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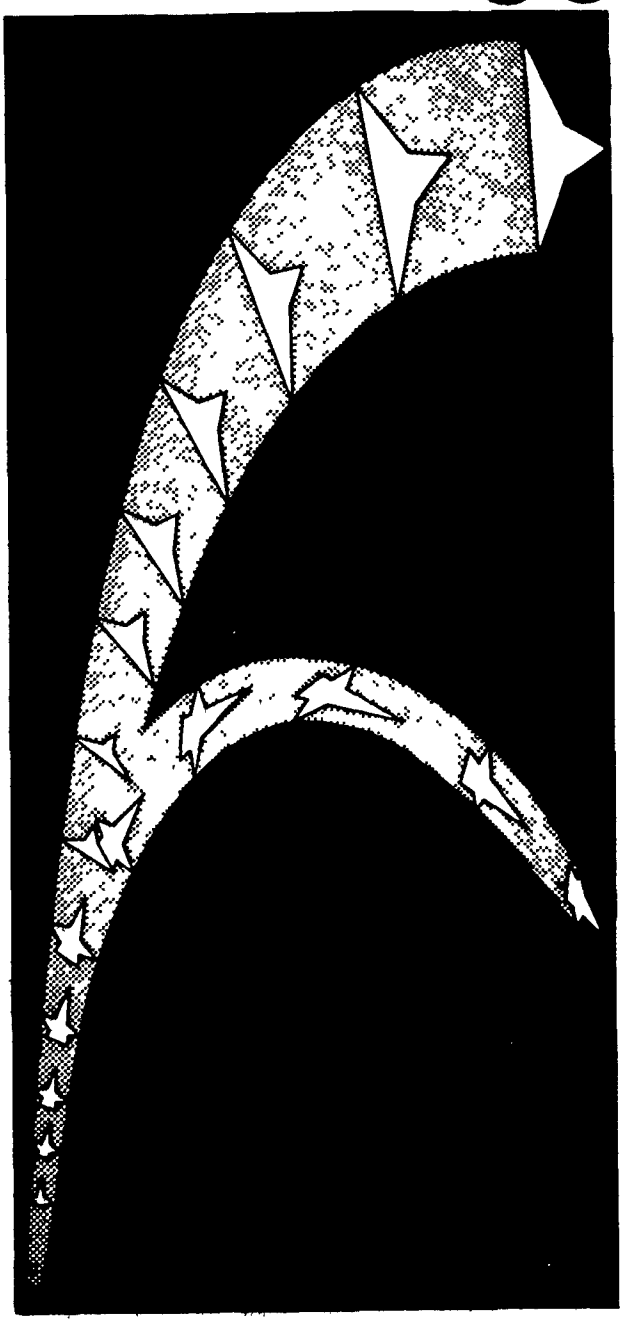

SADSAC SPACE SHUTTLE
AEROTHERMODYNAMIC
DATA MANAGEMENT SYSTEM

CONTRACT NAS8-4016
MARSHALL SPACE FLIGHT CENTER

SPACE DIVISION CHRYSLER CORPORATION

—SPACE SHUTTLE—

ASCENT HEAT TRANSFER RATE DISTRIBUTION ON THE NR DELTA WING ORBITER AND THE GD/C BOOSTER AT MACH NUMBER OF 8

[MATED]

by

R. K. Matthews, ARO, INC.
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VKF 50 INCH HYPERSONIC
TUNNEL 3

Arnold Engineering
Development Center

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CR-120,049
VOLUME I
JUNE, 1972

SADSAC/SPACE SHUTTLE

WIND TUNNEL TEST DATA REPORT

CONFIGURATION: North American Rockwell Delta Wing Orbiter (NAR-DWO) Mated With The General Dynamics Convair Booster (GDC-B)

TEST PURPOSE: To Determine the Interference Heating at a Mach Number of 8

TEST FACILITY: AEDC VKF 50-Inch Hypersonic Tunnel B

TESTING AGENCY: AEDC-MSFC

TEST NO. & DATE: VT1162-11; June, 1971

FACILITY COORDINATOR: L. L. Trimmer, ARO, Inc.

PROJECT ENGINEER(S): R. K. Matthews, ARO, Inc.
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FOREWORD

The work reported herein was sponsored by the Marshall Space Flight Center (MSFC), NASA. The results of tests presented were obtained by ARO, Inc. (a subsidiary of Sverdrup and Parcel & Associates, Inc.), contract operator of the Arnold Engineering Development Center (AEDC), AFSC, Arnold Air Force Station, Tennessee. Ascent and reentry conditions were simulated on shuttle models designed by McDonnell Douglas (MDAC), North American Rockwell (NAR) and General Dynamics Convair (GDC). In addition a limited amount of data were obtained on two research models provided by the Langley Research Center (LRC). Because of the broad scope of these tests the data will be presented in a series of SADSAC reports. This report presents the results of the phase-change paint test conducted at Mach 8 in Tunnel B on the NAR Delta Wing Orbiter mated with the GDC-booster. This volume (Volume I) contains the mated data and Volume II contains the interference-free data for the orbiter and booster alone.

CONTENTS

Section		Page
	LIST OF FIGURES	iv
	LIST OF TABLES	iv
	NOMENCLATURE	v
1.	INTRODUCTION	1
2.	MODELS AND APPARATUS	2
	2.1 Model Description	2
	2.2 Facility Description	2
3.	PROCEDURES	3
	3.1 Test Techniques	3
	3.2 Test Conditions	3
	3.3 Data Reduction	4
4.	DATA PRESENTATION	4
	REFERENCES	5

LIST OF FIGURES

Figure		Page
1.	North American Rockwell Delta Wing Orbiter Model Sketch (0.013 Scale)	6
2.	General Dynamics Convair Booster Model Sketch (0.013 Scale)	7
3.	Model Photograph	8

LIST OF TABLES

Table		
1.	Configuration Description Details	9 - 18
2.	Model Coordinates	19 - 41
3.	Phase-Change Coating Test Data Summary Sheets	42 - 43
4.	Summary Data Index	44

NOMENCLATURE

ALPHA-MODEL (α) — Model angle of attack, deg

ALPHA-PREBEND — Sting prebend angle, deg

ALPHA-SECTOR — Tunnel sector pitch angle, deg

H(TO) or H — Heat-transfer coefficient based on $T_{aw} = T_o$, BTU/ft^2 - sec - °R, and

$$H(TO) = \frac{\beta \sqrt{\rho c k}}{\sqrt{\Delta t}}$$

where β is obtained from

$$\frac{T_{pc} - T_i}{T_{aw} - T_i} = 1 - e^{\beta^2} \operatorname{erfc} \beta$$

and $\Delta t \sim$ del time

$T_{pc} \sim$ phase-change paint temperature, °R

$T_i \sim$ initial model temperature, °R

$T_{aw} \sim$ adiabatic wall temperature, °R

$\sqrt{\rho c k} \sim$ model material properties = $0.11\text{-}0.008 \sqrt{(\Delta t)}$ $BTU/ft^2\text{-}sec^{1/2}$ - °R

H(.9TO) — Heat transfer coefficient based on $T_{aw} = 0.9T_o$

H(.85TO) — Heat transfer coefficient based on $T_{aw} = .85T_o$

HREF — Reference heat transfer coefficient based on Fay-Riddell theory, BTU/ft^2-sec °R

$$HREF = \left[\frac{8.139(P01)^{0.5} \ (MU\text{-}0)^{0.4} \ (1\text{-}P\text{-}INF/P01)^{0.25}}{(RN)^{0.5} \ (TO)^{0.15}} \right] X$$

$$[0.2235 + 0.0000135 \ (T_o + 760)]$$

where P01 $\sim$ stagnation pressure downstream of a normal shock, psia

MU-0 $\sim$ air viscosity based on T_o, lb_f sec/ft^2

RN $\sim$ reference nose radius, (0.013 ft)

MU-INF	Free-stream viscosity, lb-sec/ft^2
P-INF	Free-stream static pressure, psia
PO	Tunnel stilling chamber pressure, psia
Q-INF	Free-stream dynamic pressure, psia
RE/FT	Free-stream unit Reynolds number, ft^{-1}
ROLL-MODEL	Model roll angle, deg
ST(TO)	Stanton number based on T_o,

$$ST(TO) = \frac{H(TO)}{\rho_\infty V_\infty \, [0.2235+0.0000135 \, (T_o+T_{pc})]x(32.17)}$$

STREF	Reference Stanton number

$$STREF = \frac{HREF}{\rho_\infty V_\infty \, [0.2235+0.0000135 \, (T_o+T_{pc})]x(32.17)}$$

T-INF	Free-stream static temperature, °R
TO	Tunnel stilling chamber temperature, °R
TW	Model wall temperature, °R
TIME	Time from start of model injection, sec
DEL TIME (Δt)	Time model exposed to airstream, sec
V-INF (V_∞)	Free-stream velocity, ft/sec
YAW	Model yaw angle, deg
X	Axial distance from booster nose to orbiter nose (-3.21 in.)
Z	Gap spacing between booster and orbiter (0.312 in.)

SECTION 1

INTRODUCTION

This report presents the results of a wind tunnel test program to determine aerodynamic interference heating on the North American Rockwell orbiter mated with the General Dynamics Convair Booster. The tests were conducted at the Arnold Engineering Development Center (AEDC) in Tunnel B of the von Karman Gas Dynamics Facility (VKF). The test period was June 1971.

Heat-transfer rates were determined by the phase-change paint technique on 0.013-scale Stycast® models using Tempilaq® as the surface temperature indicator. The nominal test conditions were; Mach 8, free-stream unit length Reynolds numbers of 1.25×10^6 and 2.55×10^6, and angles of attack of -5, 0, +5 deg.

Model details, test conditions, phase-change paint photographs and reduced heat-transfer coefficients are presented in this report.

SECTION 2

MODELS AND APPARATUS

2.1 MODEL DESCRIPTION

Model drawings were provided ARO, Inc. by the appropriate contractors and fabrication of two sets of Stycast models was subcontracted to the Grumman Aircraft Corporation. Sketches showing the overall model dimensions of the orbiter and booster are presented in Figs. 1 and 2 respectively and a photograph of the mated configurations is shown in Fig. 3. Table 1 provides additional configuration description details but it should be pointed out that the models were cast as one smooth surface without moveable control surfaces. Presented in Table 2 are model coordinate measurements referenced to the axis system illustrated in Figs. 1 and 2.

Six-in.-diam hemispheres were cast from the same batch of Stycast used to cast the models so that the Stycast thermal properties could be determined from calibration runs on the hemispheres. Also Chromel-Alumel thermocouples were cast into the models approximately 1/8-in. from the surface to measure the initial model temperature.

2.2 FACILITY DESCRIPTION

Tunnel B is a continuous, closed-circuit, variable density wind tunnel with an axisymmetric contoured nozzle and a 50-in.-diam test section. The tunnel can be operated at a nominal Mach number of 6 or 8 at stagnation pressures from 20 to 300 and 50 to 900 psia, respectively, at stagnation temperatures up to 1350°R. The model may be injected into the tunnel for a test run and then retracted for model cooling or model changes without interrupting the tunnel flow.

SECTION 3

PROCEDURES

3.1 TEST TECHNIQUE

Prior to each run the models were cleaned and cooled with alcohol and then spray painted with Tempilaq. The models were installed on the model injection mechanism at the desired test attitude and relative position and the model temperature of each model was measured with a thermocouple probe or with the model-embedded thermocouples. During the course of the test many of the embedded thermocouples became inoperative and the probe temperature was generally used for the model initial temperature. The models were then injected into the airstream for approximately 20 seconds and during this time the model surface temperature rise produced isotherm melt lines. The progression of the melt lines was photographed with 70-mm sequenced cameras operating at two frames per second.

3.2 TEST CONDITIONS

Nominal test conditions are presented in the data summary sheets (Table 3). As mentioned in the foreword this test was part of a comprehensive Space Shuttle investigation and as a result the run numbers are not necessarily consecutive. The specific test conditions for each run (or group) are provided on the data tabulation sheets preceding each set of melt line photographs.

3.3 DATA REDUCTION

During each run the tunnel conditions and time of each picture were recorded on magnetic tape. The heat transfer coefficient for each picture was calculated from the semi-infinite slab transient heat conduction equation

$$\frac{T_{pc} - T_i}{T_{aw} - T_i} = 1 - e^{\beta^2} \operatorname{erfc} \beta$$

where $\beta = \frac{h\sqrt{\Delta t}}{\sqrt{\rho ck}}$ and $\sqrt{\rho ck} = 0.11 - 0.008\sqrt{\Delta t}$

The equation for the thermal properties ($\sqrt{\rho ck}$) of Stycast was obtained by evaluation of a considerable amount of hemisphere calibration data and supplemented by VKF laboratory measurements.

Heat-transfer coefficients were calculated for assumed adiabatic wall temperatures of T_0, $0.9T_0$, and $0.85T_0$ (see tabulated data sheets). The use of three values of T_{aw} provides an indication of the sensitivity of the heat-transfer coefficient (h) to the values of T_{aw} assumed. For the sake of consistency all heat-transfer coefficients shown on the photographs are based on $T_{aw} = T_0$.

All heat-transfer coefficients were non-dimensionalized by dividing by the stagnation point heat-transfer coefficient (Ref. 1) on a 0.013-ft radius sphere (a 1-ft radius sphere scaled down by the model scale).

SECTION 4

DATA PRESENTATION

The test results are presented as a series of four photographs obtained by a camera mounted in the side window (LS). The photographs

are grouped as follows:

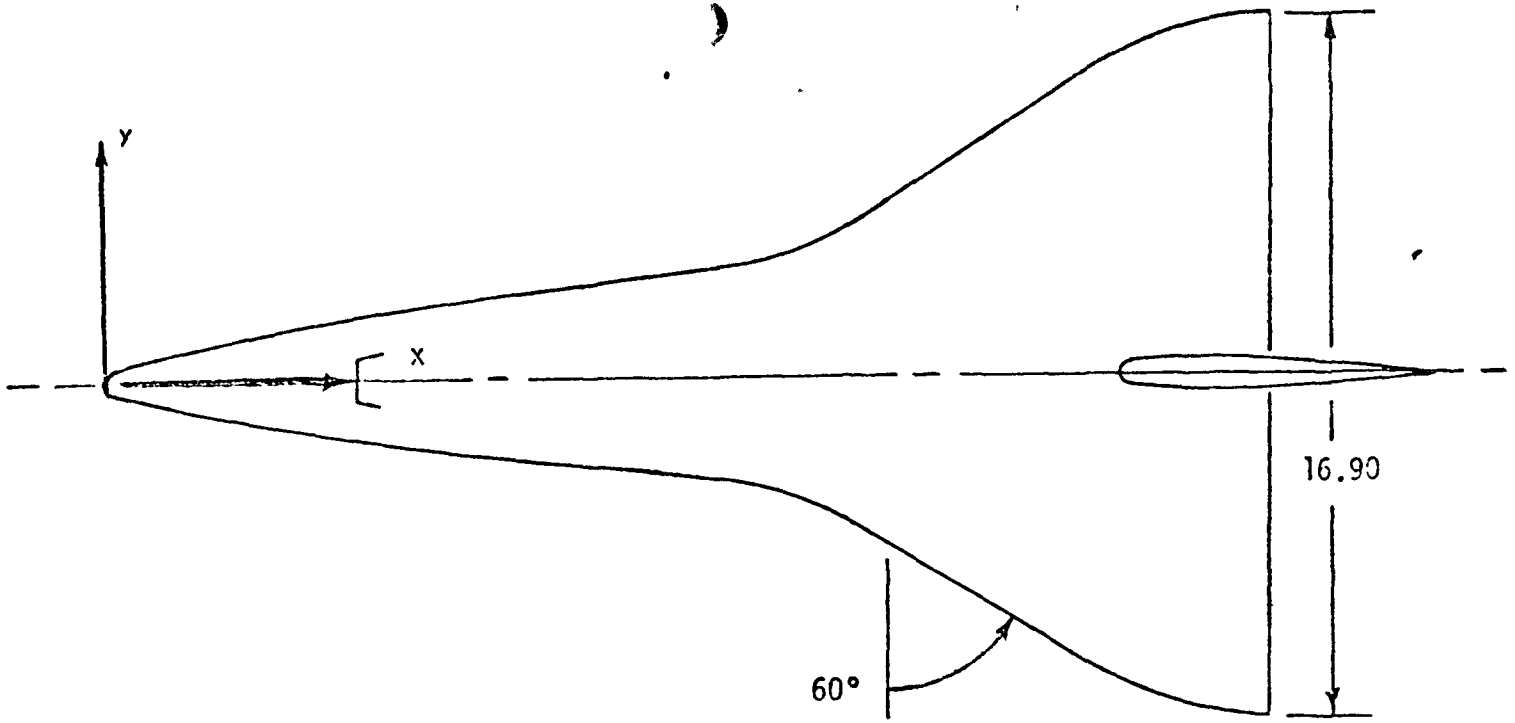
Model Surface	Re/ft	α
Side view of mated configuration*	1.25×10^6	-5,0,5 (paint)
	2.55×10^6	" "
	"	" (oil flow)
	"	" (shadowgraph)

Preceding each set of photographs is a tabulated data sheet which lists the specific test conditions and the time of each picture with the corresponding heat-transfer parameters. In general, the booster and orbiter had slightly different initial temperatures and therefore the values of h/h_0 are slightly different. Of course, the heat-transfer parameters apply only to the melt lines of the corresponding picture. Body coordinates of the melt-lines may be obtained by use of the grid overlay provided with this report. Table 4, Page 44 presents a Summary Data Index of these data.

REFERENCE

1. Fay, J. A. and Riddell, F. R. "Theory of Stagnation Point Heat Transfer in Dissociated Air." Journal of the Aeronautical Sciences, Vol. 25, 1958, pp. 73-85.

*The corresponding data for the orbiter and booster alone (non-interference) are presented in Volume II.



All Dimensions in Inches

Model Scale ~ 0.013

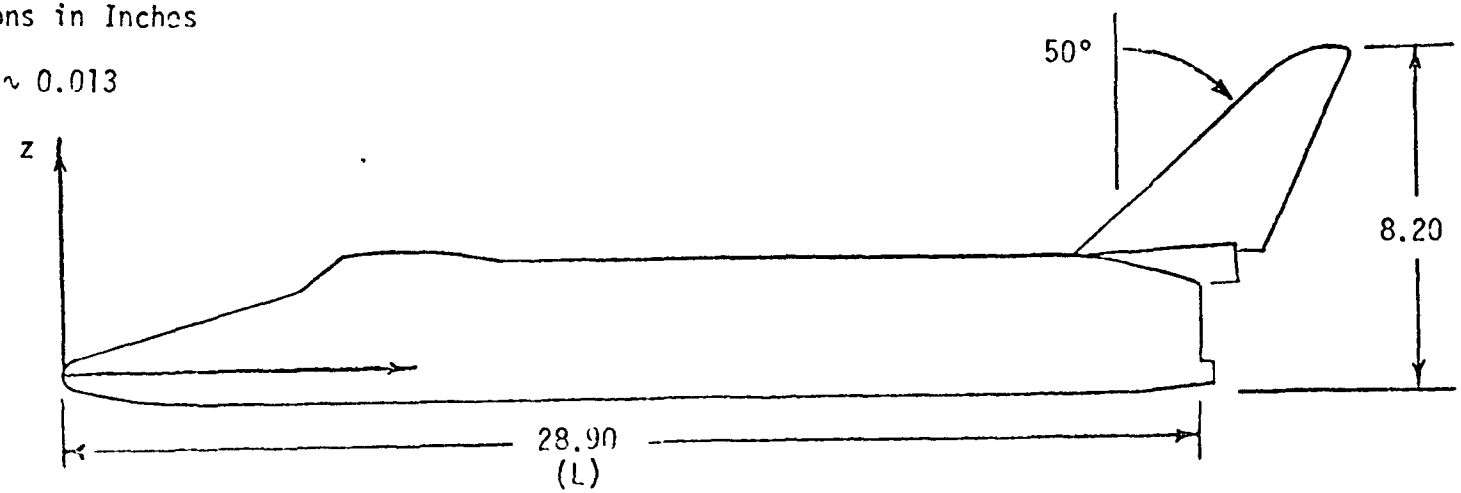


Fig. 1 North American Rockwell Delta Wing Orbiter Model Sketch

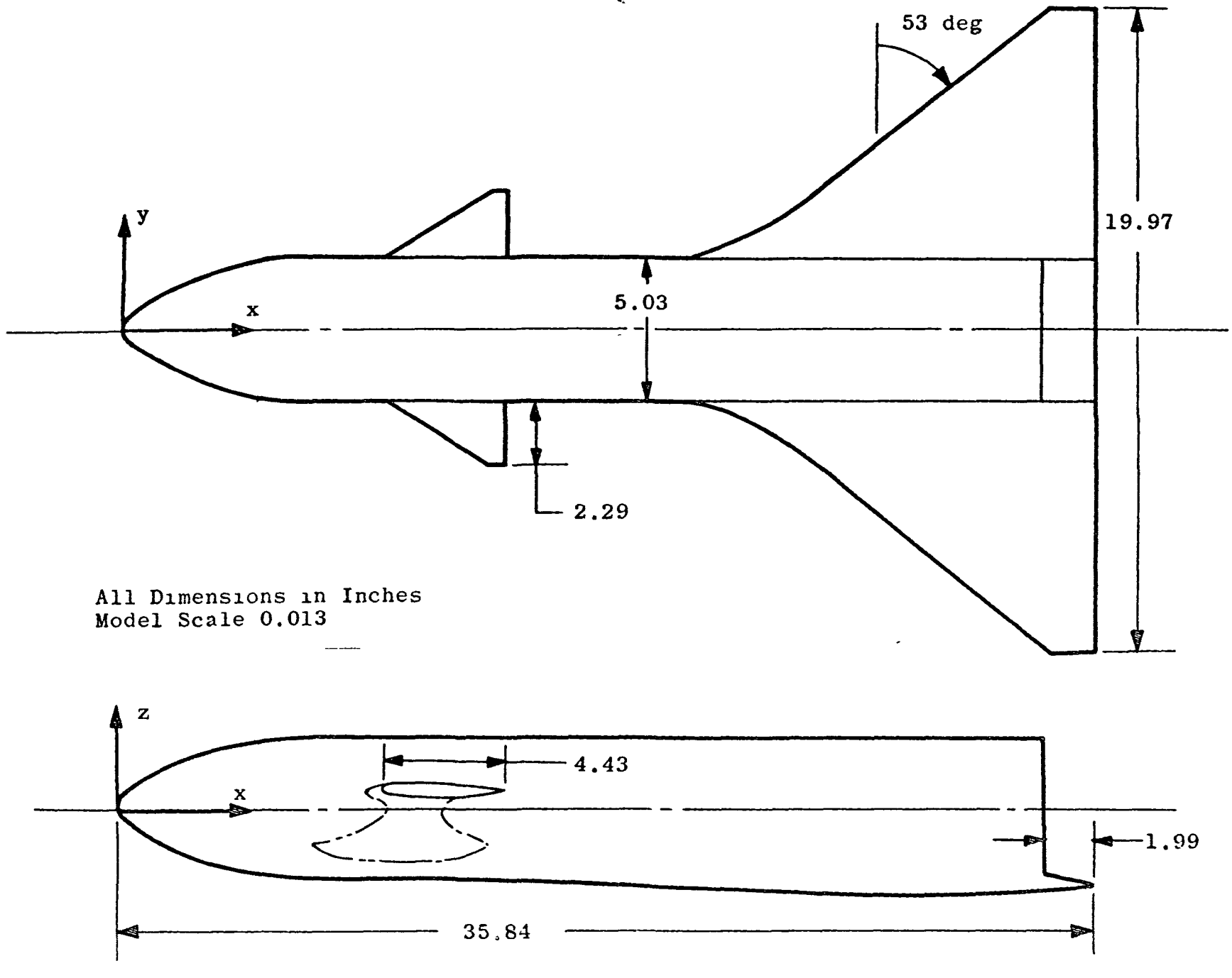


Fig. 2 General Dynamics - Convair Booster (GDC-B)

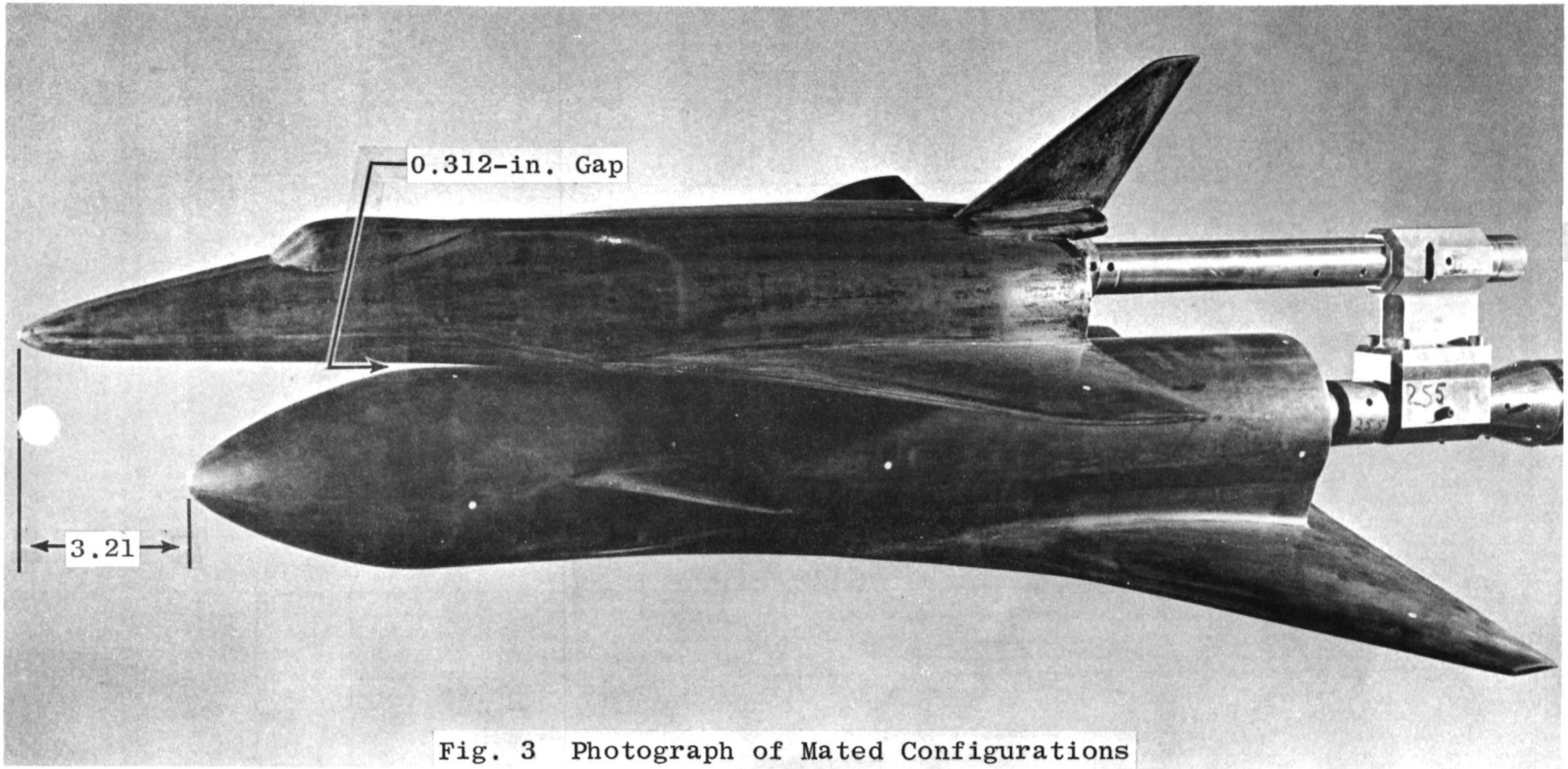


Fig. 3 Photograph of Mated Configurations

Table 1

Configuration Description Details

MODEL COMPONENT: BODY - B6

GENERAL DESCRIPTION: Basic delta wing fuselage as per NR lines drawing 9992-161B. Fuselage reference plane is located at water plane 400.00 in.

Model Scale = 0.013

DRAWING NUMBER: Lines Drawing 9992-161B

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length	2223.00	28.89
Max. Width	495.80	6.445
Max. Depth	263.00	3.419
Fineness Ratio	6.019	6.019
Area		
Max. Cross-Sectional	743.95	0.1257
Planform	DNA	DNA
Wetted	DNA	DNA
Base	DNA	DNA

Table 1 Continued

MODEL COMPONENT: Orbiter Wing Details

GENERAL DESCRIPTION: Delta wing with -5° twist and rounded wing tips. Wing blended into body. Follows NR lines 9992-161B. Used with Body B6.

Model Scale = 0.013

DRAWING NUMBER:

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area, ft^2		
Planform	6511.00	1.1003
Wetted	-	-
Span (equivalent), in.	1272.38	16.540
Aspect Ratio	1.714	1.714
Rate of Taper	1.719	1.719
Taper Ratio	0.144	0.144
Dichedral Angle, degrees	7.000	7.000
Incidence Angle, degrees	0.000	0.000
Aerodynamic Twist, degrees(about T.E.)	-5.000	-5.000
Toe-In Angle		
Cant Angle		
Sweep Back Angles, degrees		
Leading Edge	59.808	59.808
Trailing Edge	0.000	0.000
0.25 Element Line	52.197	52.197
Chords: in.		
Root (Wing Sta. 0.0)	1287.70	16.739
Tip, (equivalent)(W.S. 640.97)	186.00	2.418
MAC (W.S. 240.62)	874.10	11.363
Fus. Sta. of .25 MAC	1793.32	23.313
W.P. of .25 MAC	280.73	3.650
Airfoil Section		
Root (W.S. 249.75)	NACA 0009-64	
Tip (W.S. 561.85)	NACA 0012-64	
EXPOSED DATA		
Area, ft^2	3023.00	0.5108
Span, (equivalent), in.	810.61	10.538
Aspect Ratio	1.498	1.498
Taper Ratio	0.209	0.209
Chords, in.		
Root (Equiv.)(W.S. 232.62)	887.85	11.543
Tip (Equiv.)(W.S. 640.97)	186.00	2.418
MAC (W.S. 392.31)	613.38	7.973
Fus. Sta. of .25 MAC	1988.65	25.855
W.P. of .25 MAC	299.22	3.889

Table 1 - continued

Orbiter Elevon Details

MODEL COMPONENT: Elevon - E_{11} (Data for one of two sides)

GENERAL DESCRIPTION: Constant chord elevon located on Delta Wing - W_{21}

Model Scale = 0.013

DRAWING NUMBER:

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area (true), ft^2	423.09	0.0715
Span (equivalent), in.	417.30	5.425
Inb'd equivalent chord, in. (W.S. 237.48)	146.00	1.898
Outb'd equivalent chord, in. (W.S. 654.78)	146.00	1.898
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.166	0.166
At Outb'd equiv. chord	0.900	0.900
Sweep Back Angles, degrees		
Leading Edge	0.000	0.000
Tailing Edge	0.000	0.000
Hingeline	0.000	0.000
Area Moment (Normal to hinge line), ft^3 (Product of area and mean chord)	5144.00	0.0113

Table I - Continued
Orbiter Tail Details

MODEL COMPONENT: Vertical Tail - V27

GENERAL DESCRIPTION: Centerline vertical tail on delta wing configuration.

The total data includes the void area listed below. Used with Body-B6.

Follows NR lines 9992-1618.

Model Scale = 0.009

DRAWING NUMBER:

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area, ft^2		
Planform	626.03	0.1058
Wetted		
Span (equivalent), in.	361.06	4.694
Aspect Ratio	1.446	1.446
Rate of Taper	0.718	0.718
Taper Ratio	0.316	0.316
Diehedral Angle, degrees	-	-
Incidence Angle, degrees	-	-
Aerodynamic Twist, degrees	-	-
Toe-In Angle	0.000	0.000
Cant Angle	0.000	0.000
Sweep Back Angles, degrees		
Leading Edge	50.003	50.003
Trailing Edge	25.352	25.352
0.25 Element Line	45.352	45.352
Chords: in.		
Root (W.P. 511.62)	379.31	4.931
Tip, (equivalent) (W.P. 872.67)	120.05	1.560
MAC, inches	272.11	3.537
Fus. Sta. of .25 MAC	2422.61	31.493
W.P. of .25 MAC	660.90	8.591
Airfoil Section		
(W.P. 500.44)	NACA 0012-64	
(W.P. 878.00)	NACA 0009-64	
EXPOSED DATA		
Area		
Span, (equivalent)		
Aspect Ratio		
Taper Ratio		
Chords		
Root		
Tip		
MAC		
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		

Table 1 continued

Orbital Maneuvering System Shroud Details

MODEL COMPONENT: Orbital Maneuvering System Shroud - Z_2

GENERAL DESCRIPTION: Fairing over orbital maneuvering system. Located on aft upper fuselage mold line.

Model Scale = 0.013

DRAWING NUMBER: _____

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length (along upper surface), in.	359.31	4.671
Sta. of Leading Edge, in.	2163.33	28.123
Sta. of Trailing Edge, in.	2523.56	32.806
Pitch Angle (T.E. Up), deg.	3.181	4.594
Area		
Max. Cross-Sectional	_____	_____
Planform	_____	_____
Wetted	_____	_____
Base	_____	_____

Table 1 continued

Orbiter Drag Brake Details

MODEL COMPONENT: Drag Brake - J4 (Data for one of two sides)

GENERAL DESCRIPTION: Drag Brake - J4 is the deflectable side panels of delta wing vertical tail V27 hinged at the 60% element line and extending to the trailing edge

Model Scale = 0.013

DRAWING NUMBER:

(All dimensions are in the drag brake reference plane)

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area, ft^2	242.39	0.04095
Span (equivalent), in.	355.61	4.623
Inb'd equivalent chord, in. (W.P. 520.18)	149.22	1.939
Outb'd equivalent chord, in. (W.P. 875.79)	47.08	0.612
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	-	-
At Outb'd equiv. chord	-	-
Sweep Back Angles, degrees		
Leading Edge	37.273	37.273
Tailing Edge	25.352	25.352
Hingeline	37.273	37.273
Area Moment (Normal to hinge line), ft^3 (Produce of area and mean chord)	1921.27	0.00422
Buttock Plane of Hingeline, in.	3.44	0.045

Table 1 continued

MODEL COMPONENT: BODY - B_{24}

GENERAL DESCRIPTION: Basic Fuselage for the B-15B-2 Booster Configuration

DRAWING NUMBER: WT-71-105129

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length	2757 in.	35.84 in.
Max. Width	387 in.	5.03 in.
Max. Depth	453 in.	5.89 in.
Fineness Ratio	6.08	6.08
Area		
Max. Cross-Sectional	183837 in^2	31.07 in^2
Planform	1010612 in^2	170.79 in^2
Wetted		
Base	159510 in^2	25.43 in^2

Table 1 continued

MODEL COMPONENT: Canard C_4

GENERAL DESCRIPTION: Basic Canard for B-15B-2 Booster Configuration

DRAWING NUMBER: WT-71-105129

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	66286 in^2	11.20 in^2
Span (equivalent)	352 in.	4.58 in.
Inb'd equivalent chord	341 in.	4.43 in.
Outb'd equivalent chord	36 in.	0.468 in.
Ratio Elevator chord/horizontal tail chord		
At Inb'd equiv. chord		
At Outb'd equiv. chord		
Sweep Back Angles, degrees		
Leading Edge	60	60
Tailing Edge	0	0
Hingeline		
Area Moment (Normal to hinge line)		

Table 1 continued

MODEL COMPONENT: Wing - W_{15}

GENERAL DESCRIPTION: Basic Wing for the B-15B-2 Booster Configuration - C_L Design = 0.215

DRAWING NUMBER: WT-71-105125

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area		
Planform	1241959 in^2	209.89 in^2
Wetted		
Span (equivalent)	1739 in.	22.61 in.
Aspect Ratio	2.436	2.436
Rate of Taper		
Taper Ratio	0.106	0.106
Diehedral Angle, degrees	3 (TE)	3 (TE)
Incidence Angle, degrees	2	2
Aerodynamic Twist, degrees	0	0
Toe-In Angle		
Cant Angle		
Sweep Back Angles, degrees		
Leading Edge	53	53
Trailing Edge	0	0
0.25 Element Line	44.85	44.85
Chords:		
Root (Wing Sta. 0.0)	1291 in.	16.78 in.
Tip, (equivalent)	137 in.	1.77 in.
MAC, inches	869.4 in.	11.29 in.
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		
Airfoil Section		
Root		NACA-0010-64 (Mod)
Tip		NACA-0010-63 (Mod)
EXPOSED DATA		
Area	812980 in^2	137.39 in^2
Span, (equivalent)	1373 in.	17.85 in.
Aspect Ratio	2.25	2.25
Taper Ratio	0.1306	0.1306
Chords		
Root	1048 in.	13.62 in.
Tip	137 in.	1.78 in.
MAC	709.1 in.	9.22 in.
Fus. Sta. of .25 MAC		
W.P. of .25 MAC		

Table 1 concluded

MODEL COMPONENT: Elevon

GENERAL DESCRIPTION: Basic Elevon for the W_{15} Wing

DRAWING NUMBER: WT-71-105125

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area	69178 in^2	11.68 in^2
Span (equivalent)	486 in.	6.31 in.
Inb'd equivalent chord	172 in.	2.23 in.
Outb'd equivalent chord	114 in.	1.48 in.
Ratio Elevator chord/horizontal tail chord		
At Inb'd equiv. chord	0.167	0.167
At Outb'd equiv. chord	0.294	0.294
Sweep Back Angles, degrees		
Leading Edge	6.73	6.73
Tailing Edge	0.0	0.0
Hingeline	6.73	6.73
Area Moment (Normal to hinge line)		

Table 2 Model Coordinates

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - GDC TOP SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
1	0															
1	0	0														
2	.20															
2	-.39	0	-.37	.14	-.30	.28	-.17	.38	-.01	.41	0	.41	.13	.36	.27	.23
	.36	.08	.38	0												
3	.40															
12	-.57	0	-.56	.09	-.52	.22	-.40	.41	-.23	.53	-.01	.58	0	.58	.13	.54
	.29	.46	.47	.25	.52	.13	.54	0								
4	.60															
24	-.71	0	-.69	.18	-.60	.38	-.45	.57	-.26	.68	-.01	.72	0	.71	.38	.58
	.60	.35	.67	.14	.69	0										
5	.80															
35	-.84	0	-.81	.20	-.68	.48	-.57	.61	-.32	.79	-.01	.84	0	.84	.32	.75
	.58	.55	.73	.29	.80	0										
6	1.00															
46	-.95	0	-.92	.25	-.79	.54	-.61	.75	-.29	.93	-.01	.96	0	.96	.30	.90
	.64	.66	.87	.29	.94	0										
7	1.50															
57	-1.23	0	-1.20	.26	-1.11	.54	-.95	.79	-.66	1.04	-.35	1.19	-.01	1.24	0	1.24
	.41	1.14	.75	.93	1.00	.64	1.16	.28	1.20	0						
8	2.00															
70	-1.46	0	-1.42	.26	-1.38	.47	-1.19	.84	-.82	1.21	-.39	1.42	-.01	1.47	0	1.46
	.51	1.35	.99	1.01	1.25	.64	1.41	.20	1.43	-.01						
9	2.50															
83	-1.65	0	-1.64	.20	-1.59	.44	-1.52	.67	-1.33	1.00	-1.05	1.30	-.68	1.53	-.30	1.64
	-.01	1.67	0	1.67	.55	1.55	1.07	1.23	1.44	.71	1.58	.29	1.63	0		
10	3.00															
98	-1.83	0	-1.82	.24	-1.75	.55	-1.57	.96	-1.41	1.19	-1.05	1.53	-.54	1.77	-.01	1.85
	0	1.85	.57	1.73	1.31	1.24	1.66	.66	1.79	.26	1.80	0				
11	4.00															
112	-2.15	0	-2.14	.14	-2.12	.36	-2.05	.68	-1.87	1.09	-1.61	1.46	-1.16	1.84	-.63	2.09
	-.01	2.18	0	2.18	.63	2.06	1.34	1.66	1.90	.90	2.08	.35	2.11	0		
12	5.00															
127	-2.33	0	-2.32	.30	-2.27	.59	-2.17	.93	-1.95	1.35	-1.76	1.60	-1.43	1.92	-.88	2.23
	-.50	2.35	-.01	2.41	0	2.41	.60	2.33	1.25	2.03	1.73	1.63	2.14	.98	2.28	.51
	2.33	0														

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - GDC TOP SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
13	6.00															
144	-2.43	0	-2.42	.28	-2.37	.63	-2.24	1.04	-1.91	1.59	-1.38	2.08	-.60	2.44	-.01	2.52
	0	2.52	.56	2.44	1.22	2.17	1.78	1.71	2.22	1.04	2.40	.44	2.43	0		
14	7.00															
159	-2.43	.10	-2.43	0	-2.37	.61	-2.25	1.01	-1.95	1.54	-1.45	2.05	-.68	2.43	-.01	2.54
	0	2.53	.66	2.43	1.42	2.06	2.04	1.39	2.36	.63	2.43	0				
15	8.00															
173	-2.44	0	-2.42	.34	-2.32	.83	-2.03	1.44	-1.49	2.03	-.81	2.40	-.01	2.55	0	2.54
	.82	2.39	1.62	1.89	2.15	1.21	2.37	.55	2.43	0						
16	9.00															
186	-2.45	0	-2.42	.36	-2.40	.66	-2.34	.80	-2.22	1.12	-1.83	1.72	-1.26	2.20	-.62	2.47
	-.01	2.56	0	2.56	.71	2.44	1.38	2.11	1.95	1.53	2.24	1.00	2.33	.79	2.37	.70
	2.38	.62	2.41	.29	2.42	0										
17	9.50															
205	-2.48	.62	-2.41	.80	-2.34	.87	-2.29	.95	-2.16	1.23	-1.88	1.67	-1.59	1.96	-1.12	2.29
	-.57	2.49	-.01	2.57	0	2.57	.69	2.45	1.47	2.04	1.92	1.59	2.19	1.12	2.30	.90
	2.34	.84	2.40	.78	2.44	.65										
18	10.50															
224	-2.92	.71	-2.86	.88	-2.73	.95	-2.51	1.01	-2.34	1.03	-2.31	1.04	-2.30	1.06	-2.23	1.15
	-1.86	1.70	-1.22	2.23	-.51	2.52	-.01	2.57	0	2.57	.67	2.46	1.46	2.04	1.86	1.66
	2.11	1.28	2.24	1.03	2.26	1.00	2.32	.98	2.49	.94	2.74	.87	2.87	.79	2.90	.67
19	11.50															
8	-3.50	.77	-3.50	.73	-3.45	.84	-3.36	.90	-3.09	.97	-2.66	1.06	-2.37	1.09	-2.29	1.10
	-2.25	1.18	-2.13	1.36	-1.89	1.73	-1.32	2.23	-.50	2.57	-.01	2.63	0	2.63	.71	2.51
	1.43	2.14	1.92	1.63	2.22	1.13	2.28	1.09	2.33	1.07	2.79	1.00	3.22	.91	3.37	.86
	3.45	.79	3.47	.73												
20	12.50															
274	-4.08	.75	-4.05	.82	-3.93	.87	-3.72	.92	-3.30	.99	-2.75	1.03	-2.37	1.04	-2.28	1.07
	-2.27	1.08	-2.11	1.41	-1.78	1.84	-1.30	2.25	-.51	2.58	-.01	2.64	0	2.64	.59	2.55
	1.17	2.31	1.69	1.91	2.06	1.44	2.25	1.04	2.30	1.01	2.40	1.00	2.77	.99	3.20	.97
	3.67	.90	3.94	.85	4.02	.81	4.05	.75								
21	12.65															
302	-4.73	.76	-4.67	.82	-4.55	.84	-4.25	.86	-3.56	.87	-2.90	.88	-2.44	.89	-2.38	.90
	-2.33	.94	-2.21	1.22	-1.92	1.71	-1.32	2.26	-.62	2.57	-.01	2.65	0	2.65	.57	2.57
	1.38	2.19	2.02	1.51	2.25	1.04	2.31	.89	2.35	.86	2.43	.85	2.83	.85	3.47	.85
	4.16	.84	4.61	.81	4.67	.79	4.68	.76								
22	14.07															
330	-4.72	.80	-4.62	.81	-4.39	.82	-4.04	.82	-3.64	.82	-3.24	.82	-2.75	.83	-2.45	.83
	-2.38	.85	-2.35	.87	-2.29	1.02	-1.94	1.69	-1.40	2.20	-.71	2.55	-.01	2.66	0	2.65
	.51	2.59	1.28	2.26	1.83	1.78	2.20	1.18	2.32	.84	2.38	.80	2.51	.79	3.01	.79
	3.68	.79	4.31	.79	4.66	.79										

AEDC(ARO,INC.) NOLD AFS, TENNESSEE
VON KARMAN GA. DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - GDC TOP SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
23	15.00															
357	-2.44	.05	-2.43	.31	-2.39	.64	-2.28	1.06	-2.01	1.59	-1.38	2.23	-.67	2.57	-.01	2.66
	0	2.66	.57	2.59	1.39	2.20	1.58	1.58	2.31	.86	2.40	.30	2.41	.04		
24	16.00															
372	-2.42	0	-2.40	.42	-2.38	.92	-1.96	1.60	-1.46	2.12	-1.07	2.36	-.58	2.55	-.01	2.63
	0	2.63	.71	2.51	1.57	2.02	2.12	1.35	2.38	.55	2.43	0				
25	17.00															
386	-2.42	0	-2.41	.25	-2.38	.56	-2.34	.79	-2.24	1.09	-1.85	1.76	-1.25	2.27	-.66	2.53
	-.01	2.63	0	2.63	.50	2.58	1.30	2.24	1.93	1.65	2.29	.95	2.41	.29	2.42	0
26	18.00															
402	-2.43	0	-2.42	.23	-2.38	.62	-2.15	1.30	-1.76	1.87	-1.27	2.27	-.66	2.54	-.01	2.64
	0	2.64	.72	2.52	1.62	2.00	2.11	1.37	2.37	.67	2.42	.22	2.42	0		
27	19.00															
417	-2.42	0	-2.41	.22	-2.40	.42	-2.35	.75	-2.27	1.00	-2.13	1.33	-1.87	1.74	-1.38	2.20
	-.54	2.58	-.01	2.65	0	2.65	.67	2.55	1.38	2.21	1.96	1.63	2.31	.95	2.41	.43
	2.43	0														
28	20.00															
434	-2.41	.19	-2.41	0	-2.40	.42	-2.37	.65	-2.31	.88	-2.17	1.26	-1.86	1.77	-1.28	2.27
	-.79	2.51	-.01	2.66	0	2.66	.70	2.55	1.53	2.10	2.13	1.38	2.38	.65	2.43	0
	2.43	.17														
29	21.00															
451	-2.50	-2.21	-2.50	-2.29	-2.49	-2.14	-2.48	-2.05	-2.45	-2.01	-2.42	.24	-2.42	0	-2.42	-1.94
	-2.39	.53	-2.30	.94	-2.06	1.50	-1.69	1.95	-1.30	2.27	-.71	2.55	-.01	2.67	0	2.67
	.79	2.52	1.61	2.04	2.13	1.38	2.36	.78	2.42	.40	2.44	0	2.44	-1.96	2.49	-2.08
	2.52	-2.19	2.53	-2.29												
30	22.00															
477	-2.85	-2.18	-2.85	-2.24	-2.84	-2.10	-2.79	-2.00	-2.70	-1.88	-2.53	-1.76	-2.42	0	-2.42	-1.69
	-2.41	.26	-2.39	.51	-2.31	.90	-2.09	1.42	-1.75	1.89	-1.05	2.41	-.61	2.58	-.01	2.67
	0	2.67	.70	2.56	1.47	2.16	2.01	1.60	2.30	1.01	2.43	.41	2.44	.21	2.44	0
	2.44	-1.70	2.58	-1.77	2.75	-1.88	2.83	-2.00	2.87	-2.12	2.88	-2.24				
31	23.00															
507	-3.32	-2.17	-3.28	-2.15	-3.24	-2.03	-3.07	-1.89	-2.90	-1.79	-2.65	-1.70	-2.52	-1.65	-2.42	0
	-2.42	-1.61	-2.41	.17	-2.40	.37	-2.33	.84	-2.18	1.25	-1.83	1.82	-1.22	2.33	-.61	2.59
	-.01	2.68	0	2.68	.72	2.56	1.64	2.03	2.26	1.14	2.40	.58	2.44	-1.57	2.44	0
	2.44	.29	2.49	-1.62	2.60	-1.65	2.78	-1.70	2.92	-1.75	3.08	-1.82	3.22	-1.92	3.28	-2.05
	3.31	-2.17														
32	24.00															
540	-3.83	-2.15	-3.79	-2.03	-3.73	-1.97	-3.58	-1.87	-3.28	-1.77	-2.84	-1.67	-2.54	-1.61	-2.42	.25
	-2.42	0	-2.42	-1.54	-2.39	.58	-2.30	.97	-2.11	1.40	-1.97	1.63	-1.68	1.98	-1.22	2.33
	-.74	2.55	-.46	2.63	-.01	2.68	0	2.68	0	2.68	.40	2.64	.94	2.48	1.43	2.21
	1.93	1.73	2.26	1.14	2.40	.64	2.45	.31	2.45	0	2.45	-1.52	2.49	-1.56	2.62	-1.61
	2.94	-1.68	3.25	-1.74	3.48	-1.80	3.61	-1.85	3.76	-1.94	3.83	-2.05	3.85	-2.15		

