

2 (mix)

DMS-DR-1231
CR-120,048
VOLUME I
MARCH 1972

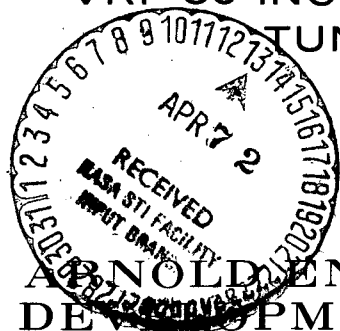
—SPACE SHUTTLE—

**HEAT TRANSFER RATE
DISTRIBUTION ON NORTH AMERICAN
ROCKWELL DELTA WING ORBITER
DETERMINED BY PHASE CHANGE
PAINT TECHNIQUE AT
A MACH NUMBER OF 8**

BY

**R.K. Matthews, ARO, INC.
W.R. Martindale, ARO, INC.
J.D. Warmbrod, MSFC**

VKF 50-INCH HYPERSONIC
TUNNEL B



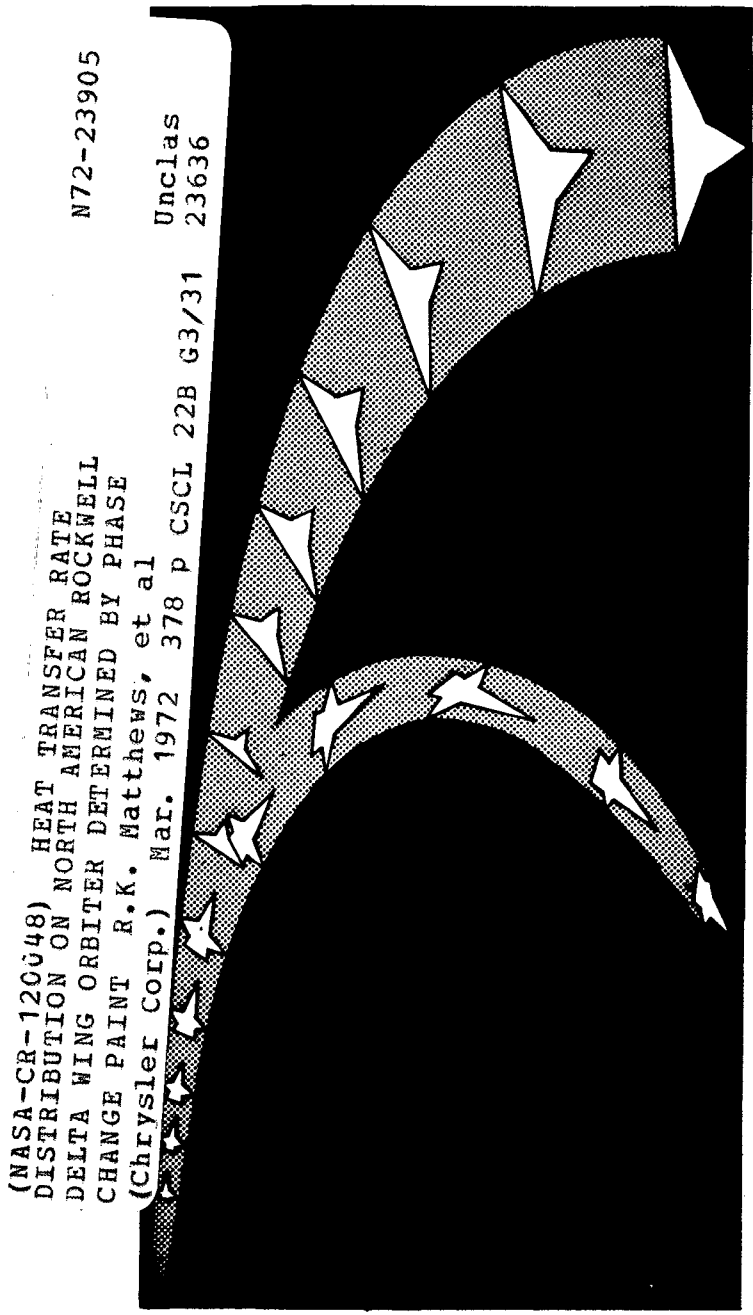
**ARNOLD ENGINEERING
DEVELOPMENT CENTER**

SADSAC SPACE SHUTTLE
AEROTHERMODYNAMIC
DATA MANAGEMENT SYSTEM

CONTRACT NAS8-4016
MARSHALL SPACE FLIGHT CENTER



This Document
Should Be Referenced
As NASA CR-120,048



(NASA-CR-120048) HEAT TRANSFER RATE
DISTRIBUTION ON NORTH AMERICAN ROCKWELL
DELTA WING ORBITER DETERMINED BY PHASE
CHANGE PAINT R.K. Matthews, et al
(Chrysler Corp.) Mar. 1972 378 p CSCL 22B G3/31
Unclas 23636
N72-23905

NASA Series Number: H-1028

DMS-DR-1231
CR-120,048
VOLUME I
MARCH, 1972

SADSAC/SPACE SHUTTLE

WIND TUNNEL TEST DATA REPORT

CONFIGURATION: North American Rockwell Delta Wing Orbiter

TEST PURPOSE: To Determine the Heat Transfer Rate Distributions at a
Mach Number of 8

TEST FACILITY: AEDC VKF 50-Inch Hypersonic Tunnel B

TESTING AGENCY: AEDC-MSFC

TEST NO. & DATE: VT1162-9; June, 1971

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

PROJECT ENGINEER(S): R. K. Matthews and W. R. Martindale, ARO, INC.
J. D. Warmbrod, MSFC

DATA MANAGEMENT SERVICES

LIAISON: *J. E. Vaughn* DATA OPERATIONS: *J. R. Ziller*
J. E. Vaughn J. R. Ziller

RELEASE APPROVAL: *N. D. Kemp*
N. D. Kemp, Supervisor
Aero Thermo Data Group

CONTRACT NAS 8-4016

AMENDMENT 153

DRL 184 - 58

This report has been prepared by Chrysler Corporation Space Division under a Data Management Contract to the NASA. Chrysler assumes no responsibility for the data presented herein other than its display characteristics.

FACILITY COORDINATOR:

Mr. L. L. Trimmer, ARO, INC.
Arnold Engineering Development Center
Arnold Air Force Station, Tennessee 37389

Phone: (615) 455-2611-X7377

PROJECT ENGINEERS:

Mr. R. K. Matthews, ARO, INC.
Arnold Engineering Development Center
Arnold Air Force Station, Tennessee 37389

Phone: (615) 455-2611-X594

Mr. W. R. Martindale, ARO, INC.
Arnold Engineering Development Center
Arnold Air Force Station, Tennessee 37389

Phone: (615) 455-2611-X575

Mr. J. D. Warmbrod
Marshall Space Flight Center
S&E-AERO-AF, Building 4610
Huntsville, Alabama 35801

Phone: (205) 453-0170

SADSAC LIAISON:

Mr. J. E. Vaughn
Chrysler Space Division
102 Wynn Drive
Department 4820
Huntsville, Alabama 35805

Phone: (205) 895-1560

SADSAC OPERATIONS

Mr. J. R. Ziler
Chrysler Corp. Space Division
P. O. Box 29200
Department 2780
New Orleans, Louisiana 70129

Phone: (504) 255-2304

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 North American Rockwell Delta Wing Orbiter.

CONTENTS

<u>Section</u>		<u>Page</u>
	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	4
	3.3 Data Reduction	4
4.	DATA PRESENTATION	5
	REFERENCES	6

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. North American Rockwell Delta Wing Orbiter Model Sketch (0.013 Scale)	7
2. Model Photograph	8
3. Shadowgraph Photographs of the North American Rockwell Orbiter at Mach 8	9-12

LIST OF TABLES

<u>Table</u>	
1. Configuration Description Details	13-18
2. Tabulated Model Coordinates	19-36
3. Phase-Change Coating Test Data Summary Sheets	37-42
4. Summary Data Plot Index	43-44

NOMENCLATURE

ALPHA-MODEL (α)	Model angle of attack, deg
ALPHA-PREBEND	Sting prebend angle, deg
ALPHA-SECTOR	Tunnel sector pitch angle, deg
H(T ₀) or H	Heat-transfer coefficient based on T _{aw} = T ₀ , BTU/ft ² -sec - °R, and

$$H(T_0) = \frac{\beta \sqrt{\rho C K}}{\sqrt{\Delta T}}$$

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 point temperature, °R

T_i \sim initial model temperature, °R

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

$\sqrt{\rho C K} \sim$ model material properties = 0.11-0.008(Δt)^{1/2},
BTU/ft²sec^{1/2} - °R

H(.9T₀) Heat transfer coefficient based on T_{aw} = 0.9T₀

H(.85T₀) Heat transfer coefficient based on T_{aw} = .85T₀

HREF Reference heat transfer coefficient based on Fay-Riddell theory, BTU/ft²-sec °R

$$H_{REF} = \left[\frac{8.139(P01)^{0.5} (MU-0)^{0.4} (1-P-INF/P01)^{0.25}}{(RN)^{0.5} (T0)^{0.15}} \right] X$$

$$[0.2235 + 0.0000135 (T_0 + 760)]$$

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

MU-0 \sim air viscosity based on T₀, lb_f sec/ft²

RN \sim reference nose radius, (0.013 ft)

L	Model length (28.90 in.)
MU-INF	Free-stream viscosity, lb-sec/ft ²
P-INF	Free-stream static pressure, psia
P0	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(T0)	Stanton number based on T ₀ ,
	$ST(T_0) = \frac{H(T_0)}{\rho_\infty V_\infty [0.2235 + 0.0000135 (T_0 + T_{pc})] \times (32.17)}$
STREF	Reference Stanton number
	$STREF = \frac{HREF}{\rho_\infty V_\infty [0.2235 + 0.0000135 (T_0 + 760)] \times (32.17)}$
T-INF	Free-stream static temperature, °R
T0	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,Y,Z	Model coordinates (see Fig. 1), in.
YMAX	Local semi-span at a given model station, in.

SECTION 1

INTRODUCTION

This report presents the results of a wind tunnel test program to determine aerodynamic heat transfer distributions on the North American Rockwell orbiter configuration. 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 in June and September 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, length Reynolds numbers of 6.0×10^6 and 8.9×10^6 , and angles of attack from 10 to 50 deg in 10-deg increments. At the higher Reynolds number, data were obtained with and without boundary layer trips.

Model details, test conditions, and reduced heat-transfer data are presented in this report. Data reduction of the phase-change paint photographs was performed by VKF personnel utilizing a new technique which is described in the data presentation section.

SECTION 2

MODELS AND APPARATUS

2.1 MODEL DESCRIPTION

Model drawings were provided ARO, Inc. by the North American Rockwell Corporation and fabrication of two Stycast models was subcontracted to the Grumman Aircraft Corporation. The two models (Configuration Nos. 52 and 53) were geometrically the same, but Configuration 52 had a 1.0-in. long steel nose and windward centerline pressure orifices. A sketch showing the overall model dimensions is presented in Fig. 1 and a photograph of Configuration 53 is shown in Fig. 2. 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. Table 2 presents model coordinate measurements referenced to the axis system illustrated in Fig. 1.

Six-in.-diam hemispheres were cast from the same batch of Stycast used to cast the orbiter 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 model was cleaned and cooled with alcohol and then spray painted with Tempilac[®]. In most cases the windward and leeward surfaces were sprayed with different paints since the leeside surface temperatures were generally lower than the windward surface temperatures. The models were installed on the model injection mechanism at the desired test attitude and the model temperature 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 to determine the model initial temperature. The model was 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 2 frames per second.

Since the maximum Reynolds number was not sufficient to produce fully turbulent flow, boundary layer trips were used to induce transition so that turbulent heating levels could be determined. For $\alpha = 10$ and 20 deg the trips consisted of 0.030-in.-diam steel spheres spot welded 1.0-in. from the model nose with about 0.060-in. between spheres. At the other angles of attack ($\alpha = 30, 40, 50$) closely-spaced surface irregularities were applied to the entire windward surface (bottom) of the model. The application method consisted of dabbing small dots of Barco Bond[®] adhesive in about 1-in. intervals on the bottom surface of the model and then sprinkling the surface with No. 46 grit (≈ 0.015 -in.-diam). Several pieces of grit adhered to each dot, resulting in a small surface irregularity approximately 0.025-in. high.

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 consecutive. Also since three cameras were used simultaneously the Data Summary sheets are divided into bottom, side and top surfaces. The specific test conditions for each run (or group) are provided on the data tabulation sheets preceding each set of melt line tracings.

3.3 DATA REDUCTION

The data reduction procedures used in this SADSAC report are somewhat more involved than previously used since the melt lines are transformed into body coordinates.

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 plots and melt lines in this report 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

Shadowgraph pictures at $\alpha = 10, 20, 30, 40$ and 50 deg are presented in Fig. 3. The phase-change paint test results are presented as individual melt contours in body coordinates grouped as follows:

<u>Model Surface</u>	<u>Re/ft</u>	<u>α, deg</u>
Bottom ↓	2.5×10^6	10,20,30,40
	3.7×10^6	10,20,30,40, 50
	3.7×10^6 (trips)*	"
Side ↓	2.5×10^6	10,20,30,40, 50
	3.7×10^6	"
	3.7×10^6 (trips)*	"
Top ↓	2.5×10^6	10,20,30,40, 50
	3.7×10^6	"
	3.7×10^6 (trips)*	"

* $\alpha \geq 30$ trips on bottom surface only.

Table 4, Page 43, presents a summary of these plotted data.

Preceding each set of melt contours is a tabulated data sheet which lists the specific test conditions and the time of each picture with the

corresponding heat-transfer parameters. Following each set of bottom surface contour plots are axial and spanwise data plots.

These figures were machine generated utilizing a data reduction technique recently developed at the VKF. This technique has simplified the tedious film reading task and provided body coordinates of melt line contours on magnetic tape.

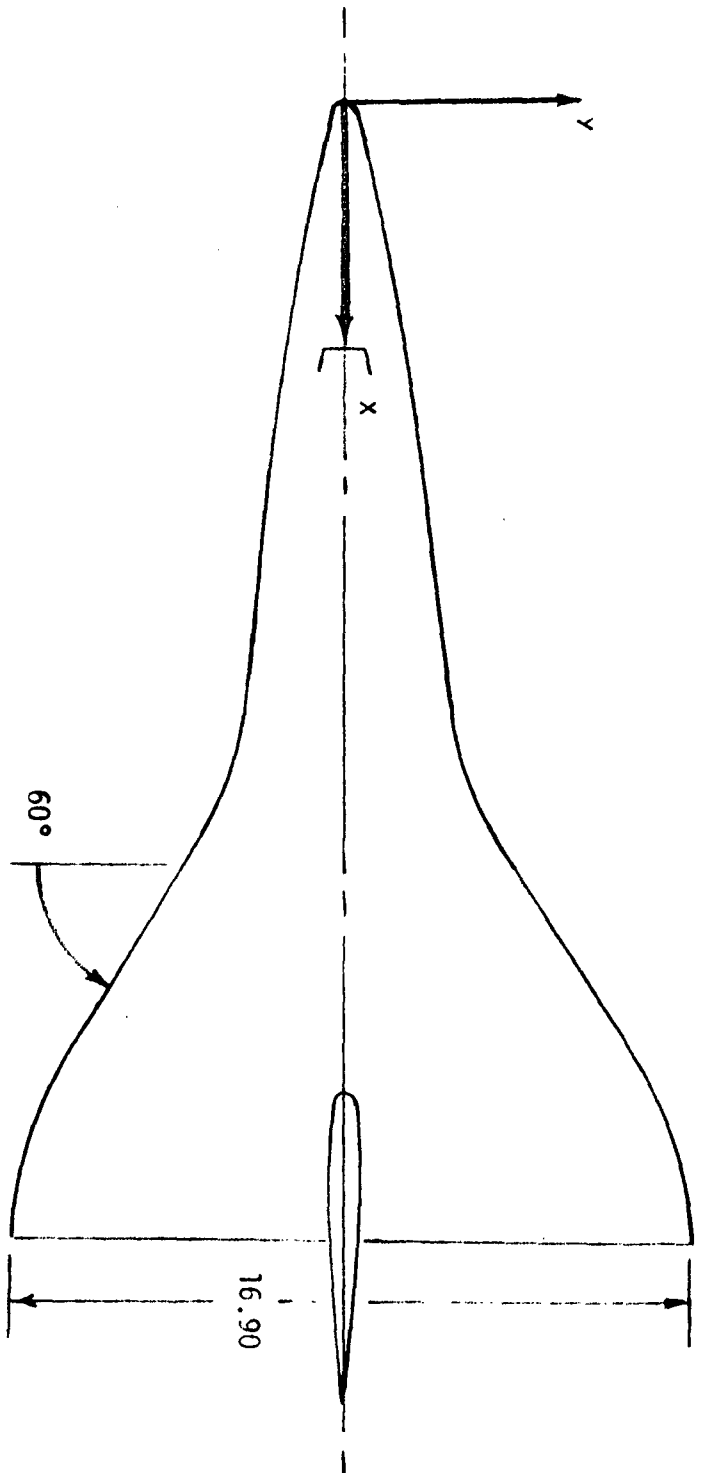
The 70-mm film was projected onto an 8 x 10-in. glass plate and an experienced engineer traced the melt line contours. In regions of relatively constant heating a distinct melt line is extremely difficult to define and in some cases the melt line tracings were terminated because of poor definition. Of course, the melt line tracings are in picture plane coordinates, whereas body coordinates are desired. The transformation to body coordinates was accomplished as follows:

- 1) The model coordinates were measured at many model stations with a modified Sheffield Cordax coordinate measuring machine (Model 200), see Table 2.
- 2) the camera locations relative to the model were determined,
- 3) using the principles of photogrammetry and the information obtained in steps 1 and 2, the model coordinates were transformed into the film plane,
- 4) the body coordinates of a given melt line were then obtained by interpolation in the film plane, with the results being stored on magnetic tape.

The level of the heat-transfer coefficient associated with each melt line was obtained by the procedure outlined in Section 3.3.

REFERENCES

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.



All Dimensions in Inches
 Model Scale = 0.013

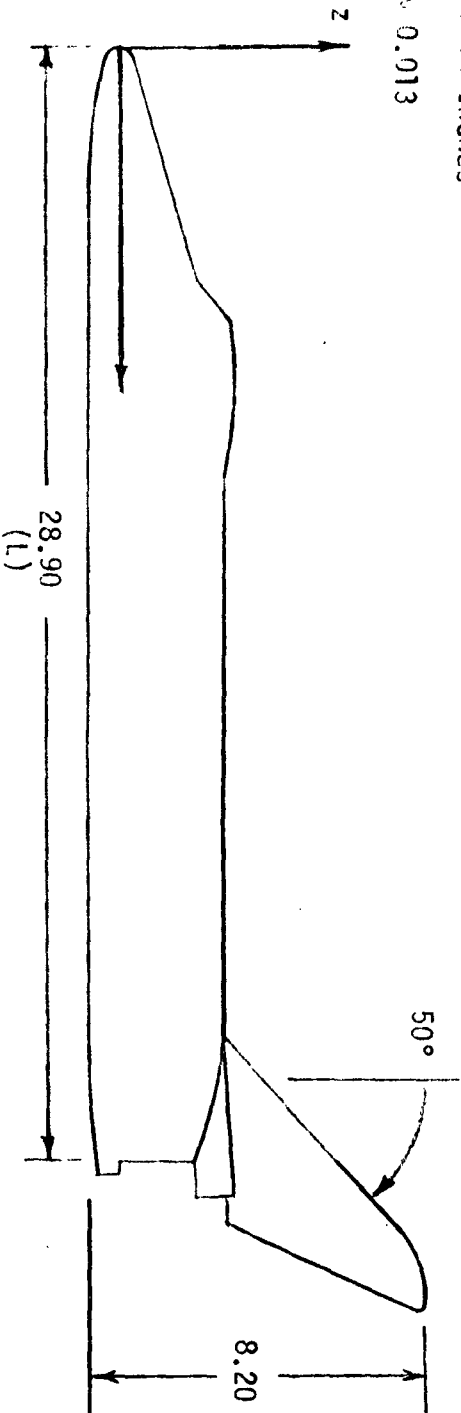


Fig. 1 North American Rockwell Delta Wing Orbiter Model Sketch

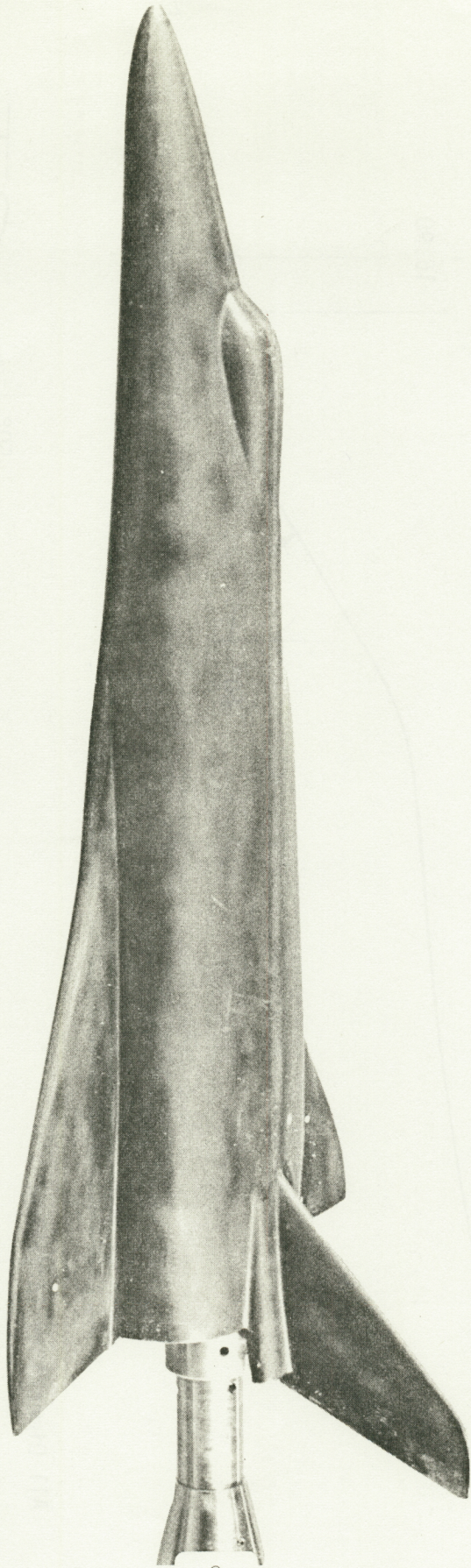


Figure 2. MODEL PHOTOGRAPH

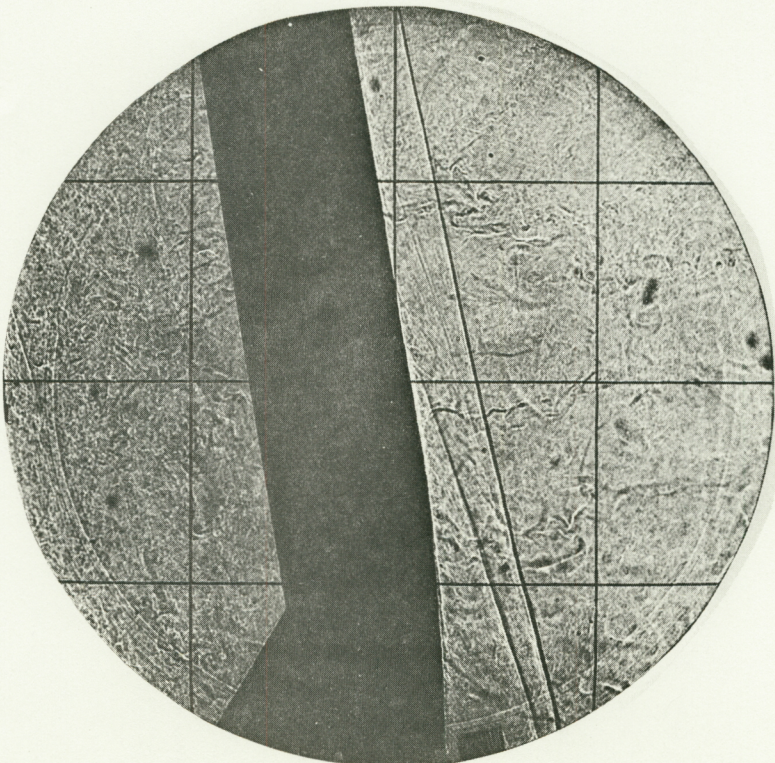
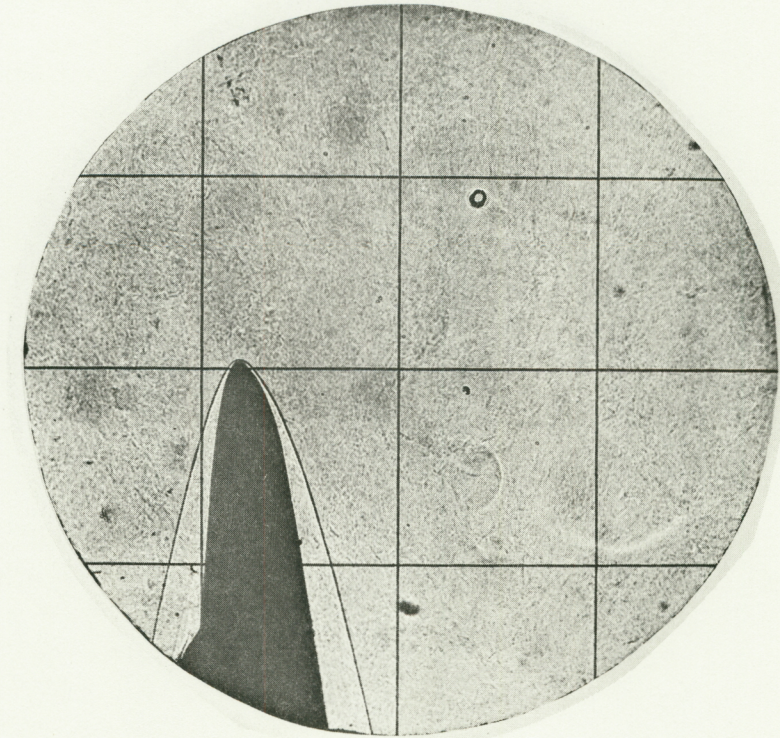
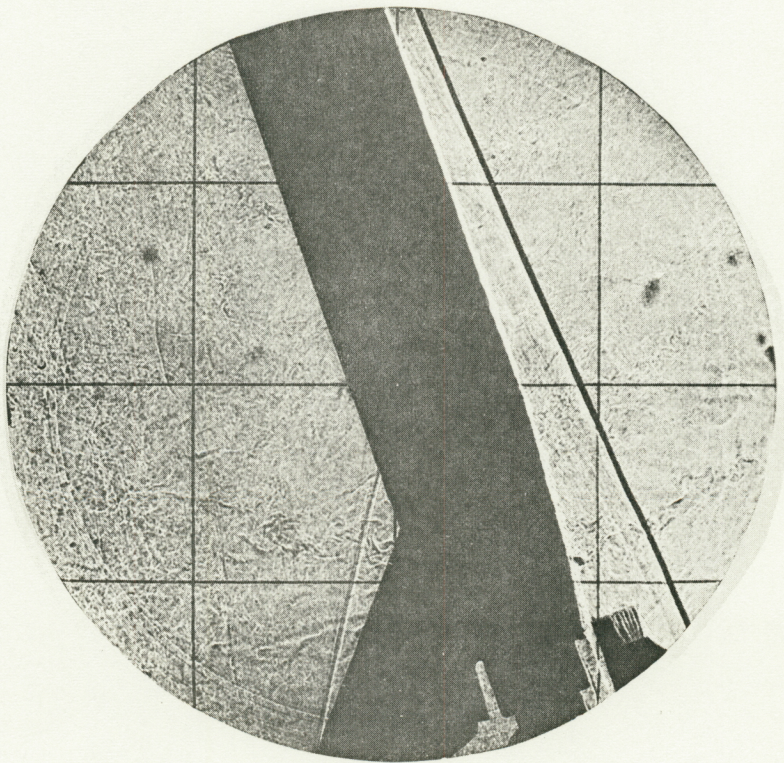
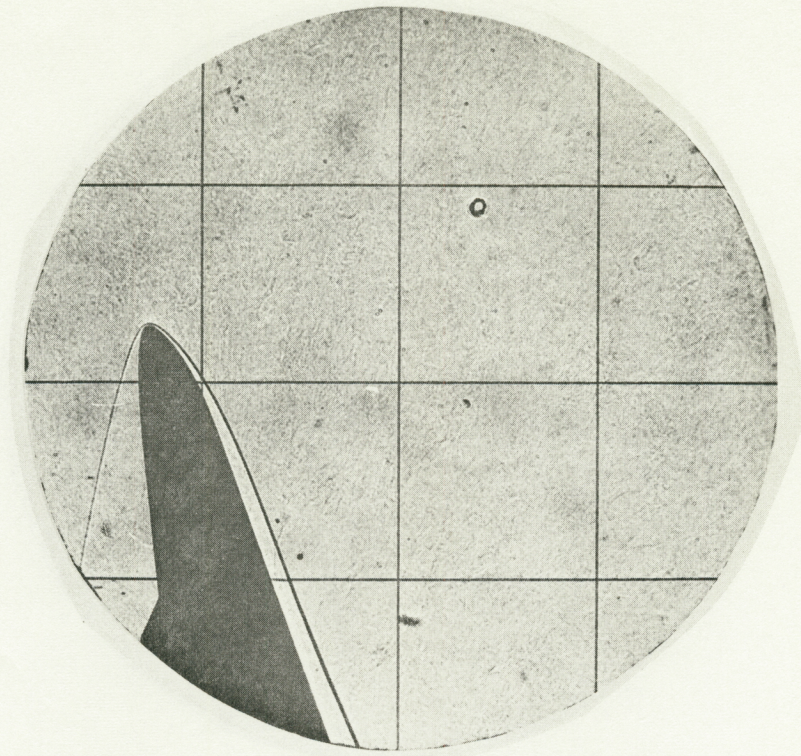
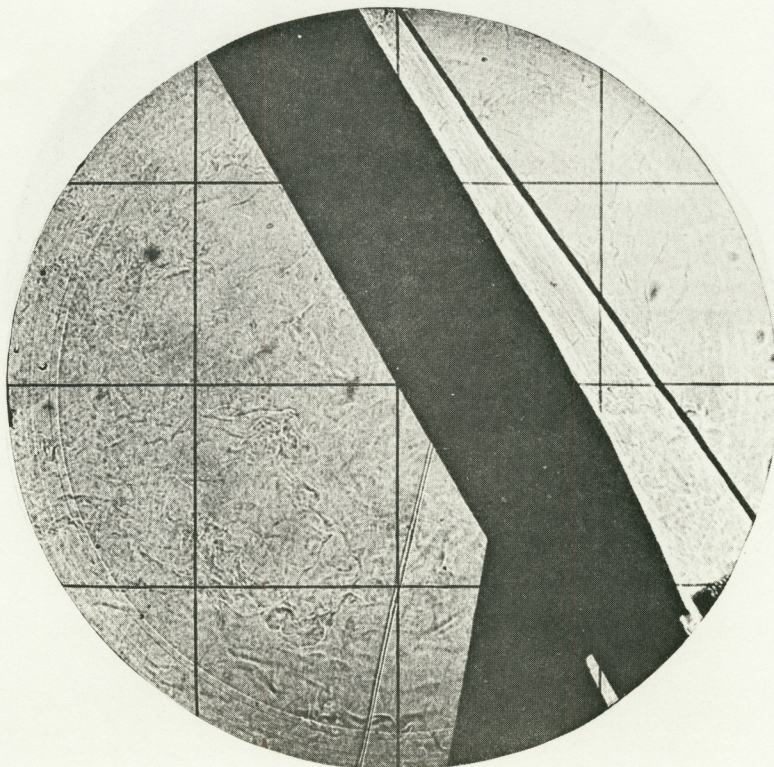
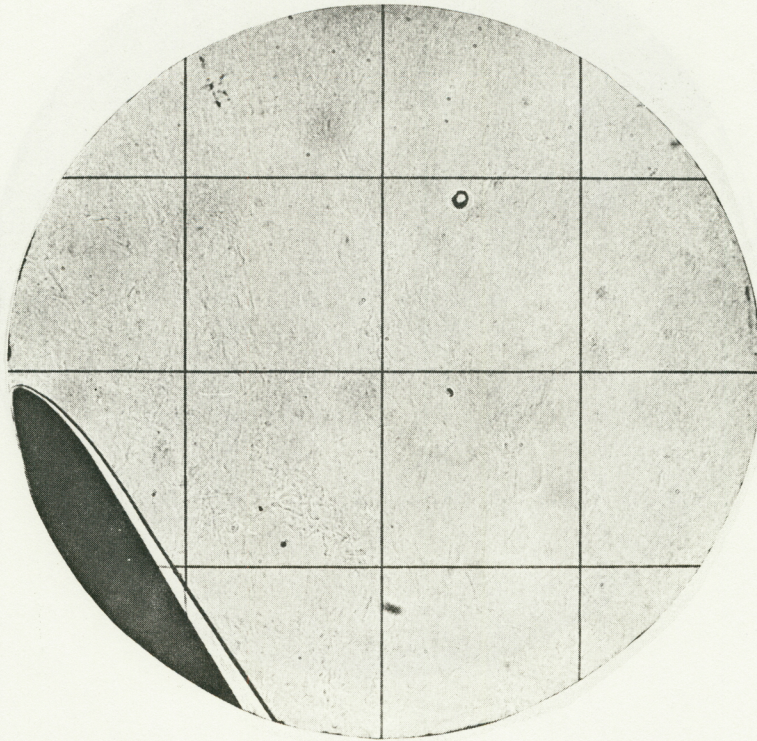


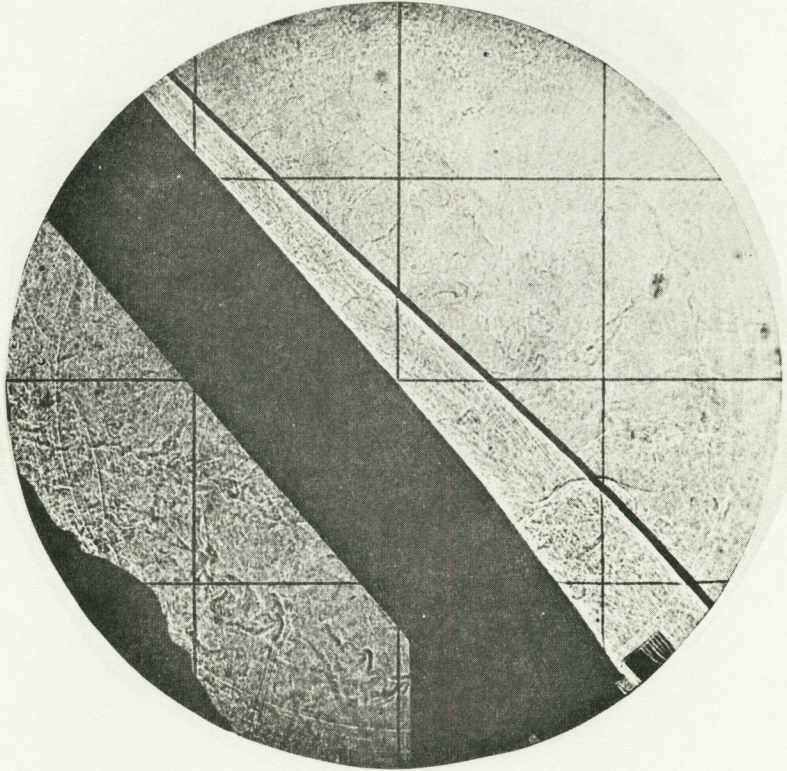
Fig. 3 Shadowgraph Photographs of North American Rockwell Orbiter at Mach 8
a. $\alpha = 10$ deg



b. $\alpha = 20$ deg
Fig. 3 Continued

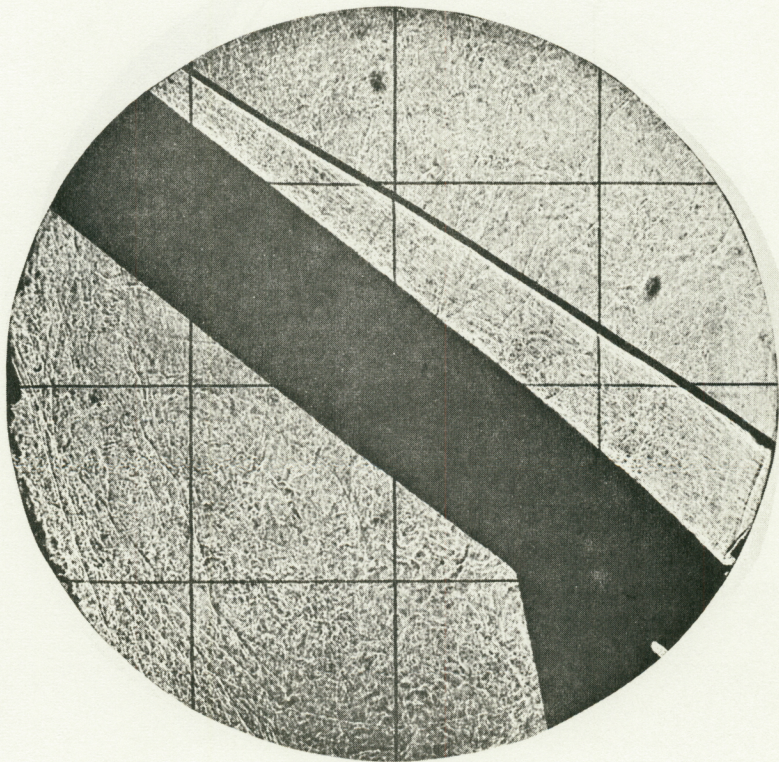


c. $\alpha = 30$ deg
Fig. 3 Continued



d. $\alpha = 40$ deg

Fig. 3 Concluded



e. $\alpha = 50$ deg

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

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
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:

TOTAL DATA

	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
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
Dihedral 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 - E11 (Data for one of two sides)

GENERAL DESCRIPTION: Constant chord elevon located on Delta Wing - W21

Model Scale = 0.013

DRAWING NUMBER: _____

DIMENSIONS:

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

Table 1 - 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-86.

Follows NR lines 9992-161B.

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
Dihedral 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 - Z₂

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

Model Scale = 0.013

DRAWING NUMBER: _____

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

Table 1. - concluded

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)

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

Table 2. Tabulated Model Coordinates

ACCIAURO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL 8
 V11162 B09

MODEL GEOMETRY OF NAR-D=0 BOTTOM SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
1	0	0	0	0										
2	.25	0	-.16	-.17	0	-.24	.17	-.16	.21	0				
3	.50	0	-.26	-.23	0	-.34	.18	-.28	.31	0				
4	.75	0	-.34	-.24	-.14	-.39	.10	-.42	.30	-.26	.30	0		
5	1.00	0	-.33	-.34	-.10	-.48	.26	-.38	.43	-.17	.45	0		
6	1.25	0	-.47	-.26	-.27	-.46	-.01	-.54	.21	-.48	.42	-.28	.52	0
7	1.50	0	-.61	-.26	-.32	-.48	-.02	-.58	.23	-.51	.49	-.27	.58	0
8	1.75	0	-.65	-.29	-.32	-.51	0	-.60	.26	-.53	.51	-.32	.59	.63
9	2.25	0	-.74	-.22	-.46	-.47	-.24	-.60	0	-.64	.36	-.54	.60	-.31
10	2.50	0	-.75	-.31	-.42	-.52	0	-.65	.38	-.54	.63	-.31	.78	0
11	2.75	0	-.79	-.32	-.41	-.54	0	-.65	.38	-.56	.72	-.25	.81	-.01
12	3.00	.18	-.80	-.15	-.58	-.45	-.27	-.63	0	-.67	.38	-.59	.64	-.39
13	3.25	.21	-.87	-.05	-.68	-.38	-.45	-.57	0	-.68	.39	-.60	.68	-.38
14	3.50	.23	-.89	0	-.68	-.38	-.45	-.57	0	-.68	.39	-.60	.68	-.38
15	3.75	.23	-.92	.14	-.64	-.56	-.33	-.76	0	-.62	.36	-.78	.67	-.59
16	3.98	.23	-.94	.12	-.64	-.56	-.33	-.76	0	-.62	.36	-.78	.67	-.59
17	4.25	.23	-.97	.08	-.66	-.56	-.33	-.76	0	-.62	.36	-.78	.67	-.59
18	4.50	.23	-.98	.08	-.66	-.56	-.33	-.76	0	-.62	.36	-.78	.67	-.59
19	4.75	.23	-.98	.08	-.66	-.56	-.33	-.76	0	-.62	.36	-.78	.67	-.59
20	5.00	.23	-.98	.08	-.66	-.56	-.33	-.76	0	-.62	.36	-.78	.67	-.59

TABLE 2 (CONTINUED)
 AEC(LARO)INC(1) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL 8
 KILLBUCK BLDG

MODEL GEOMETRY OF NARROW BOTTOM SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO. POINT NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
16	4.00	.30	-.97	0	-.02	-.29	-.54	-.52	-.29	-.62	0	-.66	.37	-.60	.77	-.34		
106	-1.02	-.01	1.01	.30														
116	4.25	.30	-.95	-.11	-.70	-.03	-.36	-.61	0	-.66	.35	-.62	.73	-.40	.94	-.12		
117	-1.03	.11	1.05	.30														
119	4.50	.30	-1.01	-.05	-.79	-.30	-.47	-.58	0	-.66	.37	-.61	.77	-.39	1.00	-.05		
126	-1.09	.30	1.08	.30														
19	4.75	.35	-1.08	.03	-.92	-.27	-.70	-.47	-.44	-.59	0	-.66	.35	-.62	.70	-.00		
135	-1.13	-.11	1.08	.09	1.12	.35												
20	5.00	.35	-1.11	.02	-.92	-.29	-.69	-.49	-.37	-.62	0	-.65	.44	-.61	.88	-.33		
146	-1.15	0	1.16	.35														
21	5.25	.45	-1.14	.02	-.94	-.30	-.71	-.49	-.41	-.61	0	-.65	.30	-.64	.70	-.44		
156	-1.19	-.14	1.15	.10	1.20	.45												
22	5.50	.41	-1.18	.06	-.97	-.29	-.73	-.50	-.40	-.62	0	-.65	.32	-.64	.70	-.52		
167	-1.23	-.22	1.15	0	1.24	.41												
23	5.75	.36	-1.20	.01	-.93	-.30	-.61	-.56	-.21	-.64	.18	-.65	.50	-.61	.95	-.36		
178	-1.26	-.02	1.27	.36														
24	6.00	.44	-1.26	.08	-.95	-.27	-.62	-.47	-.41	-.62	0	-.65	.31	-.64	.78	-.50		
188	-1.33	-.23	1.22	0	1.32	.46												
25	6.25	.43	-1.29	.08	-.96	-.29	-.71	-.54	-.31	-.63	0	-.64	.30	-.63	.87	-.47		
199	-1.35	-.06	1.35	.44														
26	6.50	.46	-1.34	.11	-.97	-.23	-.67	-.47	-.55	-.60	0	-.64	.36	-.64	.80	-.53		
209	-1.38	-.22	1.34	.14	1.39	.43												
27	6.75	.45	-1.35	.08	-.98	-.24	-.65	-.50	-.48	-.62	0	-.64	.39	-.64	.79	-.54		
220	-1.44	-.27	1.32	0	1.42	.45												
	1.15																	

TABLE 2 (CONTINUED)
 AECIAROV INC-1 ARNOLD AFS, TENNESSEE
 NON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 V11162 B00

MODEL GEOMETRY OF NAR-QAO BOTTOM SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	
29	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	-.57	-.46	-.70	-.58	0	-.64	.38	-.64	.80	-.55			
	.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	-.58	-.46	-.62	-.60	0	-.64	.38	-.64	.80	-.55			
	.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	0	-.63	.38	-.63	.80	-.55			
	.69	-.66	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	0	-.63	.38	-.63	.80	-.55			
	.32	-.63	.65	-.61	1.10	-.44	1.34	-.21	1.49	.01									
33	8.25																		
296	-1.65	.50	-1.59	.18	-1.43	-.13	-1.18	-.38	-.85	-.56	0	-.63	.38	-.63	.80	-.55			
	.31	-.63	.72	-.61	1.18	-.40	1.49	-.04	1.60	.22									
34	8.50																		
310	-1.65	.50	-1.61	.17	-1.40	-.20	-1.18	-.40	-.88	-.55	0	-.63	.38	-.63	.80	-.55			
	.31	-.63	.68	-.61	1.08	-.48	1.46	-.16	1.59	.09									
35	8.75																		
325	-1.70	.63	-1.67	.25	-1.48	-.14	-1.21	-.40	-.84	-.57	0	-.62	.38	-.62	.80	-.55			
	.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	0	-.62	.38	-.62	.80	-.55			
	.72	-.61	1.09	-.50	1.50	-.17	1.67	.10	1.73	.36									
37	9.25																		
352	-1.77	.60	-1.75	.26	-1.62	-.00	-1.40	-.30	-.82	-.59	0	-.61	.38	-.61	.80	-.55			
	.28	-.62	.67	-.61	1.12	-.50	1.56	-.15	1.68	.06									
38	9.50																		
367	-1.80	.60	-1.79	.26	-1.65	-.05	-1.36	-.36	-.82	-.58	0	-.62	.38	-.62	.80	-.55			
	.32	-.62	.70	-.61	1.11	-.52	1.47	-.28	1.69	.0									
39	9.75																		
382	-1.86	.60	-1.83	.25	-1.70	-.00	-1.48	-.31	-.82	-.57	0	-.61	.38	-.61	.80	-.55			
	.0	-.62	.37	-.62	.72	-.61	1.07	-.54	1.39	-.38									

TABLE 2. (CONTINUED)
 AECIARCO, INC.) AMNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 W11162 B00

MODEL GEOMETRY OF NAR-DWD BOTTOM SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
40	10.00	.60	-1.86	.21	-1.66	-.16	-1.30	-.44	-.93	-.57	-.52	-.61	-.25	0	-.62			
398	-1.89	.60	-.62	.63	-.61	1.01	-.57	1.45	-.34	1.76	.01	1.87	.35	1.89	.68			
41	10.25	.60	-1.91	.23	-1.75	-.12	-1.47	-.37	-1.15	-.53	-.73	-.60	-.31	0	-.62			
413	-1.94	.60	-.62	.80	-.61	1.27	-.48	1.67	-.19	1.87	.18	1.91	.38	1.91	.60			
42	10.50	.60	-1.95	.22	-1.80	-.11	-1.54	-.35	-1.22	-.51	-.89	-.59	-.55	-.60	-.61	-.25	-.61	-.35
420	-1.98	.60	-.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	.60	-2.01	.26	-1.85	-.10	-1.51	-.39	-1.13	-.54	-.76	-.60	-.40	-.61	-.06	-.61		
445	-2.02	.60	-.62	.67	-.61	1.11	-.56	1.52	-.38	1.82	-.10	1.95	.14	1.99	.36	2.01	.60	
44	11.00	.60	-2.05	.23	-1.92	-.07	-1.67	-.31	-1.34	-.49	-.94	-.58	-.51	-.61	-.23	-.61	-.22	
461	-2.07	.60	-.62	.36	-.62	.70	-.61	1.07	-.58	1.44	-.46	1.71	-.20	1.93	0	2.01	.22	
	2.05	.60																
45	11.25	.50	-2.09	.20	-1.96	-.08	-1.71	-.33	-1.40	-.49	-.96	-.58	-.55	-.60	-.26	-.61	-.35	
478	-2.11	.50	-.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	.30	-2.06	.02	-1.88	-.23	-1.61	-.41	-1.28	-.51	-.93	-.59	-.63	-.60	-.40	-.61	-.08	
495	-2.12	.30	-.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	.40	-2.19	.09	-2.04	-.16	-1.81	-.36	-1.47	-.50	-1.03	-.58	-.56	-.60	-.28	-.61	-.18	
512	-2.21	.40	-.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	.30	-2.20	0	-2.02	-.24	-1.75	-.41	-1.42	-.53	-1.09	-.58	-.75	-.60	-.49	-.61	-.01	
529	-2.25	.30	-.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	.20	-2.19	-.10	-1.94	-.33	-1.62	-.48	-1.25	-.56	-.80	-.60	-.49	-.60	-.25	-.61	-.01	
546	-2.27	.20	-.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	.20	-2.24	-.11	-1.99	-.35	-1.67	-.49	-1.30	-.56	-.91	-.60	-.64	-.60	-.41	-.61	-.20	
943	-2.32	.20	-.62	.36	-.62	.86	-.61	1.35	-.57	1.78	-.46	2.09	-.28	2.28	.01	2.31	.20	
	0	.62																

TABLE 2. (CONTINUED)
 AECCLAD, INC.) ARNOLD AFS, TENNESSEE
 NON-KARMAN GAS DYNAMICS FACILITY
 5W INCH HYPERSONIC TUNNEL B
 W11162 B00

MODEL GEOMETRY OF NAR-D=0 BOTTOM SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
63	17.90	0	-2.86	-3.39	-2.21	-5.56	-1.46	-6.60	-6.63	-6.62	-6.03	-6.64	0.49	-6.63	1.08	-6.62		
755	-3.08	1.55	-0.61	2.01	-5.59	2.56	-4.55	2.88	-4.42	3.09	0							
64	17.50	0	-3.01	-3.37	-2.48	-5.55	-1.77	-5.59	-1.02	-6.62	-6.64	0	0.11	-6.64	0.63	-6.63		
768	-3.23	1.02	-0.63	1.52	-2.05	-4.59	2.62	-5.55	3.03	-3.38	3.22	0						
65	19.00	0	-3.12	-3.36	-2.57	-5.55	-1.63	-6.60	-6.60	-6.62	-6.30	-6.64	0.13	-6.64	0.75	-6.63		
782	-3.37	1.49	-0.62	2.22	-2.73	-5.54	3.21	-5.34	3.37	-6.01								
66	19.00	0	-3.59	-3.32	-3.02	-4.49	-2.42	-5.57	-1.77	-6.60	-6.62	-6.05	-6.62	0	-6.64	0.68	-6.63	
795	-3.82	1.37	-0.62	1.99	-2.67	-5.57	3.37	-4.42	3.68	-6.25	3.77	0						
67	22.00	0	-4.09	-3.28	-3.59	-4.42	-2.80	-5.56	-2.07	-6.59	-1.32	-6.61	-6.64	-6.63	0	-6.63		
809	-4.32	0.69	-0.63	1.47	-2.30	-4.60	3.04	-5.56	3.75	-6.42	4.17	-6.28	4.34	0				
68	21.00	0	-4.76	-3.17	-4.42	-4.30	-3.83	-4.43	-3.22	-6.54	-2.30	-6.59	-1.64	-6.60	-6.60	-6.62		
824	-4.90	0.42	-0.63	0	-4.61	-4.63	1.50	-6.62	2.52	-6.61	3.24	-6.57	3.99	-6.44	4.59	-6.30		
4284	-0.14	4.91	0.08															
69	22.00	0	-5.35	-3.14	-4.94	-4.26	-4.24	-4.37	-3.74	-6.47	-3.12	-6.56	-2.36	-6.58	-1.53	-6.60		
842	-5.47	0.02	-0.61	0.14	-2.62	-4.63	0.50	-6.63	1.80	-6.01	2.66	-6.61	3.45	-6.55	4.31	-6.42		
5.00	-0.30	5.31	-0.20															
70	23.00	0	-5.04	-3.13	-5.40	-4.23	-4.83	-4.32	-4.39	-6.39	-3.71	-6.48	-3.21	-6.54	-2.70	-6.57		
861	-6.03	0.10	-0.58	-1.33	-4.65	-4.60	-4.09	-6.61	1.70	-6.61	1.47	-6.60	2.18	-6.60	2.87	-6.59		
3.02	-0.55	4.26	-0.44															
71	24.00	0	-6.44	-3.08	-5.96	-4.17	-5.48	-4.24	-4.78	-6.33	-4.21	-6.40	-3.48	-6.48	-2.85	-6.53		
883	-6.65	0.12	-0.55	-1.39	-4.47	-4.57	0.11	-6.57	0.90	-6.57	1.68	-6.57	2.58	-6.56	3.21	-6.53		
-2.18	-0.55	5.74	-0.22															
3.93	-0.36	4.81	-0.13															
72	25.00	0	-6.97	-3.05	-6.35	-4.13	-5.77	-4.19	-5.14	-6.25	-4.45	-6.32	-3.71	-6.39	-2.95	-6.46		
904	-7.22	0.14	-0.46	-1.58	-4.86	-4.50	-4.12	-5.51	0.43	-6.52	1.04	-6.51	1.92	-6.51	2.78	-6.50		
-2.25	-0.46	4.98	-0.31															
3.83	-0.20	6.28	-0.19															
73	26.00	0	-7.48	-3.06	-6.95	-4.05	-6.06	-4.11	-5.34	-6.17	-4.47	-6.24	-3.44	-6.34	-2.87	-6.39		
926	-7.70	0.27	-0.42	-1.05	-4.21	-4.44	0.49	-6.44	1.20	-6.43	2.14	-6.43	2.44	-6.42	3.98	-6.32		
-2.13	-0.42	6.06	-0.16															
4.99	-0.24	6.81	-0.11															

TABLE 2. (CONTINUED)
 AECC (ARO-INC.) ARNOLD AFS, TENNESSEE
 VCN KARAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL @
 Y1162 B00

MODEL GEOMETRY OF NARROW SIDE SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO. POINT NO.	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	
1	0	0	0																
2	.10	0	0	.13	-.12	.17	0	.09	.14	0	.14								
3	.20	0	0	.10	-.20	.20	-.14	.25	0	.24	0	.24	0	.20	.09	.10	.16	.03	.18
4	.30	0	0	.14	-.32	.22	.16	.25	.16	.11	.22	.27	-.19	.24	-.18	.33	0	.29	0
5	.50	0	0	.09	-.36	0	-.36	.19	-.31	.31	-.18	.35	0	.36	0	.26	.23	.15	.30
6	1.00	0	0	.52	-.49	.16	-.47	.29	-.41	.43	-.24	.51	0	.46	.22	.29	.46	.16	.49
7	1.50	0	0	.30	-.58	.40	-.56	.66	.66	.68	.68	.54	-.25	.62	0	.57	.31	.43	.53
8	2.00	0	0	.48	-.63	.55	-.62	.74	.74	.80	.82	.63	-.27	.72	0	.72	.24	.91	.50
9	2.50	0	0	.62	-.65	.70	-.64	.81	.81	.88	.92	.71	-.26	.80	0	.82	.20	.76	.48
10	3.00	0	0	.92	-.69	.92	-.65	1.04	1.04	1.07	1.07	.88	0	.90	.25	.79	.63	.59	.86
11	3.50	0	0	1.05	-.67	1.05	-.65	1.18	1.18	1.18	1.18	.94	0	.97	.33	.83	.74	.51	1.06
12	4.00	0	0	1.23	-.67	1.23	-.65	1.28	1.28	1.28	1.28	1.00	0	1.04	.32	.93	.73	.67	1.07
13	5.00	0	0	1.40	-.67	1.40	-.63	1.40	1.40	1.40	1.40	1.13	0	1.10	.26	1.18	.52	1.05	.88

TABLE 2. (CONTINUED)
 AECCLARO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL 8
 V11162 800

MODEL GEOMETRY OF NARROW SIDE SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
14	5.90																	
132	0	-0.67	.38	-0.65	.69	-0.58	1.02	-0.35	1.25	0	1.31	.22	1.32	.39	1.27	.72		
	1.06	1.12	.80	1.46	.52	1.66	.21	1.74	.06	1.78	0	1.78	0	1.78	0	1.78		
15	6.40																	
146	0	-0.67	.33	-0.66	.57	-0.63	.82	-0.54	1.01	-0.41	1.18	-0.22	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	.21	2.22	.19	2.23	0	2.24	0	2.24	0	2.24		
16	6.70																	
16a	.29	-0.66	0	-0.66	.56	-0.69	.77	-0.58	1.02	-0.42	1.21	-0.23	1.35	0	1.41	.23		
	1.44	.48	1.37	.84	1.17	1.19	.55	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	-0.67	.36	-0.66	.16	-0.66	.57	-0.64	.75	-0.60	.93	-0.51	1.16	-0.36	1.28	-0.19		
	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	1.61	.76	1.93	.75	2.03	.71	2.26	.61	2.42	.47	2.54	.36	2.59	.23	2.61		
	.13	2.61	0	2.61	0	2.61	0	2.61	0	2.61	0	2.61	0	2.61	0	2.61		
18	7.50																	
218	.36	-0.66	.16	-0.66	0	-0.66	.55	-0.65	.75	-0.61	.93	-0.54	1.18	-0.37	1.35	-0.18		
	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	1.67	.80	1.92	.80	2.04	.79	2.20	.75	2.33	.66	2.48	.56	2.57	.48	2.62		
	.40	2.65	.39	2.68	.13	2.69	0	2.69	0	2.69	0	2.69	0	2.69	0	2.69		
19	8.00																	
246	.42	-0.66	.20	-0.66	0	-0.66	.62	-0.65	.88	-0.58	1.19	-0.41	1.38	-0.22	1.52	0		
	1.58	.16	1.62	.39	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	0	2.72	0	2.72	0	2.72	0	2.72	0	2.72		
20	8.50																	
273	.65	-0.65	.30	-0.65	.12	-0.65	.55	-0.65	.75	-0.61	.93	-0.54	1.18	-0.37	1.35	-0.18		
	1.68	.33	1.71	.55	1.63	.90	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	-0.65	.23	-0.65	0	-0.65	.72	-0.64	.95	-0.59	1.23	-0.46	1.48	-0.24	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	2.59	.43	2.65	.33	2.68	.20	2.70	.06	2.70		
	0	2.70	0	2.70	0	2.70	0	2.70	0	2.70	0	2.70	0	2.70	0	2.70		
22	10.00																	
322	0	-0.65	.50	-0.64	.88	-0.63	1.04	-0.60	1.25	-0.52	1.47	-0.39	1.66	-0.22	1.81	0		
	1.90	.32	1.93	.64	1.88	.97	1.65	1.40	1.26	1.85	.84	2.06	.75	2.33	.61	2.43		
	.52	2.53	.49	2.60	.29	2.66	.11	2.67	0	2.67	0	2.67	0	2.67	0	2.67		

TABLE 2. (CONTINUED)
 AECIARNDJMC3 ANNOID AF5, TENNESSEE
 WGN KARMAN GAS DYNAMICS FACILITY
 5W INCM HYPERSONIC TUNNEL B
 W1162 800

MODEL GEOMETRY OF WAR-DWO SIDE SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	POINT NO.	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
23	10.70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	1.82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	1.43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	11.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	1.18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	1.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	12.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	2.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	13.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	2.35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	14.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	2.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	15.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	2.65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	2.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	16.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	2.85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	2.79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	17.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	2.95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	2.86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	18.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	3.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	2.92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	1.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 2. (CONTINUED)
 AECIARO, INC. ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 W1162 800

MODEL GEOMETRY OF NAW-DWD SIDE SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	Y			Z			Y			Z			Y			Z			
	X	Z	Y	Z	Y	Z	Z	Y	Z	Z	Y	Z	Z	Y	Z	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															
33	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	3.25	.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	-.65	.84	-.68	1.66	-.66	2.38	-.65	3.00	-.63	3.71	-.61	3.53	-.56	4.00	-.47			
	4.43	-.39	4.67	-.31	4.81	-.23	4.50	-.10	4.93	0	4.89	.09	4.74	.21	4.56	.27			
	4.34	.31	4.23	.33	3.93	.30	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	-.76	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	5.68	-.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	.46	3.14	1.14			
	2.91	1.72	2.45	2.15	1.76	2.33	1.01	2.54	.58	2.62	.29	2.66	0	2.68					
36	23.00																		
702	.69	-.62	0	-.68	1.86	-.66	2.56	-.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	1.62	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	6.44	0	6.63	.11	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	2.52	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	-.55	2.14	-.58	.93	-.58	3.04	-.54	3.31	-.52	4.04	-.43	5.13	-.35	5.83	-.27			
	6.64	-.18	7.02	-.11	7.14	-.08	7.19	0	7.21	.07	7.17	.15	7.02	.24	6.76	.32			
	4.33	.39	6.02	.42	5.76	.43	5.19	.44	3.22	.44	3.22	.44	3.20	.97	3.14	1.31			
	3.00	1.64	2.90	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	25.00																		
809	1.59	-.54	.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	7.23	.16	7.19	.21	7.03	.26	6.85	.30			
	6.45	.24	6.05	.38	5.39	.39	3.21	.39	3.20	.73	3.10	1.24	2.99	1.67	2.99	2.09			
	1.99	2.27	1.38	2.40	.74	2.52	.41	2.56	.15	2.62	0	2.64							

TABLE 2. (CONTINUED)
 AEC TARD (INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 W1162 B00

MODEL GEOMETRY OF NAW-D00 SIDE SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO. POINT NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	
40	26.40																				
890	.52	-.46	0	-.68	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	5.11	.46	3.11	.46	3.09	.69	3.05	1.13			
	2.95	1.44	2.77	1.76	2.46	2.05	1.57	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	2.76	.25	2.89					
	.21	3.05	.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	-.03	7.53	.03	7.88	.15	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	2.33	1.03	2.43	1.01	2.44	.57	2.52	.42	2.64	.79	2.75	.64	2.78	.45	2.78					
	.35	2.60	.32	2.81	.28	3.01	.23	3.36	.16	3.72	.09	3.92	.04	3.98	0	4.01					
42	28.00																				
921	.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	7.53	.25	8.21	.32	8.30	.40	8.33	.47	8.29	.53					
	8.21	.55	7.83	.60	7.81	.84	7.73	1.26	7.57	1.64	7.24	2.01	6.85	2.23	6.27	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	4.84									
43	29.00																				
961	.27	-.23	.02	-.23	.88	-.22	1.60	-.21	2.80	-.20	3.70	-.17	5.12	-.09	6.93	.04					
	6.00	.14	6.93	.26	7.15	.28	7.45	.32	7.98	.40	8.28	.45	8.37	.48	8.44	.54					
	8.31	.56	7.69	.63	7.65	.97	7.51	1.50	7.27	1.84	6.63	2.25	6.24	2.31	5.03	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	3.63	.20	4.54	.13	5.13	.08	5.37	.03	5.47	0	5.58									
44	29.05																				
999	.09	-.20	.40	-.19	1.06	-.18	2.04	-.17	2.80	-.16	3.97	-.15	5.34	.01	7.07	.21					
	6.91	.33	7.14	.36	7.51	.41	7.59	.47	8.36	.55	9.44	.64	10.95	.75	12.54	.82					
	.92	2.76	.74	2.89	.55	2.91	.38	2.91	.28	2.92	.25	2.95	.24	3.01	.22	3.41					
	.17	4.91	.12	5.38	.08	5.58	.04	5.69	0	5.74											
45	30.08																				
1028	.63	2.34	.91	2.40	.98	2.52	.99	2.64	.97	2.74	.97	2.89	.97	2.97	.95	3.07	.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	6.88					
	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	7.05					
	0	7.18																			
48	31.30																				
1062	.00	4.54	.04	5.07	.06	5.88	.07	6.59	.06	7.12	.05	7.89	.04	7.98	.03	7.99					
	0	7.41																			

TABLE 2. (CONTINUED)
 ARCTARD, INC., AMNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 V11162 800

MODEL GEOMETRY OF NAR-D=0 SIDE SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

SIA NO.	K	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 2. (CONTINUED)
 AECIARO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 Y11162 800

MODEL GEOMETRY OF NAW-DWD TOP SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO. POINT NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	
1	0																		
1	0	0																	
2	.25																		
2	-.24	.21																	
3	.50																		
3	-.35	0																	
4	.75																		
4	-.43	.11																	
5	1.00																		
5	-.50	.12																	
6	1.25																		
6	-.46	.40																	
7	1.50																		
7	-.49	.46																	
8	1.75																		
8	-.69	0																	
9	2.00																		
9	-.71	0																	
10	2.25																		
10	-.77	0																	
11	2.50																		
11	-.78	.39																	
12	3.00																		
12	-.91	.15																	
13	3.50																		
13	-.96	0																	
14	4.00																		
14	-.92	0																	
15	5.00																		
15	-.98	.12																	
16	1.10	.12																	
16	1.11	.62																	

TABLE 2. (CONTINUED)
 AEDUCARCO(ING.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 V11162 B00

MODEL GEOMETRY OF NAR-D00 TOP SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
16	5.94													
97	-1.31	1.02	1.27	0	-1.21	0.85	-0.97	1.25	-0.67	1.57	-0.21	1.78	0.27	1.77
	1.10				1.29	0.25								0.63
17	6.50													
108	-1.39	0.56	-1.37	0	-1.25	0.96	-0.88	1.49	-0.63	1.73	-0.60	1.77	-0.58	2.10
	0	2.33	0.40	0.58	1.97	0.59	1.86	0.62	1.73	0.91	1.44	1.25	0.96	1.37
	1.40	0.25												0.73
18	6.75													
125	-1.44	0.26	-1.34	0.89	-0.95	1.46	-0.71	1.74	-0.68	1.80	-0.61	2.32	-0.37	2.49
	0.42	2.47	0.64	2.23	0.67	1.77	0.66	1.56	1.27	0.99	1.40	0.66	-1.47	0.47
19	7.00													
140	-1.46	0.63	-1.39	0.87	-1.10	1.33	-0.76	1.76	-0.73	1.79	-0.65	2.38	-0.40	2.57
	0.42	2.56	0.66	2.35	0.73	1.77	0.76	1.75	1.02	1.43	1.38	0.86	1.44	0.59
														-1.34
20	7.50													
156	-1.49	0	-1.37	1.09	-1.03	1.54	-0.79	1.85	-0.77	1.90	-0.67	2.46	-0.43	2.65
	0.42	2.05	0.72	2.38	0.77	1.88	0.82	1.82	1.27	1.24	1.49	0	1.53	0.20
														-1.62
21	9.00													
172	-1.58	0.84	-1.47	1.09	-1.05	1.67	-0.81	1.95	-0.75	2.22	-0.58	2.59	-0.21	2.72
	0.48	2.66	0.68	2.46	0.77	2.01	0.85	1.90	1.24	1.60	1.57	0	1.61	0.26
														-1.68
22	8.50													
188	-1.64	0.90	-1.46	1.25	-0.92	1.92	-0.76	2.09	-0.72	2.39	-0.40	2.68	0	2.71
	0.70	2.44	0.75	2.10	1.02	1.80	1.54	1.11	1.64	0.82	1.68	0.31		0.45
														2.66
23	9.00													
202	-1.76	0.28	-1.71	0.93	-1.42	1.42	-0.79	2.13	-0.68	2.35	-0.47	2.62	0	2.70
	0.67	2.38	0.76	2.17	1.06	1.84	1.56	1.23	1.70	0.91	1.75	0.64		0.46
														2.63
24	9.50													
216	-1.83	0.74	-1.79	0	-1.54	1.40	-0.95	2.06	-0.67	2.31	-0.47	2.59	0	2.69
	0.66	2.34	1.03	1.96	1.75	0.99	1.82	0.62	-1.92	0.51				0.37
														2.64
25	10.00													
229	-1.91	0.26	-1.87	0	-1.43	1.63	-0.67	2.37	-0.53	2.50	0	2.67	0.40	2.59
	1.14	1.92	1.75	1.23	1.89	0.21	1.90	0.51						0.59
														2.43
26	10.50													
241	-1.99	0.50	-1.95	0	-1.71	1.43	-0.93	2.24	-0.46	2.54	0	2.66	0.40	2.57
	1.86	1.13	1.95	0.10	1.97	0.37								1.08
														2.08
27	11.00													
252	-2.07	0.42	-2.04	0	-1.77	1.49	-0.97	2.25	-0.23	2.63	0.36	2.61	1.05	2.19
	2.02	0.93	2.05	0.27										1.83
														1.38

TABLE 2. (CONTINUED)
 AEC (ARO) INC. 1 AMNOLD AFB, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 WILLB2 800

MODEL GEOMETRY OF NAR-D=0 TOP SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	
28	12.00																		
262	-2.23	.26	-2.22	.77	-2.12	1.25	-1.61	1.84	-.69	2.48	0	2.65	.76	2.43	1.58	1.84			
	2.08	1.26	2.19	0	2.20	.50													
29	13.00																		
273	-2.38	.41	-2.38	0	-2.28	1.24	-1.87	1.83	-.91	2.37	0	2.65	.81	2.43	1.81	1.85			
	2.31	1.16	2.35	.14	2.35	.83													
30	14.00																		
284	-2.53	.27	-2.52	.79	-2.42	1.37	-1.84	2.01	-.93	2.41	0	2.66	1.01	2.39	2.15	1.76			
	2.48	1.06	2.50	.35	2.69	-.19													
31	15.00																		
295	-2.66	.69	-2.66	.09	-2.58	1.31	-2.32	1.78	-1.69	2.20	-2.89	-.17	-.48	2.59	.37	2.62	1.53	2.27	
	2.31	1.72	2.62	1.07	2.64	.36	2.64	0	-2.89	-.17									
32	16.00																		
308	-2.79	.14	-2.76	.52	-2.76	.18	-2.71	1.25	-2.43	1.80	-1.90	2.20	-1.06	2.45	-.28	2.64			
	.42	2.62	1.49	2.36	2.23	1.97	2.63	1.44	2.75	.40	2.75	.18	2.86	-.84	-3.12	-.17			
33	17.00																		
324	-2.87	.22	-2.83	.42	-2.81	1.02	-2.45	1.87	-1.58	2.33	-3.60	-.17	-.78	2.54	0	2.67	1.86	2.48	
	1.97	2.21	2.55	1.73	2.81	1.03	2.82	.27	3.01	.10									
34	18.00																		
338	-3.30	.09	-2.96	.27	-2.89	.64	-2.80	1.37	-2.35	2.02	-1.46	2.38	-.31	2.64	-.41	2.63			
	1.45	2.39	2.23	2.09	2.70	1.58	2.88	.85	2.89	.31	3.14	.20	3.35	-.83	-3.83	-.18			
35	19.00																		
354	-3.82	-.04	-3.53	.23	-3.08	.32	-2.57	.37	-2.95	.86	-2.76	1.62	-2.35	2.08	-1.68	2.35			
	-4.82	2.55	0	2.67	1.13	2.49	2.21	2.15	2.76	1.58	2.95	.70	2.98	.35	3.25	.28			
	3.71	.08	3.76	-.11															
36	20.00																		
372	-4.37	-.23	-4.28	.12	-3.63	.32	-3.89	.38	-3.02	.67	-2.89	1.49	-2.47	2.05	-1.61	2.38			
	-.32	2.65	.50	2.62	1.57	2.37	2.48	2.01	2.90	1.43	3.01	.42	3.04	.38	3.47	.33			
	4.11	.21	4.31	-.04	4.31	-.15													
37	21.00																		
391	-4.94	-.09	-4.87	.12	-4.47	.28	-3.26	.40	-3.10	.43	-3.08	1.82	-2.74	1.85	-2.10	2.28			
	-.90	2.55	0	2.68	.81	2.57	2.81	2.30	2.72	1.84	3.03	1.20	3.07	.84	3.15	.48			
	4.09	.34	4.73	.18	4.89	-.07	-5.52	-.01											
38	22.00																		
411	-5.47	.10	-5.09	.22	-3.92	.40	-3.17	.43	-3.12	1.21	-2.67	1.99	-1.91	2.35	-.36	2.65			
	.20	2.66	1.41	2.46	2.39	2.17	2.96	1.58	3.12	.74	3.24	.41	4.28	.37	5.16	.23			
	5.44	.05	5.46	-.12															

TABLE 2. (CONTINUED)
 AECIARCO(ING) ANNOLO AF5, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 VII162 800

MODEL GEOMETRY OF NAR-DNO TOP SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	X	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
39	23.00																	
429	-6.09	0	2.68	1.06	2.54	2.37	2.20	2.56	1.63	3.15	.80	-2.98	1.69	-2.26	2.27	-2.97	2.55	
	5.98	.10		6.06	0							3.23	.42	4.48	.39	5.58	.28	
40	24.00	0		-6.53	.20							-3.24	.42	-3.19	1.06	-2.88	1.83	
447	-6.66	2.56		0	2.68	.78	2.58	1.94	2.34	2.65	2.02	3.04	1.48	3.18	.74	3.27	.40	
	4.70	.41		6.03	.32			6.42	.17				0					
41	25.00																	
467	-7.21	.14		-6.91	.27							-3.50	.40	-3.24	.38	-3.17	1.23	
	-3.32	2.65		.27	2.66	1.32	2.48	2.29	2.23	2.92	1.71	3.16	.95	3.19	.38	3.80	.39	
	5.22	.43		6.47	.35			7.10	.17			.03						
42	25.40																	
487	-7.42	.17		-7.05	.30							-4.33	.41	-3.27	.35	-3.21	.58	
	-1.13	2.51		2.27	2.66	.20	2.67	.53	2.53	1.96	2.32	2.81	1.86	3.13	1.22	3.17	.62	
	3.24	.33		4.83	.42			6.75	.35			.18	.06					
43	26.06																	
508	-7.71	.26		-7.49	.33							-4.08	.36	-3.21	.29	-3.15	.53	
	-1.55	2.40		-1.93	2.49							-1.78	2.71	-1.45	2.73	-1.25	2.78	
	.12	3.05		.21	2.78	.39	2.73	.79	2.69	.94	2.52	1.41	2.41	2.19	2.22	2.19	1.77	
	3.08	.92		3.13	.29			3.54	.31			5.51	.43	7.22	.34	7.63	.25	
44	27.00																	
539	-8.07	.43		-7.28	.46							-4.74	.34	-3.18	.19	-3.04	.80	
	-1.23	2.44		2.44	2.55							-3.36	2.80	-2.28	2.98	-1.16	3.82	
	.25	3.06		.35	2.80	.67	2.74	.51	2.62	.97	2.47	1.23	2.39	1.86	2.28	2.52	1.90	
	2.89	1.16		2.98	.31			3.09	.19			4.47	.31	6.57	.45	7.96	.42	
45	28.00																	
570	-6.29	.51		-6.12	.55							-4.87	.26	-3.05	.06	-2.86	.08	
	-1.39	2.32		2.41	2.41							-4.66	2.84	-3.31	2.87	-2.25	3.20	
	.08	4.41		.16	4.44	.27	3.25	.54	2.86	.75	2.82	.96	2.61	1.01	2.39	1.34	2.33	
	1.91	2.20		2.40	1.86			2.87	.09			5.64	.32	7.30	.46	8.21	.52	
	8.31	.43																
46	28.76																	
603	-8.37	.52		-7.53	.48							-5.36	.23	-3.19	-.03	-2.74	-.01	
	-.93	2.37		2.83	2.83							-.23	2.95	-.20	4.02	-.12	5.15	
	.23	3.75		.25	2.93							2.89	2.77	.98	2.35	1.57	2.26	
	2.87	-.03		5.22	.20			6.92	.39			8.18	.53	8.38	.52			
47	29.06																	
632	-8.67	.52		-6.78	.37							-4.47	.08	-3.68	-.07	-2.65	-.06	
	-.47	2.91		2.99	2.99							4.71	1.56	-.05	5.69	.08	5.70	
	1.70	2.91		.95	2.64							2.32	1.56	-.06	2.68	-.06	3.17	
	7.19	.39		8.32	.52													

TABLE 2. (CONCLUDED)
 AECIARO (INC.) ARNOLD AFS, TENNESSEE
 NON KARPAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL 8
 V1162 800

MODEL GEOMETRY OF NAR-080 TOP SURFACE - DIMENSIONS IN INCHES - 27 JAN 72

STA NO.	K	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y					
48	30.00																							
658	-.91	2.51		-.61	2.97		-.17	2.97		-.14	4.07		-.10	3.03		-.04	6.47		.05	6.50		.14	5.71	
	.16	2.97		.17	4.84		.54	2.96		.91	2.84		.99	2.63										
49	30.36																							
671	-.11	6.15		-.05	6.70		-.03	3.06		0	2.64		.04	2.64		.08	6.65		.12	5.91		.14	4.98	
50	30.70																							
679	-.10	5.37		-.07	4.50		0	7.13		0	3.32		.05	7.05		.08	3.76		.12	5.53		-.08	6.56	
51	31.25																							
687	-.06	7.10		-.03	7.34		0	7.41		.07	7.19		.08	5.92		.08	5.05							
52	32.00																							
683	-.03	7.27		-.02	7.48		0	7.54		.04	6.36		.05	7.22										
53	32.70																							
699																								

PHASE CHANGE COATING TEST DATA SUMMARY SHEET

Table 3

TEST TITLE: Reentry Heat Transfer Test of NAR-DWO
 TEST NUMBER: VT1162-9 TEST FACILITY: VKF Tunnel B
 TEST DATE: June & Sept. 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. (°R)	T _{aw} * Total	RNX106 Ft	Phase Change Temp. (°F)	Model Position (degrees)			Model Surface
									α	β	φ	
366	NAR-DWO (No Trips)	0.013	8.0	555	1310	1.0	2.5	113	10	0	180	Bottom
364								150	20			
365								175	20			
139								200	30			
118								200	40			
367	NAR-DWO (No Trips)	0.013	8.0	860	1345	1.0	3.7	150	10	0	180	Bottom
368								200	20			
369								225	30			
371								250	30			
377								300	40			
376								300	50			

* T_{aw} = adiabatic wall temperature

TABLE 3. Continued
 PHASE CHANGE COATING TEST DATA SUMMARY SHEET

TEST TITLE: Reentry Heat Transfer Test of NAR-DMO
 TEST NUMBER: VT1162-9 TEST FACILITY: VKF Tunnel B
 TEST DATE: June & Sept. 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. (°R)	T _{aw} * / T _{total}	RNX10 ⁶ Ft	Phase Change Temp. (°F)	Model Position (degrees)			Model Surface
									α	β	φ	
372	NAR-DMO (Trips) +	0.013	8.0	860	1345	1.0	3.7	150	10	0	180	Bottom
374								250	20			
160								300	30			
186								350	40			
184								400	50			
363	NAR-DMO (No Trips)	0.013	8.0	555	1310	1.0	3.7	113	10			Side
366								113	10			
364									20			
139								113	30			

* T_{aw} :: adiabatic wall temperature
 +Trips on bottom surface only

TABLE 3. Continued
 PHASE CHANGE COATING TEST DATA SUMMARY SHEET

TEST TITLE: Reentry Heat Transfer Test of NAR-DMO
 TEST NUMBER: VT1162-9 TEST FACILITY: VKF Tunnel B
 TEST DATE: June & Sept. 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. (°R)	T _{aw} * Total	RNX10 ⁶ Ft	Phase Change Temp. (°F)	Model Position (degrees)			Model Surface
									α	β	φ	
118	NAR-DMO (No Trips)	0.013	8.0	555	1310	1.0	2.5	113	40	0	180	Side
123								113	40			
126								113	40			
121			↓	↓	↓	↓	↓	150	50	↓	↓	↓
367	NAR-DMO (No Trips) [†]	0.013	8.0	860	1345	1.0	3.7	150	10	0	180	Side
368								200	20			
369								225	30			
371								250	30			
375								113	40			
377								113	40			
376								113	50			
386			↓	↓	↓	↓	↓	225	50	↓	↓	↓

* T_{aw} = adiabatic wall temperature
 †Trips on bottom surface only

TABLE 3. Continued
 PHASE CHANGE COATING TEST DATA SUMMARY SHEET

TEST TITLE: Reentry Heat Transfer Test of NAR-DMO
 TEST NUMBER: VT1162-9 TEST FACILITY: VKF Tunnel B
 TEST DATE: June & Sept. 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. (°R)	T _{aw} * / T _{total}	RNX106 / Ft	Phase Change Temp. (°F)	Model Position (degrees)			Model Surface
									α	β	φ	
372	NAR-DMO (Trips) ⁺	0.013	8.0	860	1345	1.0	3.7	150	10	0	180	Side
373								200	20			
374								250	20			
160								100	30			
180								113	40			
186								113	40			
182								113	50			
184								113	50			
363	NAR-DMO (No Trips)	0.013	8.0	555	1310	1.0	2.5	113	10	0	180	Top
366								113	10			
364								150	20			
365								175	20			

* T_{aw} = adiabatic wall temperature
⁺Trips on bottom surface only

PHASE CHANGE COATING TEST DATA SUMMARY SHEET

TABLE 3. Continued

TEST TITLE: Reentry Heat Transfer Test of NAR-DMO

TEST NUMBER: VT1162-9

TEST FACILITY: VKF Tunnel B

TEST DATE: June & Sept. 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. (°R)	T _{aw} * / T _{total}	RNX106 / Ft	Phase Change Temp. (°F)	Model Position (degrees)		Model Surface	
									α	φ		
139	NAR-DMO (No Trips)	0.013	8.0	555	1310	1.0	2.5	113	30	0	180	Top
118								113	40			
123								113	40			
126								113	40			
121								150	50	γ	γ	γ
367	NAR-DMO (No Trips)	0.013	8.0	860	1345	1.0	3.7	150	10	0	180	Top
368								200	20			
371								250	30			
375								113	40			
377								113	40			
376								113	50			γ
372	NAR-DMO (Trips)†	0.013	8.0	860	1345	1.0	3.7	150	10			Top
373								200	20	γ	γ	γ

* T_{aw} :: adiabatic wall temperature
 † Trips on bottom surface only

TABLE 4. SUMMARY DATA PLOT INDEX

MODEL SURFACE	PAGES	Re/FT 10 ⁶						ANGLE OF ATTACK - DEGREES				
		2.5	3.7	10	20	30	40	50				
<u>BOTTOM</u>	46-51	X		X								
	54-58	X			X							
	61-66	X			X							
	69-73	X				X						
	76-79	X					X					
	82-88	X		X								
<u>BOTTOM</u>	91-98	X			X							
	101-108	X				X						
	111-117	X				X						
	120-128	X					X					
	131-138	X						X				
	141-148	X*		X								
	151-155	X*			X							
	158-162	X*				X						
	165-169	X*					X					
	172-175	X*						X				
<u>BOTTOM</u>	178-180	X		X								
	182-184	X		X								
	186-188	X			X							
	190-193	X				X						
<u>BOTTOM</u>	195-199	X					X					
	201-205	X					X					
	207-211	X					X					
	213-217	X						X				
	219-220	X		X								
<u>BOTTOM</u>	222-223	X			X							
	225-226	X				X						
	228-230	X				X						
	232-234	X					X					
	236-239	X					X					
<u>BOTTOM</u>	241-244	X					X					
	246-248	X						X				
	250-253	X*		X								

* Boundary Layer Trip Strips Installed.

TABLE 4. SUMMARY DATA PLOT INDEX (CONTINUED)

MODEL SURFACE	PAGES	Re/FT 10						ANGLE OF ATTACK - DEGREES				
		2.5	3.7	10	20	30	40	50				
SIDE	255-256		X*									
	258-260		X*			X						
	262-265		X*				X					
	267-269		X*				X					
	271-274		X*				X					
	276-278		X*									
	280-283		X*									
	285-287		X		X					X		
	289-291		X		X							
	293-295		X			X						
297-298		X			X							
300-302		X				X						
304-307		X					X					
309-311		X					X					
313-314		X					X					
316-318		X							X			
320-322			X	X								
324-325			X		X							
327-328			X			X						
330-332			X									
334-337			X				X					
339-342			X				X					
344-347			X	X					X			
349-350			X		X							
352-353			X		X							
355-357			X			X						
359-361			X				X					
363-365			X					X				
367-370			X					X				
TOP												
TOP												
TOP												

* Boundary Layer Trip Strips Installed.

9/21/71

AFDCIARD, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9
V11102

GROUP 366 CONFID 54 MODEL MAR-DRO MACH NO 2.00 PU PSIA 556.3 TO DEG R 1299 ALPHA-MODEL 10.02 ALPHA-SECTOR 12.98 ALPHA-PREBEND -23.00 ROLL-MODEL 180.00 YAW .0

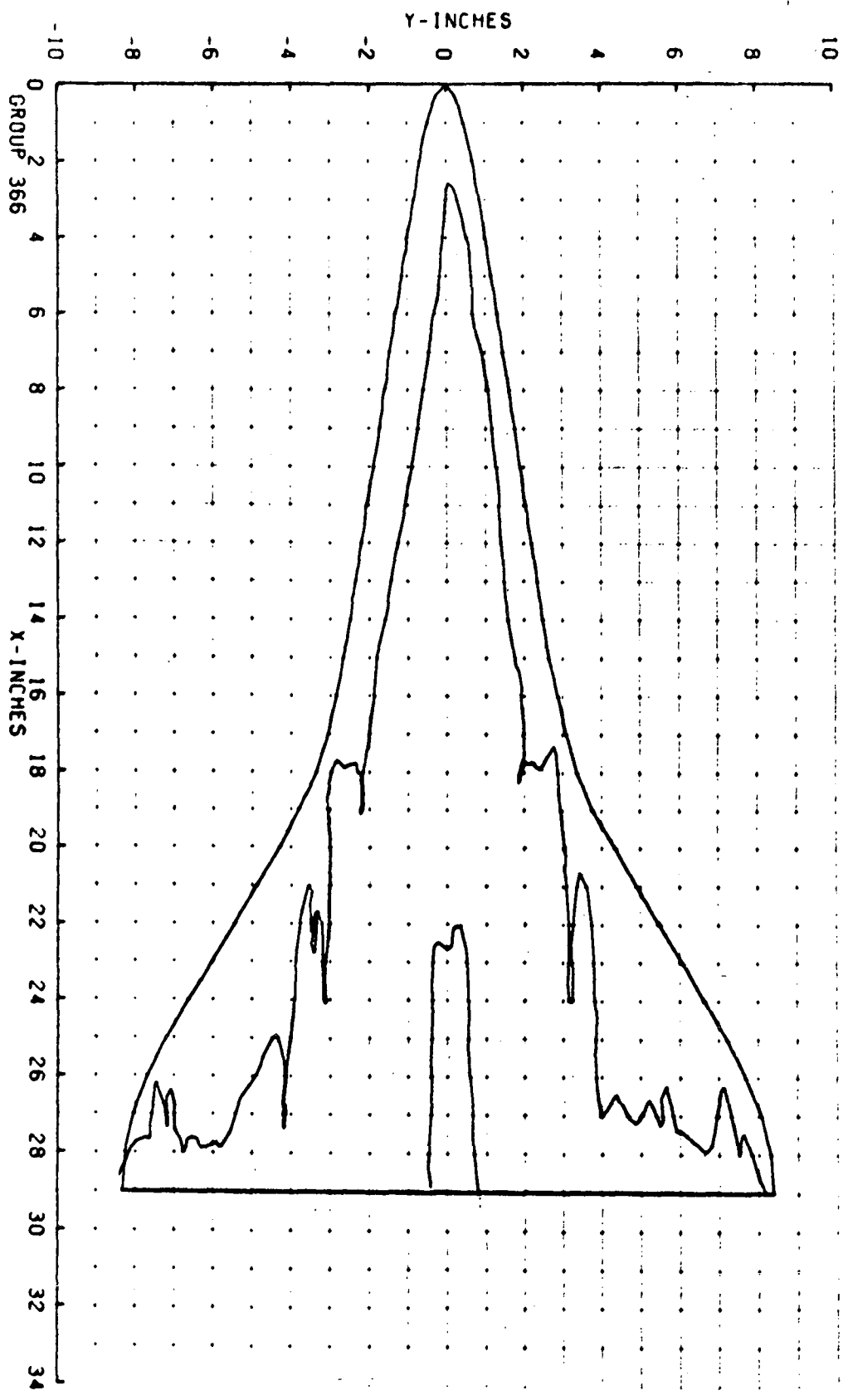
T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (R=.013FT)
94.1 .057 2.553 3PN3 5.079E-05 7.578E-08 2.55E 06 4.601E-02 2.967E-02

PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODCKX)

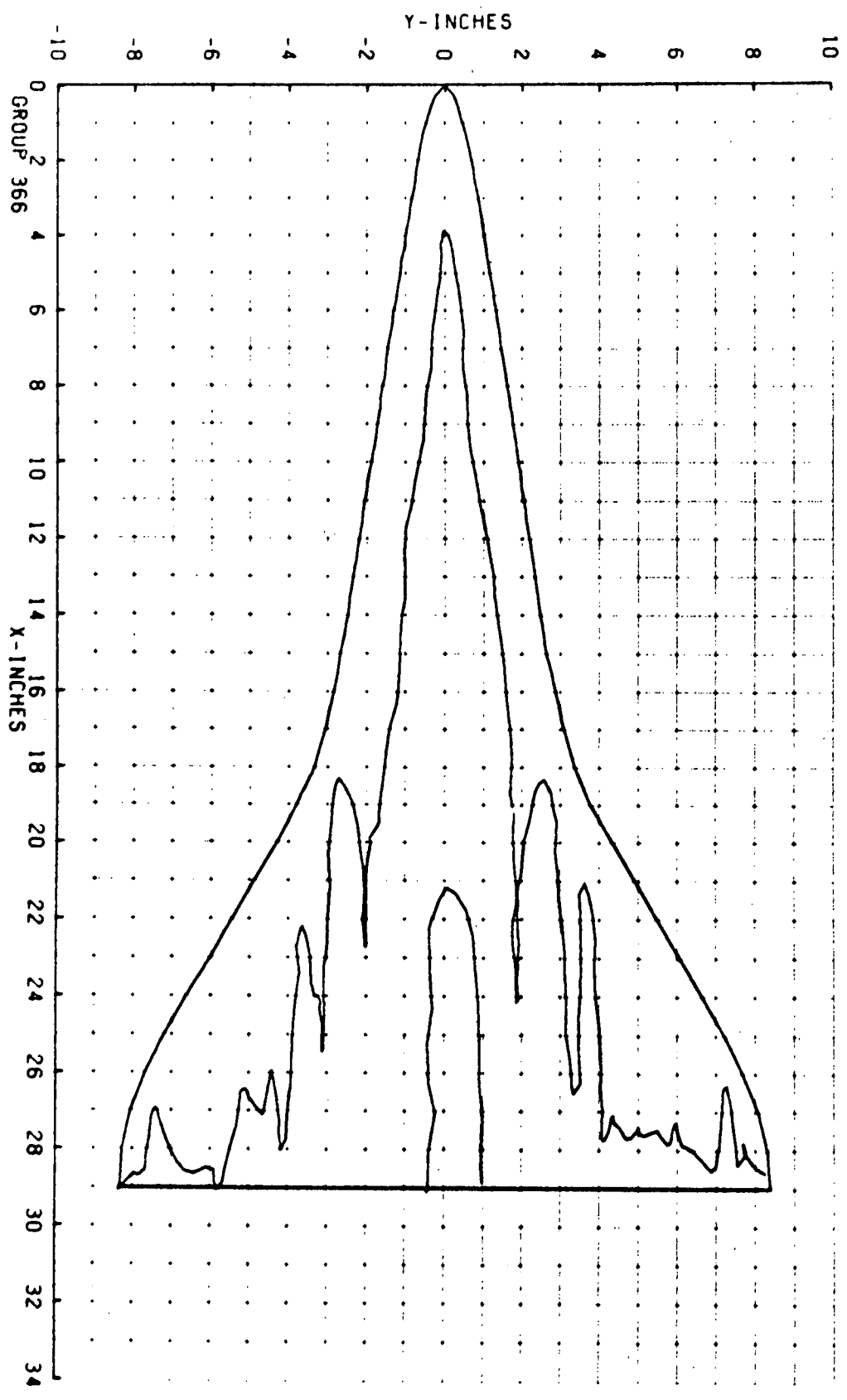
TOP(T) 113
SIDE(S) 113 AVERAGE Tm = 77
BOT(CM(B)) 113 -0.008(SQUARE ROOT DEL TIME) * 0.11

PTC NO	TYPE	DEL TME	H(TO)	H(TO)/HREF	H(.91TO)	H(.91TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP-F
T 1486 (113)	5.85	4.76	1.05E-03	.0563	3.144E-03	.0683	3.524E-03	.0746	1.674E-03	0	0
T 1487 (113)	7.45	6.36	1.65E-03	.0337	1.883E-03	.0409	2.111E-03	.0459	1.002E-03	0	0
T 1490 (113)	9.05	7.96	1.35E-03	.0293	1.638E-03	.0356	1.837E-03	.0399	8.717E-04	0	0
T 1495 (113)	11.75	10.66	1.12E-03	.0243	1.358E-03	.0295	1.523E-03	.0331	7.228E-04	0	0
T 1502 (113)	15.45	14.34	9.15E-04	.0199	1.111E-03	.0241	1.246E-03	.0271	5.914E-04	0	0

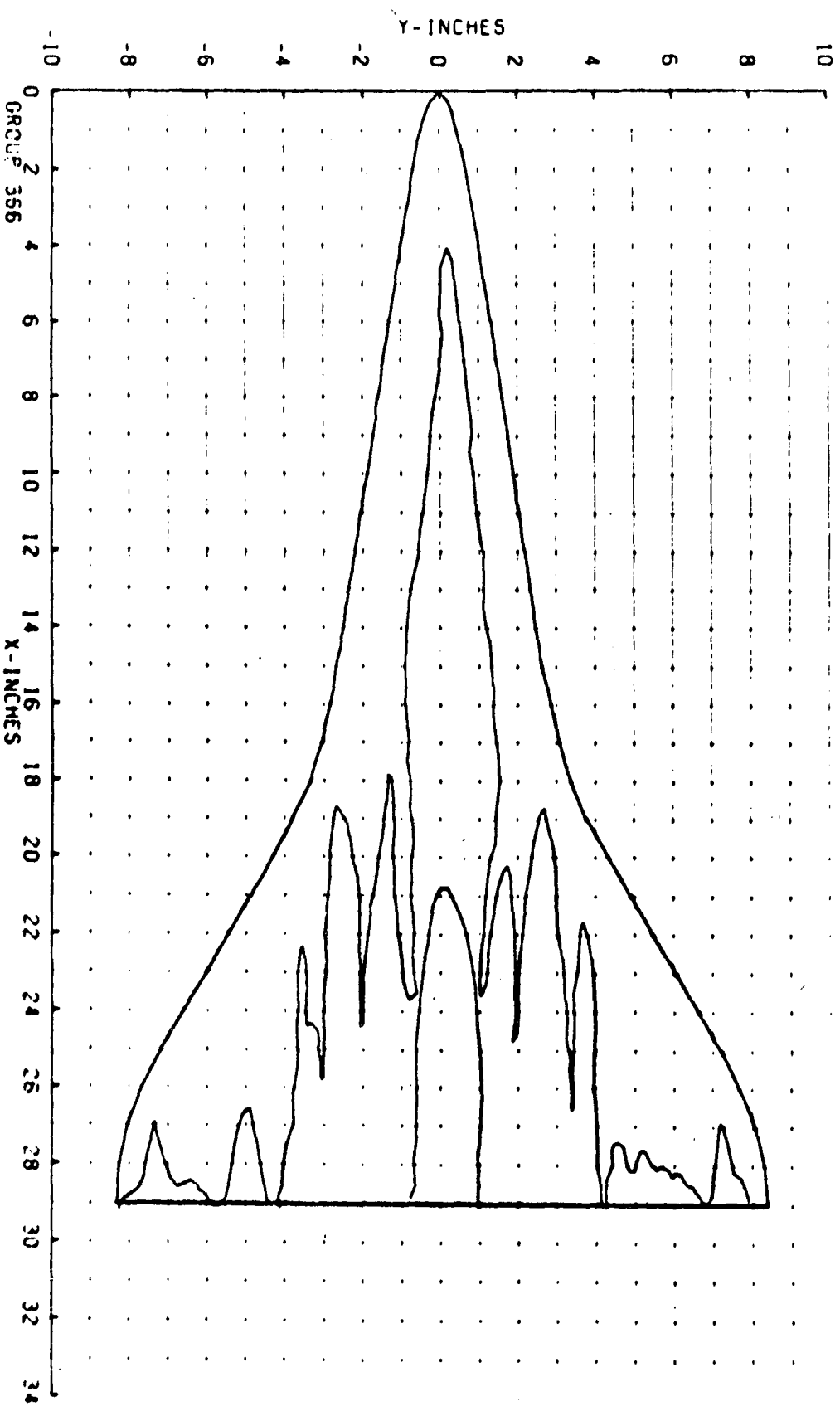
GROUP 366 PIC. NO. 1480 H/HREF 5.630E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NAR-DMO



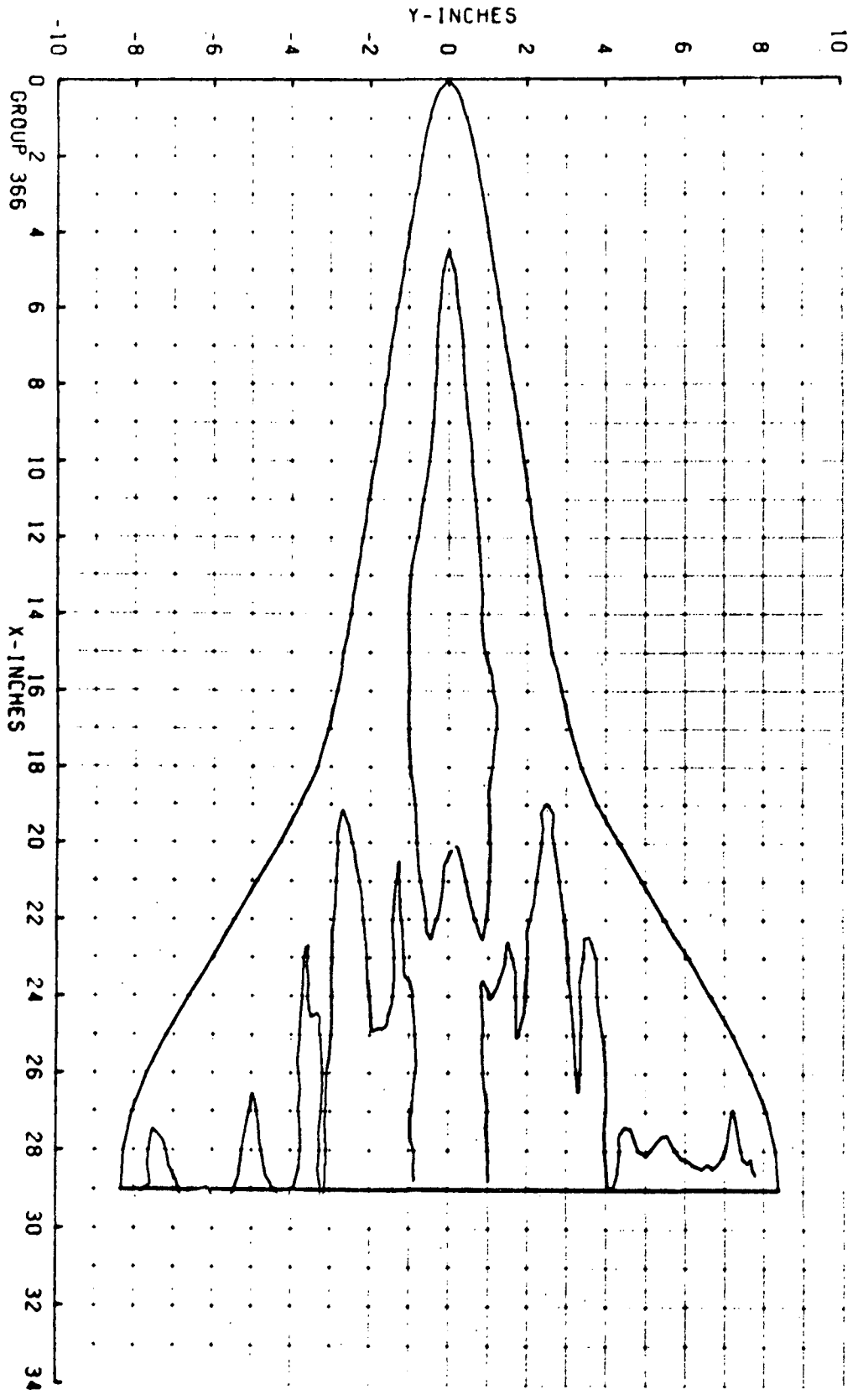
GROUP 366 PIC. NO. 1484 H/HREF 4.010E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NRR-DW0

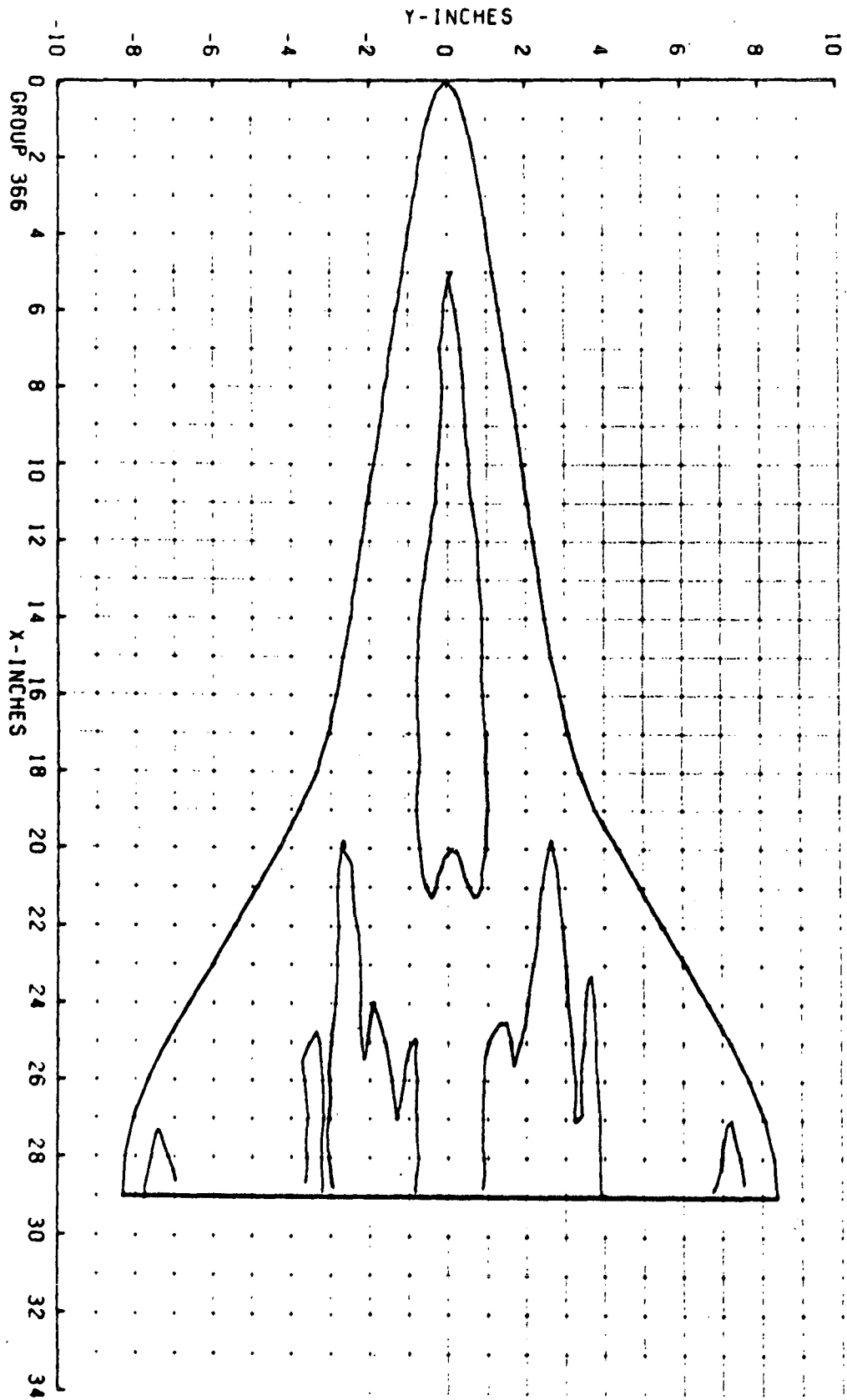


GRUP 366 PIC. NO. 1487 H/HREF 3.370E-02 MODEL SURFACE - BOTTOM
MACH 9.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NAR-DMD



GROUP 366 PIC. NO. 1490 H/HREF 2.930E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NAR-DWO

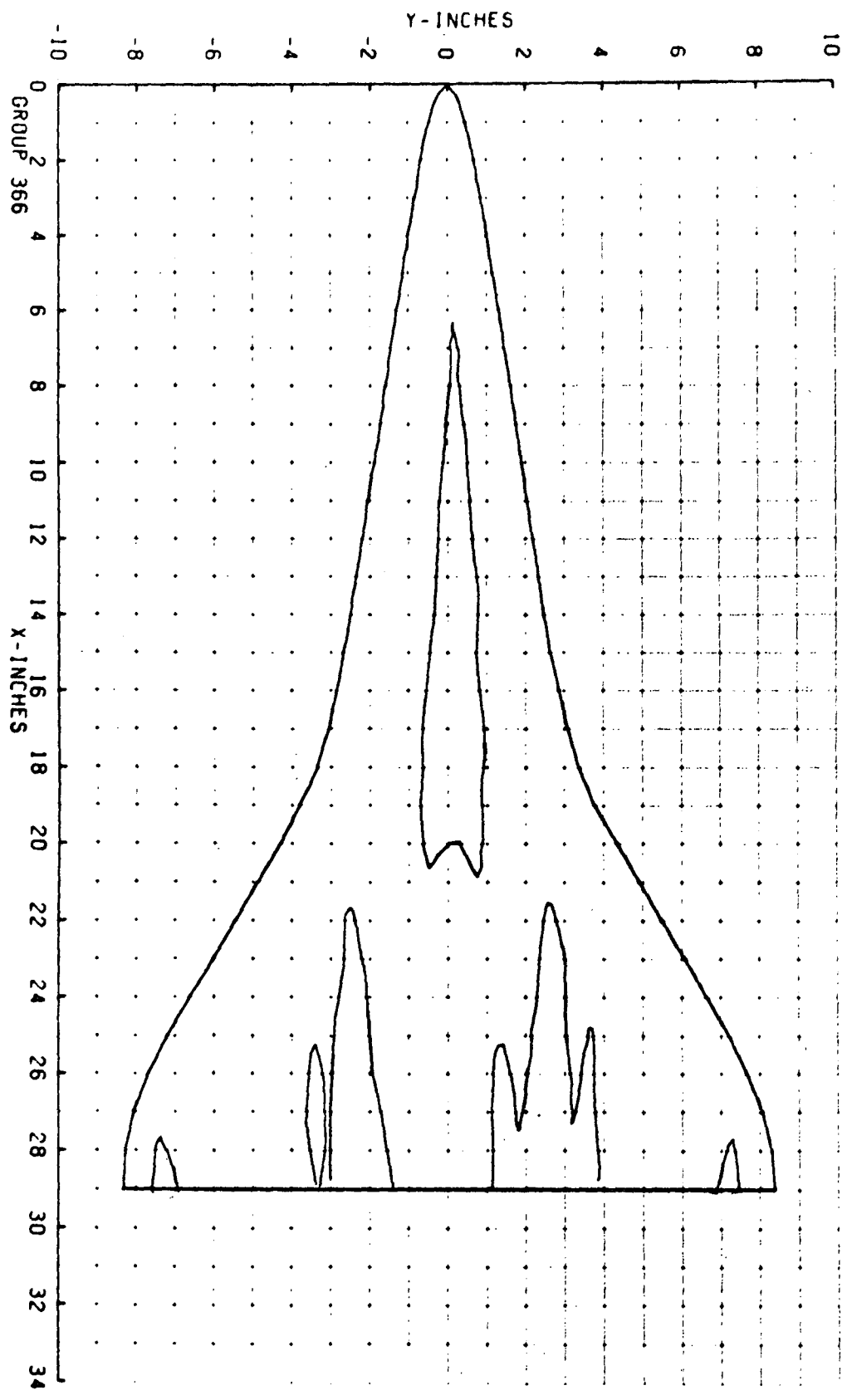




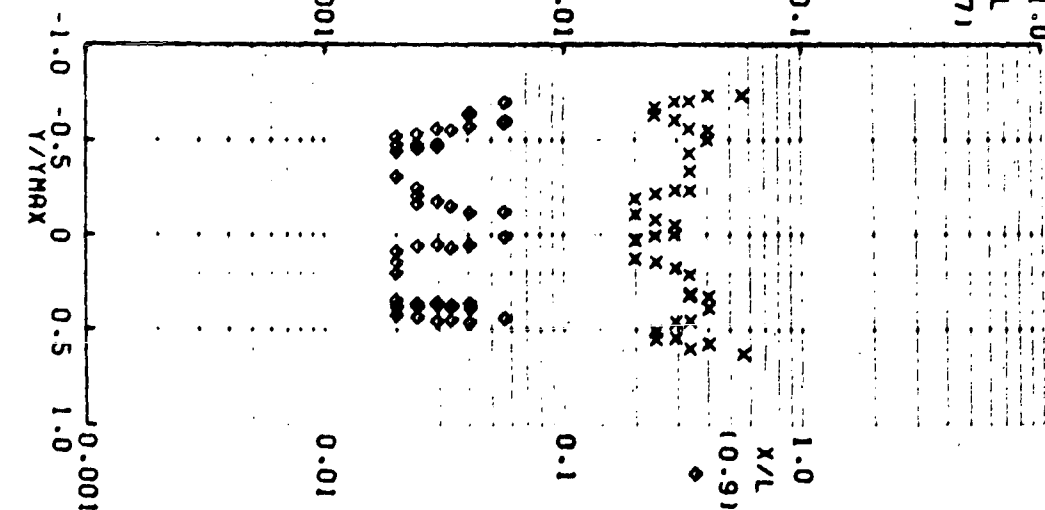
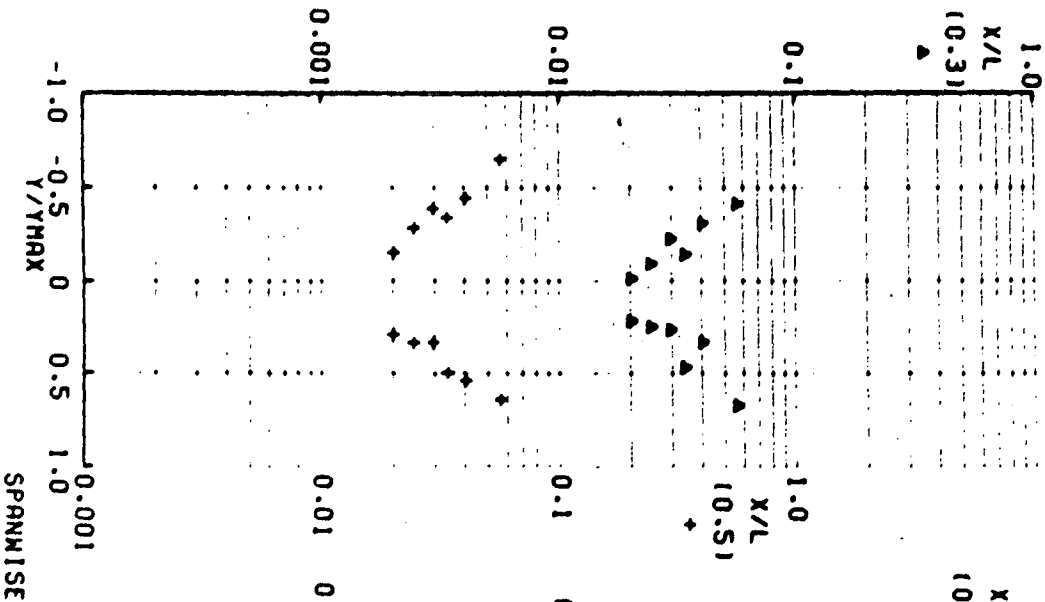
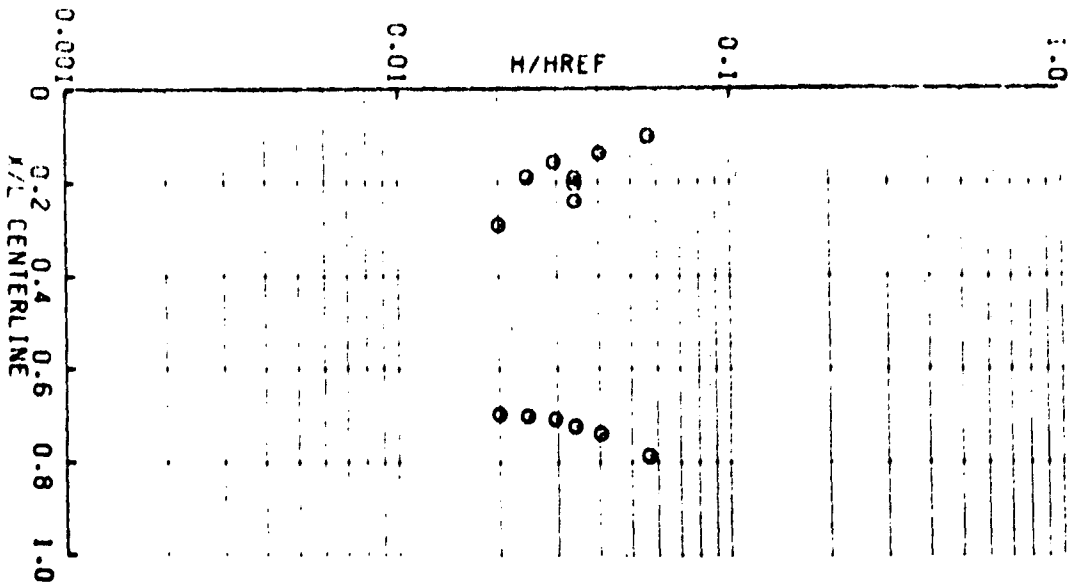
GROUP 366 PIC. NO. 1495 H/HREF 2.430E-02 MODEL SURFACE - BOTTOM

HACh 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NAR-DW0

GROUP 366 PIC. NO. 1502 H/HREF 1.990E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NAR-DHO



GROUP 366 ALPHA (DEG) 10.0 HREF 4.601E-02 MACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 2.550E 06 CONF NAR-DW0



CP

9/21/71

AEDC(ARO, INC.) ARNOLD AFB, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VT11162

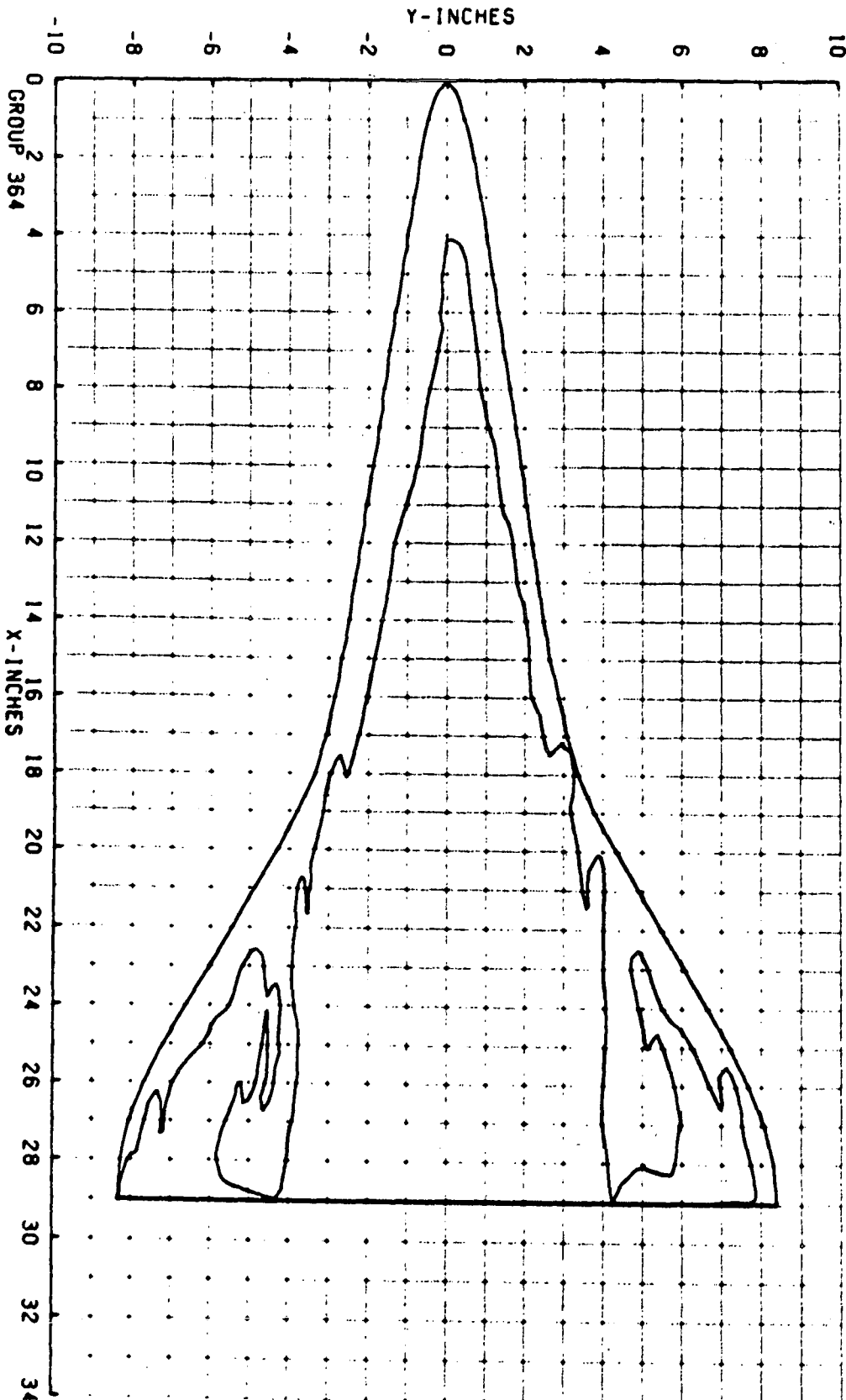
GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-PODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
364 54 AAR-DWO 8.00 556.6 1313 20.03 2.97 -23.00 180.00 .0

T-1AF P-INF Q-INF V-INF RMO-INF MU-INF RE/FT HREF STRF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) TR=.013FT
95.1 .957 2.554 3823 5.028E-05 7.659E-08 2.51E 06 4.611E-02 2.986E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMOXCK)

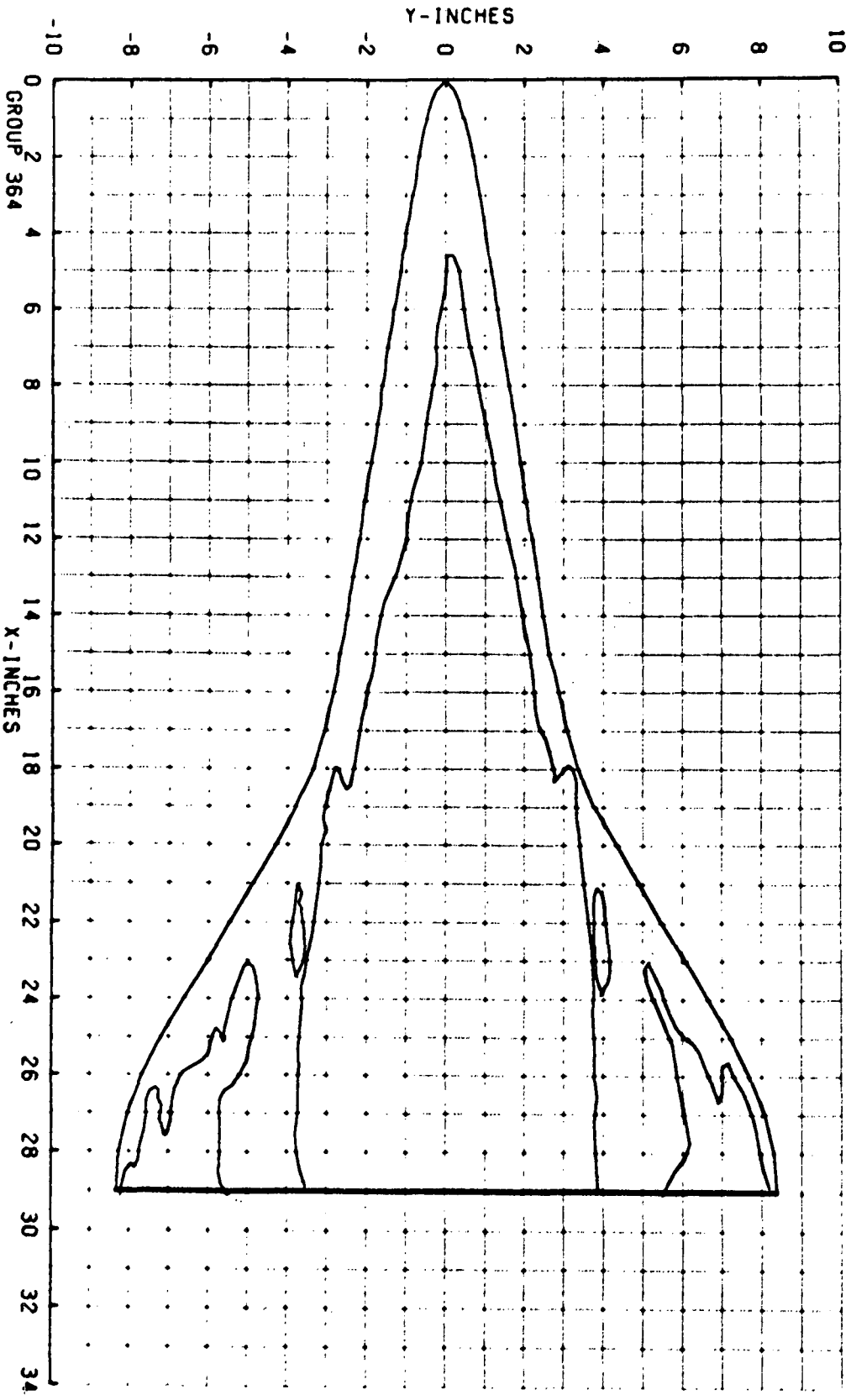
TOP(T) 159 AVERAGE TW = 75 -0.008(SQUARE ROOT DEL TIME) * 0.11
SIDE(S) 150
BOT(CMIB)

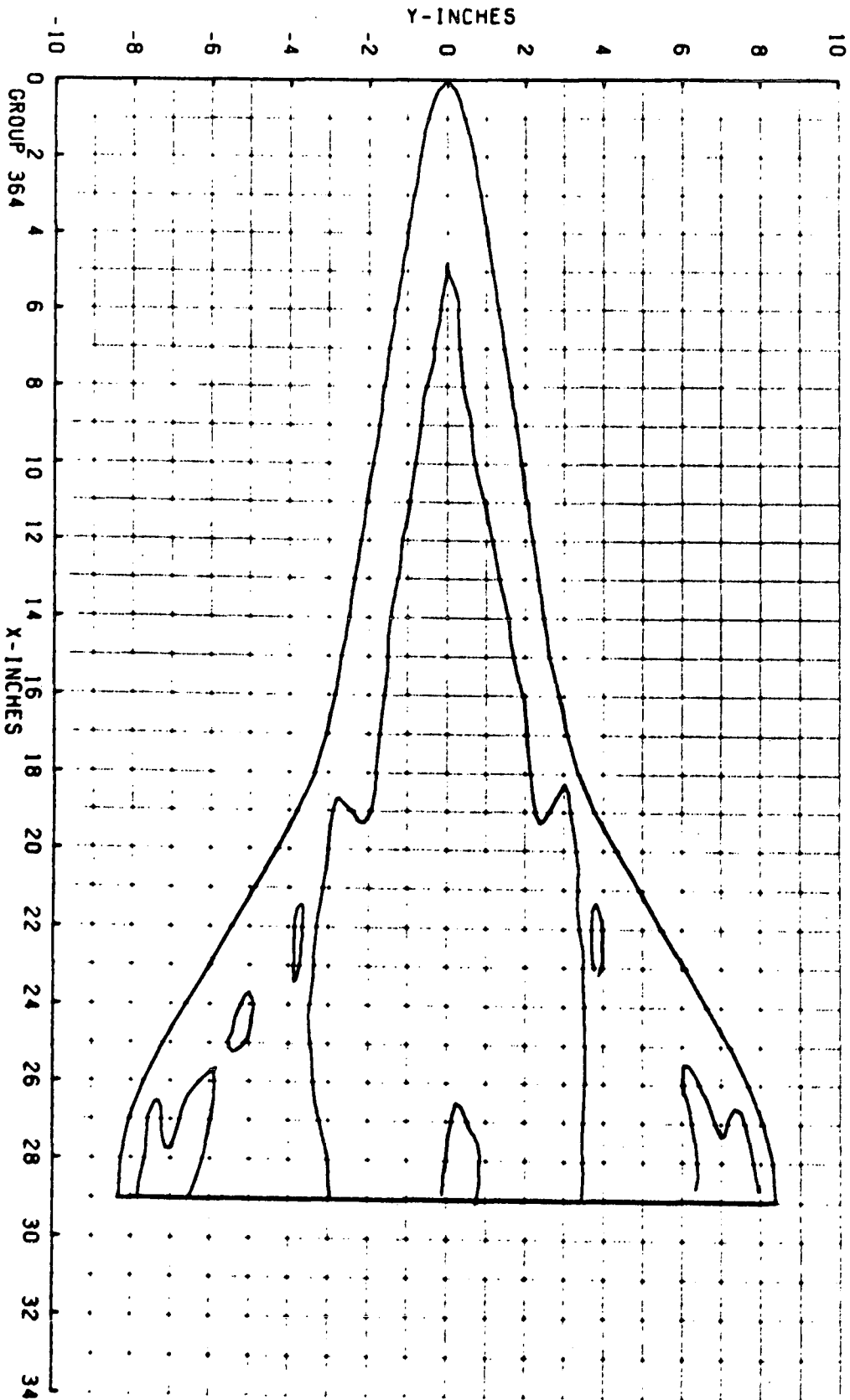
PTC NC	TIME DELTME	HTO	HTO1/REF	HT.9T01	HT.9T01/REF	HT.85T01	HT.85T01/REF	STT01	MODEL TEMP-F
T 1410 (150)	6.70	5.63	3.65E-03	.0769	4.363E-03	4.890E-03	.1040	2.300E-03	0 0 0 0
T 1413 (150)	8.30	7.23	3.05E-03	.0660	3.727E-03	4.195E-03	.0910	1.973E-03	0 0 0 0
T 1420 (150)	12.05	10.98	2.33E-03	.0506	2.853E-03	3.212E-03	.0696	1.511E-03	0 0 0 0
T 1425 (150)	14.70	13.63	2.92E-03	.0437	2.468E-03	2.779E-03	.0642	1.307E-03	0 0 0 0
T 1429 (150)	16.85	15.78	1.82E-03	.0395	2.230E-03	2.511E-03	.0544	1.180E-03	0 0 0 0



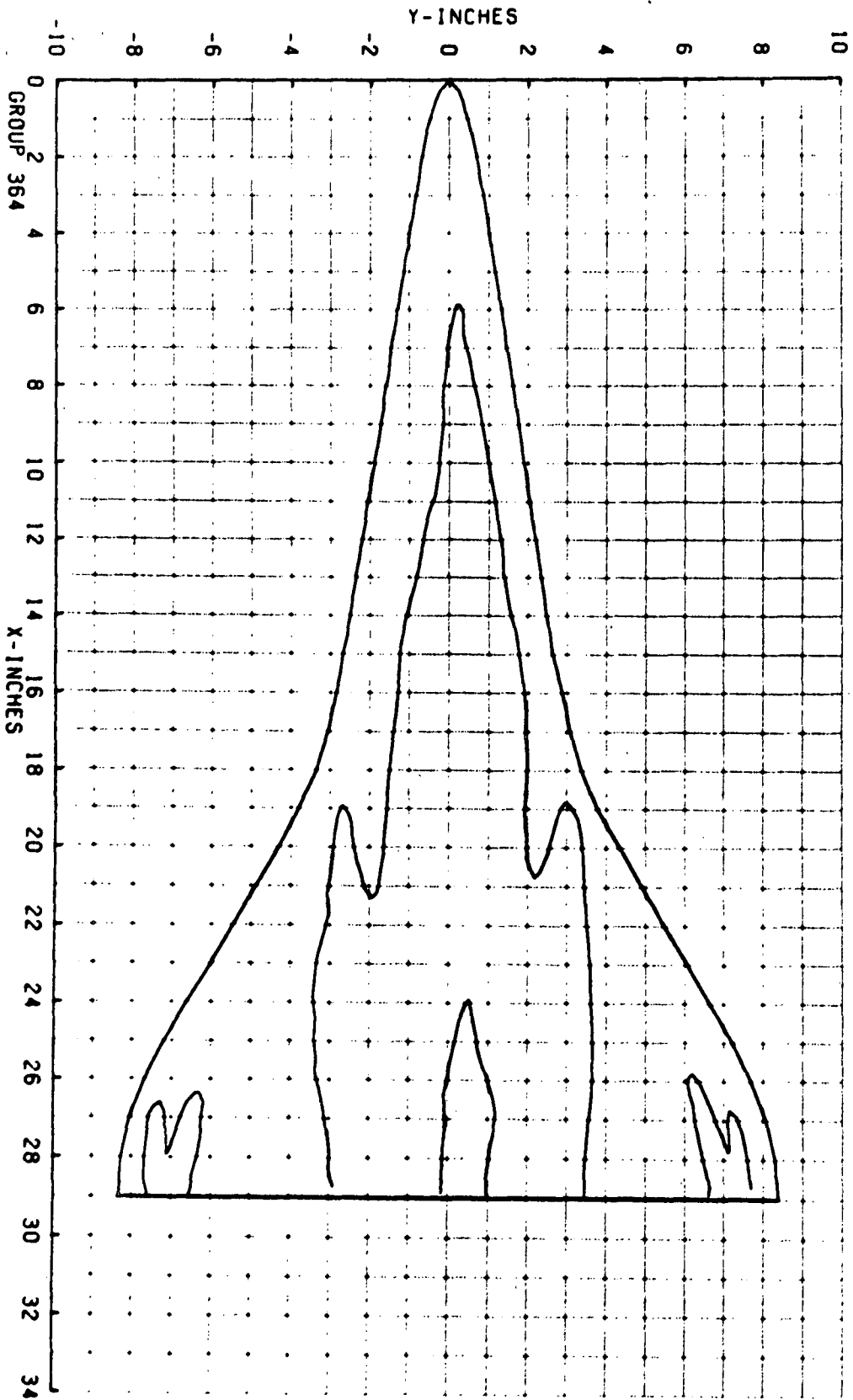
GROUP 364 PIC. NO. 1410 H/HREF 7.690E-02 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2.510E 06 CONF NAR-DMD

GROUP 364 PIC. NO. 1413 H/HREF 6.600E-02 MODEL SURFACE - BOTTOM
HACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2.510E 06 CONF NRR-DWD



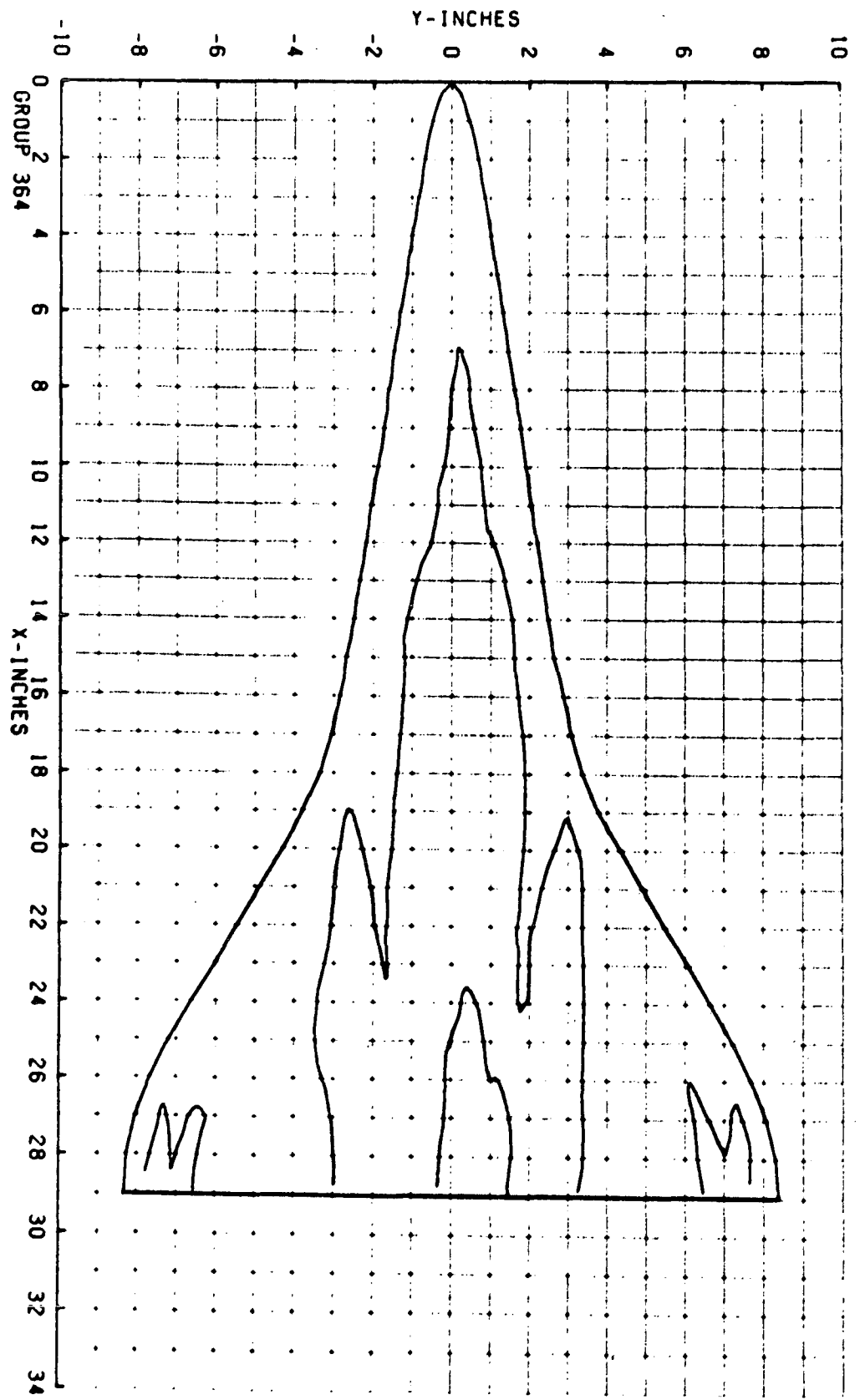


GROUP 364 PIC. NO. 1420 H/HREF 5.060E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2-SIDE 06 CONF NAR-DMO

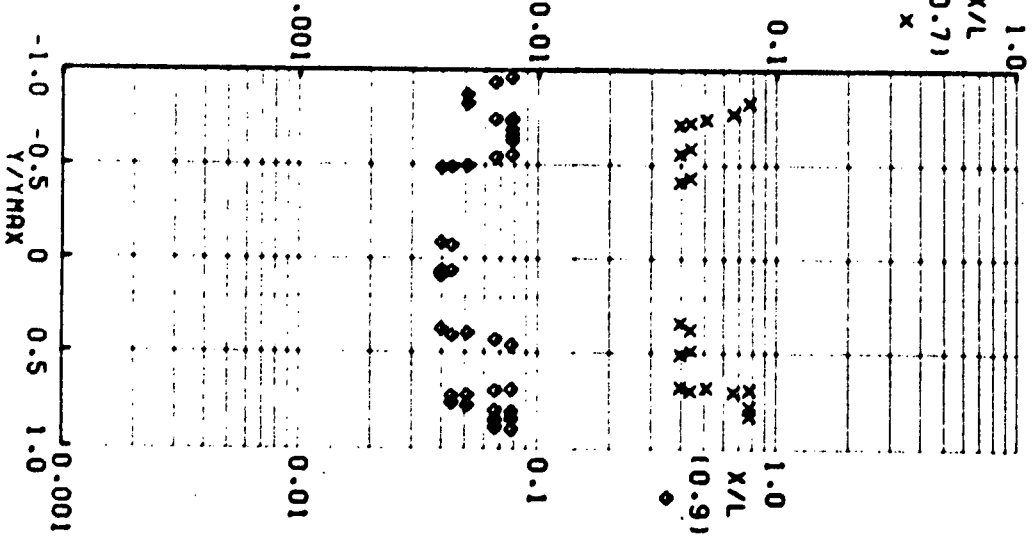
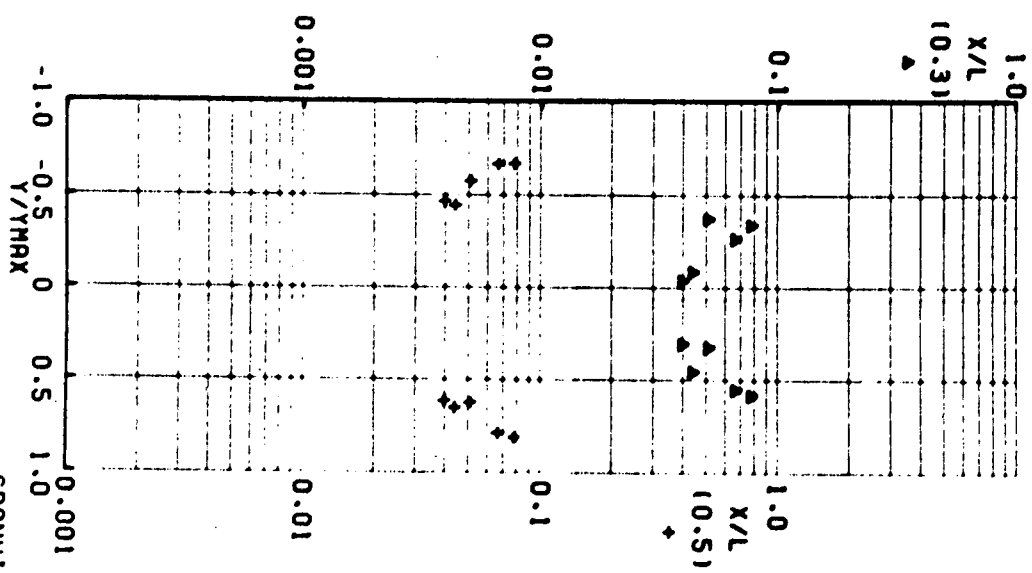
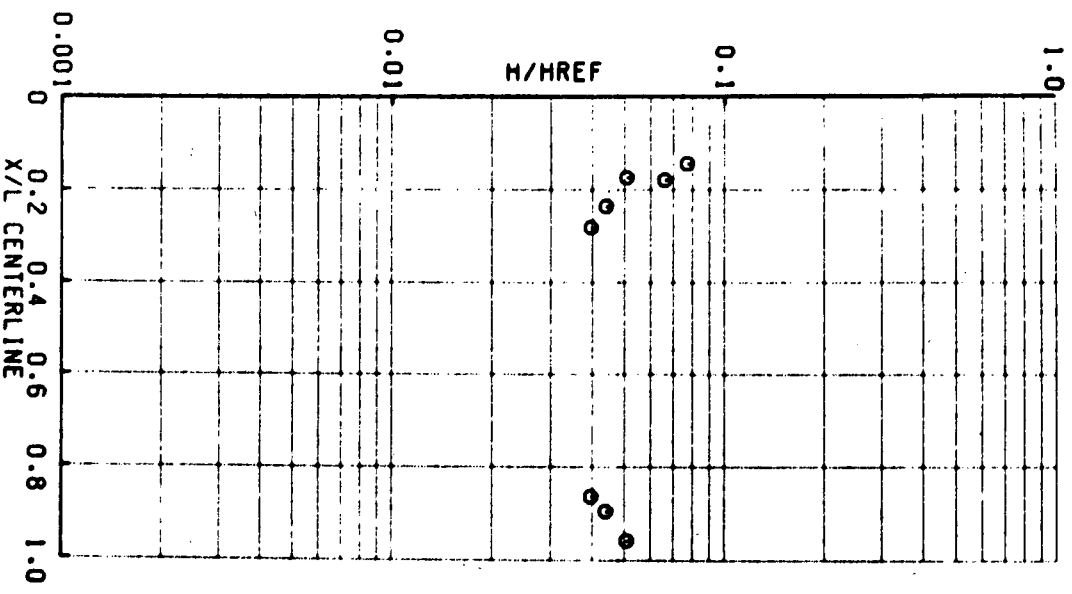


GROUP 364 PIC. NO. 1425 H/HREF 4.370E-02 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2.510E 06 CONF NAR-DMD

GROUP 364 PIC. NO. 1429 M/REF 3.950E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2.510E 06 CONF NRR-DMO



GROUP 364 ALPHA (DEG) 20.0 HREF 4.611E-02 HACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 2.510E 06 CONF NRR-DMO



9/21/71

AFDC(AROT,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
VII162

GROUP CONFIG MODEL MACH NO PO PSIA YD DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW

365 54 MAR-DWQ 8.80 555.3 1301 20.02 2.98 -23.00 100.00 .0

T-1NF P-1NF O-1NF V-1NF RNO-1NF MU-1NF RE/FI MREF STREF

(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)

94.3 A057 2.548 3867 5.060E-05 7.592E-08 2.54E 06 4.599E-02 2.973E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CXK)

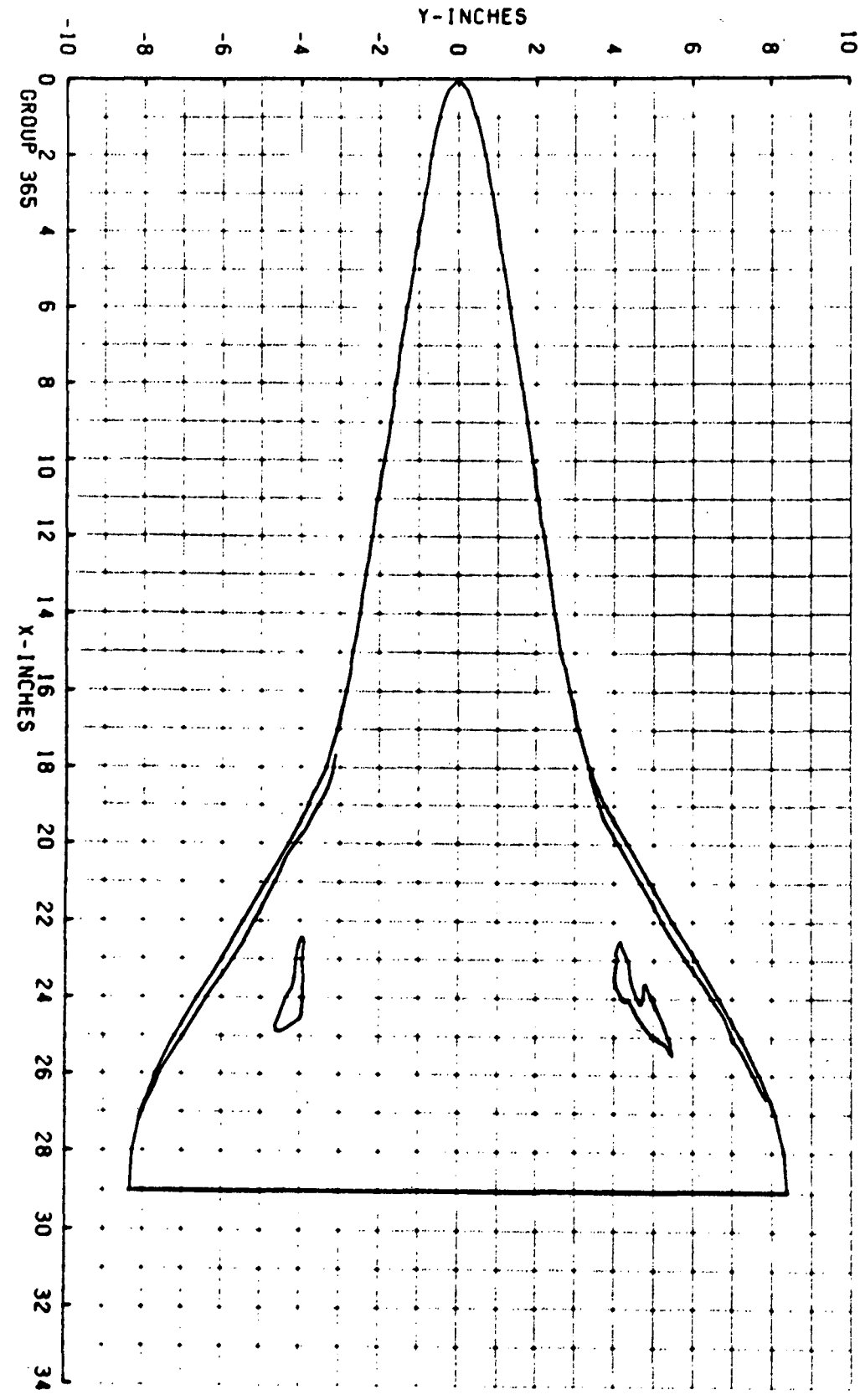
TOP(T) 175 AVERAGE TM = 75

SIDE(S) 175 -0.008(SQUARE ROOT DEL TIME) * 0.11

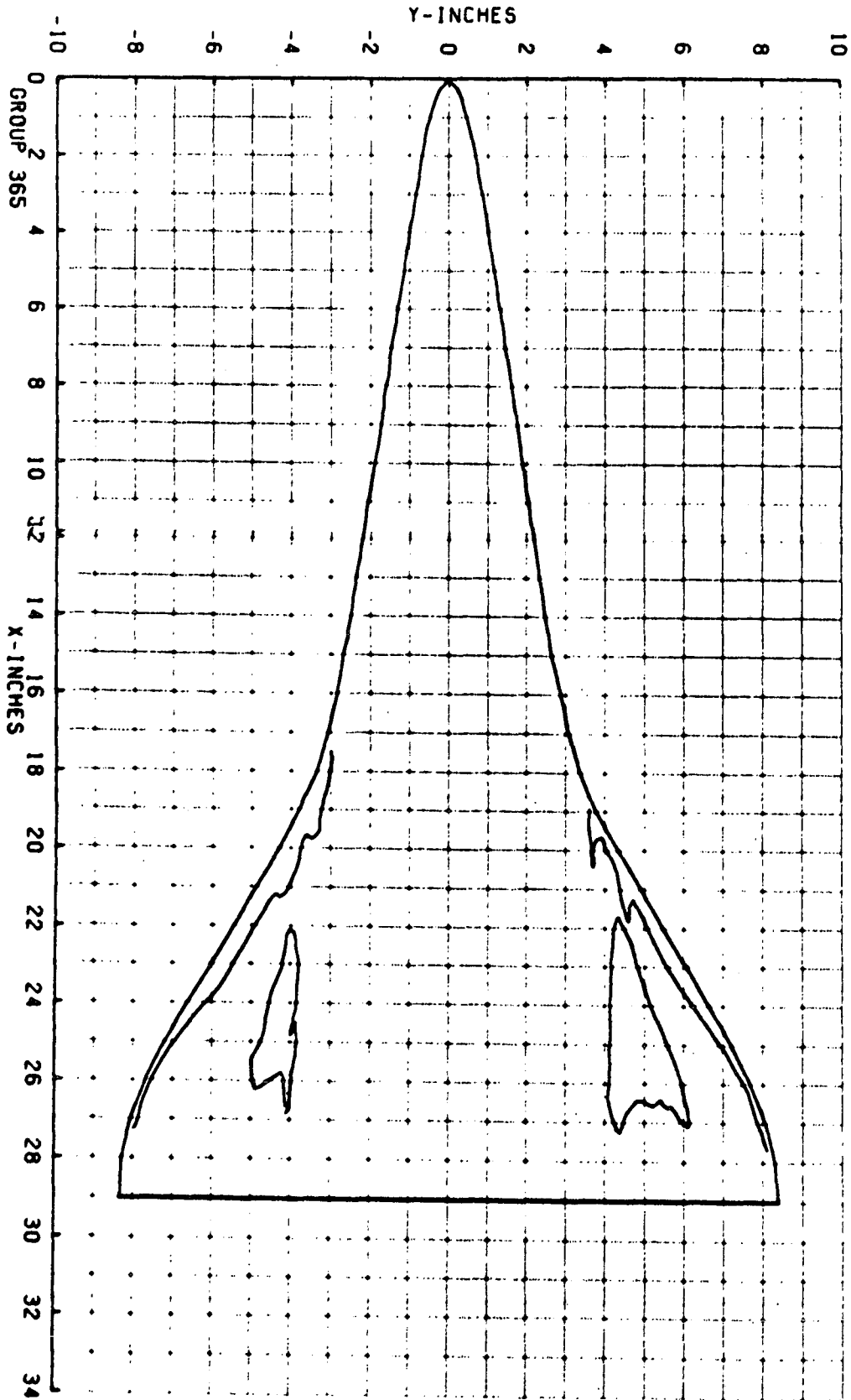
NOTCH(N) 175

PTC NC	TYPE DELTIME	M(TO)	M(TO)/MREF	M(-9T0)	M(-9T0)/MREF	M(-85T0)	M(-85T0)/MREF	ST(TO)	MODEL TEMP F
1 1446 (175)	3.20	2.11	8.75E-03	.1902	1.080E-02	1.223E-02	.2660	5.654E-03	0 0 0 0 0 0
1 1449 (175)	5.30	4.21	5.60E-03	.1280	7.267E-03	8.233E-03	.1789	3.802E-03	0 0 0 0 0 0
1 1452 (175)	7.45	6.35	4.60E-03	.0500	5.674E-03	6.428E-03	.1297	2.969E-03	0 0 0 0 0 0
1 1458 (175)	10.10	9.01	3.70E-03	.0603	4.562E-03	5.169E-03	.1123	2.387E-03	0 0 0 0 0 0
1 1464 (175)	13.30	12.21	3.03E-03	.0658	3.739E-03	4.237E-03	.0921	1.956E-03	0 0 0 0 0 0
1 1471 (175)	17.05	15.96	2.52E-03	.0545	3.111E-03	3.525E-03	.0766	1.627E-03	0 0 0 0 0 0

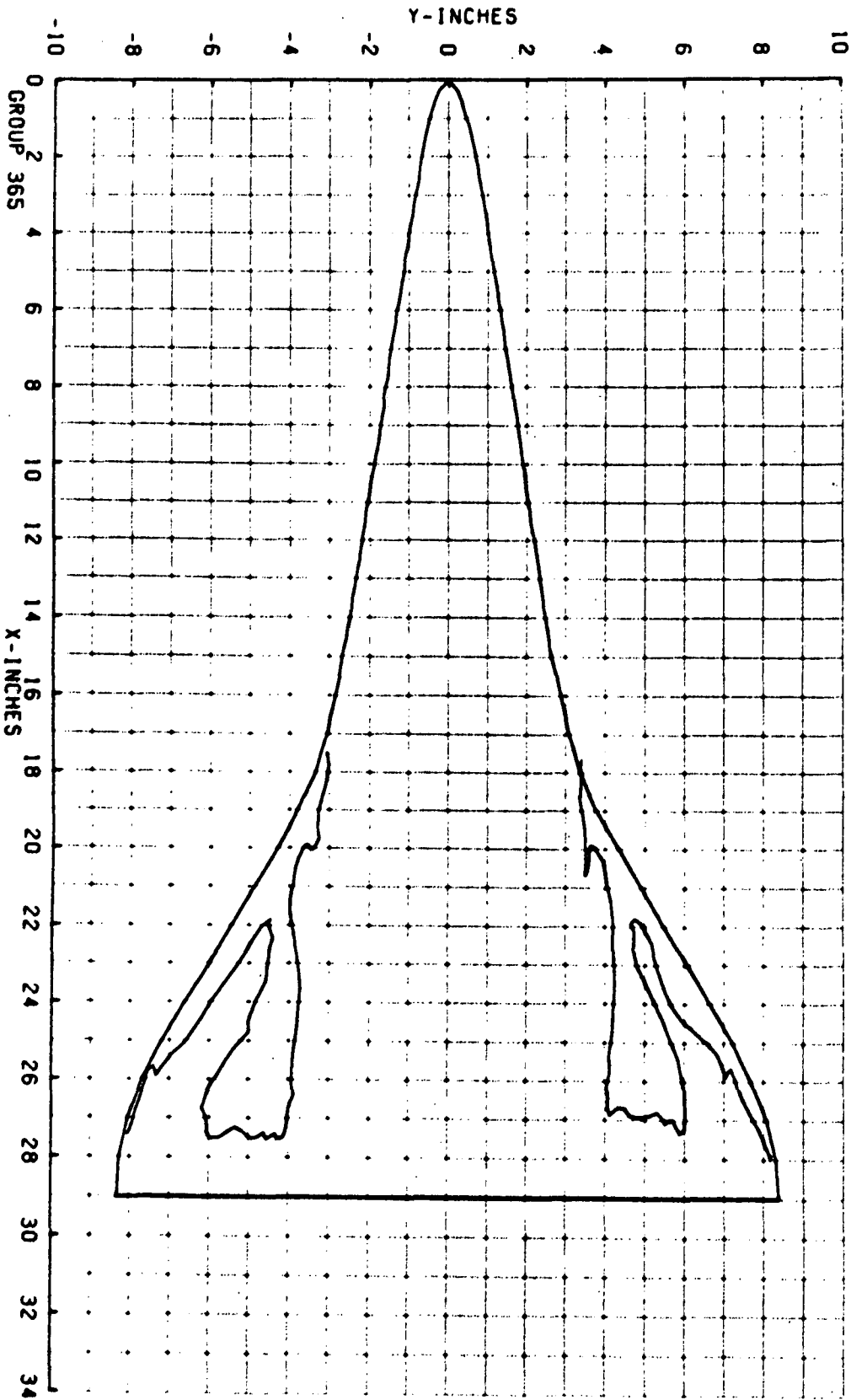
GROUP 365 PIC. NO. 1445 H/HREF 1.902E-01 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 20.0 HREF 4.599E-02 RE/FT 2.540E 06 CONF NAR-DMO



