01	8.2323-02	1.0008-01	1.0766-01	9.1980-02	6.8688-02	1.7549-02	1.0826-02	1.0877-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] ENGINEERING [illegible]
[illegible] FLIGHT CAS[illegible]
40 - INCH CONTINUOUS [illegible] WIND TU[illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3893 TO = 542.

P	9.6869-02	1.1375-01	7.2109-01	4.0213-01	4.7829-01	5.3896-01	5.3678-01	4.3358-01	1.2722-01
CP	-1.4109-01	-1.3784-01	-2.0592-02	-8.2165-02	-6.7464-02	-5.5770-02	-5.6173-02	-7.6094-02	-1.3524-01
P/POI	9.7651-03	1.1467-02	7.2692-02	4.0538-02	4.8215-02	5.4322-02	5.4111-02	4.3708-02	1.2824-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.193 P-INF = .8298 RE = .3903 TO = 542.

P	9.5390-02	1.3678+00	1.3086+00	1.1969+00	1.3686+00	3.0604-01	4.4490-01	5.9832-01	7.2544-01
CP	-1.4143-01	1.0359-01	9.2187-02	7.0689-02	1.0374-01	-1.0386-01	-7.4123-02	-4.4581-02	-2.0103-02
P/POI	9.5920-03	1.3754-01	1.3159-01	1.2036-01	1.3762-01	3.0774-02	4.4737-02	6.0164-02	7.2947-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3897 TO = 542.

P	7.5968-01	6.2637-01	2.1466-01	9.1021-02	9.4351-02	1.0543-01	8.6310-02	9.3068-02	9.8467-02
CP	-1.3373-02	-3.9067-02	-1.1842-01	-1.4225-01	-1.4161-01	-1.3947-01	-1.4306-01	-1.4186-01	-1.4081-01
P/POI	7.6462-02	6.3044-02	2.1605-02	9.1613-03	9.4965-03	1.0612-02	8.7375-03	9.3674-03	9.9108-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.3813+00	9.7266-01	4.5164+00	6.0234-01	6.0305+00	6.0703-01	8.5969+00	7.4766-01
CP	2.9917-01	2.7677-02	7.1070-01	-4.3698-02	1.0025+00	-4.2794-02	1.4972+00	-1.5690-02
P/POI	2.3967-01	9.7898-02	4.5458-01	6.0626-02	6.0697-01	6.1098-02	8.6528-01	7.5252-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.3094+00	6.8906-01	8.4375+00	4.9688-01	5.3156+00	8.1094-01	1.9102+00
CP	1.6345+00	-2.6983-02	1.4665+00	-6.4026-02	8.6474-01	-3.4930-03	2.0837-01
P/POI	9.3699-01	6.9354-02	8.4924-01	5.0011-02	5.3502-01	8.1621-02	1.9226-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
12.	237.	301244	2.99	5	5.00	180.17	.02	40.00	.0

VALVE POS 2 PO = 29.9 Q-INF = 5.168 P-INF = .8258 RE = .3884 TO = 542.

P	4.1331+00	6.9183+00	6.4028+00	6.5527+00	7.8120+00	1.5175+01	9.5888+00	9.4191+00	9.2105+00
CP	6.3994-01	1.1789+00	1.0791+00	1.1081+00	1.3518+00	2.7765+00	1.6756+00	1.6294+00	1.6234+00
P/PO1	4.1763-01	6.9906-01	6.4697-01	6.6212-01	7.8936-01	1.5433+00	9.6890-01	9.5175-01	9.3067-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3890 TO = 542.

P	8.6821+00	6.4560+00	2.3299+00	3.7826-01	6.1691-02	9.5180-02	7.0171-02	7.9773-02	1.2632+01
CP	1.5175+00	1.0875+00	2.9034-01	-8.6716-02	-1.4788-01	-1.4141-01	-1.4624-01	-1.4438-01	2.2806+00
P/PO1	8.7590-01	6.5133-01	2.3506-01	3.8161-02	6.2238-03	9.6024-03	7.0794-03	8.0480-03	1.2744+00
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3887 TO = 542.

P	8.9606+00	8.9522+00	8.6192+00	8.1718+00	5.9476+00	2.0441+00	4.8815+00	3.3221+00	5.6618+00
CP	1.5727+00	1.5711+00	1.5067+00	1.4202+00	9.9014-01	2.3542-01	7.8402-01	4.8253-01	9.3475-01
P/PO1	9.0472-01	9.0386-01	8.7024-01	8.2507-01	6.0050-01	2.0638-01	4.9287-01	3.3542-01	5.7157-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3892 TO = 542.

P	7.3666+00	7.3651+00	7.3417+00	7.0568+00	6.7950+00	5.1715+00	1.3405+00	1.6619-01	8.2655-02
CP	1.2627+00	1.2624+00	1.2579+00	1.2029+00	1.1523+00	8.3883-01	9.9648-02	-1.2779-01	-1.4383-01
P/PO1	7.4284-01	7.4269-01	7.4033-01	7.1160-01	6.8521-01	5.2144-01	1.3518-01	1.6759-02	8.3347-03
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3888 TO = 542.

P	5.9896-02	6.7955-02	5.4324+00	9.0730+00	6.6409+00	5.8006+00	5.2218+00	4.0366+00	1.0[illegible]78+00
CP	-1.4821-01	-1.4666-01	8.9037-01	1.5941+00	1.1240+00	9.6156-01	8.4966-01	6.2055-01	3.5[illegible]1[illegible]-02
P/PO1	6.0465-03	6.8600-03	5.4840-01	9.1592-01	6.7040-01	5.8557-01	5.2714-01	4.0750-01	1.0173-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.165 P-INF = .8253 RE = .3882 TO = 542.

P	3.5570+00	2.4385+00	2.3361+00	2.8873-01	8.6368-02	1.0104-01	7.6682-02	7.1648-02	8.5409-01
CP	5.2890-01	3.1235-01	2.9252-01	-1.0389-01	-1.4307-01	-1.4023-01	-1.4495-01	-1.4592-01	5.5731-03
P/PO1	3.5964-01	2.4655-01	2.3620-01	2.9193-02	8.7325-03	1.0216-02	7.7532-03	7.2442-03	8.6355-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.153 P-INF = .8234 RE = .3873 TO = 542.

P	4.4072-01	7.0489-01	8.7849-01	1.1073+00	1.0773+00	3.4924-01	1.8252+00	1.8443+00	1.8952+00
CP	-7.4262-02	-2.2991-02	1.0699-02	5.5098-02	4.9274-02	-9.2016-02	1.9442-01	1.9813-01	2.0801-01
P/PO1	4.4665-02	7.1439-02	8.9032-02	1.1222-01	1.0918-01	3.5394-02	1.8497-01	1.8691-01	1.9207-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.155 P-INF = .8237 RE = .3875 TO = 542.

P	1.2874+00	3.3830-01	3.2533-01	3.4319-01	3.5853-01	3.6974-01	9.6938-02	1.1301-01	1.1284-01
CP	8.9948-02	-9.4170-02	-9.6686-02	-9.3220-02	-9.0244-02	-8.8071-02	-1.4099-01	-1.3787-01	-1.3790-01
P/PO1	1.3042-01	3.4269-02	3.2955-02	3.4765-02	3.6319-02	3.7454-02	9.8197-03	1.1448-02	1.1431-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B480

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.157 P-INF = .8240 RE = .3876 TO = 542.

P	8.5038-02	9.8978-02	6.8407-01	2.9097-01	2.5547-01	2.4966-01	2.8141-01	2.5778-01	1.0422-01
CP	-1.4330-01	-1.4060-01	-2.7136-02	-1.0337-01	-1.1025-01	-1.1138-01	-1.0522-01	-1.0980-01	-1.3958-01
P/PO1	8.6115-03	1.0023-02	6.9274-02	2.9466-02	2.5871-02	2.5283-02	2.8498-02	2.6105-02	1.0554-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.7 Q-INF = 5.138 P-INF = .8210 RE = .3862 TO = 542.

P	9.1693-02	1.7495+00	2.0395+00	1.8768+00	2.7412+00	3.4265-01	4.0005-01	5.5324-01	5.6996-01
CP	-1.4195-01	1.8070-01	2.3714-01	2.0548-01	3.7372-01	-9.3106-02	-8.1734-02	-5.2119-02	-4.8864-02
P/PO1	9.3192-03	1.7781-01	2.0728-01	1.9075-01	2.7860-01	3.4825-02	4.0659-02	5.6228-02	5.7928-02
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.8 Q-INF = 5.148 P-INF = .8226 RE = .3874 TO = 541.

P	5.3463-01	4.5352-01	1.3147-01	1.1117-01	1.0742-01	1.2227-01	1.0345-01	1.1006-01	1.1500-01
CP	-5.5938-02	-7.1693-02	-1.3426-01	-1.3820-01	-1.3833-01	-1.3604-01	-1.3970-01	-1.3841-01	-1.3745-01
P/PO1	5.4234-02	4.6007-02	1.3336-02	1.1277-02	1.0896-02	1.2403-02	1.0494-02	1.1164-02	1.1666-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.0063+00	5.3203-01	6.8766+00	3.7500-01	1.2459+01	5.5781-01	1.0076+01	6.7500-01
CP	2.2994-01	-5.6442-02	1.1760+00	-8.6947-02	2.2605+00	-5.1434-02	1.7975+00	-2.8669-02
P/PO1	2.0352-01	5.3971-02	6.9758-01	3.8041-02	1.2639+00	5.6586-02	1.0221+00	6.8474-02
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.9836+00	6.7031-01	3.6516+00	7.5234-01	2.9039+00	9.5156-01	1.2281+00
CP	1.0026+00	-2.9580-02	5.4955-01	-1.3645-02	4.0431-01	2.5055-02	7.8780-02
P/PO1	6.0699-01	6.7998-02	3.7042-01	7.6320-02	2.9458-01	9.6529-02	1.2458-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	238.	301244	2.99	5	.00	180.03	.00	15.00	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3916 TO = 540.

P	7.9438-01	3.7535+00	3.1581+00	3.2261+00	2.6439+00	2.9070+00	6.4336+00	6.6757+00	6.9346+00
CP	-6.4935-03	5.6456-01	4.4966-01	4.6279-01	3.5042-01	4.0121-01	1.0818+00	1.1285+00	1.1785+00
P/PO1	8.0054-02	3.7826-01	3.1826-01	3.2512-01	2.6644-01	2.9296-01	6.4835-01	6.7275-01	6.9884-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3919 TO = 540.

P	7.2273+00	5.9784+00	1.9406+00	2.3128-01	2.2064-01	2.0061-01	1.9677-01	1.9869-01	2.2691+00
CP	1.2339+00	9.9303-01	2.1441-01	-1.1520-01	-1.1725-01	-1.2111-01	-1.2185-01	-1.2148-01	2.7757-01
P/PO1	7.2777-01	6.0201-01	1.9541-01	2.3290-02	2.2218-02	2.0201-02	1.9814-02	2.0008-02	2.2839-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.1 Q-INF = 5.199 P-INF = .8307 RE = .3929 TO = 540.

P	6.1285+00	6.4869+00	6.6799+00	7.0873+00	5.9784+00	1.9033+00	3.0911+00	1.1620+00	1.9635+00
CP	1.0190+00	1.0880+00	1.1251+00	1.2035+00	9.9015-01	2.0631-01	4.3286-01	6.3713-02	1.8710-01
P/PO1	6.1558-01	6.5158-01	6.7097-01	7.1189-01	6.0051-01	1.9118-01	3.0749-01	1.1672-01	1.8115-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3918 TO = 540.

P	1.8975+00	6.1171+00	6.4490+00	6.3236+00	6.4715+00	5.4407+00	1.4156+00	1.7580-01	1.9334-01
CP	2.0621-01	1.0201+00	1.0842+00	1.0600+00	1.0885+00	8.8968-01	1.1327-01	-1.2588-01	-1.2250-01
P/PO1	1.9113-01	6.1617-01	6.4960-01	6.3697-01	6.5186-01	5.4804-01	1.4259-01	1.7708-02	1.9475-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3915 TO = 540.

P	1.9374-01	1.8614-01	1.9777+00	3.7291+00	4.8726+00	5.3367+00	5.5188+00	4.7695+00	1.2418+00
CP	-1.2239-01	-1.2386-01	2.2198-01	5.6007-01	7.8082-01	8.7042-01	9.0556-01	7.6092-01	7.9931-02
P/PO1	1.9530-02	1.8764-02	1.9936-01	3.7592-01	4.9119-01	5.3798-01	5.5633-01	4.8080-01	1.2519-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3906 TO = 540.

P	9.2951-01	1.2345+00	1.1237+00	6.1128-01	1.9088-01	1.8011-01	1.7434-01	1.7506-01	1.1900+00
CP	1.9810-02	7.8737-02	5.7336-02	-4.1680-02	-1.2291-01	-1.2499-01	-1.2611-01	-1.2597-01	7.0144-02
P/PO1	9.3790-02	1.2456-01	1.1339-01	6.1680-02	1.9260-02	1.8173-02	1.7592-02	1.7664-02	1.2007-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3899 TO = 540.

P	1.9225+00	2.3027+00	2.5462+00	2.7416+00	2.3223+00	8.4085-01	8.2638-01	8.4823-01	1.6066+00
CP	2.1238-01	2.8598-01	3.3313-01	3.7095-01	2.8978-01	2.9848-03	1.8286-04	4.4124-03	3.3911-02
P/PO1	1.9435-01	2.3279-01	2.5741-01	2.7716-01	2.3477-01	8.5004-02	8.3541-02	8.5749-02	1.0115-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.154 P-INF = .8236 RE = .3890 TO = 540.

P	1.3203+00	1.3568+00	1.5386+00	1.8461+00	2.0698+00	1.9462+00	5.3176-01	1.4994-01	1.4878-01
CP	9.6364-02	1.0345-01	1.3871-01	1.9838-01	2.4177-01	2.1779-01	-5.6626-02	-1.3070-01	-1.3093-01
P/PO1	1.3377-01	1.3747-01	1.5588-01	1.8704-01	2.0970-01	1.9718-01	5.3875-02	1.5192-02	1.5074-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B482

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] GAS [illegible] FACILITY
40 - INCH CONTINUOUS [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.164 P-INF = .8252 RE = .3892 TO = 541.

P	1.4937-01	1.4921-01	1.0395+00	1.1786+00	1.4936+00	1.7932+00	1.9118+00	1.6489+00	5.5127-01
CP	-1.3087-01	-1.3090-01	4.1512-02	6.8448-02	1.2944-01	1.8745-01	2.1042-01	1.5950-01	-5.3040-02
P/PO1	1.5105-02	1.5088-02	1.0512-01	1.1919-01	1.5104-01	1.8133-01	1.9333-01	1.6674-01	5.5747-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.162 P-INF = .8249 RE = .3891 TO = 541.

P	1.2497-01	8.4733-01	8.1809-01	8.8947-01	1.0665+00	1.0837+00	1.3725+00	2.2595+00	3.3196+00
CP	-1.3559-01	4.3428-03	-1.3218-03	1.2505-02	4.6790-02	5.0126-02	1.0607-01	2.7790-01	4.8325-01
P/PO1	1.2641-02	8.5713-02	8.2755-02	8.9975-02	1.0788-01	1.0962-01	1.3884-01	2.2857-01	3.3580-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.162 P-INF = .8249 RE = .3891 TO = 541.

P	2.8618+00	2.2904+00	4.7239-01	1.4721-01	1.5822-01	1.4277-01	1.4613-01	1.5068-01	1.5165-01
CP	3.9457-01	2.8387-01	-6.8287-02	-1.3984-01	-1.2915-01	-1.3214-01	-1.3149-01	-1.3061-01	-1.3042-01
P/PO1	2.8949-01	2.3168-01	4.7785-02	1.5094-02	1.6005-02	1.4442-02	1.4782-02	1.5242-02	1.5341-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0359+00	1.0453+00	2.0555+00	1.0688+00	2.6367+00	1.2141+00	3.7898+00	1.7250+00
CP	4.0877-02	4.2693-02	2.3837-01	4.7233-02	3.5096-01	7.5381-02	5.7433-01	1.7435-01
P/PO1	1.0479-01	1.0574-01	2.0792-01	1.0911-01	2.6672-01	1.2291-01	3.8337-01	1.7449-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.7766+00	1.6313+00	4.7977+00	1.9195+00	3.7969+00	2.1094+00	2.2453+00
CP	7.6547-01	1.5619-01	7.6956-01	2.1204-01	5.7570-01	2.4881-01	2.7514-01
P/PO1	4.8318-01	1.6501-01	4.8531-01	1.9417-01	3.8408-01	2.1338-01	2.2713-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	239.	301244	2.99	5	-3.97	180.03	.00	18.97	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3897 TO = 541.

P	2.1855+00	5.0437+00	6.6491+00	3.4408+00	3.3449+00	3.6108+00	7.4032+00	7.6511+00	7.9580+00
CP	2.6290-01	8.1569-01	1.1262+00	5.0568-01	4.8713-01	5.3856-01	1.2720+00	1.3200+00	1.3793+00
P/PO1	2.2073-01	5.0940-01	6.7154-01	3.4751-01	3.3783-01	3.6469-01	7.4771-01	7.7274-01	8.0373-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3883 TO = 541.

P	9.0844+00	7.2116+00	2.1631+00	2.2979-01	1.9451-01	1.7718-01	1.7579-01	1.9352-01	3.0812+00
CP	1.6011+00	1.2379+00	2.5948-01	-1.1525-01	-1.2209-01	-1.2545-01	-1.2572-01	-1.2228-01	4.3744-01
P/PO1	9.1952-01	7.2990-01	2.1895-01	2.3254-02	1.9683-02	1.7934-02	1.7793-02	1.9588-02	3.1188-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.164 P-INF = .8252 RE = .3887 TO = 541.

P	6.6083+00	7.5038+00	7.8650+00	8.5995+00	7.2573+00	2.1910+00	4.7297+00	1.2477+00	2.0969+00
CP	1.1199+00	1.2933+00	1.3632+00	1.5055+00	1.2456+00	2.6649-01	7.5435-01	8.1824-02	2.4627-01
P/PO1	6.6826-01	7.5882-01	7.9534-01	8.6962-01	7.3389-01	2.2156-01	4.7737-01	1.2617-01	2.1205-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.159 P-INF = .8244 RE = .3883 TO = 541.

P	2.5613+00	7.0107+00	6.7568+00	6.6596+00	7.0416+00	6.3487+00	1.8932+00	2.3267-01	1.7753-01
CP	3.3666-01	1.1991+00	1.1499+00	1.1310+00	1.2051+00	1.0708+00	2.0717-01	-1.1469-01	-1.2538-01
P/PO1	2.5925-01	7.0962-01	6.8392-01	6.7408-01	7.1274-01	6.4262-01	1.9163-01	2.3551-02	1.7967-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.156 P-INF = .8239 RE = .3881 TO = 541.

P	1.8412-01	1.7801-01	2.4412+00	4.1277+00	5.0266+00	5.7245+00	5.9257+00	5.0992+00	1.2919+00
CP	-1.2408-01	-1.2527-01	3.1368-01	6.4077-01	8.1513-01	9.5047-01	9.8951-01	8.2922-01	9.0765-02
P/PO1	1.8649-02	1.8030-02	2.4725-01	4.1807-01	5.0911-01	5.7980-01	6.0017-01	5.1647-01	1.3084-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3893 TO = 541.

P	2.0290+00	1.4682+00	1.0103+00	5.1245-01	1.8435-01	1.7645-01	1.7434-01	1.7136-01	1.1543+00
CP	2.3250-01	1.2408-01	3.5535-02	-6.0714-02	-1.2415-01	-1.2568-01	-1.2609-01	-1.2666-01	6.3378-02
P/PO1	2.0486-01	1.4824-01	1.0200-01	5.1743-02	1.8613-02	1.7815-02	1.7603-02	1.7302-02	1.1654-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3882 TO = 542.

P	1.4281+00	1.6698+00	2.1136+00	2.3552+00	1.9651+00	7.3756-01	7.9224-01	7.9533-01	1.0328+00
CP	1.1666-01	1.6345-01	2.4938-01	2.9614-01	2.2062-01	-1.7012-02	-6.4249-03	-5.8284-03	4.0137-02
P/PO1	1.4437-01	1.6880-01	2.1367-01	2.3809-01	1.9865-01	7.4561-02	8.0090-02	8.0401-02	1.0440-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.165 P-INF = .8253 RE = .3882 TO = 542.

P	1.5003+00	1.1450+00	1.2445+00	1.3800+00	1.5426+00	1.4280+00	4.1814-01	1.5659-01	1.5022-01
CP	1.3069-01	6.1898-02	8.1169-02	1.0739-01	1.3889-01	1.1669-01	-7.8835-02	-1.2947-01	-1.3071-01
P/PO1	1.5169-01	1.1577-01	1.2583-01	1.3953-01	1.5597-01	1.4438-01	4.2277-02	1.5833-02	1.5188-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B484

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING [illegible]
VON KARMAN GAS DYNAMICS [illegible]
40 [illegible] ILLINOIS [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3891 TO = 542.

P	1.4937-01	1.5290-01	5.9717-01	1.0707+00	1.3362+00	1.4697+00	1.5257+00	1.3097+00	4.6143-01
CP	-1.3094-01	-1.3026-01	-4.4442-02	4.7018-02	9.8316-02	1.2409-01	1.3492-01	9.3199-02	-7.0662-02
P/PO1	1.5067-02	1.5423-02	6.0237-02	1.0800-01	1.3479-01	1.4825-01	1.5390-01	1.3211-01	4.6545-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3895 TO = 542.

P	1.4272-01	8.8203-01	8.1626-01	8.6202-01	1.0233+00	7.7018-01	1.3714+00	1.9847+00	2.1764+00
CP	-1.3229-01	1.0183-02	-2.4915-03	6.3259-03	3.7407-02	-1.1372-02	1.0449-01	2.2269-01	2.5962-01
P/PO1	1.4362-02	8.8763-02	8.2144-02	8.6748-02	1.0298-01	7.7506-02	1.3801-01	1.9973-01	2.1902-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3894 TO = 542.

P	1.9726+00	1.8459+00	4.7610-01	1.6637-01	1.7274-01	1.5741-01	1.6494-01	1.6250-01	1.6100-01
CP	2.2041-01	1.9598-01	-6.8029-02	-1.2773-01	-1.2650-01	-1.2945-01	-1.2800-01	-1.2847-01	-1.2876-01
P/PO1	1.9854-01	1.8579-01	4.7920-02	1.6746-02	1.7386-02	1.5844-02	1.6601-02	1.6356-02	1.6204-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.4531+00	1.9031+00	2.7188+00	7.6406-01	3.1711+00	1.0148+00	4.1531+00	1.2023+00
CP	1.2028-01	2.0702-01	3.6422-01	-1.2528-02	4.5141-01	3.5808-02	6.4068-01	7.1947-02
P/PO1	1.4626-01	1.9155-01	2.7364-01	7.6903-02	3.1917-01	1.0214-01	4.1801-01	1.2102-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.2055+00	1.2234+00	5.2430+00	1.4180+00	4.1016+00	1.5609+00	1.9359+00
CP	8.4351-01	7.6013-02	8.5074-01	1.1351-01	6.3074-01	1.4106-01	2.1334-01
P/PO1	5.2393-01	1.2314-01	5.2771-01	1.4272-01	4.1282-01	1.5711-01	1.9485-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH HYPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	240.	301244	2.99	5	5.02	180.03	.00	9.98	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3892 TO = 542.

P	8.4368-01	1.2400+00	1.3346+00	1.3730+00	1.9527+00	2.8091+00	5.5563+00	5.5478+00	5.6664+00
CP	2.8944-03	7.9308-02	9.7561-02	1.0496-01	2.1675-01	3.8189-01	9.1163-01	9.1000-01	9.3274-01
P/PO1	8.4957-02	1.2486-01	1.3439-01	1.3826-01	1.9663-01	2.8287-01	5.5950-01	5.5865-01	5.7063-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3887 TO = 542.

P	5.8499+00	5.0931+00	1.4676+00	1.8204-01	2.3225-01	2.1452-01	2.1051-01	2.0091-01	1.6201+00
CP	9.6985-01	8.2370-01	1.2361-01	-1.2464-01	-1.1495-01	-1.1837-01	-1.1914-01	-1.2100-01	1.5305-01
P/PO1	5.8990-01	5.1359-01	1.4799-01	1.8357-02	2.3420-02	2.1632-02	2.1228-02	2.0260-02	1.6337-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3883 TO = 542.

P	5.2540+00	5.5993+00	5.6734+00	5.8043+00	4.8356+00	1.5070+00	1.4641+00	1.2587+00	1.2829+00
CP	8.5589-01	9.2264-01	9.3696-01	9.6226-01	7.7500-01	1.3153-01	1.2324-01	8.3523-02	8.8213-02
P/PO1	5.3039-01	5.6525-01	5.7273-01	5.8594-01	4.8816-01	1.5213-01	1.4780-01	1.2706-01	1.2951-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.168 P-INF = .8258 RE = .3879 TO = 542.

P	1.3623+00	4.7659+00	5.3768+00	5.6059+00	5.7104+00	5.0185+00	1.2611+00	1.6176-01	2.0484-01
CP	1.0381-01	7.6240-01	8.8060-01	9.2492-01	9.4514-01	8.1126-01	8.4230-02	-1.2849-01	-1.2116-01
P/PO1	1.3765-01	4.8157-01	5.4330-01	5.6644-01	5.7700-01	5.0709-01	1.2743-01	1.6345-02	2.0698-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.151 P-INF = .8231 RE = .3866 TO = 542.

P	2.0557-01	2.0739-01	1.4721+00	3.7168+00	4.2689+00	4.4309+00	4.6402+00	4.0366+00	1.1564+00
CP	-1.1989-01	-1.2050-01	1.2599-01	5.6177-01	6.6895-01	7.0041-01	7.4104-01	6.2386-01	7.0535-02
P/PO1	2.0840-02	2.0518-02	1.4924-01	3.7681-01	4.3278-01	4.4920-01	4.7042-01	4.0923-01	1.2079-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.152 P-INF = .8232 RE = .3867 TO = 542.

P	8.6012-01	7.9620-01	1.1091+00	8.5470-01	1.7056-01	1.8597-01	1.8085-01	1.7875-01	1.0757+00
CP	7.1598-03	-5.2465-03	5.5487-02	6.1074-03	-1.2669-01	-1.2370-01	-1.2469-01	-1.2510-01	4.8996-02
P/PO1	8.7184-02	8.0705-02	1.1242-01	8.6634-02	1.7288-02	1.8850-02	1.8332-02	1.8119-02	1.0903-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.7 Q-INF = 5.143 P-INF = .8218 RE = .3860 TO = 542.

P	2.0227+00	2.8954+00	3.3806+00	3.5573+00	3.1971+00	9.4596-01	9.5752-01	1.0434+00	1.0506+00
CP	2.3351-01	4.0319-01	4.9753-01	5.3190-01	4.6185-01	2.4140-02	2.6389-02	4.3089-02	4.4494-02
P/PO1	2.0538-01	2.9399-01	3.4326-01	3.6121-01	3.2462-01	9.6051-02	9.7225-02	1.0595-01	1.0668-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.7 Q-INF = 5.142 P-INF = .8217 RE = .3865 TO = 542.

P	1.0738+00	2.0558+00	2.3979+00	2.8397+00	3.1170+00	2.8458+00	7.4015-01	1.4551-01	1.5884-01
CP	4.9027-02	2.4000-01	3.0654-01	3.9246-01	4.4637-01	3.9364-01	-1.5855-02	-1.3150-01	-1.2890-01
P/PO1	1.0905-01	2.0877-01	2.4352-01	2.8839-01	3.1654-01	2.8901-01	7.5165-02	1.4777-02	1.6131-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B486

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.158 P-INF = .8243 RE = .3877 TO = 542.

P	1.5750-01	1.6102-01	1.0908+00	1.5679+00	1.9959+00	2.2277+00	2.4253+00	2.1008+00	7.7190-01
CP	-1.2926-01	-1.2858-01	5.1668-02	1.4416-01	2.2713-01	2.7207-01	3.1038-01	2.4746-01	-1.0153-02
P/PO1	1.5945-02	1.6301-02	1.1043-01	1.5873-01	2.0205-01	2.2552-01	2.4553-01	2.1267-01	7.8143-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.165 P-INF = .8253 RE = .3882 TO = 542.

P	1.5381-01	9.7334-01	1.0212+00	1.0432+00	1.0755+00	1.1000+00	1.5434+00	2.0031+00	2.4515+00
CP	-1.3001-01	2.8662-02	3.7937-02	4.2189-02	4.8434-02	5.3185-02	1.3703-01	2.2803-01	3.1486-01
P/PO1	1.5551-02	9.8413-02	1.0326-01	1.0548-01	1.0874-01	1.1122-01	1.5605-01	2.0253-01	2.4787-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3888 TO = 542.

P	2.7116+00	2.5003+00	7.6319-01	1.3429-01	1.5967-01	1.4350-01	1.4902-01	1.5142-01	1.9550-01
CP	3.6439-01	3.2354-01	-1.2259-02	-1.3383-01	-1.2893-01	-1.3205-01	-1.3099-01	-1.3052-01	-1.2200-01
P/PO1	2.7373-01	2.5240-01	7.7044-02	1.3557-02	1.6119-02	1.4486-02	1.5044-02	1.5286-02	1.9735-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0313+00	8.2734-01	2.4281+00	1.0430+00	3.1148+00	1.3195+00	3.8156+00	2.0250+00
CP	3.9562-02	1.4396-04	3.0960-01	4.1827-02	4.4235-01	9.5291-02	5.7782-01	2.3167-01
P/PO1	1.0410-01	8.3520-02	2.4512-01	1.0529-01	3.1444-01	1.3321-01	3.8519-01	2.0442-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.1156+00	2.6508+00	4.1203+00	2.9883+00	3.6398+00	3.3141+00	2.9508+00
CP	6.3582-01	3.5264-01	6.3672-01	4.1788-01	5.4384-01	4.8086-01	4.1064-01
P/PO1	4.1547-01	2.6760-01	4.1595-01	3.0167-01	3.6744-01	3.3455-01	2.9788-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	241.	301244	2.99	5	10.03	180.03	-.01	4.47	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3891 TO = 542.

P	9.8795-01	9.7516-01	9.9745-01	9.9196-01	1.1708+00	1.9095+00	4.0596+00	4.4885+00	4.7379+00
CP	3.1041-02	2.8572-02	3.2877-02	3.1816-02	6.6357-02	2.0904-01	6.2419-01	7.0723-01	7.5540-01
P/PO1	9.9655-02	9.8366-02	1.0061-01	1.0006-01	1.1810-01	1.9261-01	4.0740-01	4.5276-01	4.7792-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.190 P-INF = .8293 RE = .3906 TO = 541.

P	4.8971+00	4.1918+00	1.2500+00	1.7980-01	2.2064-01	2.0354-01	2.0400-01	2.1790-01	1.4323+00
CP	7.8378-01	6.4788-01	8.1060-02	-1.2515-01	-1.1728-01	-1.2058-01	-1.2049-01	-1.1781-01	1.1140-01
P/PO1	4.9274-01	4.2177-01	1.2577-01	1.8092-02	2.2200-02	2.0480-02	2.0527-02	2.1925-02	1.4199-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3902 TO = 541.

P	4.4462+00	4.8400+00	4.9009+00	4.9446+00	4.2319+00	1.2268+00	9.6291-01	9.6680-01	1.1257+00
CP	6.9771-01	7.7365-01	7.8540-01	7.9479-01	6.5638-01	7.6817-02	2.5914-02	2.6664-02	5.7306-02
P/PO1	4.4779-01	4.8745-01	4.9359-01	4.9849-01	4.2621-01	1.2356-01	9.6978-02	9.7369-02	1.1337-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3908 TO = 541.

P	1.2144+00	3.8708+00	2.8182+00	4.7288+00	4.9650+00	4.4432+00	1.1138+00	1.7801-01	2.0412-01
CP	7.4086-02	5.8568-01	3.8296-01	7.5093-01	7.9641-01	6.9592-01	5.4716-02	-1.2551-01	-1.2744-01
P/PO1	1.2213-01	3.8929-01	2.8343-01	4.7556-01	4.9934-01	4.4686-01	1.1202-01	1.7903-02	2.0527-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3913 TO = 541.

P	1.9965-01	1.9057-01	1.3251+00	3.6371+00	4.2011+00	4.4126+00	4.4917+00	3.9206+00	1.0614+00
CP	-1.2140-01	-1.2314-01	9.5040-02	5.3969-01	6.4817-01	6.8883-01	7.0406-01	5.9422-01	4.4326-02
P/PO1	2.0051-02	1.9139-02	1.3308-01	3.6527-01	4.2192-01	4.4316-01	4.5111-01	3.9375-01	1.0657-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3905 TO = 541.

P	9.9343-01	9.8064-01	9.6634-01	1.0322+00	1.5749-01	1.7791-01	1.7362-01	1.6693-01	1.1078+00
CP	3.1680-02	2.9216-02	2.6459-02	3.9158-02	-1.2944-01	-1.2550-01	-1.2633-01	-1.2762-01	5.3727-02
P/PO1	9.9989-02	9.8702-02	9.7262-02	1.0389-01	1.5852-02	1.7907-02	1.7475-02	1.6802-02	1.1150-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.202 P-INF = .8313 RE = .3915 TO = 541.

P	2.6176+00	3.6423+00	4.0789+00	4.1216+00	3.6714+00	1.1054+00	1.0042+00	9.9233-01	9.9346-01
CP	3.4339-01	5.4038-01	6.2430-01	6.3250-01	5.4596-01	5.2703-02	3.3249-02	3.0963-02	3.1179-02
P/PO1	2.6277-01	3.6563-01	4.0946-01	4.1374-01	3.6855-01	1.1097-01	1.0081-01	9.9614-02	9.9727-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.192 P-INF = .8297 RE = .3908 TO = 541.

P	1.1432+00	2.7966+00	3.3559+00	3.8211+00	4.1395+00	3.8434+00	8.9105-01	1.4551-01	1.5956-01
CP	6.0370-02	3.7880-01	4.8651-01	5.7611-01	6.3744-01	5.8041-01	1.1814-02	-1.3177-01	-1.2906-01
P/PO1	1.1497-01	2.8126-01	3.3750-01	3.8429-01	4.1632-01	3.8654-01	8.9614-02	1.4634-02	1.6047-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B488

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V [illegible] GAS DYNAMICS [illegible]
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.195 P-INF = .8301 RE = .3910 TO = 541.

P	1.5233-01	1.5216-01	1.1603+00	2.3000+00	3.0554+00	3.5252+00	3.7926+00	3.5359+00	9.9346-01
CP	-1.3047-01	-1.3050-01	6.3571-02	2.8296-01	4.2837-01	5.1880-01	5.7028-01	5.2086-01	3.1447-02
P/PO1	1.5313-02	1.5296-02	1.1664-01	2.3121-01	3.0714-01	3.5437-01	3.8125-01	3.5544-01	9.9867-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3896 TO = 541.

P	1.2867-01	9.9525-01	9.9562-01	9.9745-01	1.0179+00	1.1544+00	2.0541+00	2.5466+00	3.0139+00
CP	-1.3494-01	3.2452-02	3.2523-02	3.2877-02	3.6829-02	6.3186-02	2.3698-01	3.3211-01	4.2239-01
P/PO1	1.2979-02	1.0039-01	1.0043-01	1.0061-01	1.0268-01	1.1644-01	2.0720-01	2.5687-01	3.0402-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.195 P-INF = .8301 RE = .3910 TO = 541.

P	3.3816+00	3.1299+00	9.4071-01	1.2310-01	1.4080-01	1.2007-01	1.2587-01	1.2705-01	1.5740-01
CP	4.9117-01	4.4272-01	2.1294-02	-1.3610-01	-1.3269-01	-1.3668-01	-1.3556-01	-1.3534-01	-1.2949-01
P/PO1	3.3994-01	3.1464-01	9.4565-02	1.2375-02	1.4154-02	1.2670-02	1.2653-02	1.2771-02	1.5823-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0195+00	1.0383+00	1.6266+00	1.1836+00	2.3086+00	1.6008+00	3.1500+00	2.3250+00
CP	3.6466-02	4.0076-02	1.5332-01	6.8048-02	2.8461-01	1.4836-01	4.4658-01	2.8777-01
P/PO1	1.0249-01	1.0437-01	1.6351-01	1.1898-01	2.3207-01	1.6092-01	3.1665-01	2.3372-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.1484+00	2.9250+00	4.2469+00	3.7078+00	4.0359+00	3.8977+00	3.5039+00
CP	6.3878-01	4.0327-01	6.5773-01	5.5396-01	6.1712-01	5.9051-01	5.1471-01
P/PO1	4.1702-01	2.9403-01	4.2692-01	3.7273-01	4.0571-01	3.9181-01	3.5223-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	242.	301244	2.99	5	14.03	180.03	-.01	.97	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3891 TO = 541.

P	9.6056-01	9.4777-01	9.0777-01	8.8215-01	9.8913-01	1.4849+00	3.2420+00	3.8718+00	4.2122+00
CP	2.6012-02	2.3539-02	1.5802-02	1.0845-02	3.1540-02	1.2744-01	4.6732-01	5.8914-01	6.5494-01
P/PO1	9.7029-02	9.5738-02	9.1697-02	8.9109-02	9.9915-02	1.4999-01	3.2748-01	3.9110-01	4.2549-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.165 P-INF = .8285 RE = .3902 TO = 541.

P	4.3022+00	3.7164+00	1.0322+00	1.8876-01	2.1410-01	1.8816-01	1.8809-01	2.2159-01	1.3185+00
CP	6.6993-01	5.5696-01	3.9282-02	-1.2339-01	-1.1850-01	-1.2350-01	-1.2357-01	-1.1706-01	9.4492-02
P/PO1	4.3328-01	3.7429-01	1.0396-01	1.9010-02	2.1563-02	1.8951-02	1.8943-02	2.2317-02	1.3279-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3891 TO = 541.

P	3.5883+00	4.1733+00	4.3323+00	4.3485+00	3.7761+00	1.0203+00	9.0003-01	9.0477-01	1.0042+00
CP	5.3420-01	6.4734-01	6.7810-01	6.8124-01	5.7053-01	3.7530-02	1.4278-02	1.5195-02	3.4420-02
P/PO1	3.6241-01	4.2149-01	4.3755-01	4.3919-01	3.8138-01	1.0304-01	9.0901-02	9.1380-02	1.0142-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.8 Q-INF = 5.155 P-INF = .8237 RE = .3880 TO = 541.

P	1.2473+00	3.2905+00	3.7205+00	3.9867+00	4.2073+00	3.7210+00	1.0384+00	1.6102-01	1.9765-01
CP	8.2154-02	4.7850-01	5.6192-01	6.1355-01	6.5635-01	5.6202-01	4.1631-02	-1.2856-01	-1.2145-01
P/PO1	1.2635-01	3.3332-01	3.7688-01	4.0385-01	4.2620-01	3.7693-01	1.0519-01	1.6312-02	2.0022-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.148 P-INF = .8226 RE = .3880 TO = 541.

P	1.8856-01	1.7801-01	1.1585+00	3.8763+00	4.2196+00	4.2841+00	4.3185+00	3.8046+00	9.3985-01
CP	-1.2316-01	-1.2521-01	6.5256-02	5.9320-01	6.5990-01	6.7242-01	6.7911-01	5.7928-01	2.2781-02
P/PO1	1.9128-02	1.8058-02	1.1752-01	3.9327-01	4.2805-01	4.3459-01	4.3808-01	3.8595-01	9.5341-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.151 P-INF = .8231 RE = .3882 TO = 541.

P	9.3864-01	9.0942-01	9.0777-01	1.1018+00	1.6257-01	1.6840-01	1.7073-01	1.6176-01	1.1096+00
CP	2.2430-02	1.6758-02	1.6437-02	5.4100-02	-1.2823-01	-1.2710-01	-1.2665-01	-1.2839-01	5.5620-02
P/PO1	9.5158-02	9.2196-02	9.2029-02	1.1170-01	1.6482-02	1.7072-02	1.7308-02	1.6399-02	1.1249-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.7 Q-INF = 5.138 P-INF = .8210 RE = .3872 TO = 541.

P	3.8137+00	4.2720+00	4.3509+00	4.2811+00	3.8685+00	1.1199+00	9.2159-01	9.2484-01	9.5057-01
CP	5.8245-01	6.7166-01	6.8700-01	6.7341-01	5.9312-01	5.8173-02	1.9572-02	2.0204-02	2.5213-02
P/PO1	3.8761-01	4.3419-01	4.4220-01	4.3511-01	3.9317-01	1.1382-01	9.3666-02	9.3996-02	9.6611-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.7 Q-INF = 5.143 P-INF = .8218 RE = .3876 TO = 541.

P	1.2327+00	3.2287+00	3.7328+00	3.9928+00	4.1703+00	3.7700+00	1.0599+00	1.4330-01	1.4734-01
CP	7.9886-02	4.6801-01	5.6603-01	6.1658-01	6.5110-01	5.7325-01	4.6299-02	-1.3193-01	-1.3114-01
P/PO1	1.2516-01	3.2784-01	3.7903-01	4.0542-01	4.2345-01	3.8280-01	1.0762-01	1.4550-02	1.4961-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B490

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.7 Q-INF = 5.132 P-INF = .8200 RE = .3868 TO = 541.

P	1.4641-01	1.4256-01	1.3873+00	3.5144+00	4.1026+00	4.3147+00	4.3804+00	4.0794+00	1.0721+00
CP	-1.3126-01	-1.3201-01	1.1055-01	5.2507-01	6.3969-01	6.8101-01	6.9382-01	6.3517-01	4.9124-02
P/PO1	1.4899-02	1.4507-02	1.4117-01	3.5764-01	4.1749-01	4.3907-01	4.4576-01	4.1513-01	1.0910-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.7 Q-INF = 5.133 P-INF = .8203 RE = .3869 TO = 541.

P	1.2423-01	9.4047-01	9.1326-01	8.9496-01	9.7834-01	1.4008+00	3.1615+00	3.8229+00	4.2122+00
CP	-1.3559-01	2.3419-02	1.8119-02	1.4554-02	3.0798-02	1.1310-01	4.5611-01	5.8495-01	6.6078-01
P/PO1	1.2638-02	9.5675-02	9.2907-02	9.1045-02	9.9528-02	1.4251-01	3.2163-01	3.8891-01	4.2851-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.7 Q-INF = 5.131 P-INF = .8199 RE = .3867 TO = 541.

P	4.3210+00	3.8831+00	1.0158+00	1.0893-01	1.3645-01	1.2081-01	1.2443-01	1.2557-01	[illegible]
CP	6.8237-01	5.9704-01	3.8179-02	-1.3856-01	-1.3326-01	-1.3625-01	-1.3554-01	-1.3532-01	-1.3366-01
P/PO1	4.3978-01	3.9522-01	1.0338-01	1.1087-02	1.3887-02	1.2295-02	1.2664-02	1.2780-02	1.5216-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	9.6094-01	1.0219+00	1.4063+00	1.5047+00	2.1422+00	2.1375+00	2.8734+00	2.7727+00
CP	2.7496-02	3.9373-02	1.1429-01	1.3347-01	2.5772-01	2.5681-01	4.0025-01	3.8061-01
P/PO1	9.7804-02	1.0401-01	1.4313-01	1.5315-01	2.1803-01	2.1755-01	2.9246-01	2.8220-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	3.5344+00	3.3703+00	4.0383+00	4.0617+00	3.9797+00	4.0195+00	3.5133+00
CP	5.2907-01	4.9709-01	6.2728-01	6.3185-01	6.1586-01	6.2362-01	5.2496-01
P/PO1	3.5973-01	3.4303-01	4.1101-01	4.1340-01	4.0505-01	4.0911-01	3.5758-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V. D. KALMAN
40 - INCH CONTINUOUS

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	243.	301244	2.99	5	14.67	180.03	-.01	.33	180.0

VALVE POS 2 PO = 29.7 Q-INF = 5.132 P-INF = .8200 RE = .3868 TO = 541.

P	9.3682-01	9.2221-01	8.7849-01	8.7117-01	9.8913-01	1.2885+00	2.7656+00	3.4137+00	3.8943+00
CP	2.2766-02	1.9919-02	1.1399-02	9.9724-03	3.2961-02	9.1291-02	3.7914-01	5.0545-01	5.9909-01
P/PO1	9.5333-02	9.3847-02	8.9398-02	8.8653-02	1.0066-01	1.3112-01	2.8143-01	3.4739-01	3.9629-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.7 Q-INF = 5.134 P-INF = .8204 RE = .3869 TO = 541.

P	4.1018+00	3.5436+00	1.0327+00	1.8950-01	2.1701-01	1.9182-01	1.9605-01	2.1568-01	1.2936+00
CP	6.3915-01	5.3042-01	4.1262-02	-1.2288-01	-1.1752-01	-1.2243-01	-1.2161-01	-1.1778-01	9.2181-02
P/PO1	4.1721-01	3.6043-01	1.0499-01	1.9275-02	2.2073-02	1.9511-02	1.9941-02	2.1938-02	1.3158-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.146 P-INF = .8223 RE = .3879 TO = 541.

P	3.4943+00	4.0930+00	4.2643+00	4.2504+00	3.6714+00	9.8764-01	8.7548-01	8.7018-01	9.8631-01
CP	5.1922-01	6.3556-01	6.6885-01	6.6614-01	5.5363-01	3.2124-02	1.0911-02	1.3186-02	3.1866-02
P/PO1	3.5459-01	4.1534-01	4.3272-01	4.3131-01	3.7255-01	1.0022-01	8.9143-02	9.0331-02	1.0007-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.7 Q-INF = 5.130 P-INF = .8197 RE = .3866 TO = 541.

P	1.2546+00	3.1732+00	3.6216+00	3.9499+00	4.1827+00	3.7516+00	1.0224+00	1.7875-01	2.0125-01
CP	8.4763-02	4.5876-01	5.4618-01	6.1017-01	6.5555-01	5.7152-01	3.5614-02	-1.2495-01	-1.2256-01
P/PO1	1.2771-01	3.2301-01	3.6866-01	4.0208-01	4.2578-01	3.8190-01	1.0204-01	1.8196-02	2.0486-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.145 P-INF = .8222 RE = .3878 TO = 541.

P	1.9522-01	1.8761-01	1.2024+00	3.5757+00	4.1087+00	4.2473+00	4.2999+00	3.7602+00	9.3628-01
CP	-1.2185-01	-1.2333-01	7.3899-02	5.3515-01	6.3874-01	6.6568-01	6.7590-01	5.7488-01	2.2173-02
P/PO1	1.9813-02	1.9041-02	1.2204-01	3.6290-01	4.1700-01	4.3106-01	4.3640-01	3.8365-01	9.5024-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.153 P-INF = .8234 RE = .3883 TO = 541.

P	9.2586-01	8.8934-01	8.9496-01	1.0853+00	1.6330-01	1.7059-01	1.7434-01	1.6841-01	1.1978+00
CP	1.9892-02	1.2804-02	1.3895-02	5.0836-02	-1.2810-01	-1.2669-01	-1.2596-01	-1.2711-01	5.5205-02
P/PO1	9.3833-02	9.0131-02	9.0701-02	1.0999-01	1.6550-02	1.7289-02	1.7669-02	1.7069-02	1.1227-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.149 P-INF = .8228 RE = .3881 TO = 541.

P	3.7260+00	4.2844+00	4.3632+00	4.2995+00	3.9055+00	1.1399+00	9.0183-01	9.1207-01	9.3628-01
CP	5.6379-01	6.7222-01	6.8753-01	6.7515-01	5.9864-01	6.1564-02	1.5332-02	1.7324-02	2.2124-02
P/PO1	3.7786-01	4.3448-01	4.4248-01	4.3601-01	3.9606-01	1.1559-01	9.1455-02	9.2494-02	9.4947-02
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.163 P-INF = .8250 RE = .3891 TO = 541.

P	1.2235+00	3.3337+00	3.9306+00	4.1523+00	4.3367+00	3.9597+00	1.0455+00	1.3739-01	1.4950-01
CP	7.7176-02	4.8587-01	6.0148-01	6.4441-01	6.8013-01	6.0711-01	4.2707-02	-1.3318-01	-1.3084-01
P/PO1	1.2375-01	3.3717-01	3.9754-01	4.1996-01	4.3861-01	4.0048-01	1.0575-01	1.3895-02	1.5120-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B492

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.162 P-INF = .8248 RE = .3890 TO = 541.

P	1.5381-01	1.4994-01	1.3543+00	3.1403+00	3.8685+00	4.1800+00	4.3309+00	3.9695+00	1.1400+00
CP	-1.3000-01	-1.3074-01	1.0259-01	4.4860-01	5.8969-01	6.5004-01	6.7927-01	6.0925-01	6.1065-02
P/PO1	1.5561-02	1.5170-02	1.3702-01	3.1771-01	3.9138-01	4.2290-01	4.3816-01	4.0160-01	1.1533-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3896 TO = 541.

P	1.5159-01	9.3682-01	9.0411-01	8.8581-01	9.8733-01	1.6585+00	3.6132+00	4.1405+00	4.4078+00
CP	-1.3047-01	2.1420-02	1.5094-02	1.1553-02	3.1192-02	1.6103-01	5.3913-01	6.4112-01	6.9284-01
P/PO1	1.5312-02	9.4631-02	9.1327-02	8.9478-02	9.9734-02	1.6753-01	3.6498-01	4.1824-01	4.4525-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.164 P-INF = .8252 RE = .3892 TO = 541.

P	4.4399+00	4.0189+00	1.0432+00	1.2086-01	1.5387-01	1.3691-01	1.5264-01	1.5436-01	1.7250-01
CP	6.9999-01	6.1847-01	4.2221-02	-1.3639-01	-1.3006-01	-1.3328-01	-1.3023-01	-1.2990-01	-1.2639-01
P/PO1	4.4898-01	4.0641-01	1.0549-01	1.2222-02	1.5559-02	1.3845-02	1.5436-02	1.5611-02	1.7444-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9140+00	2.0340+00	2.0350+00	2.1430+00	2.3540+00

CEC	9.5391-01	1.0102+00	.0000+00	1.6078+00	2.0906+00	2.1656+00	2.8125+00	2.7773+00	
CP	2.4929-02	3.5821-02	-1.5979-01	1.5156-01	2.4505-01	2.5558-01	3.8484-01	3.7803-01	
P/PO1	9.6463-02	1.0215-01	.0000+00	1.6259-01	2.1141-01	2.1900-01	2.8441-01	2.8086-01	
S/R	2.8900-01	3.8408-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	3.4828+00	3.4102+00	4.0523+00	4.2117+00	4.0125+00	4.0852+00	3.5977+00
CP	5.1465-01	5.0058-01	6.2494-01	6.5580-01	6.1722-01	6.3129-01	5.3689-01
P/PO1	3.5220-01	3.4485-01	4.0979-01	4.2591-01	4.0576-01	4.1311-01	3.6381-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	244.	301244	2.99	5	14.67	199.91	-4.95	1.17	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3907 TO = 541.

P	1.0080+00	1.0044+00	1.0103+00	1.0194+00	1.0575+00	1.3664+00	3.1925+00	3.7130+00	4.0532+00
CP	3.4678-02	3.3973-02	3.5107-02	3.6873-02	4.4216-02	1.0381-01	4.5610-01	5.5652-01	6.2216-01
P/PO1	1.0155-01	1.0119-01	1.0178-01	1.0270-01	1.0653-01	1.3766-01	3.2162-01	3.7406-01	4.0834-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	4.1769+00	3.6362+00	1.0176+00	1.8130-01	2.1120-01	1.8743-01	1.8447-01	2.0830-01	1.2827+00
CP	6.4767-01	5.4313-01	3.6920-02	-1.2475-01	-1.1897-01	-1.2356-01	-1.2413-01	-1.1953-01	8.8213-02
P/PO1	4.2166-01	3.6707-01	1.0272-01	1.8302-02	2.1321-02	1.8921-02	1.8622-02	2.1027-02	1.2951-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3915 TO = 541.

P	2.4548+00	3.2164+00	3.6216+00	3.7781+00	3.2895+00	9.8583-01	1.0168+00	1.0270+00	1.0435+00
CP	3.1283-01	4.5946-01	5.3747-01	5.6761-01	4.7353-01	3.0008-02	3.5772-02	3.7933-02	4.1109-02
P/PO1	2.4681-01	3.2338-01	3.6412-01	3.7985-01	3.3072-01	9.9115-02	1.0223-01	1.0325-01	1.0491-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3904 TO = 541.

P	1.2199+00	2.7472+00	3.1272+00	3.5635+00	3.9486+00	3.5252+00	8.2397-01	1.6989-01	1.7697-01
CP	7.5730-02	3.7061-01	4.4398-01	5.2821-01	6.0257-01	5.2982-01	4.5090-04	-1.2699-01	-1.2524-01
P/PO1	1.2299-01	2.7698-01	3.1529-01	3.5928-01	3.9811-01	3.5542-01	8.3681-02	1.7129-02	1.8044-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3898 TO = 541.

P	1.7673-01	1.7136-01	1.2152+00	2.3613+00	2.8952+00	3.2436+00	3.5699+00	3.1511+00	8.9697-01
CP	-1.2562-01	-1.2666-01	7.5167-02	2.9676-01	3.9798-01	4.6735-01	5.3042-01	4.4946-01	1.3831-02
P/PO1	1.7844-02	1.7302-02	1.2270-01	2.3841-01	2.9232-01	3.2750-01	3.6044-01	3.1816-01	9.0563-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	1.0190+00	1.0208+00	1.0286+00	9.0228-01	1.4878-01	1.5222-01	1.5770-01	1.5216-01	1.2365+00
CP	3.7192-02	3.7545-02	3.9042-02	1.4630-02	-1.3103-01	-1.2979-01	-1.2731-01	-1.3038-01	7.9232-02
P/PO1	1.0287-01	1.0305-01	1.0383-01	9.1085-02	1.5020-02	1.5669-02	1.5920-02	1.5360-02	1.2482-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3896 TO = 541.

P	2.1918+00	2.7842+00	3.1519+00	3.4917+00	3.0677+00	9.8764-01	1.0204+00	1.0197+00	1.0185+00
CP	2.6424-01	3.7886-01	4.4999-01	4.9639-01	4.3370-01	3.1281-02	3.7619-02	3.7483-02	3.7246-02
P/PO1	2.2143-01	2.8129-01	3.1843-01	3.4266-01	3.0993-01	9.9780-02	1.0309-01	1.0302-01	1.0290-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3907 TO = 541.

P	1.2071+00	2.8213+00	3.2322+00	3.5941+00	3.9055+00	3.6292+00	8.5153-01	1.3295-01	1.4519-01
CP	7.3079-02	3.8449-01	4.6378-01	5.3359-01	5.9365-01	5.4036-01	4.4845-03	-1.3414-01	-1.3178-01
P/PO1	1.2161-01	2.8423-01	3.2563-01	3.6209-01	3.9345-01	3.6562-01	8.5787-02	1.3395-02	1.4627-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B494

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3901 TO = 541.

P	1.4345-01	1.4256-01	1.3177+00	2.3245+00	2.9938+00	3.5179+00	3.8050+00	3.4748+00	1.0042+00
CP	-1.3207-01	-1.3225-01	9.4823-02	2.8936-01	4.1868-01	5.1899-01	5.7542-01	5.1162-01	3.4237-02
P/PO1	1.4475-02	1.4384-02	1.3296-01	2.3455-01	3.0208-01	3.5446-01	3.8393-01	3.5062-01	1.0132-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3904 TO = 541.

P	1.3828-01	9.9343-01	9.8281-01	9.6817-01	1.0359+00	1.3972+00	3.2791+00	3.8107+00	4.1021+00
CP	-1.3310-01	3.1980-02	2.9930-02	2.7103-02	4.0177-02	1.0992-01	4.7321-01	5.7583-01	6.3209-01
P/PO1	1.3940-02	1.0014-01	9.9075-02	9.7593-02	1.0443-01	1.4085-01	3.3056-01	3.8415-01	4.1361-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3911 TO = 541.

P	4.1331+00	3.8214+00	1.0158+00	1.1042-01	1.4008-01	1.2593-01	1.3022-01	1.2852-01	1.5884-01
CP	6.3670-01	5.7663-01	3.5952-02	-1.3851-01	-1.3280-01	-1.3553-01	-1.3470-01	-1.3503-01	-1.2918-01
P/PO1	4.1593-01	3.8456-01	1.0222-01	1.1112-02	1.4096-02	1.2673-02	1.3104-02	1.2934-02	1.5985-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0313+00	1.0758+00	1.2703+00	1.3313+00	1.7016+00	1.7297+00	2.2055+00	2.2506+00
CP	3.8939-02	4.7521-02	8.5009-02	9.6752-02	1.6812-01	1.7354-01	2.6522-01	2.7381-01
P/PO1	1.0378-01	1.0826-01	1.2784-01	1.3397-01	1.7124-01	1.7407-01	2.2195-01	2.2643-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	2.6227+00	2.5406+00	2.9297+00	3.0094+00	3.1453+00	3.1969+00	2.8031+00
CP	3.4562-01	3.2981-01	4.0479-01	4.2014-01	4.4634-01	4.5628-01	3.8040-01
P/PO1	2.6393-01	2.5567-01	2.9483-01	3.0285-01	3.1653-01	3.2172-01	2.8209-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
40 - 1000 CONTINUOUS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	245.	301244	2.99	5	13.44	222.43	-9.02	5.00	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3896 TO = 541.

P	8.7655-01	9.2951-01	8.2907-01	9.4071-01	1.2715+00	1.6528+00	4.1824+00	4.4336+00	4.5423+00
CP	9.7896-03	2.0035-02	6.0384-04	2.2203-02	8.6196-02	1.5997-01	6.4936-01	6.9796-01	7.1899-01
P/PO1	8.8557-02	9.3908-02	8.3760-02	9.5039-02	1.2846-01	1.6698-01	4.2254-01	4.4792-01	4.5890-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3893 TO = 541.

P	4.6341+00	3.9572+00	1.1988+00	1.4772-01	1.7709-01	1.6693-01	1.6566-01	1.6250-01	1.3670+00
CP	7.3730-01	6.0627-01	7.2273-02	-1.3120-01	-1.2551-01	-1.2748-01	-1.2772-01	-1.2834-01	1.0494-01
P/PO1	4.6847-01	4.0004-01	1.2119-01	1.4934-02	1.7902-02	1.6875-02	1.6747-02	1.6428-02	1.3819-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.160 P-INF = .8245 RE = .3889 TO = 541.

P	3.0748+00	3.7349+00	3.9677+00	3.9805+00	3.4188+00	1.0039+00	1.1282+00	1.1146+00	1.0971+00
CP	4.3610-01	5.6404-01	6.0915-01	6.1164-01	5.0278-01	3.4772-02	5.8849-02	5.6207-02	5.2923-02
P/PO1	3.1118-01	3.7799-01	4.0155-01	4.0284-01	3.4600-01	1.0160-01	1.1418-01	1.1280-01	1.1103-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3888 TO = 541.

P	1.2053+00	2.3274+00	2.6575+00	2.9133+00	3.2771+00	2.9988+00	7.6170-01	1.4921-01	1.6102-01
CP	7.3823-02	2.9133-01	3.5531-01	4.0490-01	4.7542-01	4.2147-01	-1.2152-02	-1.3087-01	-1.2859-01
P/PO1	1.2200-01	2.3558-01	2.6899-01	2.9489-01	3.3171-01	3.0354-01	7.7099-02	1.5102-02	1.6246-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.166 P-INF = .8256 RE = .3894 TO = 541.

P	1.6046-01	1.5807-01	1.2628+00	1.4793+00	1.7803+00	2.1665+00	2.5614+00	2.3145+00	6.8613-01
CP	-1.2874-01	-1.2920-01	8.4635-02	1.2654-01	1.8479-01	2.5955-01	3.3598-01	2.8820-01	-2.6988-02
P/PO1	1.6219-02	1.5977-02	1.2764-01	1.4952-01	1.7994-01	2.1898-01	2.5890-01	2.3394-01	6.9352-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.151 P-INF = .8231 RE = .3882 TO = 541.

P	1.1030+00	1.1760+00	1.1365+00	6.7168-01	1.3064-01	1.4131-01	1.4034-01	1.4108-01	1.2615+00
CP	5.4337-02	6.8518-02	6.0850-02	-2.9397-02	-1.3443-01	-1.3236-01	-1.3255-01	-1.3240-01	8.5104-02
P/PO1	1.1182-01	1.1923-01	1.1522-01	6.8094-02	1.3244-02	1.4325-02	1.4228-02	1.4303-02	1.2784-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.158 P-INF = .8241 RE = .3887 TO = 541.

P	1.5847+00	2.1854+00	2.6513+00	2.8765+00	2.5564+00	7.9736-01	1.1462+00	1.1073+00	1.1275+00
CP	1.4746-01	2.6394-01	3.5427-01	3.9794-01	3.3587-01	-5.1921-03	6.2436-02	5.4894-02	5.8813-02
P/PO1	1.6045-01	2.2128-01	2.6845-01	2.9125-01	2.5884-01	8.0734-02	1.1605-01	1.1211-01	1.1416-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.150 P-INF = .8230 RE = .3882 TO = 541.

P	1.2546+00	1.7052+00	2.0024+00	2.0731+00	2.1868+00	1.8605+00	5.6427-01	1.4108-01	1.4303-01
CP	8.3801-02	1.7130-01	2.2900-01	2.4273-01	2.6481-01	2.0145-01	-5.0232-02	-1.3240-01	-1.3202-01
P/PO1	1.2721-01	1.7290-01	2.0303-01	2.1020-01	2.2173-01	1.8865-01	5.7214-02	1.4305-02	1.4502-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B496

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.148 P-INF = .8226 RE = .3880 TO = 541.

P	1.4050-01	1.4256-01	1.3214+00	1.6621+00	1.9835+00	2.3195+00	2.5923+00	2.3084+00	7.3080-01
CP	-1.3250-01	-1.3210-01	9.6898-02	1.6309-01	2.2552-01	2.9079-01	3.4379-01	2.8863-01	-1.7830-02
P/PO1	1.4252-02	1.4461-02	1.3405-01	1.6861-01	2.0121-01	2.3530-01	2.6297-01	2.3417-01	7.4134-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.8 Q-INF = 5.147 P-INF = .8225 RE = .3879 TO = 541.

P	1.1979-01	8.8203-01	9.7366-01	1.0871+00	1.1834+00	1.2885+00	1.8747+00	2.4061+00	2.8305+00
CP	-1.3652-01	1.1575-02	2.9377-02	5.1423-02	7.0120-02	9.0540-02	2.0443-01	3.0769-01	3.9015-01
P/PO1	1.2154-02	8.9490-02	9.8786-02	1.1030-01	1.2006-01	1.3073-01	1.9020-01	2.4412-01	2.8718-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.8 Q-INF = 5.154 P-INF = .8236 RE = .3885 TO = 541.

P	3.0873+00	2.8460+00	8.0894-01	1.1564-01	1.4225-01	1.7666-01	1.3456-01	1.3665-01	1.4375-01
CP	4.3918-01	3.9236-01	-2.8480-03	-1.3736-01	-1.3219-01	-1.3522-01	-1.3364-01	-1.3328-01	-1.3190-01
P/PO1	3.1279-01	2.8834-01	8.1958-02	1.1716-02	1.4412-02	1.2833-02	1.3633-02	1.3845-02	1.4564-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.1438+00	1.2047+00	1.2703+00	1.2891+00	1.4227+00	1.4227+00	1.6219+00	1.7250+00
CP	6.2110-02	7.3932-02	8.6665-02	9.0302-02	1.1622-01	1.1622-01	1.5487-01	1.7488-01
P/PO1	1.1588-01	1.2205-01	1.2870-01	1.3060-01	1.4414-01	1.4414-01	1.6432-01	1.7477-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.9289+00	1.8680+00	2.1914+00	2.2359+00	2.3391+00	2.3320+00	1.9477+00
CP	2.1444-01	2.0262-01	2.6537-01	2.7401-01	2.9402-01	2.9265-01	2.1808-01
P/PO1	1.9543-01	1.8925-01	2.2202-01	2.2653-01	2.3698-01	2.3627-01	1.9733-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	246.	301244	2.99	5	10.25	241.26	-8.98	10.03	180.0

VALVE POS 2 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3888 TO = 541.

P	6.7020-01	2.0249+00	2.7502+00	1.3726+00	1.4028+00	2.3256+00	5.2465+00	5.3924+00	5.5816+00
CP	-2.9889-02	2.3269-01	3.7328-01	1.0627-01	1.1211-01	2.9099-01	8.5715-01	8.8541-01	9.2209-01
P/PO1	6.7837-02	2.0496-01	2.7837-01	1.3894-01	1.4199-01	2.3540-01	5.3105-01	5.4581-01	5.6497-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.8 Q-INF = 5.158 P-INF = .8241 RE = .3887 TO = 541.

P	5.7362+00	4.9264+00	1.4824+00	1.6563-01	1.8435-01	1.7425-01	1.7507-01	1.7284-01	1.8157+00
CP	9.5241-01	7.9540-01	1.2764-01	-1.2768-01	-1.2405-01	-1.2601-01	-1.2585-01	-1.2628-01	1.9226-01
P/PO1	5.8080-01	4.9881-01	1.5010-01	1.6770-02	1.8665-02	1.7643-02	1.7726-02	1.7500-02	1.8384-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.161 P-INF = .8247 RE = .3890 TO = 541.

P	4.2208+00	4.5869+00	4.6661+00	4.6981+00	3.9855+00	1.2142+00	7.5272-01	7.1324-01	1.1829+00
CP	6.5806-01	7.2901-01	7.4435-01	7.5057-01	6.1249-01	7.5474-02	-1.3939-02	-2.1589-02	6.9409-02
P/PO1	4.2709-01	4.6414-01	4.7215-01	4.7539-01	4.0329-01	1.2286-01	7.6166-02	7.2171-02	1.1969-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.8 Q-INF = 5.151 P-INF = .8231 RE = .3882 TO = 541.

P	1.1779+00	3.1670+00	3.4609+00	3.6432+00	3.9363+00	3.4272+00	9.1261-01	1.4330-01	1.7465-01
CP	6.8873-02	4.5503-01	5.1210-01	5.4748-01	6.0438-01	5.0556-01	1.7377-02	-1.3197-01	-1.2589-01
P/PO1	1.4941-01	3.2107-01	3.5086-01	3.6934-01	3.9905-01	3.4745-01	9.2519-02	1.4527-02	1.7706-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3896 TO = 541.

P	1.7525-01	1.7710-01	1.2500+00	1.9933+00	2.4948+00	2.8275+00	3.0311+00	2.7420+00	7.3616-01
CP	-1.2589-01	-1.2650-01	8.2004-02	2.2579-01	3.2279-01	3.8714-01	4.3620-01	3.7060-01	-1.7394-02
P/PO1	1.7703-02	1.7385-02	1.2627-01	2.0135-01	2.5201-01	2.8561-01	3.1173-01	2.7698-01	7.4362-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.162 P-INF = .8249 RE = .3891 TO = 541.

P	7.2863-01	7.7246-01	1.0194+00	4.5734-01	1.7346-01	1.6840-01	1.6349-01	1.6628-01	1.1864+00
CP	-1.8650-02	-1.0161-02	3.7676-02	-7.1202-02	-1.2619-01	-1.2717-01	-1.2812-01	-1.2875-01	7.0029-02
P/PO1	7.3706-02	7.8139-02	1.0312-01	4.6263-02	1.7547-02	1.7034-02	1.6539-02	1.6214-02	1.2001-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	1.3587+00	1.4993+00	1.5519+00	1.7725+00	1.5337+00	4.9567-01	9.0003-01	1.1127+00	1.2079+00
CP	1.0285-01	1.3004-01	1.4021-01	1.8286-01	1.3669-01	-6.3974-02	1.4196-02	5.5313-02	7.3706-02
P/PO1	1.3716-01	1.5135-01	1.5666-01	1.7894-01	1.5483-01	5.0038-02	9.0858-02	1.1233-01	1.2193-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3898 TO = 541.

P	1.2747+00	1.9817+00	2.7008+00	3.1955+00	2.7227+00	2.2950+00	4.9048-01	1.4625-01	1.4303-01
CP	8.6654-02	2.2335-01	3.6238-01	4.5803-01	3.6663-01	2.8394-01	-6.4962-02	-1.3152-01	-1.3214-01
P/PO1	1.2870-01	2.0008-01	2.7268-01	3.2263-01	2.7490-01	2.3172-01	4.9521-02	1.4766-02	1.4441-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B498

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3893 TO = 541.

P	1.3680-01	1.4330-01	1.1969+00	1.3305+00	1.5025+00	1.5556+00	1.7330+00	1.4709+00	4.5204-01
CP	-1.3331-01	-1.3205-01	7.1919-02	9.7783-02	1.3107-01	1.4135-01	1.7569-01	1.2495-01	-7.2275-02
P/PO1	1.3829-02	1.4486-02	1.2100-01	1.3451-01	1.5189-01	1.5726-01	1.7519-01	1.4869-01	4.5703-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3909 TO = 541.

P	1.3088-01	7.6150-01	8.2724-01	1.0048+00	1.2427+00	1.1272+00	1.2568+00	1.4210+00	1.7240+00
CP	-1.3456-01	-1.2975-02	-3.0056-04	3.3927-02	7.9802-02	5.7527-02	8.2510-02	1.1418-01	1.7259-01
P/PO1	1.3178-02	7.6670-02	8.3288-02	1.0116-01	1.2512-01	1.1349-01	1.2653-01	1.4307-01	1.7357-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3903 TO = 541.

P	2.0102+00	1.9508+00	5.5929-01	1.3056-01	1.4588-01	1.3252-01	1.4179-01	1.3739-01	1.4087-01
CP	2.2838-01	2.1691-01	-5.1793-02	-1.3458-01	-1.3162-01	-1.3420-01	-1.3241-01	-1.3326-01	-1.3259-01
P/PO1	2.0271-01	1.9672-01	5.6399-02	1.3166-02	1.4711-02	1.3363-02	1.4298-02	1.3854-02	1.4206-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.1813+00	1.2539+00	1.3195+00	1.1484+00	1.5234+00	1.1906+00	2.0156+00	1.2703+00
CP	6.8309-02	8.2339-02	9.5011-02	6.1973-02	1.3439-01	7.0119-02	2.2943-01	8.5507-02
P/PO1	1.1912-01	1.2644-01	1.3306-01	1.1581-01	1.5362-01	1.2006-01	2.0325-01	1.2810-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	2.4469+00	1.4344+00	2.5547+00	1.6617+00	2.2453+00	1.7836+00	1.6500+00
CP	3.1270-01	1.1719-01	3.3352-01	1.6109-01	2.7378-01	1.8462-01	1.5883-01
P/PO1	2.4674-01	1.4464-01	2.5761-01	1.6757-01	2.2642-01	1.7986-01	1.6638-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	247.	301244	2.99	5	11.19	206.79	-5.02	4.99	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3896 TO = 541.

P	1.0373+00	1.0318+00	1.0249+00	1.0249+00	1.0934+00	2.0319+00	4.2133+00	4.5130+00	4.6524+00
CP	4.0848-02	3.9789-02	3.8459-02	3.8459-02	5.1717-02	2.3324-01	6.5521-01	7.1318-01	7.4014-01
P/PO1	1.0478-01	1.0422-01	1.0353-01	1.0353-01	1.1045-01	2.0525-01	4.2560-01	4.5587-01	4.6945-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	4.7656+00	4.0868+00	1.1969+00	1.7458-01	2.1846-01	2.0354-01	2.0473-01	1.9278-01	1.4795+00
CP	7.6146-01	6.3025-01	7.1592-02	-1.2604-01	-1.1756-01	-1.2045-01	-1.2022-01	-1.2253-01	1.2621-01
P/PO1	4.8108-01	4.1257-01	1.2083-01	1.7624-02	2.2053-02	2.0547-02	2.0667-02	1.9462-02	1.4935-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3898 TO = 541.

P	3.4755+00	4.0683+00	4.3570+00	4.4160+00	3.8500+00	1.1127+00	1.0349+00	1.0160+00	1.0757+00
CP	5.1219-01	6.2679-01	6.8262-01	6.9402-01	5.8459-01	5.5337-02	4.0274-02	3.6654-02	4.9179-02
P/PO1	3.5091-01	4.1076-01	4.3991-01	4.4586-01	3.8872-01	1.1234-01	1.0448-01	1.0259-01	1.0860-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.167 P-INF = .8257 RE = .3894 TO = 541.

P	1.1724+00	3.1979+00	3.5969+00	3.8640+00	4.1211+00	3.6537+00	9.3057-01	1.7949-01	1.9550-01
CP	6.7095-02	4.5908-01	5.3630-01	5.8800-01	6.3774-01	5.4729-01	2.0297-02	-1.2506-01	-1.2146-01
P/PO1	1.1848-01	3.2318-01	3.6350-01	3.9050-01	4.1648-01	3.6924-01	9.4044-02	1.8139-02	1.9757-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3903 TO = 541.

P	1.9522-01	1.9057-01	1.2921+00	2.5085+00	3.2279+00	3.5129+00	3.6503+00	3.1389+00	8.5230-01
CP	-1.2210-01	-1.2299-01	8.9716-02	3.2461-01	4.6351-01	5.1856-01	5.4509-01	4.4634-01	4.7860-03
P/PO1	1.9686-02	1.9217-02	1.3030-01	2.5296-01	3.2549-01	3.5424-01	3.6809-01	3.1653-01	8.5949-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3902 TO = 541.

P	1.0500+00	1.0500+00	1.0505+00	8.8947-01	1.5169-01	1.6693-01	1.6928-01	1.6546-01	1.1811+00
CP	4.3003-02	4.3003-02	4.3097-02	1.1992-02	-1.3050-01	-1.2755-01	-1.2710-01	-1.2784-01	6.8310-02
P/PO1	1.0590-01	1.0590-01	1.0595-01	8.9707-02	1.5298-02	1.6836-02	1.7073-02	1.6687-02	1.1912-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.1 Q-INF = 5.197 P-INF = .8305 RE = .3917 TO = 541.

P	1.9726+00	2.4570+00	2.7502+00	2.9256+00	2.5687+00	9.4233-01	1.0599+00	1.0653+00	1.0685+00
CP	2.1976-01	3.1297-01	3.6937-01	4.0312-01	3.3446-01	2.1521-02	4.4145-02	4.5180-02	4.5797-02
P/PO1	1.9820-01	2.4688-01	2.7633-01	2.9396-01	2.5810-01	9.4683-02	1.0650-01	1.0704-01	1.0736-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3905 TO = 541.

P	1.2381+00	2.1298+00	2.3979+00	2.7048+00	3.0431+00	2.7663+00	7.7428-01	1.3739-01	1.5022-01
CP	7.9143-02	2.5123-01	3.0296-01	3.6218-01	4.2746-01	3.7405-01	-1.0372-02	-1.3328-01	-1.3080-01
P/PO1	1.2477-01	2.1464-01	2.4165-01	2.7258-01	3.0667-01	2.7877-01	7.8029-02	1.3845-02	1.5138-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B500

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.193 P-INF = .8282 RE = .3906 TO = 541.

P	1.4715-01	1.4921-01	1.3305+00	1.9075+00	2.3162+00	2.6745+00	3.0192+00	2.7298+00	8.7732-01
CP	-1.3140-01	-1.3100-01	9.6937-02	2.0826-01	2.8712-01	3.5625-01	4.2277-01	3.6692-01	9.4860-03
P/PO1	1.4827-02	1.5034-02	1.3407-01	1.9220-01	2.3338-01	2.6948-01	3.0422-01	2.7505-01	8.8399-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3907 TO = 541.

P	1.3754-01	1.0354+00	1.0469+00	1.0505+00	1.1042+00	1.3301+00	2.0912+00	2.6443+00	3.1729+00
CP	-1.3326-01	3.9963-02	4.2169-02	4.2875-02	5.3236-02	9.6819-02	2.4364-01	3.5034-01	4.5233-01
P/PO1	1.3856-02	1.0431-01	1.0547-01	1.0583-01	1.1125-01	1.3400-01	2.1068-01	2.6640-01	3.1965-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.184 P-INF = .8284 RE = .3907 TO = 541.

P	3.4505+00	3.1793+00	8.8764-01	1.1937-01	1.4298-01	1.3106-01	1.3673-01	1.3369-01	1.6603-01
CP	5.0578-01	4.5347-01	1.1424-02	-1.3677-01	-1.3221-01	-1.3451-01	-1.3342-01	-1.3401-01	-1.2777-01
P/PO1	3.4756-01	3.2025-01	8.9411-02	1.2024-02	1.4402-02	1.3201-02	1.3772-02	1.3467-02	1.6724-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0641+00	1.0617+00	.0000+00	1.3172+00	1.6992+00	1.6125+00	2.2898+00	2.0273+00	
CP	4.5455-02	4.5003-02	-1.5979-01	9.4280-02	1.6797-01	1.5124-01	2.8190-01	2.3126-01	
P/PO1	1.0718-01	1.0695-01	.0000+00	1.3268-01	1.7116-01	1.6243-01	2.3065-01	2.0421-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	2.8430+00	2.3484+00	3.2180+00	2.8617+00	3.2813+00	3.2109+00	2.9180+00
CP	3.8859-01	2.9320-01	4.6092-01	3.9221-01	4.7313-01	4.5957-01	4.0306-01
P/PO1	2.8637-01	2.3656-01	3.2414-01	2.8826-01	3.3052-01	3.2343-01	2.9392-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	248.	301244	2.99	5	7.10	225.18	-5.03	9.98	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3900 TO = 541.

P	8.6377-01	1.5358+00	1.3397+00	1.3507+00	1.5197+00	2.6194+00	5.1971+00	5.3740+00	5.5694+00
CP	7.1332-03	1.3700-01	9.9107-02	1.0123-01	1.3389-01	3.4641-01	8.4456-01	8.7876-01	9.1651-01
P/PO1	8.7170-02	1.5499-01	1.3520-01	1.3631-01	1.5336-01	2.6434-01	5.2448-01	5.4234-01	5.6205-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3903 TO = 541.

P	5.7926+00	4.8894+00	1.4854+00	1.8353-01	2.1556-01	2.0061-01	2.0473-01	1.9796-01	1.5589+00
CP	9.5877-01	7.8436-01	1.2703-01	-1.2435-01	-1.1817-01	-1.2106-01	-1.2026-01	-1.2157-01	1.4124-01
P/PO1	5.8412-01	4.9304-01	1.4978-01	1.8507-02	2.1737-02	2.0229-02	2.0645-02	1.9962-02	1.5720-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3907 TO = 541.

P	4.8532+00	5.0437+00	5.0987+00	5.1336+00	4.2935+00	1.3754+00	1.1497+00	1.1091+00	1.1453+00
CP	7.7650-01	8.1325-01	8.2385-01	8.3059-01	6.6852-01	1.0556-01	6.2017-02	5.4171-02	6.1166-02
P/PO1	4.8894-01	5.0813-01	5.1366-01	5.1718-01	4.3255-01	1.3857-01	1.1583-01	1.1173-01	1.1539-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3909 TO = 541.

P	1.3276+00	3.9202+00	4.3323+00	4.4528+00	4.6447+00	4.0699+00	1.0671+00	1.8244-01	2.0915-01
CP	9.6171-02	5.9602-01	6.7548-01	6.9871-01	7.3570-01	6.2488-01	4.5945-02	-1.2442-01	-1.1947-01
P/PO1	1.3367-01	3.9469-01	4.3619-01	4.4832-01	4.6763-01	4.0976-01	1.0744-01	1.8369-02	2.1058-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3904 TO = 541.

P	2.1370-01	2.0460-01	1.3818+00	2.4043+00	3.2094+00	3.6537+00	3.9768+00	3.5359+00	9.2199-01
CP	-1.1854-01	-1.2030-01	1.0695-01	3.0433-01	4.5975-01	5.4552-01	6.1175-01	5.2278-01	1.8189-02
P/PO1	2.1543-02	2.0626-02	1.3929-01	2.4237-01	3.2353-01	3.6832-01	4.0291-01	3.5644-01	9.2943-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.179 P-INF = .8275 RE = .3903 TO = 541.

P	8.7655-01	9.6056-01	1.0780+00	6.3690-01	2.0104-01	1.9329-01	1.9460-01	1.9205-01	1.1578+00
CP	9.4710-03	2.5692-02	4.8367-02	-3.6806-02	-1.2097-01	-1.2247-01	-1.2222-01	-1.2271-01	6.3789-02
P/PO1	8.8391-02	9.6862-02	1.0870-01	6.4225-02	2.0273-02	1.9491-02	1.9623-02	1.9366-02	1.1776-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	1.5003+00	1.7539+00	2.2249+00	2.4840+00	2.2546+00	7.4481-01	1.0348+00	1.1364+00	1.1543+00
CP	1.3024-01	1.7926-01	2.7031-01	3.2040-01	2.7605-01	-1.5812-02	4.0242-02	5.9897-02	6.3343-02
P/PO1	1.5146-01	1.7706-01	2.2460-01	2.5076-01	2.2760-01	7.5188-02	1.0446-01	1.1472-01	1.1652-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3898 TO = 541.

P	1.1980+00	1.6166+00	1.9282+00	1.9933+00	2.0944+00	1.7687+00	5.2231-01	1.4921-01	1.5740-01
CP	7.1825-02	1.5277-01	2.1302-01	2.2561-01	2.4515-01	1.8218-01	-5.8808-02	-1.3095-01	-1.2936-01
P/PO1	1.2095-01	1.6322-01	1.9468-01	2.0126-01	2.1146-01	1.7858-01	5.2735-02	1.5065-02	1.5892-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B502

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.181 P-INF = .8279 RE = .3905 TO = 541.

P	1.6712-01	1.7949-01	1.2134+00	1.4483+00	2.0267+00	2.6622+00	2.9326+00	2.5832+00	7.2186-01
CP	-1.2754-01	-1.2515-01	7.4409-02	1.1975-01	2.3137-01	3.5405-01	4.0624-01	3.3880-01	-2.0465-02
P/PO1	1.6844-02	1.8091-02	1.2230-01	1.4598-01	2.0427-01	2.6833-01	2.9558-01	2.6037-01	7.2758-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3901 TO = 541.

P	1.3310-01	8.6560-01	1.0304+00	1.1292+00	1.1924+00	1.1960+00	1.4905+00	1.7771+00	2.0602+00
CP	-1.3408-01	7.4338-03	3.9271-02	5.8365-02	7.0561-02	7.1273-02	1.2815-01	1.8353-01	2.3823-01
P/PO1	1.3428-02	8.7327-02	1.0395-01	1.1392-01	1.2029-01	1.2066-01	1.5037-01	1.7923-01	2.0785-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3902 TO = 541.

P	2.2231+00	1.9014+00	6.5887-01	1.3877-01	1.5822-01	1.4131-01	1.4902-01	1.4403-01	1.8472-01
CP	2.6956-01	2.0744-01	-3.2545-02	-1.3299-01	-1.2924-01	-1.3250-01	-1.3101-01	-1.3198-01	-1.2412-01
P/PO1	2.2421-01	1.9177-01	6.6450-02	1.3796-02	1.5957-02	1.4251-02	1.5030-02	1.4527-02	1.8630-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0734+00	1.1180+00	1.4531+00	1.1789+00	1.7930+00	1.2844+00	2.3016+00	1.4203+00
CP	4.7523-02	5.6123-02	1.2085-01	6.7892-02	1.8649-01	8.8262-02	2.8471-01	1.1452-01
P/PO1	1.0876-01	1.1275-01	1.4655-01	1.1890-01	1.8083-01	1.2954-01	2.3212-01	1.4325-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	3.0328+00	1.6289+00	3.3188+00	2.0484+00	2.8758+00	2.3414+00	2.2219+00
CP	4.2594-01	1.5480-01	4.8117-01	2.3583-01	3.9561-01	2.9241-01	2.6932-01
P/PO1	3.0587-01	1.6428-01	3.3471-01	2.0660-01	2.9004-01	2.3614-01	2.2409-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	249.	301244	2.99	5	9.02	-89.88	-9.02	15.02	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	8.0351-01	4.6116+00	4.1037+00	2.8213+00	2.3655+00	2.9132+00	6.5721+00	6.6452+00	6.7818+00
CP	-4.4642-03	7.3169-01	6.3350-01	3.8561-01	2.9748-01	4.0336-01	1.1107+00	1.1248+00	1.1512+00
P/PO1	8.1114-02	4.6554-01	4.1426-01	2.8481-01	2.3879-01	2.9408-01	6.6345-01	6.7083-01	6.8462-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3907 TO = 541.

P	6.9178+00	5.8551+00	1.8788+00	2.0368-01	1.9306-01	1.7718-01	1.8302-01	1.8244-01	2.3476+00
CP	1.1748+00	9.6979-01	2.0266-01	-1.2050-01	-1.2255-01	-1.2561-01	-1.2448-01	-1.2460-01	2.9310-01
P/PO1	6.9693-01	5.8987-01	1.8928-01	2.0520-02	1.9449-02	1.7850-02	1.8439-02	1.8380-02	2.3651-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3904 TO = 541.

P	5.1350+00	5.4759+00	5.5869+00	5.6856+00	4.8110+00	1.4584+00	1.8608+00	9.3396-01	1.3979+00
CP	8.3149-01	8.9728-01	9.1872-01	9.3777-01	7.6893-01	1.2174-01	2.0329-01	2.0500-02	1.1005-01
P/PO1	5.1765-01	5.5201-01	5.6320-01	5.7315-01	4.8478-01	1.4702-01	1.8760-01	9.4156-02	1.4092-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3904 TO = 541.

P	2.0853+00	3.0867+00	3.7885+00	4.1584+00	4.4537+00	3.8254+00	1.0420+00	1.3960-01	1.7753-01
CP	2.4276-01	4.3608-01	5.7154-01	6.4295-01	6.9996-01	5.7860-01	4.1348-02	-1.3284-01	-1.2552-01
P/PO1	2.1027-01	3.1117-01	3.8191-01	4.1920-01	4.4897-01	3.8559-01	1.0504-01	1.4073-02	1.7896-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3908 TO = 541.

P	1.8191-01	1.7653-01	2.0642+00	2.1528+00	2.8952+00	3.1212+00	3.1368+00	2.7847+00	7.8262-01
CP	-1.2472-01	-1.2575-01	2.3825-01	2.5533-01	3.9849-01	4.4208-01	4.4508-01	3.7719-01	-9.8510-03
P/PO1	1.8318-02	1.7777-02	2.0786-01	2.1678-01	2.9154-01	3.1430-01	3.1587-01	2.8042-01	7.8837-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3901 TO = 541.

P	7.3411-01	8.4186-01	8.7483-01	2.9246-01	1.8507-01	1.7352-01	1.7651-01	1.7210-01	9.1127-01
CP	-1.7946-02	2.8728-03	9.2437-03	-1.0328-01	-1.2403-01	-1.2627-01	-1.2569-01	-1.2654-01	1.6284-02
P/PO1	7.4074-02	8.4945-02	8.8272-02	2.9510-02	1.8674-02	1.7509-02	1.7811-02	1.7366-02	9.1949-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.174 P-INF = .8267 RE = .3899 TO = 541.

P	1.1066+00	1.1852+00	1.3159+00	1.4074+00	1.1762+00	4.9347-01	8.8207-01	8.7376-01	1.0699+00
CP	5.4104-02	6.9281-02	9.4549-02	1.1224-01	6.7541-02	-6.4414-02	1.0696-02	9.0912-03	5.0875-02
P/PO1	1.1170-01	1.1962-01	1.3282-01	1.4206-01	1.1872-01	4.9808-02	8.9041-02	8.8193-02	1.1001-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	1.2728+00	1.3167+00	1.4632+00	1.5147+00	1.4657+00	1.2504+00	3.3639-01	1.6767-01	1.5740-01
CP	8.6262-02	9.4735-02	1.2306-01	1.3303-01	1.2355-01	8.1928-02	-9.4765-02	-1.2738-01	-1.2937-01
P/PO1	1.2849-01	1.3292-01	1.4771-01	1.5291-01	1.4796-01	1.2623-01	3.3958-02	1.6926-02	1.5890-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.171 P-INF = .8263 RE = .3897 TO = 541.

P	1.5307-01	1.7653-01	8.4737-01	1.2006+00	1.4783+00	1.7320+00	1.4449+00	1.2495+00	3.1265-01
CP	-1.3019-01	-1.2566-01	4.0675-03	7.2373-02	1.2607-01	1.7513-01	1.2928-01	8.1836-02	-9.9335-02
P/PO1	1.5457-02	1.7827-02	8.5569-02	1.2124-01	1.4928-01	1.7490-01	1.5095-01	1.2618-01	3.1572-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.8 Q-INF = 5.153 P-INF = .8235 RE = .3884 TO = 541.

P	1.4198-01	7.8890-01	8.3822-01	8.3456-01	8.4346-01	7.8467-01	1.1408+00	1.2295+00	1.3[illegible]97+00
CP	-1.3224-01	-6.7126-03	2.8589-03	2.1487-03	3.8750-03	-7.5320-03	6.1565-02	7.8778-02	9.4150-02
P/PO1	1.4387-02	7.9940-02	8.4938-02	8.4567-02	8.5469-02	7.9512-02	1.1559-01	1.2458-01	1.3272-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.166 P-INF = .8254 RE = .3893 TO = 541.

P	1.3678+00	1.2436+00	3.5504-01	1.4026-01	1.4733-01	1.2886-01	1.3890-01	1.3665-01	1.3728-01
CP	1.0499-01	8.0954-02	-9.1063-02	-1.3264-01	-1.3127-01	-1.3485-01	-1.3291-01	-1.3334-01	-1.3322-01
P/PO1	1.3827-01	1.2572-01	3.5891-02	1.4179-02	1.4894-02	1.3027-02	1.4041-02	1.3814-02	1.3878-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.2375+00	1.6242+00	1.4367+00	8.2969-01	1.8188+00	9.5625-01	2.3508+00	1.1250+00
CP	7.9771-02	1.5464-01	1.1834-01	8.2358-04	1.9229-01	2.5325-02	2.9529-01	5.7992-02
P/PO1	1.2510-01	1.6420-01	1.4524-01	8.3875-02	1.8386-01	9.6670-02	2.3765-01	1.1373-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	3.1617+00	1.1367+00	3.1828+00	1.2117+00	2.4938+00	1.1836+00	1.1297+00
CP	4.5228-01	6.0261-02	4.5636-01	7.4780-02	3.2297-01	6.9335-02	5.8900-02
P/PO1	3.1963-01	1.1491-01	3.2176-01	1.2250-01	2.5210-01	1.1965-01	1.1420-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	250.	301744	2.99	5	5.02	-89.90	-5.02	15.01	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3902 TO = 541.

P	8.2177-01	2.9756+00	3.8750+00	2.7171+00	2.4825+00	2.7051+00	6.5259+00	6.5842+00	6.7818+00
CP	-1.0583-03	4.1499-01	5.8871-01	3.6504-01	3.1973-01	3.6273-01	1.1008+00	1.1120+00	1.1502+00
P/PO1	8.2892-02	3.0015-01	3.9087-01	2.7407-01	2.5041-01	2.7286-01	6.5928-01	6.6416-01	6.8407-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	6.9797+00	5.8397+00	1.9282+00	2.1114-01	2.2136-01	2.0866-01	2.1413-01	2.0386-01	2.3204+00
CP	1.1895+00	9.6711-01	2.1276-01	-1.1898-01	-1.1700-01	-1.1946-01	-1.1860-01	-1.2048-01	3.0230-01
P/PO1	7.0460-01	5.8952-01	1.9465-01	2.1314-02	2.2347-02	2.1065-02	2.1617-02	2.0580-02	2.4131-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3904 TO = 541.

P	5.3667+00	5.9014+00	6.1104+00	6.2778+00	5.2237+00	1.6086+00	2.2397+00	1.0197+00	1.5589+00
CP	8.7638-01	9.7960-01	1.0200+00	1.0523+00	8.4876-01	1.5079-01	2.7263-01	3.7081-02	1.4113-01
P/PO1	5.4109-01	5.9499-01	6.1607-01	6.3295-01	5.2667-01	1.6219-01	2.2581-01	1.0281-01	1.5718-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3896 TO = 541.

P	1.9100+00	4.3770+00	4.5672+00	4.9373+00	5.3100+00	4.5533+00	1.2575+00	1.5585-01	2.0412-01
CP	2.0967-01	6.8687-01	7.2366-01	7.9526-01	8.6734-01	7.2099-01	8.3458-02	-1.2965-01	-1.2031-01
P/PO1	1.9293-01	4.4213-01	4.6135-01	4.9974-01	5.3638-01	4.5995-01	1.2703-01	1.5743-02	2.0619-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3905 TO = 541.

P	2.0483-01	2.0017-01	1.7799+00	2.9440+00	3.4127+00	3.9764+00	4.2566+00	3.4321+00	1.0542+00
CP	-1.2027-01	-1.2116-01	1.8369-01	4.0835-01	4.9879-01	6.1144-01	6.6166-01	5.0253-01	4.3650-02
P/PO1	2.0642-02	2.0172-02	1.7937-01	2.9669-01	3.4391-01	4.0274-01	4.2897-01	3.4587-01	1.0624-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.178 P-INF = .8274 RE = .3902 TO = 541.

P	8.6925-01	8.3455-01	1.0578+00	4.0661-01	1.9814-01	1.8743-01	1.8302-01	1.7264-01	9.2199-01
CP	8.0868-03	1.3857-03	4.4511-02	-8.1264-02	-1.2153-01	-1.2359-01	-1.2445-01	-1.2641-01	1.8272-02
P/PO1	8.7668-02	8.4169-02	1.0669-01	4.1009-02	1.9983-02	1.8903-02	1.8459-02	1.7432-02	9.2987-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0950+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3900 TO = 541.

P	1.4025+00	1.5502+00	1.9282+00	2.0485+00	1.7618+00	6.6145-01	9.4315-01	9.2666-01	1.0185+00
CP	1.1124-01	1.3978-01	2.1284-01	2.3609-01	1.8068-01	-3.1967-02	2.2474-02	1.9288-02	3.7030-02
P/PO1	1.4154-01	1.5644-01	1.9459-01	2.0673-01	1.7779-01	6.6752-02	9.5181-02	9.3517-02	1.0278-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.173 P-INF = .8266 RE = .3899 TO = 541.

P	1.4061+00	1.3696+00	1.4942+00	1.7296+00	1.8480+00	1.4495+00	4.7094-01	1.6989-01	1.6890-01
CP	1.1203-01	1.0497-01	1.2906-01	1.7456-01	1.9745-01	1.2042-01	-6.8753-02	-1.2695-01	-1.2714-01
P/PO1	1.4195-01	1.3826-01	1.5084-01	1.7460-01	1.8656-01	1.4633-01	4.7542-02	1.7150-02	1.7051-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3896 TO = 541.

P	1.6934-01	1.6915-01	1.0615+00	1.3507+00	2.0575+00	2.8152+00	2.6233+00	2.0702+00	4.9952-01
CP	-1.2703-01	-1.2707-01	4.5572-02	1.0152-01	2.3825-01	3.8486-01	3.4772-01	2.4073-01	-6.3153-02
P/PO1	1.7108-02	1.7089-02	1.0724-01	1.3646-01	2.0786-01	2.8442-01	2.6503-01	2.0915-01	5.0466-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3900 TO = 541.

P	1.5381-01	9.2586-01	9.2973-01	8.5470-01	1.0341+00	1.0601+00	1.2360+00	1.3590+00	1.4640+00
CP	-1.3007-01	1.9132-02	1.9881-02	5.3796-03	4.0049-02	4.5080-02	7.9063-02	1.0284-01	1.2313-01
P/PO1	1.5522-02	9.3436-02	9.3827-02	8.6254-02	1.0436-01	1.0699-01	1.2473-01	1.3715-01	1.4775-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3898 TO = 541.

P	1.5802+00	1.3678+00	4.2634-01	1.5593-01	1.6983-01	1.4789-01	1.6639-01	1.5955-01	1.6531-01
CP	1.4573-01	1.0466-01	-7.7363-02	-1.2965-01	-1.2696-01	-1.3120-01	-1.2762-01	-1.2695-01	-1.2783-01
P/PO1	1.5955-01	1.3810-01	4.3046-02	1.5744-02	1.7147-02	1.4932-02	1.6799-02	1.6109-02	1.6691-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00
CEC	1.4109+00	1.3477+00	1.7203+00	8.3203-01	2.0953+00	9.9609-01	2.9977+00	1.1227+00	
CP	1.1300-01	1.0077-01	1.7282-01	1.0753-03	2.4532-01	3.2796-02	4.1979-01	5.7266-02	
P/PO1	1.4246-01	1.3607-01	1.7369-01	8.4007-02	2.1155-01	1.0057-01	3.0766-01	1.1335-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	
CEC	3.8344+00	1.2258+00	3.7570+00	1.4320+00	2.9250+00	1.5070+00	1.5094+00		
CP	5.8156-01	7.7205-02	5.6661-01	1.1708-01	4.0574-01	1.3158-01	1.3204-01		
P/PO1	3.8714-01	1.2376-01	3.7933-01	1.4459-01	2.9532-01	1.5216-01	1.5240-01		
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00		

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	251.	301244	2.99	5	5.02	89.94	5.02	15.00	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.164 P-INF = .8252 RE = .3892 TO = 541.

P	7.6698-01	2.8830+00	3.5649+00	1.8691+00	2.0698+00	2.7846+00	6.7260+00	6.6757+00	6.9651+00
CP	-1.1269-02	3.9850-01	5.3054-01	2.0215-01	2.4101-01	3.7945-01	1.1427+00	1.1329+00	1.1890+00
P/PO1	7.7561-02	2.9154-01	3.6049-01	1.8901-01	2.0930-01	2.8157-01	6.8016-01	6.7507-01	7.0434-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3900 TO = 541.

P	7.1964+00	6.0092+00	1.9838+00	2.2233-01	2.2935-01	2.1452-01	2.1992-01	2.1125-01	2.3415+00
CP	1.2309+00	1.0015+00	2.2359-01	-1.1683-01	-1.1547-01	-1.1834-01	-1.1729-01	-1.1897-01	2.9270-01
P/PO1	7.2624-01	6.0644-01	2.0021-01	2.2437-02	2.3145-02	2.1649-02	2.2194-02	2.1319-02	2.3630-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.171 P-INF = .8263 RE = .3897 TO = 541.

P	7.2273+00	7.3959+00	7.5418+00	7.5914+00	6.4098+00	1.9829+00	3.3719+00	1.3079+00	1.7301+00
CP	1.2378+00	1.2704+00	1.2986+00	1.3082+00	1.0797+00	2.2365-01	4.9225-01	9.3124-02	1.7477-01
P/PO1	7.2982-01	7.4685-01	7.6158-01	7.6659-01	6.4727-01	2.0024-01	3.4050-01	1.3207-01	1.7471-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.174 P-INF = .8267 RE = .3899 TO = 541.

P	1.9601+00	7.1032+00	7.9727+00	7.5761+00	7.4576+00	6.6532+00	1.6139+00	1.6915-01	2.0915-01
CP	2.1906-01	1.2131+00	1.3812+00	1.3045+00	1.2816+00	1.1262+00	1.5215-01	-1.2710-01	-1.1937-01
P/PO1	1.9784-01	7.1695-01	8.0472-01	7.6467-01	7.5272-01	6.7154-01	1.6290-01	1.7073-02	2.1111-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3888 TO = 541.

P	2.0557-01	2.0017-01	2.2372+00	5.2195+00	6.2249+00	6.4658+00	6.5413+00	5.5511+00	1.5589+00
CP	-1.1995-01	-1.2099-01	2.7385-01	8.5190-01	1.0468+00	1.0973+00	1.1081+00	9.1619-01	1.4238-01
P/PO1	2.0808-02	2.0261-02	2.2645-01	5.2831-01	6.3006-01	6.5649-01	6.6211-01	5.6186-01	1.5779-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3905 TO = 541.

P	1.0811+00	1.1121+00	1.3196+00	8.9130-01	1.7927-01	1.9109-01	1.8664-01	1.7727-01	1.1757+00
CP	4.8835-02	5.4827-02	9.4858-02	1.2211-02	-1.2520-01	-1.2292-01	-1.2378-01	-1.2558-01	6.7097-02
P/PO1	1.0895-01	1.1208-01	1.3298-01	8.9822-02	1.8066-02	1.9257-02	1.8809-02	1.7865-02	1.1848-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.164 P-INF = .8252 RE = .3892 TO = 541.

P	3.0998+00	3.4942+00	3.6834+00	3.8027+00	3.2525+00	1.0474+00	7.1140-01	7.6432-01	1.0328+00
CP	4.4048-01	5.1685-01	5.5349-01	5.7659-01	4.7005-01	4.3041-02	-2.2032-02	-1.1785-02	4.0200-02
P/PO1	3.1347-01	3.5335-01	3.7248-01	3.8454-01	3.2891-01	1.0592-01	7.1940-02	7.7291-02	1.0444-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3897 TO = 541.

P	1.2436+00	1.6520+00	2.2187+00	2.4533+00	2.7351+00	2.5521+00	6.7008-01	1.5659-01	1.6459-01
CP	8.0727-02	1.5972-01	2.6931-01	3.1470-01	3.6918-01	3.3379-01	-3.0196-02	-1.2951-01	-1.2796-01
P/PO1	1.2560-01	1.6685-01	2.2408-01	2.4778-01	2.7623-01	2.5775-01	6.7677-02	1.5815-02	1.6623-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B508

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DE[illegible]
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3908 TO = 541.

P	1.5972-01	1.6546-01	9.0045-01	1.2226+00	1.4549+00	1.5556+00	1.7418+00	1.6977+00	4.6790-01
CP	-1.2899-01	-1.2788-01	1.3868-02	7.5991-02	1.2080-01	1.4022-01	1.7614-01	1.6763-01	-6.9554-02
P/PO1	1.6086-02	1.6663-02	9.0687-02	1.2313-01	1.4653-01	1.5667-01	1.7542-01	1.7098-01	4.7124-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.174 P-INF = .8267 RE = .3899 TO = 541.

P	1.4789-01	7.9438-01	8.0711-01	8.2541-01	9.6216-01	9.8220-01	1.2432+00	1.3909+00	1.3472+00
CP	-1.3121-01	-6.2533-03	-3.7919-03	-2.5445-04	2.6176-02	3.0051-02	8.0490-02	1.0904-01	1.0061-01
P/PO1	1.4927-02	8.0180-02	8.1465-02	8.3312-02	9.7114-02	9.9138-02	1.2548-01	1.4039-01	1.3598-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3896 TO = 541.

P	1.5491+00	1.4098+00	3.9217-01	1.5742-01	1.6330-01	1.4863-01	1.5915-01	1.5290-01	1.5740-01
CP	1.3987-01	1.1291-01	-8.3933-02	-1.2934-01	-1.2821-01	-1.3104-01	-1.2901-01	-1.3022-01	-1.2935-01
P/PO1	1.5648-01	1.4241-01	3.9615-02	1.5902-02	1.6495-02	1.5013-02	1.6076-02	1.5445-02	1.5900-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.5234+00	7.5234-01	2.4000+00	1.0805+00	3.6117+00	1.4484+00	5.1305+00	2.0273+00
CP	1.3489-01	-1.4263-02	3.0445-01	4.9208-02	5.3884-01	1.2039-01	8.3262-01	2.3237-01
P/PO1	1.5389-01	7.5997-02	2.4243-01	1.0914-01	3.6483-01	1.4631-01	5.1825-01	2.0479-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.9625+00	2.3789+00	5.8359+00	2.8195+00	4.5797+00	3.1852+00	3.2859+00
CP	9.9357-01	3.0037-01	9.6909-01	3.8560-01	7.2608-01	4.5633-01	4.7582-01
P/PO1	6.0229-01	2.4030-01	5.8951-01	2.8481-01	4.6261-01	3.2174-01	3.3192-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	252.	301244	2.99	5	9.03	89.93	9.03	15.01	180.0

VALVE POS 2 PO = 30.0 Q-INF = 5.182 P-INF = .8280 RE = .3905 TO = 541.

P	8.2542-01	5.1795+00	3.7637+00	1.7052+00	1.9589+00	3.5802+00	6.8953+00	6.7976+00	6.9346+00
CP	-5.0249-04	8.3976-01	5.6654-01	1.6928-01	2.1824-01	5.3113-01	1.1709+00	1.1520+00	1.1765+00
P/PO1	8.3183-02	5.2197-01	3.7930-01	1.7184-01	1.9741-01	3.6080-01	6.9489-01	6.8504-01	6.9844-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3909 TO = 541.

P	7.1654+00	5.9938+00	1.8973+00	2.1636-01	1.8435-01	1.7498-01	1.8085-01	1.7801-01	2.1581+00
CP	1.2217+00	9.9582-01	2.0601-01	-1.1808-01	-1.2425-01	-1.2606-01	-1.2492-01	-1.2547-01	2.5028-01
P/PO1	7.2142-01	6.0347-01	1.9103-01	2.1784-02	1.8560-02	1.7618-02	1.8209-02	1.7923-02	2.1728-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.180 P-INF = .8278 RE = .3904 TO = 541.

P	8.1094+00	8.0431+00	7.9727+00	8.0649+00	7.3805+00	2.1726+00	1.6977+00	1.8687+00	1.8402+00
CP	1.4057+00	1.3929+00	1.3793+00	1.3971+00	1.2650+00	2.5962-01	1.6794-01	2.0095-01	1.9543-01
P/PO1	8.1749-01	8.1081-01	8.0371-01	8.1300-01	7.4402-01	2.1902-01	1.7114-01	1.8838-01	1.8550-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.189 P-INF = .8292 RE = .3911 TO = 541.

P	2.2544+00	7.4884+00	8.3883+00	8.3093+00	8.3359+00	7.8864+00	1.9056+00	1.8761-01	1.8328-01
CP	2.7465-01	1.2033+00	1.4567+00	1.4415+00	1.4466+00	1.3600+00	2.0743-01	-1.2364-01	-1.2447-01
P/PO1	2.2687-01	7.5359-01	8.4415-01	8.3620-01	8.3887-01	7.9365-01	1.9177-01	1.8886-02	1.8446-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.194 P-INF = .8300 RE = .3915 TO = 541.

P	1.8634-01	1.8097-01	1.9900+00	7.0415+00	7.4268+00	7.3079+00	7.2339+00	6.1575+00	1.7546+00
CP	-1.2392-01	-1.2495-01	2.2335-01	1.1959+00	1.2701+00	1.2472+00	1.2330+00	1.0257+00	1.7801-01
P/PO1	1.8735-02	1.8194-02	2.0008-01	7.0795-01	7.4669-01	7.3474-01	7.2730-01	6.1907-01	1.7640-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.181 P-INF = .8279 RE = .3905 TO = 541.

P	1.3294+00	2.0681+00	1.8355+00	1.0816+00	1.5677-01	1.8011-01	1.8013-01	1.6767-01	1.4287+00
CP	9.6804-02	2.3938-01	1.9448-01	4.8976-02	-1.2954-01	-1.2503-01	-1.2503-01	-1.2743-01	1.1597-01
P/PO1	1.3400-01	2.0845-01	1.8501-01	1.0902-01	1.5801-02	1.8154-02	1.8156-02	1.6900-02	1.4400-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.9 Q-INF = 5.177 P-INF = .8272 RE = .3902 TO = 541.

P	4.0266+00	4.5869+00	4.9565+00	4.8883+00	4.1950+00	1.1960+00	8.6590-01	1.2696+00	1.2365+00
CP	6.1800-01	7.2622-01	7.9763-01	7.8444-01	6.5052-01	7.1237-02	7.4664-03	8.5447-02	7.9045-02
P/PO1	4.0617-01	4.6268-01	4.9997-01	4.9308-01	4.2315-01	1.2065-01	8.7344-02	1.2807-01	1.2472-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.185 P-INF = .8285 RE = .3908 TO = 541.

P	1.5269+00	1.7716+00	2.4535+00	2.8275+00	3.1170+00	2.9132+00	7.2937-01	1.4699-01	1.6028-01
CP	1.3470-01	1.8188-01	3.1340-01	3.8552-01	4.4135-01	4.0204-01	-1.9127-02	-1.3145-01	-1.2888-01
P/PO1	1.5378-01	1.7843-01	2.4710-01	2.8476-01	3.1392-01	2.9339-01	7.3457-02	1.4804-02	1.6142-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B510

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3901 TO = 541.

P	1.6120-01	1.6324-01	6.4422-01	1.3013+00	1.7618+00	2.1726+00	2.3510+00	2.1313+00	5.9679-01
CP	-1.2865-01	-1.2826-01	-3.5334-02	9.1601-02	1.8057-01	2.5994-01	2.9441-01	2.5196-01	-4.4498-02
P/PO1	1.6263-02	1.6469-02	6.4994-02	1.3128-01	1.7774-01	2.1919-01	2.3719-01	2.1502-01	6.0208-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.9 Q-INF = 5.179 P-INF = .8276 RE = .3904 TO = 541.

P	1.3976-01	6.6655-01	6.5154-01	7.0645-01	8.8123-01	7.3393-01	1.1282+00	1.2587+00	1.3670+00
CP	-1.3281-01	-3.1102-02	-3.3998-02	-2.3398-02	1.0347-02	-1.8091-02	5.8028-02	8.3219-02	1.0414-01
P/PO1	1.4091-02	6.7203-02	6.5691-02	7.1227-02	8.8848-02	7.3998-02	1.1375-01	1.2690-01	1.3783-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3907 TO = 540.

P	1.4682+00	1.3020+00	3.5504-01	1.5369-01	1.6838-01	1.4350-01	1.6060-01	1.6250-01	1.6531-01
CP	1.2386-01	9.1753-02	-9.1203-02	-1.3010-01	-1.2726-01	-1.3207-01	-1.2877-01	-1.2840-01	-1.2786-01
P/PO1	1.4812-01	1.3136-01	3.5818-02	1.5505-02	1.6987-02	1.4477-02	1.6202-02	1.6394-02	1.6678-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.5938+00	1.0805+00	3.9211+00	1.4484+00	6.1641+00	2.0508+00	6.9281+00	2.6953+00
CP	1.4811-01	4.8946-02	5.9774-01	1.2004-01	1.0311+00	2.3640-01	1.1787+00	3.6092-01
P/PO1	1.6079-01	1.0900-01	3.9559-01	1.4613-01	6.2187-01	2.0690-01	6.9896-01	2.7192-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.7078+00	3.3703+00	6.2203+00	3.8156+00	5.3109+00	4.2773+00	4.0219+00
CP	1.1361+00	4.9133-01	1.0419+00	5.7736-01	8.6624-01	6.6656-01	6.1721-01
P/PO1	6.7673-01	3.4002-01	6.2755-01	3.8495-01	5.3580-01	4.3153-01	4.0575-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	253.	301244	2.99	5	7.10	134.88	5.02	9.98	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3902 TO = 540.

P	8.8386-01	1.2217+00	1.2116+00	1.1548+00	1.5694+00	2.7479+00	5.3562+00	5.4716+00	5.6973+00
CP	1.1176-02	7.6526-02	7.4569-02	6.3595-02	1.4378-01	3.7175-01	8.7629-01	8.9861-01	9.4228-01
P/PO1	8.9281-02	1.2341-01	1.2239-01	1.1665-01	1.5853-01	2.7758-01	5.4105-01	5.5271-01	5.7551-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.167 P-INF = .8257 RE = .3900 TO = 540.

P	5.9428+00	5.0190+00	1.5208+00	1.9398-01	2.2281-01	2.0500-01	2.1051-01	2.0534-01	1.5037+00
CP	9.9030-01	8.1152-01	1.3453-01	-1.2225-01	-1.1667-01	-1.2017-01	-1.1905-01	-1.2005-01	1.3125-01
P/PO1	6.0058-01	5.0723-01	1.5370-01	1.9604-02	2.2518-02	2.0718-02	2.1275-02	2.0752-02	1.5199-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.9 Q-INF = 5.176 P-INF = .8271 RE = .3907 TO = 540.

P	5.9892+00	6.2866+00	6.3566+00	6.4305+00	5.5502+00	1.6086+00	1.3707+00	1.1983+00	1.2509+00
CP	9.9729-01	1.0547+00	1.0683+00	1.0825+00	9.1247-01	1.5098-01	1.0602-01	6.3988-02	8.1144-02
P/PO1	6.0423-01	6.3423-01	6.4130-01	6.4875-01	5.5994-01	1.6229-01	1.3829-01	1.1686-01	1.2618-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.170 P-INF = .8262 RE = .3902 TO = 540.

P	1.5713+00	5.1302+00	5.8333+00	6.4305+00	6.7488+00	5.9072+00	1.4816+00	1.6767-01	1.9478-01
CP	1.4411-01	8.3241-01	9.6840-01	1.0839+00	1.1455+00	9.8270-01	1.2677-01	-1.2737-01	-1.2212-01
P/PO1	1.5870-01	5.1813-01	5.8915-01	6.4947-01	6.8161-01	5.9661-01	1.4964-01	1.6934-02	1.9672-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.169 P-INF = .8260 RE = .3901 TO = 540.

P	2.0113-01	1.9722-01	1.4458+00	5.3728+00	5.8243+00	5.8006+00	5.9103+00	5.0687+00	1.3449+00
CP	-1.2088-01	-1.2164-01	1.1993-01	8.7966-01	9.6701-01	9.6244-01	9.8365-01	8.2083-01	1.0941-01
P/PO1	2.0320-02	1.9925-02	1.4607-01	5.4281-01	5.8842-01	5.8603-01	5.9711-01	5.1209-01	1.3588-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.9 Q-INF = 5.164 P-INF = .8252 RE = .3897 TO = 540.

P	9.4412-01	1.0391+00	1.0505+00	1.0212+00	1.6693-01	1.8597-01	1.9315-01	1.8761-01	9.3985-01
CP	2.3034-02	4.1422-02	4.3639-02	3.7968-02	-1.2747-01	-1.2378-01	-1.2239-01	-1.2346-01	2.2208-02
P/PO1	9.5473-02	1.0508-01	1.0623-01	1.0327-01	1.6881-02	1.8806-02	1.9532-02	1.8972-02	9.5042-02
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.157 P-INF = .8240 RE = .3892 TO = 540.

P	3.5131+00	4.1547+00	4.4498+00	4.4957+00	4.0163+00	1.1652+00	9.9345-01	1.0160+00	1.0328+00
CP	5.2148-01	6.4590-01	7.0311-01	7.1203-01	6.1907-01	6.6171-02	3.2859-02	3.7241-02	4.0483-02
P/PO1	3.5576-01	4.2074-01	4.5061-01	4.5527-01	4.0672-01	1.1800-01	1.0060-01	1.0289-01	1.0459-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.156 P-INF = .8239 RE = .3891 TO = 540.

P	1.1486+00	2.5496+00	2.9232+00	3.2761+00	3.4989+00	3.2192+00	8.1919-01	1.7875-01	1.8759-01
CP	6.2990-02	3.3472-01	4.0718-01	4.6592-01	5.1883-01	4.6457-01	-9.0902-04	-1.2512-01	-1.2341-01
P/PO1	1.1634-01	2.5824-01	2.9608-01	3.2675-01	3.5438-01	3.2605-01	8.2970-02	1.8104-02	1.9000-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.158 P-INF = .8243 RE = .3893 TO = 540.

P	1.8782-01	1.8909-01	1.1201+00	1.2793+00	1.5382+00	1.9768+00	2.3882+00	2.3084+00	6.8077-01
CP	-1.2338-01	-1.2314-01	5.7345-02	8.8213-02	1.3840-01	2.2343-01	3.0318-01	2.8772-01	-2.7819-02
P/PO1	1.9014-02	1.9143-02	1.1339-01	1.2951-01	1.5572-01	2.0012-01	2.4177-01	2.3369-01	6.8918-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.7 Q-INF = 5.144 P-INF = .8219 RE = .3882 TO = 540.

P	1.5603-01	1.0336+00	1.0578+00	1.0725+00	1.1168+00	1.1562+00	1.3995+00	1.6427+00	1.9808+00
CP	-1.2946-01	4.1150-02	4.5864-02	4.8710-02	5.7324-02	6.4979-02	1.1228-01	1.5958-01	2.2529-01
P/PO1	1.5840-02	1.0493-01	1.0740-01	1.0888-01	1.1338-01	1.1738-01	1.4208-01	1.6678-01	2.0109-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.8 Q-INF = 5.153 P-INF = .8234 RE = .3889 TO = 540.

P	2.1855+00	1.9138+00	6.3690-01	1.4698-01	1.6475-01	1.4423-01	1.6060-01	1.5068-01	1.8687-01
CP	2.6436-01	2.1162-01	-3.6187-02	-1.3127-01	-1.2782-01	-1.3180-01	-1.2863-01	-1.3055-01	-1.2353-01
P/PO1	2.2150-01	1.9396-01	6.4548-02	1.4896-02	1.6697-02	1.4618-02	1.6276-02	1.5271-02	1.8939-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.0992+00	7.7813-01	2.6063+00	1.2680+00	4.4320+00	1.9570+00	5.4938+00	2.7703+00
CP	5.3537-02	-8.7791-03	3.4601-01	8.6787-02	7.0035-01	2.2002-01	9.0641-01	3.7785-01
P/PO1	1.1140-01	7.8861-02	2.6414-01	1.2850-01	4.4917-01	1.9834-01	5.5677-01	2.8076-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.3203+00	3.2742+00	4.8164+00	3.6938+00	4.5047+00	4.0758+00	3.6234+00
CP	8.7275-01	4.7565-01	7.7495-01	5.5707-01	7.1445-01	6.3121-01	5.4342-01
P/PO1	5.3920-01	3.3183-01	4.8813-01	3.7435-01	4.5654-01	4.1307-01	3.6722-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	254.	301244	2.99	5	10.26	118.79	8.98	10.02	180.0

VALVE POS 2 PO = 29.7 Q-INF = 5.128 P-INF = .8195 RE = .3870 TO = 540.

P	6.6107-01	2.1792+00	2.0271+00	1.1677+00	1.3242+00	2.3134+00	5.4940+00	5.5328+00	5.7126+00
CP	-3.0889-02	2.6515-01	2.3548-01	6.7894-02	9.8411-02	2.9131-01	9.1152-01	9.1908-01	9.5414-01
P/PO1	6.7315-02	2.2191-01	2.0642-01	1.1890-01	1.3484-01	2.3557-01	5.5944-01	5.6339-01	5.8170-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.165 P-INF = .8253 RE = .3898 TO = 540.