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GA' YNAMICS FACILITY
50 INCH HY' SONIC TUNNEL B
VT1162

MODEL GEOMETRY - GDC TOP SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
33	25.00															
579	-4.52	-2.13	-4.45	-1.99	-4.33	-1.89	-4.15	-1.82	-3.78	-1.75	-3.26	-1.68	-2.76	-1.62	-2.57	-1.58
	-2.45	0	-2.45	-1.52	-2.42	.24	-2.39	.53	-2.31	.93	-2.18	1.25	-2.05	1.51	-1.68	1.97
	-1.14	2.38	-.45	2.63	-.01	2.68	0	2.68	.45	2.64	1.20	2.36	1.67	2.02	2.07	1.53
	2.32	.96	2.43	.46	2.45	0	2.45	-1.50	2.45	.21	2.52	-1.55	2.58	-1.58	2.84	-1.62
	3.17	-1.66	3.54	-1.70	3.83	-1.74	4.06	-1.78	4.26	-1.84	4.44	-1.93	4.53	-2.04	4.54	-2.13
34	26.00															
9	-5.26	-2.10	-5.25	-2.07	-5.17	-1.97	-5.05	-1.89	-4.74	-1.80	-4.28	-1.73	-3.73	-1.67	-3.12	-1.63
	-2.69	-1.60	-2.50	-1.56	-2.46	0	-2.46	-1.53	-2.42	.22	-2.39	.55	-2.29	.99	-2.12	1.39
	-1.86	1.78	-1.45	2.17	-1.11	2.39	-.50	2.62	-.01	2.69	0	2.68	.60	2.60	1.43	2.22
	1.48	1.67	2.31	1.03	2.43	.54	2.45	.27	2.46	-1.51	2.46	0	2.54	-1.56	2.64	-1.58
	2.99	-1.61	3.50	-1.64	3.99	-1.69	4.45	-1.74	4.80	-1.79	4.96	-1.83	5.15	-1.91	5.24	-1.98
	5.28	-2.10														
35	27.00															
660	-6.00	-2.07	-6.00	-2.10	-5.90	-1.97	-5.72	-1.87	-5.39	-1.79	-4.60	-1.69	-3.70	-1.64	-2.91	-1.61
	-2.61	-1.60	-2.46	0	-2.46	-1.57	-2.42	.18	-2.41	.43	-2.38	.62	-2.28	1.02	-2.02	1.55
	-1.64	2.01	-1.13	2.38	-.45	2.63	-.01	2.68	0	2.69	.50	2.63	1.06	2.44	1.63	2.06
	2.00	1.65	2.26	1.17	2.40	.68	2.45	.31	2.46	-1.52	2.46	0	2.50	-1.56	2.58	-1.58
	2.78	-1.60	3.41	-1.62	4.02	-1.64	4.70	-1.70	5.21	-1.75	5.55	-1.80	5.80	-1.87	5.95	-1.96
	6.03	-2.04	6.04	-2.10												
36	28.00															
702.	-6.76	-2.10	-6.69	-2.03	-6.60	-1.95	-6.42	-1.87	-6.06	-1.78	-5.28	-1.71	-4.17	-1.65	-3.18	-1.64
	-2.59	-1.63	-2.52	-1.62	-2.47	-1.61	-2.45	-1.58	-2.44	.20	-2.44	0	-2.40	.47	-2.36	.71
	-2.28	1.00	-2.12	1.37	-1.80	1.84	-1.55	2.08	-1.11	2.39	-.43	2.64	-.01	2.68	0	2.69
	.64	2.60	1.26	2.33	1.88	1.80	2.18	1.33	2.33	.94	2.42	.56	2.45	-1.54	2.45	0
	2.45	.29	2.53	-1.60	2.63	-1.62	2.83	-1.63	3.47	-1.63	4.37	-1.65	5.14	-1.69	5.71	-1.74
	6.13	-1.78	6.43	-1.84	6.64	-1.92	6.75	-2.01	6.80	-2.10						
37	29.00															
747	-7.51	-2.12	-7.47	-2.06	-7.40	-1.98	-7.22	-1.89	-6.88	-1.80	-6.33	-1.74	-5.61	-1.70	-4.64	-1.67
	-3.59	-1.68	-2.85	-1.68	-2.57	-1.67	-2.49	-1.65	-2.45	0	-2.45	-1.62	-2.43	.23	-2.39	.48
	-2.35	.72	-2.27	1.01	-2.17	1.25	-1.87	1.75	-1.39	2.21	-.86	2.50	-.41	2.64	-.01	2.68
	0	2.68	.38	2.65	.98	2.48	1.59	2.09	2.03	1.61	2.29	1.08	2.43	.53	2.45	.25
	2.46	-1.60	2.46	0	2.50	-1.63	2.63	-1.67	2.80	-1.67	3.50	-1.67	4.13	-1.67	5.03	-1.69
	5.77	-1.71	6.31	-1.74	6.89	-1.80	7.14	-1.85	7.36	-1.92	7.49	-2.00	7.56	-2.12		
38	30.00															
794	-8.27	-2.12	-8.22	-2.06	-8.14	-1.98	-7.97	-1.90	-7.58	-1.80	-6.92	-1.75	-6.17	-1.72	-5.20	-1.71
	-4.19	-1.72	-3.34	-1.74	-2.70	-1.75	-2.56	-1.75	-2.49	-1.73	-2.45	0	-2.45	-1.70	-2.43	.25
	-2.39	.49	-2.35	.72	-2.27	1.00	-2.01	1.55	-1.70	1.94	-1.04	2.42	-.45	2.63	-.01	2.68
	0	2.68	.51	2.63	1.22	2.35	1.98	1.69	2.32	1.01	2.44	.51	2.46	-1.67	2.46	0
	2.46	.21	2.52	-1.71	2.63	-1.74	2.72	-1.75	3.25	-1.74	4.21	-1.72	5.31	-1.72	6.21	-1.73
	7.01	-1.76	7.57	-1.82	7.95	-1.89	8.18	-1.98	8.28	-2.05	8.32	-2.12				
39	31.00															
840	-8.98	-2.14	-8.97	-2.06	-8.90	-2.00	-8.75	-1.93	-8.46	-1.85	-7.99	-1.78	-7.10	-1.75	-5.84	-1.75
	-4.98	-1.76	-3.91	-1.80	-3.03	-1.83	-2.56	-1.84	-2.50	-1.83	-2.45	-1.81	-2.43	.12	-2.43	0
	-2.43	-1.79	-2.41	.44	-2.35	.80	-2.08	1.46	-1.60	2.05	-1.01	2.45	-.43	2.64	-.01	2.69
	0	2.69	0	2.68	.44	2.65	1.47	2.21	2.04	1.62	2.29	1.10	2.43	.57	2.46	-1.75
	2.46	0	2.53	-1.80	2.62	-1.82	2.75	-1.83	3.20	-1.81	4.11	-1.78	4.94	-1.77	5.45	-1.76

	6.00	-1.75	6.75	-1.76	7.52	-1.77	8.28	-1.81	8.84	-1.93	9.05	-2.01	9.11	-2.06	9.14	-2.11

ARDC (AEDC-ARO, INC.) — ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - GDC TOP SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

23

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
40	32.00															
888	-9.73	-2.12	-9.68	-2.06	-9.56	-1.98	-9.38	-1.92	-8.88	-1.83	-7.63	-1.79	-5.91	-1.82	-4.67	-1.87
	-3.49	-1.93	-2.77	-1.96	-2.61	-1.96	-2.53	-1.96	-2.48	-1.94	-2.43	-1.90	-2.42	.16	-2.42	0
	-2.41	.39	-2.37	.63	-2.31	.89	-2.15	1.31	-1.82	1.81	-1.46	2.16	-.95	2.46	-.49	2.62
	-.01	2.68	0	2.68	.44	2.64	.88	2.52	1.37	2.27	1.85	1.86	2.21	1.31	2.38	.84
	2.45	.44	2.46	.24	2.47	-1.88	2.47	0	2.54	-1.92	2.64	-1.95	3.00	-1.94	3.83	-1.90
	4.72	-1.87	5.25	-1.85	5.62	-1.84	6.00	-1.83	6.90	-1.81	7.84	-1.80	8.78	-1.82	9.30	-1.88
	9.62	-1.95	9.78	-2.01	9.86	-2.05	9.90	-2.11								
41	33.00															
940	-10.44	-2.11	-10.43	-2.06	-10.30	-1.99	-10.04	-1.92	-9.56	-1.85	-8.66	-1.83	-7.64	-1.85	-6.81	-1.88
	-6.44	-1.90	-5.60	-1.94	-4.72	-1.99	-3.65	-2.05	-3.01	-2.09	-2.58	-2.11	-2.51	-2.10	-2.47	-2.09
	-2.42	-2.06	-2.40	.27	-2.40	0	-2.40	-2.04	-2.37	.57	-2.20	1.16	-1.84	1.76	-1.38	2.20
	-.83	2.50	-.36	2.63	-.01	2.67	0	2.67	.54	2.61	1.27	2.32	1.94	1.75	2.32	1.06
	2.45	.55	2.47	.27	2.48	-2.03	2.48	0	2.56	-2.07	2.68	-2.09	2.89	-2.09	3.54	-2.06
	4.39	-2.01	5.38	-1.97	5.81	-1.95	6.00	-1.94	6.61	-1.92	7.40	-1.89	8.35	-1.86	9.14	-1.85
	9.87	-1.89	10.25	-1.95	10.44	-2.00	10.56	-2.05	10.62	-2.08	10.65	-2.12				
42	33.65															
994	-10.94	-2.10	-10.92	-2.07	-10.87	-2.03	-10.78	-2.00	-10.61	-1.94	-10.37	-1.90	-10.01	-1.87	-9.38	-1.85
	-8.59	-1.88	-7.59	-1.92	-6.64	-1.96	-6.00	-2.01	-5.54	-2.03	-4.95	-2.07	-4.15	-2.12	-3.37	-2.17
	-2.65	-2.21	-2.50	-2.21	-2.42	-2.23	-2.40	.16	-2.40	0	-2.40	-2.23	-2.38	.46	-2.32	.80
	-2.08	1.41	-1.58	2.02	-1.05	2.38	-.45	2.61	-.01	2.66	0	2.66	.77	2.55	1.44	2.22
	2.16	1.42	2.42	.76	2.49	-2.10	2.49	0	2.49	.24	2.57	-2.17	2.71	-2.18	2.92	-2.18
	3.80	-2.14	4.92	-2.07	5.77	-2.03	6.00	-2.02	7.10	-1.97	8.01	-1.93	9.08	-1.90	10.04	-1.90
	10.62	-1.95	10.91	-2.02	11.04	-2.07	11.10	-2.12								
43	33.87															
6	-11.08	-2.09	-11.03	-2.04	-10.94	-2.00	-10.85	-1.97	-10.66	-1.93	-10.38	-1.89	-9.73	-1.86	-8.73	-1.89
	-7.55	-1.95	-5.59	-2.06	-3.99	-2.16	-2.76	-2.25	-1.70	-2.31	1.70	-2.29	2.32	-2.26	3.36	-2.21
	5.48	-2.09	7.05	-2.01	8.93	-1.92	10.42	-1.92	10.98	-1.99	11.15	-2.03	11.25	-2.07	11.26	-2.09
44	34.70															
1070	-11.10	-1.93	-11.03	-1.92	-10.85	-1.92	-10.13	-1.92	-9.04	-1.97	-7.89	-2.04	-5.48	-2.19	-3.78	-2.32
	-2.29	-2.42	-1.43	-2.47	1.60	-2.44	2.20	-2.42	2.86	-2.38	4.11	-2.31	5.26	-2.23	6.41	-2.16
	7.36	-2.11	8.48	-2.05	9.66	-1.99	10.47	-1.95	10.94	-1.95	11.16	-1.96	11.24	-1.97		
45	35.55															
1093	-11.03	-2.00	-10.94	-2.00	-10.62	-2.02	-9.52	-2.10	-7.80	-2.20	-5.79	-2.34	-4.26	-2.45	-2.51	-2.57
	-1.47	-2.63	1.80	-2.60	2.24	-2.58	3.33	-2.52	4.64	-2.44	6.07	-2.35	7.54	-2.26	8.73	-2.18
	9.66	-2.13	10.47	-2.09	10.98	-2.06	11.20	-2.05								

AEDC(ARO,INC.) VOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 8
VT1162

MODEL GEOMETRY - GDC SIDE SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
1	0															
1	0	0														
2	.20															
2	0	-.44	.12	-.39	.21	-.34	.33	-.22	.39	0	.39	.01	.35	.19	.27	.30
	.12	.41	0	.44												
3	.40															
12	0	-.61	.12	-.55	.24	-.53	.42	-.35	.51	-.20	.54	0	.54	.01	.51	.20
	.42	.37	.23	.53	0	.60										
4	.60															
23	0	-.72	.29	-.64	.48	-.48	.63	-.26	.67	0	.67	.01	.63	.26	.55	.42
	.41	.55	.26	.64	0	.73										
5	.80															
34	0	-.86	.35	-.75	.62	-.53	.75	-.31	.80	0	.81	.01	.76	.30	.68	.46
	.54	.62	.26	.76	0	.86										
6	1.00															
45	0	-.99	.46	-.83	.72	-.60	.87	-.32	.92	0	.93	.01	.88	.32	.78	.52
	.63	.69	.40	.86	.20	.89	0	1.00								
7	1.50															
57	0	-1.24	.52	-1.10	.83	-.88	1.08	-.53	1.19	0	1.20	.01	1.12	.43	.96	.73
	.74	.96	.43	1.11	.13	1.19	0	1.24								
8	2.00															
69	0	-1.47	.62	-1.33	1.03	-1.02	1.31	-.60	1.43	0	1.43	.01	1.39	.33	1.29	.63
	1.11	.91	.78	1.22	.37	1.39	0	1.48								
9	2.50															
81	0	-1.70	.81	-1.46	1.34	-.96	1.54	-.57	1.63	0	1.63	.01	1.58	.40	1.48	.70
	1.21	1.12	.74	1.50	.37	1.62	0	1.71								
10	3.00															
93	0	-1.87	.45	-1.81	.87	-1.64	1.41	-1.18	1.69	-.66	1.80	0	1.81	.01	1.73	.55
	1.47	1.08	1.19	1.40	.70	1.67	.21	1.80	0	1.88						
11	4.00															
106	0	-2.12	.52	-2.06	1.11	-1.84	1.69	-1.32	2.04	-.60	2.12	0	2.12	.01	2.03	.63
	1.77	1.20	1.34	1.67	.89	1.95	.34	2.12	0	2.16						
12	5.00															
119	0	-2.35	.55	-2.30	1.26	-1.99	1.86	-1.46	2.20	-.84	2.33	0	2.33	.01	2.25	.61
	1.93	1.31	1.45	1.83	.72	2.24	.18	2.36	0	2.37						
13	6.00															
132	0	-2.48	.51	-2.43	1.08	-2.22	1.90	-1.58	2.34	-.73	2.43	0	2.43	.01	2.38	.45
	2.18	1.10	1.59	1.87	.95	2.25	.53	2.39	.20	2.45	0	2.47				

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - GDC SIDE SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
14	7.00															
146	0	-2.49	.46	-2.43	1.16	-2.19	1.91	-1.57	2.32	-.79	2.43	0	2.43	.01	2.37	.47
	2.20	.99	2.11	1.21	2.08	1.30	1.98	1.45	1.70	1.73	1.12	2.17	.53	2.41	.12	2.49
	0	2.50														
15	8.00															
163	.21	-2.49	0	-2.49	.81	-2.35	1.67	-1.84	2.19	-1.11	2.38	-.53	2.43	0	2.43	.01
	2.34	.63	2.21	1.01	2.19	1.14	2.17	1.27	2.10	1.37	2.03	1.41	1.92	1.52	1.31	2.07
	.68	2.39	.27	2.49	0	2.52										
16	9.00															
182	0	-2.51	.48	-2.46	1.41	-2.05	2.02	-1.42	2.29	-.85	2.34	-.74	2.38	-.60	2.39	-.50
	2.41	-.33	2.43	0	2.43	.01	2.39	.40	2.32	.74	2.30	.89	2.28	1.11	2.26	1.27
	2.18	1.37	2.08	1.43	1.94	1.55	1.59	1.85	1.13	2.20	.83	2.36	.48	2.49	.22	2.54
	0	2.56														
17	10.00															
207	0	-2.54	.32	-2.52	.94	-2.34	1.70	-1.84	2.14	-1.24	2.28	-.96	2.34	-.92	2.47	-.87
	2.61	-.80	2.63	-.76	2.63	-.64	2.53	-.50	2.44	-.48	2.44	-.26	2.44	0	2.44	.01
	2.43	.40	2.40	.76	2.37	1.03	2.35	1.19	2.31	1.25	2.24	1.33	2.07	1.44	1.78	1.68
	1.48	1.92	.95	2.30	.52	2.47	.13	2.55	0	2.57						
18	11.00															
236	0	-2.56	.59	-2.47	1.16	-2.25	1.83	-1.92	2.04	-1.43	2.21	-1.11	2.26	-1.04	2.30	-1.01
	2.62	-.95	3.09	-.87	2.97	-.87	3.19	-.79	3.19	-.68	3.14	-.58	2.96	-.51	2.62	-.43
	2.46	-.40	2.43	-.36	2.43	-.26	2.43	0	2.43	.01	2.43	.44	2.43	.84	2.41	1.12
	2.38	1.21	2.31	1.29	2.20	1.37	2.01	1.51	1.67	1.77	1.37	2.01	1.12	2.21	.84	2.37
	.50	2.50	.23	2.56	0	2.59										
19	12.00															
271	0	-2.56	.44	-2.52	.96	-2.35	1.41	-2.09	1.78	-1.77	2.03	-1.44	2.18	-1.17	2.25	-1.05
	2.28	-1.03	2.96	-1.01	2.80	-.96	3.32	-.88	3.71	-.80	3.78	-.75	3.78	-.66	3.75	-.61
	3.53	-.55	3.11	-.48	2.79	-.43	2.46	-.41	2.43	-.41	2.42	-.25	2.42	0	2.42	.01
	2.39	.36	2.33	.83	2.28	1.17	2.27	1.22	2.22	1.28	2.07	1.41	1.79	1.63	1.64	1.79
	1.26	2.14	.89	2.37	.54	2.52	.22	2.59	0	2.62						
20	13.00															
308	0	-2.57	.40	-2.53	.78	-2.42	1.35	-2.14	1.84	-1.70	2.17	-1.22	2.28	-.96	2.32	-.91
	2.56	-.88	2.36	-.88	3.38	-.87	3.69	-.86	3.86	-.83	3.98	-.81	4.16	-.78	4.30	-.78
	4.34	-.73	4.34	-.66	4.28	-.64	4.14	-.61	3.97	-.58	3.74	-.56	2.40	-.54	2.40	-.50
	2.41	-.33	2.42	-.15	2.42	0	2.42	.01	2.36	.46	2.20	.90	2.17	1.11	2.11	1.25
	1.97	1.40	1.78	1.63	1.46	2.00	1.07	2.30	.84	2.44	.57	2.54	.32	2.61	0	2.66
21	13.65															
348	0	-2.62	.38	-2.54	.97	-2.35	1.63	-1.91	2.02	-1.48	2.25	-1.02	2.30	-.89	2.33	-.85
	2.37	-.80	3.00	-.79	3.74	-.78	4.30	-.77	4.62	-.75	4.70	-.74	4.62	-.68	4.48	-.67
	2.38	-.65	2.37	-.62	2.40	-.41	2.41	-.26	2.42	0	2.42	.01	2.35	.49	2.19	.90
	2.09	1.15	2.02	1.29	1.91	1.45	1.61	1.87	1.12	2.33	.71	2.53	.44	2.62	.21	2.66
	0	2.69														

AEDC/ARO, INC. ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - GDC SIDE SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
22	14.08															
381	0	-2.58	.62	-2.49	1.33	-2.17	1.85	-1.72	2.16	-1.23	2.28	-.96	2.32	-.82	2.35	-.79
	2.38	-.78	4.67	-.77	4.69	-.75	2.46	-.75	2.36	-.73	2.37	-.61	2.41	-.36	2.42	0
	2.42	.01	2.33	.54	2.14	.99	2.04	1.22	1.87	1.54	1.29	2.21	.63	2.58	.37	2.65
	0	2.69														
23	15.00															
406	0	-2.60	.36	-2.57	1.26	-2.23	2.01	-1.51	2.35	-.66	2.41	0	2.41	.01	2.29	.64
	2.04	1.18	1.81	1.66	1.58	1.99	1.19	2.36	.67	2.61	.35	2.69	.12	2.71	0	2.72
24	16.00															
422	0	-2.60	.39	-2.57	1.13	-2.30	1.80	-1.77	2.23	-1.07	2.39	-.40	2.40	0	2.41	.01
	2.32	.52	2.09	1.08	1.90	1.47	1.74	1.80	1.60	2.04	1.36	2.32	1.09	2.50	.66	2.66
	.13	2.75	0	2.75												
25	17.00															
440	0	-2.61	.41	-2.58	1.05	-2.36	1.66	-1.95	2.12	-1.33	2.35	-.69	2.41	0	2.41	.01
	2.32	.54	2.09	1.09	1.87	1.58	1.74	1.92	1.58	2.24	1.32	2.47	.94	2.64	.41	2.75
	.03	2.77	0	2.78												
26	18.00															
458	0	-2.62	.56	-2.54	1.34	-2.19	2.02	-1.50	2.35	-.67	2.41	0	2.40	.01	2.33	.49
	2.11	1.05	1.97	1.41	1.84	1.78	1.79	2.14	1.73	2.32	1.52	2.52	.74	2.76	.23	2.81
	0	2.82														
27	19.00															
475	0	-2.63	.14	-2.62	.72	-2.52	1.54	-2.06	2.14	-1.31	2.37	-.64	2.40	0	2.40	.01
	2.35	.40	2.13	1.03	2.00	1.47	1.94	1.84	1.96	2.10	1.96	2.29	1.89	2.46	1.63	2.58
	1.22	2.70	.96	2.75	.52	2.81	.25	2.83	0	2.84						
28	20.00															
496	0	-2.64	.31	-2.61	.93	-2.42	1.62	-1.99	2.17	-1.25	2.37	-.56	2.40	0	2.40	.01
	2.31	.53	2.21	.85	2.12	1.24	2.06	1.53	2.06	1.76	2.12	1.92	2.19	2.14	2.19	2.30
	2.16	2.39	2.05	2.52	1.79	2.63	1.44	2.74	1.11	2.79	.89	2.81	.51	2.84	.22	2.87
	0	2.87														
29	21.00															
521	0	-2.65	.32	-2.62	.98	-2.42	1.62	-2.01	2.12	-1.35	2.37	-.64	2.40	0	2.40	.01
	2.35	.36	2.23	.76	2.21	.90	2.18	1.25	2.17	1.56	2.19	1.65	2.27	1.76	2.42	1.96
	2.47	2.09	2.48	2.23	2.45	2.39	2.35	2.52	2.07	2.64	1.70	2.75	1.09	2.85	.70	2.88
	.46	2.89	0	2.90												
30	22.00															
547	0	-2.63	.88	-2.45	1.61	-1.99	2.13	-1.33	2.37	-.60	2.40	0	2.40	.01	2.32	.48
	2.25	.77	2.23	1.15	2.22	1.41	2.24	1.50	2.29	1.58	2.51	1.74	2.70	1.86	2.80	2.00
	2.84	2.22	2.84	2.30	2.75	2.45	2.49	2.60	1.81	2.80	1.16	2.88	.65	2.91	.15	2.93
	0	2.94														

AEDC(ARO,INC.) OLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - GDC SIDE SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
31	23.00															
572	0	-2.67	.25	-2.65	.74	-2.55	1.55	-2.07	2.09	-1.41	2.38	-.53	2.40	0	2.39	.01
	2.34	.35	2.26	.65	2.24	1.01	2.24	1.26	2.26	1.38	2.29	1.47	2.39	1.57	2.66	1.66
	2.99	1.79	3.19	1.97	3.26	2.11	3.26	2.24	3.19	2.37	2.99	2.50	2.48	2.70	1.68	2.84
	1.16	2.89	.66	2.93	.36	2.93	0	2.94								
32	24.00															
0	0	-2.67	.63	-2.57	1.52	-2.09	2.10	-1.39	2.37	-.60	2.40	0	2.40	.01	2.35	.36
	2.27	.66	2.26	1.06	2.26	1.28	2.30	1.42	2.40	1.54	2.59	1.60	3.02	1.70	3.51	1.84
	3.70	1.96	3.78	2.15	3.77	2.21	3.69	2.34	3.46	2.45	3.03	2.62	2.59	2.75	1.73	2.88
	1.29	2.92	.49	2.95	0	2.97										
33	25.00															
627	0	-2.67	.31	-2.65	.77	-2.52	1.43	-2.17	2.02	-1.54	2.36	-.67	2.39	0	2.39	.01
	2.30	.46	2.27	.65	2.27	1.01	2.29	1.25	2.37	1.43	2.58	1.54	3.11	1.61	3.87	1.71
	4.24	1.83	4.41	1.96	4.46	2.11	4.44	2.19	4.40	2.29	4.22	2.37	3.51	2.60	2.66	2.80
	1.64	2.94	1.10	2.97	.62	2.98	.29	2.99	0	2.99						
34	26.00															
656	0	-2.69	.27	-2.66	.73	-2.56	1.49	-2.13	2.05	-1.49	2.37	-.58	2.39	0	2.39	.01
	2.33	.40	2.27	.62	2.27	.84	2.28	1.16	2.30	1.32	2.41	1.49	2.52	1.55	3.13	1.58
	3.84	1.64	4.57	1.73	4.96	1.83	5.14	1.96	5.19	2.10	5.17	2.20	5.05	2.30	4.85	2.38
	4.35	2.52	3.73	2.66	3.11	2.77	2.29	2.90	1.56	2.98	1.01	3.01	.37	3.03	0	3.03
35	27.00															
688	0	-2.69	.43	-2.64	1.28	-2.29	2.01	-1.56	2.37	-.56	2.39	0	2.39	.01	2.33	.40
	2.27	.65	2.27	.98	2.28	1.24	2.34	1.43	2.49	1.54	3.43	1.58	4.57	1.66	5.47	1.77
	5.76	1.86	5.91	1.97	5.96	2.09	5.93	2.20	5.81	2.29	5.52	2.38	4.81	2.54	3.79	2.74
	2.98	2.86	2.10	2.96	1.29	3.03	.85	3.06	.48	3.06	0	3.06				
36	28.00															
718	0	-2.66	1.04	-2.41	1.72	-1.92	2.15	-1.31	2.37	-.59	2.39	0	2.39	.01	2.35	.27
	2.27	.60	2.27	.89	2.27	1.21	2.30	1.39	2.39	1.53	2.51	1.57	3.68	1.58	4.78	1.63
	5.87	1.72	6.29	1.78	6.55	1.88	6.68	2.00	6.71	2.09	6.71	2.17	6.62	2.24	6.31	2.38
	5.70	2.47	4.83	2.62	4.04	2.75	3.08	2.88	2.56	2.94	1.88	3.01	1.18	3.06	.70	3.08
	.38	3.08	0	3.08												
37	29.00															
752	0	-2.69	.46	-2.63	1.37	-2.25	2.09	-1.43	2.36	-.67	2.39	0	2.39	.01	2.31	.42
	2.26	.73	2.27	1.07	2.28	1.34	2.34	1.51	2.52	1.62	2.88	1.63	5.68	1.66	6.63	1.73
	7.02	1.79	7.30	1.90	7.40	1.99	7.44	2.09	7.42	2.17	7.30	2.24	6.99	2.31	6.01	2.49
	4.89	2.66	3.79	2.81	3.03	2.91	1.72	3.03	1.37	3.08	1.09	3.08	.69	3.09	.37	3.09
	0	3.09														
38	30.00															
785	0	-2.66	.92	-2.46	1.59	-2.03	2.05	-1.48	2.38	-.50	2.39	0	2.39	.01	2.34	.32
	2.26	.64	2.26	.92	2.27	1.14	2.28	1.43	2.32	1.55	2.40	1.65	2.52	1.70	6.85	1.71
	7.51	1.75	8.00	1.89	8.15	2.00	8.20	2.11	8.18	2.18	8.09	2.21	7.87	2.26	7.40	2.34
	6.58	2.47	5.38	2.63	4.26	2.78	3.59	2.84	3.09	2.90	2.58	2.95	2.07	3.00	1.57	3.03
	1.09	3.07	.55	3.08	0	3.10										

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - GDC SIDE SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
39	31.00															
820	0	-2.68	.38	-2.65	.93	-2.47	1.61	-2.03	2.11	-1.38	2.37	-.56	2.39	0	2.38	.01
	2.33	.34	2.26	.64	2.26	1.00	2.27	1.36	2.28	1.50	2.33	1.66	2.50	1.79	8.37	1.80
	8.61	1.86	8.82	1.94	8.91	2.03	8.92	2.10	8.91	2.14	8.84	2.17	8.57	2.23	7.88	2.32
	6.98	2.45	5.94	2.58	5.01	2.68	4.36	2.75	4.13	2.78	3.92	2.80	3.57	2.84	3.26	2.86
	2.82	2.90	2.33	2.95	1.76	2.99	1.35	3.02	.93	3.04	.55	3.06	.28	3.07	0	3.10
40	32.00															
60	0	-2.69	.51	-2.61	1.29	-2.27	1.93	-1.65	2.35	-.67	2.39	0	2.38	.01	2.34	.28
	2.26	.60	2.26	.89	2.26	1.20	2.27	1.47	2.28	1.65	2.31	1.74	2.32	1.78	8.71	1.79
	9.15	1.83	9.52	1.94	9.62	2.01	9.65	2.10	9.61	2.15	9.48	2.16	8.91	2.22	7.99	2.34
	6.90	2.47	5.81	2.57	4.75	2.67	3.75	2.75	3.23	2.81	2.69	2.85	1.76	2.93	1.06	2.97
	.83	3.01														
41	33.00															
893	0	-2.69	.31	-2.65	.90	-2.47	1.56	-2.05	2.15	-1.25	2.36	-.53	2.38	0	2.38	.01
	2.36	.21	2.28	.53	2.26	.67	2.26	.93	2.26	1.23	2.26	1.54	2.27	1.70	2.29	1.81
	9.66	1.82	9.97	1.86	10.19	1.92	10.33	1.98	10.39	2.08	10.35	2.14	10.15	2.15	9.24	2.20
	8.15	2.33	7.33	2.41	6.76	2.47	6.42	2.50	5.36	2.58	4.46	2.65	3.11	2.75	1.96	2.85
	1.69	2.87														
42	33.62															
926	0	-2.68	.38	-2.64	1.21	-2.31	1.98	-1.56	2.33	-.70	2.37	0	2.37	.01	2.35	.24
	2.26	.60	2.26	1.06	2.26	1.42	2.26	1.62	2.27	1.77	2.27	1.84	10.31	1.85	10.61	1.90
	10.73	1.94	10.81	1.99	10.86	2.05	10.83	2.11	10.53	2.11	9.25	2.19	7.48	2.35	5.83	2.47
	4.59	2.57	2.94	2.69	2.18	2.76	1.76	2.79								
43	33.90															
954	9.69	1.84	10.57	1.85	10.93	1.90	11.04	1.94	11.11	2.01	11.12	2.08	10.96	2.08	9.53	2.16
	7.67	2.33	5.78	2.47	4.21	2.56	3.48	2.63	2.53	2.70	1.83	2.75				
44	34.70															
968	11.13	1.90	11.15	1.96	11.14	2.07	10.44	2.08	9.36	2.14	7.94	2.23	6.16	2.35	4.66	2.43
	3.00	2.57	1.83	2.64												
45	35.60															
978	11.14	1.95	11.14	1.97	10.54	1.99	9.24	2.07	7.30	2.19	4.05	2.40	2.55	2.49	1.84	2.53

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - NARROW BOTTOM SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
1	0																	
1	0	0	0	0														
2	.25																	
3	-.24	0	-.16	-.17	0	-.24	.17	-.16	.21	0								
3	.50																	
8	-.34	0	-.26	-.23	0	-.34	.18	-.28	.31	0								
4	.75																	
13	-.42	0	-.34	-.24	-.14	-.39	.10	-.42	.30	-.26	.38	0						
5	1.00																	
19	-.49	0	-.33	-.34	-.10	-.48	.26	-.38	.43	-.17	.45	0						
6	1.25																	
25	-.56	0	-.47	-.26	-.27	-.46	-.01	-.54	.21	-.48	.42	-.28	.52	0				
7	1.50																	
32	-.61	0	-.53	-.26	-.32	-.48	-.02	-.58	.23	-.51	.49	-.27	.58	0				
8	1.75																	
39	-.65	0	-.55	-.29	-.32	-.51	0	-.60	.26	-.53	.51	-.32	.59	-.16	.63	0		
9	2.25																	
47	-.74	0	-.67	-.22	-.46	-.47	-.24	-.60	0	-.64	.36	-.54	.60	-.31	.69	-.12		
	.74	0																
0	2.50																	
56	-.75	0	-.64	-.31	-.42	-.52	0	-.65	.38	-.54	.63	-.31	.76	0				
11	2.75																	
63	-.79	0	-.66	-.32	-.41	-.54	0	-.65	.38	-.56	.72	-.25	.81	-.01				
12	3.00																	
70	-.85	.18	-.80	-.15	-.58	-.45	-.27	-.63	0	-.67	.38	-.59	.64	-.39	.81	-.10		
	.86	.17																
13	3.25																	
79	-.89	.27	-.87	-.05	-.68	-.38	-.45	-.57	0	-.68	.39	-.60	.68	-.38	.84	-.09		
	.90	.23																
14	3.50																	
88	-.92	.14	-.86	-.22	-.64	-.56	-.33	-.76	0	-.82	.36	-.78	.67	-.59	.85	-.34		
	.94	-.12																
15	3.75																	
97	-.97	.30	-.93	-.02	-.75	-.33	-.51	-.53	0	-.66	.38	-.59	.76	-.34	.89	-.09		
	.98	.30																

MODEL GEOMETRY - NARROW BOTTOM SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
16	4.00															
106	-1.02	.30	-.97	0	-.82	-.29	-.54	-.52	-.29	-.62	0	-.66	.37	-.60	.77	-.34
	.95	-.01	1.01	.30												
17	4.25															
116	-1.03	.30	-.95	-.11	-.70	-.43	-.36	-.61	0	-.66	.35	-.62	.73	-.40	.94	-.12
	1.02	.11	1.05	.30												
18	4.50															
126	-1.09	.30	-1.01	-.05	-.79	-.38	-.47	-.58	0	-.66	.37	-.61	.77	-.39	1.00	-.05
	1.08	.30														
19	4.75															
135	-1.13	.35	-1.08	.03	-.92	-.27	-.70	-.47	-.44	-.59	0	-.66	.35	-.62	.78	-.40
	1.01	-.11	1.08	.09	1.12	.35										
20	5.00															
146	-1.15	.35	-1.11	.02	-.92	-.29	-.69	-.49	-.37	-.62	0	-.65	.44	-.61	.88	-.33
	1.09	0	1.16	.35												
21	5.25															
156	-1.19	.45	-1.14	.02	-.94	-.30	-.71	-.49	-.41	-.61	0	-.65	.30	-.64	.78	-.44
	1.06	-.14	1.15	.10	1.20	.45										
22	5.50															
167	-1.23	.41	-1.18	.06	-.97	-.29	-.73	-.50	-.40	-.62	0	-.65	.32	-.64	.70	-.52
	1.03	-.22	1.15	0	1.24	.41										
7	5.75															
8	-1.26	.36	-1.20	.01	-.93	-.36	-.61	-.56	-.21	-.64	.18	-.65	.50	-.61	.95	-.36
	1.15	-.08	1.27	.36												
24	6.00															
188	-1.33	.44	-1.26	.08	-1.05	-.27	-.82	-.47	-.41	-.62	0	-.65	.31	-.64	.78	-.50
	1.08	-.23	1.22	0	1.32	.46										
25	6.25															
199	-1.35	.43	-1.29	.08	-1.06	-.29	-.71	-.54	-.31	-.63	0	-.64	.38	-.63	.87	-.47
	1.22	-.06	1.35	.44												
26	6.50															
209	-1.38	.46	-1.34	.11	-1.14	-.23	-.87	-.47	-.55	-.60	0	-.64	.34	-.64	.80	-.53
	1.15	-.22	1.34	.14	1.39	.43										
27	6.75															
220	-1.44	.45	-1.35	.08	-1.14	-.28	-.85	-.50	-.48	-.62	0	-.64	.39	-.64	.79	-.54
	1.15	-.27	1.32	0	1.42	.45										

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - NARROW BOTTOM SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
28	7.00															
231	-1.47	.46	-1.38	.07	-1.11	-.33	-.71	-.57	-.35	-.63	0	-.64	.38	-.64	.80	-.55
	1.12	-.32	1.34	0	1.45	.44										
29	7.25															
242	-1.51	.50	-1.44	.11	-1.25	-.21	-.97	-.46	-.70	-.58	-.33	-.63	0	-.64	.30	-.64
	.64	-.61	1.07	-.40	1.32	-.11	1.44	.15	1.50	.50						
30	7.50															
255	-1.53	.50	-1.48	.14	-1.27	-.21	-.98	-.46	-.62	-.60	-.27	-.63	0	-.64	.37	-.64
	.78	-.57	1.21	-.29	1.42	.01	1.49	.22	1.53	.51						
31	7.75															
268	-1.55	.50	-1.51	.14	-1.31	-.19	-1.02	-.45	-.62	-.60	-.28	-.63	0	-.63	.32	-.64
	.69	-.60	1.14	-.38	1.46	.02	1.54	.26	1.57	.50						
32	8.00															
281	-1.61	.50	-1.55	.17	-1.37	-.16	-1.12	-.41	-.82	-.56	-.50	-.62	-.24	-.63	0	-.63
	.32	-.63	.65	-.61	1.10	-.44	1.34	-.21	1.49	.01	1.57	.25	1.61	.50		
33	8.25															
296	-1.65	.50	-1.59	.18	-1.43	-.13	-1.18	-.38	-.85	-.56	-.48	-.62	-.23	-.63	0	-.63
	.31	-.63	.72	-.61	1.18	-.40	1.49	-.04	1.60	.22	1.65	.51				
34	8.50															
310	-1.65	.50	-1.61	.17	-1.40	-.20	-1.18	-.40	-.88	-.55	-.54	-.61	-.28	-.62	0	-.63
	.31	-.63	.68	-.61	1.08	-.48	1.46	-.16	1.59	.09	1.65	.29	1.68	.50		
35	8.75															
325	-1.70	.63	-1.67	.25	-1.48	-.14	-1.21	-.40	-.84	-.57	-.42	-.62	-.01	-.62	.33	-.63
	.80	-.60	1.24	-.39	1.58	-.01	1.67	.24	1.72	.61						
36	9.00															
338	-1.74	.60	-1.70	.19	-1.50	-.17	-1.16	-.45	-.82	-.58	-.52	-.61	0	-.62	.34	-.62
	.72	-.61	1.09	-.50	1.50	-.17	1.67	.10	1.73	.36	1.75	.60				
37	9.25															
352	-1.77	.60	-1.75	.26	-1.62	-.06	-1.40	-.30	-1.10	-.49	-.78	-.59	-.45	-.61	0	-.62
	.28	-.62	.67	-.61	1.12	-.50	1.56	-.15	1.68	.06	1.75	.27	1.79	.60		
38	9.50															
367	-1.80	.60	-1.79	.26	-1.65	-.05	-1.36	-.36	-1.06	-.52	-.72	-.60	-.29	-.61	0	-.62
	.32	-.62	.70	-.61	1.11	-.52	1.47	-.28	1.69	0	1.79	.28	1.83	.60		
39	9.75															
382	-1.86	.60	-1.83	.25	-1.70	-.06	-1.48	-.31	-1.23	-.47	-.93	-.57	-.58	-.61	-.22	-.62
	0	-.62	.37	-.62	.72	-.61	1.07	-.54	1.39	-.36	1.66	-.07	1.81	.30	1.85	.60

AEDC(ARO,INC.) TOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - NARROW BOTTOM SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
40	10.00															
398	-1.89	.60	-1.86	.21	-1.66	-.16	-1.30	-.44	-.93	-.57	-.52	-.61	-.25	-.61	0	-.62
	.25	-.62	.63	-.61	1.01	-.57	1.45	-.34	1.76	.01	1.87	.35	1.89	.60		
41	10.25															
413	-1.94	.60	-1.91	.23	-1.75	-.12	-1.47	-.37	-1.15	-.53	-.73	-.60	-.31	-.61	0	-.62
	.37	-.62	.80	-.61	1.27	-.48	1.67	-.19	1.87	.18	1.91	.38	1.93	.60		
42	10.50															
428	-1.98	.60	-1.95	.22	-1.80	-.11	-1.54	-.35	-1.22	-.51	-.89	-.59	-.55	-.60	-.25	-.61
	0	-.61	.41	-.62	.75	-.61	1.11	-.55	1.48	-.38	1.76	-.12	1.91	.16	1.95	.35
	1.96	.60														
43	10.75															
445	-2.02	.60	-2.01	.26	-1.85	-.10	-1.51	-.39	-1.13	-.54	-.76	-.60	-.40	-.61	-.06	-.61
	.29	-.62	.67	-.61	1.11	-.56	1.52	-.38	1.82	-.10	1.95	.14	1.99	.36	2.01	.60
44	11.00															
461	-2.07	.60	-2.05	.23	-1.92	-.07	-1.67	-.31	-1.34	-.49	-.94	-.58	-.51	-.61	-.23	-.61
	0	-.62	.36	-.62	.70	-.61	1.07	-.58	1.44	-.46	1.71	-.28	1.93	0	2.01	.22
	2.05	.60														
45	11.25															
478	-2.11	.50	-2.09	.20	-1.96	-.08	-1.71	-.33	-1.40	-.49	-.96	-.58	-.55	-.60	-.26	-.61
	0	-.62	.36	-.62	.82	-.61	1.29	-.53	1.71	-.32	1.93	-.08	2.04	.15	2.07	.35
	2.09	.50														
46	11.50															
5	-2.12	.30	-2.06	.02	-1.88	-.23	-1.61	-.41	-1.28	-.53	-.93	-.59	-.63	-.60	-.40	-.61
	-.19	-.61	0	-.62	.29	-.62	.73	-.61	1.12	-.58	1.52	-.46	1.89	-.21	2.07	.08
	2.11	.30														
47	12.00															
512	-2.21	.40	-2.19	.09	-2.04	-.16	-1.81	-.36	-1.47	-.50	-1.03	-.58	-.56	-.60	-.28	-.61
	0	-.62	.29	-.62	.69	-.61	1.07	-.60	1.46	-.52	1.86	-.33	2.13	-.03	2.18	.18
	2.20	.40														
48	12.25															
529	-2.25	.30	-2.20	0	-2.02	-.24	-1.75	-.41	-1.42	-.53	-1.09	-.58	-.75	-.60	-.49	-.61
	-.25	-.61	0	-.62	.28	-.62	.65	-.61	1.11	-.60	1.56	-.50	1.92	-.33	2.18	-.01
	2.23	.30														
49	12.50															
546	-2.27	.20	-2.19	-.10	-1.94	-.33	-1.62	-.48	-1.25	-.56	-.80	-.60	-.49	-.60	-.25	-.61
	0	-.61	.28	-.62	.61	-.61	1.00	-.60	1.47	-.54	1.82	-.42	2.12	-.20	2.23	0
	2.27	.20														
50	12.75															
563	-2.32	.20	-2.24	-.11	-1.99	-.35	-1.67	-.48	-1.30	-.56	-.91	-.60	-.64	-.60	-.41	-.61
	0	-.62	.36	-.62	.86	-.61	1.35	-.57	1.78	-.46	2.09	-.28	2.28	.01	2.31	.20

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50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - NARROW BOTTOM SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
51	13.00															
579	-2.37	.20	-2.29	-.12	-2.04	-.35	-1.70	-.49	-1.25	-.57	-.95	-.59	-.60	-.61	-.27	-.61
	-.01	-.62	.32	-.62	.84	-.61	1.29	-.59	1.71	-.50	2.12	-.31	2.32	0	2.34	.20
52	13.25															
595	-2.40	.10	-2.33	-.16	-2.06	-.37	-1.75	-.49	-1.39	-.56	-.99	-.59	-.61	-.61	-.29	-.61
	0	-.62	.36	-.62	.90	-.61	1.41	-.58	1.96	-.43	2.28	-.20	2.37	.10		
53	13.50															
610	-2.45	.10	-2.36	-.20	-2.03	-.42	-1.82	-.53	-1.16	-.59	-.78	-.60	-.42	-.61	-.17	-.62
	.01	-.62	.35	-.62	.81	-.61	1.27	-.60	1.76	-.52	2.10	-.40	2.36	-.18	2.41	.10
54	13.75															
626	-2.47	0	-2.33	-.29	-1.98	-.46	-1.43	-.56	-.94	-.60	-.55	-.61	-.26	-.62	.01	-.62
	.36	-.62	.88	-.61	1.31	-.59	1.80	-.52	2.17	-.41	2.38	-.22	2.44	0		
55	14.00															
641	-2.50	0	-2.40	-.28	-2.09	-.44	-1.44	-.57	-.89	-.60	-.54	-.61	-.25	-.61	0	-.62
	.33	-.62	.83	-.61	1.28	-.60	1.71	-.55	2.10	-.46	2.35	-.34	2.48	0		
56	14.25															
656	-2.55	0	-2.44	-.31	-2.03	-.48	-1.59	-.56	-1.17	-.59	-.74	-.60	-.48	-.61	-.20	-.62
	.01	-.62	.31	-.62	.75	-.62	1.28	-.60	1.75	-.56	2.16	-.47	2.41	-.34	2.52	0
57	14.50															
672	-2.58	0	-2.46	-.34	-2.09	-.49	-1.66	-.56	-1.20	-.59	-.77	-.61	-.46	-.61	-.24	-.62
	0	-.62	.29	-.62	.75	-.62	1.25	-.60	1.74	-.57	2.13	-.50	2.45	-.35	2.56	0
58	14.75															
68	-2.64	0	-2.59	-.27	-2.35	-.44	-2.00	-.52	-1.65	-.56	-1.28	-.59	-1.04	-.60	-.68	-.61
	-.41	-.62	-.07	-.62	.27	-.62	.79	-.62	1.40	-.60	1.89	-.55	2.31	-.46	2.55	-.27
	2.59	0														
59	15.00															
705	-2.69	0	-2.62	-.30	-2.30	-.47	-1.79	-.56	-1.20	-.60	-.67	-.61	-.26	-.62	0	-.63
	.32	-.62	.85	-.62	1.38	-.60	1.86	-.57	2.26	-.50	2.60	-.25	2.63	0		
60	15.50															
720	-2.76	0	-2.43	-.46	-1.82	-.56	-1.13	-.60	-.61	-.61	0	-.63	.61	-.62	1.49	-.60
	2.13	-.55	2.63	-.39	2.77	0										
61	16.00															
731	-2.86	0	-2.54	-.46	-1.72	-.57	-.89	-.61	-.46	-.62	0	-.63	.76	-.63	1.63	-.60
	2.41	-.53	2.81	-.29	2.87	0										
62	16.50															
742	-2.97	0	-2.79	-.38	-2.18	-.55	-1.37	-.60	-.75	-.62	0	-.63	.51	-.63	1.16	-.62
	1.58	-.61	2.04	-.59	2.52	-.53	2.87	-.37	2.98	0						