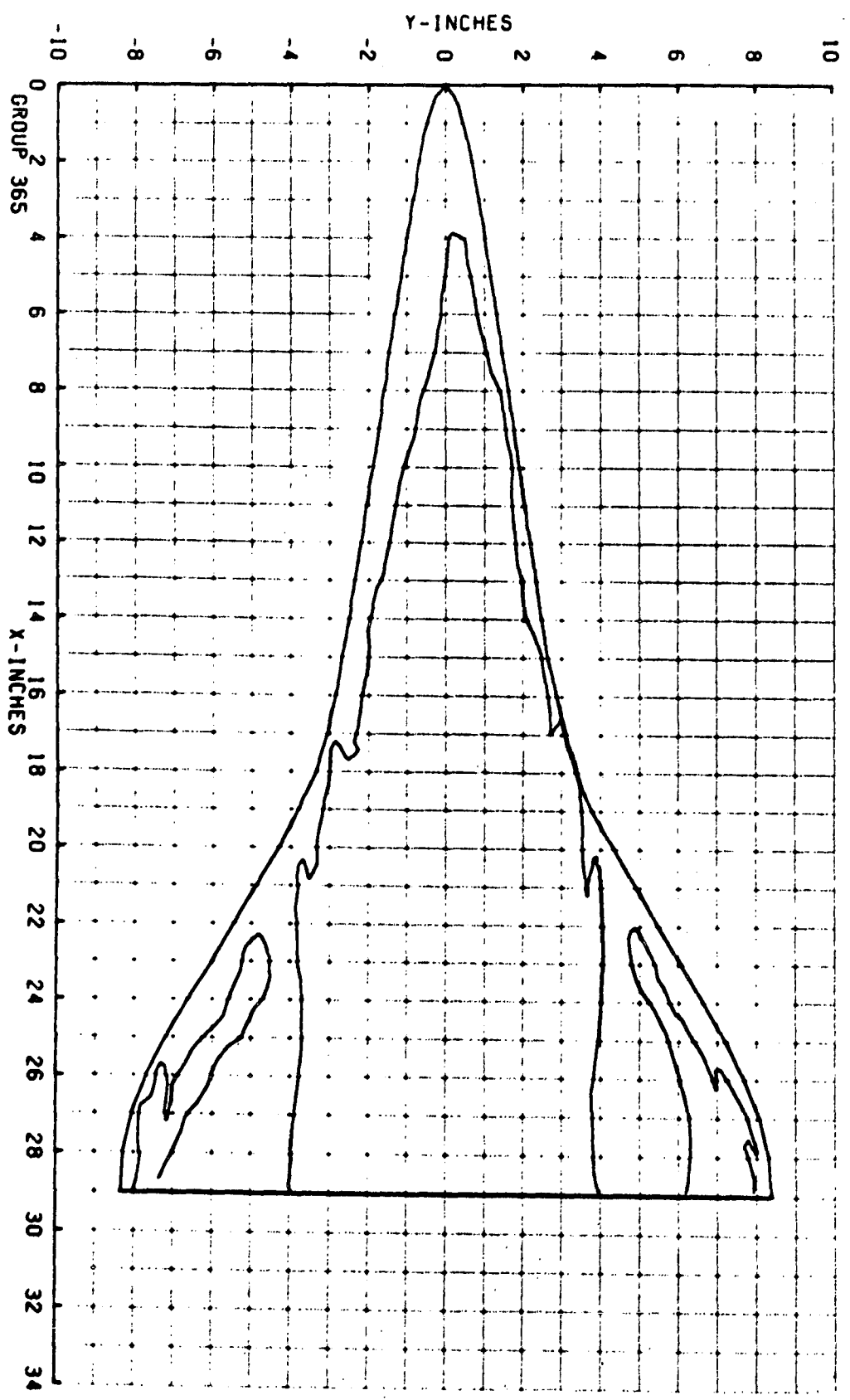
GROUP 365 PIC. NO. 144B H/HREF 1.280E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.599E-02 RE/FT 2.540E 06 CONF NAR-DW0



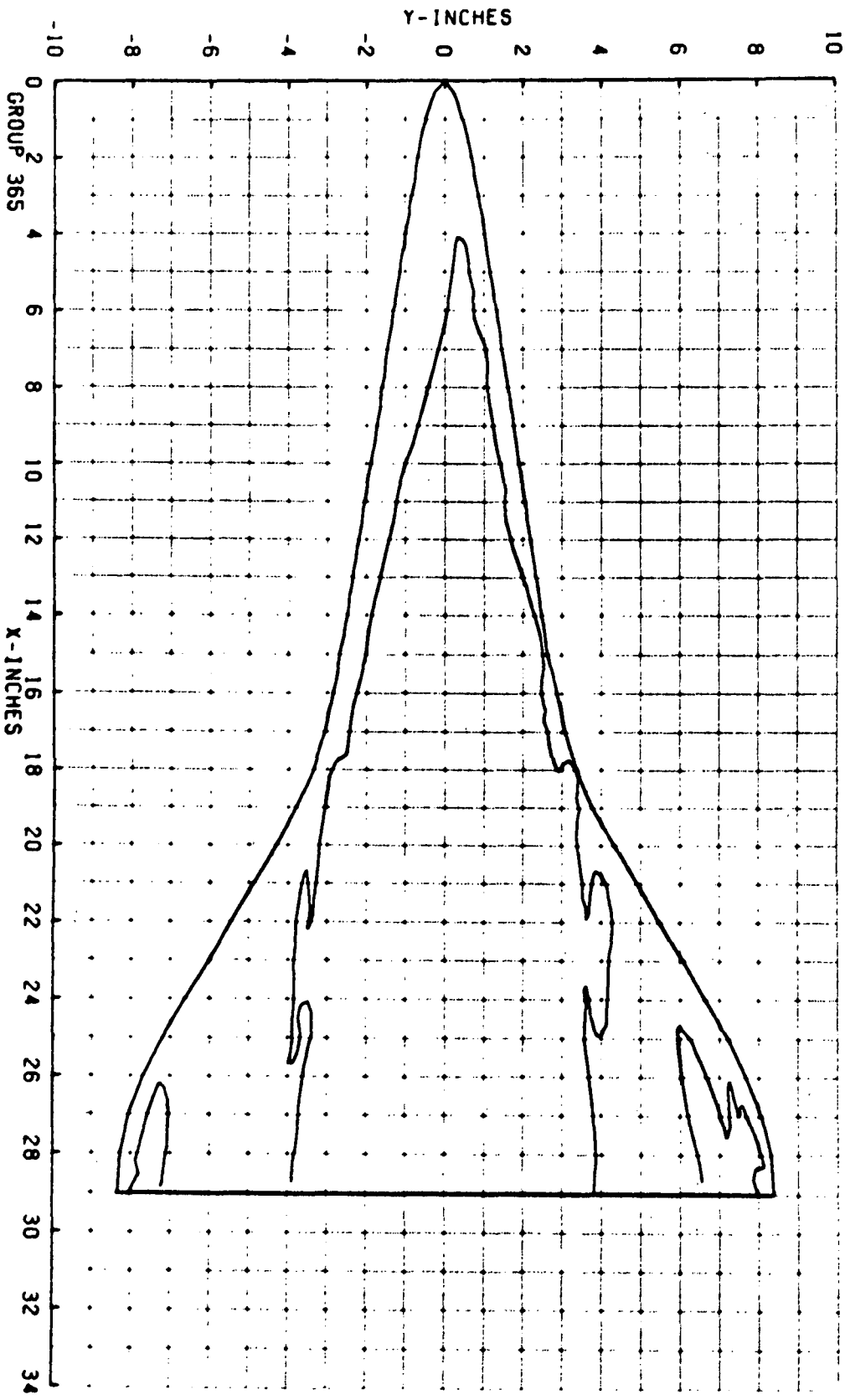
GROUP 365 PIC. NO. 1453 H/HREF 9.990E-02 MODEL SURFACE - BOTTOM
HACH 8.00 ALPHA (DEG) 20.0 HREF 4.599E-02 RE/FT 2.540E 06 CONF NRR-DMD



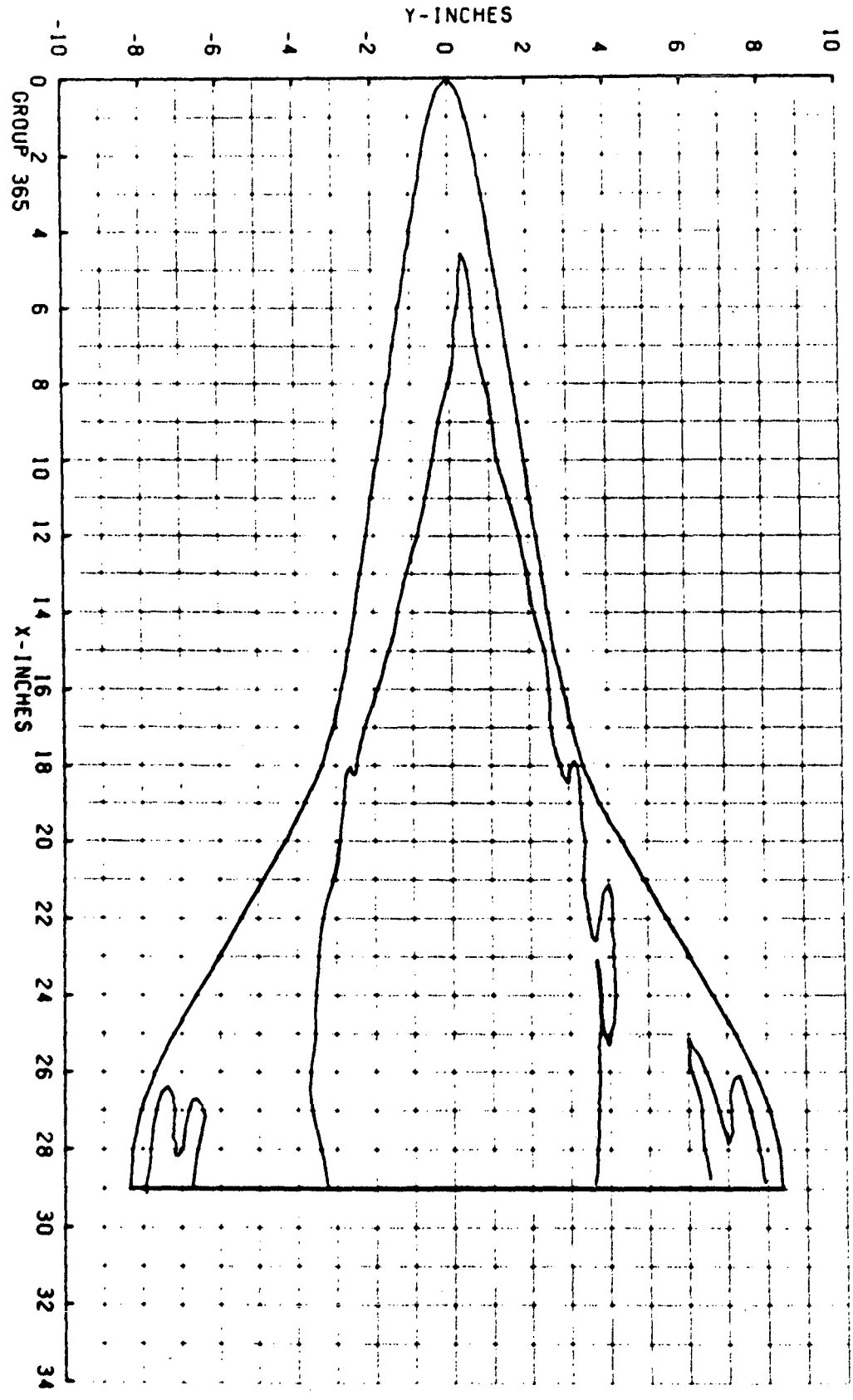
GROUP 365 PIC. NO. 1458 H/HREF 8.030E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.599E-02 RE/FT 2.540E 06 CONF NRR-DMD



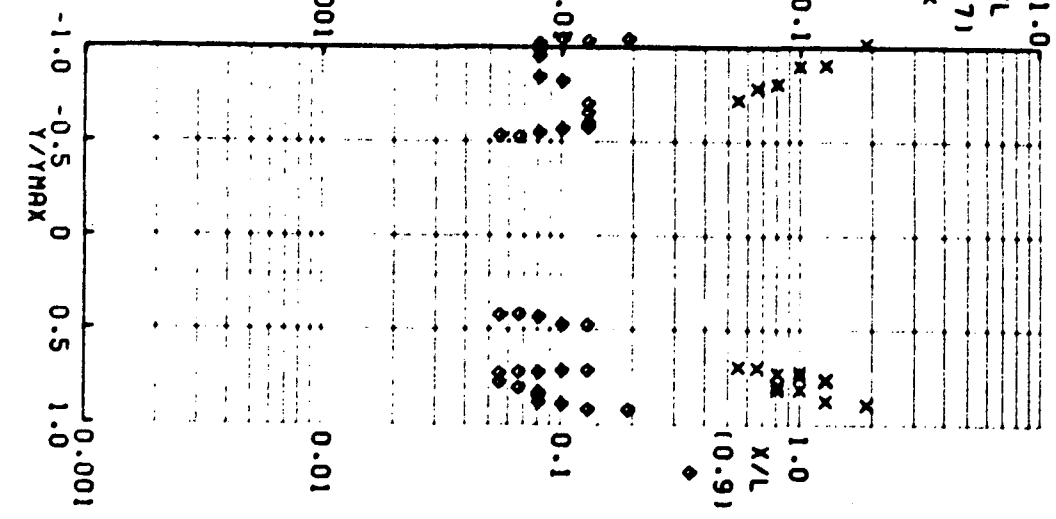
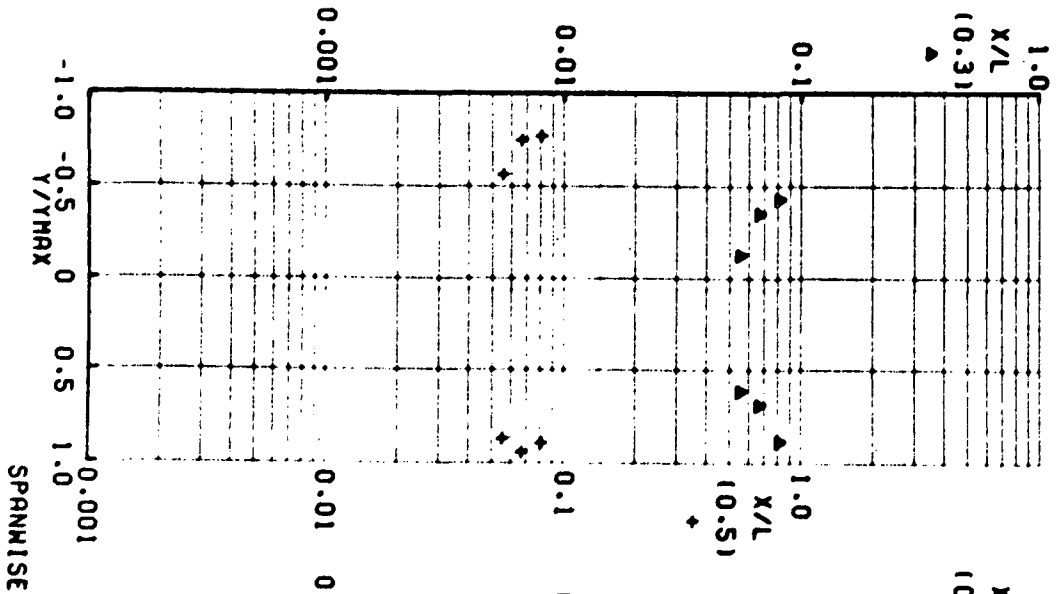
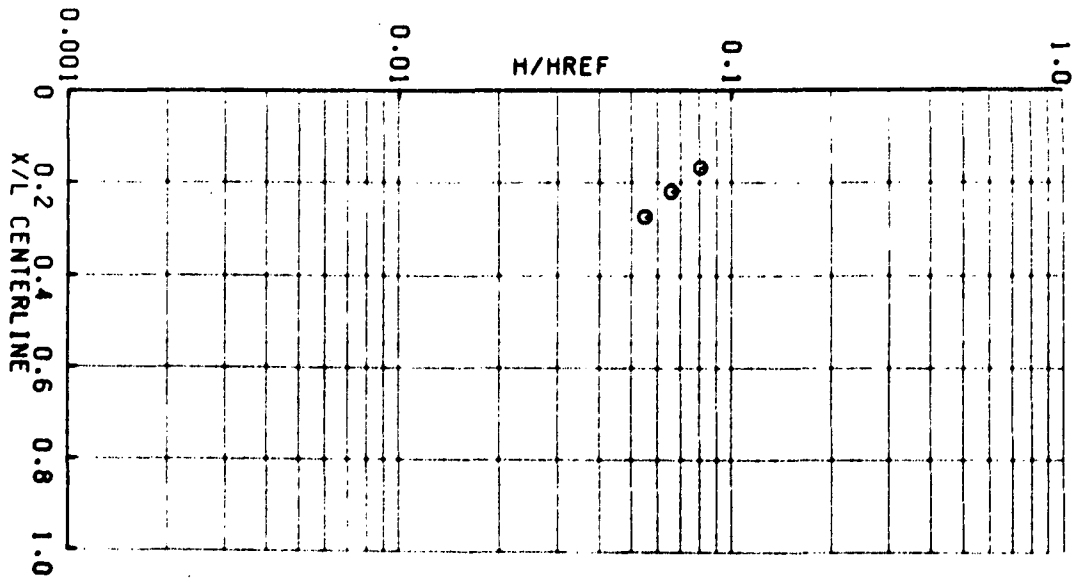
GROUP 365 PIC. NO. 1464 H/HREF 6.580E-02 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 20.0 HREF 4.599E-02 RE/FT 2.540E 06 CONF NRR-DWO



GROUP 365 PIC. NO. 1471 H/HREF 5.480E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.599E-02 RE/FT 2.540E 06 CONF NAR-DW0



GROUP 365 ALPHA (DEG) 20.0 HREF 4.599E-02 MACH 8.00
 MODEL SURFACE - BOTTOM REF/FT 2.540E 06 CONF NRR-0M0



6 / 171

AFDCLARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL VAR
139 51 MAR-DMD R.00 5530.3 1311 29.99 -6.99 -23.00 180.00 .0

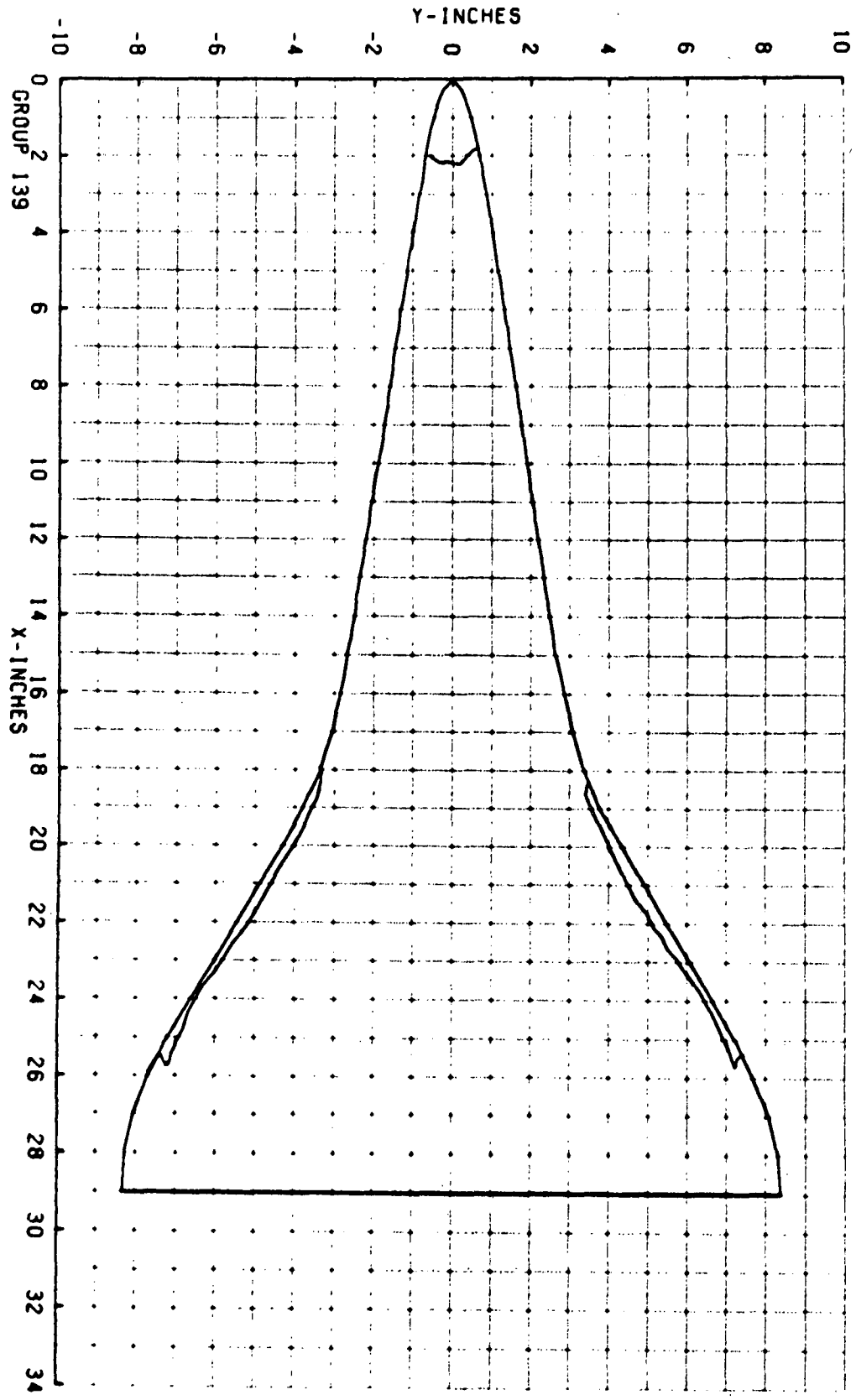
T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STRF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R = .013FT) (R = .017FT)
95.0 .057 2.539 3020 5.007E-05 7.646E-08 2.50E 06 4.596E-02 2.991E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCRK)

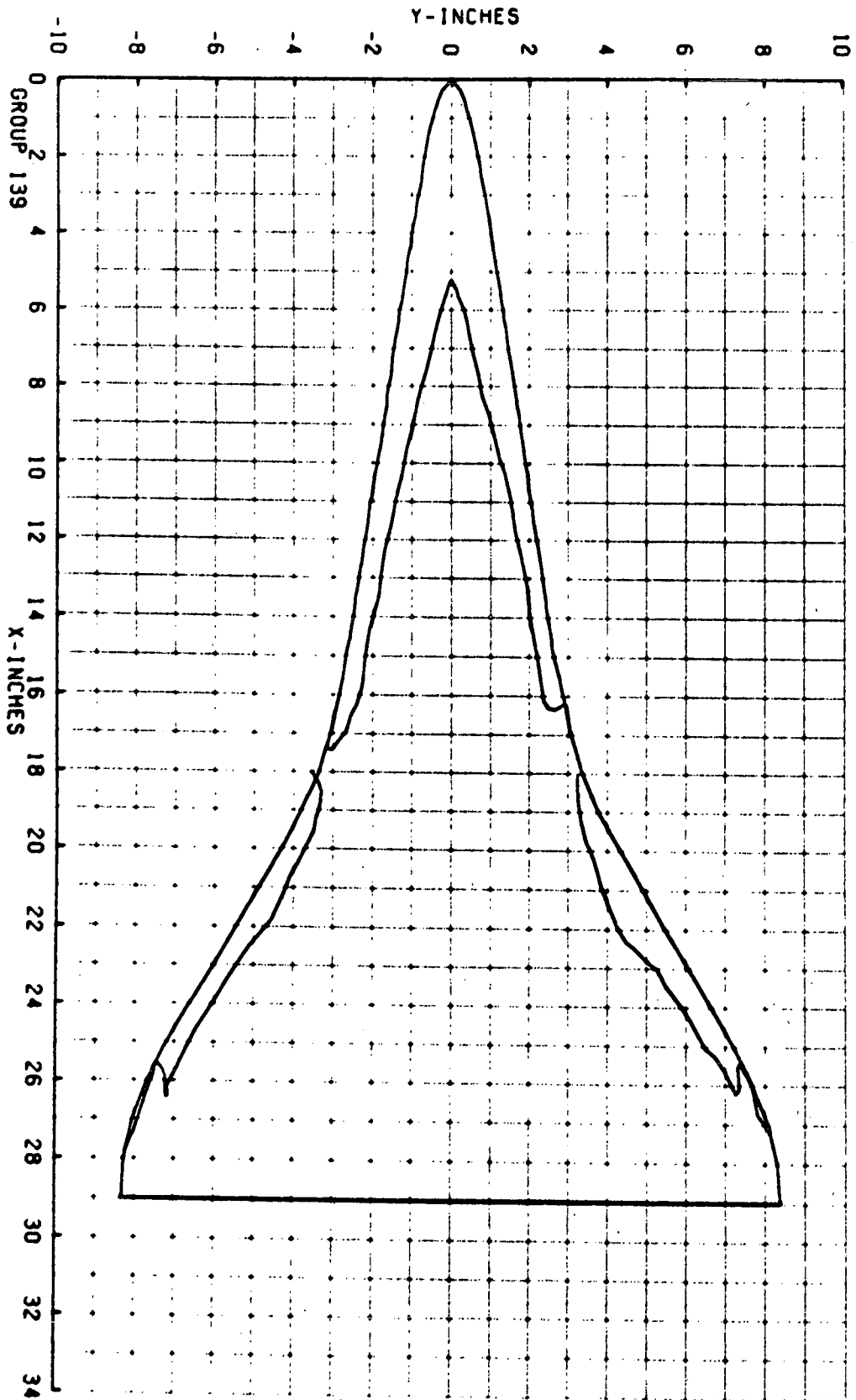
TOP(T) 200 AVERAGE TW = 79 -0.0081(SQUARE ROOT DEL TIME) * 0.11
SIDE(S) 113
BOTTOM(B) 113

PTC NC	TYPE	DELTIME	HT(D)	HT(D)/HREF	HT(.97D)	HT(.97D)/HREF	HT(.857D)	HT(.857D)/HREF	ST(T)	MODEL	TEMP F
T 2270 (200)	4.75	3.68	7.05E-03	.1709	9.751E-03	.2122	1.110E-02	.2415	5.104E-03	0	79
T 2384 (200)	7.95	6.88	5.40E-03	.1175	6.708E-03	.1460	7.634E-03	.1641	3.511E-03	0	80
T 2582 (200)	9.50	8.43	4.76E-03	.1035	5.908E-03	.1286	6.723E-03	.1463	3.093E-03	0	81
T 2596 (200)	14.25	13.19	3.55E-03	.0773	4.408E-03	.0959	5.017E-03	.1092	2.308E-03	0	82
T 2503 (200)	17.95	16.88	2.99E-03	.0651	3.711E-03	.0806	4.224E-03	.0919	1.945E-03	0	83

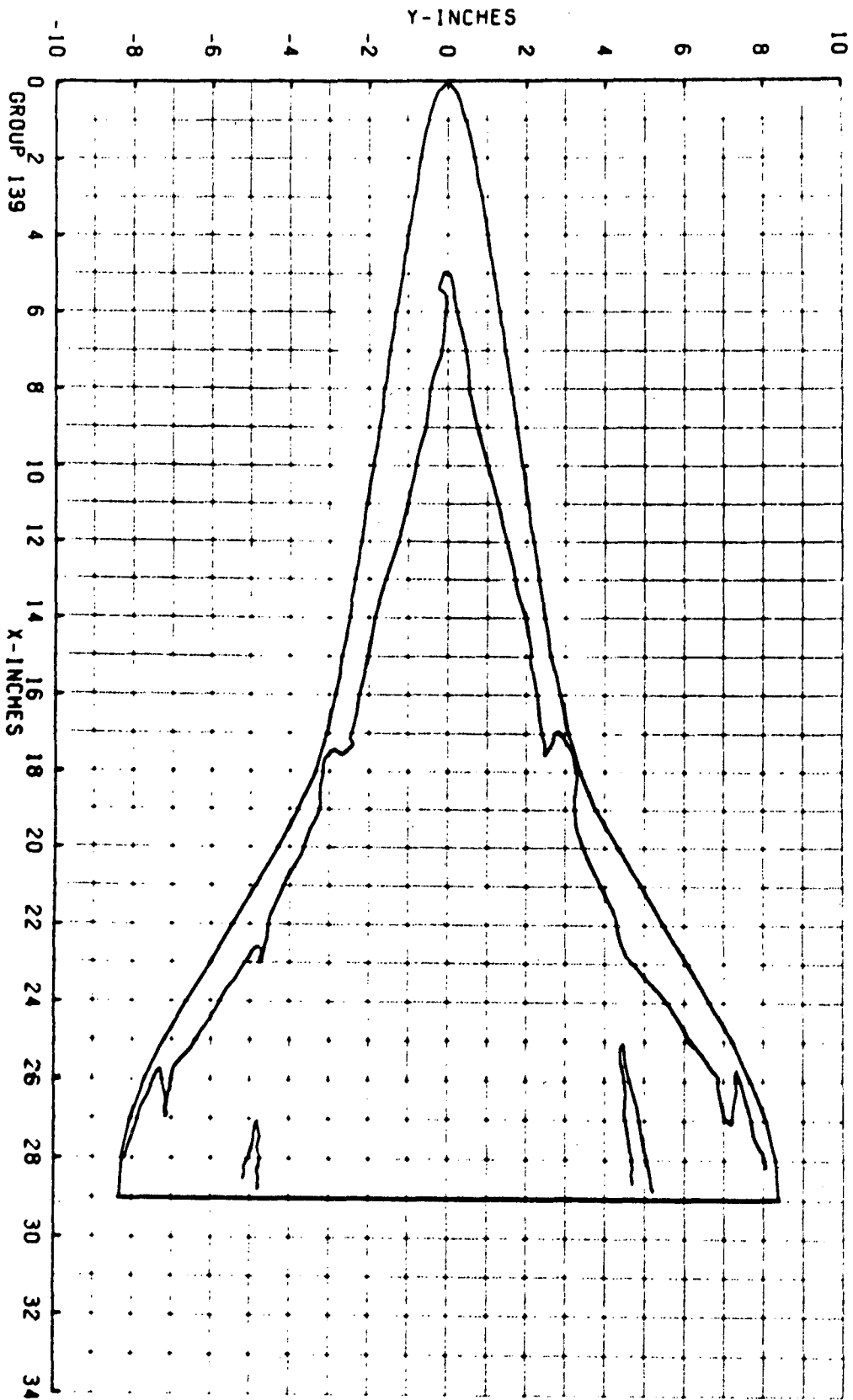
GROUP 139 PIC. NO. 2278 M/REF 1.709E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NAR-DWO



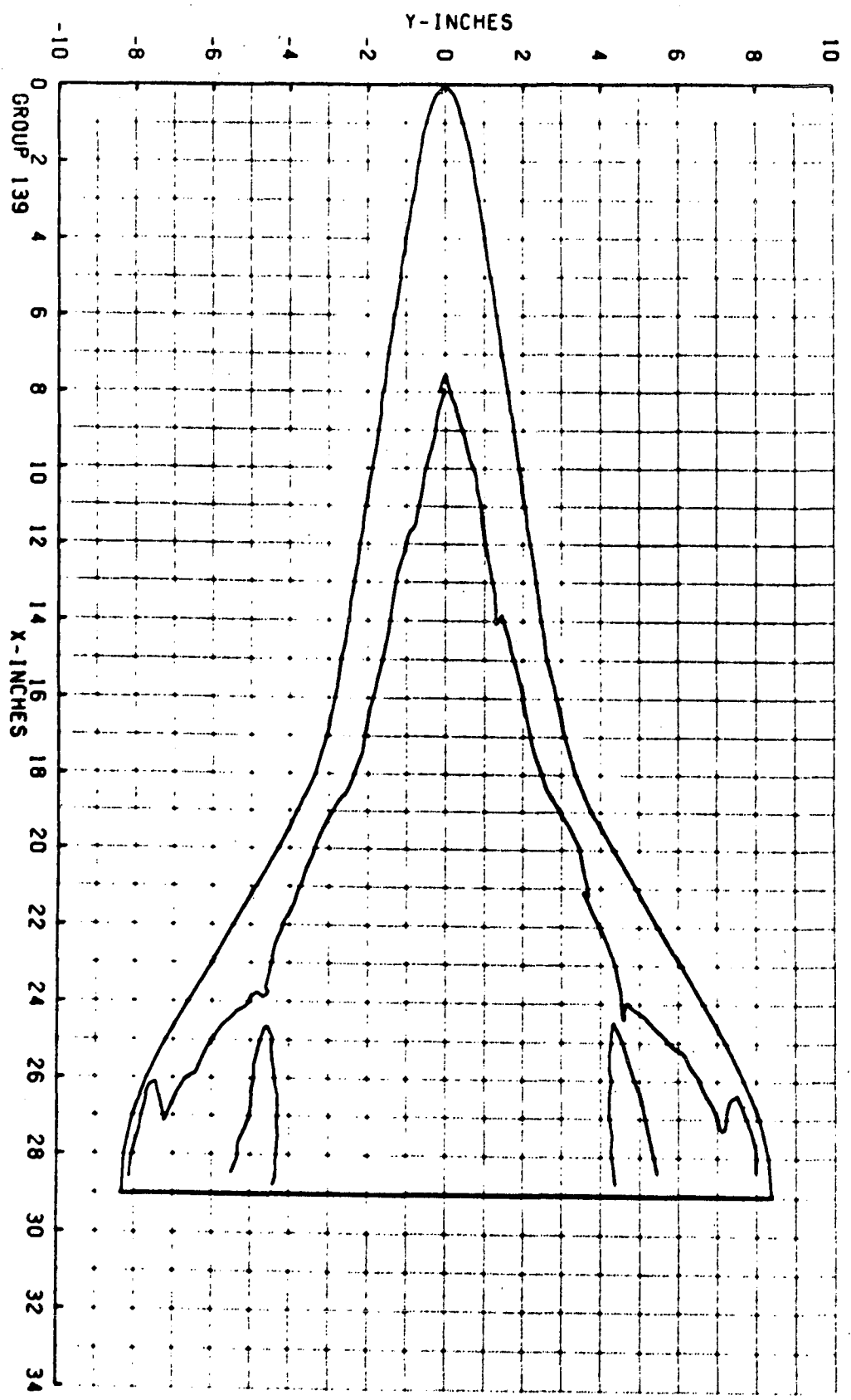
GROUP 139 PIC. NO. 2284 H/REF 1.175E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NAR-DMO



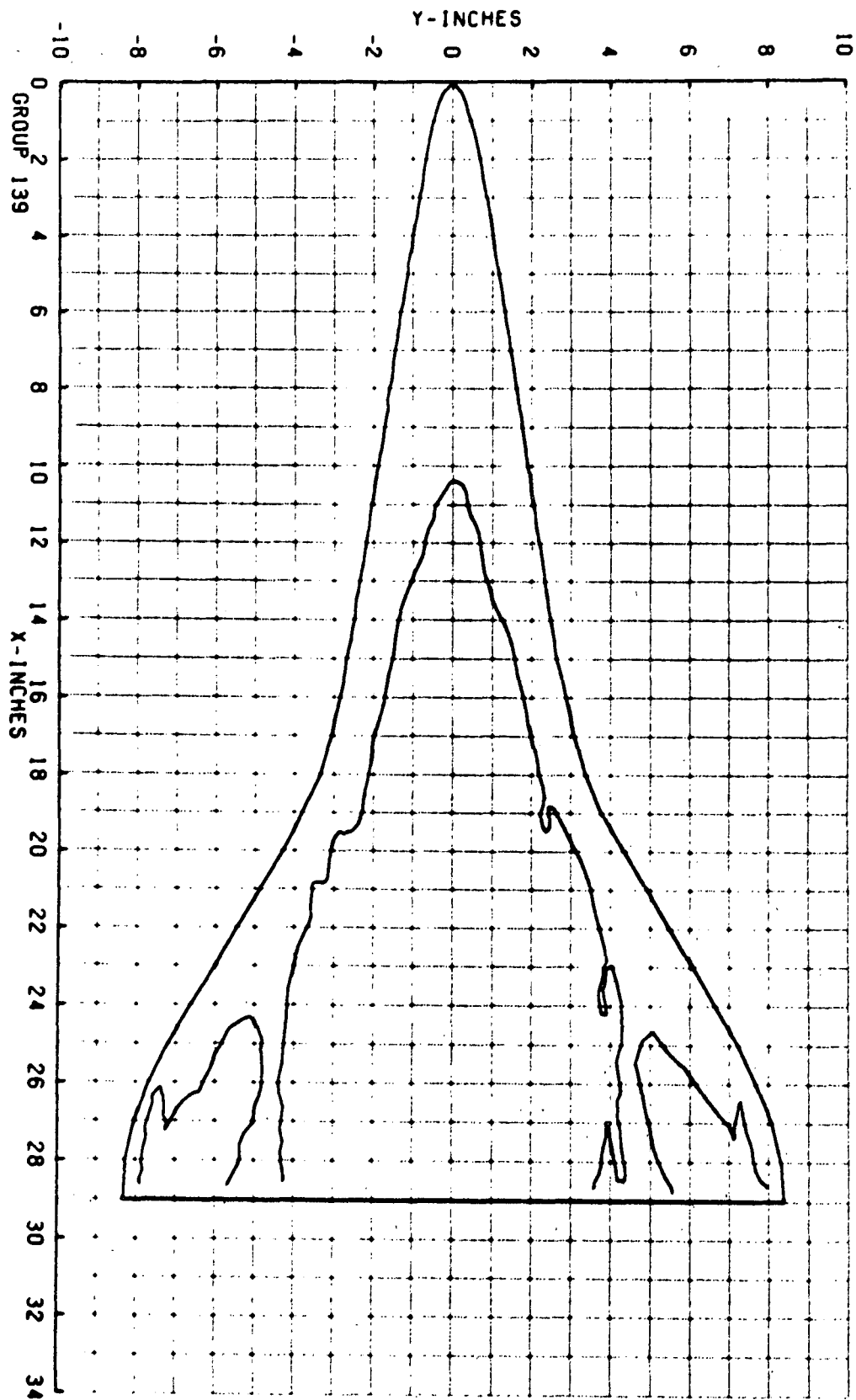
GROUP 139 PIC. NO. 2287 H/HREF 1.035E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NAR-DMO



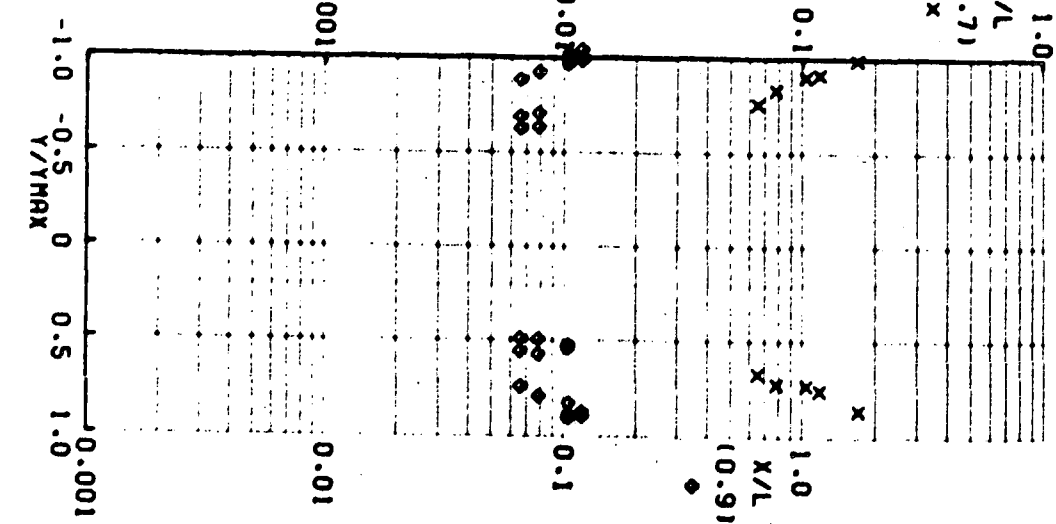
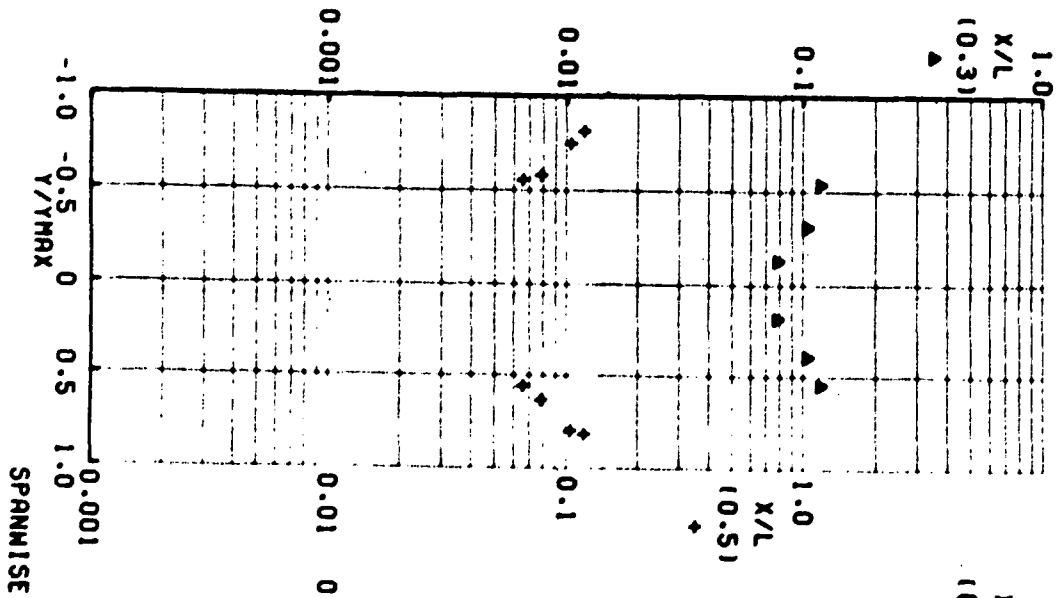
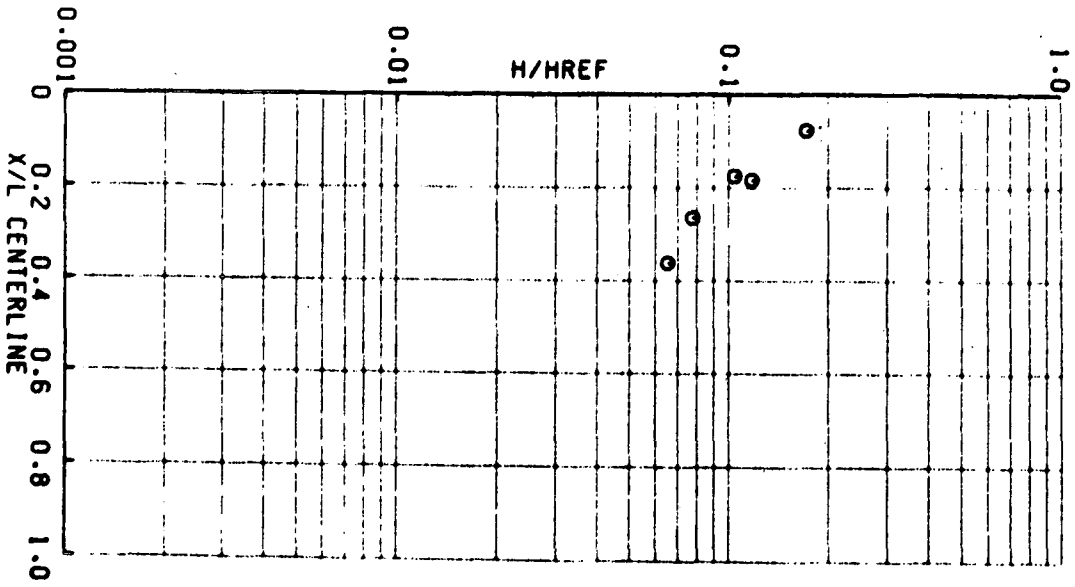
GROUP 139 PIC. NO. 2296 M/REF 7.730E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NAR-DMO



GROUP 139 PIC. NO. 2303 H/HREF 6.510E-02 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NRR-DMO



GROUP 139 ALPHA (DEG) 30.0 HREF 4.596E-02 MRCH 8.00
 MODEL SURFACE - BOTTOM RE/FT 2.500E 06 CONF NAR-DMD



5/29/71

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

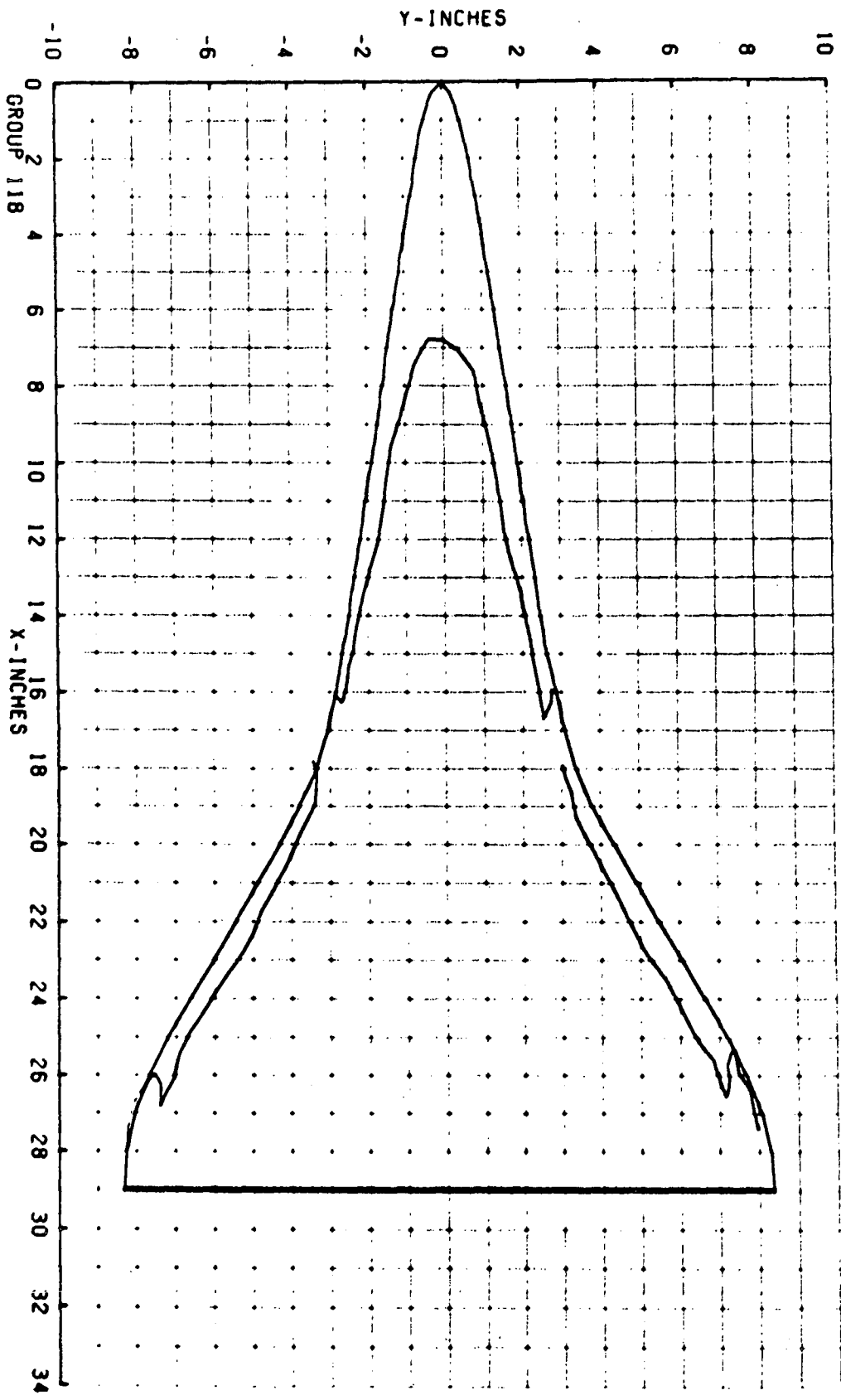
GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-PODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
11A 51 AAR-Duo 9.00 554.3 1315 79.99 10.01 -50.00 180.00 .0

T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT MREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (Rz .013FT) (Rz .013FT)
95.3 .057 2.544 3827 4.998E-05 7.673E-08 2.49E 06 4.603E-02 2.995E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CXK)

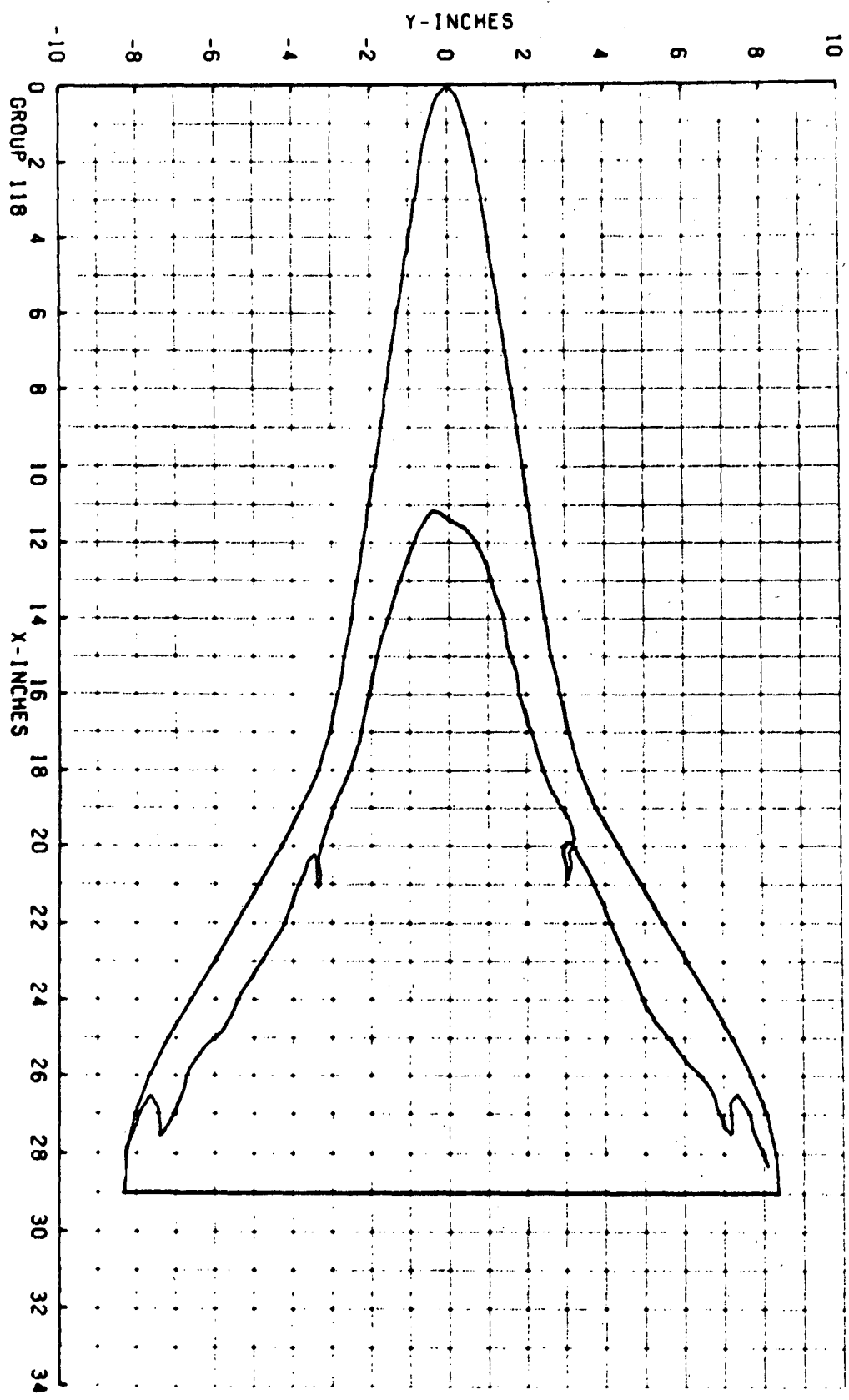
TOP(T) 200
SIDE(S) 113
BOTTCM(B) 113
AVERAGE IM = 85
-0.008(SQUARE ROOT DEL TIME) * 0.11

PIC NO	TIME DELTME	H(TO)	H(TO)/MREF	H(.970)	H(.970)/MREF	H(.8570)	H(.8570)/MREF	ST(TO)	MODEL	TEMP F
T 188 (200)	6.70	5.61	5.78E-03	.1256	7.179E-03	.1559	8.162E-03	.1773	3.756E-03	0
T 196 (200)	10.85	9.74	4.09E-03	.0889	5.078E-03	.1103	5.776E-03	.1255	2.658E-03	0
T 200 (200)	12.90	11.81	3.61E-03	.0794	4.480E-03	.0974	5.096E-03	.1147	2.346E-03	0
T 203 (200)	14.45	13.36	3.32E-03	.0722	4.123E-03	.0896	4.690E-03	.1019	2.159E-03	0

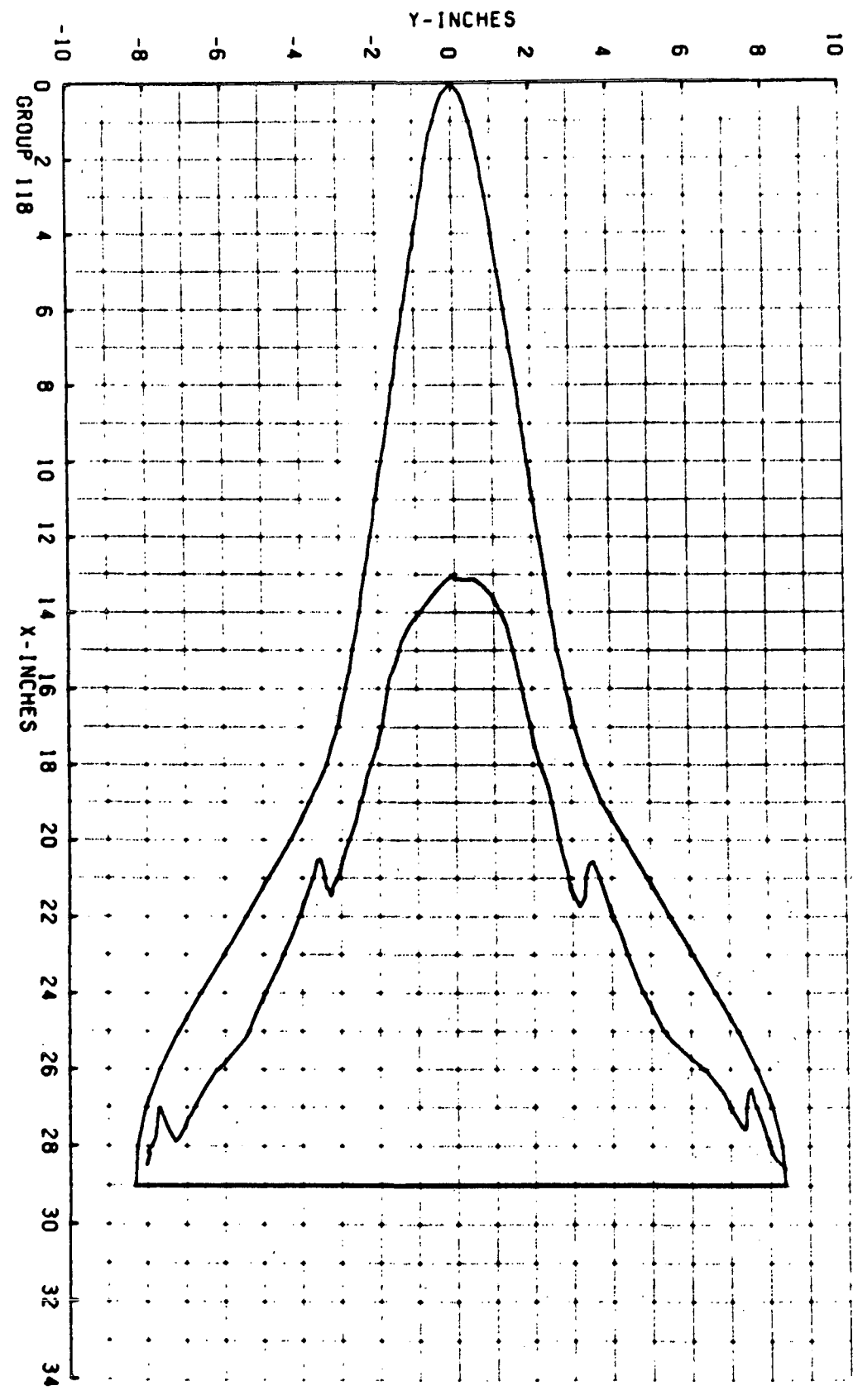


GROUP 118 PIC. NO. 188 H/HREF 1.256E-01 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NRR-DW0

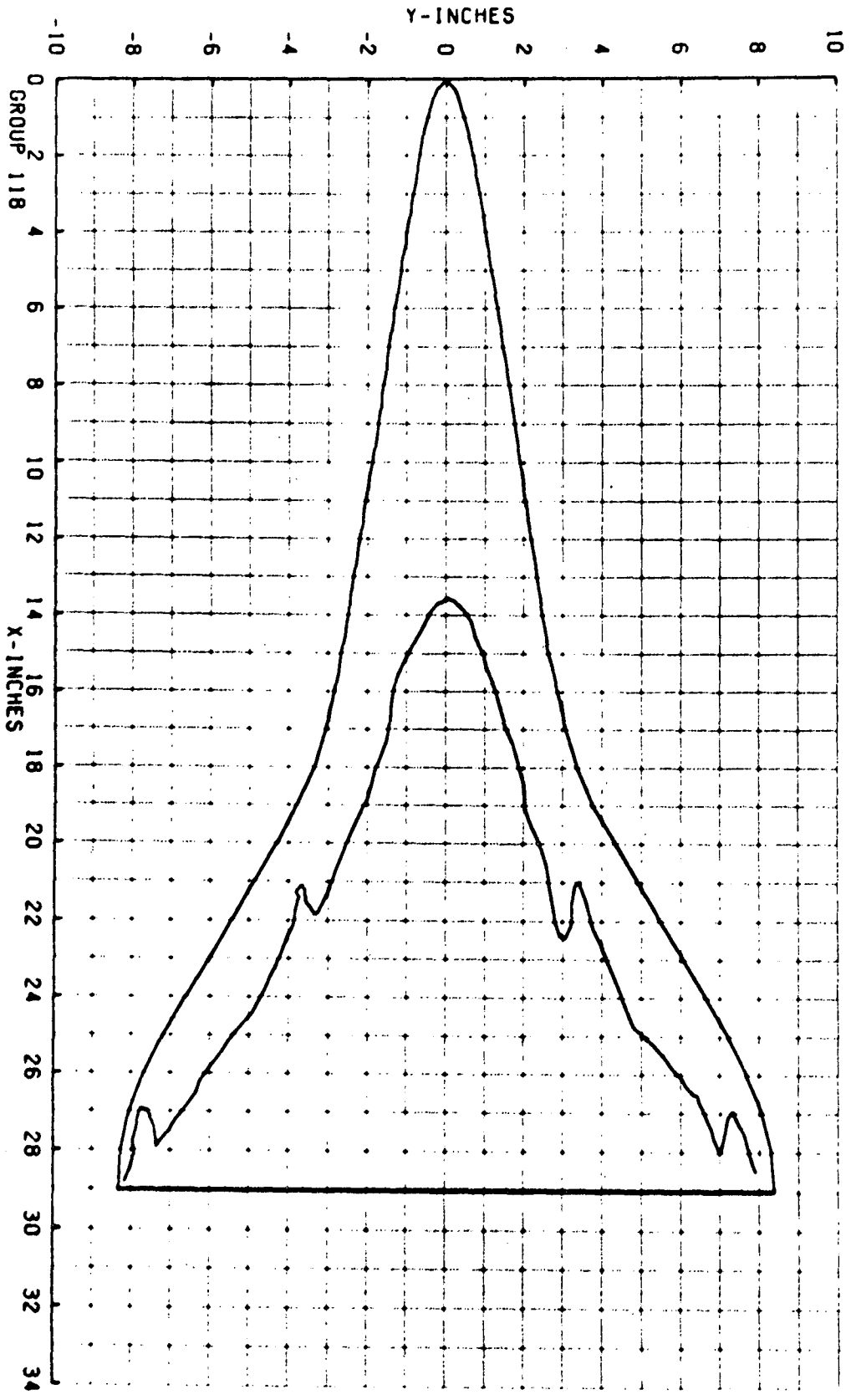
GROUP 118 PIC. NO. 196 H/HREF 8.890E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NAR-DMO



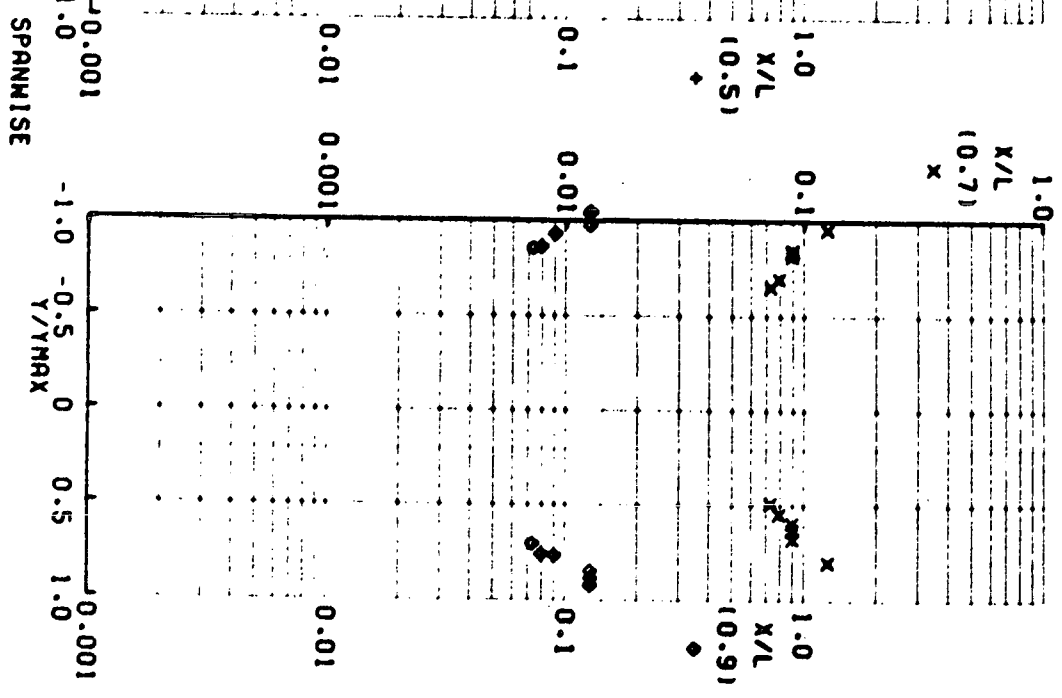
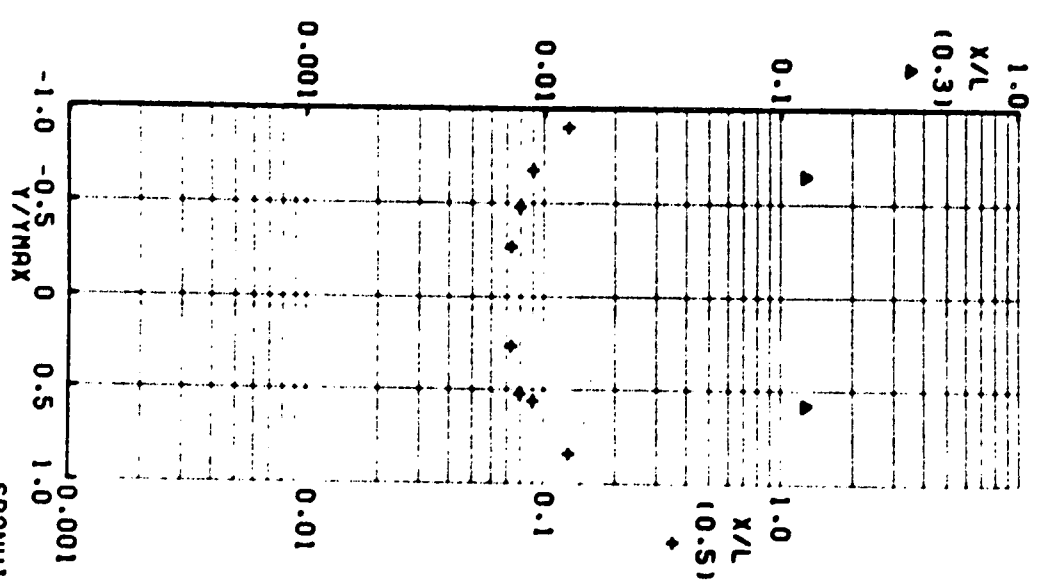
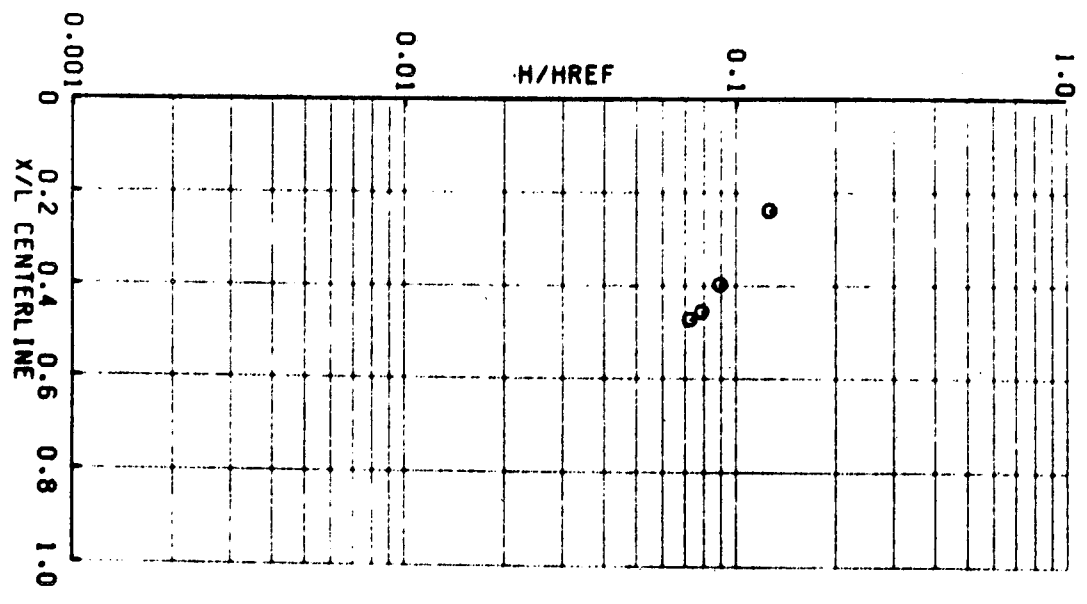
GROUP 118 PIC. NO. 200 H/REF 7.840E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NAR-DW0



GROUP 118 PIC. NO. 203 H/HREF 7.220E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NRR-DMO



GROUP 118 ALPHA (DEG) 40.0 HREF 4.603E-02 MACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 2.490E 06 CONF NAR-DMO



9/21/71

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

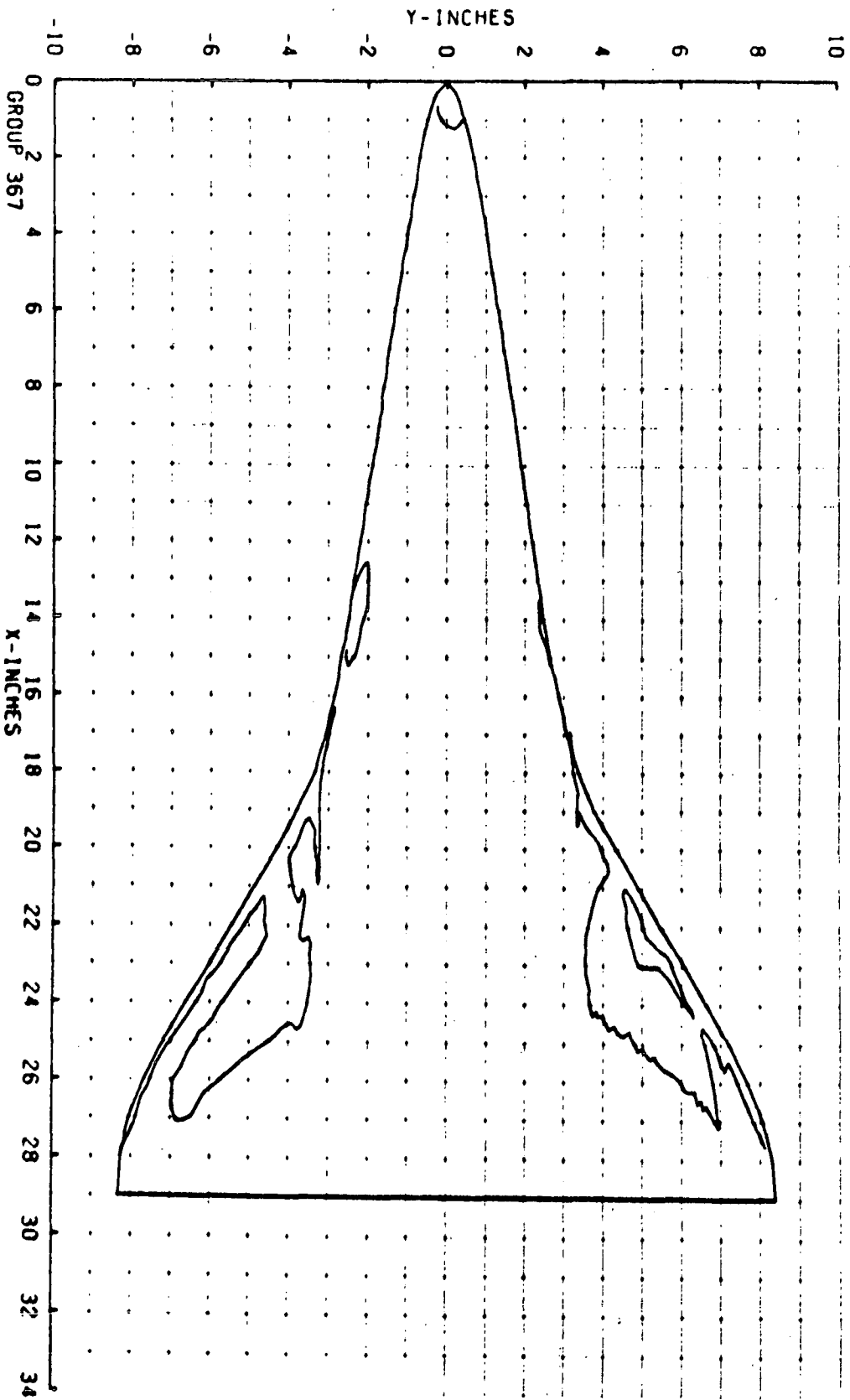
GROUP 367 CONFYG 54 MODEL NAR-DND MACH NO 9.00 PO PSIA 866.1 TO DEG R 1333 ALPHA-MODEL 10.03 ALPHA-SECTOR 12.97 ALPHA-PREBEND -23.00 ROLL-MODEL 180.00 YAW 0

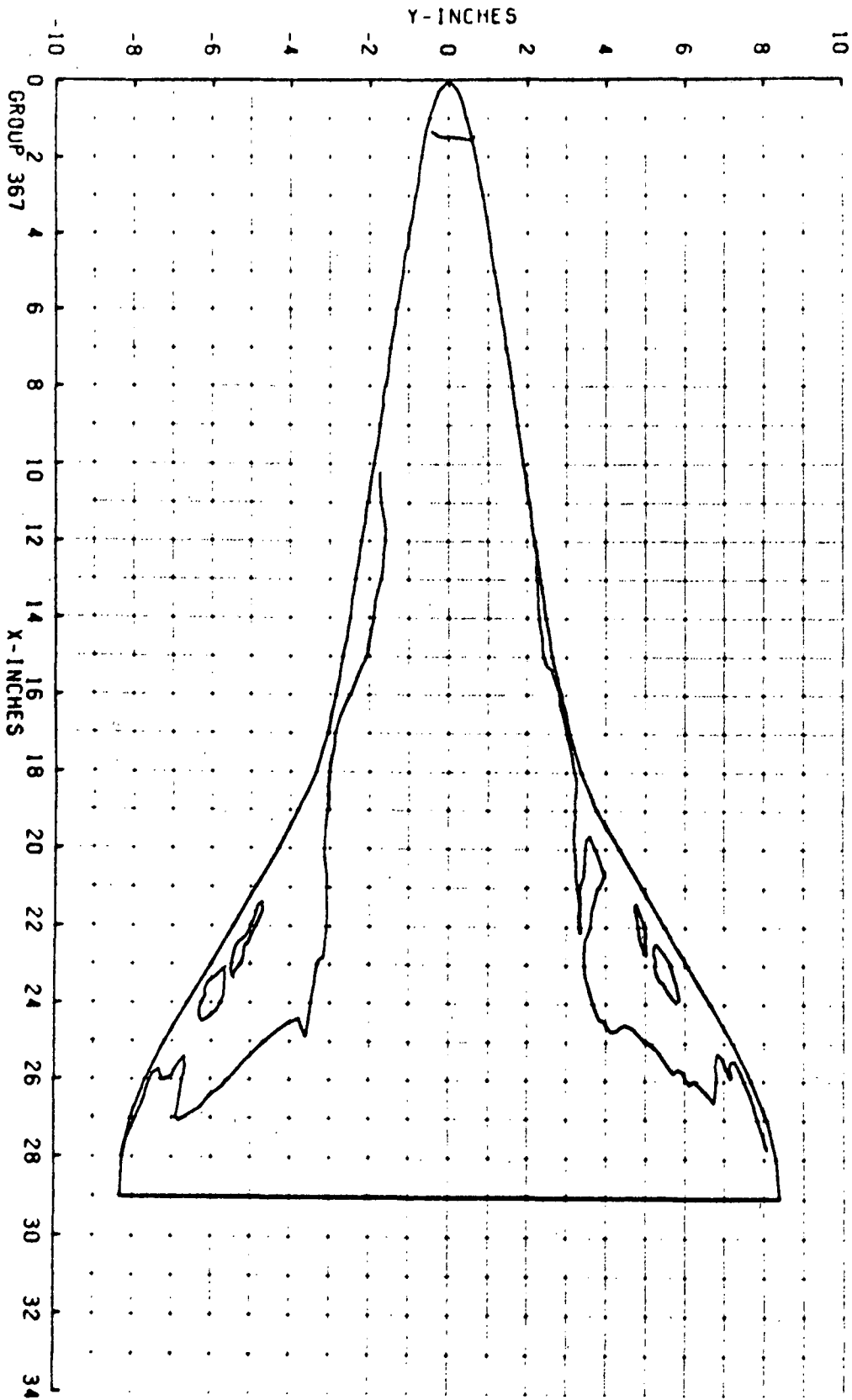
T-1NF P-1NF G-1NF V-1NF RHO-1NF MU-1NF RE/FI MREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (R=.013FT)
96.6 .088 3.947 3882 7.655E-05 7.774E-08 2.79E 06 5.747E-02 2.423E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CXK)
TOP(T) 150
SIDE(S) 150
BOTTOM(B) 150
AVERAGE TV = 76
-0.0081(SQUARE ROOT DEL TIME) * 0.11

PTC NO	TYPE	DELTIME	H(TOT)	H(TOT)/HREF	H(.910)	H(.910)/HREF	H(.8510)	H(.8510)/HREF	ST(TOT)	MODEL	TEMP F
T 1512	(150)	3.20	2.11	6.43E-03	.1049	7.359E-03	.1280	8.275E-03	.1440	2.544E-03	0
T 1515	(150)	4.25	3.16	4.79E-03	.0834	5.852E-03	.1018	6.580E-03	.1145	2.024E-03	0
T 1517	(150)	5.35	4.26	4.63E-03	.0701	4.919E-03	.0856	5.531E-03	.0942	1.700E-03	0
T 1523	(150)	8.55	7.46	2.87E-03	.0499	3.504E-03	.0610	3.940E-03	.0645	1.211E-03	0
T 1528	(150)	11.20	10.11	2.36E-03	.0411	2.887E-03	.0502	3.246E-03	.0565	9.901E-04	0
T 1535	(150)	14.95	13.86	1.92E-03	.0333	2.339E-03	.0407	2.650E-03	.0458	8.087E-04	0
T 1535	(150)	17.05	15.94	1.74E-03	.0302	2.120E-03	.0369	2.384E-03	.0415	7.327E-04	0

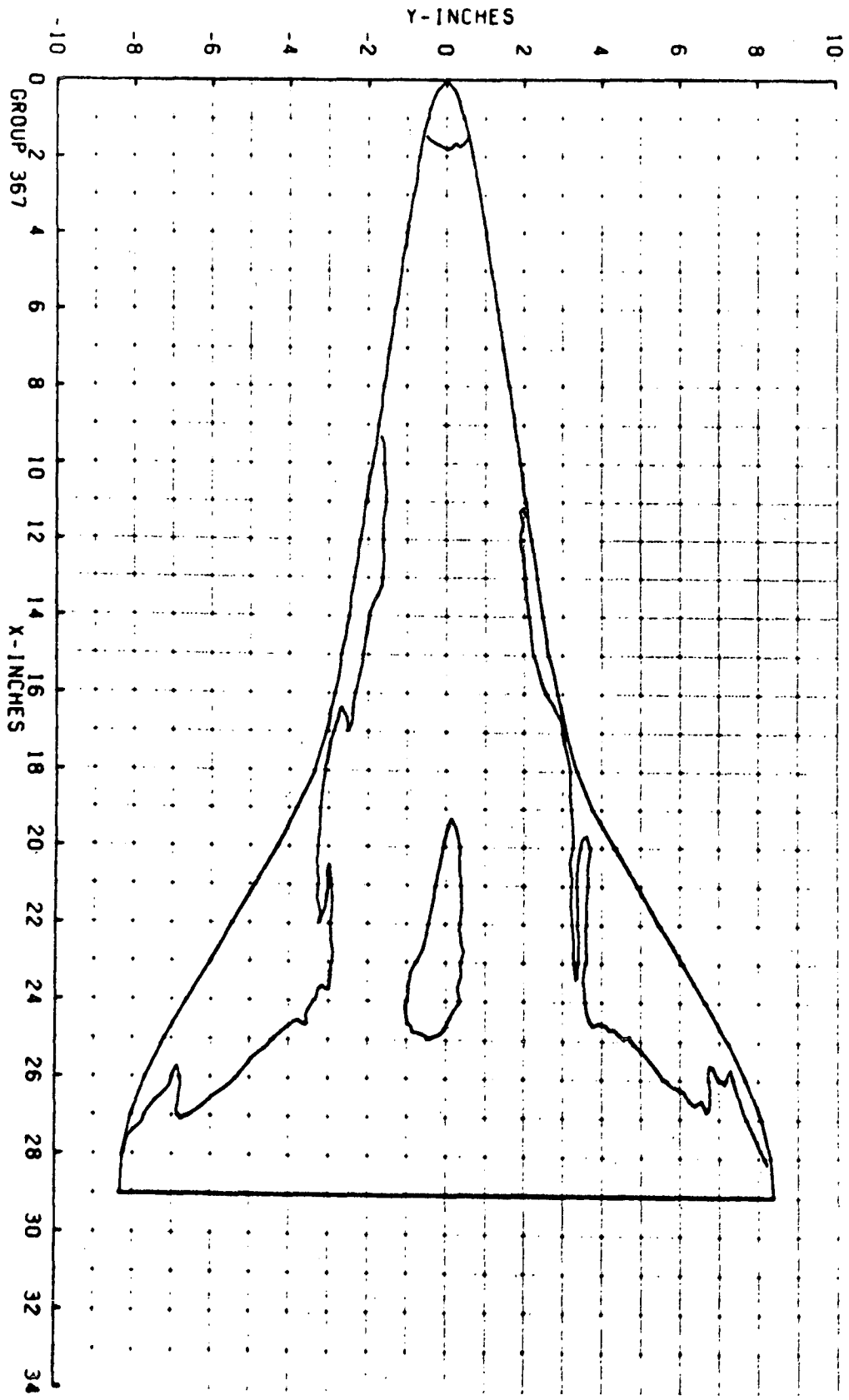
GROUP 367 PIC. NO. 1513 H/HREF 1.049E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF S.747E-02 RE/FT 3.790E 06 CONF NAR-DNO



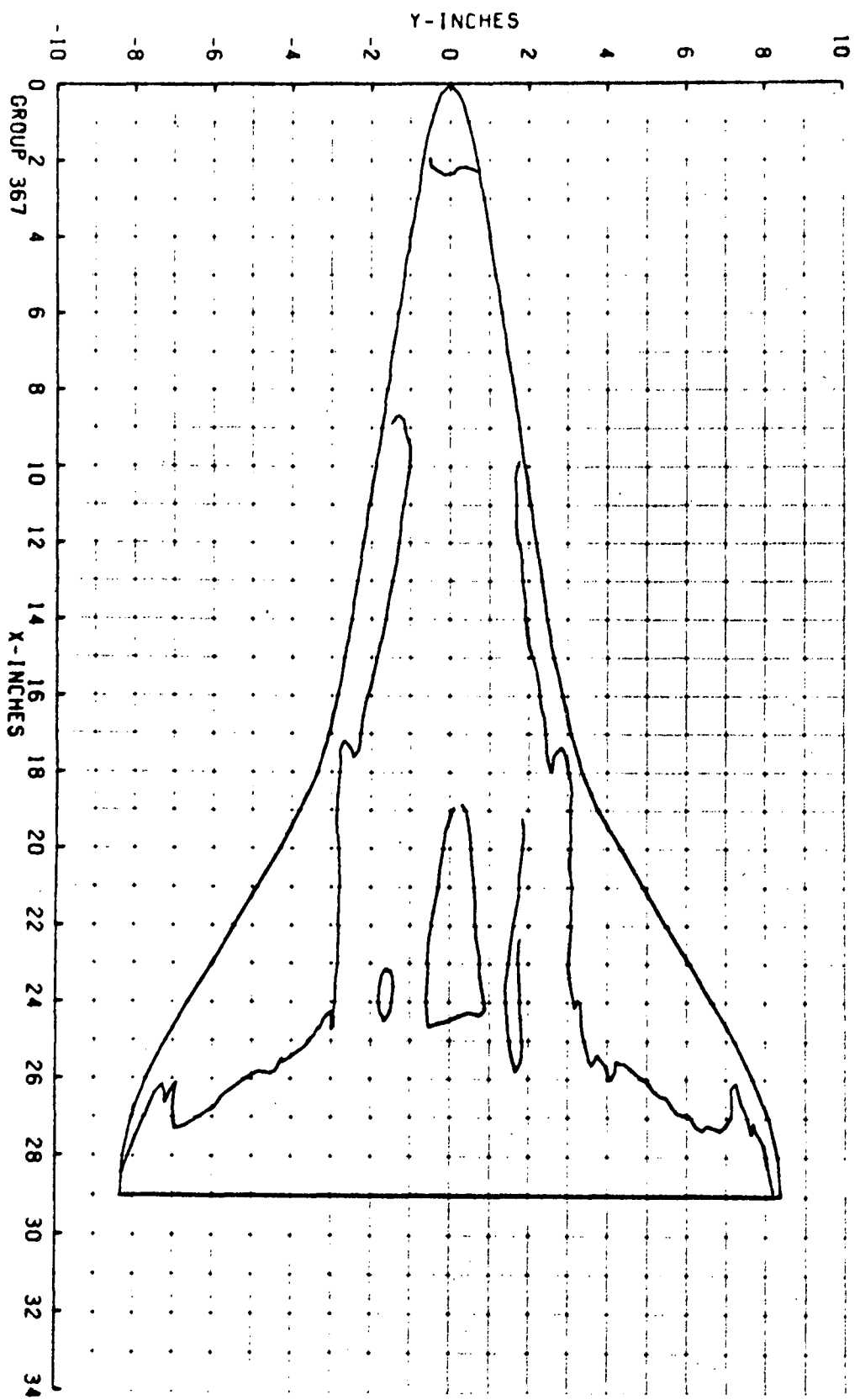


GROUP 367 PIC. NO. 1515 H/HREF 8.340E-02 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CONF NRR-DNO

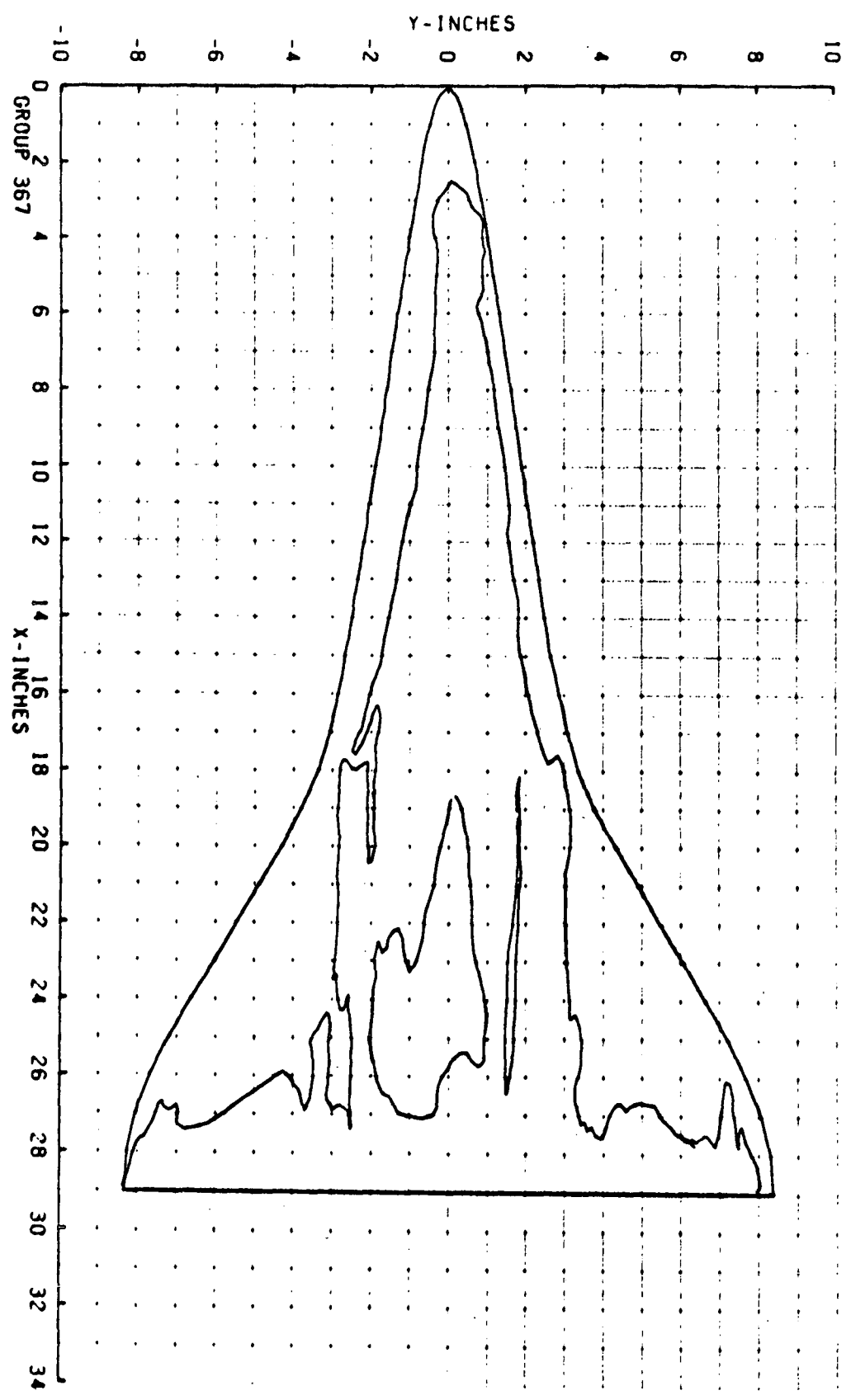
GROUP 367 PIC. NO. 1517 H/HREF 7.010E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CONF NNR-DMD



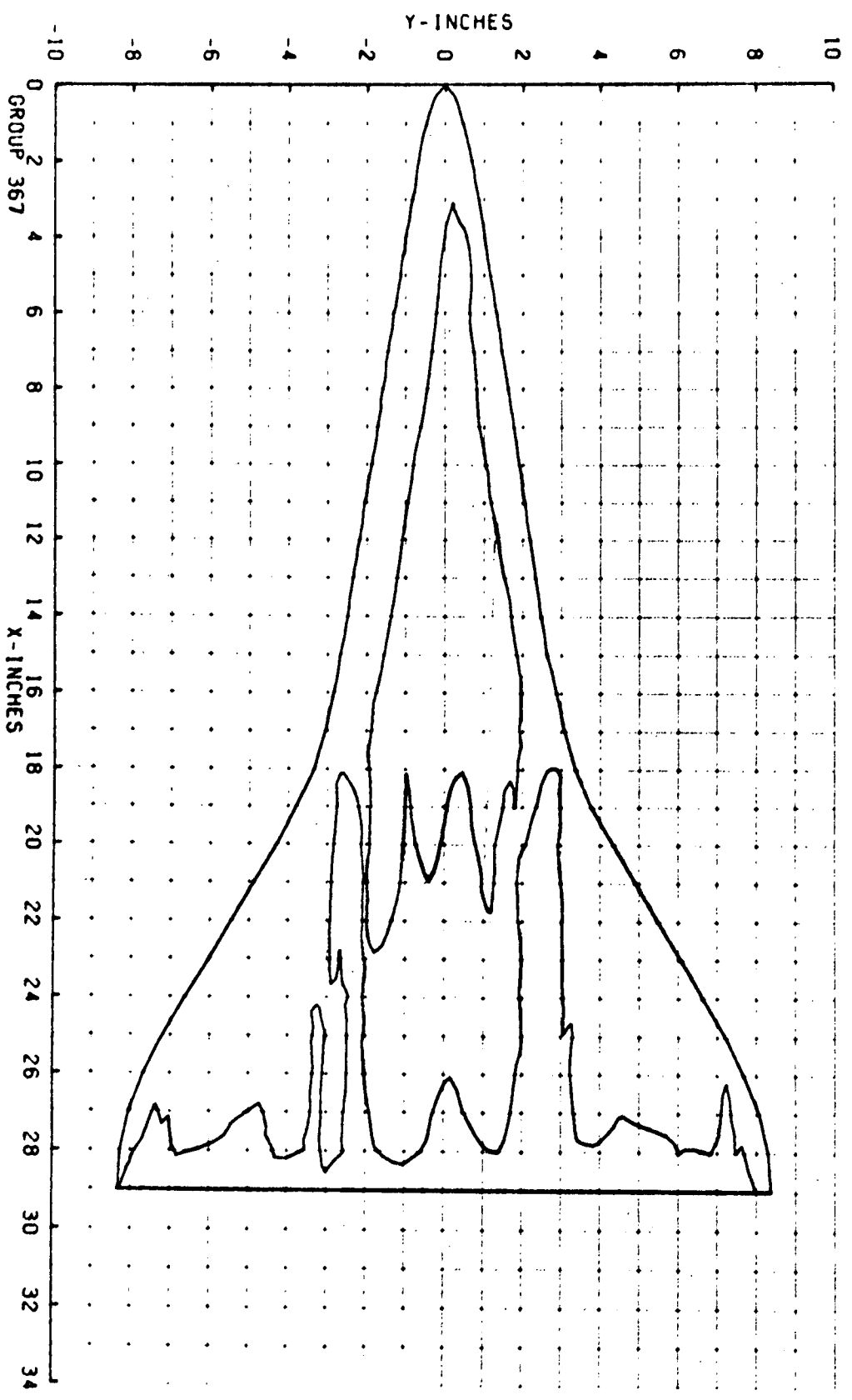
GROUP 367 PIC. NO. 1523 H/HREF 4.990E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CONF NAR-DHO



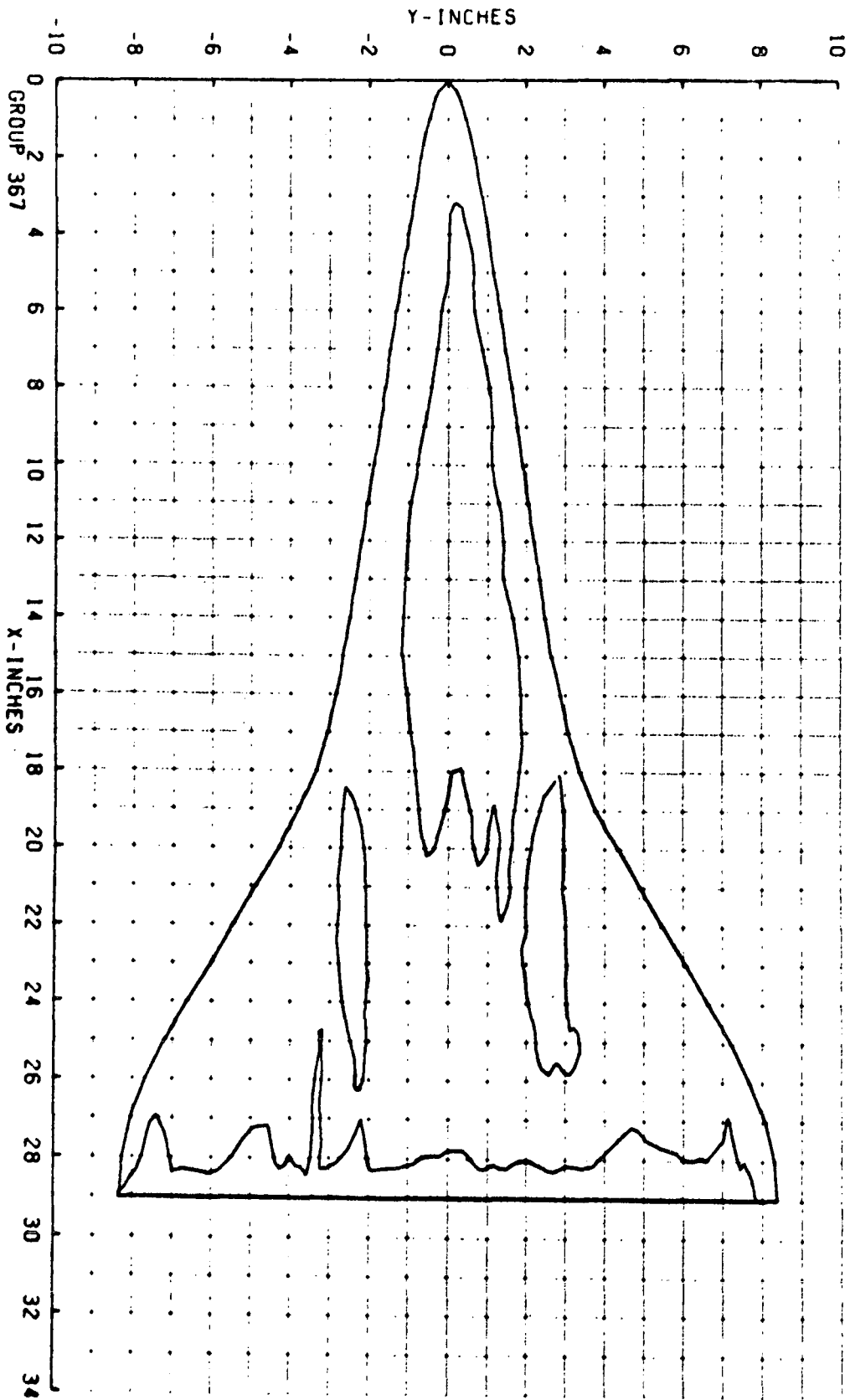
GROUP 367 PIC. NO. 1528 H/HREF 4.110E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CONF NRR-DW0



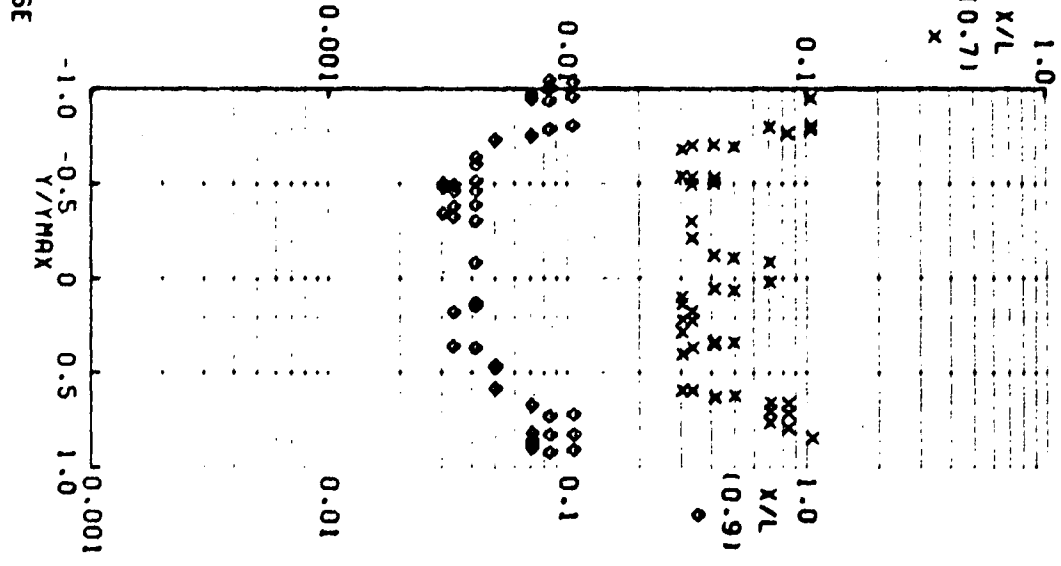
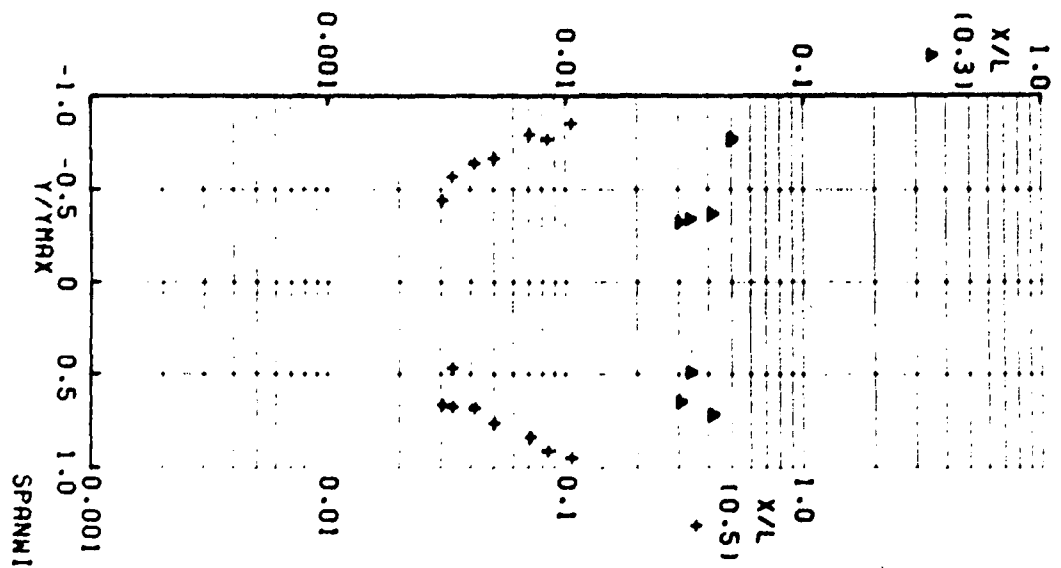
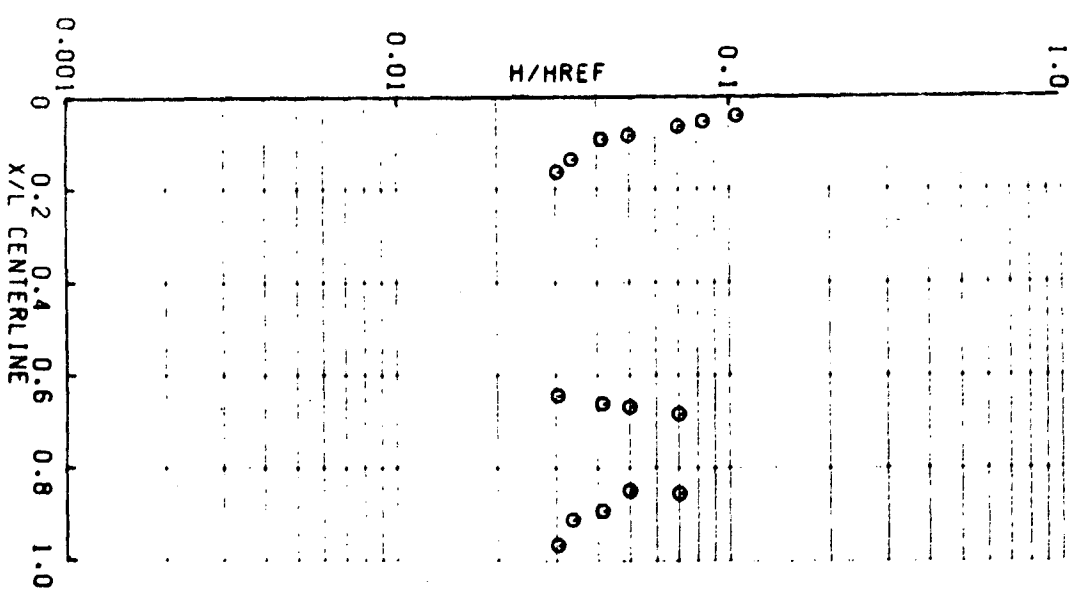
GROUP 367 PIC. NO. 1535 H/HREF 3.330E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CONF NAR-DMO



GROUP 367 PIC. NO. 1539 H/HREF 3.020E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CONF NRR-DMD



GROUP 367 ALPHA (DEG) 10.0 HREF 5.747E-02 MACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 3.790E 06 CONF NRR-DMO



9/21/71

AEOCIARON, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
V11162

GROUP CONFITE MODEL MACH NO PG PSTIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
36R 54 HAR-DWO 8.00 860.9 1343 20.03 2.97 -23.00 180.00 .0

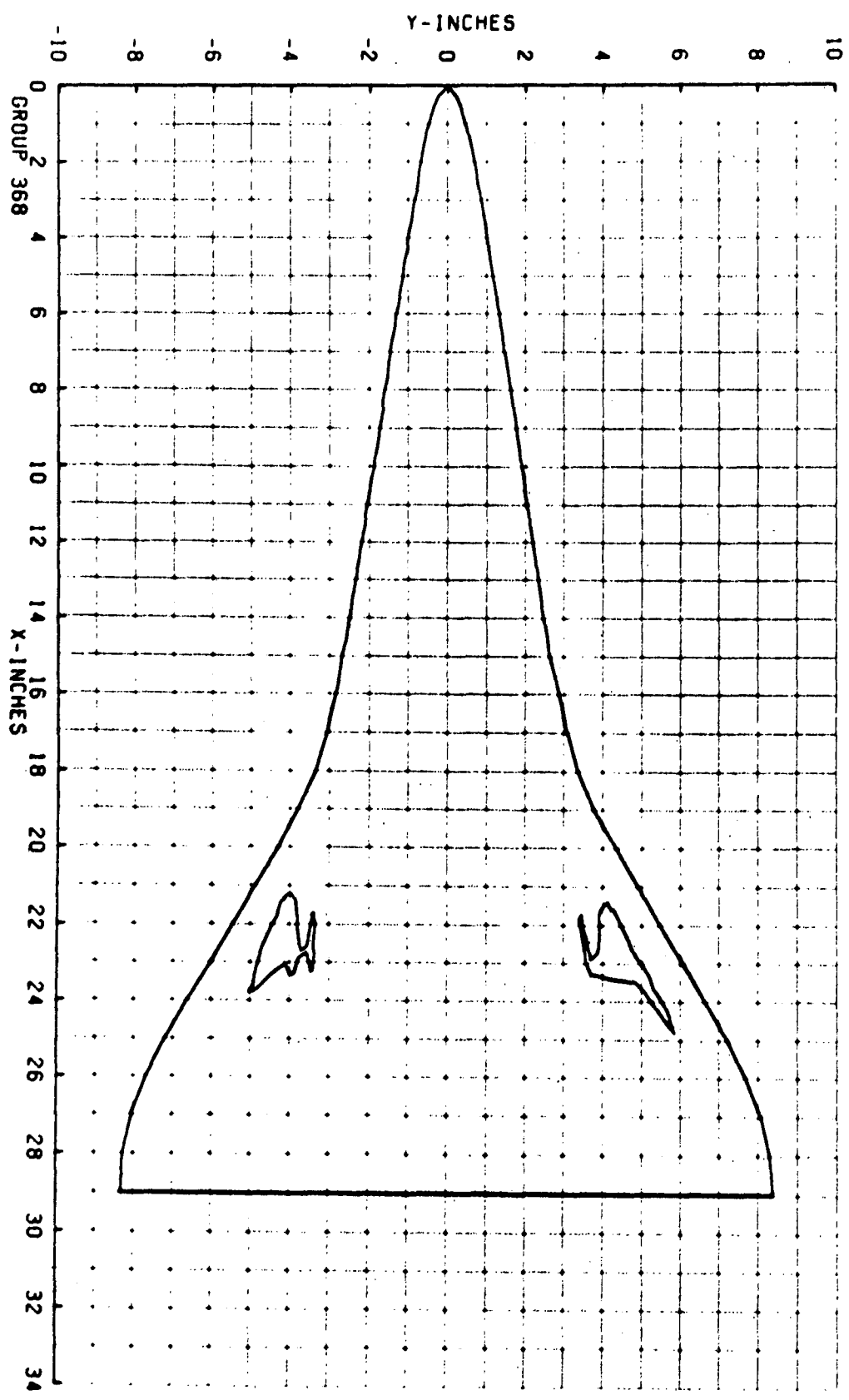
T-1NF P-1NF O-1NF V-1NF RHO-1NF PU-1NF AE/FT HREF STREF
(DEG R) (PSTIA) (PSTIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-L) (R= .013FT) (R= .013FT)
97.3 .088 3.950 3867 7.600E-05 7.037E-08 3.75E 06 5.757E-02 2.434E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCRK)

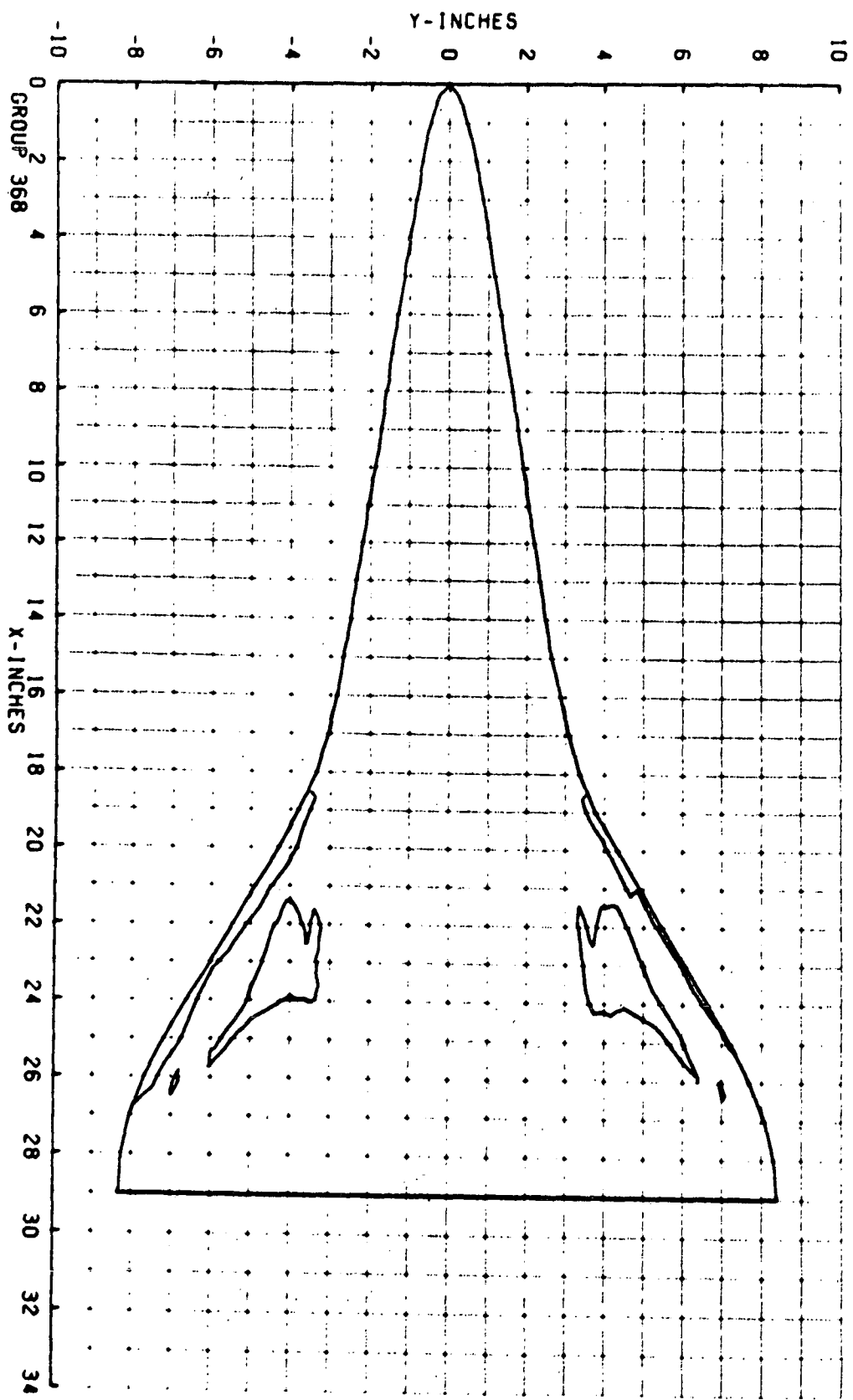
TOP(T) 200 AVERAGE TW = 76
SITE(S) 200
ROTCHM(B) 200

PIC NO	TIME DELTIVE	HIT(D)	HIT(D)/HREF	HT.9(TO)	HT.9(TO)/HREF	HT.85(TO)	HT.85(TO)/HREF	ST(TO)	MODEL TEMP F
T 1646 (200)	2.15	1.08	1.52E-02	.2633	1.872E-02	.3251	2.122E-02	6.399E-03	0
T 1647 (200)	2.05	1.50	1.93E-02	.2141	1.522E-02	.2683	1.725E-02	5.203E-03	0
T 1648 (200)	3.75	2.68	9.18E-03	.1594	1.134E-02	.1969	1.285E-02	3.875E-03	0
T 1553 (200)	5.05	4.78	6.56E-03	.1140	8.106E-03	.1408	9.189E-03	2.770E-03	0
T 1558 (200)	8.95	7.68	5.00E-03	.0868	6.174E-03	.1072	6.997E-03	2.109E-03	0
T 1562 (200)	10.65	9.58	4.27E-03	.0742	5.277E-03	.0916	5.981E-03	1.803E-03	0
T 1576 (200)	14.95	13.88	3.34E-03	.0580	4.125E-03	.0717	4.675E-03	1.411E-03	0
T 1577 (200)	21.30	20.23	2.55E-03	.0443	3.154E-03	.0548	3.575E-03	1.078E-03	0

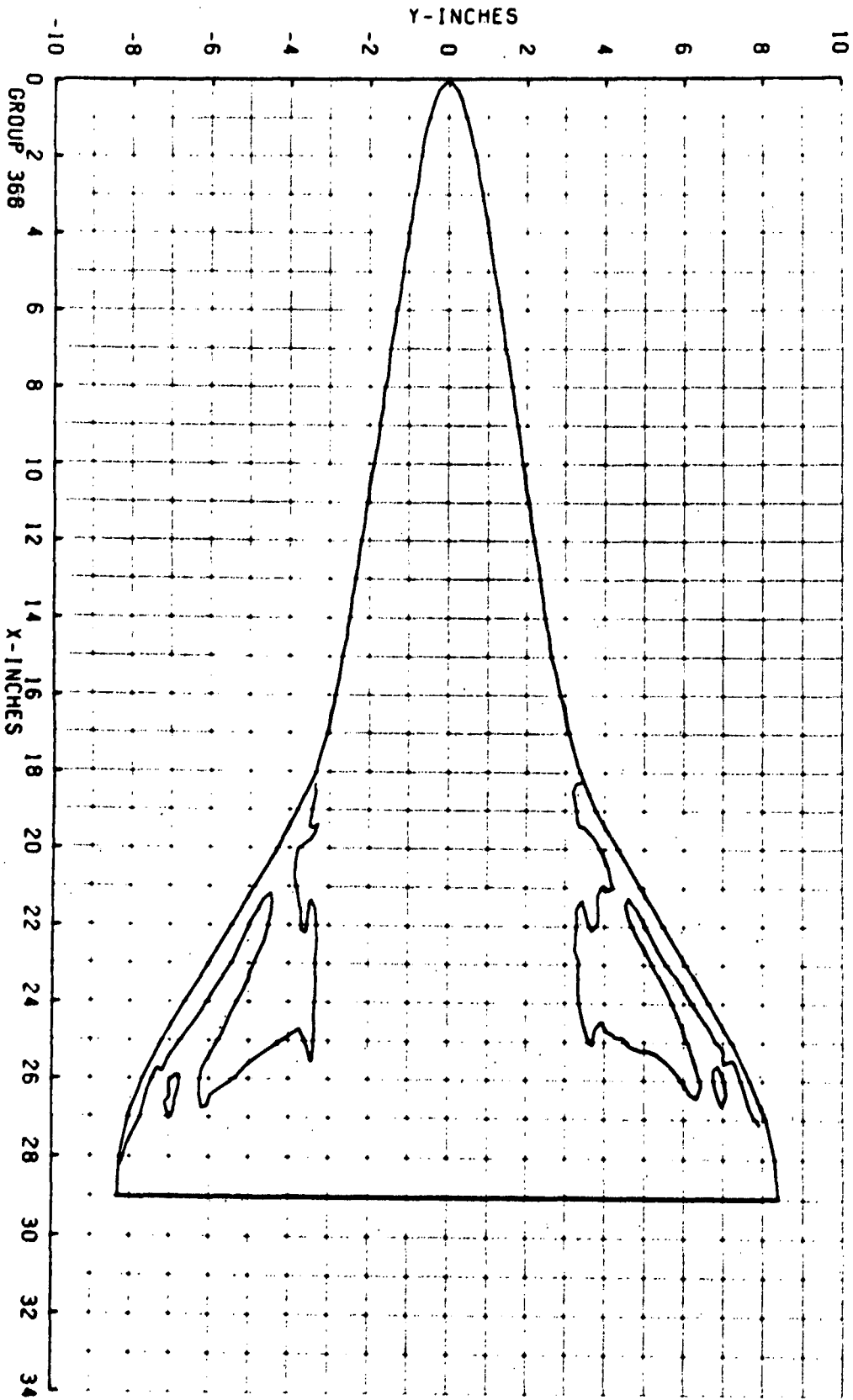
GROUP 368 PIC. NO. 1546 H/HREF 2.633E-01 MODEL SURFACE - BOTTOM
MRCH 8.00 ALPHR (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NRR-DWD



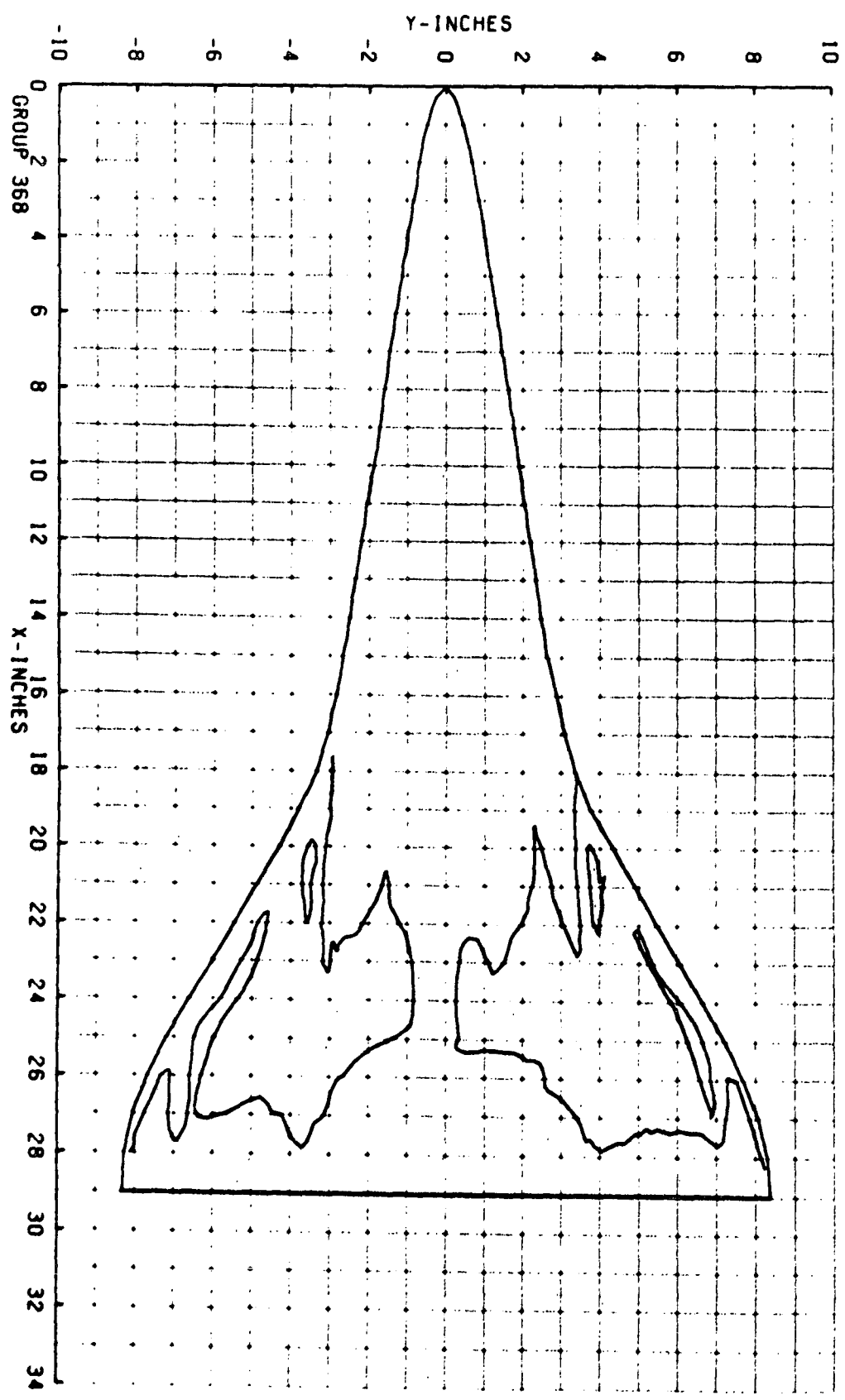
GROUP 368 PIC. NO. 1547 H/HREF 2.141E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NAR-DW0



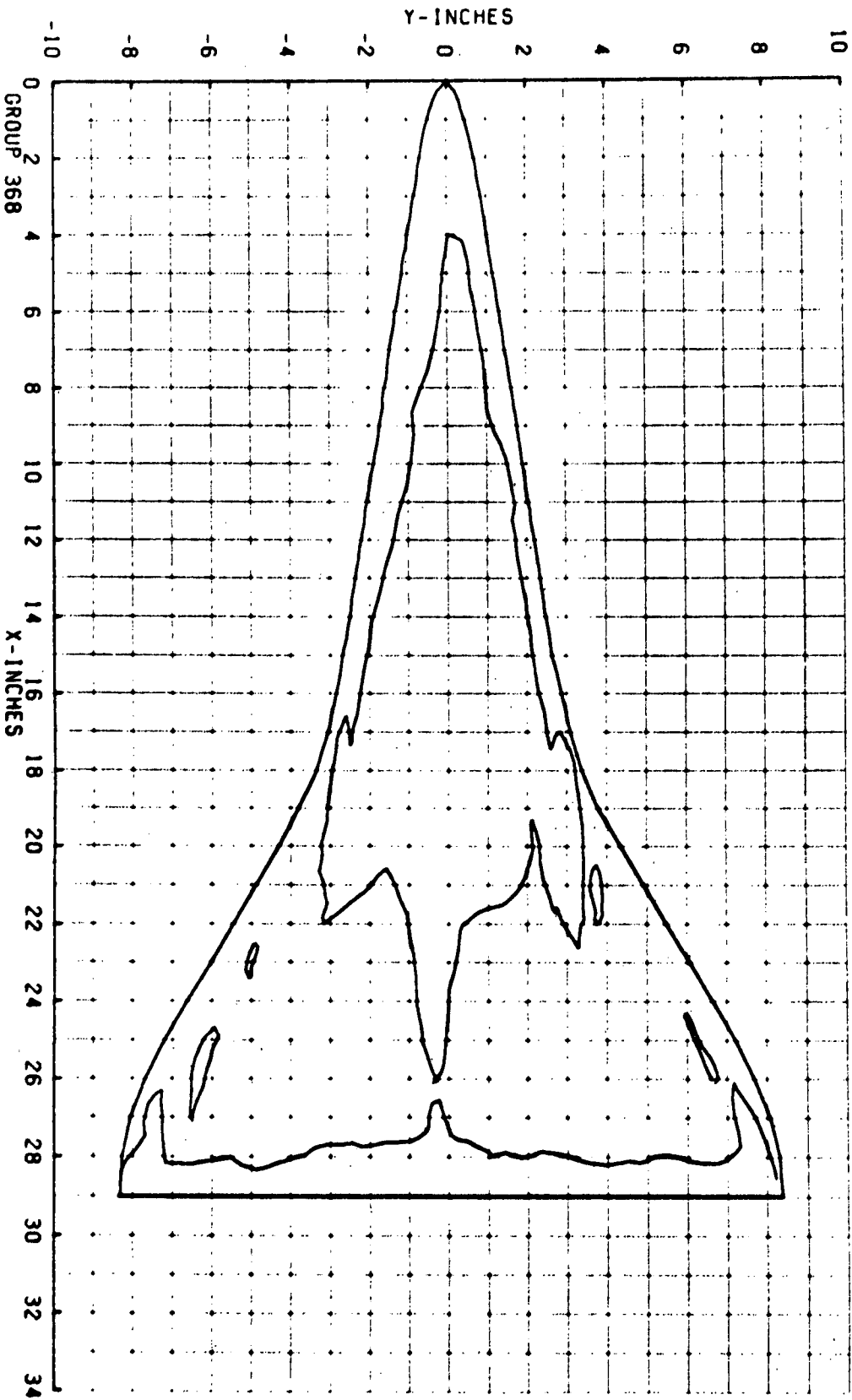
GROUP 368 PIC. NO. 1549 H/HREF 1.594E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NRR-DMD



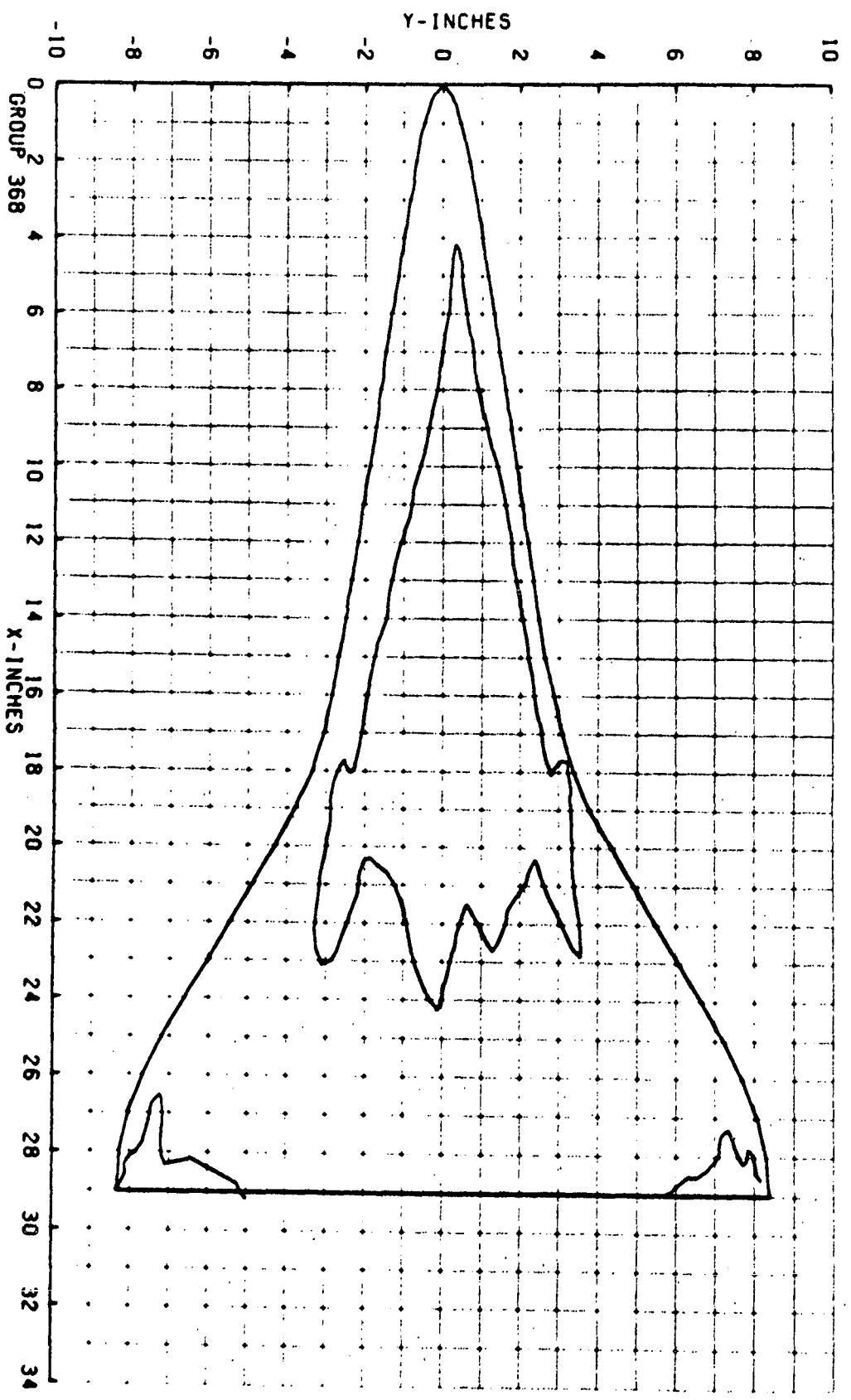
GROUP 368 PIC. NO. 1553 H/HREF 1.140E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF S.757E-02 RE/FT 3.750E 06 CONF NAR-DMD

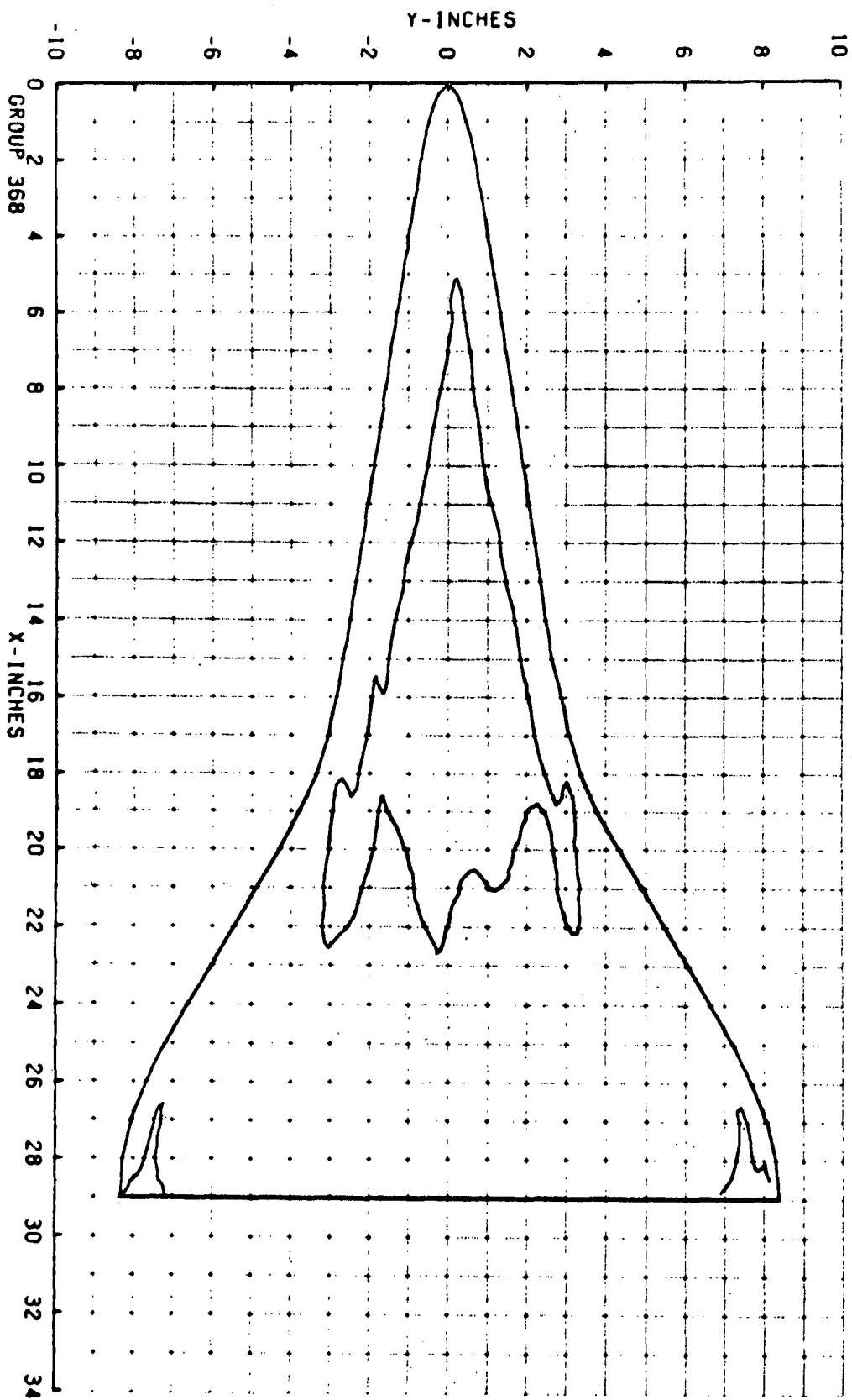


GROUP 368 PIC. NO. 1558 H/HREF 8.680E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NAR-DMO



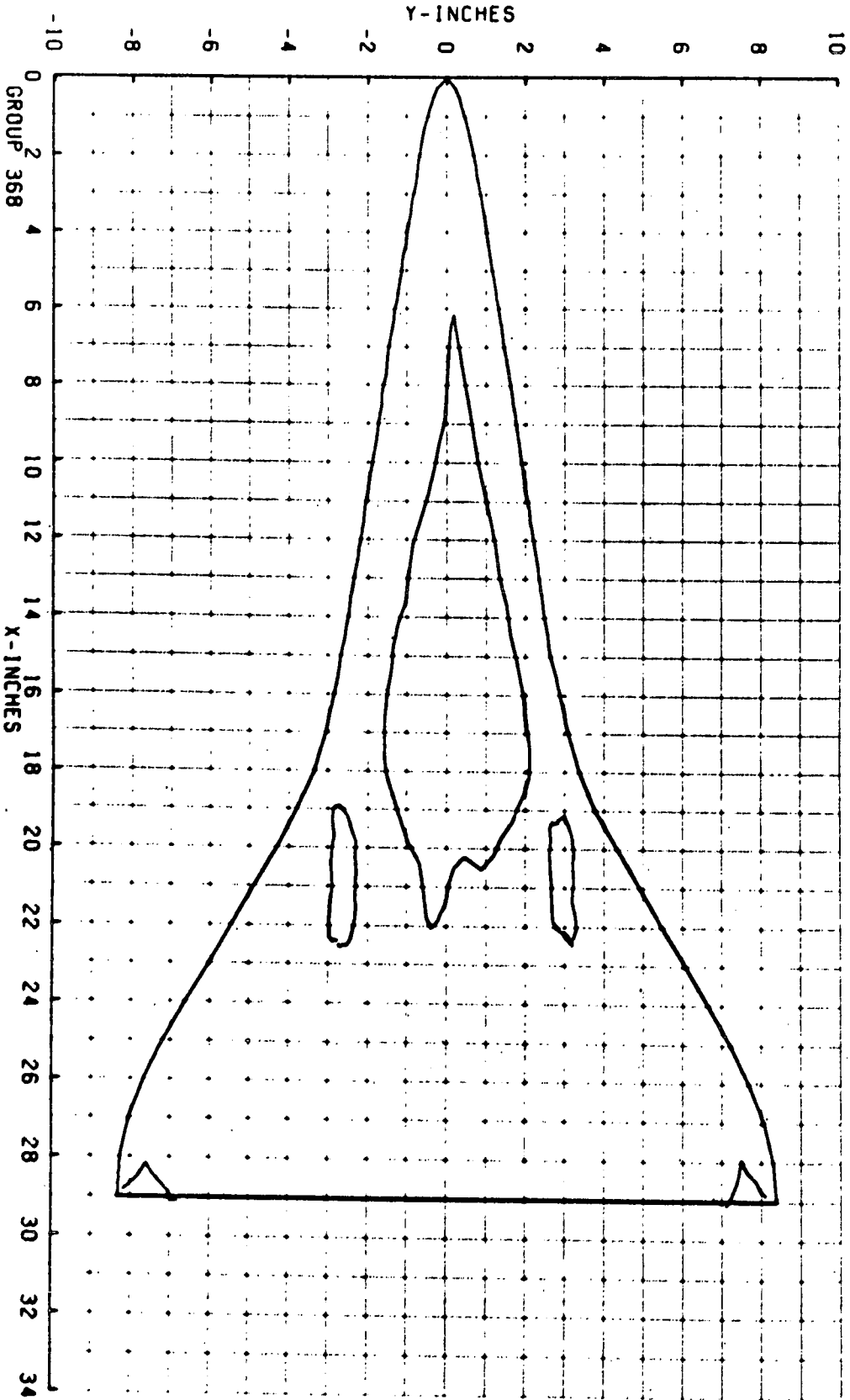
GROUP 368 PIC. NO. 1562 H/HREF 7.420E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 REF/FT 3.750E 06 CDNF NAR-DWO



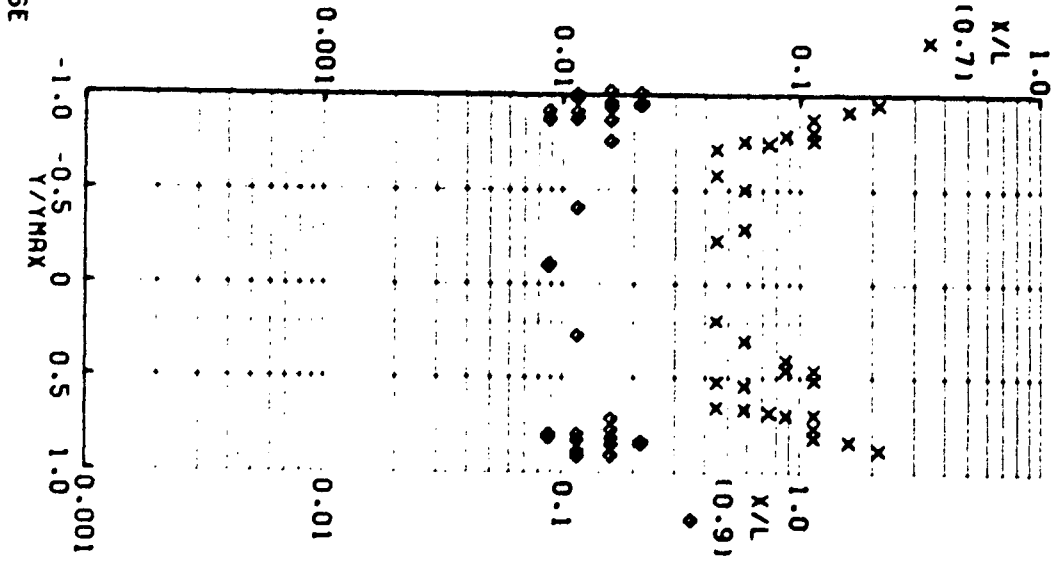
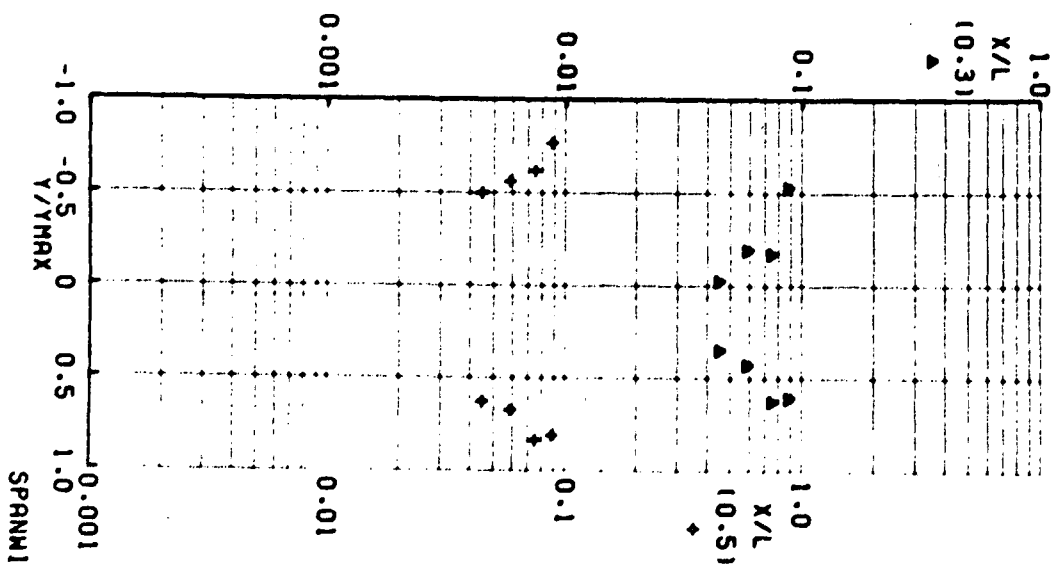
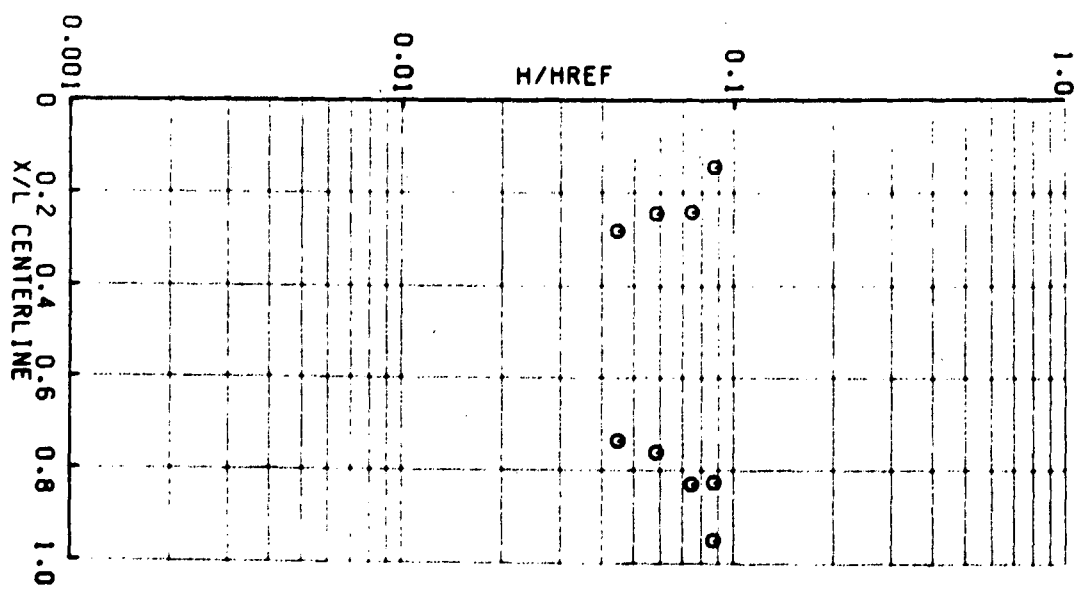


GROUP 368 PIC. NO. 1570 H/HREF 5.800E-02 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NRR-DW0

GROUP 368 PIC. NO. 1577 H/REF. 4.430E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NAR-DMO



GROUP 368 ALPHA (DEG) 20.0 HREF 5.757E-02 MACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 3.750E 06 CONF NAR-DND



9/21/71

AEDC(ARO,INC.) ARNOLD AFB, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9
V11162

GROUP 369 CONFIG 54 MODEL AAR-DW0 MACH NO 9.00 PO PSIA 858.0 TO DEG R 1341 ALPHA-MODEL 30.06 ALPHA-SECTOR -7.00 ALPHA-PREBEND -23.00 ROLL-MODEL 180.00 YAW .00

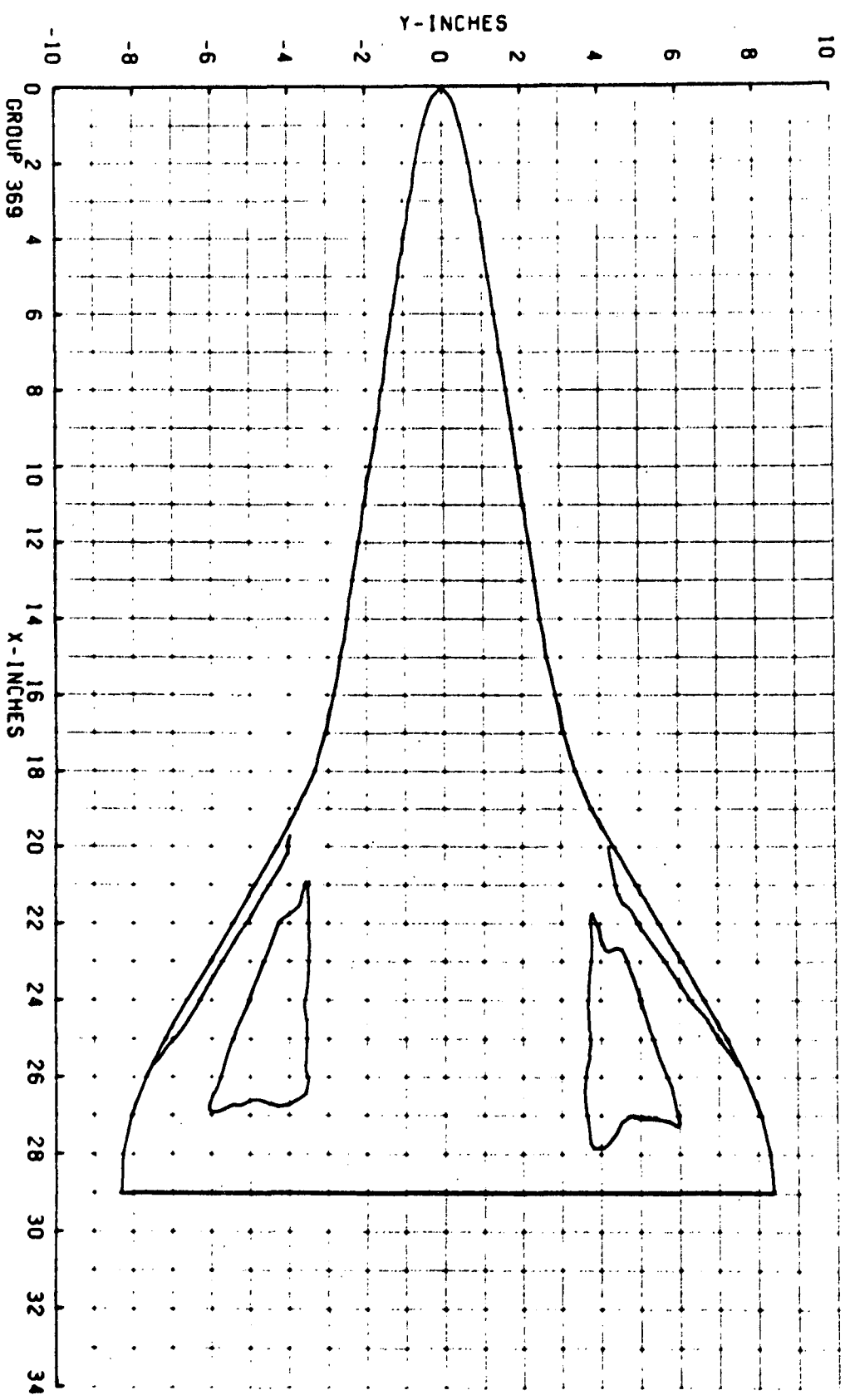
T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-I) (R=.013FT) (R=.013FT)
97.2 .088 3.961 3844 7.594E-05 7.824E-08 3.75E 06 5.749E-02 2.435E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCAK)

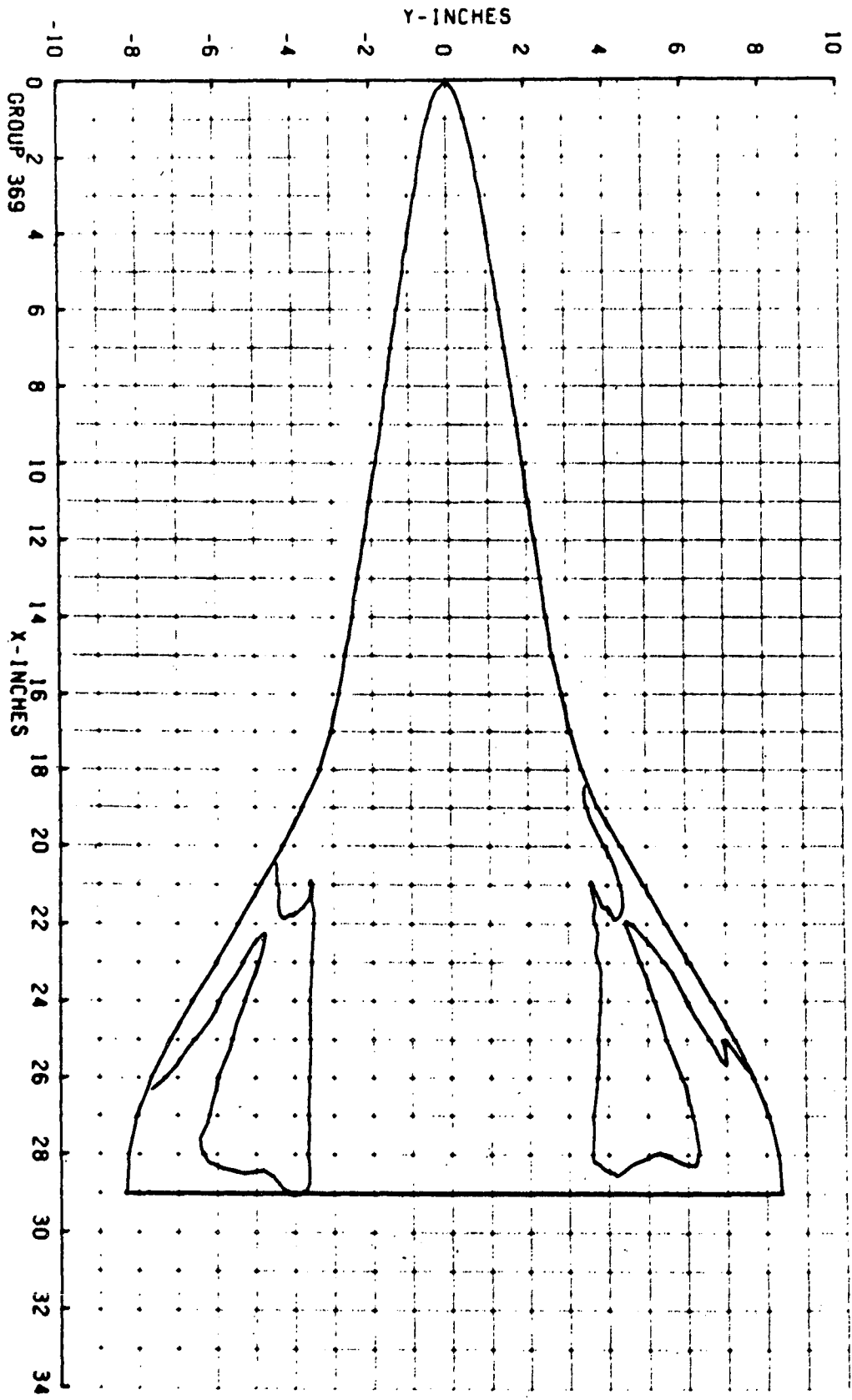
TCR(T) 225
SIC(TS) 225
POT(MI0) 225
AVERAGE TW = 77
-0.008(SQUARE ROOT DEL TIME) * 0.11

PLC NO	TYPE	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.5TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F
T 1587	(225)	3.20	2.11	1.70E-02	.2256	1.614E-02	1.840E-02	.3740	5.478E-03	0	0
T 1585	(225)	4.85	3.14	1.03E-02	.1794	1.284E-02	1.463E-02	.2544	4.354E-03	0	0
T 1592	(225)	5.85	4.74	8.12E-03	.1411	1.010E-02	1.152E-02	.2042	3.426E-03	0	0
T 1595	(225)	7.45	6.36	6.42E-03	.1185	8.483E-03	9.668E-03	.1621	2.877E-03	0	0
T 1600	(225)	10.15	9.04	5.45E-03	.0949	6.798E-03	7.747E-03	.1347	2.306E-03	0	0
T 1606	(225)	13.35	12.26	4.48E-03	.0778	5.576E-03	6.355E-03	.1104	1.890E-03	0	0
T 1610	(225)	15.45	14.36	4.02E-03	.0699	5.007E-03	5.706E-03	.0992	1.698E-03	0	0
T 1614	(225)	19.75	18.66	3.34E-03	.0580	4.158E-03	4.739E-03	.0823	1.410E-03	0	0