P	5.9273+00	5.0622+00	1.4953+00	1.6787-01	1.8653-01	1.7645-01	1.7941-01	1.7284-01	1.7118+00
CP	9.8784-01	8.2035-01	1.2972-01	-1.2729-01	-1.2368-01	-1.2563-01	-1.2506-01	-1.2633-01	1.7164-01
P/PO1	5.9930-01	5.1184-01	1.5118-01	1.6973-02	1.8859-02	1.7840-02	1.8140-02	1.7476-02	1.7307-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3916 TO = 540.

P	6.3606+00	6.7950+00	6.9107+00	6.9040+00	6.0246+00	1.7442+00	2.3510+00	1.3572+00	1.6445+00
CP	1.0662+00	1.1499+00	1.1722+00	1.1709+00	1.0014+00	1.7639-01	2.9335-01	1.0179-01	1.5717-01
P/PO1	6.4020-01	6.8392-01	6.9557-01	6.9489-01	6.0638-01	1.7556-01	2.3663-01	1.3660-01	1.6552-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 30.0 Q-INF = 5.196 P-INF = .8302 RE = .3921 TO = 540.

P	1.8098+00	6.2249+00	6.8492+00	7.1790+00	7.3497+00	6.2574+00	1.6933+00	1.9943-01	1.7753-01
CP	1.8854-01	1.0383+00	1.1585+00	1.2219+00	1.2548+00	1.0446+00	1.6612-01	-1.2141-01	-1.2562-01
P/PO1	1.8190-01	6.2566-01	6.8840-01	7.2155-01	7.3871-01	6.2892-01	1.7019-01	2.0045-02	1.7843-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.1 Q-INF = 5.200 P-INF = .8309 RE = .3924 TO = 540.

P	1.7451-01	1.7284-01	1.5563+00	6.7666+00	6.9337+00	6.7446+00	6.7722+00	5.8831+00	1.6445+00
CP	-1.2623-01	-1.2655-01	1.3951-01	1.1415+00	1.1737+00	1.1373+00	1.1426+00	9.7165-01	1.5648-01
P/PO1	1.7526-02	1.7359-02	1.5630-01	6.7957-01	6.9636-01	6.7736-01	6.8014-01	5.9085-01	1.6516-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.1 Q-INF = 5.209 P-INF = .8324 RE = .3932 TO = 540.

P	1.4959+00	3.3337+00	1.3946+00	1.3104+00	1.8362-01	1.7279-01	1.7000-01	1.5659-01	1.1293+00
CP	1.2736-01	4.8014-01	1.6791-01	9.1754-02	1.2455-01	1.2263-01	1.2716-01	1.2173-01	5.6979-02
P/PO1	1.4775-01	3.3418-01	1.3990-01	1.3136-01	1.8407-02	1.7321-02	1.7042-02	1.5697-02	1.1320-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3915 TO = 540.

P	4.2521+00	4.7844+00	5.1728+00	5.2317+00	4.6508+00	1.3084+00	8.4255-01	8.8106-01	1.3312+00
CP	6.6001-01	7.6265-01	8.3753-01	8.4889-01	7.3689-01	9.2466-02	2.6500-03	1.0076-02	9.6856-02
P/PO1	4.2811-01	4.8171-01	5.2081-01	5.2674-01	4.6825-01	1.3173-01	8.4829-02	8.8707-02	1.3402-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3915 TO = 540.

P	1.5003+00	2.7719+00	3.3682+00	3.7107+00	3.9917+00	3.5374+00	9.5393-01	1.1892-01	1.5812-01
CP	1.2947-01	3.7463-01	4.8960-01	5.5563-01	6.0981-01	5.2222-01	2.4124-02	-1.3687-01	-1.2931-01
P/PO1	1.5105-01	2.7908-01	3.3912-01	3.7360-01	4.0189-01	3.5615-01	9.6043-02	1.1973-02	1.5920-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B514

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.0 Q-INF = 5.187 P-INF = .8288 RE = .3915 TO = 540.

P	1.6638-01	1.6324-01	9.9013-01	1.7480+00	2.4147+00	2.7357+00	3.0131+00	2.7237+00	7.7904-01
CP	-1.2772-01	-1.2832-01	3.1104-02	1.7722-01	3.0577-01	3.6765-01	4.2113-01	3.6533-01	-9.5936-03
P/PO1	1.6751-02	1.6435-02	9.9688-02	1.7599-01	2.4312-01	2.7543-01	3.0336-01	2.7422-01	7.8435-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.0 Q-INF = 5.188 P-INF = .8289 RE = .3915 TO = 540.

P	1.1462-01	6.6837-01	6.8449-01	9.0045-01	1.1870+00	1.0293+00	1.2701+00	1.4087+00	1.7669+00
CP	-1.3770-01	-3.0951-02	-2.7844-02	1.3787-02	6.9017-02	3.8629-02	8.5046-02	1.1175-01	1.8079-01
P/PO1	1.1538-02	6.7282-02	6.8905-02	9.0645-02	1.1949-01	1.0362-01	1.2786-01	1.4180-01	1.7786-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.0 Q-INF = 5.196 P-INF = .8304 RE = .3922 TO = 540.

P	2.0728+00	1.9632+00	5.5929-01	1.3653-01	1.5169-01	1.3691-01	1.4685-01	1.4256-01	1.4734-01
CP	2.3910-01	2.1800-01	-5.2164-02	-1.3352-01	-1.3060-01	-1.3345-01	-1.3153-01	-1.3236-01	-1.3144-01
P/PO1	2.0830-01	1.9728-01	5.6205-02	1.3721-02	1.5244-02	1.3759-02	1.4758-02	1.4326-02	1.4807-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.3875+00	1.4484+00	2.4000+00	1.4156+00	5.2102+00	2.5875+00	6.3398+00	3.4477+00
CP	1.0722-01	1.1894-01	3.0206-01	1.1263-01	8.4285-01	3.3814-01	1.0602+00	5.0367-01
P/PO1	1.3943-01	1.4556-01	2.4118-01	1.4226-01	5.2359-01	2.6003-01	6.3711-01	3.4647-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.2367+00	3.9164+00	5.7633+00	4.6055+00	5.5055+00	5.0742+00	4.4625+00
CP	1.0404+00	5.9388-01	9.4929-01	7.2648-01	8.9968-01	8.1669-01	6.9897-01
P/PO1	6.2675-01	3.9357-01	5.7917-01	4.6282-01	5.5326-01	5.0992-01	4.4845-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	255.	301244	2.99	5	11.19	153.27	5.01	4.98	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.175 P-INF = .8270 RE = .3906 TO = 540.

P	1.0190+00	1.0117+00	9.6817-01	9.7000-01	1.2733+00	1.8850+00	4.2814+00	4.5496+00	4.7196+00
CP	3.7100-02	3.5688-02	2.7279-02	2.7633-02	8.6235-02	2.0443-01	6.6747-01	7.1930-01	7.5214-01
P/PO1	1.0282-01	1.0208-01	9.7690-02	9.7875-02	1.2848-01	1.9620-01	4.3200-01	4.5907-01	4.7622-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.170 P-INF = .8261 RE = .3902 TO = 540.

P	4.8595+00	4.1115+00	1.2354+00	1.6414-01	2.1193-01	1.9109-01	1.9243-01	1.8392-01	1.3151+00
CP	7.8021-01	6.3552-01	7.9172-02	-1.2904-01	-1.1880-01	-1.2283-01	-1.2257-01	-1.2422-01	9.4590-02
P/PO1	4.9087-01	4.1532-01	1.2479-01	1.6580-02	2.1407-02	1.9303-02	1.9438-02	1.8578-02	1.3284-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 30.0 Q-INF = 5.183 P-INF = .8283 RE = .3912 TO = 540.

P	4.8720+00	5.2598+00	5.3212+00	5.3237+00	4.6570+00	1.3573+00	9.7189-01	9.8504-01	1.1596+00
CP	7.8013-01	8.5493-01	8.6677-01	8.6727-01	7.3864-01	1.0206-01	2.7705-02	3.0241-02	6.3924-02
P/PO1	4.9083-01	5.2990-01	5.3608-01	5.3634-01	4.6917-01	1.3674-01	9.7913-02	9.9237-02	1.1683-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.174 P-INF = .8267 RE = .3905 TO = 540.

P	1.4463+00	4.3585+00	4.8515+00	5.2133+00	5.5872+00	4.8777+00	1.3227+00	1.7136-01	1.9047-01
CP	1.1976-01	6.8263-01	7.7792-01	8.4786-01	9.2012-01	7.8299-01	9.5402-02	-1.2667-01	-1.2298-01
P/PO1	1.4598-01	4.3992-01	4.8968-01	5.2620-01	5.6393-01	4.9233-01	1.3353-01	1.7296-02	1.9225-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.9 Q-INF = 5.164 P-INF = .8252 RE = .3897 TO = 540.

P	1.9670-01	1.8761-01	1.2335+00	4.9251+00	5.3284+00	5.3489+00	5.3950+00	4.6473+00	1.2793+00
CP	-1.2170-01	-1.2346-01	7.9080-02	7.9394-01	8.7205-01	8.7602-01	8.8495-01	7.4015-01	8.7944-02
P/PO1	1.9891-02	1.8972-02	1.2474-01	4.9804-01	5.3883-01	5.4091-01	5.4557-01	4.6996-01	1.2937-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.161 P-INF = .8247 RE = .3895 TO = 540.

P	9.8247-01	9.8247-01	1.0304+00	1.2720+00	1.7419-01	1.7645-01	1.7507-01	1.6324-01	1.1829+00
CP	3.0579-02	3.0579-02	3.9866-02	8.6677-02	-1.2604-01	-1.2560-01	-1.2587-01	-1.2816-01	6.9407-02
P/PO1	9.9414-02	9.9414-02	1.0426-01	1.2871-01	1.7626-02	1.7854-02	1.7715-02	1.6518-02	1.1969-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.8 Q-INF = 5.153 P-INF = .8235 RE = .3889 TO = 540.

P	3.7260+00	4.4943+00	4.8576+00	4.9169+00	4.3675+00	1.3084+00	9.9884-01	1.0106+00	1.0971+00
CP	5.6322-01	7.1230-01	7.8281-01	7.9470-01	6.8769-01	9.4093-02	3.4026-02	3.6303-02	5.3091-02
P/PO1	3.7756-01	4.5541-01	4.9223-01	4.9844-01	4.4256-01	1.3258-01	1.0121-01	1.0240-01	1.1117-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.8 Q-INF = 5.153 P-INF = .8235 RE = .3889 TO = 540.

P	1.1687+00	3.5621+00	4.1098+00	4.2136+00	4.3613+00	3.8985+00	1.0384+00	1.2335-01	1.5812-01
CP	6.6993-02	5.3141-01	6.3770-01	6.5783-01	6.8649-01	5.9669-01	4.1695-02	-1.3586-01	-1.2911-01
P/PO1	1.1843-01	3.6095-01	4.1645-01	4.2697-01	4.4194-01	3.9504-01	1.0522-01	1.2499-02	1.6023-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B516

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.149 P-INF = .8227 RE = .3886 TO = 540.

P	1.5603-01	1.5216-01	1.1878+00	2.3059+00	3.1909+00	3.4884+00	3.6998+00	3.4260+00	1.0292+00
CP	-1.2949-01	-1.3024-01	7.6908-02	3.0361-01	4.5997-01	5.1776-01	5.5881-01	5.0562-01	4.0104-02
P/PO1	1.5825-02	1.5433-02	1.2047-01	2.4199-01	3.2364-01	3.5382-01	3.7526-01	3.4748-01	1.0439-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.8 Q-INF = 5.145 P-INF = .8222 RE = .3883 TO = 540.

P	1.3902-01	1.0026+00	1.0029+00	1.0121+00	1.1024+00	1.2287+00	1.9118+00	2.4672+00	3.0751+00
CP	-1.3278-01	3.5053-02	3.5128-02	3.6906-02	5.4464-02	7.8996-02	2.1176-01	3.1970-01	4.3785-01
P/PO1	1.4109-02	1.0175-01	1.0179-01	1.0272-01	1.1189-01	1.2470-01	1.9403-01	2.5040-01	3.1209-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.7 Q-INF = 5.141 P-INF = .8215 RE = .3880 TO = 540.

P	3.3253+00	3.0312+00	8.3456-01	1.2758-01	1.5387-01	1.3691-01	1.5192-01	1.5142-01	1.7837-01
CP	4.8698-01	4.2978-01	2.5317-03	-1.3498-01	-1.2997-01	-1.3316-01	-1.3025-01	-1.3034-01	-1.2498-01
P/PO1	3.3775-01	3.0788-01	8.4767-02	1.2958-02	1.5628-02	1.3906-02	1.5430-02	1.5380-02	1.8178-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.4039+00	1.0711+00	2.4000+00	1.5609+00	3.1289+00	2.2523+00	4.9102+00	3.3773+00
CP	1.1327-01	4.8538-02	3.0701-01	1.4381-01	4.4879-01	2.7829-01	7.9525-01	4.9711-01
P/PO1	1.4260-01	1.0879-01	2.4377-01	1.5855-01	3.1781-01	2.2877-01	4.9873-01	3.4304-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.3016+00	3.6164+00	4.9125+00	4.3594+00	4.8797+00	4.7180+00	4.1320+00
CP	8.7138-01	5.4361-01	7.9570-01	6.8812-01	7.8932-01	7.5787-01	6.4390-01
P/PO1	5.3848-01	3.6732-01	4.9897-01	4.4278-01	4.9563-01	4.7921-01	4.1969-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	256.	301244	2.99	5	13.44	137.60	9.02	4.99	180.0

VALVE POS 2 PO = 29.7 Q-INF = 5.136 P-INF = .8208 RE = .3877 TO = 540.

P	8.2177-01	9.1855-01	8.0894-01	8.3456-01	1.1402+00	1.9033+00	4.1700+00	4.2565+00	4.4683+00
CP	1.9433-04	1.9037-02	-2.3030-03	2.6854-03	6.2189-02	2.1076-01	6.5206-01	6.6889-01	7.1025-01
P/PO1	8.3547-02	9.3386-02	8.2242-02	8.4847-02	1.1592-01	1.9351-01	4.2395-01	4.3274-01	4.5434-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.7 Q-INF = 5.136 P-INF = .8206 RE = .3876 TO = 540.

P	4.7656+00	4.1115+00	1.2043+00	1.4847-01	1.8362-01	1.6766-01	1.7651-01	1.7358-01	1.7423+00
CP	7.6815-01	6.4080-01	7.4698-02	-1.3088-01	-1.2404-01	-1.2715-01	-1.2542-01	-1.2599-01	1.7947-01
P/PO1	4.8458-01	4.1807-01	1.2245-01	1.5097-02	1.8671-02	1.7048-02	1.7948-02	1.7650-02	1.7717-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.7 Q-INF = 5.133 P-INF = .8203 RE = .3874 TO = 540.

P	4.9159+00	5.4820+00	5.6302+00	5.6549+00	4.8603+00	1.4363+00	2.6975+00	9.9781-01	1.5223+00
CP	7.9787-01	9.0817-01	9.3702-01	9.4185-01	7.8704-01	1.2001-01	3.6571-01	3.4589-02	1.3676-01
P/PO1	5.0010-01	5.5769-01	5.7276-01	5.7528-01	4.9444-01	1.4611-01	2.7442-01	1.0151-01	1.5486-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.7 Q-INF = 5.132 P-INF = .8201 RE = .3874 TO = 540.

P	1.5802+00	5.0931+00	5.9872+00	6.3694+00	6.5331+00	5.7397+00	1.4551+00	1.5659-01	1.7897-01
CP	1.4810-01	8.3256-01	1.0068+00	1.0812+00	1.1131+00	9.5855-01	1.2373-01	-1.2928-01	-1.2492-01
P/PO1	1.6078-01	5.1821-01	6.0918-01	6.4807-01	6.6472-01	5.8400-01	1.4806-01	1.5933-02	1.8209-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 29.7 Q-INF = 5.132 P-INF = .8200 RE = .3874 TO = 540.

P	1.8634-01	1.7506-01	1.4322+00	5.8043+00	6.1633+00	6.1356+00	6.2643+00	5.3618+00	1.5345+00
CP	-1.2348-01	-1.2568-01	1.1929-01	9.7130-01	1.0413+00	1.0359+00	1.0609+00	8.8508-01	1.3923-01
P/PO1	1.8963-02	1.7814-02	1.4574-01	5.9066-01	6.2720-01	6.2438-01	6.3747-01	5.4564-01	1.5615-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 29.8 Q-INF = 5.149 P-INF = .8228 RE = .3886 TO = 540.

P	1.2820+00	2.2410+00	1.4715+00	1.4350+00	2.1483-01	1.6327-01	1.6205-01	1.5364-01	1.2079+00
CP	8.9159-02	2.7546-01	1.2596-01	1.1888-01	-1.1807-01	-1.2809-01	-1.2832-01	-1.2996-01	7.4772-02
P/PO1	1.3000-01	2.2726-01	1.4922-01	1.4553-01	2.1786-02	1.6557-02	1.6433-02	1.5580-02	1.2249-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 29.7 Q-INF = 5.134 P-INF = .8204 RE = .3875 TO = 540.

P	4.4775+00	5.1425+00	5.5313+00	5.6059+00	5.0389+00	1.4716+00	1.0887+00	1.2988+00	1.4376+00
CP	7.1233-01	8.4186-01	9.1759-01	9.3212-01	8.2168-01	1.2685-01	5.2256-02	9.3184-02	1.2021-01
P/PO1	4.5543-01	5.2307-01	5.6262-01	5.7020-01	5.1253-01	1.4969-01	1.1073-01	1.3211-01	1.4622-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 29.7 Q-INF = 5.133 P-INF = .8203 RE = .3874 TO = 540.

P	1.4870+00	3.8646+00	4.4868+00	4.6368+00	4.7863+00	4.2963+00	1.1641+00	1.4034-01	1.5309-01
CP	1.2989-01	5.9307-01	7.1429-01	7.4350-01	7.7264-01	6.7717-01	6.6988-02	-1.3245-01	-1.2997-01
P/PO1	1.5127-01	3.9315-01	4.5645-01	4.7171-01	4.8692-01	4.3707-01	1.1843-01	1.4277-02	1.5574-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B518

PRELIMINARY UNCHECKED DATA

[illegible]
[illegible]
[illegible] INCH CONTINUOUS [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 29.8 Q-INF = 5.152 P-INF = .8232 RE = .3888 TO = 540.

P	1.5529-01	1.4994-01	1.1768+00	2.1896+00	3.1293+00	3.5802+00	3.8854+00	3.5908+00	1.0256+00
CP	-1.2965-01	-1.3069-01	6.8631-02	2.6522-01	4.4762-01	5.3515-01	5.9439-01	5.3721-01	3.9285-02
P/PO1	1.5740-02	1.5199-02	1.1928-01	2.2194-01	3.1719-01	3.6290-01	3.9384-01	3.6398-01	1.0396-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 29.8 Q-INF = 5.160 P-INF = .8245 RE = .3894 TO = 540.

P	1.3606-01	8.8020-01	9.2973-01	1.0304+00	1.1384+00	1.2722+00	1.8747+00	2.3084+00	2.7083+00
CP	-1.3343-01	1.0790-02	2.0389-02	3.9897-02	6.0829-02	8.6750-02	2.0351-01	2.8758-01	3.6507-01
P/PO1	1.3770-02	8.9080-02	9.4092-02	1.0428-01	1.1521-01	1.2875-01	1.8972-01	2.3362-01	2.7409-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 29.9 Q-INF = 5.166 P-INF = .8256 RE = .3899 TO = 540.

P	2.9683+00	2.7348+00	7.9064-01	1.1340-01	1.4153-01	1.2373-01	1.3311-01	1.2852-01	1.4159-01
CP	4.1474-01	3.6956-01	-6.7598-03	-1.3784-01	-1.3240-01	-1.3584-01	-1.3403-01	-1.3492-01	-1.3239-01
P/PO1	3.0003-01	2.7643-01	7.9915-02	1.1462-02	1.4305-02	1.2507-02	1.3454-02	1.2991-02	1.4312-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.6969+00	1.2281+00	2.4000+00	1.9242+00	3.7383+00	2.9789+00	5.4305+00	4.2727+00
CP	1.6865-01	7.7919-02	3.0474-01	2.1265-01	5.6378-01	4.1680-01	8.9131-01	6.6721-01
P/PO1	1.7151-01	1.2413-01	2.4258-01	1.9449-01	3.7785-01	3.0110-01	5.4889-01	4.3187-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.9391+00	4.5258+00	5.8359+00	5.1258+00	5.7656+00	5.5195+00	4.7531+00
CP	9.8976-01	7.1620-01	9.6979-01	8.3234-01	9.5618-01	9.0855-01	7.6021-01
P/PO1	6.0030-01	4.5745-01	5.8988-01	5.1810-01	5.8277-01	5.5790-01	4.8043-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
13.	257.	301244	2.99	5	14.67	160.14	4.94	1.17	180.0

VALVE POS 2 PO = 29.9 Q-INF = 5.162 P-INF = .8249 RE = .3896 TO = 540.

P	9.9525-01	9.7516-01	9.5169-01	9.1692-01	1.0161+00	1.3374+00	3.2543+00	3.7435+00	4.0655+00
CP	3.2996-02	2.9105-02	2.4558-02	1.7822-02	3.7036-02	9.9271-02	4.7060-01	5.6536-01	6.2772-01
P/PO1	1.0068-01	9.8644-02	9.6270-02	9.2752-02	1.0279-01	1.3528-01	3.2920-01	3.7868-01	4.1125-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 29.9 Q-INF = 5.175 P-INF = .8269 RE = .3905 TO = 540.

P	4.2208+00	3.5991+00	1.0304+00	1.7980-01	2.0975-01	1.8304-01	1.8519-01	2.1125-01	1.2972+00
CP	6.5588-01	5.3575-01	3.9334-02	-1.2505-01	-1.1926-01	-1.2442-01	-1.2400-01	-1.1897-01	9.0898-02
P/PO1	4.2595-01	3.6322-01	1.0399-01	1.8146-02	2.1168-02	1.8472-02	1.8690-02	2.1319-02	1.3091-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 29.8 Q-INF = 5.159 P-INF = .8244 RE = .3894 TO = 540.

P	4.0955+00	4.5190+00	4.6104+00	4.5693+00	3.9363+00	1.1344+00	1.0006+00	9.9416-01	1.2186+00
CP	6.3404-01	7.1612-01	7.3385-01	7.2589-01	6.0318-01	6.0093-02	3.4161-02	3.2905-02	7.6408-02
P/PO1	4.1455-01	4.5741-01	4.6667-01	4.6251-01	3.9843-01	1.1483-01	1.0128-01	1.0063-01	1.2335-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 29.9 Q-INF = 5.172 P-INF = .8265 RE = .3904 TO = 540.

P	1.2162+00	3.9819+00	4.6722+00	4.9128+00	5.1436+00	4.5901+00	1.1713+00	1.4921-01	1.8975-01
CP	7.5356-02	6.1008-01	7.4356-01	7.9007-01	8.3470-01	7.2767-01	6.6671-02	-1.3095-01	-1.2411-01
P/PO1	1.2280-01	4.0203-01	4.7174-01	4.9662-01	5.1933-01	4.6344-01	1.1826-01	1.5065-02	1.9158-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 30.0 Q-INF = 5.181 P-INF = .8279 RE = .3910 TO = 540.

P	1.8708-01	1.7210-01	1.1384+00	4.4712+00	4.8479+00	4.9940+00	5.1476+00	4.4763+00	1.2043+00
CP	-1.2368-01	-1.2658-01	5.9926-02	7.0320-01	7.7592-01	8.0411-01	8.3375-01	7.0419-01	7.2651-02
P/PO1	1.8856-02	1.7347-02	1.1474-01	4.5066-01	4.8863-01	5.0335-01	5.1883-01	4.5118-01	1.2138-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 30.0 Q-INF = 5.188 P-INF = .8291 RE = .3916 TO = 540.

P	9.8612-01	1.0336+00	1.0633+00	1.3708+00	2.0975-01	1.7572-01	1.8230-01	1.6546-01	1.1078+00
CP	3.0272-02	3.9423-02	4.5154-02	1.0442-01	-1.1937-01	-1.2593-01	-1.2466-01	-1.2790-01	5.3727-02
P/PO1	9.9253-02	1.0403-01	1.0702-01	1.3797-01	2.1111-02	1.7686-02	1.8349-02	1.6653-02	1.1150-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 30.0 Q-INF = 5.186 P-INF = .8287 RE = .3914 TO = 540.

P	4.4900+00	4.8533+00	5.1296+00	5.0845+00	4.5584+00	1.4117+00	1.0042+00	1.0270+00	1.1097+00
CP	7.0602-01	7.7589-01	8.2935-01	8.2066-01	7.1921-01	1.1242-01	3.3853-02	3.8242-02	5.2443-02
P/PO1	4.5213-01	4.8862-01	5.1653-01	5.1200-01	4.5902-01	1.4215-01	1.0112-01	1.0342-01	1.1083-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 30.1 Q-INF = 5.197 P-INF = .8305 RE = .3922 TO = 540.

P	1.1961+00	3.9263+00	4.6970+00	4.8760+00	5.0697+00	4.6451+00	1.2378+00	1.3886-01	1.6819-01
CP	7.0353-02	5.9567-01	7.4395-01	7.7840-01	8.1567-01	7.3398-01	7.8366-02	-1.3307-01	-1.2743-01
P/PO1	1.2018-01	3.9451-01	4.7194-01	4.8993-01	5.0939-01	4.6673-01	1.2437-01	1.3953-02	1.6899-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.197 P-INF = .8305 RE = .3922 TO = 540.

P	1.6268-01	1.5364-01	1.2793+00	3.8395+00	4.3675+00	4.4248+00	4.5350+00	3.9939+00	1.1757+00
CP	-1.2849-01	-1.3023-01	8.6356-02	5.7896-01	6.8055-01	6.9159-01	7.1279-01	6.0867-01	6.6425-02
P/PO1	1.6346-02	1.5437-02	1.2854-01	3.8578-01	4.3883-01	4.4459-01	4.5567-01	4.0130-01	1.1813-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.1 Q-INF = 5.213 P-INF = .8329 RE = .3934 TO = 540.

P	1.6268-01	9.7699-01	9.7366-01	1.0084+00	1.0557+00	1.2957+00	3.1182+00	3.6824+00	4.0165+00
CP	-1.2858-01	2.7634-02	2.6994-02	3.3665-02	4.2728-02	8.8777-02	4.3841-01	5.4665-01	6.1075-01
P/PO1	1.6297-02	9.7876-02	9.7542-02	1.0103-01	1.0576-01	1.2980-01	3.1239-01	3.6891-01	4.0234-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3923 TO = 540.

P	4.0705+00	3.7720+00	1.0048+00	1.1266-01	1.4443-01	1.2447-01	1.3600-01	1.3000-01	1.6172-01
CP	6.2328-01	5.6586-01	3.3504-02	-1.3812-01	-1.3201-01	-1.3585-01	-1.3363-01	-1.3478-01	-1.2868-01
P/PO1	4.0893-01	3.7894-01	1.0094-01	1.1318-02	1.4510-02	1.2504-02	1.3663-02	1.3060-02	1.6246-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.3219+00	1.1836+00	2.4000+00	1.8867+00	2.7375+00	2.4211+00	3.8859+00	3.6703+00
CP	9.4509-02	6.7906-02	3.0192-01	2.0317-01	3.6685-01	3.0598-01	5.8778-01	5.4630-01
P/PO1	1.3280-01	1.1891-01	2.4111-01	1.8954-01	2.7501-01	2.4323-01	3.9039-01	3.6873-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.6289+00	4.3406+00	4.9500+00	4.8750+00	4.8773+00	4.9008+00	4.2258+00
CP	7.3072-01	6.7526-01	7.9249-01	7.7806-01	7.7851-01	7.8302-01	6.5316-01
P/PO1	4.6503-01	4.3607-01	4.9729-01	4.8975-01	4.8999-01	4.9234-01	4.2453-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	258.	301244	1.49	5	-.01	180.00	.00	15.01	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.122 P-INF =3.9396 RE = .3692 TO = 533.

P	4.1626+00	3.3955+00	3.9820+00	4.6420+00	5.9774+00	1.1144+01	1.1236+01	1.0736+01	1.0300+01
CP	3.6429-02	-8.8871-02	6.9242-03	1.1473-01	3.3284-01	1.1767+00	1.1917+00	1.1100+00	1.0389+00
P/PO1	3.1301-01	2.5533-01	2.9943-01	3.4906-01	4.4947-01	8.3799-01	8.4487-01	8.0727-01	7.7455-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.137 P-INF =3.9487 RE = .3701 TO = 533.

P	9.5799+00	6.9066+00	2.3089+00	2.3456+00	2.2916+00	2.2278+00	2.3114+00	2.2353+00	1.0209+01
CP	9.1767-01	4.8202-01	-2.6721-01	-2.6124-01	-2.7003-01	-2.8043-01	-2.6580-01	-2.7922-01	1.0201+00
P/PO1	7.1872-01	5.1816-01	1.7322-01	1.7597-01	1.7192-01	1.6714-01	1.7341-01	1.6770-01	7.6589-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.2 Q-INF = 6.116 P-INF =3.9357 RE = .3689 TO = 533.

P	1.0882+01	1.0545+01	1.0153+01	9.4701+00	6.8379+00	2.2890+00	[illegible]	[illegible]	5.0061+00
CP	1.1357+00	1.0806+00	1.0164+00	9.0485-01	4.7449-01	-2.6722-01	-5.9426-02	[illegible]	[illegible]
P/PO1	8.1910-01	7.9372-01	7.6419-01	7.1282-01	5.1469-01	1.7230-01	2.6889-01	3.0524-01	3.8293-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.2 Q-INF = 6.114 P-INF =3.9344 RE = .3687 TO = 533.

P	7.6577+00	1.0252+01	9.9680+00	9.5466+00	8.8969+00	6.7628+00	2.0272+00	2.2658+00	2.2707+00
CP	6.0895-01	1.0332+00	9.8680-01	9.1787-01	8.1161-01	4.6258-01	-3.1193-01	-2.7290-01	-2.7219-01
P/PO1	5.7659-01	7.7192-01	7.5054-01	7.1881-01	6.6989-01	5.0920-01	1.5263-01	1.7060-01	1.7097-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3695 TO = 533.

P	2.2568+00	2.2410+00	7.0453+00	1.0143+01	9.1888+00	8.5641+00	8.1488+00	5.9625+00	1.9463+00
CP	-2.7509-01	-2.7768-01	5.0651-01	1.0122+00	8.5640-01	7.5443-01	6.8664-01	3.2977-01	-3.2578-01
P/PO1	1.6959-01	1.6841-01	5.2943-01	7.6223-01	6.9051-01	6.4357-01	6.1235-01	4.4866-01	1.4625-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.116 P-INF =3.9357 RE = .3689 TO = 533.

P	4.0373+00	3.7289+00	3.8709+00	2.2473+00	2.2362+00	2.2217+00	2.2064+00	2.0581+00	4.1068+00
CP	1.6602-02	-3.3817-02	-1.0602-02	-2.7604-01	-2.7787-01	-2.8023-01	-2.8274-01	-3.0697-01	2.7971-02
P/PO1	3.0389-01	2.8067-01	2.9136-01	1.6916-01	1.6832-01	1.6723-01	1.6608-01	1.5492-01	3.0912-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.2 Q-INF = 6.118 P-INF =3.9370 RE = .3690 TO = 533.

P	5.7976+00	7.8316+00	8.1375+00	7.6648+00	5.7167+00	2.0565+00	4.4004+00	4.3606+00	4.3455+00
CP	3.0409-01	6.3654-01	6.8653-01	6.0928-01	2.9088-01	-3.0736-01	7.5739-02	6.9228-02	6.6763-02
P/PO1	4.3624-01	5.8929-01	6.1231-01	5.7675-01	4.3016-01	1.5474-01	3.3111-01	3.2811-01	3.2698-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3706 TO = 533.

P	4.3883+00	5.4328+00	5.7993+00	6.2573+00	6.3769+00	5.1779+00	2.1013+00	2.1253+00	2.1238+00
CP	7.0708-02	2.4069-01	3.0034-01	3.7488-01	3.9434-01	1.9920-01	-3.0149-01	-2.9758-01	-2.9734-01
P/PO1	3.2879-01	4.0705-01	4.3451-01	4.6883-01	4.7779-01	3.8795-01	1.5744-01	1.5924-01	1.5912-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS 6S WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 30.1 Q-INF = 5.197 P-INF = .8305 RE = .3922 TO = 540.

P	1.6268-01	1.5364-01	1.2793+00	3.8395+00	4.3675+00	4.4248+00	4.5350+00	3.9939+00	1.1757+00
CP	-1.2849-01	-1.3023-01	8.6356-02	5.7896-01	6.8055-01	6.9159-01	7.1279-01	6.0867-01	6.6425-02
P/PO1	1.6346-02	1.5437-02	1.2854-01	3.8578-01	4.3883-01	4.4459-01	4.5567-01	4.0130-01	1.1813-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 30.1 Q-INF = 5.213 P-INF = .8329 RE = .3934 TO = 540.

P	1.6268-01	9.7699-01	9.7366-01	1.0084+00	1.0557+00	1.2957+00	3.1182+00	3.6824+00	4.0165+00
CP	-1.2858-01	2.7634-02	2.6994-02	3.3665-02	4.2728-02	8.8777-02	4.3841-01	5.4665-01	6.1075-01
P/PO1	1.6297-02	9.7876-02	9.7542-02	1.0103-01	1.0576-01	1.2990-01	3.1239-01	3.6891-01	4.0234-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 30.1 Q-INF = 5.198 P-INF = .8306 RE = .3923 TO = 540.

P	4.0705+00	3.7720+00	1.0048+00	1.1266-01	1.4443-01	1.2447-01	1.3600-01	1.3000-01	1.6172-01
CP	6.2328-01	5.6586-01	3.3504-02	-1.3812-01	-1.3201-01	-1.3585-01	-1.3363-01	-1.3478-01	-1.2868-01
P/PO1	4.0893-01	3.7894-01	1.0094-01	1.1318-02	1.4510-02	1.2504-02	1.3663-02	1.3060-02	1.6246-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	1.3219+00	1.1836+00	2.4000+00	1.8867+00	2.7375+00	2.4211+00	3.8859+00	3.6703+00
CP	9.4509-02	6.7906-02	3.0192-01	2.0317-01	3.6685-01	3.0598-01	5.8778-01	5.4630-01
P/PO1	1.3280-01	1.1891-01	2.4111-01	1.8954-01	2.7501-01	2.4323-01	3.9039-01	3.6873-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	4.6289+00	4.3406+00	4.9500+00	4.8750+00	4.8773+00	4.9008+00	4.2258+00
CP	7.3072-01	6.7526-01	7.9249-01	7.7806-01	7.7851-01	7.8302-01	6.5316-01
P/PO1	4.6503-01	4.3607-01	4.9729-01	4.8975-01	4.8999-01	4.9234-01	4.2453-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	258.	301244	1.49	5	-.01	180.00	.00	15.01	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.122 P-INF =3.9396 RE = .3692 TO = 533.

P	4.1626+00	3.3955+00	3.9820+00	4.6420+00	5.9774+00	1.1144+01	1.1236+01	1.0736+01	1.0300+01
CP	3.6429-02	-8.8871-02	6.9242-03	1.1473-01	3.3284-01	1.1767+00	1.1917+00	1.1100+00	1.0389+00
P/PO1	3.1301-01	2.5533-01	2.9943-01	3.4906-01	4.4947-01	8.3799-01	8.4487-01	8.0727-01	7.7455-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.137 P-INF =3.9487 RE = .3701 TO = 533.

P	9.5799+00	6.9066+00	2.3089+00	2.3456+00	2.2916+00	2.2278+00	2.3114+00	2.2353+00	1.0209+01
CP	9.1767-01	4.8202-01	-2.6721-01	-2.6124-01	-2.7003-01	-2.8043-01	-2.6580-01	-2.7922-01	1.0201+00
P/PO1	7.1872-01	5.1816-01	1.7322-01	1.7597-01	1.7192-01	1.6714-01	1.7341-01	1.6770-01	7.6589-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.2 Q-INF = 6.116 P-INF =3.9357 RE = .3689 TO = 533.

P	1.0882+01	1.0545+01	1.0153+01	9.4701+00	6.8379+00	2.2890+00	3.5727+00	4.0551+00	5.0061+00
CP	1.1357+00	1.0806+00	1.0164+00	9.0485-01	4.7449-01	-2.6722-01	-5.9426-02	1.9538-02	1.8[illegible]-01
P/PO1	8.1910-01	7.9372-01	7.6419-01	7.1282-01	5.1469-01	1.7230-01	2.6889-01	3.0524-01	3.8293-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.2 Q-INF = 6.114 P-INF =3.9344 RE = .3687 TO = 533.

P	7.6577+00	1.0252+01	9.9680+00	9.5466+00	8.8969+00	6.7628+00	2.0272+00	2.2658+00	2.2707+00
CP	6.0895-01	1.0332+00	9.8680-01	9.1787-01	8.1161-01	4.6258-01	-3.1193-01	-2.7290-01	-2.7210-01
P/PO1	5.7659-01	7.7192-01	7.5054-01	7.1881-01	6.6989-01	5.0920-01	1.5263-01	1.7060-01	1.7097-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3695 TO = 533.

P	2.2568+00	2.2410+00	7.0453+00	1.0143+01	9.1888+00	8.5641+00	8.1488+00	5.9625+00	1.9463+00
CP	-2.7509-01	-2.7768-01	5.0651-01	1.0122+00	8.5640-01	7.5443-01	6.8664-01	3.2977-01	-3.2578-01
P/PO1	1.6959-01	1.6841-01	5.2943-01	7.6223-01	6.9051-01	6.4357-01	6.1236-01	4.4866-01	1.4624-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.116 P-INF =3.9357 RE = .3689 TO = 533.

P	4.0373+00	3.7289+00	3.8709+00	2.2473+00	2.2362+00	2.2217+00	2.2064+00	2.0581+00	4.1968+00
CP	1.6602-02	-3.3817-02	-1.0602-02	-2.7604-01	-2.7787-01	-2.8023-01	-2.8274-01	-3.0697-01	2.7971-02
P/PO1	3.0389-01	2.8067-01	2.9136-01	1.6916-01	1.6832-01	1.6723-01	1.6608-01	1.5492-01	3.0912-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.2 Q-INF = 6.118 P-INF =3.9370 RE = .3690 TO = 533.

P	5.7976+00	7.8316+00	8.1375+00	7.6648+00	5.7167+00	2.0565+00	4.4004+00	4.3606+00	4.3455+00
CP	3.0409-01	6.3654-01	6.8653-01	6.0928-01	2.9088-01	-3.0736-01	7.5739-02	6.9228-02	6.6763-02
P/PO1	4.3624-01	5.8929-01	6.1231-01	5.7675-01	4.3016-01	1.5474-01	3.3111-01	3.2811-01	3.2698-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3706 TO = 533.

P	4.3883+00	5.4328+00	5.7993+00	6.2573+00	6.3769+00	5.1779+00	2.1013+00	2.1253+00	2.1238+00
CP	7.0708-02	2.4069-01	3.0034-01	3.7488-01	3.9434-01	1.9920-01	-3.0149-01	-2.9758-01	-2.9734-01
P/PO1	3.2879-01	4.0705-01	4.3451-01	4.6883-01	4.7779-01	3.8795-01	1.5744-01	1.5924-01	1.5912-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.175 P-INF =3.9733 RE = .3724 TO = 533.

P	2.0500+00	2.1237+00	4.5685+00	5.2315+00	5.3471+00	5.3248+00	5.1791+00	4.0002+00	1.9585+00
CP	-3.1148-01	-2.9953-01	9.6393-02	2.0377-01	2.2249-01	2.1887-01	1.9529-01	4.3670-03	-3.2629-01
P/PO1	1.5284-01	1.5834-01	3.4062-01	3.9005-01	3.9867-01	3.9701-01	3.8615-01	2.9825-01	1.4603-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.2 Q-INF = 6.100 P-INF =3.9253 RE = .3679 TO = 533.

P	2.0437+00	4.4018+00	4.3956+00	4.4148+00	4.3491+00	4.5169+00	5.4263+00	5.6064+00	5.6553+00
CP	-3.0845-01	7.8103-02	7.7091-02	8.0742-02	6.9469-02	9.6965-02	2.4605-01	2.7558-01	2.8358-01
P/PO1	1.5424-01	3.3220-01	3.3173-01	3.3318-01	3.2822-01	3.4088-01	4.0952-01	4.2311-01	4.2680-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.2 Q-INF = 6.116 P-INF =3.9357 RE = .3684 TO = 534.

P	5.3600+00	3.9573+00	1.8089+00	2.0017+00	1.9220+00	1.8790+00	1.9344+00	1.8505+00	1.8728+00
CP	2.3287-01	3.5290-03	-3.4773-01	-3.1620-01	-3.2923-01	-3.3627-01	-3.2720-01	-3.4092-01	-3.3727-01
P/PO1	4.0345-01	2.9787-01	1.3615-01	1.5067-01	1.4467-01	1.4143-01	1.4561-01	1.3929-01	1.4097-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.4016+00	3.9633+00	9.1078+00	4.0758+00	1.1895+01	4.0734+00	1.0552+01	4.3477+00
CP	7.6165-02	4.5077-03	8.4562-01	2.2901-02	1.3012+00	2.2518-02	1.0817+00	6.7351-02
P/PO1	3.3131-01	2.9832-01	6.8555-01	3.0679-01	8.9531-01	3.0661-01	7.9422-01	3.2725-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.8852+00	4.8305+00	8.0086+00	5.2547+00	6.5367+00	5.5523+00	4.7836+00
CP	8.0921-01	1.4629-01	6.6590-01	2.1565-01	4.2525-01	2.6431-01	1.3863-01
P/PO1	6.6879-01	3.6359-01	6.0281-01	3.9552-01	4.9202-01	4.1793-01	3.6006-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS 6B WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	259.	301244	1.49	5	-4.00	180.00	.00	19.00	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.137 P-INF =3.9487 RE = .3696 TO = 534.

P	3.1094+00	3.8770+00	5.1612+00	6.5633+00	8.9737+00	1.2961+01	1.1575+01	1.1132+01	1.0728+01
CP	-1.3676-01	-1.1672-02	1.9759-01	4.2608-01	8.1888-01	1.4686+00	1.2428+00	1.1706+00	1.1048+00
P/PO1	2.3328-01	2.9087-01	3.8721-01	4.9240-01	6.7324-01	9.7236-01	8.6840-01	8.3516-01	8.0487-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3705 TO = 534.

P	9.9365+00	7.1841+00	2.4818+00	2.3886+00	2.3470+00	2.3319+00	2.3980+00	2.3330+00	1.1645+01
CP	9.7206-01	5.2456-01	-2.3997-01	-2.5513-01	-2.6187-01	-2.6434-01	-2.5359-01	-2.6416-01	1.2499+00
P/PO1	7.4376-01	5.3774-01	1.8577-01	1.7879-01	1.7568-01	1.7454-01	1.7949-01	1.7463-01	8.7166-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.120 P-INF =3.9383 RE = .3686 TO = 534.

P	1.1177+01	1.0899+01	1.0491+01	9.7761+00	7.0837+00	2.4298+00	3.9172+00	3.8292+00	6.1130+00
CP	1.1826+00	1.1374+00	1.0706+00	9.5383-01	5.1392-01	-2.4647-01	-4.2715-03	-1.7819-02	3.5532-01
P/PO1	8.4071-01	8.1987-01	7.8915-01	7.3537-01	5.3284-01	1.8277-01	2.9428-01	2.8804-01	4.5982-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.126 P-INF =3.9427 RE = .3690 TO = 534.

P	9.5489+00	1.0252+01	1.0045+01	9.6690+00	9.0045+00	6.8238+00	2.0519+00	2.3208+00	2.3258+00
CP	9.1517-01	1.0299+00	9.9614-01	9.3477-01	8.2630-01	4.7036-01	-3.0855-01	-2.6466-01	-2.6365-01
P/PO1	7.1757-01	7.7040-01	7.5484-01	7.2659-01	6.7665-01	5.1279-01	1.5419-01	1.7440-01	1.7477-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3691 TO = 534.

P	2.3383+00	2.3336+00	9.0143+00	9.7455+00	8.9123+00	8.3810+00	7.8247+00	5.8100+00	2.0442+00
CP	-2.6192-01	-2.6269-01	8.2742-01	9.4674-01	8.1077-01	7.2408-01	6.3332-01	3.0456-01	-3.0991-01
P/PO1	1.7566-01	1.7531-01	6.7717-01	7.3210-01	6.6951-01	6.2959-01	5.8781-01	4.3646-01	1.5357-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.110 P-INF =3.9318 RE = .3680 TO = 534.

P	3.0342+00	3.0066+00	2.8893+00	2.3087+00	2.2854+00	2.2829+00	2.2991+00	2.2108+00	3.5866+00
CP	-1.4690-01	-1.5143-01	-1.7062-01	-2.6563-01	-2.6944-01	-2.6986-01	-2.6721-01	-2.8165-01	-5.6505-02
P/PO1	2.2861-01	2.2653-01	2.1769-01	1.7395-01	1.7220-01	1.7201-01	1.7322-01	1.6657-01	2.7023-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3712 TO = 534.

P	5.1908+00	5.6180+00	5.9531+00	6.0737+00	4.6756+00	1.9524+00	4.0976+00	4.1346+00	4.1007+00
CP	1.9882-01	2.6815-01	3.2253-01	3.4210-01	1.1523-01	-3.2666-01	2.1429-02	2.7439-02	2.1933-02
P/PO1	3.8777-01	4.1969-01	4.4473-01	4.5374-01	3.4929-01	1.4585-01	3.0611-01	3.0687-01	3.0634-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3712 TO = 534.

P	4.4134+00	5.7106+00	5.9070+00	5.9666+00	5.8544+00	4.7984+00	2.2373+00	2.2169+00	2.2217+00
CP	7.2677-02	2.8317-01	3.1504-01	3.2472-01	3.0651-01	1.3515-01	-2.8043-01	-2.8374-01	-2.8296-01
P/PO1	3.2970-01	4.2661-01	4.4128-01	4.4574-01	4.3735-01	3.5846-01	1.6714-01	1.6562-01	1.6597-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD E[illegible] [illegible] ER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.2 Q-INF = 6.116 P-INF = 3.9357 RE = .3684 TO = 534.

P	2.2004+00	7.2102+00	4.4635+00	5.4771+00	5.8237+00	5.8316+00	5.6241+00	4.3972+00	2.1766+00
CP	-2.8371-01	-2.8212-01	8.6297-02	2.5201-01	3.0868-01	3.0996-01	2.7605-01	7.5454-02	-2.8924-01
P/PO1	1.6563-01	1.6636-01	3.3597-01	4.1226-01	4.3835-01	4.3894-01	4.2333-01	3.3099-01	1.6309-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.2 Q-INF = 6.104 P-INF = 3.9279 RE = .3677 TO = 534.

P	2.2130+00	4.0005+00	4.2104+00	4.2920+00	4.2875+00	4.4601+00	6.0036+00	6.0082+00	5.7615+00
CP	-2.8095-01	1.1889-02	4.6275-02	5.9647-02	5.8907-02	9.0461-02	3.4003-01	3.4079-01	3.0037-01
P/PO1	1.6690-01	3.0172-01	3.1755-01	3.2370-01	3.2336-01	3.3789-01	4.5279-01	4.5314-01	4.3453-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.126 P-INF = 3.9422 RE = .3690 TO = 534.

P	5.3537+00	4.0190+00	2.0743+00	2.2228+00	2.1561+00	2.1789+00	2.2249+00	2.1559+00	2.1544+00
CP	2.3040-01	1.2543-02	-3.0488-01	-2.8066-01	-2.9154-01	-2.8782-01	-2.8[illegible]30-01	-2.9158-01	-2.9182-01
P/PO1	4.0232-01	3.0202-01	1.5588-01	1.6703-01	1.6202-01	1.6373-01	1.6720-01	1.6201-01	1.6189-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.3305+00	3.4969+00	1.0270+01	3.4758+00	1.0920+01	3.6750+00	9.6352+00	4.1180+00
CP	-9.9849-02	-7.2687-02	1.0329+00	-7.6130-02	1.1389+00	-4.3612-02	9.2925-01	2.8692-02
P/PO1	2.5027-01	2.6278-01	7.7178-01	2.6119-01	8.2057-01	2.7616-01	7.2405-01	3.0945-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.5313+00	4.2867+00	7.7883+00	4.5422+00	5.9555+00	4.5914+00	4.0969+00
CP	7.4906-01	5.6237-02	6.2779-01	9.7936-02	3.2862-01	1.0597-01	2.5249-02
P/PO1	6.4109-01	3.7213-01	5.8526-01	3.4133-01	4.4753-01	3.4503-01	3.0787-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

40 - INCH CONICAL NOZZLE SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	260.	301244	1.49	5	5.01	180.00	.00	9.99	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3694 TO = 534.

P	4.6391+00	4.4882+00	4.2166+00	4.5315+00	4.6713+00	6.0147+00	1.1143+01	1.0797+01	1.0178+01
CP	1.1201-01	8.7447-02	4.3210-02	9.4496-02	1.1725-01	3.3604-01	1.1712+00	1.1148+00	1.0141+00
P/PO1	3.4781-01	3.3650-01	3.1614-01	3.3975-01	3.5022-01	4.5095-01	8.3543-01	8.0946-01	7.6310-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8960-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.2 Q-INF = 6.108 P-INF =3.9305 RE = .3674 TO = 534.

P	9.3319+00	6.7370+00	2.1978+00	2.0877+00	2.0329+00	2.0381+00	2.0395+00	1.8688+00	6.0524+00
CP	8.8426-01	4.5945-01	-2.8367-01	-3.0167-01	-3.1767-01	-3.0981-01	-3.0958-01	-3.3753-01	3.5227-01
P/PO1	7.0334-01	5.0777-01	1.6565-01	1.5735-01	1.5322-01	1.5361-01	1.5372-01	1.4085-01	4.5043-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3703 TO = 534.

P	1.0541+01	1.0745+01	1.0137+01	9.3783+00	6.7457+00	2.2278+00	4.2953+00	4.4094+00	4.6279+00
CP	1.0687+00	1.1018+00	1.0031+00	8.7982-01	4.5220-01	-2.8161-01	5.4205-02	7.2736-02	1.0108-01
P/PO1	7.8824-01	8.0351-01	7.5804-01	7.0129-01	5.0443-01	1.6659-01	3.2120-01	3.2973-01	3.4600-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3702 TO = 534.

P	5.6609+00	1.0190+01	1.0245+01	9.7455+00	8.9891+00	6.8391+00	2.0272+00	2.0032+00	2.0136+00
CP	2.7631-01	1.0122+00	1.0211+00	9.3997-01	8.1707-01	4.6774-01	-3.1410-01	-3.1800-01	-3.1830-01
P/PO1	4.2345-01	7.6226-01	7.6635-01	7.2899-01	6.7241-01	5.1158-01	1.5174-01	1.4984-01	1.5362-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3706 TO = 534.

P	2.0312+00	1.9817+00	5.5748+00	8.4910+00	9.4347+00	9.1595+00	8.4730+00	6.3132+00	1.9340+00
CP	-3.1377-01	-3.2180-01	2.6143-01	7.3479-01	8.8797-01	8.4330-01	7.3186-01	3.8129-01	-3.2954-01
P/PO1	1.5179-01	1.4809-01	4.1660-01	6.3452-01	7.0505-01	6.8448-01	6.3318-01	4.7178-01	1.4453-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.080 P-INF =3.9124 RE = .3657 TO = 534.

P	4.5889+00	4.4882+00	4.5808+00	1.8114+00	1.9220+00	1.9218+00	1.9456+00	1.8444+00	4.5169+00
CP	1.1127-01	9.4708-02	1.0994-01	-3.4555-01	-3.2736-01	-3.2739-01	-3.2430-01	-3.4012-01	9.9417-02
P/PO1	3.4747-01	3.3984-01	3.4686-01	1.3716-01	1.4553-01	1.4552-01	1.4674-01	1.3966-01	3.4201-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3705 TO = 534.

P	5.5230+00	6.7678+00	7.5991+00	7.6495+00	5.7229+00	2.3319+00	4.6476+00	4.5804+00	4.5658+00
CP	2.5332-01	4.5545-01	5.9042-01	5.9861-01	2.8577-01	-2.6484-01	1.1118-01	1.0027-01	9.7896-02
P/PO1	4.1286-01	5.0592-01	5.6806-01	5.7183-01	4.2780-01	1.7432-01	3.4743-01	3.4240-01	3.4131-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3684 TO = 534.

P	4.6203+00	5.3896+00	5.6550+00	6.1043+00	6.2078+00	4.8902+00	1.8850+00	1.8077+00	1.8484+00
CP	1.1093-01	2.3654-01	2.7989-01	3.5325-01	3.7015-01	1.5500-01	-3.3569-01	-3.4830-01	-3.4167-01
P/PO1	3.4731-01	4.0514-01	4.2510-01	4.5887-01	4.6665-01	3.6760-01	1.4170-01	1.3589-01	1.3894-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B526

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.2 Q-INF = 6.094 P-INF =3.9215 RE = .3666 TO = 534.

P	1.8368+00	1.8459+00	4.7537+00	5.2929+00	5.5442+00	5.6308+00	5.5005+00	4.2567+00	1.7688+00
CP	-3.4207-01	-3.4058-01	1.3656-01	2.2504-01	2.6628-01	2.8048-01	2.5911-01	5.5018-02	-3.5323-01
P/PO1	1.3876-01	1.3945-01	3.5911-01	3.9985-01	4.1883-01	4.2537-01	4.1553-01	3.2157-01	1.3362-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.137 P-INF =3.9487 RE = .3691 TO = 534.

P	1.7804+00	4.6734+00	4.6055+00	4.6052+00	4.5155+00	4.7739+00	5.4016+00	5.5881+00	5.6920+00
CP	-3.5334-01	1.1811-01	1.0704-01	1.0699-01	9.2363-02	1.3448-01	2.3677-01	2.6717-01	2.8409-01
P/PO1	1.3357-01	3.5062-01	3.4552-01	3.4550-01	3.3876-01	3.5816-01	4.0525-01	4.1924-01	4.2703-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.134 P-INF =3.9474 RE = .3690 TO = 534.

P	5.4478+00	4.0622+00	1.6027+00	1.7254+00	1.6817+00	1.6709+00	1.7181+00	1.8306+00	1.8728+00
CP	2.4459-01	1.8726-02	-3.8221-01	-3.6221-01	-3.6933-01	-3.7110-01	-3.6339-01	-3.7766-01	-3.8817-01
P/PO1	4.0885-01	3.0486-01	1.2028-01	1.2949-01	1.2621-01	1.2540-01	1.2894-01	1.2238-01	1.4055-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.6313+00	4.4695+00	6.2320+00	4.5773+00	7.5305+00	4.4883+00	9.1359+00	4.8703+00
CP	1.1148-01	8.5119-02	3.7243-01	1.0269-01	5.8409-01	8.8176-02	8.4580-01	1.5045-01
P/PO1	3.4757-01	3.3543-01	4.6770-01	3.4352-01	5.6515-01	3.3684-01	6.8563-01	3.6551-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.7078+00	5.4680+00	9.0469+00	5.9227+00	7.3594+00	6.3820+00	5.4586+00
CP	9.3903-01	2.4788-01	8.3128-01	3.2200-01	5.5620-01	3.9688-01	2.4635-01
P/PO1	7.2855-01	4.1036-01	6.7895-01	4.4448-01	5.5231-01	4.7896-01	4.0966-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	261.	301244	1.49	5	10.02	180.00	.00	4.98	180.0

VALVE POS 2 PO = 14.2 Q-INF = 6.114 P-INF = 3.9344 RE = .3678 TO = 534.

P	4.8271+00	4.8154+00	4.7043+00	4.6912+00	4.6140+00	5.0861+00	7.6550+00	8.9208+00	9.3681+00
CP	1.4601-01	1.4409-01	1.2591-01	1.2376-01	1.1115-01	1.8835-01	6.0850-01	8.1553-01	8.8868-01
P/PO1	3.6346-01	3.6258-01	3.5421-01	3.5322-01	3.4741-01	3.8296-01	5.7638-01	6.7170-01	7.0538-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.2 Q-INF = 6.118 P-INF = 3.9370 RE = .3680 TO = 534.

P	8.8514+00	6.4287+00	2.3028+00	2.0324+00	1.9774+00	1.9708+00	1.9653+00	1.9261+00	5.2327+00
CP	8.0321-01	4.0724-01	-2.6710-01	-3.1129-01	-3.2028-01	-3.2137-01	-3.2225-01	-3.4502-01	2.1181-01
P/PO1	6.6607-01	4.8373-01	1.7327-01	1.5293-01	1.4874-01	1.4829-01	1.4788-01	1.3740-01	3.9376-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.145 P-INF = 3.9536 RE = .3696 TO = 534.

P	7.1772+00	8.5407+00	9.1989+00	8.8424+00	6.3769+00	2.3564+00	4.7465+00	4.6965+00	4.6944+00
CP	5.2459-01	7.4650-01	8.5361-01	7.9567-01	3.9434-01	-2.5738-01	1.2900-01	1.2086-01	1.2051-01
P/PO1	5.3775-01	6.3992-01	6.8923-01	6.6255-01	4.7779-01	1.7655-01	3.5563-01	3.5188-01	3.5172-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.137 P-INF = 3.9487 RE = .3691 TO = 534.

P	5.0215+00	7.3537+00	8.1529+00	8.8886+00	8.6049+00	6.6254+00	2.1940+00	1.9604+00	1.9759+00
CP	1.7483-01	5.5498-01	6.8511-01	8.0564-01	7.5878-01	4.3620-01	-2.8594-01	-3.2400-01	-3.2232-01
P/PO1	3.7673-01	5.5170-01	6.1166-01	6.6687-01	6.4557-01	4.9706-01	1.6460-01	1.4708-01	1.4785-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.2 Q-INF = 6.114 P-INF = 3.9344 RE = .3678 TO = 534.

P	1.9685+00	1.9385+00	5.0315+00	6.6551+00	7.6522+00	8.3199+00	8.2260+00	6.2522+00	2.2278+00
CP	-3.2153-01	-3.2643-01	1.7943-01	4.4497-01	6.0805-01	7.1724-01	7.0189-01	3.7907-01	-2.7911-01
P/PO1	1.4822-01	1.4596-01	3.7885-01	5.0110-01	5.7618-01	6.2645-01	6.1938-01	4.7076-01	1.6774-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.096 P-INF = 3.9228 RE = .3667 TO = 534.

P	4.8334+00	4.8031+00	4.8278+00	2.1859+00	1.8542+00	1.8667+00	1.8603+00	1.7833+00	4.8718+00
CP	1.4938-01	1.4440-01	1.4846-01	-2.8490-01	-3.3731-01	-3.3726-01	-3.3832-01	-3.5094-01	1.5568-01
P/PO1	3.6501-01	3.6272-01	3.6459-01	1.6508-01	1.4003-01	1.4097-01	1.4049-01	1.3467-01	3.6792-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.2 Q-INF = 6.104 P-INF = 3.9279 RE = .3672 TO = 534.

P	5.8051+00	6.6599+00	7.2607+00	7.2377+00	5.5627+00	2.4482+00	4.8454+00	4.7698+00	4.7617+00
CP	3.0752-01	4.4755-01	5.4597-01	5.5203-01	2.6780-01	-2.4242-01	1.5030-01	1.3791-01	1.3658-01
P/PO1	4.3782-01	5.0229-01	5.4759-01	5.5038-01	4.1953-01	1.8464-01	3.6544-01	3.5973-01	3.5912-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.120 P-INF = 3.9383 RE = .3682 TO = 534.

P	4.8961+00	6.0587+00	6.4915+00	7.0223+00	6.9608+00	5.4839+00	2.1199+00	1.7100+00	1.7443+00
CP	1.5649-01	3.4645-01	4.1717-01	5.0389-01	4.9384-01	2.5253-01	-2.9711-01	-3.6407-01	-3.5847-01
P/PO1	3.6829-01	4.5574-01	4.8830-01	5.2822-01	5.2360-01	4.1250-01	1.5946-01	1.2863-01	1.3121-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B528

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEV[illegible]
VON KARMAN GAS DYNA[illegible] FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.139 P-INF =3.9500 RE = .3693 TO = 534.

P	1.6639+00	1.6364+00	4.9389+00	5.7984+00	6.2539+00	6.6406+00	6.6209+00	5.2522+00	2.0442+00
CP	-3.7240-01	-3.7690-01	1.6110-01	3.0111-01	3.7533-01	4.3833-01	4.3512-01	2.1215-01	-3.1046-01
P/PO1	1.2479-01	1.2272-01	3.7041-01	4.3487-01	4.6904-01	4.9804-01	4.9656-01	3.9391-01	1.5331-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.2 Q-INF = 6.116 P-INF =3.9357 RE = .3679 TO = 534.

P	1.6595+00	4.8957+00	4.7969+00	4.8324+00	4.7495+00	4.9759+00	5.6612+00	5.9777+00	6.2047+00
CP	-3.7215-01	1.5695-01	1.4080-01	1.4660-01	1.3306-01	1.7006-01	2.8211-01	3.3386-01	3.7097-01
P/PO1	1.2491-01	3.6850-01	3.6106-01	3.6373-01	3.5750-01	3.7454-01	4.2612-01	4.4995-01	4.6703-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3708 TO = 534.

P	6.1076+00	4.6858+00	1.9509+00	1.6394+00	1.5992+00	1.5230+00	1.5363+00	1.4998+00	1.6892+00
CP	3.4727-01	1.1663-01	-3.2701-01	-3.7753-01	-3.8407-01	-3.9641-01	-3.9426-01	-4.0019-01	-3.6945-01
P/PO1	4.5612-01	3.4994-01	1.4569-01	1.2243-01	1.1943-01	1.1374-01	1.1473-01	1.1200-01	1.2615-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.7930+00	4.7766+00	5.4070+00	5.0086+00	5.9063+00	5.1000+00	6.9328+00	5.6930+00
CP	1.3402-01	1.3135-01	2.3363-01	1.6899-01	3.1461-01	1.8382-01	4.8113-01	2.8001-01
P/PO1	3.5794-01	3.5672-01	4.0380-01	3.7404-01	4.4108-01	3.8087-01	5.1774-01	4.2515-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.7695+00	6.3797+00	8.1445+00	7.0570+00	7.5891+00	7.1672+00	5.7422+00
CP	6.1686-01	3.9140-01	6.7769-01	5.0128-01	5.8758-01	5.1415-01	2.8799-01
P/PO1	5.8023-01	4.7644-01	6.0824-01	5.2702-01	5.6675-01	5.3525-01	4.2883-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	262.	301244	1.49	5	14.01	180.00	.00	.99	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.143 P-INF = 3.9526 RE = .3690 TO = 535.

P	4.9901+00	4.9945+00	4.9204+00	4.9490+00	4.8358+00	5.0371+00	5.8956+00	6.5419+00	7.1828+00
CP	1.6892-01	1.6962-01	1.5756-01	1.6223-01	1.4379-01	1.7656-01	3.1632-01	4.2155-01	5.2587-01
P/PO1	3.7401-01	3.7433-01	3.6878-01	3.7093-01	3.6244-01	3.7753-01	4.4187-01	4.9032-01	5.3834-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.134 P-INF = 3.9474 RE = .3686 TO = 535.

P	7.3322+00	5.6180+00	2.3398+00	2.0017+00	1.9713+00	1.9340+00	1.9715+00	1.9665+00	5.0004+00
CP	5.5177-01	2.7233-01	-2.6205-01	-3.1717-01	-3.2213-01	-3.2820-01	-3.2209-01	-3.2290-01	1.7165-01
P/PO1	5.5027-01	4.2162-01	1.7560-01	1.5023-01	1.4794-01	1.4515-01	1.4796-01	1.4758-01	3.7527-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.163 P-INF = 3.9655 RE = .3702 TO = 535.

P	5.8596+00	6.7833+00	7.4453+00	7.6036+00	5.7290+00	2.3686+00	4.9690+00	4.8797+00	4.8596+00
CP	3.0734-01	4.5723-01	5.6465-01	5.9035-01	2.8616-01	-2.5913-01	1.6263-01	1.4834-01	1.4598-01
P/PO1	4.3774-01	5.0674-01	5.5620-01	5.6803-01	4.2798-01	1.7695-01	3.7121-01	3.6454-01	3.6304-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.134 P-INF = 3.9474 RE = .3686 TO = 535.

P	4.9275+00	6.4903+00	7.1068+00	7.8637+00	7.8981+00	6.2132+00	2.2187+00	2.0826+00	2.1054+00
CP	1.5977-01	4.1454-01	5.1503-01	6.3942-01	6.4402-01	3.6936-01	-2.8179-01	-3.0[illegible]-01	-3.0[illegible]26-01
P/PO1	3.6980-01	4.8709-01	5.3335-01	5.9016-01	5.9274-01	4.6629-01	1.6651-01	1.5629-01	1.5801-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.2 Q-INF = 6.116 P-INF = 3.9357 RE = .3675 TO = 535.

P	2.0688+00	2.0496+00	4.9019+00	6.2573+00	7.2220+00	7.9840+00	8.0408+00	6.1760+00	2.2584+00
CP	-3.0524-01	-3.0836-01	1.5796-01	3.7957-01	5.3729-01	6.6188-01	6.7117-01	3.6627-01	-2.7423-01
P/PO1	1.5572-01	1.5428-01	3.6896-01	4.7099-01	5.4360-01	6.0096-01	6.0523-01	4.6487-01	1.6979-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.134 P-INF = 3.9474 RE = .3686 TO = 535.

P	4.9651+00	4.9327+00	4.8772+00	2.3272+00	2.1438+00	2.1666+00	2.1260+00	2.0704+00	4.8902+00
CP	1.6590-01	1.6063-01	1.5157-01	-2.6412-01	-2.9401-01	-2.9028-01	-2.9690-01	-3.0598-01	1.5369-01
P/PO1	3.7262-01	3.7019-01	3.6602-01	1.7465-01	1.6089-01	1.6260-01	1.5955-01	1.5538-01	3.6700-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.137 P-INF = 3.9461 RE = .3684 TO = 535.

P	6.1851+00	7.2303+00	7.9375+00	8.0167+00	6.0696+00	2.5461+00	4.9752+00	4.8675+00	4.8474+00
CP	3.6511-01	5.3555-01	6.5087-01	6.6378-01	3.4627-01	-2.2829-01	1.6781-01	1.5025-01	1.4797-01
P/PO1	4.6433-01	5.4280-01	5.9589-01	6.0184-01	4.5566-01	1.9114-01	3.7350-01	3.6541-01	3.6390-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.2 Q-INF = 6.116 P-INF = 3.9357 RE = .3675 TO = 535.

P	4.9149+00	6.5212+00	7.1376+00	7.8637+00	7.8981+00	6.1979+00	2.3053+00	2.0337+00	2.0381+00
CP	1.6010-01	4.2271-01	5.2350-01	6.4721-01	6.4783-01	3.6986-01	-2.6657-01	-3.1097-01	-3.1025-01
P/PO1	3.6995-01	4.9085-01	5.3725-01	5.9191-01	5.9449-01	4.6652-01	1.7352-01	1.5308-01	1.5341-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING [illegible]
V n KARMAN GAS [illegible]
40 - INCH CONTINUOUS [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.139 P-INF =3.9500 RE = .3688 TO = 535.

P	1.9685+00	1.9570+00	5.0068+00	5.9666+00	6.7764+00	7.4803+00	7.5932+00	6.0387+00	2.4420+00
CP	-3.2280-01	-3.2466-01	1.7217-01	3.2853-01	4.6044-01	5.7511-01	5.9351-01	3.4027-01	-2.4565-01
P/PO1	1.4763-01	1.4678-01	3.7550-01	4.4749-01	5.0822-01	5.6101-01	5.6948-01	4.5290-01	1.8315-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.120 P-INF =3.9383 RE = .3677 TO = 535.

P	1.9434+00	4.9759+00	4.9266+00	4.9490+00	4.8604+00	5.0738+00	5.8801+00	6.5115+00	7.1216+00
CP	-3.2594-01	1.6954-01	1.6147-01	1.6514-01	1.5066-01	1.8553-01	3.1727-01	4.2042-01	5.2012-01
P/PO1	1.4618-01	3.7429-01	3.7058-01	3.7227-01	3.6561-01	3.8166-01	4.4231-01	4.8980-01	5.3569-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3682 TO = 535.

P	7.2237+00	5.6242+00	2.3151+00	1.8237+00	1.7741+00	1.7137+00	1.7367+00	1.6367+00	1.7076+00
CP	5.3524-01	2.7424-01	-2.6571-01	-3.4590-01	-3.5398-01	-3.6394-01	-3.6009-01	-3.7640-01	-3.6484-01
P/PO1	5.4266-01	4.2250-01	1.7392-01	1.3700-01	1.3328-01	1.2874-01	1.3046-01	1.2296-01	1.2828-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.8469+00	4.8000+00	5.0719+00	5.1070+00	5.3836+00	5.4984+00	6.3563+00	6.3680+00
CP	1.4741-01	1.3976-01	1.8412-01	1.8986-01	2.3499-01	2.5373-01	3.9370-01	3.9561-01
P/PO1	3.6411-01	3.6059-01	3.8101-01	3.8365-01	4.0443-01	4.1305-01	4.7749-01	4.7837-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.2609+00	7.1555+00	7.9008+00	7.8984+00	7.7648+00	7.7813+00	5.9250+00
CP	5.4132-01	5.2411-01	6.4573-01	6.4534-01	6.2354-01	6.2622-01	3.2333-01
P/PO1	5.4546-01	5.3753-01	5.9352-01	5.9335-01	5.8331-01	5.8454-01	4.4510-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVE[illegible]
V[illegible] GAS DYNAM[illegible]
40 - [illegible] CONTINUOUS [illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	263.	301244	1.49	5	14.67	180.00	.00	.33	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3684 TO = 535.

P	4.9964+00	5.0068+00	4.9204+00	4.9368+00	4.8419+00	5.0493+00	5.7567+00	6.3132+00	6.9077+00
CP	1.7127-01	1.7297-01	1.5888-01	1.6155-01	1.4609-01	1.7990-01	2.9525-01	3.8600-01	4.8294-01
P/PO1	3.7509-01	3.7587-01	3.6939-01	3.7062-01	3.6350-01	3.7907-01	4.3217-01	4.7395-01	5.1858-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.2 Q-INF = 6.110 P-INF =3.9318 RE = .3671 TO = 535.

P	7.0222+00	5.4204+00	2.3028+00	2.0201+00	1.9898+00	1.9463+00	1.9653+00	1.9604+00	4.9698+00
CP	5.0576-01	2.4362-01	-2.6661-01	-3.1286-01	-3.1783-01	-3.2495-01	-3.2183-01	-3.2263-01	1.6987-01
P/PO1	5.2908-01	4.0840-01	1.7350-01	1.5221-01	1.4992-01	1.4664-01	1.4808-01	1.4771-01	3.7445-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3704 TO = 535.

P	5.8596+00	6.7678+00	7.3376+00	7.4812+00	5.6428+00	2.3319+00	4.9566+00	4.8614+00	4.8596+00
CP	3.0703-01	4.5437-01	5.4679-01	5.7009-01	2.7187-01	-2.6521-01	1.6057-01	1.4511-01	1.4482-01
P/PO1	4.3759-01	5.0543-01	5.4797-01	5.5870-01	4.2140-01	1.7415-01	3.7016-01	3.6305-01	3.6292-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3684 TO = 535.

P	4.9337+00	6.4287+00	6.9838+00	7.6495+00	7.6830+00	6.0758+00	2.1940+00	2.1009+00	2.1299+00
CP	1.6105-01	4.0483-01	4.9535-01	6.0391-01	6.0936-01	3.4729-01	-2.8570-01	-3.0089-01	-2.9016-01
P/PO1	3.7039-01	4.8262-01	5.2429-01	5.7427-01	5.7678-01	4.5613-01	1.6471-01	1.5772-01	1.5990-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.918[illegible]+00

VALVE POS 6 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3689 TO = 535.

P	2.0939+00	2.0743+00	4.9142+00	6.2420+00	7.1605+00	7.8924+00	7.9482+00	6.1302+00	2.2462+00
CP	-3.0248-01	-3.0566-01	1.5682-01	3.7306-01	5.2264-01	6.4183-01	6.5091-01	3.5485-01	-2.7767-01
P/PO1	1.5699-01	1.5552-01	3.6844-01	4.6799-01	5.3686-01	5.9173-01	5.9591-01	4.5961-01	1.6841-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.102 P-INF =3.9266 RE = .3666 TO = 535.

P	4.9713+00	4.9327+00	4.8772+00	2.3087+00	2.1006+00	2.1238+00	2.0951+00	2.0215+00	4.8841+00
CP	1.7120-01	1.6487-01	1.5577-01	-2.6513-01	-2.9923-01	-2.9544-01	-3.0013-01	-3.1220-01	1.5690-01
P/PO1	3.7506-01	3.7215-01	3.6795-01	1.7418-01	1.5848-01	1.6023-01	1.5807-01	1.5251-01	3.6848-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.2 Q-INF = 6.092 P-INF =3.9202 RE = .3660 TO = 535.

P	6.2316+00	7.3074+00	8.0606+00	8.1085+00	6.1464+00	2.5338+00	4.9690+00	4.8614+00	4.8351+00
CP	3.7941-01	5.5600-01	6.7962-01	6.8749-01	3.6542-01	-2.2756-01	1.7216-01	1.5449-01	1.5018-01
P/PO1	4.7091-01	5.5221-01	6.0913-01	6.1275-01	4.6447-01	1.9148-01	3.7550-01	3.6737-01	3.6538-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.2 Q-INF = 6.118 P-INF =3.9370 RE = .3676 TO = 535.

P	4.9149+00	6.5520+00	7.1838+00	7.9555+00	7.9903+00	6.2437+00	2.3114+00	1.9482+00	1.9585+00
CP	1.5983-01	4.2740-01	5.3065-01	6.5679-01	6.6248-01	3.7702-01	-2.6568-01	-3.2505-01	-3.2337-01
P/PO1	3.6983-01	4.9301-01	5.4055-01	5.9862-01	6.0123-01	4.6981-01	1.7393-01	1.4659-01	1.4737-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B532

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DAT

ARNOLD ENGINEERING [illegible]
[illegible] GAS [illegible]
40 - [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.2 Q-INF = 6.106 P-INF =3.9292 RE = .3669 TO = 535.

P	1.9058+00	1.8583+00	5.0500+00	6.0278+00	6.8686+00	7.5871+00	7.7013+00	6.0997+00	2.4971+00
CP	-3.3137-01	-3.3915-01	1.8355-01	3.4368-01	4.8136-01	5.9904-01	6.1773-01	3.5545-01	-2.3453-01
P/PO1	1.4369-01	1.4010-01	3.8074-01	4.5447-01	5.1785-01	5.7203-01	5.8063-01	4.5988-01	1.8827-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.130 P-INF =3.9448 RE = .3683 TO = 535.

P	1.8682+00	5.0068+00	4.9327+00	4.9552+00	4.8296+00	5.0677+00	6.0190+00	6.8017+00	7.5475+00
CP	-3.3874-01	1.7324-01	1.6115-01	1.6482-01	1.4434-01	1.8317-01	3.3835-01	4.6594-01	5.8801-01
P/PO1	1.4029-01	3.7600-01	3.7043-01	3.7212-01	3.6269-01	3.8057-01	4.5201-01	5.1075-01	5.6695-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.2 Q-INF = 6.104 P-INF =3.9279 RE = .3667 TO = 535.

P	7.5802+00	5.8429+00	2.3275+00	1.7684+00	1.7125+00	1.6692+00	1.7243+00	1.6184+00	1.6692+00
CP	5.9832-01	3.1370-01	-2.6219-01	-3.5377-01	-3.6292-01	-3.6674-01	-3.6100-01	-3.7834-01	-3.6674-01
P/PO1	5.7170-01	4.4066-01	1.7554-01	1.3337-01	1.2916-01	1.2740-01	1.3005-01	1.2206-01	1.2740-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.8422+00	4.7883+00	5.0789+00	5.0930+00	5.4281+00	5.4938+00	6.3492+00	6.4477+00
CP	1.4977-01	1.4094-01	1.8855-01	1.9085-01	2.4576-01	2.5651-01	3.9665-01	4.1278-01
P/PO1	3.6519-01	3.6113-01	3.8305-01	3.8411-01	4.0939-01	4.1433-01	4.7885-01	4.8628-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.2164+00	7.2328+00	7.8469+00	7.9617+00	7.7438+00	7.7930+00	5.9250+00
CP	5.3871-01	5.4140-01	6.4200-01	6.6081-01	6.2510-01	6.3317-01	3.2716-01
P/PO1	5.4426-01	5.4549-01	5.9181-01	6.0047-01	5.8403-01	5.8774-01	4.4686-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DAT

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	264.	301244	1.49	5	14.67	199.89	-4.94	1.17	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.120 P-INF =3.9383 RE = .3677 TO = 535.

P	4.8460+00	4.8339+00	4.7660+00	4.7648+00	4.6263+00	4.8412+00	6.1425+00	6.9689+00	7.6412+00
CP	1.4830-01	1.4634-01	1.3524-01	1.3505-01	1.1242-01	1.4753-01	3.6014-01	4.9517-01	6.0501-01
P/PO1	3.6452-01	3.6361-01	3.5851-01	3.5842-01	3.4800-01	3.6416-01	4.6204-01	5.2421-01	5.7478-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.2 Q-INF = 6.104 P-INF =3.9279 RE = .3667 TO = 535.

P	7.6267+00	5.7353+00	2.2842+00	1.8728+00	1.8234+00	1.7733+00	1.8294+00	1.7650+00	5.0922+00
CP	6.0593-01	2.9608-01	-2.6927-01	-3.3667-01	-3.4476-01	-3.4970-01	-3.4378-01	-3.5433-01	1.9072-01
P/PO1	5.7520-01	4.3255-01	1.7228-01	1.4124-01	1.3752-01	1.3525-01	1.3797-01	1.3311-01	3.8605-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3705 TO = 535.

P	5.8615+00	6.6445+00	7.1376+00	7.1447+00	5.3224+00	2.2156+00	4.8021+00	4.8064+00	4.8290+00
CP	3.0704-01	4.3401-01	5.1397-01	5.1512-01	2.1962-01	-2.8419-01	1.3525-01	1.3594-01	1.3961-01
P/PO1	4.3760-01	4.9605-01	5.3286-01	5.3339-01	3.9735-01	1.6541-01	3.5851-01	3.5883-01	3.6051-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3693 TO = 535.

P	4.9839+00	5.9045+00	6.2454+00	6.6704+00	6.6535+00	5.2146+00	1.9283+00	1.7345+00	1.7749+00
CP	1.6737-01	3.1715-01	3.7261-01	4.4175-01	4.3900-01	2.0490-01	-3.2976-01	-3.6129-01	-3.5471-01
P/PO1	3.7329-01	4.4225-01	4.6778-01	4.9962-01	4.9835-01	3.9058-01	1.4443-01	1.2991-01	1.3294-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3681 TO = 535.

P	1.6994+00	1.6496+00	5.0130+00	5.6490+00	4.8481+00	6.2590+00	6.1579+00	4.7270+00	1.8851+00
CP	-3.6608-01	-3.7421-01	1.7478-01	2.7860-01	1.4787-01	3.7817-01	3.6167-01	1.2810-01	-3.3577-01
P/PO1	1.2771-01	1.2396-01	3.7671-01	4.2451-01	3.6432-01	4.7034-01	4.6275-01	3.5522-01	1.4166-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.122 P-INF =3.9396 RE = .3678 TO = 535.

P	4.8146+00	4.8154+00	4.8278+00	1.8789+00	1.6747+00	1.6892+00	1.7243+00	1.6184+00	5.0126+00
CP	1.4292-01	1.4305-01	1.4507-01	-3.3658-01	-3.6994-01	-3.6755-01	-3.6183-01	-3.7713-01	1.7526-01
P/PO1	3.6204-01	3.6210-01	3.6303-01	1.4129-01	1.2593-01	1.2702-01	1.2966-01	1.2170-01	3.7693-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3698 TO = 535.

P	5.6421+00	6.0587+00	6.2608+00	6.2767+00	3.8440+00	2.0932+00	4.8083+00	4.8003+00	4.8168+00
CP	2.7326-01	3.4094-01	3.7378-01	3.6924-01	-1.8903-02	-3.0337-01	1.3778-01	1.3648-01	1.3915-01
P/PO1	4.2204-01	4.5320-01	4.6832-01	4.6577-01	2.8754-01	1.5658-01	3.5967-01	3.5907-01	3.6031-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.2 Q-INF = 6.104 P-INF =3.9279 RE = .3667 TO = 535.

P	4.9651+00	5.9045+00	6.1993+00	6.5633+00	5.2485+00	5.1044+00	1.9344+00	1.6001+00	1.6280+00
CP	1.6990-01	3.2380-01	3.7209-01	4.3172-01	2.1634-01	1.9273-01	-3.2657-01	-3.8134-01	-3.7677-01
P/PO1	3.7446-01	4.4531-01	4.6754-01	4.9500-01	3.9584-01	3.8497-01	1.4589-01	1.2068-01	1.2278-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B534

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.2 Q-INF = 6.094 P-INF = 3.9215 RE = .3661 TO = 535.

P	1.5441+00	1.5169+00	5.0994+00	5.8595+00	5.3409+00	7.0986+00	7.0839+00	5.5576+00	2.2401+00
CP	-3.9009-01	-3.9456-01	1.9329-01	3.1802-01	2.3292-01	5.2134-01	5.1893-01	2.6647-01	-2.7590-01
P/PO1	1.1665-01	1.1460-01	3.8523-01	4.4265-01	4.0347-01	5.3626-01	5.3515-01	4.1984-01	1.6922-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.128 P-INF = 3.9435 RE = .3682 TO = 535.

P	1.5575+00	4.8772+00	4.7660+00	4.7771+00	3.7885+00	4.8718+00	6.1271+00	6.9384+00	7.6107+00
CP	-3.8934-01	1.5235-01	1.3422-01	1.3603-01	-2.5282-02	1.5148-01	3.5633-01	4.8970-01	5.9839-01
P/PO1	1.1700-01	3.6636-01	3.5803-01	3.5887-01	2.8460-01	3.6598-01	4.6028-01	5.2123-01	5.7173-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.120 P-INF = 3.9383 RE = .3677 TO = 535.

P	7.5647+00	5.7353+00	2.2472+00	1.6824+00	1.6480+00	1.5540+00	1.5629+00	1.5175+00	1.5729+00
CP	5.9252-01	2.9361-01	-2.7631-01	-3.6858-01	-3.7421-01	-3.8956-01	-3.8811-01	-3.9553-01	-3.8647-01
P/PO1	5.6902-01	4.3141-01	1.6904-01	1.2655-01	1.2397-01	1.1690-01	1.1756-01	1.1415-01	1.1832-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.8563+00	4.8773+00	5.1938+00	5.2148+00	5.3766+00	5.3672+00	5.7914+00	5.7000+00
CP	1.4998-01	1.5343-01	2.0513-01	2.0857-01	2.3499-01	2.3346-01	3.0278-01	2.8784-01
P/PO1	3.6529-01	3.6688-01	3.9068-01	3.9226-01	4.0443-01	4.0372-01	4.3563-01	4.2876-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.0727+00	5.9438+00	6.2180+00	6.1922+00	5.9578+00	5.9602+00	4.5141+00
CP	3.4873-01	3.2767-01	3.7247-01	3.6826-01	3.2996-01	3.3035-01	9.4073-02
P/PO1	4.5679-01	4.4709-01	4.6772-01	4.6578-01	4.4815-01	4.4833-01	3.3955-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
40 - 1000 FT. TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	265.	301244	1.49	5	13.43	222.40	-9.01	5.00	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3679 TO = 535.

P	4.4510+00	4.3648+00	4.0499+00	3.9973+00	4.0165+00	4.9881+00	8.9205+00	9.5603+00	9.1236+00
CP	8.3292-02	6.9208-02	1.7799-02	9.2114-03	1.2341-02	1.7099-01	8.1308-01	9.0775-01	8.4624-01
P/PO1	3.3459-01	3.2810-01	3.0444-01	3.0048-01	3.0192-01	3.7496-01	6.7057-01	7.1415-01	6.8584-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3684 TO = 535.

P	8.4483+00	6.1049+00	1.9817+00	1.7868+00	1.7433+00	1.7260+00	1.7614+00	1.6734+00	5.4472+00
CP	7.3416-01	3.5204-01	-3.2032-01	-3.5210-01	-3.5919-01	-3.6203-01	-3.5625-01	-3.7060-01	2.4478-01
P/PO1	6.3474-01	4.5831-01	1.4877-01	1.3414-01	1.3088-01	1.2957-01	1.3223-01	1.2563-01	4.0893-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.4260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3689 TO = 535.

P	6.7587+00	8.2170+00	8.5528+00	8.1544+00	5.8698+00	1.8973+00	4.5178+00	4.5316+00	4.5964+00
CP	4.5719-01	6.9469-01	7.4938-01	6.8449-01	3.1244-01	-3.3449-01	9.2268-02	9.4506-02	1.0507-01
P/PO1	5.0672-01	6.1606-01	6.4124-01	6.1137-01	4.4008-01	1.4225-01	3.3872-01	3.3975-01	3.4461-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3701 TO = 535.

P	4.7457+00	5.8737+00	6.4915+00	7.2365+00	7.4371+00	5.8010+00	1.7799+00	1.6795+00	1.7076+00
CP	1.2684-01	3.0995-01	4.1023-01	5.3115-01	5.6372-01	2.9815-01	-3.5455-01	-3.7086-01	-3.6624-01
P/PO1	3.5464-01	4.3894-01	4.8511-01	5.4077-01	5.5577-01	4.3351-01	1.3301-01	1.2551-01	1.2761-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.2 Q-INF = 6.088 P-INF =3.9176 RE = .3658 TO = 535.

P	1.6506+00	1.6142+00	4.9821+00	5.3052+00	5.6982+00	6.0300+00	6.0653+00	4.6598+00	1.7504+00
CP	-3.7235-01	-3.7833-01	1.7485-01	2.2792-01	2.9248-01	3.4697-01	3.5278-01	1.2192-01	-3.5596-01
P/PO1	1.2482-01	1.2207-01	3.7674-01	4.0117-01	4.3089-01	4.5598-01	4.5865-01	3.5237-01	1.3237-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.159 P-INF =3.9629 RE = .3700 TO = 535.

P	4.4259+00	4.5685+00	4.6734+00	1.5009+00	1.6480+00	1.6586+00	1.6934+00	1.6001+00	4.9024+00
CP	7.5181-02	9.8328-02	1.1537-01	-3.9977-01	-3.7588-01	-3.7415-01	-3.6851-01	-3.8366-01	1.5255-01
P/PO1	3.3085-01	3.4151-01	3.4936-01	1.1220-01	1.2320-01	1.2399-01	1.2659-01	1.1961-01	3.6648-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.134 P-INF =3.9474 RE = .3686 TO = 535.

P	5.6547+00	5.9354+00	5.9224+00	5.6736+00	4.2937+00	1.7382+00	4.4869+00	4.5743+00	4.6944+00
CP	2.7831-01	3.2407-01	3.2195-01	2.8140-01	5.6454-02	-3.6012-01	8.7955-02	1.0220-01	1.2177-01
P/PO1	4.2437-01	4.4544-01	4.4446-01	4.2579-01	3.2223-01	1.3045-01	3.3674-01	3.4329-01	3.5230-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3679 TO = 535.

P	4.8460+00	5.6242+00	5.6859+00	5.7350+00	5.4272+00	4.1129+00	1.5585+00	1.5879+00	1.6158+00
CP	1.4778-01	2.7485-01	2.8493-01	2.9294-01	2.4268-01	2.8088-02	-3.8901-01	-3.8420-01	-3.7964-01
P/PO1	3.6428-01	4.2278-01	4.2742-01	4.3111-01	4.0797-01	3.0917-01	1.1715-01	1.1936-01	1.2146-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B536

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON GAS DYNAMICS FACILITY
CONTINUOUS [illegible]

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.1 Q-INF = 6.068 P-INF =3.9046 RE = .3646 TO = 535.

P	1.5752+00	1.5567+00	4.9327+00	5.3543+00	5.8544+00	6.1369+00	6.0762+00	4.7270+00	1.8422+00
CP	-3.8388-01	-3.8692-01	1.6943-01	2.3890-01	3.2132-01	3.6787-01	3.6117-01	1.3553-01	-3.3987-01
P/PO1	1.1951-01	1.1811-01	3.7424-01	4.0623-01	4.4417-01	4.6560-01	4.6252-01	3.5864-01	1.3977-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.2 Q-INF = 6.112 P-INF =3.9331 RE = .3672 TO = 535.

P	1.5841+00	4.5561+00	4.4327+00	4.3719+00	4.2937+00	4.5169+00	5.6859+00	6.4352+00	7.0758+00
CP	-3.8431-01	1.0193-01	8.1727-02	7.1780-02	5.8990-02	9.5502-02	2.8676-01	4.0935-01	5.1415-01
P/PO1	1.1931-01	3.4317-01	3.3387-01	3.2929-01	3.2340-01	3.4021-01	4.2826-01	4.8470-01	5.3295-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3679 TO = 535.

P	7.2547+00	5.4822+00	1.8212+00	1.6763+00	1.6347+00	1.5673+00	1.6116+00	1.5879+00	1.6097+00
CP	5.4108-01	2.5166-01	-3.4610-01	-3.6977-01	-3.7656-01	-3.8756-01	-3.8033-01	-3.8420-01	-3.8064-01
P/PO1	5.4535-01	4.1210-01	1.3690-01	1.2601-01	1.2288-01	1.1782-01	1.2115-01	1.1936-01	1.2100-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.7250+00	4.7625+00	5.0109+00	5.1258+00	5.2102+00	5.3156+00	5.9555+00	5.6203+00
CP	1.2803-01	1.3415-01	1.7472-01	1.9347-01	2.0725-01	2.2447-01	3.2894-01	2.7422-01
P/PO1	3.5518-01	3.5800-01	3.7668-01	3.8531-01	3.9165-01	3.9958-01	4.4768-01	4.2249-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.2672+00	5.6648+00	6.2086+00	5.7281+00	5.6086+00	5.4117+00	4.0078+00
CP	3.7984-01	2.8149-01	3.7027-01	2.9182-01	2.7230-01	2.4016-01	1.0927-02
P/PO1	4.7111-01	4.2583-01	4.6671-01	4.3059-01	4.2161-01	4.0681-01	3.0127-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	266.	301244	1.49	5	11.17	206.76	-5.00	5.00	180.0

VALVE POS 2 PO = 14.2 Q-INF = 6.084 P-INF =3.9150 RE = .3655 TO = 535.

P	4.7268+00	4.7599+00	4.5932+00	4.5438+00	4.4292+00	4.9453+00	7.6241+00	8.9666+00	9.3834+00
CP	1.3344-01	1.3887-01	1.1147-01	1.0335-01	8.4519-02	1.6934-01	6.0964-01	8.3029-01	8.9880-01
P/PO1	3.5767-01	3.6017-01	3.4756-01	3.4382-01	3.3515-01	3.7420-01	5.7691-01	6.7849-01	7.1003-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.2 Q-INF = 6.118 P-INF =3.9370 RE = .3676 TO = 535.

P	8.7893+00	6.3516+00	2.2163+00	1.8851+00	1.8358+00	1.8178+00	1.8356+00	1.7345+00	5.2880+00
CP	7.9308-01	3.9465-01	-2.8123-01	-3.3537-01	-3.4343-01	-3.4637-01	-3.4346-01	-3.5999-01	2.2081-01
P/PO1	6.6136-01	4.7793-01	1.6677-01	1.4184-01	1.3813-01	1.3678-01	1.3817-01	1.3051-01	3.9790-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3689 TO = 535.

P	6.6966+00	8.0012+00	8.8143+00	8.4910+00	6.1157+00	2.2095+00	4.7465+00	4.7331+00	4.7311+00
CP	4.4709-01	6.5954-01	7.9196-01	7.3931-01	3.5248-01	-2.8365-01	1.2951-01	1.2733-01	1.2700-01
P/PO1	5.0208-01	5.9988-01	6.6085-01	6.3660-01	4.5852-01	1.6565-01	3.5587-01	3.5486-01	3.5471-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.2 Q-INF = 6.090 P-INF =3.9189 RE = .3659 TO = 535.

P	4.8397+00	6.3054+00	6.8915+00	7.6169+00	7.6830+00	5.9842+00	2.0766+00	1.7283+00	1.7627+00
CP	1.5120-01	3.9186-01	4.8810-01	6.0755-01	6.1806-01	3.3913-01	-3.0250-01	-3.5968-01	-3.5404-01
P/PO1	3.6585-01	4.7665-01	5.2095-01	5.7594-01	5.8079-01	4.5237-01	1.5698-01	1.3065-01	1.3325-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.2 Q-INF = 6.118 P-INF =3.9370 RE = .3676 TO = 535.

P	1.6950+00	1.6540+00	5.0315+00	5.7831+00	6.2386+00	6.7017+00	6.7135+00	5.1973+00	2.0320+00
CP	-3.6644-01	-3.7313-01	1.7889-01	3.0172-01	3.7617-01	4.5187-01	4.5380-01	2.0598-01	-3.1136-01
P/PO1	1.2754-01	1.2446-01	3.7860-01	4.3515-01	4.6943-01	5.0427-01	5.0516-01	3.9107-01	1.5295-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.116 P-INF =3.9357 RE = .3675 TO = 535.

P	4.7394+00	4.7722+00	4.7537+00	1.8482+00	1.2749+00	1.6892+00	1.7243+00	1.6062+00	4.9208+00
CP	1.3140-01	1.3676-01	1.3374-01	-3.4130-01	-4.3503-01	-3.6729-01	-3.6155-01	-3.8066-01	1.6106-01
P/PO1	3.5673-01	3.5921-01	3.5781-01	1.3912-01	9.5961-02	1.2715-01	1.2979-01	1.2090-01	3.7039-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3696 TO = 535.

P	5.5355+00	5.8583+00	5.9685+00	5.8289+00	4.3861+00	1.9524+00	4.7341+00	4.7270+00	4.7433+00
CP	2.5624-01	3.0869-01	3.2661-01	3.0392-01	6.9411-02	-3.2614-01	1.2598-01	1.2482-01	1.2747-01
P/PO1	4.1421-01	4.3836-01	4.4661-01	4.3616-01	3.2820-01	1.4609-01	3.5424-01	3.5371-01	3.5493-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3698 TO = 535.

P	4.9400+00	5.7106+00	5.8455+00	6.0431+00	5.8544+00	4.5658+00	1.8047+00	1.5879+00	1.6280+00
CP	1.5918-01	2.8438-01	3.0629-01	3.3841-01	3.0775-01	9.8381-02	-3.5025-01	-3.8547-01	-3.7895-01
P/PO1	3.6952-01	4.2717-01	4.3725-01	4.5204-01	4.3793-01	3.4154-01	1.3499-01	1.1878-01	1.2178-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
NOT CONSIDERED SECRET NOFORN

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3693 TO = 535.

P	1.5663+00	1.5302+00	5.0130+00	5.5201+00	5.8391+00	5.9995+00	5.8493+00	4.4949+00	1.8116+00
CP	-3.8864-01	-3.9452-01	1.7210-01	2.5461-01	3.0650-01	3.3260-01	3.0816-01	8.7820-02	-3.4873-01
P/PO1	1.1732-01	1.1461-01	3.7548-01	4.1346-01	4.3735-01	4.4936-01	4.3811-01	3.3667-01	1.3569-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.2 Q-INF = 6.114 P-INF =3.9344 RE = .3673 TO = 535.

P	1.5663+00	4.7907+00	4.6796+00	4.6973+00	4.6633+00	4.8535+00	5.7168+00	6.2065+00	6.5409+00
CP	-3.8730-01	1.4005-01	1.2188-01	1.2477-01	1.1921-01	1.5031-01	2.9151-01	3.7159-01	4.2629-01
P/PO1	1.1794-01	3.6072-01	3.5235-01	3.5368-01	3.5112-01	3.6544-01	4.3045-01	4.6732-01	4.9250-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3681 TO = 535.

P	6.4951+00	4.9512+00	1.9879+00	1.6456+00	1.6125+00	1.5452+00	1.5494+00	1.5264+00	1.6035+00
CP	4.1671-01	1.6471-01	-3.1899-01	-3.7487-01	-3.8027-01	-3.9176-01	-3.8403-01	-3.9432-01	-3.8173-01
P/PO1	4.8809-01	3.7207-01	1.4938-01	1.2366-01	1.2117-01	1.1611-01	1.1944-01	1.1470-01	1.2050-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.7906+00	4.7953+00	5.2359+00	5.0930+00	5.6039+00	5.1563+00	6.1711+00	5.4680+00
CP	1.3849-01	1.3925-01	2.1117-01	1.8784-01	2.7124-01	1.9817-01	3.6382-01	2.4905-01
P/PO1	3.6000-01	3.6035-01	3.9346-01	3.8272-01	4.2111-01	3.8747-01	4.6374-01	4.1090-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.5039+00	5.7305+00	6.6516+00	6.0258+00	6.1734+00	5.9344+00	4.6313+00
CP	4.1814-01	2.9190-01	4.4224-01	3.4010-01	3.6420-01	3.2518-01	1.1247-01
P/PO1	4.8875-01	4.3063-01	4.9984-01	4.5282-01	4.6391-01	4.4595-01	3.4802-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING [illegible] CENTER
VON KARMAN GAS DYNAMICS FACILITY
[illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	267.	301244	1.49	5	10.24	241.23	-8.96	10.03	180.0

VALVE POS 2 PO = 14.2 Q-INF = 6.088 P-INF = 3.9176 RE = .3653 TO = 535.

P	4.2504+00	3.9079+00	3.5807+00	4.1447+00	4.6695+00	6.8086+00	1.0387+01	9.8053+00	9.3987+00
CP	5.4667-02	-1.5879-03	-5.5332-02	3.7302-02	1.2350-01	4.7485-01	1.0626+00	9.6707-01	9.[illegible]29-01
P/PO1	3.2141-01	2.9551-01	2.7077-01	3.1342-01	3.5310-01	5.1486-01	7.8543-01	7.4146-01	7.1[illegible]72-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.36[illegible]0-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.147 P-INF = 3.9551 RE = .3693 TO = 535.

P	8.8358+00	6.4287+00	2.0867+00	1.8298+00	1.8049+00	1.7810+00	1.8294+00	1.7467+00	6.9535+00
CP	7.9405-01	4.0243-01	-3.0398-01	-3.4578-01	-3.4982-01	-3.5371-01	-3.4585-01	-3.5430-01	4.8741-01
P/PO1	6.6181-01	4.8151-01	1.5629-01	1.3705-01	1.3519-01	1.3340-01	1.3702-01	1.3083-01	5.2[illegible]82-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.161 P-INF = 3.9642 RE = .3701 TO = 535.

P	9.2854+00	9.1728+00	8.7836+00	8.3227+00	5.9620+00	1.9157+00	3.7947+00	3.7315+00	4.0584+00
CP	8.6374-01	8.4546-01	7.8228-01	7.0747-01	3.2428-01	-3.3252-01	-2.7510-02	-3.7770-02	2.0163-02
P/PO1	6.9389-01	6.8548-01	6.5639-01	6.2195-01	4.4553-01	1.4316-01	2.8358-01	2.7885-01	3.0553-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5390+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.2 Q-INF = 6.112 P-INF = 3.9331 RE = .3672 TO = 535.

P	5.0654+00	7.7391+00	8.1221+00	8.0779+00	7.6983+00	5.9232+00	1.7358+00	1.7406+00	1.7749+00
CP	1.8524-01	6.2267-01	6.8533-01	6.7810-01	6.1600-01	3.2558-01	-3.6440-01	-3.5871-01	-3.53[illegible]-01
P/PO1	3.8152-01	5.8291-01	6.1176-01	6.0843-01	5.7984-01	4.4613-01	1.2848-01	1.3110-01	1.3364-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.918[illegible]+00

VALVE POS 6 PO = 14.3 Q-INF = 6.141 P-INF = 3.9513 RE = .3684 TO = 535.

P	1.8055+00	1.7657+00	4.8710+00	5.8136+00	6.7764+00	7.3429+00	7.2383+00	5.4843+00	1.6341+00
CP	-3.4945-01	-3.5593-01	1.4978-01	3.0330-01	4.6009-01	5.5233-01	5.3530-01	2.4966-01	-3.7735-01
P/PO1	1.3536-01	1.3238-01	3.6520-01	4.3587-01	5.0805-01	5.5053-01	5.4268-01	4.1118-01	1.2252-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.128 P-INF = 3.9435 RE = .3677 TO = 535.

P	4.0749+00	4.2536+00	4.3648+00	1.6456+00	1.7187+00	1.7198+00	1.7440+00	1.6367+00	4.6637+00
CP	2.1438-02	5.0608-02	6.8740-02	-3.7496-01	-3.6302-01	-3.6284-01	-3.5808-01	-3.7640-01	1.1753-01
P/PO1	3.0611-01	3.1954-01	3.2789-01	1.2362-01	1.2911-01	1.2920-01	1.3139-01	1.2296-01	3.5035-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.153 P-INF = 3.9590 RE = .3692 TO = 535.

P	4.8710+00	4.9883+00	5.0500+00	4.9368+00	3.7331+00	1.7382+00	4.3201+00	4.4339+00	4.5781+00
CP	1.4823-01	1.6729-01	1.7732-01	1.5891-01	-3.6720-02	-3.6096-01	5.8679-02	7.7175-02	1.0061-01
P/PO1	3.6448-01	3.7326-01	3.7788-01	3.6940-01	2.7934-01	1.3006-01	3.2326-01	3.3177-01	3.4256-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.167 P-INF = 3.9681 RE = .3700 TO = 535.

P	4.6704+00	5.6118+00	5.8455+00	5.9666+00	5.6921+00	4.4557+00	1.5407+00	1.6245+00	1.6709+00
CP	1.1389-01	2.6655-01	3.0443-01	3.2409-01	2.7956-01	7.9063-02	-3.9362-01	-3.8004-01	-3.7252-01
P/PO1	3.4868-01	4.1896-01	4.3640-01	4.4545-01	4.2495-01	3.3264-01	1.1503-01	1.2128-01	1.2474-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B540

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
CONTRACTOR'S NO TITLE

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3693 TO = 535.

P	1.5663+00	1.5302+00	5.0130+00	5.5201+00	5.8391+00	5.9995+00	5.8493+00	4.4949+00	1.8116+00
CP	-3.8864-01	-3.9452-01	1.7210-01	2.5461-01	3.0650-01	3.3260-01	3.0816-01	8.7820-02	-3.4873-01
P/PO1	1.1732-01	1.1461-01	3.7548-01	4.1346-01	4.3735-01	4.4936-01	4.3811-01	3.3667-01	1.3569-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.2 Q-INF = 6.114 P-INF =3.9344 RE = .3673 TO = 535.

P	1.5663+00	4.7907+00	4.6796+00	4.6973+00	4.6633+00	4.8535+00	5.7168+00	6.2065+00	6.5409+00
CP	-3.8730-01	1.4005-01	1.2188-01	1.2477-01	1.1921-01	1.5031-01	2.9151-01	3.7159-01	4.2629-01
P/PO1	1.1794-01	3.6072-01	3.5235-01	3.5368-01	3.5112-01	3.6544-01	4.3045-01	4.6732-01	4.9250-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3681 TO = 535.

P	6.4951+00	4.9512+00	1.9879+00	1.6456+00	1.6125+00	1.5452+00	1.5494+00	1.5264+00	1.6035+00
CP	4.1671-01	1.6471-01	-3.1899-01	-3.7487-01	-3.8027-01	-3.9126-01	-3.8403-01	-3.9432-01	-3.8173-01
P/PO1	4.8809-01	3.7207-01	1.4938-01	1.2366-01	1.2117-01	1.1611-01	1.1944-01	1.1470-01	1.2050-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.7906+00	4.7953+00	5.2359+00	5.0930+00	5.6039+00	5.1563+00	6.1711+00	5.4680+00
CP	1.3849-01	1.3925-01	2.1117-01	1.8784-01	2.7124-01	1.9817-01	3.6382-01	2.4905-01
P/PO1	3.6000-01	3.6035-01	3.9346-01	3.8272-01	4.2111-01	3.8747-01	4.6374-01	4.1090-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.5039+00	5.7305+00	6.6516+00	6.0258+00	6.1734+00	5.9344+00	4.6313+00
CP	4.1814-01	2.9190-01	4.4224-01	3.4010-01	3.6420-01	3.2518-01	1.1247-01
P/PO1	4.8875-01	4.3063-01	4.9984-01	4.5282-01	4.6391-01	4.4595-01	3.4802-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING [illegible] CENTER
VON KARMAN GAS [illegible] FACILITY

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	267.	301244	1.49	5	10.24	241.23	-8.96	10.03	180.0

VALVE POS 2 PO = 14.2 Q-INF = 6.088 P-INF = 3.9176 RE = .3653 TO = 535.

P	4.2504+00	3.9079+00	3.5807+00	4.1447+00	4.6695+00	6.8086+00	1.0387+01	9.8053+00	9.3987+00
CP	5.4667-02	-1.5879-03	-5.5332-02	3.7302-02	1.2350-01	4.7485-01	1.0626+00	9.6707-01	9.[illegible]29-01
P/PO1	3.2141-01	2.9551-01	2.7077-01	3.1342-01	3.5310-01	5.1486-01	7.8543-01	7.4146-01	7.1[illegible]72-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.36[illegible]-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.147 P-INF = 3.9551 RE = .3693 TO = 535.

P	8.8358+00	6.4287+00	2.0867+00	1.8298+00	1.8049+00	1.7810+00	1.8[illegible]94+00	1.7467+00	6.9535+00
CP	7.9405-01	4.0243-01	-3.0398-01	-3.4578-01	-3.4982-01	-3.5371-01	-3.4585-01	-3.5430-01	4.8781-01
P/PO1	6.6181-01	4.8151-01	1.5629-01	1.3705-01	1.3519-01	1.3340-01	1.3702-01	1.3683-01	5.2[illegible]62-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.161 P-INF = 3.9642 RE = .3701 TO = 535.

P	9.2854+00	9.1728+00	8.7836+00	8.3227+00	5.9670+00	1.9157+00	3.7947+00	3.7315+00	4.6584+00
CP	8.6374-01	8.4546-01	7.8228-01	7.0747-01	3.2428-01	-3.3252-01	-2.7510-02	-3.7770-02	2.0163-02
P/PO1	6.9389-01	6.8548-01	6.5639-01	6.2195-01	4.4553-01	1.4316-01	2.8358-01	2.7885-01	3.0553-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5390+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.2 Q-INF = 6.112 P-INF = 3.9331 RE = .3672 TO = 535.

P	5.0654+00	7.7391+00	8.1221+00	8.0779+00	7.6983+00	5.9232+00	1.7258+00	1.7406+00	1.7749+00
CP	1.8524-01	6.2267-01	6.8533-01	6.7810-01	6.1600-01	3.2558-01	-3.6440-01	-3.5871-01	-3.53[illegible]-01
P/PO1	3.8152-01	5.8291-01	6.1176-01	6.0843-01	5.7984-01	4.4613-01	1.2948-01	1.3110-01	1.3364-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.918[illegible]+00

VALVE POS 6 PO = 14.3 Q-INF = 6.141 P-INF = 3.9513 RE = .3684 TO = 535.

P	1.8055+00	1.7657+00	4.8710+00	5.8136+00	6.7764+00	7.3429+00	7.2383+00	5.4843+00	1.6341+00
CP	-3.4945-01	-3.5593-01	1.4978-01	3.0330-01	4.6009-01	5.5233-01	5.3530-01	2.4966-01	-3.7735-01
P/PO1	1.3536-01	1.3238-01	3.6520-01	4.3587-01	5.0805-01	5.5053-01	5.4268-01	4.1118-01	1.2252-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.128 P-INF = 3.9435 RE = .3677 TO = 535.

P	4.0749+00	4.2536+00	4.3648+00	1.6456+00	1.7187+00	1.7198+00	1.7440+00	1.6367+00	4.6637+00
CP	2.1438-02	5.0608-02	6.8740-02	-3.7496-01	-3.6302-01	-3.6284-01	-3.5808-01	-3.7640-01	1.1753-01
P/PO1	3.0611-01	3.1954-01	3.2789-01	1.2362-01	1.2911-01	1.2920-01	1.3139-01	1.2296-01	3.5035-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.153 P-INF = 3.9590 RE = .3692 TO = 535.

P	4.8710+00	4.9883+00	5.0500+00	4.9368+00	3.7331+00	1.7382+00	4.3201+00	4.4339+00	4.5781+00
CP	1.4823-01	1.6729-01	1.7732-01	1.5891-01	-3.6720-02	-3.6096-01	5.8679-02	7.7175-02	1.0061-01
P/PO1	3.6448-01	3.7326-01	3.7788-01	3.6940-01	2.7934-01	1.3006-01	3.2326-01	3.3177-01	3.4256-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.167 P-INF = 3.9681 RE = .3700 TO = 535.

P	4.6704+00	5.6118+00	5.8455+00	5.9666+00	5.6921+00	4.4557+00	1.5407+00	1.6245+00	1.6709+00
CP	1.1389-01	2.6655-01	3.0443-01	3.2409-01	2.7956-01	7.9063-02	-3.9362-01	-3.8004-01	-3.7252-01
P/PO1	3.4868-01	4.1896-01	4.3640-01	4.4545-01	4.2495-01	3.3264-01	1.1503-01	1.2128-01	1.2474-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B540

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING ... GAS ...

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.2 Q-INF = 6.110 P-INF =3.9318 RE = .3666 TO = 535.

P	1.6107+00	1.5921+00	4.7290+00	5.4096+00	5.7290+00	5.8010+00	5.5252+00	4.1041+00	1.5791+00
CP	-3.7987-01	-3.8291-01	1.3046-01	2.4184-01	2.9412-01	3.0591-01	2.6077-01	2.8189-02	-3.8505-01
P/PO1	1.2136-01	1.1996-01	3.5631-01	4.0758-01	4.3165-01	4.3708-01	4.1630-01	3.0922-01	1.1897-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3687 TO = 535.

P	1.6373+00	4.4203+00	4.3339+00	4.2982+00	4.2136+00	4.4557+00	4.9875+00	5.3499+00	5.7768+00
CP	-3.7700-01	7.5916-02	6.1850-02	5.6039-02	4.2274-02	8.1667-02	1.6823-01	2.2721-01	2.9667-01
P/PO1	1.2268-01	3.3119-01	3.2472-01	3.2204-01	3.1570-01	3.3384-01	3.7369-01	4.0084-01	4.3282-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3694 TO = 535.

P	6.0766+00	4.6981+00	1.5407+00	1.7254+00	1.6941+00	1.6648+00	1.7243+00	1.6245+00	1.6525+00
CP	3.4353-01	1.1963-01	-3.9321-01	-3.6322-01	-3.6831-01	-3.7307-01	-3.6340-01	-3.7961-01	-3.7506-01
P/PO1	4.5440-01	3.5132-01	1.1521-01	1.2902-01	1.2668-01	1.2449-01	1.2894-01	1.2148-01	1.2357-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.5539+00	4.6359+00	5.5711+00	4.8023+00	5.6953+00	4.8750+00	7.1977+00	5.0930+00
CP	9.6203-02	1.0953-01	2.6142-01	1.3656-01	2.8160-01	1.4836-01	5.2562-01	1.8376-01
P/PO1	3.4053-01	3.4667-01	4.1660-01	3.5911-01	4.2588-01	3.6454-01	5.3823-01	3.8084-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.3156+00	5.1539+00	7.6500+00	5.1984+00	6.2109+00	5.0461+00	4.1672+00
CP	7.0721-01	1.9366-01	5.9909-01	2.0089-01	3.6535-01	1.7615-01	3.3390-02
P/PO1	6.2183-01	3.8540-01	5.7205-01	3.8073-01	4.6444-01	3.7734-01	3.1161-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	268.	301244	1.49	5	7.07	225.15	-5.01	10.00	180.0

VALVE POS 2 PO = 14.2 Q-INF = 6.118 P-INF =3.9370 RE = .3671 TO = 535.

P	4.5074+00	4.1981+00	3.9264+00	4.3473+00	4.6818+00	6.2437+00	1.1097+01	1.0461+01	9.9183+00
CP	9.3231-02	4.2668-02	-1.7291-03	6.7059-02	1.2173-01	3.7702-01	1.1702+00	1.0663+00	9.7760-01
P/PO1	3.3916-01	3.1589-01	2.9545-01	3.2712-01	3.5228-01	4.6481-01	8.3497-01	7.8715-01	7.4631-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3684 TO = 535.

P	9.2079+00	6.6445+00	2.1978+00	1.8728+00	1.8419+00	1.8239+00	1.8603+00	1.7589+00	6.3881+00
CP	8.5605-01	4.3860-01	-2.8555-01	-3.3849-01	-3.4351-01	-3.4645-01	-3.4052-01	-3.5703-01	3.9684-01
P/PO1	6.9035-01	4.9817-01	1.6478-01	1.4041-01	1.3810-01	1.3674-01	1.3947-01	1.3187-01	4.7694-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3691 TO = 535.

P	1.0122+01	1.0098+01	9.5681+00	8.9194+00	6.4076+00	2.0809+00	4.1037+00	4.1529+00	4.4434+00
CP	1.0023+00	9.9829-01	9.1216-01	8.0669-01	3.9831-01	-3.0514-01	2.3740-02	3.1735-02	7.8965-02
P/PO1	7.5768-01	7.5584-01	7.1619-01	6.6763-01	4.7962-01	1.5576-01	3.0717-01	3.1085-01	3.3260-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.149 P-INF =3.9564 RE = .3689 TO = 535.

P	5.3349+00	8.8028+00	9.3220+00	9.0418+00	8.4205+00	6.4422+00	1.8356+00	1.7894+00	1.8234+00
CP	2.2420-01	7.8821-01	8.7264-01	8.2707-01	7.2604-01	4.0428-01	-3.4494-01	-3.5244-01	-3.4494-01
P/PO1	3.9946-01	6.5912-01	6.9799-01	6.7701-01	6.3050-01	4.8237-01	1.3744-01	1.3398-01	1.3656-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.2 Q-INF = 6.100 P-INF =3.9253 RE = .3660 TO = 535.

P	1.8494+00	1.8089+00	5.2661+00	6.8399+00	7.7752+00	8.1672+00	7.8247+00	5.8405+00	1.7743+00
CP	-3.4031-01	-3.4695-01	2.1979-01	4.8761-01	6.3109-01	6.9536-01	6.3922-01	3.1394-01	-3.5251-01
P/PO1	1.3957-01	1.3651-01	3.9743-01	5.2073-01	5.8679-01	6.1637-01	5.9053-01	4.4078-01	1.3395-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.120 P-INF =3.9383 RE = .3672 TO = 535.

P	4.4949+00	4.4882+00	4.5438+00	1.6394+00	1.7495+00	1.7566+00	1.7799+00	1.6856+00	4.6393+00
CP	9.0940-02	8.9851-02	9.8930-02	-3.7561-01	-3.5762-01	-3.5647-01	-3.5265-01	-3.6806-01	1.1453-01
P/PO1	3.3811-01	3.3761-01	3.4179-01	1.2332-01	1.3160-01	1.3213-01	1.3389-01	1.2679-01	3.4897-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3684 TO = 535.

P	4.9776+00	5.3464+00	5.6180+00	5.6490+00	4.3553+00	2.1299+00	4.5735+00	4.5621+00	4.5781+00
CP	1.6714-01	2.2720-01	2.7143-01	2.7649-01	6.5797-02	-2.9661-01	1.0133-01	9.9479-02	1.0208-01
P/PO1	3.7319-01	4.0084-01	4.2120-01	4.2353-01	3.2653-01	1.5969-01	3.4289-01	3.4204-01	3.4324-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.130 P-INF =3.9448 RE = .3678 TO = 535.

P	4.6579+00	5.4204+00	5.5871+00	5.7104+00	5.4456+00	4.1374+00	1.6934+00	1.6551+00	1.7015+00
CP	1.1632-01	2.4071-01	2.6790-01	2.8801-01	2.4482-01	3.1419-02	-3.6724-01	-3.7350-01	-3.6593-01
P/PO1	3.4979-01	4.0706-01	4.1958-01	4.2884-01	4.0895-01	3.1071-01	1.2717-01	1.2429-01	1.2778-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3677 TO = 535.

P	1.6462+00	1.6187+00	4.7537+00	5.4894+00	5.7845+00	5.8468+00	5.5747+00	4.2629+00	1.6770+00
CP	-3.7486-01	-3.7935-01	1.3220-01	2.5225-01	3.0040-01	3.1057-01	2.6617-01	5.2113-02	-3.6983-01
P/PO1	1.2367-01	1.2160-01	3.5711-01	4.1237-01	4.3454-01	4.3922-01	4.1878-01	3.2023-01	1.2598-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3688 TO = 535.

P	1.6418+00	4.5994+00	4.5006+00	4.5069+00	4.5093+00	4.7250+00	5.3645+00	5.5332+00	5.6308+00
CP	-3.7637-01	1.0481-01	8.8738-02	8.9775-02	9.0156-02	1.2524-01	2.2930-01	2.5673-01	2.7261-01
P/PO1	1.2297-01	3.4449-01	3.3710-01	3.3757-01	3.3775-01	3.5390-01	4.0181-01	4.1444-01	4.2175-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3694 TO = 535.