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

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STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
63	17.00															
755	-3.08	0	-2.86	-.39	-2.21	-.56	-1.46	-.60	-.63	-.62	-.03	-.64	.49	-.63	1.08	-.62
	1.55	-.61	2.01	-.59	2.56	-.55	2.88	-.42	3.09	0						
64	17.50															
768	-3.23	0	-3.01	-.37	-2.48	-.55	-1.77	-.59	-1.02	-.62	-.32	-.64	.11	-.64	.63	-.63
	1.02	-.63	1.52	-.62	2.05	-.59	2.62	-.55	3.03	-.38	3.22	0				
65	18.00															
782	-3.37	0	-3.12	-.36	-2.57	-.55	-1.63	-.60	-.80	-.62	-.30	-.64	.13	-.64	.75	-.63
	1.49	-.62	2.22	-.59	2.73	-.54	3.21	-.34	3.37	-.01						
66	19.00															
795	-3.82	0	-3.59	-.32	-3.02	-.49	-2.42	-.57	-1.77	-.60	-.85	-.62	0	-.64	.68	-.63
	1.37	-.62	1.99	-.60	2.67	-.57	3.37	-.42	3.68	-.25	3.77	0				
67	20.00															
809	-4.32	0	-4.09	-.28	-3.59	-.42	-2.80	-.56	-2.07	-.59	-1.32	-.61	-.64	-.63	0	-.63
	.69	-.63	1.47	-.62	2.30	-.60	3.04	-.56	3.75	-.42	4.17	-.28	4.34	0		
68	21.00															
824	-4.90	.08	-4.76	-.17	-4.42	-.30	-3.83	-.43	-3.22	-.54	-2.30	-.59	-1.64	-.60	-.96	-.62
	-.42	-.63	0	-.63	.61	-.63	1.50	-.62	2.52	-.61	3.24	-.57	3.99	-.44	4.59	-.30
	4.84	-.14	4.91	.08												
69	22.00															
842	-5.47	.08	-5.35	-.14	-4.94	-.26	-4.34	-.37	-3.74	-.47	-3.12	-.56	-2.36	-.58	-1.53	-.60
	-.80	-.61	-.14	-.62	.26	-.63	.90	-.63	1.80	-.61	2.66	-.61	3.45	-.55	4.31	-.42
	5.00	-.30	5.31	-.20	5.49	.08										
70	23.00															
861	-6.03	.10	-5.84	-.13	-5.40	-.23	-4.83	-.32	-4.39	-.39	-3.71	-.48	-3.21	-.54	-2.70	-.57
	-2.01	-.58	-1.33	-.59	-.65	-.60	-.09	-.61	.70	-.61	1.47	-.60	2.18	-.60	2.87	-.59
	3.42	-.55	4.26	-.44	4.98	-.34	5.61	-.24	5.92	-.14	6.07	.10				
71	24.00															
883	-6.65	.12	-6.44	-.08	-5.96	-.17	-5.48	-.24	-4.78	-.33	-4.21	-.40	-3.48	-.48	-2.85	-.53
	-2.18	-.55	-1.39	-.56	-.47	-.57	.11	-.57	.90	-.57	1.68	-.57	2.58	-.56	3.21	-.53
	3.93	-.46	4.81	-.36	5.74	-.25	6.42	-.13	6.64	.12						
72	25.00															
904	-7.22	.14	-6.97	-.05	-6.35	-.13	-5.77	-.19	-5.14	-.25	-4.45	-.32	-3.71	-.39	-2.95	-.46
	-2.25	-.49	-1.58	-.50	-.86	-.50	-.12	-.51	.43	-.52	1.04	-.51	1.92	-.51	2.78	-.50
	3.83	-.41	4.98	-.31	5.57	-.26	6.28	-.19	6.93	-.11	7.21	.13				
73	26.00															
926	-7.70	.27	-7.48	.06	-6.95	-.05	-6.06	-.11	-5.34	-.17	-4.47	-.24	-3.44	-.34	-2.87	-.39
	-2.13	-.42	-1.05	-.43	-.21	-.44	.49	-.44	1.20	-.43	2.14	-.43	2.84	-.42	3.96	-.32
	4.99	-.24	6.06	-.16	6.81	-.11	7.20	-.07	7.57	.07	7.68	.27				

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STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
74	27.00															
948	-8.08	.40	-7.87	.21	-7.43	.10	-7.07	.03	-6.52	.01	-5.65	-.03	-5.00	-.08	-4.28	-.15
	-3.51	-.23	-2.79	-.30	-1.99	-.32	-.86	-.33	-.16	-.34	.60	-.34	1.35	-.34	2.16	-.34
	3.24	-.29	4.26	-.19	5.02	-.13	6.04	-.06	6.79	-.03	7.21	0	7.62	.09	7.94	.19
	8.07	.40														
75	28.00															
973	-8.30	.54	-8.16	.37	-7.66	.27	-7.19	.20	-6.52	.16	-5.70	.09	-4.46	-.02	-3.87	-.09
	-3.16	-.17	-2.45	-.20	-1.35	-.22	-.51	-.23	.09	-.23	.72	-.23	1.51	-.23	2.58	-.22
	3.54	-.15	4.77	-.02	5.98	.07	7.01	.13	7.66	.21	8.20	.33	8.31	.54		
76	29.00															
996	-8.35	.59	-8.04	.51	-7.30	.43	-6.56	.34	-5.25	.18	-4.28	.07	-3.06	-.07	-1.77	-.10
	-.67	-.12	.23	-.12	.96	-.11	1.78	-.11	2.53	-.10	3.32	-.06	4.18	.03	5.25	.15
	6.38	.27	7.30	.37	7.89	.44	8.38	.57								

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VT1162

MODEL GEOMETRY - NARROW SIDE SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
1	0															
1	0	0														
2	.10															
2	0	-.15	.13	-.12	.17	0	.09	.14	0	.14						
3	.20															
7	0	-.22	.10	-.20	.20	-.14	.25	0	.24	0	.20	.09	.10	.16	.03	.18
	0	.18														
4	.30															
16	.14	-.32	0	-.32	.13	-.28	0	-.28	.27	-.19	.24	-.18	.33	0	.29	0
	.32	0	.22	.16	.25	.16	.11	.22	0	.23	.15	.25	0	.28		
5	.50															
31	.09	-.36	0	-.36	.19	-.31	.31	-.18	.35	0	.36	0	.26	.23	.15	.30
	.04	.32	0	.32												
6	1.00															
41	0	-.49	.16	-.47	.29	-.41	.43	-.24	.51	0	.46	.22	.29	.46	.16	.49
	0	.52														
7	1.50															
50	0	-.58	.11	-.56	.24	-.52	.40	-.43	.54	-.25	.62	0	.57	.31	.43	.53
	.30	.60	.15	.66	0	.68										
8	2.00															
61	0	-.63	.11	-.62	.26	-.58	.44	-.48	.63	-.27	.72	0	.72	.24	.61	.50
	.48	.66	.35	.74	.15	.80	0	.82								
9	2.50															
73	0	-.65	.14	-.64	.35	-.58	.54	-.46	.71	-.26	.80	0	.82	.20	.76	.48
	.62	.70	.48	.81	.34	.88	.19	.92	0	.95						
10	3.00															
86	0	-.69	.19	-.65	.49	-.54	.76	-.29	.88	0	.90	.25	.79	.63	.59	.86
	.40	.98	.20	1.04	0	1.07										
11	3.50															
97	0	-.67	.21	-.65	.51	-.56	.81	-.29	.94	0	.97	.33	.83	.74	.51	1.06
	.28	1.15	.10	1.18	0	1.18										
12	4.00															
108	0	-.67	.24	-.65	.57	-.55	.87	-.28	1.00	0	1.04	.32	.93	.73	.67	1.07
	.40	1.23	.22	1.28	0	1.30										
13	5.00															
119	0	-.67	.41	-.63	.74	-.49	.97	-.28	1.13	0	1.18	.26	1.18	.52	1.05	.86
	.80	1.20	.59	1.40	.34	1.51	.15	1.55	0	1.56						

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STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
14	5.90															
132	0	-.67	.38	-.65	.69	-.58	1.02	-.35	1.25	0	1.31	.22	1.32	.39	1.27	.72
	1.06	1.12	.80	1.46	.52	1.66	.31	1.74	.06	1.78	0	1.78				
15	6.40															
146	0	-.67	.33	-.66	.57	-.63	.82	-.54	1.01	-.41	1.18	-.22	1.31	0	1.39	.31
	1.40	.50	1.32	.82	1.15	1.13	.83	1.53	.62	1.72	.60	1.75	.59	1.79	.57	1.90
	.55	2.01	.51	2.09	.43	2.17	.31	2.22	.19	2.23	0	2.24				
16	6.70															
168	.29	-.66	0	-.66	.56	-.64	.77	-.58	1.02	-.42	1.21	-.23	1.35	0	1.41	.23
	1.44	.48	1.37	.84	1.17	1.19	.95	1.47	.75	1.69	.69	1.76	.68	1.83	.67	2.00
	.65	2.14	.57	2.32	.46	2.43	.33	2.48	.23	2.49	.15	2.50	.07	2.50	0	2.50
17	7.00															
192	0	-.67	.34	-.66	.16	-.66	.57	-.64	.75	-.60	.93	-.51	1.14	-.36	1.28	-.19
	1.39	0	1.47	.30	1.48	.54	1.40	.88	1.21	1.19	1.02	1.45	.83	1.70	.76	1.77
	.75	1.81	.74	1.93	.75	2.05	.71	2.26	.61	2.42	.47	2.54	.36	2.59	.23	2.61
	.13	2.61	0	2.61												
18	7.50															
218	.36	-.66	.18	-.66	0	-.66	.55	-.65	.75	-.61	.93	-.54	1.18	-.37	1.35	-.18
	1.45	0	1.46	0	1.54	.33	1.55	.60	1.47	.91	1.29	1.23	1.04	1.57	.85	1.80
	.81	1.87	.80	1.92	.80	2.04	.79	2.20	.75	2.33	.66	2.48	.56	2.57	.48	2.62
	.40	2.65	.30	2.68	.13	2.69	0	2.69								
19	8.00															
246	.42	-.66	.20	-.66	0	-.66	.62	-.65	.88	-.58	1.19	-.41	1.38	-.22	1.52	0
	1.58	.16	1.62	.38	1.63	.59	1.57	.86	1.45	1.14	1.29	1.36	1.09	1.63	.92	1.84
	.81	1.98	.80	2.00	.79	2.11	.78	2.25	.71	2.44	.55	2.62	.43	2.68	.28	2.71
	.14	2.71	.08	2.72	0	2.72										
20	8.50															
273	.65	-.65	.30	-.65	.1	-.65	0	-.65	.88	-.60	1.19	-.45	1.43	-.23	1.59	0
	1.68	.30	1.71	.55	1.63	.96	1.39	1.35	1.07	1.76	.88	1.98	.80	2.07	.78	2.13
	.76	2.26	.72	2.39	.63	2.54	.47	2.66	.32	2.70	.20	2.71	.07	2.71	0	2.71
21	9.00															
297	.51	-.65	.23	-.65	0	-.65	.72	-.64	.95	-.59	1.23	-.46	1.48	-.24	1.65	0
	1.66	0	1.75	.34	1.78	.59	1.71	.95	1.53	1.29	1.29	1.59	1.00	1.93	.86	2.08
	.76	2.19	.71	2.33	.65	2.47	.55	2.58	.43	2.65	.33	2.68	.20	2.70	.06	2.70
	0	2.70														
22	10.00															
322	0	-.65	.60	-.64	.88	-.63	1.04	-.60	1.25	-.52	1.47	-.39	1.66	-.22	1.81	0
	1.90	.32	1.93	.64	1.88	.97	1.65	1.40	1.24	1.85	.84	2.26	.75	2.33	.61	2.43
	.52	2.50	.40	2.60	.24	2.66	.11	2.67	0	2.67						

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STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
23	10.70															
343	0	-.65	.54	-.64	.24	-.64	.83	-.63	1.05	-.61	1.23	-.56	1.45	-.47	1.66	-.32
	1.82	-.15	1.92	0	1.93	0	2.00	.28	2.02	.52	2.02	.75	1.93	1.14	1.69	1.52
	1.43	1.77	1.21	1.99	1.02	2.19	.84	2.35	.71	2.44	.59	2.51	.42	2.58	.30	2.62
	.11	2.65	.04	2.65	0	2.66										
24	11.00															
0	.18	-.65	0	-.65	.78	-.64	.46	-.64	1.00	-.62	1.28	-.56	1.54	-.44	1.79	-.26
	1.98	0	2.04	.18	2.06	.38	2.07	.57	2.06	.88	1.94	1.24	1.65	1.63	1.38	1.88
	1.10	2.15	.89	2.34	.77	2.44	.57	2.54	.42	2.60	.19	2.64	0	2.65		
25	12.00															
393	.56	-.65	.31	-.65	0	-.65	.90	-.64	1.17	-.62	1.41	-.57	1.67	-.48	1.88	-.37
	2.07	-.18	2.18	0	2.23	.32	2.22	.80	2.14	1.19	1.81	1.67	1.31	2.05	1.12	2.20
	.93	2.33	.70	2.48	.45	2.58	.19	2.64	0	2.65						
26	13.00															
414	.39	-.65	0	-.65	.72	-.64	1.09	-.63	1.44	-.60	1.82	-.51	2.11	-.36	2.27	-.21
	2.35	0	2.37	.41	2.37	.80	2.25	1.34	1.87	1.82	1.60	2.00	1.37	2.13	1.15	2.26
	.85	2.42	.63	2.52	.36	2.62	.08	2.65	0	2.65						
27	14.00															
435	.69	-.65	.36	-.65	0	-.65	1.04	-.64	1.41	-.62	1.84	-.56	2.12	-.49	2.33	-.40
	2.46	-.25	2.50	0	2.52	.28	2.52	.60	2.51	1.00	2.39	1.42	2.11	1.81	1.69	2.09
	1.41	2.22	1.17	2.32	.94	2.42	.66	2.53	.33	2.63	.11	2.65	0	2.66		
28	15.00															
458	.71	-.65	.35	-.65	0	-.65	1.18	-.64	1.66	-.62	2.04	-.57	2.38	-.50	2.56	-.39
	2.65	-.26	2.67	-.09	2.66	0	2.64	.10	2.65	.30	2.66	.56	2.66	.86	2.59	1.30
	2.40	1.68	2.18	1.92	1.77	2.18	1.45	2.30	1.12	2.40	.83	2.49	.56	2.57	.33	2.63
	.18	2.65	0	2.66												
29	16.00															
484	.47	-.67	0	-.67	1.04	-.66	1.68	-.64	2.18	-.61	2.43	-.57	2.63	-.51	2.76	-.43
	2.85	-.30	2.89	-.15	2.89	0	2.88	0	2.84	.12	2.77	.22	2.77	.29	2.79	.57
	2.79	.85	2.75	1.21	2.59	1.61	2.31	1.96	1.82	2.25	1.53	2.35	1.27	2.42	1.01	2.49
	.75	2.56	.38	2.64	.21	2.66	0	2.67								
30	17.00															
512	0	-.68	.79	-.67	.46	-.67	1.31	-.66	1.91	-.64	2.37	-.62	2.54	-.60	2.79	-.52
	2.95	-.43	3.07	-.30	3.12	-.09	3.11	0	3.05	.10	2.98	.18	2.86	.28	2.85	.34
	2.86	.54	2.86	.87	2.83	1.17	2.72	1.48	2.60	1.71	2.30	2.03	1.94	2.24	1.53	2.37
	1.18	2.46	.89	2.53	.63	2.59	.37	2.64	.09	2.67	0	2.67				
31	18.00															
542	.48	-.68	0	-.68	1.23	-.67	1.89	-.64	2.44	-.63	2.61	-.61	2.87	-.55	3.04	-.49
	3.20	-.41	3.34	-.29	3.39	-.15	3.39	0	3.34	.10	3.21	.19	3.06	.26	2.93	.32
	2.92	.35	2.92	.45	2.92	.75	2.89	1.15	2.75	1.55	2.50	1.90	2.06	2.21	1.57	2.37
	1.21	2.46	.80	2.56	.47	2.62	.15	2.67	-.02	2.67						

AEDC(ARO,INC.) OLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - NARROW SIDE SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
32	19.00															
571	.80	-.68	.39	-.68	0	-.68	1.28	-.67	1.72	-.66	2.19	-.64	2.49	-.63	2.71	-.62
	2.98	-.57	3.26	-.50	3.54	-.42	3.66	-.35	3.76	-.23	3.80	0	3.79	0	3.75	.08
	3.64	.18	3.49	.24	3.31	.29	3.13	.33	3.01	.36	2.99	.40	2.99	.57	2.98	.86
	2.94	1.21	2.79	1.60	2.57	1.90	2.10	2.22	1.53	2.40	.92	2.54	.66	2.60	.34	2.65
	.13	2.67	0	2.67												
3	20.00															
605	.41	-.69	0	-.69	.98	-.68	1.65	-.66	2.24	-.65	2.71	-.64	2.97	-.62	3.24	-.58
	3.59	-.51	3.94	-.42	4.15	-.34	4.26	-.26	4.32	-.16	4.34	-.07	4.35	0	4.29	.10
	4.15	.21	3.96	.27	3.65	.32	3.35	.35	3.11	.38	3.07	.40	3.05	.44	3.04	.66
	3.04	.94	2.99	1.28	2.86	1.60	2.67	1.86	2.31	2.15	1.95	2.30	1.34	2.45	.82	2.57
	.46	2.63	.24	2.66	0	2.67										
34	21.00															
640	0	-.69	.84	-.68	1.66	-.66	2.38	-.65	3.00	-.63	3.21	-.61	3.53	-.56	4.00	-.47
	4.43	-.39	4.67	-.31	4.81	-.23	4.90	-.10	4.93	0	4.89	.09	4.74	.21	4.56	.27
	4.34	.31	4.23	.33	3.93	.36	3.65	.39	3.34	.40	3.15	.41	3.13	.42	3.12	.44
	3.11	.54	3.11	.81	3.08	1.17	3.01	1.42	2.84	1.74	2.52	2.07	2.07	2.29	1.42	2.45
	1.03	2.54	.79	2.58	.48	2.64	.27	2.67	0	2.68						
35	22.00															
677	0	-.70	1.30	-.69	2.30	-.67	3.19	-.65	3.54	-.60	4.13	-.51	4.67	-.42	5.11	-.33
	5.31	-.25	5.42	-.17	5.48	-.07	5.50	0	5.45	.10	5.34	.18	5.22	.24	5.00	.29
	4.70	.34	4.32	.37	3.82	.40	3.45	.42	3.19	.43	3.17	.46	3.17	.66	3.14	1.14
	2.91	1.72	2.45	2.15	1.76	2.38	1.01	2.54	.58	2.62	.29	2.66	0	2.68		
36	23.00															
9	.69	-.68	0	-.68	1.86	-.66	2.96	-.65	3.20	-.64	3.51	-.60	4.30	-.49	4.98	-.39
	5.59	-.29	5.86	-.22	6.01	-.12	6.07	0	6.05	.08	5.94	.17	5.65	.28	5.35	.33
	4.96	.37	4.53	.40	3.78	.42	3.23	.43	3.22	.44	3.21	.46	3.20	.80	3.17	1.20
	3.01	1.63	2.79	1.92	2.42	2.19	1.86	2.37	1.38	2.47	.89	2.57	.37	2.65	0	2.67
37	24.00															
740	.88	-.64	0	-.64	1.78	-.63	2.80	-.61	3.14	-.60	3.62	-.55	4.22	-.48	4.89	-.40
	5.62	-.31	6.13	-.24	6.44	-.17	6.59	-.07	6.63	0	6.63	.11	6.54	.18	6.33	.28
	6.05	.34	5.89	.36	5.66	.38	5.39	.40	5.00	.42	4.16	.44	3.23	.44	3.22	.52
	3.21	.74	3.19	1.06	3.11	1.43	2.92	1.77	2.50	2.14	2.08	2.31	1.60	2.42	1.02	2.54
	.52	2.63	.20	2.67	0	2.68										
38	25.00															
775	0	-.59	2.14	-.58	.93	-.58	3.04	-.54	3.31	-.52	4.26	-.43	5.13	-.35	5.83	-.27
	6.64	-.18	7.02	-.11	7.14	-.06	7.19	0	7.21	.07	7.17	.15	7.02	.24	6.76	.32
	6.33	.39	6.02	.42	5.78	.43	5.19	.44	3.22	.44	3.22	.59	3.20	.97	3.14	1.31
	3.00	1.64	2.80	1.90	2.41	2.18	2.03	2.31	1.60	2.41	1.35	2.46	.94	2.54	.55	2.61
	.25	2.66	0	2.68												
39	25.40															
809	1.59	-.56	.64	-.56	0	-.56	2.53	-.55	3.00	-.52	4.04	-.42	5.36	-.31	6.21	-.23
	7.03	-.15	7.25	-.08	7.37	0	7.42	.10	7.33	.16	7.19	.21	7.03	.26	6.85	.30
	6.45	.36	6.05	.38	5.39	.39	3.21	.39	3.20	.73	3.14	1.24	2.94	1.67	2.49	2.09
	1.99	2.27	1.38	2.40	.74	2.52	.41	2.58	.15	2.62	0	2.64				

AEDC/ARO, INC., ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

MODEL GEOMETRY - NARROW SIDE SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
40	26.40															
839	.52	-.48	0	-.48	1.45	-.47	2.53	-.46	2.80	-.45	3.45	-.39	4.34	-.31	5.40	-.22
	6.28	-.16	7.04	-.11	7.19	-.09	7.44	-.02	7.72	.09	7.84	.18	7.87	.25	7.82	.33
	7.70	.37	7.45	.40	7.13	.42	6.70	.45	6.10	.46	3.11	.46	3.09	.69	3.05	1.13
	2.95	1.46	2.77	1.76	2.46	2.05	1.97	2.28	1.54	2.37	1.19	2.43	1.02	2.47	.95	2.55
	.90	2.64	.76	2.73	.65	2.74	.47	2.74	.34	2.75	.30	2.76	.28	2.78	.25	2.89
	.21	3.08	.14	3.34	.08	3.44	0	3.50								
41	27.00															
883	0	-.43	.80	-.42	2.01	-.41	2.85	-.39	3.54	-.32	4.79	-.20	6.07	-.11	7.05	-.05
	7.20	-.04	7.53	.03	7.88	.14	8.03	.23	8.08	.35	8.04	.41	7.98	.44	7.85	.46
	3.01	.49	2.99	.74	2.95	1.07	2.84	1.47	2.60	1.84	2.29	2.10	1.96	2.26	1.56	2.34
	1.23	2.39	1.03	2.43	1.01	2.44	.97	2.52	.92	2.64	.79	2.75	.64	2.78	.45	2.78
	.35	2.80	.32	2.81	.28	3.01	.23	3.36	.16	3.72	.09	3.92	.04	3.98	0	4.01
42	28.00															
923	.36	-.32	0	-.32	1.62	-.31	2.76	-.29	3.18	-.26	3.96	-.17	5.12	-.05	6.29	.05
	7.06	.10	7.21	.12	7.49	.16	7.93	.25	8.21	.32	8.30	.40	8.33	.47	8.29	.53
	8.21	.55	2.83	.60	2.81	.84	2.73	1.26	2.57	1.64	2.24	2.01	1.85	2.23	1.27	2.34
	1.03	2.37	1.01	2.39	.97	2.57	.87	2.76	.59	2.84	.33	2.86	.31	2.88	.29	3.09
	.25	3.63	.21	4.12	.15	4.49	.09	4.72	.05	4.82	0	4.86				
43	28.80															
961	.27	-.23	.02	-.23	.88	-.22	1.80	-.21	2.80	-.20	3.20	-.17	3.79	-.09	4.93	.04
	6.00	.16	6.93	.26	7.15	.28	7.45	.32	7.98	.40	8.28	.45	8.37	.48	8.40	.54
	8.31	.56	2.69	.63	2.65	.97	2.51	1.50	2.27	1.84	1.63	2.25	1.24	2.31	1.03	2.33
	.99	2.35	.98	2.49	.91	2.75	.71	2.88	.49	2.89	.29	2.90	.27	2.93	.25	3.41
	.24	3.83	.20	4.54	.13	5.13	.08	5.37	.03	5.47	0	5.50				
44	29.05															
999	.09	-.20	.40	-.19	1.06	-.18	2.04	-.17	2.80	-.16	3.07	-.15	4.34	.01	5.87	.21
	6.91	.33	7.14	.36	7.51	.41	7.99	.47	8.36	.55	.84	2.21	.95	2.29	.98	2.54
	.92	2.76	.74	2.89	.55	2.91	.38	2.91	.28	2.92	.25	2.95	.24	3.41	.22	4.20
	.17	4.91	.12	5.38	.08	5.58	.04	5.69	0	5.74						
45	30.08															
1028	.83	2.34	.91	2.40	.98	2.52	.99	2.64	.97	2.74	.87	2.89	.60	2.97	.15	2.97
	.13	3.01	.15	3.66	.17	4.38	.15	5.33	.11	6.02	.06	6.38	.03	6.51	0	6.54
46	30.37															
1044	.03	2.60	.04	2.84	.11	3.77	.14	4.65	.12	5.80	.08	6.49	.04	6.74	.02	6.80
	0	6.83														
47	30.70															
1053	.02	3.28	.06	3.92	.11	4.76	.11	5.76	.08	6.62	.05	6.89	.04	7.01	.02	7.06
	0	7.10														
48	31.30															
1062	0	4.54	.04	5.07	.06	5.88	.07	6.59	.06	7.12	.05	7.29	.04	7.38	.03	7.39
	0	7.41														

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 8
VT1162

MODEL GEOMETRY - NARDWO SIDE SURFACE - ALL DIMENSIONS IN INCHES - 9 MAY 1972

STA NO. / POINT NO.	X / Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
49	32.00															
1071	0	6.04	.01	6.48	.03	7.08	.03	7.41	0	7.52						
50	32.70															
1076	0	7.52														

Table 3

PHASE CHANGE COATING TEST DATA SUMMARY SHEET

TEST TITLE: Ascent Heat Transfer Test of GDC-B+NAR-DWO

TEST NUMBER: VT1162-11 **TEST FACILITY:** VKF Tunnel B

TEST DATE: June 1971 **TEST ENGINEER:** R. K. Matthews & W. R. Martindale

Run No.	Model Configuration Identification	Model Scale	Free Stream Mach Number	Total Pressure (psia)	Total Temp. (^{o}R)	$\frac{T_{aw}*}{T_{total}}$	$\frac{RNX10^{6}}{Ft}$	Phase Change Temp. (^{o}F)	Model Position (degrees)			Model Surface
									α	β	ϕ	
232	GDC-B + NAR-DWO	0.013	8.0	265	1270	1.0	1.25	250	0	0	0	Side
233								125	0			
230								250	-5			
231								125	-5			
228								250	5			
229								125	5			
238				567	1310		2.55	275	0			
239								150	0			
236								275	-5			
237								150	-5			
234								300	5			
235								150	5			
242						N/A		0.F.**	0			

* T_{aw} -- adiabatic wall temperature

**0.F. = Oil Flow

PHASE CHANGE COATING TEST DATA SUMMARY SHEET

TEST TITLE: Ascent Heat Transfer Test of GDC-B+NAR-DWO

TEST NUMBER: VT1162-11 **TEST FACILITY:** VKF Tunnel B

TEST DATE: June 1971 **TEST ENGINEER:** R. K. Matthews and W. R. Martindale

Run No.	Model Configuration Identification	Model Scale	Free Stream Mach Number	Total Pressure (psia)	Total Temp. (^{o}R)	$\frac{T_{aw}*}{T_{total}}$	$\frac{RNX10^{6}}{Ft}$	Phase Change Temp. (^{o}F)	Model Position (degrees) α	β	ϕ	Model Surface
241	GDC-B + NAR-DWO	0.013	8.0	567	1310	N/A	2.55	O.F.**	-5	0	0	Side
240	"	"	"	"	"	"	"	O.F.	5	"	0	"
260	"	"	"	"	"	"	"	Sha***	0	"	0	"
261	"	"	"	"	"	"	"	Sha	0	"	90	"
258	"	"	"	"	"	"	"	Sha	-5	"	0	"
259	"	"	"	"	"	"	"	Sha	5	"	0	"

* T_{aw} - adiabatic wall temperature
**O.F. = Oil Flow
***Sha = Shadowgraphs

TABLE 4. SUMMARY DATA INDEX

CONFIGURATION	MODEL SURFACE	DATA PRESENTED	PAGE	REYNOLDS NUMBER X 10^6/FT			ANGLE OF ATTACK - DEGREES			
				1.25	2.55		-5	0	5	
Booster-Orb.	Side	A	46 - 47	X				X		
			49 - 50	X				X		
			52 - 53	X					X	
			55 - 56	X					X	
			58 - 59	X			X			
			61 - 62	X			X			
			64 - 65		X			X		
			67 - 68		X			X		
			70 - 71		X		X			
			73 - 74		X		X			
			76 - 77		X				X	
		A	79 - 80		X				X	
		C	82		X			X		
		C	84		X		X			
		C	86		X				X	
	Side	B	87		X			X		
	Rolled 90°	B	88		X			X		
	Side	B	89		X		X			
Booster-Orb.	Side	B	90		X				X	

PRESENTED DATA SCHEDULE

A: PHASE-CHANGE PAINT PHOTOGRAPHS
B: SHADOWGRAPH PHOTOGRAPHS
C: OIL FLOW PHOTOGRAPHS

6/ 4/71

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
232	6153	EDC-B+DWO	7.97	262.6	1273	.03	.03	0	0	0

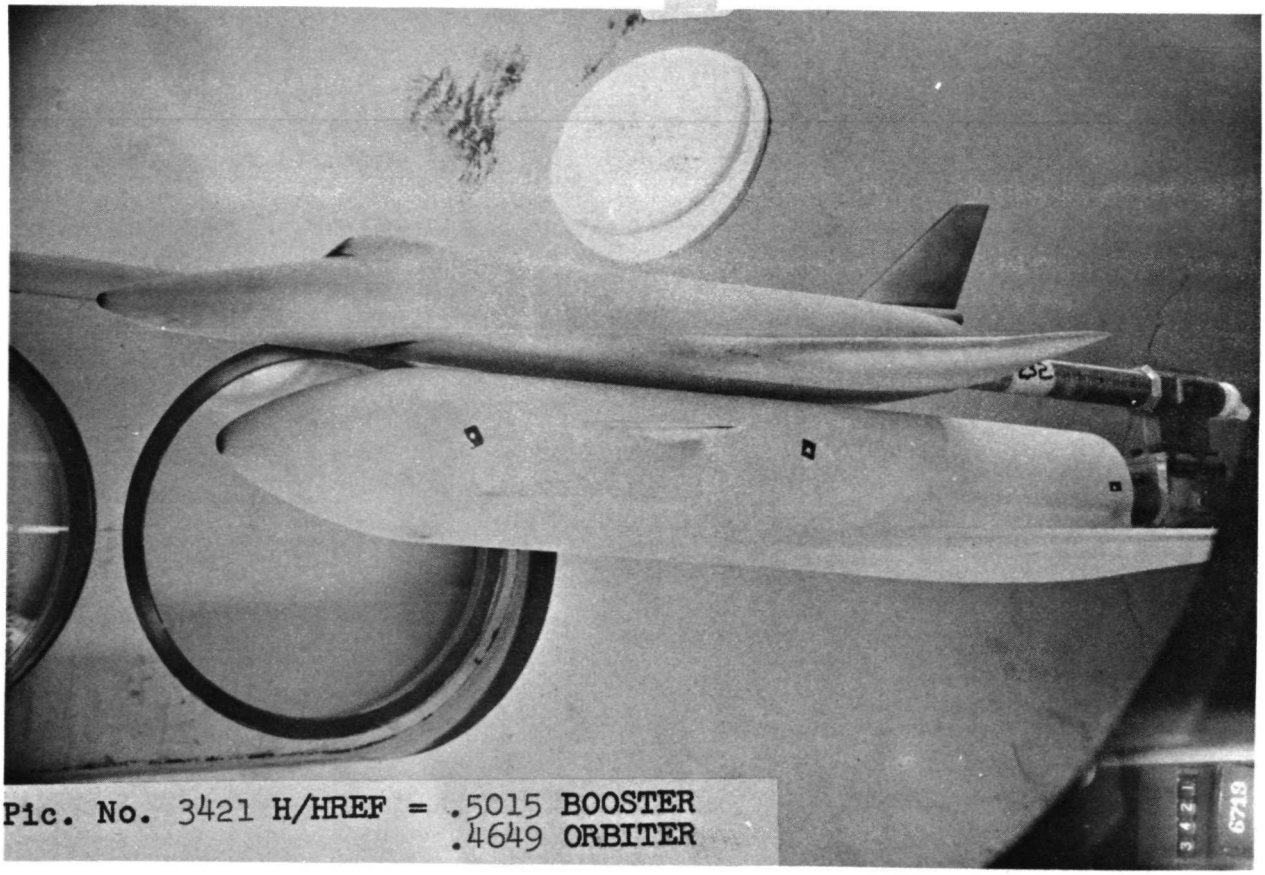
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
92.9	.028	1.226	3764	2.490E-05	7.479E-08	1.25E 06	3.177E-02	4.229E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	250		
SIDE(US)	250	AVERAGE TW = 75 (B)	=.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	250	AVERAGE TW = 88 (O)	

PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F			
LS 3421 (250)	3.60	2.53	O	1.48E-02	.4649	1.884E-02	.5929	2.186E-02	.6880	1.957E-02	74	74	90	87
LS 3421 (250)	3.60	2.53	B	1.59E-02	.5015	2.031E-02	.6391	2.356E-02	.7412	2.111E-02	74	74	90	87
LS 3421 (250)	3.60	2.53	B	1.59E-02	.5015	2.031E-02	.6391	2.356E-02	.7412	2.111E-02	74	74	90	87
LS 3421 (250)	3.60	2.53	O	1.48E-02	.4649	1.884E-02	.5929	2.186E-02	.6880	1.957E-02	74	74	90	87
LS 3433 (250)	9.70	8.63	O	7.12E-03	.2239	9.076E-03	.2855	1.053E-02	.3313	9.421E-03	77	74	93	94
LS 3433 (250)	9.70	8.63	B	7.68E-03	.2415	9.784E-03	.3078	1.135E-02	.3569	1.016E-02	77	74	93	94
LS 3433 (250)	9.70	8.63	B	7.68E-03	.2415	9.784E-03	.3078	1.135E-02	.3569	1.016E-02	77	74	93	94
LS 3433 (250)	9.70	8.63	O	7.12E-03	.2239	9.076E-03	.2855	1.053E-02	.3313	9.421E-03	77	74	93	94
LS 3445 (250)	15.85	14.78	O	4.98E-03	.1566	6.355E-03	.1997	7.373E-03	.2318	6.585E-03	79	75	95	102
LS 3445 (250)	15.85	14.78	B	5.37E-03	.1689	6.850E-03	.2153	7.944E-03	.2497	7.103E-03	79	75	95	102
LS 3445 (250)	15.85	14.78	B	5.37E-03	.1689	6.850E-03	.2153	7.944E-03	.2497	7.103E-03	79	75	95	102
LS 3445 (250)	15.85	14.78	O	4.98E-03	.1566	6.355E-03	.1997	7.373E-03	.2318	6.585E-03	79	75	95	102
LS 3458 (250)	26.65	25.58	O	3.32E-03	.1044	4.239E-03	.1332	4.919E-03	.1545	4.388E-03	83	78	99	113
LS 3458 (250)	26.65	25.58	B	3.59E-03	.1126	4.569E-03	.1435	5.299E-03	.1665	4.733E-03	83	78	99	113
LS 3458 (250)	26.65	25.58	B	3.59E-03	.1126	4.569E-03	.1435	5.299E-03	.1665	4.733E-03	83	78	99	113
LS 3458 (250)	26.65	25.58	O	3.32E-03	.1044	4.239E-03	.1332	4.919E-03	.1545	4.388E-03	83	78	99	113

Orbiter(o)

Booster(B)



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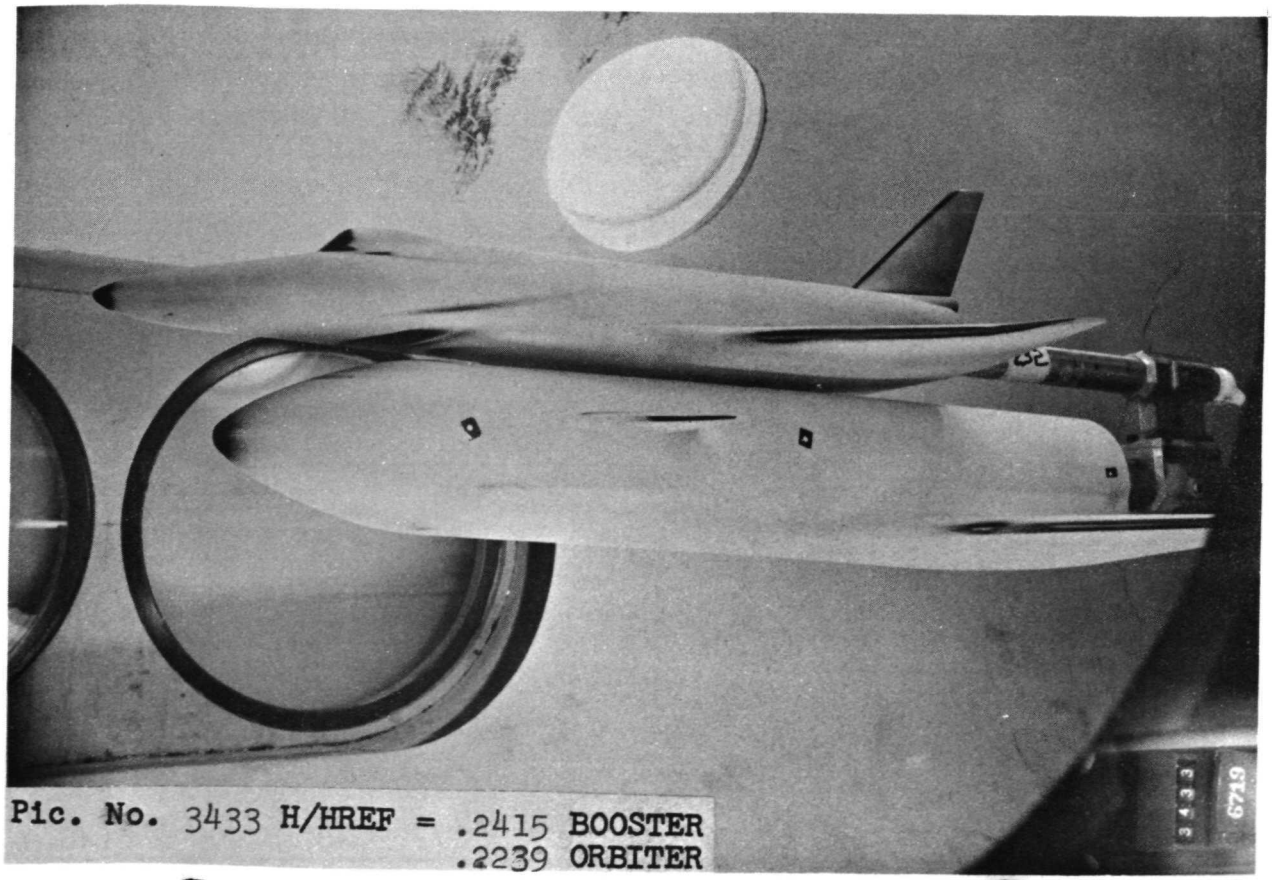
.4649 ORBITER



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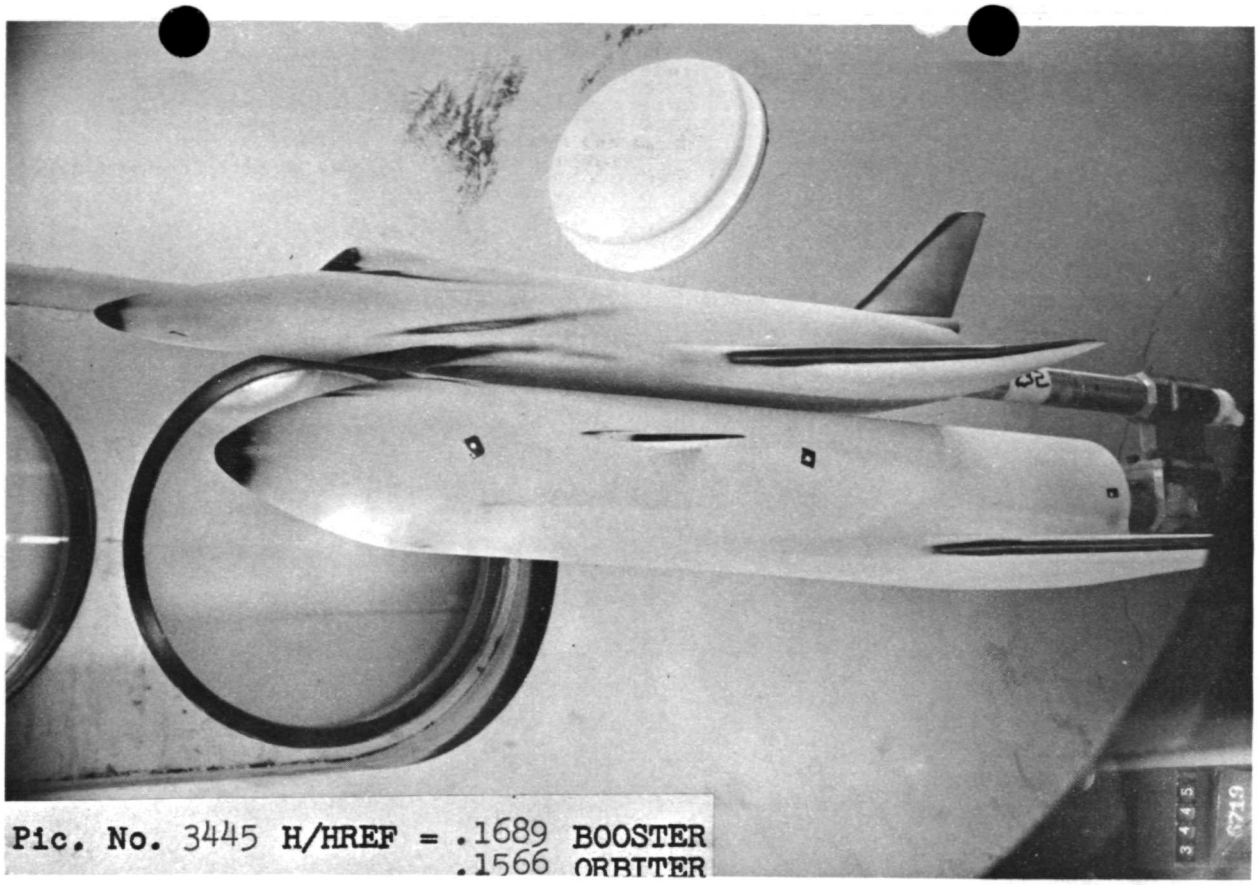
.2239 ORBITER



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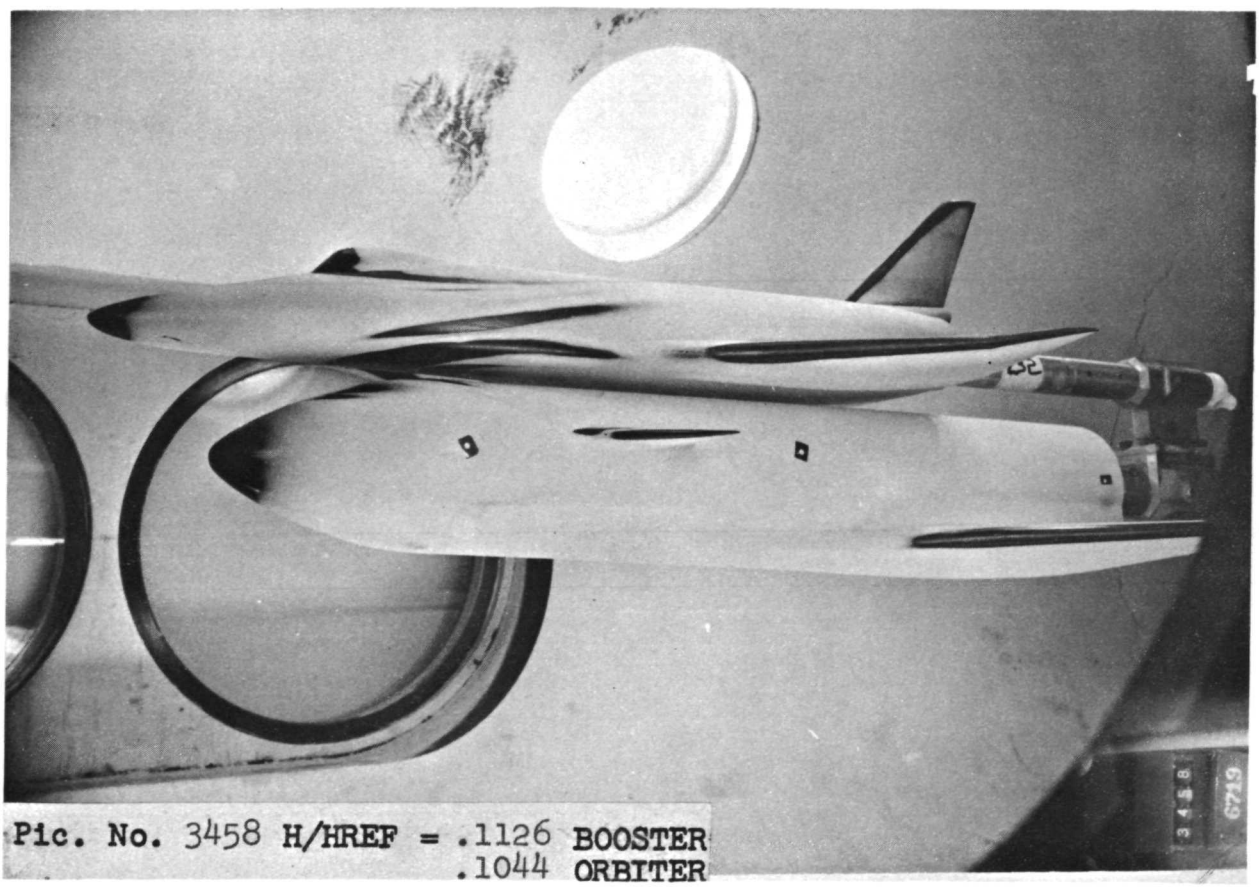