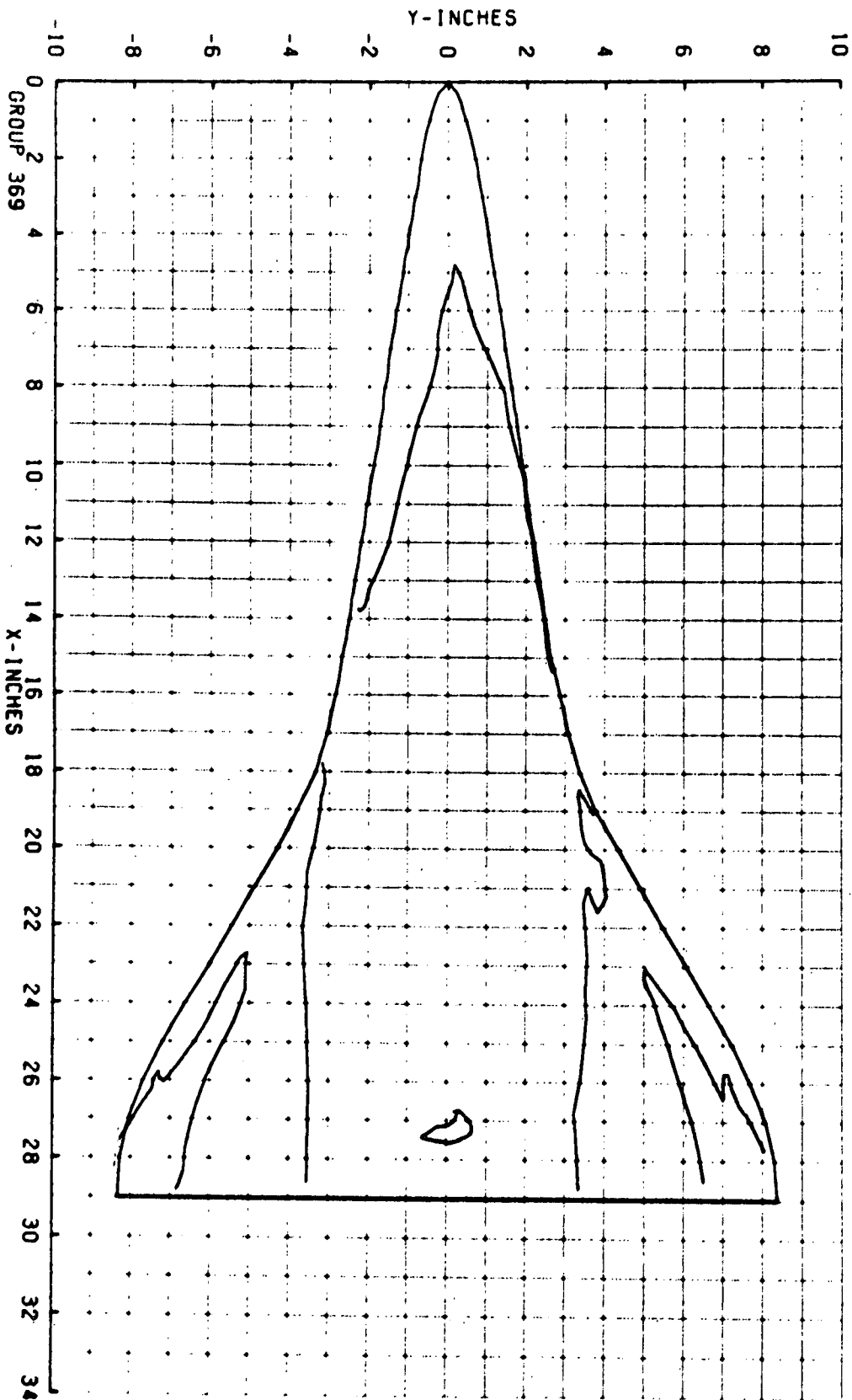
GROUP 369 PIC. NO. 1587 H/HREF 2.256E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.1 HREF 5.749E-02 RE/FT 3.750E 06 CONF NAR-DMO



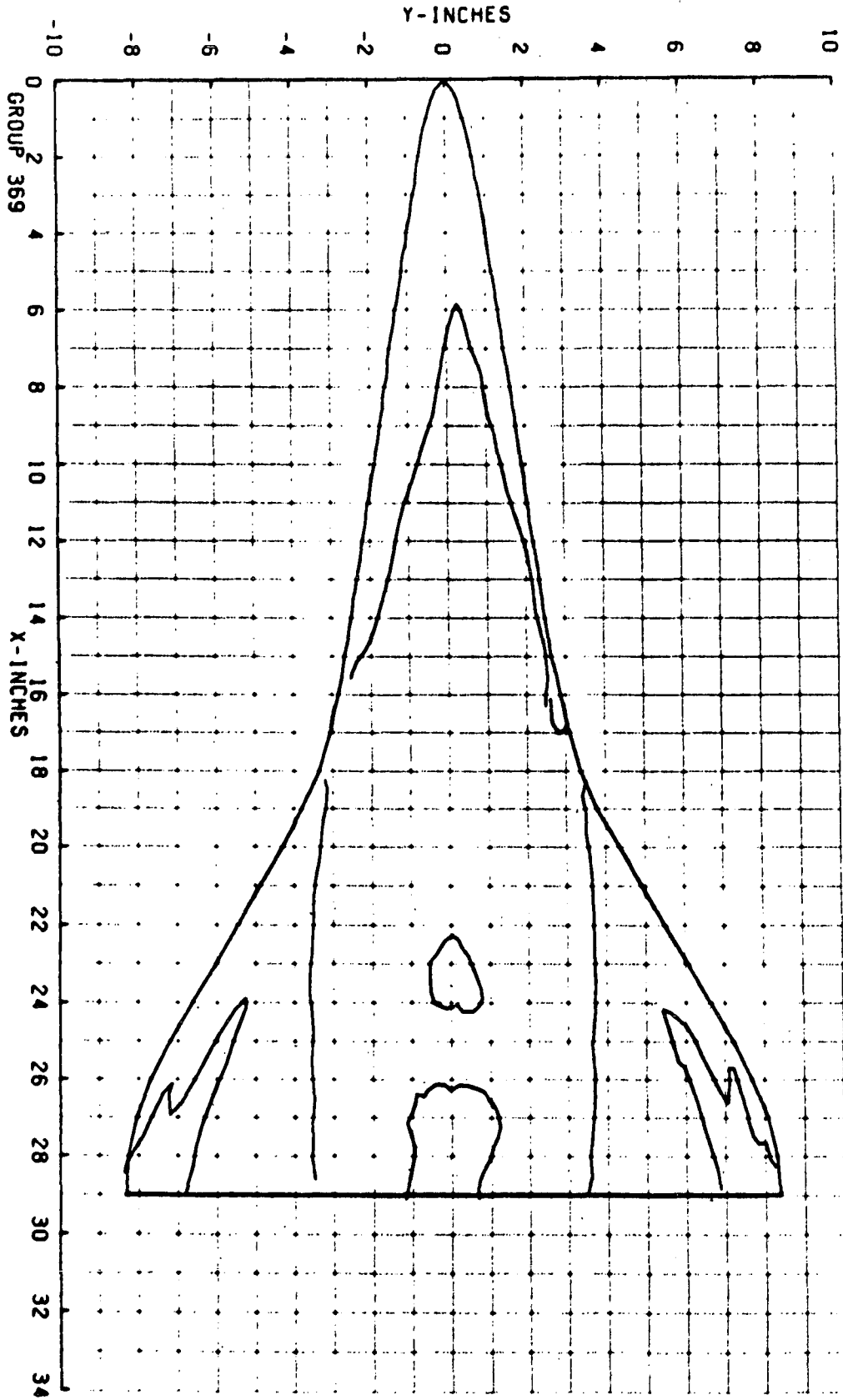
GROUP 369 PIC. NO. 1589 H/HREF 1.794E-01 MODEL SURFACE - BOTTOM
 HACH 8.00 ALPHA (DEG) 30.1 HREF 5.749E-02 RE/FT 3.750E 06 CONF NAR-DMD

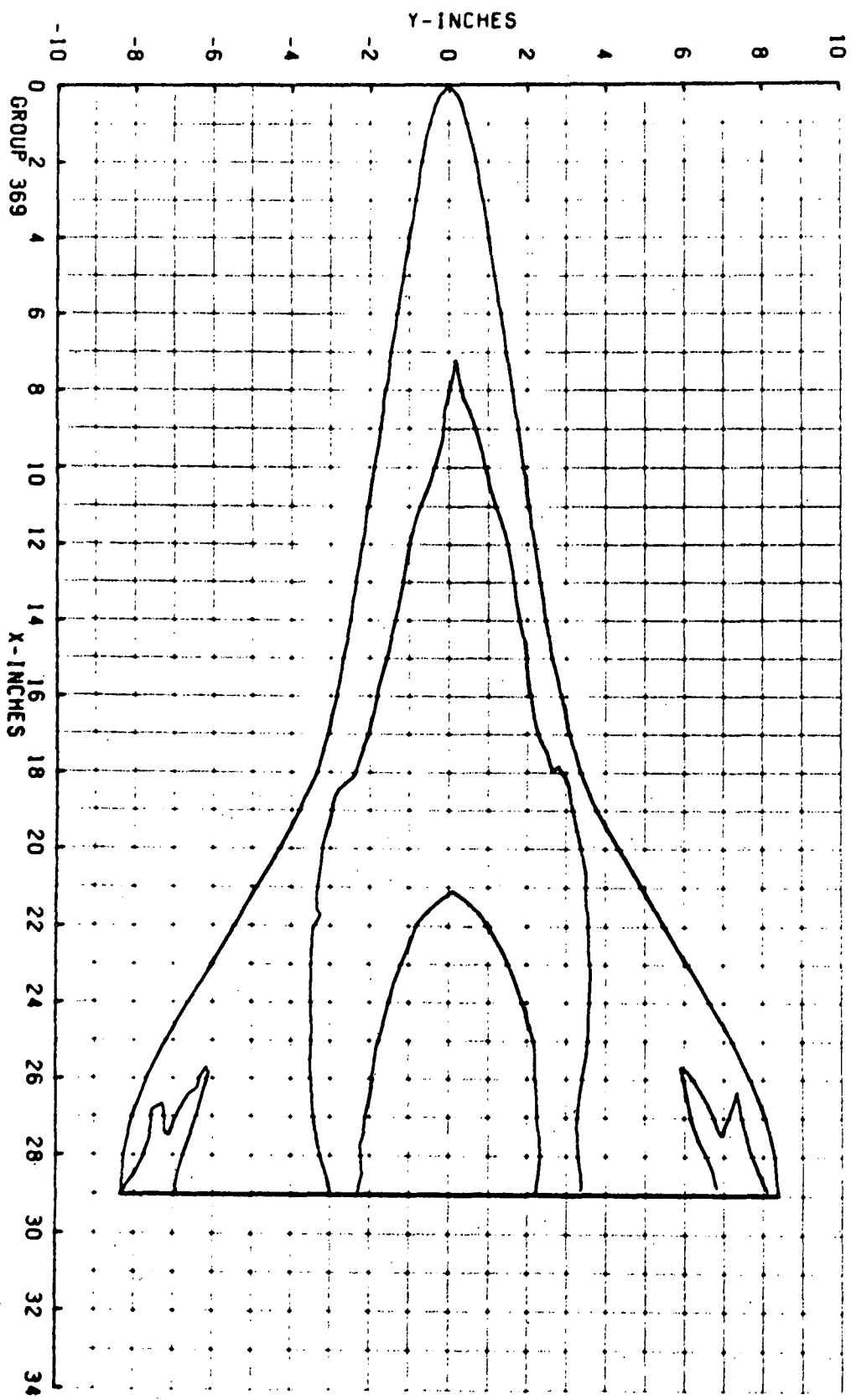


GROUP 369 PIC. NO. 1592 H/HREF 1.411E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.1 HREF 5.749E-02 RE/FT 3.750E 06 CONF NAR-DMO



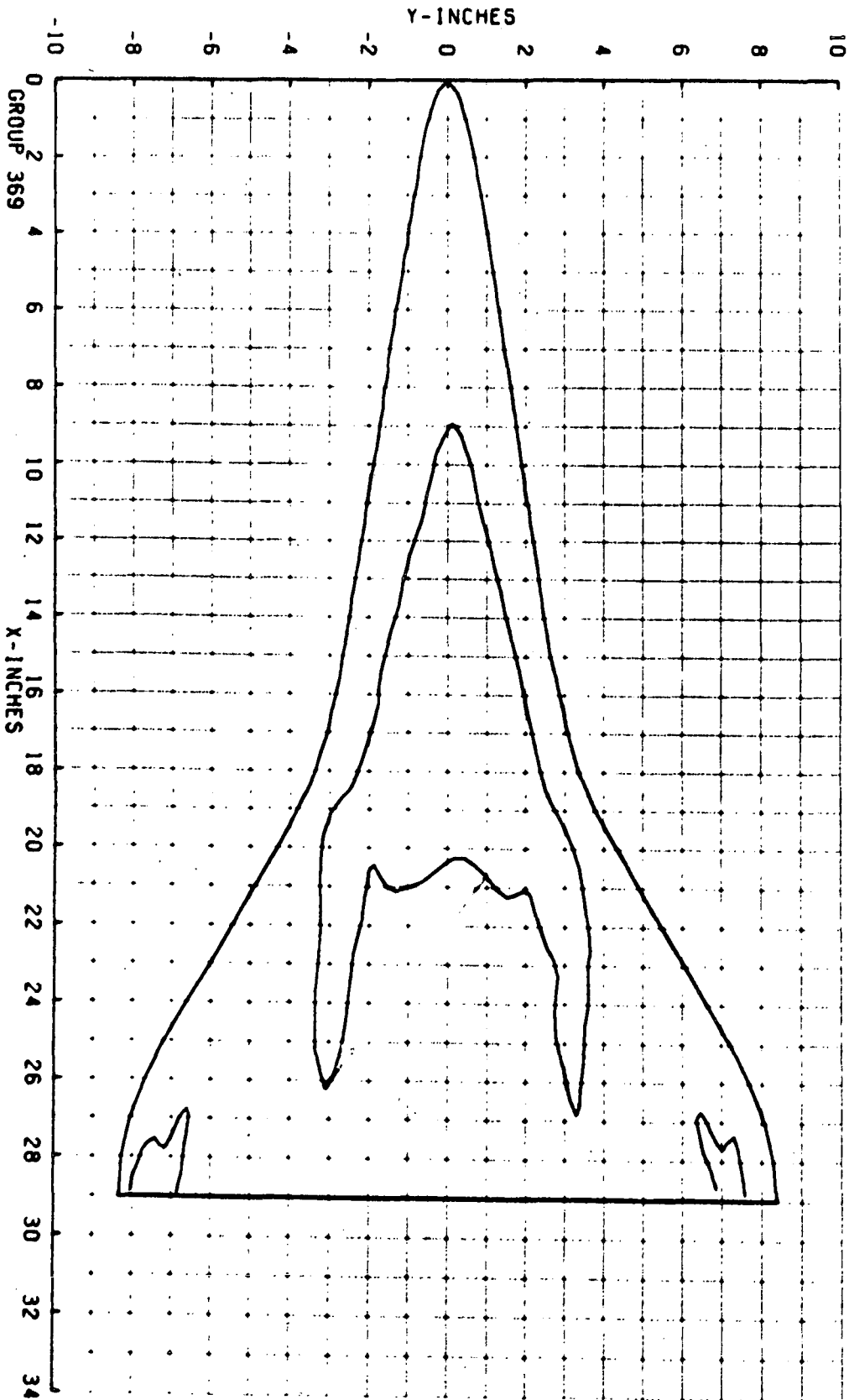
GROUP 369 PIC. NO. 1595 H/HREF 1.185E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.1 HREF 5.749E-02 RE/FT 3.750E 06 CONF NAR-DMO



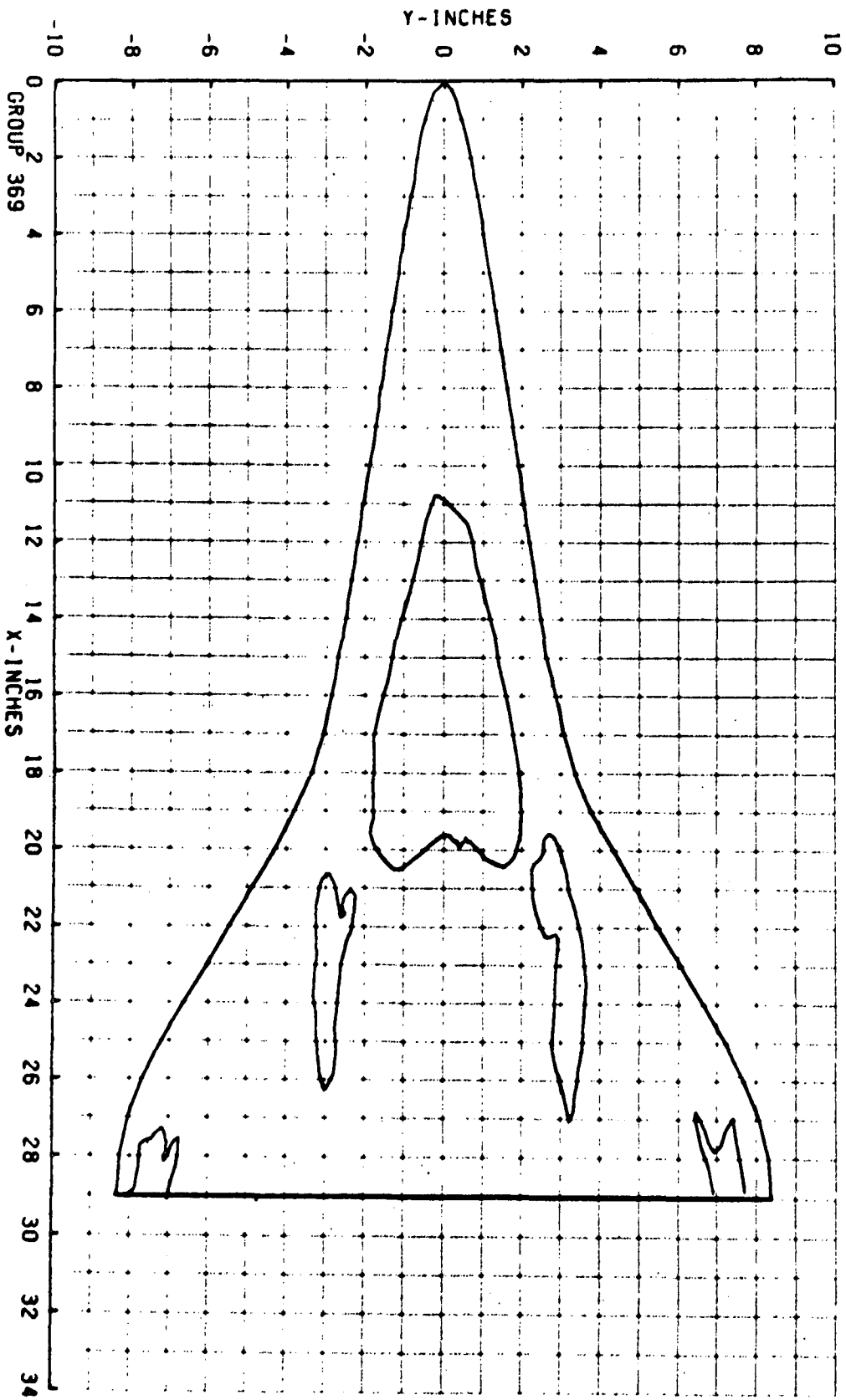


GROUP 369 PIC. NO. 1600 H/HREF 9.490E-02 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 30.1 HREF 5.749E-02 RE/FT 3.750E 06 CONF NAR-DMO

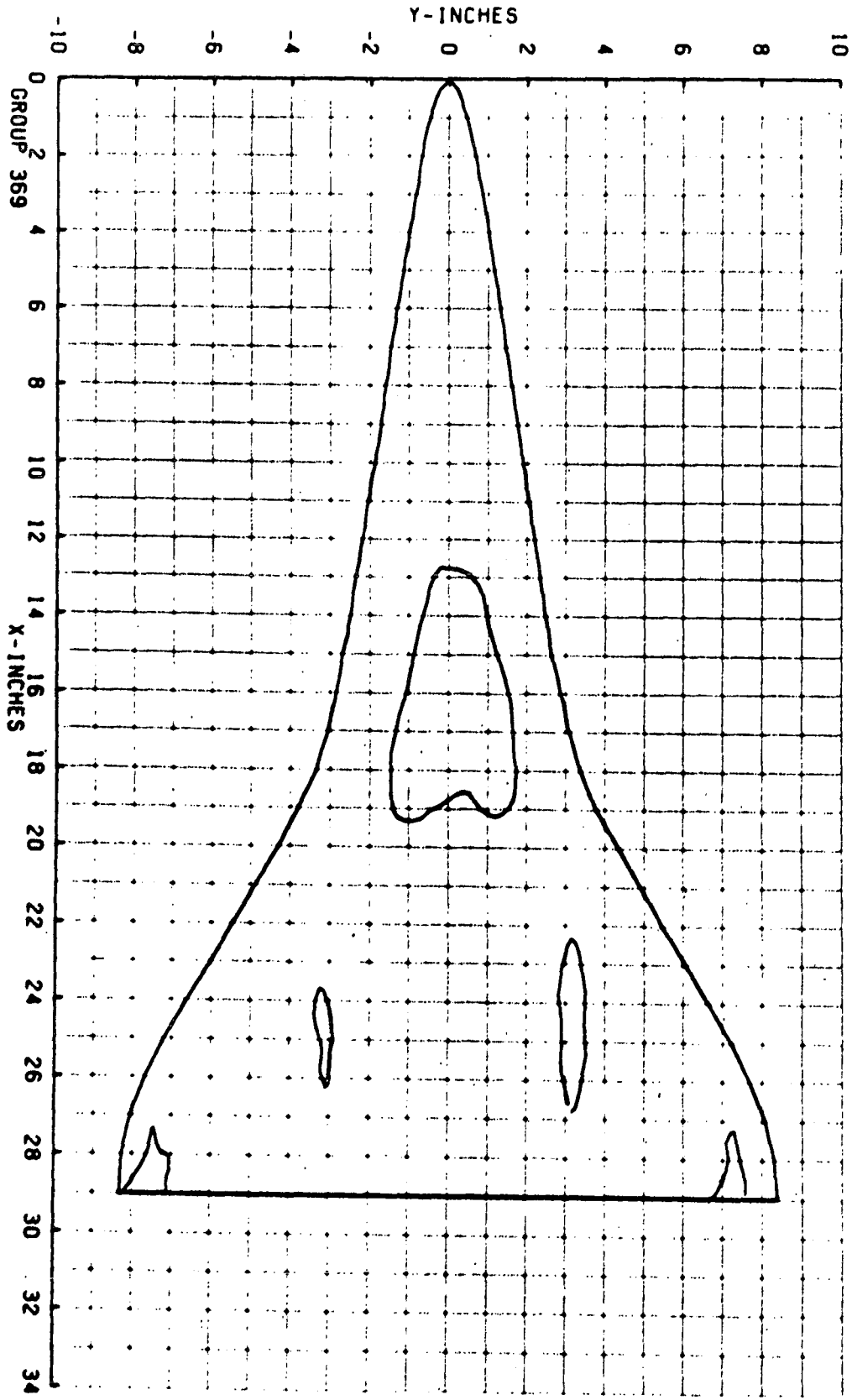
GROUP 369 PIC. NO. 1606 H/HREF 7.780E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.1 HREF 5.749E-02 RE/FT 3.750E 06 CONF NRR-DMO



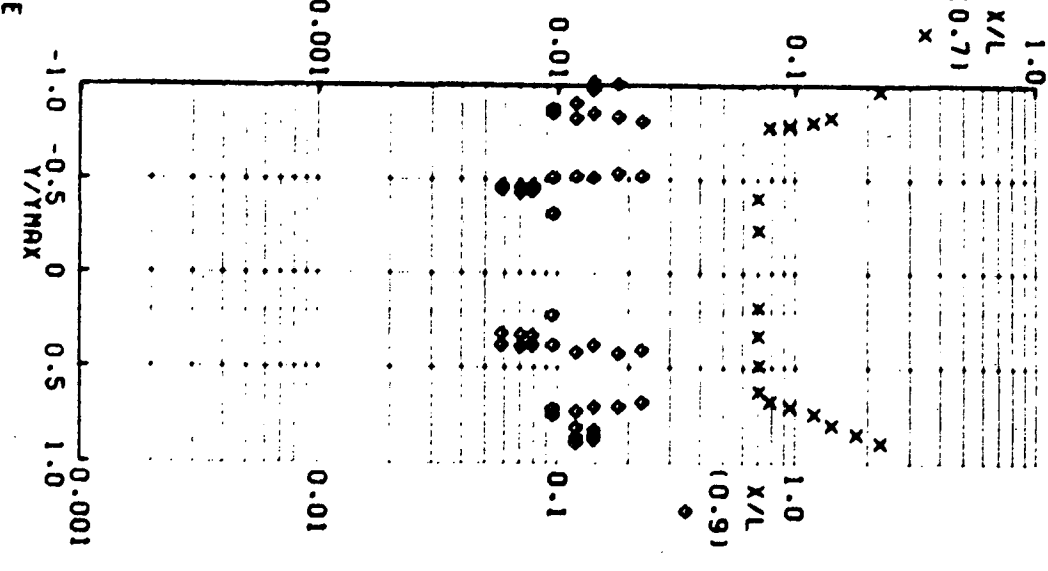
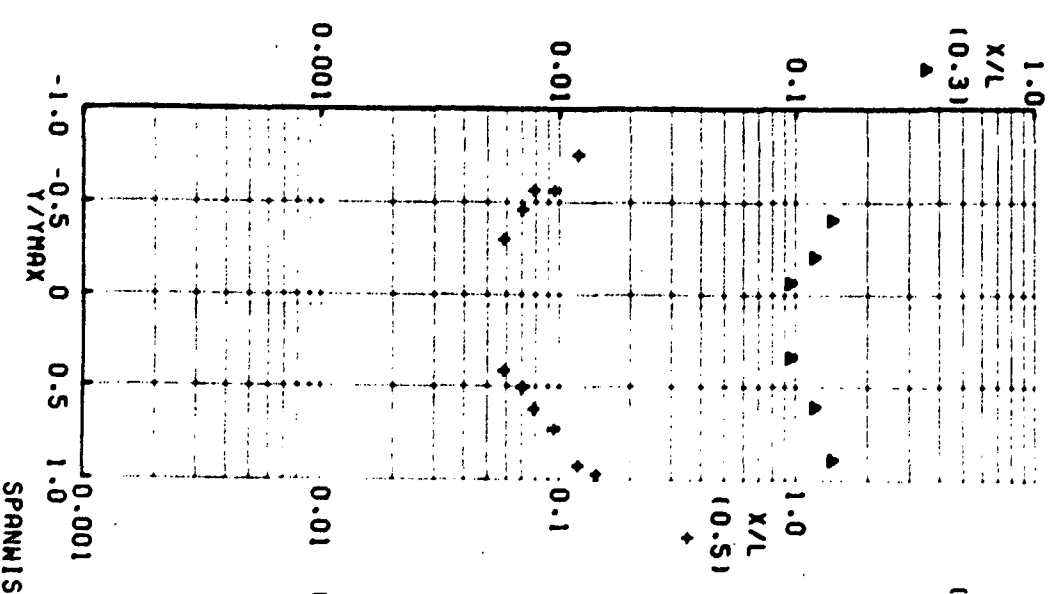
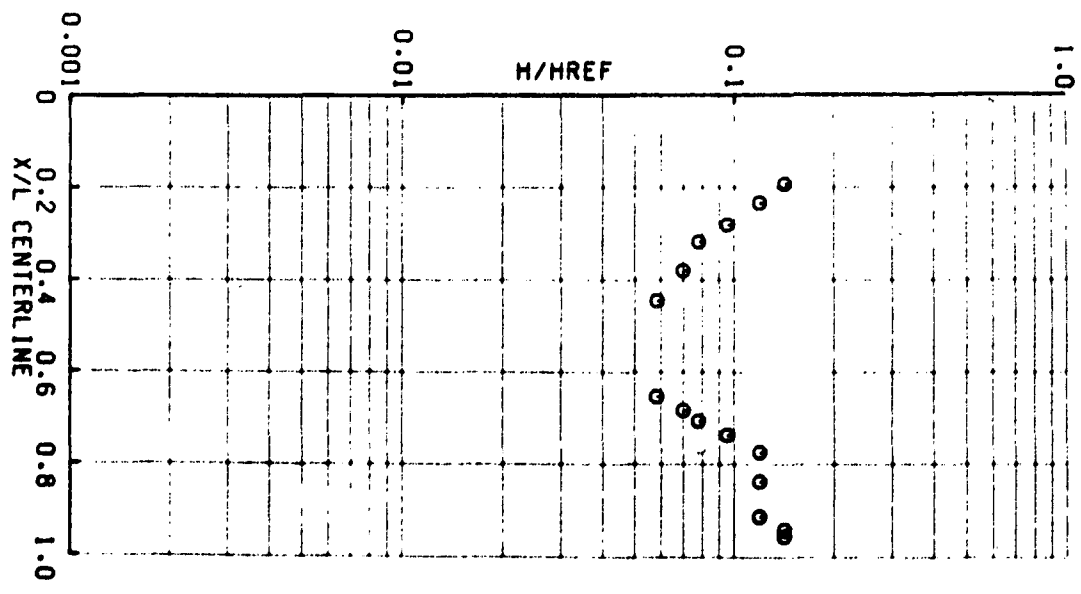
GROUP 369 PIC. NO. 1610 H/HREF 6.990E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.1 HREF 5.749E-02 RE/FT 3.750E 06 CONF NRR-DMD



GROUP 369 PIC. NO. 1614 H/HREF S.800E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.1 HREF S.749E-02 RE/FT 3.750E 06 CONF NRR-DMO



GROUP 369 ALPHA (DEG) 30.1 HREF 5.749E-02 MACH 8.00
 MODEL SURFACE - BOTTOM REF/FT 3.750E 06 CONF NRR-DMO



9/21/71

AFDCLARNO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP CONFIG MODEL MACM NO PN PSTIA TD DEG R ALPHA-PODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
371 54 AAR-090 9.00 862.5 1348 30.04 -7.04 -23.00 180.00 .0

T-1AF P-INP O-INP V-INP RHO-INP MU-INP RE/FT HREF STRF
(DEG R) (PSTIA) (PSTIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R=.013FT) (R=.013FT)
97.7 .088 3.958 3874 7.597E-05 7.865E-08 3.74E 06 5.766E-02 2.437E-02

PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCKX)

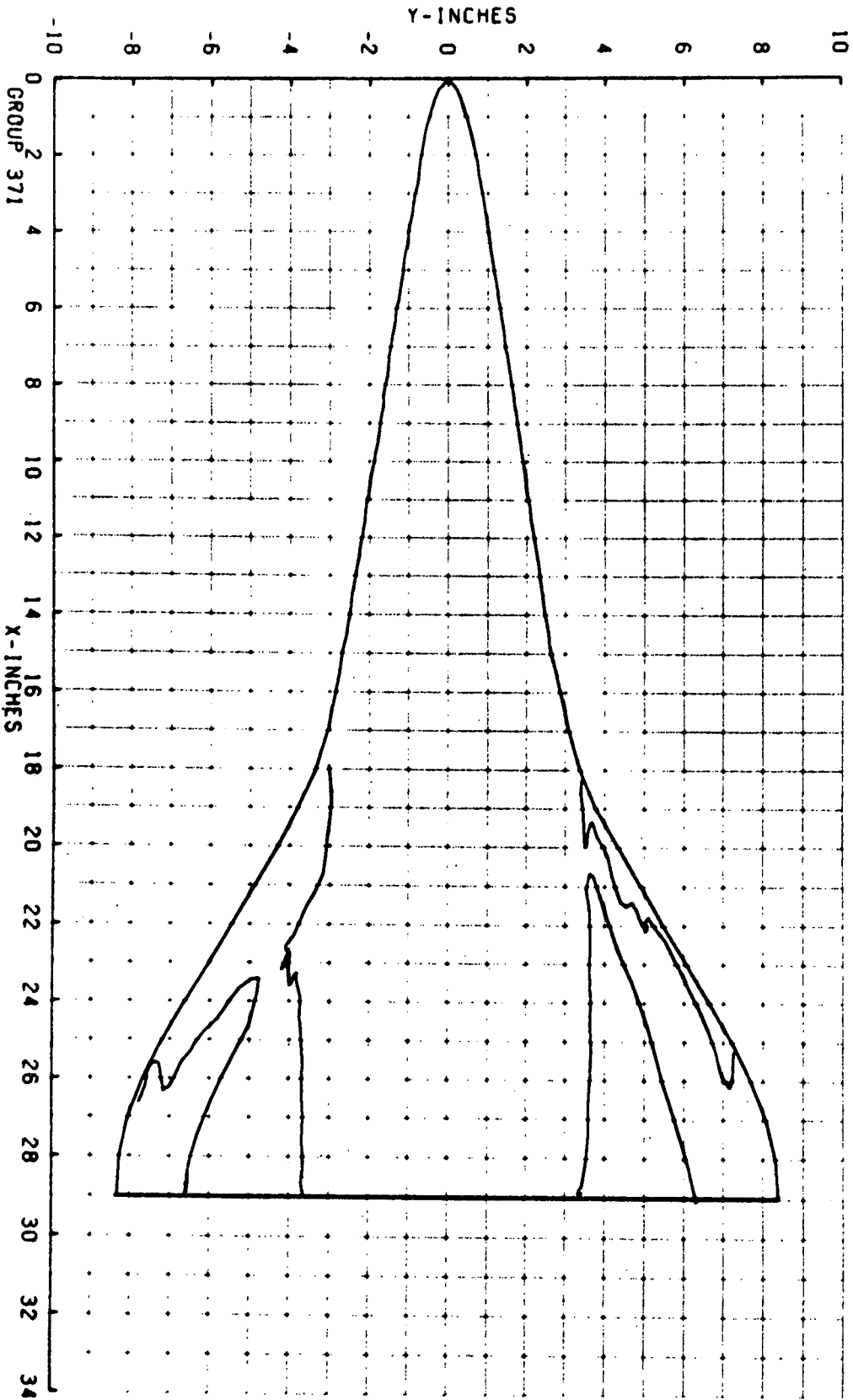
TOP(T) 250 AVERAGE TW = 76 -6.008(SQUARE ROOT DEL TIME) + 0.11

SIG(ES) 250

ROTCM(B) 250

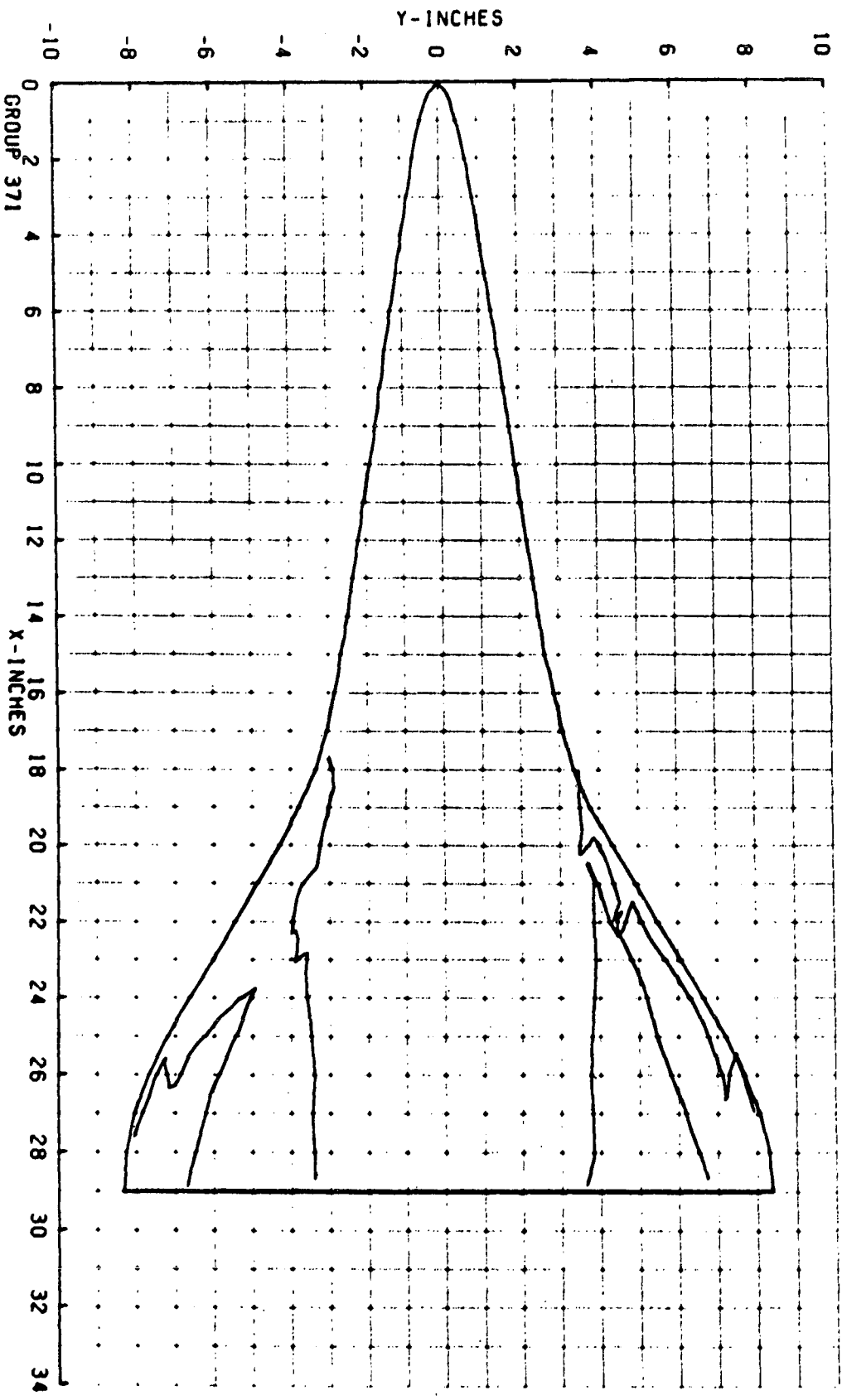
PTC MC	TYPE	DELTIME	H(TO)	H(TO)/HREF	V(.910)	H(.910)	H(.910)/HREF	H(.8510)	H(.8510)/HREF	ST(TO)	MODEL	TEMP F
T 165F (250)	3.75	2.64	1.34E-02	.2340	1.692E-02	1.939E-02	.3140	5.679E-03	0	0	0	0
T 165P (250)	4.80	3.71	1.11E-02	.1933	1.397E-02	1.601E-02	.2776	4.691E-03	0	0	0	0
T 166A (250)	8.05	6.96	7.44E-03	.1326	9.584E-03	1.098E-02	.1903	3.217E-03	0	0	0	0
T 166P (250)	10.15	9.04	6.48E-03	.1123	8.118E-03	9.299E-03	.1612	2.726E-03	0	0	0	0
T 167C (250)	11.25	10.14	6.02E-03	.1043	7.539E-03	8.636E-03	.1407	2.531E-03	0	0	0	0
T 167D (250)	12.85	11.74	5.44E-03	.0947	6.847E-03	7.843E-03	.1340	2.298E-03	0	0	0	0
T 167E (250)	15.00	13.91	4.48E-03	.0846	6.112E-03	7.401E-03	.1214	2.052E-03	0	0	0	0

GROUP 371 PIC. NO. 1656 H/REF 2.340E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NAR-DNO

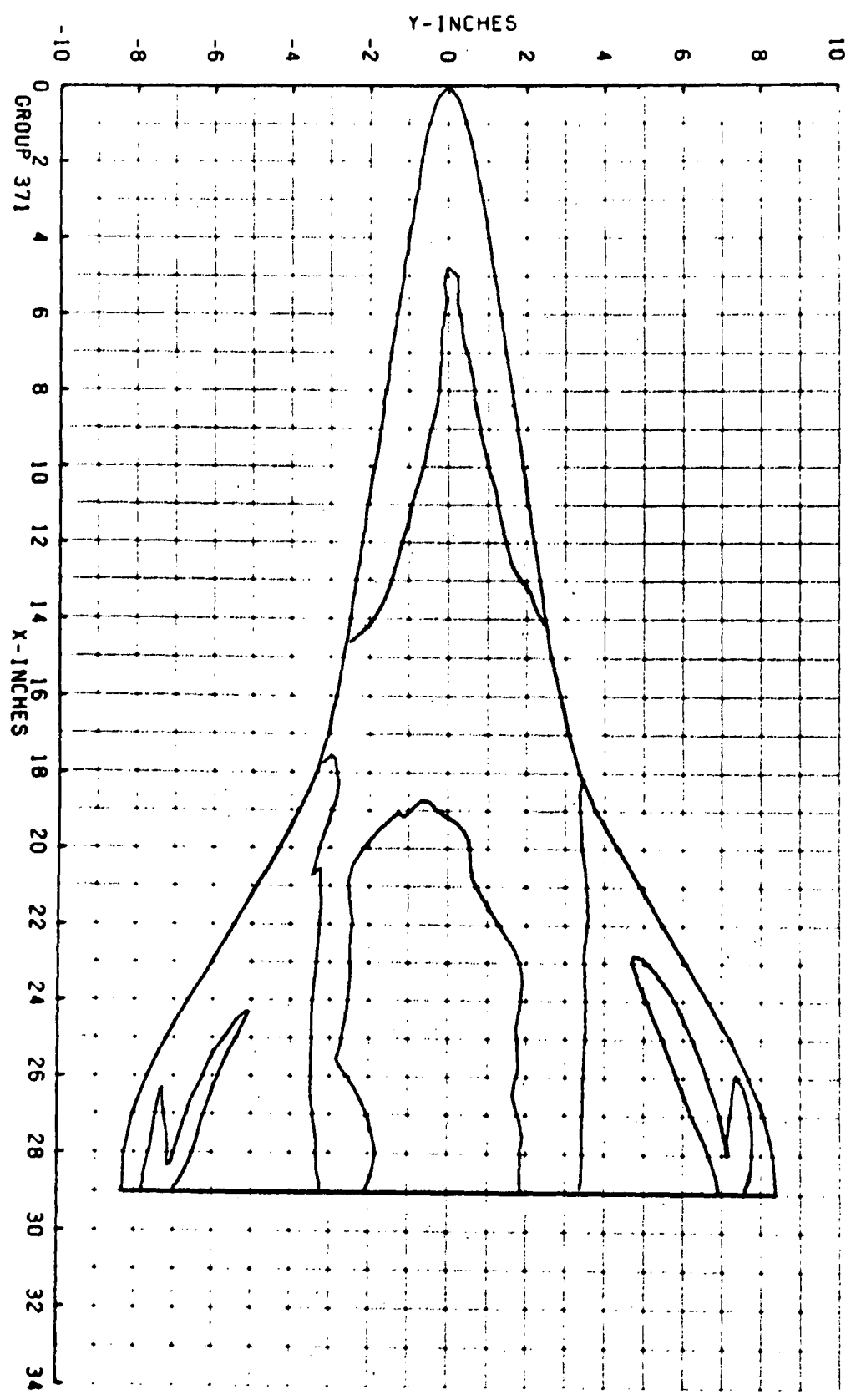


25

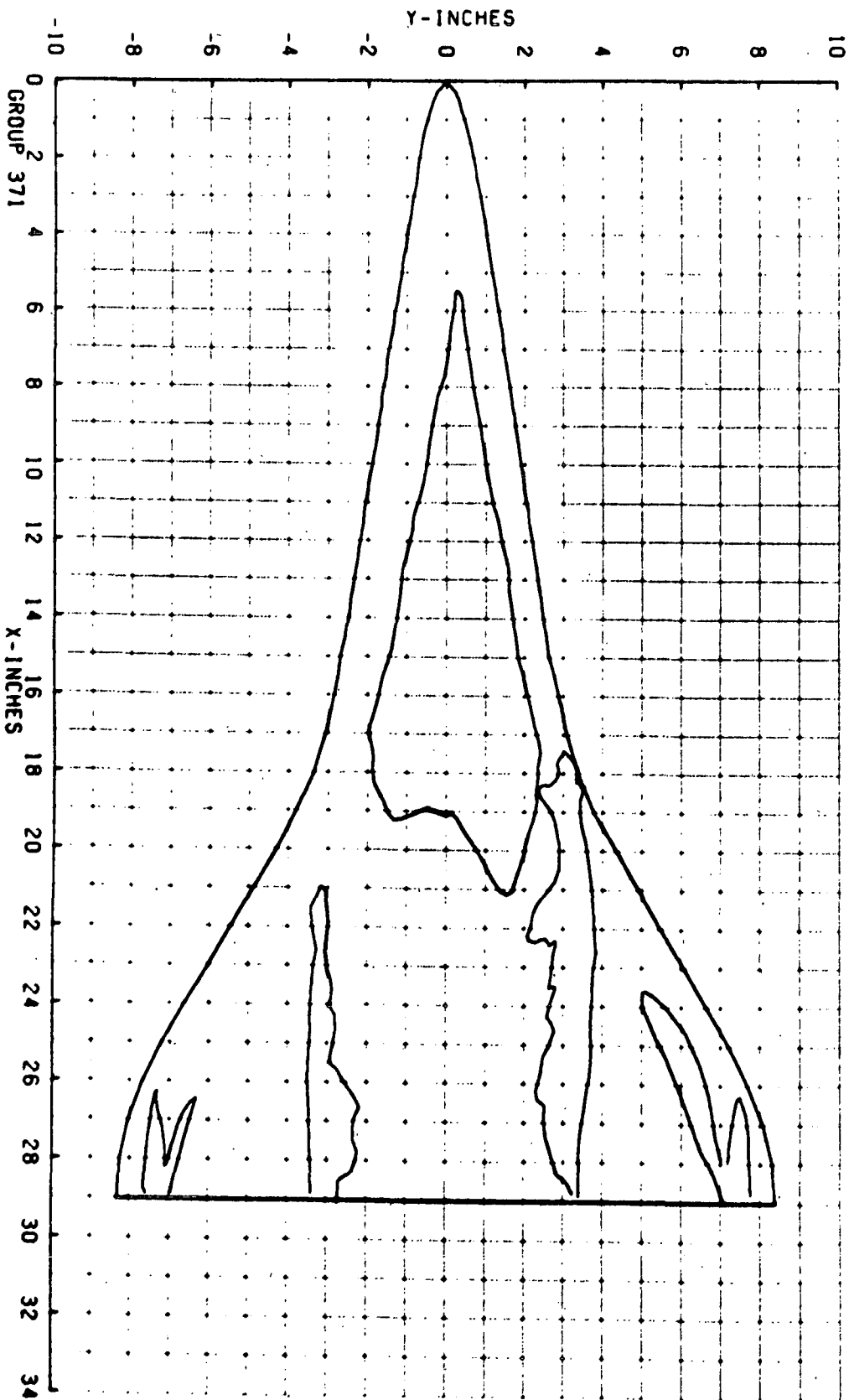
GROUP 371 PIC. NO. 1658 H/HREF 1.933E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NAR-DMD



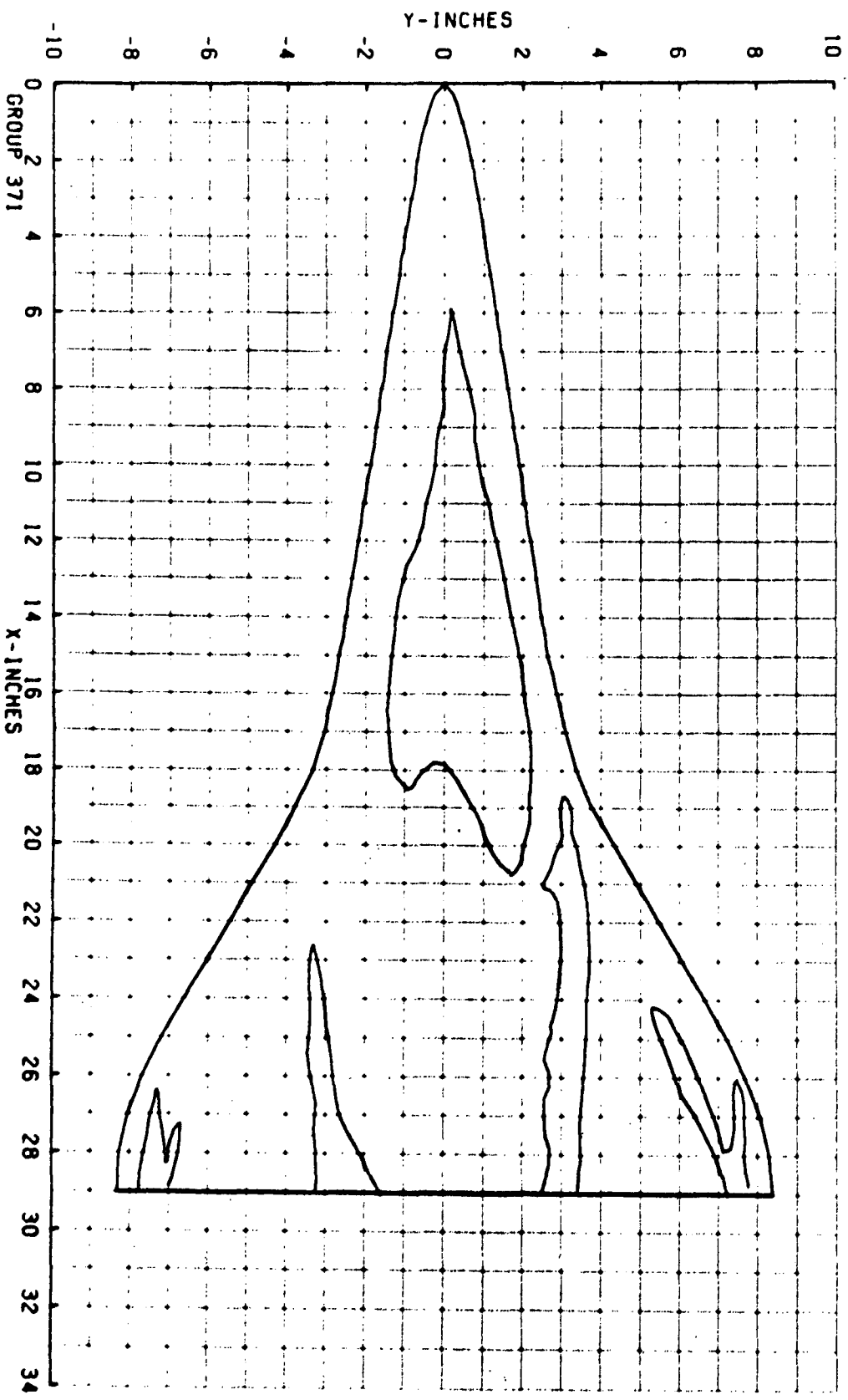
GROUP 371 PIC. NO. 1664 H/HREF 1.326E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NRR-DMD

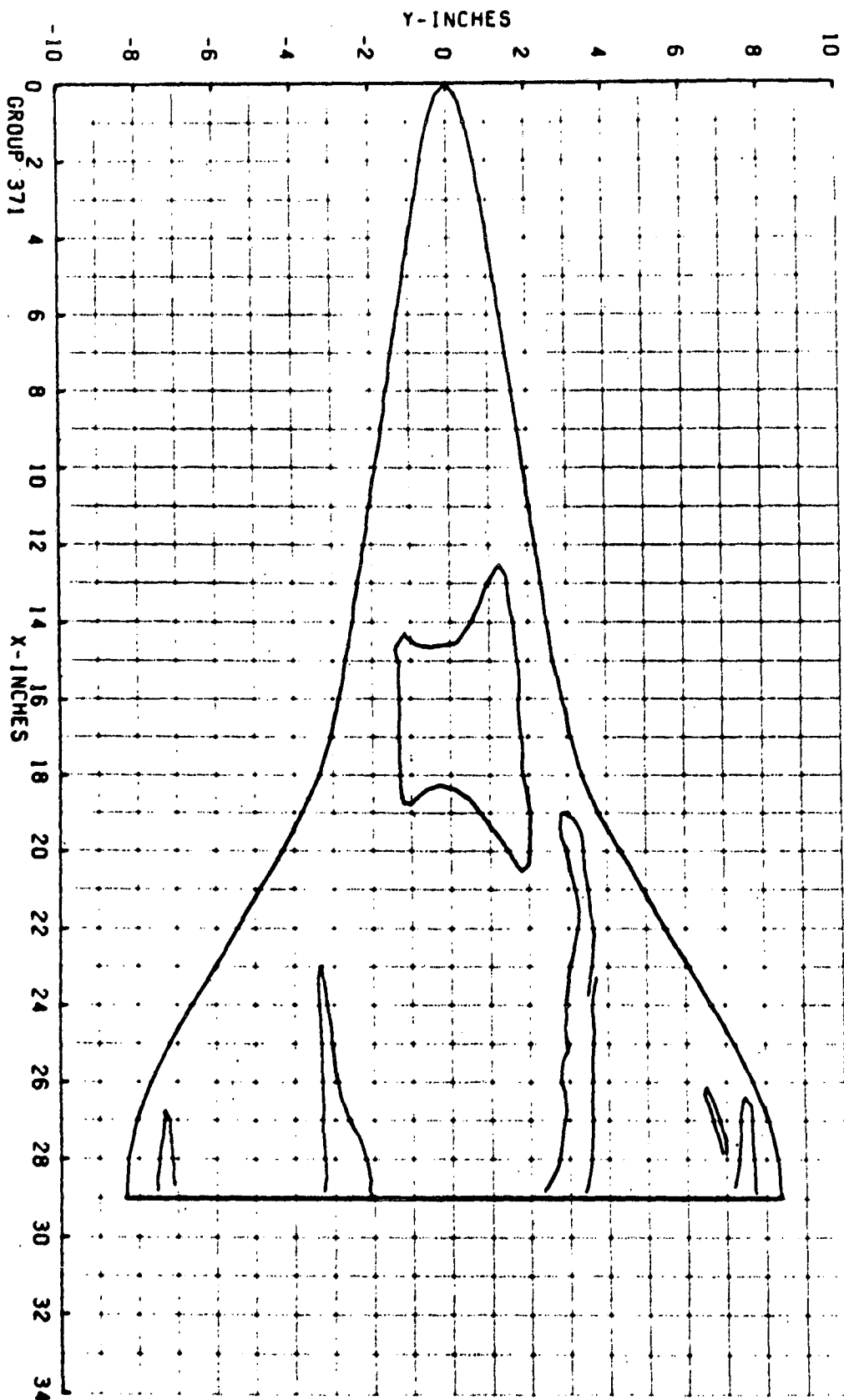


GROUP 371 PIC. NO. 1668 H/HREF 1.123E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF S.766E-02 RE/FT 3.740E 06 CONF NAR-DMD



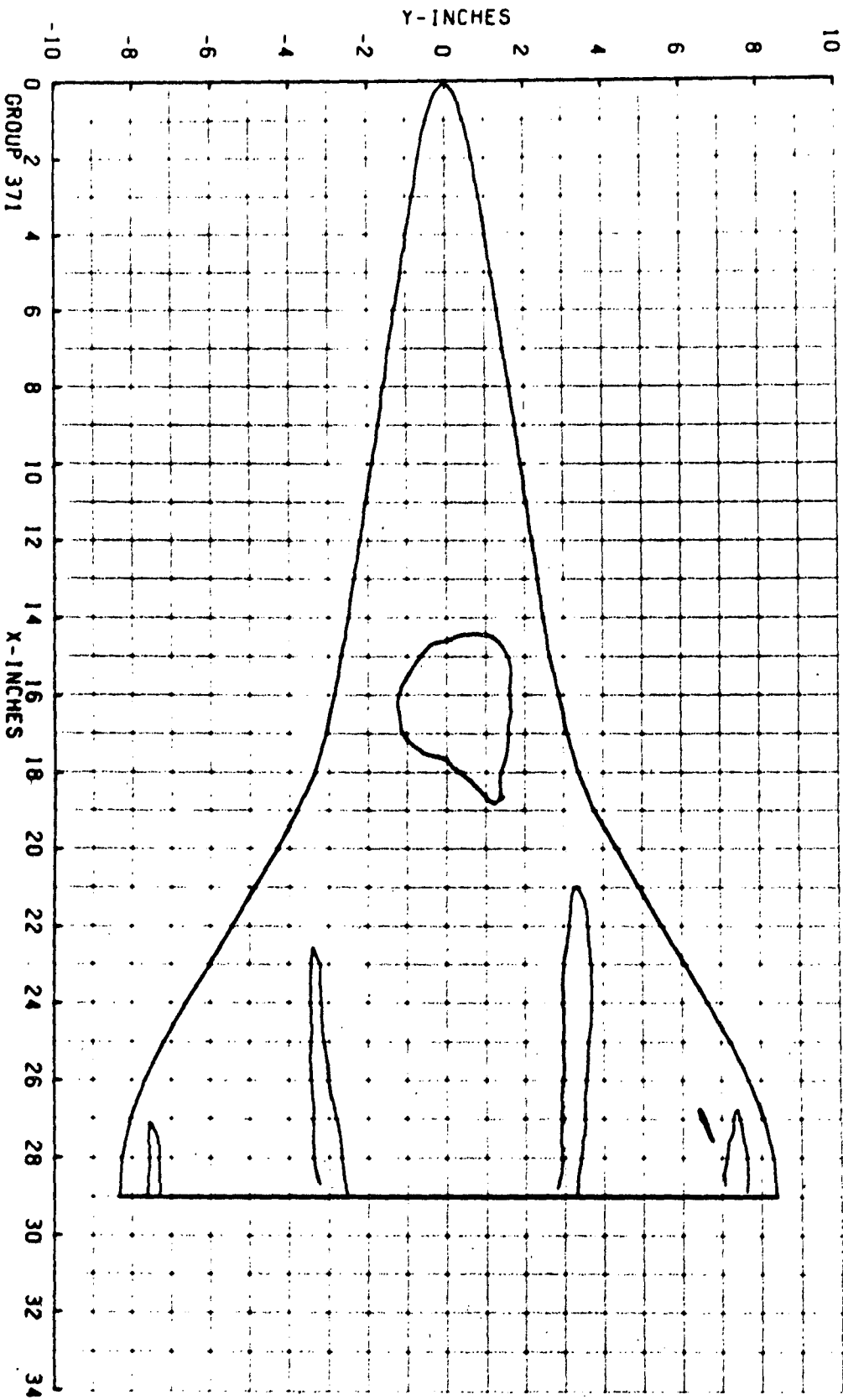
GROUP 371 PIC. NO. 1670 H/REF 1.043E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHR (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NRR-DWO



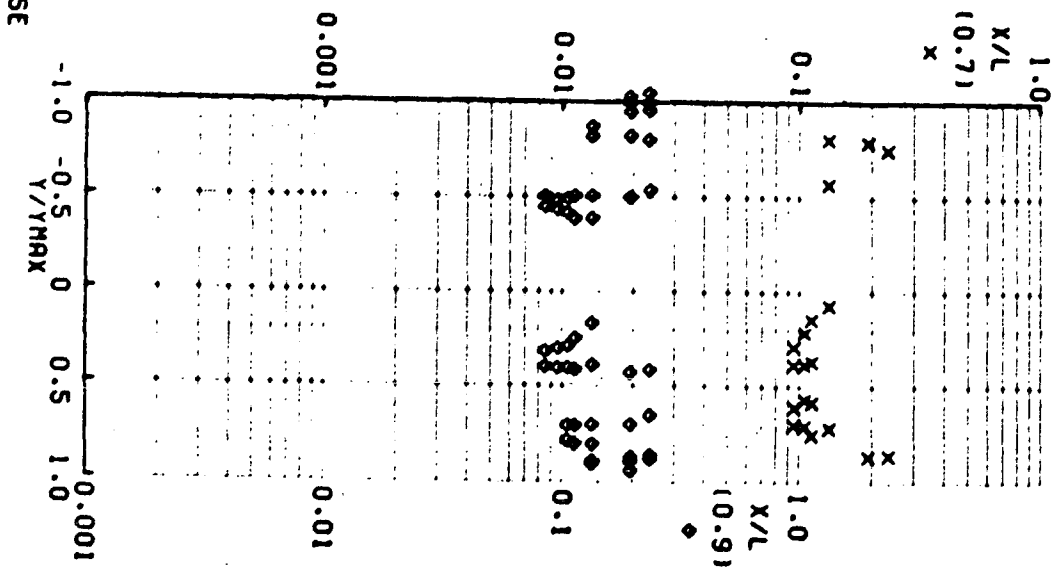
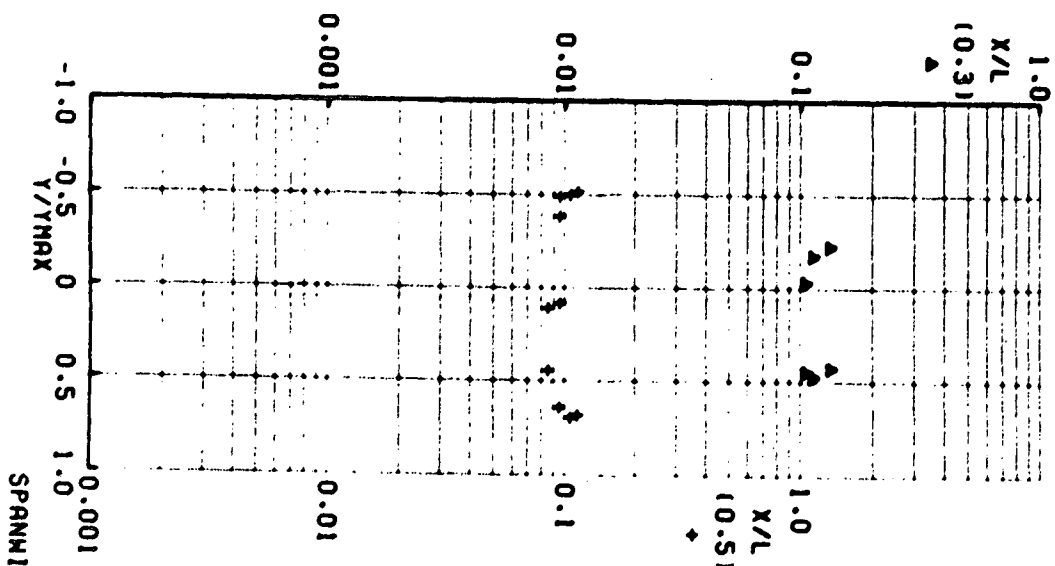
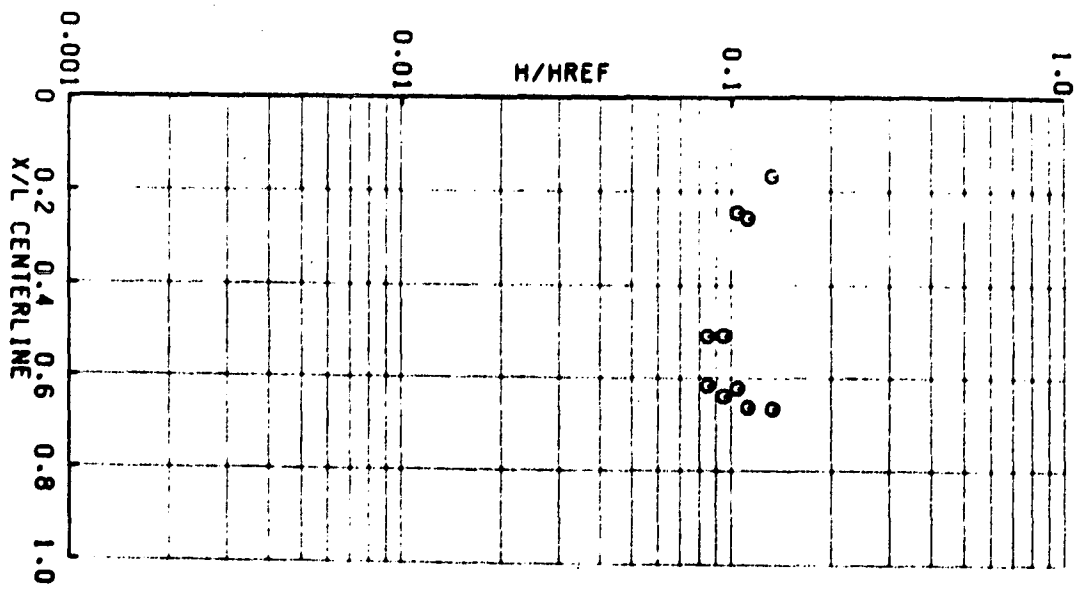


GROUP 371 PIC. NO. 1673 H/HREF 9.470E-02 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NAR-DWO

GROUP 371 PIC. NO. 1677 H/HREF 8.460E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NAR-DMO



GROUP 371 ALPHA (DEG) 30.0 HREF 5.766E-02 MACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 3.740E 06 CONF NAR-DMD



9/21/77

AFDC(ARJ,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH SUPERSONIC TUNNEL R
V11162

GROUP 377 CONFIG 54 MODEL NAR-DHO MACH NO 9.00 PO PSIA 860.5 TO DEG R 1350 ALPHA-MODEL 40.09 ALPHA-SECTOR 9.91 ALPHA-PREBEND -50.00 ROLL-MODEL 180.00 YAW .0

T-1NF P-1NF 0-1NF V-1NF RHO-1NF MU-1NF RE/FT HREF SINEF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (R=.013FT)
97.9 .NRP 3.949 3A78 7.556E-05 7.879E-08 7.72E 06 5.761E-02 2.442E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODICXK)

TOP(1) 300
SIDE(S) 112 AVERAGE TW = 80 -0.008(SQUARE ROOT OF TIME) * 0.11
PITCH(MID) 113

PIC NO	TIME	NETTIME	H(TO)	H(TO)/HREF	H(.91TO)	H(.91TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F
T 1866 (300)	4.30	3.21	1.45E-02	.2844	2.106E-02	.3655	2.445E-02	.4243	6.947E-02	0	0
T 1863 (300)	5.90	4.81	1.30E-02	.2261	1.662E-02	.2895	1.930E-02	.3349	5.484E-03	0	0
T 1868 (300)	8.55	7.46	9.97E-03	.1730	1.272E-02	.2208	1.477E-02	.2544	4.200E-03	0	0
T 1873 (300)	11.25	10.14	8.19E-03	.1421	1.045E-02	.1813	1.213E-02	.2145	3.450E-03	0	0
T 1877 (300)	13.40	12.31	7.21E-03	.1252	9.204E-03	.1597	1.069E-02	.1454	3.039E-03	0	0
T 1881 (300)	15.50	14.41	6.44E-03	.1124	8.268E-03	.1435	9.598E-03	.1646	2.731E-03	0	0
T 1883 (300)	17.55	16.46	5.99E-03	.1024	7.533E-03	.1307	8.745E-03	.1517	2.487E-03	0	0
T 1886 (300)	20.75	19.66	5.19E-03	.0901	6.625E-03	.1149	7.690E-03	.1374	2.187E-03	0	0
T 1890 (300)	25.05	23.96	4.47E-03	.0776	5.704E-03	.0990	6.621E-03	.1149	1.883E-03	0	0

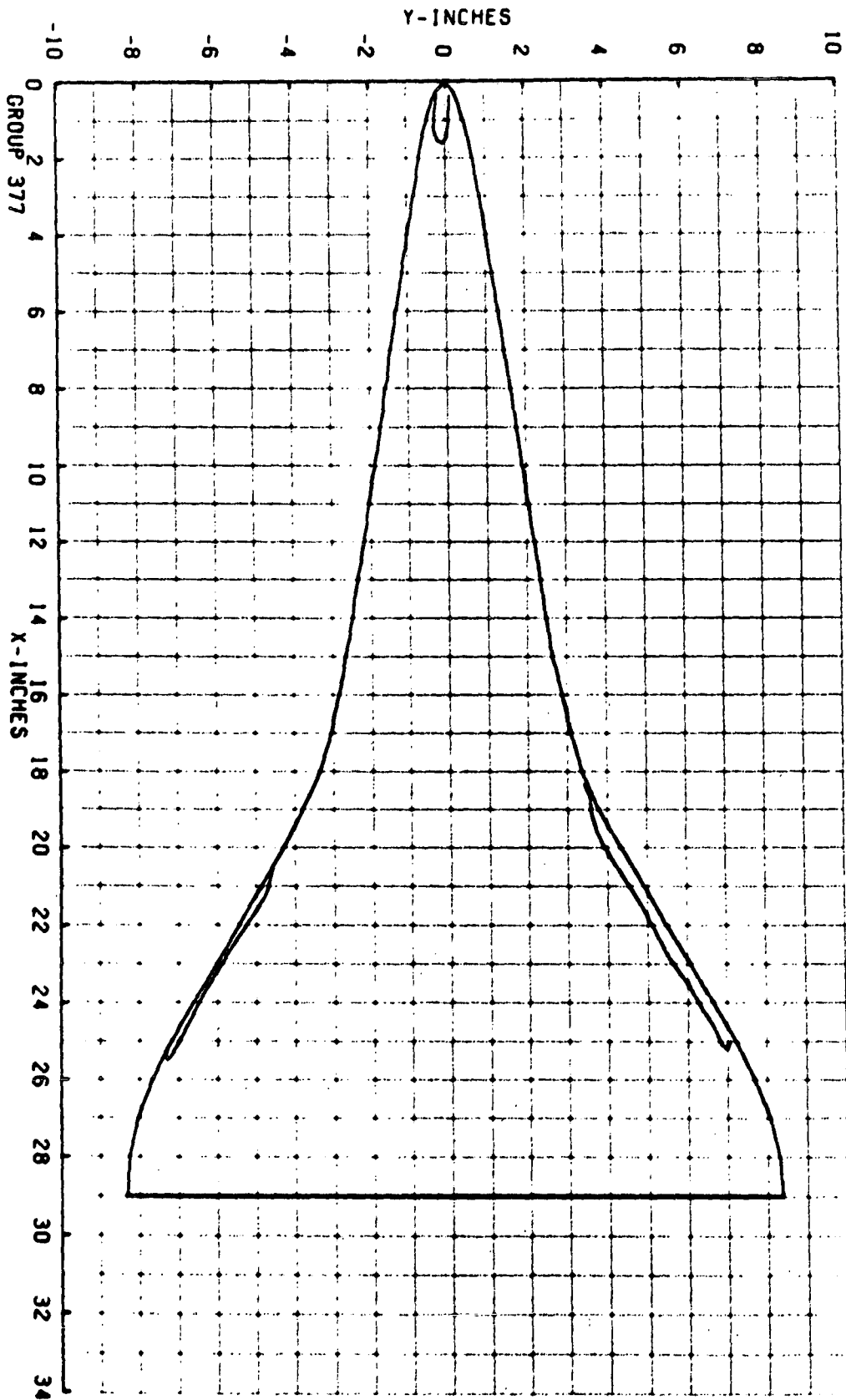
GROUP 377
MACH 8.00

PIC. NO. 1860
ALPHA (DEG) 40.1

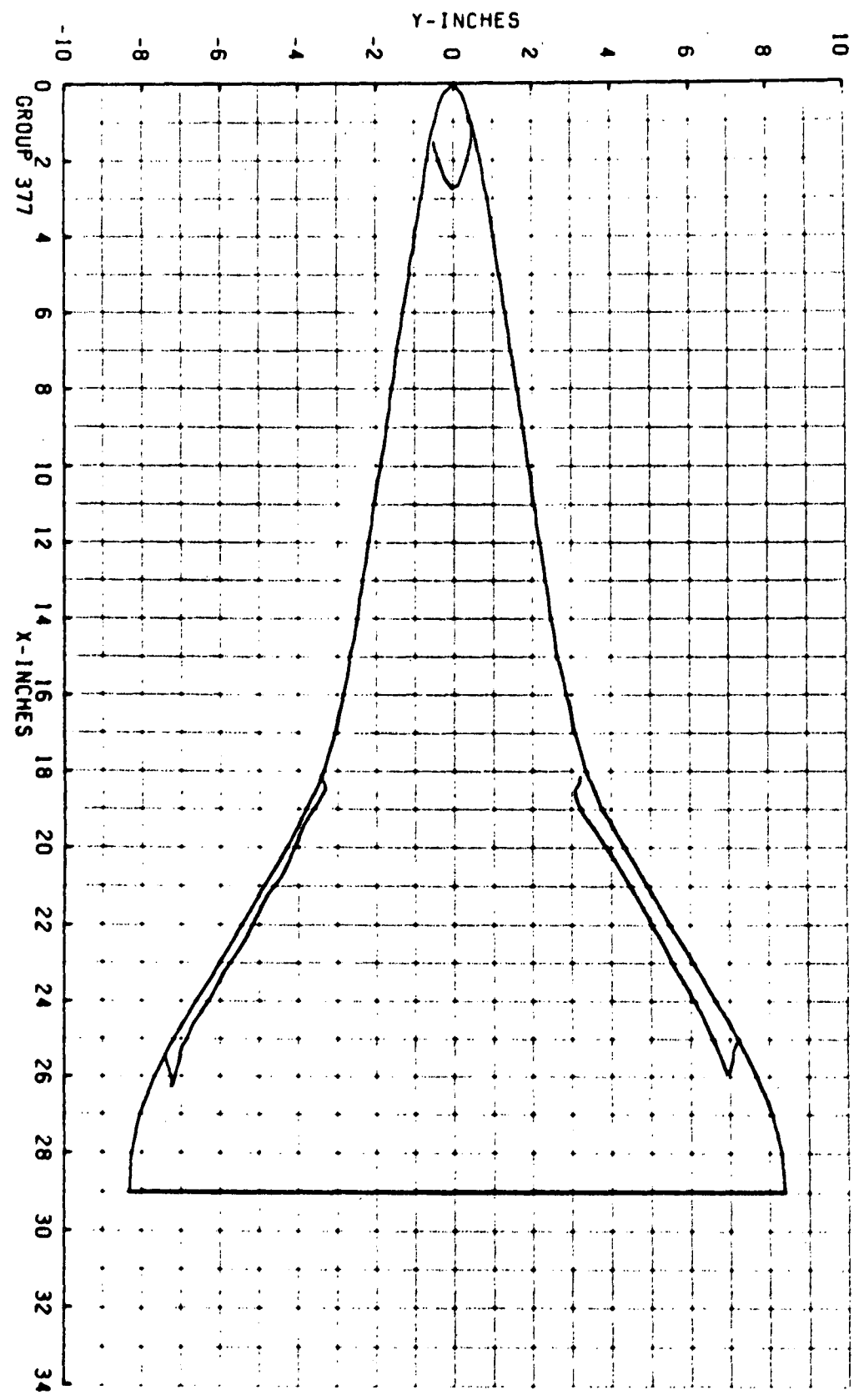
H/HREF 2.864E-01
HREF 5.761E-02

MODEL SURFACE - BOTTOM
RE/FT 3.720E 06

CONF NAR-DWO



GROUP 377 PIC. NO. 1863 H/HREF 2.261E-01 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NAR-DW0



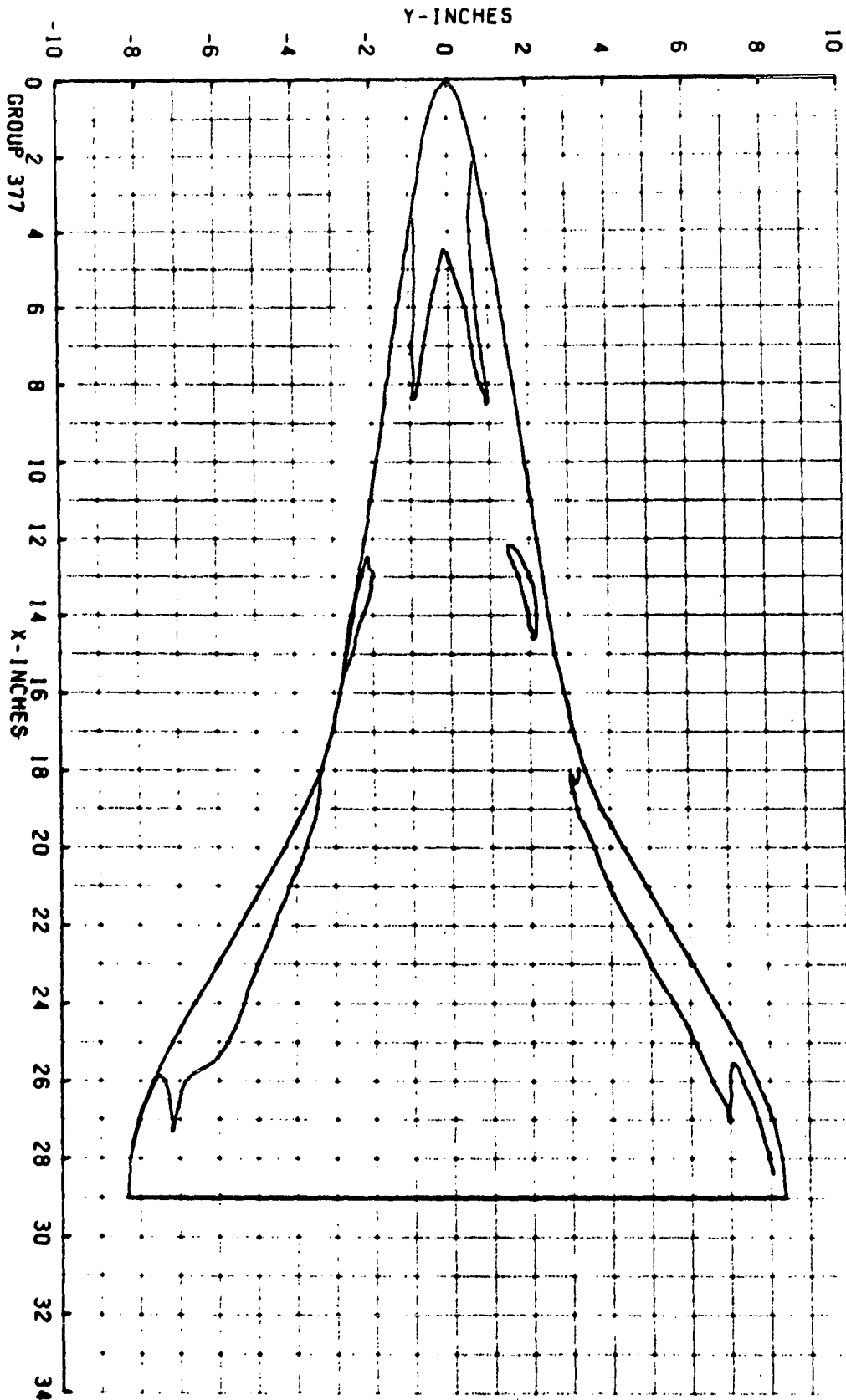
GROUP 377
MACH 8.00

PIC. NO. 1868
ALPHA (DEG) 40.1

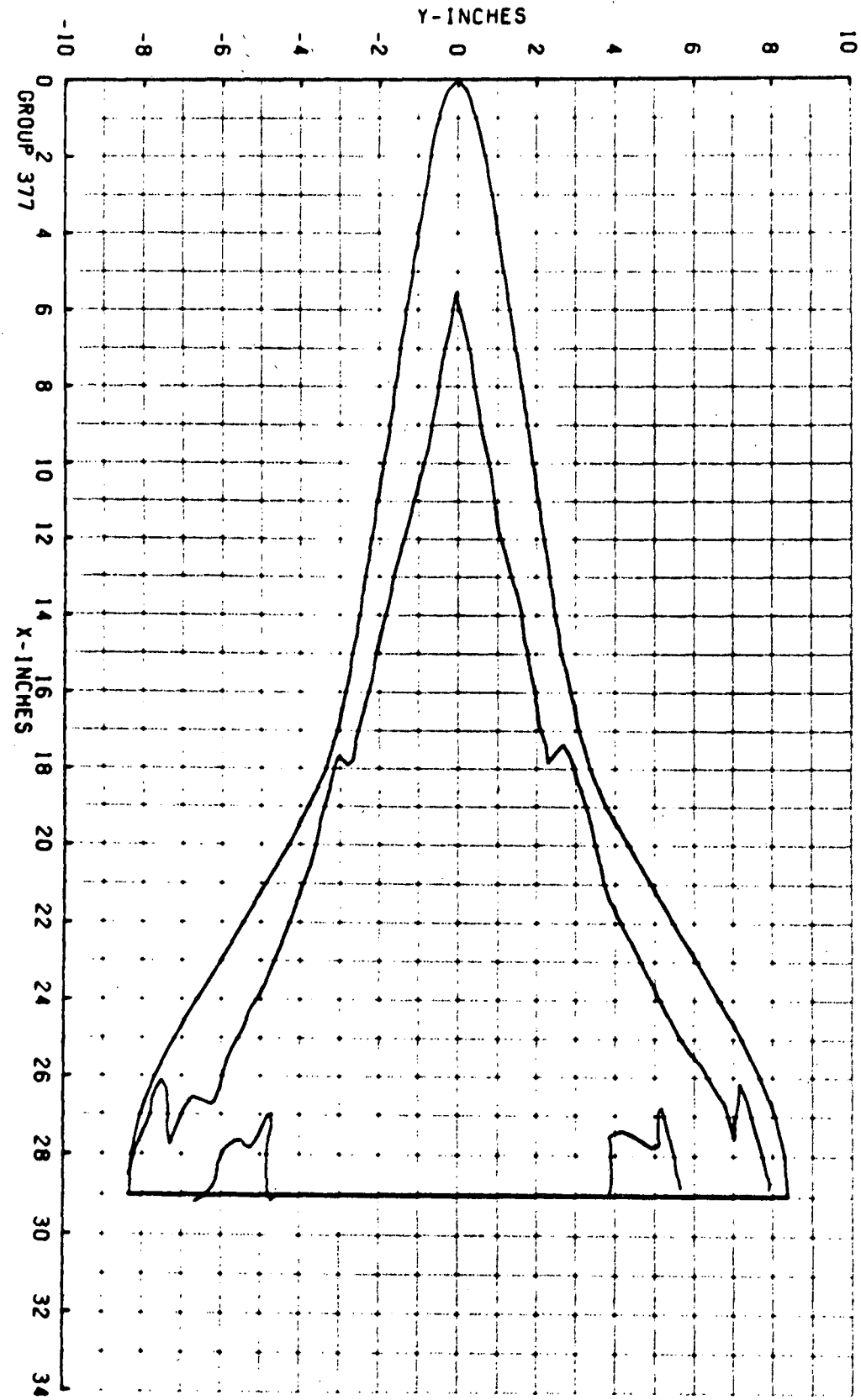
H/HREF 1.730E-01
HREF 5.761E-02

MODEL SURFACE - BOTTOM
RE/FT 3.720E 06

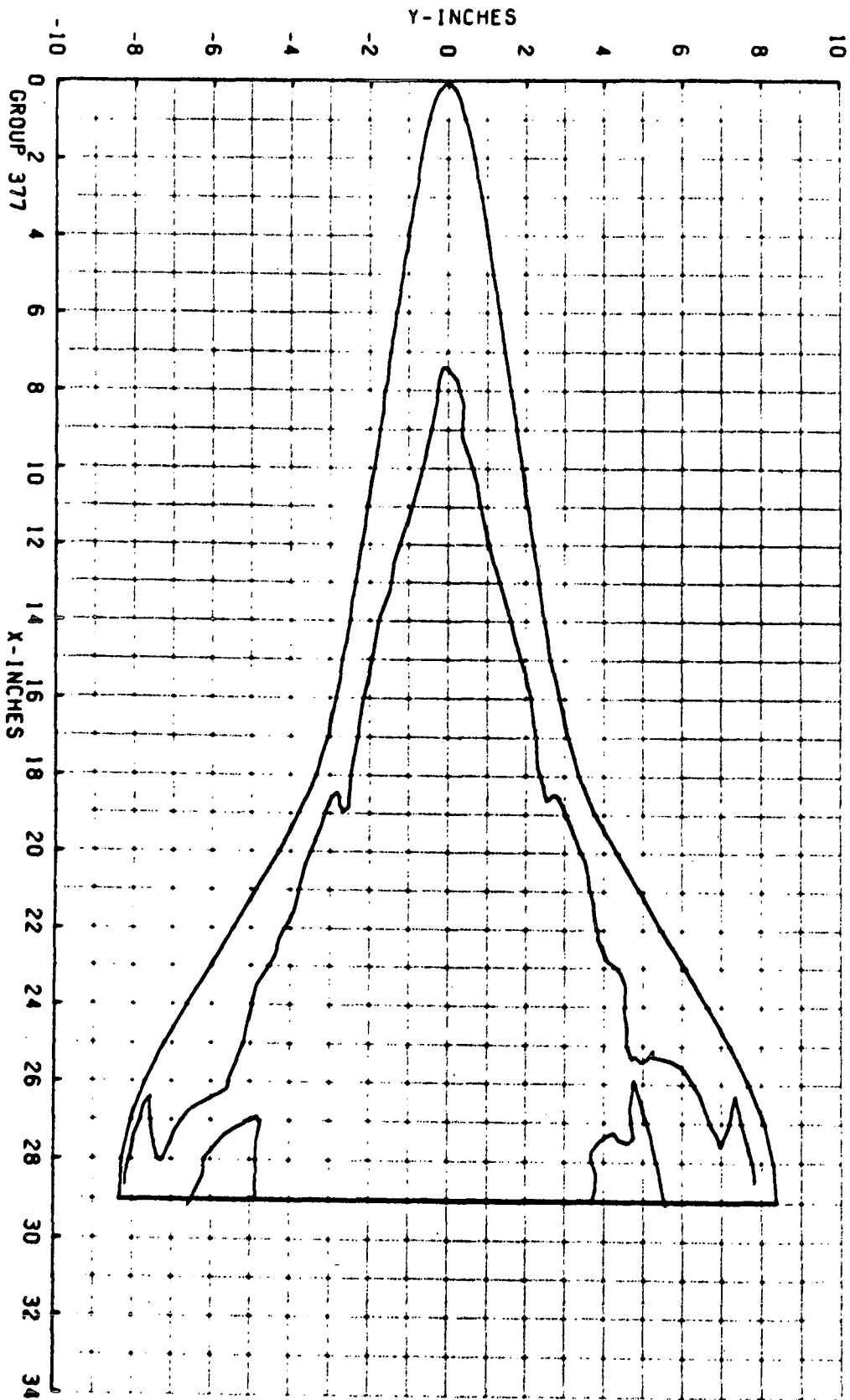
CONF NRR-DWO

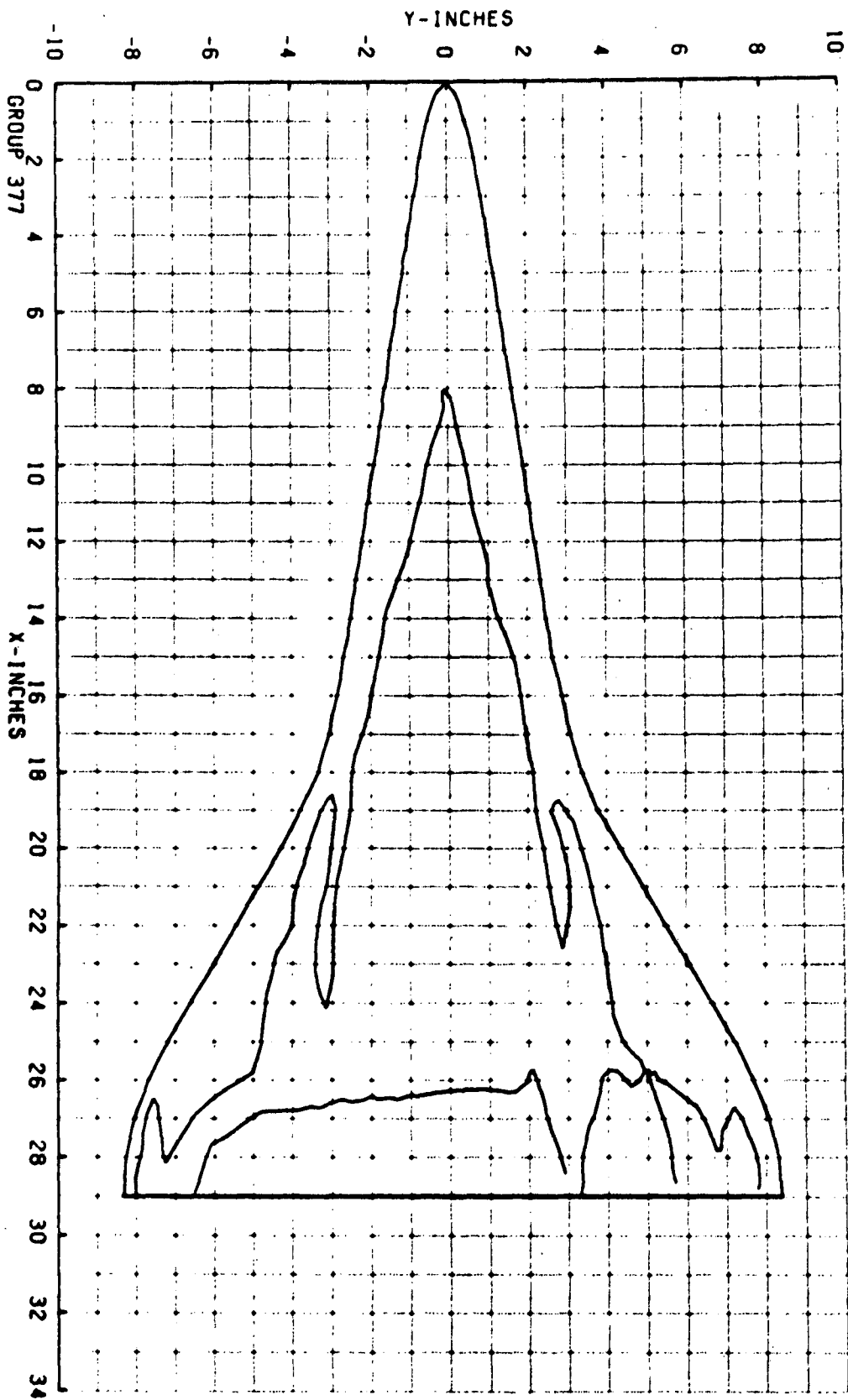


GROUP 377 PIC. NO. 1873 H/HREF 1.421E-01 MODEL SURFACE - BOTTOM
 HACH 8.00 ALPHA (DEG) 40.1 HREF S.761E-02 RE/FT 3.720E 06 CONF NRR-DWD



GROUP 377 PIC. NO. 1877 H/HREF 1.252E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NRR-DMD





GROUP 377
MACH 8.00

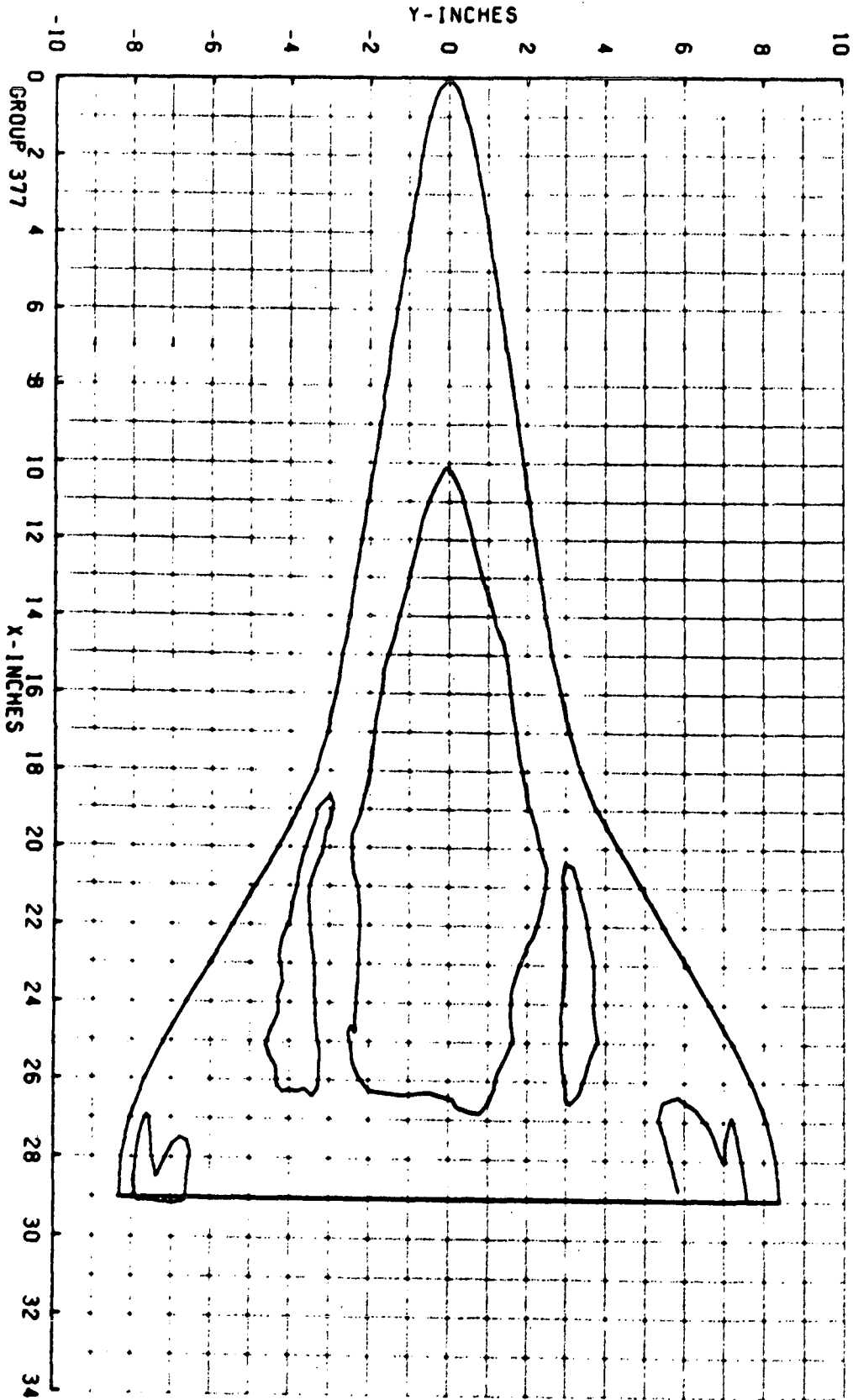
PIC. NO. 1881
ALPHA (DEG) 40.1

H/HREF 1.124E-01
HREF 5.761E-02

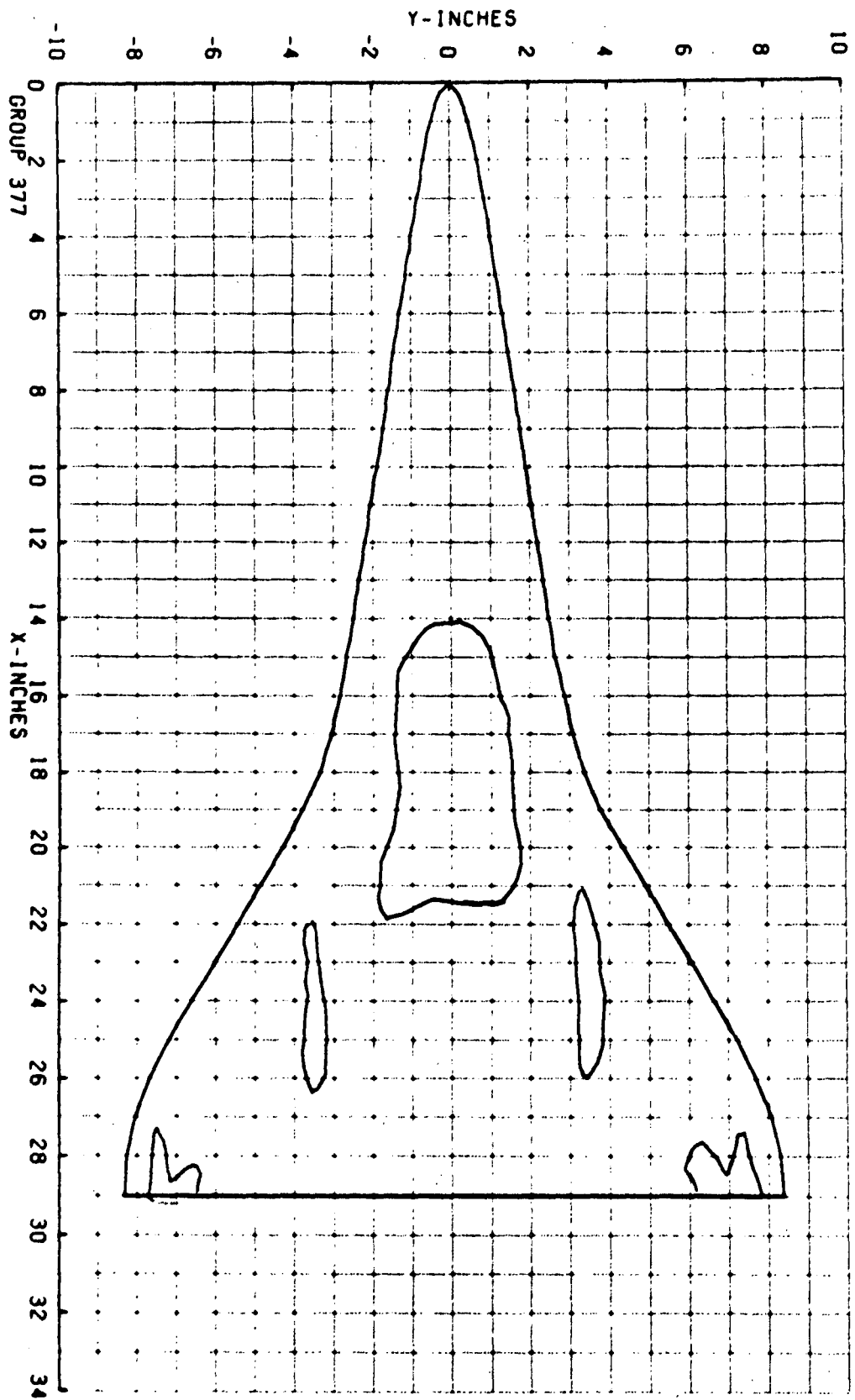
MODEL SURFACE - BOTTOM
RE/FT 3.720E 06

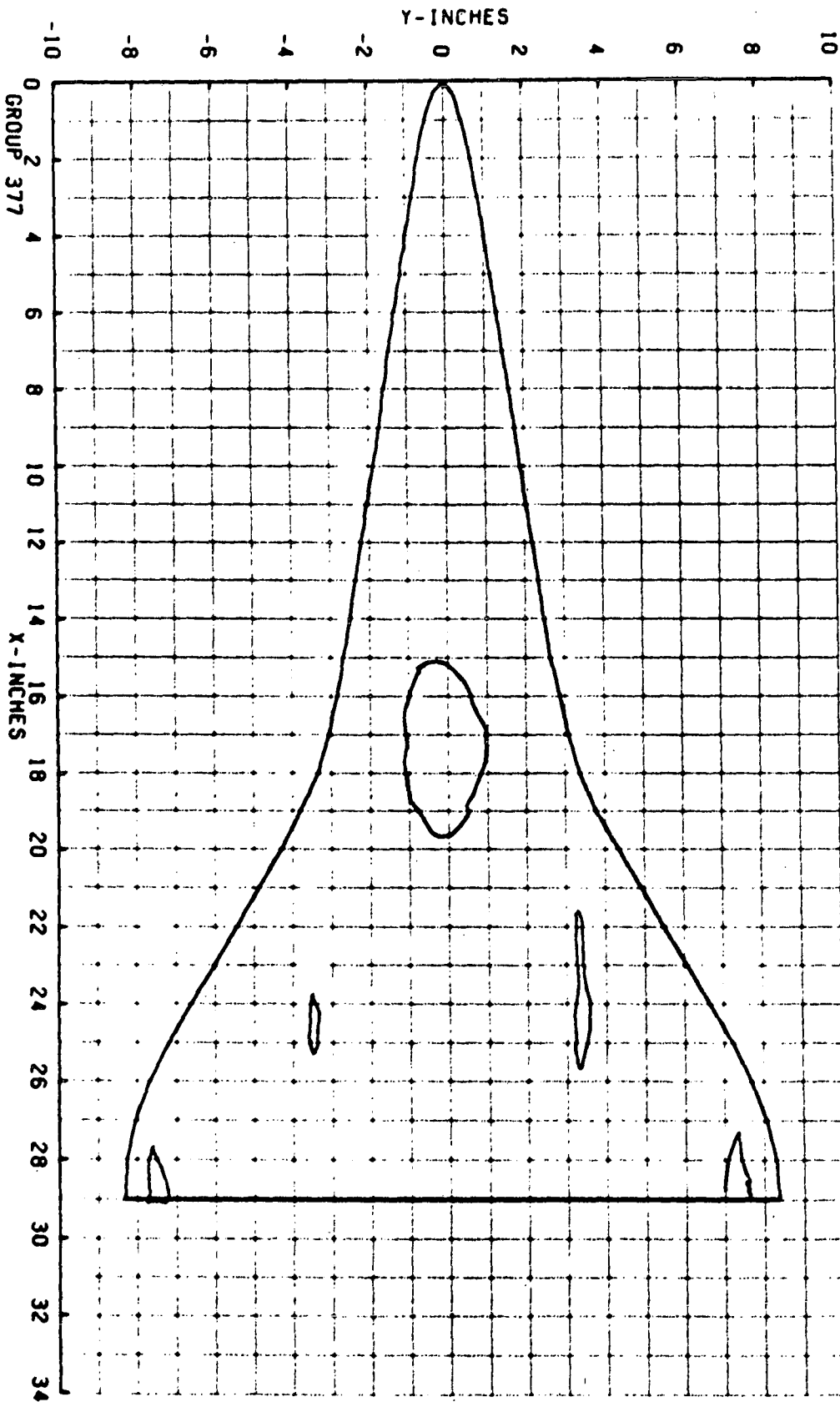
CONF NAR-DW0

GROUP 377 P/T. NO. 1883 H/HREF 1.024E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NAR-DW0



GROUP 377 PIC. NO. 1886 H/HREF 9.010E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NAR-DMD





GROUP 377
MACH 8.00

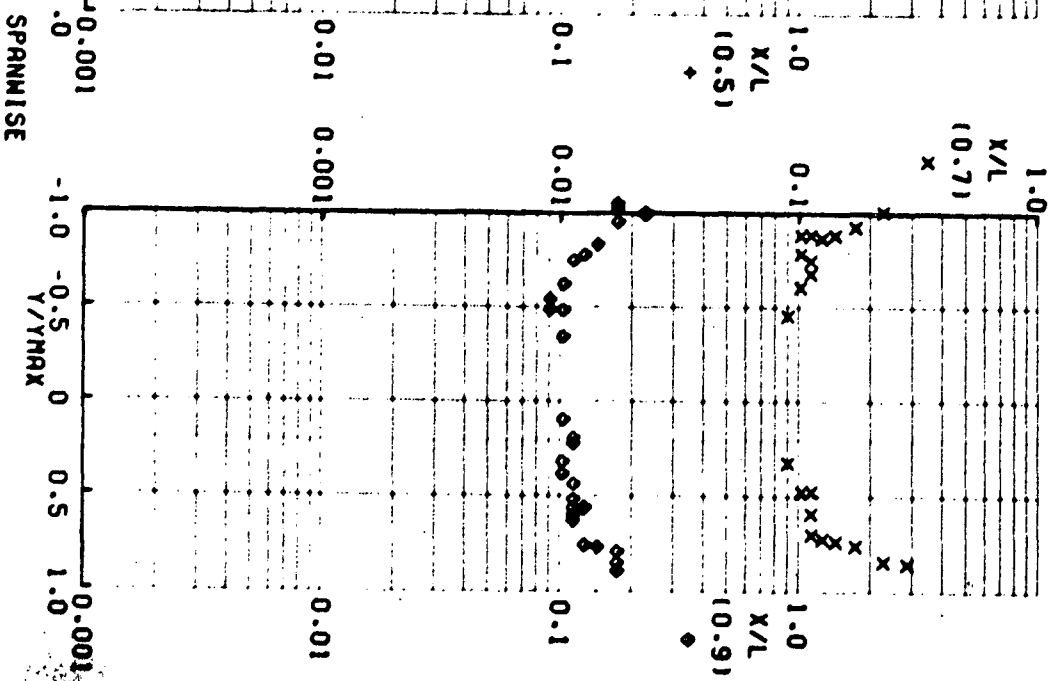
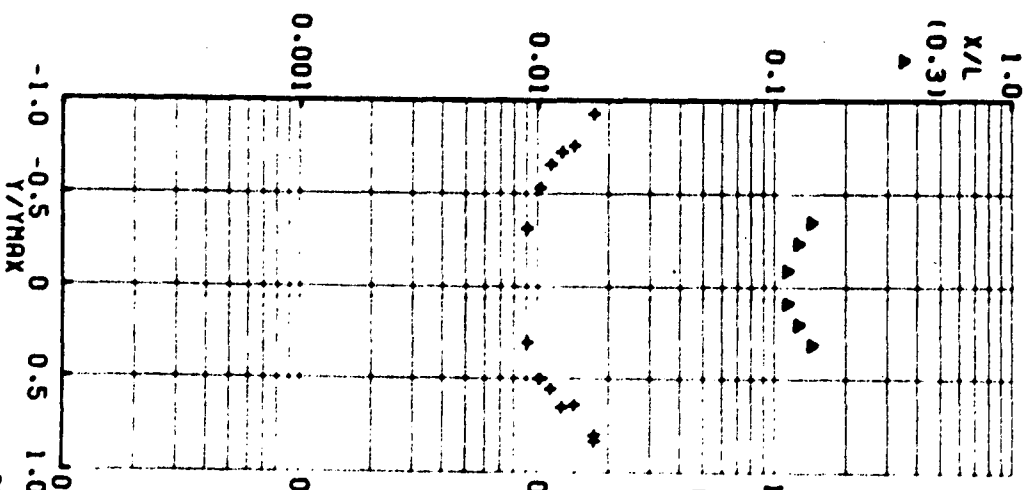
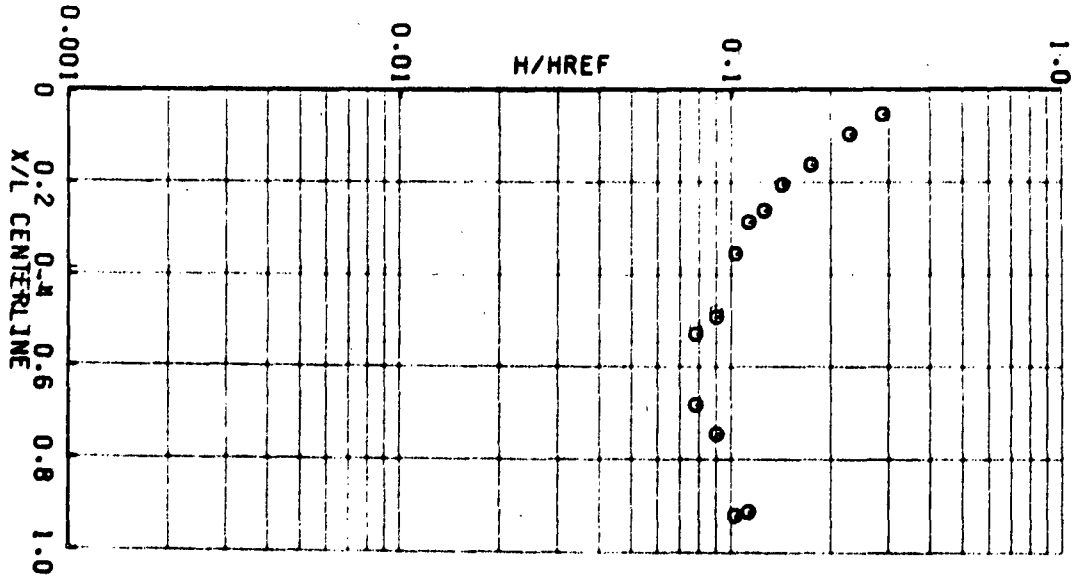
PIC. NO. 1890
ALPHA (DEG) 40.1

H/HREF 7.760E-02
HREF 5.761E-02

MODEL SURFACE - BOTTOM
RE/FT 3.720E 06

CONF NAR-DNO

GROUP 377 ALPHA (DEG) 40.1 HREF 5.761E-02 HACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 3.720E 06 CONF NRR-DWO



9/21/73

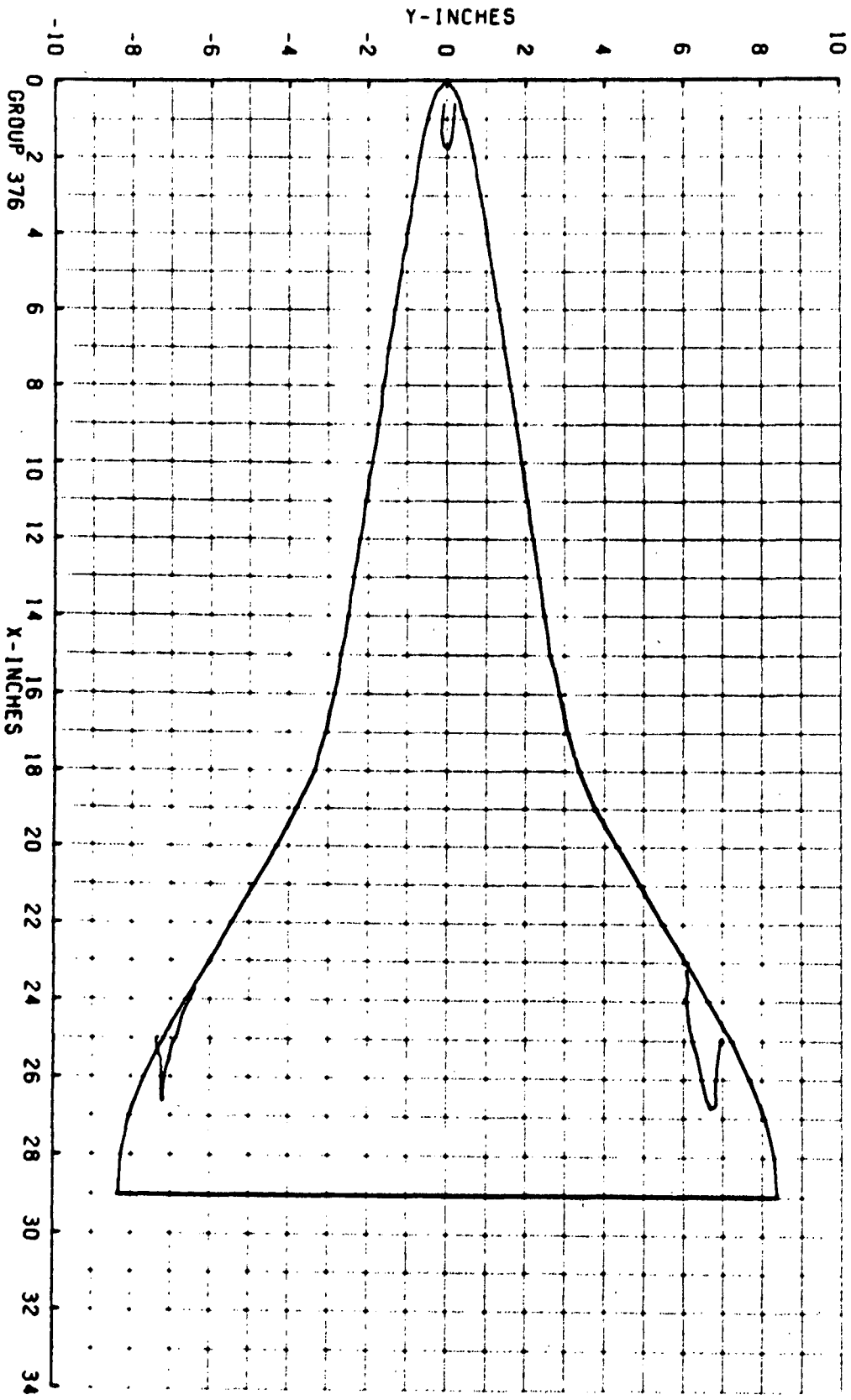
AFDCIARON, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VII162

GROUP CONFIG MODEL MACH NO PN PSIA TO DEG R ALPHA-PRODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
376 54 NAR-DW0 8.00 859.8 1346 50.05 -.05 -50.00 180.00 .0

T-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT MREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (R=.014FT)
97.6 .000 3.945 3872 7.573E-05 7.855E-08 1.73E 06 5.756E-02 2.439E-02

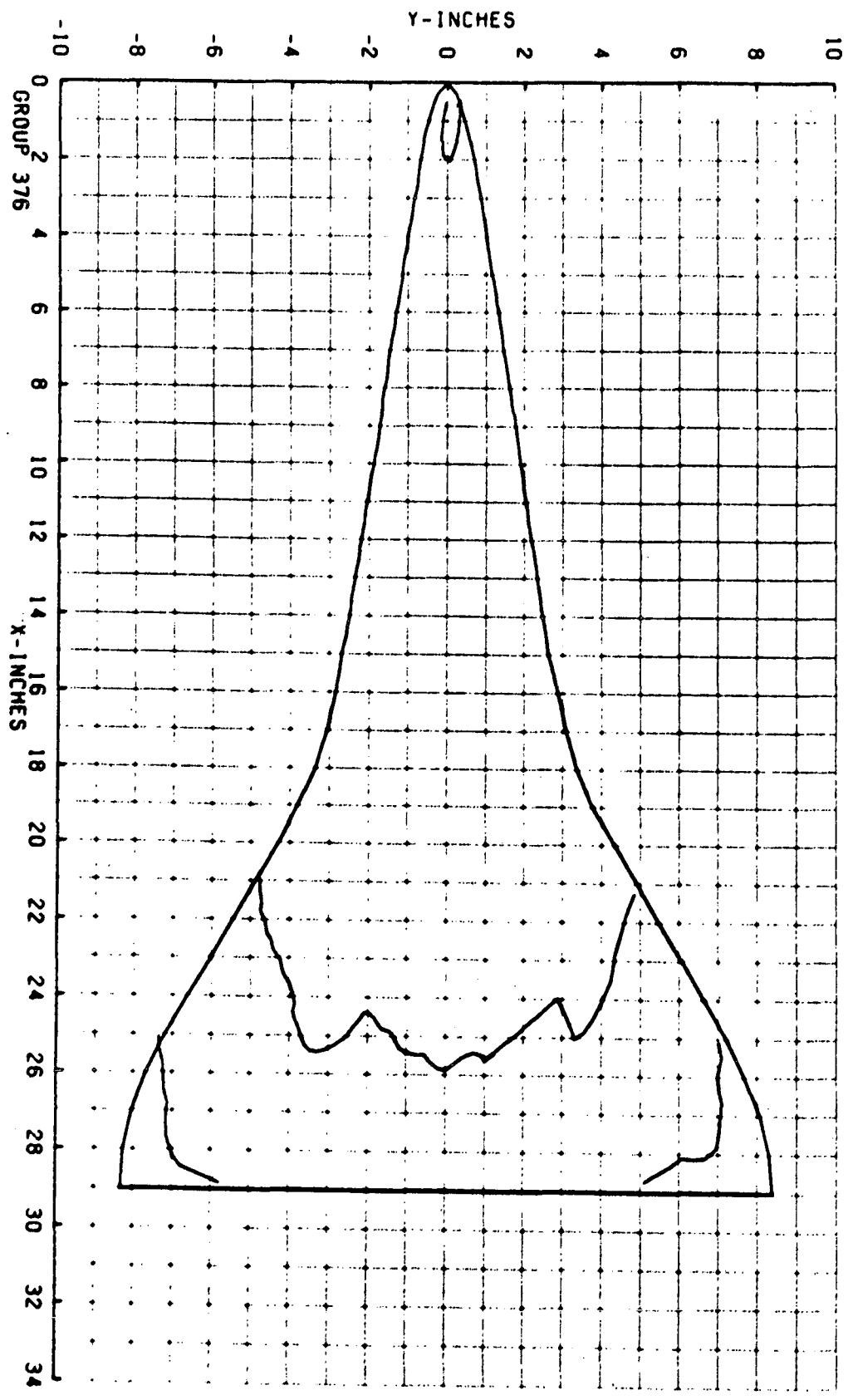
CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCKX)
TAP(T) 300
SIRELS) 113 AVERAGE TW = 76 -0.008(SQUARE ROOT DEL TIME) = 0.11
ROTCHM(B) 113

PIC	MC	TYPE	DELTIME	HITOT	HITOT/UREF	H(.970)	H(.970)/HREF	H(.850)	H(.850)/HREF	ST(TOT)	MODEL	TEMP	F
T	1923	(300)	3.20	2.11	2.19E-02	.3696	2.718E-02	3.158E-02	5.486	8.947E-03	0	97	0
T	1924	(300)	3.75	2.66	1.47E-02	.3244	2.385E-02	2.771E-02	.4815	7.856E-03	0	97	0
T	1925	(300)	4.25	3.16	1.49E-02	.2940	2.161E-02	2.511E-02	.4343	7.119E-03	0	97	0
T	1926	(300)	4.80	3.71	1.43E-02	.2679	1.969E-02	2.288E-02	.3975	6.486E-03	0	98	0
T	1927	(300)	5.35	4.24	1.42E-02	.2470	1.816E-02	2.110E-02	.3647	5.923E-03	0	98	0
T	1928	(300)	5.90	4.81	1.32E-02	.2299	1.690E-02	1.964E-02	.3413	5.567E-03	0	98	0
T	1929	(300)	6.40	5.31	1.25E-02	.2148	1.593E-02	1.851E-02	.3218	5.250E-03	0	98	0
T	1930	(300)	6.95	5.85	1.18E-02	.2043	1.501E-02	1.746E-02	.3032	4.947E-03	0	98	0

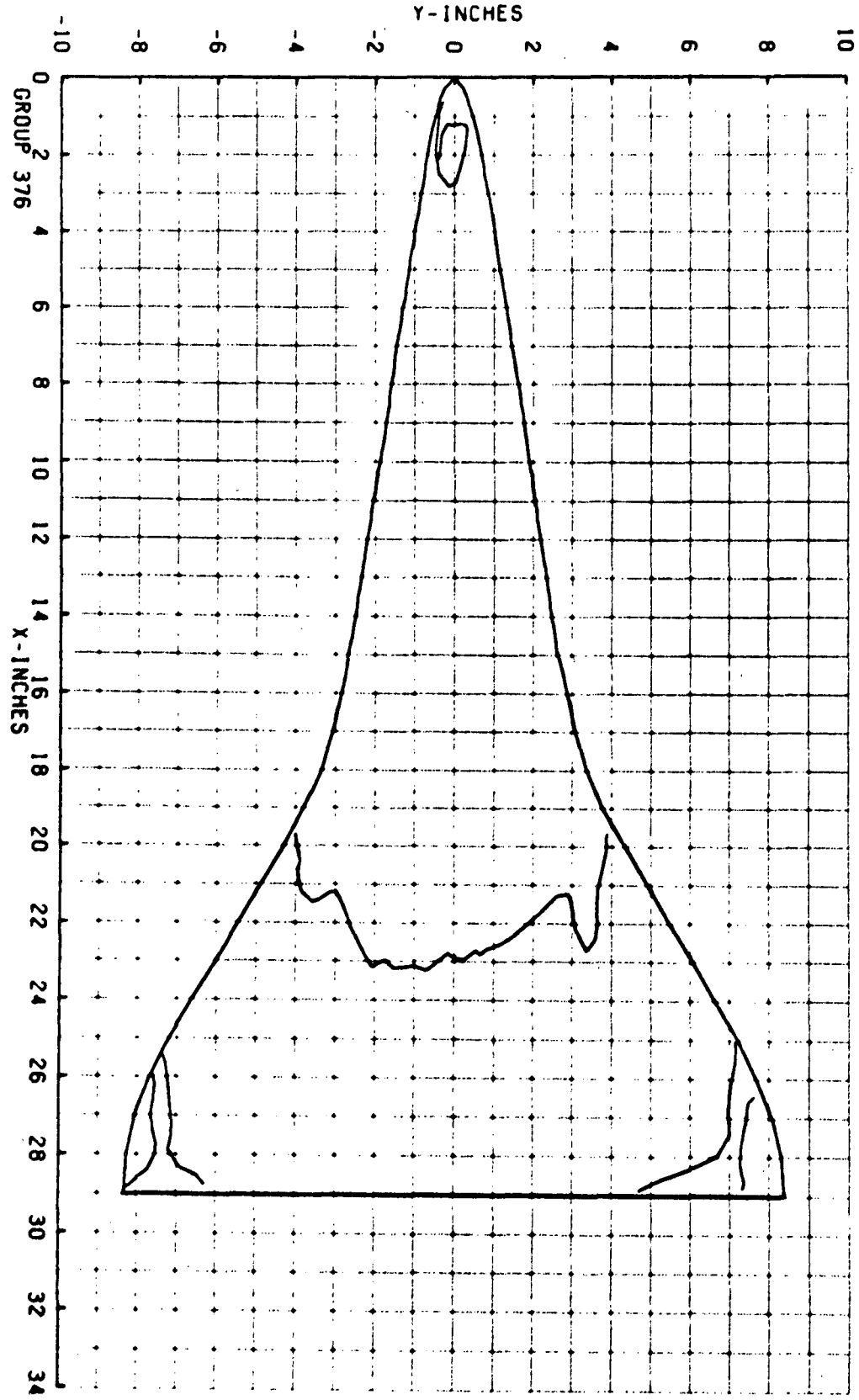


GROUP 376 PIC. NO. 1823 H/HREF 3.696E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DW0

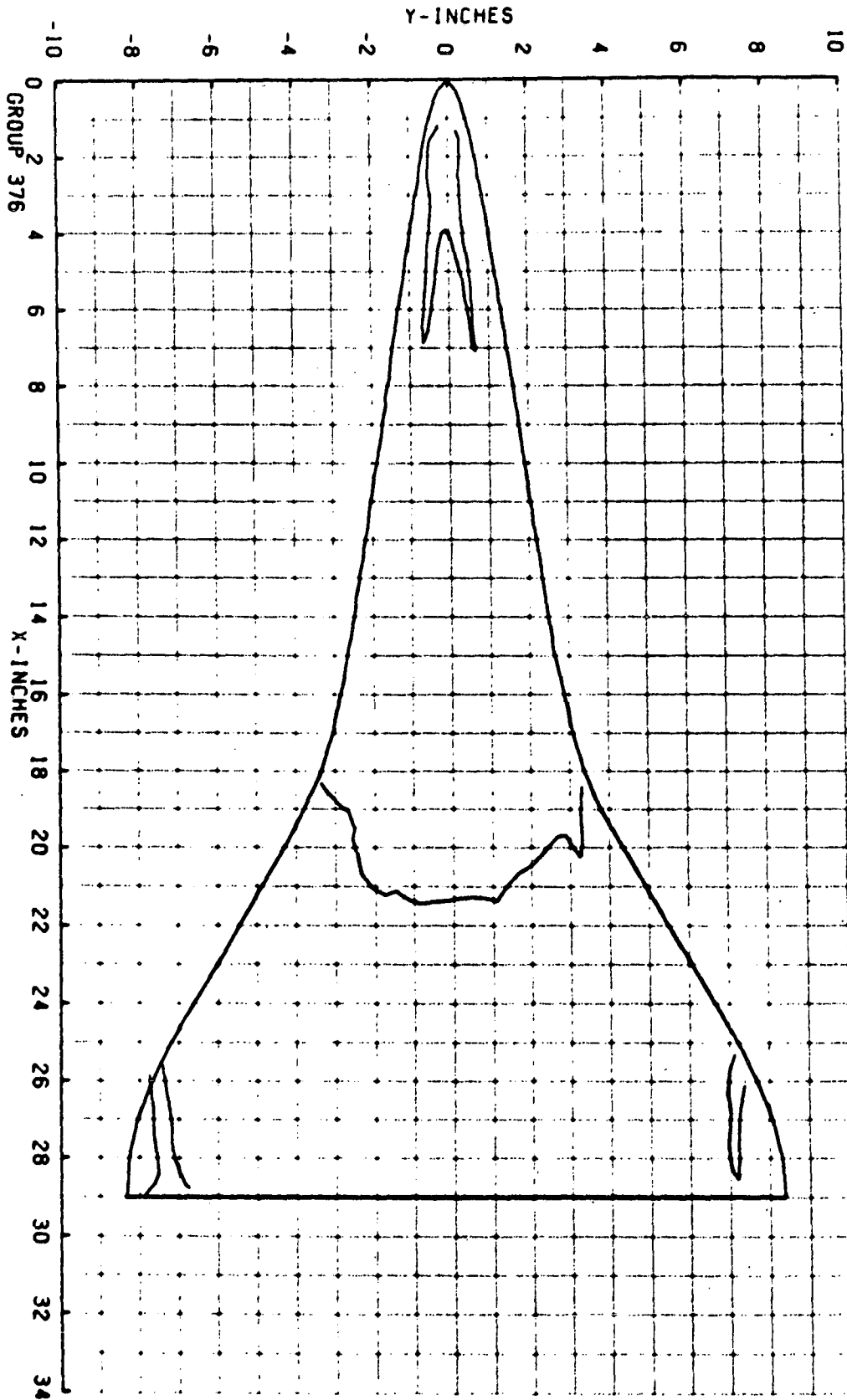
GROUP 376 PIC. NO. 1824 H/HREF 3.244E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DMO

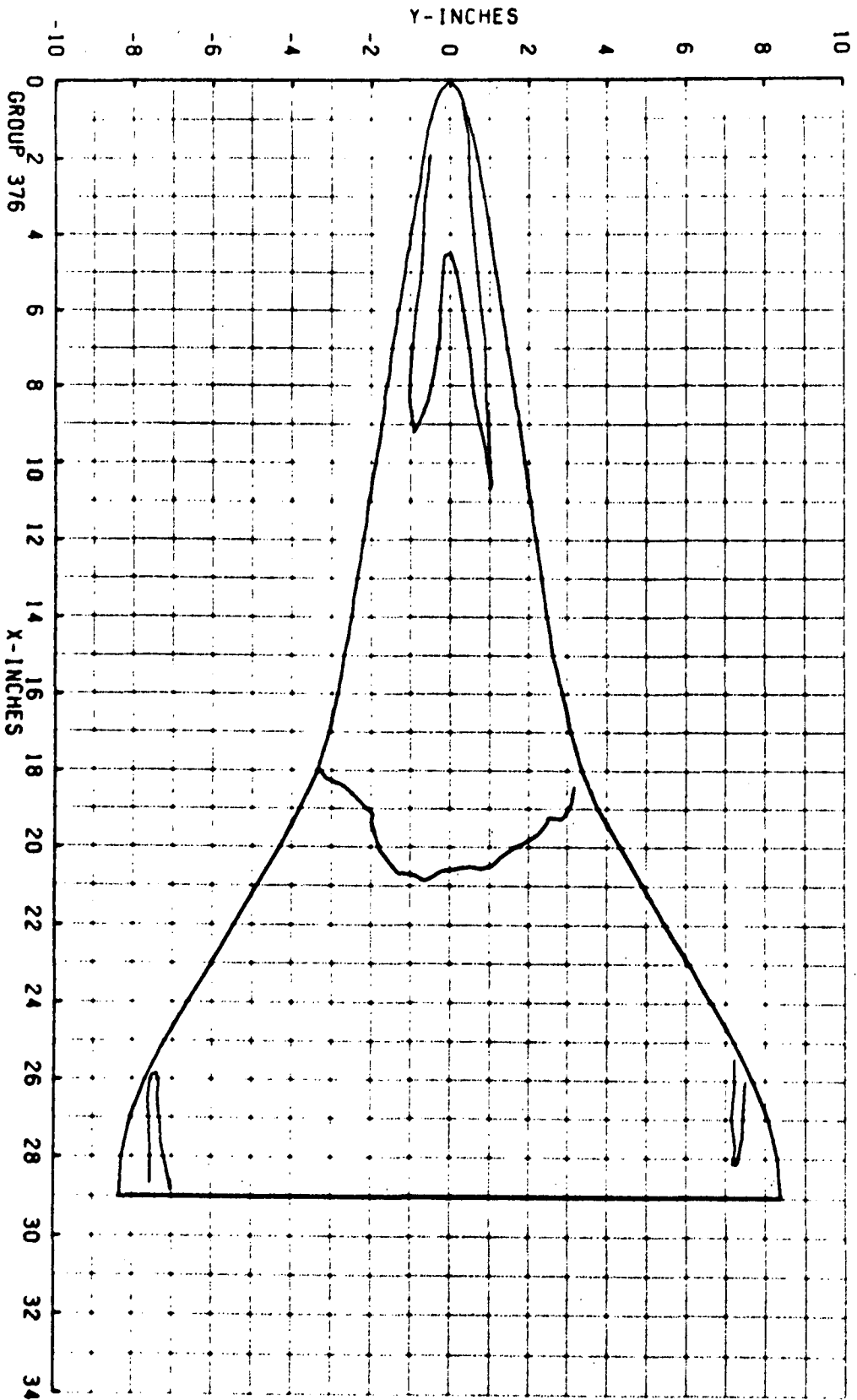


GROUP 376 PIC. NO. 1825 M/HREF 2.940E-01 MODEL SURFACE - BOTTOM
HREF 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DNO



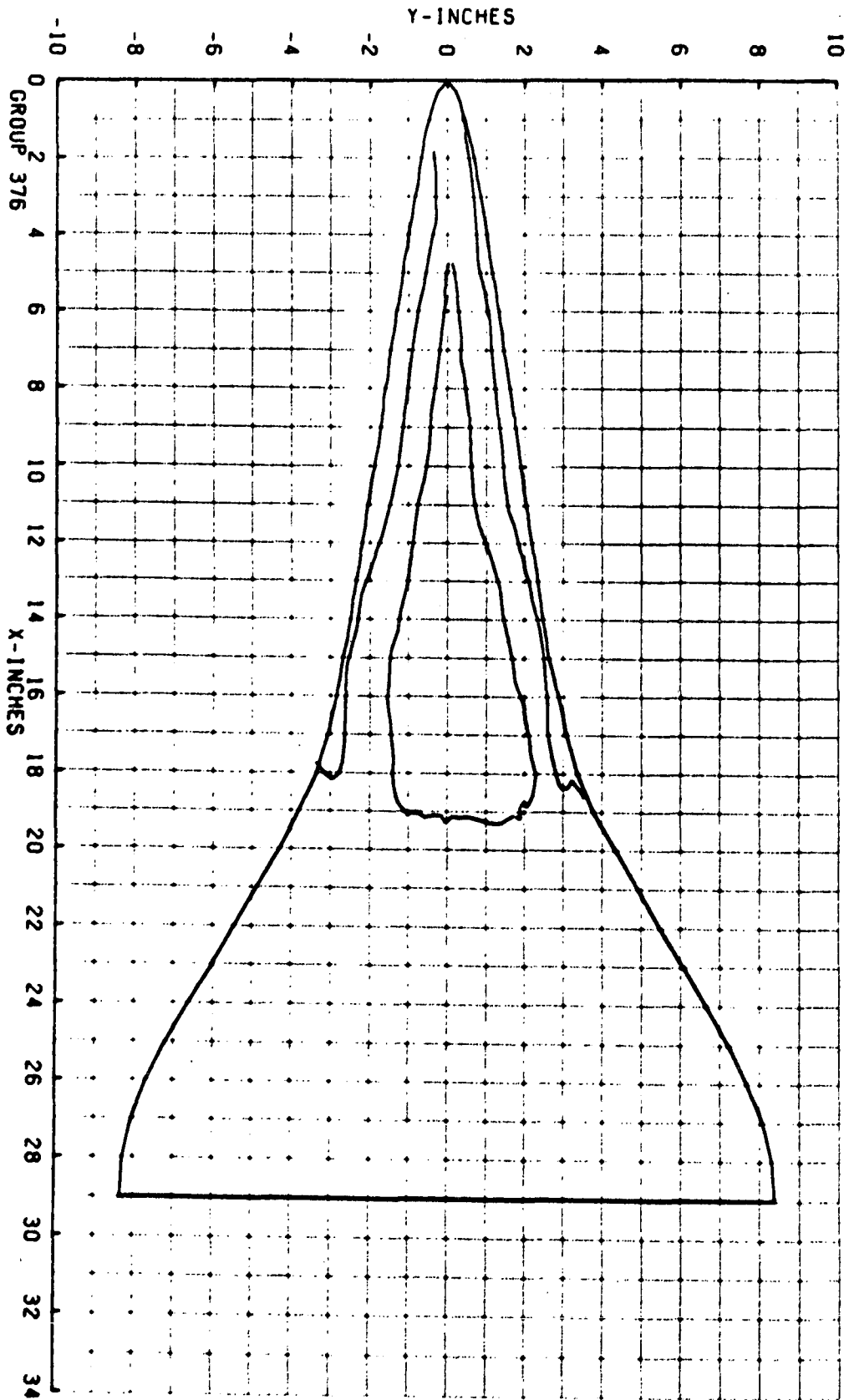
GROUP 376 PIC. NO. 1826 H/HREF 2.679E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DWO



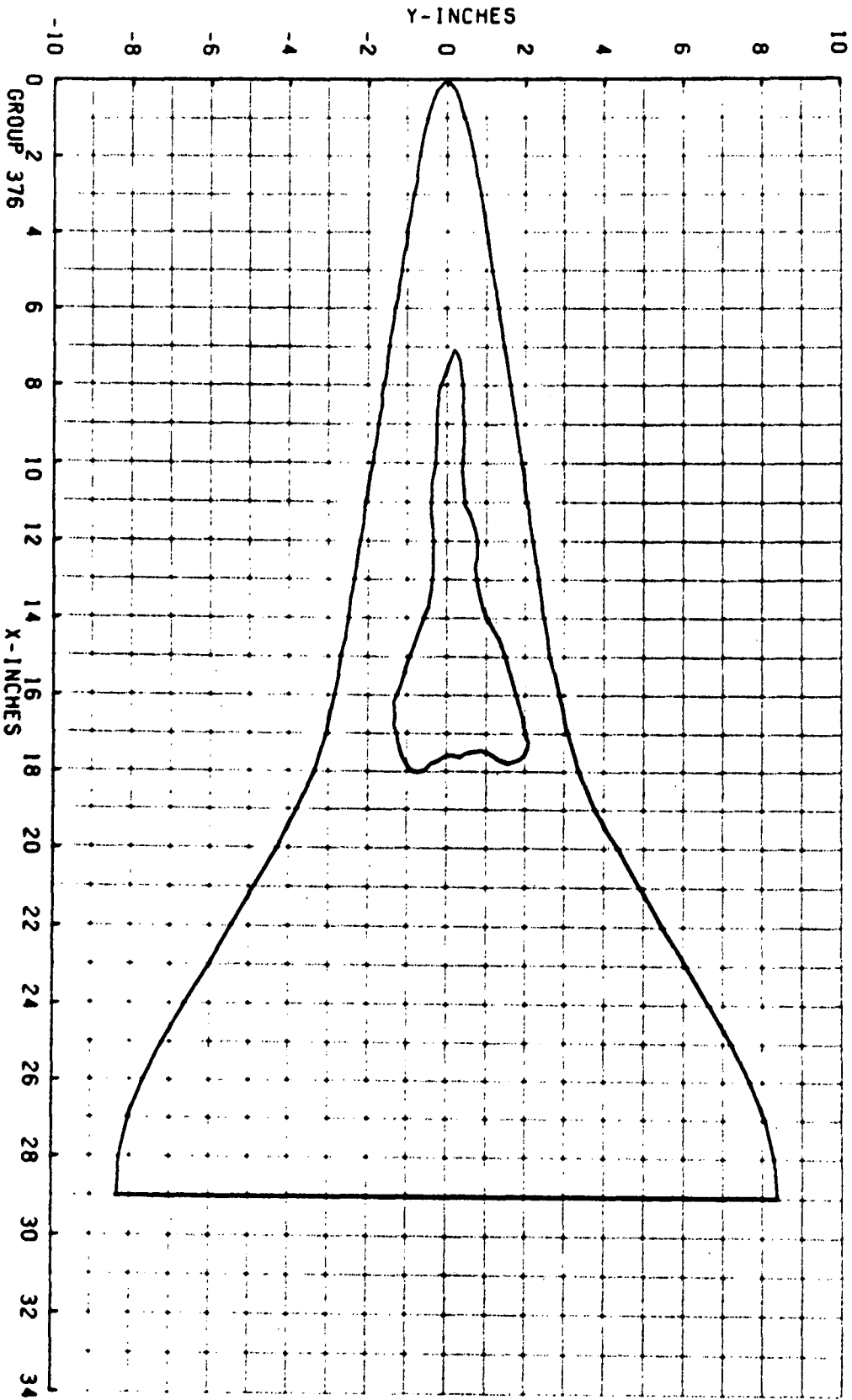


GROUP 376 PIC. NO. 1827 H/HREF 2.470E-01 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DWO

GROUP 376 PIC. NO. 1828 H/HREF 2.299E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 50.0 HREF S.756E-02 RE/FT 3.730E 06 CONF NRR-DNO



GROUP 376 PIC. NO. 1829 H/HREF 2.168E-01 MODEL SURFACE - BOTTOM
HACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DWO



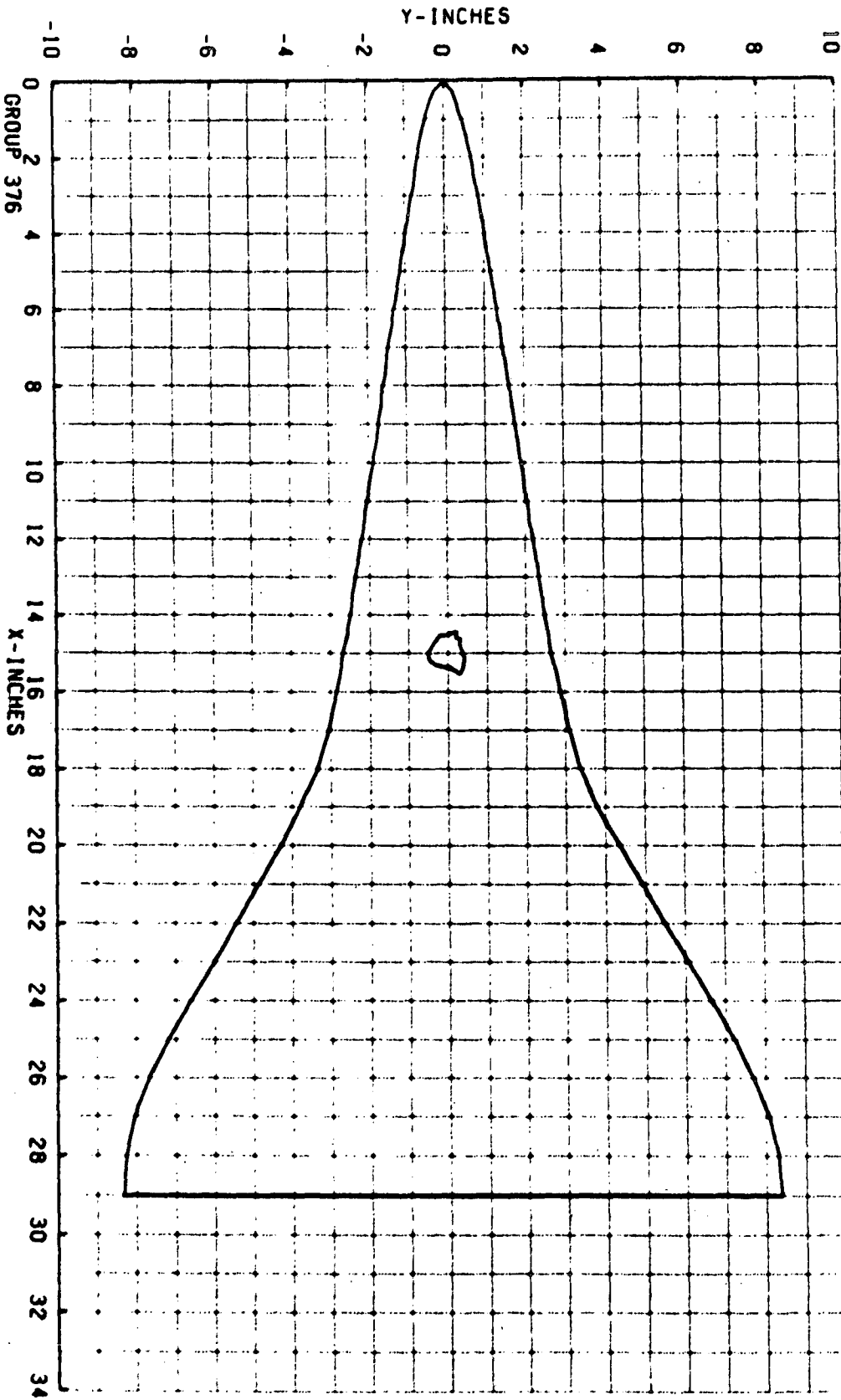
GROUP 376
MACH 8.00

PIC. NO. 1830
ALPHA (DEG) 50.0

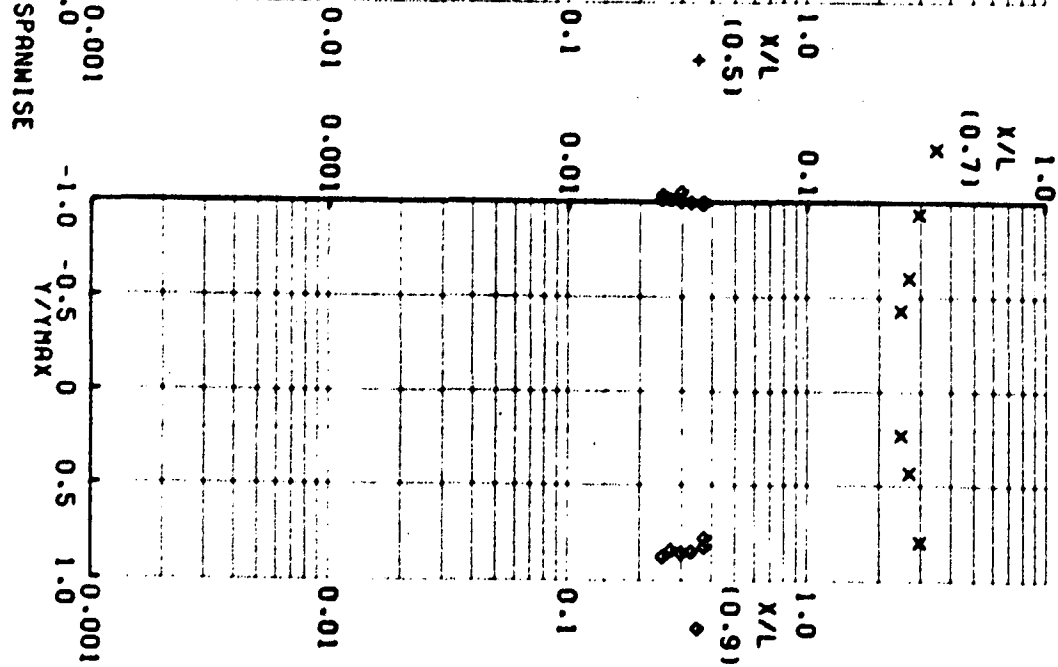
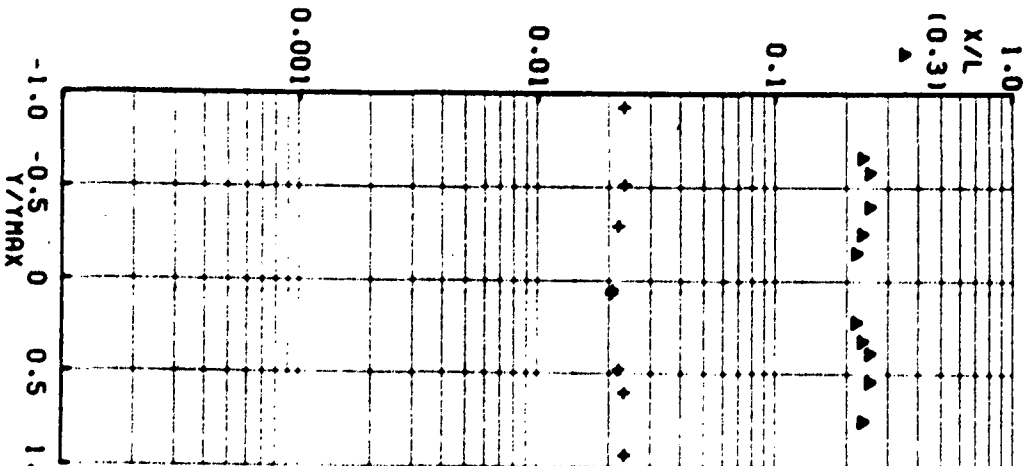
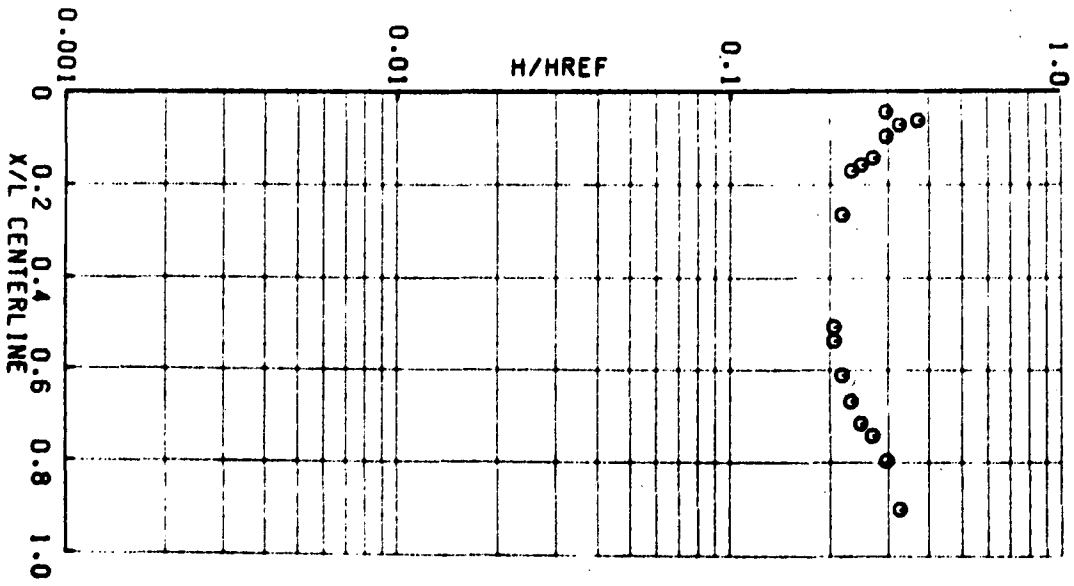
H/HREF 2.043E-01
HREF 5.756E-02

MODEL SURFACE - BOTTOM
RE/FT 3.730E 06

CONF NAR-DMD



GROUP 376 ALPHA (DEG) 50.0 HREF 5.756E-02 HACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 3.730E 06 CONF NAR-DMD



4/21/71

AECUTAKO(INC.) ANNOUN AT FERNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
V1162

GROUP CONF16 MODEL MACH NO PU PSIA TU REG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
372 53 NAM-DIC P-00 H59.6 1348 10.02 12.98 -23.00 180.00 0

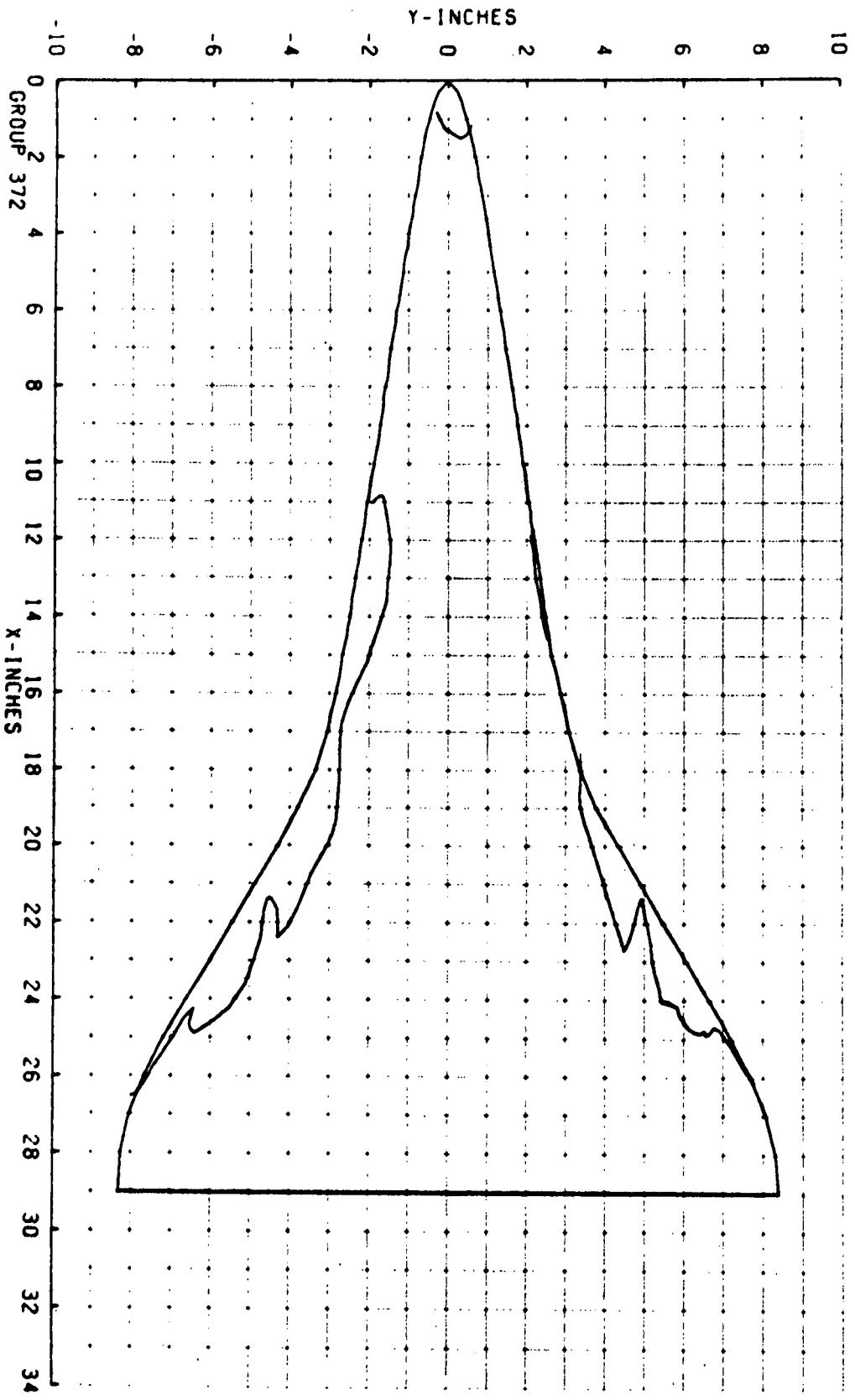
I-INE P-INE Q-INE V-INE RHO-INE PV-INE REF/FT HREF SINEF
(DEG R) (PSIA) (PSIA) (F1/SEC) (LBS/FT3) (LH-SEC/FT2) (F1-1) (IN) (0.13F1) (IN) (0.13F1)
97.7 488 3.984 3474 7.569E-05 7.892E-04 3.13E 06 5.756E-02 2.441E-02

CAMERA PAINI TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (MMUCAN)