P	5.4415+00	3.9943+00	1.5850+00	1.7316+00	1.7064+00	1.6892+00	1.7243+00	1.6428+00	1.7137+00
CP	2.4037-01	5.3140-03	-3.8602-01	-3.6222-01	-3.6631-01	-3.6910-01	-3.6340-01	-3.7663-01	-3.6512-01
P/PO1	4.0691-01	2.9869-01	1.1852-01	1.2948-01	1.2760-01	1.2632-01	1.2894-01	1.2285-01	1.2815-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0950+00	2.1430+00	2.3540+00

CEC	4.6313+00	4.6031+00	5.7328+00	4.8070+00	6.8016+00	4.8398+00	8.2758+00	5.0227+00
CP	1.0877-01	1.0420-01	2.8769-01	1.3732-01	4.6128-01	1.4265-01	7.0073-01	1.7234-01
P/PO1	3.4632-01	3.4421-01	4.2869-01	3.5946-01	5.0861-01	3.6191-01	6.1885-01	3.7558-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.5500+00	5.0836+00	8.1938+00	5.1305+00	6.6281+00	5.1023+00	4.4977+00
CP	7.4527-01	1.8224-01	6.8741-01	1.8985-01	4.3311-01	1.8528-01	8.7066-02
P/PO1	6.3935-01	3.8014-01	6.1271-01	3.8365-01	4.9564-01	3.8154-01	3.3633-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	269.	301244	1.49	5	9.02	-89.91	-9.02	15.01	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.159 P-INF = 3.9629 RE = .3695 TO = 535.

P	3.8680+00	3.3338+00	3.8770+00	4.6912+00	5.6243+00	1.2442+01	1.0711+01	1.0324+01	9.9947+00
CP	-1.5414-02	-1.0216-01	-1.3944-02	1.1825-01	2.6976-01	1.3767+00	1.0957+00	1.0328+00	9.7940-01
P/PO1	2.8915-01	2.4921-01	2.8982-01	3.5068-01	4.2044-01	9.3006-01	8.0067-01	7.7174-01	7.4714-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.143 P-INF = 3.9526 RE = .3686 TO = 535.

P	9.2699+00	6.7370+00	2.2781+00	1.9158+00	1.8850+00	1.8728+00	1.9159+00	1.8322+00	1.0010+01
CP	8.6566-01	4.5331-01	-2.7260-01	-3.3159-01	-3.3659-01	-3.3857-01	-3.3156-01	-3.4520-01	9.8615-01
P/PO1	6.9477-01	5.0494-01	1.7074-01	1.4359-01	1.4128-01	1.4037-01	1.4360-01	1.3732-01	7.5[illegible]25-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.2 Q-INF = 6.118 P-INF = 3.9370 RE = .3671 TO = 535.

P	9.4249+00	9.2962+00	9.0451+00	8.5063+00	6.1157+00	2.0197+00	3.1891+00	3.5056+00	4.1374+00
CP	8.9695-01	8.7591-01	8.3487-01	7.4681-01	3.5608-01	-3.1336-01	-1.2225-01	-7.0517-02	3.2752-02
P/PO1	7.0918-01	6.9949-01	6.8060-01	6.4006-01	4.6018-01	1.5148-01	2.3996-01	2.6378-01	3.1132-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.2 Q-INF = 6.102 P-INF = 3.9266 RE = .3662 TO = 535.

P	7.1307+00	8.1245+00	8.1836+00	8.0473+00	7.6061+00	5.8010+00	1.6496+00	1.8200+00	1.8606+00
CP	5.2506-01	6.8792-01	6.9761-01	6.7527-01	6.0297-01	3.0716-01	-3.6495-01	-3.4523-01	-3.3957-01
P/PO1	5.3797-01	6.1295-01	6.1741-01	6.0712-01	5.7384-01	4.3765-01	1.2822-01	1.3731-01	1.4[illegible]37-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.171 P-INF = 3.9707 RE = .3703 TO = 535.

P	1.8807+00	1.8397+00	5.1179+00	7.8637+00	7.7137+00	7.3123+00	6.8061+00	5.1545+00	1.5974+00
CP	-3.3869-01	-3.4533-01	1.8592-01	6.3089-01	6.0658-01	5.4153-01	4.5950-01	1.9185-01	-3.8460-01
P/PO1	1.4031-01	1.3726-01	3.8184-01	5.8669-01	5.7550-01	5.4555-01	5.0779-01	3.8456-01	1.1918-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.2 Q-INF = 6.114 P-INF = 3.9344 RE = .3669 TO = 535.

P	3.8993+00	3.8153+00	3.6733+00	1.7684+00	1.8049+00	1.7994+00	1.8294+00	1.7222+00	4.3332+00
CP	-5.7375-03	-1.9481-02	-4.2704-02	-3.5425-01	-3.4827-01	-3.4918-01	-3.4428-01	-3.6180-01	6.5229-02
P/PO1	2.9360-01	2.8727-01	2.7658-01	1.3315-01	1.3590-01	1.3549-01	1.3774-01	1.2968-01	3.2627-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.134 P-INF = 3.9474 RE = .3681 TO = 535.

P	4.4824+00	4.6426+00	4.7722+00	4.7648+00	3.6469+00	1.6116+00	4.1470+00	4.2673+00	4.3332+00
CP	8.7209-02	1.1333-01	1.3446-01	1.3326-01	-4.8987-02	-3.8076-01	3.2544-02	5.5411-02	6.2993-02
P/PO1	3.3639-01	3.4842-01	3.5815-01	3.5759-01	2.7369-01	1.2095-01	3.1122-01	3.2175-01	3.2520-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.155 P-INF = 3.9603 RE = .3693 TO = 535.

P	4.3820+00	5.4575+00	5.5254+00	5.3911+00	5.0760+00	3.9599+00	1.6072+00	1.6978+00	1.7504+00
CP	6.8522-02	2.4326-01	2.5429-01	2.3248-01	1.8128-01	-6.8566-05	-3.8234-01	-3.6761-01	-3.5906-01
P/PO1	3.2779-01	4.0823-01	4.1331-01	4.0327-01	3.7970-01	2.9621-01	1.2022-01	1.2700-01	1.3094-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B544

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] CENTER
[illegible]
40 - [illegible] TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3703 TO = 535.

P	1.6684+00	1.6408+00	4.5500+00	5.6859+00	5.8852+00	5.8316+00	5.5005+00	4.1896+00	1.5913+00
CP	-3.7310-01	-3.7758-01	9.3875-02	2.7796-01	3.1025-01	3.0156-01	2.4792-01	3.5471-02	-3.8559-01
P/PO1	1.2447-01	1.2241-01	3.3946-01	4.2421-01	4.3908-01	4.3508-01	4.1038-01	3.1257-01	1.1872-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.128 P-INF =3.9435 RE = .3677 TO = 535.

P	1.7553+00	4.1116+00	4.0622+00	4.0587+00	3.9857+00	4.3822+00	5.2966+00	5.4965+00	5.5879+00
CP	-3.5705-01	2.7438-02	1.9379-02	1.8802-02	6.8841-03	7.1589-02	2.2079-01	2.5341-01	2.6833-01
P/PO1	1.3186-01	3.0887-01	3.0516-01	3.0490-01	2.9941-01	3.2920-01	3.9789-01	4.1291-01	4.1978-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3691 TO = 535.

P	5.5982+00	4.3154+00	1.5363+00	1.7316+00	1.7125+00	1.6954+00	1.7367+00	1.6551+00	1.6892+00
CP	2.6672-01	5.8146-02	-3.9369-01	-3.6195-01	-3.6504-01	-3.6783-01	-3.6111-01	-3.7438-01	-3.6883-01
P/PO1	4.1904-01	3.2301-01	1.1500-01	1.2961-01	1.2819-01	1.2690-01	1.2999-01	1.2380-01	1.2644-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.0195+00	4.1508+00	7.1156+00	4.4320+00	8.2242+00	4.5000+00	9.9539+00	4.8750+00
CP	1.0047-02	3.1387-02	5.1343-01	7.7114-02	6.9367-01	8.8165-02	9.7489-01	1.4913-01
P/PO1	3.0087-01	3.1069-01	5.3262-01	3.3174-01	6.1559-01	3.3683-01	7.4506-01	3.6490-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.1609+00	5.0273+00	6.9047+00	5.0625+00	5.5031+00	4.9242+00	4.0477+00
CP	6.8338-01	1.7390-01	4.7913-01	1.7962-01	2.5126-01	1.5714-01	1.4620-02
P/PO1	6.1086-01	3.7630-01	5.1683-01	3.7894-01	4.1192-01	3.6859-01	3.0297-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
V D [illegible] GAS DYNAMICS FACILITY
40 [illegible] TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	270.	301244	1.49	5	4.98	-89.93	-4.98	15.01	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3693 TO = 535.

P	4.0122+00	3.4202+00	3.8894+00	4.6420+00	5.7413+00	1.1373+01	1.1128+01	1.0644+01	1.0285+01
CP	8.4248-03	-8.7761-02	-1.1526-02	1.1076-01	2.8938-01	1.2044+00	1.1645+00	1.0860+00	1.0276+00
P/PO1	3.0012-01	2.5584-01	2.9094-01	3.4724-01	4.2947-01	8.5073-01	8.3237-01	7.9620-01	7.6935-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3706 TO = 535.

P	9.5489+00	6.8912+00	2.3336+00	2.1000+00	2.0822+00	2.0565+00	2.0890+00	1.9849+00	9.9336+00
CP	9.0247-01	4.7219-01	-2.6566-01	-3.0349-01	-3.0638-01	-3.1054-01	-3.0528-01	-3.2213-01	9.6475-01
P/PO1	7.1172-01	5.1363-01	1.7394-01	1.5652-01	1.5519-01	1.5328-01	1.5570-01	1.4794-01	7.4039-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.120 P-INF =3.9383 RE = .3672 TO = 535.

P	1.0262+01	1.0005+01	9.6604+00	9.0265+00	6.4998+00	2.1483+00	3.3930+00	3.6643+00	4.4128+00
CP	1.0332+00	9.9128-01	9.3492-01	8.3134-01	4.1852-01	-2.9247-01	-8.9094-02	-4.4761-02	7.7530-02
P/PO1	7.7192-01	7.5261-01	7.2666-01	6.7898-01	4.8892-01	1.6159-01	2.5522-01	2.7564-01	3.3194-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.179 P-INF =3.9759 RE = .3707 TO = 535.

P	7.0067+00	9.4041+00	9.1681+00	8.8429+00	8.2976+00	6.2895+00	1.8108+00	2.0032+00	2.0503+00
CP	4.9052-01	8.7852-01	8.4034-01	7.8770-01	6.9945-01	3.7445-01	-3.5040-01	-3.1927-01	-3.1164-01
P/PO1	5.2207-01	7.0070-01	6.8312-01	6.5888-01	6.1826-01	4.6863-01	1.3493-01	1.4926-01	1.5277-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3680 TO = 535.

P	2.0876+00	7.0311+00	5.7839+00	9.1641+00	8.5588+00	7.9230+00	7.3463+00	5.5087+00	1.7627+00
CP	-3.0306-01	-3.1226-01	2.9969-01	8.5089-01	7.5219-01	6.4850-01	5.5446-01	2.5482-01	-3.5604-01
P/PO1	1.5672-01	1.5248-01	4.3421-01	6.8798-01	6.4253-01	5.9480-01	5.5151-01	4.1356-01	1.3233-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3706 TO = 535.

P	4.0623+00	3.9573+00	3.9696+00	1.9833+00	1.9959+00	1.9830+00	1.9963+00	1.8994+00	4.4067+00
CP	1.4207-02	-2.7976-03	-7.9867-04	-3.2238-01	-3.2034-01	-3.2243-01	-3.2028-01	-3.3597-01	6.9958-02
P/PO1	3.0278-01	2.9495-01	2.9587-01	1.4782-01	1.4876-01	1.4780-01	1.4879-01	1.4157-01	3.2845-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3698 TO = 535.

P	4.4635+00	4.6858+00	5.2723+00	6.0737+00	4.9467+00	2.1054+00	4.2892+00	4.3789+00	4.4434+00
CP	8.0815-02	1.1688-01	2.1205-01	3.4210-01	1.5921-01	-3.0183-01	5.2518-02	6.7079-02	7.7549-02
P/PO1	3.3345-01	3.5005-01	3.9386-01	4.5374-01	3.6954-01	1.5728-01	3.2042-01	3.2712-01	3.3194-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.149 P-INF =3.9564 RE = .3689 TO = 535.

P	4.4698+00	5.0871+00	5.3093+00	5.5692+00	5.3779+00	4.0701+00	1.7923+00	1.8932+00	1.9524+00
CP	8.3495-02	1.8388-01	2.2003-01	2.6230-01	2.3118-01	1.8481-02	-3.5197-01	-3.3556-01	-3.2593-01
P/PO1	3.3468-01	3.8090-01	3.9754-01	4.1700-01	4.0267-01	3.0475-01	1.3420-01	1.4176-01	1.4619-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B546

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ... CENTER
von KA...
40 - INCH ...

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3686 TO = 535.

P	1.9810+00	1.9262+00	4.5808+00	5.5999+00	5.9159+00	5.9537+00	5.6674+00	4.4094+00	1.7749+00
CP	-3.2096-01	-3.2989-01	1.0228-01	2.6819-01	3.1963-01	3.2578-01	2.7917-01	7.4379-02	-3.5452-01
P/PO1	1.4848-01	1.4437-01	3.4333-01	4.1971-01	4.4339-01	4.4623-01	4.2477-01	3.3049-01	1.3303-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.2 Q-INF = 6.112 P-INF =3.9331 RE = .3668 TO = 535.

P	1.9434+00	4.2475+00	4.2598+00	4.2552+00	4.2567+00	4.5230+00	5.2286+00	5.5454+00	5.6851+00
CP	-3.2553-01	5.1426-02	5.3446-02	5.2693-02	5.2943-02	9.6503-02	2.1194-01	2.6377-01	2.8663-01
P/PO1	1.4638-01	3.1992-01	3.2085-01	3.2050-01	3.2062-01	3.4067-01	3.9382-01	4.1768-01	4.2820-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3704 TO = 535.

P	5.5544+00	4.0314+00	1.8150+00	1.9280+00	1.9158+00	1.9034+00	1.9406+00	1.8688+00	1.9096+00
CP	2.5635-01	9.6220-03	-3.4943-01	-3.3112-01	-3.3310-01	-3.3511-01	-3.2908-01	-3.4072-01	-3.3412-01
P/PO1	4.1426-01	3.0067-01	1.3537-01	1.4380-01	1.4289-01	1.4196-01	1.4474-01	1.3938-01	1.4242-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.3641+00	4.2539+00	7.7953+00	4.4789+00	9.8695+00	4.4883+00	1.0957+01	4.6477+00
CP	6.3518-02	4.5672-02	6.1939-01	8.2123-02	9.5542-01	8.3641-02	1.1316+00	1.0946-01
P/PO1	3.2548-01	3.1727-01	5.8140-01	3.3405-01	7.3610-01	3.3475-01	8.1721-01	3.4664-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.6695+00	4.5609+00	7.3969+00	4.5023+00	5.7000+00	4.5281+00	4.1016+00
CP	7.6101-01	9.5412-02	5.5484-01	8.5920-02	2.7994-01	9.0096-02	2.0992-02
P/PO1	6.4660-01	3.4017-01	5.5168-01	3.3580-01	4.2512-01	3.3772-01	3.0591-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von Karman Facility
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	271.	301244	1.49	5	4.98	89.90	4.98	15.01	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3698 TO = 535.

P	3.9119+00	3.3585+00	4.0005+00	4.6420+00	6.1310+00	1.2045+01	1.1143+01	1.0675+01	1.0300+01
CP	-8.7032-03	-9.8505-02	5.6799-03	1.0978-01	3.5139-01	1.3110+00	1.1647+00	1.0887+00	1.0279+00
P/PO1	2.9224-01	2.5089-01	2.9886-01	3.4678-01	4.5802-01	8.9980-01	8.3243-01	7.9744-01	7.6949-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.195 P-INF =3.9862 RE = .3717 TO = 535.

P	9.5799+00	6.8912+00	2.3336+00	1.9894+00	1.9713+00	1.9524+00	2.0024+00	1.8932+00	1.0805+01
CP	9.0295-01	4.6893-01	-2.6677-01	-3.2233-01	-3.2526-01	-3.2831-01	-3.2023-01	-3.3786-01	1.1007+00
P/PO1	7.1194-01	5.1213-01	1.7343-01	1.4785-01	1.4650-01	1.4510-01	1.4881-01	1.4070-01	8.0296-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3704 TO = 535.

P	1.1363+01	1.1007+01	1.0568+01	9.8220+00	7.1144+00	2.4176+00	3.6664+00	4.1712+00	5.0685+00
CP	1.1973+00	1.1398+00	1.0686+00	9.4772-01	5.0909-01	-2.5182-01	-5.2745-02	3.2291-02	3.0723-01
P/PO1	8.4746-01	8.2096-01	7.8619-01	7.3255-01	5.3062-01	1.8031-01	2.7196-01	3.1110-01	4.3769-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3701 TO = 535.

P	9.0064+00	1.0869+01	1.0583+01	1.0143+01	9.4808+00	7.1750+00	2.1631+00	1.9543+00	1.9953+00
CP	8.1654-01	1.1184+00	1.0722+00	1.0008+00	8.9344-01	5.1965-01	-2.9281-01	-3.2666-01	[illegible]
P/PO1	6.7216-01	8.1114-01	7.8985-01	7.5701-01	7.0757-01	5.3548-01	1.6144-01	1.4585-01	[illegible]
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	[illegible]	[illegible]

VALVE POS 6 PO = 14.4 Q-INF = 6.183 P-INF =3.9785 RE = .371[illegible] TO = 535.

P	2.0374+00	1.9879+00	9.2758+00	1.0556+01	9.8649+00	9.3427+00	8.6736+00	6.4352+00	1.9891+00
CP	-3.1394-01	-3.2195-01	8.5679-01	1.0639+00	9.5207-01	8.6761-01	7.5938-01	3.9735-01	-3.2175-01
P/PO1	1.5171-01	1.4802-01	6.9069-01	7.8604-01	7.3456-01	6.9567-01	6.4585-01	4.7917-01	1.4811-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.167 P-INF =3.9681 RE = .3700 TO = 535.

P	3.6298+00	3.3276+00	3.5560+00	1.7930+00	1.9528+00	1.9340+00	1.9715+00	1.8932+00	4.4189+00
CP	-5.4864-02	-1.0387-01	-6.6825-02	-3.5272-01	-3.2680-01	-3.2984-01	-3.2377-01	-3.3646-01	7.3108-02
P/PO1	2.7098-01	2.4842-01	2.6548-01	1.3385-01	1.4579-01	1.4439-01	1.4719-01	1.4134-01	3.2990-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.4 Q-INF = 6.173 P-INF =3.9720 RE = .3704 TO = 535.

P	8.6653+00	8.3557+00	8.1375+00	7.6342+00	5.6736+00	2.1605+00	4.1161+00	3.9147+00	3.9415+00
CP	7.6033-01	7.1018-01	6.7482-01	5.9329-01	2.7566-01	-2.9346-01	2.3349-02	-9.2732-03	-4.9318-03
P/PO1	6.4629-01	6.2320-01	6.0692-01	5.6938-01	4.2315-01	1.6114-01	3.0699-01	2.9197-01	2.9397-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.161 P-INF =3.9642 RE = .3697 TO = 535.

P	4.6642+00	6.2899+00	6.7992+00	6.8234+00	6.6381+00	5.2574+00	1.7305+00	1.8627+00	1.9096+00
CP	1.1361-01	3.7751-01	4.6017-01	4.6410-01	4.3403-01	2.0992-01	-3.6258-01	-3.4112-01	-3.3351-01
P/PO1	3.4855-01	4.7004-01	5.0810-01	5.0991-01	4.9606-01	3.9288-01	1.2932-01	1.3920-01	1.4270-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B548

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V R E [illegible] FACILITY
[illegible] INCH [illegible] TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.191 P-INF = 3.9836 RE = .3715 TO = 535.

P	1.9246+00	1.9015+00	4.2289+00	5.0596+00	5.3409+00	5.6981+00	5.9419+00	4.9102+00	1.6892+00
CP	-3.3260-01	-3.3633-01	3.9621-02	1.7379-01	2.1324-01	2.7693-01	3.1631-01	1.4967-01	-3.7061-01
P/PO1	1.4312-01	1.4140-01	3.1448-01	3.7625-01	3.9718-01	4.2374-01	4.4187-01	3.6515-01	1.2562-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.167 P-INF = 3.9681 RE = .3700 TO = 535.

P	1.8995+00	4.2413+00	4.2645+00	4.2675+00	4.2567+00	4.5107+00	5.3707+00	5.6431+00	5.7004+00
CP	-3.3544-01	4.4300-02	5.1308-02	4.8548-02	4.6804-02	8.7995-02	2.2745-01	2.7162-01	2.8090-01
P/PO1	1.4181-01	3.1664-01	3.1986-01	3.1859-01	3.1779-01	3.3675-01	4.0096-01	4.2129-01	4.2557-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.134 P-INF = 3.9474 RE = .3681 TO = 535.

P	5.5293+00	4.0561+00	1.7286+00	1.8298+00	1.8296+00	1.7994+00	1.8417+00	1.7589+00	1.8116+00
CP	2.5787-01	1.7720-02	-3.6169-01	-3.4519-01	-3.4523-01	-3.5015-01	-3.4324-01	-3.5675-01	-3.4815-01
P/PO1	4.1496-01	3.0440-01	1.2973-01	1.3732-01	1.3731-01	1.3504-01	1.3822-01	1.3200-01	1.3596-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.1906+00	3.6773+00	1.0364+01	4.2750+00	1.0962+01	4.7250+00	1.1140+01	5.6203+00
CP	3.9654-02	-4.4018-02	1.0460+00	5.3408-02	1.1434+00	1.2676-01	1.1725+00	2.7271-01
P/PO1	3.1450-01	2.7598-01	7.7780-01	3.2083-01	8.2266-01	3.5460-01	8.3602-01	4.2179-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.6539+00	6.3164+00	8.8289+00	6.3820+00	7.2516+00	6.3633+00	5.2219+00
CP	9.3024-01	3.8618-01	7.9575-01	3.9688-01	5.3863-01	3.9382-01	2.0776-01
P/PO1	7.2451-01	4.7403-01	6.6259-01	4.7896-01	5.4422-01	4.7755-01	3.9189-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	272.	301244	1.49	5	9.00	89.90	9.00	15.02	180.0

VALVE POS 2 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3699 TO = 535.

P	3.8116+00	3.1053+00	3.8215+00	4.5561+00	7.0069+00	1.2320+01	1.0773+01	1.0370+01	1.0010+01
CP	-2.5181-02	-1.3974-01	-2.3574-02	9.5588-02	4.9314-01	1.3549+00	1.1040+00	1.0386+00	9.8029-01
P/PO1	2.8465-01	2.3191-01	2.8539-01	3.4025-01	5.2328-01	9.2003-01	8.0450-01	7.7440-01	7.4755-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3699 TO = 535.

P	9.3319+00	6.7062+00	2.2657+00	1.8912+00	1.8850+00	1.8667+00	1.8912+00	1.8077+00	1.1309+01
CP	8.7029-01	4.4437-01	-2.7594-01	-3.3669-01	-3.3769-01	-3.4066-01	-3.3669-01	-3.5023-01	1.1910+00
P/PO1	6.9691-01	5.0082-01	1.6920-01	1.4124-01	1.4077-01	1.3941-01	1.4123-01	1.3500-01	8.4456-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3712 TO = 535.

P	1.1456+01	1.1162+01	1.0722+01	9.9597+00	7.2374+00	2.4971+00	3.0469+00	4.2323+00	6.8618+00
CP	1.2081+00	1.1606+00	1.0895+00	9.6635-01	5.2633-01	-2.3985-01	-1.5099-01	4.0613-02	4.6563-01
P/PO1	8.5245-01	8.3056-01	7.9784-01	7.4113-01	5.3855-01	1.8582-01	2.2673-01	3.1494-01	5.1061-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.139 P-INF =3.9500 RE = .3683 TO = 535.

P	1.0014+01	1.1408+01	1.1106+01	1.0602+01	9.9110+00	7.5261+00	2.3053+00	1.8627+00	1.9996+00
CP	9.8786-01	1.2150+00	1.1658+00	1.0937+00	9.7110-01	5.8257-01	-2.6793-01	-3.4003-01	-3.3039-01
P/PO1	7.5103-01	8.5560-01	8.3296-01	7.9516-01	7.4332-01	5.6445-01	1.7289-01	1.3970-01	1.4322-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3706 TO = 535.

P	1.9497+00	1.8830+00	1.0291+01	1.1000+01	1.0464+01	9.9839+00	9.2601+00	6.8927+00	2.1727+00
CP	-3.2783-01	-3.3863-01	1.0226+00	1.1374+00	1.0507+00	9.7289-01	8.5570-01	4.7243-01	-2.9171-01
P/PO1	1.4532-01	1.4034-01	7.6704-01	8.1988-01	7.7994-01	7.4414-01	6.9019-01	5.1374-01	1.6194-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3698 TO = 535.

P	3.5483+00	3.2226+00	3.7227+00	1.6947+00	1.8727+00	1.8484+00	1.8541+00	1.7772+00	5.9602+00
CP	-6.7704-02	-1.2054-01	-3.9400-02	-3.6948-01	-3.3959-01	-3.4354-01	-3.4261-01	-3.5509-01	3.2367-01
P/PO1	2.6507-01	2.4075-01	2.7810-01	1.2660-01	1.3990-01	1.3808-01	1.3851-01	1.3277-01	4.4525-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3694 TO = 535.

P	9.3164+00	9.0187+00	8.5528+00	8.0167+00	5.7906+00	2.2462+00	3.3868+00	3.4750+00	3.8191+00
CP	8.6976-01	8.2140-01	7.4573-01	6.5865-01	2.9708-01	-2.7863-01	-9.3361-02	-7.9036-02	-2.3144-02
P/PO1	6.9666-01	6.7440-01	6.3956-01	5.9947-01	4.3301-01	1.6797-01	2.5326-01	2.5986-01	2.8559-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.126 P-INF =3.9422 RE = .3676 TO = 535.

P	5.7863+00	6.8449+00	7.1684+00	6.9305+00	6.6688+00	5.2758+00	1.5452+00	1.7589+00	1.7994+00
CP	3.0101-01	4.7381-01	5.2660-01	4.8777-01	4.4506-01	2.1768-01	-3.9126-01	-3.5637-01	-3.4975-01
P/PO1	4.3482-01	5.1437-01	5.3868-01	5.2080-01	5.0114-01	3.9646-01	1.1611-01	1.3217-01	1.3522-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B550

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.175 P-INF =3.9733 RE = .3705 TO = 535.

P	1.8055+00	1.7904+00	3.7412+00	5.5324+00	5.5627+00	5.9537+00	6.0962+00	4.9713+00	1.5607+00
CP	-3.5107-01	-3.5352-01	-3.7582-02	2.5249-01	2.5741-01	3.2073-01	3.4381-01	1.6163-01	-3.9072-01
P/PO1	1.3461-01	1.3349-01	2.7894-01	4.1249-01	4.1475-01	4.4390-01	4.5452-01	3.7065-01	1.1636-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3701 TO = 535.

P	1.7867+00	4.0190+00	3.9820+00	4.0034+00	4.0042+00	4.4495+00	5.3645+00	5.5576+00	5.6920+00
CP	-3.5384-01	8.0467-03	2.0419-03	5.5204-03	5.6348-03	7.7835-02	2.2616-01	2.5746-01	2.7925-01
P/PO1	1.3334-01	2.9995-01	2.9718-01	2.9878-01	2.9884-01	3.3208-01	4.0036-01	4.1477-01	4.2480-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.195 P-INF =3.9862 RE = .3717 TO = 535.

P	5.6296+00	4.3648+00	1.5319+00	1.7193+00	1.7125+00	1.6954+00	1.7305+00	1.6428+00	1.6892+00
CP	2.6528-01	6.1102-02	-3.9619-01	-3.6594-01	-3.6703-01	-3.6980-01	-3.6413-01	-3.7828-01	-3.7079-01
P/PO1	4.1837-01	3.2437-01	1.1384-01	1.2777-01	1.2727-01	1.2599-01	1.2860-01	1.2209-01	1.2554-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	5.9297+00	4.4742+00	1.1880+01	5.1281+00	1.1142+01	5.5242+00	1.1283+01	6.7453+00
CP	3.1372-01	7.8772-02	1.2743+00	1.8433-01	1.1551+00	2.4827-01	1.1778+00	4.4538-01
P/PO1	4.4067-01	3.3251-01	8.8291-01	3.8110-01	8.2805-01	4.1054-01	8.3850-01	5.0129-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0158+01	7.2211+00	9.4758+00	7.1063+00	7.8773+00	7.0336+00	5.6063+00
CP	9.9624-01	5.2218-01	8.8614-01	5.0364-01	6.2812-01	4.9192-01	2.6151-01
P/PO1	7.5489-01	5.3665-01	7.0421-01	5.2811-01	5.8542-01	5.2271-01	4.1664-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	273.	301244	1.49	5	7.07	134.85	5.01	10.00	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3698 TO = 535.

P	4.4886+00	4.0808+00	1.8956+00	4.3289+00	4.8174+00	6.5338+00	1.1097+01	1.0476+01	9.9489+00
CP	8.4884-02	1.8703-02	-1.1350-02	5.8964-02	1.3027-01	4.1675-01	1.1971+00	1.0565+00	9.7070-01
P/PO1	3.3532-01	3.0485-01	2.9102-01	3.2339-01	3.5988-01	4.8810-01	8.2897-01	7.8263-01	7.4323-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3684 TO = 535.

P	9.1924+00	6.5828+00	2.1669+00	1.8114+00	1.8111+00	1.7749+00	1.7923+00	1.7039+00	6.6784+00
CP	8.5353-01	4.2856-01	-2.9058-01	-3.4848-01	-3.4853-01	-3.5442-01	-3.5159-01	-3.6598-01	4.4413-01
P/PO1	6.8919-01	4.9354-01	1.6246-01	1.3581-01	1.3579-01	1.3307-01	1.3438-01	1.2775-01	5.0071-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.163 P-INF =3.9655 RE = .3698 TO = 535.

P	1.1440+01	1.0792+01	1.0260+01	9.4854+00	6.9147+00	2.2523+00	3.8442+00	4.4155+00	5.0065+00
CP	1.2129+00	1.1076+00	1.0214+00	8.9570-01	4.7855-01	-2.7800-01	-1.9688-02	7.3025-02	1.6892-01
P/PO1	8.5463-01	8.0618-01	7.6649-01	7.0861-01	5.1656-01	1.6826-01	2.8718-01	3.2986-01	3.7401-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3699 TO = 535.

P	6.5261+00	1.1269+01	1.0768+01	1.0174+01	9.4654+00	7.2055+00	2.0951+00	1.8016+00	1.8484+00
CP	4.1516-01	1.1846+00	1.1032+00	1.0069+00	8.9196-01	5.2536-01	-3.0361-01	-3.5122-01	-3.4364-01
P/PO1	4.8737-01	8.4161-01	8.0415-01	7.5979-01	7.0688-01	5.3811-01	1.5647-01	1.3455-01	1.3804-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3695 TO = 535.

P	1.8744+00	1.8027+00	6.4300+00	1.0969+01	1.0326+01	9.6786+00	8.9977+00	6.6944+00	2.0565+00
CP	-3.3871-01	-3.5038-01	4.0196-01	1.1400+00	1.0354+00	9.3012-01	8.1943-01	4.4495-01	-3.0912-01
P/PO1	1.4030-01	1.3493-01	4.8129-01	8.2108-01	7.7291-01	7.2445-01	6.7349-01	5.0109-01	1.5393-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.134 P-INF =3.9474 RE = .3686 TO = 535.

P	4.3068+00	3.8832+00	4.2228+00	1.8421+00	1.8234+00	1.8055+00	1.8294+00	1.7528+00	4.5046+00
CP	5.8595-02	-1.0459-02	4.4892-02	-3.4319-01	-3.4623-01	-3.4915-01	-3.4526-01	-3.5775-01	9.0839-02
P/PO1	3.2322-01	2.9143-01	3.1691-01	1.3824-01	1.3684-01	1.3550-01	1.3729-01	1.3154-01	3.3806-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3703 TO = 534.

P	8.4948+00	9.1574+00	8.9528+00	8.3227+00	6.1617+00	2.2462+00	4.4437+00	4.3361+00	4.3026+00
CP	7.3631-01	8.4393-01	8.1069-01	7.0835-01	3.5736-01	-2.7863-01	7.8297-02	6.0832-02	5.5391-02
P/PO1	6.3523-01	6.8477-01	6.6947-01	6.2236-01	4.6076-01	1.6797-01	3.3229-01	3.2425-01	3.2174-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.189 P-INF =3.9823 RE = .3723 TO = 534.

P	4.7268+00	6.5828+00	7.2914+00	7.8025+00	7.5293+00	5.8621+00	1.7861+00	1.7222+00	1.7749+00
CP	1.2030-01	4.2019-01	5.3469-01	6.1727-01	5.7312-01	3.0373-01	-3.5487-01	-3.6519-01	-3.5668-01
P/PO1	3.5162-01	4.8969-01	5.4240-01	5.8042-01	5.6010-01	4.3607-01	1.3287-01	1.2812-01	1.3203-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
TULLAHOMA, TENNESSEE

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.177 P-INF =3.9746 RE = .3716 TO = 534.

P	1.7804+00	1.7595+00	4.5685+00	5.0350+00	5.6736+00	6.2590+00	6.5283+00	5.3316+00	1.8178+00
CP	-3.5523-01	-3.5862-01	9.6152-02	1.7168-01	2.7506-01	3.6984-01	4.1345-01	2.1970-01	-3.4918-01
P/PO1	1.3270-01	1.3114-01	3.4051-01	3.7528-01	4.2288-01	4.6651-01	4.8659-01	3.9739-01	1.3549-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.4 Q-INF = 6.165 P-INF =3.9668 RE = .3708 TO = 534.

P	1.7553+00	4.5623+00	4.5191+00	4.5008+00	4.5031+00	4.7188+00	5.2595+00	5.4538+00	5.6247+00
CP	-3.5873-01	9.6600-02	8.9590-02	8.6623-02	8.7000-02	1.2199-01	2.0969-01	2.4121-01	2.6893-01
P/PO1	1.3109-01	3.4071-01	3.3749-01	3.3612-01	3.3630-01	3.5240-01	3.9278-01	4.0729-01	4.2005-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.169 P-INF =3.9694 RE = .3711 TO = 534.

P	5.4917+00	4.1302+00	1.5806+00	1.6886+00	1.6941+00	1.6586+00	1.6872+00	1.6062+00	1.6648+00
CP	2.4677-01	2.6061-02	-3.8724-01	-3.6974-01	-3.6885-01	-3.7459-01	-3.6996-01	-3.8309-01	-3.7360-01
P/PO1	4.0985-01	3.0824-01	1.1796-01	1.2602-01	1.2643-01	1.2379-01	1.2592-01	1.1987-01	1.2424-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.5023+00	4.3078+00	7.4039+00	4.7930+00	9.8461+00	5.3578+00	1.1902+01	6.3680+00
CP	8.6396-02	5.4861-02	5.5676-01	1.3351-01	9.5266-01	2.2507-01	1.2859+00	3.8883-01
P/PO1	3.3602-01	3.2150-01	5.5257-01	3.5771-01	7.3483-01	3.9986-01	8.8823-01	4.7525-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0329+01	7.3734+00	9.4148+00	7.6594+00	8.1234+00	7.6172+00	5.9883+00
CP	1.0309+00	5.5182-01	8.8275-01	5.9818-01	6.7341-01	5.9134-01	3.2728-01
P/PO1	7.7086-01	5.5029-01	7.0265-01	5.7163-01	6.0627-01	5.6848-01	4.4692-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	274.	301244	1.49	5	10.24	118.75	8.97	10.03	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3700 TO = 534.

P	4.1689+00	3.6918+00	3.4881+00	3.9052+00	4.6448+00	7.1292+00	1.0371+01	9.8053+00	9.4140+00
CP	3.5222-02	-4.2445-02	-7.5612-02	-7.7084-03	1.1270-01	5.1715-01	1.0450+00	9.5282-01	8.8912-01
P/PO1	3.1246-01	2.7670-01	2.6143-01	2.9269-01	3.4813-01	5.3433-01	7.7732-01	7.3690-01	7.0557-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.149 P-INF =3.9564 RE = .3703 TO = 534.

P	8.8669+00	6.3670+00	2.0620+00	1.8359+00	1.8234+00	1.7994+00	1.8417+00	1.7650+00	7.6107+00
CP	7.9863-01	3.9205-01	-3.0811-01	-3.4488-01	-3.4691-01	-3.5082-01	-3.4393-01	-3.5641-01	5.9432-01
P/PO1	6.6391-01	4.7674-01	1.5439-01	1.3747-01	1.3653-01	1.3473-01	1.3790-01	1.3216-01	5.6986-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.179 P-INF =3.9759 RE = .3726 TO = 533.

P	1.1130+01	1.0591+01	1.0168+01	9.4395+00	6.9147+00	2.2339+00	3.5599+00	4.2751+00	5.4716+00
CP	1.1579+00	1.0706+00	1.0022+00	8.8426-01	4.7563-01	-2.8192-01	-6.7326-02	4.8424-02	2.4208-01
P/PO1	8.2930-01	7.8915-01	7.5762-01	7.0334-01	5.1521-01	1.6645-01	2.6525-01	3.1854-01	4.0769-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3704 TO = 533.

P	7.5957+00	1.1162+01	1.0829+01	1.0327+01	9.6345+00	7.3429+00	2.1878+00	1.7955+00	1.8484+00
CP	5.9311-01	1.1736+00	1.1196+00	1.0377+00	9.2501-01	5.5194-01	-2.8729-01	-3.5116-01	-3.4256-01
P/PO1	5.6930-01	8.3655-01	8.1166-01	7.7400-01	7.2210-01	5.5035-01	1.6398-01	1.3457-01	1.3554-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3703 TO = 533.

P	1.9058+00	1.8336+00	7.9067+00	1.1046+01	1.0495+01	9.9991+00	9.3372+00	6.9384+00	2.1544+00
CP	-3.3311-01	-3.4487-01	6.4416-01	1.1554+00	1.0657+00	9.8491-01	8.7712-01	4.8647-01	-2.9263-01
P/PO1	1.4288-01	1.3747-01	5.9280-01	8.2816-01	7.8685-01	7.4968-01	7.0005-01	5.2020-01	1.6152-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3703 TO = 533.

P	3.6047+00	3.7289+00	4.2228+00	1.9219+00	1.8542+00	1.8239+00	1.8541+00	1.7711+00	5.3492+00
CP	-5.6439-02	-3.6216-02	4.4215-02	-3.3049-01	-3.4151-01	-3.4645-01	-3.4153-01	-3.5504-01	2.2766-01
P/PO1	2.7026-01	2.7957-01	3.1660-01	1.4409-01	1.3902-01	1.3674-01	1.3901-01	1.3279-01	4.0105-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.147 P-INF =3.9551 RE = .3707 TO = 533.

P	9.8900+00	9.5428+00	9.1527+00	8.4910+00	6.2847+00	2.2462+00	3.8195+00	3.7682+00	3.9905+00
CP	9.6555-01	9.0907-01	8.4561-01	7.3795-01	3.7900-01	-2.7803-01	-2.2076-02	-3.0419-02	5.7531-03
P/PO1	7.4076-01	7.1476-01	6.8555-01	6.3598-01	4.7073-01	1.6824-01	2.8608-01	2.8224-01	2.9889-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3704 TO = 533.

P	5.0403+00	8.0937+00	8.2452+00	7.9708+00	7.6061+00	5.9537+00	1.7243+00	1.7711+00	1.8239+00
CP	1.7708-01	6.7417-01	6.9883-01	6.5417-01	5.9480-01	3.2578-01	-3.6275-01	-3.5514-01	-3.4655-01
P/PO1	3.7777-01	6.0662-01	6.1797-01	5.9741-01	5.7008-01	4.4623-01	1.2924-01	1.3274-01	1.3670-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.157 P-INF =3.9616 RE = .3713 TO = 533.

P	1.8619+00	1.8336+00	3.6918+00	5.4525+00	6.6688+00	7.1444+00	7.0839+00	5.6736+00	1.7137+00
CP	-3.4105-01	-3.4565-01	-4.3821-02	2.4217-01	4.3972-01	5.1697-01	5.0715-01	2.7808-01	-3.6512-01
P/PO1	1.3923-01	1.3711-01	2.7607-01	4.0773-01	4.9868-01	5.3425-01	5.2972-01	4.2426-01	1.2815-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.2 Q-INF = 6.116 P-INF =3.9357 RE = .3689 TO = 533.

P	1.8368+00	4.3586+00	4.4080+00	4.3105+00	4.2259+00	4.3700+00	4.8639+00	5.2767+00	5.7769+00
CP	-3.4316-01	6.9137-02	7.7217-02	6.1270-02	4.7448-02	7.1000-02	1.5176-01	2.1924-01	3.0100-01
P/PO1	1.3826-01	3.2807-01	3.3179-01	3.2445-01	3.1809-01	3.2893-01	3.6611-01	3.9718-01	4.3482-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3703 TO = 533.

P	6.1386+00	4.8957+00	1.5363+00	1.7500+00	1.7435+00	1.6954+00	1.7243+00	1.6367+00	1.6770+00
CP	3.5621-01	1.5380-01	-3.9328-01	-3.5848-01	-3.5856-01	-3.6736-01	-3.6266-01	-3.7692-01	-3.7037-01
P/PO1	4.6024-01	3.6705-01	1.1518-01	1.3120-01	1.3117-01	1.2711-01	1.2928-01	1.2271-01	1.2573-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.8586+00	4.3430+00	9.7969+00	5.5219+00	1.1416+01	6.7758+00	1.1470+01	7.8000+00
CP	1.4776-01	6.3791-02	9.5197-01	2.5578-01	1.2157+00	4.5998-01	1.2245+00	6.2678-01
P/PO1	3.6427-01	3.2561-01	7.3451-01	4.1400-01	8.5594-01	5.0801-01	8.5998-01	5.8480-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0174+01	8.5102+00	9.6586+00	8.4023+00	8.5008+00	8.0930+00	6.1945+00
CP	1.0134+00	7.4243-01	9.2945-01	7.2487-01	7.4090-01	6.7449-01	3.6532-01
P/PO1	7.6280-01	6.3804-01	7.2415-01	6.2996-01	6.3734-01	6.0676-01	4.6443-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	275.	301244	1.49	5	11.18	153.22	5.01	4.99	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.143 P-INF =3.9526 RE = .3704 TO = 533.

P	4.7268+00	4.7105+00	4.4882+00	4.4148+00	4.3922+00	4.9919+00	8.0562+00	9.3936+00	9.5515+00
CP	1.2605-01	1.2339-01	8.7207-02	7.5261-02	7.1582-02	1.6921-01	6.6808-01	8.8579-01	9.1151-01
P/PO1	3.5428-01	3.5305-01	3.3639-01	3.3089-01	3.2920-01	3.7414-01	6.0381-01	7.0404-01	7.1588-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.2 Q-INF = 6.106 P-INF =3.9292 RE = .3683 TO = 533.

P	8.8203+00	6.3362+00	2.1546+00	1.8175+00	1.8173+00	1.7566+00	1.7676+00	1.6673+00	5.1411+00
CP	8.0099-01	3.9417-01	-2.9062-01	-3.4583-01	-3.4587-01	-3.5581-01	-3.5400-01	-3.7043-01	1.9847-01
P/PO1	6.6501-01	4.7771-01	1.6244-01	1.3703-01	1.3701-01	1.3245-01	1.3327-01	1.2570-01	3.8761-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.141 P-INF =3.9513 RE = .3703 TO = 533.

P	8.8979+00	1.0159+01	9.9680+00	9.1794+00	6.6688+00	2.2095+00	4.3510+00	4.4278+00	4.5781+00
CP	8.0557-01	1.0110+00	9.7985-01	8.5142-01	4.4256-01	-2.8365-01	6.5093-02	7.7598-02	1.0208-01
P/PO1	6.6711-01	7.6170-01	7.4735-01	6.8822-01	4.9999-01	1.6565-01	3.2621-01	3.3197-01	3.4324-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.132 P-INF =3.9461 RE = .3703 TO = 533.

P	5.4290+00	9.8203+00	1.0430+01	1.0097+01	9.3271+00	7.0986+00	2.1260+00	1.8139+00	1.8667+00
CP	2.4181-01	9.5789-01	1.0572+00	1.0031+00	8.7747-01	5.1407-01	-2.9679-01	-3.4769-01	-3.3907-01
P/PO1	4.0757-01	7.3724-01	7.8297-01	7.5804-01	7.0021-01	5.3291-01	1.5961-01	1.3617-01	1.4014-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3716 TO = 533.

P	1.8932+00	1.8089+00	5.3957+00	9.2253+00	1.0326+01	9.9991+00	9.2446+00	6.8469+00	2.1727+00
CP	-3.3586-01	-3.4957-01	2.3323-01	8.5546-01	1.0343+00	9.8118-01	8.5859-01	4.6902-01	-2.9045-01
P/PO1	1.4162-01	1.3531-01	4.0362-01	6.9008-01	7.7241-01	7.4796-01	6.9152-01	5.1217-01	1.6253-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3716 TO = 533.

P	4.6892+00	4.4882+00	4.5438+00	2.1552+00	1.8296+00	1.7933+00	1.8047+00	1.7222+00	4.6270+00
CP	1.1843-01	8.5773-02	9.4801-02	-2.9329-01	-3.4620-01	-3.5210-01	-3.5025-01	-3.6364-01	1.0833-01
P/PO1	3.5077-01	3.3573-01	3.3989-01	1.6122-01	1.3686-01	1.3414-01	1.3499-01	1.2883-01	3.4611-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3715 TO = 533.

P	7.9523+00	9.5428+00	9.6450+00	8.8888+00	6.6227+00	2.3564+00	4.6600+00	4.5194+00	4.5169+00
CP	6.4903-01	9.0755-01	9.2416-01	8.0124-01	4.3294-01	-2.6049-01	1.1393-01	9.1072-02	9.0666-02
P/PO1	5.9504-01	7.1406-01	7.2171-01	6.6512-01	4.9556-01	1.7632-01	3.4869-01	3.3817-01	3.3798-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.2 Q-INF = 6.116 P-INF =3.9357 RE = .3693 TO = 533.

P	4.7582+00	7.0453+00	7.9375+00	8.7511+00	8.5742+00	6.6254+00	2.0272+00	1.6795+00	1.7382+00
CP	1.3447-01	5.0841-01	6.5428-01	7.8729-01	7.5837-01	4.3975-01	-3.1204-01	-3.6888-01	-3.5928-01
P/PO1	3.5815-01	5.3031-01	5.9746-01	6.5870-01	6.4538-01	4.9869-01	1.5258-01	1.2642-01	1.3083-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.167 P-INF = 3.9681 RE = .3724 TO = 533.

P	1.6373+00	1.6187+00	4.7722+00	5.8901+00	6.7918+00	7.4345+00	7.5469+00	5.9777+00	2.2401+00
CP	-3.7796-01	-3.8099-01	1.3040-01	3.1168-01	4.5789-01	5.6211-01	5.8035-01	3.2588-01	-2.8022-01
P/PO1	1.2224-01	1.2084-01	3.5627-01	4.3973-01	5.0705-01	5.5503-01	5.6342-01	4.4627-01	1.6723-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.139 P-INF = 3.9500 RE = .3707 TO = 533.

P	1.7303+00	4.8093+00	4.6920+00	4.6850+00	4.6818+00	4.8474+00	5.6736+00	6.2065+00	6.6020+00
CP	-3.6160-01	1.3998-01	1.2088-01	1.1974-01	1.1922-01	1.4619-01	2.8078-01	3.6760-01	4.3204-01
P/PO1	1.2977-01	3.6069-01	3.5189-01	3.5137-01	3.5113-01	3.6355-01	4.2551-01	4.6548-01	4.9514-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.4 Q-INF = 6.169 P-INF = 3.9694 RE = .3725 TO = 533.

P	6.5881+00	5.0994+00	2.0249+00	1.5452+00	1.5858+00	1.5230+00	1.5407+00	1.4998+00	1.5791+00
CP	4.2452-01	1.8319-01	-3.1521-01	-3.9299-01	-3.8640-01	-3.9657-01	-3.9370-01	-4.0035-01	-3.8749-01
P/PO1	4.9168-01	3.8058-01	1.5113-01	1.1532-01	1.1835-01	1.1367-01	1.1499-01	1.1193-01	1.1785-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.5141+00	4.4906+00	4.8000+00	5.0297+00	7.4742+00	6.0094+00	9.7875+00	7.6500+00	
CP	8.8295-02	8.4496-02	1.3465-01	1.7188-01	5.6816-01	3.3070-01	9.4316-01	5.9666-01	
P/PO1	3.3689-01	3.3514-01	3.5823-01	3.7537-01	5.5781-01	4.4849-01	7.3046-01	5.7093-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	1.0191+01	8.7375+00	9.9539+00	9.1523+00	8.8500+00	8.5969+00	6.5016+00
CP	1.0085+00	7.7295-01	9.7014-01	8.4020-01	7.9119-01	7.5015-01	4.1049-01
P/PO1	7.6054-01	6.5209-01	7.4288-01	6.8305-01	6.6049-01	6.4160-01	4.8522-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH [illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	276.	301244	1.49	5	13.42	137.58	9.01	5.01	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.139 P-INF = 3.9500 RE = .3707 TO = 533.

P	4.5388+00	4.3030+00	3.8276+00	3.7333+00	3.9487+00	5.0249+00	9.4607+00	9.4546+00	9.0472+00
CP	9.5921-02	5.7515-02	-1.9925-02	-3.5299-02	-2.0363-04	1.7511-01	8.9773-01	8.9673-01	8.3037-01
P/PO1	3.4040-01	3.2272-01	2.8707-01	2.7999-01	2.9615-01	3.7686-01	7.0954-01	7.0908-01	6.7853-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.4 Q-INF = 6.167 P-INF = 3.9681 RE = .3724 TO = 533.

P	8.4793+00	6.1049+00	1.9632+00	1.7684+00	1.7803+00	1.7198+00	1.7429+00	1.6490+00	5.3370+00
CP	7.3154-01	3.4651-01	-3.2511-01	-3.5671-01	-3.5477-01	-3.6458-01	-3.6085-01	-3.7607-01	2.2198-01
P/PO1	6.3303-01	4.5577-01	1.4657-01	1.3202-01	1.3291-01	1.2840-01	1.3011-01	1.2310-01	3.9844-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.3 Q-INF = 6.141 P-INF = 3.9513 RE = .3708 TO = 533.

P	1.0650+01	1.0159+01	9.6758+00	8.9806+00	6.6074+00	2.1177+00	3.8071+00	4.2140+00	4.7494+00
CP	1.0908+00	1.0110+00	9.3225-01	8.1903-01	4.3255-01	-2.9861-01	-2.3477-02	4.2789-02	1.2999-01
P/PO1	7.9844-01	7.6170-01	7.2543-01	6.7331-01	4.9538-01	1.5877-01	2.8543-01	3.1594-01	3.5609-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.3 Q-INF = 6.137 P-INF = 3.9487 RE = .3705 TO = 533.

P	6.1076+00	1.0992+01	1.0660+01	1.0051+01	9.3886+00	7.1750+00	2.0951+00	1.7711+00	1.8239+00
CP	3.5182-01	1.1478+00	1.0937+00	9.9451-01	8.8649-01	5.2575-01	-3.0205-01	-3.5485-01	-3.4625-01
P/PO1	4.5821-01	8.2465-01	7.9977-01	7.5410-01	7.0436-01	5.3829-01	1.5718-01	1.3287-01	1.3683-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.185 P-INF = 3.9798 RE = .3735 TO = 533.

P	1.8682+00	1.8027+00	6.4915+00	1.1245+01	1.0818+01	1.0213+01	9.4916+00	7.0604+00	2.1727+00
CP	-3.4141-01	-3.5200-01	4.0612-01	1.1747+00	1.1056+00	1.0078+00	8.9118-01	4.9810-01	-2.9217-01
P/PO1	1.3906-01	1.3419-01	4.8321-01	8.3703-01	8.0524-01	7.6022-01	7.0653-01	5.2556-01	1.6173-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.4 Q-INF = 6.185 P-INF = 3.9798 RE = .3735 TO = 533.

P	4.1376+00	3.9203+00	4.3709+00	2.1368+00	1.8234+00	1.7810+00	1.8170+00	1.7222+00	5.4104+00
CP	2.5514-02	-9.6210-03	6.3247-02	-2.9798-01	-3.4865-01	-3.5550-01	-3.4968-01	-3.6501-01	2.3132-01
P/PO1	5.0799-01	2.9181-01	3.2536-01	1.5906-01	1.3573-01	1.3258-01	1.3525-01	1.2820-01	4.0274-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.149 P-INF = 3.9564 RE = .3713 TO = 533.

P	1.0572+01	1.0252+01	9.7834+00	9.0418+00	6.7764+00	2.3380+00	4.0419+00	4.0125+00	4.2720+00
CP	1.0760+00	1.0239+00	9.4770-01	8.2707-01	4.5863-01	-2.6322-01	1.3907-02	9.1112-03	5.1330-02
P/PO1	7.9159-01	7.6763-01	7.3254-01	6.7701-01	5.0739-01	1.7506-01	3.0264-01	3.0044-01	3.1987-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.165 P-INF = 3.9668 RE = .3722 TO = 533.

P	5.2346+00	9.3578+00	9.5527+00	9.1030+00	8.5588+00	6.6101+00	1.9159+00	1.7039+00	1.7627+00
CP	2.0566-01	8.7450-01	9.0611-01	8.3316-01	7.4489-01	4.2878-01	-3.3268-01	-3.6707-01	-3.5754-01
P/PO1	3.9092-01	6.9885-01	7.1340-01	6.7981-01	6.3918-01	4.9365-01	1.4308-01	1.2725-01	1.3164-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B558

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.4 Q-INF = 6.183 P-INF =3.9785 RE = .3733 TO = 533.

P	1.7804+00	1.7657+00	4.3771+00	6.9152+00	8.1593+00	8.4115+00	8.0408+00	6.2827+00	1.9279+00
CP	-3.5551-01	-3.5790-01	6.4476-02	4.7498-01	6.7621-01	7.1699-01	6.5704-01	3.7269-01	-3.3165-01
P/PO1	1.3257-01	1.3147-01	3.2593-01	5.1491-01	6.0756-01	6.2633-01	5.9873-01	4.6782-01	1.4356-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.149 P-INF =3.9564 RE = .3713 TO = 533.

P	1.7553+00	4.5561+00	4.4821+00	4.3657+00	4.2875+00	4.4801+00	5.6983+00	6.4962+00	7.1675+00
CP	-3.5799-01	9.7534-02	8.5486-02	6.6566-02	5.3847-02	8.5174-02	2.8329-01	4.1306-01	5.2224-01
P/PO1	1.3143-01	3.4115-01	3.3560-01	3.2689-01	3.2103-01	3.3545-01	4.2666-01	4.8641-01	5.3667-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.120 P-INF =3.9383 RE = .3696 TO = 533.

P	7.3012+00	5.5810+00	1.8027+00	1.6763+00	1.6941+00	1.5717+00	1.6872+00	1.5879+00	1.6341+00
CP	5.4946-01	2.6839-01	-3.4893-01	-3.6959-01	-3.6668-01	-3.8667-01	-3.6780-01	-3.8403-01	-3.7647-01
P/PO1	5.4920-01	4.1980-01	1.3560-01	1.2609-01	1.2743-01	1.1823-01	1.2692-01	1.1944-01	1.2292-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.7719+00	4.9313+00	7.7414+00	6.1898+00	1.0001+01	8.1797+00	1.1491+01	9.5203+00	
CP	1.3620-01	1.6224-01	6.2138-01	3.6788-01	9.9054-01	6.9299-01	1.2341+00	9.1203-01	
P/PO1	3.5894-01	3.7093-01	5.8231-01	4.6561-01	7.5227-01	6.1528-01	8.6439-01	7.1613-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	1.0634+01	9.7125+00	1.0144+01	9.5859+00	9.1102+00	8.9203+00	6.6563+00
CP	1.0939+00	9.4344-01	1.0139+00	9.2276-01	8.4502-01	8.1400-01	4.4408-01
P/PO1	7.9987-01	7.3058-01	7.6302-01	7.2106-01	6.8527-01	6.7099-01	5.0069-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	277.	301244	1.49	5	14.66	160.09	4.94	1.18	180.0

VALVE POS 2 PO = 14.3 Q-INF = 6.120 P-INF =3.9383 RE = .3700 TO = 532.

P	4.8146+00	4.7846+00	4.7290+00	4.6543+00	4.6079+00	4.7372+00	6.3740+00	7.3197+00	7.9774+00
CP	1.4318-01	1.3827-01	1.2919-01	1.1699-01	1.0940-01	1.3053-01	3.9797-01	5.5247-01	6.5995-01
P/PO1	3.6716-01	3.5990-01	3.5572-01	3.5010-01	3.4661-01	3.5634-01	4.7946-01	5.5059-01	6.0007-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 14.3 Q-INF = 6.124 P-INF =3.9409 RE = .3703 TO = 532.

P	7.9523+00	5.8737+00	2.2410+00	1.7745+00	1.7988+00	1.7321+00	1.7490+00	1.6734+00	4.7733+00
CP	6.5498-01	3.1559-01	-2.7756-01	-3.5372-01	-3.4976-01	-3.6066-01	-3.5789-01	-3.7024-01	1.3602-01
P/PO1	5.9778-01	4.4153-01	1.6846-01	1.3339-01	1.3522-01	1.3020-01	1.3148-01	1.2579-01	3.5886-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 14.4 Q-INF = 6.181 P-INF =3.9772 RE = .3737 TO = 532.

P	6.9917+00	8.2941+00	8.9528+00	8.5828+00	6.3615+00	2.2462+00	4.5858+00	4.4766+00	4.5413+00
CP	4.8764-01	6.9844-01	8.0501-01	7.4515-01	3.8577-01	-2.8006-01	9.8474-02	8.0806-02	9.1279-02
P/PO1	5.2074-01	6.1779-01	6.6685-01	6.3930-01	4.7384-01	1.6731-01	3.4158-01	3.3344-01	3.3627-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 14.4 Q-INF = 6.187 P-INF =3.9811 RE = .3736 TO = 533.

P	5.0027+00	8.2170+00	9.0912+00	9.5466+00	9.0045+00	6.8544+00	2.1137+00	1.8688+00	1.9096+00
CP	1.6513-01	6.8467-01	8.2597-01	8.9954-01	8.1195-01	4.6442-01	-3.0183-01	-3.4141-01	-3.3482-01
P/PO1	3.7226-01	6.1145-01	6.7651-01	7.1039-01	6.7005-01	5.1005-01	1.5729-01	1.3906-01	1.4210-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 14.4 Q-INF = 6.183 P-INF =3.9785 RE = .3738 TO = 532.

P	1.9371+00	1.8150+00	4.9636+00	8.2921+00	9.8342+00	9.9075+00	9.1983+00	6.8317+00	2.1605+00
CP	-3.3016-01	-3.4991-01	1.5933-01	6.9768-01	9.4710-01	9.5896-01	8.4425-01	4.6148-01	-2.9403-01
P/PO1	1.4424-01	1.3515-01	3.6960-01	6.1744-01	7.3227-01	7.3773-01	6.8492-01	5.0870-01	1.6087-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3715 TO = 532.

P	4.8146+00	4.5870+00	4.5932+00	2.3087+00	1.9220+00	1.8851+00	1.8788+00	1.7589+00	4.8963+00
CP	1.4009-01	1.0304-01	1.0405-01	-2.6773-01	-3.3068-01	-3.3668-01	-3.3770-01	-3.5722-01	1.5338-01
P/PO1	3.6074-01	3.4368-01	3.4414-01	1.7298-01	1.4401-01	1.4124-01	1.4077-01	1.3178-01	3.6686-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 14.3 Q-INF = 6.153 P-INF =3.9590 RE = .3720 TO = 532.

P	8.0763+00	9.6353+00	9.8757+00	9.1947+00	6.8686+00	2.4604+00	4.6353+00	4.4827+00	4.5107+00
CP	6.6919-01	9.2258-01	9.6166-01	8.5098-01	4.7290-01	-2.4358-01	1.0991-01	8.5116-02	8.9671-02
P/PO1	6.0432-01	7.2098-01	7.3897-01	6.8802-01	5.1396-01	1.8410-01	3.4684-01	3.3543-01	3.3752-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 14.4 Q-INF = 6.171 P-INF =3.9707 RE = .3731 TO = 532.

P	4.9275+00	7.9703+00	8.8451+00	9.3630+00	8.9123+00	6.7780+00	2.1940+00	1.7222+00	1.7688+00
CP	1.5505-01	6.4816-01	7.8992-01	8.7386-01	8.0081-01	4.5495-01	-2.8792-01	-3.6437-01	-3.5683-01
P/PO1	3.6762-01	5.9464-01	6.5991-01	6.9855-01	6.6492-01	5.0569-01	1.6369-01	1.2849-01	1.3197-01
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B560

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 14.3 Q-INF = 6.151 P-INF =3.9577 RE = .3719 TO = 532.

P	1.6462+00	1.6187+00	4.7722+00	6.7775+00	8.0057+00	8.6405+00	8.4575+00	6.5115+00	2.3258+00
CP	-3.7582-01	-3.8030-01	1.3242-01	4.5845-01	6.5814-01	7.6135-01	7.3160-01	4.1520-01	-2.6534-01
P/PO1	1.2322-01	1.2116-01	3.5721-01	5.0731-01	5.9924-01	6.4675-01	6.3306-01	4.8739-01	1.7409-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 14.3 Q-INF = 6.145 P-INF =3.9538 RE = .3715 TO = 532.

P	1.7428+00	4.8278+00	4.7599+00	4.7341+00	4.7003+00	4.8229+00	6.2197+00	6.9232+00	7.7176+00
CP	-3.5984-01	1.4223-01	1.3118-01	1.2699-01	1.2148-01	1.4143-01	3.6875-01	4.8325-01	6.1254-01
P/PO1	1.3058-01	3.6172-01	3.5663-01	3.5471-01	3.5217-01	3.6135-01	4.6601-01	5.1872-01	5.7824-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 14.3 Q-INF = 6.155 P-INF =3.9603 RE = .3721 TO = 532.

P	7.7197+00	5.9045+00	2.2225+00	1.5629+00	1.5947+00	1.5186+00	1.5363+00	1.4820+00	1.5546+00
CP	6.1083-01	3.1589-01	-2.8236-01	-3.8953-01	-3.8436-01	-3.9673-01	-3.9385-01	-4.0267-01	-3.9088-01
P/PO1	5.7746-01	4.4167-01	1.6625-01	1.1691-01	1.1929-01	1.1360-01	1.1492-01	1.1086-01	1.1629-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.5516+00	4.5563+00	5.4234+00	5.4398+00	6.6492+00	6.6492+00	8.9250+00	9.5203+00	
CP	9.6064-02	9.6826-02	2.3773-01	2.4039-01	4.3689-01	4.3689-01	8.0666-01	9.0338-01	
P/PO1	3.4047-01	3.4082-01	4.0569-01	4.0691-01	4.9738-01	4.9738-01	6.6761-01	7.1214-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	9.6750+00	9.4219+00	9.8297+00	9.7805+00	9.0023+00	8.9906+00	6.6469+00
CP	9.2852-01	8.8739-01	9.5365-01	9.4565-01	8.1922-01	8.1732-01	4.3651-01
P/PO1	7.2371-01	7.0478-01	7.3529-01	7.3160-01	6.7340-01	6.7252-01	4.9720-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	278.	301244	1.99	5	.00	180.00	.00	15.00	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.113 P-INF =2.5659 RE = .4345 TO = 531.

P	2.3822+00	2.9448+00	3.5684+00	4.6298+00	6.7457+00	9.2206+00	1.1189+01	1.1025+01	1.0881+01
CP	-2.5826-02	5.3268-02	1.4093-01	2.9015-01	5.8762-01	9.3557-01	1.2123+00	1.1893+00	1.1690+00
P/PO1	1.6610-01	2.0533-01	2.4881-01	3.2281-01	4.7034-01	6.4291-01	7.8017-01	7.6874-01	7.5869-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4348 TO = 532.

P	1.0448+01	7.7083+00	2.5374+00	9.4893-01	9.5525-01	9.2143-01	9.5297-01	8.9185-01	5.9754+00
CP	1.1050+00	7.2065-01	-4.7763-03	-2.2762-01	-2.2673-01	-2.3147-01	-2.2705-01	-2.3562-01	4.7755-01
P/PO1	7.2694-01	5.3632-01	1.7654-01	6.6024-02	6.6463-02	6.4110-02	6.6305-02	6.2052-02	4.1575-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4361 TO = 532.

P	1.0696+01	1.0838+01	1.0691+01	1.0296+01	7.6830+00	2.4910+00	2.9233+00	2.7544+00	4.3945+00
CP	1.1356+00	1.1554+00	1.1349+00	1.0796+00	7.1405-01	-1.2269-02	4.8206-02	2.4573-02	2.5401-01
P/PO1	7.4209-01	7.5193-01	7.4174-01	7.1435-01	5.3304-01	1.7283-01	2.0282-01	1.9110-01	3.0489-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4362 TO = 532.

P	4.2504+00	1.0175+01	1.0199+01	9.9291+00	9.5884+00	7.4650+00	2.1755+00	9.1556-01	9.0409-01
CP	2.3372-01	1.0623+00	1.0657+00	1.0279+00	9.8028-01	6.8331-01	-5.6480-02	-2.3269-01	-2.3430-01
P/PO1	2.9482-01	7.0577-01	7.0742-01	6.8872-01	6.6508-01	5.1786-01	1.5090-01	6.3507-02	6.2711-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4368 TO = 532.

P	9.0213-01	8.7544-01	5.4451+00	8.2462+00	8.9123+00	8.9000+00	8.5810+00	6.5877+00	1.9953+00
CP	-2.3475-01	-2.3848-01	3.9974-01	7.9094-01	8.8396-01	8.8225-01	8.3769-01	5.5931-01	-8.2081-02
P/PO1	6.2487-02	6.0638-02	3.7716-01	5.7118-01	6.1731-01	6.1646-01	5.9437-01	4.5630-01	1.3520-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4366 TO = 532.

P	2.4073+00	2.4262+00	2.4324+00	1.3208+00	8.7819-01	8.4525-01	8.4149-01	8.1708-01	2.8705+00
CP	-2.4375-02	-2.1730-02	-2.0867-02	-1.7619-01	-2.3803-01	-2.4264-01	-2.4316-01	-2.4657-01	4.0342-02
P/PO1	1.6682-01	1.6813-01	1.6856-01	9.1530-02	6.0857-02	5.8574-02	5.8314-02	5.6622-02	1.9892-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4349 TO = 532.

P	5.9061+00	6.4595+00	6.3992+00	6.2420+00	4.8050+00	1.8300+00	2.8924+00	2.8948+00	2.9194+00
CP	4.6762-01	5.4525-01	5.3679-01	5.1474-01	3.1319-01	-1.0407-01	4.4936-02	4.5277-02	4.8725-02
P/PO1	4.1083-01	4.4933-01	4.4513-01	4.3420-01	3.3424-01	1.2730-01	2.0120-01	2.0137-01	2.0308-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.7 Q-INF = 7.084 P-INF =2.5556 RE = .4321 TO = 532.

P	2.9527+00	3.7474+00	4.1795+00	4.7157+00	5.0452+00	4.3455+00	1.2281+00	8.2072-01	8.0383-01
CP	5.6057-02	1.6873-01	2.2923-01	3.0492-01	3.5143-01	2.5266-01	-1.8739-01	-2.4489-01	-2.4727-01
P/PO1	2.0671-01	2.6235-01	2.9260-01	3.3014-01	3.5320-01	3.0422-01	8.5975-02	5.7457-02	5.6275-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B562

PRELIMINARY UNCHECKED DATA

DEVELOPMENT CE
FACILIT
40 - INF

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4341 TO = 532.

P	8.0698-01	7.7878-01	3.0498+00	3.8192+00	4.4600+00	4.7556+00	4.8578+00	3.7804+00	1.2872+00
CP	-2.4734-01	-2.5131-01	6.7820-02	1.7595-01	2.6599-01	3.0752-01	3.2188-01	1.7049-01	-1.7986-01
P/PO1	5.6240-02	5.4275-02	2.1255-01	2.6617-01	3.1083-01	3.3143-01	3.3855-01	2.6346-01	8.9709-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4341 TO = 532.

P	8.0332-01	2.8769+00	2.8893+00	2.9473+00	3.0000+00	3.0418+00	4.3015+00	5.2522+00	5.8073+00
CP	-2.4786-01	4.3529-02	4.5264-02	5.3423-02	6.0830-02	6.6705-02	2.4372-01	3.7731-01	4.5532-01
P/PO1	5.5985-02	2.0050-01	2.0136-01	2.0541-01	2.0908-01	2.1199-01	2.9978-01	3.6604-01	4.0473-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	5.7424+00	4.6364+00	1.3571+00	7.7123-01	7.6707-01	7.4730-01	7.7137-01	7.6966-01	8.1458-01
CP	4.4334-01	2.8847-01	-1.7071-01	-2.5275-01	-2.5333-01	-2.5610-01	-2.5273-01	-2.5297-01	-2.4668-01
P/PO1	3.9879-01	3.2198-01	9.4246-02	5.3559-02	5.3269-02	5.1897-02	5.3568-02	5.3449-02	5.6569-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.9250+00	2.5219+00	5.6391+00	2.7867+00	7.4016+00	3.1172+00	8.6813+00	3.8203+00
CP	4.8830-02	-7.6172-03	4.2887-01	2.9467-02	6.7566-01	7.5741-02	8.5485-01	1.7420-01
P/PO1	2.0313-01	1.7513-01	3.9161-01	1.9352-01	5.1400-01	2.1647-01	6.0287-01	2.6530-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.0352+00	4.3922+00	8.6508+00	4.7742+00	6.7617+00	5.0180+00	4.5680+00
CP	9.0440-01	2.5427-01	8.5058-01	3.0777-01	5.8606-01	3.4190-01	2.7889-01
P/PO1	6.2745-01	3.0502-01	6.0076-01	3.3155-01	4.6957-01	3.4848-01	3.1722-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

B563

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	279.	301244	1.99	5	-3.99	180.00	.00	18.99	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4360 TO = 532.

P	2.4951+00	6.8295+00	5.8762+00	6.5327+00	6.4076+00	1.1587+01	1.2038+01	1.1803+01	1.1630+01
CP	-1.1618-02	5.9488-01	4.6149-01	5.5335-01	5.3584-01	1.2605+00	1.3237+00	1.2908+00	1.2666+00
P/PO1	1.7315-01	4.7394-01	4.0779-01	4.5335-01	4.4466-01	8.0408-01	8.3540-01	8.1908-01	8.0707-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.155 P-INF =2.5811 RE = .4365 TO = 532.

P	1.1068+01	8.1245+00	2.7102+00	9.5076-01	9.6421-01	9.3412-01	9.7095-01	9.5751-01	8.0386+00
CP	1.1861+00	7.7474-01	1.8040-02	-2.2786-01	-2.2598-01	-2.3019-01	-2.2504-01	-2.2692-01	7.6273-01
P/PO1	7.6718-01	5.6315-01	1.8786-01	6.5902-02	6.6834-02	6.4748-02	6.7301-02	6.6369-02	5.5719-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4340 TO = 532.

P	1.1456+01	1.1578+01	1.1306+01	1.0755+01	8.0057+00	2.6134+00	5.7477+00	4.4888+00	4.5658+00
CP	1.2494+00	1.2666+00	1.2284+00	1.1510+00	7.6450-01	6.5885-03	4.4713-01	2.7019-01	2.8101-01
P/PO1	7.9856-01	8.0708-01	7.8815-01	7.4974-01	5.5807-01	1.8218-01	4.0067-01	3.1291-01	3.1828-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0600-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4352 TO = 532.

P	4.3820+00	1.0499+01	1.0476+01	1.0266+01	9.8957+00	7.6635+00	2.1817+00	9.5022-01	9.4169-01
CP	2.5343-01	1.1107+00	1.1075+00	1.0781+00	1.0262+00	7.1334-01	-5.4966-02	-2.2756-01	-2.2876-01
P/PO1	3.0460-01	7.2977-01	7.2818-01	7.1358-01	6.8786-01	5.3270-01	1.5165-01	6.6051-02	6.5458-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4351 TO = 532.

P	9.5520-01	9.3745-01	4.9883+00	9.4701+00	9.5269+00	9.0832+00	8.4267+00	6.3742+00	1.9402+00
CP	-2.2683-01	-2.2932-01	3.3857-01	9.6688-01	9.7483-01	9.1263-01	8.2059-01	5.3286-01	-8.8749-02
P/PO1	6.6413-02	6.5179-02	3.4682-01	6.5843-01	6.6238-01	6.3153-01	5.8588-01	4.4318-01	1.3490-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4340 TO = 532.

P	2.5201+00	2.2410+00	2.9572+00	9.9656-01	9.5167-01	9.2687-01	9.3499-01	9.2286-01	2.6379+00
CP	-6.5204-03	-4.5753-02	5.4905-02	-2.2067-01	-2.2698-01	-2.3046-01	-2.2732-01	-2.3103-01	1.0030-02
P/PO1	1.7568-01	1.5622-01	2.0614-01	6.9469-02	6.6340-02	6.4611-02	6.5177-02	6.4331-02	1.8388-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4355 TO = 532.

P	4.4761+00	5.1118+00	5.1365+00	5.4403+00	4.4600+00	1.8545+00	2.4351+00	2.2169+00	2.6318+00
CP	2.6617-01	3.5520-01	3.5866-01	4.0121-01	2.6392-01	-1.0101-01	-1.9693-02	-5.0244-02	7.8585-03
P/PO1	3.1092-01	3.5507-01	3.5679-01	3.7789-01	3.0980-01	1.2882-01	1.6914-01	1.5399-01	1.8281-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4361 TO = 532.

P	3.0718+00	4.3030+00	4.5438+00	4.6175+00	4.5894+00	3.6967+00	1.1040+00	9.2651-01	9.1483-01
CP	6.8983-02	2.4122-01	2.7490-01	2.8521-01	2.8128-01	1.5640-01	-2.0630-01	-2.3113-01	-2.3276-01
P/PO1	2.1312-01	2.9854-01	3.1525-01	3.2036-01	3.1841-01	2.5648-01	7.6596-02	6.4281-02	6.3471-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B564

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4344 TO = 532.

P	9.1128-01	9.0644-01	3.0621+00	4.2859+00	4.2875+00	4.1313+00	4.1903+00	3.4506+00	1.0187+00
CP	-2.3278-01	-7.3346-01	6.9249-02	2.4109-01	2.4132-01	2.1938-01	2.2767-01	1.2380-01	-2.1770-01
P/PO1	6.3464-02	6.3127-02	2.1325-01	2.9848-01	2.9860-01	2.8771-01	2.9182-01	2.4031-01	7.0943-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	8.9664-01	2.5003+00	2.4015+00	2.5298+00	3.0986+00	3.1336+00	5.1297+00	4.9591+00	4.6821+00
CP	-2.3540-01	-1.1213-02	-2.5022-02	-7.0942-03	7.2422-02	7.7322-02	3.5635-01	3.3251-01	2.9377-01
P/PO1	6.2165-02	1.7335-01	1.6650-01	1.7539-01	2.1483-01	2.1726-01	3.5565-01	3.4382-01	3.2461-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4357 TO = 532.

P	4.4824+00	3.6548+00	1.0545+00	8.5733-01	8.6026-01	8.3980-01	8.5747-01	8.5355-01	8.7903-01
CP	2.6675-01	1.5090-01	-2.1312-01	-2.4072-01	-2.4031-01	-2.4318-01	-2.4042-01	-2.4125-01	-2.3769-01
P/PO1	3.1121-01	2.5375-01	7.3214-02	5.9524-02	5.9727-02	5.8307-02	5.9672-02	5.9261-02	6.1030-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.0984+00	2.4703+00	6.2742+00	2.5500+00	7.7813+00	2.5664+00	1.2164+01	2.8430+00
CP	7.3013-02	-1.4919-02	5.1760-01	-3.7633-03	7.2857-01	-1.4666-03	1.3421+00	3.7250-02
P/PO1	2.1512-01	1.7151-01	4.3561-01	1.7704-01	5.4024-01	1.7818-01	8.4454-01	1.9738-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.1030+01	3.1313+00	8.3156+00	3.5320+00	5.9344+00	3.6445+00	3.5578+00
CP	1.1833+00	7.7607-02	8.0337-01	1.3371-01	4.7002-01	1.4946-01	1.3732-01
P/PO1	7.6578-01	2.1740-01	5.7735-01	2.4523-01	4.1202-01	2.5304-01	2.4702-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH HYPERSONIC WIND TUNNEL

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	280.	301244	1.99	5	5.01	180.00	.00	9.99	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.120 P-INF =2.5684 RE = .4343 TO = 532.

P	2.9966+00	2.9078+00	2.7040+00	2.8614+00	3.3265+00	5.2362+00	9.8928+00	1.0034+01	1.0025+01
CP	6.0147-02	4.7673-02	1.9058-02	4.1153-02	1.0649-01	3.7471-01	1.0288+00	1.0486+00	1.0474+00
P/PO1	2.0874-01	2.0255-01	1.8836-01	1.9932-01	2.3172-01	3.6475-01	6.8913-01	6.9896-01	6.9835-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4347 TO = 532.

P	9.7349+00	7.2303+00	2.3707+00	9.8923-01	9.9468-01	9.5408-01	9.7994-01	9.2651-01	4.8474+00
CP	1.0053+00	6.5384-01	-2.8082-02	-2.2193-01	-2.2117-01	-2.2686-01	-2.2323-01	-2.3073-01	3.1945-01
P/PO1	6.7749-01	5.0318-01	1.6498-01	6.8844-02	6.9223-02	6.6397-02	6.8198-02	6.4479-02	3.3734-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4352 TO = 532.

P	9.4869+00	9.8974+00	9.9065+00	9.6537+00	7.3296+00	2.3686+00	2.7317+00	2.7849+00	3.2071+00
CP	9.6891-01	1.0264+00	1.0277+00	9.9229-01	6.6655-01	-2.8766-02	2.2127-02	2.9582-02	8.8755-02
P/PO1	6.5945-01	6.8798-01	6.8861-01	6.7104-01	5.0949-01	1.6464-01	1.8488-01	1.9358-01	2.2293-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4362 TO = 532.

P	3.8116+00	9.1766+00	9.3989+00	9.4089+00	9.2964+00	7.3276+00	2.1137+00	9.3198-01	9.2199-01
CP	1.7234-01	9.1569-01	9.5378-01	9.5519-01	9.3945-01	6.6409-01	-6.5124-02	-2.3040-01	-2.3179-01
P/PO1	2.6438-01	6.3305-01	6.5194-01	6.5264-01	6.4483-01	5.0827-01	1.4661-01	6.4645-02	6.3953-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	9.1677-01	8.9550-01	3.9943+00	7.6954+00	8.4666+00	8.5947+00	8.4267+00	6.5267+00	2.0197+00
CP	-2.3258-01	-2.3556-01	1.9764-01	7.1503-01	8.2284-01	8.4074-01	8.1725-01	5.5165-01	-7.8376-02
P/PO1	6.3561-02	6.2086-02	2.7693-01	5.3353-01	5.8700-01	5.9588-01	5.8423-01	4.5250-01	1.4003-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.120 P-INF =2.5684 RE = .4343 TO = 532.

P	2.9966+00	2.9140+00	2.9880+00	1.5098+00	8.8535-01	8.5432-01	8.4509-01	8.2072-01	3.1398+00
CP	6.0147-02	4.8540-02	5.8945-02	-1.4869-01	-2.3639-01	-2.4075-01	-2.4204-01	-2.4547-01	8.0257-02
P/PO1	2.0874-01	2.0298-01	2.0814-01	1.0517-01	6.1673-02	5.9511-02	5.8868-02	5.7171-02	2.1871-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.111 P-INF =2.5653 RE = .4338 TO = 532.

P	4.8397+00	6.1204+00	6.7377+00	6.6551+00	5.1192+00	1.9708+00	3.0222+00	2.9925+00	3.0418+00
CP	3.1983-01	4.9992-01	5.8672-01	5.7511-01	3.5913-01	-8.3607-02	6.4246-02	6.0078-02	6.7009-02
P/PO1	3.3753-01	4.2685-01	4.6990-01	4.6414-01	3.5702-01	1.3745-01	2.1077-01	2.0871-01	2.1214-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.111 P-INF =2.5653 RE = .4338 TO = 532.

P	3.2411+00	4.2783+00	4.6673+00	5.2806+00	5.7105+00	4.6944+00	1.5009+00	8.1708-01	8.0383-01
CP	9.5027-02	2.4089-01	2.9558-01	3.8183-01	4.4229-01	2.9939-01	-1.4968-01	-2.4584-01	-2.4770-01
P/PO1	2.2604-01	2.9838-01	3.2550-01	3.6828-01	3.9826-01	3.2739-01	1.0468-01	5.6985-02	5.6061-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT
CENTER ... AERODYNAMICS FACILITY
40 - INCH ... SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	7.9783-01	7.7513-01	3.3893+00	4.1815+00	4.5894+00	4.7494+00	4.7280+00	3.6460+00	1.3239+00
CP	-2.4921-01	-2.5238-01	1.1306-01	2.2381-01	2.8082-01	3.0320-01	3.0020-01	1.4895-01	-1.7567-01
P/PO1	5.5314-02	5.3740-02	2.3498-01	2.8991-01	3.1819-01	3.2928-01	3.2779-01	2.5278-01	9.1784-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4368 TO = 532.

P	7.7038-01	3.0683+00	2.9880+00	2.9964+00	3.0308+00	3.3601+00	4.2459+00	4.6537+00	5.1167+00
CP	-2.5315-01	6.7781-02	5.6572-02	5.7747-02	6.2550-02	1.0854-01	2.3225-01	2.8920-01	3.5386-01
P/PO1	5.3361-02	2.1253-01	2.0697-01	2.0755-01	2.0993-01	2.3274-01	2.9409-01	3.2234-01	3.5441-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.157 P-INF =2.5818 RE = .4366 TO = 532.

P	5.2158+00	4.1178+00	1.4341+00	7.3276-01	7.2226-01	6.8019-01	7.1922-01	7.2224-01	9.1304-01
CP	3.6805-01	2.1463-01	-1.6035-01	-2.5835-01	-2.5982-01	-2.6570-01	-2.6025-01	-2.5982-01	-2.3316-01
P/PO1	3.6145-01	2.8536-01	9.9383-02	5.0779-02	5.0052-02	4.7136-02	4.9941-02	5.0050-02	6.3272-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.1172+00	3.0422+00	4.5211+00	3.1500+00	5.8758+00	2.4516+00	8.2875+00	4.1227+00
CP	7.4815-02	6.4336-02	2.7098-01	7.9400-02	4.6027-01	-1.8191-02	7.9725-01	2.1531-01
P/PO1	2.1602-01	2.1082-01	3.1330-01	2.1829-01	4.0718-01	1.6989-01	5.7431-01	2.8569-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.5664+00	4.9781+00	8.1891+00	5.5969+00	6.9000+00	5.8711+00	5.1563+00
CP	8.3622-01	3.3484-01	7.8350-01	4.2130-01	6.0338-01	4.5961-01	3.5973-01
P/PO1	5.9364-01	3.4497-01	5.6749-01	3.8785-01	4.7816-01	4.0686-01	3.5732-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	281.	301244	1.99	5	10.01	180.00	.00	4.99	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	3.1972+00	3.1362+00	3.0621+00	3.0578+00	3.1972+00	3.6967+00	7.1302+00	8.4624+00	8.8485+00
CP	8.6206-02	7.7679-02	6.7322-02	6.6725-02	8.6201-02	1.5604-01	6.3602-01	8.1385-01	8.7022-01
P/PO1	2.2166-01	2.1744-01	2.1230-01	2.1200-01	2.2166-01	2.5630-01	4.9435-01	5.8254-01	6.1348-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4353 TO = 532.

P	8.7738+00	6.6445+00	2.2472+00	9.4343-01	9.4629-01	8.9785-01	9.1881-01	8.9368-01	3.6314+00
CP	8.6868-01	5.7031-01	-4.5855-02	-2.2854-01	-2.2814-01	-2.3493-01	-2.3199-01	-2.3552-01	1.7613-01
P/PO1	6.0974-01	4.6176-01	1.5617-01	6.5564-02	6.5762-02	6.2396-02	6.3852-02	6.2106-02	2.6626-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.170 P-INF =2.5866 RE = .4374 TO = 532.

P	6.6191+00	8.1245+00	8.6759+00	8.6899+00	6.6996+00	2.2462+00	3.0778+00	3.0597+00	3.1581+00
CP	5.6239-01	7.7234-01	8.4924-01	8.5119-01	5.7361-01	-4.7478-02	6.8504-02	6.5982-02	7.9706-02
P/PO1	4.5783-01	5.6195-01	6.0009-01	6.0106-01	4.6339-01	1.5536-01	2.1289-01	2.1163-01	2.1844-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.167 P-INF =2.5854 RE = .4372 TO = 532.

P	3.6235+00	6.5828+00	7.5068+00	8.2462+00	8.3541+00	6.5948+00	2.0519+00	8.7179-01	8.6112-01
CP	1.4485-01	5.5776-01	6.8668-01	7.8085-01	8.0560-01	5.5944-01	-7.4443-02	-2.3710-01	-2.4052-01
P/PO1	2.5075-01	4.5553-01	5.1947-01	5.7064-01	5.7845-01	4.5637-01	1.4199-01	6.0328-02	5.9590-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	8.5639-01	8.2255-01	3.5992+00	5.6736+00	7.0376+00	7.7398+00	7.8402+00	6.1150+00	2.0381+00
CP	-2.4102-01	-2.4575-01	1.4241-01	4.3739-01	6.2307-01	7.2123-01	7.3526-01	4.9409-01	-7.5823-02
P/PO1	5.9374-02	5.7028-02	2.4954-01	3.9336-01	4.8792-01	5.3661-01	5.4357-01	4.2396-01	1.4130-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4380 TO = 532.

P	3.1784+00	3.1485+00	3.2165+00	1.8912+00	8.0650-01	7.8720-01	7.8395-01	7.5871-01	3.3907+00
CP	8.1907-02	7.7751-02	8.7208-02	-9.7358-02	-2.4842-01	-2.5111-01	-2.5156-01	-2.5508-01	1.1149-01
P/PO1	2.1953-01	2.1747-01	2.2216-01	1.3063-01	5.5705-02	5.4372-02	5.4148-02	5.2405-02	2.3420-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4347 TO = 532.

P	4.8397+00	6.0124+00	6.9530+00	7.2671+00	5.8544+00	2.1483+00	3.1705+00	3.1208+00	3.1704+00
CP	3.1838-01	4.8294-01	6.1492-01	6.5899-01	4.6077-01	-5.9291-02	8.4154-02	7.7178-02	8.4134-02
P/PO1	3.3681-01	4.1843-01	4.8388-01	5.0574-01	4.0743-01	1.4950-01	2.2065-01	2.1719-01	2.2064-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4377 TO = 532.

P	3.4480+00	5.1365+00	5.7291+00	6.5021+00	6.8225+00	5.5451+00	1.8417+00	7.3136-01	7.1969-01
CP	1.1979-01	3.5511-01	4.3770-01	5.4543-01	5.9008-01	4.1206-01	-1.0406-01	-2.5881-01	-2.6044-01
P/PO1	2.3832-01	3.5503-01	3.9599-01	4.4942-01	4.7156-01	3.8327-01	1.2730-01	5.0551-02	4.9744-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B568

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4371 TO = 537.

P	6.9902-01	6.8576-01	3.4819+00	4.6359+00	5.3902+00	5.8774+00	6.0653+00	4.8797+00	1.8667+00
CP	-2.6318-01	-2.6503-01	1.2521-01	2.8626-01	3.9153-01	4.5952-01	4.8576-01	3.2028-01	-1.0022-01
P/PO1	4.8383-02	4.7466-02	2.4101-01	3.2088-01	3.7309-01	4.0681-01	4.1982-01	3.3776-01	1.2921-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4341 TO = 532.

P	6.3497-01	3.2165+00	3.1485+00	3.1684+00	3.2033+00	3.5070+00	4.5549+00	5.0446+00	5.5206+00
CP	-2.7151-01	9.1243-02	8.1700-02	8.4486-02	8.9397-02	1.3207-01	2.7933-01	3.4813-01	4.1503-01
P/PO1	4.4253-02	2.2416-01	2.1943-01	2.2081-01	2.2325-01	2.4441-01	3.1744-01	3.5157-01	3.8474-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 20.0 Q-INF = 7.179 P-INF =2.5897 RE = .4379 TO = 532.

P	5.6421+00	4.3462+00	1.7657+00	6.2468-01	6.2548-01	5.9312-01	5.9696-01	5.7998-01	7.7877-01
CP	4.2521-01	2.4469-01	-1.1478-01	-2.7372-01	-2.7361-01	-2.7812-01	-2.7758-01	-2.7995-01	-2.5226-01
P/PO1	3.8979-01	3.0027-01	1.2198-01	4.3157-02	4.3212-02	4.0977-02	4.1242-02	4.0069-02	5.3803-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.2180+00	3.2438+00	3.9141+00	3.5203+00	4.6477+00	3.8883+00	6.1336+00	4.7977+00
CP	8.7524-02	9.1115-02	1.8449-01	1.2964-01	2.8668-01	1.8090-01	4.9367-01	3.0758-01
P/PO1	2.2232-01	2.2410-01	2.7041-01	2.4321-01	3.2109-01	2.6863-01	4.2375-01	3.3145-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.9398+00	5.7094+00	7.5328+00	6.7031+00	7.2398+00	6.9563+00	5.5547+00
CP	6.0598-01	4.3458-01	6.8858-01	5.7301-01	6.4777-01	6.0827-01	4.1303-01
P/PO1	4.7945-01	3.9444-01	5.2042-01	4.6310-01	5.0018-01	4.8058-01	3.8375-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	282.	301744	1.97	5	14.00	180.00	.00	1.00	180.0

VALVE POS 2 PO = 20.0 Q-INF = 7.187 P-INF =2.5927 RE = .4384 TO = 532.

P	3.3414+00	3.3338+00	3.2535+00	3.2605+00	3.2896+00	3.5498+00	5.2011+00	6.2065+00	7.0605+00
CP	1.0417-01	1.0311-01	9.1942-02	9.2912-02	9.6959-02	1.3317-01	3.6292-01	5.0281-01	6.2164-01
P/PO1	2.3057-01	2.3005-01	2.2451-01	2.2499-01	2.2700-01	2.4496-01	3.5890-01	4.2828-01	4.8721-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 20.0 Q-INF = 7.197 P-INF =2.5964 RE = .4390 TO = 532.

P	7.4097+00	5.7291+00	2.0805+00	8.8665-01	8.9432-01	8.2529-01	8.0553-01	9.3563-01	3.6294+00
CP	6.6878-01	4.3527-01	-7.1672-02	-2.3755-01	-2.3648-01	-2.4607-01	-2.4882-01	-2.3074-01	1.4353-01
P/PO1	5.1059-01	3.9478-01	1.4336-01	6.1097-02	6.1626-02	5.6870-02	5.5508-02	6.4472-02	2.5010-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 20.0 Q-INF = 7.189 P-INF =2.5933 RE = .4385 TO = 532.

P	5.0528+00	6.0895+00	6.9530+00	7.2824+00	5.7290+00	2.1115+00	3.2632+00	3.2002+00	3.2561+00
CP	3.4213-01	4.8634-01	6.0645-01	6.5727-01	4.3619-01	-6.7017-02	9.3188-02	8.4420-02	9.2191-02
P/PO1	3.4859-01	4.2011-01	4.7968-01	5.0240-01	3.9524-01	1.4567-01	2.2513-01	2.2078-01	2.2463-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 20.0 Q-INF = 7.185 P-INF =2.5921 RE = .4383 TO = 532.

P	3.5295+00	5.7353+00	6.4761+00	7.3130+00	7.6983+00	6.2437+00	1.7468+00	8.7179-01	8.5754-01
CP	1.3045-01	4.3744-01	5.4054-01	6.5700-01	7.1064-01	5.0820-01	-8.9904-02	-2.3941-01	-2.4140-01
P/PO1	2.4361-01	3.9586-01	4.4699-01	5.0475-01	5.3135-01	4.3095-01	1.3437-01	6.0172-02	5.9183-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 20.0 Q-INF = 7.180 P-INF =2.5903 RE = .4380 TO = 532.

P	8.3992-01	7.9337-01	3.5066+00	5.2438+00	6.4844+00	7.3276+00	7.6704+00	6.1150+00	2.0320+00
CP	-2.4377-01	-2.5025-01	1.2762-01	3.6955-01	5.4233-01	6.5976-01	7.0750-01	4.9088-01	-7.7752-02
P/PO1	5.8013-02	5.4798-02	2.4220-01	3.6219-01	4.4788-01	5.0612-01	5.2980-01	4.2236-01	1.4035-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 20.0 Q-INF = 7.207 P-INF =2.6000 RE = .4397 TO = 532.

P	3.3477+00	3.2720+00	3.2658+00	2.1061+00	8.6923-01	8.5613-01	8.2711-01	7.6419-01	3.4703+00
CP	1.0373-01	9.3240-02	9.2383-02	-6.8526-02	-2.4014-01	-2.4196-01	-2.4598-01	-2.5471-01	1.2075-01
P/PO1	2.3036-01	2.2515-01	2.2473-01	1.4492-01	5.9813-02	5.8912-02	5.6915-02	5.2585-02	2.3879-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 20.0 Q-INF = 7.199 P-INF =2.5970 RE = .4391 TO = 532.

P	5.2534+00	6.4595+00	7.3376+00	7.6495+00	6.1157+00	2.2890+00	3.2941+00	3.2124+00	3.2438+00
CP	3.6901-01	5.3654-01	6.5851-01	7.0185-01	4.8878-01	-4.2774-02	9.6842-02	8.5491-02	8.9854-02
P/PO1	3.6192-01	4.4501-01	5.0550-01	5.2699-01	4.2132-01	1.5770-01	2.2694-01	2.2131-01	2.2347-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4355 TO = 532.

P	3.4793+00	5.5624+00	6.3838+00	7.2671+00	7.6369+00	6.1979+00	1.9901+00	7.8425-01	7.6266-01
CP	1.2656-01	4.1832-01	5.3336-01	6.5707-01	7.0886-01	5.0733-01	-8.2017-02	-2.5090-01	-2.5393-01
P/PO1	2.4168-01	3.8638-01	4.4343-01	5.0478-01	5.3047-01	4.3052-01	1.3823-01	5.4475-02	5.2976-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B570

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4369 TO = 532.

P	7.0817-01	6.6570-01	3.6795+00	4.8815+00	5.9927+00	6.8544+00	7.1970+00	5.7947+00	2.1544+00
CP	-2.6186-01	-2.6779-01	1.5302-01	3.2086-01	4.7601-01	5.9633-01	6.4347-01	4.4837-01	-5.9928-02
P/PO1	4.9040-02	4.6099-02	2.5480-01	3.3804-01	4.1499-01	4.7466-01	4.9804-01	4.0128-01	1.4919-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4377 TO = 532.

P	6.5144-01	3.3523+00	3.2782+00	3.2973+00	3.3019+00	3.5682+00	5.0617+00	6.0845+00	6.9994+00
CP	-2.6995-01	1.0645-01	9.6128-02	9.8793-02	9.9430-02	1.3654-01	3.4469-01	4.8723-01	6.1473-01
P/PO1	4.5027-02	2.3171-01	2.2659-01	2.2791-01	2.2822-01	2.4663-01	3.4986-01	4.2055-01	4.8379-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.172 P-INF =2.5872 RE = .4375 TO = 532.

P	7.3167+00	5.7504+00	2.0373+00	6.2651-01	6.2369-01	5.8587-01	5.9156-01	5.7815-01	7.4655-01
CP	6.5944-01	4.4104-01	-7.6678-02	-2.7339-01	-2.7378-01	-2.7905-01	-2.7826-01	-2.8013-01	-2.5665-01
P/PO1	5.0596-01	3.9765-01	1.4088-01	4.3324-02	4.3129-02	4.0514-02	4.0907-02	3.9980-02	5.1625-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.2578+00	3.2648+00	3.7078+00	3.7219+00	4.3031+00	4.3219+00	5.6273+00	5.3203+00
CP	9.3501-02	9.4481-02	1.5625-01	1.5821-01	2.3925-01	2.4186-01	4.2389-01	3.8108-01
P/PO1	2.2528-01	2.2577-01	2.5640-01	2.5737-01	2.9757-01	2.9886-01	3.8914-01	3.6791-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.4102+00	6.2742+00	7.1930+00	7.2164+00	7.3875+00	7.3922+00	5.8289+00
CP	5.3304-01	5.1408-01	6.4219-01	6.4545-01	6.6931-01	6.6996-01	4.5199-01
P/PO1	4.4327-01	4.3387-01	4.9740-01	4.9903-01	5.1086-01	5.1118-01	4.0308-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DAT

40 - INCH CONF

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	283.	301244	1.99	5	14.63	180.02	-.00	.37	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.175 P-INF =2.5884 RE = .4377 TO = 532.

P	3.3289+00	3.3214+00	3.2412+00	3.2666+00	3.2588+00	3.5560+00	4.9319+00	5.7947+00	6.6631+00
CP	1.0319-01	1.0215-01	9.0966-02	9.4514-02	9.3420-02	1.3484-01	3.2660-01	4.4685-01	5.6788-01
P/PO1	2.3009-01	2.2957-01	2.2403-01	2.2579-01	2.2524-01	2.4578-01	3.4089-01	4.0053-01	4.6055-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 20.0 Q-INF = 7.179 P-INF =2.5897 RE = .4379 TO = 532.

P	7.0067+00	5.4266+00	2.0496+00	8.7932-01	8.8715-01	8.2348-01	7.7676-01	9.3015-01	3.5315+00
CP	6.1529-01	3.9519-01	-7.5225-02	-2.3825-01	-2.3716-01	-2.4603-01	-2.5254-01	-2.3117-01	1.3120-01
P/PO1	4.8407-01	3.7491-01	1.4160-01	6.0749-02	6.1290-02	5.6891-02	5.3664-02	6.4261-02	2.4398-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4357 TO = 532.

P	5.0779+00	6.1204+00	6.9530+00	7.2977+00	5.7598+00	2.0442+00	3.2385+00	3.1697+00	3.2316+00
CP	3.5012-01	4.9606-01	6.1262-01	6.6087-01	4.4558-01	-7.4569-02	9.2621-02	8.2984-02	9.1651-02
P/PO1	3.5255-01	4.2493-01	4.8274-01	5.0667-01	3.9990-01	1.4193-01	2.2485-01	2.2007-01	2.2437-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.162 P-INF =2.5836 RE = .4369 TO = 532.

P	3.5169+00	5.5130+00	6.1685+00	7.0070+00	7.4064+00	5.9842+00	1.9592+00	8.5903-01	8.4659-01
CP	1.3032-01	4.0904-01	5.0056-01	6.1763-01	6.7340-01	4.7483-01	-8.7185-02	-2.4080-01	-2.4225-01
P/PO1	2.4354-01	3.8177-01	4.2716-01	4.8523-01	5.1289-01	4.1440-01	1.3567-01	5.9487-02	5.8764-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4355 TO = 532.

P	8.2894-01	7.7330-01	3.4696+00	5.2069+00	6.4844+00	7.2971+00	7.6241+00	6.1150+00	2.0197+00
CP	-2.4464-01	-2.5243-01	1.2520-01	3.6853-01	5.4745-01	6.6127-01	7.0707-01	4.9571-01	-7.7862-02
P/PO1	5.7580-02	5.3715-02	2.4100-01	3.6168-01	4.5042-01	5.0687-01	5.2959-01	4.2476-01	1.4029-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	3.3163+00	3.2535+00	3.2473+00	2.0754+00	8.2442-01	8.1441-01	7.8755-01	7.3865-01	3.4703+00
CP	1.0286-01	9.4076-02	9.3213-02	-7.0613-02	-2.4549-01	-2.4689-01	-2.5065-01	-2.5748-01	1.2438-01
P/PO1	2.2992-01	2.2557-01	2.2514-01	1.4389-01	5.7158-02	5.6464-02	5.4602-02	5.1211-02	2.4060-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4360 TO = 532.

P	5.4039+00	6.6445+00	7.5376+00	7.7872+00	6.2693+00	2.2707+00	3.2570+00	3.1880+00	3.2255+00
CP	3.9540-01	5.6899-01	6.9395-01	7.2889-01	5.1649-01	-4.3017-02	9.5001-02	8.5338-02	9.0581-02
P/PO1	3.7501-01	4.6110-01	5.2308-01	5.4040-01	4.3507-01	1.5758-01	2.2603-01	2.2123-01	2.2383-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4358 TO = 532.

P	3.4856+00	5.5130+00	6.2762+00	7.1753+00	7.5447+00	6.0300+00	2.0086+00	7.4048-01	7.2864-01
CP	1.2709-01	4.1086-01	5.1766-01	6.4350-01	6.9520-01	4.8321-01	-7.9619-02	-2.5711-01	-2.5876-01
P/PO1	2.4194-01	3.8268-01	4.3565-01	4.9805-01	5.2370-01	4.1856-01	1.3942-01	5.1398-02	5.0577-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTOUR NOZZLE WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4352 TO = 532.

P	6.9536-01	6.4746-01	3.6795+00	5.0841+00	6.2847+00	7.1750+00	7.4543+00	5.9777+00	2.1605+00
CP	-2.6328-01	-2.7000-01	1.5496-01	3.5183-01	5.2010-01	6.4488-01	6.8404-01	4.7708-01	-5.7932-02
P/PO1	4.8335-02	4.5006-02	2.5576-01	3.5340-01	4.3685-01	4.9874-01	5.1816-01	4.1552-01	1.5018-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	6.4046-01	3.3338+00	3.2350+00	3.2175+00	3.2772+00	3.5743+00	5.5129+00	6.5724+00	7.4578+00
CP	-2.7106-01	1.0607-01	9.2235-02	8.9786-02	9.8153-02	1.3975-01	4.1119-01	5.5956-01	6.8354-01
P/PO1	4.4477-02	2.3151-01	2.2465-01	2.2344-01	2.2759-01	2.4872-01	3.8284-01	4.5643-01	5.1791-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.118 P-INF =2.5678 RE = .4342 TO = 532.

P	7.6887+00	6.0433+00	2.0373+00	6.1735-01	6.1652-01	5.8043-01	5.8437-01	5.7633-01	7.2685-01
CP	7.1944-01	4.8827-01	-7.4524-02	-2.7401-01	-2.7413-01	-2.7920-01	-2.7864-01	-2.7977-01	-2.5863-01
P/PO1	5.3572-01	4.2107-01	1.4195-01	4.3015-02	4.2957-02	4.0442-02	4.0716-02	4.0156-02	5.0644-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0140+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.2297+00	3.2438+00	3.6844+00	3.7148+00	4.2352+00	4.3477+00	5.5031+00	5.4000+00	
CP	9.2994-02	9.4970-02	1.5687-01	1.6115-01	2.3425-01	2.5006-01	4.1239-01	3.9790-01	
P/PO1	2.2503-01	2.2601-01	2.5671-01	2.5883-01	2.9509-01	3.0293-01	3.8343-01	3.7625-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	

CEC	6.2977+00	6.3070+00	7.0828+00	7.2445+00	7.2938+00	7.3617+00	5.7516+00
CP	5.2401-01	5.2533-01	6.3432-01	6.5704-01	6.6395-01	6.7350-01	4.4729-01
P/PO1	4.3879-01	4.3945-01	4.9350-01	5.0477-01	5.0820-01	5.1293-01	4.0074-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

OLD [illegible]
VON KA[illegible]
40 - INCH CONTINUOUS [illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	284.	301244	1.99	5	14.63	199.89	-4.93	1.21	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4344 TO = 532.

P	3.1659+00	3.1239+00	3.0745+00	3.1438+00	3.1972+00	3.3356+00	5.2657+00	6.5877+00	7.4731+00
CP	8.3816-02	7.7918-02	7.0983-02	8.0720-02	8.8212-02	1.0765-01	3.7867-01	5.6432-01	6.8865-01
P/PO1	2.2048-01	2.1755-01	2.1411-01	2.1894-01	2.2266-01	2.3230-01	3.6672-01	4.5879-01	5.2045-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.7 Q-INF = 7.081 P-INF =2.5544 RE = .4319 TO = 532.

P	7.5337+00	5.6859+00	1.9756+00	8.0238-01	8.0829-01	7.6907-01	7.8395-01	7.7513-01	3.6172+00
CP	7.0321-01	4.4225-01	-8.1742-02	-2.4743-01	-2.4659-01	-2.5213-01	-2.5003-01	-2.5127-01	1.5009-01
P/PO1	5.2767-01	3.9825-01	1.3837-01	5.6199-02	5.6613-02	5.3866-02	5.4909-02	5.4291-02	2.5335-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4333 TO = 532.

P	4.8021+00	5.8583+00	6.6915+00	7.0223+00	5.4641+00	1.9463+00	3.0345+00	3.0781+00	3.1826+00
CP	3.1534-01	4.6404-01	5.8135-01	6.2792-01	4.0855-01	-8.6725-02	6.6491-02	7.2615-02	8.7336-02
P/PO1	3.3530-01	4.0905-01	4.6723-01	4.9033-01	3.8153-01	1.3590-01	2.1189-01	2.1492-01	2.2223-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4346 TO = 532.

P	3.5420+00	5.0068+00	5.5316+00	6.1808+00	6.5459+00	5.2819+00	1.7305+00	7.4412-01	7.3938-01
CP	1.3640-01	3.4199-01	4.1565-01	5.0677-01	5.5801-01	3.8061-01	-1.1786-01	-2.5630-01	-2.5696-01
P/PO1	2.4656-01	3.4852-01	3.8505-01	4.3025-01	4.5566-01	3.6767-01	1.2046-01	5.1798-02	5.1468-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4351 TO = 532.

P	7.4293-01	7.1494-01	3.5437+00	4.6113+00	5.1992+00	5.5757+00	5.7415+00	4.5133+00	1.6709+00
CP	-2.5659-01	-2.6051-01	1.3604-01	2.8572-01	3.6814-01	4.2091-01	4.4417-01	2.7197-01	-1.2650-01
P/PO1	5.1654-02	4.9708-02	2.4638-01	3.2061-01	3.6149-01	3.8766-01	3.9920-01	3.1380-01	1.1617-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.7 Q-INF = 7.074 P-INF =2.5519 RE = .4315 TO = 532.

P	3.1032+00	3.0313+00	3.1300+00	1.6456+00	7.0076-01	6.9107-01	6.8066-01	6.6935-01	3.5192+00
CP	7.7922-02	6.7756-02	8.1719-02	-1.2812-01	-2.6168-01	-2.6305-01	-2.6339-01	-2.6612-01	1.3674-01
P/PO1	2.1756-01	2.1251-01	2.1944-01	1.1537-01	4.9128-02	4.8449-02	4.8280-02	4.6926-02	2.4673-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4350 TO = 532.

P	4.5701+00	5.1303+00	5.5439+00	5.6982+00	4.5524+00	1.8361+00	3.0407+00	3.0781+00	3.1581+00
CP	2.8010-01	3.5864-01	4.1664-01	4.3827-01	2.7761-01	-1.0327-01	6.5639-02	7.0873-02	8.2102-02
P/PO1	3.1782-01	3.5678-01	3.8555-01	3.9627-01	3.1659-01	1.2769-01	2.1146-01	2.1406-01	2.1963-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4358 TO = 532.

P	3.5169+00	4.9327+00	5.4143+00	5.9972+00	6.2693+00	5.0922+00	1.7181+00	6.3834-01	6.3197-01
CP	1.3148-01	3.2963-01	3.9703-01	4.7862-01	5.1670-01	3.5195-01	-1.2027-01	-2.7140-01	-2.7229-01
P/PO1	2.4412-01	3.4239-01	3.7582-01	4.1628-01	4.3517-01	3.5346-01	1.1926-01	4.4309-02	4.3867-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4340 TO = 532.

P	6.3314-01	6.2193-01	3.6116+00	4.6420+00	5.7598+00	6.5643+00	6.7907+00	5.4721+00	1.9524+00
CP	-2.7175-01	-2.7333-01	1.4689-01	2.9172-01	4.4883-01	5.6191-01	5.9373-01	4.0839-01	-8.6319-02
P/PO1	4.4135-02	4.3354-02	2.5176-01	3.2359-01	4.0151-01	4.5759-01	4.7337-01	3.8145-01	1.3610-01
S/R	2.0850+00	7.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.7 Q-INF = 7.079 P-INF =2.5516 RE = .4316 TO = 532.

P	6.1642-01	3.1177+00	3.0621+00	3.1070+00	3.1725+00	3.3173+00	5.0555+00	6.3137+00	7.2133+00
CP	-2.7367-01	7.9659-02	7.1810-02	7.8146-02	8.7405-02	1.0785-01	3.5340-01	5.3106-01	6.5820-01
P/PO1	4.3185-02	2.1842-01	2.1452-01	2.1767-01	2.2226-01	2.3240-01	3.5418-01	4.4229-01	5.0535-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.113 P-INF =2.5659 RE = .4339 TO = 532.

P	7.2547+00	5.5501+00	1.8891+00	6.2468-01	6.2728-01	5.8950-01	5.9516-01	5.7633-01	6.6419-01
CP	6.5919-01	4.1954-01	-9.5151-02	-2.7292-01	-2.7255-01	-2.7786-01	-2.7707-01	-2.7972-01	-2.6736-01
P/PO1	5.0584-01	3.8698-01	1.3172-01	4.3556-02	4.3737-02	4.1103-02	4.1498-02	4.0185-02	4.6311-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.2016+00	3.2719+00	3.7805+00	3.7945+00	4.1789+00	4.1367+00	4.9359+00	4.6500+00
CP	8.9363-02	9.9248-02	1.7075-01	1.7273-01	2.2677-01	2.2084-01	3.3320-01	2.9300-01
P/PO1	2.2323-01	2.2813-01	2.6359-01	2.6458-01	2.9138-01	2.8843-01	3.4416-01	3.2422-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.1797+00	5.0344+00	5.4961+00	5.4492+00	5.4516+00	5.4445+00	4.2422+00
CP	3.6747-01	3.4704-01	4.1195-01	4.0536-01	4.0569-01	4.0470-01	2.3566-01
P/PO1	3.6116-01	3.5102-01	3.8322-01	3.7995-01	3.8011-01	3.7962-01	2.9579-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	285.	301244	1.99	5	13.42	222.40	-9.00	5.01	180.0

VALVE POS 2 PO = 19.7 Q-INF = 7.076 P-INF =2.5525 RE = .4316 TO = 532.

P	2.9339+00	2.7905+00	2.6423+00	2.6526+00	2.8275+00	3.7273+00	7.9636+00	8.4481+00	8.4359+00
CP	5.3896-02	3.3627-02	1.2687-02	1.4139-02	3.8865-02	1.6603-01	7.6473-01	8.3320-01	8.3147-01
P/PO1	2.0564-01	1.9559-01	1.8520-01	1.8592-01	1.9819-01	2.6125-01	5.5818-01	5.9214-01	5.9128-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4354 TO = 532.

P	8.2933+00	6.2591+00	2.0373+00	7.0895-01	7.1330-01	6.7837-01	6.9405-01	6.6935-01	3.6967+00
CP	8.0107-01	5.1610-01	-7.5335-02	-2.6142-01	-2.6081-01	-2.6571-01	-2.6351-01	-2.6697-01	1.5714-01
P/PO1	5.7620-01	4.3487-01	1.4155-01	4.9257-02	4.9559-02	4.7132-02	4.8221-02	4.6505-02	2.5684-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4350 TO = 532.

P	6.0766+00	7.1070+00	7.5991+00	7.7719+00	6.0849+00	1.9096+00	2.9048+00	2.9132+00	2.9500+00
CP	4.9134-01	6.3583-01	7.0483-01	7.2906-01	4.9251-01	-9.2976-02	4.6574-02	4.7750-02	5.2922-02
P/PO1	4.2259-01	4.9425-01	5.2847-01	5.4049-01	4.2317-01	1.3280-01	2.0201-01	2.0259-01	2.0516-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4344 TO = 532.

P	3.2724+00	4.9512+00	5.6859+00	6.3644+00	6.7764+00	5.4778+00	1.5939+00	6.6205-01	6.5703-01
CP	9.8781-02	3.3452-01	4.3769-01	5.3297-01	5.9082-01	4.0846-01	-1.3693-01	-2.6777-01	-2.6849-01
P/PO1	2.2790-01	3.4482-01	3.9598-01	4.4324-01	4.7193-01	3.8149-01	1.1100-01	4.6107-02	4.5759-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.110 P-INF =2.5647 RE = .4337 TO = 532.

P	6.6608-01	6.3834-01	3.3955+00	3.8868+00	4.5155+00	5.0861+00	5.5623+00	4.4400+00	1.4209+00
CP	-2.6705-01	-2.7095-01	1.1685-01	1.8596-01	2.7438-01	3.5464-01	4.2163-01	2.6376-01	-1.6088-01
P/PO1	4.6465-02	4.4530-02	2.3686-01	2.7114-01	3.1499-01	3.5480-01	3.8802-01	3.0973-01	9.9123-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.7 Q-INF = 7.106 P-INF =2.5635 RE = .4335 TO = 532.

P	2.8712+00	2.9325+00	3.0992+00	1.3226+00	6.3803-01	6.2396-01	6.2573-01	6.2010-01	3.3907+00
CP	4.3303-02	5.1923-02	7.5380-02	-1.7462-01	-2.7096-01	-2.7294-01	-2.7269-01	-2.7348-01	1.1641-01
P/PO1	2.0039-01	2.0466-01	2.1630-01	9.2309-02	4.4529-02	4.3547-02	4.3670-02	4.3278-02	2.3664-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4355 TO = 532.

P	4.2316+00	4.7969+00	5.1673+00	5.2561+00	4.3060+00	1.5407+00	2.9171+00	3.0231+00	3.1520+00
CP	2.3192-01	3.1110-01	3.6298-01	3.7541-01	2.4235-01	-1.4495-01	4.7824-02	6.2665-02	8.0721-02
P/PO1	2.9393-01	3.3320-01	3.5893-01	3.6510-01	2.9910-01	1.0702-01	2.0263-01	2.0999-01	2.1894-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.7 Q-INF = 7.093 P-INF =2.5586 RE = .4327 TO = 532.

P	3.4103+00	4.3030+00	4.5006+00	4.6605+00	4.6202+00	3.5070+00	1.2884+00	6.1281-01	6.0332-01
CP	1.2008-01	2.4594-01	2.7380-01	2.9634-01	2.9066-01	1.3371-01	-1.7909-01	-2.7434-01	-2.7568-01
P/PO1	2.3847-01	3.0089-01	3.1470-01	3.2588-01	3.2306-01	2.4522-01	9.0089-02	4.2850-02	4.2187-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B576

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.083 P-INF =2.5550 RE = .4320 TO = 532.

P	6.1850-01	6.0734-01	3.4325+00	3.9789+00	4.5031+00	4.9698+00	5.2718+00	4.2751+00	1.5607+00
CP	-2.7341-01	-2.7499-01	1.2390-01	2.0104-01	2.7506-01	3.4095-01	3.8360-01	2.4286-01	-1.4038-01
P/PO1	4.3310-02	4.2528-02	2.4036-01	2.7862-01	3.1533-01	3.4800-01	3.6916-01	2.9936-01	1.0929-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	6.1484-01	2.8275+00	2.8769+00	2.8859+00	2.9631+00	3.2438+00	4.2397+00	5.3011+00	6.0977+00
CP	-2.7465-01	3.5181-02	4.2096-02	4.3358-02	5.4161-02	9.3472-02	2.3292-01	3.8154-01	4.9309-01
P/PO1	4.2698-02	1.9636-01	1.9979-01	2.0041-01	2.0577-01	2.2527-01	2.9443-01	3.6814-01	4.2346-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	6.3556+00	5.0068+00	1.5673+00	6.3384-01	6.3444-01	6.0401-01	6.2752-01	6.0186-01	6.1765-01
CP	5.2920-01	3.4033-01	-1.4128-01	-2.7199-01	-2.7190-01	-2.7617-01	-2.7287-01	-2.7647-01	-2.7426-01
P/PO1	4.4137-01	3.4770-01	1.0884-01	4.4017-02	4.4059-02	4.1945-02	4.3579-02	4.1797-02	4.2893-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.1500+00	3.2344+00	3.4758+00	3.5578+00	3.6750+00	3.7969+00	4.6852+00	4.1930+00
CP	8.0336-02	9.2150-02	1.2595-01	1.3744-01	1.5385-01	1.7091-01	2.9529-01	2.2638-01
P/PO1	2.1875-01	2.2461-01	2.4138-01	2.4707-01	2.5521-01	2.6368-01	3.2536-01	2.9118-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.0320+00	4.5305+00	5.1281+00	4.8047+00	4.8703+00	4.7156+00	3.5953+00
CP	3.4387-01	2.7363-01	3.5732-01	3.1203-01	3.2122-01	2.9956-01	1.4269-01
P/PO1	3.4945-01	3.1462-01	3.5612-01	3.3366-01	3.3822-01	3.2748-01	2.4968-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

B577

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	286.	301244	1.99	5	11.18	206.76	-5.01	4.99	180.0

VALVE POS 2 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4361 TO = 532.

P	2.9903+00	2.9942+00	2.8769+00	2.8675+00	2.9877+00	3.6110+00	7.5778+00	8.3719+00	8.7110+00
CP	5.7582-02	5.8125-02	4.1716-02	4.0400-02	5.7217-02	1.4442-01	6.9934-01	8.1042-01	8.5786-01
P/PO1	2.0747-01	2.0774-01	1.9960-01	1.9895-01	2.0729-01	2.5053-01	5.2575-01	5.8084-01	6.0437-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	8.6033+00	6.4903+00	2.2163+00	8.2986-01	8.3336-01	7.9265-01	7.9834-01	7.6419-01	3.7334+00
CP	8.4393-01	5.4807-01	-5.0401-02	-2.4454-01	-2.4405-01	-2.4975-01	-2.4895-01	-2.5374-01	1.6203-01
P/PO1	5.9746-01	4.5073-01	1.5391-01	5.7630-02	5.7874-02	5.5046-02	5.5441-02	5.3069-02	2.5927-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4346 TO = 532.