Pic. No. 3458 H/HREF = .1126 BOOSTER
.1044 ORBITER

Group 232 Re/ft 1.25E 06 ALPHA 0

6/ 4/71

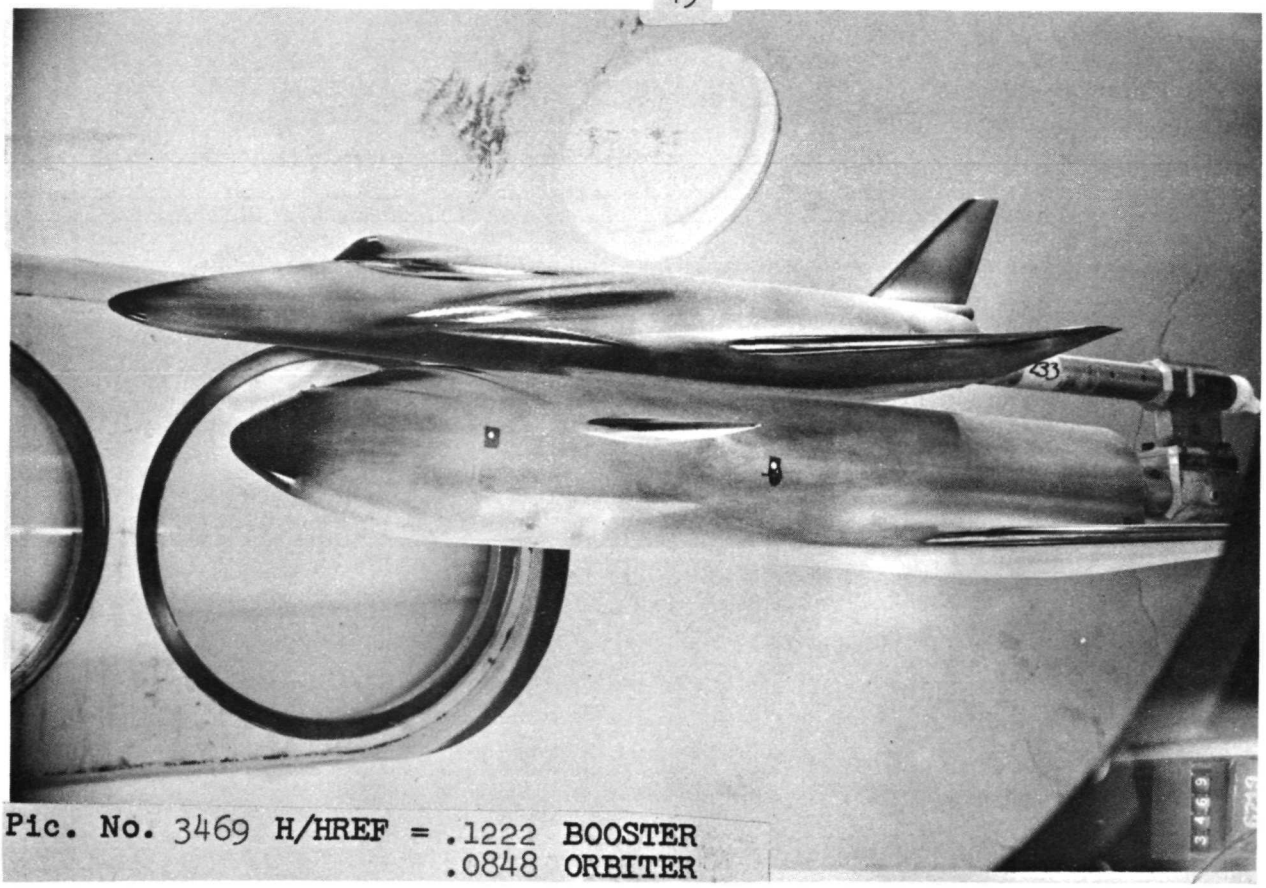
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
233	6253	EDC-B+DWO	7.97	266.4	1275	-.00	-.00	0	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
93.0	.028	1.243	3767	2.522E-05	7.490E-08	1.27E 06	3.202E-02	4.203E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	125		
IDE(US)	125	AVERAGE TW = 73 (R)	-.008(SQUARE ROOT DEL TIME) + 0.11
IDE(LS)	125	AVERAGE TW = 89 (R)	

PIC NC	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F		
LS 3469 (125)	3.70	2.63	0	2.71E-03	.0848	3.320E-03	.1037	3.741E-03	.1169	3.572E-03	0	73	91	89
LS 3469 (125)	3.70	2.63	B	3.91E-03	.1222	4.781E-03	.1494	5.379E-03	.1681	5.148E-03	0	73	91	89
LS 3469 (125)	3.70	2.63	B	3.91E-03	.1222	4.781E-03	.1494	5.379E-03	.1681	5.148E-03	0	73	91	89
LS 3469 (125)	3.70	2.63	0	2.71E-03	.0848	3.320E-03	.1037	3.741E-03	.1169	3.572E-03	0	73	91	89
LS 3479 (125)	8.95	7.88	0	1.42E-03	.0442	1.731E-03	.0541	1.951E-03	.0609	1.863E-03	0	74	93	95
LS 3479 (125)	8.95	7.88	B	2.04E-03	.0637	2.493E-03	.0779	2.805E-03	.0876	2.685E-03	0	74	93	95
LS 3479 (125)	8.95	7.88	B	2.04E-03	.0637	2.493E-03	.0779	2.805E-03	.0876	2.685E-03	0	74	93	95
LS 3479 (125)	8.95	7.88	0	1.42E-03	.0442	1.731E-03	.0541	1.951E-03	.0609	1.863E-03	0	74	93	95
LS 3489 (125)	14.20	13.13	0	1.01E-03	.0317	1.241E-03	.0388	1.399E-03	.0437	1.336E-03	0	75	96	101
LS 3489 (125)	14.20	13.13	B	1.46E-03	.0457	1.787E-03	.0559	2.011E-03	.0628	1.926E-03	0	75	96	101
LS 3489 (125)	14.20	13.13	B	1.46E-03	.0457	1.787E-03	.0559	2.011E-03	.0628	1.926E-03	0	75	96	101
LS 3489 (125)	14.20	13.13	0	1.01E-03	.0317	1.241E-03	.0388	1.399E-03	.0437	1.336E-03	0	75	96	101
LS 3501 (125)	24.15	23.08	0	6.76E-04	.0211	8.272E-04	.0258	9.320E-04	.0291	8.897E-04	0	79	99	113
LS 3501 (125)	24.15	23.08	B	9.75E-04	.0305	1.191E-03	.0372	1.340E-03	.0419	1.282E-03	0	79	99	113
LS 3501 (125)	24.15	23.08	B	9.75E-04	.0305	1.191E-03	.0372	1.340E-03	.0419	1.282E-03	0	79	99	113
LS 3501 (125)	24.15	23.08	0	6.76E-04	.0211	8.272E-04	.0258	9.320E-04	.0291	8.897E-04	0	79	99	113



Pic. No. 3469 H/HREF = .1222 BOOSTER
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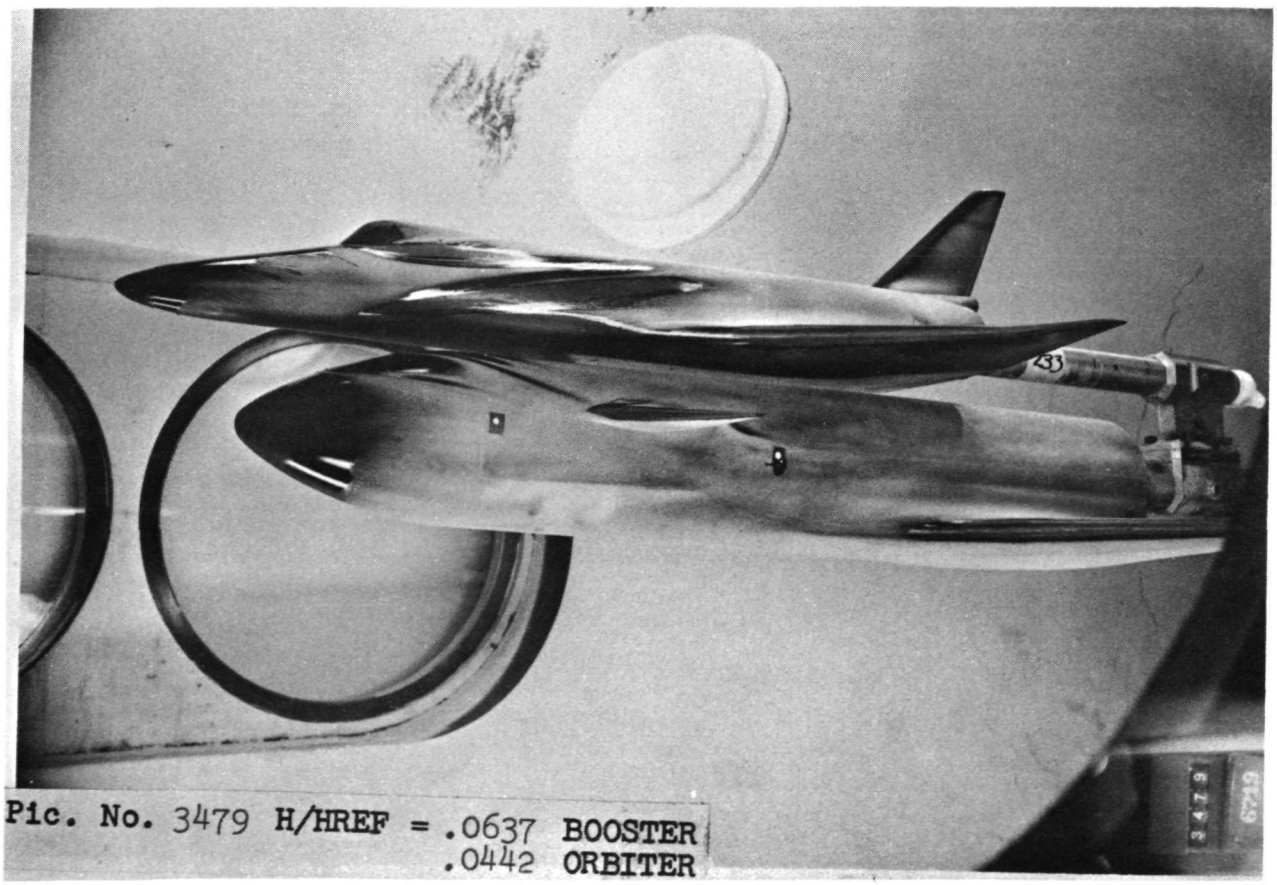

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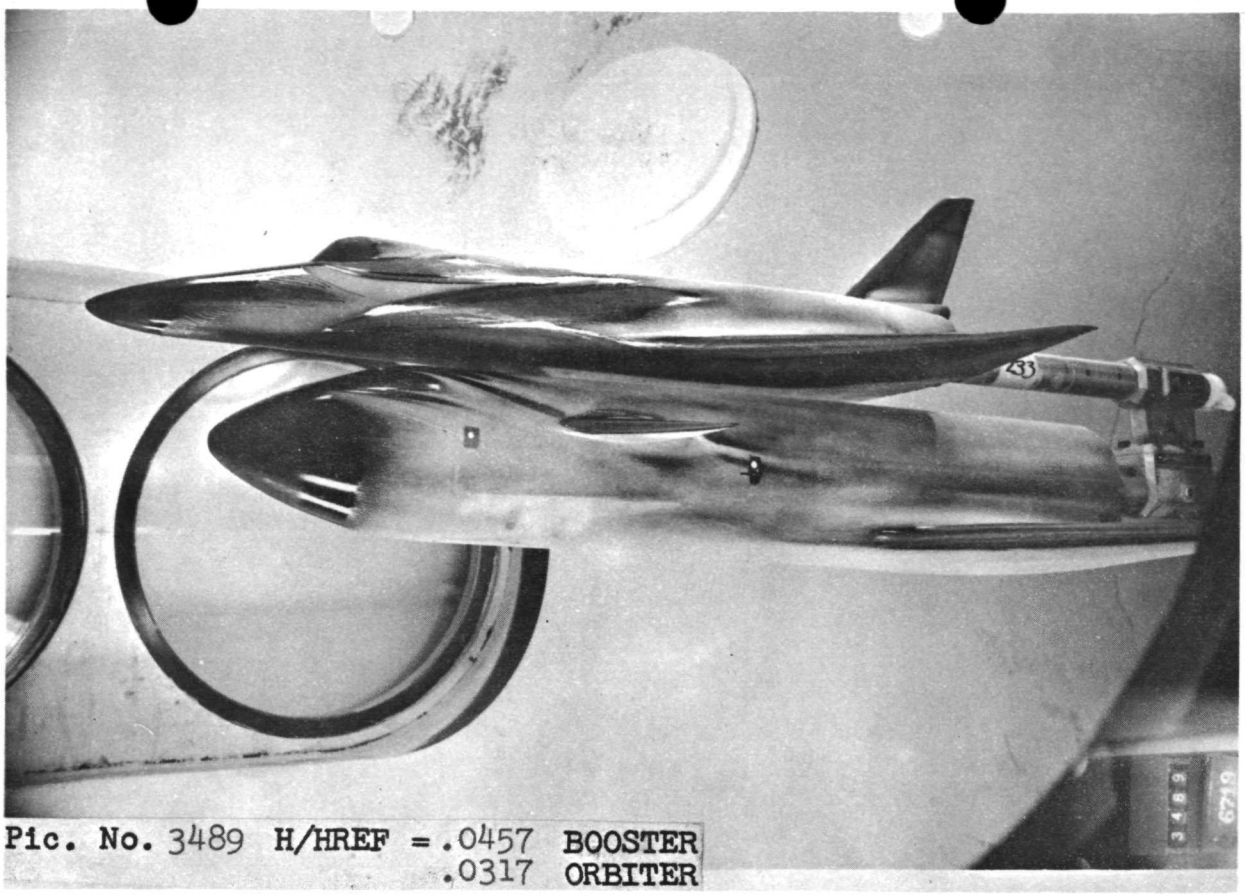
.0442 ORBITER



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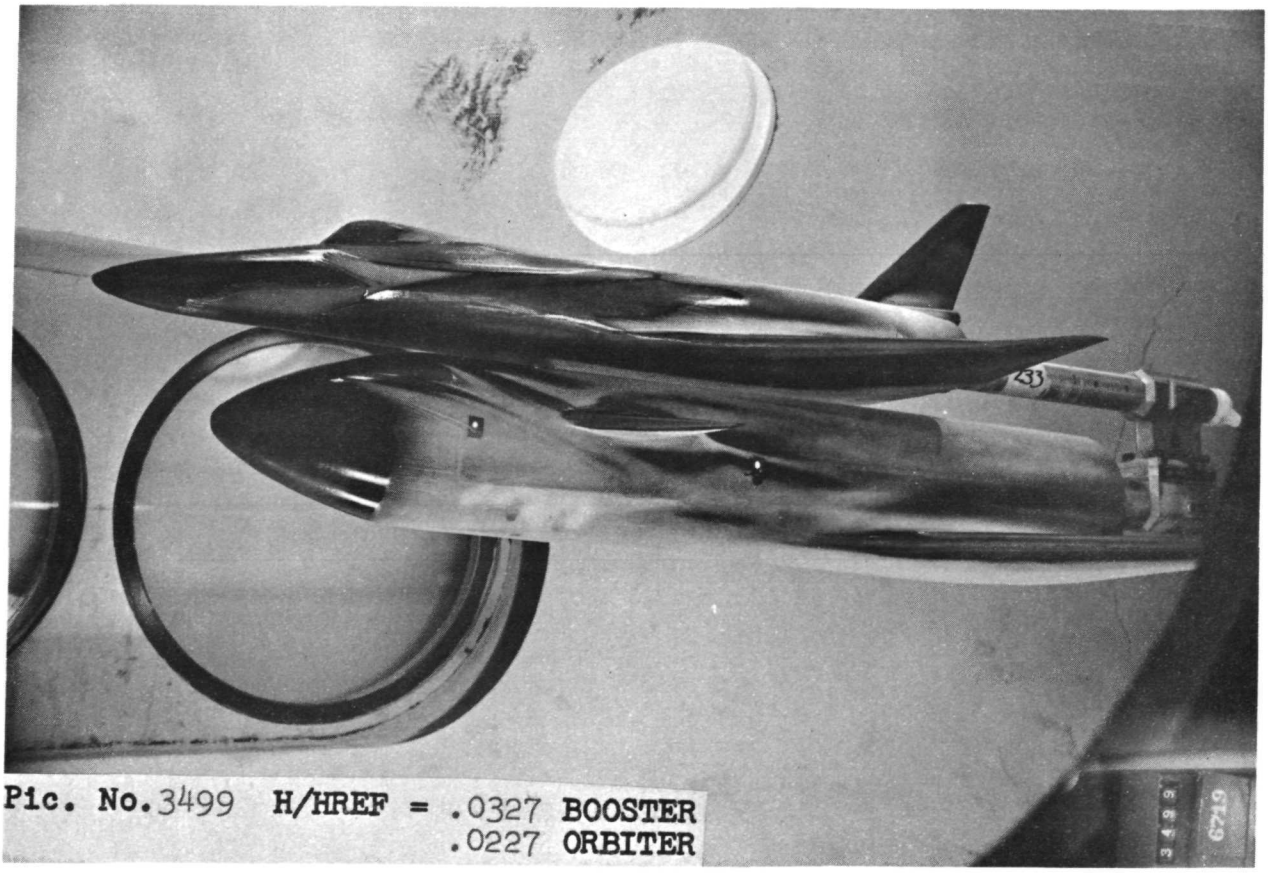
.0317 ORBITER



Pic. No. 3499 H/HREF = .0327 BOOSTER
.0227 ORBITER

Group 233 Re/ft 1.27E 06 ALPHA 0

6/ 4/71

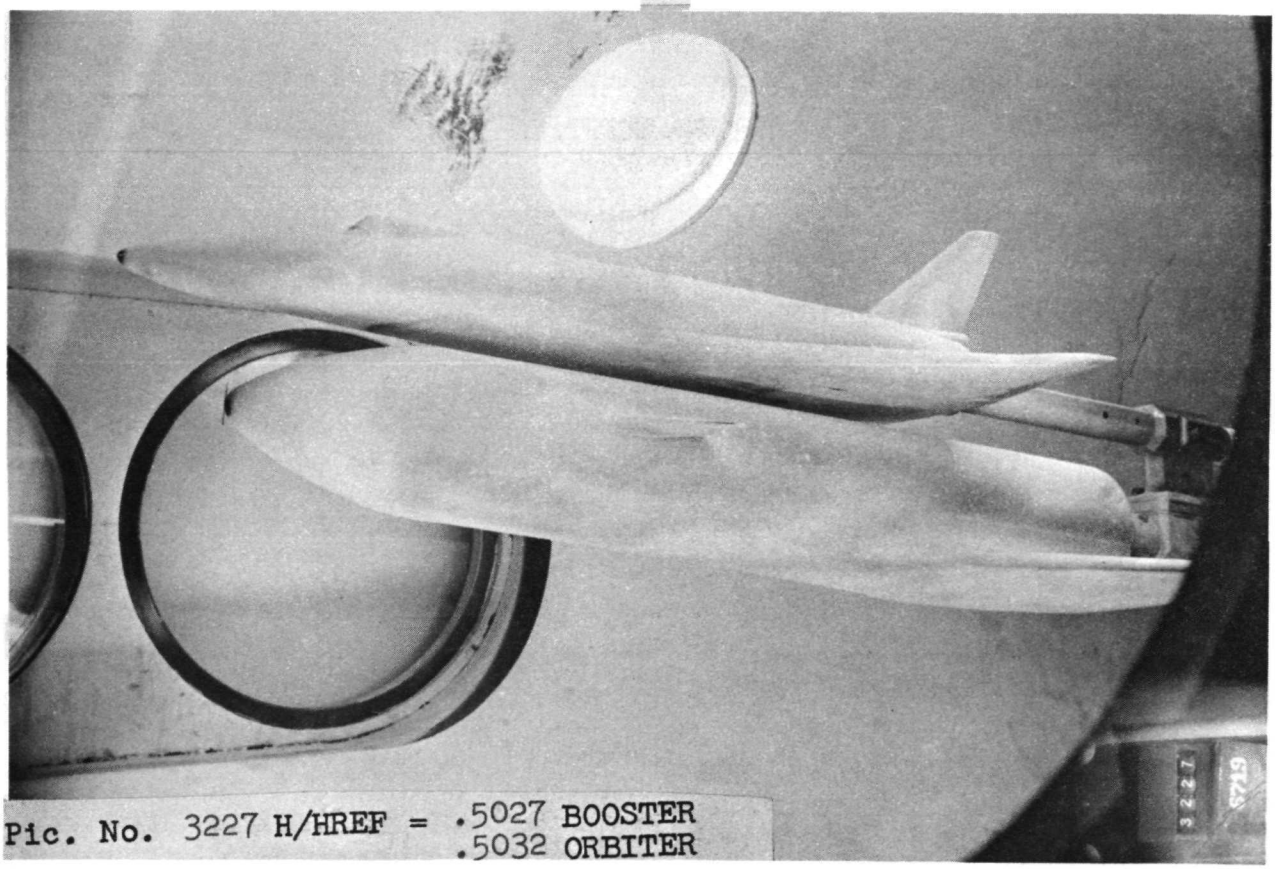
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
228	6153	EDC-B+DWO	7.97	263.6	1267	5.01	5.01	0	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STHEF (R= .013FT)
92.5	.028	1.230	3755	2.511E-05	7.445E-08	1.27E 06	3.181E-02	4.210E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	250		
SIDE(US)	250	AVERAGE TW = 74 (B)	=.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	250	AVERAGE TW = 73 (C)	

PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F			
LS 3227 (250)	3.65	2.58	O	1.60E-02	.5032	2.043E-02	.6421	2.371E-02	.7454	2.109E-02	73	73	74	74
LS 3227 (250)	3.65	2.58	B	1.60E-02	.5027	2.041E-02	.6415	2.369E-02	.7447	2.107E-02	73	73	74	74
LS 3227 (250)	3.65	2.58	B	1.60E-02	.5027	2.041E-02	.6415	2.369E-02	.7447	2.107E-02	73	73	74	74
LS 3227 (250)	3.65	2.58	O	1.60E-02	.5032	2.043E-02	.6421	2.371E-02	.7454	2.109E-02	73	73	74	74
LS 3239 (250)	9.90	8.83	O	7.68E-03	.2415	9.805E-03	.3082	1.138E-02	.3578	1.012E-02	77	74	77	79
LS 3239 (250)	9.90	8.83	B	7.68E-03	.2413	9.795E-03	.3079	1.137E-02	.3574	1.011E-02	77	74	77	79
LS 3239 (250)	9.90	8.83	B	7.68E-03	.2413	9.795E-03	.3079	1.137E-02	.3574	1.011E-02	77	74	77	79
LS 3239 (250)	9.90	8.83	O	7.68E-03	.2415	9.805E-03	.3082	1.138E-02	.3578	1.012E-02	77	74	77	79
LS 3251 (250)	16.05	14.98	O	5.41E-03	.1700	6.901E-03	.2170	8.011E-03	.2519	7.127E-03	80	76	80	85
LS 3251 (250)	16.05	14.98	B	5.40E-03	.1698	6.894E-03	.2168	8.002E-03	.2516	7.120E-03	80	76	80	85
LS 3251 (250)	16.05	14.98	B	5.40E-03	.1698	6.894E-03	.2168	8.002E-03	.2516	7.120E-03	80	76	80	85
LS 3251 (250)	16.05	14.98	O	5.41E-03	.1700	6.901E-03	.2170	8.011E-03	.2519	7.127E-03	80	76	80	85
LS 3264 (250)	28.04	26.97	O	3.49E-03	.1098	4.454E-03	.1401	5.171E-03	.1627	4.604E-03	87	80	85	94
LS 3264 (250)	28.04	26.97	B	3.49E-03	.1097	4.450E-03	.1400	5.166E-03	.1625	4.599E-03	87	80	85	94
LS 3264 (250)	28.04	26.97	B	3.49E-03	.1097	4.450E-03	.1400	5.166E-03	.1625	4.599E-03	87	80	85	94
LS 3264 (250)	28.04	26.97	O	3.49E-03	.1098	4.454E-03	.1401	5.171E-03	.1627	4.604E-03	87	80	85	94



Pic. No. 3227 H/HREF = .5027 BOOSTER
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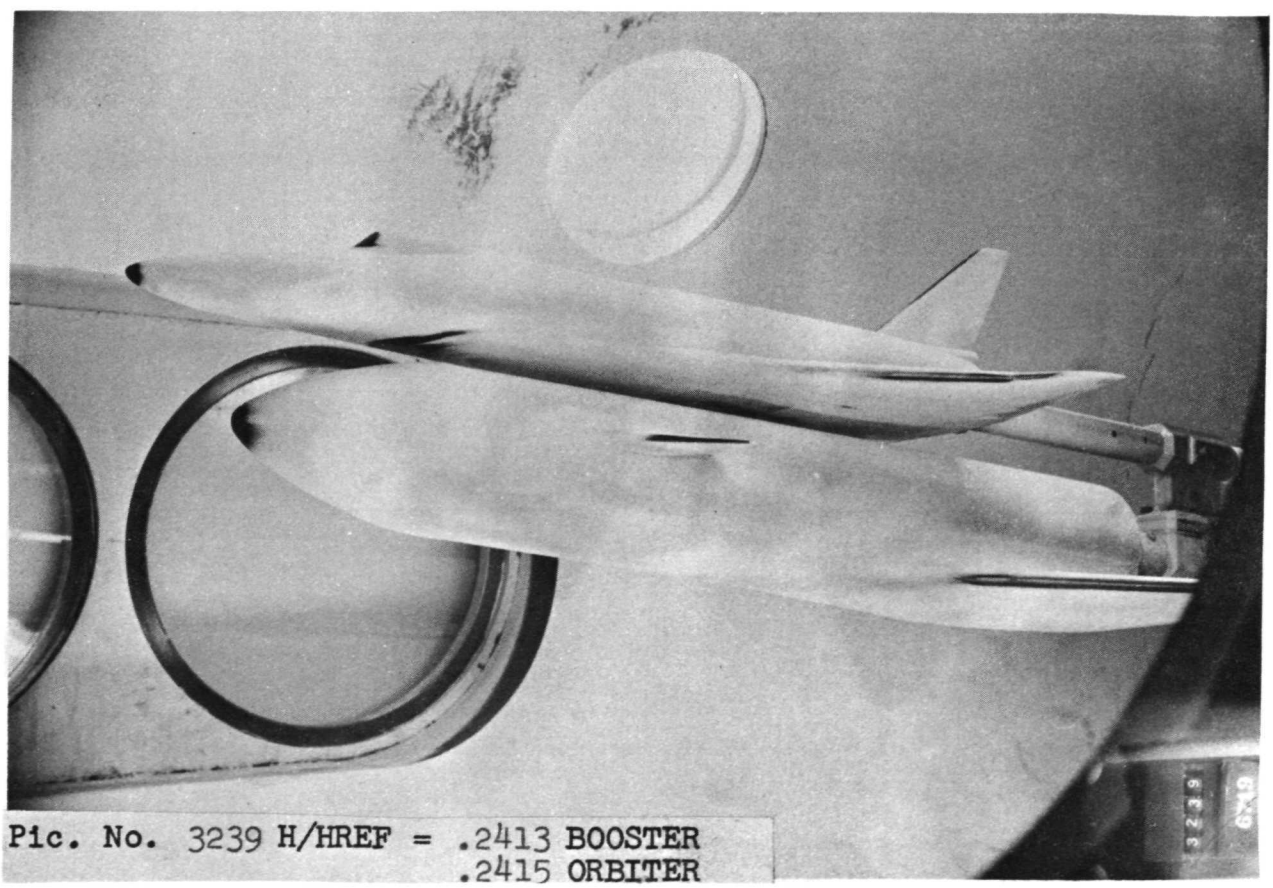

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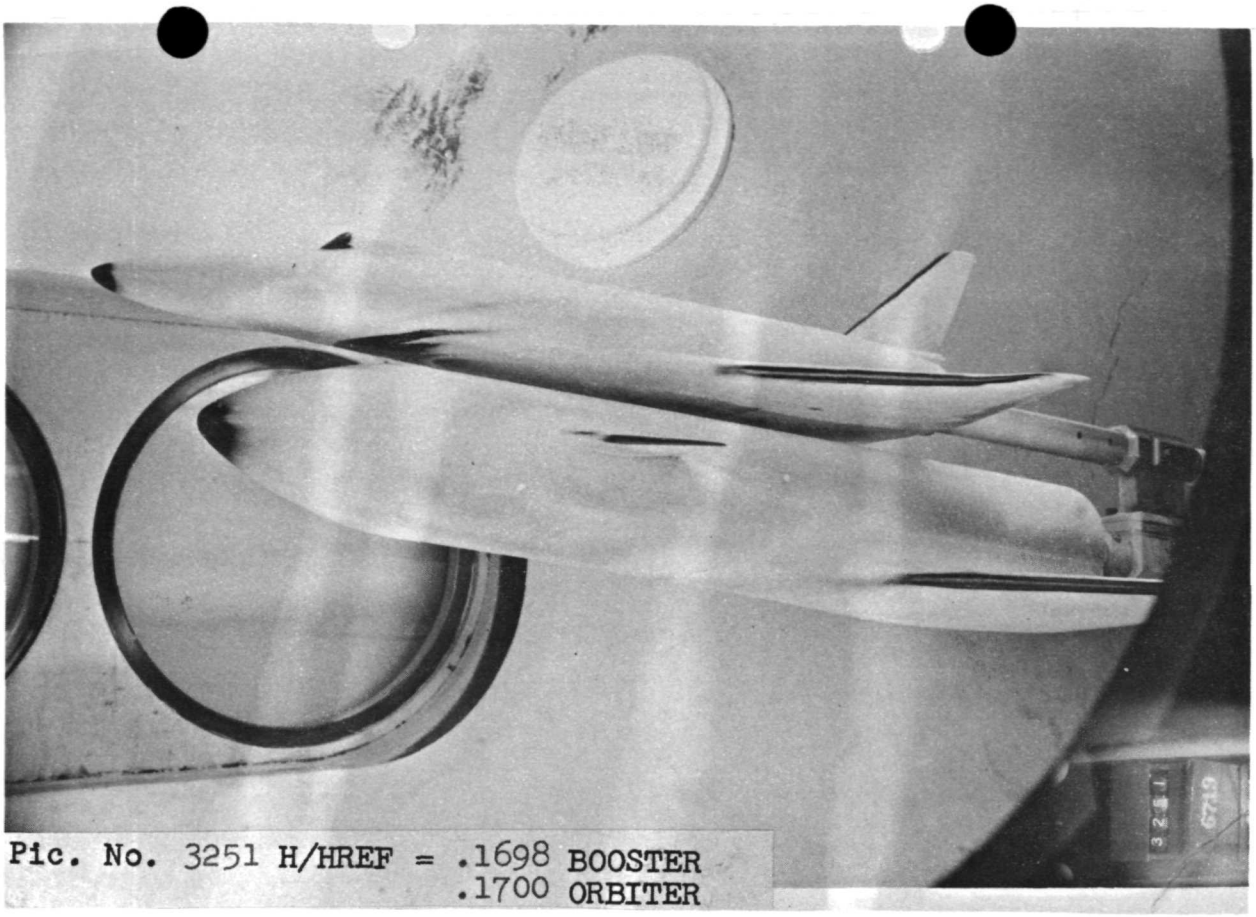

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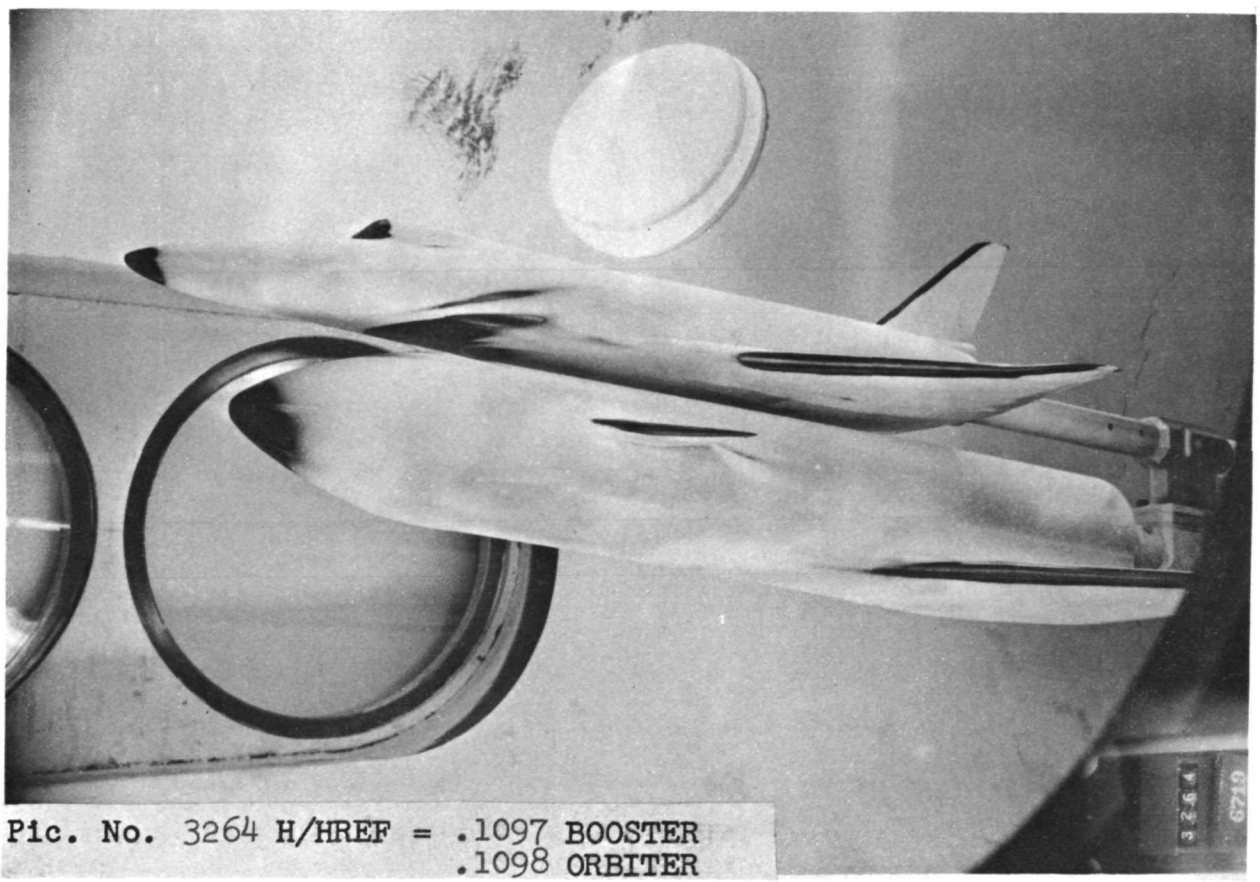
.1700 ORBITER



Pic. No. 3264 H/HREF = .1097 BOOSTER
.1098 ORBITER

Group 228 Re/ft 1.27E 06 ALPHA 5

6/ 4/71

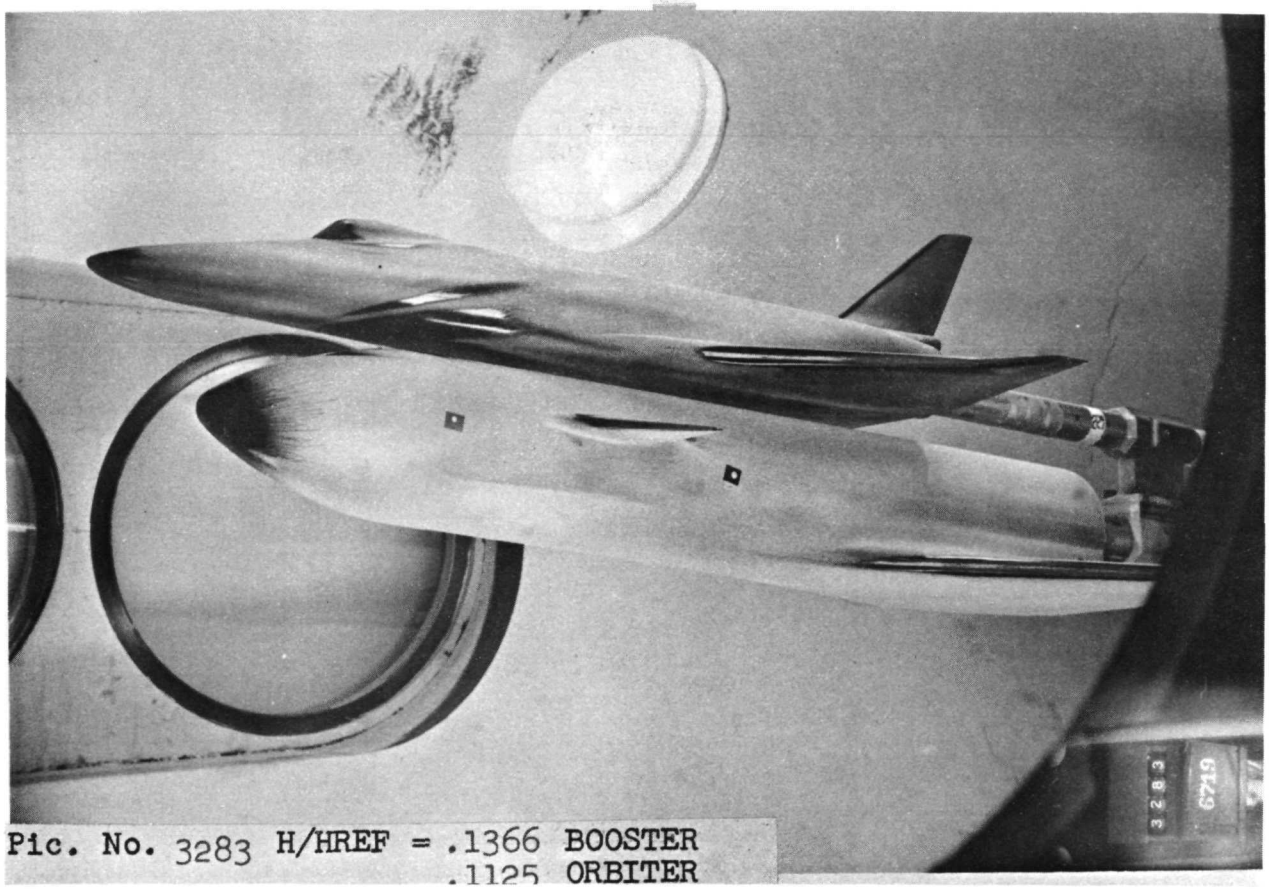
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
229	6253	EDC-B+DWO	7.97	265.3	1266	5.02	5.02	0	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STHEF (R= .013FT)
92.4	.028	1.238	3754	2.529E-05	7.438E-08	1.28E 06	3.191E-02	4.194E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	125		
SIDE(US)	125	AVERAGE TW = 68 (B)	=.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	125	AVERAGE TW = 78 (C)	

PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F			
LS 3283 (125)	3.65	2.61	0	3.59E-03	.1125	4.395E-03	.1377	4.951E-03	.1552	4.729E-03	68	68	80	78
LS 3283 (125)	3.65	2.61	B	4.36E-03	.1366	5.336E-03	.1672	6.010E-03	.1883	5.743E-03	68	68	80	78
LS 3283 (125)	3.65	2.61	B	4.36E-03	.1366	5.336E-03	.1672	6.010E-03	.1883	5.743E-03	68	68	80	78
LS 3283 (125)	3.65	2.61	0	3.59E-03	.1125	4.395E-03	.1377	4.951E-03	.1552	4.729E-03	68	68	80	78
LS 3295 (125)	9.95	8.91	0	1.72E-03	.0540	2.110E-03	.0661	2.378E-03	.0745	2.271E-03	69	70	82	84
LS 3295 (125)	9.95	8.91	B	2.09E-03	.0656	2.563E-03	.0803	2.886E-03	.0904	2.758E-03	69	70	82	84
LS 3295 (125)	9.95	8.91	B	2.09E-03	.0656	2.563E-03	.0803	2.886E-03	.0904	2.758E-03	69	70	82	84
LS 3295 (125)	9.95	8.91	0	1.72E-03	.0540	2.110E-03	.0661	2.378E-03	.0745	2.271E-03	69	70	82	84
LS 3307 (125)	16.25	15.21	0	1.21E-03	.0378	1.478E-03	.0463	1.665E-03	.0522	1.589E-03	72	72	85	90
LS 3307 (125)	16.25	15.21	B	1.47E-03	.0459	1.795E-03	.0562	2.021E-03	.0633	1.930E-03	72	72	85	90
LS 3307 (125)	16.25	15.21	B	1.47E-03	.0459	1.795E-03	.0562	2.021E-03	.0633	1.930E-03	72	72	85	90
LS 3307 (125)	16.25	15.21	0	1.21E-03	.0378	1.478E-03	.0463	1.665E-03	.0522	1.589E-03	72	72	85	90
LS 3318 (125)	26.15	25.11	0	8.34E-04	.0261	1.021E-03	.0320	1.150E-03	.0360	1.098E-03	76	75	89	98
LS 3318 (125)	26.15	25.11	B	1.01E-03	.0317	1.239E-03	.0388	1.396E-03	.0437	1.333E-03	76	75	89	98
LS 3318 (125)	26.15	25.11	B	1.01E-03	.0317	1.239E-03	.0388	1.396E-03	.0437	1.333E-03	76	75	89	98
LS 3318 (125)	26.15	25.11	0	8.34E-04	.0261	1.021E-03	.0320	1.150E-03	.0360	1.098E-03	76	75	89	98



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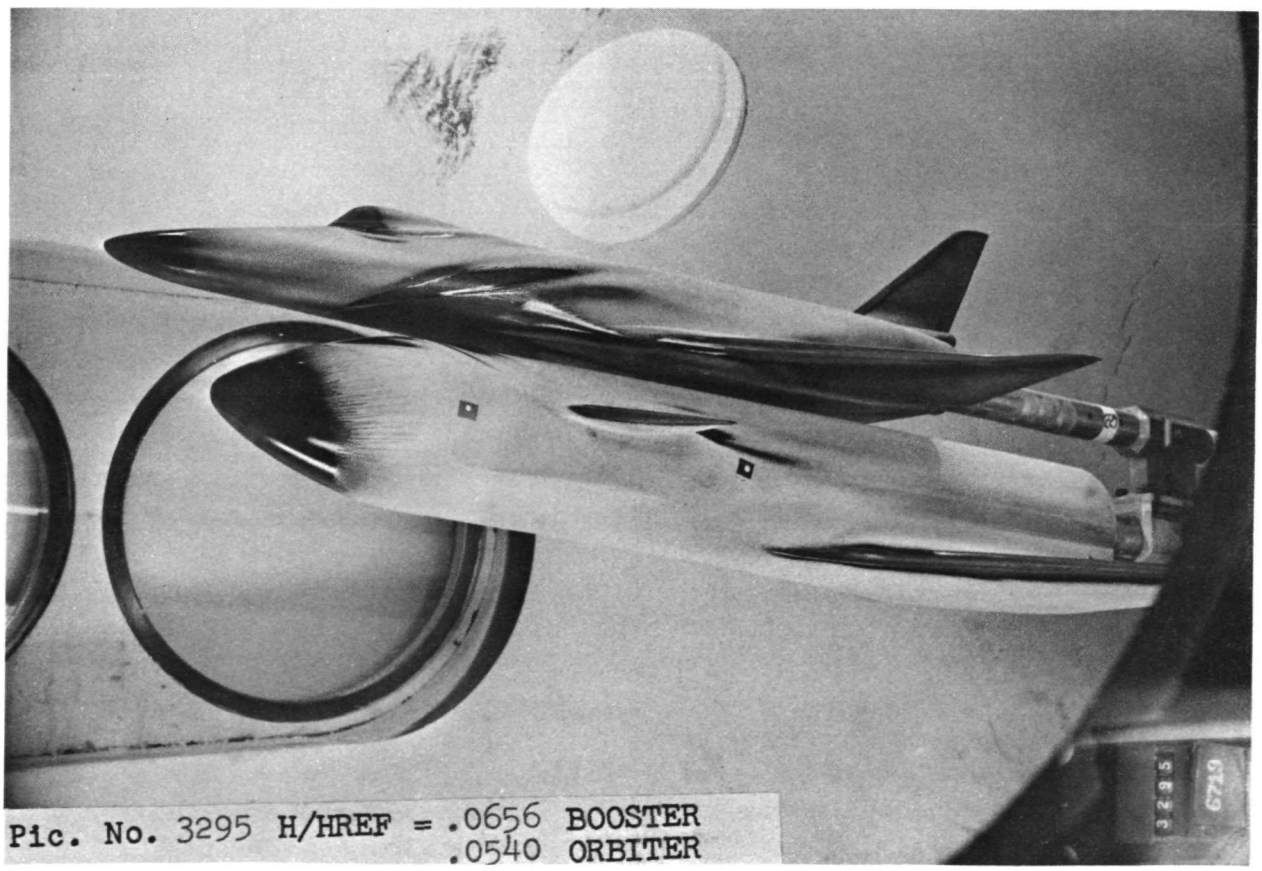

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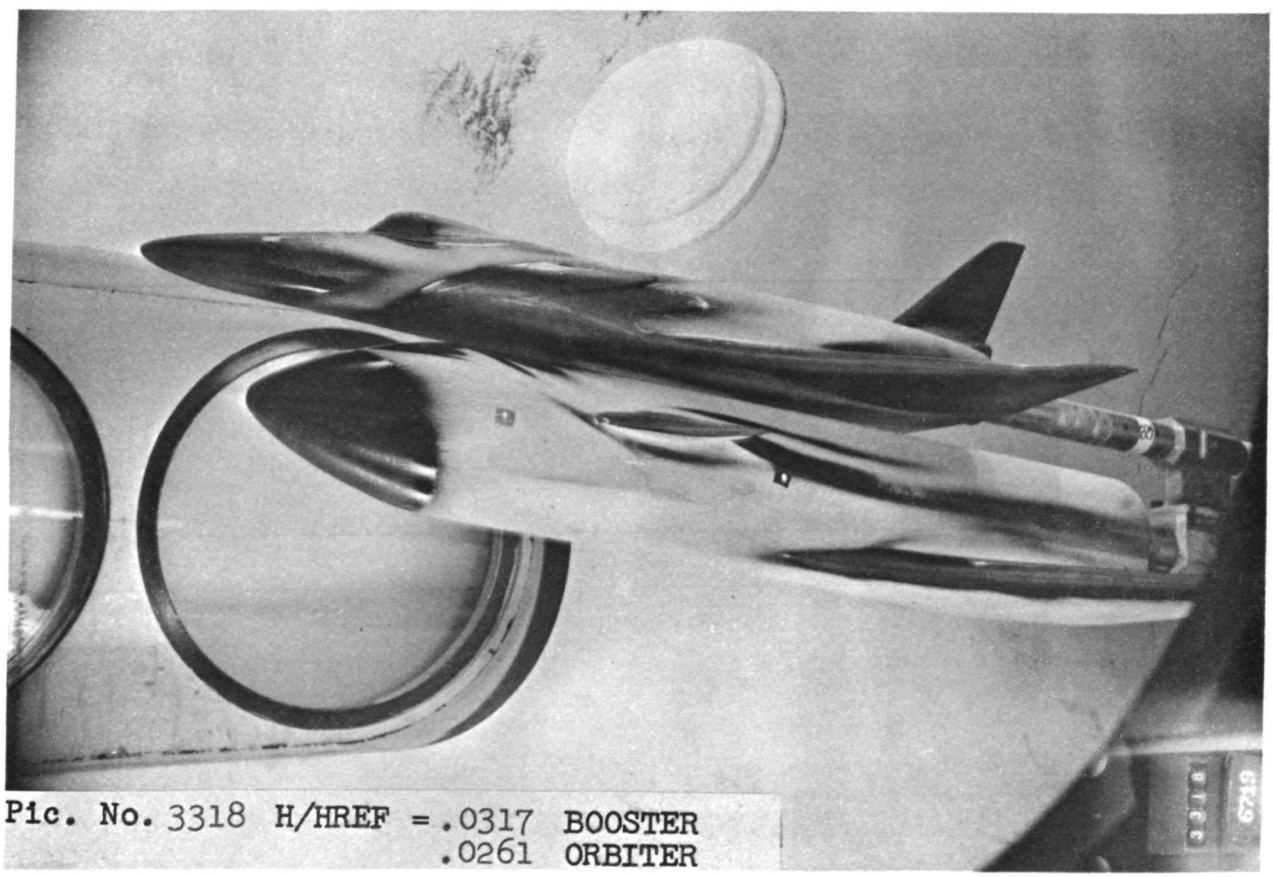
.0378 ORBITER



