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CR 175067

# TURBOFAN AFT DUCT SUPPRESSOR STUDY

## CONTRACTOR'S DATA REPORT OF MODE PROBE SIGNAL DATA

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R.E. Motsinger  
A.A. Syed

General Electric Company

M.C. Joshi  
R.E. Kraft

Douglas Aircraft Company  
Long Beach, California

(NASA-CR-175067) TURBOFAN AFT DUCT  
SUPPRESSOR STUDY. CONTRACTOR'S DATA REPORT  
OF MODE PROBE SIGNAL DATA Final Report  
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Final Report  
NASA Contract No. NAS3-22766  
NASA Lewis Research Center

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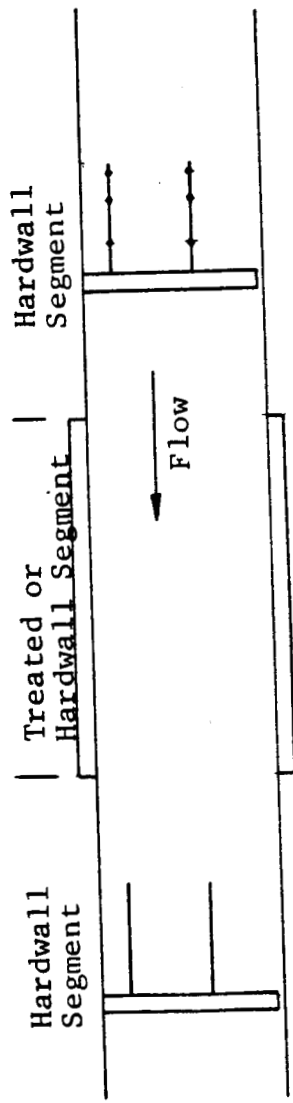
## INTRODUCTION

This report contains the amplitude and phase data of the acoustic signals sensed by the transducers of the two mode probes employed in the measurement of the acoustic modes in the straight annular exhaust duct used in the experimental part of the Aft Duct Suppressor Study.

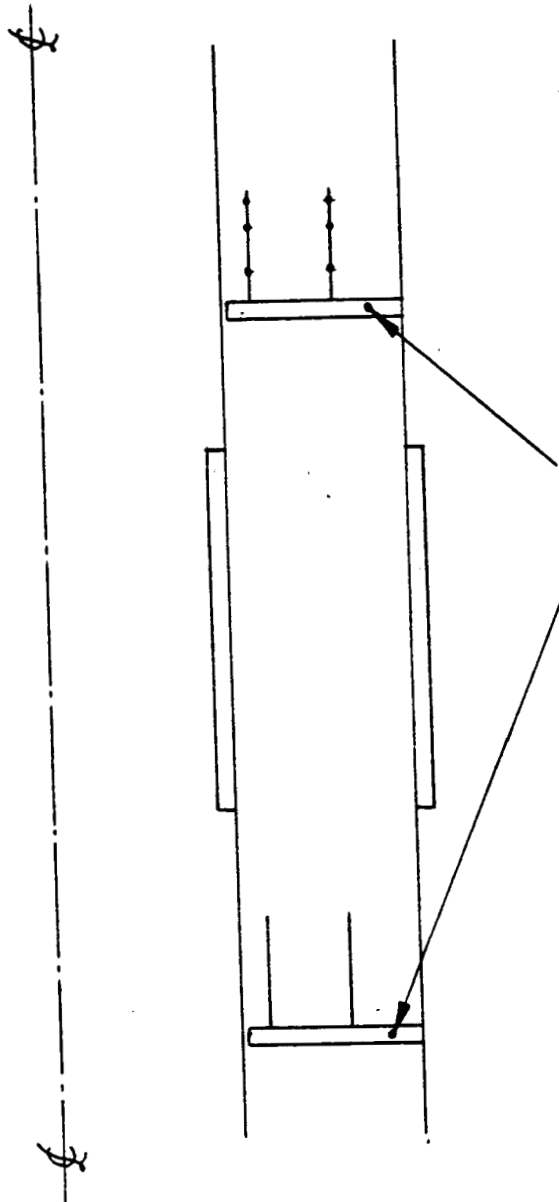
Each mode probe consisted of an array of 12 transducers sensing the acoustic field at three axial positions and four radial positions. As shown in Figure 1, data at two radial locations was taken at one circumferential location and at the other two radial locations was obtained at 180° from that location. Measurements were taken at 18° intervals. In this way acoustic field was measured at 20 circumferential, 3 axial and four radial locations in the annulus of the duct. During the angular traversing of the probes, the acoustic field in the duct was assumed to be stationary.

Amplitude and phase data is tabulated against the transducer's spatial location and number. The axial locations are with respect to a reference location on the rotor hub and are quoted in inches. The radial locations are in terms of  $(r/r_2)$  where  $r_2$ , the radius of the outer wall is 10 inches. The treated segment used in runs 71, 73, and 75 is located between 34.85 inch and 44.85 inch (effective length of 10 inches) from the reference location.

Figure 1. Schematic Diagram Showing a Straight Segmented Annular Duct and Mode Probes in the Upstream and Downstream Hardwall Segments.



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Circumferentially Traversable  
Acoustic Mode Probes  
Each Probe Has 12 Kulite Transducers

Run No.	Fan R.P.M.	Test Configuration
66	7600	Hard
67	7600	Hard
69	4000	Hard
70	6000	Hard
71	7600	Treated
73	6000	Treated
75	4000	Treated

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 0002 PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 0003  
 0004 RUN # 66 DATE 8/27/82 MEASUREMENT LOCATION: UPSTREAM  
 0005  
 0006 CONFIGURATION: HARDWALL FAN SPEED: 7600 rpm  
 0007  
 0008 TEMPERATURES (deg. F):  
 0009 INLET (DRY) : 90  
 0010 CHAMBER (DRY): 90  
 0011 CHAMBER (WET): 78  
 0012  
 0013 DATA REDUCTION: FROM TAPE

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)	
0018	1	27.161	.925	0	92.975	13.94
0019	2	29.036	.925	0	30.611	44.41
0020	3	30.161	.925	0	29.742	181.58
0021	4	27.161	.700	0	23.930	29.34
0022	5	29.036	.700	0	14.466	42.64
0023	6	30.161	.700	0	19.724	134.35
0024	7	27.161	.800	0	51.030	-220.40
0025	8	29.036	.800	0	16.046	.65
0026	9	30.161	.800	0	8.760	320.54
0027	10	27.161	.575	0	.100	90.00
0028	11	29.036	.575	0	37.436	52.06
0029	12	30.161	.575	0	21.722	85.08
0030	1	27.161	.925	18	28.428	268.05
0031	2	29.036	.925	18	81.768	220.19
0032	3	30.161	.925	18	123.467	219.29
0033	4	27.161	.700	18	27.219	208.36
0034	5	29.036	.700	18	55.900	209.42
0035	6	30.161	.700	18	66.122	178.01
0036	7	27.161	.800	18	20.620	-48.20
0037	8	29.036	.800	18	83.774	242.57
0038	9	30.161	.800	18	96.426	225.80
0039	10	27.161	.575	18	18.327	242.93
0040	11	29.036	.575	18	25.952	258.60
0041	12	30.161	.575	18	19.289	215.49
0042	1	27.161	.925	36	28.679	261.85
0043	2	29.036	.925	36	62.359	-43.78
0044	3	30.161	.925	36	110.486	-8.92
0045	4	27.161	.700	36	38.312	206.74
0046	5	29.036	.700	36	25.659	-42.01
0047	6	30.161	.700	36	28.757	39.78
0048	7	27.161	.800	36	67.596	15.52
0049	8	29.036	.800	36	35.388	340.59
0050	9	30.161	.800	36	27.267	388.91
0051	10	27.161	.575	36	17.888	236.45
0052	11	29.036	.575	36	17.658	248.17
0053	12	30.161	.575	36	4.377	13.59
0054	1	27.161	.925	54	33.052	88.96
0055	2	29.036	.925	54	50.716	97.40
0056	3	30.161	.925	54	71.153	91.17
0057	4	27.161	.700	54	24.685	115.60
0058	5	29.036	.700	54	36.277	95.46

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RUN # 66

DATE 8/27/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE POSITION		CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )			
6	30.161	.700	54	53.629	86.12
7	27.161	.800	54	30.419	-181.06
8	29.036	.800	54	42.285	120.12
9	30.161	.800	54	54.249	108.61
10	27.161	.575	54	29.502	121.55
11	29.036	.575	54	25.795	169.18
12	30.161	.575	54	34.615	126.53
1	27.161	.925	72	40.528	190.88
2	29.036	.925	72	46.928	211.84
3	30.161	.925	72	85.879	220.12
4	27.161	.700	72	16.554	184.79
5	29.036	.700	72	22.520	194.77
6	30.161	.700	72	7.991	228.05
7	27.161	.800	72	23.417	-110.51
8	29.036	.800	72	49.560	205.65
9	30.161	.800	72	44.386	213.21
10	27.161	.575	72	17.258	126.82
11	29.036	.575	72	8.929	123.94
12	30.161	.575	72	17.031	4.42
1	27.161	.925	90	52.082	274.52
2	29.036	.925	90	57.902	308.56
3	30.161	.925	90	66.070	367.76
4	27.161	.700	90	.100	90.00
5	29.036	.700	90	17.429	308.88
6	30.161	.700	90	53.239	382.67
7	27.161	.800	90	23.903	-297.62
8	29.036	.800	90	38.515	-47.27
9	30.161	.800	90	48.156	-18.66
10	27.161	.575	90	42.042	113.10
11	29.036	.575	90	22.465	358.30
12	30.161	.575	90	40.161	367.41
1	27.161	.925	108	7.948	42.01
2	29.036	.925	108	37.075	157.85
3	30.161	.925	108	97.533	148.42
4	27.161	.700	108	38.218	93.29
5	29.036	.700	108	35.856	122.55
6	30.161	.700	108	28.662	116.95
7	27.161	.800	108	15.847	-164.48
8	29.036	.800	108	44.840	139.98
9	30.161	.800	108	60.379	130.34
10	27.161	.575	108	55.566	90.44
11	29.036	.575	108	41.042	89.37
12	30.161	.575	108	18.940	67.98
1	27.161	.925	126	35.691	215.01
2	29.036	.925	126	42.313	232.43
3	30.161	.925	126	82.107	251.63
4	27.161	.700	126	20.125	95.57
5	29.036	.700	126	25.031	305.68
6	30.161	.700	126	38.392	272.26
7	27.161	.800	126	29.856	-103.83
8	29.036	.800	126	41.019	256.04
9	30.161	.800	126	48.994	248.40

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 66

DATE 8/27/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
10	27.161	.575	126	62.896	81.53
11	29.036	.575	126	17.530	9.70
12	30.161	.575	126	38.106	-20.88
1	27.161	.925	144	30.580	61.50
2	29.036	.925	144	41.415	-3.99
3	30.161	.925	144	115.734	-11.23
4	27.161	.700	144	49.767	19.84
5	29.036	.700	144	63.401	-23.03
6	30.161	.700	144	73.205	-19.90
7	27.161	.800	144	36.286	74.17
8	29.036	.800	144	59.283	356.94
9	30.161	.800	144	59.665	-13.77
10	27.161	.575	144	84.974	25.80
11	29.036	.575	144	78.481	354.72
12	30.161	.575	144	68.915	344.28
1	27.161	.925	162	43.421	45.01
2	29.036	.925	162	47.257	133.17
3	30.161	.925	162	134.632	161.59
4	27.161	.700	162	25.550	343.26
5	29.036	.700	162	13.329	297.09
6	30.161	.700	162	32.201	194.95
7	27.161	.800	162	26.471	-233.41
8	29.036	.800	162	33.169	148.33
9	30.161	.800	162	60.961	161.25
10	27.161	.575	162	65.901	348.78
11	29.036	.575	162	58.158	316.17
12	30.161	.575	162	38.078	279.26
1	27.161	.925	180	60.843	216.57
2	29.036	.925	180	7.238	298.35
3	30.161	.925	180	23.639	351.13
4	27.161	.700	180	29.944	316.54
5	29.036	.700	180	30.552	300.09
6	30.161	.700	180	41.140	310.77
7	27.161	.800	180	53.608	-13.74
8	29.036	.800	180	58.971	264.98
9	30.161	.800	180	60.285	248.07
10	27.161	.575	180	53.440	312.58
11	29.036	.575	180	84.553	292.31
12	30.161	.575	180	69.105	260.34
1	27.161	.925	198	38.041	59.21
2	29.036	.925	198	59.489	72.36
3	30.161	.925	198	104.509	71.53
4	27.161	.700	198	46.269	-15.45
5	29.036	.700	198	40.776	-8.40
6	30.161	.700	198	25.387	-12.04
7	27.161	.800	198	26.896	45.34
8	29.036	.800	198	42.088	383.36
9	30.161	.800	198	38.562	50.70
10	27.161	.575	198	47.507	-45.49
11	29.036	.575	198	48.671	273.17
12	30.161	.575	198	34.677	254.59
1	27.161	.925	216	82.104	148.80

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 66

DATE 8/27/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
2	29.036	.925	216	46.451	154.46
3	30.161	.925	216	75.389	152.97
4	27.161	.700	216	22.153	171.11
5	29.036	.700	216	26.889	218.86
6	30.161	.700	216	41.819	221.71
7	27.161	.800	216	42.563	-126.61
8	29.036	.800	216	40.822	151.77
9	30.161	.800	216	64.592	143.31
10	27.161	.575	216	35.947	274.18
11	29.036	.575	216	51.475	239.34
12	30.161	.575	216	66.046	196.37
1	27.161	.925	234	76.522	252.94
2	29.036	.925	234	32.375	302.28
3	30.161	.925	234	47.028	330.82
4	27.161	.700	234	48.913	271.83
5	29.036	.700	234	32.341	277.81
6	30.161	.700	234	12.187	301.51
7	27.161	.800	234	31.089	-39.74
8	29.036	.800	234	57.383	248.47
9	30.161	.800	234	50.870	258.40
10	27.161	.575	234	51.308	289.58
11	29.036	.575	234	53.542	238.22
12	30.161	.575	234	36.864	238.01
1	27.161	.925	252	36.355	5.27
2	29.036	.925	252	46.003	52.30
3	30.161	.925	252	83.740	63.71
4	27.161	.700	252	5.095	276.85
5	29.036	.700	252	20.102	57.71
6	30.161	.700	252	38.246	62.70
7	27.161	.800	252	10.319	-1.99
8	29.036	.800	252	52.475	38.06
9	30.161	.800	252	56.659	52.33
10	27.161	.575	252	11.530	249.58
11	29.036	.575	252	7.182	188.23
12	30.161	.575	252	9.573	66.62
1	27.161	.925	270	46.161	73.46
2	29.036	.925	270	31.047	111.71
3	30.161	.925	270	25.092	172.48
4	27.161	.700	270	17.272	110.63
5	29.036	.700	270	39.526	118.19
6	30.161	.700	270	36.057	164.44
7	27.161	.800	270	59.382	-171.21
8	29.036	.800	270	49.535	119.34
9	30.161	.800	270	34.736	124.87
10	27.161	.575	270	35.891	135.85
11	29.036	.575	270	62.682	159.82
12	30.161	.575	270	33.721	132.79
1	27.161	.925	288	38.093	274.93
2	29.036	.925	288	58.758	329.09
3	30.161	.925	288	129.662	332.85
4	27.161	.700	288	15.638	233.10
5	29.036	.700	288	27.682	237.95



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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

RUN # 66

DATE 8/27/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	30.161	.700	288	31.631	285.02
7	27.161	.800	288	14.939	-24.57
8	29.036	.800	288	47.851	306.72
9	30.161	.800	288	73.023	315.41
10	27.161	.575	288	20.266	200.69
11	29.036	.575	288	40.218	183.79
12	30.161	.575	288	37.612	203.14
1	27.161	.925	306	42.865	364.95
2	29.036	.925	306	32.392	76.78
3	30.161	.925	306	67.924	84.03
4	27.161	.700	306	8.734	280.81
5	29.036	.700	306	34.260	130.37
6	30.161	.700	306	40.186	143.90
7	27.161	.800	306	11.361	76.35
8	29.036	.800	306	38.969	89.56
9	30.161	.800	306	58.581	81.23
10	27.161	.575	306	27.751	227.31
11	29.036	.575	306	48.843	155.82
12	30.161	.575	306	43.872	171.49
1	27.161	.925	324	76.046	164.80
2	29.036	.925	324	45.413	175.21
3	30.161	.925	324	80.537	185.65
4	27.161	.700	324	34.486	198.60
5	29.036	.700	324	40.630	162.74
6	30.161	.700	324	43.372	165.84
7	27.161	.800	324	43.501	-122.65
8	29.036	.800	324	59.565	149.67
9	30.161	.800	324	64.302	151.10
10	27.161	.575	324	56.266	232.69
11	29.036	.575	324	23.238	169.64
12	30.161	.575	324	27.573	154.75
1	27.161	.925	342	6.676	358.31
2	29.036	.925	342	60.378	319.90
3	30.161	.925	342	131.422	325.69
4	27.161	.700	342	21.935	269.52
5	29.036	.700	342	58.055	314.51
6	30.161	.700	342	52.636	344.65
7	27.161	.800	342	25.735	-21.32
8	29.036	.800	342	67.039	300.51
9	30.161	.800	342	74.618	297.49
10	27.161	.575	342	41.260	227.25
11	29.036	.575	342	26.569	328.06
12	30.161	.575	342	29.011	380.90

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 66 DATE 8/27/82 MEASUREMENT LOCATION: DOWNSTREAM

CONFIGURATION: HARDWALL FAN SPEED: 7600 rpm

TEMPERATURES (deg. F):  
INLET (DRY) : 90  
CHAMBER (DRY): 90  
CHAMBER (WET): 78

REDUCTION: FROM TAPE

KULITE No.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
13	56.161	.925	0	39.527	235.80
14	58.036	.925	0	2.681	145.32
15	59.161	.925	0	6.978	250.05
16	56.161	.700	0	4.748	313.98
17	58.036	.700	0	18.875	103.00
18	59.161	.700	0	36.963	126.48
19	56.161	.800	0	30.289	76.53
20	58.036	.800	0	56.751	82.98
21	59.161	.800	0	53.724	95.76
22	56.161	.575	0	30.283	238.48
23	58.036	.575	0	20.271	194.33
24	59.161	.575	0	13.028	229.95
13	56.161	.925	18	20.970	344.86
14	58.036	.925	18	.100	90.00
15	59.161	.925	18	11.947	220.64
16	56.161	.700	18	22.715	125.26
17	58.036	.700	18	46.290	181.29
18	59.161	.700	18	76.088	186.08
19	56.161	.800	18	11.762	107.20
20	58.036	.800	18	38.856	225.19
21	59.161	.800	18	59.454	243.07
22	56.161	.575	18	27.287	258.71
23	58.036	.575	18	53.296	210.47
24	59.161	.575	18	23.334	224.99
13	56.161	.925	36	41.603	136.68
14	58.036	.925	36	.100	90.00
15	59.161	.925	36	19.296	173.40
16	56.161	.700	36	15.141	261.16
17	58.036	.700	36	27.916	284.56
18	59.161	.700	36	32.552	319.55
19	56.161	.800	36	35.221	299.86
20	58.036	.800	36	54.439	315.98
21	59.161	.800	36	38.080	340.82
22	56.161	.575	36	42.626	295.89
23	58.036	.575	36	21.466	180.44
24	59.161	.575	36	11.372	267.50
13	56.161	.925	54	31.145	256.92
14	58.036	.925	54	.100	90.00
15	59.161	.925	54	19.091	348.01
16	56.161	.700	54	36.368	282.06
17	58.036	.700	54	5.475	354.76

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 66

DATE 8/27/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
18	59.161	.700	54	50.989	107.30
19	56.161	.800	54	.100	90.00
20	58.036	.800	54	12.903	117.82
21	59.161	.800	54	49.195	124.93
22	56.161	.575	54	27.223	304.02
23	58.036	.575	54	42.253	149.70
24	59.161	.575	54	4.276	210.37
13	56.161	.925	72	47.530	17.72
14	58.036	.925	72	.100	90.00
15	59.161	.925	72	8.226	224.63
16	56.161	.700	72	7.476	95.36
17	58.036	.700	72	41.368	193.94
18	59.161	.700	72	43.225	220.06
19	56.161	.800	72	6.904	65.86
20	58.036	.800	72	57.982	193.75
21	59.161	.800	72	67.318	209.25
22	56.161	.575	72	16.457	271.36
23	58.036	.575	72	14.312	172.23
24	59.161	.575	72	9.232	216.75
13	56.161	.925	90	34.114	125.73
14	58.036	.925	90	.100	90.00
15	59.161	.925	90	42.396	169.69
16	56.161	.700	90	7.506	349.40
17	58.036	.700	90	21.165	273.50
18	59.161	.700	90	32.514	316.29
19	56.161	.800	90	39.811	352.16
20	58.036	.800	90	39.882	305.80
21	59.161	.800	90	52.838	306.92
22	56.161	.575	90	10.501	169.59
23	58.036	.575	90	8.002	254.96
24	59.161	.575	90	9.603	219.21
13	56.161	.925	108	24.880	270.87
14	58.036	.925	108	.100	90.00
15	59.161	.925	108	15.047	118.40
16	56.161	.700	108	15.291	299.26
17	58.036	.700	108	25.107	140.77
18	59.161	.700	108	45.684	147.92
19	56.161	.800	108	14.893	294.12
20	58.036	.800	108	22.623	114.88
21	59.161	.800	108	46.179	119.12
22	56.161	.575	108	36.609	199.10
23	58.036	.575	108	26.635	141.21
24	59.161	.575	108	16.252	181.00
13	56.161	.925	126	31.426	40.30
14	58.036	.925	126	.100	90.00
15	59.161	.925	126	4.738	312.01
16	56.161	.700	126	42.965	169.10
17	58.036	.700	126	44.545	190.63
18	59.161	.700	126	24.759	230.60
19	56.161	.800	126	21.426	172.32
20	58.036	.800	126	51.538	195.66
21	59.161	.800	126	46.619	212.95