P	6.2316+00	7.6312+00	8.0760+00	8.1544+00	6.2539+00	2.0871+00	3.0345+00	3.0048+00	3.0724+00
CP	5.1390-01	7.1034-01	7.7277-01	7.8378-01	5.1704-01	-6.7810-02	6.5176-02	6.0995-02	7.0494-02
P/PO1	4.3378-01	5.3120-01	5.6217-01	5.6763-01	4.3534-01	1.4578-01	2.1123-01	2.0916-01	2.1387-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.7 Q-INF = 7.106 P-INF =2.5635 RE = .4335 TO = 532.

P	3.3790+00	5.5748+00	6.4454+00	7.2518+00	7.4832+00	5.9995+00	1.8170+00	7.5507-01	7.5013-01
CP	1.1476-01	4.2376-01	5.4627-01	6.5974-01	6.9232-01	4.8352-01	-1.0505-01	-2.5449-01	-2.5518-01
P/PO1	2.3583-01	3.8907-01	4.4983-01	5.0611-01	5.2227-01	4.1871-01	1.2681-01	5.2697-02	5.2352-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4368 TO = 532.

P	7.5391-01	7.2406-01	3.4881+00	4.6420+00	5.5504+00	6.2437+00	6.5283+00	5.1912+00	1.7872+00
CP	-2.5545-01	-2.5962-01	1.2641-01	2.8757-01	4.1443-01	5.1127-01	5.5102-01	3.6426-01	-1.1114-01
P/PO1	5.2220-02	5.0152-02	2.4160-01	3.2153-01	3.8445-01	4.3248-01	4.5219-01	3.5957-01	1.2379-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4363 TO = 532.

P	3.0217+00	3.0313+00	3.1424+00	1.5629+00	7.1151-01	6.9833-01	6.9585-01	6.7482-01	3.4519+00
CP	6.1768-02	6.3107-02	7.8645-02	-1.4221-01	-2.6125-01	-2.6310-01	-2.6344-01	-2.6638-01	1.2193-01
P/PO1	2.0954-01	2.1021-01	2.1791-01	1.0838-01	4.9341-02	4.8427-02	4.8255-02	4.6797-02	2.3938-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4350 TO = 532.

P	4.4949+00	4.9883+00	5.3402+00	5.4096+00	4.2321+00	1.7504+00	2.9727+00	3.0292+00	3.1275+00
CP	2.6955-01	3.3873-01	3.8808-01	3.9780-01	2.3269-01	-1.1529-01	5.6106-02	6.4022-02	7.7810-02
P/PO1	3.1259-01	3.4691-01	3.7138-01	3.7620-01	2.9432-01	1.2173-01	2.0674-01	2.1066-01	2.1750-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.7 Q-INF = 7.076 P-INF =2.5525 RE = .4316 TO = 532.

P	3.4856+00	4.6055+00	4.8648+00	5.1333+00	5.1869+00	4.0456+00	1.4832+00	6.4928-01	6.4092-01
CP	1.3186-01	2.9014-01	3.2678-01	3.6472-01	3.7231-01	2.1101-01	-1.5113-01	-2.6898-01	-2.7016-01
P/PO1	2.4431-01	3.2281-01	3.4098-01	3.5980-01	3.6356-01	2.8356-01	1.0396-01	4.5509-02	4.4923-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B578

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V.K.A.F. GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4367 TO = 532.

P	6.4961-01	6.4564-01	3.5190+00	4.5684+00	5.0945+00	5.3615+00	5.4202+00	4.2934+00	1.5791+00
CP	-2.6999-01	-2.7055-01	1.3084-01	2.7743-01	3.5093-01	3.8823-01	3.9643-01	2.3902-01	-1.4015-01
P/PO1	4.5006-02	4.4731-02	2.4380-01	3.1650-01	3.5296-01	3.7145-01	3.7552-01	2.9745-01	1.0940-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4345 TO = 532.

P	6.4046-01	3.0683+00	2.9880+00	3.0517+00	3.1356+00	3.4519+00	4.4807+00	5.1728+00	5.8990+00
CP	-2.7083-01	7.0014-02	5.8746-02	6.7685-02	7.9457-02	1.2387-01	2.6831-01	3.6547-01	4.6742-01
P/PO1	4.4593-02	2.1363-01	2.0805-01	2.1248-01	2.1832-01	2.4034-01	3.1198-01	3.6017-01	4.1073-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.7 Q-INF = 7.086 P-INF =2.5562 RE = .4322 TO = 532.

P	6.1851+00	4.8463+00	1.7163+00	6.4117-01	6.3987-01	6.1489-01	6.3651-01	6.1098-01	6.7493-01
CP	5.1213-01	3.2319-01	-1.1853-01	-2.7026-01	-2.7045-01	-2.7397-01	-2.7091-01	-2.7452-01	-2.6549-01
P/PO1	4.3290-01	3.3920-01	1.2012-01	4.4876-02	4.4782-02	4.3037-02	4.4550-02	4.2763-02	4.7239-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.1688+00	3.2367+00	3.6961+00	3.6633+00	4.1672+00	3.9750+00	5.1820+00	4.4203+00
CP	8.6447-02	9.6039-02	1.6087-01	1.5624-01	2.2735-01	2.0023-01	3.7057-01	2.6307-01
P/PO1	2.2178-01	2.2654-01	2.5869-01	2.5640-01	2.9167-01	2.7821-01	3.6270-01	3.0938-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	5.5992+00	4.8586+00	5.9883+00	5.3344+00	5.7750+00	5.4984+00	4.4414+00
CP	4.2944-01	3.2492-01	4.8435-01	3.9207-01	4.5425-01	4.1522-01	2.6605-01
P/PO1	3.9189-01	3.4006-01	4.1913-01	3.7336-01	4.0420-01	3.8484-01	3.1086-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	287.	301244	1.99	5	10.23	241.25	-8.96	10.04	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4348 TO = 532.

P	2.8712+00	2.6361+00	2.5929+00	2.7324+00	3.2896+00	7.6177+00	9.6922+00	9.5156+00	9.4751+00
CP	4.2060-02	9.0813-03	3.0186-03	2.2588-02	1.0075-01	7.0794-01	9.9897-01	9.7419-01	9.6852-01
P/PO1	1.9977-01	1.8341-01	1.8041-01	1.9011-01	2.2888-01	5.3001-01	6.7435-01	6.6206-01	6.5925-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	9.2079+00	6.8912+00	2.2472+00	7.5292-01	7.5632-01	7.2009-01	7.3181-01	7.0035-01	5.2880+00
CP	9.2859-01	6.0419-01	-4.6078-02	-2.5531-01	-2.5484-01	-2.5991-01	-2.5827-01	-2.6267-01	3.7971-01
P/PO1	6.3945-01	4.7856-01	1.5606-01	5.2287-02	5.2523-02	5.0007-02	5.0821-02	4.8636-02	3.6723-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4361 TO = 532.

P	8.2778+00	8.3557+00	8.3682+00	8.3074+00	6.3000+00	1.9953+00	2.6637+00	2.6322+00	2.9256+00
CP	7.9726-01	8.0816-01	8.0991-01	8.0140-01	5.2059-01	-8.1621-02	1.1894-02	7.4862-03	4.8521-02
P/PO1	5.7431-01	5.7972-01	5.8059-01	5.7637-01	4.3710-01	1.3843-01	1.8481-01	1.8262-01	2.0297-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.7 Q-INF = 7.088 P-INF =2.5568 RE = .4324 TO = 532.

P	3.4730+00	6.6753+00	7.0915+00	7.7671+00	7.3910+00	5.9689+00	1.6872+00	7.1129-01	6.9642-01
CP	1.2927-01	5.8109-01	6.3980-01	6.6457-01	6.8206-01	4.8142-01	-1.2269-01	-2.6038-01	-2.6249-01
P/PO1	2.4302-01	4.6710-01	4.9622-01	5.0851-01	5.1718-01	4.1767-01	1.1806-01	4.9772-02	4.8731-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4348 TO = 532.

P	7.0634-01	6.7482-01	3.1115+00	4.7587+00	5.4580+00	6.1216+00	6.5283+00	5.2706+00	1.5607+00
CP	-2.6165-01	-2.6607-01	7.5771-02	3.0685-01	4.0495-01	4.9806-01	5.5512-01	3.7866-01	-1.4179-01
P/PO1	4.9145-02	4.6952-02	2.1649-01	3.3110-01	3.7975-01	4.2592-01	4.5422-01	3.6671-01	1.0859-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.118 P-INF =2.5678 RE = .4342 TO = 532.

P	2.9088+00	2.9078+00	2.9386+00	1.0277+00	6.8821-01	6.6024-01	6.5090-01	6.2740-01	3.1642+00
CP	4.7917-02	4.7769-02	5.2106-02	-2.1636-01	-2.6406-01	-2.6799-01	-2.6930-01	-2.7260-01	8.3801-02
P/PO1	2.0267-01	2.0260-01	2.0475-01	7.1606-02	4.7952-02	4.6002-02	4.5352-02	4.3715-02	2.2047-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.7 Q-INF = 7.093 P-INF =2.5586 RE = .4327 TO = 532.

P	3.7301+00	3.9141+00	4.0931+00	4.1201+00	3.2772+00	1.2570+00	2.9542+00	3.0048+00	3.1336+00
CP	1.6516-01	1.9111-01	2.1635-01	2.2015-01	1.0132-01	-1.8352-01	5.5772-02	6.2901-02	8.1072-02
P/PO1	2.6082-01	2.7369-01	2.8621-01	2.8810-01	2.2916-01	8.7894-02	2.0657-01	2.1011-01	2.1912-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4348 TO = 532.

P	3.1909+00	4.5191+00	5.0747+00	5.6183+00	5.7290+00	4.8412+00	1.3845+00	6.2010-01	6.1046-01
CP	8.6913-02	2.7324-01	3.5119-01	4.2745-01	4.4298-01	3.1843-01	-1.6651-01	-2.7375-01	-2.7510-01
P/PO1	2.2202-01	3.1442-01	3.5308-01	3.9091-01	3.9861-01	3.3684-01	9.6330-02	4.3145-02	4.2476-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B580

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V [illegible]
40 - [illegible] CONTINUOUS [illegible] WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	6.1484-01	5.9639-01	3.2103+00	3.7947+00	4.2998+00	4.6148+00	4.7094+00	3.6582+00	1.3724+00
CP	-2.7479-01	-2.7737-01	8.8035-02	1.6973-01	2.4035-01	2.8437-01	2.9760-01	1.5066-01	-1.6889-01
P/PO1	4.2627-02	4.1348-02	2.2257-01	2.6309-01	2.9811-01	3.1995-01	3.2651-01	2.5363-01	9.5150-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4346 TO = 532.

P	6.1484-01	2.9448+00	2.8831+00	2.8614+00	2.8707+00	3.0480+00	3.5352+00	3.9392+00	4.5169+00
CP	-2.7444-01	5.2582-02	4.3917-02	4.0867-02	4.2174-02	6.7058-02	1.3544-01	1.9214-01	2.7323-01
P/PO1	4.2799-02	2.0499-01	2.0069-01	1.9918-01	1.9983-01	2.1217-01	2.4608-01	2.7421-01	3.1442-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4352 TO = 532.

P	4.8961+00	3.9696+00	1.2856+00	6.3384-01	6.3086-01	6.0763-01	6.1673-01	6.0734-01	6.1048-01
CP	3.2548-01	1.9563-01	-1.8056-01	-2.7190-01	-2.7232-01	-2.7558-01	-2.7430-01	-2.7562-01	-2.7518-01
P/PO1	3.4033-01	2.7593-01	8.9363-02	4.4059-02	4.3852-02	4.2237-02	4.2870-02	4.2217-02	4.2435-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.0375+00	3.0680+00	4.0734+00	3.2180+00	4.7719+00	3.3164+00	5.8828+00	3.6703+00
CP	6.4985-02	6.9255-02	2.1018-01	9.0279-02	3.0807-01	1.0408-01	4.6378-01	1.5368-01
P/PO1	2.1114-01	2.1376-01	2.8315-01	2.2368-01	3.3170-01	2.3053-01	4.0892-01	2.5513-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	6.0094+00	3.9492+00	5.9977+00	4.1461+00	5.1938+00	4.1602+00	3.5438+00
CP	4.8151-01	1.9277-01	4.7987-01	2.2036-01	3.6720-01	2.2233-01	1.3594-01
P/PO1	4.1772-01	2.7451-01	4.1690-01	2.8820-01	3.6102-01	2.8918-01	2.4633-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	288.	301244	1.99	5	7.08	225.15	-5.01	9.99	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.113 P-INF =2.5659 RE = .4339 TO = 532.

P	2.9151+00	2.6979+00	2.6855+00	2.8982+00	3.2403+00	5.8621+00	9.8002+00	9.7748+00	9.7808+00
CP	4.9089-02	1.8550-02	1.6814-02	4.6714-02	9.4807-02	4.6340-01	1.0171+00	1.0135+00	1.0143+00
P/PO1	2.0376-01	1.8811-01	1.8725-01	2.0208-01	2.2593-01	4.0874-01	6.8432-01	6.8155-01	6.8197-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	9.5489+00	7.0762+00	2.3213+00	8.4085-01	8.4413-01	8.1078-01	8.1992-01	7.8972-01	4.9208+00
CP	9.7634-01	6.3010-01	-3.5705-02	-2.4300-01	-2.4254-01	-2.4721-01	-2.4593-01	-2.5016-01	3.2829-01
P/PO1	6.6313-01	4.9141-01	1.6120-01	5.8393-02	5.8671-02	5.6305-02	5.6939-02	5.4842-02	3.4173-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4351 TO = 532.

P	8.7738+00	9.1728+00	9.1835+00	9.0418+00	6.8379+00	2.1666+00	2.6823+00	2.6628+00	2.8705+00
CP	8.6926-01	9.2520-01	9.2670-01	9.0682-01	5.9786-01	-5.7002-02	1.5286-02	1.2551-02	4.1870-02
P/PO1	6.1002-01	6.3776-01	6.3851-01	6.2865-01	4.7542-01	1.5064-01	1.8649-01	1.8514-01	1.9958-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4347 TO = 532.

P	3.5733+00	7.5233+00	8.1221+00	8.3533+00	8.4359+00	6.7475+00	1.8850+00	7.9701-01	7.8772-01
CP	1.4068-01	6.9494-01	7.7897-01	8.1142-01	8.2301-01	5.8609-01	-9.6232-02	-2.4890-01	-2.5021-01
P/PO1	2.4868-01	5.2357-01	5.6524-01	5.8133-01	5.8708-01	4.6458-01	1.3118-01	5.5467-02	5.4820-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4341 TO = 532.

P	7.9417-01	7.5783-01	3.3708+00	5.6920+00	6.6688+00	7.1750+00	7.3772+00	5.7947+00	1.7749+00
CP	-2.4914-01	-2.5284-01	1.1293-01	4.3911-01	5.7638-01	6.4750-01	6.7592-01	4.5355-01	-1.1133-01
P/PO1	5.5348-02	5.3512-02	2.3492-01	3.9669-01	4.6477-01	5.0004-01	5.1413-01	4.0385-01	1.2370-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	2.7960+00	2.8769+00	2.9633+00	1.1999+00	7.7245-01	7.4730-01	7.3541-01	7.0400-01	3.1520+00
CP	3.0765-02	4.2096-02	5.4199-02	-1.9273-01	-2.5258-01	-2.5610-01	-2.5777-01	-2.6216-01	8.0617-02
P/PO1	1.9417-01	1.7979-01	2.0579-01	8.3328-02	5.3643-02	5.1897-02	5.1071-02	4.8890-02	2.1869-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.153 P-INF =2.5805 RE = .4364 TO = 532.

P	3.6862+00	4.2783+00	4.7969+00	4.9859+00	3.9734+00	1.7443+00	2.9542+00	2.9742+00	3.0235+00
CP	1.5456-01	2.3734-01	3.0983-01	3.3625-01	1.9471-01	-1.1690-01	5.2237-02	5.5036-02	6.1921-02
P/PO1	2.5557-01	2.9662-01	3.3257-01	3.4568-01	2.7548-01	1.2093-01	2.0482-01	2.0621-01	2.0962-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.170 P-INF =2.5866 RE = .4374 TO = 532.

P	3.1721+00	4.1919+00	4.4697+00	4.7280+00	4.7803+00	3.6845+00	1.3327+00	6.5293-01	6.4629-01
CP	8.1658-02	2.2388-01	2.6262-01	2.9865-01	3.0595-01	1.5311-01	-1.7488-01	-2.6968-01	-2.7061-01
P/PO1	2.1941-01	2.8994-01	3.0916-01	3.2702-01	3.3065-01	2.5485-01	9.2177-02	4.5162-02	4.4702-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B582

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4350 TO = 532.

P	6.5876-01	6.6576-01	3.2350+00	4.0526+00	4.5771+00	4.7862+00	4.7759+00	3.8598+00	1.3283+00
CP	-2.6837-01	-2.6739-01	9.2878-02	2.0752-01	2.8107-01	3.1039-01	3.1176-01	1.8049-01	-1.7449-01
P/PO1	4.5813-02	4.6295-02	2.2497-01	2.8183-01	3.1831-01	3.3285-01	3.3353-01	2.6842-01	9.2373-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4360 TO = 532.

P	6.7523-01	2.9510+00	2.9448+00	2.9535+00	3.0247+00	3.2316+00	4.1099+00	4.4583+00	4.7127+00
CP	-2.6626-01	5.2177-02	5.1313-02	5.2523-02	6.2487-02	9.1438-02	2.1434-01	2.6309-01	2.9869-01
P/PO1	4.6858-02	2.0479-01	2.0436-01	2.0496-01	2.0990-01	2.2426-01	2.8521-01	3.0939-01	3.2704-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4358 TO = 532.

P	4.6516+00	3.4634+00	1.2929+00	6.9613-01	6.9717-01	6.6386-01	6.7068-01	6.5293-01	7.2148-01
CP	2.9029-01	1.2399-01	-1.7979-01	-2.6331-01	-2.6317-01	-2.6783-01	-2.6687-01	-2.6936-01	-2.5976-01
P/PO1	3.2288-01	2.4040-01	8.9746-02	4.8320-02	4.8393-02	4.6080-02	4.6553-02	4.5322-02	5.0080-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.0492+00	3.1453+00	4.1156+00	3.3141+00	4.9617+00	3.4266+00	6.7758+00	3.6703+00
CP	6.6022-02	7.9471-02	2.1527-01	1.0309-01	3.3369-01	1.1883-01	5.8759-01	1.5295-01
P/PO1	2.1165-01	2.1832-01	2.8568-01	2.3004-01	3.4441-01	2.3785-01	4.7032-01	2.5477-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.0313+00	3.9492+00	6.7758+00	4.2023+00	5.6953+00	4.3359+00	3.9023+00
CP	6.2334-01	1.9198-01	5.8759-01	2.2741-01	4.3637-01	2.4611-01	1.8542-01
P/PO1	4.8806-01	2.7413-01	4.7032-01	2.9170-01	3.9533-01	3.0097-01	2.7087-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	289.	301244	1.99	5	9.01	270.09	-9.01	15.01	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4345 TO = 532.

P	1.9810+00	4.6920+00	4.0252+00	3.9605+00	4.0288+00	8.4115+00	1.1035+01	1.0644+01	1.0453+01
CP	-8.2629-02	2.9796-01	2.0435-01	1.9527-01	2.0486-01	8.2014-01	1.1884+00	1.1336+00	1.1068+00
P/PO1	1.3793-01	3.2668-01	2.8026-01	2.7575-01	2.8051-01	5.8566-01	7.6832-01	7.4110-01	7.2782-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4347 TO = 532.

P	1.0014+01	7.3845+00	2.3892+00	7.8223-01	7.9216-01	7.7088-01	7.9474-01	7.7148-01	6.6173+00
CP	1.0444+00	6.7547-01	-2.5483-02	-2.5098-01	-2.4958-01	-2.5257-01	-2.4922-01	-2.5248-01	5.6782-01
P/PO1	6.9691-01	5.1391-01	1.6627-01	5.4438-02	5.5129-02	5.3648-02	5.5309-02	5.3690-02	4.6052-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4348 TO = 532.

P	9.0374+00	9.2037+00	9.1527+00	8.9347+00	6.7303+00	2.0993+00	2.1940+00	2.7422+00	3.6845+00
CP	9.0711-01	9.3043-01	9.2329-01	8.9270-01	5.8345-01	-6.6232-02	-5.2943-02	2.3954-02	1.5615-01
P/PO1	6.2879-01	6.4036-01	6.3682-01	6.2165-01	4.6827-01	1.4606-01	1.5265-01	1.9079-01	2.5036-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4360 TO = 532.

P	3.2035+00	7.0453+00	7.5376+00	7.7872+00	7.8213+00	6.1827+00	1.7305+00	7.8060-01	7.7161-01
CP	8.7505-02	6.2508-01	6.9395-01	7.2889-01	7.3365-01	5.0437-01	-1.1860-01	-2.5152-01	-2.5277-01
P/PO1	2.2231-01	4.8892-01	5.2308-01	5.4040-01	5.4277-01	4.2905-01	1.2009-01	5.4171-02	5.3547-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4363 TO = 532.

P	7.8685-01	7.6783-01	3.8523+00	6.3491+00	6.6996+00	6.7170+00	6.5592+00	5.1973+00	1.5607+00
CP	-2.5072-01	-2.5338-01	1.7792-01	5.2703-01	5.7603-01	5.7847-01	5.5641-01	3.6597-01	-1.4251-01
P/PO1	5.4566-02	5.3247-02	2.6715-01	4.4029-01	4.6460-01	4.6580-01	4.5486-01	3.6042-01	1.0823-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4353 TO = 532.

P	2.2255+00	2.5806+00	2.8646+00	9.4893-01	8.0829-01	7.8358-01	7.8036-01	7.6601-01	2.7481+00
CP	-4.8895-02	8.5859-04	4.0652-02	-2.2777-01	-2.4748-01	-2.5094-01	-2.5139-01	-2.5341-01	2.4327-02
P/PO1	1.5466-01	1.7934-01	1.9907-01	6.5946-02	5.6172-02	5.4454-02	5.4231-02	5.3234-02	1.9098-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.9 Q-INF = 7.164 P-INF =2.5842 RE = .4370 TO = 532.

P	3.0342+00	3.1918+00	3.3585+00	3.4508+00	2.7906+00	1.0049+00	2.7997+00	2.9070+00	3.1704+00
CP	6.2821-02	8.4816-02	1.0808-01	1.2098-01	2.8813-02	-2.2047-01	3.0085-02	4.5070-02	8.1829-02
P/PO1	2.1007-01	2.2098-01	2.3252-01	2.3891-01	1.9320-01	6.9570-02	1.9383-01	2.0126-01	2.1949-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.7 Q-INF = 7.096 P-INF =2.5598 RE = .4329 TO = 532.

P	3.0029+00	5.0068+00	5.2908+00	4.2184+00	4.0103+00	3.4274+00	8.5408-01	7.5871-01	7.3580-01
CP	6.2431-02	3.4483-01	3.8485-01	2.3372-01	2.0440-01	1.2226-01	-2.4038-01	-2.5382-01	-2.5705-01
P/PO1	2.0987-01	3.4993-01	3.6978-01	2.9483-01	2.8029-01	2.3955-01	5.9693-02	5.3027-02	5.1426-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B584

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.176 P-INF =2.5708 RE = .4347 TO = 532.

P	6.9719-01	7.2771-01	3.1362+00	4.1877+00	4.8912+00	4.5107+00	4.1532+00	3.5727+00	9.2915-01
CP	-2.6291-01	-2.5863-01	7.9339-02	2.2688-01	3.2561-01	2.7222-01	2.2205-01	1.4059-01	-2.3036-01
P/PO1	4.8520-02	5.0644-02	2.1826-01	2.9143-01	3.4040-01	3.1392-01	2.8903-01	2.4864-01	6.4663-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4360 TO = 532.

P	7.2280-01	2.6053+00	2.7164+00	2.8245+00	2.8707+00	3.0480+00	3.7144+00	4.2018+00	4.6025+00
CP	-2.5960-01	3.8019-03	1.9351-02	3.4480-02	4.0938-02	6.5746-02	1.5900-01	2.2719-01	2.8327-01
P/PO1	5.0160-02	1.8080-01	1.8851-01	1.9601-01	1.9921-01	2.1152-01	2.5776-01	2.9159-01	3.1940-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4344 TO = 532.

P	4.6704+00	3.7165+00	1.1205+00	7.1811-01	7.0972-01	6.7293-01	6.7607-01	6.5658-01	6.5524-01
CP	2.9509-01	1.6114-01	-2.0339-01	-2.5990-01	-2.6108-01	-2.6625-01	-2.6581-01	-2.6854-01	-2.6873-01
P/PO1	3.2526-01	2.5883-01	7.8037-02	5.0011-02	4.9427-02	4.6865-02	4.7083-02	4.5726-02	4.5633-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.3648+00	2.4141+00	4.8141+00	2.8852+00	5.6555+00	2.9344+00	8.6719+00	3.2203+00
CP	-2.8664-02	-2.1753-02	3.1526-01	4.4399-02	4.3341-01	5.1311-02	8.5698-01	9.1463-02
P/PO1	1.6469-01	1.6812-01	3.3526-01	2.0093-01	3.9386-01	2.0436-01	6.0393-01	2.2427-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	7.8258+00	3.5086+00	6.3891+00	3.8320+00	4.9711+00	3.9094+00	3.3750+00
CP	7.3817-01	1.3194-01	5.3643-01	1.7736-01	3.3731-01	1.8822-01	1.1318-01
P/PO1	5.4501-01	2.4435-01	4.4495-01	2.6687-01	3.4620-01	2.7226-01	2.3504-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	290.	301244	1.99	5	5.00	270.10	-5.00	15.01	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	2.2631+00	2.8213+00	3.5251+00	4.1385+00	4.7557+00	9.1900+00	1.1128+01	1.0949+01	1.0789+01
CP	-4.3849-02	3.4316-02	1.3286-01	2.1875-01	3.0517-01	9.2609-01	1.1974+00	1.1724+00	1.1500+00
P/PO1	1.5716-01	1.9593-01	2.4480-01	2.8740-01	3.3026-01	6.3821-01	7.7275-01	7.6036-01	7.4928-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.7 Q-INF = 7.098 P-INF =2.5605 RE = .4330 TO = 532.

P	1.0293+01	7.5849+00	2.5065+00	8.9764-01	9.0865-01	8.7608-01	8.8285-01	8.2802-01	6.3422+00
CP	1.0894+00	7.0790-01	-7.6026-03	-2.3427-01	-2.3272-01	-2.3731-01	-2.3636-01	-2.4408-01	5.3281-01
P/PO1	7.1922-01	5.2999-01	1.7514-01	6.2722-02	6.3492-02	6.1216-02	6.1689-02	5.7858-02	4.4316-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4360 TO = 532.

P	9.7659+00	1.0036+01	9.9988+00	9.6537+00	7.2527+00	2.3135+00	2.5030+00	2.5773+00	3.8314+00
CP	1.0058+00	1.0436+00	1.0383+00	9.9006-01	6.5410-01	-3.7022-02	-1.0503-02	-1.1790-04	1.7536-01
P/PO1	6.7772-01	6.9647-01	6.9388-01	6.6993-01	5.0331-01	1.6055-01	1.7370-01	1.7885-01	2.6580-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.9 Q-INF = 7.165 P-INF =2.5848 RE = .4371 TO = 532.

P	3.7489+00	8.6178+00	8.8759+00	8.8988+00	8.7586+00	6.8849+00	1.9406+00	8.7362-01	8.6112-01
CP	1.6246-01	8.4199-01	8.7800-01	8.7980-01	8.6163-01	6.0014-01	-8.9901-02	-2.3882-01	-2.4056-01
P/PO1	2.5948-01	5.9650-01	6.1436-01	6.1525-01	6.0624-01	4.7655-01	1.3432-01	6.0469-02	5.9604-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.118 P-INF =2.5678 RE = .4342 TO = 532.

P	8.6371-01	8.2255-01	4.3524+00	7.4507+00	7.9288+00	7.8619+00	7.5161+00	5.7642+00	1.7504+00
CP	-2.3940-01	-2.4518-01	2.5072-01	6.8599-01	7.5317-01	7.4377-01	6.9518-01	4.4907-01	-1.1482-01
P/PO1	6.0179-02	5.7312-02	3.0326-01	5.1913-01	5.5245-01	5.4779-01	5.2369-01	4.0163-01	1.2196-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.160 P-INF =2.5830 RE = .4368 TO = 532.

P	2.4010+00	2.5312+00	2.3707+00	9.3061-01	8.4593-01	8.1441-01	8.1272-01	7.9519-01	2.9868+00
CP	-2.5409-02	-7.2317-03	-2.9649-02	-2.3077-01	-2.4260-01	-2.4700-01	-2.4724-01	-2.4968-01	5.6394-02
P/PO1	1.6631-01	1.7537-01	1.6471-01	6.4459-02	5.8593-02	5.6411-02	5.6294-02	5.5079-02	2.0688-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4352 TO = 532.

P	3.3289+00	3.9696+00	4.5438+00	4.9368+00	4.1397+00	1.8484+00	2.9109+00	2.8887+00	2.9745+00
CP	1.0582-01	1.9563-01	2.7610-01	3.3118-01	2.1946-01	-1.0168-01	4.7247-02	4.4133-02	5.6158-02
P/PO1	2.3139-01	2.7593-01	3.1584-01	3.4316-01	2.8775-01	1.2848-01	2.0234-01	2.0080-01	2.0676-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.147 P-INF =2.5781 RE = .4360 TO = 532.

P	3.0279+00	3.7844+00	4.1055+00	4.4947+00	4.5955+00	3.4886+00	1.2175+00	7.7695-01	7.6803-01
CP	6.2944-02	1.6880-01	2.1372-01	2.6818-01	2.8229-01	1.2741-01	-1.9038-01	-2.5203-01	-2.5327-01
P/PO1	2.1013-01	2.6263-01	2.8490-01	3.1191-01	3.1891-01	2.4210-01	8.4493-02	5.3918-02	5.3298-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B586

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.148 P-INF =2.5787 RE = .4361 TO = 532.

P	7.7953-01	7.7330-01	3.1794+00	3.9543+00	5.1808+00	5.8316+00	5.5067+00	4.3850+00	1.2890+00
CP	-2.5169-01	-2.5256-01	8.4035-02	1.9244-01	3.6401-01	4.5505-01	4.0960-01	2.5269-01	-1.8042-01
P/PO1	5.4084-02	5.3652-02	2.2059-01	2.7435-01	3.5944-01	4.0459-01	3.8205-01	3.0423-01	8.9431-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.9 Q-INF = 7.158 P-INF =2.5824 RE = .4367 TO = 532.

P	7.8319-01	2.7596+00	2.8769+00	2.9473+00	3.0555+00	3.1826+00	3.5599+00	3.9209+00	4.2231+00
CP	-2.5133-01	2.4761-02	4.1147-02	5.0983-02	6.6092-02	8.3852-02	1.3655-01	1.8698-01	2.2920-01
P/PO1	5.4261-02	1.9119-01	1.9932-01	2.0420-01	2.1169-01	2.2050-01	2.4663-01	2.7164-01	2.9258-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.120 P-INF =2.5684 RE = .4343 TO = 532.

P	4.2128+00	3.2782+00	9.9583-01	7.4925-01	7.5273-01	7.2735-01	7.3720-01	7.2771-01	7.5013-01
CP	2.3097-01	9.9700-02	-2.2087-01	-2.5550-01	-2.5502-01	-2.5858-01	-2.5720-01	-2.5853-01	-2.5538-01
P/PO1	2.9346-01	2.2836-01	6.9369-02	5.2192-02	5.2435-02	5.0667-02	5.1353-02	5.0692-02	5.2253-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.0883+00	2.7563+00	5.1938+00	3.0867+00	6.0117+00	2.9297+00	8.9063+00	2.9250+00
CP	-6.7430-02	2.6390-02	3.6875-01	7.2806-02	4.8364-01	5.0750-02	8.9019-01	5.0092-02
P/PO1	1.4547-01	1.9200-01	3.6179-01	2.1502-01	4.1877-01	2.0408-01	6.2040-01	2.0375-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.3773+00	3.0750+00	7.7156+00	3.3844+00	5.4234+00	3.4570+00	3.2813+00
CP	9.5636-01	7.1160-02	7.2296-01	1.1461-01	4.0101-01	1.2482-01	1.0013-01
P/PO1	6.5322-01	2.1420-01	5.3747-01	2.3575-01	3.7779-01	2.4081-01	2.2857-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	291.	301244	1.99	5	4.99	89.91	4.99	15.01	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4348 TO = 532.

P	2.3948+00	2.3275+00	2.8893+00	3.5061+00	5.7930+00	8.3962+00	1.1035+01	1.0842+01	1.0698+01
CP	-2.4781-02	-3.4223-02	4.4591-02	1.3113-01	4.5195-01	8.1716-01	1.1873+00	1.1603+00	1.1400+00
P/P01	1.6662-01	1.6194-01	2.0103-01	2.4394-01	4.0306-01	5.8418-01	7.6777-01	7.5437-01	7.4431-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.7 Q-INF = 7.093 P-INF =2.5586 RE = .4327 TO = 532.

P	1.0246+01	7.5078+00	2.4448+00	8.9031-01	9.0328-01	8.6883-01	8.8105-01	8.3714-01	5.5390+00
CP	1.0839+00	6.9779-01	-1.6055-02	-2.3522-01	-2.3339-01	-2.3825-01	-2.3652-01	-2.4271-01	4.2020-01
P/P01	7.1648-01	5.2498-01	1.7095-01	6.2254-02	6.3161-02	6.0752-02	6.1607-02	5.8536-02	3.8731-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4349 TO = 532.

P	1.1564+01	1.1485+01	1.1168+01	1.0448+01	8.0518+00	2.5706+00	3.2261+00	2.8704+00	4.3394+00
CP	1.2612+00	1.2501+00	1.2056+00	1.1327+00	7.6857-01	-2.0256-04	9.1745-02	4.1851-02	2.4788-01
P/P01	8.0440-01	7.9892-01	7.7684-01	7.4069-01	5.6008-01	1.7881-01	2.2441-01	1.9967-01	3.0185-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4348 TO = 532.

P	5.2096+00	1.1100+01	1.1383+01	1.1031+01	1.0556+01	8.2588+00	2.2682+00	8.7909-01	8.7186-01
CP	3.7011-01	1.1965+00	1.2362+00	1.1867+00	1.1202+00	7.9789-01	-4.2539-02	-2.3741-01	-2.3843-01
P/P01	3.6247-01	7.7230-01	7.9201-01	7.6748-01	7.3448-01	5.2662-01	1.5781-01	6.1164-02	6.0662-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.9 Q-INF = 7.150 P-INF =2.5793 RE = .4362 TO = 532.

P	8.7468-01	8.4443-01	4.8648+00	9.7914+00	9.6652+00	9.4801+00	9.2755+00	7.1367+00	2.1666+00
CP	-2.3841-01	-2.4264-01	3.1965-01	1.0087+00	9.9102-01	9.6514-01	9.3652-01	6.3739-01	-5.7719-02
P/P01	6.0671-02	5.8573-02	3.3744-01	6.7917-01	6.7041-01	6.5757-01	6.4338-01	4.9502-01	1.5038-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4357 TO = 532.

P	2.2380+00	2.6855+00	2.5559+00	1.5186+00	8.4593-01	8.1985-01	8.1093-01	7.9519-01	3.4580+00
CP	-4.7435-02	1.5209-02	-2.9400-03	-1.4815-01	-2.4232-01	-2.4537-01	-2.4722-01	-2.4942-01	1.2335-01
P/P01	1.5539-01	1.8645-01	1.7745-01	1.0544-01	5.8732-02	5.6722-02	5.6302-02	5.5209-02	2.4009-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4350 TO = 532.

P	7.4252+00	7.7545+00	7.5683+00	7.1906+00	5.5257+00	1.9096+00	2.6823+00	2.6383+00	2.7481+00
CP	6.8045-01	7.2662-01	7.0051-01	6.4754-01	4.1409-01	-9.2976-02	1.5375-02	9.2135-03	2.4601-02
P/P01	5.1638-01	5.3928-01	5.2633-01	5.0006-01	3.8428-01	1.3280-01	1.8654-01	1.8348-01	1.9111-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.113 P-INF =2.5659 RE = .4339 TO = 532.

P	3.1471+00	4.1795+00	5.0994+00	5.5569+00	5.6921+00	4.8351+00	1.2982+00	7.8607-01	7.6803-01
CP	8.1699-02	2.2686-01	3.5618-01	4.2050-01	4.3950-01	3.1902-01	-1.7823-01	-2.5023-01	-2.5276-01
P/P01	2.1943-01	2.9142-01	3.5556-01	3.8746-01	3.9688-01	3.3713-01	9.0518-02	5.4809-02	5.3551-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B588

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.152 P-INF =2.5799 RE = .4161 TO = 532.

P	7.6489-01	7.5142-01	3.0313+00	3.5306+00	3.9610+00	4.2231+00	4.4622+00	4.0552+00	1.2049+00
CP	-2.5379-01	-2.5567-01	6.3107-02	1.3294-01	1.9311-01	2.2976-01	2.6319-01	2.0628-01	-1.9227-01
P/PO1	5.3043-02	5.2109-02	2.1021-01	2.4484-01	2.7469-01	2.9286-01	3.0944-01	2.8122-01	8.3553-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	7.7038-01	2.7843+00	2.8522+00	2.8982+00	3.0185+00	3.1092+00	3.6279+00	3.9697+00	4.2720+00
CP	-2.5287-01	2.9130-02	3.8639-02	4.5078-02	6.1925-02	7.4618-02	1.4725-01	1.9511-01	2.3745-01
P/PO1	5.3499-02	1.9336-01	1.9807-01	2.0127-01	2.0962-01	2.1592-01	2.5194-01	2.7568-01	2.9667-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.126 P-INF =2.5708 RE = .4347 TO = 532.

P	4.2692+00	3.3214+00	1.0472+00	7.4192-01	7.4556-01	7.2191-01	7.3361-01	7.2406-01	7.4834-01
CP	2.3833-01	1.0533-01	-2.1380-01	-2.5663-01	-2.5612-01	-2.5944-01	-2.5780-01	-2.5914-01	-2.5573-01
P/PO1	2.9711-01	2.3115-01	7.2877-02	5.1633-02	5.1886-02	5.0240-02	5.1054-02	5.0390-02	5.2079-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.8641+00	2.0344+00	8.3133+00	3.0820+00	9.5695+00	3.8717+00	1.0219+01	5.1727+00
CP	4.1152-02	-7.5272-02	8.0580-01	7.1738-02	9.8208-01	1.8257-01	1.0732+00	3.6510-01
P/PO1	1.9932-01	1.4158-01	5.7855-01	2.1449-01	6.6598-01	2.6946-01	7.1116-01	3.5998-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.3070+00	6.1641+00	8.7680+00	6.1805+00	7.2586+00	6.2414+00	5.1258+00
CP	9.4525-01	5.0422-01	8.6960-01	5.0652-01	6.5780-01	5.1507-01	3.5852-01
P/PO1	6.4771-01	4.2898-01	6.1019-01	4.3012-01	5.0515-01	4.3436-01	3.5672-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	292.	301244	1.99	5	9.00	89.91	9.00	15.01	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4345 TO = 532.

P	2.0186+00	3.5004+00	3.6980+00	3.1008+00	4.7927+00	8.5794+00	1.0958+01	1.0553+01	1.0361+01
CP	-7.7348-02	1.3068-01	1.5842-01	7.4582-02	3.1210-01	8.4371-01	1.1776+00	1.1207+00	1.0939+00
P/PO1	1.4055-01	2.4372-01	2.5748-01	2.1590-01	3.3370-01	5.9735-01	7.6295-01	7.3473-01	7.2143-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.113 P-INF =2.5659 RE = .4339 TO = 532.

P	9.9830+00	7.3228+00	2.2966+00	7.5841-01	7.6886-01	7.4367-01	7.6597-01	7.5324-01	6.1435+00
CP	1.0428+00	6.6877-01	-3.7866-02	-2.5412-01	-2.5265-01	-2.5619-01	-2.5305-01	-2.5484-01	5.0297-01
P/PO1	6.9607-01	5.1059-01	1.6013-01	5.2881-02	5.3609-02	5.1853-02	5.3408-02	5.2520-02	4.2836-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.7 Q-INF = 7.105 P-INF =2.5629 RE = .4334 TO = 532.

P	1.2215+01	1.1824+01	1.1383+01	1.0801+01	8.1901+00	2.5400+00	4.1161+00	2.9803+00	4.3088+00
CP	1.3586+00	1.3036+00	1.2415+00	1.1596+00	7.9206-01	-3.2260-03	2.1862-01	5.8758-02	2.4574-01
P/PO1	8.5272-01	8.2544-01	7.9464-01	7.5401-01	5.7173-01	1.7731-01	2.8734-01	2.0805-01	3.0079-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4349 TO = 532.

P	5.8906+00	1.1886+01	1.1891+01	1.1413+01	1.0925+01	8.5183+00	2.3547+00	7.8060-01	7.7519-01
CP	4.6545-01	1.3064+00	1.3070+00	1.2400+00	1.1716+00	8.3401-01	-3.0478-02	-2.5126-01	-2.5202-01
P/PO1	4.0975-01	8.2680-01	8.2714-01	7.9390-01	7.5996-01	5.9254-01	1.6379-01	5.4299-02	5.3923-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.120 P-INF =2.5684 RE = .4343 TO = 532.

P	7.8502-01	7.5324-01	5.3772+00	1.1444+01	1.1017+01	1.0350+01	9.7231+00	7.2892+00	2.3013+00
CP	-2.5048-01	-2.5494-01	3.9452-01	1.2466+00	1.1867+00	1.0930+00	1.0049+00	6.6306-01	-3.7514-02
P/PO1	5.4684-02	5.2470-02	3.7457-01	7.9716-01	7.6746-01	7.2099-01	6.7730-01	5.0776-01	1.6031-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.118 P-INF =2.5678 RE = .4342 TO = 532.

P	2.1754+00	2.7967+00	2.1793+00	1.5717+00	8.1904-01	7.9265-01	7.8395-01	7.5871-01	3.4152+00
CP	-5.5128-02	3.2158-02	-5.4575-02	-1.3993-01	-2.4567-01	-2.4938-01	-2.5060-01	-2.5415-01	1.1905-01
P/PO1	1.5157-01	1.9486-01	1.5184-01	1.0951-01	5.7068-02	5.5228-02	5.4623-02	5.2864-02	2.3796-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.7 Q-INF = 7.093 P-INF =2.5586 RE = .4327 TO = 532.

P	8.3088+00	8.5716+00	8.4298+00	7.9708+00	6.1617+00	2.0809+00	2.3114+00	1.9604+00	2.5277+00
CP	8.1072-01	8.4777-01	8.2777-01	7.6307-01	5.0800-01	-6.7350-02	-3.4850-02	-8.4341-02	-4.3567-03
P/PO1	5.8099-01	5.9936-01	5.8945-01	5.5735-01	4.3086-01	1.4551-01	1.6163-01	1.3708-01	1.7675-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.115 P-INF =2.5665 RE = .4340 TO = 532.

P	3.1847+00	5.6550+00	6.5069+00	6.6092+00	6.3615+00	5.3003+00	1.3845+00	7.9154-01	7.7340-01
CP	8.6881-02	4.3411-01	5.5384-01	5.6822-01	5.3340-01	3.8424-01	-1.6614-01	-2.4949-01	-2.5204-01
P/PO1	2.2200-01	3.9421-01	4.5359-01	4.6072-01	4.4345-01	3.6948-01	9.6512-02	5.5178-02	5.3913-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
AIR FORCE SYSTEMS COMMAND

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4333 TO = 532.

P	7.6123-01	7.7148-01	2.6176+00	4.1999+00	4.5463+00	4.4679+00	4.4251+00	3.9086+00	1.1153+00
CP	-2.5357-01	-2.5213-01	7.7911-03	2.3056-01	2.7932-01	2.6829-01	2.6227-01	1.8955-01	-2.0371-01
P/PO1	5.3153-02	5.3868-02	1.8277-01	2.9326-01	3.1744-01	3.1197-01	3.0898-01	2.7292-01	7.7879-02
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.7 Q-INF = 7.098 P-INF =2.5605 RE = .4330 TO = 532.

P	7.6489-01	2.5127+00	2.5682+00	2.6219+00	2.5811+00	2.9378+00	3.5352+00	3.9758+00	4.3761+00
CP	-2.5298-01	-6.7328-03	1.0954-03	8.6556-03	2.9143-03	5.3163-02	1.3733-01	1.9941-01	2.5580-01
P/PO1	5.3446-02	1.7557-01	1.7945-01	1.8320-01	1.8036-01	2.0528-01	2.4702-01	2.7781-01	3.0578-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4333 TO = 532.

P	4.4635+00	3.6671+00	1.0820+00	7.1261-01	7.0613-01	6.6024-01	6.6169-01	6.4199-01	6.3197-01
CP	2.6768-01	1.5555-01	-2.0840-01	-2.6041-01	-2.6133-01	-2.6779-01	-2.6758-01	-2.7036-01	-2.7177-01
P/PO1	3.1167-01	2.5606-01	7.5552-02	4.9758-02	4.9306-02	4.6101-02	4.6202-02	4.4827-02	4.4127-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.5156+00	2.1891+00	9.8953+00	3.6633+00	1.0725+01	4.4742+00	1.1454+01	5.6977+00
CP	1.3422-01	-5.2545-02	1.0324+00	1.5501-01	1.1492+00	2.6918-01	1.2518+00	4.4143-01
P/PO1	2.4548-01	1.5285-01	6.9094-01	2.5579-01	7.4887-01	3.1241-01	7.9977-01	3.9784-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0277+01	6.8625+00	9.7125+00	6.8367+00	7.9828+00	6.9164+00	5.8055+00
CP	1.0862+00	6.0542-01	1.0067+00	6.0180-01	7.6315-01	6.1301-01	4.5661-01
P/PO1	7.1761-01	4.7917-01	6.7817-01	4.7737-01	5.5740-01	4.8294-01	4.0537-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
SUPERSONIC GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	293.	301244	1.99	5	7.08	134.85	5.01	9.99	180.0

VALVE POS 2 PO = 19.7 Q-INF = 7.079 P-INF =2.5538 RE = .4318 TO = 532.

P	2.8587+00	2.5621+00	2.6300+00	2.8368+00	3.4682+00	5.9384+00	9.7231+00	9.7291+00	9.7196+00
CP	4.3072-02	1.1717-03	1.0765-02	3.9982-02	1.2917-01	4.7811-01	1.0127+00	1.0136+00	1.0122+00
P/PO1	2.0027-01	1.7949-01	1.8425-01	1.9874-01	2.4297-01	4.1603-01	6.8117-01	6.8159-01	6.8094-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4344 TO = 532.

P	9.4869+00	7.0299+00	2.3028+00	8.3718-01	8.4593-01	8.1078-01	8.2711-01	7.9337-01	4.7984+00
CP	9.7143-01	6.2642-01	-3.7382-02	-2.4318-01	-2.4195-01	-2.4689-01	-2.4460-01	-2.4933-01	3.1306-01
P/PO1	6.6070-01	4.8958-01	1.6037-01	5.8304-02	5.8913-02	5.6465-02	5.7602-02	5.5252-02	3.3417-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4352 TO = 532.

P	1.0200+01	1.0360+01	1.0306+01	9.9750+00	7.5908+00	2.4359+00	2.5525+00	2.7971+00	3.6784+00
CP	1.0689+00	1.0913+00	1.0838+00	1.0373+00	7.0316-01	-1.9330-02	-2.9935-03	3.1294-02	1.5481-01
P/PO1	7.0901-01	7.2013-01	7.1641-01	6.9337-01	5.2764-01	1.6932-01	1.7743-01	1.9443-01	2.5569-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.118 P-INF =2.5678 RE = .4342 TO = 532.

P	4.6391+00	9.6507+00	1.0045+01	1.0143+01	9.9571+00	7.8619+00	2.2620+00	8.1890-01	8.1279-01
CP	2.9100-01	9.9508-01	1.0505+00	1.0643+00	1.0381+00	7.4377-01	-4.2754-02	-2.4569-01	-2.4655-01
P/PO1	3.2173-01	6.7242-01	6.9989-01	7.0674-01	6.9377-01	5.4779-01	1.5761-01	5.7058-02	5.6032-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4341 TO = 532.

P	8.1979-01	7.9519-01	4.4574+00	9.7455+00	9.7727+00	9.5106+00	9.0903+00	6.8927+00	2.1789+00
CP	-2.4554-01	-2.4900-01	2.6562-01	1.0087+00	1.0125+00	9.7571-01	9.1665-01	6.0783-01	-5.4562-02
P/PO1	5.7133-02	5.5419-02	3.1064-01	6.7919-01	6.8109-01	6.6282-01	6.3352-01	4.8037-01	1.5185-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.7 Q-INF = 7.099 P-INF =2.5611 RE = .4331 TO = 532.

P	2.7082+00	2.5682+00	2.7164+00	1.8052+00	8.1008-01	7.8539-01	7.8575-01	7.6966-01	3.2561+00
CP	2.0728-02	1.0095-03	2.1880-02	-1.0646-01	-2.4664-01	-2.5011-01	-2.5006-01	-2.5233-01	9.7894-02
P/PO1	1.8919-01	1.7941-01	1.8976-01	1.2611-01	5.6591-02	5.4866-02	5.4891-02	5.3767-02	2.2746-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	7.2237+00	8.0012+00	8.0760+00	7.9096+00	6.1310+00	2.1850+00	2.7750+00	2.6872+00	2.7664+00
CP	6.5075-01	7.5962-01	7.7009-01	7.4680-01	4.9775-01	-5.4790-02	2.7823-02	1.5531-02	2.6626-02
P/PO1	5.0165-01	5.5564-01	5.6084-01	5.4929-01	4.2577-01	1.5174-01	1.9271-01	1.8661-01	1.9212-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.7 Q-INF = 7.081 P-INF =2.5544 RE = .4319 TO = 532.

P	3.0969+00	5.2970+00	6.1223+00	6.7163+00	7.0530+00	5.9689+00	1.6072+00	7.6783-01	7.5550-01
CP	7.6619-02	3.8732-01	5.0389-01	5.8777-01	6.3532-01	4.8222-01	-1.3377-01	-2.5230-01	-2.5405-01
P/PO1	2.1691-01	3.7101-01	4.2881-01	4.7042-01	4.9400-01	4.1807-01	1.1257-01	5.3780-02	5.2916-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B592

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DAT

[illegible] DEVELOPMENT CENTER
[illegible] FACILITY
[illegible] TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4345 TO = 532.

P	7.5757-01	7.5142-01	3.2041+00	3.7885+00	4.4477+00	5.1105+00	5.6859+00	4.8186+00	1.5791+00
CP	-2.5439-01	-2.5525-01	8.9081-02	1.7113-01	2.6367-01	3.5672-01	4.3750-01	3.1574-01	-1.3466-01
P/PO1	5.2747-02	5.2319-02	2.2309-01	2.6378-01	3.0968-01	3.5583-01	3.9589-01	3.3550-01	1.0994-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.108 P-INF =2.5641 RE = .4336 TO = 532.

P	7.3927-01	2.9263+00	2.9078+00	2.9789+00	3.0124+00	3.1876+00	4.0667+00	4.4094+00	4.6637+00
CP	-2.5673-01	5.0957-02	4.8351-02	5.1323-02	6.3064-02	8.7017-02	2.1139-01	2.5962-01	2.9540-01
P/PO1	5.1583-02	2.0418-01	2.0289-01	2.0436-01	2.1019-01	2.2207-01	2.8375-01	3.0767-01	3.2541-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4333 TO = 532.

P	4.6391+00	3.5498+00	1.2526+00	6.9063-01	6.9180-01	6.5661-01	6.6348-01	6.4746-01	7.1074-01
CP	2.9239-01	1.3904-01	-1.8439-01	-2.6351-01	-2.6334-01	-2.6830-01	-2.6733-01	-2.6959-01	-2.6068-01
P/PO1	3.2392-01	2.4787-01	8.7461-02	4.8223-02	4.8304-02	4.5847-02	4.6328-02	4.5209-02	4.9627-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	3.0000+00	2.5875+00	6.2063+00	3.4477+00	8.1633+00	4.5141+00	9.7969+00	5.6953+00
CP	6.1626-02	3.5508-03	5.1303-01	1.2465-01	7.8856-01	2.7479-01	1.0186+00	4.4110-01
P/PO1	2.0947-01	1.8067-01	4.3335-01	2.4073-01	5.7000-01	3.1519-01	6.8406-01	3.9767-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	9.3141+00	6.7148+00	8.8500+00	7.1648+00	7.8703+00	7.2563+00	5.9578+00
CP	9.5058-01	5.8464-01	8.8524-01	6.4799-01	7.4731-01	6.6086-01	4.7805-01
P/PO1	6.5035-01	4.6886-01	6.1795-01	5.0028-01	5.4954-01	5.0667-01	4.1600-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	294.	301244	1.99	5	10.24	118.75	8.97	10.03	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.111 P-INF =2.5653 RE = .4338 TO = 532.

P	2.7709+00	2.4695+00	2.5250+00	2.5543+00	4.0165+00	6.4422+00	9.5379+00	9.4698+00	9.4293+00
CP	2.8910-02	-1.3482-02	-5.6682-03	-1.5434-03	2.0406-01	5.4517-01	9.8049-01	9.7093-01	9.6522-01
P/PO1	1.9325-01	1.7222-01	1.7610-01	1.7815-01	2.8012-01	4.4929-01	6.6519-01	6.6044-01	6.5762-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.142 P-INF =2.5763 RE = .4356 TO = 532.

P	9.2079+00	6.8758+00	2.2102+00	7.4559-01	7.5094-01	7.2009-01	7.3361-01	7.0947-01	5.3737+00
CP	9.2859-01	6.0203-01	-5.1265-02	-2.5634-01	-2.5559-01	-2.5991-01	-2.5802-01	-2.6140-01	3.9171-01
P/PO1	6.3945-01	4.7749-01	1.5349-01	5.1778-02	5.2149-02	5.0007-02	5.0946-02	4.9270-02	3.7318-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.121 P-INF =2.5690 RE = .4344 TO = 532.

P	1.0433+01	1.0637+01	1.0491+01	9.9597+00	7.4986+00	2.4971+00	2.7379+00	2.6183+00	3.7212+00
CP	1.1042+00	1.1330+00	1.1124+00	1.0378+00	6.9223-01	-1.0089-02	2.3720-02	9.7393-03	1.6180-01
P/PO1	7.2655-01	7.4082-01	7.3063-01	6.9362-01	5.2222-01	1.7391-01	1.9067-01	1.8374-01	2.5916-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.7 Q-INF = 7.101 P-INF =2.5617 RE = .4332 TO = 532.

P	5.1782+00	1.0360+01	1.0753+01	1.0694+01	1.0326+01	8.0146+00	2.3980+00	7.1494-01	7.2148-01
CP	3.6847-01	1.0982+00	1.1535+00	1.1452+00	1.0934+00	7.6789-01	-2.3052-02	-2.6006-01	-2.5914-01
P/PO1	3.6165-01	7.2355-01	7.5097-01	7.4689-01	7.2118-01	5.5975-01	1.6748-01	4.9933-02	5.0389-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4345 TO = 532.

P	7.3195-01	7.0035-01	4.4944+00	1.0924+01	1.0818+01	1.0442+01	1.0078+01	7.7314+00	2.2829+00
CP	-2.5798-01	-2.6242-01	2.7022-01	1.1728+00	1.1579+00	1.1052+00	1.0541+00	7.2466-01	-4.0245-02
P/PO1	5.0963-02	4.8763-02	3.1293-01	7.6057-01	7.5319-01	7.2703-01	7.0170-01	5.3831-01	1.5695-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.7 Q-INF = 7.081 P-INF =2.5544 RE = .4319 TO = 532.

P	2.3760+00	2.6114+00	2.6732+00	1.9649+00	7.2943-01	7.0421-01	7.0484-01	6.7847-01	3.9171+00
CP	-2.5196-02	8.0604-03	1.6779-02	-8.3250-02	-2.5773-01	-2.[illegible]58-01	-2.6120-01	-2.6492-01	1.9245-01
P/PO1	1.6641-01	1.8291-01	1.8723-01	1.3762-01	5.1090-02	4.9974-02	4.9368-02	4.7520-02	2.7435-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.7 Q-INF = 7.094 P-INF =2.5592 RE = .4328 TO = 532.

P	8.5723+00	8.8491+00	8.9835+00	8.7052+00	6.7610+00	2.2523+00	2.5834+00	2.6933+00	2.9623+00
CP	8.4758-01	8.8659-01	9.0555-01	8.6631-01	5.9227-01	-4.3263-02	3.4037-03	1.8896-02	5.6811-02
P/PO1	5.9927-01	6.1862-01	6.2802-01	6.0856-01	4.7265-01	1.5745-01	1.8060-01	1.8828-01	2.0709-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4333 TO = 532.

P	3.1972+00	7.1070+00	7.5222+00	7.3742+00	7.2988+00	5.9995+00	1.6514+00	6.9306-01	6.7051-01
CP	8.9390-02	6.3985-01	6.9830-01	6.7746-01	6.6686-01	4.8392-01	-1.2824-01	-2.6317-01	-2.6521-01
P/PO1	2.2324-01	4.9625-01	5.2523-01	5.1490-01	5.0964-01	4.1891-01	1.1531-01	4.8392-02	4.7377-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

B594

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.106 P-INF =2.5635 RE = .4335 TO = 532.

P	6.8255-01	6.6935-01	2.7473+00	4.4271+00	5.2177+00	5.8774+00	6.0962+00	5.2644+00	1.5852+00
CP	-2.6469-01	-2.6655-01	2.5860-02	2.6225-01	3.7351-01	4.6633-01	4.9713-01	3.8008-01	-1.3767-01
P/PO1	4.7636-02	4.6715-02	1.9174-01	3.0898-01	3.6415-01	4.1019-01	4.2546-01	3.6741-01	1.1063-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4341 TO = 532.

P	6.9170-01	2.8646+00	2.8893+00	2.8245+00	2.7967+00	2.9990+00	3.5166+00	3.9270+00	4.4924+00
CP	-2.6354-01	4.1794-02	4.5264-02	3.6166-02	3.2264-02	6.0685-02	1.3342-01	1.9108-01	2.7054-01
P/PO1	4.8206-02	1.9964-01	2.0136-01	1.9685-01	1.9491-01	2.0901-01	2.4508-01	2.7368-01	3.1308-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.123 P-INF =2.5696 RE = .4345 TO = 532.

P	4.9337+00	4.2104+00	1.2966+00	6.4300-01	6.3982-01	6.1126-01	6.1853-01	6.0916-01	6.0332-01
CP	3.3190-01	2.3036-01	-1.7871-01	-2.7047-01	-2.7092-01	-2.7493-01	-2.7391-01	-2.7522-01	-2.7604-01
P/PO1	3.4352-01	2.9316-01	9.0277-02	4.4770-02	4.4548-02	4.2560-02	4.3066-02	4.2414-02	4.2007-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	4.0875+00	3.0984+00	7.2000+00	4.4883+00	9.4711+00	5.8758+00	1.0805+01	6.9680+00
CP	2.1310-01	7.4246-02	6.5006-01	2.6936-01	9.6890-01	4.6415-01	1.1561+00	6.1749-01
P/PO1	2.8460-01	2.1573-01	5.0131-01	3.1250-01	6.5944-01	4.0911-01	7.5229-01	4.8515-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	1.0022+01	8.0203+00	9.7031+00	8.3203+00	8.8125+00	8.2828+00	6.5156+00
CP	1.0462+00	7.6522-01	1.0015+00	8.0734-01	8.7644-01	8.0208-01	5.5398-01
P/PO1	6.9779-01	5.5842-01	6.7559-01	5.7931-01	6.1358-01	5.7670-01	4.5366-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SUPERSONIC WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	295.	301244	1.99	5	11.17	153.24	5.00	5.00	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.110 P-INF =2.5647 RE = .4337 TO = 532.

P	3.0029+00	2.9880+00	2.8460+00	2.8000+00	2.9384+00	3.5743+00	7.5315+00	8.3414+00	8.6499+00
CP	6.1628-02	5.9543-02	3.9571-02	3.3088-02	5.2566-02	1.4201-01	6.9861-01	8.1252-01	8.5571-01
P/PO1	2.0948-01	2.0844-01	1.9854-01	1.9532-01	2.0498-01	2.4934-01	5.2539-01	5.8188-01	6.0340-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4357 TO = 532.

P	8.6033+00	6.4595+00	2.1978+00	8.4634-01	8.4951-01	8.1078-01	8.1632-01	7.7695-01	3.6600+00
CP	8.4365-01	5.4354-01	-5.3067-02	-2.4226-01	-2.4182-01	-2.4724-01	-2.4646-01	-2.5197-01	1.5163-01
P/PO1	5.9732-01	4.4848-01	1.5259-01	5.8761-02	5.8981-02	5.6292-02	5.6676-02	5.3943-02	2.5411-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4333 TO = 532.

P	8.3863+00	9.1574+00	9.3373+00	9.1794+00	7.0530+00	2.2584+00	2.7997+00	2.8460+00	3.1092+00
CP	8.1996-01	9.2852-01	9.5386-01	9.3163-01	6.3224-01	-4.2779-02	3.3426-02	3.9941-02	7.6946-02
P/PO1	5.8557-01	6.3941-01	6.5198-01	6.4095-01	4.9247-01	1.5769-01	1.9549-01	1.9872-01	2.1710-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4341 TO = 532.

P	3.6548+00	8.6178+00	9.1220+00	9.3477+00	9.2964+00	7.2018+00	2.2249+00	8.4443-01	8.3964-01
CP	1.5285-01	8.5026-01	9.2110-01	9.5282-01	9.4561-01	6.6252-01	-4.8079-02	-2.4209-01	-2.4275-01
P/PO1	2.5471-01	6.0060-01	6.3573-01	6.5147-01	6.4789-01	5.0749-01	1.5506-01	5.8051-02	5.8516-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.7 Q-INF = 7.105 P-INF =2.5629 RE = .4334 TO = 532.

P	8.4175-01	8.0796-01	3.8030+00	8.4757+00	9.1888+00	9.2664+00	9.1983+00	7.1062+00	2.2217+00
CP	-2.4226-01	-2.4702-01	1.7455-01	8.3226-01	9.3264-01	9.4355-01	9.3398-01	6.3949-01	-4.8023-02
P/PO1	5.8761-02	5.6402-02	2.6548-01	5.9167-01	6.4146-01	6.4687-01	6.4212-01	4.9607-01	1.5504-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.7 Q-INF = 7.099 P-INF =2.5611 RE = .4331 TO = 532.

P	3.0405+00	2.9325+00	2.9386+00	2.1245+00	8.1546-01	7.8902-01	7.8216-01	7.6419-01	3.2315+00
CP	6.7529-02	5.2315-02	5.3185-02	-6.1488-02	-2.4588-01	-2.4960-01	-2.5057-01	-2.5310-01	9.4446-02
P/PO1	2.1240-01	2.0486-01	2.0529-01	1.4842-01	5.6966-02	5.5119-02	5.4640-02	5.3384-02	2.2575-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.128 P-INF =2.5714 RE = .4348 TO = 532.

P	6.9602+00	8.3866+00	8.6913+00	8.6440+00	6.8532+00	2.3196+00	3.0407+00	2.9987+00	3.0235+00
CP	6.1570-01	8.1581-01	8.5855-01	8.5192-01	6.0069-01	-3.5321-02	6.5841-02	5.9939-02	6.3421-02
P/PO1	4.8427-01	5.8351-01	6.0471-01	6.0142-01	4.7683-01	1.6139-01	2.1156-01	2.0864-01	2.1036-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.9 Q-INF = 7.145 P-INF =2.5775 RE = .4358 TO = 532.

P	3.2348+00	6.0587+00	7.0915+00	7.7413+00	7.9596+00	6.4269+00	1.9530+00	7.3865-01	7.2864-01
CP	9.1998-02	4.8722-01	6.3177-01	7.2272-01	7.5327-01	5.3876-01	-8.7404-02	-2.5736-01	-2.5876-01
P/PO1	2.2454-01	4.2055-01	4.9224-01	5.3735-01	5.5249-01	4.4611-01	1.3556-01	5.1272-02	5.0577-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
[illegible]
40 [illegible] CONTINUOUS [illegible] TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.078 P-INF =2.5532 RE = .4317 TO = 532.

P	7.2097-01	6.8758-01	3.5313+00	4.8201+00	5.9927+00	6.7322+00	6.9605+00	5.6126+00	1.9349+00
CP	-2.5887-01	-2.6359-01	1.3821-01	3.2030-01	4.8599-01	5.9047-01	6.2272-01	4.3227-01	-8.7475-02
P/PO1	5.0522-02	4.8182-02	2.4745-01	3.3777-01	4.1994-01	4.7176-01	4.8775-01	3.9330-01	1.3553-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.8 Q-INF = 7.135 P-INF =2.5738 RE = .4352 TO = 532.

P	6.8804-01	3.0621+00	2.9633+00	3.0087+00	3.1479+00	3.4703+00	4.5920+00	5.2339+00	5.8685+00
CP	-2.6431-01	6.8436-02	5.4591-02	6.0952-02	8.0456-02	1.2564-01	2.8286-01	3.7283-01	4.6176-01
P/PO1	4.7826-02	2.1285-01	2.0599-01	2.0914-01	2.1881-01	2.4122-01	3.1919-01	3.6381-01	4.0792-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.138 P-INF =2.5751 RE = .4354 TO = 532.

P	6.1386+00	4.9080+00	1.6293+00	6.4950-01	6.4699-01	6.2033-01	6.2932-01	6.2010-01	6.7851-01
CP	4.9922-01	3.2683-01	-1.3249-01	-2.6989-01	-2.7010-01	-2.7384-01	-2.7258-01	-2.7387-01	-2.6569-01
P/PO1	4.2650-01	3.4100-01	1.1320-01	4.5056-02	4.4952-02	4.3100-02	4.3724-02	4.3084-02	4.7142-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.9719+00	2.9180+00	4.3711+00	3.6047+00	6.3586+00	4.9219+00	8.5688+00	6.6680+00
CP	5.5590-02	4.8039-02	2.5161-01	1.4424-01	5.3004-01	3.2877-01	8.3966-01	5.7338-01
P/PO1	2.0648-01	2.0274-01	3.0370-01	2.5045-01	4.4178-01	3.4196-01	5.9534-01	4.6328-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.8898+00	7.6453+00	9.0188+00	8.3203+00	8.4867+00	8.2336+00	6.3844+00
CP	8.8464-01	7.1030-01	9.0270-01	8.0486-01	8.2817-01	7.9271-01	5.3365-01
P/PO1	6.1765-01	5.3118-01	6.2661-01	5.7808-01	5.8964-01	5.7206-01	4.4358-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	296.	301244	1.99	5	13.42	137.57	9.01	5.01	180.0

VALVE POS 2 PO = 19.7 Q-INF = 7.106 P-INF =2.5635 RE = .4335 TO = 532.

P	2.8900+00	2.7349+00	2.4818+00	2.5175+00	2.6982+00	3.5192+00	8.1180+00	8.4329+00	8.4206+00
CP	4.5949-02	2.4123-02	-1.1497-02	-6.4720-03	1.8953-02	1.3449-01	7.8164-01	8.2595-01	8.2423-01
P/PO1	2.0170-01	1.9097-01	1.7321-01	1.7570-01	1.8831-01	2.4561-01	5.6657-01	5.8854-01	5.8769-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.137 P-INF =2.5744 RE = .4353 TO = 532.

P	8.2468+00	6.1974+00	2.0126+00	7.3460-01	7.3660-01	7.0377-01	7.1743-01	6.9670-01	3.6845+00
CP	7.9483-01	5.0767-01	-7.8728-02	-2.5781-01	-2.5753-01	-2.6213-01	-2.6021-01	-2.6312-01	1.5554-01
P/PO1	5.7311-01	4.3069-01	1.3987-01	5.1051-02	5.1190-02	4.8908-02	4.9857-02	4.8417-02	2.5605-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.133 P-INF =2.5732 RE = .4351 TO = 532.

P	9.0684+00	9.2037+00	9.2143+00	8.9806+00	6.8532+00	2.3135+00	2.5587+00	2.8277+00	3.6355+00
CP	9.1055-01	9.2952-01	9.3101-01	8.9824-01	6.0001-01	-3.6410-02	-2.0424-03	3.5667-02	1.4892-01
P/PO1	6.3050-01	6.3991-01	6.4065-01	6.2440-01	4.7649-01	1.6085-01	1.7790-01	1.9660-01	2.5277-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.8 Q-INF = 7.110 P-INF =2.5647 RE = .4337 TO = 532.

P	3.9871+00	9.7741+00	1.0168+01	1.0143+01	9.9571+00	7.9077+00	2.2064+00	8.1708-01	8.0383-01
CP	2.0007-01	1.0140+00	1.0694+00	1.0660+00	1.0338+00	7.5152-01	-5.0401-02	-2.4581-01	-2.4763-01
P/PO1	2.7813-01	6.8182-01	7.0931-01	7.0758-01	6.9460-01	5.5163-01	1.5341-01	5.6998-02	5.6074-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.7 Q-INF = 7.101 P-INF =2.5617 RE = .4332 TO = 532.

P	7.9600-01	7.2953-01	4.0005+00	9.9903+00	1.0264+01	1.0171+01	9.8928+00	7.5942+00	2.2890+00
CP	-2.4865-01	-2.5801-01	2.0262-01	1.0461+00	1.0847+00	1.0646+00	1.0324+00	7.0869-01	-3.8394-02
P/PO1	5.5594-02	5.0952-02	2.7940-01	6.9774-01	7.1688-01	7.0688-01	6.9093-01	5.3039-01	1.5987-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.108 P-INF =2.5641 RE = .4336 TO = 532.

P	2.6267+00	2.6917+00	2.9263+00	2.2596+00	7.7603-01	7.5093-01	7.4260-01	7.2224-01	4.0150+00
CP	8.8095-03	1.7951-02	5.0957-02	-4.2838-02	-2.5156-01	-2.5509-01	-2.5627-01	-2.5913-01	2.0412-01
P/PO1	1.8328-01	1.8781-01	2.0418-01	1.5766-01	5.4148-02	5.2396-02	5.1815-02	5.0394-02	2.8015-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.110 P-INF =2.5647 RE = .4337 TO = 532.

P	8.9754+00	9.4812+00	9.5219+00	9.2559+00	7.1605+00	2.5155+00	2.5401+00	2.5589+00	2.8643+00
CP	9.0169-01	9.7284-01	9.7857-01	9.4116-01	6.4643-01	-6.9239-03	-3.4589-03	-8.1269-04	4.2146-02
P/PO1	6.2611-01	6.6139-01	6.6424-01	6.4568-01	4.9951-01	1.7548-01	1.7720-01	1.7851-01	1.9981-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.116 P-INF =2.5671 RE = .4341 TO = 532.

P	3.2662+00	8.2478+00	8.6451+00	8.5675+00	8.5127+00	6.9002+00	1.9344+00	7.1494-01	7.0000-01
CP	9.8227-02	7.9826-01	8.5409-01	8.4318-01	8.3549-01	6.0889-01	-8.8908-02	-2.6028-01	-2.6238-01
P/PO1	2.2763-01	5.7481-01	6.0250-01	5.9709-01	5.9327-01	4.8089-01	1.3482-01	4.9826-02	4.8785-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS GAS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.9 Q-INF = 7.143 P-INF =2.5769 RE = .4357 TO = 532.

P	6.9719-01	6.7664-01	2.9448+00	6.1655+00	7.1759+00	7.5413+00	7.4852+00	6.2217+00	1.8973+00
CP	-2.6314-01	-2.6602-01	5.1508-02	5.0238-01	6.4382-01	6.9498-01	6.8712-01	5.1024-01	-9.5132-02
P/PO1	4.8405-02	4.6979-02	2.0446-01	4.2807-01	4.9822-01	5.2359-01	5.1969-01	4.3197-01	1.3173-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.6 Q-INF = 7.051 P-INF =2.5434 RE = .4301 TO = 532.

P	6.8987-01	2.7843+00	2.8090+00	2.8307+00	2.9384+00	3.2561+00	4.4746+00	5.5209+00	6.0977+00
CP	-2.6290-01	3.4166-02	3.7669-02	4.0740-02	5.6026-02	1.0108-01	2.7390-01	4.2231-01	5.0412-01
P/PO1	4.8527-02	1.9586-01	1.9759-01	1.9912-01	2.0670-01	2.2904-01	3.1475-01	3.8836-01	4.2893-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.7 Q-INF = 7.103 P-INF =2.5623 RE = .4333 TO = 532.

P	6.3866+00	5.2723+00	1.5939+00	6.5033-01	6.4878-01	6.1852-01	6.2752-01	6.1646-01	6.2660-01
CP	5.3843-01	3.8154-01	-1.3634-01	-2.6918-01	-2.6940-01	-2.7366-01	-2.7239-01	-2.7395-01	-2.7252-01
P/PO1	4.4594-01	3.6814-01	1.1129-01	4.5409-02	4.5301-02	4.3188-02	4.3817-02	4.3044-02	4.3752-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00
CEC	3.4430+00	3.5320+00	6.6797+00	4.9641+00	8.3297+00	6.9516+00	1.0223+01	8.3250+00	
CP	1.2399-01	1.3653-01	5.7969-01	3.3815-01	8.1199-01	6.1796-01	1.0786+00	8.1133-01	
P/PO1	2.4040-01	2.4662-01	4.6641-01	3.4661-01	5.8162-01	4.8539-01	7.1385-01	5.8129-01	
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01	
CEC	1.0062+01	8.8688+00	9.9398+00	9.3398+00	9.3703+00	9.1242+00	7.0313+00		
CP	1.0558+00	8.8788-01	1.0387+00	9.5421-01	9.5850-01	9.2385-01	6.2918-01		
P/PO1	7.0256-01	6.1926-01	6.9405-01	6.5215-01	6.5428-01	6.3710-01	4.9096-01		
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00		

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
14.	297.	301244	1.99	5	14.66	160.09	4.94	1.18	180.0

VALVE POS 2 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4349 TO = 532.

P	3.1032+00	3.0683+00	3.0498+00	3.0701+00	3.1294+00	3.3111+00	5.2718+00	6.5267+00	7.3356+00
CP	7.4498-02	6.9606-02	6.7008-02	6.9864-02	7.8177-02	1.0367-01	3.7867-01	5.5467-01	6.6812-01
P/PO1	2.1586-01	2.1343-01	2.1214-01	2.1356-01	2.1768-01	2.3032-01	3.6671-01	4.5400-01	5.1027-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO = 19.8 Q-INF = 7.130 P-INF =2.5720 RE = .4349 TO = 532.

P	7.4562+00	5.6303+00	1.9879+00	8.0055-01	8.1008-01	7.7088-01	7.8395-01	7.8425-01	3.2316+00
CP	6.8504-01	4.2895-01	-8.1925-02	-2.4846-01	-2.4712-01	-2.5262-01	-2.5079-01	-2.5075-01	9.2507-02
P/PO1	5.1866-01	3.9165-01	1.3828-01	5.5686-02	5.6350-02	5.3623-02	5.4532-02	5.4553-02	2.2479-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	4.9700-01

VALVE POS 4 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4346 TO = 532.

P	5.8906+00	7.3999+00	8.0298+00	8.0779+00	6.2539+00	2.1360+00	2.9789+00	2.8087+00	2.9684+00
CP	4.6603-01	6.7788-01	7.6629-01	7.7304-01	5.1704-01	-6.0938-02	5.7369-02	4.4709-02	5.5891-02
P/PO1	4.1004-01	5.1511-01	5.5895-01	5.6230-01	4.3534-01	1.4869-01	2.0736-01	2.0108-01	2.0663-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 5 PO = 19.7 Q-INF = 7.094 P-INF =2.5592 RE = .4328 TO = 532.

P	3.3477+00	7.2920+00	8.0760+00	8.5369+00	8.6664+00	6.8849+00	2.0890+00	8.7909-01	8.6470-01
CP	1.1113-01	6.6712-01	7.7762-01	8.4259-01	8.6084-01	6.0973-01	-6.6289-02	-2.3683-01	-2.3886-01
P/PO1	2.3403-01	5.0977-01	5.6457-01	5.9679-01	6.0585-01	4.8131-01	1.4603-01	6.1455-02	6.0449-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

VALVE POS 6 PO = 19.8 Q-INF = 7.131 P-INF =2.5726 RE = .4350 TO = 532.

P	8.6005-01	8.1890-01	3.4017+00	7.4965+00	8.6971+00	9.0069+00	8.9377+00	6.9994+00	2.1666+00
CP	-2.4014-01	-2.4591-01	1.1625-01	6.9045-01	8.5880-01	9.0223-01	9.0094-01	6.2074-01	-5.6931-02
P/PO1	5.9811-02	5.6950-02	2.3657-01	5.2134-01	6.0483-01	6.2637-01	6.2574-01	4.8677-01	1.5068-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 7 PO = 19.8 Q-INF = 7.111 P-INF =2.5653 RE = .4338 TO = 532.

P	3.0906+00	2.9572+00	2.9572+00	2.3701+00	8.4951-01	8.4525-01	8.3430-01	8.0796-01	3.3662+00
CP	7.3870-02	5.5102-02	5.5102-02	-2.7447-02	-2.4128-01	-2.4188-01	-2.4342-01	-2.4712-01	1.1262-01
P/PO1	2.1555-01	2.0624-01	2.0624-01	1.6530-01	5.9247-02	5.8949-02	5.8186-02	5.6349-02	2.3477-01
S/R	6.4000-02	1.1800-01	2.0800-01	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01

VALVE POS 8 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4346 TO = 532.

P	7.4097+00	8.6024+00	9.0143+00	8.9194+00	7.0222+00	2.4665+00	2.9913+00	2.9009+00	2.9684+00
CP	6.7926-01	8.4666-01	9.0447-01	8.9114-01	6.2487-01	-1.4550-02	5.9104-02	4.6423-02	5.5891-02
P/PO1	5.1579-01	5.9881-01	6.2748-01	6.2088-01	4.8882-01	1.7169-01	2.0822-01	2.0193-01	2.0663-01
S/R	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01

VALVE POS 9 PO = 19.8 Q-INF = 7.125 P-INF =2.5702 RE = .4346 TO = 532.

P	3.3477+00	7.2766+00	8.0913+00	8.4757+00	8.5588+00	6.7933+00	2.1199+00	7.7695-01	7.6445-01
CP	1.0912-01	6.6057-01	7.7493-01	8.2887-01	8.4054-01	5.9274-01	-6.3207-02	-2.5169-01	-2.5345-01
P/PO1	2.3303-01	5.0652-01	5.6324-01	5.8999-01	5.9578-01	4.7288-01	1.4756-01	5.4084-02	5.3213-02
S/R	4.9700-01	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00

~~CONFIDENTIAL~~

B600

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
V D KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS SS WIND TUNNEL

~~CONFIDENTIAL~~

VALVE POS 10 PO = 19.7 Q-INF = 7.105 P-INF =2.5629 RE = .4334 TO = 532.

P	7.4476-01	7.0765-01	3.2226+00	5.8595+00	7.3449+00	7.9077+00	7.9791+00	6.4047+00	2.1727+00
CP	-2.5591-01	-2.6114-01	9.2863-02	4.6402-01	6.7310-01	7.5232-01	7.6236-01	5.4076-01	-5.4915-02
P/PO1	5.1991-02	4.9400-02	2.2497-01	4.0904-01	5.1274-01	5.5202-01	5.5701-01	4.4710-01	1.5168-01
S/R	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 11 PO = 19.7 Q-INF = 7.101 P-INF =2.5617 RE = .4332 TO = 532.

P	7.1183-01	3.0868+00	3.0498+00	3.0824+00	3.1787+00	3.2989+00	5.1297+00	6.3742+00	7.1828+00
CP	-2.6050-01	7.3952-02	6.8736-02	7.3332-02	8.6889-02	1.0382-01	3.6163-01	5.3689-01	6.5075-01
P/PO1	4.9715-02	2.1559-01	2.1300-01	2.1528-01	2.2200-01	2.3040-01	3.5876-01	4.4518-01	5.0165-01
S/R	1.8540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO = 19.8 Q-INF = 7.140 P-INF =2.5757 RE = .4355 TO = 532.

P	7.2392+00	5.6057+00	1.8891+00	6.2651-01	6.2369-01	5.8224-01	5.8617-01	5.7086-01	6.4808-01
CP	6.5316-01	4.2437-01	-9.6154-02	-2.7299-01	-2.7339-01	-2.7919-01	-2.7864-01	-2.8079-01	-2.6997-01
P/PO1	5.0285-01	3.8938-01	1.3122-01	4.3519-02	4.3323-02	4.0444-02	4.0716-02	3.9653-02	4.5017-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00

CEC	2.9906+00	2.9695+00	3.8016+00	3.9492+00	5.4047+00	5.4844+00	7.6031+00	7.2000+00
CP	5.8118-02	5.5164-02	1.7170-01	1.9238-01	3.9623-01	4.0739-01	7.0413-01	6.4767-01
P/PO1	2.0773-01	2.0627-01	2.6406-01	2.7432-01	3.7542-01	3.8095-01	5.2813-01	5.0013-01
S/R	2.8900-01	3.8400-01	4.9700-01	4.9700-01	7.1700-01	7.1700-01	9.3600-01	9.3600-01

CEC	8.3180+00	8.1328+00	8.8031+00	8.7961+00	8.5805+00	8.6039+00	6.5672+00
CP	8.0425-01	7.7832-01	8.7220-01	8.7122-01	8.4102-01	8.4430-01	5.5904-01
P/PO1	5.7778-01	5.6492-01	6.1148-01	6.1099-01	5.9602-01	5.9764-01	4.5617-01
S/R	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00	1.7420+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	1.	301244	10.18	3	-4.99	.00	-.00	139.99	180.0

VALVE POS 2 PO =1805.5 Q-INF = 2.679 P-INF = .0369 RE = .1807 TO = 1903.

P	2.6782-02	3.1214-02	1.1823-01	1.8684-01	2.6055-01	4.3459-01	5.3411-01	1.6983+00	3.9278+00
CP	-3.7746-03	-2.1203-03	3.0359-02	5.5971-02	8.3484-02	1.4845-01	1.8560-01	6.2017-01	1.4524+00
P/PO1	5.3881-03	6.2796-03	2.3785-02	3.7589-02	5.2417-02	8.7432-02	1.0745-01	3.4167-01	7.9020-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.0 Q-INF = 2.673 P-INF = .0368 RE = .1802 TO = 1904.

P	4.9990+00	5.0371+00	4.9775+00	4.7532+00	4.2887+00	3.9466+00	3.0120+00	5.1734-01	1.7328+00
CP	1.8561+00	1.8704+00	1.8481+00	1.7642+00	1.5904+00	1.4625+00	1.1129+00	1.7974-01	6.3440-01
P/PO1	1.0078+00	1.0155+00	1.0035+00	9.5824-01	8.6460-01	7.9563-01	6.0722-01	1.0430-01	3.4934-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1799.2 Q-INF = 2.670 P-INF = .0368 RE = .1806 TO = 1900.

P	3.8971+00	4.9108+00	4.8305+00	7.0016-02	1.1896-01	1.5447-01	1.5541-01	2.2675-01	2.5194-01
CP	1.4456+00	1.8252+00	1.7951+00	1.2447-02	3.0775-02	4.4072-02	4.4424-02	7.1140-02	8.0571-02
P/PO1	7.8657-01	9.9117-01	9.7496-01	1.4131-02	2.4010-02	3.1177-02	3.1366-02	4.5766-02	5.0849-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1802.2 Q-INF = 2.674 P-INF = .0368 RE = .1804 TO = 1903.

P	8.5869-01	2.3878+00	3.7687+00	3.7890+00	1.5421-01	1.6687-01	9.3324-02	8.4456-02	3.4927-01
CP	3.0734-01	8.7917-01	1.3956+00	1.4032+00	4.3895-02	4.8632-02	2.1128-02	1.7811-02	1.1684-01
P/PO1	1.7307-01	4.8126-01	7.5959-01	7.6369-01	3.1080-02	3.3634-02	1.8810-02	1.7022-02	7.0395-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1803.5 Q-INF = 2.677 P-INF = .0369 RE = .1810 TO = 1900.

P	3.8175-02	1.1005-01	5.2812-02	1.2163-01	1.7964-01	3.4815-02	3.4846-02	4.3029-02	1.4720-01
CP	4.8926-04	2.7340-02	5.9573-03	3.1665-02	5.3337-02	-7.6561-04	-7.5403-04	2.3026-03	4.1217-02
P/PO1	7.6864-03	2.2158-02	1.0634-02	2.4489-02	3.6170-02	7.0100-03	7.0163-03	8.6637-03	2.9638-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1803.7 Q-INF = 2.678 P-INF = .0369 RE = .1816 TO = 1897.

P	1.5670-01	1.5887-01	1.6264-01	1.0002-01	5.6475-02	3.1214-02	3.2644-02	3.2622-02	2.6836-02
CP	4.4738-02	4.5551-02	4.6957-02	2.3577-02	7.3162-03	-2.1165-03	-1.5826-03	-1.5908-03	-3.7513-03
P/PO1	3.1536-02	3.1974-02	3.2732-02	2.0130-02	1.1366-02	6.2821-03	6.5698-03	6.5654-03	5.4010-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1803.2 Q-INF = 2.677 P-INF = .0369 RE = .1813 TO = 1898.

P	3.5976-02	3.6016-02	3.3607-02	1.1202-01	5.5354-01	1.8022+00	2.8408+00	3.2422-02	3.1842-02
CP	-3.3309-04	-3.1816-04	-1.2179-03	2.8075-02	1.9300-01	6.5944-01	1.0474+00	-1.6608-03	-1.8772-03
P/PO1	7.2433-03	7.2513-03	6.7664-03	2.2555-02	1.1145-01	3.6285-01	5.7196-01	6.5277-03	6.4110-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1803.7 Q-INF = 2.678 P-INF = .0369 RE = .1818 TO = 1896.

P	3.5376-02	3.0013-02	4.9011-02	3.3407-02	4.2657-02	3.8817-02	4.1455-02	3.4423-02	3.2644-02
CP	-5.6360-04	-2.5660-03	4.5270-03	-1.2987-03	2.1546-03	7.2108-04	1.7060-03	-9.1958-04	-1.5840-03
P/PO1	7.1191-03	6.0399-03	9.8629-03	6.7229-03	8.5843-03	7.8116-03	8.3424-03	6.9273-03	6.5692-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1803.2 Q-INF = 2.677 P-INF = .0369 RE = .1813 TO = 1898.

P	3.0979-02	2.5051-01	4.3750-01	2.1311+00	4.1464+00	3.2548+00	2.6592+00	1.4778+00	4.1315-01
CP	-2.1996-03	7.9806-02	1.4965-01	7.8228-01	1.5351+00	1.2020+00	9.7955-01	5.3825-01	1.4056-01
P/PO1	6.2373-03	5.0437-02	8.8084-02	4.2906-01	8.3481-01	6.5531-01	5.3539-01	2.9753-01	8.3182-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B602

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.5 Q-INF = 2.677 P-INF = .0369 RE = .1818 TO = 1895.

P	5.1965-02	1.2005-03	3.5168+00	2.5020+00	1.0639+00	2.4411-01	4.8934+00	4.4349+00	3.0681+00
CP	5.6416-03	-1.3323-02	1.3000+00	9.2094-01	3.8370-01	7.7423-02	1.8143+00	1.6430+00	1.1324+00
P/PO1	1.0464-02	2.4174-04	7.0815-01	5.0381-01	2.1424-01	4.9154-02	9.8534-01	8.9302-01	6.1780-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1802.7 Q-INF = 2.677 P-INF = .0369 RE = .1820 TO = 1894.

P	1.1619+00	3.0414-02	4.3210-02	5.0211-02	4.9466-02	3.0013-02	2.0728-01	9.3769-01	8.8738-01
CP	4.2020-01	-2.4127-03	2.3666-03	4.9816-03	4.7032-03	-2.5621-03	6.3644-02	3.3645-01	3.1766-01
P/PO1	2.3391-01	6.1226-03	8.6987-03	1.0108-02	9.9582-03	6.0421-03	4.1727-02	1.8877-01	1.7864-01
S/R	6.0300-01	6.4000-02	1.8800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B603

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS NB WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	2.	301244	10.18	3	-10.00	.00	-.00	145.00	180.0

VALVE POS 2 PO =1802.2 Q-INF = 2.677 P-INF = .0369 RE = .1820 TO = 1894.

P	3.7575-02	3.0414-02	9.6221-02	1.5143-01	2.1589-01	3.2254-01	3.9693-01	1.2993+00	3.4477+00
CP	2.6599-04	-2.4095-03	2.2176-02	4.2803-02	6.6883-02	1.0673-01	1.3452-01	4.7163-01	1.2743+00
P/POI	7.5665-03	6.1244-03	1.9376-02	3.0494-02	4.3473-02	6.4951-02	7.9930-02	2.6163-01	6.9426-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.5 Q-INF = 2.677 P-INF = .0369 RE = .1820 TO = 1894.

P	4.8369+00	5.0115+00	5.0060+00	4.8809+00	4.5674+00	4.2857+00	3.4565+00	3.8726-01	1.3533+00
CP	1.7930+00	1.8583+00	1.8562+00	1.8094+00	1.6924+00	1.5871+00	1.2774+00	1.3089-01	4.9173-01
P/POI	9.7386-01	1.0090+00	1.0079+00	9.8272-01	9.1961-01	8.6289-01	6.9593-01	7.7971-02	2.7247-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1802.5 Q-INF = 2.675 P-INF = .0368 RE = .1807 TO = 1901.

P	3.4588+00	4.7606+00	4.9130+00	7.1616-02	1.1575-01	1.5047-01	1.4119-01	1.7191-01	1.9626-01
CP	1.2792+00	1.7659+00	1.8228+00	1.3000-02	2.9500-02	4.2477-02	3.9008-02	5.0494-02	5.9596-02
P/POI	6.9688-01	9.5917-01	9.8988-01	1.4429-02	2.3322-02	3.0316-02	2.8447-02	3.4638-02	3.9543-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1802.5 Q-INF = 2.674 P-INF = .0368 RE = .1802 TO = 1904.

P	7.1757-01	2.1444+00	3.7223+00	4.1300+00	1.4419-01	1.4887-01	7.3899-02	7.3849-02	3.1322-01
CP	2.5456-01	7.8811-01	1.3782+00	1.5306+00	4.0148-02	4.1896-02	1.3862-02	1.3844-02	1.0335-01
P/POI	1.4462-01	4.3218-01	7.5019-01	8.3236-01	2.9061-02	3.0003-02	1.4894-02	1.4884-02	6.3127-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1801.5 Q-INF = 2.672 P-INF = .0368 RE = .1794 TO = 1908.

P	4.2172-02	1.1645-01	5.2412-02	1.2023-01	1.7383-01	4.3419-02	4.3057-02	4.3229-02	1.3117-01
CP	2.0138-03	2.9818-02	5.8468-03	3.1231-02	5.1297-02	2.4808-03	2.3453-03	2.4095-03	3.5329-02
P/POI	8.5076-03	2.3493-02	1.0573-02	2.4254-02	3.5068-02	8.7593-03	8.6863-03	8.7209-03	2.6463-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1803.7 Q-INF = 2.674 P-INF = .0368 RE = .1791 TO = 1911.

P	1.4790-01	1.5087-01	1.2963-01	7.8417-02	5.2870-02	4.0618-02	4.1055-02	4.1227-02	3.7850-02
CP	4.1538-02	4.2647-02	3.4705-02	1.5554-02	6.0000-03	1.4180-03	1.5813-03	1.6459-03	3.8303-04
P/POI	2.9808-02	3.0406-02	2.6126-02	1.5804-02	1.0656-02	8.1862-03	8.2742-03	8.3090-03	7.6284-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1800.7 Q-INF = 2.667 P-INF = .0367 RE = .1776 TO = 1918.

P	4.5170-02	4.4820-02	3.4008-02	1.2043-01	6.0801-01	2.0198+00	3.2282+00	4.1628-02	4.1255-02
CP	3.1615-03	3.0303-03	-1.0231-03	3.1374-02	2.1416-01	7.4342-01	1.1964+00	1.8336-03	1.6939-03
P/POI	9.1254-03	9.0547-03	6.8704-03	2.4329-02	1.2283-01	4.0805-01	6.5218-01	8.4098-03	8.3345-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.5 Q-INF = 2.673 P-INF = .0368 RE = .1805 TO = 1902.

P	4.2372-02	3.5416-02	5.9413-02	4.3010-02	4.9065-02	4.6821-02	5.2870-02	4.2228-02	3.7850-02
CP	2.0784-03	-4.4886-04	8.4532-03	2.3170-03	4.5823-03	3.7427-03	6.0057-03	2.0247-03	3.8707-04
P/POI	8.5428-03	7.1807-03	1.1979-02	8.6714-03	9.8924-03	9.4398-03	1.0660-02	8.5139-03	7.6313-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1799.0 Q-INF = 2.671 P-INF = .0368 RE = .1809 TO = 1898.

P	3.9973-02	3.1894-01	4.8211-01	2.5125+00	4.3786+00	3.6044+00	3.0090+00	1.7028+00	4.9226-01
CP	1.1957-03	1.0565-01	1.6675-01	9.2703-01	1.6258+00	1.3359+00	1.1129+00	6.2385-01	1.7055-01
P/POI	8.0675-03	6.4369-02	9.7299-02	5.0708-01	8.8370-01	7.2745-01	6.0728-01	3.4367-01	9.9348-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B604

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
10 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1798.7 Q-INF = 2.670 P-INF = .0368 RE = .1807 TO = 1899.

P	6.3757-02	8.0036-04	3.6863+00	2.6327+00	1.0804+00	2.2850-01	4.8604+00	4.2849+00	2.7140+00
CP	1.0108-02	-1.3472-02	1.3669+00	9.7226-01	3.9089-01	7.1811-02	1.8066+00	1.5911+00	1.0027+00
P/PO1	1.2871-02	1.6157-04	7.4415-01	5.3145-01	2.1810-01	4.6128-02	9.8116-01	8.6498-01	5.4788-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1800.7 Q-INF = 2.673 P-INF = .0368 RE = .1809 TO = 1899.

P	9.0620-01	4.0018-02	5.2412-02	5.4812-02	5.1068-02	3.5616-02	2.7517-01	1.1747+00	1.0052+00
CP	3.2525-01	1.1993-03	5.8360-03	6.7341-03	5.3334-03	-4.4757-04	8.9172-02	4.2571-01	3.6229-01
P/PO1	1.8273-01	8.0692-03	1.0568-02	1.1052-02	1.0297-02	7.1816-03	5.5485-02	2.3688-01	2.0269-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	3.	301244	10.18	3	-11.97	.00	-.00	146.97	180.0

VALVE POS 2 PO =1799.7 Q-INF = 2.671 P-INF = .0368 RE = .1805 TO = 1901.

P	3.9973-02	2.9213-02	8.8820-02	1.4163-01	1.9826-01	2.7532-01	3.3885-01	1.1408+00	3.1926+00
CP	1.1943-03	-2.8345-03	1.9483-02	3.9256-02	6.0460-02	8.9311-02	1.1310-01	4.1334-01	1.1816+00
P/PO1	8.0665-03	5.8951-03	1.7923-02	2.8581-02	4.0009-02	5.5559-02	6.8379-02	2.3020-01	6.4426-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1804.0 Q-INF = 2.677 P-INF = .0369 RE = .1809 TO = 1901.

P	4.7138+00	4.9709+00	4.9970+00	4.8944+00	4.6049+00	4.3442+00	3.5991+00	3.3302-01	1.1972+00
CP	1.7469+00	1.8429+00	1.8527+00	1.8143+00	1.7062+00	1.6088+00	1.3305+00	1.1062-01	4.3341-01
P/PO1	9.4894-01	1.0007+00	1.0060+00	9.8529-01	9.2702-01	8.7454-01	7.2454-01	6.7041-02	2.4102-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1800.2 Q-INF = 2.671 P-INF = .0368 RE = .1803 TO = 1902.

P	3.2216+00	4.6419+00	4.9100+00	7.0016-02	1.1475-01	1.4627-01	1.3358-01	1.4830-01	1.7463-01
CP	1.1922+00	1.7239+00	1.8243+00	1.2438-02	2.9185-02	4.0981-02	3.6232-02	4.1742-02	5.1600-02
P/PO1	6.4998-01	9.3653-01	9.9064-01	1.4126-02	2.3152-02	2.9510-02	2.6951-02	2.9921-02	3.5234-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1800.0 Q-INF = 2.671 P-INF = .0368 RE = .1801 TO = 1903.

P	6.6653-01	2.0332+00	3.6863+00	4.1885+00	1.4119-01	1.4066-01	6.4887-02	6.8245-02	2.9619-01
CP	2.3580-01	7.4751-01	1.3665+00	1.5546+00	3.9094-02	3.8897-02	1.0524-02	1.1781-02	9.7134-02
P/PO1	1.3451-01	4.1031-01	7.4392-01	8.4528-01	2.8493-02	2.8387-02	1.3095-02	1.3772-02	5.9774-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1799.5 Q-INF = 2.669 P-INF = .0368 RE = .1796 TO = 1906.

P	5.0766-02	1.2125-01	6.1814-02	1.2383-01	1.6702-01	4.6020-02	4.5461-02	4.4630-02	1.3077-01
CP	5.2481-03	3.1657-02	9.3872-03	3.2621-02	4.8805-02	3.4701-03	3.2603-03	2.9490-03	3.5224-02
P/PO1	1.0251-02	2.4484-02	1.2482-02	2.5004-02	3.3726-02	9.2927-03	9.1796-03	9.0119-03	2.6407-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1804.5 Q-INF = 2.677 P-INF = .0369 RE = .1806 TO = 1903.

P	1.4590-01	1.4206-01	1.1082-01	7.2216-02	5.2670-02	4.2619-02	4.2256-02	4.3029-02	4.1856-02
CP	4.0721-02	3.9287-02	2.7620-02	1.3200-02	5.8998-03	2.1458-03	2.0104-03	2.2988-03	1.8608-03
P/PO1	2.9369-02	2.8597-02	2.2308-02	1.4537-02	1.0602-02	8.5790-03	8.5060-03	8.6614-03	8.4254-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1805.7 Q-INF = 2.679 P-INF = .0369 RE = .1804 TO = 1905.

P	4.6969-02	4.6421-02	3.2607-02	1.2283-01	6.3024-01	2.1038+00	3.3754+00	4.3629-02	4.5260-02
CP	3.7619-03	3.5573-03	-1.5993-03	3.2080-02	2.2150-01	7.7160-01	1.2463+00	2.5152-03	3.1242-03
P/PO1	9.4498-03	9.3395-03	6.5603-03	2.4712-02	1.2680-01	4.2328-01	6.7910-01	8.7779-03	9.1061-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1803.0 Q-INF = 2.675 P-INF = .0368 RE = .1801 TO = 1905.

P	4.4570-02	3.6816-02	6.3814-02	4.5210-02	5.0868-02	4.9222-02	5.6275-02	4.4430-02	4.0454-02
CP	2.8922-03	-6.8570-06	1.0087-02	3.1314-03	5.2467-03	4.6313-03	7.2684-03	2.8396-03	1.3532-03
P/PO1	8.9812-03	7.4187-03	1.2859-02	9.1101-03	1.0250-02	9.9185-03	1.1340-02	8.9528-03	8.1517-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1803.5 Q-INF = 2.677 P-INF = .0369 RE = .1808 TO = 1901.

P	4.3771-02	3.4655-01	5.0911-01	2.6627+00	4.4640+00	3.7215+00	3.1366+00	1.8019+00	5.2470-01
CP	2.5816-03	1.1571-01	1.7644-01	9.8105-01	1.6541+00	1.3766+00	1.1581+00	6.5943-01	1.8226-01
P/PO1	8.8141-03	6.9785-02	1.0252-01	5.3618-01	8.9892-01	7.4939-01	6.3162-01	3.6284-01	1.0566-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B606

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.2 Q-INF = 2.674 P-INF = .0368 RE = .1804 TO = 1903.

P	6.8155-02	4.0018-04	3.7612+00	2.6822+00	1.0834+00	2.2270-01	4.8754+00	4.2323+00	2.5670+00
CP	1.1715-02	-1.3622-02	1.3928+00	9.8927-01	3.9138-01	6.9508-02	1.8094+00	1.5690+00	9.4619-01
P/PO1	1.3737-02	8.0656-05	7.5808-01	5.4060-01	2.1836-01	4.4885-02	9.8264-01	8.5303-01	5.1738-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1805.0 Q-INF = 2.679 P-INF = .0369 RE = .1808 TO = 1902.

P	8.1765-01	4.2819-02	5.7013-02	5.9013-02	5.4272-02	3.9017-02	3.0060-01	1.2843+00	1.0682+00
CP	2.9149-01	2.2143-03	7.5134-03	8.2602-03	6.4903-03	7.9502-04	9.8454-02	4.6569-01	3.8503-01
P/PO1	1.6453-01	8.6159-03	1.1472-02	1.1874-02	1.0921-02	7.8510-03	6.0486-02	2.5842-01	2.1494-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL

~~CONFIDENTIAL~~

Mach 10

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	4.	301244	10.18	3	-14.02	.00	-.00	149.02	180.0

VALVE POS 2 PO =1804.2 Q-INF = 2.676 P-INF = .0369 RE = .1800 TO = 1906.

P	4.2372-02	3.0814-02	8.7219-02	1.3363-01	1.8124-01	2.3370-01	2.8959-01	9.9566-01	2.9481+00
CP	2.0608-03	-2.2579-03	1.8819-02	3.6160-02	5.3951-02	7.3554-02	9.4435-02	3.5827-01	1.0878+00
P/PO1	8.5330-03	6.2054-03	1.7565-02	2.6911-02	3.6499-02	4.7064-02	5.8318-02	2.0051+01	5.9370-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1803.5 Q-INF = 2.676 P-INF = .0368 RE = .1803 TO = 1904.

P	4.5877+00	4.9184+00	4.9880+00	4.9349+00	4.6858+00	4.4418+00	3.7477+00	2.8319-01	1.0290+00
CP	1.7008+00	1.8244+00	1.8504+00	1.8306+00	1.7375+00	1.6463+00	1.3869+00	9.2066-02	3.7079-01
P/PO1	9.2409-01	9.9070-01	1.0047+00	9.9403-01	9.4386-01	8.9470-01	7.5490-01	5.7042-02	2.0726-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1803.0 Q-INF = 2.675 P-INF = .0368 RE = .1804 TO = 1903.

P	2.9994+00	4.5337+00	4.9430+00	7.3216-02	1.1716-01	1.4546-01	1.2857-01	1.2608-01	1.5280-01
CP	1.1074+00	1.6809+00	1.8339+00	1.3596-02	3.0021-02	4.0603-02	3.4288-02	3.3359-02	4.3346-02
P/PO1	6.0427-01	9.1338-01	9.9585-01	1.4751-02	2.3603-02	2.9306-02	2.5903-02	2.5402-02	3.0785-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1802.7 Q-INF = 2.675 P-INF = .0368 RE = .1802 TO = 1904.

P	6.0048-01	1.9084+00	3.6623+00	4.2937+00	1.4039-01	1.3266-01	5.7076-02	6.1441-02	2.7797-01
CP	2.1074-01	6.9978-01	1.3555+00	1.5916+00	3.8718-02	3.5829-02	7.5686-03	9.2006-03	9.0160-02
P/PO1	1.2101-01	3.8456-01	7.3800-01	8.6523-01	2.8290-02	2.6733-02	1.1502-02	1.2381-02	5.6015-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1801.5 Q-INF = 2.672 P-INF = .0368 RE = .1794 TO = 1908.

P	5.1566-02	1.2646-01	6.3214-02	1.2823-01	1.5641-01	4.8221-02	4.7864-02	4.5030-02	1.3238-01
CP	5.5301-03	3.3563-02	9.8903-03	3.4227-02	4.4775-02	4.2783-03	4.1444-03	3.0837-03	3.5779-02
P/PO1	1.0403-02	2.5511-02	1.2753-02	2.5868-02	3.1553-02	9.7280-03	9.6559-03	9.0842-03	2.6705-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1800.5 Q-INF = 2.670 P-INF = .0368 RE = .1793 TO = 1908.

P	1.4470-01	1.3326-01	9.5221-02	6.5815-02	5.2069-02	4.4220-02	4.4059-02	4.4229-02	4.3458-02
CP	4.0424-02	3.6136-02	2.1891-02	1.0878-02	5.7297-03	2.7897-03	2.7294-03	2.7933-03	2.5044-03
P/PO1	2.9209-02	2.6899-02	1.9221-02	1.3285-02	1.0510-02	8.9258-03	8.8933-03	8.9278-03	8.7720-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1803.2 Q-INF = 2.676 P-INF = .0369 RE = .1806 TO = 1902.

P	4.7768-02	4.7221-02	3.1407-02	1.2563-01	6.5047-01	2.1774+00	3.5090+00	4.5630-02	4.7463-02
CP	4.0795-03	3.8750-03	-2.0348-03	3.3176-02	2.2931-01	7.9993-01	1.2976+00	3.2806-03	3.9656-03
P/PO1	9.6213-03	9.5111-03	6.3259-03	2.5304-02	1.3102-01	4.3856-01	7.0677-01	9.1907-03	9.5599-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1800.0 Q-INF = 2.672 P-INF = .0368 RE = .1807 TO = 1900.

P	4.5969-02	3.8017-02	6.8015-02	4.7010-02	5.3672-02	5.2023-02	6.1282-02	4.5831-02	4.1255-02
CP	3.4349-03	4.5821-04	1.1687-02	3.8246-03	6.3180-03	5.7009-03	9.1666-03	3.3830-03	1.6703-03
P/PO1	9.2742-03	7.6698-03	1.3722-02	9.4842-03	1.0828-02	1.0496-02	1.2363-02	9.2462-03	8.3231-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1801.7 Q-INF = 2.674 P-INF = .0368 RE = .1808 TO = 1900.

P	4.7368-02	3.7577-01	5.4512-01	2.8294+00	4.5480+00	3.8370+00	3.2658+00	1.8979+00	5.5714-01
CP	3.9412-03	1.2674-01	1.9007-01	1.0443+00	1.6869+00	1.4211+00	1.2074+00	6.9593-01	1.9457-01
P/PO1	9.5470-03	7.5735-02	1.0987-01	5.7026-01	9.1663-01	7.7334-01	6.5821-01	3.8251-01	1.1229-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B608

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.2 Q-INF = 2.676 P-INF = .0368 RE = .1812 TO = 1898.

P	7.3951-02	8.0036-04	3.8362+00	2.7348+00	1.0759+00	2.1550-01	4.8604+00	4.1513+00	2.3930+00
CP	1.3868-02	-1.3473-02	1.4200+00	1.0084+00	3.8836-01	6.6771-02	1.8028+00	1.5378+00	8.8062-01
P/PO1	1.4897-02	1.6123-04	7.7281-01	5.5092-01	2.1675-01	4.3412-02	9.7912-01	8.3629-01	4.8207-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1803.5 Q-INF = 2.677 P-INF = .0369 RE = .1814 TO = 1898.

P	7.2672-01	4.6020-02	5.7013-02	5.8613-02	5.4072-02	4.2619-02	3.3184-01	1.3938+00	1.1462+00
CP	2.5765-01	3.4166-03	7.5221-03	8.1198-03	6.4238-03	2.1461-03	1.1017-01	5.0680-01	4.1434-01
P/PO1	1.4629-01	9.2643-03	1.1477-02	1.1799-02	1.0885-02	8.5795-03	6.6803-02	2.8058-01	2.3075-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
CONTINUOUS FLOW TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	5.	301244	10.18	3	-14.99	.00	-.00	149.99	180.0

VALVE POS 2 PO =1804.5 Q-INF = 2.679 P-INF = .0369 RE = .1813 TO = 1899.

P	4.4570-02	3.2815-02	8.9020-02	1.3263-01	1.7623-01	2.1730-01	2.6936-01	9.3763-01	2.8491+00
CP	2.8674-03	-1.5213-03	1.9461-02	3.5742-02	5.2021-02	6.7350-02	8.6786-02	3.3627-01	1.0499+00
P/PO1	8.9682-03	6.6028-03	1.7912-02	2.6687-02	3.5461-02	4.3723-02	5.4199-02	1.8866-01	5.7327-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1803.7 Q-INF = 2.677 P-INF = .0369 RE = .1810 TO = 1900.

P	4.5066+00	4.8928+00	4.9820+00	4.9469+00	4.7248+00	4.4898+00	3.8138+00	2.6358-01	9.6809-01
CP	1.6695+00	1.8138+00	1.8471+00	1.8340+00	1.7510+00	1.6633+00	1.4108+00	8.4680-02	3.4783-01
P/PO1	9.0727-01	9.8502-01	1.0030+00	9.9592-01	9.5119-01	9.0388-01	7.6780-01	5.3063-02	1.9490-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1802.7 Q-INF = 2.676 P-INF = .0368 RE = .1809 TO = 1900.

P	2.8793+00	4.4781+00	4.9490+00	7.4417-02	1.1816-01	1.4486-01	1.2497-01	1.1748-01	1.4379-01
CP	1.0623+00	1.6598+00	1.8358+00	1.4040-02	3.0387-02	4.0369-02	3.2932-02	3.0134-02	3.9968-02
P/PO1	5.7999-01	9.0203-01	9.9690-01	1.4990-02	2.3801-02	2.9181-02	2.5172-02	2.3664-02	2.8964-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1801.5 Q-INF = 2.674 P-INF = .0368 RE = .1810 TO = 1899.

P	5.6745-01	1.8573+00	3.6413+00	4.3327+00	1.4019-01	1.2846-01	5.4473-02	5.9039-02	2.7016-01
CP	1.9843-01	6.8079-01	1.3479+00	1.6065+00	3.8652-02	3.4265-02	6.5984-03	8.3062-03	8.7256-02
P/PO1	1.1437-01	3.7436-01	7.3392-01	8.7328-01	2.8256-02	2.5891-02	1.0979-02	1.1900-02	5.4452-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1802.5 Q-INF = 2.676 P-INF = .0368 RE = .1811 TO = 1899.

P	5.1965-02	1.2886-01	6.4014-02	1.3083-01	1.5040-01	4.8622-02	4.8665-02	4.5230-02	1.3418-01
CP	5.6499-03	3.4388-02	1.0153-02	3.5125-02	4.2440-02	4.4002-03	4.4164-03	3.1327-03	3.6377-02
P/PO1	1.0468-02	2.5957-02	1.2895-02	2.6354-02	3.0297-02	9.7944-03	9.8031-03	9.1112-03	2.7029-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1802.2 Q-INF = 2.675 P-INF = .0368 RE = .1809 TO = 1900.

P	1.4430-01	1.2926-01	8.9620-02	6.3614-02	5.2069-02	4.5220-02	4.4860-02	4.5030-02	4.4660-02
CP	4.0174-02	3.4550-02	1.9731-02	1.0010-02	5.6937-03	3.1331-03	2.9984-03	3.0621-03	2.9236-03
P/PO1	2.9076-02	2.6044-02	1.8058-02	1.2818-02	1.0491-02	9.1114-03	9.0388-03	9.0731-03	8.9985-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1805.5 Q-INF = 2.680 P-INF = .0369 RE = .1810 TO = 1901.

P	4.9167-02	4.8021-02	3.1207-02	1.2563-01	6.6028-01	2.2269+00	3.5736+00	4.5630-02	4.7463-02
CP	4.5772-03	4.1496-03	-2.1254-03	3.3112-02	2.3264-01	8.1729-01	1.3199+00	3.2573-03	3.9413-03
P/PO1	9.8895-03	9.6591-03	6.2770-03	2.5269-02	1.3281-01	4.4792-01	7.1879-01	9.1781-03	9.5468-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.5 Q-INF = 2.673 P-INF = .0368 RE = .1797 TO = 1907.

P	4.6769-02	3.8817-02	6.9615-02	4.7611-02	5.4272-02	5.3024-02	6.2483-02	4.7031-02	4.2657-02
CP	3.7229-03	7.4844-04	1.2269-02	4.0377-03	6.5297-03	6.0626-03	9.6012-03	3.8211-03	2.1847-03
P/PO1	9.4287-03	7.8257-03	1.4035-02	9.5984-03	1.0941-02	1.0690-02	1.2597-02	9.4817-03	8.5997-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1803.2 Q-INF = 2.674 P-INF = .0368 RE = .1796 TO = 1908.

P	4.8368-02	3.8897-01	5.6273-01	2.9045+00	4.5884+00	3.8881+00	3.3213+00	1.9573+00	5.7256-01
CP	4.3153-03	1.3168-01	1.9666-01	1.0724+00	1.7021+00	1.4402+00	1.2282+00	7.1816-01	2.0034-01
P/PO1	9.7479-03	7.8393-02	1.1341-01	5.8536-01	9.2474-01	7.8359-01	6.6937-01	3.9447-01	1.1539-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B610

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1804.7 Q-INF = 2.676 P-INF = .0369 RE = .1797 TO = 1908.

P	7.5949-02	8.0036-04	3.8722+00	2.7558+00	1.0789+00	2.1189-01	4.8453+00	-2.4496+00	2.3075+00
CP	1.4606-02	-1.3473-02	1.4330+00	1.0159+00	3.8935-01	6.5399-02	1.7966+00	-9.2904-01	8.4837-01
P/PO1	1.5294-02	1.6117-04	7.7974-01	5.5493-01	2.1726-01	4.2668-02	9.7569-01	-4.9327-01	4.6465-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1803.0 Q-INF = 2.674 P-INF = .0368 RE = .1799 TO = 1906.

P	6.8694-01	4.7221-02	5.5612-02	5.7813-02	5.4072-02	4.4620-02	3.4666-01	1.4414+00	1.1822+00
CP	2.4309-01	3.8851-03	7.0229-03	7.8457-03	6.4469-03	2.9125-03	1.1585-01	5.2518-01	4.2829-01
P/PO1	1.3844-01	9.5162-03	1.1207-02	1.1651-02	1.0897-02	8.9920-03	6.9861-02	2.9047-01	2.3825-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	6.	301244	10.18	3	-10.29	61.19	9.01	140.00	180.0

VALVE POS 2 PO =1802.7 Q-INF = 2.674 P-INF = .0368 RE = .1802 TO = 1904.

P	2.9580-02	3.5216-02	1.1763-01	1.8224-01	2.5434-01	4.3779-01	5.5194-01	1.6595+00	3.7838+00
CP	-2.7089-03	-6.0123-04	3.0220-02	5.4386-02	8.1351-02	1.4996-01	1.9265-01	6.0688-01	1.4014+00
P/PO1	5.9625-03	7.0985-03	2.3710-02	3.6734-02	5.1267-02	8.8247-02	1.1125-01	3.3451-01	7.6270-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1801.5 Q-INF = 2.673 P-INF = .0368 RE = .1803 TO = 1903.

P	4.7798+00	4.8132+00	4.7391+00	4.5204+00	4.0894+00	3.7530+00	2.9264+00	4.5250-01	1.5423+00
CP	1.7744+00	1.7869+00	1.7592+00	1.6774+00	1.5161+00	1.3903+00	1.0811+00	1.5552-01	5.6323-01
P/PO1	9.6379-01	9.7051-01	9.5556-01	9.1148-01	8.2457-01	7.5674-01	5.9007-01	9.1241-02	3.1099-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1801.2 Q-INF = 2.673 P-INF = .0368 RE = .1806 TO = 1901.

P	3.4858+00	4.4961+00	4.4541+00	5.1411-02	6.8291-02	7.8235-02	1.1035-01	1.3329-01	1.5340-01
CP	1.2902+00	1.6682+00	1.6525+00	5.4605-03	1.1775-02	1.5495-02	2.7508-02	3.6090-02	4.3615-02
P/PO1	7.0282-01	9.0652-01	8.9806-01	1.0366-02	1.3769-02	1.5774-02	2.2249-02	2.6874-02	3.0930-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1801.0 Q-INF = 2.674 P-INF = .0368 RE = .1815 TO = 1896.

P	6.0949-01	1.6274+00	2.9874+00	3.3715+00	9.5127-02	9.9244-02	5.1268-02	2.5617-02	1.7203-01
CP	2.1414-01	5.9479-01	1.1033+00	1.2470+00	2.1800-02	2.3339-02	5.3994-03	-4.1927-03	5.0557-02
P/PO1	1.2284-01	3.2801-01	6.0212-01	6.7954-01	1.9173-02	2.0003-02	1.0333-02	5.1632-03	3.4673-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1803.7 Q-INF = 2.679 P-INF = .0369 RE = .1819 TO = 1895.

P	3.9773-02	1.3326-01	5.1611-02	1.2723-01	1.0554-01	3.7217-02	3.8451-02	1.7612-02	8.9920-02
CP	1.0765-03	3.5977-02	5.4959-03	3.3725-02	2.5629-02	1.2194-04	5.8289-04	-7.1969-03	1.9797-02
P/PO1	8.0032-03	2.6814-02	1.0385-02	2.5601-02	2.1237-02	7.4887-03	7.7371-03	3.5438-03	1.8094-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1805.0 Q-INF = 2.681 P-INF = .0369 RE = .1826 TO = 1892.

P	9.6336-02	9.6843-02	9.2621-02	5.5812-02	4.1255-02	3.2815-02	3.4646-02	1.8813-02	3.2644-02
CP	2.2155-02	2.2345-02	2.0770-02	7.0428-03	1.6138-03	-1.5339-03	-8.5084-04	-6.7558-03	-1.5977-03
P/PO1	1.9365-02	1.9467-02	1.8618-02	1.1219-02	8.2930-03	6.5963-03	6.9645-03	3.7816-03	6.5619-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1805.0 Q-INF = 2.676 P-INF = .0369 RE = .1794 TO = 1910.

