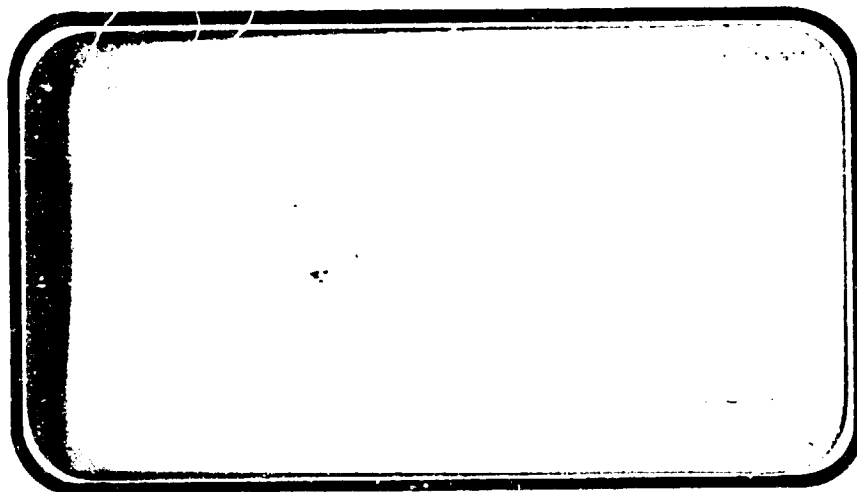


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NASA

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



NASA-CR-128788) RESULTS OF TESTS IN THE
NSFC 14 X 14 INCH TRANSONIC WIND TUNNEL
ON A .004 SCALE MODEL OF THE ROCKWELL
INTERNATIONAL SPACE SHUTTLE (Chrysler
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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA Management services

SPACE DIVISION



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DMS-DR-2063
NASA CR - 128,788

RESULTS OF TESTS IN THE MSFC 14 x 14 INCH
TRISONIC WIND TUNNEL ON A .004 SCALE MODEL
OF THE ROCKWELL INTERNATIONAL SPACE
SHUTTLE VEHICLE 3, (INTEGRATED CONFIGURATION)

By

E. C. Allen and Tom Hamilton, Rockwell International

Prepared under NASA Contract Number NAS9-13247

by

Data Management Services
Chrysler Corporation Space Division
New Orleans, La. 70189

for

Engineering Analysis Division
Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS

Test Number: MSFC 579-580
NASA Series No.: IA-37, IA-48
Date: July 10-16, 1973 (54 Occ. Hrs.)

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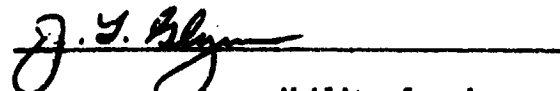
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This document has been reviewed and is approved for release.

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RESULTS OF TESTS IN THE MSFC 14 x 14 INCH TRISONIC
WIND TUNNEL ON A .004 SCALE MODEL OF THE
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ABSTRACT

Experimental aerodynamic investigations were conducted during mid-July, 1973 on a .004 scale model of the Rockwell International integrated configuration Space Shuttle Vehicle 3. The purpose of the tests was three fold: (1) to determine the static stability characteristics of the integrated vehicle, utilizing the Vehicle 3 orbiter configuration; (2) to determine the effect of interstage structure and tank external fuel lines on the integrated vehicle aerodynamic characteristics; (3) to determine the effects of the aft interstage structure on orbiter aerodynamic loads. Data were recorded on the integrated vehicle (test no. 579) at angles of attack and sideslip ranging from -10° to 10° over a Mach number schedule from 0.6 to 4.96. Data were obtained on the orbiter alone in the presence of the external tank with SRB attached (test no. 580) at angles of attack from -10° to 10° over a Mach number range from .6 to 1.96.

Plotted data are presented in the body axis system.

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Schedule of Coefficients Plotted:

- A) CN vs CLM
CN, CLM, CAF, CABO, CABS, CABT vs ALPHA
- B) CN vs CLM
CN, CLM, CAB, CAP vs ALPHA
- C) CY, CYN, CBL vs BETA
CY vs CYN
- D) CN vs CLM
CN, CLM, CAF, CABO, CABT vs ALPHA
- E) DCN/DA, DCIMDA, XAC, CNALFO, CIMAFO, CAFAF0, CABOAO,
CABTAG, CABS AO vs MACH
- F) DCN/DA, DCIMDA, XAC, CNALFO, CIMAFO, CAFAF0 vs MACH
- G) DCN/DA, DCIMDA, XAC, CNALFO, CIMAFO, CAFAF0, CABOAO,
CABT AO vs MACH
- H) DCY/DB, DCYNDB, DCHLDB, YAC vs MACH

NOMENCLATURE
General

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(p_1 - p_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m^2 , psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$, N/m^2 , psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
ψ	PSI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
ρ		mass density; kg/m^3 , slugs/ft ³

Reference & C.G. Definitions

A_b		base area; m^2 , ft^2
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
\bar{c}	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m^2 , ft^2
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
∞	free stream

NOMENCLATURE
(Continued)

Body-Axis System

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
C_N	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
C_A	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_{A_b}	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(P_b - P_\infty)/qS$
C_{A_f}	CAF	forebody axial force coefficient; $C_A - C_{A_b}$
C_m	CIM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS l_{REF}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qS b}$
C_l	CEL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qS b}$

NOMENCLATURE (Concluded)

ADDITIONS TO STANDAPD LIST

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
C_A'	CAP	axial force coefficient corrected for balance cavity pressure effects
C_{ABO}	CABO	orbiter base axial force coefficient
C_{ABS}	CABS	solid rocket booster base axial force coefficient
C_{ABT}	CABT	external tank base axial force coefficient
$C_A'(\alpha=0)$	CAPAFO	axial force coefficient corrected for balance cavity pressure effects, at zero degrees angle of attack
$C_{AF}(\alpha=0)$	CAFAFO	forebody axial force coefficient at zero degrees angle of attack
$C_{ABO}(\alpha=0)$	CABOAO	orbiter base axial force coefficient at zero degrees angle of attack
$C_{ABS}(\alpha=0)$	CABSAO	solid rocket booster base axial force coefficient at zero degrees angle of attack
$C_{ABT}(\alpha=0)$	CABTAO	external tank base axial force coefficient at zero degrees angle of attack
$C_m(\alpha=0)$	CLMAFO	pitching moment coefficient at zero degrees angle of attack
$C_N(\alpha=0)$	CNALFO	normal force coefficient at zero degrees angle of attack
X_{AC}	XAC	longitudinal location of aerodynamic center with respect to reference c.g. $X_{AC} = -(dC_m/d\alpha)/(dC_N/d\alpha)$; positive X when a.c. aft of c.g.
Y_{AC}	YAC	longitudinal location of aerodynamic center with respect to reference c.g. $Y_{AC} = -(dC_n/d\beta)/(dC_Y/d\beta)$; positive X when a.c. aft of c.g.
$C_{N\alpha}$	DCN/DA	derivative of normal force coefficient with respect to alpha, ($\text{Alpha} = \pm 7^\circ$); per degree

NOMENCLATURE (Concluded)

ADDITIONS TO STANDARD LIST

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
$C_{m\alpha}$	DCLMDA	derivative of pitching moment coefficient with respect to Alpha, (Alpha = $\pm 7^\circ$); per degree
$C_{Y\beta}$	DCY/DB	derivative of side force coefficient with respect to Beta, (Beta = $\pm 7^\circ$); per degree
$C_{n\beta}$	DCYNDB	derivative of yawing moment coefficient with respect to Beta, (Beta = $\pm 7^\circ$); per degree, body axis system
$C_{l\beta}$	DCYLDB	derivative of rolling moment coefficient with respect to Beta, (Beta = $\pm 7^\circ$); per degree, body axis system

CONFIGURATIONS INVESTIGATED

For the integrated vehicle testing (test no. 579) the external tank was mounted on the 232 balance which was supported by the number 3 balance adapter and sting. The orbiter was mounted to the tank at three points simulating the forward attach point and the two main fuel lines at the rear attach point. The SRB's were also rigidly attached to the tank. (See figures 2 thru 6.)

When testing the orbiter in the presence of the tank and booster (test No. 580) the dual sting support system was used as shown in figure 7. The orbiter was mounted on the 231 balance supported by the upper sting. The tank was mounted on a dummy balance supported by the lower sting. The two SRB's were rigidly attached to the tank.

Base pressures were monitored at the six locations shown in figure 8. during test no. 579. Since only three data channels were available for pressure measurements, the three tubes monitoring the orbiter were "teed" together, as were the two tubes at the base of the external tank. Thus, three base pressures were recorded; an averaged pressure for the orbiter, an averaged pressure for the external tank, and the base pressure of one SRB.

For test no. 580 only orbiter average base pressure was recorded.

The orbiter model Vehicle 3 configuration consisted of the following components:

B19	Body
C7	Canopy
F5	Body Flap
M4	OMS pods

W107	Wing
E23	Elevon
V7	Vertical tail
R5	Rudder

The external tank, solid rocket motors and interstage structures were not broken into subassemblies and carried the following designations:

T9	External Tank
T14	External Tank with external fuel lines
S12	Solid Rocket Motor
U6	Aft interstage structure between orbiter, tank and solid rocket motors
U7	Aft interstage structure between orbiter and tank.

Pertinent dimensions for all the model components are given in Table III.

The speed brake and rudder deflections were 0 for both tests.

The tunnel conditions existing during the test are delineated in Table I. Table II summarizes the model configurations tested and identifies the run number grouping for data set formation.

TEST FACILITY DESCRIPTION

The Marshall Space Flight Center 14" x 14" Transonic Wind Tunnel is an intermittent blowdown tunnel which operates by high pressure air flowing from storage to either vacuum or atmospheric conditions. A Mach number range from .2 to 5.85 is covered by utilizing two interchangeable test sections. The transonic section permits testing at Mach 0.20 through 2.50, and the supersonic section permits testing at Mach 2.74 through 5.85. Mach numbers between .2 and .9 are obtained by using a controllable diffuser. The range from .95 to 1.3 is achieved through the use of plenum suction and perforated walls. Mach numbers of 1.44, 1.93 and 2.50 are produced by interchangeable sets of fixed contour nozzle blocks. Above Mach 2.50 a set of fixed contour nozzle blocks are tilted and translated automatically to produce any desired Mach number in .25 increments.

Air is supplied to a 6000 cubic foot storage tank at approximately -40°F dew point and 500 psi. The compressor is a three-stage reciprocating unit driven by a 1500 hp motor.

The tunnel flow is established and controlled with a servo actuated gate valve. The controlled air flows through the valve diffuser into the stilling chamber and heat exchanger where the air temperature can be controlled from ambient to approximately 180°F . The air then passes through the test section which contains the nozzle blocks and test region.

Downstream of the test section is a hydraulically controlled pitch sector that provides a total angle of attack range of 20° ($\pm 10^{\circ}$). Sting offsets are available for obtaining various maximum angles of attack up to 90° .

DATA REDUCTION

All model aerodynamic forces and moments were reduced to coefficient form in the body axis system utilizing the following reference dimensions:

$$S_{REF} = \text{orbiter wing planform area} = 6.198 \text{ in.}^2$$

$$l_{REF} = b_{REF} = \text{orbiter body length} = 5.160 \text{ inches}$$

Moments were about a reference center of gravity which was located 2.720 inches aft of the external tank nose on the ET centerline (see figure 2). This held true for both tests (#579 and #580).

For test #579, which measured integrated vehicle loads, base pressures were measured on all three vehicle components-orbiter, external tank, and solid rocket booster-and utilized to correct the balance-measured axial force to an axial force that assumed freestream static pressure acting on the respective base areas. Due to a slanted base the normal force was also corrected. The appropriate equations and base area were

$$CAF = CA - CABO - CABT - CABS$$

$$CN = CNU - CNBO$$

where:

$$CAF = \text{forebody axial force coefficient}$$

$$CA = \text{balance measured axial force coefficient}$$

$$CABO = -C_{PB0} (A_{B0}/S_{REF}) \cos i_B$$

$$CABT = -C_{PB_T} (A_{B_T}/S_{REF})$$

$$CABS = -C_{PB_S} (A_{B_S}/S_{REF})$$

$$CNU = \text{balance measured normal force coefficient}$$

$$CNBO = -C_{PB0} (A_{B0}/S_{REF}) \sin i_B$$

and

$$C_{PB0} = \text{orbiter average base pressure coefficient } [(p_{B0\text{avg}} - p_{\infty})/(q)]$$

$$C_{PBT} = \text{external tank average base pressure coefficient} \\ [(p_{BT\text{avg}} - p_{\infty})/(q)]$$

$$C_{PBS} = \text{solid rocket booster pressure coefficient } [(p_{BS} - p_{\infty})/(q)]$$

$$A_{B0} = \text{orbiter base area} = 0.9857 \text{ in.}^2$$

$$A_{BT} = \text{external tank base area} = 1.319 \text{ in.}^2$$

$$A_{BS} = \text{solid rocket booster base area (2)} = 0.9265 \text{ in.}^2$$

$$i_B = \text{orbiter base slant angle} = 12^\circ$$

For test #580 which recorded orbiter forces and moments only the orbiter average base pressure was measured and utilized to correct axial force in accordance with established procedures. The equations utilized were:

$$C_{AF} = C_A - C_{AB}$$

$$C_A' = C_{AF} - C_{PB0} (A_{B0}/S_{REF})$$

where:

$$C_{AB} = -C_{PB0} [(A_{B0} - A_{C0})/(S_{REF})] - C_{PC0} (A_{C0}/S_{REF})$$

and:

$$A_{C0} = \text{orbiter balance cavity area} = 0.3167 \text{ in.}^2$$

$$C_{PC0} = [(p_c - p_{\infty})/(q)]$$

TABLE I.

TEST CONDITIONS
TEST IA37 (TWT-579)

MACH NUMBER	REYNOLDS NUMBER per unit length	DYNAMIC PRESSURE (pounds/sq. inch)	TOTAL PRESSURE (psi)	TOTAL TEMPERATURE (°F)
0.6	5.0 x 10 ⁶	4.35	22	100
0.8	5.9	6.47	22	100
0.9	6.2	7.37	22	100
1.0	6.5	8.14	22	100
1.10	6.6	8.73	22	100
1.20	6.7	9.29	22	100
1.46	6.5	9.47	22	100
1.96	7.0	10.24	28	100
2.99	4.0	5.19	30	140
3.50	6.2	6.74	60	140
4.96	4.8	3.07	90	140

BALANCE UTILIZED: MSFC 232

CAPACITY:

NF 300 lbs.
 SF 143 lbs.
 AF 50 lbs.
 PM 400 in.-lbs.
 YM 192 in.-lbs.
 RM 100 in.-lbs.

ACCURACY:

±1.50 lbs.
±0.72 lbs.
±0.25 lbs.
±2.00 in.-lbs.
±0.96 in.-lbs.
±0.50 in.-lbs.

COEFFICIENT

TOLERANCE: at q = 10 lbs./in.²

±0.024
±0.012
±0.004
±0.006
±0.003
±0.002

COMMENTS: Accuracy based on ± 0.5% of balance capacity.

TABLE III. - MODEL DIMENSIONAL DATA SHEETS

MODEL COMPONENT: BODY B19

GENERAL DESCRIPTION: Fuselage, 3 configuration, Lightweight
Orbiter per VL70-000139B

NOTE: Identical to B17 except forebody

Model Scale = 0.004

DRAWING NUMBER

VL70-000139B

DIMENSION:

FULL SCALE

MODEL SCALE

Length ~ IN.

1290.3

5.16120

Max Width ~ IN.

267.6

1.07040

Max Dep h ~ IN.

244.5

0.9780

Fineness Ratio

4.82175

4.82175

Area ~ ft²

Max Cross-Sectional

386.67

0.00619

Planform

Wetted

Base

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: Canopy - C7

GENERAL DESCRIPTION: Configuration 3 per Rockwell Lines

VL 70-000139

Model Scale = .004

DRAWING NUMBER VL70-000139

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length ($x_o = 433$ to $x_o = 670$) in.FS	<u>237</u>	<u>0.9480</u>
Max Width	<u> </u>	<u> </u>
Max Depth ($B_o =$ to $B_o = 501$) in.FS	<u> </u>	<u> </u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: F5 Body Flap

GENERAL DESCRIPTION: 3 configuration per Rockwell lines

VL70-000139

Scale Model = 0.004

DRAWING NUMBER

VL70-000139

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length ~ IN.	<u>84.70</u>	<u>0.33880</u>
Max Width ~ IN.	<u>267.6</u>	<u>1.07040</u>
Max Depth	<u> </u>	<u> </u>
Fineness Ratio	<u> </u>	<u> </u>
Area ~ Ft ²		
Max Cross-Sectional		
Planform	<u>142.5195</u>	<u>0.00228</u>
Wetted	<u> </u>	<u> </u>
Base	<u>38.0958</u>	<u>0.15238</u>

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: OMS Pod - M4

GENERAL DESCRIPTION: 3 Lightweight configuration per Rockwell
Lines VL70-000139

Scale Model = 0.004

DRAWING NUMBER VL70-000139

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length ~ IN.	<u>346.0</u>	<u>1.3840</u>
Max Width ~ IN.	<u>108.0</u>	<u>0.4320</u>
Max Depth ~ IN.	<u>113.0</u>	<u>113.0</u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

D of OMS Pod

WP = 463.9 INFS: $WP400 + 63.9 = 463.9$

BP = 80.0 INFS

Length 1214.0 to 1560.0 = 346.0 INFS

NOTE: M4 identical to M3 of 2A configuration except intersection to body

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)
 MODEL COMPONENT: WING-W 107 New Lightweight Orbiter

GENERAL DESCRIPTION: Orbiter 3 configuration per lines VL70-000139E.

NOTE: Same as W103 except cuff, airfoil, and angle of incidence

Scale Model = 0.004

TEST NO.	DWG. NO. VL70-000139	
DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (theo.) Ft ²		
Planform	2690.00	0.04304
Span (Theo In.)	936.68	3.74672
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.200
Dihedral Angle, degrees	3.500	3.500
Incidence Angle, degrees	0.500	0.500
Aerodynamic Twist, degrees	+3.000	+3.000
Sweep Back Angles, degrees		
Leading Edge	45.000	45.000
Trailing Edge	-10.24	-10.24
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.O.O.	689.24	2.75696
Tip, (Theo) B.P.	137.85	0.55140
MAC	474.81	1.89924
Fus. Sta. of .25 MAC	1136.89	4.54756
W.P. of .25 MAC	299.20	1.19680
B.L. of .25 MAC	182.13	0.72852
EXPOSED DATA		
Area (theo) Ft ²	1752.29	0.02804
Span, (Theo) In. BP108	720.68	2.88272
Aspect Ratio	2.058	2.058
Taper Ratio	0.2451	0.2451
Chords		
Root BP108	502.40	2.2496
Tip 1.00 $\frac{b}{2}$	137.85	0.55140
MAC	393.03	1.57212
Fus. Sta. of .25 MAC	1185.31	4.74124
W.P. of .25 MAC	300.20	1.20080
B.L. of .25 MAC	251.76	1.00704
Airfoil Section (Rockwell Mod NASA) XXXX-64		
Root $\frac{b}{2}$.10	.10
Tip $\frac{b}{2}$.12	.12
Data for (1) of (2) Sides		
Leading Edge Cuff		
Planform Area Ft ²	118.333	0.00189
Leading Edge Intersects Fus M. L. @ Sta	500	2.0
Leading Edge Intersects Wing @ Sta	1083.4	4.3336

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: Elevon E-23

GENERAL DESCRIPTION: 3 configuration per W107 Rockwell lines

VL70-000139B data for (1) of (2) sides

Scale Model = 0.004

DRAWING NUMBER: VL70-000139B

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area ~ FT ²	<u>205.52</u>	<u>0.003288</u>
Span (equivalent) ~ IN.	<u>353.34</u>	<u>1.41336</u>
Inb'd equivalent chord	<u>114.78</u>	<u>0.45912</u>
Outb'd equivalent chord	<u>55.00</u>	<u>0.220</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>.208</u>	<u>.208</u>
At Outb'd equiv. chord	<u>.400</u>	<u>.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.00</u>	<u>0.00</u>
Tailing Edge	<u>-10.24</u>	<u>-10.24</u>
Hingeline	<u>0.00</u>	<u>0.00</u>
Area Moment (Normal to hinge line) ~ FT ³	<u>1548.07</u>	<u>0.00010</u>
Product of Area Moment		

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: VERTICAL - V 7 (Lightweight orbiter configuration)

GENERAL DESCRIPTION: Centerline vertical tail, double wedge airfoil
with rounded leading edge

Scale Model = .004

DRAWING NUMBER:

VL70-0000139
VL70-000095

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
<u>TOTAL DATA</u>		
Area (Theo) ~ Ft ²	<u>425.92</u>	<u>0.00682</u>
Planform		
Span (Theo) ~ In.	<u>315.72</u>	<u>1.26288</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>.404</u>	<u>.404</u>
Sweep Back Angles, degrees		
Leading Edge	<u>45.000</u>	<u>45.000</u>
Trailing Edge	<u>26.249</u>	<u>26.249</u>
0.25 Element Line	<u>41.130</u>	<u>41.130</u>
Chords:		
Root (Theo) WP	<u>268.50</u>	<u>1.0740</u>
Tip (Theo) WP	<u>108.47</u>	<u>0.43388</u>
MAC	<u>199.81</u>	<u>0.79924</u>
Fus. Sta. of .25 MAC	<u>1463.50</u>	<u>5.8540</u>
W. B. of .25 MAC	<u>635.522</u>	<u>2.542088</u>
B. L. of .25 MAC	<u>0.00</u>	<u>0.00</u>
Airfoil Section		
Leading Wedge Angle Deg	<u>10.000</u>	<u>10.000</u>
Trailing Wedge Angle Deg	<u>14.920</u>	<u>14.920</u>
Leading Edge Radius ~IN.	<u>2.00</u>	<u>0.0080</u>
Void Area	<u>13.17</u>	<u>0.00021</u>
Blanketed Area		

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: R5 - Rudder

GENERAL DESCRIPTION: 2A and 3 configuration per Rockwell lines

VL70-000095 and VL70-000139

Scale Model = .004

DRAWING NUMBER: VL70-000139
VL70-000095

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area ~ Ft ²	<u>106.38</u>	<u>0.00170</u>
Span (equivalent) ~ IN.	<u>201.0</u>	<u>0.8040</u>
Inb'd equivalent chord	<u>91.585</u>	<u>0.36634</u>
Outb'd equivalent chord	<u>50.833</u>	<u>0.20333</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>34.83</u>	<u>34.83</u>
Tailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline	<u>34.83</u>	<u>34.83</u>
Area Moment (Normal to hinge line) Ft ³	<u>526.13</u>	<u>0.00003</u>
Product of area and mean chord		

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: External Tank T9

GENERAL DESCRIPTION: 2A Configuration Per NR Lines VL78-000018 and VL72-0000618;
Body of Revolution

Scale Model = .004

DRAWING NUMBER: VL78-000018

<u>DIMENSIONS:</u>	<u>THEORETICAL</u>		<u>ACTUAL MEASURED</u>
	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>	<u>MODEL SCALE</u>
Length	<u>1826.00</u>	<u>7.304</u>	<u> </u>
Max. Width	<u>324.00</u>	<u>1.296</u>	<u> </u>
Max. Depth	<u> </u>	<u> </u>	<u> </u>
Fineness Ratio	<u>6.13889</u>	<u>6.13889</u>	<u> </u>
Area			
Max. Cross-Sectional	<u>572.555</u>	<u>0.00916</u>	<u> </u>
Planform	<u> </u>	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>	<u> </u>
Base	<u>572.555</u>	<u>0.00916</u>	<u> </u>

REF

FS (Orbiter) 0.00 = TANK Station 635.0 INFS

WP (ET) = 400 - 344.413 = 55.587 INFS

BP (Orbiter) 0.00 = 0.00 ET

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: EXTERNAL TANK - T_{1A}

GENERAL DESCRIPTION: _____

NOTE: T_{1A} identical to T₀ but with external fuel lines added.

Model Scale = 0.004

DRAWING NUMBER: VL78-000018

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length - IN.	<u>1858</u>	<u>7.432</u>
Max. Width (Dia) - IN.	<u>324.0</u>	<u>1.296</u>
Max. Depth	_____	_____
Fineness Ratio - L/D	<u>5.73457</u>	<u>5.73457</u>
Area - FT ²		
Max. Cross-Sectional	<u>572.56</u>	<u>0.009161</u>
Planform	_____	_____
Wetted	_____	_____
Base	_____	_____

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: BOOSTER SOLID ROCKET MOTOR - S12

GENERAL DESCRIPTION: Configuration 3A, Data for (1) of (2)
sides, per Rockwell Lines VL77-000036A

Model Scale = 0.004

DRAWING NUMBER: VL72-000088A
VL77-000036A

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length (Includes Nozzle) - IN.	<u>1741.0</u>	<u>6.9640</u>
Max. Width (Tank Dia) - IN.	<u>142.3</u>	<u>0.5692</u>
Max. Depth (Aft Shroud) - IN.	<u>192.0</u>	<u>0.7680</u>
Fineness Ratio	<u>9.06771</u>	<u>9.06771</u>
• Area - FT ²		
Max. Cross-Sectional	<u>201.06193</u>	<u>0.00322</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>
WP of BSRM Centerline (Z_T) - IN.	<u>400</u>	<u>1.6000</u>
FS of BSRM Nose (X_T) - IN.	<u>200</u>	<u>0.8000</u>

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Continued)

MODEL COMPONENT: - U6 Interstage Structure

GENERAL DESCRIPTION: The aft tie-downs that support the SRBs and the orbiter on the external tank.

Scale Model = 0.004

DRAWING NUMBER: VL72-000061

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Max. Depth	_____	_____
Fineness Ratio	_____	_____
Area	_____	_____
: Max. Cross-Sectional	_____	_____
Planform	_____	_____
Wetted	_____	_____
Base	_____	_____

TABLE III. MODEL DIMENSIONAL DATA SHEETS (Concluded)

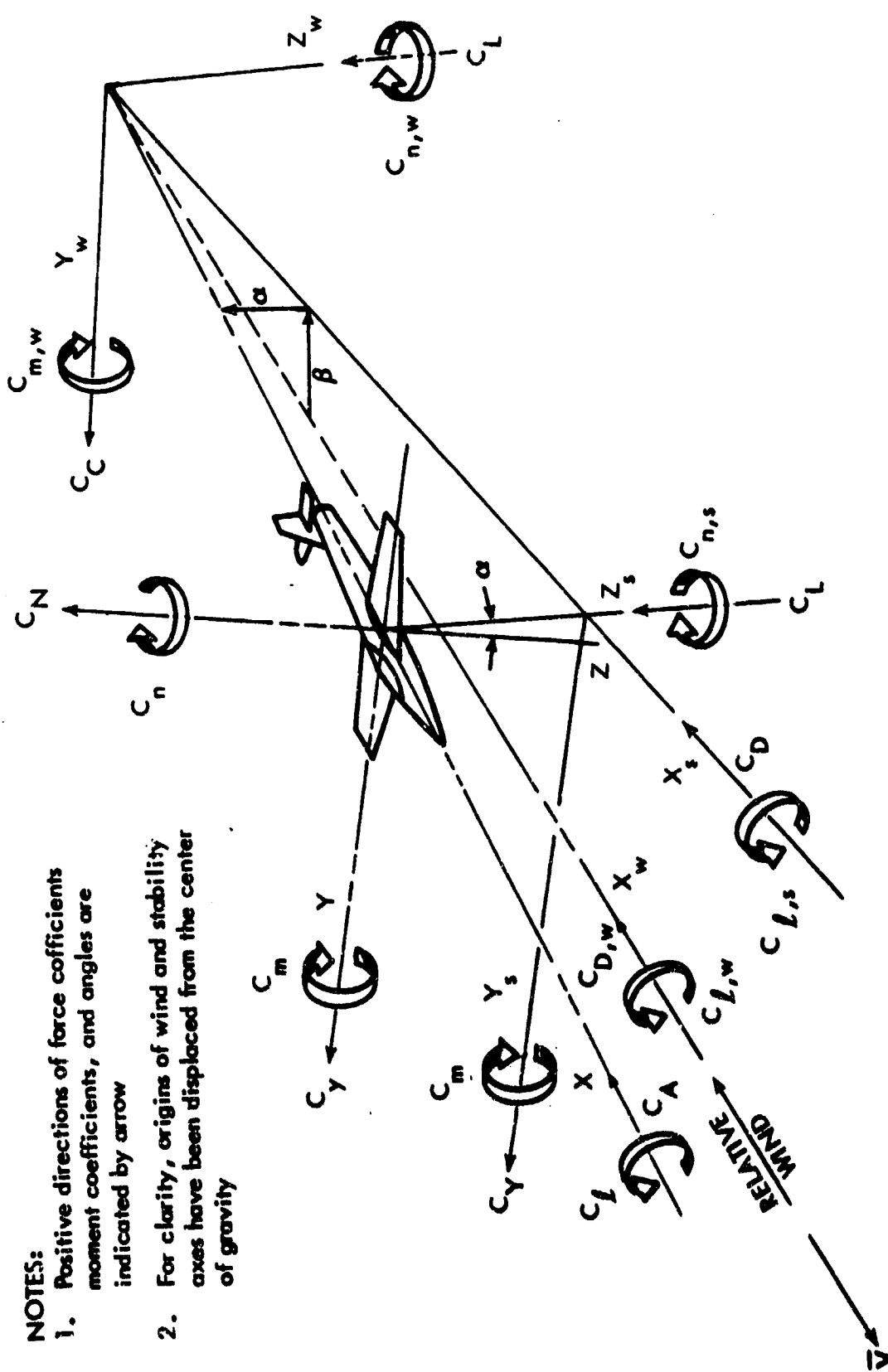
MODEL COMPONENT: U7 Interstage Structure

GENERAL DESCRIPTION: The aft tie-downs that support the orbiter on the external tank.

Scale Model = 0.004

DRAWING NUMBER: VL72-000061

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
	_____	_____
	_____	_____
Max. Depth	_____	_____
Fineness Ratio	_____	_____
Area		
Max. Cross-Sectional	_____	_____
Planform	_____	_____
Wetted	_____	_____
Base	_____	_____



- NOTES:**
1. Positive directions of force coefficients moment coefficients, and angles are indicated by arrow
 2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

FIGURE 1. - Axis Systems

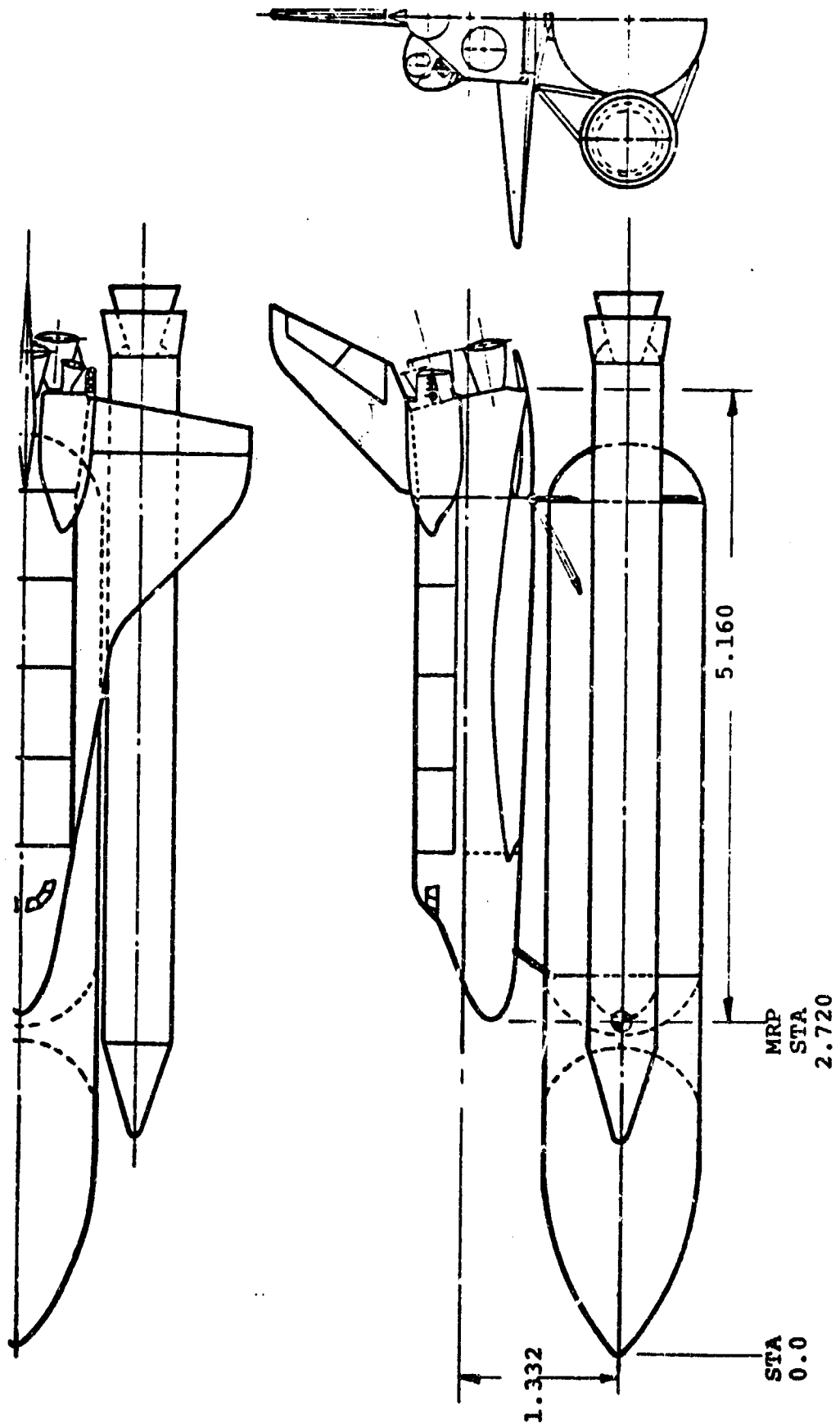


FIGURE 2. - General Arrangement of the Integrated Vehicle Model

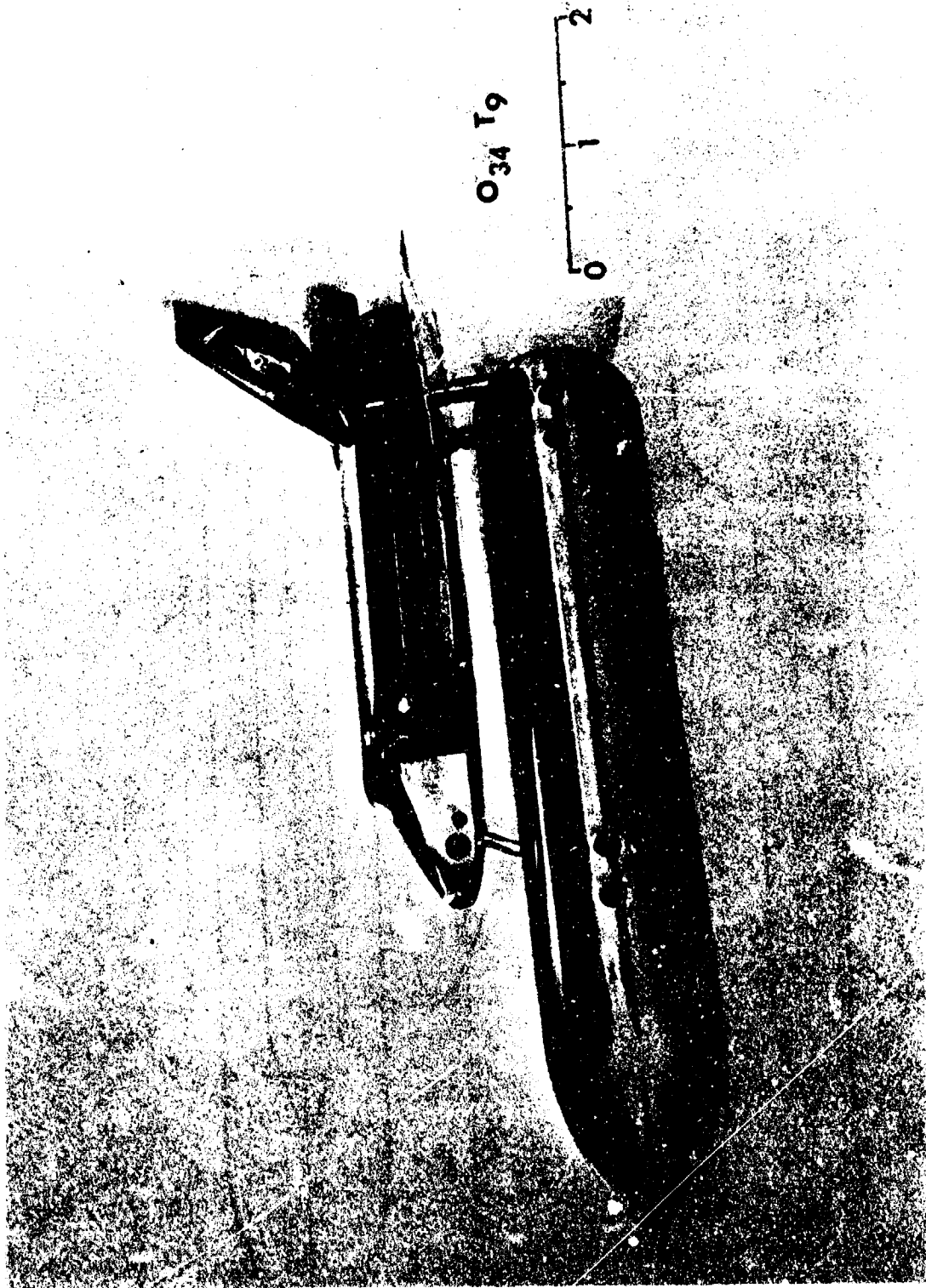


FIGURE 3. - Photograph of Configuration O34 T9



FIGURE 4. - Photograph of Configuration 034T9S12

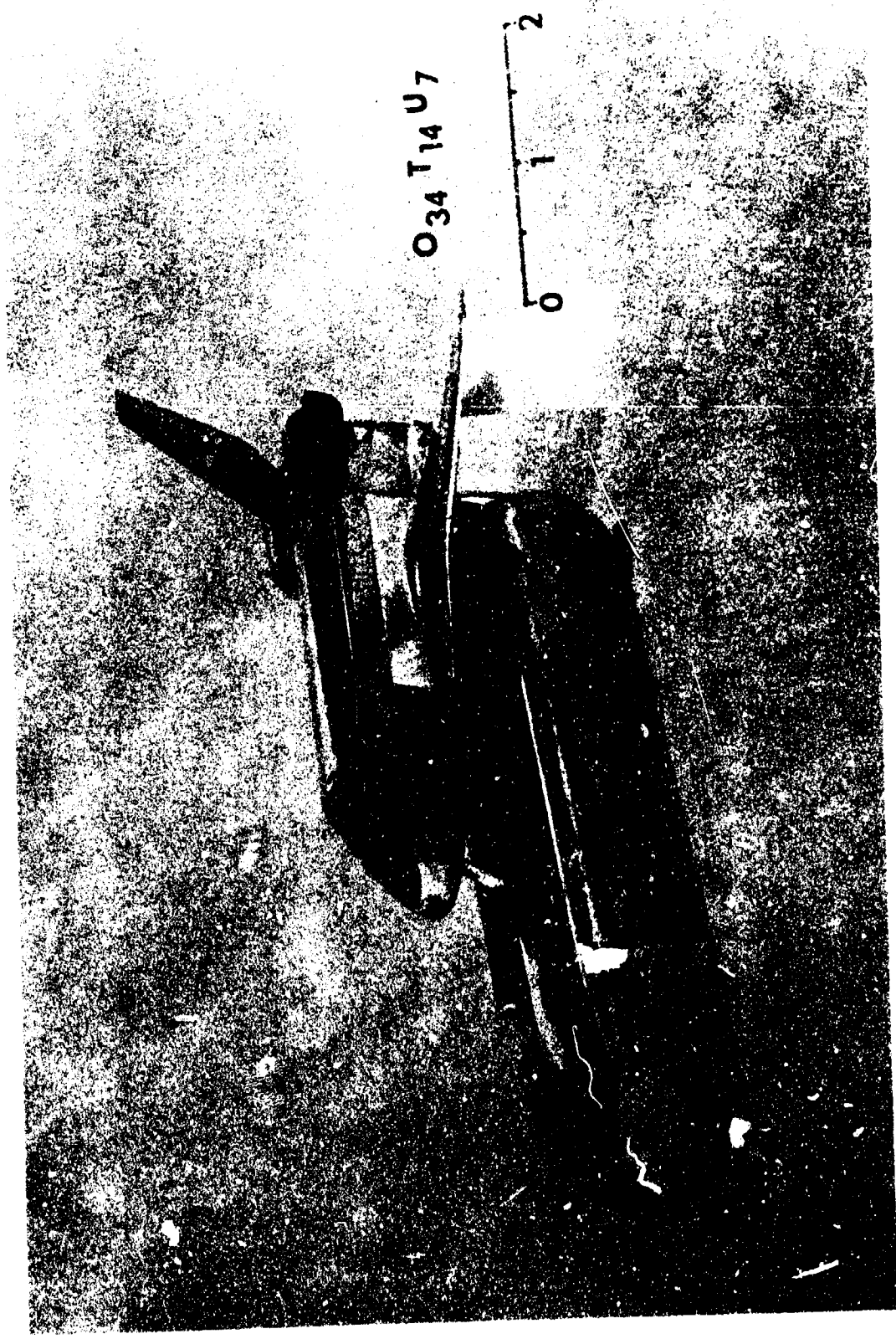
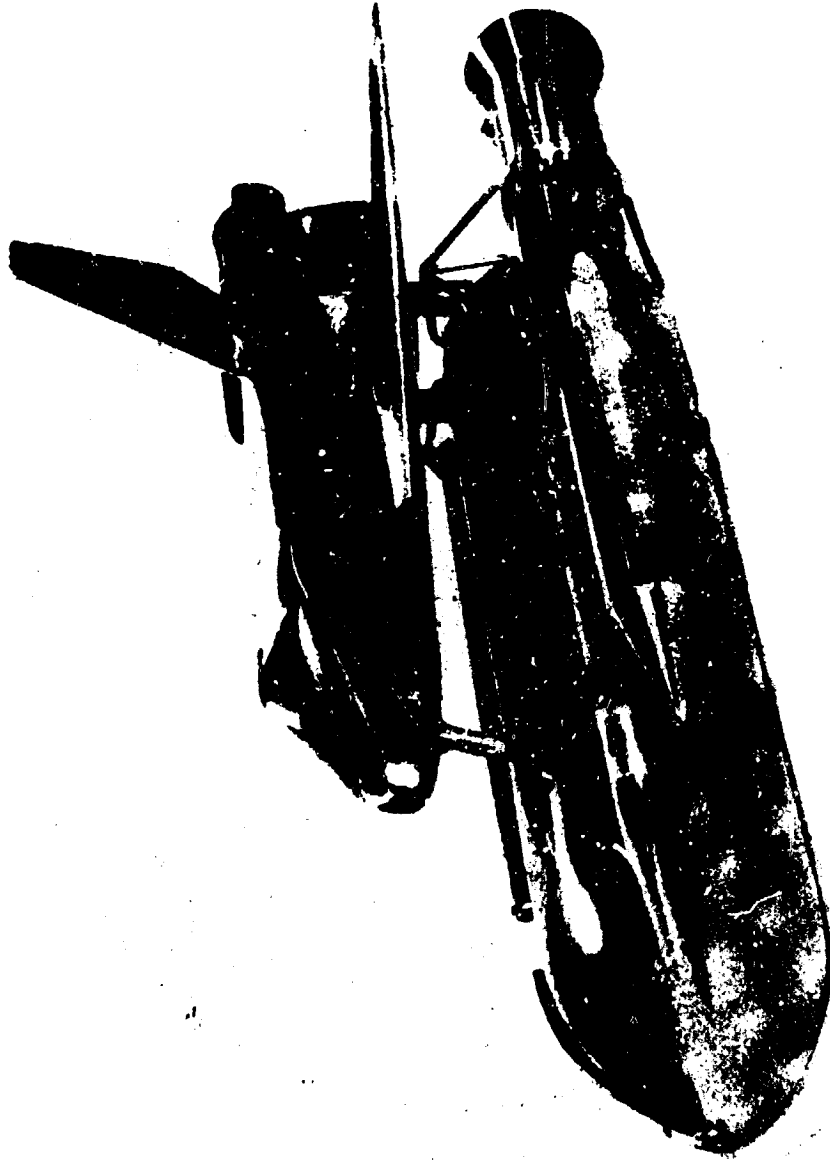


FIGURE 5. - Photograph of Configuration O34T14U7



O₃₄ T₁₄ S₁₂ U₆



FIGURE 6. Photograph of Configuration O₃₄T₁₄S₁₂U₆

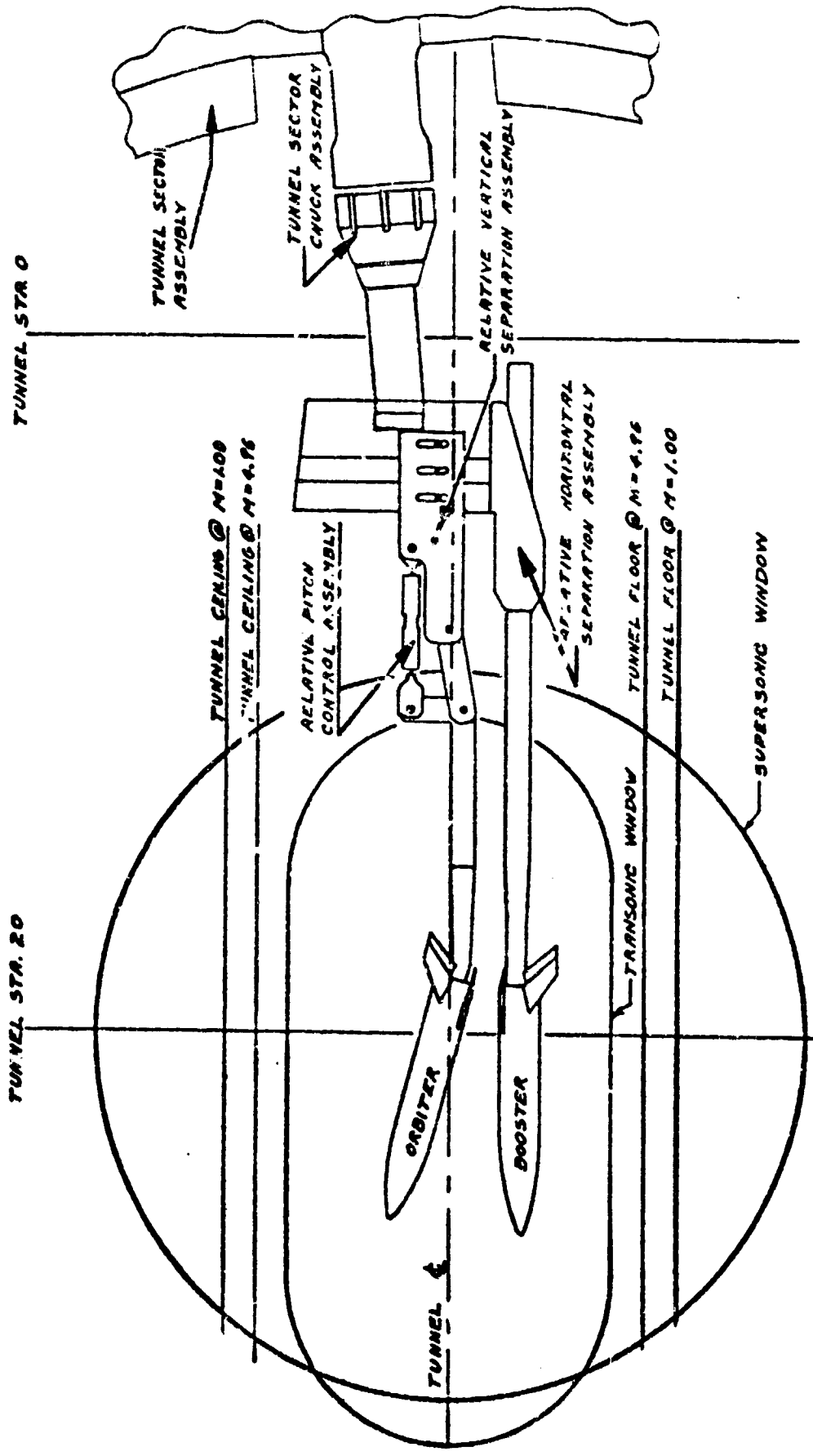
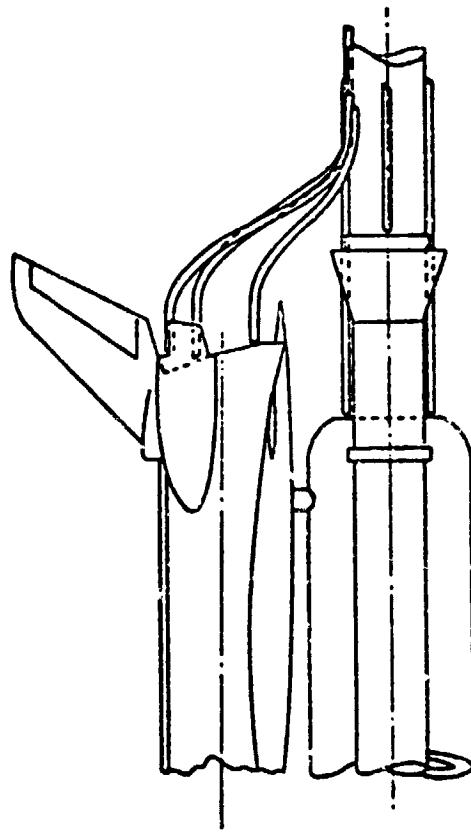
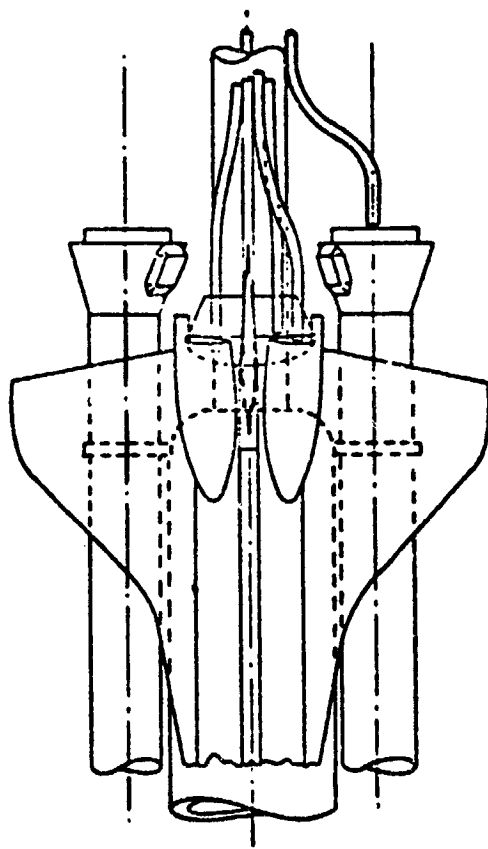


Figure 7. - Dual Sting Support System



- BASE AREAS
- ① OMS POD
 - ② ORBITER UPPER HALF
 - ③ ORBITER LOWER HALF
 - ④ EXTERNAL TANK
 - ⑤ SRB

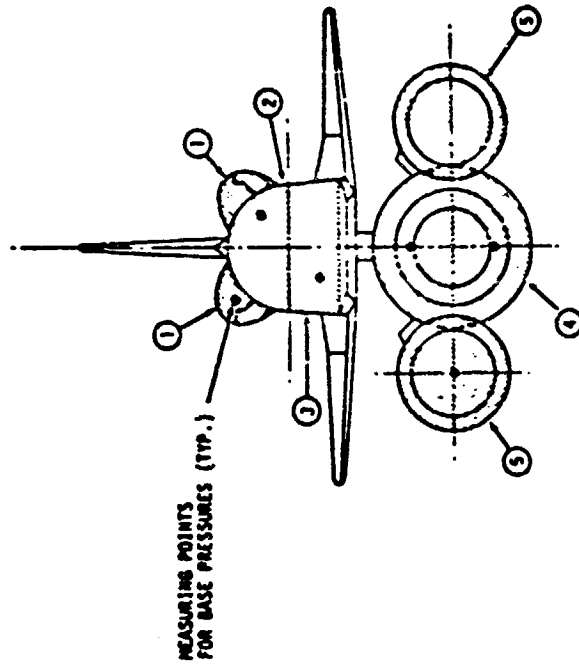


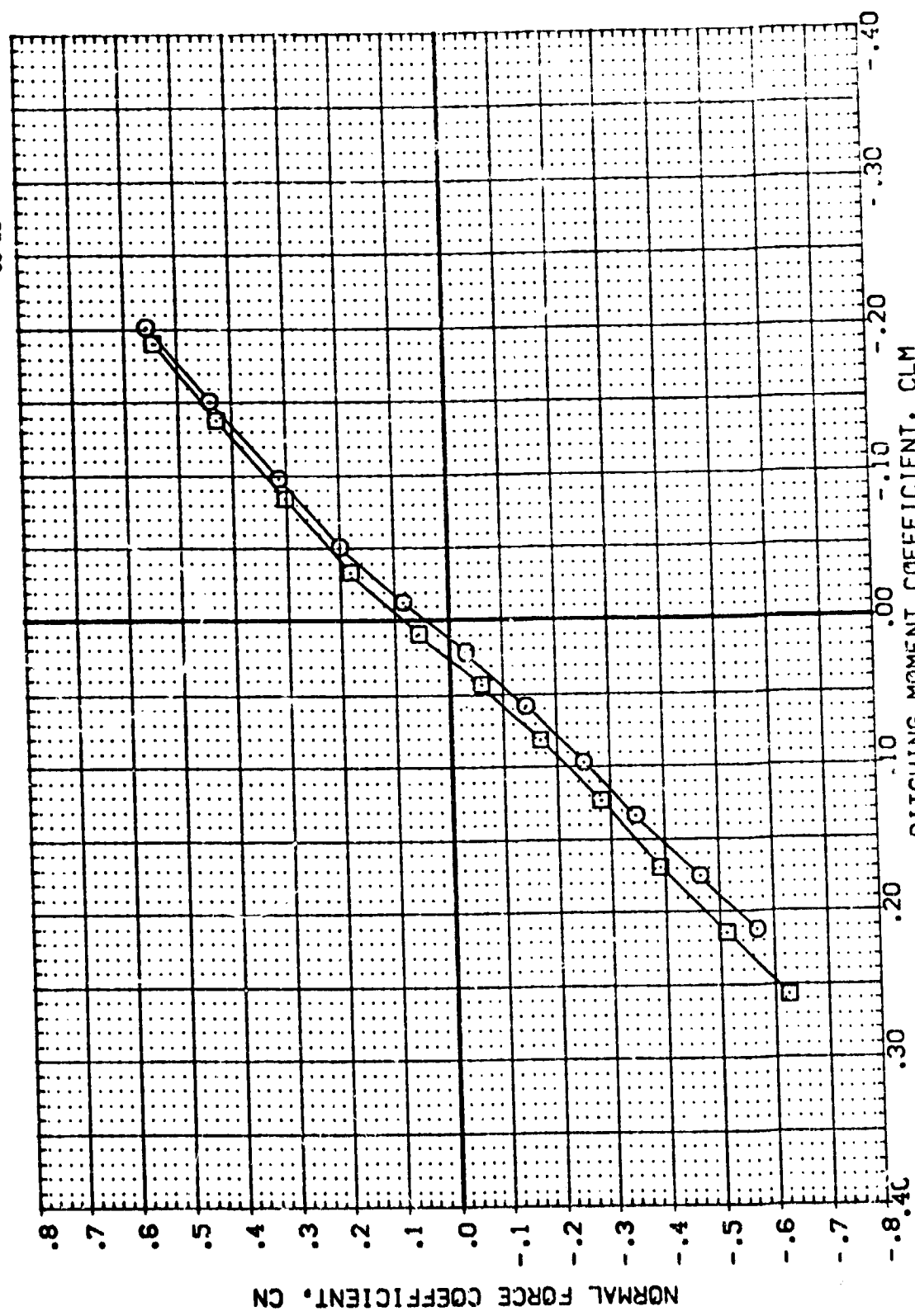
Figure 8. - Base Pressure Measuring Tube Locations.



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 ORBING .000

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 MSFC 579(1A37) (034)(119)(S12)



PITCHING MOMENT COEFFICIENT, CLM

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

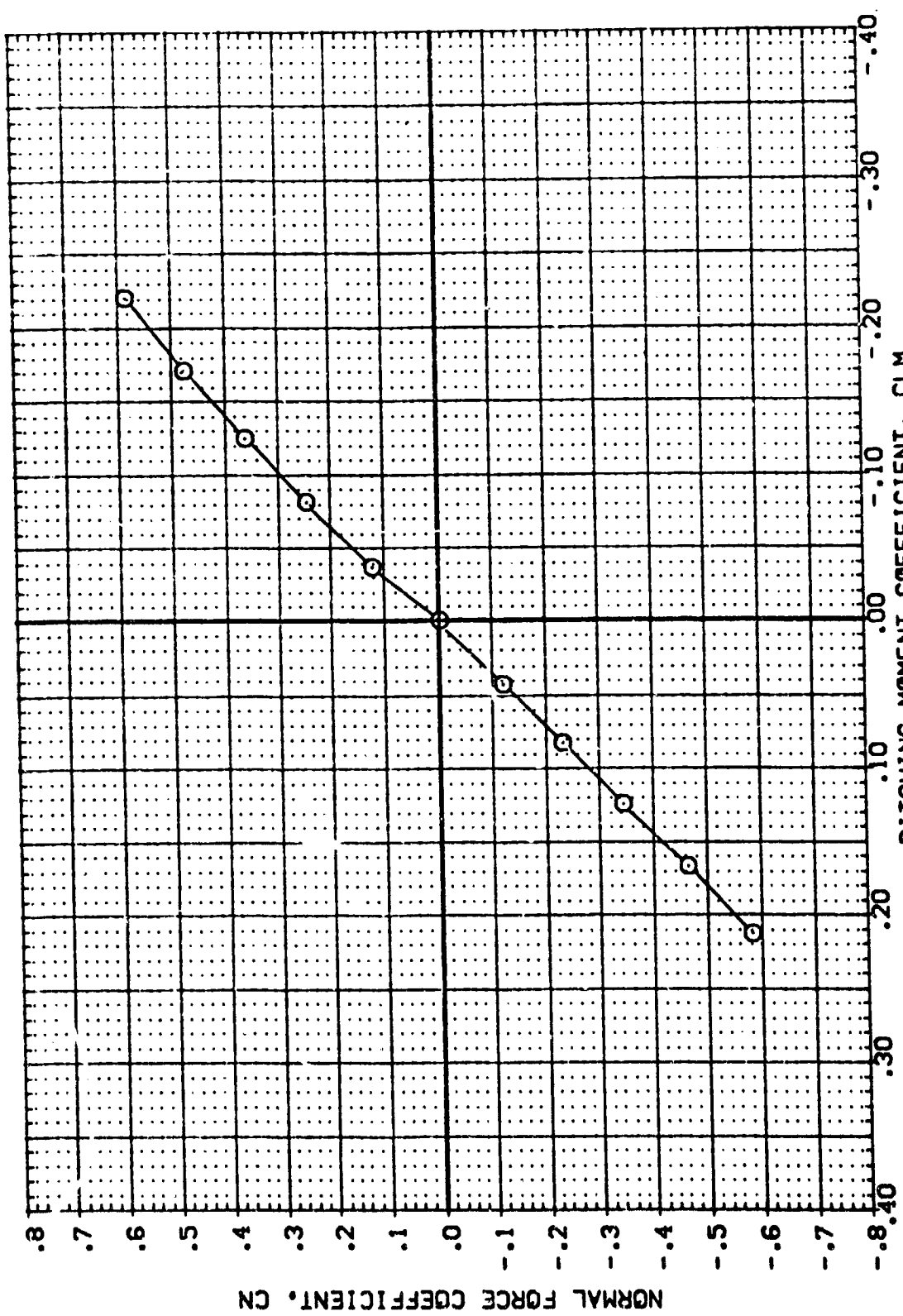
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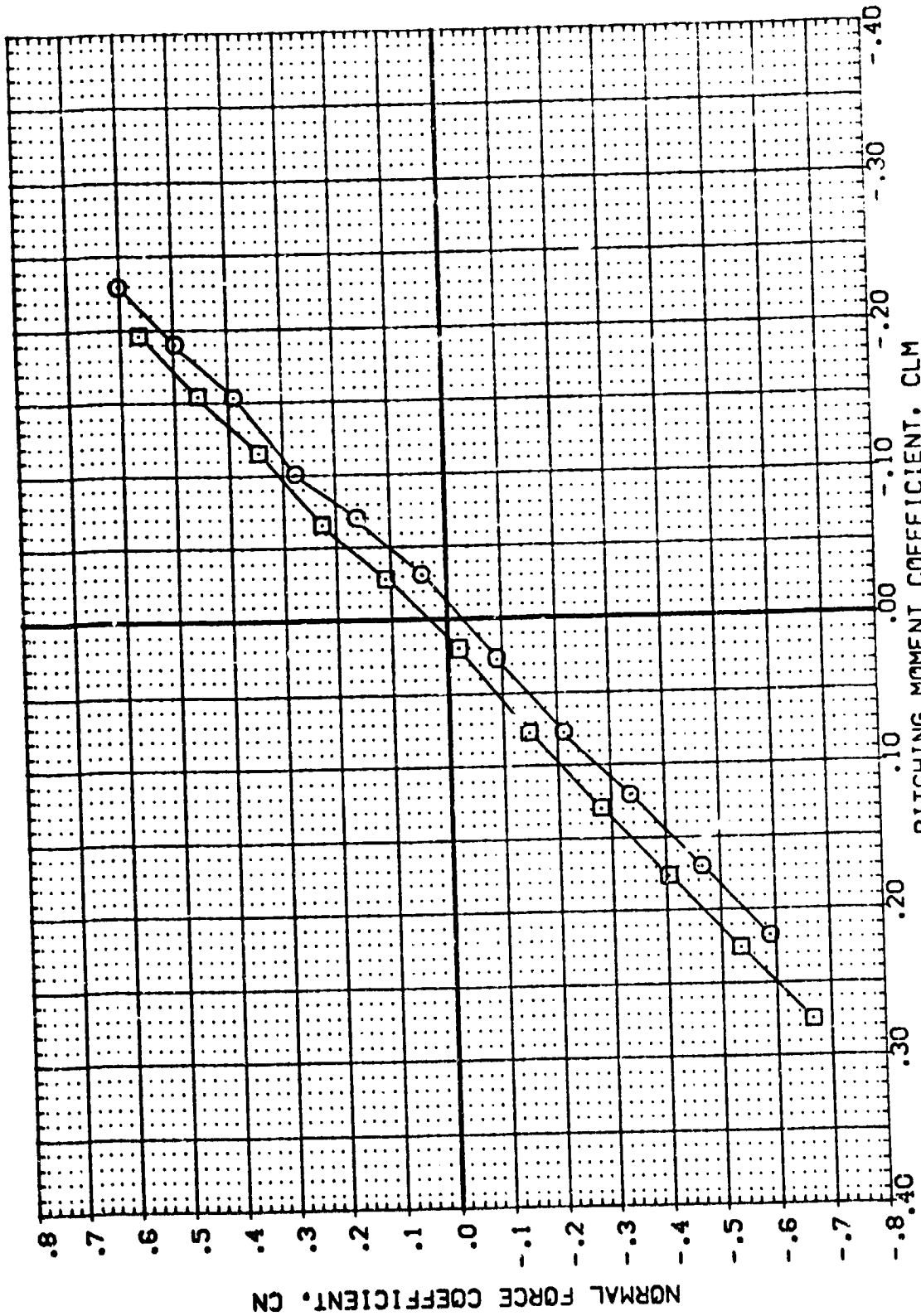
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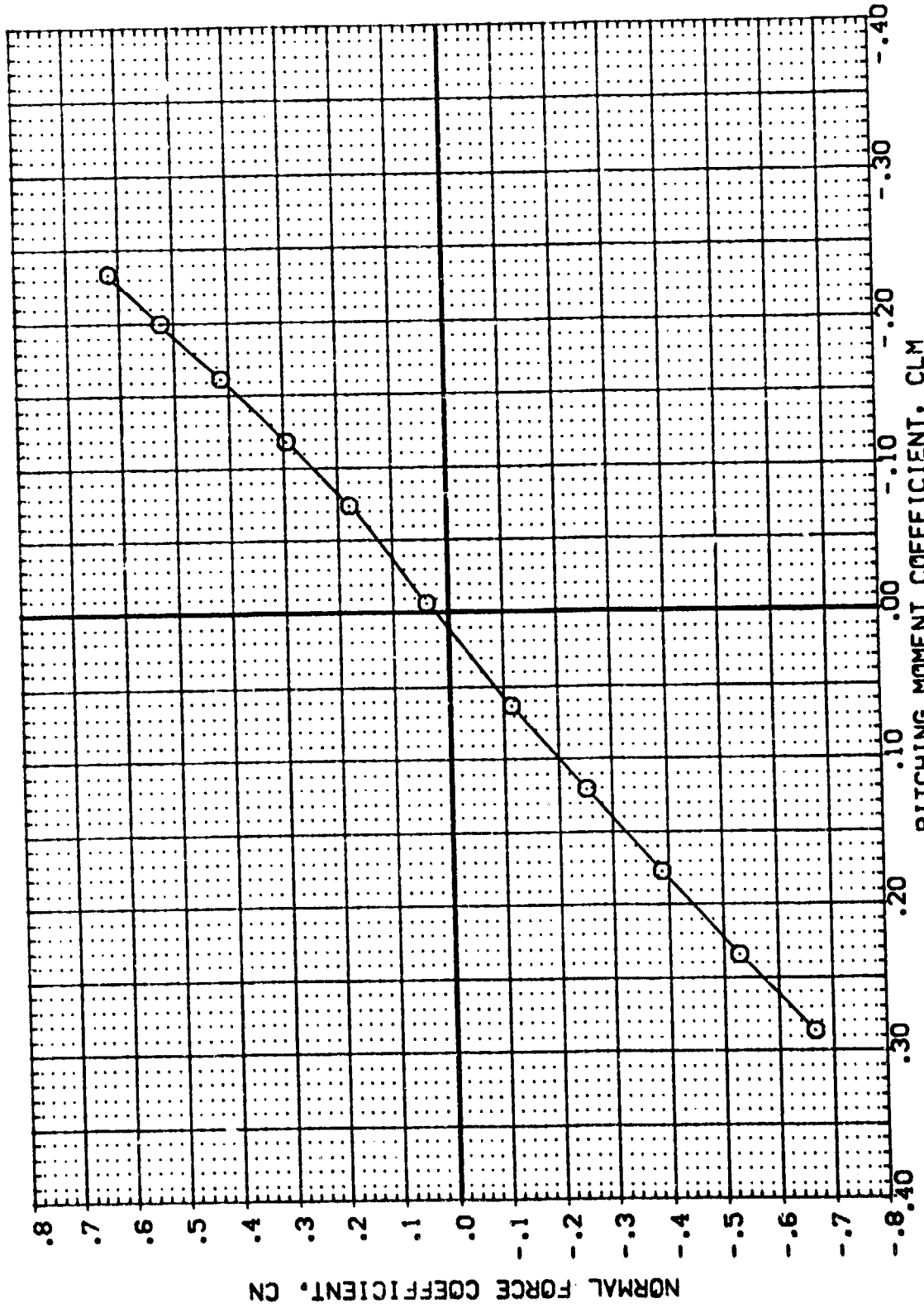


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
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PAGE 3

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 ORBINC .000

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EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

PAGE 4

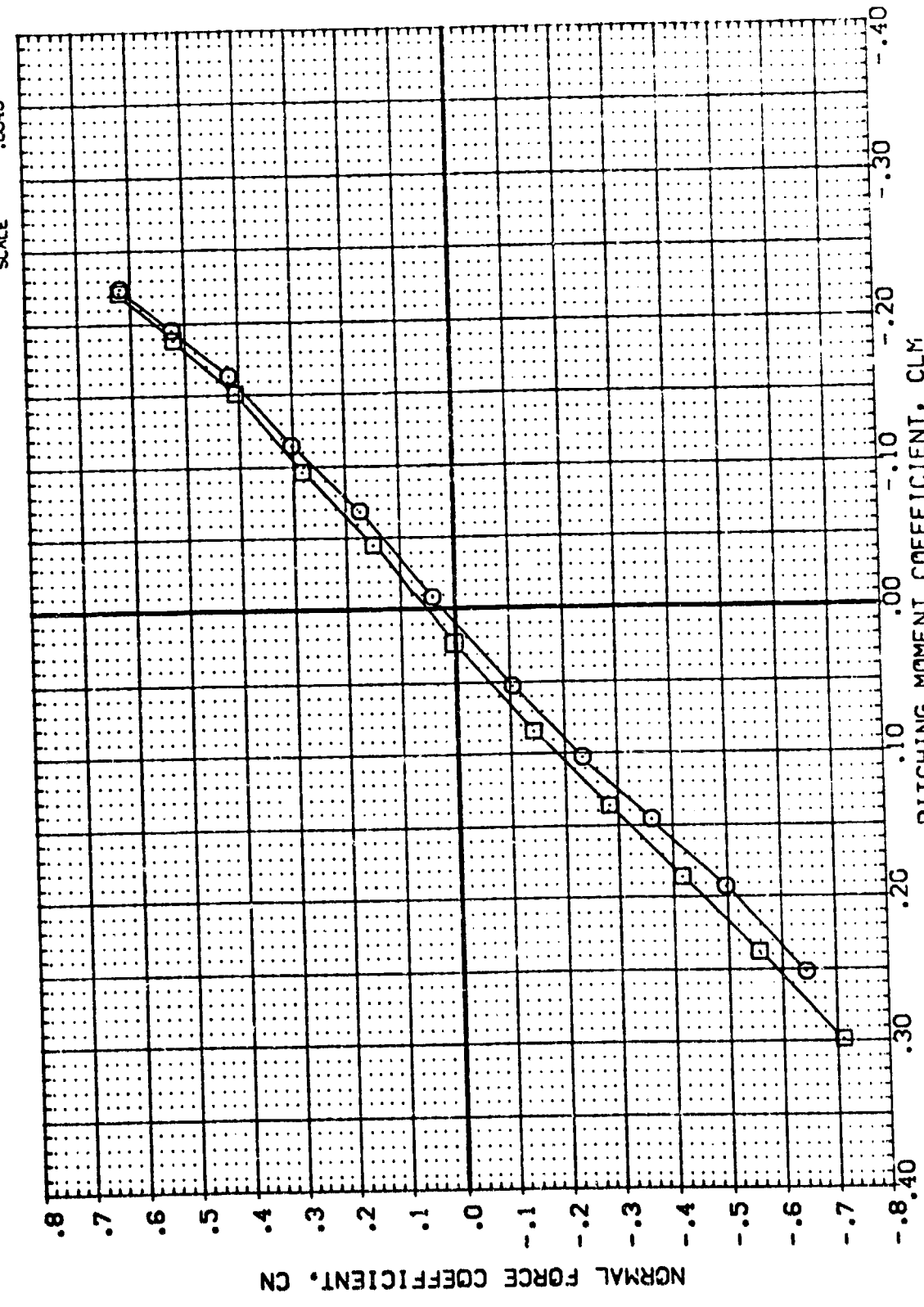
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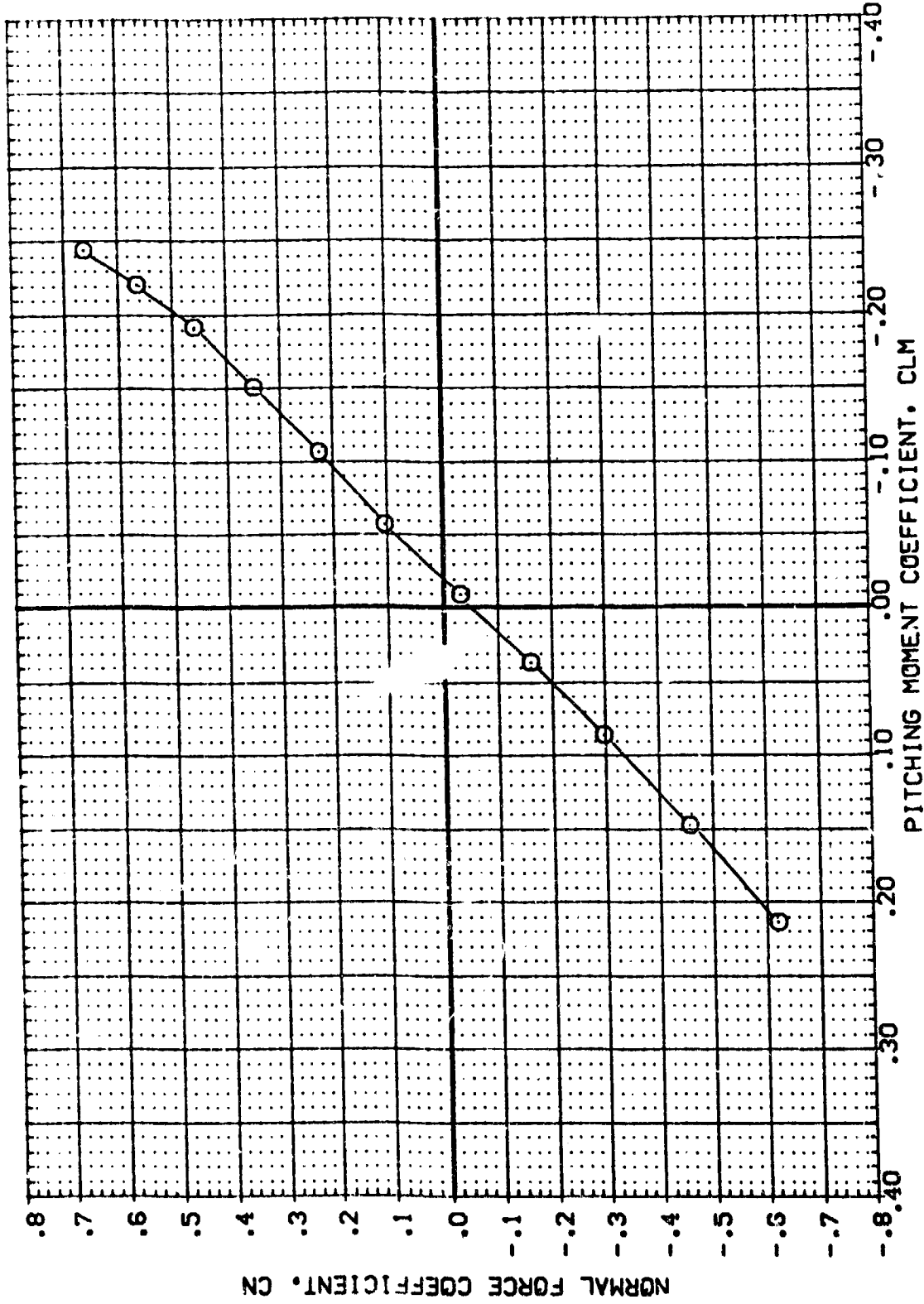


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

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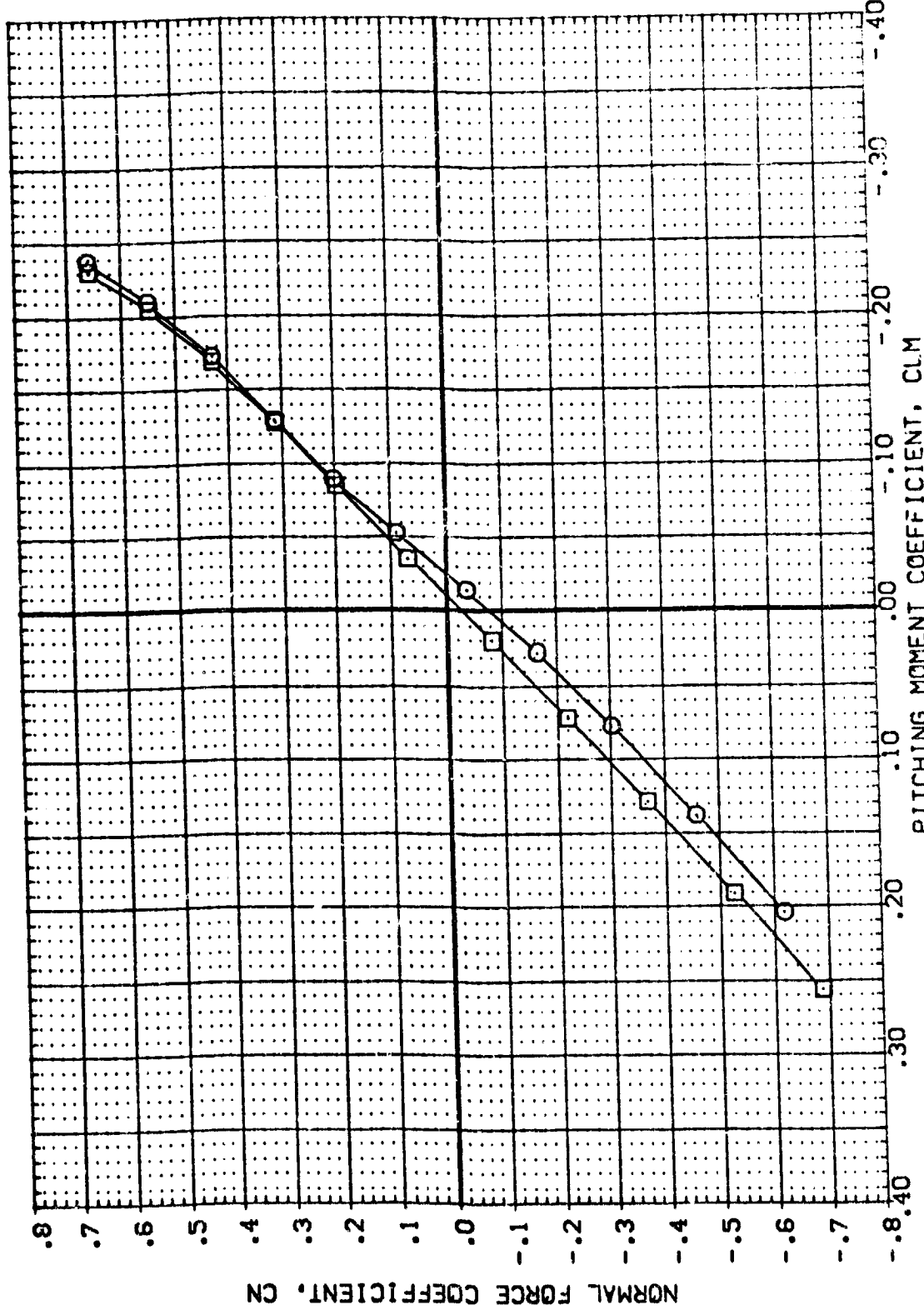
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BETA ORBING
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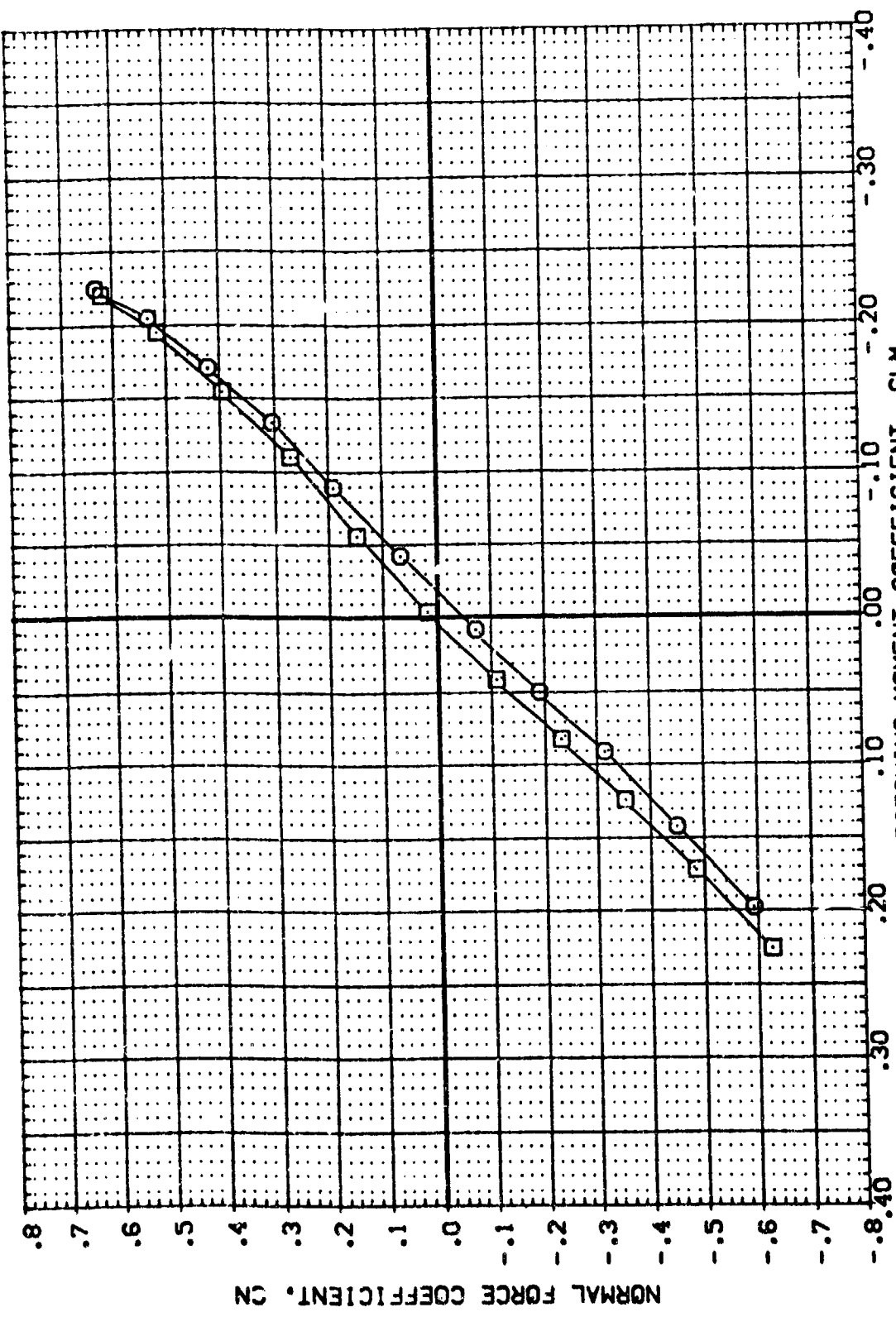
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