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 66

DATE 8/27/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE		POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)			
22	56.161	.575	126	45.113	175.16	
23	58.036	.575	126	15.995	141.03	
24	59.161	.575	126	21.869	177.55	
13	56.161	.925	144	34.740	135.54	
14	58.036	.925	144	.100	90.00	
15	59.161	.925	144	16.229	178.46	
16	56.161	.700	144	.100	90.00	
17	58.036	.700	144	42.697	352.24	
18	59.161	.700	144	66.861	18.25	
19	56.161	.800	144	20.274	69.65	
20	58.036	.800	144	45.923	16.69	
21	59.161	.800	144	62.982	361.90	
22	56.161	.575	144	33.300	126.91	
23	58.036	.575	144	48.630	42.67	
24	59.161	.575	144	19.486	74.62	
13	56.161	.925	162	23.701	289.37	
14	58.036	.925	162	.100	90.00	
15	59.161	.925	162	16.562	64.05	
16	56.161	.700	162	24.273	365.37	
17	58.036	.700	162	24.915	395.56	
18	59.161	.700	162	18.048	141.49	
19	56.161	.800	162	25.046	310.98	
20	58.036	.800	162	29.614	372.01	
21	59.161	.800	162	26.745	124.22	
22	56.161	.575	162	26.501	75.63	
23	58.036	.575	162	33.428	35.33	
24	59.161	.575	162	20.488	41.30	
13	56.161	.925	180	31.501	88.81	
14	58.036	.925	180	.100	90.00	
15	59.161	.925	180	38.017	91.89	
16	56.161	.700	180	38.064	257.29	
17	58.036	.700	180	38.781	278.48	
18	59.161	.700	180	50.665	301.26	
19	56.161	.800	180	19.898	292.07	
20	58.036	.800	180	64.508	269.56	
21	59.161	.800	180	75.852	260.69	
22	56.161	.575	180	27.697	92.65	
23	58.036	.575	180	27.080	265.31	
24	59.161	.575	180	3.811	269.60	
13	56.161	.925	198	33.951	254.53	
14	58.036	.925	198	.100	90.00	
15	59.161	.925	198	29.810	54.21	
16	56.161	.700	198	18.062	262.60	
17	58.036	.700	198	21.506	48.43	
18	59.161	.700	198	52.382	65.54	
19	56.161	.800	198	15.924	15.07	
20	58.036	.800	198	41.168	336.66	
21	59.161	.800	198	38.385	378.00	
22	56.161	.575	198	49.689	59.13	
23	58.036	.575	198	19.657	331.40	
24	59.161	.575	198	11.885	34.62	
13	56.161	.925	216	33.617	332.81	

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 66

DATE 8/27/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE POSITION		CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )			
14	58.036	.925	216	.100	90.00
15	59.161	.925	216	37.454	306.50
16	56.161	.700	216	47.130	102.57
17	58.036	.700	216	45.883	102.13
18	59.161	.700	216	22.861	105.13
19	56.161	.800	216	8.849	87.24
20	58.036	.800	216	29.795	95.90
21	59.161	.800	216	47.559	124.64
22	56.161	.575	216	45.438	43.54
23	58.036	.575	216	32.986	12.75
24	59.161	.575	216	46.989	31.04
13	56.161	.925	234	43.951	103.87
14	58.036	.925	234	.100	90.00
15	59.161	.925	234	24.836	107.36
16	56.161	.700	234	7.983	14.16
17	58.036	.700	234	40.229	356.94
18	59.161	.700	234	47.210	338.15
19	56.161	.800	234	15.198	308.13
20	58.036	.800	234	50.851	277.23
21	59.161	.800	234	64.591	257.10
22	56.161	.575	234	37.452	369.49
23	58.036	.575	234	60.685	350.16
24	59.161	.575	234	58.081	342.88
13	56.161	.925	252	16.418	246.33
14	58.036	.925	252	.100	90.00
15	59.161	.925	252	24.203	56.38
16	56.161	.700	252	31.211	296.94
17	58.036	.700	252	21.130	347.64
18	59.161	.700	252	40.305	58.02
19	56.161	.800	252	21.520	250.15
20	58.036	.800	252	6.123	332.15
21	59.161	.800	252	33.796	410.18
22	56.161	.575	252	21.783	373.19
23	58.036	.575	252	37.343	368.43
24	59.161	.575	252	36.489	352.41
13	56.161	.925	270	58.018	308.33
14	58.036	.925	270	.100	90.00
15	59.161	.925	270	29.102	369.30
16	56.161	.700	270	.100	90.00
17	58.036	.700	270	50.321	152.56
18	59.161	.700	270	68.495	161.77
19	56.161	.800	270	29.571	203.94
20	58.036	.800	270	79.405	152.77
21	59.161	.800	270	91.644	144.39
22	56.161	.575	270	11.301	16.05
23	58.036	.575	270	34.879	194.35
24	59.161	.575	270	23.719	152.68
13	56.161	.925	288	10.156	131.16
14	58.036	.925	288	.100	90.00
15	59.161	.925	288	27.910	369.88
16	56.161	.700	288	15.992	232.67
17	58.036	.700	288	35.598	240.92

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 66

DATE 8/27/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE		POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)			
18	59.161	.700	288	44.612	274.12	
19	56.161	.800	288	24.965	221.81	
20	58.036	.800	288	35.525	230.28	
21	59.161	.800	288	28.618	273.97	
22	56.161	.575	288	31.785	331.09	
23	58.036	.575	288	61.277	248.47	
24	59.161	.575	288	36.106	247.31	
13	56.161	.925	306	47.359	232.01	
14	58.036	.925	306	.100	90.00	
15	59.161	.925	306	14.968	343.64	
16	56.161	.700	306	33.231	323.73	
17	58.036	.700	306	32.873	350.65	
18	59.161	.700	306	23.851	381.25	
19	56.161	.800	306	11.288	225.56	
20	58.036	.800	306	42.305	34.28	
21	59.161	.800	306	56.739	57.36	
22	56.161	.575	306	58.954	323.94	
23	58.036	.575	306	43.280	284.90	
24	59.161	.575	306	44.106	314.57	
13	56.161	.925	324	33.637	336.61	
14	58.036	.925	324	.100	90.00	
15	59.161	.925	324	29.316	291.49	
16	56.161	.700	324	20.107	49.99	
17	58.036	.700	324	7.894	111.65	
18	59.161	.700	324	34.040	227.63	
19	56.161	.800	324	24.437	75.34	
20	58.036	.800	324	44.602	81.76	
21	59.161	.800	324	40.384	139.82	
22	56.161	.575	324	50.380	313.42	
23	58.036	.575	324	30.660	275.40	
24	59.161	.575	324	43.160	308.40	
13	56.161	.925	342	34.387	123.70	
14	58.036	.925	342	.100	90.00	
15	59.161	.925	342	12.003	287.78	
16	56.161	.700	342	12.011	227.60	
17	58.036	.700	342	38.782	295.30	
18	59.161	.700	342	54.833	321.51	
19	56.161	.800	342	6.578	129.98	
20	58.036	.800	342	39.679	282.22	
21	59.161	.800	342	61.489	311.17	
22	56.161	.575	342	26.915	310.02	
23	58.036	.575	342	57.660	276.71	
24	59.161	.575	342	40.918	295.18	

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 0002 PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 0003

0004 RUN # 67 DATE 8/31/82 MEASUREMENT LOCATION: UPSTREAM  
 0005

0006 CONFIGURATION: HARDWALL FAN SPEED: 7600 rpm  
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0008 TEMPERATURES (deg. F):  
 0009 INLET (DRY) :  
 0010 CHAMBER (DRY):  
 0011 CHAMBER (WET):

DATA REDUCTION: FROM TAPE

0012	KULITE	KULITE	POSITION		AMPLITUDE	PHASE
0013	NO.	AXIAL	RADIAL	CIRCUM.	(Voltsx10)	(deg.)
0014		(in.)	(r/r <sub>2</sub> )	(deg.)		
0015	-----	-----	-----	-----	-----	-----
0016						
0017						
0018	13	27.161	.925	0	50.509	71.34
0019	14	29.036	.925	0	41.046	92.78
0020	15	30.161	.925	0	29.575	75.24
0021	16	27.161	.700	0	24.054	66.68
0022	17	29.036	.700	0	27.245	99.23
0023	18	30.161	.700	0	29.062	83.07
0024	19	27.161	.800	0	18.733	90.57
0025	20	29.036	.800	0	11.931	290.53
0026	21	30.161	.800	0	6.290	374.49
0027	22	27.161	.575	0	9.809	155.43
0028	23	29.036	.575	0	7.580	68.67
0029	24	30.161	.575	0	7.502	122.39
0030	13	27.161	.925	18	66.963	198.51
0031	14	29.036	.925	18	73.176	218.93
0032	15	30.161	.925	18	49.093	185.77
0033	16	27.161	.700	18	25.947	243.29
0034	17	29.036	.700	18	37.119	217.80
0035	18	30.161	.700	18	39.372	162.38
0036	19	27.161	.800	18	46.225	226.47
0037	20	29.036	.800	18	38.839	241.53
0038	21	30.161	.800	18	42.289	171.61
0039	22	27.161	.575	18	16.708	233.35
0040	23	29.036	.575	18	11.083	132.81
0041	24	30.161	.575	18	8.368	291.89
0042	13	27.161	.925	36	50.997	321.18
0043	14	29.036	.925	36	34.783	317.38
0044	15	30.161	.925	36	16.053	269.16
0045	16	27.161	.700	36	57.807	278.66
0046	17	29.036	.700	36	46.575	311.57
0047	18	30.161	.700	36	1.100	90.00
0048	19	27.161	.800	36	56.998	329.10
0049	20	29.036	.800	36	16.923	316.47
0050	21	30.161	.800	36	13.814	260.47
0051	22	27.161	.575	36	7.996	323.60
0052	23	29.036	.575	36	23.434	344.32
0053	24	30.161	.575	36	8.516	325.84
0054	13	27.161	.925	54	63.678	81.31
0055	14	29.036	.925	54	45.330	72.54
0056	15	30.161	.925	54	41.958	41.27
0057	16	27.161	.700	54	30.343	104.21
0058	17	29.036	.700	54	5.625	62.96

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
18	30.161	.700	54	19.988	372.25
19	27.161	.800	54	56.086	92.92
20	29.036	.800	54	23.084	55.97
21	30.161	.800	54	32.978	15.46
22	27.161	.575	54	32.197	81.83
23	29.036	.575	54	9.440	8.89
24	30.161	.575	54	11.089	18.28
13	27.161	.925	72	69.704	162.75
14	29.036	.925	72	29.032	206.11
15	30.161	.925	72	9.793	263.43
16	27.161	.700	72	39.192	172.48
17	29.036	.700	72	8.607	168.48
18	30.161	.700	72	1.600	190.00
19	27.161	.800	72	38.366	163.65
20	29.036	.800	72	9.131	189.87
21	30.161	.800	72	5.300	394.90
22	27.161	.575	72	22.085	97.40
23	29.036	.575	72	12.864	344.28
24	30.161	.575	72	6.450	77.31
13	27.161	.925	90	72.458	296.16
14	29.036	.925	90	31.973	330.11
15	30.161	.925	90	10.340	272.95
16	27.161	.700	90	36.609	315.93
17	29.036	.700	90	13.701	393.21
18	30.161	.700	90	23.104	46.23
19	27.161	.800	90	73.688	15.13
20	29.036	.800	90	6.900	234.50
21	30.161	.800	90	25.035	218.53
22	27.161	.575	90	31.140	57.27
23	29.036	.575	90	12.986	204.08
24	30.161	.575	90	7.990	92.71
13	27.161	.925	108	26.840	172.77
14	29.036	.925	108	56.789	150.06
15	30.161	.925	108	64.133	135.79
16	27.161	.700	108	14.103	119.90
17	29.036	.700	108	24.806	95.89
18	30.161	.700	108	31.923	81.77
19	27.161	.800	108	20.777	160.87
20	29.036	.800	108	35.288	136.90
21	30.161	.800	108	40.591	125.40
22	27.161	.575	108	41.322	71.83
23	29.036	.575	108	37.152	8.28
24	30.161	.575	108	19.862	46.31
13	27.161	.925	126	56.217	201.27
14	29.036	.925	126	50.962	205.70
15	30.161	.925	126	43.400	206.01
16	27.161	.700	126	20.277	165.72
17	29.036	.700	126	27.508	304.40
18	30.161	.700	126	27.895	299.46
19	27.161	.800	126	42.815	192.39
20	29.036	.800	126	24.007	230.97
21	30.161	.800	126	23.792	219.06



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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 67

DATE 8/31/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
22	27.161	.575	126	38.685	81.78
23	29.036	.575	126	51.943	330.51
24	30.161	.575	126	22.086	335.91
13	27.161	.925	144	103.839	2.35
14	29.036	.925	144	45.286	-5.39
15	30.161	.925	144	33.939	294.01
16	27.161	.700	144	71.436	376.23
17	29.036	.700	144	54.232	331.59
18	30.161	.700	144	63.980	307.47
19	27.161	.800	144	93.805	347.86
20	29.036	.800	144	53.897	347.61
21	30.161	.800	144	38.120	297.27
22	27.161	.575	144	61.537	368.24
23	29.036	.575	144	62.405	309.51
24	30.161	.575	144	36.304	332.43
13	27.161	.925	162	34.467	145.26
14	29.036	.925	162	49.550	143.29
15	30.161	.925	162	62.605	135.09
16	27.161	.700	162	18.108	299.03
17	29.036	.700	162	13.532	278.93
18	30.161	.700	162	21.086	150.73
19	27.161	.800	162	13.416	81.15
20	29.036	.800	162	16.414	172.13
21	30.161	.800	162	27.915	152.50
22	27.161	.575	162	8.957	329.15
23	29.036	.575	162	18.278	311.78
24	30.161	.575	162	22.635	301.85
13	27.161	.925	180	115.657	203.03
14	29.036	.925	180	52.932	192.50
15	30.161	.925	180	68.228	135.36
16	27.161	.700	180	37.320	248.80
17	29.036	.700	180	47.673	201.94
18	30.161	.700	180	37.472	172.13
19	27.161	.800	180	73.831	212.68
20	29.036	.800	180	30.646	203.15
21	30.161	.800	180	25.958	139.38
22	27.161	.575	180	34.686	236.70
23	29.036	.575	180	11.073	190.35
24	30.161	.575	180	15.166	285.81
13	27.161	.925	198	28.397	37.77
14	29.036	.925	198	24.789	76.29
15	30.161	.925	198	38.942	26.73
16	27.161	.700	198	15.288	295.54
17	29.036	.700	198	16.365	180.61
18	30.161	.700	198	10.899	26.26
19	27.161	.800	198	21.861	369.61
20	29.036	.800	198	33.334	84.43
21	30.161	.800	198	36.478	49.22
22	27.161	.575	198	20.646	331.71
23	29.036	.575	198	12.250	140.37
24	30.161	.575	198	18.526	158.70
13	27.161	.925	216	33.842	153.59

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 67

DATE 8/31/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
14	29.036	.925	216	35.026	108.04
15	30.161	.925	216	47.094	71.67
16	27.161	.700	216	36.799	166.33
17	29.036	.700	216	22.396	151.64
18	30.161	.700	216	15.439	116.39
19	27.161	.800	216	44.097	166.30
20	29.036	.800	216	21.704	136.66
21	30.161	.800	216	23.547	110.90
22	27.161	.575	216	20.287	177.20
23	29.036	.575	216	39.203	165.00
24	30.161	.575	216	25.985	199.48
13	27.161	.925	234	52.426	259.33
14	29.036	.925	234	16.809	273.45
15	30.161	.925	234	26.931	168.89
16	27.161	.700	234	34.229	269.36
17	29.036	.700	234	26.275	207.46
18	30.161	.700	234	37.289	186.07
19	27.161	.800	234	57.916	248.78
20	29.036	.800	234	29.671	250.79
21	30.161	.800	234	10.565	215.03
22	27.161	.575	234	38.837	247.48
23	29.036	.575	234	39.997	167.54
24	30.161	.575	234	30.169	211.38
13	27.161	.925	252	51.229	38.27
14	29.036	.925	252	27.137	12.67
15	30.161	.925	252	27.813	-7.24
16	27.161	.700	252	16.368	259.72
17	29.036	.700	252	7.096	222.17
18	30.161	.700	252	.100	90.00
19	27.161	.800	252	29.373	10.48
20	29.036	.800	252	7.386	24.13
21	30.161	.800	252	12.743	340.15
22	27.161	.575	252	46.081	255.82
23	29.036	.575	252	32.109	171.76
24	30.161	.575	252	23.740	214.37
13	27.161	.925	270	43.045	119.67
14	29.036	.925	270	4.799	117.85
15	30.161	.925	270	46.535	9.36
16	27.161	.700	270	8.940	335.36
17	29.036	.700	270	7.844	92.76
18	30.161	.700	270	21.563	185.46
19	27.161	.800	270	70.814	127.56
20	29.036	.800	270	20.483	200.86
21	30.161	.800	270	6.788	31.12
22	27.161	.575	270	53.127	236.78
23	29.036	.575	270	38.037	141.76
24	30.161	.575	270	26.841	223.52
13	27.161	.925	288	28.086	329.35
14	29.036	.925	288	44.467	351.22
15	30.161	.925	288	40.616	330.92
16	27.161	.700	288	26.556	256.52
17	29.036	.700	288	9.210	291.57

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 67

DATE 8/31/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
18	30.161	.700	288	11.614	266.17
19	27.161	.800	288	25.905	271.40
20	29.036	.800	288	18.138	337.68
21	30.161	.800	288	20.983	359.34
22	27.161	.575	288	58.160	253.18
23	29.036	.575	288	23.220	153.68
24	30.161	.575	288	6.221	220.52
13	27.161	.925	306	59.419	57.17
14	29.036	.925	306	60.068	64.21
15	30.161	.925	306	34.222	32.03
16	27.161	.700	306	2.874	31.49
17	29.036	.700	306	43.311	83.22
18	30.161	.700	306	28.604	72.46
19	27.161	.800	306	47.463	64.46
20	29.036	.800	306	45.616	80.59
21	30.161	.800	306	27.662	53.36
22	27.161	.575	306	12.976	144.14
23	29.036	.575	306	19.684	96.05
24	30.161	.575	306	25.131	100.56
13	27.161	.925	324	82.781	172.06
14	29.036	.925	324	18.177	211.91
15	30.161	.925	324	12.641	299.38
16	27.161	.700	324	60.323	159.34
17	29.036	.700	324	23.403	109.23
18	30.161	.700	324	18.785	51.45
19	27.161	.800	324	80.766	151.92
20	29.036	.800	324	14.142	159.45
21	30.161	.800	324	5.819	19.47
22	27.161	.575	324	49.324	136.47
23	29.036	.575	324	28.147	64.71
24	30.161	.575	324	26.010	104.23
13	27.161	.925	342	33.205	249.78
14	29.036	.925	342	39.350	302.85
15	30.161	.925	342	51.007	333.75
16	27.161	.700	342	28.393	226.79
17	29.036	.700	342	26.117	375.90
18	30.161	.700	342	37.539	26.40
19	27.161	.800	342	24.808	292.40
20	29.036	.800	342	14.985	361.49
21	30.161	.800	342	14.476	310.87
22	27.161	.575	342	27.037	167.34
23	29.036	.575	342	21.718	84.10
24	30.161	.575	342	16.894	119.01

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 RUN # 67 DATE 8/31/82 MEASUREMENT LOCATION: DOWNSTREAM  
 CONFIGURATION: HARDWALL FAN SPEED: 7600 rpm  
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 INLET (DRY) :  
 CHAMBER (DRY):  
 CHAMBER (WET):

DATA REDUCTION: FROM TAPE

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
1	56.161	.925	0	92.008	115.16
2	58.036	.925	0	52.612	83.75
3	59.161	.925	0	60.634	22.25
4	56.161	.700	0	30.862	104.67
5	58.036	.700	0	25.841	92.93
6	59.161	.700	0	24.471	36.79
7	56.161	.800	0	55.931	167.72
8	58.036	.800	0	25.112	110.64
9	59.161	.800	0	27.836	.03
10	56.161	.575	0	4.400	142.00
11	58.036	.575	0	17.012	134.04
12	59.161	.575	0	11.451	137.11
1	56.161	.925	18	43.912	122.30
2	58.036	.925	18	28.250	54.43
3	59.161	.925	18	44.915	41.25
4	56.161	.700	18	22.673	175.29
5	58.036	.700	18	26.464	34.09
6	59.161	.700	18	42.350	43.58
7	56.161	.800	18	22.101	216.56
8	58.036	.800	18	34.837	47.17
9	59.161	.800	18	47.886	48.46
10	56.161	.575	18	17.273	246.07
11	58.036	.575	18	26.021	53.44
12	59.161	.575	18	42.091	86.57
1	56.161	.925	36	23.547	315.51
2	58.036	.925	36	43.077	258.80
3	59.161	.925	36	60.927	247.91
4	56.161	.700	36	30.230	278.69
5	58.036	.700	36	17.076	288.04
6	59.161	.700	36	7.274	256.50
7	56.161	.800	36	36.420	-1.35
8	58.036	.800	36	32.784	277.67
9	59.161	.800	36	34.903	242.44
10	56.161	.575	36	28.132	268.10
11	58.036	.575	36	8.338	354.27
12	59.161	.575	36	15.519	113.39
1	56.161	.925	54	36.276	101.63
2	58.036	.925	54	23.654	220.05
3	59.161	.925	54	22.191	303.96
4	56.161	.700	54	25.028	98.81
5	58.036	.700	54	16.787	212.21