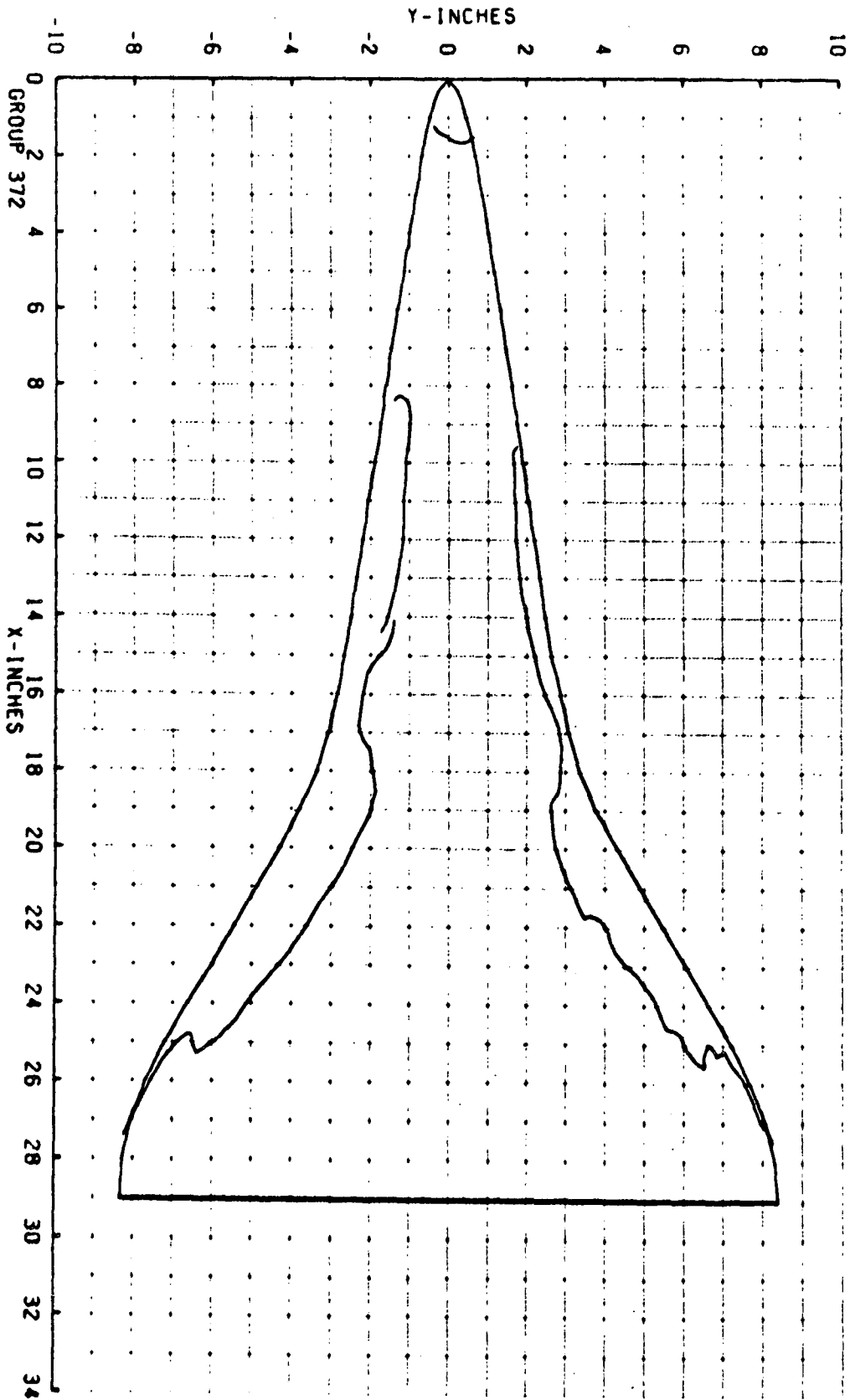
TOP(T) 150 AVERAGE Iw = 75 -0.008(SQUARE ROOT DEL TIME) * 0.11
MUTCH(R) 150

PIC NO	I-INE	DELTIME	HT(D)	HT(D)/HREF	P1-(D)	H1-(D)	H1-(D)/HREF	S1(TD)	MODEL	TEMP	F
I 1684 (150)	2.63	1.06	0.74E-03	.1519	1.000E-02	.1950	1.197E-02	.2078	75	72	0
I 1684 (150)	2.63	1.54	7.04E-03	.1230	9.620E-03	.1498	9.646E-03	.1643	75	73	0
I 1690 (150)	4.30	3.21	4.72E-03	.0419	5.174E-03	.0998	6.454E-03	.1121	79	75	0
I 1692 (150)	5.35	4.24	4.00E-03	.0505	4.674E-03	.0847	5.474E-03	.0951	83	77	0
I 1695 (150)	6.35	5.86	3.31E-03	.0514	4.029E-03	.0700	4.524E-03	.0780	86	80	0
I 1702 (150)	10.70	9.61	2.43E-03	.0348	2.857E-03	.0514	3.320E-03	.0577	100	88	0
I 1708 (150)	13.25	12.44	2.00E-03	.0348	2.439E-03	.0424	2.739E-03	.0476	110	94	0
I 1714 (150)	17.70	16.61	1.08E-03	.0291	2.043E-03	.0355	2.294E-03	.0399	119	100	0

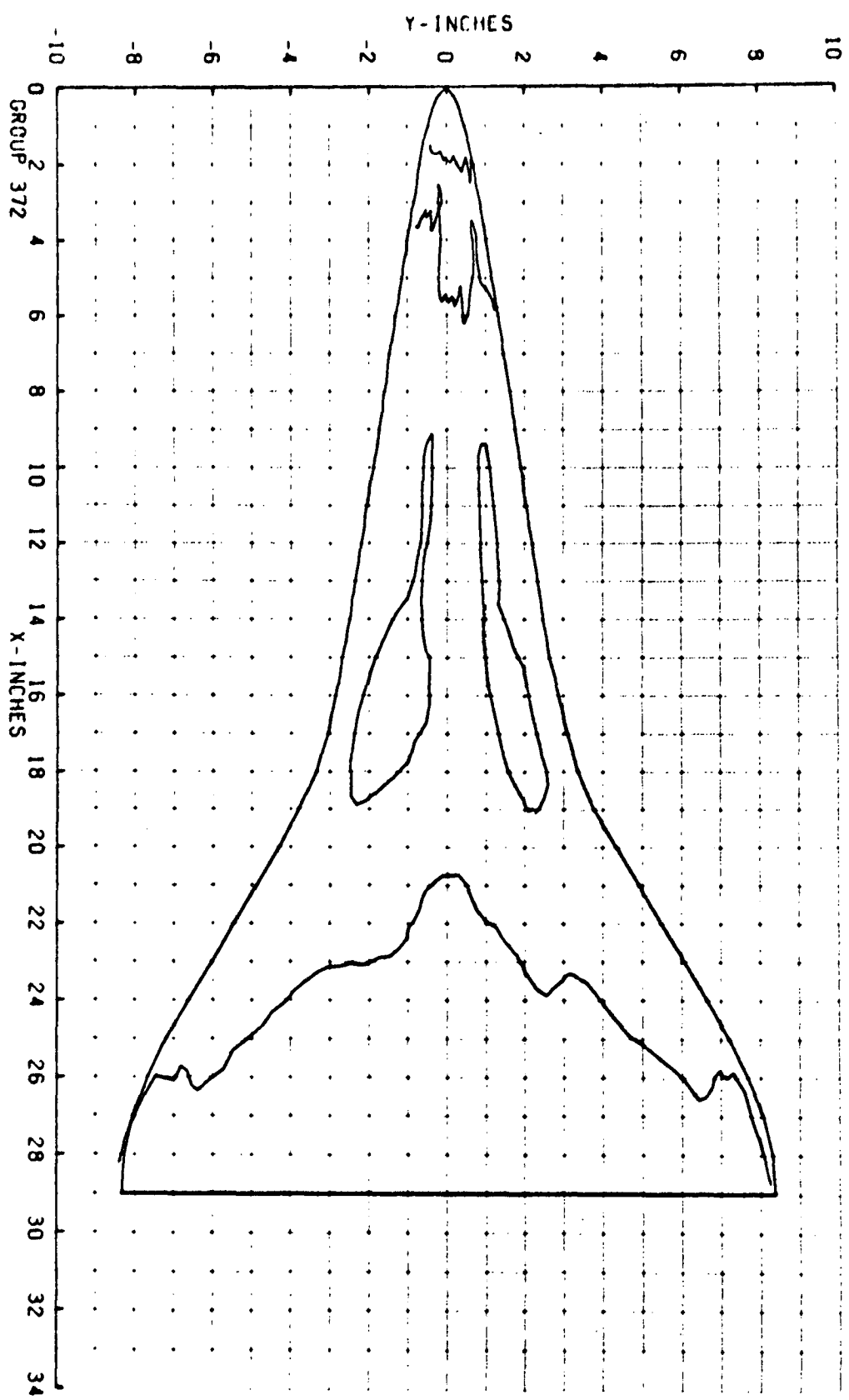
GROUP 372 PIC. NO. 1686 H/HREF 1.519E-01 MODEL SURFACE - BOTTOM
MRCH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DNO



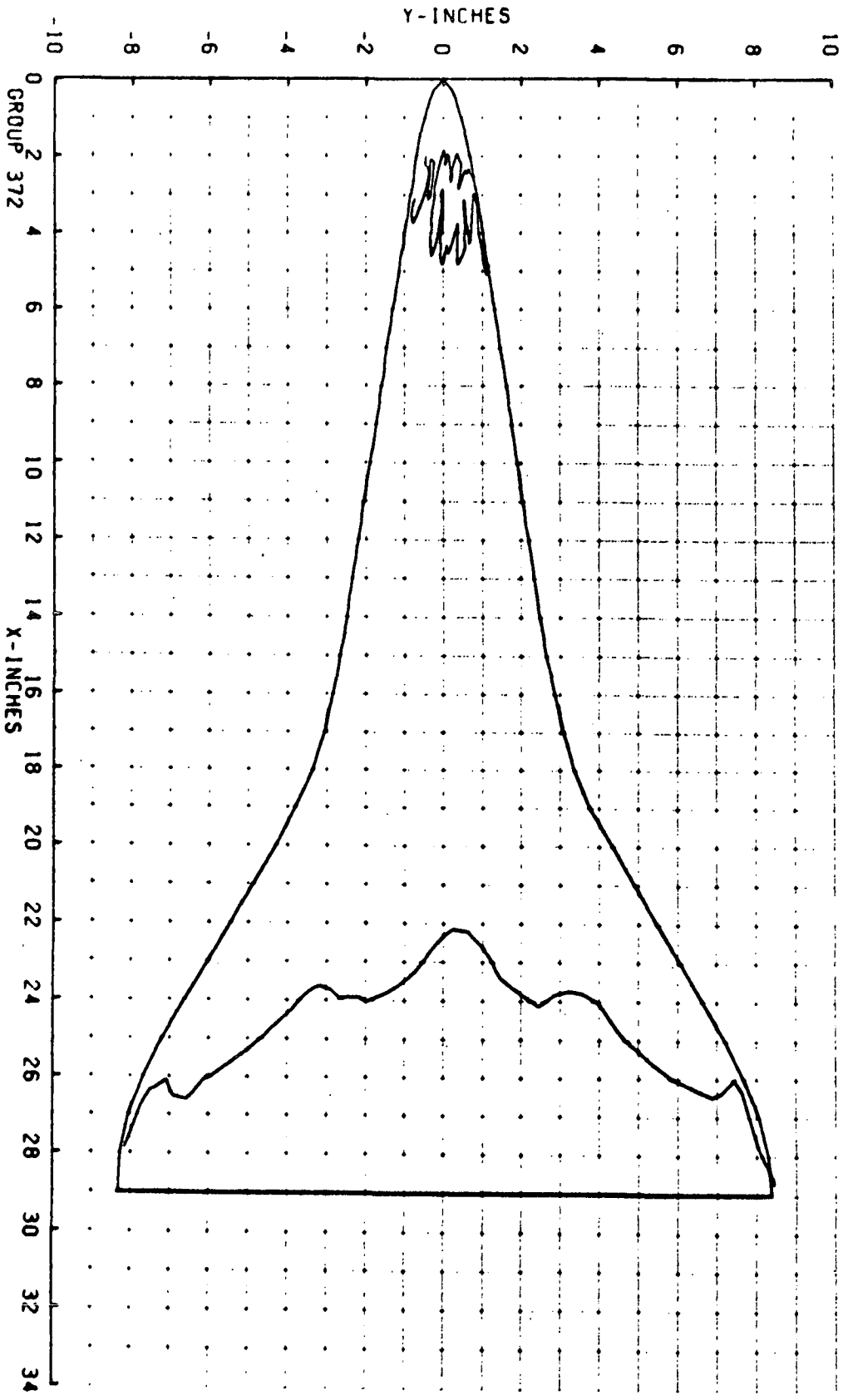
GROUP 372 PIC. NO. 1687 H/HREF 1.230E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CNF NAR-DMO



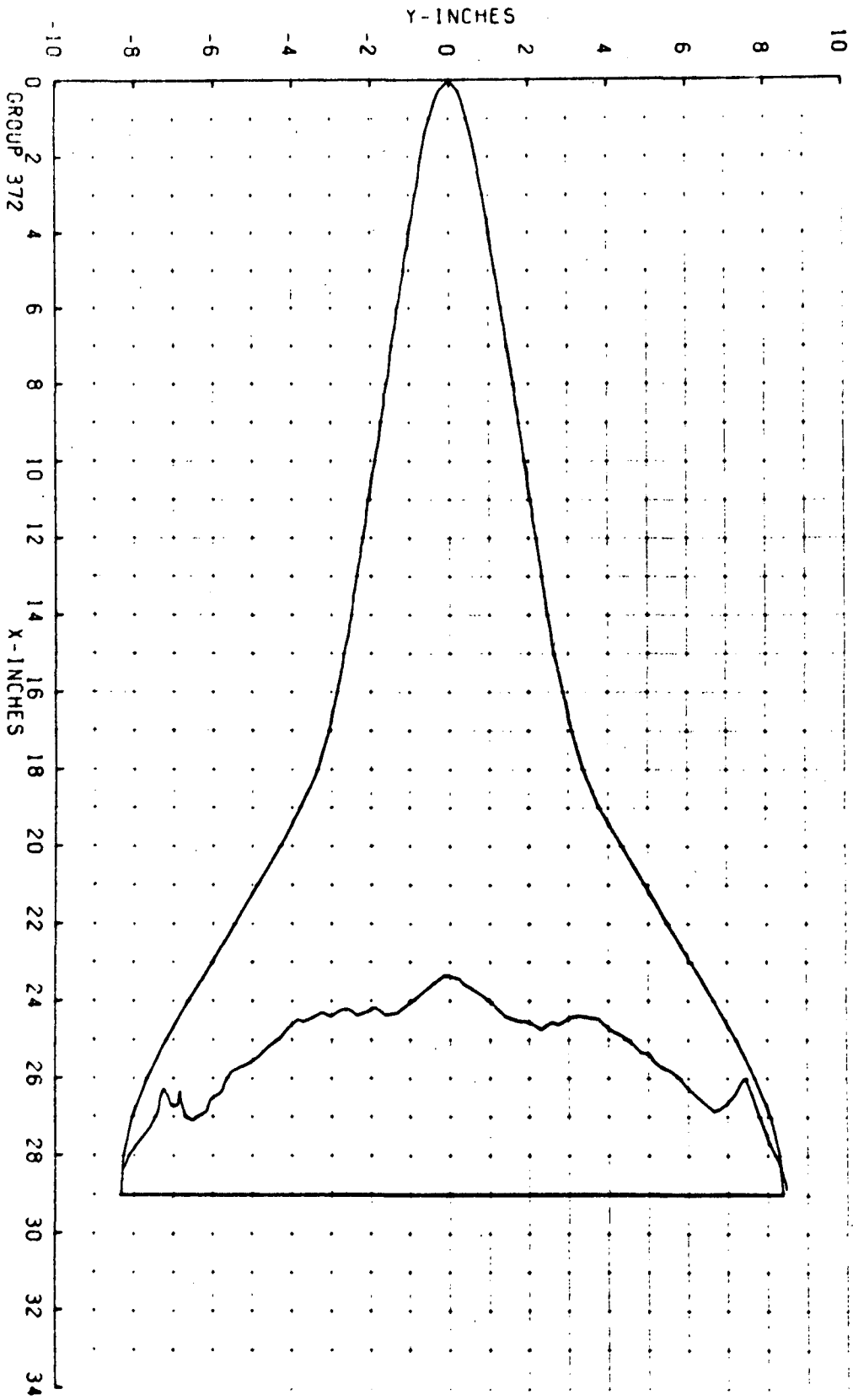
GROUP 372 PIC. NO. 1690 H/HREF 8.190E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DMD



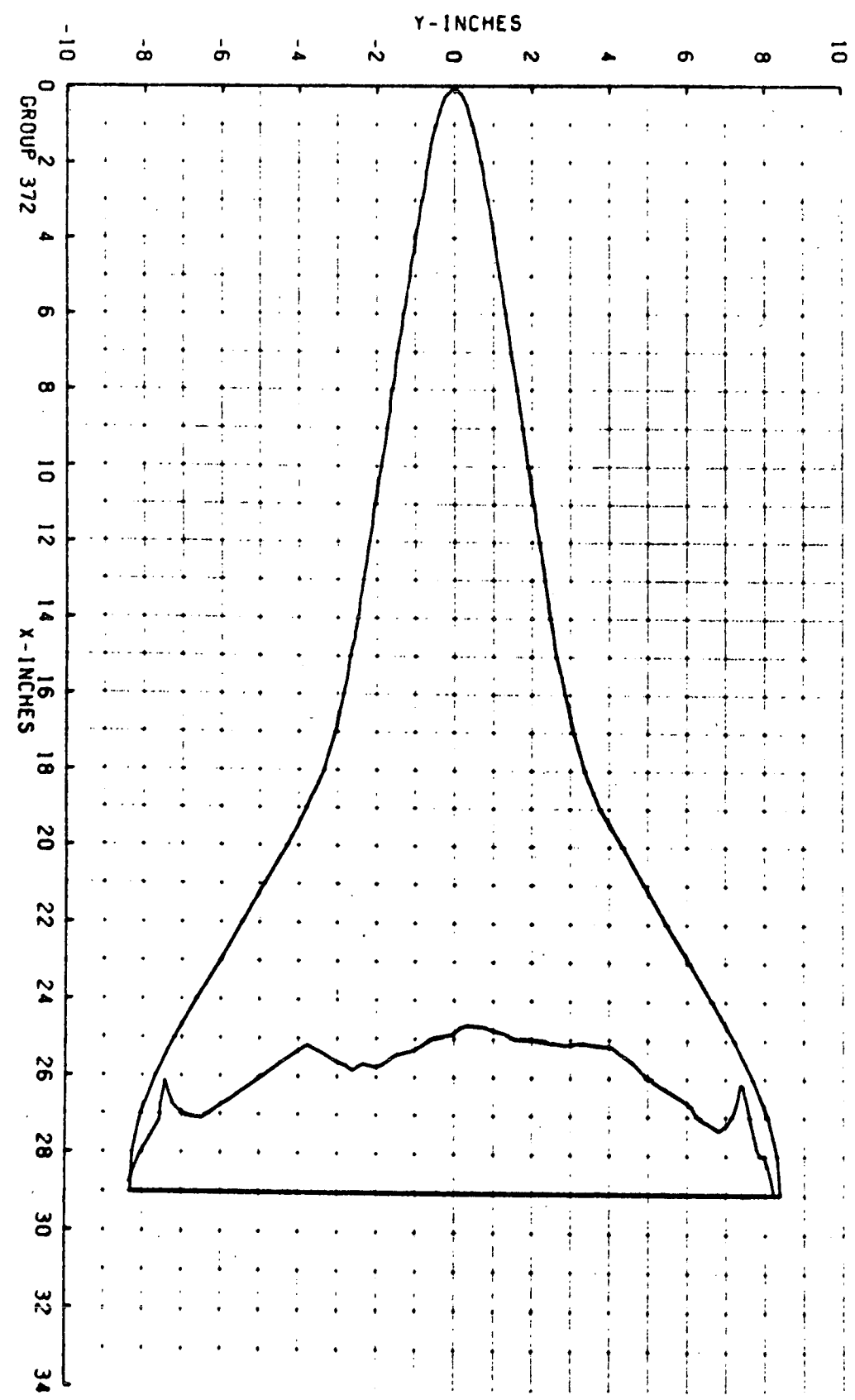
GROUP 372 PIC. NO. 1692 H/HREF 6.950E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DMO



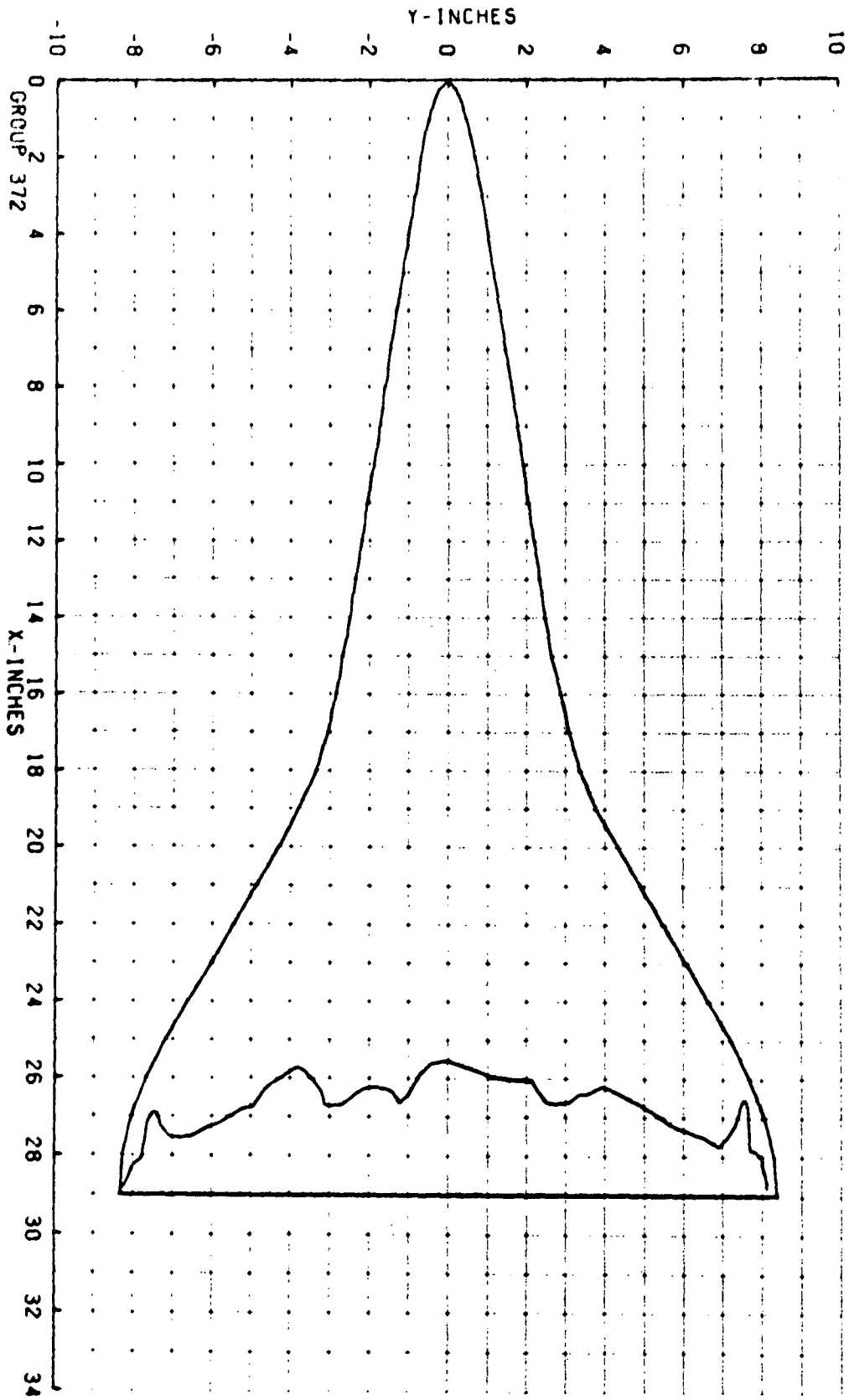
GROUP 372 PIC. NO. 1695 H/HREF 5.740E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DNO



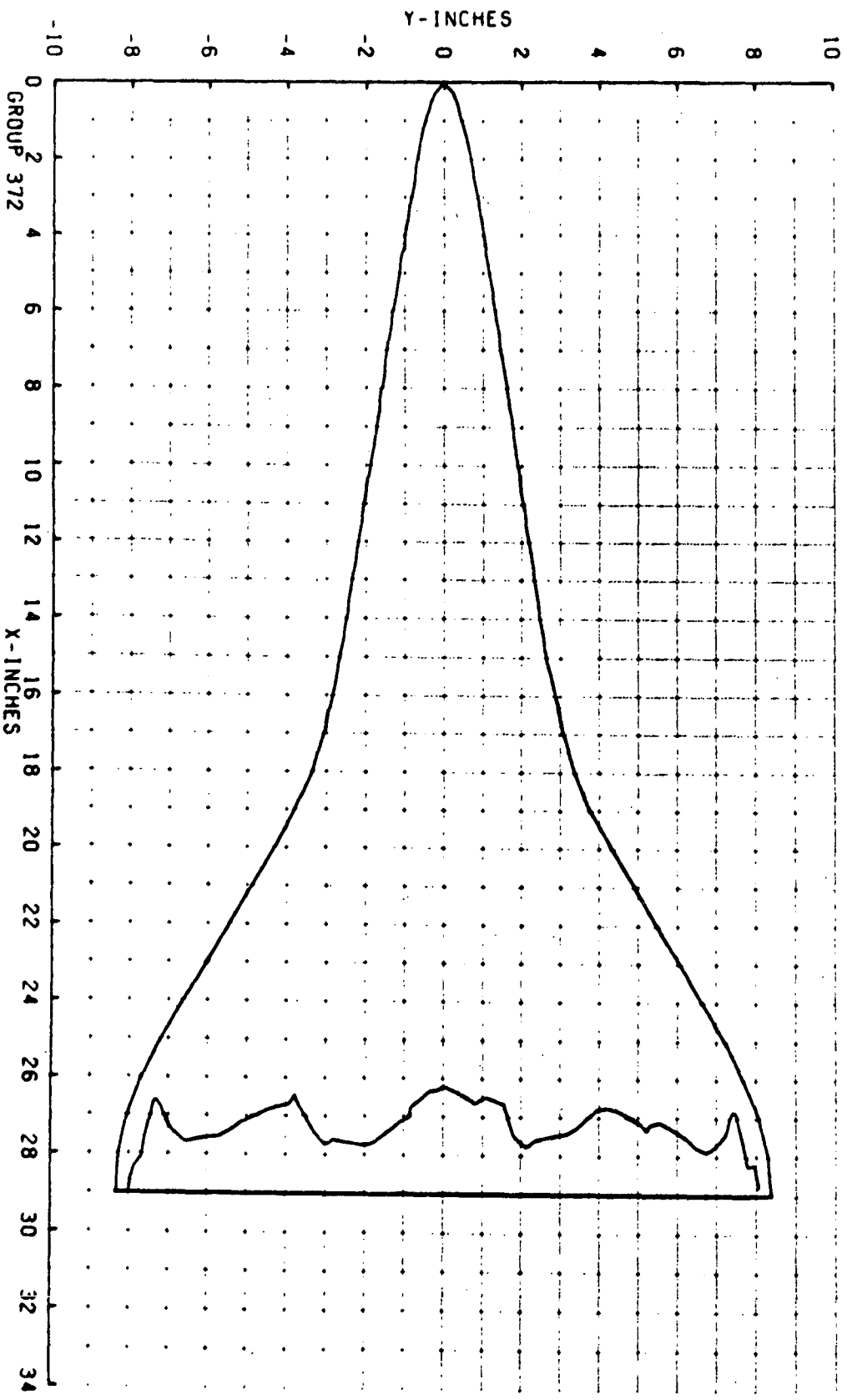
GROUP 372 PIC. NO. 1702 H/HREF 4.210E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DMO



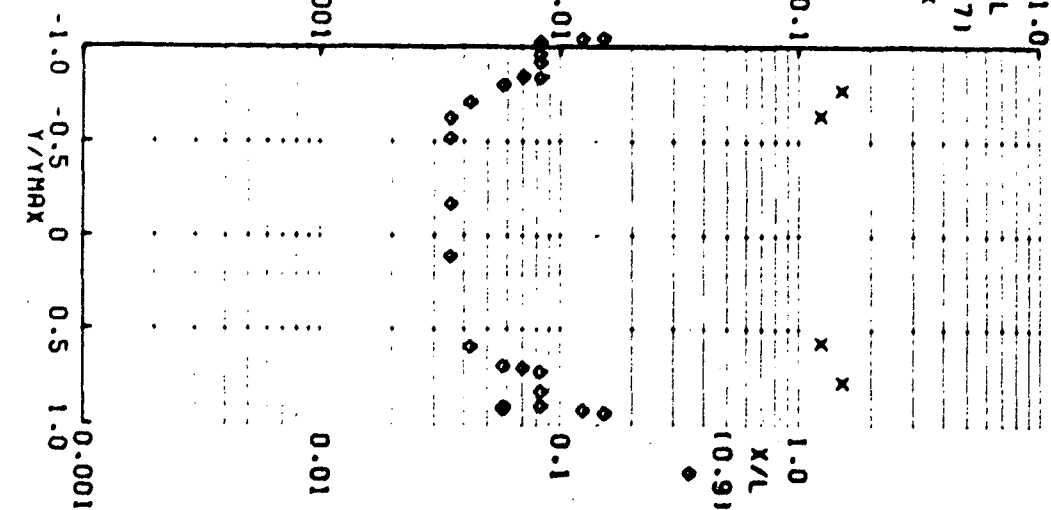
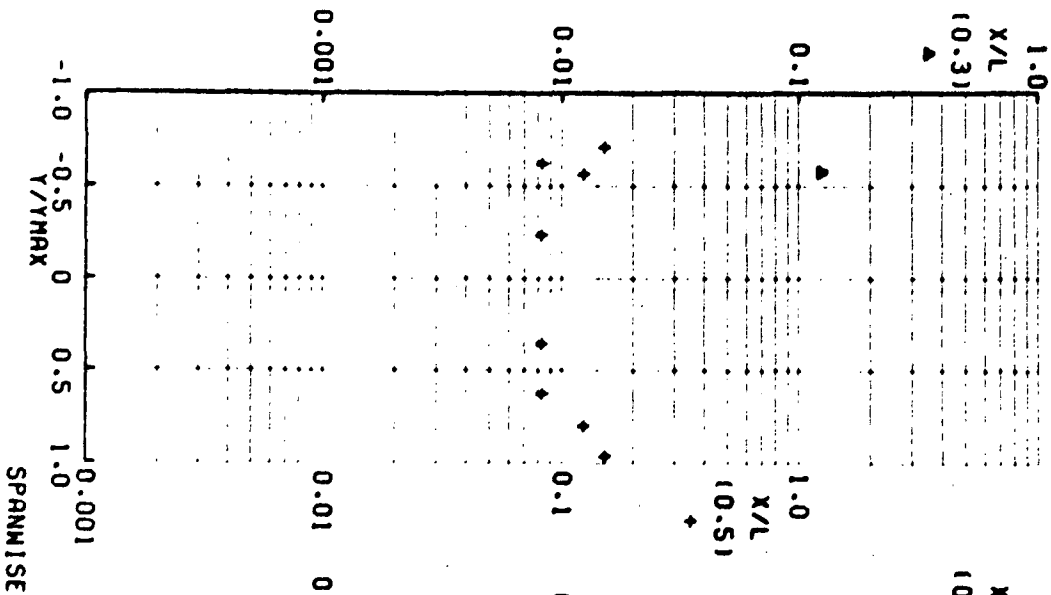
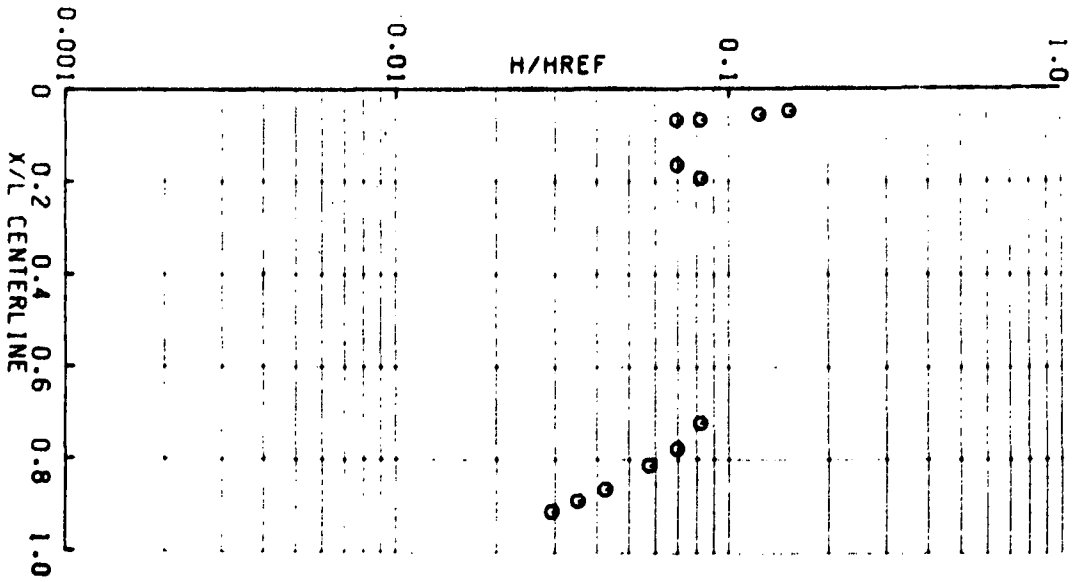
GROUP 372 PIC. NO. 1708 H/HREF 3.480E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DW0



GROUP 372 PIC. NO. 1714 H/HREF 2.910E-02 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DWO



GROUP 372 ALPHA (DEG) 10.0 HREF 5.756E-02 HACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 3.730E 06 CONF NAR-DWO



9/21/71

AEDICARD, INC. 1 ARNOLD AF, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H
V11162

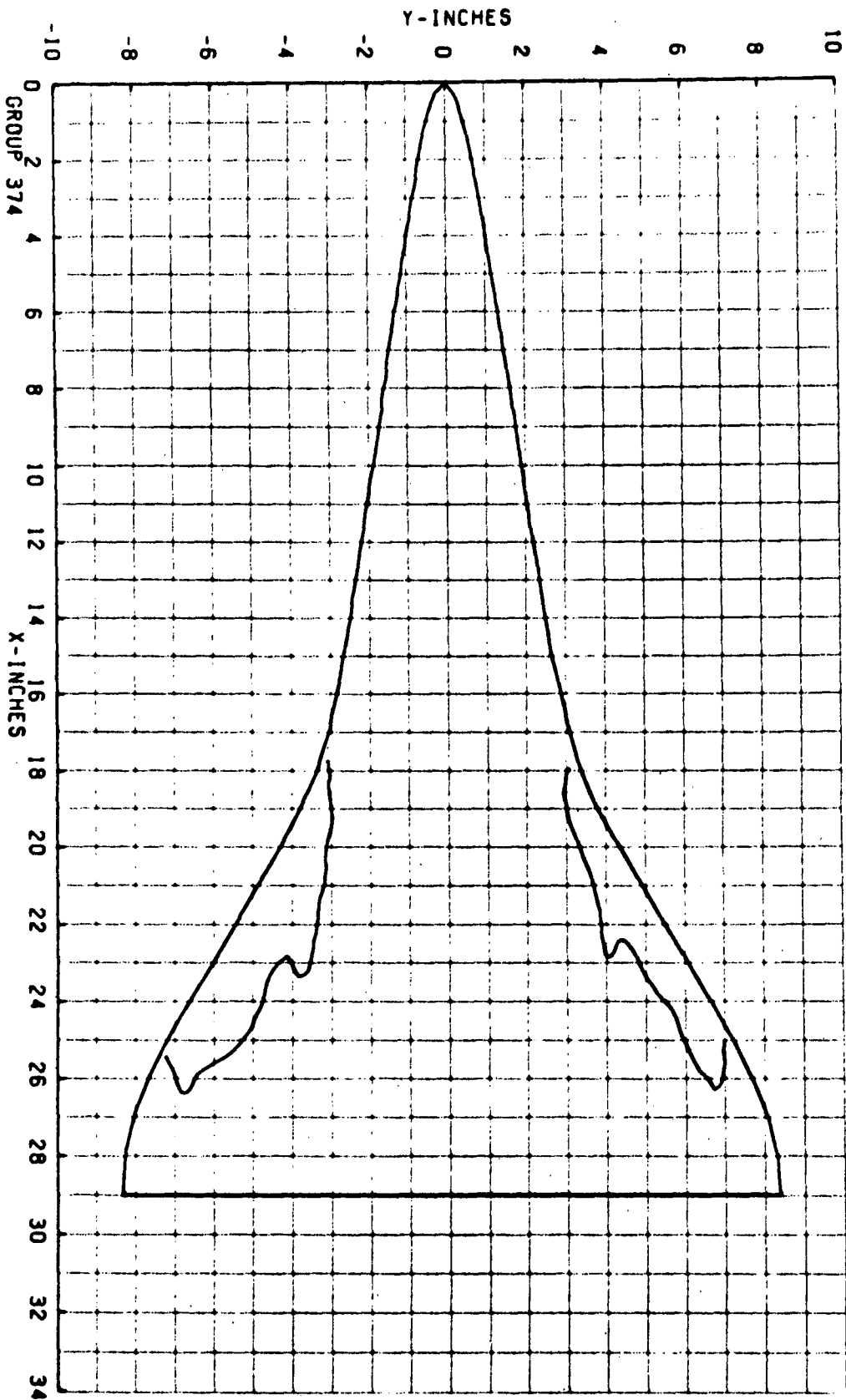
GROUP 374 CONFID 53 MODEL NAH-D-00 MACH NO 11.00 PO PSIA 861.3 TO DEG R 1348 ALPHA-PODEL 19.99 ALPHA-SECTOR 3.01 ALPHA-PREEND -23.00 ROLL-MODEL 180.00 YAW 0

T-1NF P-1NF Q-1NF V-1NF RHO-1NF PU-1NF RE/FT HREF SINEF
(DEG R) (PSIA) (PSIA) (F1/SEC) (SLUGS/F13) (LH-SEC/F12) (FT-1) (R= .013F1) (R= .013F1)
97.7 .088 3.952 .9875 7.574E-05 7.407E-08 3.73E 06 5.763E-02 2.439E-02

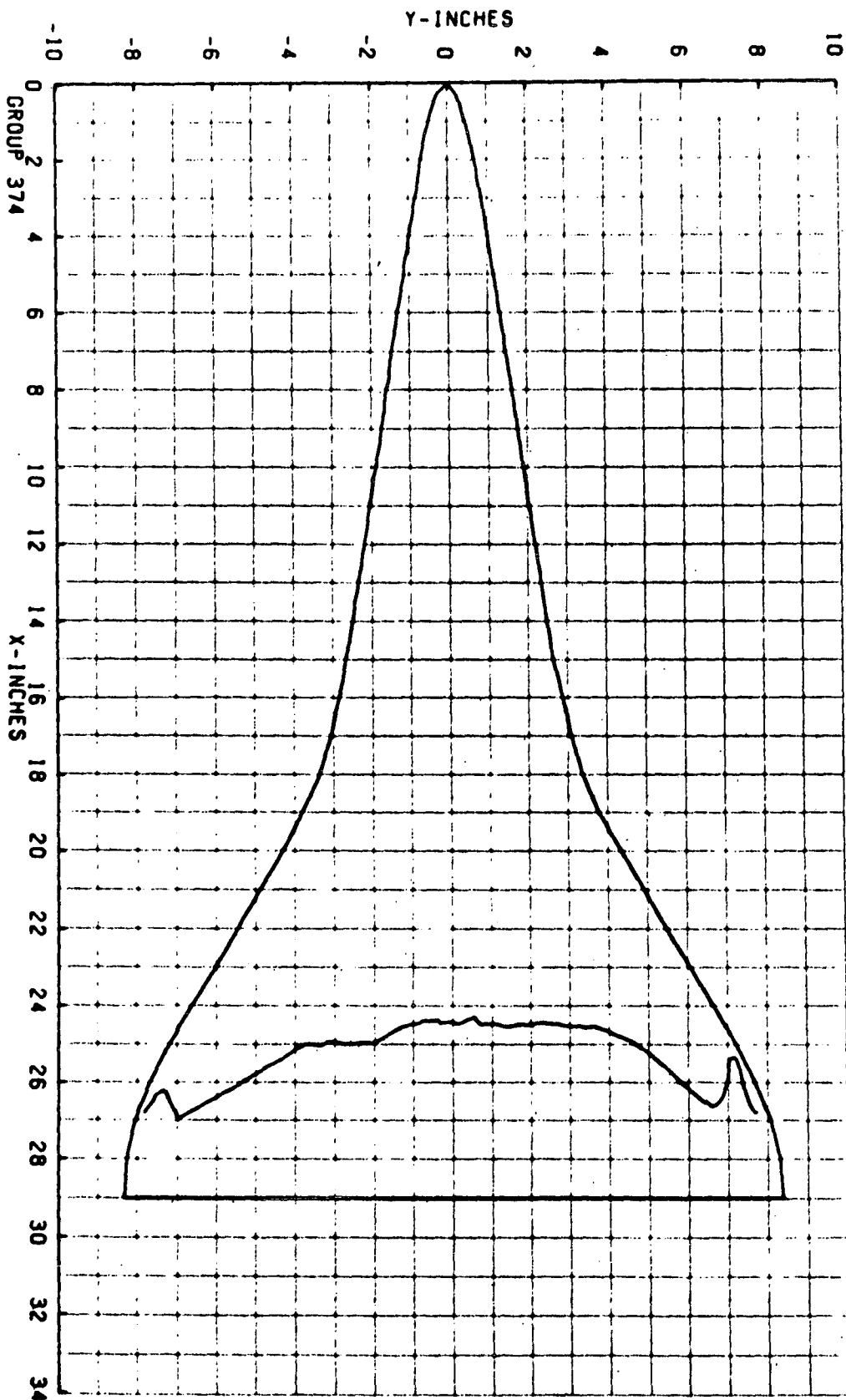
CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHUXCKR)

TOP(T) 450
SIDE(S) 450
BOT(B) 450
AVERAGE I = 78
-0.0081 SQUARE ROOT DEL TIME) * 0.11

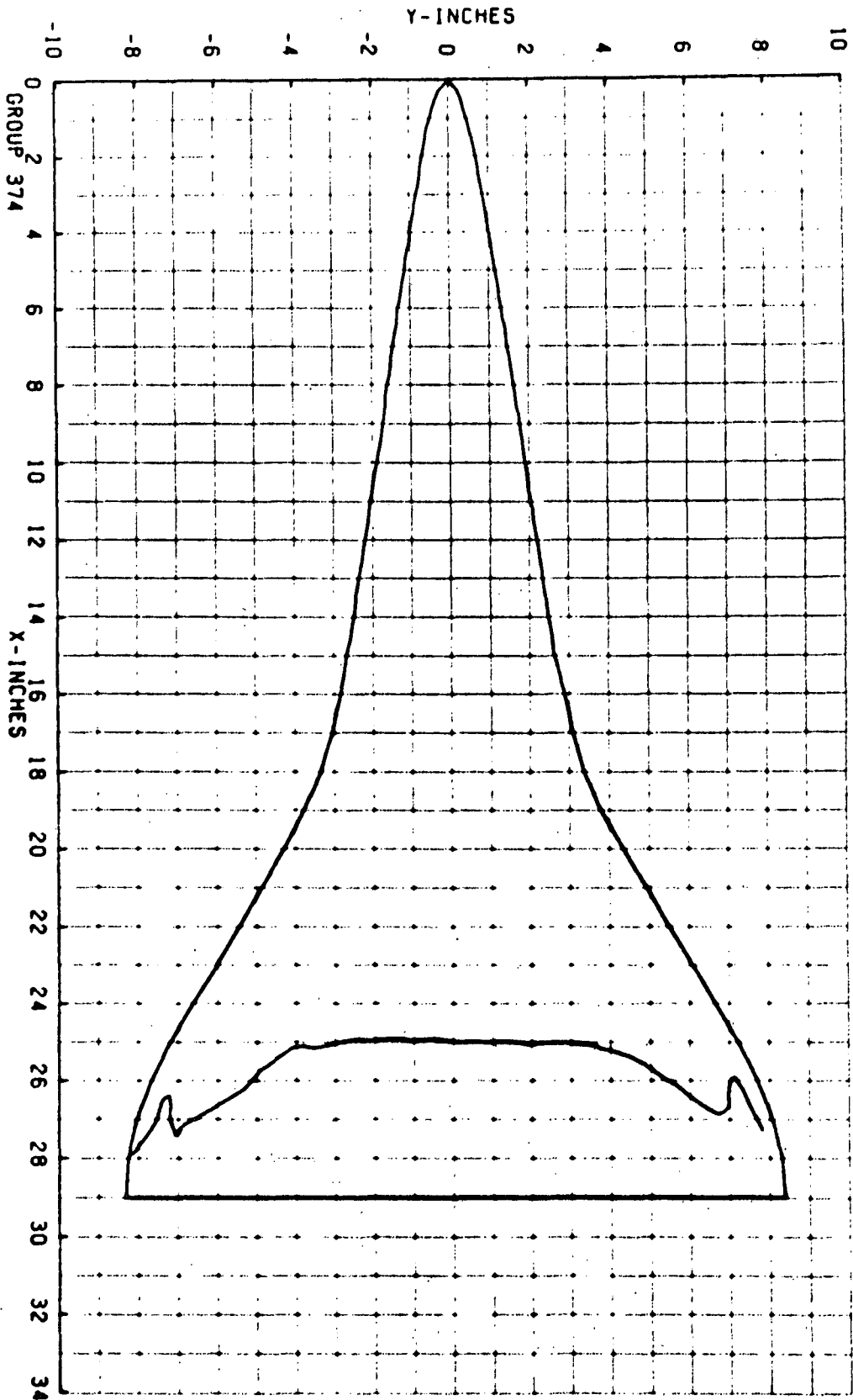
PIC NO	TIME	DELTIME	HT(U)	H(TO)/HREF	H(.Y1U)	H(.STO)/HREF	H(.ASTU)	H(.BSTO)/HREF	ST(10)	MODEL	TEMP F			
1	1759 (250)	2.20	2.11	1.54E-02	.2667	1.427E-02	.3342	2.207E-02	.3927	6.476E-03	86	76	0	0
1	1751 (250)	2.75	2.66	1.35E-02	.2340	1.691E-02	.2933	1.936E-02	.3358	5.683E-03	89	77	0	0
1	1754 (250)	5.35	4.26	1.03E-02	.1783	1.208E-02	.2235	1.475E-02	.2559	4.333E-03	101	78	0	0
1	1760 (250)	8.55	7.46	1.32E-03	.1270	9.017E-03	.1591	1.051E-02	.1822	3.085E-03	124	80	0	0
1	1767 (250)	12.35	11.26	5.62E-03	.0975	7.994E-03	.1221	8.066E-03	.1399	2.367E-03	147	83	0	0



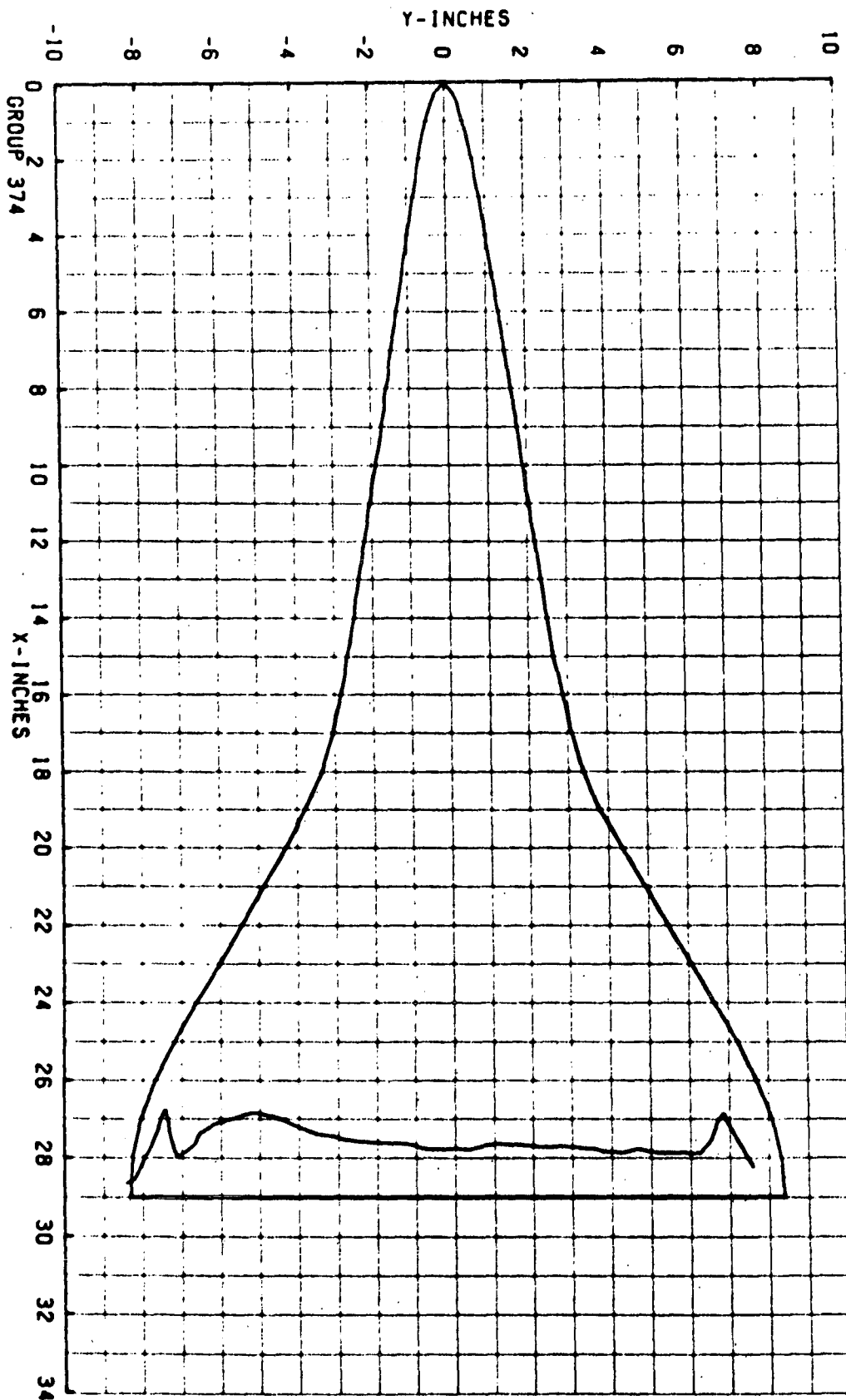
GROUP 374 PIC. NO. 1750 H/HREF 2.667E-01 MODEL SURFACE - BOTTOM
 MRCH 8.00 ALPHA (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NRR-DWO



GROUP 374 PIC. NO. 1751 H/HREF 2.340E-01 MODEL SURFACE - BOTTOM
 MRCH 8.00 ALPHA (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NAR-DW0

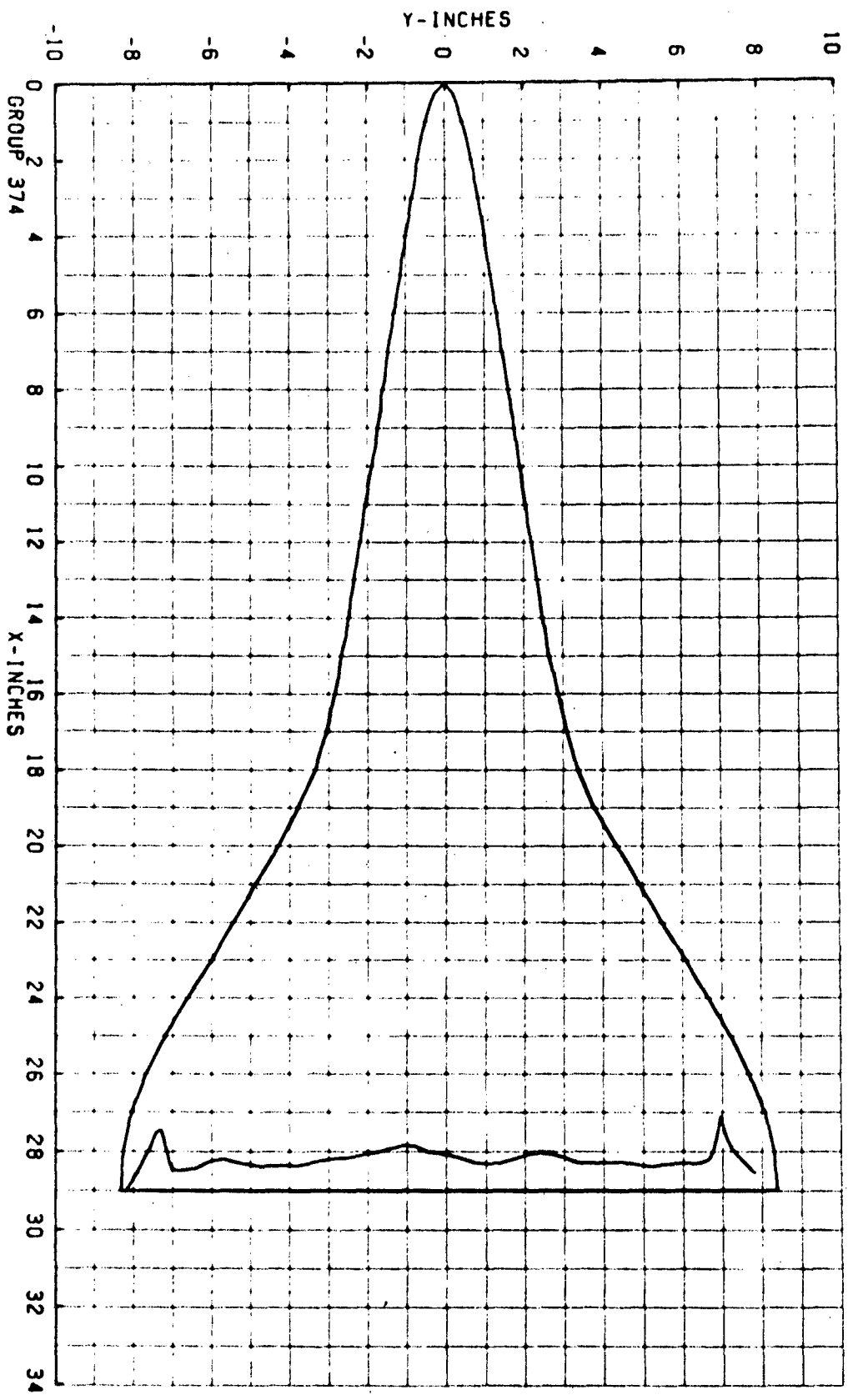


GROUP 374 PIC. NO. 1754 H/HREF 1.783E-01 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NAR-DMD

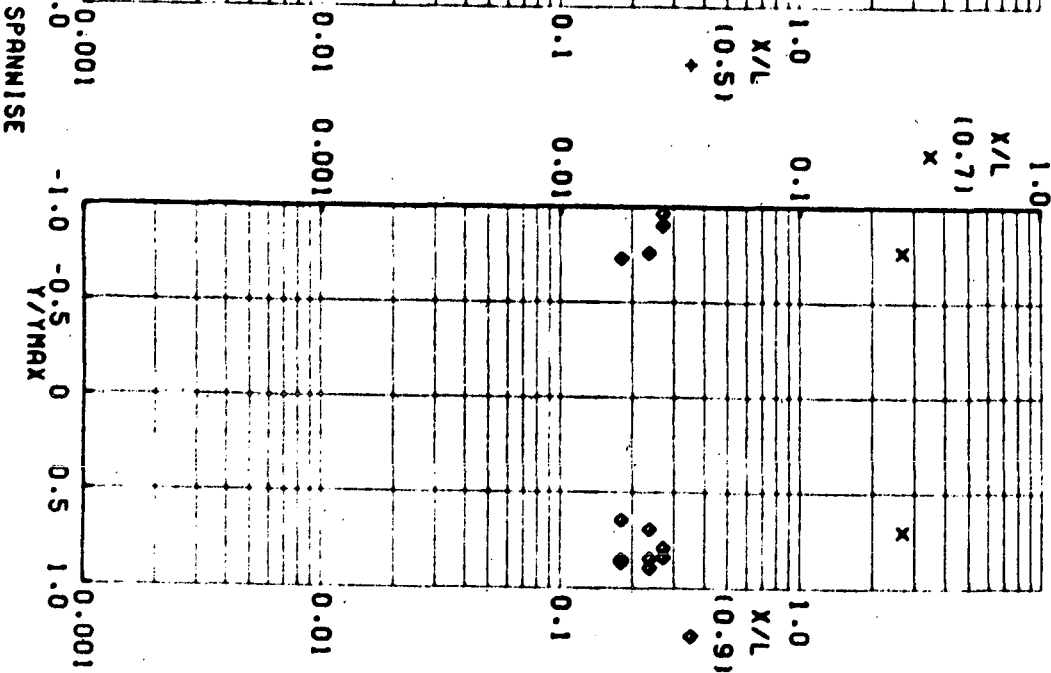
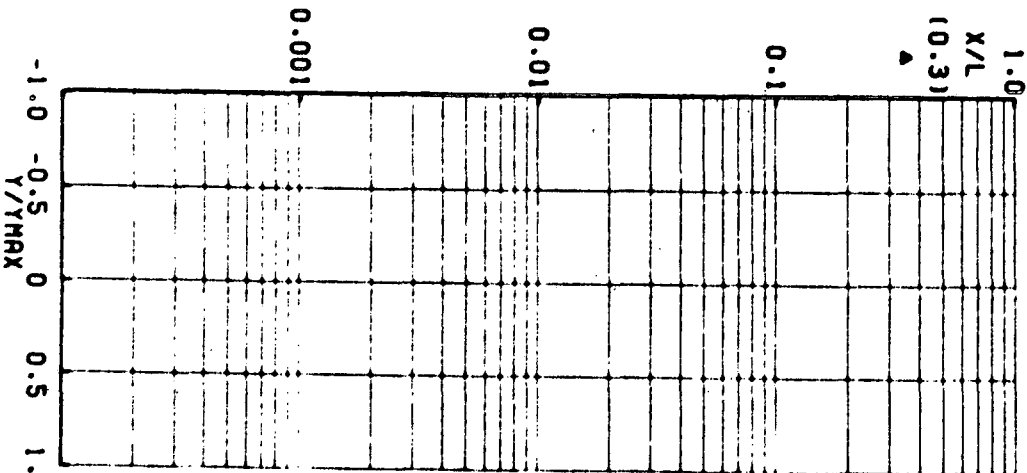
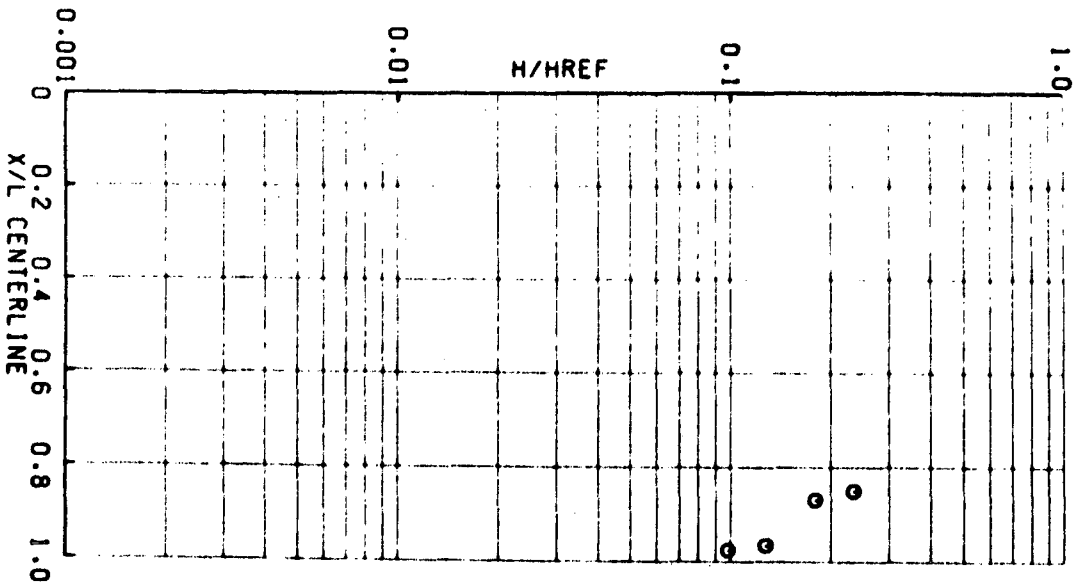


GROUP 374 PIC. NO. 1760 H/HREF 1.270E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NAR-DWO

GROUP 374 PIC. NO. 1767 H/HREF 9.750E-02 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NAR-DWO



GROUP 374 ALPHA (DEG) 20.0 HREF 5.763E-02 HACH 8.00
 MODEL SURFACE - BOTTOM REF/FT 3.730E 06 CONF NAR-DMO



6/27/71

AFDC/ARNO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL #
VT1162

GROUP 160 CONFIG C1 MODEL NAR-D=0 MACH NO 8.00 PN PSIA 856.3 TO DEG R 1332 ALPHA-MODEL 30.02 ALPHA-SECTOR -7.02 ALPHA-REBEND -23.00 ROLL-MODEL 180.00 YAW 0.0

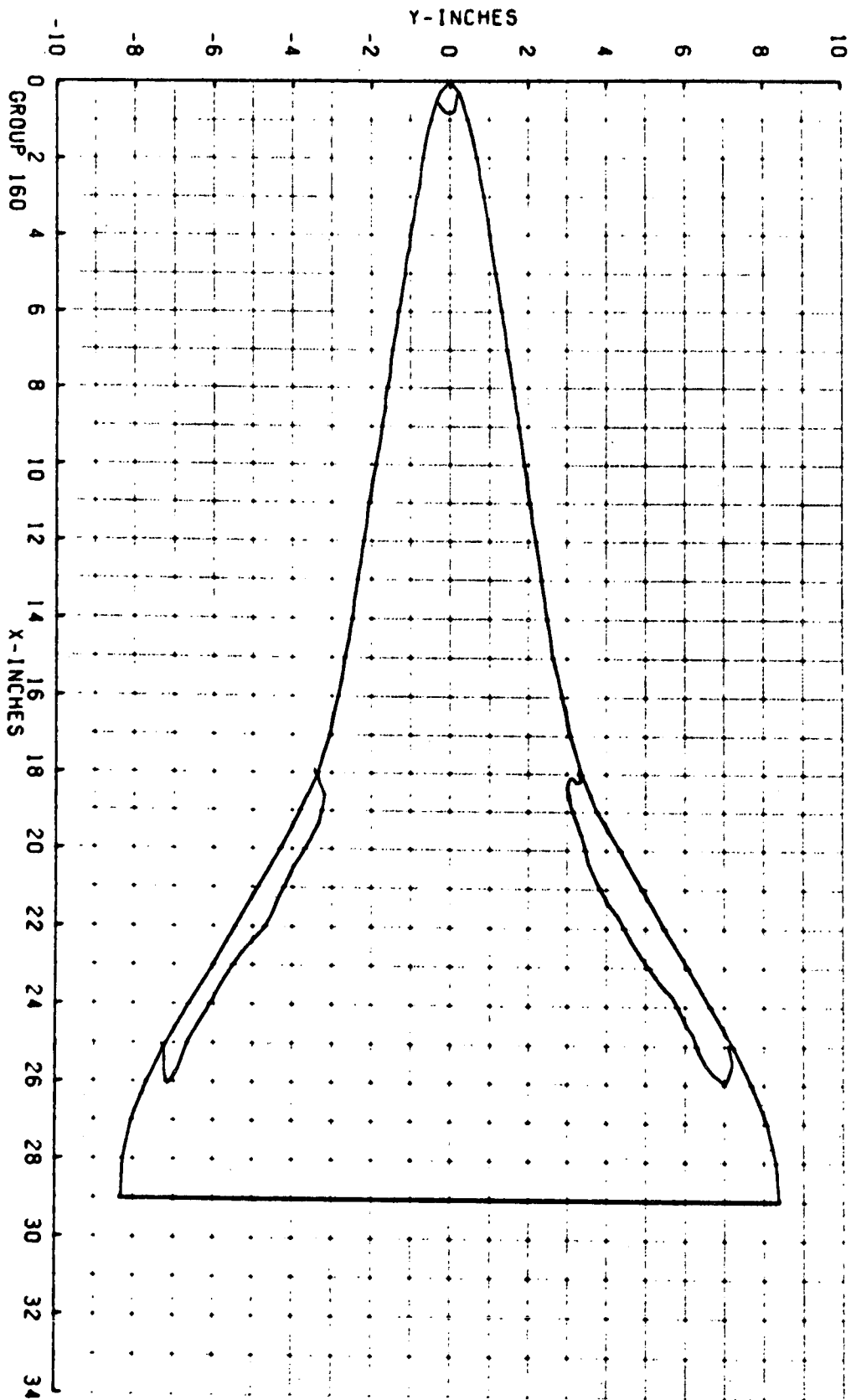
T-1NF P-1NF Q-1NF V-1NF PHO-1NF MU-1NF GE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R= .013FT) (R= .017FT)
96.5 .098 3.929 382 7.622E-05 7.773E-08 3.78E 06 5.734E-02 2.429E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODCRK)

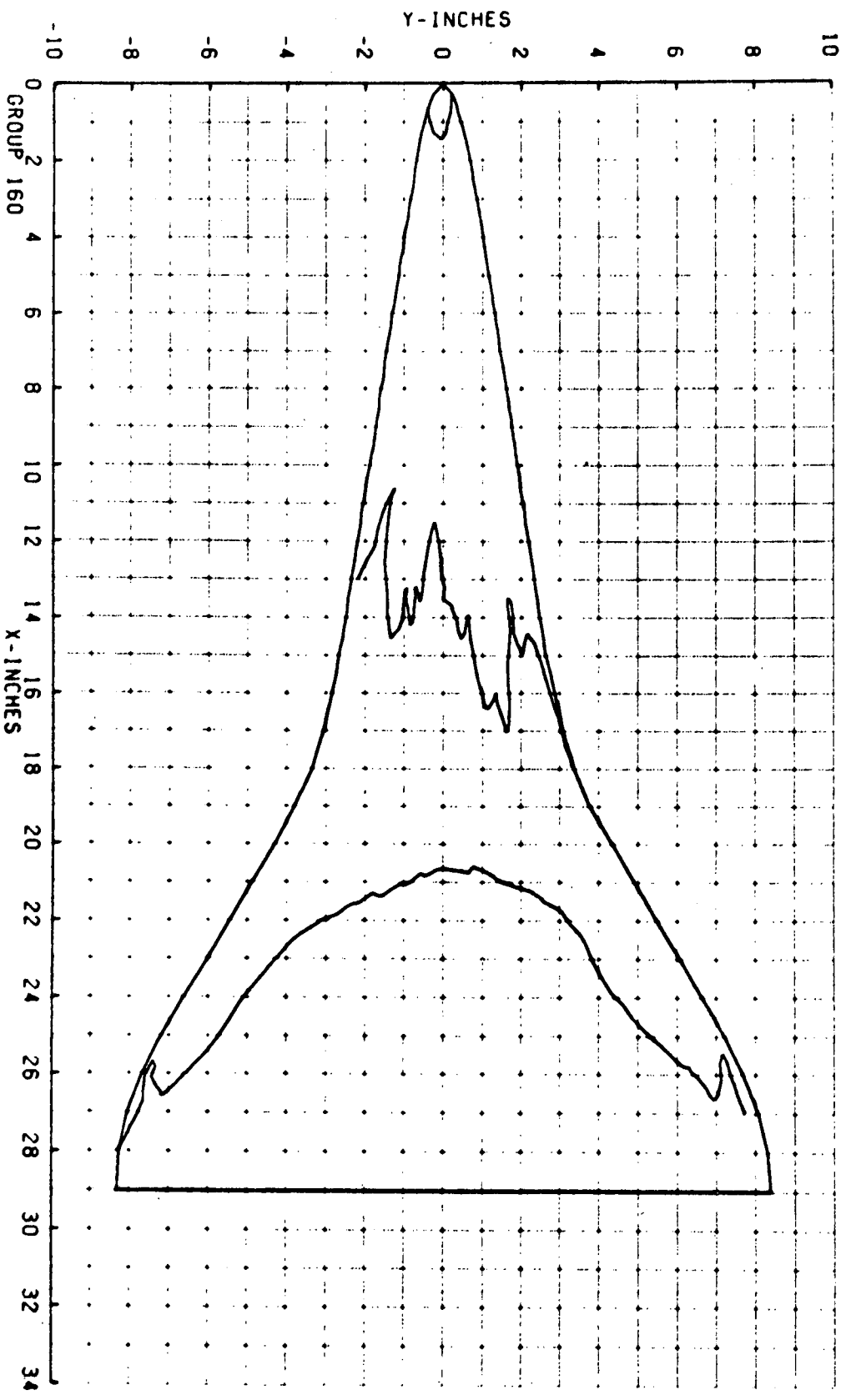
TOP(T) 300 AVERAGE TM = 73 -0.008(SQUARE ROOT DFL TIME) * 0.11
SIDE(S) 100
POT(CM(8)) 100

PGC NO	TYPE	RELTIME	H(TN)	H(TOY)/HREF	HI(.9TO)	H(.5TC)/HREF	HI(.85TO)	HI(.85TO)/HREF	ST(TO)	MODEL	TEMP F
T 3202 (300)	3.65	2.58	1.08E-02	.3447	2.534E-02	.4418	2.952E-02	.5147	8.312E-02	74	73
T 3205 (300)	5.20	4.13	1.61E-02	.2630	1.933E-02	.3371	2.252E-02	.3625	5.742E-02	77	73
T 3208 (300)	6.60	5.13	1.24E-02	.2164	1.591E-02	.2774	1.853E-02	.3211	5.218E-02	81	74
T 3212 (300)	8.90	7.83	1.02E-02	.1786	1.312E-02	.2299	1.529E-02	.2647	4.309E-02	89	75
T 3220 (300)	13.05	11.98	7.78E-03	.1356	9.968E-03	.1739	1.161E-02	.2025	3.272E-02	104	76

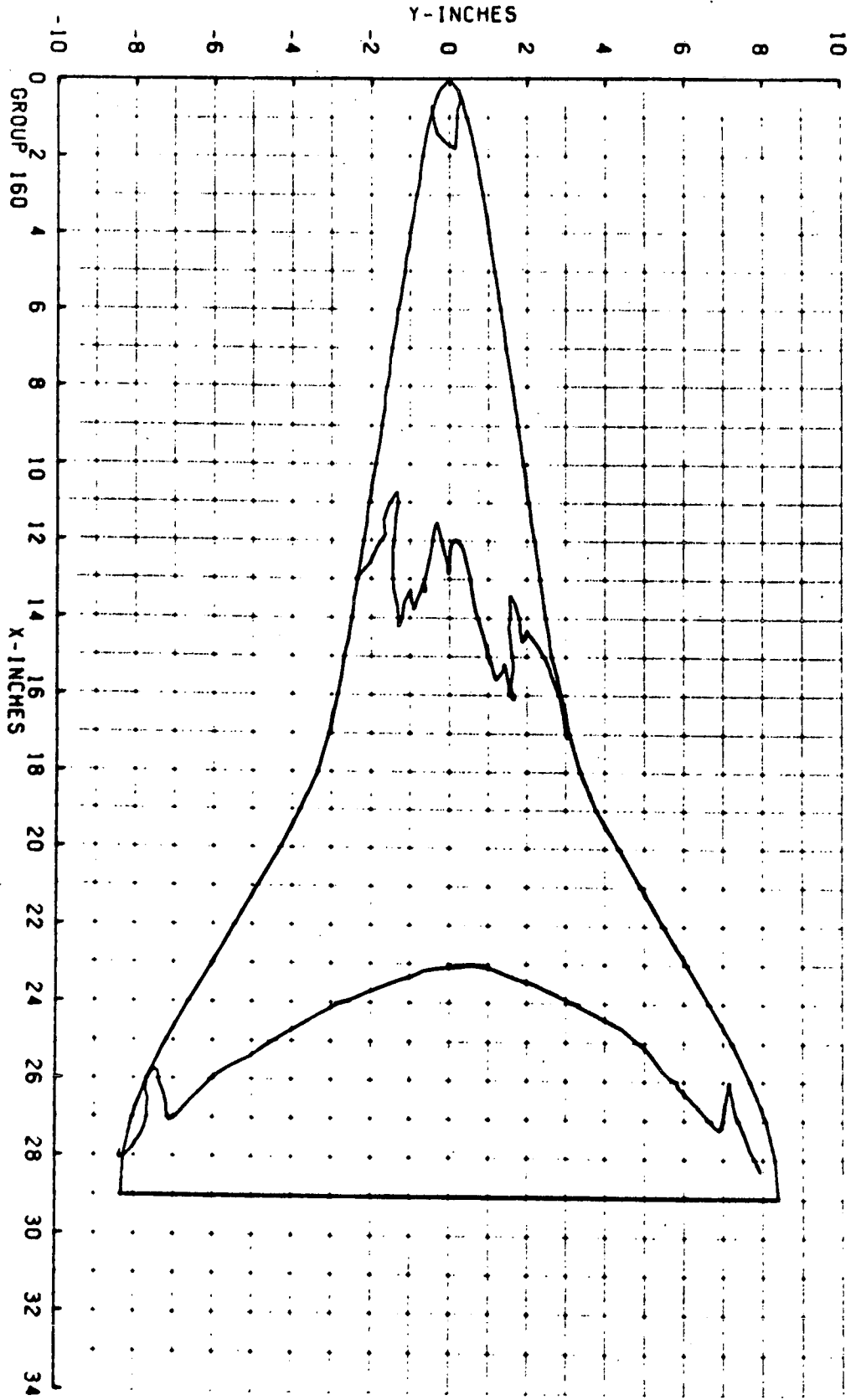
GROUP 160 PIC. NO. 3202 H/HREF 3.447E-01 MODEL SURFACE - BOTTOM
HRCH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NAR-DWO



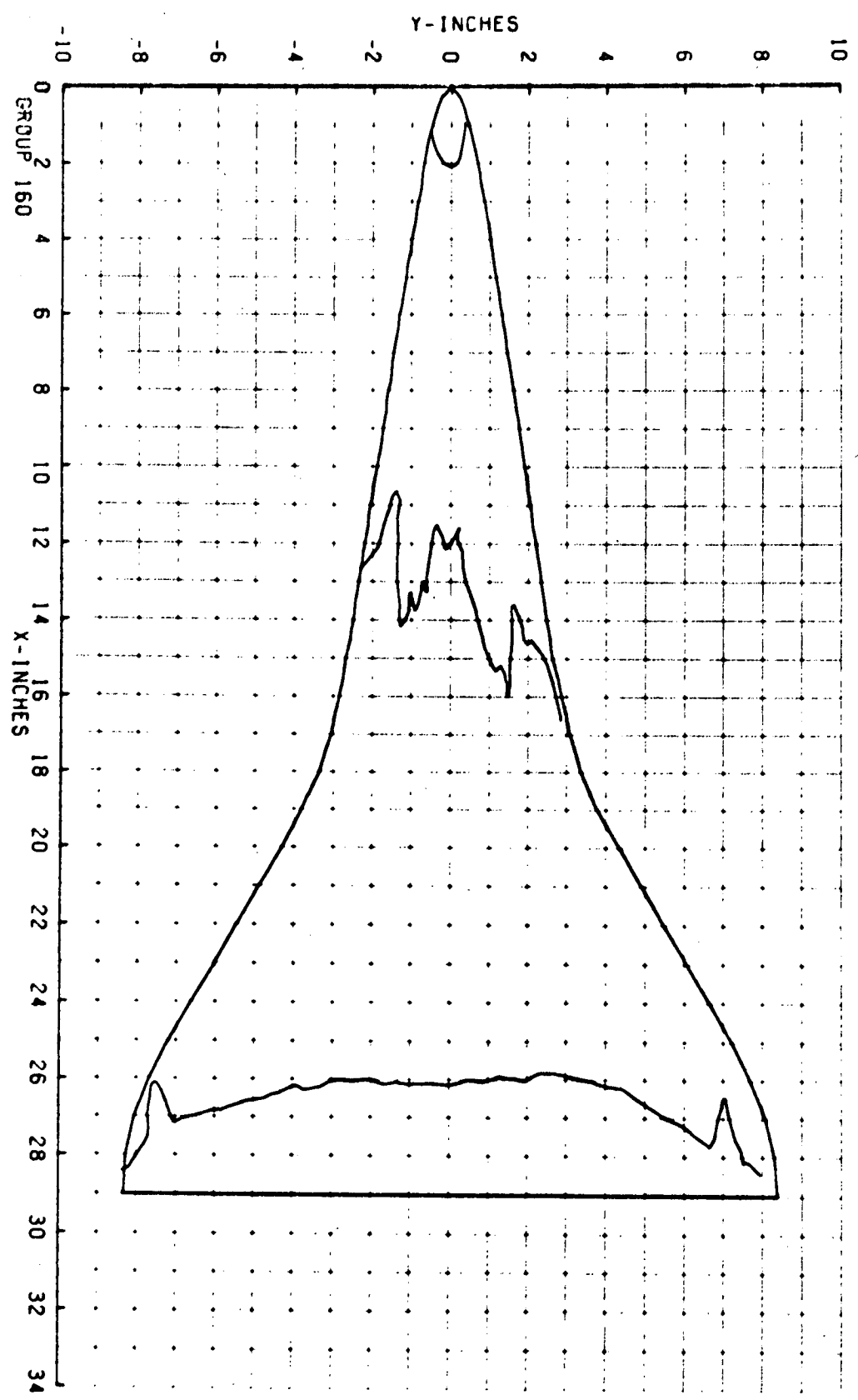
GROUP 160 PIC. NO. 3205 H/HREF 2.630E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NAR-DMD



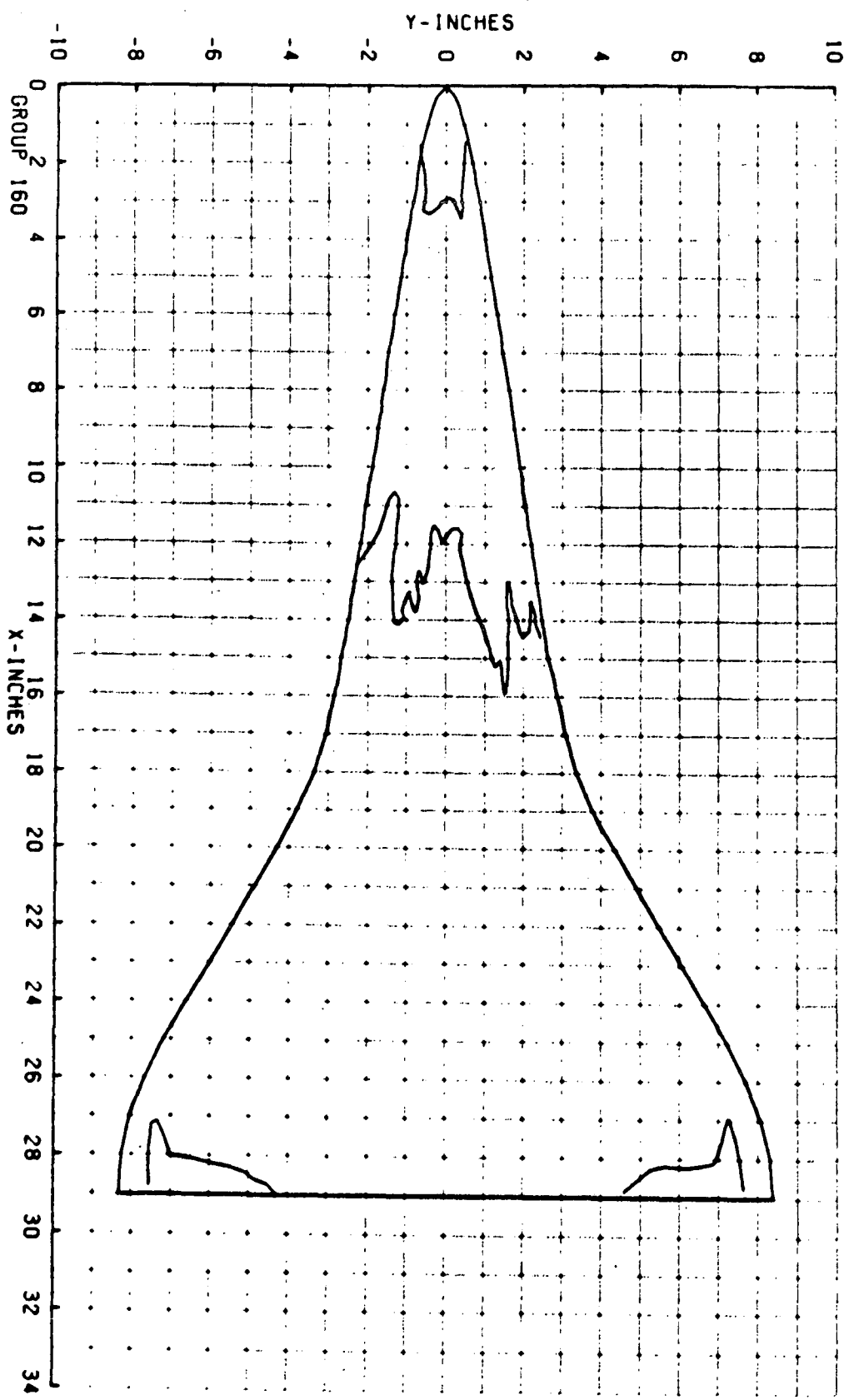
GROUP 160 PIC. NO. 3208 H/HREF 2.164E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NAR-DMD



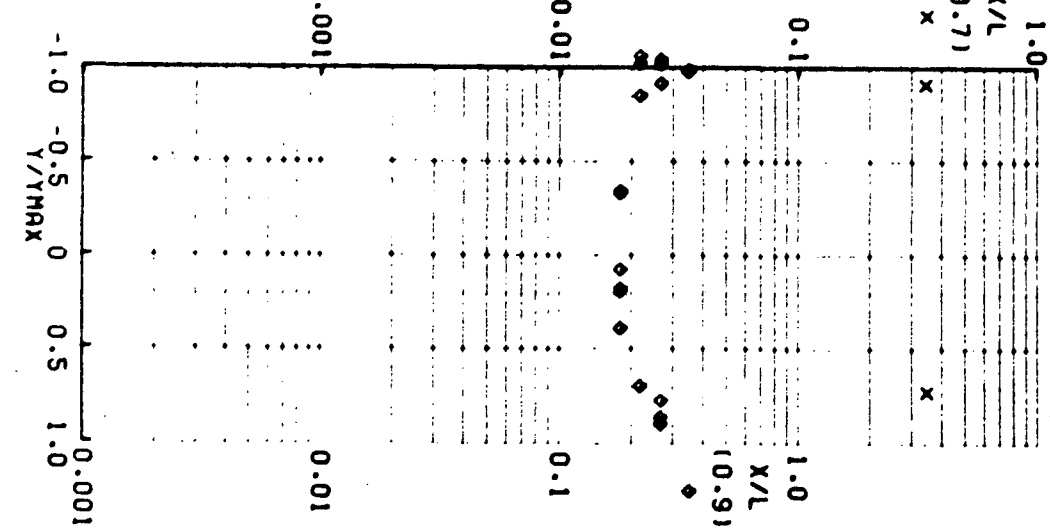
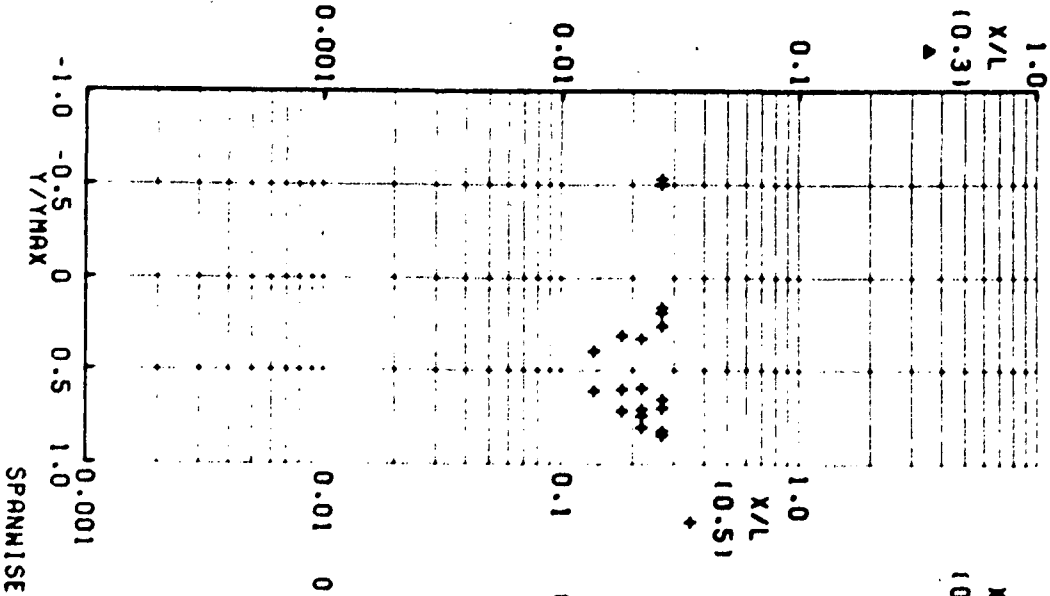
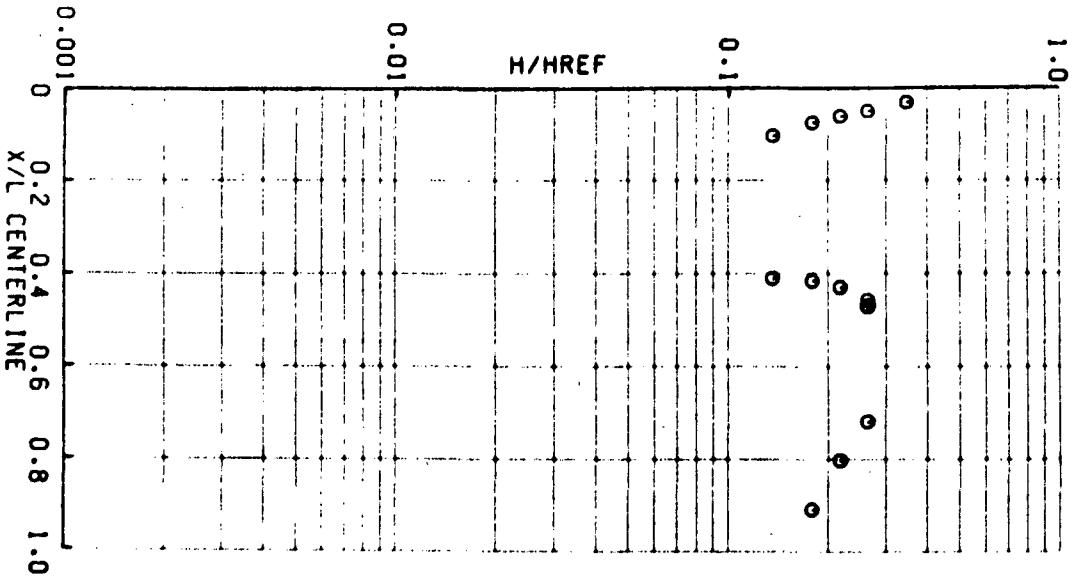
GROUP 160 PIC. NO. 3212 H/HREF 1.786E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NAR-DMO



GROUP 160 PIC. NO. 3220 H/HREF 1.356E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NAR-DNO



GROUP 160 ALPHA (DEG) 30.0 HREF 5.734E-02 MACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 3.780E 06 CONF NRR-DMO



6/2/71

AFDIAAR(ING.) ARNOLD AFB, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9
V11162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PRERNN ROLL-MODEL YAW

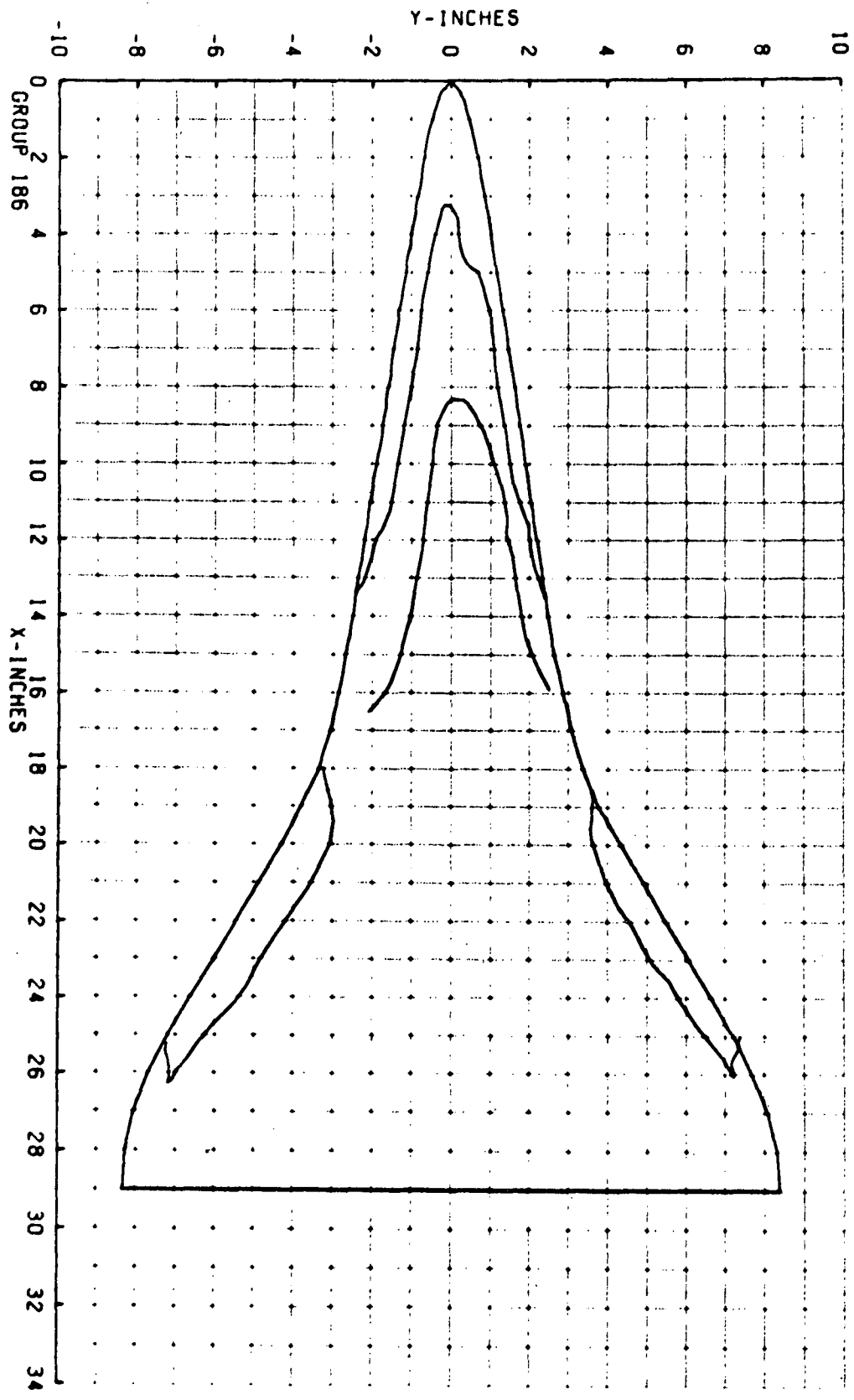
184 51 NAR-DWO 2.00 854.7 1356 39.98 10.02 -50.00 180.00 .0

T-1NF P-1NF Q-1NF V-1NF RHO-1NF PU-1NF RE/FT HREF STRF
(NEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)
97.5 .088 3.922 3971 7.532E-05 7.851E-08 2.71E 06 5.739E-02 2.446E-02

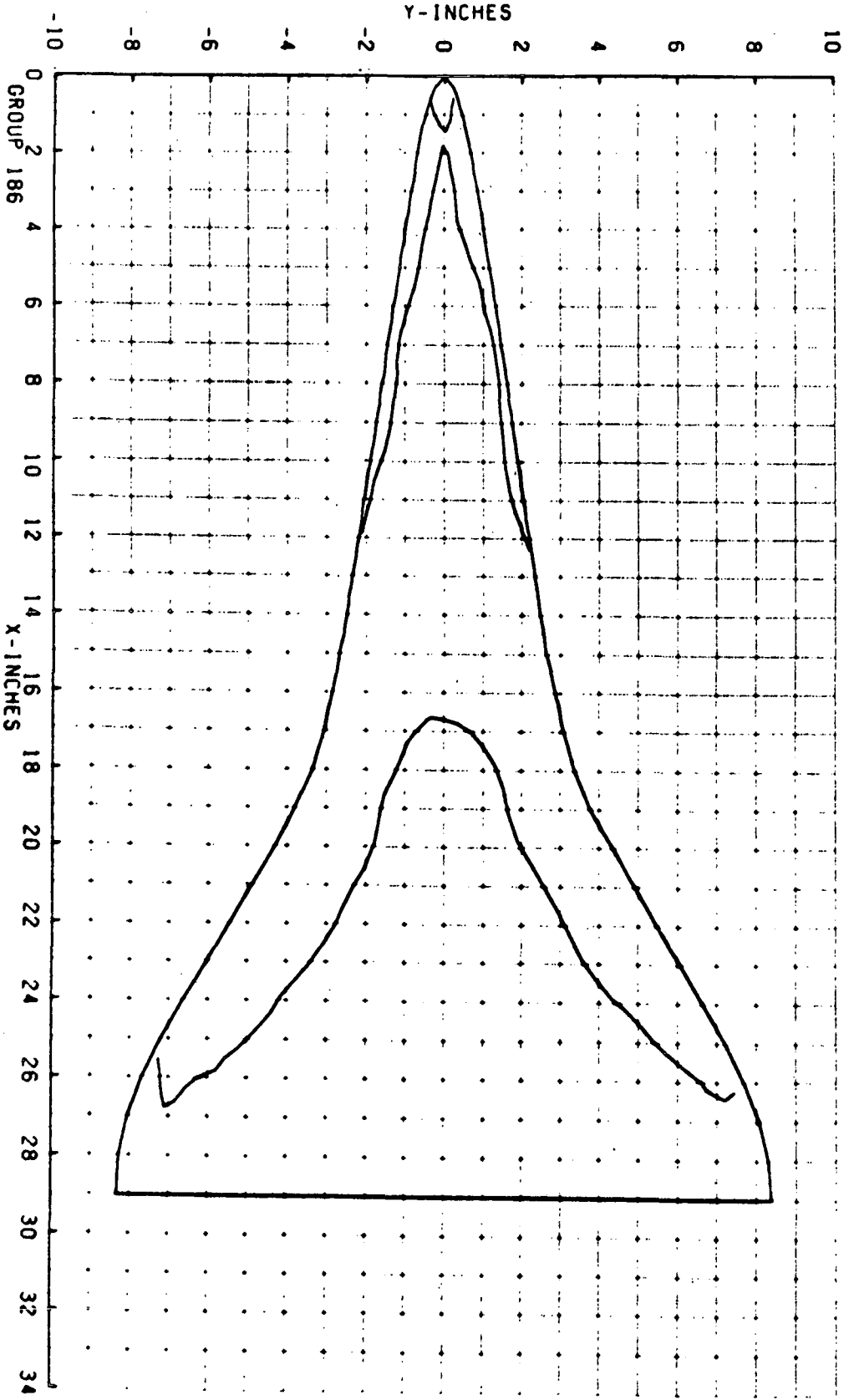
CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCXK)
TOP(T) 356
SIDE(S) 113 AVERAGE IV = 87 -0.008(SQUARE ROOT DEF. TIME) = 0.11
BOTTOM(B) 113

PIC NC	TIME	NETTIME	M(TO)	H(TO)/HREF	M(.910)	H(.570)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL	TEMP F
T 3931 (351)	4.25	3.21	2.14E-02	.3722	2.793E-02	.4966	3.305E-02	.5759	9.013E-03	0	85 92
T 3933 (351)	5.30	4.76	1.81E-02	.3157	2.359E-02	.4128	2.804E-02	.4885	7.646E-03	0	85 95
T 3935 (351)	6.40	5.36	1.58E-02	.2754	2.067E-02	.3601	2.446E-02	.4241	6.667E-03	0	86 98
T 3935 (351)	8.50	7.44	1.29E-02	.2250	1.688E-02	.2941	1.998E-02	.3491	5.446E-03	0	87 107
T 3543 (350)	10.60	9.56	1.10E-02	.1923	1.483E-02	.2514	1.707E-02	.2975	4.657E-03	0	88 117

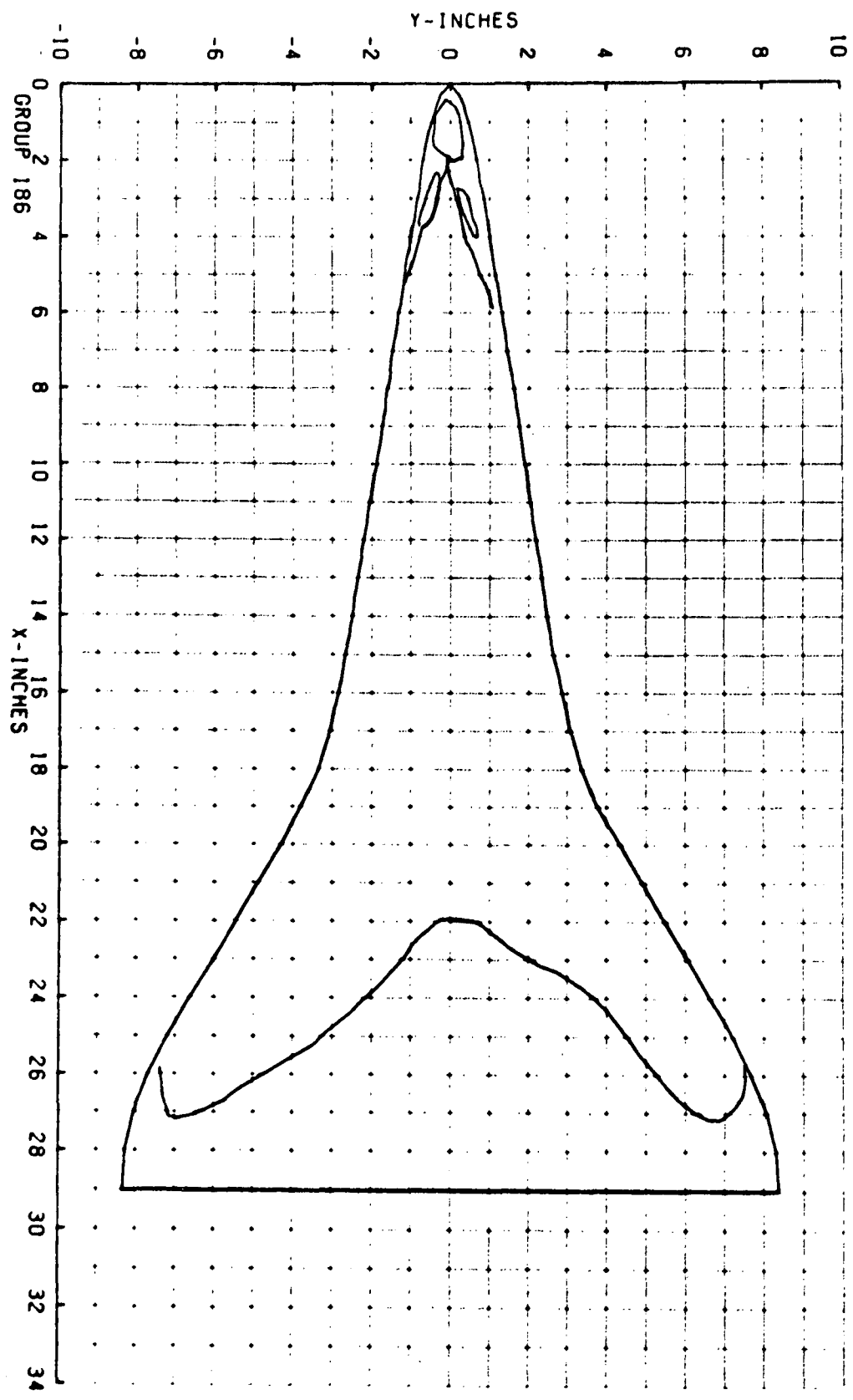
GROUP 186 PIC. NO. 3931 H/HREF 3.722E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.739E-02 RE/FT 3.710E 06 CONF NAR-DMO



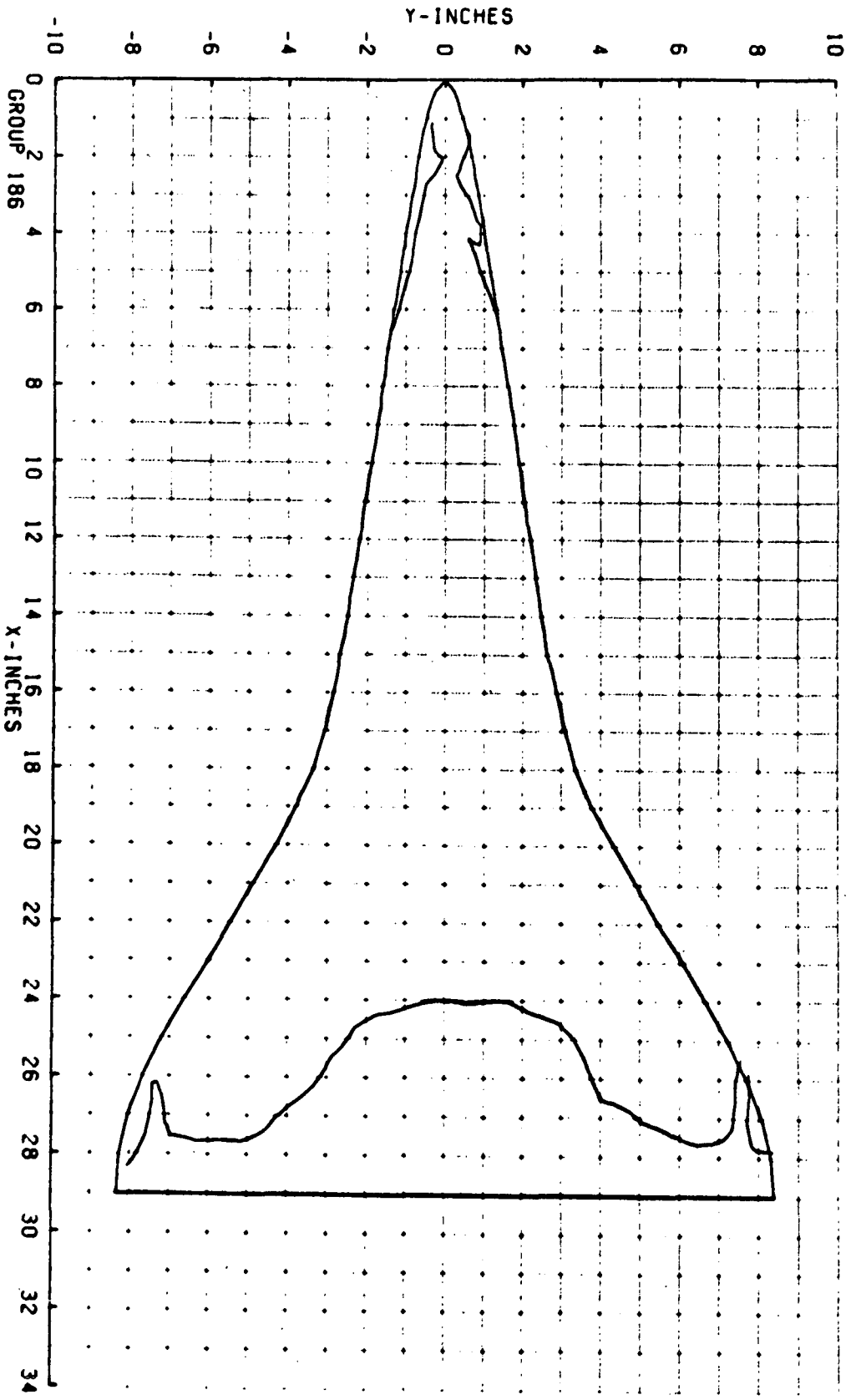
GROUP 186 PIC. NO. 3933 H/HREF 3.157E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.739E-02 RE/FT 3.710E 06 CONF NAR-DMO

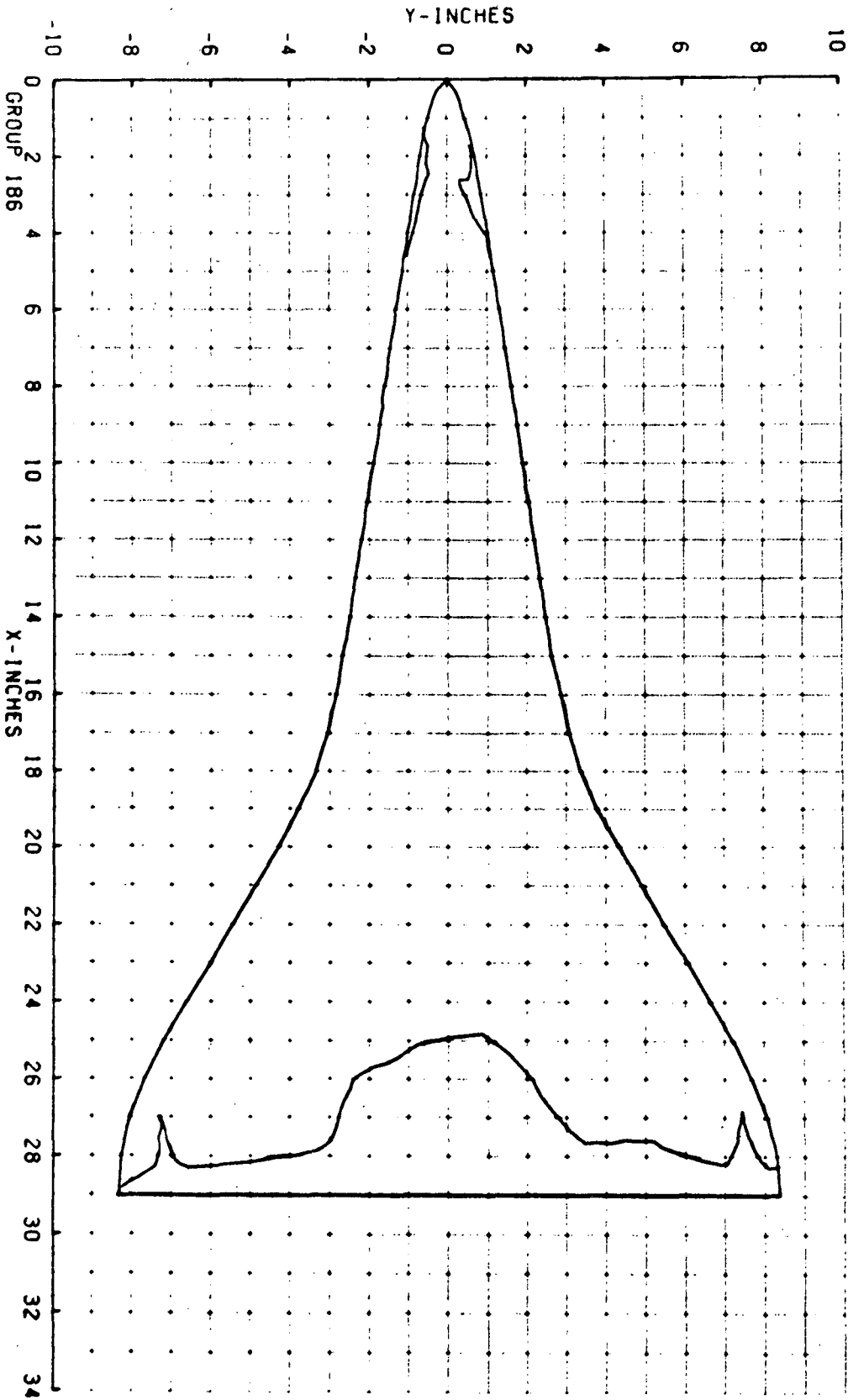


GROUP 186 PIC. NO. 3935 H/HREF 2.754E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.739E-02 RE/FT 3.710E 06 CONF NAR-DHO



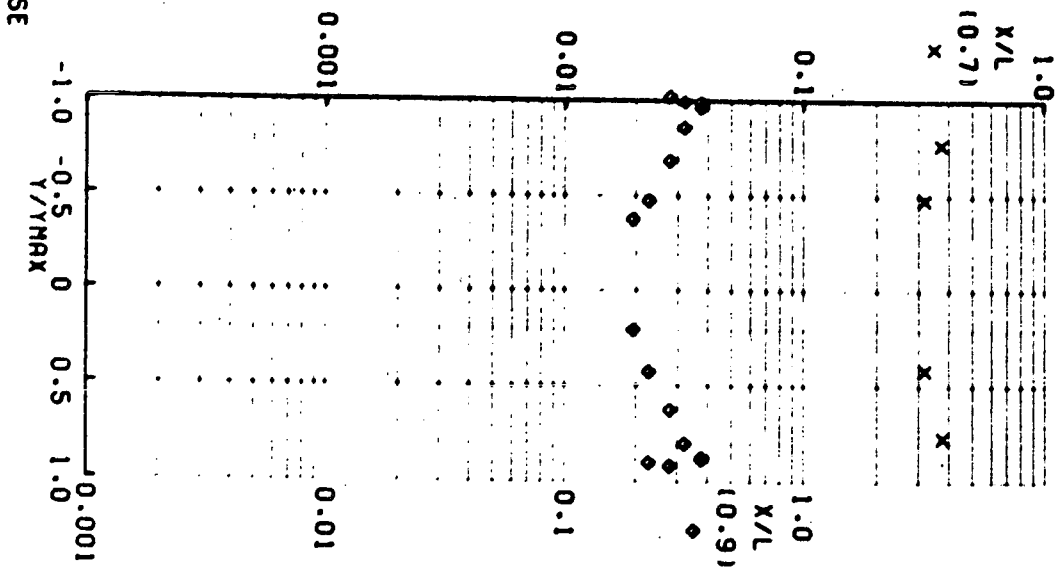
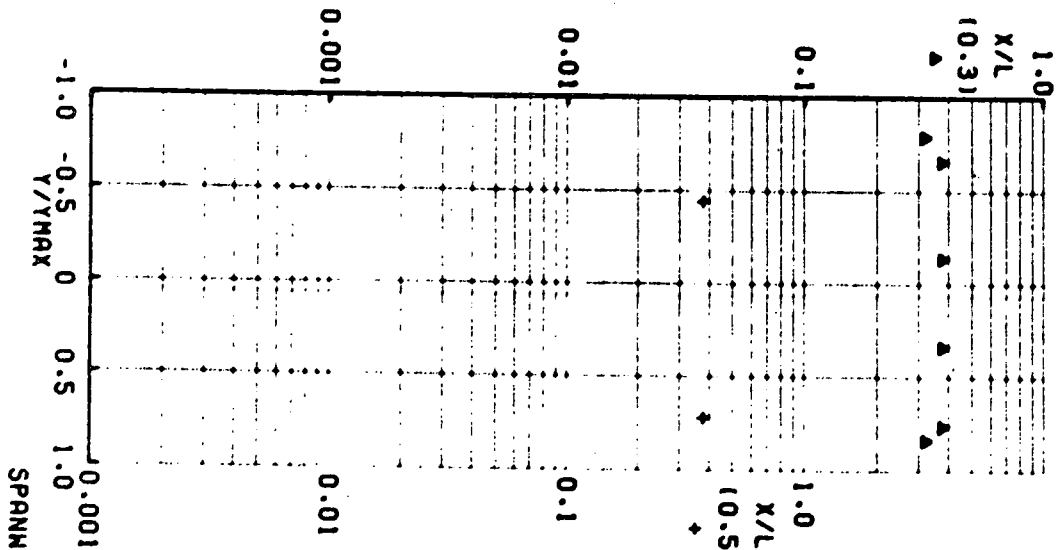
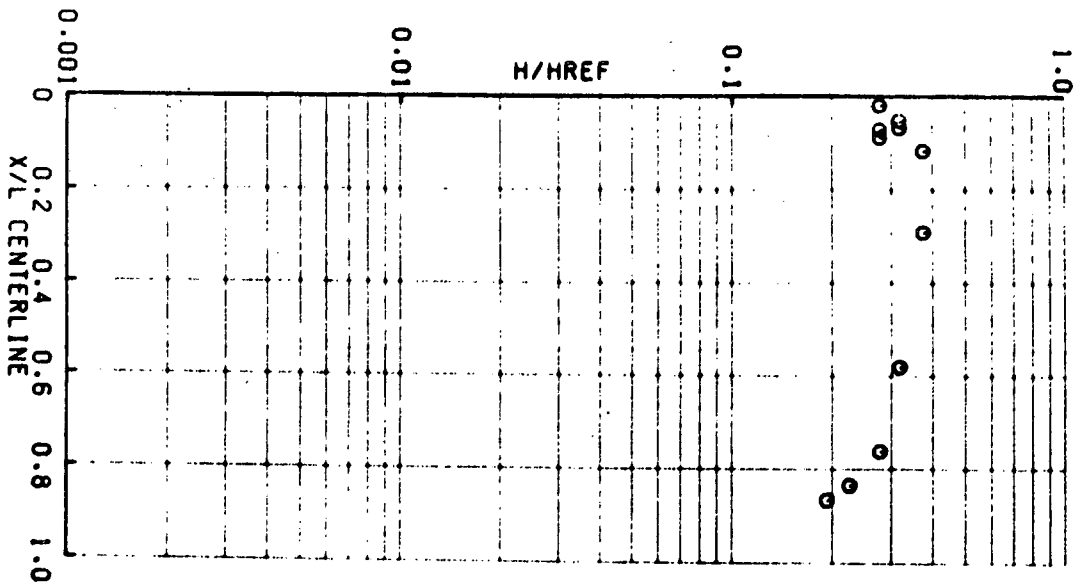
GROUP 186 PIC. NO. 3939 H/HREF 2.250E-01 MODEL SURFACE - BOTTOM
HACH 8.00 ALPHA (DEG) 40.0 HREF 5.739E-02 RE/FT 3.710E 06 CONF NRR-DWD





GROUP 186 PIC. NO. 3943 H/HREF 1.923E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.739E-02 RE/FT 3.710E 06 CONF NAR-DMD

GROUP 186 ALPHA (DEG) 40.0 HREF 5.739E-02 MACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 3.710E 06 CONF NRR-DMO



6/ 2/71

AFDCC(ARQ,INC.) ARNOLD AFB, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL #
VT1162

GROUP CONFIG MODEL MACH NO PO PSTA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREREN ROLL-MODEL YAW

194 51 NAR-DRO 9.00 856.6 1351 50.01 -01 -50.00 180.00 0

T-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF STREF
(NEG R) (PST A) (PST A) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R= .013FT) (R= .013FT)
97.9 .088 3.931 3879 7.519E-05 7.883E-08 2.70E 06 5.749E-02 2.449E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMO(CXK))
TOP(T) 400
SIDE(S) 113 AVERAGE T_w = 85 -0.008(SQUARE ROOT DEL TIME) + 0.11
ROTCH(MB) 113

PIC_NC TIME DELTYPE H(TOT) H(TOT)/HREF H(.97OT) H(.97OT)/HREF H1.85(TOT) H1.85(TOT)/HREF ST(TOT) MODEL_TEMP F

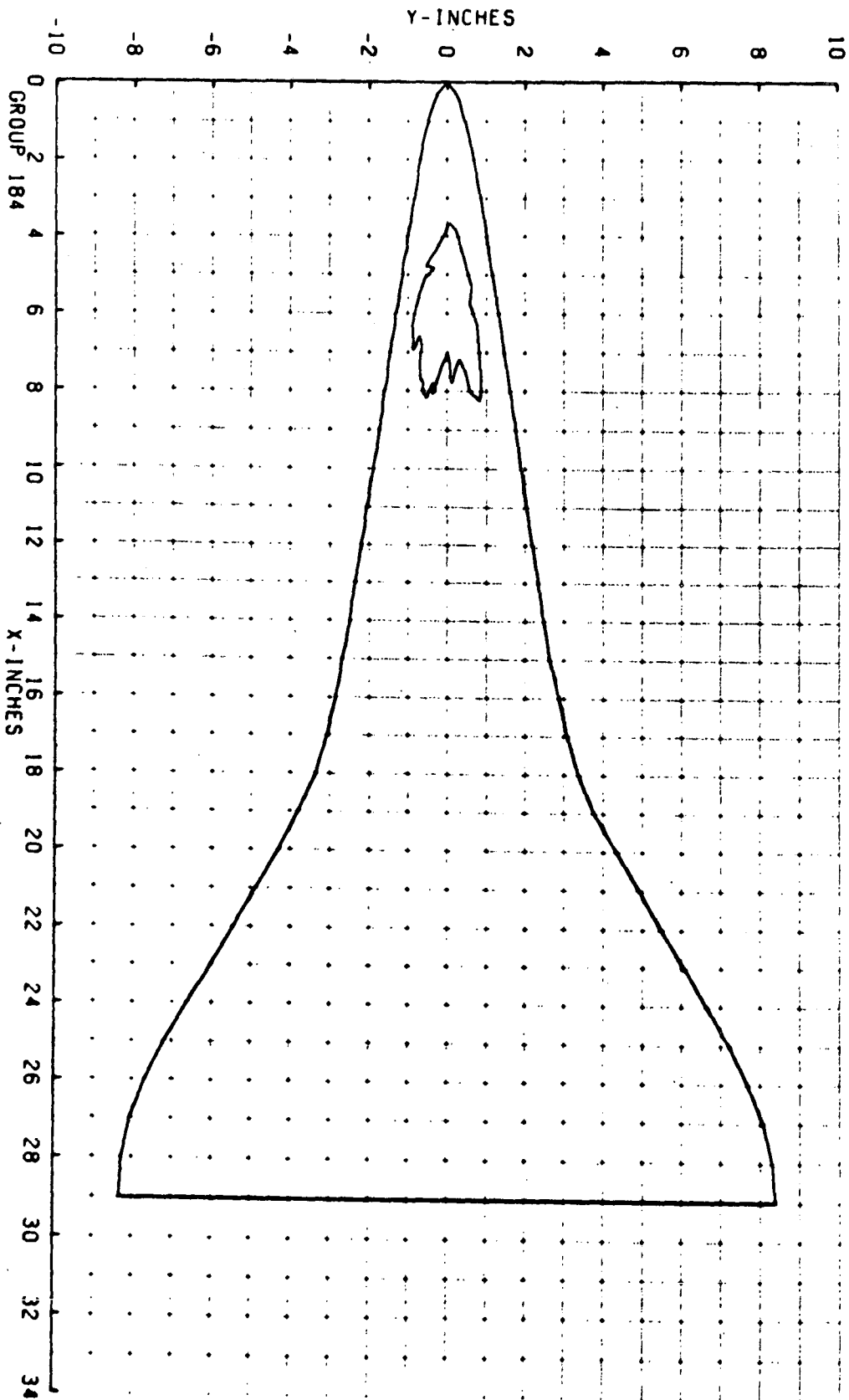
T 3868 (400) 5.30 4.23 2.13E-02 .4056 3.130E-02 .5444 3.786E-02 .6586 9.911E-03 92 84 94 0

T 3870 (400) 6.40 5.33 2.11E-02 .3536 2.728E-02 .4746 3.301E-02 .5741 8.553E-03 98 84 98 0

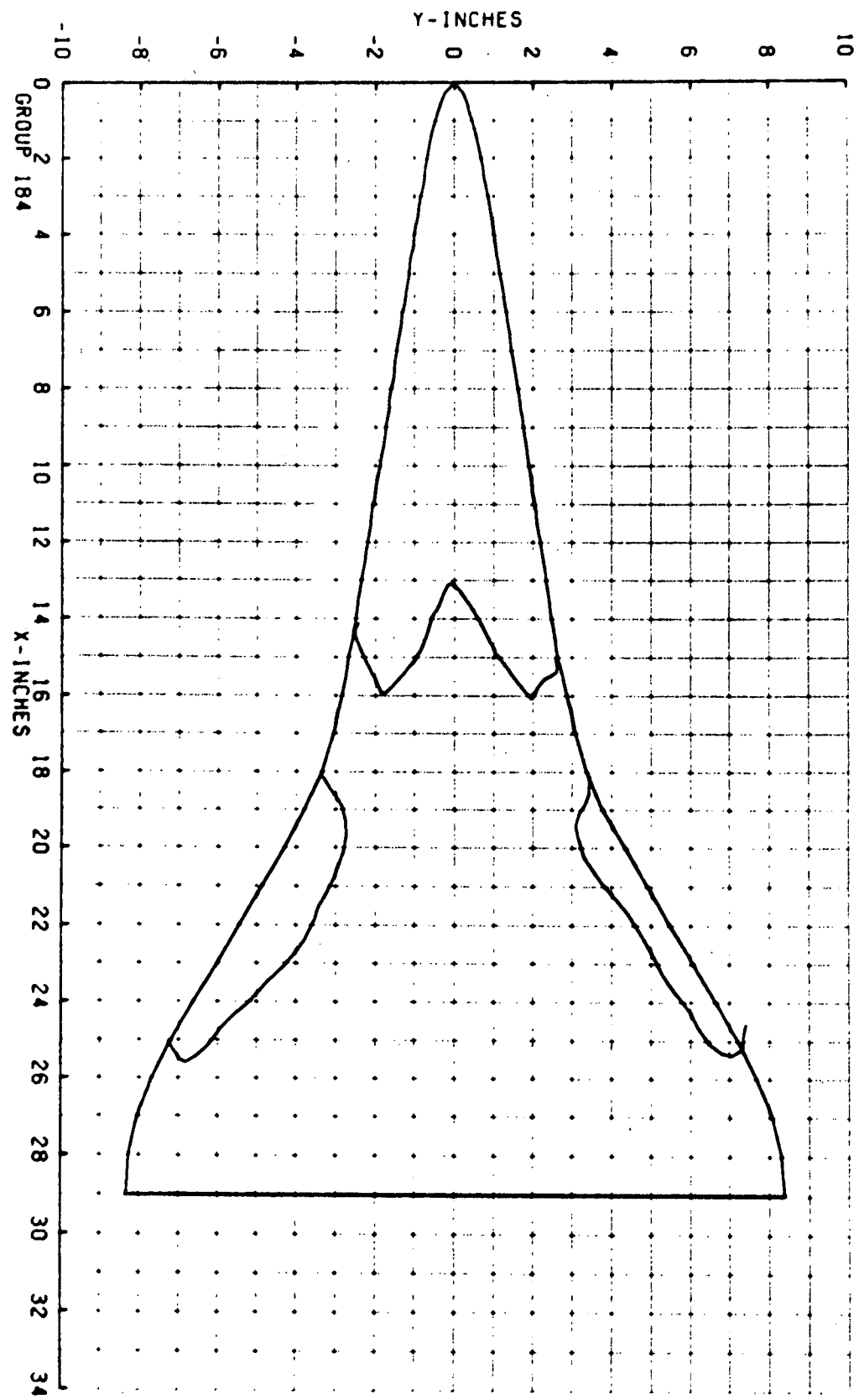
T 3872 (400) 8.00 6.93 1.73E-02 .3013 2.325E-02 .4044 2.813E-02 .4892 7.289E-03 109 86 106 0

T 3875 (400) 11.20 10.13 1.16E-02 .2369 1.828E-02 .3180 2.212E-02 .3846 5.731E-03 131 88 123 0

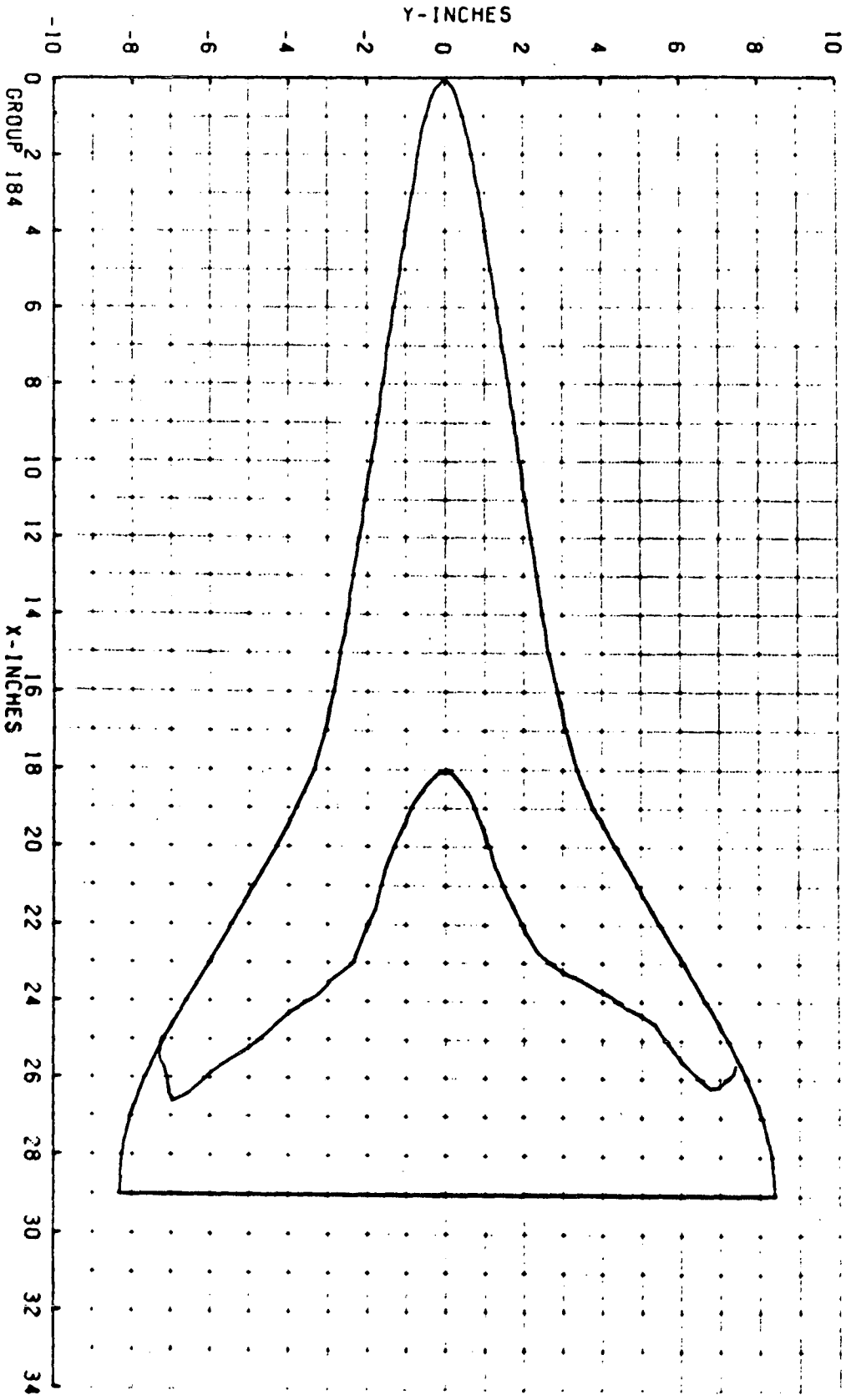
GROUP 184 PIC. NO. 3868 H/HREF 4.056E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NAR-DND



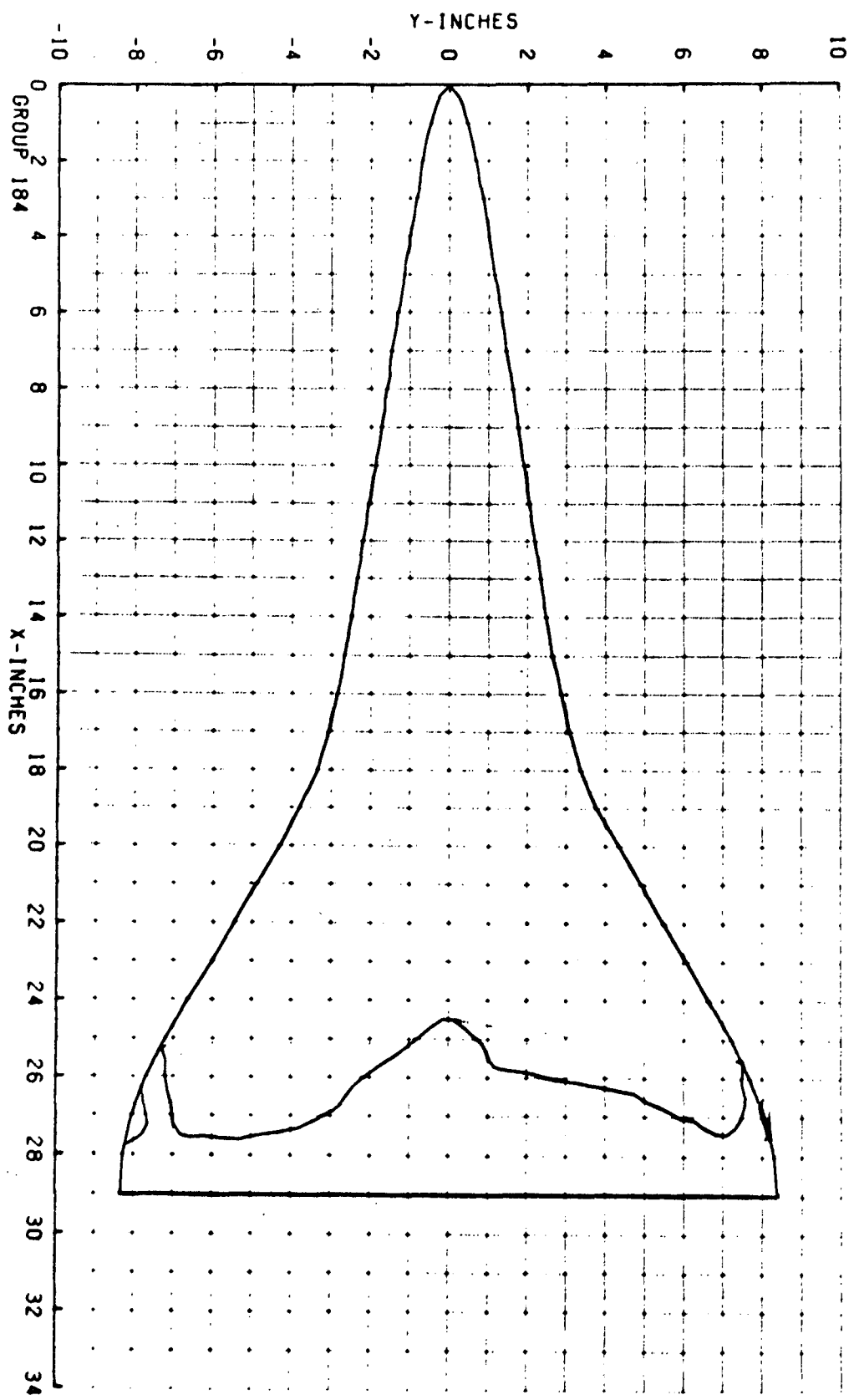
GROUP 184 PIC. NO. 3870 H/HREF 3.536E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NAR-DNO



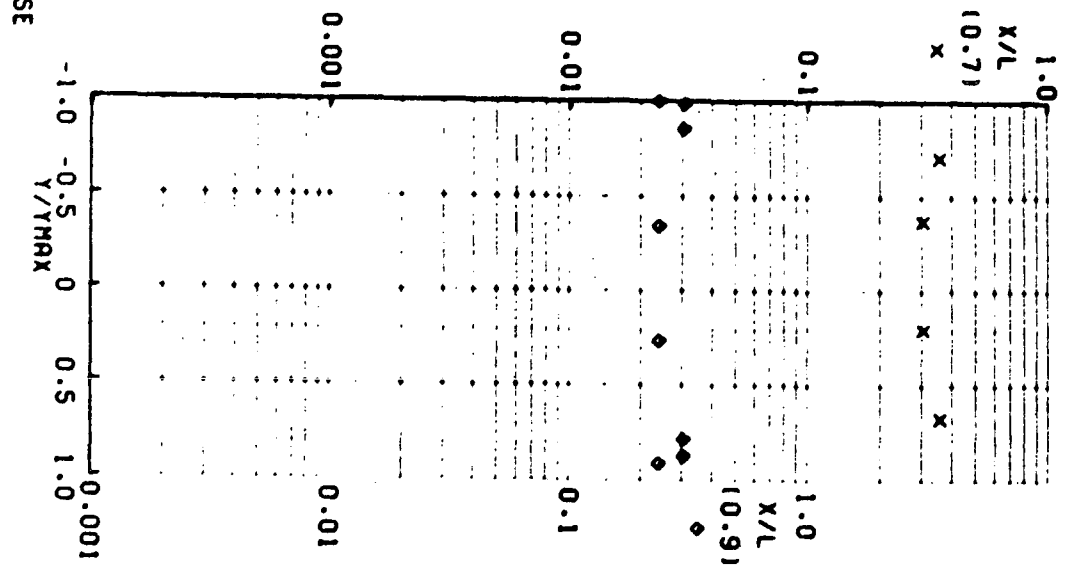
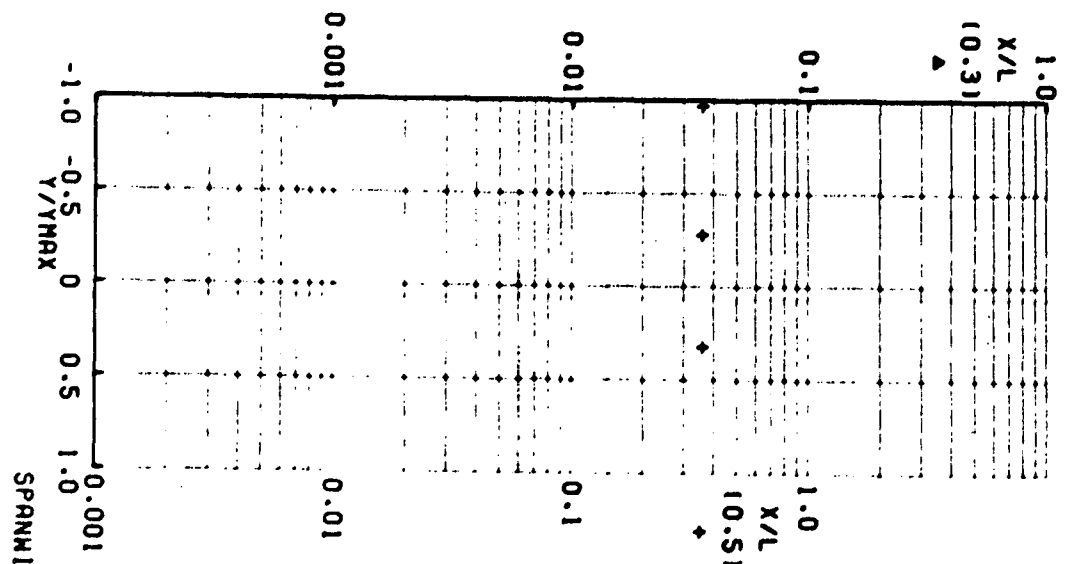
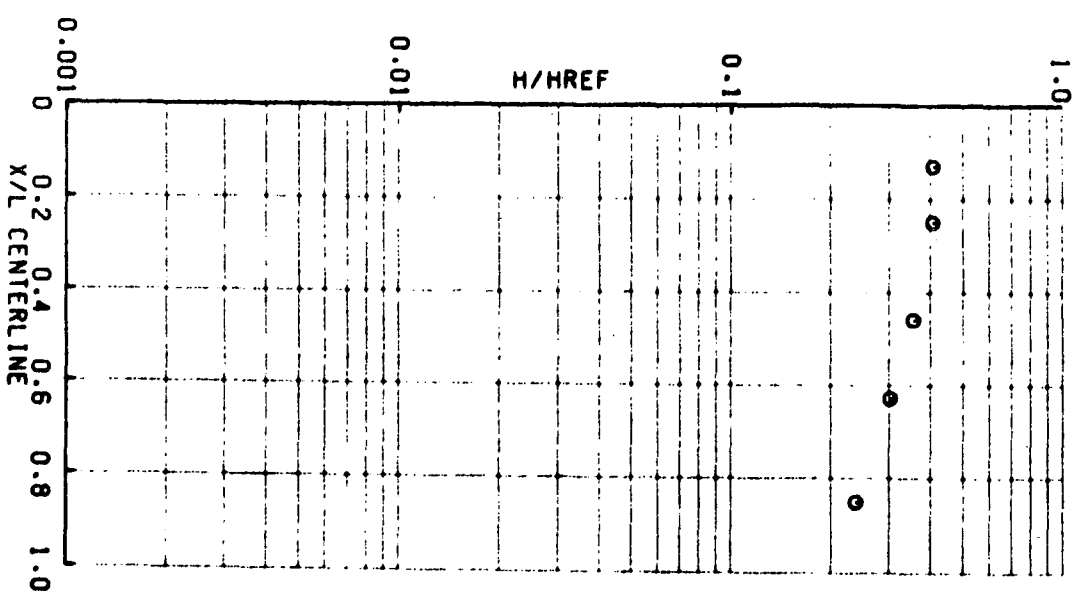
GROUP 184 PIC. NO. 3873 H/HREF 3.013E-01 MODEL SURFACE - BOTTOM
 MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NAR-D40



GROUP 184 PIC. NO. 3879 H/HREF 2.369E-01 MODEL SURFACE - BOTTOM
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NRR-DW0



GROUP 184 ALPHA (DEG) 50.0 HREF 5.749E-02 MACH 8.00
 MODEL SURFACE - BOTTOM RE/FT 3.700E 06 CONF NRR-DMO



9/21/71

AFDC (ARJ, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
VII162

GROUP CONFIG MODEL MACH NO PN PSTA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW

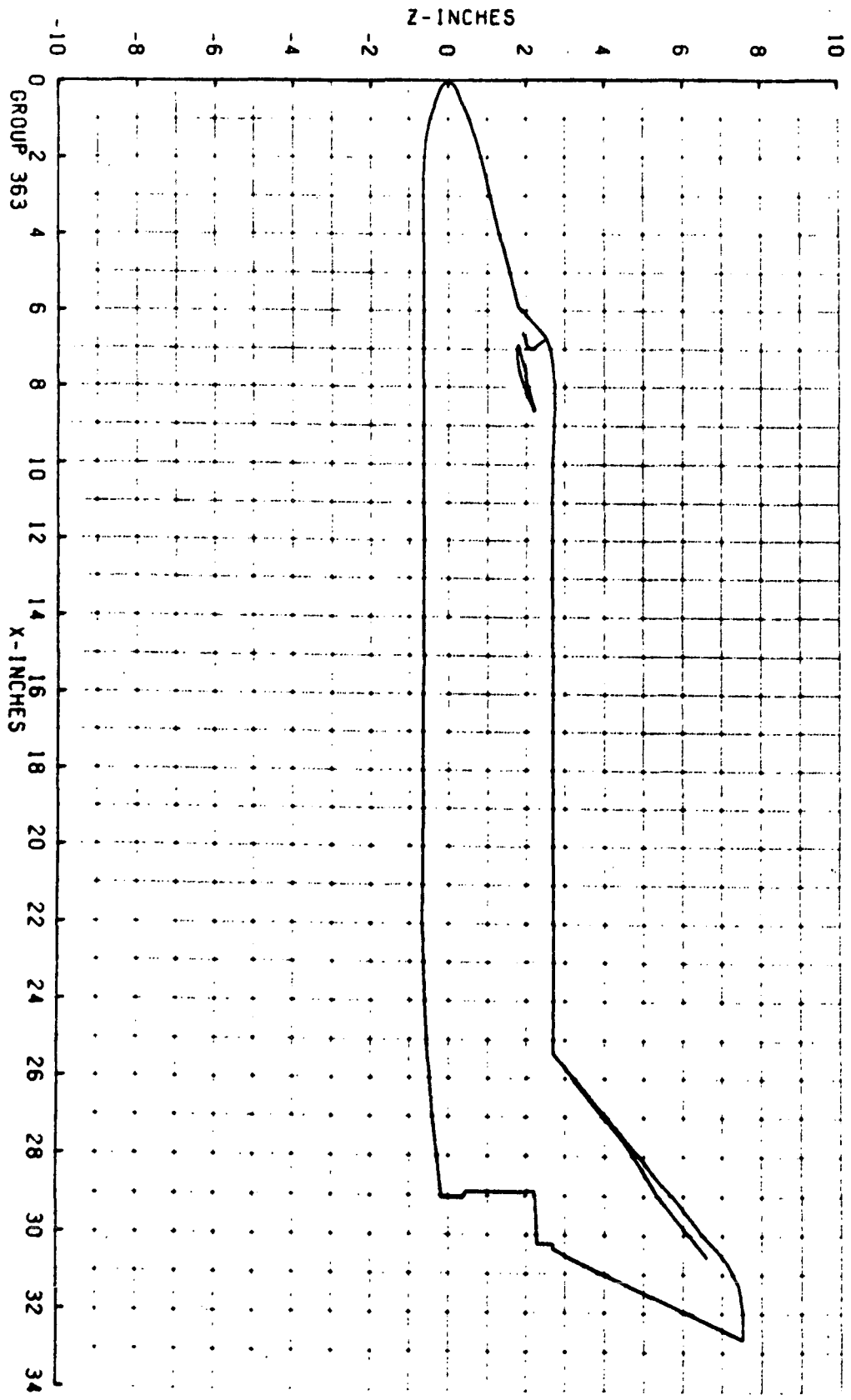
363 5A MAR-DMO 9.00 556.8 1300 9.99 13.01 -23.00 180.00 0.0

T-1NF P-1NF O-1NF V-1NF RMO-1NF MU-1NF GE/FT HREF SINEF
(DFG P) (PST A) (PST A) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R= .013FT) (R= .017FT)
94.2 .057 2.546 3895 5.041E-05 7.595E-08 2.54F 05 4.596E-02 2.973E-02

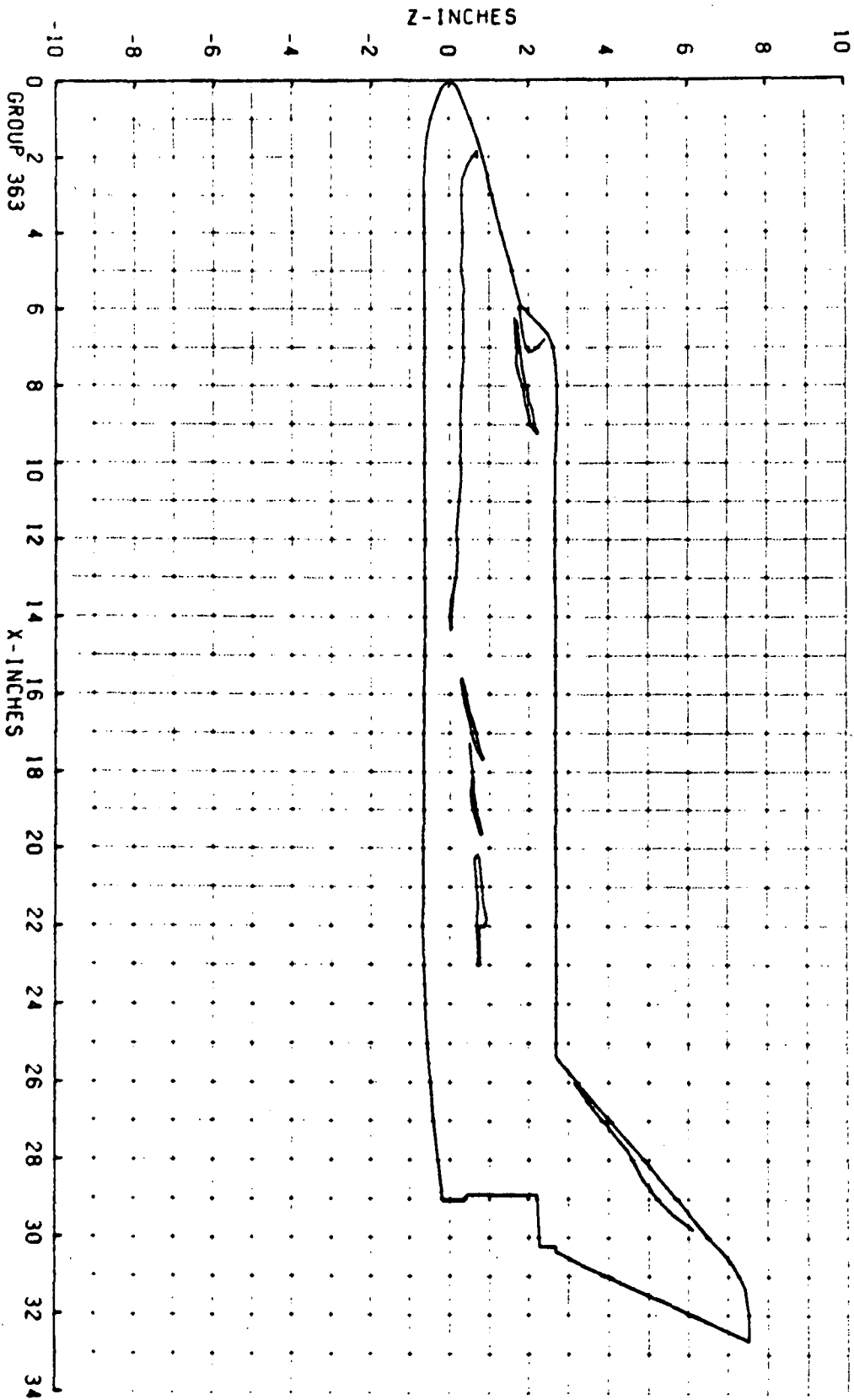
CAVEHA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMOXCHK)
TOP(T) 113 AVERAGE TW = 82 -0.0081SQUARE ROOT OF TIME) + 0.11
SITE(S) 113
PITCH(B) 113

PIC WC TIME DELTIME HITOT HITO)/HREF H(.970) H(.970)/HREF H(.8570) H(.8570)/HREF ST(TOT) MODEL TEMP F
S 951 (113) 3.20 2.11 2.64E-03 .0553 3.087E-03 .0672 3.459E-03 .0743 1.648E-03 0 0 0 0
S 955 (113) 5.30 4.21 1.71E-03 .0372 2.078E-03 .0452 2.329E-03 .0567 1.109E-03 0 0 0 0
S 962 (113) 9.05 7.94 1.14E-03 .0253 1.411E-03 .0307 1.591E-03 .0344 7.536E-04 0 0 0 0

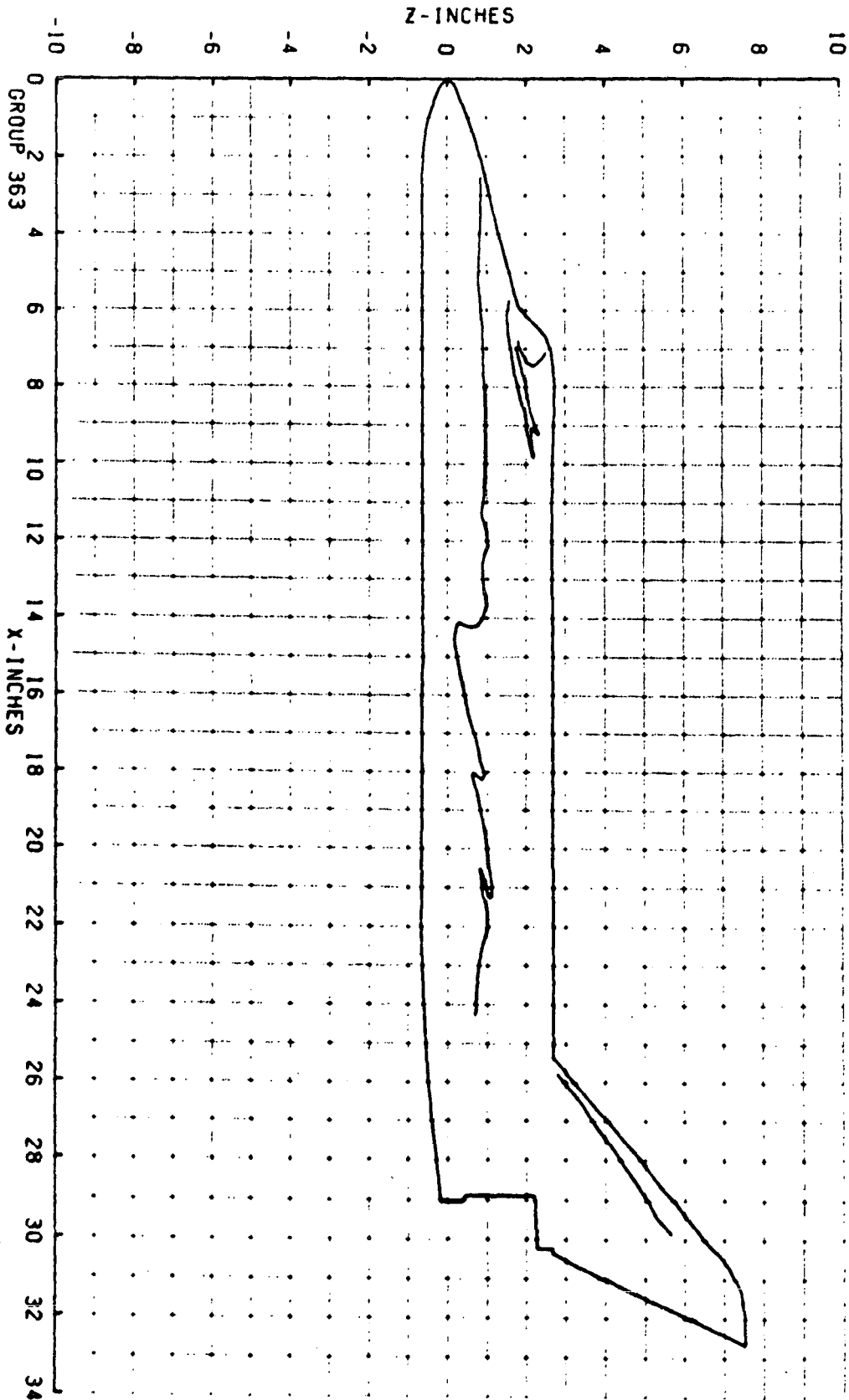
GROUP 363 PIC. NO. 851 H/HREF 5.530E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.596E-02 RE/FT 2.540E 06 CONF NRR-DMD



GROUP 363 PIC. NO. 855 H/HREF 3.720E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.596E-02 RE/FT 2.540E 06 CONF NRR-DWO



GROUP 363 PIC. NO. 862 H/HREF 2.530E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.596E-02 RE/FT 2.540E 06 CONF NAR-DW0



9/21/71

AFDCIARNO, INC.) ARNOLD AFB, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
V11162

GROUP CONFIS MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-DRIBEND ROLL-MODEL YAW

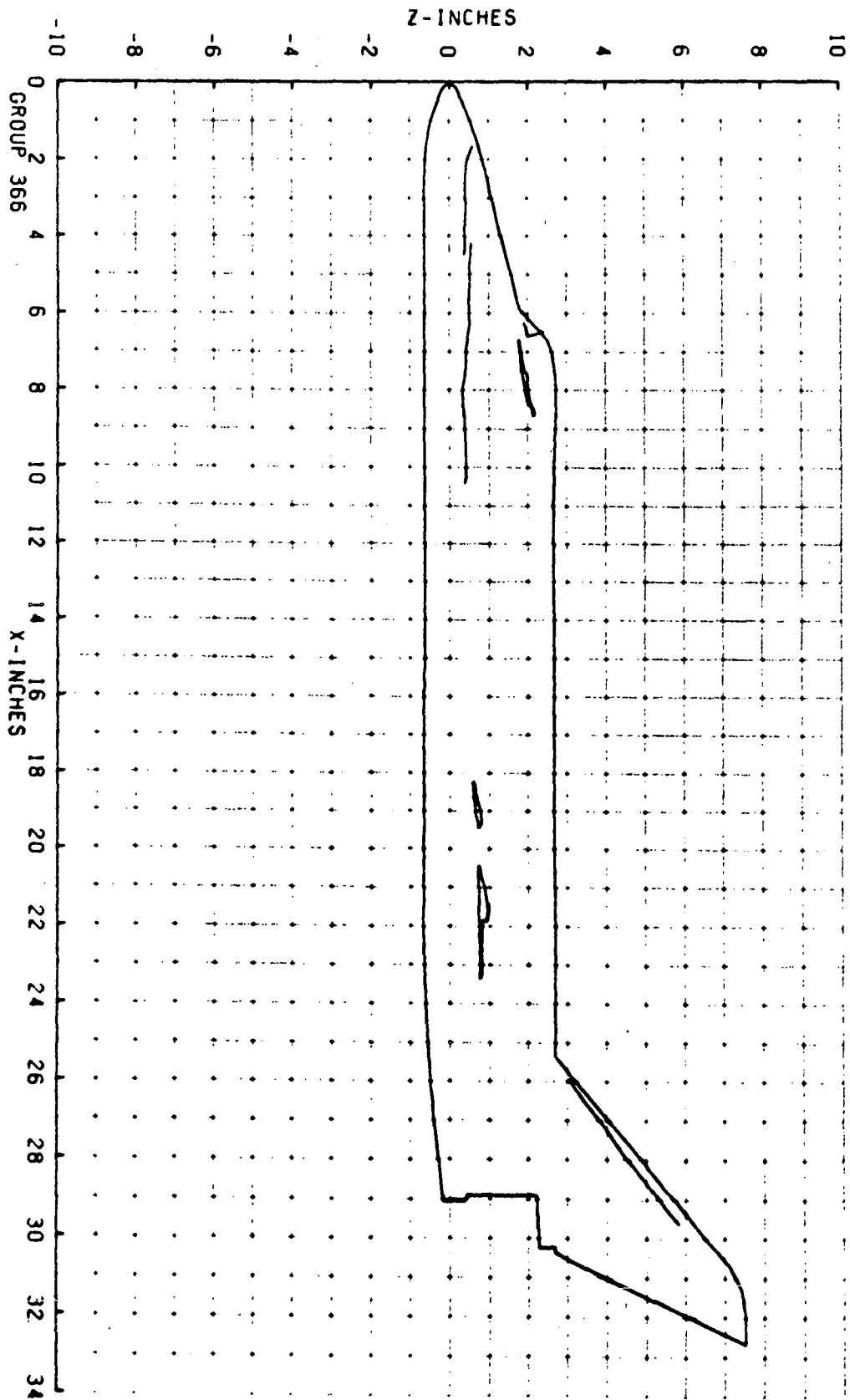
365 SA MAR-040 8.00 556.3 1299 10.02 12.98 -23.00 180.00 .0

T-1NF P-1NF Q-1NF V-1NF PNO-1NF MU-1NF RE/FT HREF SINEF
(REG R) (PSIA) (PSIA) (FI/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)
94.1 .657 2.553 383 5.079E-05 7.578E-08 2.55E 06 4.601E-02 2.967E-02

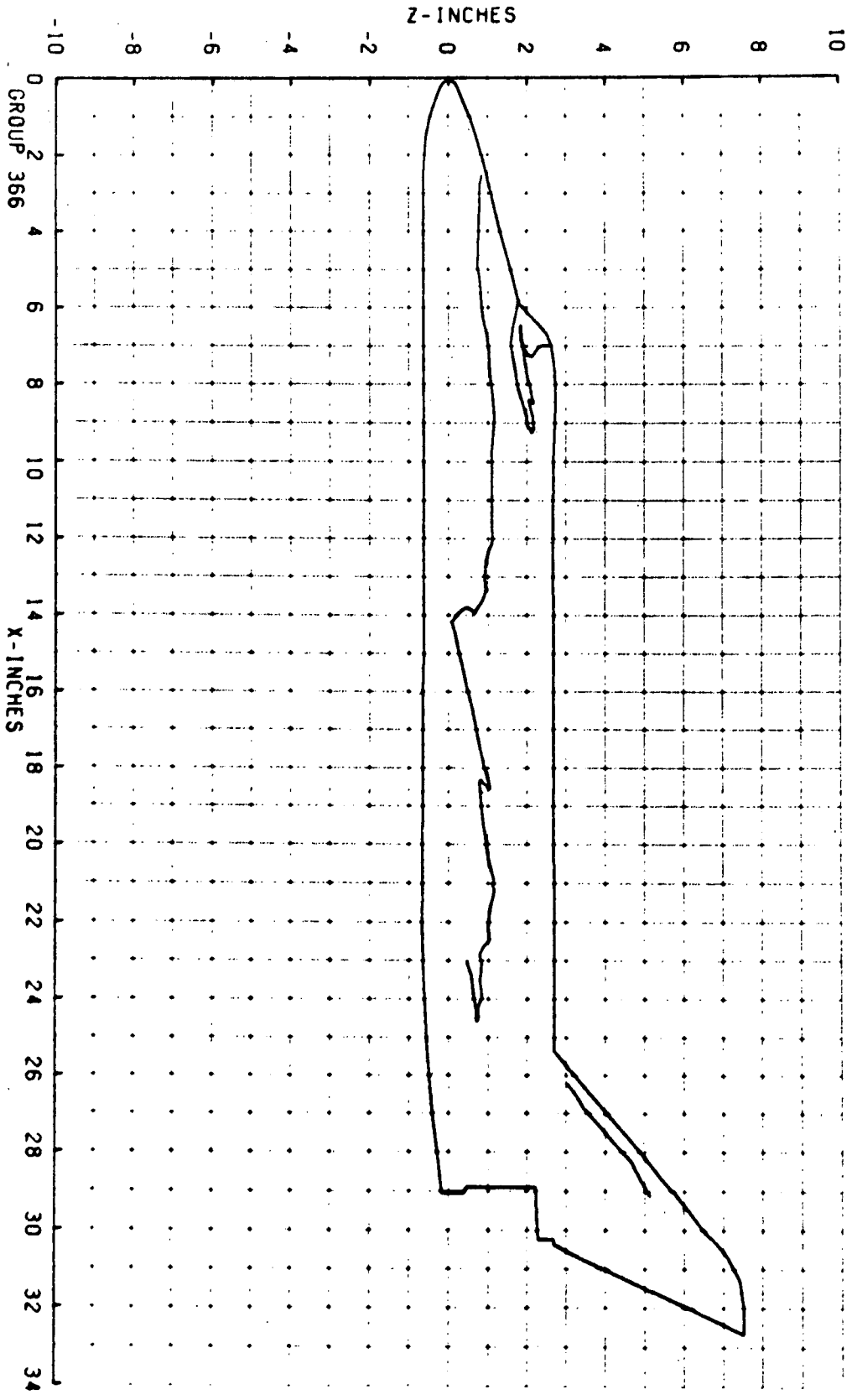
CAMERA PAINT (FUP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCRK)
TOP(T) 11? AVERAGE Tm = 77 -0.008(SQUARE ROOT DEL TIME) * 0.11
SINCE(S) 11? ROTICM(R) 11?