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BETA ORBING
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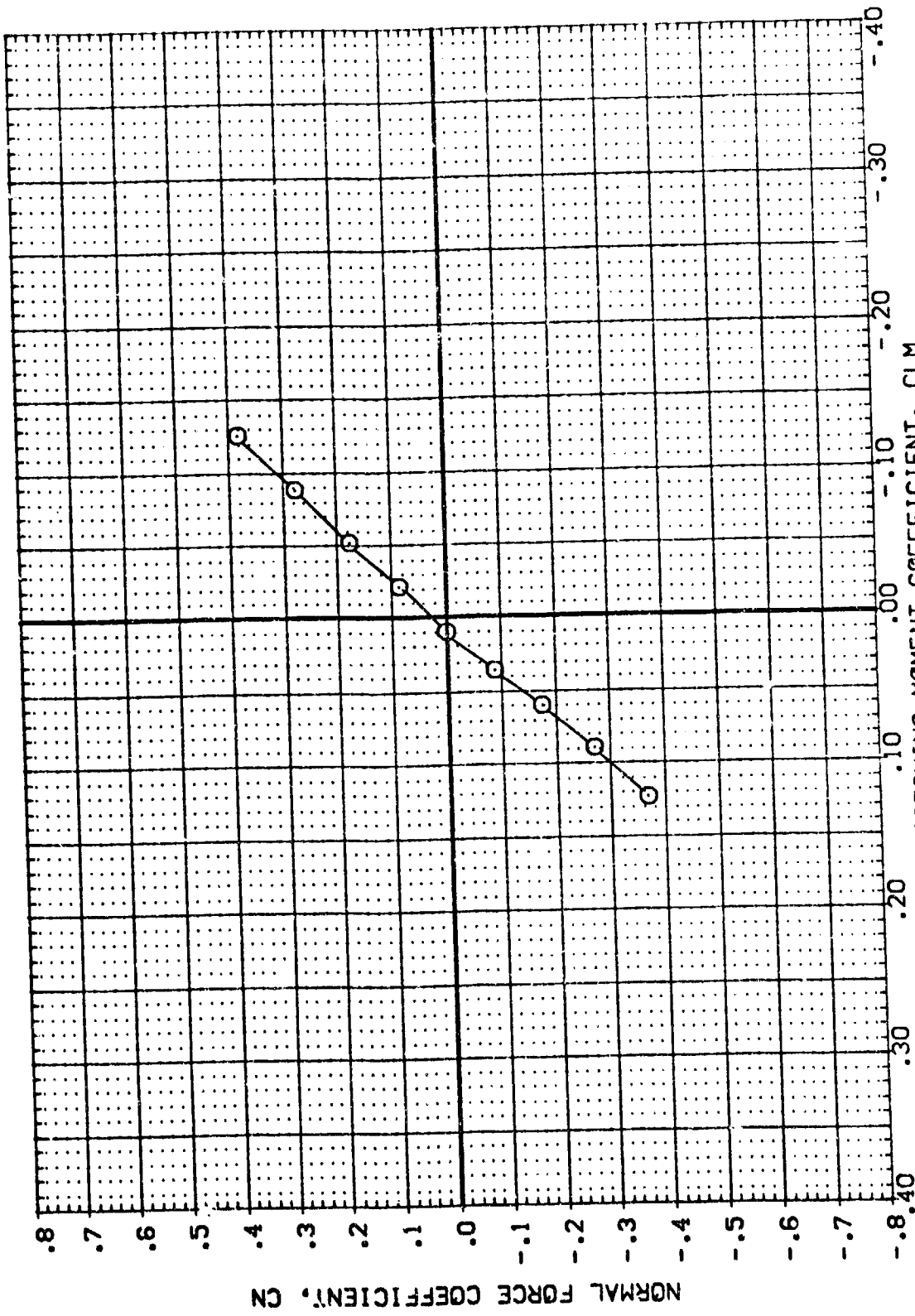
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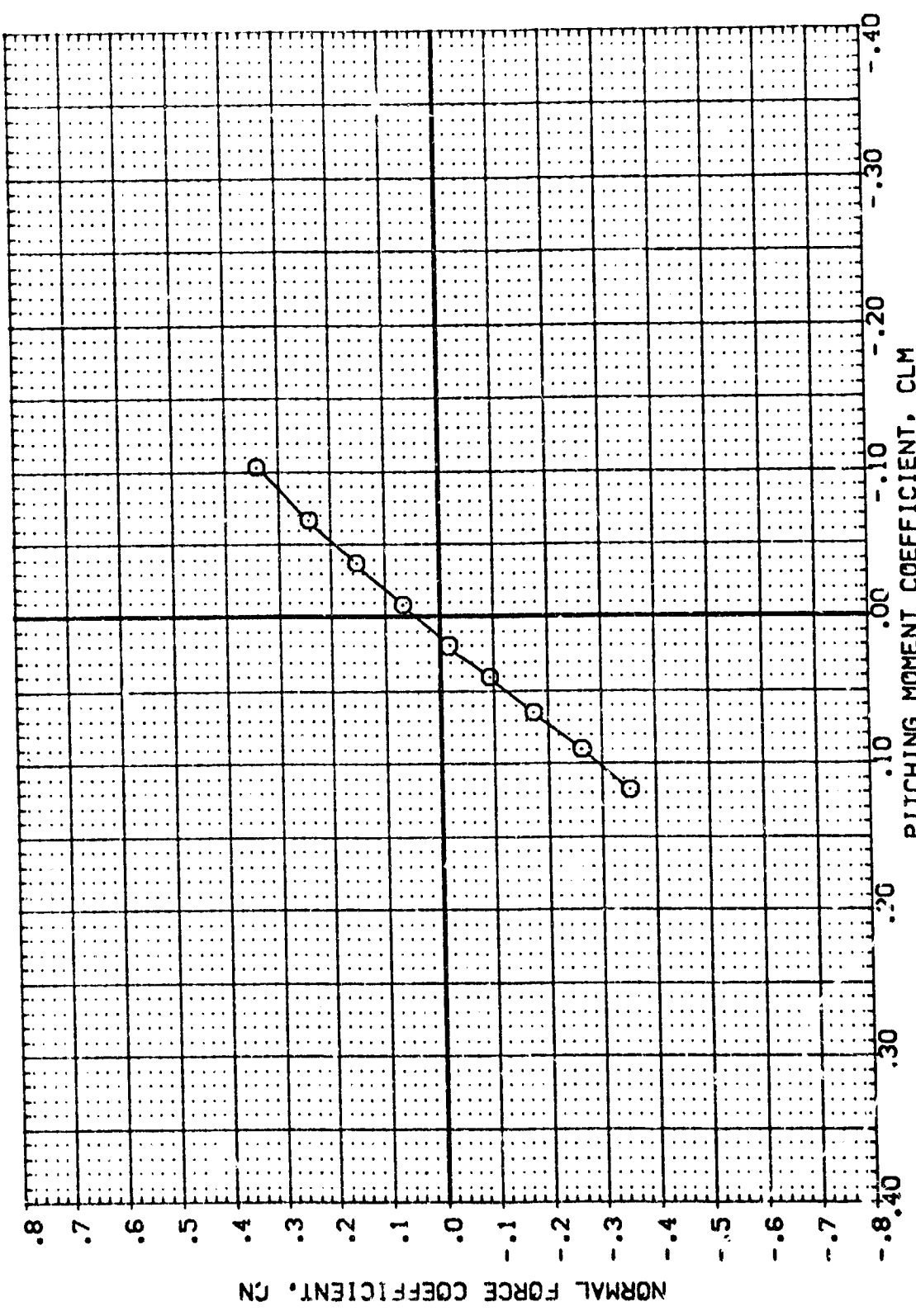
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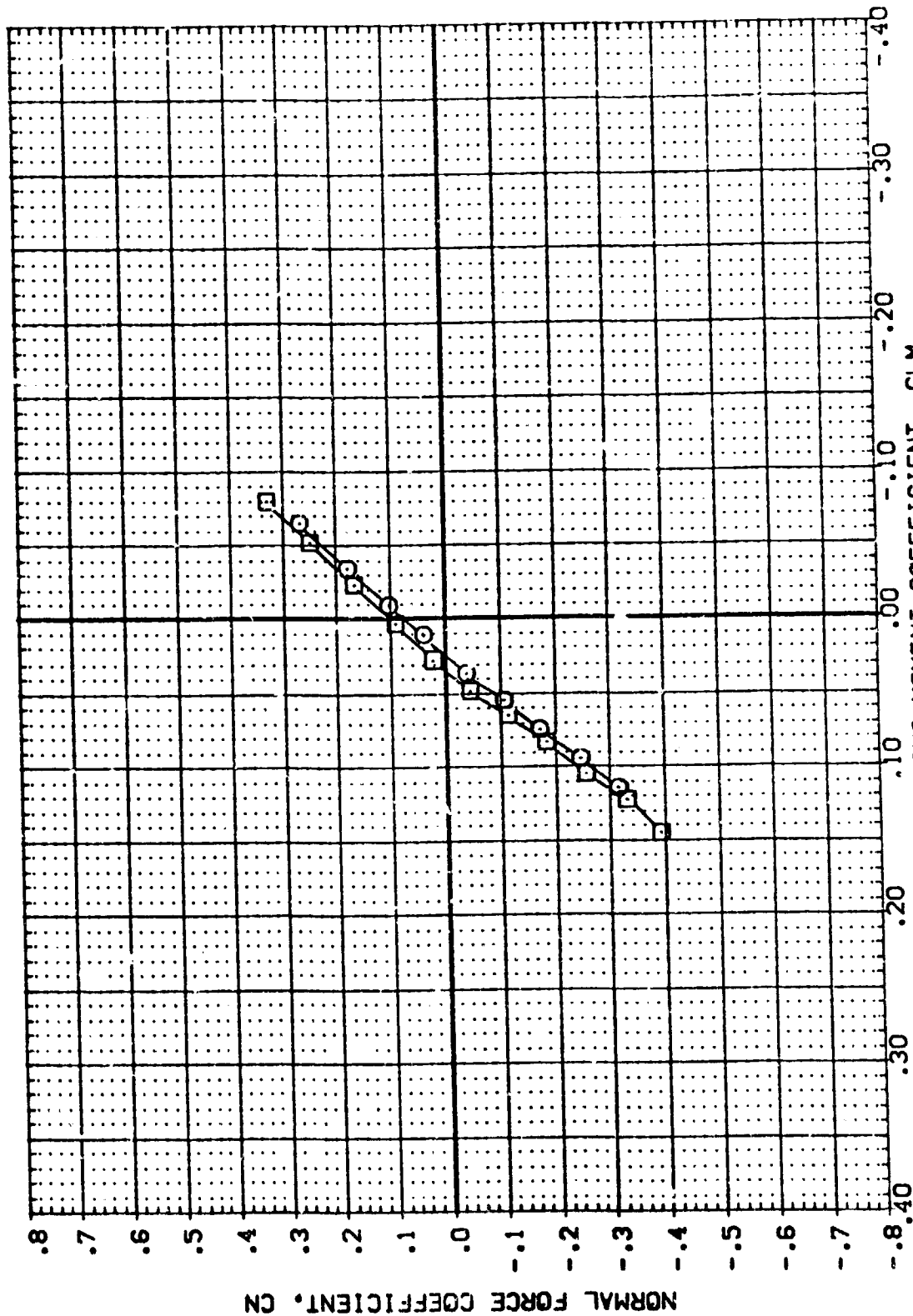


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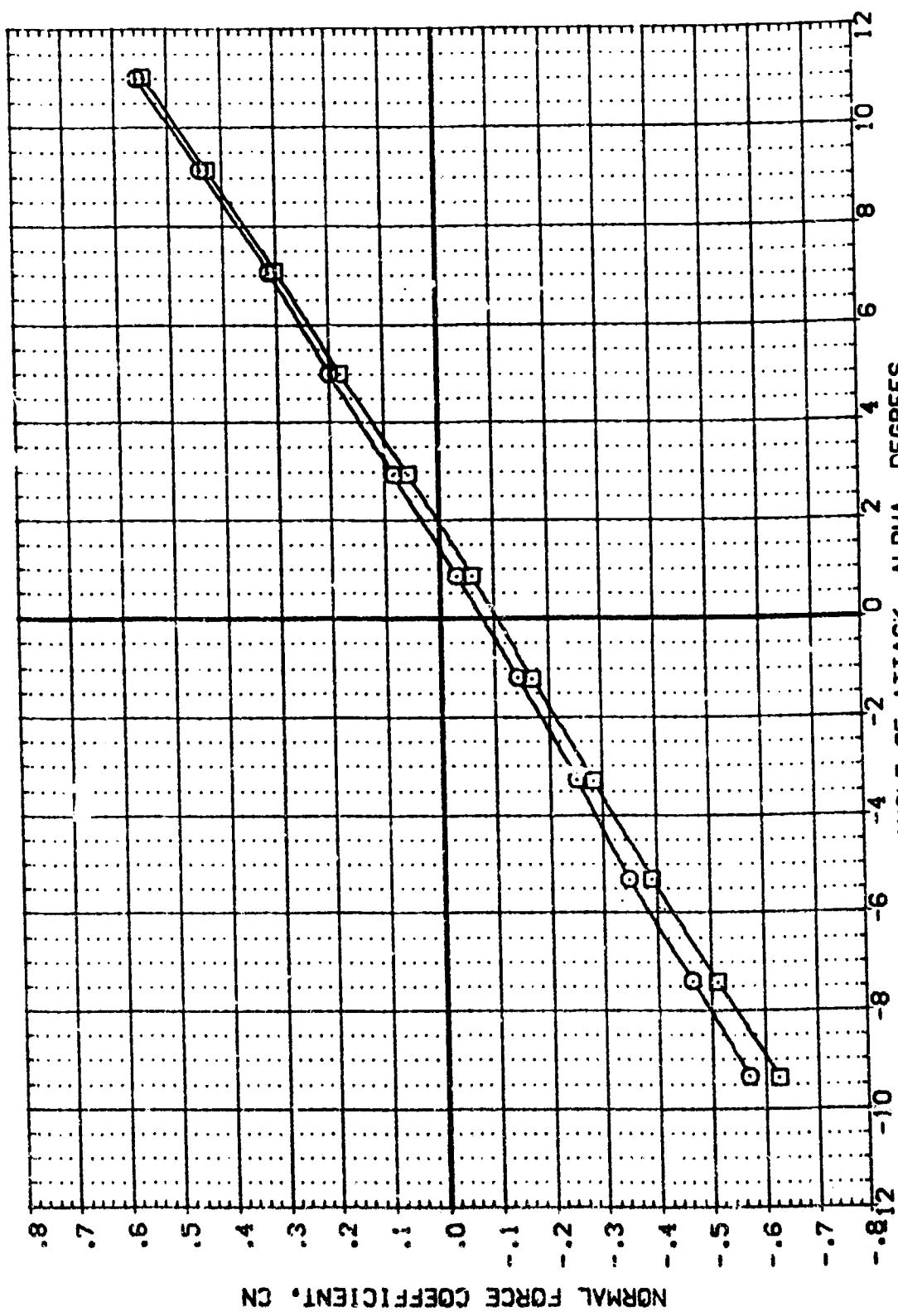
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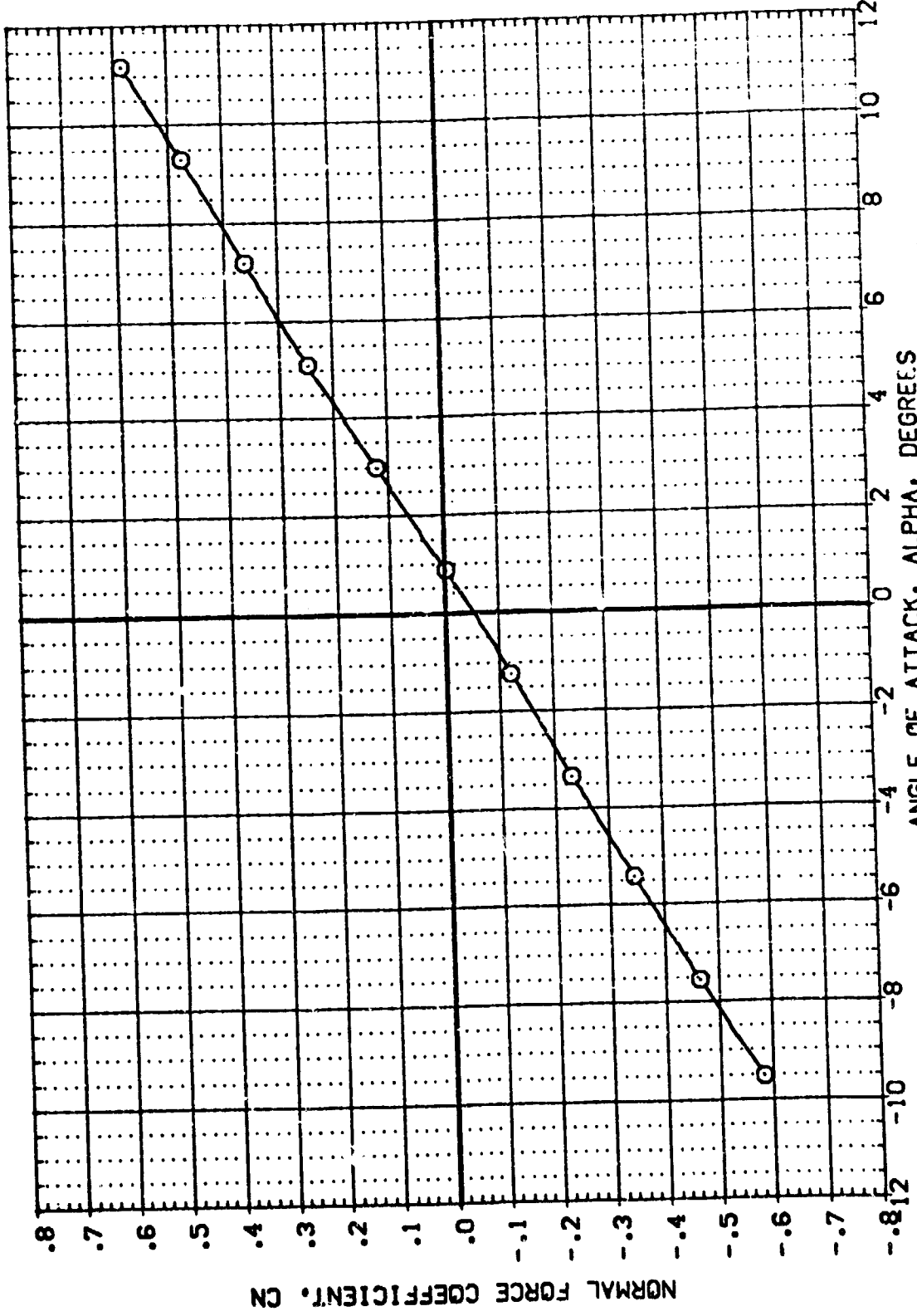
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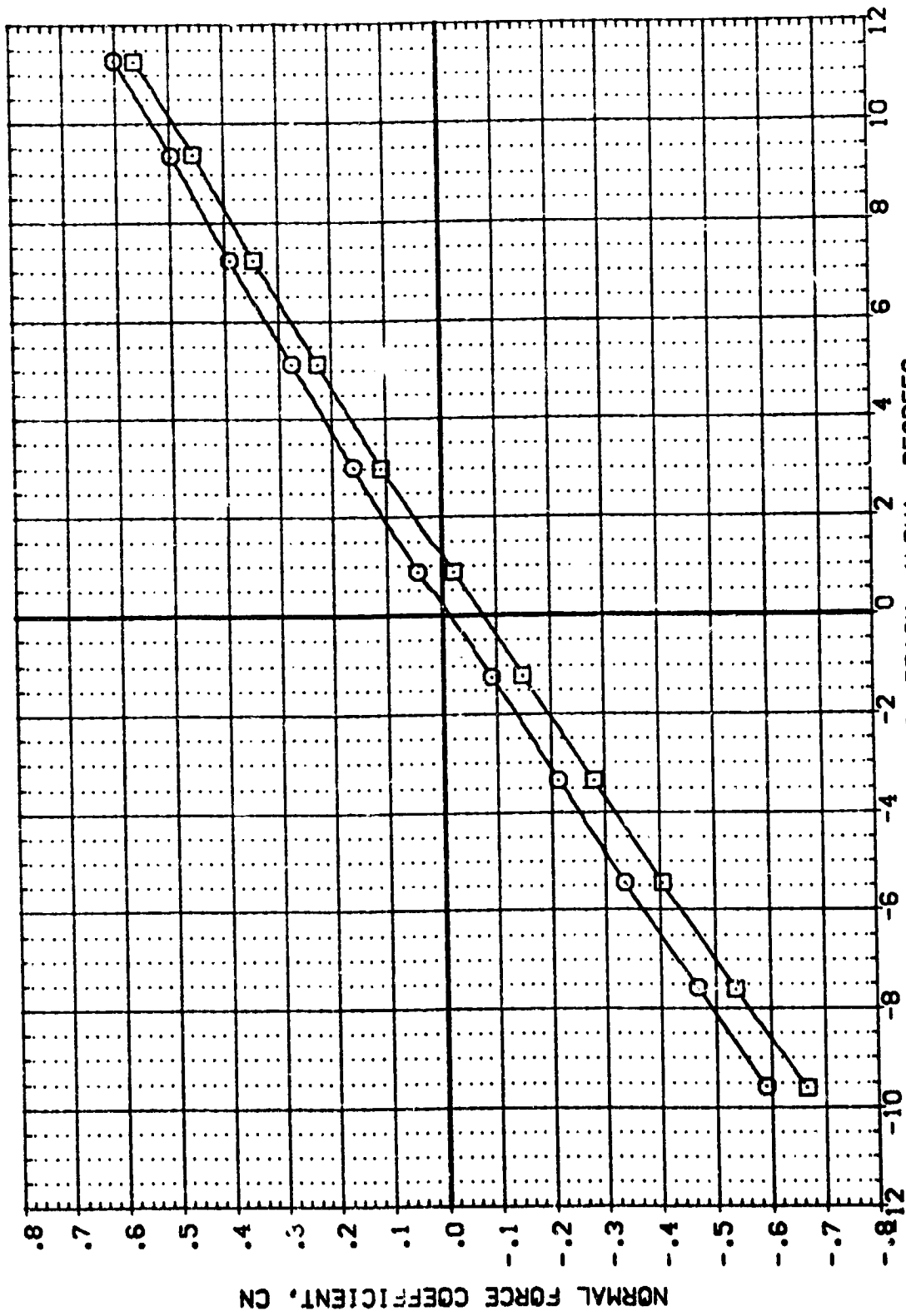


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
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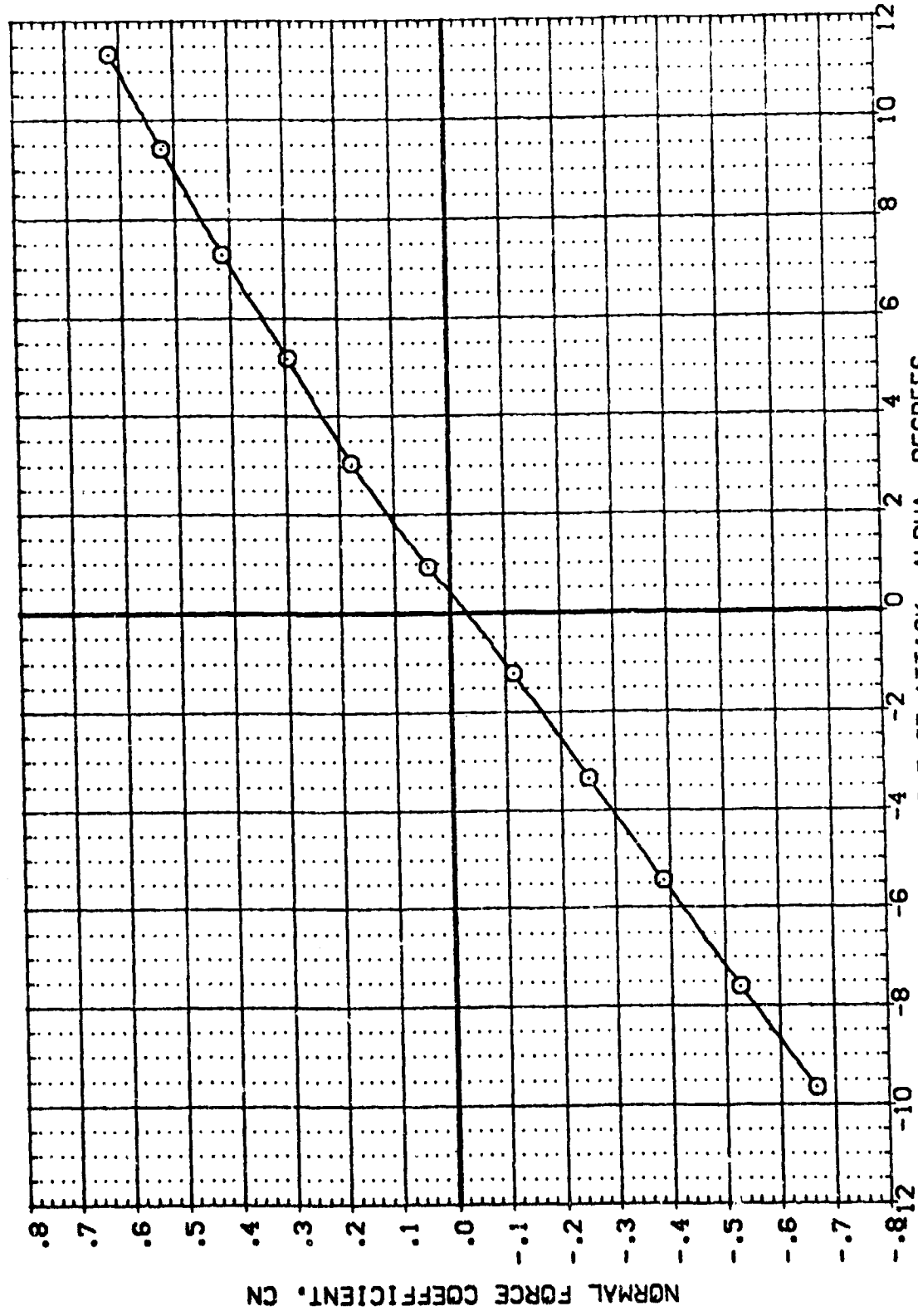
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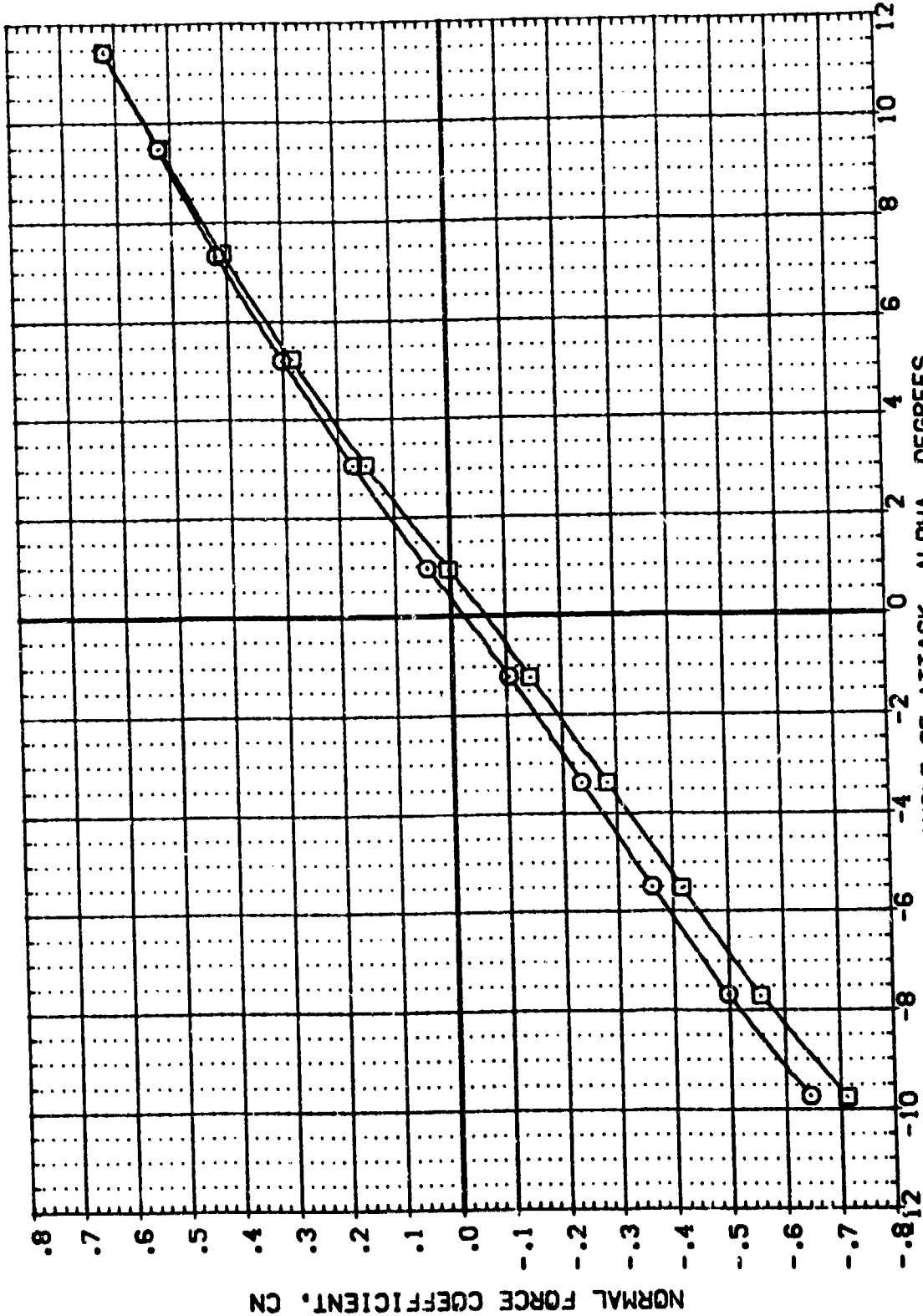


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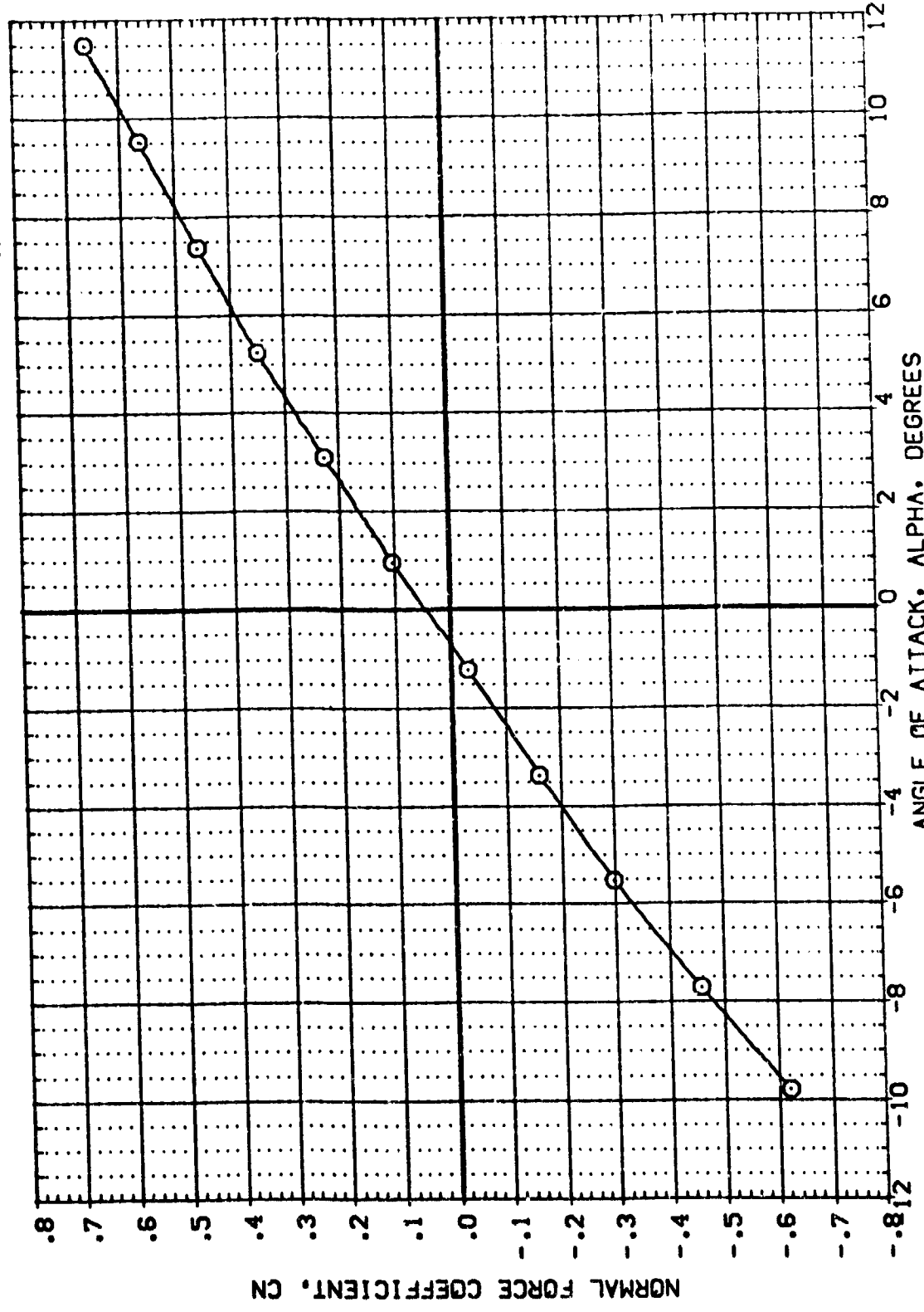
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 PAGE 16



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LREF 5.1600 IN.
BREF 5.1600 IN.
YPRP 2.7200 IN.
ZPRP .0000 IN.
SCALE .0040

BETA ORBING
.000 .000
.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(888009) NSFC 579(1A37) (034)(114)(S12)(U6)
(888007) DATA NOT AVAILABLE



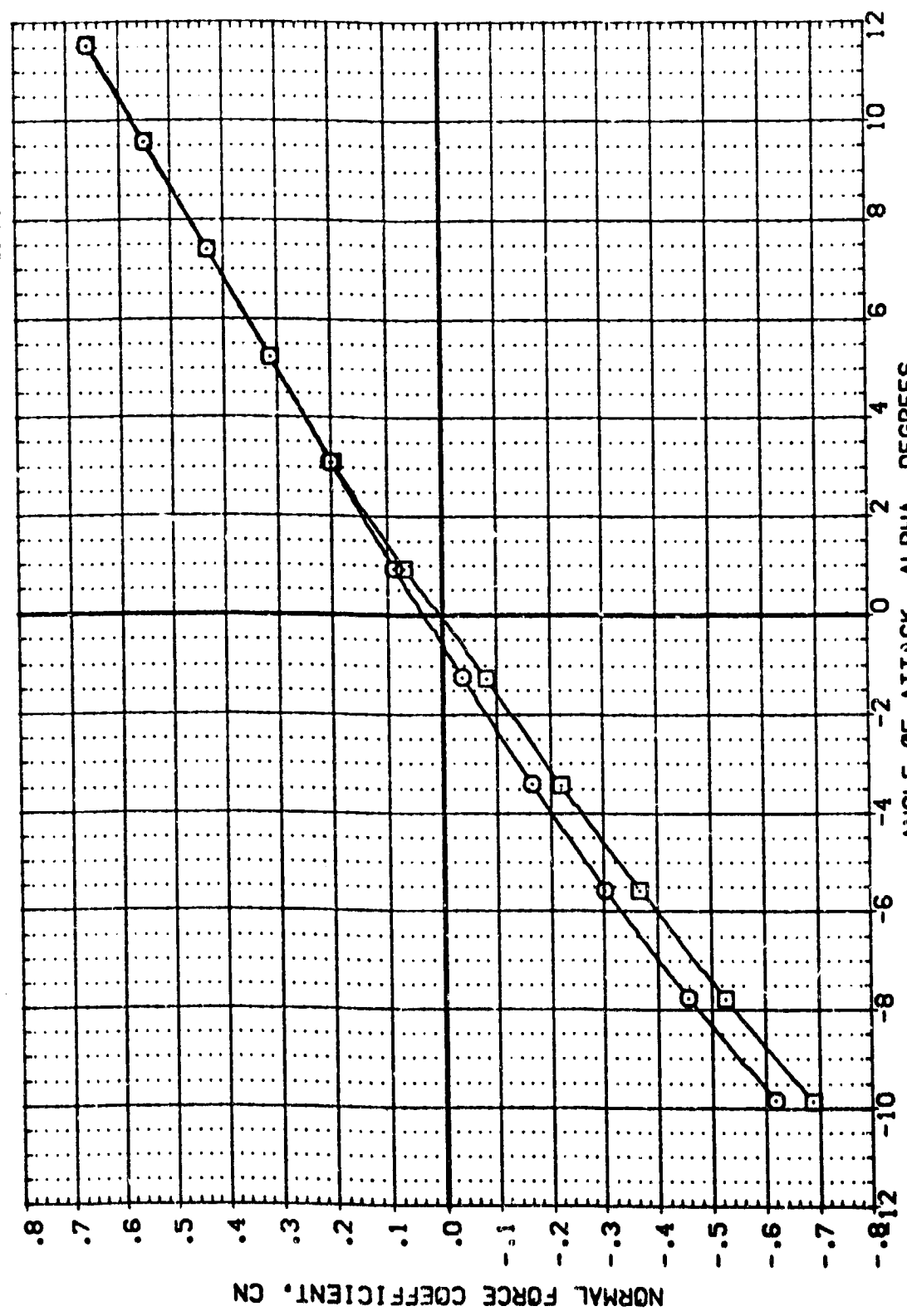
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(F)MACH = 1.20

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (88009) (88007) (88007) MSFC 579(1A37) (034)(114)(S12)(U6)
 (88007) (88007) MSFC 579(1A37) (034)(19)(S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

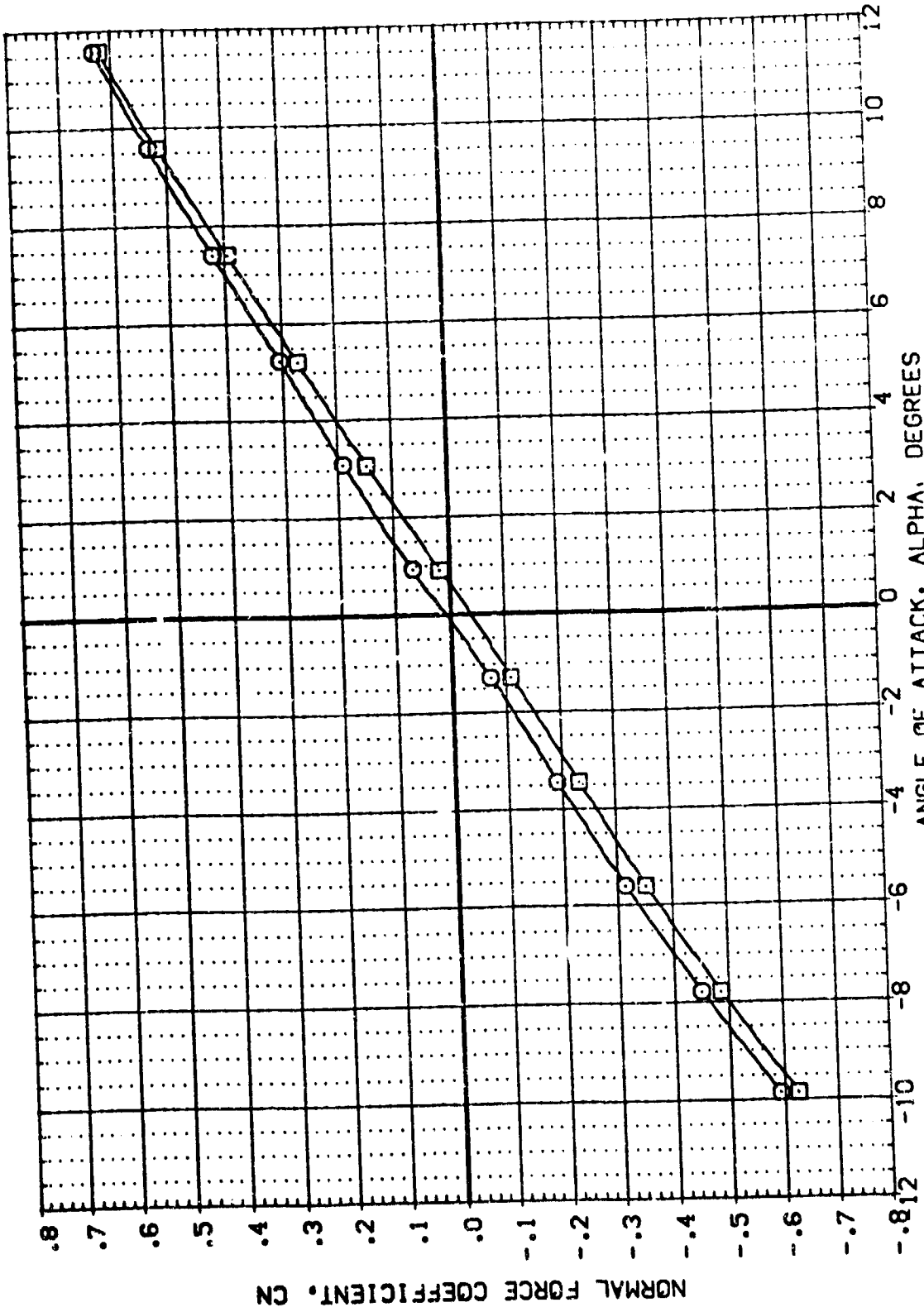
(G)MACH = 1.46



REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0010

BETA ORBINC
.000 .000
.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(1988009) (888007) MFC 579(A37) (034)(T14)(S12)(U6)
(1988009) (888007) MFC 579(A37) (034)(T9)(S12)

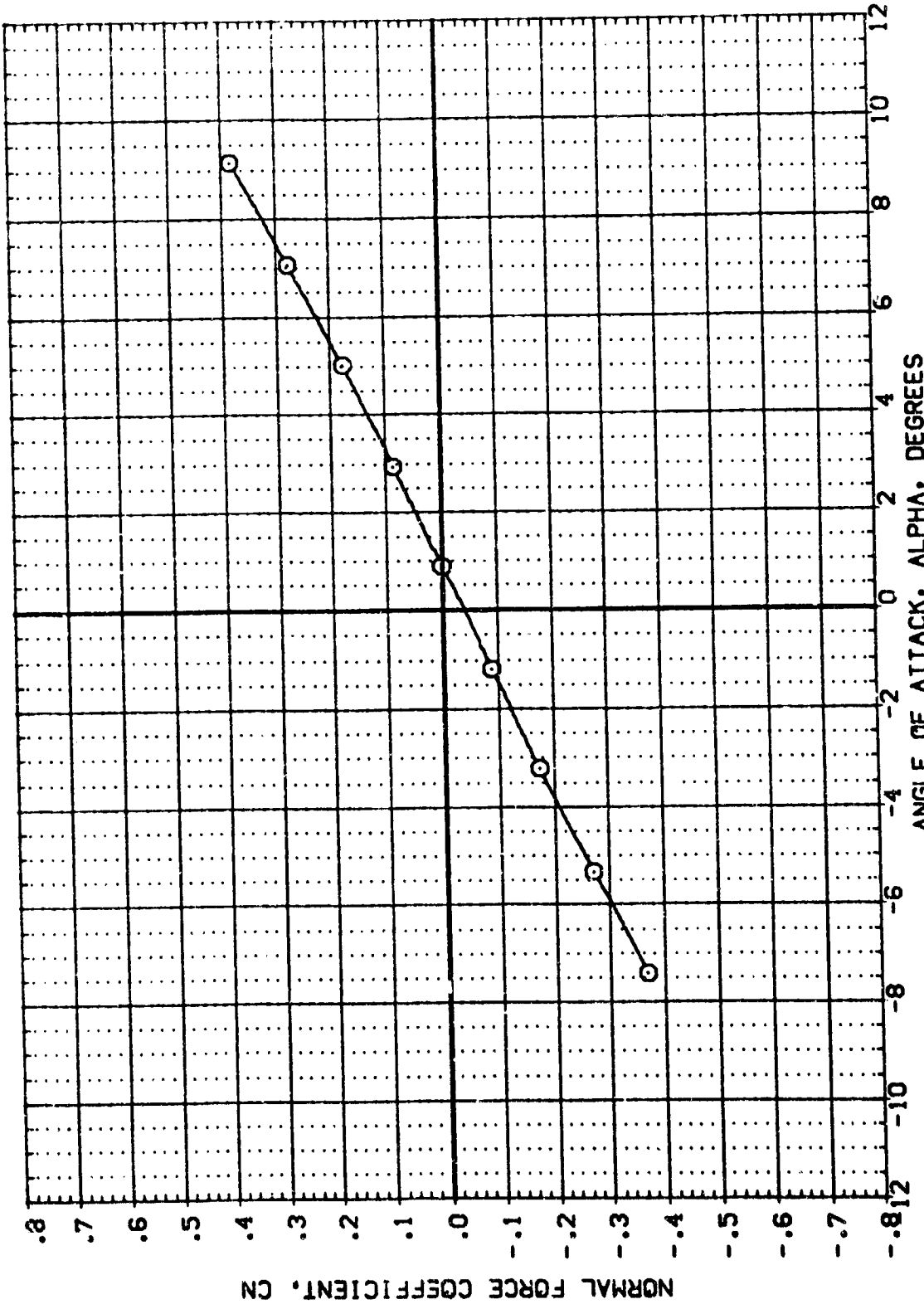


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
(M)MACH = 1.96

REFERENCE INFORMATION
 SREF 6.1960 50.1N.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 (888007) DATA NOT AVAILABLE

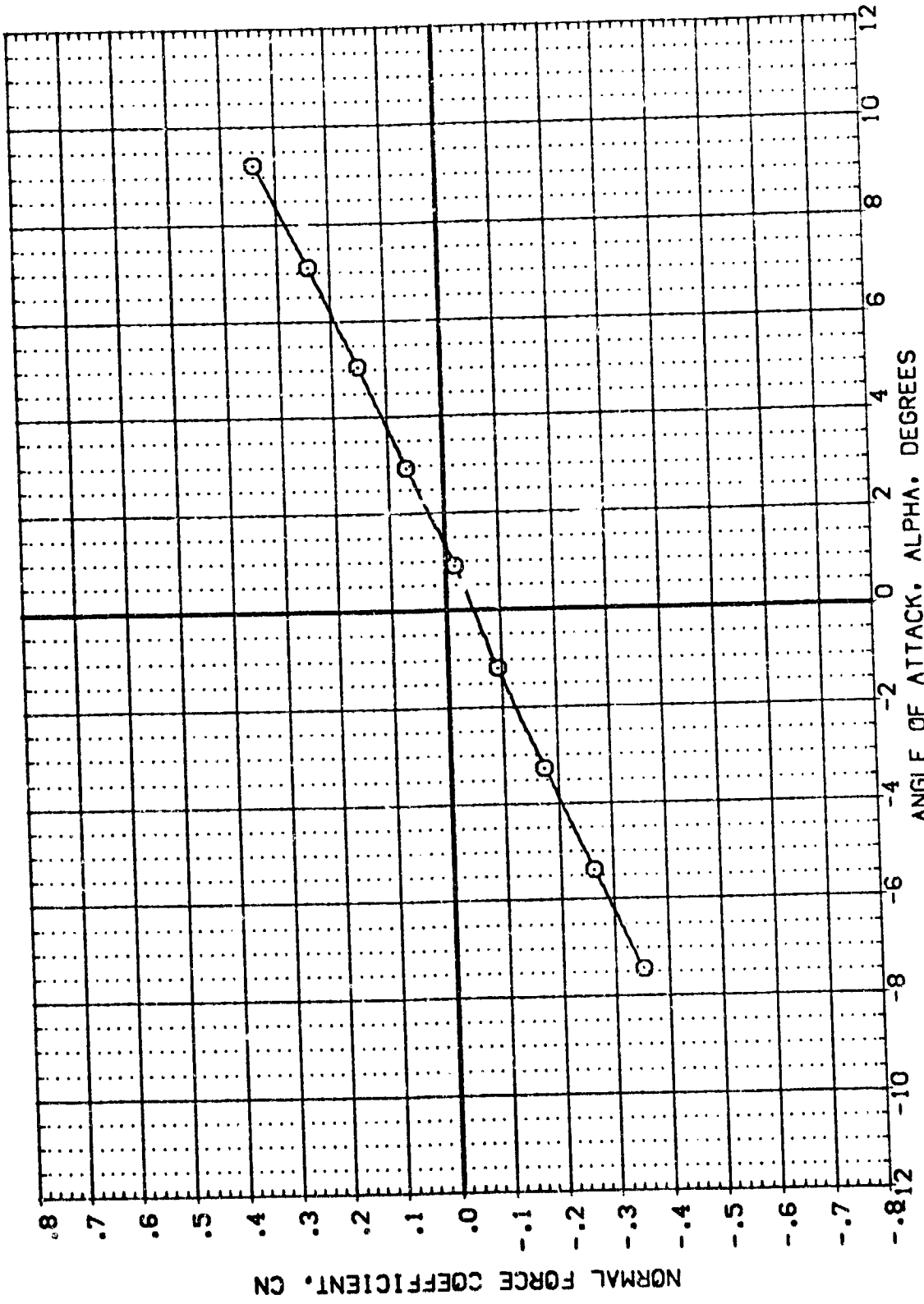


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
 (1)MACH = 2.99
 PAGE 20

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA .000
 ORBINC .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (888009) MSFC 579(IA37) (034)(T14)(S12)(U6)
 (888007) DATA NOT AVAILABLE

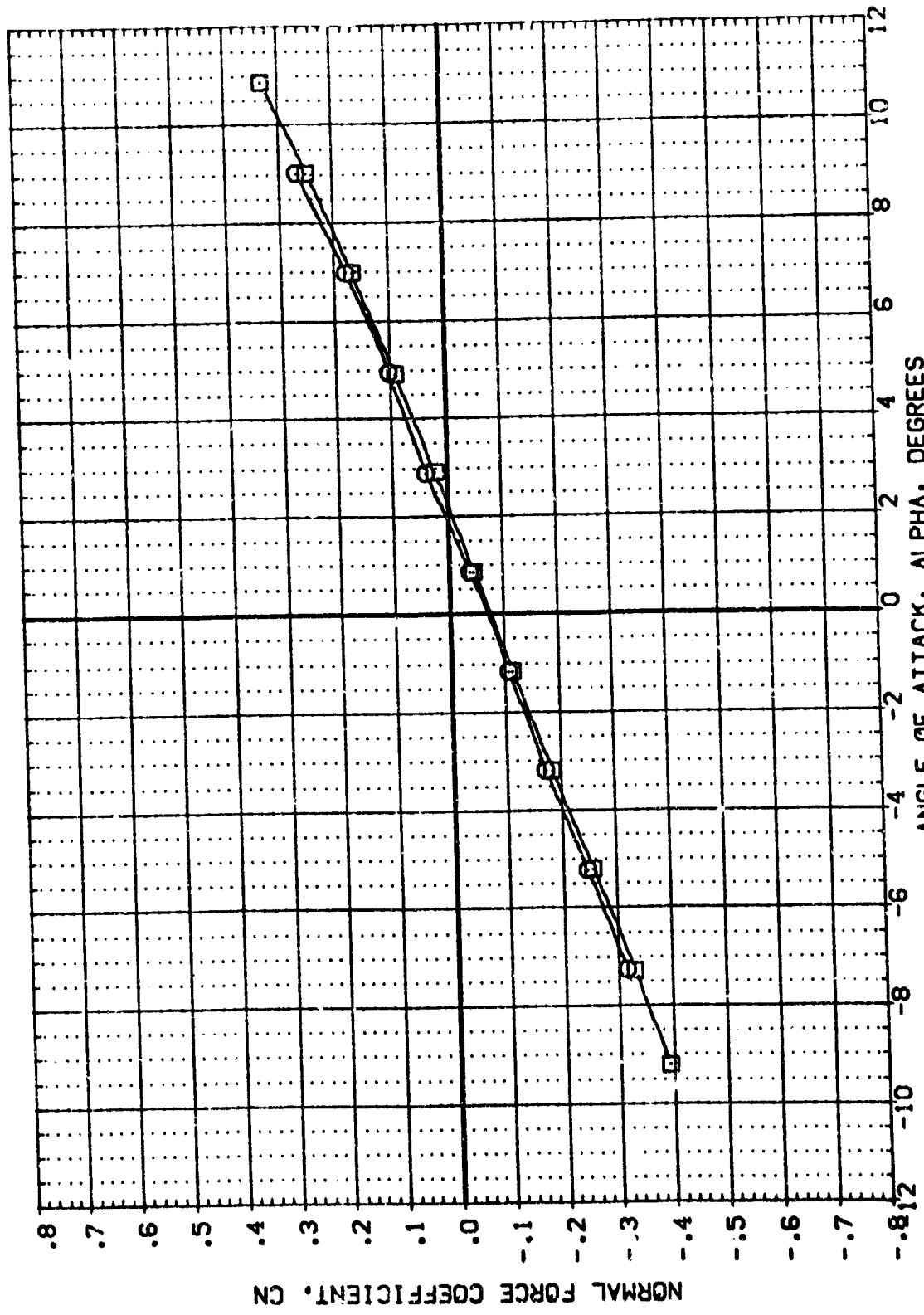


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) □ MSFC 579(1A37) (034)(T14)(S12)(U6)
 (888007) □ MSFC 579(1A37) (034)(T19)(S12)

BETA ORBING
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 90. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



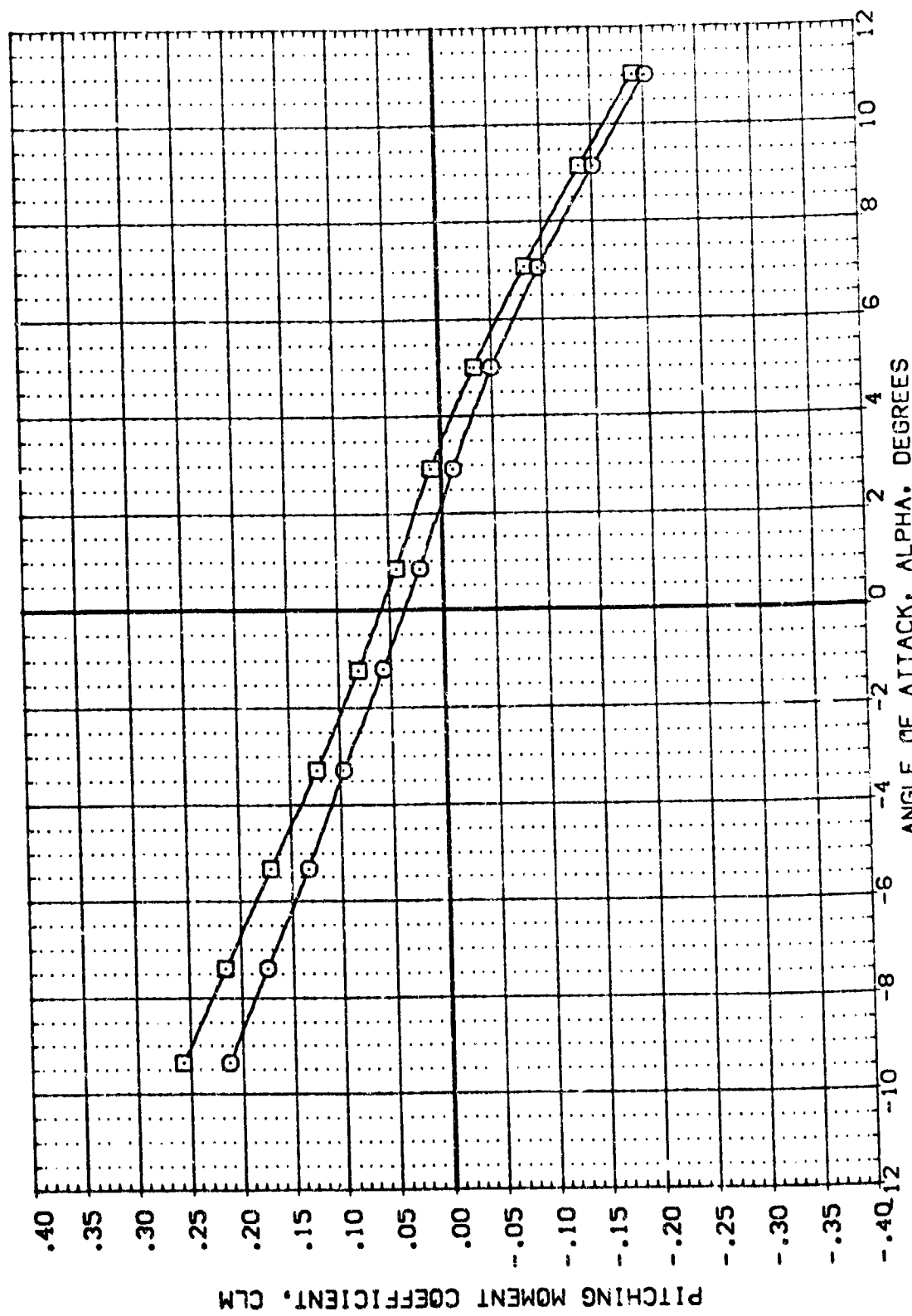
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
 (K)MACH = 4.96
 PAGE 22



REFERENCE INFORMATION
SREF 6.1960 SQ. IN.
LREF 5.1600 IN.
BREF 5.1500 IN.
VREF 2.7200 IN.
WREF .0000 IN.
ZREF .0000 IN.
SCALE .0040

BETA .000
ORBINC .000

DATA SET SYMBOL (B66009) (B66007)
CONFIGURATION DESCRIPTION MSC 579(1A37) (034)(14)(S12)(U6)
MSC 579(1A37) (034)(19)(S12)

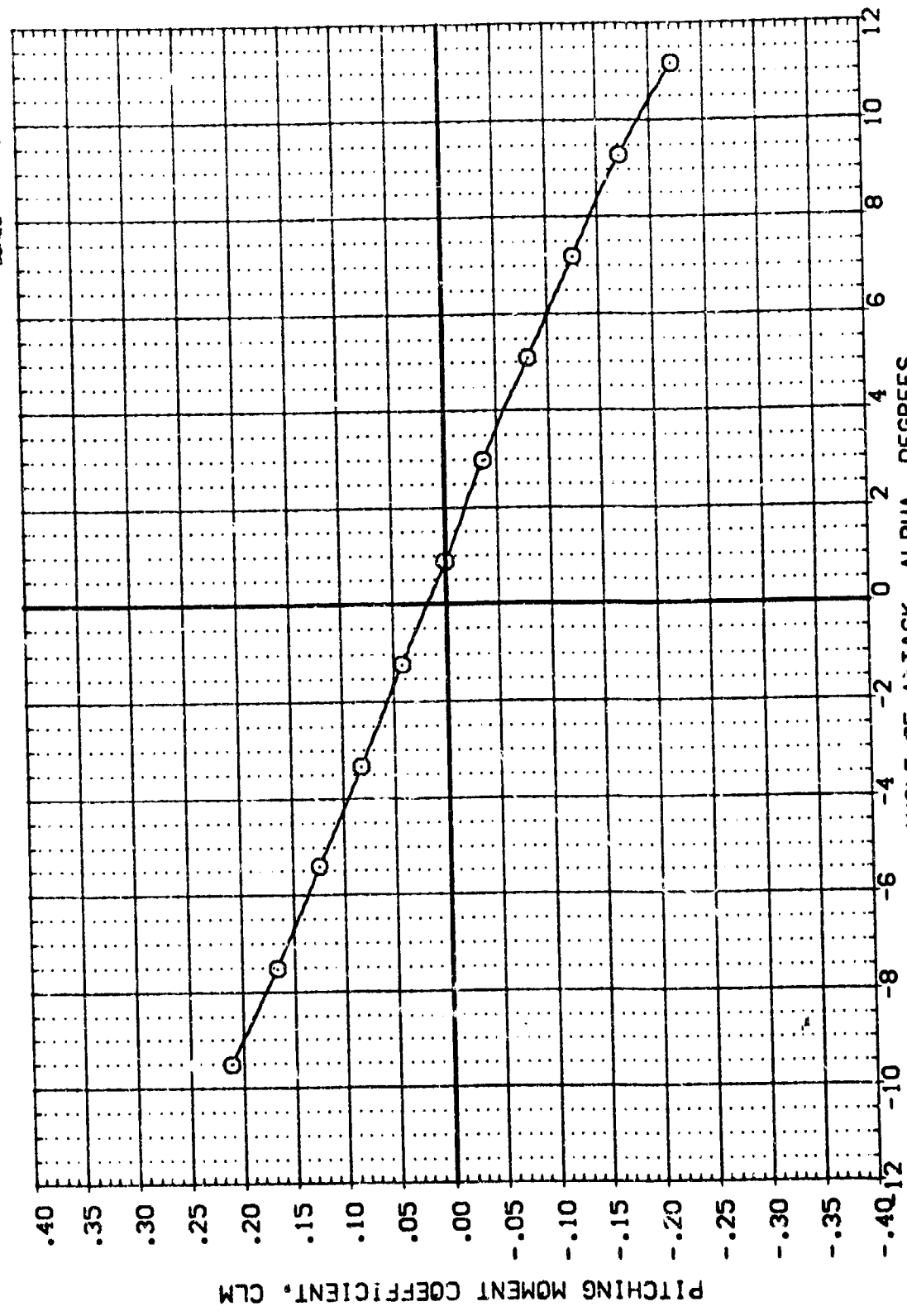


EFFECT OF ATTACH STRUCTURE AND PROTRUSANCES ON LONG. CHARACT. (FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B68009) MSFC 579(1A37) (024)(114)(512)(J6)
 (B68007) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
 (B)MACH = .80
 PAGE 24

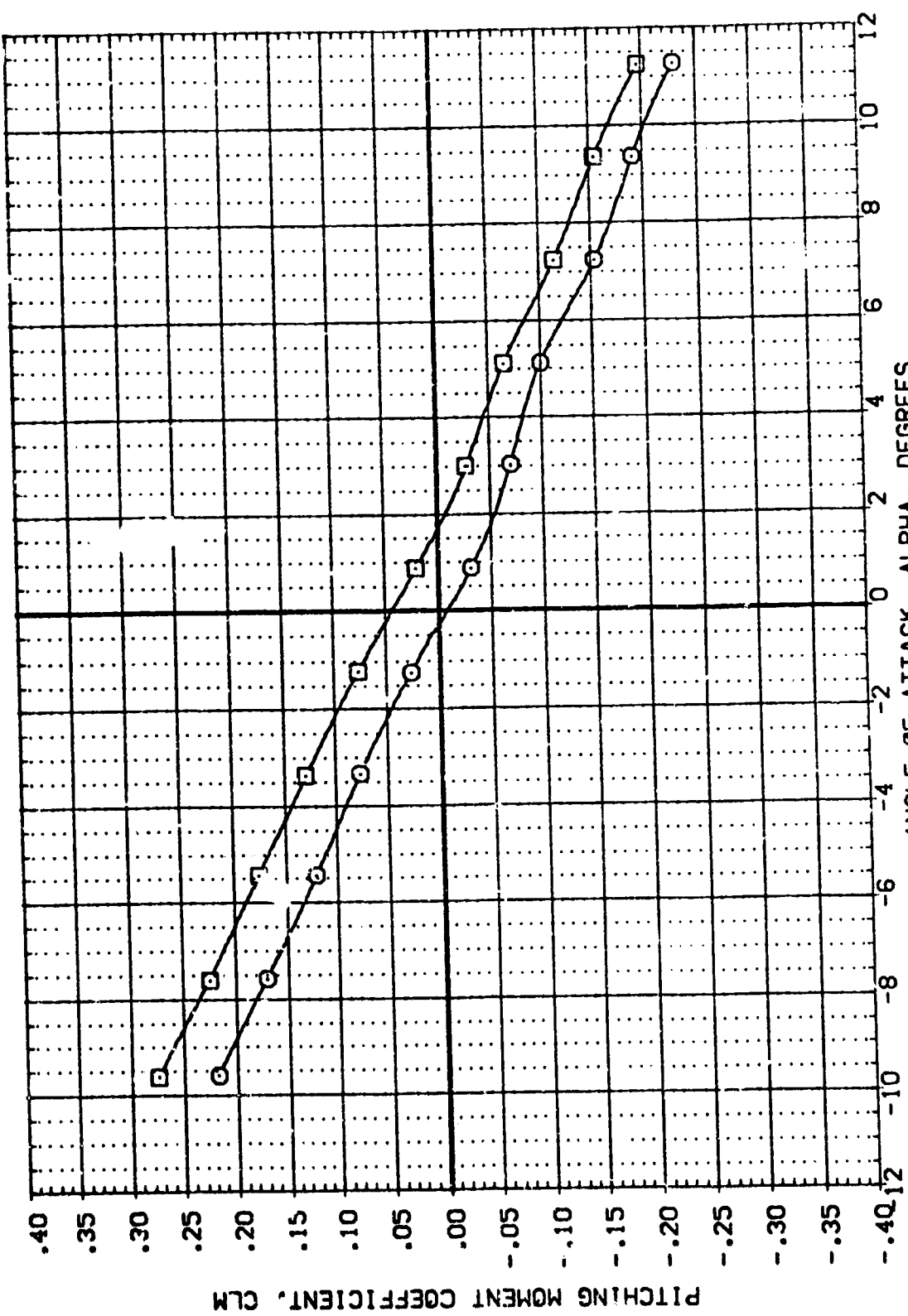


DATA SET SYMBOL (888009) (888007)

CONFIGURATION DESCRIPTION
MSFC 579(1A37) (034)(114)(S)(2)(U6)
MSFC 579(1A37) (034)(119)(S)(2)

BETA .000 .000
ORBING .000 .000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 2.1600 IN.
YMRP .7200 IN.
ZMRP .0000 IN.
SCALE .0040

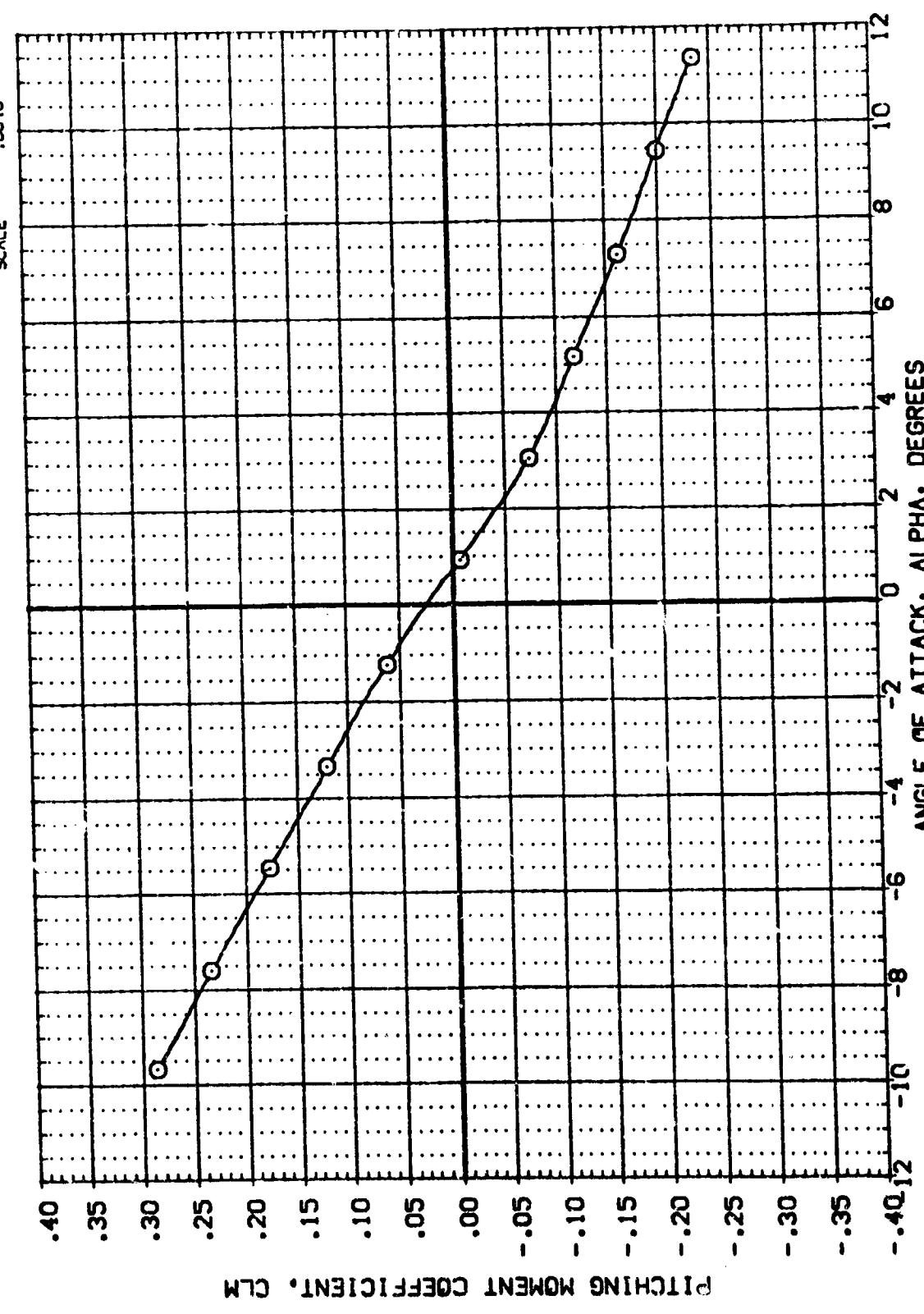


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 3.1600 IN.
 SREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (888009) NSFC 579(1A37) (034)(T14)(S12)(U6)
 (888007) DATA NOT AVAILABLE



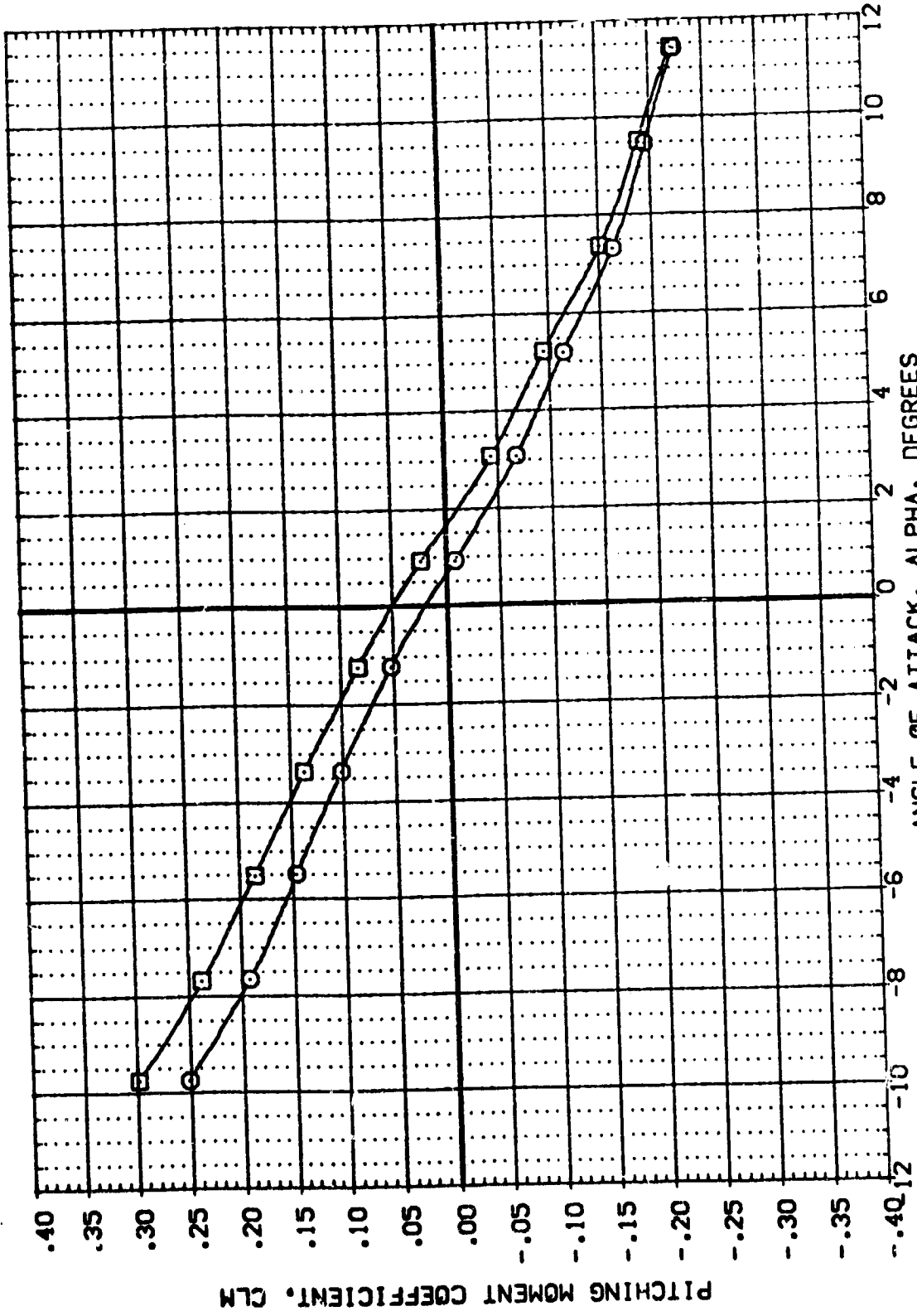
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)



DATA SET SYMBO. CONFIGURATION DESCRIPTION
(B89009) (B89007) □ MSC 579(1A37) (034)(T14)(S12)(L6)
MSC 579(1A37) (034)(T9)(S12)

BETA DRG INC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1960 SO.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0010



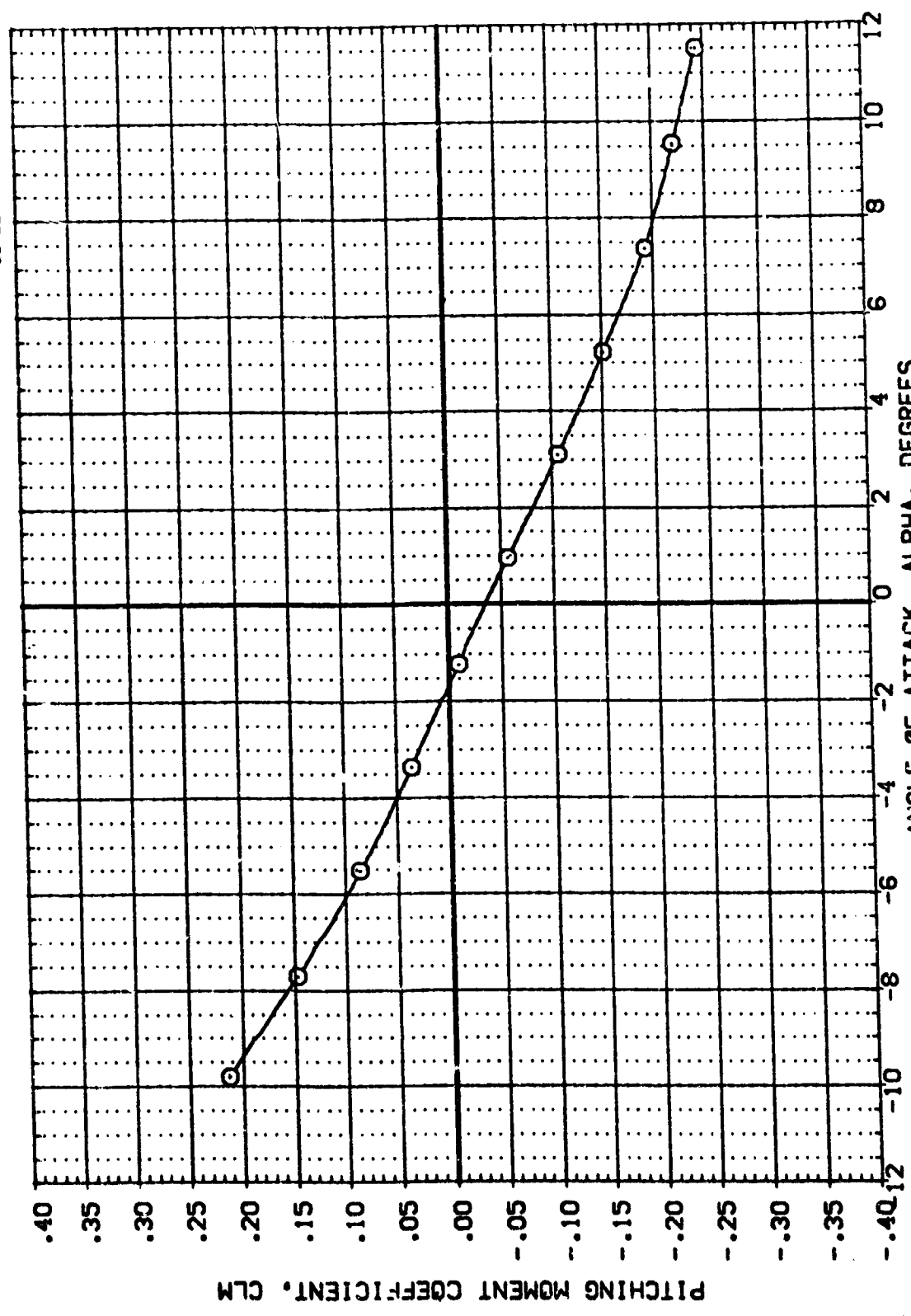
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(E)MACH = 1.10

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1600 IN.
 BRREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA .000
 ORBING .000

DATA SET SYMBOL (888009) (888007) □
 CONFIGURATION DESCRIPTION MSFC 579(1A37) (D34)(T14)(S12)(US)
 DATA NOT AVAILABLE



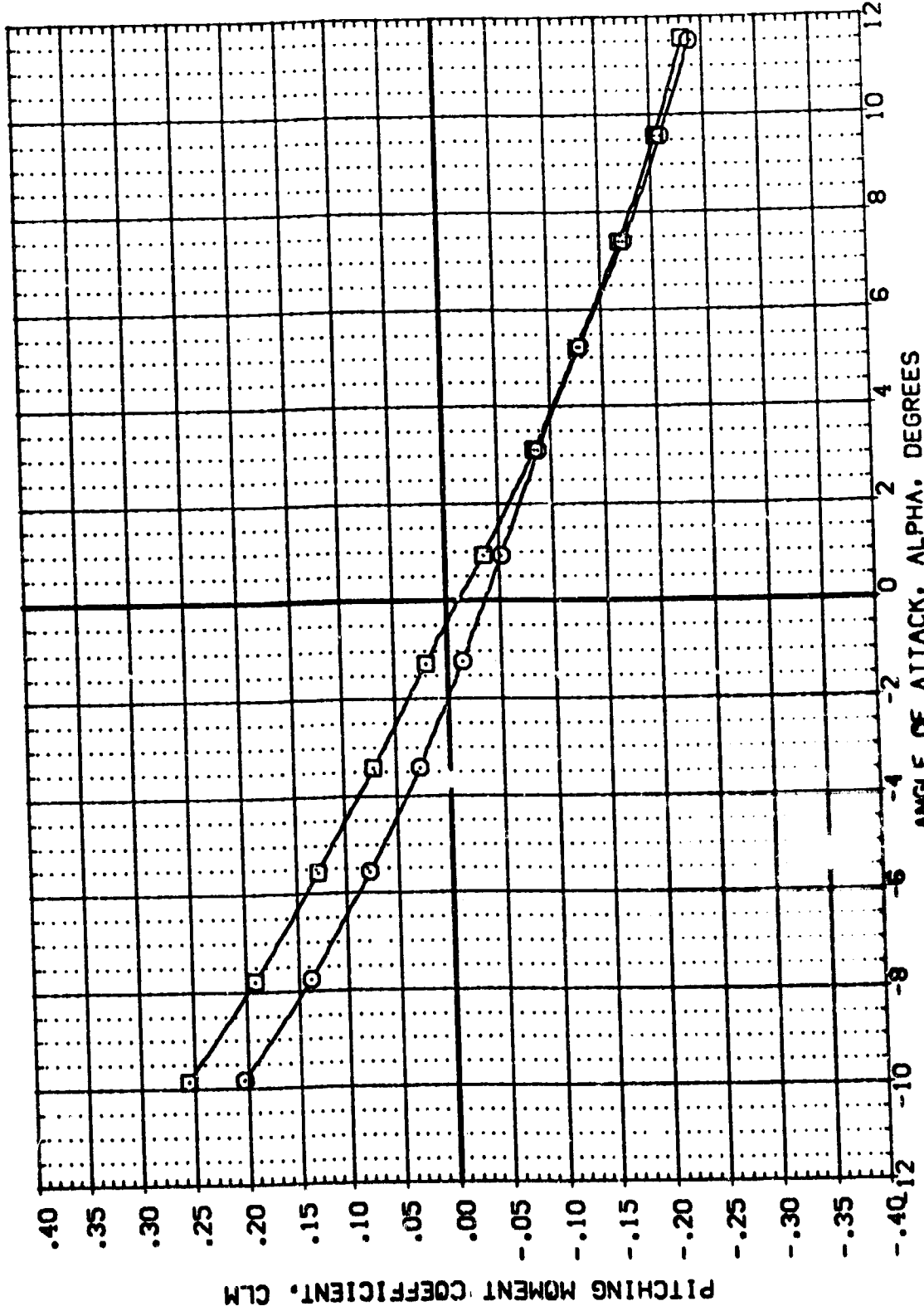
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
 (F)MACH = 1.20
 PAGE 28



REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040

BETA ORBING
.000
.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(888005) MSFC 579(1A37) (034)(114)(S12)(U6)
(888007) MSFC 579(1A37) (034)(119)(S12)



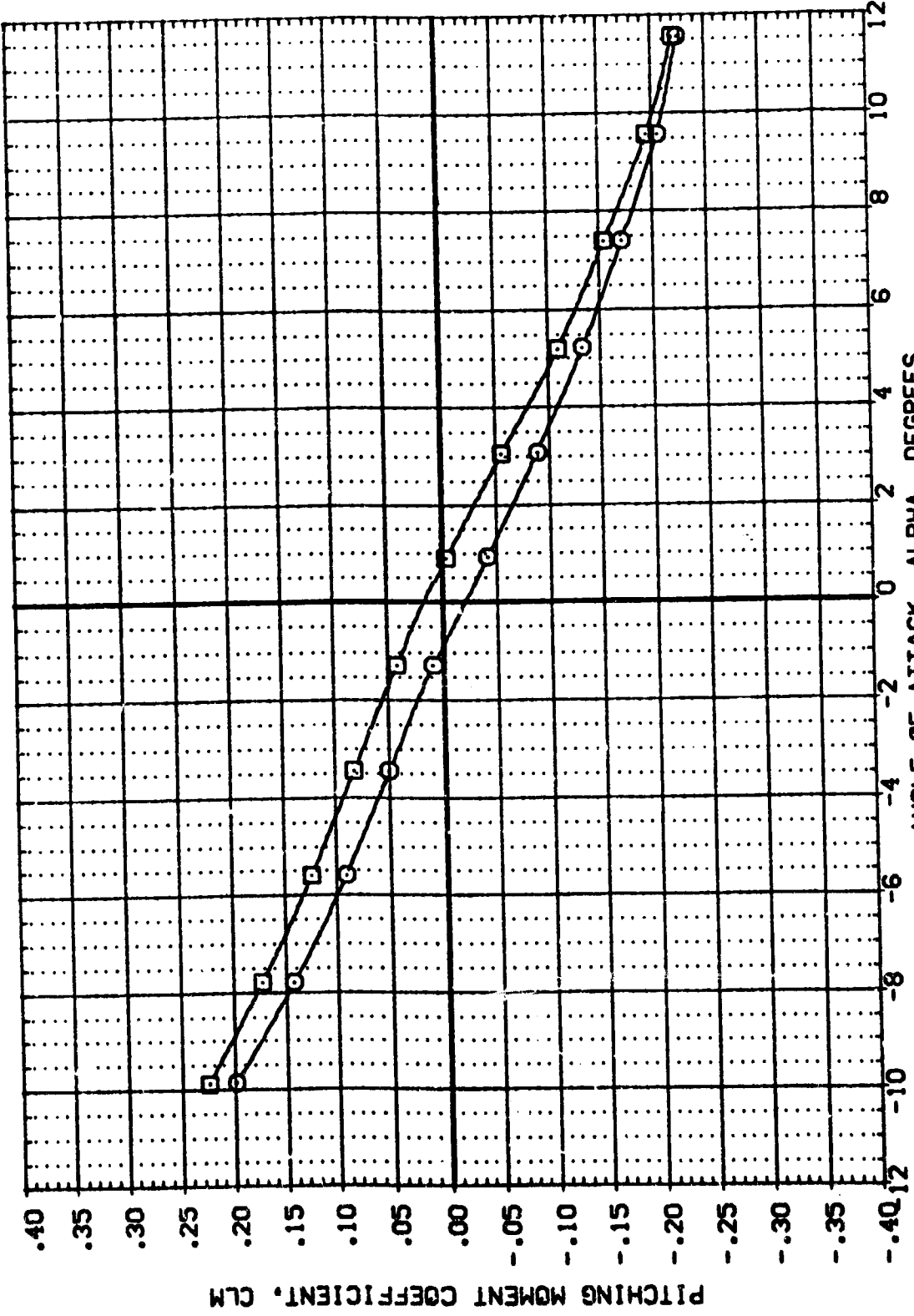
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(G)MACH = 1.46