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 67

DATE 8/31/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	59.161	.700	54	12.356	282.01
7	56.161	.800	54	39.840	163.34
8	58.036	.800	54	14.076	231.86
9	59.161	.800	54	23.453	306.44
10	56.161	.575	54	21.257	142.45
11	58.036	.575	54	11.148	160.24
12	59.161	.575	54	5.535	101.86
1	56.161	.925	72	20.334	301.49
2	58.036	.925	72	12.189	-5.62
3	59.161	.925	72	28.968	126.94
4	56.161	.700	72	7.476	171.58
5	58.036	.700	72	3.671	91.15
6	59.161	.700	72	14.240	104.56
7	56.161	.800	72	9.431	229.34
8	58.036	.800	72	19.894	64.33
9	59.161	.800	72	26.668	89.87
10	56.161	.575	72	21.829	158.27
11	58.036	.575	72	18.543	127.24
12	59.161	.575	72	17.653	114.16
1	56.161	.925	90	83.396	320.50
2	58.036	.925	90	61.713	298.05
3	59.161	.925	90	72.026	249.49
4	56.161	.700	90	27.331	318.77
5	58.036	.700	90	13.024	348.64
6	59.161	.700	90	11.297	218.18
7	56.161	.800	90	53.998	19.68
8	58.036	.800	90	25.964	301.89
9	59.161	.800	90	39.407	232.81
10	56.161	.575	90	5.881	139.84
11	58.036	.575	90	17.166	139.92
12	59.161	.575	90	10.556	162.57
1	56.161	.925	108	22.467	103.60
2	58.036	.925	108	9.087	-20.41
3	59.161	.925	108	19.108	-39.93
4	56.161	.700	108	36.837	112.14
5	58.036	.700	108	18.679	91.47
6	59.161	.700	108	16.870	27.25
7	56.161	.800	108	27.452	157.87
8	58.036	.800	108	10.592	62.74
9	59.161	.800	108	13.857	341.33
10	56.161	.575	108	49.189	115.61
11	58.036	.575	108	33.010	87.32
12	59.161	.575	108	29.321	39.75
1	56.161	.925	126	10.809	200.29
2	58.036	.925	126	41.816	84.44
3	59.161	.925	126	41.018	97.94
4	56.161	.700	126	36.388	147.86
5	58.036	.700	126	36.803	91.63
6	59.161	.700	126	34.064	68.26
7	56.161	.800	126	29.597	222.69
8	58.036	.800	126	38.082	91.94
9	59.161	.800	126	37.087	72.19

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

RUN # 67

DATE 8/31/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
10	56.161	.575	126	49.559	141.02
11	58.036	.575	126	34.195	98.78
12	59.161	.575	126	32.261	55.98
1	56.161	.925	144	15.668	-12.81
2	58.036	.925	144	7.887	-65.90
3	59.161	.925	144	44.341	282.17
4	56.161	.700	144	3.759	347.30
5	58.036	.700	144	6.521	141.49
6	59.161	.700	144	11.249	268.80
7	56.161	.800	144	17.080	17.42
8	58.036	.800	144	6.064	222.92
9	59.161	.800	144	25.471	258.45
10	56.161	.575	144	14.447	184.09
11	58.036	.575	144	17.628	143.58
12	59.161	.575	144	1.129	220.41
1	56.161	.925	162	13.045	159.23
2	58.036	.925	162	.100	90.00
3	59.161	.925	162	33.499	62.10
4	56.161	.700	162	8.088	68.06
5	58.036	.700	162	5.224	264.62
6	59.161	.700	162	7.362	346.29
7	56.161	.800	162	26.950	156.09
8	58.036	.800	162	14.124	158.56
9	59.161	.800	162	5.273	317.87
10	56.161	.575	162	8.715	234.35
11	58.036	.575	162	17.520	150.64
12	59.161	.575	162	12.810	157.57
1	56.161	.925	180	61.745	279.35
2	58.036	.925	180	38.858	205.29
3	59.161	.925	180	86.842	161.25
4	56.161	.700	180	41.196	292.42
5	58.036	.700	180	8.563	231.76
6	59.161	.700	180	36.601	160.74
7	56.161	.800	180	32.580	-28.27
8	58.036	.800	180	.100	90.00
9	59.161	.800	180	34.365	122.28
10	56.161	.575	180	24.690	268.23
11	58.036	.575	180	.100	90.00
12	59.161	.575	180	18.569	111.72
1	56.161	.925	198	26.062	267.20
2	58.036	.925	198	67.364	250.57
3	59.161	.925	198	53.324	254.64
4	56.161	.700	198	18.375	327.65
5	58.036	.700	198	30.243	250.12
6	59.161	.700	198	25.852	240.97
7	56.161	.800	198	32.752	1.59
8	58.036	.800	198	37.109	248.81
9	59.161	.800	198	28.130	211.04
10	56.161	.575	198	22.246	333.47
11	58.036	.575	198	8.051	265.52
12	59.161	.575	198	9.204	184.66
1	56.161	.925	216	18.115	57.04

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 67

DATE 8/31/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
2	58.036	.925	216	20.596	57.55
3	59.161	.925	216	23.360	71.28
4	56.161	.700	216	21.137	91.18
5	58.036	.700	216	6.787	342.73
6	59.161	.700	216	9.067	42.93
7	56.161	.800	216	16.619	159.47
8	58.036	.800	216	10.462	290.66
9	59.161	.800	216	5.872	27.37
10	56.161	.575	216	26.898	86.84
11	58.036	.575	216	4.703	-3.35
12	59.161	.575	216	5.549	3.58
1	56.161	.925	234	67.350	330.47
2	58.036	.925	234	4.639	303.44
3	59.161	.925	234	60.730	198.46
4	56.161	.700	234	20.961	311.97
5	58.036	.700	234	6.726	372.03
6	59.161	.700	234	18.102	180.04
7	56.161	.800	234	34.363	-4.53
8	58.036	.800	234	3.837	282.27
9	59.161	.800	234	32.306	160.89
10	56.161	.575	234	21.706	51.03
11	58.036	.575	234	14.757	375.04
12	59.161	.575	234	6.267	346.37
1	56.161	.925	252	22.245	222.59
2	58.036	.925	252	39.945	248.27
3	59.161	.925	252	33.244	300.40
4	56.161	.700	252	9.076	328.95
5	58.036	.700	252	12.823	263.99
6	59.161	.700	252	23.096	295.39
7	56.161	.800	252	10.319	50.47
8	58.036	.800	252	16.275	216.63
9	59.161	.800	252	17.379	267.62
10	56.161	.575	252	29.634	372.91
11	58.036	.575	252	27.360	362.85
12	59.161	.575	252	29.363	331.89
1	56.161	.925	270	97.321	181.87
2	58.036	.925	270	82.670	133.66
3	59.161	.925	270	104.985	81.95
4	56.161	.700	270	19.427	169.35
5	58.036	.700	270	32.031	109.75
6	59.161	.700	270	46.070	70.14
7	56.161	.800	270	58.631	214.38
8	58.036	.800	270	42.942	129.22
9	59.161	.800	270	44.140	57.54
10	56.161	.575	270	14.909	-27.74
11	58.036	.575	270	24.008	367.17
12	59.161	.575	270	29.038	367.35
1	56.161	.925	288	55.245	173.52
2	58.036	.925	288	88.995	117.94
3	59.161	.925	288	71.555	108.66
4	56.161	.700	288	22.171	240.30
5	58.036	.700	288	27.800	99.71

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 67

DATE 8/31/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	59.161	.700	288	26.657	94.85
7	56.161	.800	288	35.766	259.64
8	58.036	.800	288	55.561	114.20
9	59.161	.800	288	52.525	96.73
10	56.161	.575	288	38.200	300.53
11	58.036	.575	288	14.147	-1.71
12	59.161	.575	288	1.100	-27.00
1	56.161	.925	306	28.974	132.99
2	58.036	.925	306	19.031	71.72
3	59.161	.925	306	41.569	21.61
4	56.161	.700	306	14.022	313.22
5	58.036	.700	306	10.212	267.75
6	59.161	.700	306	12.705	256.98
7	56.161	.800	306	4.750	161.80
8	58.036	.800	306	6.479	69.35
9	59.161	.800	306	7.388	12.46
10	56.161	.575	306	35.974	303.93
11	58.036	.575	306	22.501	264.20
12	59.161	.575	306	30.742	237.30
1	56.161	.925	324	36.944	213.98
2	58.036	.925	324	14.176	-15.30
3	59.161	.925	324	48.743	68.44
4	56.161	.700	324	23.414	234.08
5	58.036	.700	324	25.155	257.78
6	59.161	.700	324	8.347	176.61
7	56.161	.800	324	27.047	-90.35
8	58.036	.800	324	18.280	294.59
9	59.161	.800	324	17.571	42.92
10	56.161	.575	324	22.644	274.89
11	58.036	.575	324	29.354	234.41
12	59.161	.575	324	40.378	209.39
1	56.161	.925	342	35.146	256.15
2	58.036	.925	342	8.939	172.92
3	59.161	.925	342	20.047	159.79
4	56.161	.700	342	28.156	263.02
5	58.036	.700	342	15.964	163.08
6	59.161	.700	342	30.155	162.31
7	56.161	.800	342	21.305	-2.14
8	58.036	.800	342	22.432	196.18
9	59.161	.800	342	38.051	193.91
10	56.161	.575	342	22.592	279.29
11	58.036	.575	342	29.915	217.62
12	59.161	.575	342	46.109	207.02



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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE

RUN # 69 DATE 9/ 3/82 MEASUREMENT LOCATION: UPSTREAM

CONFIGURATION: HARDWALL FAN SPEED: 4000 rpm

TEMPERATURES (deg. F):  
INLET (DRY) : 82->84  
CHAMBER (DRY): 79->84  
CHAMBER (WET): 76

DATA REDUCTION: ON-LINE

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
1	27.161	.925	0	8.306	152.55
2	29.036	.925	0	13.186	8.16
3	30.161	.925	0	19.061	3.98
4	27.161	.700	0	13.166	70.95
5	29.036	.700	0	10.504	116.39
6	30.161	.700	0	21.693	6.16
7	27.161	.800	0	16.638	134.42
8	29.036	.800	0	2.276	162.40
9	30.161	.800	0	15.122	233.72
10	27.161	.575	0	18.375	107.73
11	29.036	.575	0	6.563	198.28
12	30.161	.575	0	7.688	338.95
1	27.161	.925	18	22.547	26.99
2	29.036	.925	18	21.272	-5.29
3	30.161	.925	18	17.596	-19.42
4	27.161	.700	18	13.374	47.97
5	29.036	.700	18	16.769	-4.27
6	30.161	.700	18	18.064	-16.87
7	27.161	.800	18	15.492	99.42
8	29.036	.800	18	4.458	105.57
9	30.161	.800	18	7.450	-25.59
10	27.161	.575	18	13.646	87.95
11	29.036	.575	18	7.934	99.73
12	30.161	.575	18	4.732	334.31
1	27.161	.925	36	17.893	24.75
2	29.036	.925	36	19.771	-24.70
3	30.161	.925	36	26.074	-17.66
4	27.161	.700	36	7.946	19.83
5	29.036	.700	36	23.792	-15.32
6	30.161	.700	36	10.853	-16.20
7	27.161	.800	36	11.289	69.00
8	29.036	.800	36	8.889	184.70
9	30.161	.800	36	12.439	-75.49
10	27.161	.575	36	13.635	98.56
11	29.036	.575	36	8.170	80.79
12	30.161	.575	36	6.760	152.61
1	27.161	.925	54	13.232	357.75
2	29.036	.925	54	16.696	320.35
3	30.161	.925	54	19.049	321.90
4	27.161	.700	54	13.683	367.36
5	29.036	.700	54	20.140	323.22

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

RUN # 69

DATE 9/ 3/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
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6	30.161	.700	54	14.741	314.80
7	27.161	.800	54	12.296	70.92
8	29.036	.800	54	3.255	-9.77
9	30.161	.800	54	9.668	-54.17
10	27.161	.575	54	15.055	-38.93
11	29.036	.575	54	5.995	167.24
12	30.161	.575	54	11.679	314.15
1	27.161	.925	72	18.552	351.53
2	29.036	.925	72	19.748	293.70
3	30.161	.925	72	17.086	289.33
4	27.161	.700	72	18.681	304.71
5	29.036	.700	72	20.035	321.93
6	30.161	.700	72	16.107	276.64
7	27.161	.800	72	12.276	39.14
8	29.036	.800	72	5.628	65.31
9	30.161	.800	72	10.061	-86.19
10	27.161	.575	72	7.157	14.11
11	29.036	.575	72	6.263	117.18
12	30.161	.575	72	2.204	223.69
1	27.161	.925	90	15.067	269.45
2	29.036	.925	90	26.806	265.49
3	30.161	.925	90	16.208	267.36
4	27.161	.700	90	17.420	331.68
5	29.036	.700	90	11.083	293.26
6	30.161	.700	90	29.298	280.30
7	27.161	.800	90	16.803	6.19
8	29.036	.800	90	4.759	31.94
9	30.161	.800	90	22.391	61.15
10	27.161	.575	90	14.164	348.80
11	29.036	.575	90	9.244	343.53
12	30.161	.575	90	8.996	199.36
1	27.161	.925	108	17.208	298.44
2	29.036	.925	108	23.268	250.56
3	30.161	.925	108	25.441	258.78
4	27.161	.700	108	16.571	310.44
5	29.036	.700	108	21.066	269.39
6	30.161	.700	108	25.247	255.44
7	27.161	.800	108	13.194	9.31
8	29.036	.800	108	.101	110.44
9	30.161	.800	108	16.009	244.41
10	27.161	.575	108	10.684	324.52
11	29.036	.575	108	8.036	332.92
12	30.161	.575	108	9.787	-1.37
1	27.161	.925	126	18.507	-69.76
2	29.036	.925	126	22.506	-111.82
3	30.161	.925	126	28.552	252.21
4	27.161	.700	126	26.826	292.29
5	29.036	.700	126	14.898	283.34
6	30.161	.700	126	30.862	241.94
7	27.161	.800	126	17.773	54.59
8	29.036	.300	126	10.966	-78.24
9	30.161	.800	126	14.525	221.02

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 69

DATE 9/ 3/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
10	27.161	.575	126	17.067	329.13
11	29.036	.575	126	10.107	324.50
12	30.161	.575	126	8.973	52.74
1	27.161	.925	144	15.272	288.03
2	29.036	.925	144	21.077	228.04
3	30.161	.925	144	19.831	232.31
4	27.161	.700	144	17.706	289.26
5	29.036	.700	144	19.765	254.24
6	30.161	.700	144	20.530	228.71
7	27.161	.800	144	16.362	-31.74
8	29.036	.800	144	9.235	-85.94
9	30.161	.800	144	12.447	225.29
10	27.161	.575	144	18.842	311.60
11	29.036	.575	144	8.294	27.26
12	30.161	.575	144	3.931	-37.83
1	27.161	.925	162	16.978	264.18
2	29.036	.925	162	16.234	210.25
3	30.161	.925	162	23.289	207.14
4	27.161	.700	162	19.839	284.03
5	29.036	.700	162	14.278	236.27
6	30.161	.700	162	20.388	204.64
7	27.161	.800	162	15.926	-53.36
8	29.036	.800	162	9.629	-92.88
9	30.161	.800	162	11.868	-73.69
10	27.161	.575	162	19.951	291.14
11	29.036	.575	162	7.696	364.50
12	30.161	.575	162	8.194	210.70
1	27.161	.925	180	19.808	252.48
2	29.036	.925	180	21.228	207.10
3	30.161	.925	180	20.930	194.59
4	27.161	.700	180	19.042	271.78
5	29.036	.700	180	13.305	207.68
6	30.161	.700	180	24.373	212.10
7	27.161	.800	180	18.227	261.01
8	29.036	.800	180	12.569	238.91
9	30.161	.800	180	15.129	199.39
10	27.161	.575	180	17.562	289.73
11	29.036	.575	180	8.517	347.67
12	30.161	.575	180	7.198	277.01
1	27.161	.925	198	28.174	232.61
2	29.036	.925	198	27.772	193.83
3	30.161	.925	198	24.789	187.67
4	27.161	.700	198	20.178	237.46
5	29.036	.700	198	23.307	199.29
6	30.161	.700	198	25.706	185.17
7	27.161	.800	198	20.190	-82.34
8	29.036	.800	198	12.429	246.27
9	30.161	.800	198	19.303	190.48
10	27.161	.575	198	23.511	282.29
11	29.036	.575	198	7.574	331.38
12	30.161	.575	198	11.391	197.12
1	27.161	.925	216	19.733	225.83

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 69

DATE 9/ 3/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
2	29.035	.925	216	21.309	176.76
3	30.151	.925	216	28.572	181.17
4	27.151	.700	216	19.789	237.49
5	29.035	.700	216	15.194	191.73
6	30.151	.700	216	30.064	190.80
7	27.151	.800	216	21.335	-27.12
8	29.035	.800	216	19.861	231.43
9	30.151	.800	216	23.600	150.24
10	27.151	.575	216	23.976	263.34
11	29.035	.575	216	7.995	338.77
12	30.151	.575	216	12.854	270.98
1	27.151	.925	234	25.714	-54.54
2	29.035	.925	234	22.758	179.49
3	30.151	.925	234	25.676	157.11
4	27.151	.700	234	19.221	214.77
5	29.035	.700	234	19.470	185.15
6	30.151	.700	234	23.234	163.41
7	27.151	.800	234	18.967	246.55
8	29.035	.800	234	13.266	215.32
9	30.151	.800	234	13.124	170.57
10	27.151	.575	234	22.986	255.13
11	29.035	.575	234	7.949	231.30
12	30.151	.575	234	9.123	267.33
1	27.151	.925	252	18.890	205.11
2	29.035	.925	252	19.437	148.70
3	30.151	.925	252	20.264	128.31
4	27.151	.700	252	22.438	197.30
5	29.035	.700	252	17.321	165.64
6	30.151	.700	252	21.808	126.58
7	27.151	.800	252	23.766	238.99
8	29.035	.800	252	12.054	231.01
9	30.151	.800	252	17.257	237.98
10	27.151	.575	252	19.452	237.32
11	29.035	.575	252	6.713	217.36
12	30.151	.575	252	7.494	233.49
1	27.151	.925	270	17.217	153.94
2	29.035	.925	270	19.023	111.00
3	30.151	.925	270	20.390	112.75
4	27.151	.700	270	18.916	173.90
5	29.035	.700	270	11.759	149.64
6	30.151	.700	270	30.454	106.20
7	27.151	.800	270	17.674	221.16
8	29.035	.800	270	10.510	234.88
9	30.151	.800	270	10.295	105.23
10	27.151	.575	270	21.968	224.70
11	29.035	.575	270	8.203	-74.68
12	30.151	.575	270	4.564	-43.95
1	27.151	.925	288	28.974	128.24
2	29.035	.925	288	21.065	76.20
3	30.151	.925	288	24.000	81.72
4	27.151	.700	288	15.824	151.78
5	29.035	.700	288	20.033	106.40

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 69

DATE 9/ 3/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	30.161	.700	288	23.237	80.25
7	27.161	.800	288	18.298	197.22
8	29.036	.800	288	9.475	135.37
9	30.161	.800	288	14.257	76.29
10	27.161	.575	288	24.506	207.84
11	29.036	.575	288	9.199	274.18
12	30.161	.575	288	10.334	95.50
1	27.161	.925	306	18.649	44.32
2	29.036	.925	306	17.765	79.84
3	30.161	.925	306	25.221	72.10
4	27.161	.700	306	15.398	139.73
5	29.036	.700	306	17.334	101.45
6	30.161	.700	306	25.561	67.15
7	27.161	.800	306	18.894	168.86
8	29.036	.800	306	12.300	119.17
9	30.161	.800	306	6.842	55.76
10	27.161	.575	306	19.910	163.05
11	29.036	.575	306	5.973	270.27
12	30.161	.575	306	4.473	169.64
1	27.161	.925	324	12.872	122.89
2	29.036	.925	324	12.462	41.06
3	30.161	.925	324	15.897	53.69
4	27.161	.700	324	14.807	108.55
5	29.036	.700	324	14.019	84.03
6	30.161	.700	324	17.674	46.41
7	27.161	.800	324	14.484	156.20
8	29.036	.800	324	6.452	216.71
9	30.161	.800	324	8.654	142.86
10	27.161	.575	324	17.661	170.78
11	29.036	.575	324	5.964	164.45
12	30.161	.575	324	1.052	99.21
1	27.161	.925	342	7.158	112.38
2	29.036	.925	342	6.837	-13.23
3	30.161	.925	342	19.619	9.98
4	27.161	.700	342	17.616	89.76
5	29.036	.700	342	7.194	85.25
6	30.161	.700	342	20.484	93.97
7	27.161	.800	342	19.331	148.77
8	29.036	.800	342	1.899	230.99
9	30.161	.800	342	10.207	210.03
10	27.161	.575	342	19.354	44.21
11	29.036	.575	342	5.745	138.61
12	30.161	.575	342	9.020	-1.83

TEMP6 T=00004 IS ON CR AA USING 00078 BLKS R=0000

0001  
 0002 PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 0003  
 0004 RUN # 69 DATE 9/ 3/82 MEASUREMENT LOCATION: DOWNSTREAM  
 0005  
 0006 CONFIGURATION: HARDWALL FAN SPEED: 4000 rpm  
 0007  
 0008 TEMPERATURES (deg. F):  
 0009 INLET (DRY) : 82->84  
 0010 CHAMBER (DRY): 79->84  
 0011 CHAMBER (WET): 76