PIC NO TYPE NETTYPE H(TOT) H(TOT)/HREF H(.970) H(.970)/HREF H(.8570) H(.8570)/HREF SIT(TOT) MODEL TEMP F
S 642 (113) 4.80 3.71 2.14E-03 .0465 2.597E-03 .0564 2.912E-03 .0433 1.382E-03 0 0 0 0
S 952 (113) 10.15 9.04 1.24E-03 .0270 1.509E-03 .0328 1.492E-03 .0349 8.028E-04 0 0 0 0
S 962 (113) 15.45 14.34 9.15E-04 .0199 1.111E-03 .0241 1.246E-03 .0271 5.914E-04 0 0 0 0

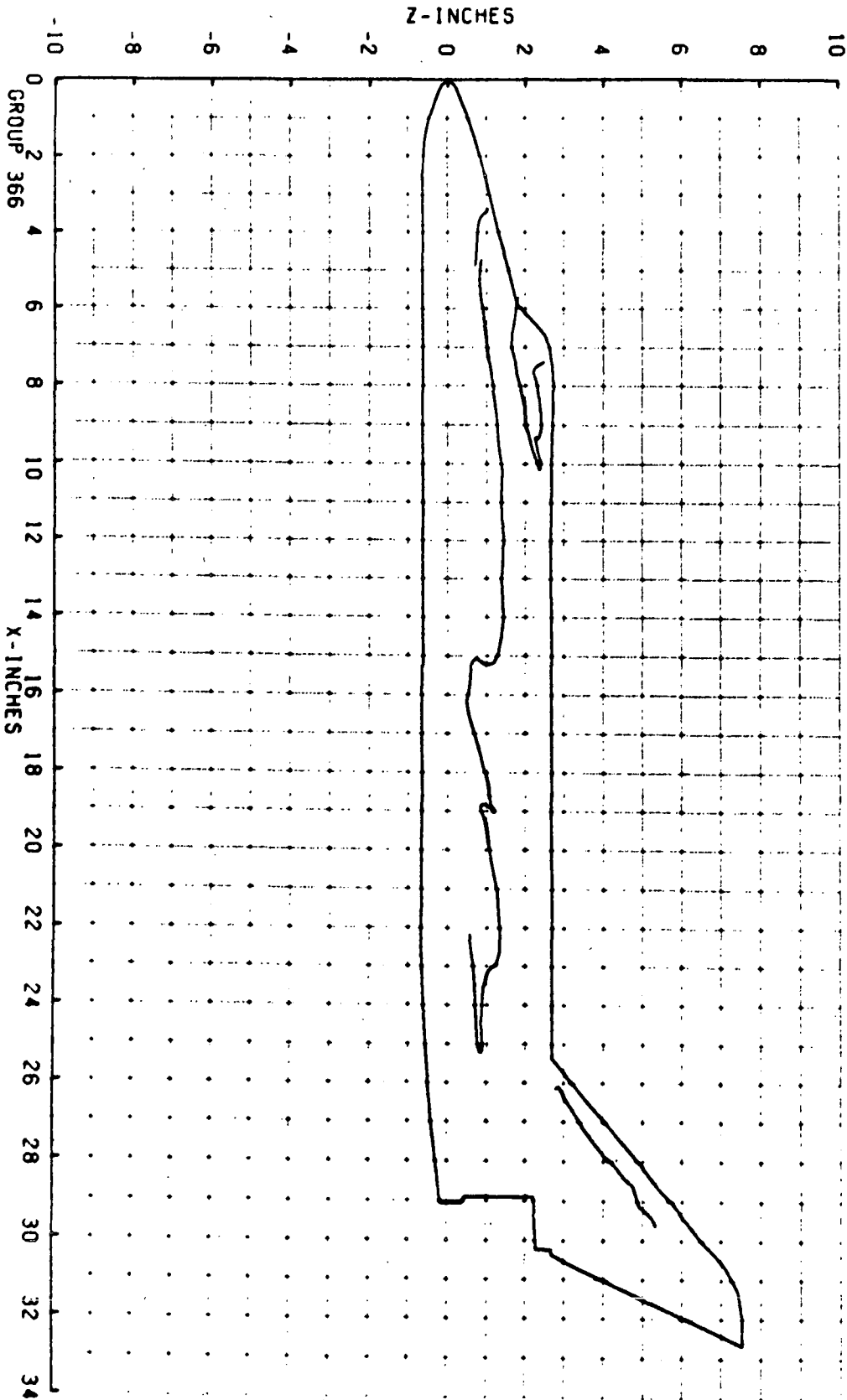
GROUP 366 PIC. NO. 942 H/HREF 4.650E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NAR-DMD



GROUP 366 PIC. NO. 952 H/HREF 2.700E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NAR-DHO



GROUP 366 PIC. NO. 962 H/HREF 1.990E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NRR-DW0



50 INCH HYPERSONIC TUNNEL B
V11162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW

364 54 NAR-DW0 R.00 556.6 1313 20.03 2.97 -23.00 180.00 .0

T-INF P-INF Q-INF V-INF RHO-INF MU-INF REF/FT FREF STREF
(NEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (H=.013FT)

95.1 .057 2.554 3R23 5.078E-05 7.659E-08 2.51E 06 4.611E-02 2.986E-02

CAMERA PRINT TRUP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCRK)

TOP(T) 150
SITE(S) 150
RPTICM(B) 150
AVERAGE TW = 75
-0.008TSQUARE ROOT DEF TIME) + 0.11

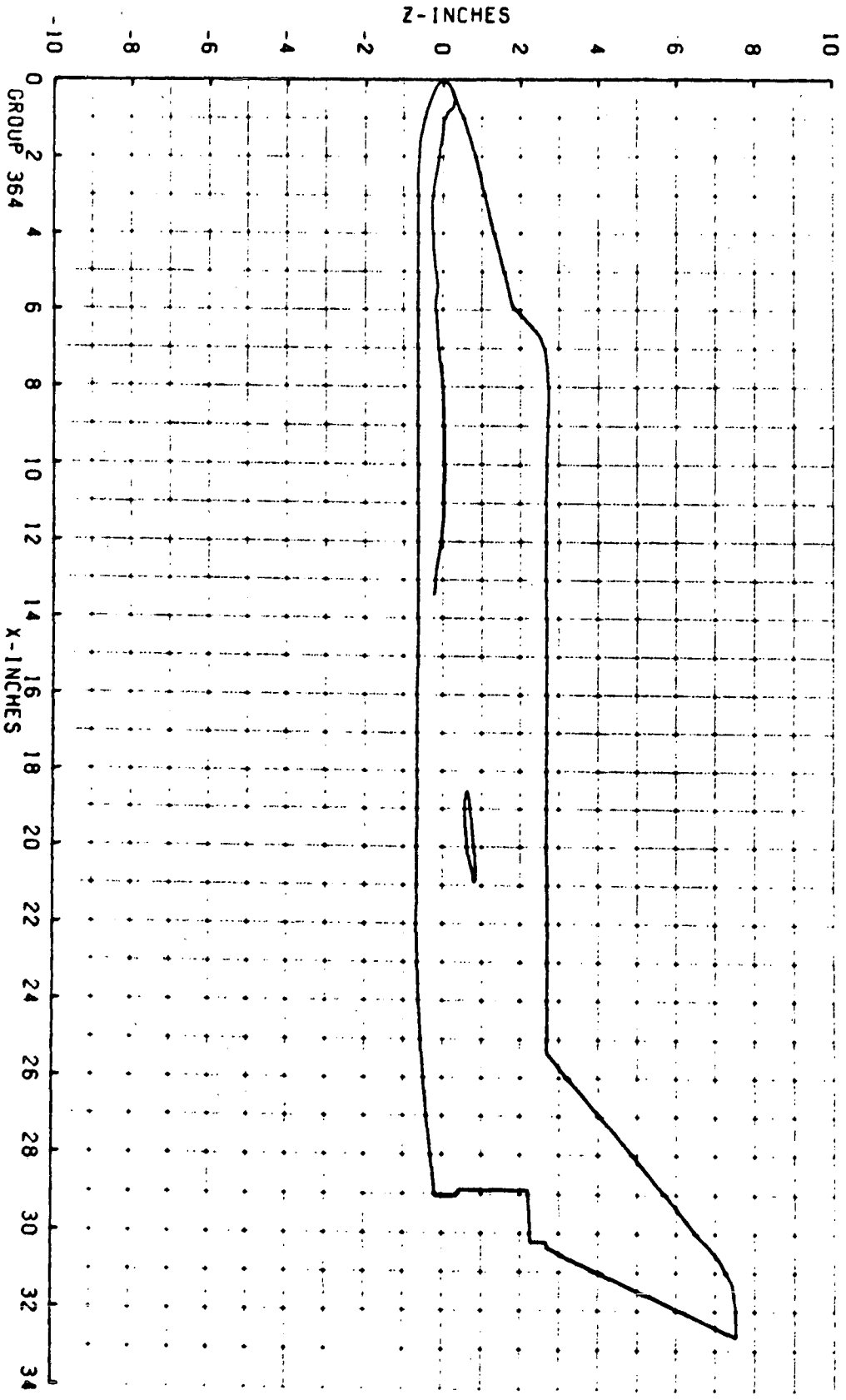
PIC NO TIME DELTIME H(TO) H(TO)/HREF H(.910) H(.970)/HREF H(.8510) H(.8510)/HREF ST(TO) MODEL TEMP F

S 874 (150) 8.85 7.7P 2.91E-03 .0631 3.560E-03 .0772 4.008E-03 .0869 1.887E-03 0 0 0 0

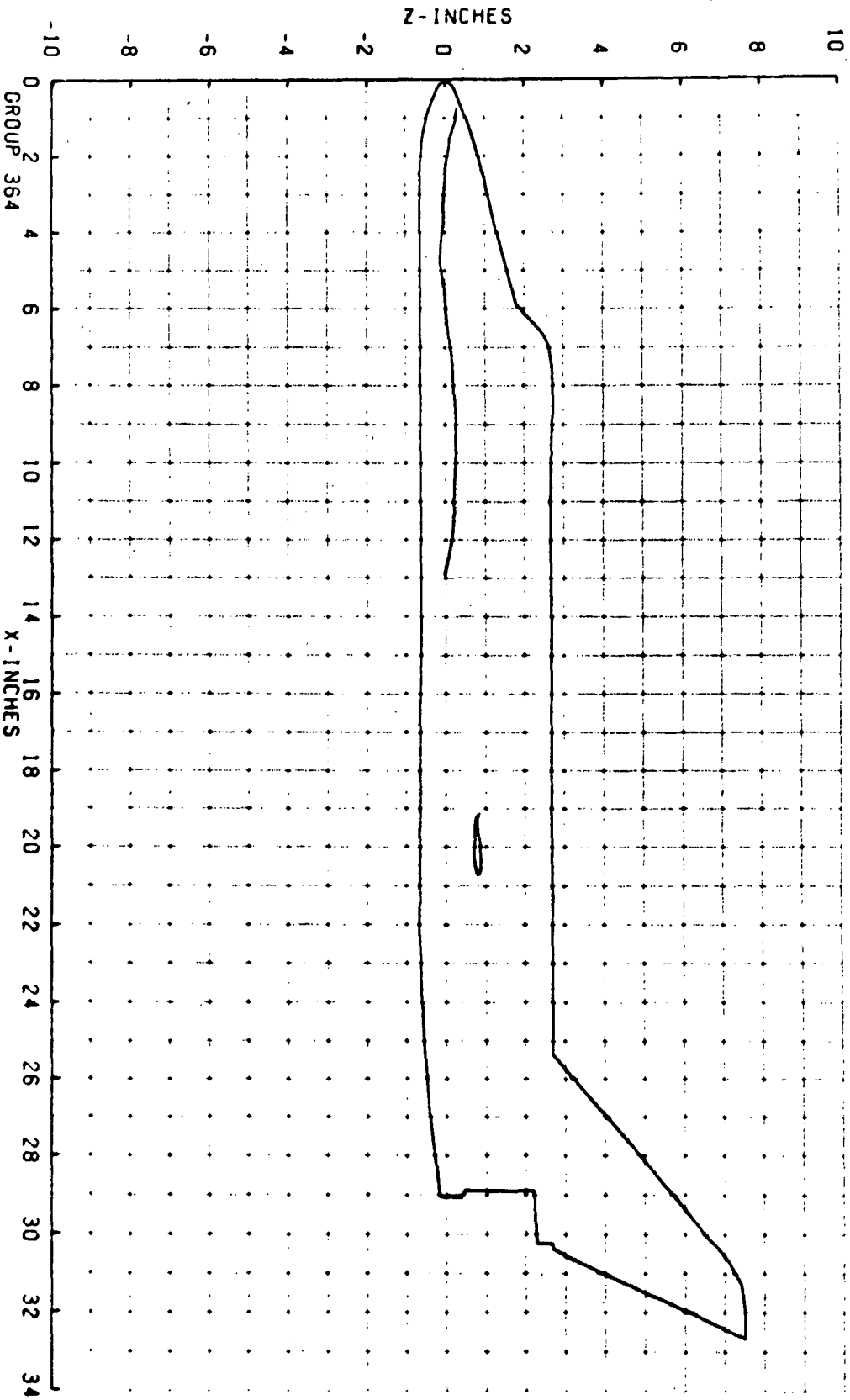
S 879 (150) 11.55 10.4P 2.40E-03 .0521 2.942E-03 .0638 3.312E-03 .0718 1.558E-03 0 0 0 0

S 888 (150) 16.35 15.2P 1.86E-03 .0404 2.281E-03 .0695 2.568E-03 .0557 1.207E-03 0 0 0 0

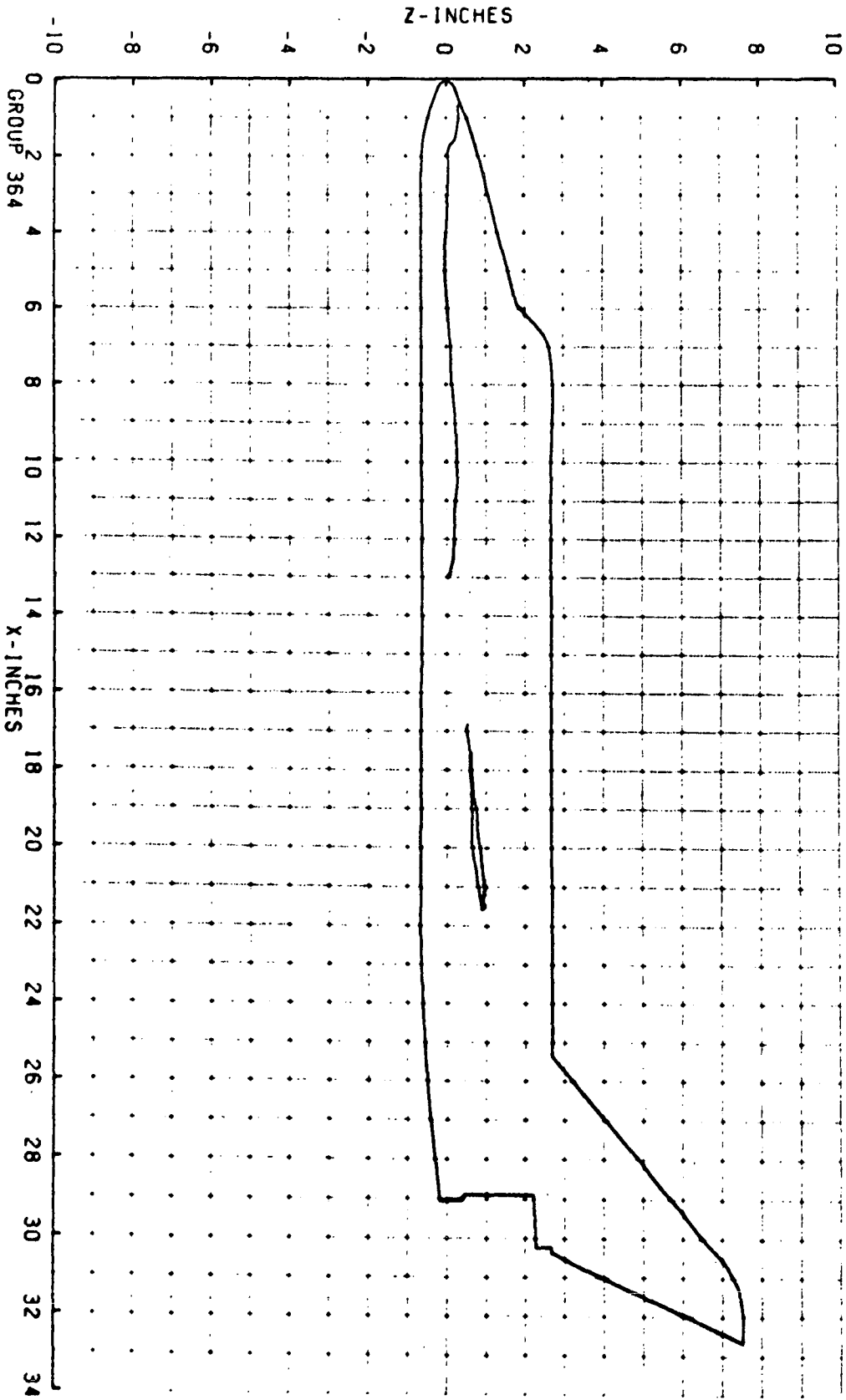
GROUP 364 PIC. NO. 874 H/HREF 6.310E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2.510E 06 CONF NRR-DWO



GROUP 364 PIC. NO. 879 H/HREF 5.210E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2.510E 06 CONF NAR-DMO



GROUP 364 PIC. NO. 888 H/HREF 4.040E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2.510E 06 CONF NAR-DMO



6/ 1/71

AFCC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
V11162

GROUP 139 CONFIG 51 MODEL NAR-D40 MACU NO P.00 PN PSTA 553.3 TO DEG R 1311 ALPHA-MODEL 29.99 ALPHA-SECTOR -6.99 ALPHA-PREBEND -23.00 ROLL-MODEL 180.00 YAW .0

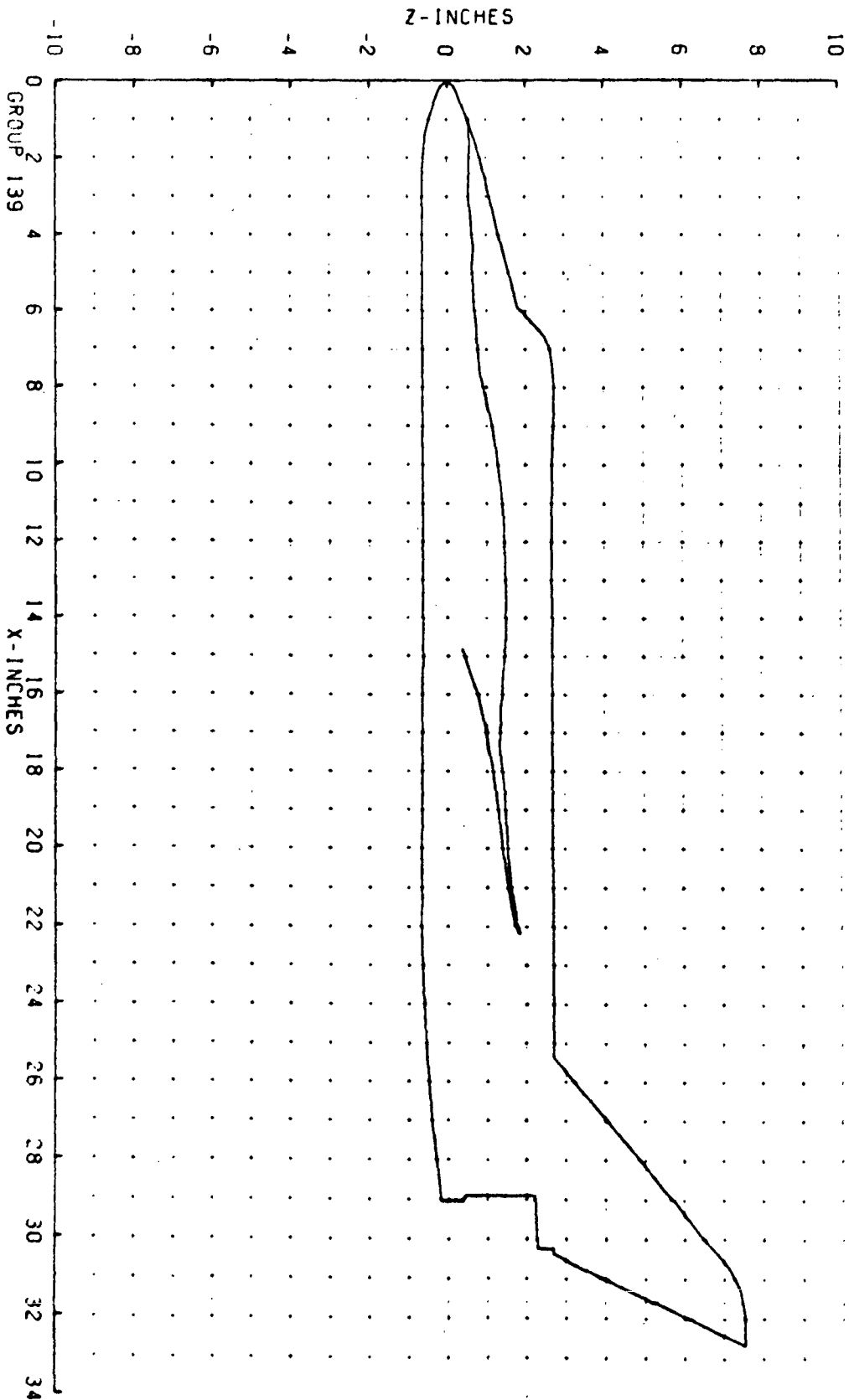
T-1NF P-1NF Q-1NF V-1NF RHO-1NF MU-1NF RE/F T HREF STREF
(NEG M) (PCIA) (PSTIA) (FI/CF) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R=.013FT) (R=.017FT)
95.0 .057 2.579 3820 5.007E-05 7.64E-09 2.50E 06 4.596E-02 2.991E-02

CAVEEA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODGAK)

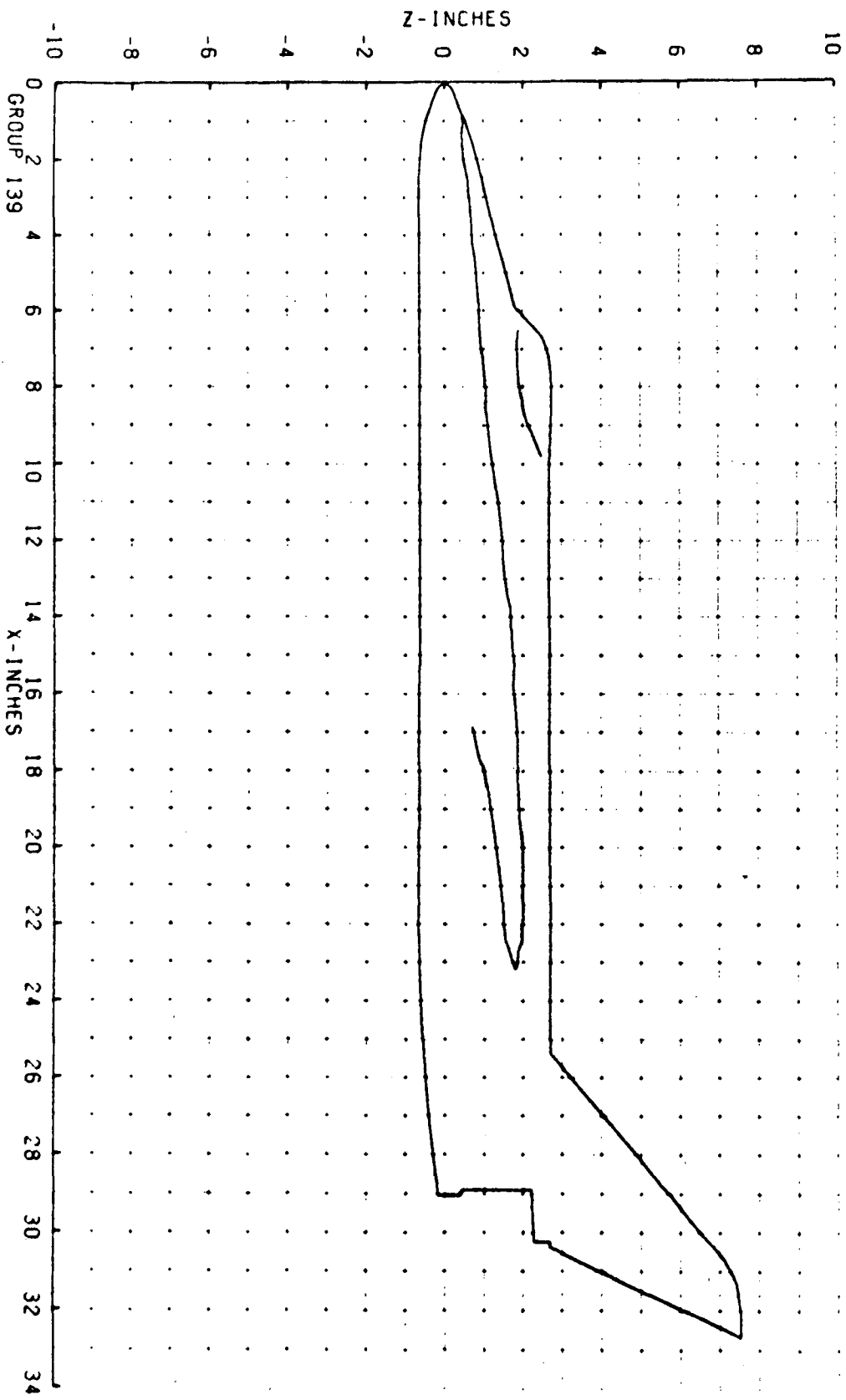
TOP(T) 208
SIDE(S) 113
ROT(M/R) 113
AVERAGE Iw = 79
-0.008(SQUARE ROOT DEL TIME) * 0.11

PTC NO	TIME RELTIVE	HIT01	HIT01/HREF	HI.9(T01)	HI.5(T01)	HREF	ST(T01)	MODEL	TEMP F
S 2472 (113)	2.10	1.07	4.49E-03	.0888	4.951E-03	.1078	5.542E-03	0	79
S 2484 (113)	7.95	4.86	1.78E-03	.0301	1.676E-03	.0325	1.874E-03	0	80
S 2494 (113)	13.20	12.13	9.60E-04	.0209	1.165E-03	.0253	1.304E-03	0	82
S 2504 (113)	18.50	17.43	7.47E-04	.0163	9.064E-04	.0197	1.015E-03	0	83

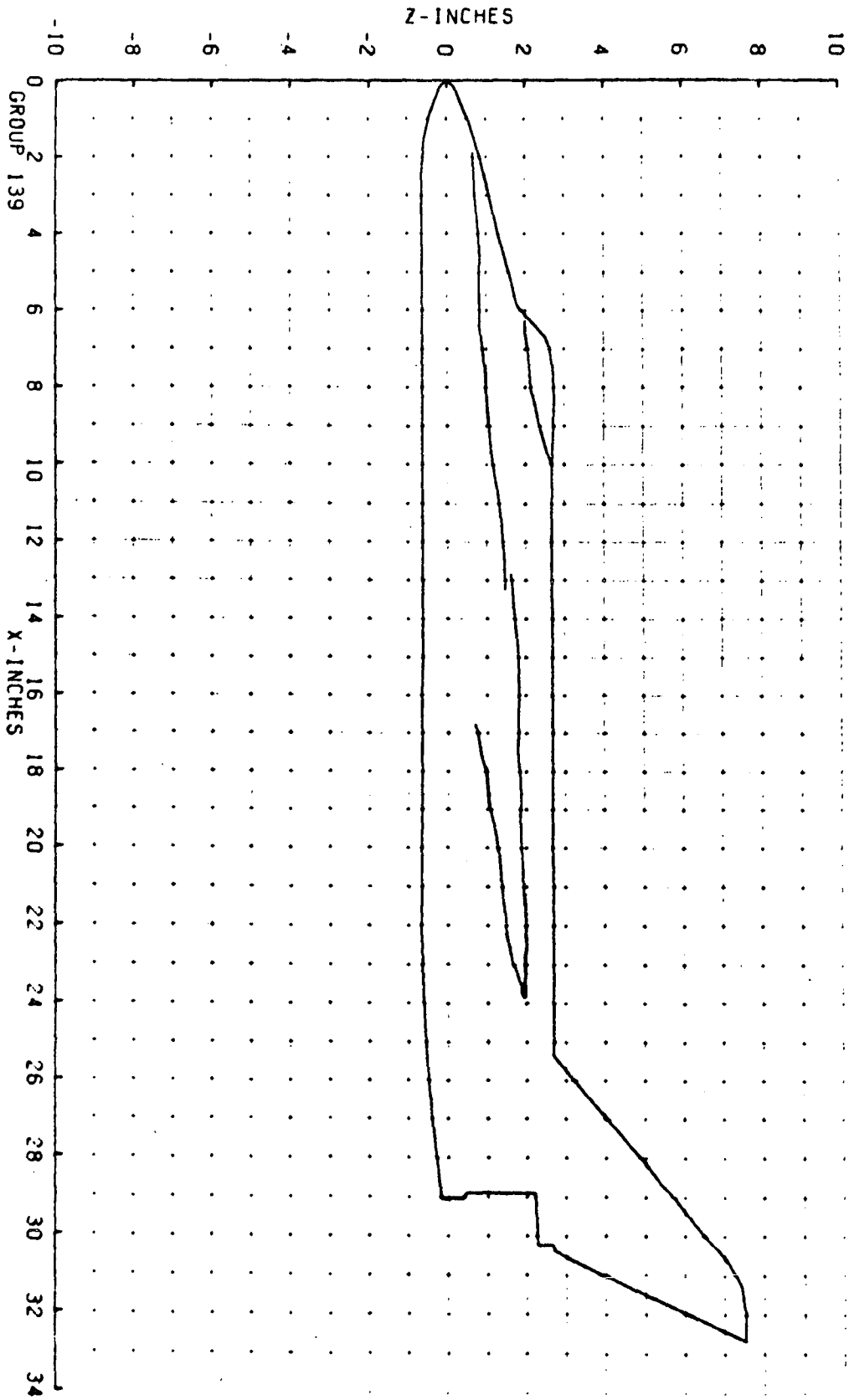
GROUP 139 PIC. NO. 2473 H/HREF 8.880E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NAR-DW0



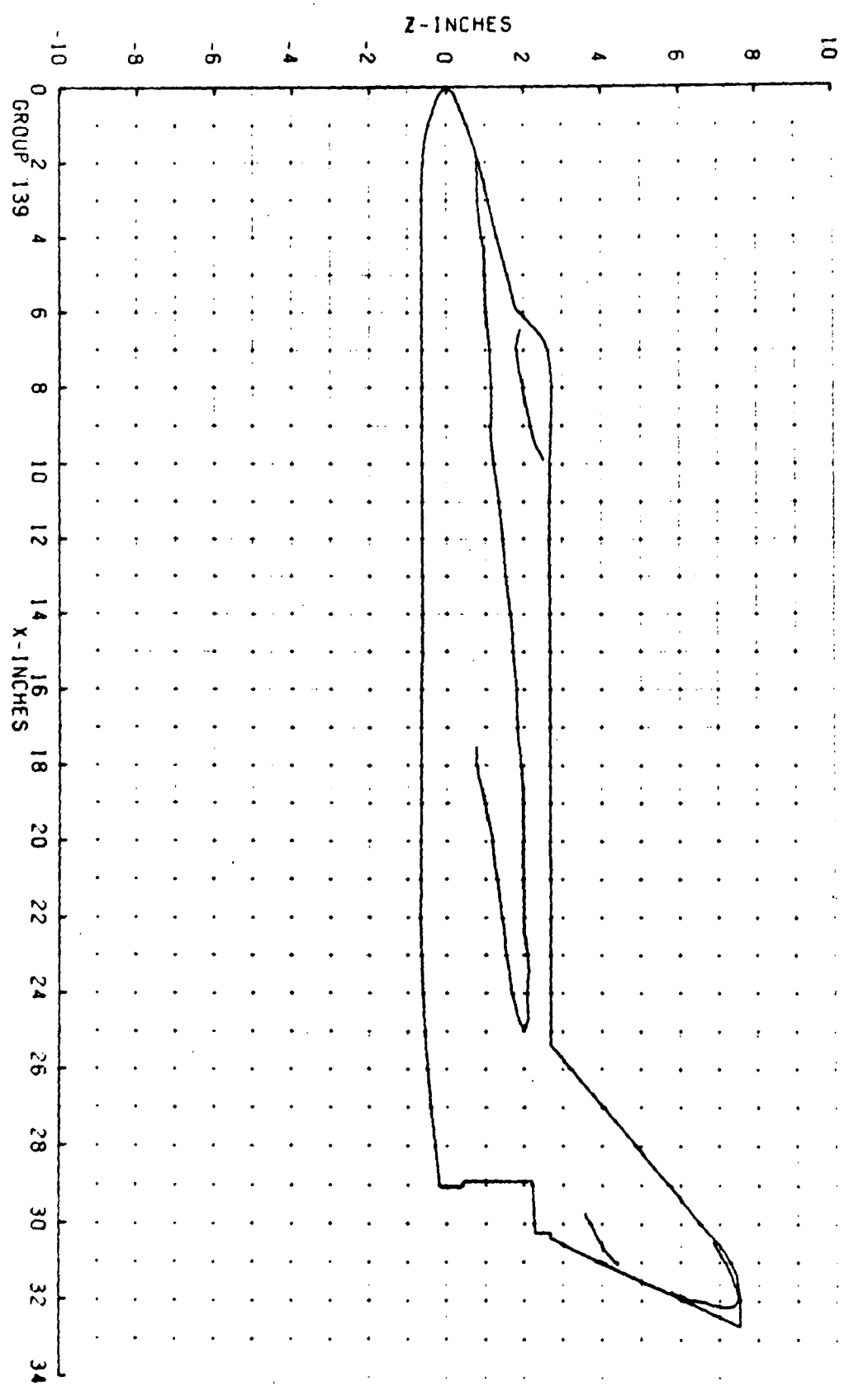
GROUP 139 PIC. NO. 2484 H/HREF 3.010E-02 MODEL SURFACE - SIDE
 MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NAR-DM0



GROUP 139 P.I.C. NO. 2494 H/HREF 2.090E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NAR-DW0



GROUP 139 PIC. NO. 2504 H/HREF 1.630E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NAR-DMO



5/29/71

AFDICIARON(INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
V11162

GROUP CONFIG MODEL MACH NO PA PSTA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
11A 51 NAR-DWC 9.00 556.3 1315 39.99 10.01 -50.00 180.00 .0

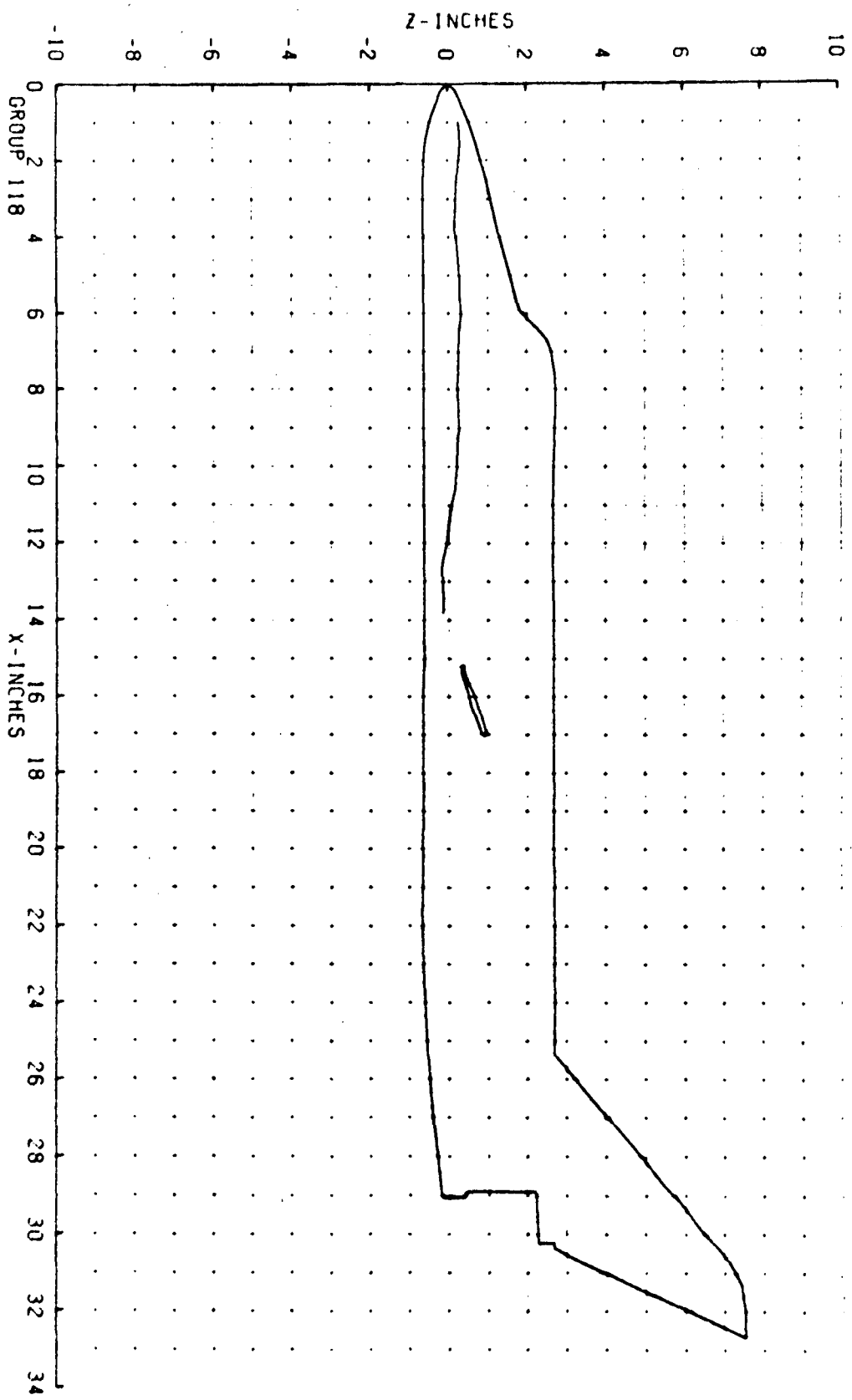
T-1AF P-1NF 0-1NF V-1NF QMO-1NF MU-1NF SE/FT P-REF STRIP
(DEG R) (PSTIA) (PSTIA) (FT/SEC) (SLUGS/FT3) (L9-SEC/FT2) (FT-1) (H = .013FT) (R = .017FT)
95.3 .057 2-544 3827 4.998E-05 7.673E-08 2.49E 06 4.603E-02 2.995E-02

CAMERA PAINT IFWD (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CXK)

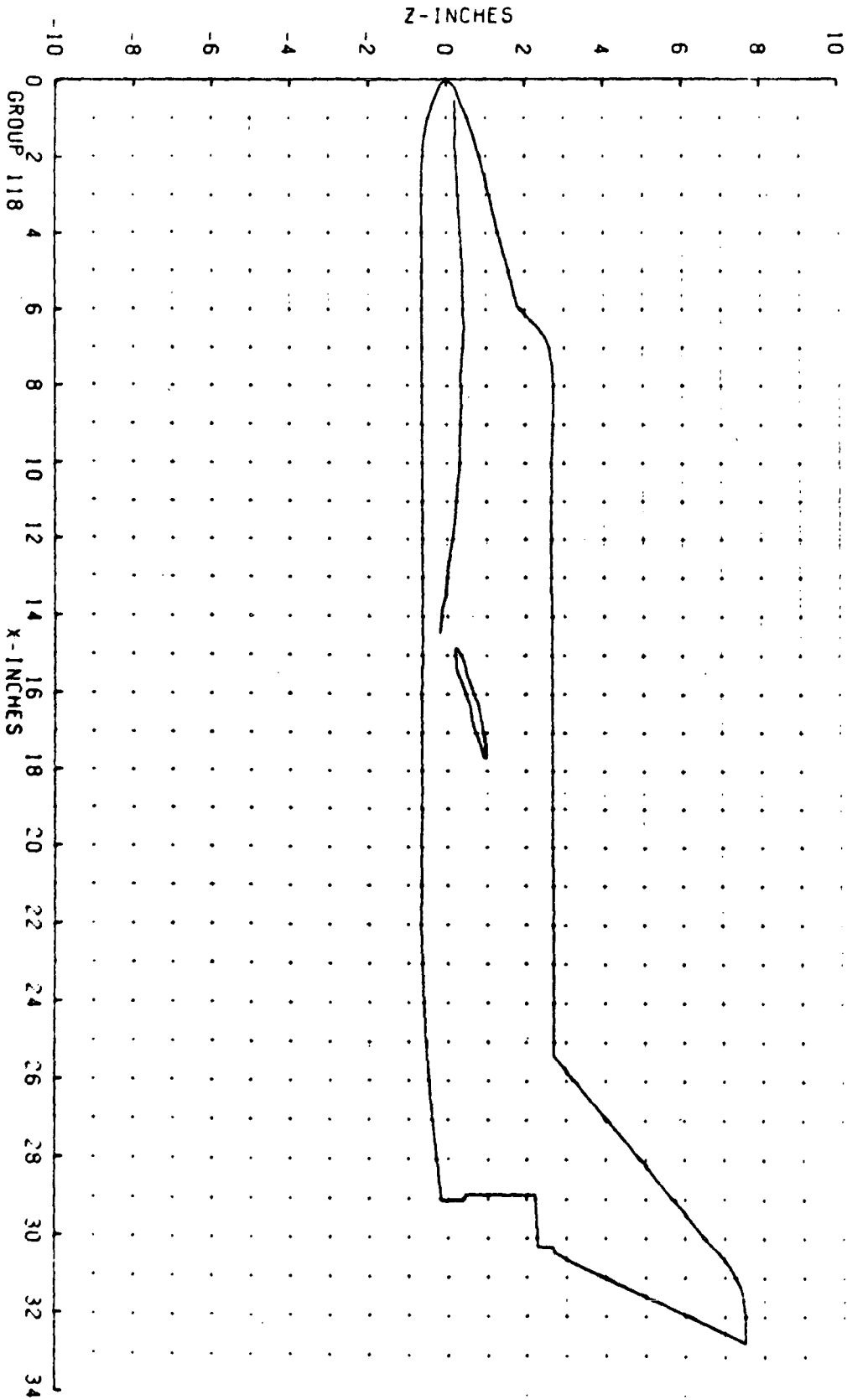
TOP(T) 200
SIDE(S) 112 AVERAGE Tm = 85 -0.008(SQUARE ROOT DEL TIME) * 0.11
PNTICW(FH) 113

PTC MC	TIME DELTIVE	H(TO)	H(TO)/HREF	M(.910)	M(.5TC)/HREF	M(.85TO)	M(.85TO)/HREF	S(TO)	MODEL TEMP-F
S 1525 (113)	3.60	2.64E-03	.0443	2.470E-03	.0538	2.771E-03	.0462	1.331E-03	0 0 0 0
S 1525 (113)	5.65	1.44E-03	.0314	1.753E-03	.0381	1.962E-03	.0425	7.431E-04	0 0 0 0
S 1532 (113)	7.75	6.64	.0250	1.394E-03	.0303	1.561E-03	.0379	7.495E-04	0 0 0 0
S 1546 (113)	11.35	16.25	.0190	1.061E-03	.0230	1.187E-03	.0268	5.705E-04	0 0 0 0
S 1546 (113)	14.45	13.36	.0159	8.896E-04	.0193	9.959E-04	.0216	4.785E-04	0 0 0 0

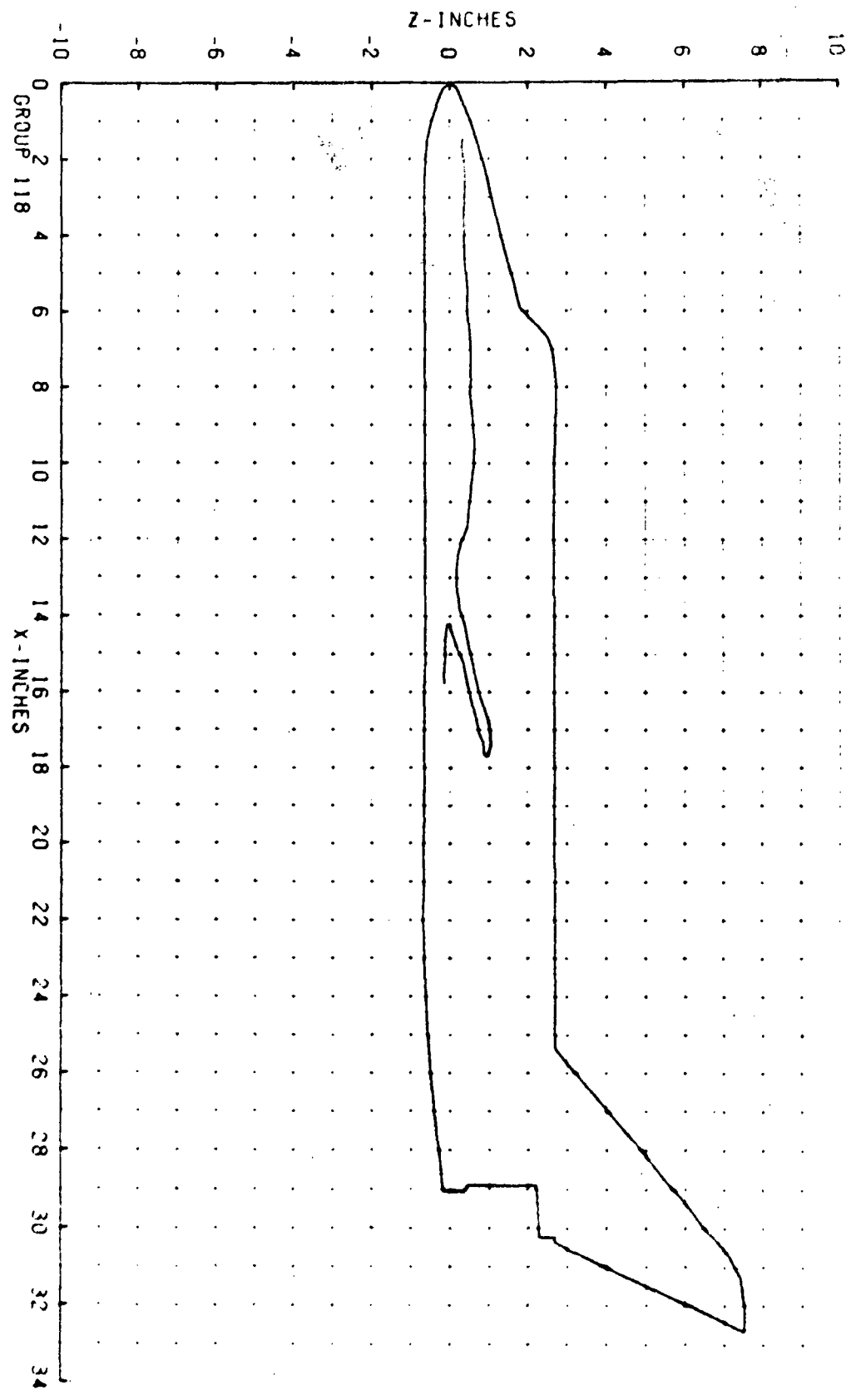
GROUP 118 PIC. NO. 1525 H/HREF 4.430E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NAR-DMO



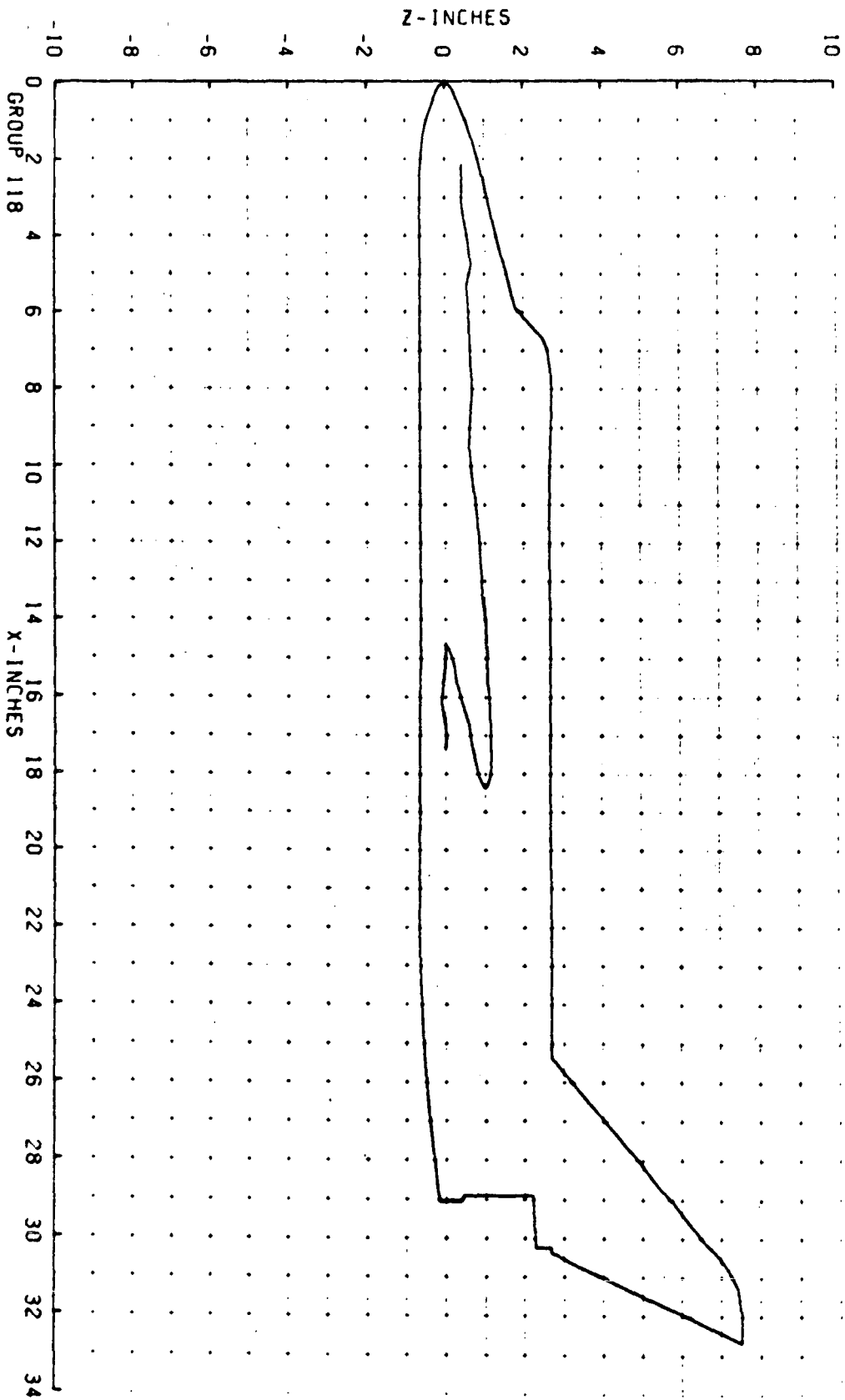
GROUP 118 PIC. NO. 1529 H/HREF 3.140E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NAR-DMD



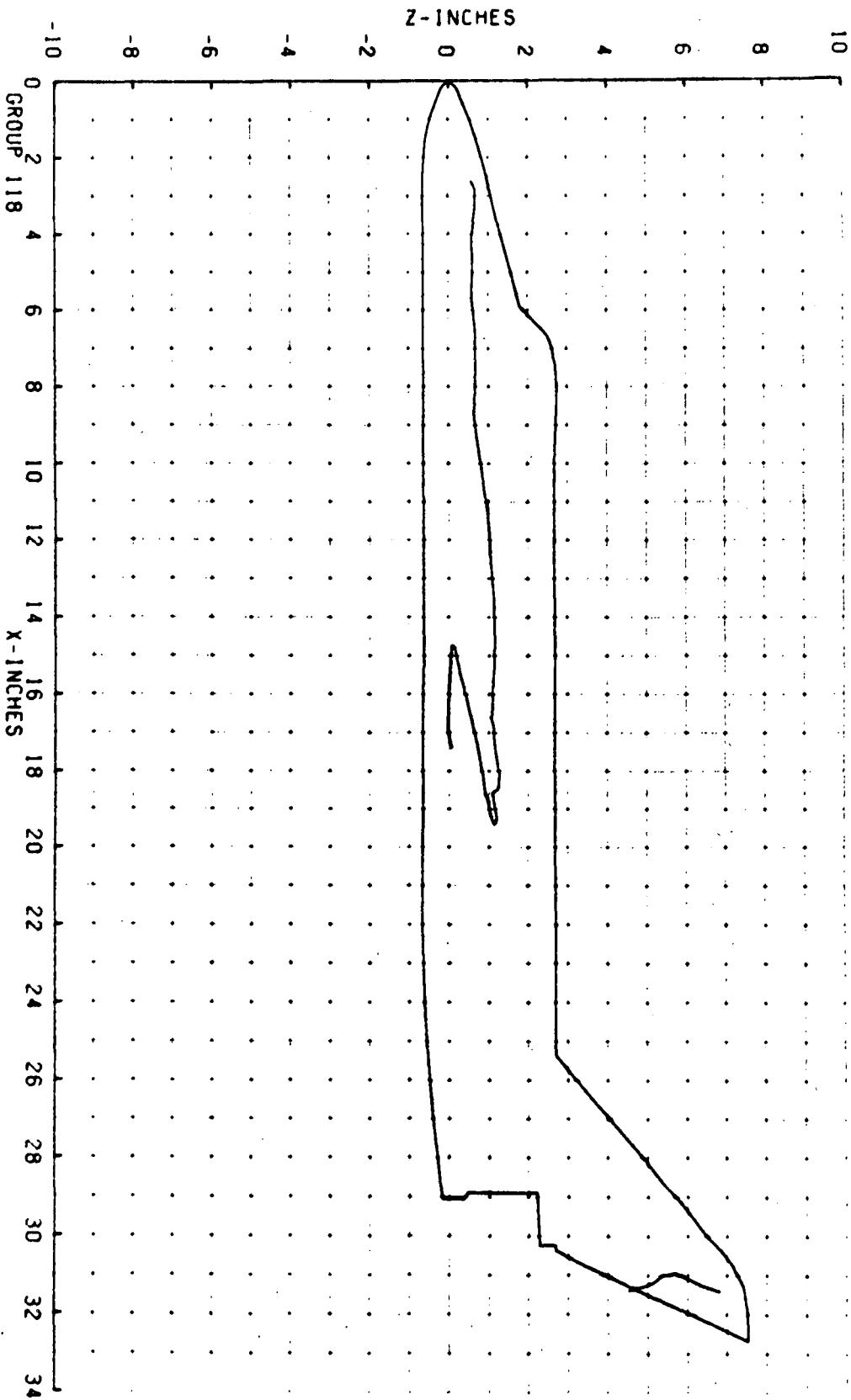
GROUP 118 PIC. NO. 1533 H/HREF 2.500E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NRR-DW0



GROUP 118 PIC. NO. 1540 H/HREF 1.900E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NAR-DMD



GROUP 118 PIC. NO. 1546 H/HREF 1.590E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NAR-DMO



6/1/71

AEC(ARNO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9
V11162

GROUP 123 CONFIG 51 MODEL NAR-DWD MACM NO 9.06 PN PSIA 557.4 TO DEG R 1303 ALPHA-MODEL 40.03 ALPHA-SECTOR 9.97 ALPHA-PREBEND -50.00 ROLL-MODEL 180.00 YAW .00

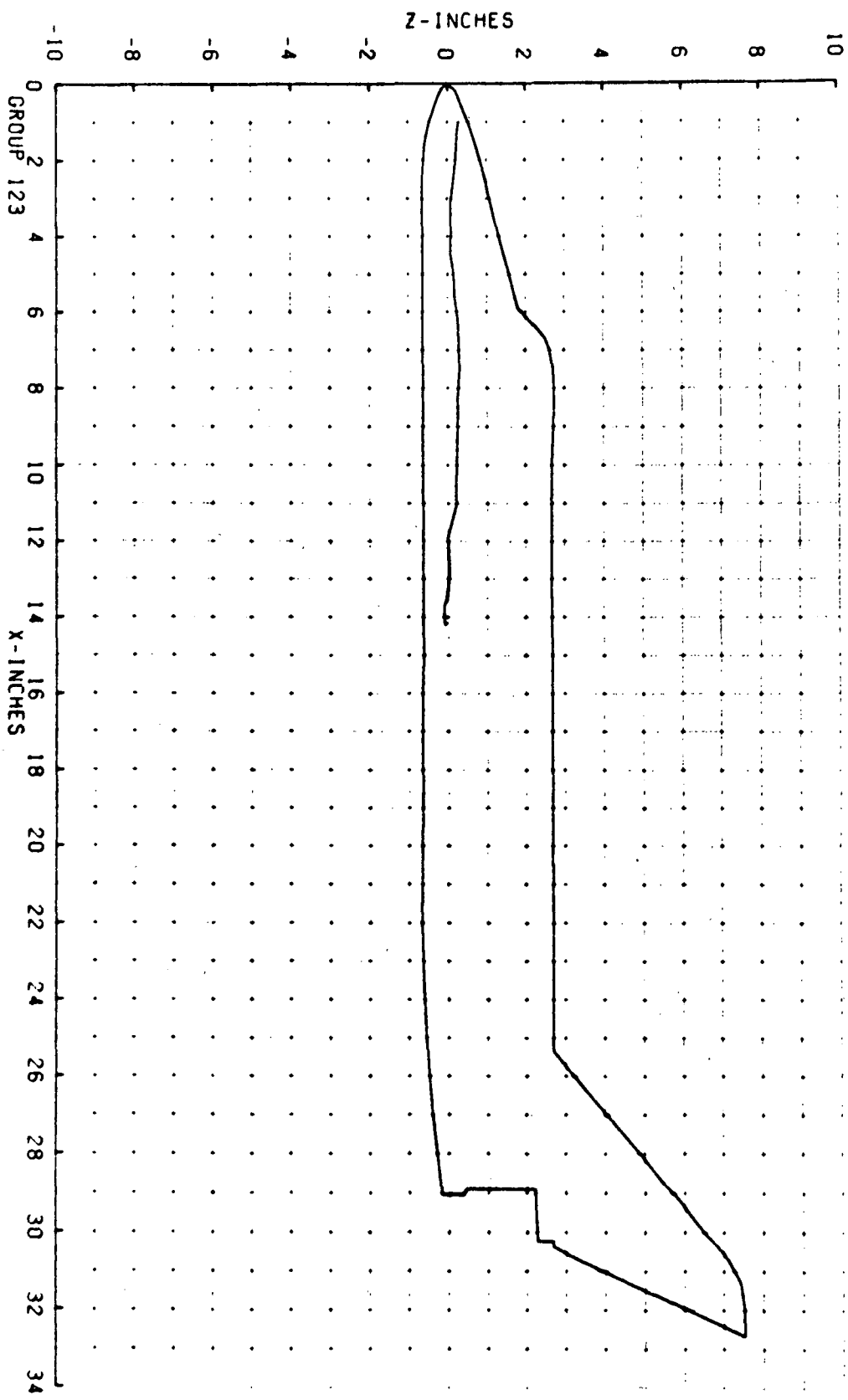
T-1NF P-1NF O-1NF V-1NF RHO-1NF WU-1NF GE-FT HREF S1REF
(DEG R) (PCIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)
94.4 .057 2.535 3009 5.029E-05 7.601E-08 2.52E 06 4.588E-02 2.983E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHDXCKI)

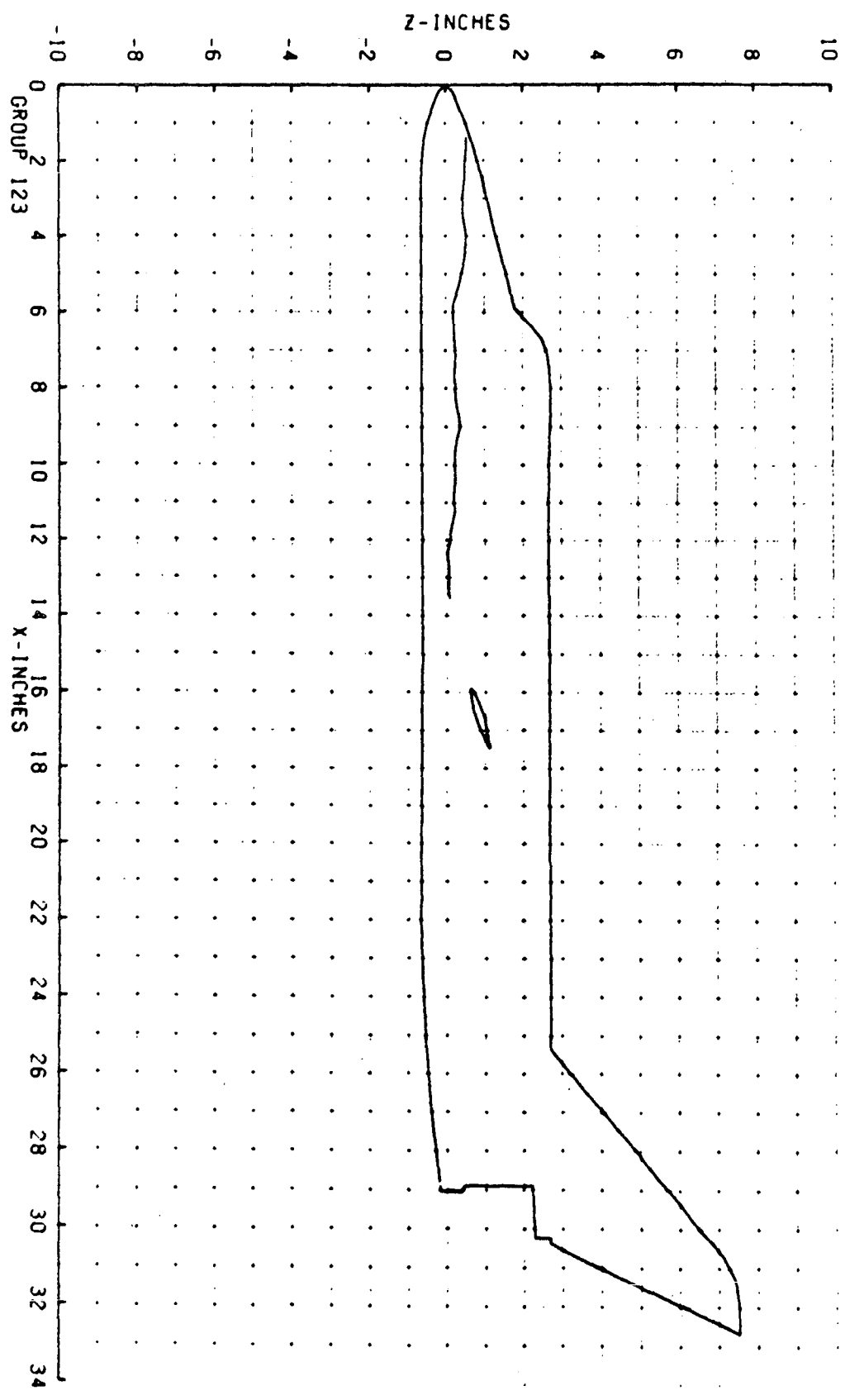
TOP(F) 270
SIDE(S) 113 AVERAGE TW = 85
ROT(CM) 113 -0.008(SQUARE ROOT DEL TIME) * 0.11

PIC NO	TYPE	DELTYPE	M(TN)	M(TD)/HREF	H(.970)	H(.970)	GE/FT	HREF	S1REF	ST1(T)	MODEL	TEMP F
S 1957 (113)	3.20	2.14	2.29E-03	.0497	2.770E-03	.0604	3.103E-03	.0676	1.487E-03	85	84	86
S 1960 (113)	4.75	3.71	1.68E-03	.0365	2.035E-03	.0444	2.288E-03	.0497	1.092E-03	87	86	88
S 1966 (113)	7.95	6.91	1.16E-03	.0252	1.403E-03	.0306	1.571E-03	.0342	7.531E-04	97	85	93
S 1973 (113)	11.60	10.54	8.82E-04	.0192	1.072E-03	.0233	1.200E-03	.0241	5.747E-04	111	86	102
S 1979 (113)	14.25	13.21	7.40E-04	.0166	9.230E-04	.0201	1.034E-03	.0225	4.952E-04	121	87	108

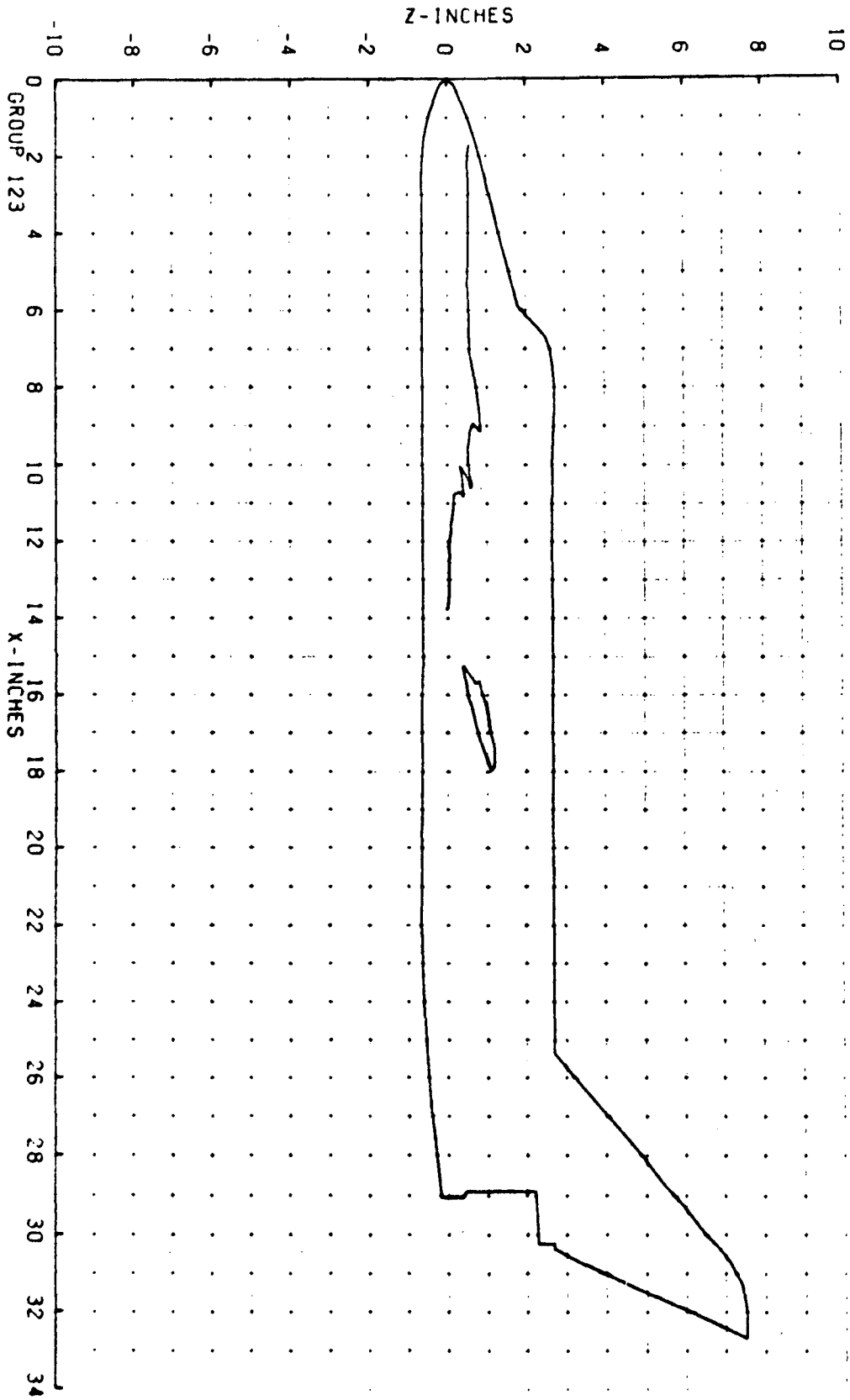
GROUP 123 PIC. NO. 1957 H/HREF 4.970E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.520E 06 CONF NAR-DMO



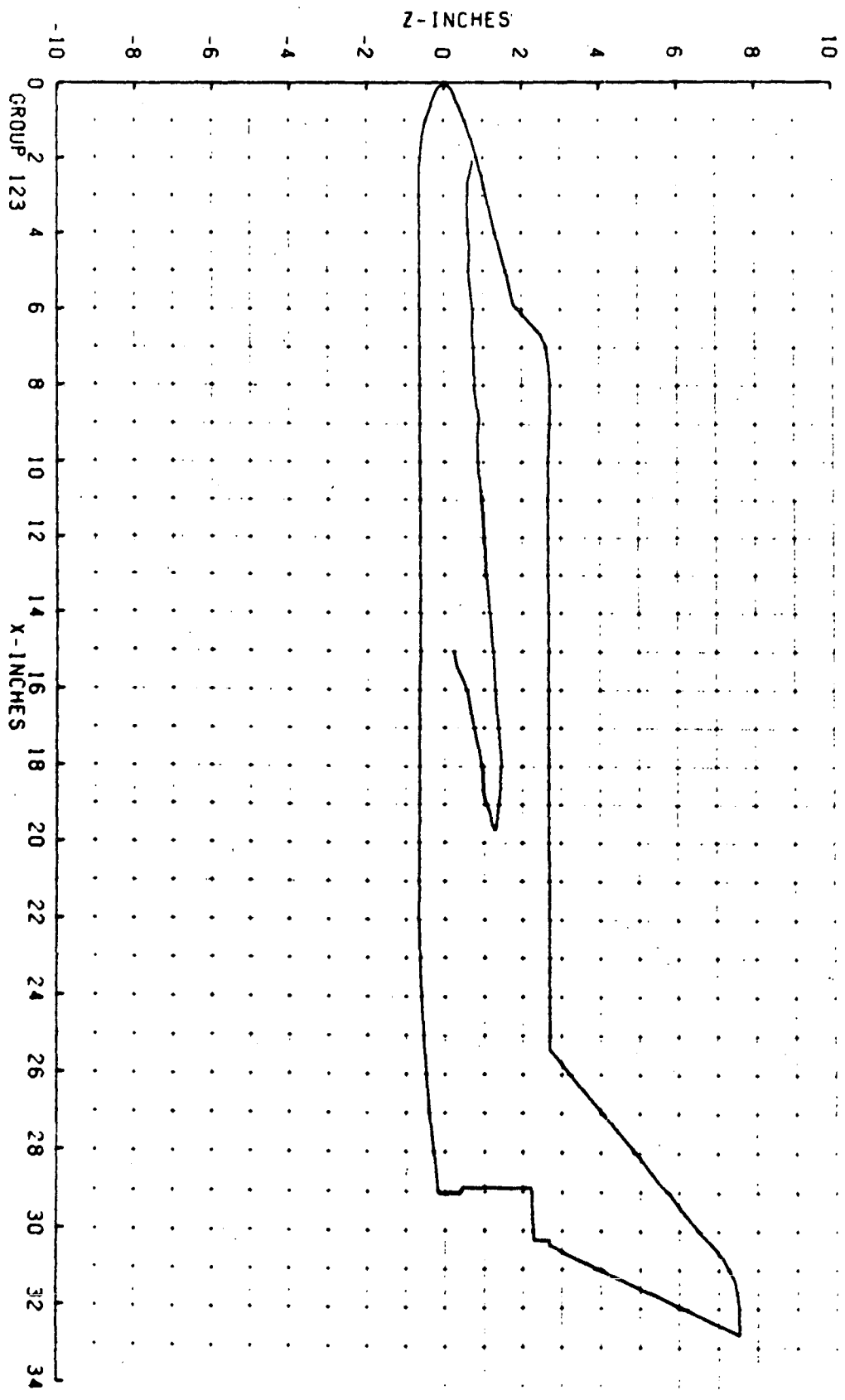
GROUP 123 PIC. NO. 1960 H/HREF 3.650E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.520E 06 CONF NRR-DW0



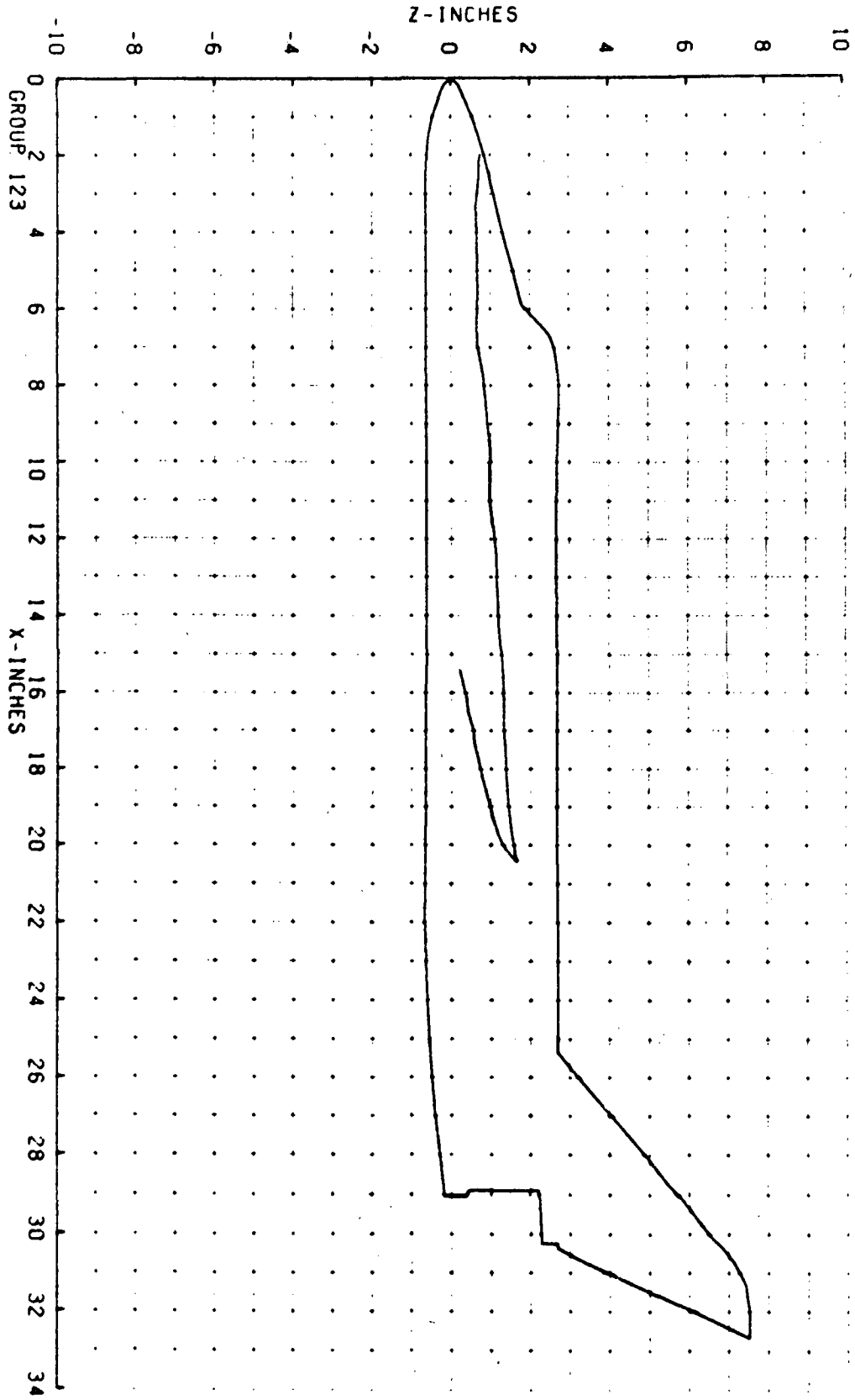
GROUP 123 PIC. NO. 1966 H/HREF 2.520E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.520E 06 CONF NRR-DW0



GROUP 123 PIC. NO. 1973 H/HREF 1.920E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.520E 06 CONF NAR-DMO



GROUP 123 PIC. NO. 1978 H/HREF 1.660E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.520E 06 CONF NRR-DW0



6/1/71

AFCC(ARJ) INC.) ARNOLD AFB, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 VII1162

GROUP 126 CONFIG 51 MODEL MAR-DMO MACH NO 8.00 PN PSIA 552.2 TO DEG R 1304 ALPHA-RODEL 40.01 ALPHA-SECTOR 9.99 ALPHA-PREBEND -50.00 ROLL-MODEL 180.00 YAW 0

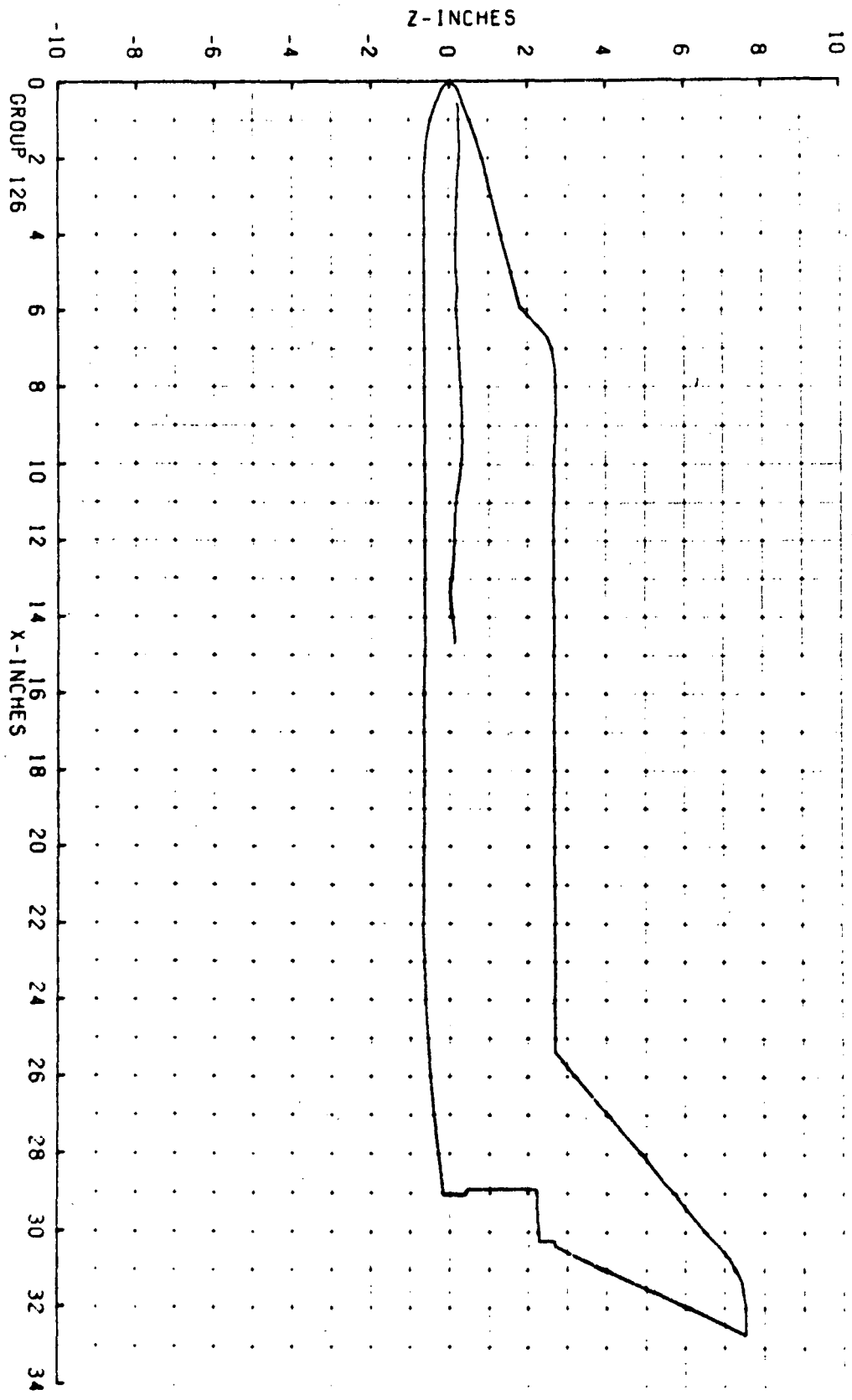
T-INF P-INF 0-INF V-INF RMO-INF PU-INF RE/FT HREF SINEF
 (DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT³) (LR-SEC/FT²) (FT-I) (R= .013FT) (R= .013FT)
 94.5 .057 2.534 3811 5.021E-05 7.609E-08 2.51E 06 4.598E-02 2.986E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOCXKX)

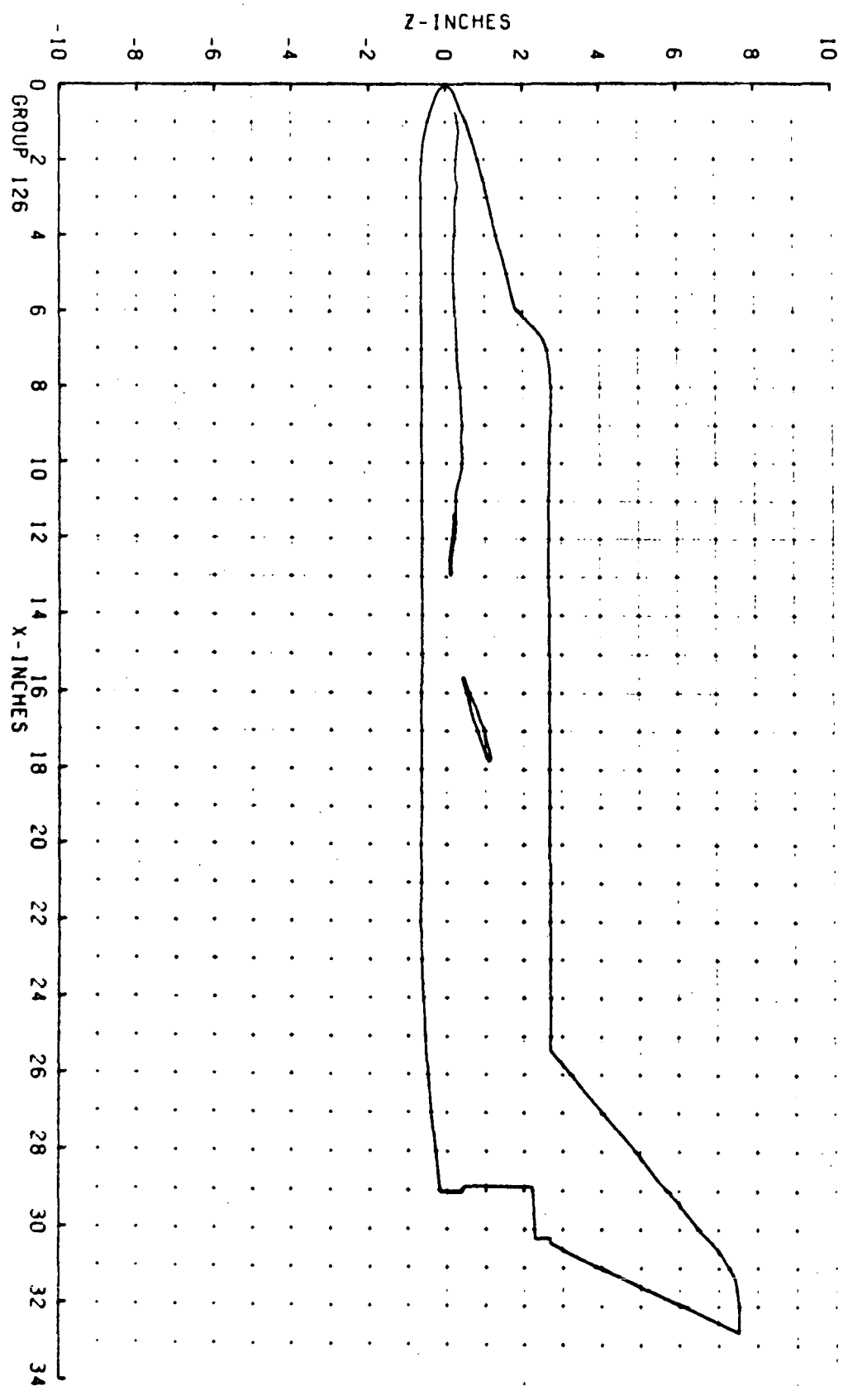
TOP(T) 150
 SIDE(S) 119 AVERAGE Iw = 84
 ROTCM(8) 119 -0.008(SQUARE ROOT DEL TIME) * 0.11

PTC NO	TIME DELT	H(TO)	H(TO)/MREF	H(.970)	H(.970)/MREF	H(.8570)	H(.8570)/MREF	ST(TO)	MODEL TEMP-F
S 2066 (113)	3.20	2.14	2.21E-03	.0503	2.805E-03	3.141E-03	.0684	1.506E-03	84 83 89
S 2064 (113)	5.30	4.24	1.54E-03	.0341	1.901E-03	2.129E-03	.0244	1.020E-03	87 83 89
S 2070 (113)	8.45	7.41	1.12E-03	.0244	1.360E-03	1.523E-03	.0132	7.299E-04	97 84 94
S 2079 (113)	13.25	12.21	8.11E-04	.0177	9.854E-04	1.104E-03	.0270	5.266E-04	116 86 106
S 2087 (113)	17.50	16.44	6.60E-04	.0144	8.021E-04	8.984E-04	.0196	4.301E-04	131 87 121

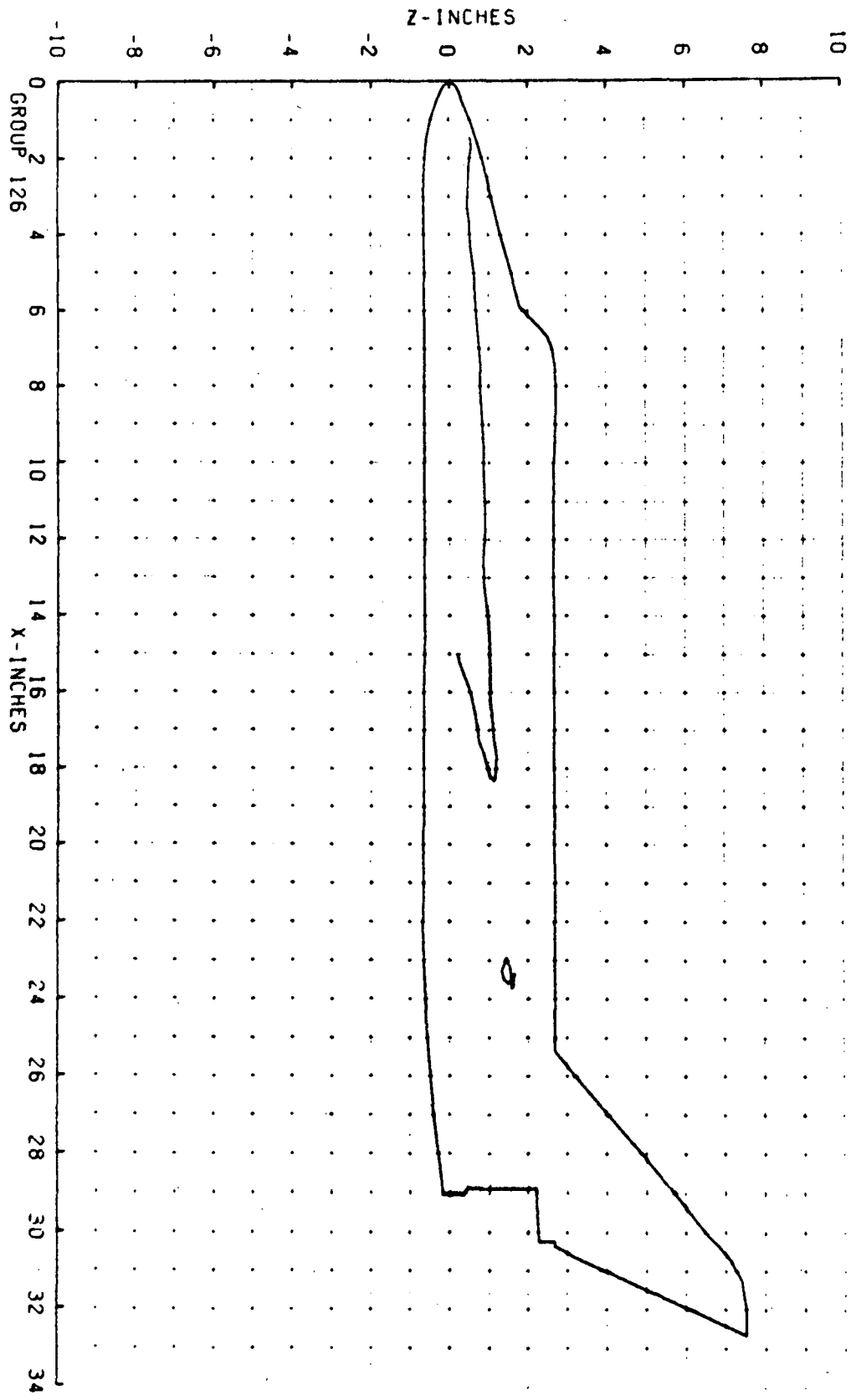
GROUP 126 PIC. NO. 2060 H/HREF 5.030E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.510E 06 CONF NGR-DM0



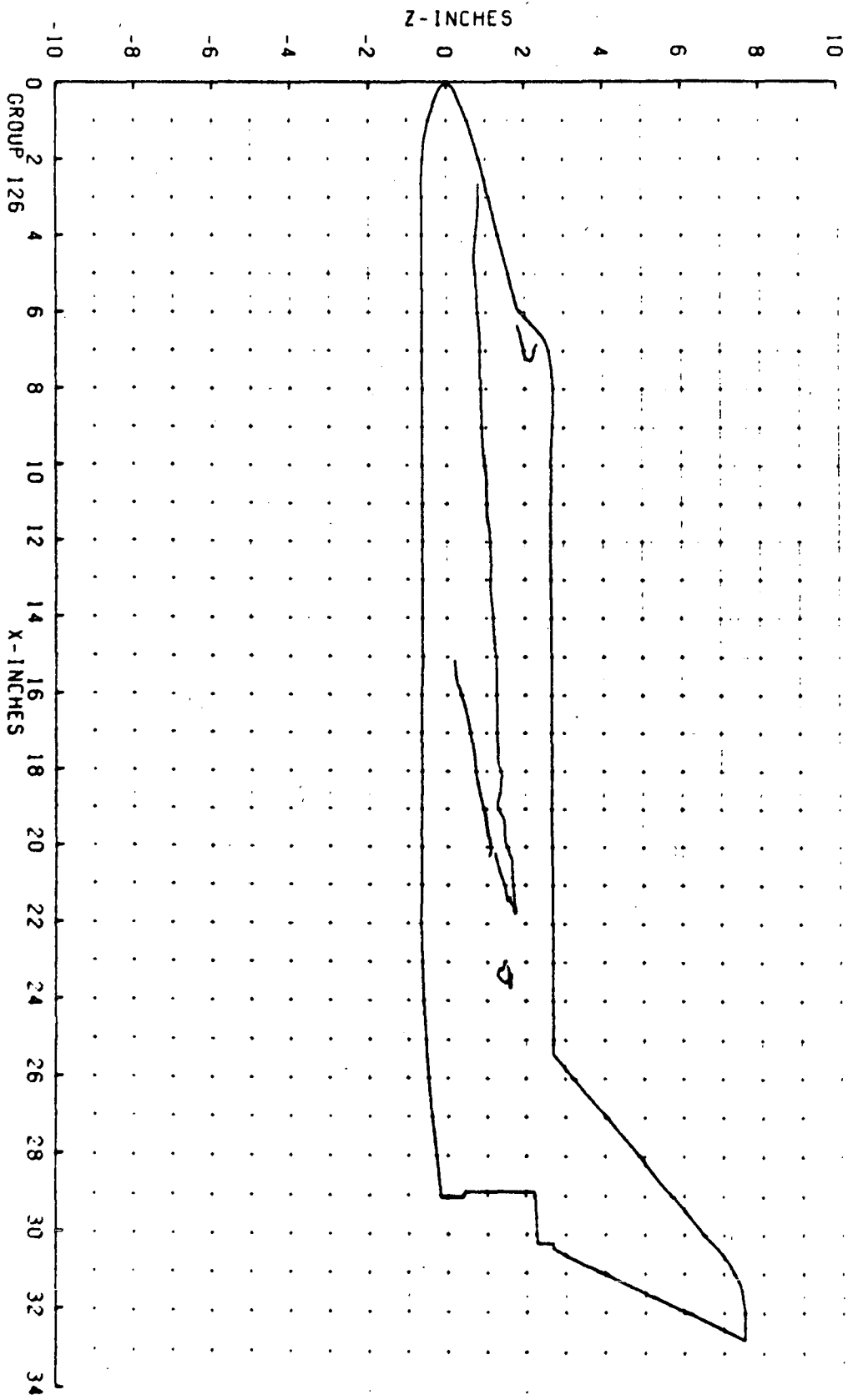
GROUP 126 PIC. NO. 2064 H/HREF 3.410E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.510E 06 CONF NAR-DNO



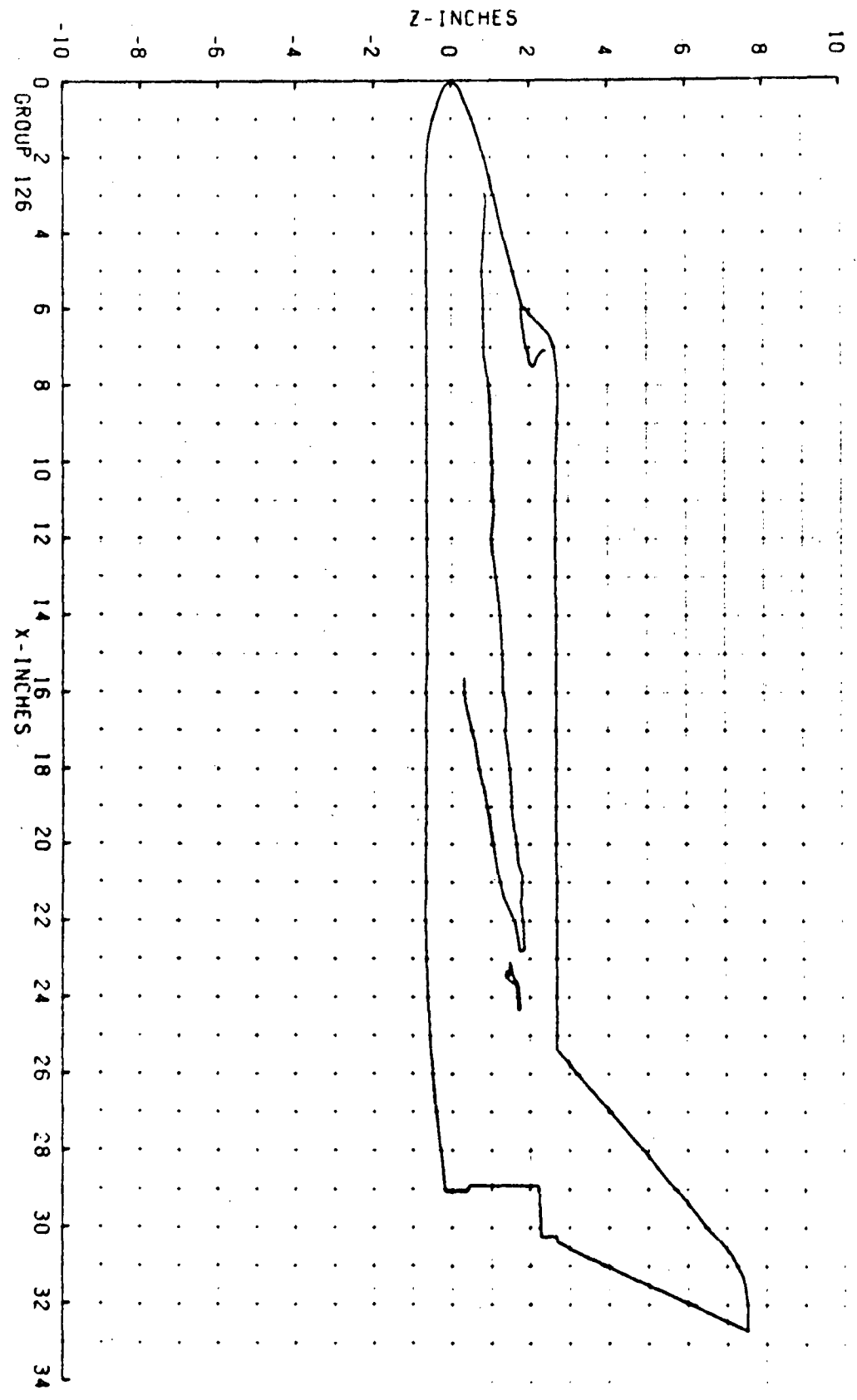
GROUP 126 PIC. NO. 2070 H/HREF 2.440E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.510E 06 CONF NAR-DW0



GROUP 126 PIC. NO. 2079 H/HREF 1.770E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.510E 06 CONF NAR-DW0



GROUP 126 PIC. NO. 2087 H/HREF 1.440E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.510E 06 CONF NAR-DW0



5/29/71

AFDCIAR0-IACJ) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

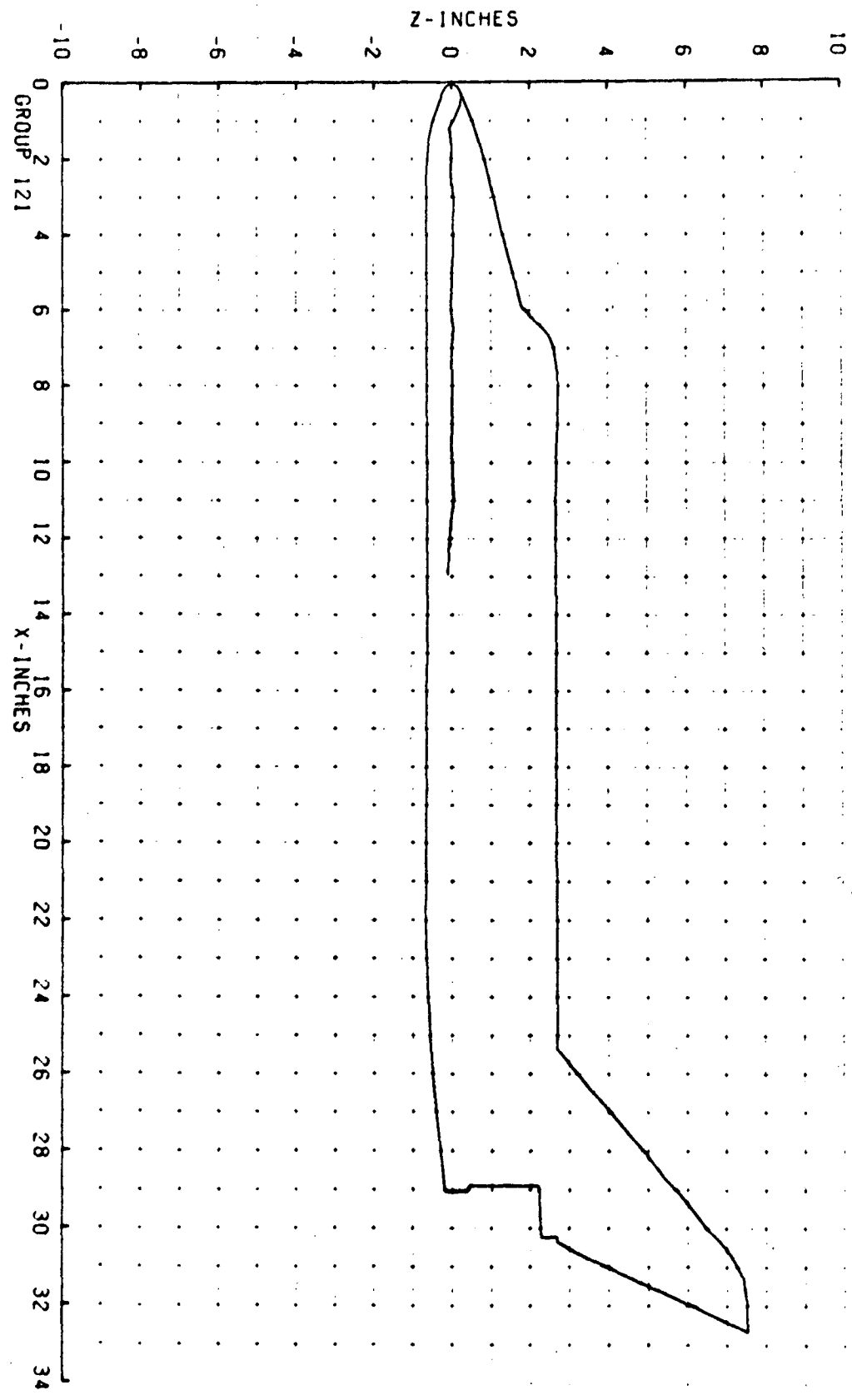
GROUP	CONFIG	MODEL	WACH NO	PN PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
121	91	NAR-DWC	R.00	552.2	1290	50.00	-0.00	-50.00	180.00	0

T-1NF	P-1NF	Q-1NF	V-1NF	QMO-1NF	MU-1NF	REF/FT	PREF	STRREF
(DEG R)	(PSIA)	(PSIA)	(FT/SEC)	(SLUGS/FT ³)	(LB-SEC/FT ²)	(FT-1)	(R=.013FT)	(R=.013FT)
94.1	.957	2.574	3902	5.044E-05	7.575E-06	2.53E 06	4.584E-02	2.378E-02

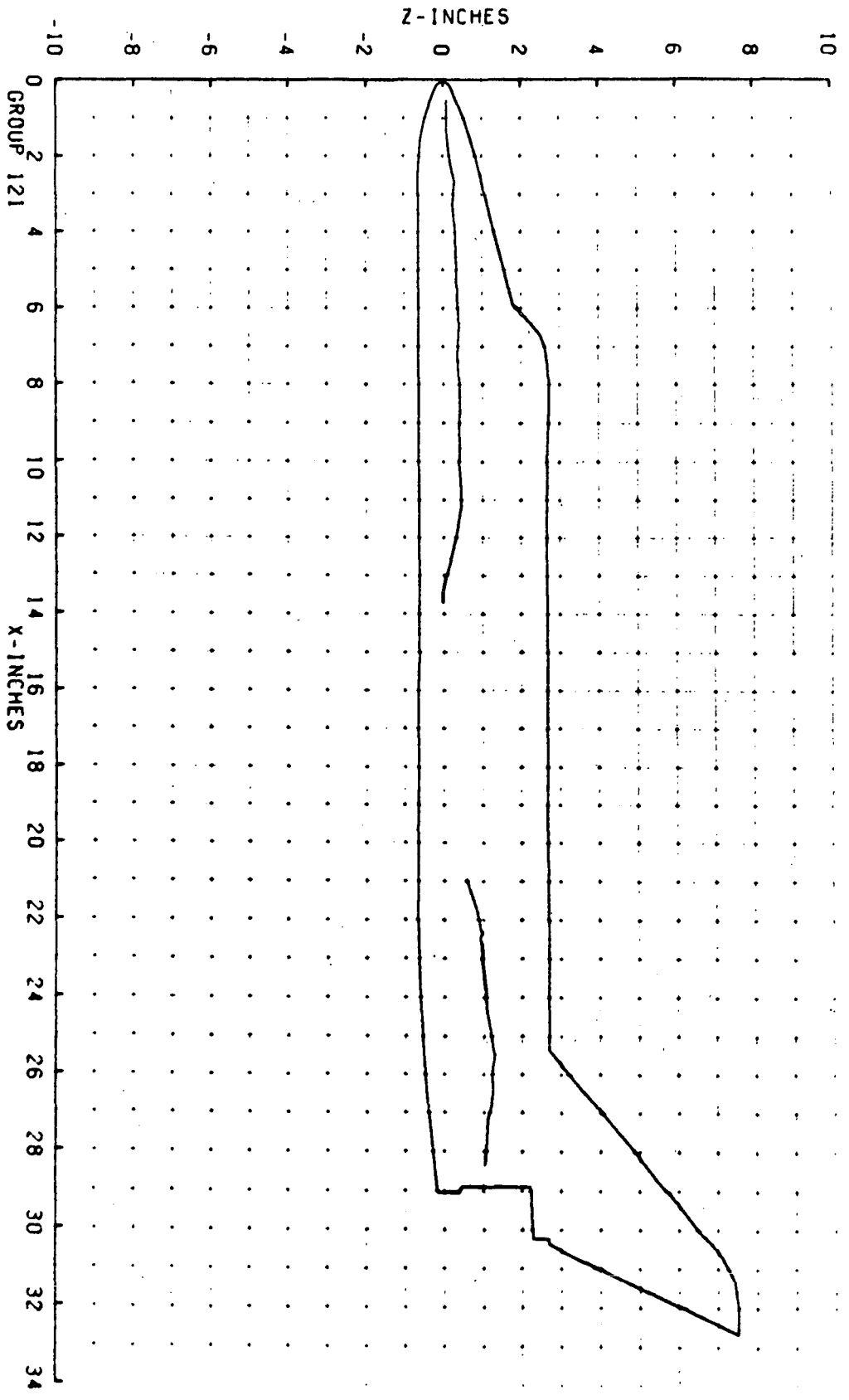
CAMERA	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHO/CXK)
TRP(T)	150		
STC(S)	150	AVERAGE T _w = 88	-0.008(SQUARE ROOT DEF TIME) * 0.11
POTICM(R)	150		

PIC-NO	TYPE	DELTIME	H(TO)	H(REF)	H(.010)	H(.STC)	H(REF)	H(.85TO)	H(.85TO)/PREF	ST(TO)	MODEL	TEMP-F
S 1427 (150)		2.60	1.53	6.33E-03	.1382	7.777E-03	.1697	8.772E-03	.1914	4.120E-03	0	0
S 1430 (150)		4.20	3.13	4.24E-03	.092E	5.209E-03	.1137	5.875E-03	.1282	2.759E-03	0	0
S 1435 (150)		6.85	5.79	2.96E-03	.0645	3.631E-03	.0792	4.096E-03	.0903	1.923E-03	0	0
S 1442 (150)		10.50	9.43	2.19E-03	.0475	2.676E-03	.0594	3.018E-03	.0448	1.417E-03	0	0
S 1449 (150)		14.15	12.06	1.76E-03	.0343	2.156E-03	.0470	2.432E-03	.0470	1.141E-03	0	0

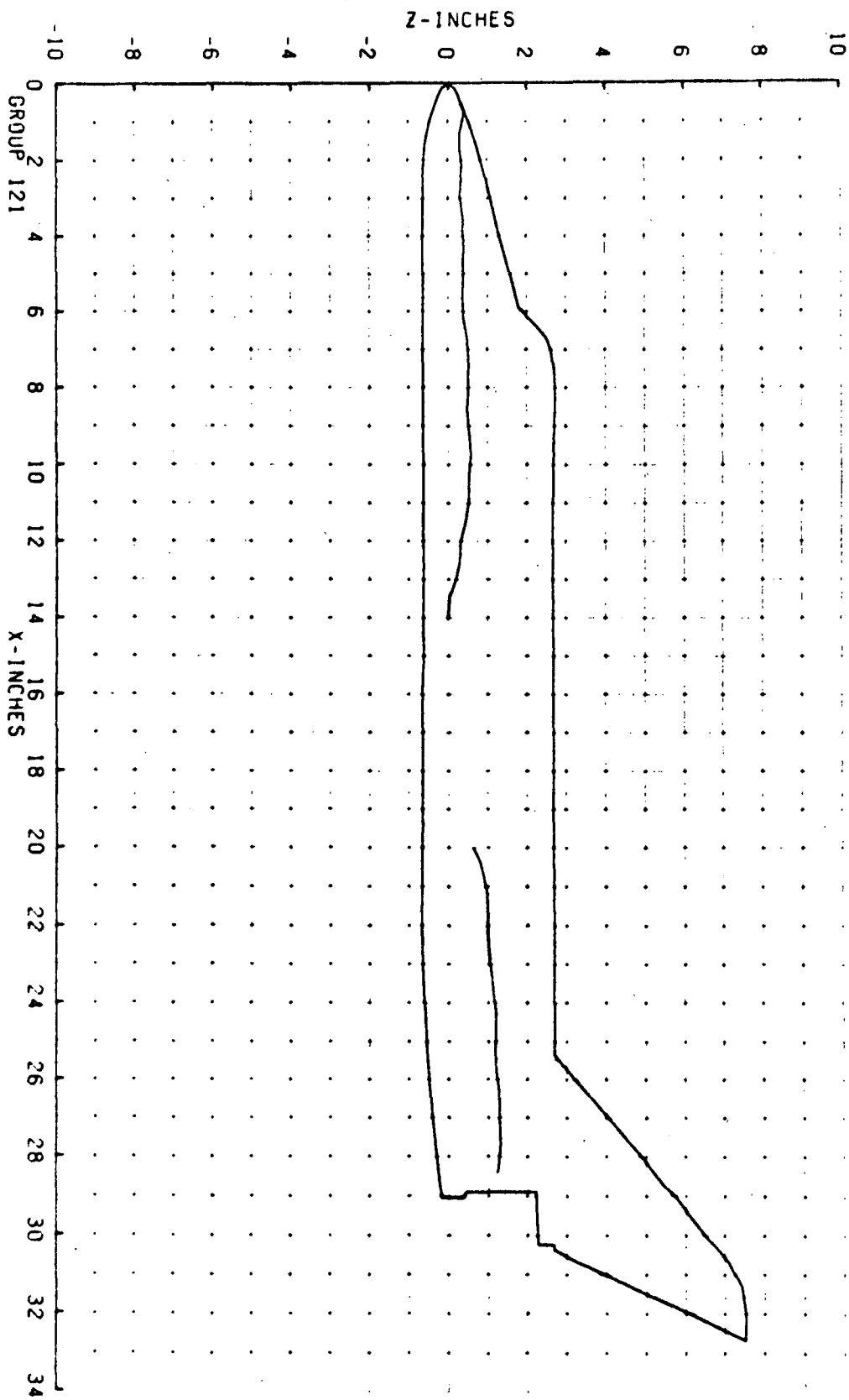
GROUP 121 PIC. NO. 1627 H/HREF 1.382E-01 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 4.584E-02 RE/FT 2.530E 06 CONF NRR-DW0



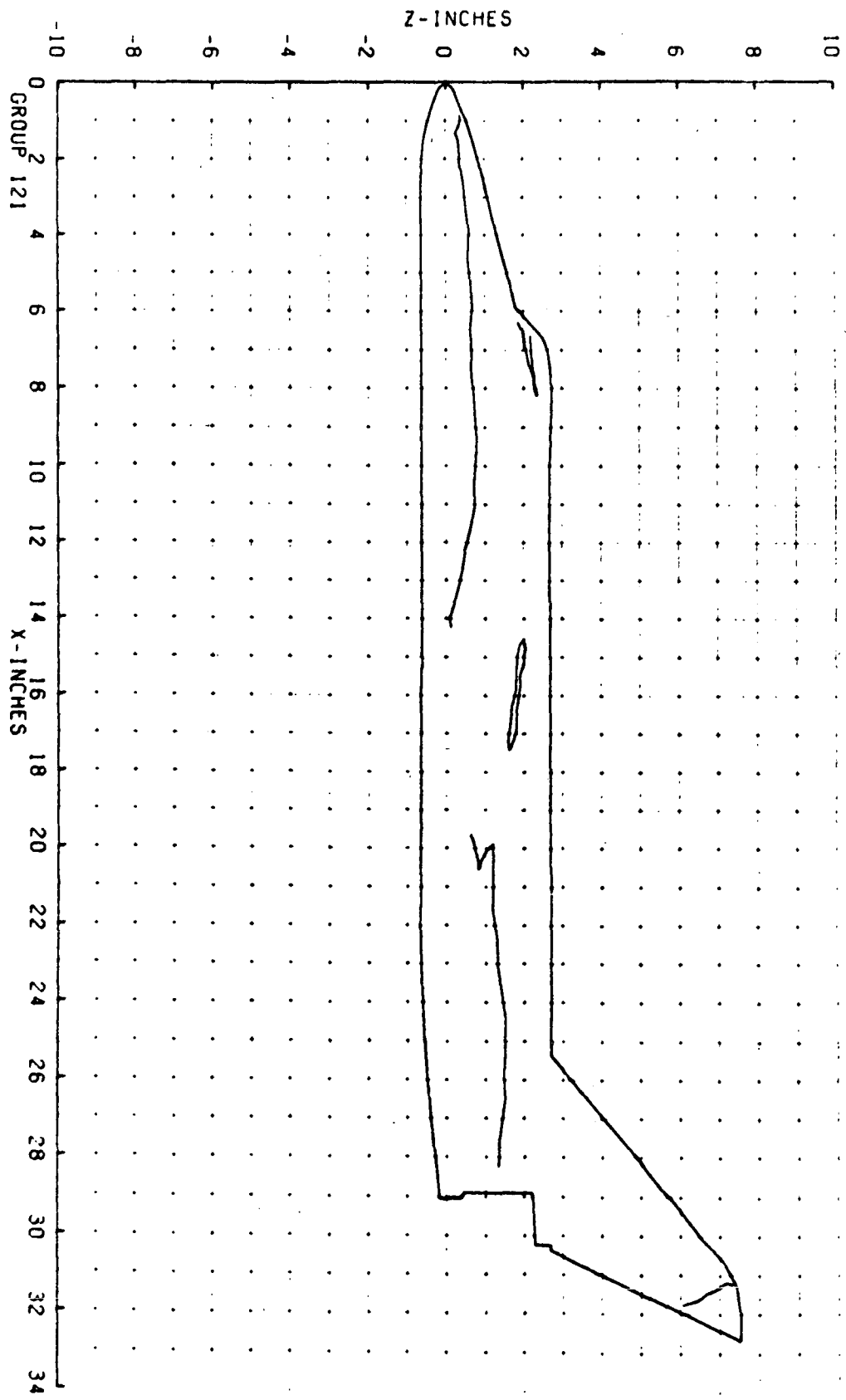
GROUP 121 PIC. NO. 1630 H/HREF 9.260E-02 MODEL SURFACE - SIDE
 MACH 8.00 ALPHA (DEG) 50.0 HREF 4.584E-02 RE/FT 2.530E 06 CONF NAR-DMO



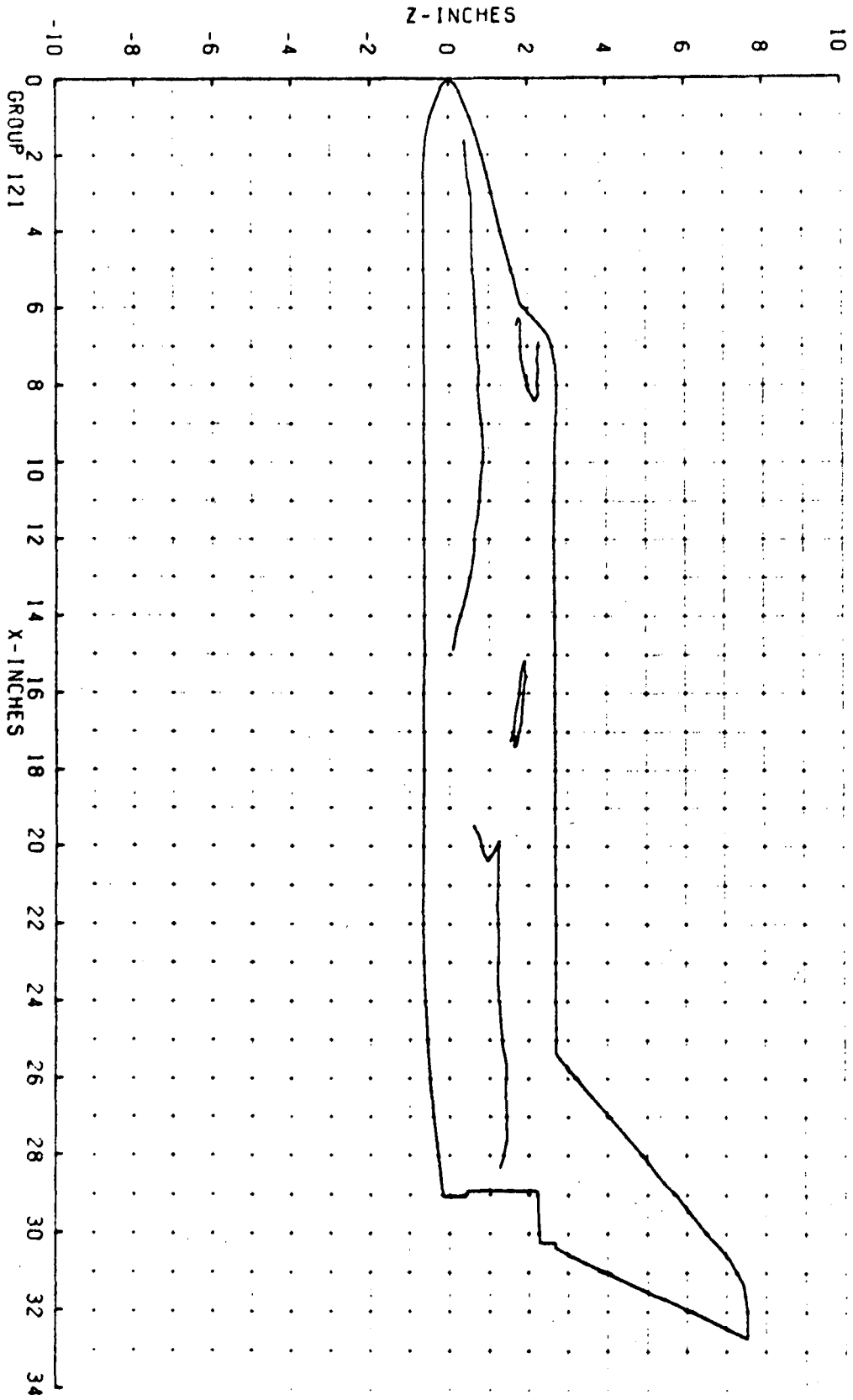
GROUP 121 PIC. NO. 1635 H/HREF 6.450E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 4.584E-02 RE/FT 2.530E 06 CONF NAR-DWO



GROUP 121 PIC. NO. 1642 H/HREF 4.750E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 4.584E-02 RE/FT 2.530E 06 CONF NAR-DWO



GROUP 121 PIC. NO. 1649 H/HREF 3.830E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 4.584E-02 RE/FT 2.530E 06 CONF NRR-DW0



9/21/71

AFOC(LARNO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL #
V11162

GROUP CONFIG MODEL MACW NO PN PSIA TO DEG M ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW

367 54 AAR-DW0 2.00 850.1 1333 10.03 12.97 -23.00 180.00 .0

T-1NF P-1NF 0-1NF V-1NF RHO-1NF MU-1NF RE/FT HREF STREF
(DEG A) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)
96.6 .000 3.947 3002 7.655E-05 7.774E-08 3.79E 06 5.747E-02 2.423E-02

CAMERA PAINY IFWD (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCRK)

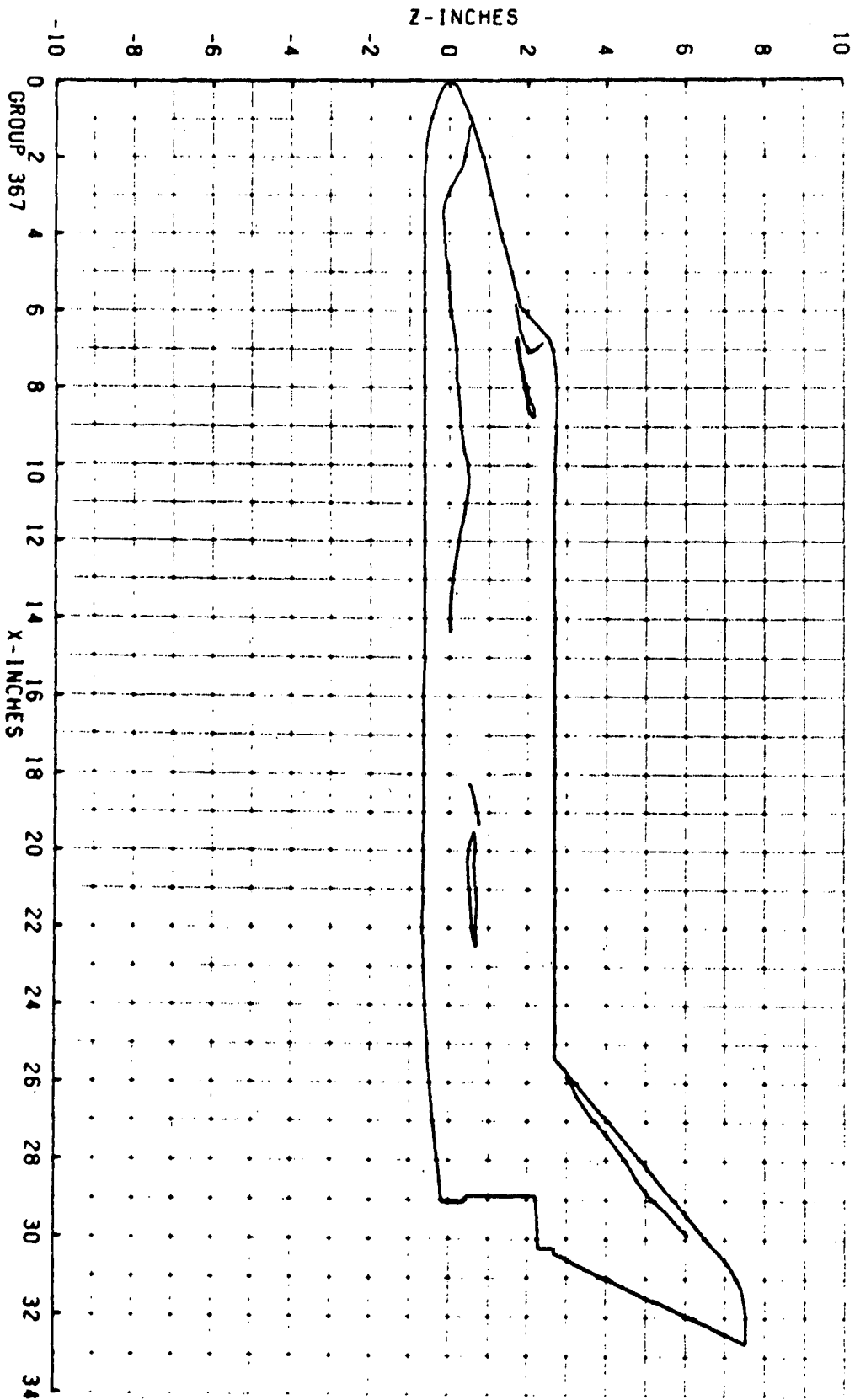
TOP(T) 150 AVERAGE Tm = 76 -0.008(SQUARE ROOT OF TIME) * 0.11
SIDE(S) 150
ROT(CM(R)) 150

PIC NO TIME OF FLIGHT W(TO) W(TO)/HREF W(.910) W(.570)/HREF W(.8510) W(.8510)/HREF ST(TO) MODEL TEMP F

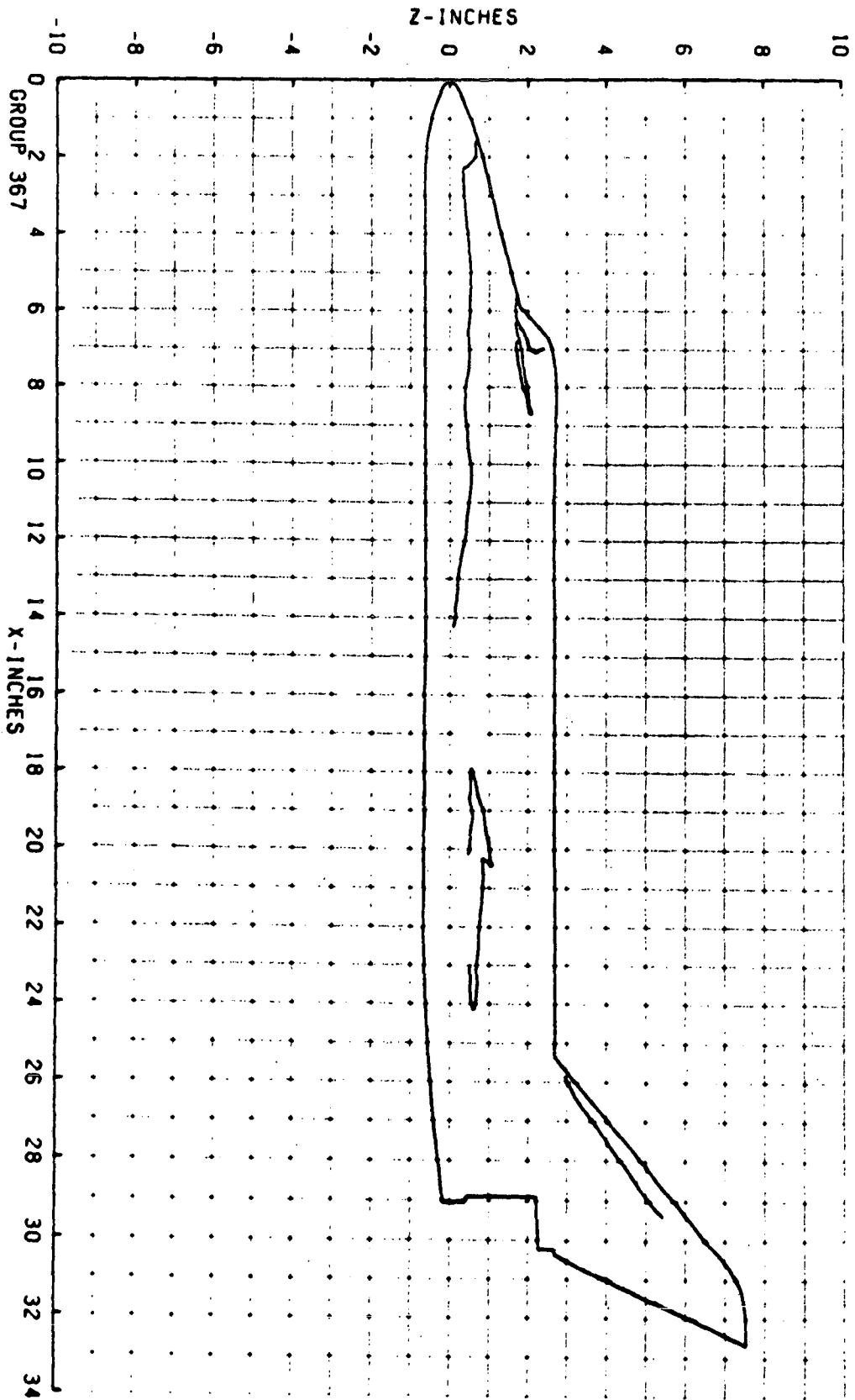
S 595 (150) 12.25 11.014 2.22E-03 .0306 2.70E-03 .0471 3.043E-03 .0529 9.361E-04 0 0 0 0

S 1004 (150) 17.05 15.94 1.74E-03 .0302 2.120E-03 .0369 2.384E-03 .0415 7.327E-04 0 0 0 0

GROUP 367 PIC. NO. 995 H/HREF 3.860E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CONF NRR-DMO



GROUP 367 PIC. NO. 1004 H/HREF 3.020E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CONF NAR-DMD

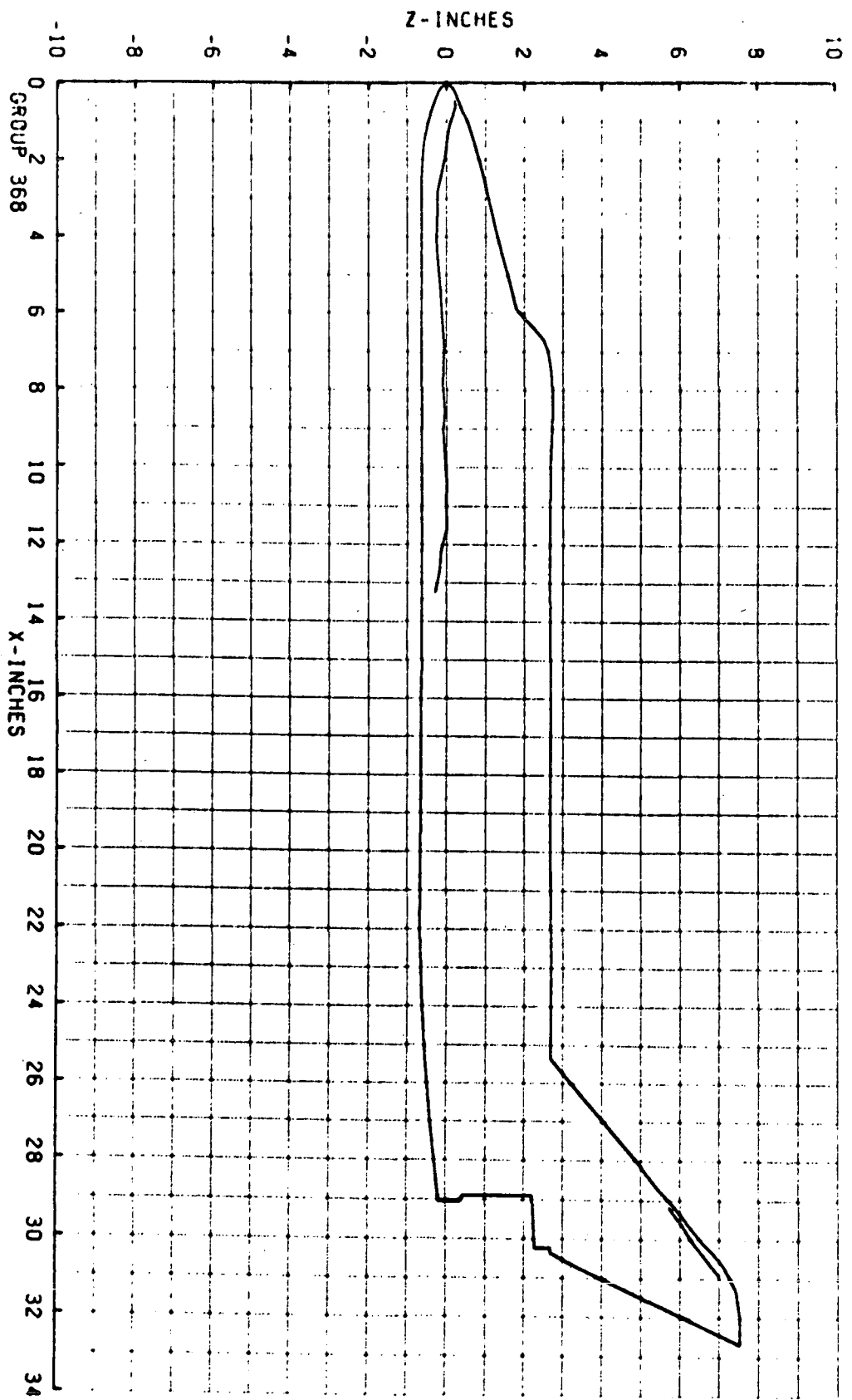


9/21/71

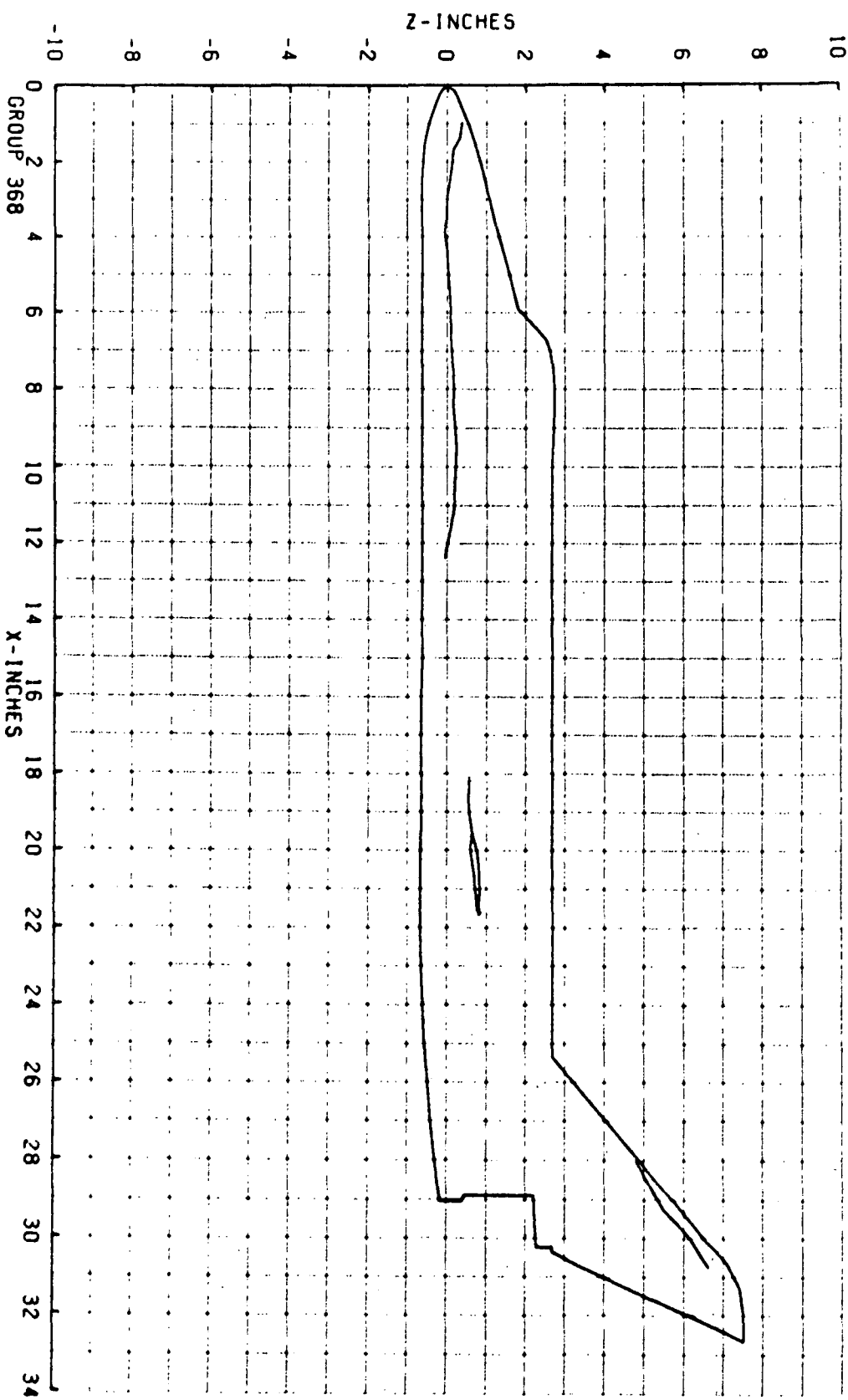
AFDC(ARND,INC.) ARNDLU AFB, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9
V11162

GROUP	CONFIG	MODEL	MACH NO	PN PSTA	TU DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREEND	ROLL-MODEL	YAW
368	54	AAH-1)no	4.00	850.9	135.3	20.03	2.97	-23.00	180.00	0.0
T-INF P-INF U-INF V-INF RHO-INF MU-INF RE/FT H-PREF SINEF (DEG M) (PSTIA) (PSTIA) (FI/SEC) (SLUGS/FT3) (LH-SEC/FT2) (FT-1) (R=.013FT) (R=.013FT) 97.3 .639 3.556 3847 7.600E-05 7.837E-08 3.75E 06 5.757E-02 2.834E-02										
CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODACKI) TOP(T) 200 SICE(S) 200 AVERAGE Tw = 76 -0.008(SQUARE ROOT DEL TIME) * 0.11 POTTCM(FB) 200										
PIC NC TIME DELTME H(TO) H(TO)/HREF H(.910) H(.85TO) H(.85TO)/HREF ST(TO) MODEL TEMP F S 1036 (200) 12.45 11.18 3.86E-03 .0671 4.771E-03 .0828 5.408E-03 .0979 1.630E-03 0 0 0 0 S 1043 (200) 22.35 21.24 2.46E-03 .0427 3.037E-03 .0527 3.442E-03 .0508 1.039E-03 0 0 0 0										

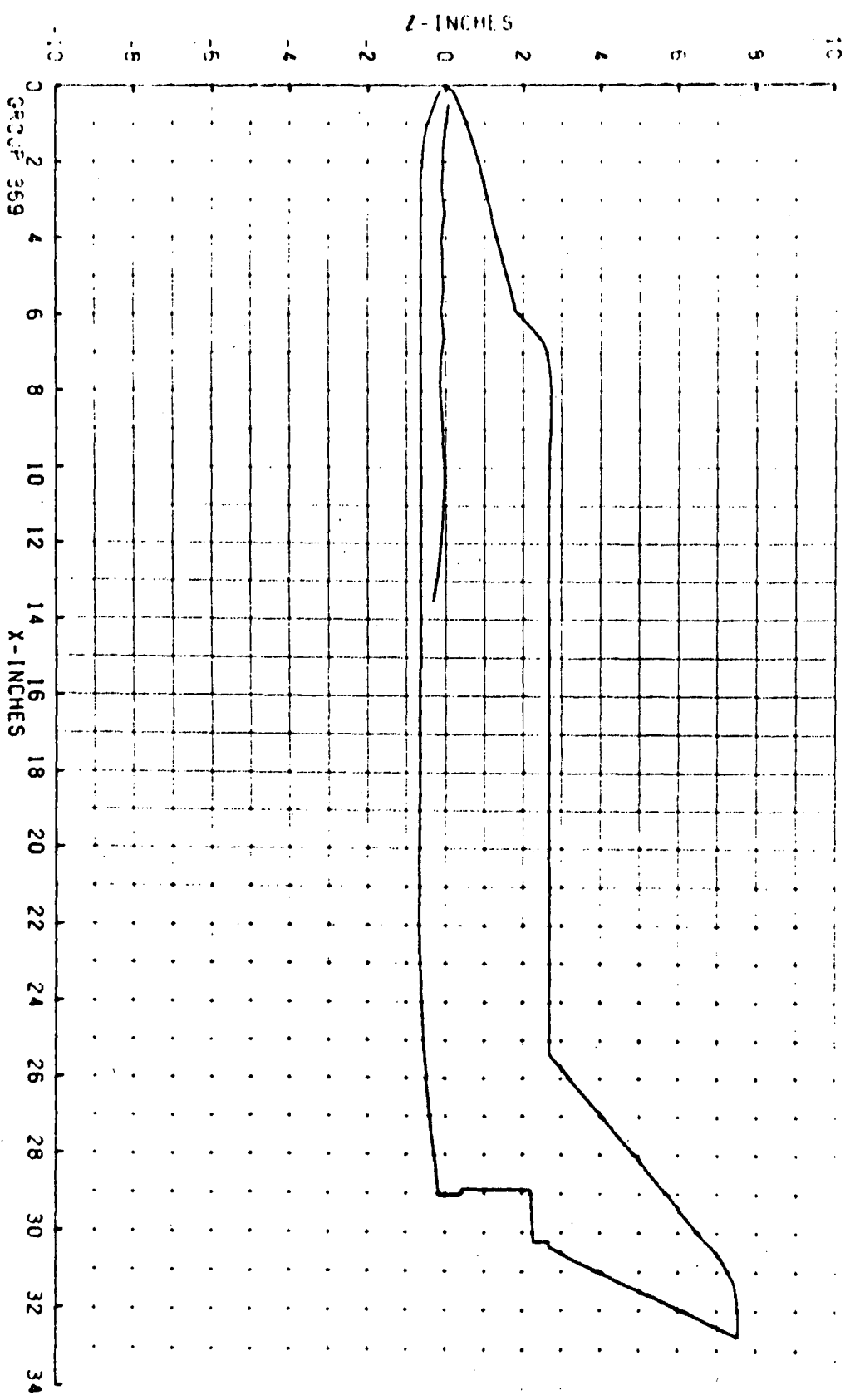
GROUP 368 PIC. NO. 1030 H/HREF 6.710E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NRR-DWO



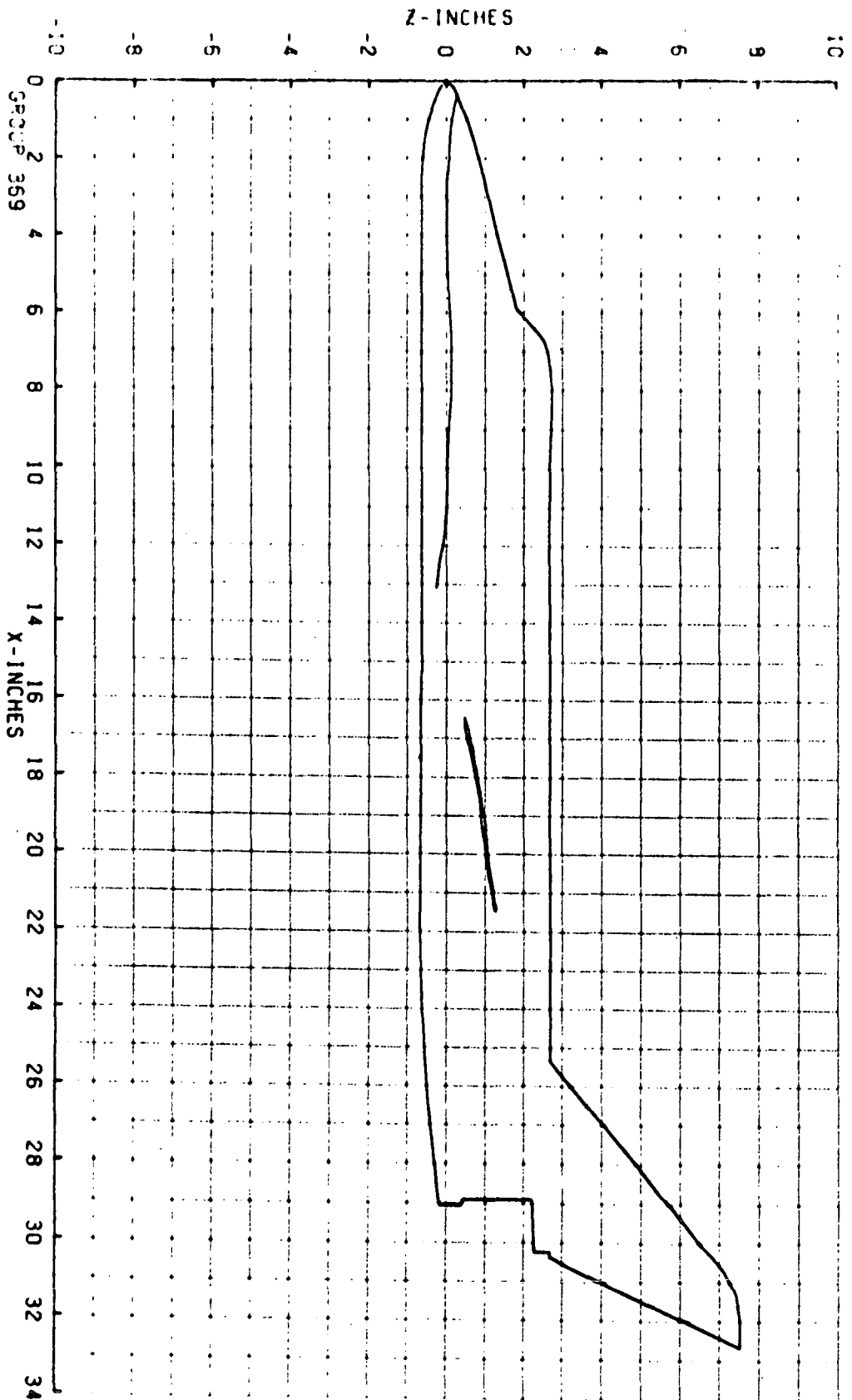
GROUP 368 PIC. NO. 1043 H/HREF 4.270E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NRR-DW0



GROUP 359 PIC. NO. 1074 H/HREF 7.160E-02 MODEL SURFACE - SIDE
WACH 8.00 ALPHA (DEG) 30.1 HREF 5.749E-02 RE/FT 3.750E 06 CONF NAR-DWO



GROUP 369 PIC. NO. 1081 H/HREF S.350E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.1 HREF S.749E-02 RE/FT 3.750E 06 CONF NAR-DMD



9/21/71

AEDC(LAHO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9
V11162

GRUPE CONFIG MODEL MACH NO FN PSIA TO DEG R ALPHA-WONDEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
371 54 NAR-D+C 2.00 862.5 1348 30.04 -7.04 -23.00 180.00 .0

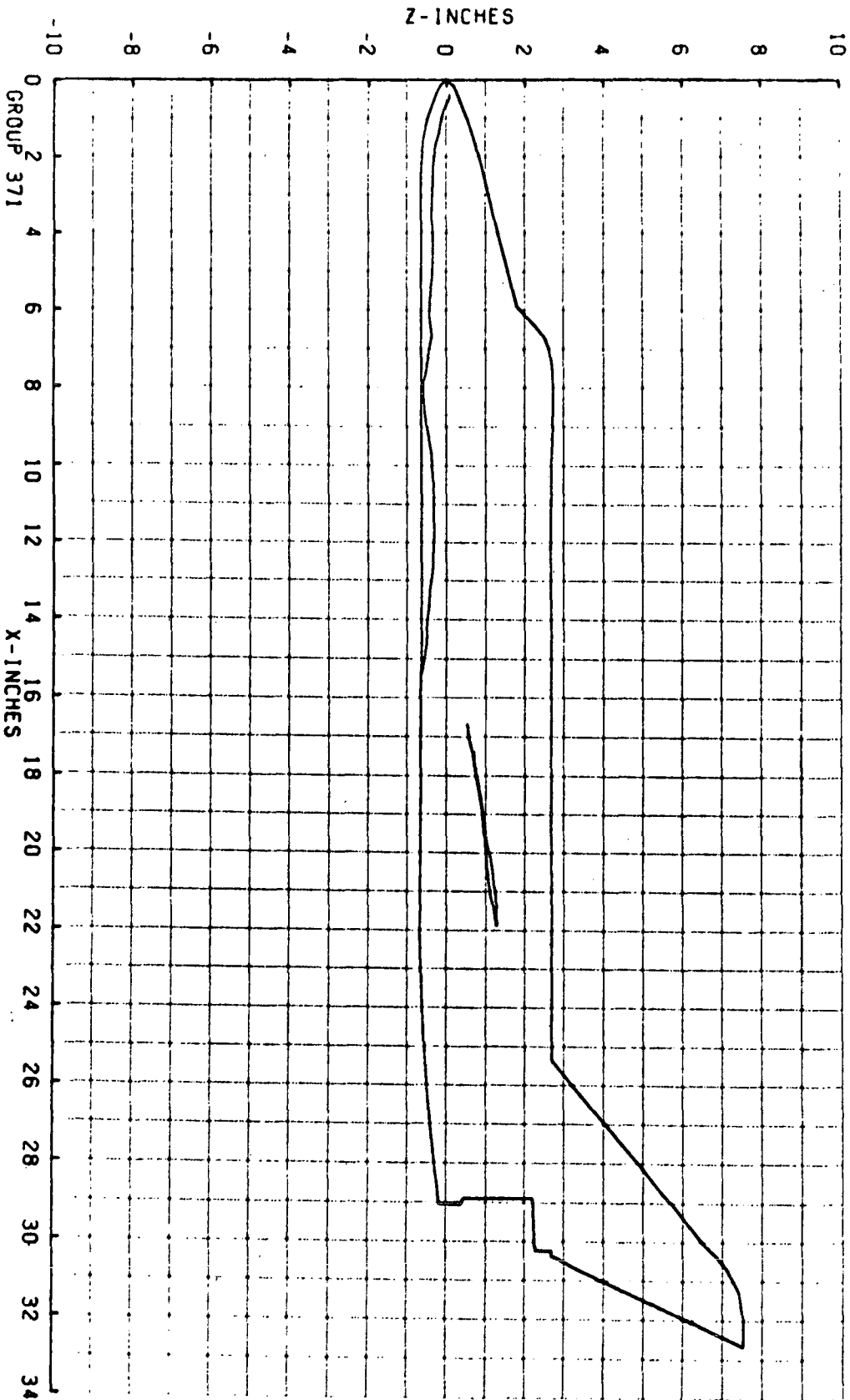
T-INF P-INF O-INF V-INF PRO-INF PU-INF RE/FT HREF SREF
(DEG R) (PSIA) (PSIA) (F1/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (H= .013FT)
97.7 .098 3.958 J874 7.587E-05 7.895E-08 3.74E 06 5.766E-02 2.437E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CAR)