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (L8009) MSC 579(1A37) (094)114(S12)(US)
 (88007) MSC 579(1A37) (094)119(S12)

BETA ORBING
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



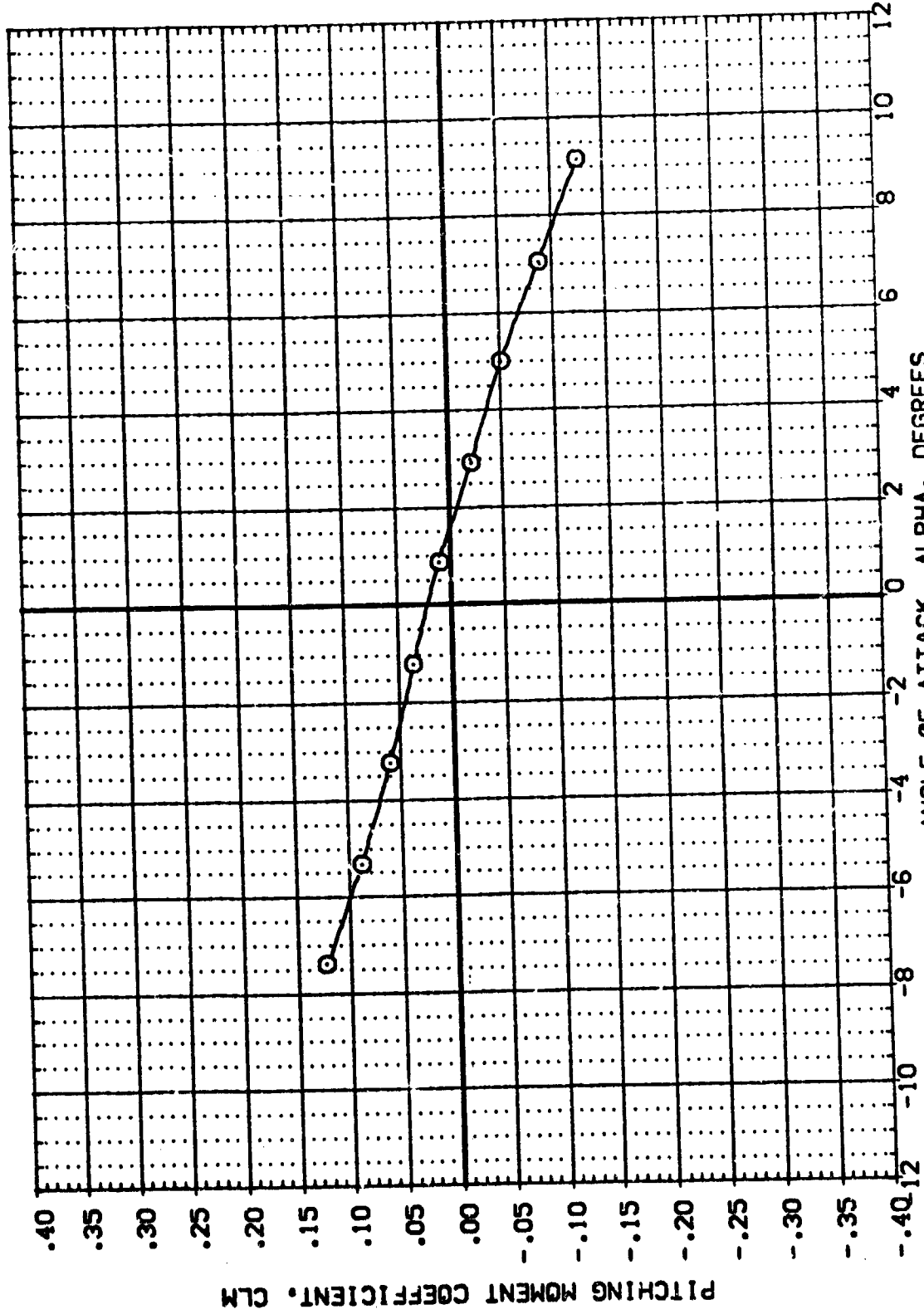
EFFECT OF ATTACH STRUCTURE AND PROTRUSANCES ON LONG. CHARACT. (FIRST STAGE)



DATA SET SYMBOL (888009) (888007) CONFIGURATION DESCRIPTION MSFC 5791(A37) (034J)(114J)(S12)(US) DATA NOT AVAILABLE

BETA .000 .000 ORBING .000 .000

REFERENCE INFORMATION
SREF 6.1960 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



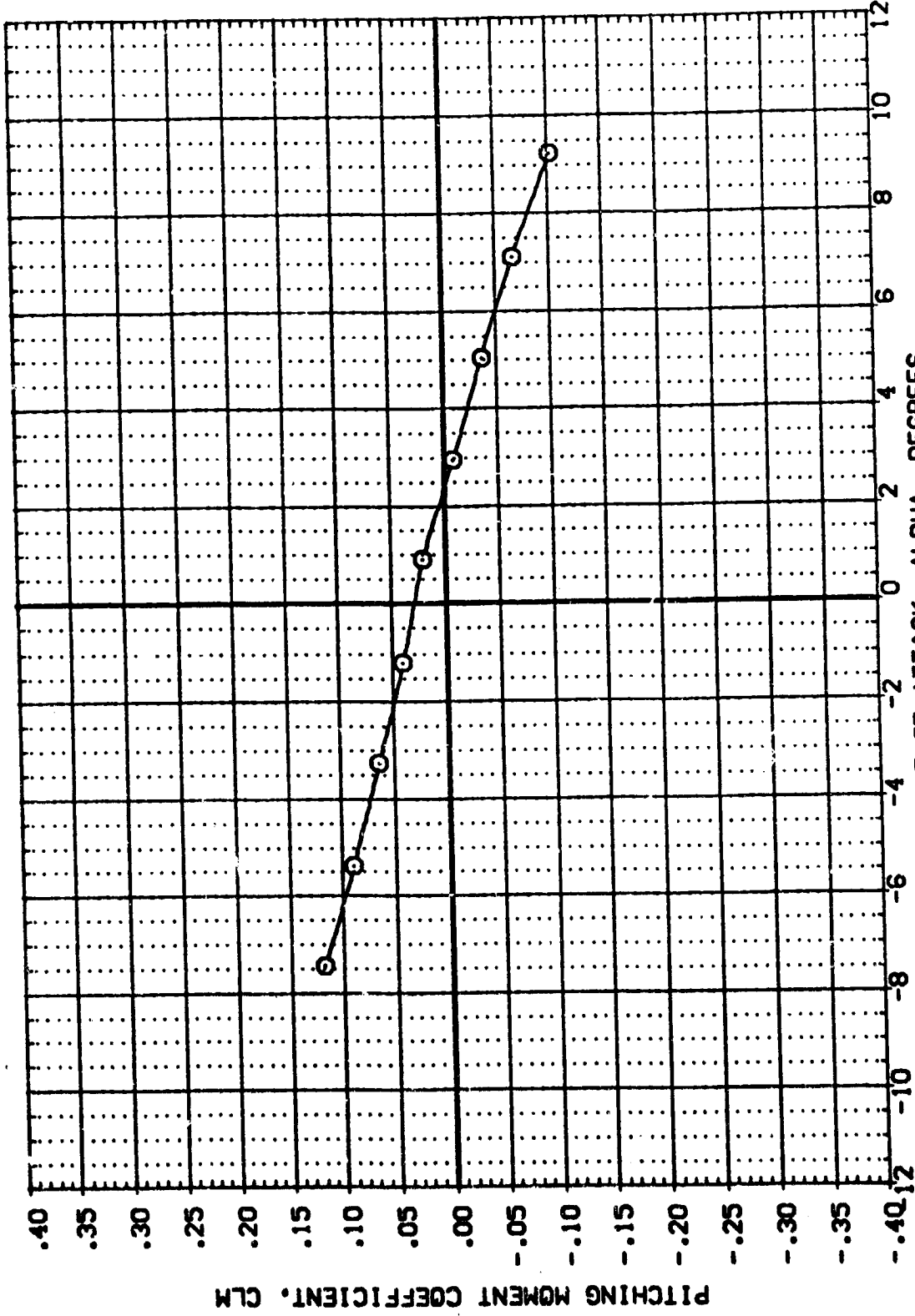
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(1)MACH = 2.99

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (000007) (000007) MFC 579(1A37) (034)(T14)(S12)(U6)
 DATA NOT AVAILABLE

BETA ORBITING
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1960 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040



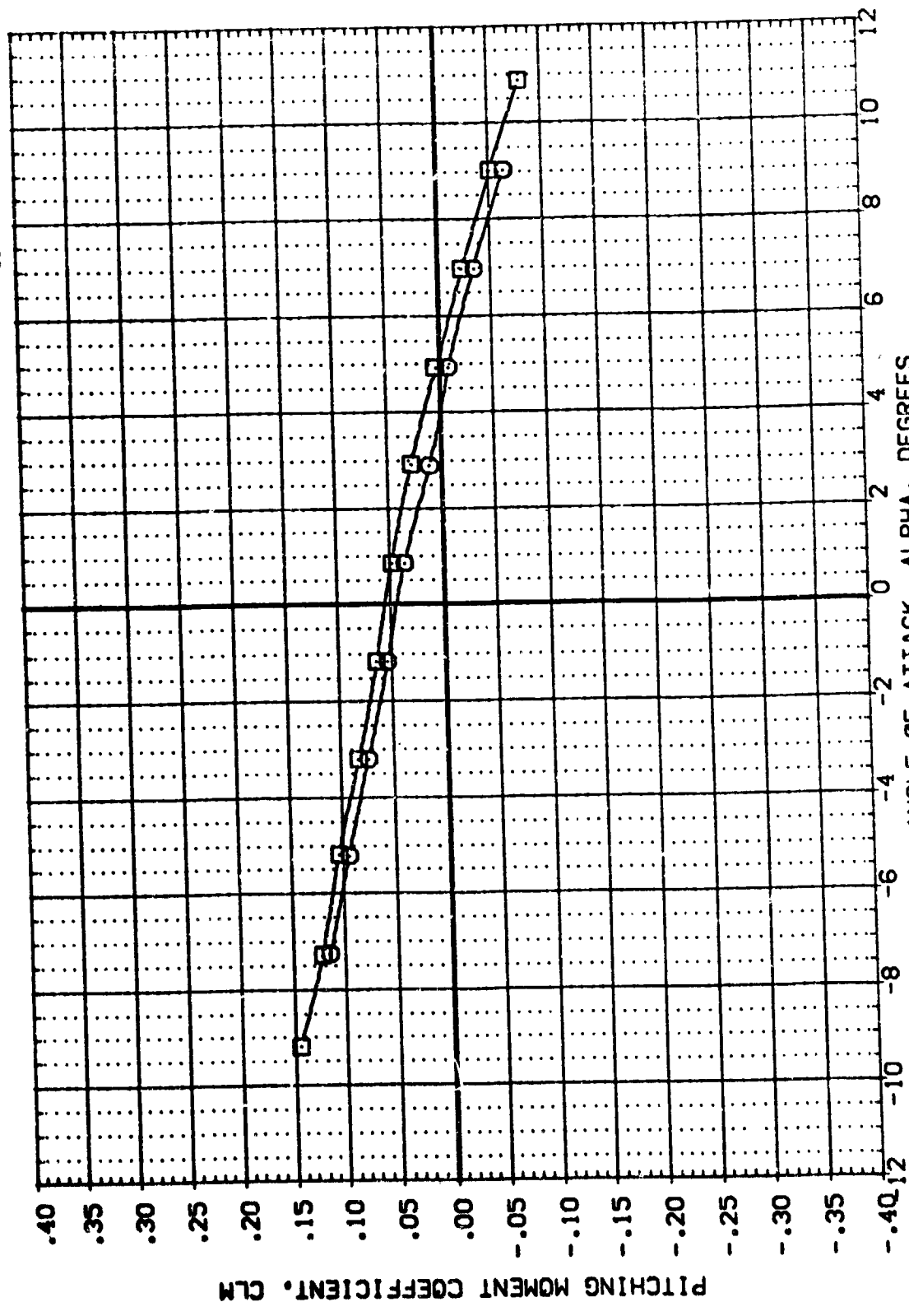
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)



DATA SET SYMBOL: (888008) (888007) □
 CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(114)(S12)(U6) MSFC 579(1A37) (034)(19)(S12)

BETA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1980 SQ. IN.
 LREF: 5.1500 IN.
 BREF: 5.1500 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



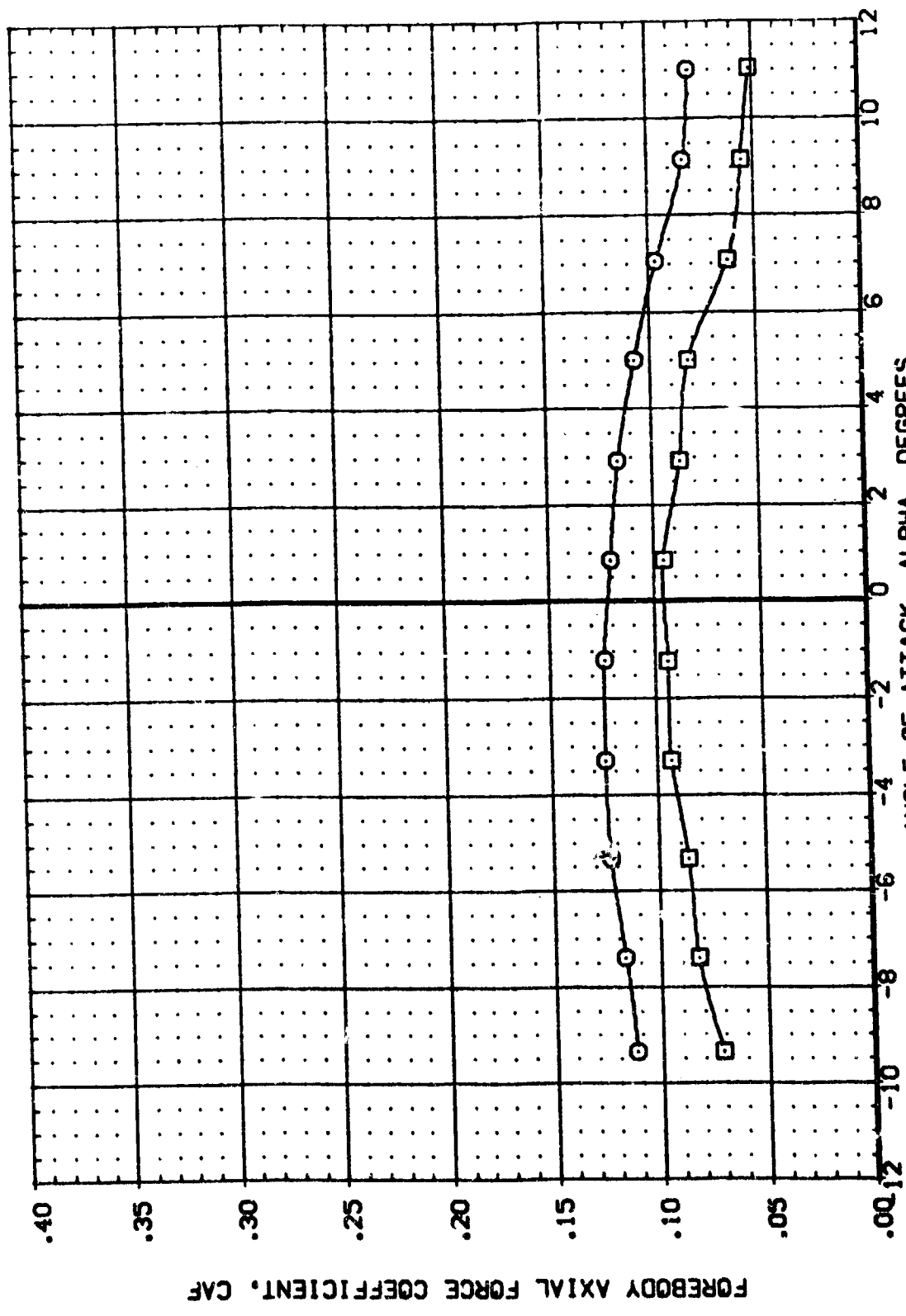
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(K)MACH = 4.96

DATA SET SYMBOL: (B68009) (B68007)
 CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(14)(S12)(U6) MSFC 579(1A37) (034)(19)(S12)

BETA: .000
 ORBING: .000

REFERENCE INFORMATION:
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



FOREBODY AXIAL FORCE COEFFICIENT, CAF

ANGLE OF ATTACK, ALPHA, DEGREES
 EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

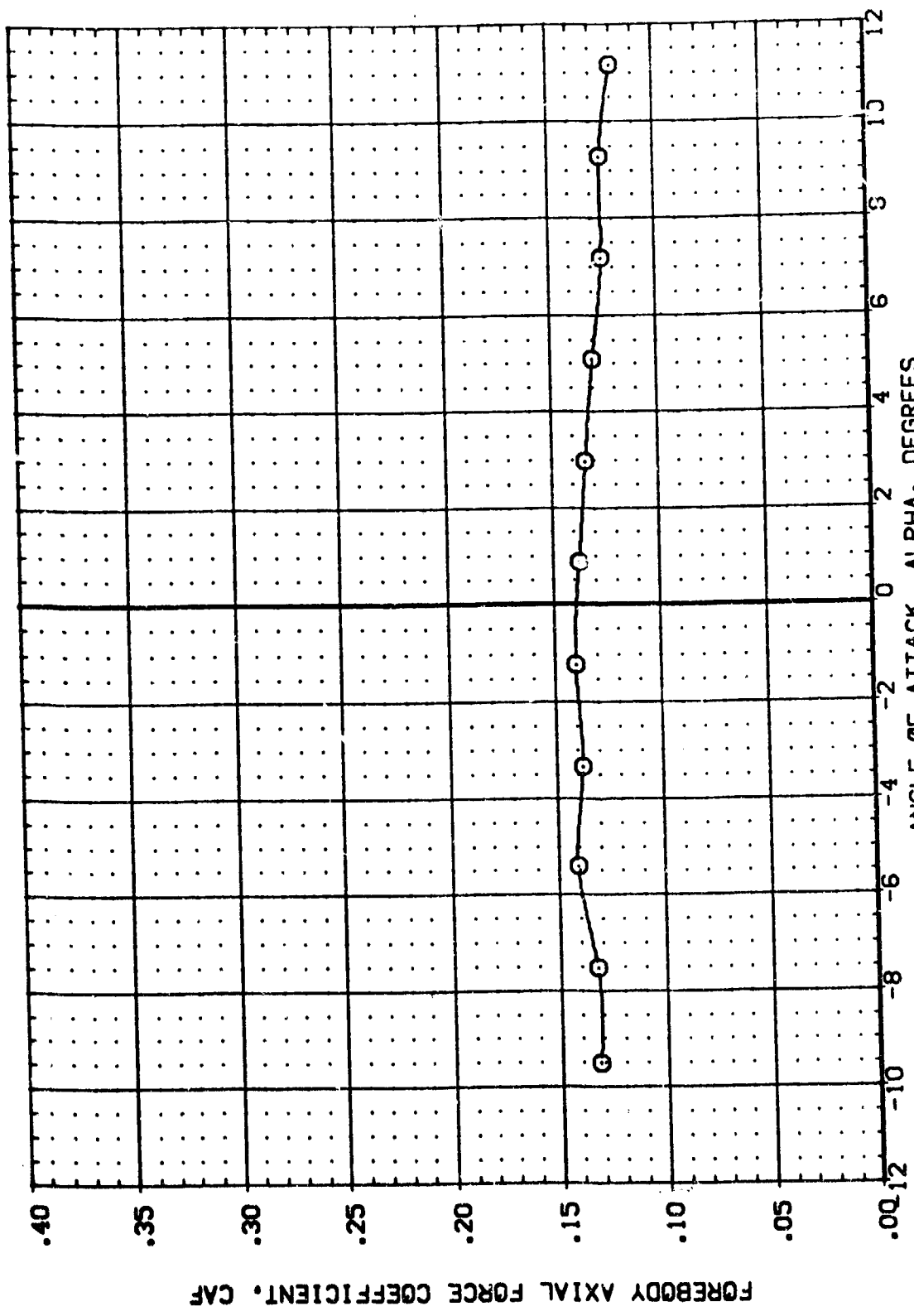
(A)MACH = .60



DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (886005) (886007) NSFC 578(1A37) (C341)(T14)(S12)(U6)
 DATA NOT AVAILABLE

BETA 0.000
 CRBINC 0.000

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

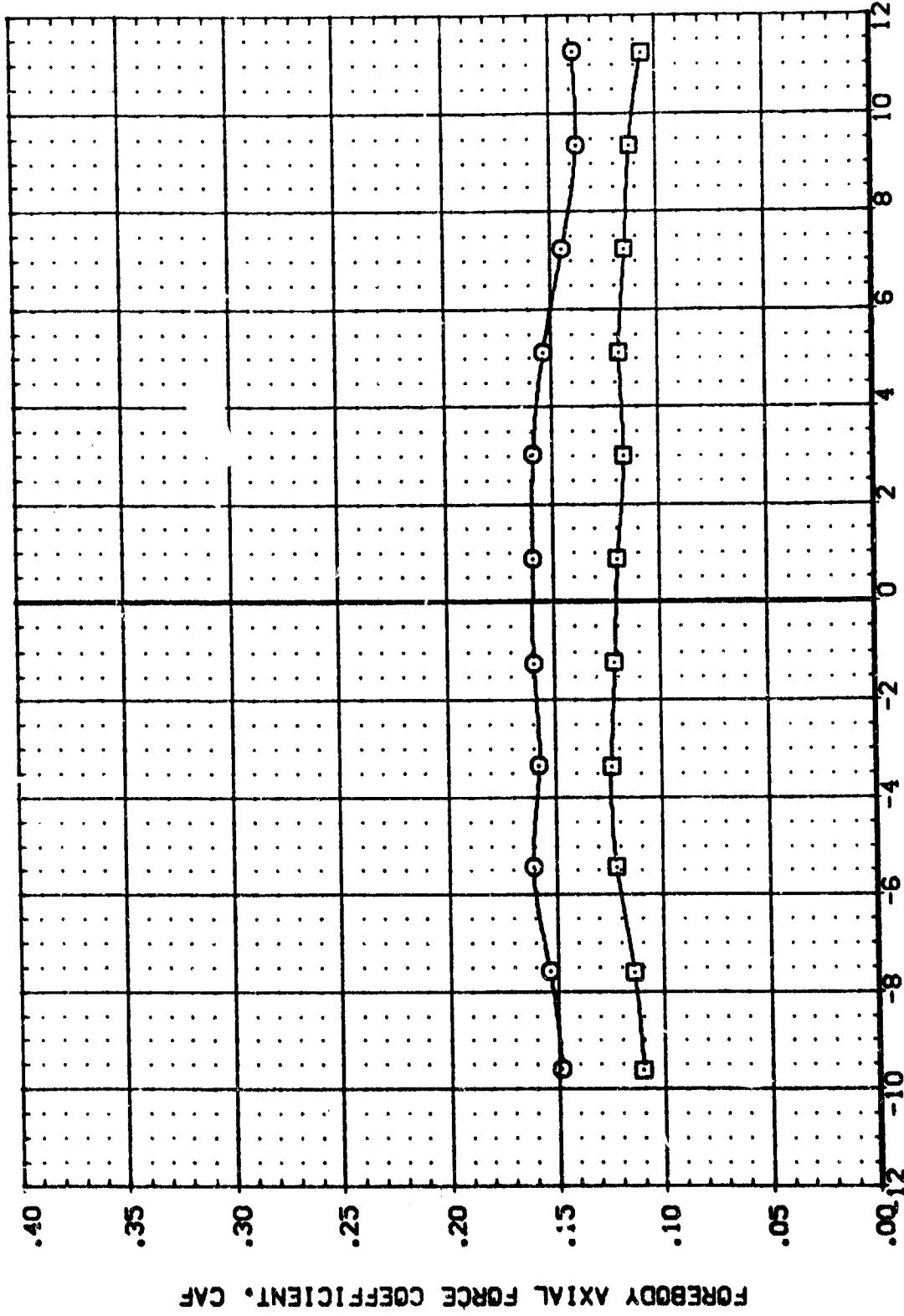


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

DATA SET SYMBOL (880009) (880007) MSFC 579(1A37) (034)(114)(S12)(US) MSFC 579(1A37) (034)(119)(S12)

BETA .000 .000 ORBINC .000 .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



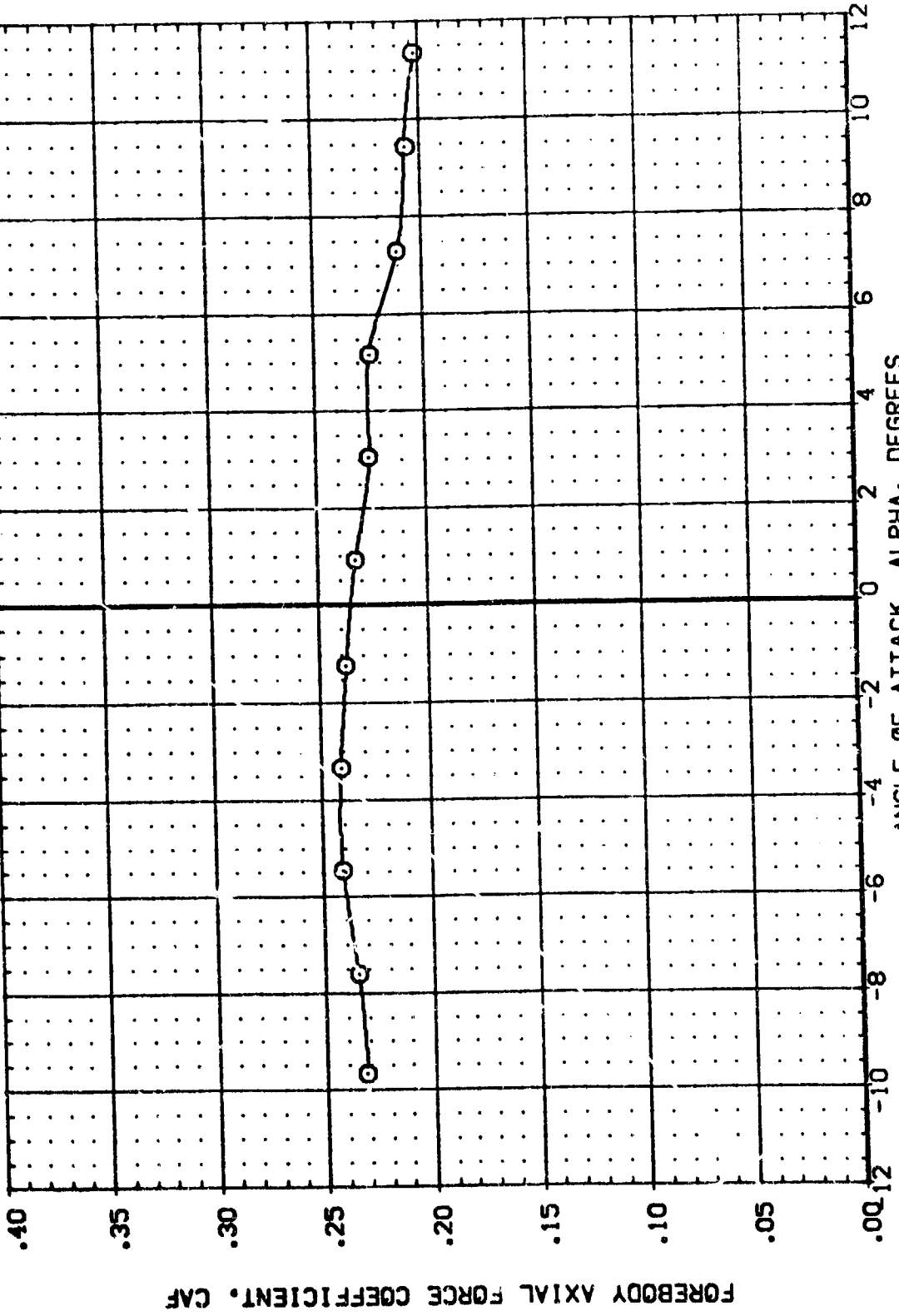
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)



DATA SET SYMBOL (886009) □
CONFIGURATION DESCRIPTION MSC 579(1A37) (034)(114)(S12)(US)
DATA NOT AVAILABLE

BETA .0C
ORB INC .000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



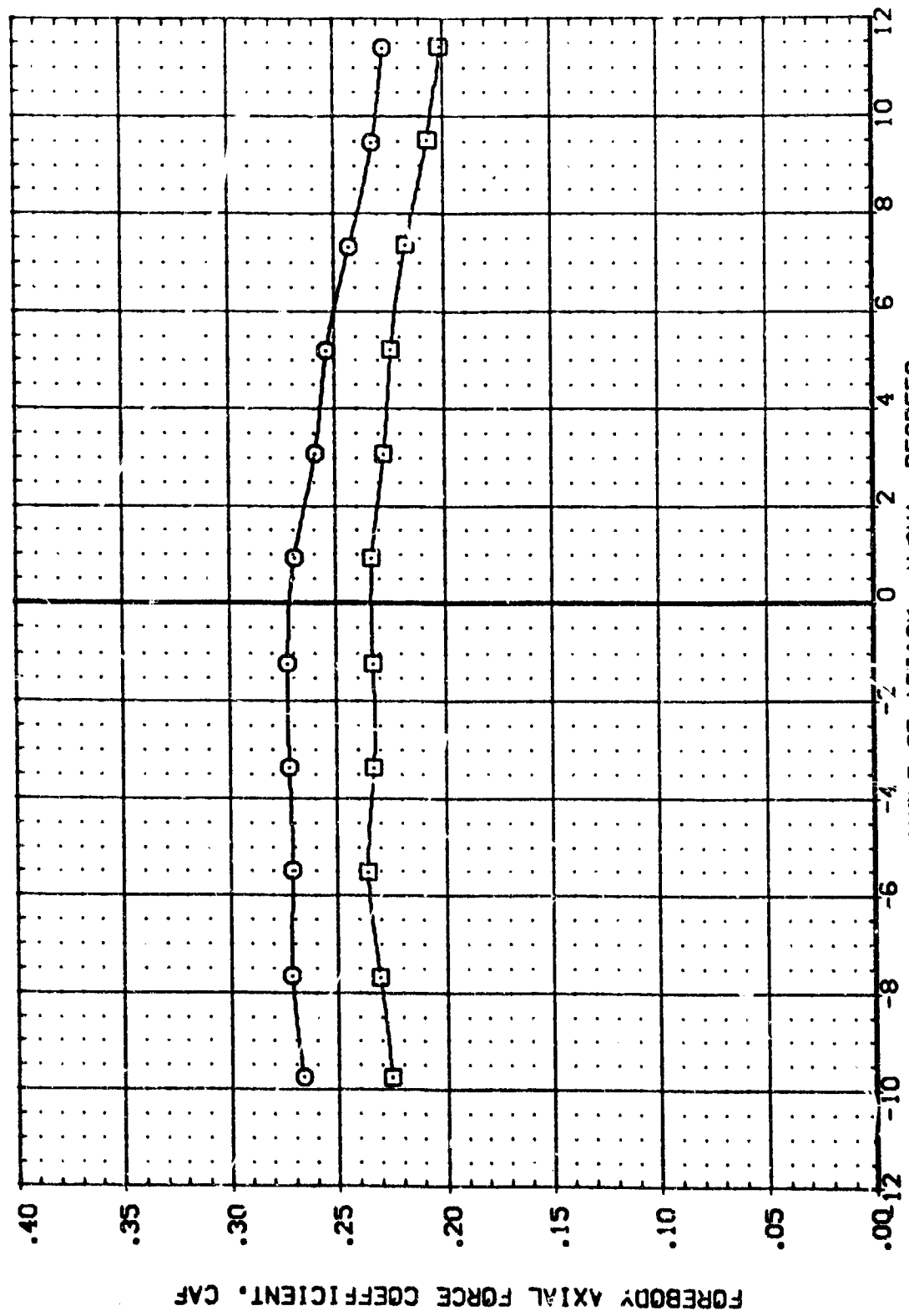
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

DATA SET SYMBOL (888009) (888007)

CONFIGURATION DESCRIPTION
 MSFC 579(1A37) (034)(T14)(S12)(U6)
 MSFC 579(1A37) (034)(T9)(S12)

BETA ORBING
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1600 IN.
 BRFP 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



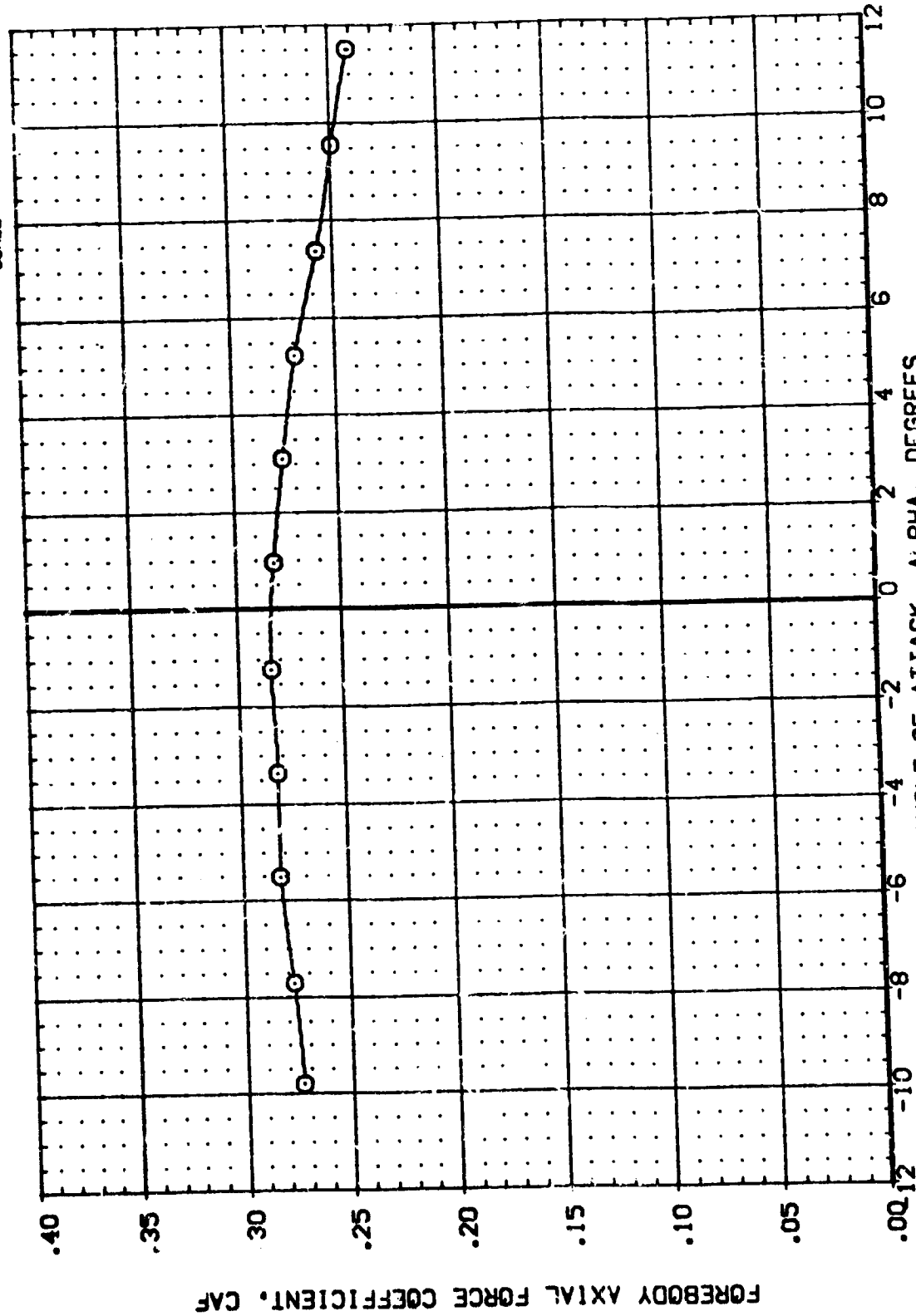
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)



DATA SET SYMBO. CONFIGURATION DESCRIPTION
(B88009) MFPC 579(A37) (034)(Y14)(S12)(LG)
(B88007) DATA NOT AVAILABLE

BETA .000
SRBINC .000

REFERENCE INFORMATION
SPREF 6.1960 SO.IN.
LREF 9.1600 IN.
BREF 9.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0710

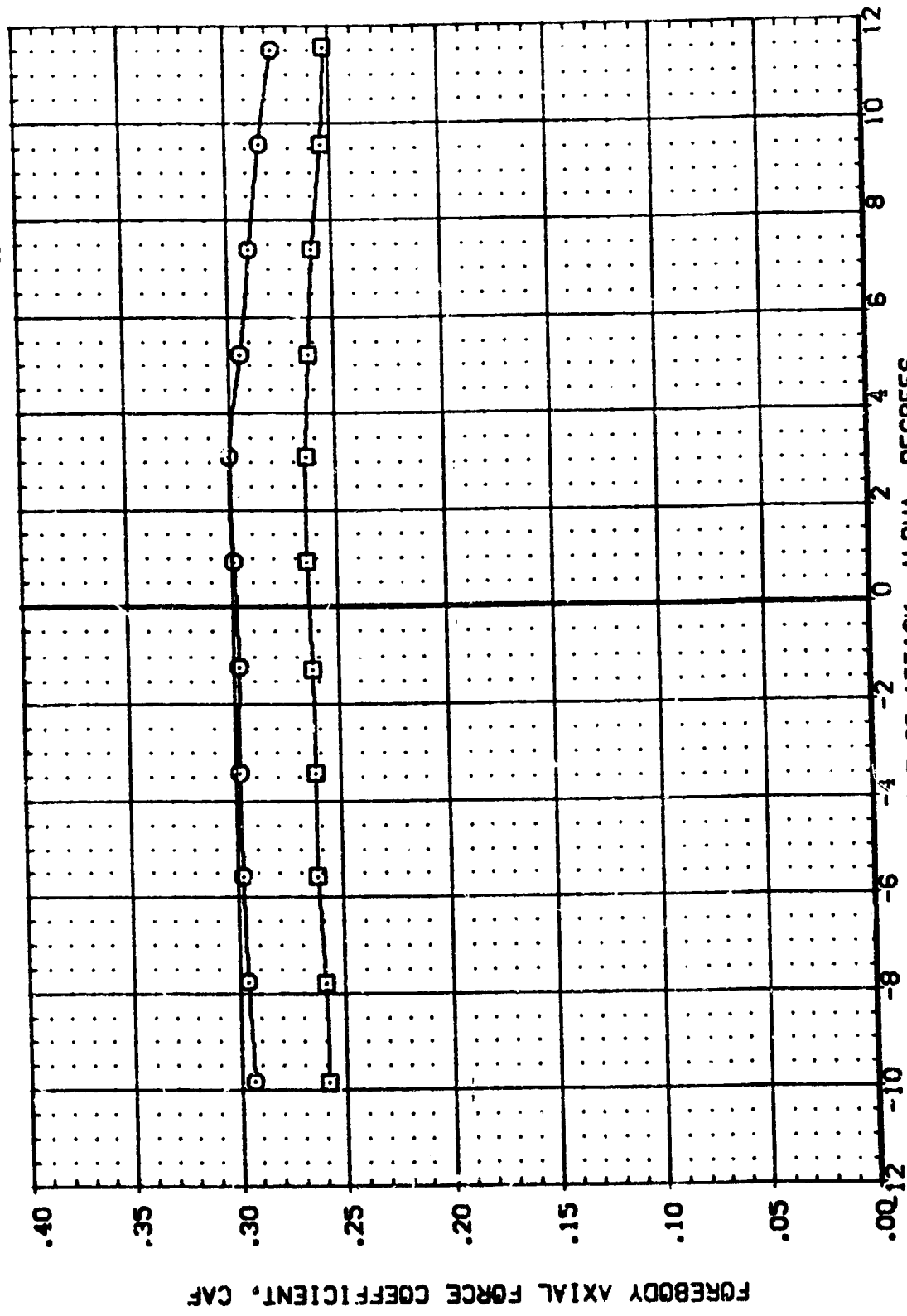


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

DATA SET SYMBOL: **□** CONFIGURATION DESCRIPTION:
 HFC 375(1A37) (034)(114)(S12)(US)
 HFC 375(1A37) (034)(119)(S12)

REFERENCE INFORMATION
 SREF 6.1980 SO.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

BETA .000
 ORBING .000



FOREBODY AXIAL FORCE COEFFICIENT, CAF

ANGLE OF ATTACK, ALPHA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(G)MACH = 1.46

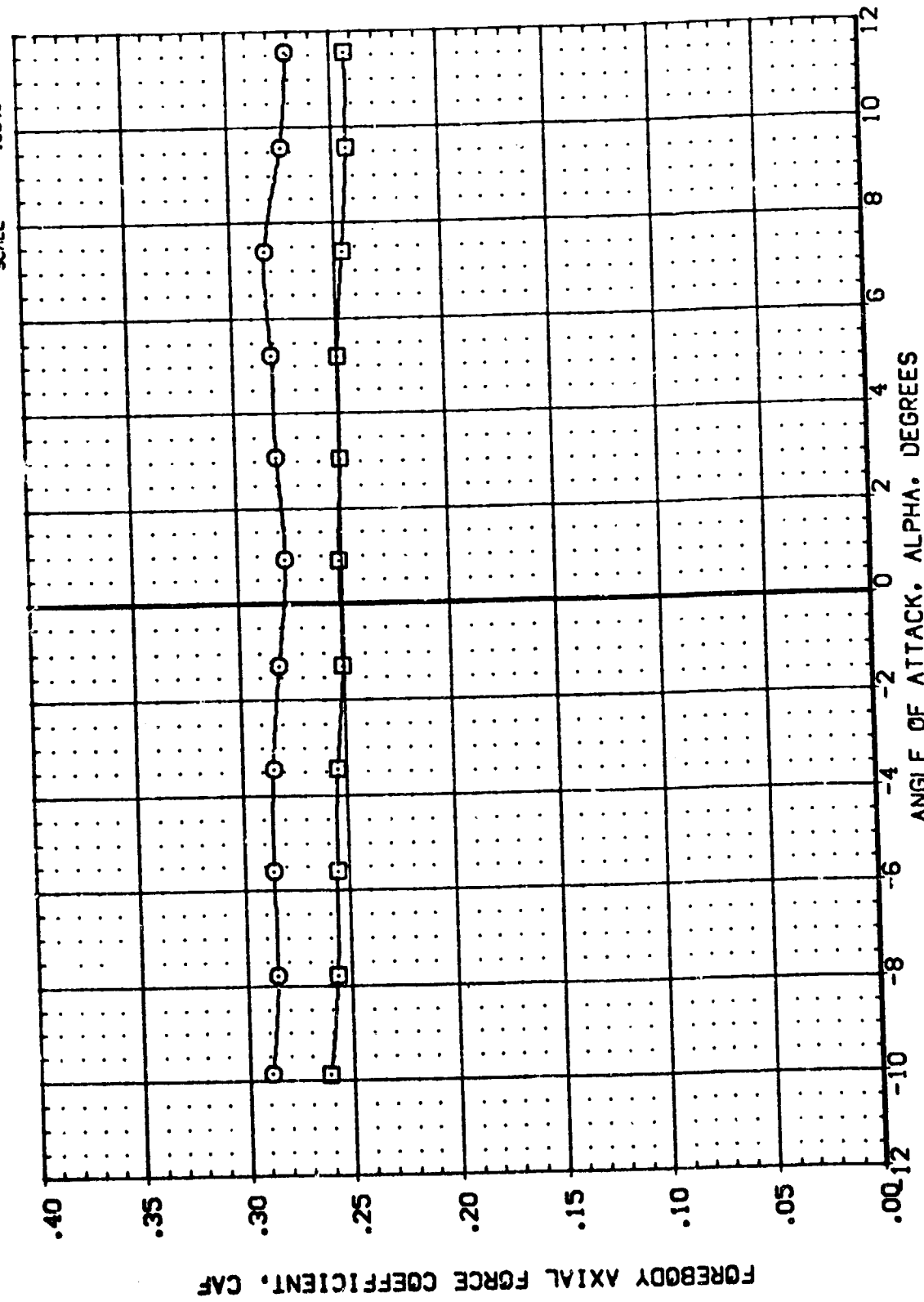
r JE 40



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) MSFC 579(1A37) (034)(T14)(S12)(U6)
 (888007) MSFC 579(1A37) (034)(T9)(S12)

BETA ORBING
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

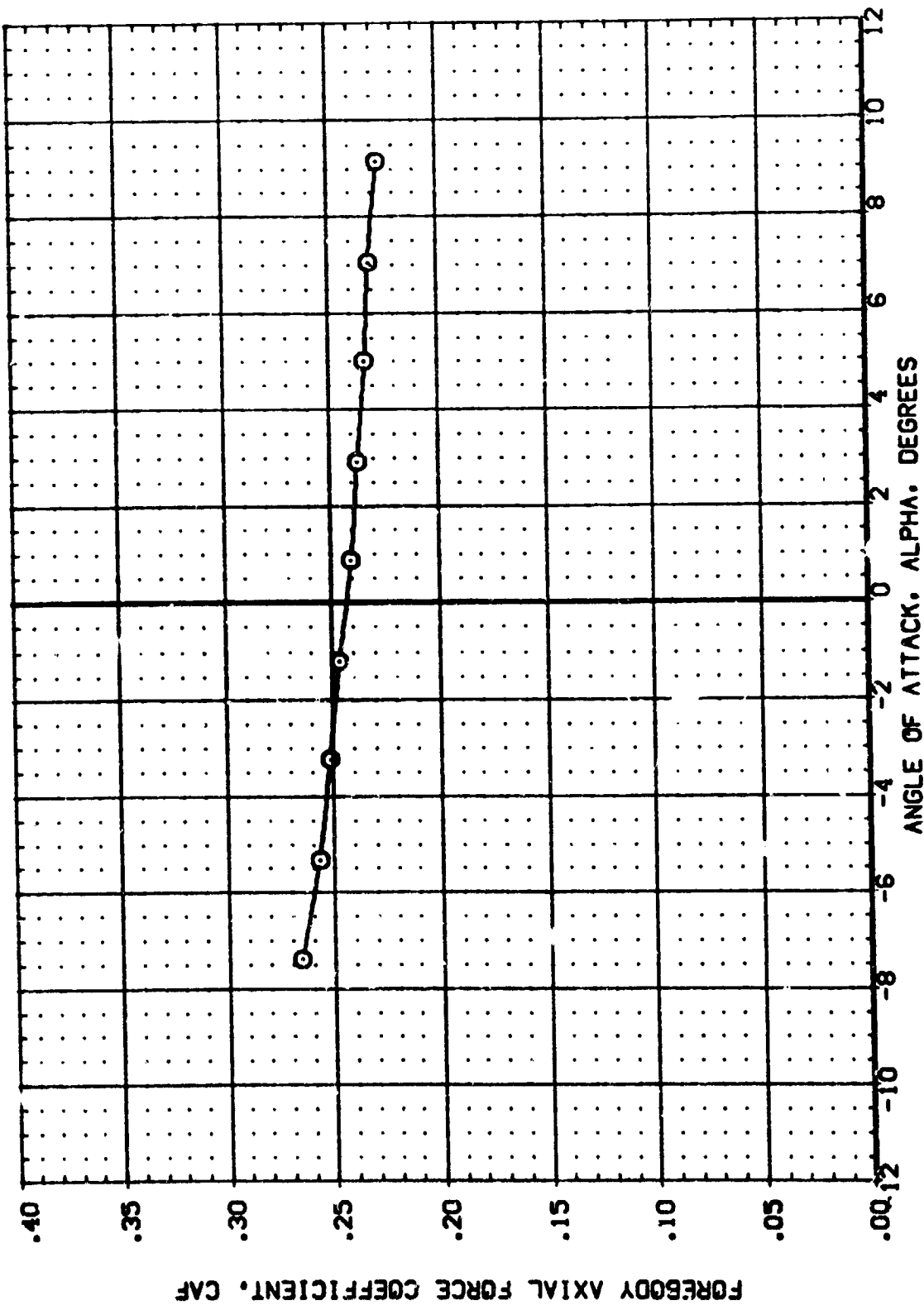


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
 (H)MACH = 1.96
 PAGE 41

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

BETA DRIBING
 .000
 .000

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (880009) MSC ST (1A37) (024)(T14)(S12)(US)
 (880007) DATA NOT AVAILABLE



FOREBODY AXIAL FORCE COEFFICIENT, CAF

ANGLE OF ATTACK, ALPHA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

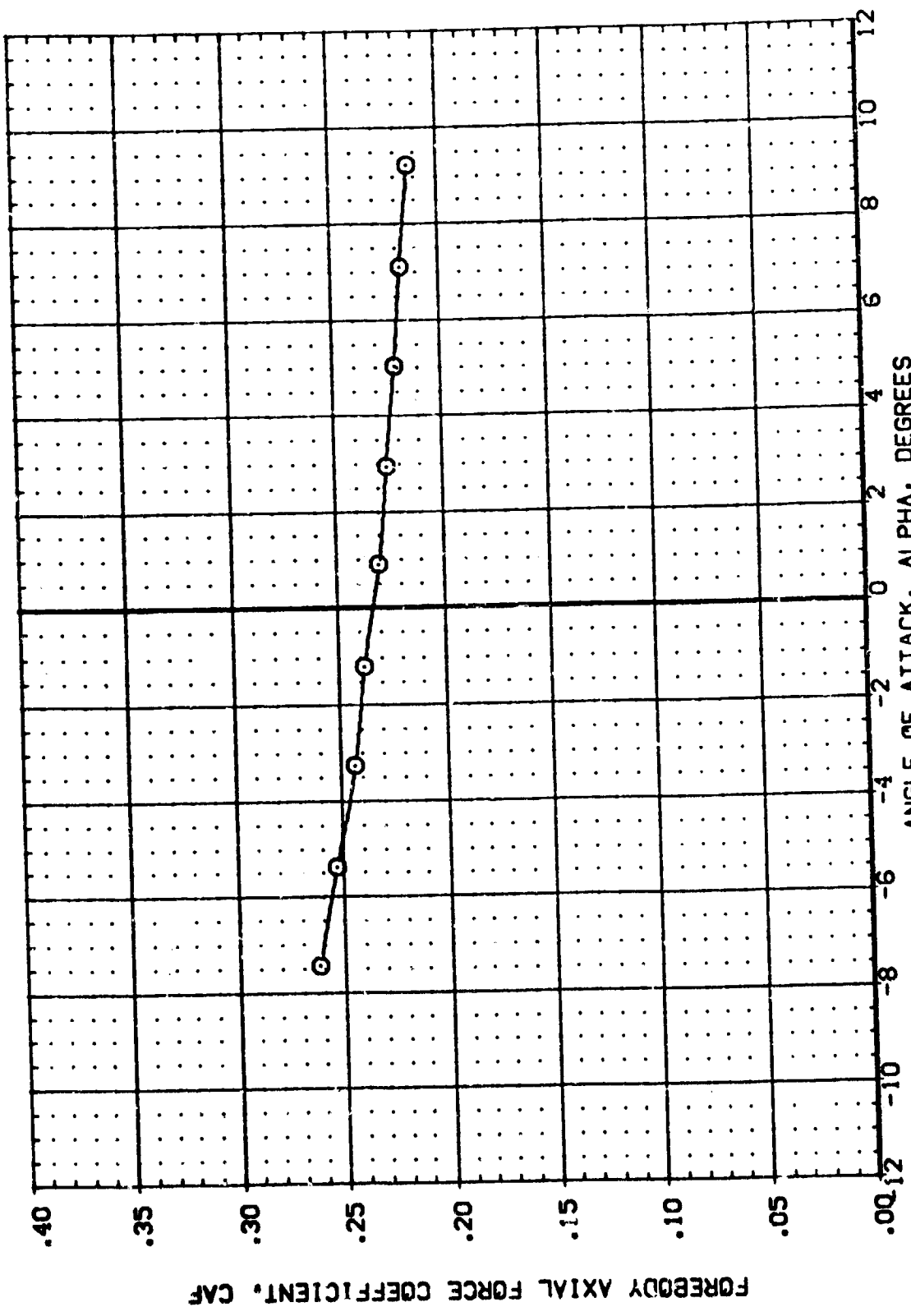
(1)MACH = 2.99



DATA SET SYMBOL: (888009) (888007)
CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(14)(S12)(U6)
DATA NOT AVAILABLE

BETA: .000
ORBITING: .000

REFERENCE INFORMATION:
SREF: 6.1980 SQ. IN.
LREF: 5.1500 IN.
BREF: 5.1500 IN.
XTRIP: 2.7200 IN.
YTRIP: .0000 IN.
ZTRIP: .0000 IN.
SCALE: .0010



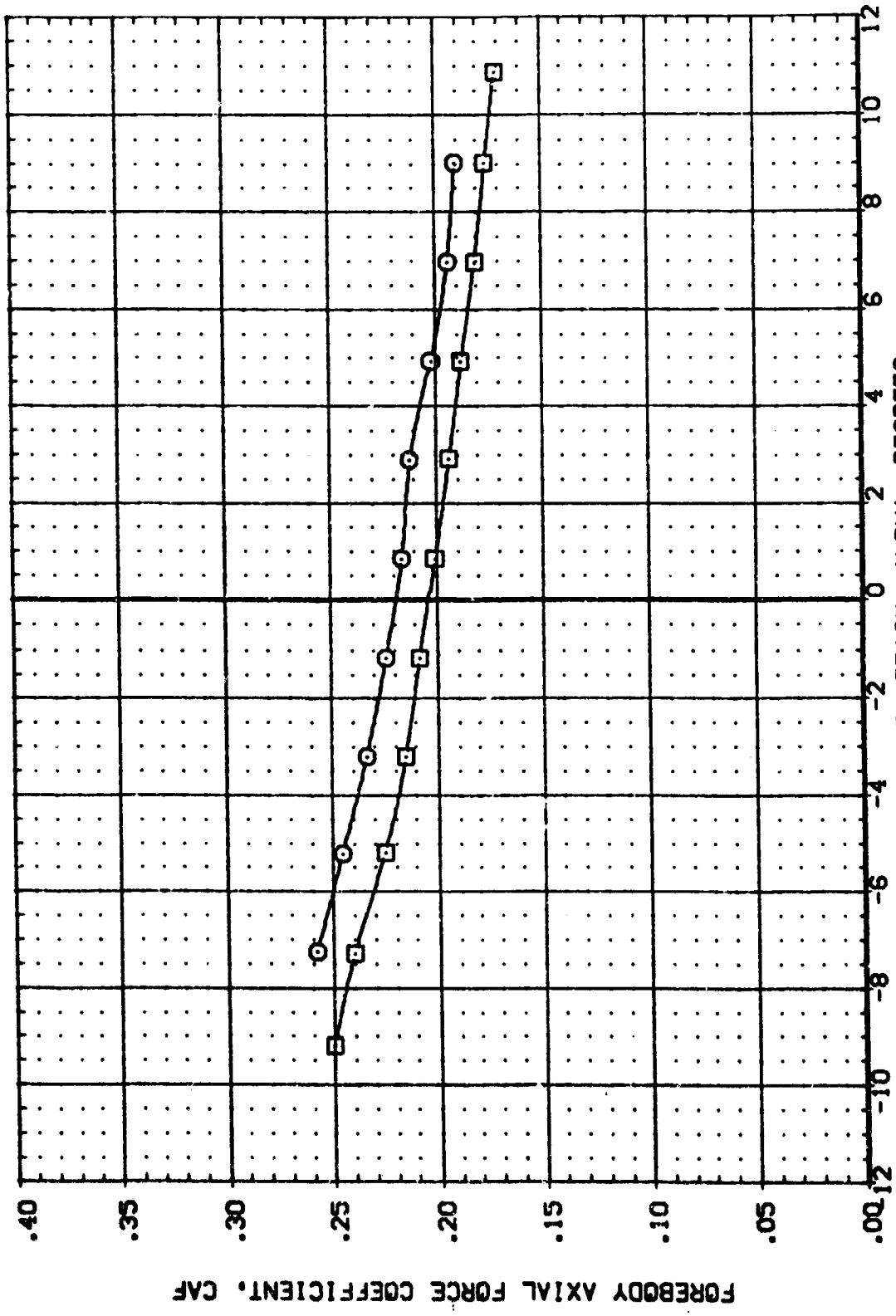
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(J)MACH = 3.48

DATA SET SYMBOL: \square MSFC 573(A37) (034)(T14)(S121(U6))
 (886007) \square MSFC 573(A37) (034)(T9)(S12)


BETA: .000
 ORBITING: .000

REFERENCE INFORMATION
 SREF: 6.1980 SO. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0010



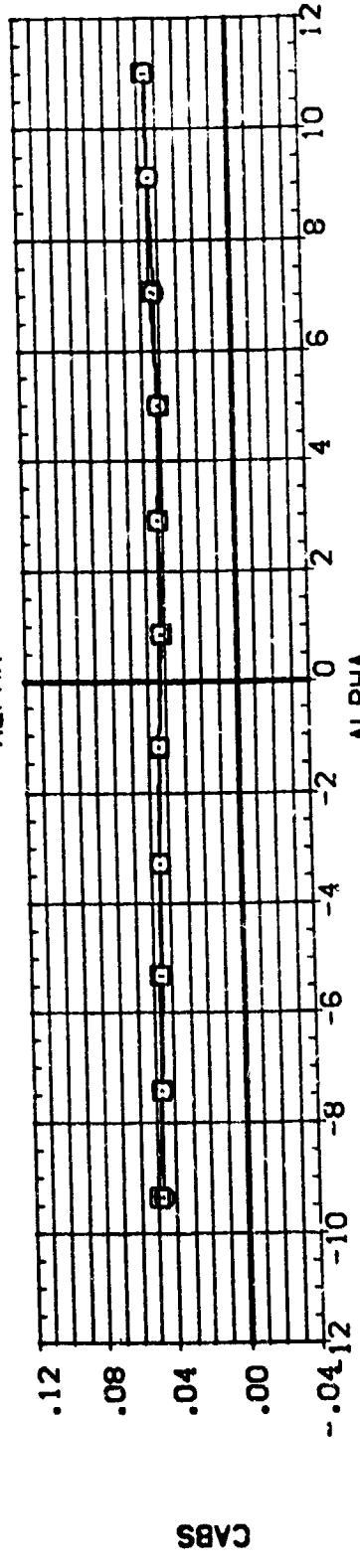
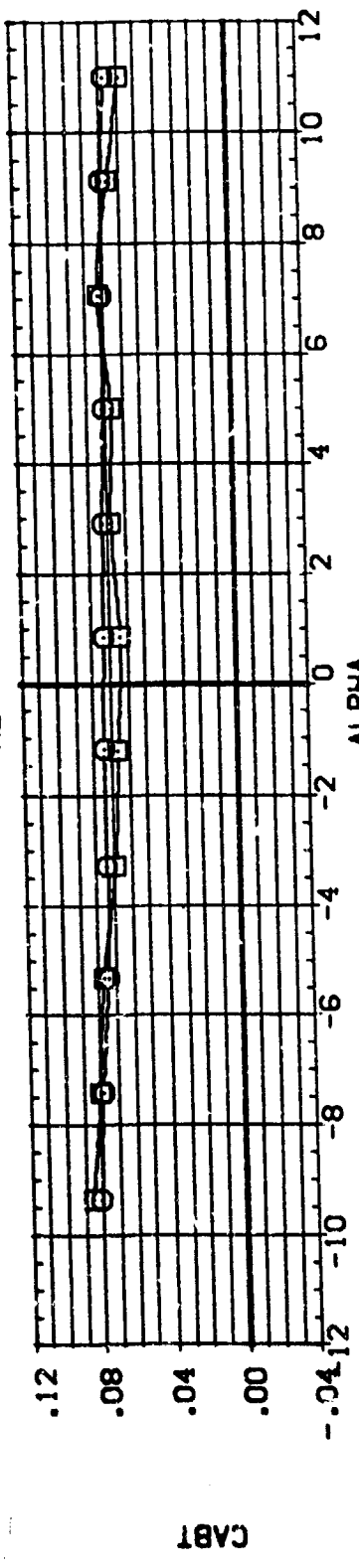
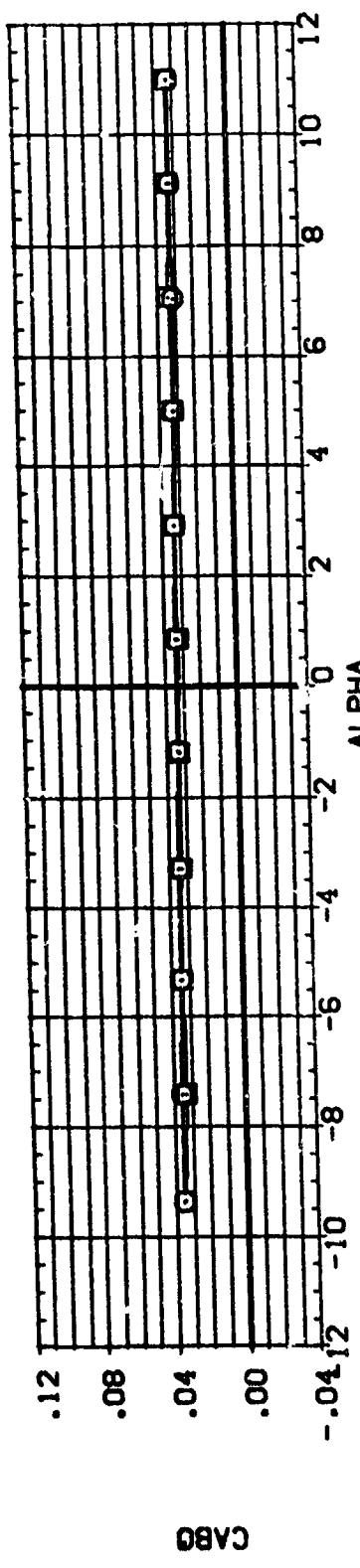
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)
 (K)MACH = 4.96



DATA SET SYMBOL (B88009) (B88007)  CONFIGURATION DESCRIPTION
 MSFC 579(A37) (034)(T14)(S12)(S) MSFC 579(A37) (034)(T9)(S12)

BETA .000
 ORBINC .000

REFERENCE INFORMATION
 SREF 6.1980 SO. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



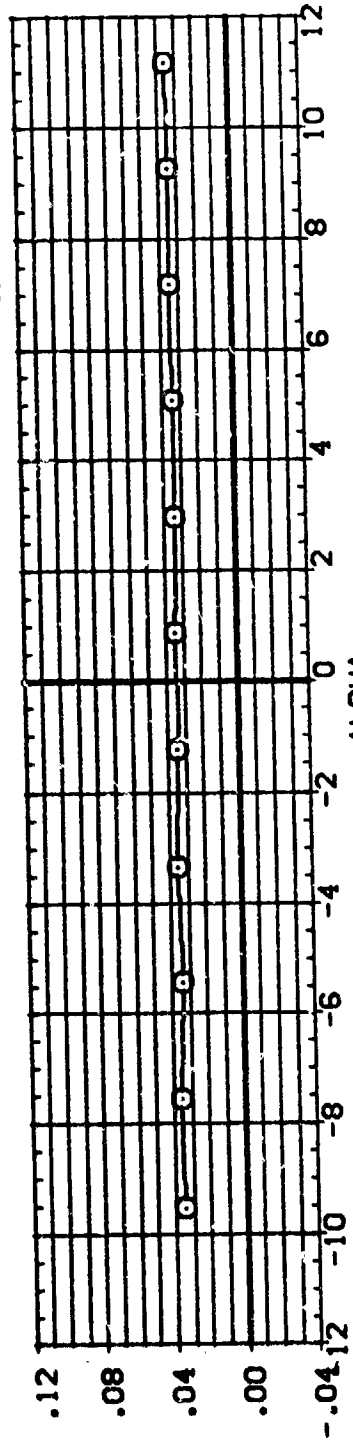
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(A)MACH = .60

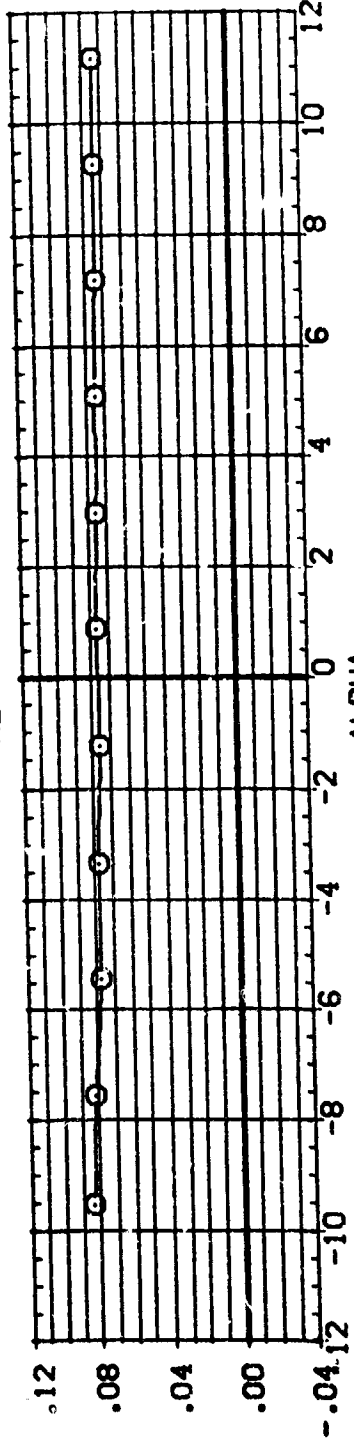
DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (88E209) MSFC 579 (A37) (024) (T14) (S12) (US)
 (288007) DATA NOT AVAILABLE

BETA ORBING
 .000
 .300 .000
 .000

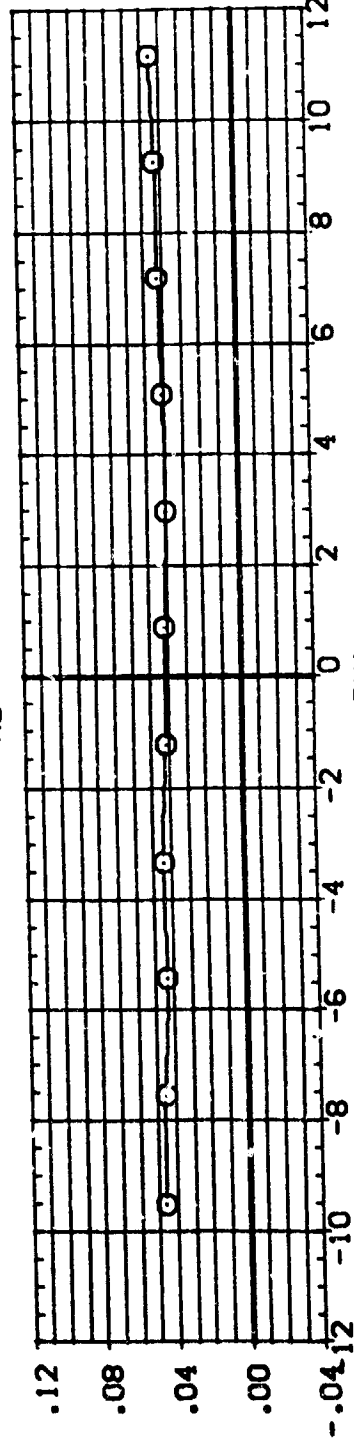
REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



CAB0



CAB1



CAB3

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

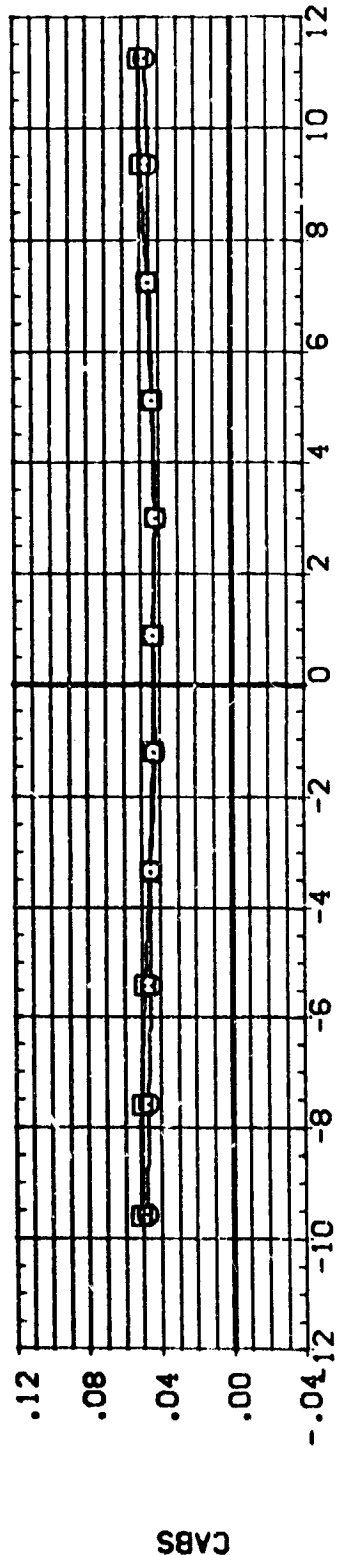
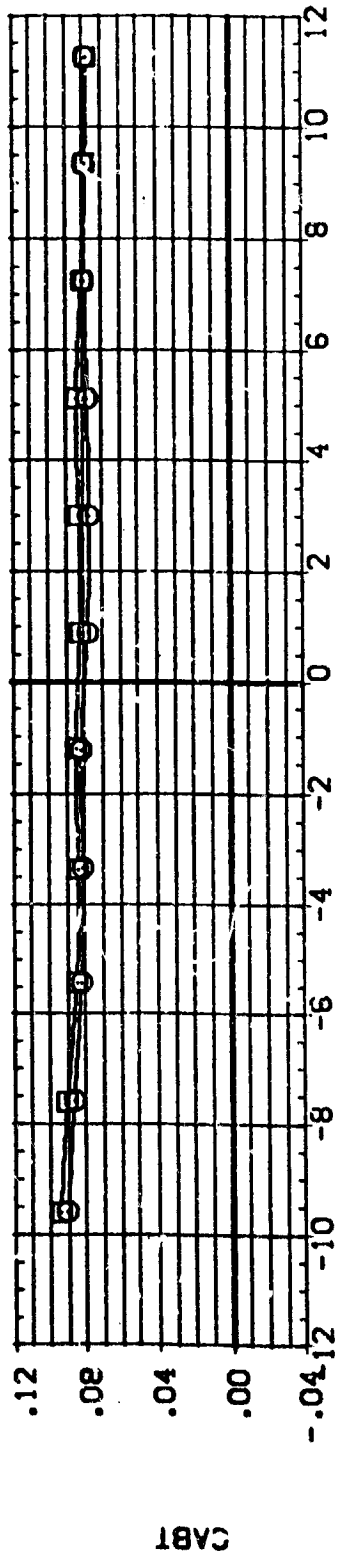
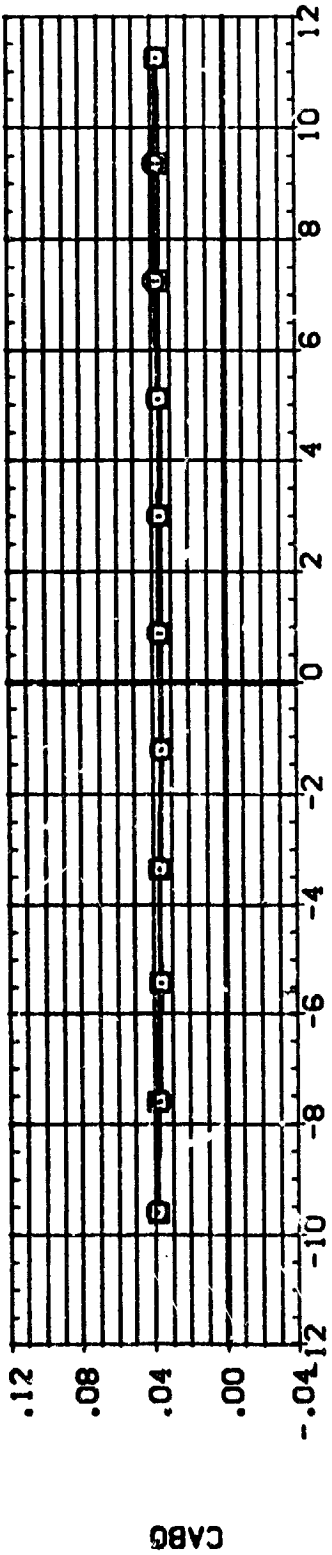
(B)MACH = .80



DATA SET SYMBOL (886009) (886007) CONFIGURATION DESCRIPTION
 MSC 579(1A37) (054)(114)(S12)(U6)
 MSC 579(1A37) (054)(19)(S12)

BETA ORBING
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1360 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010



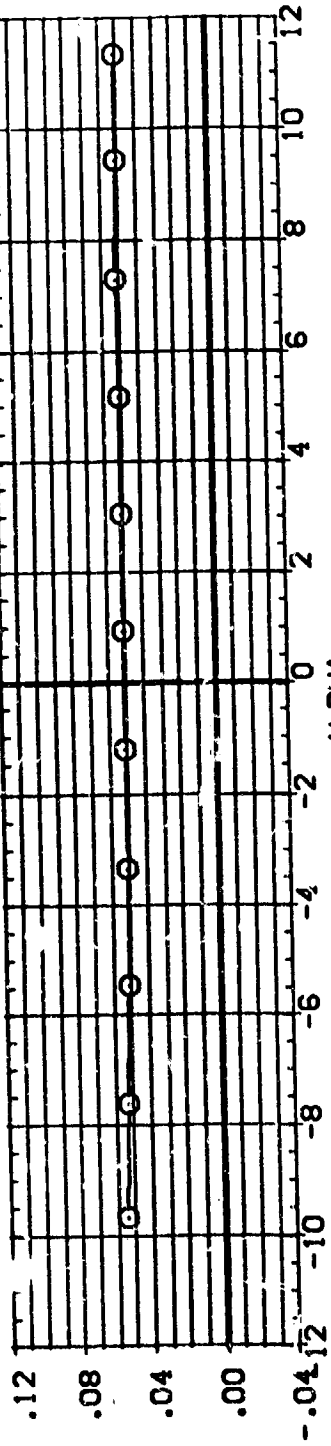
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(C)MACH = .90

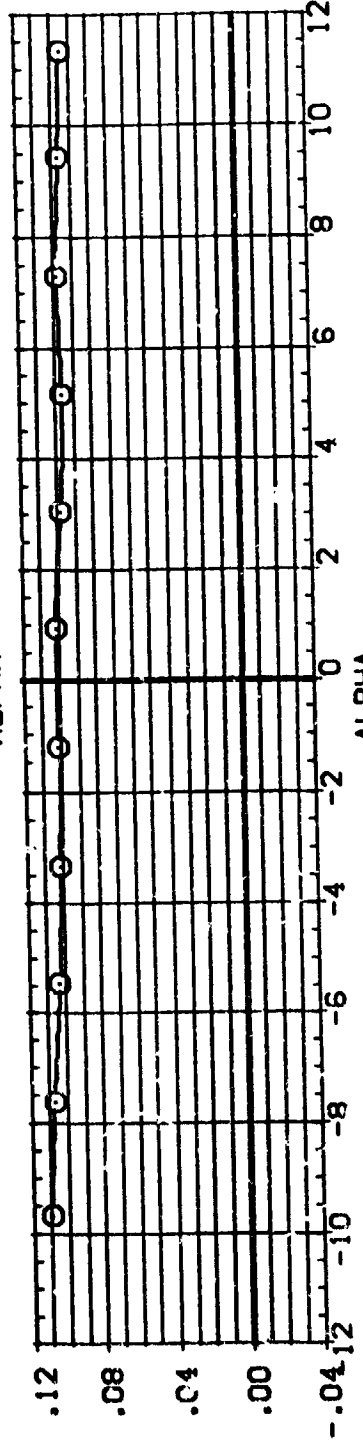
DATA SET SYMBOL  CONFIGURATION DESCRIPTION
 (886009) MSFC 579(1A37) (034)(114)(S12)(U6)
 (886007) DATA NOT AVAILABLE

BETA .000
 DRBINC .000
 .000
 .000

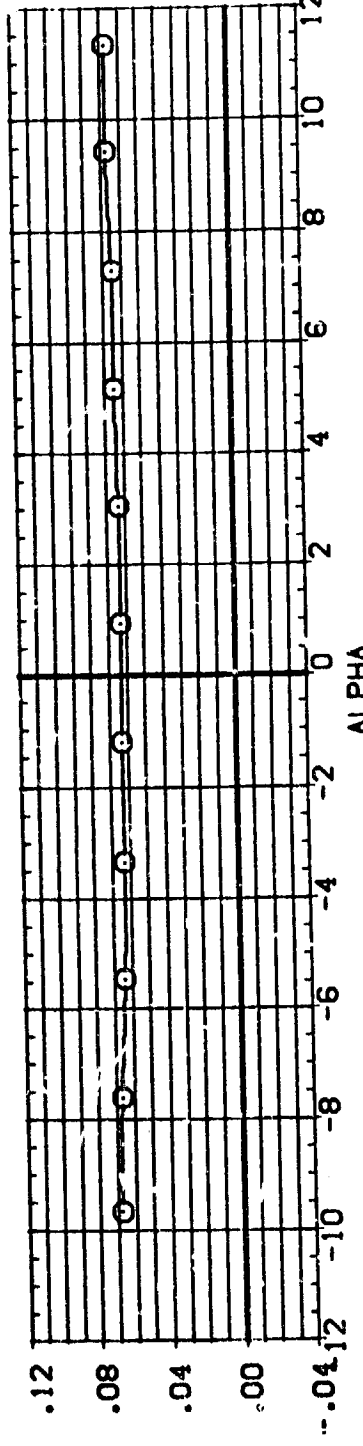
REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BRFF 5.1600 IN.
 X'Y'P 2.7200 IN.
 Y'Y'P .0000 IN.
 Z'Y'P .0000 IN.
 SCALE .0040



CABO



CABT



CABS

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

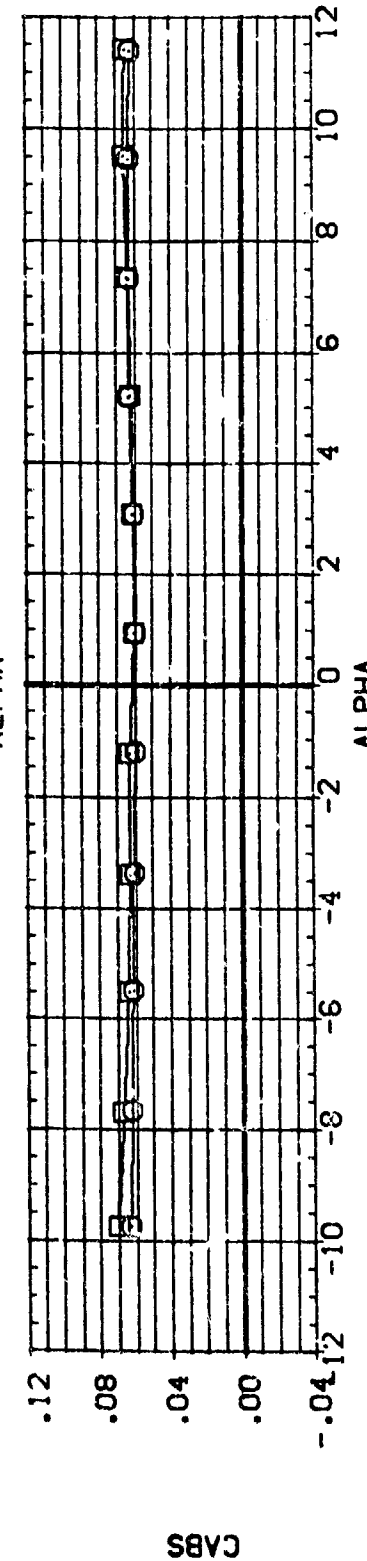
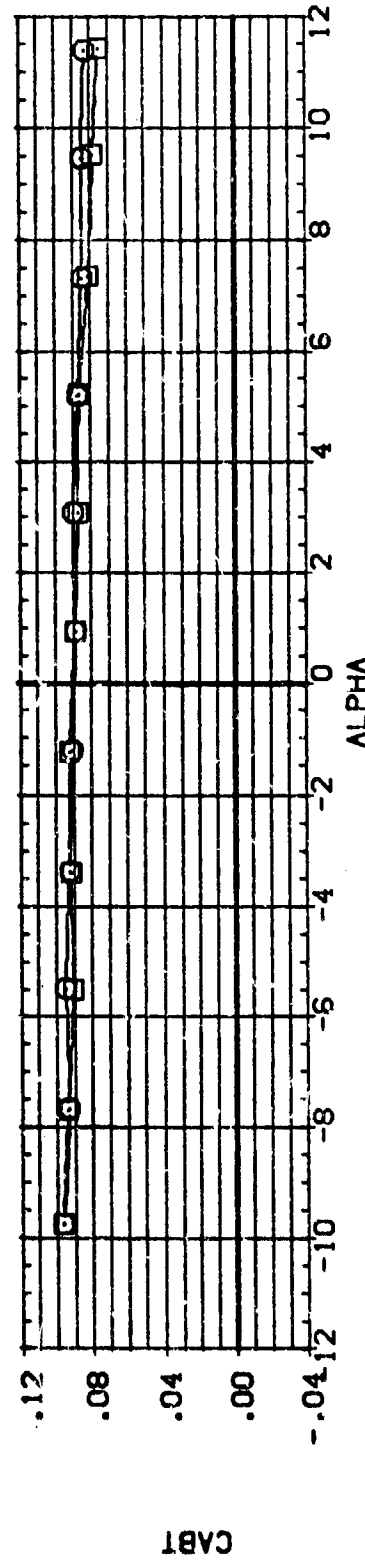
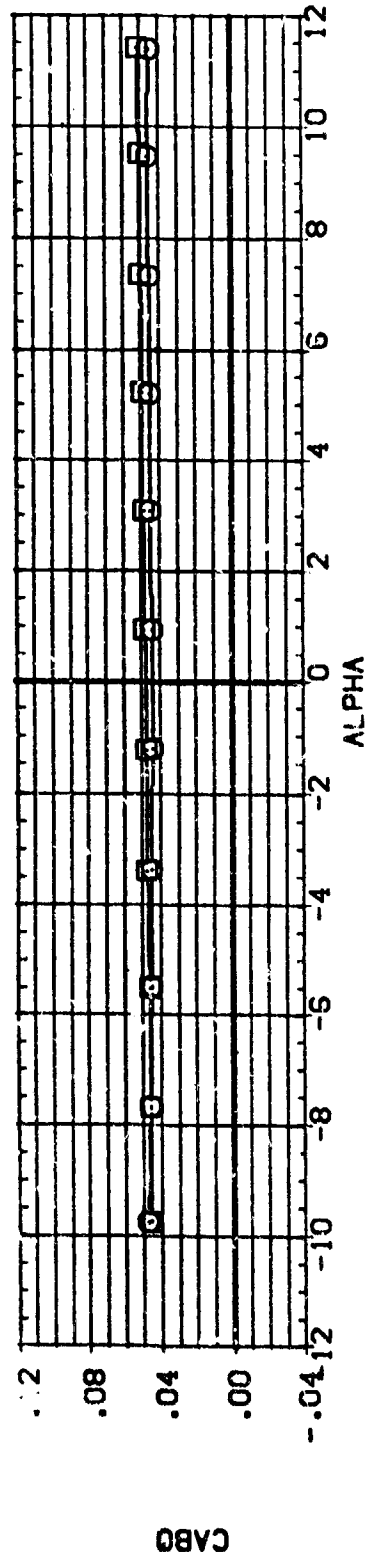
(O)MACH = 1.00



DATA SET SYMBOL (888009) 3
 CONFIGURATION DESCRIPTION MSFC 579(A37) (034)(T14)(S12)(U6)
 MSFC 579(A37) (034)(T19)(S12)

BETA .002
 ORBINC .000

REFERENCE INFORMATION
 SREF 6.1990 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040