P	3.8774-02	3.7617-02	2.8206-02	6.0613-02	3.6669-01	1.4436+00	2.4715+00	2.1414-02	3.9052-02
CP	7.1675-04	2.8426-04	-3.2321-03	8.8773-03	1.2325-01	5.2564-01	9.0972-01	-5.7700-03	8.2060-04
P/PO1	7.8083-03	7.5752-03	5.6801-03	1.2206-02	7.3843-02	2.9071-01	4.9770-01	4.3124-03	7.8643-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1804.0 Q-INF = 2.674 P-INF = .0368 RE = .1791 TO = 1911.

P	3.6975-02	3.3615-02	3.4808-02	3.0807-02	4.1656-02	4.2819-02	5.1068-02	2.2815-02	3.5047-02
CP	5.3824-05	-1.2027-03	-7.5667-04	-2.2527-03	1.8038-03	2.2389-03	5.3233-03	-5.2408-03	-6.6731-04
P/PO1	7.4510-03	6.7738-03	7.0142-03	6.2080-03	8.3941-03	8.6286-03	1.0291-02	4.5976-03	7.0624-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.7 Q-INF = 2.674 P-INF = .0368 RE = .1801 TO = 1905.

P	2.6382-02	2.1410-01	3.3948-01	1.9178+00	4.1913+00	3.4469+00	2.8964+00	1.6698+00	5.5574-01
CP	-3.9065-03	6.6286-02	1.1317-01	7.0336-01	1.5535+00	1.2751+00	1.0693+00	6.1064-01	1.9404-01
P/PO1	5.3170-03	4.3147-02	6.8416-02	3.8650-01	8.4469-01	6.9466-01	5.8372-01	3.3653-01	1.1200-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS [illegible] TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.7 Q-INF = 2.672 P-INF = .0368 RE = .1796 TO = 1907.

P	8.8141-02	8.0036-04	3.8812+00	3.0712+00	1.7008+00	5.0482-01	4.9024+00	4.8550+00	3.7583+00
CP	1.9213-02	-1.3472-02	1.4387+00	1.1355+00	6.2271-01	1.7515-01	1.8208+00	1.8031+00	1.3927+00
P/PO1	1.7777-02	1.6142-04	7.8280-01	6.1942-01	3.4303-01	1.0182-01	9.8876-01	9.7919-01	7.5800-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1804.7 Q-INF = 2.677 P-INF = .0369 RE = .1801 TO = 1906.

P	1.6243+00	3.2414-02	4.3810-02	4.8811-02	4.5661-02	2.9213-02	2.0227-01	9.0918-01	8.0127-01
CP	5.9299-01	-1.6632-03	2.5936-03	4.4618-03	3.2851-03	-2.8591-03	6.1787-02	3.2586-01	2.8554-01
P/PO1	3.2701-01	6.5259-03	8.8201-03	9.8269-03	9.1927-03	5.8813-03	4.0722-02	1.8304-01	1.6132-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	7.	301244	10.18	3	-7.06	45.09	4.99	140.00	180.0

VALVE POS 2 PO =1804.0 Q-INF = 2.677 P-INF = .0369 RE = .1805 TO = 1903.

P	2.5583-02	3.4415-02	1.1583-01	1.8264-01	2.5774-01	4.4120-01	5.5714-01	1.6623+00	3.8408+00
CP	-4.2142-03	-9.1454-04	2.9500-02	5.4461-02	8.2519-02	1.5105-01	1.9437-01	6.0726-01	1.4211+00
P/PO1	5.1512-03	6.9296-03	2.3322-02	3.6775-02	5.1897-02	8.8835-02	1.1218-01	3.3471-01	7.7334-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.7 Q-INF = 2.674 P-INF = .0368 RE = .1802 TO = 1904.

P	4.8609+00	4.9003+00	4.8380+00	4.6180+00	4.1853+00	3.8415+00	2.9775+00	4.9473-01	1.6458+00
CP	1.8042+00	1.8189+00	1.7957+00	1.7134+00	1.5515+00	1.4230+00	1.0998+00	1.7126-01	6.0177-01
P/PO1	9.7981-01	9.8776-01	9.7521-01	9.3086-01	8.4364-01	7.7434-01	6.0017-01	9.9723-02	3.3175-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1801.5 Q-INF = 2.672 P-INF = .0368 RE = .1798 TO = 1906.

P	3.6539+00	4.6629+00	4.6071+00	5.9813-02	8.1108-02	9.8844-02	1.2937-01	1.8232-01	1.9706-01
CP	1.3537+00	1.7313+00	1.7104+00	8.6125-03	1.6582-02	2.3219-02	3.4644-02	5.4460-02	5.9977-02
P/PO1	7.3698-01	9.4049-01	9.2923-01	1.2064-02	1.6359-02	1.9936-02	2.6094-02	3.6774-02	3.9747-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1802.2 Q-INF = 2.673 P-INF = .0368 RE = .1795 TO = 1908.

P	7.1457-01	1.9445+00	3.2993+00	3.5593+00	1.1515-01	1.2446-01	6.7490-02	5.9440-02	2.4152-01
CP	2.5359-01	7.1379-01	1.2207+00	1.3180+00	2.9314-02	3.2795-02	1.1480-02	8.4681-03	7.6596-02
P/PO1	1.4409-01	3.9211-01	6.6532-01	7.1773-01	2.3221-02	2.5097-02	1.3609-02	1.1986-02	4.8703-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1802.5 Q-INF = 2.674 P-INF = .0368 RE = .1800 TO = 1905.

P	3.9773-02	1.2005-01	5.4412-02	1.1883-01	1.3037-01	3.8417-02	3.9453-02	3.7625-02	1.1115-01
CP	1.1029-03	3.1127-02	6.5776-03	3.0668-02	3.4986-02	5.9564-04	9.8292-04	2.9945-04	2.7796-02
P/PO1	8.0168-03	2.4198-02	1.0967-02	2.3951-02	2.6278-02	7.7434-03	7.9522-03	7.5838-03	2.2403-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1802.2 Q-INF = 2.673 P-INF = .0368 RE = .1798 TO = 1906.

P	1.2072-01	1.2045-01	1.1743-01	6.9615-02	4.5060-02	3.4615-02	3.6048-02	3.7625-02	3.7443-02
CP	3.1187-02	3.1287-02	3.0155-02	1.2270-02	3.0842-03	-8.2294-04	-2.8700-04	3.0293-04	-1.6355-03
P/PO1	2.4338-02	2.4285-02	2.3674-02	1.4035-02	9.0846-03	6.9788-03	7.2677-03	7.5856-03	6.5409-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1802.2 Q-INF = 2.673 P-INF = .0368 RE = .1795 TO = 1908.

P	4.0373-02	3.9217-02	2.7406-02	7.8217-02	4.3298-01	1.5951+00	2.6486+00	3.6624-02	3.8451-02
CP	1.3342-03	9.0177-04	-3.5176-03	1.5494-02	1.4823-01	5.8307-01	9.7725-01	-6.8433-05	6.1510-04
P/PO1	8.1413-03	7.9083-03	5.5265-03	1.5773-02	8.7311-02	3.2166-01	5.3410-01	7.3854-03	7.7538-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.7 Q-INF = 2.673 P-INF = .0368 RE = .1795 TO = 1908.

P	3.7375-02	3.2815-02	4.0409-02	2.9006-02	4.2056-02	4.4220-02	5.3471-02	3.8025-02	3.4846-02
CP	2.0852-04	-1.4974-03	1.3434-03	-2.9218-03	1.9595-03	2.7688-03	6.2294-03	4.5176-04	-7.3732-04
P/PO1	7.5346-03	6.6152-03	8.1462-03	5.8475-03	8.4783-03	8.9144-03	1.0780-02	7.6657-03	7.0249-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1803.2 Q-INF = 2.674 P-INF = .0368 RE = .1796 TO = 1908.

P	2.8981-02	2.3530-01	3.6128-01	2.0259+00	4.1733+00	3.3448+00	2.7883+00	1.5963+00	4.8425-01
CP	-2.9345-03	7.4220-02	1.2133-01	7.4382-01	1.5468+00	1.2370+00	1.0289+00	5.8317-01	1.6731-01
P/PO1	5.8407-03	4.7423-02	7.2812-02	4.0830-01	8.4108-01	6.7411-01	5.6194-01	3.2172-01	9.7594-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B614

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS AS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.7 Q-INF = 2.674 P-INF = .0368 RE = .1797 TO = 1907.

P	6.8354-02	8.0036-04	3.7163+00	2.7843+00	1.3801+00	3.6716-01	4.9099+00	4.6959+00	3.4642+00
CP	1.1794-02	-1.3472-02	1.3762+00	1.0276+00	5.0241-01	1.2355-01	1.8226+00	1.7426+00	1.2819+00
P/PO1	1.3778-02	1.6133-04	7.4910-01	5.6125-01	2.7820-01	7.4011-02	9.8971-01	9.4658-01	6.9829-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1803.2 Q-INF = 2.674 P-INF = .0368 RE = .1796 TO = 1908.

P	1.4081+00	2.9613-02	4.2409-02	4.8611-02	4.6662-02	2.9213-02	2.0908-01	9.3619-01	8.1228-01
CP	5.1280-01	-2.6980-03	2.0872-03	4.4062-03	3.6775-03	-2.8476-03	6.4413-02	3.3632-01	2.8998-01
P/PO1	2.8379-01	5.9682-03	8.5471-03	9.7969-03	9.4042-03	5.8875-03	4.2137-02	1.8868-01	1.6371-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS FLOW TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	8.	301244	10.18	3	-13.41	42.39	9.00	144.99	180.0

VALVE POS 2 PO =1802.2 Q-INF = 2.672 P-INF = .0368 RE = .1793 TO = 1909.

P	3.1579-02	3.1214-02	9.0020-02	1.5083-01	2.0848-01	3.1654-01	3.9352-01	1.2362+00	3.3022+00
CP	-1.9550-03	-2.0916-03	1.9914-02	4.2670-02	6.4241-02	1.0468-01	1.3349-01	4.4883-01	1.2219+00
P/PO1	6.3686-03	6.2950-03	1.8154-02	3.0419-02	4.2044-02	6.3837-02	7.9363-02	2.4932-01	6.6595-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.2 Q-INF = 2.672 P-INF = .0368 RE = .1791 TO = 1910.

P	4.6447+00	4.8372+00	4.8380+00	4.6961+00	4.3606+00	4.0756+00	3.3333+00	3.2882-01	1.1822+00
CP	1.7245+00	1.7965+00	1.7968+00	1.7437+00	1.6182+00	1.5115+00	1.2337+00	1.0929-01	4.2867-01
P/PO1	9.3680-01	9.7563-01	9.7579-01	9.4717-01	8.7951-01	8.2202-01	6.7231-01	6.6320-02	2.3845-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1801.7 Q-INF = 2.672 P-INF = .0368 RE = .1793 TO = 1909.

P	3.0324+00	4.3593+00	4.6131+00	4.7210-02	6.6489-02	7.8835-02	1.0174-01	1.0167-01	1.1115-01
CP	1.1213+00	1.6180+00	1.7129+00	3.8993-03	1.1115-02	1.5737-02	2.4309-02	2.4283-02	2.7832-02
P/PO1	6.1173-01	8.7941-01	9.3059-01	9.5237-03	1.3413-02	1.5903-02	2.0523-02	2.0509-02	2.2422-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1801.0 Q-INF = 2.671 P-INF = .0368 RE = .1795 TO = 1907.

P	3.9773-01	1.4501+00	2.9994+00	3.6854+00	9.3925-02	9.4642-02	4.6061-02	3.9426-02	1.5280-01
CP	1.3513-01	5.2913-01	1.1092+00	1.3660+00	2.1392-02	2.1661-02	3.4727-03	9.8865-04	4.3436-02
P/PO1	8.0253-02	2.9259-01	6.0520-01	7.4362-01	1.8952-02	1.9096-02	9.2940-03	7.9552-03	3.0832-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1803.7 Q-INF = 2.675 P-INF = .0368 RE = .1798 TO = 1907.

P	4.3771-02	1.3326-01	5.3012-02	1.2463-01	1.1595-01	3.9418-02	4.2256-02	3.6825-02	8.3912-02
CP	2.5900-03	3.6041-02	6.0443-03	3.2815-02	2.9573-02	9.6268-04	2.0238-03	-6.5853-06	1.7595-02
P/PO1	8.8181-03	2.6846-02	1.0680-02	2.5108-02	2.3360-02	7.9411-03	8.5130-03	7.4187-03	1.6905-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1804.2 Q-INF = 2.675 P-INF = .0368 RE = .1795 TO = 1909.

P	9.0340-02	9.4042-02	6.5214-02	4.9611-02	4.4459-02	3.5016-02	3.6849-02	3.7625-02	3.7450-02
CP	1.9995-02	2.1379-02	1.0604-02	4.7719-03	2.8462-03	-6.8363-04	1.7257-06	2.9176-04	2.2629-04
P/PO1	1.8198-02	1.8944-02	1.3137-02	9.9938-03	8.9560-03	7.0537-03	7.4230-03	7.5793-03	7.5441-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1805.5 Q-INF = 2.678 P-INF = .0369 RE = .1798 TO = 1908.

P	4.2172-02	4.0418-02	2.8006-02	6.6815-02	4.1475-01	1.6462+00	2.8318+00	3.8225-02	4.1656-02
CP	1.9785-03	1.3235-03	-3.3120-03	1.1182-02	1.4113-01	6.0103-01	1.0438+00	5.0466-04	1.7857-03
P/PO1	8.4884-03	8.1354-03	5.6371-03	1.3449-02	8.3482-02	3.3134-01	5.7000-01	7.6941-03	8.3845-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1805.0 Q-INF = 2.676 P-INF = .0369 RE = .1794 TO = 1910.

P	4.1572-02	3.7217-02	4.3010-02	3.4808-02	4.4459-02	4.3819-02	5.4072-02	4.0827-02	3.8251-02
CP	1.7623-03	1.3473-04	2.2994-03	-7.6535-04	2.8411-03	2.6020-03	6.4330-03	1.4839-03	5.2127-04
P/PO1	8.3718-03	7.4946-03	8.6612-03	7.0095-03	8.9531-03	8.8243-03	1.0889-02	8.2217-03	7.7029-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1804.0 Q-INF = 2.675 P-INF = .0368 RE = .1797 TO = 1908.

P	3.3378-02	2.7172-01	4.1869-01	2.2842+00	4.4790+00	3.8565+00	3.3138+00	1.9594+00	6.5447-01
CP	-1.2954-03	8.7795-02	1.4273-01	8.4006-01	1.6604+00	1.4278+00	1.2249+00	7.1863-01	2.3086-01
P/PO1	6.7240-03	5.4739-02	8.4347-02	4.6017-01	9.0231-01	7.7691-01	6.6757-01	3.9472-01	1.3184-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B616

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1803.5 Q-INF = 2.675 P-INF = .0368 RE = .1796 TO = 1908.

P	1.0253-01	1.2005-03	4.1872+00	3.2469+00	1.6738+00	4.5740-01	4.9354+00	4.7064+00	3.3382+00
CP	2.4565-02	-1.3323-02	1.5518+00	1.2002+00	6.1207-01	1.5725-01	1.8316+00	1.7460+00	1.2344+00
P/PO1	2.0661-02	2.4192-04	8.4375-01	6.5428-01	3.3729-01	9.2171-02	9.9454-01	9.4839-01	6.7267-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1804.0 Q-INF = 2.675 P-INF = .0368 RE = .1795 TO = 1909.

P	1.2730+00	3.6016-02	4.6210-02	5.0811-02	4.8465-02	3.5416-02	2.6696-01	1.1492+00	9.7710-01
CP	4.6212-01	-3.0780-04	3.5031-03	5.2232-03	4.3459-03	-5.3220-04	8.6025-02	4.1585-01	3.5150-01
P/PO1	2.5648-01	7.2562-03	9.3101-03	1.0237-02	9.7643-03	7.1353-03	5.3784-02	2.3154-01	1.9686-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

RHOLD ... ERING DEVEL... CENTER
... DYNAMI... ILITY
50 ... NTINUOUS HS ... TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S ROLL	YAW	ALPHA	ST-ROLL
1.	9.	301244	10.18	3	-14.91	37.30	8.97	146.96	180.0

VALVE POS 2 PO =1804.2 Q-INF = 2.675 P-INF = .0368 RE = .1793 TO = 1910.

P	3.7775-02	3.0414-02	8.4019-02	1.4483-01	1.9406-01	2.7452-01	3.3825-01	1.1169+00	3.0861+00
CP	3.4926-04	-2.4025-03	1.7636-02	4.0369-02	5.8771-02	8.8850-02	1.1267-01	4.0376-01	1.1399+00
P/PO1	7.6103-03	6.1272-03	1.6927-02	2.9178-02	3.9096-02	5.5306-02	6.8145-02	2.2502-01	6.2174-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1804.5 Q-INF = 2.675 P-INF = .0368 RE = .1789 TO = 1913.

P	4.5546+00	4.8177+00	4.8560+00	4.7577+00	4.4640+00	4.1972+00	3.4940+00	2.8359-01	1.0093+00
CP	1.6892+00	1.7875+00	1.8018+00	1.7651+00	1.6553+00	1.5555+00	1.2926+00	9.2259-02	3.6361-01
P/PO1	9.1774-01	9.7074-01	9.7847-01	9.5866-01	8.9949-01	8.4572-01	7.0403-01	5.7142-02	2.0338-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1804.0 Q-INF = 2.674 P-INF = .0368 RE = .1791 TO = 1911.

P	2.8463+00	4.2842+00	4.6551+00	4.4210-02	6.8491-02	8.5238-02	9.5527-02	8.6658-02	9.9132-02
CP	1.0505+00	1.5882+00	1.7268+00	2.7589-03	1.1838-02	1.8100-02	2.1947-02	1.8631-02	2.3295-02
P/PO1	5.7356-01	8.6332-01	9.3806-01	8.9088-03	1.3802-02	1.7177-02	1.9250-02	1.7463-02	1.9976-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1803.7 Q-INF = 2.674 P-INF = .0368 RE = .1793 TO = 1910.

P	3.5976-01	1.3855+00	2.9964+00	3.8056+00	9.3124-02	9.0840-02	4.6862-02	3.7625-02	1.4740-01
CP	1.2075-01	5.0430-01	1.1067+00	1.4092+00	2.1050-02	2.0196-02	3.7513-03	2.9722-04	4.1344-02
P/PO1	7.2499-02	2.7921-01	6.0384-01	7.6690-01	1.8766-02	1.8306-02	9.4438-03	7.5822-03	2.9703-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1800.2 Q-INF = 2.668 P-INF = .0367 RE = .1784 TO = 1913.

P	4.8767-02	1.3486-01	5.5612-02	1.2543-01	1.1475-01	4.2019-02	4.5260-02	3.9626-02	8.1108-02
CP	4.5054-03	3.6772-02	7.0708-03	3.3237-02	2.9236-02	1.9760-03	3.1910-03	1.0794-03	1.6626-02
P/PO1	9.8501-03	2.7239-02	1.1233-02	2.5334-02	2.3178-02	8.4870-03	9.1417-03	8.0038-03	1.6382-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1800.2 Q-INF = 2.668 P-INF = .0367 RE = .1783 TO = 1914.

P	9.1539-02	8.9240-02	5.9413-02	5.0611-02	4.7463-02	3.7417-02	3.9653-02	4.1628-02	4.0053-02
CP	2.0539-02	1.9677-02	8.4977-03	5.1985-03	4.0185-03	2.5276-04	1.0910-03	1.8312-03	1.2411-03
P/PO1	1.8491-02	1.8026-02	1.2002-02	1.0224-02	9.5876-03	7.5582-03	8.0099-03	8.4088-03	8.0908-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1803.7 Q-INF = 2.673 P-INF = .0368 RE = .1786 TO = 1914.

P	4.4970-02	4.2819-02	3.0007-02	6.9015-02	4.3138-01	1.7287+00	2.9610+00	4.1628-02	4.4459-02
CP	3.0510-03	2.2463-03	-2.5466-03	1.2046-02	1.4760-01	6.3291-01	1.0939+00	1.8007-03	2.8599-03
P/PO1	9.0660-03	8.6324-03	6.0494-03	1.3914-02	8.6966-02	3.4851-01	5.9693-01	8.3922-03	8.9631-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1805.0 Q-INF = 2.675 P-INF = .0368 RE = .1786 TO = 1915.

P	4.3771-02	3.8817-02	4.6010-02	3.9809-02	4.7063-02	4.7021-02	5.8278-02	4.3429-02	4.0254-02
CP	2.5927-03	7.4071-04	3.4299-03	1.1114-03	3.8234-03	3.8078-03	8.0163-03	2.4649-03	1.2777-03
P/PO1	8.8189-03	7.8209-03	9.2701-03	8.0707-03	9.4822-03	9.4737-03	1.1742-02	8.7500-03	8.1103-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1799.7 Q-INF = 2.675 P-INF = .0368 RE = .1828 TO = 1888.

P	3.6376-02	2.9653-01	4.5230-01	2.4314+00	4.5749+00	4.0066+00	3.4760+00	2.0734+00	6.9292-01
CP	-1.7177-04	9.7096-02	1.5534-01	8.9530-01	1.6967+00	1.4842+00	1.2858+00	7.6144-01	2.4530-01
P/PO1	7.3310-03	5.9762-02	9.1154-02	4.9002-01	9.2201-01	8.0747-01	7.0053-01	4.1787-01	1.3965-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

B618

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL, Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1800.7 Q-INF = 2.671 P-INF = .0368 RE = .1799 TO = 1905.

P	1.0793-01	1.2005-03	4.2621+00	3.2995+00	1.6738+00	4.4660-01	4.9399+00	4.6269+00	3.1596+00
CP	7.6637-02	-1.3323-02	1.5818+00	1.2214+00	6.1284-01	1.5342-01	1.8355+00	1.7184+00	1.1691+00
P/PO1	2.1776-02	2.4222-04	8.5994-01	6.6571-01	3.3771-01	9.0107-02	9.9669-01	9.3354-01	6.3749-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1804.2 Q-INF = 2.677 P-INF = .0369 RE = .1802 TO = 1905.

P	1.1529+00	3.9618-02	5.1411-02	5.5612-02	5.2270-02	3.9418-02	2.9499-01	1.2588+00	1.0517+00
CP	4.1698-01	1.0301-03	5.4365-03	7.0060-03	5.7572-03	9.5536-04	9.6443-02	4.5652-01	3.7917-01
P/PO1	2.3216-01	7.9775-03	1.0352-02	1.1198-02	1.0525-02	7.9372-03	5.9401-02	2.5347-01	2.1178-01
S/R	6.0300-01	6.4000-02	1.8000-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL machin

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	10.	301244	10.18	3	-11.17	26.73	5.00	145.00	180.0

VALVE POS 2 PO =1801.7 Q-INF = 2.672 P-INF = .0368 RE = .1796 TO = 1907.

P	3.7175-02	3.0414-02	9.3421-02	1.5003-01	2.1088-01	3.1554-01	3.9312-01	1.2648+00	3.3442+00
CP	1.4004-04	-2.3904-03	2.1189-02	4.2375-02	6.5145-02	1.0431-01	1.3335-01	4.5953-01	1.2377+00
P/POI	7.4978-03	6.1341-03	1.8842-02	3.0260-02	4.2532-02	6.3641-02	7.9289-02	2.5509-01	6.7448-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1801.2 Q-INF = 2.672 P-INF = .0368 RE = .1799 TO = 1905.

P	4.7228+00	4.9169+00	4.9160+00	4.7772+00	4.4520+00	4.1687+00	3.4144+00	3.4883-01	1.2603+00
CP	1.7537+00	1.8264+00	1.8261+00	1.7741+00	1.6524+00	1.5464+00	1.2641+00	1.1678-01	4.5788-01
P/POI	9.5261-01	9.9175-01	9.9159-01	9.6359-01	8.9800-01	8.4084-01	6.8870-01	7.0361-02	2.5420-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1805.2 Q-INF = 2.676 P-INF = .0369 RE = .1791 TO = 1912.

P	3.2186+00	4.5502+00	4.7570+00	5.4212-02	8.2109-02	1.0565-01	1.1676-01	1.2728-01	1.4259-01
CP	1.1890+00	1.6866+00	1.7639+00	6.4869-03	1.6912-02	2.5708-02	2.9859-02	3.3793-02	3.9513-02
P/POI	6.4819-01	9.1637-01	9.5802-01	1.0918-02	1.6536-02	2.1276-02	2.3513-02	2.5634-02	2.8716-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1795.0 Q-INF = 2.663 P-INF = .0367 RE = .1798 TO = 1902.

P	5.8847-01	1.7176+00	3.3083+00	3.8611+00	1.1055-01	1.1565-01	5.0067-02	4.8833-02	2.1068-01
CP	2.0717-01	6.3111-01	1.2284+00	1.4359+00	2.7733-02	2.9650-02	5.0255-03	4.5621-03	6.5329-02
P/POI	1.1908-01	3.4757-01	6.6948-01	7.8134-01	2.2370-02	2.3403-02	1.0132-02	9.8818-03	4.2633-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1804.0 Q-INF = 2.678 P-INF = .0369 RE = .1812 TO = 1899.

P	4.7968-02	1.2325-01	5.3812-02	1.1943-01	1.3758-01	4.2619-02	4.3658-02	3.9626-02	1.0314-01
CP	4.1409-03	3.2255-02	6.3232-03	3.0826-02	3.7606-02	2.1434-03	2.5315-03	1.0259-03	2.4743-02
P/POI	9.6546-03	2.4808-02	1.0831-02	2.4037-02	2.7692-02	8.5780-03	8.7871-03	7.9757-03	2.0759-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1802.7 Q-INF = 2.676 P-INF = .0368 RE = .1809 TO = 1900.

P	1.1432-01	1.1485-01	8.5419-02	5.8613-02	4.6262-02	3.8617-02	3.9853-02	3.9827-02	3.9252-02
CP	2.8955-02	2.9152-02	1.8152-02	8.1338-03	3.5177-03	6.6065-04	1.1226-03	1.1126-03	8.9804-04
P/POI	2.3029-02	2.3135-02	1.7206-02	1.1807-02	9.3187-03	7.7788-03	8.0278-03	8.0224-03	7.9067-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1802.0 Q-INF = 2.675 P-INF = .0368 RE = .1810 TO = 1899.

P	4.4171-02	4.2819-02	2.7206-02	8.5619-02	4.8585-01	1.7977+00	3.0165+00	4.1027-02	4.2857-02
CP	2.7413-03	2.2360-03	-3.6009-03	1.8737-02	1.6786-01	6.5831-01	1.1140+00	1.5662-03	2.2503-03
P/POI	8.9003-03	8.6280-03	5.4820-03	1.7252-02	9.7898-02	3.6224-01	6.0782-01	8.2670-03	8.6357-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.7 Q-INF = 2.676 P-INF = .0368 RE = .1809 TO = 1900.

P	4.3571-02	3.8017-02	4.9611-02	4.1809-02	4.7463-02	4.6821-02	5.5274-02	4.2829-02	3.9653-02
CP	2.5120-03	4.3631-04	4.7694-03	1.8537-03	3.9667-03	3.7266-03	6.8857-03	2.2346-03	1.0477-03
P/POI	8.7766-03	7.6579-03	9.9933-03	8.4218-03	9.5607-03	9.4313-03	1.1134-02	8.6271-03	7.9874-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.5 Q-INF = 2.676 P-INF = .0368 RE = .1811 TO = 1899.

P	3.6376-02	2.9533-01	4.4470-01	2.4029+00	4.4655+00	3.7650+00	3.1967+00	1.8379+00	5.6716-01
CP	-1.7659-04	9.6607-02	1.5243-01	8.8429-01	1.6552+00	1.3934+00	1.1810+00	6.7312-01	1.9820-01
P/POI	7.3276-03	5.9492-02	8.9581-02	4.8404-01	8.9955-01	7.5843-01	6.4395-01	3.7022-01	1.1425-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B620

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1803.0 Q-INF = 2.676 P-INF = .0369 RE = .1810 TO = 1900.

P	7.9547-02	4.0018-04	3.9892+00	2.9751+00	1.4011+00	3.4375-01	4.9249+00	4.5234+00	3.0516+00
CP	1.5953-02	-1.3622-02	1.4769+00	1.0980+00	5.0979-01	1.1468-01	1.8266+00	1.6765+00	1.1766+00
P/PO1	1.6021-02	8.0598-05	8.0345-01	5.9919-01	2.8219-01	6.9234-02	9.9190-01	9.1104-01	6.1461-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1803.5 Q-INF = 2.677 P-INF = .0369 RE = .1812 TO = 1899.

P	1.0899+00	3.9217-02	4.9411-02	5.3012-02	4.9866-02	3.5816-02	2.7236-01	1.1687+00	9.9393-01
CP	3.9333-01	8.7727-04	4.6849-03	6.0299-03	4.8551-03	-3.9331-04	8.7965-02	4.2279-01	3.5749-01
P/PO1	2.1942-01	7.8956-03	9.9478-03	1.0673-02	1.0040-02	7.2108-03	5.4834-02	2.3530-01	2.0011-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	11.	301244	10.18	3	-13.01	22.81	5.01	147.03	180.0

VALVE POS 2 PO =1804.0 Q-INF = 2.678 P-INF = .0369 RE = .1816 TO = 1847.

P	4.6369-02	3.2815-02	8.8420-02	1.4303-01	1.9646-01	2.7512-01	3.4065-01	1.1306+00	3.1446+00
CP	3.5401-03	-1.5205-03	1.9240-02	3.9629-02	5.9577-02	8.8945-02	1.1341-01	4.0832-01	1.1603+00
P/POI	9.3309-03	6.6033-03	1.7793-02	2.8782-02	3.9534-02	5.5363-02	6.8550-02	2.2750-01	6.3280-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1805.2 Q-INF = 2.677 P-INF = .0369 RE = .1796 TO = 1909.

P	4.6477+00	4.9169+00	4.9430+00	4.8418+00	4.5539+00	4.2887+00	3.5706+00	3.0280-01	1.1162+00
CP	1.7225+00	1.8230+00	1.8328+00	1.7950+00	1.6874+00	1.5884+00	1.3201+00	9.9346-02	4.0321-01
P/POI	9.3573-01	9.8991-01	9.9518-01	9.7480-01	9.1685-01	8.6345-01	7.1886-01	6.0963-02	2.2473-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1801.2 Q-INF = 2.670 P-INF = .0368 RE = .1787 TO = 1912.

P	3.0204+00	4.4600+00	4.7870+00	5.2812-02	8.6315-02	1.1045-01	1.1175-01	1.0927-01	1.2657-01
CP	1.1175+00	1.6567+00	1.7791+00	6.0079-03	1.8556-02	2.7595-02	2.8082-02	2.7155-02	3.3632-02
P/POI	6.0966-01	9.0024-01	9.6625-01	1.0660-02	1.7422-02	2.2294-02	2.2556-02	2.2056-02	2.5547-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1805.0 Q-INF = 2.676 P-INF = .0368 RE = .1791 TO = 1912.

P	5.5845-01	1.6364+00	3.3143+00	3.9888+00	1.1255-01	1.1105-01	4.6662-02	4.5230-02	2.0127-01
CP	1.9494-01	5.9784-01	1.2249+00	1.4770+00	2.8293-02	2.7732-02	3.5931-03	3.1328-03	6.1451-02
P/POI	1.1248-01	3.2961-01	6.6757-01	8.0342-01	2.2670-02	2.2367-02	9.3583-03	9.1102-03	4.0539-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1803.2 Q-INF = 2.673 P-INF = .0368 RE = .1787 TO = 1913.

P	5.5563-02	1.2686-01	5.4812-02	1.2283-01	1.3418-01	4.4820-02	4.6662-02	4.2228-02	1.0134-01
CP	7.0172-03	3.3692-02	6.7363-03	3.2184-02	3.6432-02	2.9977-03	3.6870-03	2.0280-03	2.4143-02
P/POI	1.1204-02	2.5579-02	1.1052-02	2.4767-02	2.7056-02	9.0374-03	9.4089-03	8.5148-03	2.0433-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1803.0 Q-INF = 2.673 P-INF = .0368 RE = .1789 TO = 1912.

P	1.1592-01	1.1045-01	7.4417-02	5.9213-02	4.6862-02	4.1418-02	4.3458-02	4.3029-02	4.1856-02
CP	2.9602-02	2.7554-02	1.4072-02	8.3837-03	3.7625-03	1.7255-03	2.4886-03	2.3280-03	1.8892-03
P/POI	2.3375-02	2.2272-02	1.5006-02	1.1940-02	9.4497-03	8.3519-03	8.7632-03	8.6766-03	8.4401-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1802.2 Q-INF = 2.671 P-INF = .0368 RE = .1786 TO = 1913.

P	4.5570-02	4.4020-02	2.7806-02	8.8420-02	5.0407-01	1.8773+00	3.1471+00	4.3429-02	4.5461-02
CP	3.2877-03	2.7075-03	-3.3622-03	1.9329-02	1.7493-01	6.8900-01	1.1644+00	2.4864-03	3.2469-03
P/POI	9.1938-03	8.8811-03	5.6100-03	1.7839-02	1.0170-01	3.7874-01	6.3494-01	8.7619-03	9.1718-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.0 Q-INF = 2.671 P-INF = .0368 RE = .1786 TO = 1913.

P	4.5769-02	4.0418-02	5.3612-02	5.0011-02	4.9466-02	4.8422-02	5.6275-02	4.5230-02	4.1856-02
CP	3.3650-03	1.3613-03	6.3013-03	4.9531-03	4.7490-03	4.3579-03	7.2984-03	3.1630-03	1.8996-03
P/POI	9.2354-03	8.1556-03	1.0818-02	1.0091-02	9.9813-03	9.7705-03	1.1355-02	9.1266-03	8.4457-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1801.5 Q-INF = 2.670 P-INF = .0368 RE = .1787 TO = 1912.

P	3.9374-02	3.2054-01	4.7851-01	2.5471+00	4.5390+00	3.8926+00	3.3333+00	1.9324+00	6.0060-01
CP	9.7282-04	1.0627-01	1.6542-01	9.4005-01	1.6860+00	1.4439+00	1.2345+00	7.0987-01	2.1114-01
P/POI	7.9463-03	6.4691-02	9.6571-02	5.1404-01	9.1604-01	7.8559-01	6.7273-01	3.8999-01	1.2121-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B622

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.0 Q-INF = 2.670 P-INF = .0368 RE = .1787 TO = 1912.

P	8.5543-02	8.0036-04	4.0102+00	3.0276+00	1.3876+00	3.3295-01	4.9294+00	4.4559+00	2.8896+00
CP	1.8271-02	-1.3472-02	1.4884+00	1.1203+00	5.0601-01	1.1095-01	1.8377+00	1.6554+00	1.0686+00
P/PO1	1.7269-02	1.6157-04	8.0956-01	6.1120-01	2.8012-01	6.7214-02	9.9513-01	8.9953-01	5.8333-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1802.2 Q-INF = 2.674 P-INF = .0368 RE = .1805 TO = 1902.

P	9.8479-01	4.8422-02	5.4612-02	5.5612-02	5.1469-02	3.9217-02	2.9960-01	1.2708+00	1.0637+00
CP	3.5446-01	4.3338-03	6.6486-03	7.0226-03	5.4732-03	8.9226-04	9.8254-02	4.6139-01	3.8397-01
P/PO1	1.9846-01	9.7584-03	1.1006-02	1.1208-02	1.0373-02	7.9035-03	6.0378-02	2.5610-01	2.1437-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B623

PRELIMINARY UNCHECKED DATA

HOLD FOR OPERATING DATA CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	12.	301244	10.18	3	-14.82	19.88	4.99	148.97	180.0

VALVE POS 2 PO =1803.0 Q-INF = 2.676 P-INF = .0369 RE = .1808 TO = 1901.

P	4.6369-02	3.3615-02	8.4619-02	1.3683-01	1.8184-01	2.3330-01	2.8939-01	9.8846-01	2.9091+00
CP	3.5572-03	-1.2092-03	1.7852-02	3.7364-02	5.4186-02	7.3643-02	9.4378-02	3.5564-01	1.0734+00
P/POI	9.3399-03	6.7709-03	1.7044-02	2.7561-02	3.6628-02	4.7114-02	5.8290-02	1.9910-01	5.8596-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.2 Q-INF = 2.674 P-INF = .0368 RE = .1805 TO = 1902.

P	4.5246+00	4.8658+00	4.9370+00	4.8854+00	4.6454+00	4.4013+00	3.7177+00	2.5857-01	9.5067-01
CP	1.6781+00	1.8056+00	1.8323+00	1.8130+00	1.7232+00	1.6319+00	1.3764+00	8.2913-02	3.4170-01
P/POI	9.1185-01	9.8060-01	9.9496-01	9.8455-01	9.3618-01	8.8699-01	7.4923-01	5.2110-02	1.9159-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1803.2 Q-INF = 2.676 P-INF = .0368 RE = .1805 TO = 1903.

P	2.8163+00	4.3639+00	4.8200+00	5.5412-02	9.3725-02	1.1485-01	1.0614-01	9.2662-02	1.1235-01
CP	1.0388+00	1.6172+00	1.7877+00	6.9384-03	2.1258-02	2.9154-02	2.5898-02	2.0860-02	2.8219-02
P/POI	5.6730-01	8.7904-01	9.7093-01	1.1162-02	1.8880-02	2.3135-02	2.1381-02	1.8665-02	2.2631-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1801.5 Q-INF = 2.674 P-INF = .0368 RE = .1806 TO = 1901.

P	4.1173-01	1.5628+00	3.2963+00	4.1014+00	1.1515-01	1.0345-01	4.9065-02	4.4830-02	1.9126-01
CP	1.4023-01	5.7078-01	1.2192+00	1.5203+00	2.9300-02	2.4921-02	4.5803-03	2.9961-03	5.7765-02
P/POI	8.3002-02	3.1506-01	6.6453-01	8.2683-01	2.3215-02	2.0854-02	9.8914-03	9.0375-03	3.8556-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1799.7 Q-INF = 2.671 P-INF = .0368 RE = .1805 TO = 1901.

P	5.4763-02	1.3126-01	5.8013-02	1.2603-01	1.2136-01	4.6621-02	4.8264-02	4.4029-02	1.0374-01
CP	6.7318-03	3.5372-02	7.9484-03	3.3414-02	3.1667-02	3.6831-03	4.2985-03	2.7128-03	2.5068-02
P/POI	1.1051-02	2.6487-02	1.1707-02	2.5432-02	2.4490-02	9.4079-03	9.7395-03	8.8849-03	2.0934-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1799.2 Q-INF = 2.670 P-INF = .0368 RE = .1806 TO = 1900.

P	1.1652-01	1.0044-01	6.6215-02	5.2612-02	4.8264-02	4.2619-02	4.5260-02	4.4229-02	4.3858-02
CP	2.9862-02	2.3842-02	1.1024-02	5.9296-03	4.3016-03	2.1875-03	3.1767-03	2.7907-03	2.6517-03
P/POI	2.3518-02	2.0273-02	1.3364-02	1.0619-02	9.7413-03	8.6019-03	9.1350-03	8.9270-03	8.8521-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1798.2 Q-INF = 2.669 P-INF = .0368 RE = .1803 TO = 1901.

P	4.6969-02	4.5620-02	2.8406-02	8.9620-02	5.2330-01	1.9628+00	3.2838+00	4.5230-02	4.7664-02
CP	3.8282-03	3.3229-03	-3.1276-03	1.9811-02	1.8232-01	7.2173-01	1.2167+00	3.1767-03	4.0886-03
P/POI	9.4861-03	9.2138-03	5.7371-03	1.8100-02	1.0569-01	3.9642-01	6.6322-01	9.1350-03	9.6265-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.7 Q-INF = 2.676 P-INF = .0368 RE = .1809 TO = 1900.

P	4.7368-02	4.1618-02	5.7813-02	4.9211-02	4.9866-02	5.0022-02	5.7276-02	4.7031-02	4.3858-02
CP	3.9313-03	1.7823-03	7.8347-03	4.6199-03	4.8649-03	4.9231-03	7.6342-03	3.8053-03	2.6195-03
P/POI	9.5416-03	8.3834-03	1.1645-02	9.9127-03	1.0045-02	1.0076-02	1.1537-02	9.4737-03	8.8346-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1801.5 Q-INF = 2.674 P-INF = .0368 RE = .1808 TO = 1900.

P	4.3171-02	3.4896-01	5.1872-01	2.7183+00	4.6424+00	4.0291+00	3.4820+00	2.0419+00	6.3965-01
CP	2.3740-03	1.1674-01	1.8023-01	1.0028+00	1.7225+00	1.4931+00	1.2885+00	7.4989-01	2.2546-01
P/POI	8.7023-03	7.0341-02	1.0456-01	5.4794-01	9.3579-01	8.1217-01	7.0188-01	4.1160-01	1.2894-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B624

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.0 Q-INF = 2.673 P-INF = .0368 RE = .1806 TO = 1901.

P	9.1739-02	8.0036-04	4.1362+00	3.0862+00	1.3816+00	3.1914-01	4.9219+00	4.3839+00	2.7245+00
CP	2.0551-02	-1.3473-02	1.5337+00	1.1409+00	5.0315-01	1.0563-01	1.8277+00	1.6264+00	1.0056+00
P/PO1	1.8499-02	1.6139-04	8.3407-01	6.2234-01	2.7861-01	6.4356-02	9.9252-01	8.8402-01	5.4941-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1801.0 Q-INF = 2.673 P-INF = .0368 RE = .1806 TO = 1901.

P	9.0973-01	4.8021-02	5.7813-02	5.7813-02	5.4272-02	4.3219-02	3.2984-01	1.3863+00	1.1447+00
CP	3.2660-01	4.1949-03	7.8583-03	7.8583-03	6.5336-03	2.3982-03	1.0964-01	5.0489-01	4.1452-01
P/PO1	1.8345-01	9.6837-03	1.1658-02	1.1658-02	1.0944-02	8.7153-03	6.6513-02	2.7955-01	2.3084-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B625

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	13.	301244	10.18	3	-14.82	-19.89	-4.99	148.97	180.0

VALVE POS 2 PO =1805.5 Q-INF = 2.677 P-INF = .0369 RE = .1795 TO = 1910.

P	4.5570-02	3.2815-02	8.1618-02	1.3403-01	1.7884-01	2.3230-01	2.8758-01	9.8746-01	2.8986+00
CP	3.2517-03	-1.5135-03	1.6717-02	3.6296-02	5.3035-02	7.3007-02	9.3657-02	3.5510-01	1.0690+00
P/PO1	9.1742-03	6.6063-03	1.6432-02	2.6983-02	3.6004-02	4.6768-02	5.7897-02	1.9880-01	5.8355-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1805.2 Q-INF = 2.677 P-INF = .0369 RE = .1794 TO = 1910.

P	4.5216+00	4.8746+00	4.9370+00	4.8839+00	4.6437+00	4.3968+00	3.7237+00	2.7760-01	1.1192+00
CP	1.6755+00	1.8075+00	1.8307+00	1.8109+00	1.7212+00	1.6289+00	1.3774+00	9.7414-02	4.0438-01
P/PO1	9.1043-01	9.8154-01	9.9407-01	9.8337-01	9.3504-01	8.8529-01	7.4777-01	5.9921-02	2.2536-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1798.0 Q-INF = 2.665 P-INF = .0367 RE = .1784 TO = 1912.

P	3.0895+00	4.5878+00	4.9460+00	8.5219-02	1.3838-01	1.7728-01	1.5200-01	1.6731-01	1.9927-01
CP	1.1455+00	1.7077+00	1.8421+00	1.8204-02	3.8153-02	5.2747-02	4.3263-02	4.9007-02	6.0997-02
P/PO1	6.2475-01	9.2773-01	1.0002+00	1.7233-02	2.7984-02	3.5849-02	3.0738-02	3.3833-02	4.0295-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1809.2 Q-INF = 2.682 P-INF = .0369 RE = .1797 TO = 1911.

P	7.6261-01	2.3292+00	4.0042+00	4.4213+00	1.6762-01	1.6227-01	8.6716-02	9.3062-02	4.0654-01
CP	2.7054-01	8.5457-01	1.4790+00	1.6345+00	4.8720-02	4.6725-02	1.8557-02	2.0923-02	1.3779-01
P/PO1	1.5322-01	4.6797-01	8.0451-01	8.8831-01	3.3678-02	3.2603-02	1.7423-02	1.8698-02	8.1681-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1802.0 Q-INF = 2.671 P-INF = .0368 RE = .1786 TO = 1913.

P	5.4963-02	1.2846-01	6.3814-02	1.4023-01	1.9186-01	2.9813-02	3.0340-02	2.8019-02	1.7383-01
CP	6.8073-03	3.4325-02	1.0121-02	3.8733-02	5.8062-02	-2.6093-03	-2.5244-03	-3.2812-03	5.1314-02
P/PO1	1.1091-02	2.5920-02	1.2876-02	2.8296-02	3.8713-02	6.0157-03	6.0615-03	5.6536-03	3.5076-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1800.7 Q-INF = 2.668 P-INF = .0367 RE = .1781 TO = 1915.

P	1.8308-01	1.7248-01	1.3703-01	9.8022-02	6.3885-02	2.5811-02	2.6636-02	2.5611-02	2.2830-02
CP	5.4839-02	5.0866-02	3.7582-02	2.2963-02	1.0170-02	-4.0988-03	-3.7900-03	-4.1717-03	-5.2160-03
P/PO1	3.6975-02	3.4834-02	2.7675-02	1.9797-02	1.2903-02	5.2130-03	5.3794-03	5.1737-03	4.6109-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1804.7 Q-INF = 2.675 P-INF = .0368 RE = .1787 TO = 1914.

P	3.7375-02	4.9222-02	4.4610-02	1.7844-01	8.1529-01	2.4235+00	3.6742+00	2.7018-02	4.6662-02
CP	2.0198-04	4.6312-03	2.9069-03	5.2943-02	2.9104-01	8.9231-01	1.3599+00	-3.6703-03	3.6742-03
P/PO1	7.5306-03	9.9176-03	8.9884-03	3.5953-02	1.6427-01	4.8830-01	7.4030-01	5.4438-03	9.4019-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1804.7 Q-INF = 2.675 P-INF = .0368 RE = .1787 TO = 1914.

P	4.5570-02	3.1614-02	8.6419-02	5.0811-02	5.1268-02	3.9217-02	5.9279-02	4.5430-02	3.9653-02
CP	3.2657-03	-1.9519-03	1.8538-02	5.2255-03	5.3964-03	8.9079-04	8.3914-03	3.2136-03	1.0536-03
P/PO1	9.1817-03	6.3698-03	1.7412-02	1.0238-02	1.0330-02	7.9018-03	1.1944-02	9.1537-03	7.9896-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.5 Q-INF = 2.671 P-INF = .0368 RE = .1783 TO = 1915.

P	5.2565-02	4.0458-01	5.6793-01	2.9135+00	4.3786+00	3.5909+00	3.0150+00	1.7313+00	4.8785-01
CP	5.9081-03	1.3770-01	1.9886-01	1.0770+00	1.6256+00	1.3306+00	1.1150+00	6.3443-01	1.6888-01
P/PO1	1.0606-02	8.1630-02	1.1459-01	5.8784-01	8.8345-01	7.2452-01	6.0832-01	3.4932-01	9.8431-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

B626

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HC WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1800.5 Q-INF = 2.668 P-INF = .0367 RE = .1779 TO = 1916.

P	5.8361-02	4.0018-04	3.4973+00	2.3954+00	8.0628-01	1.5047-01	4.6742+00	3.8123+00	1.9774+00
CP	8.1050-03	-1.3622-02	1.2972+00	8.8415-01	2.8847-01	4.2631-02	1.7384+00	1.4153+00	7.2747-01
P/PO1	1.1790-02	8.0841-05	7.0650-01	4.8390-01	1.6288-01	3.0396-02	9.4424-01	7.7013-01	3.9946-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1798.2 Q-INF = 2.664 P-INF = .0367 RE = .1777 TO = 1916.

P	5.9448-01	4.8822-02	5.7213-02	5.7413-02	5.3672-02	4.2019-02	3.3104-01	1.3938+00	1.1447+00
CP	2.0935-01	4.5523-03	7.7017-03	7.7768-03	6.3726-03	1.9989-03	1.1048-01	5.0936-01	4.1588-01
P/PO1	1.2024-01	9.8752-03	1.1572-02	1.1613-02	1.0856-02	8.4991-03	6.6960-02	2.8192-01	2.3154-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	14.	301244	10.18	3	-12.99	-22.88	-5.01	147.00	180.0

VALVE POS 2 PO =1808.7 Q-INF = 2.682 P-INF = .0369 RE = .1796 TO = 1911.

P	4.7568-02	3.3615-02	8.5619-02	1.4043-01	1.9306-01	2.6972-01	3.3324-01	1.1103+00	3.1056+00
CP	3.9675-03	-1.2359-03	1.8157-02	3.8597-02	5.8222-02	8.6811-02	1.1050-01	4.0029-01	1.1444+00
P/PO1	9.5600-03	6.7557-03	1.7207-02	2.8223-02	3.8799-02	5.4206-02	6.6973-02	2.2315-01	6.2415-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1797.2 Q-INF = 2.663 P-INF = .0367 RE = .1780 TO = 1914.

P	4.5997+00	4.8763+00	4.9100+00	4.8133+00	4.5240+00	4.2617+00	3.5601+00	3.4223-01	1.2452+00
CP	1.7132+00	1.8171+00	1.8298+00	1.7934+00	1.6848+00	1.5863+00	1.3229+00	1.1472-01	4.5378-01
P/PO1	9.3072-01	9.8669-01	9.9352-01	9.7394-01	9.1540-01	8.6233-01	7.2036-01	6.9248-02	2.5197-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1792.5 Q-INF = 2.656 P-INF = .0366 RE = .1773 TO = 1915.

P	3.2786+00	4.6599+00	4.8950+00	8.6019-02	1.3939-01	1.7988-01	1.5801-01	1.9173-01	2.2510-01
CP	1.2207+00	1.7408+00	1.8293+00	1.8615-02	3.8709-02	5.3956-02	4.5721-02	5.8416-02	7.0982-02
P/PO1	6.6527-01	9.4554-01	9.9326-01	1.7454-02	2.8283-02	3.6500-02	3.2062-02	3.8904-02	4.5675-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1812.5 Q-INF = 2.688 P-INF = .0370 RE = .1802 TO = 1910.

P	8.3767-01	2.4674+00	4.0522+00	4.3342+00	1.7083-01	1.7188-01	9.8531-02	1.0207-01	4.3198-01
CP	2.9792-01	9.0433-01	1.4940+00	1.5989+00	4.9792-02	5.0182-02	2.2891-02	2.4207-02	1.4696-01
P/PO1	1.6798-01	4.9479-01	8.1258-01	8.6913-01	3.4256-02	3.4466-02	1.9758-02	2.0468-02	8.6624-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1801.0 Q-INF = 2.670 P-INF = .0368 RE = .1787 TO = 1912.

P	3.3327-01	1.2365-01	5.6012-02	1.3523-01	2.0127-01	3.1014-02	2.7837-02	2.8419-02	1.6963-01
CP	1.1107-01	3.2548-02	7.2096-03	3.6884-02	6.1621-02	-2.1546-03	-3.3445-03	-3.1266-03	4.9768-02
P/PO1	6.7278-02	2.4963-02	1.1308-02	2.7300-02	4.0631-02	6.2609-03	5.6196-03	5.7371-03	3.4243-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1801.5 Q-INF = 2.670 P-INF = .0368 RE = .1787 TO = 1912.

P	2.7022-01	1.7888-01	1.5403-01	1.0842-01	6.9693-02	2.7212-02	2.6836-02	2.6818-02	2.0828-02
CP	8.7419-02	5.3215-02	4.3911-02	2.6831-02	1.2327-02	-3.5815-03	-3.7224-03	-3.7291-03	-5.9723-03
P/PO1	5.4534-02	3.6101-02	3.1087-02	2.1882-02	1.4065-02	5.4919-03	5.4159-03	5.4123-03	4.2034-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1800.5 Q-INF = 2.669 P-INF = .0368 RE = .1790 TO = 1910.

P	1.9215-01	4.8021-02	4.5210-02	1.7504-01	7.9146-01	2.3379+00	3.5150+00	2.9420-02	3.1041-02
CP	5.8211-02	4.2174-03	3.1643-03	5.1800-02	2.8272-01	8.6205-01	1.3030+00	-2.7510-03	-2.1435-03
P/PO1	3.8794-02	9.6951-03	9.1275-03	3.5339-02	1.5979-01	4.7201-01	7.0965-01	5.9396-03	6.2670-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1803.0 Q-INF = 2.673 P-INF = .0368 RE = .1790 TO = 1911.

P	1.2010-01	2.8813-02	8.2018-02	4.8811-02	4.3858-02	3.5816-02	4.9065-02	4.4029-02	3.8051-02
CP	3.1159-02	-2.9922-03	1.6913-02	4.4895-03	2.6367-03	-3.7221-04	4.5847-03	2.7006-03	4.6389-04
P/PO1	2.4215-02	5.8094-03	1.6537-02	9.8416-03	8.8430-03	7.2214-03	9.8929-03	8.8775-03	7.6720-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1803.5 Q-INF = 2.674 P-INF = .0368 RE = .1794 TO = 1909.

P	9.3074-02	3.7577-01	5.3092-01	2.7483+00	4.2812+00	3.4679+00	2.8799+00	1.6608+00	4.5981-01
CP	2.1032-02	1.2674-01	1.8476-01	1.0139+00	1.5871+00	1.2830+00	1.0631+00	6.0728-01	1.5817-01
P/PO1	1.8757-02	7.5728-02	1.0700-01	5.5386-01	8.6279-01	6.9888-01	5.8038-01	3.3471-01	9.2666-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

B628

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1803.7 Q-INF = 2.673 P-INF = .0368 RE = .1788 TO = 1913.

P	8.1065-02	.0000+00	3.4343+00	2.3443+00	8.0447-01	1.5247-01	4.6907+00	3.8888+00	2.1379+00
CP	1.6550-02	.0000+00	1.2708+00	8.6311-01	2.8714-01	4.3258-02	1.7408+00	1.4408+00	7.8591-01
P/PO1	1.6341-02	.0000+00	6.9229-01	4.7257-01	1.6217-01	3.0735-02	9.4556-01	7.8391-01	4.3097-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0750+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1803.5 Q-INF = 2.673 P-INF = .0368 RE = .1789 TO = 1912.

P	5.9448-01	4.8422-02	5.6012-02	5.6012-02	5.2069-02	3.8017-02	3.0180-01	1.2888+00	1.0742+00
CP	2.0860-01	4.3407-03	7.1802-03	7.1802-03	5.7053-03	4.4879-04	9.9120-02	4.6830-01	3.8805-01
P/PO1	1.1984-01	9.7613-03	1.1292-02	1.1292-02	1.0497-02	7.6638-03	6.0840-02	2.5980-01	2.1655-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] ENGINEERING DEVELOPMENT CENTER
[illegible] GAS [illegible]
50 INCH CONTINUOUS [illegible] 80 RANGE Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	15.	301244	10.18	3	-11.75	-26.73	-5.26	145.53	180.0

VALVE POS 2 PO =1803.5 Q-INF = 2.673 P-INF = .0368 RE = .1789 TO = 1912.

P	2.7322-01	3.3215-02	9.0820-02	1.4663-01	2.0487-01	3.0113-01	3.7330-01	1.2152+00	3.2647+00
CP	8.8428-02	-1.3475-03	2.0200-02	4.1977-02	6.2863-02	9.8870-02	1.2586-01	4.4080-01	1.2074+00
P/POI	5.5078-02	6.6958-03	1.8308-02	2.9560-02	4.1300-02	6.0706-02	7.5253-02	2.4498-01	6.5812-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.7 Q-INF = 2.673 P-INF = .0368 RE = .1790 TO = 1911.

P	4.6777+00	4.8928+00	4.9040+00	4.7742+00	4.4595+00	4.1837+00	3.4565+00	3.8366-01	1.3758+00
CP	1.7365+00	1.8170+00	1.8212+00	1.7726+00	1.6549+00	1.5517+00	1.2706+00	1.2978-01	5.0101-01
P/POI	9.4329-01	9.8666-01	9.8892-01	9.6275-01	8.9929-01	8.4366-01	6.9701-01	7.7366-02	2.7743-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1803.0 Q-INF = 2.673 P-INF = .0368 RE = .1789 TO = 1912.

P	3.4528+00	4.7440+00	4.8920+00	8.9220-02	1.4459-01	1.8388-01	1.6602-01	2.1554-01	2.5214-01
CP	1.2781+00	1.7613+00	1.8167+00	1.9611-02	4.0330-02	5.5030-02	4.8348-02	6.6877-02	8.0569-02
P/POI	6.9624-01	9.5662-01	9.8646-01	1.7991-02	2.9157-02	3.7079-02	3.3478-02	4.3464-02	5.0842-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1803.2 Q-INF = 2.673 P-INF = .0368 RE = .1789 TO = 1912.

P	8.8571-01	2.5786+00	4.0672+00	4.2396+00	1.7423-01	1.7888-01	1.0955-01	1.1007-01	4.5340-01
CP	3.1758-01	9.5093-01	1.5078+00	1.5723+00	5.1411-02	5.3149-02	2.7211-02	2.7408-02	1.5585-01
P/POI	1.7857-01	5.1990-01	8.2002-01	8.5478-01	3.5128-02	3.6065-02	2.2086-02	2.2193-02	9.1415-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1803.2 Q-INF = 2.674 P-INF = .0368 RE = .1792 TO = 1910.

P	2.5220-01	1.2165-01	5.6613-02	1.3363-01	2.0768-01	3.1414-02	2.7837-02	2.8019-02	1.7203-01
CP	8.0559-02	3.1731-02	7.4030-03	3.6210-02	6.3906-02	-2.0220-03	-3.3599-03	-3.2920-03	5.0572-02
P/POI	5.0838-02	2.4523-02	1.1412-02	2.6937-02	4.1863-02	6.3324-03	5.6113-03	5.6479-03	3.4677-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1802.5 Q-INF = 2.672 P-INF = .0368 RE = .1792 TO = 1910.

P	2.2818-01	1.8608-01	1.7074-01	1.1683-01	6.9693-02	2.7412-02	2.6235-02	2.6017-02	1.9025-02
CP	7.1612-02	5.5858-02	4.9929-02	2.9943-02	1.2307-02	-3.5145-03	-3.9550-03	-4.0364-03	-6.6528-03
P/POI	4.6016-02	3.7526-02	3.4331-02	2.3560-02	1.4055-02	5.5280-03	5.2906-03	5.2467-03	3.8367-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1802.5 Q-INF = 2.672 P-INF = .0368 RE = .1792 TO = 1910.

P	1.6813-01	4.8021-02	4.6210-02	1.7684-01	7.8865-01	2.2959+00	3.4114+00	2.9620-02	2.8438-02
CP	4.9142-02	4.1972-03	3.5195-03	5.2400-02	2.8133-01	8.4534-01	1.2627+00	-2.6885-03	-3.1307-03
P/POI	3.3907-02	9.6841-03	9.3189-03	3.5662-02	1.5904-01	4.6300-01	6.8796-01	5.9732-03	5.7349-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.5 Q-INF = 2.673 P-INF = .0368 RE = .1793 TO = 1909.

P	1.1409-01	2.5611-02	7.8617-02	4.4810-02	4.9866-02	3.7817-02	5.2069-02	4.0827-02	3.5047-02
CP	2.8915-02	-4.1894-03	1.5643-02	2.9938-03	4.8856-03	3.7727-04	5.7099-03	1.5036-03	-6.5915-04
P/POI	2.3006-02	5.1644-03	1.5853-02	9.0356-03	1.0055-02	7.6255-03	1.0499-02	8.2325-03	7.0669-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.0 Q-INF = 2.672 P-INF = .0368 RE = .1791 TO = 1910.

P	1.0208-01	3.5576-01	5.0531-01	2.6327+00	4.1928+00	3.3538+00	2.7733+00	1.5573+00	4.3578-01
CP	2.4437-02	1.1939-01	1.7536-01	9.7162-01	1.5556+00	1.2416+00	1.0243+00	5.6912-01	1.4934-01
P/POI	2.0592-02	7.1764-02	1.0193-01	5.3106-01	8.4577-01	6.7654-01	5.5943-01	3.1414-01	8.7906-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B630

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.5 Q-INF = 2.673 P-INF = .0368 RE = .1793 TO = 1909.

P	9.0072-02	4.0018-04	3.3503+00	2.2827+00	7.9065-01	1.5167-01	4.6742+00	3.9083+00	2.2084+00
CP	1.9929-02	-1.3622-02	1.2398+00	8.4031-01	2.8205-01	4.2974-02	1.7351+00	1.4485+00	8.1251-01
P/PO1	1.8162-02	8.0693-05	6.7557-01	4.6030-01	1.5943-01	3.0583-02	9.4252-01	7.8808-01	4.4532-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1804.7 Q-INF = 2.674 P-INF = .0368 RE = .1784 TO = 1916.

P	6.3351-01	4.1218-02	5.3212-02	5.5612-02	5.1669-02	3.5616-02	2.8077-01	1.2157+00	1.0217+00
CP	2.2313-01	1.6422-03	6.1273-03	7.0250-03	5.5503-03	-4.5288-04	9.1226-02	4.4068-01	3.6830-01
P/PO1	1.2767-01	8.3067-03	1.0724-02	1.1207-02	1.0413-02	7.1776-03	5.6584-02	2.4491-01	2.0590-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] FOR [illegible] GAS DYNAMICS [illegible]
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	16.	301244	10.18	3	-14.95	-37.30	-9.00	146.99	180.0

VALVE POS 2 PO =1798.7 Q-INF = 2.666 P-INF = .0367 RE = .1786 TO = 1911.

P	3.9174-02	3.1614-02	7.9418-02	1.4083-01	1.8785-01	2.6672-01	3.2664-01	1.0867+00	3.0216+00
CP	9.1902-04	-1.9161-03	1.6011-02	3.9043-02	5.6676-02	8.6254-02	1.0872-01	3.9378-01	1.1194+00
P/POI	7.9175-03	6.3896-03	1.6051-02	2.8464-02	3.7967-02	5.3907-02	6.6317-02	2.1964-01	6.1070-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1798.7 Q-INF = 2.667 P-INF = .0367 RE = .1788 TO = 1910.

P	4.5036+00	4.7816+00	4.8170+00	4.7247+00	4.4401+00	4.1717+00	3.4865+00	3.5604-01	1.2903+00
CP	1.6750+00	1.7793+00	1.7925+00	1.7577+00	1.6512+00	1.5505+00	1.2736+00	1.1974-01	4.7005-01
P/POI	9.1014-01	9.6632-01	9.7348-01	9.5482-01	8.9730-01	8.4306-01	7.0459-01	7.1952-02	2.6075-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1798.2 Q-INF = 2.666 P-INF = .0367 RE = .1786 TO = 1911.

P	3.3297+00	4.6719+00	4.8830+00	9.7422-02	1.5821-01	2.0469-01	1.8044-01	2.3536-01	2.8097-01
CP	1.2353+00	1.7388+00	1.8180+00	2.2774-02	4.5578-02	6.3014-02	5.3917-02	7.4517-02	9.1630-02
P/POI	6.7316-01	9.4452-01	9.8720-01	1.9696-02	3.1985-02	4.1382-02	3.6480-02	4.7582-02	5.6604-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1798.2 Q-INF = 2.666 P-INF = .0367 RE = .1787 TO = 1910.

P	9.3757-01	2.8116+00	4.2831+00	4.3492+00	1.9426-01	1.9609-01	1.3618-01	1.3869-01	5.5674-01
CP	3.3790-01	1.0408+00	1.5928+00	1.6176+00	5.9092-02	5.9778-02	3.7308-02	3.8250-02	1.9506-01
P/POI	1.8953-01	5.6835-01	8.6583-01	8.7919-01	3.9269-02	3.9639-02	2.7529-02	2.8037-02	1.1254-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1797.5 Q-INF = 2.665 P-INF = .0367 RE = .1785 TO = 1911.

P	4.3371-02	1.5628-01	6.3214-02	1.4843-01	2.3792-01	3.1214-02	2.9840-02	2.8019-02	1.9887-01
CP	2.5045-03	4.4879-02	9.9514-03	4.1933-02	7.5516-02	-2.0580-03	-2.5737-03	-3.2571-03	6.0860-02
P/POI	8.7720-03	3.1609-02	1.2785-02	3.0021-02	4.8120-02	6.3132-03	6.0352-03	5.6669-03	4.0221-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1797.2 Q-INF = 2.665 P-INF = .0367 RE = .1786 TO = 1910.

P	2.0606-01	1.9235-01	2.0445-01	1.4463-01	8.9119-02	2.6612-02	2.7036-02	3.2021-02	1.8825-02
CP	6.3564-02	5.8416-02	6.2957-02	4.0509-02	1.9674-02	-3.7848-03	-3.6256-03	-1.7546-03	-6.7072-03
P/POI	4.1679-02	3.8905-02	4.1352-02	2.9254-02	1.8025-02	5.3826-03	5.4684-03	6.4768-03	3.8076-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1797.5 Q-INF = 2.665 P-INF = .0367 RE = .1785 TO = 1911.

P	3.8574-02	1.5328-01	6.2814-02	2.4205-01	9.8832-01	2.5795+00	3.5976+00	2.9019-02	2.9239-02
CP	7.0430-04	4.3751-02	9.8012-03	7.7068-02	3.5713-01	9.5430-01	1.3364+00	-2.8816-03	-2.7991-03
P/POI	7.8018-03	3.1001-02	1.2704-02	4.8957-02	1.9989-01	5.2172-01	7.2763-01	5.8693-03	5.9137-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1800.7 Q-INF = 2.670 P-INF = .0368 RE = .1790 TO = 1910.

P	3.9973-02	1.0218-01	1.0322-01	4.3810-02	4.6061-02	3.5816-02	5.1268-02	4.1227-02	3.3244-02
CP	1.2004-03	2.4502-02	2.4891-02	2.6374-03	3.4808-03	-3.5678-04	5.4311-03	1.6702-03	-1.3200-03
P/POI	8.0691-03	2.0627-02	2.0837-02	8.8436-03	9.2981-03	7.2299-03	1.0349-02	8.3223-03	6.7108-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1803.2 Q-INF = 2.674 P-INF = .0368 RE = .1792 TO = 1910.

P	5.3564-02	2.7800-01	5.4652-01	2.7949+00	4.1089+00	3.2593+00	2.6667+00	1.5168+00	4.1255-01
CP	6.2629-03	9.0209-02	1.9064-01	1.0316+00	1.5231+00	1.2053+00	9.8364-01	5.5356-01	1.4053-01
P/POI	1.0797-02	5.6039-02	1.1017-01	5.6338-01	8.2826-01	6.5700-01	5.3754-01	3.0575-01	8.3161-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B632

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS AIR WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1804.7 Q-INF = 2.676 P-INF = .0369 RE = .1797 TO = 1908.

P	4.7169-02	4.0573-02	3.1674+00	2.1190+00	6.6088-01	1.1705-01	4.5105+00	3.5992+00	1.8214+00
CP	3.8521-03	1.3878-03	1.1697+00	7.7797-01	2.3316-01	2.9963-02	1.6715+00	1.3310+00	6.6675-01
P/PO1	9.4982-03	8.1701-03	6.3780-01	4.2670-01	1.3308-01	2.3570-02	9.0827-01	7.2476-01	3.6676-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1803.5 Q-INF = 2.675 P-INF = .0368 RE = .1796 TO = 1908.

P	5.3564-01	4.0573-02	5.1812-02	5.4612-02	5.0668-02	3.7217-02	2.9840-01	1.2753+00	1.0712+00
CP	1.8650-01	1.3984-03	5.6004-03	6.6476-03	5.1727-03	1.4339-04	9.7798-02	4.6304-01	3.8675-01
P/PO1	1.0794-01	8.1758-03	1.0440-02	1.1005-02	1.0210-02	7.4995-03	6.0130-02	2.5698-01	2.1586-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B633

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	17.	301244	10.18	3	-13.41	-42.36	-8.99	144.99	180.0

VALVE POS 2 PO =1804.7 Q-INF = 2.676 P-INF = .0369 RE = .1797 TO = 1908.

P	3.4377-02	3.4562-02	8.7019-02	1.4863-01	2.0427-01	3.0954-01	3.8091-01	1.2272+00	3.2361+00
CP	-9.2725-04	-8.5808-04	1.8742-02	4.1763-02	6.2551-02	1.0188-01	1.2855-01	4.4477-01	1.1954+00
P/PO1	6.9224-03	6.9597-03	1.7523-02	2.9930-02	4.1134-02	6.2331-02	7.6702-02	2.4713-01	6.5165-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1808.0 Q-INF = 2.692 P-INF = .0369 RE = .1804 TO = 1906.

P	4.6237+00	4.8237+00	4.8290+00	4.6961+00	4.3681+00	4.0831+00	3.3664+00	4.1247-01	1.4523+00
CP	1.7103+00	1.7848+00	1.7868+00	1.7373+00	1.6150+00	1.5087+00	1.2414+00	1.4003-01	5.2774-01
P/PO1	9.2917-01	9.6936-01	9.7043-01	9.4372-01	8.7781-01	8.2054-01	6.7650-01	8.2890-02	2.9185-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1805.5 Q-INF = 2.678 P-INF = .0369 RE = .1802 TO = 1906.

P	3.5458+00	4.7696+00	4.8500+00	9.8222-02	1.6242-01	2.1269-01	1.8865-01	2.6738-01	3.1802-01
CP	1.3102+00	1.7672+00	1.7972+00	2.2904-02	4.6874-02	6.5647-02	5.6745-02	8.6066-02	1.0498-01
P/PO1	7.1357-01	9.5984-01	9.7603-01	1.9766-02	3.2685-02	4.2803-02	3.8005-02	5.3808-02	6.4000-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1804.7 Q-INF = 2.677 P-INF = .0369 RE = .1801 TO = 1906.

P	1.0313+00	2.3393+00	4.3131+00	4.2591+00	1.9927-01	2.0609-01	1.5080-01	1.4770-01	5.8578-01
CP	3.7148-01	1.0842+00	1.5974+00	1.5772+00	6.0665-02	6.3214-02	4.2560-02	4.1402-02	2.0505-01
P/PO1	2.0763-01	5.9176-01	8.6835-01	8.5747-01	4.0117-02	4.1492-02	3.0360-02	2.9736-02	1.1793-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1805.2 Q-INF = 2.678 P-INF = .0369 RE = .1801 TO = 1906.

P	3.9973-02	1.5778-01	6.4614-02	1.4763-01	2.4653-01	3.1814-02	3.0641-02	3.0020-02	2.0127-01
CP	1.1563-03	4.5152-02	1.0358-02	4.1361-02	7.8294-02	-1.8907-03	-2.3289-03	-2.5607-03	6.1392-02
P/PO1	8.0454-03	3.1757-02	1.3005-02	2.9714-02	4.9619-02	6.4032-03	6.1671-03	6.0421-03	4.0509-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1800.0 Q-INF = 2.669 P-INF = .0368 RE = .1791 TO = 1909.

P	2.0686-01	1.9535-01	2.2645-01	1.5804-01	9.3925-02	2.7612-02	2.7637-02	2.6618-02	1.8024-02
CP	6.3735-02	5.9422-02	7.1074-02	4.5440-02	2.1420-02	-3.4263-03	-3.4171-03	-3.7990-03	-7.0188-03
P/PO1	4.1771-02	3.9447-02	4.5727-02	3.1912-02	1.8966-02	5.5757-03	5.5807-03	5.3749-03	3.6396-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1797.7 Q-INF = 2.665 P-INF = .0367 RE = .1787 TO = 1910.

P	3.7375-02	1.5478-01	6.4614-02	2.4485-01	9.7690-01	2.4835+00	3.4384+00	2.8419-02	2.8238-02
CP	2.5078-04	4.4300-02	1.0471-02	7.8096-02	3.5276-01	9.1803-01	1.2763+00	-3.1095-03	-3.1776-03
P/PO1	7.5575-03	3.1297-02	1.3065-02	4.9511-02	1.9754-01	5.0218-01	6.9527-01	5.7465-03	5.7098-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1800.0 Q-INF = 2.670 P-INF = .0368 RE = .1796 TO = 1906.

P	3.6975-02	1.0068-01	9.6421-02	3.7408-02	4.6662-02	3.5616-02	4.6662-02	3.7625-02	3.0441-02
CP	7.7317-05	2.3939-02	2.2343-02	2.3949-04	3.7056-03	-4.3190-04	3.7056-03	3.2068-04	-2.3703-03
P/PO1	7.4641-03	2.0324-02	1.9464-02	7.5515-03	9.4196-03	7.1897-03	9.4196-03	7.5953-03	6.1450-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.5 Q-INF = 2.674 P-INF = .0368 RE = .1802 TO = 1904.

P	4.6969-02	2.2541-01	5.1111-01	2.6357+00	4.0145+00	3.1318+00	2.5526+00	1.4238+00	3.8712-01
CP	3.7919-03	7.0518-02	1.7736-01	9.7183-01	1.4874+00	1.1573+00	9.4075-01	5.1865-01	1.3099-01
P/PO1	9.4662-03	4.5429-02	1.0301-01	5.3120-01	8.0909-01	6.3118-01	5.1445-01	2.8695-01	7.8020-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B634

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 INCH CONTINUOUS FLOW TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.2 Q-INF = 2.672 P-INF = .0368 RE = .1799 TO = 1905.

P	4.3771-02	4.0573-02	3.0834+00	2.0605+00	6.5187-01	1.1765-01	4.5120+00	3.6547+00	1.9534+00
CP	2.6093-03	1.4126-03	1.1402+00	7.5736-01	2.3019-01	3.0260-02	1.6749+00	1.3540+00	7.1729-01
P/PO1	8.8288-03	8.1838-03	6.2193-01	4.1561-01	1.3149-01	2.3731-02	9.1010-01	7.3718-01	3.9401-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1798.7 Q-INF = 2.667 P-INF = .0367 RE = .1791 TO = 1908.

P	5.9740-01	3.7568-02	4.6810-02	5.0811-02	4.7263-02	3.3415-02	2.6896-01	1.1612+00	9.9993-01
CP	2.1020-01	3.1206-04	3.7772-03	5.2772-03	3.9469-03	-1.2448-03	8.7061-02	4.2158-01	3.6111-01
P/PO1	1.2071-01	7.5906-03	9.4581-03	1.0266-02	9.5496-03	6.7515-03	5.4343-02	2.3463-01	2.0204-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B635

PRELIMINARY UNCHECKED DATA

machio

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	18.	301244	10.18	3	-7.04	-45.09	-4.98	139.98	180.0

VALVE POS 2 PO =1801.7 Q-INF = 2.672 P-INF = .0368 RE = .1796 TO = 1907.

P	2.6582-02	3.3060-02	1.1343-01	1.7984-01	2.5494-01	4.3599-01	5.4933-01	1.6443+00	3.7943+00
CP	-3.8241-03	-1.4002-03	2.8675-02	5.3529-02	8.1633-02	1.4939-01	1.9180-01	6.0158-01	1.4061+00
P/PO1	5.3613-03	6.6677-03	2.2877-02	3.6272-02	5.1418-02	8.7735-02	1.1079-01	3.3164-01	7.6526-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.5 Q-INF = 2.674 P-INF = .0368 RE = .1800 TO = 1905.

P	4.8339+00	4.8733+00	4.8110+00	4.5970+00	4.1778+00	3.8406+00	3.0000+00	5.4937-01	1.8169+00
CP	1.7940+00	1.8088+00	1.7855+00	1.7053+00	1.5487+00	1.4224+00	1.1082+00	1.9168-01	6.6571-01
P/PO1	9.7433-01	9.8227-01	9.6972-01	9.2654-01	8.4209-01	7.7401-01	6.0469-01	1.1073-01	3.6621-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1801.5 Q-INF = 2.672 P-INF = .0368 RE = .1798 TO = 1906.

P	3.9662+00	4.9048+00	4.7630+00	9.6021-02	1.4680-01	1.8728-01	1.8725-01	2.9480-01	3.4206-01
CP	1.4705+00	1.8218+00	1.7687+00	2.2163-02	4.1165-02	5.6317-02	5.6304-02	9.6552-02	1.1424-01
P/PO1	7.9996-01	9.8929-01	9.6069-01	1.9367-02	2.9608-02	3.7774-02	3.7768-02	5.9459-02	6.8992-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1802.0 Q-INF = 2.672 P-INF = .0368 RE = .1795 TO = 1908.

P	1.0631+00	2.8717+00	4.0882+00	3.8626+00	1.8465-01	1.9649-01	1.4399-01	1.3329-01	5.0968-01
CP	3.8405-01	1.0608+00	1.5161+00	1.4317+00	5.5325-02	5.9756-02	4.0112-02	3.6107-02	1.7696-01
P/PO1	2.1440-01	5.7916-01	8.2450-01	7.7902-01	3.7239-02	3.9628-02	2.9040-02	2.6882-02	1.0279-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1801.7 Q-INF = 2.676 P-INF = .0369 RE = .1819 TO = 1894.

P	3.5776-02	1.3975-01	5.9813-02	1.3243-01	2.1228-01	3.2214-02	2.9239-02	3.1021-02	1.7904-01
CP	-4.0230-04	3.8454-02	8.5804-03	3.5717-02	6.5559-02	-1.7334-03	-2.8452-03	-2.1794-03	5.3135-02
P/PO1	7.2063-03	2.8150-02	1.2048-02	2.6675-02	4.2760-02	6.4888-03	5.8895-03	6.2484-03	3.6063-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1800.2 Q-INF = 2.674 P-INF = .0368 RE = .1817 TO = 1894.

P	1.9507-01	1.7131-01	1.9944-01	1.4923-01	7.9105-02	2.8012-02	2.7837-02	2.8819-02	1.6422-02
CP	5.9188-02	5.0301-02	6.0824-02	4.2044-02	1.5815-02	-3.2948-03	-3.3604-03	-2.9931-03	-7.6299-03
P/PO1	5.9326-02	3.4535-02	4.0208-02	3.0085-02	1.5948-02	5.6473-03	5.6119-03	5.8099-03	3.3106-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1800.2 Q-INF = 2.674 P-INF = .0368 RE = .1819 TO = 1893.

P	3.1779-02	1.3524-01	4.8811-02	1.7504-01	7.3298-01	2.0423+00	2.9444+00	3.0220-02	2.8238-02
CP	-1.8874-03	3.6806-02	4.4822-03	5.1689-02	2.6035-01	7.5001-01	1.0874+00	-2.4703-03	-3.2117-03
P/PO1	6.4059-03	2.7262-02	9.8392-03	3.5284-02	1.4775-01	4.1169-01	5.9354-01	6.0917-03	5.6921-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.2 Q-INF = 2.677 P-INF = .0369 RE = .1823 TO = 1892.

P	3.6176-02	9.4670-02	6.4014-02	3.4608-02	4.0454-02	3.7217-02	4.5060-02	3.6424-02	3.2043-02
CP	-2.5960-04	2.1589-02	1.0138-02	-8.4535-04	1.3383-03	1.2910-04	3.0588-03	-1.6682-04	-1.8034-03
P/PO1	7.2833-03	1.9060-02	1.2888-02	6.9676-03	8.1446-03	7.4928-03	9.0720-03	7.3333-03	6.4512-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.7 Q-INF = 2.678 P-INF = .0369 RE = .1824 TO = 1892.

P	3.4977-02	1.7582-01	4.1129-01	2.1671+00	3.8916+00	2.9847+00	2.4084+00	1.3473+00	3.6148-01
CP	-7.1118-04	5.1880-02	1.3981-01	7.9545-01	1.4394+00	1.1007+00	8.8555-01	4.8931-01	1.2121-01
P/PO1	7.0399-03	3.5387-02	8.2782-02	4.3618-01	7.8328-01	6.0074-01	4.8475-01	2.7117-01	7.2757-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B636

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HIGH SPEED TUNNEL machio

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.5 Q-INF = 2.675 P-INF = .0368 RE = .1817 TO = 1895.

P	4.0773-02	3.9070-02	3.0984+00	2.1085+00	7.7944-01	1.6247-01	4.5946+00	4.0223+00	2.6135+00
CP	1.4687-03	8.3236-04	1.1444+00	7.7439-01	2.7758-01	4.6959-02	1.7037+00	1.4897+00	9.6315-01
P/PO1	8.2147-03	7.8717-03	6.2425-01	4.2482-01	1.5704-01	3.2734-02	9.2570-01	8.1040-01	5.2656-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1800.0 Q-INF = 2.674 P-INF = .0368 RE = .1819 TO = 1893.

P	9.3398-01	3.6065-02	4.5010-02	5.0211-02	4.6662-02	2.7412-02	2.0708-01	9.0620-01	8.2830-01
CP	3.3557-01	-2.8262-04	3.0631-03	5.0085-03	3.6811-03	-3.5190-03	6.3681-02	3.2518-01	2.9604-01
P/PO1	1.8830-01	7.2709-03	9.0743-03	1.0123-02	9.4074-03	5.5265-03	4.1748-02	1.8270-01	1.6699-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN [illegible]
50 - INCH CONTINUOUS [illegible]

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	19.	301244	10.18	3	-10.29	-61.17	-9.01	140.00	180.0

VALVE POS 2 PO =1799.2 Q-INF = 2.672 P-INF = .0368 RE = .1818 TO = 1893.

P	2.7781-02	3.3060-02	1.1483-01	1.7884-01	2.5033-01	4.3299-01	5.4277-01	1.6623+00	3.7252+00
CP	-3.3765-03	-1.4015-03	2.9195-02	5.3148-02	7.9901-02	1.4825-01	1.8931-01	6.0826-01	1.3802+00
P/POI	5.6033-03	6.6678-03	2.3159-02	3.6071-02	5.0490-02	8.7331-02	1.0946-01	3.3528-01	7.5135-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1800.0 Q-INF = 2.674 P-INF = .0368 RE = .1819 TO = 1893.

P	4.7348+00	4.7591+00	4.6971+00	4.4784+00	4.0624+00	3.7320+00	2.9309+00	5.7038-01	1.8784+00
CP	1.7572+00	1.7663+00	1.7431+00	1.6613+00	1.5057+00	1.3821+00	1.0825+00	1.9957-01	6.8880-01
P/POI	9.5456-01	9.5946-01	9.4696-01	9.0287-01	8.1901-01	7.5239-01	5.9690-01	1.1499-01	3.7869-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1799.5 Q-INF = 2.673 P-INF = .0368 RE = .1822 TO = 1891.

P	4.0202+00	4.8958+00	4.7061+00	1.1202-01	1.7824-01	2.2950-01	2.1368-01	3.4883-01	4.1636-01
CP	1.4900+00	1.8175+00	1.7466+00	2.8132-02	5.2899-02	7.2075-02	6.6158-02	1.1671-01	1.4197-01
P/POI	8.1057-01	9.8711-01	9.4885-01	2.2587-02	3.5937-02	4.6273-02	4.3084-02	7.0333-02	8.3947-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1799.7 Q-INF = 2.674 P-INF = .0368 RE = .1826 TO = 1889.

P	1.2829+00	3.2398+00	4.3671+00	3.9122+00	2.1589-01	2.2870-01	1.8985-01	1.8592-01	6.8852-01
CP	4.6595-01	1.1977+00	1.6192+00	1.4491+00	6.6954-02	7.1745-02	5.7219-02	5.5749-02	2.4368-01
P/POI	2.5858-01	6.5300-01	8.8022-01	7.8852-01	4.3513-02	4.6096-02	3.8266-02	3.7474-02	1.3877-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1800.5 Q-INF = 2.675 P-INF = .0368 RE = .1821 TO = 1892.

P	3.6576-02	1.4576-01	6.8415-02	1.4963-01	2.4653-01	3.2214-02	3.0841-02	2.9820-02	2.1509-01
CP	-9.6899-05	4.0726-02	1.1807-02	4.2174-02	7.8402-02	-1.7275-03	-2.2409-03	-2.6228-03	6.6646-02
P/POI	7.3711-03	2.9375-02	1.3788-02	3.0156-02	4.9683-02	6.4921-03	6.2154-03	6.0096-03	4.3346-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1800.2 Q-INF = 2.675 P-INF = .0368 RE = .1825 TO = 1890.

P	2.3145-01	1.8934-01	2.4225-01	1.9824-01	1.1515-01	2.7812-02	2.7437-02	2.8419-02	1.8224-02
CP	7.2756-02	5.7015-02	7.6797-02	6.0343-02	2.9279-02	-3.3742-03	-3.5146-03	-3.1474-03	-6.9587-03
P/POI	4.6640-02	3.8156-02	4.8819-02	3.9950-02	2.3206-02	5.6047-03	5.5290-03	5.7269-03	3.6725-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1800.2 Q-INF = 2.675 P-INF = .0368 RE = .1828 TO = 1888.

P	3.7375-02	1.4877-01	7.1416-02	2.5566-01	9.2603-01	2.2074+00	3.0270+00	2.9420-02	2.8638-02
CP	1.9794-04	4.1834-02	1.2922-02	8.1787-02	3.3236-01	8.1130-01	1.1177+00	-2.7756-03	-3.0677-03
P/POI	7.5303-03	2.9973-02	1.4389-02	5.1509-02	1.8658-01	4.4474-01	6.0988-01	5.9274-03	5.7700-03
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.0 Q-INF = 2.675 P-INF = .0368 RE = .1820 TO = 1893.

P	3.5177-02	9.9179-02	8.0218-02	3.6808-02	3.9653-02	3.6416-02	4.1055-02	3.5624-02	3.0240-02
CP	-6.2226-04	2.3303-02	1.6215-02	-1.2324-05	1.0511-03	-1.5886-04	1.5751-03	-4.5509-04	-2.4675-03
P/POI	7.0878-03	1.9984-02	1.6163-02	7.4166-03	7.9898-03	7.3376-03	8.2722-03	7.1779-03	6.0932-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.5 Q-INF = 2.677 P-INF = .0369 RE = .1818 TO = 1895.

P	3.8574-02	1.9685-01	4.3070-01	2.2001+00	3.7088+00	2.7851+00	2.2117+00	1.2377+00	3.2283-01
CP	6.3888-04	5.9770-02	1.4713-01	8.0817-01	1.3718+00	1.0267+00	8.1249-01	4.4863-01	1.0683-01
P/POI	7.7674-03	3.9639-02	8.6726-02	4.4302-01	7.4681-01	5.6082-01	4.4535-01	2.4924-01	6.5006-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.8800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B638

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN [illegible]
50 - INCH CONTINUOUS HS WIND TUNNEL machio

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.5 Q-INF = 2.677 P-INF = .0369 RE = .1822 TO = 1893.

P	3.5576-02	4.0573-02	2.8464+00	1.8803+00	6.2323-01	1.1925-01	4.4189+00	3.7402+00	2.2685+00
CP	-4.8399-04	1.3823-03	1.0494+00	6.8851-01	2.1901-01	3.0770-02	1.6367+00	1.3832+00	8.3350-01
P/PO1	7.1623-03	8.1682-03	5.7305-01	3.7854-01	1.2547-01	2.4008-02	8.8962-01	7.5299-01	4.5669-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1802.5 Q-INF = 2.678 P-INF = .0369 RE = .1823 TO = 1892.

P	7.7728-01	3.7568-02	4.5810-02	4.9011-02	4.4860-02	2.6412-02	2.0367-01	8.8859-01	8.2410-01
CP	2.7651-01	2.5828-04	3.3366-03	4.5319-03	2.9816-03	-3.9080-03	6.2292-02	3.1808-01	2.9400-01
P/PO1	1.5647-01	7.5624-03	9.2217-03	9.8660-03	9.0304-03	5.3167-03	4.0999-02	1.7888-01	1.6589-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	20.	301244	10.18	3	5.01	.02	-.00	159.99	180.0

VALVE POS 2 PO =1803.0 Q-INF = 2.677 P-INF = .0369 RE = .1815 TO = 1897.

P	5.2565-02	3.6065-02	8.1018-02	1.0042-01	1.0634-01	7.9835-02	1.1415-01	4.8492-01	1.8769+00
CP	5.8643-03	-2.9945-04	1.6493-02	2.3742-02	2.5953-02	1.6051-02	2.8671-02	1.6738-01	6.8735-01
P/PO1	1.0584-02	7.2615-03	1.6313-02	2.0220-02	2.1411-02	1.6074-02	2.2984-02	9.7637-02	3.7790-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1801.7 Q-INF = 2.675 P-INF = .0368 RE = .1812 TO = 1898.

P	3.9722+00	4.6208+00	4.8410+00	4.9860+00	4.9795+00	4.8139+00	4.3228+00	1.1728-01	5.1389-01
CP	1.4713+00	1.7138+00	1.7961+00	1.8503+00	1.8479+00	1.7860+00	1.6024+00	3.0074-02	1.7835-01
P/PO1	8.0042-01	9.3113-01	9.7550-01	1.0047+00	1.0034+00	9.7004-01	8.7108-01	2.3632-02	1.0355-01
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1801.7 Q-INF = 2.674 P-INF = .0368 RE = .1810 TO = 1899.

P	1.9423+00	3.9611+00	4.9010+00	6.8415-02	1.0314-01	1.1965-01	8.1909-02	5.0434-02	7.7503-02
CP	7.1246-01	1.4673+00	1.8187+00	1.1809-02	2.4792-02	2.7600-02	1.6854-02	5.0854-03	1.5207-02
P/PO1	3.9143-01	7.9828-01	9.8769-01	1.3788-02	2.0785-02	2.2299-02	1.6507-02	1.0164-02	1.5619-02
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1801.2 Q-INF = 2.673 P-INF = .0368 RE = .1808 TO = 1900.

P	3.2179-01	1.4426+00	3.4553+00	4.6391+00	1.1676-01	7.2832-02	4.9666-02	4.0227-02	2.0888-01
CP	1.0659-01	5.2583-01	1.2787+00	1.7215+00	2.9900-02	1.3471-02	4.8057-03	1.2749-03	6.4359-02
P/PO1	6.4873-02	2.9083-01	6.9661-01	9.3526-01	2.3538-02	1.4683-02	1.0013-02	8.1099-03	4.2111-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1800.5 Q-INF = 2.672 P-INF = .0368 RE = .1807 TO = 1900.

P	6.2159-02	1.9685-01	7.5617-02	1.7244-01	7.2497-02	5.3424-02	5.4473-02	4.7632-02	1.3178-01
CP	9.4882-03	5.9893-02	1.4524-02	5.0756-02	1.3357-02	6.2196-03	6.6121-03	4.0522-03	3.5540-02
P/PO1	1.2537-02	3.9704-02	1.5251-02	3.4779-02	1.4622-02	1.0775-02	1.0987-02	9.6069-03	2.6578-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1800.0 Q-INF = 2.672 P-INF = .0368 RE = .1807 TO = 1900.

P	1.0613-01	1.5778-01	5.6613-02	7.1216-02	5.1669-02	5.1823-02	5.2470-02	5.0434-02	5.0868-02
CP	2.5954-02	4.5289-02	7.4188-03	1.2885-02	5.5683-03	5.6260-03	5.8682-03	5.1060-03	5.2885-03
P/PO1	2.1411-02	3.1832-02	1.1421-02	1.4368-02	1.0424-02	1.0455-02	1.0586-02	1.0175-02	1.0262-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1800.0 Q-INF = 2.671 P-INF = .0368 RE = .1805 TO = 1901.

P	5.5163-02	1.2623-01	2.9807-02	1.4163-01	7.1636-01	2.5120+00	4.0706+00	5.0634-02	5.2870-02
CP	6.8786-03	3.3482-02	-2.6138-03	3.9248-02	2.5440-01	9.2661-01	1.5101+00	5.1829-03	6.6203-03
P/PO1	1.1130-02	2.5469-02	6.0140-03	2.8577-02	1.4454-01	5.0684-01	8.2131-01	1.0216-02	1.0668-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.2 Q-INF = 2.673 P-INF = .0368 RE = .1806 TO = 1901.

P	5.4963-02	9.4670-02	9.0220-02	6.8815-02	5.4673-02	5.5625-02	6.1081-02	5.3636-02	4.7664-02
CP	6.7893-03	2.1643-02	1.9978-02	1.1971-02	6.6806-03	7.0367-03	9.0780-03	6.2927-03	4.0585-03
P/PO1	1.1082-02	1.9088-02	1.8191-02	1.3875-02	1.1023-02	1.1215-02	1.2316-02	1.0814-02	9.6101-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1801.0 Q-INF = 2.675 P-INF = .0368 RE = .1816 TO = 1895.

P	7.3151-02	5.1242-01	7.7077-01	3.5803+00	4.7817+00	4.2977+00	3.7943+00	2.3360+00	6.9813-01
CP	1.3579-02	1.7782-01	2.7442-01	1.3249+00	1.7741+00	1.5931+00	1.4049+00	8.5965-01	2.4726-01
P/PO1	1.4742-02	1.0327-01	1.5534-01	7.2155-01	9.6367-01	8.6613-01	7.6467-01	4.7077-01	1.4070-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

B640

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL

Mach 10 ~~CONFIDENTIAL~~

VALVE POS 11 PO =1800.7 Q-INF = 2.675 P-INF = .0368 RE = .1820 TO = 1893.

P	9.6736-02	2.5546-02	4.0702+00	2.9000+00	1.0579+00	1.9329-01	4.6757+00	3.7432+00	1.6878+00
CP	2.2395-02	-4.2210-03	1.5080+00	1.0705+00	3.8176-01	5.8492-02	1.7343+00	1.3857+00	6.1727-01
P/PO1	1.9494-02	5.1481-03	8.2023-01	5.8441-01	2.1320-01	3.8951-02	9.4225-01	7.5434-01	3.4013-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1802.7 Q-INF = 2.678 P-INF = .0369 RE = .1824 TO = 1892.

P	4.5937-01	4.0573-02	2.6995-01	2.7783-01	2.3826-01	6.4429-02	5.3303-01	1.9639+00	1.6218+00
CP	1.5776-01	1.3786-03	8.7029-02	8.9974-02	7.5198-02	1.0286-02	1.8527-01	7.1957-01	5.9183-01
P/PO1	9.2458-02	8.1663-03	5.4333-02	5.5920-02	4.7956-02	1.2968-02	1.0729-01	3.9528-01	3.2643-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 INCH CONTINUOUS NS WIND TUNNEL

machio

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	21.	301244	10.18	3	-4.99	.02	.00	169.99	180.0

VALVE POS 2 PO =1802.5 Q-INF = 2.678 P-INF = .0369 RE = .1823 TO = 1892.

P	4.8368-02	3.3060-02	6.2814-02	6.0013-02	4.7864-02	2.4811-02	4.9666-02	2.4496-01	1.1942+00
CP	4.2917-03	-1.4253-03	9.6869-03	8.6409-03	4.1035-03	-4.5058-03	4.7767-03	7.7713-02	4.3223-01
P/POI	9.7365-03	6.6549-03	1.2645-02	1.2081-02	9.6351-03	4.9945-03	9.9979-03	4.9312-02	2.4040-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.7 Q-INF = 2.678 P-INF = .0369 RE = .1822 TO = 1893.

P	3.2936+00	4.0588+00	4.3641+00	4.6481+00	4.9286+00	4.9865+00	4.8498+00	5.8039-02	2.5995-01
CP	1.2162+00	1.5020+00	1.6160+00	1.7221+00	1.8268+00	1.8484+00	1.7974+00	7.7028-03	8.3305-02
P/POI	6.6299-01	8.1701-01	8.7847-01	9.3563-01	9.9209-01	1.0037+00	9.7624-01	1.1683-02	5.2325-02
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8600+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1802.2 Q-INF = 2.677 P-INF = .0369 RE = .1823 TO = 1892.

P	1.2640+00	3.3195+00	4.5141+00	6.2814-02	7.1095-02	6.0627-02	5.9079-02	3.6224-02	4.3458-02
CP	4.5836-01	1.2261+00	1.6723+00	9.6901-03	1.2783-02	8.8733-03	8.2950-03	-2.4157-04	2.4604-03
P/POI	2.5448-01	6.6831-01	9.0882-01	1.2646-02	1.4314-02	1.2206-02	1.1894-02	7.2930-03	8.7494-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1801.7 Q-INF = 2.677 P-INF = .0369 RE = .1826 TO = 1890.

P	1.9207-01	1.0624+00	3.1464+00	4.8028+00	6.5888-02	5.0222-02	5.1469-02	2.9219-02	1.6582-01
CP	5.7975-02	3.8308-01	1.1615+00	1.7803+00	1.0840-02	4.9882-03	5.4537-03	-2.8572-03	4.8169-02
P/POI	3.8673-02	2.1391-01	6.3351-01	9.6702-01	1.3266-02	1.0112-02	1.0363-02	5.8833-03	3.3388-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1802.2 Q-INF = 2.677 P-INF = .0369 RE = .1823 TO = 1892.

P	5.4963-02	1.6981-01	6.3814-02	1.4603-01	5.2470-02	5.3624-02	5.3471-02	5.0033-02	5.4673-02
CP	6.7578-03	4.9653-02	1.0064-02	4.0774-02	5.8265-03	6.2575-03	6.2005-03	4.9164-03	6.6493-03
P/POI	1.1066-02	3.4187-02	1.2848-02	2.9401-02	1.0564-02	1.0796-02	1.0765-02	1.0073-02	1.1007-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1801.7 Q-INF = 2.676 P-INF = .0369 RE = .1821 TO = 1893.

P	5.1366-02	1.4877-01	5.4812-02	5.9813-02	4.4459-02	4.6020-02	4.7263-02	4.4229-02	4.3458-02
CP	5.4215-03	4.1817-02	6.7093-03	8.5780-03	2.8408-03	3.4242-03	3.8885-03	2.7550-03	2.4667-03
P/POI	1.0345-02	2.9963-02	1.1040-02	1.2047-02	8.9544-03	9.2688-03	9.5191-03	8.9081-03	8.7527-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1801.5 Q-INF = 2.676 P-INF = .0369 RE = .1822 TO = 1892.

P	4.7968-02	1.2322-01	2.8806-02	1.3403-01	7.6862-01	2.7671+00	4.4665+00	4.9833-02	5.0067-02
CP	4.1525-03	3.2273-02	-3.0077-03	3.6312-02	2.7344-01	1.0202+00	1.6627+00	4.8495-03	4.9367-03
P/POI	9.6615-03	2.4819-02	5.8021-03	2.6996-02	1.5481-01	5.5734-01	9.0365-01	1.0037-02	1.0084-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1800.7 Q-INF = 2.675 P-INF = .0368 RE = .1820 TO = 1893.

P	4.9167-02	8.8660-02	1.1603-01	5.4012-02	5.7477-02	5.6025-02	6.0681-02	4.9833-02	3.4446-02
CP	4.6103-03	1.9375-02	2.9607-02	6.4217-03	7.7170-03	7.1742-03	8.9150-03	4.8593-03	-8.9357-04
P/POI	9.9082-03	1.7867-02	2.3382-02	1.0885-02	1.1583-02	1.1290-02	1.2228-02	1.0042-02	6.9416-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1800.7 Q-INF = 2.675 P-INF = .0368 RE = .1822 TO = 1892.

P	9.8135-02	5.8155-01	8.8800-01	4.2050+00	4.8297+00	4.6143+00	4.2087+00	2.6825+00	8.3131-01
CP	2.2914-02	2.0363-01	3.1819-01	1.5582+00	1.7917+00	1.7112+00	1.5596+00	9.8905-01	2.9700-01
P/POI	1.9774-02	1.1718-01	1.7893-01	8.4732-01	9.7318-01	9.2980-01	8.4806-01	5.4053-01	1.6751-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B642

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL machio

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.2 Q-INF = 2.676 P-INF = .0369 RE = .1822 TO = 1892.

P	1.1932-01	1.9535-02	4.1332+00	2.9871+00	1.0160+00	1.6807-01	4.2147+00	3.2286+00	1.1522+00
CP	3.0821-02	-6.4711-03	1.5309+00	1.1026+00	3.6593-01	4.9042-02	1.5614+00	1.1929+00	4.1685-01
P/PO1	2.4036-02	3.9352-03	8.3260-01	6.0173-01	2.0466-01	3.3858-02	8.4903-01	6.5039-01	2.3211-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1801.5 Q-INF = 2.677 P-INF = .0369 RE = .1826 TO = 1890.

P	2.2665-01	3.0054-02	6.4614-02	6.1214-02	4.7463-02	9.1040-02	6.3745-01	2.4185+00	1.9219+00
CP	7.0903-02	-2.5439-03	1.0368-02	9.0971-03	3.9601-03	2.0240-02	2.2438-01	8.8976-01	7.0423-01
P/PO1	4.5642-02	6.0522-03	1.3012-02	1.2327-02	9.5580-03	1.8333-02	1.2837-01	4.8702-01	3.8702-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B643

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
50 - INCH CONTINUOUS [illegible] mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	22.	301244	10.18	3	-14.01	.02	.00	179.01	180.0

VALVE POS 2 PO =1805.7 Q-INF = 2.683 P-INF = .0370 RE = .1832 TO = 1889.

P	6.4557-02	3.4562-02	5.7013-02	5.5212-02	5.4072-02	5.2223-02	3.2443-02	1.3929-01	8.5214-01
CP	1.0286-02	-8.9172-04	7.4746-03	6.8037-03	6.3788-03	5.6898-03	-1.6814-03	3.8137-02	3.0378-01
P/PO1	1.2968-02	6.9426-03	1.1452-02	1.1091-02	1.0862-02	1.0490-02	6.5170-03	2.7980-02	1.7117-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1804.5 Q-INF = 2.681 P-INF = .0369 RE = .1827 TO = 1891.

P	2.8373+00	3.6185+00	3.9472+00	4.2831+00	4.6469+00	4.7569+00	4.9820+00	3.8225-02	1.5260-01
CP	1.0445+00	1.3359+00	1.4585+00	1.5838+00	1.7195+00	1.7606+00	1.8445+00	4.8646-04	4.3150-02
P/PO1	5.7045-01	7.2752-01	7.9360-01	8.6114-01	9.3427-01	9.5640-01	1.0016+00	7.6854-03	3.0682-02
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1801.5 Q-INF = 2.676 P-INF = .0369 RE = .1824 TO = 1891.

P	8.8981-01	2.8942+00	4.1362+00	6.7015-02	7.1896-02	6.4229-02	6.9493-02	6.0040-02	3.5047-02
CP	3.1869-01	1.0676+00	1.5316+00	1.1267-02	1.3091-02	1.0226-02	1.2193-02	8.6611-03	-6.7728-04
P/PO1	1.7920-01	5.8288-01	8.3301-01	1.3497-02	1.4480-02	1.2935-02	1.3996-02	1.2092-02	7.0583-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1801.5 Q-INF = 2.676 P-INF = .0369 RE = .1821 TO = 1893.

P	1.3631-01	8.7157-01	2.8794+00	4.6240+00	6.9893-02	6.0627-02	6.3885-02	3.9226-02	1.3798-01
CP	3.7169-02	3.1195-01	1.0623+00	1.7143+00	1.2348-02	8.8852-03	1.0103-02	8.8745-04	3.7795-02
P/PO1	2.7458-02	1.7557-01	5.8002-01	9.3145-01	1.4079-02	1.2212-02	1.2869-02	7.9015-03	2.7795-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1802.0 Q-INF = 2.676 P-INF = .0368 RE = .1816 TO = 1896.

P	6.6156-02	1.7732-01	6.9615-02	1.5203-01	6.2283-02	6.0827-02	6.1081-02	5.9440-02	5.9880-02
CP	1.0953-02	5.2498-02	1.2245-02	4.3048-02	9.5051-03	8.9610-03	9.0561-03	8.4425-03	8.6070-03
P/PO1	1.3326-02	3.5719-02	1.4023-02	3.0625-02	1.2546-02	1.2253-02	1.2304-02	1.1973-02	1.2062-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1801.7 Q-INF = 2.675 P-INF = .0368 RE = .1815 TO = 1896.

P	5.8961-02	1.5328-01	6.2214-02	7.0816-02	5.6475-02	5.5625-02	5.6475-02	5.4436-02	5.3271-02
CP	8.2666-03	4.3520-02	9.4825-03	1.2698-02	7.3376-03	7.0196-03	7.3376-03	6.5754-03	6.1399-03
P/PO1	1.1879-02	3.0880-02	1.2534-02	1.4267-02	1.1378-02	1.1207-02	1.1378-02	1.0967-02	1.0732-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1801.5 Q-INF = 2.675 P-INF = .0368 RE = .1815 TO = 1896.

P	5.6762-02	1.2623-01	3.3407-02	1.3723-01	7.8525-01	2.8436+00	4.6577+00	5.6638-02	5.8478-02
CP	7.4478-03	3.3416-02	-1.2831-03	3.7530-02	2.7978-01	1.0493+00	1.7274+00	7.4013-03	8.0892-03
P/PO1	1.1437-02	2.5434-02	6.7315-03	2.7651-02	1.5822-01	5.7298-01	9.3850-01	1.1412-02	1.1783-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1799.7 Q-INF = 2.672 P-INF = .0368 RE = .1810 TO = 1898.

P	5.7961-02	9.3168-02	1.3883-01	6.2214-02	6.4486-02	6.2828-02	6.7089-02	5.6838-02	3.3244-02
CP	7.9221-03	2.1099-02	3.8190-02	9.5137-03	1.0364-02	9.7436-03	1.1339-02	7.5016-03	-1.3292-03
P/PO1	1.1693-02	1.8795-02	2.8007-02	1.2551-02	1.3009-02	1.2675-02	1.3534-02	1.1466-02	6.7066-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1800.2 Q-INF = 2.673 P-INF = .0368 RE = .1810 TO = 1898.

P	1.3511-01	7.6337-01	1.0094+00	4.6361+00	4.6229+00	4.6053+00	4.3844+00	2.9406+00	9.5487-01
CP	3.6783-02	2.7187-01	3.6393-01	1.7210+00	1.7160+00	1.7095+00	1.6268+00	1.0865+00	3.4352-01
P/PO1	2.7249-02	1.5396-01	2.0358-01	9.3499-01	9.3233-01	9.2880-01	8.8424-01	5.9305-01	1.9258-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.6600-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

B644

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1800.5 Q-INF = 2.673 P-INF = .0368 RE = .1809 TO = 1899.

P	1.4330-01	2.2541-02	3.9832+00	2.9030+00	9.6503-01	1.5047-01	3.8438+00	2.8926+00	8.8538-01
CP	3.9848-02	-5.3380-03	1.4766+00	1.0724+00	3.4731-01	4.2528-02	1.4245+00	1.0685+00	3.1751-01
P/PO1	2.8900-02	4.5458-03	8.0329-01	5.8544-01	1.9462-01	3.0345-02	7.7519-01	5.8335-01	1.7855-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1799.5 Q-INF = 2.671 P-INF = .0368 RE = .1808 TO = 1899.

P	1.4850-01	3.7568-02	6.7415-02	6.3414-02	4.3258-02	1.3606-01	8.3291-01	2.8566+00	2.1769+00
CP	4.1824-02	2.9246-04	1.1467-02	9.9689-03	2.4227-03	3.7166-02	2.9805-01	1.0557+00	8.0123-01
P/PO1	2.9965-02	7.5806-03	1.3603-02	1.2796-02	8.7287-03	2.7455-02	1.6807-01	5.7641-01	4.3927-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
0 - INCH CONTINUOUS HS WIND TUNNEL machio

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	23.	301244	10.18	3	-14.97	.02	.00	179.97	180.0

VALVE POS 2 PO =1804.0 Q-INF = 2.679 P-INF = .0369 RE = .1818 TO = 1896.

P	5.9760-02	3.9070-02	5.7213-02	5.7413-02	5.6876-02	5.8426-02	3.4246-02	1.3249-01	8.2971-01
CP	8.5372-03	8.1351-04	7.5862-03	7.6609-03	7.4604-03	8.0391-03	-9.8757-04	3.5687-02	2.9596-01
P/P01	1.2024-02	7.8614-03	1.1512-02	1.1592-02	1.1444-02	1.1756-02	6.8906-03	2.6658-02	1.6695-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1805.7 Q-INF = 2.683 P-INF = .0369 RE = .1827 TO = 1892.

P	2.8223+00	3.6245+00	3.9502+00	4.2846+00	4.6693+00	4.7959+00	5.0375+00	3.9626-02	1.4619-01
CP	1.0383+00	1.3374+00	1.4588+00	1.5835+00	1.7269+00	1.7740+00	1.8641+00	1.0003-03	4.0727-02
P/P01	5.6708-01	7.2828-01	7.9372-01	8.6092-01	9.3822-01	9.6366-01	1.0122+00	7.9622-03	2.9375-02
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1801.7 Q-INF = 2.676 P-INF = .0368 RE = .1817 TO = 1895.

P	8.6682-01	2.8717+00	4.1242+00	6.6415-02	7.1696-02	6.5029-02	6.9493-02	6.1441-02	3.6849-02
CP	3.1020-01	1.0595+00	1.5276+00	1.1050-02	1.3024-02	1.0532-02	1.2200-02	9.1912-03	1.6333-07
P/P01	1.7462-01	5.7849-01	8.3080-01	1.3379-02	1.4443-02	1.3100-02	1.3999-02	1.2377-02	7.4232-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1900-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1801.0 Q-INF = 2.674 P-INF = .0368 RE = .1813 TO = 1897.

P	1.3151-01	8.2799-01	2.8734+00	4.6331+00	6.4486-02	6.1427-02	6.2483-02	4.0627-02	1.3618-01
CP	3.5411-02	2.9588-01	1.0608+00	1.7189+00	1.0345-02	9.2007-03	9.5956-03	1.4218-03	3.7157-02
P/P01	2.6509-02	1.6690-01	5.7920-01	9.3390-01	1.2999-02	1.2382-02	1.2595-02	8.1893-03	2.7451-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1800.5 Q-INF = 2.673 P-INF = .0368 RE = .1814 TO = 1896.

P	6.3358-02	1.7582-01	6.8415-02	1.5303-01	6.2083-02	6.0827-02	6.0481-02	5.8039-02	6.0681-02
CP	9.9268-03	5.1992-02	1.1818-02	4.3470-02	9.4499-03	8.9802-03	8.8506-03	7.9372-03	8.9255-03
P/P01	1.2774-02	3.5446-02	1.3793-02	3.0853-02	1.2516-02	1.2263-02	1.2193-02	1.1701-02	1.2234-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1801.0 Q-INF = 2.675 P-INF = .0368 RE = .1816 TO = 1895.

P	5.9360-02	1.4877-01	6.2414-02	7.0016-02	5.5874-02	5.5825-02	5.6676-02	5.4436-02	5.3471-02
CP	8.4229-03	4.1852-02	9.5646-03	1.2407-02	7.1196-03	7.1010-03	7.4191-03	6.5818-03	6.2210-03
P/P01	1.1963-02	2.9982-02	1.2578-02	1.4110-02	1.1261-02	1.1251-02	1.1422-02	1.0971-02	1.0776-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1801.2 Q-INF = 2.675 P-INF = .0368 RE = .1815 TO = 1896.

P	5.6762-02	5.7626-02	3.3207-02	1.4003-01	7.9146-01	2.8571+00	4.6742+00	5.6838-02	5.9279-02
CP	7.4508-03	7.7736-03	-1.3561-03	3.8584-02	2.8214-01	1.0545+00	1.7338+00	7.4791-03	8.3918-03
P/P01	1.1439-02	1.1613-02	6.6921-03	2.8220-02	1.5950-01	5.7578-01	9.4196-01	1.1454-02	1.1946-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.0 Q-INF = 2.677 P-INF = .0369 RE = .1821 TO = 1893.

P	5.7362-02	3.4015-02	1.4303-01	6.1614-02	6.4085-02	6.2628-02	6.6889-02	5.6438-02	3.2243-02
CP	7.6590-03	-1.0635-03	3.9666-02	9.2475-03	1.0171-02	9.6264-03	1.1219-02	7.3137-03	-1.7256-03
P/P01	1.1551-02	6.8499-03	2.8804-02	1.2408-02	1.2905-02	1.2612-02	1.3470-02	1.1365-02	6.4931-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.7 Q-INF = 2.678 P-INF = .0369 RE = .1824 TO = 1892.

P	1.4051-01	7.8742-01	1.0220+00	4.6961+00	4.6109+00	4.6143+00	4.4099+00	2.9706+00	9.7230-01
CP	3.8695-02	2.8026-01	3.6786-01	1.7398+00	1.7080+00	1.7093+00	1.6329+00	1.0955+00	3.4929-01
P/P01	2.8280-02	1.5849-01	2.0571-01	9.4521-01	9.2805-01	9.2874-01	8.8760-01	5.9790-01	1.9570-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B646

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.7 Q-INF = 2.679 P-INF = .0369 RE = .1829 TO = 1889.

P	1.4690-01	.0000+00	3.9772+00	2.8955+00	9.6204-01	1.4847-01	3.8138+00	2.8626+00	8.6275-01
CP	4.1065-02	.0000+00	1.4709+00	1.0671+00	3.4535-01	4.1649-02	1.4099+00	1.0548+00	3.0828-01
P/PO1	2.9559-02	.0000+00	8.0027-01	5.8261-01	1.9357-01	2.9873-02	7.6739-01	5.7599-01	1.7360-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0750+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1802.5 Q-INF = 2.679 P-INF = .0369 RE = .1832 TO = 1887.

P	1.4231-01	6.0427-02	6.6815-02	6.5214-02	4.2256-02	1.4366-01	8.6255-01	2.9181+00	2.2039+00
CP	3.9345-02	8.7832-03	1.1168-02	1.0570-02	2.0009-03	3.9852-02	3.0819-01	1.0754+00	8.0888-01
P/PO1	2.8632-02	1.2158-02	1.3443-02	1.3121-02	8.5021-03	2.8905-02	1.7355-01	5.8712-01	4.4344-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

* B647

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	24.	301244	10.18	3	-14.86	-19.89	-5.01	179.01	180.0

VALVE POS 2 PO =1803.5 Q-INF = 2.680 P-INF = .0369 RE = .1828 TO = 1890.

P	5.4564-02	5.4424-02	5.4412-02	5.4612-02	5.2870-02	5.2623-02	2.8638-02	1.3889-01	8.4973-01
CP	6.5898-03	6.5378-03	6.5333-03	6.6079-03	5.9580-03	5.8658-03	-3.0848-03	3.8059-02	3.0332-01
P/PO1	1.0975-02	1.0947-02	1.0945-02	1.0985-02	1.0635-02	1.0585-02	5.7605-03	2.7938-02	1.7092-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.5 Q-INF = 2.678 P-INF = .0369 RE = .1827 TO = 1890.

P	2.8493+00	3.6350+00	3.9712+00	4.3342+00	4.6708+00	4.7899+00	5.0090+00	3.6224-02	1.6941-01
CP	1.0501+00	1.3435+00	1.4690+00	1.5933+00	1.7302+00	1.7747+00	1.8565+00	-2.4637-04	4.6124-02
P/PO1	5.7345-01	7.3160-01	7.9925-01	8.6626-01	9.4006-01	9.6403-01	1.0081+00	7.2905-03	3.2285-02
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1802.5 Q-INF = 2.678 P-INF = .0369 RE = .1823 TO = 1892.

P	9.2258-01	2.9483+00	4.1992+00	6.8815-02	7.3498-02	6.3428-02	6.9893-02	5.0434-02	3.6248-02
CP	3.3078-01	1.0873+00	1.5545+00	1.1928-02	1.3677-02	9.9163-03	1.2331-02	5.0633-03	-2.3443-04
P/PO1	1.8572-01	5.9350-01	8.4530-01	1.3853-02	1.4795-02	1.2768-02	1.4070-02	1.0152-02	7.2969-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1802.2 Q-INF = 2.677 P-INF = .0369 RE = .1821 TO = 1893.

P	1.6489-01	9.9329-01	3.0714+00	4.7983+00	6.5888-02	5.5024-02	5.4673-02	3.2021-02	1.8304-01
CP	4.7824-02	3.5728-01	1.1336+00	1.7786+00	1.0841-02	6.7829-03	6.6515-03	-1.8101-03	5.4605-02
P/PO1	3.3201-02	2.0000-01	6.1842-01	9.6613-01	1.3267-02	1.1079-02	1.1008-02	6.4475-03	3.6056-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1802.2 Q-INF = 2.676 P-INF = .0369 RE = .1816 TO = 1896.

P	6.1759-02	1.6847-01	6.8615-02	1.5303-01	5.6275-02	6.0427-02	5.7677-02	5.6638-02	5.8278-02
CP	9.3060-03	4.9183-02	1.1868-02	4.3413-02	7.2568-03	8.8083-03	7.7807-03	7.3924-03	8.0052-03
P/PO1	1.2439-02	3.3933-02	1.3820-02	3.0823-02	1.1334-02	1.2171-02	1.1617-02	1.1407-02	1.1738-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1801.2 Q-INF = 2.675 P-INF = .0368 RE = .1817 TO = 1895.

P	5.5963-02	5.6825-02	5.7013-02	6.2614-02	4.5661-02	5.6825-02	5.5474-02	5.2635-02	5.0868-02
CP	7.1496-03	7.4721-03	7.5421-03	9.6361-03	3.2983-03	7.4721-03	6.9669-03	5.9056-03	5.2449-03
P/PO1	1.1277-02	1.1451-02	1.1488-02	1.2617-02	9.2609-03	1.1451-02	1.1178-02	1.0606-02	1.0250-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1800.5 Q-INF = 2.673 P-INF = .0368 RE = .1814 TO = 1896.

P	5.1366-02	4.5620-02	3.8809-02	1.8984-01	9.6328-01	3.1167+00	4.8769+00	5.6037-02	5.6475-02
CP	5.4412-03	3.2921-03	7.4424-04	5.7238-02	3.4654-01	1.1520+00	1.8104+00	7.1886-03	7.3524-03
P/PO1	1.0356-02	9.1975-03	7.8242-03	3.8274-02	1.9421-01	6.2837-01	9.8323-01	1.1298-02	1.1386-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1800.5 Q-INF = 2.673 P-INF = .0368 RE = .1809 TO = 1899.

P	4.8568-02	3.1614-02	1.8444-01	6.4614-02	6.6088-02	6.3428-02	6.3284-02	5.0834-02	3.1242-02
CP	4.4004-03	-1.9430-03	5.5240-02	1.0405-02	1.0956-02	9.9608-03	9.9070-03	5.2484-03	-2.0824-03
P/PO1	9.7946-03	6.3756-03	3.7196-02	1.3031-02	1.3328-02	1.2792-02	1.2763-02	1.0252-02	6.3005-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1800.2 Q-INF = 2.672 P-INF = .0368 RE = .1807 TO = 1900.