Pic. No. 3318 H/HREF = .0317 BOOSTER
.0261 ORBITER

Group 229 Re/ft 1.28E 06 ALPHA 5

6/ 4/71

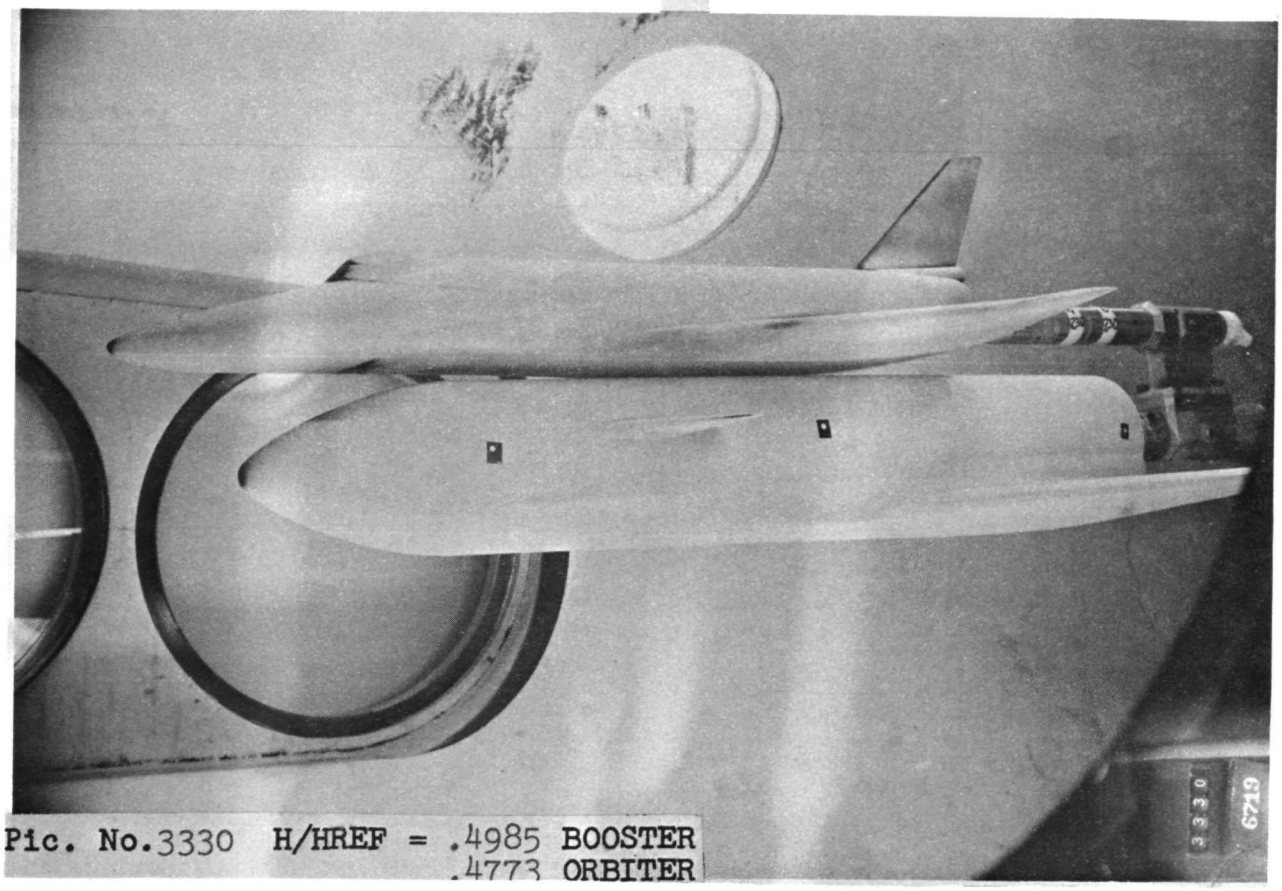
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
230	6153	EDC-H-DW0	7.97	264.6	1269	-4.99	-4.99	0	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
92.6	.028	1.235	3758	2.517E-05	7.454E-08	1.27E 06	3.189E-02	4.205E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	250		
SIDE(US)	250	AVERAGE TW = 74 (R)	-.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	250	AVERAGE TW = 82 (C)	

PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F			
LS 3330 (250)	3.65	2.58	O	1.52E-02	.4773	1.942E-02	.6091	2.254E-02	.7072	1.998E-02	74	74	84	83
LS 3330 (250)	3.65	2.58	B	1.59E-02	.4985	2.027E-02	.6359	2.353E-02	.7380	2.087E-02	74	74	84	83
LS 3330 (250)	3.65	2.58	B	1.59E-02	.4985	2.027E-02	.6359	2.353E-02	.7380	2.087E-02	74	74	84	83
LS 3330 (250)	3.65	2.58	O	1.52E-02	.4773	1.942E-02	.6091	2.254E-02	.7072	1.998E-02	74	74	84	83
LS 3342 (250)	9.95	8.88	O	7.28E-03	.2283	9.287E-03	.2913	1.078E-02	.3382	9.556E-03	76	74	87	96
LS 3342 (250)	9.95	8.88	B	7.60E-03	.2384	9.695E-03	.3042	1.125E-02	.3530	9.980E-03	76	74	87	96
LS 3342 (250)	9.95	8.88	B	7.60E-03	.2384	9.695E-03	.3042	1.125E-02	.3530	9.980E-03	76	74	87	96
LS 3342 (250)	9.95	8.88	O	7.28E-03	.2283	9.287E-03	.2913	1.078E-02	.3382	9.556E-03	76	74	87	96
LS 3354 (250)	16.30	15.23	O	5.08E-03	.1594	6.484E-03	.2034	7.528E-03	.2362	6.673E-03	78	76	91	108
LS 3354 (250)	16.30	15.23	B	5.31E-03	.1665	6.770E-03	.2124	7.856E-03	.2465	6.968E-03	78	76	91	108
LS 3354 (250)	16.30	15.23	B	5.31E-03	.1665	6.770E-03	.2124	7.856E-03	.2465	6.968E-03	78	76	91	108
LS 3354 (250)	16.30	15.23	O	5.08E-03	.1594	6.484E-03	.2034	7.528E-03	.2362	6.673E-03	78	76	91	108
LS 3365 (250)	26.25	25.18	O	3.50E-03	.1099	4.472E-03	.1403	5.192E-03	.1629	4.601E-03	80	79	95	121
LS 3365 (250)	26.25	25.18	B	3.66E-03	.1148	4.669E-03	.1465	5.418E-03	.1700	4.805E-03	80	79	95	121
LS 3365 (250)	26.25	25.18	B	3.66E-03	.1148	4.669E-03	.1465	5.418E-03	.1700	4.805E-03	80	79	95	121
LS 3365 (250)	26.25	25.18	O	3.50E-03	.1099	4.472E-03	.1403	5.192E-03	.1629	4.601E-03	80	79	95	121



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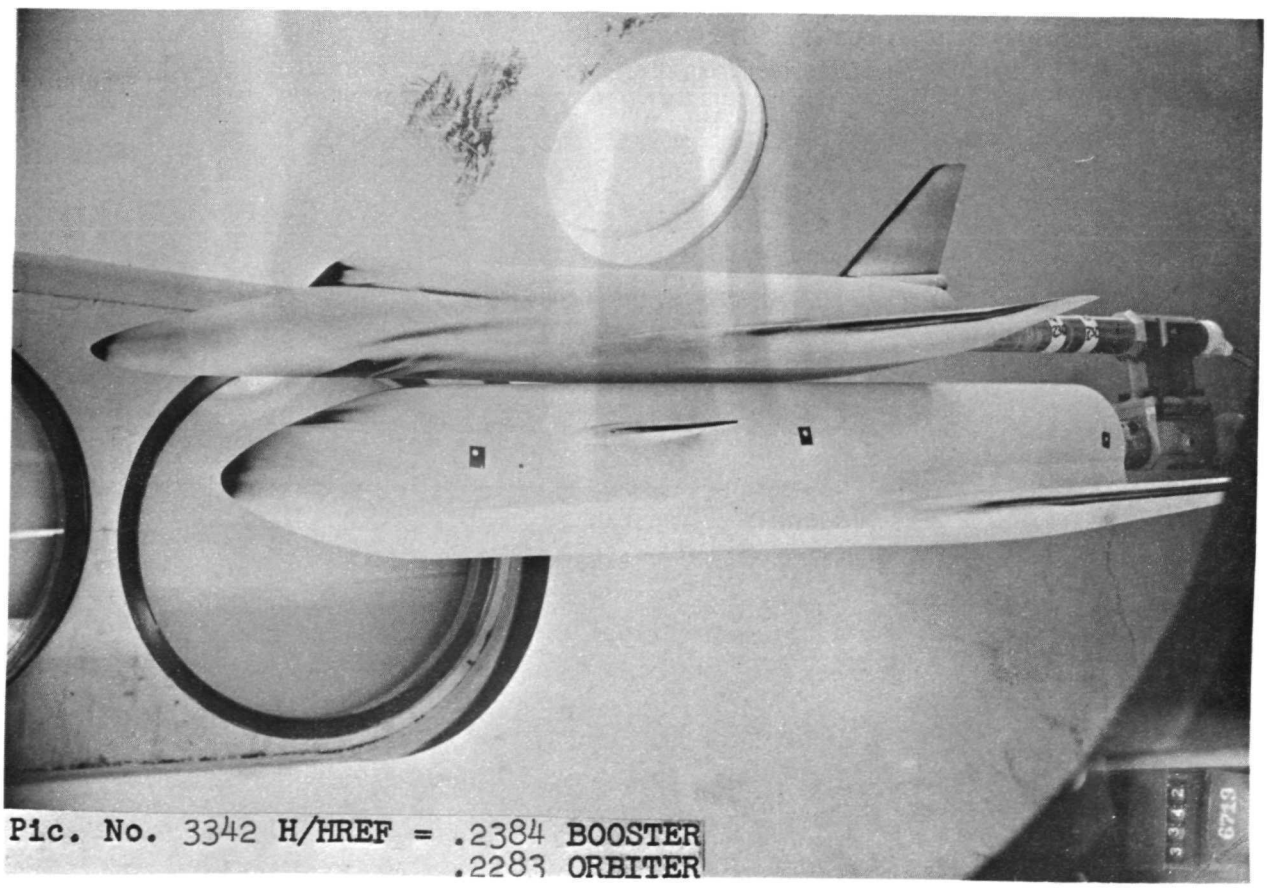
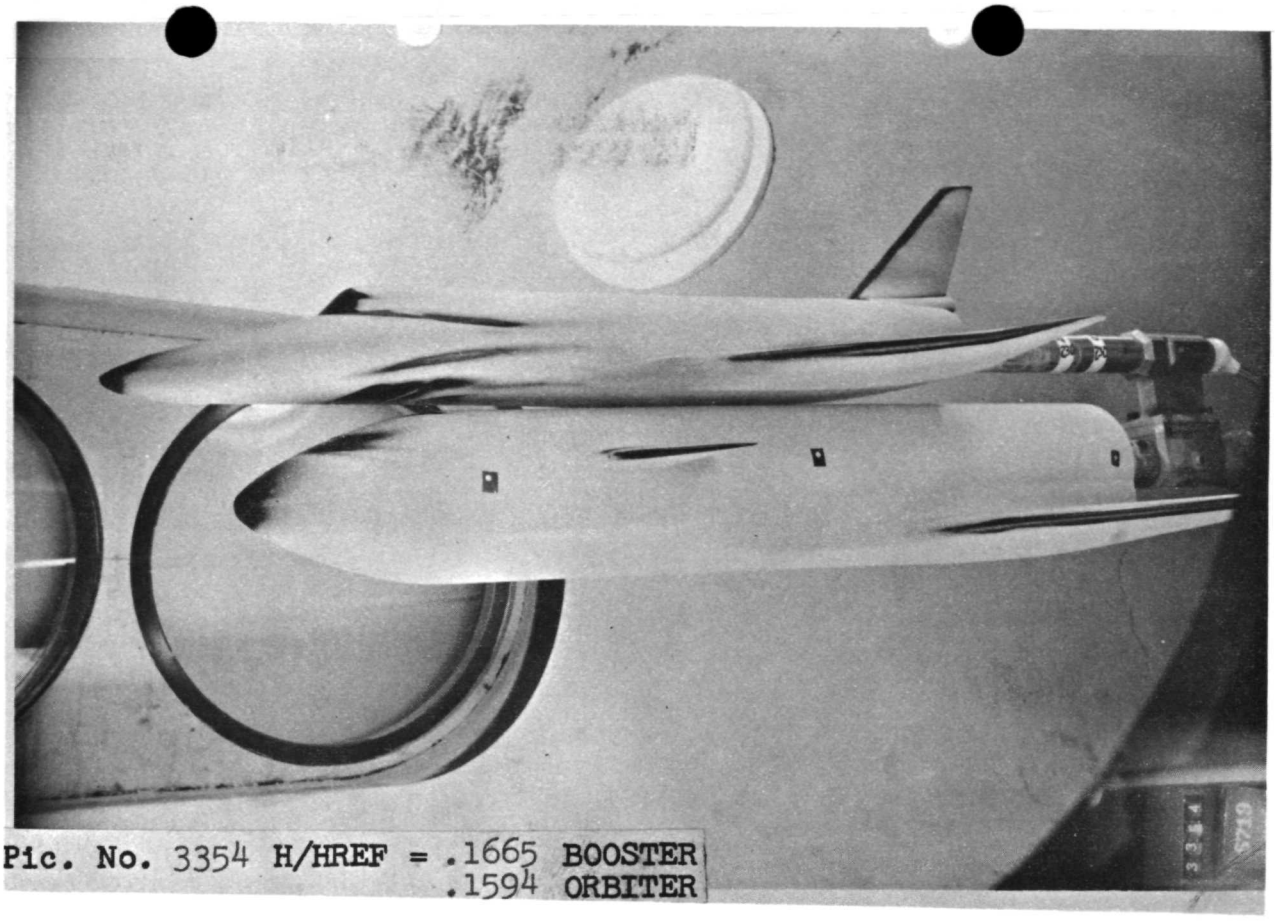
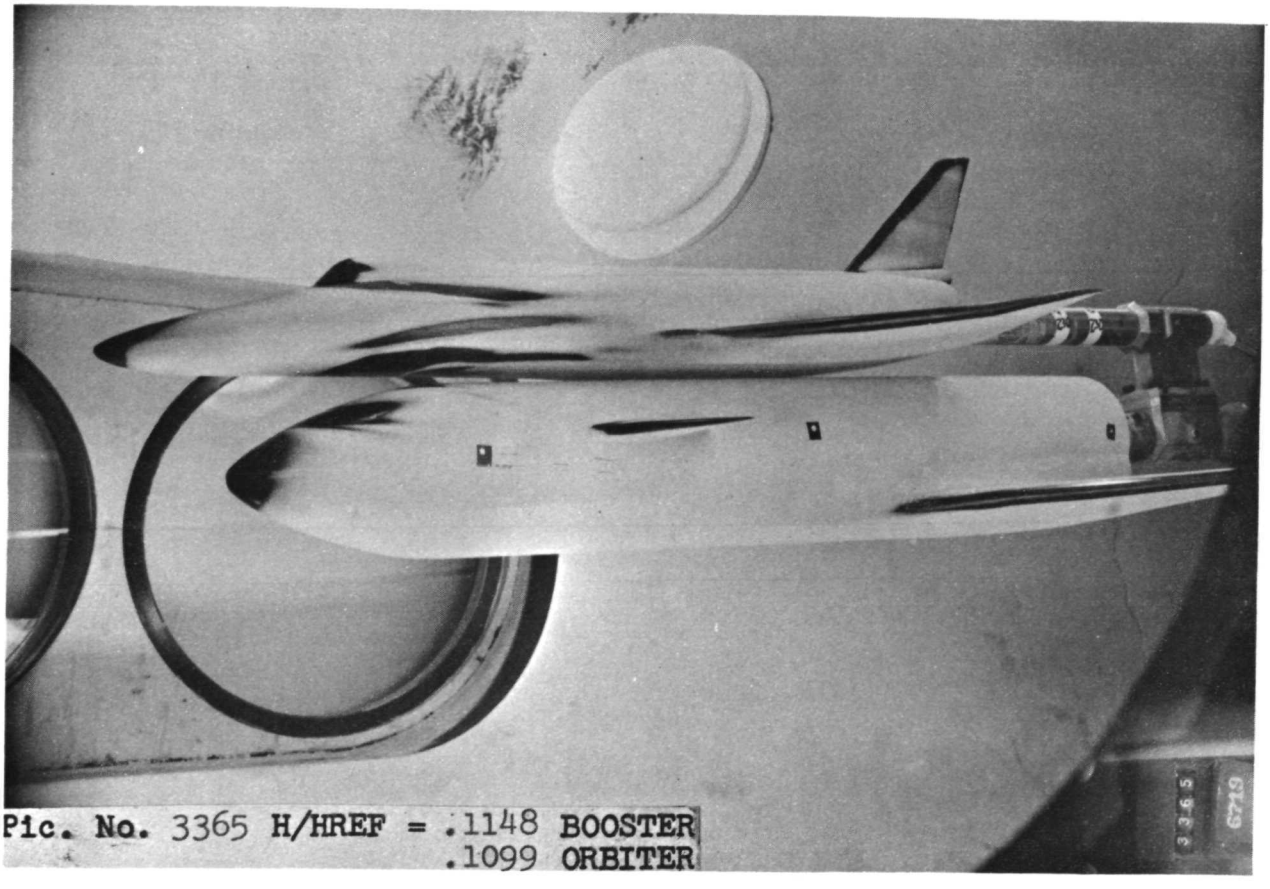
.4773 ORBITER



Pic. No. 3342 H/HREF = .2384 BOOSTER
.2283 ORBITER



Pic. No. 3354 H/HREF = .1665 BOOSTER
.1594 ORBITER



Pic. No. 3365 H/HREF = .1148 BOOSTER
.1099 ORBITER

Group 230 Re/ft 1.27E 06 ALPHA -5

6/ 4/71

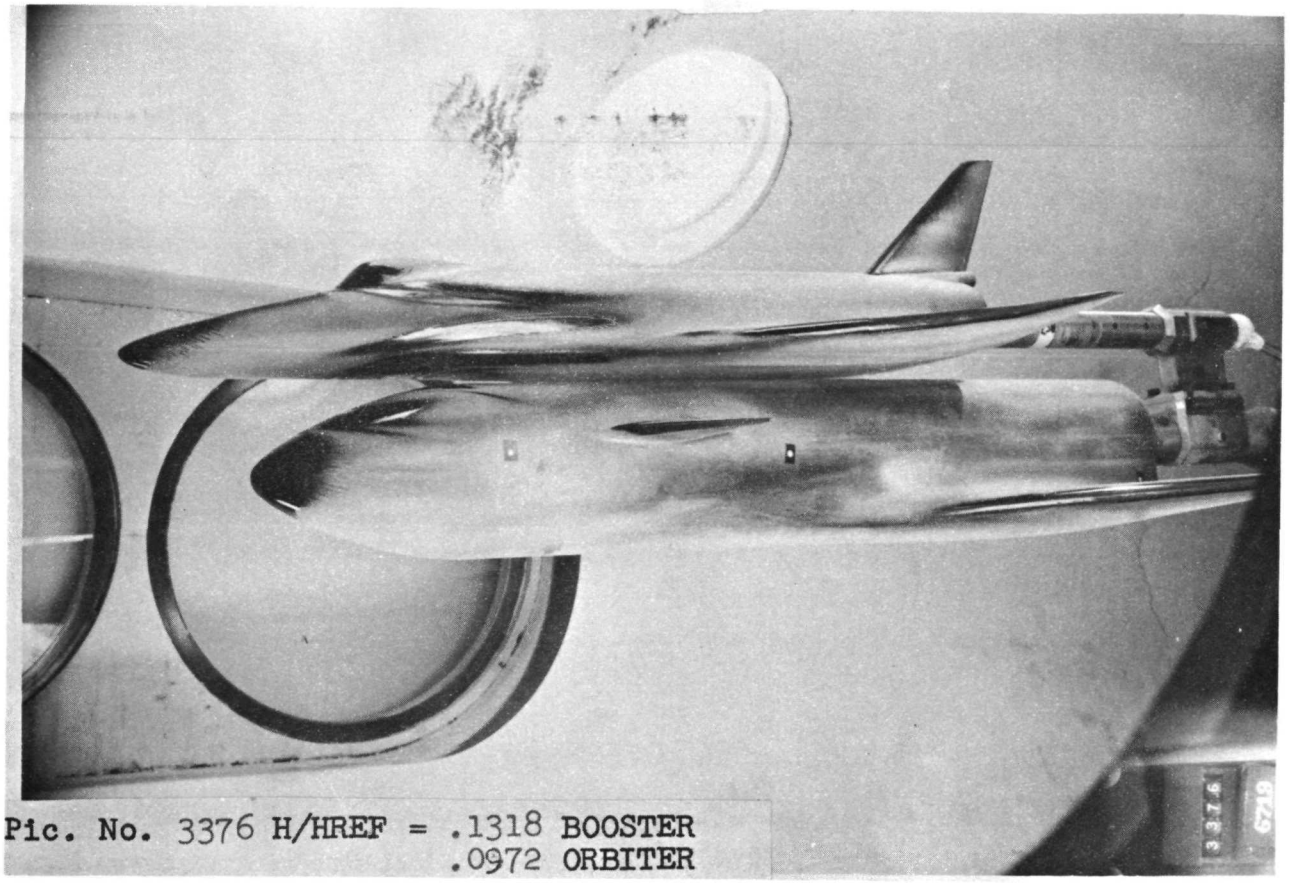
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
231	6253	EDC-8+DWD	7.97	262.5	1270	-5.00	-5.00	0	0	0

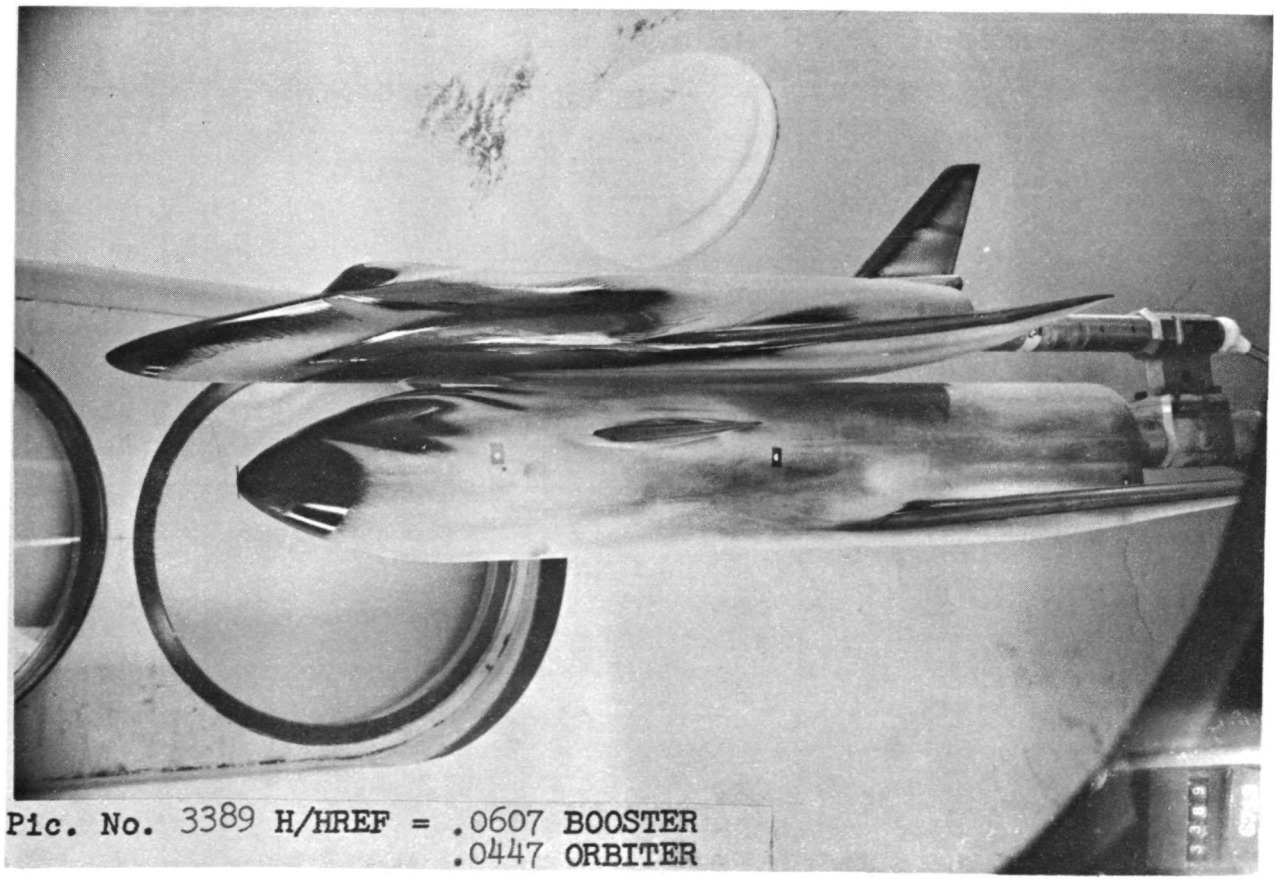
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
92.7	.028	1.225	3760	2.494E-05	7.463E-08	1.26E 06	3.161E-02	4.225E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	125		
SIDE(US)	125	AVERAGE TW = 71 (B)	=.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	125	AVERAGE TW = 85 (O)	

PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F		
LS 3376 (125)	3.65	2.58	O	3.09E-03	.0972	3.778E-03	.1190	4.255E-03	.1340	4.114E-03	0	70	87	85
LS 3376 (125)	3.65	2.58	B	4.19E-03	.1318	5.120E-03	.1612	5.763E-03	.1815	5.580E-03	0	70	87	85
LS 3376 (125)	3.65	2.58	B	4.19E-03	.1318	5.120E-03	.1612	5.763E-03	.1815	5.580E-03	0	70	87	85
LS 3376 (125)	3.65	2.58	O	3.09E-03	.0972	3.778E-03	.1190	4.255E-03	.1340	4.114E-03	0	70	87	85
LS 3389 (125)	10.50	9.43	O	1.42E-03	.0447	1.739E-03	.0548	1.958E-03	.0617	1.894E-03	0	71	91	98
LS 3389 (125)	10.50	9.43	B	1.93E-03	.0607	2.356E-03	.0742	2.652E-03	.0835	2.569E-03	0	71	91	98
LS 3389 (125)	10.50	9.43	B	1.93E-03	.0607	2.356E-03	.0742	2.652E-03	.0835	2.569E-03	0	71	91	98
LS 3389 (125)	10.50	9.43	O	1.42E-03	.0447	1.739E-03	.0548	1.958E-03	.0617	1.894E-03	0	71	91	98
LS 3401 (125)	16.85	15.78	O	1.01E-03	.0317	1.231E-03	.0387	1.386E-03	.0436	1.340E-03	0	73	94	109
LS 3401 (125)	16.85	15.78	B	1.36E-03	.0429	1.668E-03	.0525	1.877E-03	.0591	1.818E-03	0	73	94	109
LS 3401 (125)	16.85	15.78	B	1.36E-03	.0429	1.668E-03	.0525	1.877E-03	.0591	1.818E-03	0	73	94	109
LS 3401 (125)	16.85	15.78	O	1.01E-03	.0317	1.231E-03	.0387	1.386E-03	.0436	1.340E-03	0	73	94	109
LS 3411 (125)	23.60	22.53	O	7.75E-04	.0244	9.485E-04	.0299	1.068E-03	.0336	1.034E-03	0	75	98	120
LS 3411 (125)	23.60	22.53	B	1.05E-03	.0331	1.285E-03	.0405	1.447E-03	.0456	1.402E-03	0	75	98	120
LS 3411 (125)	23.60	22.53	B	1.05E-03	.0331	1.285E-03	.0405	1.447E-03	.0456	1.402E-03	0	75	98	120
LS 3411 (125)	23.60	22.53	O	7.75E-04	.0244	9.485E-04	.0299	1.068E-03	.0336	1.034E-03	0	75	98	120

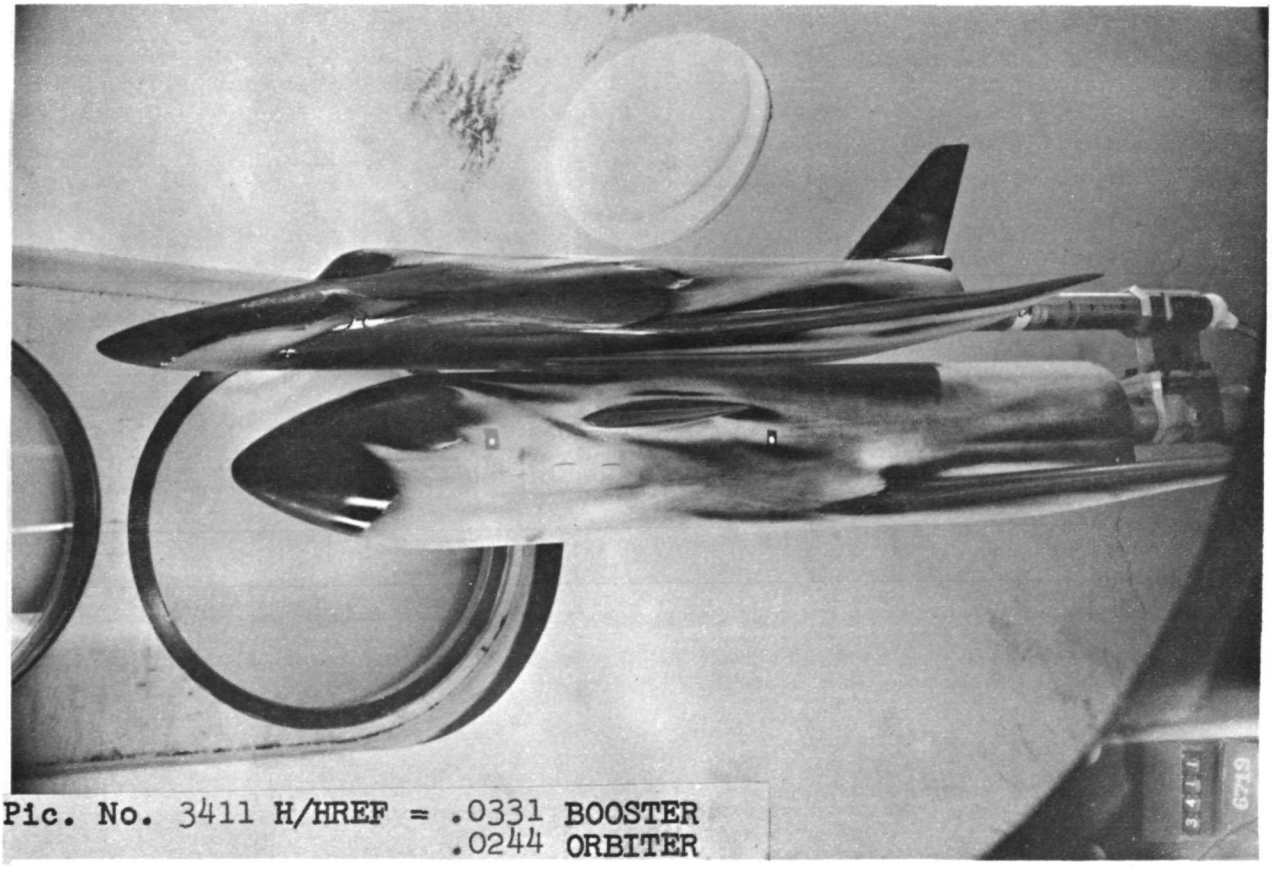


Pic. No. 3376 H/HREF = .1318 BOOSTER
.0972 ORBITER



Pic. No. 3389 H/HREF = .0607 BOOSTER
.0447 ORBITER

Pic. No. 3401 H/HREF = .0429 BOOSTER
.0317 ORBITER



Pic. No. 3411 H/HREF = .0331 BOOSTER
.0244 ORBITER

Group 231 Re/ft 1.26E 06 ALPHA -5

6/ 4/71

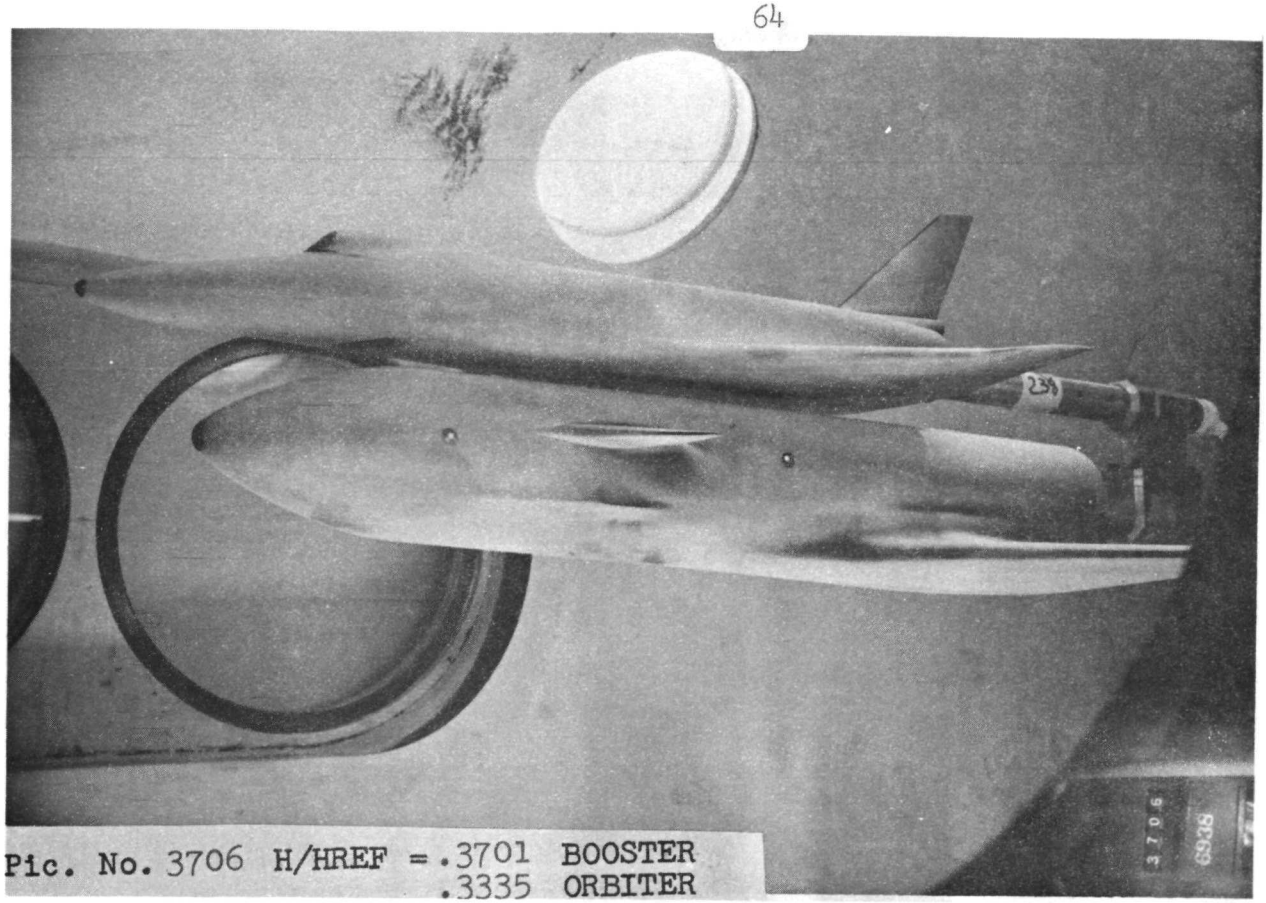
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
239	6153	EDC-B+CWO	8.00	565.1	1321	.02	.02	0	0	0

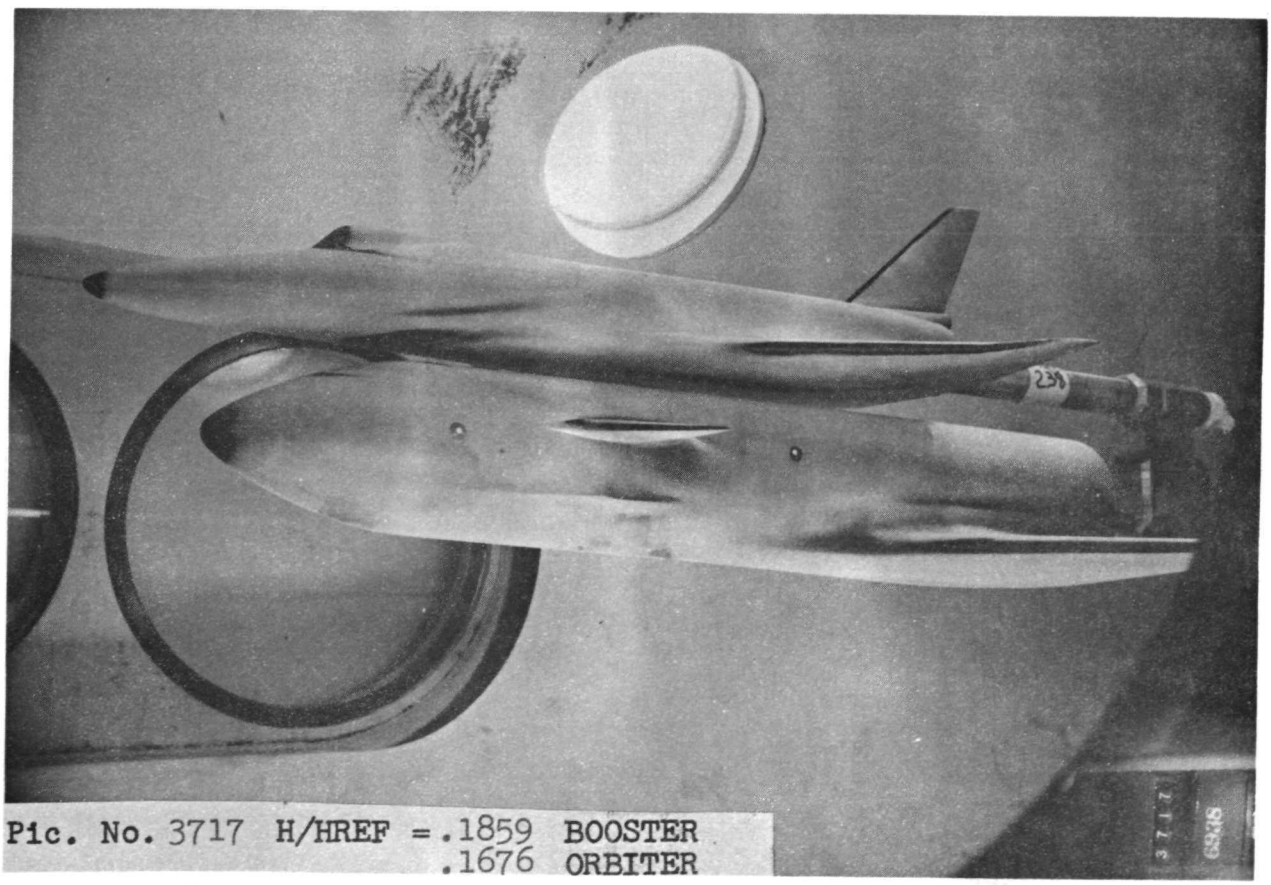
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
95.7	.058	2.593	3835	5.075E-05	7.704E-08	2.53E 06	4.655E-02	2.974E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	275		
SIDE(US)	275	AVERAGE TW = 75 (8)	-.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	275	AVERAGE TW = 96 (0)	

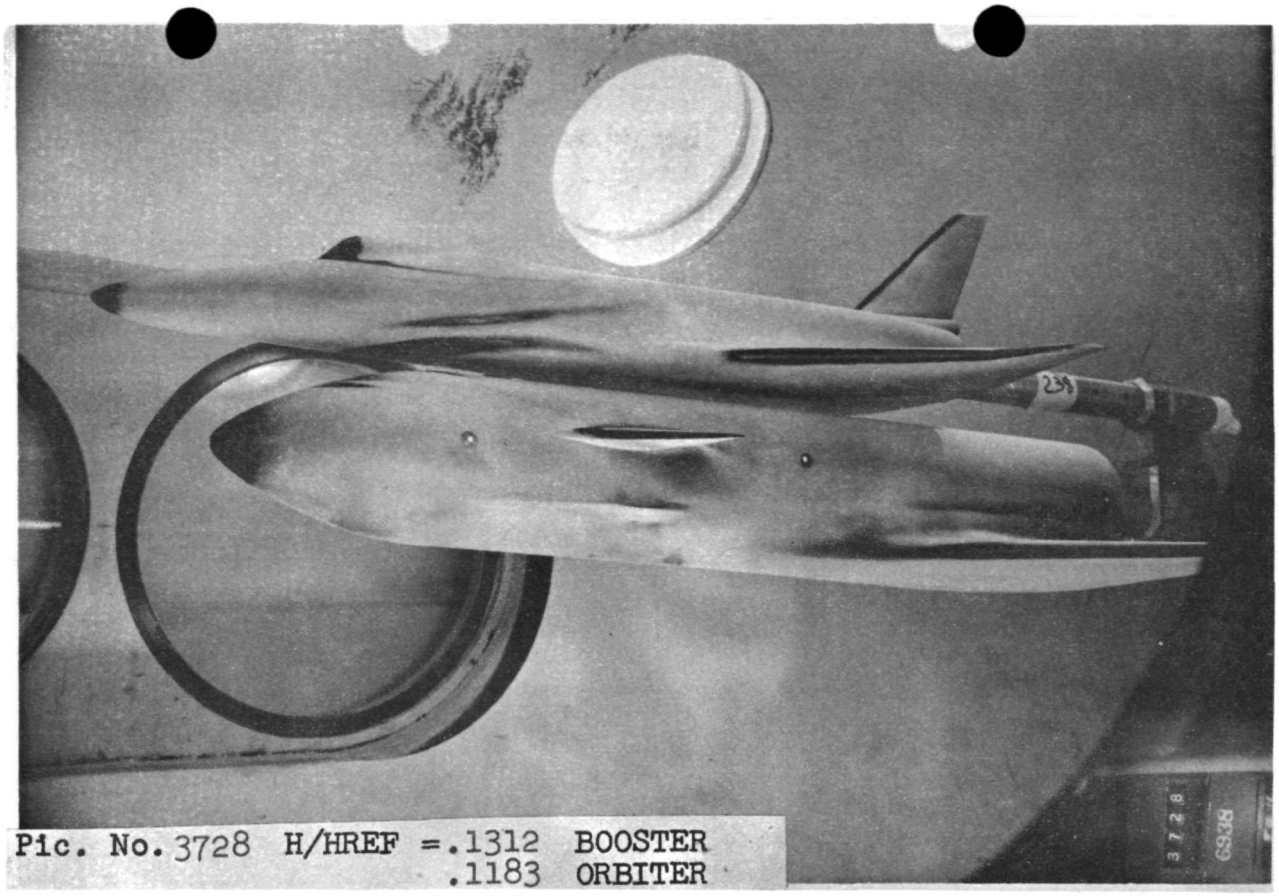
PIC NC	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F		
LS 3706 (275)	3.65	2.58	O	1.55E-02	.3335	1.975E-02	.4247	2.289E-02	.4924	9.865E-03	0	75	96	98
LS 3706 (275)	3.65	2.58	B	1.72E-02	.3701	2.189E-02	.4709	2.535E-02	.5454	1.095E-02	0	75	96	98
LS 3706 (275)	3.65	2.58	B	1.72E-02	.3701	2.189E-02	.4709	2.535E-02	.5454	1.095E-02	0	75	96	98
LS 3706 (275)	3.65	2.58	O	1.55E-02	.3335	1.975E-02	.4247	2.289E-02	.4924	9.865E-03	0	75	96	98
LS 3717 (275)	9.30	8.23	O	7.78E-03	.1676	9.911E-03	.2134	1.149E-02	.2474	4.962E-03	0	75	98	108
LS 3717 (275)	9.30	8.23	B	8.63E-03	.1859	1.099E-02	.2366	1.273E-02	.2740	5.505E-03	0	75	98	108
LS 3717 (275)	9.30	8.23	B	8.63E-03	.1859	1.099E-02	.2366	1.273E-02	.2740	5.505E-03	0	75	98	108
LS 3717 (275)	9.30	8.23	O	7.78E-03	.1676	9.911E-03	.2134	1.149E-02	.2474	4.962E-03	0	75	98	108
LS 3728 (275)	15.05	13.98	O	5.49E-03	.1183	6.997E-03	.1506	8.111E-03	.1746	3.501E-03	0	77	101	118
LS 3728 (275)	15.05	13.98	B	6.10E-03	.1312	7.756E-03	.1670	8.984E-03	.1934	3.885E-03	0	77	101	118
LS 3728 (275)	15.05	13.98	B	6.10E-03	.1312	7.756E-03	.1670	8.984E-03	.1934	3.885E-03	0	77	101	118
LS 3728 (275)	15.05	13.98	O	5.49E-03	.1183	6.997E-03	.1506	8.111E-03	.1746	3.501E-03	0	77	101	118
LS 3739 (275)	23.40	22.33	O	3.92E-03	.0843	4.991E-03	.1074	5.785E-03	.1245	2.496E-03	0	80	105	131
LS 3739 (275)	23.40	22.33	B	4.35E-03	.0935	5.533E-03	.1190	6.409E-03	.1379	2.769E-03	0	80	105	131
LS 3739 (275)	23.40	22.33	B	4.35E-03	.0935	5.533E-03	.1190	6.409E-03	.1379	2.769E-03	0	80	105	131
LS 3739 (275)	23.40	22.33	O	3.92E-03	.0843	4.991E-03	.1074	5.785E-03	.1245	2.496E-03	0	80	105	131