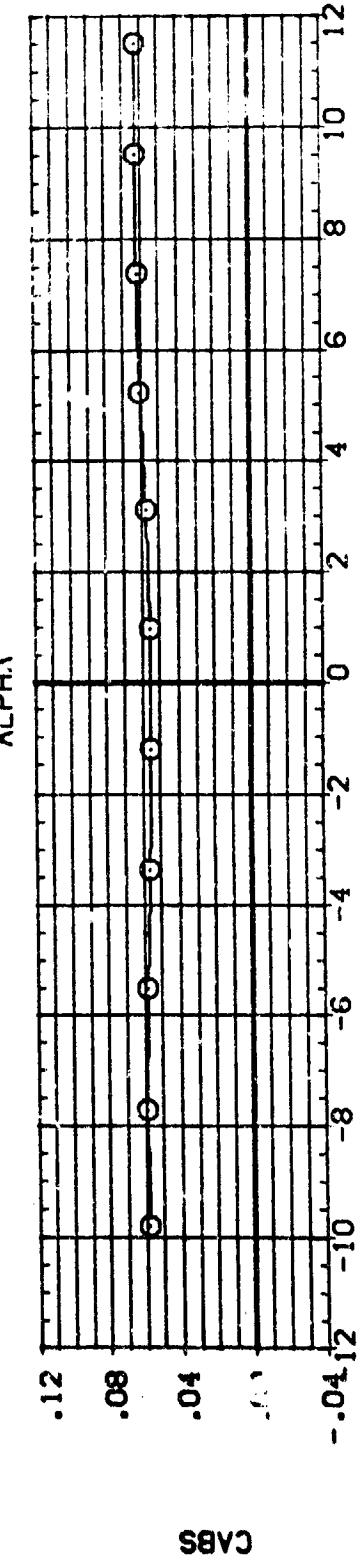
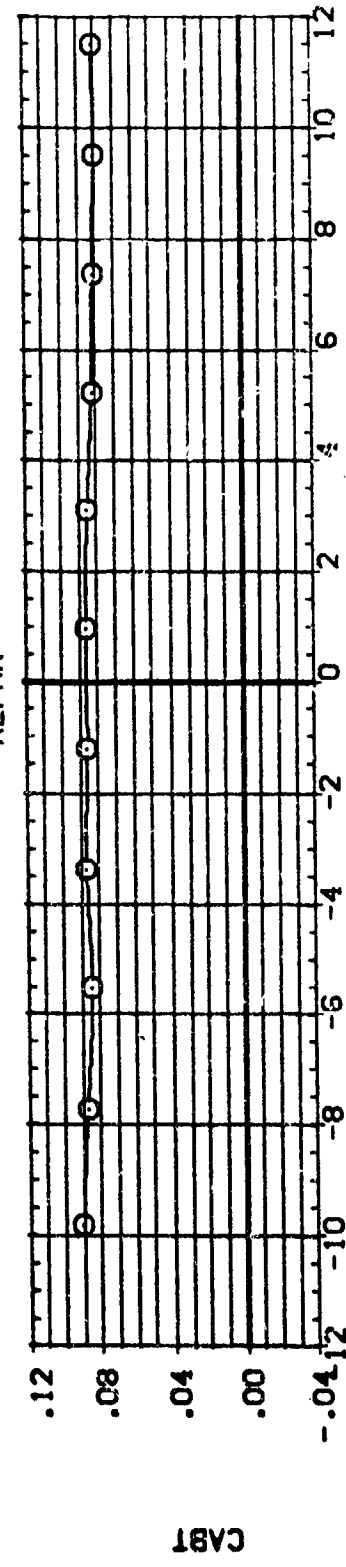
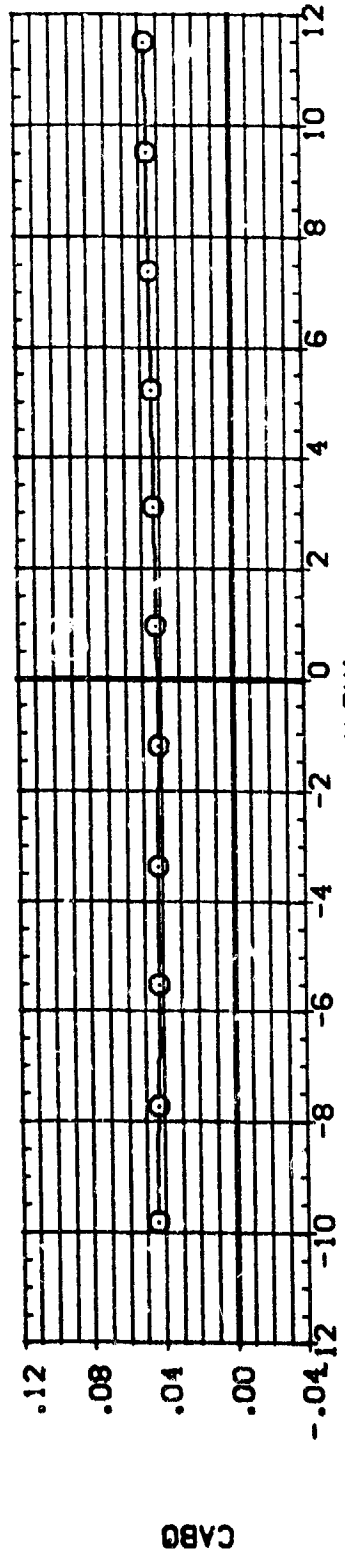
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(E)MACH = 1.10

DATA SET SYMBOL [888009] [888007] CONFIGURATION DESCRIPTION
 NSFC 579(1A37) (03A)(T14)(S12)(U6)
 DATA NOT AVAILABLE

BETA .000
 DRIBING .000
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BRREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040



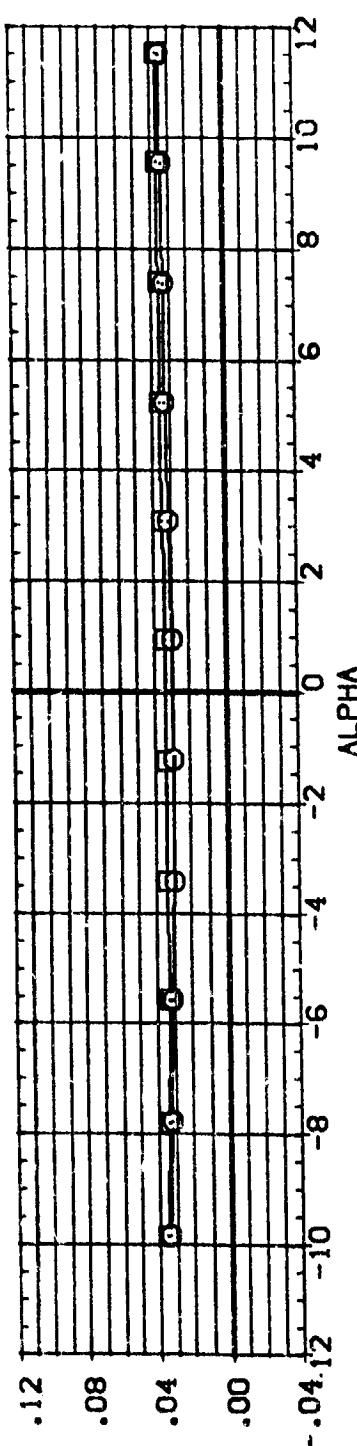
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(F)MACH = 1.20

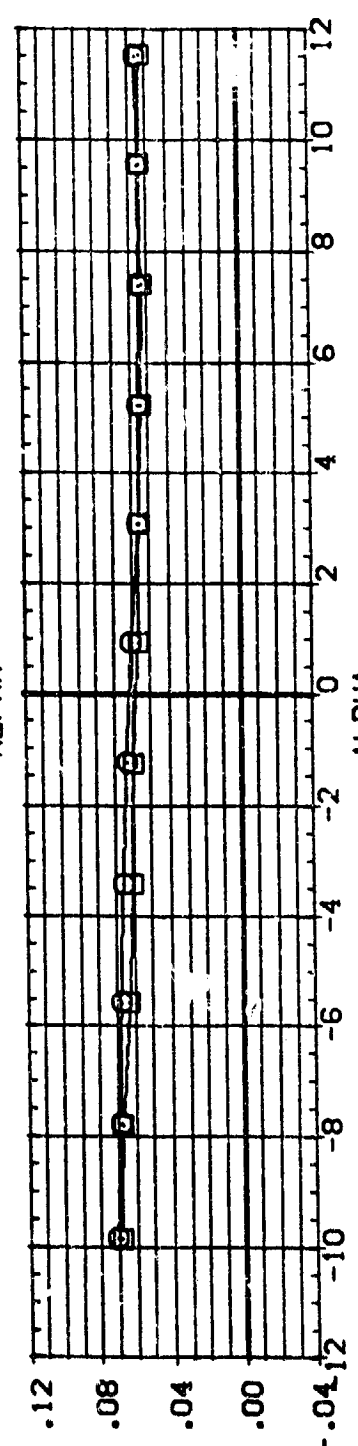
DATA SET SYMOL CONFIGURATION DESCRIPTION
 (B88009) (B88007) MSFC 579(1A37) (034)(114)(S12)(L6)
 MSFC 579(1A37) (034)(19)(S12)

BETA ORBINC
 .000 .000
 .000 .000

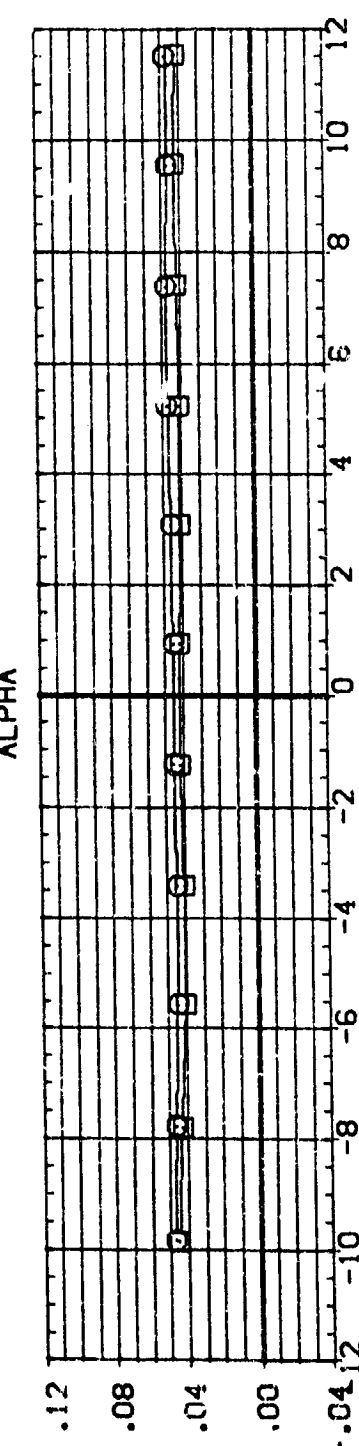
REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 WREF 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



CAB0



CAB1



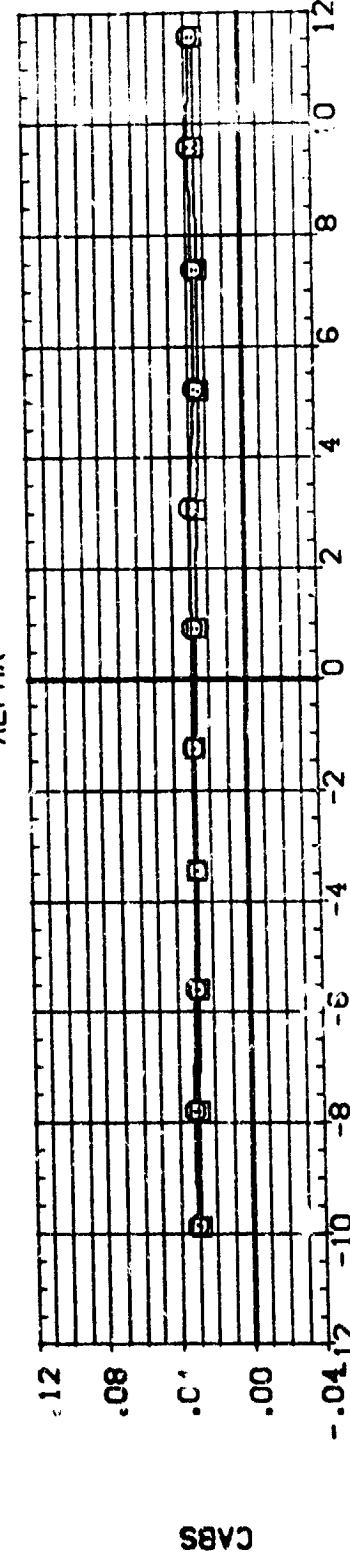
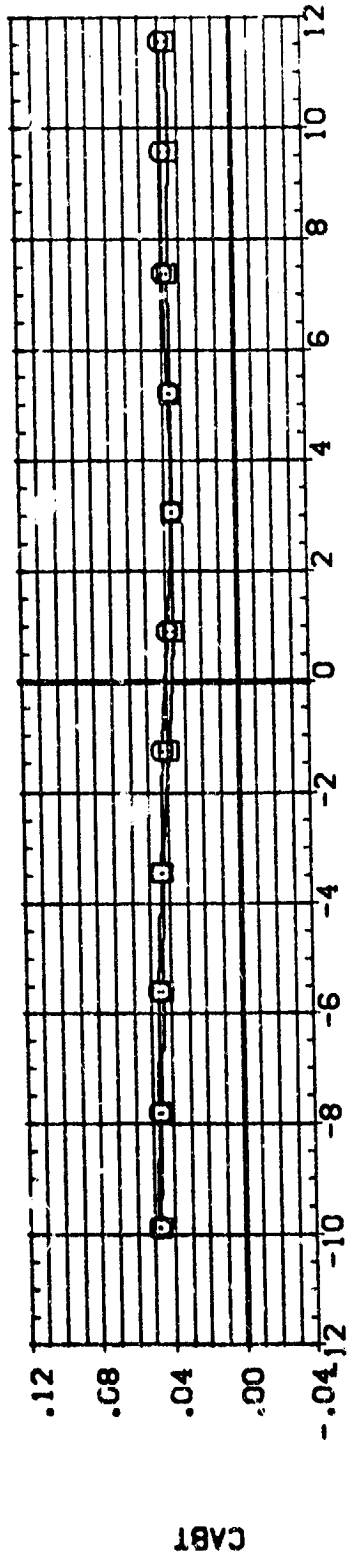
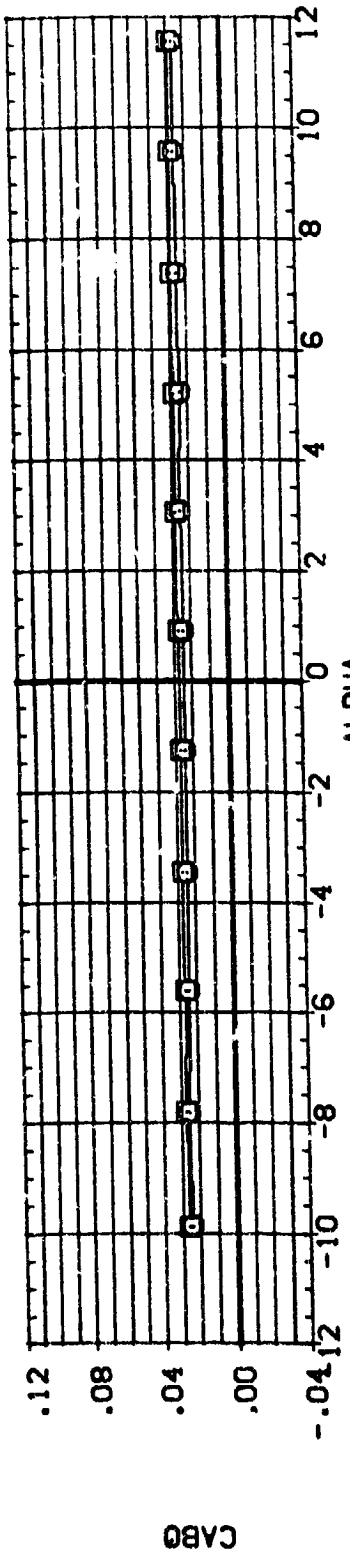
CAB2

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XIRP 2.7200 IN.
 YIRP .0000 IN.
 ZIRP .0000 IN.
 SCALE .0010

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888009) □ MSFC 579(1A37) (034)(14)(S12)(U6)
 (888007) □ MSFC 579(1A37) (034)(19)(S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

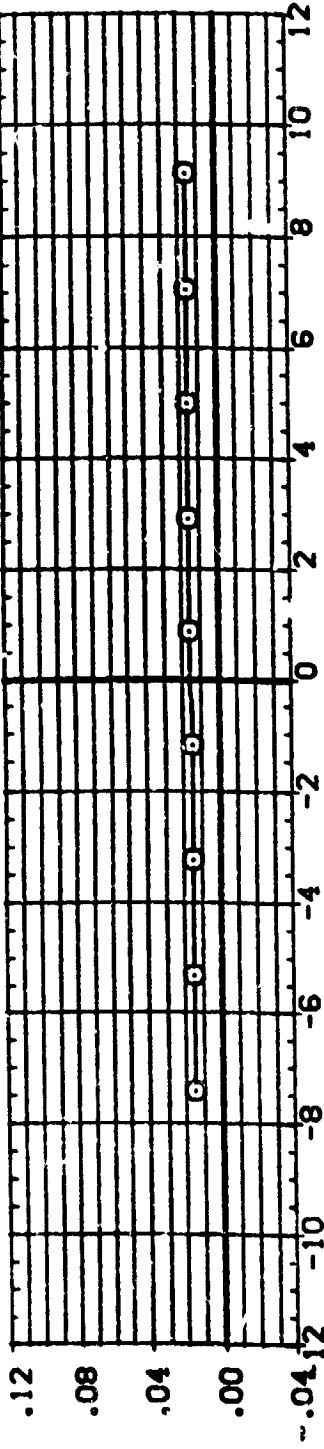
(M)MACH = 1.96

DATA SET SYMBOL
(B88009) □
(B88007)

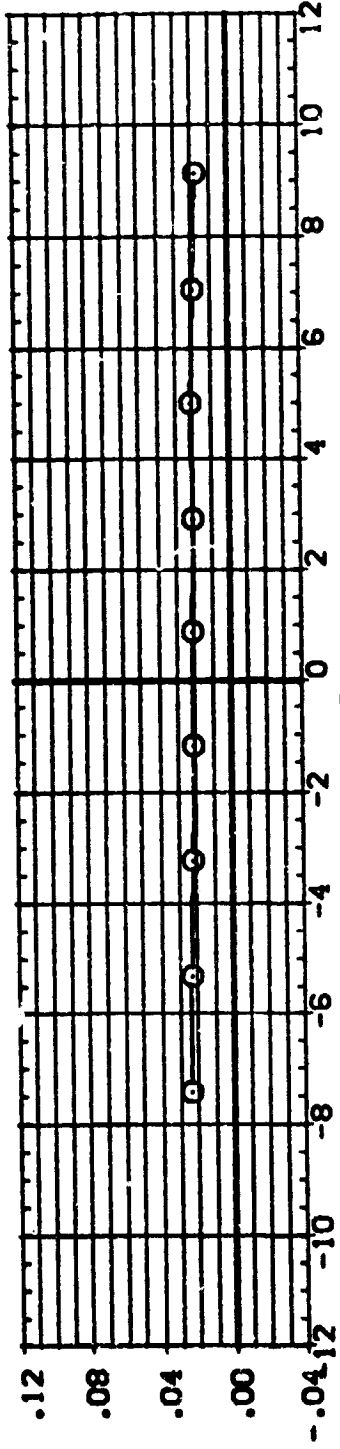
CONFIGURATION DESCRIPTION
MSFC 579(1A37) (034)(1:4)(S12)(US)
DATA NOT AVAILABLE

BETA ORBINC
.000
.000

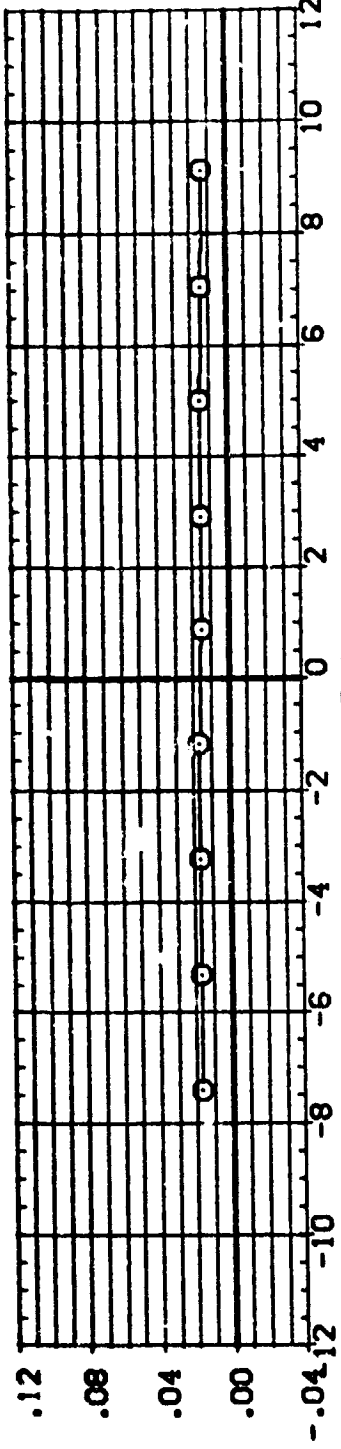
REFERENCE INFORMATION
SREF 6.1800 50. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040



CABG



CABT



CABS

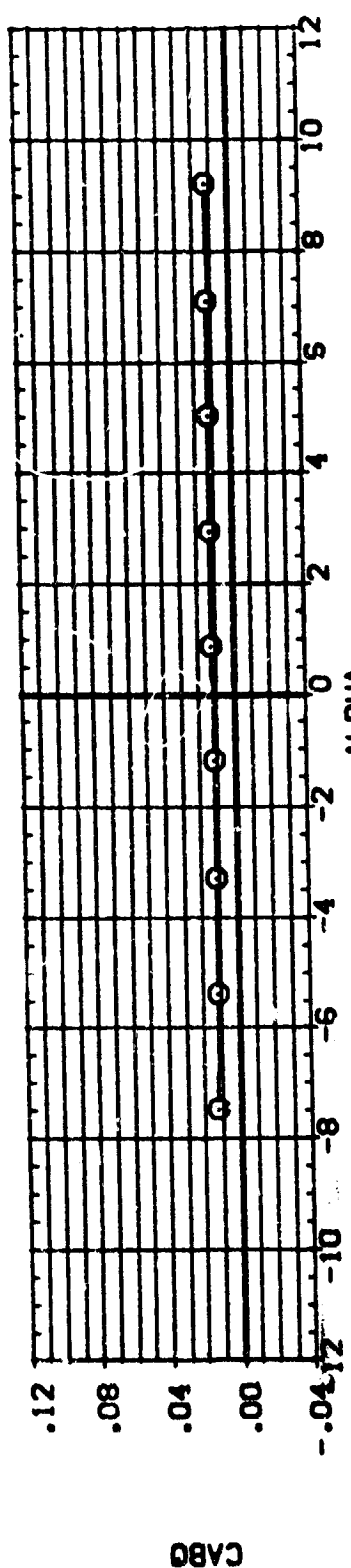
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

(1)MACH = 2.99

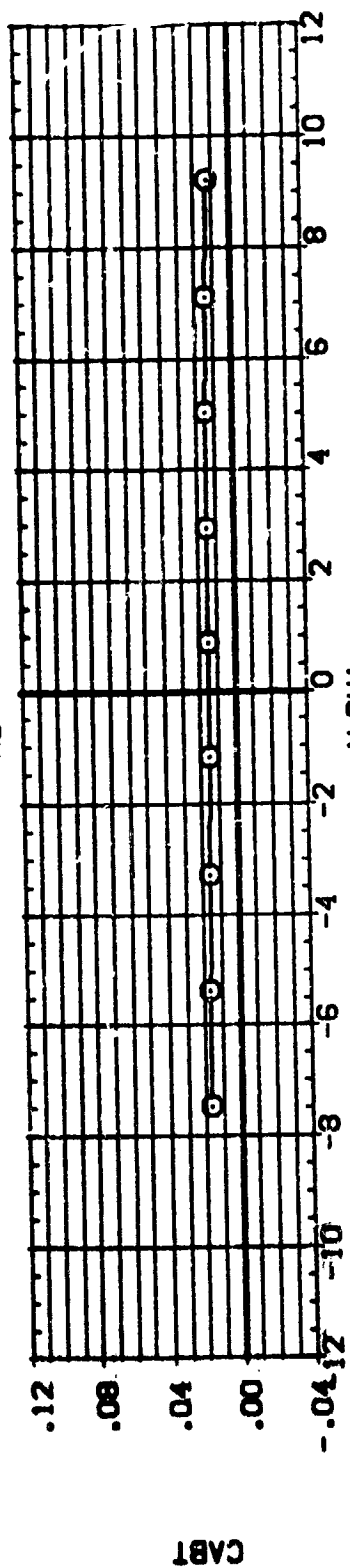
DATA SET SYMBOL (886078) □
 CONFIGURATION DESCRIPTION MSC 579(1A37) (03A1)(14)(S12)(U6)
 DATA NOT AVAILABLE

BETA 0.000
 0.000
 0.000

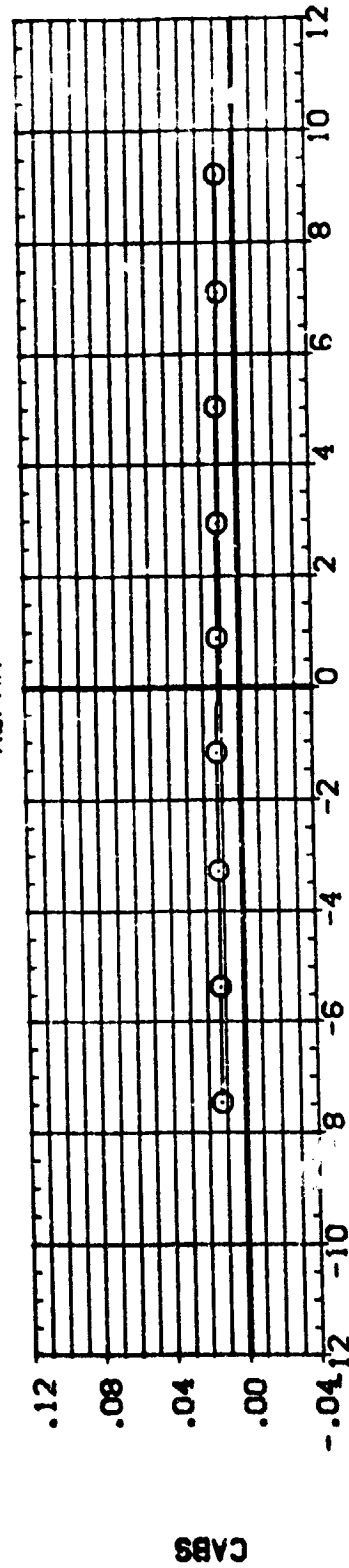
REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



CABO



CABT



CABS

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

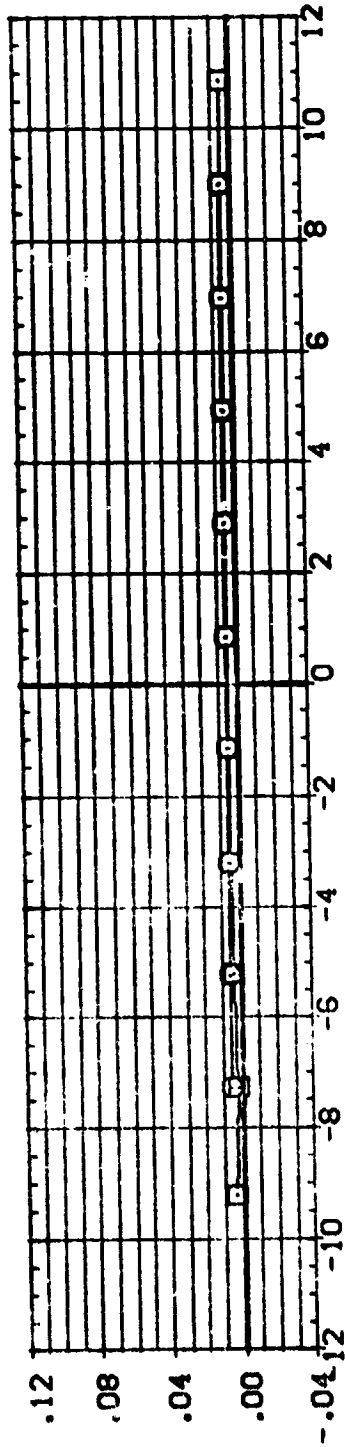


DATA SET SYMBOL (888009) (888007)

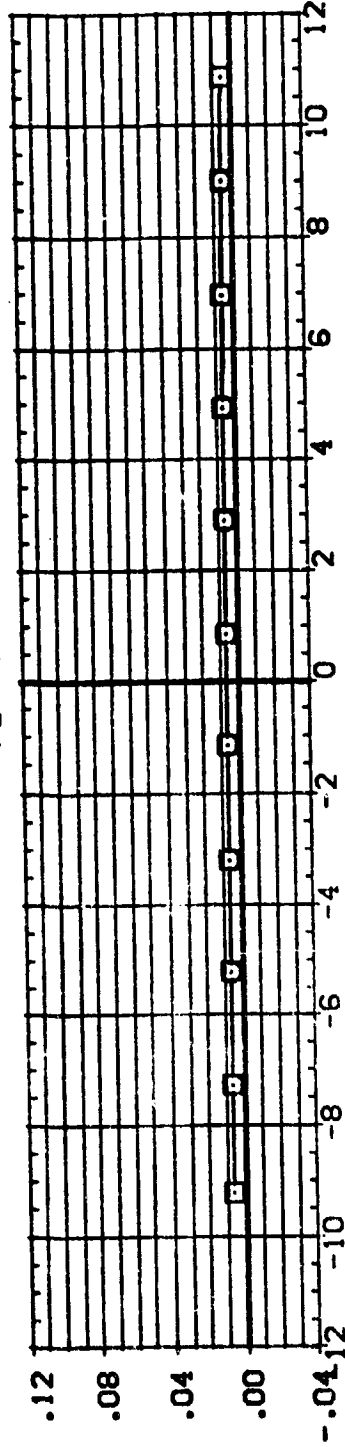
CONFIGURATION DESCRIPTION
 MSFC 579(1/37) (034)(1/4)(S)(2)(US)
 MSFC 579(1/37) (034)(1/5)(S)(2)

BETA .000
 ORBING .000

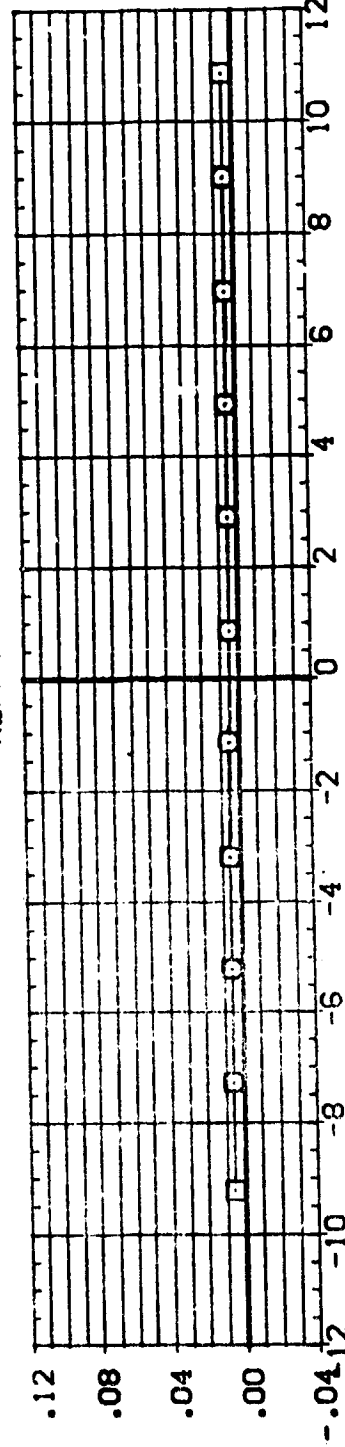
REFERENCE INFORMATION
 SREF 6.1680 SQ. IN.
 LREF 5.1600 IN.
 SREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010



CABO



CABT



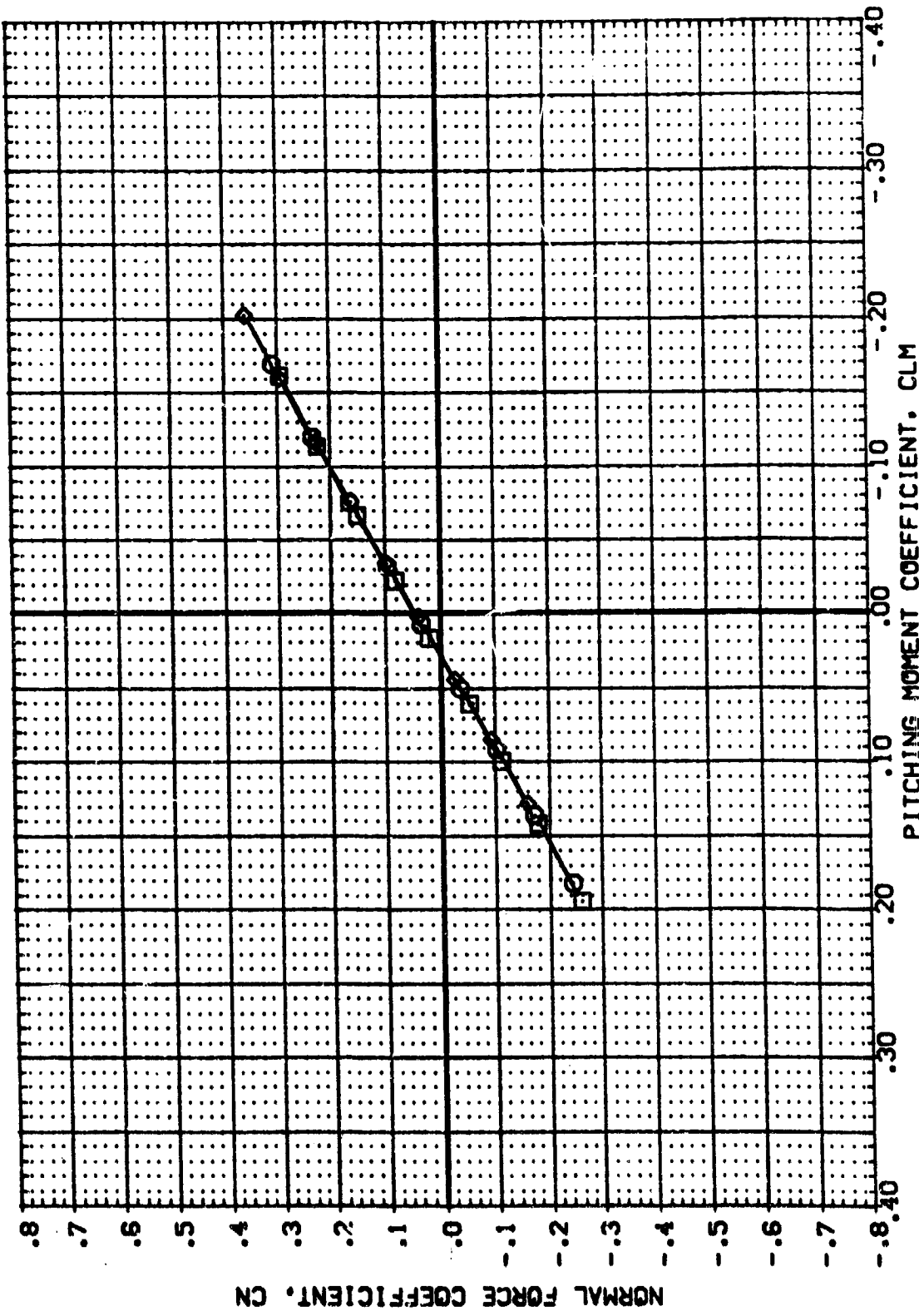
CABS

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (FIRST STAGE)

REFERENCE INFORMATION
 SREF 5.1560 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

BETA ORBING
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (889005) MSC 580(1A8) (034)(T9)(S12)
 (889004) MSC 580(1A8) (034)(T14)(S12)
 (889001) MSC 580(1A8) (034)(T14)(S12)(US)



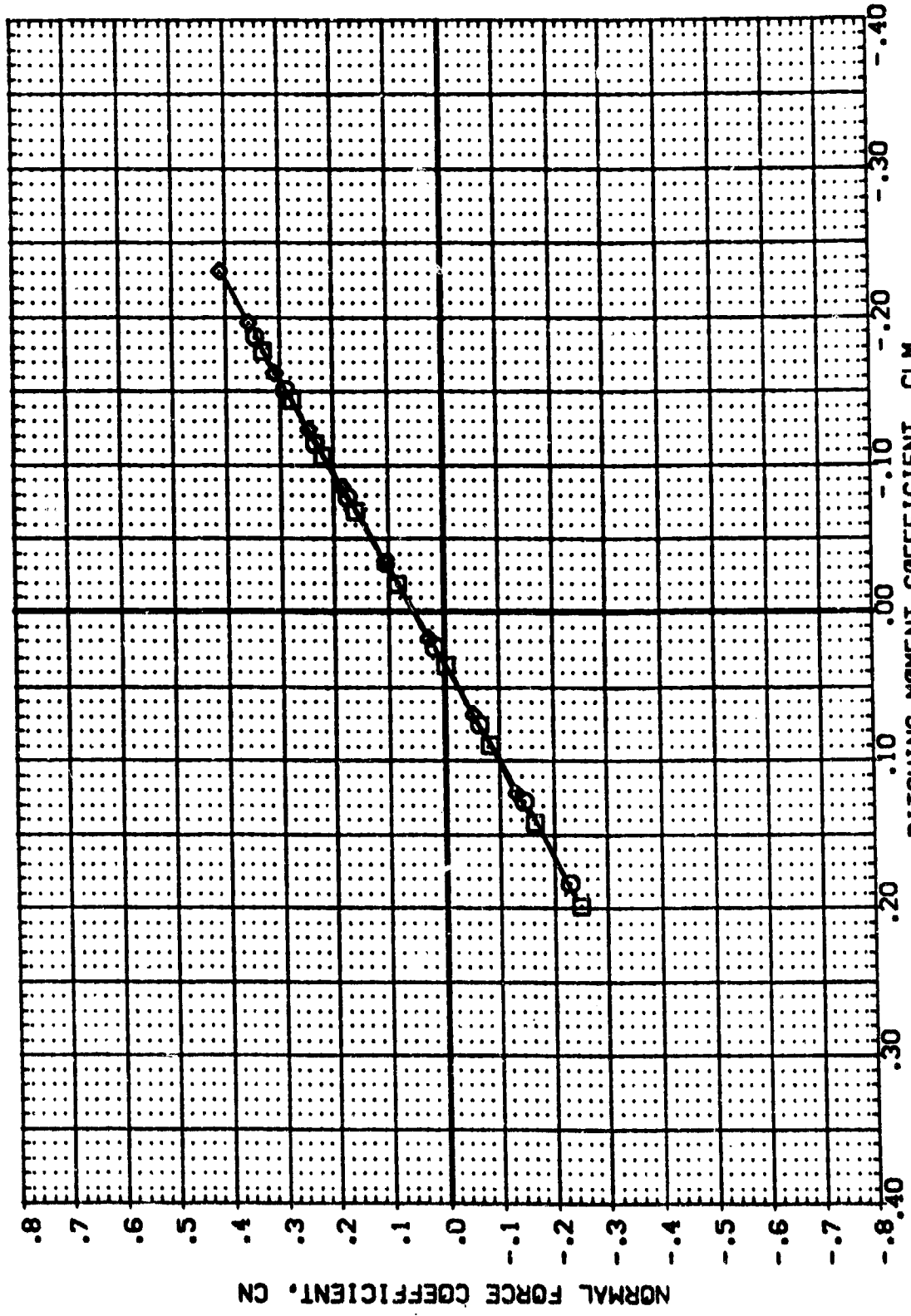
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885005) (885004) (885001) (885002)
 (885003) (885004) (885001) (885002)

BETA 0.000
 0.000
 0.000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010



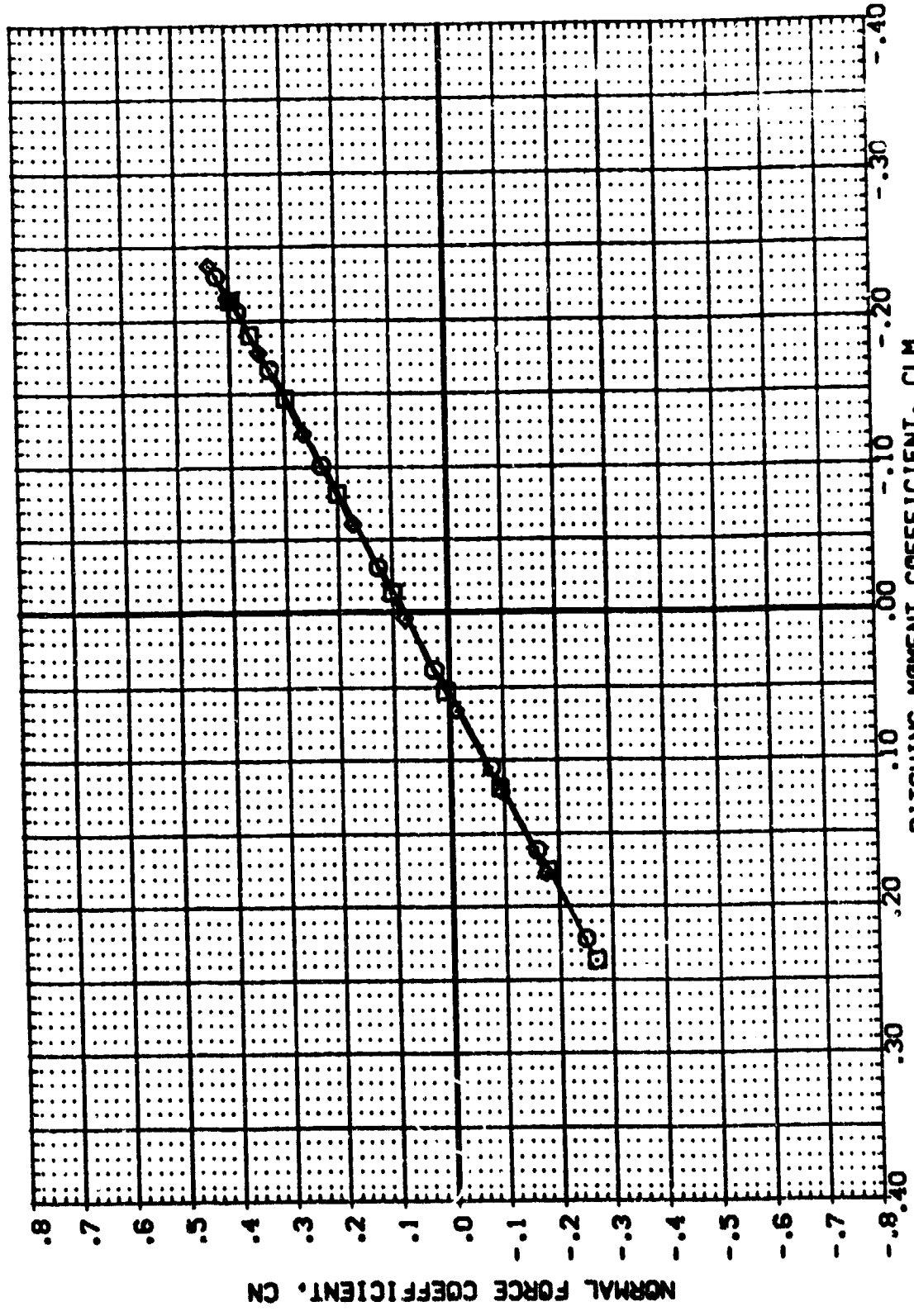
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(B)MACH = .90

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YPRP 2.7200 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA 0.000
 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885005) MSFC 580(1A48) (034)(179)(S12)
 (885004) MSFC 580(1A48) (034)(114)(S12)
 (885001) MSFC 580(1A48) (034)(114)(S12)(US)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

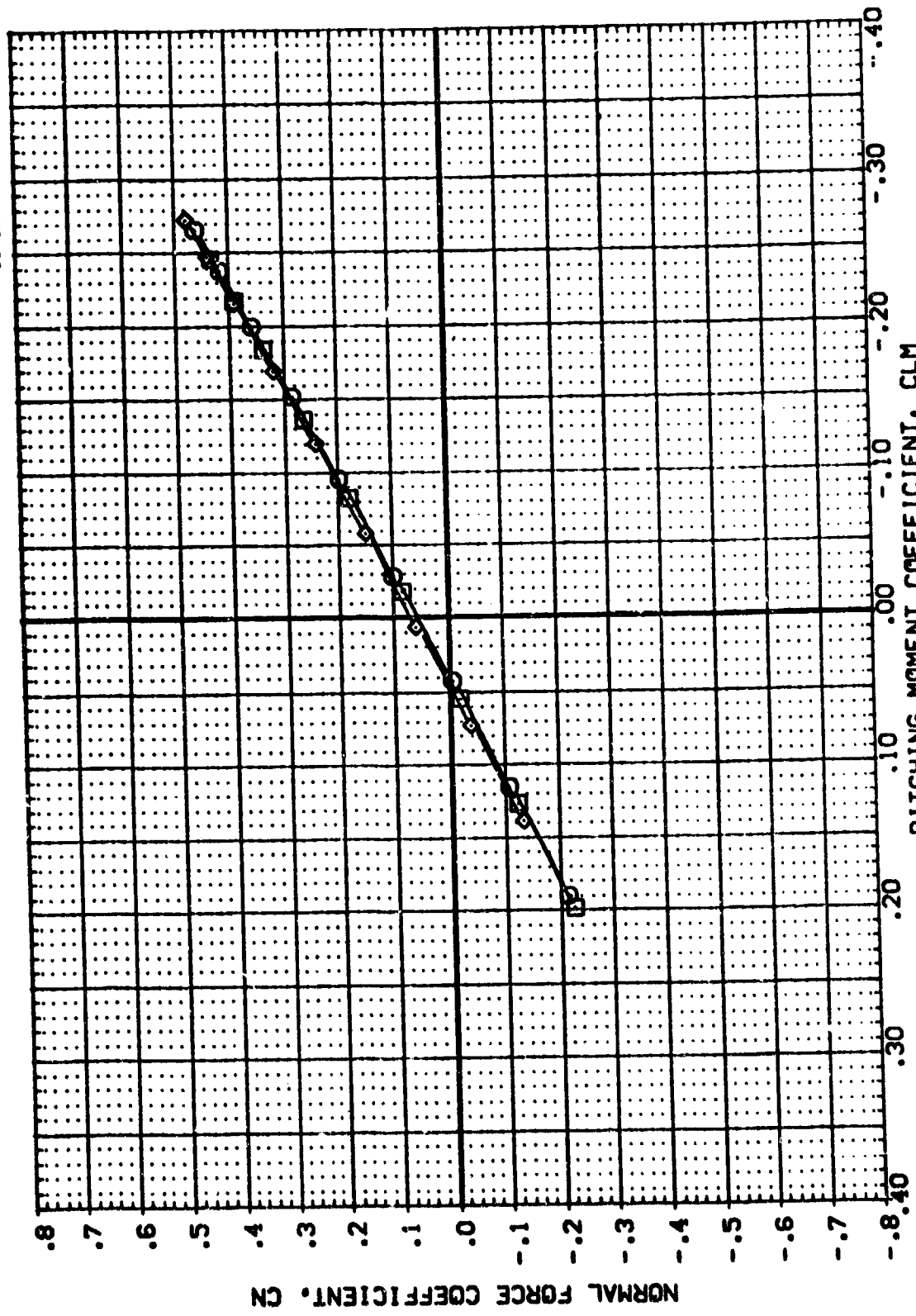
(C)MACH = 1.10



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885005) (034)(19)(S12)
 (885004) (034)(14)(S12)
 (885001) (034)(14)(S12)(US)

BETA ORBITING
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SHEET 6.1800 50. IN.
 LINE 5.1600 IN.
 SHEET 5.1600 IN.
 XPROP 2.7200 IN.
 YPROP .0000 IN.
 ZPROP .0000 IN.
 SCALE .0040

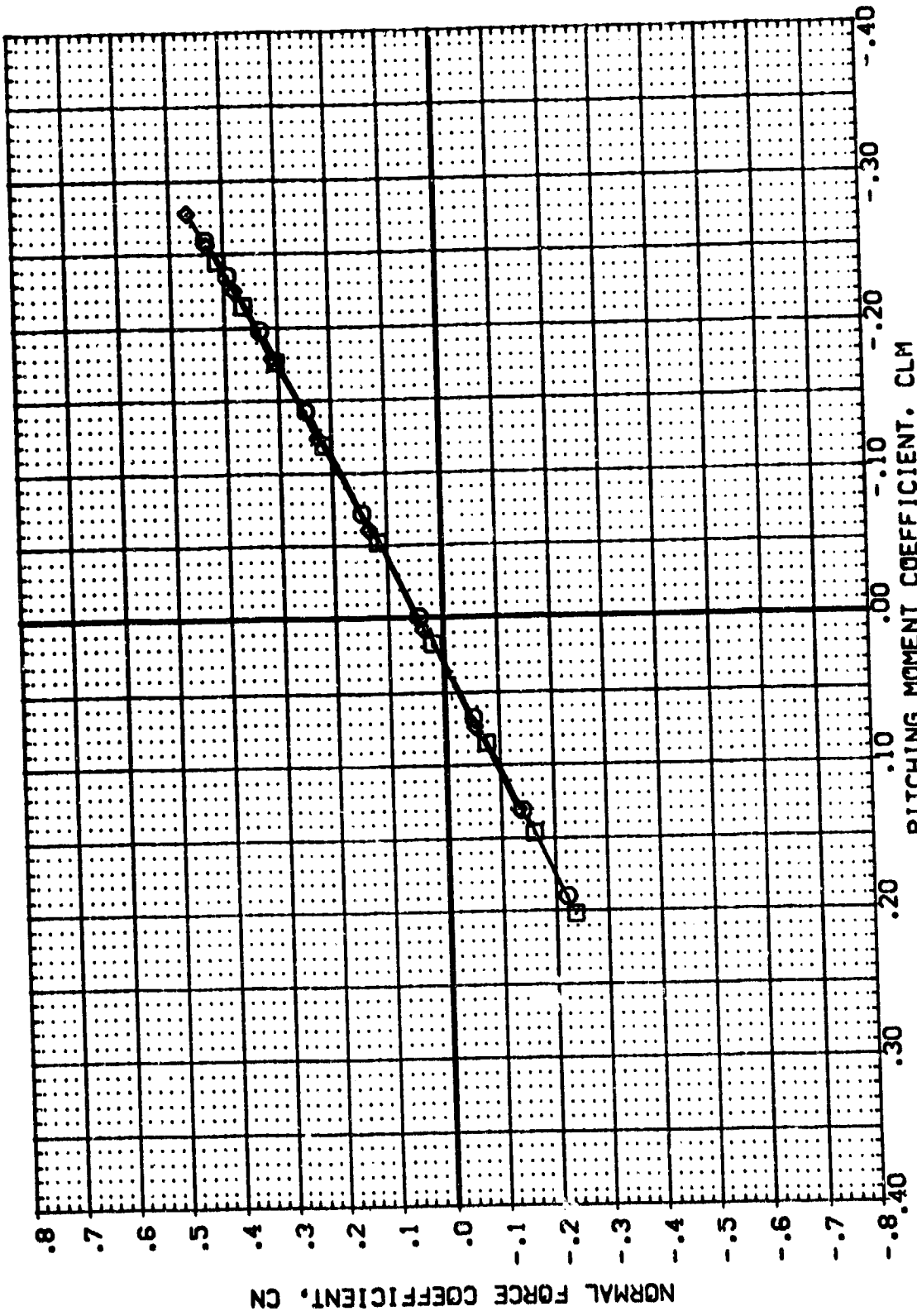


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

REFERENCE INFORMATION
 SREF 8.1980 50. IN.
 LREF 5.1600 IN.
 MREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0010

BETA 0.000
 0.000
 0.000

DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (888005) MSFC 580(1A48) (034)(179)(S12)
 (888006) MSFC 580(1A48) (034)(174)(S12)
 (888007) MSFC 580(1A48) (034)(174)(S12)(L6)



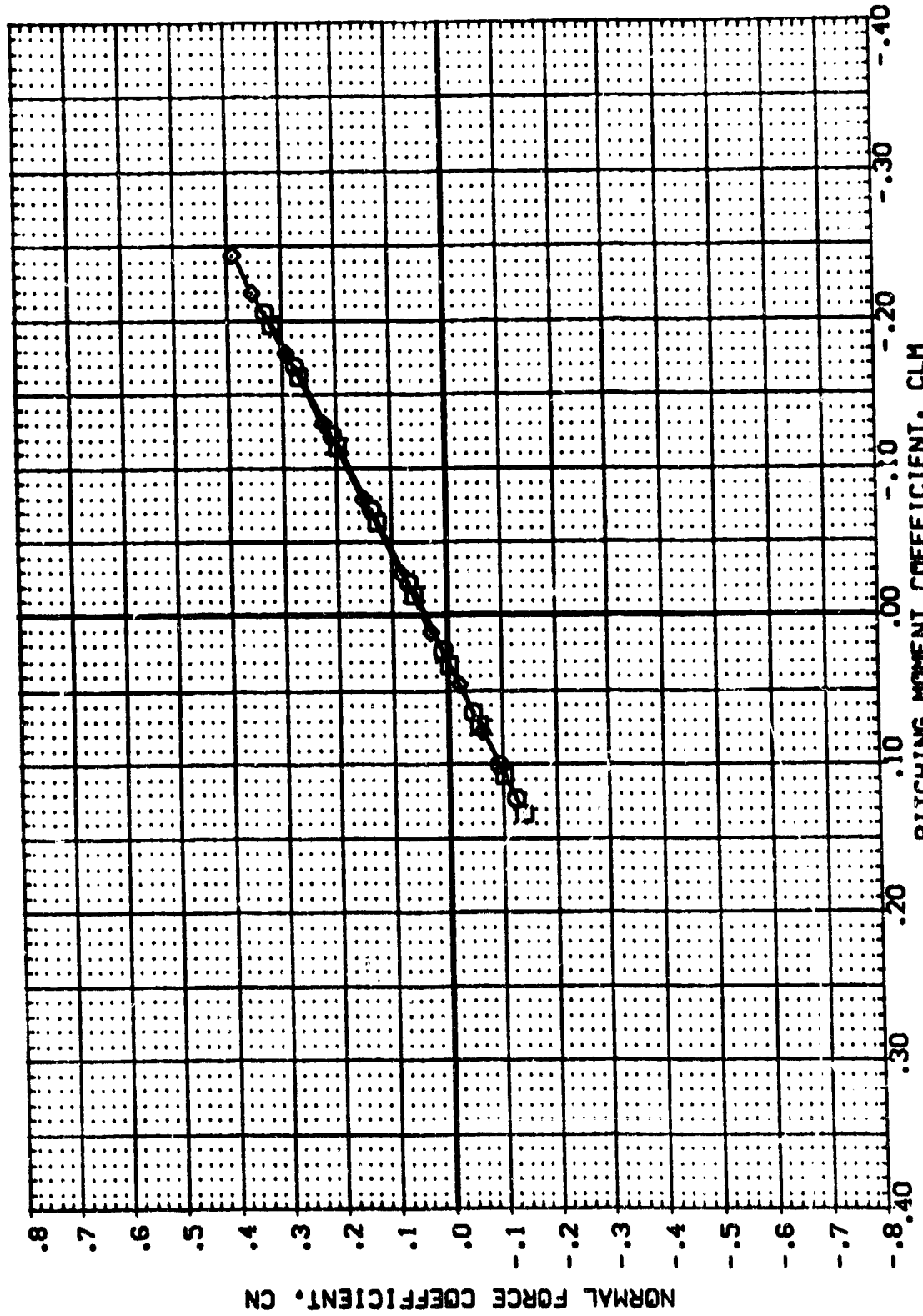
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(E)MACH = 1.46

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

BETA ORBING
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURAT (O) DESCRIPTION
 (B95005) (B95001) MSC 580 (A48) (034) (T9) (S12)
 (B95004) (B95002) MSC 580 (A48) (034) (T14) (S12)
 (B95001) (B95003) MSC 580 (A48) (034) (T14) (S12) (US)



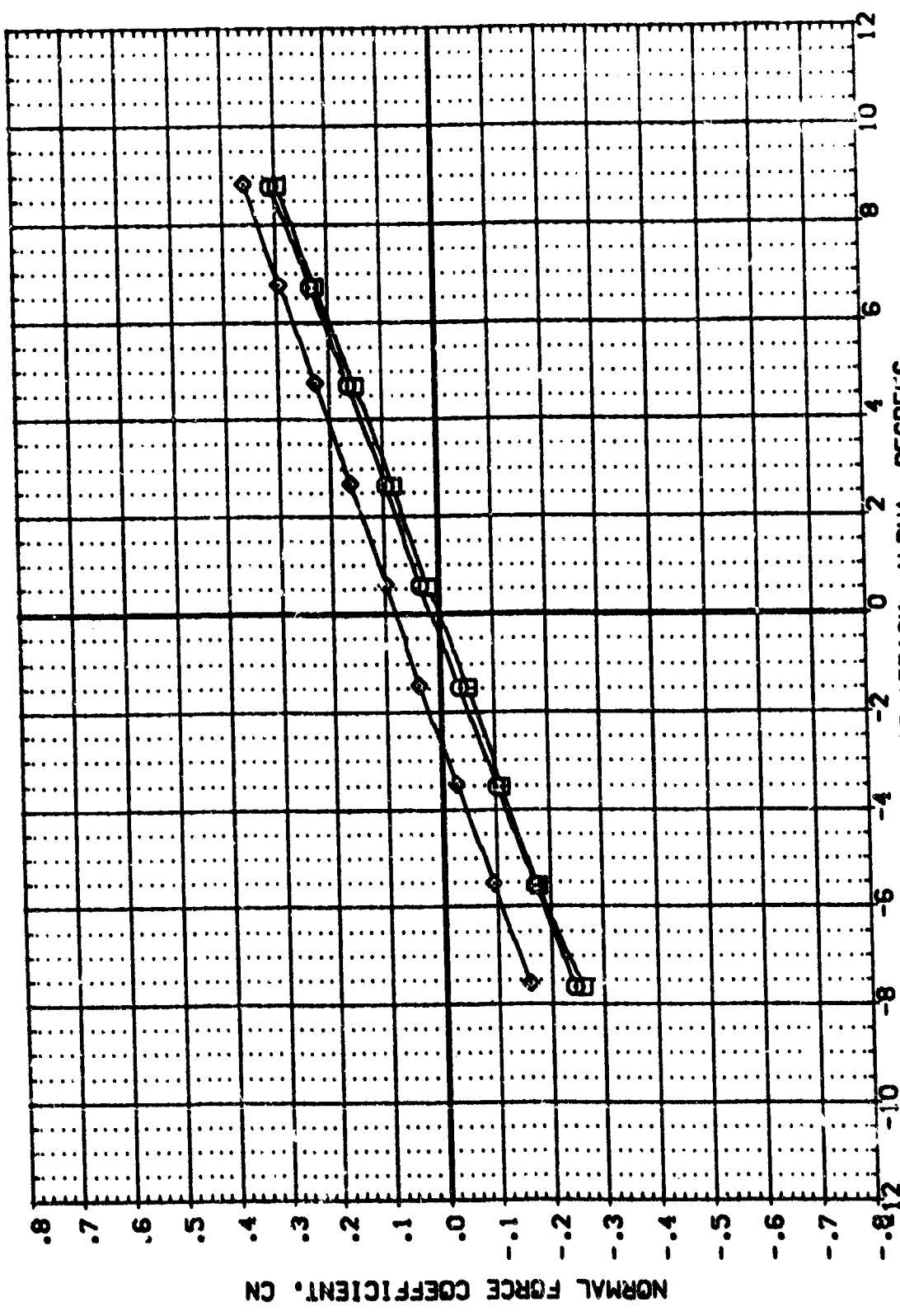
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(F)MACH = 1.97

REFERENCE INFORMATION
 WRET 6.1800 50. IN.
 LWF 5.1800 IN.
 XWPS 2.1800 IN.
 YWPS 2.7200 IN.
 ZWPS .0000 IN.
 SCALE .0010

BETA .000
 ORBINC .000
 .000
 .000

DATA SET SYMBOL [0]
 CONFIGURATION DESCRIPTION
 MSFC 5801(A48) (034)(T9)(S12)
 MSFC 5801(A48) (034)(T14)(S12)
 MSFC 5801(A48) (034)(T14)(S12)(US)

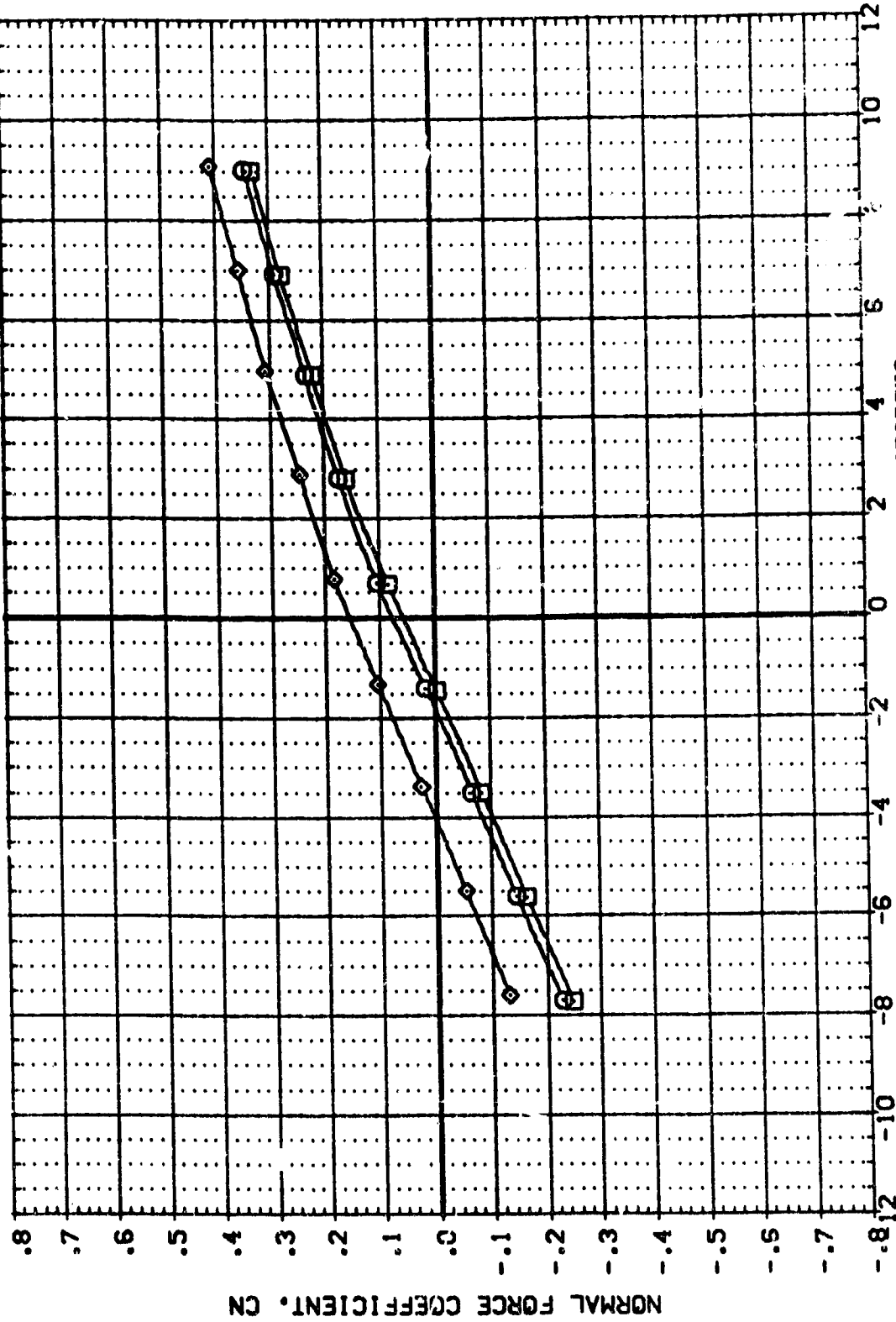


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)
 (A) MACH = .60
 PAGE 62

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (B89005) MSFC 580(1A48) (034)(T9)(S12)
 (B89004) MSFC 580(1A48) (034)(T14)(S12)
 (B89001) MSFC 580(1A48) (034)(T14)(S12)(US)

BETA ORBITING
 .000
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 XREF 5.1600 IN.
 YREF 2.7200 IN.
 ZREF .0000 IN.
 SCALE .0040

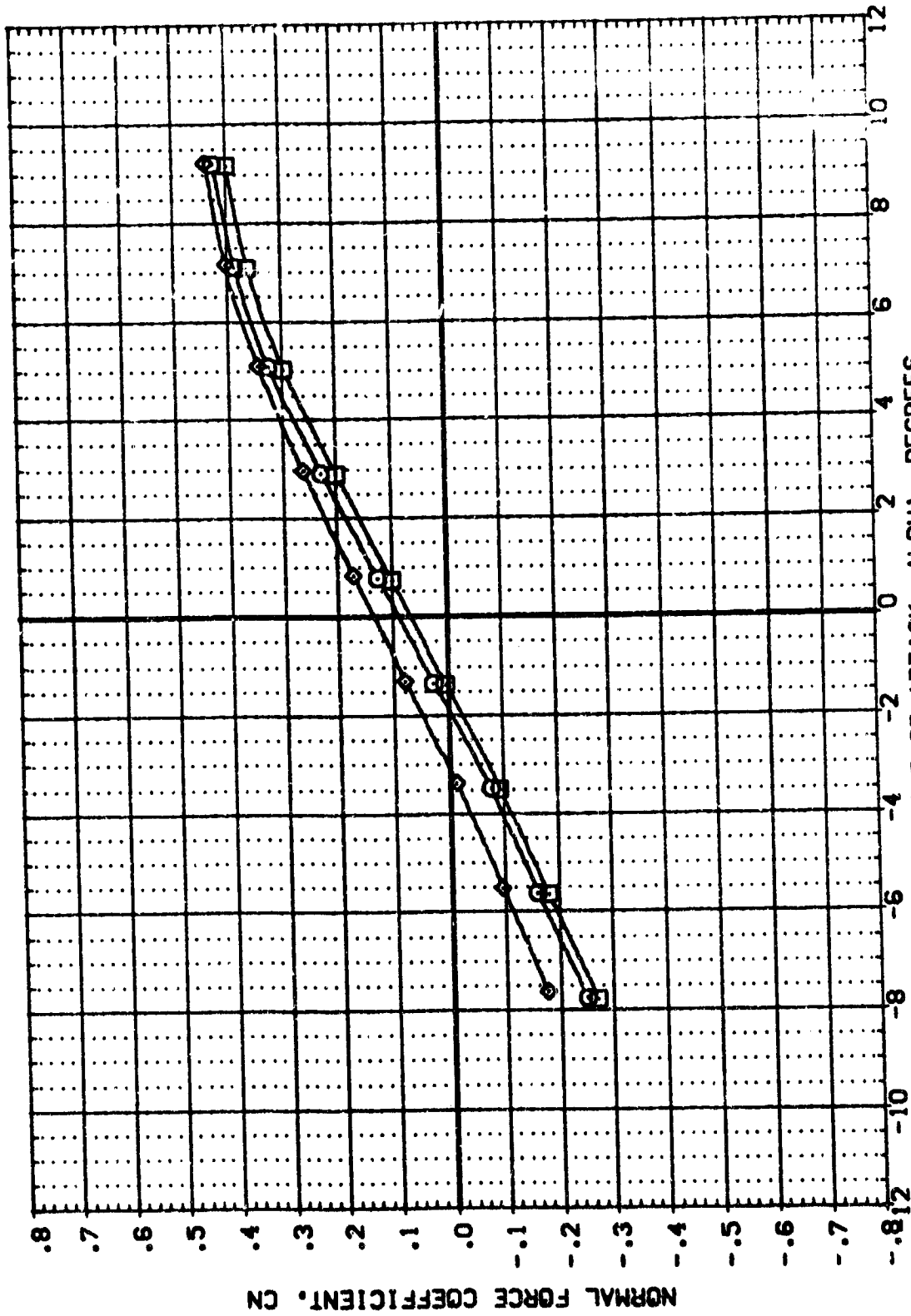


ANGLE OF ATTACK, ALPHA, DEGREES
 EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (PRINTER ONLY)

REFERENCE INFORMATION
 SREF 6.1560 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

BETA 0.000
 ORBITING 0.000
 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B69005) MSFC 580(A48) (034)(T9)(S12)
 (B69004) MSFC 580(A48) (034)(T14)(S12)
 (B69001) MSFC 580(A48) (034)(T14)(S12)(US)



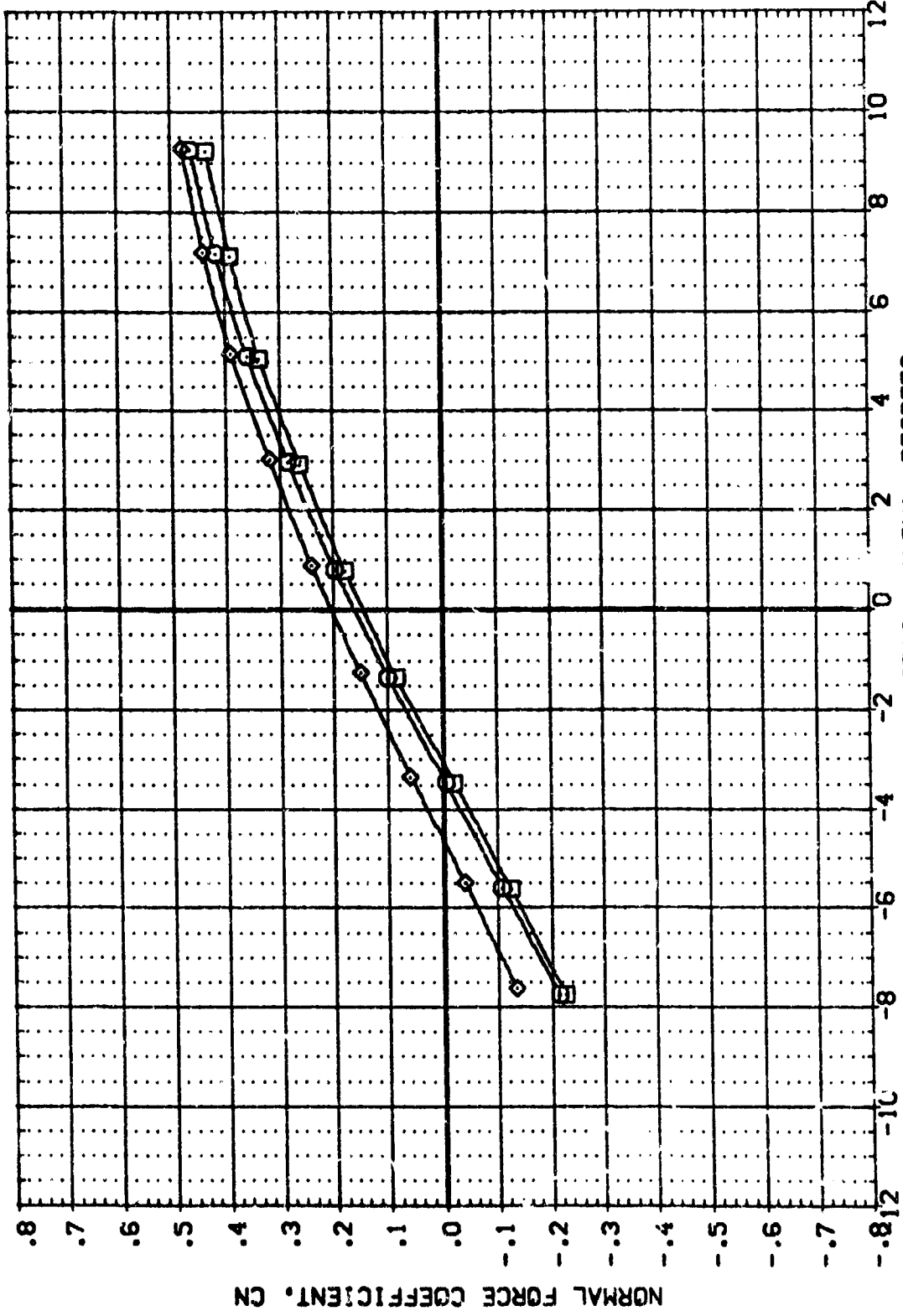
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)
 (C)MACH = 1.10
 PAGE 64



DATA SET SYMB. CONFIGURATION DESCRIPTION
(B89005) MSFC 880(1A48) (034)(19)(S12)
(B89004) MSFC 880(1A48) (034)(114)(S12)
(B89001) MSFC 880(1A48) (034)(114)(S12)(U6)

BETA .000
ORBINC .000
.000
.000
.000

REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040

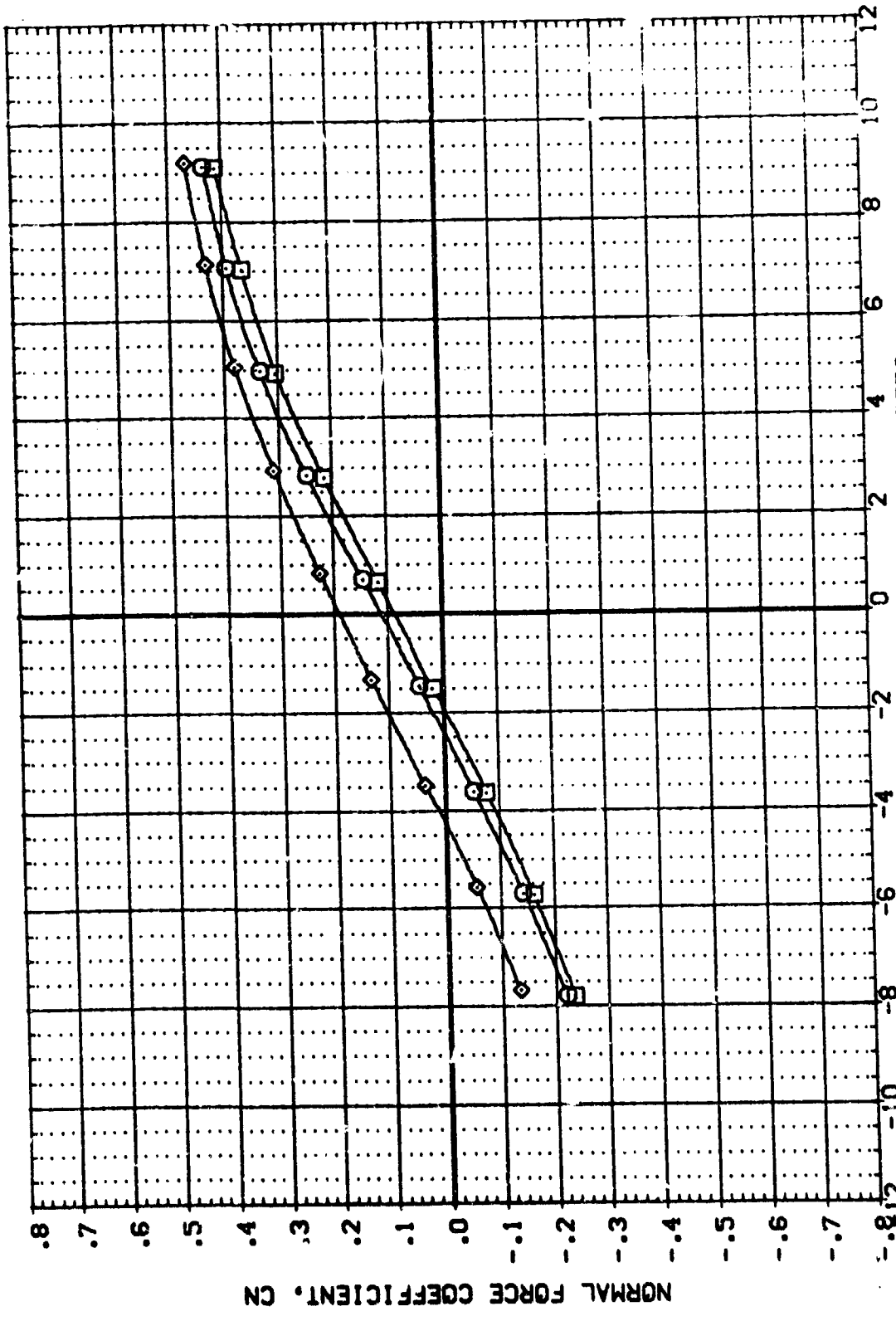


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)
(D)MACH = :.25
PAGE 65

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA .000
 ORBINC .000
 .000
 .000
 .000

DATA SET SYMBOL (889005) (889004) (889001)
 CONFIGURATION DESCRIPTION
 MSFC 560(1A18) (034)(T9)(S12)
 MSFC 560(1A18) (034)(T14)(S12)
 MSFC 560(1A18) (034)(T14)(S12)(L6)

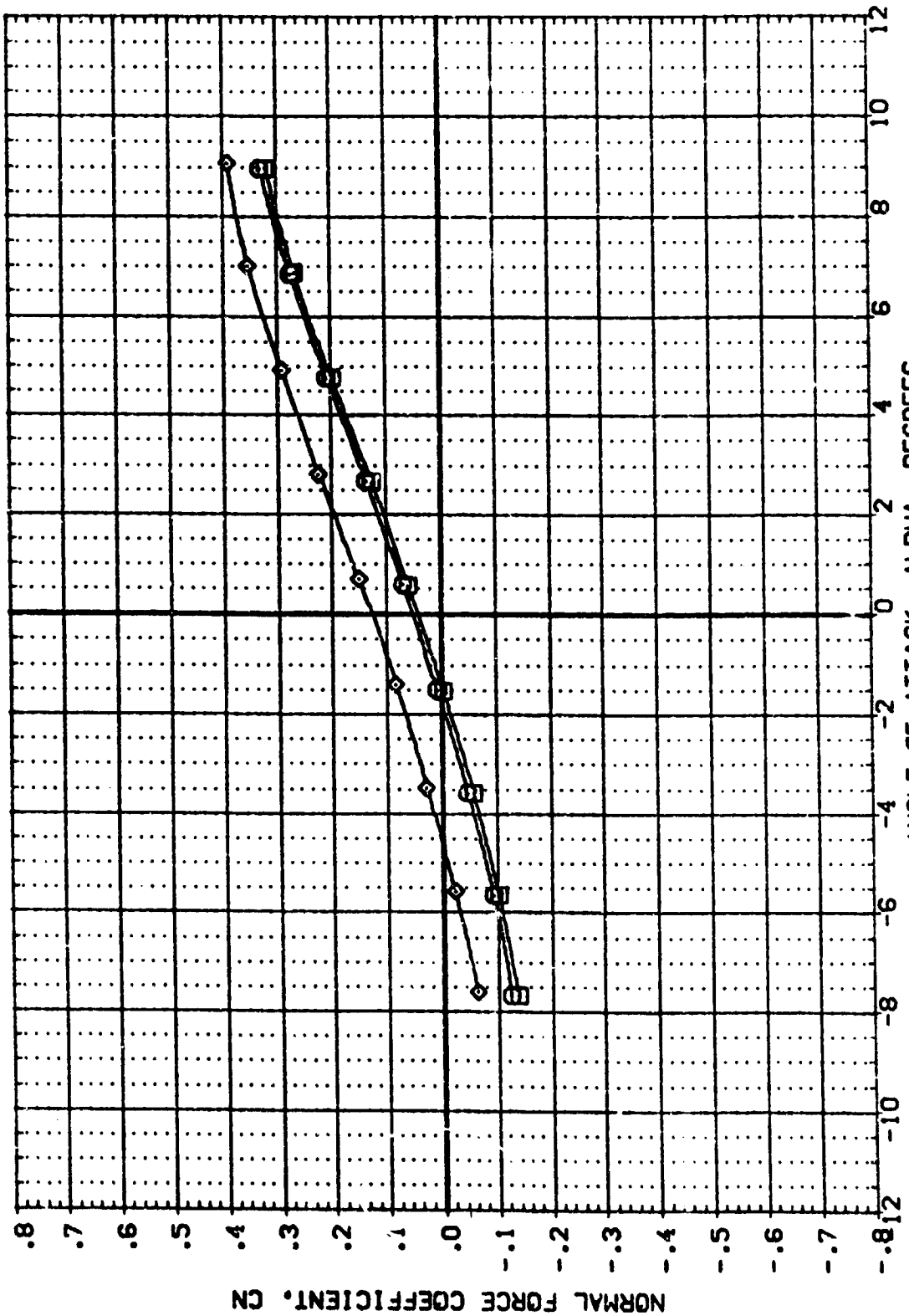


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)
 (E)MACH = 1.46
 PAGE 66

DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (889005) MSFC 580(1A48) (034)(19)(S12)
 (889004) MSFC 580(1A48) (034)(114)(S12)
 (889001) MSFC 580(1A48) (034)(114)(S12)(US)

BETA ORBITING
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0300 IN.
 ZMRP .0300 IN.
 SCALE .0040



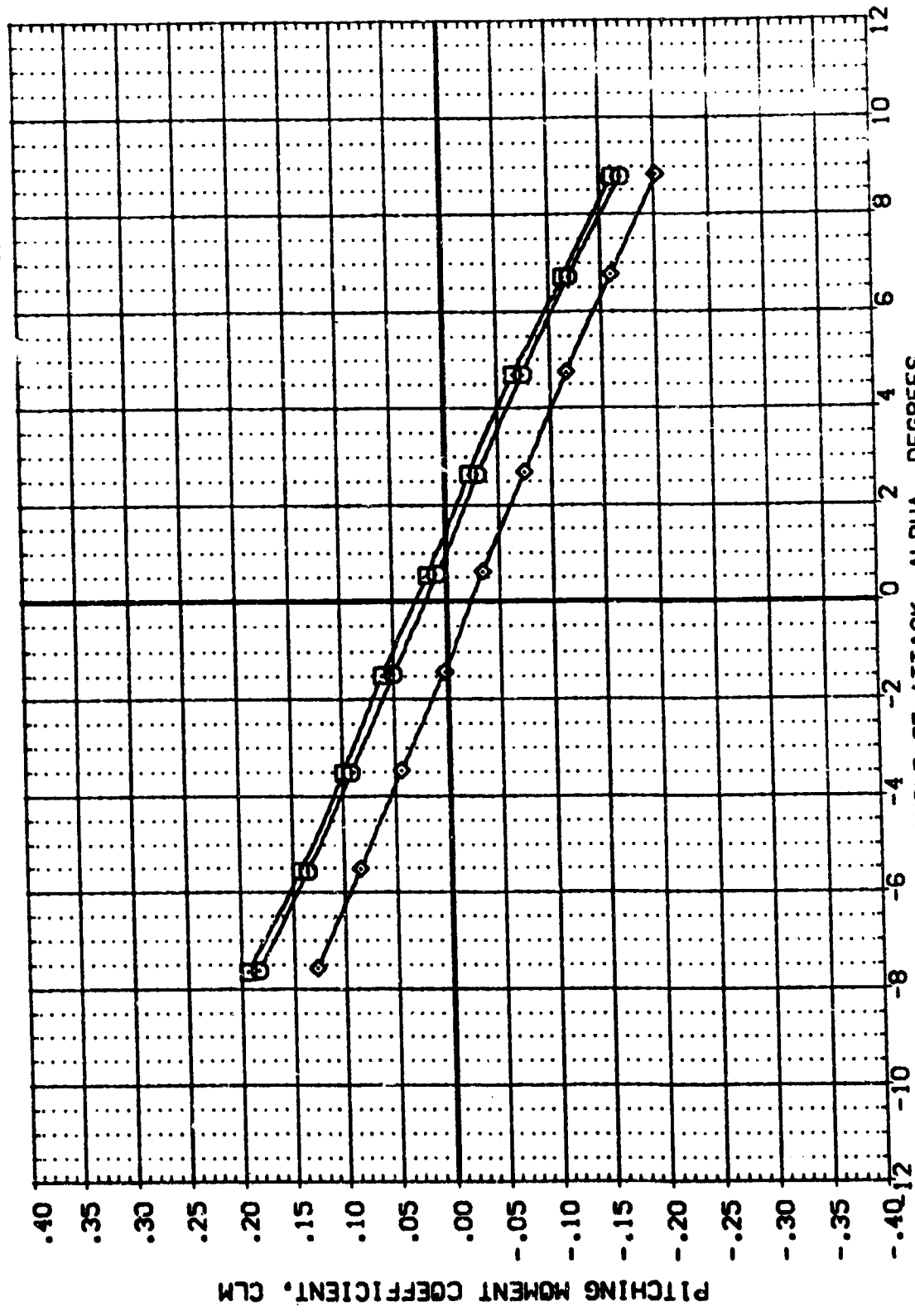
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (CORBITER ONLY)