DATA REDUCTION: ON-LINE

	KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
0012						
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0017						
0018	13	56.161	.925	0	9.443	251.69
0019	14	58.036	.925	0	11.442	232.82
0020	15	59.161	.925	0	14.466	122.51
0021	16	56.161	.700	0	5.353	212.21
0022	17	58.036	.700	0	23.788	146.32
0023	18	59.161	.700	0	25.950	139.10
0024	19	56.161	.800	0	13.173	196.27
0025	20	58.036	.800	0	19.897	239.89
0026	21	59.161	.800	0	0.000	0.00
0027	22	56.161	.575	0	13.142	213.81
0028	23	58.036	.575	0	25.285	139.05
0029	24	59.161	.575	0	20.994	152.60
0030	13	56.161	.925	18	7.214	205.71
0031	14	58.036	.925	18	16.565	222.08
0032	15	59.161	.925	18	18.779	118.58
0033	16	56.161	.700	18	6.134	188.36
0034	17	58.036	.700	18	27.885	139.67
0035	18	59.161	.700	18	25.197	130.22
0036	19	56.161	.800	18	17.643	269.90
0037	20	58.036	.800	18	26.154	144.36
0038	21	59.161	.800	18	0.000	0.00
0039	22	56.161	.575	18	15.776	186.95
0040	23	58.036	.575	18	28.372	130.98
0041	24	59.161	.575	18	24.216	150.20
0042	13	56.161	.925	36	9.842	180.03
0043	14	58.036	.925	36	18.947	122.38
0044	15	59.161	.925	36	20.479	110.16
0045	16	56.161	.700	36	9.182	164.51
0046	17	58.036	.700	36	27.978	124.15
0047	18	59.161	.700	36	26.402	119.22
0048	19	56.161	.800	36	22.534	160.25
0049	20	58.036	.800	36	25.822	137.01
0050	21	59.161	.800	36	0.000	0.00
0051	22	56.161	.575	36	18.696	167.96
0052	23	58.036	.575	36	22.799	123.08
0053	24	59.161	.575	36	24.997	126.19
0054	13	56.161	.925	54	7.354	161.22
0055	14	58.036	.925	54	15.703	100.68
0056	15	59.161	.925	54	15.763	81.46
0057	16	56.161	.700	54	5.079	141.93
0058	17	58.036	.700	54	22.367	99.58

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

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RUN # 69

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MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	POSITION CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
18	59.161	.700	54	20.538	90.04
19	56.161	.800	54	19.897	236.13
20	58.036	.800	54	24.237	109.58
21	59.161	.800	54	0.000	0.00
22	56.161	.575	54	19.847	148.37
23	58.036	.575	54	20.251	93.20
24	59.161	.575	54	22.940	116.62
13	56.161	.925	72	4.840	109.74
14	58.036	.925	72	12.341	147.77
15	59.161	.925	72	18.107	46.67
16	56.161	.700	72	8.323	93.30
17	58.036	.700	72	21.861	81.67
18	59.161	.700	72	20.518	66.52
19	56.161	.800	72	13.012	106.28
20	58.036	.800	72	20.548	72.78
21	59.161	.800	72	0.000	0.00
22	56.161	.575	72	12.386	114.66
23	58.036	.575	72	21.287	56.18
24	59.161	.575	72	18.096	65.54
13	56.161	.925	90	7.886	366.81
14	58.036	.925	90	23.106	373.28
15	59.161	.925	90	24.046	368.53
16	56.161	.700	90	10.372	13.78
17	58.036	.700	90	25.063	32.90
18	59.161	.700	90	31.433	22.12
19	56.161	.800	90	16.859	234.48
20	58.036	.800	90	25.231	24.96
21	59.161	.800	90	0.000	0.00
22	56.161	.575	90	15.483	60.85
23	58.036	.575	90	23.119	21.10
24	59.161	.575	90	25.834	22.64
13	56.161	.925	108	12.260	.79
14	58.036	.925	108	26.058	6.10
15	59.161	.925	108	28.034	-1.65
16	56.161	.700	108	11.994	-13.16
17	58.036	.700	108	32.726	11.09
18	59.161	.700	108	34.701	7.18
19	56.161	.800	108	16.824	315.34
20	58.036	.800	108	27.016	12.81
21	59.161	.800	108	0.000	0.00
22	56.161	.575	108	22.106	49.87
23	58.036	.575	108	32.699	12.41
24	59.161	.575	108	29.678	19.60
13	56.161	.925	126	10.996	104.44
14	58.036	.925	126	25.932	-10.31
15	59.161	.925	126	27.228	-23.13
16	56.161	.700	126	15.829	-1.22
17	58.036	.700	126	32.194	.64
18	59.161	.700	126	33.277	-5.39
19	56.161	.800	126	20.821	215.69
20	58.036	.800	126	30.747	2.32
21	59.161	.800	126	0.000	0.00

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

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0123

RUN # 69

DATE 9/ 3/82

MEASUREMENT LOCATION: DOWNSTREAM

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KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
22	56.161	.575	126	21.264	42.11
23	58.036	.575	126	30.373	-7.70
24	59.161	.575	126	29.176	6.18
13	56.161	.925	144	8.401	87.31
14	58.036	.925	144	17.698	-30.33
15	59.161	.925	144	22.210	-46.14
16	56.161	.700	144	11.196	-1.51
17	58.036	.700	144	27.034	-14.98
18	59.161	.700	144	29.342	-32.32
19	56.161	.800	144	15.506	127.00
20	58.036	.800	144	23.636	-23.48
21	59.161	.800	144	0.000	0.00
22	56.161	.575	144	15.410	28.28
23	58.036	.575	144	27.950	-34.28
24	59.161	.575	144	24.586	-23.21
13	56.161	.925	162	3.507	-21.34
14	58.036	.925	162	18.522	-65.88
15	59.161	.925	162	23.419	-78.35
16	56.161	.700	162	8.096	-51.01
17	58.036	.700	162	25.709	-57.26
18	59.161	.700	162	28.630	-57.14
19	56.161	.800	162	9.711	199.29
20	58.036	.800	162	22.871	-57.49
21	59.161	.800	162	0.000	0.00
22	56.161	.575	162	11.721	17.49
23	58.036	.575	162	27.479	-52.52
24	59.161	.575	162	22.347	-47.48
13	56.161	.925	180	4.142	302.94
14	58.036	.925	180	20.541	284.20
15	59.161	.925	180	25.991	273.68
16	56.161	.700	180	9.575	287.87
17	58.036	.700	180	28.322	296.13
18	59.161	.700	180	29.443	284.61
19	56.161	.800	180	12.591	169.23
20	58.036	.800	180	23.678	-67.58
21	59.161	.800	180	0.000	0.00
22	56.161	.575	180	11.758	-4.96
23	58.036	.575	180	29.523	281.38
24	59.161	.575	180	22.778	291.09
13	56.161	.925	198	5.981	319.36
14	58.036	.925	198	19.393	272.28
15	59.161	.925	198	24.908	261.10
16	56.161	.700	198	11.188	293.03
17	58.036	.700	198	25.405	290.02
18	59.161	.700	198	30.095	275.96
19	56.161	.800	198	15.278	-21.01
20	58.036	.800	198	25.018	-73.69
21	59.161	.800	198	0.000	0.00
22	56.161	.575	198	16.710	-14.04
23	58.036	.575	198	28.397	8.13
24	59.161	.575	198	21.362	284.12
13	56.161	.925	216	7.670	320.03



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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

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RUN # 69

DATE 9/ 3/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
14	58.036	.925	216	17.904	273.57
15	59.161	.925	216	22.795	256.22
16	56.161	.700	216	7.781	286.05
17	58.036	.700	216	26.669	278.06
18	59.161	.700	216	27.062	265.15
19	56.161	.800	216	18.623	157.19
20	58.036	.800	216	24.762	-78.74
21	59.161	.800	216	0.000	0.00
22	56.161	.575	216	18.522	-21.23
23	58.036	.575	216	26.124	266.43
24	59.161	.575	216	22.611	283.16
13	56.161	.925	234	5.224	326.05
14	58.036	.925	234	14.249	252.55
15	59.161	.925	234	16.917	231.12
16	56.161	.700	234	4.678	293.03
17	58.036	.700	234	21.291	268.90
18	59.161	.700	234	23.066	250.76
19	56.161	.800	234	19.009	52.83
20	58.036	.800	234	18.914	-91.97
21	59.161	.800	234	0.000	0.00
22	56.161	.575	234	18.696	-32.19
23	58.036	.575	234	20.488	250.30
24	59.161	.575	234	20.319	276.07
13	56.161	.925	252	3.954	254.96
14	58.036	.925	252	9.834	249.93
15	59.161	.925	252	17.895	228.22
16	56.161	.700	252	2.801	325.01
17	58.036	.700	252	20.299	258.82
18	59.161	.700	252	25.841	236.99
19	56.161	.800	252	14.894	-41.51
20	58.036	.800	252	16.266	-11.01
21	59.161	.800	252	0.000	0.00
22	56.161	.575	252	15.558	319.87
23	58.036	.575	252	25.987	234.93
24	59.161	.575	252	19.698	250.47
13	56.161	.925	270	8.038	168.61
14	58.036	.925	270	10.877	-56.27
15	59.161	.925	270	16.759	199.37
16	56.161	.700	270	2.569	350.38
17	58.036	.700	270	25.021	229.07
18	59.161	.700	270	28.424	222.92
19	56.161	.800	270	16.625	109.74
20	58.036	.800	270	23.387	229.70
21	59.161	.800	270	0.000	0.00
22	56.161	.575	270	18.963	292.34
23	58.036	.575	270	27.721	223.10
24	59.161	.575	270	26.537	242.89
13	56.161	.925	288	8.218	339.99
14	58.036	.925	288	11.219	212.05
15	59.161	.925	288	15.894	192.30
16	56.161	.700	288	4.372	293.81
17	58.036	.700	288	25.941	220.08

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

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RUN # 69

DATE 9/ 3/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
18	59.161	.700	288	26.126	207.17
19	56.161	.800	288	18.250	.47
20	58.036	.800	288	26.660	220.79
21	59.161	.800	288	0.000	0.00
22	56.161	.575	288	20.032	273.40
23	58.036	.575	288	28.245	210.86
24	59.161	.575	288	24.320	223.44
13	56.161	.925	306	8.594	230.00
14	58.036	.925	306	11.897	214.88
15	59.161	.925	306	15.157	191.06
16	56.161	.700	306	10.566	306.98
17	58.036	.700	306	26.909	304.73
18	59.161	.700	306	26.516	201.45
19	56.161	.800	306	22.840	3.78
20	58.036	.800	306	23.842	218.65
21	59.161	.800	306	0.000	0.00
22	56.161	.575	306	21.209	276.89
23	58.036	.575	306	27.340	203.13
24	59.161	.575	306	24.146	234.80
13	56.161	.925	324	11.779	299.51
14	58.036	.925	324	9.514	204.64
15	59.161	.925	324	11.587	159.77
16	56.161	.700	324	7.641	227.48
17	58.036	.700	324	19.536	291.20
18	59.161	.700	324	23.915	181.55
19	56.161	.800	324	16.994	-5.67
20	58.036	.800	324	18.437	207.61
21	59.161	.800	324	0.000	0.00
22	56.161	.575	324	19.002	277.24
23	58.036	.575	324	23.129	183.49
24	59.161	.575	324	18.184	218.99
13	56.161	.925	342	9.446	307.38
14	58.036	.925	342	5.913	180.36
15	59.161	.925	342	14.399	235.48
16	56.161	.700	342	6.142	228.86
17	58.036	.700	342	16.509	260.05
18	59.161	.700	342	20.752	157.73
19	56.161	.800	342	11.778	247.97
20	58.036	.800	342	12.331	272.98
21	59.161	.800	342	0.000	0.00
22	56.161	.575	342	12.095	251.26
23	58.036	.575	342	20.282	157.11
24	59.161	.575	342	16.296	181.91

TEMP 13 T=00004 IS ON CR AA USING 00072 BLKS R=0000

0001  
 0002 PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 0003  
 0004 RUN # 70 DATE 9/ 8/82 MEASUREMENT LOCATION: UPSTREAM  
 0005  
 0006 CONFIGURATION: HARDWALL FAN SPEED: 6000 rpm  
 0007  
 0008 TEMPERATURES (deg. F):  
 0009 INLET (DRY) : 76->80  
 0010 CHAMBER (DRY): 76->80  
 0011 CHAMBER (WET): 71  
 0012 DATA REDUCTION: FROM TAPE  
 0013

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)	
0018	1	27.161	.925	0	63.039	212.89
0019	2	29.036	.925	0	18.026	187.23
0020	3	30.161	.925	0	17.115	80.81
0021	4	27.161	.700	0	34.924	181.56
0022	5	29.036	.700	0	31.435	143.08
0023	6	30.161	.700	0	35.535	105.00
0024	7	27.161	.800	0	61.787	159.50
0025	8	29.036	.800	0	21.622	186.77
0026	9	30.161	.800	0	29.617	94.22
0027	10	27.161	.575	0	29.741	154.41
0028	11	29.036	.575	0	36.249	483.13
0029	12	30.161	.575	0	45.476	122.03
0030	1	27.161	.925	18	33.265	160.22
0031	2	29.036	.925	18	22.958	83.60
0032	3	30.161	.925	18	45.023	59.81
0033	4	27.161	.700	18	28.785	134.69
0034	5	29.036	.700	18	42.277	94.39
0035	6	30.161	.700	18	41.856	82.72
0036	7	27.161	.800	18	38.378	115.87
0037	8	29.036	.800	18	31.340	94.92
0038	9	30.161	.800	18	38.233	69.04
0039	10	27.161	.575	18	24.777	118.63
0040	11	29.036	.575	18	47.076	458.01
0041	12	30.161	.575	18	50.831	94.21
0042	1	27.161	.925	36	9.033	210.63
0043	2	29.036	.925	36	39.882	25.52
0044	3	30.161	.925	36	74.049	29.91
0045	4	27.161	.700	36	8.505	129.46
0046	5	29.036	.700	36	38.736	58.50
0047	6	30.161	.700	36	32.206	59.70
0048	7	27.161	.800	36	8.993	121.81
0049	8	29.036	.800	36	34.273	34.14
0050	9	30.161	.800	36	43.480	19.94
0051	10	27.161	.575	36	21.897	104.96
0052	11	29.036	.575	36	38.109	445.22
0053	12	30.161	.575	36	42.061	62.52
0054	1	27.161	.925	54	41.518	211.11
0055	2	29.036	.925	54	20.056	292.04
0056	3	30.161	.925	54	44.382	351.95
0057	4	27.161	.700	54	21.915	165.32
0058	5	29.036	.700	54	10.238	63.28

0059

## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

0060

0061

0062

RUN # 70

DATE 9/ 8/82

MEASUREMENT LOCATION: UPSTREAM

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KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	30.161	.700	54	28.206	20.36
7	27.161	.800	54	27.680	142.21
8	29.036	.800	54	5.573	291.79
9	30.161	.800	54	31.034	352.56
10	27.161	.575	54	21.660	142.45
11	29.036	.575	54	13.533	444.07
12	30.161	.575	54	33.523	59.57
1	27.161	.925	72	61.451	149.69
2	29.036	.925	72	33.449	153.00
3	30.161	.925	72	6.266	267.50
4	27.161	.700	72	29.103	154.73
5	29.036	.700	72	19.482	94.82
6	30.161	.700	72	.100	90.00
7	27.161	.800	72	43.649	115.70
8	29.036	.800	72	20.424	143.50
9	30.161	.800	72	3.677	360.97
10	27.161	.575	72	29.905	155.72
11	29.036	.575	72	18.627	453.09
12	30.161	.575	72	22.417	66.68
1	27.161	.925	90	77.072	122.36
2	29.036	.925	90	30.606	82.37
3	30.161	.925	90	30.333	34.37
4	27.161	.700	90	35.124	104.31
5	29.036	.700	90	33.296	76.43
6	30.161	.700	90	31.650	17.93
7	27.161	.800	90	51.273	54.46
8	29.036	.800	90	39.928	82.84
9	30.161	.800	90	22.729	16.12
10	27.161	.575	90	22.389	95.89
11	29.036	.575	90	25.630	408.65
12	30.161	.575	90	22.030	27.44
1	27.161	.925	108	51.052	73.69
2	29.036	.925	108	53.995	12.76
3	30.161	.925	108	75.283	-4.10
4	27.161	.700	108	47.485	54.56
5	29.036	.700	108	50.178	20.44
6	30.161	.700	108	53.985	-8.95
7	27.161	.800	108	53.477	28.60
8	29.036	.800	108	53.302	14.08
9	30.161	.800	108	60.701	-10.61
10	27.161	.575	108	27.524	59.90
11	29.036	.575	108	45.730	375.33
12	30.161	.575	108	48.522	346.52
1	27.161	.925	126	34.147	94.92
2	29.036	.925	126	41.417	331.21
3	30.161	.925	126	79.846	319.72
4	27.161	.700	126	35.190	45.75
5	29.036	.700	126	45.195	349.79
6	30.161	.700	126	58.516	315.17
7	27.161	.800	126	38.305	42.32
8	29.036	.800	126	41.785	-28.27
9	30.161	.800	126	62.502	314.06

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 70

DATE 9/ 8/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
10	27.161	.575	126	21.938	49.16
11	29.036	.575	126	44.191	348.53
12	30.161	.575	126	47.396	321.37
1	27.161	.925	144	60.000	98.84
2	29.036	.925	144	.100	90.00
3	30.161	.925	144	44.426	276.60
4	27.161	.700	144	40.132	58.36
5	29.036	.700	144	15.434	.72
6	30.161	.700	144	39.283	287.76
7	27.161	.800	144	46.391	43.05
8	29.036	.800	144	6.665	355.73
9	30.161	.800	144	40.626	282.55
10	27.161	.575	144	28.863	52.35
11	29.036	.575	144	28.966	343.27
12	30.161	.575	144	36.685	301.50
1	27.161	.925	162	74.708	53.83
2	29.036	.925	162	23.718	56.54
3	30.161	.925	162	25.493	244.03
4	27.161	.700	162	45.365	33.37
5	29.036	.700	162	19.085	3.16
6	30.161	.700	162	14.855	257.78
7	27.161	.800	162	60.045	6.01
8	29.036	.800	162	16.146	26.40
9	30.161	.800	162	10.461	245.50
10	27.161	.575	162	33.840	395.95
11	29.036	.575	162	18.914	337.14
12	30.161	.575	162	20.116	289.51
1	27.161	.925	180	47.465	373.87
2	29.036	.925	180	34.235	336.26
3	30.161	.925	180	26.602	275.03
4	27.161	.700	180	53.296	365.47
5	29.036	.700	180	21.134	-25.73
6	30.161	.700	180	29.817	283.91
7	27.161	.800	180	55.217	302.35
8	29.036	.800	180	39.012	327.87
9	30.161	.800	180	23.702	249.26
10	27.161	.575	180	31.621	13.33
11	29.036	.575	180	28.153	306.44
12	30.161	.575	180	24.320	259.24
1	27.161	.925	198	20.232	327.13
2	29.036	.925	198	45.343	273.68
3	30.161	.925	198	66.302	264.78
4	27.161	.700	198	37.961	334.99
5	29.036	.700	198	35.839	285.42
6	30.161	.700	198	47.260	249.52
7	27.161	.800	198	40.239	289.75
8	29.036	.800	198	42.746	280.41
9	30.161	.800	198	56.004	252.26
10	27.161	.575	198	38.019	349.86
11	29.036	.575	198	25.424	281.40
12	30.161	.575	198	41.693	250.23
1	27.161	.925	216	22.535	-11.53

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 70

DATE 9/ 8/82

MEASUREMENT LOCATION: UPSTREAM

KULITE No.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
2	29.036	.925	216	23.141	258.46
3	30.161	.925	216	48.241	221.80
4	27.161	.700	216	24.716	362.34
5	29.036	.700	216	22.724	274.63
6	30.161	.700	216	45.297	221.52
7	27.161	.800	216	10.403	-52.68
8	29.036	.800	216	40.995	265.59
9	30.161	.800	216	38.972	225.78
10	27.161	.575	216	21.877	352.24
11	29.036	.575	216	35.616	267.53
12	30.161	.575	216	49.025	227.56
1	27.161	.925	234	50.545	359.21
2	29.036	.925	234	28.121	-2.73
3	30.161	.925	234	8.137	148.12
4	27.161	.700	234	38.541	346.24
5	29.036	.700	234	12.469	314.84
6	30.161	.700	234	20.207	201.41
7	27.161	.800	234	38.668	-43.36
8	29.036	.800	234	17.140	-17.65
9	30.161	.800	234	10.610	173.99
10	27.161	.575	234	32.964	355.63
11	29.036	.575	234	14.007	248.20
12	30.161	.575	234	32.907	214.41
1	27.161	.925	252	68.542	326.18
2	29.036	.925	252	51.041	330.96
3	30.161	.925	252	.100	90.00
4	27.161	.700	252	37.880	-45.37
5	29.036	.700	252	24.173	289.37
6	30.161	.700	252	16.066	179.05
7	27.161	.800	252	61.277	263.30
8	29.036	.800	252	39.276	315.05
9	30.161	.800	252	.100	90.00
10	27.161	.575	252	18.801	342.61
11	29.036	.575	252	22.125	592.54
12	30.161	.575	252	29.599	201.43
1	27.161	.925	270	82.356	295.42
2	29.036	.925	270	42.142	278.81
3	30.161	.925	270	27.217	220.94
4	27.161	.700	270	53.840	282.41
5	29.036	.700	270	35.588	252.43
6	30.161	.700	270	48.369	199.40
7	27.161	.800	270	37.975	240.67
8	29.036	.800	270	41.590	253.46
9	30.161	.800	270	19.827	214.24
10	27.161	.575	270	26.102	296.63
11	29.036	.575	270	39.614	565.38
12	30.161	.575	270	43.192	195.18
1	27.161	.925	288	52.957	-69.13
2	29.036	.925	288	34.325	210.61
3	30.161	.925	288	63.235	174.63
4	27.161	.700	288	37.820	244.92
5	29.036	.700	288	49.322	203.44