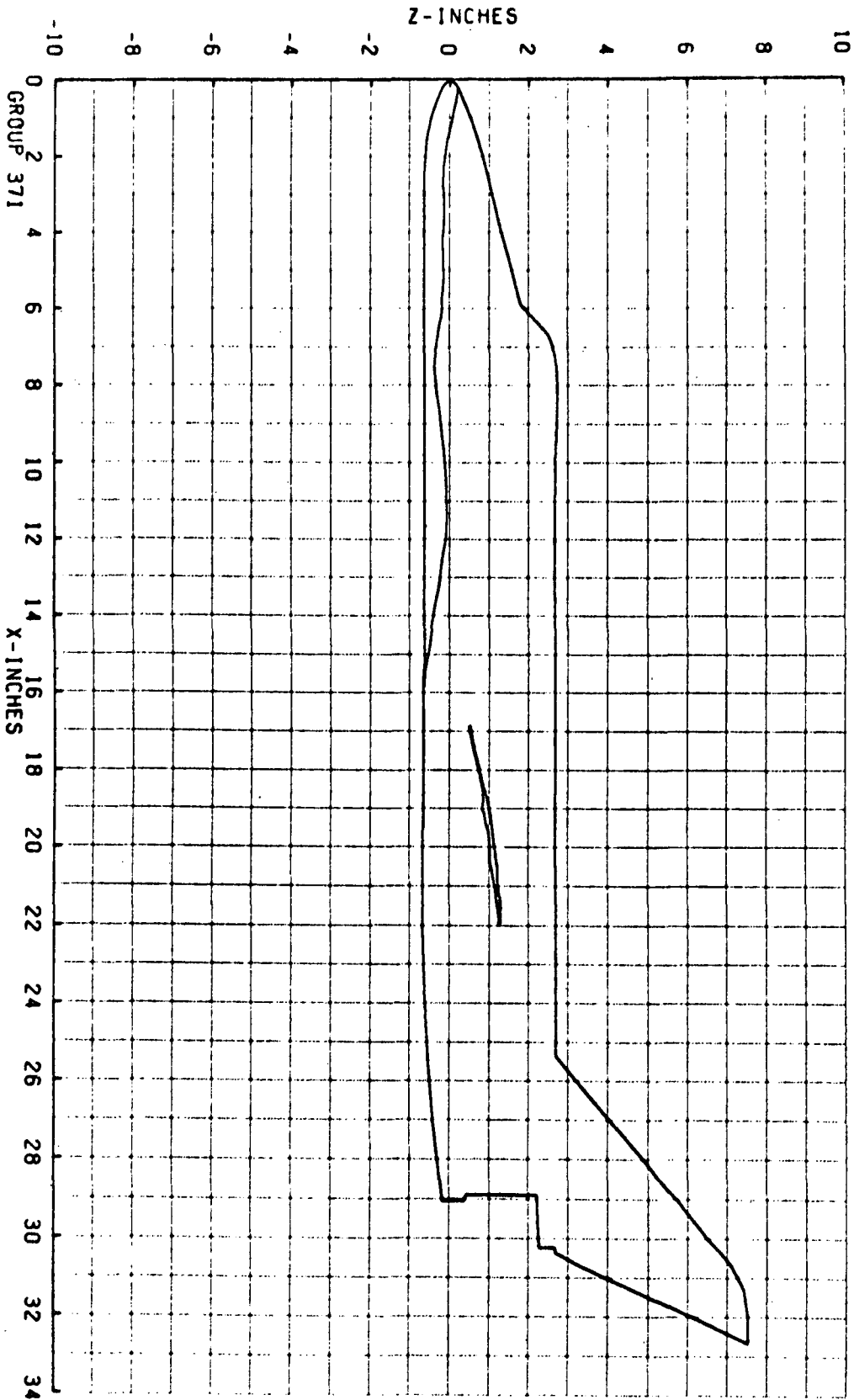
TOP(1) 250
SIDE(S) 250 AVERAGE Iw = 70 -0.0081(SQUARE ROOT DEL TIME) * 0.11
ROT(MIR) 250

PIC MC TIME DELTIME H(TD) H(TO)/HREF H(.910) H(.9TC)/HREF H(.85TD) H(.85TO)/HREF ST(TO) MODEL TEMP F
S 1130 (250) 8.55 7.44 7.32E-03 .1270 9.179E-03 .1592 1.051E-02 .1823 3.082E-03 0 0 0
S 1137 (250) 12.40 11.21 5.64E-03 .0978 7.060E-03 .1225 8.097E-03 .1404 2.373E-03 0 0 0
S 1144 (250) 16.05 14.96 4.64E-03 .0804 5.812E-03 .1008 6.658E-03 .1154 1.952E-03 0 0 0

GROUP 371 PIC. NO. 1130 H/HREF 1.270E-01 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NAR-DW0

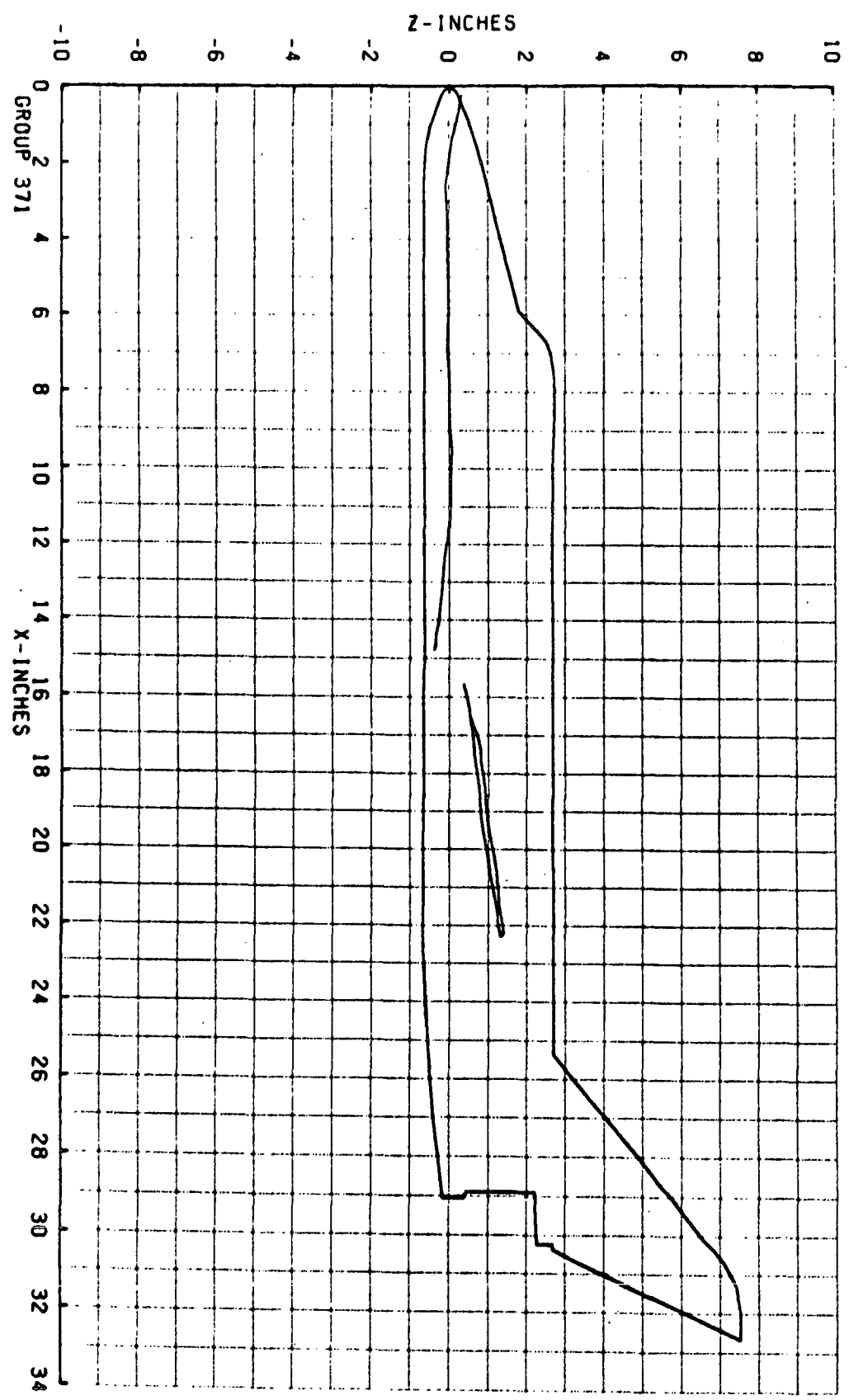


GROUP 371 PIC. NO. 1137 H/HREF 9.780E-02 MODEL SURFACE - SIDE
 MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NAR-DMD



05

GROUP 371 PIC. NO. 1144 H/HREF 8.040E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NRR-DWO



9/21/71

AFDC(ARO, INC.) ARNOLD AFB, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL R
 V11162

GROUP CONFIG MODEL MACH NO PO PSIA TU DEG R ALPHA-RODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
 375 54 HAR-UAC R.00 861.9 1345 40.04 9.96 -50.00 180.00 .0

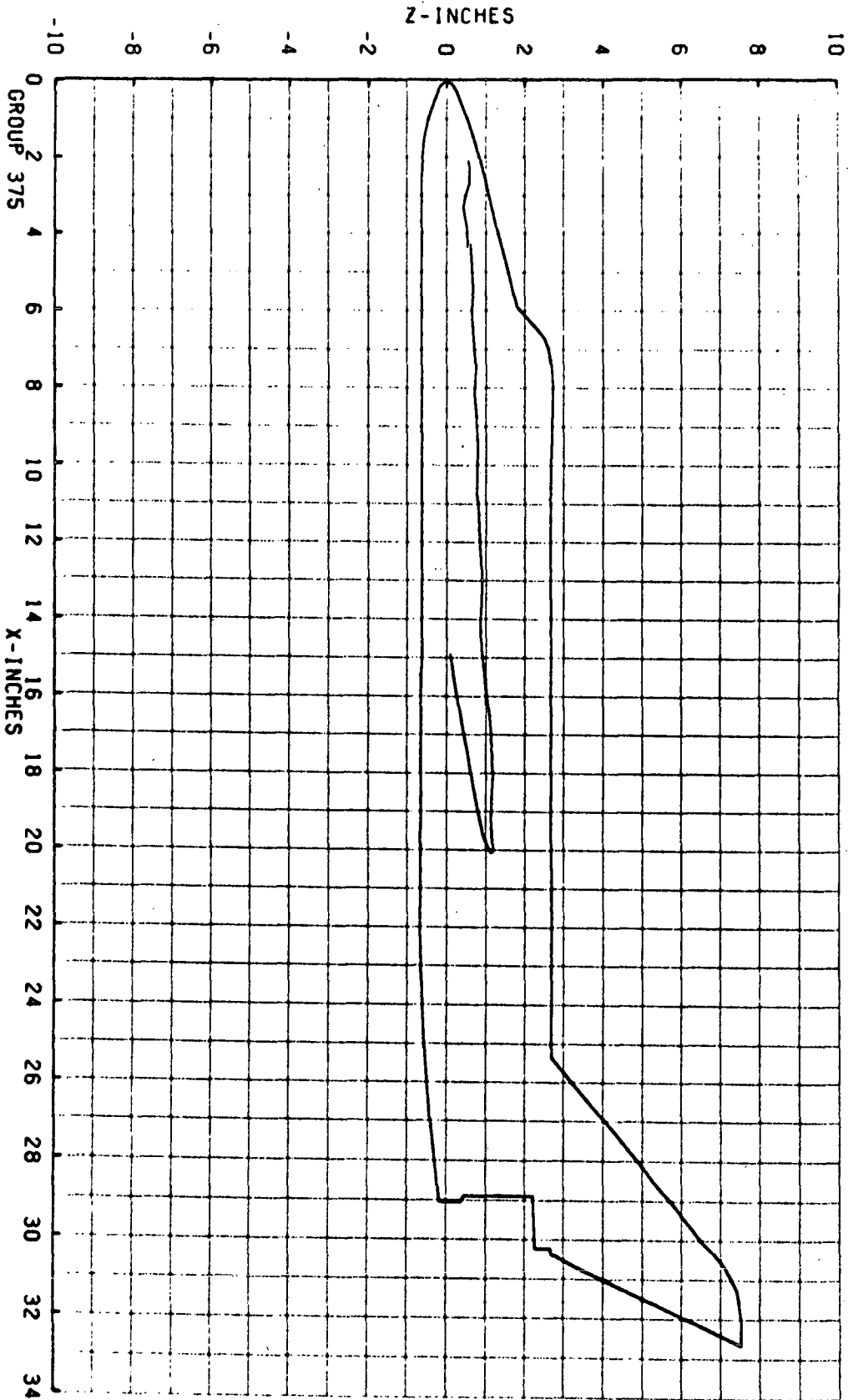
T-1NF P-1NF Q-1NF V-1NF RHO-1NF PU-1NF RE/FT PREF SIMEF
 (CEG 9) (PSIA) (PSIA) (FI/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (F=.013FT) (R=.013FT)
 97.4 .092 3.555 3869 7.602E-05 7.844E-08 3.75F 06 5.762E-02 2.434E-02

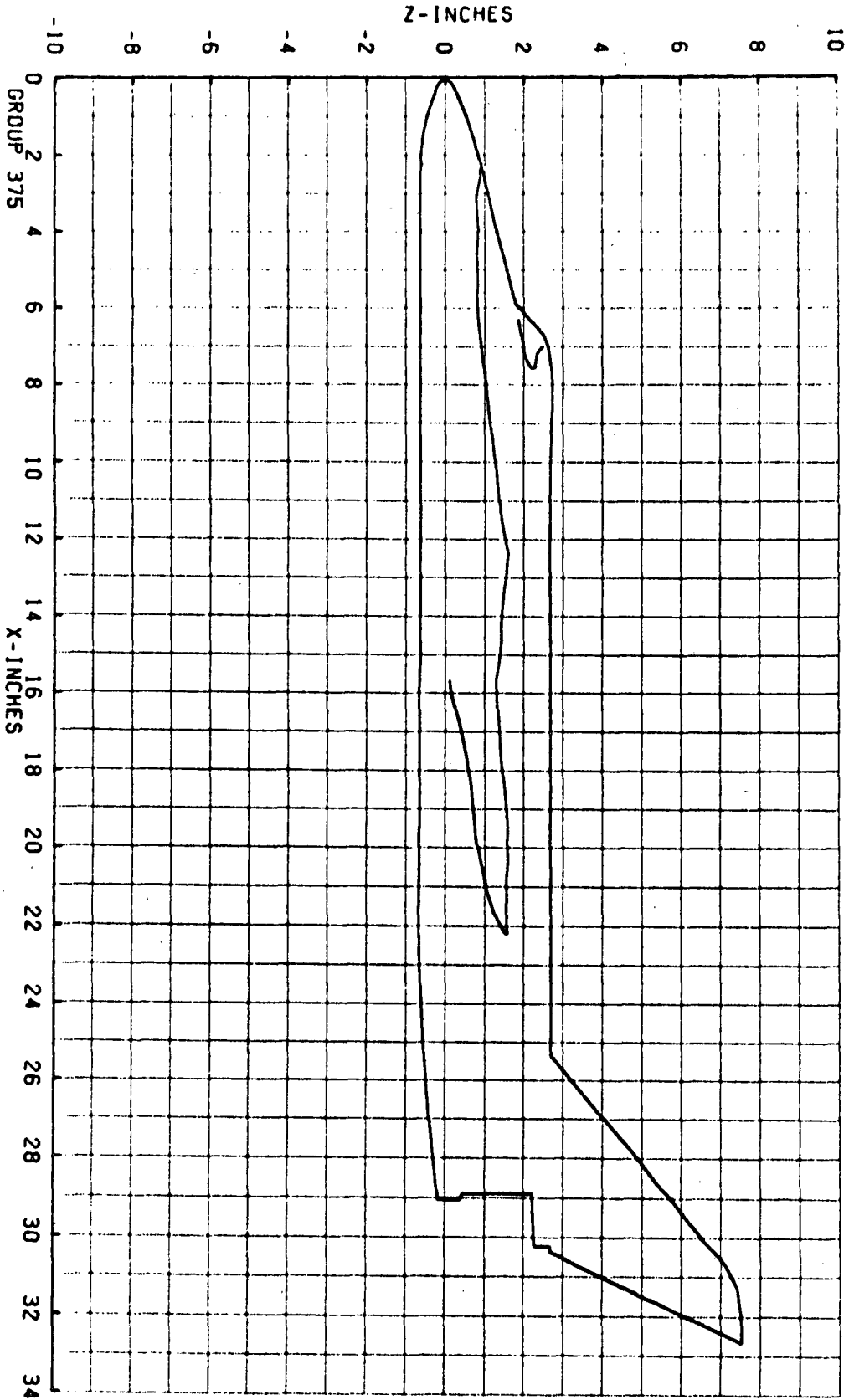
CAMERA PALNI TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODACK)

TOP(T) 250 AVERAGE T_w = 79 -0.009(SQUARE ROOT DEL TIME) * 0.11
 SIDE(S) 113
 ROT(CM(R)) 113

PIC NO	TIME	NETTIME	M(TO)	M(TO)/HREF	M(.910)	M(.510)	M(.510)/HREF	ST(I)	MODEL	TEMP	F
S 1245 (113)	4.25	3.14	2.09E-03	.0363	2.528E-03	.0438	2.819E-03	.0489	8.859E-04	0	82
S 1260 (113)	10.15	9.04	1.11E-03	.0192	1.337E-03	.0232	1.493E-03	.0249	4.697E-04	0	82
S 1273 (113)	18.05	16.96	7.25E-04	.0126	8.765E-04	.0152	9.782E-04	.0170	3.085E-04	0	82

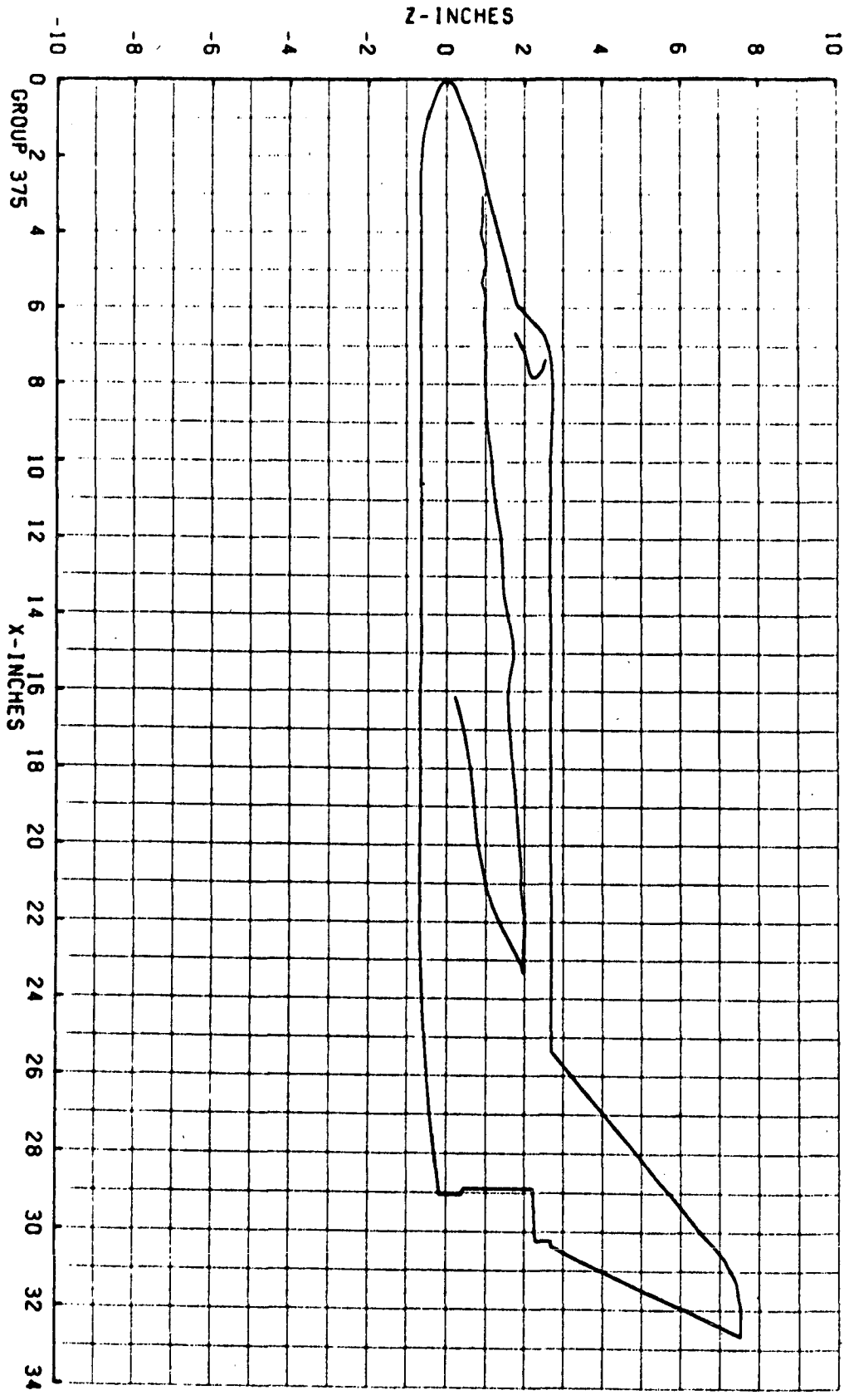
GROUP 375 PIC. NO. 1249 H/HREF 3.630E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.762E-02 REF/FT 3.750E 06 CONF NAR-DW0





GROUP 375 PIC. NO. 1260 H/HREF 1.920E-02 MODEL SURFACE - SIDE
 HACH 8.00 ALPHA (DEG) 40.0 HREF 5.762E-02 RE/FT 3.750E 06 CONF NAR-DWO

GROUP 375 PIC. NO. 1273 H/HREF 1.260E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.762E-02 RE/FT 3.750E 06 CONF NRR-DWO



9/21/71

AFDC(LAND-INCL) ARNOLD AFS, TENNESSEE
VUM KAHMAN GAS DYNAMICS FACILITY
50 INCP HYPERSONIC TUNNEL B
V11162

GROUP 317 CONFIG SA MA-U-00 MACH NO A-00 FO PSIA B60.5 TU DEG R 1350 ALPHA-RODEL 40.09 ALPHA-SECTOR 4.91 ALPHA-PREBEND -50.00 ROLL-MODEL 180.00 YAW 0.0

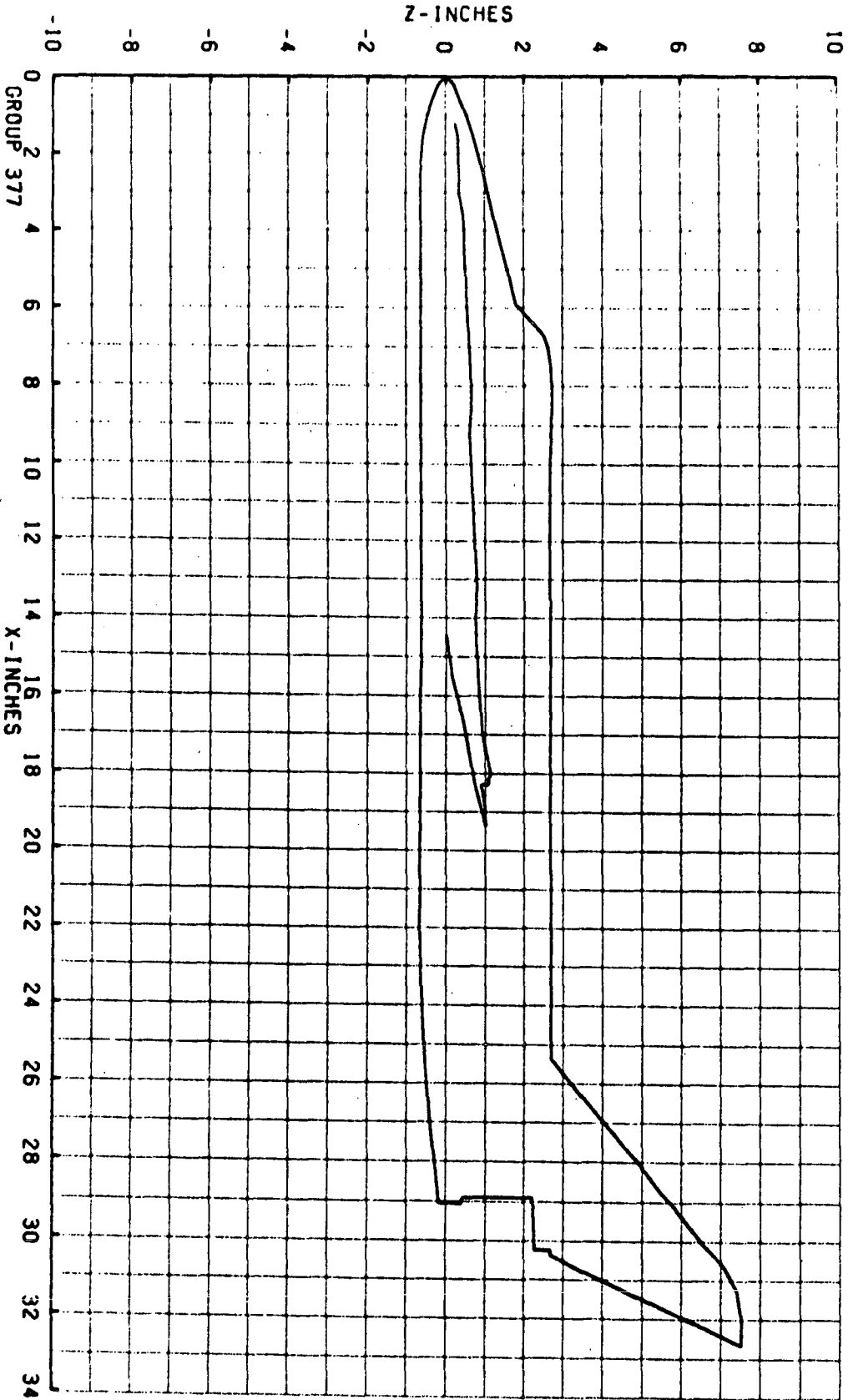
T-INF P-INF Q-INF V-INF RHO-INF W-INF RE/FT HREF S/HREF
(DEG R) (PSIA) (PSIA) (F/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R= .013FT) (R= .013FT)
97.9 0.008 3.948 3678 7.556E-05 7.879E-08 3.72E 06 5.761E-02 2.442E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (INCH/CRK)

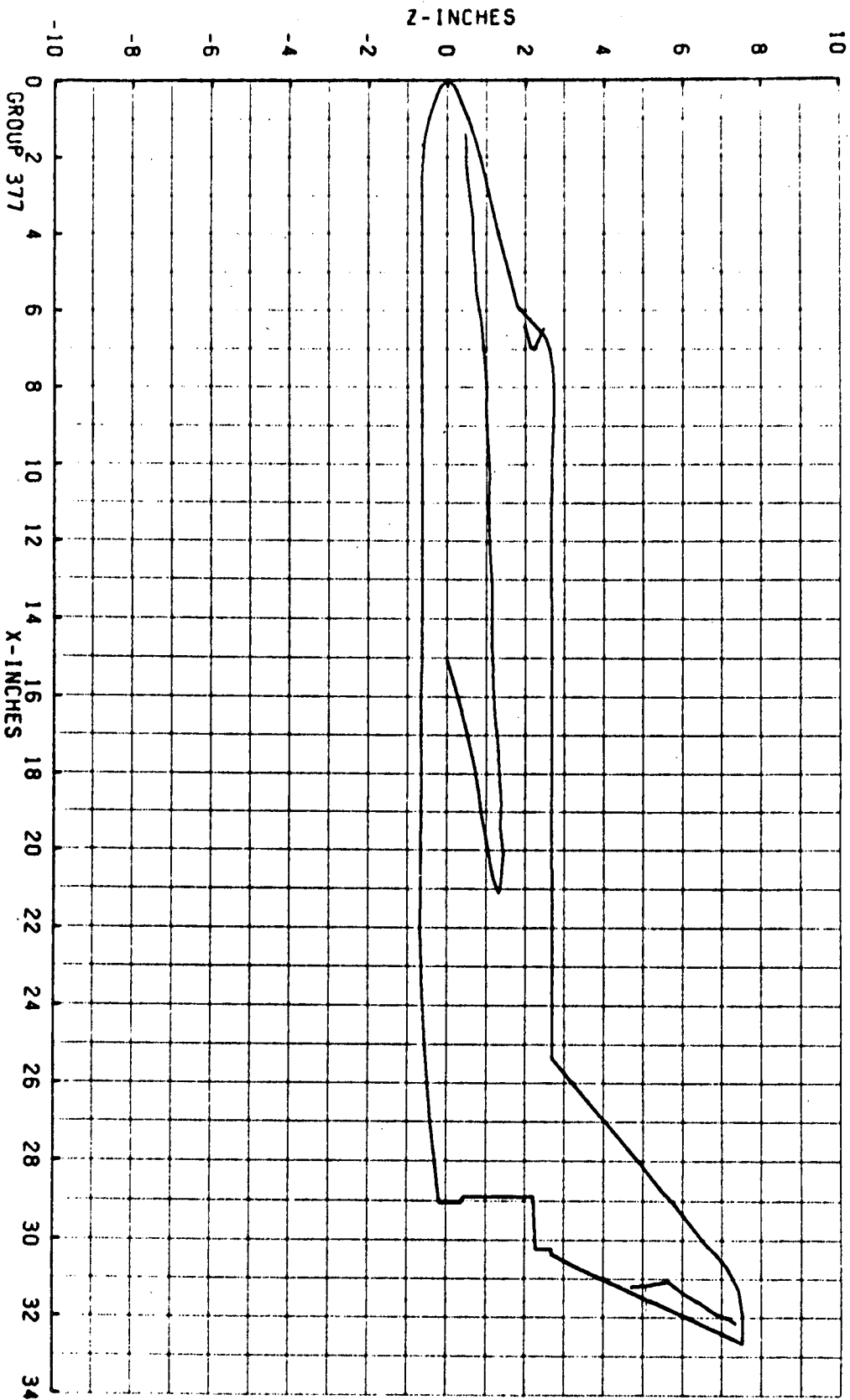
TOP(T) 300 AVERAGE I_z = 80 -0.008(SQUARE ROOT DEL TIME) * 0.11
SIDE(S) 113
ROT(CM(R)) 113

PIC NO	TIME RELTIME	M(TO)	M(TO)/HREF	H(.91TO)	H(.51C)/HREF	H(.85TO)	H(.85TO)/HREF	S(TO)	MODEL	TEMP F
S 1322 (113)	3.22	2.11	4.53E-03	.0439	3.652E-03	.0530	3.4409E-03	.0502	1.076E-03	0
S 1325 (113)	6.95	5.04	1.80E-03	.0242	1.660E-03	.0293	1.883E-03	.0327	5.543E-04	0
S 1342 (113)	14.45	13.34	8.24E-04	.0143	9.540E-04	.0173	1.111E-03	.0193	3.507E-04	0
S 1353 (113)	20.00	22.91	5.59E-04	.0097	6.743E-04	.0117	7.532E-04	.0131	2.377E-04	0

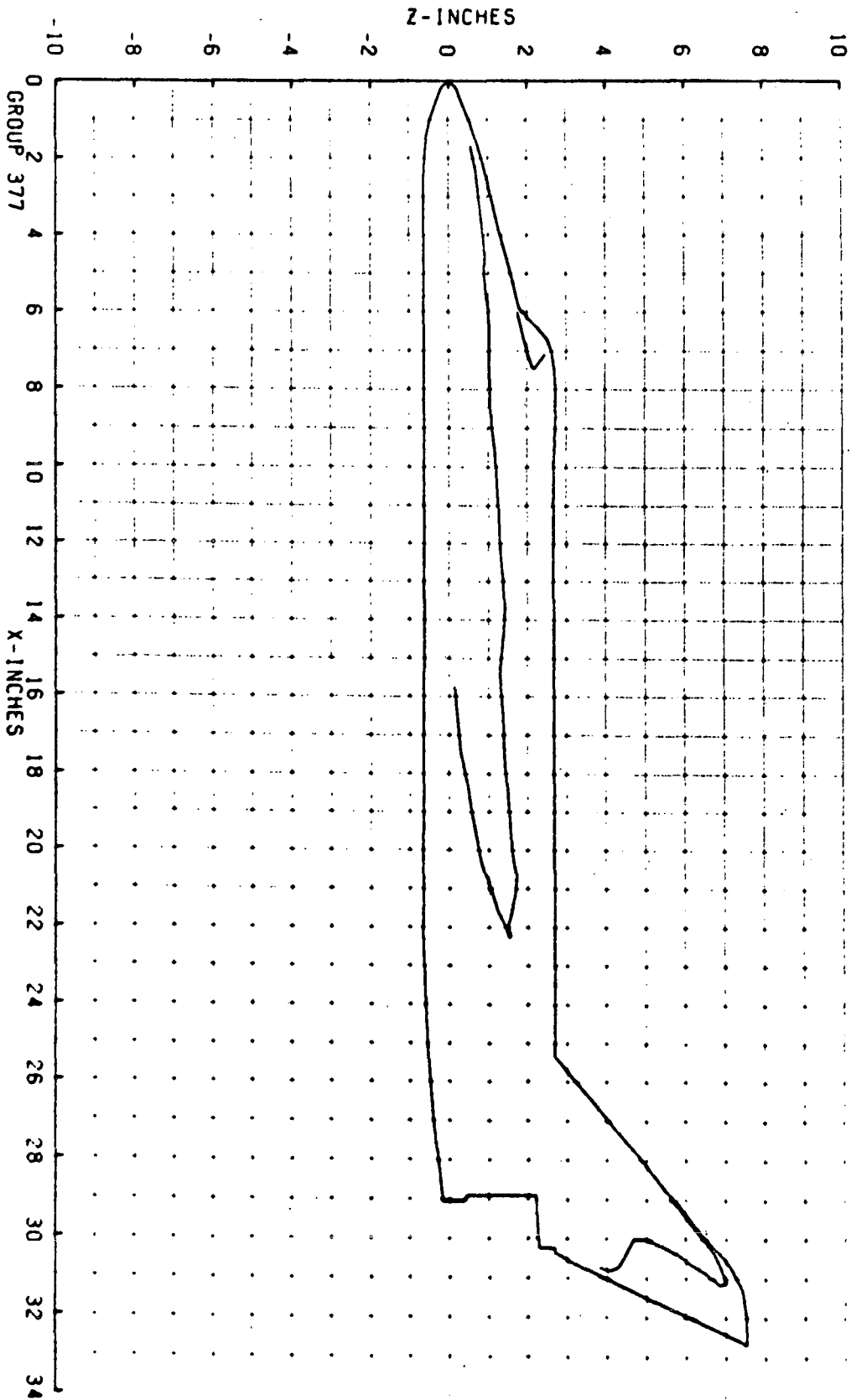
GROUP 377 PIC. NO. 1322 H/HREF 4.390E-02 MODEL SURFACE - SIDE
 MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NRR-DWO



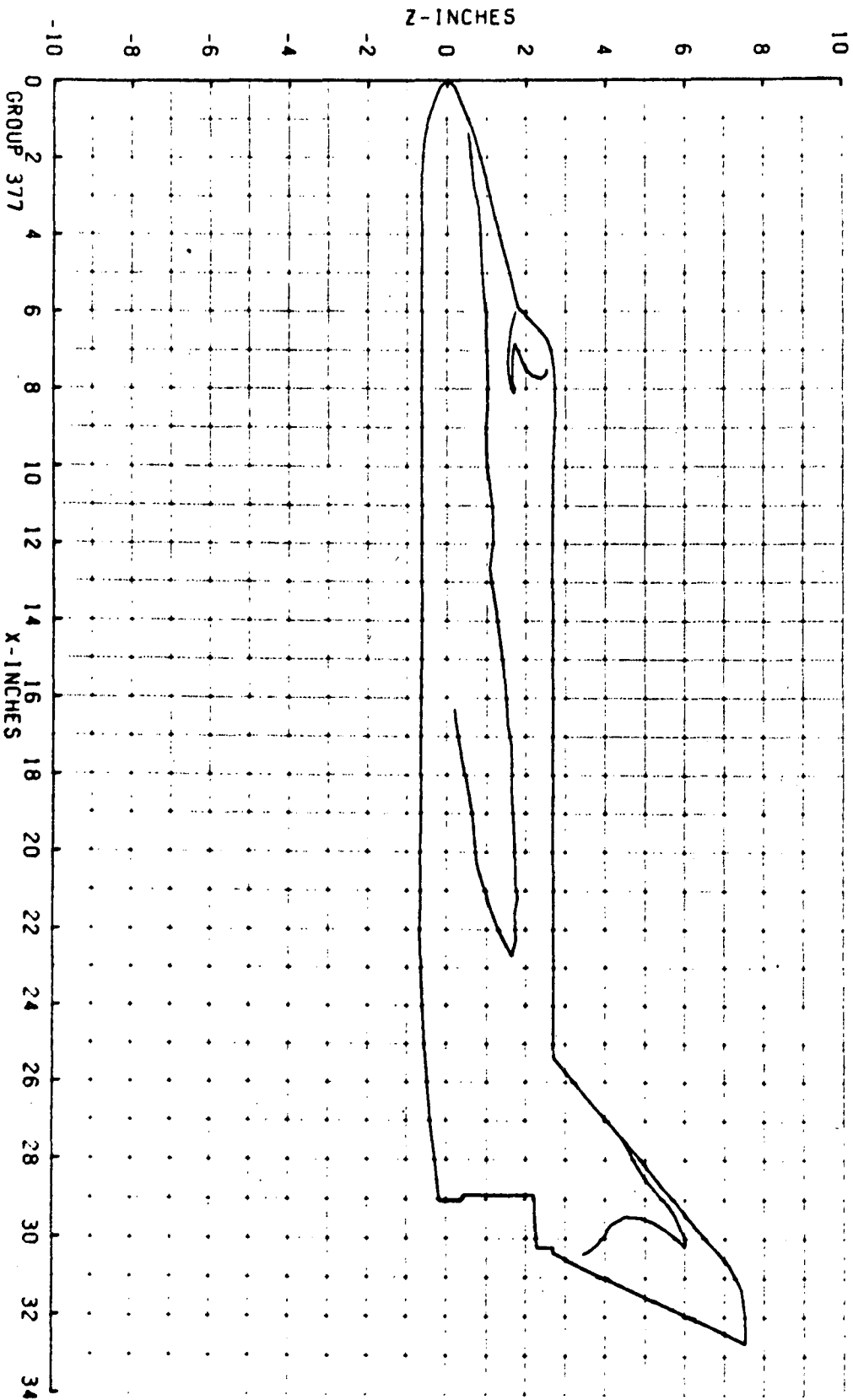
GROUP 377 PIC. NO. 1329 H/HREF 2.420E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NRR-DWD



GROUP 377 PIC. NO. 1343 H/HREF 1.430E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NRR-DMO



GROUP 377 PIC. NO. 1353 H/HREF 9.700E-03 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NAR-DW0



9/21/71

AFDC(AHD,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL #
VII162

GROUP CONFIG MODEL MACH NO PN PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREREND ROLL-MODEL YAW

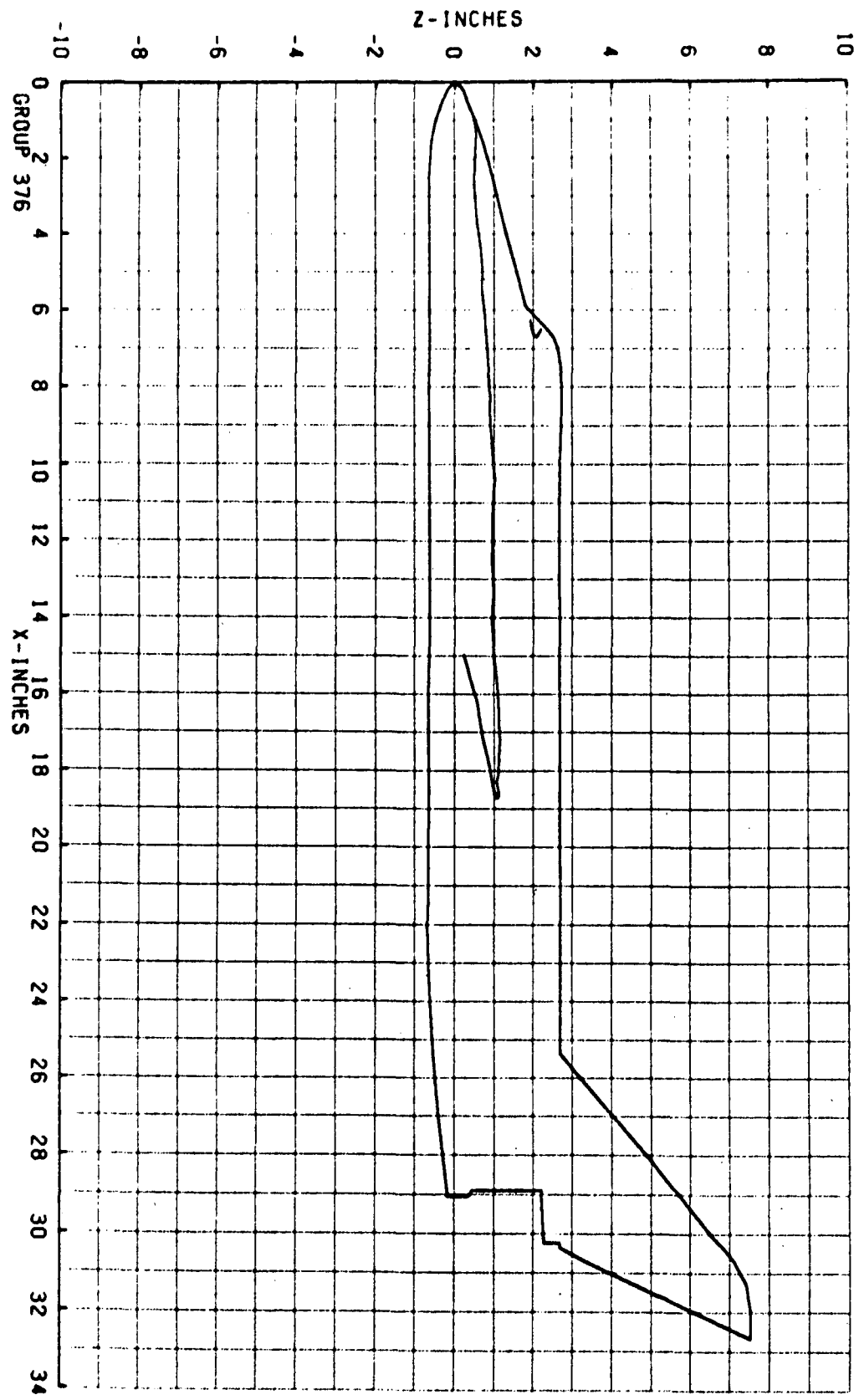
376 S4 AM-DWC R.00 859.8 1346 50.05 -0.05 -50.00 180.00 .0

T-1NF P-1NF Q-1NF V-1NF RHO-1NF PU-1NF RE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (F1/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (R=.013FT)
97.6 .088 3.945 JRT2 7.573E-05 7.855E-08 3.73E 06 5.756E-02 2.839E-02

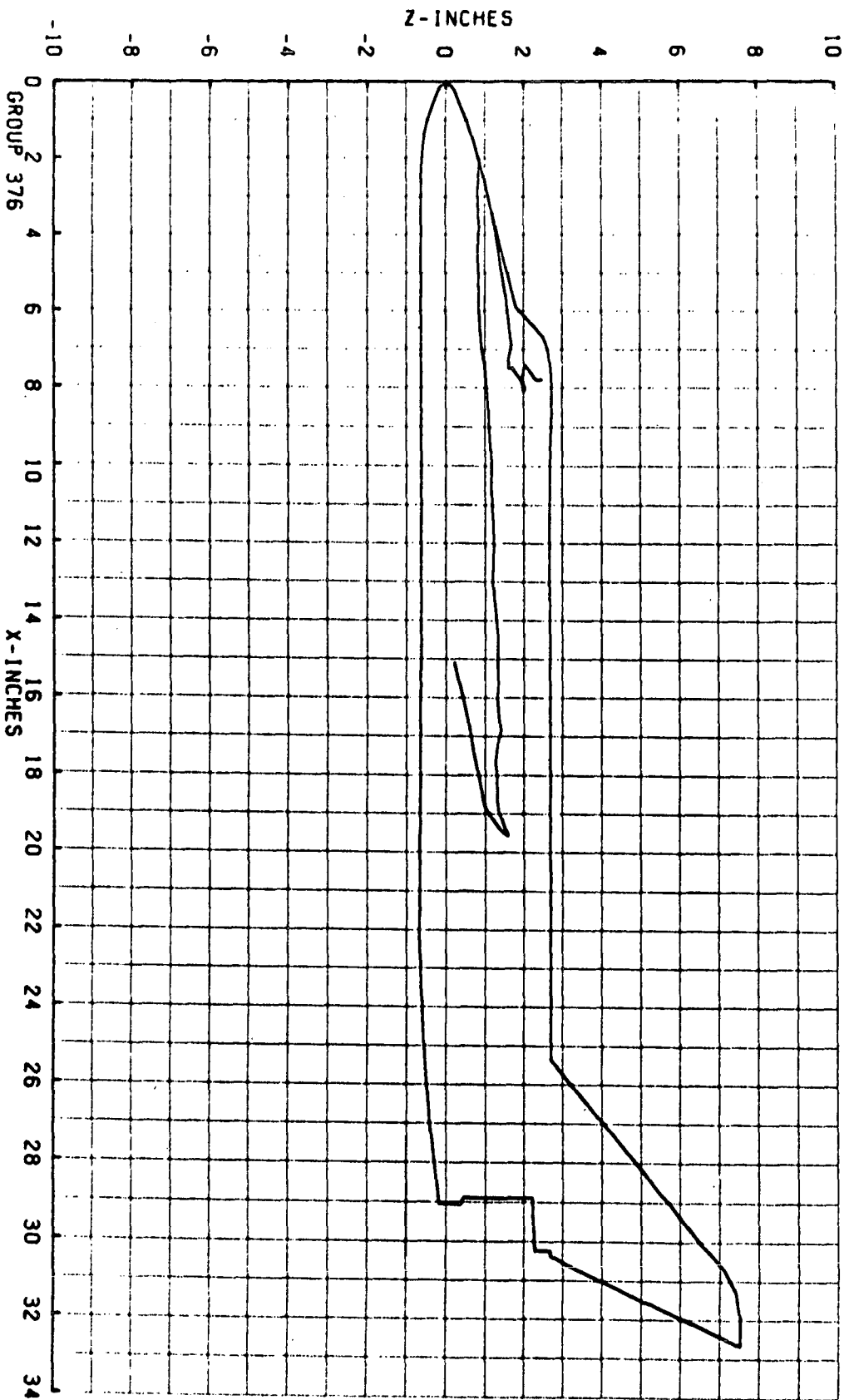
CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RM/DGAKI)
TOP(T) J00
SIDE(S) 113 AVERAGE $\bar{t}_w = 78$ -0.008(SQUARE ROOT DEL TIME) * 0.11
ROTCR(R) 113

PTC NC	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.STC)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F
S 1284 (113)	3.75	2.046	4.36E-03	.0411	2.450E-03	3.192E-03	.0497	1.005E-03	0 97 0
S 1290 (113)	6.95	5.84	1.49E-03	.0259	1.79E-03	2.009E-03	.0313	6.330E-04	0 98 0
S 1299 (113)	11.75	10.66	1.02E-03	.0177	1.234E-03	1.379E-03	.0215	4.340E-04	0 99 0
S 1305 (113)	18.70	17.61	7.24E-04	.0126	4.750E-04	9.772E-04	.0152	3.077E-04	0 101 0

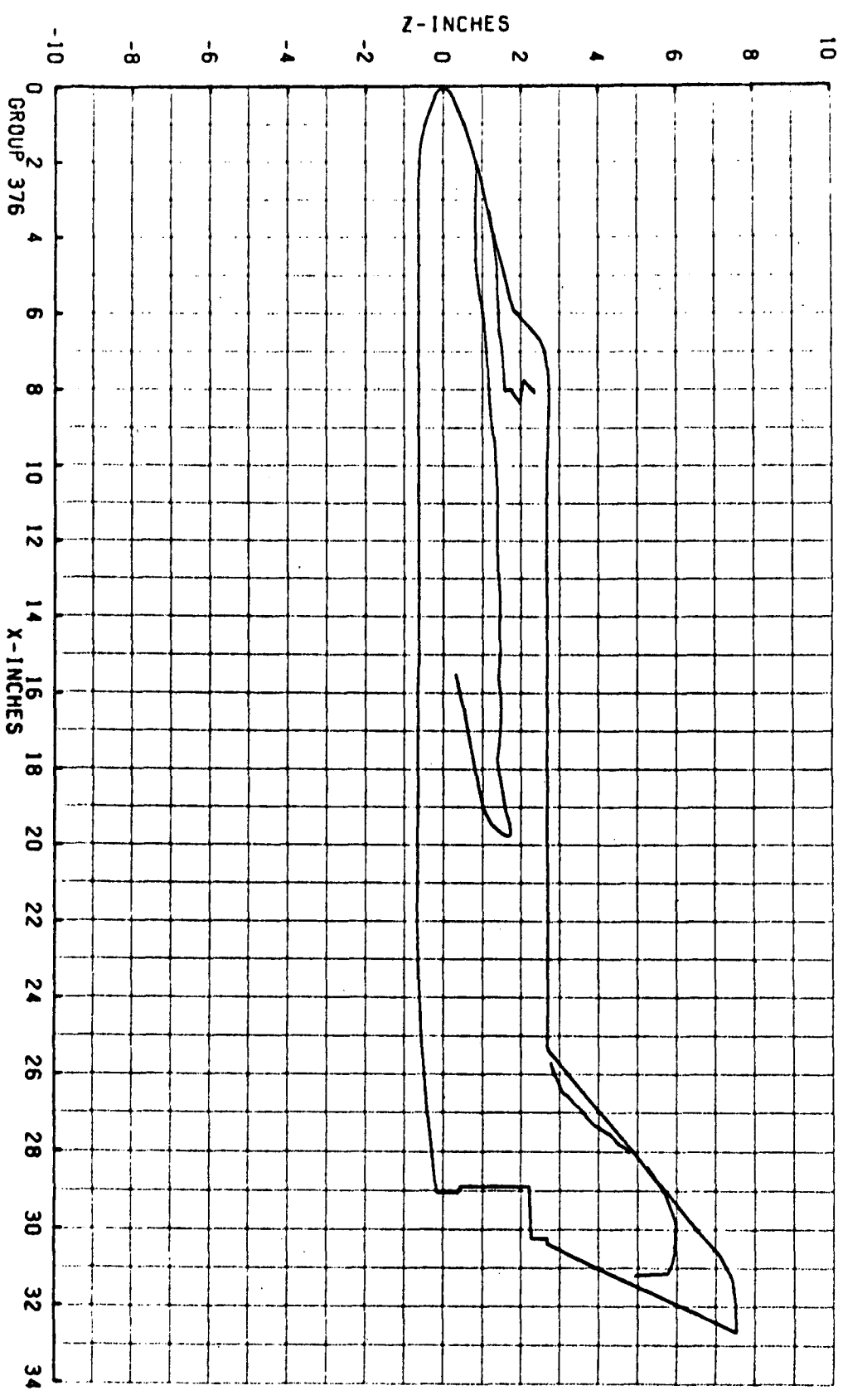
GROUP 376 PIC. NO. 1284 H/HREF 4.110E-02 MODEL SURFACE - SIDE
HACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DWO



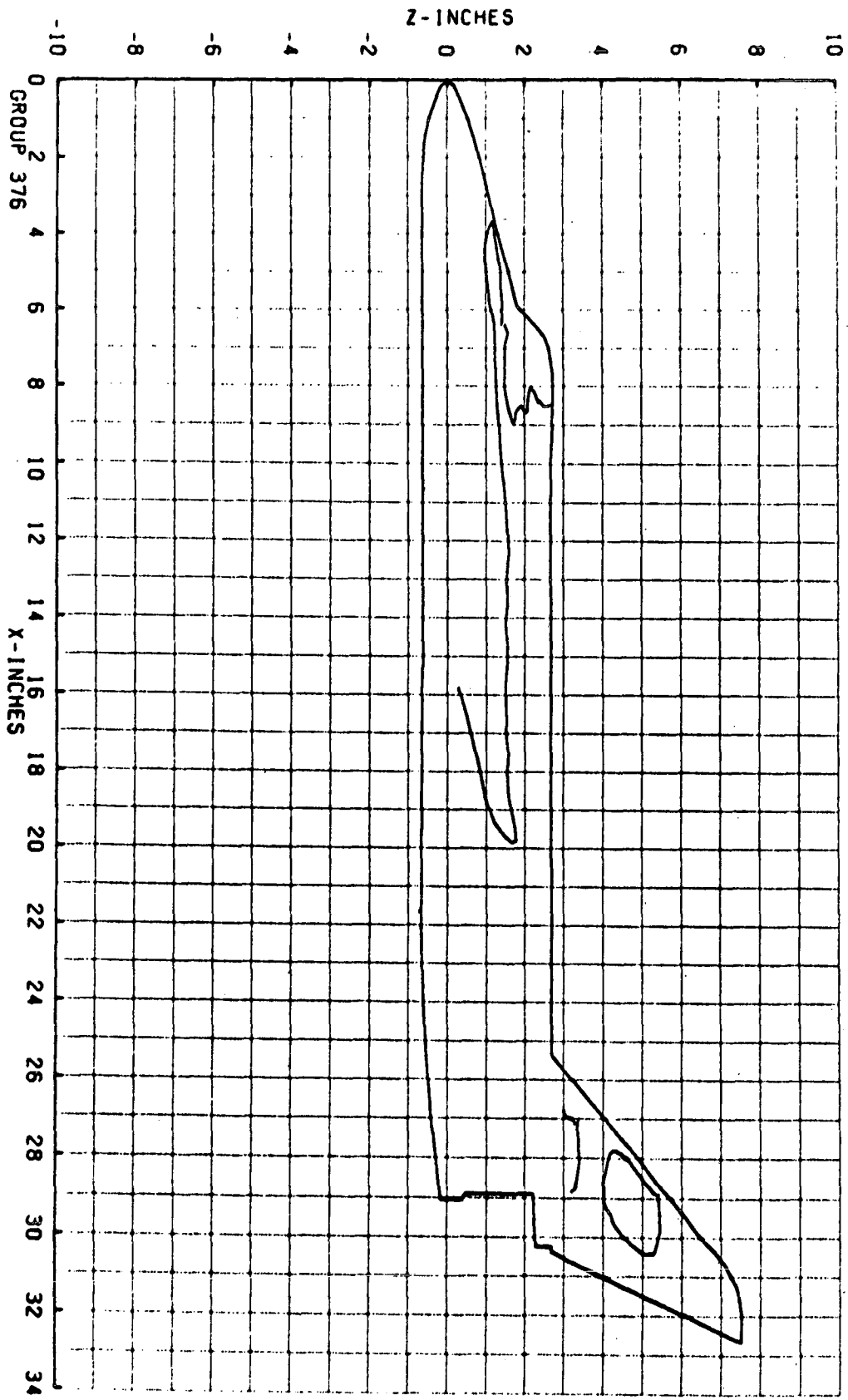
GROUP 376 PIC. NO. 1290 H/HREF 2.590E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DHO



GROUP 376 PIC. NO. 1299 H/HREF 1.770E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DWO



GROUP 376 PIC. NO. 1309 H/HREF 1.260E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DW0



9/21/71

AEUCIADU, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL #
W11162

GROUP CONFIG MODEL MACH NO PN PSIA TU DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREEND ROLL-MODEL YAW

386 S4 NAR-UMC M.00 554.7 1304 49.93 .07 -50.00 180.00 .0

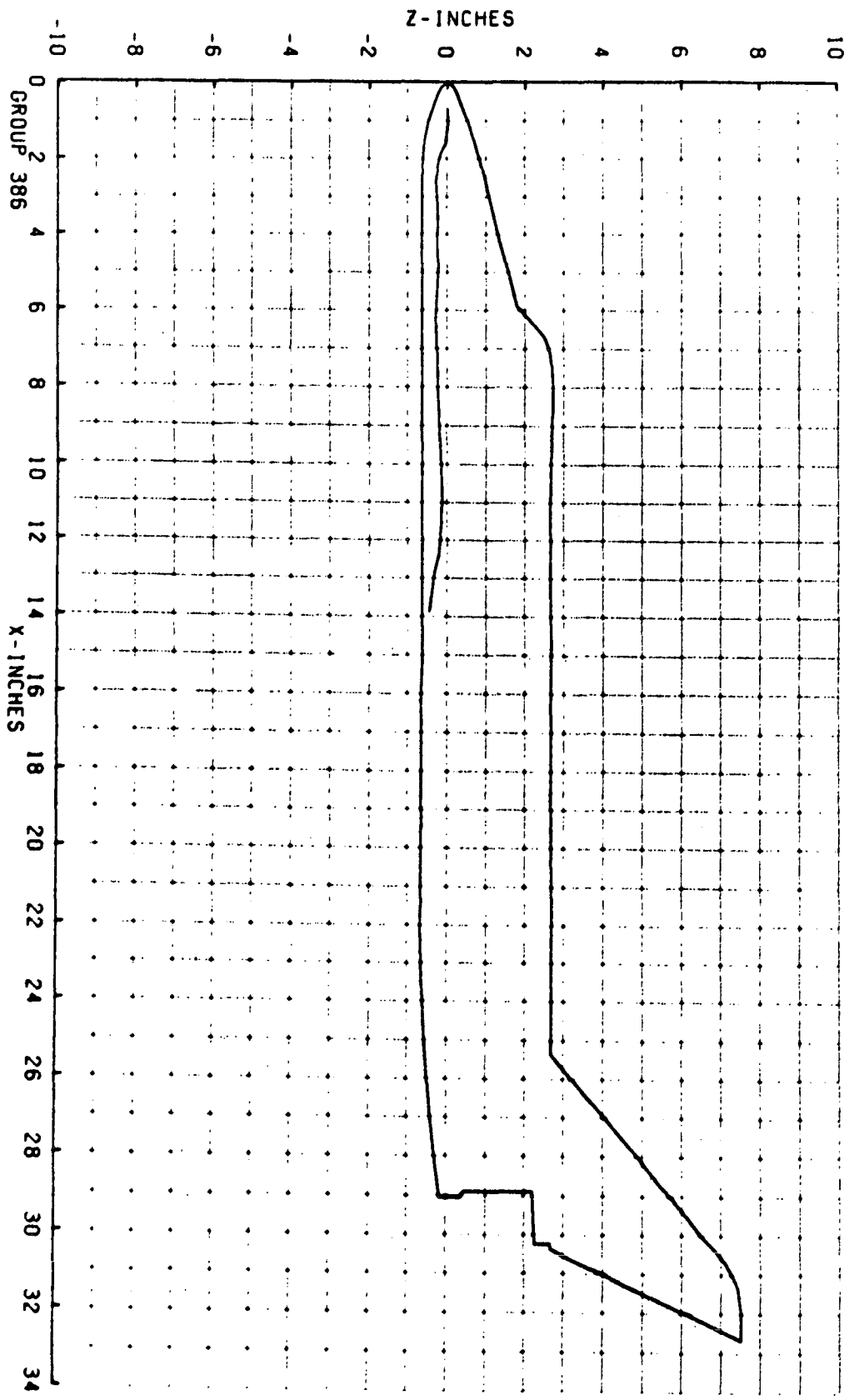
I-INF P-INF O-INF V-INF HPO-INF WU-INF HE/FT HREF SREF
(DEG R) (PSIA) (PSIA) (F1/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (H= .013FT)
94.5 .057 2.545 .310 5.045E-05 7.606E-08 2.53E 06 4.598E-02 2.779E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODACK)

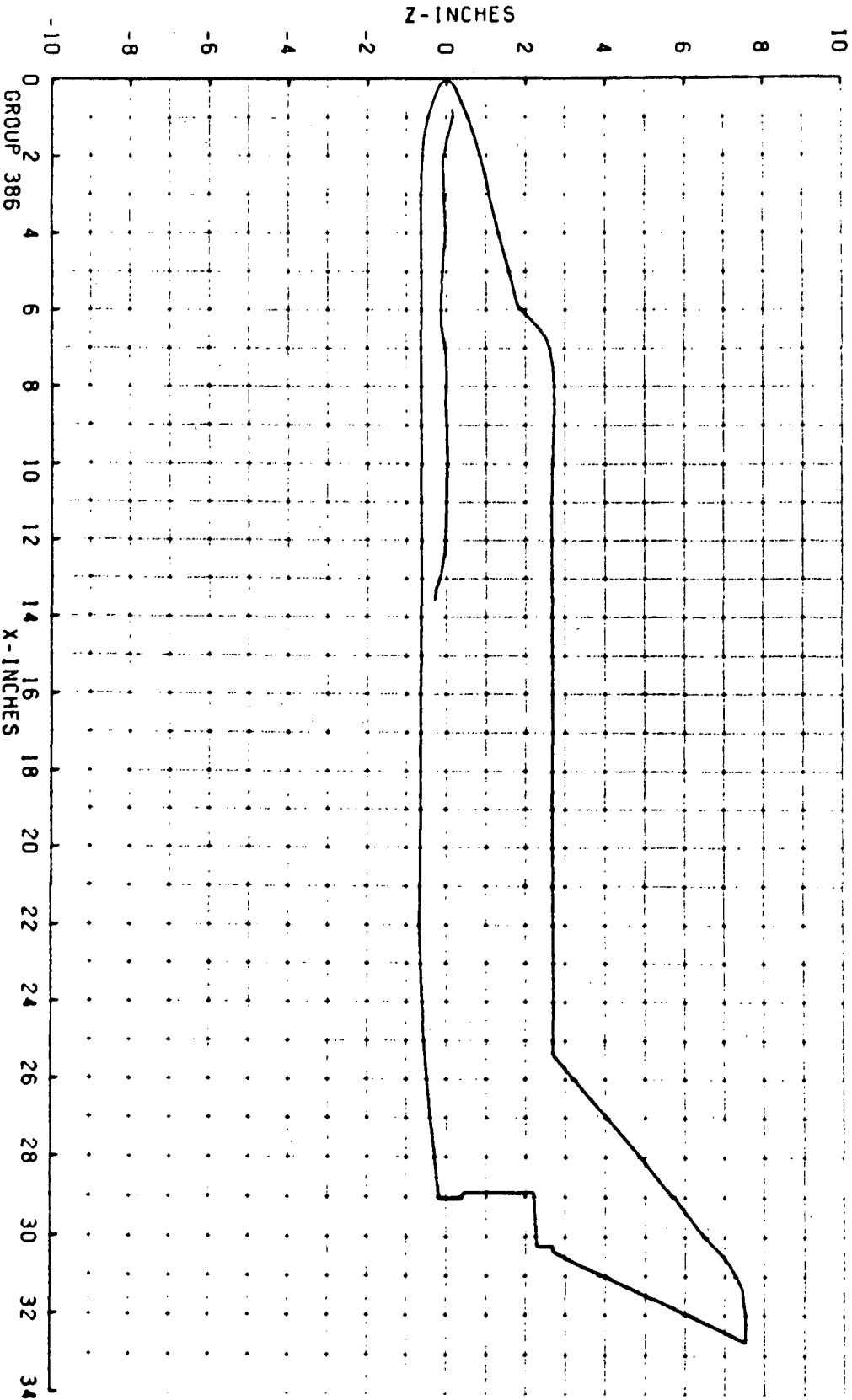
TOP(1) 225
SICE(S) 225
BOTCM(B) 225
AVERAGE I = 80
-0.0081 SQUARE ROOT DEL TIME) .011

PIC NO	TYPE	DELTIME	H(TO)	H(TO)/MPREF	H(.91G)	H(.91G)/MPREF	H(.85TO)	H(.85TO)/MPREF	SI(TO)	MODEL TEMP F
S 1424 (225)	5.35	4.26	8.99E-03	.1956	1.12DE-02	.4452	1.292E-02	.2910	5.810E-03	0
S 1434 (225)	8.55	7.44	0.41E-03	.1393	8.032E-03	.1747	9.201E-03	.2011	4.138E-03	0
S 1645 (225)	14.45	13.36	9.33E-03	.0954	5.999E-03	.1196	6.298E-03	.1370	2.830E-03	0

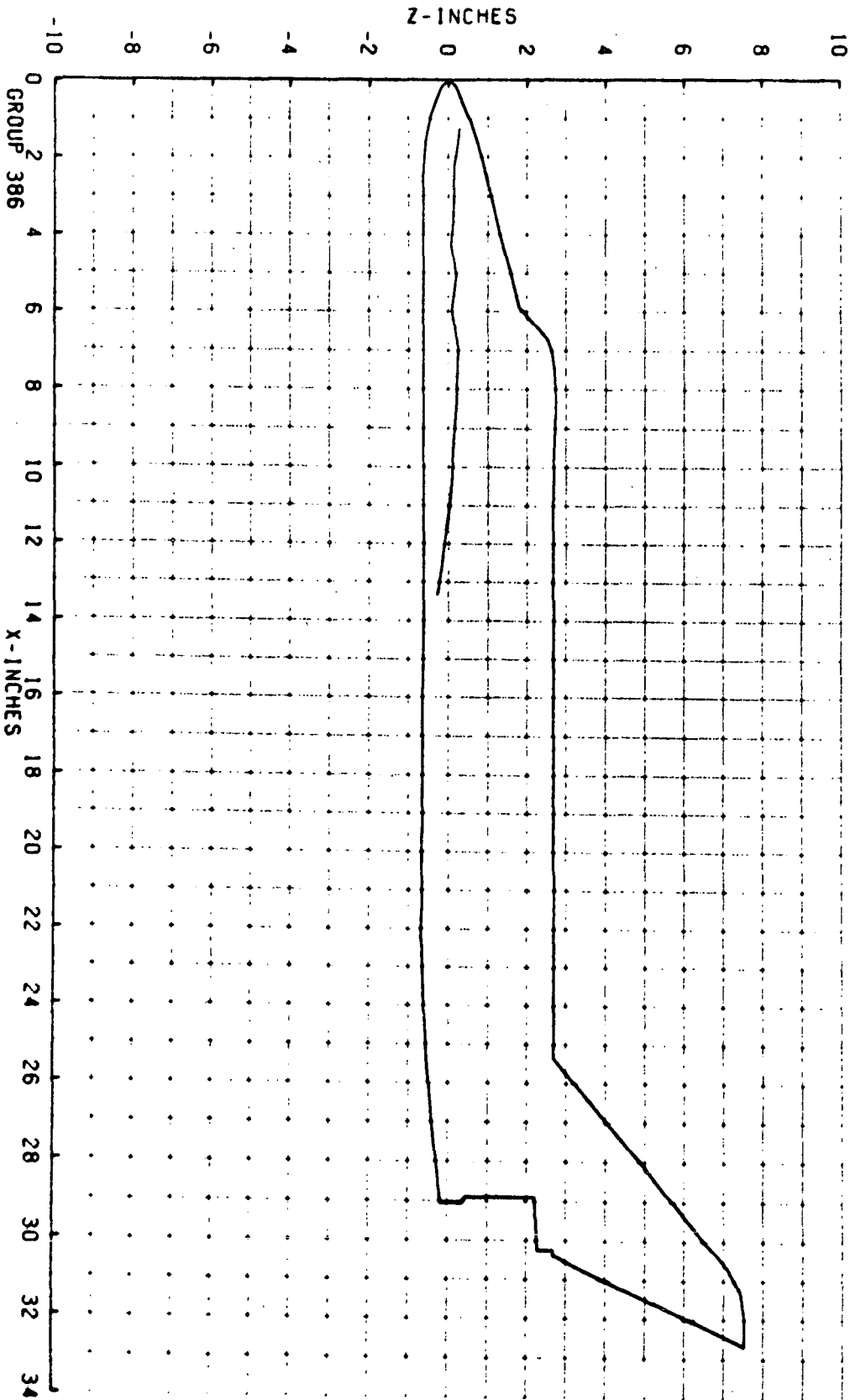
GROUP 386 PIC. NO. 1628 H/HREF 1.956E-01 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 49.9 HREF 4.598E-02 RE/FT 2.530E 06 CONF NAR-DMO



GROUP 386 PIC. NO. 1634 H/HREF 1.393E-01 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 49.9 HREF 4.598E-02 RE/FT 2.530E 06 CONF NAR-DW0



GROUP 386 PIC. NO. 1645 H/HREF 9.540E-02 MODEL SURFACE - SIDE
MRCH 8.00 ALPHR (DEG) 49.9 HREF 4.598E-02 RE/FT 2.530E 06 CONF NAR-DW0



9/21/71

AFDCLAHO, INC.) ARNOLD AFB, TENNESSEE
VON KAHMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
V11162

GROUP 372 CONFIG 53 MODEL NAK-UHC MACH AN 9.00 PO PSIA 859.6 TU DEG R 1348 ALPHA-MODEL 10.02 ALPHA-SECTOR 12.95 ALPHA-PREEND -23.00 ROLL-MODEL 180.00 YAW .0

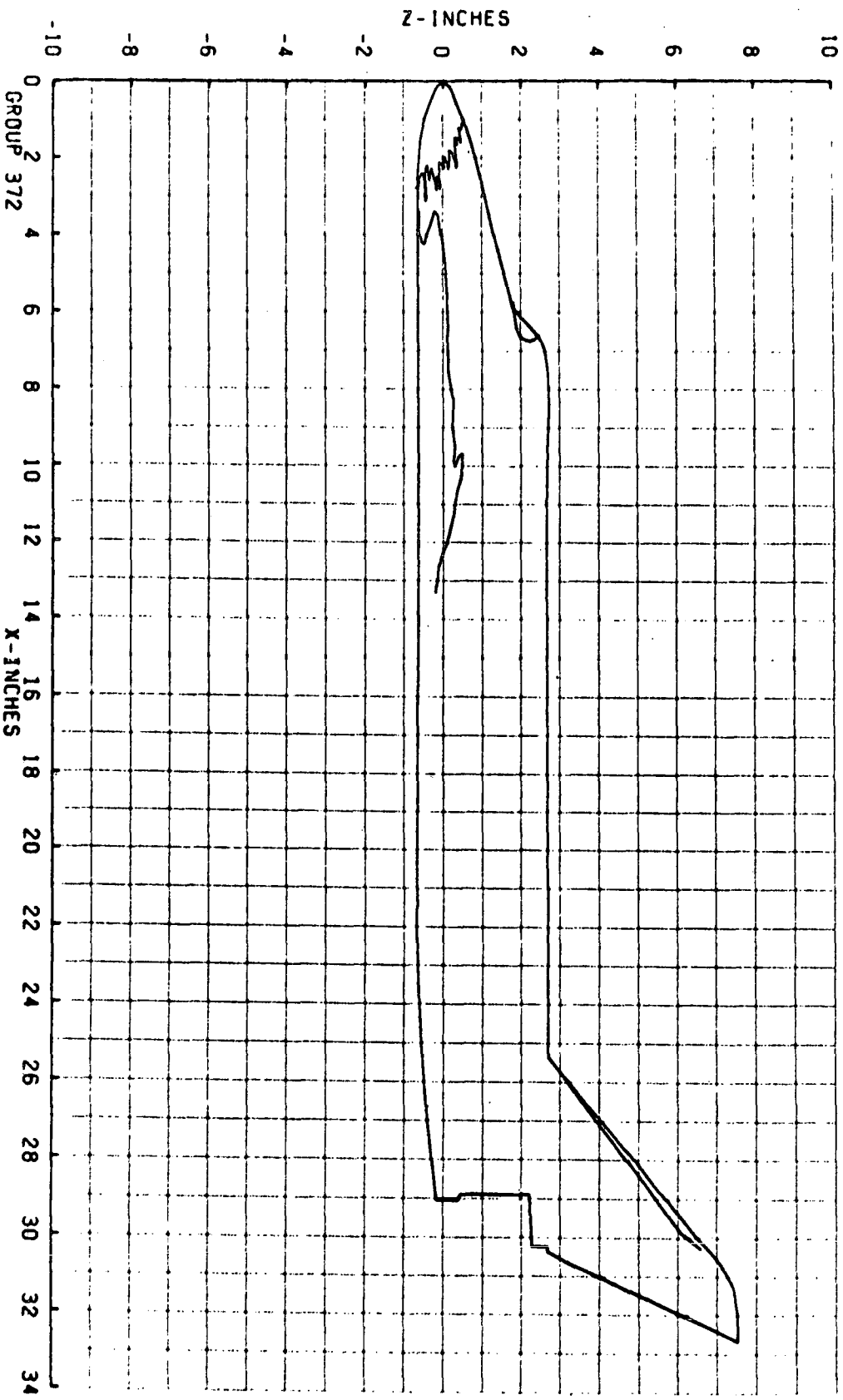
T-INF P-INF Q-INF V-INF QRO-INF PU-INF HE/FT MREF STREF
(DEG R) (PSIA) (PSIA) (FI/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .017FT)
97.7 .CMA 3.964 J874 7.564E-05 7.802E-08 3.73E 06 5.756E-02 2.441E-02

CAPEEA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (HMDACXK)

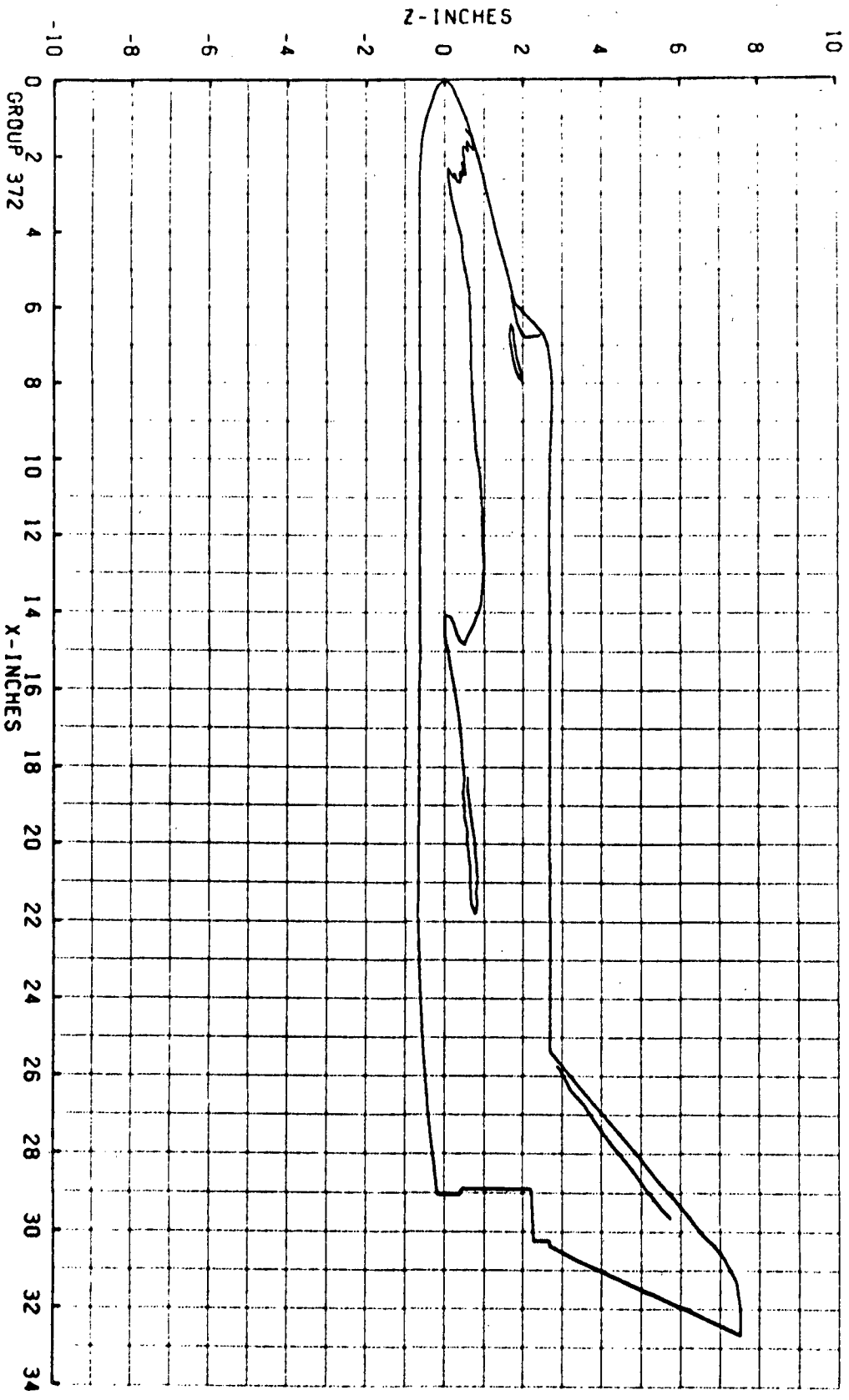
TOP(T) 150 AVERAGE T_w = 75 -0.008(SQUARE ROOT DFL TIME) + 0.11
SIC(5) 159
ROTCM(8) 159

PIC MC	TIME DELTIME	H(TO)	H(TO)/MREF	H(.910)	H(.5TC)/MREF	H(.85TO)	H(.85TO)/MREF	ST(TO)	MODEL TEMP F
S 1156 (150)	4.80 3.71	4.74E-03	.0753	5.285E-03	.091E	5.935E-03	.1011	1.840E-03	81 76 0 0
S 1163 (150)	8.55 7.46	2.05E-03	.0495	3.472E-03	.0663	3.499E-03	.0677	1.209E-03	93 83 0 0
S 1171 (150)	12.85 11.74	2.13E-03	.0349	2.590E-03	.0450	2.908E-03	.0505	9.019E-04	107 92 0 0
S 1175 (150)	17.70 16.61	1.69E-03	.0291	2.043E-03	.0355	2.294E-03	.0309	7.117E-04	119 100 0 0

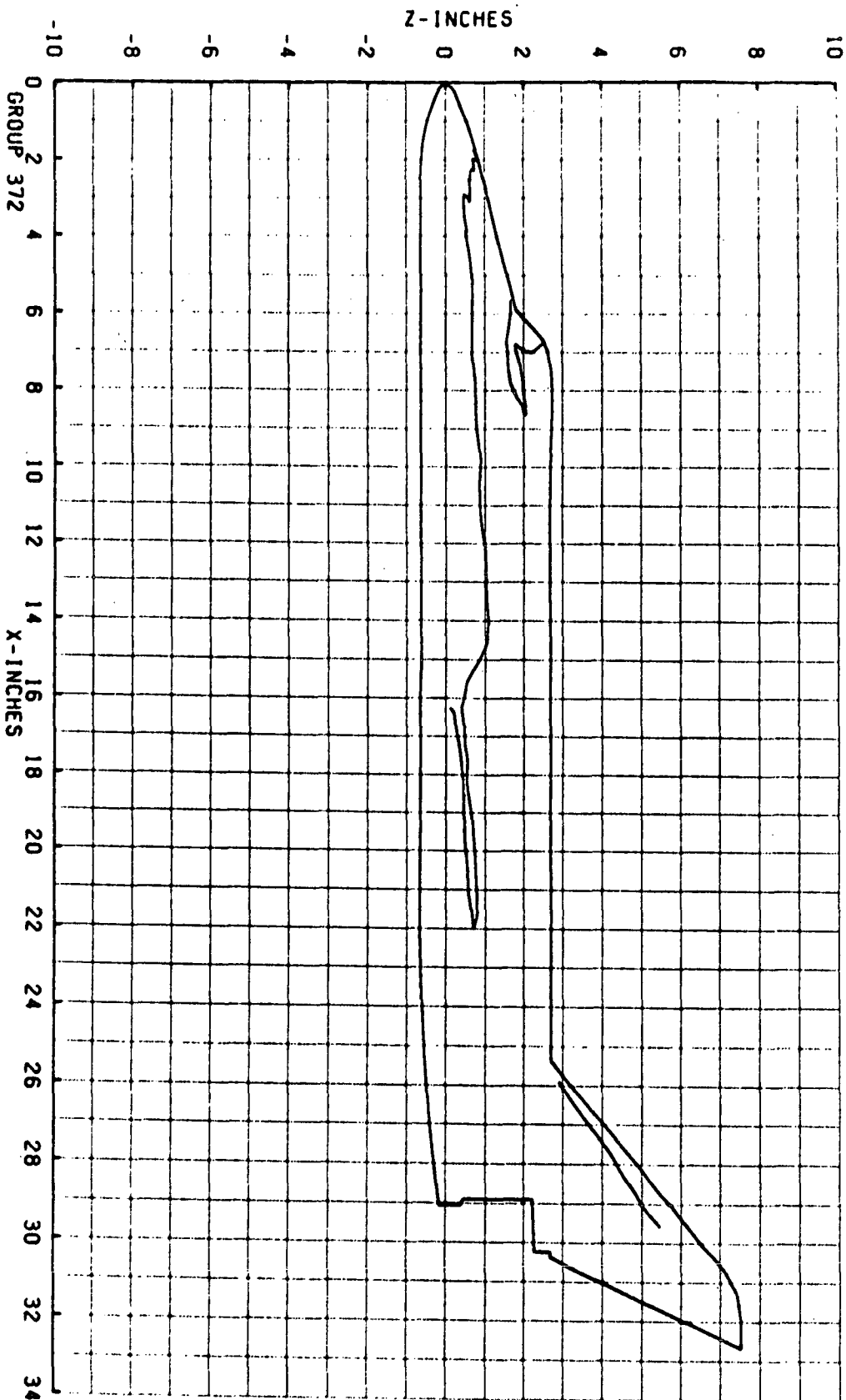
GROUP 372 PIC. NO. 1156 H/HREF 7.530E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DMD



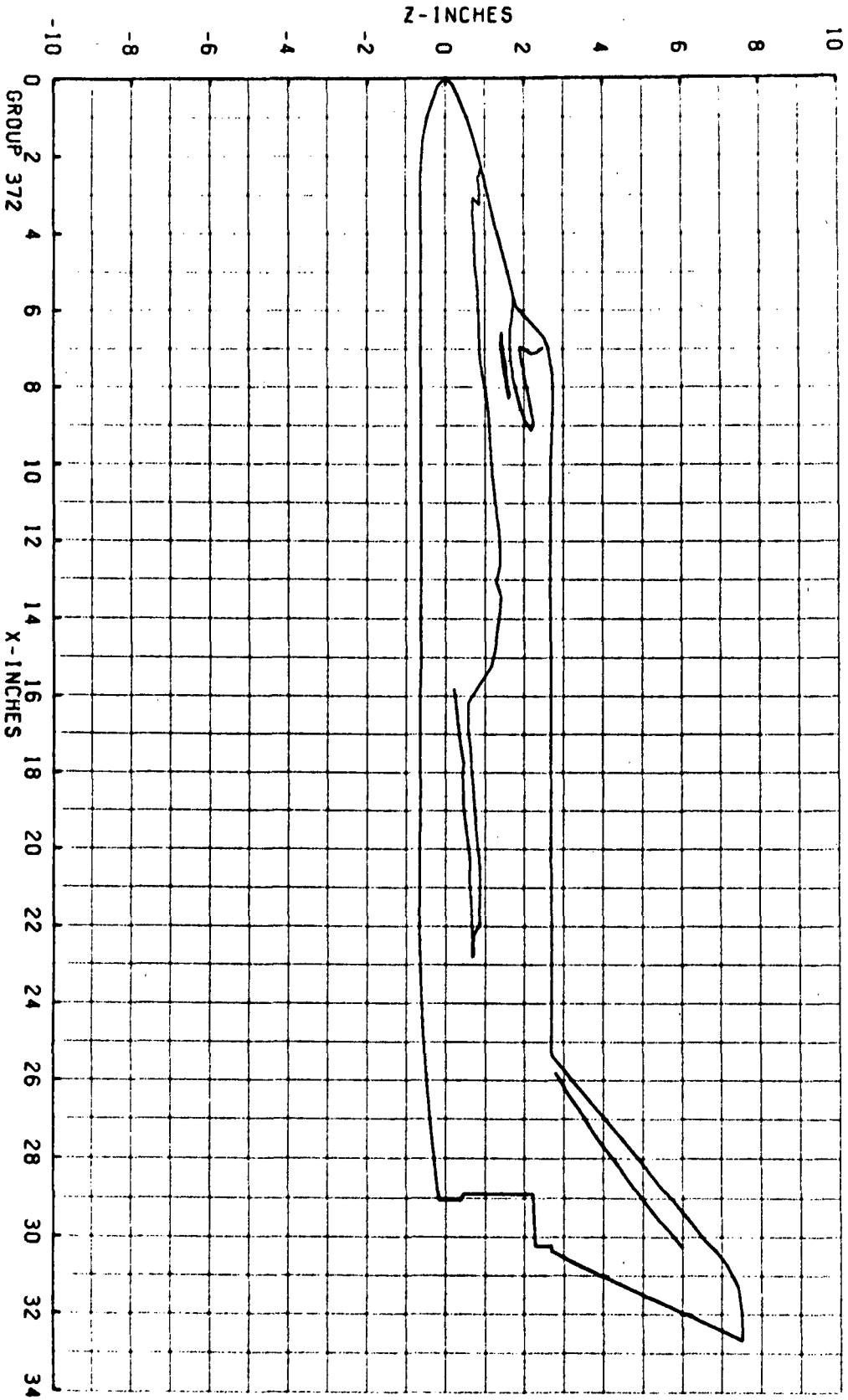
GROUP 372 PIC. NO. 1163 H/HREF 4.950E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DWO



GROUP 372 PIC. NO. 1171 H/HREF 3.690E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DW0



GROUP 372 PIC. NO. 1179 H/HREF 2.910E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DW0



9/21/71

AEDCLAND, INC.) ARNOLD AFB, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL #
V11162

GROUP CONFIG MODEL MACH NO PN PSIA TV DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREHEND ROLL-MODEL YAW

373 53 AAR-08C 9.00 862.1 1351 20.01 2.99 -23.00 180.00 .0

T-INF P-INF O-INF V-INF RMO-INF PU-INF REF/FT PREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (G=.013FT) (H=.013FT)

97.9 .088 3.956 3879 7.546E-05 7.883E-08 3.12E 06 5.767E-02 2.441E-02

CAVEFA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODAGRA)

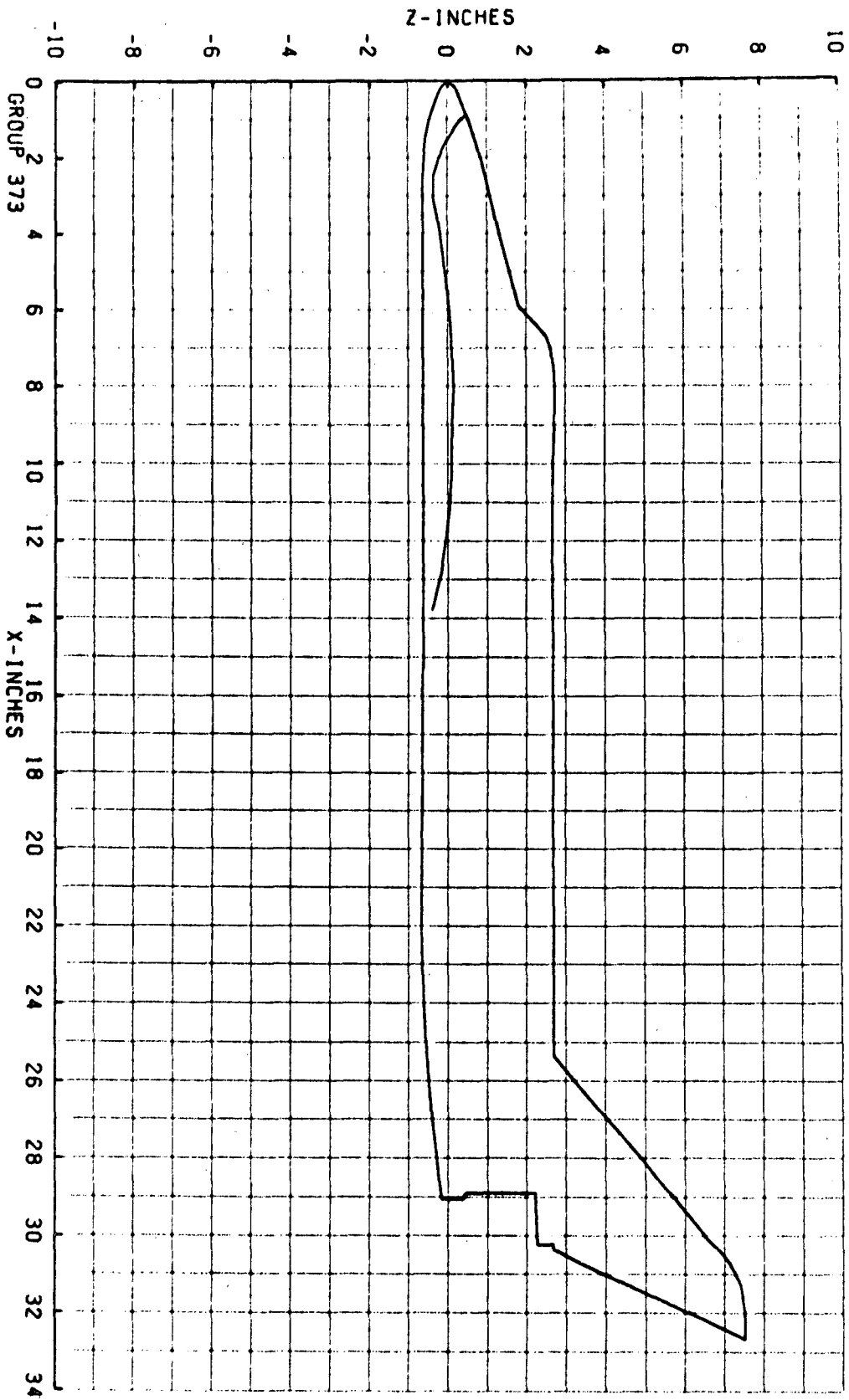
TOP(T) 200 AVERAGE TM = 77 -0.008(SQUARE ROOT OF TIME) * 0.11
SICE(S) 200
BOITCM(B) 200

PIC NO TIME DELTME HIT0 HIT0/HREF H(.910) H(.5TC)/HREF H(.85TO) H(.85TO)/HREF ST(TO) MODEL TEMP F

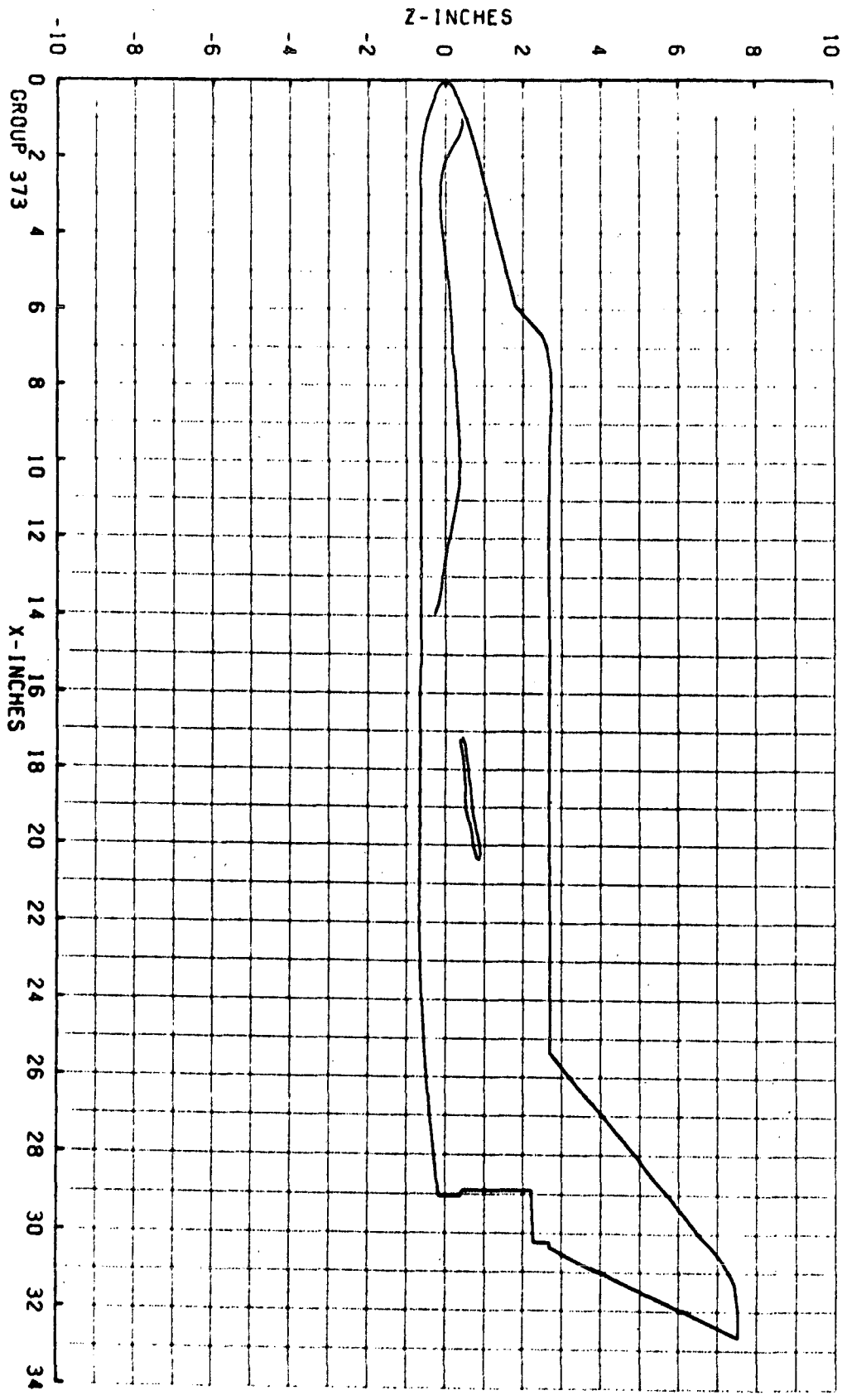
S 1193 (200) 5.99 4.01 6.43E-03 .1116 7.537E-03 .1377 8.987E-03 .1549 2.718E-03 105 77 0 0

S 1203 (200) 11.25 10.16 4.04E-03 .0702 4.090E-03 .0866 5.650E-03 .0941 1.709E-03 142 81 0 0

GROUP 373 PIC. NO. 1193 H/HREF 1.116E-01 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.767E-02 RE/FT 3.720E 06 CONF NAR-DMD



GROUP 373 PIC. NO. 1203 H/HREF 7.020E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.767E-02 RE/FT 3.720E 06 CONF NAR-DMO



9/21/71

AFOCIANO, INC.) ARNOLD AFB, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A
VII1162

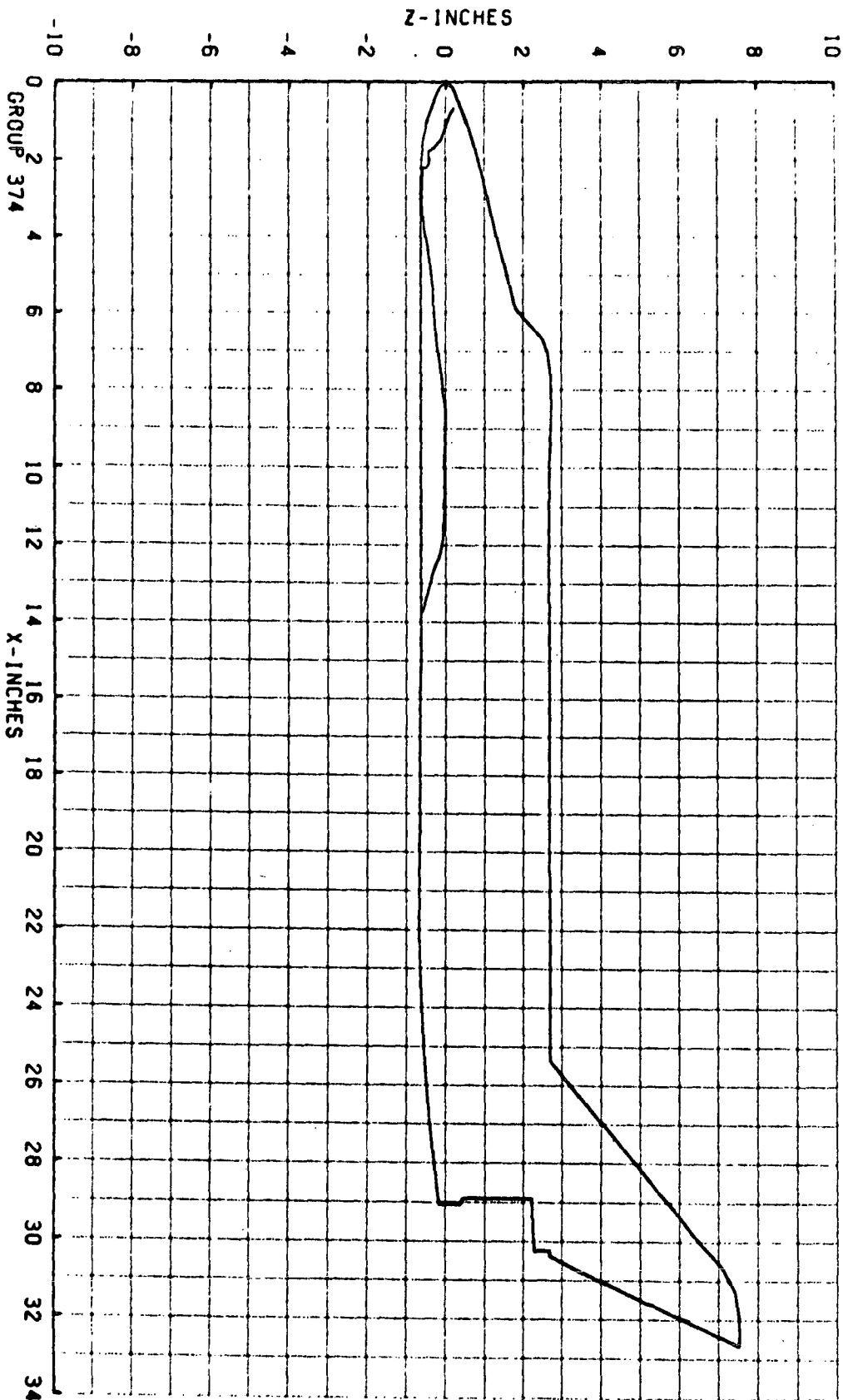
GROUP CONFIG MODEL MACH NO PO PSIA TU DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREHEND ROLL-MODEL YAW
374 53 HAR-U-0 8.00 861.3 134.8 19.99 3.01 -23.00 180.00 .0

T-1NF P-1NF U-1NF V-1NF RMO-1NF MU-1NF REF FT PREF STREF
(DEG R) (PSIA) (PSIA) (FI/SEC) (SLUGS/FT3) (LH-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)
97.7 .088 3.952 3RT5 7.574E-05 7.897E-08 3.73E 06 5.763E-02 2.039E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CCK)

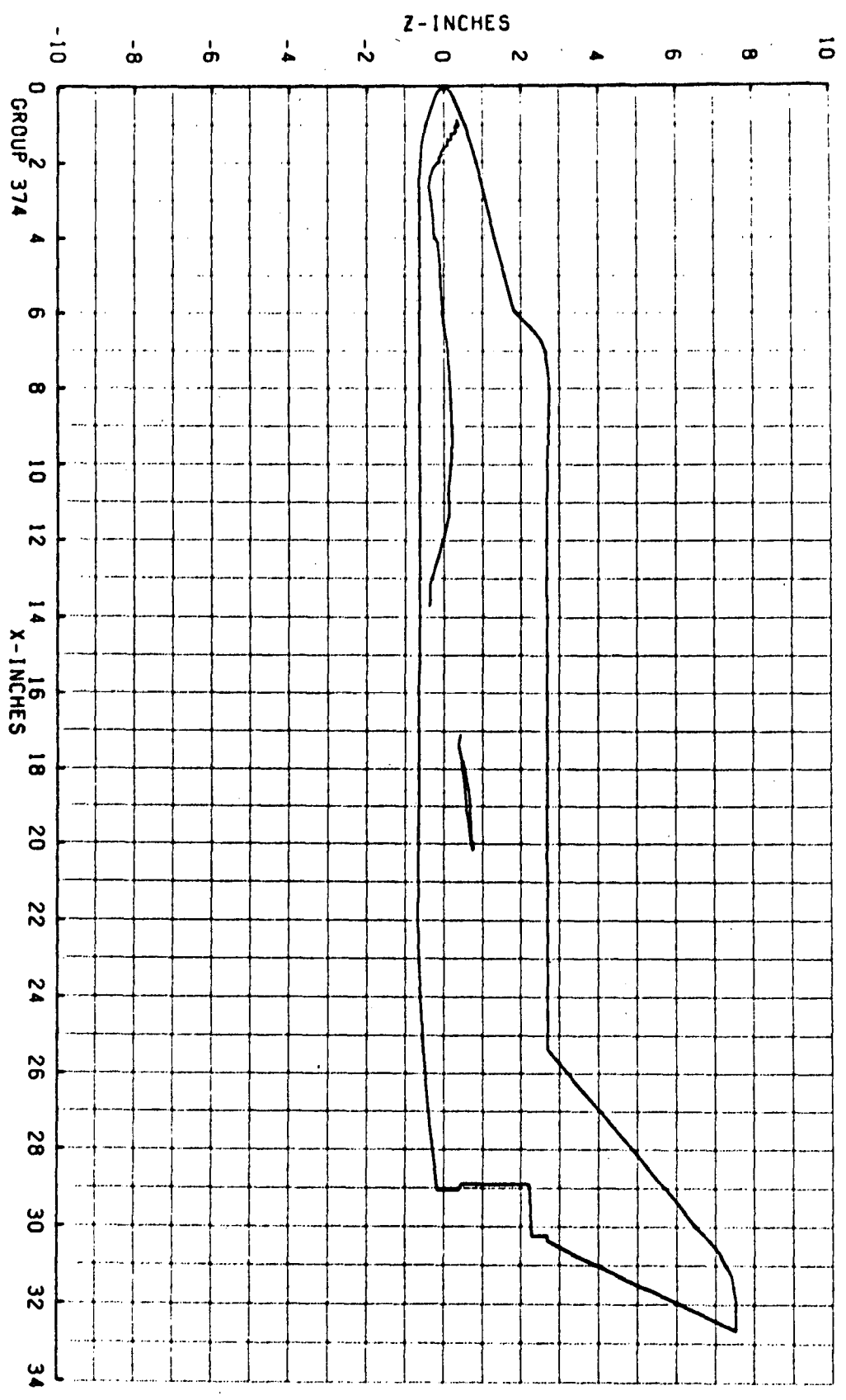
TOP(T) 250 AVERAGE TW = 70 -0.009(SQUARE ROOT DFL TIME) * 0.11
SICE(S) 250
BOTICE(B) 250

PIC MC	TIME	DELTIME	H(TO)	H(TO)/HREF	H(-910)	H(.STC)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F
S 1222 (250)	6.95	5.84	0.49E-03	.1473	1.064E-02	.1846	1.219E-02	.2114	3.579E-03	113 79
S 1225 (250)	10.70	9.61	0.23E-03	.1091	7.211E-03	.1355	8.946E-03	.1552	2.628E-03	138 82
S 1237 (250)	15.00	13.91	4.87E-03	.0845	6.108E-03	.1059	6.995E-03	.1213	2.054E-03	162 85

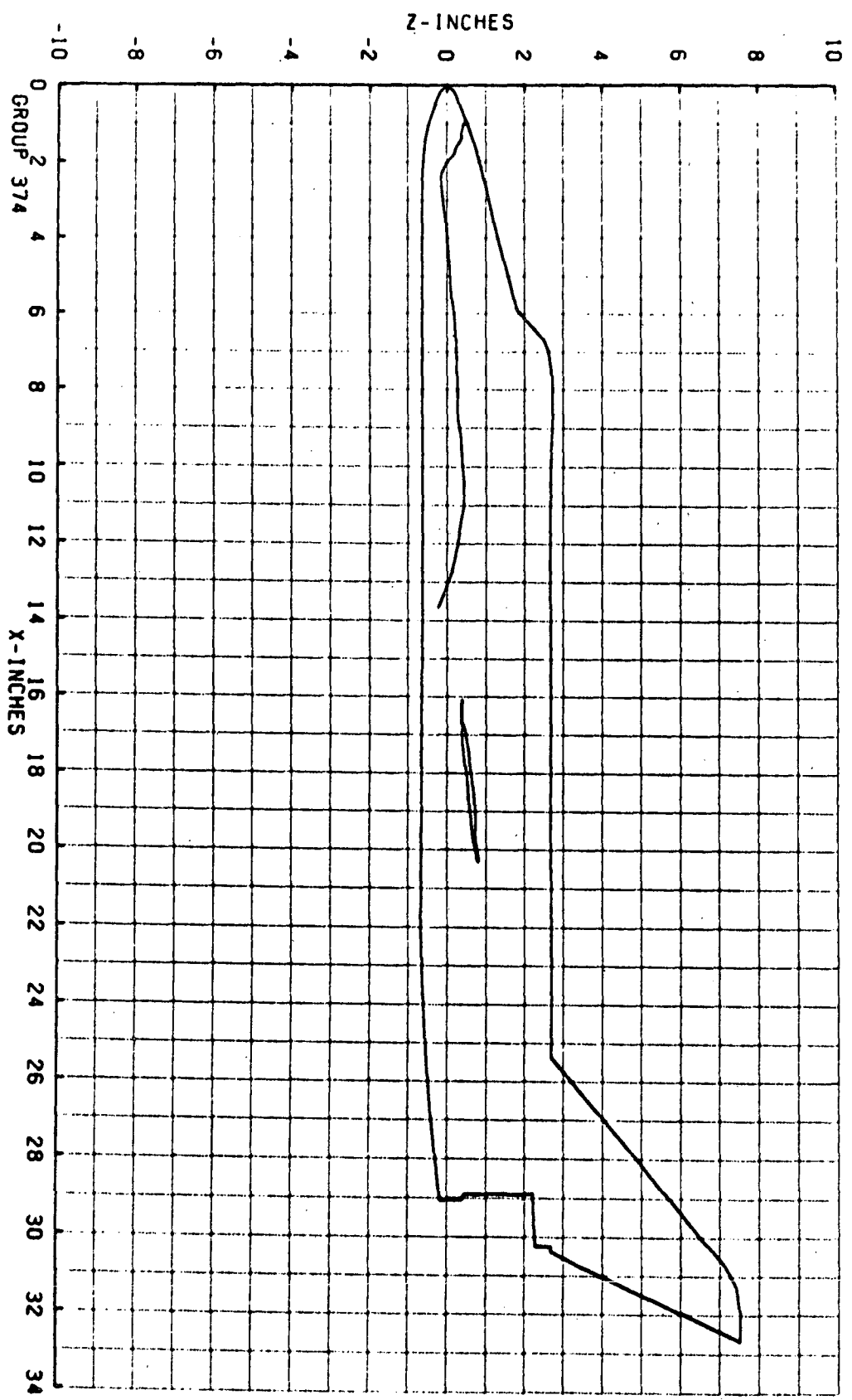


GROUP 374 PIC. NO. 1222 H/HREF 1.473E-01 MODEL SURFACE - SIDE
 MACH 8.00 ALPHA (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NRR-DWO

GROUP 374 PIC. NO. 1229 H/HREF 1.081E-01 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NRR-DWD



GROUP 374 PIC. NO. 1237 H/HREF 8.450E-02 MODEL SURFACE - SIDE
 MACH 8.00 ALPHA (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NRR-DWO



6/ 2/71

AFDC(ARND,INC.) ARNOLD AFS, ILLINOIS
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R
V11162

GROUP CONFIG MODEL MACH NO PN PSTA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-REBEND ROLL-MODEL YAW
160 51 NAR-D40 P.100 956.3 1332 30.02 -7.02 -23.00 180.00 .0

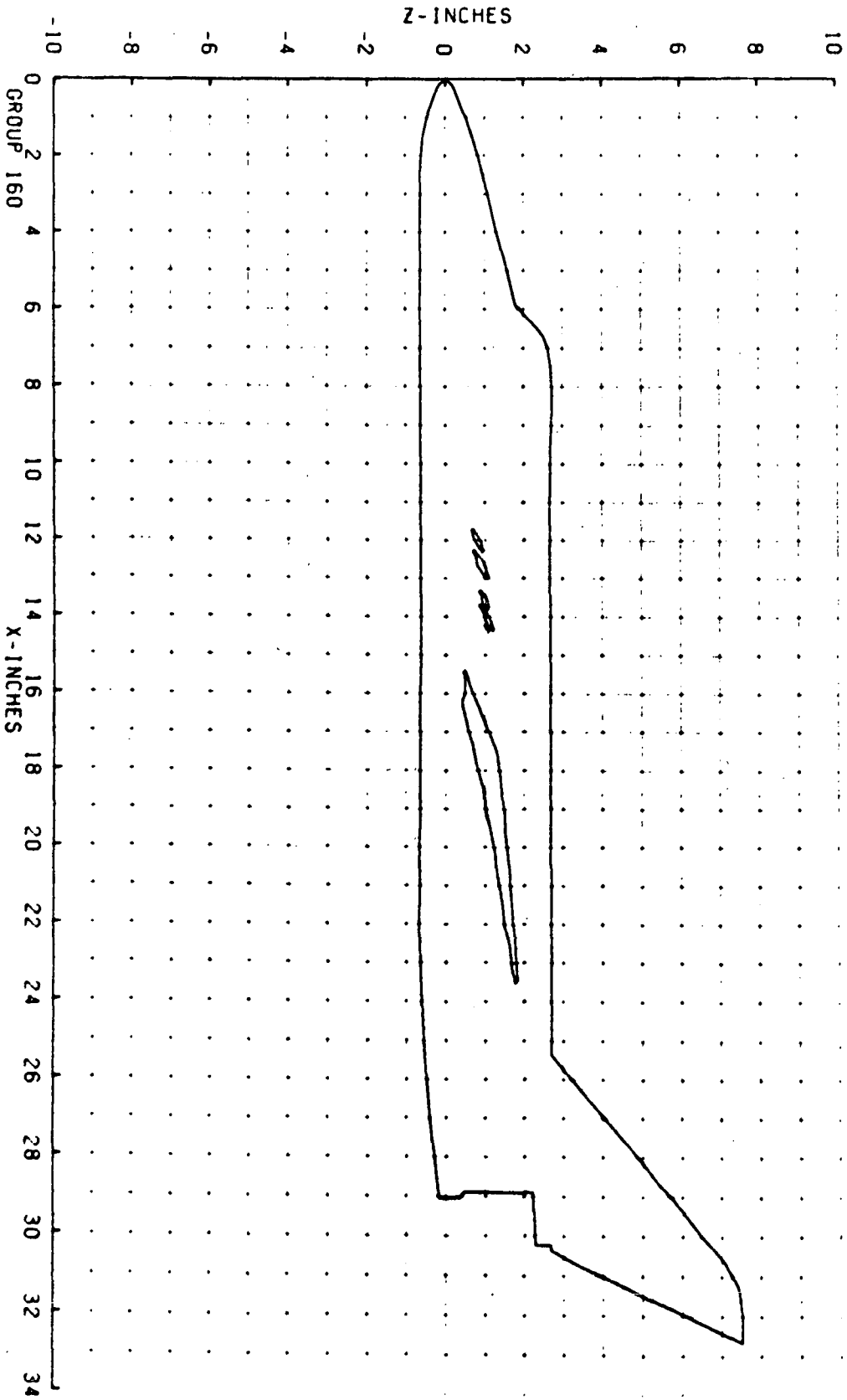
T-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF STRAF
(DEG R) (PSIA) (PSIA) (FI/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)
96.5 .000 3.929 3.952 7.672E-05 7.773E-08 3.78E 06 5.736E-02 2.4229E-02

CAMERA PAINT IFWP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCKX)

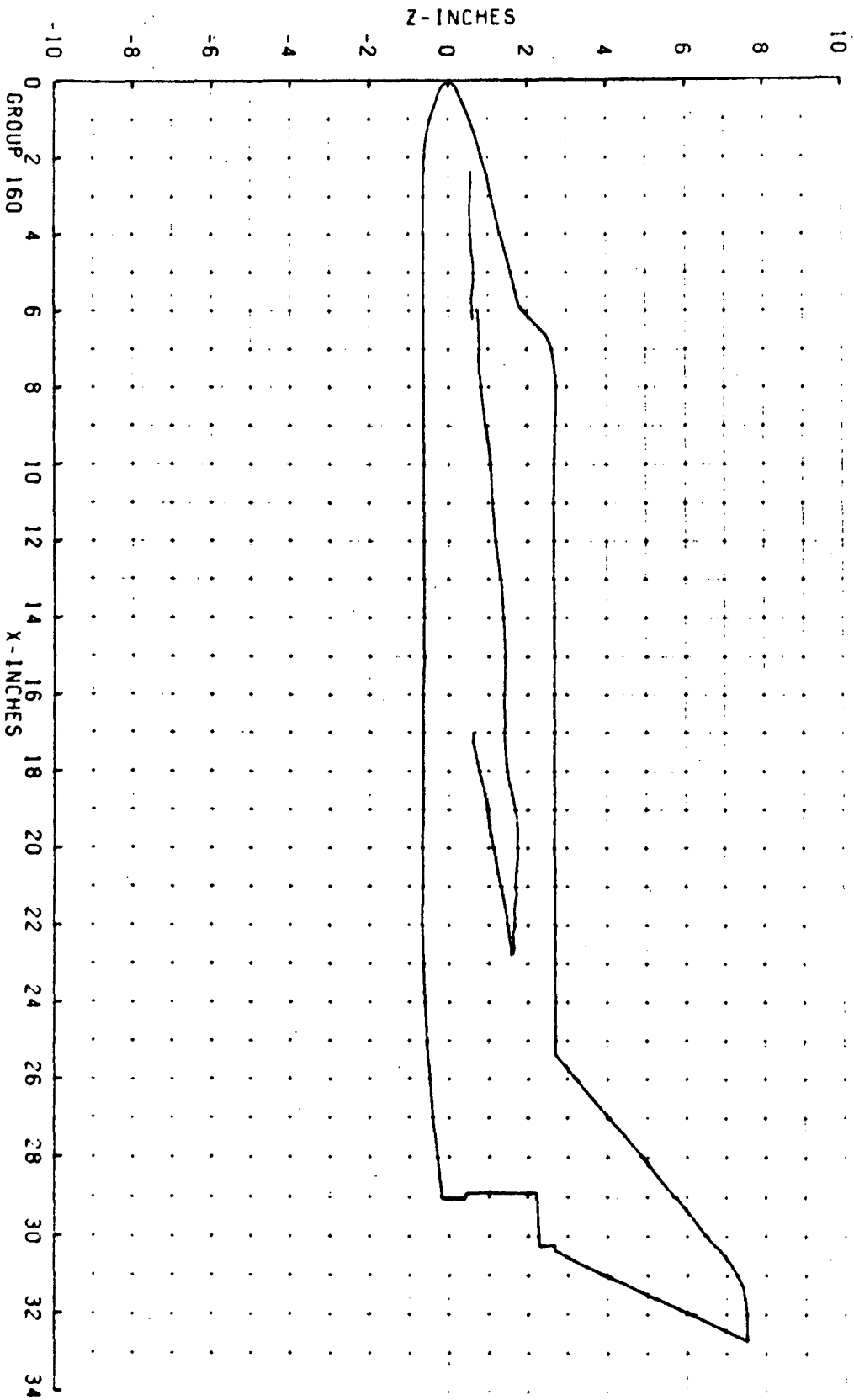
TOP(FT) 300 AVERAGE TW = 73 -0.008(SQUARE ROOT DFL TIME) * 0.11
SIDE(S) 100
BOTTOM(IN) 100

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TOR)	H(.5TOR)	H(.5TOR)/HREF	H(.85TOR)	H(.85TOR)/HREF	ST(TOI)	MODEL	TEMP-F
S 2437 (100)	3.15	2.00	.0360	2.492E-03	.0435	2.777E-03	.0485	8.775E-04	74	72	75
S 3441 (100)	5.25	4.10	.0241	1.673E-03	.0292	1.866E-03	.0325	5.885E-04	77	73	79
S 3457 (100)	9.95	8.00	.0152	1.056E-03	.0184	1.177E-03	.0245	3.716E-04	92	75	94
S 3458 (100)	14.10	13.03	.0118	8.209E-04	.0143	9.148E-04	.0160	2.889E-04	107	77	110

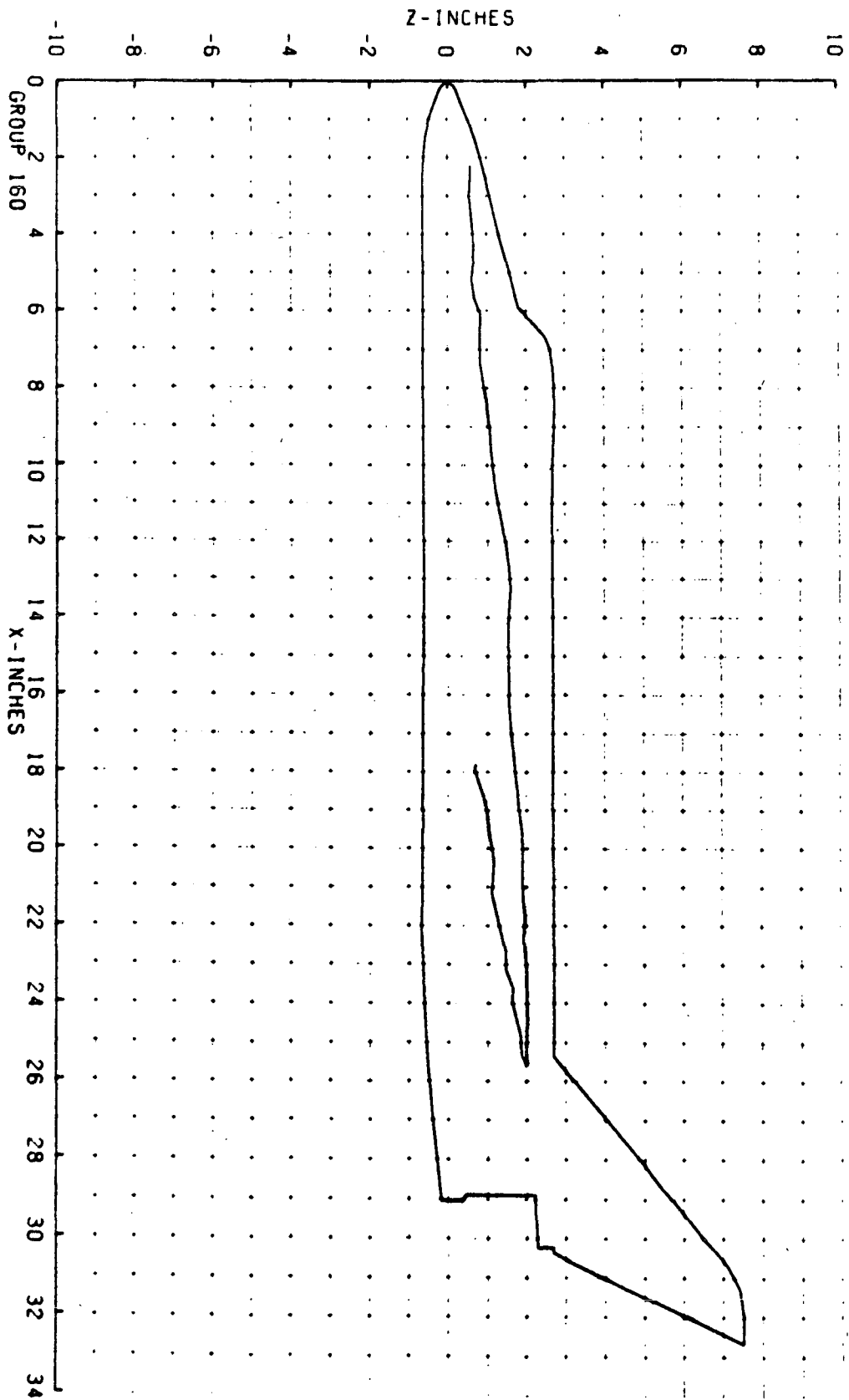
GROUP 160 PIC. NO. 3437 H/HREF 3.600E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NAR-DMD



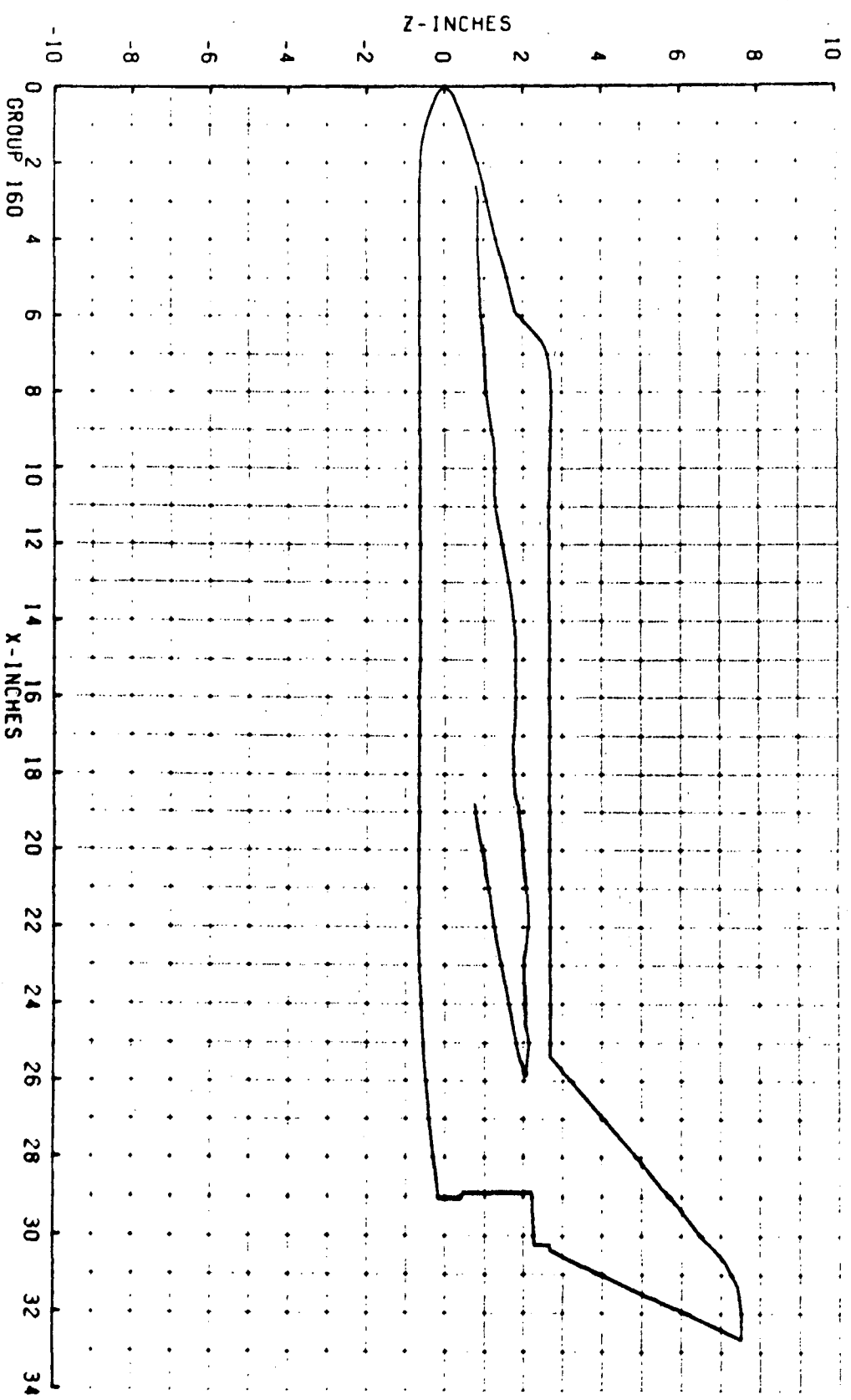
GROUP 160 PIC. NO. 3441 H/REF 2.410E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NAR-DW0



GROUP 160 PIC. NO. 3450 H/HREF 1.520E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NAR-DM0



GROUP 160 PIC. NO. 3458 H/HREF 1.180E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NRR-DMD



6/ 2/78

AEDC(ARO+INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL #
V11162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-DREBEND ROLL-MODEL YAW

180 51 MAR-U40 8.98 854.7 1351 40.01 9.91 -50.00 180.00 0

I-IAF P-IAF U-IAF V-IAF RHO-IAF MU-IAF RE/FT HREF SREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R= .013FT) (R= .013FT)
97.9 .998 3.922 3878 7.505E-05 7.880E-08 3.09E 06 5.742E-02 2.451E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CAM)
TOP(T) 400
SIDE(S) 113
BOT(B) 113
AVERAGE T_w = 79 -0.0081 SQUARE ROOT DEL TIME) = 0.11

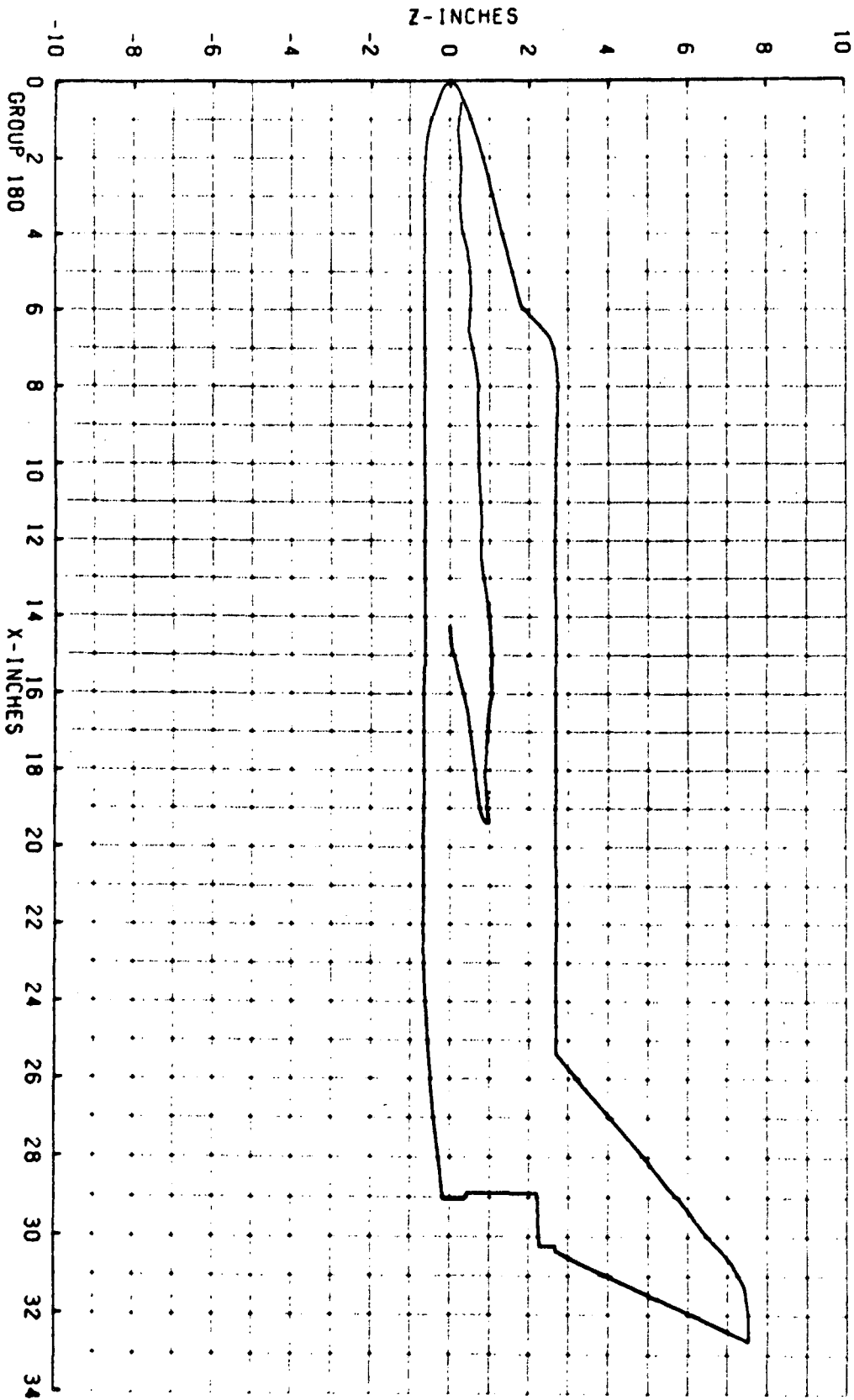
PIC MC TIME DELTIME H(TN) H(TD)/HREF H(.910) H(.5TC)/HREF H(.85TD) H(.85TD)/HREF ST(TD) MODEL TEMP F

S 3997 (113) 3.20 2.13 4.61E-03 .0655 3.150E-03 .0549 3.522E-03 .0613 1.118E-03 77 80 80 0

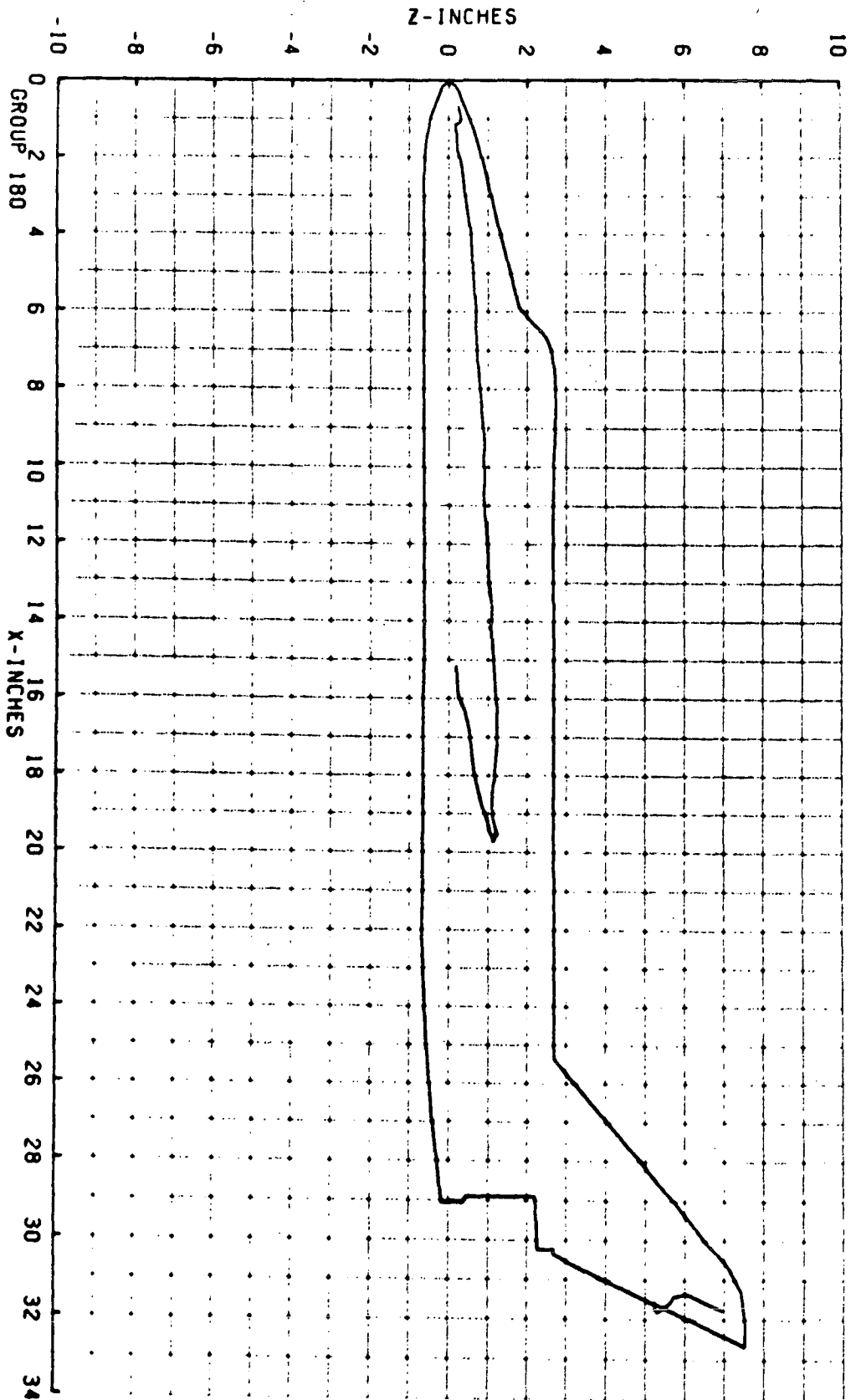
S 4001 (113) 5.30 4.23 1.77E-03 .0397 2.132E-03 .0371 2.379E-03 .0414 7.548E-04 82 80 86 0

S 4010 (113) 10.10 4.03 1.11E-03 .0193 1.341E-03 .0233 1.497E-03 .0241 4.750E-04 103 82 109 0

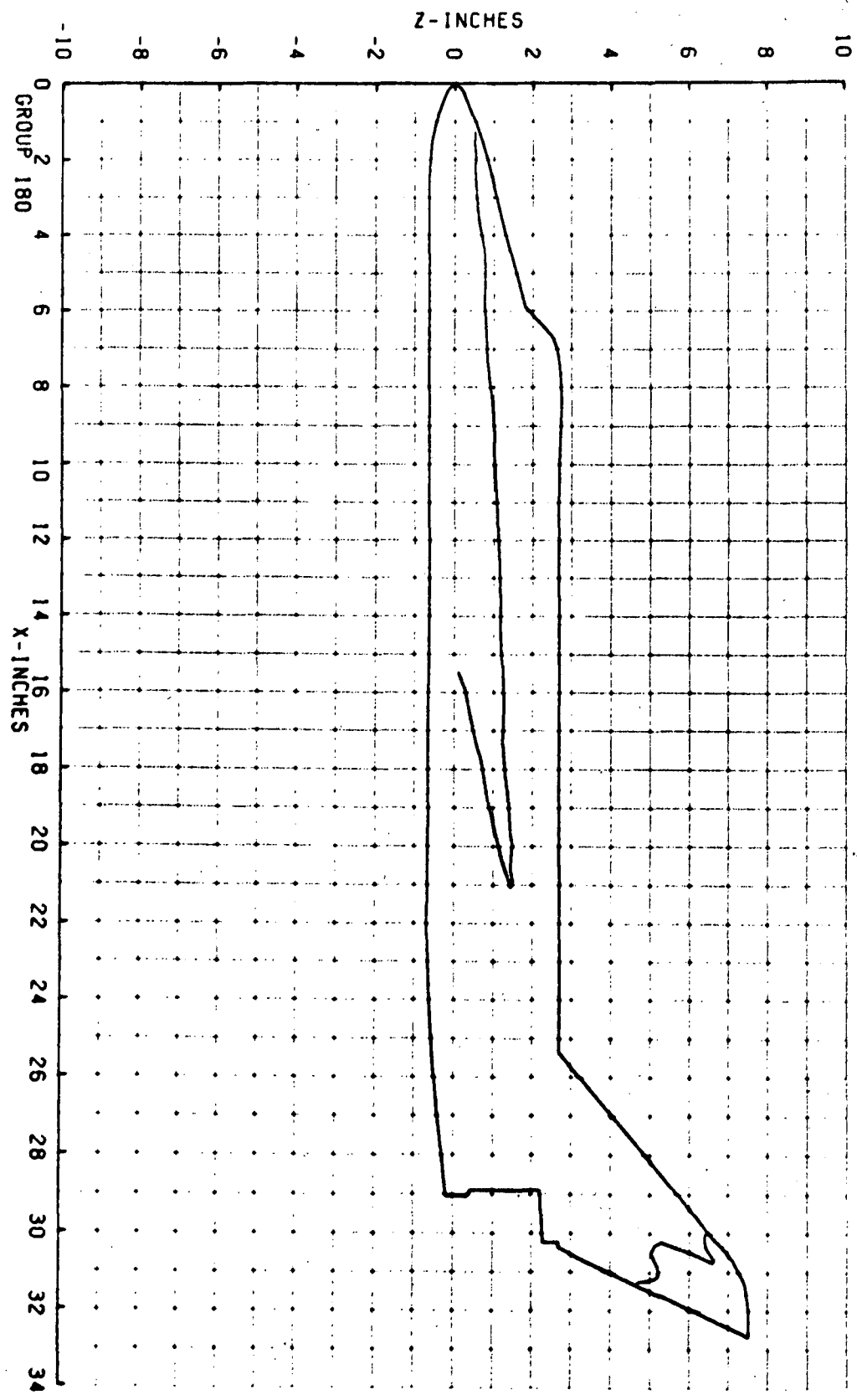
GROUP 180 PIC. NO. 3997 H/HREF 4.550E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.742E-02 RE/FT 3.690E 06 CONF NRR-DW0



GROUP 180 PIC. NO. 4001 H/HREF 3.070E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.742E-02 RE/FT 3.690E 06 CONF NRR-DMO



GROUP 180 PIC. NO. 4010 H/HREF 1.930E-02 MODEL SURFACE - SIDE
 MACH 8.00 ALPHA (DEG) 40.0 HREF 5.742E-02 RE/FT 3.690E 06 CONF NAR-DMO



6/ 2/71

AEDC(AMD,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9
V11162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PCREND ROLL-MODEL YAW

186 SI MAR-JUN 8.00 854.7 1346 39.90 10.02 -50.00 180.00 0.0

T-1NF P-1NF O-1NF V-1NF RHO-1NF MU-1NF RE/FT PREF ST/EF
(OEG R) (PSIA) (PSIA) (F1/SEC) (SLUGS/FT3) (LB-SEC/FT2) (F1-1) (R .013FT) (R .013FT)

97.5 .088 3.922 3871 7.532E-05 7.851E-08 3.71E 06 5.739E-02 2.946E-02

CAMERA PAINT TEMP (OEG F) INITIAL TEMP (OEG F) SQUARE ROOT (RMU/CKI)

TOP(1) 350 AVERAGE Iw = 87 -0.008(SQUARE ROOT DEL. TIME) * 0.11
SIGEL(1) 113
ROTCM(1) 113

PIC NC TIME DELTIME M(TO) M(TO)/MREF M(.910) M(.5TC)/MREF M(.85TO) M(.85TO)/MREF S(TO) MODEL TEMP F

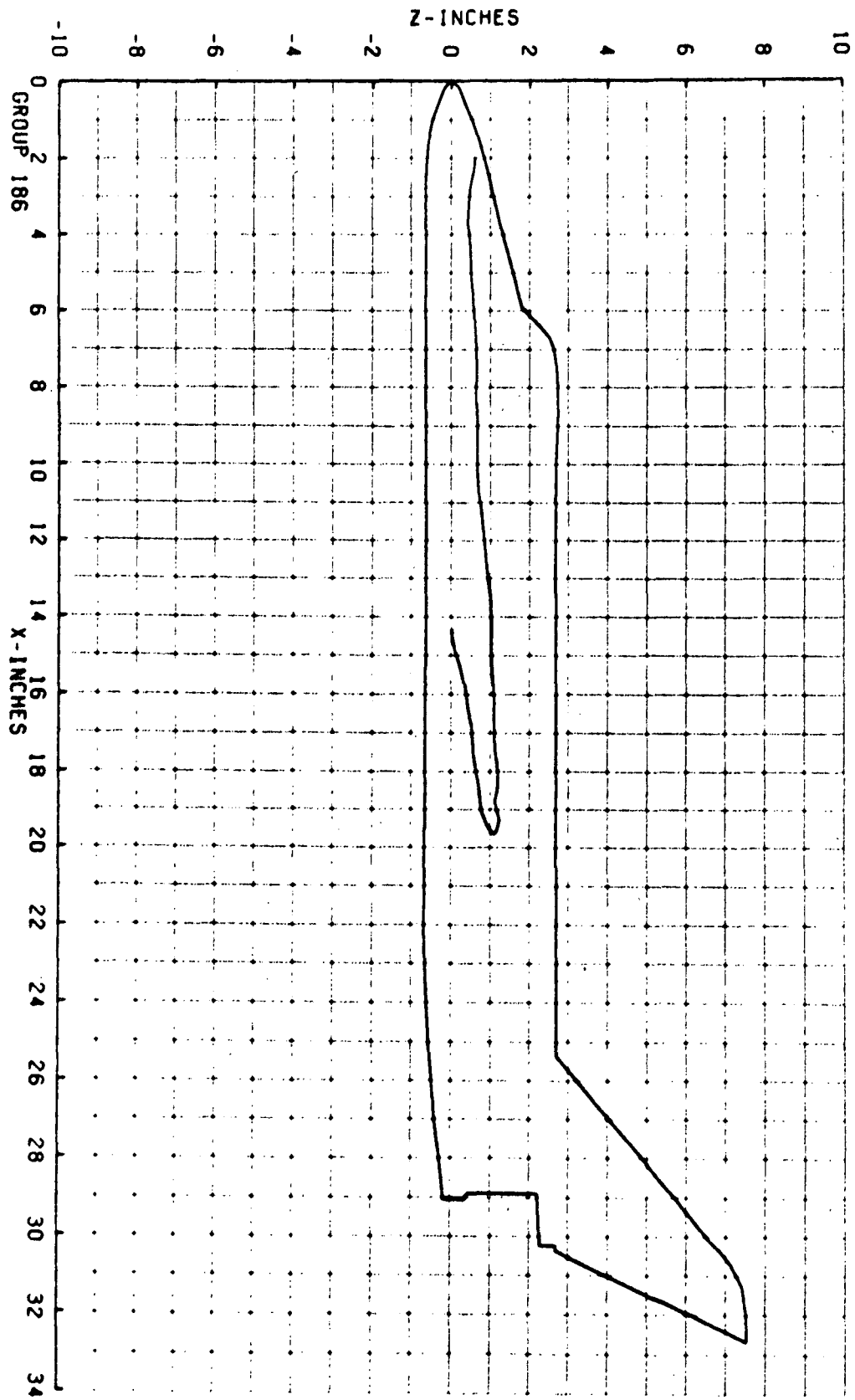
S 4164 (113) 2.65 1.61 2.34E-03 .0402 2.822E-03 .0493 3.157E-03 .0550 9.990E-04 8 85 89

S 4169 (113) 5.35 4.31 1.34E-03 .0233 1.617E-03 .0282 1.805E-03 .0314 5.710E-04 0 85 95

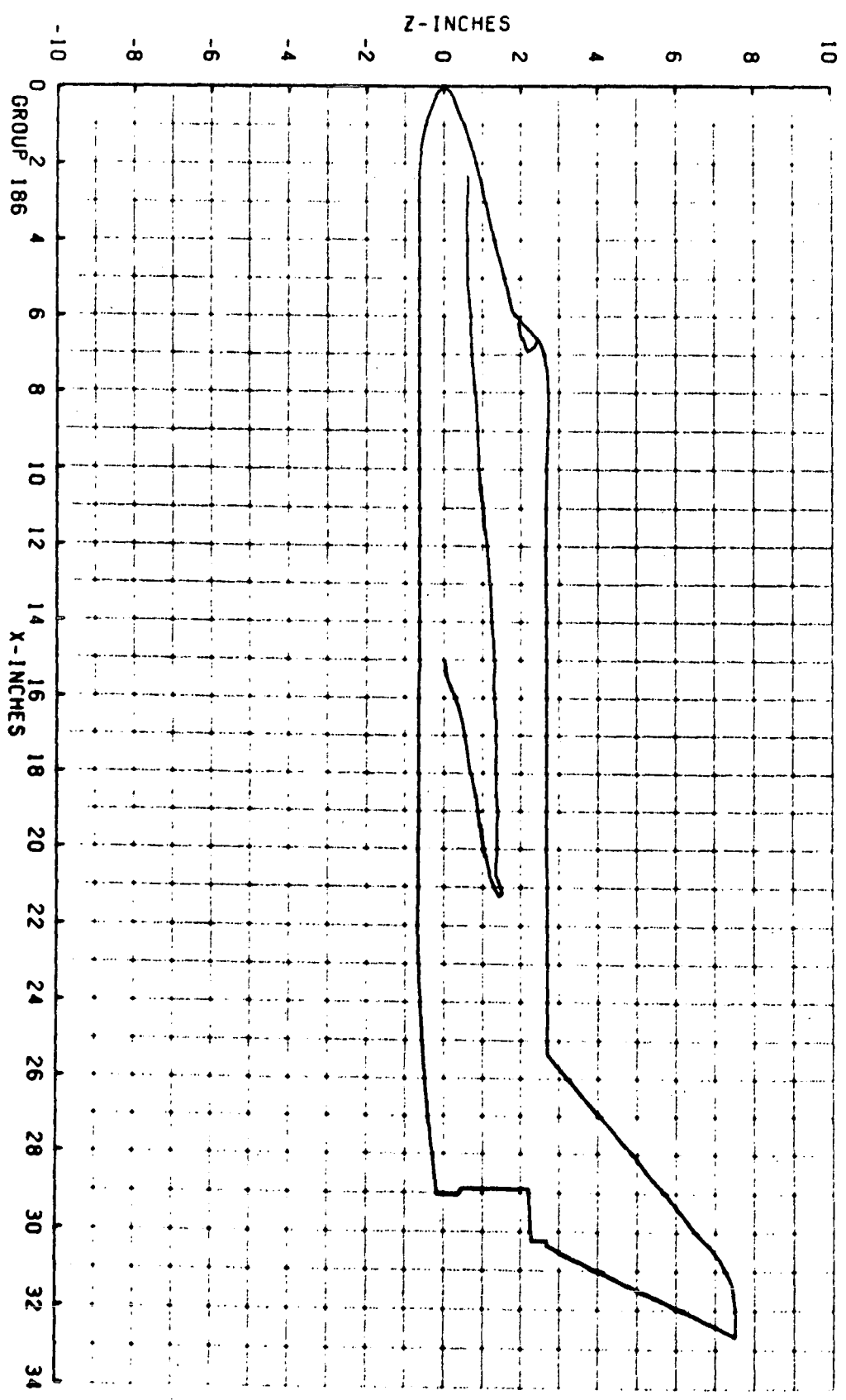
S 4172 (113) 10.10 9.06 8.48E-04 .0148 1.020E-03 .0179 1.146E-03 .0200 3.626E-04 0 87 114

S 4184 (113) 13.20 12.16 7.08E-04 .0122 8.467E-04 .0148 9.450E-04 .0165 2.991E-04 0 89 129

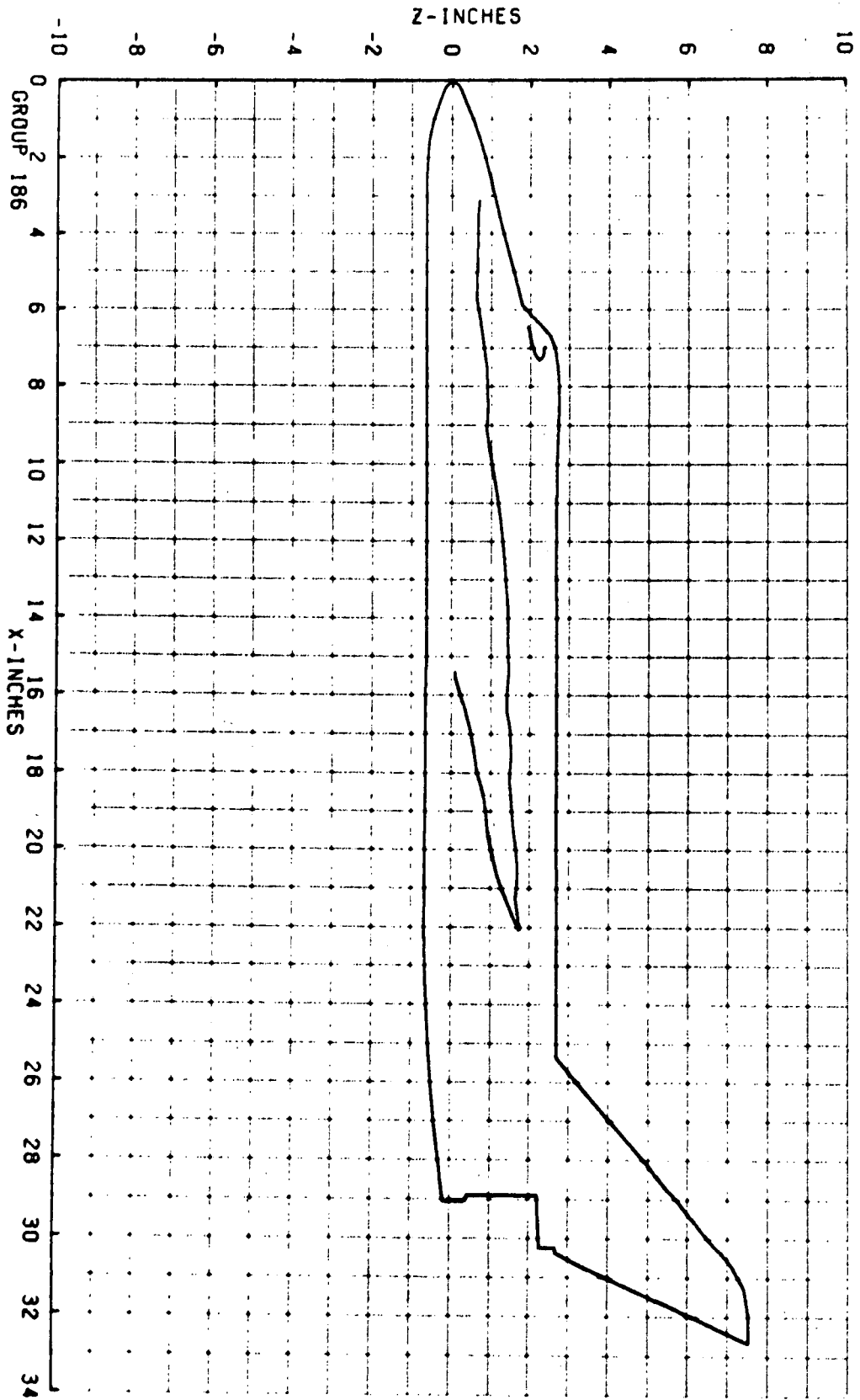
GROUP 186 PIC. NO. 4164 H/HREF 4.070E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.739E-02 RE/FT 3.710E 06 CONF NAR-0M0