(F)MACH = 1.97

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YMRP 2.7200 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA 0.000
 0.000
 0.000
 0.500

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85005) P5FC 560(IA48) (034)(T9)(S12)
 (B85004) P5FC 560(IA48) (034)(T14)(S12)
 (B85001) P5FC 560(IA48) (034)(T14)(S12)(US)

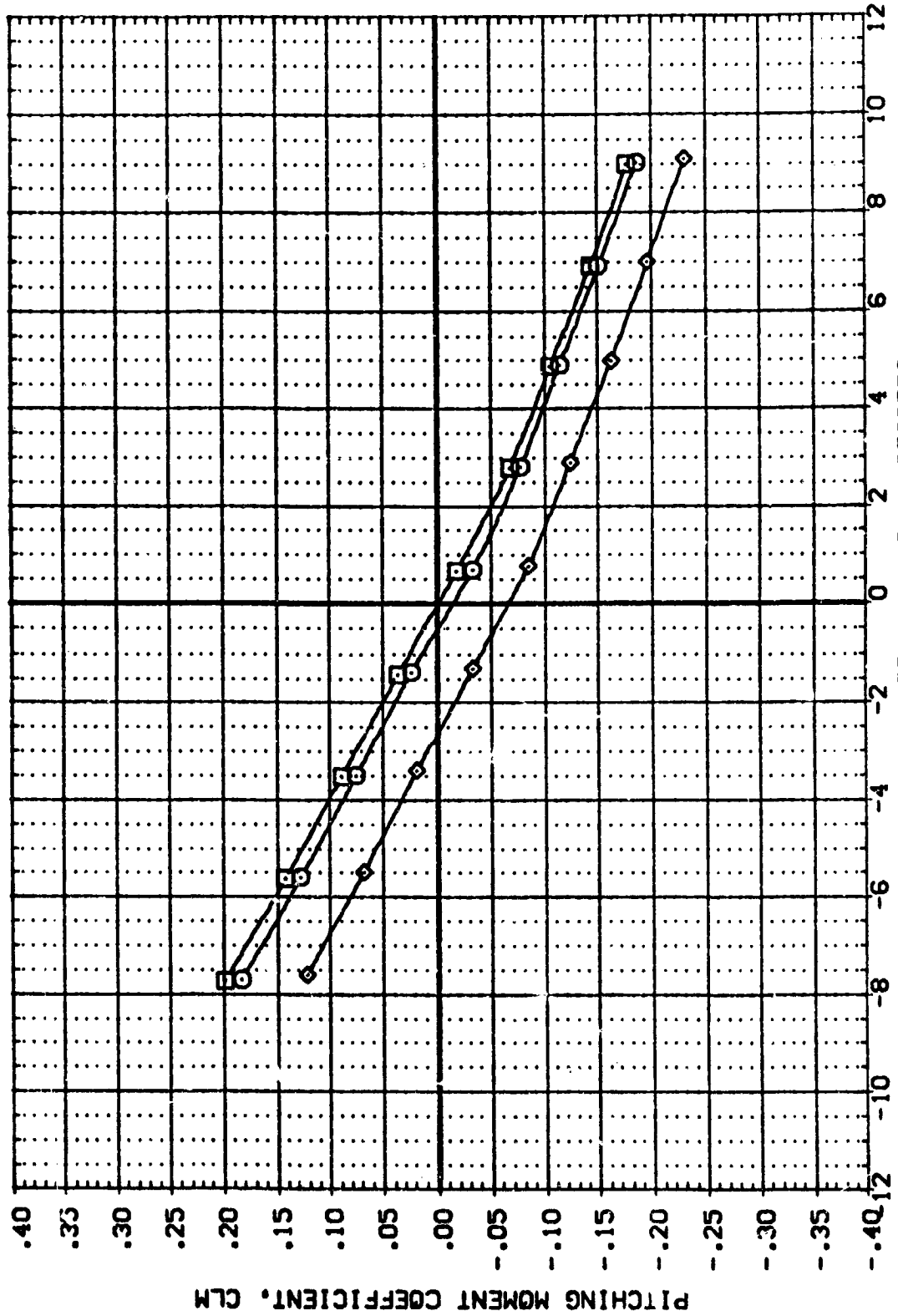


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)
 (A)MACH = .60
 PAGE 68

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1900 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

BETA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85005) MSFC 580(1A18) (C04)(T9)(S12)
 (B85004) MSFC 580(1A18) (C04)(T14)(S12)
 (B85001) MSFC 580(1A18) (C04)(T14)(S12) (UB)

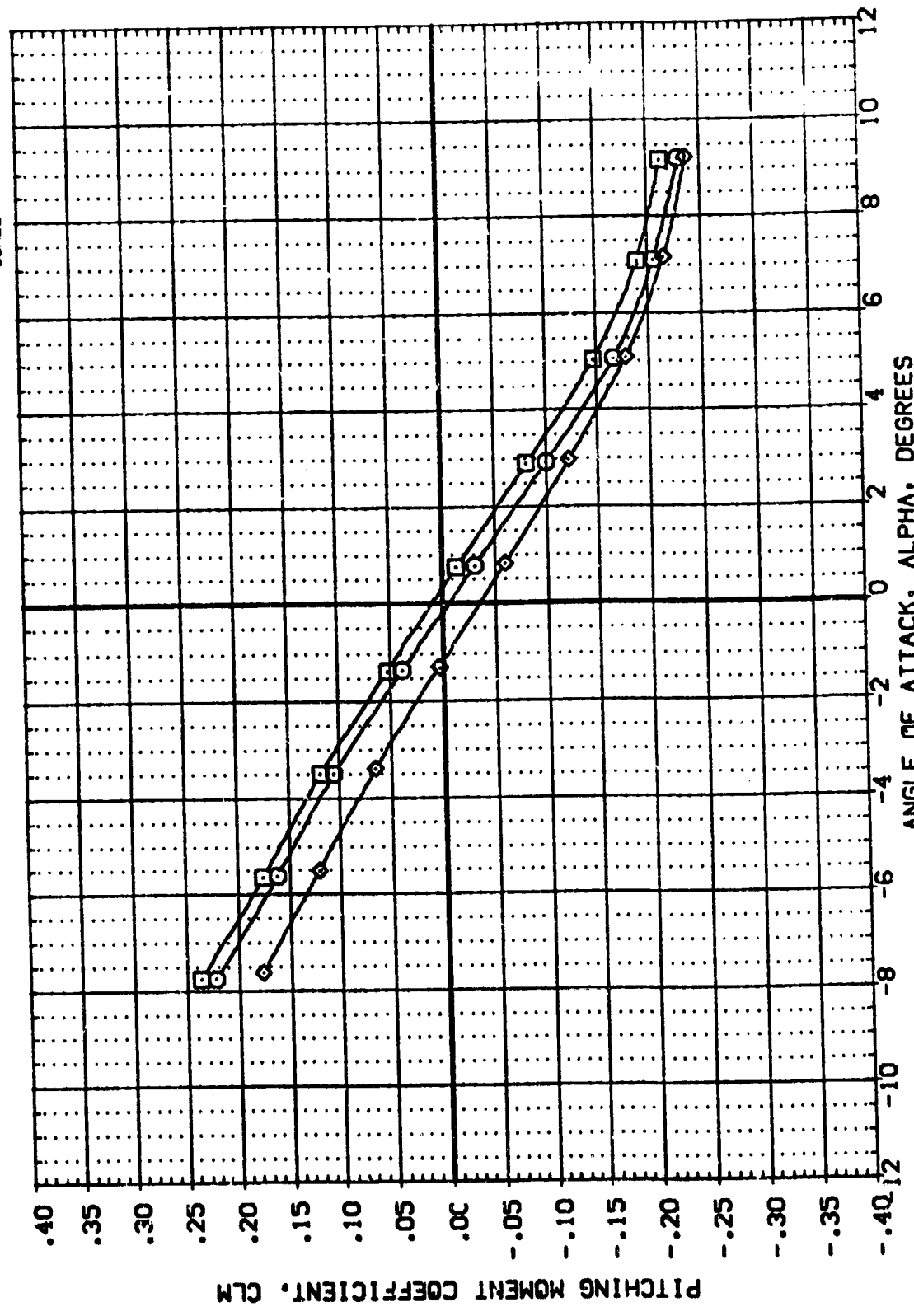


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA .000
 ORBINC .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885003) MSFC 580(IA48) (03A)(T9)(S12)
 (885004) MSFC 580(IA48) (03A)(T14)(S12)
 (885001) MSFC 580(IA48) (03A)(T14)(S12)(U6)



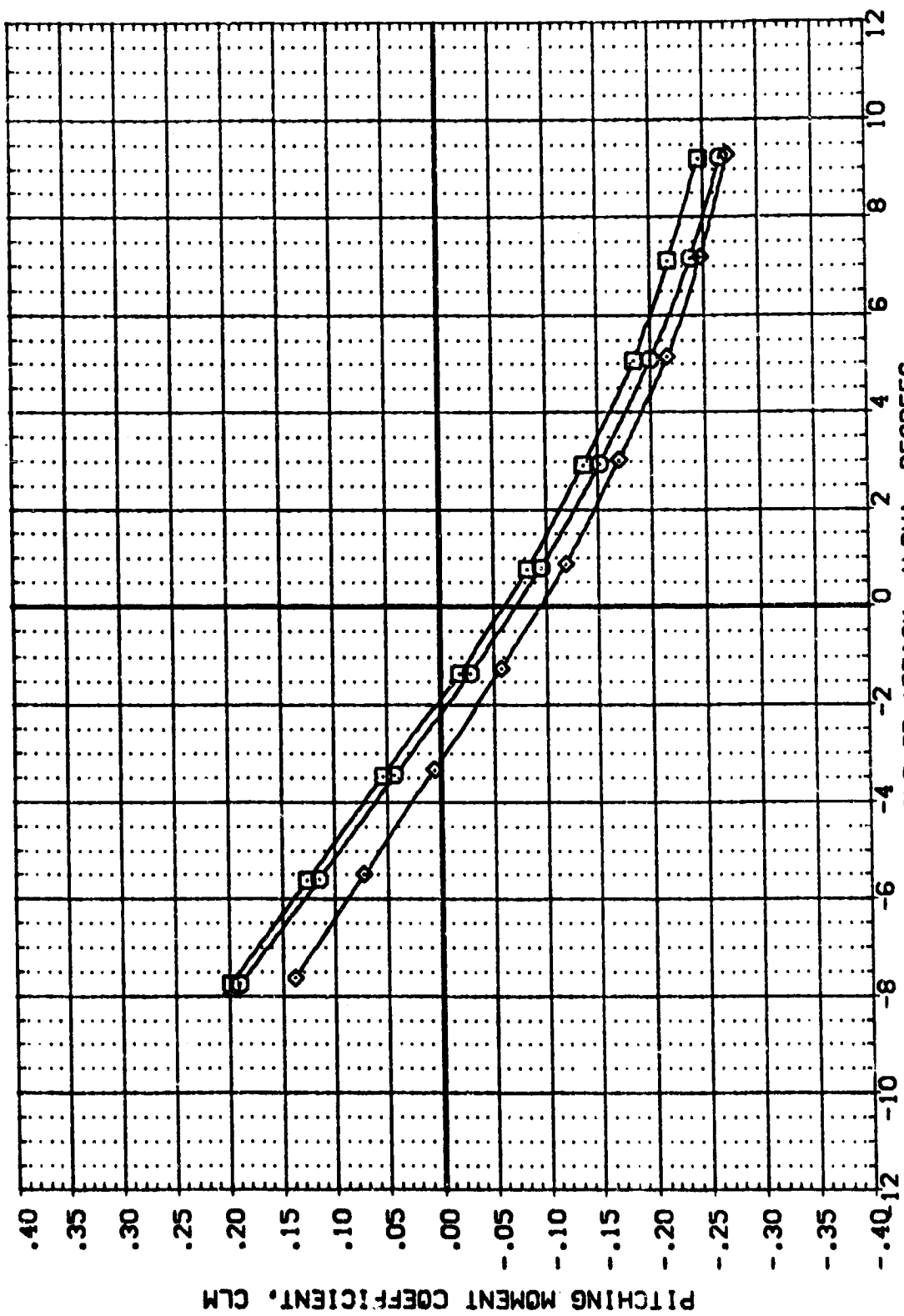
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)
 (C)MACH = 1.10
 PAGE 70



DATA SET SYMB. CONFIGURATION DESCRIPTION
(B99005) MSFC 560(A48) (034)(T9)(S12)
(B99004) MSFC 560(A48) (034)(T14)(S12)
(B99001) MSFC 560(A48) (034)(T14)(S12)(L6)

BETA ORBITING
.000 .000
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1960 SQ.IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



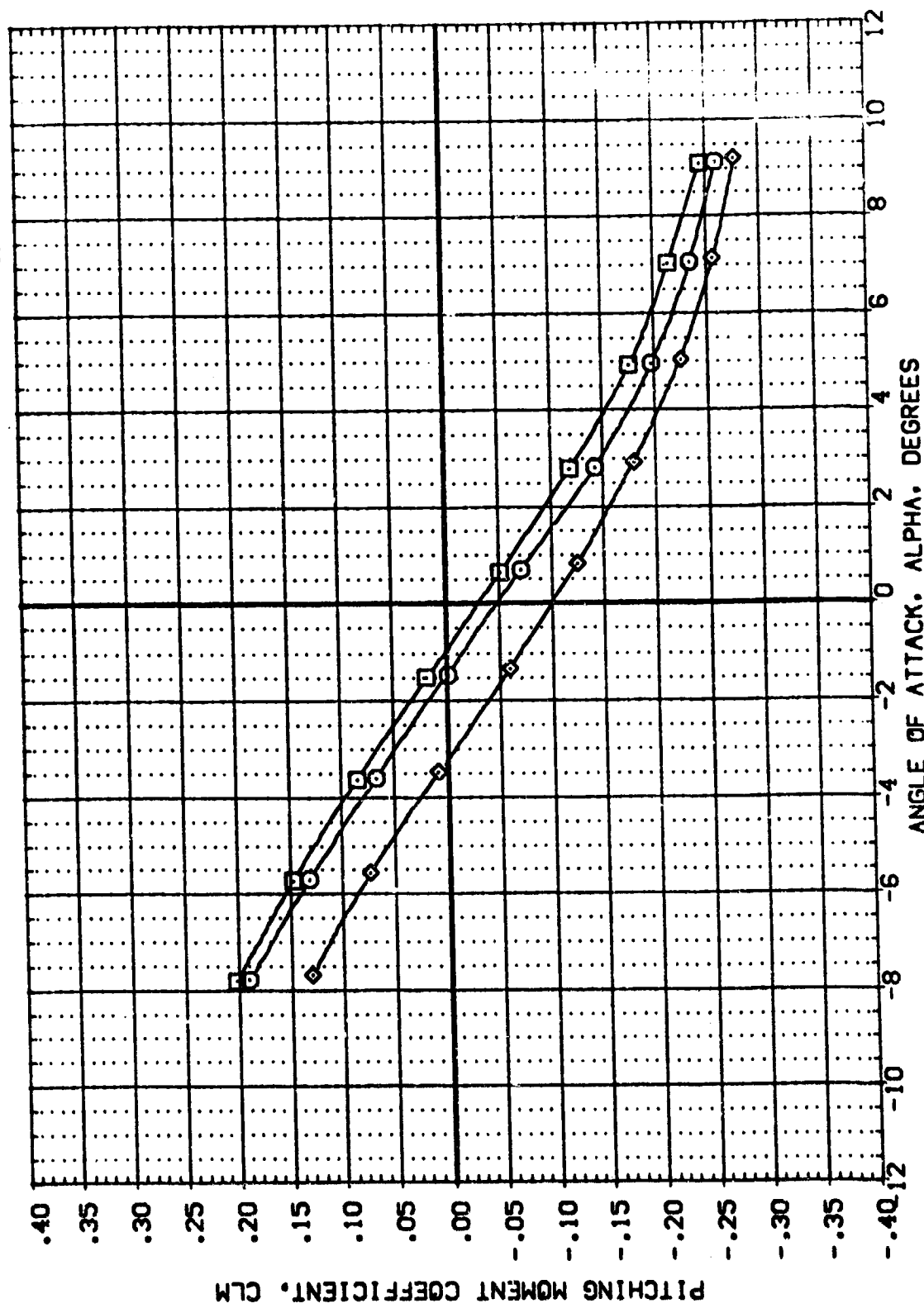
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(ORBITER ONLY)

(D)MACH = 1.25

REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

BETA ORIGIN
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85005) MSFC 560(1A48) (034)(19)(S12)
 (B85004) MSFC 560(1A48) (034)(114)(S12)
 (B85001) MSFC 560(1A48) (034)(114)(S12)(US)



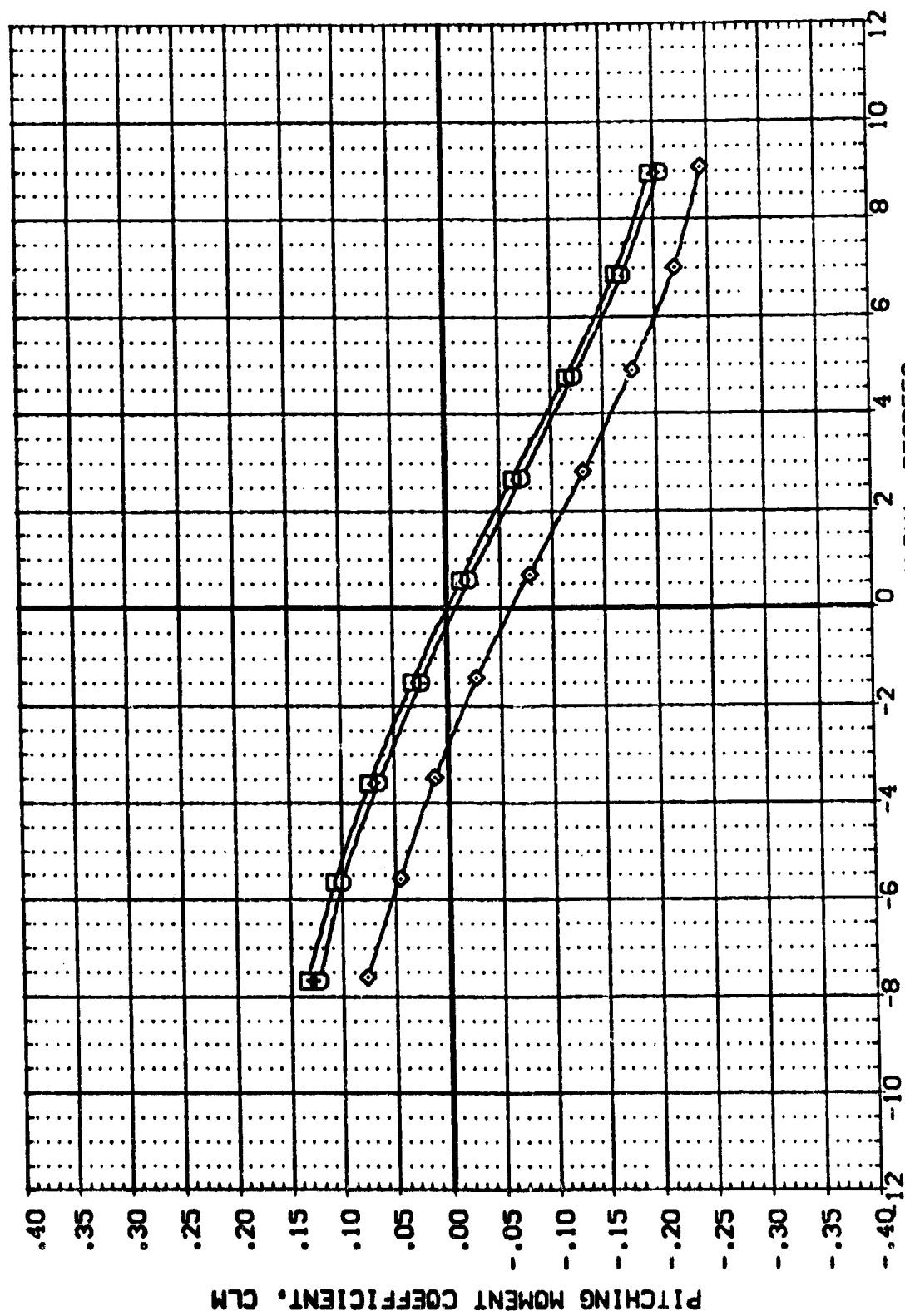
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)



DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (889003) MSFC 560(1A18) (034)(T9)(S12)
 (889004) MSFC 560(1A18) (034)(T14)(S12)
 (889001) MSFC 560(1A18) (034)(T14)(S12)(US)

BETA ORBING
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XGRP 2.7200 IN.
 YGRP .0000 IN.
 ZGRP .0000 IN.
 SCALE .0040

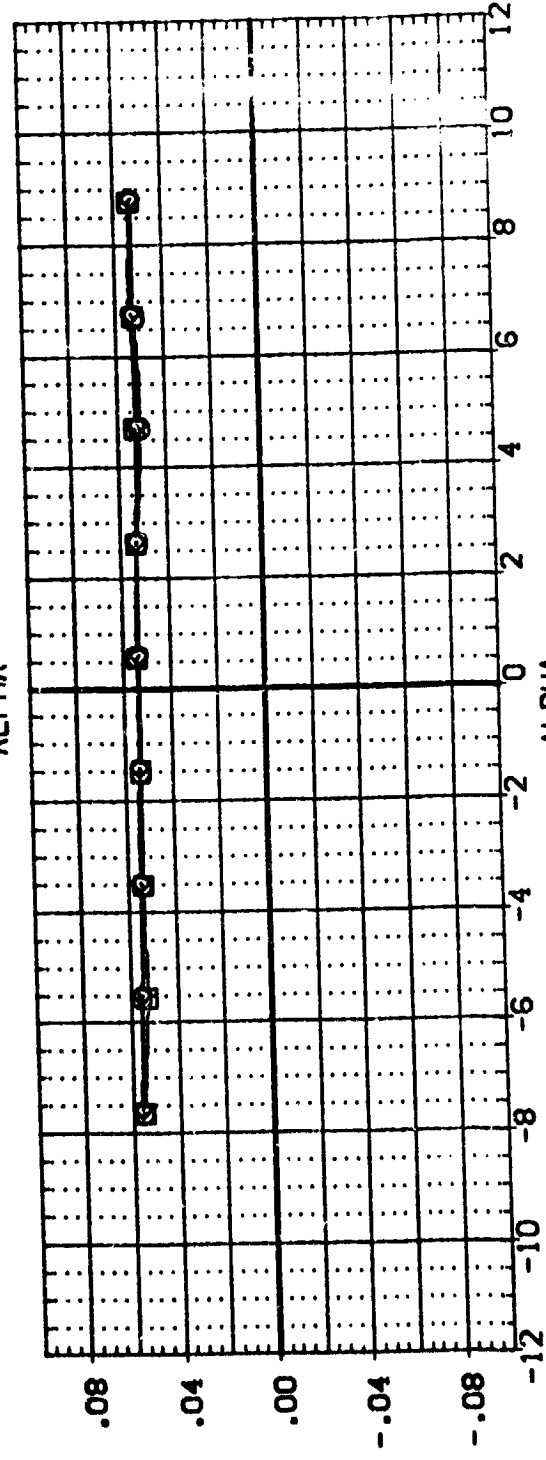
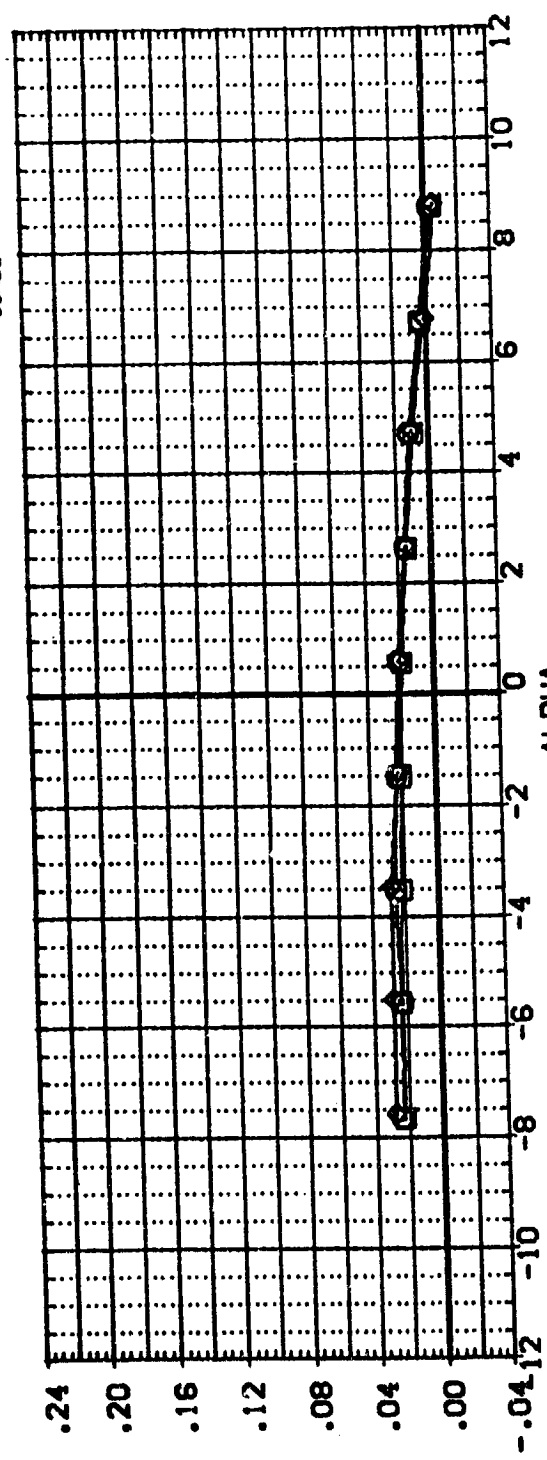


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

BETA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) NSFC 580(A48) (034)(T9)(S12)
 (B89004) NSFC 580(A48) (034)(T14)(S12)
 (B89001) NSFC 580(A48) (034)(T14)(S12)(U6)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(A)MACH = .60



DATA SET SYMBOL (889005) (889004) (889001)

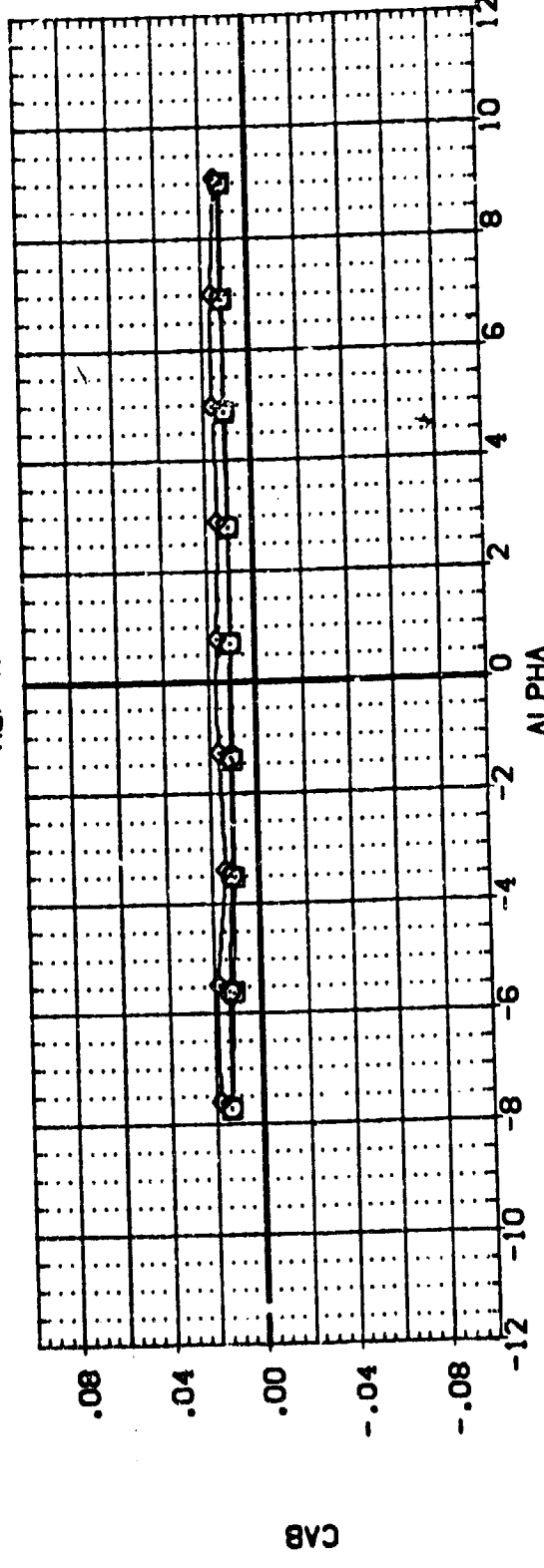
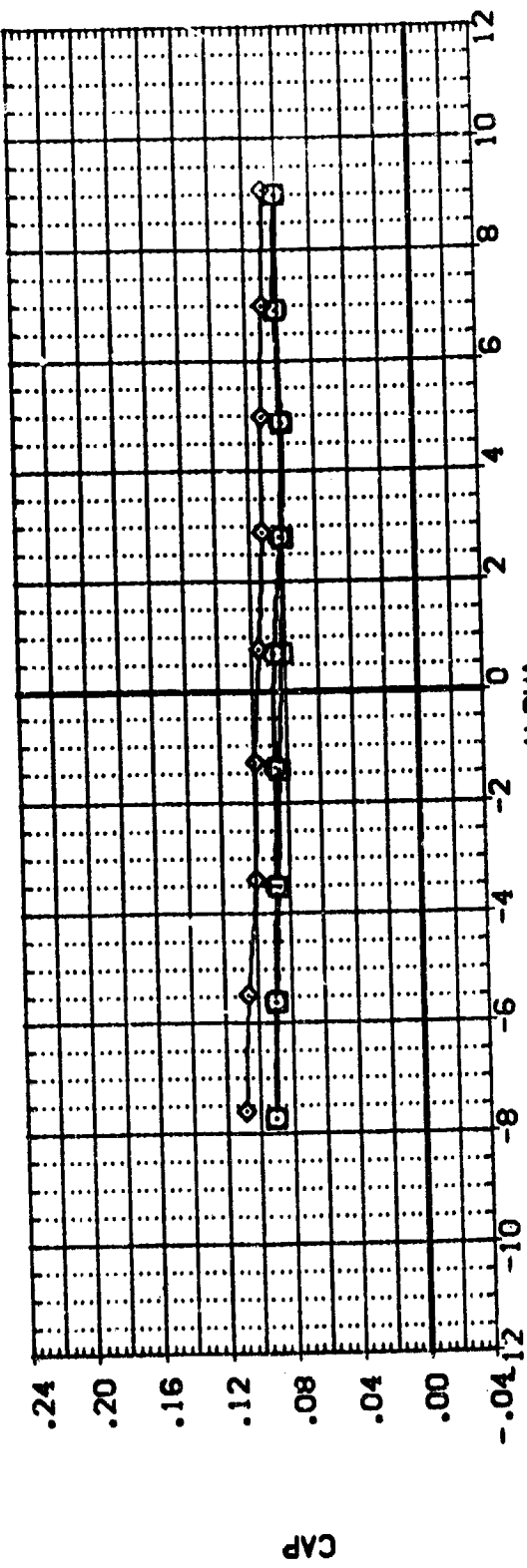
CONFIGURATION DESCRIPTION (C34)(T9)(S12) (C34)(T14)(S12) (C34)(T14)(S12)(L6)

BETA 0.000 0.000 0.000

ORBITING 0.000 0.000 0.000

REFERENCE INFORMATION

SREF	6.1900	50. IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.7200	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

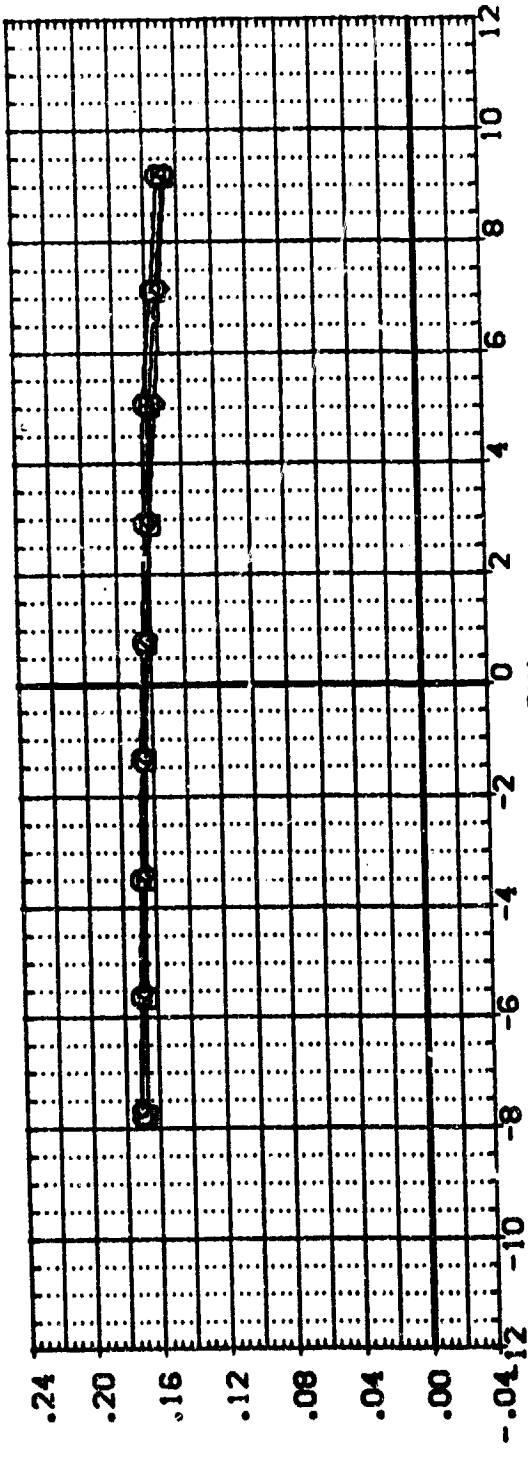
(B)MACH = .90

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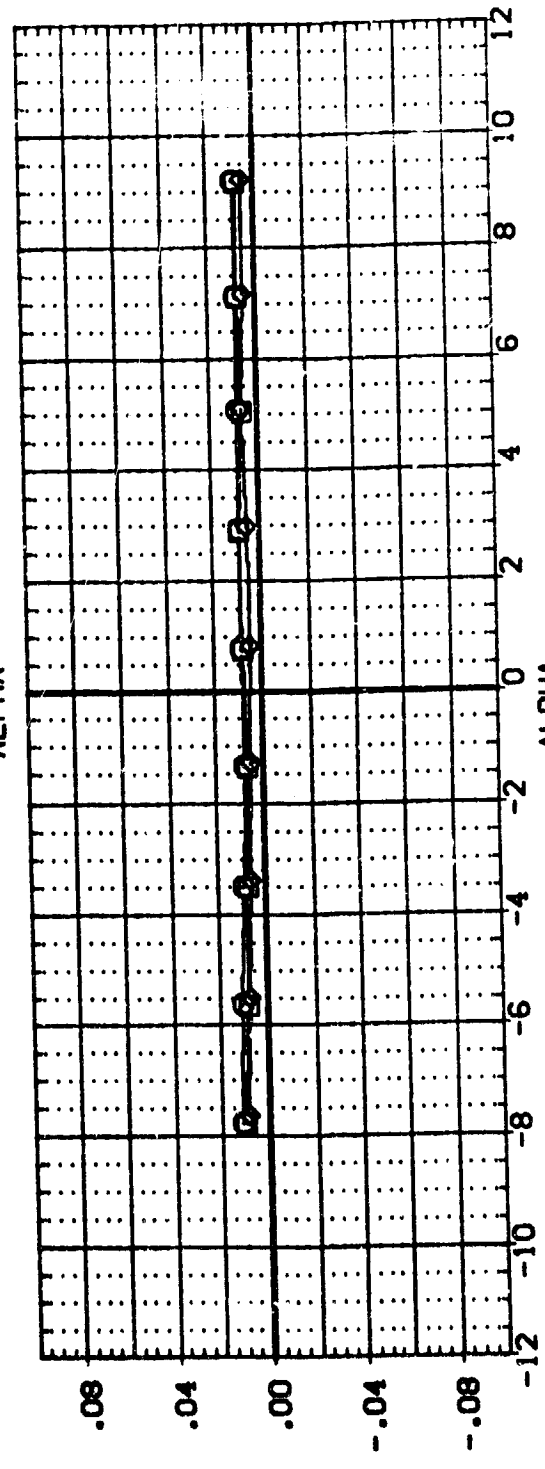
REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (885005) (885001) (A48) (034) (119) (S12)
 (885004) (885001) (A8) (034) (114) (S12)
 (885001) (885001) (A48) (034) (114) (S12) (US)



CAP



CAB

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (CORBITER ONLY)

(CJMACH = 1.10



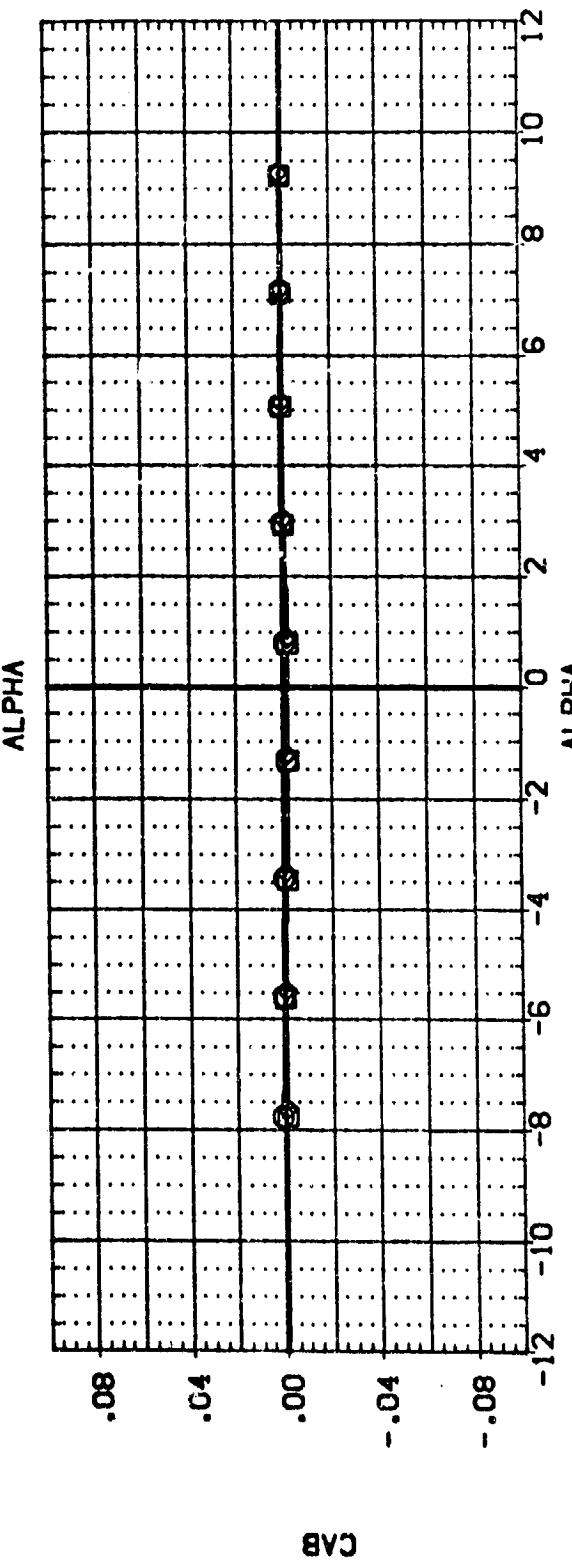
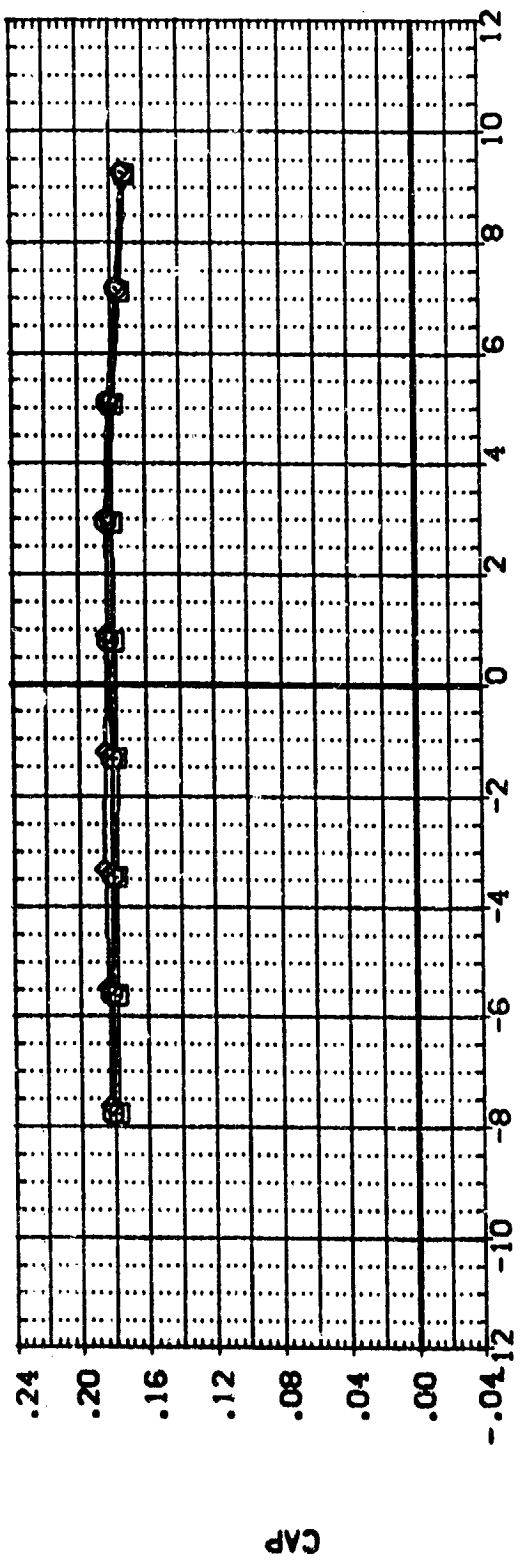
DATA SET SYMBOL: (B69005) (B69004) (B69001)

CONFIGURATION DESCRIPTION: MSC 560(1A48) (034)(T9)(S12) MSC 560(1A48) (034)(T14)(S12) MSC 560(1A48) (034)(T14)(S12)(US)

BETA: .000 .000 .000

ORBINC: .000 .000 .000

REFERENCE INFORMATION: SREF 6.1980 IN. LREF 5.1600 IN. BREF 5.1600 IN. XMRP 2.7200 IN. YMRP .0000 IN. ZMRP .0000 IN. SCALE .0040



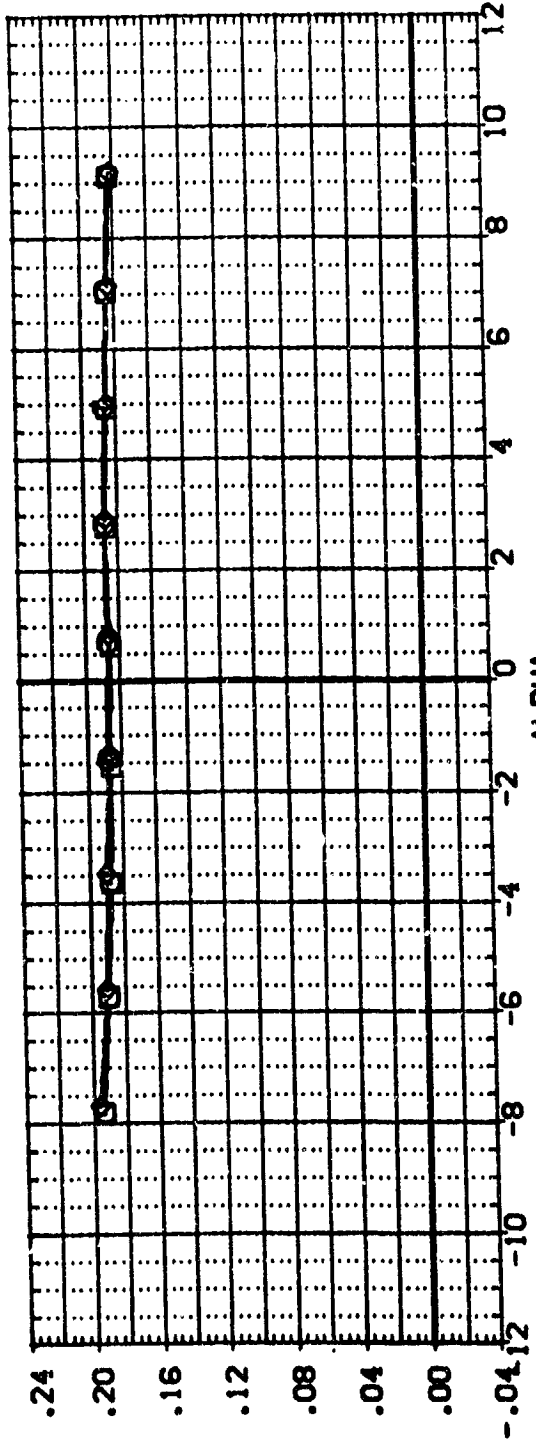
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(D)MACH = 1.25

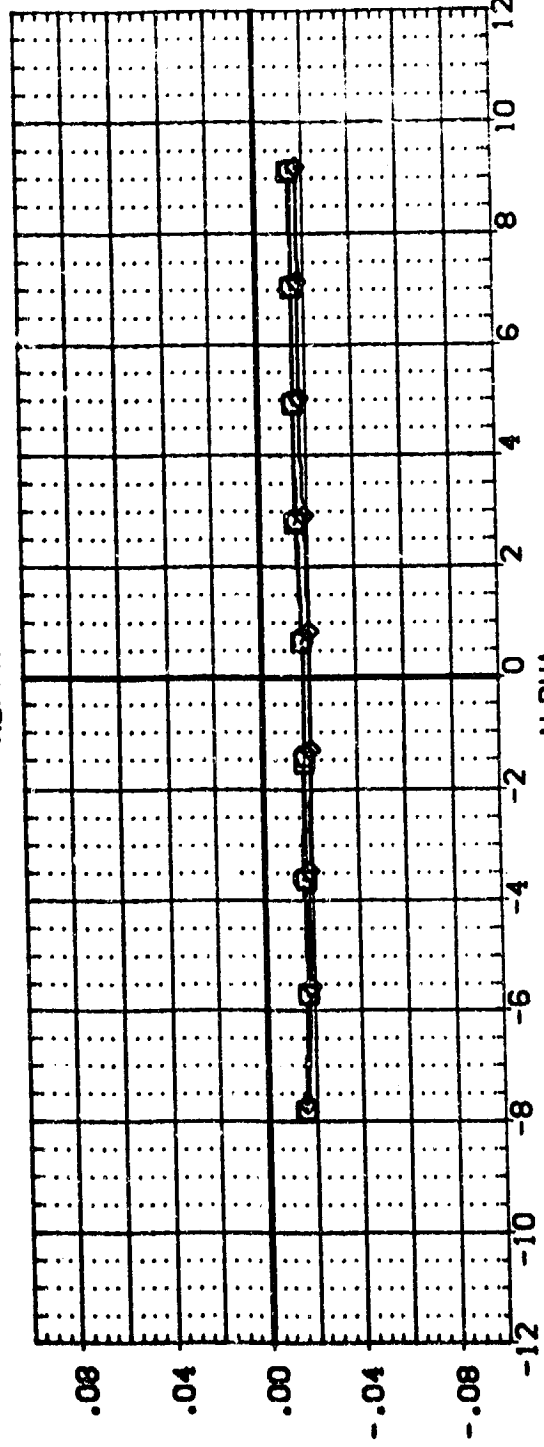
REFERENCE INFORMATION
 SREF 5.1560 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

BETA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885005) (885004) (034)(T9)(S12)
 (885004) (885004) (034)(T14)(S12)
 (885001) (885001) (034)(T14)(S12)(US)



CAP



CAB

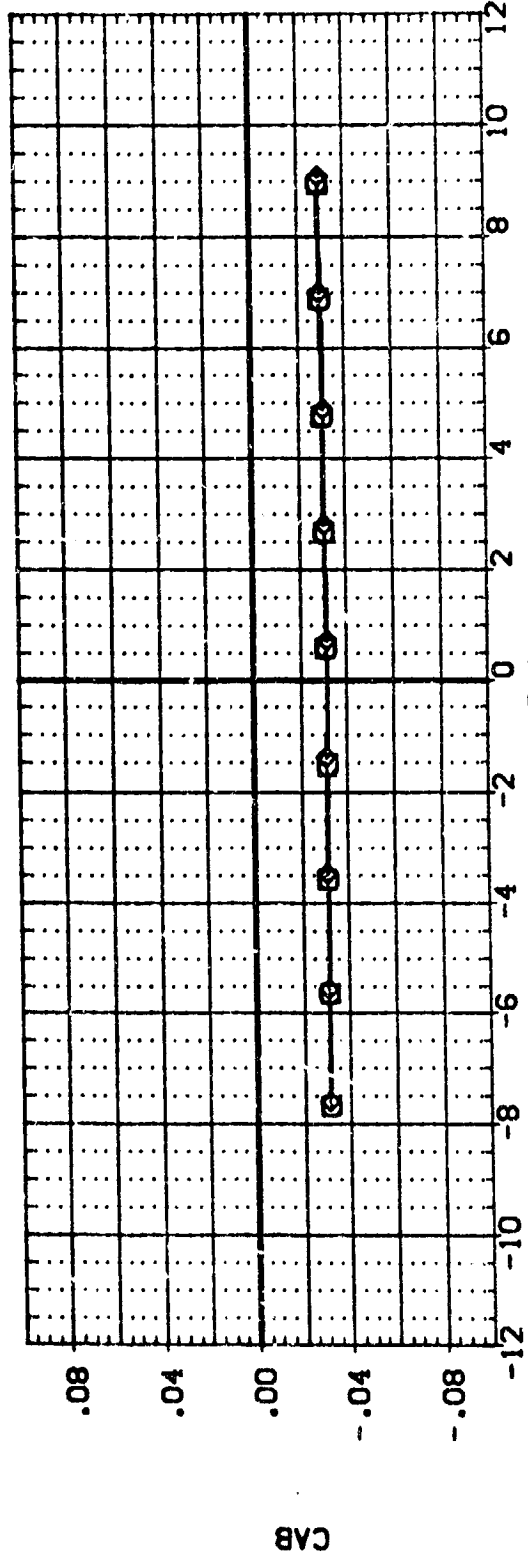
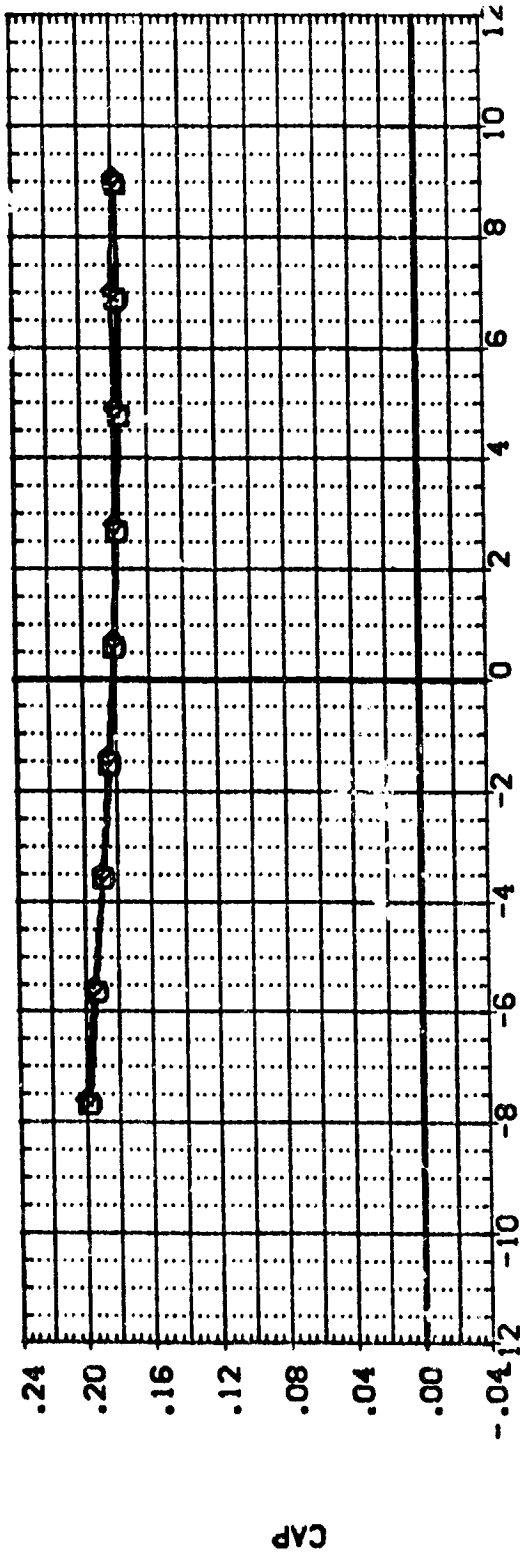
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (CORBITER ONLY)
 (E)MACH = 1.46
 PAGE 78



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) MSFC 580(1A48) (034)(T9)(S12)
 (B89004) MSFC 580(1A48) (034)(T14)(S12)
 (B89001) MSFC 580(1A48) (034)(T14)(S12)(US)

BETA ORIGIN
 .000 .00
 .000 .00
 .000 .00

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



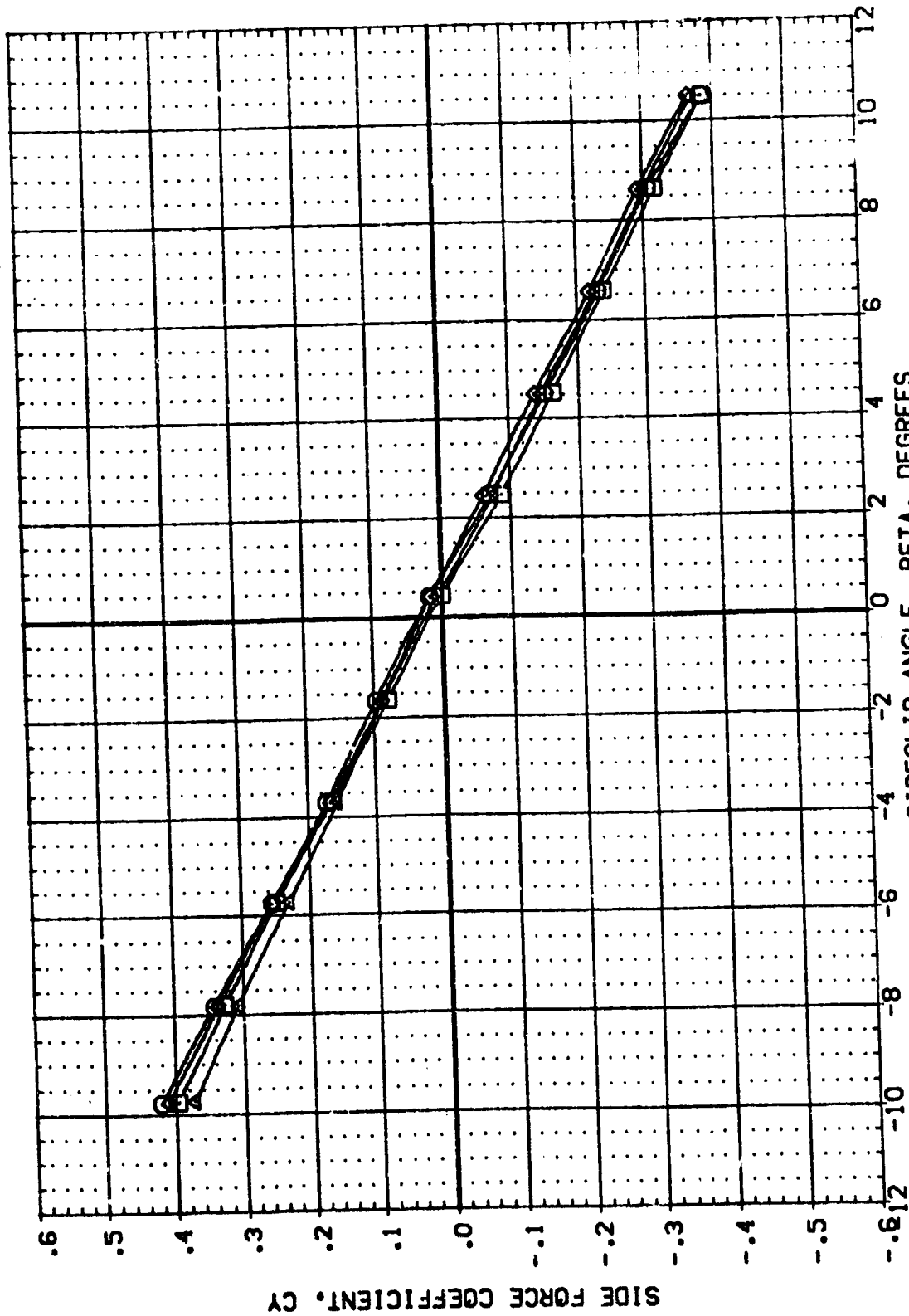
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (ORBITER ONLY)

(F)MACH = 1.97

REFERENCE INFORMATION
 SREF 6.1900 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000
 .000
 .000
 .000
 -5.000
 5.000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (888011) MSFC 579(A37) (034)(T14)(S12)(U6)
 (888010) MSFC 579(A37) (034)(T14)(S12)(U6)
 (888012) MSFC 579(A37) (034)(T14)(S12)(U6)
 (888008) MSFC 579(A37) (034)(T19)(S12)



EFFECT OF A TACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(2)

REFERENCE INFORMATION

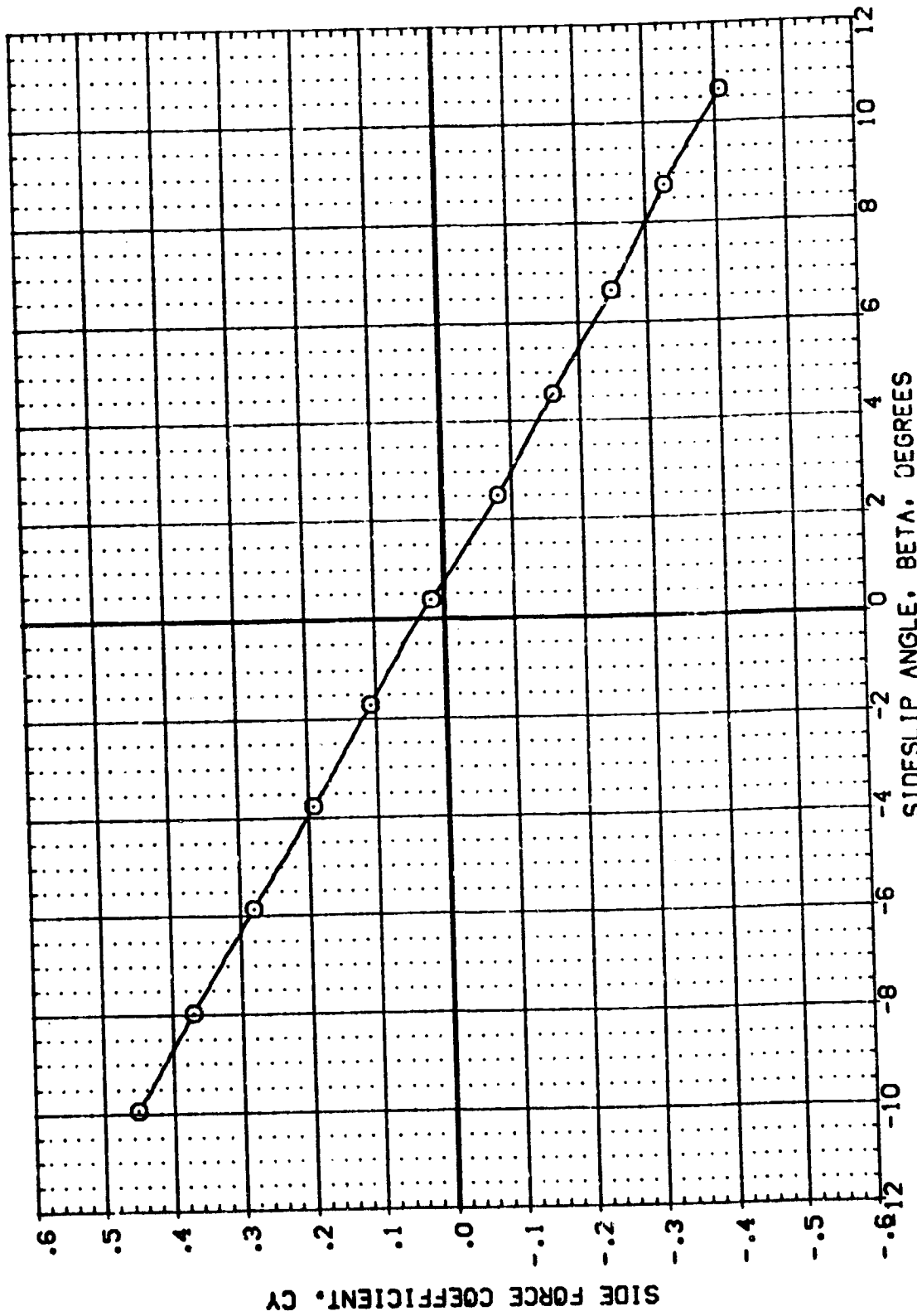
SREF	6.1980	SO. IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.7200	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

ALPHA ORBINC

.000	.000
-5.000	.000
5.000	.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(888011)	MSFC 579(1A37) (034)(114)(S12)(U6)
(888010)	DATA NOT AVAILABLE
(888012)	DATA NOT AVAILABLE
(888008)	DATA NOT AVAILABLE



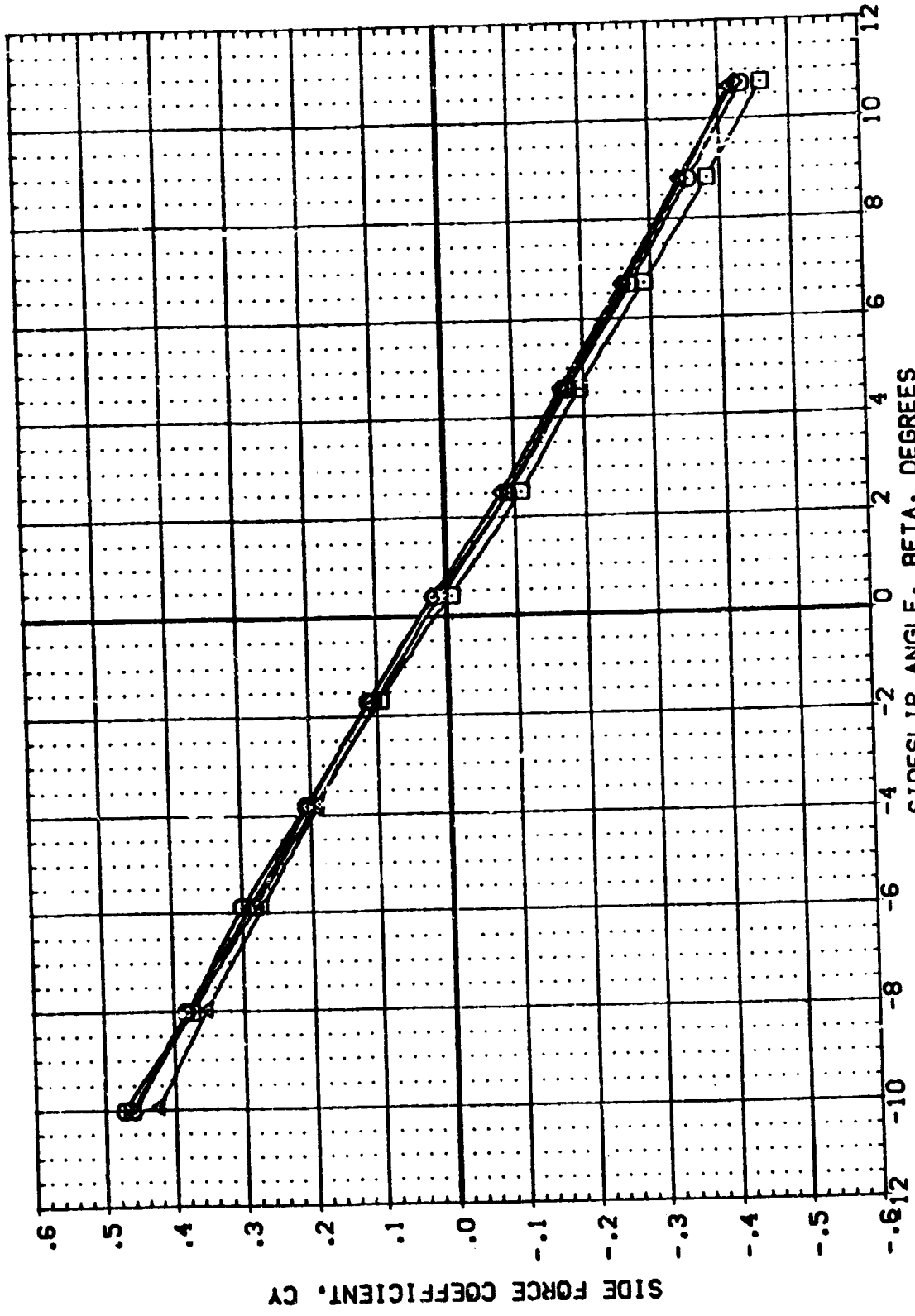
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (FIRST STAGE)

(B)MACH = .80

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

ALPHA 0.000
 .000
 -5.000
 5.000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) MS-C 579(IA37) (034)(T14)(S12)(U6)
 (B88010) MS-C 579(IA37) (034)(T14)(S12)(U6)
 (B88012) MS-C 579(IA37) (034)(T14)(S12)(U6)
 (B88008) MS-C 579(IA37) (034)(T9)(S12)

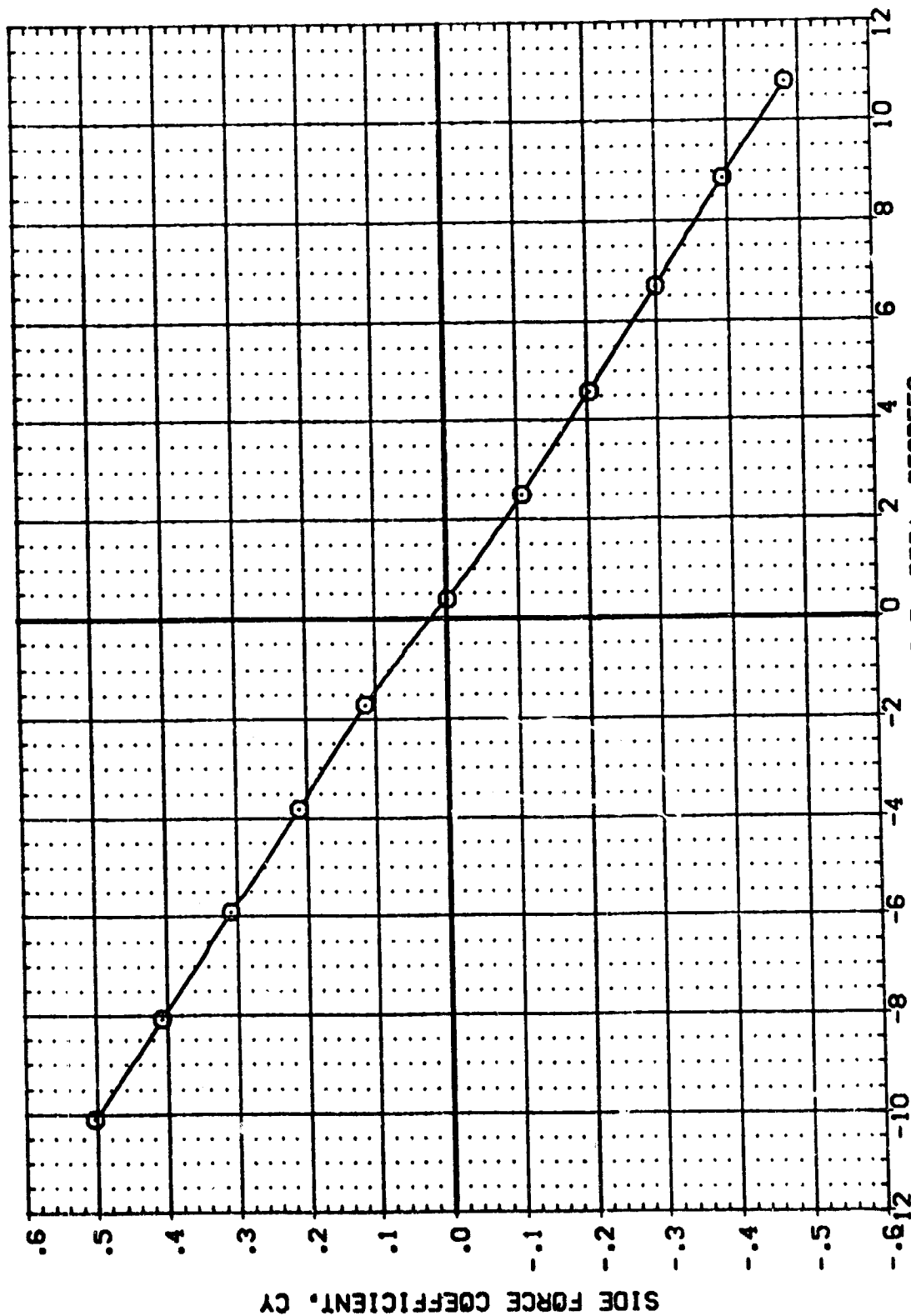


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (C)MACH = .89
 PAGE 82

REFERENCE INFORMATION
 SREF 6.1980 SO.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

ALPHA ORBING
 .000
 .000
 -5.000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSFC 579(1A37) (02A)(114)(S12)(U6)
 (888010) DATA NOT AVAILABLE
 (888012) DATA NOT AVAILABLE
 (888008) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTRUDANCES ON DIRECT. CHARACT.(FIRST STAGE)

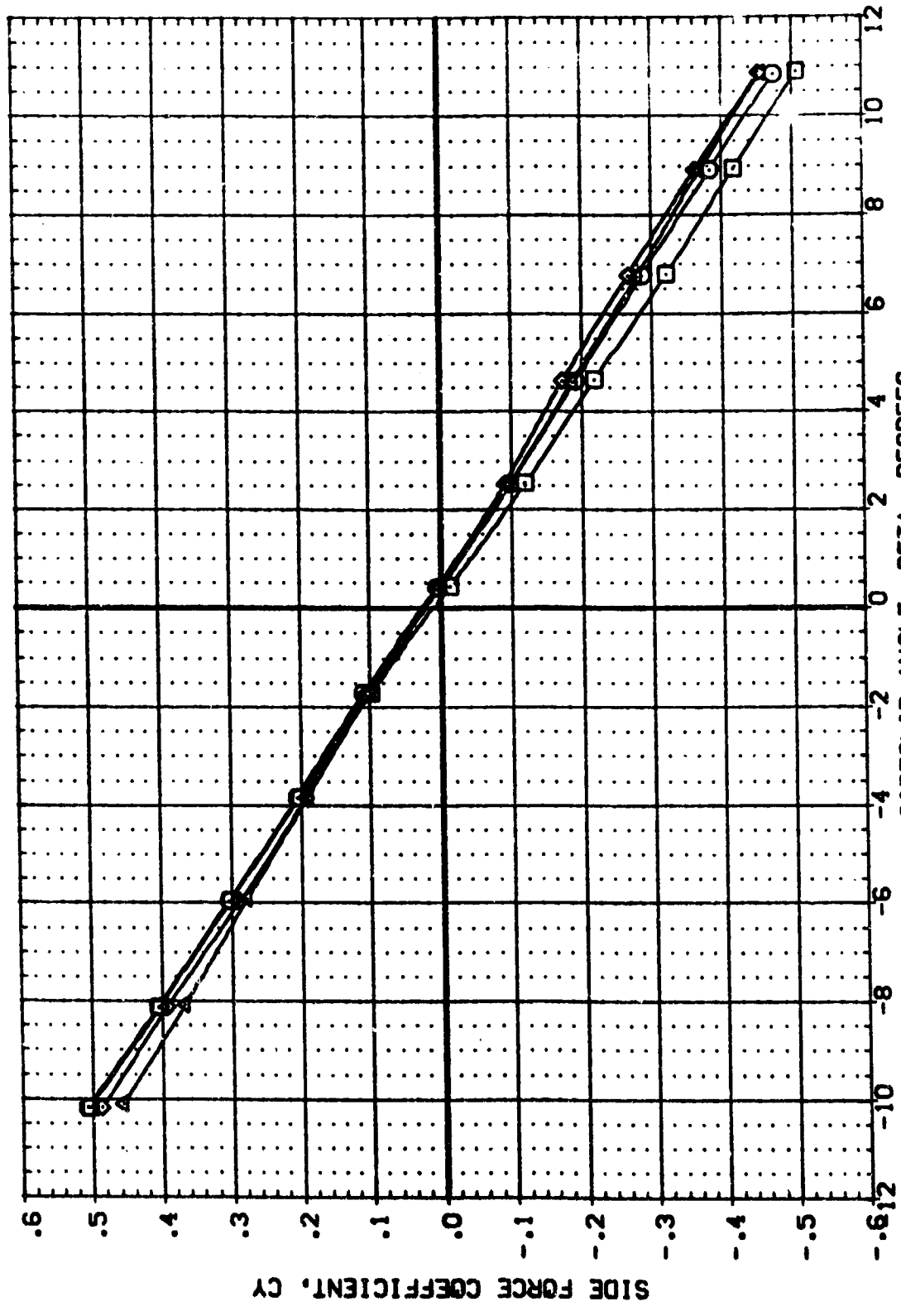
(O)MACH = 1.00

DATA SET SYMBOL: (888011), (888010), (888012), (888008)

CONFIGURATION DESCRIPTION: MSFC 579(A37) (034)(T14)(S12)(U6), MSFC 579(A37) (034)(T14)(S12)(U6), MSFC 579(A37) (034)(T14)(S12)(U6), MSFC 579(A37) (034)(T9)(S12)

ALPHA ORBITING: .000, .000, -5.000, 5.000, .000, .000

REFERENCE INFORMATION: SREF 6.1980 SQ. IN., LREF 5.1600 IN., BREF 5.1600 IN., YARP 2.7200 IN., ZARP .5000 IN., ZTRP .0000 IN., SCALE .0040



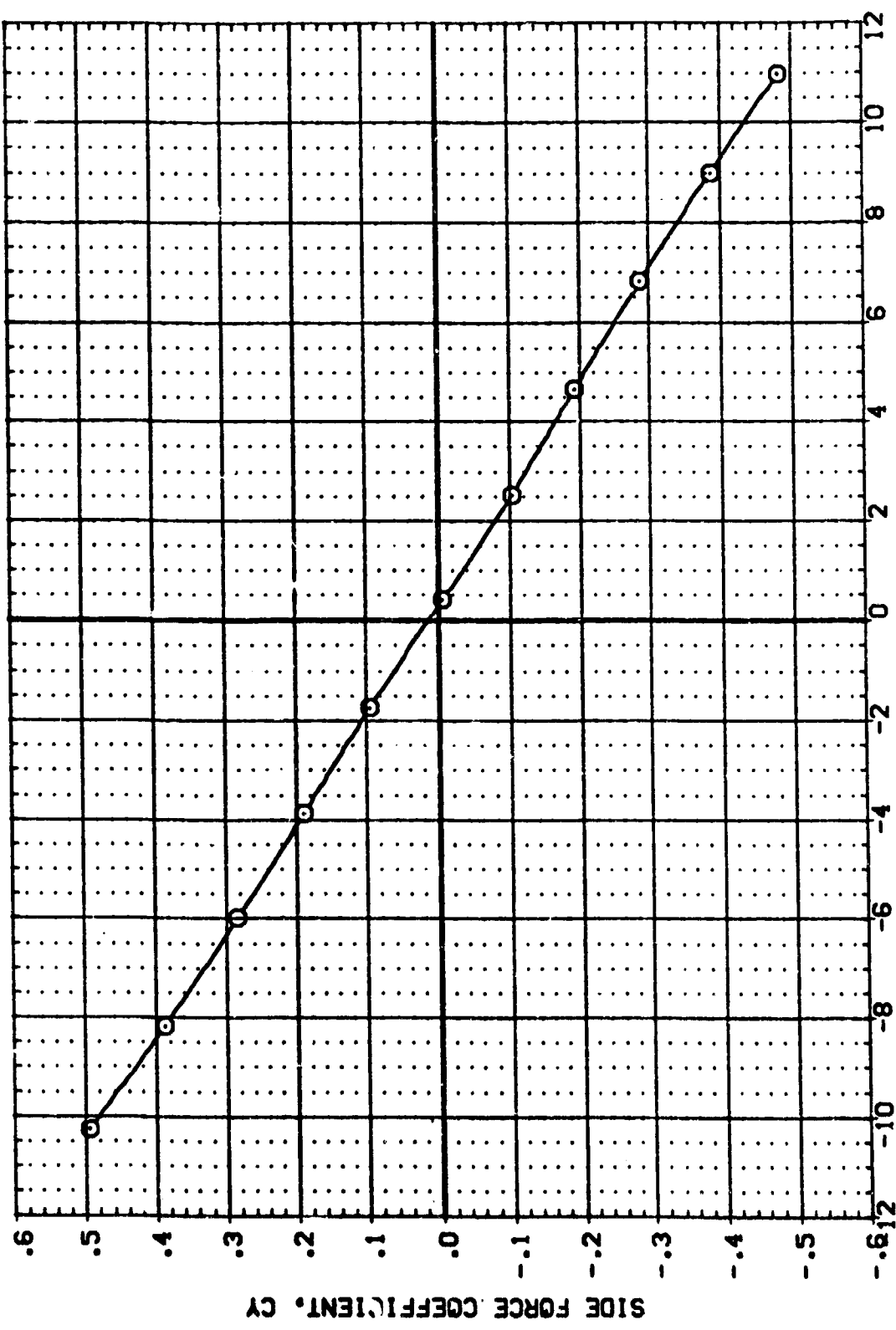
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE.)