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 70

DATE 9/ 8/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	30.161	.700	288	56.126	175.35
7	27.161	.800	288	49.992	214.10
8	29.036	.800	288	44.627	211.44
9	30.161	.800	288	46.081	171.89
10	27.161	.575	288	22.257	241.52
11	29.036	.575	288	54.684	556.98
12	30.161	.575	288	66.688	182.50
1	27.161	.925	306	36.525	284.17
2	29.036	.925	306	7.748	131.33
3	30.161	.925	306	52.490	113.90
4	27.161	.700	306	33.164	245.93
5	29.036	.700	306	36.995	158.42
6	30.161	.700	306	47.210	137.58
7	27.161	.800	306	29.496	218.52
8	29.036	.800	306	25.668	152.45
9	30.161	.800	306	40.577	128.98
10	27.161	.575	306	15.554	175.41
11	29.036	.575	306	48.259	520.55
12	30.161	.575	306	60.316	166.65
1	27.161	.925	324	62.973	274.25
2	29.036	.925	324	22.700	342.82
3	30.161	.925	324	39.678	74.58
4	27.161	.700	324	24.147	228.90
5	29.036	.700	324	20.056	168.14
6	30.161	.700	324	37.509	114.30
7	27.161	.800	324	34.347	199.50
8	29.036	.800	324	.100	90.00
9	30.161	.800	324	30.010	77.47
10	27.161	.575	324	9.499	220.35
11	29.036	.575	324	35.951	499.57
12	30.161	.575	324	49.100	136.99
1	27.161	.925	342	72.805	244.40
2	29.036	.925	342	30.087	266.74
3	30.161	.925	342	19.275	39.41
4	27.161	.700	342	47.154	214.31
5	29.036	.700	342	20.076	183.92
6	30.161	.700	342	33.567	109.04
7	27.161	.800	342	66.772	197.59
8	29.036	.800	342	15.177	251.70
9	30.161	.800	342	.19.225	83.04
10	27.161	.575	342	23.055	195.79
11	29.036	.575	342	35.147	507.33
12	30.161	.575	342	43.765	128.13

0001  
 0002 PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 0003  
 0004 RUN # 70 DATE 9/ 8/82 MEASUREMENT LOCATION: DOWNSTREAM  
 0005  
 0006 CONFIGURATION: HARDWALL FAN SPEED: 6000 rpm  
 0007  
 0008 TEMPERATURES (deg. F):  
 0009 INLET (DRY) : 76->80  
 0010 CHAMBER (DRY): 76->80  
 0011 CHAMBER (WET): 71

DATA REDUCTION: FROM TAPE

	KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
0012						
0013						
0014						
0015	13	56.161	.925	0	61.635	385.75
0016	14	58.036	.925	0	39.862	366.33
0017	15	59.161	.925	0	24.495	305.04
0018	16	56.161	.700	0	32.972	37.52
0019	17	58.036	.700	0	40.717	-7.06
0020	18	59.161	.700	0	43.053	-38.83
0021	19	56.161	.800	0	55.776	28.96
0022	20	58.036	.800	0	41.012	4.51
0023	21	59.161	.800	0	.100	90.00
0024	22	56.161	.575	0	25.647	22.42
0025	23	58.036	.575	0	39.444	321.21
0026	24	59.161	.575	0	25.479	353.33
0027	13	56.161	.925	18	23.033	336.97
0028	14	58.036	.925	18	23.095	337.10
0029	15	59.161	.925	18	13.894	259.82
0030	16	56.161	.700	18	11.271	343.16
0031	17	58.036	.700	18	32.643	318.33
0032	18	59.161	.700	18	30.818	299.89
0033	19	56.161	.800	18	23.584	348.14
0034	20	58.036	.800	18	31.708	333.58
0035	21	59.161	.800	18	.100	90.00
0036	22	56.161	.575	18	15.860	332.49
0037	23	58.036	.575	18	33.602	308.88
0038	24	59.161	.575	18	19.900	324.52
0039	13	56.161	.925	36	14.784	345.86
0040	14	58.036	.925	36	10.705	289.28
0041	15	59.161	.925	36	20.489	213.33
0042	16	56.161	.700	36	12.097	345.01
0043	17	58.036	.700	36	27.366	294.36
0044	18	59.161	.700	36	28.045	266.91
0045	19	56.161	.800	36	14.700	-27.91
0046	20	58.036	.800	36	19.259	285.55
0047	21	59.161	.800	36	.100	90.00
0048	22	56.161	.575	36	17.841	305.07
0049	23	58.036	.575	36	29.340	270.77
0050	24	59.161	.575	36	21.885	296.62
0051	13	56.161	.925	54	43.278	350.48
0052	14	58.036	.925	54	9.900	265.06
0053	15	59.161	.925	54	40.065	195.12
0054	16	56.161	.700	54	24.405	348.34
0055	17	58.036	.700	54	28.079	272.46



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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 70

DATE 9/ 8/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE POSITION		CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )			
18	59.161	.700	54	40.122	235.95
19	56.161	.800	54	40.406	-16.53
20	58.036	.800	54	16.933	273.63
21	59.161	.800	54	.100	90.00
22	56.161	.575	54	33.708	312.11
23	58.036	.575	54	35.573	243.67
24	59.161	.575	54	21.866	282.15
13	56.161	.925	72	65.843	320.20
14	58.036	.925	72	18.829	283.18
15	59.161	.925	72	30.905	174.22
16	56.161	.700	72	35.258	316.02
17	58.036	.700	72	32.675	258.99
18	59.161	.700	72	45.786	223.07
19	56.161	.800	72	54.989	318.01
20	58.036	.800	72	24.368	272.55
21	59.161	.800	72	.100	90.00
22	56.161	.575	72	44.359	293.62
23	58.036	.575	72	40.696	235.05
24	59.161	.575	72	24.624	265.80
13	56.161	.925	90	50.522	276.97
14	58.036	.925	90	22.147	253.84
15	59.161	.925	90	26.920	153.06
16	56.161	.700	90	33.218	280.55
17	58.036	.700	90	35.729	240.92
18	59.161	.700	90	33.799	202.89
19	56.161	.800	90	44.921	274.62
20	58.036	.800	90	27.843	248.87
21	59.161	.800	90	.100	90.00
22	56.161	.575	90	34.942	270.23
23	58.036	.575	90	34.142	221.72
24	59.161	.575	90	26.539	249.13
13	56.161	.925	108	38.609	234.47
14	58.036	.925	108	21.008	235.87
15	59.161	.925	108	22.591	111.73
16	56.161	.700	108	21.038	239.43
17	58.036	.700	108	31.384	225.58
18	59.161	.700	108	26.039	185.42
19	56.161	.800	108	31.508	225.62
20	58.036	.800	108	26.794	223.51
21	59.161	.800	108	.100	90.00
22	56.161	.575	108	22.176	228.59
23	58.036	.575	108	30.053	210.96
24	59.161	.575	108	21.522	228.55
13	56.161	.925	126	22.011	262.26
14	58.036	.925	126	11.523	252.55
15	59.161	.925	126	13.938	98.53
16	56.161	.700	126	7.561	248.66
17	58.036	.700	126	26.863	205.15
18	59.161	.700	126	23.675	176.66
19	56.161	.800	126	17.480	250.06
20	58.036	.800	126	19.327	224.22
21	59.161	.800	126	.100	90.00

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 70

DATE 9/ 8/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
22	56.161	.575	126	10.376	221.22
23	58.036	.575	126	32.030	182.70
24	59.161	.575	126	22.253	201.90
13	56.161	.925	144	52.839	265.40
14	58.036	.925	144	25.750	242.77
15	59.161	.925	144	8.654	107.82
16	56.161	.700	144	17.699	276.79
17	58.036	.700	144	26.993	194.54
18	59.161	.700	144	34.078	162.41
19	56.161	.800	144	38.567	266.72
20	58.036	.800	144	23.786	223.29
21	59.161	.800	144	.100	90.00
22	56.161	.575	144	9.554	250.40
23	58.036	.575	144	39.963	161.52
24	59.161	.575	144	19.861	186.24
13	56.161	.925	162	69.052	236.40
14	58.036	.925	162	39.052	219.23
15	59.161	.925	162	12.930	126.37
16	56.161	.700	162	28.960	251.26
17	58.036	.700	162	32.468	184.53
18	59.161	.700	162	46.726	148.26
19	56.161	.800	162	54.795	231.03
20	58.036	.800	162	38.460	201.39
21	59.161	.800	162	.100	90.00
22	56.161	.575	162	16.822	220.05
23	58.036	.575	162	53.928	143.46
24	59.161	.575	162	24.174	164.68
13	56.161	.925	180	69.742	197.48
14	58.036	.925	180	52.950	186.75
15	59.161	.925	180	13.919	131.22
16	56.161	.700	180	26.034	214.19
17	58.036	.700	180	44.644	161.50
18	59.161	.700	180	52.655	130.23
19	56.161	.800	180	54.708	192.89
20	58.036	.800	180	48.912	174.32
21	59.161	.800	180	.100	90.00
22	56.161	.575	180	13.551	190.42
23	58.036	.575	180	55.990	120.57
24	59.161	.575	180	29.171	147.53
13	56.161	.925	198	43.078	172.55
14	58.036	.925	198	47.439	171.53
15	59.161	.925	198	16.015	142.93
16	56.161	.700	198	8.922	214.46
17	58.036	.700	198	40.276	140.57
18	59.161	.700	198	47.808	121.50
19	56.161	.800	198	32.317	173.24
20	58.036	.800	198	44.291	153.34
21	59.161	.800	198	.100	90.00
22	56.161	.575	198	9.170	214.06
23	58.036	.575	198	58.326	105.16
24	59.161	.575	198	22.848	125.83
13	56.161	.925	216	30.016	189.29

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 70

DATE 9/ 8/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
14	58.036	.925	216	32.796	164.29
15	59.161	.925	216	10.004	148.10
16	56.161	.700	216	17.893	251.41
17	58.036	.700	216	26.454	114.16
18	59.161	.700	216	40.441	94.04
19	56.161	.800	216	25.994	203.50
20	58.036	.800	216	30.146	156.58
21	59.161	.800	216	.100	90.00
22	56.161	.575	216	13.874	282.90
23	58.036	.575	216	50.124	92.31
24	59.161	.575	216	19.625	104.98
13	56.161	.925	234	61.254	164.66
14	58.036	.925	234	39.060	143.98
15	59.161	.925	234	10.672	84.81
16	56.161	.700	234	28.187	212.73
17	58.036	.700	234	26.016	95.15
18	59.161	.700	234	45.752	64.54
19	56.161	.800	234	42.252	178.99
20	58.036	.800	234	29.562	133.71
21	59.161	.800	234	.100	90.00
22	56.161	.575	234	21.997	239.76
23	58.036	.575	234	53.881	56.44
24	59.161	.575	234	18.831	72.29
13	56.161	.925	252	93.856	128.66
14	58.036	.925	252	53.097	121.66
15	59.161	.925	252	20.121	49.77
16	56.161	.700	252	32.087	163.48
17	58.036	.700	252	30.115	84.34
18	59.161	.700	252	55.042	44.30
19	56.161	.800	252	65.689	127.63
20	58.036	.800	252	42.691	106.88
21	59.161	.800	252	.100	90.00
22	56.161	.575	252	24.014	179.23
23	58.036	.575	252	57.044	32.26
24	59.161	.575	252	16.693	55.42
13	56.161	.925	270	92.327	99.36
14	58.036	.925	270	56.523	99.67
15	59.161	.925	270	14.895	37.92
16	56.161	.700	270	25.404	125.27
17	58.036	.700	270	34.462	63.64
18	59.161	.700	270	49.451	30.77
19	56.161	.800	270	67.035	99.98
20	58.036	.800	270	45.740	87.31
21	59.161	.800	270	.100	90.00
22	56.161	.575	270	7.797	142.32
23	58.036	.575	270	50.457	18.92
24	59.161	.575	270	21.039	41.29
13	56.161	.925	288	45.448	73.43
14	58.036	.925	288	36.581	87.06
15	59.161	.925	288	.100	90.00
16	56.161	.700	288	.100	90.00
17	58.036	.700	288	29.057	43.69

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 70

DATE 9/ 8/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
18	59.161	.700	288	33.066	376.32
19	56.161	.800	288	34.302	73.29
20	58.036	.800	288	32.476	79.13
21	59.161	.800	288	.100	90.00
22	56.161	.575	288	9.359	291.65
23	58.036	.575	288	42.930	369.36
24	59.161	.575	288	18.779	385.49
13	56.161	.925	306	19.729	97.36
14	58.036	.925	306	20.496	100.51
15	59.161	.925	306	8.136	182.55
16	56.161	.700	306	8.334	215.55
17	58.036	.700	306	18.578	27.69
18	59.161	.700	306	23.076	-4.23
19	56.161	.800	306	11.367	104.22
20	58.036	.800	306	15.015	74.47
21	59.161	.800	306	.100	90.00
22	56.161	.575	306	13.959	257.79
23	58.036	.575	306	35.234	353.59
24	59.161	.575	306	15.984	362.91
13	56.161	.925	324	50.904	96.75
14	58.036	.925	324	26.583	87.51
15	59.161	.925	324	4.901	283.80
16	56.161	.700	324	24.691	126.81
17	58.036	.700	324	16.937	30.10
18	59.161	.700	324	29.818	-17.73
19	56.161	.800	324	37.614	92.91
20	58.036	.800	324	21.663	63.86
21	59.161	.800	324	.100	90.00
22	56.161	.575	324	7.732	133.88
23	58.036	.575	324	35.102	330.64
24	59.161	.575	324	13.445	362.89
13	56.161	.925	342	78.673	64.04
14	58.036	.925	342	39.417	47.92
15	59.161	.925	342	22.109	-47.06
16	56.161	.700	342	36.985	78.06
17	58.036	.700	342	28.658	20.48
18	59.161	.700	342	42.736	-21.44
19	56.161	.800	342	61.836	65.34
20	58.036	.800	342	32.813	40.14
21	59.161	.800	342	.100	90.00
22	56.161	.575	342	25.331	61.08
23	58.036	.575	342	39.442	332.93
24	59.161	.575	342	18.991	361.85

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 0002 PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 0003  
 0004 RUN # 71 DATE 10/1/82 MEASUREMENT LOCATION: UPSTREAM  
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 0006 CONFIGURATION: TREATMENT FAN SPEED: 7600 rpm  
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 0008 TEMPERATURES (deg. F):  
 0009 INLET (DRY) : 74->80  
 0010 CHAMBER (DRY): 74->80  
 0011 CHAMBER (WET): 64(?)>70(?)  
 0012 DATA REDUCTION: FROM TAPE  
 0013

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	POSITION CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)	
0018	1	27.161	.925	0	8.759	294.72
0019	2	29.036	.925	0	19.612	49.21
0020	3	30.161	.925	0	21.958	145.88
0021	4	27.161	.700	0	17.479	89.63
0022	5	29.036	.700	0	8.647	141.30
0023	6	30.161	.700	0	8.359	113.12
0024	7	27.161	.800	0	7.833	-257.62
0025	8	29.036	.800	0	11.802	273.73
0026	9	30.161	.800	0	10.962	20.09
0027	10	27.161	.575	0	23.458	200.78
0028	11	29.036	.575	0	12.868	-11.95
0029	12	30.161	.575	0	8.122	74.47
0030	1	27.161	.925	18	51.410	230.27
0031	2	29.036	.925	18	95.072	210.37
0032	3	30.161	.925	18	117.365	191.80
0033	4	27.161	.700	18	26.465	123.06
0034	5	29.036	.700	18	35.950	214.85
0035	6	30.161	.700	18	30.540	16.58
0036	7	27.161	.800	18	14.604	-93.18
0037	8	29.036	.800	18	61.674	204.42
0038	9	30.161	.800	18	59.870	184.76
0039	10	27.161	.575	18	22.938	229.18
0040	11	29.036	.575	18	11.278	-53.42
0041	12	30.161	.575	18	26.990	197.18
0042	1	27.161	.925	36	90.099	328.68
0043	2	29.036	.925	36	58.796	318.02
0044	3	30.161	.925	36	58.491	287.55
0045	4	27.161	.700	36	20.853	291.78
0046	5	29.036	.700	36	49.809	311.33
0047	6	30.161	.700	36	.100	90.00
0048	7	27.161	.800	36	24.384	8.58
0049	8	29.036	.800	36	30.856	312.71
0050	9	30.161	.800	36	26.880	269.65
0051	10	27.161	.575	36	12.382	311.10
0052	11	29.036	.575	36	27.763	-138.66
0053	12	30.161	.575	36	20.263	253.25
0054	1	27.161	.925	54	59.116	11.91
0055	2	29.036	.925	54	48.700	78.77
0056	3	30.161	.925	54	60.224	48.72
0057	4	27.161	.700	54	43.611	90.63
0058	5	29.036	.700	54	17.897	79.07

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RUN # 71

DATE 10/1/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE		POSITION	AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)		
6	30.161	.700	54	21.094	34.93
7	27.161	.800	54	13.406	-206.28
8	29.036	.800	54	29.224	74.81
9	30.161	.800	54	28.755	45.68
10	27.161	.575	54	30.476	105.21
11	29.036	.575	54	.100	90.00
12	30.161	.575	54	16.490	72.59
1	27.161	.925	72	62.994	171.77
2	29.036	.925	72	24.654	197.56
3	30.161	.925	72	25.289	156.62
4	27.161	.700	72	39.790	172.44
5	29.036	.700	72	.100	90.00
6	30.161	.700	72	18.140	71.89
7	27.161	.800	72	17.967	-131.64
8	29.036	.800	72	8.150	177.76
9	30.161	.800	72	9.641	102.74
10	27.161	.575	72	19.759	115.11
11	29.036	.575	72	19.285	76.89
12	30.161	.575	72	12.031	372.49
1	27.161	.925	90	62.179	288.69
2	29.036	.925	90	61.231	107.71
3	30.161	.925	90	35.632	198.03
4	27.161	.700	90	45.714	320.65
5	29.036	.700	90	9.718	296.60
6	30.161	.700	90	14.996	386.91
7	27.161	.800	90	23.840	18.02
8	29.036	.800	90	24.249	300.56
9	30.161	.800	90	27.905	296.09
10	27.161	.575	90	28.542	39.77
11	29.036	.575	90	9.860	23.86
12	30.161	.575	90	7.703	-63.63
1	27.161	.925	108	62.761	88.69
2	29.036	.925	108	96.715	166.95
3	30.161	.925	108	91.560	135.90
4	27.161	.700	108	38.029	126.36
5	29.036	.700	108	29.467	127.88
6	30.161	.700	108	18.160	372.82
7	27.161	.800	108	13.029	-140.17
8	29.036	.800	108	47.247	167.12
9	30.161	.800	108	40.382	140.02
10	27.161	.575	108	25.466	78.84
11	29.036	.575	108	15.560	73.32
12	30.161	.575	108	12.759	24.20
1	27.161	.925	126	42.900	216.11
2	29.036	.925	126	31.464	198.26
3	30.161	.925	126	51.662	189.45
4	27.161	.700	126	13.858	179.18
5	29.036	.700	126	15.117	339.64
6	30.161	.700	126	4.988	106.10
7	27.161	.800	126	14.362	-80.51
8	29.036	.800	126	7.514	223.96
9	30.161	.800	126	32.723	170.86

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 71

DATE 10/1/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
10	27.161	.575	126	34.171	79.60
11	29.036	.575	126	18.526	7.99
12	30.161	.575	126	19.597	2.89
1	27.161	.925	144	104.727	12.99
2	29.036	.925	144	87.740	348.60
3	30.161	.925	144	87.830	325.13
4	27.161	.700	144	96.120	367.34
5	29.036	.700	144	59.665	343.06
6	30.161	.700	144	60.175	313.71
7	27.161	.800	144	30.452	63.56
8	29.036	.800	144	61.796	349.79
9	30.161	.800	144	55.173	322.18
10	27.161	.575	144	72.025	369.45
11	29.036	.575	144	47.136	-15.18
12	30.161	.575	144	39.728	317.79
1	27.161	.925	162	44.680	144.97
2	29.036	.925	162	65.074	169.40
3	30.161	.925	162	73.628	137.83
4	27.161	.700	162	11.470	96.49
5	29.036	.700	162	25.097	219.53
6	30.161	.700	162	18.092	196.63
7	27.161	.800	162	9.139	-178.97
8	29.036	.800	162	28.440	204.47
9	30.161	.800	162	24.653	177.52
10	27.161	.575	162	34.435	330.75
11	29.036	.575	162	42.493	-154.99
12	30.161	.575	162	21.199	253.72
1	27.161	.925	180	109.290	197.55
2	29.036	.925	180	78.688	197.52
3	30.161	.925	180	93.415	158.19
4	27.161	.700	180	62.217	60.51
5	29.036	.700	180	62.183	206.54
6	30.161	.700	180	40.510	72.35
7	27.161	.800	180	36.271	-70.98
8	29.036	.800	180	50.501	196.14
9	30.161	.800	180	64.784	133.78
10	27.161	.575	180	52.369	66.22
11	29.036	.575	180	42.845	-109.32
12	30.161	.575	180	35.970	177.17
1	27.161	.925	198	36.402	-29.35
2	29.036	.925	198	70.997	65.61
3	30.161	.925	198	59.209	390.56
4	27.161	.700	198	27.673	309.13
5	29.036	.700	198	18.131	44.34
6	30.161	.700	198	32.705	43.90
7	27.161	.800	198	16.356	-322.87
8	29.036	.800	198	27.228	76.00
9	30.161	.800	198	24.901	58.48
10	27.161	.575	198	49.101	284.50
11	29.036	.575	198	22.100	211.43
12	30.161	.575	198	11.235	126.03
1	27.161	.925	216	73.943	138.95