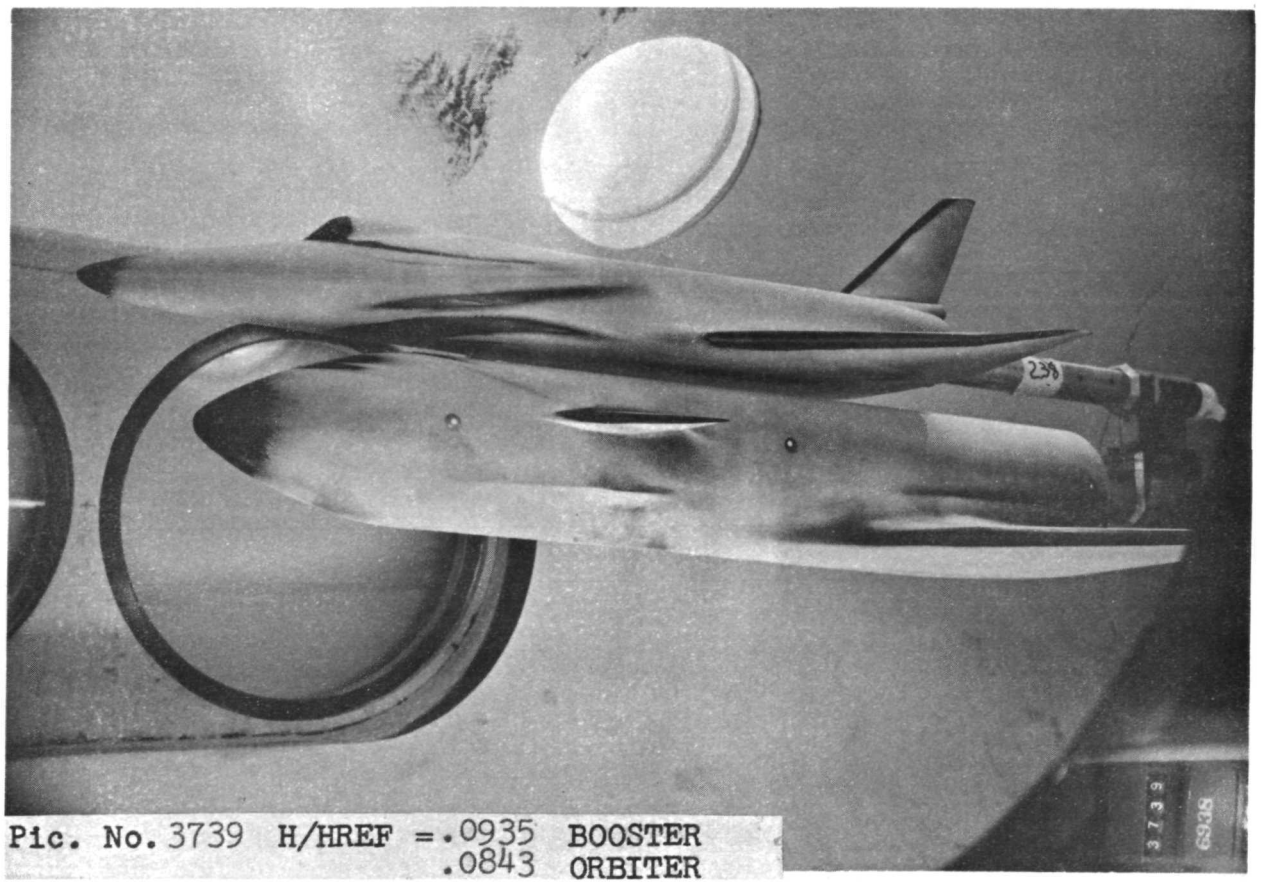
Pic. No. 3706 H/HREF = .3701 BOOSTER
.3335 ORBITER



Pic. No. 3717 H/HREF = .1859 BOOSTER
.1676 ORBITER



Pic. No. 3728 H/HREF = .1312 BOOSTER
.1183 ORBITER



Pic. No. 3739 H/HREF = .0935 BOOSTER
.0843 ORBITER

Group 238 Re/ft 2.53E 06 ALPHA 0

6/ 4/71

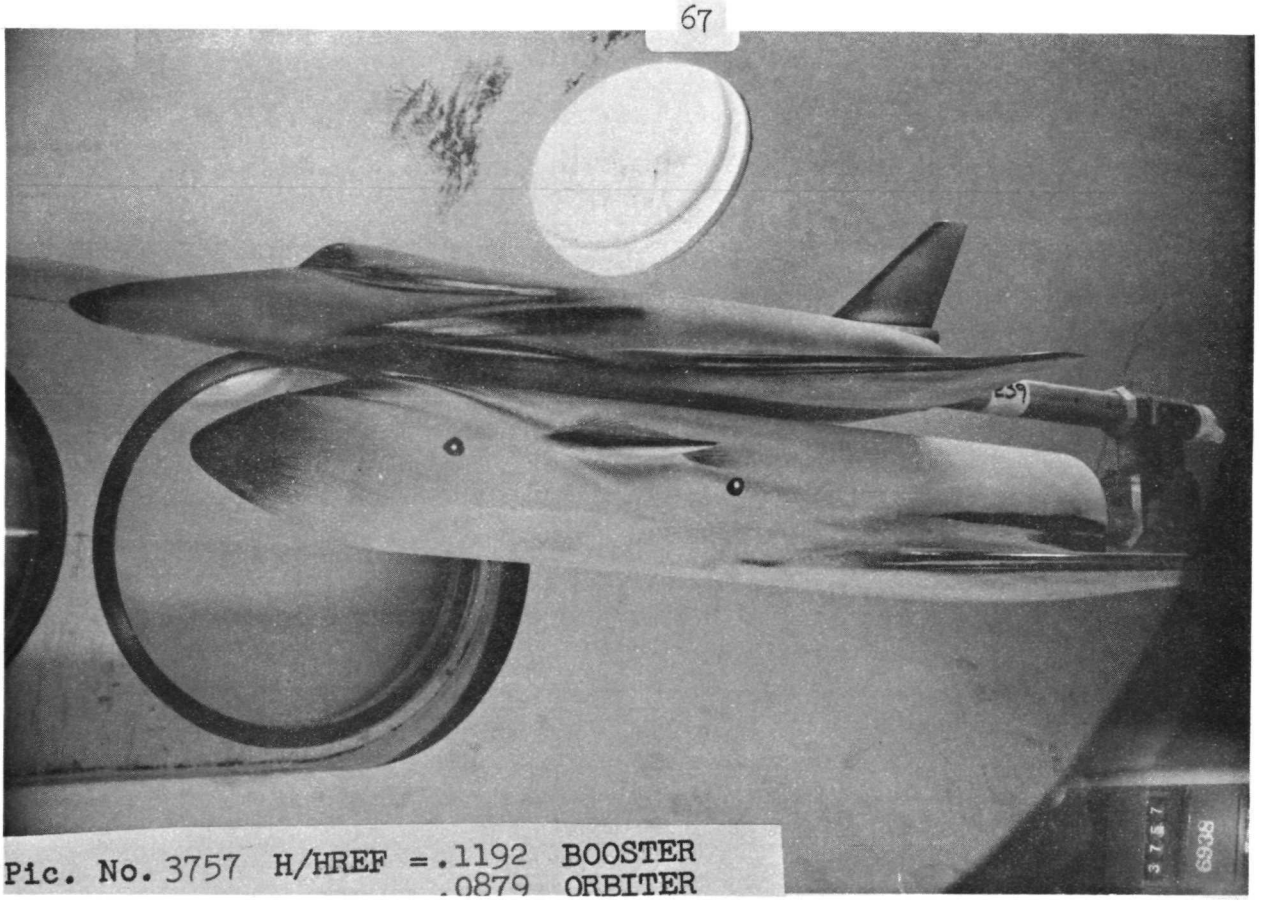
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREREND	ROLL-MODEL	YAW
239	6253	EDC-8+DW0	8.00	565.9	1316	.02	.02	0	0	0

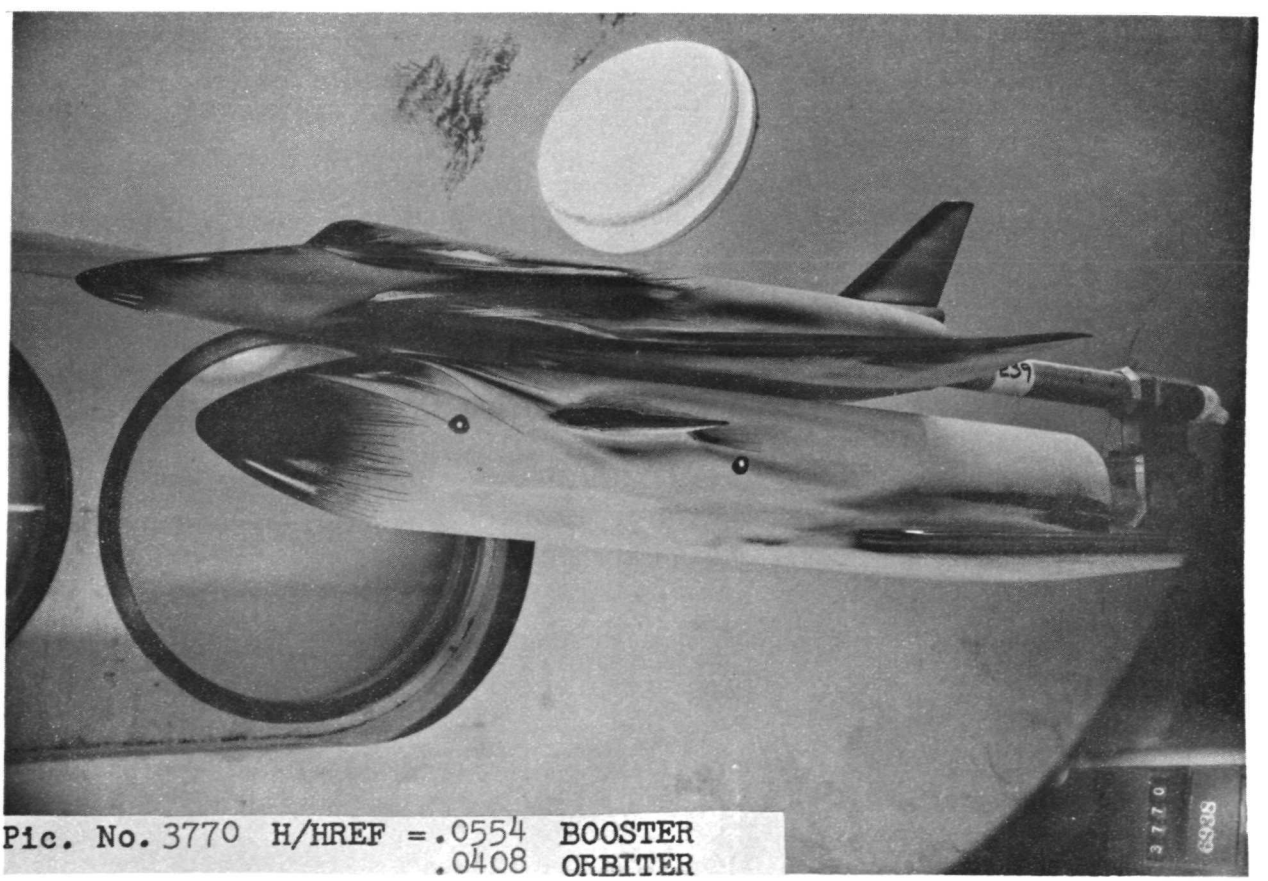
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
95.3	.058	2.597	3828	5.101E-05	7.676E-08	2.54E 06	4.649E-02	2.965E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	150		
SIDE(US)	150	AVERAGE TW = 75 (R)	-.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	150	AVERAGE TW = 95 (O)	

PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F			
LS 3757 (150)	3.65	2.58	O	4.09E-03	.0879	5.006E-03	.1076	5.642E-03	.1213	2.608E-03	0	75	94	99
LS 3757 (150)	3.65	2.58	B	5.55E-03	.1192	6.784E-03	.1459	7.638E-03	.1642	3.539E-03	0	75	94	99
LS 3757 (150)	3.65	2.58	B	5.55E-03	.1192	6.784E-03	.1459	7.638E-03	.1642	3.539E-03	0	75	94	99
LS 3757 (150)	3.65	2.58	O	4.09E-03	.0879	5.006E-03	.1076	5.642E-03	.1213	2.608E-03	0	75	94	99
LS 3770 (150)	10.35	9.28	O	1.90E-03	.0408	2.328E-03	.0500	2.624E-03	.0564	1.212E-03	0	77	98	110
LS 3770 (150)	10.35	9.28	B	2.58E-03	.0554	3.154E-03	.0678	3.551E-03	.0763	1.644E-03	0	77	98	110
LS 3770 (150)	10.35	9.28	B	2.58E-03	.0554	3.154E-03	.0678	3.551E-03	.0763	1.644E-03	0	77	98	110
LS 3770 (150)	10.35	9.28	O	1.90E-03	.0408	2.328E-03	.0500	2.624E-03	.0564	1.212E-03	0	77	98	110
LS 3783 (150)	17.10	16.03	O	1.32E-03	.0283	1.613E-03	.0347	1.818E-03	.0391	8.401E-04	0	80	102	122
LS 3783 (150)	17.10	16.03	B	1.79E-03	.0384	2.185E-03	.0470	2.461E-03	.0529	1.140E-03	0	80	102	122
LS 3783 (150)	17.10	16.03	B	1.79E-03	.0384	2.185E-03	.0470	2.461E-03	.0529	1.140E-03	0	80	102	122
LS 3783 (150)	17.10	16.03	O	1.32E-03	.0283	1.613E-03	.0347	1.818E-03	.0391	8.401E-04	0	80	102	122
LS 3797 (150)	30.94	29.87	O	8.20E-04	.0176	1.004E-03	.0216	1.132E-03	.0244	5.234E-04	0	86	109	142
LS 3797 (150)	30.94	29.87	B	1.11E-03	.0239	1.361E-03	.0293	1.532E-03	.0330	7.104E-04	0	86	109	142
LS 3797 (150)	30.94	29.87	B	1.11E-03	.0239	1.361E-03	.0293	1.532E-03	.0330	7.104E-04	0	86	109	142
LS 3797 (150)	30.94	29.87	O	8.20E-04	.0176	1.004E-03	.0216	1.132E-03	.0244	5.234E-04	0	86	109	142

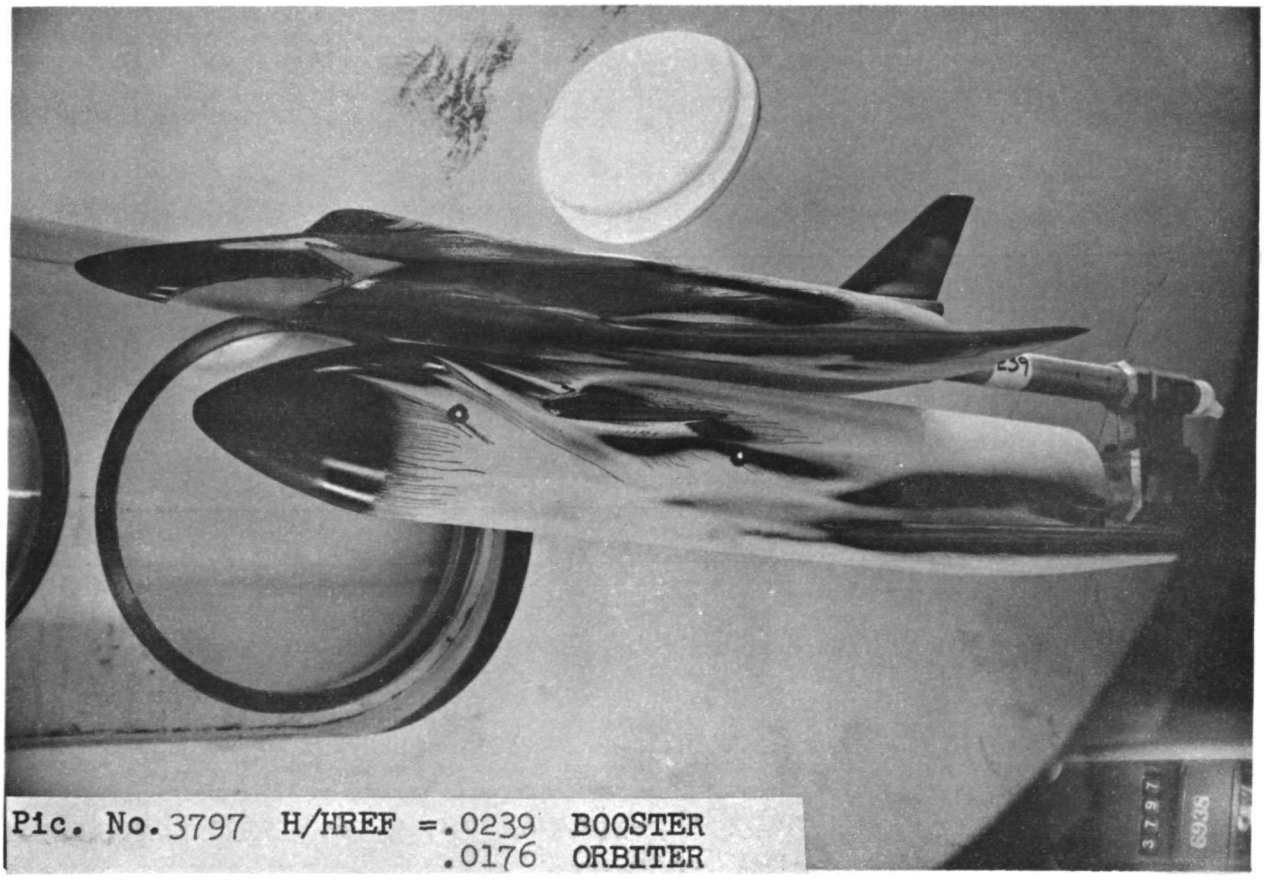


Pic. No. 3757 H/HREF = .1192 BOOSTER
.0879 ORBITER



Pic. No. 3770 H/HREF = .0554 BOOSTER
.0408 ORBITER

Pic. No. 3783 H/HREF =.0384 BOOSTER
.0283 ORBITER



Pic. No. 3797 H/HREF =.0239 BOOSTER
.0176 ORBITER

Group 239 Re/ft 2.54E 06 ALPHA 0

6/ 4/71

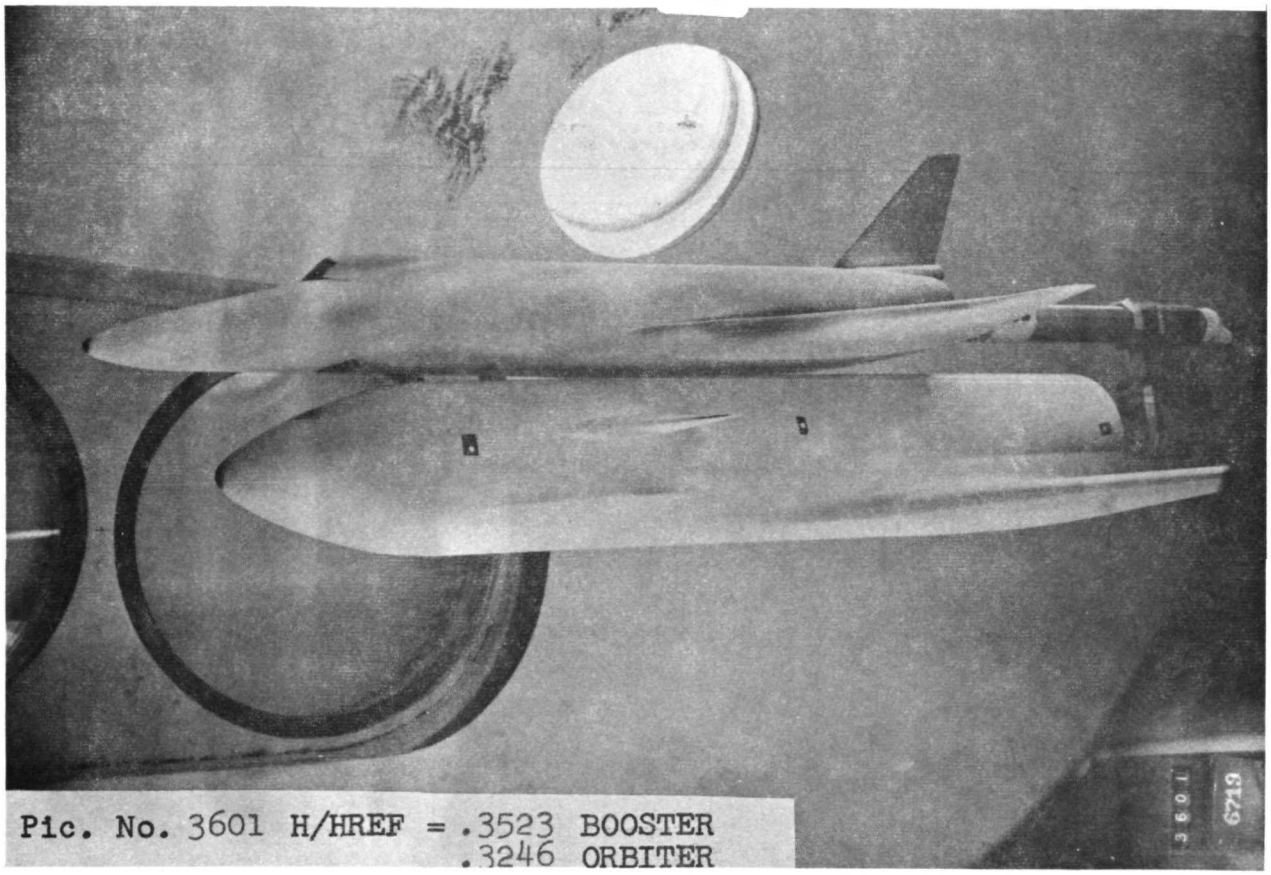
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
216	4153	EDC-B+DWO	8.00	565.6	1302	-4.97	-4.97	0	0	0

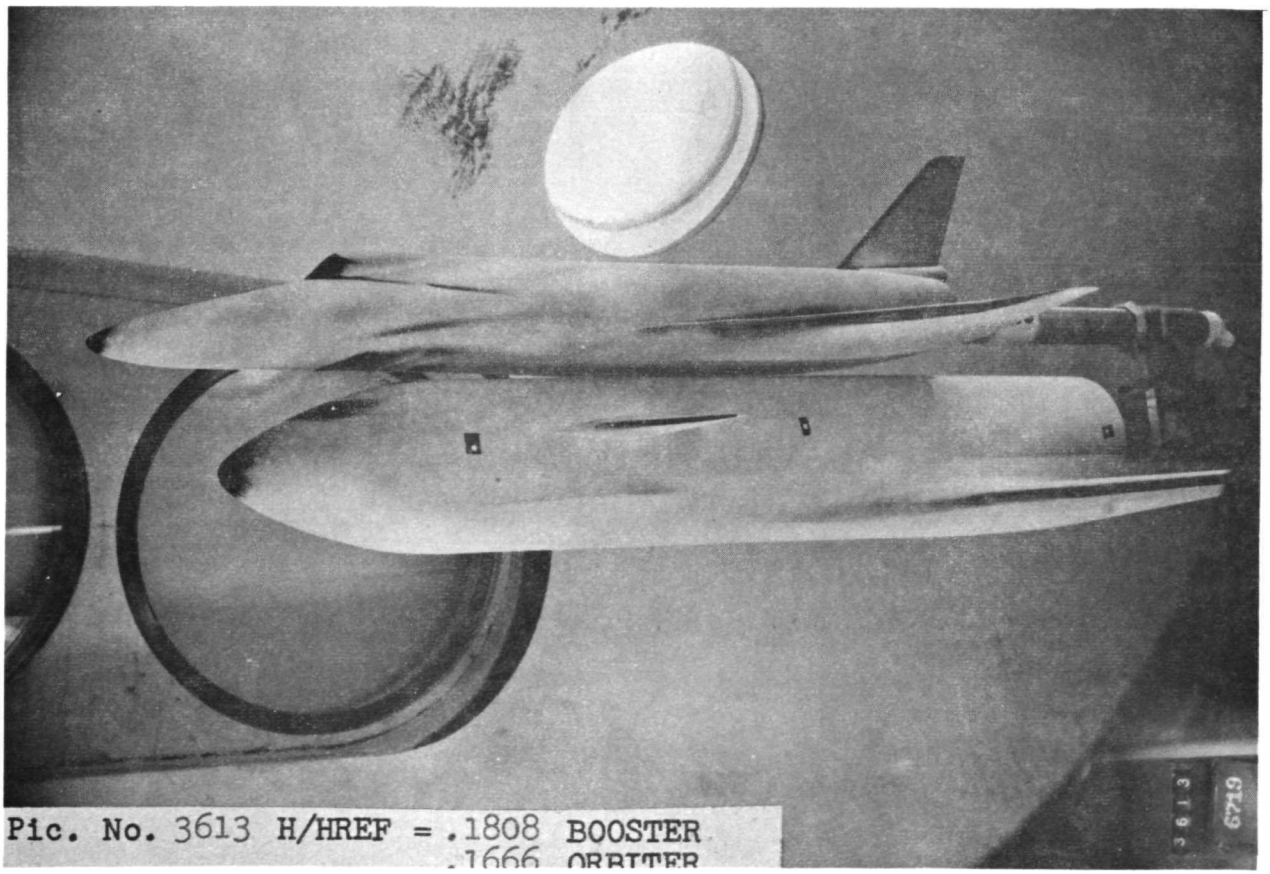
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
94.3	.058	2.595	3807	5.152E-05	7.595E-08	2.58E 06	4.641E-02	2.947E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	275		
SIDE(US)	275	AVERAGE TW = 73 (P)	-.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	275	AVERAGE TW = 90 (C)	

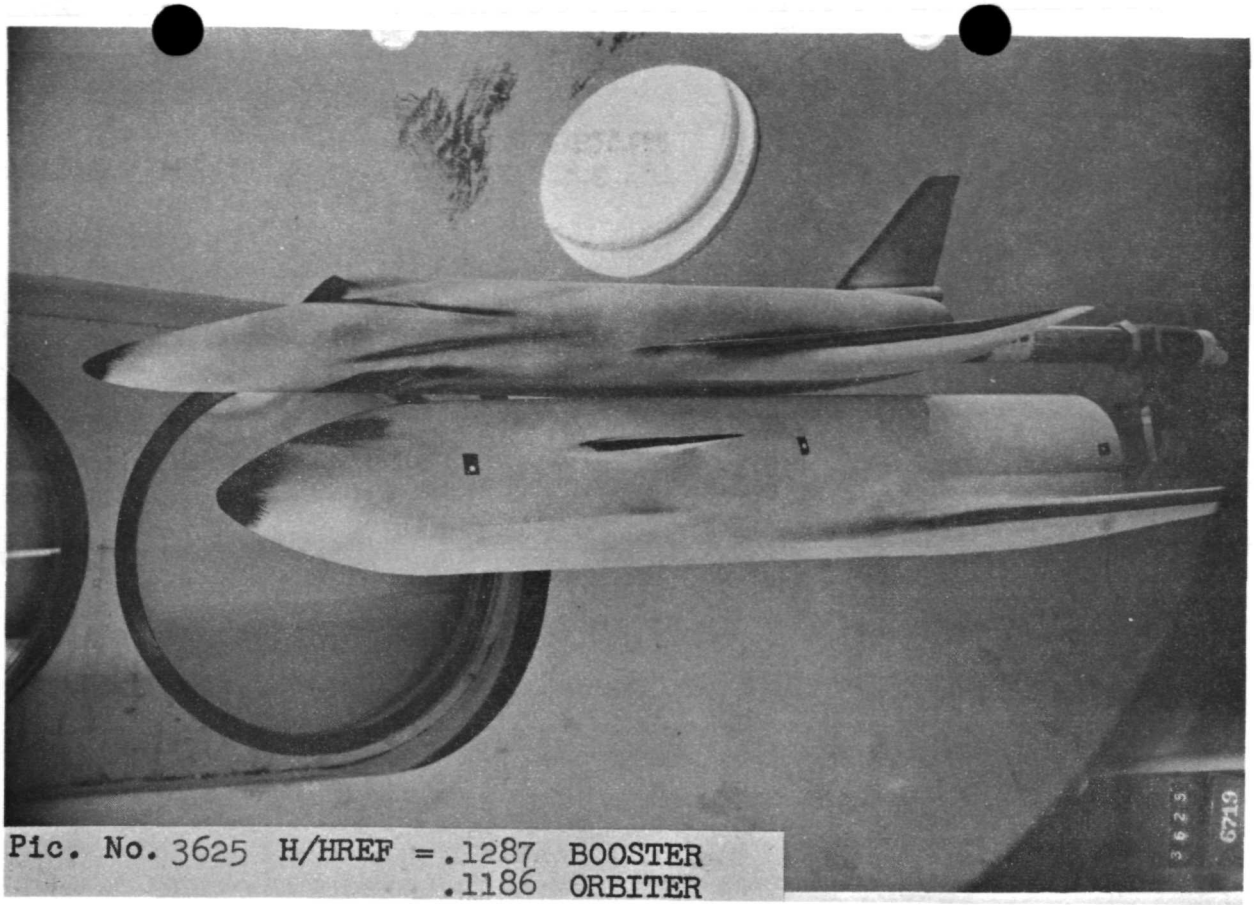
PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F		
LS 3601 (275)	4.10	3.03	O	1.51E-02	.3246	1.928E-02	.4153	2.242E-02	.4830	9.507E-03	0	73	92	92
LS 3601 (275)	4.10	3.03	B	1.64E-02	.3523	2.090E-02	.4502	2.429E-02	.5233	1.032E-02	0	73	92	92
LS 3601 (275)	4.10	3.03	B	1.64E-02	.3523	2.090E-02	.4502	2.429E-02	.5233	1.032E-02	0	73	92	92
LS 3601 (275)	4.10	3.03	O	1.51E-02	.3246	1.928E-02	.4153	2.242E-02	.4830	9.507E-03	0	73	92	92
LS 3613 (275)	10.25	9.18	O	7.73E-03	.1666	9.891E-03	.2132	1.150E-02	.2479	4.881E-03	0	74	97	110
LS 3613 (275)	10.25	9.18	B	8.39E-03	.1808	1.072E-02	.2311	1.246E-02	.2686	5.297E-03	0	74	97	110
LS 3613 (275)	10.25	9.18	B	8.39E-03	.1808	1.072E-02	.2311	1.246E-02	.2686	5.297E-03	0	74	97	110
LS 3613 (275)	10.25	9.18	O	7.73E-03	.1666	9.891E-03	.2132	1.150E-02	.2479	4.881E-03	0	74	97	110
LS 3625 (275)	16.35	15.28	O	5.50E-03	.1186	7.034E-03	.1517	8.186E-03	.1764	3.474E-03	0	76	101	126
LS 3625 (275)	16.35	15.28	B	5.97E-03	.1287	7.631E-03	.1645	8.870E-03	.1912	3.770E-03	0	76	101	126
LS 3625 (275)	16.35	15.28	B	5.97E-03	.1287	7.631E-03	.1645	8.870E-03	.1912	3.770E-03	0	76	101	126
LS 3625 (275)	16.35	15.28	O	5.50E-03	.1186	7.034E-03	.1517	8.186E-03	.1764	3.474E-03	0	76	101	126
LS 3637 (275)	22.50	21.43	O	4.31E-03	.0928	5.509E-03	.1188	6.407E-03	.1381	2.720E-03	0	79	106	139
LS 3637 (275)	22.50	21.43	B	4.67E-03	.1007	5.972E-03	.1288	6.942E-03	.1497	2.952E-03	0	79	106	139
LS 3637 (275)	22.50	21.43	B	4.67E-03	.1007	5.972E-03	.1288	6.942E-03	.1497	2.952E-03	0	79	106	139
LS 3637 (275)	22.50	21.43	O	4.31E-03	.0928	5.509E-03	.1188	6.407E-03	.1381	2.720E-03	0	79	106	139



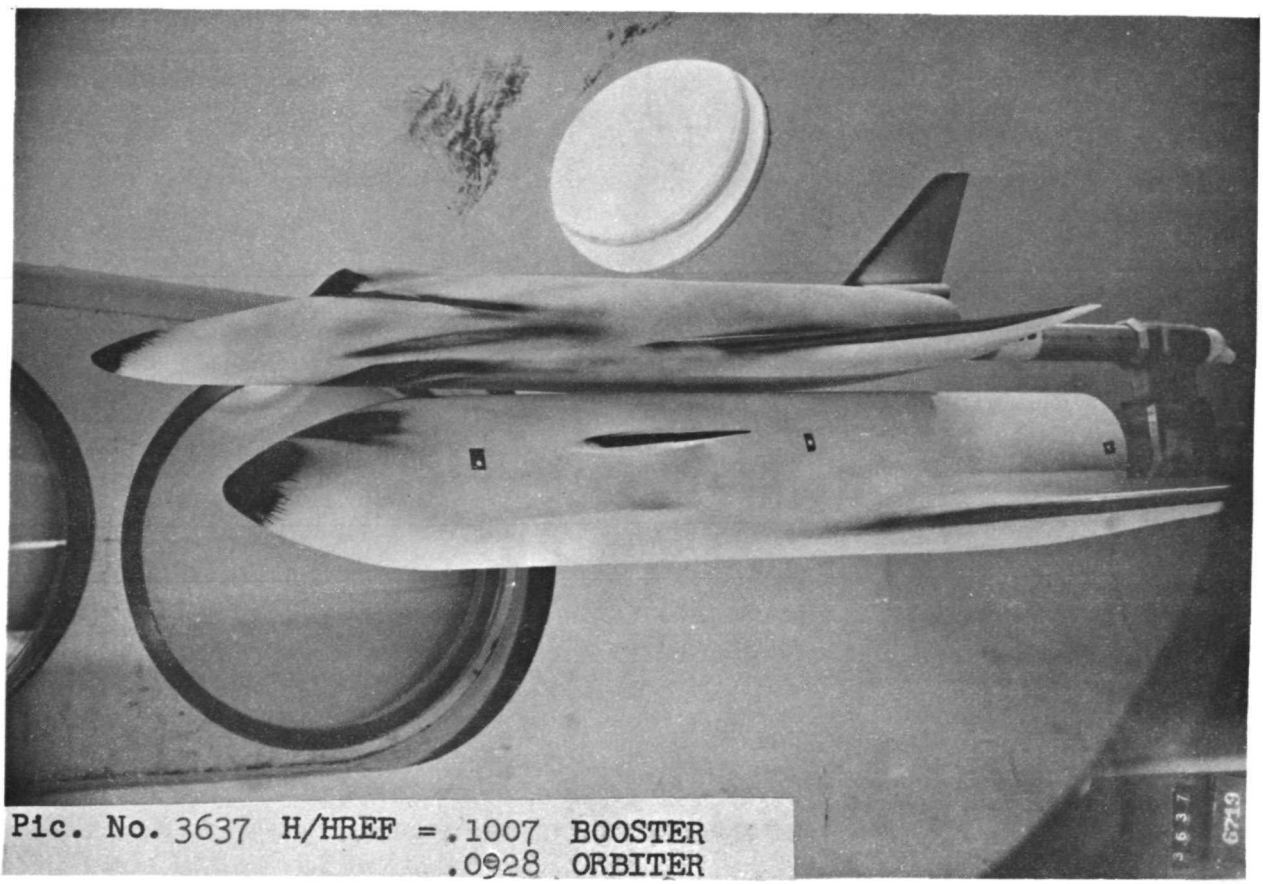
Pic. No. 3601 H/HREF = .3523 BOOSTER
.3246 ORBITER



Pic. No. 3613 H/HREF = .1808 BOOSTER
.1666 ORBITER



Pic. No. 3625 H/HREF = .1287 BOOSTER
.1186 ORBITER



Pic. No. 3637 H/HREF = .1007 BOOSTER
.0928 ORBITER

Group 236 Re/ft 2.58E 06 ALPHA -5

6/ 4/71

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

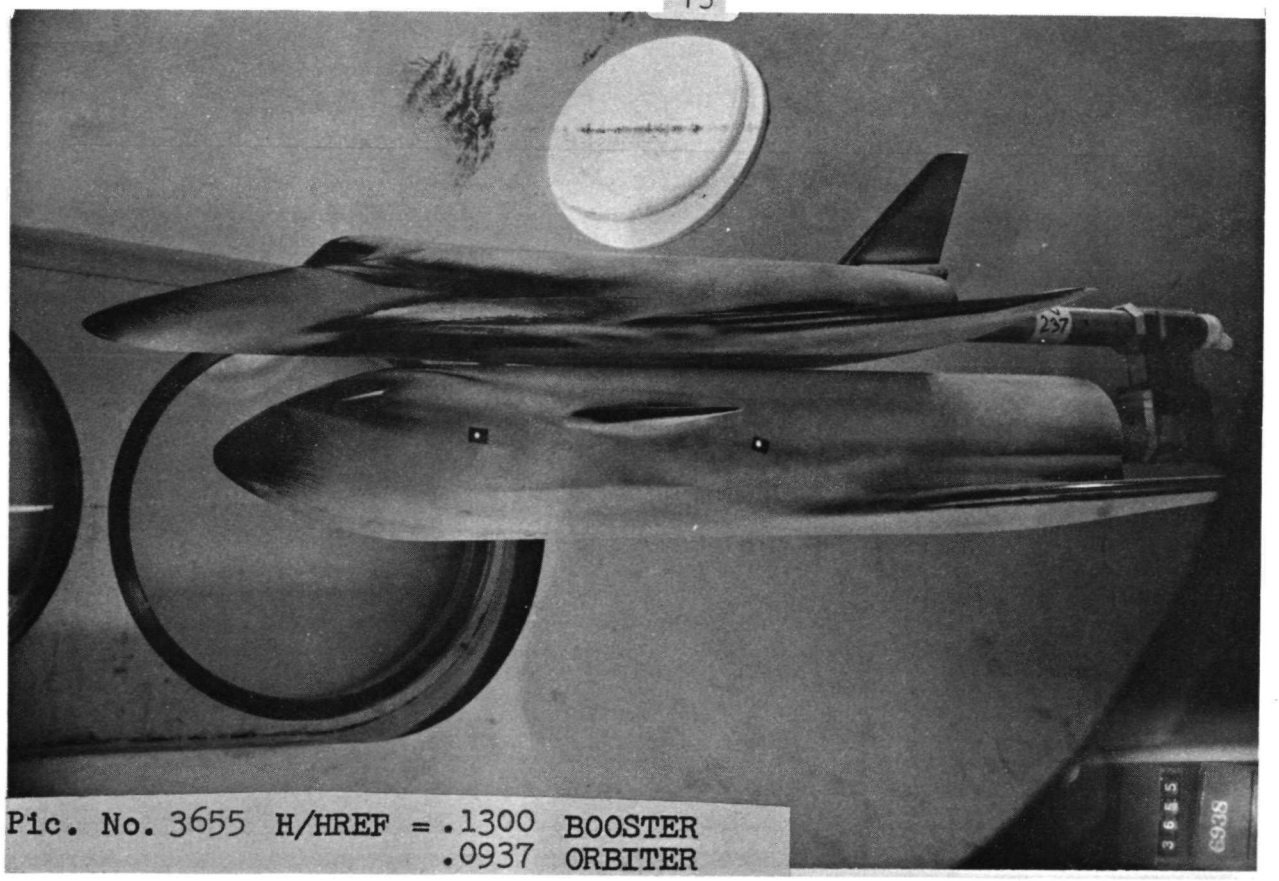
GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
237	6253	EDC-B+DWO	8.00	565.7	1299	-4.99	-4.99	0	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STHEF (R= .013FT)
94.2	.058	2.596	3804	5.163E-05	7.580E-08	2.59E 06	4.640E-02	2.943E-02

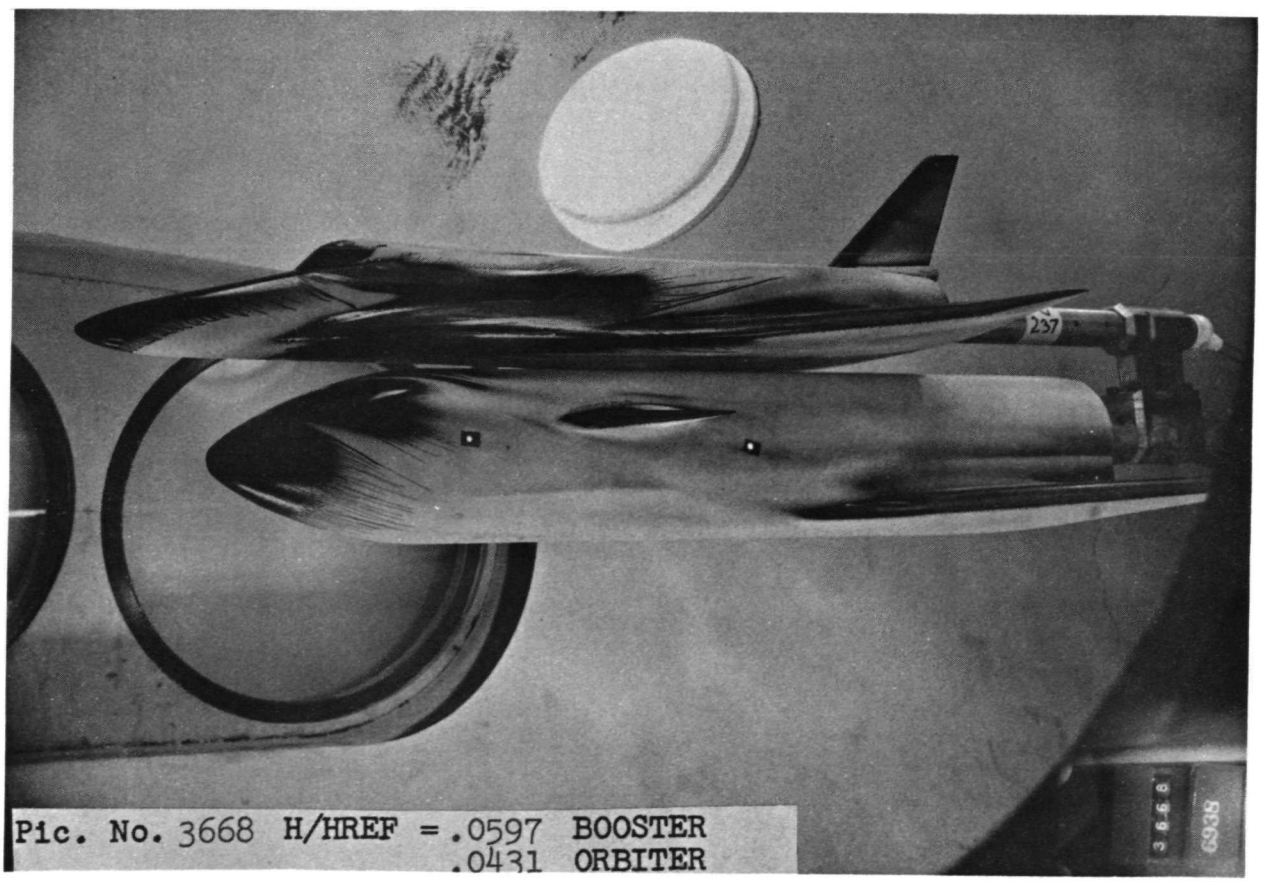
CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	150		
SIDE(US)	150	AVERAGE Tw = 72 (R)	-.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	150	AVERAGE Tw = 94 (O)	

PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F		
LS 3655 (150)	3.55	2.48	O	4.35E-03	.0937	5.338E-03	.1150	6.024E-03	.1298	2.761E-03	0	72	95	97
LS 3655 (150)	3.55	2.48	B	6.03E-03	.1300	7.393E-03	.1593	8.337E-03	.1797	3.830E-03	0	72	95	97
LS 3655 (150)	3.55	2.48	B	6.03E-03	.1300	7.393E-03	.1593	8.337E-03	.1797	3.830E-03	0	72	95	97
LS 3655 (150)	3.55	2.48	O	4.35E-03	.0937	5.338E-03	.1150	6.024E-03	.1298	2.761E-03	0	72	95	97
LS 3668 (150)	10.20	9.13	O	2.00E-03	.0431	2.453E-03	.0529	2.768E-03	.0597	1.269E-03	0	74	100	115
LS 3668 (150)	10.20	9.13	B	2.77E-03	.0597	3.397E-03	.0732	3.831E-03	.0826	1.760E-03	0	74	100	115
LS 3668 (150)	10.20	9.13	B	2.77E-03	.0597	3.397E-03	.0732	3.831E-03	.0826	1.760E-03	0	74	100	115
LS 3668 (150)	10.20	9.13	O	2.00E-03	.0431	2.453E-03	.0529	2.768E-03	.0597	1.269E-03	0	74	100	115
LS 3681 (150)	16.80	15.73	O	1.39E-03	.0299	1.704E-03	.0367	1.923E-03	.0415	8.820E-04	0	77	106	131
LS 3681 (150)	16.80	15.73	B	1.93E-03	.0415	2.360E-03	.0509	2.662E-03	.0574	1.224E-03	0	77	106	131
LS 3681 (150)	16.80	15.73	B	1.93E-03	.0415	2.360E-03	.0509	2.662E-03	.0574	1.224E-03	0	77	106	131
LS 3681 (150)	16.80	15.73	O	1.39E-03	.0299	1.704E-03	.0367	1.923E-03	.0415	8.820E-04	0	77	106	131
LS 3693 (150)	25.40	24.33	O	1.01E-03	.0217	1.235E-03	.0266	1.394E-03	.0301	6.395E-04	0	81	113	148
LS 3693 (150)	25.40	24.33	B	1.40E-03	.0301	1.710E-03	.0369	1.929E-03	.0416	8.871E-04	0	81	113	148
LS 3693 (150)	25.40	24.33	B	1.40E-03	.0301	1.710E-03	.0369	1.929E-03	.0416	8.871E-04	0	81	113	148
LS 3693 (150)	25.40	24.33	O	1.01E-03	.0217	1.235E-03	.0266	1.394E-03	.0301	6.395E-04	0	81	113	148