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (886011) MSC 579(1A37) (094)(T14)(S12)(U6)
 (886010) DATA NOT AVAILABLE
 (886012) DATA NOT AVAILABLE
 (886008) DATA NOT AVAILABLE

ALPHA ORBINC
 .000
 -5.000
 5.000

REFERENCE INFORMATION
 SREF 5.1980 SQ.IN.
 LREF 2.1600 IN.
 BREF 2.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



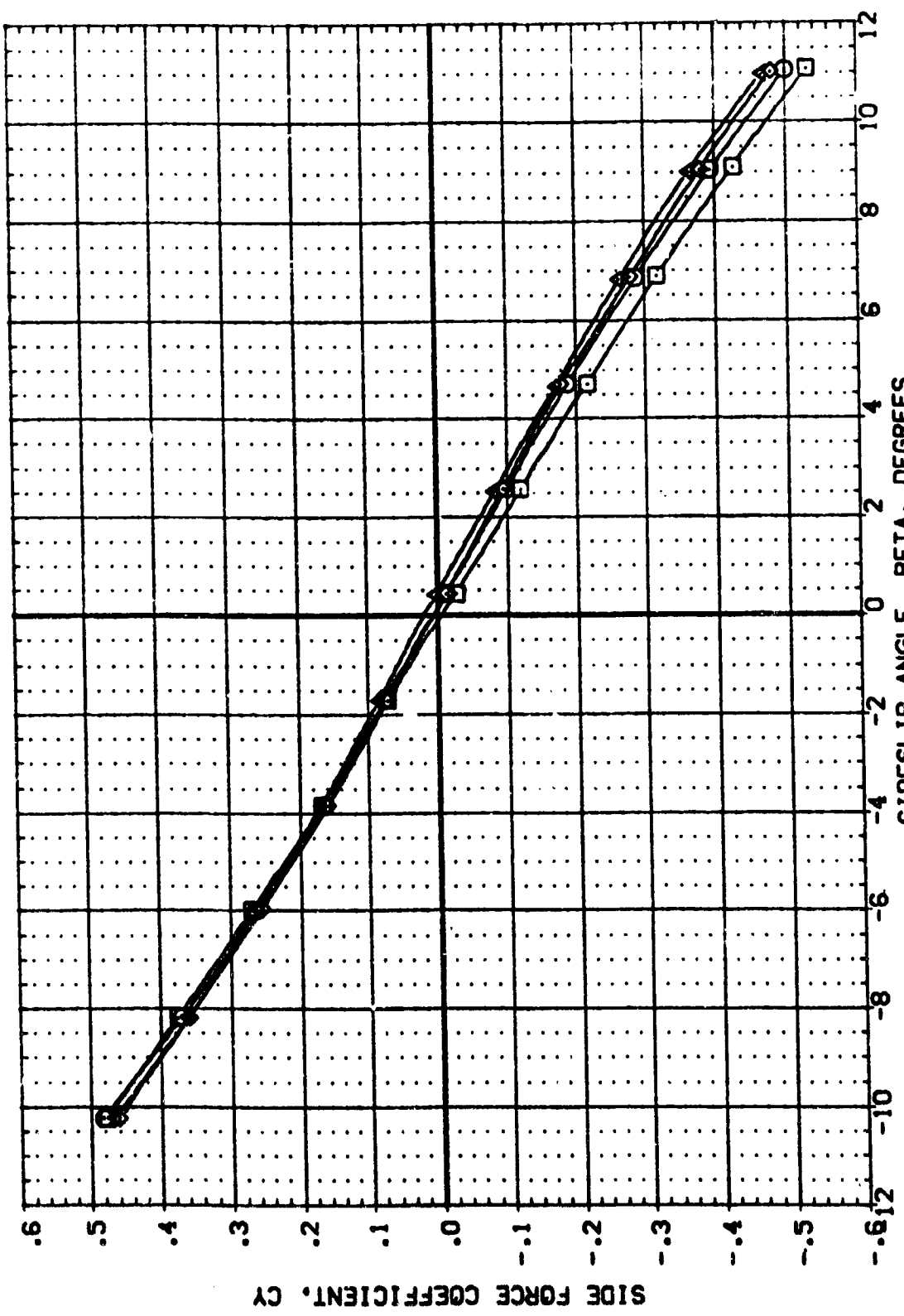
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(F)MACH = 1.20

REFERENCE INFORMATION
 SREF 6.1960 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSFC 579(IA37) (034)(T14)(S12)(U6)
 (888010) MSFC 579(IA37) (034)(T14)(S12)(U6)
 (888012) MSFC 579(IA37) (034)(T14)(S12)(U6)
 (888008) MSFC 579(IA37) (034)(T9)(S12)

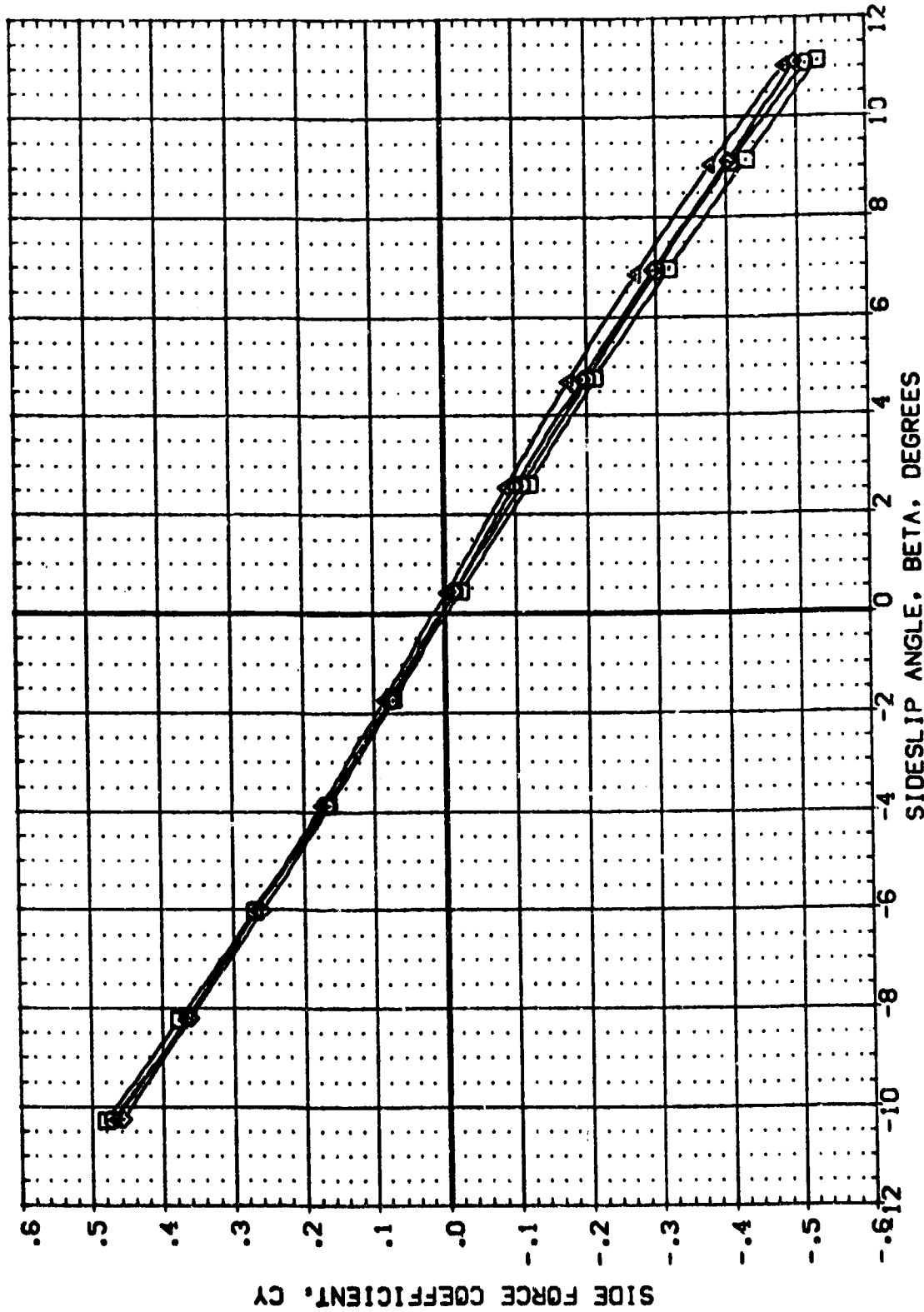


SIDESLIP ANGLE, BETA, DEGREES
 EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (G)MACH = 1.46
 PAGE 86

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000 .000
 -5.000 .000
 5.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (886011) MSC 579(A37) (034)(T14)(S12)(U6)
 (886010) MSC 579(A37) (034)(T14)(S12)(U6)
 (886012) MSC 579(A37) (034)(T14)(S12)(U6)
 (886008) MSC 579(A37) (034)(T19)(S12)

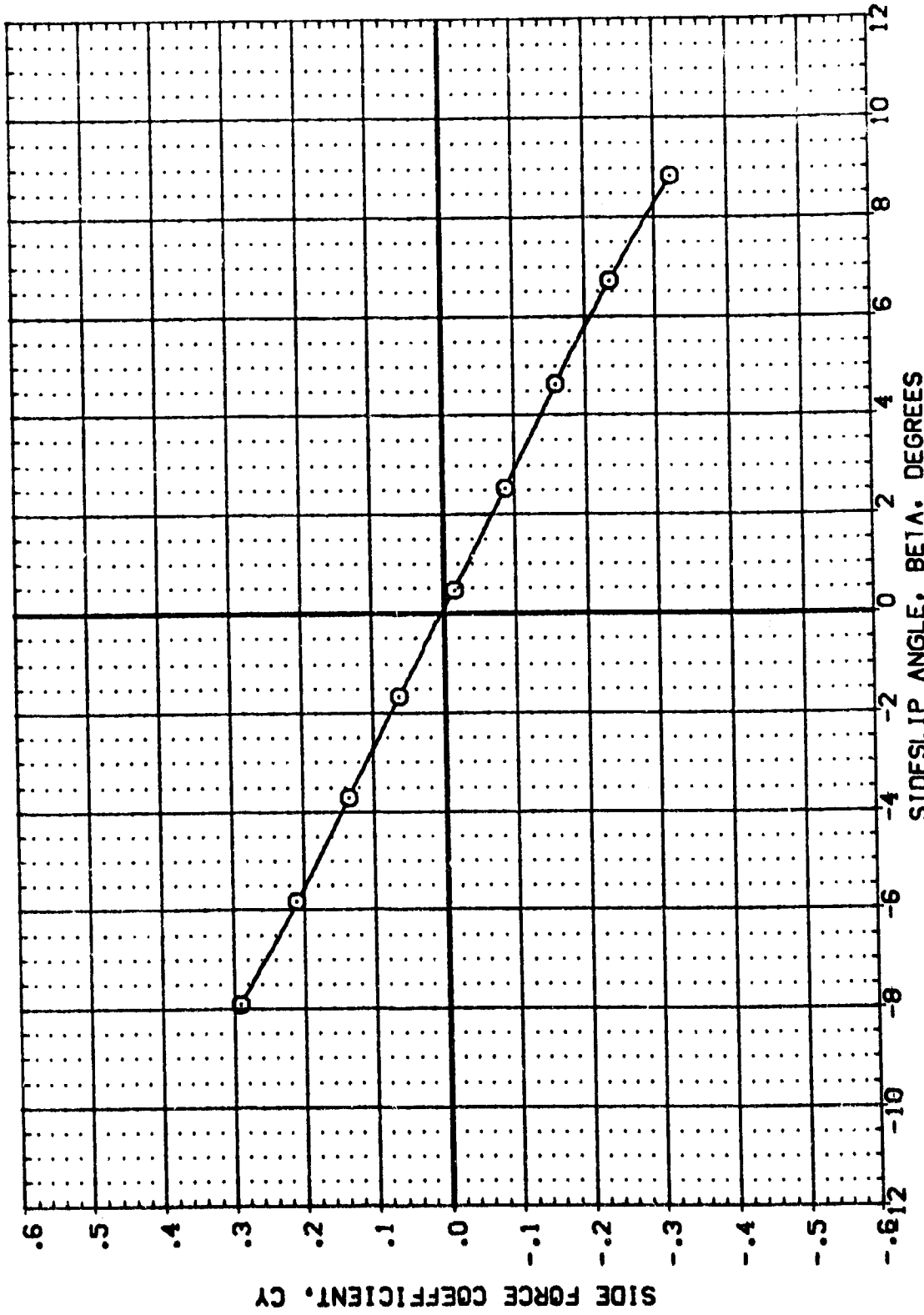


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSFC 579(1A37) (034)(114)(S12)(U6)
 (888010) DATA NOT AVAILABLE
 (888012) DATA NOT AVAILABLE
 (888008) DATA NOT AVAILABLE

ALPHA ORBINC
 .000 .000
 -5.000 .000
 5.000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BRFP 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



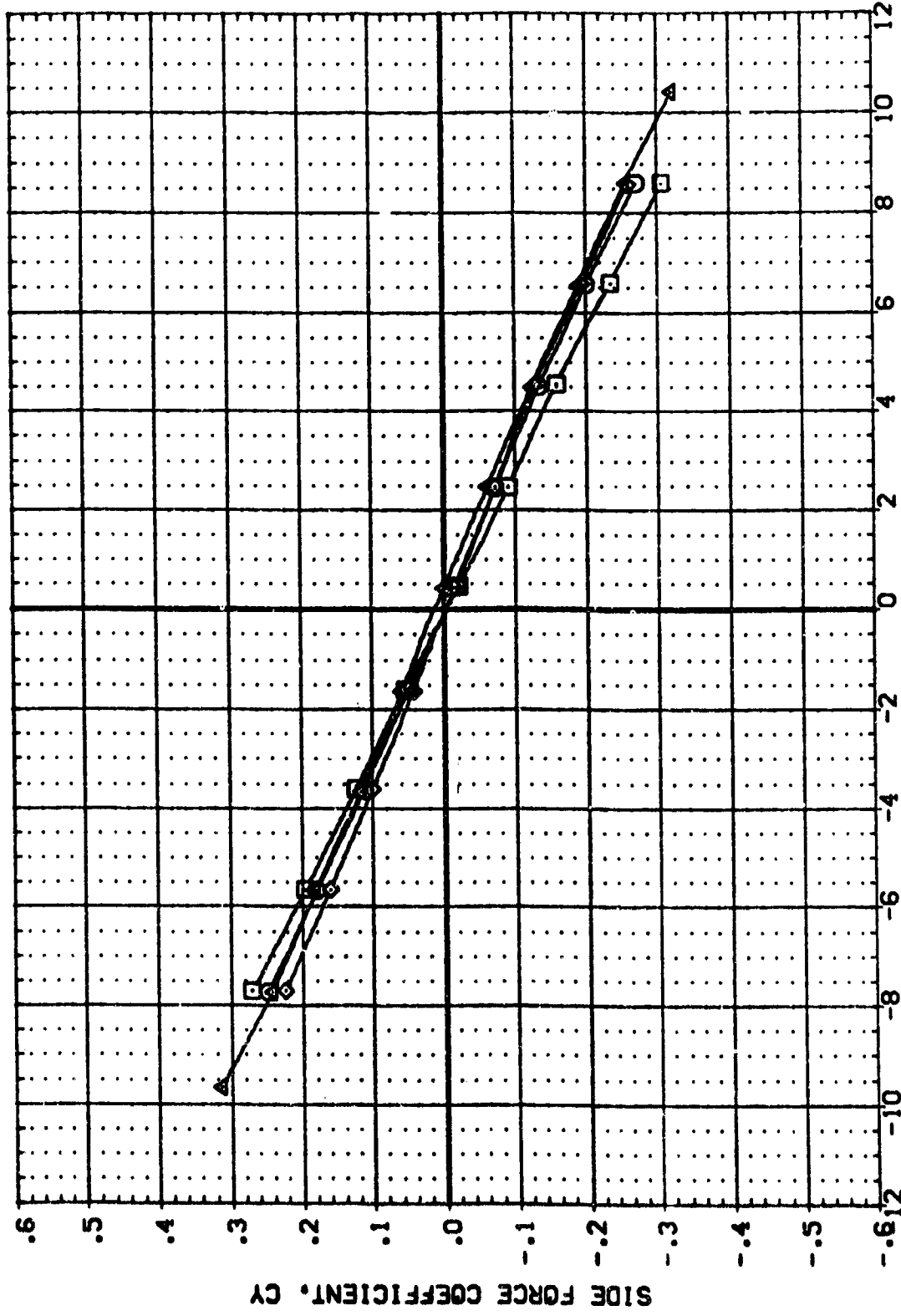
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(1)MACH = 3.48

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7000 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B86011) MSC 579(IA37) (034)(I14)(S12)(U6)
 (B86010) MSC 579(IA37) (034)(I14)(S12)(U6)
 (B86012) MSC 579(IA37) (034)(I14)(S12)(U6)
 (B86009) MSC 579(IA37) (034)(I19)(S12)

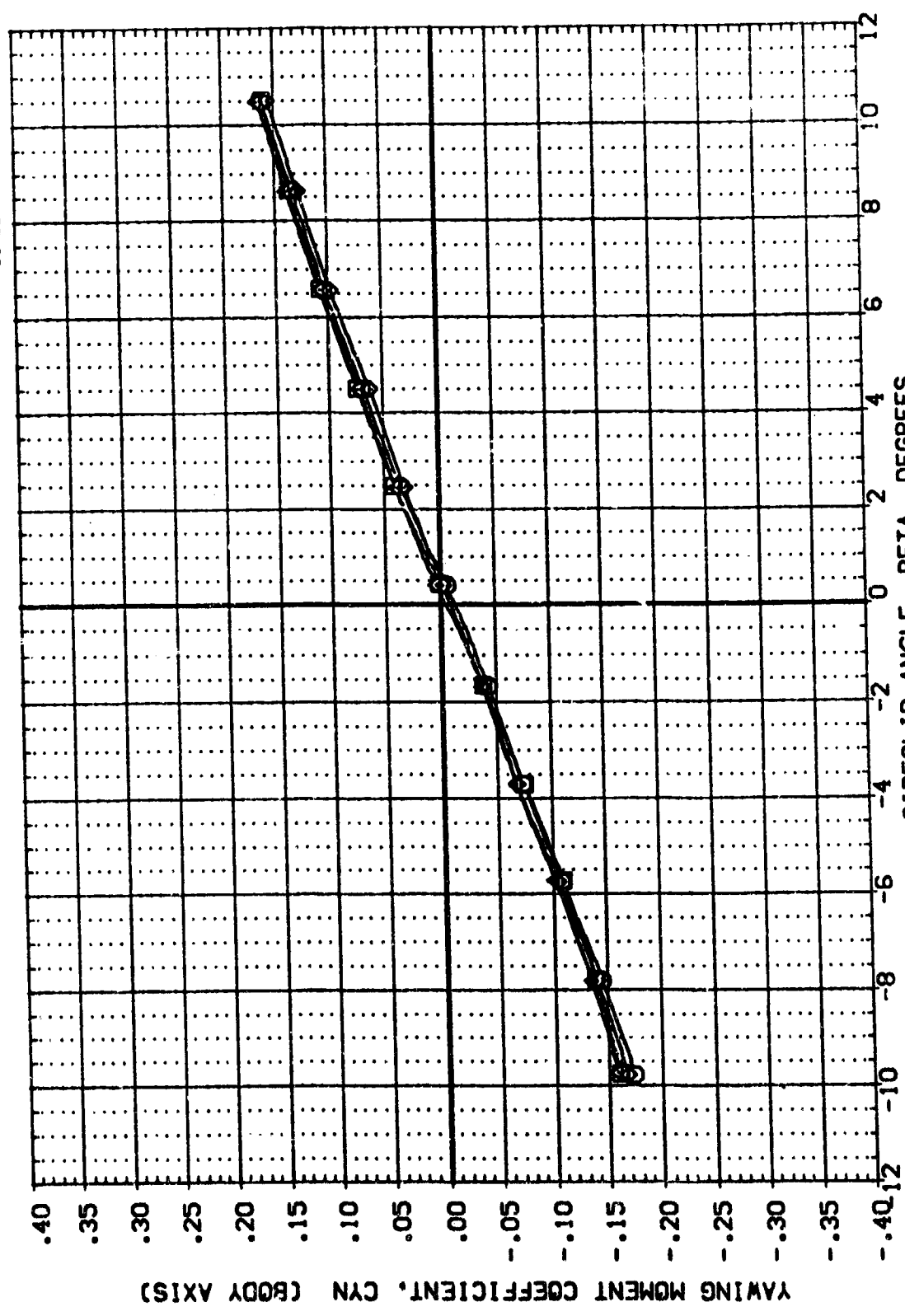


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.1980 SO.IN.
 LREF 5.1600 IN.
 MREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 ORBINC .000
 .000
 -5.000
 5.000
 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (B88011) H5FC 579(IA37) (034)(T14)(S12)(U6)
 (B88010) H5FC 579(IA37) (034)(T14)(S12)(U6)
 (B88012) H5FC 579(IA37) (034)(T14)(S12)(U6)
 (B88008) H5FC 579(IA37) (034)(T19)(S12)



SIDESLIP ANGLE, BETA, DEGREES
 EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (A)MACH = .60
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DATA SET SYMBOL: (B88011) (B88010) (B88012) (B88008)

CONFIGURATION DESCRIPTION: MSC 579(1A37) (03A)(T14)(S12)(U6)

DATA NOT AVAILABLE

DATA NOT AVAILABLE

DATA NOT AVAILABLE

ALPHA: .000, .000, .000, .000

DRBINC: .000, .000, .000, .000

REFERENCE INFORMATION:

SREF: 6.1960 SQ. IN.

LREF: 5.1600 IN.

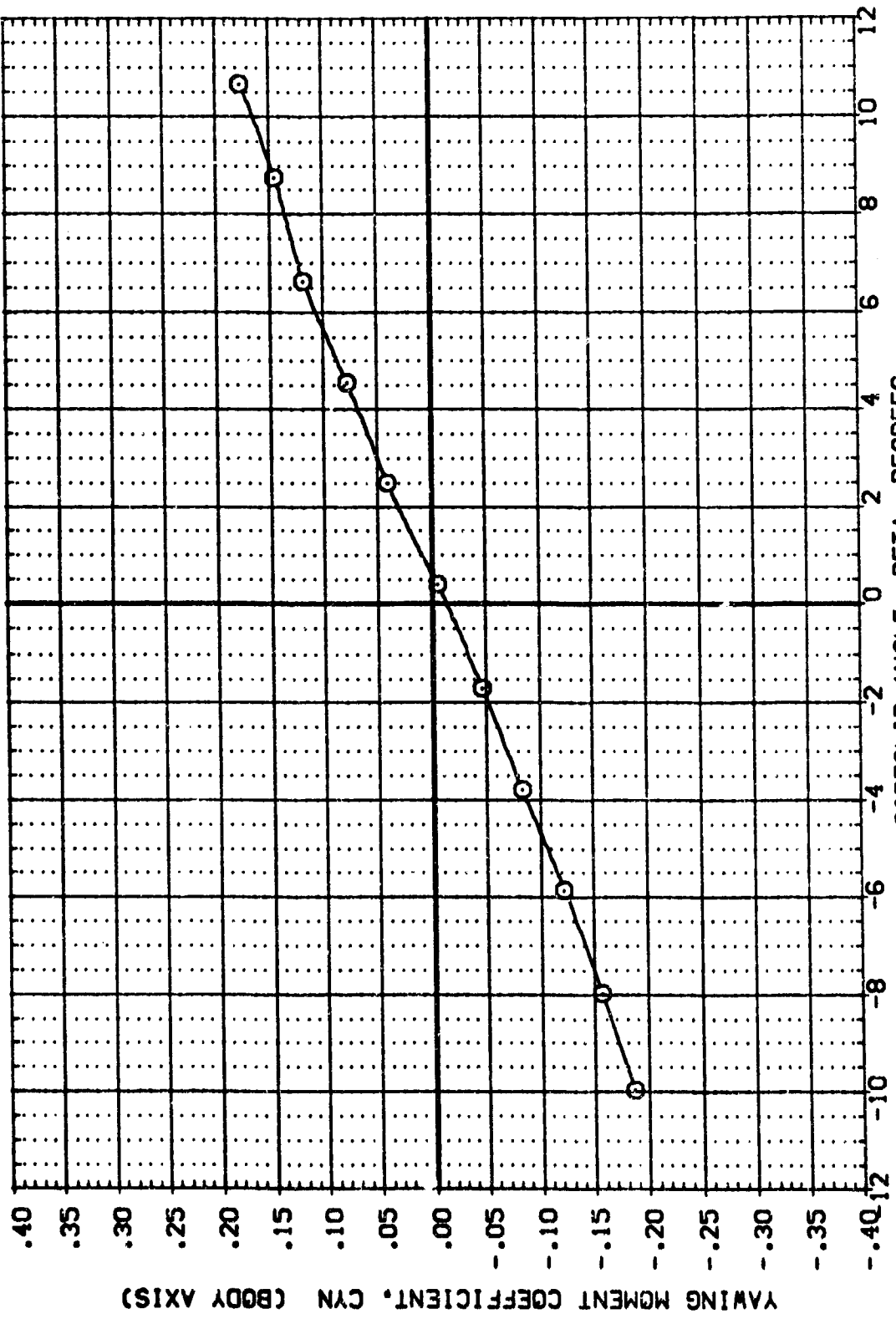
BREF: 5.1600 IN.

XMRP: 2.7200 IN.

YMRP: .0000 IN.

ZMRP: .0000 IN.

SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

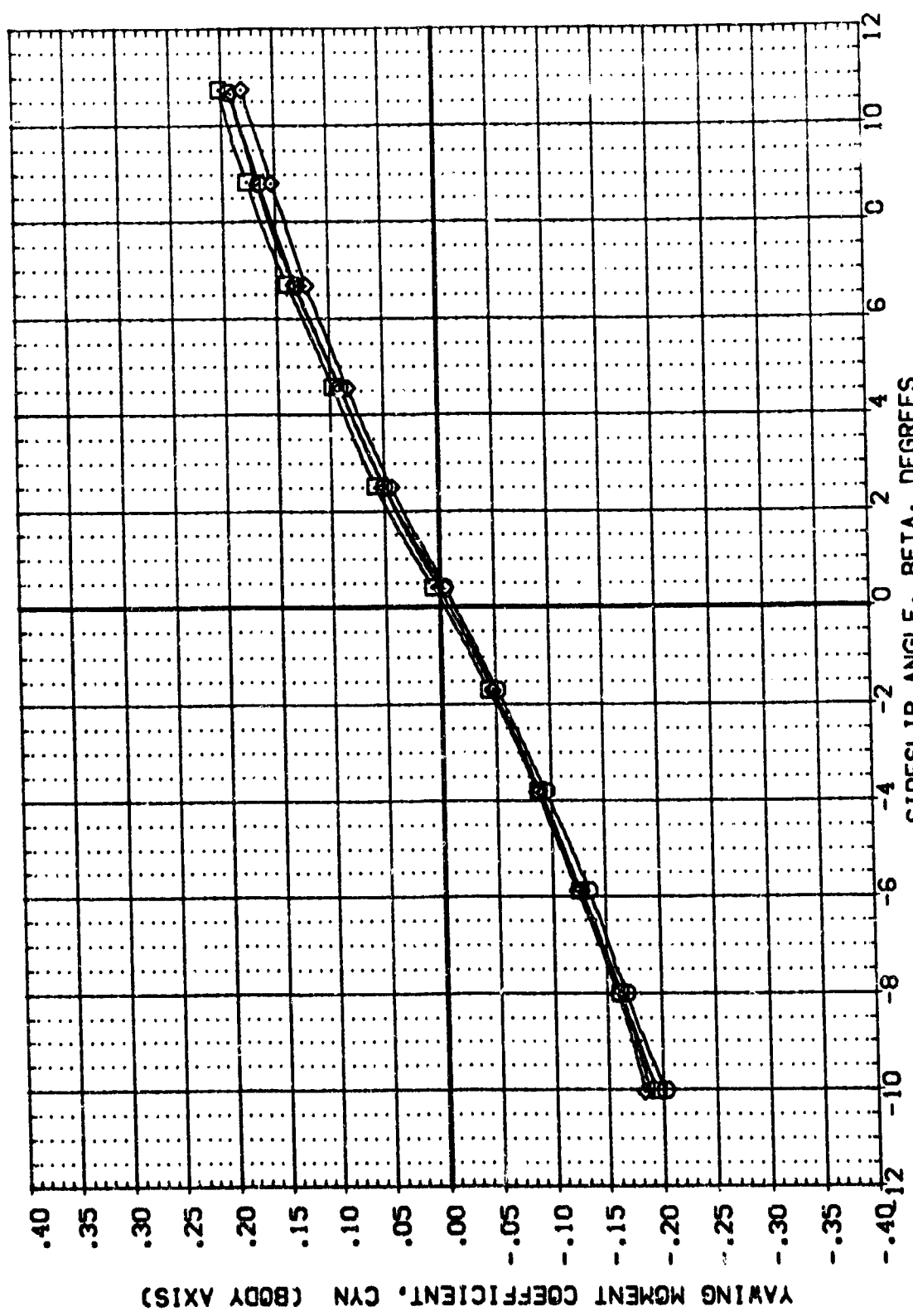
(B)MACH = .80

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REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP 0.300 IN.
 SCALE .0340

ALPHA 0.000
 ORBINC 0.000
 -5.000
 5.000
 .003
 .003

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (889011) MSFC 579(A37) (034)(114)(S12)(U6)
 (889010) MSFC 579(A37) (034)(114)(S12)(U6)
 (889012) MSFC 579(A37) (034)(114)(S12)(U6)
 (889008) MSFC 579(A37) (034)(119)(S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (C)MACH = .89
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DATA SET SYMBOL: (888011) (888010) (888017) (888006)

CONFIGURATION DESCRIPTION: NSFC 579(1A37) (024)(T14)(S12)(U6)

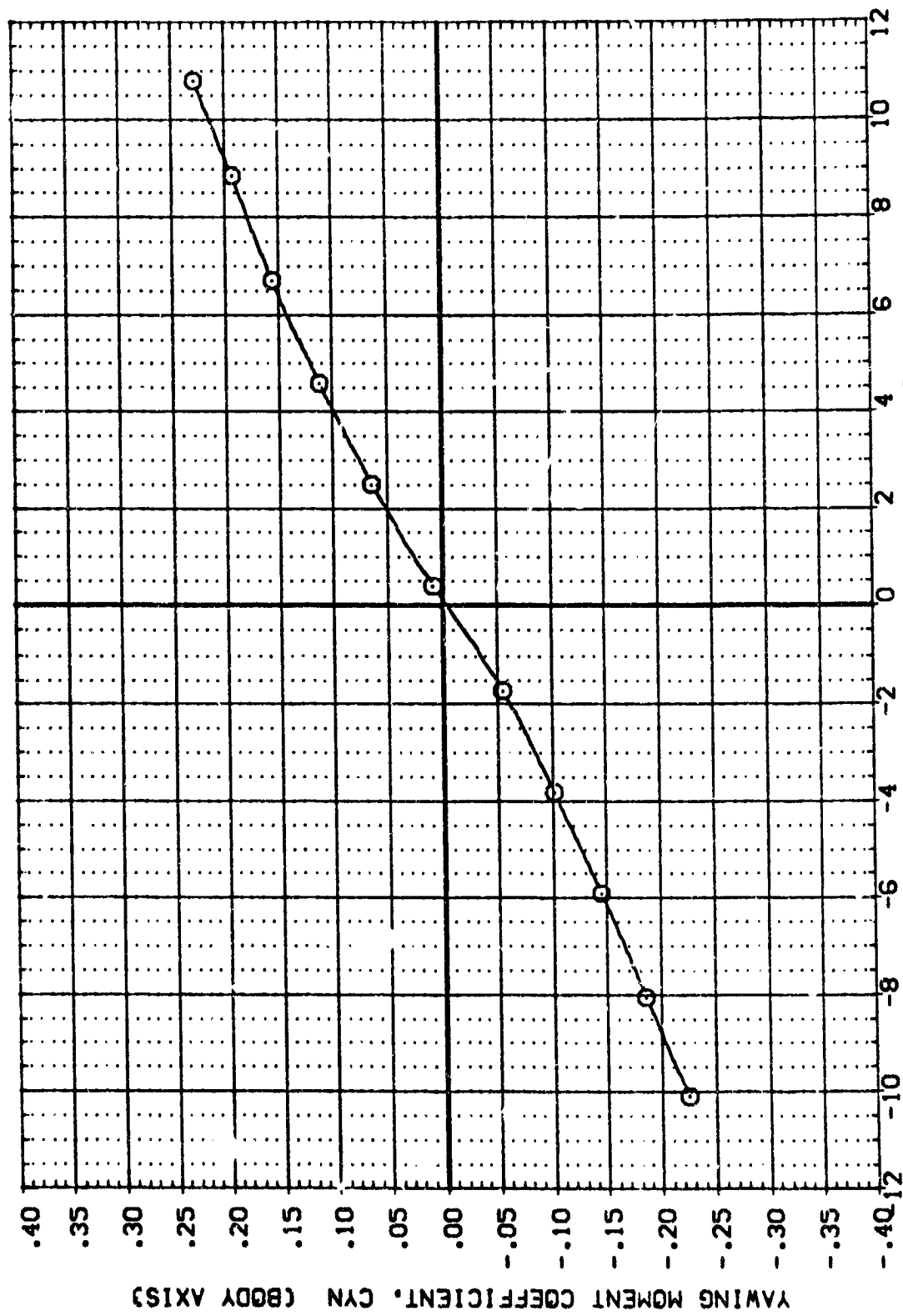
DATA NOT AVAILABLE

DATA NOT AVAILABLE

DATA NOT AVAILABLE

ALPHA ORBINC: .000 .000 .000 .000

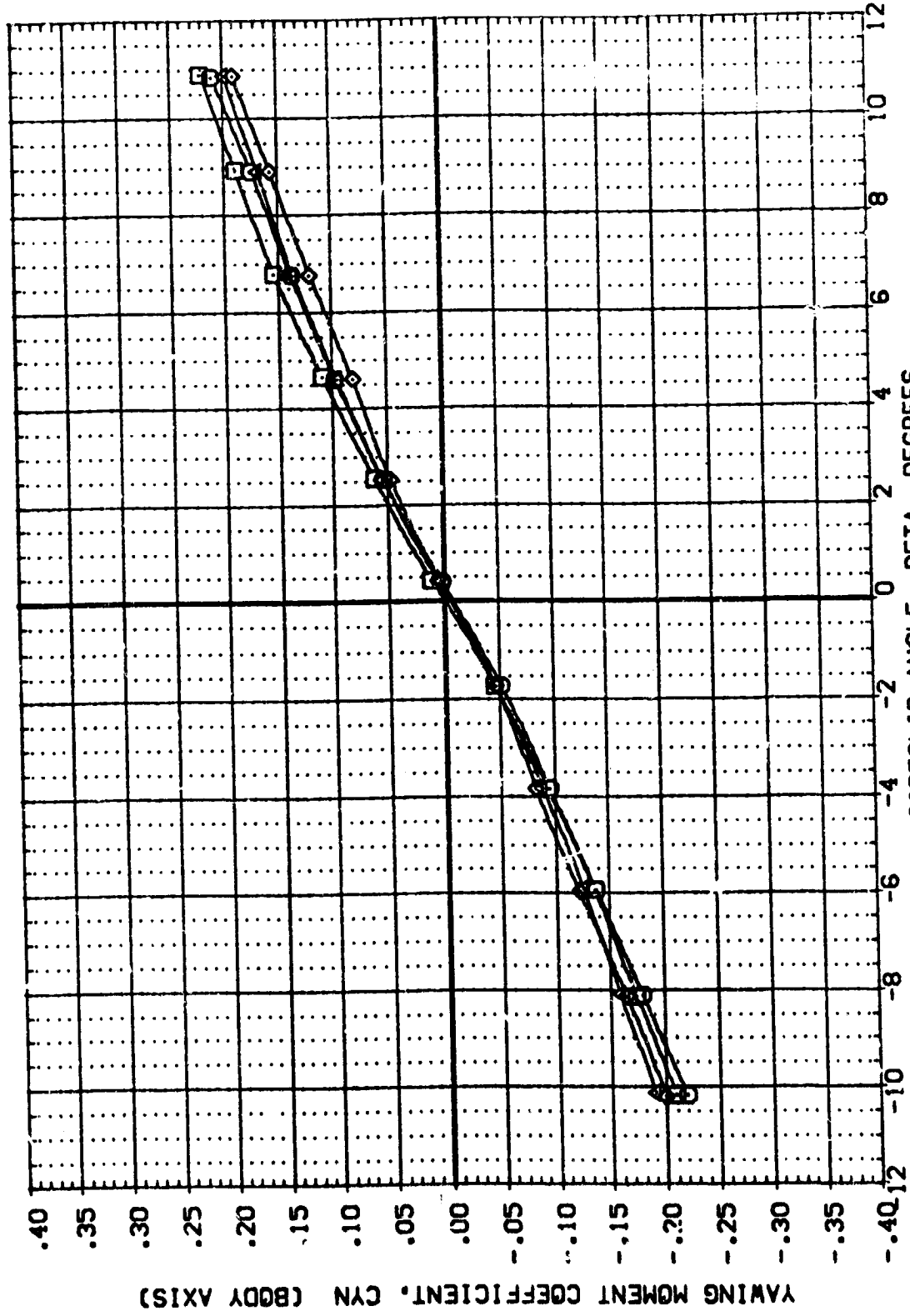
REFERENCE INFORMATION: SREF 6.1980 SQ. IN. LREF 5.1600 IN. BREF 5.1600 IN. XMRP 2.7200 IN. YMRP .0000 IN. ZMRP .0000 IN. SCALE .0040



REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1300 IN.
 XPRP 2.7270 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000
 -5.000
 5.000
 .000
 .000
 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (B86011) MSC 579 (A37) (034)(114)(5)(2)(US)
 (B86010) MSC 579 (A37) (034)(114)(5)(2)(US)
 (B86012) MSC 579 (A37) (034)(114)(5)(2)(US)
 (B86008) MSC 579 (A37) (034)(119)(5)(2)



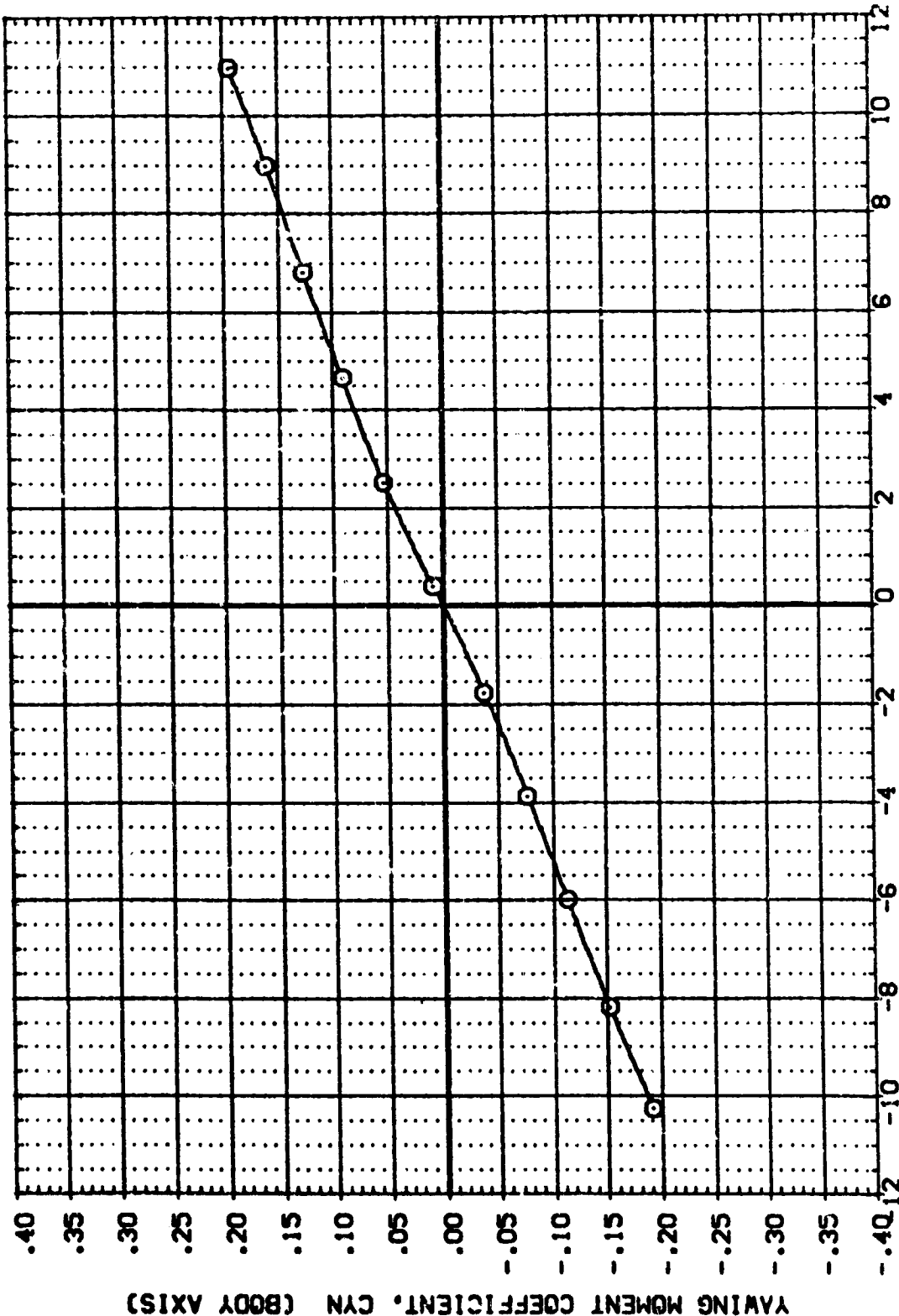
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (E)MACH = 1.10
 PAGE 94



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) MFC 579(1A37) (G04)(T14)(S12)(L8)
 (B88010) DATA NOT AVAILABLE
 (B88012) DATA NOT AVAILABLE
 (B88008) DATA NOT AVAILABLE

ALPHA ORBING
 .000 .000
 -5.000 .000
 5.000 .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

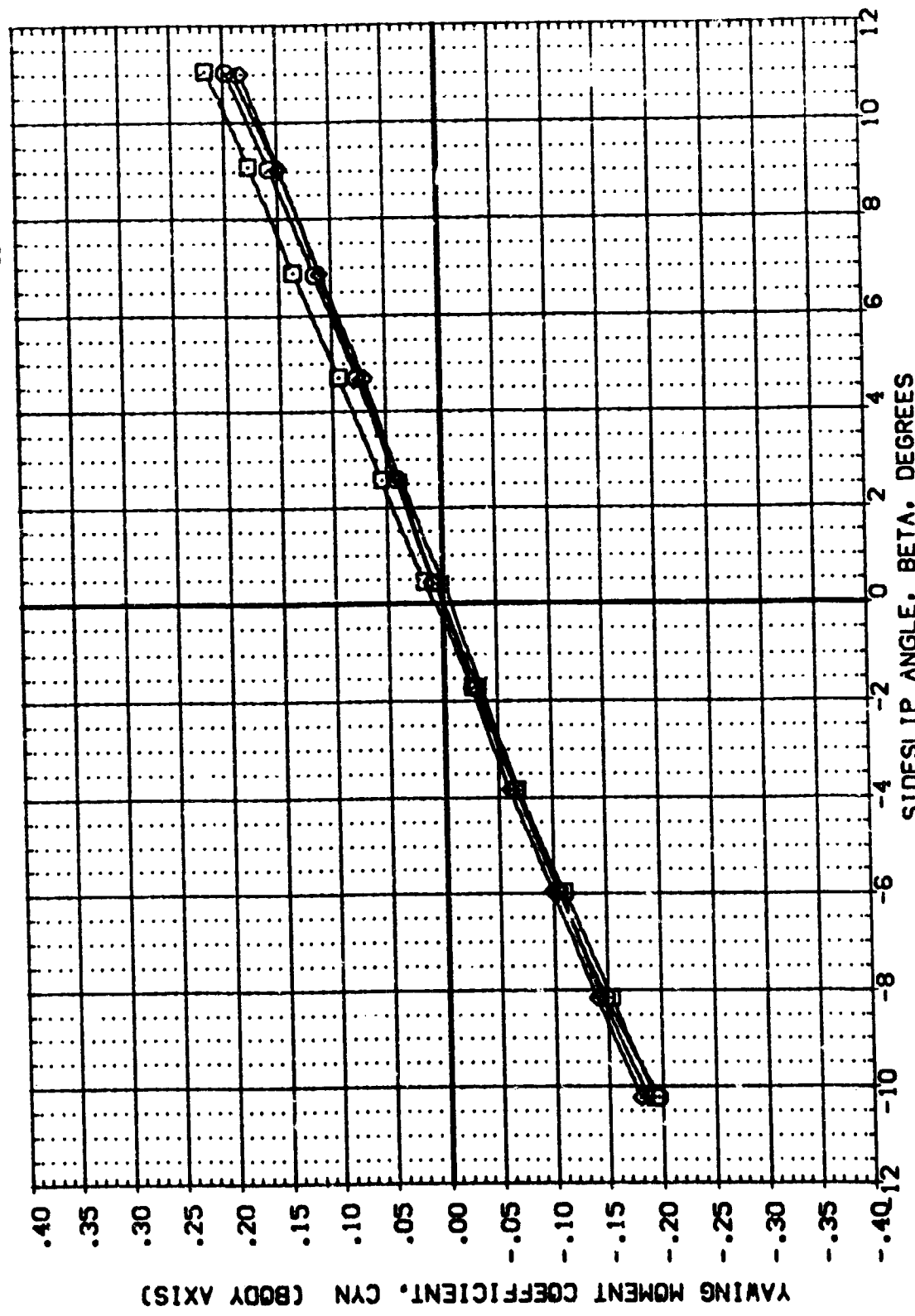


EFFECT OF ATTACH STRUCTURE AND PROTRUSANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (F)MACH = 1.20 PAGE 95

REFERENCE INFORMATION
 SREF 6.1980 SO. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010

ALPHA 0.8130
 .000
 .000
 -5.000
 -5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) MSFC 579(A37) (034)(T14)(S12)(U6)
 (B88010) MSFC 579(A37) (034)(T14)(S12)(U6)
 (B88012) MSFC 579(A37) (034)(T14)(S12)(U6)
 (B88008) MSFC 579(A37) (034)(T9)(S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

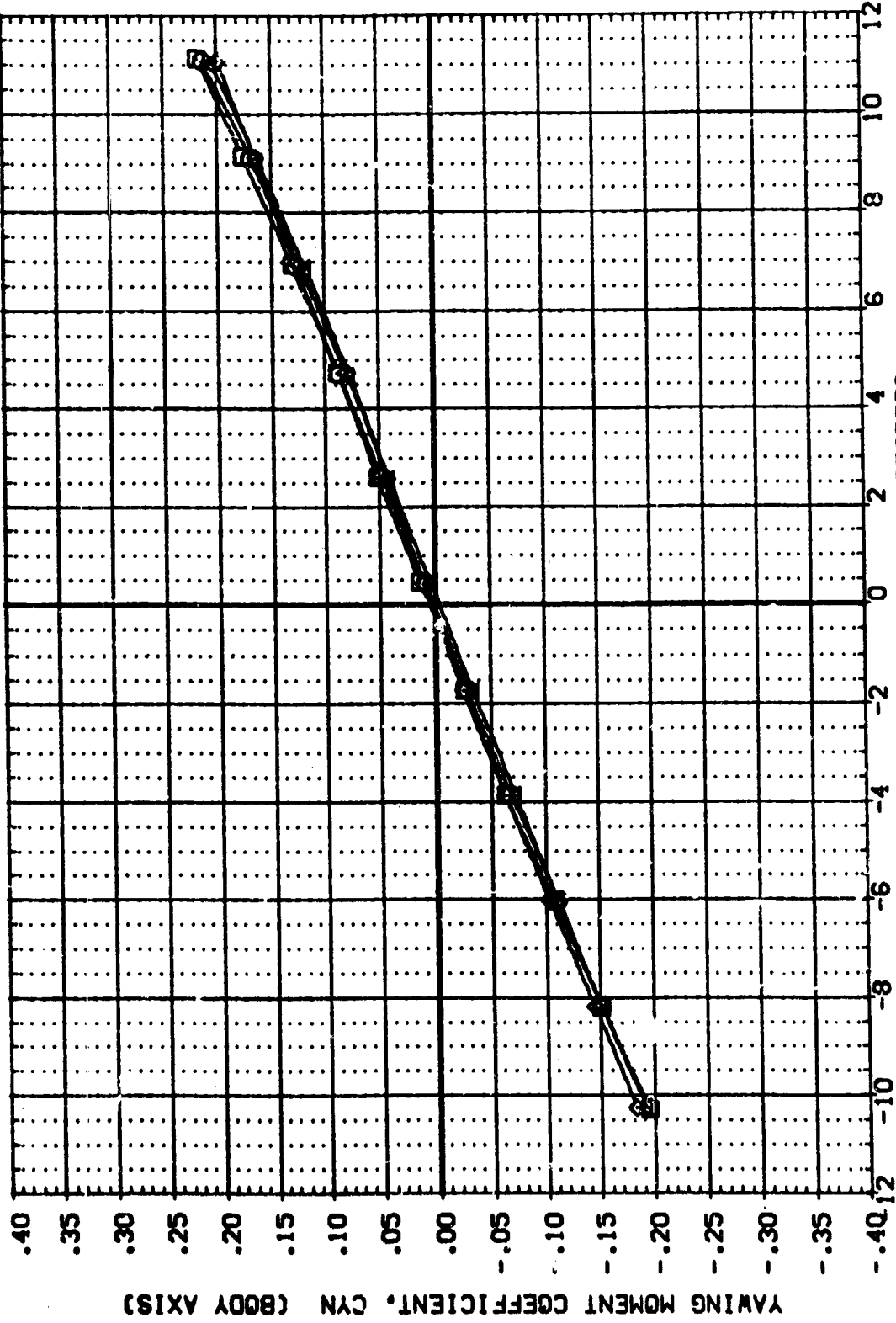
(G)MACH = 1.46



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (886011) MSC 579(A37) (034)(T14)(S12)(US)
 (886010) MSC 579(A37) (034)(T14)(S12)(US)
 (886012) MSC 579(A37) (034)(T14)(S12)(US)
 (886008) MSC 579(A37) (034)(T14)(S12)(US)

ALPHA 0.000
 0.000
 -5.000
 5.000
 0.000
 0.000
 0.000
 0.000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1800 IN.
 BREF 5.1800 IN.
 XPRP 2.7250 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

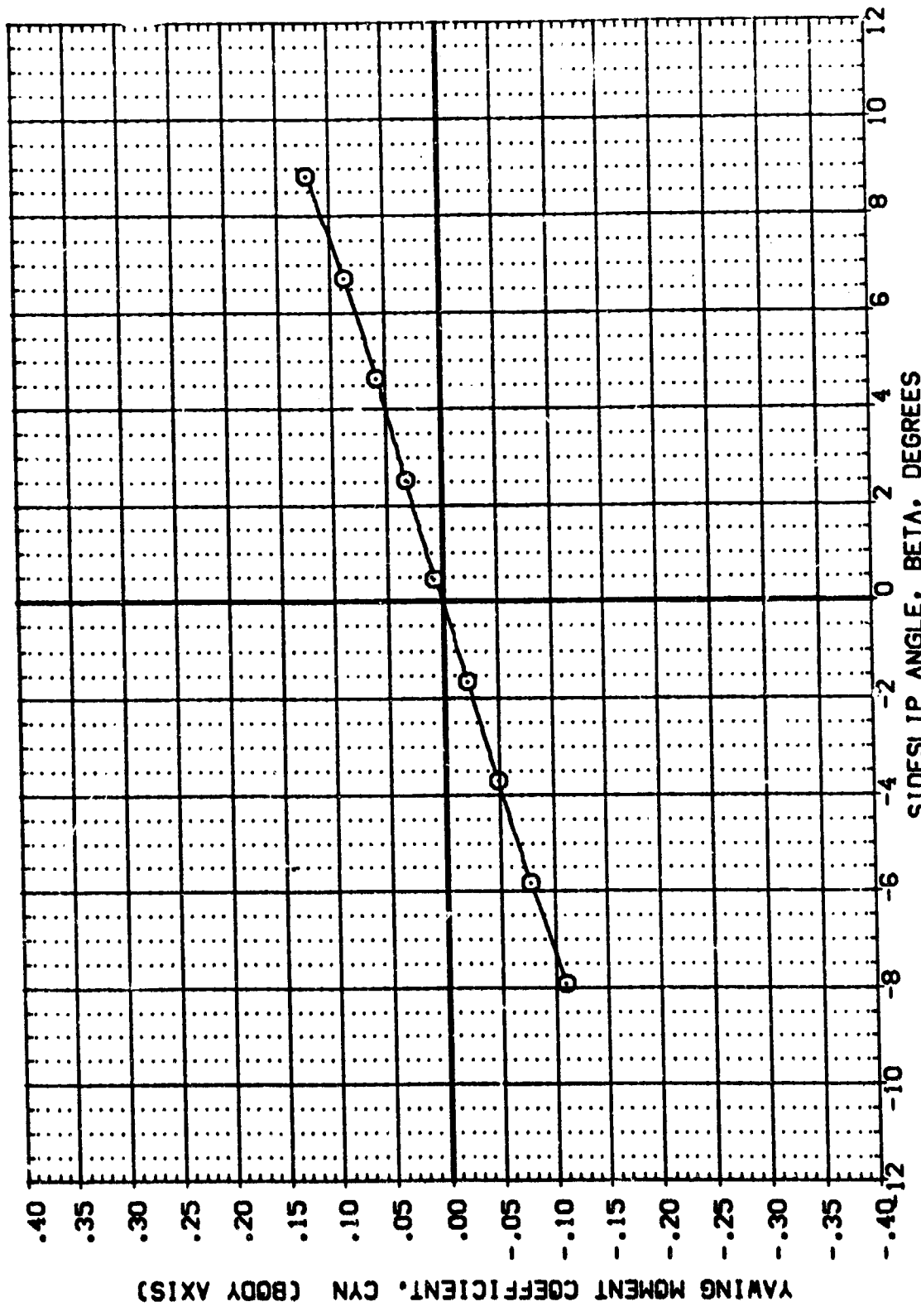


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.198C SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

ALPHA CRBINC
 .000
 .000
 -5.000
 5.000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) MSC 579(1A37) (C34)(T14)(S12)(U6)
 (B88010) DATA NOT AVAILABLE
 (L88012) DATA NOT AVAILABLE
 (B88008) DATA NOT AVAILABLE



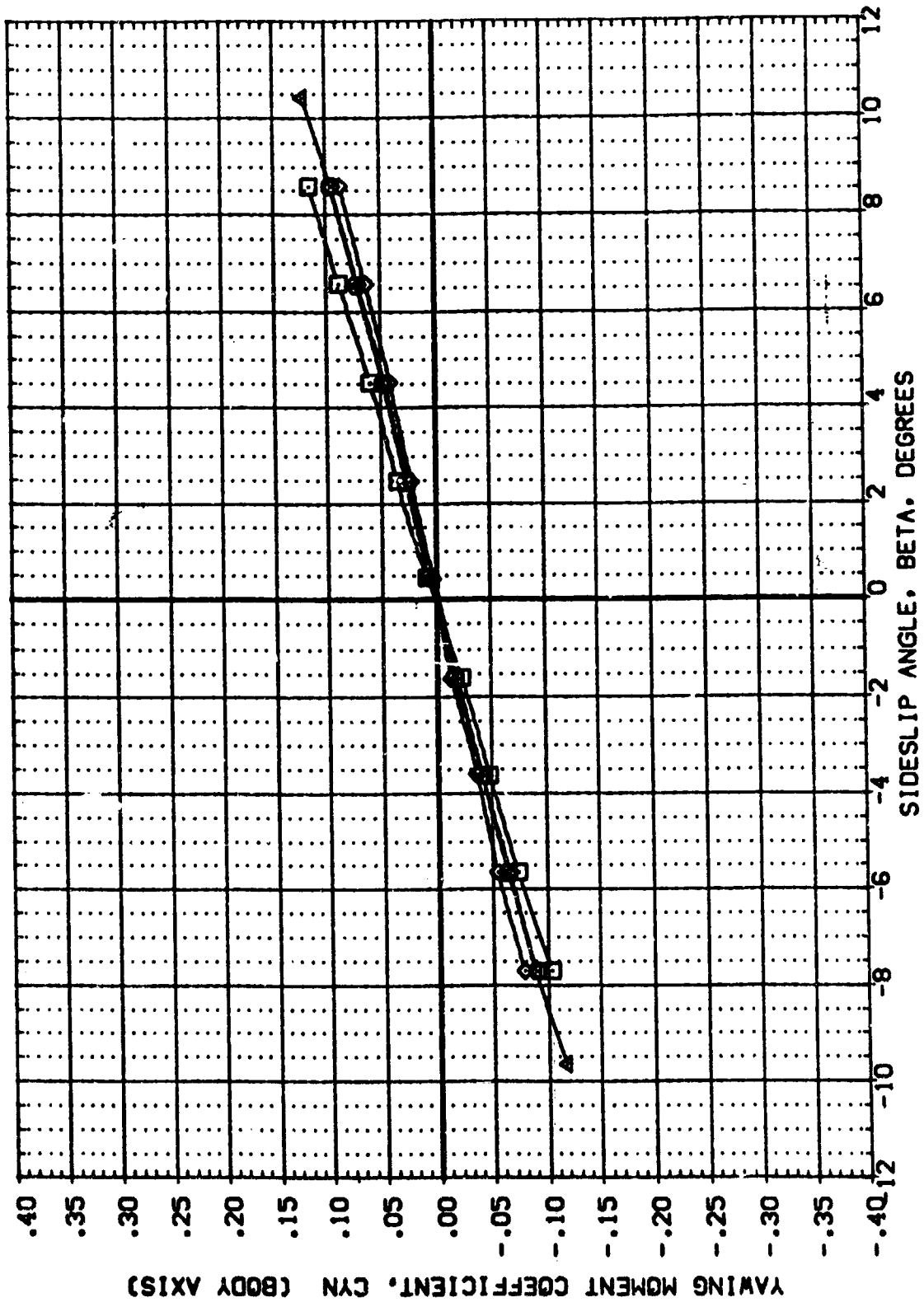
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (1)MACH = 3.48
 PAGE 98



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSC 579(1A37) (034)(T14)(S12)(US)
 (888010) MSC 579(1A37) (034)(T14)(S12)(US)
 (888012) MSC 579(1A37) (034)(T14)(S12)(US)
 (888008) MSC 579(1A37) (034)(T9)(S12)

ALPHA ORIGIN
 .000 .000
 -5.000 .000
 5.000 .000

REFERENCE INFORMATION
 SREF 6.1960 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YPRP 2.7200 IN.
 ZPRP .0000 IN.
 SCALE .0040



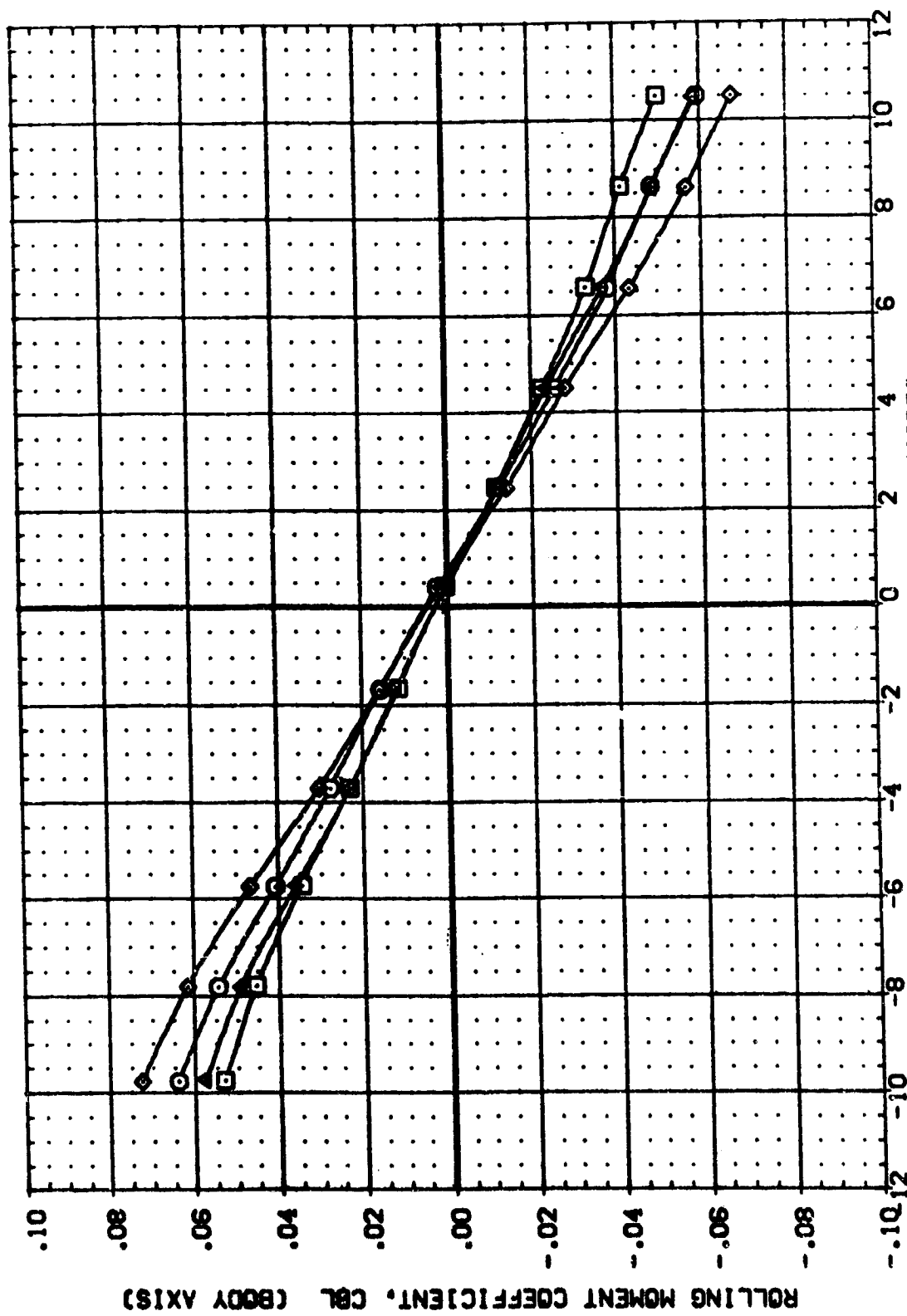
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(J)MACH = 4.96

REFERENCE INFORMATION
 SREF 6.1580 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA .000
 .000
 -5.000
 5.000
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) H5FC 579(1A37) (034)(T14)(S12)(U6)
 (888010) H5FC 579(1A37) (034)(T14)(S12)(U6)
 (888012) H5FC 579(1A37) (034)(T14)(S12)(U6)
 (888008) H5FC 579(1A37) (034)(T19)(S12)



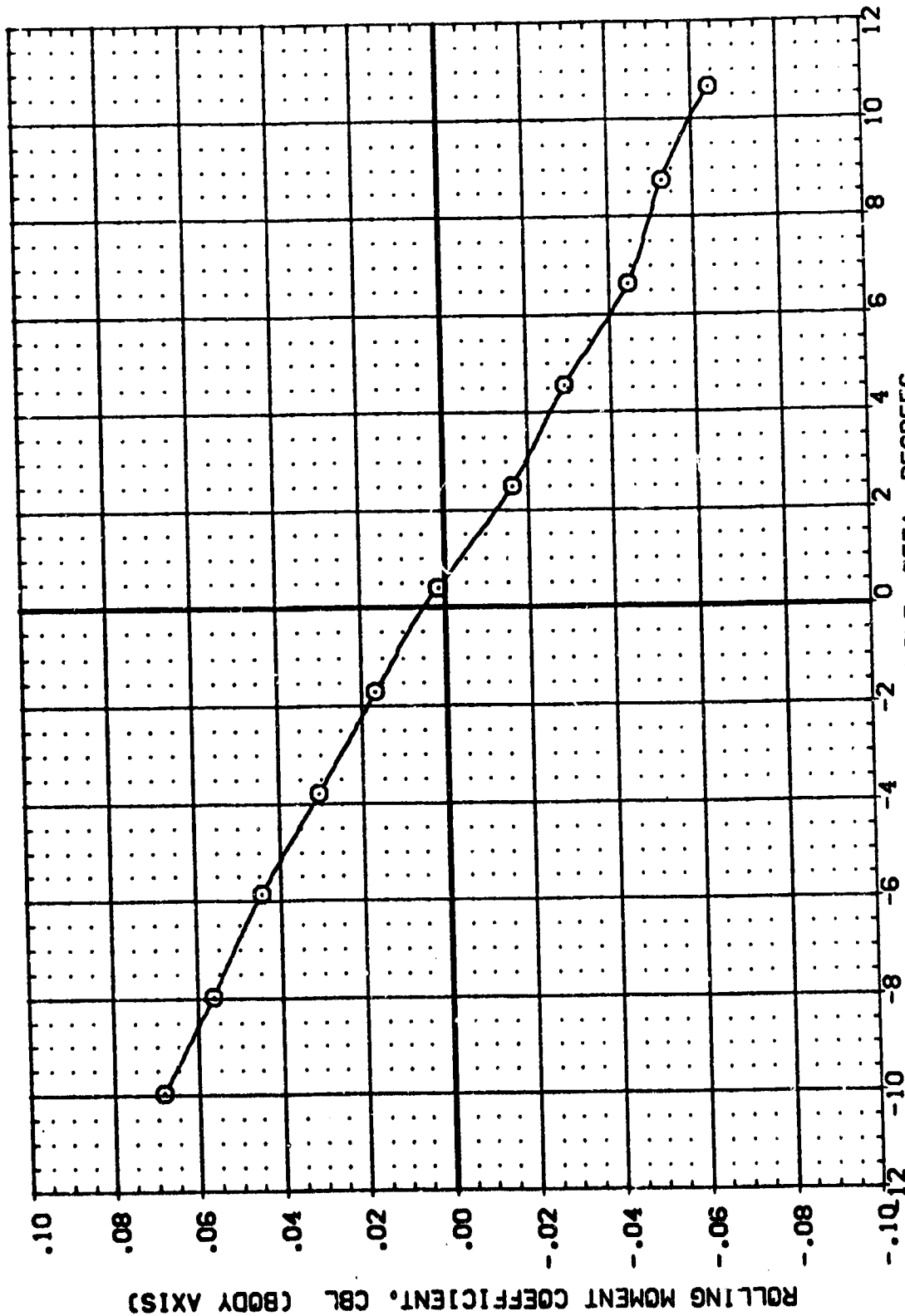
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (A)MACH = .60
 PAGE 100



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B86011) MSCC 579(1A37) (024)(114)(S12)(US)
 (B86010) DATA NOT AVAILABLE
 (B86012) DATA NOT AVAILABLE
 (B86008) DATA NOT AVAILABLE

ALPHA ORBITING
 .000
 .000
 -5.000
 5.000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 7.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)

SIDESLIP ANGLE, BETA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT CHARACTERISTICS (FIRST STAGE)

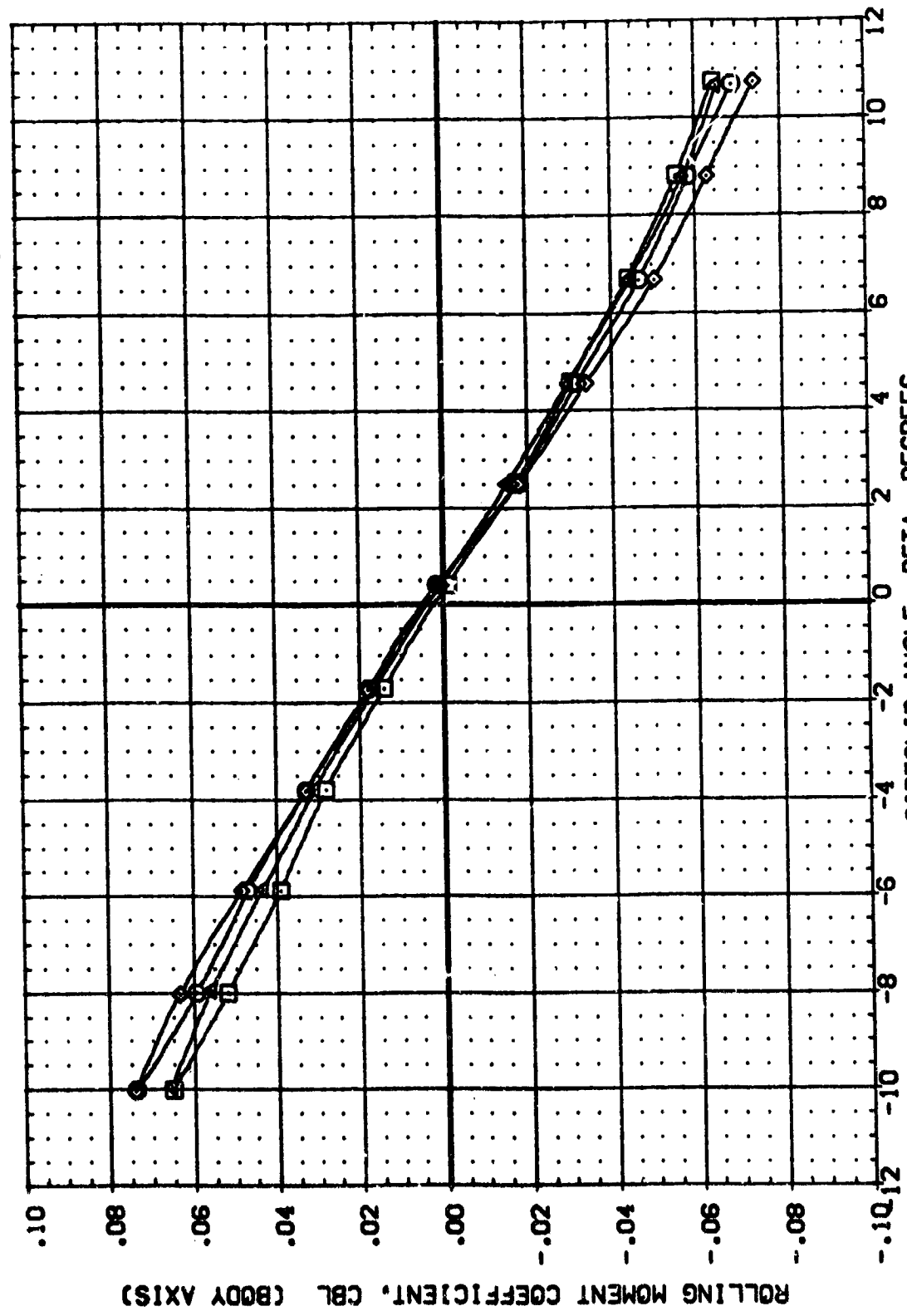
(B)MACH = .80

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REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000 .000
 -5.000 .000
 5.000 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (B88011) H5-C 579(IA37) (034)(T14)(S12)(U6)
 (B88010) H5-C 579(IA37) (034)(T14)(S12)(U6)
 (B88012) H5-C 579(IA37) (034)(T14)(S12)(U6)
 (B88008) H5-C 579(IA37) (034)(T9)(S12)



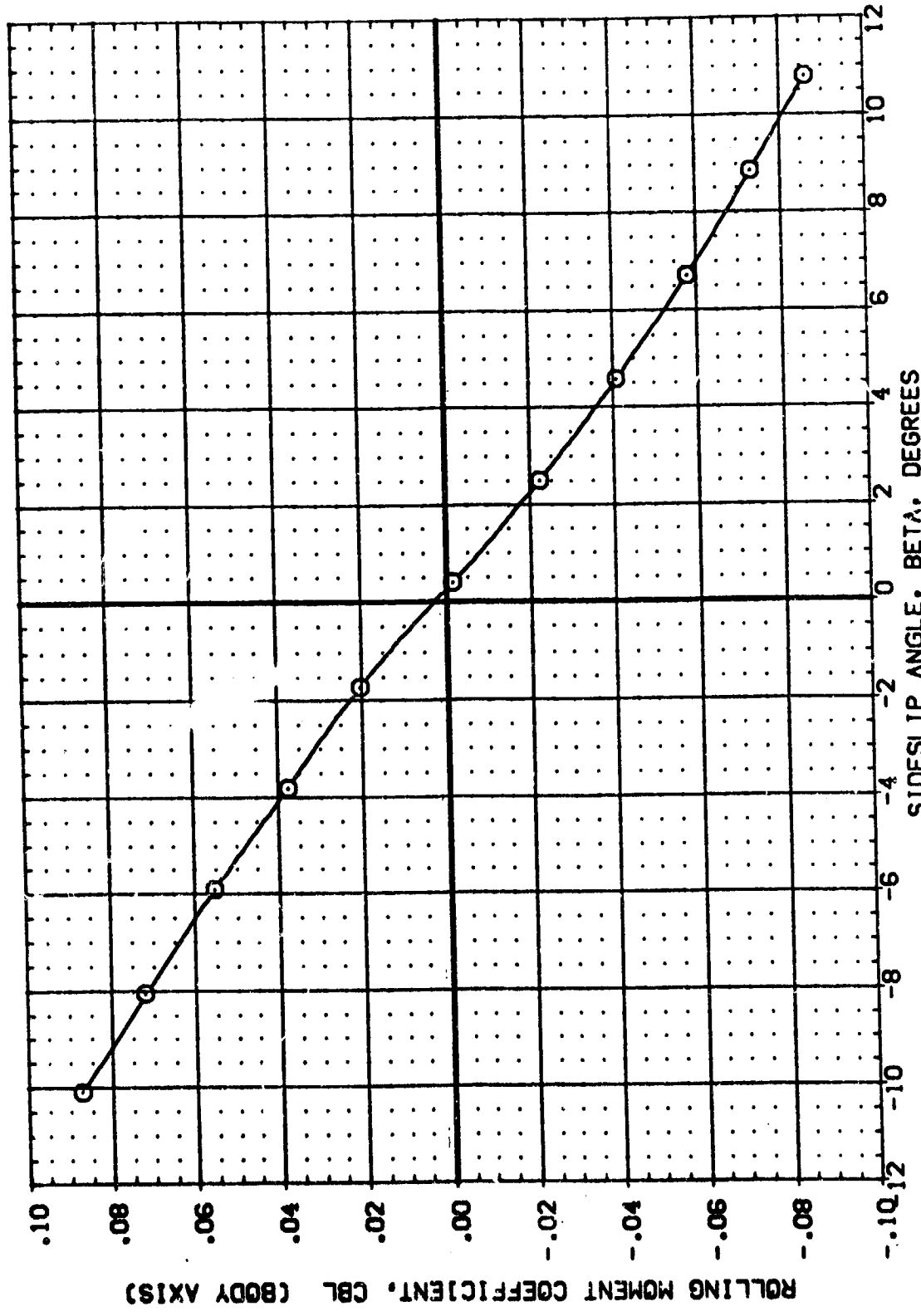
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (C)MACH = .89
 PAGE 102



REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA 0RB IN C
 .000 .000
 .000 .000
 -5.000 .000
 -5.000 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (889011) MSFC 579(1A37) (03A)(114)(S12)(US)
 (889010) DATA NOT AVAILABLE
 (889012) DATA NOT AVAILABLE
 (889008) DATA NOT AVAILABLE

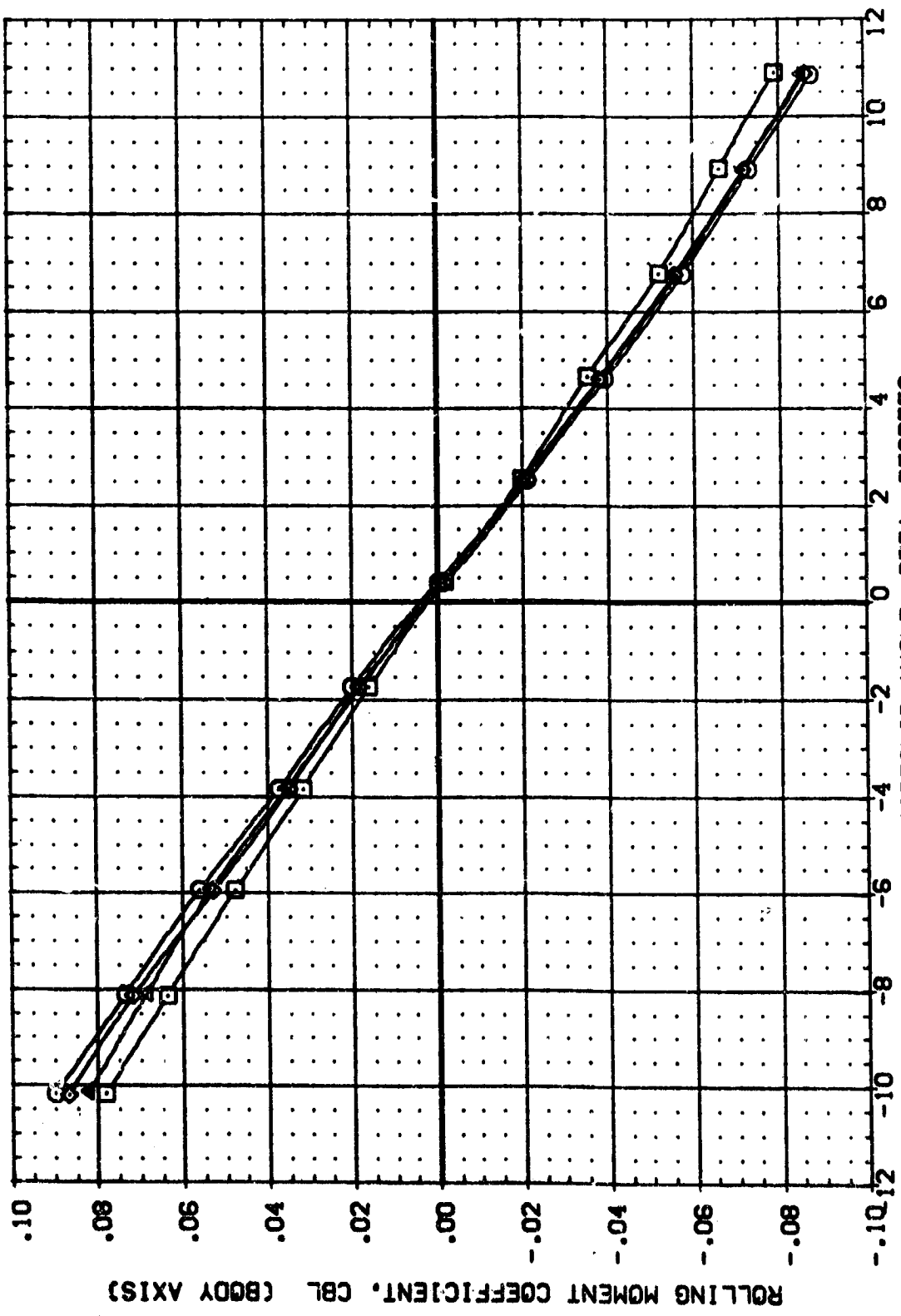


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSFC 579(A37) (034)(114)(S)(2)(U6)
 (888010) MSFC 579(A37) (034)(114)(S)(2)(U6)
 (888012) MSFC 579(A37) (034)(114)(S)(2)(U6)
 (888008) MSFC 579(A37) (034)(119)(S)(1?)