P	1.6129-01	9.1881-01	1.0662+00	4.7772+00	4.5000+00	4.3803+00	4.0961+00	2.7080+00	8.2190-01
CP	4.6593-02	3.3010-01	3.8528-01	1.7742+00	1.6704+00	1.6256+00	1.5192+00	9.9974-01	2.9383-01
P/PO1	3.2536-02	1.8534-01	2.1508-01	9.6366-01	9.0773-01	8.8358-01	8.2626-01	5.4626-01	1.6579-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

B648

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1800.0 Q-INF = 2.671 P-INF = .0368 RE = .1803 TO = 1902.

P	1.1153-01	8.0036-04	3.7642+00	2.7002+00	7.7944-01	1.2185-01	3.7658+00	2.7726+00	8.0447-01
CP	2.7983-02	-1.3472-02	1.3955+00	9.9718-01	2.7805-01	3.1850-02	1.3961+00	1.0243+00	2.8742-01
P/PO1	2.2504-02	1.6150-04	7.5958-01	5.4487-01	1.5728-01	2.4589-02	7.5988-01	5.5947-01	1.6233-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1797.0 Q-INF = 2.666 P-INF = .0367 RE = .1797 TO = 1904.

P	1.2672-01	5.6025-02	6.4414-02	6.4014-02	4.2256-02	1.3786-01	8.4513-01	2.8896+00	2.1724+00
CP	3.3760-02	7.2434-03	1.0390-02	1.0240-02	2.0786-03	3.7941-02	3.0325-01	1.0701+00	8.0114-01
P/PO1	2.5618-02	1.1327-02	1.3023-02	1.2942-02	8.5430-03	2.7872-02	1.7086-01	5.8419-01	4.3920-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
0 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
1.	25.	301244	10.16	3	-14.83	-340.14	4.99	178.99	180.0

VALVE POS 2 PO =1801.0 Q-INF = 2.673 P-INF = .0368 RE = .1808 TO = 1900.

P	5.4763-02	5.4024-02	5.4612-02	5.3812-02	5.2069-02	5.1823-02	2.8638-02	1.4149-01	8.5414-01
CP	6.7152-03	6.4385-03	6.6586-03	6.3592-03	5.7073-03	5.6152-03	-3.0584-03	3.9161-02	3.0576-01
P/PO1	1.1042-02	1.0893-02	1.1012-02	1.0850-02	1.0499-02	1.0449-02	5.7744-03	2.8530-02	1.7222-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1801.5 Q-INF = 2.674 P-INF = .0368 RE = .1810 TO = 1899.

P	2.8553+00	3.6531+00	3.9682+00	4.3042+00	4.6708+00	4.7869+00	4.9210+00	3.5023-02	1.4579-01
CP	1.0540+00	1.3523+00	1.4702+00	1.5958+00	1.7329+00	1.7763+00	1.8526+00	-6.7474-04	4.0824-02
P/PO1	5.7550-01	7.3630-01	7.9982-01	8.6753-01	9.4143-01	9.6483-01	1.0060+00	7.0592-03	2.9426-02
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1802.2 Q-INF = 2.675 P-INF = .0368 RE = .1811 TO = 1899.

P	8.6302-01	2.8596+00	4.1062+00	6.0814-02	6.7290-02	6.1027-02	6.4085-02	5.8839-02	3.7650-02
CP	3.0882-01	1.0552+00	1.5211+00	8.9601-03	1.1381-02	9.0399-03	1.0183-02	8.2221-03	3.0169-04
P/PO1	1.7387-01	5.7613-01	8.2727-01	1.2252-02	1.3557-02	1.2295-02	1.2911-02	1.1854-02	7.5854-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1802.7 Q-INF = 2.675 P-INF = .0368 RE = .1808 TO = 1901.

P	1.1412-01	7.9493-01	2.7295+00	4.4949+00	6.4686-02	5.8626-02	6.2283-02	4.7031-02	1.1155-01
CP	2.8885-02	2.8335-01	1.0064+00	1.6663+00	1.0406-02	8.1410-03	9.5079-03	3.8072-03	2.7922-02
P/PO1	2.2991-02	1.6014-01	5.4986-01	9.0551-01	1.3031-02	1.1810-02	1.2547-02	9.4746-03	2.2472-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1802.7 Q-INF = 2.676 P-INF = .0368 RE = .1809 TO = 1900.

P	5.8361-02	1.7008-01	6.5214-02	1.5303-01	6.0080-02	5.9426-02	5.9680-02	5.4236-02	5.9079-02
CP	8.0396-03	4.9791-02	1.0601-02	4.3422-02	8.6821-03	8.4377-03	8.5324-03	6.4980-03	8.3078-03
P/PO1	1.1756-02	3.4259-02	1.3136-02	3.0826-02	1.2102-02	1.1970-02	1.2021-02	1.0925-02	1.1900-02
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1802.7 Q-INF = 2.676 P-INF = .0368 RE = .1809 TO = 1900.

P	5.8561-02	5.9626-02	6.0613-02	6.5014-02	5.7477-02	5.6825-02	5.7477-02	5.6438-02	5.5874-02
CP	8.1143-03	8.5125-03	8.8814-03	1.0526-02	7.7091-03	7.4656-03	7.7091-03	7.3207-03	7.1103-03
P/PO1	1.1796-02	1.2011-02	1.2210-02	1.3096-02	1.1578-02	1.1447-02	1.1578-02	1.1368-02	1.1255-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1802.5 Q-INF = 2.675 P-INF = .0368 RE = .1809 TO = 1900.

P	5.7961-02	5.6825-02	4.0209-02	1.0922-01	6.6549-01	2.6035+00	4.4264+00	5.6838-02	5.9680-02
CP	7.8933-03	7.4686-03	1.2577-03	2.7055-02	2.3498-01	9.5939-01	1.6408+00	7.4733-03	8.5355-03
P/PO1	1.1677-02	1.1448-02	8.1006-03	2.2005-02	1.3407-01	5.2451-01	8.9176-01	1.1451-02	1.2023-02
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.7 Q-INF = 2.673 P-INF = .0368 RE = .1803 TO = 1903.

P	5.8761-02	4.4820-02	1.1202-01	5.7013-02	6.0481-02	6.1427-02	6.5688-02	5.7839-02	4.0254-02
CP	8.2084-03	2.9936-03	2.8133-02	7.5545-03	8.8518-03	9.2059-03	1.0800-02	7.8635-03	1.2856-03
P/PO1	1.1847-02	9.0360-03	2.2585-02	1.1494-02	1.2193-02	1.2384-02	1.3243-02	1.1661-02	8.1155-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1801.7 Q-INF = 2.674 P-INF = .0368 RE = .1805 TO = 1902.

P	1.1352-01	7.3513-01	9.5461-01	4.5039+00	4.7278+00	4.8484+00	4.6742+00	3.1761+00	1.1522+00
CP	2.8689-02	2.6118-01	3.4328-01	1.6708+00	1.7545+00	1.7997+00	1.7345+00	1.1742+00	4.1719-01
P/PO1	2.2885-02	1.4819-01	1.9244-01	9.0793-01	9.5306-01	9.7739-01	9.4226-01	6.4027-01	2.3228-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

B650

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1800.5 Q-INF = 2.672 P-INF = .0368 RE = .1805 TO = 1901.

P	1.8967-01	-4.0018-04	4.2501+00	3.1913+00	1.1508+00	2.0449-01	3.9024+00	3.0036+00	9.7550-01
CP	5.7213-02	-1.3922-02	1.5768+00	1.1806+00	4.1693-01	6.2758-02	1.4467+00	1.1103+00	3.5131-01
P/PO1	3.8259-02	-8.0720-05	8.5730-01	6.4372-01	2.3214-01	4.1248-02	7.8715-01	6.0586-01	1.9677-01
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1798.7 Q-INF = 2.669 P-INF = .0368 RE = .1804 TO = 1901.

P	1.7488-01	5.6025-02	6.2414-02	6.0213-02	4.0053-02	1.3786-01	8.3892-01	2.8671+00	2.1529+00
CP	5.1743-02	7.2159-03	9.6093-03	8.7850-03	1.2326-03	3.7873-02	3.0050-01	1.0603+00	7.9276-01
P/PO1	3.5311-02	1.1312-02	1.2602-02	1.2158-02	8.0872-03	2.7836-02	1.6939-01	5.7889-01	4.3470-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	26.	301244	10.18	2	9.98	.00	-.00	65.02	180.0

VALVE POS 2 PO =1806.7 Q-INF = 2.684 P-INF = .0370 RE = .1828 TO = 1872.

P	7.3051-01	1.8071+00	3.9712+00	4.5843+00	4.6995+00	4.8130+00	4.8423+00	4.9560+00	4.5198+00
CP	2.5841-01	6.5952-01	1.4658+00	1.6943+00	1.7372+00	1.7795+00	1.7904+00	1.8328+00	1.6702+00
P/PO1	1.4671-01	3.6291-01	7.9753-01	9.2066-01	9.4378-01	9.6657-01	9.7247-01	9.9530-01	9.0770-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1805.7 Q-INF = 2.679 P-INF = .0369 RE = .1807 TO = 1903.

P	3.0270+00	1.3523+00	2.5892-01	1.9871-01	1.8637-01	1.7836-01	2.4371-01	1.1985-01	7.6336-02
CP	1.1160+00	4.9096-01	8.2865-02	6.0395-02	5.5787-02	5.2798-02	7.7189-02	3.0962-02	1.4720-02
P/PO1	6.0891-01	2.7203-01	5.2084-02	3.9973-02	3.7489-02	3.5879-02	4.9025-02	2.4110-02	1.5356-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1803.9 Q-INF = 2.681 P-INF = .0369 RE = .1830 TO = 1889.

P	5.2965-02	2.4765+00	2.9784+00	3.2458+00	2.8724+00	2.7756+00	2.3799+00	1.3305+00	4.9789-01
CP	5.9863-03	9.1006-01	1.0973+00	1.1970+00	1.0578+00	1.0216+00	8.7402-01	4.8256-01	1.7196-01
P/PO1	1.0656-02	4.9797-01	5.9890-01	6.5266-01	5.7758-01	5.5811-01	4.7855-01	2.6754-01	1.0011-01
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1800.9 Q-INF = 2.676 P-INF = .0369 RE = .1829 TO = 1888.

P	1.0873-01	9.8844-02	9.0840-02	3.3508+00	2.5534+00	2.1919+00	1.4204+00	1.1475+00	4.3417-01
CP	2.6852-02	2.3160-02	2.0169-02	1.2382+00	9.4027-01	8.0571-01	5.1695-01	4.1497-01	1.4845-01
P/PO1	2.1898-02	1.9907-02	1.8295-02	6.7486-01	5.1426-01	4.4146-01	2.8607-01	2.3111-01	8.7443-02
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1803.2 Q-INF = 2.680 P-INF = .0369 RE = .1833 TO = 1887.

P	6.1259-01	2.8052-01	4.8782-01	3.9316+00	3.2842+00	4.9244-02	5.1523-01	1.2626-01	2.7248-02
CP	2.1480-01	9.0896-02	1.6824-01	1.4532+00	1.2116+00	4.6020-03	1.7847-01	3.3337-02	-3.6049-03
P/PO1	1.2321-01	5.6421-02	9.8112-02	7.9074-01	6.6054-01	9.9042-03	1.0363-01	2.5393-02	5.4803-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1803.4 Q-INF = 2.681 P-INF = .0369 RE = .1839 TO = 1884.

P	2.9980-02	2.6812-02	5.2823-02	7.2968-02	2.9293+00	1.0850-01	1.6627-01	1.5667-01	4.0672-02
CP	-2.5908-03	-3.7724-03	5.9286-03	1.3441-02	1.0787+00	2.6692-02	4.8240-02	4.4658-02	1.3968-03
P/PO1	6.0271-03	5.3902-03	1.0619-02	1.4669-02	5.8890-01	2.1812-02	3.3427-02	3.1496-02	8.1766-03
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1803.2 Q-INF = 2.681 P-INF = .0369 RE = .1838 TO = 1884.

P	1.4151-01	1.1725-01	8.0036-02	2.2890-01	8.4275-02	4.3238-02	3.9618-02	3.9818-02	3.3459-02
CP	3.9010-02	2.9963-02	1.6081-02	7.1607-02	1.7663-02	2.3561-03	1.0055-03	1.0802-03	-1.2914-03
P/PO1	2.8452-02	2.3575-02	1.6092-02	4.6023-02	1.6945-02	8.6937-03	7.9657-03	8.0060-03	6.7275-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1805.7 Q-INF = 2.681 P-INF = .0369 RE = .1819 TO = 1896.

P	3.9973-02	1.2578+00	5.3824-02	1.7252-01	9.4284-02	1.8236-01	1.5007-01	4.3619-02	4.9087-02
CP	1.1366-03	4.5531-01	6.3023-03	5.0572-02	2.1392-02	5.4241-02	4.2196-02	2.4964-03	4.5357-03
P/PO1	8.0355-03	2.5283-01	1.0820-02	3.4681-02	1.8953-02	3.6659-02	3.0166-02	8.7684-03	9.8676-03
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1806.7 Q-INF = 2.682 P-INF = .0369 RE = .1813 TO = 1900.

P	5.4763-02	6.8430-02	4.4841+00	5.6375-02	5.9853-02	5.3648-02	3.5405+00	4.1618-02	3.2128+00
CP	6.6501-03	1.1747-02	1.6584+00	7.2510-03	8.5480-03	6.2340-03	1.3065+00	1.7482-03	1.1843+00
P/PO1	1.1007-02	1.3754-02	9.0125-01	1.1331-02	1.2030-02	1.0782-02	7.1160-01	8.3648-03	6.4573-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

B652

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1799.9 Q-INF = 2.673 P-INF = .0368 RE = .1814 TO = 1896.

P	5.4763-02	3.1174+00	6.0027-02	2.4700+00	7.4066-02	1.7044+00	1.0845-01	8.5238-01	2.8551-01
CP	6.7187-03	1.1527+00	8.6880-03	9.1042-01	1.3941-02	6.4639-01	2.6806-02	3.0516-01	9.3056-02
P/PO1	1.1044-02	6.2870-01	1.2106-02	4.9814-01	1.4937-02	3.5583-01	2.1871-02	1.7190-01	5.7580-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1800.9 Q-INF = 2.676 P-INF = .0369 RE = .1829 TO = 1888.

P	5.2765-02	4.1140+00	2.8014+00	2.8917+00	7.0503-01	2.4902-01	5.3624-02	2.9040+00	9.5570-02
CP	5.9428-03	1.5234+00	1.0329+00	1.0667+00	2.4965-01	7.9271-02	6.2638-03	1.0713+00	2.1936-02
P/PO1	1.0627-02	8.2856-01	5.6421-01	5.8238-01	1.4199-01	5.0153-02	1.0800-02	5.8487-01	1.9248-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL mach 10

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	27.	301244	10.18	2	4.99	.00	-.00	70.01	180.0

VALVE POS 2 PO =1801.9 Q-INF = 2.677 P-INF = .0369 RE = .1826 TO = 1890.

P	5.0546-01	1.3418+00	3.6743+00	4.3532+00	4.4748+00	4.6089+00	4.6817+00	4.8930+00	4.7749+00
CP	1.7502-01	4.8740-01	1.3586+00	1.6122+00	1.6576+00	1.7077+00	1.7349+00	1.8139+00	1.7697+00
P/PO1	1.0176-01	2.7014-01	7.3973-01	8.7643-01	9.0091-01	9.2790-01	9.4255-01	9.8509-01	9.6132-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1802.4 Q-INF = 2.678 P-INF = .0369 RE = .1827 TO = 1890.

P	3.6450+00	1.8221+00	3.8757-01	3.0566-01	2.8325-01	2.6804-01	2.1269-01	1.6747-01	9.8776-02
CP	1.3473+00	6.6660-01	1.3095-01	1.0036-01	9.1994-02	8.6313-02	6.5648-02	4.8763-02	2.3111-02
P/PO1	7.3363-01	3.6673-01	7.8007-02	6.1521-02	5.7010-02	5.3948-02	4.2809-02	3.3708-02	1.9881-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1803.4 Q-INF = 2.679 P-INF = .0369 RE = .1824 TO = 1892.

P	6.2159-02	2.2198+00	2.7804+00	3.0717+00	2.6792+00	2.6540+00	2.4099+00	1.6050+00	6.9143-01
CP	9.4300-03	8.1482-01	1.0241+00	1.1328+00	9.8629-01	9.7689-01	8.8577-01	5.8532-01	2.4432-01
P/PO1	1.2506-02	4.4662-01	5.5941-01	6.1802-01	5.3905-01	5.3398-01	4.8486-01	3.2292-01	1.3911-01
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1803.7 Q-INF = 2.679 P-INF = .0369 RE = .1823 TO = 1893.

P	1.6769-01	1.5487-01	1.2165-01	3.1753+00	2.3467+00	2.0224+00	1.2778+00	1.0785+00	4.9708-01
CP	4.8819-02	4.4034-02	3.1636-02	1.1714+00	8.6216-01	7.4110-01	4.6317-01	3.8878-01	1.7177-01
P/PO1	3.3737-02	3.1158-02	2.4475-02	6.3883-01	4.7214-01	4.0688-01	2.5707-01	2.1698-01	1.0001-01
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1802.7 Q-INF = 2.677 P-INF = .0369 RE = .1820 TO = 1894.

P	4.9127-01	1.9048-01	3.3855-01	3.7020+00	3.0970+00	4.5240-02	4.3900-01	1.1005-01	2.4844-02
CP	1.6972-01	5.7375-02	1.1268-01	1.3689+00	1.1430+00	3.1257-03	1.5020-01	2.7332-02	-4.4924-03
P/PO1	9.8904-02	3.8349-02	6.8158-02	7.4529-01	6.2350-01	9.1078-03	8.8379-02	2.2155-02	5.0017-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1803.7 Q-INF = 2.679 P-INF = .0369 RE = .1819 TO = 1895.

P	2.8981-02	4.6821-02	6.5429-02	6.4571-02	2.8290+00	1.2271-01	1.5827-01	1.4266-01	3.5062-02
CP	-2.9522-03	3.7081-03	1.0655-02	1.0335-02	1.0424+00	3.2040-02	4.5316-02	3.9490-02	-6.8175-04
P/PO1	5.8317-03	9.4216-03	1.3166-02	1.2994-02	5.6927-01	2.4692-02	3.1848-02	2.8708-02	7.0555-03
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1803.9 Q-INF = 2.678 P-INF = .0369 RE = .1812 TO = 1899.

P	9.8534-02	8.8439-02	5.5225-02	1.5933-01	6.8461-02	3.7834-02	3.6416-02	3.9818-02	3.5663-02
CP	2.3025-02	1.9255-02	6.8515-03	4.5729-02	1.1795-02	3.5700-04	-1.7233-04	1.0979-03	-4.5346-04
P/PO1	1.9833-02	1.7801-02	1.1116-02	3.2070-02	1.3780-02	7.6151-03	7.3298-03	8.0145-03	7.1783-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1804.9 Q-INF = 2.676 P-INF = .0369 RE = .1794 TO = 1910.

P	3.9174-02	1.1512+00	4.9822-02	1.1595-01	7.7269-02	1.3132-01	1.1025-01	5.4024-02	5.0890-02
CP	8.6672-04	4.1640-01	4.8457-03	2.9556-02	1.5102-02	3.5298-02	2.7476-02	6.4159-03	5.2449-03
P/PO1	7.8891-03	2.3183-01	1.0034-02	2.3351-02	1.5561-02	2.6445-02	2.2203-02	1.0880-02	1.0249-02
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1804.7 Q-INF = 2.679 P-INF = .0369 RE = .1811 TO = 1900.

P	5.2765-02	6.4429-02	4.2531+00	5.6375-02	5.7051-02	4.7843-02	3.2673+00	3.7417-02	3.1333+00
CP	5.9268-03	1.0281-02	1.5740+00	7.2746-03	7.5268-03	4.0892-03	1.2060+00	1.9692-04	1.1560+00
P/PO1	1.0617-02	1.2964-02	8.5579-01	1.1343-02	1.1479-02	9.6266-03	6.5742-01	7.5288-03	6.3046-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

B654

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
TUNNEL B

Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.9 Q-INF = 2.677 P-INF = .0369 RE = .1823 TO = 1892.

P	4.1372-02	2.7737+00	4.8021-02	1.9553+00	7.1263-02	1.3293+00	1.1845-01	7.6514-01	2.2580-01
CP	1.6842-03	1.0224+00	4.1681-03	7.1669-01	1.2851-02	4.8282-01	3.0480-02	2.7207-01	7.0584-02
P/PO1	8.3310-03	5.5852-01	9.6699-03	3.9373-01	1.4350-02	2.6767-01	2.3852-02	1.5407-01	4.5469-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1805.2 Q-INF = 2.681 P-INF = .0369 RE = .1823 TO = 1894.

P	4.0973-02	3.9189+00	2.6065+00	3.4769+00	5.1906-01	3.5992-01	6.0027-02	-2.4495+00	1.2402-01
CP	1.5103-03	1.4479+00	9.5839-01	1.2830+00	1.7983-01	1.2047-01	8.6171-03	-9.2738-01	3.2485-02
P/PO1	8.2370-03	7.8784-01	5.2400-01	6.9899-01	1.0435-01	7.2357-02	1.2068-02	-4.9244-01	2.4933-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

B655

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	28.	301244	10.18	2	-5.01	.00	-.00	80.01	180.0

VALVE POS 2 PO =1803.2 Q-INF = 2.677 P-INF = .0369 RE = .1813 TO = 1898.

P	2.7702-01	9.1561-01	3.1044+00	3.6855+00	3.9132+00	4.1753+00	4.2628+00	-2.4641+00	4.8800+00
CP	8.9711-02	3.2826-01	1.1459+00	1.3630+00	1.4481+00	1.5460+00	1.5786+00	-9.3426-01	1.5[illegible]92+00
P/PO1	5.5776-02	1.8435-01	6.2505-01	7.4205-01	7.8791-01	8.4068-01	8.5829-01	-4.9613-01	9.8755-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1803.7 Q-INF = 2.677 P-INF = .0369 RE = .1809 TO = 1901.

P	4.5150+00	2.8442+00	7.4173-01	6.0653-01	5.4528-01	4.9744-01	2.9413-01	2.6272-01	1.5267-01
CP	1.6729+00	1.0488+00	2.6332-01	2.1281-01	1.8993-01	1.7206-01	9.6109-02	8.4373-02	4.3263-02
P/PO1	9.0909-01	5.7268-01	1.4935-01	1.2212-01	1.0979-01	1.0016-01	5.9223-02	5.2898-02	3.0740-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1806.7 Q-INF = 2.675 P-INF = .0368 RE = .1774 TO = 1923.

P	9.0939-02	1.7591+00	2.2166+00	2.5330+00	2.2898+00	2.3900+00	2.4069+00	-6.7290-01	1.1615+00
CP	2.0225-02	6.4383-01	8.1486-01	9.3316-01	8.4225-01	8.7969-01	8.8601-01	-2.6532-01	4.2042-01
P/PO1	1.8320-02	3.5436-01	4.4653-01	5.1028-01	4.6129-01	4.8146-01	4.8487-01	-1.3556-01	2.3398-01
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1799.1 Q-INF = 2.672 P-INF = .0368 RE = .1816 TO = 1894.

P	3.5436-01	3.1374-01	1.9869-01	2.5675+00	1.9574+00	1.6098+00	1.0330+00	9.2241-01	6.3433-01
CP	1.1885-01	1.0364-01	6.0586-02	9.4712-01	7.1877-01	5.8870-01	3.7284-01	3.3144-01	2.2362-01
P/PO1	7.1483-02	6.3288-02	4.0080-02	5.1792-01	3.9484-01	3.2474-01	2.0638-01	1.8607-01	1.2796-01
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1801.9 Q-INF = 2.678 P-INF = .0369 RE = .1832 TO = 1887.

P	3.3738-01	1.7088-01	1.8648-01	2.9307+00	2.2809+00	3.4831-02	3.3915-01	7.9835-02	4.5280-02
CP	1.1220-01	5.0030-02	5.5858-02	1.0805+00	8.3786-01	-7.6659-04	1.1286-01	1.6037-02	3.1351-03
P/PO1	6.7903-02	3.4392-02	3.7533-02	5.8985-01	4.5906-01	7.0103-03	6.8260-02	1.6068-02	9.1135-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1808.2 Q-INF = 2.687 P-INF = .0370 RE = .1836 TO = 1888.

P	6.4557-02	1.3566-01	9.6243-02	3.5184-02	2.3241-01	8.8679-02	9.8[illegible]44-02	6.5629-02	2.4243-02
CP	1.0251-02	3.6709-02	2.2041-02	-6.7902-04	7.2709-02	1.9227-02	2.2711-02	1.0650-02	-4.7504-03
P/PO1	1.2949-02	2.7210-02	1.9304-02	7.0572-03	4.6616-02	1.7787-02	1.9665-02	1.3164-02	4.8626-03
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1805.4 Q-INF = 2.683 P-INF = .0370 RE = .1833 TO = 1888.

P	5.7362-02	5.5625-02	2.9613-02	1.4074-01	4.8643-02	4.2638-02	5.1023-02	3.4615-02	4.1073-02
CP	7.6063-03	6.9589-03	-2.7352-03	3.8679-02	4.3570-03	2.1189-03	5.2438-03	-8.7096-04	1.5357-03
P/PO1	1.1523-02	1.1174-02	5.9490-03	2.8273-02	9.7719-03	8.5655-03	1.0250-02	6.9539-03	8.2511-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1803.4 Q-INF = 2.680 P-INF = .0369 RE = .1831 TO = 1888.

P	3.3178-02	8.4918-01	4.8221-02	6.0973-02	5.5649-02	8.7077-02	6.4829-02	3.5416-02	4.6483-02
CP	-1.3929-03	3.0306-01	4.2200-03	8.9776-03	6.9914-03	1.8717-02	1.0416-02	-5.5792-04	3.5712-03
P/PO1	6.6726-03	1.7078-01	9.6981-03	1.2763-02	1.1192-02	1.7513-02	1.3038-02	7.1227-03	9.3484-03
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1801.9 Q-INF = 2.678 P-INF = .0369 RE = .1833 TO = 1886.

P	5.0366-02	6.2028-02	3.5783+00	5.2177-02	4.6041-02	4.8443-02	2.5270+00	1.2606-02	2.5315+00
CP	5.0321-03	9.3857-03	1.3222+00	5.7080-03	3.4172-03	4.3140-03	9.2968-01	-9.0657-03	9.3135-01
P/PO1	1.0136-02	1.2483-02	7.2012-01	1.0500-02	9.2656-03	9.7490-03	5.0856-01	2.5368-03	5.0946-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

~~CONFIDENTIAL~~

B656

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONICAL NOZZLE WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1804.9 Q-INF = 2.684 P-INF = .0370 RE = .1840 TO = 1884.

P	2.5383-02	2.0127+00	3.5416-02	1.1971+00	4.2238-02	1.0343+00	8.4638-02	6.1527-01	1.6469-01
CP	-4.3131-03	7.3623-01	-5.7466-04	4.3229-01	1.9674-03	3.7165-01	1.7767-02	2.1550-01	4.7598-02
P/PO1	5.0986-03	4.0429-01	7.1138-03	2.4045-01	8.4841-03	2.0776-01	1.7001-02	1.2359-01	3.3081-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1801.4 Q-INF = 2.678 P-INF = .0369 RE = .1833 TO = 1886.

P	2.8381-02	3.3530+00	2.0936+00	4.3412+00	3.0387-01	7.1203-01	5.6425-02	2.2125+00	2.0376-01
CP	-3.1730-03	1.2384+00	7.6807-01	1.6075+00	9.9708-02	2.5214-01	7.3000-03	8.1248-01	6.2323-02
P/PO1	5.7132-03	6.7498-01	4.2145-01	8.7391-01	6.1170-02	1.4334-01	1.1359-02	4.4539-01	4.1018-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

B657

PRELIMINARY UNCHECKED DATA

mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	29.	301244	10.18	2	10.25	61.14	-8.96	70.01	180.0

VALVE POS 2 PO =1801.2 Q-INF = 2.677 P-INF = .0369 RE = .1829 TO = 1888.

P	5.1905-01	1.2788+00	3.5033+00	4.1236+00	4.2981+00	4.5084+00	4.5405+00	4.7520+00	4.6053+00
CP	1.8014-01	4.6395-01	1.2950+00	1.5268+00	1.5919+00	1.6705+00	1.6825+00	1.7615+00	1.7667+00
P/PO1	1.0452-01	2.5751-01	7.0547-01	8.3039-01	8.6552-01	9.0787-01	9.1434-01	9.5642-01	9.2739-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1804.7 Q-INF = 2.680 P-INF = .0369 RE = .1822 TO = 1894.

P	3.4980+00	1.7546+00	3.7657-01	2.9927-01	2.7745-01	2.6143-01	3.1594-01	1.6567-01	9.7173-02
CP	1.2913+00	6.4083-01	1.2672-01	9.7880-02	8.9739-02	8.3765-02	1.0410-01	4.8039-02	2.2482-02
P/PO1	7.0343-01	3.5283-01	7.5726-02	6.0181-02	5.5793-02	5.2573-02	6.3534-02	3.3316-02	1.9541-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1805.4 Q-INF = 2.681 P-INF = .0369 RE = .1823 TO = 1894.

P	6.4157-02	2.7346+00	3.5213+00	3.8400+00	3.3621+00	3.3832+00	3.1532+00	2.2860+00	1.0092+00
CP	1.0154-02	1.0060+00	1.2994+00	1.4183+00	1.2401+00	1.2479+00	1.1621+00	8.3650-01	3.6258-01
P/PO1	1.2896-02	5.4969-01	7.0781-01	7.7188-01	6.7582-01	6.8005-01	6.3381-01	4.5830-01	2.0286-01
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1800.9 Q-INF = 2.674 P-INF = .0368 RE = .1815 TO = 1896.

P	2.3724-01	1.9849-01	1.3846-01	3.8896+00	3.3067+00	2.7005+00	1.8408+00	1.6050+00	8.7996-01
CP	7.4946-02	6.0454-02	3.8007-02	1.4408+00	1.2228+00	9.9611-01	6.7462-01	5.8643-01	3.1530-01
P/PO1	4.7819-02	4.0008-02	2.7908-02	7.8398-01	6.6650-01	5.4432-01	3.7104-01	3.2351-01	1.7737-01
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1804.9 Q-INF = 2.680 P-INF = .0369 RE = .1815 TO = 1898.

P	8.4724-01	3.5376-01	2.0929-01	4.2602+00	3.6347+00	5.9453-02	6.9951-01	1.8108-01	4.6883-02
CP	3.0241-01	1.1825-01	6.4335-02	1.5761+00	1.3427+00	8.4157-03	2.4728-01	5.3806-02	3.7249-03
P/PO1	1.7042-01	7.1157-02	4.2098-02	8.5692-01	7.3110-01	1.1959-02	1.4070-01	3.6424-02	9.4304-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1806.4 Q-INF = 2.682 P-INF = .0369 RE = .1818 TO = 1897.

P	3.0380-02	6.6029-02	8.1636-02	5.8174-02	3.3127+00	1.9557-01	2.3911-01	2.3030-01	6.0107-02
CP	-2.4449-03	1.0847-02	1.6665-02	7.9179-03	1.2213+00	5.9146-02	7.5376-02	7.2094-02	8.6385-03
P/PO1	6.1050-03	1.3269-02	1.6405-02	1.1690-02	6.6571-01	3.9302-02	4.8050-02	4.6281-02	1.2079-02
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1807.9 Q-INF = 2.684 P-INF = .0370 RE = .1815 TO = 1900.

P	1.7788-01	1.2926-01	5.4624-02	2.8607-01	7.2064-02	5.9453-02	4.7621-02	3.1614-02	2.6848-02
CP	5.2515-02	3.4395-02	6.5839-03	9.2831-02	1.3083-02	8.3832-03	3.9742-03	-1.9907-03	-3.7668-03
P/PO1	3.5727-02	2.5961-02	1.0971-02	5.7456-02	1.4474-02	1.1941-02	9.5645-03	6.3495-03	5.3922-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1808.9 Q-INF = 2.684 P-INF = .0370 RE = .1812 TO = 1902.

P	3.4177-02	1.5039+00	4.9822-02	1.2654-01	7.6468-02	6.4057-02	9.7643-02	4.4220-02	5.3495-02
CP	-1.0399-03	5.4645-01	4.7880-03	3.3368-02	1.4714-02	1.0091-02	2.2602-02	2.7010-03	6.1562-03
P/PO1	6.8618-03	3.0194-01	1.0003-02	2.5406-02	1.5353-02	1.2861-02	1.9604-02	8.8781-03	1.0740-02
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1801.9 Q-INF = 2.672 P-INF = .0368 RE = .1791 TO = 1910.

P	6.0160-02	6.6830-02	3.9982+00	6.0573-02	6.2456-02	5.4649-02	4.0030+00	5.6425-02	4.0171+00
CP	8.7466-03	1.1243-02	1.4828+00	8.9013-03	9.6059-03	6.6837-03	1.4846+00	7.3486-03	1.4899+00
P/PO1	1.2136-02	1.3481-02	8.0655-01	1.2219-02	1.2599-02	1.1024-02	8.0752-01	1.1383-02	8.1037-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

B658

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1805.7 Q-INF = 2.680 P-INF = .0369 RE = .1812 TO = 1900.

P	6.0759-02	3.4266+00	6.3428-02	3.3433+00	9.5285-02	2.3375+00	1.3846-01	1.1479+00	3.8729-01
CP	8.8987-03	1.2647+00	9.8944-03	1.2337+00	2.1781-02	8.5837-01	3.7891-02	4.1453-01	1.3073-01
P/PO1	1.2219-02	6.8908-01	1.2755-02	6.7235-01	1.9162-02	4.7007-01	2.7845-02	2.3085-01	7.7884-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1802.9 Q-INF = 2.676 P-INF = .0369 RE = .1810 TO = 1900.

P	5.8961-02	4.2791+00	3.2603+00	3.6164+00	7.0703-01	4.2077-01	5.6825-02	3.3510+00	1.2502-01
CP	8.2615-03	1.5853+00	1.2046+00	1.3377+00	2.5044-01	1.4347-01	7.4635-03	1.2385+00	3.2948-02
P/PO1	1.1875-02	8.6186-01	6.5668-01	7.2840-01	1.4241-01	8.4750-02	1.1445-02	6.7494-01	2.5181-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	30.	301244	10.18	2	7.07	45.11	-5.00	70.00	180.0

VALVE POS 2 PO =1803.9 Q-INF = 2.677 P-INF = .0369 RE = .1811 TO = 1900.

P	5.2985-01	1.3448+00	3.7493+00	4.2122+00	4.3715+00	4.5594+00	4.6381+00	4.8285+00	4.7044+00
CP	1.8412-01	4.8849-01	1.3865+00	1.5594+00	1.6189+00	1.6891+00	1.7185+00	1.7896+00	1.7432+00
P/PO1	1.0666-01	2.7071-01	7.5472-01	8.4791-01	8.7998-01	9.1781-01	9.3366-01	9.7198-01	9.4699-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1806.4 Q-INF = 2.682 P-INF = .0369 RE = .1818 TO = 1897.

P	3.5940+00	1.8041+00	3.8317-01	3.0307-01	2.8045-01	2.6403-01	2.3110-01	1.6547-01	9.8175-02
CP	1.3262+00	6.5886-01	1.2909-01	9.9222-02	9.0790-02	8.4670-02	7.2392-02	4.7923-02	2.2832-02
P/PO1	7.2223-01	3.6254-01	7.7000-02	6.0303-02	5.6358-02	5.3059-02	4.6441-02	3.3253-02	1.9729-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1807.9 Q-INF = 2.684 P-INF = .0370 RE = .1818 TO = 1898.

P	6.5157-02	2.5065+00	3.2364+00	3.5324+00	3.0581+00	3.0516+00	2.8108+00	1.9650+00	8.6273-01
CP	1.0503-02	9.2006-01	1.1920+00	1.3023+00	1.1256+00	1.1231+00	1.0334+00	7.1831-01	3.0765-01
P/PO1	1.3084-02	5.0332-01	6.4988-01	7.0933-01	6.1408-01	6.1278-01	5.6443-01	3.9458-01	1.7324-01
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1808.9 Q-INF = 2.686 P-INF = .0370 RE = .1821 TO = 1897.

P	2.0606-01	1.7968-01	1.3286-01	3.6179+00	2.8949+00	2.3945+00	1.5781+00	1.3635+00	6.9524-01
CP	6.2948-02	5.3126-02	3.5694-02	1.3332+00	1.0640+00	8.7772-01	5.7377-01	4.9388-01	2.4507-01
P/PO1	4.1351-02	3.6057-02	2.6661-02	7.2602-01	5.8092-01	4.8051-01	3.1668-01	2.7362-01	1.3951-01
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1807.9 Q-INF = 2.684 P-INF = .0370 RE = .1818 TO = 1898.

P	6.7495-01	2.2250-01	2.6532-01	4.1161+00	3.4340+00	5.3047-02	5.7526-01	1.4326-01	3.3459-02
CP	2.3769-01	6.9123-02	8.5076-02	1.5197+00	1.2656+00	5.9919-03	2.0055-01	3.9603-02	-1.3057-03
P/PO1	1.3553-01	4.4679-02	5.3277-02	8.2654-01	6.8957-01	1.0652-02	1.1551-01	2.8768-02	6.7188-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1806.2 Q-INF = 2.681 P-INF = .0369 RE = .1813 TO = 1900.

P	3.7775-02	5.5625-02	7.4233-02	6.2772-02	3.1974+00	1.6675-01	2.0049-01	1.8808-01	4.6883-02
CP	3.1882-04	6.9770-03	1.3918-02	9.6431-03	1.1789+00	4.8427-02	6.1013-02	5.6386-02	3.7164-03
P/PO1	7.5944-03	1.1183-02	1.4924-02	1.2620-02	6.4281-01	3.3524-02	4.0307-02	3.7813-02	9.4256-03
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1805.2 Q-INF = 2.679 P-INF = .0369 RE = .1808 TO = 1902.

P	1.4171-01	1.1885-01	5.8826-02	1.8472-01	7.2665-02	4.7242-02	4.3619-02	4.0018-02	3.5263-02
CP	3.9127-02	3.0596-02	8.1882-03	5.5184-02	1.3354-02	3.8638-03	2.5115-03	1.1670-03	-6.0804-04
P/PO1	2.8511-02	2.3913-02	1.1836-02	3.7165-02	1.4620-02	9.5050-03	8.7761-03	8.0515-03	7.0948-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1804.4 Q-INF = 2.678 P-INF = .0369 RE = .1808 TO = 1902.

P	3.9973-02	1.4003+00	4.9422-02	1.2715-01	8.0071-02	8.2073-02	1.1585-01	5.0222-02	5.4096-02
CP	1.1567-03	5.0920-01	4.6854-03	3.1845-02	1.6132-02	1.6879-02	2.9494-02	4.9843-03	6.4310-03
P/PO1	8.0460-03	2.8186-01	9.9478-03	2.4586-02	1.6117-02	1.6520-02	2.3319-02	1.0109-02	1.0889-02
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1803.7 Q-INF = 2.676 P-INF = .0369 RE = .1805 TO = 1903.

P	5.9560-02	7.3233-02	4.1212+00	5.9773-02	5.9453-02	5.0445-02	3.7462+00	4.6821-02	3.7215+00
CP	8.4834-03	1.3592-02	1.5261+00	8.5630-03	8.4433-03	5.0773-03	1.3860+00	3.7232-03	1.3768+00
P/PO1	1.1995-02	1.4748-02	8.2996-01	1.2038-02	1.1973-02	1.0159-02	7.5445-01	9.4292-03	7.4946-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

B660

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING [illegible] CENTER
VON [illegible] AS [illegible]
[illegible] Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.9 Q-INF = 2.675 P-INF = .0368 RE = .1803 TO = 1904.

P	5.5963-02	3.1279+00	6.7030-02	2.6501+00	8.5676-02	1.8574+00	1.3526-01	9.6103-01	3.0935-01
CP	7.1502-03	1.1556+00	1.1288-02	9.7697-01	1.8259-02	6.8062-01	3.6796-02	3.4551-01	1.0188-01
P/PO1	1.1276-02	6.3025-01	1.3506-02	5.3397-01	1.7263-02	3.7425-01	2.7254-02	1.9364-01	6.2332-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1802.4 Q-INF = 2.675 P-INF = .0368 RE = .1806 TO = 1902.

P	5.2765-02	4.1530+00	3.0024+00	3.5534+00	6.2696-01	4.0316-01	6.2628-02	3.0150+00	1.2222-01
CP	5.9559-03	1.5390+00	1.1088+00	1.3148+00	2.2064-01	1.3696-01	9.6435-03	1.1135+00	3.1923-02
P/PO1	1.0633-02	8.3687-01	6.0502-01	7.1605-01	1.2634-01	8.1241-02	1.2620-02	6.0755-01	2.4628-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

B661

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	31.	301244	10.18	2	13.39	42.34	-8.97	65.02	180.0

VALVE POS 2 PO =1802.2 Q-INF = 2.673 P-INF = .0368 RE = .1795 TO = 1908.

P	7.1292-01	1.5369+00	3.8182+00	4.2887+00	4.4883+00	4.5759+00	4.5991+00	4.7490+00	4.3382+00
CP	2.5299-01	5.6131-01	1.4149+00	1.5910+00	1.6657+00	1.6984+00	1.7071+00	1.7632+00	1.6[illegible]+00
P/PO1	1.4377-01	3.0994-01	7.6999-01	8.6486-01	9.0511-01	9.2278-01	9.2745-01	9.5768-01	8.748[illegible]-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1801.4 Q-INF = 2.671 P-INF = .0368 RE = .1791 TO = 1910.

P	2.9130+00	1.3238+00	2.6052-01	2.0131-01	1.8937-01	1.8036-01	2.9133-01	1.2806-01	8.1144-02
CP	1.0769+00	4.8188-01	8.3770-02	6.1602-02	5.7131-02	5.3758-02	9.5307-02	3.4175-02	1.6610-02
P/PO1	5.8780-01	2.6712-01	5.2568-02	4.0622-02	3.8212-02	3.6394-02	5.8786-02	2.5840-02	1.6374-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1802.4 Q-INF = 2.672 P-INF = .0368 RE = .1788 TO = 1912.

P	6.0759-02	2.9928+00	3.6653+00	3.9241+00	3.5808+00	3.4687+00	3.0931+00	1.9695+00	7.6396-01
CP	8.9696-03	1.1064+00	1.3581+00	1.4550+00	1.3265+00	1.2845+00	1.1439+00	7.2338-01	2.7217-01
P/PO1	1.2256-02	6.0368-01	7.3933-01	7.9153-01	7.2228-01	6.9968-01	6.2391-01	3.9727-01	1.5410-01
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1804.4 Q-INF = 2.672 P-INF = .0368 RE = .1773 TO = 1922.

P	1.6069-01	1.3246-01	1.0945-01	3.9766+00	3.4340+00	2.9316+00	2.0586+00	1.7160+00	7.9742-01
CP	4.6371-02	3.5804-02	2.7192-02	1.4745+00	1.2715+00	1.0834+00	7.5668-01	6.2847-01	2.8468-01
P/PO1	3.2410-02	2.6715-02	2.2074-02	8.0203-01	6.9259-01	5.9126-01	4.1518-01	3.4609-01	1.6083-01
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1806.7 Q-INF = 2.674 P-INF = .0368 RE = .1765 TO = 1928.

P	9.8614-01	3.3935-01	2.6512-01	4.4193+00	3.7904+00	6.8661-02	8.2917-01	2.1570-01	4.8687-02
CP	3.5508-01	1.1316-01	8.5393-02	1.6392+00	1.4040+00	1.1910-02	2.9637-01	6.6907-02	4.4391-03
P/PO1	1.9876-01	6.8397-02	5.3435-02	8.9071-01	7.6397-01	1.3839-02	1.6712-01	4.3474-02	9.8129-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1806.9 Q-INF = 2.677 P-INF = .0369 RE = .1781 TO = 1919.

P	3.6176-02	3.4015-02	6.3228-02	6.8570-02	3.5418+00	1.7976-01	2.6052-01	2.4191-01	6.5116-02
CP	-2.5549-04	-1.0628-03	9.8518-03	1.1847-02	1.3095+00	5.3390-02	8.3562-02	7.6610-02	1.0557-02
P/PO1	7.2837-03	6.8487-03	1.2730-02	1.3806-02	7.1312-01	3.6193-02	5.2453-02	4.8706-02	1.3111-02
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1801.9 Q-INF = 2.674 P-INF = .0368 RE = .1809 TO = 1900.

P	2.3584-01	1.6247-01	1.0765-01	2.7688-01	8.0271-02	6.2656-02	5.7826-02	3.6016-02	2.9853-02
CP	7.4411-02	4.6978-02	2.6478-02	8.9754-02	1.6242-02	9.6555-03	7.8495-03	-3.0528-04	-2.6096-03
P/PO1	4.7529-02	3.2743-02	2.1694-02	5.5798-02	1.6177-02	1.2627-02	1.1653-02	7.2582-03	6.0162-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1802.7 Q-INF = 2.676 P-INF = .0369 RE = .1813 TO = 1898.

P	4.3771-02	1.7170+00	4.9422-02	1.7632-01	9.9488-02	1.1230-01	1.2506-01	4.3219-02	5.4697-02
CP	2.5839-03	6.2783-01	4.6955-03	5.2114-02	2.3404-02	2.8191-02	3.2957-02	2.3778-03	6.6667-03
P/PO1	8.8155-03	3.4581-01	9.9537-03	3.5511-02	2.0037-02	2.2617-02	2.5186-02	8.7044-03	1.1016-02
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.7 Q-INF = 2.675 P-INF = .0368 RE = .1808 TO = 1901.

P	6.2159-02	7.2432-02	4.2142+00	5.6975-02	6.0254-02	5.5249-02	4.2553+00	6.0827-02	3.9811+00
CP	9.4623-03	1.3302-02	1.5614+00	7.5246-03	8.7503-03	6.8796-03	1.5768+00	8.9646-03	1.4743+00
P/PO1	1.2523-02	1.4592-02	8.4899-01	1.1478-02	1.2139-02	1.1131-02	8.5727-01	1.2254-02	8.0204-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

B662

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
TUNNEL B CONTOUR

machio

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.7 Q-INF = 2.675 P-INF = .0368 RE = .1808 TO = 1901.

P	7.4550-02	3.6532+00	8.0036-02	3.4229+00	9.0280-02	2.8926+00	1.2826-01	1.3875+00	4.2075-01
CP	1.4094-02	1.3517+00	1.6145-02	1.2657+00	1.9974-02	1.0674+00	3.4169-02	5.0486-01	1.4350-01
P/PO1	1.5019-02	7.3598-01	1.6124-02	6.8958-01	1.8188-02	5.8274-01	2.5839-02	2.7953-01	8.4765-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1802.7 Q-INF = 2.676 P-INF = .0368 RE = .1809 TO = 1900.

P	6.9154-02	4.4712+00	3.4493+00	3.0387+00	6.9682-01	2.9246-01	5.3824-02	3.6540+00	9.5770-02
CP	1.2074-02	1.6573+00	1.2754+00	1.1219+00	2.4666-01	9.5535-02	6.3448-03	1.3519+00	2.2022-02
P/PO1	1.3930-02	9.0068-01	6.9484-01	6.1212-01	1.4037-01	5.8914-02	1.0842-02	7.3607-01	1.9292-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS
50 - INCH CONTI

mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	32.	301244	10.18	2	11.18	26.73	-5.00	64.99	180.0

VALVE POS 2 PO =1804.7 Q-INF = 2.681 P-INF = .0369 RE = .1826 TO = 1892.

P	7.1932-01	1.6495+00	3.8392+00	4.4223+00	4.5542+00	4.7199+00	4.7192+00	4.8615+00	4.4238+00
CP	2.5454-01	6.0150-01	1.4183+00	1.6358+00	1.6850+00	1.7468+00	1.7465+00	1.7996+00	1.6363+00
P/PO1	1.4462-01	3.3164-01	7.7189-01	8.8912-01	9.1564-01	9.4896-01	9.4882-01	9.7743-01	8.8942-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1800.4 Q-INF = 2.674 P-INF = .0368 RE = .1818 TO = 1894.

P	2.9430+00	1.3193+00	2.5391-01	1.9471-01	1.8276-01	1.7596-01	2.4571-01	1.2105-01	7.5334-02
CP	1.0869+00	4.7962-01	8.1187-02	5.9047-02	5.4578-02	5.2033-02	7.8119-02	3.1500-02	1.4402-02
P/PO1	5.9324-01	2.6594-01	5.1183-02	3.9250-02	3.6841-02	3.5469-02	4.9530-02	2.4402-02	1.5186-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1802.4 Q-INF = 2.678 P-INF = .0369 RE = .1825 TO = 1891.

P	5.5963-02	2.8337+00	3.4343+00	3.6660+00	3.2708+00	3.1536+00	2.7688+00	1.6515+00	6.2191-01
CP	7.1268-03	1.0444+00	1.2687+00	1.3552+00	1.2077+00	1.1639+00	1.0202+00	6.0296-01	2.1847-01
P/PO1	1.1265-02	5.7040-01	6.9129-01	7.3792-01	6.5837-01	6.3479-01	5.5733-01	3.3243-01	1.2518-01
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1803.4 Q-INF = 2.680 P-INF = .0369 RE = .1828 TO = 1890.

P	1.3071-01	1.1245-01	9.7243-02	3.7605+00	3.1210+00	2.5790+00	1.7372+00	1.4355+00	6.1209-01
CP	3.5009-02	2.8193-02	2.2518-02	1.3896+00	1.1509+00	9.4868-01	6.3454-01	5.2194-01	2.1465-01
P/PO1	2.6294-02	2.2620-02	1.9561-02	7.5645-01	6.2781-01	5.1879-01	3.4946-01	2.8876-01	1.2313-01
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1803.7 Q-INF = 2.679 P-INF = .0369 RE = .1823 TO = 1893.

P	8.1865-01	2.8533-01	3.5976-01	4.3322+00	3.5433+00	6.6659-02	6.9351-01	1.6747-01	3.4461-02
CP	2.9180-01	9.2728-02	1.2051-01	1.6033+00	1.3088+00	1.1109-02	2.4508-01	4.8739-02	-9.0692-04
P/PO1	1.6470-01	5.7404-02	7.2379-02	8.7159-01	7.1287-01	1.3411-02	1.3953-01	3.3694-02	6.9332-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1804.9 Q-INF = 2.681 P-INF = .0369 RE = .1826 TO = 1892.

P	3.5776-02	2.9213-02	6.0027-02	6.7770-02	3.3486+00	1.5674-01	2.0769-01	1.9349-01	5.1091-02
CP	-4.2889-04	-2.8766-03	8.6154-03	1.1503-02	1.2351+00	4.4685-02	6.3688-02	5.8389-02	5.2828-03
P/PO1	7.1919-03	5.8726-03	1.2067-02	1.3623-02	6.7316-01	3.1509-02	4.1752-02	3.8896-02	1.0271-02
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1805.7 Q-INF = 2.682 P-INF = .0369 RE = .1821 TO = 1895.

P	1.8368-01	1.5047-01	1.0765-01	2.3570-01	9.3683-02	5.3448-02	4.9222-02	3.7417-02	2.9252-02
CP	5.4724-02	4.2340-02	2.6372-02	7.4123-02	2.1164-02	6.1597-03	4.5839-03	1.8159-04	-2.8631-03
P/PO1	3.6919-02	3.0244-02	2.1637-02	4.7375-02	1.8830-02	1.0743-02	9.8936-03	7.5208-03	5.8797-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1805.7 Q-INF = 2.682 P-INF = .0369 RE = .1825 TO = 1893.

P	3.9973-02	1.5774+00	5.1823-02	1.7992-01	9.8087-02	1.0249-01	1.8868-01	4.4020-02	5.4697-02
CP	1.1318-03	5.7435-01	5.5498-03	5.3309-02	2.2799-02	2.4441-02	5.6576-02	2.6404-03	6.6214-03
P/PO1	8.0331-03	3.1700-01	1.0414-02	3.6157-02	1.9712-02	2.0597-02	3.7918-02	8.8467-03	1.0992-02
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1804.2 Q-INF = 2.680 P-INF = .0369 RE = .1821 TO = 1894.

P	5.8961-02	6.9231-02	4.3341+00	6.0573-02	5.9253-02	5.4448-02	4.0255+00	6.1827-02	3.6194+00
CP	8.2318-03	1.2065-02	1.6037+00	8.8335-03	8.3408-03	6.5479-03	1.4885+00	9.3017-03	1.3370+00
P/PO1	1.1860-02	1.3926-02	8.7182-01	1.2184-02	1.1919-02	1.0952-02	8.0974-01	1.2437-02	7.2806-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

B664

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1803.2 Q-INF = 2.678 P-INF = .0369 RE = .1817 TO = 1896.

P	6.4357-02	3.3440+00	8.0236-02	2.9592+00	8.1072-02	2.6165+00	1.1925-01	1.1127+00	3.7747-01
CP	1.0264-02	1.2352+00	1.6195-02	1.0914+00	1.6507-02	9.6345-01	3.0767-02	4.0180-01	1.2721-01
P/PO1	1.2955-02	6.7316-01	1.6152-02	5.9570-01	1.6320-02	5.2672-01	2.4006-02	2.2399-01	7.5987-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1802.7 Q-INF = 2.677 P-INF = .0369 RE = .1816 TO = 1896.

P	6.9354-02	4.3301+00	3.2184+00	2.9922+00	5.9333-01	2.7905-01	5.1223-02	3.3255+00	9.3967-02
CP	1.2138-02	1.6039+00	1.1886+00	1.1041+00	2.0789-01	9.0477-02	5.3643-03	1.2286+00	2.1333-02
P/PO1	1.3965-02	8.7192-01	6.4805-01	6.0251-01	1.1947-01	5.6190-02	1.0314-02	6.6963-01	1.8921-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS
TUNNEL NO. - [illegible]

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	33.	301244	10.18	2	11.18	-26.75	5.01	64.99	180.0

VALVE POS 2 PO =1801.9 Q-INF = 2.676 P-INF = .0369 RE = .1819 TO = 1894.

P	6.9833-01	1.5624+00	3.8092+00	4.3983+00	4.5467+00	4.7034+00	4.7017+00	4.8360+00	4.4613+00
CP	2.4717-01	5.7006-01	1.4096+00	1.6297+00	1.6852+00	1.7437+00	1.7429+00	1.7933+00	1.6533+00
P/PO1	1.4065-01	3.1469-01	7.6721-01	8.8584-01	9.1574-01	9.4731-01	9.4686-01	9.7406-01	8.9853-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1801.9 Q-INF = 2.676 P-INF = .0369 RE = .1819 TO = 1894.

P	3.0210+00	1.3718+00	2.6592-01	2.0491-01	1.9177-01	1.8456-01	2.5691-01	1.2526-01	7.9141-02
CP	1.1151+00	4.9883-01	8.5592-02	6.2795-02	5.7886-02	5.5193-02	8.2228-02	3.3032-02	1.5800-02
P/PO1	6.0845-01	2.7629-01	5.3558-02	4.1270-02	3.8624-02	3.7173-02	5.1744-02	2.5227-02	1.5939-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1802.2 Q-INF = 2.676 P-INF = .0368 RE = .1814 TO = 1897.

P	5.3165-02	2.0712+00	2.4325+00	2.6486+00	2.4171+00	2.3090+00	1.9655+00	1.0965+00	3.9530-01
CP	6.0975-03	7.6032-01	8.9534-01	9.7608-01	8.8959-01	8.4916-01	7.2079-01	3.9603-01	1.3397-01
P/PO1	1.0709-02	4.1723-01	4.9000-01	5.3352-01	4.8690-01	4.6511-01	3.9592-01	2.2088-01	7.9629-02
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1801.9 Q-INF = 2.676 P-INF = .0368 RE = .1816 TO = 1896.

P	9.0340-02	9.2841-02	9.1040-02	2.7746+00	1.9993+00	1.7854+00	1.1502+00	8.9220-01	3.1937-01
CP	1.9992-02	2.0927-02	2.0254-02	1.0232+00	7.3346-01	6.5350-01	4.1609-01	3.1968-01	1.0559-01
P/PO1	1.8199-02	1.8703-02	1.8340-02	5.5894-01	4.0275-01	3.5966-01	2.3169-01	1.7973-01	6.4336-02
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1801.9 Q-INF = 2.675 P-INF = .0368 RE = .1812 TO = 1898.

P	4.5730-01	2.8693-01	4.4800-01	3.4139+00	2.5729+00	4.5841-02	3.7937-01	1.0205-01	2.1638-02
CP	1.5718-01	9.3489-02	1.5370-01	1.2624+00	9.4804-01	3.3646-03	1.2805-01	2.4375-02	-5.6829-03
P/PO1	9.2139-02	5.7812-02	9.0266-02	6.8785-01	5.1840-01	9.2363-03	7.6438-02	2.0561-02	4.3599-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1801.9 Q-INF = 2.675 P-INF = .0368 RE = .1812 TO = 1898.

P	3.6975-02	2.8813-02	5.0823-02	6.3572-02	4.4860-01	7.3465-02	1.3066-01	1.2265-01	3.0654-02
CP	5.0444-05	-3.0009-03	5.2269-03	9.9929-03	1.5393-01	1.3691-02	3.5071-02	3.2080-02	-2.3125-03
P/PO1	7.4501-03	5.8054-03	1.0240-02	1.2809-02	9.0387-02	1.4802-02	2.6326-02	2.4713-02	6.1765-03
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1801.9 Q-INF = 2.676 P-INF = .0368 RE = .1816 TO = 1896.

P	1.1133-01	7.5634-02	4.7621-02	2.3510-01	7.9671-02	4.8443-02	4.5420-02	4.2419-02	3.6866-02
CP	2.7836-02	1.4496-02	4.0263-03	7.4094-02	1.6005-02	4.3335-03	3.2037-03	2.0819-03	6.4236-06
P/PO1	2.2426-02	1.5236-02	9.5931-03	4.7359-02	1.6049-02	9.7587-03	9.1498-03	8.5452-03	7.4265-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1802.4 Q-INF = 2.676 P-INF = .0369 RE = .1816 TO = 1896.

P	4.3371-02	9.4842-01	5.3824-02	1.7552-01	9.4684-02	1.1130-01	1.8448-01	4.3219-02	5.1692-02
CP	2.4333-03	3.4060-01	6.3389-03	5.1810-02	2.1606-02	2.7814-02	5.5158-02	2.3766-03	5.5423-03
P/PO1	8.7345-03	1.9100-01	1.0840-02	3.5348-02	1.9068-02	2.2415-02	3.7153-02	8.7039-03	1.0410-02
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.4 Q-INF = 2.676 P-INF = .0369 RE = .1816 TO = 1896.

P	5.6762-02	7.1232-02	4.2981+00	5.6975-02	5.8052-02	5.4248-02	2.8453+00	5.0222-02	2.5000+00
CP	7.4367-03	1.2843-02	1.5922+00	7.5162-03	7.9185-03	6.4974-03	1.0494+00	4.9932-03	9.2033-01
P/PO1	1.1431-02	1.4345-02	8.6560-01	1.1474-02	1.1691-02	1.0925-02	5.7302-01	1.0114-02	5.0348-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

B666

~~CONFIDENTIAL~~

PRELIMINARY UNCORRECTED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.9 Q-INF = 2.674 P-INF = .0368 RE = .1809 TO = 1900.

P	3.7975-02	2.4885+00	5.5825-02	1.9628+00	5.3448-02	1.2347+00	9.6643-02	6.2768-01	2.1699-01
CP	4.2708-04	9.1669-01	7.1014-03	7.2013-01	6.2125-03	4.4791-01	2.2364-02	2.2092-01	6.7361-02
P/PO1	7.6529-03	5.0150-01	1.1250-02	3.9555-01	1.0771-02	2.4884-01	1.9476-02	1.2649-01	4.3729-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1802.2 Q-INF = 2.675 P-INF = .0368 RE = .1811 TO = 1899.

P	4.1173-02	3.7102+00	2.3035+00	2.7206+00	4.0556-01	2.4862-01	6.1827-02	2.4090+00	9.3767-02
CP	1.6190-03	1.3732+00	8.4732-01	1.0032+00	1.3783-01	7.9166-02	9.3401-03	8.8674-01	2.1279-02
P/PO1	8.2954-03	7.4753-01	4.6411-01	5.4814-01	8.1712-02	5.0092-02	1.2457-02	4.8536-01	1.8892-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS FLOW TUNNEL

machio

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	34.	301244	10.18	2	13.39	-42.39	8.98	65.03	180.0

VALVE POS 2 PO =1801.9 Q-INF = 2.675 P-INF = .0368 RE = .1810 TO = 1899.

P	6.9734-01	1.5204+00	3.6803+00	4.2497+00	4.4688+00	4.5804+00	4.5931+00	4.7265+00	4.3712+00
CP	2.4694-01	5.5466-01	1.3622+00	1.5750+00	1.6570+00	1.6987+00	1.7034+00	1.7533+00	1.6205+00
P/PO1	1.4052-01	3.0637-01	7.4160-01	8.5635-01	9.0051-01	9.2299-01	9.2554-01	9.5242-01	8.8084-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1801.9 Q-INF = 2.674 P-INF = .0368 RE = .1809 TO = 1900.

P	2.9610+00	1.3538+00	2.6332-01	2.0411-01	1.9237-01	1.8536-01	2.9373-01	1.2806-01	8.0944-02
CP	1.0934+00	4.9243-01	8.4684-02	6.2546-02	5.8157-02	5.5537-02	9.6056-02	3.4109-02	1.6494-02
P/PO1	5.9672-01	2.7283-01	5.3066-02	4.1134-02	3.8768-02	3.7356-02	5.9195-02	2.5807-02	1.6312-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1801.7 Q-INF = 2.675 P-INF = .0368 RE = .1812 TO = 1898.

P	6.1759-02	1.8401+00	2.1596+00	2.1699+00	2.0922+00	1.9909+00	1.6892+00	8.5478-01	3.1576-01
CP	9.3184-03	6.7420-01	7.9365-01	7.9750-01	7.6844-01	7.3058-01	6.1778-01	3.0581-01	1.0428-01
P/PO1	1.2445-02	3.7081-01	4.3519-01	4.3726-01	4.2160-01	4.0120-01	3.4040-01	1.7225-01	6.3631-02
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1801.4 Q-INF = 2.674 P-INF = .0368 RE = .1812 TO = 1898.

P	7.4350-02	8.1636-02	8.5038-02	2.2959+00	1.6953+00	1.4628+00	8.9080-01	7.2112-01	2.4524-01
CP	1.4030-02	1.6754-02	1.8026-02	8.4475-01	6.2015-01	5.3321-01	3.1933-01	2.5588-01	7.7930-02
P/PO1	1.4985-02	1.6453-02	1.7139-02	4.6273-01	3.4168-01	2.9482-01	1.7953-01	1.4534-01	4.9426-02
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1801.9 Q-INF = 2.675 P-INF = .0368 RE = .1812 TO = 1898.

P	3.8554-01	3.4215-01	4.6701-01	3.0537+00	2.0188+00	3.9035-02	2.9693-01	8.3837-02	2.0436-02
CP	1.3035-01	1.1413-01	1.6081-01	1.1278+00	7.4090-01	8.2028-04	9.7229-02	1.7569-02	-6.1323-03
P/PO1	7.7682-02	6.8939-02	9.4096-02	6.1529-01	4.0676-01	7.8650-03	5.9828-02	1.6892-02	4.1177-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1801.7 Q-INF = 2.675 P-INF = .0368 RE = .1812 TO = 1898.

P	3.7975-02	3.2815-02	4.9022-02	5.3976-02	3.8654-01	6.1054-02	1.0104-01	9.7443-02	2.4644-02
CP	4.2602-04	-1.5032-03	4.5563-03	6.4086-03	1.3075-01	9.0550-03	2.4007-02	2.2660-02	-4.5581-03
P/PO1	7.6525-03	6.6127-03	9.8787-03	1.0877-02	7.7895-02	1.2303-02	2.0362-02	1.9636-02	4.9661-03
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1801.7 Q-INF = 2.674 P-INF = .0368 RE = .1810 TO = 1899.

P	1.0173-01	6.5229-02	3.7817-02	2.7608-01	8.0071-02	5.8052-02	5.0022-02	4.7621-02	4.1273-02
CP	2.4268-02	1.0618-02	3.6852-04	8.9459-02	1.6168-02	7.9347-03	4.9324-03	4.0346-03	1.6610-03
P/PO1	2.0503-02	1.3146-02	7.6214-03	5.5639-02	1.6137-02	1.1699-02	1.0081-02	9.5974-03	8.3181-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1802.7 Q-INF = 2.676 P-INF = .0369 RE = .1813 TO = 1898.

P	4.6569-02	7.1752-01	5.4224-02	1.8532-01	9.8688-02	1.0850-01	1.2466-01	4.0218-02	5.1091-02
CP	3.6295-03	2.5434-01	6.4900-03	5.5475-02	2.3105-02	2.6770-02	3.2808-02	1.2563-03	5.3191-03
P/PO1	9.3791-03	1.4451-01	1.0921-02	3.7323-02	1.9876-02	2.1851-02	2.5106-02	8.1000-03	1.0290-02
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1802.4 Q-INF = 2.676 P-INF = .0369 RE = .1813 TO = 1898.

P	5.8961-02	6.6430-02	4.1572+00	5.8774-02	5.9653-02	5.5449-02	2.4565+00	3.2614-02	2.0003+00
CP	8.2630-03	1.1054-02	1.5398+00	8.1931-03	8.5217-03	6.9507-03	9.0426-01	-1.5832-03	7.3378-01
P/PO1	1.1876-02	1.3381-02	8.3738-01	1.1839-02	1.2016-02	1.1169-02	4.9480-01	6.5695-03	4.0292-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

B668

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.9 Q-INF = 2.677 P-INF = .0369 RE = .1813 TO = 1898.

P	3.1779-02	1.9377+00	5.1023-02	1.6312+00	3.7834-02	9.9108-01	8.0836-02	4.9462-01	1.7511-01
CP	-1.8988-03	7.1017-01	5.2910-03	5.9565-01	3.6338-04	3.5651-01	1.6430-02	1.7103-01	5.1652-02
P/P01	6.3994-03	3.9019-01	1.0275-02	3.2847-01	7.6187-03	1.9958-01	1.6278-02	9.9603-02	3.5263-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1802.4 Q-INF = 2.675 P-INF = .0368 RE = .1807 TO = 1901.

P	3.5576-02	3.4686+00	2.0576+00	2.5435+00	3.6332-01	2.3181-01	5.7826-02	2.0280+00	9.4568-02
CP	-4.7198-04	1.2829+00	7.5544-01	9.3710-01	1.2205-01	7.2887-02	7.8458-03	7.4438-01	2.1582-02
P/P01	7.1683-03	6.9889-01	4.1458-01	5.1749-01	7.3206-02	4.6707-02	1.1651-02	4.0862-01	1.9055-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] DEVELOPMENT CENTER
[illegible] GAS DYNAMICS [illegible]
[illegible] CONTINUOUS [illegible] machio

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	35.	301244	10.18	2	7.07	-45.13	5.01	70.00	180.0

VALVE POS 2 PO =1803.2 Q-INF = 2.675 P-INF = .0368 RE = .1803 TO = 1904.

P	5.1626-01	1.2923+00	3.5603+00	4.1717+00	4.3595+00	4.5339+00	4.5916+00	4.7835+00	4.6639+00
CP	1.7921-01	4.6929-01	1.3171+00	1.5456+00	1.6158+00	1.6810+00	1.7026+00	1.7743+00	1.7296+00
P/PO1	1.0401-01	2.6035-01	7.1727-01	8.4045-01	8.7829-01	9.1342-01	9.2505-01	9.6371-01	9.3961-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1804.4 Q-INF = 2.676 P-INF = .0369 RE = .1797 TO = 1908.

P	3.5640+00	1.7906+00	3.8837-01	3.0846-01	2.8706-01	2.7224-01	2.3210-01	1.7168-01	1.0098-01
CP	1.3181+00	6.5537-01	1.3136-01	1.0150-01	9.3501-02	8.7966-02	7.2966-02	5.0384-02	2.3965-02
P/PO1	7.1780-01	3.6063-01	7.8220-02	6.2126-02	5.7814-02	5.4831-02	4.6746-02	3.4576-02	2.0338-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1798.4 Q-INF = 2.672 P-INF = .0368 RE = .1824 TO = 1889.

P	6.9554-02	1.8776+00	2.2855+00	2.4985+00	2.2764+00	2.2294+00	1.9835+00	1.2735+00	5.3715-01
CP	1.2255-02	6.8884-01	8.4149-01	9.2118-01	8.3805-01	8.2050-01	7.2846-01	4.6278-01	1.8723-01
P/PO1	1.4029-02	3.7873-01	4.6101-01	5.0396-01	4.5916-01	4.4969-01	4.0008-01	2.5687-01	1.0835-01
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1800.7 Q-INF = 2.676 P-INF = .0369 RE = .1827 TO = 1889.

P	1.3711-01	1.4126-01	1.1885-01	2.6170+00	1.8241+00	1.6458+00	1.0435+00	8.2177-01	3.4642-01
CP	3.7469-02	3.9022-02	3.0647-02	9.6429+01	6.6794-01	6.0132-01	3.7623-01	2.9334-01	1.1569-01
P/PO1	2.7620-02	2.8457-02	2.3943-02	5.2720-01	3.6746-01	3.3155-01	2.1022-01	1.6554-01	6.9785-02
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1814.2 Q-INF = 2.696 P-INF = .0371 RE = .1843 TO = 1888.

P	3.7395-01	2.2050-01	3.4095-01	3.2068+00	2.5414+00	4.0236-02	3.2935-01	9.1241-02	2.0837-02
CP	1.2491-01	6.8002-02	1.1267-01	1.1755+00	9.2873-01	1.1506-03	1.0837-01	2.0066-02	-6.0435-03
P/PO1	7.4753-02	4.4078-02	6.8157-02	6.4104-01	5.0804-01	8.0432-03	6.5837-02	1.8239-02	4.1653-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1802.4 Q-INF = 2.678 P-INF = .0369 RE = .1829 TO = 1889.

P	3.5177-02	4.7221-02	6.0827-02	5.5775-02	4.5140-01	8.1673-02	1.1945-01	1.0405-01	2.6247-02
CP	-6.3840-04	3.8585-03	8.9384-03	7.0523-03	1.5476-01	1.6721-02	3.0827-02	2.5075-02	-3.9725-03
P/PO1	7.0793-03	9.5032-03	1.2241-02	1.1225-02	9.0845-02	1.6437-02	2.4040-02	2.0939-02	5.2821-03
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1801.9 Q-INF = 2.677 P-INF = .0369 RE = .1823 TO = 1892.

P	8.0346-02	6.3228-02	4.7821-02	1.7932-01	6.6859-02	4.2438-02	4.6421-02	4.8622-02	4.1674-02
CP	1.6244-02	9.8491-03	4.0934-03	5.3219-02	1.1206-02	2.0822-03	3.5701-03	4.3924-03	1.7969-03
P/PO1	1.6179-02	1.2732-02	9.6296-03	3.6109-02	1.3463-02	8.5456-03	9.3476-03	9.7908-03	8.3918-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1804.9 Q-INF = 2.682 P-INF = .0369 RE = .1828 TO = 1891.

P	4.2971-02	8.6919-01	5.1423-02	1.2434-01	7.7869-02	8.8879-02	8.9240-02	5.1223-02	5.2093-02
CP	2.2529-03	3.1036-01	5.4045-03	3.2598-02	1.5267-02	1.9372-02	1.9507-02	5.3299-03	5.6543-03
P/PO1	8.6375-03	1.7471-01	1.0336-02	2.4994-02	1.5652-02	1.7865-02	1.7938-02	1.0296-02	1.0471-02
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1803.4 Q-INF = 2.680 P-INF = .0369 RE = .1828 TO = 1890.

P	5.6762-02	7.2032-02	4.0882+00	6.0373-02	5.8452-02	4.9244-02	2.5826+00	3.4415-02	2.4835+00
CP	7.4111-03	1.3110-02	1.5119+00	8.7587-03	8.0417-03	4.6054-03	9.5002-01	-9.2844-04	9.1304-01
P/PO1	1.1418-02	1.4490-02	8.2236-01	1.2144-02	1.1758-02	9.9057-03	5.1950-01	6.9229-03	4.9957-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

~~CONFIDENTIAL~~

B670

PRELIMINARY UNCHECKED DATA

[illegible] TPB
[illegible] GAS DYNAMICS
50 - [illegible] CONTINUOUS FLOW [illegible] mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.2 Q-INF = 2.677 P-INF = .0369 RE = .1821 TO = 1893.

P	3.0180-02	2.2904+00	4.6821-02	1.4916+00	5.4048-02	9.9689-01	9.3642-02	5.7506-01	1.7050-01
CP	-2.4975-03	8.4185-01	3.7191-03	5.4345-01	6.4189-03	9.5864-01	2.1210-02	2.0105-01	4.9923-02
P/PO1	6.0770-03	4.6119-01	9.4278-03	3.0035-01	1.0883-02	2.0073-01	1.8856-02	1.1579-01	3.4332-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1802.4 Q-INF = 2.678 P-INF = .0369 RE = .1825 TO = 1891.

P	3.3977-02	3.5151+00	2.1716+00	3.2383+00	3.1288-01	3.5732-01	6.0027-02	2.1510+00	1.2622-01
CP	-1.0834-03	1.2989+00	7.9717-01	1.1955+00	1.0307-01	1.1966-01	8.6444-03	7.8950-01	3.3365-02
P/PO1	6.8393-03	7.0756-01	4.3711-01	6.5184-01	6.2979-02	7.1925-02	1.2083-02	4.3298-01	2.5408-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

B671,

PRELIMINARY UNCHECKED DATA

ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
AO - ARO CONTROLLED RESEARCH

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
2.	36.	301244	10.18	2	10.29	-61.17	9.01	70.00	180.0

VALVE POS 2 PO =1802.7 Q-INF = 2.677 P-INF = .0369 RE = .1820 TO = 1894.

P	5.1206-01	1.3313+00	3.4163+00	4.0816+00	4.2727+00	4.4844+00	4.5015+00	4.7085+00	4.5828+00
CP	1.7749-01	4.8348-01	1.2622+00	1.5107+00	1.5821+00	1.6612+00	1.6676+00	1.7449+00	1.6979+00
P/PO1	1.0309-01	2.6802-01	6.8778-01	8.2172-01	8.6018-01	9.0281-01	9.0625-01	9.4792-01	9.2262-01
S/R	.0000+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00

VALVE POS 3 PO =1802.9 Q-INF = 2.678 P-INF = .0369 RE = .1820 TO = 1894.

P	3.4770+00	1.7440+00	3.7597-01	3.0067-01	2.8125-01	2.6824-01	3.2815-01	1.6787-01	9.9978-02
CP	1.2847+00	6.3755-01	1.2663-01	9.8513-02	9.1262-02	8.6403-02	1.0878-01	4.8922-02	2.3565-02
P/PO1	6.9290-01	3.5106-01	7.5680-02	6.0522-02	5.6614-02	5.3995-02	6.6054-02	3.3792-02	2.0125-02
S/R	1.7970+00	1.8540+00	1.9180+00	1.9790+00	2.0340+00	2.0850+00	2.1430+00	2.3540+00	2.6260+00

VALVE POS 4 PO =1803.2 Q-INF = 2.678 P-INF = .0369 RE = .1817 TO = 1896.

P	6.5157-02	1.6510+00	2.0186+00	-2.4529+00	2.0068+00	1.9279+00	1.6892+00	1.0092+00	4.3077-01
CP	1.0563-02	6.0284-01	7.4014-01	-9.2989-01	7.3573-01	7.0626-01	6.1711-01	3.6316-01	1.4711-01
P/PO1	1.3116-02	3.3235-01	4.0635-01	-4.9378-01	4.0398-01	3.8809-01	3.4004-01	2.0317-01	8.6715-02
S/R	2.8800+00	1.1800-01	2.8900-01	4.9700-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 5 PO =1803.4 Q-INF = 2.676 P-INF = .0369 RE = .1809 TO = 1901.

P	1.1272-01	1.2365-01	1.0905-01	-2.4529+00	1.5306+00	1.3488+00	8.0876-01	6.6850-01	2.5986-01
CP	2.8346-02	3.2429-02	2.6972-02	-9.3025-01	5.5809-01	4.9017-01	2.8940-01	2.3600-01	8.3320-02
P/PO1	2.2700-02	2.4901-02	2.1960-02	-4.9396-01	3.0822-01	2.7161-01	1.6287-01	1.3462-01	5.2330-02
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1803.7 Q-INF = 2.677 P-INF = .0369 RE = .1810 TO = 1900.

P	3.0859-01	3.7217-01	3.5736-01	2.7596+00	1.9858+00	3.7433-02	2.6152-01	7.6034-02	1.8633-02
CP	1.0150-01	1.2525-01	1.1971-01	1.0170+00	7.2801-01	2.1094-04	8.3914-02	1.4630-02	-6.8116-03
P/PO1	6.2129-02	7.4927-02	7.1946-02	5.5559-01	3.9980-01	7.5364-03	5.2651-02	1.5308-02	3.7514-03
S/R	1.1800-01	2.0850+00	3.8400-01	4.9700-01	9.3600-01	4.9700-01	1.7420+00	1.7970+00	1.8540+00

VALVE POS 7 PO =1803.4 Q-INF = 2.676 P-INF = .0369 RE = .1808 TO = 1901.

P	3.0979-02	4.4820-02	5.5825-02	4.9178-02	1.9499+00	5.7051-02	9.2441-02	8.2036-02	2.3842-02
CP	-2.1970-03	2.9743-03	7.0860-03	4.6026-03	7.1476-01	7.5441-03	2.0767-02	1.6879-02	-4.8636-03
P/PO1	6.2385-03	9.0257-03	1.1242-02	9.9033-03	3.9266-01	1.1489-02	1.8615-02	1.6520-02	4.8013-03
S/R	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 8 PO =1804.2 Q-INF = 2.676 P-INF = .0369 RE = .1802 TO = 1905.

P	7.4550-02	4.7621-02	3.0213-02	2.9667-01	6.4257-02	4.6842-02	5.1823-02	5.2623-02	4.7484-02
CP	1.4083-02	4.0211-03	-2.4830-03	9.7073-02	1.0237-02	3.7299-03	5.5911-03	5.8901-03	3.9700-03
P/PO1	1.5012-02	9.5896-03	6.0841-03	5.9741-02	1.2940-02	9.4326-03	1.0436-02	1.0597-02	9.5620-03
S/R	1.1800-01	2.8900-01	4.9700-01	1.0460+00	1.1550+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 9 PO =1804.4 Q-INF = 2.677 P-INF = .0369 RE = .1804 TO = 1904.

P	4.6769-02	6.6790-01	5.3024-02	1.3414-01	8.3474-02	6.1054-02	9.0040-02	4.4420-02	5.3295-02
CP	3.6983-03	2.3571-01	6.0347-03	3.6335-02	1.7409-02	9.0345-03	1.9862-02	2.8208-03	6.1360-03
P/PO1	9.4156-03	1.3446-01	1.0675-02	2.7006-02	1.6805-02	1.2292-02	1.8127-02	8.9427-03	1.0729-02
S/R	1.9180+00	2.8900-01	2.3540+00	6.4000-02	1.1800-01	2.8900-01	4.9700-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1804.4 Q-INF = 2.677 P-INF = .0369 RE = .1804 TO = 1904.

P	5.9760-02	6.8030-02	3.9742+00	6.3572-02	6.2856-02	5.1846-02	2.1426+00	3.1214-02	1.9913+00
CP	8.5511-03	1.1640-02	1.4708+00	9.9749-03	9.7075-03	5.5949-03	7.8659-01	-2.1121-03	7.3006-01
P/PO1	1.2031-02	1.3696-02	8.0010-01	1.2798-02	1.2654-02	1.0438-02	4.3136-01	6.2841-03	4.0089-01
S/R	1.7970+00	1.8540+00	2.0800-01	2.0850+00	2.3540+00	2.6260+00	4.9700-01	4.9700-01	7.1700-01

~~CONFIDENTIAL~~

B672

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL, mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.9 Q-INF = 2.676 P-INF = .0369 RE = .1811 TO = 1899.

P	2.7382-02	1.8791+00	4.1418-02	1.3235+00	4.1036-02	8.2814-01	7.4233-02	4.5680-01	1.4025-01
CP	-3.5405-03	6.8837-01	1.7044-03	4.8077-01	1.5617-03	2.9567-01	1.3966-02	1.5691-01	3.8633-02
P/P01	5.5145-03	3.7844-01	8.3414-03	2.6655-01	8.2645-03	1.6678-01	1.4950-02	9.1997-02	2.8245-02
S/R	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00	1.5890+00

VALVE POS 12 PO =1802.9 Q-INF = 2.677 P-INF = .0369 RE = .1815 TO = 1897.

P	3.0779-02	3.3065+00	1.9226+00	3.0492+00	2.8125-01	3.3530-01	6.1027-02	1.8960+00	1.2663-01
CP	-2.2734-03	1.2214+00	7.0447-01	1.1253+00	9.1296-02	1.1149-01	9.0263-03	6.9453-01	3.3532-02
P/P01	6.1975-03	6.6577-01	3.8712-01	6.1397-01	5.6631-02	6.7513-02	1.2288-02	3.8177-01	2.5496-02
S/R	9.3600-01	4.9700-01	2.0800-01	1.7970+00	6.4000-02	1.9180+00	1.7970+00	1.0460+00	2.4900+00

~~CONFIDENTIAL~~

D67

B673

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	37.	301244	10.18	1	14.98	.02	-.00	.02	180.0

VALVE POS 2 PO =1805.4 Q-INF = 2.681 P-INF = .0369 RE = .1819 TO = 1896.

P	4.9690+00	3.6546+00	1.7397+00	1.4066+00	1.4991+00	1.6255+00	1.5877+00	1.6545+00	1.6553+00
CP	1.8397+00	1.3494+00	6.3512-01	5.1090-01	5.4540-01	5.9253-01	5.7845-01	6.0336-01	6.0404-01
P/PO1	9.9900-01	7.3475-01	3.4975-01	2.8280-01	3.0139-01	3.2680-01	3.1921-01	3.3263-01	3.3300-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1806.2 Q-INF = 2.683 P-INF = .0369 RE = .1825 TO = 1893.

P	1.6463+00	1.3008+00	3.0500-01	5.1041-02	2.2034-02	2.0160-02	2.3805-02	2.3426-02	1.8634+00
CP	5.9986-01	4.7108-01	9.9910-02	5.2526-03	-5.5589-03	-6.2576-03	-4.8988-03	-5.0401-03	6.8075-01
P/PO1	3.3075-01	2.6134-01	6.1276-02	1.0254-02	4.4267-03	4.0501-03	4.7825-03	4.7063-03	3.7435-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1805.2 Q-INF = 2.681 P-INF = .0369 RE = .1824 TO = 1893.

P	1.4034+00	1.4811+00	1.6857+00	1.6168+00	4.4069-03	1.6360+00	1.6133+00	1.3995+00	2.9573-01
CP	5.0962-01	5.3857-01	6.1487-01	5.8919-01	-1.2128-02	5.8515-01	5.8787-01	5.0815-01	9.6516-02
P/PO1	2.8211-01	2.9772-01	3.3884-01	3.2500-01	8.8584-04	3.2282-01	3.2429-01	2.8132-01	5.9446-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1804.4 Q-INF = 2.680 P-INF = .0369 RE = .1824 TO = 1893.

P	3.2414-02	1.6014-02	2.1014-02	1.8165-01	1.8181+00	1.6015+00	1.6463+00	1.6470+00	1.5918+00
CP	-1.6782-03	-7.7969-03	-5.9316-03	5.3999-02	6.6454-01	5.8372-01	6.0045-01	6.0071-01	5.8012-01
P/PO1	6.5185-03	3.2205-03	4.2259-03	3.6529-02	3.6562-01	3.2205-01	3.3107-01	3.3121-01	3.2011-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1804.2 Q-INF = 2.679 P-INF = .0369 RE = .1818 TO = 1896.

P	1.4244+00	2.8025-01	3.6353+00	1.7759+00	1.4572+00	1.5895+00	1.5204+01	1.0065+00	7.5824-01
CP	5.1792-01	9.0836-02	1.3431+00	6.4912-01	5.3014-01	5.7352-01	5.6615+00	3.6192-01	2.6925-01
P/PO1	2.8658-01	5.6383-02	7.3137-01	3.5729-01	2.9317-01	3.1978-01	3.0589+00	2.0250-01	1.5255-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1803.9 Q-INF = 2.678 P-INF = .0369 RE = .1816 TO = 1897.

P	8.3817-01	1.0860+00	1.1218+00	1.1709+00	1.4272+00	1.4153+00	1.0665+00	1.5435+00	1.5153+00
CP	2.9917-01	3.9170-01	4.0505-01	4.2341-01	5.1909-01	5.1466-01	3.8441-01	5.6251-01	5.5198-01
P/PO1	1.6867-01	2.1855-01	2.2574-01	2.3564-01	2.8721-01	2.8482-01	2.1462-01	3.1061-01	3.0493-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1803.2 Q-INF = 2.676 P-INF = .0369 RE = .1808 TO = 1901.

P	1.4994+00	1.4661+00	1.6227+00	2.2518-01	1.7427-02	1.7365-02	2.1405-02	1.9245+00	1.6458+00
CP	5.4652-01	5.3406-01	5.9259-01	7.0373-02	-7.2597-03	-7.2828-03	-5.7733-03	7.0537-01	6.0124-01
P/PO1	3.0198-01	2.9527-01	3.2681-01	4.5352-02	3.5099-03	3.4974-03	4.3110-03	3.8760-01	3.3147-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1803.2 Q-INF = 2.676 P-INF = .0369 RE = .1806 TO = 1902.

P	1.7003+00	1.7049+00	1.6707+00	1.4637+00	3.8119-01	1.8791+00	1.4600+00	1.5750+00	1.7559+00
CP	6.2167-01	6.2338-01	6.1059-01	5.3323-01	1.2869-01	6.8849-01	5.3187-01	5.7483-01	6.4515-01
P/PO1	3.4248-01	3.4340-01	3.3651-01	2.9482-01	7.6781-02	3.7850-01	2.9409-01	3.1724-01	3.5568-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1800.2 Q-INF = 2.674 P-INF = .0368 RE = .1821 TO = 1892.

P	1.7213+00	1.7409+00	1.7217+00	1.7099+00	1.4811+00	3.2196-01	4.2810-02	2.6229-02	2.3026-02
CP	6.2991-01	6.3725-01	6.3004-01	6.2563-01	5.4010-01	1.0662-01	2.2366-03	-3.9637-03	-5.1616-03
P/PO1	3.4695-01	3.5091-01	3.4702-01	3.4465-01	2.9854-01	6.4895-02	8.6288-03	5.2868-03	4.6411-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B674

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTOUR [illegible] MODEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1804.2 Q-INF = 2.680 P-INF = .0369 RE = .1825 TO = 1892.

P	2.9413-02	3.7042+00	1.8416+00	1.4712+00	1.6144+00	1.7380+00	1.7274+00	1.7565+00	1.7514+00
CP	-2.7976-03	1.3683+00	6.7335-01	5.3513-01	5.8857-01	6.3470-01	6.3074-01	6.4159-01	6.4340-01
P/PO1	5.9152-03	7.4494-01	3.7037-01	2.9587-01	3.2467-01	3.4953-01	3.4740-01	3.5325-01	3.5422-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1799.4 Q-INF = 2.673 P-INF = .0368 RE = .1818 TO = 1893.

P	1.7483+00	1.4600+00	3.1461-01	2.0566-01	1.7828-02	1.6367-02	1.9204-02	3.0734-01	1.4016-03
CP	6.4035-01	5.3250-01	1.0394-01	6.3177-02	-7.1019-03	-7.6483-03	-6.5868-03	1.0122-01	-1.3248-02
P/PO1	3.5258-01	2.9445-01	6.3447-02	4.1476-02	3.5953-03	3.3008-03	3.8729-03	6.1981-02	2.8265-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	38.	301244	10.18	1	14.00	.02	-.00	1.00	180.0

VALVE POS 2 PO =1801.9 Q-INF = 2.677 P-INF = .0369 RE = .1825 TO = 1891.

P	4.9660+00	3.6907+00	1.8626+00	1.5748+00	1.6294+00	1.7380+00	1.7019+00	1.7700+00	1.7734+00
CP	1.8412+00	1.3648+00	6.8199-01	5.7446-01	5.9487-01	6.3546-01	6.2195-01	6.4739-01	6.4865-01
P/PO1	9.9988-01	7.4309-01	3.7503-01	3.1707-01	3.2807-01	3.4995-01	3.4266-01	3.5638-01	3.5705-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1801.7 Q-INF = 2.675 P-INF = .0368 RE = .1815 TO = 1896.

P	1.7693+00	1.4045+00	3.4423-01	4.0532-02	2.2034-02	2.1756-02	2.4605-02	2.3426-02	1.9339+00
CP	6.4758-01	5.1121-01	1.1490-01	1.3784-03	-5.5357-03	-5.6395-03	-4.5746-03	-5.0154-03	7.0910-01
P/PO1	3.5646-01	2.8236-01	6.9353-02	8.1562-03	4.4393-03	4.3833-03	4.9573-03	4.7197-03	3.8963-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1804.4 Q-INF = 2.678 P-INF = .0369 RE = .1809 TO = 1901.

P	1.4724+00	1.5697+00	1.7606+00	1.7039+00	4.4069-03	1.6960+00	1.7019+00	1.4595+00	3.2216-01
CP	5.3605-01	5.7238-01	6.4368-01	6.2247-01	-1.2126-02	6.1754-01	6.2173-01	5.3123-01	1.0653-01
P/PO1	2.9634-01	3.1592-01	3.5435-01	3.4292-01	8.8692-04	3.4134-01	3.4252-01	2.9374-01	6.4938-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1803.7 Q-INF = 2.679 P-INF = .0369 RE = .1821 TO = 1894.

P	3.9818-02	2.1219-02	2.8219-02	2.9174-02	1.8795+00	1.6510+00	1.6744+00	1.6950+00	1.6743+00
CP	1.0918-03	-5.8510-03	-3.2380-03	-2.8914-03	6.8782-01	6.0253-01	6.1372-01	6.1896-01	6.1124-01
P/PO1	8.0115-03	4.2693-03	5.6778-03	5.8766-03	3.7816-01	3.3219-01	3.4332-01	3.4104-01	3.3588-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1803.7 Q-INF = 2.681 P-INF = .0369 RE = .1832 TO = 1888.

P	1.5114+00	2.6383-01	3.6233+00	1.7759+00	1.4512+00	1.6000+00	1.5212+01	1.1025+00	7.2961-01
CP	5.5005-01	8.4652-02	1.3379+00	6.4973-01	5.2759-01	5.8309-01	5.6610+00	3.9752-01	2.5641-01
P/PO1	3.0392-01	5.3053-02	7.2859-01	3.5711-01	2.9181-01	3.2173-01	3.0589+00	2.2170-01	1.4671-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1804.7 Q-INF = 2.682 P-INF = .0369 RE = .1835 TO = 1887.

P	8.8179-01	1.0557+00	1.1369+00	1.1559+00	1.4751+00	1.4003+00	9.6585-01	1.6710+00	1.4868+00
CP	3.1496-01	3.7981-01	4.1002-01	4.1716-01	5.3616-01	5.0827-01	3.4630-01	6.0917-01	5.4050-01
P/PO1	1.7720-01	2.1215-01	2.2844-01	2.3229-01	2.9643-01	2.8140-01	1.9409-01	3.3579-01	2.9877-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1804.9 Q-INF = 2.683 P-INF = .0370 RE = .1838 TO = 1885.

P	1.5444+00	1.4691+00	1.7067+00	4.8157-02	2.3036-02	2.1956-02	2.6606-02	1.8585+00	1.5918+00
CP	5.6177-01	5.3370-01	6.2224-01	4.1749-03	-5.1870-03	-5.5894-03	-3.8565-03	6.7883-01	5.7344-01
P/PO1	3.1024-01	2.9511-01	3.4284-01	9.6740-03	4.6275-03	4.4106-03	5.3447-03	3.7334-01	3.1977-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1805.4 Q-INF = 2.684 P-INF = .0370 RE = .1837 TO = 1886.

P	1.6523+00	1.6568+00	1.6227+00	1.4201+00	3.6176-01	1.7681+00	1.3584+00	1.4970+00	1.6968+00
CP	6.0189-01	6.0356-01	5.9084-01	5.1537-01	1.2102-01	6.4501-01	4.9510-01	5.4401-01	6.1847-01
P/PO1	3.3187-01	3.3277-01	3.2591-01	2.8523-01	7.2659-02	3.5511-01	2.7484-01	3.0067-01	3.4080-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1805.9 Q-INF = 2.685 P-INF = .0370 RE = .1841 TO = 1884.

P	1.6134+00	1.6538+00	1.6377+00	1.6788+00	1.4092+00	3.1078-01	4.3810-02	2.5628-02	2.2225-02
CP	5.8707-01	6.0214-01	5.9612-01	5.9282-01	5.1105-01	1.0197-01	2.5438-03	-4.2271-03	-5.4948-03
P/PO1	3.2388-01	3.3200-01	3.2876-01	3.2698-01	2.8291-01	6.2389-02	8.7948-03	5.1449-03	4.4616-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B676

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HG WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1807.4 Q-INF = 2.687 P-INF = .0370 RE = .1843 TO = 1884.

P	2.8413-02	3.6050+00	1.7576+00	1.3691+00	1.4961+00	1.6390+00	1.6268+00	1.6560+00	1.6523+00
CP	-3.1991-03	1.3277+00	6.4025-01	4.9567-01	5.4293-01	5.9610-01	5.9155-01	6.0243-01	6.0478-01
P/PO1	5.6990-03	7.2310-01	3.5755-01	2.7461-01	3.0009-01	3.2875-01	3.2630-01	3.3216-01	3.3343-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1803.4 Q-INF = 2.680 P-INF = .0369 RE = .1831 TO = 1888.

P	1.6553+00	1.3714+00	3.0060-01	3.6767-02	2.3036-02	2.7146-02	2.6536-02	3.5099-01	1.4016-03
CP	6.0384-01	4.9791-01	9.8383-02	-5.3814-05	-5.1771-03	-3.6437-03	-3.8451-03	1.1718-01	-1.3249-02
P/PO1	3.3291-01	2.7581-01	6.0455-02	7.3944-03	4.6328-03	5.4594-03	5.3508-03	7.0589-02	2.8187-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B677

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS RG WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	39.	301244	10.18	1	11.95	.02	-.00	3.05	180.0

VALVE POS 2 PO =1802.2 Q-INF = 2.677 P-INF = .0369 RE = .1825 TO = 1871.

P	4.9540+00	3.8589+00	2.0426+00	1.7669+00	1.8495+00	1.9392+00	1.8701+00	1.9410+00	1.9539+00
CP	1.8365+00	1.4275+00	7.4911-01	6.4615-01	6.7701-01	7.1048-01	6.8469-01	7.1117-01	7.1972-01
P/PO1	9.9732-01	7.7686-01	4.1171-01	3.5571-01	3.7234-01	3.9038-01	3.7548-01	3.9075-01	3.9536-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1802.4 Q-INF = 2.676 P-INF = .0368 RE = .1811 TO = 1899.

P	1.9552+00	1.5607+00	3.8266-01	1.3988-03	2.5840-02	2.1158-02	2.8006-02	2.8231-02	2.0554+00
CP	7.1700-01	5.6954-01	1.2925-01	-1.3249-02	-4.1139-03	-5.8641-03	-3.3044-03	-3.2202-03	7.5445-01
P/PO1	3.9387-01	3.1440-01	7.7085-02	2.8178-04	5.2054-03	4.2622-03	5.6418-03	5.6871-03	4.1405-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1801.4 Q-INF = 2.674 P-INF = .0368 RE = .1808 TO = 1900.

P	1.6044+00	1.7229+00	1.8836+00	1.8870+00	3.6056-03	1.8281+00	1.8311+00	1.5750+00	3.3878-01
CP	5.8627-01	6.3061-01	6.9072-01	6.9198-01	-1.2423-02	6.6995-01	6.7106-01	5.7529-01	1.1293-01
P/PO1	3.2341-01	3.4731-01	3.7970-01	3.8039-01	7.2682-04	3.6851-01	3.6911-01	3.1749-01	6.8291-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1801.2 Q-INF = 2.677 P-INF = .0369 RE = .1829 TO = 1888.

P	3.9418-02	1.9617-02	2.5817-02	2.5977-02	1.9873+00	1.7305+00	1.7394+00	1.7415+00	1.7373+00
CP	9.5352-04	-6.4433-03	-4.1272-03	-4.0676-03	7.2864-01	6.3272-01	6.3504-01	6.3681-01	6.3526-01
P/PO1	7.9375-03	3.9504-03	5.1988-03	5.2310-03	4.0019-01	3.4848-01	3.5027-01	3.5069-01	3.4985-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1801.4 Q-INF = 2.677 P-INF = .0369 RE = .1829 TO = 1898.

P	1.5684+00	2.3741-01	3.6083+00	1.7804+00	1.4542+00	1.5970+00	1.5215+01	1.2750+00	6.5533-01
CP	5.7205-01	7.4907-02	1.3340+00	6.5126-01	5.2940-01	5.8273-01	5.6593+00	4.6247-01	2.3138-01
P/PO1	3.1578-01	4.7801-02	7.2650-01	3.5847-01	2.9279-01	3.2153-01	3.0634+00	2.5671-01	1.3215-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1802.2 Q-INF = 2.679 P-INF = .0369 RE = .1832 TO = 1887.

P	9.8684-01	9.5725-01	1.1818+00	1.1049+00	1.5410+00	1.3313+00	9.5233-01	1.5555+00	1.4418+00
CP	3.5464-01	3.4359-01	4.2741-01	3.9871-01	5.6154-01	4.8324-01	3.4176-01	5.6694-01	5.2448-01
P/PO1	1.9859-01	1.9263-01	2.3781-01	2.2234-01	3.1011-01	2.6791-01	1.9154-01	3.1302-01	2.9014-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1802.4 Q-INF = 2.679 P-INF = .0369 RE = .1834 TO = 1866.

P	1.4394+00	1.4090+00	1.8416+00	4.7957-02	2.1634-02	2.2754-02	2.4605-02	1.7310+00	1.4868+00
CP	5.2347-01	5.1210-01	6.7359-01	4.1274-03	-5.6975-03	-5.2791-03	-4.5883-03	6.3229-01	5.4115-01
P/PO1	2.8959-01	2.8347-01	3.7051-01	9.6484-03	4.3524-03	4.5779-03	4.9503-03	3.4826-01	2.9913-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.7 Q-INF = 2.678 P-INF = .0369 RE = .1830 TO = 1888.

P	1.5294+00	1.5066+00	1.4967+00	1.3075+00	2.6421-01	1.6435+00	1.2543+00	1.3470+00	1.5603+00
CP	5.5741-01	5.4890-01	5.4520-01	4.7456-01	8.4403-02	6.0002-01	4.5455-01	4.8929-01	5.6995-01
P/PO1	3.0789-01	3.0330-01	3.0131-01	2.6323-01	5.3189-02	3.3085-01	2.5250-01	2.7117-01	3.1411-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1801.7 Q-INF = 2.677 P-INF = .0369 RE = .1826 TO = 1890.

P	1.4574+00	1.5096+00	1.5027+00	1.5012+00	1.3029+00	2.8862-01	4.0209-02	2.4627-02	2.1424-02
CP	5.3065-01	5.5015-01	5.4756-01	5.4700-01	4.7293-01	9.4044-02	1.2482-03	-4.5723-03	-5.7690-03
P/PO1	2.9346-01	3.0396-01	3.0257-01	3.0227-01	2.6235-01	5.8115-02	8.0962-03	4.9588-03	4.3137-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B678

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.2 Q-INF = 2.675 P-INF = .0368 RE = .1820 TO = 1893.

P	2.6812-02	3.4158+00	1.6017+00	1.2025+00	1.2894+00	1.4484+00	1.4525+00	1.4760+00	1.4778+00
CP	-3.7503-03	1.2630+00	5.8490-01	4.3568-01	4.6819-01	5.2760-01	5.2915-01	5.3792-01	5.3860-01
P/PO1	5.4018-03	6.8818-01	3.2269-01	2.4226-01	2.5978-01	2.9180-01	2.9264-01	2.9737-01	2.9773-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1801.2 Q-INF = 2.674 P-INF = .0368 RE = .1810 TO = 1899.

P	1.4694+00	1.2122+00	2.7598-01	3.4369-02	2.4238-02	2.4950-02	2.6205-02	3.6220-01	1.8020-03
CP	5.3582-01	4.3961-01	8.9451-02	-9.1711-04	-4.7066-03	-4.4401-03	-3.9705-03	1.2170-01	-1.3098-02
P/PO1	2.9622-01	2.4437-01	5.5636-02	6.9285-03	4.8861-03	5.0297-03	5.2828-03	7.3016-02	3.6327-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	40.	301244	10.18	1	9.99	.02	-.00	5.01	180.0

VALVE POS 2 PO =1800.2 Q-INF = 2.669 P-INF = .0368 RE = .1788 TO = 1911.

P	4.9090+00	3.9941+00	2.2256+00	1.9651+00	2.0337+00	2.1313+00	2.0489+00	2.1000+00	2.1409+00
CP	1.8257+00	1.4829+00	8.2018-01	7.2257-01	7.4831-01	7.8485-01	7.5397-01	7.7313-01	7.8947-01
P/PO1	9.9136-01	8.0659-01	4.4944-01	3.9684-01	4.1071-01	4.3040-01	4.1376-01	4.2409-01	4.3235-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1802.2 Q-INF = 2.671 P-INF = .0368 RE = .1783 TO = 1915.

P	2.1381+00	1.7109+00	4.2628-01	7.9929-04	1.6826-02	1.5768-02	2.0204-02	2.0222-02	2.1944+00
CP	7.8687-01	6.2688-01	1.4585-01	-1.3473-02	-7.4712-03	-7.7925-03	-6.2052-03	-6.1995-03	8.0420-01
P/PO1	4.3147-01	3.4526-01	8.6024-02	1.6130-04	3.3955-03	3.2223-03	4.0772-03	4.0809-03	4.4082-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1802.4 Q-INF = 2.671 P-INF = .0368 RE = .1781 TO = 1916.

P	1.7363+00	1.8611+00	1.9976+00	2.0566+00	3.2050-03	1.9527+00	1.9527+00	1.6980+00	3.7121-01
CP	6.3638-01	6.8311-01	7.3422-01	7.5632-01	-1.2572-02	7.1739-01	7.1742-01	6.2203-01	1.2523-01
P/PO1	3.5037-01	3.7555-01	4.0310-01	4.1501-01	6.4673-04	3.9403-01	3.9404-01	3.4264-01	7.4707-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1801.4 Q-INF = 2.669 P-INF = .0368 RE = .1777 TO = 1918.

P	4.2819-02	1.7616-02	2.4216-02	2.4378-02	2.0892+00	1.8071+00	1.7755+00	1.7850+00	1.7929+00
CP	2.2739-03	-7.1707-03	-4.6973-03	-4.6365-03	7.6911-01	6.6341-01	6.5157-01	6.5513-01	6.5908-01
P/PO1	8.6471-03	3.5574-03	4.8903-03	4.9231-03	4.2189-01	3.6493-01	3.5655-01	3.6047-01	3.6206-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1800.7 Q-INF = 2.667 P-INF = .0367 RE = .1773 TO = 1920.

P	1.6134+00	2.1699-01	3.5633+00	1.7714+00	1.4452+00	1.5729+00	1.5108+01	1.4940+00	5.8905-01
CP	5.9120-01	6.7595-02	1.3224+00	6.5047-01	5.2814-01	5.7604-01	5.6514+00	5.4644-01	2.0711-01
P/PO1	3.2601-01	4.3848-02	7.2004-01	3.5795-01	2.9203-01	3.1785-01	3.0523+00	3.0189-01	1.1903-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1799.2 Q-INF = 2.666 P-INF = .0367 RE = .1778 TO = 1915.

P	1.1335+00	8.2714-01	1.2657+00	1.0298+00	1.5695+00	1.1077+00	1.0530+00	1.3155+00	1.5678+00
CP	4.1146-01	2.9651-01	4.6105-01	3.7255-01	5.7499-01	4.0175-01	3.8123-01	4.7971-01	5.7437-01
P/PO1	2.2916-01	1.6722-01	2.5589-01	2.0819-01	3.1729-01	2.2393-01	2.1287-01	2.6594-01	3.1595-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1798.2 Q-INF = 2.664 P-INF = .0367 RE = .1774 TO = 1918.

P	1.2085+00	1.3339+00	1.9556+00	4.2962-02	2.0231-02	1.7365-02	2.3605-02	1.5975+00	1.4588+00
CP	4.3994-01	4.8700-01	7.2041-01	2.3568-03	-6.1768-03	-7.2528-03	-4.9102-03	5.8597-01	5.3755-01
P/PO1	2.4450-01	2.6986-01	3.9565-01	8.6919-03	4.0932-03	3.5133-03	4.7757-03	3.2320-01	2.9715-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1800.9 Q-INF = 2.668 P-INF = .0367 RE = .1776 TO = 1918.

P	1.4034+00	1.5336+00	1.6137+00	1.3826+00	2.6962-01	1.5024+00	1.1281+00	1.2150+00	1.4088+00
CP	5.1230-01	5.6110-01	5.9110-01	5.0449-01	8.7293-02	5.4939-01	4.0908-01	4.4166-01	5.1430-01
P/PO1	2.8350-01	3.0980-01	3.2597-01	2.7929-01	5.4464-02	3.0349-01	2.2787-01	2.4543-01	2.8458-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1801.4 Q-INF = 2.669 P-INF = .0368 RE = .1777 TO = 1918.

P	1.3075+00	1.3699+00	1.3677+00	1.3766+00	1.2265+00	2.6168-01	4.0209-02	2.5628-02	2.0022-02
CP	4.7619-01	4.9959-01	4.9876-01	5.0209-01	4.4586-01	8.4288-02	1.2958-03	-4.1680-03	-6.2689-03
P/PO1	2.6404-01	2.7665-01	2.7621-01	2.7800-01	2.4769-01	5.2844-02	8.1200-03	5.1755-03	4.0434-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH [illegible] TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.4 Q-INF = 2.669 P-INF = .0368 RE = .1774 TO = 1920.

P	2.3610-02	3.1965+00	1.4517+00	1.3331+00	1.1037+00	1.2683+00	1.2903+00	1.3035+00	1.3008+00
CP	-4.9272-03	1.1836+00	5.3005-01	4.8560-01	3.9969-01	4.6133-01	4.6958-01	4.7453-01	4.7350-01
P/PO1	4.7663-03	6.4528-01	2.9306-01	2.6911-01	2.2281-01	2.5603-01	2.6048-01	2.6314-01	2.6259-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1801.9 Q-INF = 2.671 P-INF = .0368 RE = .1788 TO = 1912.

P	1.2955+00	1.0605+00	2.5657-01	3.7766-02	2.3236-02	1.7964-02	2.5806-02	3.6240-01	1.6018-03
CP	4.7124-01	3.8326-01	8.2285-02	3.6735-04	-5.0726-03	-7.0464-03	-4.1106-03	1.2191-01	-1.3172-02
P/PO1	2.6138-01	2.1397-01	5.1767-02	7.6200-03	4.6883-03	3.6245-03	5.2067-03	7.3121-02	3.2319-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HIGH SPEED TUNNEL

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	41.	301244	10.19	1	4.98	.02	-.00	10.02	180.0

VALVE POS 2 PO =1805.9 Q-INF = 2.683 P-INF = .0370 RE = .1830 TO = 1890.

P	4.7891+00	4.3276+00	2.6695+00	2.5115+00	2.5130+00	2.6556+00	2.5290+00	2.4930+00	2.5535+00
CP	1.7709+00	1.5989+00	9.8102-01	9.2716-01	9.2771-01	9.5721-01	9.2832-01	9.1526-01	9.3781-01
P/PO1	9.6198-01	8.6927-01	5.3621-01	5.0449-01	5.0476-01	5.2338-01	5.0781-01	5.0077-01	5.1272-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1800.2 Q-INF = 2.674 P-INF = .0368 RE = .1823 TO = 1891.

P	2.5760+00	2.0924+00	5.4937-01	1.3988-03	1.9230-02	1.7764-02	2.0405-02	2.0222-02	2.4590+00
CP	9.4941-01	7.6861-01	1.9164-01	-1.3749-02	-6.5816-03	-7.1297-03	-6.1425-03	-6.2107-03	9.0403-01
P/PO1	5.1917-01	4.2172-01	1.1072-01	2.8191-04	3.8757-03	3.5403-03	4.1124-03	4.0757-03	4.9741-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1797.4 Q-INF = 2.670 P-INF = .0368 RE = .1816 TO = 1893.

P	2.0632+00	2.1600+00	2.2346+00	2.3569+00	3.6056-03	2.2453+00	2.2141+00	1.9365+00	4.5531-01
CP	7.5904-01	7.9531-01	8.2323-01	8.6905-01	-1.2422-02	8.2727-01	8.1557-01	7.1159-01	1.5715-01
P/PO1	4.1655-01	4.3611-01	4.5115-01	4.7585-01	7.2777-04	4.5333-01	4.4702-01	3.9098-01	9.2128-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1800.4 Q-INF = 2.674 P-INF = .0368 RE = .1818 TO = 1894.

P	5.1623-02	1.9817-02	2.3215-02	2.3979-02	2.2774+00	2.0097+00	1.9352+00	1.9110+00	1.9264+00
CP	5.5338-03	-6.7350-03	-5.0900-03	-4.8045-03	8.3865-01	7.3781-01	7.1033-01	7.0590-01	7.0565-01
P/PO1	1.0406-02	3.7930-03	4.6797-03	4.8335-03	4.5946-01	4.0511-01	3.9029-01	3.8521-01	3.8831-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1802.9 Q-INF = 2.678 P-INF = .0369 RE = .1824 TO = 1892.

P	1.7183+00	1.5454-01	3.4553+00	1.7129+00	1.4092+00	1.4814+00	1.5552+01	2.2110+00	5.0095-01
CP	6.2779-01	4.3928-02	1.2763+00	6.2576-01	5.1240-01	5.3933-01	5.7728+00	8.1175-01	1.7327-01
P/PO1	3.4581-01	3.1101-02	6.9538-01	3.4472-01	2.8361-01	2.9813-01	3.1298+00	4.4496-01	1.0282-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1803.4 Q-INF = 2.679 P-INF = .0369 RE = .1826 TO = 1891.

P	1.5763+00	5.8452-01	1.7876+00	6.4683-01	2.0427+00	6.8263-01	1.0300+00	8.8999-01	1.2558+00
CP	6.1187-01	2.0438-01	6.5342-01	2.2764-01	7.4862-01	2.4100-01	3.8431-01	3.1839-01	4.5490-01
P/PO1	3.3723-01	1.1759-01	3.5963-01	1.3012-01	4.1094-01	1.3733-01	2.1727-01	1.7904-01	2.5262-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1798.2 Q-INF = 2.671 P-INF = .0368 RE = .1819 TO = 1892.

P	1.0671+00	1.1566+00	2.3395+00	3.5768-02	3.6056-03	9.3812-03	1.0502-02	1.3965+00	1.4358+00
CP	3.8571-01	4.1923-01	8.6209-01	-3.8154-04	-1.2422-02	-1.0260-02	-9.8030-03	5.0404-01	5.2375-01
P/PO1	2.1533-01	2.3340-01	4.7210-01	7.2178-03	7.2758-04	1.8931-03	2.1395-03	2.8180-01	2.8973-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.9 Q-INF = 2.678 P-INF = .0369 RE = .1822 TO = 1893.

P	2.2851+00	2.0744+00	1.9226+00	1.5312+00	2.6000-01	1.2412+00	9.0350-01	9.1442-01	1.0412+00
CP	8.3950-01	7.6083-01	7.0415-01	5.5800-01	8.3316-02	4.4972-01	3.2364-01	3.2768-01	3.7502-01
P/PO1	4.5992-01	4.1752-01	3.8697-01	3.0819-01	5.2331-02	2.4983-01	1.8187-01	1.8404-01	2.0956-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1805.2 Q-INF = 2.682 P-INF = .0369 RE = .1830 TO = 1890.

P	9.6503-01	1.0304+00	1.0648+00	1.0704+00	9.8193-01	2.2894-01	3.4538-02	2.0623-02	1.5217-02
CP	3.4600-01	3.7039-01	3.8320-01	3.8527-01	3.5230-01	7.1581-02	-8.6942-04	-6.0831-03	-8.0985-03
P/PO1	1.9393-01	2.0707-01	2.1397-01	2.1509-01	1.9732-01	4.6007-02	6.9546-03	4.1443-03	3.0579-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

~~CONFIDENTIAL~~

B682

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1807.2 Q-INF = 2.685 P-INF = .0370 RE = .1830 TO = 1891.

P	2.3010-02	2.6843+00	1.1128+00	7.6512-01	7.5237-01	8.9521-01	9.3241-01	9.1522-01	9.0100-01
CP	-5.2017-03	9.8594-01	4.0066-01	2.7118-01	2.6644-01	3.1963-01	3.3349-01	3.2709-01	3.2179-01
P/PO1	4.6193-03	5.3886-01	2.2339-01	1.5360-01	1.5104-01	1.7971-01	1.8718-01	1.8373-01	1.8087-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1808.9 Q-INF = 2.688 P-INF = .0370 RE = .1832 TO = 1891.

P	8.8039-01	6.8381-01	2.1194-01	3.4569-02	2.4438-02	1.8962-02	2.5006-02	3.8803-01	.0000+00
CP	3.1379-01	2.4065-01	6.5085-02	-9.0931-04	-4.6788-03	-6.7162-03	-4.4676-03	1.3060-01	.0000+00
P/PO1	1.7656-01	1.3714-01	4.2505-02	6.9329-03	4.9010-03	3.8028-03	5.0149-03	7.7820-02	.0000+00
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B683

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
Von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS MACH NO TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	42.	301244	10.19	1	-5.02	.02	.00	20.02	180.0

VALVE POS 2 PO =1808.7 Q-INF = 2.687 P-INF = .0370 RE = .1831 TO = 1891.

P	4.3243+00	4.7737+00	3.5873+00	3.4798+00	3.4235+00	3.5076+00	3.5014+00	3.4845+00	3.3707+00
CP	1.5954+00	1.7626+00	1.3211+00	1.2811+00	1.2602+00	1.2915+00	1.2892+00	1.2829+00	1.2482+00
P/PO1	8.6735-01	9.5750-01	7.1953-01	6.9797-01	6.8668-01	7.0355-01	7.0230-01	6.9891-01	6.8110-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3500-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1805.9 Q-INF = 2.683 P-INF = .0370 RE = .1829 TO = 1891.

P	3.4426+00	2.8870+00	9.1182-01	1.3788-03	2.4839-02	2.1557-02	2.5655-02	2.4628-02	3.0261+00
CP	1.2693+00	1.0622+00	3.2606-01	-1.3350-02	-4.5143-03	-5.7374-03	-4.2285-03	-4.5184-03	1.1140+00
P/PO1	6.9159-01	5.7998-01	1.8317-01	2.8100-04	4.9898-03	4.3306-03	5.1439-03	4.9876-03	6.0791-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1805.2 Q-INF = 2.681 P-INF = .0369 RE = .1824 TO = 1893.

P	2.6629+00	2.6752+00	2.6875+00	2.8568+00	3.0047-03	2.8367+00	2.7744+00	2.3835+00	6.6574-01
CP	9.7933-01	9.8392-01	9.8848-01	1.0516+00	-1.2651-02	1.0441+00	1.0209+00	8.7512-01	2.3489-01
P/PO1	5.3529-01	5.3776-01	5.4022-01	5.7426-01	6.0398-04	5.7022-01	5.5769-01	4.7912-01	1.3402-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1804.4 Q-INF = 2.680 P-INF = .0369 RE = .1822 TO = 1894.

P	8.4237-02	2.2420-02	2.6618-02	2.7975-02	2.5953+00	2.4810+00	2.3569+00	2.2770+00	2.2024+00
CP	1.7660-02	-5.4061-03	-3.8398-03	-3.3333-03	9.5464-01	9.1196-01	8.6563-01	8.3585-01	8.0803-01
P/PO1	1.6942-02	4.5091-03	5.3534-03	5.6264-03	5.2198-01	4.9898-01	4.7400-01	4.5795-01	4.4295-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1803.2 Q-INF = 2.678 P-INF = .0369 RE = .1819 TO = 1895.

P	1.9072+00	1.1570-01	3.1434+00	1.6033+00	1.3314+00	1.3418+00	1.2364+01	3.5505+00	2.4547-01
CP	6.9846-01	2.9436-02	1.1601+00	5.8495-01	4.8341-01	4.8731-01	4.6033+00	1.3121+00	7.7897-02
P/PO1	3.8389-01	2.3299-02	6.3270-01	3.2271-01	2.6798-01	2.7008-01	2.4885+00	7.1455-01	4.9439-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1801.9 Q-INF = 2.676 P-INF = .0368 RE = .1816 TO = 1896.

P	2.3990+00	2.4262-01	2.3965+00	2.5133-01	2.0892+00	3.5729-01	1.0500+00	5.1057-01	1.1572+00
CP	8.8285-01	7.6903-02	8.8130-01	8.0178-02	7.6703-01	1.1976-01	3.7864-01	1.7705-01	4.2247-01
P/PO1	4.8327-01	4.8874-02	4.8277-01	5.0638-02	4.2085-01	7.1973-02	2.1151-01	1.0285-01	2.3513-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1799.9 Q-INF = 2.672 P-INF = .0368 RE = .1810 TO = 1898.

P	6.8110-01	7.6948-01	2.8614+00	3.5369-02	2.0432-02	1.7565-02	2.4405-02	1.0260+00	7.4102-01
CP	2.4113-01	2.7420-01	1.0571+00	-5.3558-04	-6.1296-03	-7.1985-03	-4.6385-03	3.7020-01	2.6355-01
P/PO1	1.3739-01	1.5521-01	5.7719-01	7.1343-03	4.1213-03	3.5431-03	4.9229-03	2.0696-01	1.4947-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3500-01

VALVE POS 9 PO =1799.2 Q-INF = 2.671 P-INF = .0368 RE = .1808 TO = 1899.