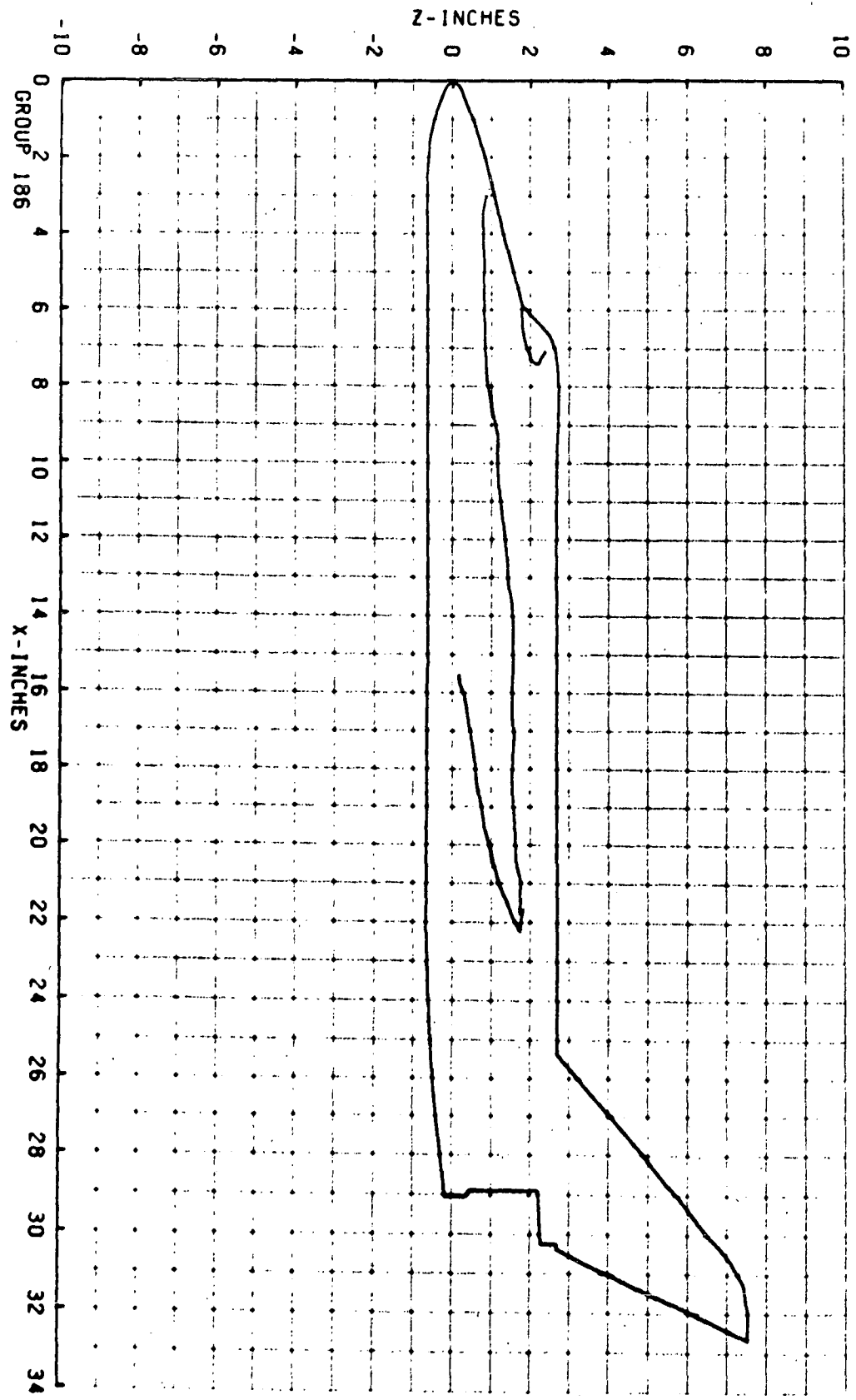
GROUP 186 PIC. NO. 4169 H/HREF 2.330E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.739E-02 RE/FT 3.710E 06 CONF NAR-DMD



GROUP 186 PIC. NO. 4178 H/HREF 1.480E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF S.739E-02 RE/FT 3.710E 06 CONF NAR-DMD



GROUP 186 PIC. NO. 4184 H/HREF 1.220E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.739E-02 RE/FT 3.710E 06 CONF NRR-0M0



6/27/71

AFDC(ARND, INC.) ARNOLD AFS, TENNESSEE
VON KAMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP CONFIG MODEL MACH NO PO PSIA TU DEG R ALPHA-RODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW

182 S1 NAR-D00 P000 853.3 1354 50.00 .00 -50.00 180.00 .0

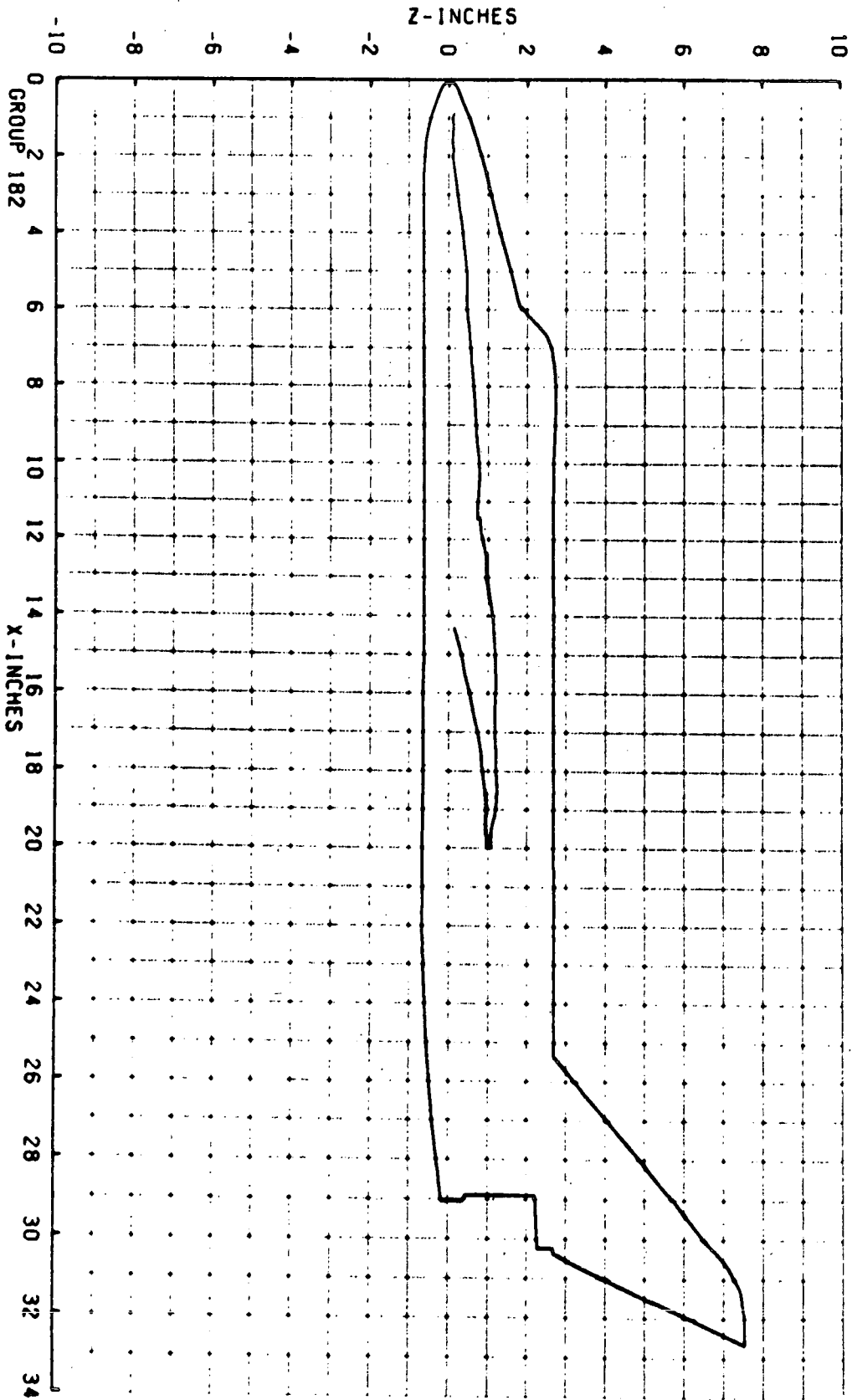
T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT MREF SIMEF
(DEG R) (PSIA) (PSIA) (F1/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (H= .013FT)
98.1 .087 3.916 .983 7.473E-05 7.900E-08 2.67E 06 5.740E-02 2.457E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMUXCKN)
TOP(T) 350
SIDE(S) 113
BOTTOM(B) 113
AVERAGE I_w = 80
-0.008(SQUARE ROOT DEL TIME) * 0.11

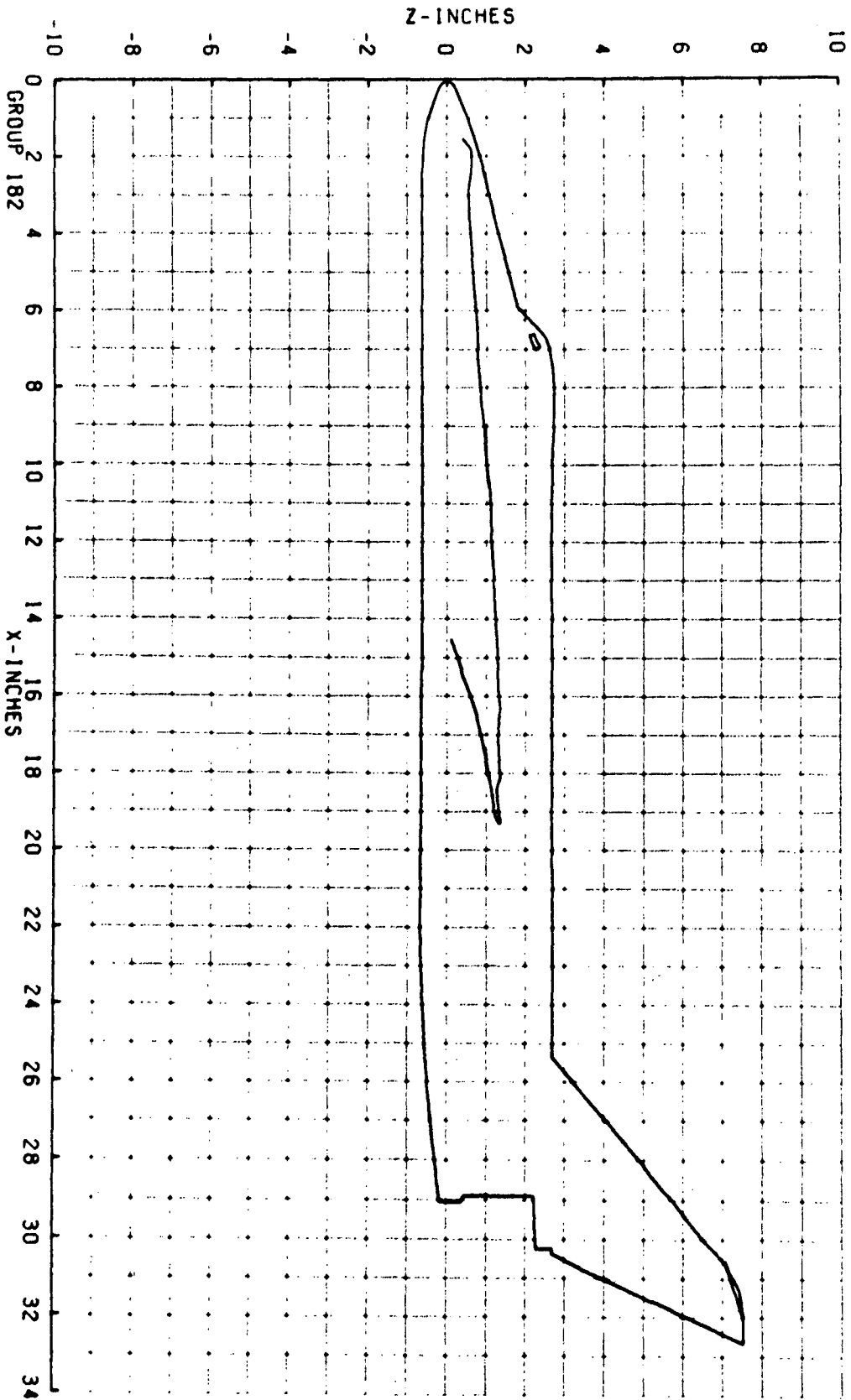
PIC NC TIME DELTIME H(TO) H(TO)/HREF H(.910) H(.910)/HREF H(.8510) H(.8510)/HREF ST(TO) MODEL TEMP F

S 4051 (113) 2.65 1.52 2.92E-03 .0508 3.52E-03 .0613 3.929E-03 .0694 1.251E-03 79 80 82
S 4052 (113) 4.40 3.73 1.40E-03 .0313 2.10E-03 .0370 2.420E-03 .0432 7.706E-04 84 81 87
S 4065 (113) 10.10 9.03 1.05E-03 .0183 1.287E-03 .0221 1.415E-03 .0246 4.505E-04 120 85 113

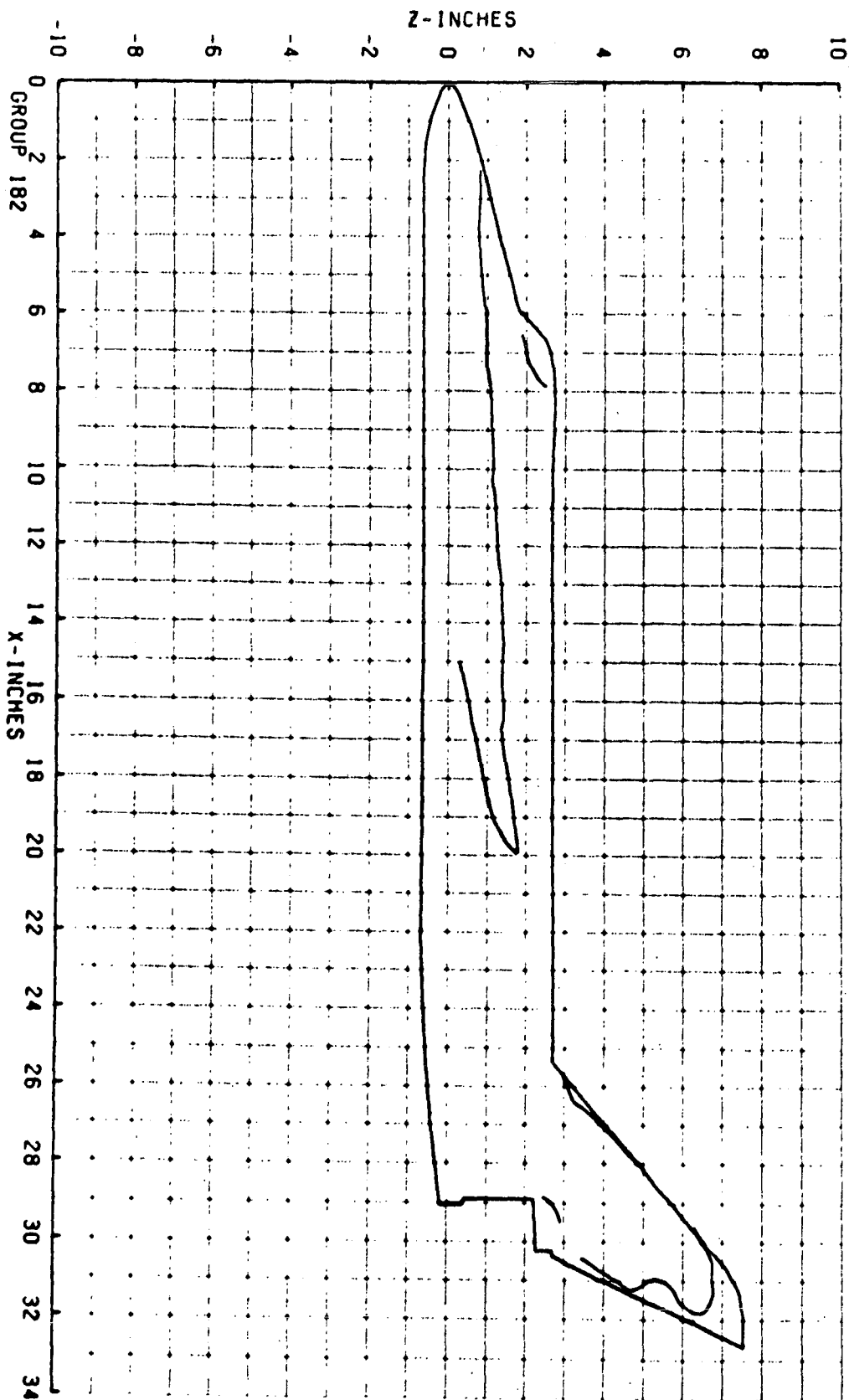
GROUP 182 PIC. NO. 4051 H/HREF 5.080E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.740E-02 RE/FT 3.670E 06 CONF NAR-DWO



GROUP 182 PIC. NO. 4055 H/HREF 3.130E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.740E-02 RE/FT 3.670E 06 CONF NRR-DNO



GROUP 182 PIC. NO. 4065 H/HREF 1.830E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.740E-02 RE/FT 3.670E 06 CONF NRR-DMD



6/22/71
 AFUCIARO, INC.) ARNOLD AFS, TENNESSEE
 VON KAMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL B
 V11162

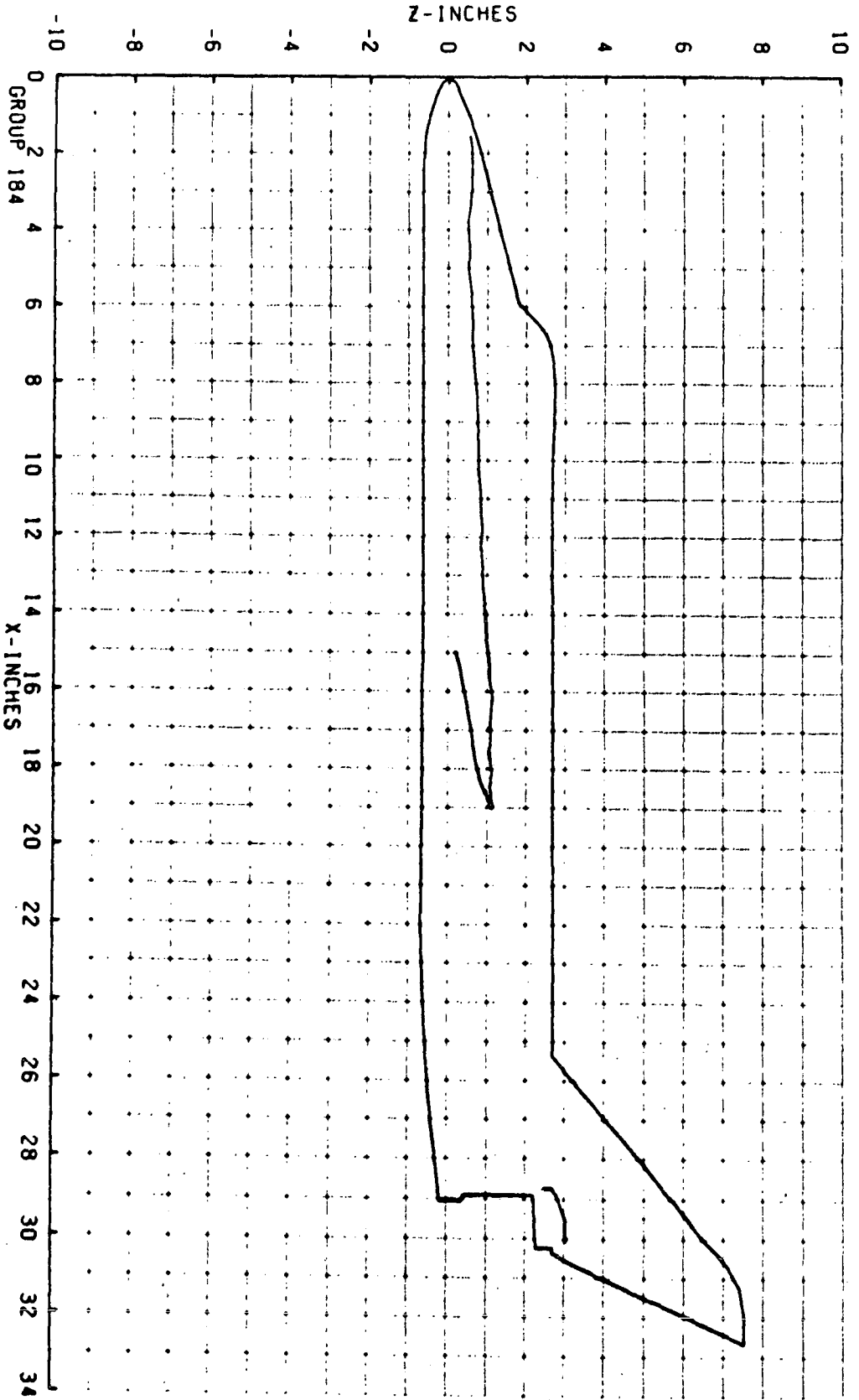
GROUP CONFIG MODEL MACH NO PN PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREEND ROLL-MODEL YAW
 184 51 MAR-UMD 3.00 856.6 1351 50.01 -.01 -50.00 180.00 .0

T-INF P-INF Q-INF V-INF RHO-INF MU-INF RE/FT HREF SREF
 (DEG R) (PSIA) (PSIA) (F/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (H=.013FT) (H=.013FT)
 97.8 .088 3.931 3879 7.519E-05 7.883E-08 3.70E 06 5.749E-02 2.949E-02

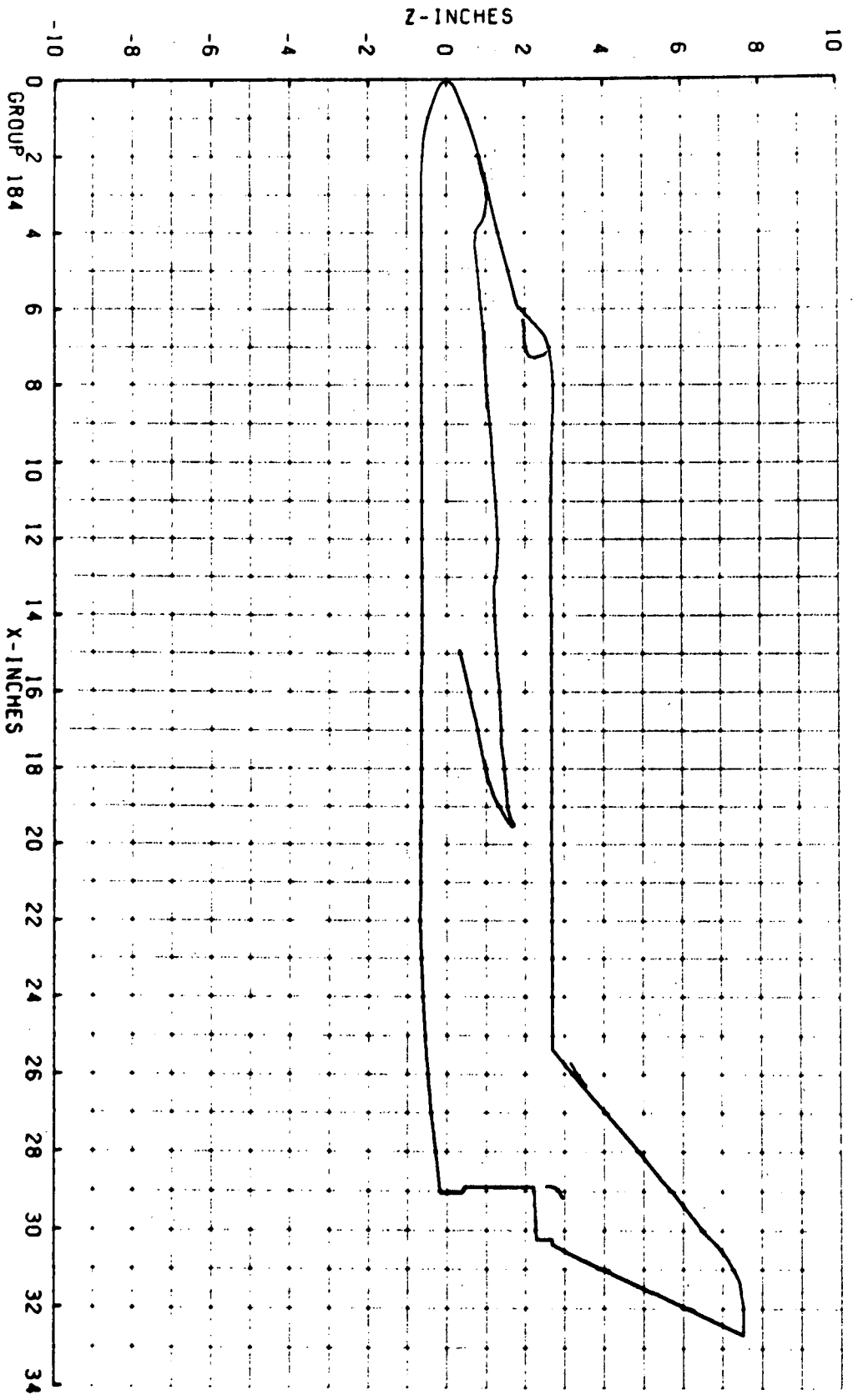
CAVEFA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO*CXK)
 TOP(1) 400
 SICELSI 113 AVERAGE I_w = 85 -0.008(SQUARE ROOT DEL TIME) * 0.11
 BOLTCH(R) 113

PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.5TC)/HREF	H(.85TO)	H(.5TO)/HREF	SI(TO)	MODEL	TEMP F
S 4104 (113)	3.20	2.13	2.15E-03	.0376	2.609E-03	.0454	2.914E-03	.0507	9.242E-04	85	82 88
S 4105 (113)	5.85	4.78	1.36E-03	.0236	1.644E-03	.0285	1.831E-03	.0318	5.806E-04	95	84 96
S 4115 (113)	9.05	7.99	7.94E-04	.0173	1.199E-03	.0209	1.339E-03	.0233	4.246E-04	116	86 112
S 4123 (113)	13.30	12.23	7.53E-04	.0131	9.091E-04	.0158	1.015E-03	.0177	3.219E-04	145	90 134

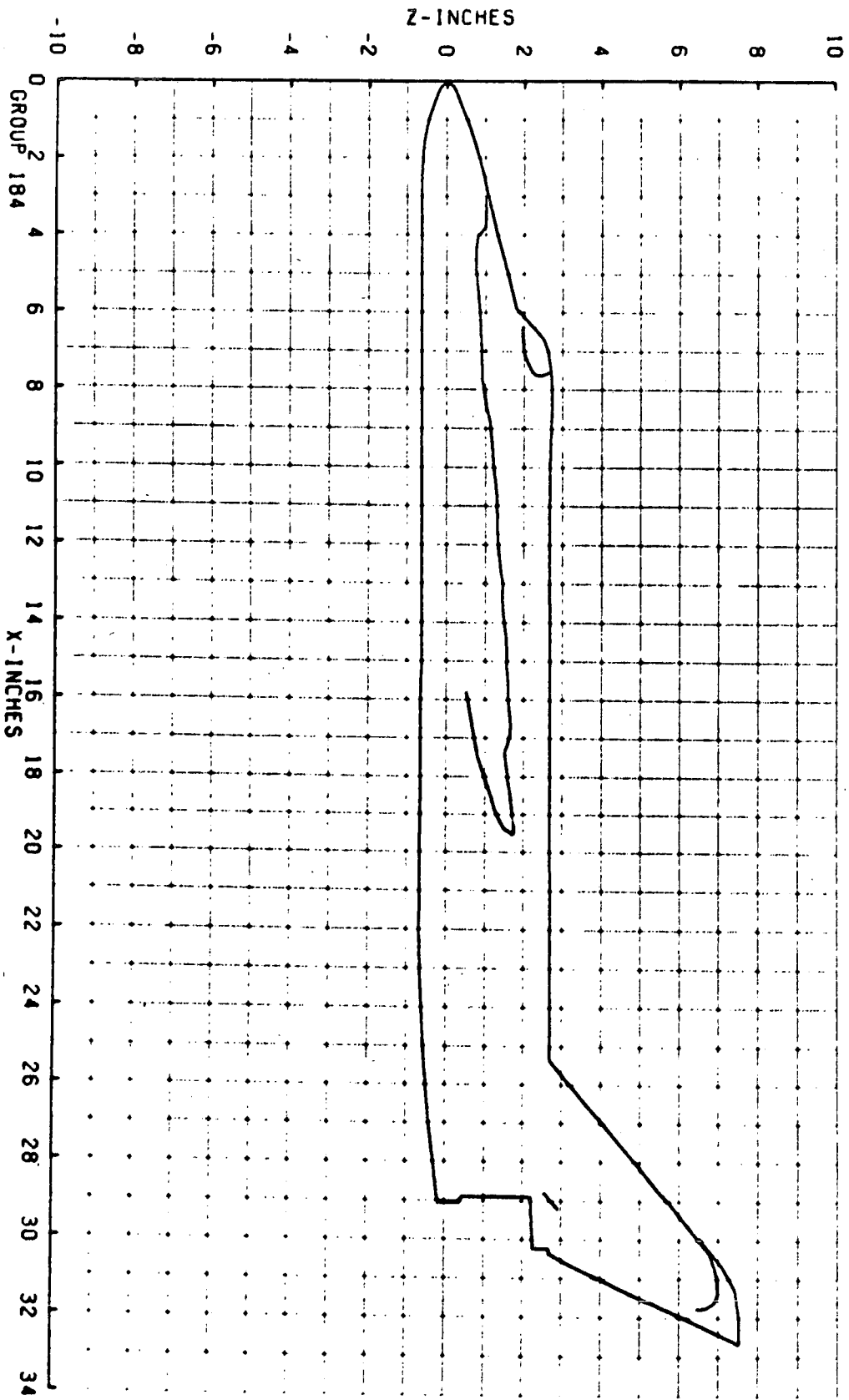
GROUP 184 PIC. NO. 4104 H/HREF 3.760E-02 MODEL SURFACE - SIDE
 MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NAR-DMO



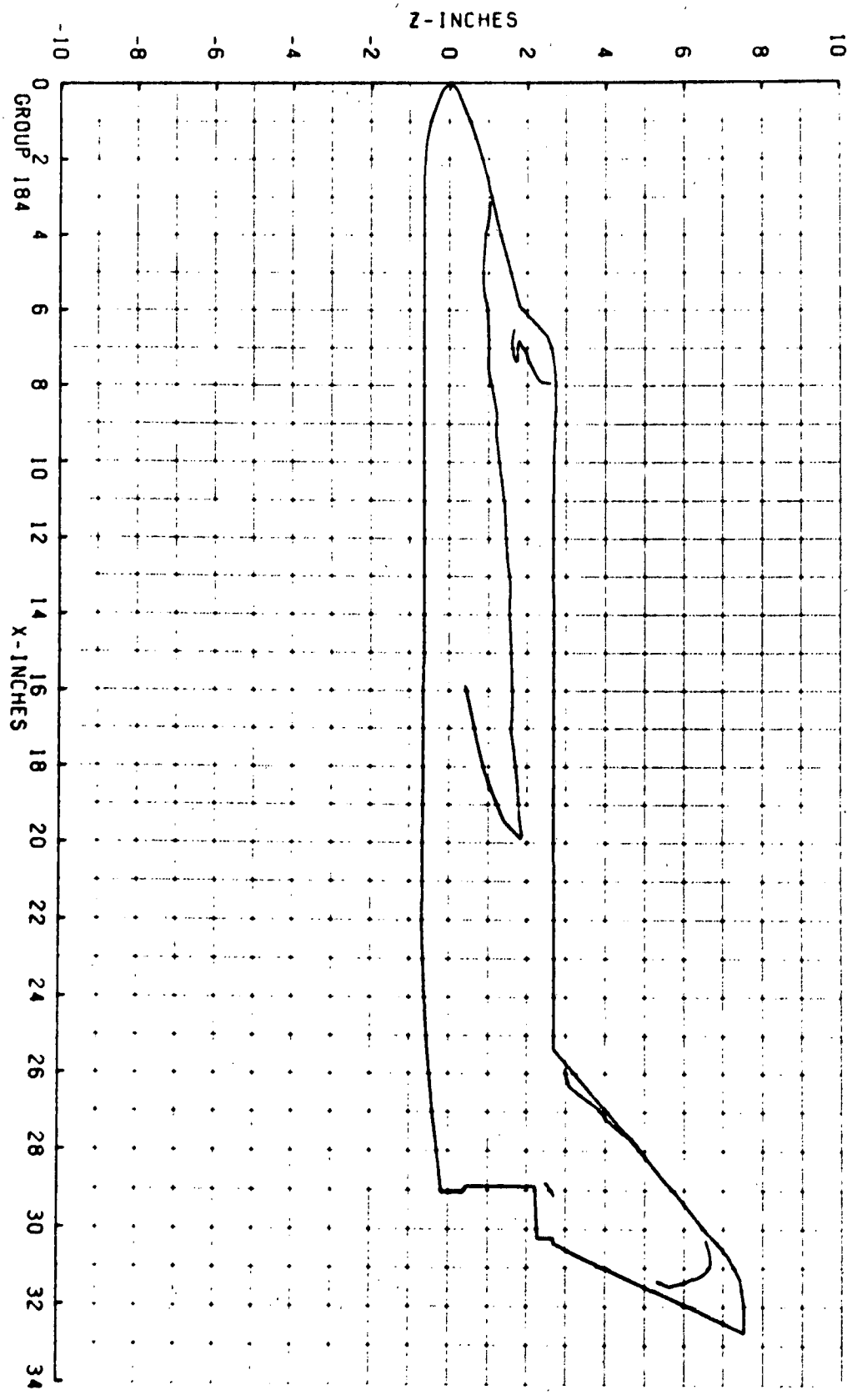
GROUP 184 PIC. NO. 4109 H/HREF 2.360E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF S.749E-02 RE/FT 3.700E 06 CONF NAR-DMD



GROUP 184 PIC. NO. 4115 H/HREF 1.730E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NAR-DMO



GROUP 184 PIC. NO. 4123 H/REF 1.310E-02 MODEL SURFACE - SIDE
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NAR-DMD



9/21/71

AECC(ARD,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP 363 CONFIG 54 MODEL MAR-DMO MACH NO 8.00 PO PSIA 554.8 TO DEG R 1300 ALPHA-MODEL 9.99 ALPHA-SECTOR 13.01 ALPHA-PREBEND -23.00 ROLL-MODEL 180.00 YAW .0

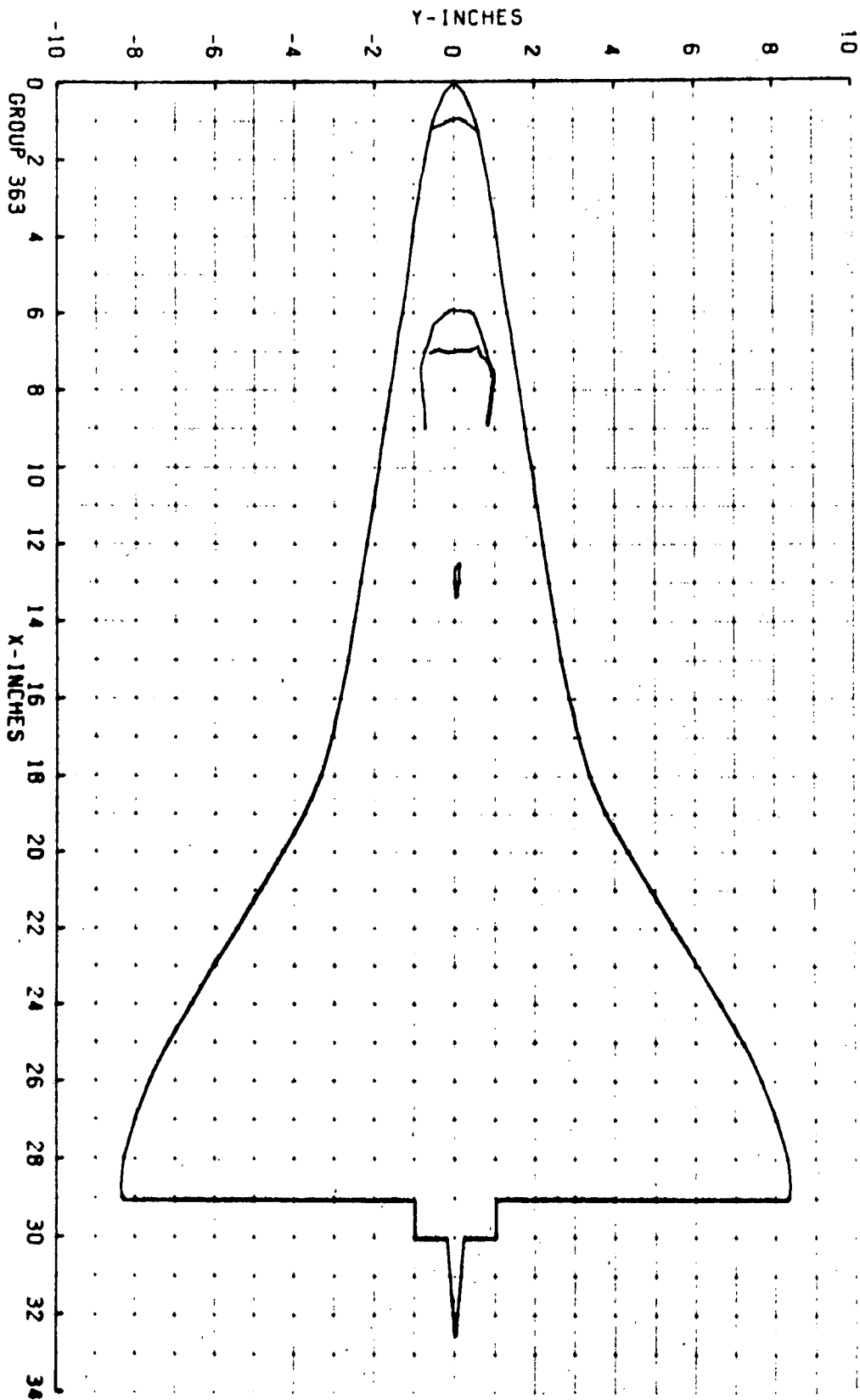
T-INF P-INF Q-INF V-INF RMO-INF MU-INF RE/FT P-REF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (R=.013FT)
90.2 .057 2.546 3085 5.061E-05 7.585E-08 2.54E 06 4.596E-02 2.973E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMOXCRK)

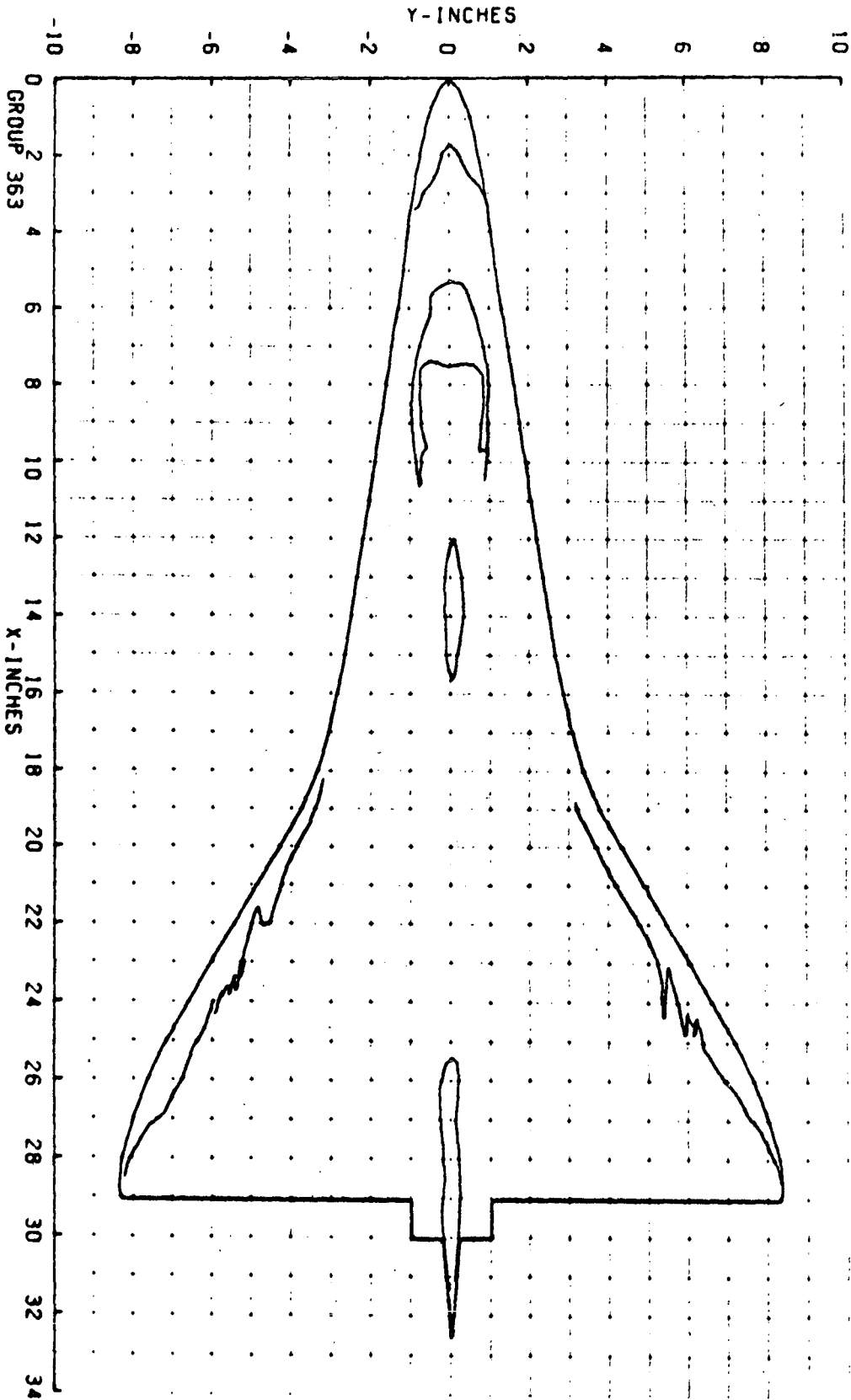
TOP(1) 113
SIDE(5) 113
GOTTCHMIG) 113
AVERAGE TW = 82
-0.008(SQUARE ROOT DEL TIME) * 0.11

PIC NO	TIME DELTIME	M(TO)	M(TO)/MREF	M(.910)	M(.5TCI)/MREF	M(.85TO)	M(.85TO)/MREF	ST(TO)	MODEL TEMP F
8 2216 (113)	3.20 2.11	2.54E-03	.0553	3.087E-03	.0672	3.459E-03	.0753	1.648E-03	0 0 0 0
8 2226 (113)	8.50 7.41	1.21E-03	.0264	1.476E-03	.0321	1.654E-03	.0360	7.880E-04	0 0 0 0
8 2231 (113)	11.20 10.11	9.96E-04	.0217	1.211E-03	.0264	1.357E-03	.0295	6.463E-04	0 0 0 0

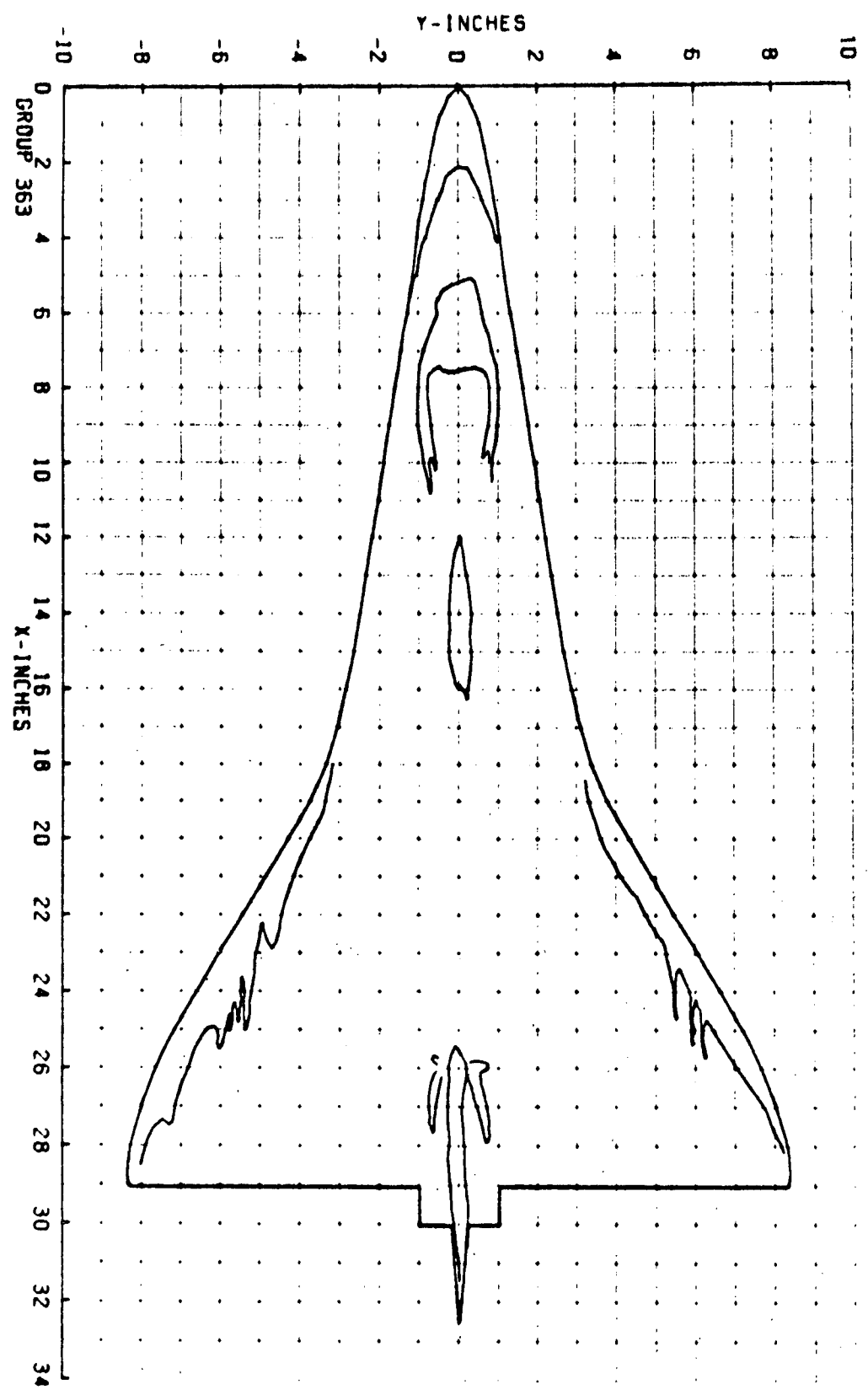
GROUP 363 PIC. NO. 2216 H/HREF 5.530E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.596E-02 RE/FT 2.540E 06 CONF NAR-DWD



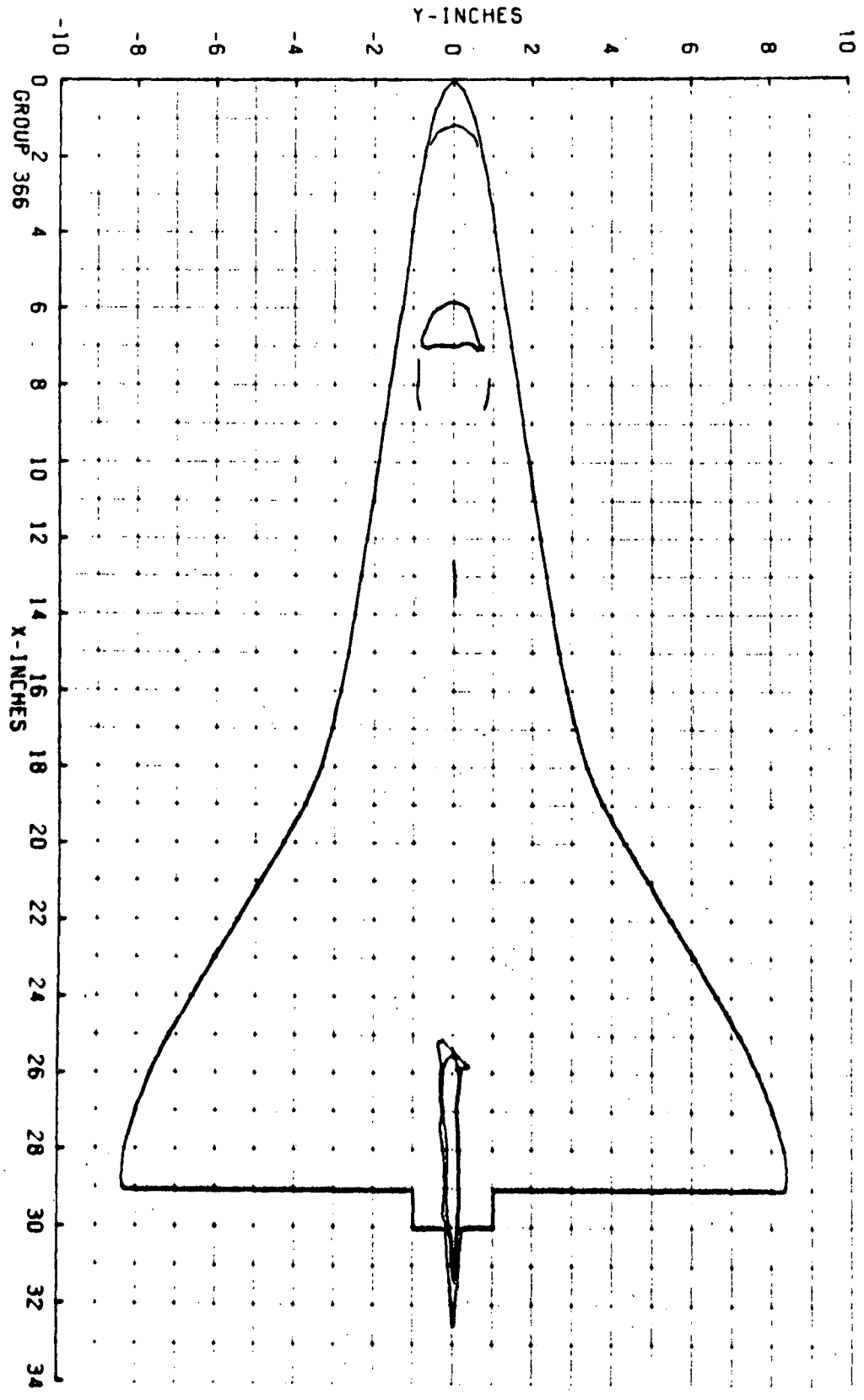
GROUP 363 PIC. NO. 2226 H/HREF 2.640E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHR (DEG) 10.0 HREF 4.596E-02 RE/FT 2.540E 06 CONF NAR-DMD



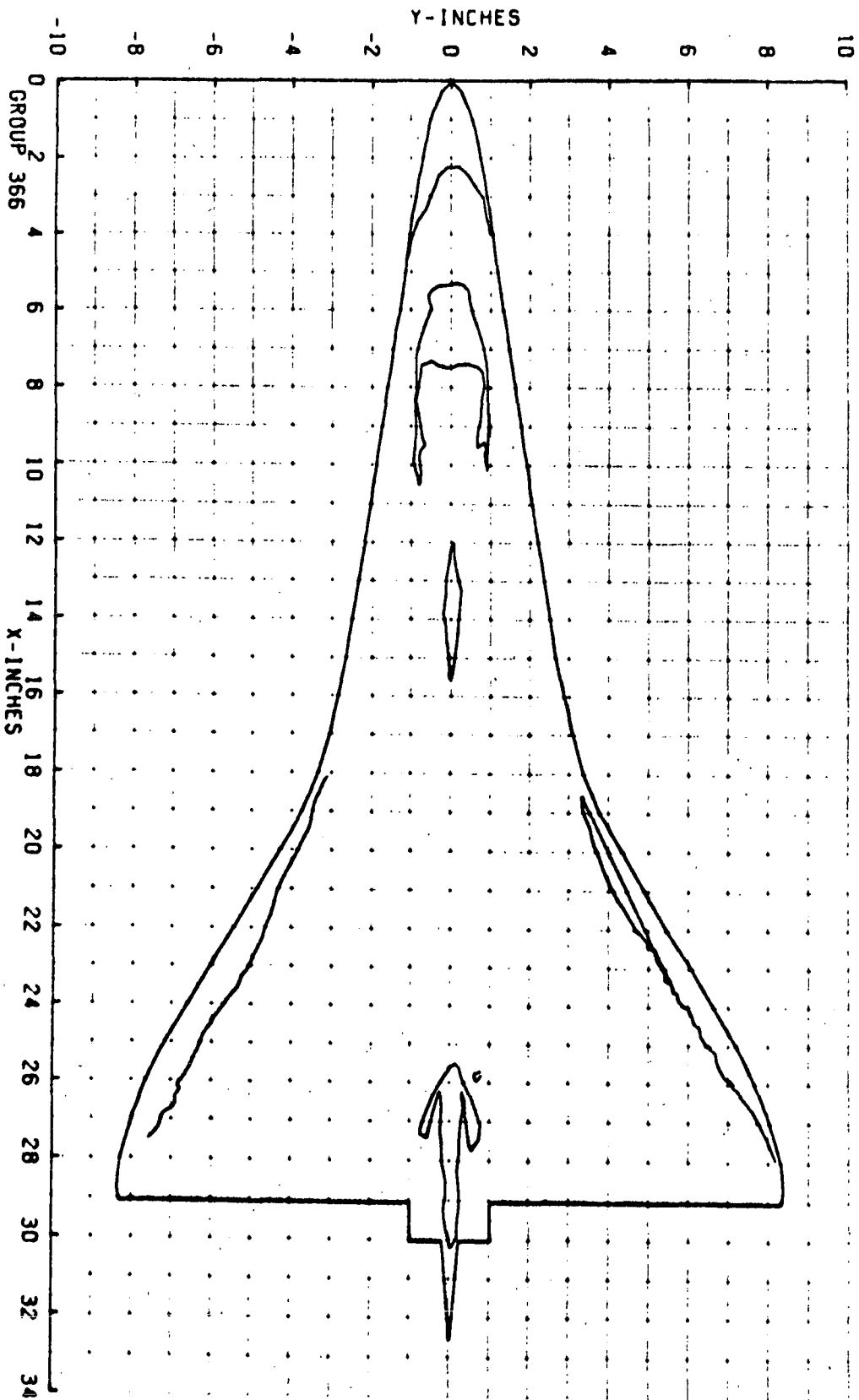
GROUP 363 PIC. NO. 2231 H/HREF 2.170E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.596E-02 RE/FT 2.540E 06 CONF NAR-DMD



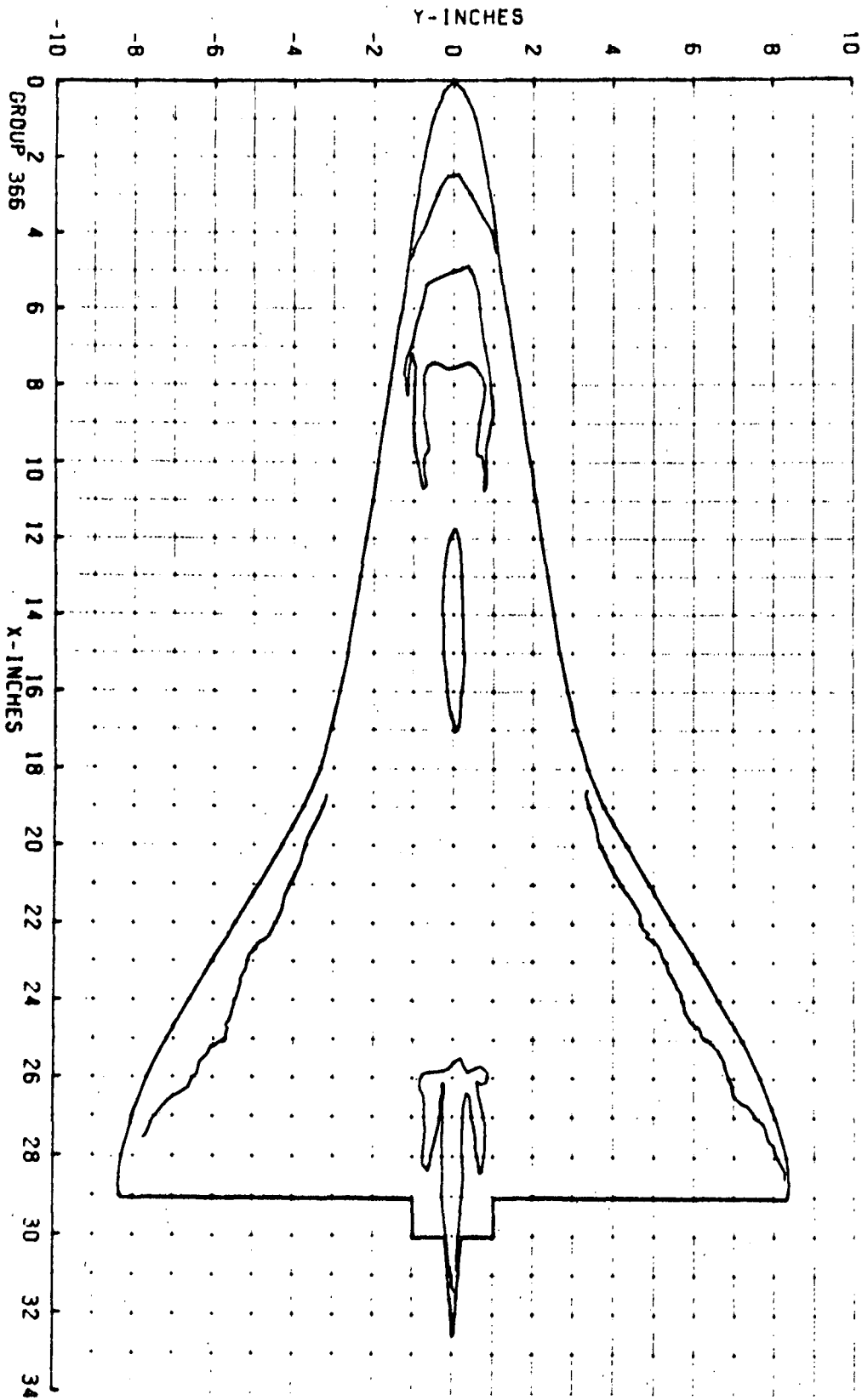
GROUP 366 PIC. NO. 2304 H/HREF 5.630E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NRR-DWO



GROUP 366 PIC. NO. 2315 H/HREF 2.810E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NNR-DWD



GROUP 366 PIC. NO. 2327 H/HREF 1.940E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 4.601E-02 RE/FT 2.550E 06 CONF NAR-DWO



9/21/71

AEDCLARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 8
V71162

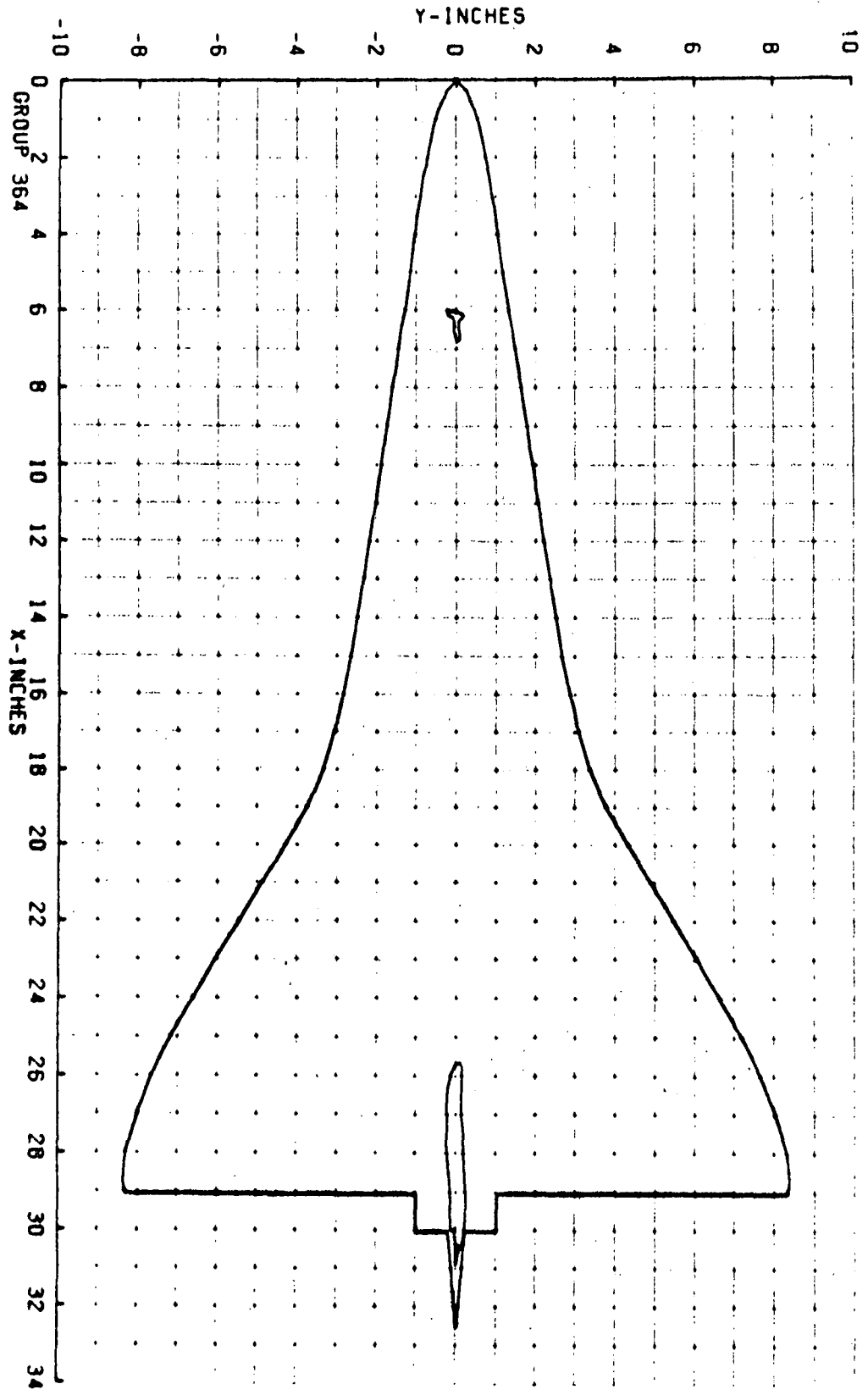
GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PIRENG ROLL-MODEL YAW
3A8 54 MAR-040 P.00 556.6 1313 20.03 2.97 -23.00 180.00 .0

T-1NF P-1NF G-1NF V-1NF RH0-1NF MU-1NF RE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .014FT)
95.1 .057 2.554 3023 5.028E-05 7.659E-08 2.51E 06 4.611E-02 2.986E-02

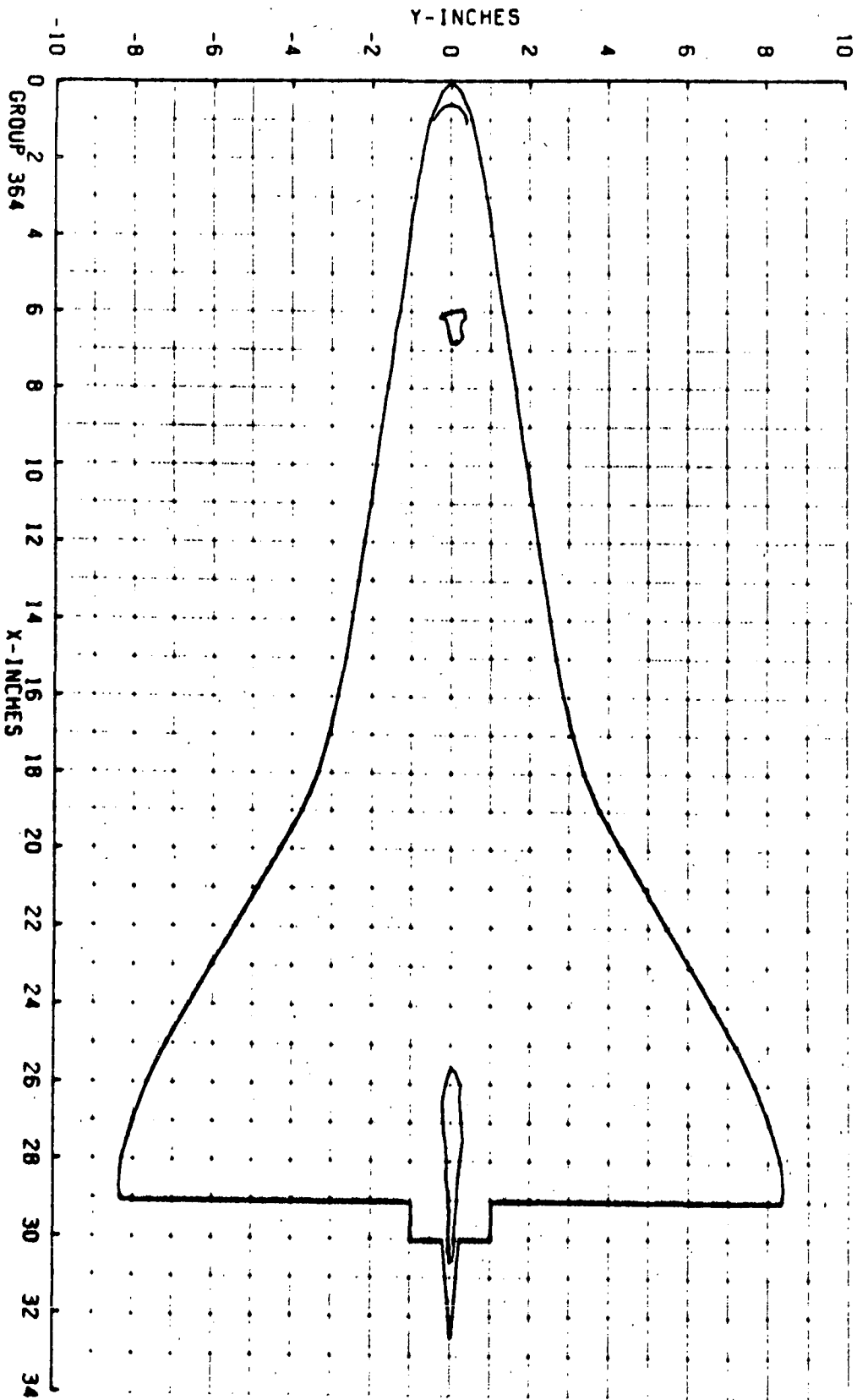
CAVEFA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RH0ACKX)
TOP(1) 150
SIDE(S) 150
ROTCM(B) 150
AVERAGE TW = 75
-0.008(SQUARE ROOT DEL TIME) * 0.11

PIC NO	TIME DELTIME	M(TO)	M(TO)/HREF	M(.9TO)	M(.9TO)/HREF	M(.85TO)	M(.85TO)/HREF	ST(TO)	MODEL TEMP F
8 2234 (150)	6.78 5.63	3.55E-03	.0769	4.343E-03	.0942	4.890E-03	.1040	2.300E-03	0 0 0
8 2247 (150)	13.65 12.54	2.13E-03	.0462	2.606E-03	.0565	2.932E-03	.0616	1.380E-03	0 0 0
8 2252 (150)	16.85 15.78	1.42E-03	.0395	2.230E-03	.0494	2.511E-03	.0544	1.180E-03	0 0 0

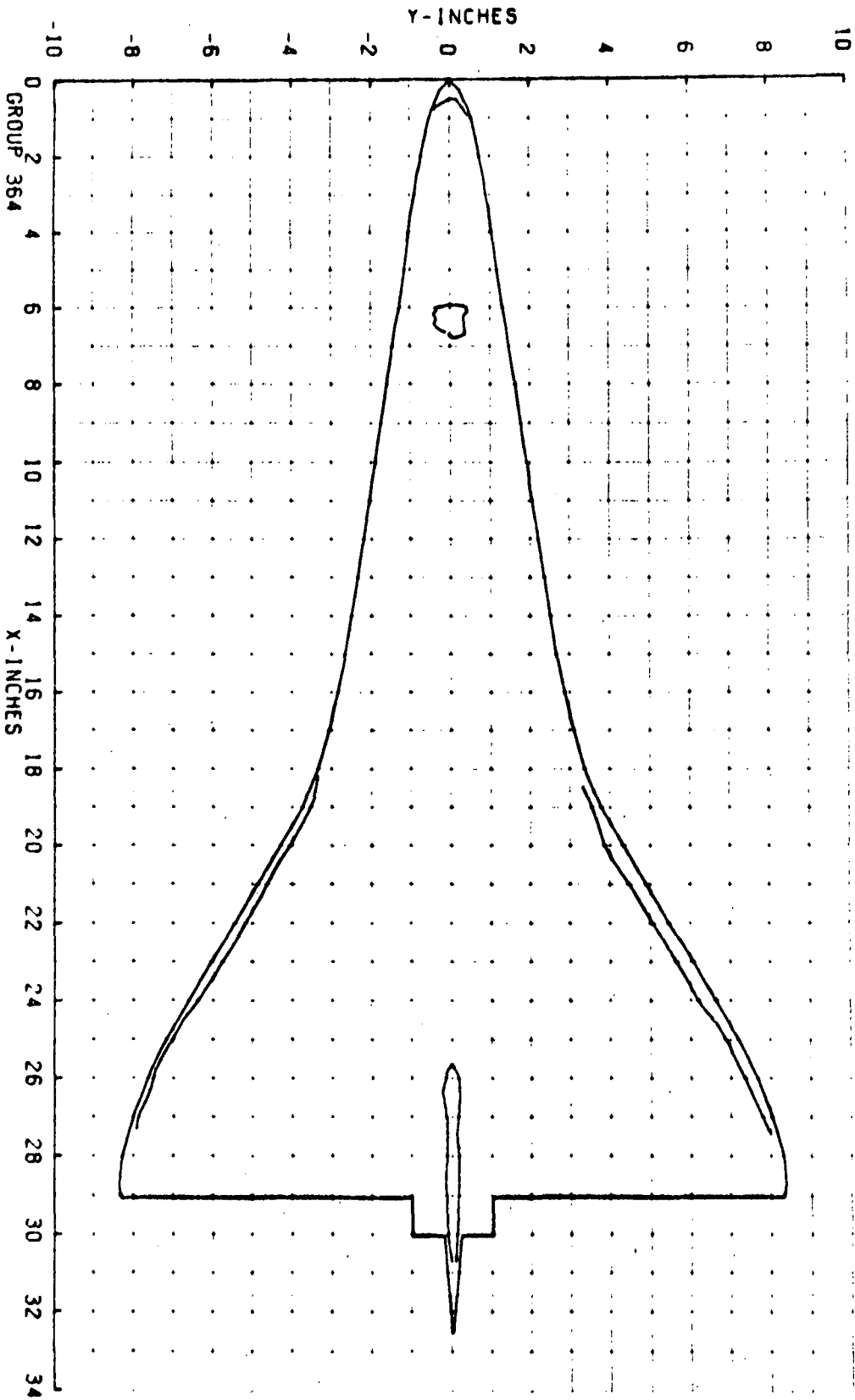
GROUP 364 PIC. NO. 2234 H/HREF 7.690E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2-SIDE 06 CONF NAR-DMD

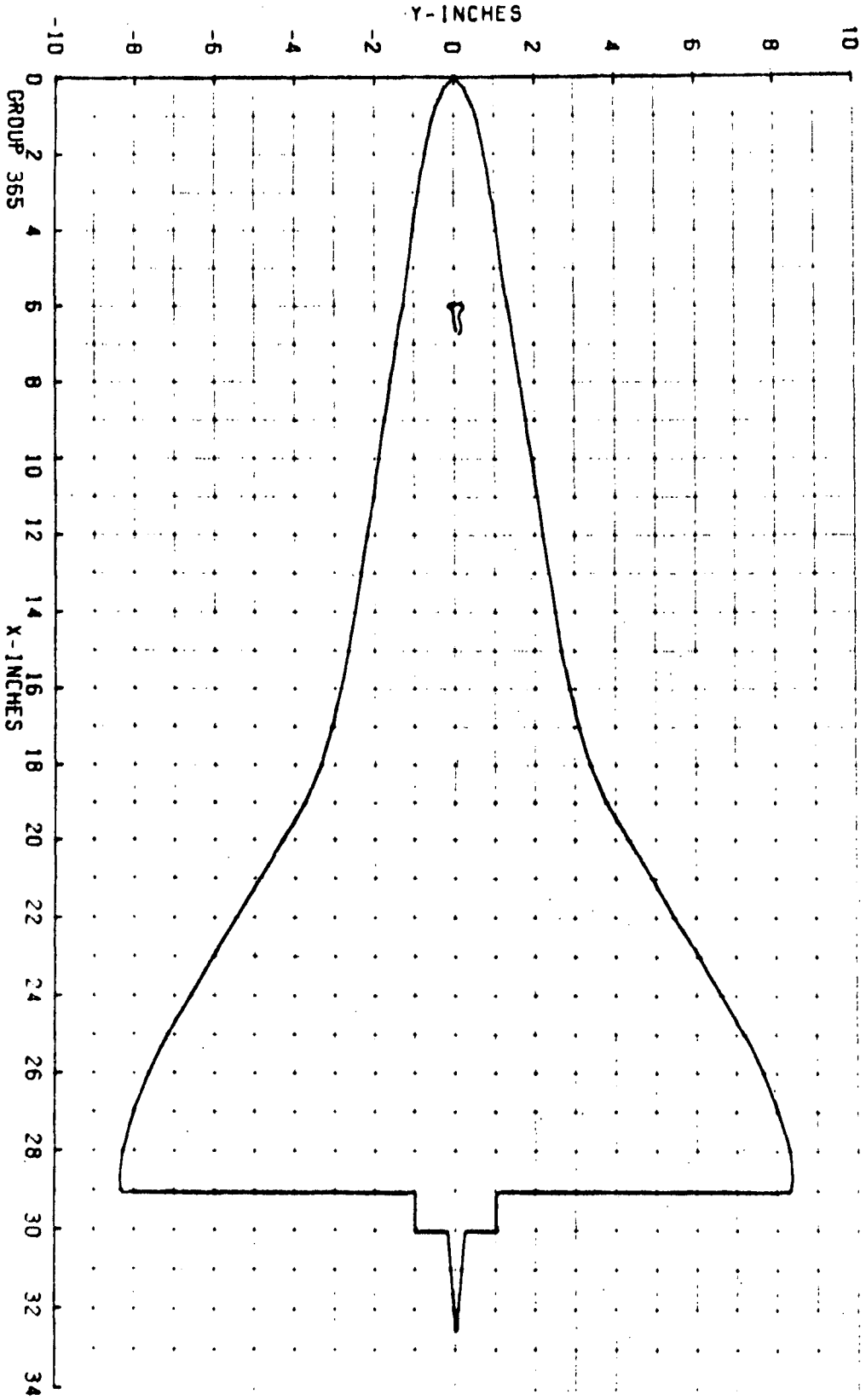


GROUP 364 PIC. NO. 2247 H/HREF 4.620E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2.51DE 06 CONF NRR-DMD



GROUP 364 PIC. NO. 2253 H/HREF 3.950E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.611E-02 RE/FT 2.510E 06 CONF NRR-DMO

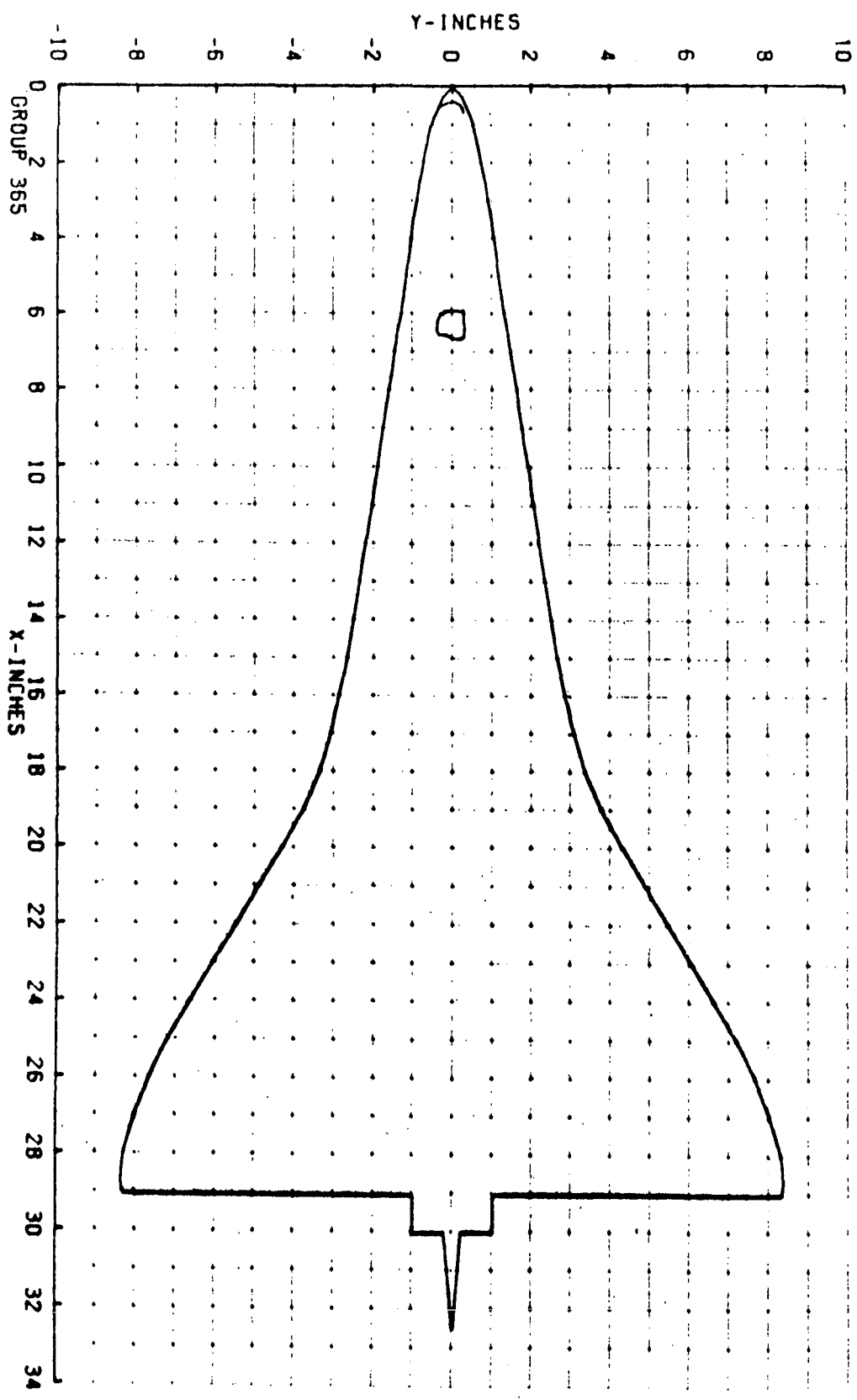




GROUP 365 PIC. NO. 2274 H/HREF 1.271E-01 MODEL SURFACE - TOP

MACH 8.00 ALPHA (DEG) 20.0 HREF 4.599E-02 RE/FT 2.540E 06 CONF NRR-DW0

GROUP 365 PIC. NO. 2295 H/HREF 5.610E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 20.0 HREF 4.599E-02 RE/FT 2.540E 06 CONF NAR-DMD



6/1/71
 AEDCIARNO, INC.) ARNOLD AFS, TENNESSEE
 VON KARMAN GAS DYNAMICS FACILITY
 50 INCH HYPERSONIC TUNNEL #
 VII162

GROUP CONF16 MODEL NAR-DND MACH NO 8.00 PN PSIA 553.3 TD DEG R 1311 ALPHA-MODEL 29.99 ALPHA-SECTOR -6.99 ALPHA-PREBEND -23.00 ROLL-MODEL 100.00 YAW .0

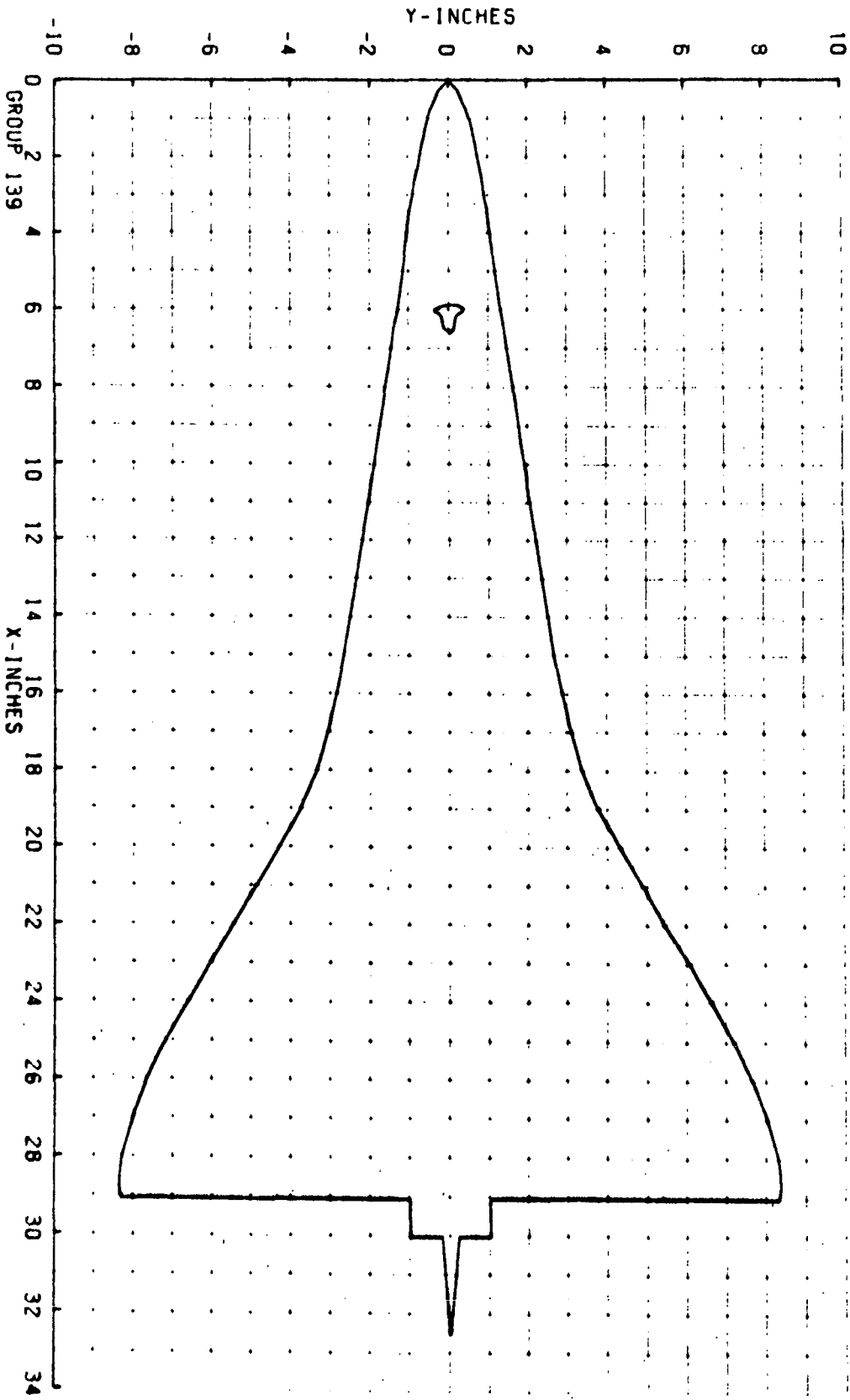
T-1NF P-1NF O-1NF V-1NF QNO-1NF MU-1NF RE/FT HREF STREF
 (DEG R) (PSIA) (PSIA) (FI/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R= .013FT) (R= .013FT)
 95.0 .057 2.539 3R20 5.007E-05 7.646E-08 2.50E 06 4.596E-02 2.991E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODIAKI)

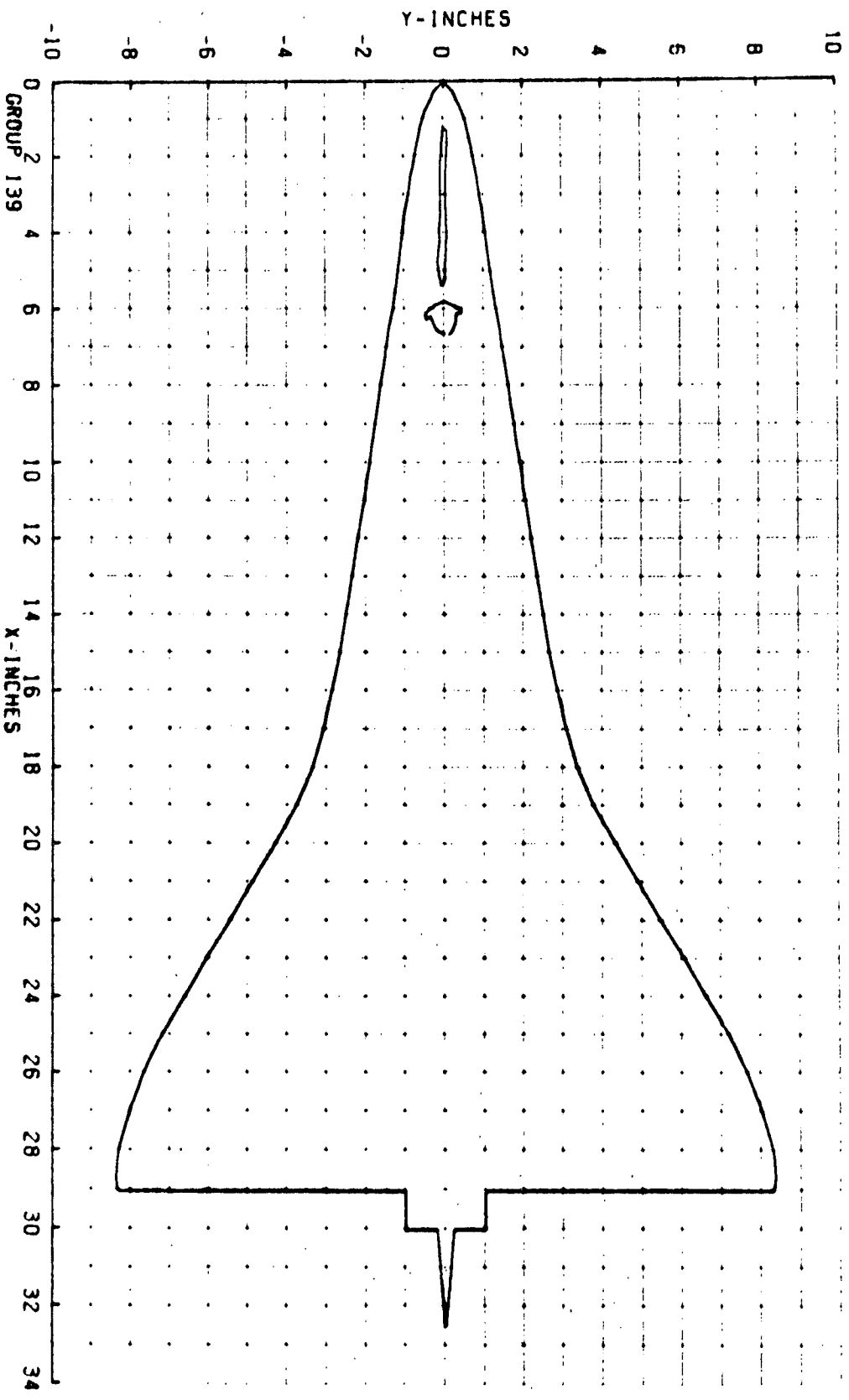
TOP(T) 200 AVERAGE T_w = 79 -0.0081(SQUARE ROOT DEL TIME) * 0.11
 SIDE(S) 113
 BOTTCM(B) 113

PTC NC	TIME DELTIME	M(TO)	M(TO)/MREF	M(.910)	M(.910)/MREF	M(.8510)	M(.8510)/MREF	ST(TO)	MODEL TEMP F
8 282 (112)	3.20	2.13	2.74E-03	.0596	3.326E-03	.0723	3.723E-03	1.788E-03	0 79 0 0
8 382 (112)	5.80	4.77	1.73E-03	.0377	2.103E-03	.0458	2.354E-03	1.132E-03	0 80 0 0
8 411 (112)	17.95	16.88	7.64E-04	.0166	9.275E-04	.0202	1.038E-03	4.997E-04	0 83 0 0

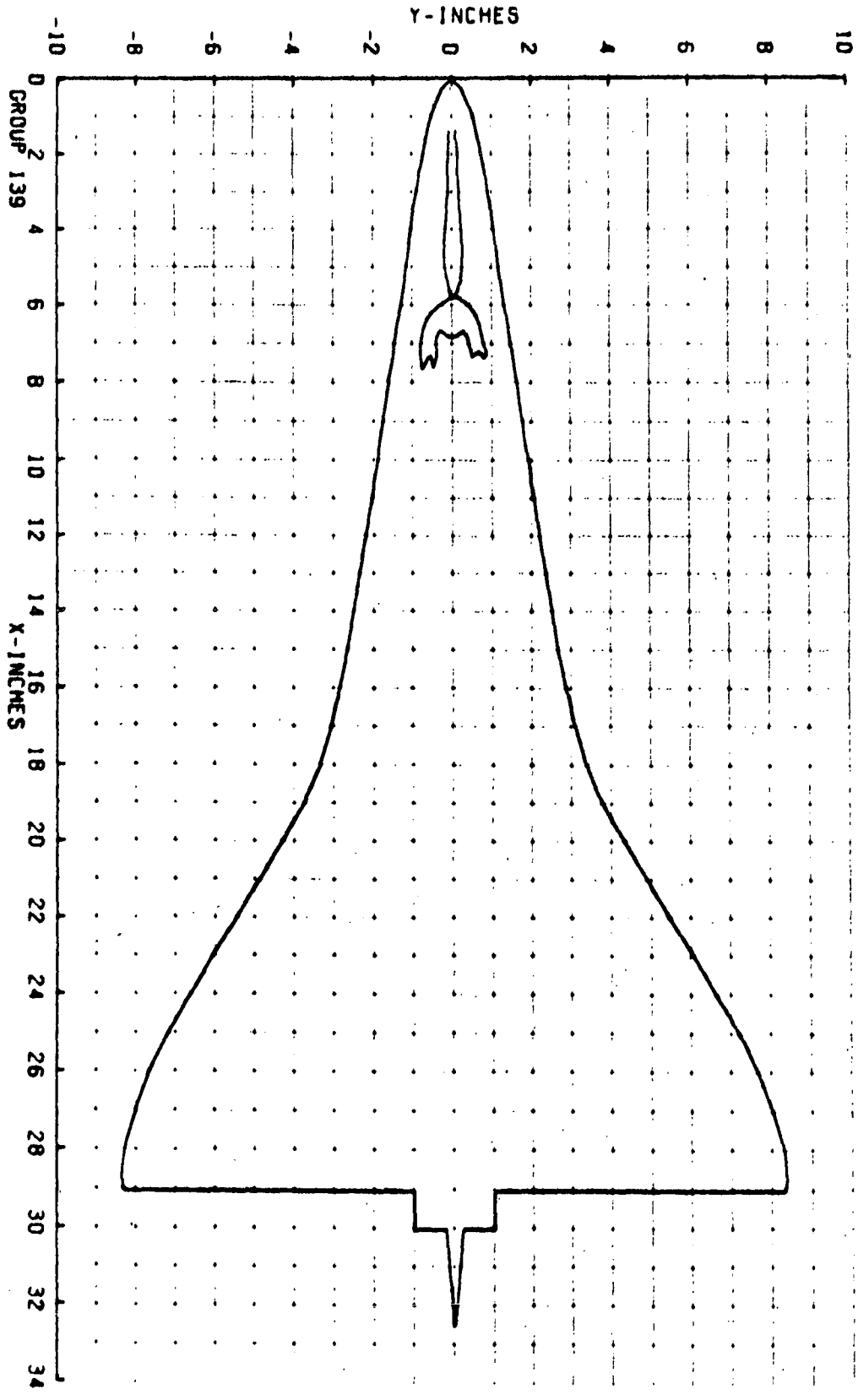
GROUP 139 PIC. NO. 383 H/HREF 5.960E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.50DE 06 CONF NRR-DMD



GROUP 139 PIC. NO. 388 H/HREF 3.770E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.500E 06 CONF NAR-DMD



GROUP 139 PIC. NO. 411 H/HREF 1.66DE-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 30.0 HREF 4.596E-02 RE/FT 2.50DE 06 CONF NAR-DMD



5/29/71

AFDC(ARN,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP CONFIG MODEL MACM NO PN PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-DRIBEND ROLL-MODEL YAW
118 51 NAR-DW0 8.00 554.3 1315 39.99 10.01 -50.00 180.00 .0

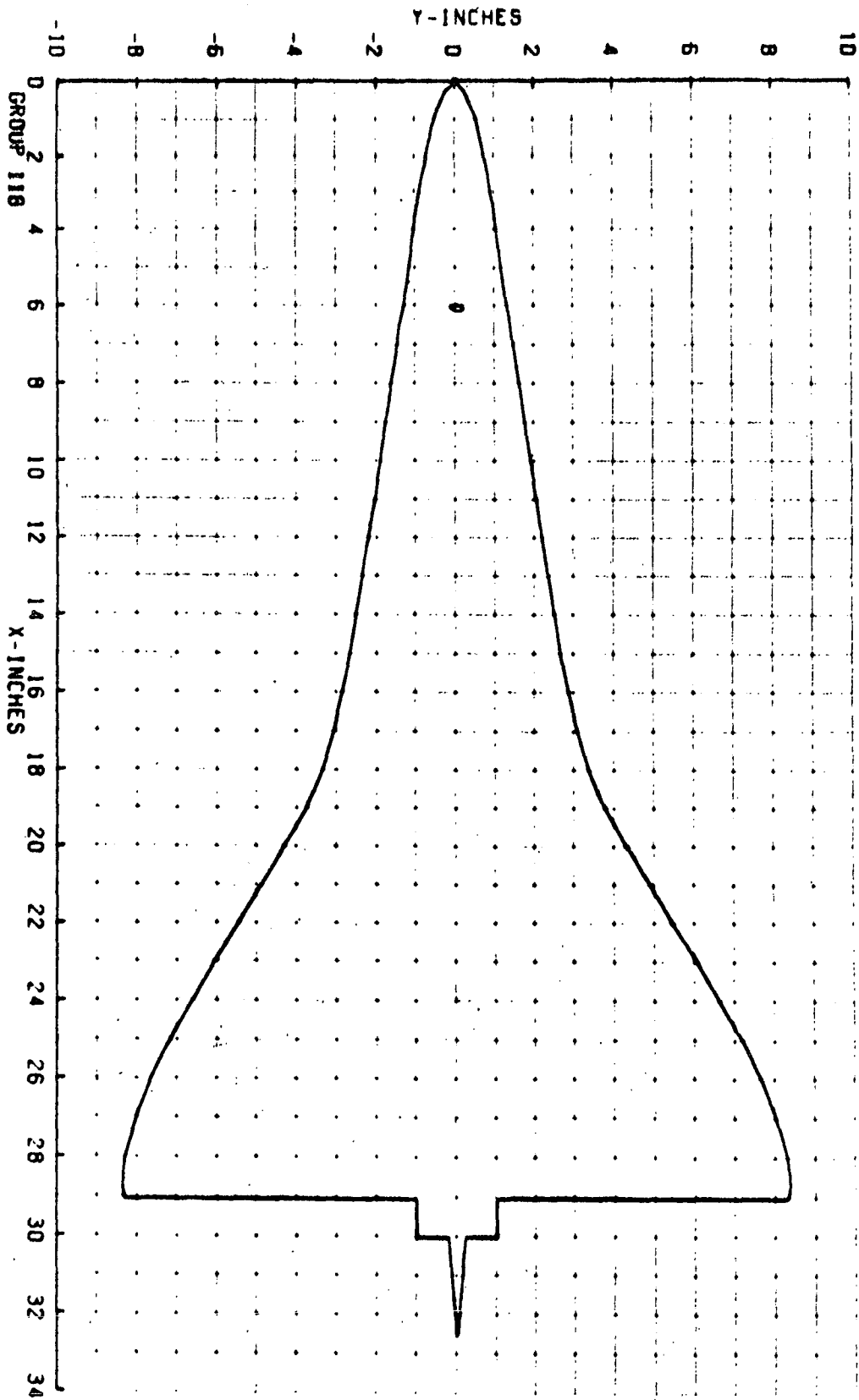
T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STRF
(DEG R) (PCTA) (PST) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R=.013FT) (R=.019FT)
95.3 .657 2.544 3827 4.998E-05 7.673E-08 2.49E 06 4.603E-02 2.995E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCRK)

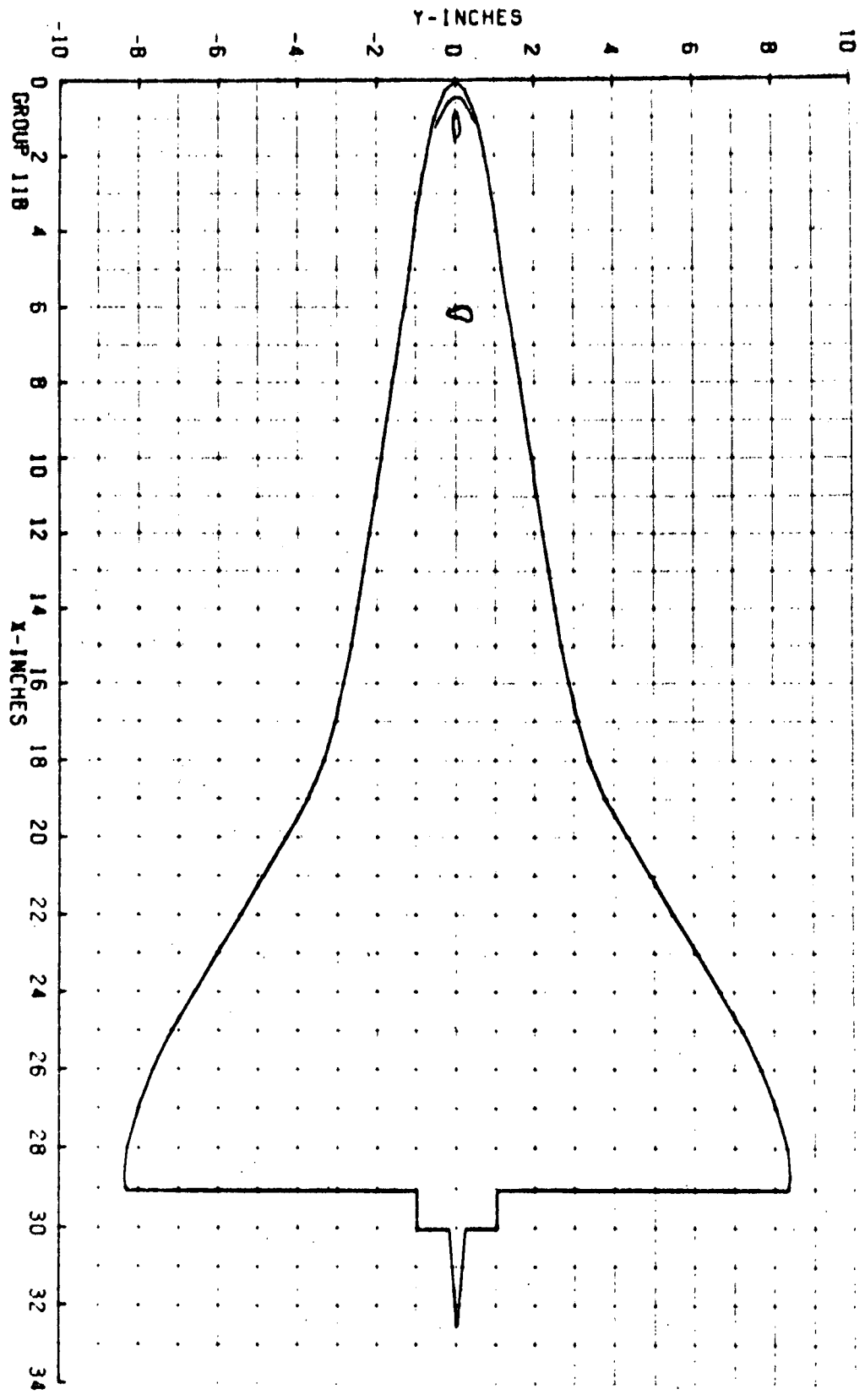
TOP(11) 200 AVERAGE TW = 85 -0.008(SQUARE ROOT DEL TIME) * 0.11
SIDE(S) 113
POTTCW(18) 113

PIC NO	TIME DELTIVE	H(TO)	H(REF)	H(.910)	H(.910)/HREF	H(.8510)	H(.8510)/HREF	ST(TO)	MODEL TEMP F
R 9576 (113)	4.10	3.01	1.84E-03	.0399	2.232E-03	2.499E-03	.0543	1.199E-01	0
R 9585 (113)	8.75	7.66	1.05E-03	.0229	1.278E-03	1.431E-03	.0311	6.873E-04	0
R 9585 (113)	10.85	9.74	9.03E-04	.0196	1.096E-03	1.227E-03	.0266	5.892E-04	0
R 959E (113)	14.45	13.36	7.33E-04	.0159	8.896E-04	9.959E-04	.0216	4.785E-04	0

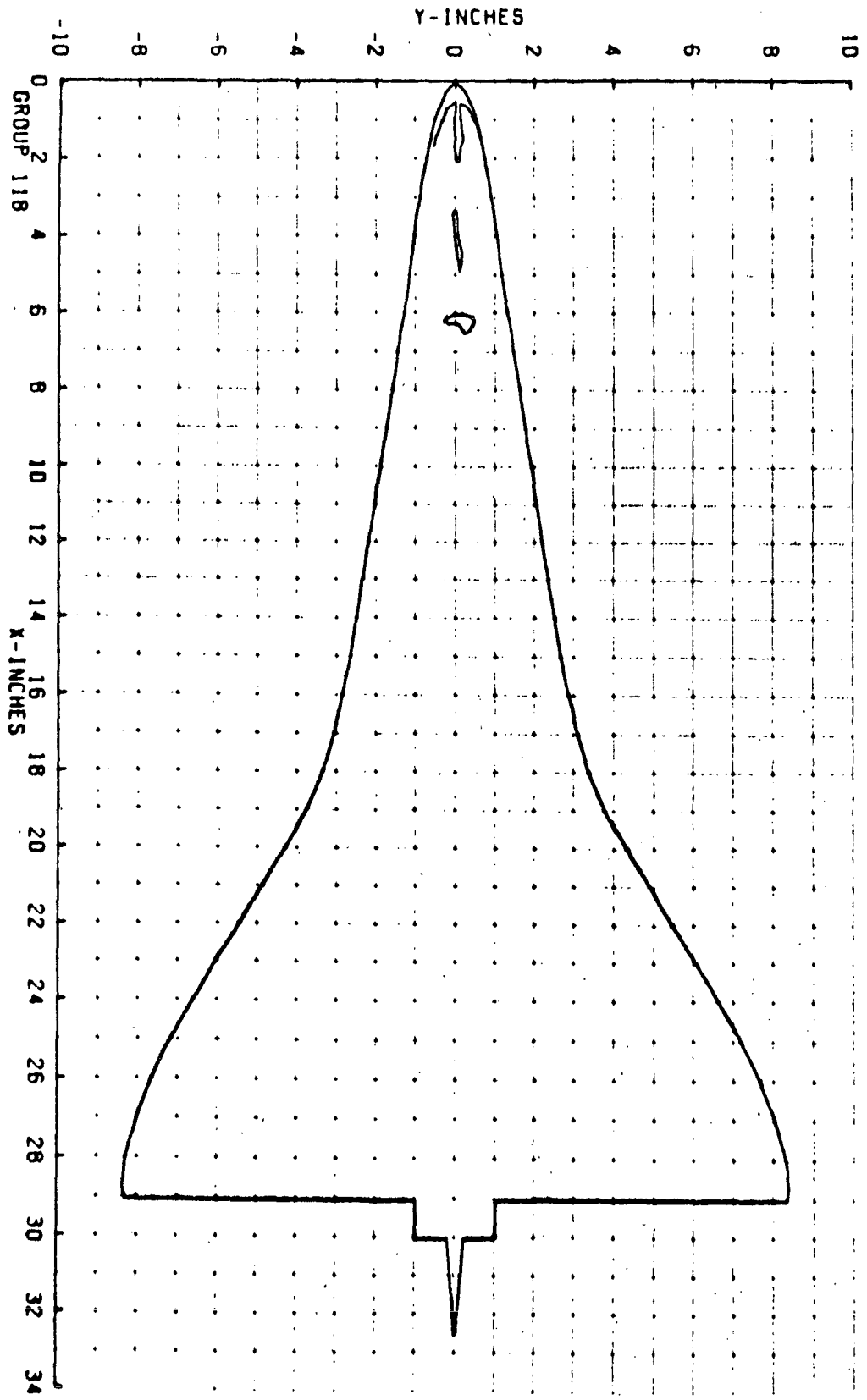
GROUP 118 PIC. NO. 9576 H/HREF 3.990E-02 MODEL SURFACE - TOP
RSCM 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NAR-DMD



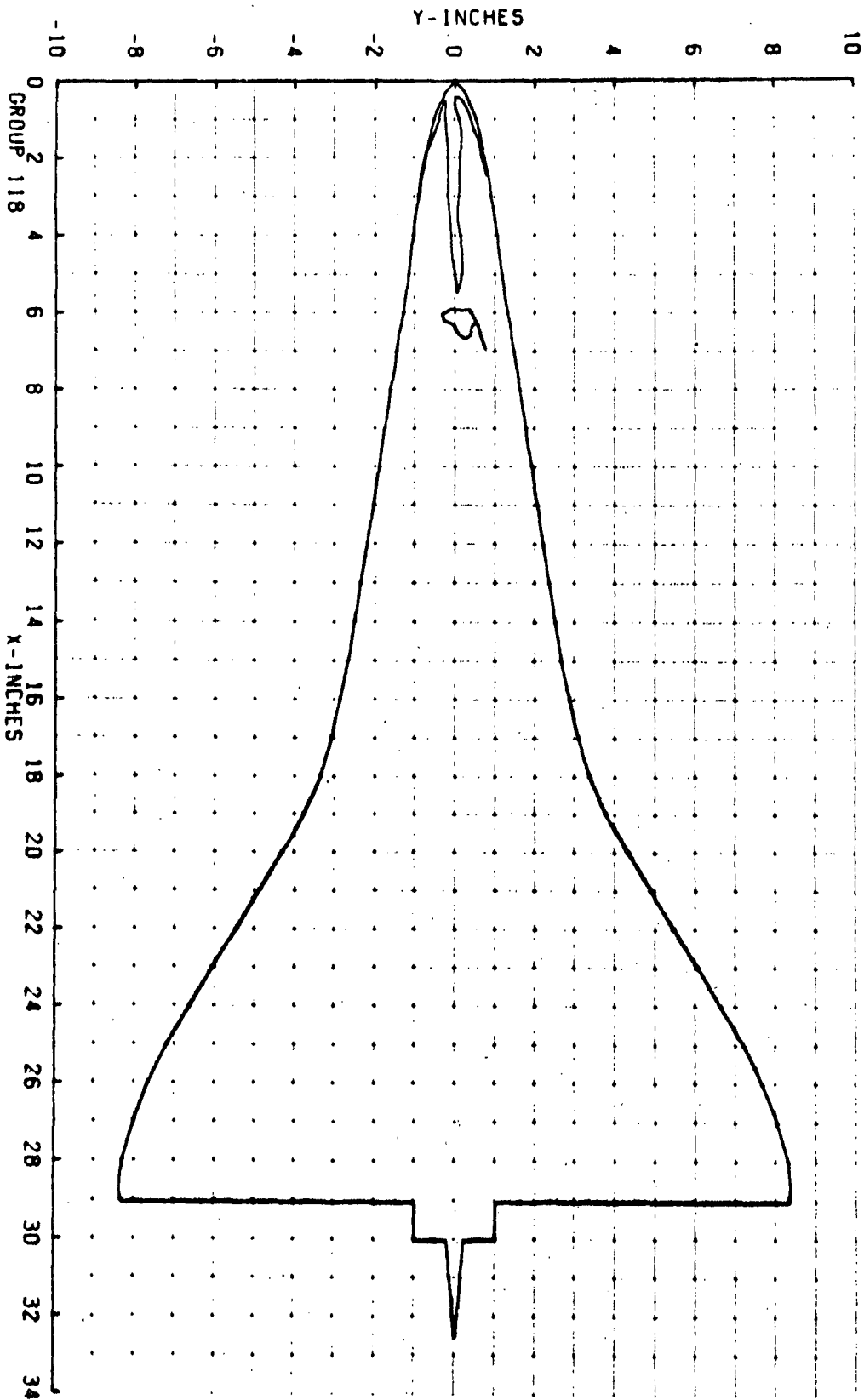
GROUP 118 PIC. NO. 9585 H/HREF 2.290E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 WREF 4.603E-02 RE/FT 2.490E 06 CONF NAR-DWD



GROUP 118 PIC. NO. 9589 H/HREF 1.960E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NAR-DW0



GROUP 118 PIC. NO. 9596 H/HREF 1.590E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.603E-02 RE/FT 2.490E 06 CONF NRR-DWD

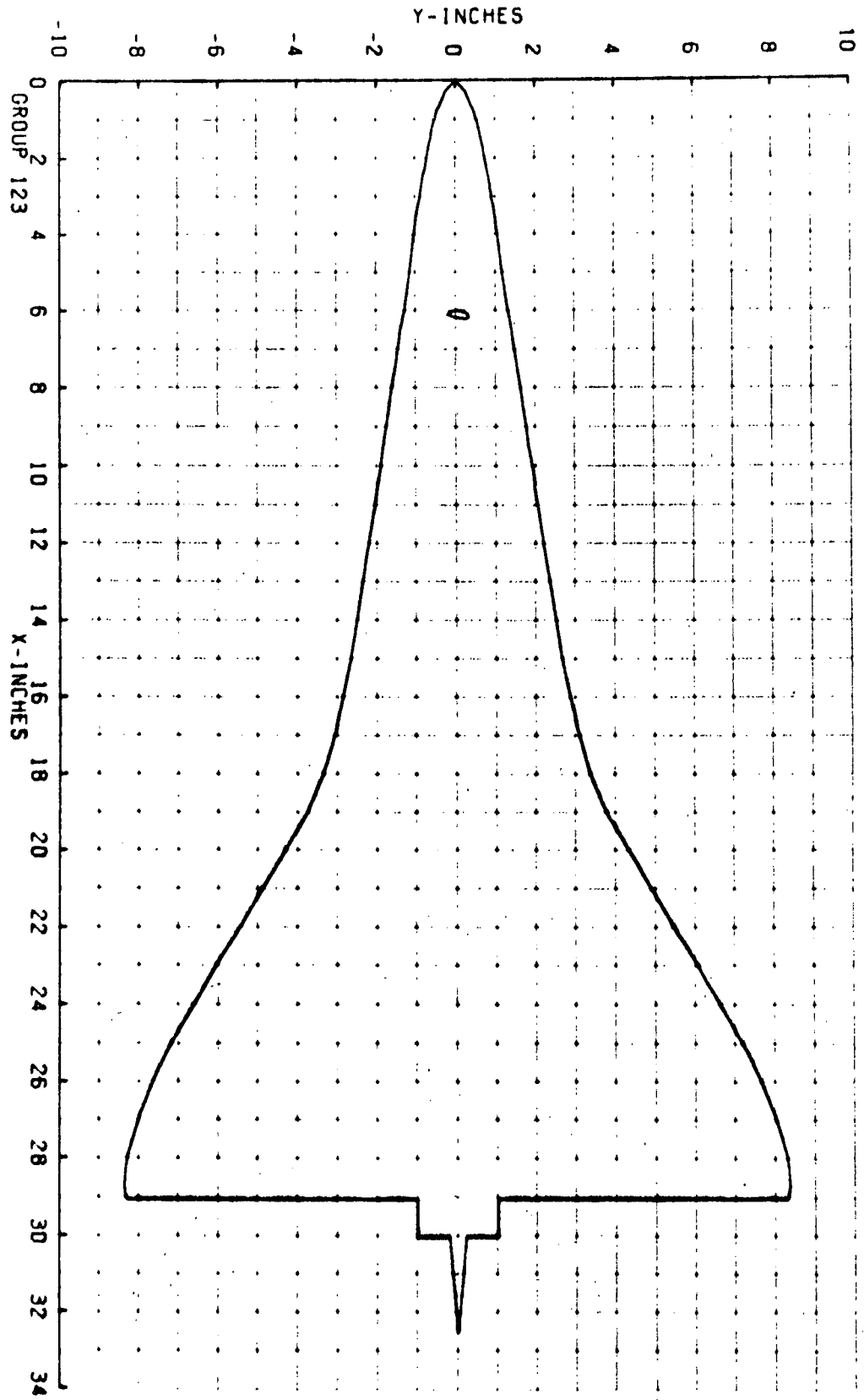


6/ 1/71

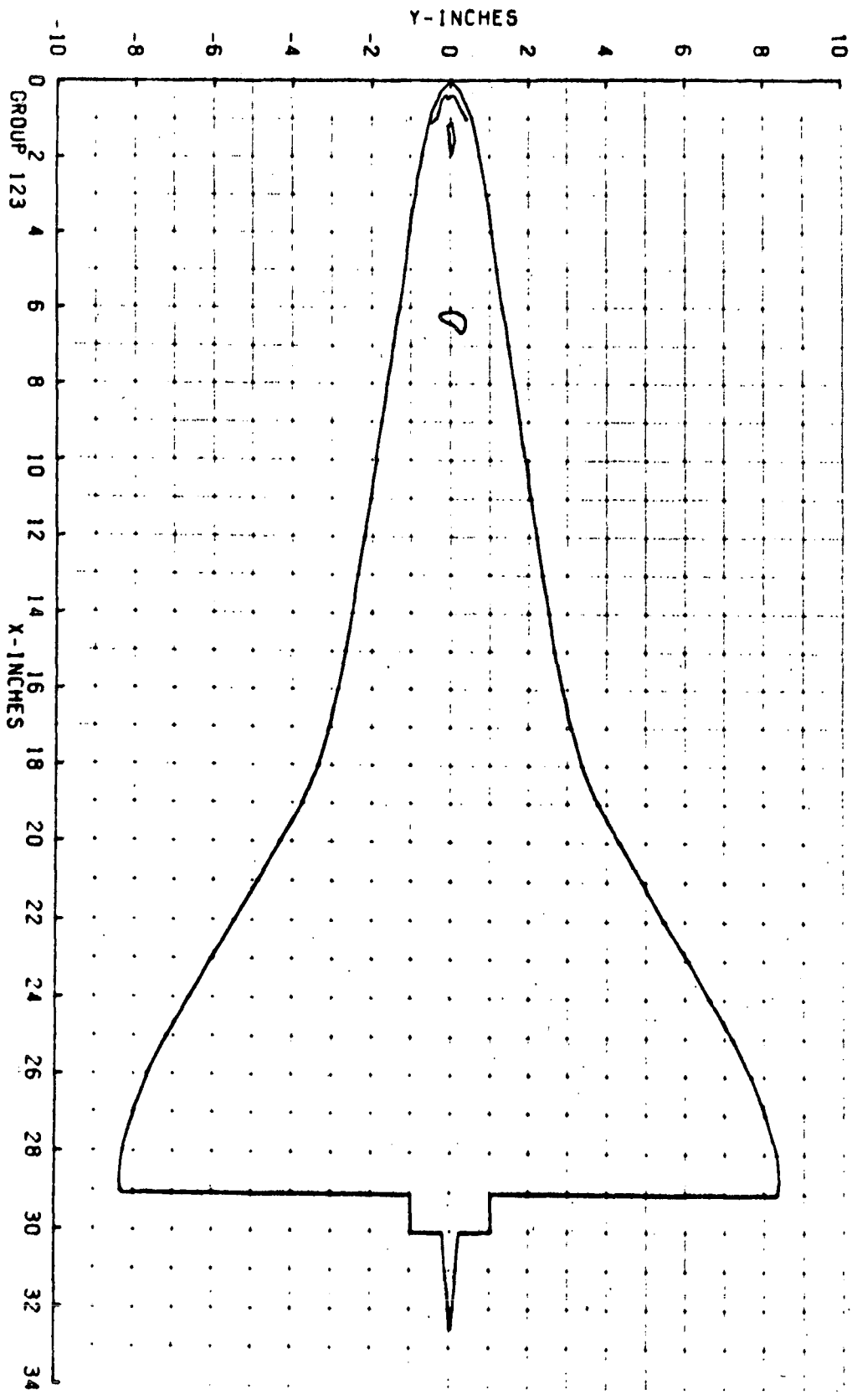
AEDC(ARND, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP	CONFIG	MODEL	MACH NO	PO PSIA	TO DEG R	ALPHA-ANGLE	ALPHA-SECTOR	ALPHA-PREREND	ROLL-ANGLE	YAW				
123	51	AR-D=0	8.08	552.4	1303	40.03	9.97	-50.00	180.00	00				
T-1NF P-1NF G-1NF V-1NF RMO-1NF MU-1NF RE/FT HREF STREF														
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT ³) (LB-SEC/FT ²) (FT-1) (R=.013FT) (R=.013FT)														
94.4 .057 2.535 3809 5.029E-05 7.601E-08 2.52E 06 4.588E-02 2.983E-02														
CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCKX)														
TOP(T) 200														
SICETS) 117														
ROTICR(8) 113														
AVERAGE T _w = 85														
-0.008(SQUARE ROOT DEL TIME) * 0.11														
PIC NO TIME DELTIME M(TO) M(TO)/HREF M(.9TO) M(.9TO)/HREF M(.85TO) M(.85TO)/HREF M(.85TO) M(.85TO)/HREF M(TO) MODEL TEMP F														
8	9870 (113)	3.70	2.64	2.63E-03	.0442	2.468E-03	.0537	2.759E-03	.0611	1.322E-03	85	84	87	0
8	9880 (113)	9.00	7.94	1.64E-03	.0230	1.285E-03	.0280	1.439E-03	.0314	6.891E-04	101	86	96	0
8	9890 (113)	14.25	13.21	7.60E-04	.0166	9.230E-04	.0201	1.034E-03	.0275	4.952E-04	121	87	108	0

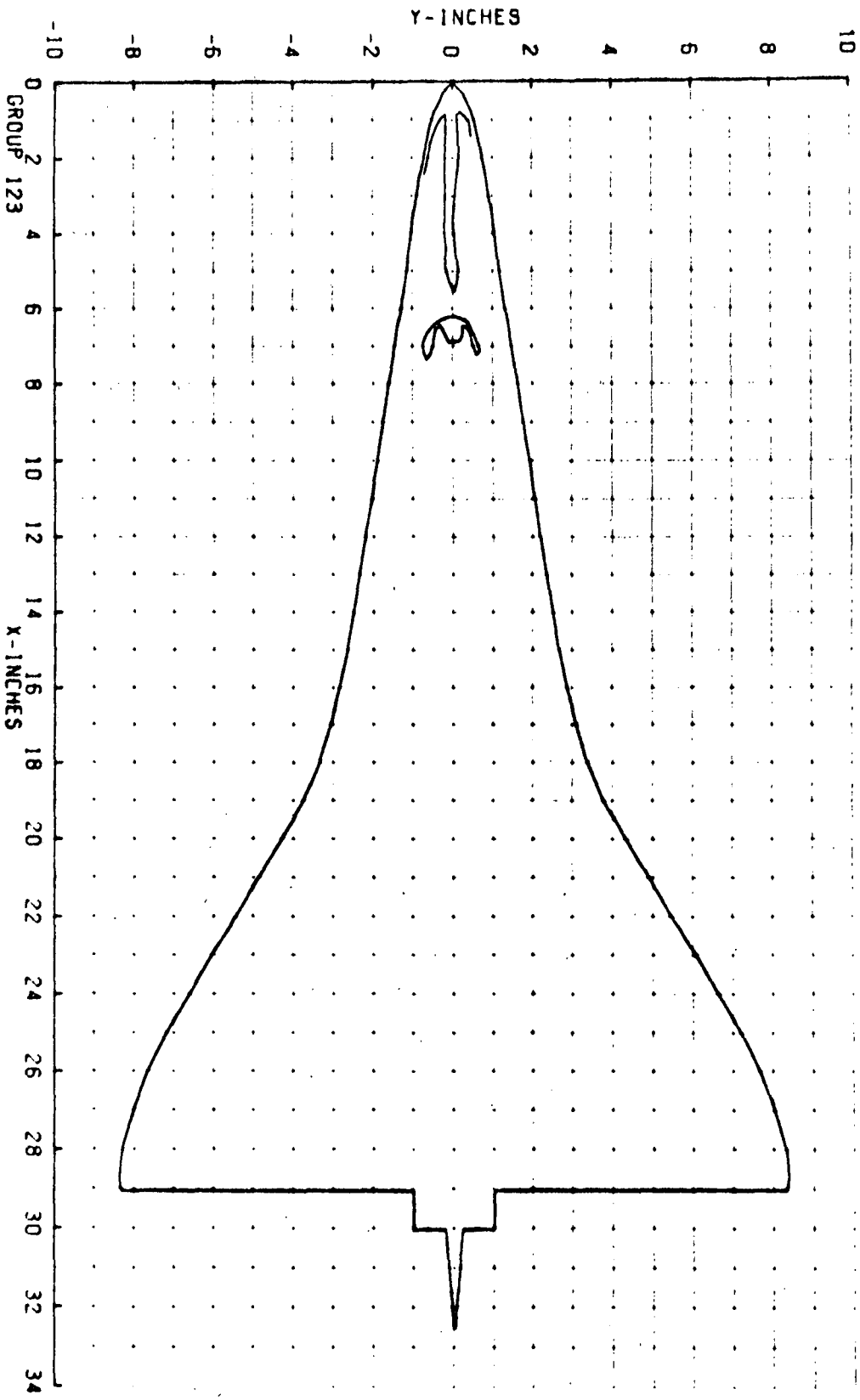
GROUP 123 PIC. NO. 9870 H/HREF 4.420E-02 MODEL SURFACE - TDP
MACH 8.00 ALPMA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.520E 06 CONF NRR-DWD



GROUP 123 PIC. NO. 9880 H/HREF 2.300E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.520E 06 CONF NRR-DWD



GROUP 123 PIC. NO. 9890 H/HREF 1.660E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.520E 06 CONF NAR-DMO



6/1/71

AEDC(ARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP 126 CONFID 51 MODEL NAR-DHO MACW NO 8.00 PO PSIA 552.2 TO DEG R 1304 ALPHA-MODEL 40-01 ALPHA-SECTOR 9.99 ALPHA-PREBEND -50.00 ROLL-MODEL 180.00 YAW .0

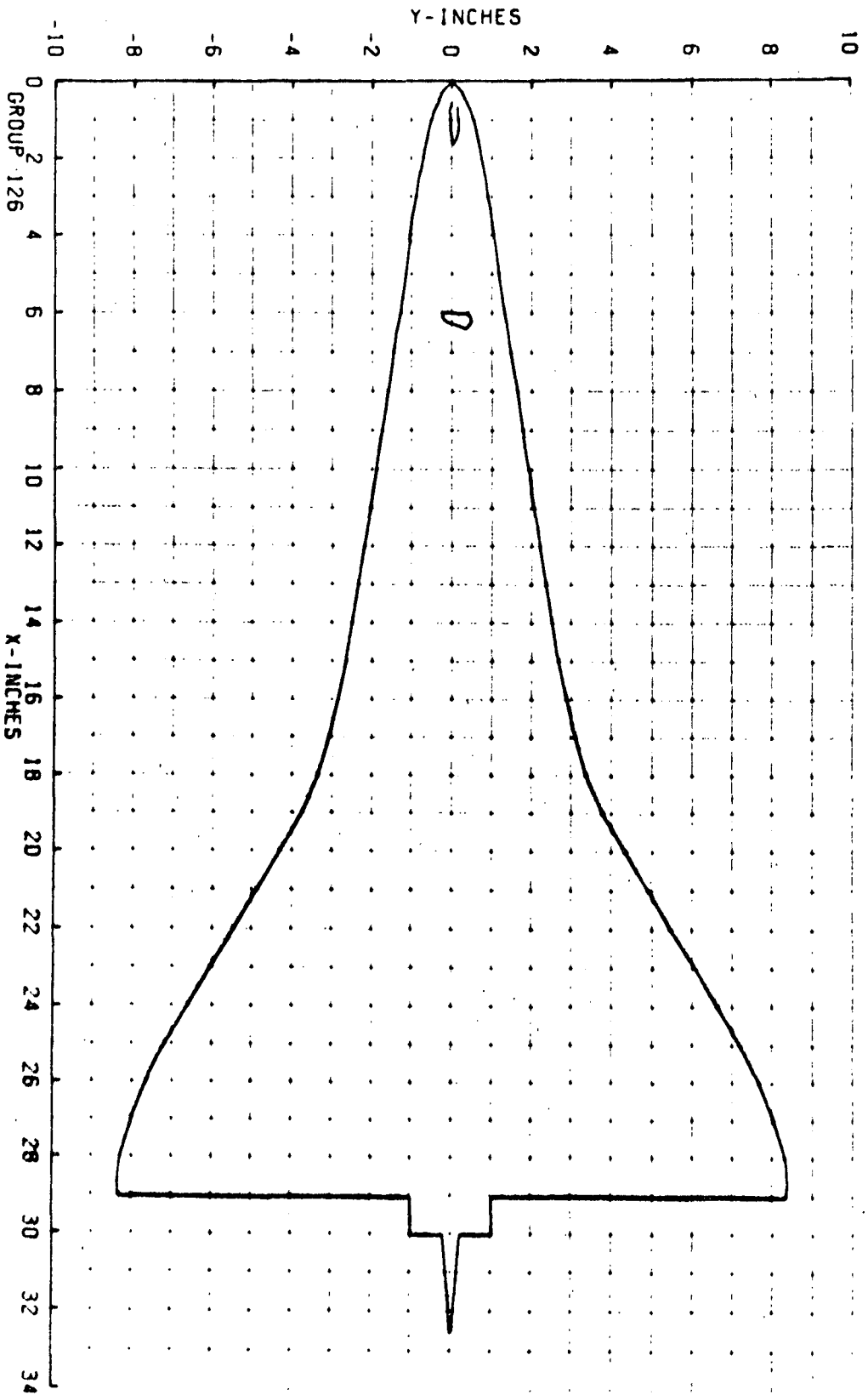
T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R= .013FT) (R= .013FT)
94.5 .057 2.534 3411 5.021E-05 7.609E-08 2.51E 06 4.588E-02 2.986E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOKC/K)

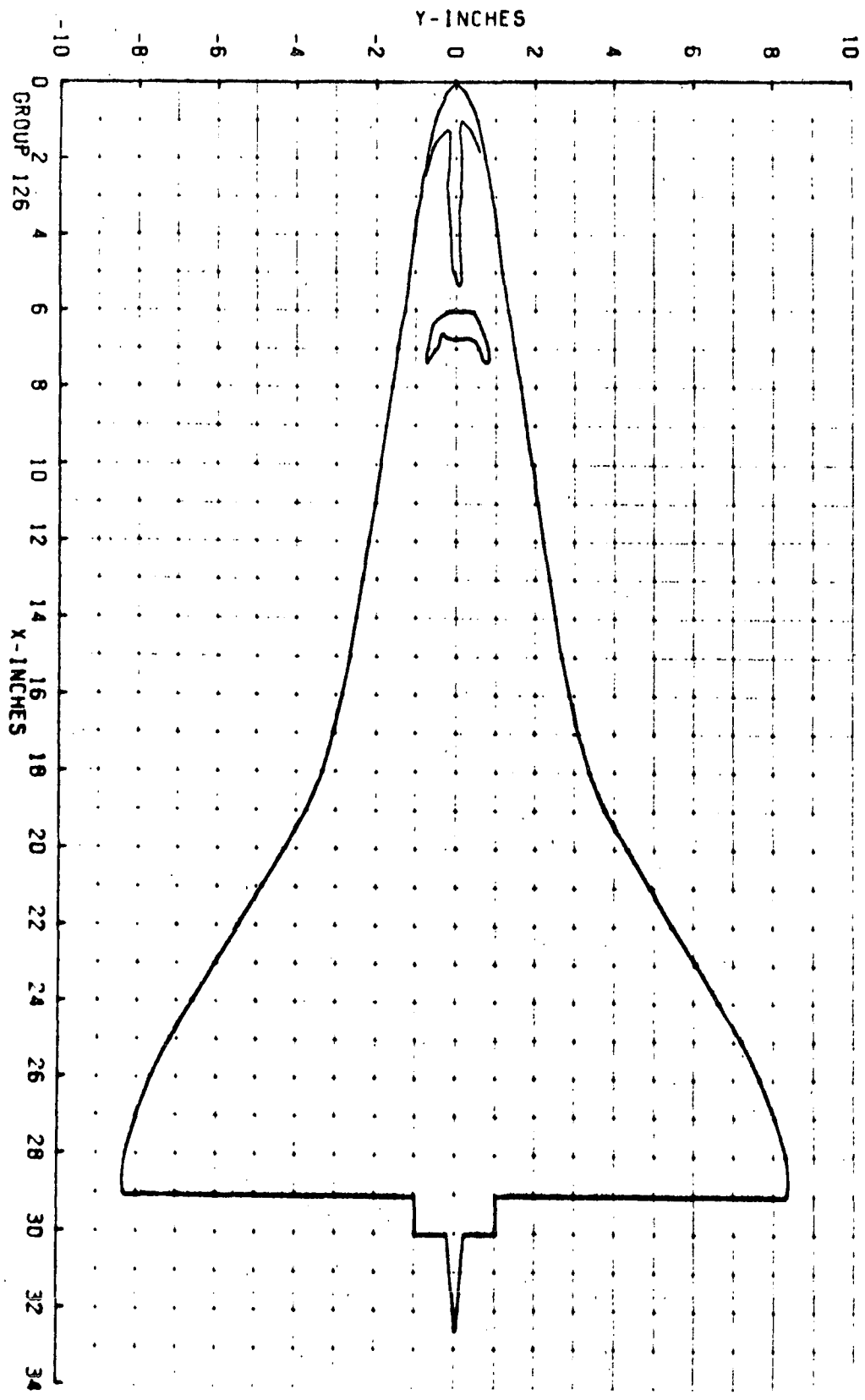
TOP(T) 150 AVERAGE TW = 84 -0.008(SQUARE ROOT DEL TIME) * 0.11
SIDE(S) 113
ROT(CM/8) 113

PIC MC TIME DELTIME H(TO) H(TO)/HREF H(.9TO) H(.9TO)/HREF H(.85TO) H(.85TO)/HREF ST(TO) MODEL TEMP F
B 9980 (113) 7.40 6.35 1.23E-03 .0268 1.495E-03 .0326 1.674E-03 .0365 8.024E-04 94 84 92
B 10000 (113) 18.00 16.96 6.46E-04 .0141 7.853E-04 .0171 8.795E-04 .0192 4.212E-04 133 88 123

GROUP 126 PIC. NO. 998D H/HREF 2.680E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.510E 06 CONF. NAR-DMD



GROUP 126 PIC. NO. 10000 H/HREF 1.410E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 4.588E-02 RE/FT 2.510E 06 CONF NAR-DWD



5/29/71

AFDC(ARND) INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V1162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
121 51 NAR-DNO 8.00 552.2 1298 50.00 -0.00 -50.00 180.00 0

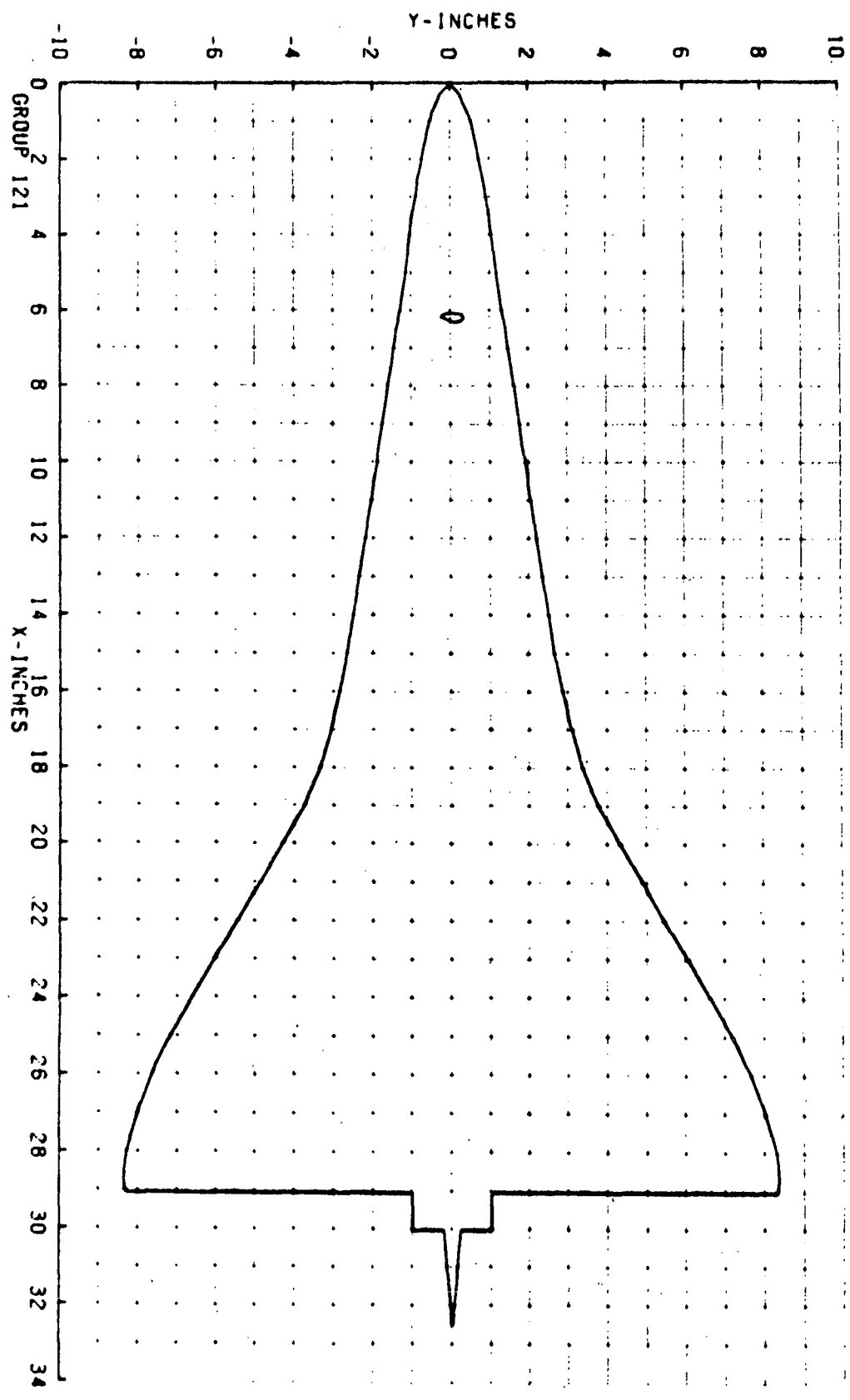
T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STRF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (R=.0136FT)
94.1 .057 2.534 3802 5.044E-05 7.575E-08 2.53E 06 4.584E-02 2.978E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CXK)

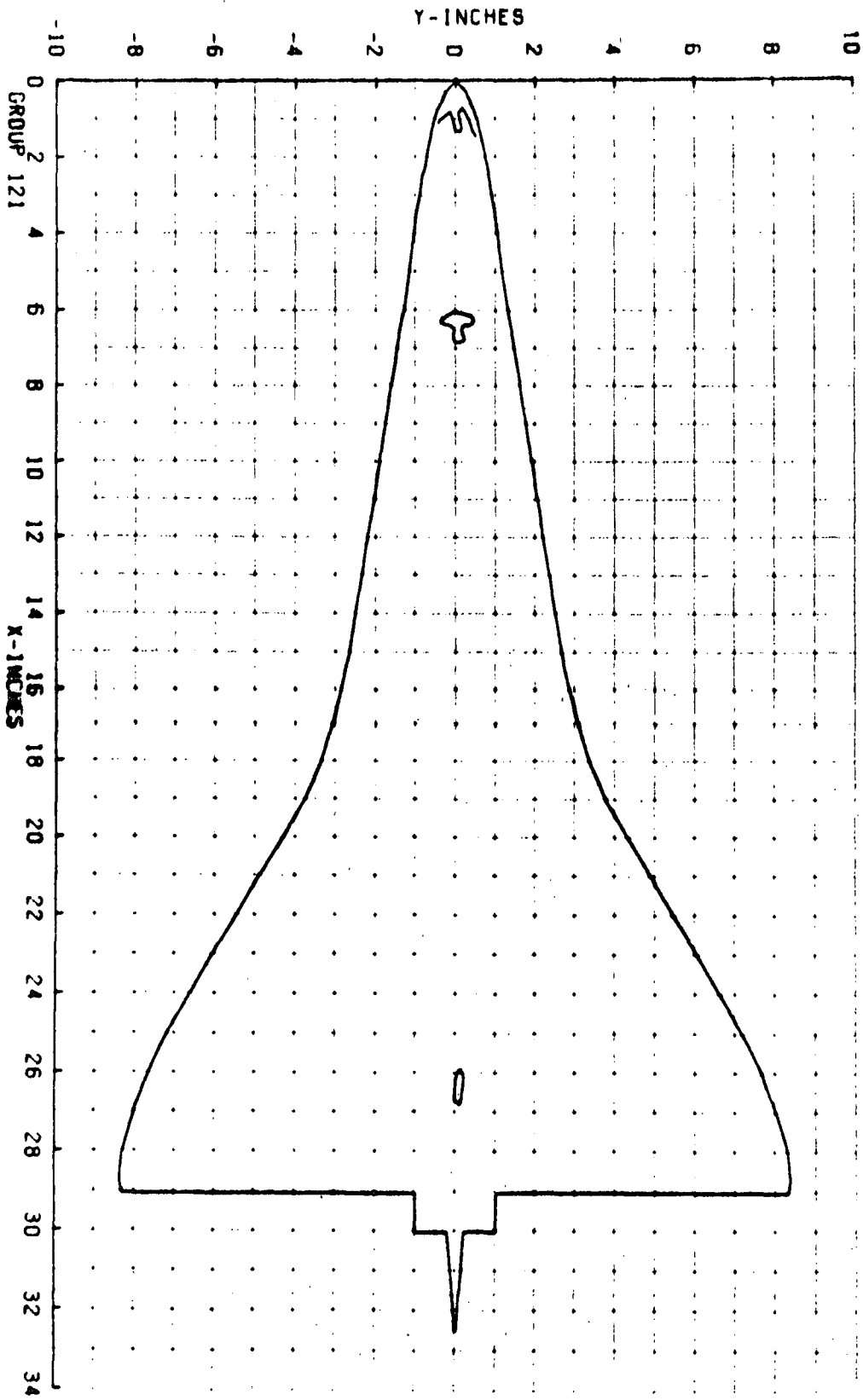
TOP(I) 150 AVERAGE TM = 88 -0.008(SQUARE ROOT DEL TIME) * 0.11
SIDE(S) 150
ROTCM(I8) 150

PIC NC	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F
8 9682 (150)	5.75	4.69	3.36E-03	.0732	4.121E-03	4.648E-03	.1014	2.182E-03	0 0 0
8 9690 (150)	9.45	8.30	2.35E-03	.0513	2.886E-03	3.255E-03	.0710	1.529E-03	0 0 0
8 9701 (150)	15.20	14.13	1.67E-03	.0363	2.046E-03	2.307E-03	.0503	1.003E-03	0 0 0

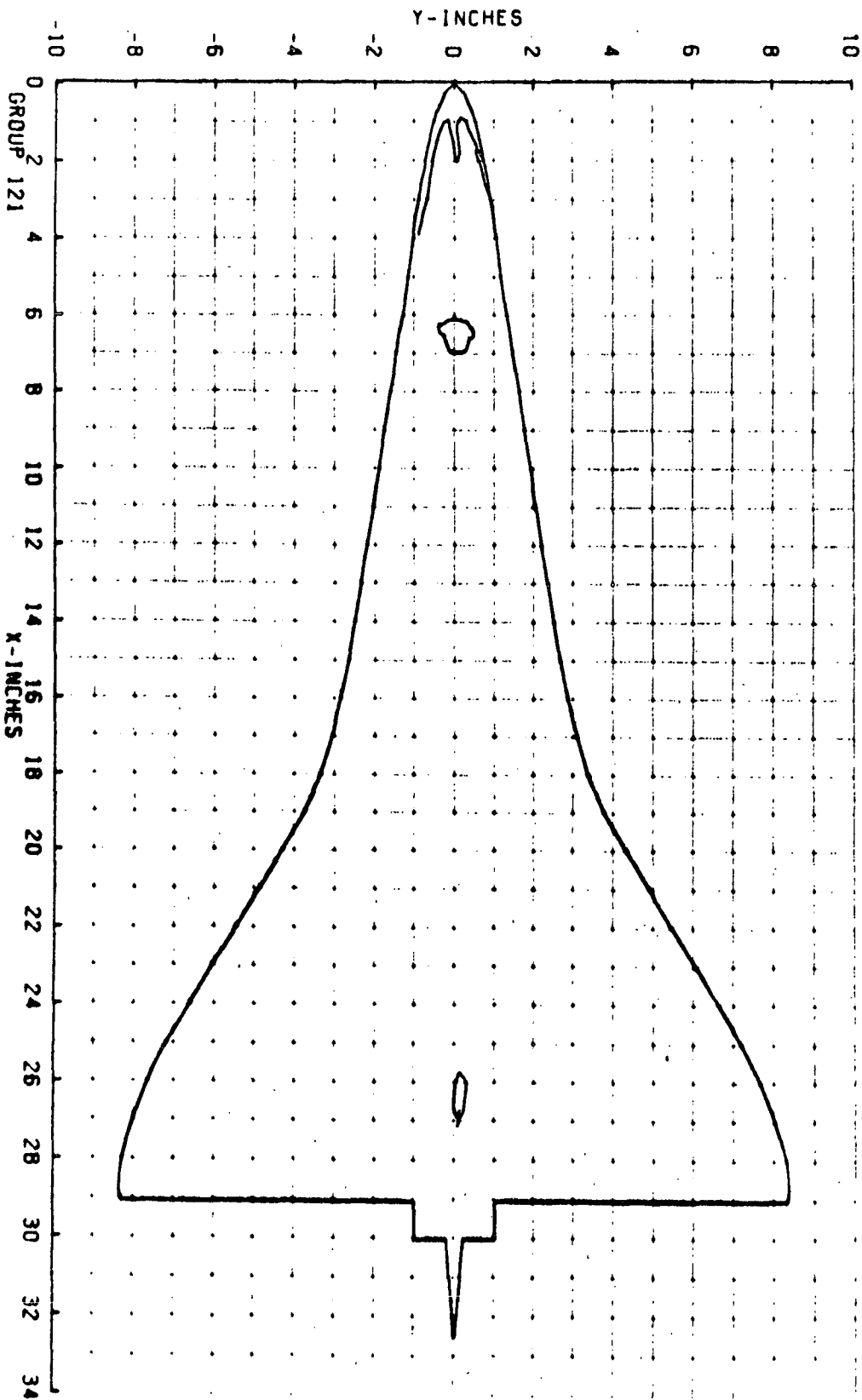
GROUP 121 PIC. NO. 9683 H/HREF 7.320E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 4.584E-02 RE/FT 2.530E 06 CONF NRR-DMO



GROUP 121 PIC. NO. 9690 H/HREF S-130E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 4-SGAE-02 RE/FT 2.530E 06 CONF NAR-DMD



GROUP 121 PIC. NO. 9701 H/HREF 3.630E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 4.584E-02 RE/FT 2.530E 06 CONF NAR-DW0



9/21/71

AFDC(ARNO,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-DEBEND ROLL-MODEL YAW
367 5A AAR-DWD 9.00 860.1 1333 10.03 12.97 -23.00 180.00 0

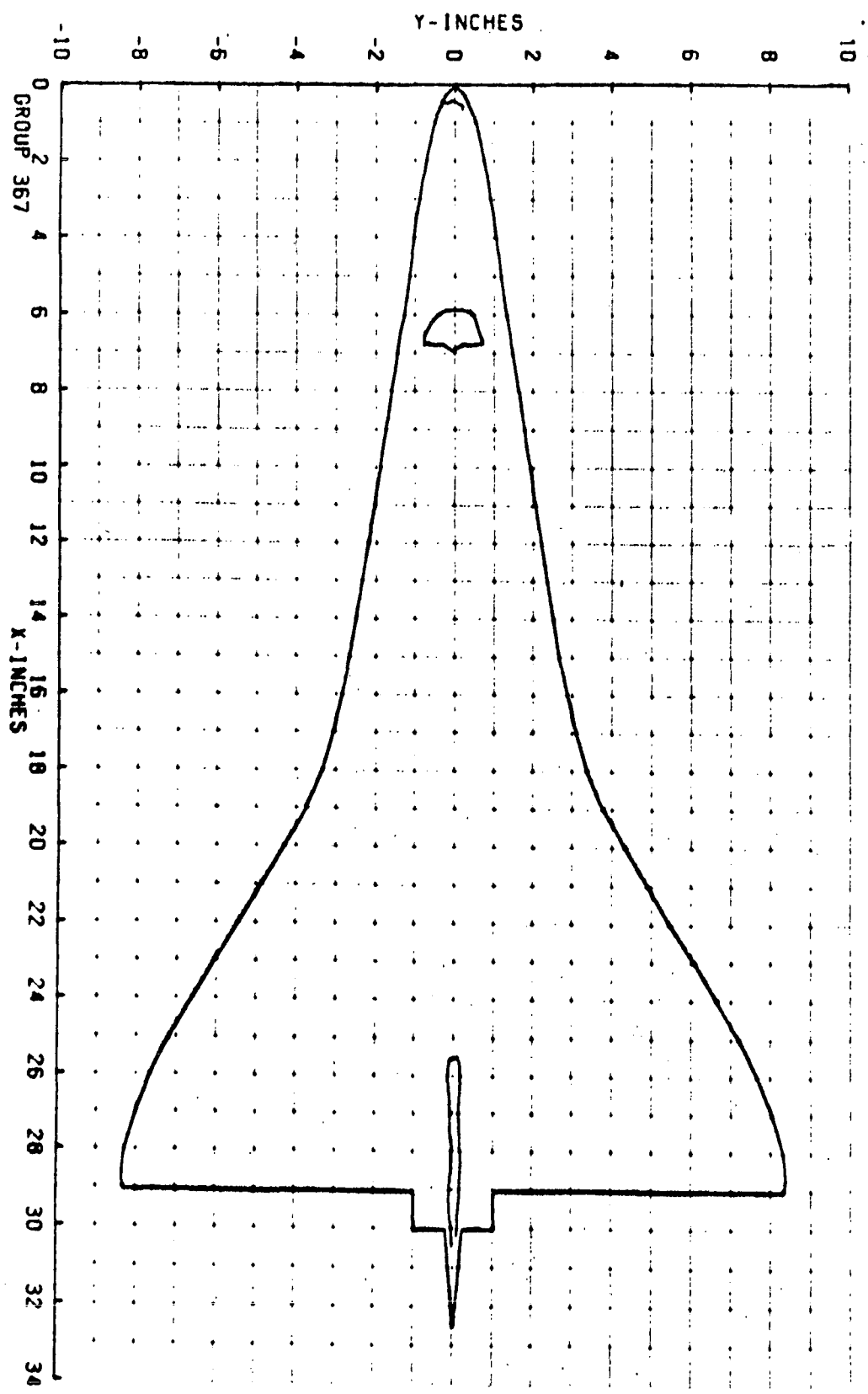
T-1NF P-1NF O-1NF V-1NF RHO-1NF MU-1NF RE/FT MREF STREF
(DEG R) (PCIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LR-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)
96.6 .088 3.947 3852 7.655E-05 7.774E-08 3.79E 06 5.747E-02 2.423E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCAK)

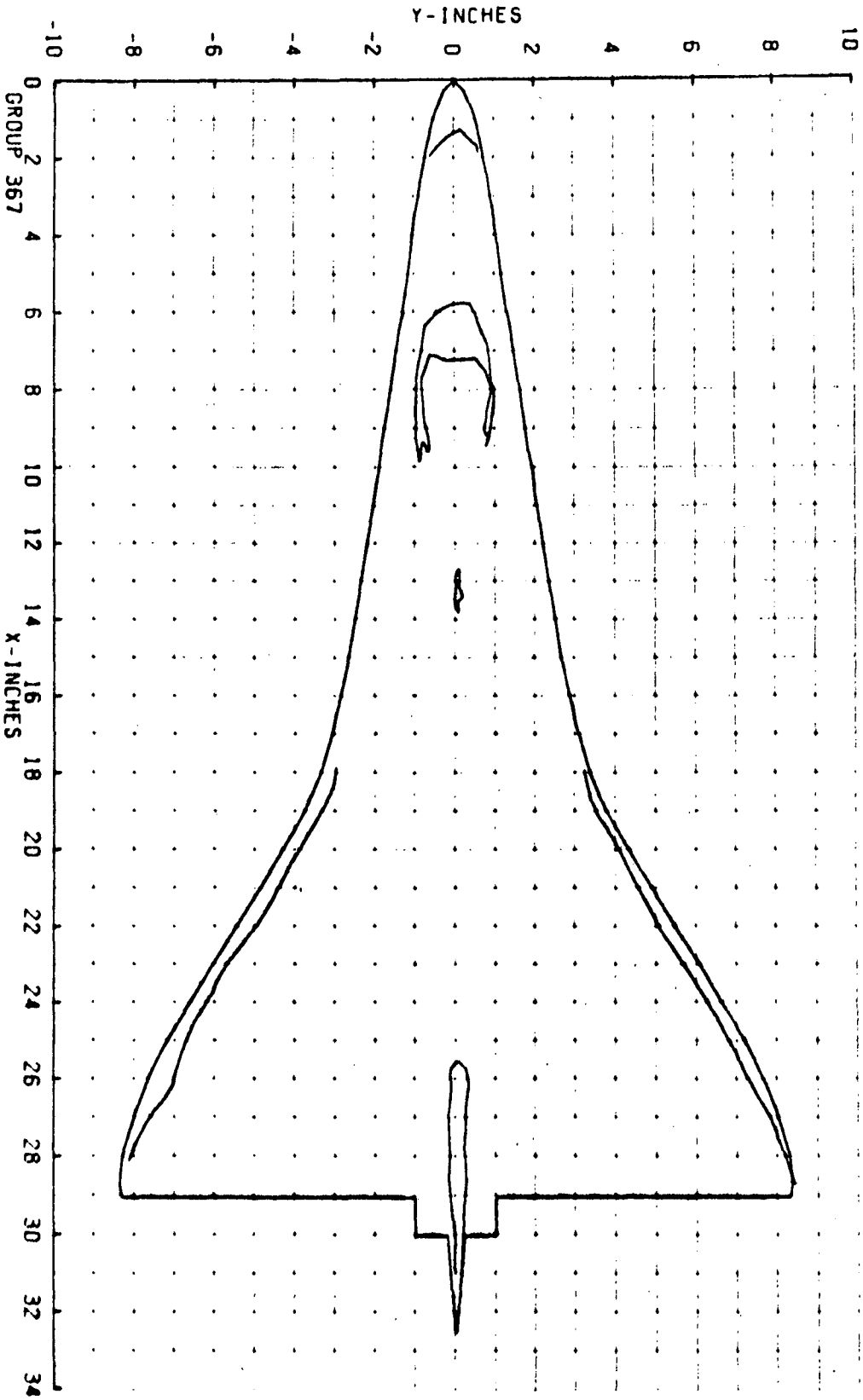
TOP(T) 150 AVERAGE TW = 76 -0.0081(SQUARE ROOT OFL TIME) * 0.11
SIDE(S) 150
BOITCM(R) 150

PIC NC TIME DELTIME H(TO) H(TO)/HREF H(.910) H(.91C)/HREF H(.8510) H(.8510)/HREF ST(TO) MODEL TEMP F
8 2337 (150) 3.20 2.11 6.93E-03 .1049 7.359E-03 .1280 9.275E-03 .1440 2.544E-03 0 0 0
8 2352 (150) 11.20 10.11 2.76E-03 .0411 2.687E-03 .0502 3.246E-03 .0565 9.981E-04 0 0 0
8 2364 (150) 17.60 16.51 1.70E-03 .0295 2.070E-03 .0360 2.328E-03 .0495 7.156E-04 0 0 0