ALPHA ORBINC
 .000
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

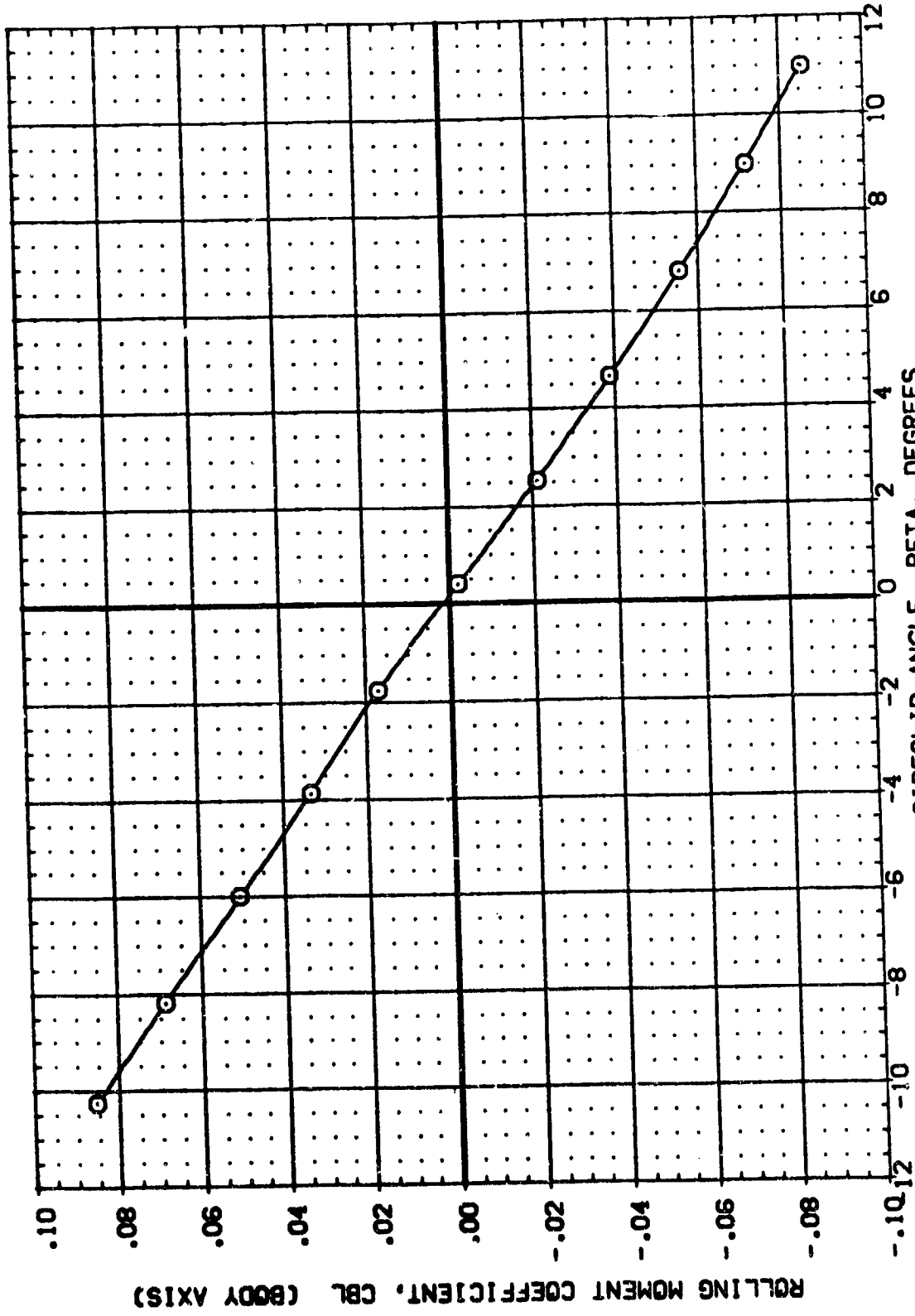


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (C)MACH = 1.10
 PAGE 104

REFERENCE INFORMATION
 SREF 6.1980 SC.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 0.000
 -5.000
 5.000
 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (847011) MSFC 5791 (A37) (094)(114)(S12)(US)
 (847010) DATA NOT AVAILABLE
 (886012) DATA NOT AVAILABLE
 (886008) DATA NOT AVAILABLE

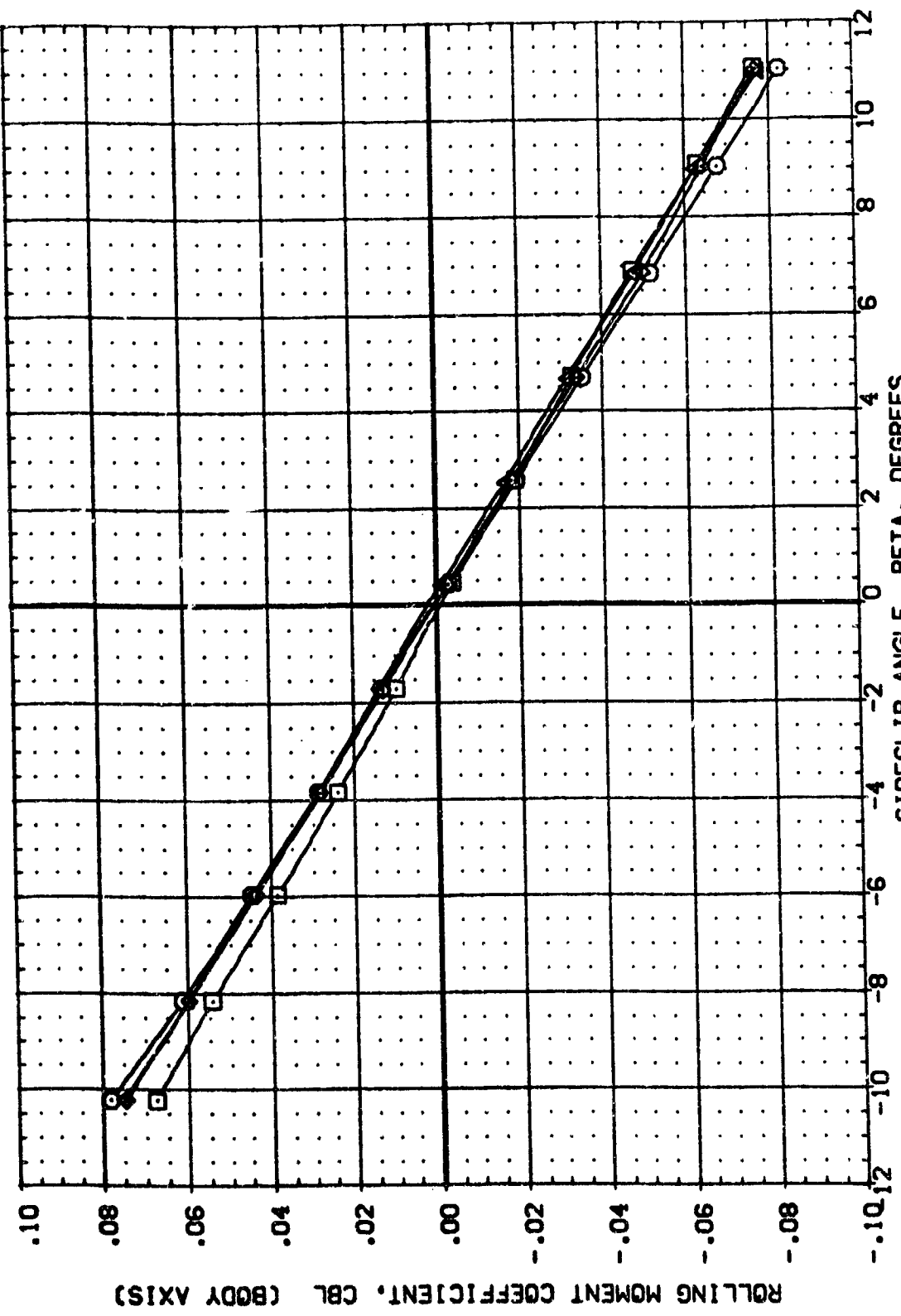


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (F)MACH = 1.20
 PAGE 105

REFERENCE INFORMATION
 SREF 6.1960 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

ALPHA 0.000
 ORBINC .000
 -5.000 .000
 5.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSFC 579(A37) (034)(T14)(S12)(U6)
 (888010) MSFC 579(A37) (034)(T14)(S12)(U6)
 (888012) MSFC 579(A37) (034)(T14)(S12)(U6)
 (888008) MSFC 579(A37) (034)(T9)(S12)



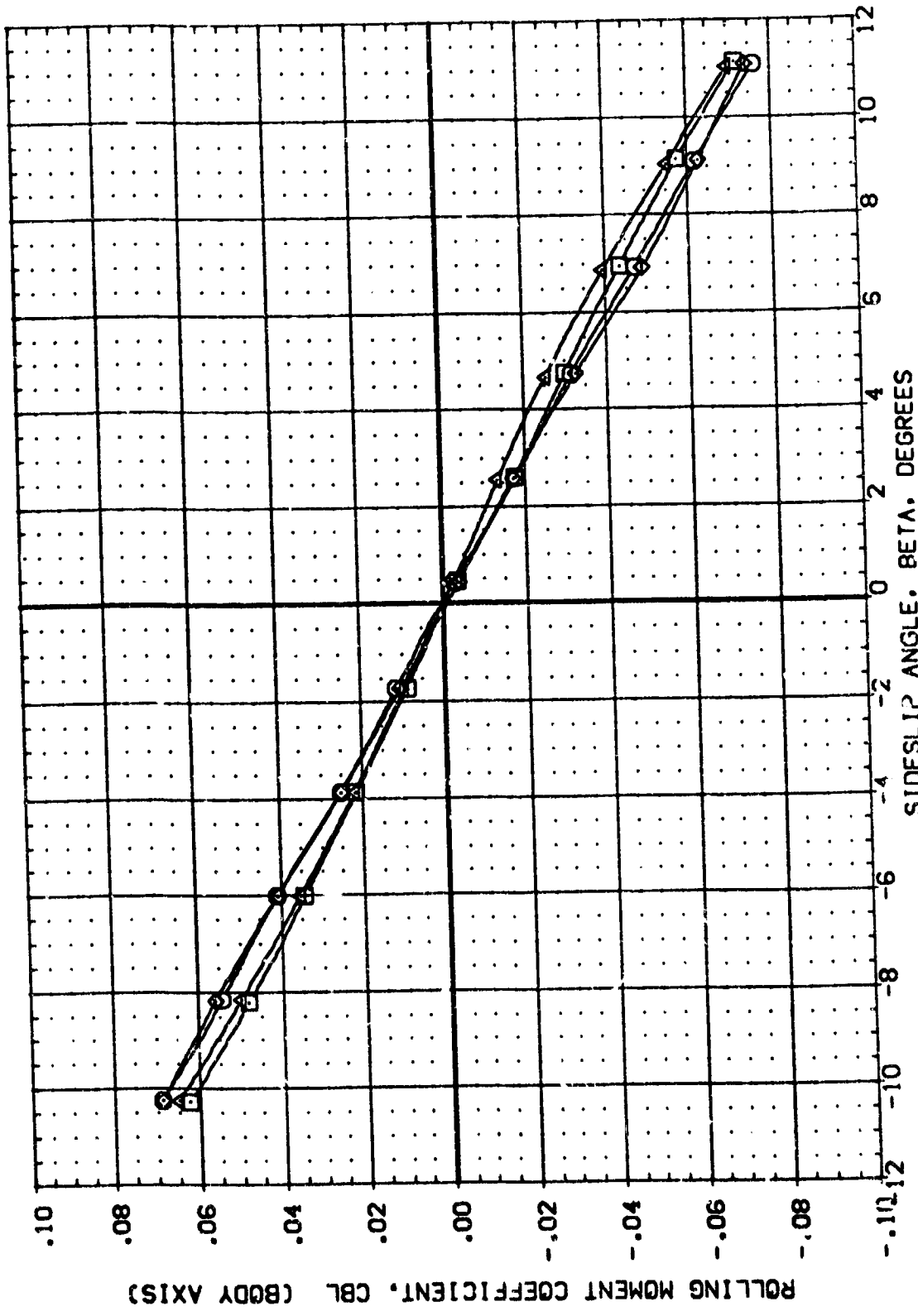
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)



REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040

ALPHA ORBINC
.000 .000
-5.000 .000
5.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(B88011) MSFC 579(A37) (034)(114)(S12)(US)
(B88010) MSFC 579(A37) (034)(114)(S12)(US)
(B88012) MSFC 579(A37) (034)(114)(S12)(US)
(B8800E) MSFC 579(A37) (034)(119)(S12)

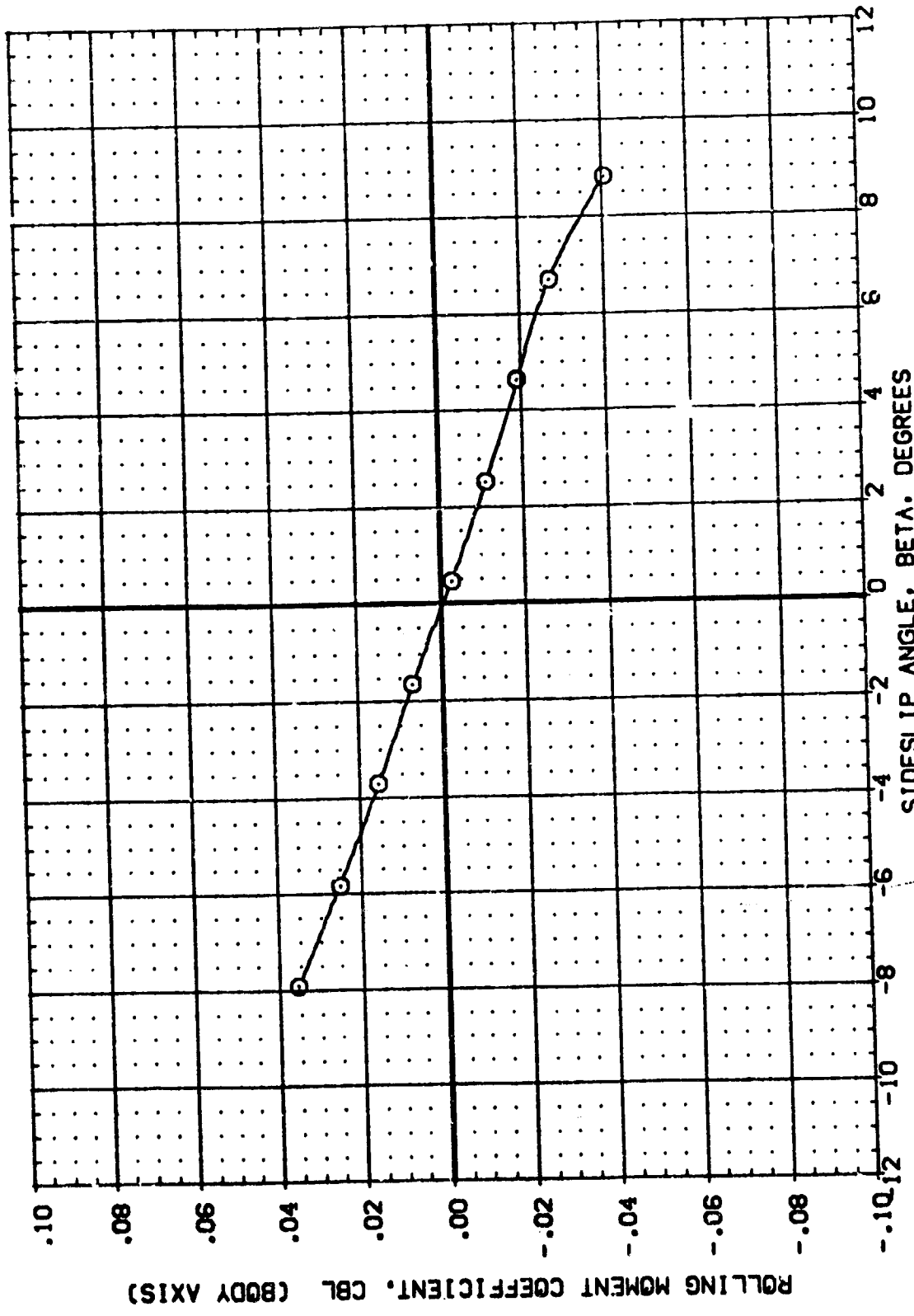


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040

ALPHA CRBINC
 .000
 .000
 .000
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
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 (E'9010) DATA NOT AVAILABLE
 (889012) DATA NOT AVAILABLE
 (889008) DATA NOT AVAILABLE

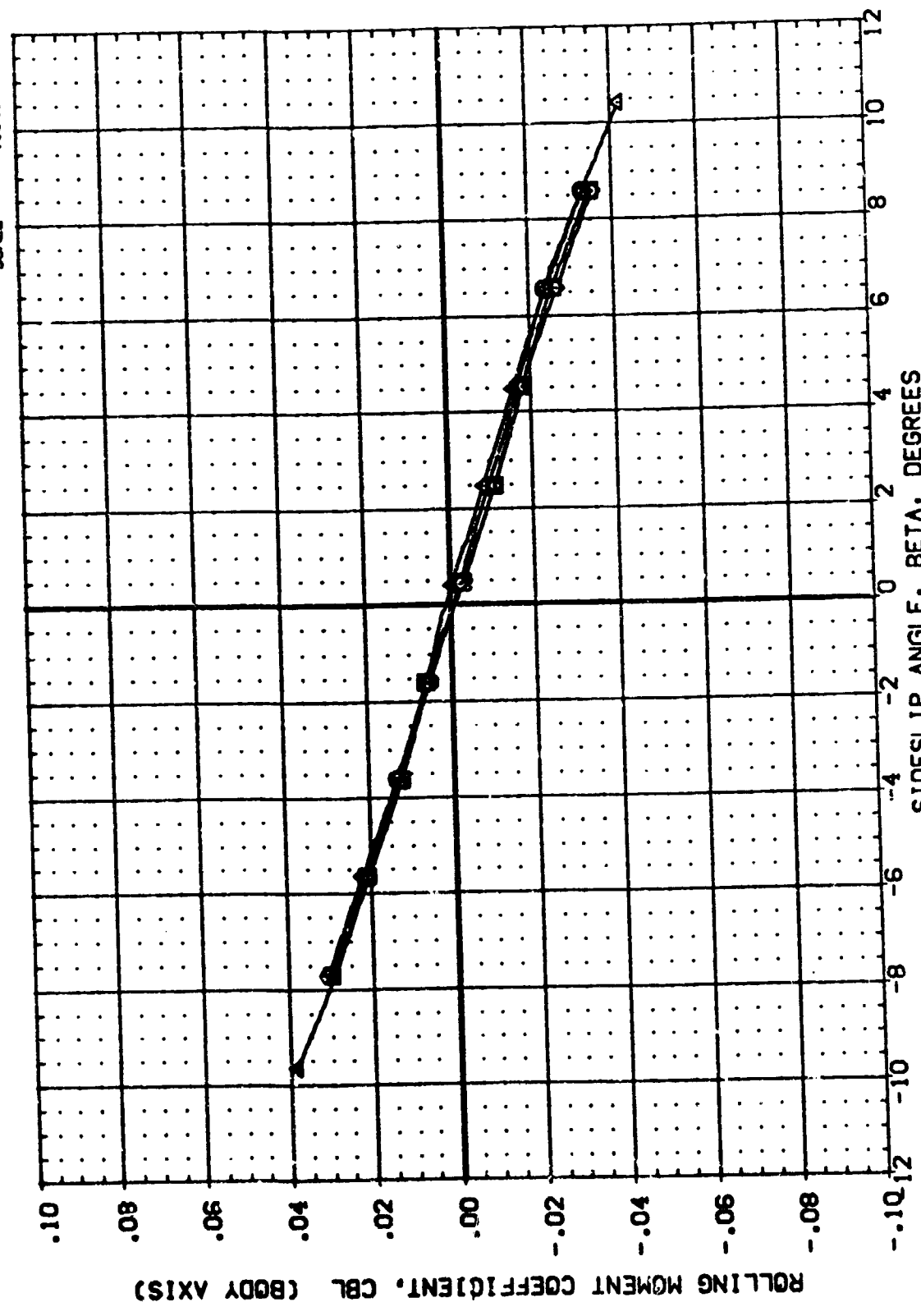


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (1)MACH = 3.48
 PAGE 108

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (B88011) MSFC 579(A37) (034)(114)(S12)(U6)
 (B88010) MSFC 579(A37) (034)(114)(S12)(U6)
 (B88012) MSFC 579(A37) (034)(114)(S12)(U6)
 (B88009) MSFC 579(A37) (034)(119)(S12)

ALPHA DEGREE
 .000
 .000
 -5.000
 .000
 .000
 .000

REFERENCE INFORMATION
 XREF 6.1990 SQ. IN.
 YREF 5.1600 IN.
 ZREF 2.7200 IN.
 XPRP .0000 IN.
 YPRP .0000 IN.
 ZPRP .0040 IN.
 SCALE

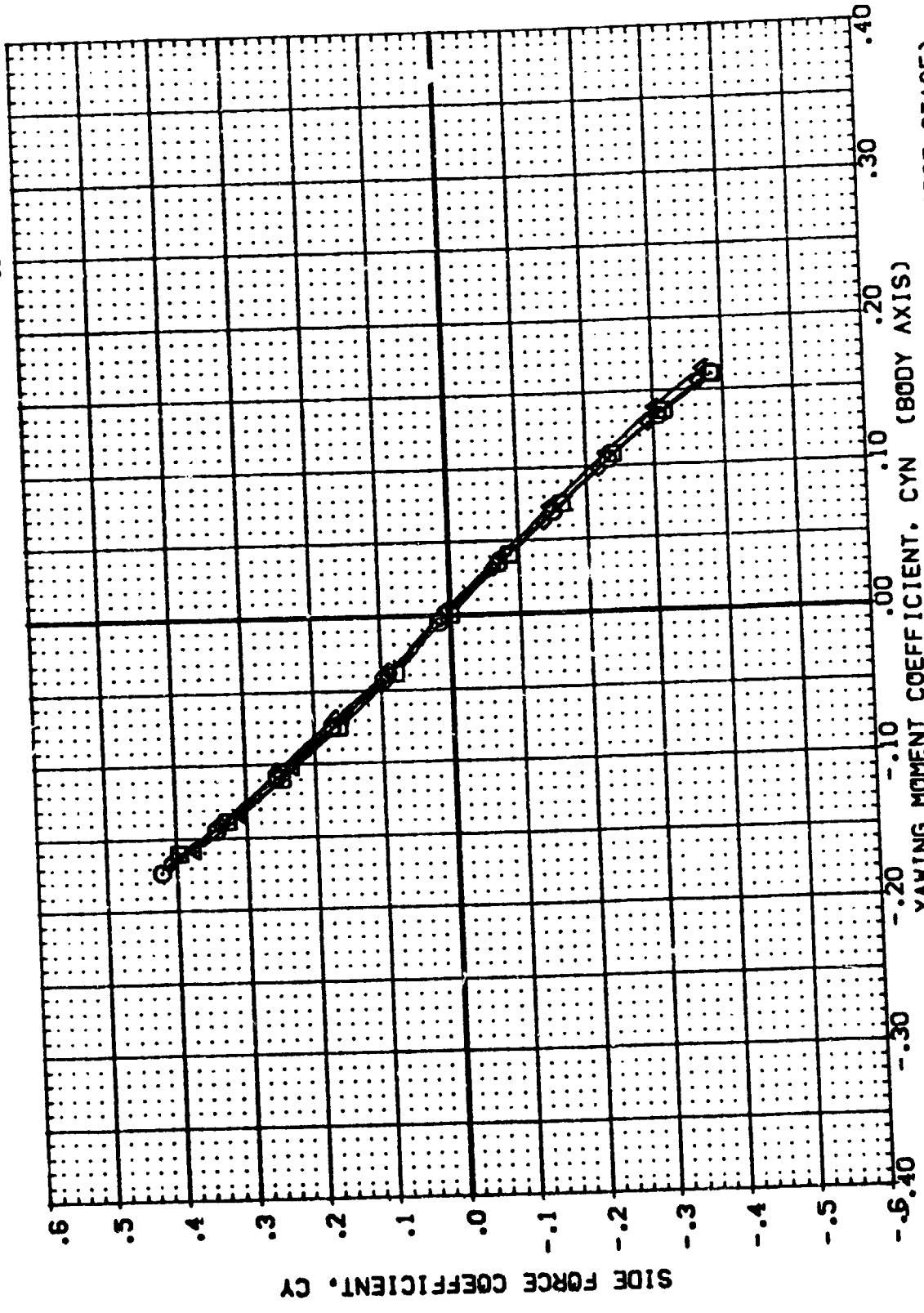


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (FIRST STAGE)
 (J)MACH = 4.96
 PAGE 109

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA .000
 .000
 -5.000
 .000
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) H5FC 579(1A37) (034)(T14)(S12)(U6)
 (888010) H5FC 579(1A37) (034)(T14)(S12)(U6)
 (888012) H5FC 579(1A37) (034)(T14)(S12)(U6)
 (888008) H5FC 579(1A37) (034)(T19)(S12)



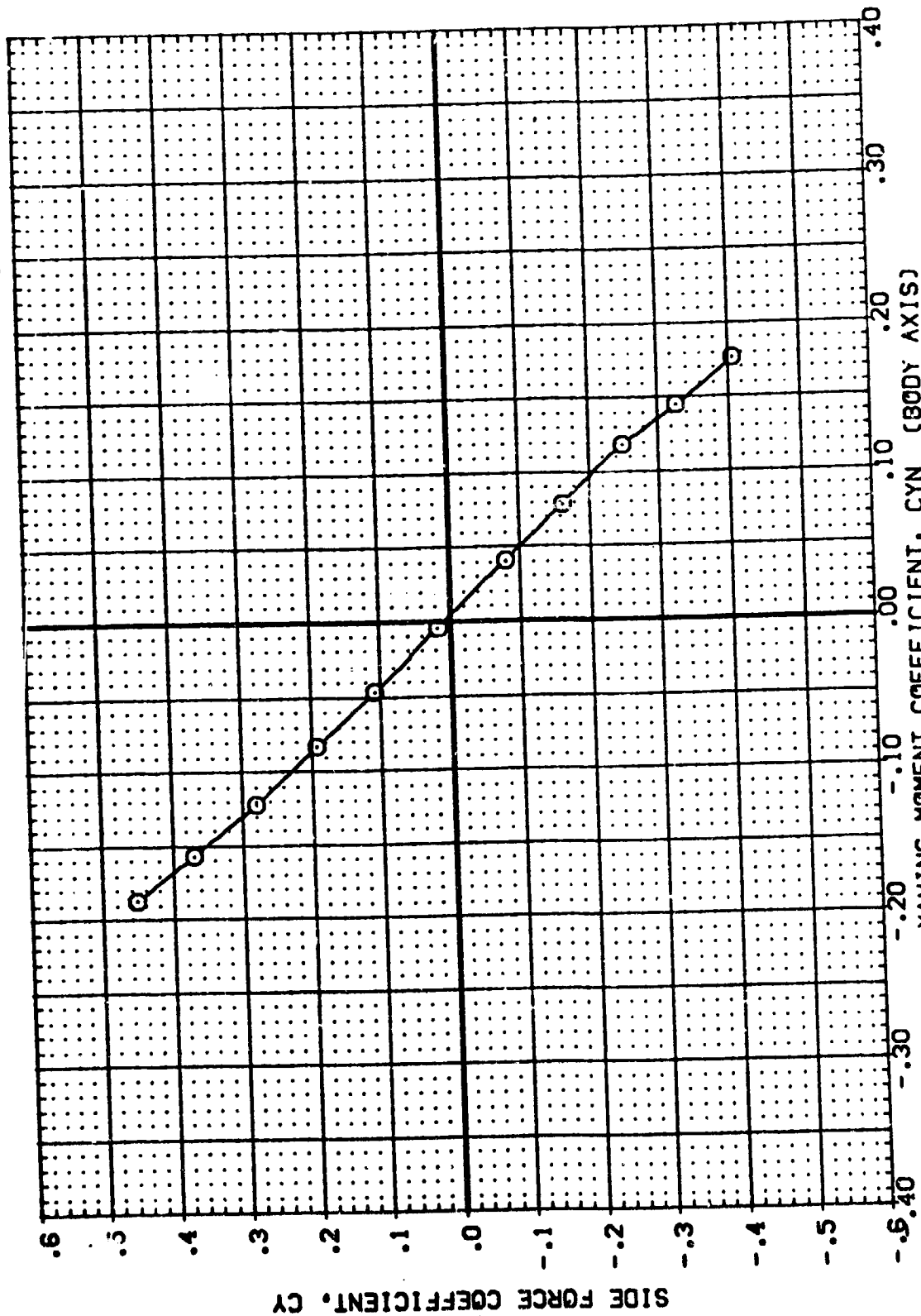
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (A)MACH = .60



REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BRREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000 .000
 -5.000 .000
 5.000 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
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 (B89012) DATA NOT AVAILABLE
 (B89008) DATA NOT AVAILABLE

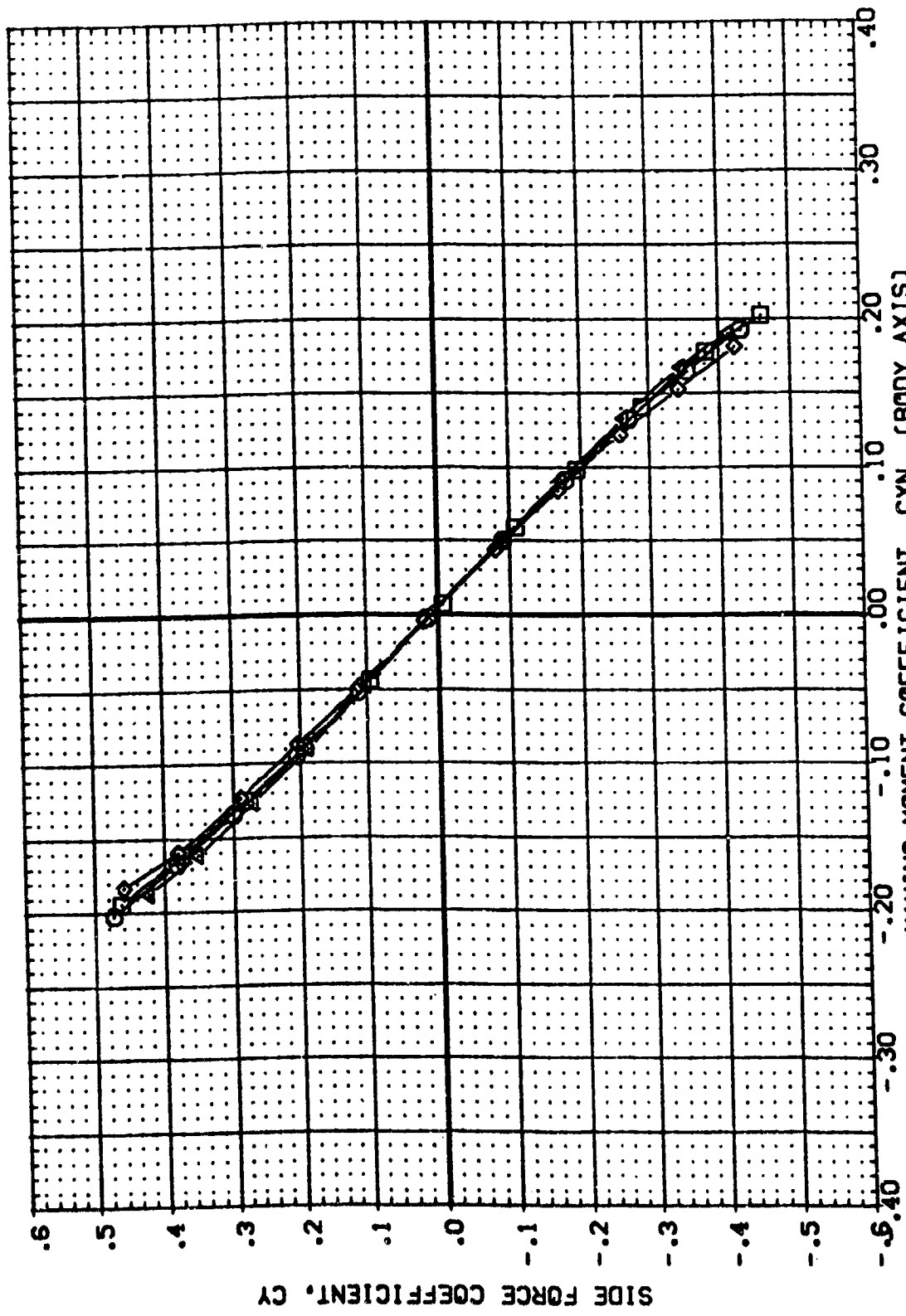


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (B)MACH = .80
 PAGE 111

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 YMRP 2.7200 IN.
 ZMRP .0000 IN.
 SCALE .0010

ALPHA ORBING
 .000 .000
 -5.000 .000
 5.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888011) MSFC 579 (A37) (034) (114) (S12) (US)
 (888010) MSFC 579 (A37) (034) (114) (S12) (US)
 (888012) MSFC 579 (A37) (034) (114) (S12) (US)
 (888008) MSFC 579 (A37) (034) (119) (S12)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

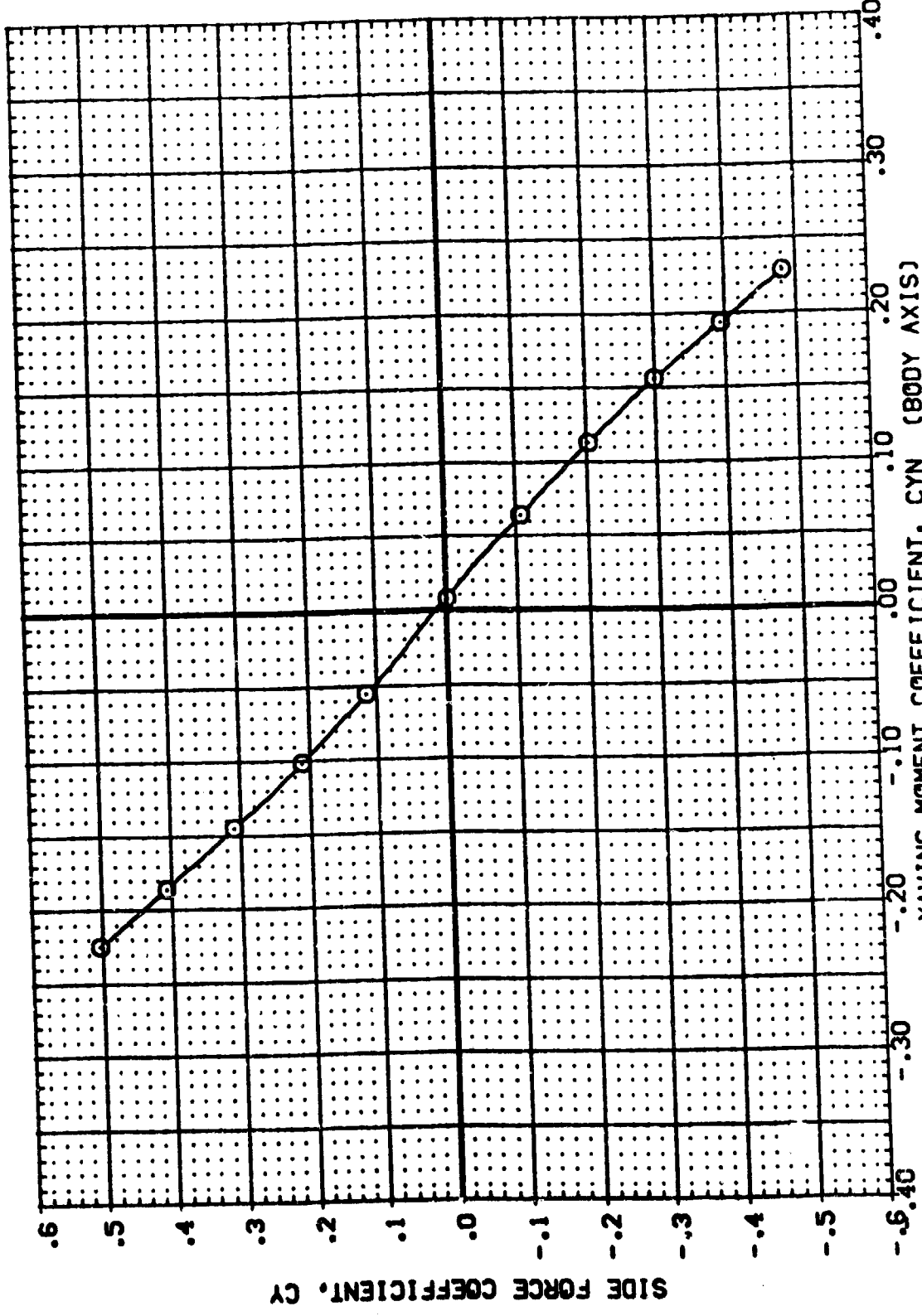
(CJ)MACH = .89



REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040

ALPHA 0RBING
.000
-3.000
5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(888011) MSFC 5791 (A37) (02A)(114)(S12)(US)
(888010) DATA NOT AVAILABLE
(888012) DATA NOT AVAILABLE
(888008) DATA NOT AVAILABLE



DATA SET SYMBO. CONFIGURATION DESCRIPTION

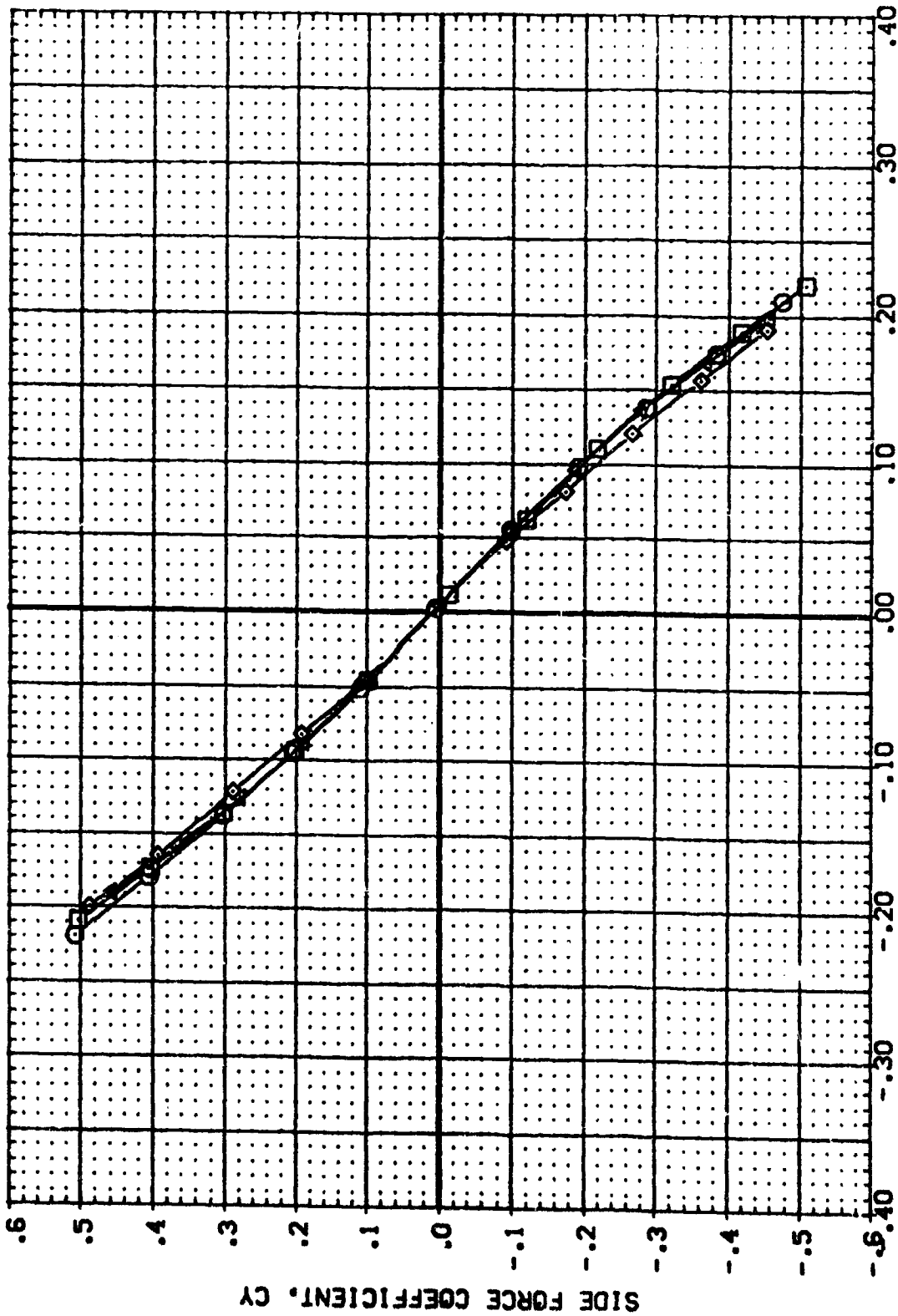
(B86011)	MSFC 579(1A37)	(034)(114)(S12)(US)
(B86010)	MSFC 579(1A37)	(034)(114)(S12)(US)
(B86012)	MSFC 579(1A37)	(034)(114)(S12)(US)
(B86008)	MSFC 579(1A37)	(034)(119)(S12)

ALPHA ORBITING

.000	.000
-5.000	.000
5.000	.000

REFERENCE INFORMATION

SREF	6.1860	50. IN.
LREF	5.1800	IN.
BREF	5.1600	IN.
XPRP	2.7200	IN.
YPRP	.0000	IN.
ZPRP	.0000	IN.
SCALE	.0040	



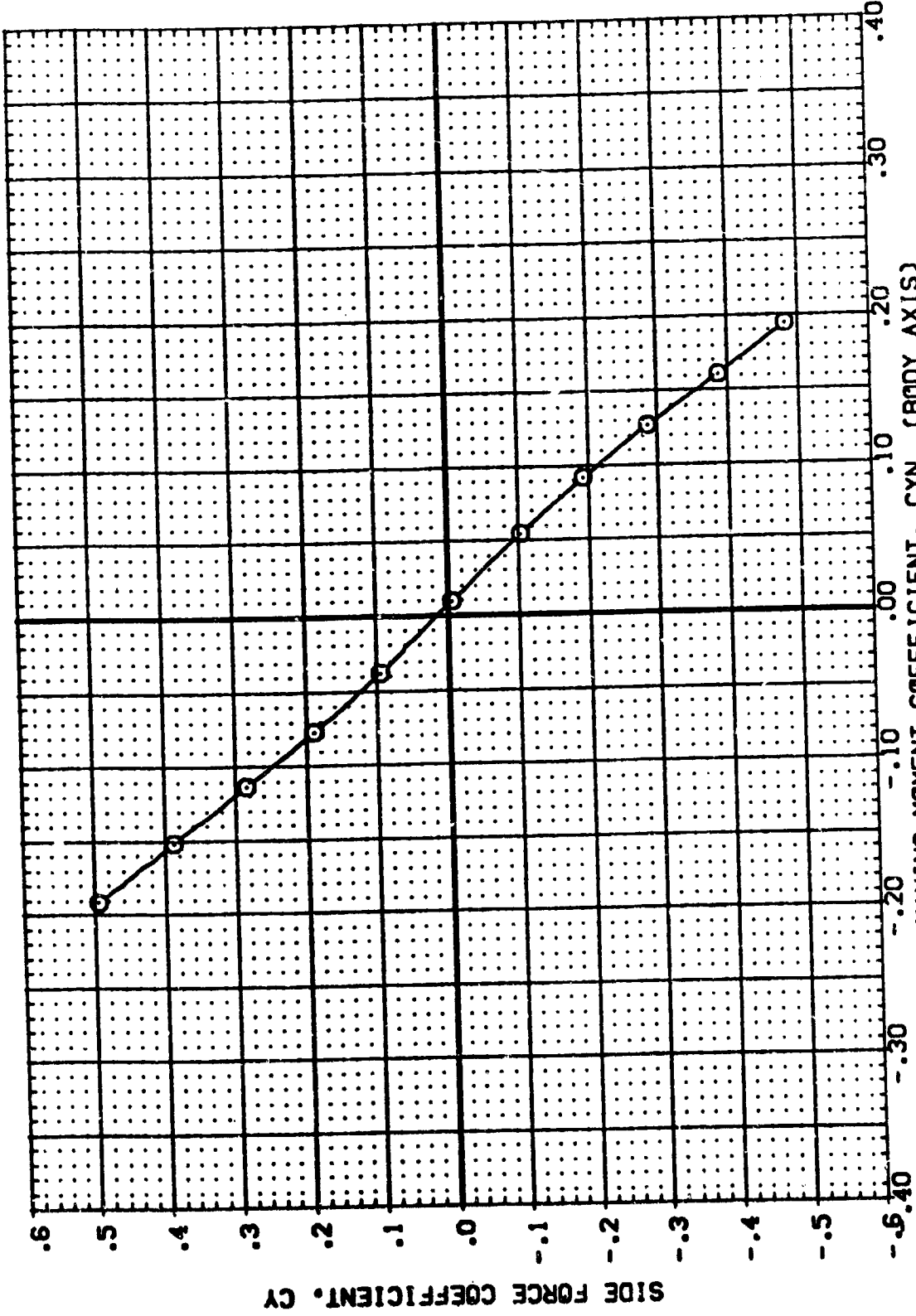
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)



DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (888011) MSC 579(1A37) (004)(T14)(S12)(U6)
 (888010) DATA NOT AVAILABLE
 (888012) DATA NOT AVAILABLE
 (888008) DATA NOT AVAILABLE

ALPHA ORBING
 .000
 .000
 -5.000
 5.000

REFERENCE INFORMATION
 SREF 6.1960 SO.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)
 (F)MACH = 1.20
 PAGE 115

DATA SET SYMBO... CONFIGURATION DESCRIPTION

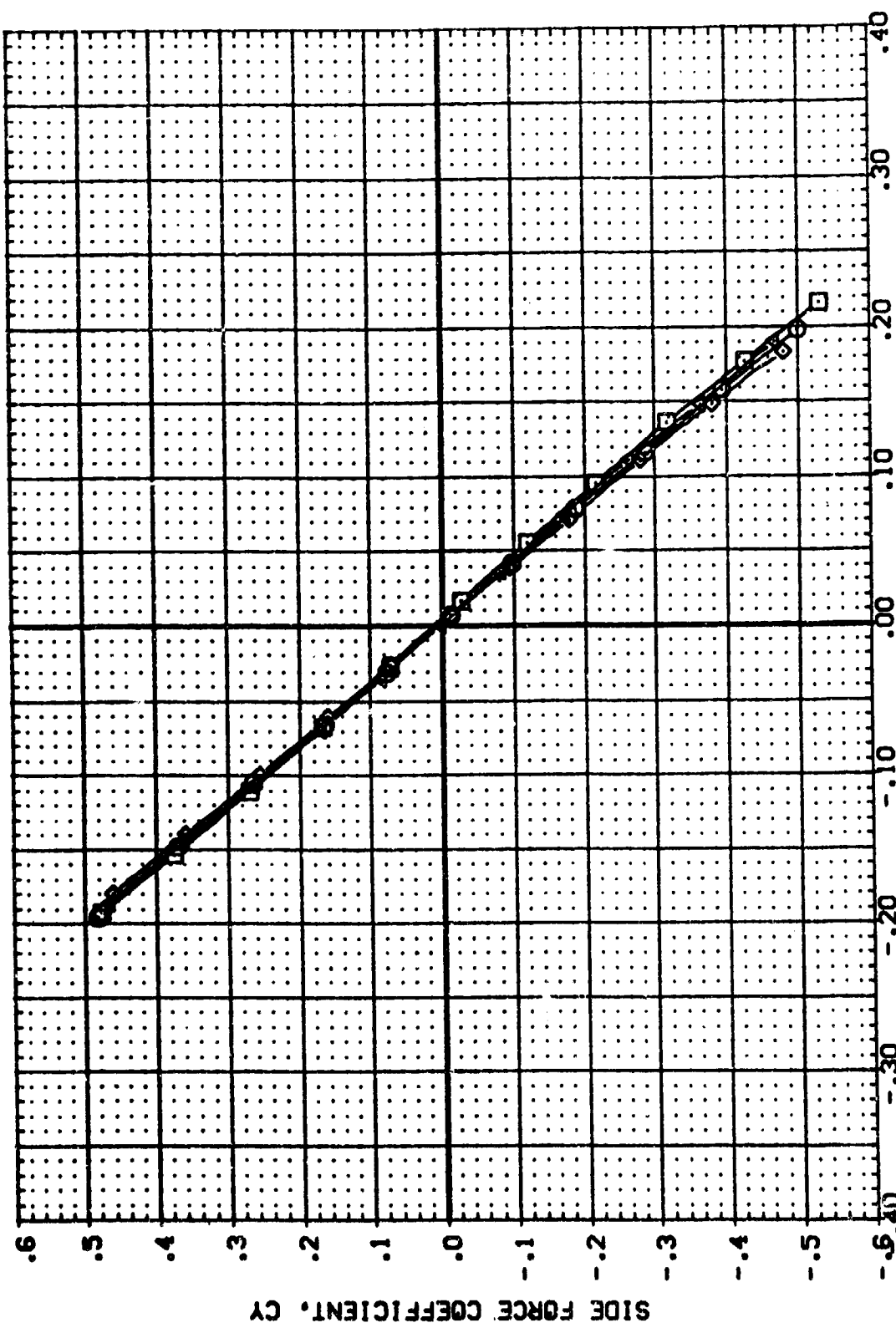
(888011) (004)(T14)(S12)(U6)
 (888010) (004)(T14)(S12)(U6)
 (888012) (004)(T14)(S12)(U6)
 (888008) (004)(T9)(S12)

MSFC 579(A37) (004)(T14)(S12)(U6)
 MSFC 579(A37) (004)(T14)(S12)(U6)
 MSFC 579(A37) (004)(T14)(S12)(U6)
 MSFC 579(A37) (004)(T9)(S12)

ALPHA 0.000
 -5.000
 5.000

ORBITING
 .000
 .000
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

(G)MACH = 1.46

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DATA SET SYMBO. CONFIGURATION DESCRIPTION

(B88011) MSFC 579(A37) (034)(114)(S12)(US)

(B88010) MSFC 579(A37) (034)(114)(S12)(US)

(B88012) MSFC 579(A37) (034)(114)(S12)(US)

(B88008) MSFC 579(A37) (034)(119)(S12)

ALPHA ORBINC

.000 .000

-5.000 .000

5.000 .000

REFERENCE INFORMATION

SREF 6.1980 SQ.IN.

LREF 5.1600 IN.

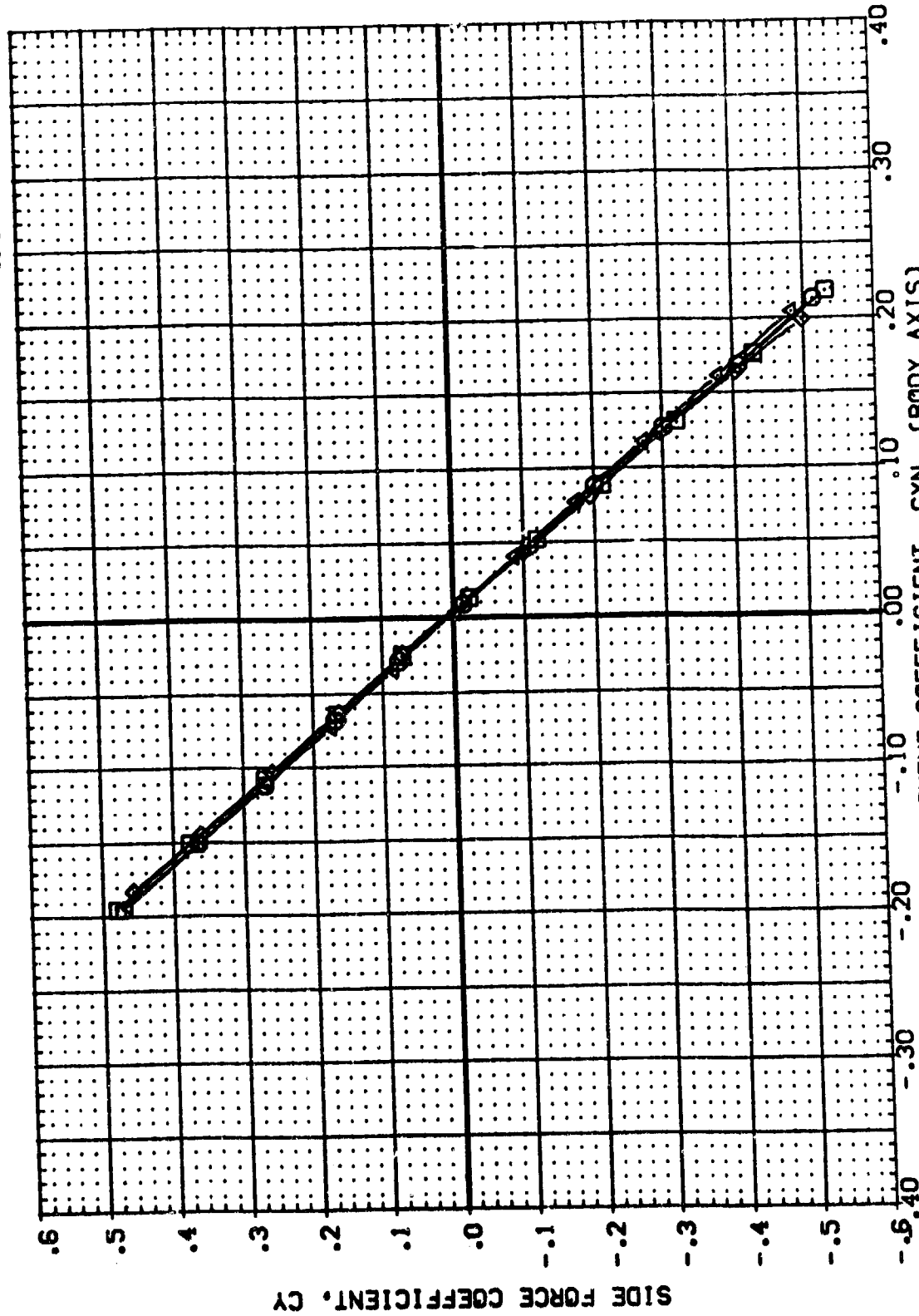
BREF 5.1600 IN.

XPRP 2.7200 IN.

YPRP .0000 IN.

ZPRP .0000 IN.

SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

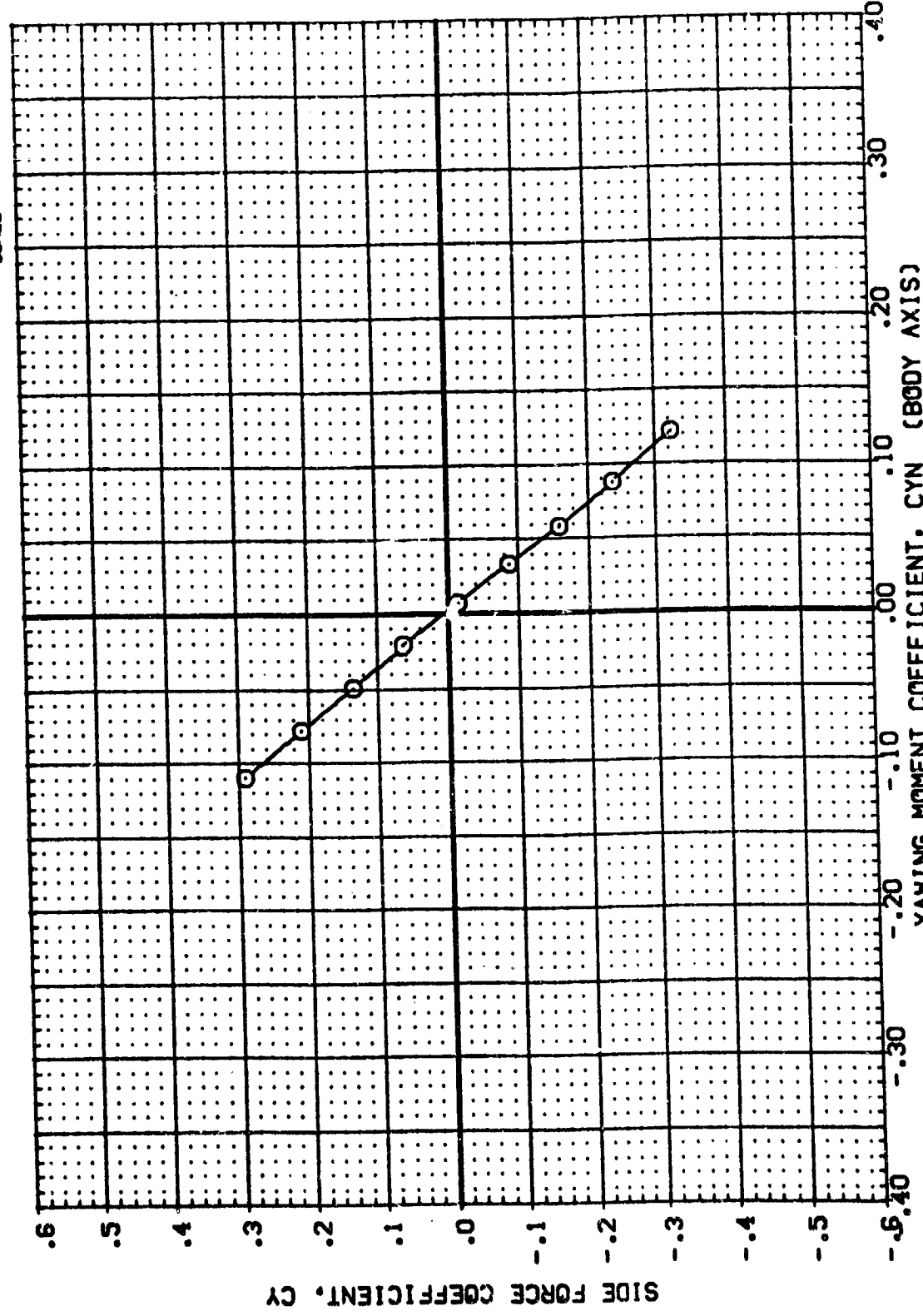
(H)MACH = 1.96

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REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000 .000
 -5.000 .000
 5.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B86011) MSC 579(1A37) (024)(114)(S12)(U6)
 (B86010) DATA NOT AVAILABLE
 (B86012) DATA NOT AVAILABLE
 (B86008) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

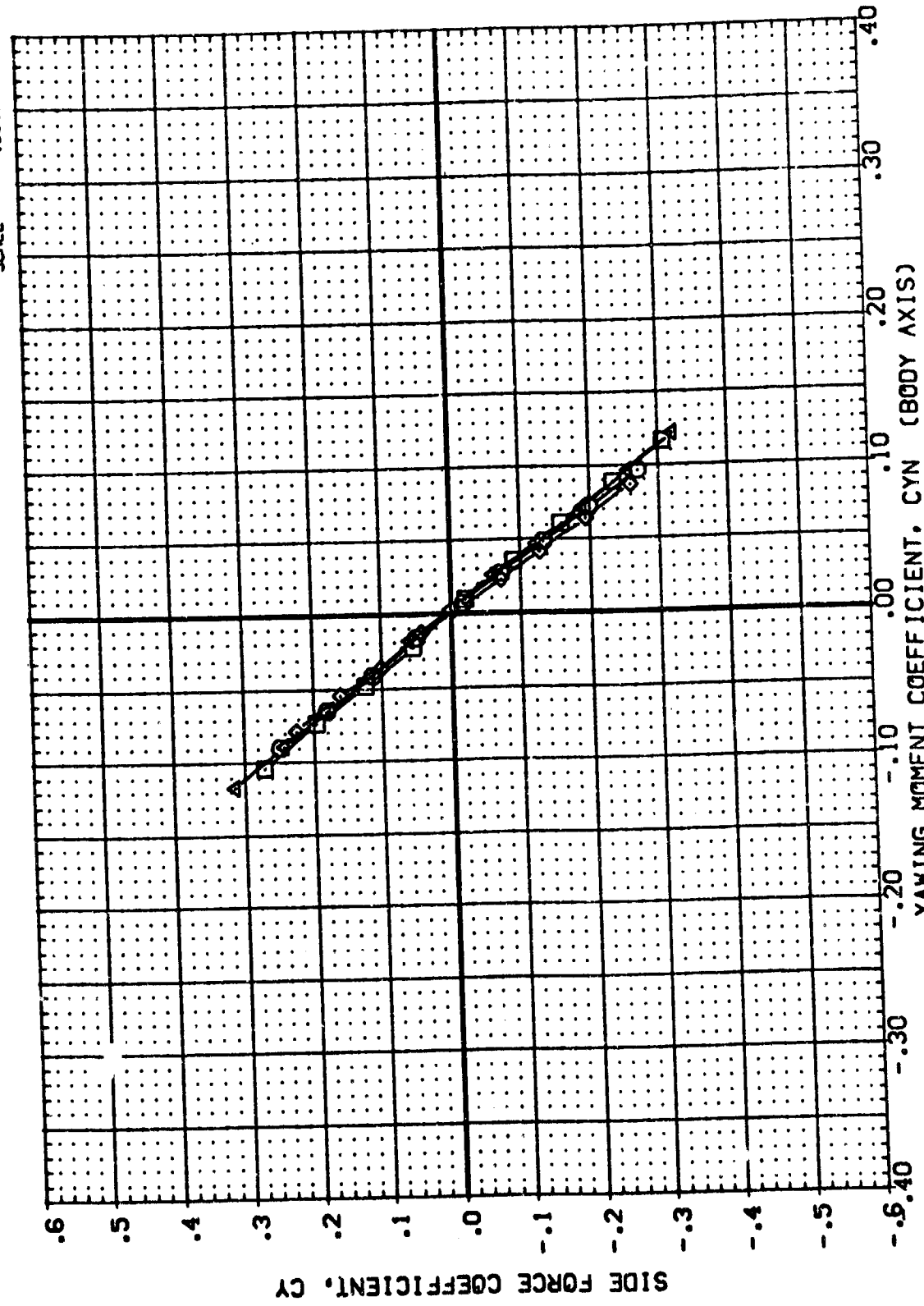
(1)MACH = 3.48



REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

ALPHA ORBINC
 .000 .000
 -5.000 .000
 5.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88011) MSC 579(IA37) (034)(T14)(S12)(US)
 (B88010) MSC 579(IA37) (034)(T14)(S12)(US)
 (B88012) MSC 579(IA37) (034)(T14)(S12)(US)
 (B88008) MSC 579(IA37) (034)(T19)(S12)



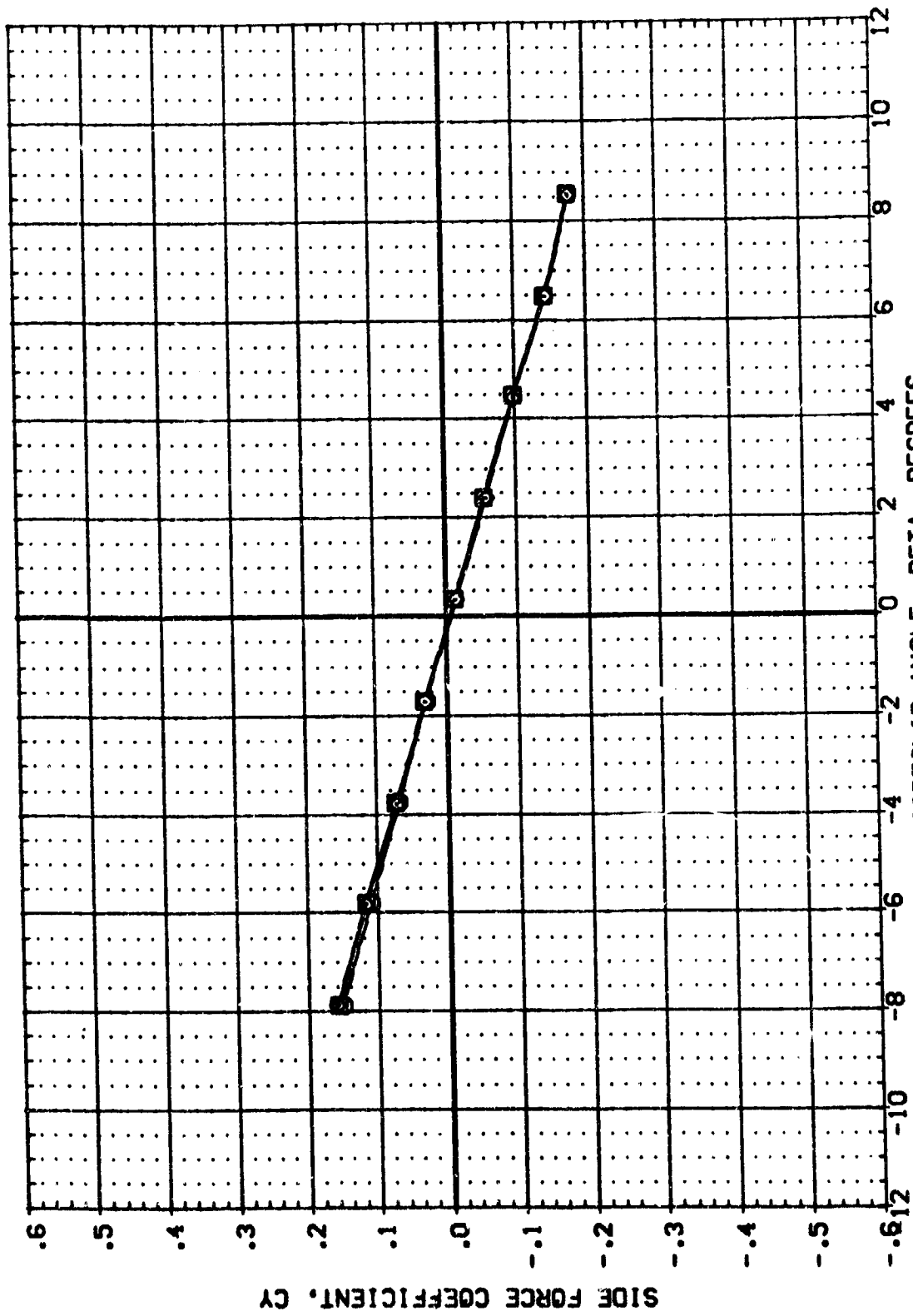
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(FIRST STAGE)

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA .000
 ORBINC .000
 .000
 .000
 .000

DATA SET SYMBOL (885005)
 (885003)
 (885002)

CONFIGURATION DESCRIPTION
 MSC 580(1A48) (034)(T9)(S12)
 MSC 580(1A48) (034)(T14)(S12)
 MSC 580(1A48) (034)(T14)(S12)(U6)



SIDESLIP ANGLE, BETA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

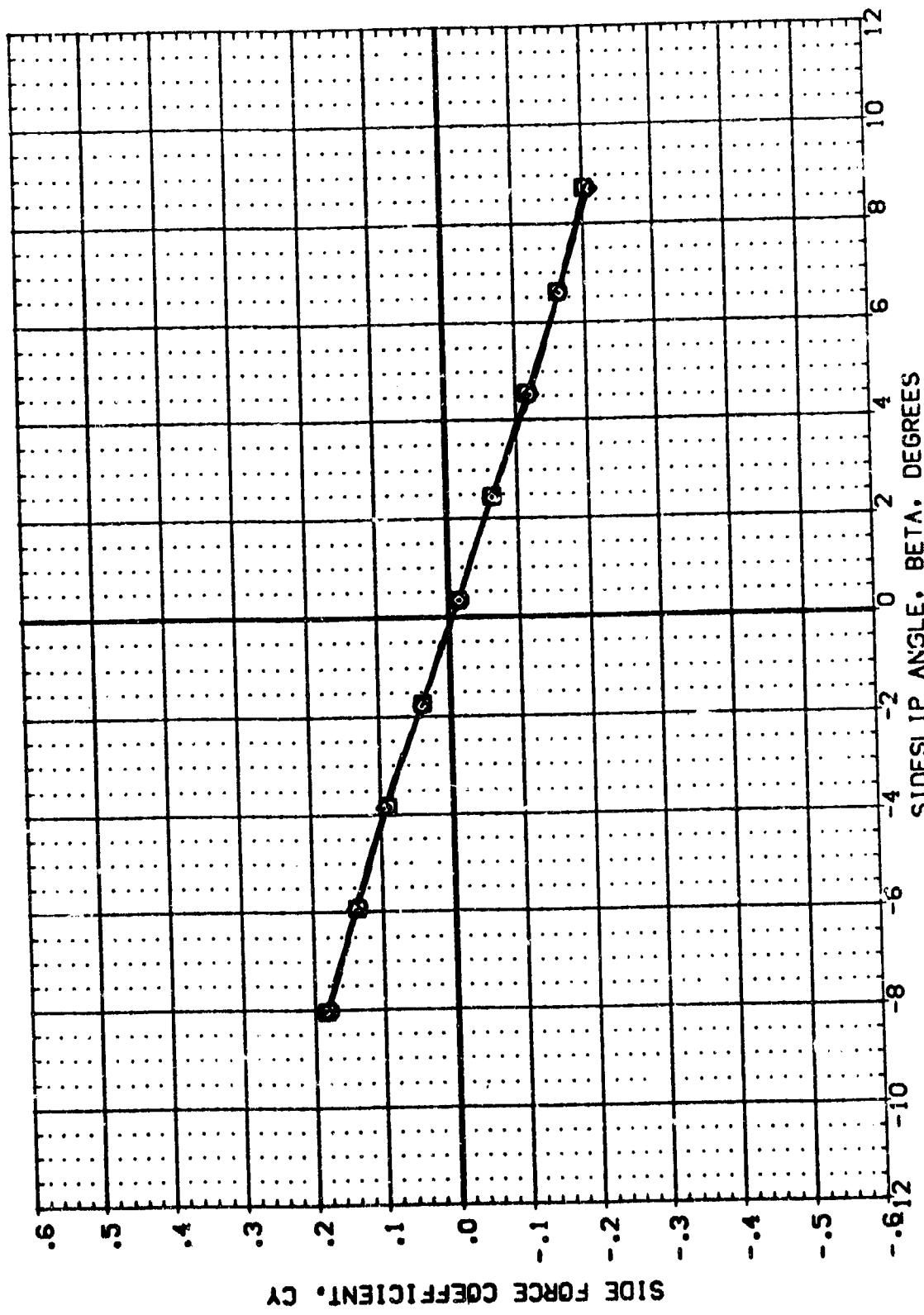
(A)MACH = .60



REFERENCE INFORMATION
SREF 5.1580 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0010

ALPHA ORBING
.000 .000
.000 .000
.000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(885005) (885005) (885005) (885005)
(885003) (885003) (885003) (885003)
(885002) (885002) (885002) (885002)



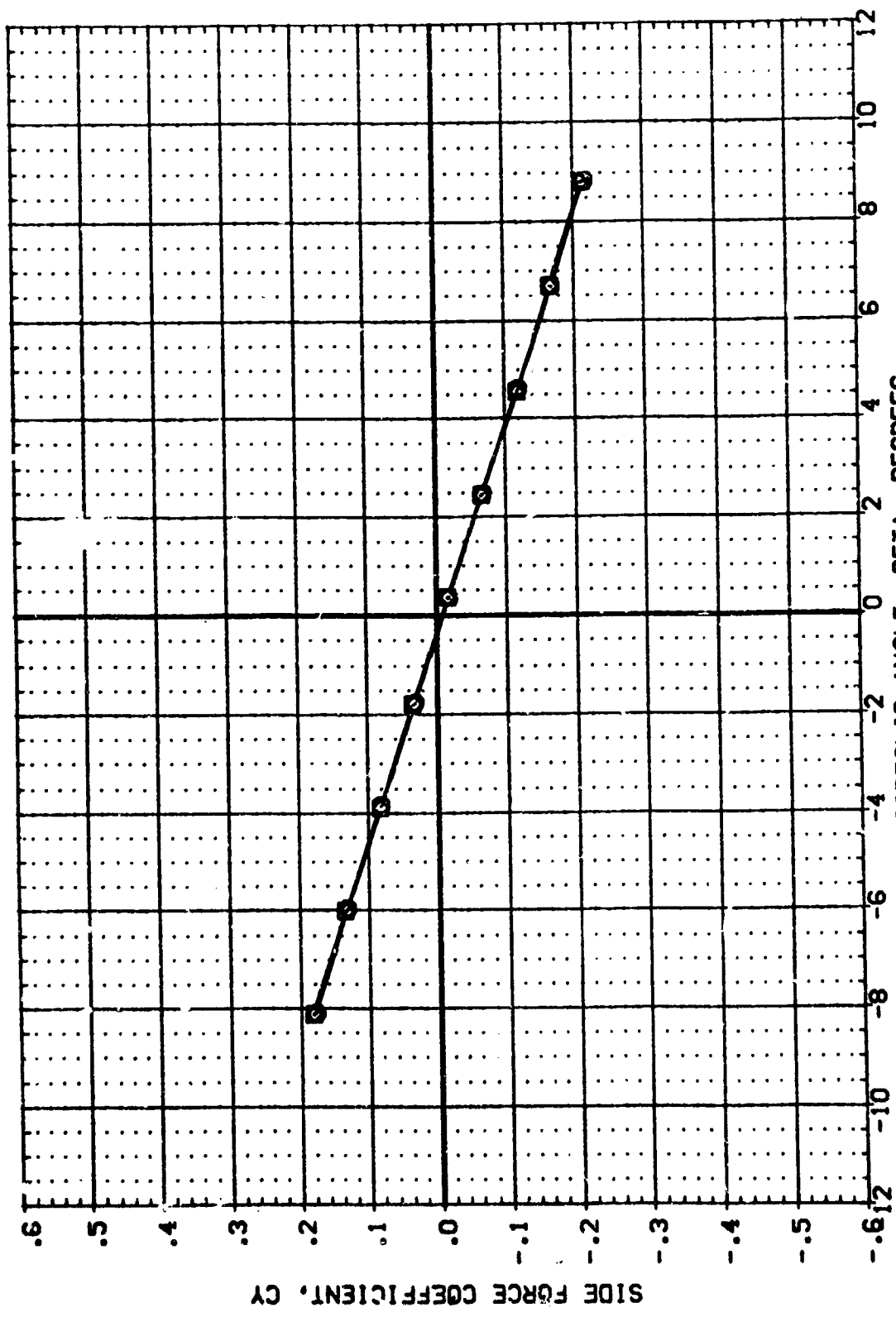
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)

(B)MACH = .90

REFERENCE INFORMATION
 SREF 6.1800 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89006) (B89003) (B89002) (03A)(T9)(S12)
 (03A)(T14)(S12)
 (03A)(T14)(S12)(U6)



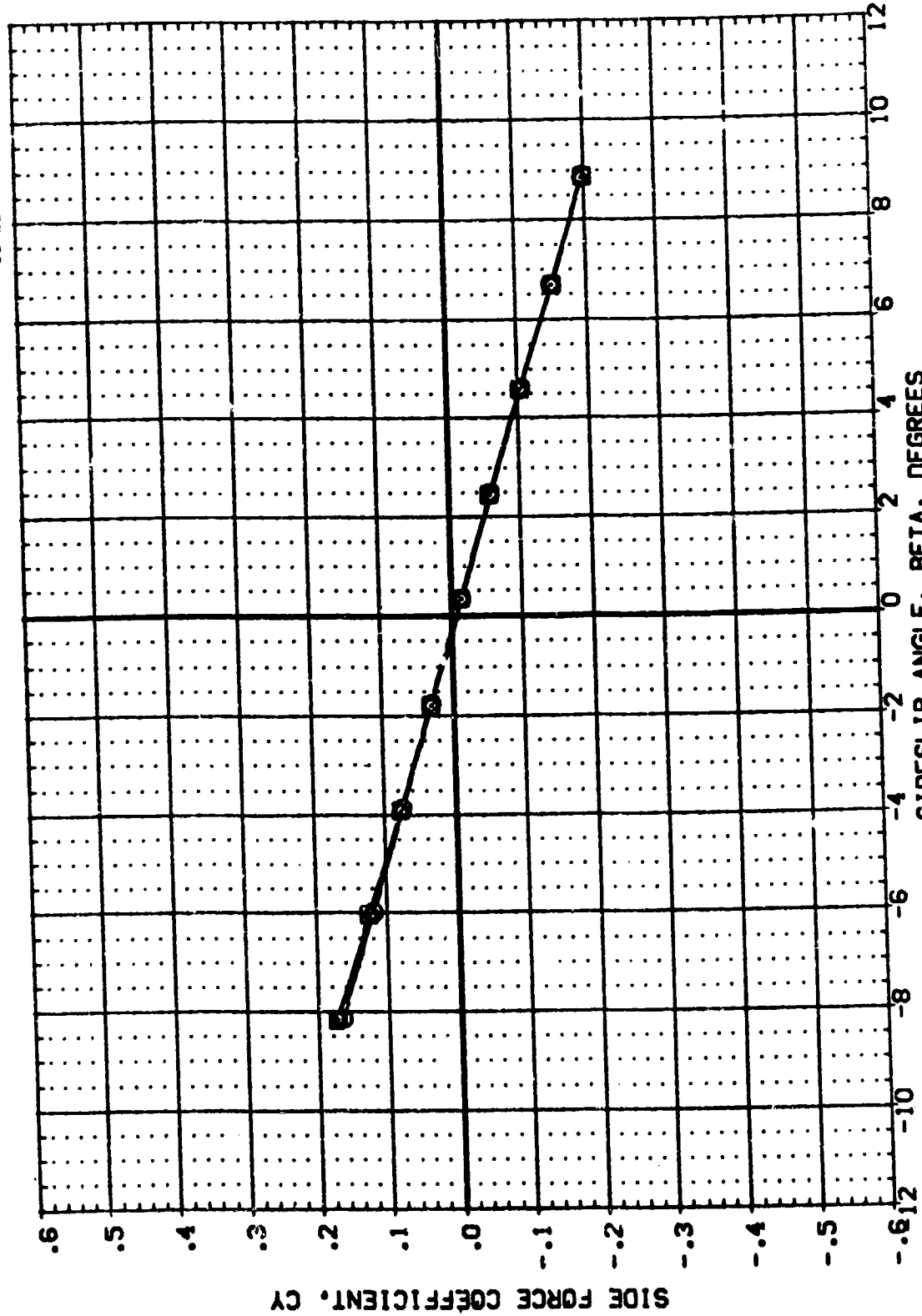
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
 (C)MACH = 1.10
 PAGE 122



REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1522 IN.
 BREF 5.1800 IN.
 XFRP 2.7200 IN.
 YFRP .0000 IN.
 ZFRP .0000 IN.
 SCALE .0010

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85005) (B85005) (B85005) (B85005)
 (B85003) (B85003) (B85003) (B85003)
 (B85002) (B85002) (B85002) (B85002)

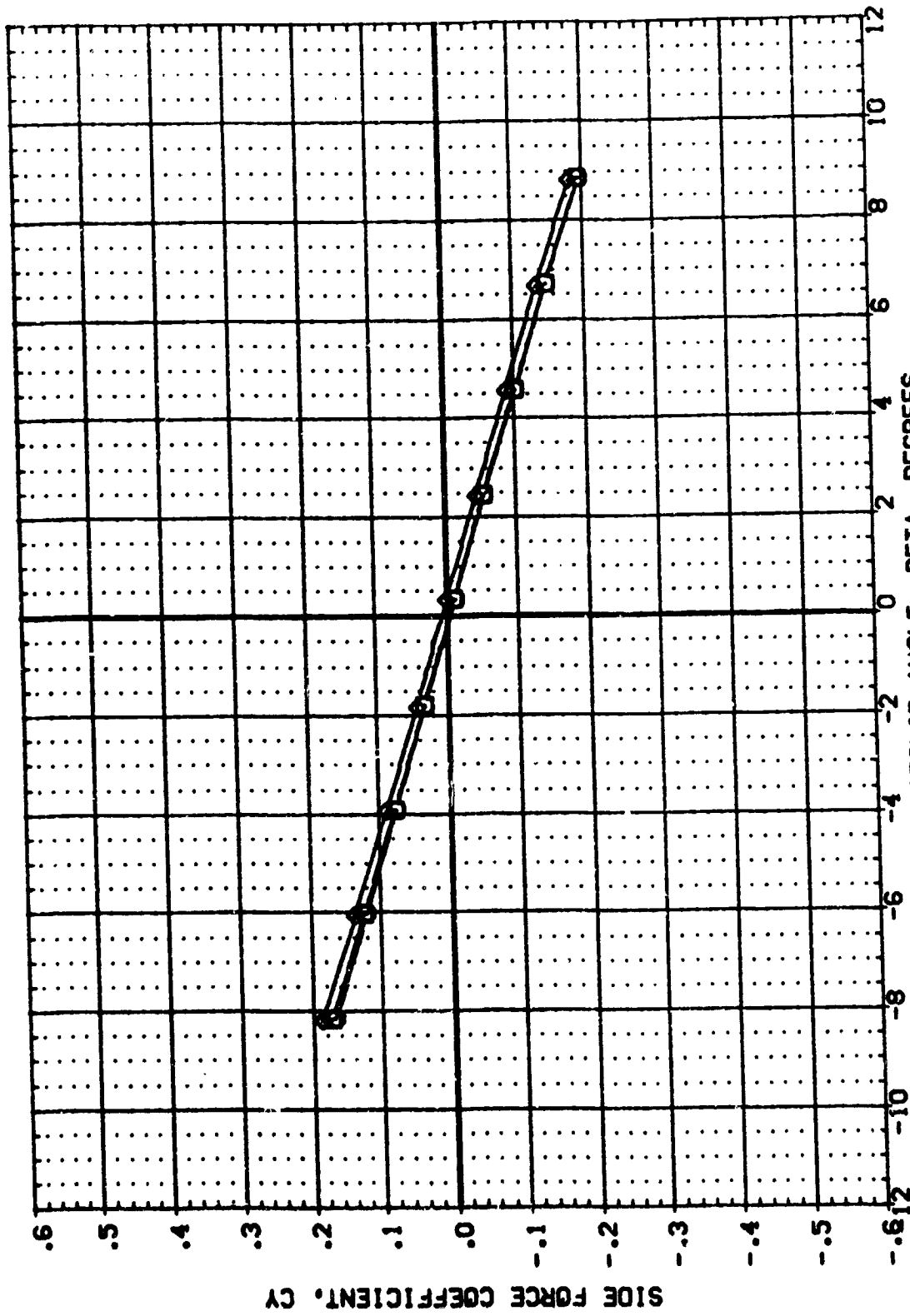


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
 SIDESLIP ANGLE: BETA, DEGREES
 (D)MACH = 1.25
 PAGE 123

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885008) MFC 500(1A48) (034)(79)(S12)
 (885009) MFC 500(1A48) (034)(114)(S12)
 (885010) MFC 500(1A48) (034)(114)(S12)(U6)

ALPHA ORBINC
 .000
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1500 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)
 (E)MACH = 1.46
 PAGE 124



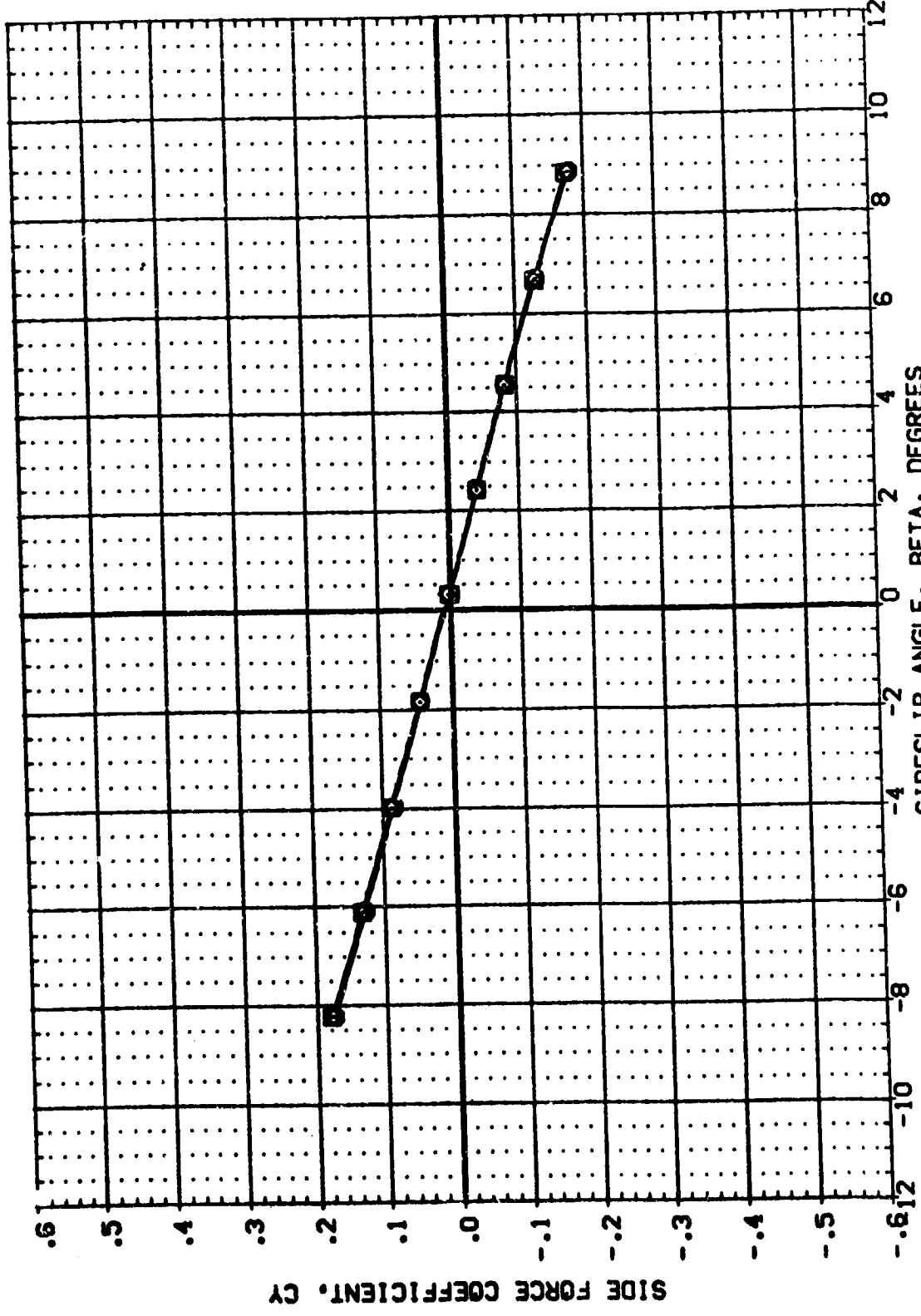
DATA SET SYMBOL: (885006) (885007) (885002)

CONFIGURATION DESCRIPTION:
 MSFC 580(1A48) (034)(179)(S12)
 MSFC 580(1A48) (034)(114)(S12)
 MSFC 580(1A48) (034)(114)(S12)(U6)

ALPHA: .000 .000 .000

ORBING: .000 .000 .000

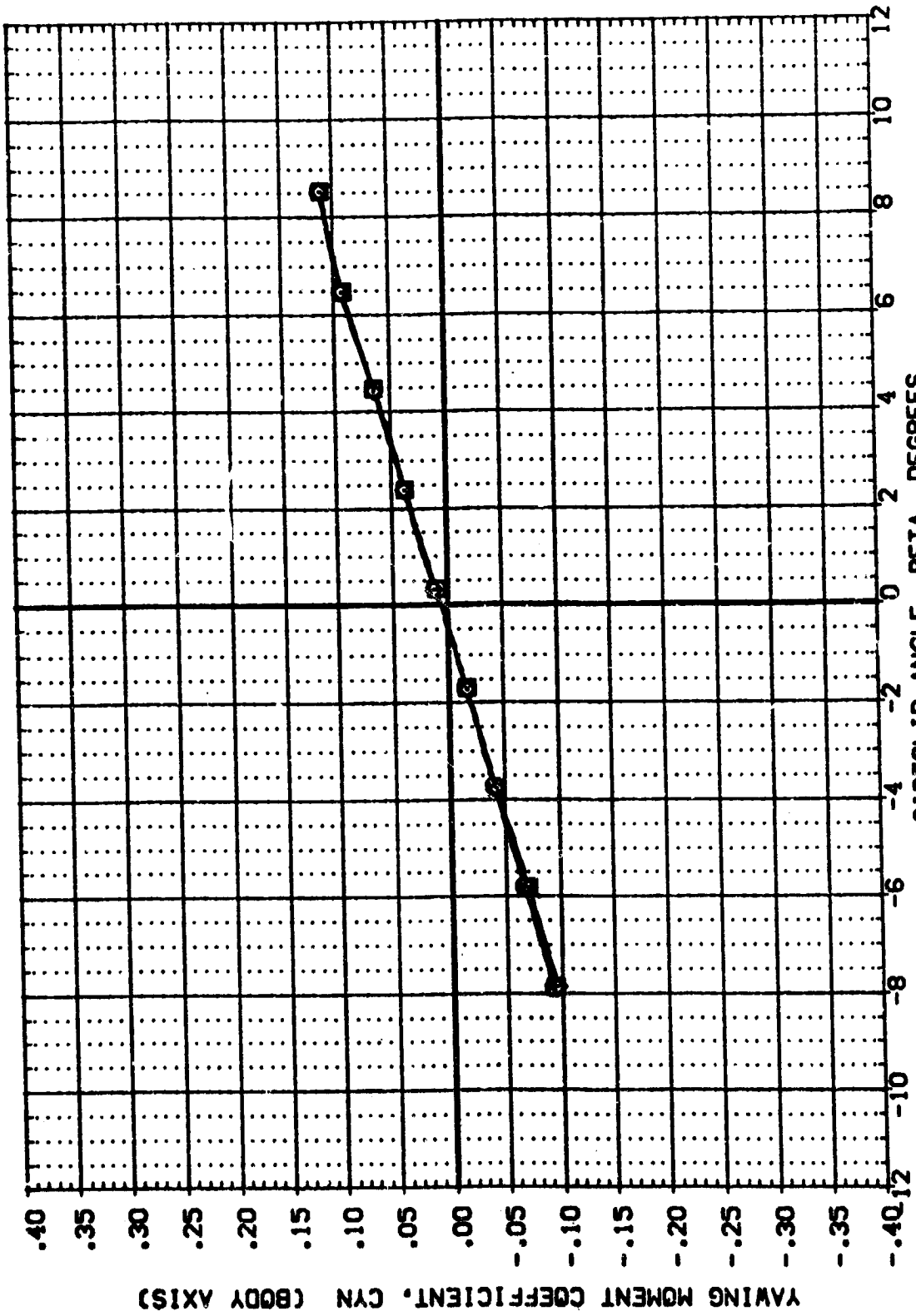
REFERENCE INFORMATION:
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040



REFERENCE INFORMATION
 SREF 6.1980 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B89005) MSFC 580(1A48) (034)(T9)(S12)
 (B89003) MSFC 580(1A48) (034)(T14)(S12)
 (B89002) MSFC 580(1A48) (034)(T14)(S12)(U6)



SIDESLIP ANGLE, BETA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(A)MACH = .60

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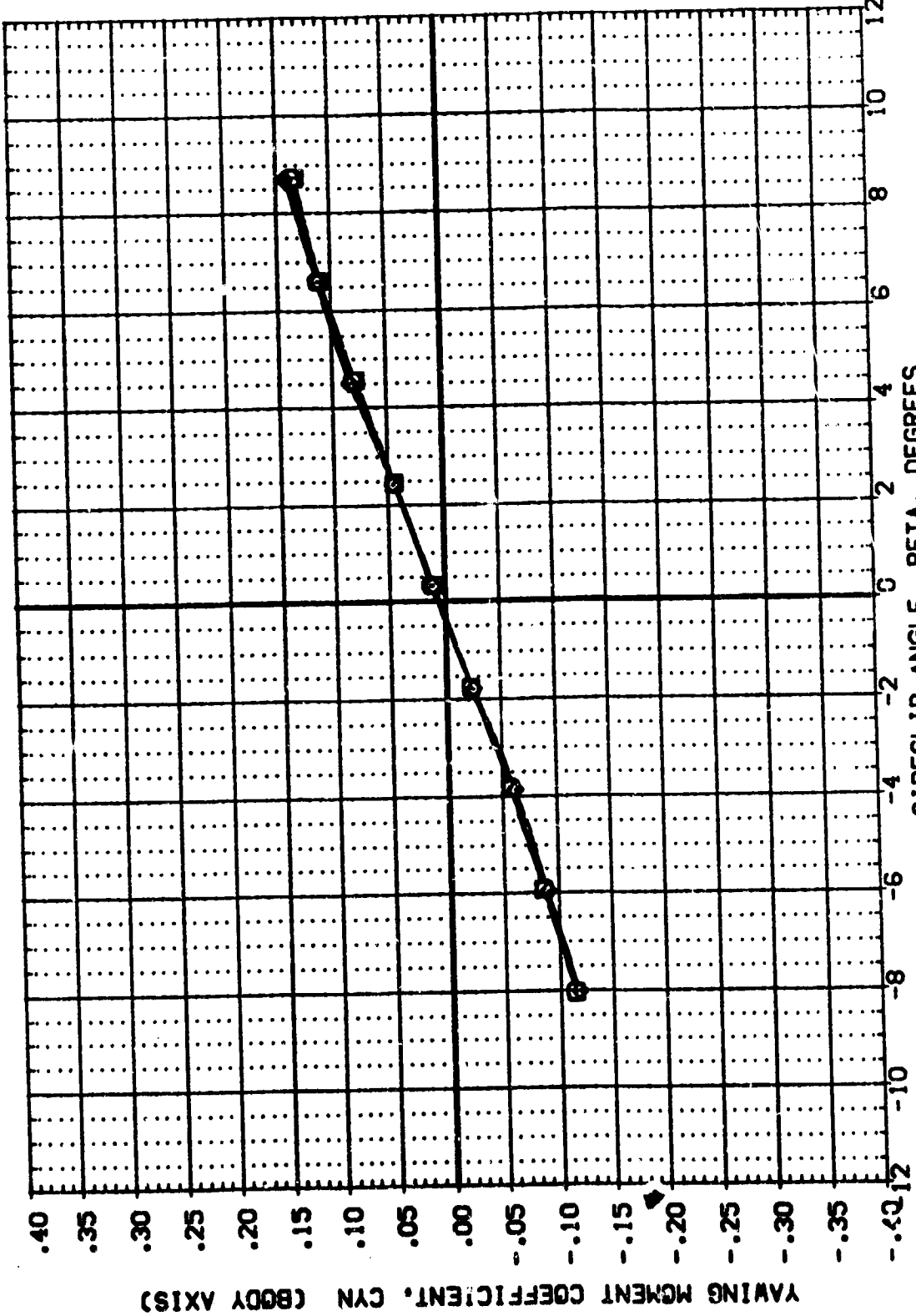