P	8.7979-01	7.8069-01	7.7952-01	6.6940-01	1.8689-01	8.5010-01	5.9473-01	5.6263-01	5.2238-01
CP	3.1566-01	2.7855-01	2.7811-01	2.3688-01	5.6208-02	3.0454-01	2.0892-01	1.9690-01	1.8183-01
P/PO1	1.7756-01	1.5756-01	1.5732-01	1.3510-01	3.7718-02	1.7157-01	1.2003-01	1.1355-01	1.0543-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1798.4 Q-INF = 2.669 P-INF = .0368 RE = .1805 TO = 1900.

P	4.3920-01	4.7722-01	4.6731-01	6.3164-01	5.1260-01	7.8643-02	2.8806-02	2.8632-02	2.0423-02
CP	1.5077-01	1.6502-01	1.6130-01	2.2287-01	1.7827-01	1.5691-02	-2.9801-03	-3.0455-03	-6.1210-03
P/PO1	8.8684-02	9.6363-02	9.4362-02	1.2754-01	1.0351-01	1.5880-02	5.8157-03	5.7815-03	4.1238-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B684

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1804.2 Q-INF = 2.678 P-INF = .0369 RE = .1813 TO = 1899.

P	3.1814-02	1.8476+00	6.5444-01	4.2262-01	3.9742-01	3.9681-01	3.8188-01	3.6741-01	3.4819-01
CP	-1.8928-03	6.7609-01	2.3059-01	1.4403-01	1.3462-01	1.3439-01	1.2882-01	1.2341-01	1.1624-01
P/PO1	6.4025-03	3.7182-01	1.3170-01	8.5052-02	7.9980-02	7.9857-02	7.6854-02	7.3940-02	7.0072-02
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1810.2 Q-INF = 2.688 P-INF = .0370 RE = .1826 TO = 1895.

P	3.3655-01	2.7104-01	8.5457-02	2.4778-02	2.7242-02	2.7545-02	2.5206-02	5.2538-01	6.0067-04
CP	1.1141-01	8.7046-02	1.8016-02	-4.5547-03	-3.6381-03	-3.5255-03	-4.3957-03	1.8165-01	-1.3548-02
P/PO1	6.7474-02	5.4341-02	1.7133-02	4.9677-03	5.4618-03	5.5224-03	5.0534-03	1.0533-01	1.2043-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B685

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	43.	301244	10.18	1	-7.09	45.09	5.02	20.02	180.0

VALVE POS 2 PO =1803.4 Q-INF = 2.678 P-INF = .0369 RE = .1815 TO = 1897.

P	4.2673+00	4.7361+00	3.5693+00	3.4483+00	3.4056+00	3.4566+00	3.4553+00	3.4590+00	3.3902+00
CP	1.5799+00	1.7550+00	1.3192+00	1.2740+00	1.2581+00	1.2771+00	1.2770+00	1.2780+00	1.2486+00
P/PO1	8.5898-01	9.5335-01	7.1847-01	6.9411-01	6.8552-01	6.9579-01	6.9574-01	6.9627-01	6.8041-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1803.7 Q-INF = 2.678 P-INF = .0369 RE = .1817 TO = 1895.

P	3.3766+00	2.8194+00	8.9920-01	7.9929-04	2.5039-02	2.1159-02	2.4405-02	2.4627-02	3.4012+00
CP	1.2470+00	1.0389+00	3.2196-01	-1.3473-02	-4.4230-03	-5.8721-03	-4.6595-03	-4.5766-03	1.2561+00
P/PO1	6.7953-01	5.6740-01	1.8096-01	1.6085-04	5.0390-03	4.2579-03	4.9115-03	4.9561-03	5.8447-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1801.9 Q-INF = 2.676 P-INF = .0369 RE = .1819 TO = 1894.

P	3.0858+00	3.0673+00	3.1374+00	3.2566+00	2.2034-03	3.1564+00	3.1439+00	2.7045+00	7.7785-01
CP	1.1393+00	1.1324+00	1.1585+00	1.2068+00	-1.2949-02	1.1656+00	1.1599+00	9.9579-01	2.7688-01
P/PO1	6.2149-01	6.1777-01	6.3188-01	6.5791-01	4.4378-04	6.3571-01	6.3259-01	5.4470-01	1.5557-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1800.4 Q-INF = 2.674 P-INF = .0368 RE = .1816 TO = 1895.

P	1.0044-01	2.2820-02	2.6017-02	2.7575-02	3.2438+00	2.8157+00	2.6497+00	2.5980+00	2.5555+00
CP	2.3796-02	-5.2368-03	-4.0411-03	-3.4583-03	1.1995+00	1.0393+00	9.7726-01	9.5792-01	9.4577-01
P/PO1	2.0249-02	4.6005-03	5.2450-03	5.5591-03	6.5394-01	5.6763-01	5.3417-01	5.2374-01	5.1720-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1799.4 Q-INF = 2.672 P-INF = .0368 RE = .1817 TO = 1894.

P	2.2461+00	1.2051-01	3.5363+00	1.9921+00	1.7402+00	1.7681+00	1.2132+01	3.9210+00	3.3637-01
CP	8.2669-01	3.1320-02	1.3095+00	7.3165-01	6.3740-01	6.4782-01	4.5261+00	1.4534+00	1.1210-01
P/PO1	4.5302-01	2.4305-02	7.1323-01	4.0178-01	3.5098-01	3.5660-01	2.4470+00	7.9082-01	6.7843-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1797.4 Q-INF = 2.671 P-INF = .0368 RE = .1825 TO = 1888.

P	2.5880+00	2.6584-01	2.6215+00	3.6707-01	2.3932+00	5.6068-01	1.2422+00	7.9950-01	1.5053+00
CP	9.5509-01	8.5749-02	9.6763-01	1.2465-01	8.8216-01	1.9613-01	4.5127-01	2.8554-01	5.5014-01
P/PO1	5.2225-01	5.3645-02	5.2901-01	7.4075-02	4.8294-01	1.1314-01	2.5068-01	1.6134-01	3.0397-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1799.4 Q-INF = 2.668 P-INF = .0367 RE = .1789 TO = 1910.

P	9.8604-01	1.0281+00	3.1824+00	4.4560-02	1.9831-02	1.7764-02	2.2205-02	1.3155+00	1.1267+00
CP	3.5583-01	3.7160-01	1.1791+00	2.9307-03	-6.3388-03	-7.1133-03	-5.4489-03	4.7932-01	4.0856-01
P/PO1	1.9919-01	2.0769-01	6.4287-01	9.0017-03	4.0061-03	3.5886-03	4.4857-03	2.6575-01	2.2761-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.2 Q-INF = 2.670 P-INF = .0368 RE = .1790 TO = 1910.

P	9.9544-01	1.1191+00	1.0288+00	9.1339-01	2.9406-01	1.0124+00	7.3995-01	7.1760-01	7.1279-01
CP	3.5899-01	4.0528-01	3.7147-01	3.2826-01	9.6342-02	3.6533-01	2.6332-01	2.5494-01	2.5314-01
P/PO1	2.0089-01	2.2584-01	2.0762-01	1.8433-01	5.9344-02	2.0431-01	1.4933-01	1.4482-01	1.4385-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1800.4 Q-INF = 2.669 P-INF = .0368 RE = .1790 TO = 1910.

P	6.2408-01	6.9382-01	7.5430-01	9.3857-01	7.5217-01	9.3413-02	2.4205-02	2.6229-02	1.9922-02
CP	2.2002-01	2.4615-01	2.6881-01	3.3784-01	2.6801-01	2.1223-02	-4.7041-03	-3.9460-03	-6.3462-03
P/PO1	1.2600-01	1.4008-01	1.5229-01	1.8949-01	1.5186-01	1.8860-02	4.8870-03	5.2956-03	4.0020-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B686

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1796.7 Q-INF = 2.670 P-INF = .0368 RE = .1823 TO = 1869.

P	2.7612-02	1.8371+00	6.5203-01	4.2682-01	3.9982-01	3.8604-01	3.3507-01	3.2616-01	3.1755-01
CP	-3.4296-03	6.7434-01	2.3046-01	1.4610-01	1.3599-01	1.2858-01	1.1174-01	1.0840-01	1.0555-01
P/PO1	5.5750-03	3.7091-01	1.3165-01	8.6177-02	8.0726-02	7.6732-02	6.7653-02	6.5854-02	6.4317-02
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1799.9 Q-INF = 2.671 P-INF = .0368 RE = .1803 TO = 1902.

P	3.1994-01	2.6263-01	7.4650-02	2.3979-02	2.7843-02	1.7964-02	2.5206-02	6.3571-01	8.0089-04
CP	1.0602-01	8.4559-02	1.4177-02	-4.7943-03	-3.3474-03	-7.0462-03	-4.3349-03	2.2424-01	-1.3972-02
P/PO1	6.4562-02	5.2998-02	1.5064-02	4.8387-03	5.6186-03	3.6250-03	5.0853-03	1.2828-01	1.6151-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

B687

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

50 INCH CONTINUOUS FLOW

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	44.	301244	10.18	1	-10.32	61.16	9.03	20.02	180.0

VALVE POS 2 PO =1798.2 Q-INF = 2.675 P-INF = .0368 RE = .1844 TO = 1878.

P	4.1983+00	4.6730+00	3.5093+00	3.3867+00	3.3576+00	1.5759+00	3.3517+00	3.3435+00	3.2962+00
CP	1.5556+00	1.7331+00	1.2980+00	1.2522+00	1.2413+00	5.7533-01	1.2429+00	1.2361+00	1.2184+00
P/PO1	8.4602-01	9.4168-01	7.0717-01	6.8247-01	6.7661-01	3.1757-01	6.7743-01	6.7376-01	6.6422-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1799.9 Q-INF = 2.676 P-INF = .0369 RE = .1833 TO = 1885.

P	3.3227+00	2.7413+00	8.6079-01	5.9947-04	2.4839-02	2.3553-02	2.5206-02	2.4828-02	3.6547+00
CP	1.2280+00	1.0107+00	3.1540-01	-1.3548-02	-4.4873-03	-4.9698-03	-4.3522-03	-4.4935-03	1.3533+00
P/PO1	6.6936-01	5.5225-01	1.7744-01	1.2076-04	5.0038-03	4.7448-03	5.0777-03	5.0016-03	7.4230-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1800.9 Q-INF = 2.677 P-INF = .0369 RE = .1831 TO = 1887.

P	3.4096+00	3.3737+00	3.5633+00	3.4843+00	3.8850-02	1.5759+00	3.4323+00	2.9520+00	8.6756-01
CP	1.2600+00	1.2466+00	1.3174+00	1.2879+00	7.4589-04	5.7499-01	1.2585+00	1.0891+00	3.1034-01
P/PO1	6.8663-01	6.7939-01	7.1757-01	7.0166-01	7.8257-03	3.1736-01	6.9119-01	5.9447-01	1.7471-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1802.4 Q-INF = 2.680 P-INF = .0369 RE = .1835 TO = 1884.

P	1.1905-01	2.2820-02	2.4616-02	2.6576-02	3.7320+00	1.5759+00	2.9592+00	2.9490+00	2.9271+00
CP	3.0653-02	-5.2564-03	-4.5862-03	-3.8648-03	1.3788+00	5.7430-01	1.0738+00	1.0867+00	1.0785+00
P/PO1	2.3947-02	4.5902-03	4.9515-03	5.3458-03	7.5069-01	3.1700-01	5.9704-01	5.9318-01	5.8878-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1802.2 Q-INF = 2.679 P-INF = .0369 RE = .1837 TO = 1884.

P	2.5130+00	1.1931-01	3.8332+00	2.3569+00	2.1221+00	4.0374-01	1.0871+01	3.8235+00	4.9375-01
CP	9.2409-01	3.0754-02	1.4168+00	8.6583-01	7.7821-01	1.3691-01	4.0432+00	1.4132+00	1.7050-01
P/PO1	5.0555-01	2.4602-02	7.7116-01	4.7415-01	4.2692-01	8.1223-02	2.1859+00	7.6920-01	9.9330-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1803.7 Q-INF = 2.681 P-INF = .0369 RE = .1837 TO = 1885.

P	2.8579+00	3.2229-01	2.8674+00	6.0466-01	2.7316+00	8.0796-01	1.4600+00	1.0785+00	1.8109+00
CP	1.0520+00	1.0642-01	1.0556+00	2.1172-01	1.0049+00	2.8755-01	5.3072-01	3.8843-01	6.6155-01
P/PO1	5.7450-01	6.4788-02	5.7643-01	1.2155-01	5.4913-01	1.6243-01	2.9351-01	2.1681-01	3.6403-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1804.2 Q-INF = 2.683 P-INF = .0369 RE = .1839 TO = 1884.

P	1.3015+00	1.2963+00	3.4283+00	5.5950-02	2.2235-02	1.7764-02	2.4005-02	1.2375+00	1.3563+00
CP	4.7140-01	4.6947-01	1.2642+00	7.0856-03	-5.4830-03	-7.1494-03	-4.8229-03	4.4755-01	4.9182-01
P/PO1	2.6153-01	2.6049-01	6.8892-01	1.1243-02	4.4680-03	3.5697-03	4.8238-03	2.4867-01	2.7254-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1807.2 Q-INF = 2.682 P-INF = .0369 RE = .1814 TO = 1900.

P	1.4184+00	1.2903+00	1.3017+00	1.1169+00	3.8720-01	1.1362+00	8.8520-01	8.8538-01	8.6917-01
CP	5.1501-01	4.6725-01	4.7151-01	4.0260-01	1.3058-01	4.0979-01	3.1623-01	3.1629-01	3.1025-01
P/PO1	2.8500-01	2.5926-01	2.6156-01	2.2441-01	7.7600-02	2.2829-01	1.7786-01	1.7790-01	1.7464-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1807.2 Q-INF = 2.683 P-INF = .0370 RE = .1819 TO = 1897.

P	8.6618-01	9.6646-01	1.2058+00	9.9951-01	8.3350-01	1.7605-01	3.3607-02	2.6830-02	2.0823-02
CP	3.0903-01	3.4640-01	4.3558-01	3.5872-01	2.9685-01	5.1837-02	-1.2469-03	-3.7727-03	-6.0113-03
P/PO1	1.7399-01	1.9413-01	2.4220-01	2.0077-01	1.6742-01	3.5362-02	6.7507-03	5.3892-03	4.1827-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B688

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS FLOW WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1803.7 Q-INF = 2.677 P-INF = .0369 RE = .1812 TO = 1899.

P	2.6812-02	1.8296+00	6.4963-01	4.3242-01	4.0363-01	3.6507-01	2.8906-01	2.8912-01	3.0974-01
CP	-3.7577-03	6.6955-01	2.2886-01	1.4773-01	1.3698-01	1.2258-01	9.4191-02	9.4213-02	1.0192-01
P/PO1	5.3974-03	3.6830-01	1.3077-01	8.7048-02	8.1252-02	7.3490-02	5.8190-02	5.8202-02	6.2353-02
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1801.4 Q-INF = 2.674 P-INF = .0368 RE = .1808 TO = 1900.

P	3.1714-01	2.5943-01	7.4650-02	1.9982-02	2.5440-02	1.7365-02	2.2005-02	7.3862-01	4.0044-04
CP	1.0484-01	8.3257-02	1.4148-02	-6.2984-03	-4.2573-03	-7.2772-03	-5.5419-03	2.6248-01	-1.3522-02
P/PO1	6.3930-02	5.2296-02	1.5048-02	4.0281-03	5.1282-03	3.5005-03	4.4358-03	1.4889-01	8.0722-05
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL

Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	45.	301244	10.18	1	10.29	61.16	-9.00	10.00	180.0

VALVE POS 2 PO =1795.2 Q-INF = 2.668 P-INF = .0367 RE = .1823 TO = 1888.

P	4.5872+00	4.0977+00	2.5225+00	2.4319+00	2.3602+00	2.4570+00	2.4094+00	2.4150+00	2.4290+00
CP	1.7038+00	1.5223+00	9.3178-01	8.9784-01	8.7096-01	9.0772-01	8.8938-01	8.9149-01	8.9573-01
P/PO1	9.2585-01	8.2797-01	5.0969-01	4.9139-01	4.7690-01	4.9645-01	4.8683-01	4.8797-01	4.9079-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1798.9 Q-INF = 2.678 P-INF = .0368 RE = .1825 TO = 1889.

P	2.4320+00	1.9888+00	5.5377-01	.0000+00	2.2034-02	1.5968-02	2.3005-02	2.2625-02	1.8409+00
CP	8.9603-01	7.3022-01	1.9339-01	.0000+00	-5.5293-03	-7.7886-03	-5.1661-03	-5.3082-03	6.7488-01
P/PO1	4.9041-01	4.0103-01	1.1167-01	.0000+00	4.4431-03	3.2199-03	4.6389-03	4.5623-03	3.7120-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1800.7 Q-INF = 2.675 P-INF = .0368 RE = .1825 TO = 1890.

P	1.4184+00	1.4315+00	1.5417+00	1.6978+00	4.8075-03	1.5759+00	1.5682+00	1.3320+00	3.1455-01
CP	5.1639-01	5.2127-01	5.6246-01	5.8716-01	-1.1975-02	5.7526-01	5.7235-01	4.8408-01	1.0379-01
P/PO1	2.8577-01	2.8840-01	3.1060-01	3.2392-01	9.6855-04	3.1756-01	3.1594-01	2.6835-01	6.3371-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1802.7 Q-INF = 2.674 P-INF = .0369 RE = .1827 TO = 1890.

P	4.0818-02	1.9617-02	2.5617-02	2.5777-02	1.3808+00	1.3343+00	1.2708+00	1.2705+00	1.2407+00
CP	1.4672-03	-6.4479-03	-4.2079-03	-4.1482-03	5.0173-01	4.8438-01	4.6366-01	4.6056-01	4.4945-01
P/PO1	8.2142-03	3.9478-03	5.1552-03	5.1874-03	2.7787-01	2.6851-01	2.5573-01	2.5567-01	2.4969-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1803.7 Q-INF = 2.680 P-INF = .0369 RE = .1826 TO = 1891.

P	1.1066+00	3.3790-01	2.5915+00	1.1169+00	8.0846-01	7.9321-01	1.0896+01	1.3350+00	2.7651-01
CP	3.9916-01	1.1232-01	9.5329-01	4.0302-01	2.8792-01	2.8223-01	4.0524+00	4.8441-01	8.9412-02
P/PO1	2.2258-01	6.7967-02	5.2126-01	2.2466-01	1.6262-01	1.5955-01	2.1917+00	2.6853-01	5.5518-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1803.9 Q-INF = 2.680 P-INF = .0369 RE = .1825 TO = 1892.

P	1.1905+00	3.4591-01	1.2448+00	3.9405-01	1.2685+00	3.6588-01	6.9415-01	4.4509-01	6.6914-01
CP	4.3048-01	1.1531-01	4.5072-01	1.3327-01	4.5957-01	1.2089-01	2.4526-01	1.5232-01	2.3592-01
P/PO1	2.3946-01	6.9575-02	2.5037-01	7.9258-02	2.5514-01	7.2586-02	1.3962-01	8.9525-02	1.3459-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1805.7 Q-INF = 2.683 P-INF = .0369 RE = .1828 TO = 1891.

P	5.3244-01	5.7851-01	1.5537+00	2.9774-02	2.8044-02	1.5569-02	2.8406-02	6.3911-01	4.9595-01
CP	1.8469-01	2.0187-01	5.6536-01	-2.6736-03	-3.3184-03	-7.9683-03	-3.1832-03	2.2446-01	1.7109-01
P/PO1	1.0698-01	1.1623-01	3.1216-01	5.9820-03	5.6345-03	3.1281-03	5.7073-03	1.2841-01	9.9546-02
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1806.9 Q-INF = 2.684 P-INF = .0370 RE = .1824 TO = 1894.

P	6.5949-01	7.7069-01	8.7438-01	8.1108-01	1.5043-01	9.1477-01	6.2694-01	5.9446-01	6.7535-01
CP	2.3196-01	2.7339-01	3.1203-01	2.8844-01	4.2281-02	3.2708-01	2.1983-01	2.0773-01	2.3824-01
P/PO1	1.3245-01	1.5478-01	1.7561-01	1.6289-01	3.0213-02	1.8372-01	1.2591-01	1.1939-01	1.3584-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1807.2 Q-INF = 2.684 P-INF = .0370 RE = .1823 TO = 1895.

P	6.9251-01	6.7700-01	6.5464-01	6.3504-01	5.0579-01	1.7365-01	4.1209-02	2.5628-02	2.0022-02
CP	2.4425-01	2.3848-01	2.3014-01	2.2284-01	1.7468-01	5.0930-02	1.5828-03	-4.2225-03	-6.3113-03
P/PO1	1.3907-01	1.3596-01	1.3147-01	1.2753-01	1.0158-01	3.4874-02	8.2759-03	5.1469-03	4.0210-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B690

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

[illegible] GAS DYNAMICS FACILITY

50 - INCH CONTINUOUS [illegible] TUNNEL

Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1805.9 Q-INF = 2.682 P-INF = .0369 RE = .1820 TO = 1895.

P	2.7012-02	2.6167+00	1.1188+00	7.7751-01	7.8282-01	8.2435-01	8.4559-01	8.5135-01	8.6135-01
CP	-3.6989-03	9.6197-01	4.0342-01	2.7616-01	2.7814-01	2.9363-01	3.0192-01	3.0369-01	3.0743-01
P/PO1	5.4291-03	5.2592-01	2.2486-01	1.5627-01	1.5734-01	1.6569-01	1.7016-01	1.7111-01	1.7312-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1799.4 Q-INF = 2.672 P-INF = .0368 RE = .1815 TO = 1895.

P	8.5818-01	7.0863-01	1.6391-01	2.3379-02	2.1433-02	1.4371-02	2.1605-02	2.3626-01	4.0044-04
CP	3.0738-01	2.5142-01	4.7568-02	-5.0229-03	-5.7511-03	-8.3940-03	-5.6869-03	7.4644-02	-1.3622-02
P/PO1	1.7310-01	1.4294-01	3.3062-02	4.7158-03	4.3233-03	2.8988-03	4.3579-03	4.7656-02	8.0774-05
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER

[illegible] FACILITY

~~CONFIDENTIAL~~

11

Mach 10

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	46.	301244	10.18	1	7.03	45.13	-4.98	10.03	180.0

VALVE POS 2 PO =1797.2 Q-INF = 2.668 P-INF = .0367 RE = .1806 TO = 1897.

P	4.7171+00	4.2374+00	2.5915+00	2.4950+00	2.4366+00	2.5245+00	2.4770+00	2.4735+00	2.5085+00
CP	1.7545+00	1.5747+00	9.5769-01	9.2152-01	8.9963-01	9.3259-01	9.1476-01	9.1346-01	9.2658-01
P/PO1	9.5308-01	8.5616-01	5.2360-01	5.0411-01	4.9231-01	5.1007-01	5.0047-01	4.9976-01	5.0684-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1805.9 Q-INF = 2.681 P-INF = .0369 RE = .1818 TO = 1897.

P	2.5430+00	2.0729+00	5.6077-01	5.9947-04	2.2836-02	1.9162-02	2.3605-02	2.3026-02	2.1364+00
CP	9.3460-01	7.5929-01	1.9536-01	-1.3548-02	-5.2554-03	-6.6255-03	-4.9583-03	-5.1845-03	7.8298-01
P/PO1	5.1116-01	4.1667-01	1.1272-01	1.2050-04	4.5902-03	3.8517-03	4.7449-03	4.6284-03	4.2944-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1809.4 Q-INF = 2.685 P-INF = .0370 RE = .1822 TO = 1896.

P	1.7063+00	1.7560+00	1.8596+00	1.9350+00	2.8044-03	1.9046+00	1.9107+00	1.6245+00	3.7922-01
CP	6.2161-01	6.4010-01	6.7870-01	7.0579-01	-1.2727-02	6.9546-01	6.9771-01	5.9115-01	1.2744-01
P/PO1	3.4247-01	3.5243-01	3.7324-01	3.8838-01	5.6285-04	3.8227-01	3.8348-01	3.2605-01	7.6112-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1812.2 Q-INF = 2.692 P-INF = .0371 RE = .1832 TO = 1893.

P	4.5620-02	1.9217-02	2.5417-02	2.5977-02	1.7702+00	1.6285+00	1.5762+00	1.5540+00	1.5378+00
CP	3.1753-03	-6.6326-03	-4.3296-03	-4.1216-03	6.4379-01	5.9115-01	5.6430-01	5.6349-01	5.5747-01
P/PO1	9.1342-03	3.8477-03	5.0891-03	5.2012-03	3.5443-01	3.2606-01	3.1158-01	3.1115-01	3.0790-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1804.2 Q-INF = 2.679 P-INF = .0369 RE = .1818 TO = 1896.

P	1.3555+00	1.9137-01	3.0054+00	1.3516+00	1.0618+00	1.0746+00	1.6507+01	1.7190+00	3.3437-01
CP	4.9217-01	5.7660-02	1.1080+00	4.9446-01	3.8296-01	3.8736-01	6.1484+00	6.2787-01	1.1104-01
P/PO1	2.7270-01	3.8501-02	6.0465-01	2.7394-01	2.1342-01	2.1621-01	3.3214+00	3.4584-01	6.7272-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1803.2 Q-INF = 2.678 P-INF = .0369 RE = .1817 TO = 1896.

P	1.3585+00	4.7883-01	1.4277+00	4.6718-01	1.5515+00	4.8623-01	8.3817-01	6.1929-01	9.0040-01
CP	4.9358-01	1.6506-01	5.1945-01	1.6071-01	5.6568-01	1.6782-01	2.9927-01	2.1752-01	3.2251-01
P/PO1	2.7346-01	9.6389-02	2.8740-01	9.4045-02	3.1232-01	9.7879-02	1.6873-01	1.2466-01	1.8125-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1802.4 Q-INF = 2.676 P-INF = .0369 RE = .1814 TO = 1897.

P	7.2372-01	8.2513-01	1.8896+00	3.2171-02	2.5440-02	1.8563-02	2.6606-02	9.4565-01	7.7145-01
CP	2.5666-01	2.9456-01	6.9233-01	-1.7502-03	-4.2657-03	-6.8354-03	-3.8299-03	3.3459-01	2.7450-01
P/PO1	1.4576-01	1.6619-01	3.8058-01	6.4796-03	5.1237-03	3.7387-03	5.3586-03	1.9046-01	1.5538-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.2 Q-INF = 2.675 P-INF = .0368 RE = .1815 TO = 1896.

P	1.0623+00	1.2618+00	1.3407+00	1.1529+00	2.4178-01	1.0597+00	7.4156-01	7.1980-01	8.2452-01
CP	3.8341-01	4.5800-01	4.8753-01	4.1730-01	7.6628-02	3.8244-01	2.6350-01	2.5536-01	2.9451-01
P/PO1	2.1408-01	2.5428-01	2.7020-01	2.3235-01	4.8725-02	2.1356-01	1.4745-01	1.4506-01	1.6616-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1800.2 Q-INF = 2.673 P-INF = .0368 RE = .1812 TO = 1897.

P	7.9495-01	8.0592-01	8.0894-01	8.3266-01	7.2773-01	1.8164-01	3.5008-02	2.4828-02	1.9221-02
CP	2.8366-01	2.8776-01	2.8889-01	2.9777-01	2.5851-01	5.4188-02	-6.7384-04	-4.4828-03	-6.5803-03
P/PO1	1.6031-01	1.6252-01	1.6313-01	1.6792-01	1.4676-01	3.6630-02	7.0598-03	5.0068-03	3.8753-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B692

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VALIDATION OF CAL DATA FACILITY
50 - INCH CONTINUOUS U.S. WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1799.4 Q-INF = 2.671 P-INF = .0368 RE = .1810 TO = 1898.

P	2.5611-02	2.6737+00	1.1218+00	7.6992-01	7.6579-01	8.4790-01	8.8550-01	8.8238-01	8.8038-01
CP	-4.1845-03	9.8714-01	4.0616-01	2.7445-01	2.7290-01	3.0364-01	3.1775-01	3.1655-01	3.1580-01
P/PO1	5.1676-03	5.3948-01	2.2634-01	1.5535-01	1.5451-01	1.7108-01	1.7869-01	1.7804-01	1.7763-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1796.7 Q-INF = 2.668 P-INF = .0367 RE = .1810 TO = 1895.

P	8.8165-01	7.3753-01	2.3995-01	1.8465-01	2.0367-01	1.9061-01	1.8476-01	3.4050-01	2.7005-02
CP	3.1672-01	2.6269-01	7.6174-02	5.5443-02	6.2576-02	5.7680-02	5.5485-02	1.1387-01	-3.6492-03
P/PO1	1.7813-01	1.4901-01	4.8481-02	3.7307-02	4.1151-02	3.8513-02	3.7329-02	6.8796-02	5.4563-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B693

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS DS WIND TUNNEL MACH 10

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	47.	301244	10.18	1	13.43	42.38	-9.01	4.99	180.0

VALVE POS 2 PO =1806.9 Q-INF = 2.684 P-INF = .0370 RE = .1826 TO = 1893.

P	4.7711+00	3.7673+00	2.0966+00	1.9320+00	1.8735+00	1.9962+00	1.9738+00	2.0070+00	1.9939+00
CP	1.7638+00	1.3898+00	7.6734-01	7.0604-01	6.8423-01	7.2994-01	7.2159-01	7.3397-01	7.2797-01
P/PO1	9.5811-01	7.5653-01	4.2103-01	3.8799-01	3.7623-01	4.0087-01	3.9635-01	4.0304-01	3.9980-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1802.9 Q-INF = 2.678 P-INF = .0369 RE = .1824 TO = 1892.

P	1.9882+00	1.6118+00	4.2591-01	2.2518-02	1.8421-01	1.8761-01	1.7725-01	1.8300-01	1.6128+00
CP	7.2856-01	5.8801-01	1.4525-01	-5.3643-03	5.5035-02	5.6277-02	5.2407-02	5.4555-02	5.8840-01
P/PO1	4.0013-01	3.2437-01	8.5716-02	4.5318-03	3.7071-02	3.7757-02	3.5671-02	3.6829-02	3.2458-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1805.7 Q-INF = 2.683 P-INF = .0370 RE = .1830 TO = 1890.

P	1.1785+00	1.1761+00	1.2837+00	1.3601+00	4.8075-03	1.3418+00	1.3369+00	1.1220+00	2.5849-01
CP	4.2548-01	4.2459-01	4.6469-01	4.9315-01	-1.1980-02	4.8633-01	4.8449-01	4.0441-01	8.2569-02
P/PO1	2.3676-01	2.3629-01	2.5790-01	2.7324-01	9.6581-04	2.6957-01	2.6857-01	2.2541-01	5.1730-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1803.7 Q-INF = 2.680 P-INF = .0369 RE = .1828 TO = 1890.

P	3.3415-02	1.7616-02	2.3215-02	2.3579-02	1.2400+00	1.0957+00	1.1086+00	1.0920+00	1.0892+00
CP	-1.3037-03	-7.1988-03	-5.1094-03	-4.9737-03	4.4891-01	3.9505-01	3.9785-01	3.9369-01	3.9265-01
P/PO1	6.7206-03	3.5430-03	4.6692-03	4.7423-03	2.4940-01	2.2036-01	2.2295-01	2.1963-01	2.1907-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1803.9 Q-INF = 2.681 P-INF = .0369 RE = .1834 TO = 1887.

P	9.4702-01	3.3190-01	2.6635+00	1.1319+00	8.2048-01	8.0180-01	1.1341+01	9.0100-01	3.9724-01
CP	3.3943-01	1.1001-01	9.7959-01	4.0838-01	2.9223-01	2.8526-01	4.2159+00	3.2226-01	1.3438-01
P/PO1	1.9039-01	6.6723-02	5.3546-01	2.2755-01	1.6495-01	1.6119-01	2.2799+00	1.8113-01	7.9560-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1803.7 Q-INF = 2.681 P-INF = .0369 RE = .1832 TO = 1898.

P	8.3997-01	4.6081-01	8.8819-01	5.6550-01	8.9419-01	5.7904-01	5.5372-01	6.5413-01	7.0959-01
CP	2.9958-01	1.5813-01	3.1757-01	1.9719-01	3.1981-01	2.0224-01	1.9279-01	2.3025-01	2.5394-01
P/PO1	1.6891-01	9.2662-02	1.7860-01	1.1371-01	1.7981-01	1.1644-01	1.1135-01	1.3154-01	1.4269-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1801.9 Q-INF = 2.678 P-INF = .0369 RE = .1830 TO = 1888.

P	6.7850-01	6.3536-01	1.3467+00	2.6976-02	2.3036-02	1.9760-02	2.2005-02	9.0260-01	7.5103-01
CP	2.3959-01	2.2349-01	4.8912-01	-3.6985-03	-5.1699-03	-6.3930-03	-5.5549-03	3.2328-01	2.6568-01
P/PO1	1.3657-01	1.2789-01	2.7108-01	5.4299-03	4.6368-03	3.9775-03	4.4292-03	1.8168-01	1.5117-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.2 Q-INF = 2.677 P-INF = .0369 RE = .1829 TO = 1888.

P	8.2837-01	8.6757-01	8.7018-01	7.4774-01	1.9871-01	1.1062+00	7.7537-01	7.5444-01	8.9359-01
CP	2.9569-01	3.1033-01	3.1131-01	2.6556-01	6.0461-02	3.9947-01	2.7625-01	2.6807-01	3.2305-01
P/PO1	1.6681-01	1.7470-01	1.7523-01	1.5057-01	4.0014-02	2.2275-01	1.5634-01	1.5192-01	1.7994-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1800.4 Q-INF = 2.676 P-INF = .0368 RE = .1828 TO = 1888.

P	8.8619-01	8.9840-01	9.1361-01	8.9161-01	7.4816-01	2.0080-01	3.4008-02	2.3226-02	1.8821-02
CP	3.1743-01	3.2199-01	3.2768-01	3.1945-01	2.6584-01	6.1273-02	-1.0622-03	-5.0917-03	-6.7380-03
P/PO1	1.7853-01	1.8099-01	1.8405-01	1.7962-01	1.5072-01	4.0452-02	6.8510-03	4.6790-03	3.7916-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B694

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.2 Q-INF = 2.676 P-INF = .0369 RE = .1826 TO = 1890.

P	2.1810-02	3.1018+00	1.4337+00	1.0589+00	1.1202+00	1.2097+00	1.2317+00	1.2255+00	1.2152+00
CP	-5.6226-03	1.1453+00	5.2195-01	3.8188-01	4.0480-01	4.3825-01	4.4547-01	4.4415-01	4.4031-01
P/PO1	4.3927-03	6.2474-01	2.8876-01	2.1326-01	2.2562-01	2.4365-01	2.4808-01	2.4683-01	2.4475-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1799.2 Q-INF = 2.673 P-INF = .0368 RE = .1820 TO = 1892.

P	1.2145+00	1.0064+00	2.6095-01	1.6813-01	1.7222-01	1.7561-01	1.7725-01	2.5950-01	1.9504-02
CP	4.4065-01	3.6279-01	8.3864-02	4.9137-02	5.0668-02	5.1933-02	5.2547-02	8.3323-02	-6.4745-03
P/PO1	2.4494-01	2.0297-01	5.2627-02	3.3909-02	3.4734-02	3.5416-02	3.5747-02	5.2335-02	3.9335-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0950+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	48.	301244	10.18	1	14.93	37.30	-8.98	3.02	180.0

VALVE POS 2 PO =1800.4 Q-INF = 2.675 P-INF = .0368 RE = .1821 TO = 1892.

P	4.7771+00	3.5786+00	1.9226+00	1.7354+00	1.6818+00	1.8131+00	1.8040+00	1.8315+00	1.8109+00
CP	1.7724+00	1.3240+00	7.0509-01	6.3504-01	6.1505-01	6.6413-01	6.6375-01	6.7102-01	6.6330-01
P/PO1	9.6275-01	7.2110-01	3.8747-01	3.4974-01	3.3894-01	3.6540-01	3.6357-01	3.6911-01	3.6495-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1804.2 Q-INF = 2.681 P-INF = .0369 RE = .1829 TO = 1890.

P	1.8023+00	1.4570+00	3.7025-01	9.9911-04	2.3436-02	2.7745-02	2.5505-02	2.5028-02	1.5138+00
CP	6.5852-01	5.2974-01	1.2434-01	-1.3399-02	-5.0294-03	-3.4224-03	-4.2202-03	-4.4358-03	5.5091-01
P/PO1	3.6238-01	2.9296-01	7.4445-02	2.0087-04	4.7123-03	5.5785-03	5.1485-03	5.0323-03	3.0438-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1806.2 Q-INF = 2.684 P-INF = .0370 RE = .1834 TO = 1898.

P	1.0719+00	1.0653+00	1.1938+00	1.2865+00	4.0062-03	1.2773+00	1.2723+00	1.0710+00	2.4587-01
CP	3.8553-01	3.8310-01	4.3093-01	4.6549-01	-1.2279-02	4.6204-01	4.6018-01	3.8520-01	7.7822-02
P/PO1	2.1523-01	2.1392-01	2.3971-01	2.5834-01	8.0446-04	2.5648-01	2.5548-01	2.1506-01	4.9372-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1807.9 Q-INF = 2.682 P-INF = .0369 RE = .1808 TO = 1904.

P	3.1614-02	1.6815-02	2.2415-02	2.3979-02	1.1630+00	1.0116+00	1.0169+00	1.0305+00	1.0762+00
CP	-1.9858-03	-7.5029-03	-5.4152-03	-4.8322-03	4.1980-01	3.6334-01	3.6534-01	3.7040-01	3.6880-01
P/PO1	6.3520-03	3.3785-03	4.5037-03	4.8179-03	2.3368-01	2.0325-01	2.0432-01	2.0705-01	2.0519-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1807.7 Q-INF = 2.682 P-INF = .0369 RE = .1807 TO = 1904.

P	8.9140-01	2.9306-01	2.6605+00	1.1744+00	8.1707-01	8.0319-01	1.1203+01	7.4883-01	4.5751-01
CP	3.1859-01	9.5496-02	9.7819-01	4.0546-01	2.9087-01	2.8570-01	4.1632+00	2.6543-01	1.5581-01
P/PO1	1.7913-01	5.8891-02	5.3462-01	2.2595-01	1.6419-01	1.6140-01	2.2512+00	1.5048-01	9.1937-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1806.9 Q-INF = 2.681 P-INF = .0369 RE = .1808 TO = 1903.

P	7.2952-01	5.1366-01	7.8732-01	6.5202-01	8.2368-01	6.8244-01	5.2152-01	7.0398-01	7.3041-01
CP	2.5832-01	1.7781-01	2.7988-01	2.2941-01	2.9344-01	2.4076-01	1.8074-01	2.4879-01	2.5865-01
P/PO1	1.4665-01	1.0325-01	1.5827-01	1.3107-01	1.6557-01	1.3718-01	1.0483-01	1.4151-01	1.4682-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1805.4 Q-INF = 2.678 P-INF = .0369 RE = .1802 TO = 1905.

P	7.2192-01	6.5658-01	1.2567+00	3.2771-02	2.4839-02	2.6547-02	2.3405-02	9.8249-01	8.1290-01
CP	2.5580-01	2.3140-01	4.5550-01	-1.5348-03	-4.4968-03	-3.8589-03	-5.0320-03	3.5310-01	2.8977-01
P/PO1	1.4528-01	1.3214-01	2.5292-01	6.5950-03	4.9987-03	5.3425-03	4.7102-03	1.9772-01	1.6359-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1803.9 Q-INF = 2.676 P-INF = .0369 RE = .1800 TO = 1906.

P	8.7299-01	9.2042-01	9.1941-01	7.5493-01	2.9205-01	1.1902+00	8.4219-01	8.2992-01	9.6587-01
CP	3.1248-01	3.3021-01	3.2983-01	2.6836-01	9.5375-02	4.3104-01	3.0097-01	2.9639-01	3.4757-01
P/PO1	1.7583-01	1.8539-01	1.8519-01	1.5206-01	5.8825-02	2.3973-01	1.6963-01	1.6716-01	1.9475-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1802.4 Q-INF = 2.674 P-INF = .0368 RE = .1799 TO = 1906.

P	9.7904-01	1.0101+00	1.0247+00	1.0111+00	8.4071-01	2.0579-01	3.4208-02	2.3826-02	1.9522-02
CP	3.5242-01	3.6404-01	3.6950-01	3.6442-01	3.0068-01	6.3201-02	-9.7692-04	-4.8599-03	-6.4326-03
P/PO1	1.9736-01	2.0362-01	2.0656-01	2.0383-01	1.6948-01	4.1485-02	6.8959-03	4.8031-03	3.9555-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B696

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1800.4 Q-INF = 2.671 P-INF = .0368 RE = .1800 TO = 1904.

P	2.4411-02	3.2641+00	1.5687+00	1.1769+00	1.2790+00	1.3673+00	1.3849+00	1.3785+00	1.3668+00
CP	-4.6331-03	1.2082+00	5.7351-01	4.2685-01	4.6504-01	4.9813-01	5.0472-01	5.0231-01	4.9792-01
P/PO1	4.9255-03	6.5861-01	3.1652-01	2.3748-01	2.5806-01	2.7589-01	2.7945-01	2.7815-01	2.7578-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1797.9 Q-INF = 2.667 P-INF = .0367 RE = .1796 TO = 1905.

P	1.3645+00	1.1311+00	2.5297-01	3.0773-02	2.0432-02	1.7964-02	2.2605-02	2.0443-01	5.0067-04
CP	4.9783-01	4.1033-01	8.1079-02	-2.2340-03	-6.1113-03	-7.0366-03	-5.2964-03	6.2878-02	-1.3547-02
P/PO1	2.7573-01	2.2857-01	5.1121-02	6.2186-03	4.1289-03	3.6302-03	4.5681-03	4.1311-02	1.2138-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B697

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS NO WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	49.	301244	10.18	1	11.14	26.75	-4.99	5.03	180.0

VALVE POS 2 PO =1796.9 Q-INF = 2.664 P-INF = .0367 RE = .1786 TO = 1910.

P	4.8251+00	3.8168+00	2.1206+00	1.9365+00	1.9139+00	2.0322+00	2.0083+00	2.0580+00	2.0574+00
CP	1.7974+00	1.4189+00	7.8222-01	7.1314-01	7.0466-01	7.4906-01	7.4009-01	7.5873-01	7.6227-01
P/PO1	9.7610-01	7.7214-01	4.2899-01	3.9176-01	3.8719-01	4.1111-01	4.0628-01	4.1633-01	4.1923-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1794.2 Q-INF = 2.665 P-INF = .0367 RE = .1815 TO = 1892.

P	2.0662+00	1.6598+00	4.1788-01	7.9929-04	2.4037-02	2.1756-02	2.6205-02	2.5428-02	1.8529+00
CP	7.6150-01	6.0403-01	1.4303-01	-1.3473-02	-4.7531-03	-5.6390-03	-3.9395-03	-4.2312-03	6.8147-01
P/PO1	4.1789-01	3.3570-01	8.4516-02	1.6166-04	4.8616-03	4.4003-03	5.3002-03	5.1429-03	3.7474-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1793.7 Q-INF = 2.663 P-INF = .0367 RE = .1807 TO = 1896.

P	1.4004+00	1.4435+00	1.5897+00	1.6573+00	3.4053-03	1.6465+00	1.6238+00	1.3650+00	3.0174-01
CP	5.1208-01	5.2826-01	5.8314-01	6.0854-01	-1.2494-02	6.0447-01	5.9594-01	4.9877-01	9.9526-02
P/PO1	2.8343-01	2.9215-01	3.2173-01	3.3542-01	6.8919-04	3.3323-01	3.2853-01	2.7626-01	6.1068-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1793.9 Q-INF = 2.662 P-INF = .0367 RE = .1800 TO = 1900.

P	4.0018-02	2.1619-02	2.8219-02	2.9174-02	1.6144+00	1.4033+00	1.3534+00	1.3440+00	1.3758+00
CP	1.2582-03	-5.6523-03	-3.1735-03	-2.8147-03	5.9260-01	5.1332-01	4.9455-01	4.9103-01	5.0297-01
P/PO1	8.1012-03	4.3766-03	5.7126-03	5.9060-03	3.2682-01	2.8409-01	2.7398-01	2.7208-01	2.7851-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1800.7 Q-INF = 2.673 P-INF = .0368 RE = .1809 TO = 1899.

P	1.2085+00	2.4502-01	3.0684+00	1.3796+00	1.0570+00	1.1107+00	1.8648+01	1.1730+00	4.8434-01
CP	4.3836-01	7.7895-02	1.1342+00	5.0237-01	3.8170-01	4.0176-01	6.9529+00	4.2508-01	1.6743-01
P/PO1	2.4369-01	4.9407-02	6.1873-01	2.7817-01	2.1315-01	2.2396-01	3.7003+00	2.3653-01	9.7555-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1804.4 Q-INF = 2.679 P-INF = .0369 RE = .1815 TO = 1898.

P	8.7559-01	6.0974-01	1.0648+00	7.1896-01	1.1157+00	7.5110-01	7.2575-01	8.4073-01	1.1567+00
CP	3.1345-01	2.1394-01	3.8371-01	2.5461-01	4.0272-01	2.6661-01	2.5715-01	3.0007-01	4.1803-01
P/PO1	1.7637-01	1.2268-01	2.1423-01	1.4465-01	2.2448-01	1.5112-01	1.4602-01	1.6916-01	2.3273-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1807.4 Q-INF = 2.684 P-INF = .0370 RE = .1820 TO = 1897.

P	8.8719-01	9.7887-01	1.6737+00	2.7176-02	1.5624-02	1.6766-02	1.8604-02	1.1955+00	1.0397+00
CP	3.1682-01	3.5098-01	6.0987-01	-3.6452-03	-7.9495-03	-7.5239-03	-6.8392-03	4.3170-01	3.7365-01
P/PO1	1.7818-01	1.9660-01	3.3614-01	5.4580-03	3.1380-03	3.3674-03	3.7354-03	2.4010-01	2.0881-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1799.9 Q-INF = 2.672 P-INF = .0368 RE = .1810 TO = 1898.

P	1.1635+00	1.1867+00	1.1278+00	9.3996-01	1.6926-01	1.2728+00	9.1800-01	9.2102-01	1.1297+00
CP	4.2167-01	4.3033-01	4.0829-01	3.3800-01	4.9574-02	4.6255-01	3.2979-01	3.3092-01	4.0902-01
P/PO1	2.3470-01	2.3936-01	2.2749-01	1.8960-01	3.4143-02	2.5673-01	1.8517-01	1.8578-01	2.2788-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1792.7 Q-INF = 2.660 P-INF = .0366 RE = .1796 TO = 1902.

P	1.0923+00	1.0954+00	1.0738+00	1.0704+00	8.9579-01	2.4271-01	3.9209-02	2.4027-02	1.9522-02
CP	3.9687-01	3.9803-01	3.8991-01	3.8863-01	3.2300-01	7.7475-02	9.6782-04	-4.7398-03	-6.3958-03
P/PO1	2.2132-01	2.2195-01	2.1758-01	2.1688-01	1.8151-01	4.9180-02	7.9447-03	4.8684-03	3.9759-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B698

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1792.4 Q-INF = 2.659 P-INF = .0366 RE = .1790 TO = 1905.

P	2.6412-02	3.1199+00	1.4217+00	1.0363+00	1.0863+00	1.2112+00	1.2578+00	1.2525+00	1.2467+00
CP	-3.8386-03	1.1597+00	5.2097-01	3.7600-01	3.9481-01	4.4190-01	4.6307-01	4.5732-01	4.5516-01
P/PO1	5.3540-03	6.3244-01	2.8820-01	2.1007-01	2.2021-01	2.4553-01	2.5700-01	2.5390-01	2.5273-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1802.4 Q-INF = 2.676 P-INF = .0368 RE = .1811 TO = 1849.

P	1.2535+00	1.0413+00	2.3816-01	3.0773-02	2.3236-02	1.8363-02	2.3805-02	2.5929-01	1.6018-03
CP	4.5473-01	3.7543-01	7.5241-02	-2.2704-03	-5.0872-03	-6.9085-03	-4.8745-03	8.3138-02	-1.3173-02
P/PO1	2.5251-01	2.0977-01	4.7976-02	6.1991-03	4.6809-03	3.6992-03	4.7955-03	5.2233-02	3.2267-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B699

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	50.	301244	10.18	1	12.96	22.81	-4.99	3.02	180.0

VALVE POS 2 PO =1807.2 Q-INF = 2.685 P-INF = .0370 RE = .1830 TO = 1891.

P	4.9000+00	3.6832+00	1.9646+00	1.7534+00	1.7357+00	1.8716+00	1.8611+00	1.9080+00	1.9129+00
CP	1.8112+00	1.3580+00	7.1791-01	6.3925-01	6.3267-01	6.8328-01	6.7937-01	6.9683-01	6.9865-01
P/PO1	9.8367-01	7.3939-01	3.9439-01	3.5199-01	3.4844-01	3.7572-01	3.7351-01	3.8303-01	3.8401-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1804.9 Q-INF = 2.679 P-INF = .0369 RE = .1812 TO = 1900.

P	1.8952+00	1.5156+00	3.7305-01	7.9929+04	2.3036-02	2.1158-02	2.5435-02	2.4928-02	1.7539+00
CP	6.9366-01	5.5196-01	1.2548-01	-1.3473-02	-5.1731-03	-5.8742-03	-4.2885-03	-4.5043-03	6.3977-01
P/PO1	3.8129-01	3.0492-01	7.5051-02	1.6080-04	4.6344-03	4.2566-03	5.1112-03	4.9949-03	3.5224-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1804.4 Q-INF = 2.678 P-INF = .0369 RE = .1811 TO = 1900.

P	1.2985+00	1.3234+00	1.4967+00	1.5522+00	3.8059-03	1.5399+00	1.5051+00	1.2810+00	2.8291-01
CP	4.7105-01	4.8033-01	5.4506-01	5.6579-01	-1.2351-02	5.6120-01	5.4820-01	4.6452-01	9.1861-02
P/PO1	2.6131-01	2.6631-01	3.0120-01	3.1237-01	7.6590-04	3.0789-01	3.0289-01	2.5779-01	5.6934-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.9460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1802.4 Q-INF = 2.675 P-INF = .0368 RE = .1807 TO = 1901.

P	3.0417-02	2.2020-02	2.8419-02	2.9174-02	1.5455+00	1.3178+00	1.2933+00	1.2900+00	1.3338+00
CP	5.8983-04	-5.5402-03	-3.1478-03	-2.8655-03	5.6400-01	4.7887-01	4.6771-01	4.6848-01	4.8484-01
P/PO1	7.7406-03	4.4367-03	5.7251-03	5.8762-03	3.1140-01	2.6552-01	2.6059-01	2.5992-01	2.5874-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1803.9 Q-INF = 2.672 P-INF = .0368 RE = .1779 TO = 1918.

P	1.1649+00	2.6984-01	3.0504+00	1.3706+00	1.0520+00	1.1107+00	1.8817+01	9.7148-01	5.5702-01
CP	4.2215-01	8.7204-02	1.1277+00	4.9912-01	3.7991-01	4.0185-01	7.0279+00	3.4976-01	1.9467-01
P/PO1	2.3492-01	5.4416-02	6.1514-01	2.7639-01	2.1215-01	2.2398-01	3.7947+00	1.9591-01	1.1233-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1800.2 Q-INF = 2.671 P-INF = .0368 RE = .1803 TO = 1902.

P	7.4913-01	6.9181-01	9.1521-01	8.1787-01	1.0218+00	8.5908-01	6.7335-01	9.4725-01	9.9851-01
CP	2.6667-01	2.4521-01	3.2884-01	2.9240-01	3.6874-01	3.0783-01	2.3830-01	3.4083-01	3.6002-01
P/PO1	1.5115-01	1.3958-01	1.8466-01	1.6502-01	2.0616-01	1.7333-01	1.3586-01	1.9112-01	2.0146-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1797.9 Q-INF = 2.667 P-INF = .0367 RE = .1798 TO = 1904.

P	9.8924-01	9.8648-01	1.5507+00	3.6168-02	2.3436-02	1.9760-02	2.3805-02	1.2870+00	1.1147+00
CP	3.5710-01	3.5607-01	5.6760-01	-2.1248-04	-4.9856-03	-6.3638-03	-4.8473-03	4.6874-01	4.0415-01
P/PO1	1.9989-01	1.9933-01	3.1334-01	7.3082-03	4.7356-03	3.9928-03	4.8102-03	2.6305-01	2.2524-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1799.9 Q-INF = 2.672 P-INF = .0368 RE = .1808 TO = 1899.

P	1.1875+00	1.1942+00	1.1818+00	1.0261+00	2.4558-01	1.3568+00	1.0334+00	1.0335+00	1.2317+00
CP	4.3070-01	4.3319-01	4.2854-01	3.7028-01	7.8145-02	4.9406-01	3.6057-01	3.7305-01	4.4725-01
P/PO1	2.3956-01	2.4090-01	2.3840-01	2.0700-01	4.9542-02	2.7371-01	2.0182-01	2.0849-01	2.4848-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1806.7 Q-INF = 2.681 P-INF = .0369 RE = .1806 TO = 1904.

P	1.2175+00	1.2407+00	1.1998+00	1.1965+00	1.0200+00	2.5210-01	3.8208-02	2.4627-02	1.9822-02
CP	4.4044-01	4.4910-01	4.3381-01	4.3258-01	3.6675-01	8.0276-02	4.8255-04	-4.5840-03	-6.3767-03
P/PO1	2.4480-01	2.4947-01	2.4123-01	2.4057-01	2.0508-01	5.0688-02	7.6824-03	4.9517-03	3.9855-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B700

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.2 Q-INF = 2.674 P-INF = .0368 RE = .1802 TO = 1904.

P	2.5211-02	3.3887+00	1.6047+00	1.1844+00	1.2834+00	1.4108+00	1.4450+00	1.4475+00	1.4418+00
CP	-4.3426-03	1.2537+00	5.8639-01	4.2922-01	4.6625-01	5.1390-01	5.2668-01	5.2761-01	5.2547-01
P/PO1	5.0820-03	6.8309-01	3.2347-01	2.3876-01	2.5871-01	2.8439-01	2.9128-01	2.9178-01	2.9063-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1804.9 Q-INF = 2.679 P-INF = .0369 RE = .1812 TO = 1900.

P	1.4424+00	1.1942+00	2.6538-01	2.6377-02	5.4084-03	1.0978-02	1.1002-02	2.7511-01	1.6018-03
CP	5.2464-01	4.3197-01	8.5285-02	-3.9261-03	-1.1753-02	-9.6739-03	-9.6548-03	8.0917-02	-1.3174-02
P/PO1	2.9019-01	2.4025-01	5.3389-02	5.3065-03	1.0881-03	2.2086-03	2.2135-03	5.5347-02	3.2225-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B701

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	51.	301244	10.13	1	14.82	19.84	-4.98	1.02	180.0

VALVE POS 2 PO =1804.7 Q-INF = 2.679 P-INF = .0369 RE = .1811 TO = 1900.

P	4.9600+00	3.5209+00	1.8236+00	1.5793+00	1.5680+00	1.7215+00	1.7019+00	1.7445+00	1.7559+00
CP	1.8379+00	1.3007+00	6.6703-01	5.7580-01	5.7159-01	6.2891-01	6.2158-01	6.3749-01	6.4546-01
P/PO1	9.9801-01	7.0845-01	3.6694-01	3.1777-01	3.1550-01	3.4639-01	3.4244-01	3.5101-01	3.5531-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1804.4 Q-INF = 2.679 P-INF = .0369 RE = .1816 TO = 1897.

P	1.7663+00	1.3985+00	3.3943-01	7.9929-04	2.1834-02	2.0758-02	2.4205-02	2.3826-02	1.6563+00
CP	6.4550-01	5.0821-01	1.1292-01	-1.3473-02	-5.6221-03	-6.0235-03	-4.7370-03	-4.8784-03	6.0446-01
P/PO1	3.5534-01	2.8134-01	6.8286-02	1.6080-04	4.3926-03	4.1762-03	4.8696-03	4.7934-03	3.3322-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1804.4 Q-INF = 2.679 P-INF = .0369 RE = .1813 TO = 1899.

P	1.1995+00	1.2242+00	1.4277+00	1.4592+00	3.6056-03	1.4319+00	1.4240+00	1.1970+00	2.6970-01
CP	4.3405-01	4.4327-01	5.1924-01	5.3098-01	-1.2426-02	5.2079-01	5.1785-01	4.3311-01	8.6916-02
P/PO1	2.4137-01	2.4634-01	2.8728-01	2.9361-01	7.2552-04	2.8812-01	2.8654-01	2.4086-01	5.4259-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1805.4 Q-INF = 2.680 P-INF = .0369 RE = .1812 TO = 1900.

P	3.6416-02	2.1219-02	2.7418-02	2.8375-02	1.4811+00	1.2593+00	1.2573+00	1.2705+00	1.3173+00
CP	-1.8245-04	-5.8535-03	-3.5401-03	-3.1832-03	5.3893-01	4.5614-01	4.5539-01	4.6033-01	4.7778-01
P/PO1	7.3243-03	4.2677-03	5.5145-03	5.7069-03	2.9789-01	2.5327-01	2.5287-01	2.5553-01	2.6494-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1806.2 Q-INF = 2.681 P-INF = .0369 RE = .1815 TO = 1899.

P	1.1887+00	2.6263-01	3.1224+00	1.3991+00	1.0825+00	1.1617+00	2.0048+01	8.3393-01	6.5072-01
CP	4.2958-01	8.4182-02	1.1508+00	5.0805-01	3.8996-01	4.1950-01	7.4533+00	2.9725-01	2.2893-01
P/PO1	2.3896-01	5.2795-02	6.2766-01	2.8125-01	2.1760-01	2.3353-01	4.0300+00	1.6764-01	1.3081-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1806.4 Q-INF = 2.682 P-INF = .0369 RE = .1815 TO = 1899.

P	6.6169-01	7.6068-01	8.6698-01	8.9161-01	1.0108+00	9.8044-01	6.7535-01	1.0290+00	1.0952+00
CP	2.3298-01	2.6789-01	3.0954-01	3.1872-01	3.6316-01	3.5195-01	2.3845-01	3.6996-01	3.9465-01
P/PO1	1.3300-01	1.5289-01	1.7426-01	1.7921-01	2.0316-01	1.9706-01	1.3594-01	2.0682-01	2.2013-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1802.9 Q-INF = 2.677 P-INF = .0369 RE = .1813 TO = 1898.

P	1.1263+00	1.1310+00	1.4757+00	3.7766-02	2.4037-02	2.6946-02	2.4005-02	1.4400+00	1.2212+00
CP	4.0702-01	4.0878-01	5.3757-01	3.3808-04	-4.7912-03	-3.7045-03	-4.8032-03	5.2423-01	4.4250-01
P/PO1	2.2680-01	2.2775-01	2.9716-01	7.6050-03	4.8404-03	5.4262-03	4.8340-03	2.8997-01	2.4592-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1798.7 Q-INF = 2.670 P-INF = .0368 RE = .1809 TO = 1898.

P	1.2655+00	1.2618+00	1.2687+00	1.1328+00	3.2631-01	1.4934+00	1.1371+00	1.1655+00	1.3743+00
CP	4.6017-01	4.5877-01	4.6139-01	4.1947-01	1.0843-01	5.4552-01	4.1208-01	4.2272-01	5.0091-01
P/PO1	2.5545-01	2.5469-01	2.5610-01	2.2966-01	6.5867-02	3.0145-01	2.2953-01	2.3526-01	2.7741-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1796.2 Q-INF = 2.664 P-INF = .0367 RE = .1794 TO = 1905.

P	1.3615+00	1.4075+00	1.3437+00	1.3301+00	1.1444+00	2.6467-01	3.9409-02	2.5829-02	2.1424-02
CP	4.9721-01	5.1448-01	4.9056-01	4.8543-01	4.1574-01	8.5565-02	1.0187-03	-4.0782-03	-5.7315-03
P/PO1	2.7540-01	2.8471-01	2.7181-01	2.6905-01	2.3149-01	5.3538-02	7.9717-03	5.2247-03	4.3337-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B702

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1796.2 Q-INF = 2.664 P-INF = .0367 RE = .1792 TO = 1906.

P	2.6812-02	3.5810+00	1.7786+00	1.3556+00	1.5051+00	1.6120+00	1.6148+00	1.6395+00	1.6368+00
CP	-3.7081-03	1.3304+00	6.5387-01	4.9506-01	5.5118-01	5.9130-01	5.9235-01	6.0164-01	6.0063-01
P/PO1	5.4241-03	7.2445-01	3.5983-01	2.7424-01	3.0448-01	3.2611-01	3.2667-01	3.3168-01	3.3114-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1803.4 Q-INF = 2.676 P-INF = .0368 RE = .1803 TO = 1904.

P	1.6283+00	1.3474+00	2.9400-01	3.4769-02	2.2034-02	1.9760-02	2.4205-02	2.7170-01	2.4027-03
CP	5.9482-01	4.8981-01	9.6108-02	-7.7697-04	-5.5366-03	-6.3864-03	-4.7251-03	8.7776-02	-1.2874-02
P/PO1	3.2800-01	2.7141-01	5.9221-02	7.0037-03	4.4385-03	3.9804-03	4.8758-03	5.4730-02	4.8398-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B703

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	52.	301244	10.18	1	14.83	-19.86	4.99	1.02	180.0

VALVE POS 2 PO =1802.4 Q-INF = 2.672 P-INF = .0368 RE = .1790 TO = 1911.

P	4.9570+00	3.5615+00	1.8266+00	1.5733+00	1.6054+00	1.7425+00	1.6914+00	1.7265+00	1.7704+00
CP	1.8413+00	1.3191+00	6.6983-01	5.7500-01	5.8705-01	6.3836-01	6.1921-01	6.3235-01	6.4877-01
P/PO1	9.9978-01	7.1831-01	3.6841-01	3.1731-01	3.2380-01	3.5145-01	3.4113-01	3.4822-01	3.5705-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1799.4 Q-INF = 2.666 P-INF = .0367 RE = .1780 TO = 1915.

P	1.7573+00	1.3909+00	3.3102-01	1.5986-03	1.8429-02	2.3752-02	2.0805-02	2.0823-02	2.2219+00
CP	6.4528-01	5.0789-01	1.1037-01	-1.3173-02	-6.8606-03	-4.8640-03	-5.9595-03	-5.9626-03	8.1954-01
P/PO1	3.5517-01	2.8113-01	6.6904-02	3.2309-04	3.7247-03	4.8007-03	4.2049-03	4.2086-03	4.4908-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1798.2 Q-INF = 2.665 P-INF = .0367 RE = .1779 TO = 1915.

P	1.8053+00	1.9437+00	2.0996+00	1.9621+00	4.2065-03	2.0487+00	2.0188+00	1.7745+00	4.0785-01
CP	6.6376-01	7.1571-01	7.7421-01	7.2260-01	-1.2173-02	7.5512-01	7.4390-01	6.5220-01	1.3930-01
P/PO1	3.6513-01	3.9313-01	4.2465-01	3.9684-01	8.5080-04	4.1437-01	4.0832-01	3.5890-01	8.2491-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1797.9 Q-INF = 2.664 P-INF = .0367 RE = .1777 TO = 1915.

P	4.6621-02	1.6415-02	2.3215-02	2.3779-02	2.2823+00	2.1073+00	2.0769+00	2.0385+00	2.0284+00
CP	3.7291-03	-7.6102-03	-5.0572-03	-4.8457-03	8.4302-01	7.7779-01	7.7341-01	7.4021-01	7.4769-01
P/PO1	9.4316-03	3.3208-03	4.6966-03	4.8106-03	4.6173-01	4.2631-01	4.2422-01	4.0633-01	4.1335-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1799.7 Q-INF = 2.667 P-INF = .0367 RE = .1780 TO = 1915.

P	1.8203+00	2.5302-01	4.0722+00	2.1572+00	1.9319+00	2.1223+00	9.1403+00	1.2885+00	9.9350-01
CP	6.6880-01	8.1109-02	1.4945+00	7.9516-01	7.1067-01	7.8205-01	3.4137+00	4.6940-01	3.5878-01
P/PO1	3.6785-01	5.1132-02	8.1282-01	4.3594-01	3.7041-01	4.2888-01	1.8471+00	2.6039-01	2.0077-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1800.4 Q-INF = 2.668 P-INF = .0367 RE = .1781 TO = 1915.

P	1.1253+00	1.2573+00	1.4997+00	1.5357+00	2.1476+00	1.9572+00	1.2482+00	2.0805+00	1.9339+00
CP	4.0802-01	4.5748-01	5.4835-01	5.6186-01	7.9119-01	7.1983-01	4.5410-01	7.6605-01	7.1110-01
P/PO1	2.2731-01	2.5396-01	3.0294-01	3.1021-01	4.3380-01	3.9535-01	2.5214-01	4.2026-01	3.9064-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1800.9 Q-INF = 2.670 P-INF = .0368 RE = .1787 TO = 1912.

P	1.9792+00	1.8356+00	2.0186+00	6.6940-02	1.9831-02	1.8563-02	2.3005-02	2.3145+00	1.9774+00
CP	7.2764-01	6.7383-01	7.4239-01	1.1304-02	-6.3434-03	-6.8184-03	-5.1543-03	8.5324-01	7.2495-01
P/PO1	3.9956-01	3.7057-01	4.0752-01	1.3514-02	4.0035-03	3.7475-03	4.6443-03	4.6725-01	3.9920-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.2 Q-INF = 2.670 P-INF = .0368 RE = .1790 TO = 1910.

P	2.0062+00	1.9227+00	2.0216+00	1.8210+00	4.2105-01	2.0007+00	1.6824+00	1.8690+00	2.0464+00
CP	7.3748-01	7.0621-01	7.4324-01	6.6811-01	1.4390-01	7.3542-01	6.1621-01	6.8610-01	7.5254-01
P/PO1	4.0487-01	3.8802-01	4.0798-01	3.6749-01	8.4974-02	4.0376-01	3.3952-01	3.7719-01	4.1299-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1805.9 Q-INF = 2.679 P-INF = .0369 RE = .1806 TO = 1904.

P	1.8802+00	1.9587+00	1.9826+00	1.9696+00	1.7642+00	3.9461-01	4.6510-02	2.0623-02	1.4415-02
CP	6.8797-01	7.1727-01	7.2617-01	7.2131-01	6.4465-01	1.3350-01	3.6243-03	-6.0747-03	-8.3913-03
P/PO1	3.7821-01	3.9400-01	3.9880-01	3.9618-01	3.5486-01	7.9376-02	9.3757-03	4.1483-03	2.8998-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B704

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL MACH 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1805.9 Q-INF = 2.680 P-INF = .0369 RE = .1811 TO = 1901.

P	2.7012-02	3.6186+00	1.7696+00	1.3736+00	1.5186+00	1.6465+00	1.6238+00	1.6485+00	1.6533+00
CP	-3.6935-03	1.3363+00	6.4648-01	4.9872-01	5.5280-01	6.0053-01	5.9205-01	6.0128-01	6.0308-01
P/PO1	5.4318-03	7.2766-01	3.5586-01	2.7622-01	3.0537-01	3.3109-01	3.2652-01	3.3150-01	3.3247-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1805.7 Q-INF = 2.680 P-INF = .0369 RE = .1812 TO = 1900.

P	1.6463+00	1.3759+00	3.0060-01	3.3970-02	2.1033-02	1.8762-02	2.3505-02	3.6100-01	4.2047-03
CP	6.0050-01	4.9960-01	9.8386-02	-1.0971-03	-5.9241-03	-6.7711-03	-4.9642-03	1.2092-01	-1.2703-02
P/PO1	3.3108-01	2.7670-01	6.0450-02	6.8313-03	4.2296-03	3.7731-03	4.7470-03	7.2597-02	8.4555-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B705

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 INCH CONTINUOUS RC WIND TUNNEL

~~CONFIDENTIAL~~

Mach 10

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	53.	301244	10.18	1	12.96	-22.84	4.99	3.03	180.0

VALVE POS 2 PO =1807.2 Q-INF = 2.682 P-INF = .0369 RE = .1809 TO = 1903.

P	4.9690+00	3.7508+00	1.9946+00	1.7654+00	1.8121+00	1.9302+00	1.8746+00	1.9020+00	1.9519+00
CP	1.8393+00	1.3849+00	7.3005-01	6.4458-01	6.6199-01	7.0601-01	6.8531-01	6.9551-01	7.1412-01
P/PO1	9.9871-01	7.5386-01	4.0089-01	3.5483-01	3.6421-01	3.8794-01	3.7578-01	3.8228-01	3.9231-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1799.7 Q-INF = 2.670 P-INF = .0368 RE = .1798 TO = 1905.

P	1.9492+00	1.5517+00	3.7885-01	7.9929-04	1.7627-02	1.2176-02	2.0835-02	2.1023-02	2.3660+00
CP	7.1637-01	5.6745-01	1.2814-01	-1.3473-02	-7.1692-03	-9.2113-03	-5.9791-03	-5.8971-03	8.7247-01
P/PO1	3.9351-01	3.1326-01	7.6484-02	1.6136-04	3.5587-03	2.4580-03	4.2001-03	4.2442-03	4.7755-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1799.2 Q-INF = 2.667 P-INF = .0367 RE = .1796 TO = 1905.

P	1.9582+00	2.1029+00	2.2466+00	2.1032+00	4.0062-03	2.1868+00	2.1590+00	1.9050+00	4.3528-01
CP	7.2036-01	7.7462-01	8.2846-01	7.7471-01	-1.2270-02	8.0606-01	7.9940-01	7.0041-01	1.4979-01
P/PO1	3.9567-01	4.2491-01	4.5392-01	4.2496-01	8.0947-04	4.4185-01	4.3826-01	3.8491-01	8.8153-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1806.4 Q-INF = 2.680 P-INF = .0369 RE = .1806 TO = 1904.

P	4.8822-02	1.5614-02	2.1614-02	2.2380-02	2.4066+00	2.1793+00	2.2021+00	2.1750+00	2.1814+00
CP	4.4445-03	-7.9458-03	-5.7069-03	-5.4212-03	8.8418-01	7.9934-01	8.0796-01	7.9775-01	8.0015-01
P/PO1	9.8177-03	3.1498-03	4.3465-03	4.5005-03	4.8396-01	4.3824-01	4.4282-01	4.3738-01	4.3957-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1804.9 Q-INF = 2.677 P-INF = .0369 RE = .1798 TO = 1908.

P	1.9522+00	2.6143-01	4.0372+00	2.1677+00	1.9334+00	2.1163+00	9.1869+00	1.4880+00	8.9539-01
CP	7.1556-01	8.3897-02	1.4945+00	7.9607-01	7.0853-01	7.7685-01	3.4184+00	5.4213-01	3.2074-01
P/PO1	3.9307-01	5.2638-02	8.1285-01	4.3646-01	3.8928-01	4.2610-01	1.8497+00	2.9960-01	1.8028-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1801.4 Q-INF = 2.671 P-INF = .0368 RE = .1791 TO = 1910.

P	1.2715+00	1.1662+00	1.6197+00	1.4412+00	2.1890+00	1.7741+00	1.2492+00	2.0190+00	1.8919+00
CP	4.6229-01	4.2788-01	5.9265-01	5.2581-01	8.0544-01	6.5046-01	4.5359-01	7.4217-01	6.9457-01
P/PO1	2.5657-01	2.3533-01	3.2682-01	2.9080-01	4.4150-01	3.5798-01	2.5188-01	4.0740-01	3.8175-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1801.2 Q-INF = 2.668 P-INF = .0367 RE = .1775 TO = 1919.

P	1.8683+00	1.7890+00	2.1506+00	6.7540-02	1.9430-02	1.3174-02	2.2435-02	2.2005+00	1.8484+00
CP	6.8650-01	6.5680-01	7.9233-01	1.1544-02	-6.4889-03	-8.8341-03	-5.3739-03	8.1104-01	6.7905-01
P/PO1	3.7738-01	3.6137-01	4.3440-01	1.3643-02	3.9248-03	2.6610-03	4.5257-03	4.4449-01	3.7336-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1800.2 Q-INF = 2.670 P-INF = .0368 RE = .1795 TO = 1907.

P	1.8623+00	1.9663+00	2.0906+00	1.8180+00	3.9822-01	1.8776+00	1.5457+00	1.7145+00	1.9024+00
CP	6.8374-01	7.2270-01	7.6927-01	6.6715-01	1.3538-01	6.8950-01	5.6516-01	6.2840-01	6.9877-01
P/PO1	3.7592-01	3.9692-01	4.2202-01	3.6698-01	8.0387-02	3.7903-01	3.1202-01	3.4610-01	3.8402-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1797.9 Q-INF = 2.667 P-INF = .0367 RE = .1798 TO = 1904.

P	1.7243+00	1.8190+00	1.8386+00	1.8360+00	1.6444+00	3.7625-01	4.5810-02	1.9622-02	1.8621-02
CP	6.3269-01	6.6821-01	6.7555-01	6.7455-01	6.0272-01	1.2729-01	3.4025-03	-6.4158-03	-6.7911-03
P/PO1	3.4842-01	3.6756-01	3.7152-01	3.7098-01	3.3226-01	7.6025-02	9.2565-03	3.9648-03	3.7525-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B706

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH [illegible] MACH 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1798.7 Q-INF = 2.668 P-INF = .0367 RE = .1797 TO = 1905.

P	2.4611-02	3.4338+00	1.6197+00	1.2190+00	1.3179+00	1.4604+00	1.4510+00	1.4775+00	1.4793+00
CP	-4.5482-03	1.2732+00	5.9327-01	4.4309-01	4.8016-01	5.3357-01	5.3006-01	5.3998-01	5.4066-01
P/PO1	4.9713-03	6.9362-01	3.2717-01	2.4623-01	2.6621-01	2.9499-01	2.9310-01	2.9845-01	2.9881-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1802.2 Q-INF = 2.673 P-INF = .0368 RE = .1795 TO = 1908.

P	1.4754+00	1.2257+00	2.7458-01	3.0373-02	1.7828-02	1.2774-02	2.0405-02	4.9935-01	3.4038-03
CP	5.3829-01	4.4486-01	8.8969-02	-2.4072-03	-7.1012-03	-8.9920-03	-6.1371-03	1.7307-01	-1.2498-02
P/PO1	2.9753-01	2.4717-01	5.5372-02	6.1749-03	3.5951-03	2.5761-03	4.1147-03	1.0070-01	6.8540-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B707

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS DRY WIND TUNNEL MACH 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	54.	301244	10.18	1	11.15	-26.73	4.99	5.02	180.0

VALVE POS 2 PO =1804.4 Q-INF = 2.675 P-INF = .0368 RE = .1788 TO = 1913.

P	4.7600+00	3.9280+00	2.1626+00	1.9711+00	2.0173+00	2.1[illegible]08+00	2.0744+00	2.0730+00	2.1319+00
CP	1.8408+00	1.4544+00	7.9481-01	7.2321-01	7.4049-01	7.7916-01	7.6185-01	7.6132-01	7.8335-01
P/PO1	9.9945-01	7.7150-01	4.3576-01	3.9718-01	4.0648-01	4.2734-01	4.1800-01	4.1771-01	4.2359-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1804.2 Q-INF = 2.678 P-INF = .0369 RE = .1814 TO = 1898.

P	2.1501+00	1.7184+00	4.2909-01	7.9929-04	1.6626-02	1.6367-02	2.0204-02	2.0423-02	2.5145+00
CP	7.8897-01	6.2779-01	1.4643-01	-1.3473-02	-7.5645-03	-7.6611-03	-6.2285-03	-6.1470-03	9.2501-01
P/PO1	4.3267-01	3.4579-01	8.6344-02	1.6084-04	3.3456-03	3.2936-03	4.0657-03	4.1096-03	5.0599-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1805.2 Q-INF = 2.678 P-INF = .0369 RE = .1801 TO = 1906.

P	2.1142+00	2.2547+00	2.3725+00	2.2903+00	3.6056-03	2.3324+00	2.3223+00	2.0205+00	4.7232-01
CP	7.7578-01	8.2825-01	8.7227-01	8.3783-01	-1.2425-02	8.5728-01	8.5349-01	7.4080-01	1.6262-01
P/PO1	4.2553-01	4.5381-01	4.7753-01	4.5897-01	7.2572-04	4.6945-01	4.6741-01	4.0668-01	9.5057-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1805.9 Q-INF = 2.680 P-INF = .0369 RE = .1807 TO = 1903.

P	5.1823-02	1.3612-02	2.0414-02	2.0582-02	2.5295+00	2.2333+00	2.2502+00	2.2530+00	2.2444+00
CP	5.5677-03	-8.6918-03	-6.1537-03	-6.0909-03	9.3017-01	8.1946-01	8.2594-01	8.2700-01	8.2381-01
P/PO1	1.0423-02	2.7378-03	4.1059-03	4.1395-03	5.0875-01	4.4919-01	4.5257-01	4.5315-01	4.5143-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1806.7 Q-INF = 2.681 P-INF = .0369 RE = .1808 TO = 1893.

P	2.0302+00	2.4422-01	4.0402+00	2.1722+00	1.9409+00	2.1028+00	9.4813+00	1.7310+00	8.1050-01
CP	7.4353-01	7.7327-02	1.4943+00	7.9552-01	7.1022-01	7.7060-01	3.5229+00	6.3193-01	2.8855-01
P/PO1	4.0816-01	4.9099-02	8.1226-01	4.3672-01	3.9021-01	4.2275-01	1.9052+00	3.4801-01	1.6295-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8400-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1803.9 Q-INF = 2.676 P-INF = .0369 RE = .1809 TO = 1906.

P	1.4094+00	1.0770+00	1.6407+00	1.3331+00	2.0817+00	1.5114+00	1.4255+00	1.7475+00	1.9009+00
CP	5.1296-01	3.8871-01	5.9938-01	4.8442-01	7.6419-01	5.5107-01	5.1497-01	6.3931-01	6.9563-01
P/PO1	2.8388-01	2.1692-01	3.3046-01	2.6850-01	4.1928-01	3.0442-01	2.8712-01	3.5198-01	3.8287-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1802.4 Q-INF = 2.673 P-INF = .0368 RE = .1797 TO = 1907.

P	1.6583+00	1.6974+00	2.2885+00	5.8343-02	1.6826-02	1.6169-02	2.1205-02	2.0985+00	1.7153+00
CP	6.0658-01	6.2118-01	8.4232-01	8.0549-03	-7.4776-03	-7.7239-03	-5.8396-03	7.7123-01	6.2828-01
P/PO1	3.3433-01	3.4221-01	4.6139-01	1.1763-02	3.3923-03	3.2595-03	4.2750-03	4.2308-01	3.4603-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.9 Q-INF = 2.673 P-INF = .0368 RE = .1794 TO = 1909.

P	1.9582+00	2.0384+00	1.9886+00	1.6394+00	3.7138-01	1.7621+00	1.4330+00	1.5645+00	1.7509+00
CP	7.1871-01	7.4868-01	7.3007-01	6.2189-01	1.2514-01	6.4533-01	5.2225-01	5.7144-01	6.4114-01
P/PO1	3.9476-01	4.1092-01	4.0089-01	3.4258-01	7.4867-02	3.5522-01	2.8888-01	3.1539-01	3.5275-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1799.9 Q-INF = 2.669 P-INF = .0368 RE = .1793 TO = 1908.

P	1.5714+00	1.6688+00	1.6917+00	1.7099+00	1.5306+00	3.5349-01	4.4610-02	2.0823-02	1.9021-02
CP	5.7494-01	6.1145-01	6.2001-01	6.2683-01	5.5965-01	1.1866-01	2.9410-03	-5.9707-03	-6.6458-03
P/PO1	3.1728-01	3.3696-01	3.4157-01	3.4525-01	3.0904-01	7.1375-02	9.0074-03	4.2045-03	3.8405-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B708

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS RS WIND TUNNEL MACH 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1799.4 Q-INF = 2.668 P-INF = .0367 RE = .1790 TO = 1959.

P	2.1810-02	3.2566+00	1.4787+00	1.0982+00	1.1452+00	1.2788+00	1.2733+00	1.3050+00	1.3053+00
CP	-5.5979-03	1.2068+00	5.4044-01	3.9784-01	4.1544-01	4.6550-01	4.7095-01	4.7534-01	4.7543-01
P/PO1	4.4054-03	6.5780-01	2.9869-01	2.2183-01	2.3132-01	2.5830-01	2.6124-01	2.6360-01	2.6365-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3500-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1797.2 Q-INF = 2.664 P-INF = .0367 RE = .1786 TO = 1910.

P	1.3120+00	1.0822+00	2.5057-01	3.0173-02	1.9430-02	1.5768-02	2.1405-02	5.0076-01	3.2036-03
CP	4.7863-01	3.9238-01	8.0269-02	-2.4479-03	-6.4798-03	-7.8042-03	-5.7388-03	1.7417-01	-1.2570-02
P/PO1	2.6537-01	2.1889-01	5.0682-02	6.1031-03	3.9301-03	3.1895-03	4.3295-03	1.0129-01	6.4798-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B709

ARNOLD ENGINEERING DEVELOPMENT CENTER

PRELIMINARY UNCHECKED DATA

50 - [illegible] Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	55.	301244	10.18	1	14.93	-37.30	8.98	3.03	180.0

VALVE POS 2 PO =1796.4 Q-INF = 2.663 P-INF = .0367 RE = .1782 TO = 1912.

P	4.8940+00	3.6636+00	1.9226+00	1.7099+00	1.7522+00	1.8291+00	1.8[illegible]40+00	1.8195+00	1.8454+00
CP	1.8242+00	1.3621+00	7.0827-01	6.2838-01	6.4427-[illegible]1	6.7278-01	6.6374-01	6.6955-01	6.7926-01
P/PO1	9.9054-01	7.4150-01	3.8913-01	3.4607-01	3.5464-01	3.7000-01	3.6513-01	3.6826-01	3.7350-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.9900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1803.2 Q-INF = 2.674 P-INF = .0368 RE = .1796 TO = 1908.

P	1.8563+00	1.4426+00	3.7445-01	7.9324-04	1.8023-02	1.8363-02	2.1205-02	2.1224-02	2.5865+00
CP	6.8040-01	5.4065-01	1.2626-01	-1.3473-02	-7.0300-03	-6.9047-03	-5.8421-03	-5.8350-03	9.5348-01
P/PO1	3.7412-01	2.9880-01	7.5464-02	1.6133-04	3.6334-03	3.7010-03	4.2737-03	4.2775-03	5.2129-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1802.4 Q-INF = 2.673 P-INF = .0368 RE = .1795 TO = 1908.

P	2.2401+00	2.3628+00	2.5075+00	2.4994+00	4.0062-03	2.4426+00	2.4034+00	2.1240+00	5.4160-01
CP	8.2479-01	8.7020-01	9.2433-01	8.8764-01	-1.2273-02	8.9981-01	8.8637-01	7.8086-01	1.8885-01
P/PO1	4.5167-01	4.7641-01	5.0558-01	4.8581-01	8.0777-04	4.9237-01	4.8459-01	4.2826-01	1.0020-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1800.4 Q-INF = 2.669 P-INF = .0368 RE = .1788 TO = 1911.

P	6.3228-02	1.6415-02	2.2615-02	2.2980-02	2.7586+00	2.6131+00	2.5265+00	2.4750+00	2.4735+00
CP	9.9173-03	-7.6221-03	-5.2940-03	-5.1624-03	1.0198+00	9.6525-01	9.3283-01	9.1352-01	9.2045-01
P/PO1	1.2767-02	3.3144-03	4.5664-03	4.6400-03	5.5701-01	5.2762-01	5.1015-01	4.9975-01	5.0348-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1800.4 Q-INF = 2.669 P-INF = .0368 RE = .1788 TO = 1911.

P	2.2251+00	3.1668-01	4.3431+00	2.5355+00	2.3797+00	2.5395+00	6.9172+00	1.7100+00	1.1[illegible]87+00
CP	8.1990-01	1.0486-01	1.6134+00	9.3620-01	8.7781-01	9.3770-01	2.5778+00	6.2690-01	4.0163-01
P/PO1	4.4929-01	6.3944-02	8.7695-01	5.1197-01	4.8050-01	5.1277-01	1.3957+00	3.4529-01	2.2397-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1799.7 Q-INF = 2.668 P-INF = .0367 RE = .1787 TO = 1911.

P	1.4244+00	1.3609+00	2.1776+00	1.8029+00	2.7766+00	2.1568+00	1.5201+00	2.4195+00	2.2550+00
CP	5.2014-01	4.9633-01	8.0243-01	6.6201-01	1.0269+00	7.9464-01	5.5601-01	8.9311-01	8.3144-01
P/PO1	2.8774-01	2.7491-01	4.3988-01	3.6420-01	5.6087-01	4.3568-01	3.0707-01	4.8875-01	4.5551-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1798.4 Q-INF = 2.666 P-INF = .0367 RE = .1788 TO = 1910.

P	2.1921+00	2.1150+00	2.4055+00	8.5724-02	2.0432-02	1.7764-02	2.0004-02	2.6055+00	2.3585+00
CP	8.0838-01	7.7944-01	8.8841-01	1.8378-02	-6.1093-03	-7.1096-03	-6.2695-03	9.6341-01	8.7077-01
P/PO1	4.4309-01	4.2749-01	4.8622-01	1.7327-02	4.1298-03	3.5907-03	4.0434-03	5.2664-01	4.7571-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1797.7 Q-INF = 2.665 P-INF = .0367 RE = .1785 TO = 1911.

P	2.2401+00	2.3478+00	2.3935+00	2.1287+00	5.1325-01	2.0938+00	1.8190+00	1.9965+00	2.1549+00
CP	8.2682-01	8.6723-01	8.8439-01	7.8502-01	1.7880-01	7.7190-01	6.6882-01	7.3541-01	7.9851-01
P/PO1	4.5302-01	4.7480-01	4.8405-01	4.3049-01	1.0379-01	4.2343-01	3.6787-01	4.0376-01	4.3782-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0300-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1797.2 Q-INF = 2.664 P-INF = .0367 RE = .1786 TO = 1910.

P	2.0032+00	2.0669+00	2.0936+00	2.0281+00	1.8577+00	4.4471-01	5.4612-02	1.8621-02	1.7520-02
CP	7.3805-01	7.6196-01	7.7198-01	7.4741-01	6.8344-01	1.5313-01	6.7244-03	-6.7837-03	-7.1574-03
P/PO1	4.0519-01	4.1807-01	4.2347-01	4.1023-01	3.7575-01	8.9951-02	1.1046-02	3.7664-03	3.5539-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B710

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

APOLLO ENGINEERING DEVELOPMENT COUNCIL

50 - INCH [illegible] MODEL mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1799.4 Q-INF = 2.668 P-INF = .0367 RE = .1792 TO = 1908.

P	2.2810-02	3.3993+00	1.5987+00	1.2220+00	1.3297+00	1.4169+00	1.4165+00	1.4250+00	1.4118+00
CP	-5.2239-03	1.2601+00	5.8534-01	4.4417-01	4.9453-01	5.1720-01	5.1706-01	5.2025-01	5.1530-01
P/PO1	4.6070-03	6.8655-01	3.2289-01	2.4680-01	2.6855-01	2.8616-01	2.8609-01	2.8781-01	2.8514-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1800.9 Q-INF = 2.671 P-INF = .0368 RE = .1795 TO = 1907.

P	1.4064+00	1.1835+00	2.6037-01	2.9374-02	2.0031-02	1.7764-02	2.0805-02	5.5041-01	3.6040-03
CP	5.1279-01	4.2931-01	8.3711-02	-2.7745-03	-6.2724-03	-7.1210-03	-5.9828-03	1.9230-01	-1.2423-02
P/PO1	2.8379-01	2.3880-01	5.2538-02	5.9270-03	4.0419-03	3.5845-03	4.1979-03	1.1106-01	7.2721-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	56.	301244	10.18	1	13.41	-42.38	0.99	5.01	180.0

VALVE POS 2 PO =1802.2 Q-INF = 2.673 P-INF = .0368 RE = .1798 TO = 1956.

P	4.9120+00	3.8649+00	2.1086+00	1.9185+00	1.9949+00	2.0397+00	2.0453+00	2.0220+00	2.0434+00
CP	1.8238+00	1.4321+00	7.7503-01	7.0393-01	7.3250-01	7.4590-01	7.3440-01	7.4264-01	7.5065-01
P/PO1	9.9035-01	7.7923-01	4.2512-01	3.8681-01	4.0221-01	4.0943-01	4.0430-01	4.0767-01	4.1179-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1804.4 Q-INF = 2.677 P-INF = .0369 RE = .1804 TO = 1954.

P	2.0482+00	1.6433+00	4.2368-01	9.9911-04	5.8090-03	2.0559-02	2.4205-02	2.4027-02	2.7350+00
CP	7.5130-01	6.0006-01	1.4449-01	-1.3399-02	-1.1602-02	-6.0922-03	-4.7392-03	-4.7969-03	1.0079+00
P/PO1	4.1234-01	3.3083-01	8.5276-02	2.0114-04	1.1695-03	4.1389-03	4.8730-03	4.8371-03	5.5062-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1806.7 Q-INF = 2.681 P-INF = .0367 RE = .1808 TO = 1953.

P	2.3960+00	2.5040+00	2.6365+00	2.5761+00	-1.0617-02	2.5665+00	2.5505+00	2.2505+00	5.8085-01
CP	8.8000-01	9.2027-01	9.6969-01	9.4715-01	-1.7732-02	9.4360-01	9.3993-01	8.2944-01	2.0270-01
P/PO1	4.8171-01	5.0342-01	5.3005-01	5.1790-01	-2.1344-03	5.1599-01	5.1377-01	4.5446-01	1.1578-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5540+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1799.2 Q-INF = 2.669 P-INF = .0368 RE = .1801 TO = 1953.

P	6.8230-02	1.7215-02	2.2015-02	2.3179-02	-2.4801+00	2.6641+00	2.5751+00	2.5470+00	2.5545+00
CP	1.1787-02	-7.3232-03	-5.5253-03	-5.0890-03	-9.4281-01	9.8421-01	9.5125-01	9.4035-01	9.5527-01
P/PO1	1.3776-02	3.4758-03	4.4447-03	4.6799-03	-5.0072-01	5.3788-01	5.2011-01	5.1424-01	5.2282-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1799.4 Q-INF = 2.670 P-INF = .0368 RE = .1803 TO = 1952.

P	2.3121+00	3.3430-01	4.3401+00	2.5355+00	2.4638+00	2.5185+00	7.1245+00	1.8915+00	9.9591-01
CP	8.5213-01	1.1143-01	1.6117+00	9.3581-01	9.0896-01	9.2944-01	2.6544+00	6.9462-01	3.5958-01
P/PO1	4.6669-01	6.7476-02	8.7606-01	5.1180-01	4.9733-01	5.0836-01	1.4381+00	3.8180-01	2.0123-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1799.4 Q-INF = 2.670 P-INF = .0368 RE = .1801 TO = 1953.

P	1.5474+00	1.2631+00	2.1026+00	1.6723+00	2.3617+00	1.9646+00	1.5607+00	2.1645+00	2.2835+00
CP	5.6580-01	4.5933-01	7.7375-01	6.1261-01	8.7082-01	6.9462-01	5.7777-01	7.7695-01	8.4375-01
P/PO1	3.1237-01	2.5499-01	4.2445-01	3.3760-01	4.7676-01	3.8449-01	3.1505-01	4.3695-01	4.6217-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1804.7 Q-INF = 2.679 P-INF = .0369 RE = .1815 TO = 1898.

P	2.0722+00	2.0414+00	2.5645+00	7.8730-02	2.6358-01	1.7545-02	1.9404-02	2.5680+00	1.9924+00
CP	7.5965-01	7.4815-01	9.4340-01	1.5614-02	8.4606-02	-7.2158-03	-6.5292-03	9.4471-01	7.2987-01
P/PO1	4.1686-01	4.1066-01	5.1590-01	1.5938-02	5.3024-02	3.5335-03	3.9036-03	5.1661-01	4.0281-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1807.2 Q-INF = 2.683 P-INF = .0370 RE = .1819 TO = 1897.

P	2.4500+00	2.2336+00	2.3995+00	2.0566+00	4.7794-01	1.9902+00	1.7034+00	1.8570+00	2.0224+00
CP	8.9929-01	8.1864-01	8.8047-01	7.5269-01	1.6435-01	7.2792-01	6.2104-01	6.7828-01	7.3973-01
P/PO1	4.9213-01	4.4866-01	4.8199-01	4.1311-01	9.6003-02	3.9977-01	3.4215-01	3.7301-01	4.0624-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1801.7 Q-INF = 2.675 P-INF = .0368 RE = .1814 TO = 1897.

P	1.8713+00	1.9257+00	1.9706+00	1.9035+00	1.6863+00	4.2575-01	5.6212-02	2.3826-02	2.0423-02
CP	6.8576-01	7.0612-01	7.2291-01	6.9783-01	6.1662-01	1.4539-01	7.2422-03	-4.8648-03	-6.1372-03
P/PO1	3.7704-01	3.8801-01	3.9706-01	3.8355-01	3.3978-01	8.5785-02	1.1325-02	4.8009-03	4.1150-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B712

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
50 - INCH [illegible] MACH 10

~~CONFIDENTIAL~~

VALVE_POS 11 PO =1798.4 Q-INF = 2.669 P-INF = .0368 RE = .1807 TO = 1899.

P	2.8613-02	3.2235+00	1.4577+00	1.1078+00	1.1400+00	1.2533+00	1.2573+00	1.2575+00	1.2588+00
CP	-3.0538-03	1.1938+00	5.3229-01	4.0122-01	4.1326-01	4.5570-01	4.5720-01	4.6104-01	4.5776-01
P/PO1	5.7770-03	6.5084-01	2.9432-01	2.2367-01	2.3017-01	2.5304-01	2.5385-01	2.5591-01	2.5415-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1801.9 Q-INF = 2.676 P-INF = .0368 RE = .1816 TO = 1896.

P	1.2652+00	1.0489+00	2.3336-01	2.9774-02	5.2081-03	1.8563-02	2.3005-02	6.1168-01	3.8042-03
CP	4.5907-01	3.7826-01	7.3442-02	-2.6443-03	-1.1825-02	-6.8342-03	-5.1740-03	2.1484-01	-1.2350-02
P/PO1	2.5486-01	2.1130-01	4.7008-02	5.9977-03	1.0491-03	3.7374-03	4.6343-03	1.2322-01	7.6534-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	57.	301244	10.18	1	7.06	-45.09	4.99	10.00	180.0

VALVE POS 2 PO =1803.4 Q-INF = 2.678 P-INF = .0369 RE = .1819 TO = 1895.

P	4.9060+00	4.3606+00	2.6125+00	2.5205+00	2.5156+00	2.5436+00	2.5571+00	2.5410+00	2.5520+00
CP	1.8181+00	1.6144+00	9.6168-01	9.2735-01	9.2565-01	9.5462-01	9.4474-01	9.3500-01	9.3911-01
P/PO1	9.8736-01	8.7759-01	5.2577-01	5.0726-01	5.0635-01	5.2196-01	5.1664-01	5.1139-01	5.1360-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1804.9 Q-INF = 2.681 P-INF = .0369 RE = .1822 TO = 1894.

P	2.6240+00	2.1360+00	5.7358-01	3.9964-04	2.1433-02	1.8563-02	2.3005-02	2.1824-02	2.8671+00
CP	9.6503-01	7.8301-01	2.0019-01	-1.3623-02	-5.7765-03	-6.8472-03	-5.1701-03	-5.6306-03	1.0557+00
P/PO1	5.2758-01	4.2947-01	1.1533-01	8.0354-05	4.3095-03	3.7323-03	4.6255-03	4.3881-03	5.7545-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1805.4 Q-INF = 2.681 P-INF = .0369 RE = .1821 TO = 1895.

P	2.4980+00	2.5986+00	2.6515+00	2.7607+00	3.4053-03	2.6611+00	2.6457+00	2.3325+00	5.7904-01
CP	9.1799-01	9.5542-01	9.7513-01	1.0159+00	-1.2502-02	9.7872-01	9.7335-01	8.5616-01	2.0219-01
P/PO1	5.0216-01	5.2239-01	5.3302-01	5.5497-01	6.8455-04	5.3495-01	5.3206-01	4.6889-01	1.1640-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1806.2 Q-INF = 2.684 P-INF = .0370 RE = .1829 TO = 1891.

P	6.6029-02	1.7215-02	2.1614-02	2.1980-02	2.7990+00	2.4570+00	2.3583+00	2.4045+00	2.4740+00
CP	1.0834-02	-7.3564-03	-5.7171-03	-5.5807-03	1.0293+00	9.0180-01	8.6503-01	8.8225-01	9.0815-01
P/PO1	1.3263-02	3.4579-03	4.3415-03	4.4150-03	5.6221-01	4.9351-01	4.7359-01	4.8297-01	4.9693-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1806.4 Q-INF = 2.684 P-INF = .0370 RE = .1827 TO = 1892.

P	2.2101+00	1.9377-01	4.0012+00	2.1707+00	1.9169+00	2.0277+00	1.0941+01	2.3670+00	6.6354-01
CP	8.0979-01	5.8434-02	1.4772+00	7.9511-01	7.0054-01	7.4182-01	4.0633+00	8.6825-01	2.3348-01
P/PO1	4.4391-01	3.8020-02	8.0355-01	4.3600-01	3.8502-01	4.0727-01	2.1975+00	4.7542-01	1.3327-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1805.2 Q-INF = 2.681 P-INF = .0369 RE = .1824 TO = 1893.

P	1.9462+00	7.1664-01	2.1986+00	8.8701-01	3.0371+00	8.8104-01	1.2843+00	1.1940+00	1.6798+00
CP	7.1204-01	2.5349-01	8.0615-01	3.1703-01	1.1189+00	3.1480-01	4.6519-01	4.3151-01	6.1732-01
P/PO1	3.9122-01	1.4405-01	4.4194-01	1.7830-01	6.1051-01	1.7710-01	2.5815-01	2.4001-01	3.3747-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1804.9 Q-INF = 2.680 P-INF = .0369 RE = .1821 TO = 1895.

P	1.5834+00	1.5727+00	2.6755+00	5.3752-02	2.3036-02	2.1756-02	2.3505-02	1.9875+00	2.9591+00
CP	5.7693-01	5.7295-01	9.8436-01	6.3561-03	-5.1778-03	-5.6550-03	-4.9653-03	7.2770-01	1.0939+00
P/PO1	3.1839-01	3.1624-01	5.3799-01	1.0849-02	4.6321-03	4.3749-03	4.7466-03	3.9965-01	5.9703-01
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1804.7 Q-INF = 2.680 P-INF = .0369 RE = .1818 TO = 1895.

P	3.5566+00	2.5686+00	2.3665+00	1.9170+00	3.6797-01	1.5054+00	1.1626+00	1.2360+00	1.3818+00
CP	1.3134+00	9.4473-01	8.6932-01	7.0159-01	1.2354-01	5.4798-01	4.2007-01	4.4745-01	5.0185-01
P/PO1	7.1534-01	5.1663-01	4.7598-01	3.8558-01	7.4011-02	3.0278-01	2.3384-01	2.4860-01	2.7792-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1804.9 Q-INF = 2.680 P-INF = .0369 RE = .1815 TO = 1898.

P	1.2145+00	1.3279+00	1.3737+00	1.4081+00	1.2505+00	2.8044-01	3.7608-02	2.2225-02	1.9021-02
CP	4.3947-01	4.8177-01	4.9889-01	5.1172-01	4.5290-01	9.0885-02	2.6331-04	-5.4777-03	-6.6732-03
P/PO1	2.4429-01	2.6709-01	2.7632-01	2.8323-01	2.5153-01	5.6408-02	7.5547-03	4.4703-03	3.8260-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B714

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS FLOW WIND TUNNEL MACH 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.2 Q-INF = 2.675 P-INF = .0368 RE = .1807 TO = 1901.

P	2.3210-02	2.7714+00	1.1518+00	8.0988-01	7.9424-01	8.8593-01	9.1027-01	9.1962-01	9.2022-01
CP	-5.0938-03	1.0224+00	4.1686-01	2.8903-01	2.8318-01	3.1713-01	3.2657-01	3.3006-01	3.3029-01
P/PO1	4.6773-03	5.5848-01	2.3210-01	1.6320-01	1.6005-01	1.7835-01	1.8344-01	1.8532-01	1.8544-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1800.4 Q-INF = 2.671 P-INF = .0368 RE = .1800 TO = 1904.

P	9.2341-01	7.6948-01	1.9353-01	2.7975-02	2.2836-02	1.9162-02	2.4205-02	5.3920-01	3.6040-03
CP	3.3193-01	2.7431-01	5.8681-02	-3.2987-03	-5.2228-03	-6.5983-03	-4.7100-03	1.8809-01	-1.2423-02
P/PO1	1.8632-01	1.5526-01	3.9050-02	5.6447-03	4.6077-03	3.8664-03	4.8841-03	1.0880-01	7.2720-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 INCH CONTINUOUS HS WIND TUNNEL machio

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	58.	301244	10.18	1	-7.07	-45.09	-5.00	20.01	180.0

VALVE POS 2 PO =1801.7 Q-INF = 2.673 P-INF = .0368 RE = .1800 TO = 1905.

P	4.3243+00	4.8172+00	3.5783+00	3.5563+00	3.4490+00	3.5526+00	3.5314+00	3.5565+00	3.4587+00
CP	1.6042+00	1.7886+00	1.3251+00	1.3169+00	1.2767+00	1.3155+00	1.3075+00	1.3169+00	1.2841+00
P/PO1	8.7201-01	9.7142-01	7.2157-01	7.1715-01	6.9550-01	7.1640-01	7.1213-01	7.1718-01	6.9947-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1801.9 Q-INF = 2.670 P-INF = .0368 RE = .1781 TO = 1916.

P	3.4366+00	2.8720+00	9.2642-01	3.9964-04	2.0832-02	2.0559-02	2.1005-02	2.0623-02	2.6780+00
CP	1.2734+00	1.0619+00	3.3322-01	-1.3622-02	-5.9691-03	-6.0716-03	-5.9046-03	-6.0476-03	9.8428-01
P/PO1	6.9367-01	5.7971-01	1.8699-01	8.0667-05	4.2050-03	4.1498-03	4.2397-03	4.1627-03	5.4055-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1800.7 Q-INF = 2.670 P-INF = .0368 RE = .1790 TO = 1910.

P	2.2791+00	2.3132+00	2.3305+00	2.3914+00	2.2034-03	2.3534+00	2.3673+00	2.0310+00	5.7344-01
CP	8.3991-01	8.5270-01	8.5918-01	8.8198-01	-1.2947-02	8.6775-01	8.7235-01	7.4698-01	2.0102-01
P/PO1	4.6008-01	4.6697-01	4.7046-01	4.8275-01	4.4480-04	4.7508-01	4.7789-01	4.1000-01	1.1575-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1799.2 Q-INF = 2.667 P-INF = .0367 RE = .1788 TO = 1910.

P	7.3633-02	1.7616-02	2.3816-02	2.2380-02	2.0502+00	2.0772+00	1.9978+00	1.9500+00	1.8979+00
CP	1.3832-02	-7.1682-03	-4.8438-03	-5.1573-03	7.5483-01	7.6496-01	7.3518-01	7.1726-01	6.9772-01
P/PO1	1.4877-02	3.5591-03	4.8118-03	4.6428-03	4.1423-01	4.1969-01	4.0364-01	3.9398-01	3.8345-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1801.4 Q-INF = 2.671 P-INF = .0368 RE = .1791 TO = 1910.

P	1.6253+00	1.1090-01	2.7594+00	1.2955+00	1.0200+00	9.8882-01	1.1521+01	2.9655+00	2.0463-01
CP	5.9478-01	2.7750-02	1.0194+00	4.7129-01	3.6812-01	3.5645-01	4.2799+00	1.0965+00	6.2843-02
P/PO1	3.2797-01	2.2377-02	5.5681-01	2.6142-01	2.0582-01	1.9953-01	2.3248+00	5.9839-01	4.1270-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1803.4 Q-INF = 2.674 P-INF = .0368 RE = .1793 TO = 1910.

P	2.2701+00	2.1539-01	2.0666+00	1.7964-01	1.9768+00	2.5110-01	8.4568-01	2.9393-01	9.1482-01
CP	8.3522-01	6.6782-02	7.5911-01	5.3412-02	7.2554-01	8.0136-02	3.0250-01	9.6153-02	3.2835-01
P/PO1	4.5755-01	4.3413-02	4.1653-01	3.6207-02	3.9844-01	5.0610-02	1.7045-01	5.9242-02	1.8439-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1805.9 Q-INF = 2.678 P-INF = .0369 RE = .1795 TO = 1910.

P	4.2439-01	5.0525-01	2.3635+00	2.4179-02	2.5440-02	1.9361-02	2.5806-02	5.6343-01	3.8082-01
CP	1.4472-01	1.7492-01	8.6891-01	-4.7419-03	-4.2709-03	-6.5409-03	-4.1342-03	1.9665-01	1.2845-01
P/PO1	8.5417-02	1.0169-01	4.7571-01	4.8664-03	5.1202-03	3.8969-03	5.1939-03	1.1340-01	7.6548-02
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1803.7 Q-INF = 2.674 P-INF = .0368 RE = .1793 TO = 1910.

P	5.3844-01	6.2936-01	5.2455-01	4.2542-01	9.8353-02	7.2555-01	4.8751-01	4.5851-01	3.8743-01
CP	1.8757-01	2.2157-01	1.8238-01	1.4531-01	2.3006-02	2.5754-01	1.6927-01	1.5768-01	1.3110-01
P/PO1	1.0851-01	1.2683-01	1.0571-01	8.5734-02	1.9821-02	1.4622-01	9.8649-02	9.2402-02	7.8077-02
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1802.2 Q-INF = 2.671 P-INF = .0368 RE = .1788 TO = 1912.

P	3.1274-01	3.2709-01	3.6404-01	3.5968-01	2.9466-01	7.8643-02	2.7006-02	2.8231-02	2.2225-02
CP	1.0330-01	1.0867-01	1.2250-01	1.2087-01	9.6529-02	1.5667-02	-3.6525-03	-3.2039-03	-5.4524-03
P/PO1	6.3091-02	6.5987-02	7.3441-02	7.2561-02	5.9444-02	1.5865-02	5.4481-03	5.6953-03	4.4836-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B716

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.9 Q-INF = 2.671 P-INF = .0368 RE = .1788 TO = 1912.

P	3.0614-02	1.8371+00	6.6544-01	4.3581-01	4.0984-01	3.8483-01	3.3467-01	3.2536-01	3.2016-01
CP	-2.3106-03	6.7400-01	2.3536-01	1.4939-01	1.3967-01	1.3030-01	1.1153-01	1.0804-01	1.0609-01
P/PO1	6.1768-03	3.7066-01	1.3426-01	8.7932-02	8.2691-02	7.7646-02	6.7526-02	6.5647-02	6.4597-02
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1800.7 Q-INF = 2.669 P-INF = .0368 RE = .1786 TO = 1912.

P	3.2494-01	2.5903-01	7.5851-02	2.0782-02	2.5440-02	2.0958-02	2.4605-02	4.5030-01	3.6040-03
CP	1.0797-01	8.3274-02	1.4646-02	-5.9862-03	-4.2410-03	-5.9200-03	-4.5535-03	1.5493-01	-1.2422-02
P/PO1	6.5609-02	5.2301-02	1.5315-02	4.1960-03	5.1365-03	4.2316-03	4.9581-03	9.0920-02	7.2768-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY. UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	59.	301244	10.18	1	-10.30	-61.17	-9.01	20.01	180.0

VALVE POS 2 PO =1798.9 Q-INF = 2.667 P-INF = .0367 RE = .1785 TO = 1912.

P	4.2313+00	4.7061+00	3.5033+00	3.4768+00	3.3217+00	3.4386+00	3.4059+00	3.4050+00	3.3502+00
CP	1.5731+00	1.7511+00	1.3000+00	1.2901+00	1.2319+00	1.2758+00	1.2638+00	1.2632+00	1.2426+00
P/PO1	8.5519-01	9.5114-01	7.0805-01	7.0269-01	6.7134-01	6.9497-01	6.8854-01	6.8818-01	6.7710-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1798.2 Q-INF = 2.665 P-INF = .0367 RE = .1780 TO = 1914.

P	3.3587+00	2.7699+00	9.0180-01	7.9929-04	2.3236-02	2.0958-02	2.3605-02	2.4227-02	2.3435+00
CP	1.2466+00	1.0257+00	3.2464-01	-1.3472-02	-5.0525-03	-5.9074-03	-4.9140-03	-4.6807-03	8.6565-01
P/PO1	6.7924-01	5.6017-01	1.8238-01	1.6164-04	4.6992-03	4.2385-03	4.7738-03	4.8996-03	4.7393-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1799.7 Q-INF = 2.667 P-INF = .0367 RE = .1782 TO = 1914.

P	1.9492+00	1.9563+00	1.9856+00	2.0296+00	2.4037-03	1.9797+00	1.9913+00	1.6920+00	4.7833-01
CP	7.1708-01	7.2346-01	7.3072-01	7.4722-01	-1.2871-02	7.2850-01	7.2910-01	6.2063-01	1.6558-01
P/PO1	3.9387-01	3.9731-01	4.0122-01	4.1011-01	4.8571-04	4.0002-01	4.0034-01	3.4189-01	9.6554-02
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1800.9 Q-INF = 2.669 P-INF = .0368 RE = .1783 TO = 1914.

P	6.4028-02	2.0418-02	2.8219-02	2.8375-02	1.6324+00	1.6825+00	1.6553+00	1.5915+00	1.5589+00
CP	1.0218-02	-6.1217-03	-3.1990-03	-3.1405-03	5.7735-01	6.1663-01	6.0544-01	5.8253-01	5.7028-01
P/PO1	1.2929-02	4.1229-03	5.6980-03	5.7295-03	3.2961-01	3.3973-01	3.3424-01	3.2136-01	3.1475-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1801.4 Q-INF = 2.670 P-INF = .0368 RE = .1785 TO = 1913.

P	1.3375+00	1.0970-01	2.4295+00	1.0692+00	8.0265-01	7.6168-01	8.9165+00	2.4435+00	1.6458-01
CP	4.8715-01	2.7313-02	8.9616-01	3.8670-01	2.8685-01	2.7150-01	3.3257+00	9.0140-01	4.7870-02
P/PO1	2.6796-01	2.2142-02	4.9038-01	2.1582-01	1.6201-01	1.5374-01	1.7997+00	4.9321-01	3.3220-02
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1801.9 Q-INF = 2.671 P-INF = .0368 RE = .1788 TO = 1912.

P	1.9582+00	1.7656-01	1.8326+00	1.4707-01	1.6878+00	1.7305-01	7.0599-01	2.0683-01	7.8547-01
CP	7.1936-01	5.2429-02	6.7234-01	4.1289-02	6.1812-01	5.1017-02	2.5054-01	6.3662-02	2.8030-01
P/PO1	3.9510-01	3.5623-02	3.6976-01	2.9674-02	3.4054-01	3.4916-02	1.4244-01	4.1731-02	1.5948-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1802.7 Q-INF = 2.672 P-INF = .0368 RE = .1788 TO = 1912.

P	3.0373-01	3.8194-01	1.9886+00	1.9982-02	2.7042-02	1.9162-02	2.4935-02	4.0565-01	2.3606-01
CP	9.9894-02	1.2916-01	7.3042-01	-6.2939-03	-3.6519-03	-5.6010-03	-4.4889-03	1.3803-01	7.4569-02
P/PO1	6.1258-02	7.7030-02	4.0106-01	4.0300-03	5.4539-03	3.8645-03	5.0328-03	8.1812-02	4.7509-02
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.4 Q-INF = 2.672 P-INF = .0368 RE = .1788 TO = 1912.

P	3.1114-01	3.9395-01	4.1528-01	3.0073-01	6.7906-02	6.2455-01	4.1489-01	3.8883-01	3.3377-01
CP	1.0268-01	1.3366-01	1.4166-01	9.8787-02	1.1644-02	2.1999-01	1.4151-01	1.3176-01	1.1115-01
P/PO1	6.2759-02	7.9463-02	8.3765-02	6.0661-02	1.3697-02	1.2598-01	8.3688-02	7.8431-02	6.7325-02
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1802.9 Q-INF = 2.673 P-INF = .0368 RE = .1792 TO = 1910.

P	2.6652-01	2.5182-01	2.6718-01	2.8335-01	2.2415-01	7.6647-02	3.0807-02	3.3437-02	2.5228-02
CP	8.5931-02	8.0434-02	8.6178-02	9.2227-02	7.0081-02	1.4901-02	-2.2472-03	-1.2632-03	-4.3342-03
P/PO1	5.3733-02	5.0771-02	5.3866-02	5.7126-02	4.5191-02	1.5453-02	6.2110-03	6.7413-03	5.0863-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B718

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA ARNOLD ENGINEERING DEVELOPMENT CENTER Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1802.9 Q-INF = 2.673 P-INF = .0368 RE = .1792 TO = 1910.

P	3.1214-02	1.8085+00	6.6544-01	4.4201-01	4.1384-01	3.6507-01	2.8585-01	2.7052-01	3.0994-01
CP	-2.0949-03	6.6279-01	2.3517-01	1.5158-01	1.4104-01	1.2280-01	9.3542-02	9.4911-02	1.0180-01
P/PO1	6.2931-03	3.6462-01	1.3416-01	8.9114-02	8.3436-02	7.3602-02	5.7335-02	5.8573-02	6.2287-02
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1803.9 Q-INF = 2.675 P-INF = .0368 RE = .1795 TO = 1909.

P	3.1654-01	7.5463-01	7.7452-02	2.1781-02	2.6842-02	2.0958-02	2.3805-02	3.6981-01	2.6023-03
CP	1.0456-01	8.1418-02	1.5183-02	-5.6292-03	-3.7372-03	-5.9367-03	-4.8723-03	1.2448-01	-1.2799-02
P/PO1	6.3776-02	5.1302-02	1.5605-02	4.3883-03	5.4080-03	4.2226-03	4.7952-03	7.4509-02	5.2442-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTOUR NOZ HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	60.	301244	10.18	1	10.29	-61.17	9.00	10.00	180.0

VALVE POS 2 PO =1803.9 Q-INF = 2.676 P-INF = .0368 RE = .1798 TO = 1907.

P	4.8371+00	4.3140+00	2.5825+00	2.4770+00	2.4755+00	2.5080+00	2.4875+00	2.4810+00	2.4845+00
CP	1.7941+00	1.5987+00	9.5146-01	9.1203-01	9.1149-01	9.2362-01	9.1595-01	9.1353-01	9.1484-01
P/PO1	9.7437-01	8.6901-01	5.2021-01	4.9896-01	4.9867-01	5.0521-01	5.0107-01	4.9977-01	5.0047-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1804.2 Q-INF = 2.676 P-INF = .0368 RE = .1777 TO = 1908.

P	2.5190+00	2.0474+00	5.6938-01	9.9711-04	1.9030-02	1.6766-02	2.0805-02	2.0022-02	3.1191+00
CP	9.2770-01	7.5143-01	1.9903-01	-1.3398-02	-6.6594-03	-7.5053-03	-5.9960-03	-6.2884-03	1.1520+00
P/PO1	5.0740-01	4.1240-01	1.1469-01	2.0125-04	3.8331-03	3.3773-03	4.1907-03	4.0331-03	6.2828-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1804.2 Q-INF = 2.676 P-INF = .0369 RE = .1800 TO = 1906.

P	2.7859+00	2.8630+00	2.9064+00	2.9694+00	5.0076-03	2.8832+00	2.8885+00	2.5545+00	6.8036-01
CP	1.0272+00	1.0560+00	1.0723+00	1.0958+00	-1.1990-02	1.0636+00	1.0656+00	9.4076-01	2.4046-01
P/PO1	5.6105-01	5.7658-01	5.8532-01	5.9800-01	1.0085-03	5.8065-01	5.8172-01	5.1445-01	1.3702-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1805.2 Q-INF = 2.678 P-INF = .0369 RE = .1805 TO = 1904.

P	8.2036-02	1.5614-02	1.8412-02	1.9782-02	3.1195+00	2.7647+00	2.7248+00	2.7420+00	2.7891+00
CP	1.6859-02	-7.9418-03	-6.8969-03	-6.3454-03	1.1510+00	1.0185+00	1.0035+00	1.0100+00	1.0275+00
P/PO1	1.6509-02	3.1421-03	3.7052-03	3.9809-03	6.2775-01	5.5635-01	5.4833-01	5.5179-01	5.6125-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1805.2 Q-INF = 2.679 P-INF = .0369 RE = .1807 TO = 1903.

P	2.4290+00	3.6032-01	4.2981+00	2.5325+00	2.3258+00	2.4375+00	8.6952+00	2.4645+00	7.8768-01
CP	8.9307-01	1.2075-01	1.5909+00	9.3171-01	8.5453-01	8.9622-01	3.2287+00	9.0632-01	2.8030-01
P/PO1	4.8876-01	7.2502-02	8.6485-01	5.0958-01	4.6798-01	4.9045-01	1.7476+00	4.9589-01	1.5849-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1806.4 Q-INF = 2.680 P-INF = .0369 RE = .1806 TO = 1904.

P	2.3331+00	9.1361-01	2.9694+00	1.2700+00	3.3441+00	1.1257+00	1.5126+00	1.6050+00	2.0344+00
CP	8.5673-01	3.2711-01	1.0942+00	4.6009-01	1.2340+00	4.0623-01	5.5061-01	5.8508-01	7.4529-01
P/PO1	4.6916-01	1.8372-01	5.9713-01	2.5539-01	6.7249-01	2.2637-01	3.0418-01	3.2275-01	4.0911-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1806.9 Q-INF = 2.681 P-INF = .0369 RE = .1807 TO = 1904.