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 71

DATE 10/1/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE		POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)			
2	29.036	.925	216	55.844	124.12	
3	30.161	.925	216	42.921	91.12	
4	27.161	.700	216	60.999	166.67	
5	29.036	.700	216	14.105	163.10	
6	30.161	.700	216	25.643	106.89	
7	27.161	.800	216	25.015	-246.22	
8	29.036	.800	216	12.440	153.27	
9	30.161	.800	216	39.564	112.94	
10	27.161	.575	216	38.287	225.02	
11	29.036	.575	216	30.883	-142.23	
12	30.161	.575	216	58.525	130.89	
1	27.161	.925	234	35.658	183.75	
2	29.036	.925	234	29.445	261.92	
3	30.161	.925	234	20.006	239.64	
4	27.161	.700	234	68.923	253.43	
5	29.036	.700	234	33.592	240.50	
6	30.161	.700	234	24.235	247.98	
7	27.161	.800	234	17.245	-49.73	
8	29.036	.800	234	31.929	66.49	
9	30.161	.800	234	8.628	146.73	
10	27.161	.575	234	65.383	242.25	
11	29.036	.575	234	42.893	-139.17	
12	30.161	.575	234	39.735	68.55	
1	27.161	.925	252	63.668	284.51	
2	29.036	.925	252	37.675	31.76	
3	30.161	.925	252	34.955	-10.85	
4	27.161	.700	252	13.351	207.96	
5	29.036	.700	252	13.767	215.90	
6	30.161	.700	252	9.472	218.14	
7	27.161	.800	252	16.330	66.71	
8	29.036	.800	252	11.059	25.88	
9	30.161	.800	252	6.698	197.28	
10	27.161	.575	252	30.225	330.02	
11	29.036	.575	252	20.016	-151.31	
12	30.161	.575	252	9.539	179.36	
1	27.161	.925	270	45.610	312.22	
2	29.036	.925	270	30.180	96.98	
3	30.161	.925	270	12.483	216.56	
4	27.161	.700	270	11.208	-77.37	
5	29.036	.700	270	7.948	182.04	
6	30.161	.700	270	20.287	249.20	
7	27.161	.800	270	13.282	-190.95	
8	29.036	.800	270	32.449	156.67	
9	30.161	.800	270	11.317	161.93	
10	27.161	.575	270	32.994	175.46	
11	29.036	.575	270	62.489	-145.22	
12	30.161	.575	270	14.021	23.48	
1	27.161	.925	288	67.193	338.78	
2	29.036	.925	288	66.879	-10.99	
3	30.161	.925	288	40.289	303.70	
4	27.161	.700	288	22.124	266.54	
5	29.036	.700	288	8.721	306.42	



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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 71

DATE 10/1/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	30.161	.700	288	15.620	318.46
7	27.161	.800	288	11.876	13.06
8	29.036	.800	288	27.030	345.64
9	30.161	.800	288	26.382	328.00
10	27.161	.575	288	27.100	126.87
11	29.036	.575	288	23.505	-139.94
12	30.161	.575	288	10.145	250.55
1	27.161	.925	306	36.100	88.40
2	29.036	.925	306	38.372	45.05
3	30.161	.925	306	62.850	22.49
4	27.161	.700	306	26.874	135.52
5	29.036	.700	306	27.359	134.66
6	30.161	.700	306	17.081	46.90
7	27.161	.800	306	15.936	-217.12
8	29.036	.800	306	32.879	87.77
9	30.161	.800	306	47.509	11.96
10	27.161	.575	306	40.680	150.75
11	29.036	.575	306	31.294	145.46
12	30.161	.575	306	7.805	85.66
1	27.161	.925	324	100.245	278.70
2	29.036	.925	324	39.595	157.03
3	30.161	.925	324	49.444	135.70
4	27.161	.700	324	67.264	175.15
5	29.036	.700	324	47.600	162.63
6	30.161	.700	324	32.253	123.81
7	27.161	.800	324	28.607	-133.38
8	29.036	.800	324	48.402	150.43
9	30.161	.800	324	36.287	108.92
10	27.161	.575	324	55.505	176.80
11	29.036	.575	324	40.592	141.33
12	30.161	.575	324	29.970	117.24
1	27.161	.925	342	63.054	326.10
2	29.036	.925	342	33.776	335.70
3	30.161	.925	342	31.271	297.78
4	27.161	.700	342	26.084	281.44
5	29.036	.700	342	4.843	317.85
6	30.161	.700	342	14.202	138.75
7	27.161	.800	342	15.170	10.69
8	29.036	.800	342	36.605	369.54
9	30.161	.800	342	15.531	15.28
10	27.161	.575	342	33.601	202.82
11	29.036	.575	342	17.841	91.79
12	30.161	.575	342	44.696	68.40

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 RUN # 71 DATE 10/1/82 MEASUREMENT LOCATION: DOWNSTREAM  
 CONFIGURATION: TREATMENT FAN SPEED: 7600 rpm  
 TEMPERATURES (deg. F):  
 INLET (DRY) : 74->80  
 CHAMBER (DRY): 74->80  
 CHAMBER (WET): 64(?)->70(?)  
 DATA REDUCTION: FROM TAPE

KULITE NO.	KULITE POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)	
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )			CIRCUM. (deg.)
13	56.161	.925	0	3.688	60.16
14	58.036	.925	0	2.075	171.77
15	59.161	.925	0	4.649	293.77
16	56.161	.700	0	.100	90.00
17	58.036	.700	0	4.056	32.21
18	59.161	.700	0	2.476	319.54
19	56.161	.800	0	5.291	153.04
20	58.036	.800	0	3.147	376.79
21	59.161	.800	0	10.000	90.00
22	56.161	.575	0	.100	90.00
23	58.036	.575	0	7.932	155.50
24	59.161	.575	0	7.192	69.92
13	56.161	.925	18	8.524	152.59
14	58.036	.925	18	7.703	236.19
15	59.161	.925	18	11.219	290.07
16	56.161	.700	18	6.267	86.31
17	58.036	.700	18	3.137	43.33
18	59.161	.700	18	3.574	347.52
19	56.161	.800	18	4.983	60.50
20	58.036	.800	18	.100	90.00
21	59.161	.800	18	.100	90.00
22	56.161	.575	18	.100	90.00
23	58.036	.575	18	13.027	17.38
24	59.161	.575	18	6.557	-5.31
13	56.161	.925	36	8.278	137.52
14	58.036	.925	36	8.345	303.66
15	59.161	.925	36	4.382	294.34
16	56.161	.700	36	.100	90.00
17	58.036	.700	36	.100	90.00
18	59.161	.700	36	.100	90.00
19	56.161	.800	36	4.929	119.10
20	58.036	.800	36	2.824	210.92
21	59.161	.800	36	10.000	90.00
22	56.161	.575	36	.100	90.00
23	58.036	.575	36	8.651	97.90
24	59.161	.575	36	.430	323.87
13	56.161	.925	54	4.662	290.40
14	58.036	.925	54	.100	90.00
15	59.161	.925	54	5.042	146.81
16	56.161	.700	54	.100	90.00
17	58.036	.700	54	.100	90.00

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 71

DATE 10/1/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
18	59.161	.700	54	.100	90.00
19	56.161	.800	54	.100	90.00
20	58.036	.800	54	.100	90.00
21	59.161	.800	54	.100	90.00
22	56.161	.575	54	.100	90.00
23	58.036	.575	54	3.312	366.26
24	59.161	.575	54	3.311	243.30
13	56.161	.925	72	7.677	109.71
14	58.036	.925	72	3.189	22.58
15	59.161	.925	72	.100	90.00
16	56.161	.700	72	.100	90.00
17	58.036	.700	72	.100	90.00
18	59.161	.700	72	.100	90.00
19	56.161	.800	72	.100	90.00
20	58.036	.800	72	.100	90.00
21	59.161	.800	72	.100	90.00
22	56.161	.575	72	5.067	52.08
23	58.036	.575	72	3.573	192.18
24	59.161	.575	72	.100	90.00
13	56.161	.925	90	8.618	227.88
14	58.036	.925	90	.100	90.00
15	59.161	.925	90	6.014	95.81
16	56.161	.700	90	.100	90.00
17	58.036	.700	90	3.921	99.63
18	59.161	.700	90	4.434	63.88
19	56.161	.800	90	6.345	233.98
20	58.036	.800	90	4.701	114.89
21	59.161	.800	90	10.000	90.00
22	56.161	.575	90	3.641	130.53
23	58.036	.575	90	6.539	193.27
24	59.161	.575	90	6.156	168.13
13	56.161	.925	108	9.934	85.05
14	58.036	.925	108	3.110	203.17
15	59.161	.925	108	10.111	124.80
16	56.161	.700	108	.100	90.00
17	58.036	.700	108	4.233	5.99
18	59.161	.700	108	4.709	241.43
19	56.161	.800	108	2.098	267.74
20	58.036	.800	108	4.322	128.92
21	59.161	.800	108	10.000	90.00
22	56.161	.575	108	3.906	402.08
23	58.036	.575	108	4.573	143.11
24	59.161	.575	108	2.928	148.92
13	56.161	.925	126	.100	90.00
14	58.036	.925	126	7.079	80.09
15	59.161	.925	126	4.557	48.37
16	56.161	.700	126	.100	90.00
17	58.036	.700	126	3.271	119.50
18	59.161	.700	126	7.116	335.10
19	56.161	.800	126	.100	90.00
20	58.036	.800	126	.100	90.00
21	59.161	.800	126	.100	90.00

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 71

DATE 10/1/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
-----	-----	-----	-----	-----	-----
22	56.161	.575	126	2.950	367.41
23	58.036	.575	126	-1.635	253.54
24	59.161	.575	126	2.339	166.96
13	56.161	.925	144	9.202	49.77
14	58.036	.925	144	12.585	127.79
15	59.161	.925	144	12.476	102.40
16	56.161	.700	144	.100	90.00
17	58.036	.700	144	.100	90.00
18	59.161	.700	144	4.423	13.03
19	56.161	.800	144	4.509	148.55
20	58.036	.800	144	5.623	125.97
21	59.161	.800	144	10.000	90.00
22	56.161	.575	144	4.421	337.21
23	58.036	.575	144	4.921	87.07
24	59.161	.575	144	5.537	-4.76
13	56.161	.925	162	7.360	136.55
14	58.036	.925	162	6.706	152.98
15	59.161	.925	162	7.467	123.33
16	56.161	.700	162	5.465	239.74
17	58.036	.700	162	6.581	186.90
18	59.161	.700	162	5.037	274.02
19	56.161	.800	162	4.592	348.17
20	58.036	.800	162	9.061	209.43
21	59.161	.800	162	10.000	90.00
22	56.161	.575	162	4.812	210.59
23	58.036	.575	162	2.521	105.07
24	59.161	.575	162	1.956	341.51
13	56.161	.925	180	8.817	257.51
14	58.036	.925	180	11.778	236.11
15	59.161	.925	180	3.960	242.74
16	56.161	.700	180	.511	400.79
17	58.036	.700	180	5.411	202.52
18	59.161	.700	180	9.805	136.17
19	56.161	.800	180	6.889	263.87
20	58.036	.800	180	7.953	218.64
21	59.161	.800	180	10.000	90.00
22	56.161	.575	180	4.668	228.57
23	58.036	.575	180	9.405	123.94
24	59.161	.575	180	4.459	152.01
13	56.161	.925	198	6.241	211.91
14	58.036	.925	198	11.672	176.19
15	59.161	.925	198	6.274	121.40
16	56.161	.700	198	5.346	261.17
17	58.036	.700	198	4.984	56.26
18	59.161	.700	198	10.011	93.98
19	56.161	.800	198	5.470	277.57
20	58.036	.800	198	5.976	112.61
21	59.161	.800	198	10.000	90.00
22	56.161	.575	198	6.783	146.36
23	58.036	.575	198	15.504	40.85
24	59.161	.575	198	5.200	166.15
13	56.161	.925	216	6.460	275.96

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 71

DATE 10/1/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
		RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)		
14	58.036	.925	216	6.389	188.73
15	59.161	.925	216	6.837	160.34
16	56.161	.700	216	3.192	265.20
17	58.036	.700	216	4.381	42.17
18	59.161	.700	216	5.948	237.76
19	56.161	.800	216	7.901	217.08
20	58.036	.800	216	4.319	160.99
21	59.161	.800	216	10.000	90.00
22	56.161	.575	216	-1.118	240.39
23	58.036	.575	216	6.424	185.10
24	59.161	.575	216	5.976	221.55
13	56.161	.925	234	1.843	245.13
14	58.036	.925	234	2.935	192.21
15	59.161	.925	234	1.919	78.96
16	56.161	.700	234	.100	90.00
17	58.036	.700	234	8.240	235.79
18	59.161	.700	234	5.095	244.26
19	56.161	.800	234	.100	90.00
20	58.036	.800	234	3.778	326.44
21	59.161	.800	234	10.000	90.00
22	56.161	.575	234	5.768	279.12
23	58.036	.575	234	10.376	248.86
24	59.161	.575	234	11.931	242.39
13	56.161	.925	252	-3.472	189.52
14	58.036	.925	252	12.419	117.97
15	59.161	.925	252	13.139	92.96
16	56.161	.700	252	.100	90.00
17	58.036	.700	252	.100	90.00
18	59.161	.700	252	.100	90.00
19	56.161	.800	252	4.185	181.45
20	58.036	.800	252	7.149	118.25
21	59.161	.800	252	10.000	90.00
22	56.161	.575	252	6.741	276.67
23	58.036	.575	252	3.845	245.72
24	59.161	.575	252	3.780	254.02
13	56.161	.925	270	8.360	157.94
14	58.036	.925	270	13.780	123.11
15	59.161	.925	270	4.592	54.23
16	56.161	.700	270	.100	90.00
17	58.036	.700	270	8.161	210.57
18	59.161	.700	270	10.329	52.93
19	56.161	.800	270	8.622	147.32
20	58.036	.800	270	15.344	98.93
21	59.161	.800	270	10.000	90.00
22	56.161	.575	270	2.801	270.34
23	58.036	.575	270	4.222	159.03
24	59.161	.575	270	4.429	75.87
13	56.161	.925	288	9.485	264.83
14	58.036	.925	288	9.154	74.50
15	59.161	.925	288	13.896	37.24
16	56.161	.700	288	2.916	296.04
17	58.036	.700	288	9.922	96.72

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 71

DATE 10/1/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE		POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)			
18	59.161	.700	288	12.096	76.28	
19	56.161	.800	288	10.197	51.27	
20	58.036	.800	288	12.569	83.82	
21	59.161	.800	288	10.000	90.00	
22	56.161	.575	288	-.874	250.11	
23	58.036	.575	288	8.115	73.04	
24	59.161	.575	288	8.701	83.20	
13	56.161	.925	306	.100	90.00	
14	58.036	.925	306	4.325	45.79	
15	59.161	.925	306	5.982	80.00	
16	56.161	.700	306	.100	90.00	
17	58.036	.700	306	.100	90.00	
18	59.161	.700	306	.100	90.00	
19	56.161	.800	306	4.224	195.96	
20	58.036	.800	306	4.712	367.76	
21	59.161	.800	306	10.000	90.00	
22	56.161	.575	306	4.578	194.59	
23	58.036	.575	306	3.860	131.93	
24	59.161	.575	306	.528	104.49	
13	56.161	.925	324	8.477	335.71	
14	58.036	.925	324	8.215	290.75	
15	59.161	.925	324	8.978	262.79	
16	56.161	.700	324	.100	90.00	
17	58.036	.700	324	3.911	177.74	
18	59.161	.700	324	4.233	279.41	
19	56.161	.800	324	2.662	320.11	
20	58.036	.800	324	7.626	285.71	
21	59.161	.800	324	10.000	90.00	
22	56.161	.575	324	6.579	181.76	
23	58.036	.575	324	2.539	180.28	
24	59.161	.575	324	6.420	231.28	
13	56.161	.925	342	5.756	-1.96	
14	58.036	.925	342	4.371	327.67	
15	59.161	.925	342	2.312	35.90	
16	56.161	.700	342	.100	90.00	
17	58.036	.700	342	.100	90.00	
18	59.161	.700	342	.100	90.00	
19	56.161	.800	342	.100	90.00	
20	58.036	.800	342	3.832	314.77	
21	59.161	.800	342	10.000	90.00	
22	56.161	.575	342	4.675	113.71	
23	58.036	.575	342	.100	90.00	
24	59.161	.575	342	3.866	191.10	

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 0002 PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 0003  
 0004 RUN # 73 DATE 10/5/82 MEASUREMENT LOCATION: UPSTREAM  
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 0006 CONFIGURATION: TREATMENT FAN SPEED: 6000 rpm  
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 0008 TEMPERATURES (deg. F):  
 0009 INLET (DRY) : 75  
 0010 CHAMBER (DRY): 75  
 0011 CHAMBER (WET): 64(?)  
 0012 DATA REDUCTION: FROM TAPE

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)	
0018	1	27.161	.925	0	36.763	177.51
0019	2	29.036	.925	0	37.473	136.95
0020	3	30.161	.925	0	27.312	115.35
0021	4	27.161	.700	0	53.799	177.20
0022	5	29.036	.700	0	31.095	145.84
0023	6	30.161	.700	0	38.545	88.17
0024	7	27.161	.800	0	62.679	170.23
0025	8	29.036	.800	0	35.673	152.62
0026	9	30.161	.800	0	25.146	103.67
0027	10	27.161	.575	0	43.384	176.25
0028	11	29.036	.575	0	23.263	307.64
0029	12	30.161	.575	0	12.486	82.08
0030	1	27.161	.925	18	44.311	118.04
0031	2	29.036	.925	18	50.026	91.81
0032	3	30.161	.925	18	26.940	69.54
0033	4	27.161	.700	18	50.528	132.50
0034	5	29.036	.700	18	33.305	95.77
0035	6	30.161	.700	18	34.812	61.26
0036	7	27.161	.800	18	61.419	117.95
0037	8	29.036	.800	18	42.332	98.08
0038	9	30.161	.800	18	18.352	63.88
0039	10	27.161	.575	18	29.666	140.39
0040	11	29.036	.575	18	24.393	270.65
0041	12	30.161	.575	18	24.263	44.48
0042	1	27.161	.925	36	23.528	92.88
0043	2	29.036	.925	36	39.874	58.19
0044	3	30.161	.925	36	38.543	27.08
0045	4	27.161	.700	36	.100	90.00
0046	5	29.036	.700	36	37.728	46.55
0047	6	30.161	.700	36	25.784	27.49
0048	7	27.161	.800	36	36.627	77.49
0049	8	29.036	.800	36	40.426	50.29
0050	9	30.161	.800	36	20.677	22.91
0051	10	27.161	.575	36	23.287	122.98
0052	11	29.036	.575	36	25.971	250.14
0053	12	30.161	.575	36	30.310	375.67
0054	1	27.161	.925	54	10.089	206.07
0055	2	29.036	.925	54	22.442	35.33
0056	3	30.161	.925	54	22.757	23.21
0057	4	27.161	.700	54	26.709	167.77
0058	5	29.036	.700	54	18.507	68.51

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RUN # 73

DATE 10/5/82

MEASUREMENT LOCATION: UPSTREAM

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KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	30.161	.700	54	42.023	21.01
7	27.161	.800	54	15.049	180.26
8	29.036	.800	54	18.286	48.73
9	30.161	.800	54	19.109	382.45
10	27.161	.575	54	29.100	137.51
11	29.036	.575	54	8.087	241.98
12	30.161	.575	54	25.721	38.42
1	27.161	.925	72	28.855	156.03
2	29.036	.925	72	22.410	91.17
3	30.161	.925	72	15.906	57.31
4	27.161	.700	72	29.768	158.02
5	29.036	.700	72	27.117	74.34
6	30.161	.700	72	17.872	73.57
7	27.161	.800	72	40.998	145.32
8	29.036	.800	72	22.928	85.32
9	30.161	.800	72	13.167	61.43
10	27.161	.575	72	38.035	141.10
11	29.036	.575	72	23.945	263.63
12	30.161	.575	72	18.078	58.26
1	27.161	.925	90	42.318	111.00
2	29.036	.925	90	41.093	33.23
3	30.161	.925	90	39.662	369.82
4	27.161	.700	90	59.260	93.78
5	29.036	.700	90	36.814	65.66
6	30.161	.700	90	39.589	16.22
7	27.161	.800	90	65.631	75.43
8	29.036	.800	90	47.568	55.52
9	30.161	.800	90	20.237	18.49
10	27.161	.575	90	42.592	92.40
11	29.036	.575	90	30.416	244.19
12	30.161	.575	90	8.416	66.23
1	27.161	.925	108	46.836	21.73
2	29.036	.925	108	68.365	-13.97
3	30.161	.925	108	77.752	326.06
4	27.161	.700	108	77.732	46.76
5	29.036	.700	108	44.075	13.73
6	30.161	.700	108	48.929	-27.43
7	27.161	.800	108	81.316	41.10
8	29.036	.800	108	58.630	4.21
9	30.161	.800	108	45.682	332.15
10	27.161	.575	108	44.257	63.14
11	29.036	.575	108	37.037	212.77
12	30.161	.575	108	18.107	332.86
1	27.161	.925	126	19.845	355.52
2	29.036	.925	126	62.934	-42.61
3	30.161	.925	126	76.737	-55.51
4	27.161	.700	126	60.252	34.30
5	29.036	.700	126	46.450	-9.10
6	30.161	.700	126	58.993	300.16
7	27.161	.800	126	60.787	22.24
8	29.036	.800	126	52.174	329.27
9	30.161	.800	126	46.607	308.80



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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 73