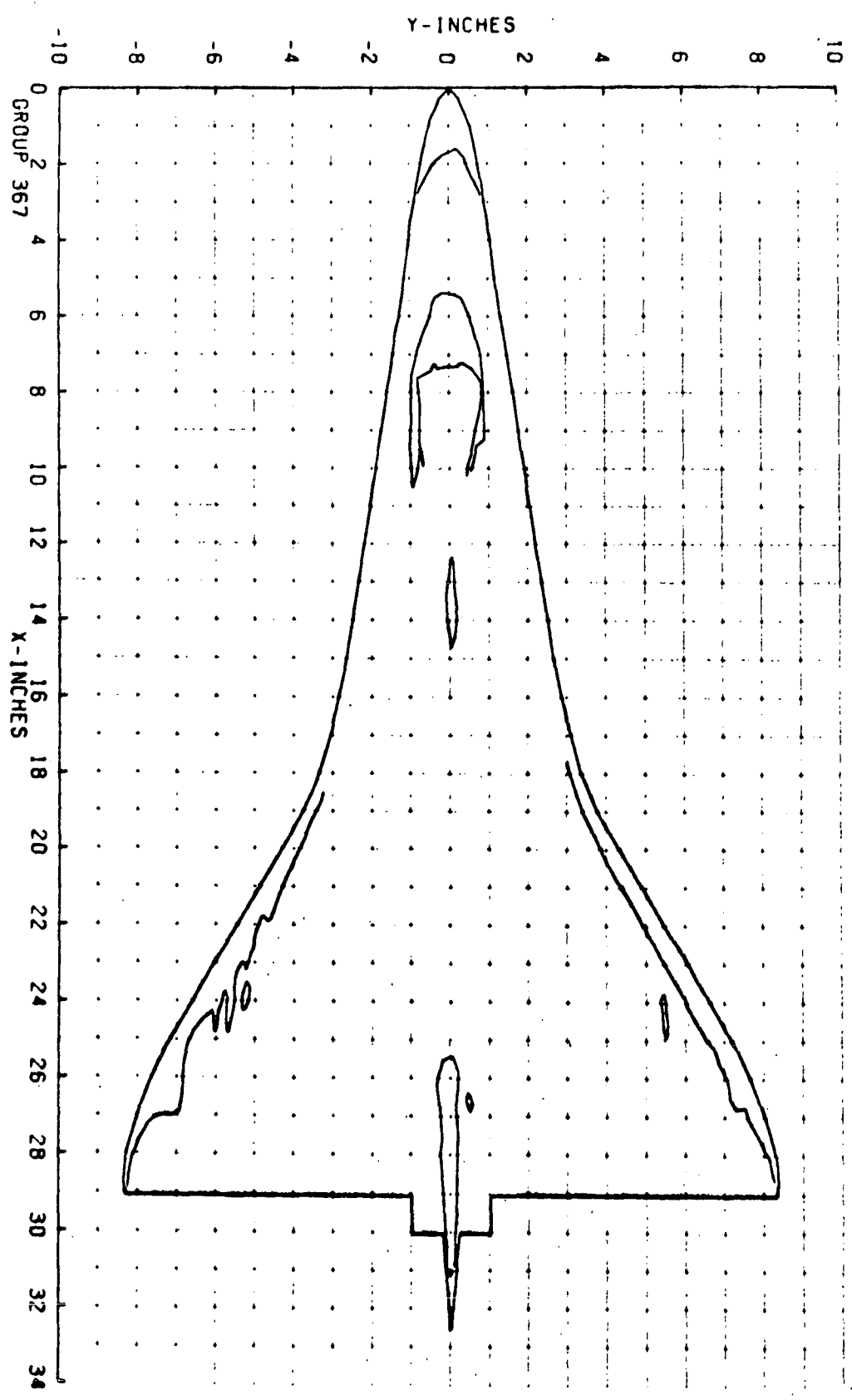
GROUP 367 PIC. NO. 2337 H/HREF 1.049E-01 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 H/REF 5.747E-02 RE/FT 3.790E 06 CONF NAR-DMD



GROUP 367 PIC. NO. 2352 H/HREF 4.110E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CDNF NRR-DWD



GROUP 367 PIC. NO. 2364 H/HREF 2.950E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.747E-02 RE/FT 3.790E 06 CONF NRR-DWD



9/21/71

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

GROUP 368 COMPFIG 54 MODEL NAR-D80 MACH NO 9.80 PN PSIA 860.9 TO DEG R 1343 ALPHA-MODEL 20.03 ALPHA-SECTOR 2.97 ALPHA-PREBEND -23.00 ROLL-MODEL 180.00 YAW 0.0

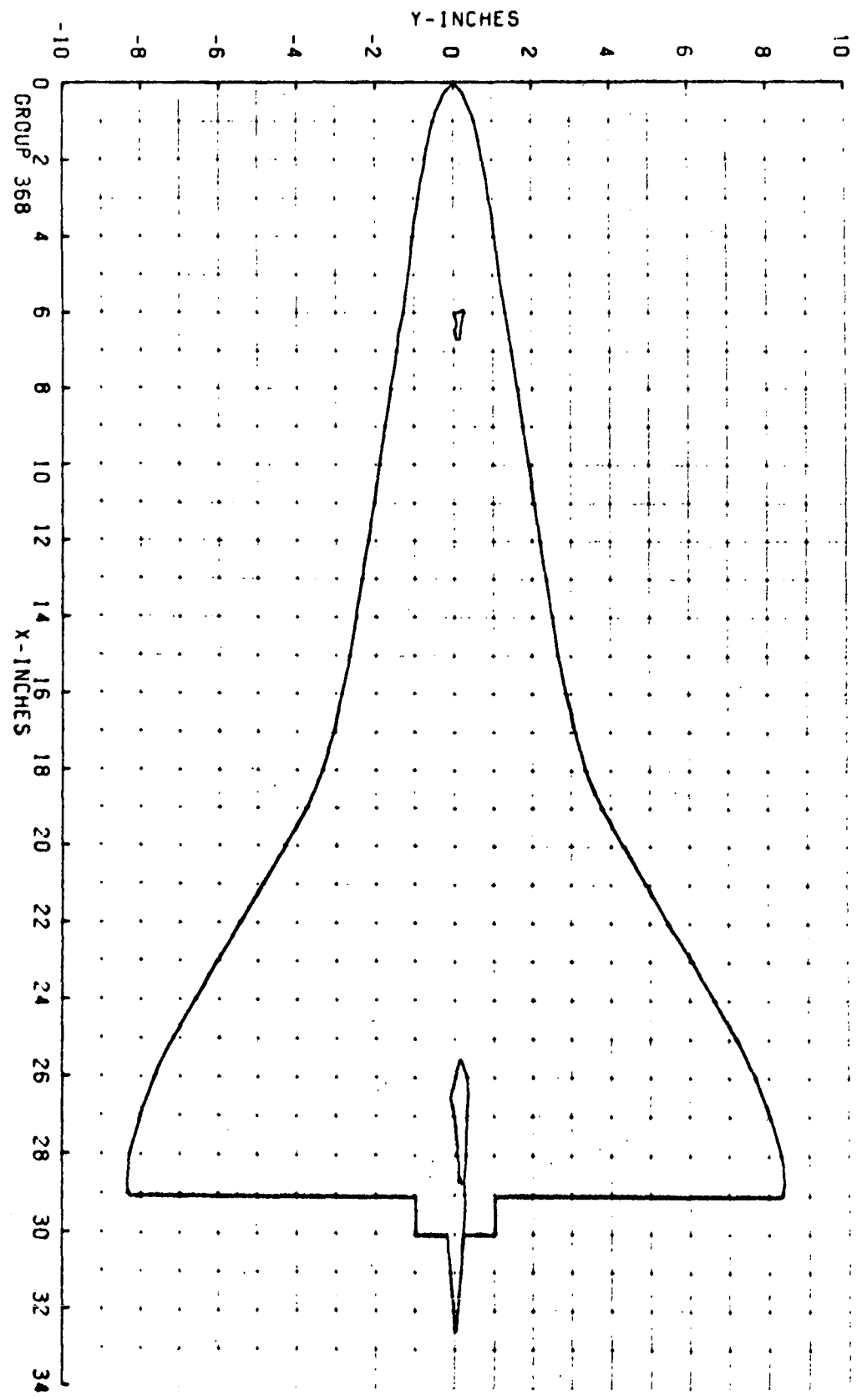
T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT MREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (R=.013FT)
97.3 .082 3.950 3467 7.600E-05 7.837E-08 3.75E 06 5.757E-02 2.434E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCAK)

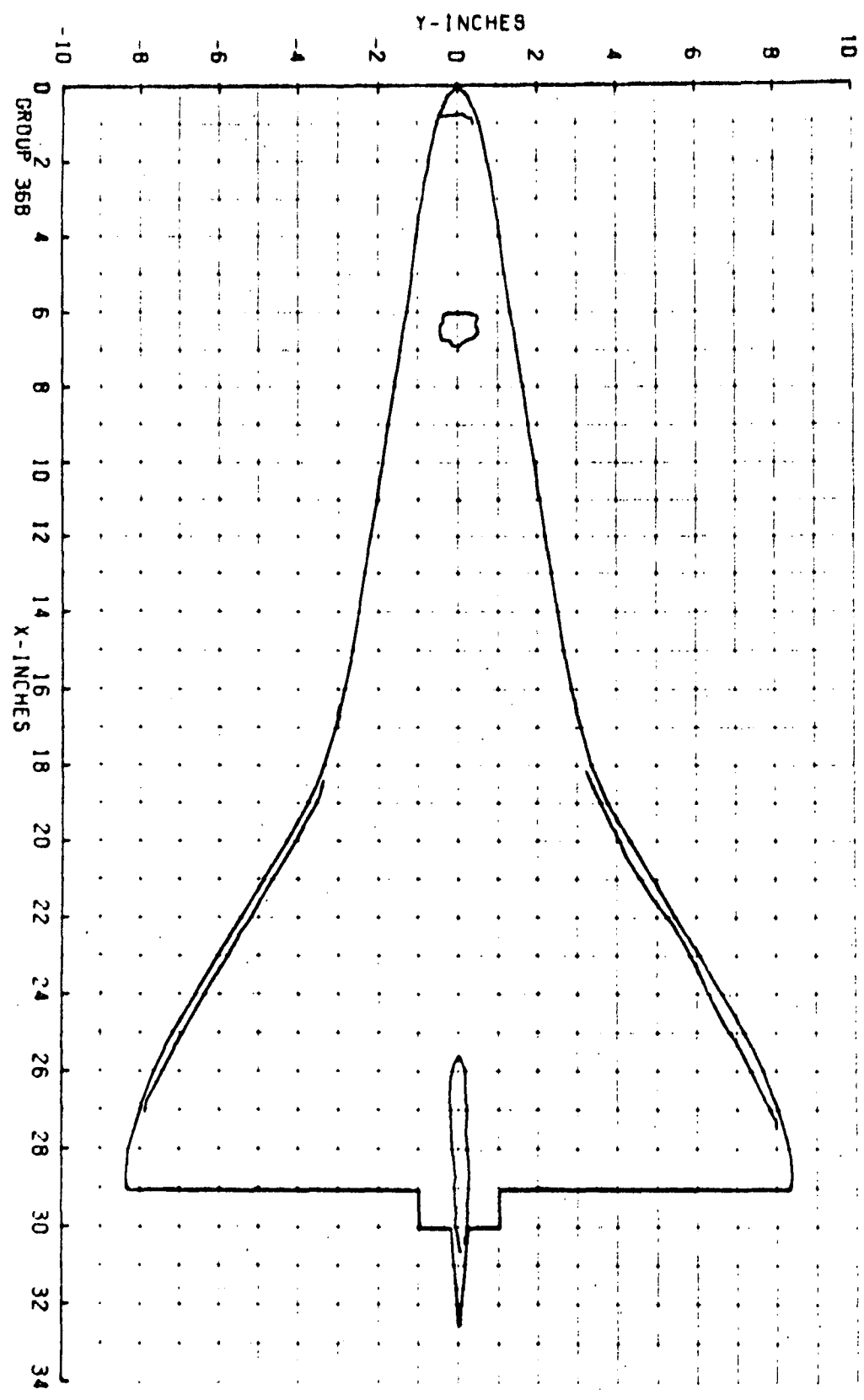
TOP(1) 200 AVERAGE TW = 76 -0.008(SQUARE ROOT DFL TIME) * 0.11
SIDE(S) 200
ROTTCM(B)

PTC MC TIME DELTIME H(TO) H(TO)/MREF H(.9TO) H(.9TC)/MREF H(.95TO) H(.85TO)/MREF ST(TO) MODEL TEMP F
R 2274 (200) 4.25 3.12 8.33E-03 .1447 1.028E-02 .1197 1.166E-02 .2025 3.518E-03 0 0 0
R 2401 (200) 21.30 20.23 2.55E-03 .0443 3.154E-03 .0540 3.575E-03 .0621 1.078E-03 0 0 0

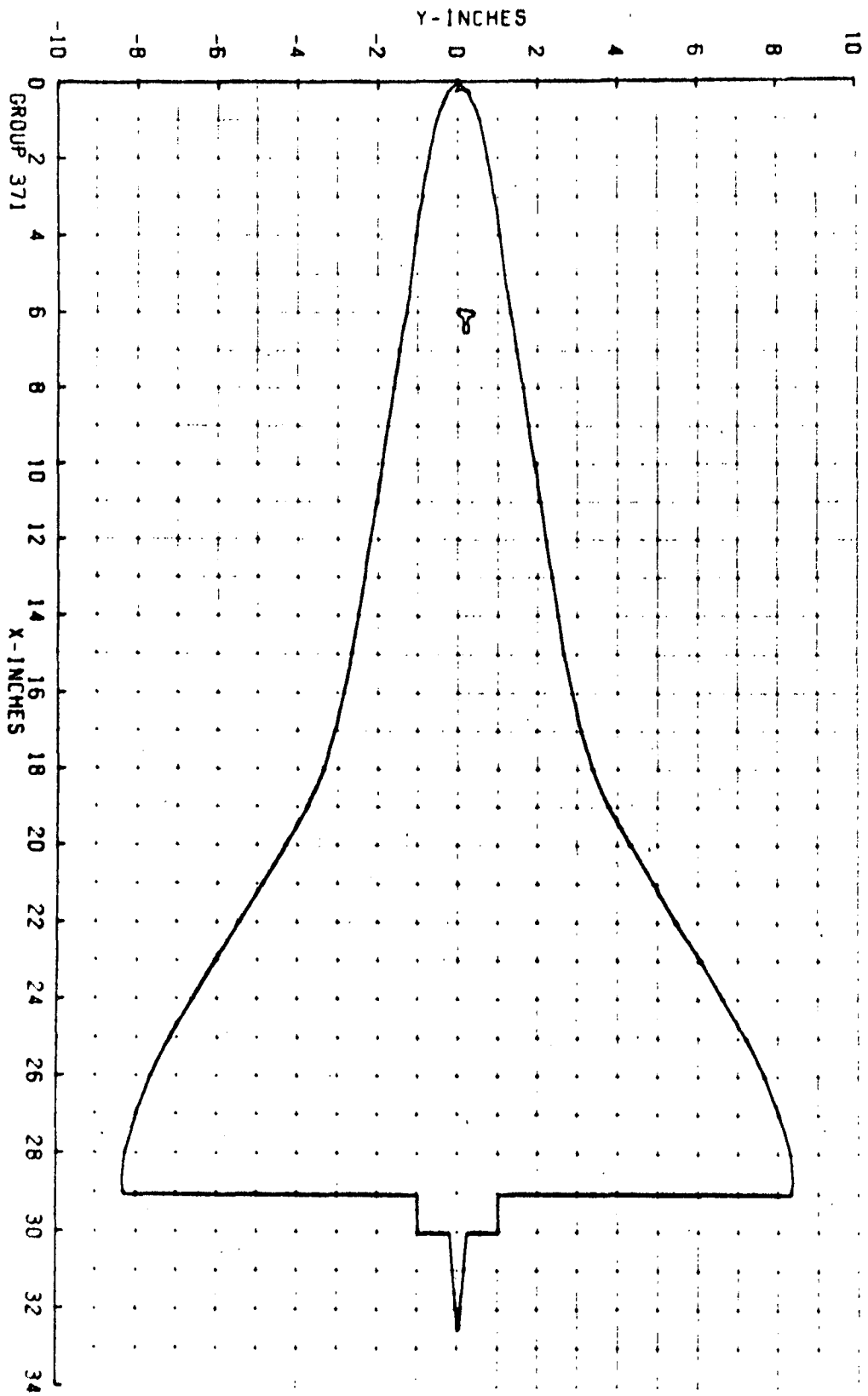
GROUP 368 P.I.C. NO. 2374 H/HREF 1.447E-01 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NRR-DMD



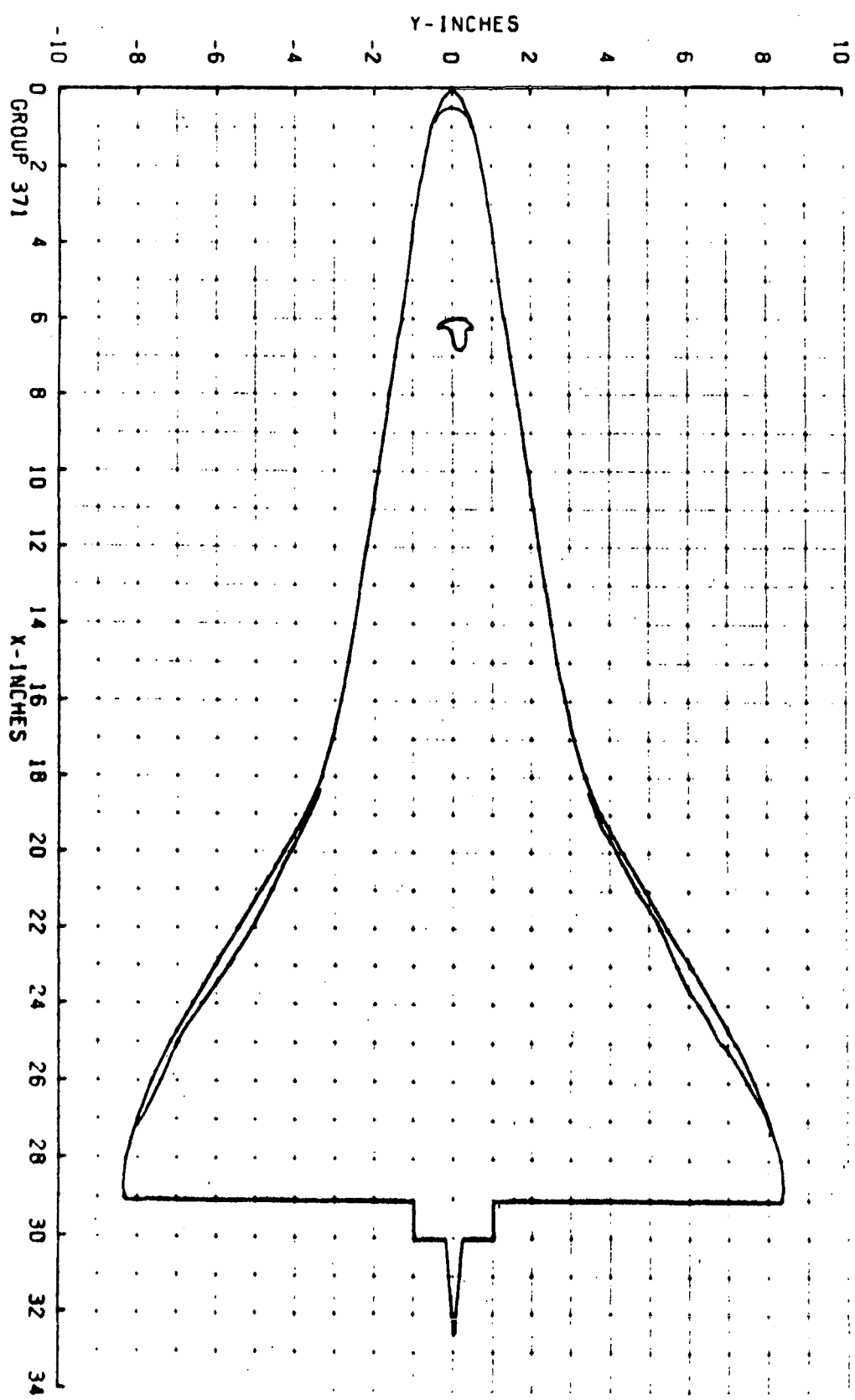
GROUP 368 PIC. NO. 2401 H/HREF 4.430E-02 MODEL SURFACE - TOP
 MACH 8.00 ALPHA (DEG) 20.0 HREF 5.757E-02 RE/FT 3.750E 06 CONF NRR-DMD



GROUP 371 PIC. NO. 2485 H/HREF 1.564E-01 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NAR-DMD



GROUP 371 PIC. NO. 2503 H/HREF 8.040E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.766E-02 RE/FT 3.740E 06 CONF NAR-DWD



9/21/71

AEDC(ARNO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 8
V11162

GROUP CONFIG MODEL MACH NO PN PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW
375 54 NAR-DND 8.00 861.9 1345 40.04 9.96 -50.00 180.00 .0

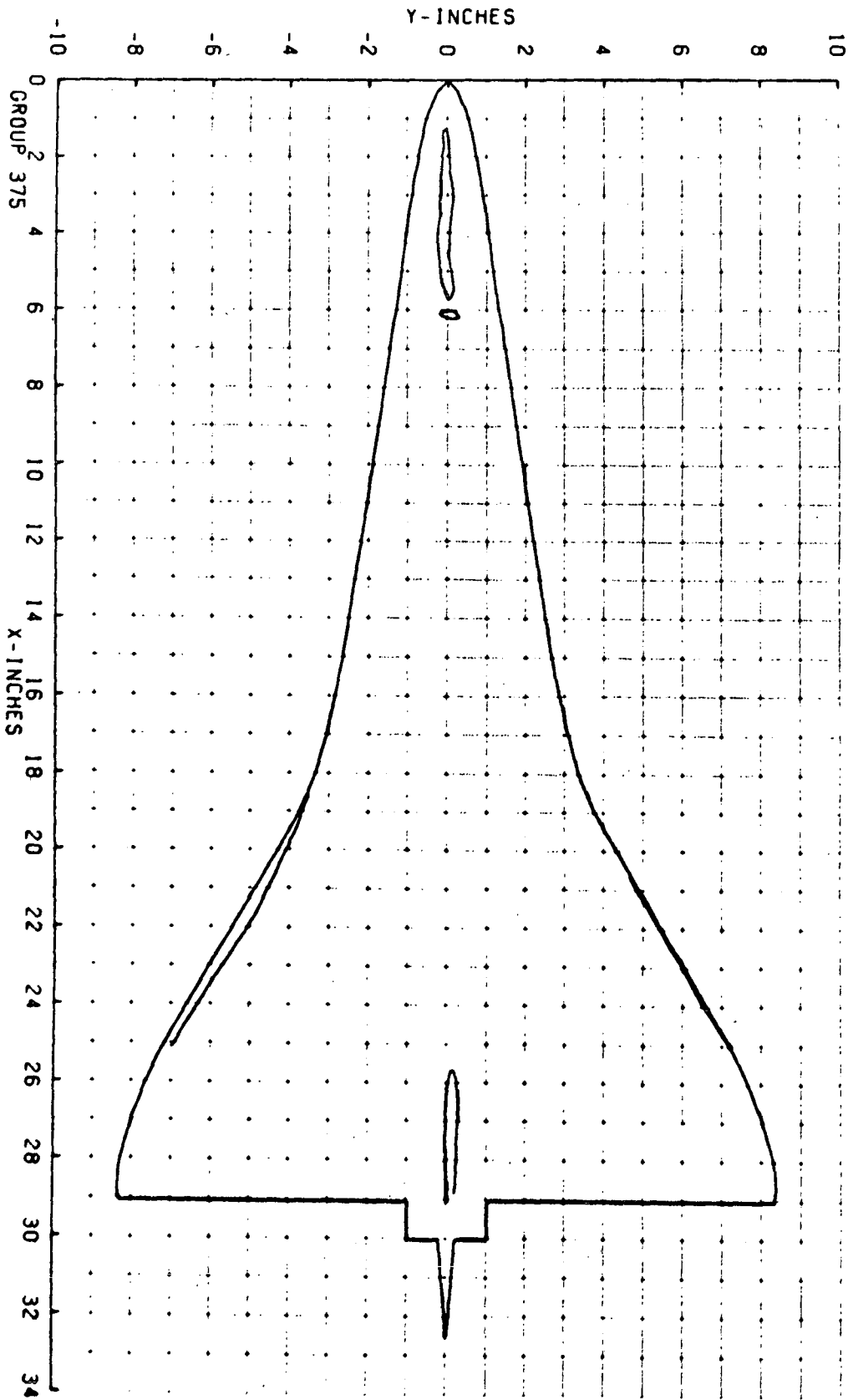
T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R= .013FT) (R= .013FT)
97.4 .088 3.955 3869 7.602E-05 7.844E-08 3.75E 06 5.762E-02 2.43AE-02

PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CXK)

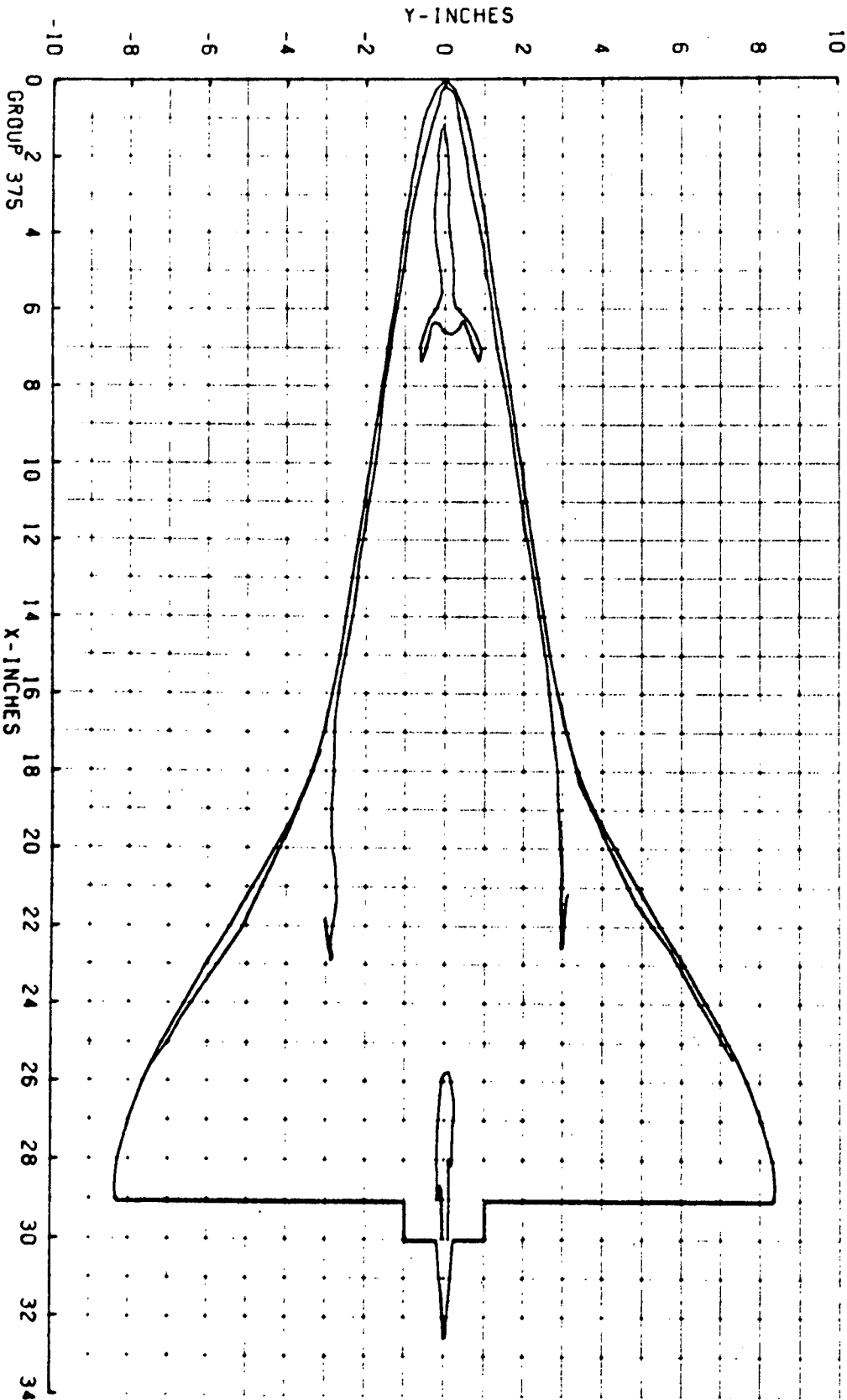
TOP(T) 250
SICEST) 113 AVERAGE TW = 79 -0.008(SQUARE ROOT DEL TIME) * 0.11
BOTTCM(B) 113

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TC)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F
8 2612 (113)	4.80 3.71	1.91E-03	.0331	2.302E-03	.0400	2.569E-03	.0446	8.074E-04	82
8 262C (113)	9.05 7.96	1.20E-03	.0209	1.452E-03	.0252	1.620E-03	.0281	5.099E-04	82
8 2634 (113)	17.00 15.91	7.59E-04	.0132	9.171E-04	.0159	1.024E-03	.0178	3.228E-04	82

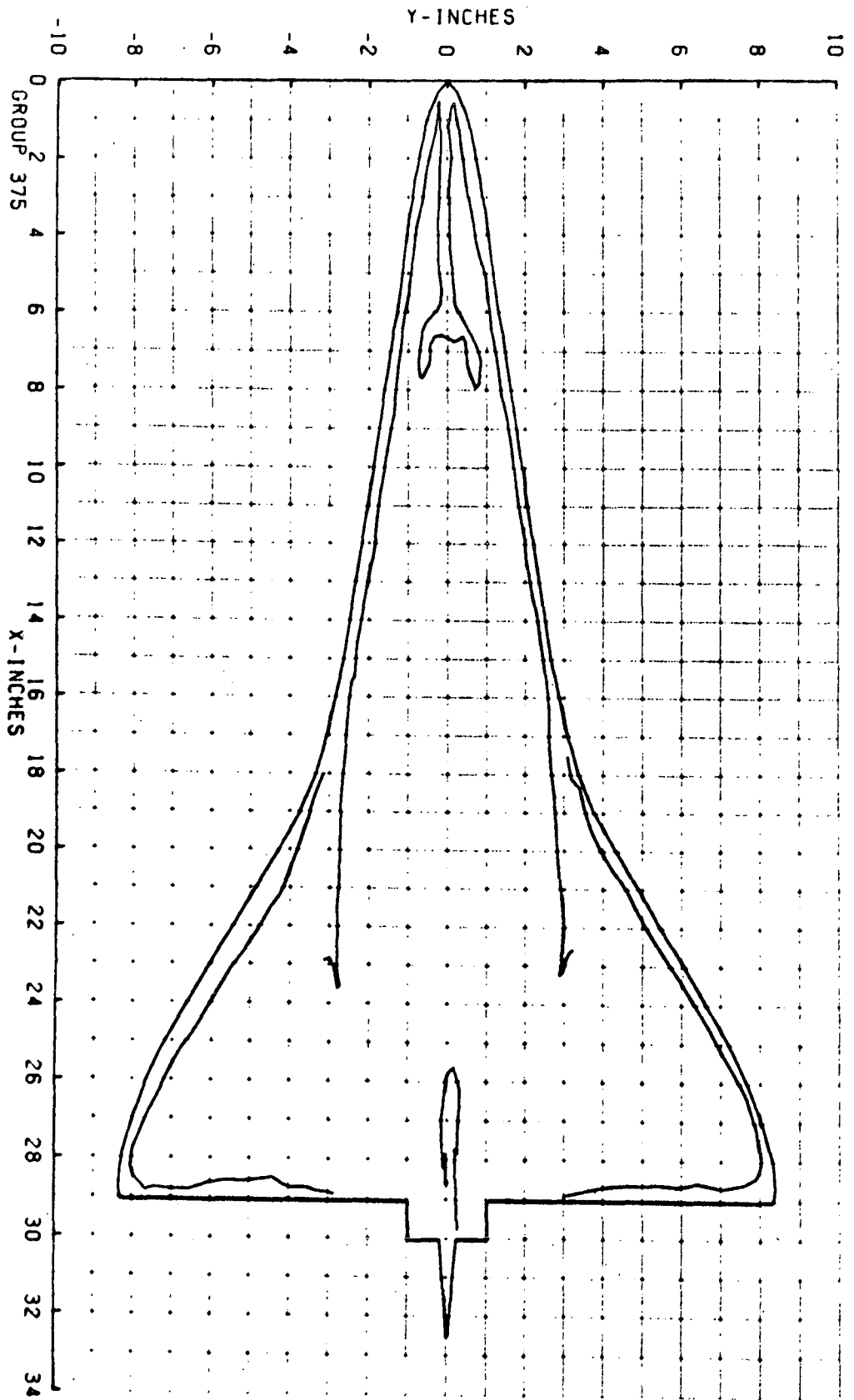
GROUP 375 PIC. NO. 2612 H/HREF 3.310E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.762E-02 RE/FT 3.750E 06 CONF NAR-DWO



GROUP 375 PIC. NO. 2620 H/HREF 2.090E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.762E-02 RE/FT 3.750E 06 CONF NAR-DMO



GROUP 375 PIC. NO. 2634 H/HREF 1.320E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.762E-02 RE/FT 3.750E 06 CONF NAR-DWO



9/21/71

AEDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-REBEND ROLL-MODEL YAW
377 54 MAR-DMD 8.00 860.5 1350 40.09 9.91 -50.00 180.00 .0

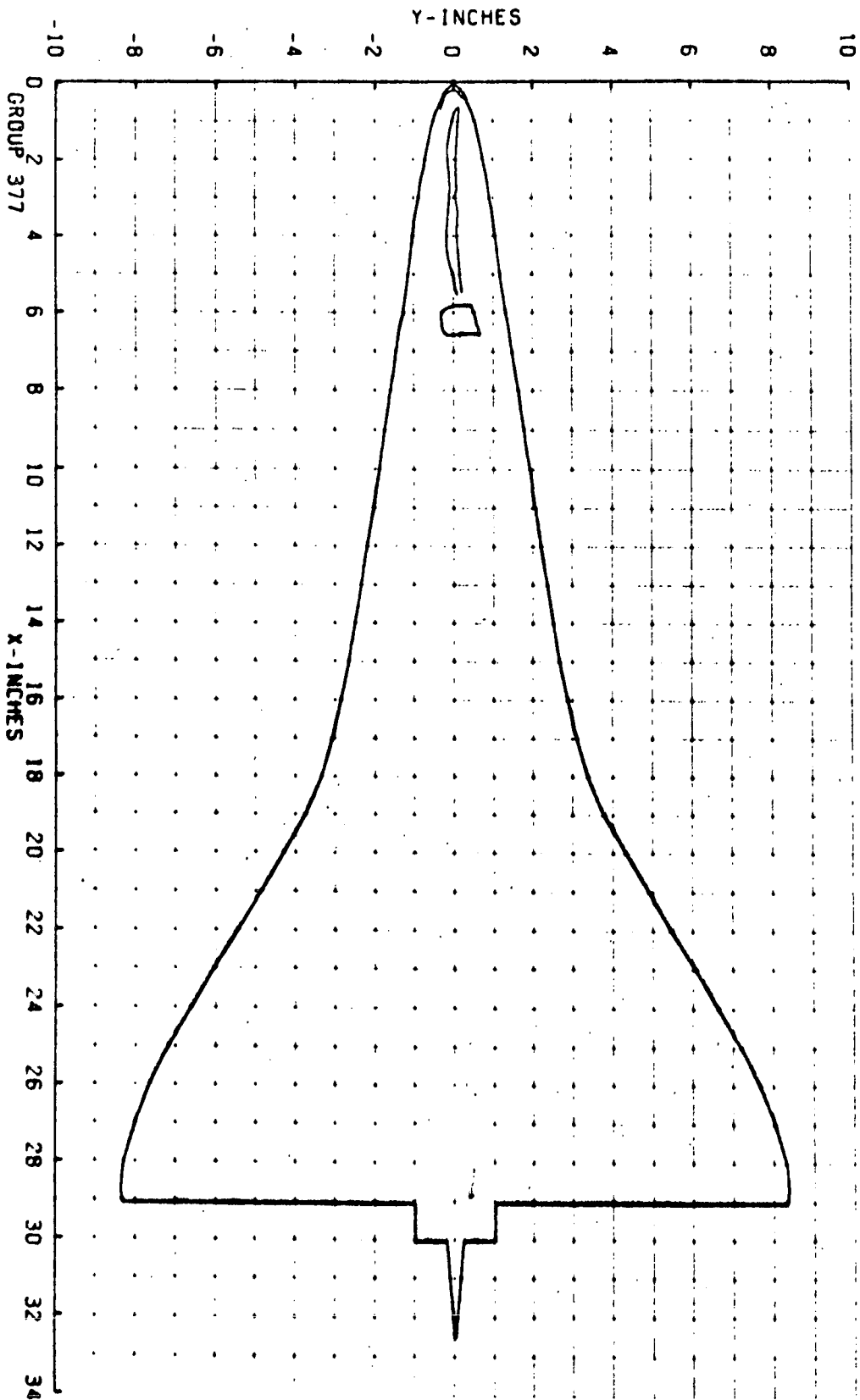
T-INF P-INF Q-INF V-INF RHO-INF PU-INF RE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT³) (LB-SEC/FT²) (FT-1) (R=.013FT) (R=.013FT)
97.9 .082 3.94M 3878 7.556E-05 7.879E-08 3.72E 06 5.761E-02 2.442E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXGKX)

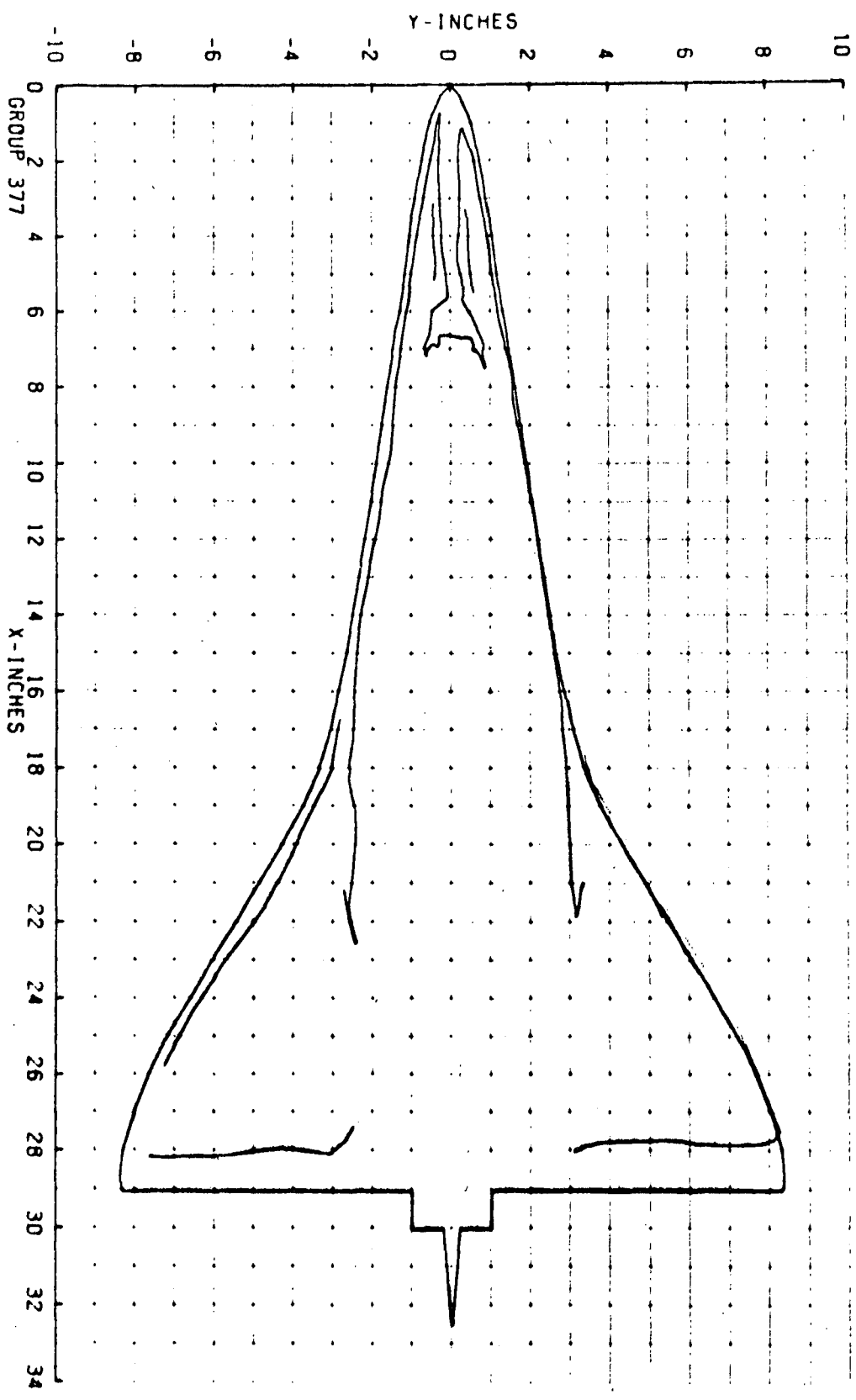
TOP(1) 306 AVERAGE $t_w = 80$ -0.008(SQUARE ROOT DEL TIME) * 0.11
SIDE(1) 113
ROTCW(M) 113

PIC NO	TIME DELTIME	M(TO)	M(TO)/HREF	M(.91TO)	M(.91TO)/HREF	M(.85TO)	M(.85TO)/HREF	ST(TO)	MODEL TEMP F
R 2682 (113)	3.20 2.11	2.53E-03	.0439	3.052E-03	.0530	3.409E-03	.0592	1.076E-03	0 0 0
R 2692 (113)	11.25 10.14	9.89E-04	.0172	1.193E-03	.0207	1.333E-03	.0231	4.208E-04	0 0 0
R 2703 (113)	13.90 12.81	8.49E-04	.0147	1.023E-03	.0178	1.143E-03	.0198	3.607E-04	0 0 0
R 2714 (113)	24.00 22.91	5.69E-04	.0097	6.743E-04	.0117	7.532E-04	.0131	2.377E-04	0 0 0

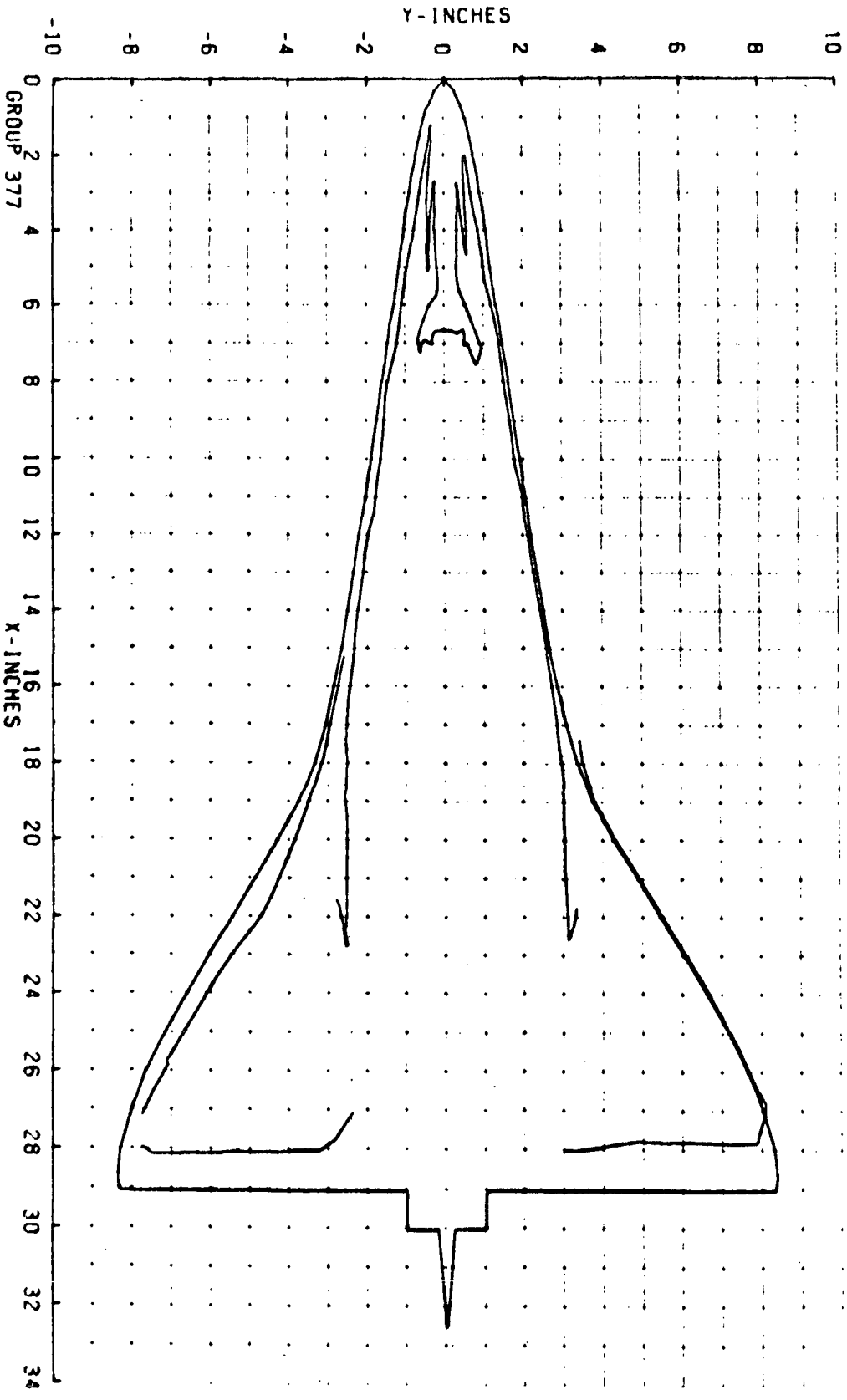
GROUP 377 PIC. NO. 2683 H/HREF 4.390E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NAR-DND



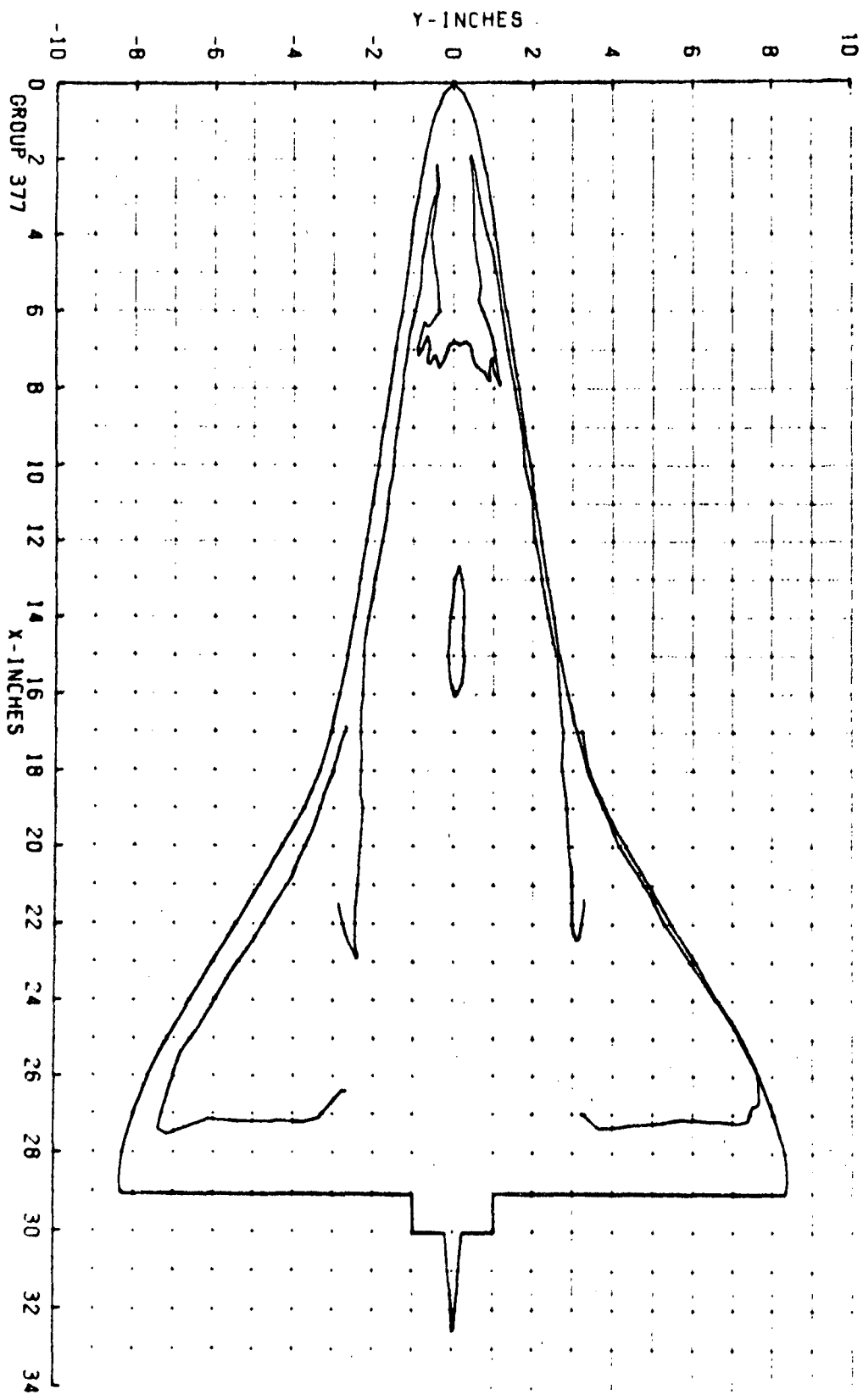
GROUP 377 PIC. NO. 2698 H/HREF 1.720E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NRR-DWD



GROUP 377 PIC. NO. 2703 H/HREF 1.470E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NAR-DMD



GROUP 377 PIC. NO. 2714 H/HREF 9.700E-03 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.1 HREF 5.761E-02 RE/FT 3.720E 06 CONF NAR-DMD



9/21/71

AEDCIARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP CONFIG MODEL MACH NO PO PSTA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-DREBEND ROLL-MODEL YAW

316 54 NAR-DHO P.00 959.8 1346 50.05 -05 -50.00 180.00 .0

T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)

97.5 .080 3.945 3872 7.573E-05 7.855E-08 3.73E 06 5.756E-02 2.439E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (INCHES)

TOP(T) 300
SIDE(S) 113 AVERAGE Tm = 78 -0.008(SQUARE ROOT DEL TIME) * 0.11
BOT(CM) 113

PIC NO TIME NETTIME HIT0) HIT0)/HREF H(.970) H(.970)/HREF H(.8570) H(.8570)/HREF ST(T0) MODEL TEMP F

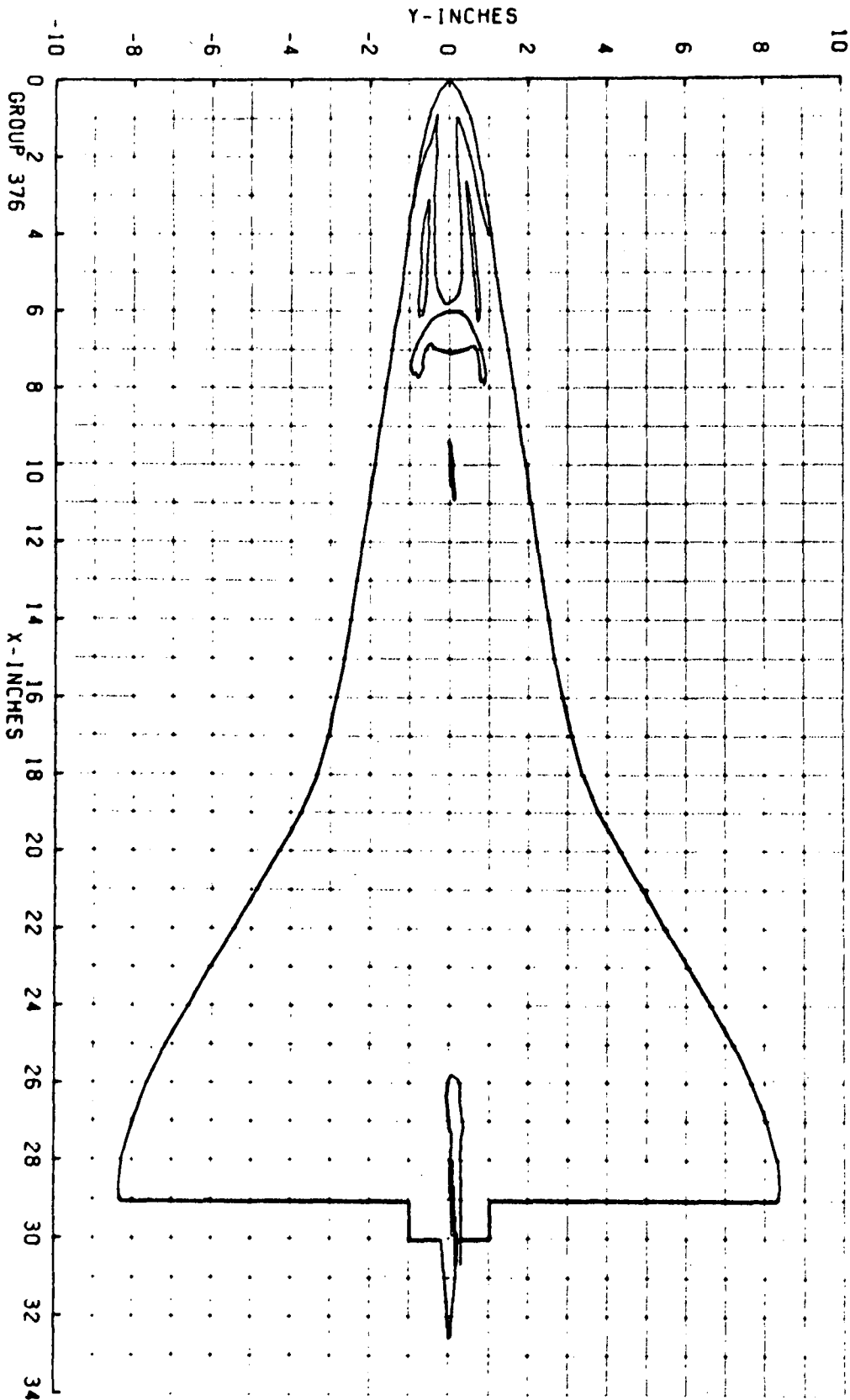
R 2649 (113) 3.20 2.11 2.60E-03 .0468 3.257E-03 .0566 3.638E-03 .0632 1.145E-03 0 97 0 0

B 2652 (113) 5.35 4.24 1.80E-03 .0313 2.177E-03 .0378 2.431E-03 .0422 7.655E-04 0 98 0 0

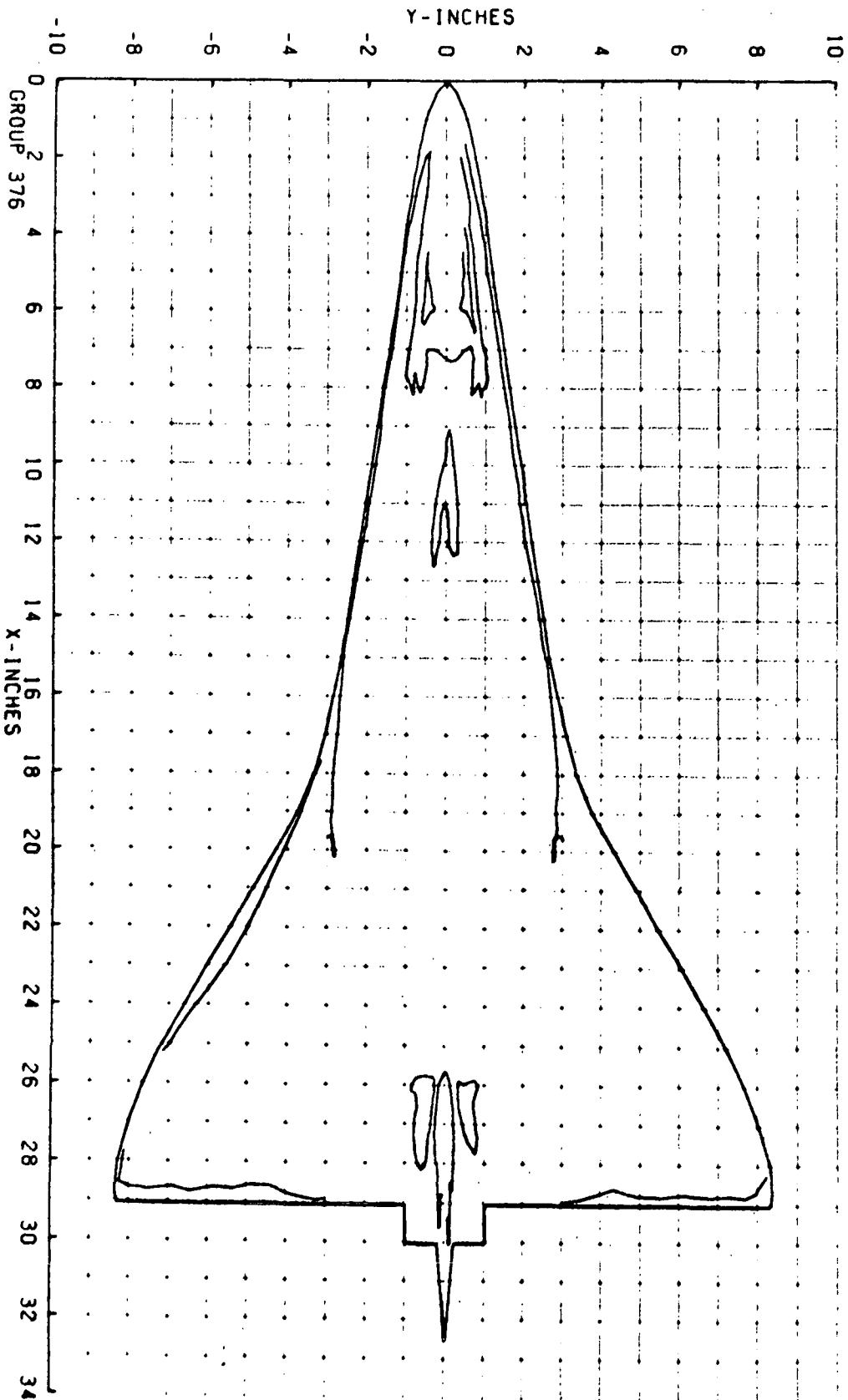
B 2661 (113) 9.60 8.51 1.18E-03 .0205 1.428E-03 .0248 1.594E-03 .0277 5.018E-04 0 99 0 0

B 2671 (113) 14.95 13.86 8.56E-04 .0149 1.035E-03 .0180 1.156E-03 .0241 3.641E-04 0 100 0 0

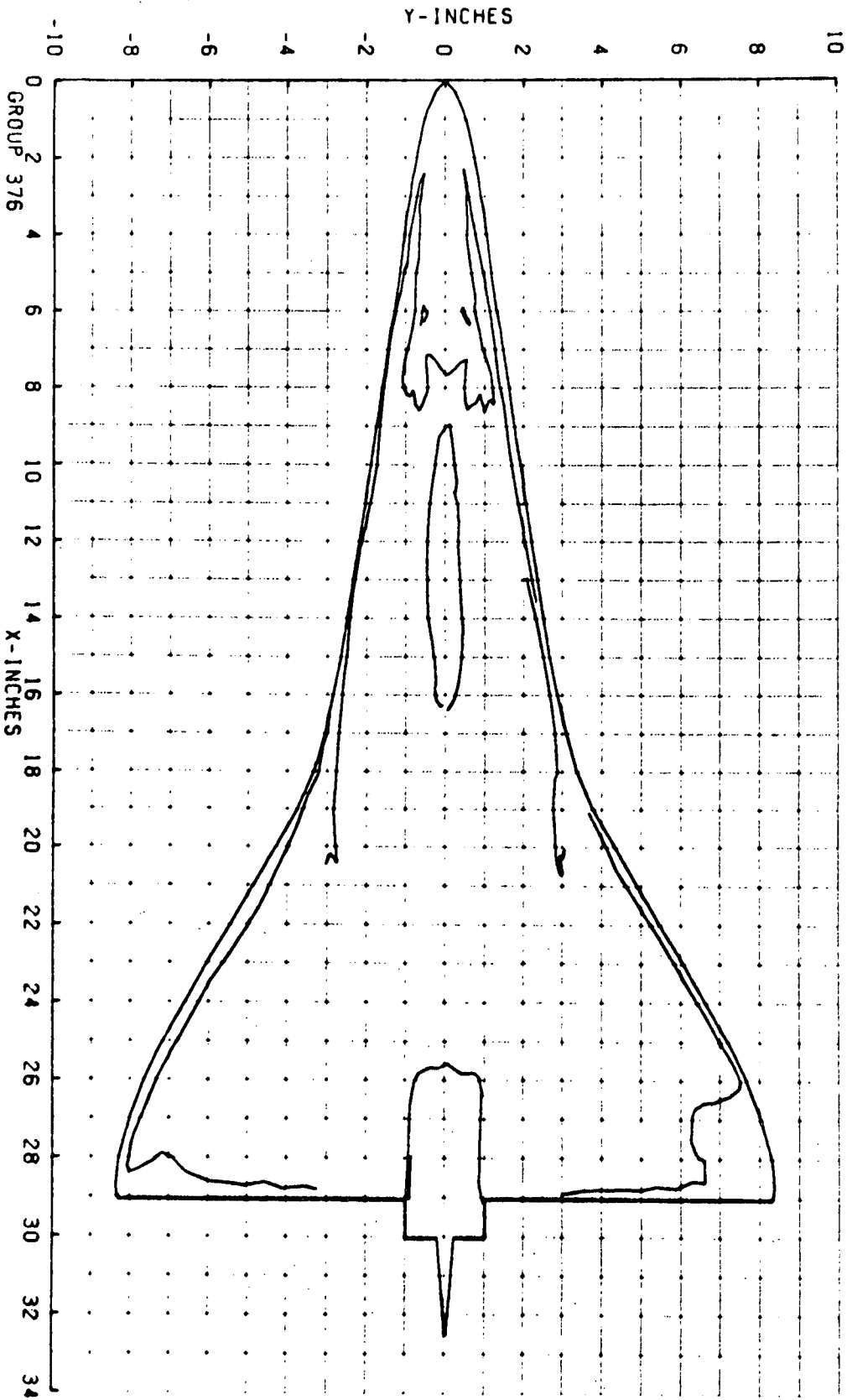
GROUP 376 PIC. NO. 2649 H/HREF 4.680E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DW0

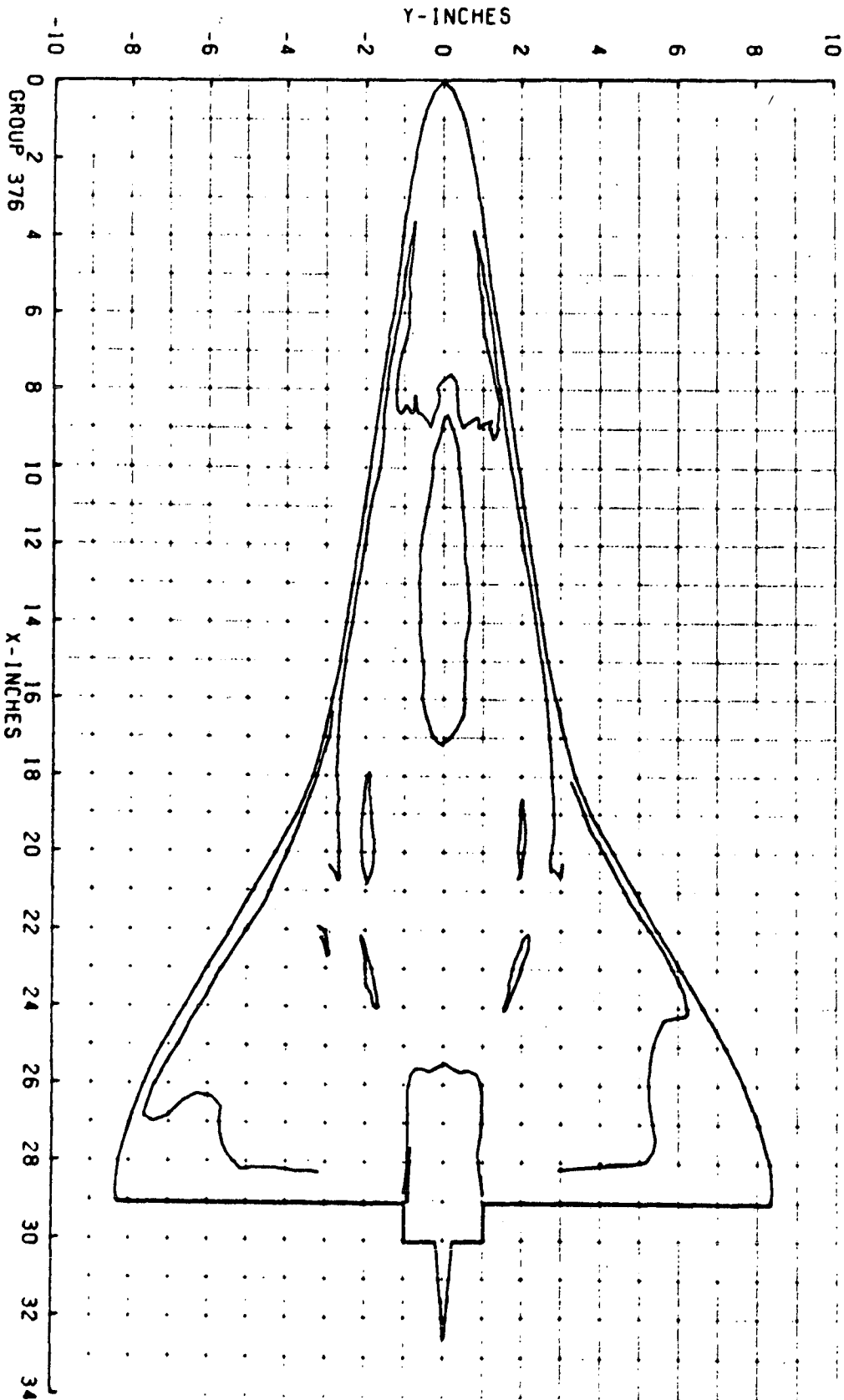


GROUP 376 PIC. NO. 2653 H/HREF 3.130E-02 MODEL SURFACE - TOP
HRCH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DMO



GROUP 376 PIC. NO. 2661 H/HREF 2.050E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NNR-DW0





GROUP 376 P.I.C. NO. 2671 H/HREF 1.490E-02 MODEL SURFACE - TOP
 MACH 8.00 ALPHA (DEG) 50.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NAR-DMO

9/21/71

AFDC(ARO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V711162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREEMN ROLL-MODEL YAW
312 53 AAR-DWC 8.00 859.6 134.8 10.02 12.98 -23.00 180.00 .0

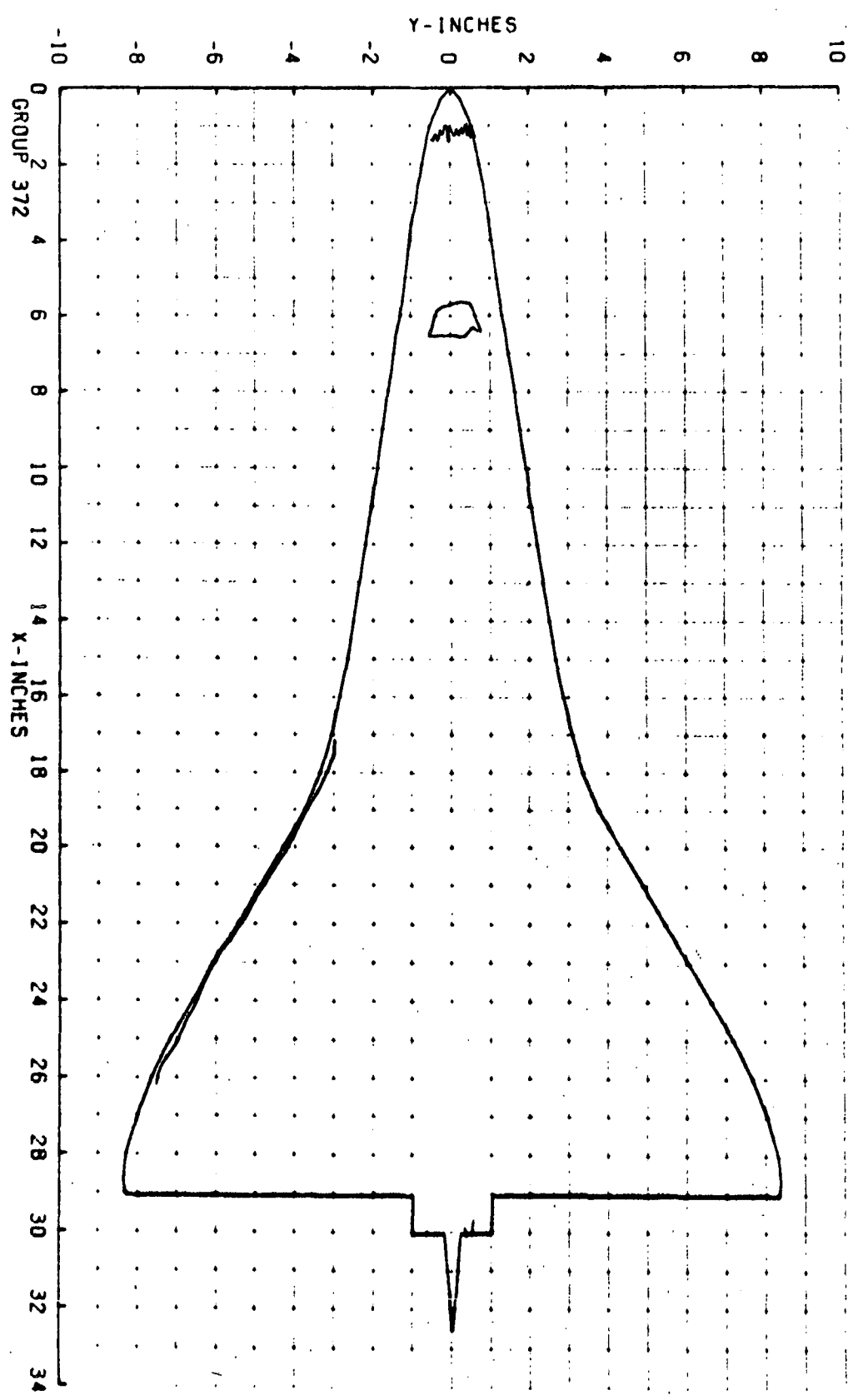
T-1NF P-1NF Q-1NF V-1NF RMO-1NF WU-1NF RE/FT PREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (R=.013FT)
97.7 .008 7.944 3874 7.564E-05 7.862E-08 3.73E 06 5.756E-02 2.441E-02

CAMEGA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODCKM)

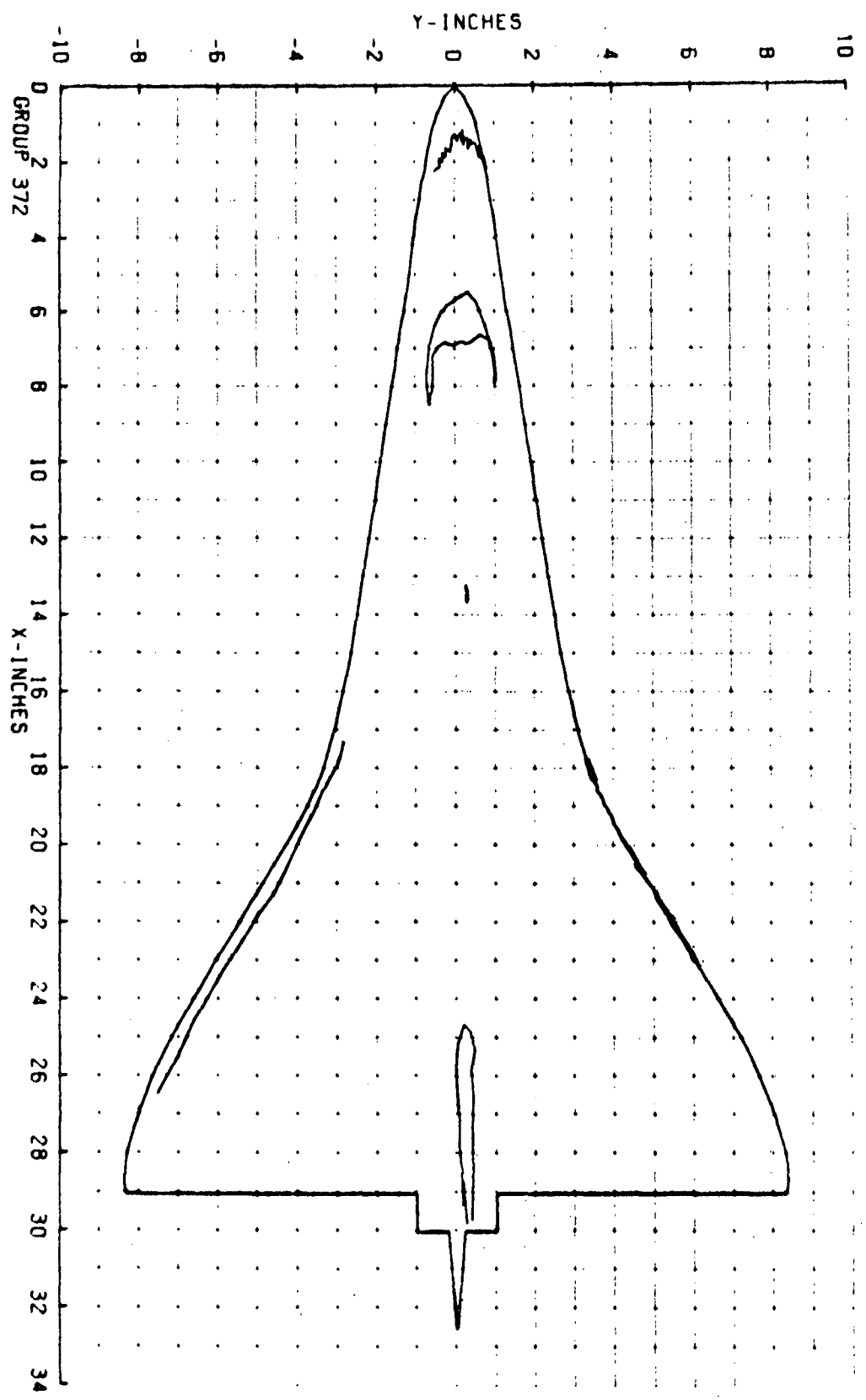
TOP(T) 150
SIDE(S) 150
BOTTCM(B) 150
AVERAGE TW = 75
-0.008(SQUARE ROOT DEL TIME) * 0.11

PTC MC	TIME DELTIME	H(TO)	H(TO)/HREF	H(.91TC)	H(.91TO)/HREF	H(.85TO)	H(.85TO)/HREF	ST(TO)	MODEL TEMP F
B 2512 (150)	3.20	2.11	5.99E-03	.1039	7.293E-03	.1266	0.189E-02	.1422	2.539E-03
B 2521 (150)	8.05	6.94	2.98E-03	.0517	3.629E-03	.0630	4.071E-03	.0707	1.262E-03
B 2525 (150)	12.35	11.26	2.19E-03	.0380	2.666E-03	.0463	2.993E-03	.0520	9.286E-04
B 2538 (150)	17.70	16.61	1.68E-03	.0291	2.043E-03	.0355	2.294E-03	.0399	7.117E-04

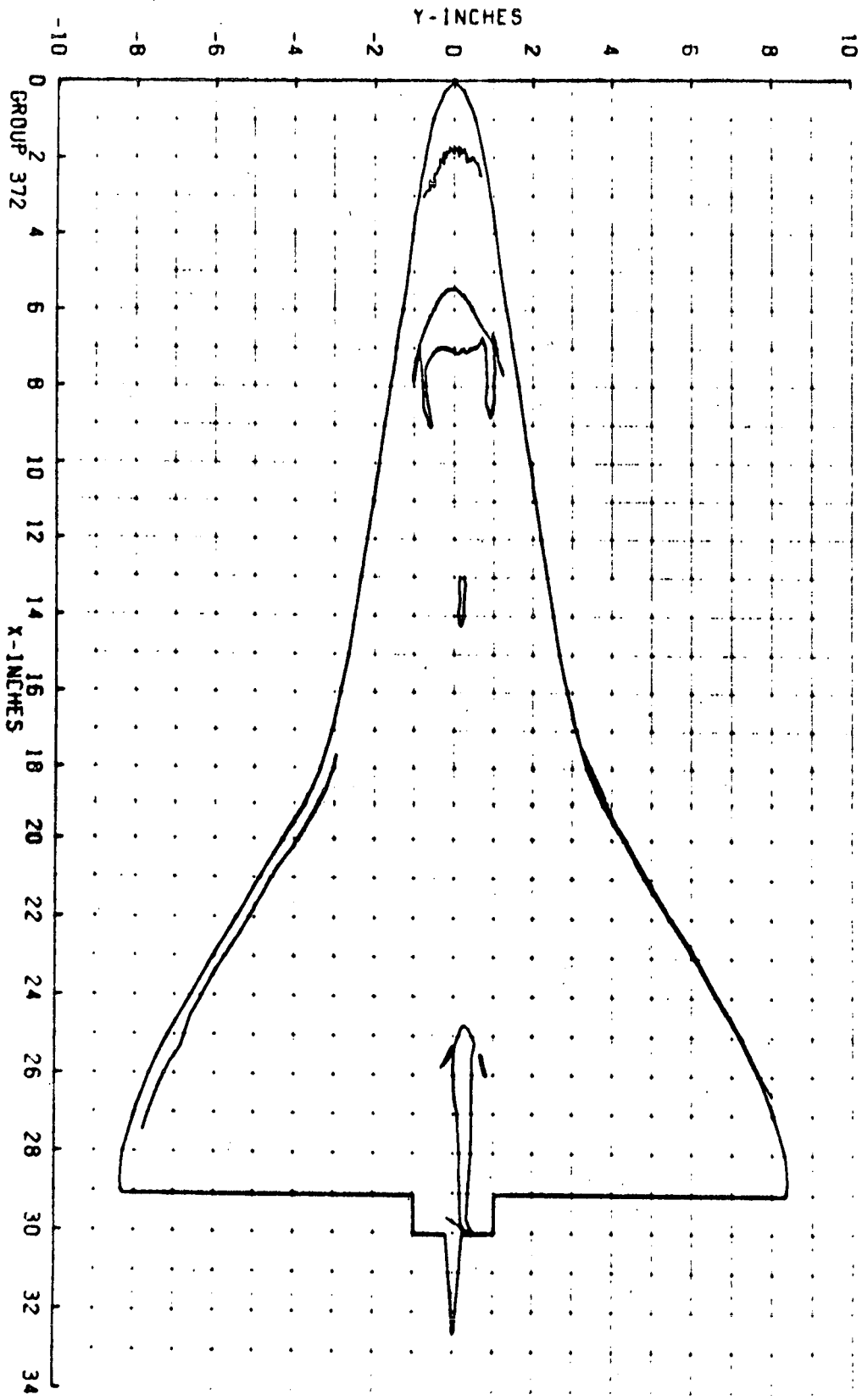
GROUP 372 PIC. NO. 2512 H/HREF 1.039E-01 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DWD

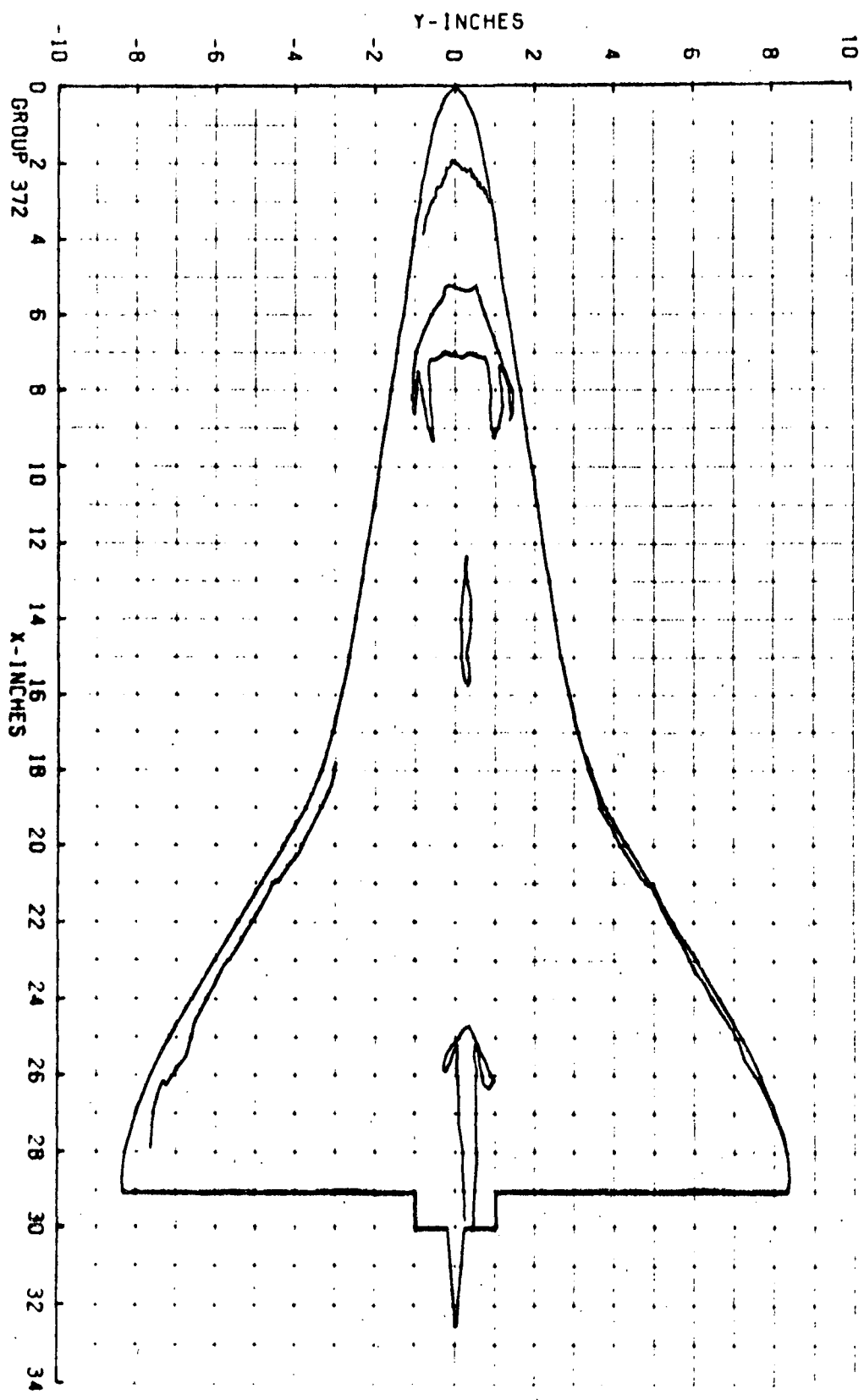


GROUP 372 PIC. NO. 2521 H/HREF 5.170E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DWD



GROUP 372 PIC. NO. 2529 H/HREF 3.800E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CONF NRR-DW0





GROUP 372 P.I.C. NO. 2538 H/HREF 2.910E-02 MODEL SURFACE - TOP
 MACH 8.00 ALPHA (DEG) 10.0 HREF 5.756E-02 RE/FT 3.730E 06 CORR NAR-DWD

27

9/21/71

AFDC(ARCO,INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B
V11162

GROUP 371 CONFIG 53 MODEL NAR-DWO MACH NO 8.00 PN PSIA 862.1 TO DEG R 1351 ALPHA-MODEL 20.01 ALPHA-SECTOR 2.99 ALPHA-PREBEND -23.00 ROLL-MODEL 180.00 YAW 0.0

1-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STREF
(OFG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R=.013FT) (M=.013FT)
97.9 .098 3.956 3879 7.546E-05 7.883E-08 3.72E 06 5.767E-02 2.441E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHO/CXK)

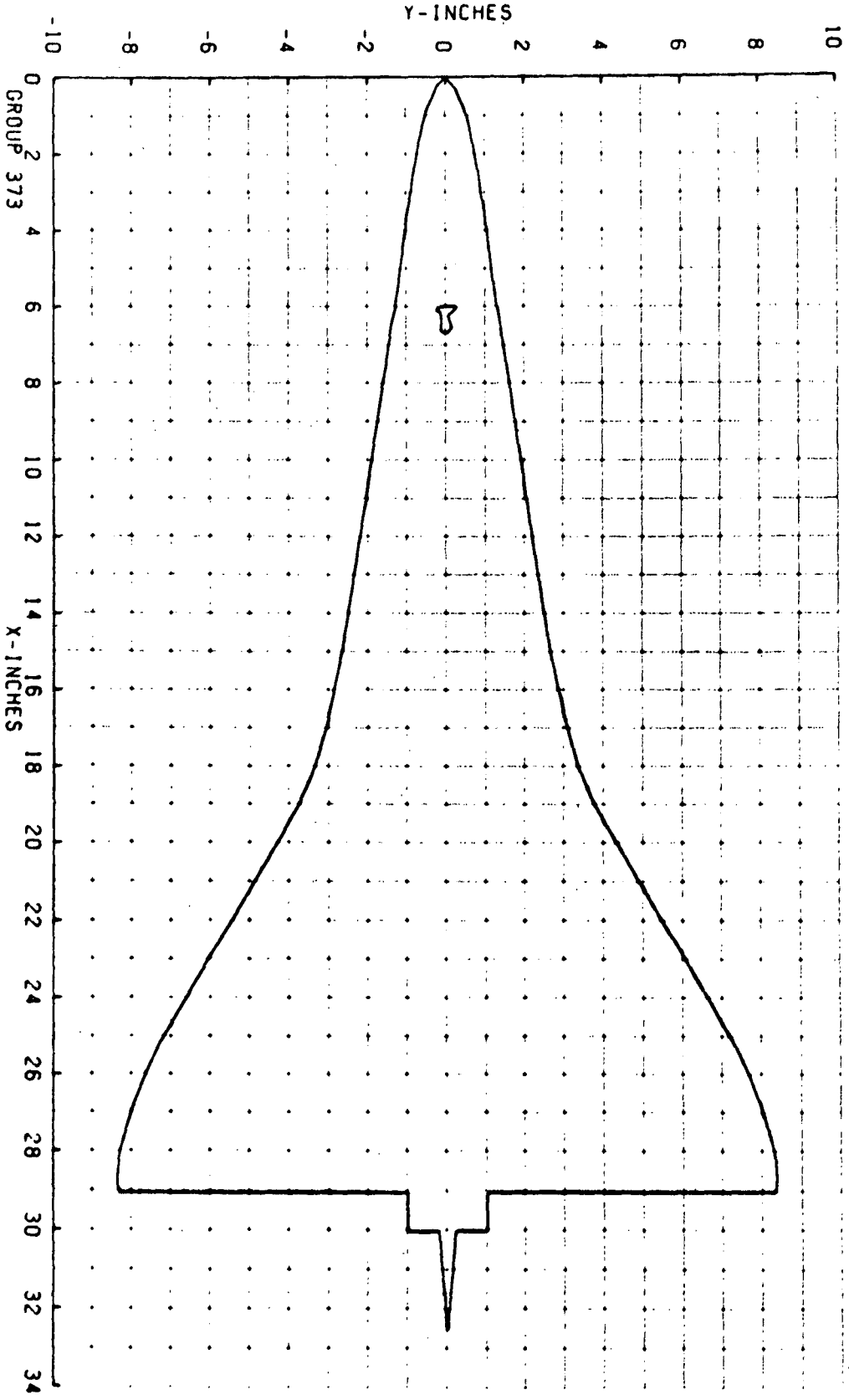
TOP(T) 200
SICE(S) 200
ROTCM(R) 200

AVERAGE TW = 77

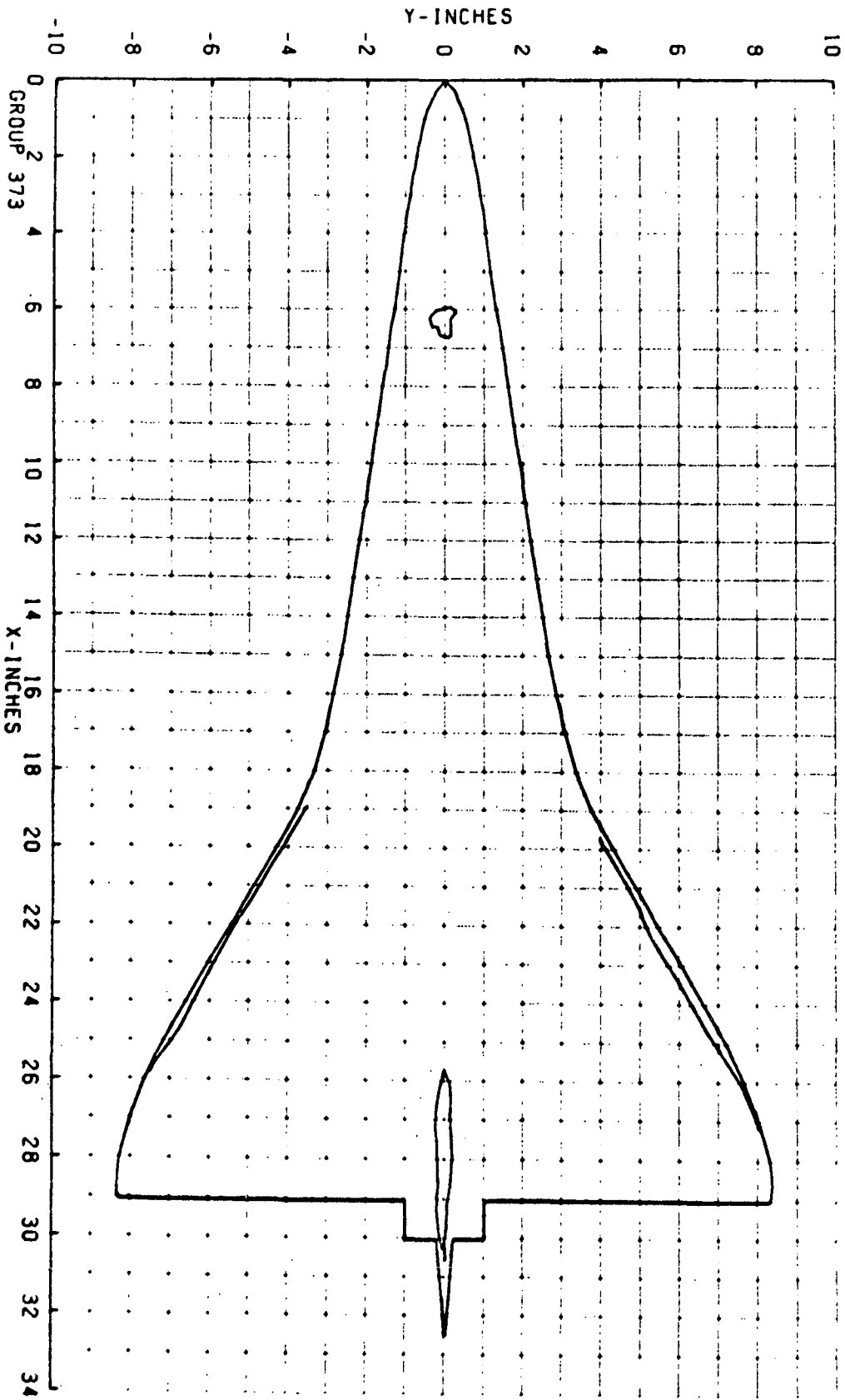
-0.008(SQUARE ROOT DEL TIME) * 0.11

PTC NC TIME NETTIME H(TO) H(TO)/HREF H(.9TO) H(.5TC)/HREF H(.85TO) H(.85TO)/HREF ST(TO) MODEL TEMP F
8 2556 (200) 5.90 4.91 6.43E-03 .1116 7.937E-03 .1377 8.987E-03 .1549 2.718E-03 105 77 0 0
8 2566 (200) 11.25 10.16 4.04E-03 .0702 4.990E-03 .0866 5.650E-03 .0991 1.709E-03 142 81 0 0

GROUP 373 PIC. NO. 2556 H/HREF 1.116E-01 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.767E-02 RE/FT 3.720E 06 CONF NAR-DW0



GROUP 373 PIC. NO. 2566 H/HREF 7.020E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.767E-02 RE/FT 3.720E 06 CONF NAR-DW0



9/21/71

AEDCIAR0.INC01 ARNOLD AFB, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 0
V11162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-DREBEND ROLL-MODEL YAW

37A 53 AAR-DWD 8.00 861.1 13A8 19.99 3.01 -23.00 180.00 .0

T-INF P-INF O-INF V-INF RHO-INF MU-INF RE/FT HREF STREF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT)

97.7 .6A8 3.957 3875 7.574E-05 7.867E-08 3.73E 06 5.763E-02 2.439E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHOXCKA)

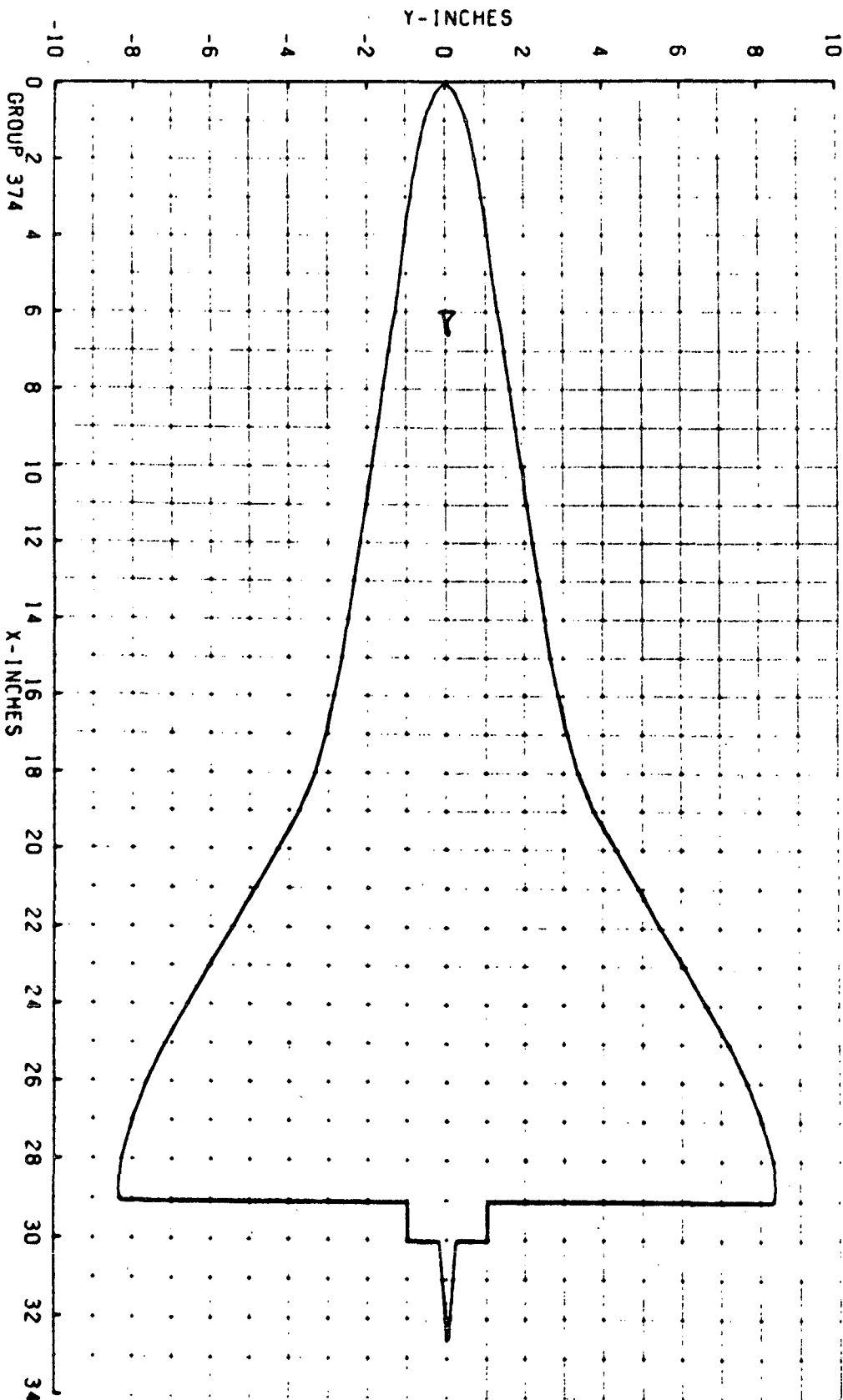
TOP(1) 250 AVERAGE TW = 78 -0.008(SQUARE ROOT DEL TIME) * 0.11
SIDE(S) 250
ROTICM(B) 250

PIC MC TIME DELTIME H(TO) H(TO)/HREF H(.9TO) H(.9TO)/HREF H(.85TO) H(.85TO)/HREF ST(TO) MODEL TEMP F

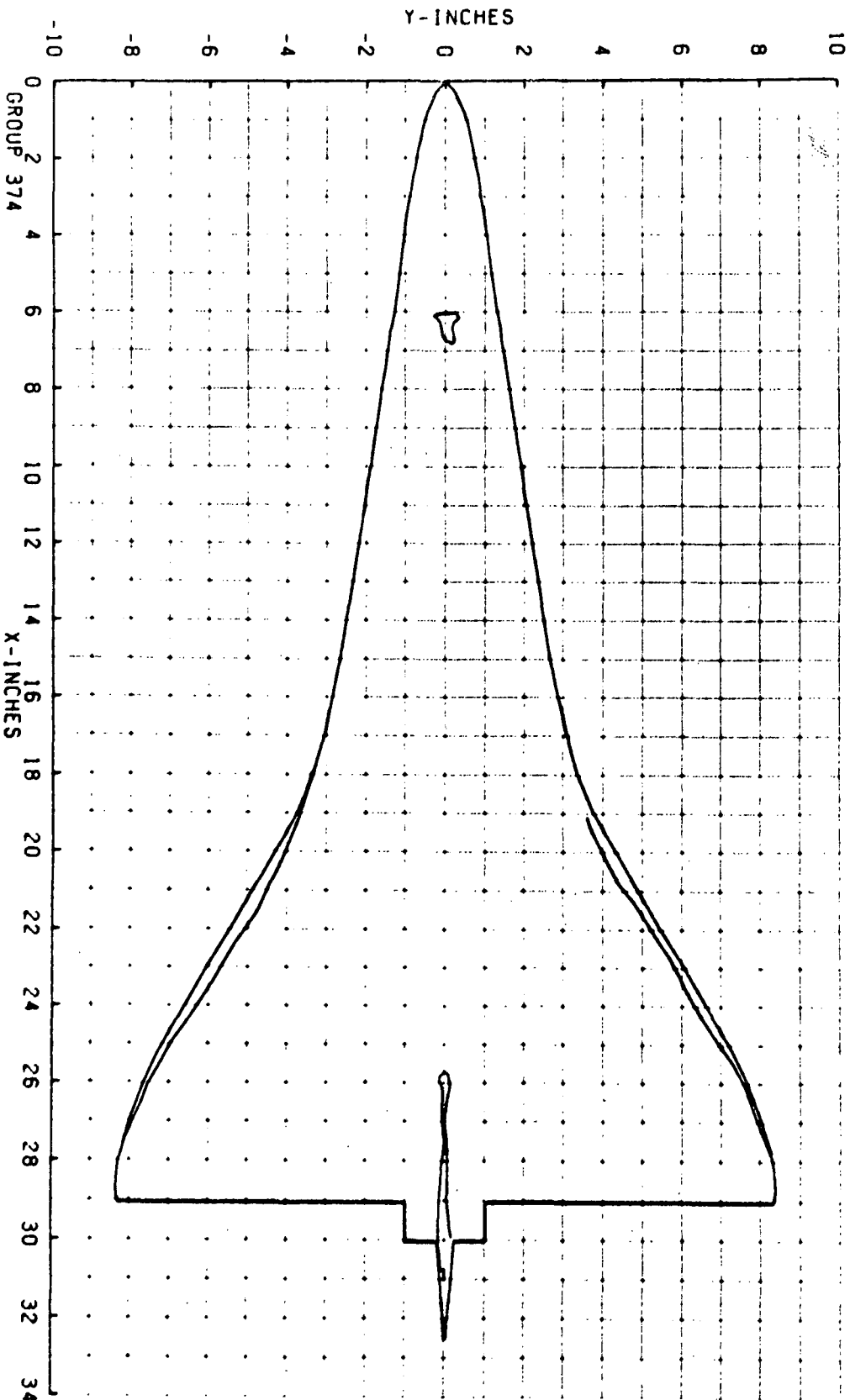
R 2579 (250) 3.75 2.66 1.35E-02 .2348 1.691E-02 .2933 1.936E-02 .3358 5.683E-03 89 77 0 0

0 2400 (250) 15.00 13.91 4.87E-03 .0945 6.108E-03 .1059 6.995E-03 .1213 2.054E-03 162 85 0 0

GROUP 374 PIC. NO. 2579 H/HREF 2.340E-01 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NAR-DMO



GROUP 374 PIC. NO. 2600 H/HREF 8.450E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHR (DEG) 20.0 HREF 5.763E-02 RE/FT 3.730E 06 CONF NRR-DMO

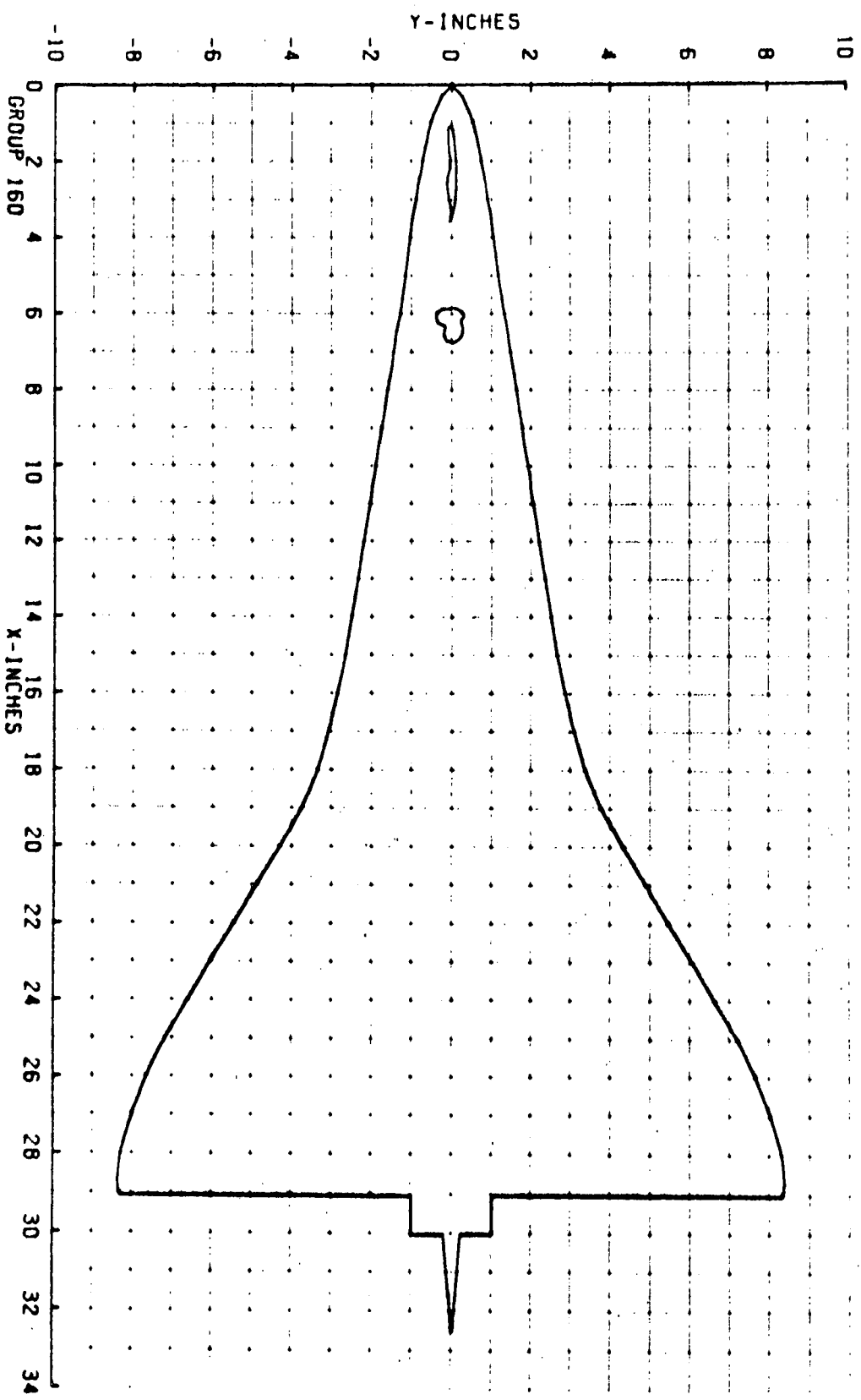


6/ 2/71

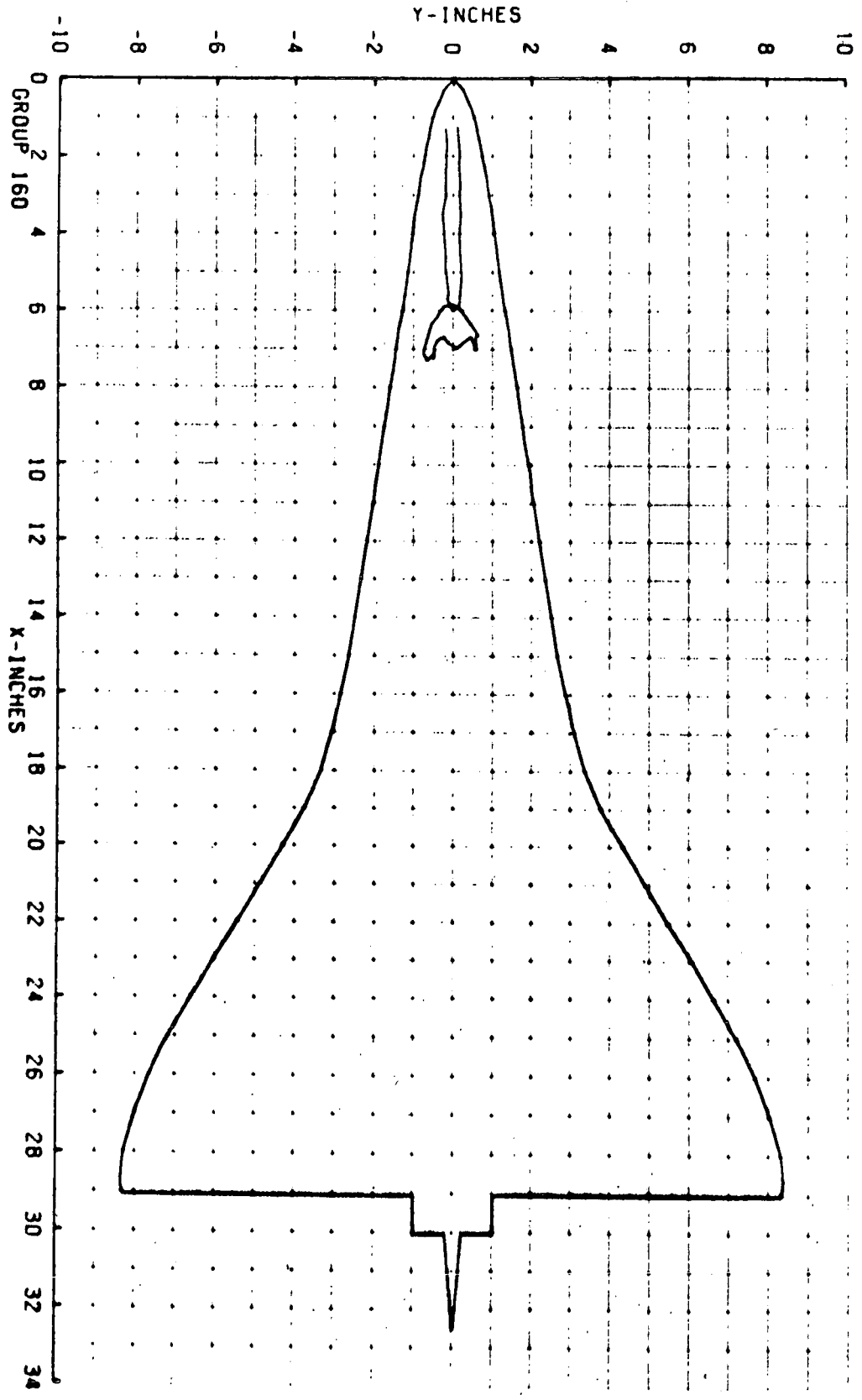
AFDCIARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 8
V11162

GROUP	CONFID	MODEL	MACW NO	PN PSIA	TO DEG R	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
160	SI	NAR-040	8.08	856.3	1332	30.02	-7.02	-23.00	180.00	.0
T-INF P-INF O-INF V-INF RHO-INF MU-INF REF/FT RREF STREF (DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .013FT) 96.5 .088 3.529 3852 7.622E-05 7.773E-08 2.78E 06 5.734E-02 2.429E-02										
CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RHODACKI) TOP(1) 306 SIDE(S) 100 AVERAGE TM = 73 -0.008(SQUARE ROOT DEL TIME) * 0.11 BOTTOM(B) 100										
PIC WC TIME DELTIME H(TO) H(TO)/HREF H(.91TO) H(.51TO) H(.85TO) H(.85TO)/HREF ST(1TO) MODEL TEMP F 8 1022 (100) 3.15 2.08 2.06E-03 .0360 2.492E-03 .0435 2.777E-03 .0485 8.775E-04 74 72 75 8 1026 (100) 5.25 4.18 1.38E-03 .0241 1.673E-03 .0292 1.864E-03 .0325 5.885E-04 77 73 79 9 1042 (100) 13.60 12.53 6.98E-04 .0122 8.429E-04 .0147 9.393E-04 .0154 2.965E-04 106 77 108										

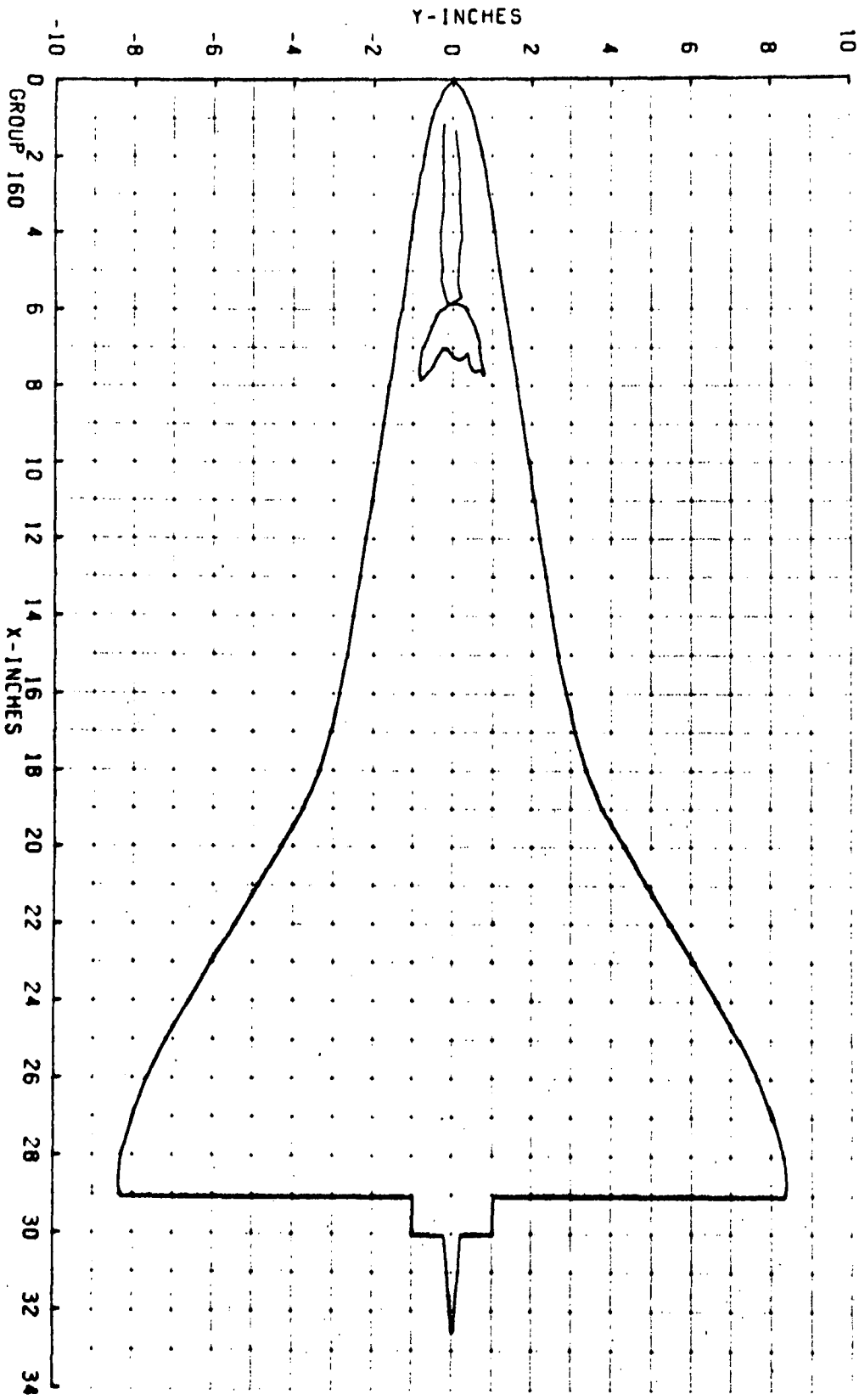
GROUP 160 PIC. NO. 1022 H/HREF 3.600E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NAR-DWD



GROUP 160 PIC. NO. 1026 H/HREF 2.410E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NRR-DWD



GROUP 160 PIC. NO. 1042 H/HREF 1.220E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 30.0 HREF 5.734E-02 RE/FT 3.780E 06 CONF NRR-DWD



6/ 2/71

AFDCIARO, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9
VI1162

GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-PREBEND ROLL-MODEL YAW

180 S1 NR-DWG 9.00 854.7 1351 40.01 9.99 -50.00 180.00 0

T-INF P-INF O-INF V-INF RMO-INF MU-INF RE/FT HREF STREF
(DEG R) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R = .013FT) (R = .013FT)

97.9 .08 3.922 3979 7.505E-05 7.880E-08 3.69E 06 5.742E-02 2.451E-02

CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMOICXK)
TOP(T) 400
SICE(S) 113 AVERAGE Tw = 79 -0.008(SQUARE ROOT DEL TIME) * 0.11
BOT(CM(B)) 113

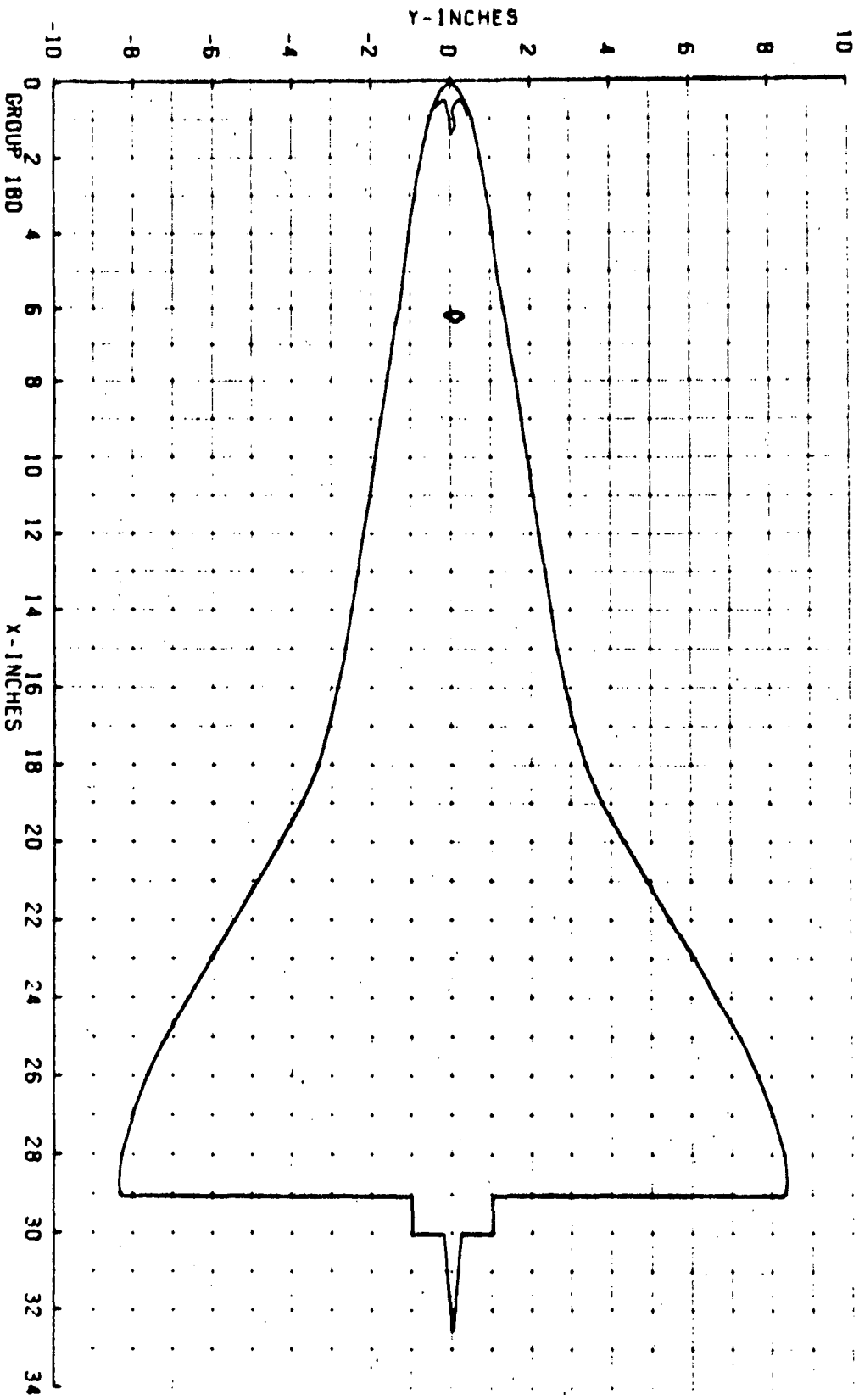
PTC MC TIME DELTIME H(TO) M(TO)/HREF M(.91TO) M(.91TO)/HREF M(.85TO) M(.85TO)/HREF ST(TO) MODEL TEMP F

0 1482 (113) 3.70 2.63 2.22E-03 .0404 2.803E-03 .0448 3.128E-03 .0545 9.929E-04 77 80 81 0

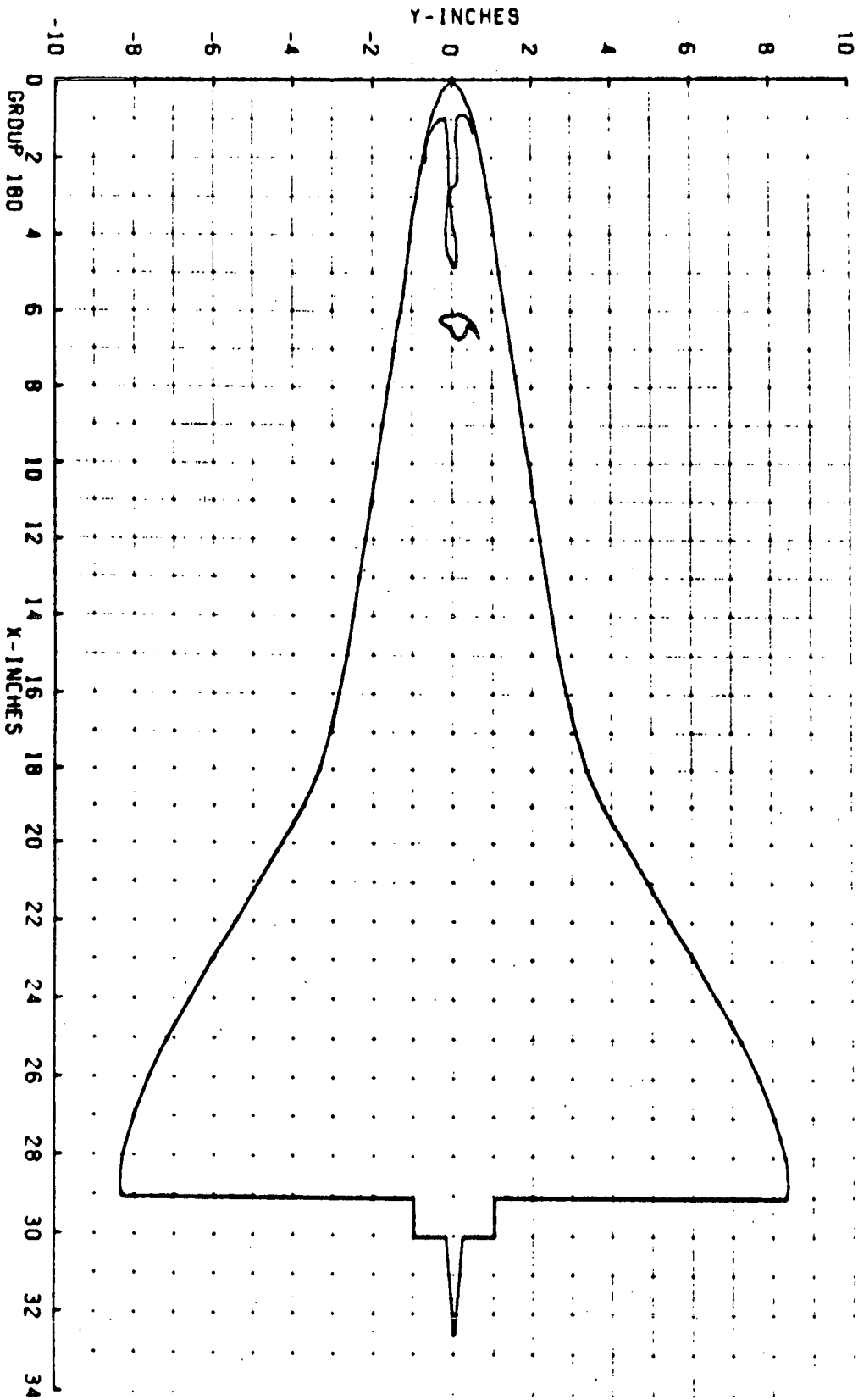
8 1587 (113) 5.85 4.74 1.64E-03 .0286 1.583E-03 .0345 2.213E-03 .0385 7.026E-04 84 91 88 0

8 1595 (113) 10.10 9.03 1.11E-03 .0193 1.341E-03 .0233 1.497E-03 .0241 4.750E-04 103 82 109 0

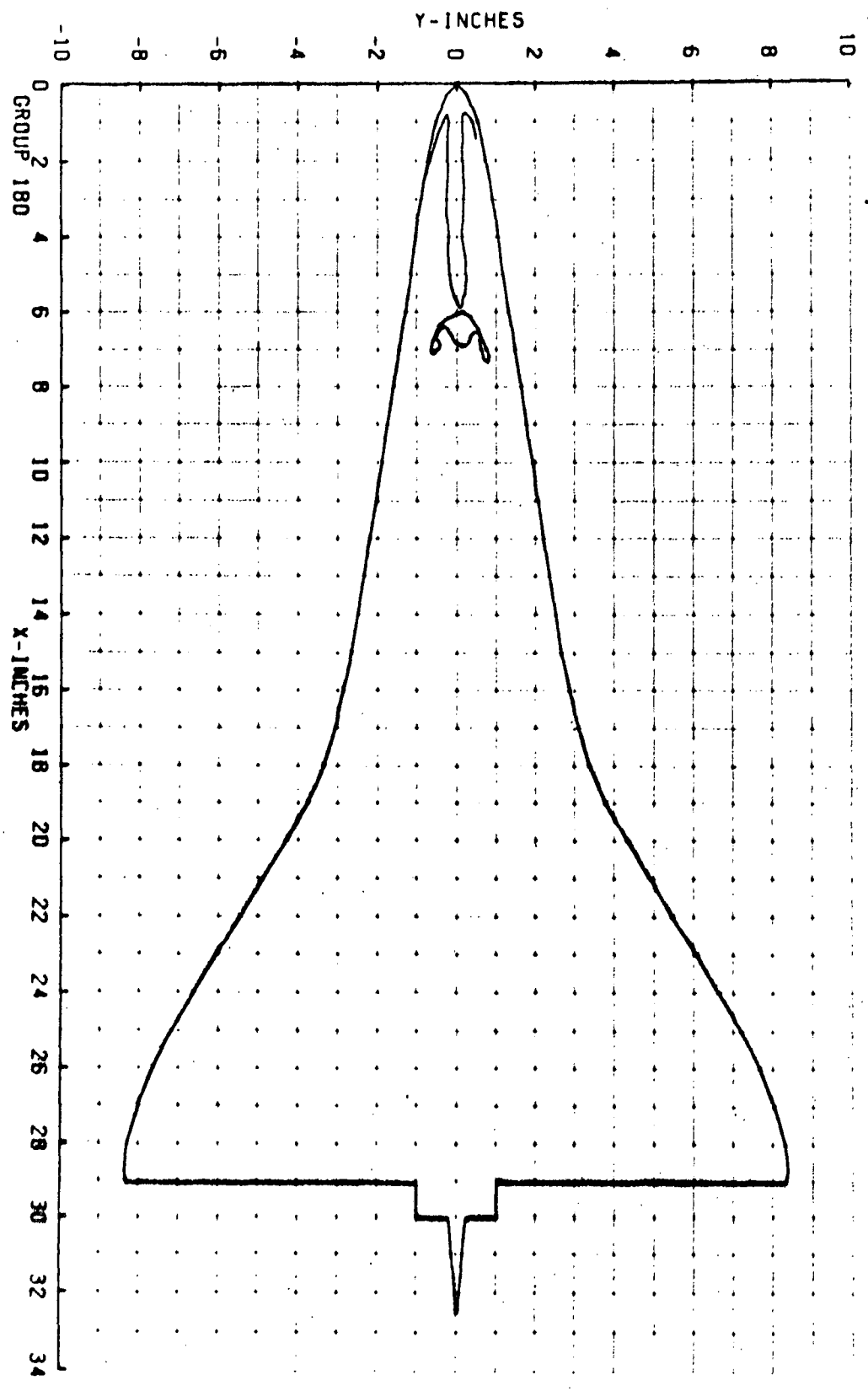
GROUP 180 PIC. NO. 1583 H/HREF 4.040E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.742E-02 RE/FT 3.690E 06 CONF NRR-DMO



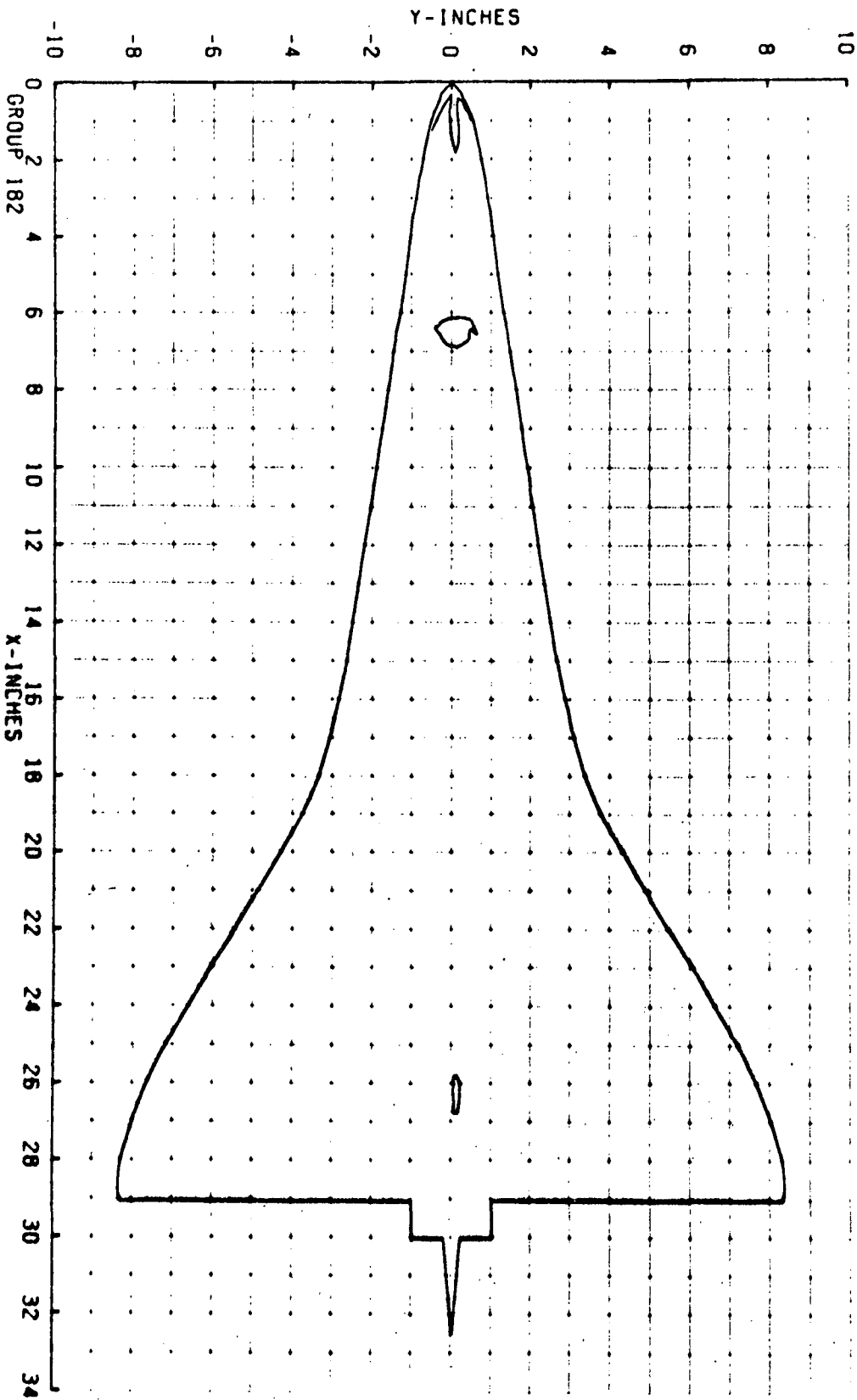
GROUP 180 PIC. NO. 1587 H/HREF 2.860E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 40.0 HREF 5.742E-02 RE/FT 3.690E 06 CONF NAR-DMD



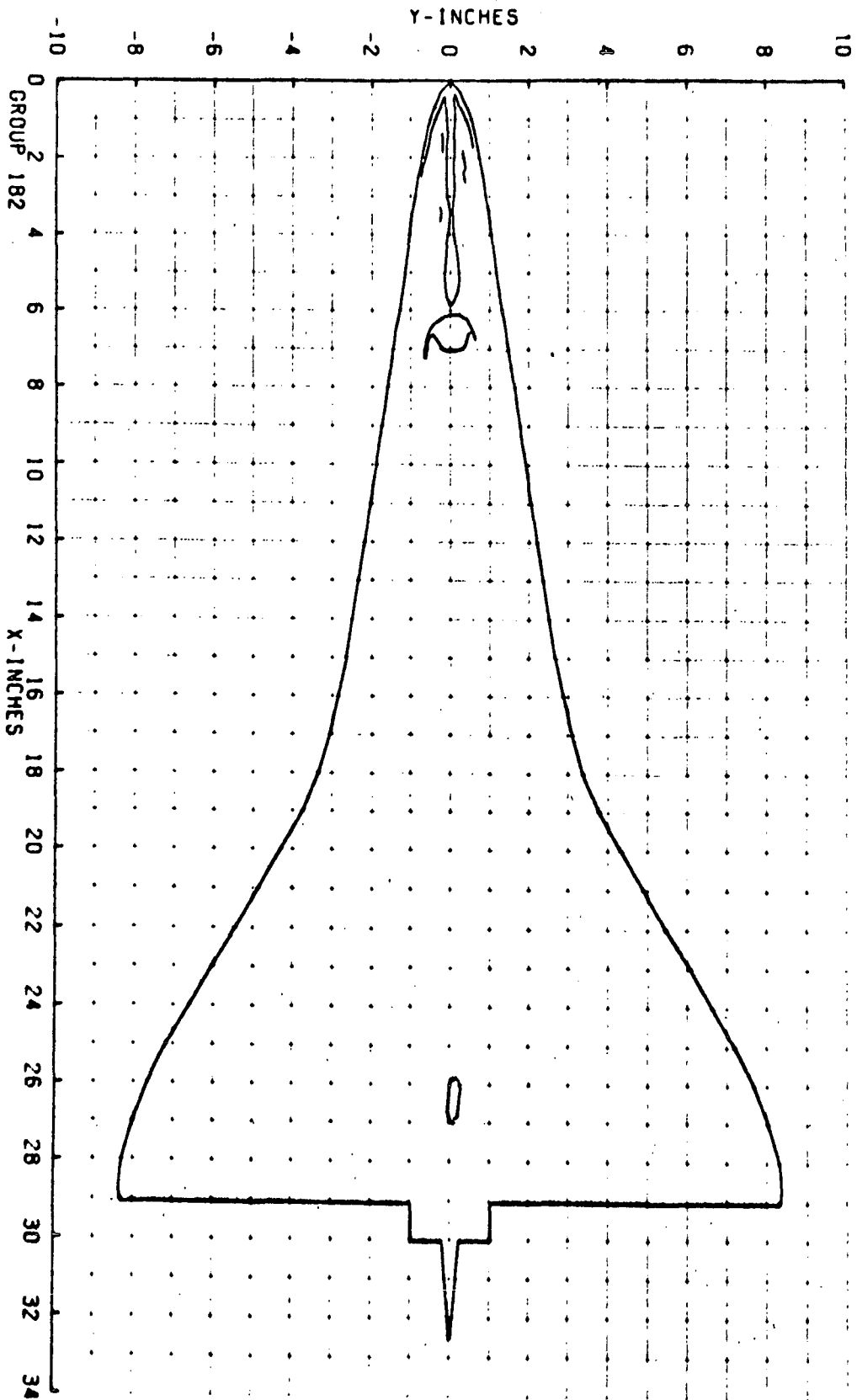
GROUP 180 PIC. NO. 1595 H/HREF 1.930E-02 MODEL SURFACE - TOP
 MACH 8.00 ALPHA (DEG) 40.0 HREF 5.742E-02 RE/FT 3.690E 06 COMP NAR-010



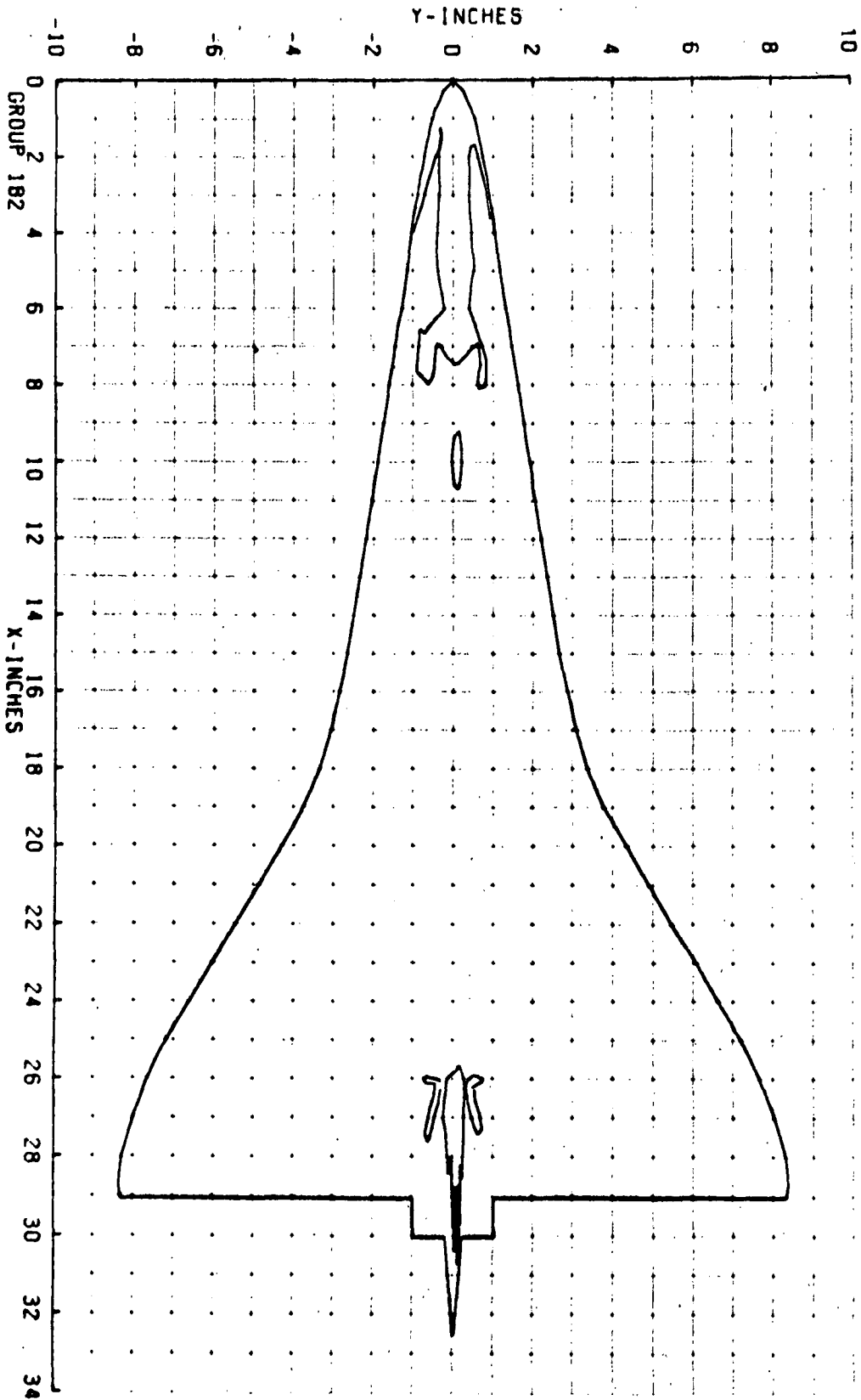
GROUP 182 PIC. NO. 1633 H/HREF 4.300E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.740E-02 RE/FT 3.670E 06 CONF NRR-DWD



GROUP 182 PIC. NO. 1635 H/HREF 3.430E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.740E-02 RE/FT 3.670E 06 CONF NAR-DWD



GROUP 182 PIC. NO. 1647 H/HREF 1.760E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.740E-02 RE/FT 3.670E 06 CONF NAR-DMD



6 / 2771

AFDCIARON, INC.) ARNOLD AFS, TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL @
V1162

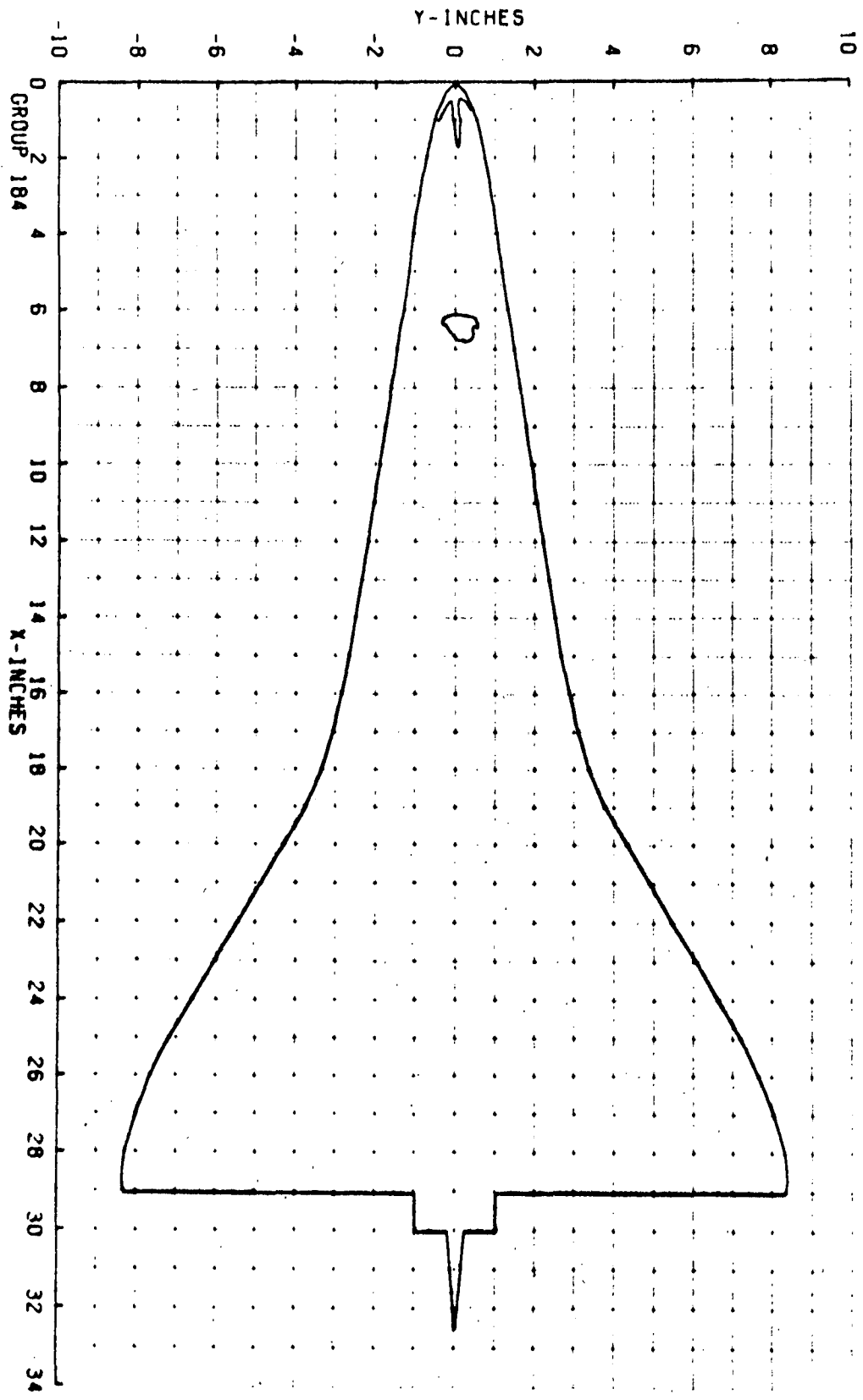
GROUP CONFIG MODEL MACH NO PO PSIA TO DEG R ALPHA-MODEL ALPHA-SECTOR ALPHA-DRIBEND ROLL-MODEL YAW
184 51 AAR-DW0 2.00 856.6 1351 50.01 -.01 -50.00 180.00 .0

T-1AF P-1NF O-1AF V-1NF RMO-1NF MU-1NF GE/FT HREF STRIF
(DEG R) (PSIA) (PSIA) (FT/SEC) (SLUGS/FT3) (LB-SEC/FT2) (FT-1) (R= .013FT) (R= .01FT)
97.9 .082 3.931 3879 7.519E-05 7.803E-08 3.70E 06 5.749E-02 2.449E-02

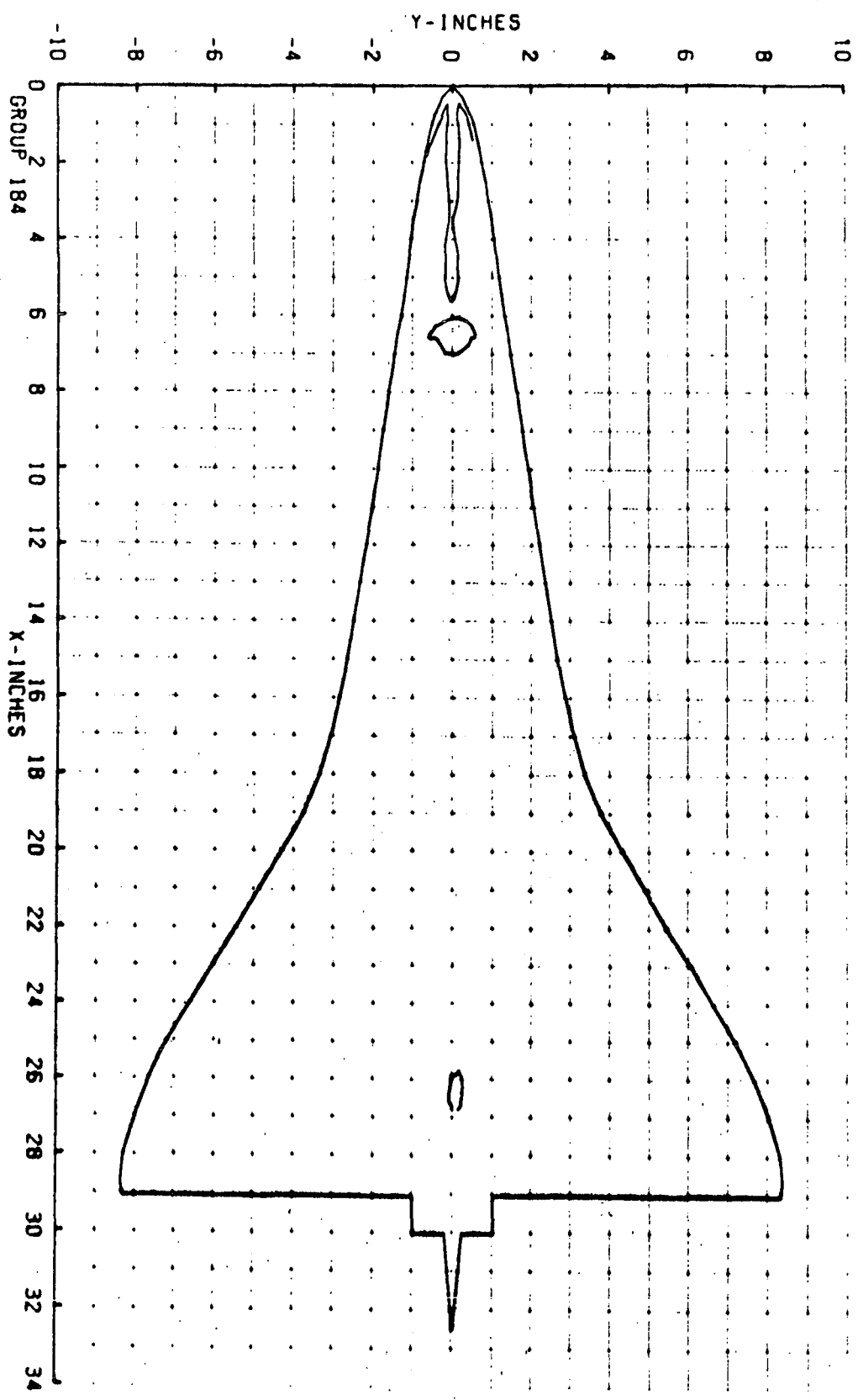
CAMERA PAINT TEMP (DEG F) INITIAL TEMP (DEG F) SQUARE ROOT (RMOXCRK)
TOP (I) 400
SIDE(S) 112 AVERAGE TM = 85
BOTTOM(B) 113 -0.008(SQUARE ROOT DEL TIME) * 0.11

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.8510)	H(.8510)/HREF	ST(TO)	MODEL	TEMP F
8 1684 (113)	2.65	1.58	2.55E-03	.0444	3.079E-03	3.438E-03	.0598	1.090E-03	84	82
8 1686 (113)	3.75	2.64	1.93E-03	.0331	2.293E-03	2.561E-03	.0446	8.125E-04	86	83
8 1695 (113)	8.50	7.43	1.04E-03	.0181	1.254E-03	1.400E-03	.0244	4.441E-04	113	86
8 1705 (113)	13.85	12.78	7.31E-04	.0127	8.826E-04	9.855E-04	.0171	3.124E-04	148	90

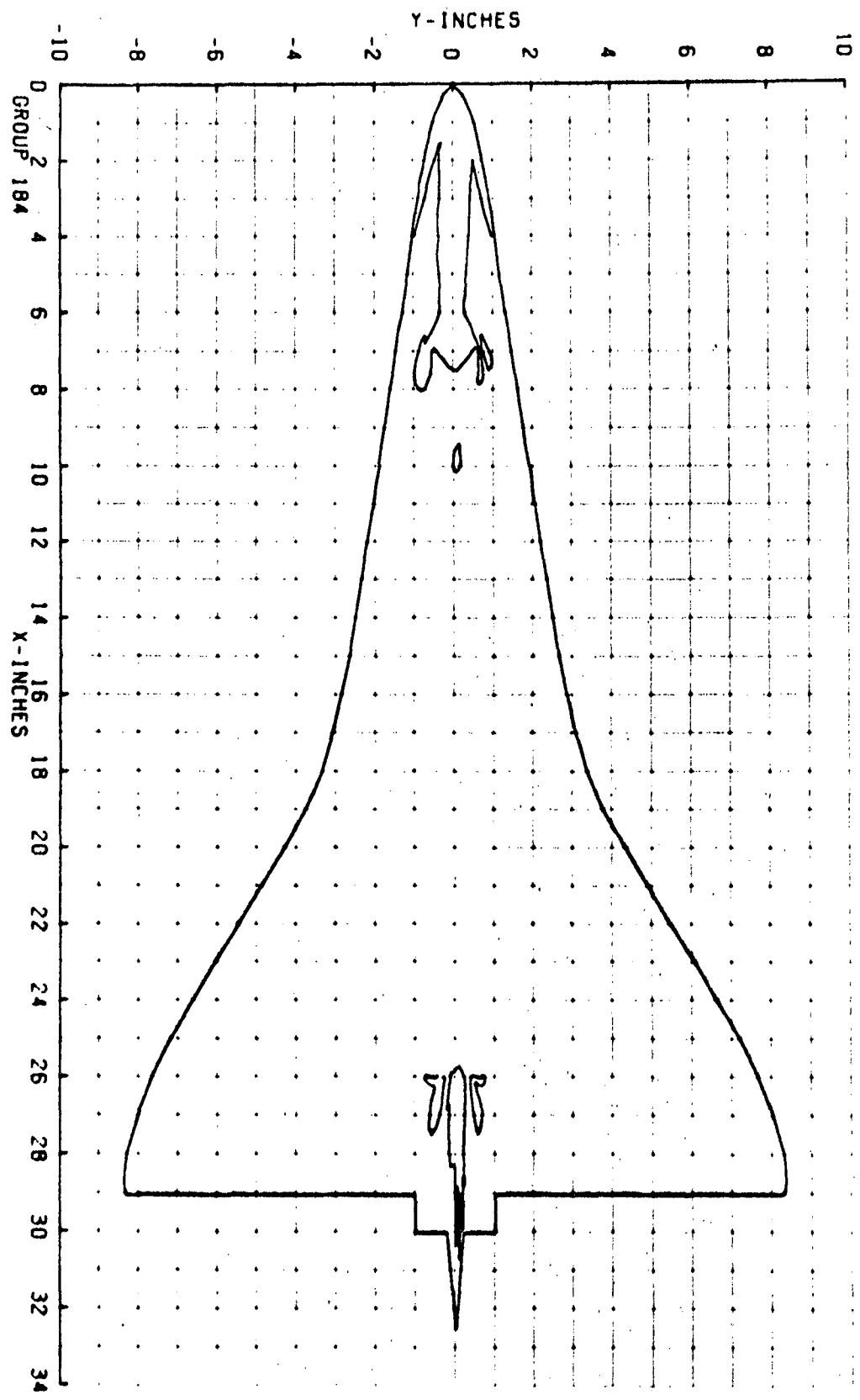
GROUP 184 PIC. NO. 1684 H/HREF 4.440E-02 MODEL SURFACE - TOP
MACH 8.00 RLPNR (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NNR-DW0



GROUP 184 PIC. NO. 1686 H/HREF 3.310E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NAR-DMD



GROUP 184 PIC. NO. 1695 H/HREF 1.810E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NRR-DMD



GROUP 184 PIC. NO. 1705 H/HREF 1.270E-02 MODEL SURFACE - TOP
MACH 8.00 ALPHA (DEG) 50.0 HREF 5.749E-02 RE/FT 3.700E 06 CONF NAR-DWD