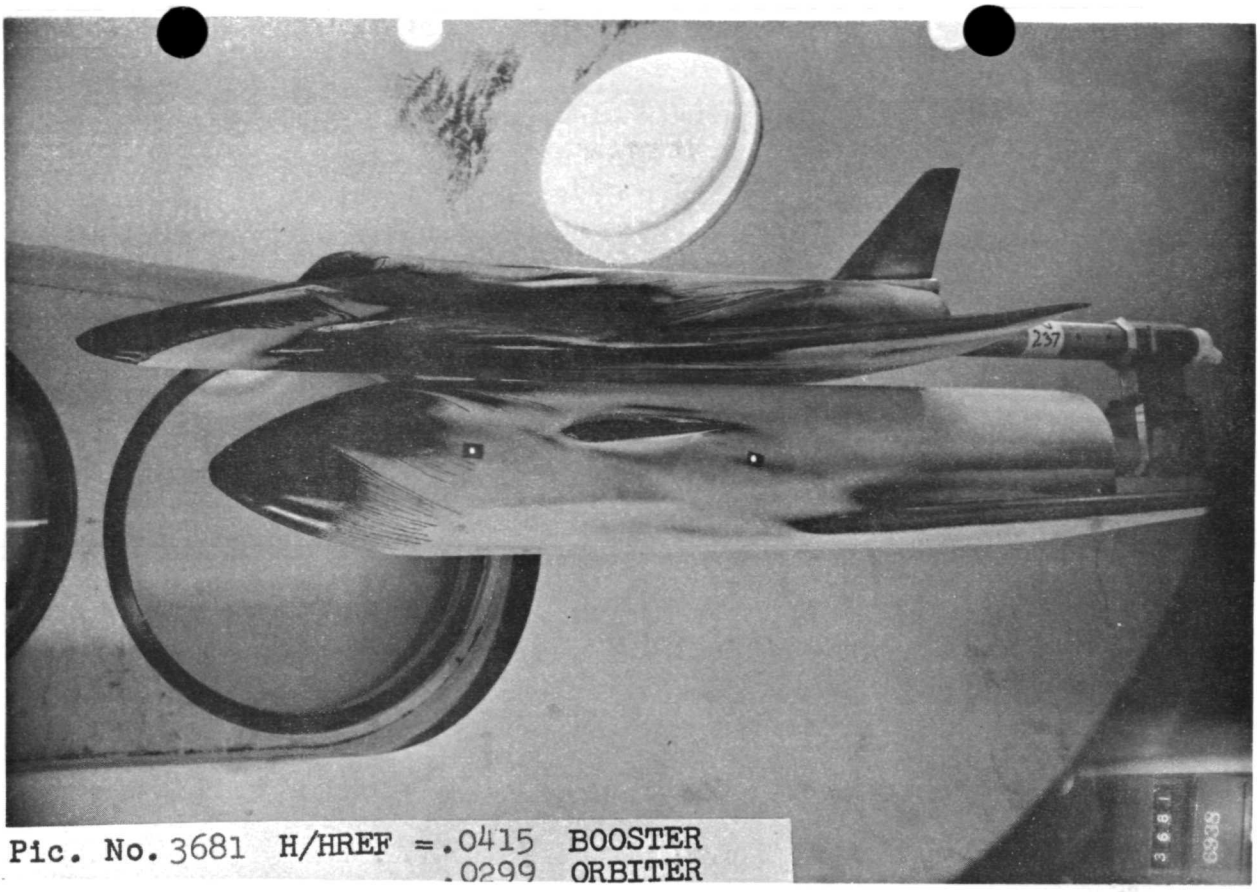
72



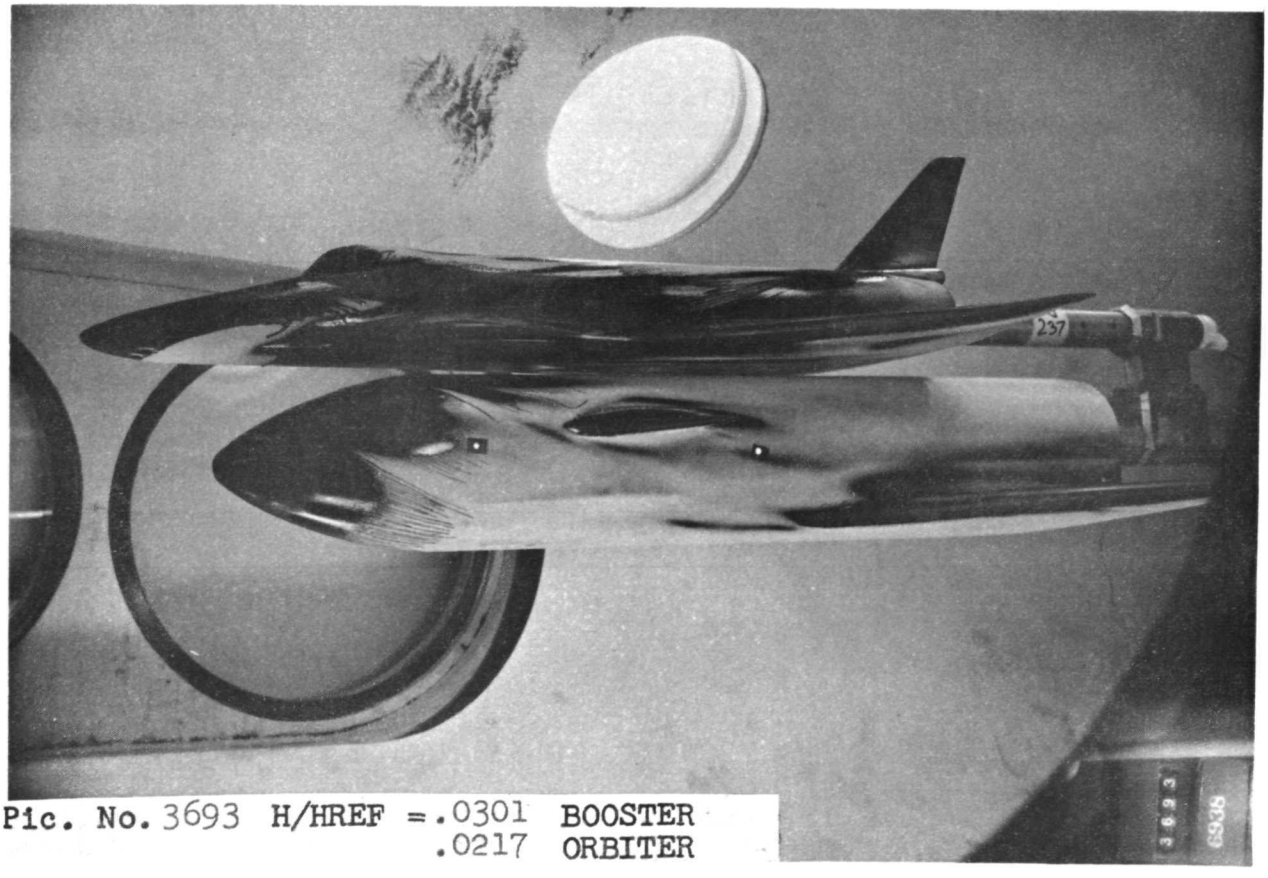
Pic. No. 3655 H/HREF = .1300 BOOSTER
.0937 ORBITER



Pic. No. 3668 H/HREF = .0597 BOOSTER
.0431 ORBITER



Pic. No. 3681 H/HREF = .0415 BOOSTER
.0299 ORBITER



Pic. No. 3693 H/HREF = .0301 BOOSTER
.0217 ORBITER

Group 237 Re/ft 2.59E 06 ALPHA -5

6/ 4/71

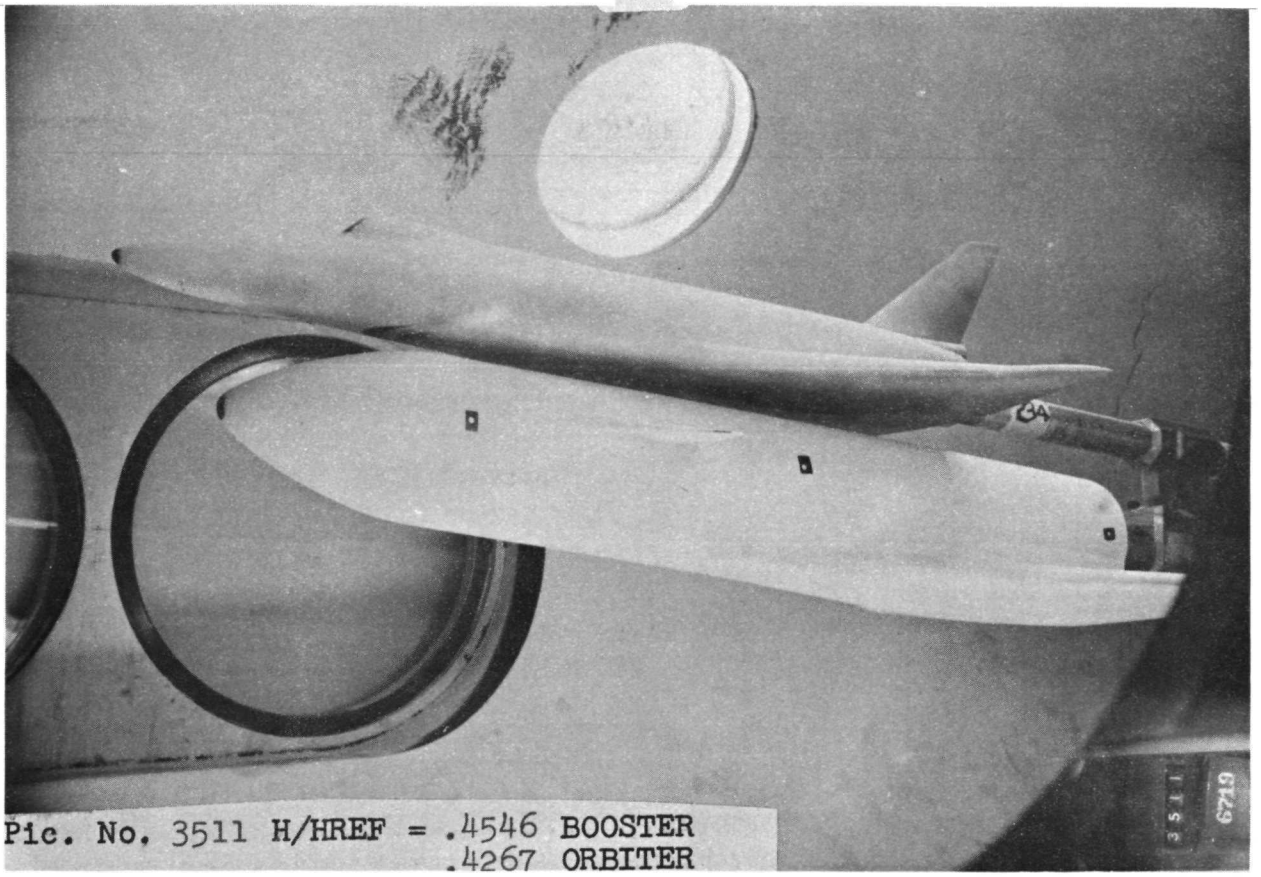
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
234	6153	GDC-H+DWO	8.00	565.3	1286	5.02	5.02	0	0	0

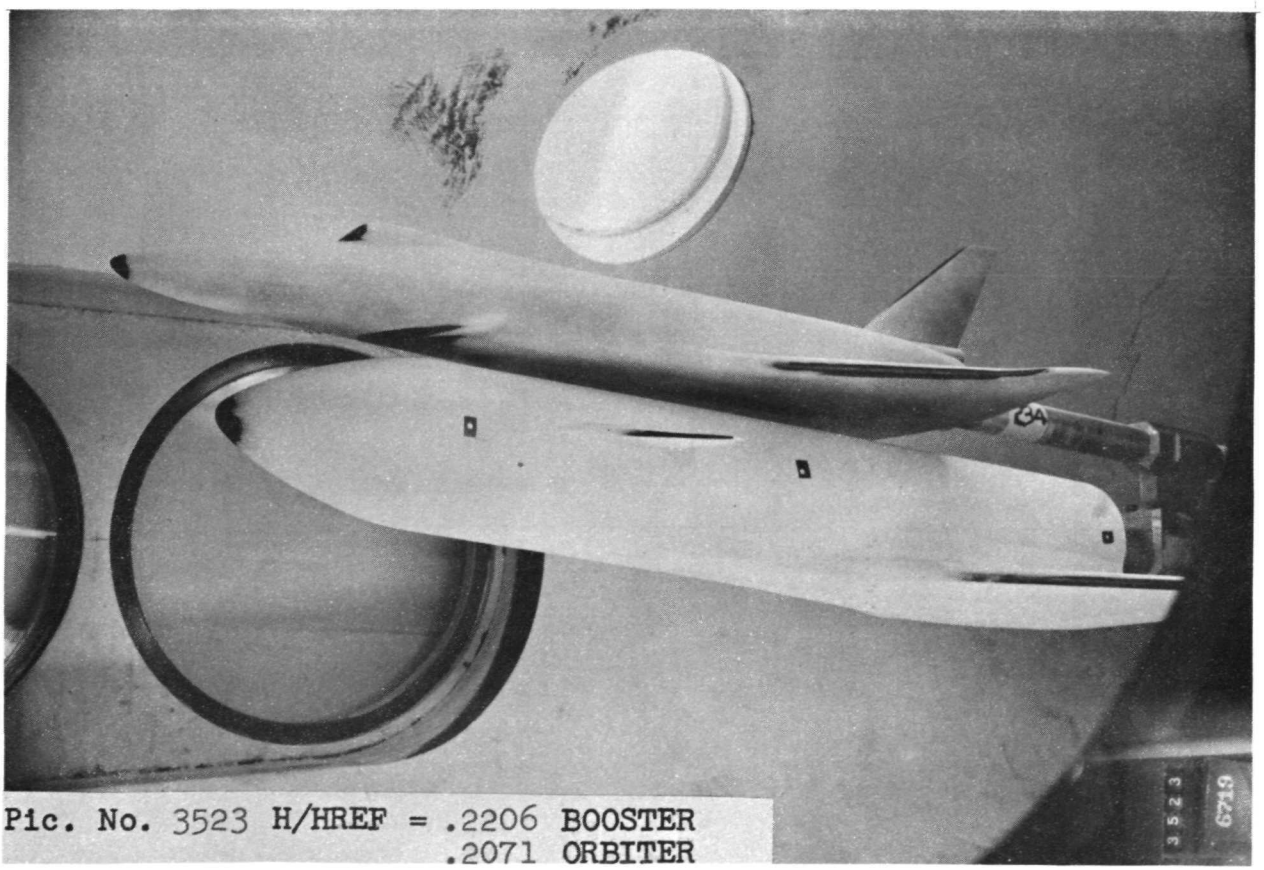
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STHEF (R= .013FT)
93.2	.058	2.594	3784	5.213E-05	7.503E-08	2.63E 06	4.628E-02	2.926E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	300		
SIDE(US)	300	AVERAGE TW = 75 (R)	-.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	300	AVERAGE TW = 90 (O)	

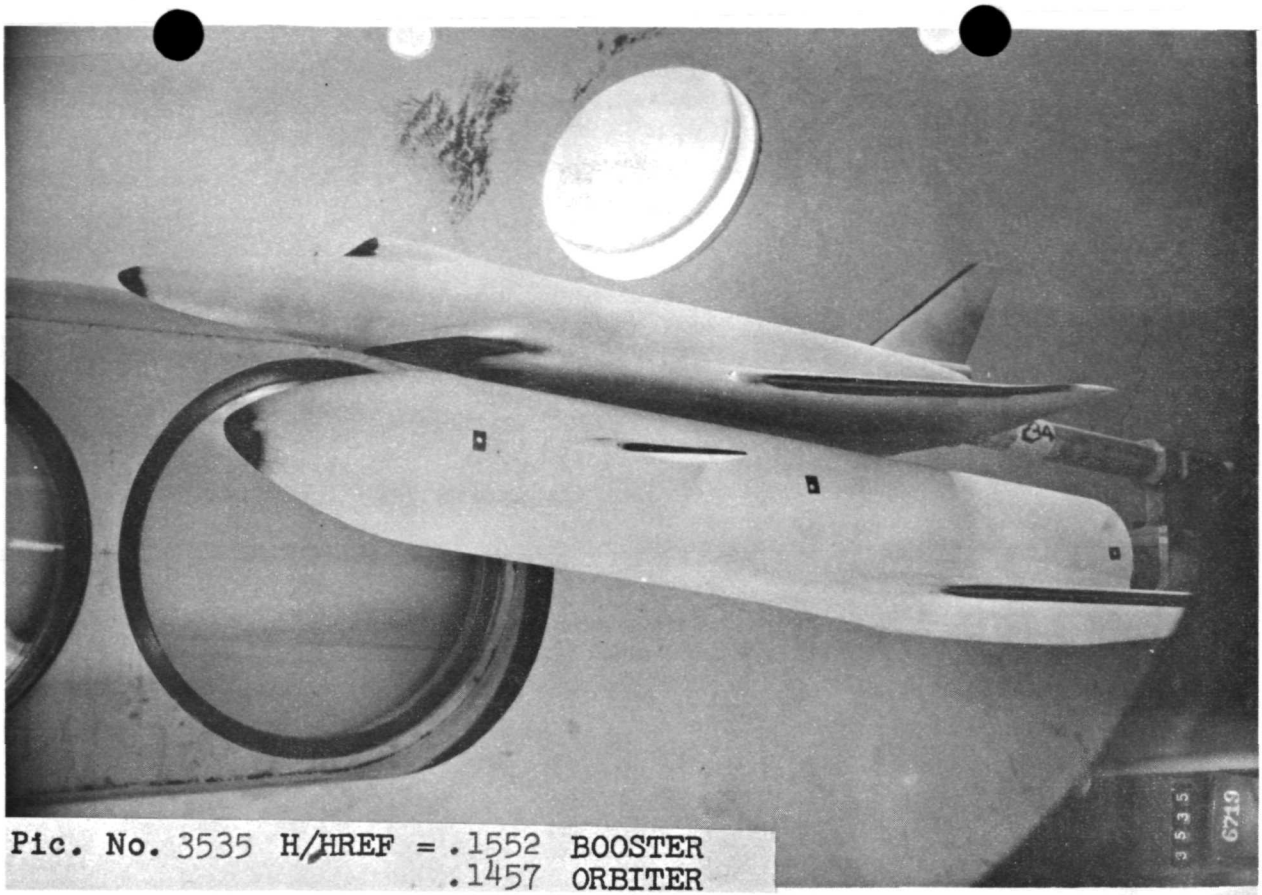
PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F		
LS 3511 (300)	3.70	2.63	O	1.98E-02	.4267	2.568E-02	.5547	3.024E-02	.6533	1.240E-02	0	74	91	90
LS 3511 (300)	3.70	2.63	B	2.10E-02	.4546	2.734E-02	.5905	3.218E-02	.6950	1.321E-02	0	74	91	90
LS 3511 (300)	3.70	2.63	B	2.10E-02	.4546	2.734E-02	.5905	3.218E-02	.6950	1.321E-02	0	74	91	90
LS 3511 (300)	3.70	2.63	O	1.98E-02	.4267	2.568E-02	.5547	3.024E-02	.6533	1.240E-02	0	74	91	90
LS 3523 (300)	9.90	8.83	O	9.59E-03	.2071	1.246E-02	.2692	1.468E-02	.3171	6.021E-03	0	76	95	98
LS 3523 (300)	9.90	8.83	B	1.02E-02	.2206	1.326E-02	.2866	1.561E-02	.3373	6.414E-03	0	76	95	98
LS 3523 (300)	9.90	8.83	B	1.02E-02	.2206	1.326E-02	.2866	1.561E-02	.3373	6.414E-03	0	76	95	98
LS 3523 (300)	9.90	8.83	O	9.59E-03	.2071	1.246E-02	.2692	1.468E-02	.3171	6.021E-03	0	76	95	98
LS 3535 (300)	16.05	14.98	O	6.75E-03	.1457	8.770E-03	.1894	1.033E-02	.2231	4.236E-03	0	79	99	106
LS 3535 (300)	16.05	14.98	B	7.19E-03	.1552	9.335E-03	.2016	1.099E-02	.2374	4.513E-03	0	79	99	106
LS 3535 (300)	16.05	14.98	B	7.19E-03	.1552	9.335E-03	.2016	1.099E-02	.2374	4.513E-03	0	79	99	106
LS 3535 (300)	16.05	14.98	O	6.75E-03	.1457	8.770E-03	.1894	1.033E-02	.2231	4.236E-03	0	79	99	106
LS 3546 (300)	26.60	25.53	O	4.55E-03	.0982	5.914E-03	.1277	6.965E-03	.1504	2.855E-03	0	84	105	117
LS 3546 (300)	26.60	25.53	B	4.85E-03	.1046	6.295E-03	.1359	7.410E-03	.1600	3.042E-03	0	84	105	117
LS 3546 (300)	26.60	25.53	B	4.85E-03	.1046	6.295E-03	.1359	7.410E-03	.1600	3.042E-03	0	84	105	117
LS 3546 (300)	26.60	25.53	O	4.55E-03	.0982	5.914E-03	.1277	6.965E-03	.1504	2.855E-03	0	84	105	117



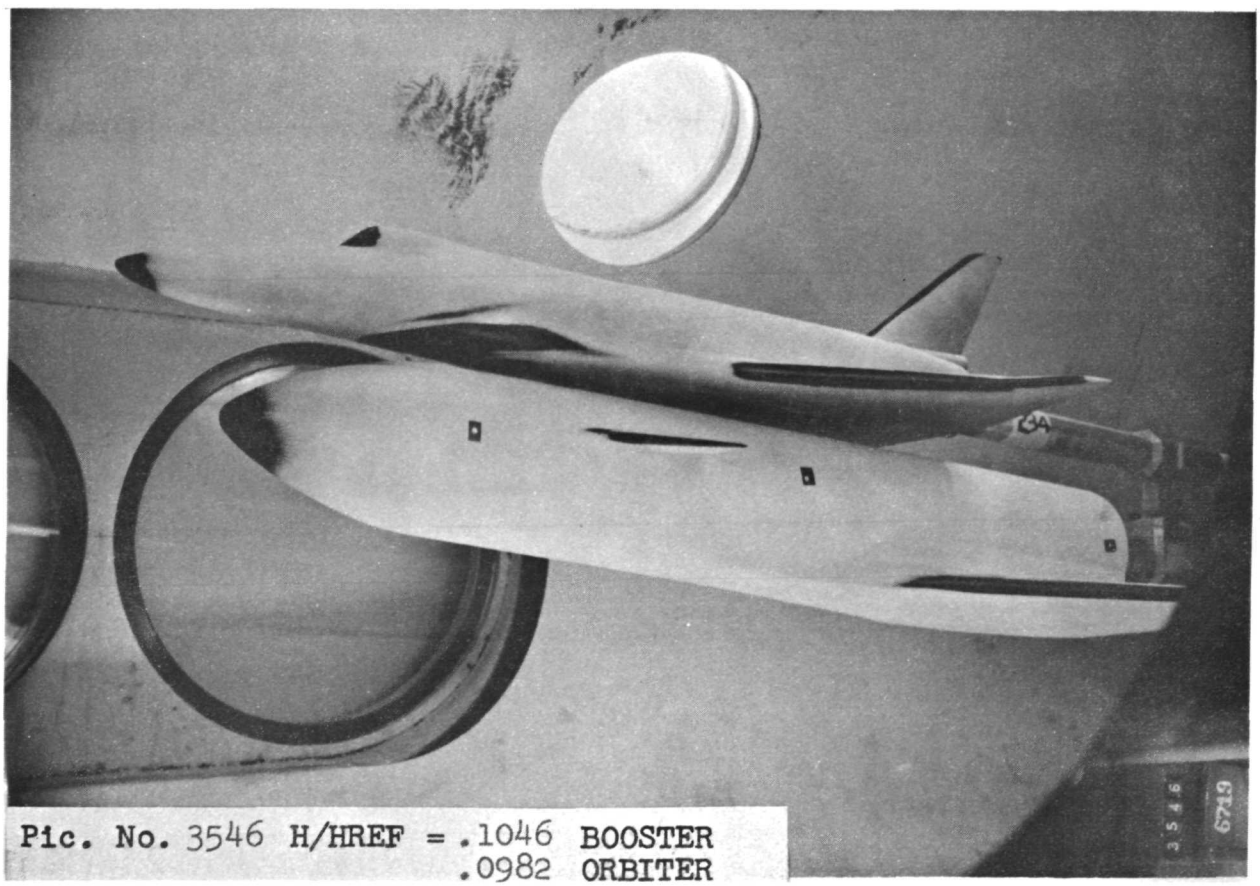
Pic. No. 3511 H/HREF = .4546 BOOSTER
.4267 ORBITER



Pic. No. 3523 H/HREF = .2206 BOOSTER
.2071 ORBITER



Pic. No. 3535 H/HREF = .1552 BOOSTER
.1457 ORBITER



Pic. No. 3546 H/HREF = .1046 BOOSTER
.0982 ORBITER

Group 234 Re/ft 2.63E 06 ALPHA 5

6/ 4/71

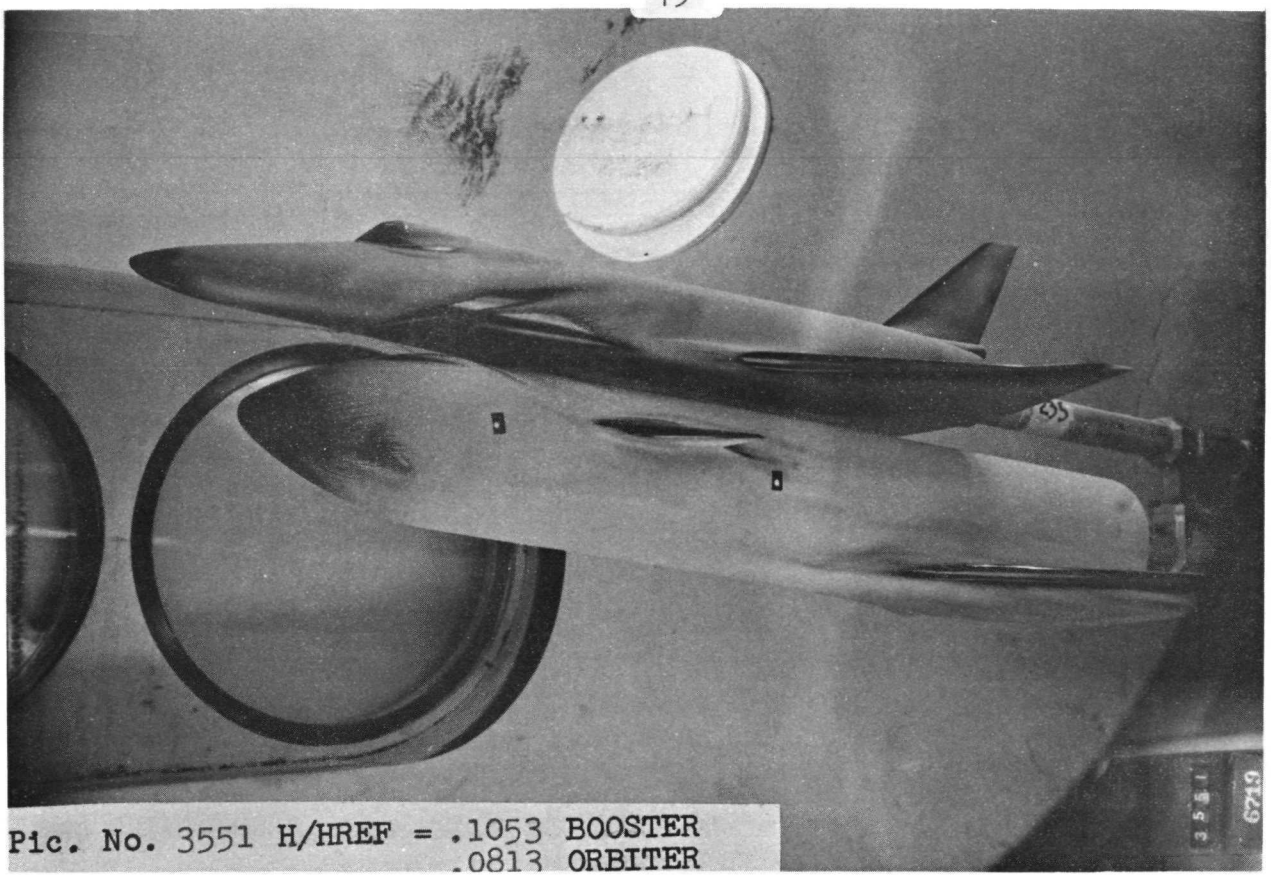
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
236	6253	EDC-B+DWO	8.00	564.2	1319	5.03	5.03	0	0	0

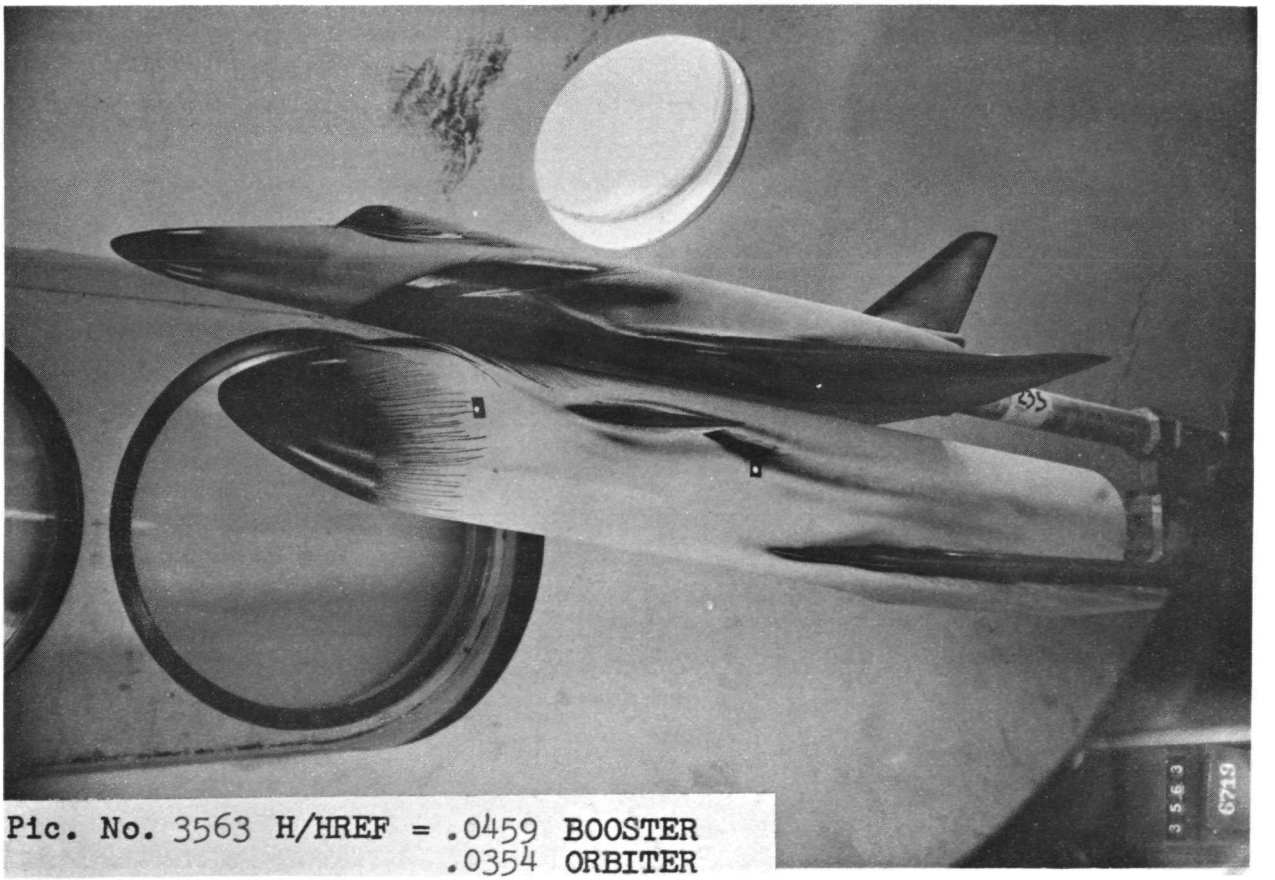
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
95.6	.058	2.589	3833	5.072E-05	7.697E-08	2.53E 06	4.646E-02	2.974E-02

CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)
TOP(T)	150		
SIDE(US)	150	AVERAGE TW = 75 (R)	-.008(SQUARE ROOT DEL TIME) + 0.11
SIDE(LS)	150	AVERAGE TW = 93 (C)	

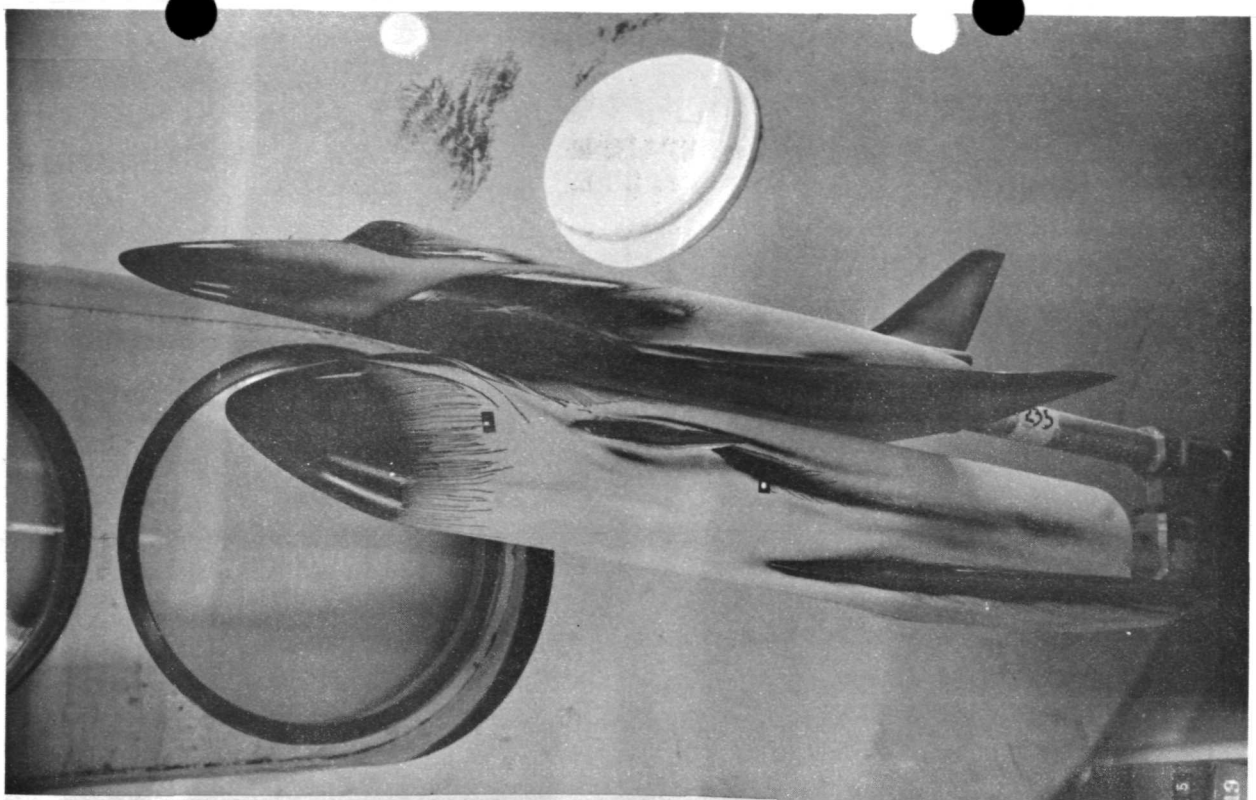
PIC NO	TIME	DELTIME		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F		
LS 3551 (150)	4.25	3.1A	0	3.77E-03	.0813	4.619E-03	.0994	5.202E-03	.1120	2.420E-03	0	75	95	94
LS 3551 (150)	4.25	3.1A	B	4.89E-03	.1053	5.982E-03	.1288	6.731E-03	.1449	3.137E-03	0	75	95	94
LS 3551 (150)	4.25	3.1A	B	4.89E-03	.1053	5.982E-03	.1288	6.731E-03	.1449	3.137E-03	0	75	95	94
LS 3551 (150)	4.25	3.1A	0	3.77E-03	.0813	4.619E-03	.0994	5.202E-03	.1120	2.420E-03	0	75	95	94
LS 3563 (150)	13.35	12.2A	0	1.65E-03	.0354	2.013E-03	.0433	2.267E-03	.0488	1.055E-03	0	80	101	107
LS 3563 (150)	13.35	12.2A	B	2.13E-03	.0459	2.607E-03	.0561	2.934E-03	.0632	1.367E-03	0	80	101	107
LS 3563 (150)	13.35	12.2A	B	2.13E-03	.0459	2.607E-03	.0561	2.934E-03	.0632	1.367E-03	0	80	101	107
LS 3563 (150)	13.35	12.2A	0	1.65E-03	.0354	2.013E-03	.0433	2.267E-03	.0488	1.055E-03	0	80	101	107
LS 3575 (150)	19.50	18.4A	0	1.24E-03	.0267	1.517E-03	.0327	1.709E-03	.0368	7.949E-04	0	83	105	115
LS 3575 (150)	19.50	18.4A	B	1.61E-03	.0346	1.965E-03	.0423	2.211E-03	.0476	1.030E-03	0	83	105	115
LS 3575 (150)	19.50	18.4A	B	1.61E-03	.0346	1.965E-03	.0423	2.211E-03	.0476	1.030E-03	0	83	105	115
LS 3575 (150)	19.50	18.4A	0	1.24E-03	.0267	1.517E-03	.0327	1.709E-03	.0368	7.949E-04	0	83	105	115
LS 3586 (150)	25.15	24.0A	0	1.01E-03	.0218	1.241E-03	.0267	1.398E-03	.0301	6.505E-04	0	86	108	122
LS 3586 (150)	25.15	24.0A	B	1.31E-03	.0283	1.607E-03	.0346	1.808E-03	.0389	8.431E-04	0	86	108	122
LS 3586 (150)	25.15	24.0A	B	1.31E-03	.0283	1.607E-03	.0346	1.808E-03	.0389	8.431E-04	0	86	108	122
LS 3586 (150)	25.15	24.0A	0	1.01E-03	.0218	1.241E-03	.0267	1.398E-03	.0301	6.505E-04	0	86	108	122



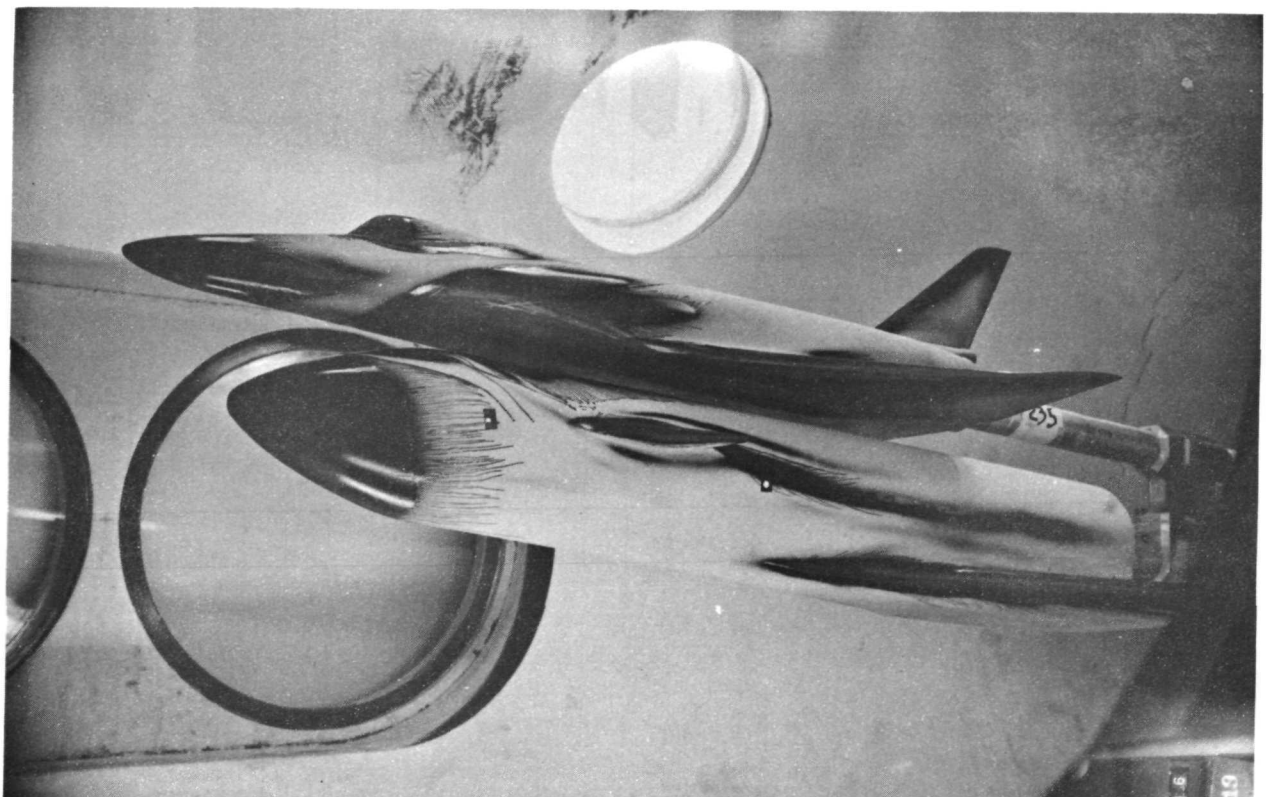
Pic. No. 3551 H/HREF = .1053 BOOSTER
.0813 ORBITER



Pic. No. 3563 H/HREF = .0459 BOOSTER
.0354 ORBITER



Pic. No. 3575 H/HREF = .0346 BOOSTER
.0267 ORBITER



Pic. No. 3586 H/HREF = .0283 BOOSTER
.0218 ORBITER

Group 235 Re/ft 2.53E 06 ALPHA 5

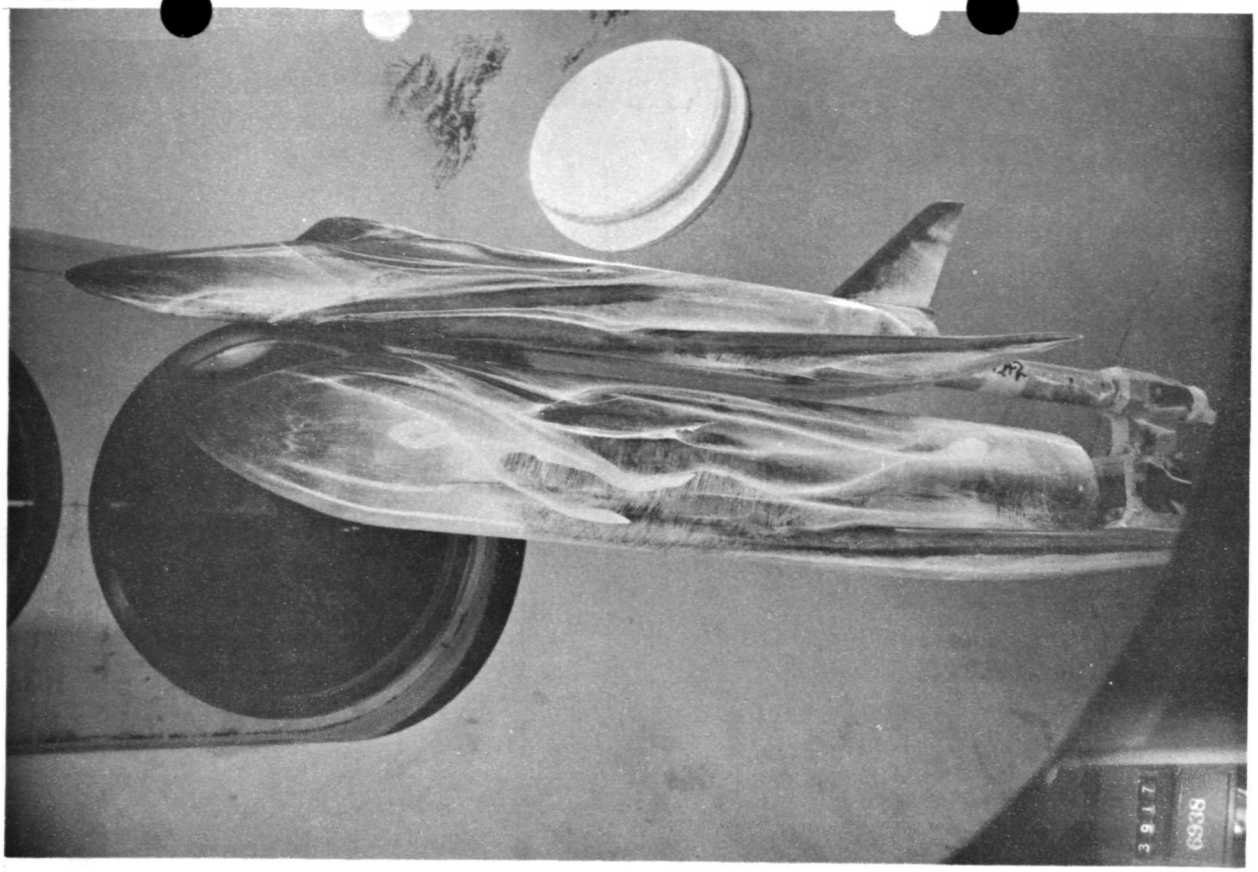
6/ 4/71

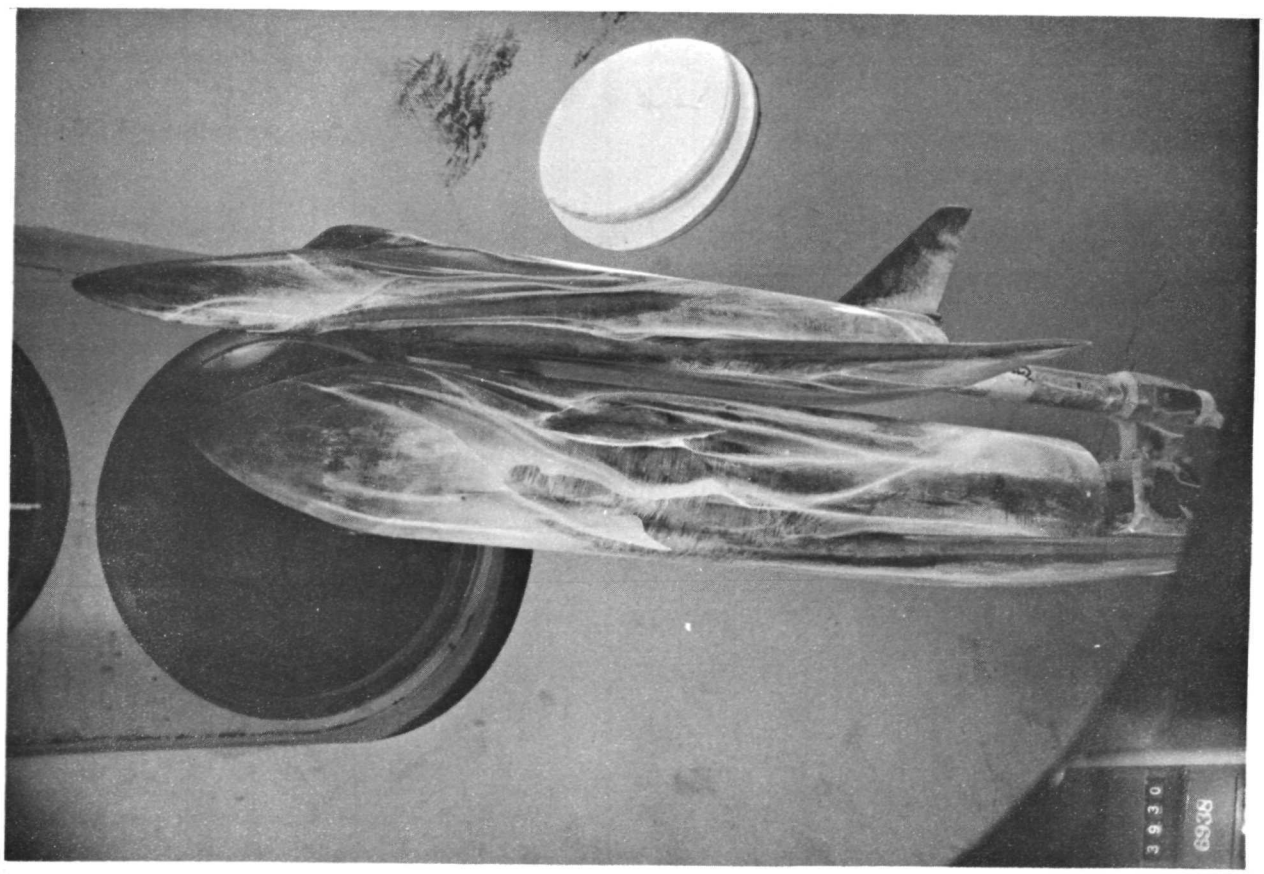
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
242	6153	GDC-B+DWO	8.00	565.5	1332	.01	.01	0	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	MREF (R= .013FT)	STREF (R= .013FT)
96.5	.058	2.595	3852	5.034E-05	7.773E-08	2.49E 06	4.660E-02	2.988E-02