DATE 10/5/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
10	27.161	.575	126	34.477	50.47
11	29.036	.575	126	37.261	173.47
12	30.161	.575	126	17.479	303.25
1	27.161	.925	144	21.816	89.24
2	29.036	.925	144	26.892	310.63
3	30.161	.925	144	37.878	296.76
4	27.161	.700	144	47.534	45.85
5	29.036	.700	144	26.478	-6.91
6	30.161	.700	144	46.688	302.70
7	27.161	.800	144	37.127	57.17
8	29.036	.800	144	29.477	334.66
9	30.161	.800	144	29.270	-59.93
10	27.161	.575	144	29.716	39.94
11	29.036	.575	144	29.362	163.04
12	30.161	.575	144	21.557	299.26
1	27.161	.925	162	44.539	33.26
2	29.036	.925	162	24.422	-8.32
3	30.161	.925	162	22.722	250.14
4	27.161	.700	162	40.852	26.82
5	29.036	.700	162	32.844	328.23
6	30.161	.700	162	17.838	296.89
7	27.161	.800	162	38.481	38.63
8	29.036	.800	162	28.085	334.87
9	30.161	.800	162	10.146	275.22
10	27.161	.575	162	29.963	16.22
11	29.036	.575	162	36.191	142.60
12	30.161	.575	162	18.681	313.08
1	27.161	.925	180	16.850	21.85
2	29.036	.925	180	37.326	-62.81
3	30.161	.925	180	29.030	243.52
4	27.161	.700	180	55.092	-6.49
5	29.036	.700	180	35.056	-55.86
6	30.161	.700	180	51.791	-65.15
7	27.161	.800	180	51.618	315.96
8	29.036	.800	180	49.311	302.87
9	30.161	.800	180	24.027	238.04
10	27.161	.575	180	36.871	-31.72
11	29.036	.575	180	55.227	122.29
12	30.161	.575	180	28.124	278.78
1	27.161	.925	198	.100	90.00
2	29.036	.925	198	44.286	254.29
3	30.161	.925	198	60.150	243.58
4	27.161	.700	198	68.922	318.31
5	29.036	.700	198	51.714	288.82
6	30.161	.700	198	57.727	261.54
7	27.161	.800	198	54.483	295.06
8	29.036	.800	198	44.648	274.81
9	30.161	.800	198	40.688	240.73
10	27.161	.575	198	51.435	312.86
11	29.036	.575	198	56.646	109.10
12	30.161	.575	198	43.825	277.67
1	27.161	.925	216	8.612	42.21

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

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MEASUREMENT LOCATION: UPSTREAM

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	KULITE NO.	KULITE AXIAL (in.)	POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
			RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)		
0190	2	29.036	.925	216	26.718	246.22
0191	3	30.161	.925	216	45.302	215.47
0192	4	27.161	.700	216	28.204	-41.25
0193	5	29.036	.700	216	48.784	288.38
0194	6	30.161	.700	216	70.383	244.86
0195	7	27.161	.800	216	16.987	310.23
0196	8	29.036	.800	216	48.920	267.12
0197	9	30.161	.800	216	26.259	220.93
0198	10	27.161	.575	216	40.272	315.30
0199	11	29.036	.575	216	66.754	105.33
0200	12	30.161	.575	216	34.245	269.13
0201	1	27.161	.925	234	33.262	32.02
0202	2	29.036	.925	234	17.432	285.82
0203	3	30.161	.925	234	18.665	232.93
0204	4	27.161	.700	234	55.684	346.00
0205	5	29.036	.700	234	32.435	277.68
0206	6	30.161	.700	234	49.725	252.84
0207	7	27.161	.800	234	48.035	8.81
0208	8	29.036	.800	234	22.160	278.52
0209	9	30.161	.800	234	22.578	252.34
0210	10	27.161	.575	234	38.209	314.85
0211	11	29.036	.575	234	47.525	95.87
0212	12	30.161	.575	234	37.448	263.30
0213	1	27.161	.925	252	30.901	-13.17
0214	2	29.036	.925	252	24.817	275.66
0215	3	30.161	.925	252	21.749	237.69
0216	4	27.161	.700	252	34.262	313.89
0217	5	29.036	.700	252	41.221	253.14
0218	6	30.161	.700	252	40.965	226.05
0219	7	27.161	.800	252	51.446	330.73
0220	8	29.036	.800	252	32.086	273.96
0221	9	30.161	.800	252	30.732	231.16
0222	10	27.161	.575	252	23.931	293.11
0223	11	29.036	.575	252	44.716	67.93
0224	12	30.161	.575	252	30.037	237.28
0225	1	27.161	.925	270	57.456	310.03
0226	2	29.036	.925	270	35.131	233.05
0227	3	30.161	.925	270	34.309	207.73
0228	4	27.161	.700	270	72.152	277.19
0229	5	29.036	.700	270	39.047	239.23
0230	6	30.161	.700	270	81.031	196.16
0231	7	27.161	.800	270	53.816	277.22
0232	8	29.036	.800	270	47.043	223.96
0233	9	30.161	.800	270	23.361	201.54
0234	10	27.161	.575	270	33.911	254.35
0235	11	29.036	.575	270	53.646	25.88
0236	12	30.161	.575	270	34.516	179.57
0237	1	27.161	.925	288	50.477	287.68
0238	2	29.036	.925	288	34.947	205.00
0239	3	30.161	.925	288	49.857	158.10
0240	4	27.161	.700	288	74.603	237.57
0241	5	29.036	.700	288	50.936	201.21

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KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	30.161	.700	288	69.807	165.09
7	27.161	.800	288	64.423	230.17
8	29.036	.800	288	46.142	196.88
9	30.161	.800	288	34.172	153.65
10	27.161	.575	288	44.698	217.97
11	29.036	.575	288	53.567	7.24
12	30.161	.575	288	54.189	156.63
1	27.161	.925	306	21.736	262.45
2	29.036	.925	306	23.935	168.41
3	30.161	.925	306	26.952	110.68
4	27.161	.700	306	57.586	229.76
5	29.036	.700	306	44.523	165.75
6	30.161	.700	306	60.290	130.69
7	27.161	.800	306	41.077	211.38
8	29.036	.800	306	37.912	159.96
9	30.161	.800	306	20.811	124.15
10	27.161	.575	306	42.909	190.86
11	29.036	.575	306	50.482	-26.08
12	30.161	.575	306	47.942	140.26
1	27.161	.925	324	26.484	267.11
2	29.036	.925	324	10.236	163.20
3	30.161	.925	324	22.667	103.33
4	27.161	.700	324	41.590	207.96
5	29.036	.700	324	34.505	169.60
6	30.161	.700	324	53.563	126.91
7	27.161	.800	324	25.263	214.13
8	29.036	.800	324	22.103	168.49
9	30.161	.800	324	25.080	107.65
10	27.161	.575	324	35.878	199.85
11	29.036	.575	324	37.479	-23.15
12	30.161	.575	324	39.841	130.50
1	27.161	.925	342	31.890	242.05
2	29.036	.925	342	25.397	178.46
3	30.161	.925	342	16.021	106.06
4	27.161	.700	342	64.694	215.62
5	29.036	.700	342	31.746	176.22
6	30.161	.700	342	51.981	109.57
7	27.161	.800	342	40.911	215.17
8	29.036	.800	342	21.733	168.29
9	30.161	.800	342	22.827	107.48
10	27.161	.575	342	50.371	193.46
11	29.036	.575	342	36.452	-23.83
12	30.161	.575	342	27.900	112.28

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 RUN # 73 DATE 10/5/82 MEASUREMENT LOCATION: DOWNSTREAM  
 CONFIGURATION: TREATMENT FAN SPEED: 6000 rpm  
 TEMPERATURES (deg. F):  
 INLET (DRY) : 75  
 CHAMBER (DRY): 75  
 CHAMBER (WET): 64(?)  
 DATA REDUCTION: FROM TAPE

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
13	56.161	.925	0	21.811	.12
14	58.036	.925	0	9.143	326.79
15	59.161	.925	0	6.979	212.55
16	56.161	.700	0	9.982	-15.44
17	58.036	.700	0	18.777	261.08
18	59.161	.700	0	25.799	248.94
19	56.161	.800	0	17.881	344.89
20	58.036	.800	0	15.001	289.85
21	59.161	.800	0	10.000	90.00
22	56.161	.575	0	15.629	294.25
23	58.036	.575	0	32.132	242.75
24	59.161	.575	0	48.669	266.13
13	56.161	.925	18	20.193	345.17
14	58.036	.925	18	9.606	322.85
15	59.161	.925	18	3.081	167.65
16	56.161	.700	18	.100	90.00
17	58.036	.700	18	17.740	245.94
18	59.161	.700	18	22.493	235.39
19	56.161	.800	18	11.760	-33.30
20	58.036	.800	18	8.649	277.62
21	59.161	.800	18	10.000	90.00
22	56.161	.575	18	16.039	261.12
23	58.036	.575	18	25.051	233.39
24	59.161	.575	18	46.162	237.72
13	56.161	.925	36	20.626	308.13
14	58.036	.925	36	7.872	293.95
15	59.161	.925	36	6.126	102.54
16	56.161	.700	36	10.921	264.71
17	58.036	.700	36	18.864	231.07
18	59.161	.700	36	21.295	202.50
19	56.161	.800	36	19.563	284.53
20	58.036	.800	36	11.076	254.49
21	59.161	.800	36	10.000	90.00
22	56.161	.575	36	24.780	227.51
23	58.036	.575	36	27.936	203.78
24	59.161	.575	36	52.202	211.73
13	56.161	.925	54	25.234	275.96
14	58.036	.925	54	9.127	253.44
15	59.161	.925	54	8.428	100.37
16	56.161	.700	54	15.008	235.94
17	58.036	.700	54	19.083	200.61

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 73

DATE 10/5/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE		POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)			
18	59.161	.700	54	25.140	157.25	
19	56.161	.800	54	21.900	254.16	
20	58.036	.800	54	11.649	220.07	
21	59.161	.800	54	10.000	90.00	
22	56.161	.575	54	27.559	211.40	
23	58.036	.575	54	28.016	171.08	
24	59.161	.575	54	53.768	187.74	
13	56.161	.925	72	16.674	253.88	
14	58.036	.925	72	7.316	207.81	
15	59.161	.925	72	7.788	99.16	
16	56.161	.700	72	12.216	212.50	
17	58.036	.700	72	20.528	180.75	
18	59.161	.700	72	23.190	153.80	
19	56.161	.800	72	18.105	221.62	
20	58.036	.800	72	14.884	186.66	
21	59.161	.800	72	10.000	90.00	
22	56.161	.575	72	24.868	185.23	
23	58.036	.575	72	30.317	151.10	
24	59.161	.575	72	53.725	165.54	
13	56.161	.925	90	17.493	231.01	
14	58.036	.925	90	12.174	206.98	
15	59.161	.925	90	3.168	96.60	
16	56.161	.700	90	9.633	191.47	
17	58.036	.700	90	20.127	153.15	
18	59.161	.700	90	24.635	125.55	
19	56.161	.800	90	17.956	217.89	
20	58.036	.800	90	15.295	182.29	
21	59.161	.800	90	10.000	90.00	
22	56.161	.575	90	18.250	164.70	
23	58.036	.575	90	29.893	133.27	
24	59.161	.575	90	57.330	143.40	
13	56.161	.925	108	24.093	226.13	
14	58.036	.925	108	15.604	214.42	
15	59.161	.925	108	3.921	249.73	
16	56.161	.700	108	5.675	195.27	
17	58.036	.700	108	16.215	136.19	
18	59.161	.700	108	18.232	103.13	
19	56.161	.800	108	14.997	218.97	
20	58.036	.800	108	12.541	185.97	
21	59.161	.800	108	10.000	90.00	
22	56.161	.575	108	12.857	134.26	
23	58.036	.575	108	30.597	114.21	
24	59.161	.575	108	48.617	117.99	
13	56.161	.925	126	26.145	202.82	
14	58.036	.925	126	20.187	193.01	
15	59.161	.925	126	5.811	227.07	
16	56.161	.700	126	8.022	181.52	
17	58.036	.700	126	17.236	118.82	
18	59.161	.700	126	21.001	80.94	
19	56.161	.800	126	18.329	195.64	
20	58.036	.800	126	13.718	174.95	
21	59.161	.800	126	10.000	90.00	

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 73

DATE 10/5/82

MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
22	56.161	.575	126	11.381	103.45
23	58.036	.575	126	32.680	87.43
24	59.161	.575	126	55.407	94.95
13	56.161	.925	144	31.543	171.56
14	58.036	.925	144	23.553	166.63
15	59.161	.925	144	5.505	173.77
16	56.161	.700	144	8.491	145.80
17	58.036	.700	144	21.304	102.88
18	59.161	.700	144	27.006	69.03
19	56.161	.800	144	25.529	160.35
20	58.036	.800	144	20.576	145.53
21	59.161	.800	144	10.000	90.00
22	56.161	.575	144	14.593	91.74
23	58.036	.575	144	38.379	73.44
24	59.161	.575	144	60.790	76.48
13	56.161	.925	162	29.857	157.52
14	58.036	.925	162	23.933	140.26
15	59.161	.925	162	6.323	127.59
16	56.161	.700	162	9.032	161.84
17	58.036	.700	162	21.077	82.86
18	59.161	.700	162	28.697	59.42
19	56.161	.800	162	21.228	156.97
20	58.036	.800	162	17.395	127.58
21	59.161	.800	162	10.000	90.00
22	56.161	.575	162	8.875	91.57
23	58.036	.575	162	39.700	64.11
24	59.161	.575	162	60.171	66.97
13	56.161	.925	180	24.931	160.07
14	58.036	.925	180	19.719	139.52
15	59.161	.925	180	5.293	124.36
16	56.161	.700	180	8.845	177.54
17	58.036	.700	180	17.654	69.69
18	59.161	.700	180	28.912	51.71
19	56.161	.800	180	22.027	158.93
20	58.036	.800	180	19.488	106.94
21	59.161	.800	180	10.000	90.00
22	56.161	.575	180	3.183	128.34
23	58.036	.575	180	38.794	395.42
24	59.161	.575	180	50.625	41.58
13	56.161	.925	198	22.535	140.56
14	58.036	.925	198	22.343	120.96
15	59.161	.925	198	7.625	106.74
16	56.161	.700	198	7.260	179.72
17	58.036	.700	198	16.168	60.22
18	59.161	.700	198	23.134	43.27
19	56.161	.800	198	21.211	136.00
20	58.036	.800	198	17.832	98.32
21	59.161	.800	198	10.000	90.00
22	56.161	.575	198	8.626	141.82
23	58.036	.575	198	36.431	384.27
24	59.161	.575	198	42.043	31.45
13	56.161	.925	216	27.879	121.08

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 73

DATE 10/5/82

MEASUREMENT LOCATION: DOWNSTREAM

	KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
	-----	-----	-----	-----	-----	-----
	14	58.036	.925	216	22.274	105.70
	15	59.161	.925	216	5.588	96.99
	16	56.161	.700	216	11.543	158.53
	17	58.036	.700	216	14.693	51.28
	18	59.161	.700	216	27.689	31.16
	19	56.161	.800	216	25.332	121.26
	20	58.036	.800	216	17.641	87.67
	21	59.161	.800	216	10.000	90.00
	22	56.161	.575	216	12.005	122.02
	23	58.036	.575	216	34.110	11.06
	24	59.161	.575	216	42.556	21.19
	13	56.161	.925	234	21.619	89.87
	14	58.036	.925	234	17.731	80.61
	15	59.161	.925	234	5.863	392.05
	16	56.161	.700	234	13.170	114.93
	17	58.036	.700	234	16.708	25.06
	18	59.161	.700	234	25.234	-.20
	19	56.161	.800	234	20.310	97.03
	20	58.036	.800	234	15.589	54.88
	21	59.161	.800	234	10.000	90.00
	22	56.161	.575	234	14.419	96.99
	23	58.036	.575	234	32.601	352.74
	24	59.161	.575	234	38.574	4.01
	13	56.161	.925	252	14.013	53.23
	14	58.036	.925	252	12.365	40.65
	15	59.161	.925	252	3.791	342.57
	16	56.161	.700	252	11.264	90.97
	17	58.036	.700	252	16.159	362.68
	18	59.161	.700	252	23.805	335.27
	19	56.161	.800	252	14.682	61.57
	20	58.036	.800	252	13.225	26.94
	21	59.161	.800	252	10.000	90.00
	22	56.161	.575	252	10.579	76.40
	23	58.036	.575	252	28.866	341.86
	24	59.161	.575	252	40.762	-11.70
	13	56.161	.925	270	14.850	47.26
	14	58.036	.925	270	14.435	35.43
	15	59.161	.925	270	4.075	298.11
	16	56.161	.700	270	11.598	76.57
	17	58.036	.700	270	18.062	352.91
	18	59.161	.700	270	26.540	329.61
	19	56.161	.800	270	15.879	49.47
	20	58.036	.800	270	15.292	374.78
	21	59.161	.800	270	10.000	90.00
	22	56.161	.575	270	15.245	48.84
	23	58.036	.575	270	30.439	-32.71
	24	59.161	.575	270	43.918	-15.13
	13	56.161	.925	288	17.087	76.94
	14	58.036	.925	288	11.128	50.72
	15	59.161	.925	288	3.018	-27.78
	16	56.161	.700	288	12.770	74.91
	17	58.036	.700	288	14.427	359.50

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 73

DATE 10/5/82

MEASUREMENT LOCATION: DOWNSTREAM

	KULITE NO.	KULITE AXIAL (in.)	POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
			RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)		
	18	59.161	.700	288	20.176	-30.08
	19	56.161	.800	288	18.451	54.84
	20	58.036	.800	288	14.216	22.33
	21	59.161	.800	288	10.000	90.00
	22	56.161	.575	288	18.159	40.74
	23	58.036	.575	288	25.627	311.99
	24	59.161	.575	288	40.168	-22.89
	13	56.161	.925	306	14.748	60.63
	14	58.036	.925	306	12.484	42.89
	15	59.161	.925	306	1.375	29.41
	16	56.161	.700	306	14.845	55.42
	17	58.036	.700	306	13.616	352.52
	18	59.161	.700	306	15.603	314.08
	19	56.161	.800	306	17.740	49.29
	20	58.036	.800	306	13.879	372.02
	21	59.161	.800	306	10.000	90.00
	22	56.161	.575	306	14.737	14.77
	23	58.036	.575	306	23.548	305.22
	24	59.161	.575	306	38.096	320.90
	13	56.161	.925	324	13.648	10.30
	14	58.036	.925	324	10.025	357.75
	15	59.161	.925	324	3.664	212.73
	16	56.161	.700	324	16.367	20.28
	17	58.036	.700	324	17.765	323.48
	18	59.161	.700	324	21.052	281.69
	19	56.161	.800	324	16.954	3.36
	20	58.036	.800	324	14.840	334.92
	21	59.161	.800	324	10.000	90.00
	22	56.161	.575	324	17.772	334.67
	23	58.036	.575	324	24.836	285.82
	24	59.161	.575	324	46.313	-57.04
	13	56.161	.925	342	20.185	-7.12
	14	58.036	.925	342	12.573	327.89
	15	59.161	.925	342	7.856	237.84
	16	56.161	.700	342	13.316	350.34
	17	58.036	.700	342	17.591	300.80
	18	59.161	.700	342	23.468	272.99
	19	56.161	.800	342	20.170	334.60
	20	58.036	.800	342	15.778	304.03
	21	59.161	.800	342	10.000	90.00
	22	56.161	.575	342	21.582	320.20
	23	58.036	.575	342	28.511	260.64
	24	59.161	.575	342	47.272	274.92



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 0002 PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 0003  
 0004 RUN # 75 DATE 10/7/82 MEASUREMENT LOCATION: UPSTREAM  
 0005  
 0006 CONFIGURATION: TREATMENT FAN SPEED: 4000 rpm  
 0007  
 0008 TEMPERATURES (deg. F):  
 0009 INLET (DRY) : 80  
 0010 CHAMBER (DRY): 80  
 0011 CHAMBER (WET): 74  
 0012 DATA REDUCTION: ON-LINE  
 0013

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)	
0014						
0015						
0016						
0017						
0018	1	27.161	.925	0	6.901	65.08
0019	2	29.036	.925	0	10.160	33.91
0020	3	30.161	.925	0	8.958	34.60
0021	4	27.161	.700	0	13.371	75.90
0022	5	29.036	.700	0	9.420	50.46
0023	6	30.161	.700	0	10.218	34.61
0024	7	27.161	.800	0	15.516	76.13
0025	8	29.036	.800	0	7.283	58.25
0026	9	30.161	.800	0	10.009	28.30
0027	10	27.161	.575	0	12.324	79.98
0028	11	29.036	.575	0	8.795	254.18
0029	12	30.161	.575	0	9.345	34.51
0030	1	27.161	.925	18	13.125	32.03
0031	2	29.036	.925	18	13.133	31.01
0032	3	30.161	.925	18	9.935	6.59
0033	4	27.161	.700	18	11.442	72.75
0034	5	29.036	.700	18	10.183	27.59
0035	6	30.161	.700	18	8.978	23.30
0036	7	27.161	.800	18	11.953	51.96
0037	8	29.036	.800	18	11.468	30.15
0038	9	30.161	.800	18	9.341	27.98
0039	10	27.161	.575	18	10.532	56.78
0040	11	29.036	.575	18	8.017	242.74
0041	12	30.161	.575	18	9.677	24.90
0042	1	27.161	.925	36	7.402	39.92
0043	2	29.036	.925	36	8.187	18.63
0044	3	30.161	.925	36	9.368	2.77
0045	4	27.161	.700	36	6.454	67.57
0046	5	29.036	.700	36	9.679	7.81
0047	6	30.161	.700	36	7.839	45.08
0048	7	27.161	.800	36	9.575	19.59
0049	8	29.036	.800	36	12.100	12.72
0050	9	30.161	.800	36	6.975	-3.17
0051	10	27.161	.575	36	6.638	52.68
0052	11	29.036	.575	36	8.125	222.35
0053	12	30.161	.575	36	8.515	363.74
0054	1	27.161	.925	54	5.186	358.97
0055	2	29.036	.925	54	8.420	338.99
0056	3	30.161	.925	54	6.546	335.70
0057	4	27.161	.700	54	7.449	23.47
0058	5	29.036	.700	54	8.282	-4.44