P	2.0272+00	1.8836+00	2.9064+00	7.0537-02	1.9430-02	1.5968-02	2.0405-02	2.1765+00	5.7416+00
CP	7.4239-01	6.8884-01	1.0703+00	1.2540-02	-6.5239-03	-7.8153-03	-6.1505-03	7.9808-01	2.1279+00
P/PO1	4.0754-01	3.7868-01	5.8430-01	1.4181-02	3.9062-03	3.2102-03	4.1021-03	4.3756-01	1.1543+00
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1807.2 Q-INF = 2.682 P-INF = .0369 RE = .1810 TO = 1902.

P	3.7635+00	2.8946+00	2.6305+00	2.1532+00	4.7173-01	1.6825+00	1.3599+00	1.4565+00	1.5888+00
CP	1.3895+00	1.0655+00	9.6707-01	7.9284-01	1.6213-01	6.1359-01	4.9704-01	5.2932-01	5.7866-01
P/PO1	7.5634-01	5.8171-01	5.2864-01	4.3474-01	9.4803-02	3.3813-01	2.7531-01	2.9271-01	3.1930-01
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1803.9 Q-INF = 2.677 P-INF = .0369 RE = .1809 TO = 1901.

P	1.5054+00	1.5607+00	1.6197+00	1.5312+00	1.3478+00	2.8743-01	3.5008-02	1.8220-02	1.6418-02
CP	5.4852-01	5.6917-01	5.9121-01	5.5817-01	4.8967-01	9.3587-02	-6.9566-04	-6.9661-03	-7.6392-03
P/PO1	3.0306-01	3.1419-01	3.2607-01	3.0826-01	2.7134-01	5.7864-02	7.0477-03	3.6680-03	3.3053-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B720

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS BLOWDOWN WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1799.4 Q-INF = 2.669 P-INF = .0368 RE = .1796 TO = 1905.

P	2.1810-02	2.7276+00	1.1308+00	8.1328-01	8.0165-01	8.5210-01	8.7272-01	8.8318-01	8.9179-01
CP	-5.6006-03	1.0083+00	4.0990-01	2.9094-01	2.8658-01	3.0549-01	3.1321-01	3.1713-01	3.2035-01
P/PO1	4.4041-03	5.5083-01	2.2834-01	1.6423-01	1.6188-01	1.7206-01	1.7623-01	1.7834-01	1.8008-01
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1797.2 Q-INF = 2.666 P-INF = .0367 RE = .1799 TO = 1903.

P	8.9300-01	7.3746-01	1.6831-01	2.3779-02	1.9631-02	1.7365-02	2.1205-02	6.5172-01	2.2024-03
CP	3.2113-01	2.6280-01	4.9350-02	-4.8545-03	-6.4102-03	-7.2598-03	-5.8199-03	2.3064-01	-1.2746-02
P/PO1	1.8050-01	1.4906-01	3.4021-02	4.8064-03	3.9679-03	3.5100-03	4.2861-03	1.3173-01	4.4518-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] ENGINEERING [illegible] CENTER
[illegible] GAS [illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	61.	301244	10.18	1	-14.00	-.06	-.02	59.00	180.0

VALVE POS 2 PO =1804.4 Q-INF = 2.675 P-INF = .0368 RE = .1790 TO = 1912.

P	9.8684-01	2.4469+00	4.1602+00	4.6252+00	4.7789+00	4.8674+00	4.4042+00	4.8645+00	4.9450+00
CP	3.5517-01	9.0103-01	1.5415+00	1.7154+00	1.7728+00	1.8060+00	1.6328+00	1.8049+00	1.8350+00
P/PO1	1.9883-01	4.9301-01	8.3820-01	9.3189-01	9.6785-01	9.8069-01	8.8736-01	9.8011-01	9.9632-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8700-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1798.4 Q-INF = 2.665 P-INF = .0367 RE = .1777 TO = 1916.

P	4.9660+00	4.2720+00	2.9064+00	1.5986-03	1.5925-01	1.1178-01	8.2818-02	7.6885-02	2.6975+00
CP	1.8499+00	1.5895+00	1.0770+00	-1.3172-02	4.5992-02	2.8177-02	1.7309-02	1.5082-02	9.9859-01
P/PO1	1.0044+00	8.6400-01	5.8782-01	3.2331-04	3.2207-02	2.2607-02	1.6750-02	1.5550-02	5.4557-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1798.9 Q-INF = 2.665 P-INF = .0367 RE = .1778 TO = 1916.

P	2.9748+00	3.1003+00	3.4013+00	3.0715+00	2.2034-03	2.9478+00	2.5491+00	2.2830+00	1.2738+00
CP	1.1023+00	1.1494+00	1.2624+00	1.1386+00	-1.2945-02	1.0922+00	9.4260-01	8.4278-01	4.6412-01
P/PO1	6.0148-01	6.2686-01	6.8771-01	6.2102-01	4.4551-04	5.9601-01	5.1540-01	4.6160-01	2.5754-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1798.4 Q-INF = 2.665 P-INF = .0367 RE = .1777 TO = 1915.

P	3.4555-01	6.7260-02	6.0440-02	6.1745-02	3.4789+00	2.7496+00	2.0819+00	2.0070+00	1.5769+00
CP	1.1591-01	1.1470-02	8.9106-03	9.4002-03	1.2916+00	1.0181+00	7.6755-01	7.3944-01	5.7799-01
P/PO1	6.9887-02	1.3603-02	1.2224-02	1.2488-02	7.0361-01	5.5611-01	4.2106-01	4.0591-01	3.1891-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1802.9 Q-INF = 2.672 P-INF = .0368 RE = .1787 TO = 1913.

P	1.1335+00	1.3972-01	9.0941-01	7.8210-01	8.4451-01	1.3568+00	7.6357-01	5.8265-02	4.8430+00
CP	4.1042-01	3.8515-02	3.2654-01	2.7890-01	3.0226-01	4.9397-01	2.7197-01	8.0318-03	1.7985+00
P/PO1	2.2861-01	2.8179-02	1.6340-01	1.5773-01	1.7032-01	2.7363-01	1.5399-01	1.1750-02	9.7669-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8700-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1804.9 Q-INF = 2.676 P-INF = .0369 RE = .1792 TO = 1911.

P	2.6252-01	3.5525+00	6.9847-02	3.4332+00	7.8322-02	2.6341+00	2.2772+00	6.3270-02	1.1507+00
CP	8.4334-02	1.3136+00	1.2331-02	1.2693+00	1.5498-02	9.7062-01	8.3724-01	9.8732-03	4.1627-01
P/PO1	5.2872-02	7.1548-01	1.4067-02	6.9147-01	1.5774-02	5.3052-01	4.5864-01	1.2743-02	2.3176-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1797.4 Q-INF = 2.664 P-INF = .0367 RE = .1783 TO = 1912.

P	3.0093-01	5.7371-01	2.9994+00	3.3370-02	3.5656-02	3.6527-02	6.1214-02	5.5462-02	1.0772-01
CP	9.9181-02	2.0156-01	1.1120+00	-1.2470-03	-3.1409-04	-6.2169-05	9.2038-03	7.0448-03	2.6659-02
P/PO1	6.0873-02	1.1605-01	6.0672-01	6.7502-03	7.2530-03	7.3887-03	1.2382-02	1.1219-02	2.1790-02
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1800.4 Q-INF = 2.669 P-INF = .0368 RE = .1786 TO = 1912.

P	8.7439-02	1.4413-01	1.6591-01	1.2889-01	4.8475-02	1.8902-01	1.5884-01	1.4897-01	3.3237-02
CP	1.8992-02	4.0233-02	4.8395-02	3.4522-02	4.3919-03	5.7055-02	4.5744-02	4.2046-02	-1.3180-03
P/PO1	1.7657-02	2.9105-02	3.3504-02	2.6027-02	9.7890-03	3.8171-02	3.2075-02	3.0082-02	6.7118-03
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1800.9 Q-INF = 2.670 P-INF = .0368 RE = .1788 TO = 1911.

P	7.5634-02	6.0053-02	4.8232-02	4.4760-02	3.4454-02	3.5729-02	4.5210-02	4.0245-02	2.8632-02
CP	1.4557-02	8.7215-03	4.2938-03	2.9933-03	-8.6711-04	-3.8757-04	3.1618-03	1.3020-03	-3.0477-03
P/PO1	1.5267-02	1.2122-02	9.7362-03	9.0353-03	6.9548-03	7.2122-03	9.1261-03	8.1238-03	5.7796-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B722

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1801.9 Q-INF = 2.672 P-INF = .0368 RE = .1791 TO = 1910.

P	3.9217-02	2.5583-01	1.1027-01	1.5966-01	2.3897-01	1.8862-01	5.6813-02	7.1279-02	8.0890-02
CP	9.0741-04	8.1986-02	2.7504-02	4.5989-02	7.5677-02	5.6831-02	7.4934-03	1.2908-02	1.6506-02
P/PO1	7.9112-03	5.1607-02	2.2245-02	3.2207-02	4.8207-02	3.8050-02	1.1461-02	1.4379-02	1.6318-02
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1802.7 Q-INF = 2.673 P-INF = .0368 RE = .1794 TO = 1909.

P	8.7639-02	7.9270-02	4.2028-02	5.3153-02	5.2482-02	3.8523-02	3.7608-02	4.5991-01	-2.2024-03
CP	1.9014-02	1.5884-02	1.9511-03	6.1130-03	5.8619-03	6.3985-04	2.9769-04	1.5828-01	-1.4596-02
P/PO1	1.7670-02	1.5983-02	8.4737-03	1.0717-02	1.0581-02	7.7670-03	7.5826-03	9.2727-02	-4.4406-04
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

50 - [illegible] TUNNEL March 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	62.	301244	10.18	1	-14.83	-349.14	4.99	58.98	180.0

VALVE POS 2 PO =1797.2 Q-INF = 2.664 P-INF = .0367 RE = .1786 TO = 1910.

P	9.8204-01	2.4469+00	4.1152+00	4.5682+00	4.7204+00	4.8059+00	4.8398+00	4.8105+00	4.8895+00
CP	3.5480-01	9.0459-01	1.5307+00	1.7007+00	1.7579+00	1.7899+00	1.8027+00	1.7917+00	1.8213+00
P/PO1	1.9864-01	4.9494-01	8.3237-01	9.2400-01	9.5480-01	9.7208-01	9.7894-01	9.7302-01	9.8899-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1802.9 Q-INF = 2.673 P-INF = .0368 RE = .1792 TO = 1910.

P	4.9450+00	4.2540+00	2.8854+00	2.1781-02	1.5925-01	1.1138-01	8.4419-02	7.8287-02	3.0906+00
CP	1.8361+00	1.5776+00	1.0656+00	-5.6234-03	4.5802-02	2.7894-02	1.7809-02	1.5515-02	1.1424+00
P/PO1	9.9698-01	8.5765-01	5.8174-01	4.3912-03	3.2106-02	2.2455-02	1.7920-02	1.5784-02	6.2311-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1804.2 Q-INF = 2.675 P-INF = .0368 RE = .1795 TO = 1909.

P	3.4606+00	3.6456+00	3.9562+00	3.5368+00	2.2034-02	3.3405+00	3.3461+00	2.7090+00	1.5618+00
CP	1.2798+00	1.3489+00	1.4650+00	1.3083+00	-5.5355-03	1.2536+00	1.2220+00	9.9882-01	5.7002-01
P/PO1	6.9714-01	7.3440-01	7.9638-01	7.1244-01	4.4388-03	6.8302-01	6.6602-01	5.4573-01	3.1463-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1805.4 Q-INF = 2.676 P-INF = .0368 RE = .1788 TO = 1914.

P	4.3779-01	8.6077-02	7.1843-02	6.7340-02	4.0001+00	3.3230+00	2.8540+00	2.4270+00	1.9779+00
CP	1.4984-01	1.8398-02	1.3080-02	1.1395-02	1.4812+00	1.2304+00	1.0528+00	8.9327-01	7.2916-01
P/PO1	8.8175-02	1.7337-02	1.4471-02	1.3563-02	8.0565-01	6.7049-01	5.7482-01	4.8882-01	4.0038-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1797.7 Q-INF = 2.663 P-INF = .0367 RE = .1775 TO = 1917.

P	1.4604+00	1.4293-01	1.0618+00	1.0298+00	1.2505+00	1.7275+00	5.3092-01	6.8076-02	5.0185+00
CP	5.3460-01	3.9836-02	3.8492-01	3.7242-01	4.5578-01	6.3490-01	1.8558-01	1.1790-02	1.8756+00
P/PO1	2.9552-01	2.8922-02	2.1486-01	2.0839-01	2.5304-01	3.4957-01	1.0743-01	1.3775-02	1.0155+00
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.9900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1798.7 Q-INF = 2.664 P-INF = .0367 RE = .1774 TO = 1918.

P	3.4595-01	4.2870+00	8.0053-02	3.7545+00	1.0116-01	2.9223+00	2.8810+00	1.1413-01	1.5843+00
CP	1.1607-01	1.5952+00	1.6273-02	1.3954+00	2.4194-02	1.0830+00	1.0675+00	2.9062-02	5.8685-01
P/PO1	6.9973-02	8.6709-01	1.6192-02	7.5938-01	2.0460-02	5.9105-01	5.8272-01	2.3083-02	3.2044-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1808.9 Q-INF = 2.677 P-INF = .0369 RE = .1767 TO = 1928.

P	2.9893-01	7.4786-01	3.4583+00	4.4161-02	3.5055-02	4.0519-02	6.2214-02	5.8365-02	1.1293-01
CP	9.7898-02	2.6560-01	1.2781+00	2.7253-03	-6.7642-04	1.3649-03	9.4692-03	7.9192-03	2.8413-02
P/PO1	6.0173-02	1.5054-01	6.9614-01	8.8993-03	7.0563-03	8.1562-03	1.2523-02	1.1688-02	2.2731-02
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1801.2 Q-INF = 2.665 P-INF = .0367 RE = .1756 TO = 1930.

P	1.3186-01	2.2100-01	2.2575-01	1.7205-01	6.5903-02	2.4032-01	2.2665-01	1.9261-01	3.7241-02
CP	3.5712-02	6.9163-02	7.0947-02	5.0794-02	1.0960-02	7.6415-02	7.1285-02	5.8512-02	2.0391-04
P/PO1	2.6664-02	4.4689-02	4.5651-02	3.4791-02	1.3327-02	4.8597-02	4.5833-02	3.8950-02	7.5309-03
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1796.4 Q-INF = 2.658 P-INF = .0366 RE = .1757 TO = 1927.

P	8.4237-02	7.2064-02	6.1641-02	6.6341-02	5.3884-02	3.3932-02	4.4810-02	4.2848-02	3.4839-02
CP	1.7915-02	1.3336-02	9.4149-03	1.1183-02	6.4969-03	-1.0082-03	3.0836-03	2.3455-03	-6.6719-04
P/PO1	1.7075-02	1.4607-02	1.2495-02	1.3447-02	1.0922-02	6.8781-03	9.0830-03	8.6853-03	7.0619-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B724

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1797.7 Q-INF = 2.660 P-INF = .0366 RE = .1758 TO = 1927.

P	3.9418-02	2.6143-01	1.1428-01	1.5366-01	1.1618-01	1.2216-01	6.1414-02	7.4483-02	8.9900-02
CP	1.0448-03	8.4500-02	2.9184-02	4.3990-02	2.9900-02	3.2146-02	9.3131-03	1.4226-02	2.0521-02
P/PO1	7.9843-03	5.2955-02	2.3148-02	3.1126-02	2.3533-02	2.4744-02	1.2440-02	1.5087-02	1.8210-02
S/R	2.3540+00	6.4000-02	1.1800-01	2.0900-01	2.8900-01	4.3700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1796.2 Q-INF = 2.659 P-INF = .0366 RE = .1761 TO = 1924.

P	1.0124-01	8.6877-02	3.9226-02	6.0147-02	4.6072-02	3.8523-02	3.7608-02	6.4331-01	1.4116-01
CP	2.4306-02	1.8902-02	9.8047-04	8.8486-03	3.5550-03	7.1600-04	4.4726-04	2.2818-01	3.9316-02
P/PO1	2.0519-02	1.7607-02	7.9499-03	1.2190-02	9.3373-03	7.8074-03	7.6626-03	1.3038-01	2.8608-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3540+00

~~CONFIDENTIAL~~

B725

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS FLOW WIND TUNNEL mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
3.	63.	301244	10.13	1	-14.83	-19.92	-5.00	58.98	180.0

VALVE POS 2 PO =1805.9 Q-INF = 2.680 P-INF = .0369 RE = .1807 TO = 1903.

P	9.7583-01	2.4289+00	4.1482+00	4.6147+00	4.7504+00	4.8374+00	4.9044+00	4.8585+00	4.9375+00
CP	3.5039-01	8.9264-01	1.5342+00	1.7083+00	1.7590+00	1.7914+00	1.8164+00	1.7993+00	1.8288+00
P/PO1	1.9627-01	4.8852-01	8.3432-01	9.2815-01	9.5545-01	9.7295-01	9.8641-01	9.7719-01	9.9308-01
S/R	.0000+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 3 PO =1798.4 Q-INF = 2.664 P-INF = .0367 RE = .1774 TO = 1918.

P	4.9090+00	4.1999+00	2.8404+00	2.0981-02	1.6145-01	1.1517-01	8.5819-02	7.8487-02	2.3420+00
CP	1.8289+00	1.5627+00	1.0524+00	-5.8963-03	4.6832-02	2.9459-02	1.8442-02	1.5690-02	8.6534-01
P/PO1	9.9304-01	8.4959-01	5.7459-01	4.2443-03	3.2660-02	2.3297-02	1.7360-02	1.5877-02	4.7375-01
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	2.6260+00	1.1800-01

VALVE POS 4 PO =1800.9 Q-INF = 2.670 P-INF = .0368 RE = .1790 TO = 1910.

P	2.5400+00	2.6227+00	2.8674+00	2.6421+00	2.0632-02	2.5245+00	2.4349+00	1.9170+00	1.0262+00
CP	9.3750-01	9.6846-01	1.0601+00	9.7575-01	-6.0449-03	9.3170-01	8.9814-01	7.0418-01	3.7856-01
P/PO1	5.1267-01	5.2936-01	5.7876-01	5.3328-01	4.1644-03	5.0955-01	4.9146-01	3.8693-01	2.0713-01
S/R	2.0800-01	2.8900-01	4.9700-01	1.0460+00	1.7970+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00

VALVE POS 5 PO =1802.9 Q-INF = 2.673 P-INF = .0368 RE = .1792 TO = 1910.

P	2.7132-01	5.5249-02	5.2035-02	5.7549-02	2.9443+00	2.2724+00	1.9602+00	1.6890+00	1.3368+00
CP	8.7728-02	6.8966-03	5.6941-03	7.7569-03	1.0877+00	8.3631-01	6.9787-01	6.1807-01	4.8631-01
P/PO1	5.4701-02	1.1139-02	1.0491-02	1.1603-02	5.9360-01	4.5814-01	3.8309-01	3.4052-01	2.6951-01
S/R	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00

VALVE POS 6 PO =1802.9 Q-INF = 2.673 P-INF = .0368 RE = .1792 TO = 1910.

P	9.1341-01	1.3692-01	8.0233-01	6.1845-01	5.8331-01	1.0214+00	8.9376-01	5.0456-02	4.6254+00
CP	3.2793-01	3.7456-02	2.8638-01	2.1759-01	2.0444-01	3.6831-01	3.2282-01	5.1035-03	1.7166+00
P/PO1	1.8415-01	2.7605-02	1.6176-01	1.2469-01	1.1760-01	2.0592-01	1.8140-01	1.0173-02	9.3254-01
S/R	1.7420+00	2.1430+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	3.8400-01	4.9700-01	4.9700-01

VALVE POS 7 PO =1803.2 Q-INF = 2.673 P-INF = .0368 RE = .1791 TO = 1911.

P	2.4011-01	3.1259+00	6.3442-02	2.9318+00	6.7906-02	2.4495+00	2.0218+00	9.1902-02	7.5544-01
CP	7.6048-02	1.1556+00	9.9606-03	1.0830+00	1.1630-02	9.0253-01	7.4256-01	2.0607-02	2.6882-01
P/PO1	4.8406-02	6.3919-01	1.2790-02	5.9107-01	1.3690-02	4.9382-01	4.0761-01	1.8528-02	1.5230-01
S/R	7.1700-01	7.1700-01	9.3600-01	9.3600-01	1.1550+00	1.1550+00	1.3720+00	1.3720+00	1.5890+00

VALVE POS 8 PO =1804.4 Q-INF = 2.674 P-INF = .0369 RE = .1783 TO = 1916.

P	2.7632-01	4.1517-01	2.5885+00	3.0173-02	3.4454-02	3.7126-02	5.5612-02	5.8265-02	1.0752-01
CP	8.9579-02	1.4151-01	9.5437-01	-2.4963-03	-8.8536-04	1.1403-04	7.1033-03	8.0205-03	2.6443-02
P/PO1	5.5696-02	8.3682-02	5.2174-01	6.0818-03	6.9445-03	7.4831-03	1.1250-02	1.1744-02	2.1672-02
S/R	1.5890+00	1.7420+00	1.1550+00	1.8540+00	1.9180+00	2.0850+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1804.7 Q-INF = 2.675 P-INF = .0368 RE = .1789 TO = 1913.

P	7.5233-02	1.0449-01	1.2308-01	1.0351-01	3.9662-02	1.5808-01	1.3203-01	9.8509-02	4.0645-02
CP	1.4354-02	2.5293-02	3.2242-02	2.4924-02	1.0557-03	4.5327-02	3.5587-02	2.3056-02	1.4233-03
P/PO1	1.5158-02	2.1053-02	2.4798-02	2.0854-02	7.9308-03	3.1850-02	2.6600-02	1.9847-02	8.1889-03
S/R	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.0800-01	2.8900-01	4.9700-01

VALVE POS 10 PO =1804.9 Q-INF = 2.674 P-INF = .0368 RE = .1782 TO = 1917.

P	6.9831-02	5.2046-02	4.1828-02	3.4569-02	3.1249-02	3.9721-02	4.3810-02	3.9844-02	3.3237-02
CP	1.2342-02	5.6913-03	1.8701-03	-8.4430-04	-2.0861-03	1.0821-03	2.6112-03	1.1283-03	-1.3425-03
P/PO1	1.4073-02	1.0489-02	8.4294-03	6.9666-03	6.2974-03	8.0047-03	8.8288-03	8.0296-03	6.6981-03
S/R	1.0460+00	1.1550+00	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.0850+00

B726

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

mach 10 ~~CONFIDENTIAL~~

VALVE POS 11 PO =1805.4 Q-INF = 2.673 P-INF = .0368 RE = .1774 TO = 1922.

P	3.6016-02	2.6223-01	1.1247-01	1.5566-01	1.2860-01	1.5409-01	6.6015-02	7.9088-02	9.3904-02
CP	-2.9973-04	8.4317-02	2.8300-02	4.4454-02	3.4332-02	4.3867-02	1.0921-02	1.5811-02	2.1354-02
P/PO1	7.2597-03	5.2858-02	2.2672-02	3.1377-02	2.5922-02	3.1060-02	1.3397-02	1.5942-02	1.8928-02
S/R	2.3540+00	6.4000-02	1.1800-01	2.0800-01	2.8900-01	4.9700-01	9.3600-01	1.1550+00	1.3720+00

VALVE POS 12 PO =1804.7 Q-INF = 2.674 P-INF = .0368 RE = .1784 TO = 1916.

P	1.0165-01	8.5676-02	4.2228-02	6.1146-02	4.4069-02	3.9321-02	3.7808-02	3.4038-01	1.3755-01
CP	2.4240-02	1.8268-02	2.0203-03	9.0948-03	2.7085-03	9.3372-04	3.6743-04	1.1352-01	3.7669-02
P/PO1	2.0485-02	1.7267-02	8.5104-03	1.2323-02	8.8813-03	7.9246-03	7.6197-03	6.8598-02	2.7722-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.1430+00	2.0850+00	1.7970+00	2.3549+00

~~CONFIDENTIAL~~

B727

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	67.	301244	10.18	3	9.03	.00	-.00	189.97	180.0

VALVE POS 2 PO =1800.4 Q-INF = 2.672 P-INF = .0368 RE = .1804 TO = 1902.

P	4.7789-02	4.3200-02	5.7025-02	1.2609-01	4.1837-02	4.9666-02	3.1814-02	7.4466-02	5.6943-01
CP	4.1155-03	2.3977-03	7.5725-03	3.3423-02	1.8876-03	4.8180-03	-1.8640-03	1.4101-02	1.9937-01
P/PO1	9.6408-03	8.7150-03	1.1504-02	2.5436-02	8.4401-03	1.0019-02	6.4181-03	1.5023-02	1.1488-01
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1800.7 Q-INF = 2.672 P-INF = .0368 RE = .1802 TO = 1903.

P	2.2221+00	2.9544+00	3.2207+00	1.2282+00	4.0212+00	4.2184+00	4.7752+00	3.3029-02	8.6696-02
CP	8.1794-01	1.0920+00	1.1917+00	4.4594-01	1.4913+00	1.5651+00	1.7735+00	-1.4095-03	1.8677-02
P/PO1	4.4826-01	5.9598-01	6.4971-01	2.4777-01	8.1118-01	8.5096-01	9.6328-01	6.6629-03	1.7489-02
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1800.4 Q-INF = 2.671 P-INF = .0368 RE = .1800 TO = 1904.

P	6.0167-01	1.1634+00	1.5174+00	1.5606-01	6.2055-02	5.4673-02	6.0027-02	1.3852-01	2.8632-02
CP	2.1148-01	4.2179-01	5.5431-01	4.4654-02	9.4602-03	6.6964-03	8.7008-03	3.8088-02	-3.0528-03
P/PO1	1.2140-01	2.3475-01	3.0617-01	3.1489-02	1.2521-02	1.1032-02	1.2112-02	2.7951-02	5.7772-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1800.4 Q-INF = 2.671 P-INF = .0368 RE = .1802 TO = 1903.

P	9.1180-02	6.1440-01	2.3990+00	4.1411+00	1.6695-01	4.3658-02	5.1423-02	3.3029-02	1.0472-01
CP	2.0360-02	2.1622-01	8.8428-01	1.5364+00	4.8723-02	2.5710-03	5.4776-03	-1.4078-03	2.5427-02
P/PO1	1.8396-02	1.2396-01	4.8402-01	8.3550-01	3.3683-02	8.8083-03	1.0375-02	6.6639-03	2.1127-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1799.9 Q-INF = 2.669 P-INF = .0368 RE = .1791 TO = 1909.

P	4.5990-02	1.7600-01	5.4024-02	5.8148-02	4.7442-02	6.2483-02	5.1623-02	3.6833-02	4.5450-02
CP	3.4598-03	5.2173-02	6.4701-03	8.0155-03	4.0040-03	9.6398-03	5.5705-03	2.8767-05	3.2577-03
P/PO1	9.2869-03	3.5540-02	1.0909-02	1.1742-02	9.5802-03	1.2618-02	1.0424-02	7.4378-03	9.1780-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1799.9 Q-INF = 2.669 P-INF = .0368 RE = .1791 TO = 1909.

P	4.2591-02	4.8800-02	4.6821-02	5.0155-02	3.9835-02	6.2483-02	5.2823-02	4.4640-02	4.0645-02
CP	2.1861-03	4.5128-03	3.7712-03	5.0206-03	1.1538-03	9.6398-03	6.0203-03	3.0289-03	1.4572-03
P/PO1	8.6005-03	9.8544-03	9.4547-03	1.0128-02	8.0441-03	1.2618-02	1.0667-02	9.0547-03	8.2076-03
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1797.9 Q-INF = 2.666 P-INF = .0367 RE = .1787 TO = 1910.

P	4.3390-02	1.6280-01	2.7612-02	1.3648-01	7.5727-01	2.7232+00	2.0009-03	4.9044-02	1.0011-03
CP	2.5059-03	4.7303-02	-3.4133-03	3.7428-02	2.7032-01	1.0078+00	-1.3022-02	4.6267-03	-1.3397-02
P/PO1	8.7728-03	3.2915-02	5.5827-03	2.7594-02	1.5311-01	5.5058-01	4.0455-04	9.9158-03	2.0241-04
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1797.7 Q-INF = 2.664 P-INF = .0367 RE = .1782 TO = 1913.

P	3.5792-02	3.8400-02	1.6527-01	4.5759-02	6.4858-02	9.4726-02	3.6416-02	3.3630-02	3.6841-02
CP	-3.3843-04	6.4041-04	4.8260-02	3.4026-03	1.0571-02	2.1781-02	-1.0418-04	-1.1500-03	5.5244-05
P/PO1	7.2398-03	7.7673-03	3.3430-02	9.2559-03	1.3119-02	1.9161-02	7.3660-03	6.8024-03	7.4519-03
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1796.9 Q-INF = 2.663 P-INF = .0367 RE = .1777 TO = 1915.

P	1.9776-01	1.7640-01	1.8008-03	4.6862+00	3.9807+00	4.2349+00	4.1874+00	2.9136+00	1.0590+00
CP	6.0499-02	5.2478-02	-1.3096-02	1.7462+00	1.4813+00	1.5767+00	1.5589+00	1.0805+00	3.8396-01
P/PO1	4.0026-02	3.5703-02	3.6448-04	9.4848-01	8.0570-01	8.5714-01	8.4754-01	5.8971-01	2.1434-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B728

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1797.7 Q-INF = 2.663 P-INF = .0367 RE = .1771 TO = 1919.

P	1.6776-01	3.6404+00	3.5326+00	2.6201+00	8.0171-01	1.3458-01	3.1241+00	2.3105+00	2.8331-01
CP	4.9235-02	1.3535+00	1.3130+00	9.7027-01	2.8733-01	3.6772-02	1.1596+00	8.5398-01	9.2633-02
P/PO1	3.3954-02	7.3680-01	7.1498-01	5.3030-01	1.6226-01	2.7238-02	6.3231-01	4.6763-01	5.7341-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1796.7 Q-INF = 2.663 P-INF = .0367 RE = .1784 TO = 1911.

P	9.0380-02	5.3600-02	5.5024-02	5.4751-02	6.4257-02	2.6535-01	1.6007-03	3.3322+00	4.7880+00
CP	2.0162-02	6.3524-03	6.8872-03	6.7847-03	1.0354-02	8.5858-02	-1.3171-02	1.2373+00	1.7839+00
P/PO1	1.8288-02	1.0846-02	1.1134-02	1.1079-02	1.3002-02	5.3694-02	3.2390-04	6.7425-01	9.6884-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	68.	301244	10.18	3	-9.97	.00	-.00	208.97	180.0

VALVE POS 2 PO =1794.9 Q-INF = 2.660 P-INF = .0366 RE = .1779 TO = 1913.

P	4.1991-02	3.7600-02	4.4820-02	8.2527-02	3.9635-02	3.7450-02	3.7016-02	3.4631-02	3.1475-01
CP	2.0125-03	3.6195-04	3.0760-03	1.7251-02	1.1270-03	3.0554-04	1.4258-04	-7.5422-04	1.0455-01
P/PO1	8.5068-03	7.6173-03	9.0800-03	1.6719-02	8.0296-03	7.5869-03	7.4991-03	7.0158-03	6.3765-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1793.4 Q-INF = 2.659 P-INF = .0366 RE = .1783 TO = 1910.

P	1.3615+00	1.7789+00	1.9222+00	7.2196-01	2.5949+00	2.8133+00	3.7223+00	4.0636-02	4.4650-02
CP	4.9829-01	6.5530-01	7.0920-01	2.5776-01	9.6220-01	1.0443+00	1.3862+00	1.5112-03	3.0207-03
P/PO1	2.7597-01	3.6059-01	3.8964-01	1.4634-01	5.2598-01	5.7025-01	7.5452-01	8.2370-03	9.0505-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1792.4 Q-INF = 2.657 P-INF = .0366 RE = .1782 TO = 1910.

P	3.3473-01	6.9680-01	8.7865-01	9.7913-02	5.5850-02	4.6462-02	5.6025-02	8.9079-02	4.2047-02
CP	1.1219-01	2.4845-01	3.1689-01	2.3075-02	7.2451-03	3.7122-03	7.3110-03	1.9750-02	2.0507-03
P/PO1	6.7888-02	1.4132-01	1.7820-01	1.9958-02	1.1327-02	9.4232-03	1.1363-02	1.8067-02	8.5277-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1791.9 Q-INF = 2.656 P-INF = .0366 RE = .1779 TO = 1911.

P	5.6387-02	3.6920-01	1.5504+00	2.8348+00	1.0289-01	3.8652-02	5.5425-02	4.8843-02	6.2069-02
CP	7.4557-03	1.2522-01	5.6990-01	1.0535+00	2.4963-02	7.7862-04	7.0933-03	4.6156-03	9.5947-03
P/PO1	1.1441-02	7.4908-02	3.1456-01	5.7517-01	2.0876-02	7.8421-03	1.1245-02	9.9100-03	1.2593-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1789.4 Q-INF = 2.652 P-INF = .0365 RE = .1775 TO = 1912.

P	4.3990-02	1.0680-01	5.5825-02	5.8948-02	4.4840-02	1.5300-01	1.6687-01	3.4230-02	4.4449-02
CP	2.8137-03	2.6496-02	7.2759-03	8.4534-03	3.1340-03	4.3917-02	4.9147-02	-8.6626-04	2.9868-03
P/PO1	8.9389-03	2.1702-02	1.1344-02	1.1978-02	9.1116-03	3.1091-02	3.3909-02	6.9557-03	9.0322-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1801.7 Q-INF = 2.672 P-INF = .0368 RE = .1793 TO = 1909.

P	4.3390-02	4.3600-02	4.5020-02	4.7957-02	4.8043-02	1.7123-01	2.1129-01	2.2700-01	1.1633-01
CP	2.4699-03	2.5484-03	3.0799-03	4.1794-03	4.2113-03	5.0322-02	6.5319-02	7.1199-02	2.9772-02
P/PO1	8.7533-03	8.7956-03	9.0821-03	9.6746-03	9.6919-03	3.4543-02	4.2625-02	4.5794-02	2.3468-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1801.4 Q-INF = 2.671 P-INF = .0368 RE = .1789 TO = 1911.

P	6.6585-02	1.0240-01	3.6616-02	1.1690-01	6.2616-01	2.1632+00	2.0009-03	1.4733-01	1.0011-03
CP	1.1161-02	2.4572-02	-6.0892-05	3.0000-02	2.2069-01	7.9625-01	-1.3023-02	4.1396-02	-1.3397-02
P/PO1	1.3437-02	2.0665-02	7.3893-03	2.3590-02	1.2636-01	4.3655-01	4.0379-04	2.9732-02	2.0203-04
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1802.4 Q-INF = 2.672 P-INF = .0368 RE = .1792 TO = 1910.

P	5.1589-02	4.2400-02	2.4891-01	4.9156-02	6.8861-02	8.6916-02	1.2325-01	1.0389-01	1.2194-01
CP	5.5326-03	2.0942-03	7.9370-02	4.6224-03	1.1996-02	1.8752-02	3.2350-02	2.5105-02	3.1856-02
P/PO1	1.0404-02	8.5508-03	5.0198-02	9.9133-03	1.3887-02	1.7528-02	2.4857-02	2.0952-02	2.4591-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1804.4 Q-INF = 2.675 P-INF = .0368 RE = .1792 TO = 1911.

P	4.9869-01	1.0840-01	1.6007-03	4.2387+00	2.6503+00	3.1510+00	3.3529+00	2.6645+00	1.2030+00
CP	1.7265-01	2.6750-02	-1.3173-02	1.5707+00	9.7696-01	1.1641+00	1.2396+00	9.8228-01	4.3593-01
P/PO1	1.0047-01	2.1838-02	3.2248-04	8.5394-01	5.3394-01	6.3481-01	6.7549-01	5.3680-01	2.4236-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B730

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 INCH CONTINUOUS HS WIND TUNNEL machio

~~CONFIDENTIAL~~

VALVE POS 11 PO =1805.9 Q-INF = 2.678 P-INF = .0369 RE = .1797 TO = 1909.

P	2.4215-01	2.3374+00	2.4890+00	1.9159+00	5.6370-01	8.5514-02	1.9202+00	1.4868+00	1.6398-01
CP	7.6651-02	8.5905-01	9.1567-01	7.0167-01	1.9673-01	1.8161-02	7.0329-01	5.4143-01	4.7463-02
P/PO1	4.8732-02	4.7040-01	5.0091-01	3.8558-01	1.1345-01	1.7210-02	3.8645-01	2.9922-01	3.3001-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PC =1801.2 Q-INF = 2.670 P-INF = .0368 RE = .1787 TO = 1917.

P	4.9989-02	5.3200-02	5.8626-02	2.1121-01	2.6163-01	9.6377-01	1.2005-03	4.4289+00	4.6155+00
CP	4.9512-03	6.1539-03	8.1862-03	6.5337-02	8.4221-02	3.4720-01	-1.3322-02	1.6450+00	1.7149+00
P/PO1	1.0090-02	1.0739-02	1.1834-02	4.2634-02	5.2811-02	1.9454-01	2.4233-04	8.9398-01	9.3165-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL

~~CONFIDENTIAL~~

Machio

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	69.	301744	10.18	3	-11.98	.00	-.00	210.98	180.0

VALVE POS 2 PO =1805.2 Q-INF = 2.677 P-INF = .0369 RE = .1794 TO = 1910.

P	4.2591-02	3.5600-02	4.3419-02	8.2127-02	4.3639-02	4.0053-02	3.8017-02	3.1228-02	2.9052-01
CP	2.1410-03	-4.7080-04	2.4506-03	1.6913-02	2.5326-03	1.1931-03	4.3220-04	-2.1044-03	9.4773-02
P/PO1	8.5758-03	7.1683-03	8.7427-03	1.6537-02	8.7869-03	8.0650-03	7.6549-03	6.2879-03	5.8498-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1808.2 Q-INF = 2.681 P-INF = .0369 RE = .1797 TO = 1910.

P	1.2595+00	1.6663+00	1.8083+00	6.7280-01	2.4675+00	2.6676+00	3.6057+00	4.0636-02	4.2447-02
CP	4.5601-01	6.0775-01	6.6069-01	2.3718-01	9.0659-01	9.8122-01	1.3311+00	1.3853-03	2.0608-03
P/PO1	2.5318-01	3.3496-01	3.6349-01	1.3524-01	4.9601-01	5.3623-01	7.2480-01	8.1685-03	8.5325-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1797.2 Q-INF = 2.664 P-INF = .0367 RE = .1783 TO = 1912.

P	3.0913-01	6.4240-01	8.1856-01	9.7114-02	5.5850-02	4.9666-02	5.7225-02	8.8879-02	4.2447-02
CP	1.0227-01	2.2738-01	2.9351-01	2.2684-02	7.1934-03	4.8722-03	7.7098-03	1.9592-02	2.1622-03
P/PO1	6.2540-02	1.2996-01	1.6560-01	1.9647-02	1.1299-02	1.0048-02	1.1577-02	1.7981-02	8.5875-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1802.7 Q-INF = 2.672 P-INF = .0368 RE = .1790 TO = 1911.

P	5.6787-02	3.4960-01	1.5114+00	2.6862+00	1.0209-01	4.1656-02	5.5024-02	4.7242-02	5.7864-02
CP	7.4773-03	1.1704-01	5.5177-01	9.9137-01	2.4429-02	1.8151-03	6.8176-03	3.9055-03	7.8803-03
P/PO1	1.1452-02	7.0501-02	3.0479-01	5.4170-01	2.0588-02	8.4003-03	1.1096-02	9.5268-03	1.1669-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1804.2 Q-INF = 2.675 P-INF = .0368 RE = .1795 TO = 1909.

P	4.2591-02	1.0640-01	5.3424-02	5.5950-02	4.5040-02	1.5961-01	1.8168-01	3.4030-02	4.4449-02
CP	2.1482-03	2.5999-02	6.1975-03	7.1419-03	3.0638-03	4.5890-02	5.4139-02	-1.0516-03	2.8430-03
P/PO1	8.5798-03	2.1434-02	1.0762-02	1.1271-02	9.0733-03	3.2154-02	3.6599-02	6.8554-03	8.9543-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1804.4 Q-INF = 2.676 P-INF = .0369 RE = .1797 TO = 1908.

P	4.2990-02	4.4000-02	4.4420-02	4.6758-02	4.6842-02	1.7503-01	2.2110-01	2.4602-01	1.4516-01
CP	2.2937-03	2.6709-03	2.8278-03	3.7018-03	3.7328-03	5.1638-02	6.8852-02	7.8165-02	4.0475-02
P/PO1	8.6583-03	8.8616-03	8.9462-03	9.4172-03	9.4339-03	3.5252-02	4.4529-02	4.9548-02	2.9236-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1804.9 Q-INF = 2.678 P-INF = .0369 RE = .1803 TO = 1905.

P	6.8985-02	1.0160-01	3.8417-02	1.1290-01	6.0614-01	2.0912+00	2.0009-03	1.4813-01	8.0089-04
CP	1.1992-02	2.4173-02	5.7595-04	2.8393-02	2.1260-01	7.6722-01	-1.3024-02	4.1551-02	-1.3473-02
P/PO1	1.3885-02	2.0450-02	7.7327-03	2.2725-02	1.2201-01	4.2092-01	4.0275-04	2.9816-02	1.6121-04
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1805.4 Q-INF = 2.679 P-INF = .0369 RE = .1805 TO = 1904.

P	5.4788-02	4.3600-02	2.6072-01	5.3552-02	6.7660-02	9.5928-02	1.3466-01	1.2131-01	1.3775-01
CP	6.6820-03	2.5053-03	8.3560-02	6.2208-03	1.1488-02	2.2041-02	3.6500-02	3.1516-02	3.7655-02
P/PO1	1.1024-02	8.7726-03	5.2458-02	1.0775-02	1.3614-02	1.9301-02	2.7094-02	2.4408-02	2.7717-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1801.4 Q-INF = 2.673 P-INF = .0368 RE = .1801 TO = 1904.

P	5.4568-01	1.0720-01	1.4006-03	4.1216+00	2.4960+00	2.9919+00	3.2168+00	2.6105+00	1.2015+00
CP	1.9040-01	2.6339-02	-1.3248-02	1.5284+00	9.2016-01	1.1057+00	1.1899+00	9.6300-01	4.3579-01
P/PO1	1.1004-01	2.1618-02	2.8245-04	8.3117-01	5.0335-01	6.0335-01	6.4872-01	5.2644-01	2.4230-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B732

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

50 - INCH CONTINUOUS [illegible] mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1799.2 Q-INF = 2.669 P-INF = .0368 RE = .1801 TO = 1903.

P	2.5154-01	2.2023+00	2.3391+00	1.8153+00	5.3067-01	8.4513-02	1.7916+00	1.3968+00	1.5577-01
CP	8.0458-02	8.1121-01	8.6245-01	6.6625-01	1.8502-01	1.7887-02	6.5738-01	5.0947-01	4.4581-02
P/PO1	5.0787-02	4.4463-01	4.7225-01	3.6651-01	1.0714-01	1.7063-02	3.6173-01	2.8201-01	3.1450-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1796.9 Q-INF = 2.666 P-INF = .0367 RE = .1800 TO = 1902.

P	4.7789-02	5.6800-02	6.4229-02	2.4958-01	3.0907-01	1.1034+00	1.2005-03	4.5084+00	4.5255+00
CP	4.1508-03	7.5301-03	1.0316-02	7.9830-02	1.0214-01	4.0004-01	-1.3322-02	1.6771+00	1.6835+00
P/PO1	9.6600-03	1.1481-02	1.2983-02	5.0449-02	6.2475-02	2.2303-01	2.4267-04	9.1131-01	9.1477-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B733

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL machD

~~CONFIDENTIAL~~

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	70.	301244	10.18	3	-13.98	.00	-.00	212.98	180.0

VALVE POS 2 PO =1800.9 Q-INF = 2.673 P-INF = .0368 RE = .1808 TO = 1900.

P	4.3390-02	3.2400-02	4.1618-02	8.0528-02	4.2037-02	3.9453-02	3.8017-02	2.8425-02	2.6690-01
CP	2.4609-03	-1.6507-03	1.7980-03	1.6355-02	1.9548-03	9.8776-04	4.5064-04	-3.1377-03	8.6078-02
P/PO1	8.7492-03	6.5331-03	8.3919-03	1.6738-02	8.4764-03	7.9552-03	7.6657-03	5.7316-03	5.3817-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1802.9 Q-INF = 2.677 P-INF = .0369 RE = .1813 TO = 1898.

P	1.1725+00	1.5597+00	1.6883+00	6.2484-01	2.2922+00	2.4860+00	3.4382+00	4.1036-02	3.8843-02
CP	4.2430-01	5.6896-01	6.1700-01	2.1968-01	8.4263-01	9.1502-01	1.2708+00	1.5598-03	7.4036-04
P/PO1	2.3611-01	3.1409-01	3.3998-01	1.2583-01	4.6159-01	5.0060-01	6.9235-01	8.2635-03	7.8219-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1804.9 Q-INF = 2.681 P-INF = .0369 RE = .1822 TO = 1894.

P	2.8574-01	5.9960-01	7.6534-01	9.7313-02	5.5850-02	4.8465-02	5.7025-02	8.9079-02	4.0445-02
CP	9.2816-02	2.0990-01	2.7172-01	2.2529-02	7.0618-03	4.3069-03	7.5003-03	1.9457-02	1.3154-03
P/PO1	5.7451-02	1.2056-01	1.5388-01	1.9566-02	1.1229-02	9.7444-03	1.1466-02	1.7911-02	8.1320-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1805.2 Q-INF = 2.681 P-INF = .0369 RE = .1824 TO = 1893.

P	5.2188-02	3.2560-01	1.4064+00	2.5315+00	1.0249-01	4.3458-02	5.1823-02	4.5440-02	5.4461-02
CP	5.6912-03	1.0766-01	5.1074-01	9.3032-01	2.4451-02	2.4353-03	5.5549-03	3.1746-03	6.5385-03
P/PO1	1.0491-02	6.5450-02	2.8271-01	5.0887-01	2.0602-02	8.7357-03	1.0417-02	9.1342-03	1.0947-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1807.7 Q-INF = 2.685 P-INF = .0370 RE = .1827 TO = 1893.

P	3.7192-02	1.0680-01	5.3824-02	5.5551-02	4.3639-02	1.6822-01	1.9629-01	3.1828-02	4.1646-02
CP	7.9065-05	2.6002-02	6.2730-03	6.9161-03	2.4800-03	4.8877-02	5.9328-02	-1.9183-03	1.7380-03
P/PO1	7.4655-03	2.1438-02	1.0804-02	1.1151-02	8.7597-03	3.3768-02	3.9401-02	6.3889-03	8.3597-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1803.2 Q-INF = 2.678 P-INF = .0369 RE = .1817 TO = 1896.

P	4.0391-02	4.2000-02	4.2819-02	4.5160-02	4.4039-02	1.9065-01	2.1510-01	2.7184-01	1.7219-01
CP	1.3133-03	1.9142-03	2.2201-03	3.0943-03	2.6758-03	5.7433-02	6.6561-02	8.7755-02	5.0538-02
P/PO1	8.1308-03	8.4547-03	8.6196-03	9.0908-03	8.8652-03	3.8379-02	4.3299-02	5.4722-02	3.4662-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1798.9 Q-INF = 2.670 P-INF = .0368 RE = .1806 TO = 1900.

P	7.5983-02	1.0120-01	4.1018-02	1.1210-01	5.8212-01	1.9861+00	1.4006-03	1.5013-01	8.0089-04
CP	1.4686-02	2.4131-02	1.5907-03	2.8214-02	2.0425-01	7.3009-01	-1.3248-02	4.2458-02	-1.3472-02
P/PO1	1.5339-02	2.0429-02	8.2802-03	2.2629-02	1.1751-01	4.0093-01	2.8274-04	3.0307-02	1.6167-04
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1796.9 Q-INF = 2.666 P-INF = .0367 RE = .1798 TO = 1903.

P	5.8787-02	4.5600-02	2.7352-01	7.5333-02	8.1873-02	9.3525-02	1.4206-01	1.4353-01	1.5697-01
CP	8.2777-03	3.3315-03	8.8821-02	1.4484-02	1.6937-02	2.1307-02	3.9513-02	4.0062-02	4.5106-02
P/PO1	1.1884-02	9.2183-03	5.5294-02	1.5229-02	1.6551-02	1.8907-02	2.8719-02	2.9015-02	3.1733-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1794.9 Q-INF = 2.663 P-INF = .0367 RE = .1796 TO = 1903.

P	5.9847-01	1.0640-01	1.4006-03	3.9910+00	2.3102+00	2.8223+00	3.0688+00	2.5445+00	1.1970+00
CP	2.1096-01	2.6182-02	-1.3246-02	1.4849+00	8.5374-01	1.0460+00	1.1386+00	9.4171-01	4.3571-01
P/PO1	1.2112-01	2.1534-02	2.8347-04	8.0772-01	4.6756-01	5.7119-01	6.2108-01	5.1497-01	2.4226-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B734

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS FLOW WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1793.7 Q-INF = 2.661 P-INF = .0366 RE = .1791 TO = 1905.

P	2.6214-01	2.0281+00	2.1801+00	1.7057+00	4.9864-01	7.8705-02	1.6555+00	1.2963+00	1.4957-01
CP	8.4755-02	7.4851-01	8.0564-01	6.2733-01	1.7365-01	1.5809-02	6.0847-01	4.7343-01	4.2443-02
P/PO1	5.3102-02	4.1084-01	4.4163-01	3.4553-01	1.0101-01	1.5943-02	3.3536-01	2.6258-01	3.0298-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1804.7 Q-INF = 2.679 P-INF = .0369 RE = .1815 TO = 1898.

P	4.5390-02	7.5600-02	8.5038-02	2.9394-01	3.6693-01	1.2535+00	8.0036-04	4.6464+00	4.4565+00
CP	3.1697-03	1.4445-02	1.7968-02	9.5938-02	1.2318-01	4.5409-01	-1.3473-02	1.7205+00	1.6496+00
P/PO1	9.1312-03	1.5209-02	1.7107-02	5.9132-02	7.3815-02	2.5217-01	1.6101-04	9.3473-01	8.9652-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B735

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS DRIVE TUNNEL machip

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	71.	301244	10.18	3	-14.85	.00	-.00	213.85	180.0

VALVE POS 2 PO =1796.2 Q-INF = 2.663 P-INF = .0367 RE = .1787 TO = 1909.

P	4.6790-02	3.0400-02	4.1418-02	8.0129-02	3.9635-02	3.8652-02	3.9618-02	2.7625-02	2.5508-01
CP	3.7965-03	-2.3576-03	1.7797-03	1.6315-02	1.1101-03	7.4075-04	1.1035-03	-3.3997-03	8.2008-02
P/PO1	9.4685-03	6.1519-03	8.3816-03	1.6215-02	8.0207-03	7.8217-03	8.0172-03	5.5902-03	5.1620-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1798.7 Q-INF = 2.667 P-INF = .0367 RE = .1791 TO = 1908.

P	1.1156+00	1.4877+00	1.6104+00	5.9527-01	2.2009+00	2.3989+00	3.3470+00	4.2238-02	3.8242-02
CP	4.0446-01	5.4398-01	5.8997-01	2.0940-01	8.1136-01	8.8562-01	1.2410+00	2.0633-03	5.6549-04
P/PO1	2.2541-01	3.0060-01	3.2538-01	1.2028-01	4.4470-01	4.8472-01	6.7628-01	8.5344-03	7.7272-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1798.9 Q-INF = 2.669 P-INF = .0368 RE = .1797 TO = 1905.

P	2.7314-01	5.7160-01	7.2872-01	9.7114-02	5.2647-02	4.2857-02	5.3624-02	8.9679-02	4.0044-02
CP	8.8584-02	2.0043-01	2.5931-01	2.2620-02	5.9567-03	2.2881-03	6.3228-03	1.9609-02	1.2341-03
P/PO1	5.5165-02	1.1544-01	1.4718-01	1.9614-02	1.0633-02	8.6558-03	1.0830-02	1.7991-02	8.0877-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1798.9 Q-INF = 2.669 P-INF = .0368 RE = .1800 TO = 1903.

P	4.9989-02	3.1120-01	1.3525+00	2.4429+00	1.0229-01	4.2457-02	5.1023-02	4.4039-02	5.2458-02
CP	4.9566-03	1.0282-01	4.9294-01	9.0150-01	2.4552-02	2.1346-03	5.3439-03	2.7275-03	5.8818-03
P/PO1	1.0094-02	6.2840-02	2.7310-01	4.9330-01	2.0655-02	8.5732-03	1.0303-02	8.8927-03	1.0593-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1800.9 Q-INF = 2.672 P-INF = .0368 RE = .1802 TO = 1903.

P	3.6592-02	1.0680-01	5.2823-02	5.3353-02	4.2037-02	1.7543-01	1.9949-01	3.1228-02	4.1046-02
CP	-7.8048-05	2.6196-02	5.9964-03	6.1944-03	1.9598-03	5.1881-02	6.0884-02	-2.0855-03	1.5887-03
P/PO1	7.3805-03	2.1541-02	1.0654-02	1.0761-02	8.4789-03	3.5385-02	4.0237-02	6.2986-03	8.2789-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1802.2 Q-INF = 2.674 P-INF = .0368 RE = .1802 TO = 1904.

P	3.9591-02	4.0800-02	4.1618-02	4.3961-02	4.2838-02	2.0988-01	2.1089-01	2.7625-01	1.9081-01
CP	1.0356-03	1.4877-03	1.7939-03	2.6700-03	2.2500-03	6.4725-02	6.5105-02	8.9547-02	5.7594-02
P/PO1	7.9807-03	8.2243-03	8.3893-03	8.8615-03	8.6352-03	4.2307-02	4.2511-02	5.5685-02	3.8463-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1804.2 Q-INF = 2.677 P-INF = .0369 RE = .1807 TO = 1902.

P	7.6983-02	1.0160-01	4.0618-02	1.0890-01	5.7291-01	1.9531+00	1.8008-03	1.5314-01	1.4016-03
CP	1.4982-02	2.4177-02	1.3994-03	2.6904-02	2.0021-01	7.1571-01	-1.3099-02	4.3426-02	-1.3248-02
P/PO1	1.5497-02	2.0453-02	8.1768-03	2.1923-02	1.1533-01	3.9317-01	3.6252-04	3.0828-02	2.8215-04
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1804.4 Q-INF = 2.678 P-INF = .0369 RE = .1811 TO = 1900.

P	6.0786-02	4.4400-02	2.8092-01	9.6914-02	9.8888-02	9.5928-02	1.4426-01	1.5394-01	1.6699-01
CP	8.9244-03	2.8061-03	9.1118-02	2.2413-02	2.3150-02	2.2045-02	4.0093-02	4.3704-02	4.8576-02
P/PO1	1.2233-02	8.9351-03	5.6533-02	1.9503-02	1.9900-02	1.9305-02	2.9032-02	3.0978-02	3.3604-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1806.4 Q-INF = 2.681 P-INF = .0369 RE = .1813 TO = 1900.

P	6.3106-01	1.0720-01	1.4006-03	3.9550+00	2.2458+00	2.7622+00	3.0209+00	2.5295+00	1.2045+00
CP	2.2158-01	2.6209-02	-1.3249-02	1.4612+00	8.2381-01	1.0164+00	1.1129+00	9.2961-01	4.3545-01
P/PO1	1.2685-01	2.1549-02	2.8154-04	7.9500-01	4.5144-01	5.5524-01	6.0725-01	5.0846-01	2.4212-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B736

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGIN[illegible] DEVELOPMENT CENTER
[illegible] KA[illegible]
50 - INCH CONTINUOUS RC WIND TUNNEL machio ~~CONFIDENTIAL~~

VALVE POS 11 PO =1805.7 Q-INF = 2.681 P-INF = .0369 RE = .1820 TO = 1896.

P	2.6834-01	1.9666+00	2.1261+00	1.6757+00	4.8663-01	7.4099-02	1.6122+00	1.2663+00	1.4736-01
CP	8.6306-02	7.1966-01	7.7918-01	6.1117-01	1.6772-01	1.3864-02	5.8748-01	4.5848-01	4.1188-02
P/PO1	5.3941-02	3.9532-01	4.2739-01	3.3684-01	9.7822-02	1.4895-02	3.2407-01	2.5454-01	2.9623-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1806.4 Q-INF = 2.682 P-INF = .0369 RE = .1819 TO = 1897.

P	4.5190-02	9.1600-02	1.0425-01	3.1272-01	3.9175-01	1.3271+00	1.6007-03	4.6749+00	4.3875+00
CP	3.0767-03	2.0380-02	2.5095-02	1.0782-01	1.3228-01	4.8100-01	-1.3175-02	1.7292+00	1.6220+00
P/PO1	9.0810-03	1.8407-02	2.0949-02	6.2842-02	7.8723-02	2.6668-01	3.2167-04	9.3944-01	8.8168-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL

~~CONFIDENTIAL~~

machio

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	72.	301244	10.18	3	-10.00	.00	-.00	209.00	180.0

VALVE POS 2 PO =1652.6 Q-INF = 2.452 P-INF = .0338 RE = .1674 TO = 1889.

P	3.7992-02	3.4400-02	4.0618-02	7.5133-02	3.7233-02	4.0254-02	3.4615-02	3.1028-02	2.8772-01
CP	1.7077-03	2.4319-04	2.7787-03	1.6853-02	1.3984-03	2.6302-03	3.3102-04	-1.1320-03	1.0354-01
P/PO1	8.3510-03	7.5615-03	8.9283-03	1.6515-02	8.1843-03	8.8482-03	7.6089-03	6.8202-03	6.3244-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1651.9 Q-INF = 2.451 P-INF = .0338 RE = .1670 TO = 1891.

P	1.2205+00	1.6183+00	1.7603+00	6.7580-01	2.3866+00	2.5851+00	3.4217+00	3.6432-02	4.1446-02
CP	4.8424-01	6.4655-01	7.0450-01	2.6197-01	9.6007-01	1.0410+00	1.3824+00	1.0819-03	3.1277-03
P/PO1	2.6846-01	3.5595-01	3.8719-01	1.4865-01	5.2496-01	5.6860-01	7.5263-01	8.0135-03	9.1163-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8400+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1651.9 Q-INF = 2.452 P-INF = .0338 RE = .1677 TO = 1887.

P	3.0753-01	6.5680-01	8.3497-01	9.1519-02	4.9244-02	4.4459-02	4.6821-02	8.3875-02	3.8242-02
CP	1.1165-01	2.5411-01	3.2678-01	2.3544-02	6.3010-03	4.3495-03	5.3127-03	2.0426-02	1.8138-03
P/PO1	6.7617-02	1.4441-01	1.8359-01	2.0122-02	1.0827-02	9.7753-03	1.0294-02	1.8441-02	8.4084-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1651.4 Q-INF = 2.452 P-INF = .0338 RE = .1681 TO = 1884.

P	5.1189-02	3.3800-01	1.4424+00	2.6096+00	9.6886-02	3.9052-02	5.0222-02	4.4640-02	5.7264-02
CP	7.0939-03	1.2407-01	5.7453-01	1.0506+00	2.5732-02	2.1438-03	6.6998-03	4.4228-03	9.5717-03
P/PO1	1.1255-02	7.4317-02	3.1715-01	5.7378-01	2.1303-02	8.5865-03	1.1043-02	9.8150-03	1.2591-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1651.1 Q-INF = 2.451 P-INF = .0338 RE = .1676 TO = 1887.

P	4.0591-02	1.0080-01	5.0823-02	5.2753-02	4.2037-02	1.5040-01	1.5207-01	3.1428-02	4.1046-02
CP	2.7793-03	2.7348-02	6.9544-03	7.7422-03	3.3695-03	4.7588-02	4.8268-02	-9.5978-04	2.9648-03
P/PO1	8.9288-03	2.2173-02	1.1180-02	1.1604-02	9.2470-03	3.3084-02	3.3450-02	6.9132-03	9.0288-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1654.1 Q-INF = 2.456 P-INF = .0338 RE = .1682 TO = 1885.

P	4.0191-02	4.0800-02	4.2219-02	4.4361-02	4.5440-02	1.5300-01	1.9629-01	2.0258-01	1.0672-01
CP	2.5827-03	2.8307-03	3.4084-03	4.2806-03	4.7204-03	4.8523-02	6.6149-02	6.8711-02	2.9674-02
P/PO1	8.8229-03	8.9565-03	9.2680-03	9.7382-03	9.9752-03	3.3588-02	4.3090-02	4.4471-02	2.3427-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1656.1 Q-INF = 2.459 P-INF = .0339 RE = .1684 TO = 1885.

P	6.1186-02	9.6000-02	3.2414-02	1.0830-01	5.7851-01	1.9906+00	1.4006-03	1.3592-01	-2.0022-04
CP	1.1102-02	2.5262-02	-6.0012-04	3.0266-02	2.2151-01	7.9584-01	-1.3214-02	4.1498-02	-1.3865-02
P/PO1	1.3415-02	2.1048-02	7.1070-03	2.3746-02	1.2684-01	4.3645-01	3.0709-04	2.9801-02	-4.3900-05
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1658.1 Q-INF = 2.463 P-INF = .0339 RE = .1693 TO = 1881.

P	4.7389-02	3.8800-02	2.3050-01	4.4960-02	6.3456-02	8.1909-02	1.1425-01	9.5285-02	1.1273-01
CP	5.4590-03	1.9712-03	7.9813-02	4.4725-03	1.1983-02	1.9476-02	3.2608-02	2.4907-02	3.1989-02
P/PO1	1.0374-02	8.4933-03	5.0457-02	9.8417-03	1.3891-02	1.7930-02	2.5009-02	2.0858-02	2.4676-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1660.4 Q-INF = 2.466 P-INF = .0340 RE = .1695 TO = 1881.

P	4.5910-01	1.0200-01	1.6007-03	3.9009+00	2.4436+00	2.8943+00	3.0823+00	2.4515+00	1.1100+00
CP	1.7238-01	2.7577-02	-1.3134-02	1.5680+00	9.7707-01	1.1598+00	1.2361+00	9.8028-01	4.3632-01
P/PO1	1.0036-01	2.2297-02	3.4991-04	8.5273-01	5.3416-01	6.3269-01	6.7378-01	5.3589-01	2.4264-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B738

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HIGH WIND TUNNEL machio

~~CONFIDENTIAL~~

VALVE POS 11 PC =1661.6 Q-INF = 2.468 P-INF = .0340 RE = .1698 TO = 1880.

P	2.2355-01	2.1482+00	2.2911+00	1.7763+00	5.2166-01	8.3912-02	1.7767+00	1.3863+00	1.5237-01
CP	7.6786-02	8.5655-01	9.1443-01	7.0586-01	1.9756-01	2.0213-02	7.0602-01	5.4786-01	4.7948-02
P/PO1	4.8826-02	4.6919-01	5.0040-01	3.8796-01	1.1394-01	1.8327-02	3.8804-01	3.0278-01	3.3279-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1654.9 Q-INF = 2.458 P-INF = .0339 RE = .1688 TO = 1882.

P	4.7989-02	5.4400-02	5.9426-02	1.9403-01	2.4202-01	8.5614-01	8.0036-04	4.0538+00	4.2420+00
CP	5.7432-03	8.3518-03	1.0397-02	6.5167-02	8.4693-02	3.3459-01	-1.3458-02	1.6357+00	1.7123+00
P/PO1	1.0527-02	1.1933-02	1.3036-02	4.2561-02	5.3088-02	1.8780-01	1.7556-04	8.8923-01	9.3052-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] Mach 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	73.	301244	10.18	3	-11.98	.00	-.00	210.98	180.0

VALVE POS 2 PC =1652.9 Q-INF = 2.454 P-INF = .0338 RE = .1683 TO = 1884.

P	3.9391-02	3.3200-02	3.9618-02	7.4933-02	4.0036-02	3.3645-02	3.4815-02	2.9026-02	2.6770-01
CP	2.2675-03	-2.5538-04	2.3597-03	1.6751-02	2.5301-03	-7.4108-05	4.0291-04	-1.9563-03	9.5300-02
P/PO1	8.6531-03	7.2930-03	8.7028-03	1.6461-02	8.7546-03	7.3908-03	7.6479-03	6.3761-03	5.8805-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PC =1652.1 Q-INF = 2.453 P-INF = .0338 RE = .1685 TO = 1882.

P	1.1485+00	1.5387+00	1.6673+00	6.2125-01	2.2578+00	2.4470+00	3.2886+00	3.5632-02	3.9043-02
CP	4.5435-01	6.1339-01	6.6581-01	2.3943-01	9.0648-01	9.8358-01	1.3266+00	7.3904-04	2.1296-03
P/PO1	2.5237-01	3.3810-01	3.6636-01	1.3651-01	4.9610-01	5.3767-01	7.2261-01	7.8293-03	8.5789-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PC =1650.1 Q-INF = 2.450 P-INF = .0338 RE = .1683 TO = 1882.

P	2.8574-01	6.0080-01	7.6894-01	9.0320-02	5.2246-02	4.2857-02	5.3424-02	8.3074-02	3.7842-02
CP	1.0282-01	2.3140-01	3.0002-01	2.3075-02	7.5371-03	3.7054-03	8.0176-03	2.0118-02	1.6588-03
P/PO1	6.2862-02	1.3218-01	1.6917-01	1.9870-02	1.1494-02	9.4285-03	1.1753-02	1.8276-02	8.3252-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PC =1652.6 Q-INF = 2.454 P-INF = .0338 RE = .1682 TO = 1884.

P	4.5390-02	3.2160-01	1.3705+00	2.4745+00	9.5285-02	3.6849-02	4.7621-02	4.4440-02	5.6163-02
CP	4.7147-03	1.1779-01	5.4475-01	9.9470-01	2.5050-02	1.2339-03	5.6241-03	4.3274-03	9.3907-03
P/PO1	9.9723-03	7.0657-02	3.0109-01	5.4365-01	2.0934-02	8.0459-03	1.0463-02	9.7635-03	1.2433-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PC =1654.1 Q-INF = 2.457 P-INF = .0339 RE = .1691 TO = 1880.

P	3.9791-02	9.8800-02	5.1223-02	5.4352-02	4.2238-02	1.4279-01	1.6647-01	3.1028-02	4.0645-02
CP	2.4113-03	2.6428-02	7.0640-03	8.3375-03	3.4070-03	4.4333-02	5.3972-02	-1.1556-03	2.7989-03
P/PO1	8.7308-03	2.1678-02	1.1239-02	1.1926-02	9.2676-03	3.1330-02	3.6527-02	6.8079-03	8.9182-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PC =1654.9 Q-INF = 2.458 P-INF = .0339 RE = .1691 TO = 1880.

P	3.9991-02	4.0400-02	4.1418-02	4.4161-02	4.3839-02	1.5481-01	2.0389-01	2.2360-01	1.2754-01
CP	2.4852-03	2.6516-03	3.0659-03	4.1815-03	4.0506-03	4.9194-02	6.9163-02	7.7180-02	3.8103-02
P/PO1	8.7706-03	8.8603-03	9.0837-03	9.6851-03	9.6145-03	3.3951-02	4.4716-02	4.9038-02	2.7972-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PC =1655.9 Q-INF = 2.460 P-INF = .0339 RE = .1697 TO = 1877.

P	6.3786-02	9.4400-02	3.3215-02	1.0491-01	5.5970-01	1.9215+00	1.8008-03	1.3612-01	1.2013-03
CP	1.2141-02	2.4584-02	-2.8401-04	2.8955-02	2.1370-01	7.6721-01	-1.3052-02	4.1541-02	-1.3296-02
P/PO1	1.3976-02	2.0685-02	7.2779-03	2.2987-02	1.2264-01	4.2104-01	3.9458-04	2.9826-02	2.6323-04
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PC =1657.4 Q-INF = 2.463 P-INF = .0339 RE = .1699 TO = 1877.

P	4.9989-02	3.8400-02	2.4011-01	4.8757-02	6.5658-02	8.3712-02	1.2225-01	1.1010-01	1.2554-01
CP	6.5151-03	1.8093-03	8.3716-02	6.0148-03	1.2878-02	2.0209-02	3.5860-02	3.0923-02	3.7194-02
P/PO1	1.0943-02	8.4063-03	5.2563-02	1.0674-02	1.4374-02	1.8326-02	2.6763-02	2.4102-02	2.7482-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PC =1659.1 Q-INF = 2.466 P-INF = .0340 RE = .1702 TO = 1876.

P	5.0069-01	1.0000-01	1.0004-03	3.8018+00	2.2997+00	2.7517+00	2.9626+00	2.4020+00	1.1010+00
CP	1.8929-01	2.6775-02	-1.3378-02	1.5282+00	9.1897-01	1.1023+00	1.1878+00	9.6044-01	4.3277-01
P/PO1	1.0948-01	2.1866-02	2.1876-04	8.3130-01	5.0286-01	6.0168-01	6.4780-01	5.2521-01	2.4074-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B740

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

MACH 10

VALVE POS 11 PO =1645.4 Q-INF = 2.443 P-INF = .0337 RE = .1675 TO = 1884.

P	2.3135-01	2.0131+00	2.1441+00	1.6607+00	8.9800-01	7.4499-02	1.6406+00	1.2753+00	1.4476-01
CP	8.0924-02	8.1033-01	8.6398-01	6.6605-01	3.5383-01	1.6713-02	6.5783-01	5.0827-01	4.5477-02
P/PO1	5.1055-02	4.4427-01	4.7318-01	3.6649-01	1.9818-01	1.6441-02	3.6205-01	2.8143-01	3.1947-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1658.4 Q-INF = 2.464 P-INF = .0340 RE = .1697 TO = 1879.

P	4.4790-02	5.3600-02	5.9827-02	2.2840-01	2.8425-01	1.0148+00	8.0036-04	4.1393+00	4.1745+00
CP	4.3969-03	7.9729-03	1.0500-02	7.8924-02	1.0160-01	3.9813-01	-1.3459-02	1.6664+00	1.6807+00
P/PO1	9.8011-03	1.1729-02	1.3091-02	4.9979-02	6.2201-02	2.2206-01	1.7514-04	9.0578-01	9.1348-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B741

PRELIMINARY UNCHECKED DATA

[illegible] DEVELOPMENT CENTER
VON KARMAN [illegible] FACILITY
50 INCH CONTINUOUS AIR WIND TUNNEL MACH [illegible]

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	74.	301244	10.18	3	-13.98	.00	-.00	212.98	180.0

VALVE POS 2 PO =1653.1 Q-INF = 2.457 P-INF = .0339 RE = .1698 TO = 1875.

P	3.8991-02	3.0000-02	3.7617-02	7.3135-02	3.8434-02	3.5648-02	3.4215-02	2.6423-02	2.4828-01
CP	2.0870-03	-1.5729-03	1.5274-03	1.5985-02	1.8602-03	7.2590-04	1.4289-04	-3.0287-03	8.7274-02
P/PO1	8.5564-03	6.5833-03	8.2547-03	1.6049-02	8.4341-03	7.8226-03	7.5083-03	5.7984-03	5.4482-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1655.9 Q-INF = 2.460 P-INF = .0339 RE = .1697 TO = 1877.

P	1.0766+00	1.4382+00	1.5534+00	5.7329-01	2.1095+00	2.2878+00	3.1570+00	3.7233-02	3.6240-02
CP	4.2378-01	5.7074-01	6.1757-01	2.1922-01	8.4359-01	9.1608-01	1.2694+00	1.3492-03	9.4568-04
P/PO1	2.3589-01	3.1512-01	3.4037-01	1.2562-01	4.6222-01	5.0130-01	6.9175-01	8.1584-03	7.9408-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1656.9 Q-INF = 2.462 P-INF = .0339 RE = .1697 TO = 1878.

P	2.6654-01	5.6240-01	7.1552-01	9.0520-02	5.0845-02	4.4259-02	5.2023-02	8.3074-02	3.6841-02
CP	9.4494-02	2.1468-01	2.7688-01	2.2988-02	6.8713-03	4.1958-03	7.3499-03	1.9964-02	1.1823-03
P/PO1	5.8373-02	1.2317-01	1.5670-01	1.9824-02	1.1135-02	9.6929-03	1.1393-02	1.8193-02	8.0683-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1654.6 Q-INF = 2.458 P-INF = .0339 RE = .1693 TO = 1879.

P	4.8589-02	3.0040-01	1.2925+00	2.3183+00	9.5085-02	3.7450-02	4.9222-02	4.1837-02	4.9855-02
CP	5.9840-03	1.0843-01	5.1205-01	9.2940-01	2.4900-02	1.4521-03	6.2414-03	3.2370-03	6.4991-03
P/PO1	1.0657-02	6.5886-02	2.8348-01	5.0847-01	2.0855-02	8.2138-03	1.0796-02	9.1760-03	1.0935-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1653.1 Q-INF = 2.455 P-INF = .0338 RE = .1689 TO = 1880.

P	3.4192-02	9.8800-02	5.0422-02	5.2753-02	4.0236-02	1.5280-01	1.8028-01	2.9426-02	3.8242-02
CP	1.4098-04	2.6453-02	6.7508-03	7.6999-03	2.6022-03	4.8446-02	5.9636-02	-1.8001-03	1.7904-03
P/PO1	7.5070-03	2.1692-02	1.1070-02	1.1582-02	8.8338-03	3.3548-02	3.9581-02	6.4605-03	8.3961-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1652.4 Q-INF = 2.454 P-INF = .0338 RE = .1689 TO = 1880.

P	3.7992-02	3.9200-02	3.9818-02	4.2163-02	4.1437-02	1.7003-01	1.9789-01	2.5002-01	1.5257-01
CP	1.6953-03	2.1877-03	2.4393-03	3.3947-03	3.0990-03	5.5492-02	6.6844-02	8.8086-02	4.8379-02
P/PO1	8.3449-03	8.6103-03	8.7460-03	9.2611-03	9.1017-03	3.7347-02	4.3466-02	5.4918-02	3.3512-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1651.4 Q-INF = 2.453 P-INF = .0338 RE = .1688 TO = 1880.

P	6.7985-02	9.4000-02	3.4215-02	1.0191-01	5.3748-01	1.8345+00	1.4006-03	1.3612-01	4.0044-04
CP	1.3933-02	2.4539-02	1.6509-04	2.7764-02	2.0534-01	7.3412-01	-1.3213-02	4.1711-02	-1.3621-02
P/PO1	1.4942-02	2.0660-02	7.5200-03	2.2398-02	1.1813-01	4.0319-01	3.0784-04	2.9918-02	8.8012-05
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1650.9 Q-INF = 2.452 P-INF = .0338 RE = .1687 TO = 1880.

P	5.3188-02	3.8800-02	2.5131-01	6.5142-02	7.5067-02	8.6315-02	1.2706-01	1.2952-01	1.4216-01
CP	7.9069-03	2.0391-03	8.8706-02	1.2782-02	1.6829-02	2.1417-02	3.8032-02	3.9035-02	4.4190-02
P/PO1	1.1694-02	8.5303-03	5.5252-02	1.4322-02	1.6504-02	1.8977-02	2.7934-02	2.8474-02	3.1254-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1650.9 Q-INF = 2.452 P-INF = .0338 RE = .1687 TO = 1880.

P	5.4828-01	9.9200-02	1.4006-03	3.6637+00	2.1304+00	2.5926+00	2.8205+00	2.3405+00	1.1055+00
CP	2.0981-01	2.6671-02	-1.3213-02	1.4803+00	8.5505-01	1.0435+00	1.1365+00	9.4070-01	4.3706-01
P/PO1	1.2054-01	2.1810-02	3.0793-04	8.0547-01	4.6839-01	5.6999-01	6.2011-01	5.1456-01	2.4305-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B742

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

[illegible] CENTER
[illegible] KARMAN [illegible] FACILITY
[illegible] INCH CONTINUOUS BS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1654.9 Q-INF = 2.459 P-INF = .0339 RE = .1696 TO = 1877.

P	2.4315-01	1.8735+00	2.0152+00	1.5751+00	4.6241-01	8.0107-02	1.5344+00	1.2017+00	1.3855-01
CP	8.5101-02	7.4815-01	8.0578-01	6.2678-01	1.7427-01	1.8795-02	6.1024-01	4.7495-01	4.2565-02
P/PO1	5.3310-02	4.1077-01	4.4183-01	3.4534-01	1.0138-01	1.7563-02	3.3642-01	2.6348-01	3.0378-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1655.4 Q-INF = 2.460 P-INF = .0339 RE = .1702 TO = 1874.

P	4.2790-02	6.7200-02	7.5033-02	2.6536-01	3.3250-01	1.1409+00	6.0027-04	4.2293+00	4.0695+00
CP	3.6077-03	1.3529-02	1.6712-02	9.4070-02	1.2135-01	4.4992-01	-1.3540-02	1.7052+00	1.6402+00
P/PO1	9.3762-03	1.4725-02	1.6441-02	5.8146-02	7.2856-02	2.5000-01	1.3153-04	9.2673-01	8.9170-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

~~CONFIDENTIAL~~

mnchro

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	75.	301244	10.18	3	-14.85	.00	-.00	213.85	180.0

VALVE POS 2 PO =1655.4 Q-INF = 2.457 P-INF = .0339 RE = .1679 TO = 1888.

P	4.1391-02	2.8400-02	3.7617-02	7.3734-02	3.7033-02	3.3244-02	3.5616-02	2.5823-02	2.3867-01
CP	3.0638-03	-2.2239-03	1.5276-03	1.6729-02	1.2900-03	-2.5210-04	7.1319-04	-3.2729-03	8.3362-02
P/PO1	9.0819-03	6.2315-03	8.2538-03	1.6179-02	8.1257-03	7.2945-03	7.8148-03	5.6661-03	5.2368-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1655.9 Q-INF = 2.457 P-INF = .0339 RE = .1676 TO = 1890.

P	1.0316+00	1.3826+00	1.4904+00	5.4991-01	2.0406+00	2.2188+00	3.0867+00	3.8434-02	3.5239-02
CP	4.0607-01	5.4894-01	5.9281-01	2.1003-01	8.1673-01	8.8926-01	1.2425+00	1.8590-03	5.5858-04
P/PO1	2.2633-01	3.0334-01	3.2699-01	1.2065-01	4.4769-01	4.8679-01	6.7722-01	8.4323-03	7.7313-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1655.4 Q-INF = 2.456 P-INF = .0339 RE = .1675 TO = 1890.

P	2.5554-01	5.3920-01	6.8671-01	9.1319-02	5.0845-02	4.0654-02	5.2423-02	8.3074-02	3.6240-02
CP	9.0255-02	2.0574-01	2.6579-01	2.3394-02	6.9166-03	2.7675-03	7.5591-03	2.0038-02	9.7050-04
P/PO1	5.6082-02	1.1833-01	1.5071-01	2.0041-02	1.1159-02	8.9221-03	1.1505-02	1.8232-02	7.9534-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1655.1 Q-INF = 2.456 P-INF = .0339 RE = .1675 TO = 1890.

P	4.3590-02	2.9080-01	1.2415+00	2.2613+00	9.5285-02	4.0654-02	4.6221-02	4.1237-02	4.9855-02
CP	3.9656-03	1.0463-01	4.9174-01	9.0698-01	2.5015-02	2.7701-03	5.0366-03	3.0072-03	6.5167-03
P/PO1	9.5679-03	6.3830-02	2.7251-01	4.9634-01	2.0915-02	8.9234-03	1.0145-02	9.0513-03	1.0943-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1654.9 Q-INF = 2.455 P-INF = .0338 RE = .1672 TO = 1892.

P	3.4192-02	9.9200-02	5.2423-02	5.4751-02	3.9235-02	1.5761-01	1.8248-01	2.8225-02	3.7442-02
CP	1.4396-04	2.6624-02	7.5701-03	8.5184-03	2.1980-03	5.0417-02	6.0548-02	-2.2868-03	1.4675-03
P/PO1	7.5077-03	2.1782-02	1.1511-02	1.2022-02	8.6149-03	3.4607-02	4.0068-02	6.1975-03	8.2212-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1654.9 Q-INF = 2.455 P-INF = .0338 RE = .1672 TO = 1892.

P	3.6992-02	3.8000-02	3.9217-02	4.1363-02	4.0036-02	1.8104-01	1.9369-01	2.5302-01	1.6859-01
CP	1.2843-03	1.6949-03	2.1909-03	3.0649-03	2.5241-03	5.9961-02	6.5112-02	8.9283-02	5.4888-02
P/PO1	8.1224-03	8.3438-03	8.6111-03	9.0823-03	8.7907-03	3.9752-02	4.2528-02	5.5558-02	3.7017-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1654.9 Q-INF = 2.454 P-INF = .0338 RE = .1665 TO = 1896.

P	7.0784-02	9.4800-02	3.4815-02	1.0211-01	5.2987-01	1.7969+00	1.4006-03	1.3932-01	4.0044-04
CP	1.5062-02	2.4848-02	4.0381-04	2.7827-02	2.0215-01	7.1849-01	-1.3213-02	4.2992-02	-1.3621-02
P/PO1	1.5548-02	2.0824-02	7.6476-03	2.2429-02	1.1639-01	3.9472-01	3.0766-04	3.0604-02	8.7962-05
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1654.6 Q-INF = 2.454 P-INF = .0338 RE = .1668 TO = 1894.

P	5.5988-02	4.0000-02	2.5751-01	8.1128-02	8.5676-02	8.5314-02	1.3166-01	1.3972-01	1.5277-01
CP	9.0303-03	2.5156-03	9.1150-02	1.9275-02	2.1128-02	2.0980-02	3.9865-02	4.3152-02	4.8468-02
P/PO1	1.2298-02	8.7860-03	5.6563-02	1.7820-02	1.8819-02	1.8739-02	2.8919-02	3.0690-02	3.3556-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1653.6 Q-INF = 2.453 P-INF = .0338 RE = .1667 TO = 1894.

P	5.7207-01	9.9600-02	1.2005-03	3.6171+00	2.0675+00	2.5295+00	2.7682+00	2.3180+00	1.1025+00
CP	2.1947-01	2.6827-02	-1.3295-02	1.4611+00	8.2922-01	1.0176+00	1.1149+00	9.3134-01	4.3575-01
P/PO1	1.2573-01	2.1891-02	2.6386-04	7.9499-01	4.5441-01	5.5595-01	6.0841-01	5.0945-01	2.4231-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B744

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS HS WIND TUNNEL MAch 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1653.4 Q-INF = 2.452 P-INF = .0338 RE = .1667 TO = 1894.

P	2.4535-01	1.8089+00	1.9552+00	1.5240+00	4.4860-01	7.0694-02	1.4671+00	1.1432+00	1.3555-01
CP	8.6268-02	7.2391-01	7.8355-01	6.0771-01	1.6915-01	1.5045-02	5.8450-01	4.5243-01	4.1494-02
P/PO1	5.3932-02	3.9764-01	4.2979-01	3.3501-01	9.8610-02	1.5540-02	3.2250-01	2.5130-01	2.9797-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1653.4 Q-INF = 2.452 P-INF = .0338 RE = .1667 TO = 1894.

P	4.1991-02	7.8400-02	8.9440-02	2.8155-01	3.5391-01	1.2025+00	1.2005-03	4.2519+00	4.0005+00
CP	3.3398-03	1.8188-02	2.2690-02	1.0103-01	1.3054-01	4.7658-01	-1.3294-02	1.7201+00	1.6176+00
P/PO1	9.2303-03	1.7234-02	1.9661-02	6.1890-02	7.7797-02	2.6432-01	2.6390-04	9.3464-01	8.7938-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B745

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL MACH 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	76.	301244	10.17	3	-12.03	.00	-.00	211.03	180.0

VALVE POS 2 PO =1292.7 Q-INF = 1.920 P-INF = .0265 RE = .1344 TO = 1860.

P	3.0793-02	2.6400-02	3.1014-02	5.6949-02	3.2028-02	2.6035-02	2.8813-02	2.5222-02	2.0763-01
CP	2.2143-03	-7.3528-05	2.3292-03	1.5836-02	2.8577-03	-2.6376-04	1.1830-03	-6.8679-04	9.4308-02
P/POI	8.6476-03	7.4139-03	8.7095-03	1.5993-02	8.9945-03	7.3113-03	8.0914-03	7.0832-03	5.8308-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1288.7 Q-INF = 1.914 P-INF = .0265 RE = .1337 TO = 1862.

P	8.9364-01	1.1784+00	1.2745+00	5.5011-01	1.7229+00	1.8660+00	2.5379+00	3.0427-02	3.0234-02
CP	4.5311-01	6.0192-01	6.5211-01	2.7361-01	8.8642-01	9.6117-01	1.3122+00	2.0758-03	1.9747-03
P/POI	2.5179-01	3.3203-01	3.5910-01	1.5500-01	4.8545-01	5.2575-01	7.1507-01	8.5730-03	8.5185-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1289.7 Q-INF = 1.916 P-INF = .0265 RE = .1339 TO = 1861.

P	2.2075-01	5.2840-01	6.7470-01	7.2136-02	4.3639-02	3.0641-02	4.6221-02	6.5058-02	2.8432-02
CP	1.0142-01	2.6203-01	3.3840-01	2.3836-02	8.9591-03	2.1735-03	1.0307-02	2.0141-02	1.0202-03
P/POI	6.2144-02	1.4875-01	1.8993-01	2.0307-02	1.2285-02	8.6257-03	1.3012-02	1.8314-02	8.0038-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1290.2 Q-INF = 1.916 P-INF = .0265 RE = .1337 TO = 1863.

P	4.2391-02	2.4800-01	1.0706+00	1.8904+00	7.6468-02	2.6235-02	4.1618-02	3.1828-02	3.9444-02
CP	8.3034-03	1.1562-01	5.4496-01	9.7287-01	2.6090-02	-1.2900-04	7.9005-03	2.7904-03	6.7654-03
P/POI	1.1931-02	6.9801-02	3.0132-01	5.3206-01	2.1522-02	7.3839-03	1.1714-02	8.9582-03	1.1102-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1293.7 Q-INF = 1.921 P-INF = .0266 RE = .1342 TO = 1862.

P	3.0193-02	8.0000-02	4.5020-02	4.7158-02	3.3230-02	1.0895-01	1.3906-01	2.3020-02	3.0434-02
CP	1.8931-03	2.7817-02	9.6101-03	1.0723-02	3.4734-03	4.2882-02	5.8557-02	-1.8402-03	2.0183-03
P/POI	8.4741-03	2.2453-02	1.2635-02	1.3236-02	9.3263-03	3.0577-02	3.9030-02	6.4610-03	8.5417-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1294.2 Q-INF = 1.922 P-INF = .0266 RE = .1341 TO = 1863.

P	3.0793-02	3.2400-02	3.3815-02	3.5768-02	3.4030-02	1.2156-01	1.6667-01	1.8677-01	9.6307-02
CP	2.2008-03	3.0369-03	3.7732-03	4.7895-03	3.8852-03	4.9431-02	7.2904-02	8.3359-02	3.6290-02
P/POI	8.6400-03	9.0908-03	9.4879-03	1.0036-02	9.5482-03	3.4108-02	4.6766-02	5.2403-02	2.7022-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1294.5 Q-INF = 1.922 P-INF = .0266 RE = .1338 TO = 1866.

P	4.8789-02	7.6000-02	2.4611-02	8.2726-02	4.4019-01	1.5042+00	1.2005-03	1.0690-01	2.0022-04
CP	1.1568-02	2.5728-02	-1.0145-03	2.9228-02	2.1525-01	7.6896-01	-1.3197-02	4.1806-02	-1.3718-02
P/POI	1.3691-02	2.1326-02	6.9060-03	2.3214-02	1.2352-01	4.2209-01	3.3688-04	2.9995-02	5.6184-05
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1294.0 Q-INF = 1.920 P-INF = .0265 RE = .1333 TO = 1869.

P	3.7592-02	3.2000-02	1.9269-01	3.9565-02	5.5249-02	5.8278-02	9.7843-02	8.8278-02	1.0151-01
CP	5.7541-03	2.8423-03	8.6520-02	6.7817-03	1.4949-02	1.6527-02	3.7131-02	3.2150-02	3.9041-02
P/POI	1.0556-02	8.9855-03	5.4105-02	1.1110-02	1.5514-02	1.6364-02	2.7474-02	2.4788-02	2.8504-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1294.2 Q-INF = 1.921 P-INF = .0265 RE = .1333 TO = 1869.

P	3.9691-01	8.0400-02	1.4006-03	2.9550+00	1.7754+00	2.1257+00	2.3031+00	1.8964+00	8.4053-01
CP	1.9283-01	2.8039-02	-1.3093-02	1.5247+00	9.1053-01	1.0929+00	1.1853+00	9.7354-01	4.2381-01
P/POI	1.1143-01	2.2572-02	3.9321-04	8.2958-01	4.9842-01	5.9677-01	6.4657-01	5.3239-01	2.3597-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B746

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DY[illegible]
50 - INCH CONTINUOUS [illegible] WIND TUNNEL mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1292.7 Q-INF = 1.918 P-INF = .0265 RE = .1330 TO = 1870.

P	1.8536-01	1.5643+00	1.6703+00	1.3003+00	3.8534-01	6.2684-02	1.2876+00	1.0082+00	1.1713-01
CP	8.2808-02	8.0164-01	8.5695-01	6.6404-01	1.8706-01	1.8856-02	6.5744-01	5.1177-01	4.7240-02
P/PO1	5.2103-02	4.3970-01	4.6952-01	3.6551-01	1.0832-01	1.7620-02	3.6195-01	2.8340-01	3.2925-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1292.2 Q-INF = 1.917 P-INF = .0265 RE = .1329 TO = 1871.

P	3.8791-02	5.0400-02	5.4824-02	1.7944-01	2.2820-01	7.6943-01	1.2005-03	3.2331+00	3.2490+00
CP	6.4103-03	1.2465-02	1.4773-02	7.9769-02	1.0520-01	3.8749-01	-1.3196-02	1.6725+00	1.6808+00
P/PO1	1.0909-02	1.4174-02	1.5418-02	5.0464-02	6.4178-02	2.1639-01	3.3763-04	9.0926-01	9.1372-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

50 - INCH CONTINUOUS HS WIND TUN - MACH 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	77.	301244	10.17	3	-14.01	.00	-.00	213.01	180.0

VALVE POS 2 PO =1292.2 Q-INF = 1.917 P-INF = .0265 RE = .1326 TO = 1873.

P	3.1393-02	2.4400-02	3.0614-02	6.0147-02	3.0827-02	2.5834-02	2.7812-02	2.1819-02	1.9642-01
CP	2.5549-03	-1.0932-03	2.1483-03	1.7555-02	2.2598-03	-3.4489-04	6.8694-04	-2.4395-03	8.8645-02
P/PO1	8.8304-03	6.8634-03	8.6111-03	1.6918-02	8.6713-03	7.2668-03	7.8232-03	6.1375-03	5.5249-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1292.5 Q-INF = 1.917 P-INF = .0265 RE = .1328 TO = 1872.

P	8.3961-01	1.1304+00	1.2175+00	4.5100-01	1.6435+00	1.7954+00	2.4482+00	2.8625-02	3.0033-02
CP	4.2406-01	5.7571-01	6.2114-01	2.2138-01	8.4332-01	9.2254-01	1.2629+00	1.1067-03	1.8410-03
P/PO1	2.3610-01	3.1787-01	3.4237-01	1.2682-01	4.6217-01	5.0488-01	6.8843-01	8.0496-03	8.4455-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1292.2 Q-INF = 1.917 P-INF = .0265 RE = .1329 TO = 1871.

P	2.1175-01	4.4320-01	5.6505-01	7.2735-02	4.3839-02	3.4045-02	4.5820-02	6.7060-02	2.7631-02
CP	9.6622-02	2.1734-01	2.8089-01	2.4114-02	9.0430-03	3.9349-03	1.0076-02	2.1154-02	5.8920-04
P/PO1	5.9552-02	1.2464-01	1.5891-01	2.0455-02	1.2329-02	9.5746-03	1.2886-02	1.8859-02	7.7706-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1292.0 Q-INF = 1.917 P-INF = .0265 RE = .1330 TO = 1870.

P	4.2391-02	2.3880-01	1.0196+00	1.7958+00	7.6668-02	3.2844-02	4.1418-02	3.0827-02	3.9644-02
CP	8.2895-03	1.1074-01	5.1802-01	9.2290-01	2.6169-02	3.3097-03	7.7824-03	2.2579-03	6.8569-03
P/PO1	1.1923-02	6.7165-02	2.8677-01	5.0508-01	2.1564-02	9.2376-03	1.1649-02	8.6705-03	1.1150-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1291.7 Q-INF = 1.917 P-INF = .0265 RE = .1331 TO = 1869.

P	2.8994-02	7.9600-02	4.4020-02	4.7158-02	3.1828-02	1.1535-01	1.4086-01	2.2620-02	3.0434-02
CP	1.3027-03	2.7702-02	9.1413-03	1.0779-02	2.7815-03	4.6354-02	5.9661-02	-2.0221-03	2.0541-03
P/PO1	8.1555-03	2.2390-02	1.2382-02	1.3265-02	8.9529-03	3.2447-02	3.9623-02	6.3627-03	8.5606-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1291.7 Q-INF = 1.917 P-INF = .0265 RE = .1332 TO = 1868.

P	3.0593-02	3.1200-02	3.2815-02	3.4969-02	3.3029-02	1.2477-01	1.5967-01	1.8556-01	1.1172-01
CP	2.1356-03	2.4521-03	3.2943-03	4.4180-03	3.4063-03	5.1257-02	6.9464-02	8.2971-02	4.4454-02
P/PO1	8.6046-03	8.7753-03	9.2294-03	9.8354-03	9.2898-03	3.5092-02	4.4909-02	5.2192-02	3.1424-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1291.7 Q-INF = 1.917 P-INF = .0265 RE = .1329 TO = 1870.

P	5.3588-02	7.5600-02	2.2810-02	8.0928-02	4.2818-01	1.4502+00	1.4006-03	1.0529-01	6.0067-04
CP	1.4136-02	2.5620-02	-1.9217-03	2.8400-02	2.0957-01	7.4275-01	-1.3091-02	4.1111-02	-1.3509-02
P/PO1	1.5075-02	2.1267-02	6.4168-03	2.2766-02	1.2045-01	4.0795-01	3.9401-04	2.9621-02	1.6898-04
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1291.7 Q-INF = 1.917 P-INF = .0265 RE = .1328 TO = 1871.

P	4.1791-02	3.2400-02	2.0109-01	4.8757-02	5.9052-02	6.3284-02	1.0185-01	1.0229-01	1.1573-01
CP	7.9830-03	3.0832-03	9.1101-02	1.1618-02	1.6990-02	1.9198-02	3.9318-02	3.9550-02	4.6562-02
P/PO1	1.1757-02	9.1154-03	5.6575-02	1.3717-02	1.6614-02	1.7804-02	2.8653-02	2.8779-02	3.2559-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1291.2 Q-INF = 1.916 P-INF = .0265 RE = .1330 TO = 1869.

P	4.3510-01	7.9600-02	1.4006-03	2.8634+00	1.6675+00	2.0161+00	2.2119+00	1.8544+00	8.4414-01
CP	2.1324-01	2.7718-02	-1.3091-02	1.4805+00	8.5639-01	1.0383+00	1.1405+00	9.5392-01	4.2671-01
P/PO1	1.2244-01	2.2399-02	3.9413-04	8.0574-01	4.6923-01	5.6733-01	6.2241-01	5.2181-01	2.3754-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B748

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1293.7 Q-INF = 1.920 P-INF = .0265 RE = .1330 TO = 1871.

P	1.9296-01	1.4652+00	1.5684+00	1.2432+00	3.6653-01	6.1081-02	1.2114+00	9.6169-01	1.1072-01
CP	8.6702-02	7.4948-01	8.0324-01	6.3386-01	1.7712-01	1.7999-02	6.1726-01	4.8718-01	4.3861-02
P/PO1	5.4202-02	4.1157-01	4.4056-01	3.4923-01	1.0296-01	1.7158-02	3.4028-01	2.7014-01	3.1103-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1289.2 Q-INF = 1.913 P-INF = .0264 RE = .1324 TO = 1872.

P	3.8391-02	5.6800-02	6.3428-02	2.0642-01	2.6163-01	8.6615-01	1.6007-03	3.2932+00	3.1590+00
CP	6.2501-03	1.5875-02	1.9340-02	9.4101-02	1.2297-01	4.3904-01	-1.2986-02	1.7080+00	1.6378+00
P/PO1	1.0823-02	1.6013-02	1.7881-02	5.8192-02	7.3758-02	2.4418-01	4.5126-04	9.2839-01	8.9057-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B749

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL MACH 10

~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	78.	301244	10.17	3	-14.94	.00	-.00	213.94	180.0

VALVE POS 2 PO =1291.2 Q-INF = 1.915 P-INF = .0265 RE = .1325 TO = 1873.

P	3.1393-02	2.3200-02	2.9813-02	5.9547-02	2.8425-02	2.8438-02	2.8012-02	2.1019-02	1.8721-01
CP	2.5675-03	-1.7099-03	1.7427-03	1.7266-02	1.0181-03	1.0247-03	8.0255-04	-2.8488-03	8.3916-02
P/PO1	8.8372-03	6.5309-03	8.3925-03	1.6763-02	8.0018-03	8.0054-03	7.8856-03	5.9168-03	5.2700-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1291.7 Q-INF = 1.917 P-INF = .0265 RE = .1328 TO = 1871.

P	8.0842-01	1.0899+00	1.1785+00	4.2662-01	1.5896+00	1.7444+00	2.3973+00	2.9026-02	2.9433-02
CP	4.0799-01	5.5484-01	6.0110-01	2.0878-01	8.1558-01	8.9636-01	1.2370+00	1.3227-03	1.5350-03
P/PO1	2.2744-01	3.0662-01	3.3157-01	1.2003-01	4.4722-01	4.9077-01	6.7446-01	8.1661-03	8.2806-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1292.2 Q-INF = 1.917 P-INF = .0265 RE = .1326 TO = 1873.

P	2.0435-01	4.1920-01	5.3744-01	7.3135-02	4.5841-02	4.1055-02	4.8221-02	6.7260-02	2.7030-02
CP	9.2785-02	2.0487-01	2.6655-01	2.4331-02	1.0092-02	7.5952-03	1.1334-02	2.1266-02	2.7882-04
P/PO1	5.7482-02	1.1791-01	1.5117-01	2.0572-02	1.2894-02	1.1548-02	1.3564-02	1.8919-02	7.6031-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1292.0 Q-INF = 1.917 P-INF = .0265 RE = .1327 TO = 1872.

P	4.1791-02	2.3200-01	9.8960-01	1.7417+00	7.6468-02	3.2243-02	4.0418-02	2.9827-02	3.8242-02
CP	7.9811-03	1.0722-01	5.0248-01	8.9489-01	2.6073-02	2.9998-03	7.2649-03	1.7391-03	6.1299-03
P/PO1	1.1756-02	6.5265-02	2.7839-01	4.8997-01	2.1511-02	9.0704-03	1.1370-02	8.3906-03	1.0758-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1291.7 Q-INF = 1.917 P-INF = .0265 RE = .1328 TO = 1871.

P	2.7994-02	8.0000-02	4.4420-02	4.7158-02	3.1228-02	1.2156-01	1.4126-01	2.1819-02	2.9232-02
CP	7.8418-04	2.7920-02	9.3548-03	1.0784-02	2.4716-03	4.9606-02	5.9885-02	-2.4374-03	1.4305-03
P/PO1	7.8758-03	2.2507-02	1.2497-02	1.3267-02	8.7856-03	3.4200-02	3.9743-02	6.1387-03	8.2243-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1291.2 Q-INF = 1.916 P-INF = .0265 RE = .1326 TO = 1872.

P	-2.9993-02	3.0800-02	3.1814-02	3.3770-02	3.2629-02	1.3178-01	1.6167-01	1.8456-01	1.2254-01
CP	1.8351-03	2.2562-03	2.7856-03	3.8066-03	3.2110-03	5.4969-02	7.0575-02	8.2526-02	5.0145-02
P/PO1	8.4424-03	8.6695-03	8.9549-03	9.5055-03	9.1843-03	3.7092-02	4.5507-02	5.1950-02	3.4491-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1291.5 Q-INF = 1.916 P-INF = .0265 RE = .1327 TO = 1872.

P	5.6188-02	7.6000-02	2.2610-02	8.0728-02	4.2097-01	1.4231+00	1.6007-03	1.0730-01	.0000+00
CP	1.5504-02	2.5844-02	-2.0214-03	2.8312-02	2.0590-01	7.2895-01	-1.2987-02	4.2178-02	.0000+00
P/PO1	1.5812-02	2.1388-02	6.3630-03	2.2719-02	1.1847-01	4.0050-01	4.5048-04	3.0195-02	.0000+00
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1291.2 Q-INF = 1.915 P-INF = .0265 RE = .1325 TO = 1873.

P	4.4190-02	3.2800-02	2.0569-01	5.8748-02	6.7060-02	6.7290-02	1.0505-01	1.0930-01	1.2234-01
CP	9.2487-03	3.3021-03	9.3566-02	1.6849-02	2.1188-02	2.1309-02	4.1021-02	4.3240-02	5.0047-02
P/PO1	1.2440-02	9.2333-03	5.7903-02	1.6538-02	1.8878-02	1.8942-02	2.9571-02	3.0768-02	3.4438-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1291.0 Q-INF = 1.915 P-INF = .0265 RE = .1326 TO = 1872.

P	4.5450-01	8.0000-02	1.6007-03	2.8153+00	1.6166+00	1.9591+00	2.1715+00	1.8424+00	8.4374-01
CP	2.2349-01	2.7948-02	-1.2987-02	1.4561+00	8.3023-01	1.0091+00	1.1200+00	9.4814-01	4.2672-01
P/PO1	1.2796-01	2.2523-02	4.5065-04	7.9260-01	4.5511-01	5.5154-01	6.1134-01	5.1868-01	2.3754-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4900-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

B750

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
40 - INCH CONTINUOUS FLOW WIND TUNNEL MACH 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1290.7 Q-INF = 1.914 P-INF = .0265 RE = .1323 TO = 1874.

P	1.9616-01	1.4111+00	1.5174+00	1.2132+00	3.5552-01	5.6676-02	1.1725+00	8.7838-01	1.0712-01
CP	8.8638-02	7.2327-01	7.7877-01	6.1989-01	1.7188-01	1.5782-02	5.9861-01	4.4499-01	4.2130-02
P/PO1	5.5245-02	3.9743-01	4.2736-01	3.4169-01	1.0013-01	1.5962-02	3.3022-01	2.4739-01	3.0169-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1290.2 Q-INF = 1.914 P-INF = .0265 RE = .1323 TO = 1874.

P	3.7392-02	6.2400-02	7.0231-02	2.2140-01	2.7965-01	9.1582-01	1.4006-03	3.3232+00	3.1200+00
CP	5.7164-03	1.8784-02	2.2876-02	1.0187-01	1.3231-01	4.6473-01	-1.3091-02	1.7227+00	1.6165+00
P/PO1	1.0535-02	1.7581-02	1.9788-02	6.2380-02	7.8791-02	2.5803-01	3.9462-04	9.3630-01	8.7906-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL mach 10

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	79.	301244	10.17	3	-10.00	.00	-.00	209.00	180.0

VALVE POS 2 PO =1285.2 Q-INF = 1.906 P-INF = .0264 RE = .1318 TO = 1874.

P	3.0993-02	2.6000-02	3.2014-02	6.1345-02	2.8225-02	2.8037-02	2.6412-02	2.3621-02	2.2765-01
CP	2.4354-03	-1.8391-04	2.9710-03	1.8358-02	9.8333-04	8.8487-04	3.2083-05	-1.4319-03	1.0560-01
P/PO1	8.7664-03	7.3541-03	9.0552-03	1.7352-02	7.9834-03	7.9304-03	7.4705-03	6.6812-03	6.4391-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO =1282.2 Q-INF = 1.902 P-INF = .0263 RE = .1314 TO = 1874.

P	8.9964-01	1.2595+00	1.3675+00	5.0615-01	1.8473+00	2.0086+00	2.6441+00	2.6624-02	3.3838-02
CP	4.5922-01	6.4844-01	7.0520-01	2.5232-01	9.5750-01	1.0423+00	1.3765+00	1.7564-04	3.9688-03
P/PO1	2.5506-01	3.5709-01	3.8769-01	1.4350-01	5.2373-01	5.6947-01	7.4963-01	7.5482-03	9.5934-03
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO =1281.0 Q-INF = 1.899 P-INF = .0263 RE = .1309 TO = 1877.

P	2.4555-01	5.0080-01	6.3968-01	7.4134-02	4.7242-02	4.1255-02	4.7821-02	6.8060-02	2.7030-02
CP	1.1545-01	2.4984-01	3.2296-01	2.5207-02	1.1049-02	7.8968-03	1.1354-02	2.2010-02	4.0746-04
P/PO1	6.9704-02	1.4216-01	1.8159-01	2.1045-02	1.3411-02	1.1711-02	1.3575-02	1.9320-02	7.6731-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO =1281.2 Q-INF = 1.899 P-INF = .0263 RE = .1306 TO = 1880.

P	4.7589-02	2.7000-01	1.1425+00	1.9925+00	7.7669-02	3.6849-02	4.3819-02	3.1828-02	4.4650-02
CP	1.1235-02	1.2835-01	5.8778-01	1.0353+00	2.7073-02	5.5794-03	9.2496-03	2.9356-03	9.6867-03
P/PO1	1.3511-02	7.6653-02	3.2437-01	5.6567-01	2.2050-02	1.0461-02	1.2440-02	9.0360-03	1.2676-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO =1281.2 Q-INF = 1.900 P-INF = .0263 RE = .1311 TO = 1876.

P	3.3193-02	8.0400-02	4.7621-02	5.1954-02	3.4230-02	1.1315-01	1.1565-01	2.4622-02	3.2036-02
CP	3.6468-03	2.8494-02	1.1241-02	1.3521-02	4.1930-03	4.5731-02	4.7048-02	-8.6424-04	3.0378-03
P/PO1	9.4197-03	2.2817-02	1.3514-02	1.4744-02	9.7142-03	3.2111-02	3.2821-02	6.9874-03	9.0914-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO =1284.2 Q-INF = 1.905 P-INF = .0263 RE = .1317 TO = 1874.

P	3.1993-02	3.2800-02	3.4415-02	3.6967-02	3.5832-02	1.1255-01	1.6367-01	1.4373-01	7.5484-02
CP	2.9728-03	3.3966-03	4.2446-03	5.5843-03	4.9883-03	4.5265-02	7.2104-02	6.1633-02	2.5805-02
P/PO1	9.0562-03	9.2847-03	9.7419-03	1.0464-02	1.0143-02	3.1860-02	4.6331-02	4.0685-02	2.1367-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO =1282.5 Q-INF = 1.902 P-INF = .0263 RE = .1313 TO = 1875.

P	4.6790-02	7.6400-02	2.1810-02	8.5124-02	4.5480-01	1.5612+00	1.4006-03	1.0609-01	-2.0022-04
CP	1.0777-02	2.6345-02	-2.3566-03	3.0932-02	2.2530-01	8.0703-01	-1.3087-02	4.1957-02	-1.3929-02
P/PO1	1.3264-02	2.1658-02	6.1827-03	2.4131-02	1.2893-01	4.4259-01	3.9706-04	3.0076-02	-5.6760-05
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO =1279.7 Q-INF = 1.898 P-INF = .0262 RE = .1308 TO = 1877.

P	3.5192-02	2.8800-02	1.8068-01	3.5169-02	5.7251-02	6.5487-02	8.7839-02	7.2064-02	8.5295-02
CP	4.7227-03	1.3540-03	8.1396-02	4.7104-03	1.6348-02	2.0688-02	3.2468-02	2.4154-02	3.1127-02
P/PO1	9.9999-03	8.1835-03	5.1340-02	9.9932-03	1.6268-02	1.8608-02	2.4959-02	2.0477-02	2.4237-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO =1281.7 Q-INF = 1.900 P-INF = .0263 RE = .1310 TO = 1877.

P	3.5512-01	8.0400-02	1.2005-03	2.9985+00	1.8802+00	2.2113+00	2.3704+00	1.9174+00	8.2792-01
CP	1.7303-01	2.8481-02	-1.3192-02	1.5639+00	9.7553-01	1.1497+00	1.2334+00	9.9507-01	4.2181-01
P/PO1	1.0075-01	2.2810-02	3.4060-04	8.5069-01	5.3344-01	6.2735-01	6.7249-01	5.4397-01	2.3489-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.8800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

B752

~~CONFIDENTIAL~~

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KÁRMÁN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS HS WIND TUNNEL MACH 10

~~CONFIDENTIAL~~

VALVE POS 11 PO =1285.2 Q-INF = 1.906 P-INF = .0264 RE = .1318 TO = 1874.

P	1.7776-01	1.6663+00	1.7573+00	1.3829+00	4.0776-01	6.8291-02	1.3908+00	1.0937+00	1.2033-01
CP	7.9427-02	8.6031-01	9.0802-01	7.1161-01	2.0008-01	2.2001-02	7.1578-01	5.5992-01	4.9302-02
P/PO1	5.0279-02	4.7132-01	4.9705-01	3.9115-01	1.1534-01	1.9316-02	3.9339-01	3.0936-01	3.4036-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO =1288.0 Q-INF = 1.910 P-INF = .0264 RE = .1319 TO = 1875.

P	4.0391-02	4.6800-02	5.1023-02	1.5206-01	1.9317-01	6.6849-01	1.2005-03	3.1281+00	3.3030+00
CP	7.3225-03	1.0678-02	1.2888-02	6.5785-02	8.7305-02	3.3614-01	-1.3194-02	1.6238+00	1.7153+00
P/PO1	1.1401-02	1.3210-02	1.4402-02	4.2923-02	5.4527-02	1.8870-01	3.3888-04	8.8298-01	9.3234-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~

B753

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
von KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS RG WIND TUNNEL

Mach 10 ~~CONFIDENTIAL~~

11

RUN	GROUP	PROJECT NO	MACH NO	CONFIGURATION	S-ALPHA	S-ROLL	YAW	ALPHA	ST-ROLL
4.	80.	301244	10.13	3	-13.98	.00	-.00	212.98	180.0

VALVE POS 2 PO = 751.5 Q-INF = 1.126 P-INF = .0157 RE = .0821 TO = 1810.

P	2.5794-02	2.1200-02	2.5611-02	3.8965-02	2.4622-02	2.9640-02	2.4811-02	2.2420-02	1.1633-01
CP	8.9882-03	4.9078-03	8.8257-03	2.0686-02	7.9469-03	1.2403-02	8.1149-03	5.9912-03	8.9397-02
P/PO1	1.2360-02	1.0158-02	1.2272-02	1.8671-02	1.1798-02	1.4202-02	1.1889-02	1.0743-02	5.5741-02
S/R	.0000+00	6.4000-02	1.1800-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00

VALVE POS 3 PO = 751.5 Q-INF = 1.126 P-INF = .0157 RE = .0822 TO = 1808.

P	4.9049-01	6.4900-01	7.0491-01	2.7675-01	9.6486-01	1.0974+00	1.4506+00	2.0819-02	2.1224-02
CP	4.2162-01	5.6149-01	6.1203-01	2.3183-01	8.4285-01	9.6053-01	1.2742+00	4.5654-03	4.9251-03
P/PO1	2.3499-01	3.1044-01	3.3771-01	1.3259-01	4.6225-01	5.2573-01	6.9498-01	9.9738-03	1.0168-02
S/R	1.9180+00	1.9790+00	2.0340+00	2.1430+00	2.3540+00	2.4900+00	2.8800+00	1.7420+00	1.7970+00

VALVE POS 4 PO = 751.0 Q-INF = 1.125 P-INF = .0157 RE = .0822 TO = 1808.

P	1.2917-01	2.6840-01	3.4675-01	4.9956-02	3.5031-02	2.6836-02	3.6016-02	4.4840-02	1.5617-02
CP	1.0086-01	2.2457-01	2.9419-01	3.0467-02	1.7206-02	9.9241-03	1.8081-02	2.5922-02	-4.4172-05
P/PO1	6.1924-02	1.2867-01	1.6623-01	2.3949-02	1.6794-02	1.2865-02	1.7266-02	2.1496-02	7.4869-03
S/R	1.8540+00	1.9180+00	2.0850+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 5 PO = 749.5 Q-INF = 1.124 P-INF = .0156 RE = .0823 TO = 1804.

P	3.2993-02	1.4280-01	5.8606-01	1.0961+00	5.2246-02	1.7623-02	3.0414-02	1.6415-02	2.2924-02
CP	1.5441-02	1.1317-01	5.0765-01	9.6157-01	3.2576-02	1.7629-03	1.3146-02	6.8696-04	5.6796-03
P/PO1	1.5842-02	6.8568-02	2.8141-01	5.2631-01	2.5087-02	8.4623-03	1.4604-02	7.8818-03	1.0575-02
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01	1.5890+00	1.7420+00	1.7970+00

VALVE POS 6 PO = 748.8 Q-INF = 1.123 P-INF = .0156 RE = .0823 TO = 1804.

P	1.9196-02	5.4000-02	3.5016-02	4.0364-02	2.0618-02	6.6288-02	7.9035-02	1.3212-02	1.7219-02
CP	3.1788-03	3.4184-02	1.7272-02	2.2037-02	4.4461-03	4.5131-02	5.6487-02	-2.1521-03	1.4179-03
P/PO1	9.2263-03	2.5955-02	1.6830-02	1.9401-02	9.9101-03	3.1861-02	3.7988-02	6.3501-03	8.2763-03
S/R	6.4000-02	1.1800-01	2.8900-01	4.9700-01	9.3600-01	4.9700-01	9.3600-01	3.8400-01	4.9700-01

VALVE POS 7 PO = 750.8 Q-INF = 1.125 P-INF = .0157 RE = .0825 TO = 1804.

P	1.8396-02	2.0000-02	2.1009-02	2.3379-02	2.0418-02	7.4099-02	1.1485-01	9.2482-02	5.4661-02
CP	2.4237-03	3.8490-03	4.7458-03	6.8515-03	4.2205-03	5.1916-02	8.8125-02	6.8250-02	3.4645-02
P/PO1	8.8187-03	9.5876-03	1.0071-02	1.1208-02	9.7881-03	3.5522-02	5.5058-02	4.4334-02	2.6203-02
S/R	7.1700-01	9.3600-01	1.1550+00	1.3720+00	1.5890+00	4.9700-01	7.1700-01	9.3600-01	1.1550+00

VALVE POS 8 PO = 750.5 Q-INF = 1.125 P-INF = .0157 RE = .0824 TO = 1805.

P	3.1393-02	5.1600-02	1.2406-02	4.8956-02	2.5903-01	8.4352-01	1.2005-03	6.0254-02	-4.0044-04
CP	1.3984-02	3.1945-02	-2.8942-03	2.9596-02	2.1633-01	7.3588-01	-1.2854-02	3.9637-02	-1.4277-02
P/PO1	1.5056-02	2.4746-02	5.9495-03	2.3479-02	1.2423-01	4.0454-01	5.7575-04	2.8897-02	-1.9205-04
S/R	1.3720+00	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.9700-01	9.3600-01

VALVE POS 9 PO = 750.0 Q-INF = 1.124 P-INF = .0156 RE = .0822 TO = 1806.

P	2.4195-02	2.2400-02	1.2105-01	2.6976-02	4.2238-02	4.3258-02	6.1227-02	5.8652-02	6.8676-02
CP	7.6011-03	6.0047-03	9.3763-02	1.0075-02	2.3651-02	2.4559-02	4.0544-02	3.8253-02	4.7170-02
P/PO1	1.1612-02	1.0751-02	5.8099-02	1.2947-02	2.0272-02	2.0761-02	2.9385-02	2.8150-02	3.2961-02
S/R	1.5890+00	1.7420+00	1.7970+00	1.1800-01	2.8900-01	4.9700-01	9.3600-01	1.5890+00	1.7420+00

VALVE POS 10 PO = 750.0 Q-INF = 1.124 P-INF = .0157 RE = .0823 TO = 1805.

P	2.6254-01	5.4000-02	-1.4006-03	1.6847+00	1.0218+00	1.1980+00	1.3116+00	1.1357+00	5.0236-01
CP	2.1960-01	3.4110-02	-1.2676-02	1.4846+00	8.9492-01	1.0516+00	1.1527+00	9.9628-01	4.3291-01
P/PO1	1.2599-01	2.5914-02	6.7216-04	8.0848-01	4.9035-01	5.7490-01	6.2942-01	5.4503-01	2.4108-01
S/R	1.7970+00	1.8540+00	1.9180+00	2.3540+00	4.4800-01	8.4600-01	1.2540+00	1.3710+00	1.4310+00

~~CONFIDENTIAL~~

B754

PRELIMINARY UNCHECKED DATA

ARNOLD ENGINEERING DEVELOPMENT CENTER
VON KARMAN GAS DYNAMICS FACILITY
50 - INCH CONTINUOUS BLOWDOWN TUNNEL Mach 10

~~CONFIDENTIAL~~

VALVE POS 11 PO = 750.0 Q-INF = 1.124 P-INF = .0156 RE = .0822 TO = 1806.

P	1.1857-01	8.6720-01	9.8661-01	7.2496-01	2.2440-01	4.4459-02	6.9791-01	5.3367-01	6.9878-02
CP	9.1557-02	7.5750-01	8.6372-01	6.3097-01	1.8569-01	2.5628-02	6.0691-01	4.6081-01	4.8239-02
P/PO1	5.6908-02	4.1620-01	4.7351-01	3.4794-01	1.0770-01	2.1338-02	3.3496-01	2.5613-01	3.3537-02
S/R	1.6290+00	4.4800-01	8.4600-01	1.0250+00	1.0830+00	1.2800+00	2.3700-01	4.4800-01	5.0400-01

VALVE POS 12 PO = 750.0 Q-INF = 1.124 P-INF = .0156 RE = .0822 TO = 1806.

P	2.5594-02	3.8800-02	4.3419-02	1.2429-01	1.6114-01	5.1549-01	1.0004-03	1.9369+00	1.8720+00
CP	8.8462-03	2.0593-02	2.4703-02	9.6641-02	1.2942-01	4.4463-01	-1.3031-02	1.7091+00	1.6513+00
P/PO1	1.2284-02	1.8622-02	2.0839-02	5.9652-02	7.7339-02	2.4740-01	4.8015-04	9.2959-01	8.9845-01
S/R	6.0300-01	6.4000-02	1.1800-01	1.5890+00	1.7420+00	1.7970+00	1.8540+00	1.9180+00	2.3540+00

~~CONFIDENTIAL~~