OIL FLOW





Group 242 Re/ft 2.49E 06 ALPHA 0

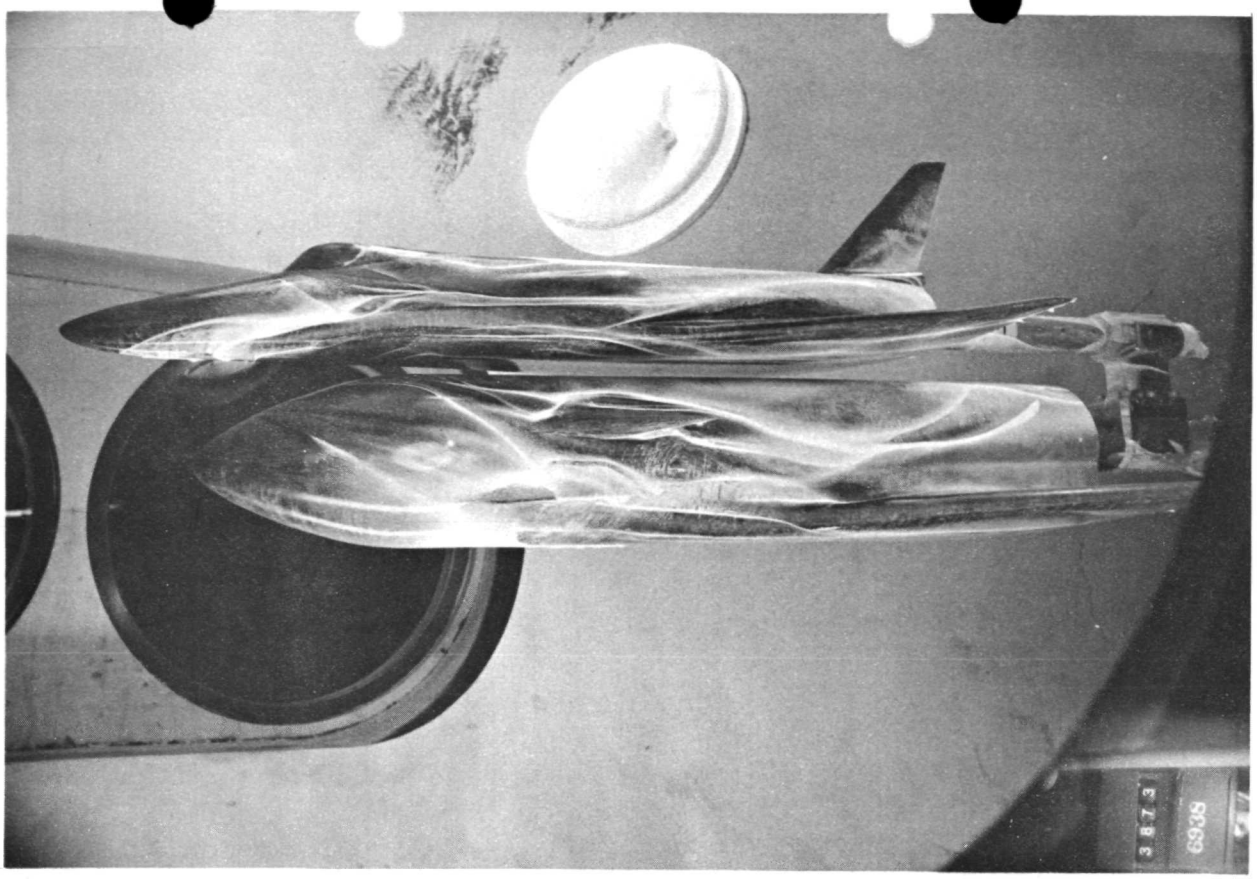
6/ 4/71

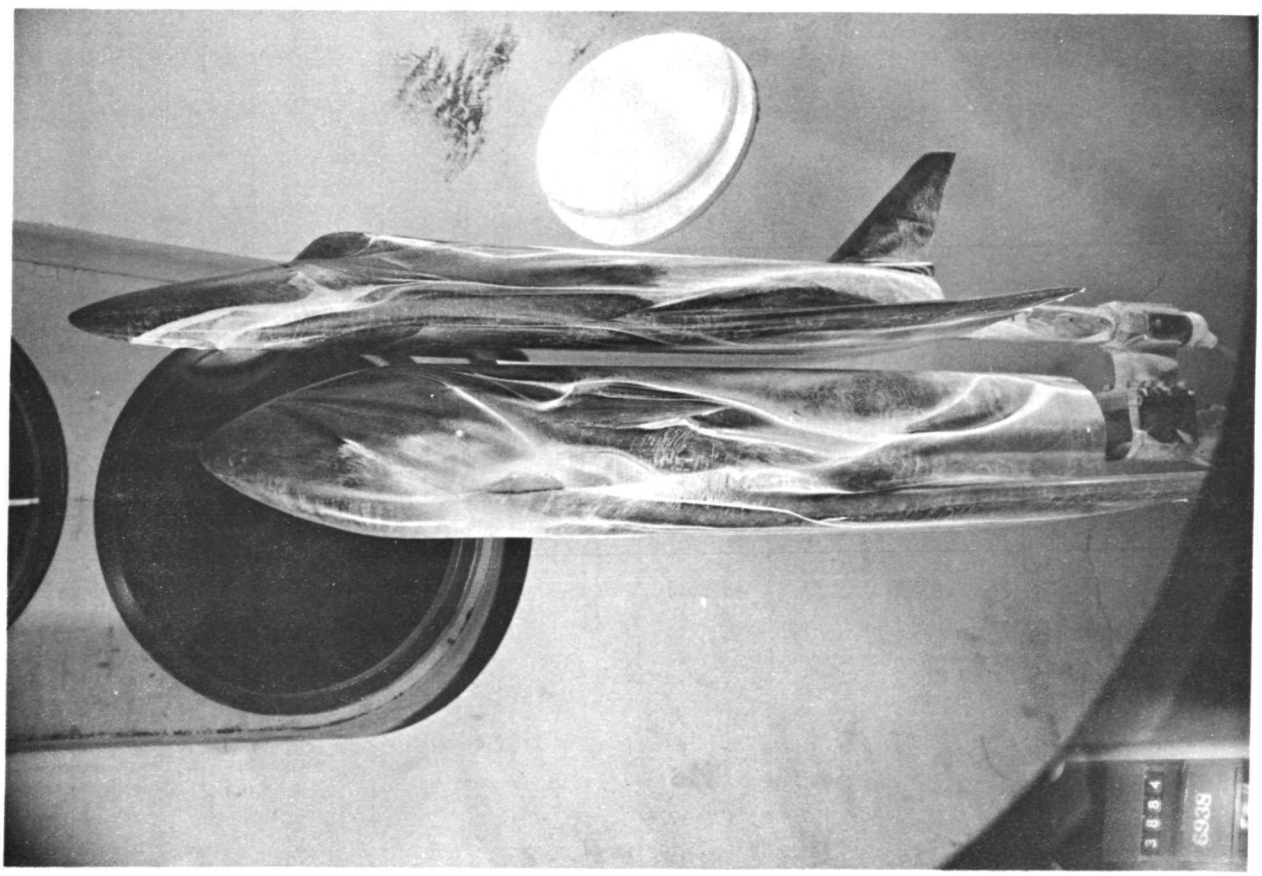
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
241	6153	EDC-B+CWD	8.00	566.2	1326	-4.99	-4.99	0	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
96.1	.058	2.598	3942	5.065E-05	7.735E-08	2.52E 06	4.659E-02	2.978E-02

OIL FLOW





Group 241 Re/ft 2.52E 06 ALPHA -5

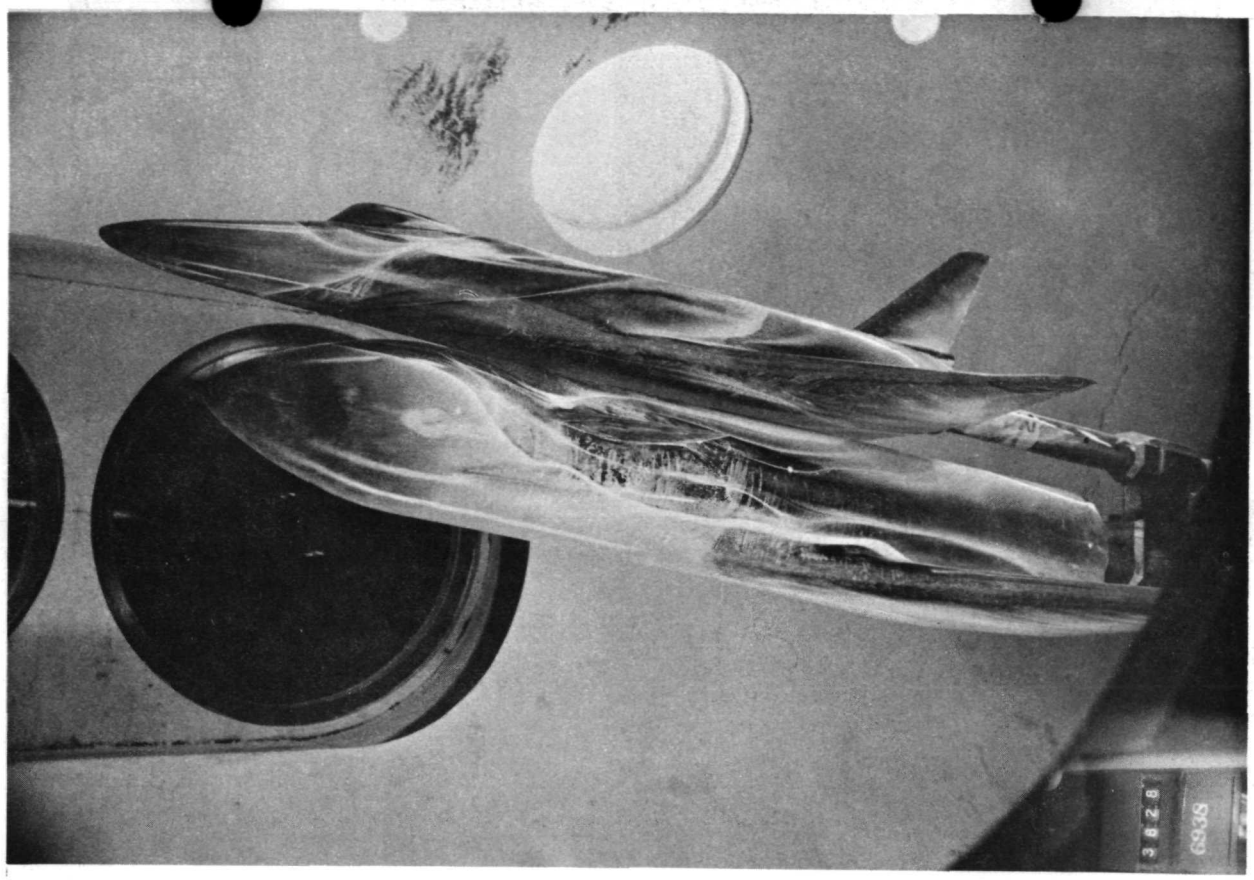
6/ 4/71

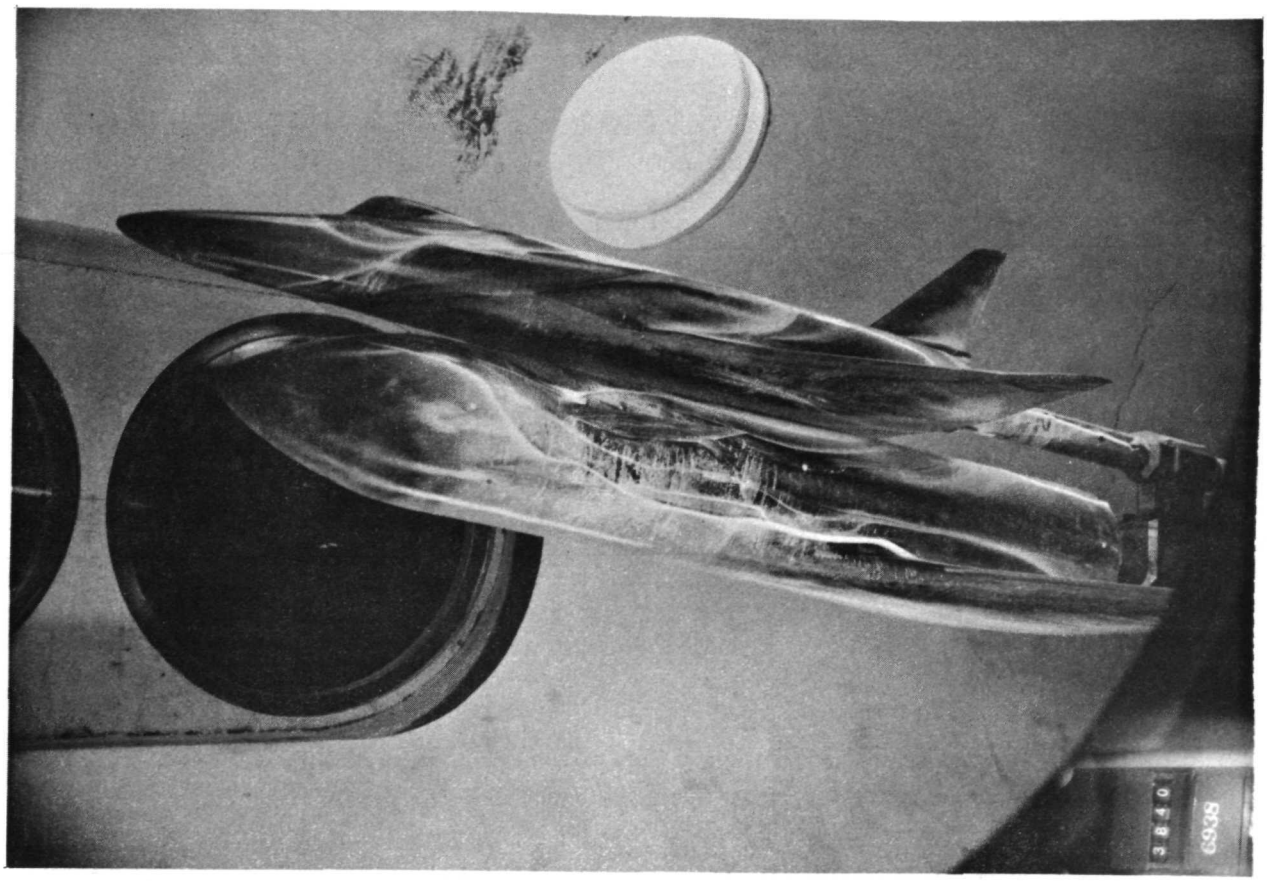
AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT1162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
240	4153	EDC-8+CWO	8.00	565.5	1317	5.01	5.01	0	0	0

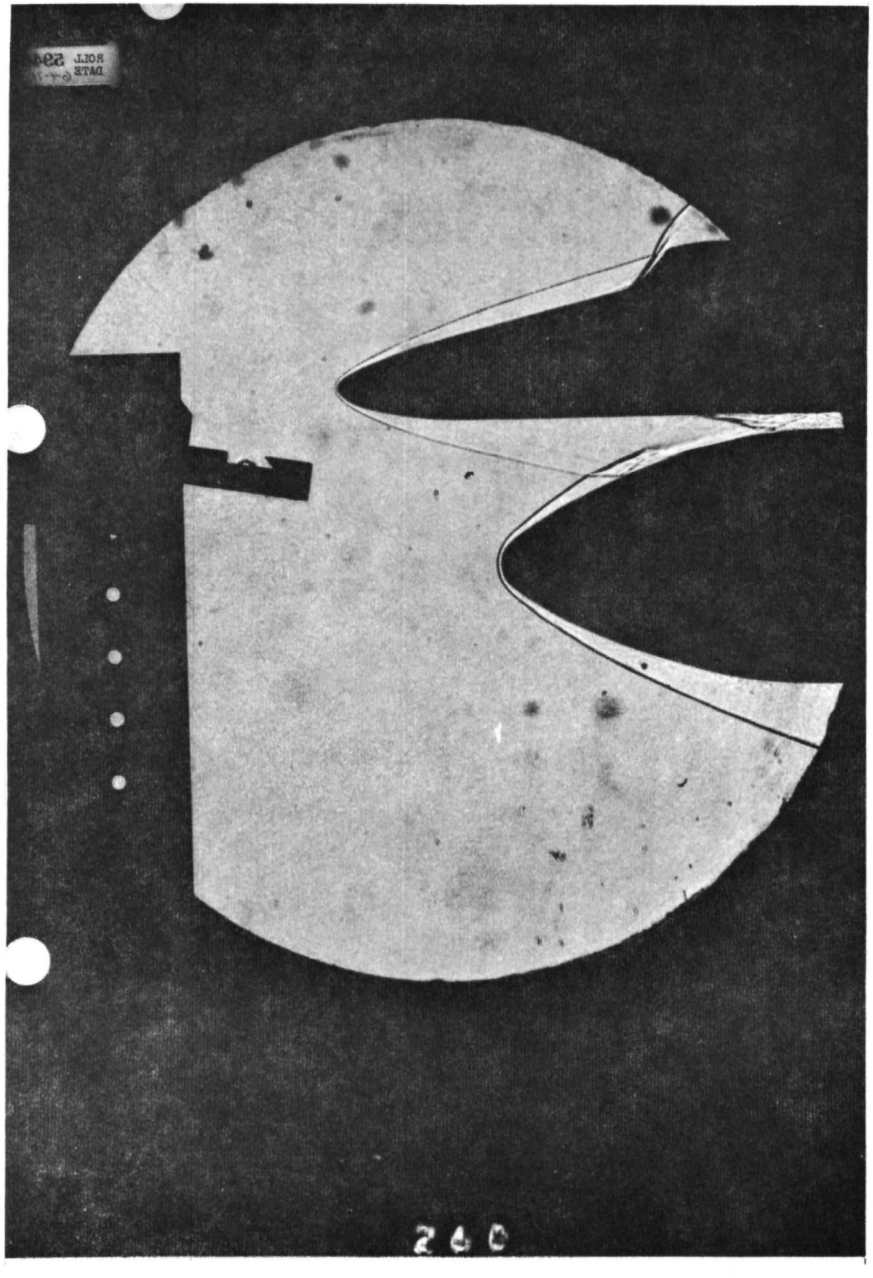
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .013FT)	STREF (R= .013FT)
95.5	.058	2.595	3830	5.090E-05	7.686E-08	2.54E 06	4.451E-02	2.968E-02

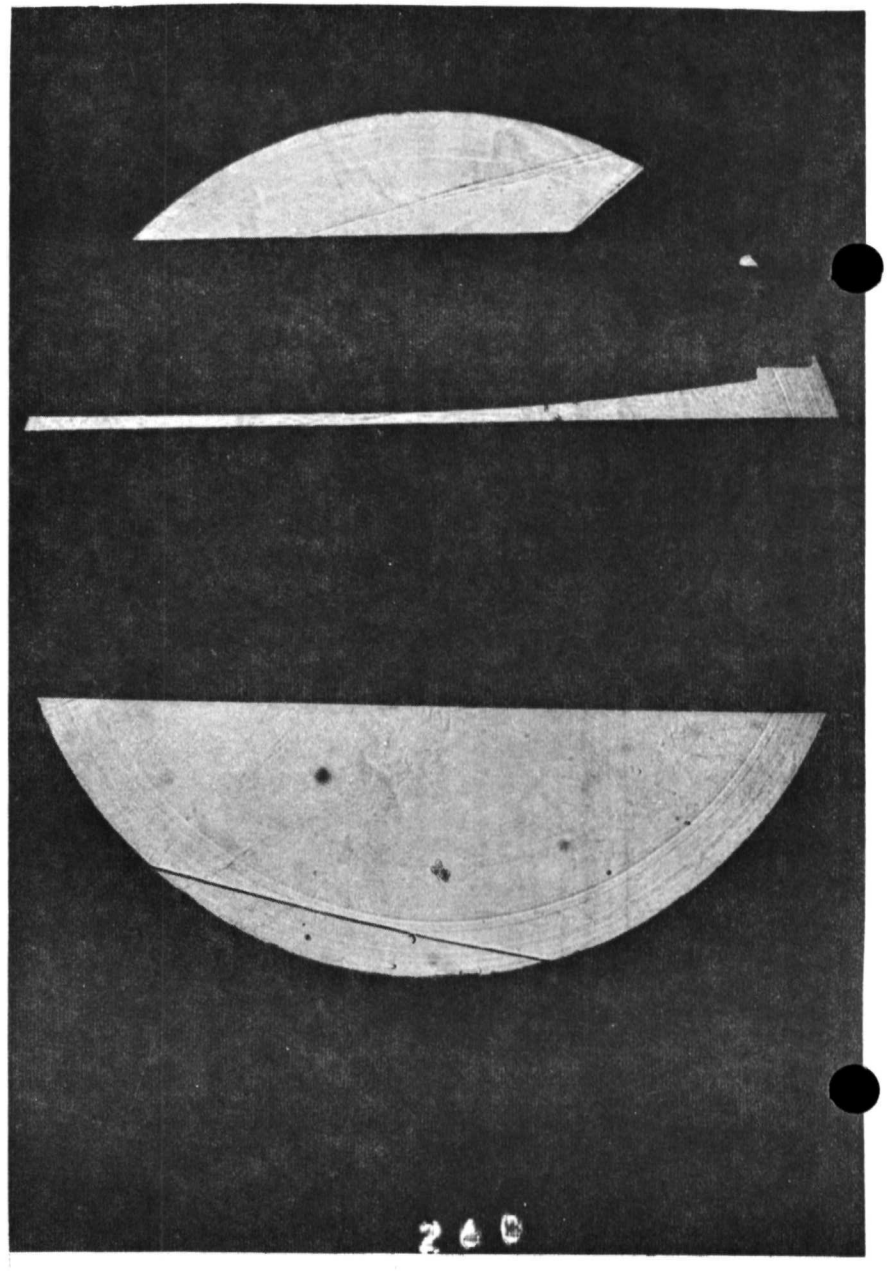
OIL FLOW



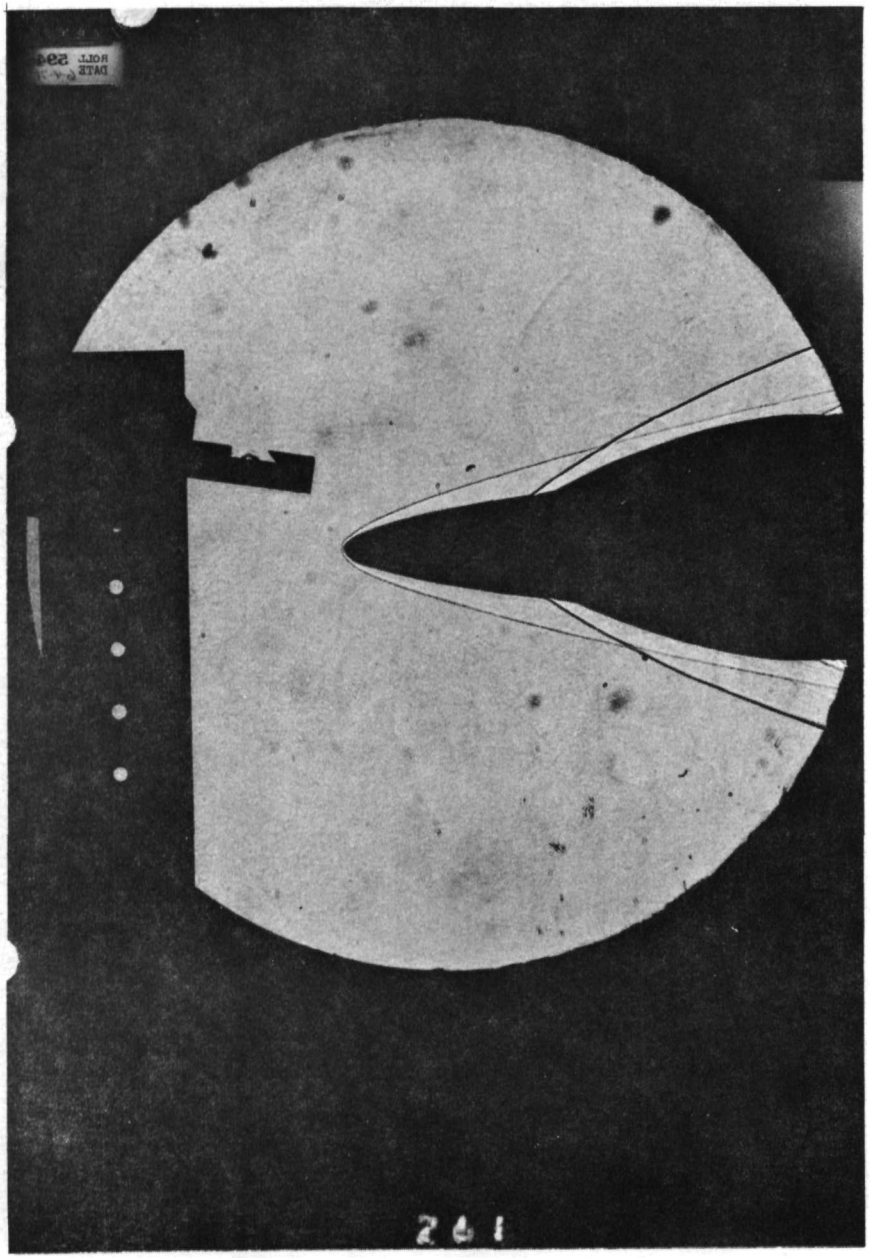


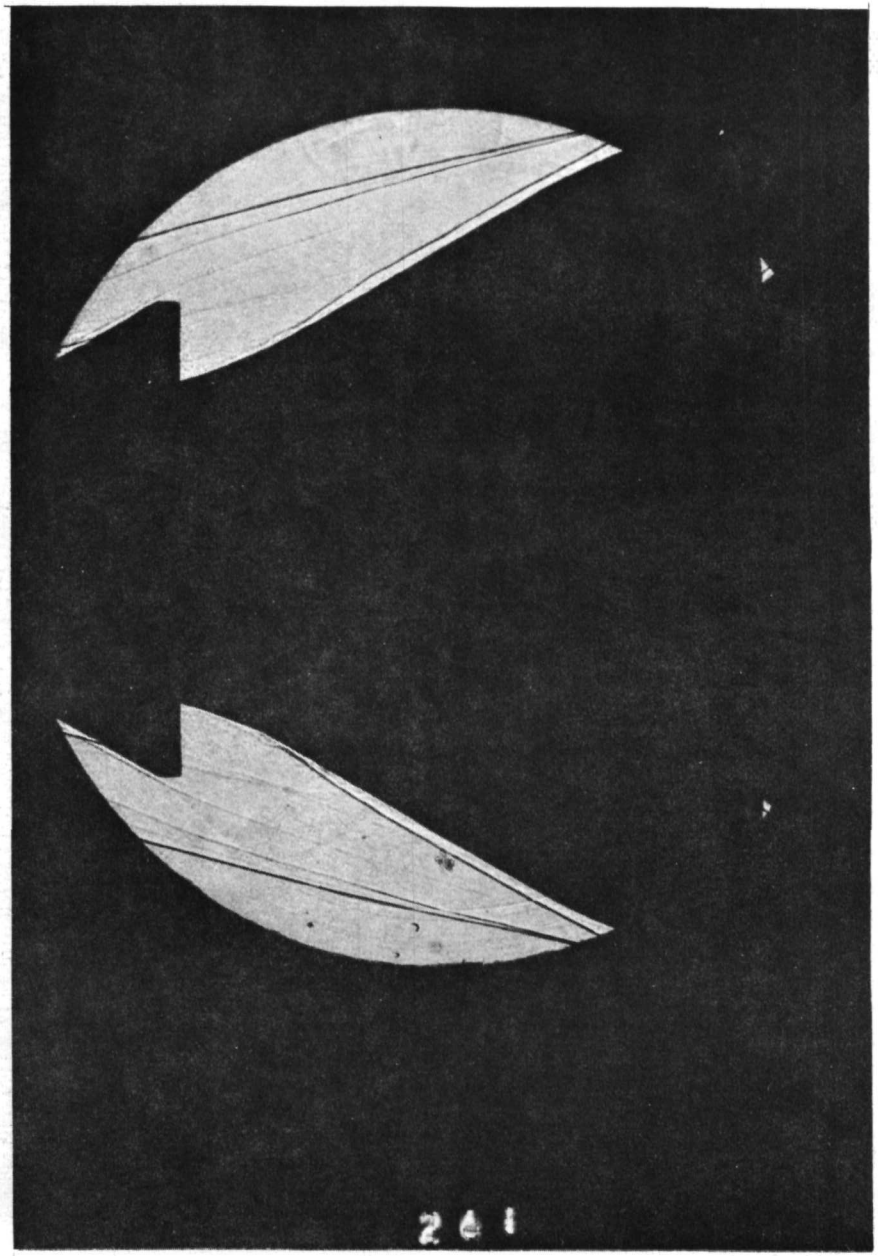
Group 240 Re/ft 2.54E 06 ALPHA 5



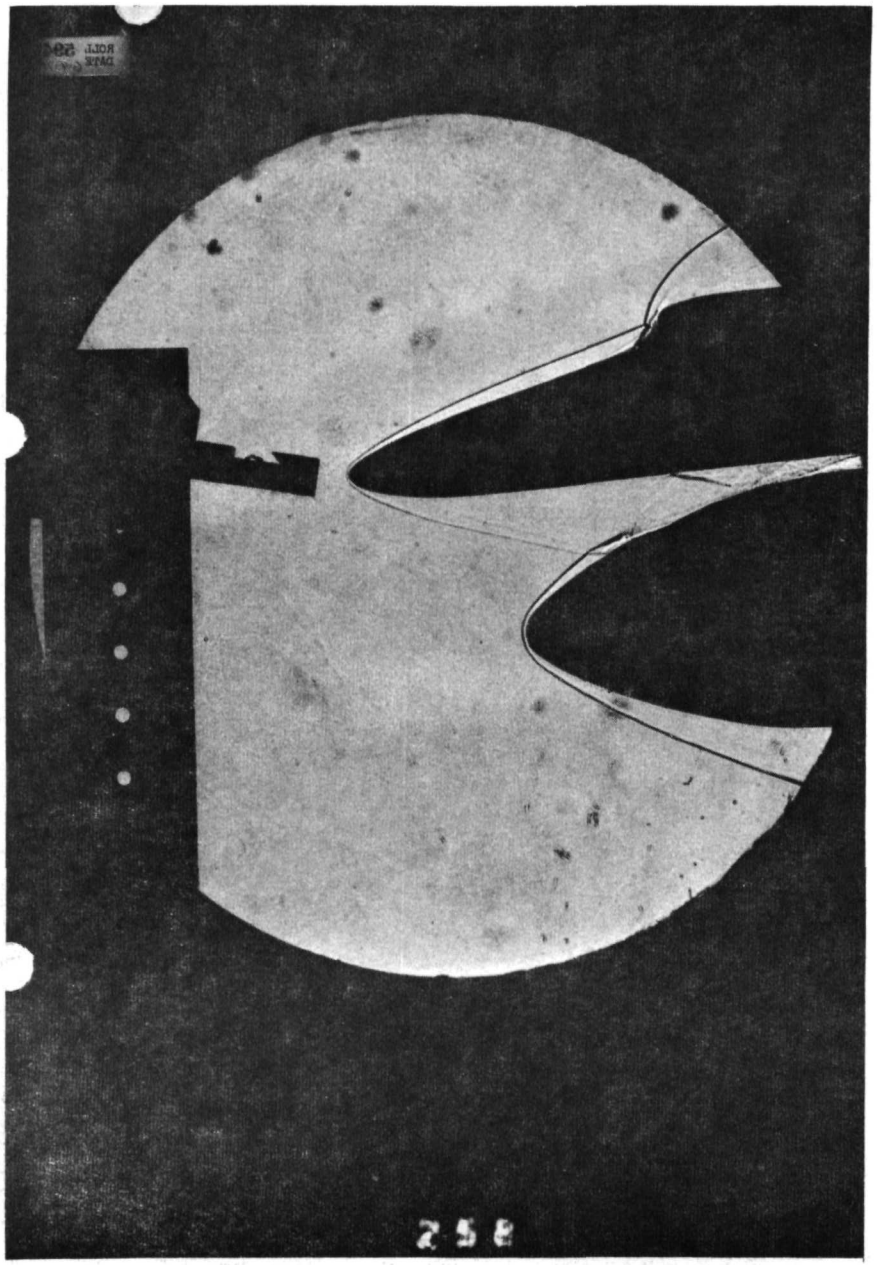


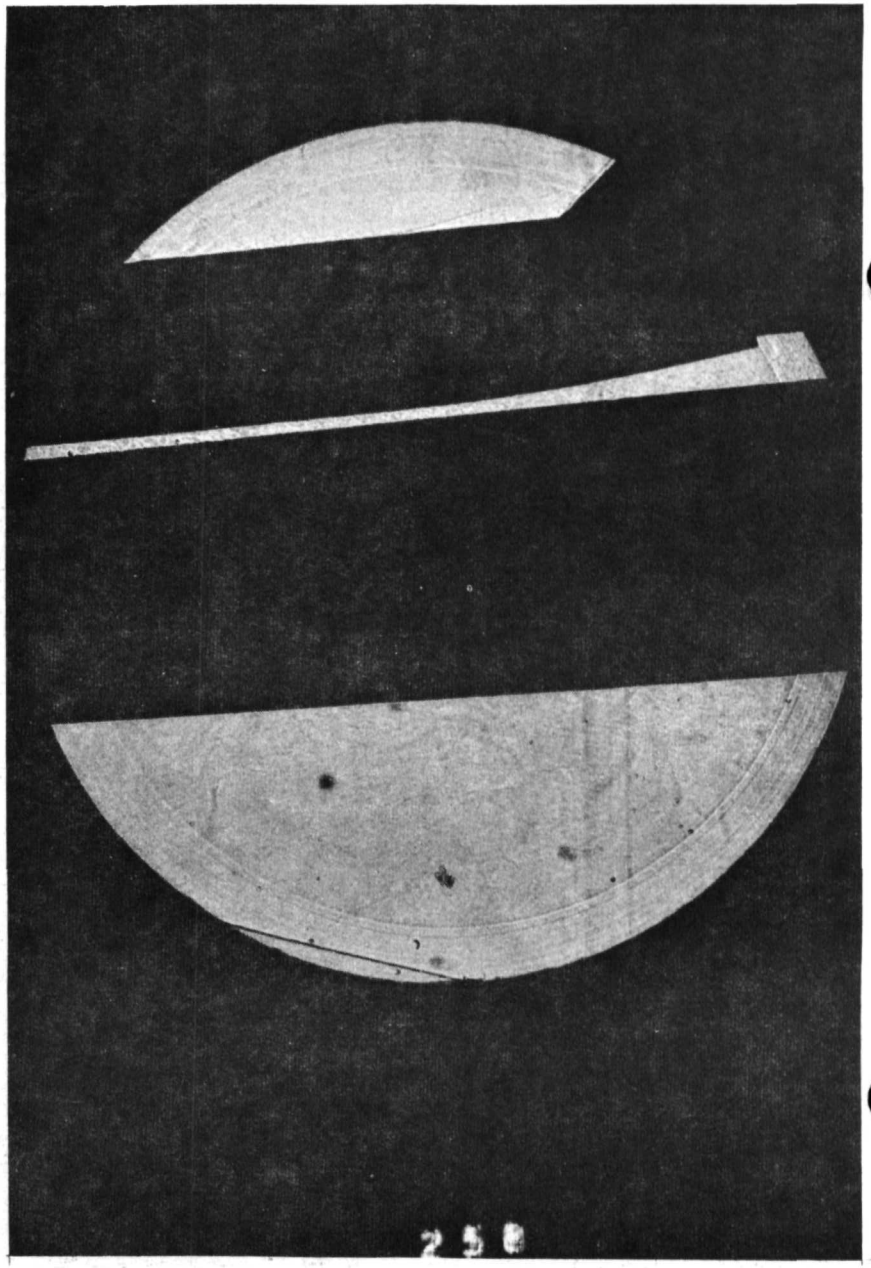
Group 260 Re/ft 2.54 06 ALPHA 0



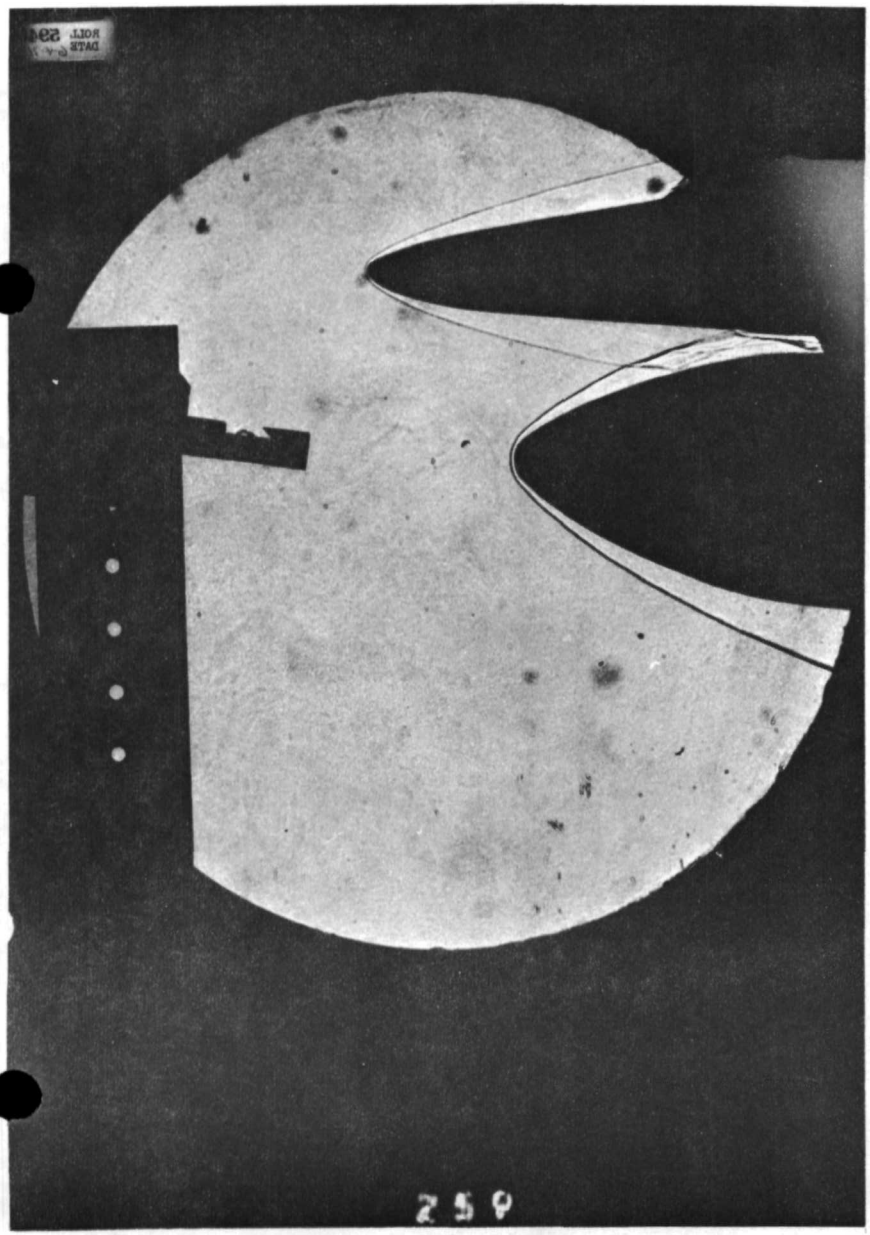


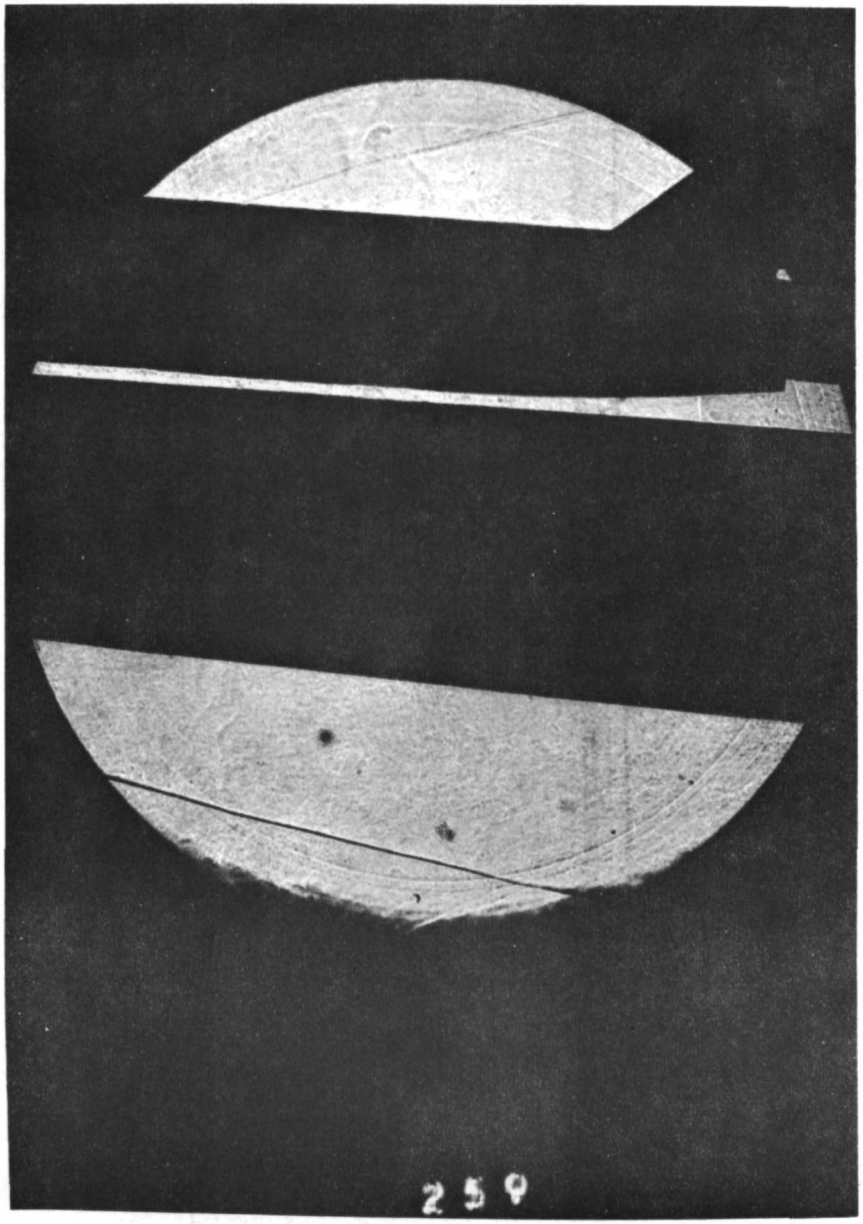
Group 261 Re/ft 2.54 06 ALPHA 0 Roll 90°



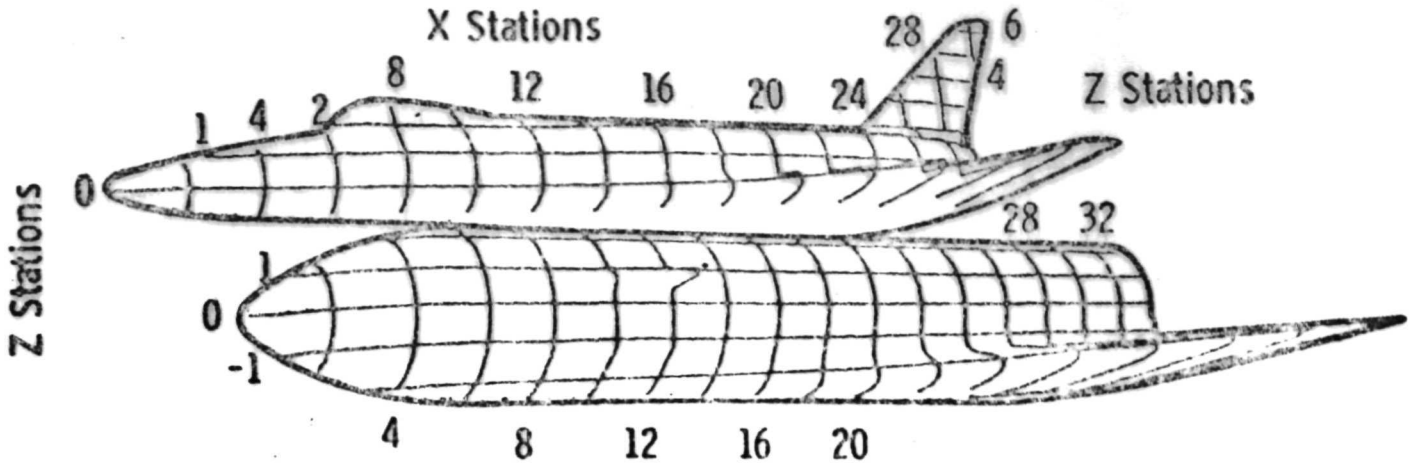


Group 258 Re/ft 2.54 06 ALPHA -5

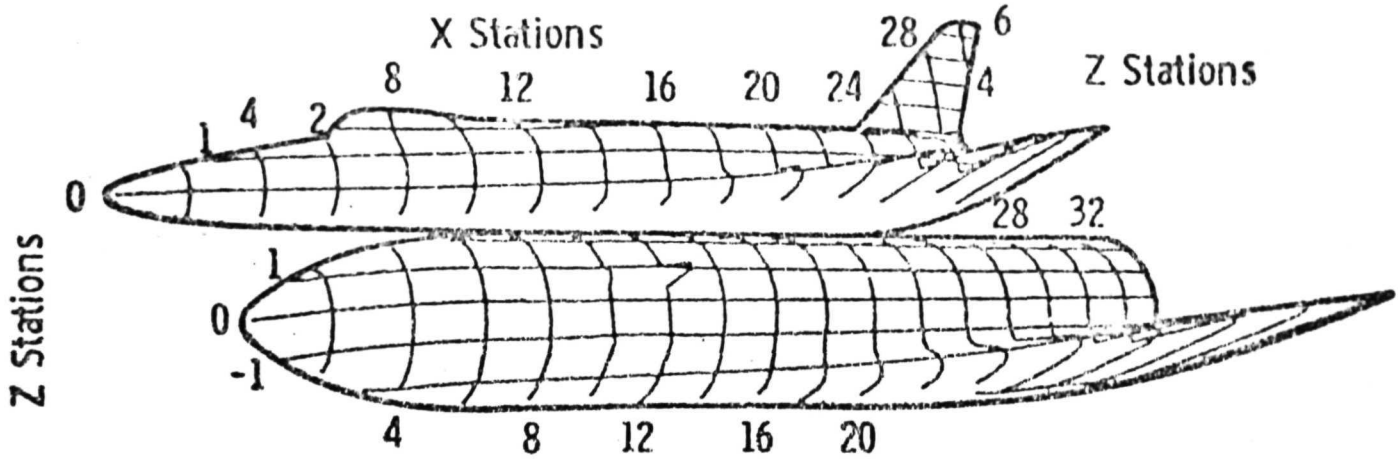




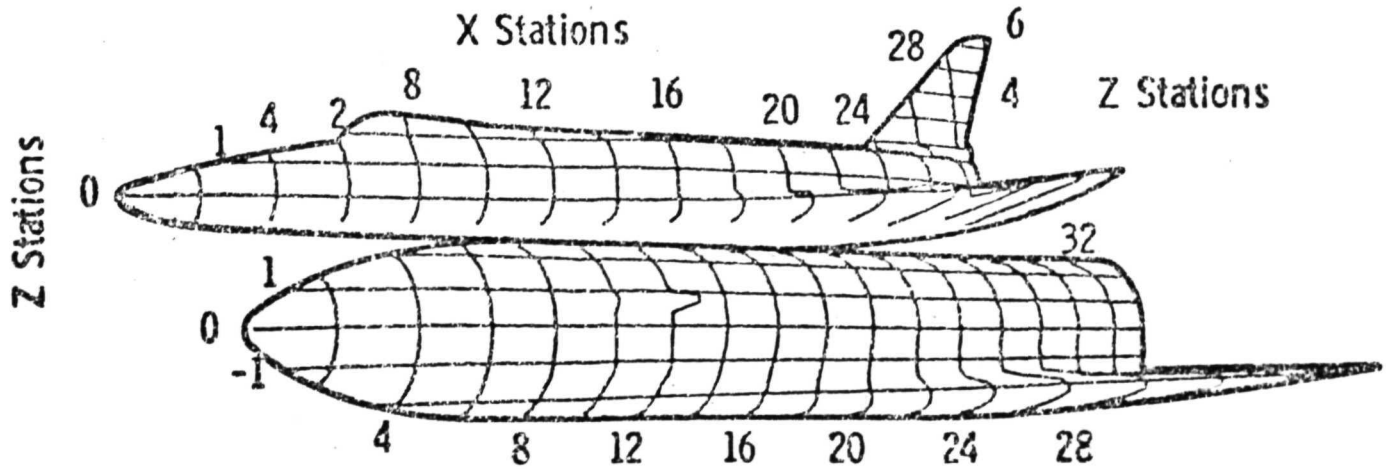
Group 259 Re/ft 2.54 06 ALPHA 5



α = 0



α = 5



α = -5

Grid Overlay for Mated Configurations