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

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0061

RUN # 75

DATE 10/7/82

MEASUREMENT LOCATION: UPSTREAM

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KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	30.161	.700	54	5.669	-11.44
7	27.161	.800	54	9.622	17.39
8	29.036	.800	54	7.791	-1.49
9	30.161	.800	54	7.325	-22.40
10	27.161	.575	54	8.213	32.03
11	29.036	.575	54	3.914	217.34
12	30.161	.575	54	9.591	338.62
1	27.161	.925	72	8.211	337.50
2	29.036	.925	72	8.667	318.84
3	30.161	.925	72	7.064	300.73
4	27.161	.700	72	8.753	313.37
5	29.036	.700	72	10.206	328.43
6	30.161	.700	72	4.417	257.48
7	27.161	.800	72	8.138	-16.63
8	29.036	.800	72	8.990	-31.46
9	30.161	.800	72	6.559	-51.80
10	27.161	.575	72	6.403	-25.96
11	29.036	.575	72	7.216	166.40
12	30.161	.575	72	4.559	304.90
1	27.161	.925	90	5.284	238.54
2	29.036	.925	90	10.616	275.67
3	30.161	.925	90	5.066	287.04
4	27.161	.700	90	9.029	334.54
5	29.036	.700	90	3.773	313.50
6	30.161	.700	90	11.016	291.25
7	27.161	.800	90	13.146	320.08
8	29.036	.800	90	6.078	321.15
9	30.161	.800	90	10.653	265.03
10	27.161	.575	90	8.233	318.14
11	29.036	.575	90	7.387	150.33
12	30.161	.575	90	5.873	273.48
1	27.161	.925	108	4.919	284.52
2	29.036	.925	108	7.502	263.28
3	30.161	.925	108	8.321	264.05
4	27.161	.700	108	7.988	306.27
5	29.036	.700	108	6.991	277.43
6	30.161	.700	108	7.001	261.19
7	27.161	.800	108	8.651	296.31
8	29.036	.800	108	6.496	274.58
9	30.161	.800	108	7.083	257.22
10	27.161	.575	108	6.699	291.07
11	29.036	.575	108	8.036	131.55
12	30.161	.575	108	7.854	260.53
1	27.161	.925	126	6.422	283.28
2	29.036	.925	126	8.209	261.78
3	30.161	.925	126	8.781	251.79
4	27.161	.700	126	11.139	288.29
5	29.036	.700	126	6.341	292.93
6	30.161	.700	126	11.368	245.51
7	27.161	.800	126	8.886	263.01
8	29.036	.800	126	9.944	262.52
9	30.161	.800	126	7.119	230.69

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PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 75

DATE 10/7/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
10	27.161	.575	126	6.186	282.55
11	29.036	.575	126	8.887	110.68
12	30.161	.575	126	6.587	232.11
1	27.161	.925	144	2.130	256.74
2	29.036	.925	144	7.682	234.23
3	30.161	.925	144	7.198	224.81
4	27.161	.700	144	8.550	280.98
5	29.036	.700	144	6.804	254.83
6	30.161	.700	144	7.536	231.16
7	27.161	.800	144	7.790	274.95
8	29.036	.800	144	7.441	248.49
9	30.161	.800	144	8.162	232.00
10	27.161	.575	144	6.608	275.27
11	29.036	.575	144	8.994	95.95
12	30.161	.575	144	9.255	231.33
1	27.161	.925	162	6.761	259.39
2	29.036	.925	162	7.728	226.98
3	30.161	.925	162	9.298	222.37
4	27.161	.700	162	10.247	284.56
5	29.036	.700	162	7.766	243.57
6	30.161	.700	162	9.782	214.80
7	27.161	.800	162	8.190	261.92
8	29.036	.800	162	9.834	240.04
9	30.161	.800	162	8.559	224.76
10	27.161	.575	162	9.420	266.82
11	29.036	.575	162	9.961	87.15
12	30.161	.575	162	8.525	214.86
1	27.161	.925	180	6.258	244.20
2	29.036	.925	180	11.996	229.61
3	30.161	.925	180	6.337	207.40
4	27.161	.700	180	11.765	297.80
5	29.036	.700	180	5.616	215.95
6	30.161	.700	180	9.491	225.59
7	27.161	.800	180	10.664	248.04
8	29.036	.800	180	12.468	232.27
9	30.161	.800	180	8.603	213.19
10	27.161	.575	180	6.476	255.95
11	29.036	.575	180	11.616	68.07
12	30.161	.575	180	7.304	198.16
1	27.161	.925	198	12.611	246.75
2	29.036	.925	198	12.660	226.94
3	30.161	.925	198	10.551	216.72
4	27.161	.700	198	10.135	267.52
5	29.036	.700	198	10.688	221.61
6	30.161	.700	198	10.859	209.64
7	27.161	.800	198	13.868	253.19
8	29.036	.800	198	10.951	228.91
9	30.161	.800	198	11.744	207.45
10	27.161	.575	198	10.164	260.03
11	29.036	.575	198	9.486	72.62
12	30.161	.575	198	11.470	125.34
1	27.161	.925	216	7.539	231.32

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 75

DATE 10/7/82

MEASUREMENT LOCATION: UPSTREAM

	KULITE No.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
	-----	-----	-----	-----	-----	-----
0190	2	29.036	.925	216	11.099	209.11
0191	3	30.161	.925	216	11.327	200.89
0192	4	27.161	.700	216	12.206	265.91
0193	5	29.036	.700	216	7.186	187.82
0194	6	30.161	.700	216	13.271	210.96
0195	7	27.161	.800	216	13.959	209.79
0196	8	29.036	.800	216	14.231	219.24
0197	9	30.161	.800	216	10.429	179.33
0198	10	27.161	.575	216	10.121	237.98
0199	11	29.036	.575	216	11.186	70.64
0200	12	30.161	.575	216	11.204	189.30
0201	1	27.161	.925	234	13.647	222.14
0202	2	29.036	.925	234	13.749	204.04
0203	3	30.161	.925	234	10.086	181.25
0204	4	27.161	.700	234	11.487	237.60
0205	5	29.036	.700	234	11.241	197.46
0206	6	30.161	.700	234	10.384	181.60
0207	7	27.161	.800	234	11.021	228.36
0208	8	29.036	.800	234	11.716	197.85
0209	9	30.161	.800	234	10.282	186.61
0210	10	27.161	.575	234	9.298	233.20
0211	11	29.036	.575	234	10.051	38.43
0212	12	30.161	.575	234	8.915	185.73
0213	1	27.161	.925	252	8.522	203.71
0214	2	29.036	.925	252	12.362	175.79
0215	3	30.161	.925	252	9.275	166.71
0216	4	27.161	.700	252	13.219	208.28
0217	5	29.036	.700	252	13.468	199.82
0218	6	30.161	.700	252	11.720	147.90
0219	7	27.161	.800	252	15.325	212.25
0220	8	29.036	.800	252	10.578	181.57
0221	9	30.161	.800	252	11.224	162.64
0222	10	27.161	.575	252	8.373	194.43
0223	11	29.036	.575	252	11.535	378.01
0224	12	30.161	.575	252	8.670	160.01
0225	1	27.161	.925	270	6.693	155.86
0226	2	29.036	.925	270	11.744	133.82
0227	3	30.161	.925	270	10.300	147.95
0228	4	27.161	.700	270	16.229	199.45
0229	5	29.036	.700	270	9.064	169.93
0230	6	30.161	.700	270	12.063	136.34
0231	7	27.161	.800	270	8.553	152.11
0232	8	29.036	.800	270	11.704	142.32
0233	9	30.161	.800	270	7.734	134.06
0234	10	27.161	.575	270	7.963	197.18
0235	11	29.036	.575	270	11.755	335.63
0236	12	30.161	.575	270	8.299	162.73
0237	1	27.161	.925	288	12.924	126.53
0238	2	29.036	.925	288	12.990	133.61
0239	3	30.161	.925	288	12.411	127.52
0240	4	27.161	.700	288	11.076	170.61
0241	5	29.036	.700	288	10.984	130.04

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## PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM

PAGE

RUN # 75

DATE 10/7/82

MEASUREMENT LOCATION: UPSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
6	30.161	.700	288	9.164	118.24
7	27.161	.800	288	12.083	154.07
8	29.036	.800	288	11.981	132.60
9	30.161	.800	288	11.121	115.00
10	27.161	.575	288	8.297	166.83
11	29.036	.575	288	10.579	340.93
12	30.161	.575	288	9.164	125.55
1	27.161	.925	306	7.814	129.29
2	29.036	.925	306	10.451	114.46
3	30.161	.925	306	9.677	96.78
4	27.161	.700	306	10.528	158.81
5	29.036	.700	306	6.611	129.68
6	30.161	.700	306	11.019	103.73
7	27.161	.800	306	9.000	119.84
8	29.036	.800	306	12.301	112.15
9	30.161	.800	306	6.561	96.71
10	27.161	.575	306	9.230	136.10
11	29.036	.575	306	10.447	293.84
12	30.161	.575	306	8.662	126.01
1	27.161	.925	324	7.613	117.43
2	29.036	.925	324	10.701	73.15
3	30.161	.925	324	10.347	84.73
4	27.161	.700	324	11.503	119.51
5	29.036	.700	324	10.057	95.19
6	30.161	.700	324	9.261	79.91
7	27.161	.800	324	11.951	105.75
8	29.036	.800	324	9.128	94.77
9	30.161	.800	324	7.607	74.80
10	27.161	.575	324	7.838	127.34
11	29.036	.575	324	8.942	274.42
12	30.161	.575	324	7.194	99.65
1	27.161	.925	342	7.650	87.38
2	29.036	.925	342	8.108	61.56
3	30.161	.925	342	11.706	51.01
4	27.161	.700	342	13.978	96.50
5	29.036	.700	342	9.676	85.19
6	30.161	.700	342	11.607	46.23
7	27.161	.800	342	11.263	102.02
8	29.036	.800	342	9.209	76.88
9	30.161	.800	342	9.982	70.59
10	27.161	.575	342	10.291	100.50
11	29.036	.575	342	9.011	276.15
12	30.161	.575	342	9.804	41.51

0001  
 0002 PHASE AND MAGNITUDE DATA - NASA AFT DUCT PROGRAM PAGE  
 0003  
 0004 RUN # 75 DATE 10/7/82 MEASUREMENT LOCATION: DOWNSTREAM  
 0005  
 0006 CONFIGURATION: TREATMENT FAN SPEED: 4000 rpm  
 0007  
 0008 TEMPERATURES (deg. F):  
 0009 INLET (DRY) : 80  
 0010 CHAMBER (DRY): 80  
 0011 CHAMBER (WET): 74  
 0012 DATA REDUCTION: ON-LINE  
 0013

KULITE NO.	KULITE AXIAL (in.)	POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)	
		RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)			
0018	13	56.161	.925	0	5.729	122.07
0019	14	58.036	.925	0	1.717	157.71
0020	15	59.161	.925	0	6.773	107.13
0021	16	56.161	.700	0	6.110	120.39
0022	17	58.036	.700	0	8.692	173.57
0023	18	59.161	.700	0	8.194	106.83
0024	19	56.161	.800	0	5.896	174.85
0025	20	58.036	.800	0	6.951	117.49
0026	21	59.161	.800	0	10.000	90.00
0027	22	56.161	.575	0	6.051	175.58
0028	23	58.036	.575	0	7.897	99.46
0029	24	59.161	.575	0	5.204	119.03
0030	13	56.161	.925	18	6.143	105.92
0031	14	58.036	.925	18	1.651	149.37
0032	15	59.161	.925	18	7.151	96.67
0033	16	56.161	.700	18	7.736	105.40
0034	17	58.036	.700	18	9.649	143.34
0035	18	59.161	.700	18	9.329	89.98
0036	19	56.161	.800	18	5.898	137.41
0037	20	58.036	.800	18	8.464	105.04
0038	21	59.161	.800	18	10.000	90.00
0039	22	56.161	.575	18	6.115	149.15
0040	23	58.036	.575	18	7.863	89.42
0041	24	59.161	.575	18	6.026	101.16
0042	13	56.161	.925	36	6.081	86.51
0043	14	58.036	.925	36	1.501	121.01
0044	15	59.161	.925	36	7.050	78.46
0045	16	56.161	.700	36	7.037	88.10
0046	17	58.036	.700	36	9.248	123.35
0047	18	59.161	.700	36	8.836	73.89
0048	19	56.161	.800	36	5.796	121.04
0049	20	58.036	.800	36	8.662	79.15
0050	21	59.161	.800	36	10.000	90.00
0051	22	56.161	.575	36	5.664	125.47
0052	23	58.036	.575	36	8.455	77.46
0053	24	59.161	.575	36	5.959	75.04
0054	13	56.161	.925	54	4.941	68.51
0055	14	58.036	.925	54	1.428	97.07
0056	15	59.161	.925	54	6.311	55.76
0057	16	56.161	.700	54	5.968	64.40
0058	17	58.036	.700	54	7.762	105.22

KULITE NO.	KULITE		POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)			
18	59.161	.700	54	7.706	54.10	
19	56.161	.800	54	5.636	93.52	
20	58.036	.800	54	7.602	65.84	
21	59.161	.800	54	10.000	90.00	
22	56.161	.575	54	5.503	106.76	
23	58.036	.575	54	7.278	49.31	
24	59.161	.575	54	5.261	55.07	
13	56.161	.925	72	4.724	32.03	
14	58.036	.925	72	1.071	82.09	
15	59.161	.925	72	4.867	24.44	
16	56.161	.700	72	5.653	30.34	
17	58.036	.700	72	6.981	73.44	
18	59.161	.700	72	7.689	19.44	
19	56.161	.800	72	4.584	69.90	
20	58.036	.800	72	6.487	29.54	
21	59.161	.800	72	10.000	90.00	
22	56.161	.575	72	4.627	78.60	
23	58.036	.575	72	6.519	17.34	
24	59.161	.575	72	5.147	26.44	
13	56.161	.925	90	4.972	-1.29	
14	58.036	.925	90	.854	25.31	
15	59.161	.925	90	6.443	-14.66	
16	56.161	.700	90	5.975	-6.95	
17	58.036	.700	90	6.163	46.50	
18	59.161	.700	90	7.698	-13.56	
19	56.161	.800	90	3.776	27.20	
20	58.036	.800	90	6.928	-5.84	
21	59.161	.800	90	10.000	90.00	
22	56.161	.575	90	4.709	35.46	
23	58.036	.575	90	7.013	-18.57	
24	59.161	.575	90	5.738	-12.03	
13	56.161	.925	108	5.748	-35.49	
14	58.036	.925	108	.787	-17.04	
15	59.161	.925	108	7.438	-35.42	
16	56.161	.700	108	6.311	54.56	
17	58.036	.700	108	7.239	359.53	
18	59.161	.700	108	8.972	317.21	
19	56.161	.800	108	4.211	177.32	
20	58.036	.800	108	7.286	-39.11	
21	59.161	.800	108	10.000	90.00	
22	56.161	.575	108	4.149	11.64	
23	58.036	.575	108	7.870	-41.19	
24	59.161	.575	108	5.388	-38.90	
13	56.161	.925	126	6.306	-48.61	
14	58.036	.925	126	1.118	-20.61	
15	59.161	.925	126	7.539	299.64	
16	56.161	.700	126	7.089	309.86	
17	58.036	.700	126	7.699	358.57	
18	59.161	.700	126	8.715	298.72	
19	56.161	.800	126	5.109	-9.43	
20	58.036	.800	126	7.919	-53.41	
21	59.161	.800	126	10.000	90.00	

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MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
22	56.161	.575	126	4.908	2.32
23	58.036	.575	126	7.473	-65.79
24	59.161	.575	126	5.834	-56.12
13	56.161	.925	144	5.366	294.31
14	58.036	.925	144	1.148	331.06
15	59.161	.925	144	7.984	286.33
16	56.161	.700	144	6.721	290.28
17	58.036	.700	144	8.051	352.11
18	59.161	.700	144	8.837	281.41
19	56.161	.800	144	5.236	-21.01
20	58.036	.800	144	7.898	-67.87
21	59.161	.800	144	10.000	90.00
22	56.161	.575	144	5.366	-19.15
23	58.036	.575	144	7.943	277.10
24	59.161	.575	144	5.259	282.57
13	56.161	.925	162	5.801	273.99
14	58.036	.925	162	1.134	307.95
15	59.161	.925	162	8.244	265.94
16	56.161	.700	162	6.214	276.94
17	58.036	.700	162	7.403	336.14
18	59.161	.700	162	8.831	260.81
19	56.161	.800	162	5.099	-39.47
20	58.036	.800	162	7.738	264.56
21	59.161	.800	162	10.000	90.00
22	56.161	.575	162	4.873	332.26
23	58.036	.575	162	8.679	255.16
24	59.161	.575	162	5.834	262.79
13	56.161	.925	180	5.931	251.33
14	58.036	.925	180	.913	296.31
15	59.161	.925	180	7.406	251.56
16	56.161	.700	180	6.418	252.61
17	58.036	.700	180	6.597	321.86
18	59.161	.700	180	9.196	246.63
19	56.161	.800	180	4.429	-48.68
20	58.036	.800	180	7.134	248.55
21	59.161	.800	180	10.000	90.00
22	56.161	.575	180	4.789	324.45
23	58.036	.575	180	8.862	243.22
24	59.161	.575	180	5.491	255.76
13	56.161	.925	198	5.591	246.97
14	58.036	.925	198	.874	295.53
15	59.161	.925	198	7.228	230.89
16	56.161	.700	198	6.109	245.94
17	58.036	.700	198	6.816	305.80
18	59.161	.700	198	9.054	233.89
19	56.161	.800	198	4.728	-51.09
20	58.036	.800	198	7.365	245.28
21	59.161	.800	198	10.000	90.00
22	56.161	.575	198	5.108	313.90
23	58.036	.575	198	8.661	233.87
24	59.161	.575	198	5.633	240.73
13	56.161	.925	216	5.944	233.73



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MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE AXIAL (in.)	POSITION RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)	AMPLITUDE (Voltsx10)	PHASE (deg.)
14	58.036	.925	216	1.091	284.33
15	59.161	.925	216	6.156	310.61
16	56.161	.700	216	5.898	146.59
17	58.036	.700	216	6.804	297.67
18	59.161	.700	216	8.775	222.78
19	56.161	.800	216	4.600	-76.49
20	58.036	.800	216	7.408	236.06
21	59.161	.800	216	10.000	90.00
22	56.161	.575	216	5.150	302.70
23	58.036	.575	216	7.786	228.35
24	59.161	.575	216	5.561	229.71
13	56.161	.925	234	4.622	229.52
14	58.036	.925	234	.994	283.27
15	59.161	.925	234	6.118	213.05
16	56.161	.700	234	5.361	146.20
17	58.036	.700	234	6.539	295.09
18	59.161	.700	234	7.654	213.90
19	56.161	.800	234	4.677	292.50
20	58.036	.800	234	5.931	227.43
21	59.161	.800	234	10.000	90.00
22	56.161	.575	234	4.913	295.03
23	58.036	.575	234	7.019	216.30
24	59.161	.575	234	4.977	216.43
13	56.161	.925	252	4.034	213.61
14	58.036	.925	252	1.029	281.49
15	59.161	.925	252	4.804	201.93
16	56.161	.700	252	3.867	315.85
17	58.036	.700	252	7.093	296.08
18	59.161	.700	252	6.413	194.11
19	56.161	.800	252	4.586	-65.49
20	58.036	.800	252	4.874	213.91
21	59.161	.800	252	10.000	90.00
22	56.161	.575	252	4.783	293.64
23	58.036	.575	252	5.934	198.09
24	59.161	.575	252	3.850	209.34
13	56.161	.925	270	3.078	196.76
14	58.036	.925	270	.878	266.75
15	59.161	.925	270	4.213	187.51
16	56.161	.700	270	3.225	210.54
17	58.036	.700	270	7.392	281.12
18	59.161	.700	270	5.564	187.06
19	56.161	.800	270	4.488	-74.92
20	58.036	.800	270	4.214	201.12
21	59.161	.800	270	10.000	90.00
22	56.161	.575	270	4.763	278.27
23	58.036	.575	270	5.334	181.25
24	59.161	.575	270	3.916	187.68
13	56.161	.925	288	3.858	195.11
14	58.036	.925	288	.977	254.01
15	59.161	.925	288	3.891	172.00
16	56.161	.700	288	3.897	202.38
17	58.036	.700	288	6.437	263.27

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MEASUREMENT LOCATION: DOWNSTREAM

KULITE NO.	KULITE		POSITION		AMPLITUDE (Voltsx10)	PHASE (deg.)
	AXIAL (in.)	RADIAL (r/r <sub>2</sub> )	CIRCUM. (deg.)			
18	59.161	.700	288		5.684	172.63
19	56.161	.800	288		3.903	256.40
20	58.036	.800	288		5.202	188.57
21	59.161	.800	288		10.000	90.00
22	56.161	.575	288		4.752	255.67
23	58.036	.575	288		5.846	158.35
24	59.161	.575	288		3.287	188.10
13	56.161	.925	306		3.660	176.27
14	58.036	.925	306		1.131	239.16
15	59.161	.925	306		4.568	167.11
16	56.161	.700	306		4.472	186.70
17	58.036	.700	306		7.328	241.23
18	59.161	.700	306		5.984	157.91
19	56.161	.800	306		4.741	236.48
20	58.036	.800	306		5.309	179.28
21	59.161	.800	306		10.000	90.00
22	56.161	.575	306		5.167	240.83
23	58.036	.575	306		5.572	160.10
24	59.161	.575	306		2.968	164.28
13	56.161	.925	324		4.512	152.10
14	58.036	.925	324		1.154	208.76
15	59.161	.925	324		5.247	148.50
16	56.161	.700	324		4.977	168.45
17	58.036	.700	324		8.284	215.86
18	59.161	.700	324		6.380	143.09
19	56.161	.800	324		5.489	216.12
20	58.036	.800	324		5.408	164.63
21	59.161	.800	324		10.000	90.00
22	56.161	.575	324		5.581	223.94
23	58.036	.575	324		6.424	137.38
24	59.161	.575	324		3.827	149.41
13	56.161	.925	342		4.901	131.23
14	58.036	.925	342		1.267	187.14
15	59.161	.925	342		6.215	129.07
16	56.161	.700	342		5.067	144.45
17	58.036	.700	342		8.462	195.19
18	59.161	.700	342		7.131	123.90
19	56.161	.800	342		5.599	197.55
20	58.036	.800	342		5.451	136.45
21	59.161	.800	342		10.000	90.00
22	56.161	.575	342		5.818	201.06
23	58.036	.575	342		7.218	118.49
24	59.161	.575	342		4.642	131.46