DATA SET SYMBOL: (885003) (885003) (885002)

CONFIGURATION DESCRIPTION:
 HSTC 500(IA48) (034)(T9)(S12)
 HSTC 500(IA48) (034)(T14)(S12)
 HSTC 500(IA48) (034)(T14)(S12)(US)

ALPHA: .000 ORBINC: .000
 .000 .000
 .000 .000

REFERENCE INFORMATION:
 SREF: 6.1980 SQ. IN.
 LREF: 9.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0010



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

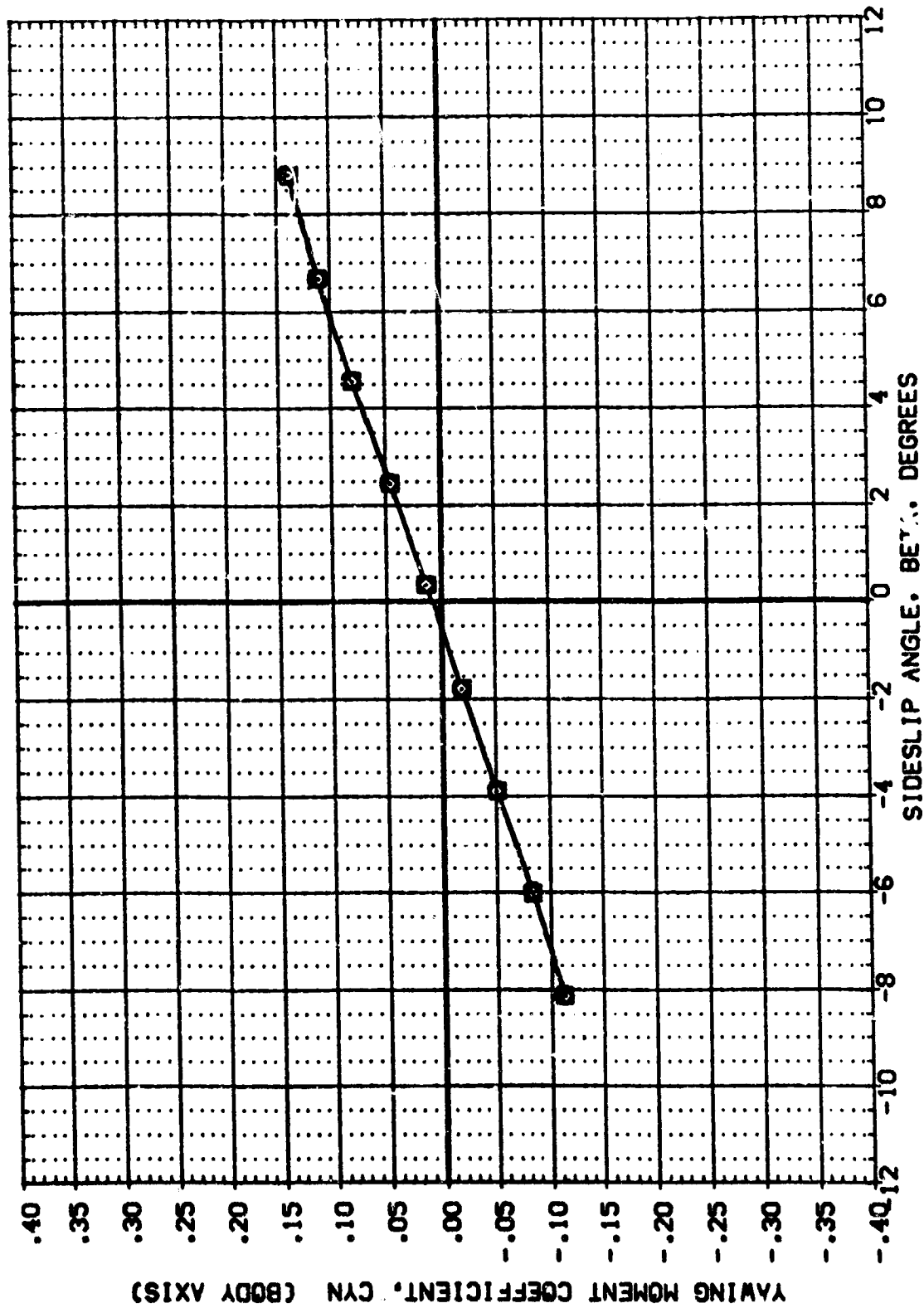
(B)MACH = .90

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DATA SET SYMB. CONFIGURATION DESCRIPTION
 (889005) MSFC 980(1A48) (024)(179)(S12)
 (889006) MSFC 980(1A48) (024)(114)(S12)
 (889007) MSFC 980(1A48) (024)(114)(S12)
 (889008) MSFC 980(1A48) (024)(114)(S12)

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



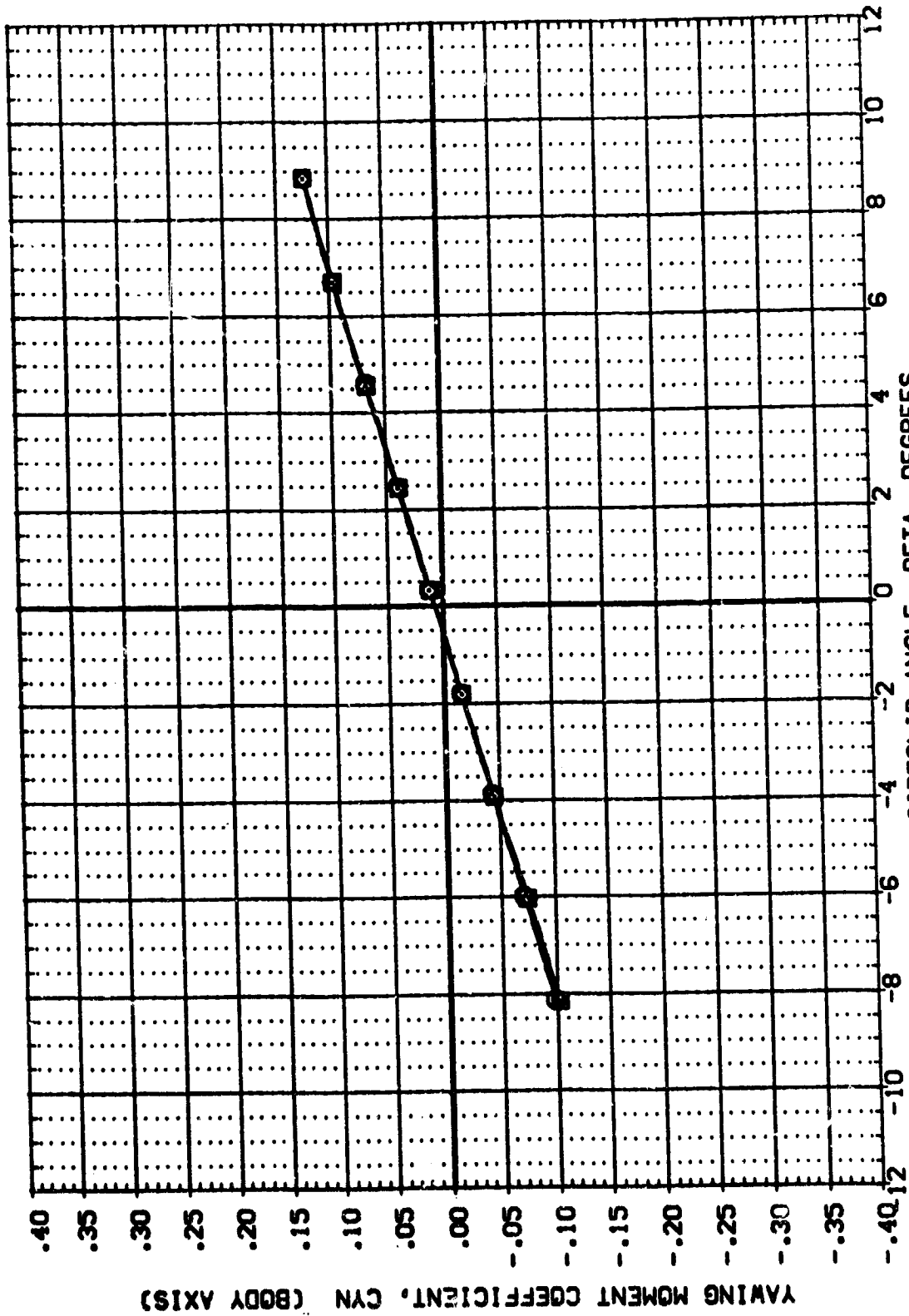
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
 (C)MACH = 1.10
 PAGE 128



DATA SET SYMBL. CONF. (ORBITATION DESCRIPTION)
(888008) MSFC 580(1A48) (004)(T9)(S12)
(888009) MSFC 580(1A48) (004)(T14)(S12)
(888012) MSFC 580(1A48) (004)(T14)(S12)(US)

ALPHA ORBITING
.000 .000
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1580 50. IN.
LREF 5.1500 IN.
SREF 5.1500 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0010



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)
(0)MACH = 1.25
PAGE 129

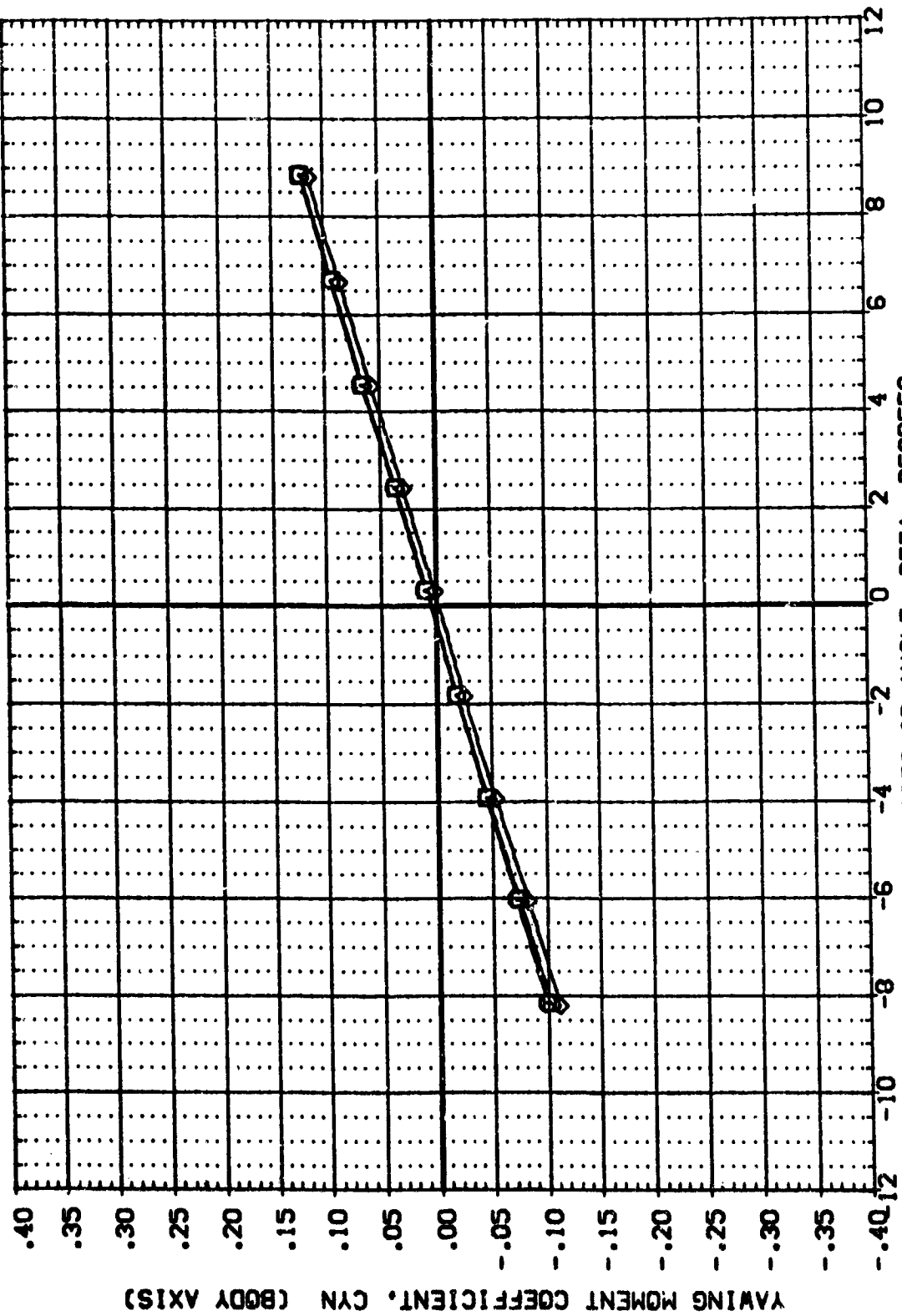
DATA SET SYMBOL: (865002) (865003) (865004)

CONFIGURATION DESCRIPTION: MSFC 580(A48) (034)(T14)(S12) MSFC 580(A48) (034)(T14)(S12) MSFC 580(A48) (034)(T14)(S12)(US)

ALPHA: .000 .000 .000

ORBITING: .000 .000 .000

REFERENCE INFORMATION: SREF 6.1580 SQ. IN. LREF 5.1500 IN. BREF 5.1600 IN. XPRP 2.7200 IN. YPRP .0000 IN. ZPRP .0000 IN. SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(E)MACH = 1.46

PAGE 130

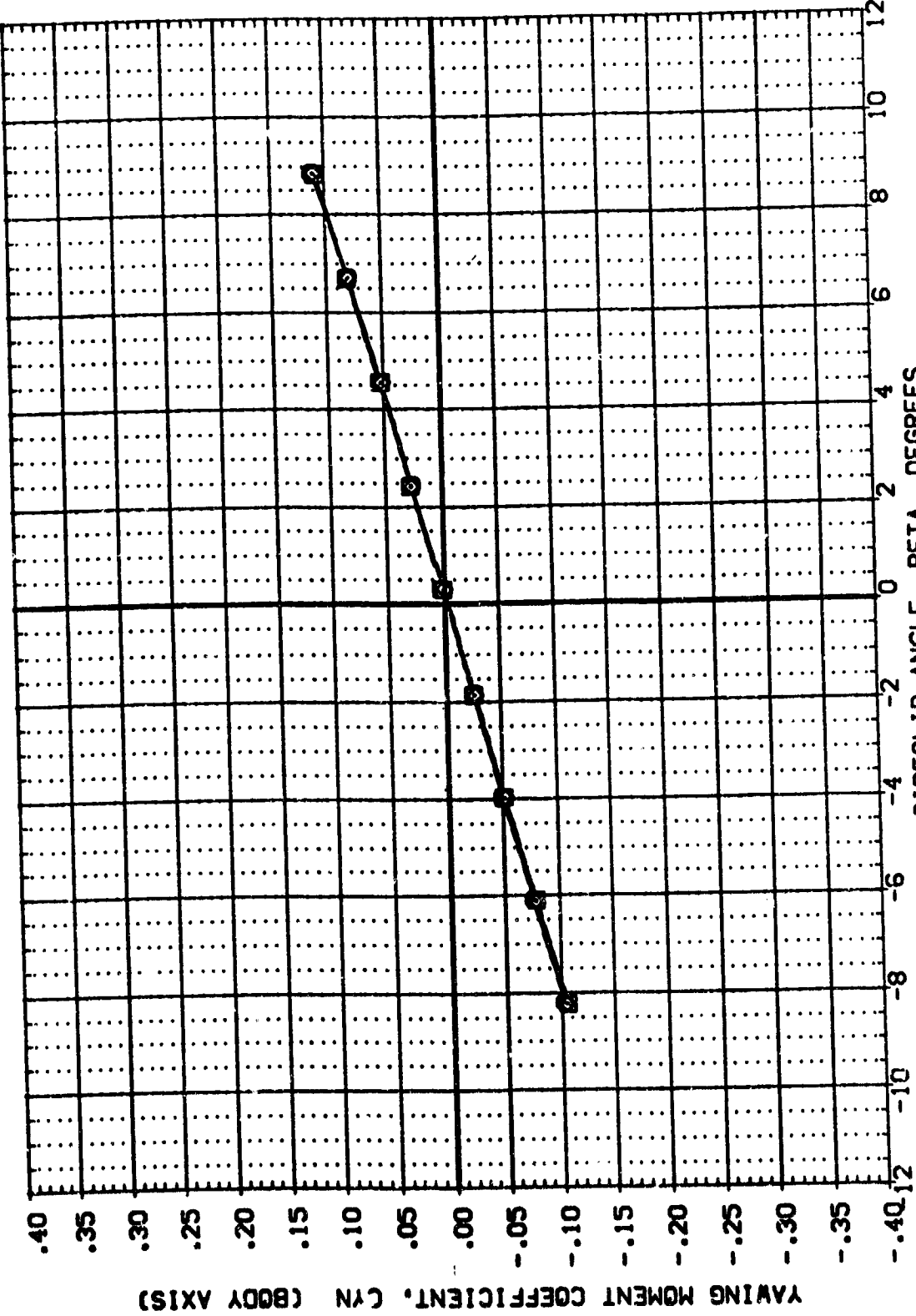


DATA SET SYMBOL: (865002)
 (865005)
 (865007)
 (865012)

CONFIGURATION DESCRIPTION:
 MSFC 590(IA48) (034)(T9)(S12)
 MSFC 590(IA48) (034)(T1)(S12)
 MSFC 590(IA48) (034)(T1)(S12)(U6)

ALPHA ORBING:
 .000
 .000
 .000

REFERENCE INFORMATION:
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

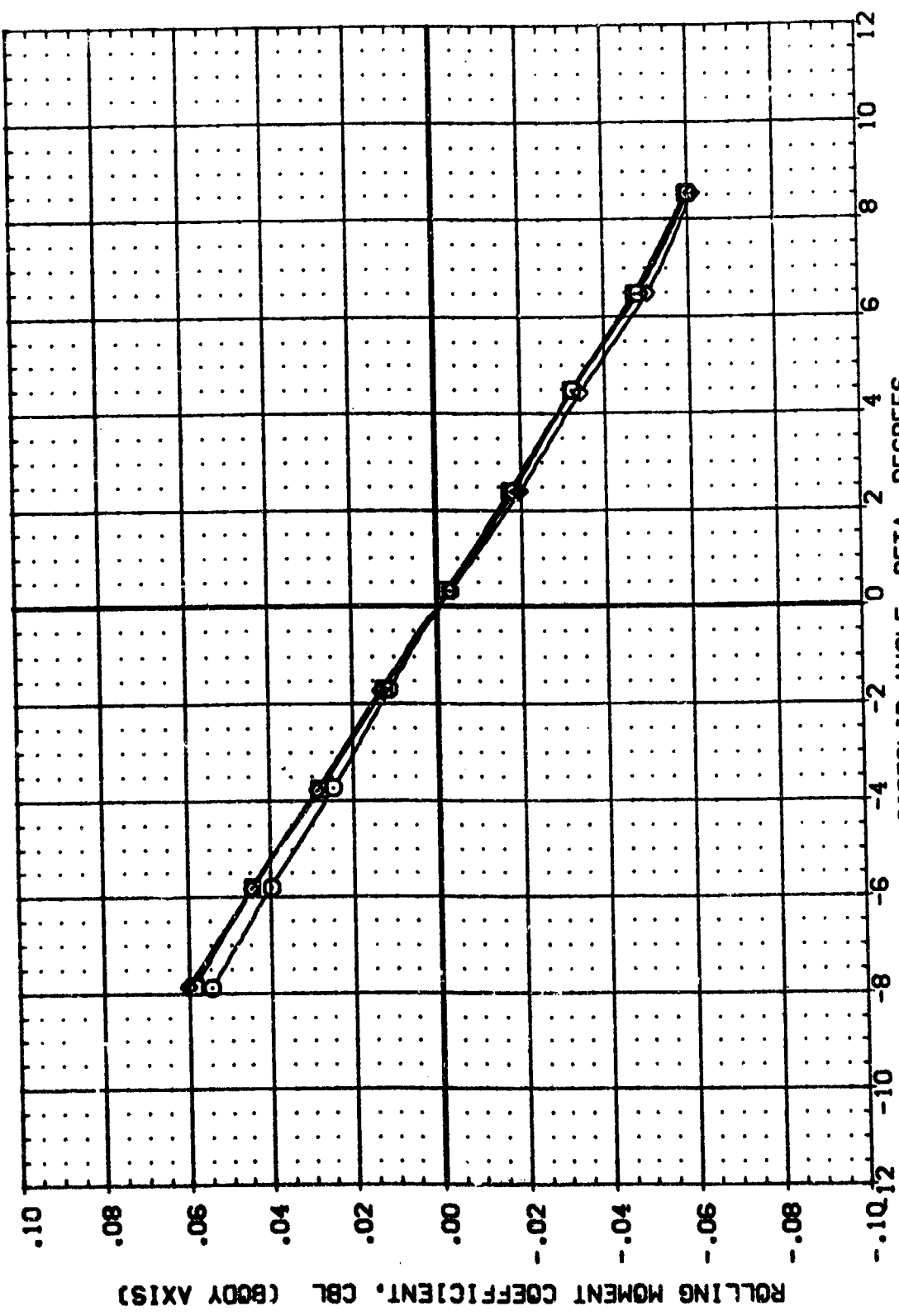


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
 (F)MACH = 1.96
 PAGE 131

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885008) MSFC 580(A48) (034)(T9)(S12)
 (885009) MSFC 580(A48) (034)(T14)(S12)
 (885002) MSFC 580(A48) (034)(T14)(S12)(US)



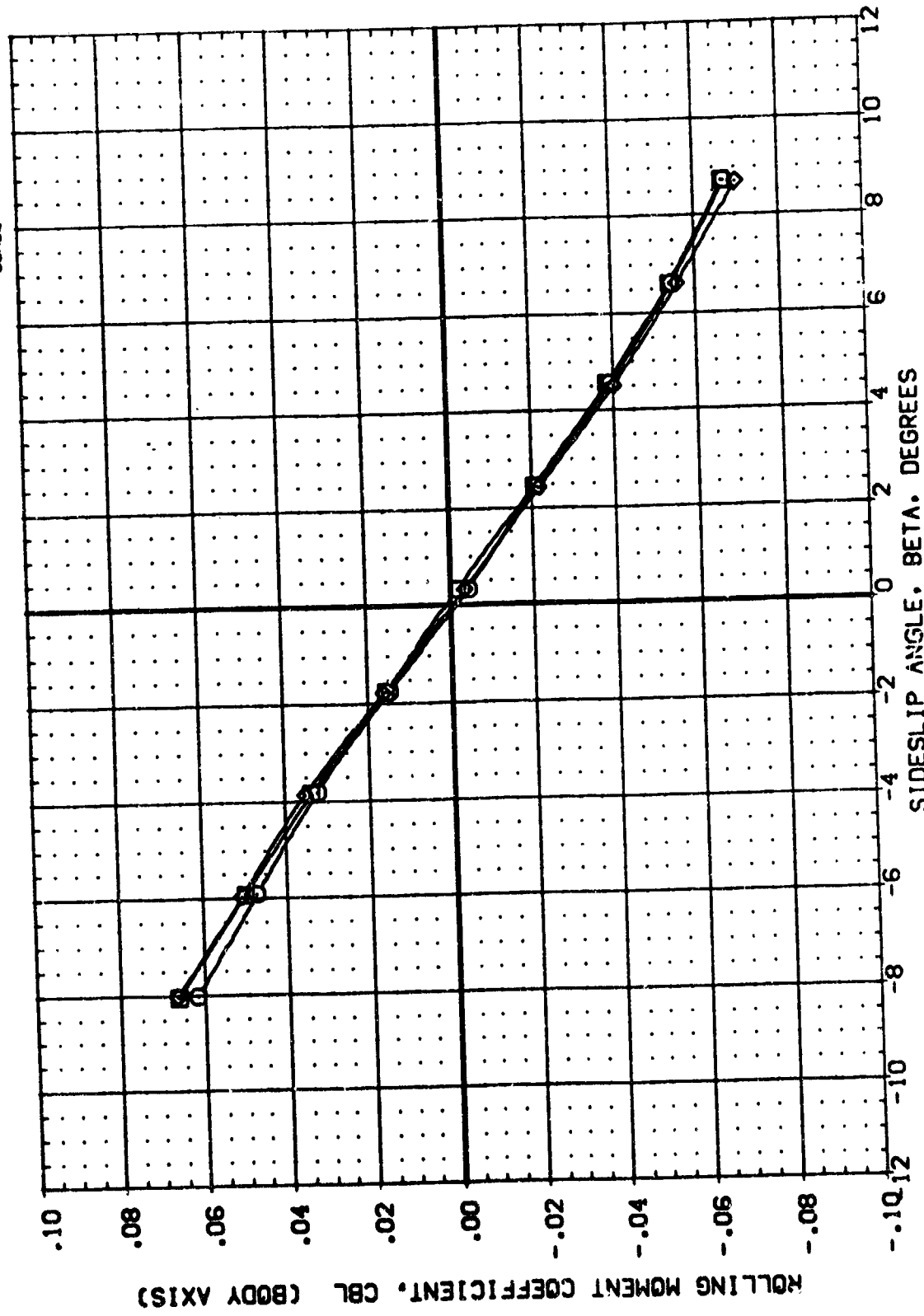
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
 (A)MACH = .60
 PAGE 132



REFERENCE INFORMATION
 SREF 6.1980 SO.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885006) MSFC 580(IA19) (034)(T9)(S12)
 (885007) MSFC 580(IA48) (034)(T14)(S12)
 (885002) MSFC 580(IA48) (034)(T14)(S12)(U6)

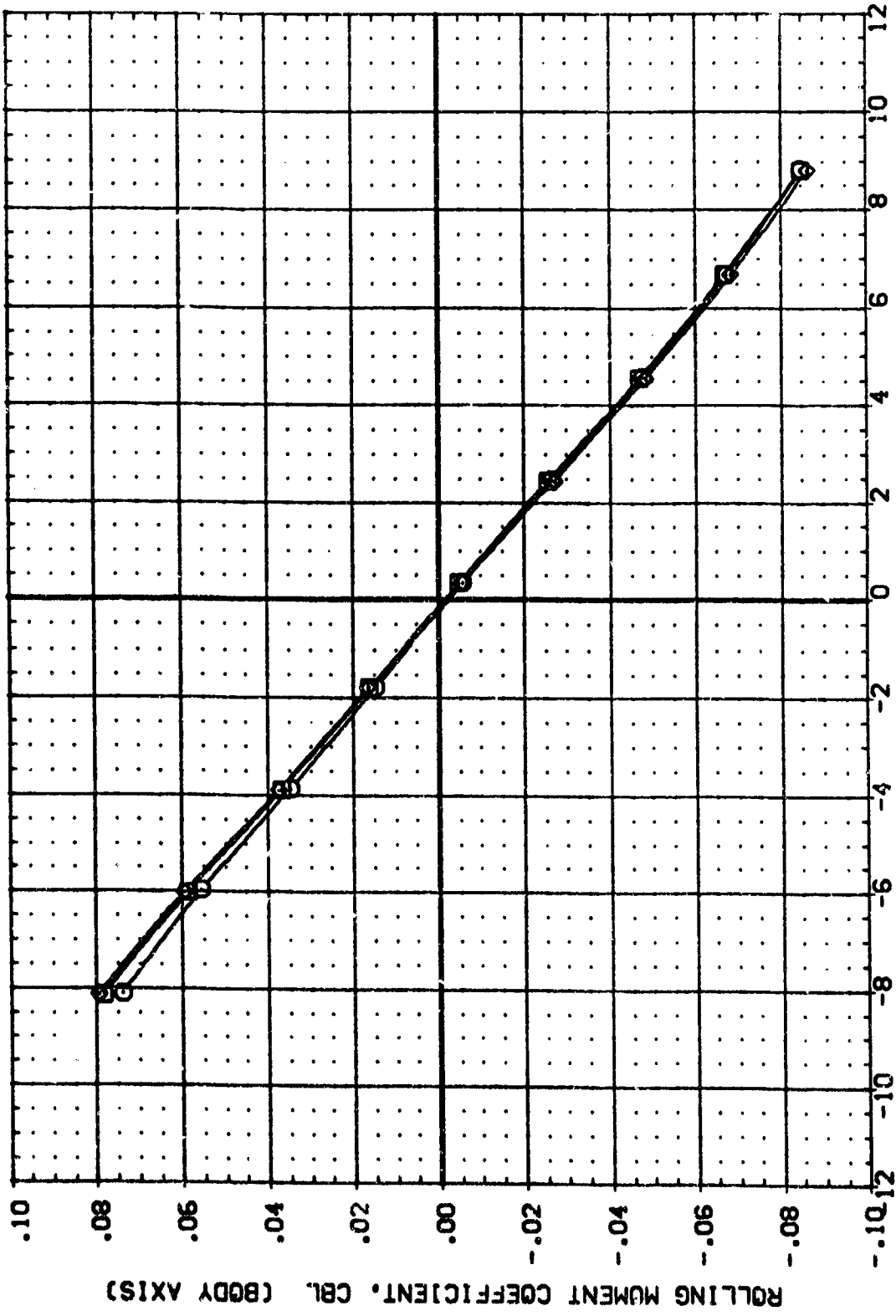


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
 (B)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885006) MSFC 580(1A48) (034)(19)(S12)
 (885003) MSFC 580(1A48) (034)(114)(S12)
 (885002) MSFC 580(1A48) (034)(114)(S12)(US)

ALPHA ORBITING
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 XHREF 5.1600 IN.
 YHREF 2.7200 IN.
 ZHREF .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(CJMACH = 1.10

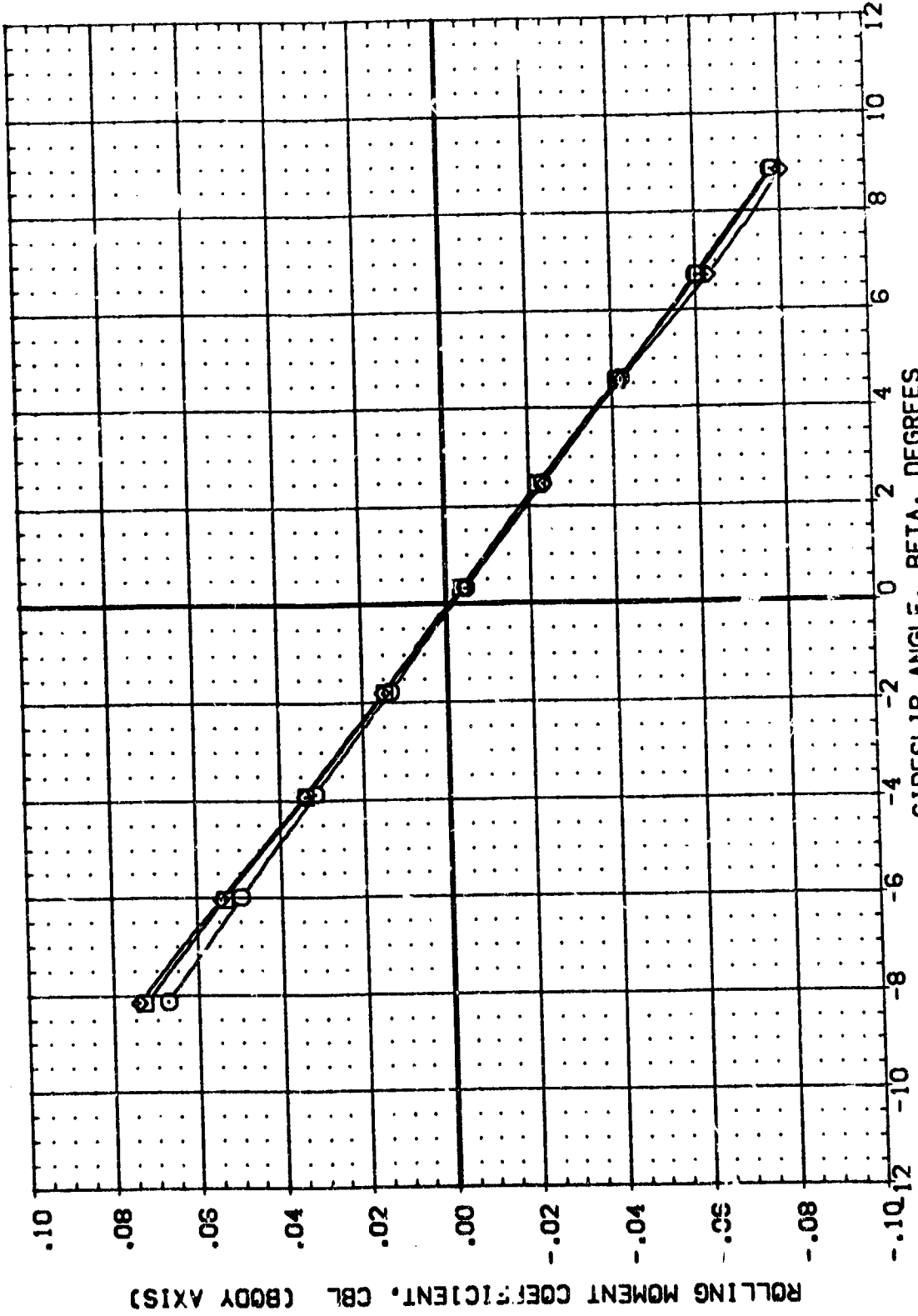


DATA SET SYMBOL: (885006) (885003) (885002)

CONFIGURATION DESCRIPTION:
 MSC 580(A48) (034)(T9)(J12)
 MSC 580(A48) (034)(T14)(S12)
 MSC 580(A48) (034)(T14)(S12)(U6)

ALPHA: .000 .000 .000
 ORBINC: .000 .000 .000

REFERENCE INFORMATION:
 SREF: 6.1580 SQ. IN.
 LREF: 5.1600 IN.
 BRREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)

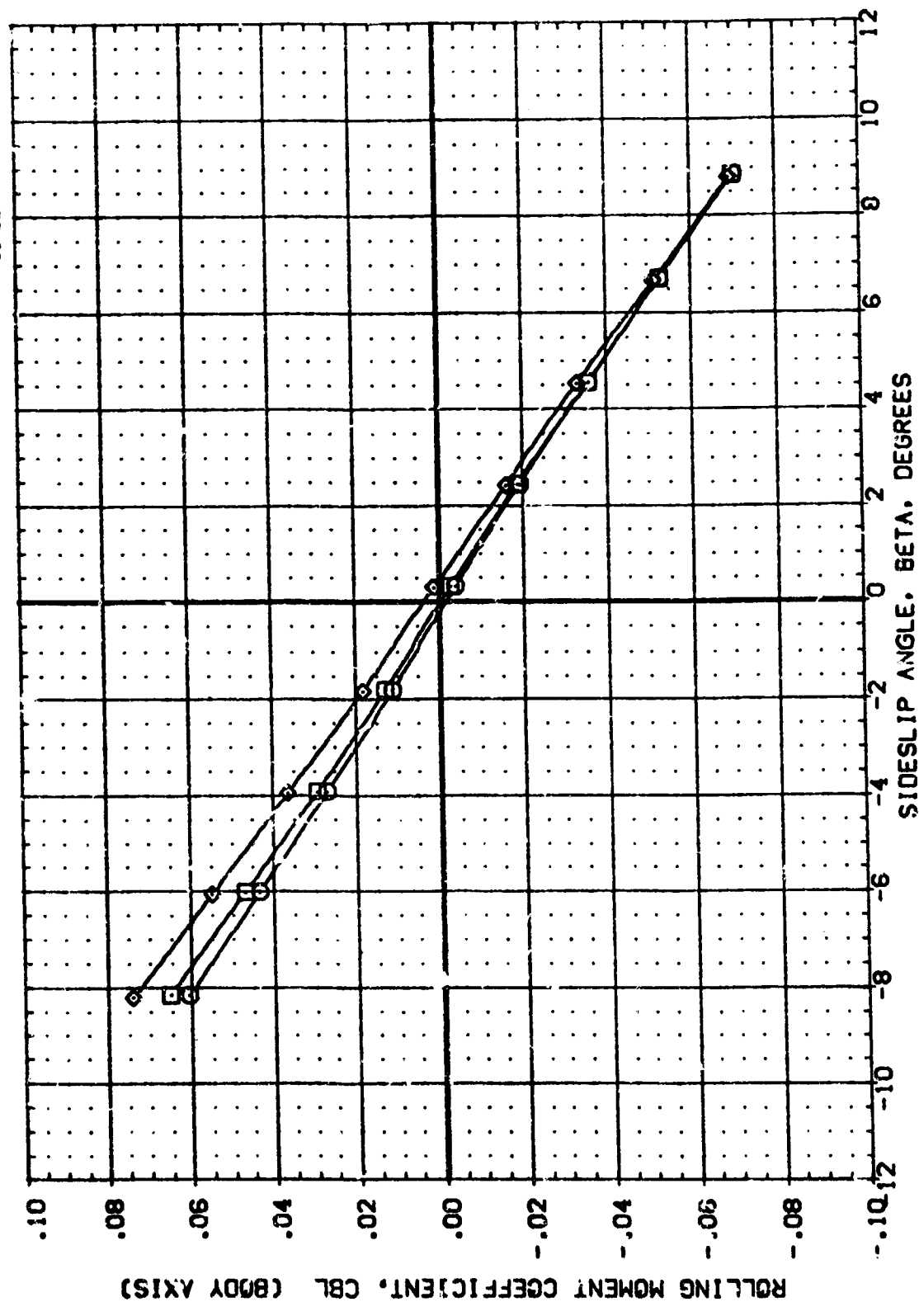
(0)MACH = 1.25

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REFERENCE INFORMATION
 SREF 5.1960 50. IN.
 LREF 5.1600 IN.
 BREF 5.1500 IN.
 YMRP 2.7200 IN.
 ZMRP .0000 IN.
 SCALE .1240

ALPHA ORBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (865003) MSFC 500(A46) (034)(T9)(S12)
 (865003) MSFC 500(A48) (034)(T14)(S12)
 (865003) MSFC 500(A48) (034)(T14)(S12)(U6)



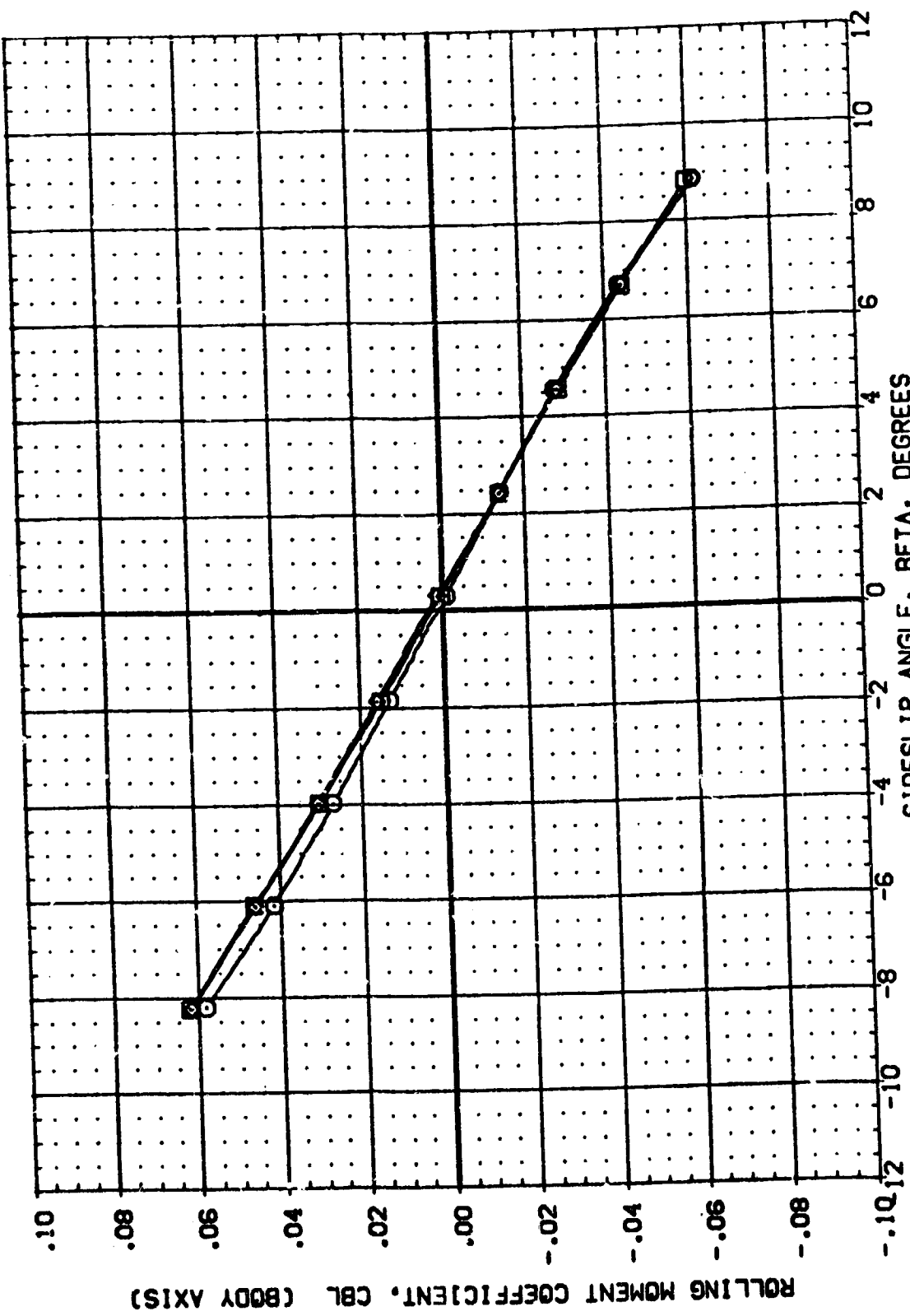
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)

(E)MACH = 1.46

REFERENCE INFORMATION
 SREF 6.1800 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (B80005) MSFC 580(A48) (034)(T9)(S12)
 (B80003) MSFC 580(A48) (034)(T14)(S12)
 (B80002) MSFC 580(A48) (034)(T14)(S12)(L6)



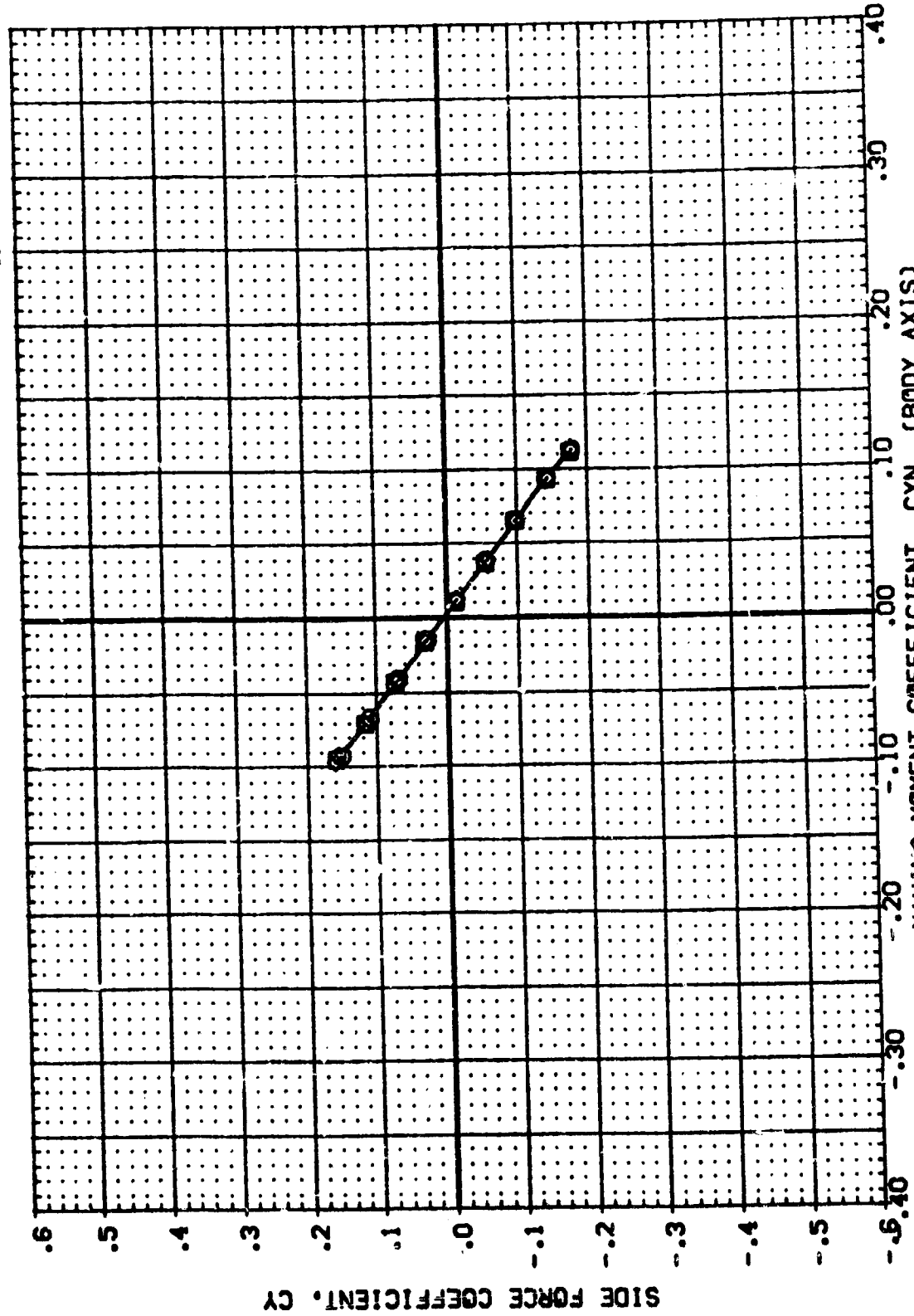
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(F)MACH = 1.96

REFERENCE INFORMATION
 SREF 6.1900 SO. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010

ALPHA ORBING
 .000 .000
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88005) MSC 580 (A48) (034)(T9)(S12)
 (B88003) MSC 580 (A48) (034)(T4)(S12)
 (B88002) MSC 580 (A48) (034)(T14)(S12)(U6)



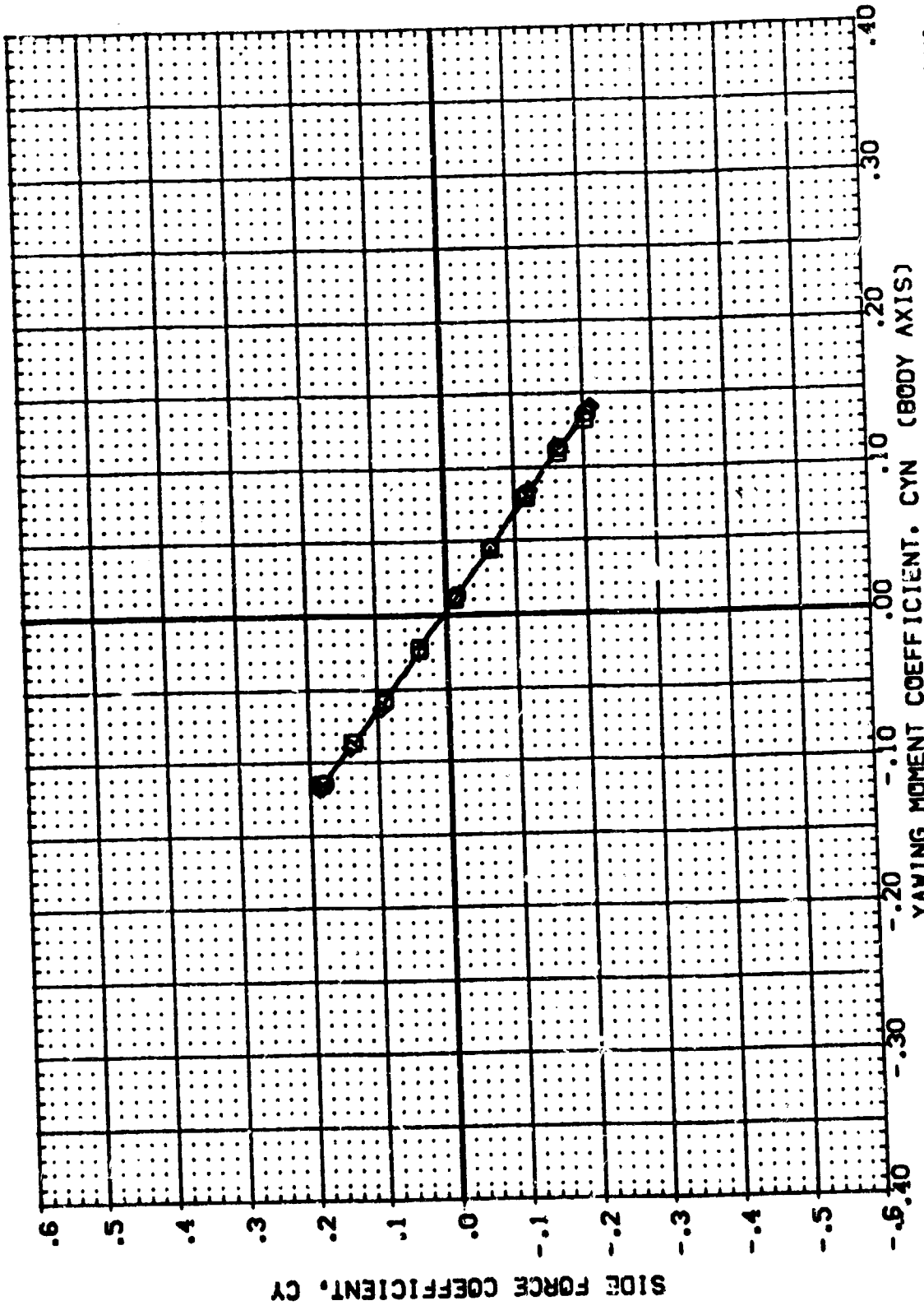
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

(A)MACH = .60

REFERENCE INFORMATION
 SREF 8.1800 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA 0RBINC
 .000
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B85002) (B85003) (B85004) (B85005)
 MSFC 580(1A48) (034)(T9)(S12)
 MSFC 580(1A48) (034)(T14)(S12)
 MSFC 580(1A48) (034)(T14)(S12)(US)

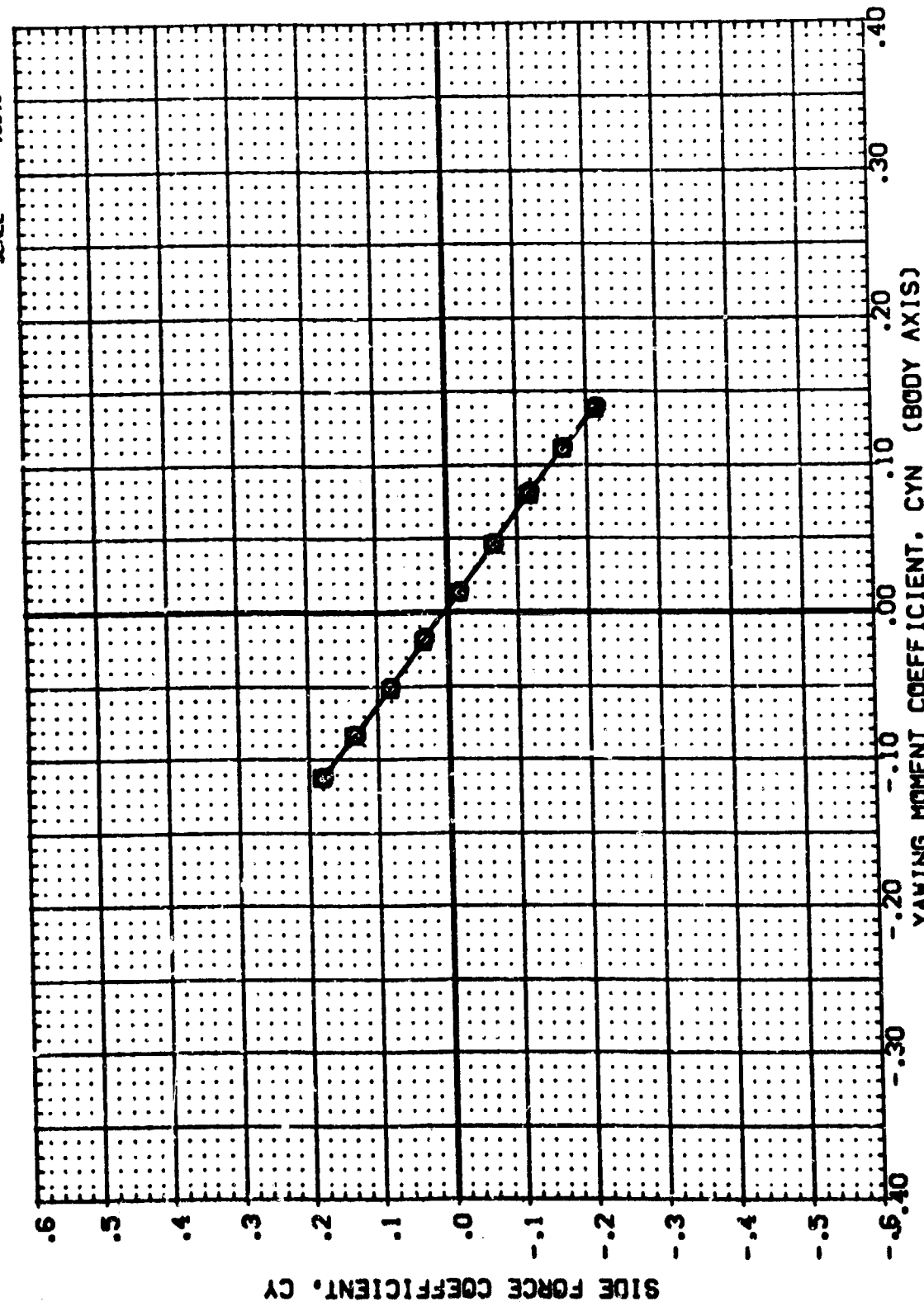


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 3.1600 IN.
 XREF 2.1600 IN.
 YREF 2.7200 IN.
 ZREF .0000 IN.
 SCALE .0040

ALPHA .000
 ORBIT .000
 .000
 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (888006) H8FC 380(1A48) (094)(19)(S12)
 (888007) H8FC 380(1A48) (094)(114)(S12)
 (888008) H8FC 380(1A48) (094)(114)(S12)(US)



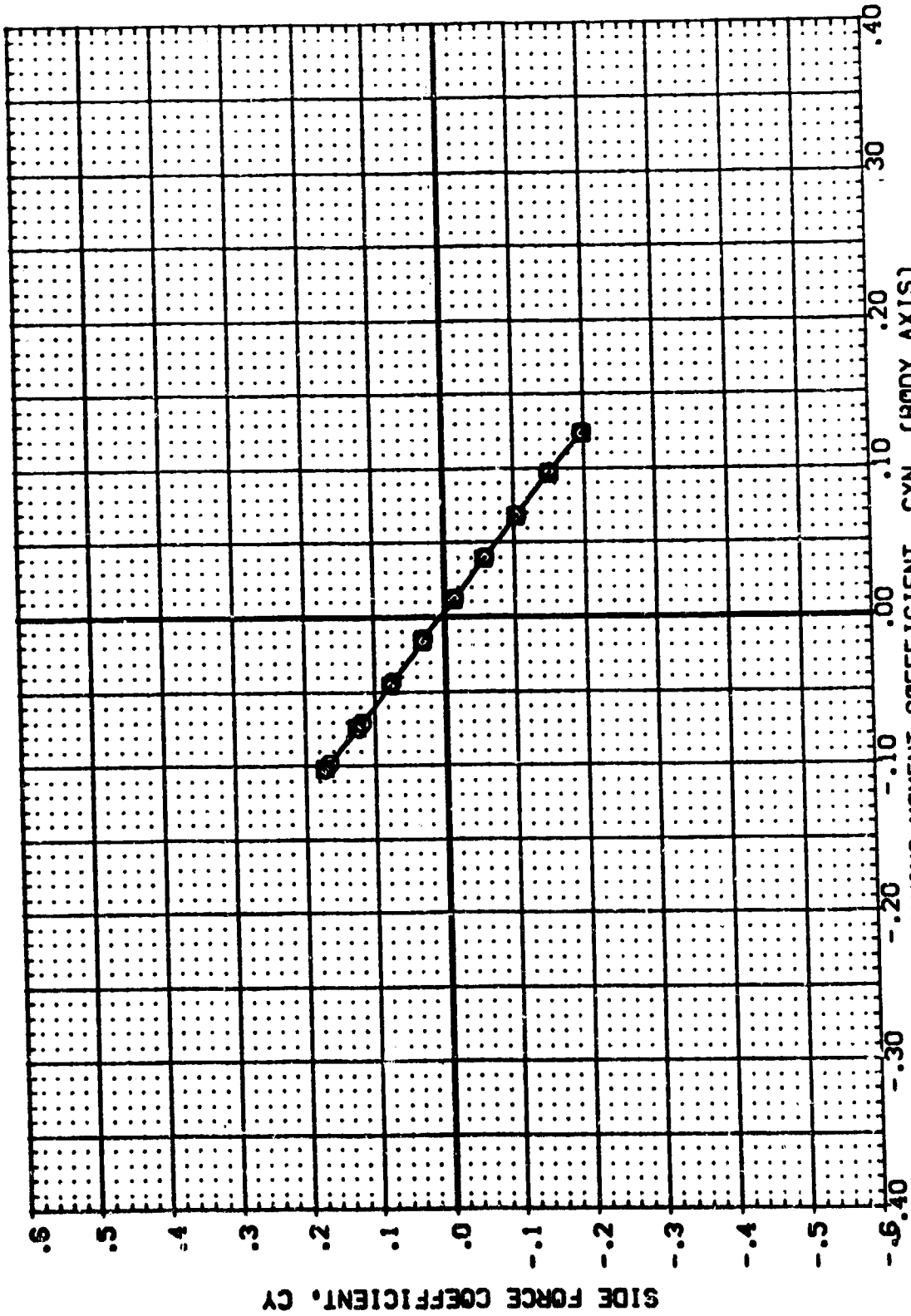
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(ORBITER ONLY)
 (C)MACH = 1.10
 PAGE 140



REFERENCE INFORMATION
SREF 6.1980 50. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XTRP 2.7200 IN.
YTRP .0000 IN.
ZTRP .0000 IN.
SCALE .0040

ALPHA 0.8116
.000
.000
.000

DATA SET SYMBL. CONFIGURATION DESCRIPTION
(080006) H5FC 560 (A48) (034) (T9) (S12)
(080003) H5FC 560 (A48) (034) (T9) (S12)
(080002) H5FC 560 (A48) (034) (T9) (S12) (L6)

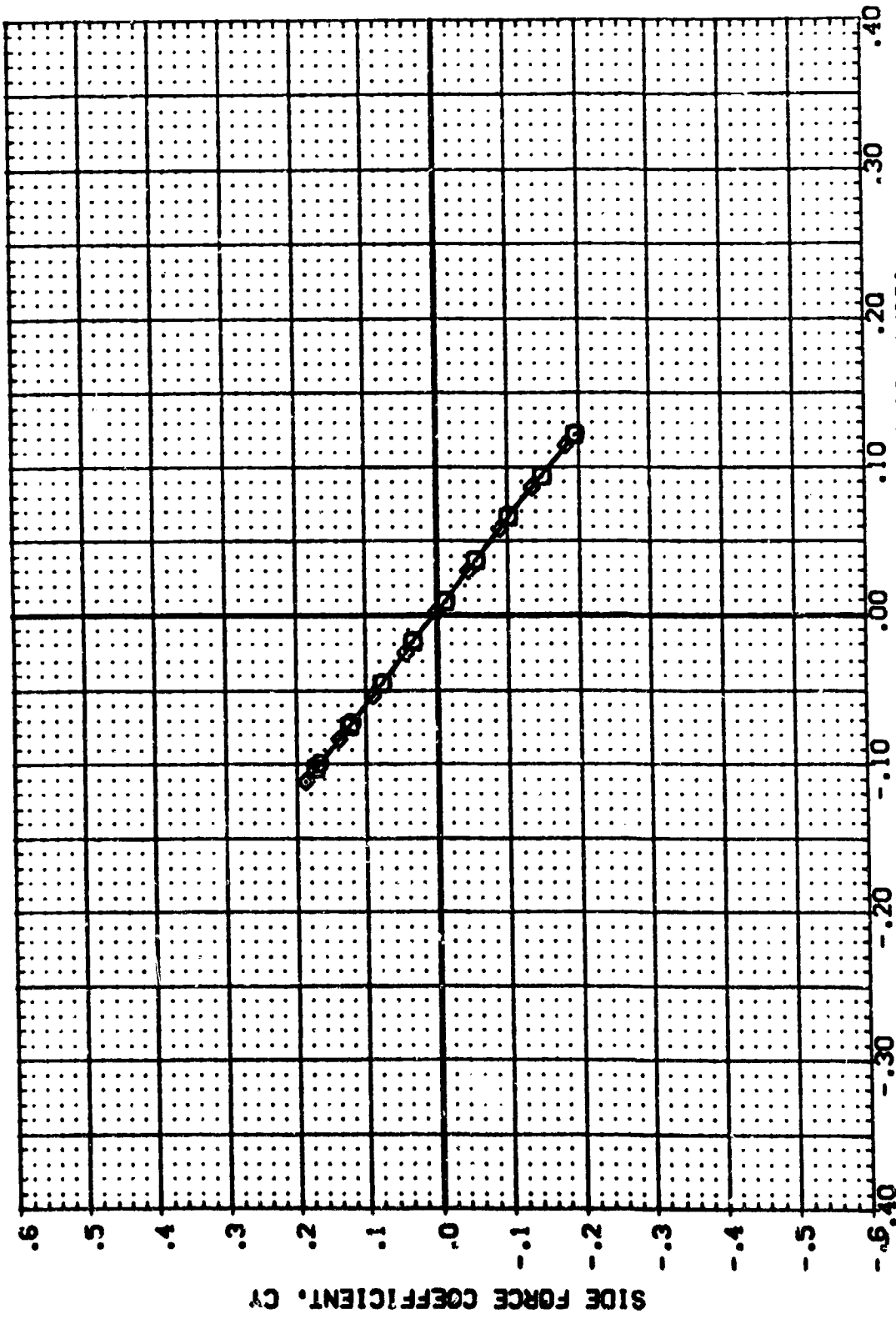


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (CORBIER ONLY)
(D)MACH = 1.25
PAGE 141

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 [170005] H5-C 900(1A48) (004)(19)(S12)
 [180005] H5-C 900(1A48) (004)(14)(S12)
 [180002] H5-C 900(1A48) (004)(14)(S12)(U6)

ALPHA CGBINC
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1800 50. IN.
 LREF 5.1600 IN.
 BRREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)

(E)MACH = 1.46



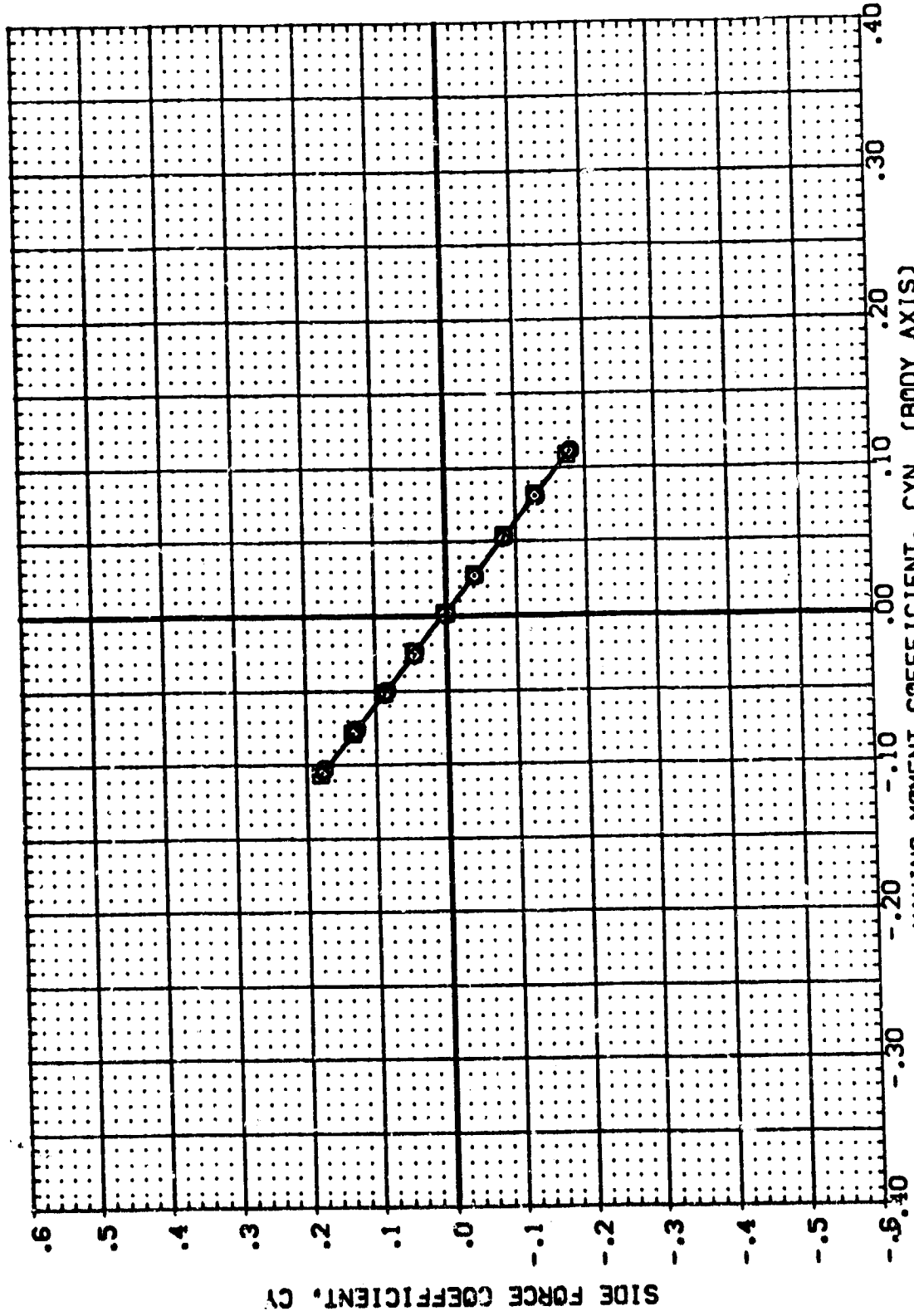
DATA SET SYMBOL: (885006) (885003) (885002)

CONFIGURATION DESCRIPTION: MSFC 580(1A48) (034)(TS)(S12) MSFC 580(1A48) (034)(114)(S12) MSFC 580(1A48) (034)(114)(S12)(U6)

ALPHA: .000 .000 .000

ORBINC: .000 .000 .000

REFERENCE INFORMATION: SREF 6.1560 SQ. IN. LREF 5.1600 IN. BREF 5.1600 IN. XPRP 2.7200 IN. YPRP .0000 IN. ZPRP .0000 IN. SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (ORBITER ONLY)

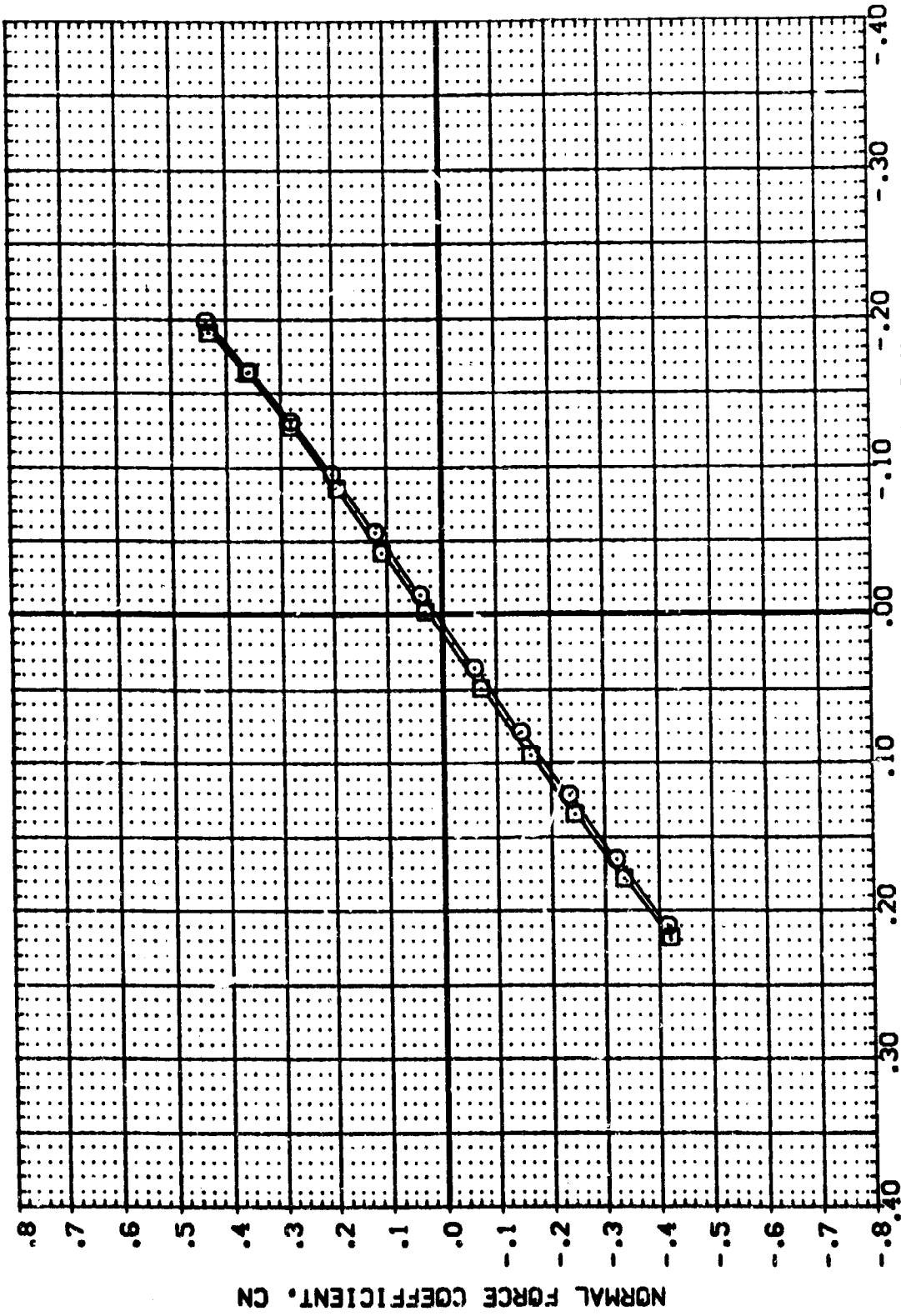
(FJ)MACH = 1.96

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DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (880003) □ MSFC 579(1A37) (03A1)(14)(U7)
 (880001) □ MSFC 579(1A37) (03A1)(19)

BETA 0.000
 0.000
 0.000

REFERENCE INFORMATION
 SREF 6.1980 SO.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010



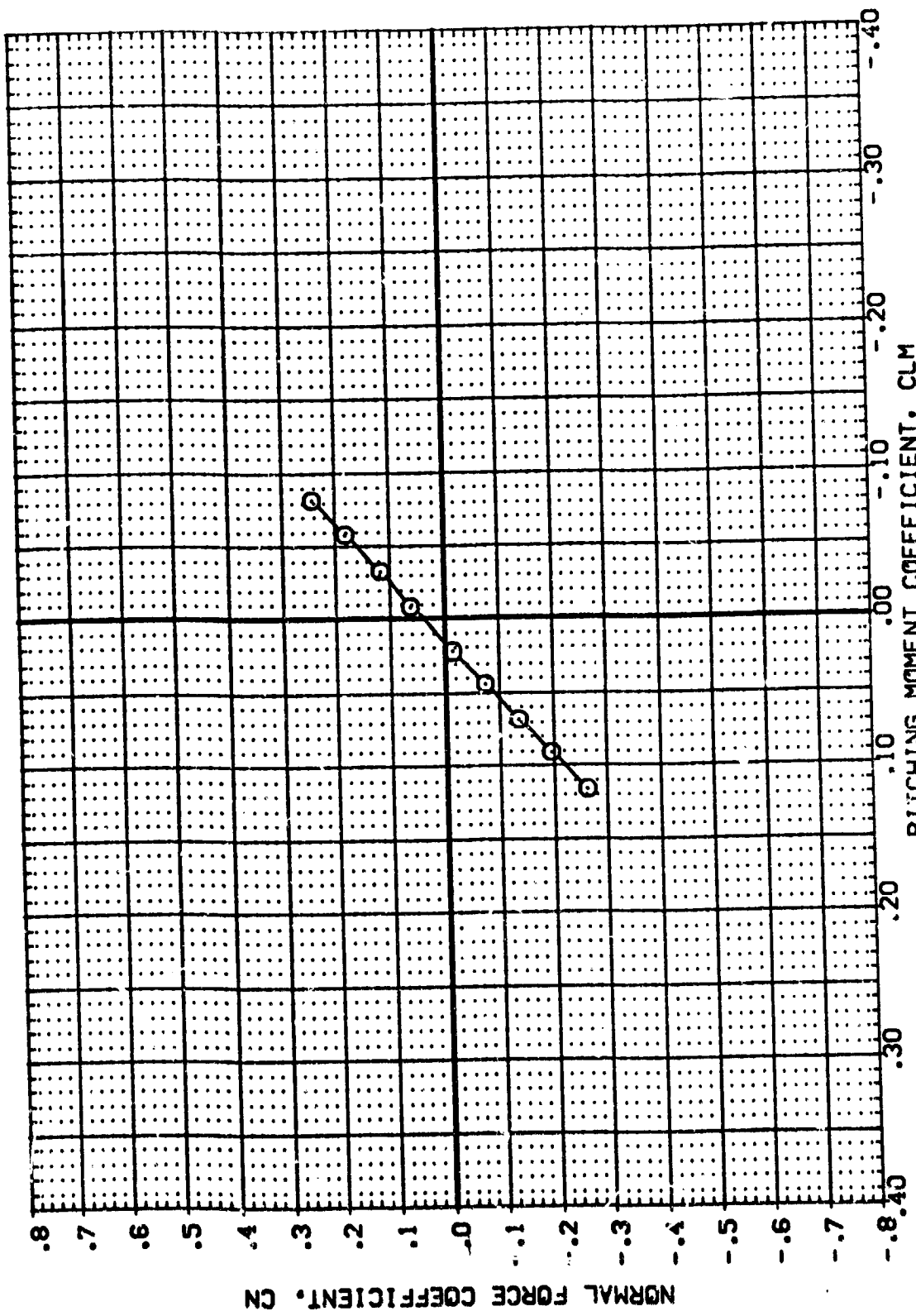
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)



REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 5.1600 IA.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

BETA 0.000
 ORBING .000

DATA SET SYMBOL (888003) (888001)
 CONFIGURATION DESCRIPTION
 NSFC 579(1A37) (034)(114)(U7)
 DATA NOT AVAILABLE

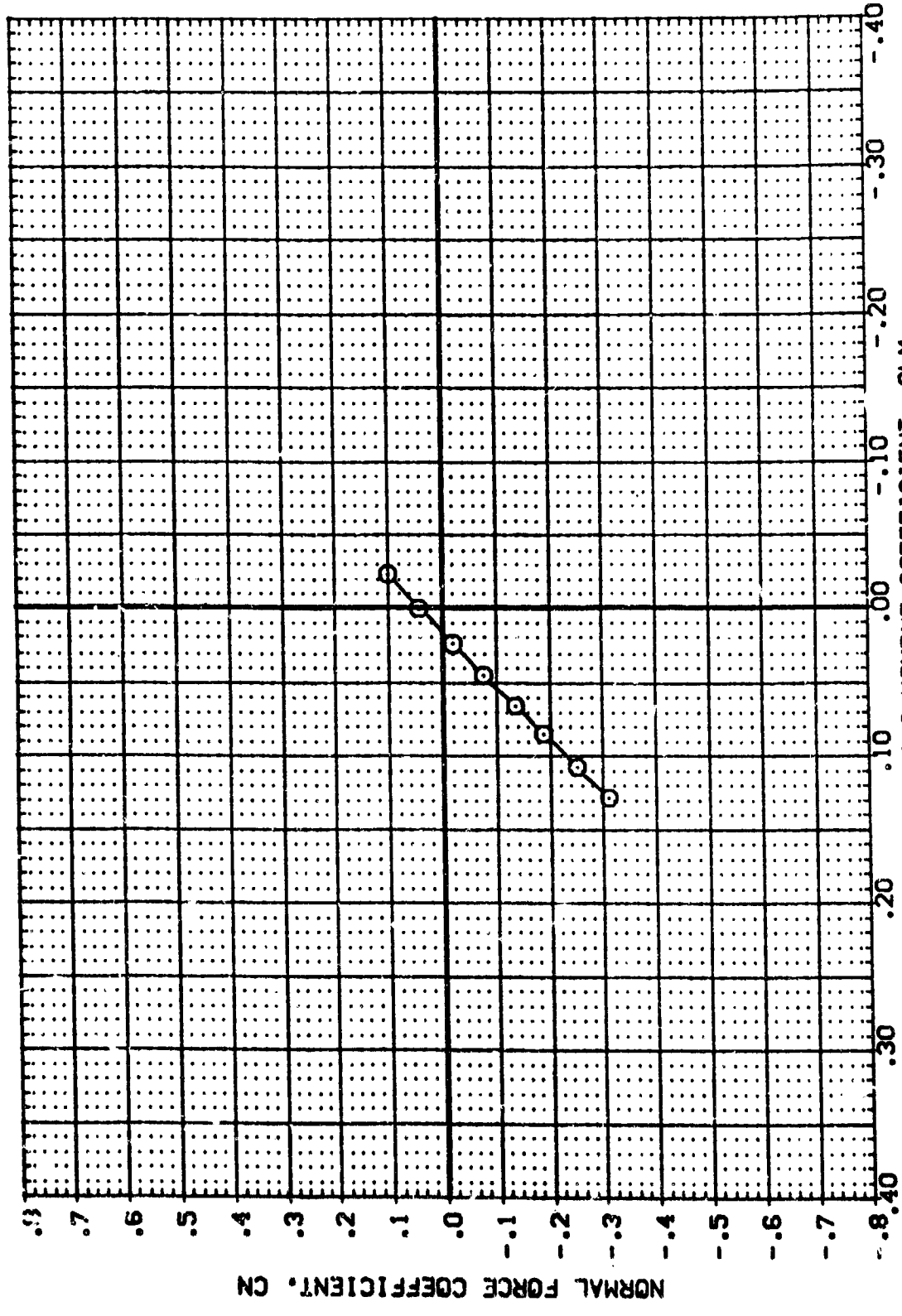


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (888003) P5FC 575(1A37) (094)(114)(U7)
 (888001) DATA NOT AVAILABLE

BETA .000
 DRBINC .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

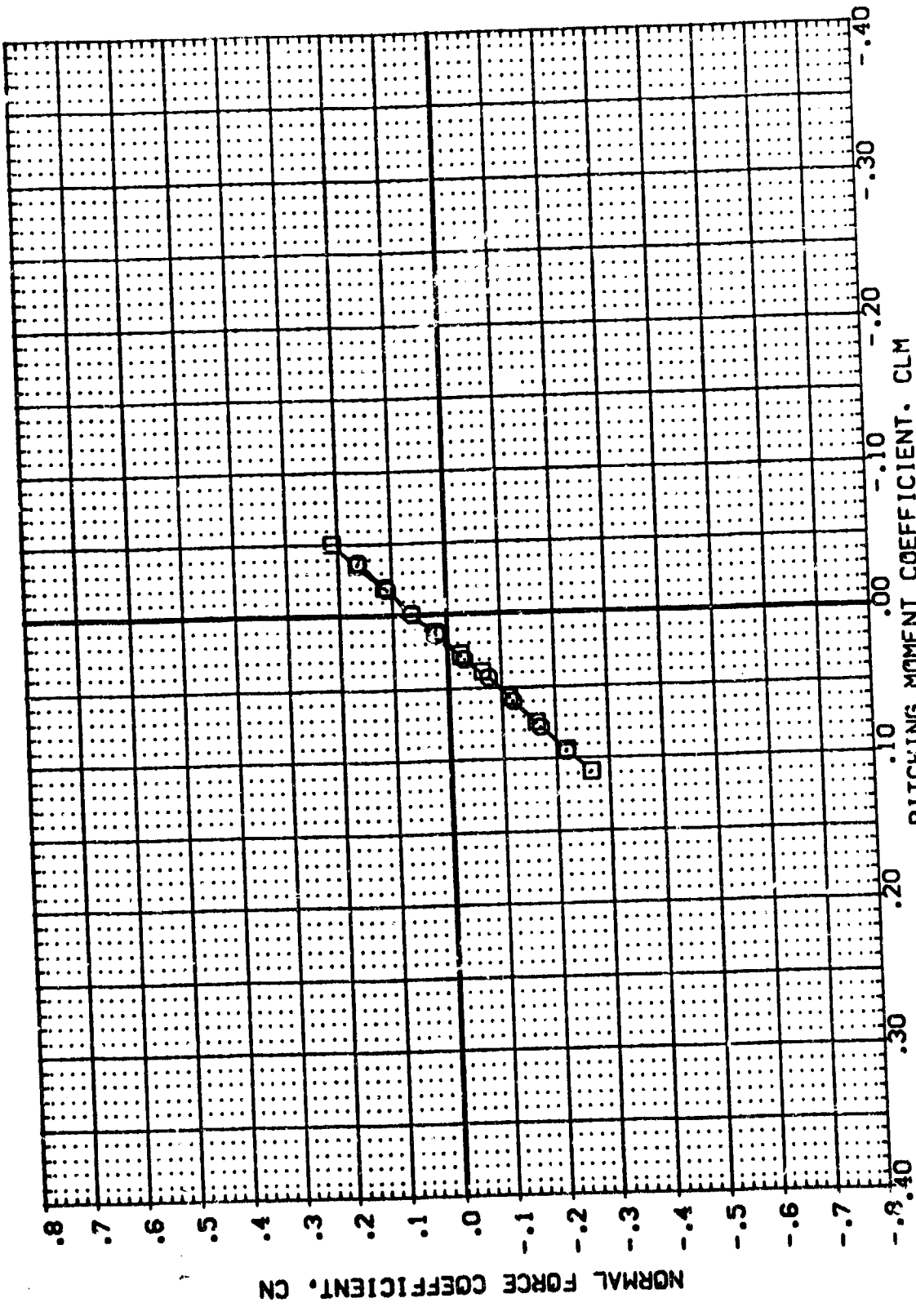


DATA SET SYMBOL: (860003) (860001)

CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(114)(U7) MSFC 579(1A37) (034)(175)

BE: .000
ORBIT: .000

REFERENCE INFORMATION:
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



PITCHING MOMENT COEFFICIENT, CLM

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

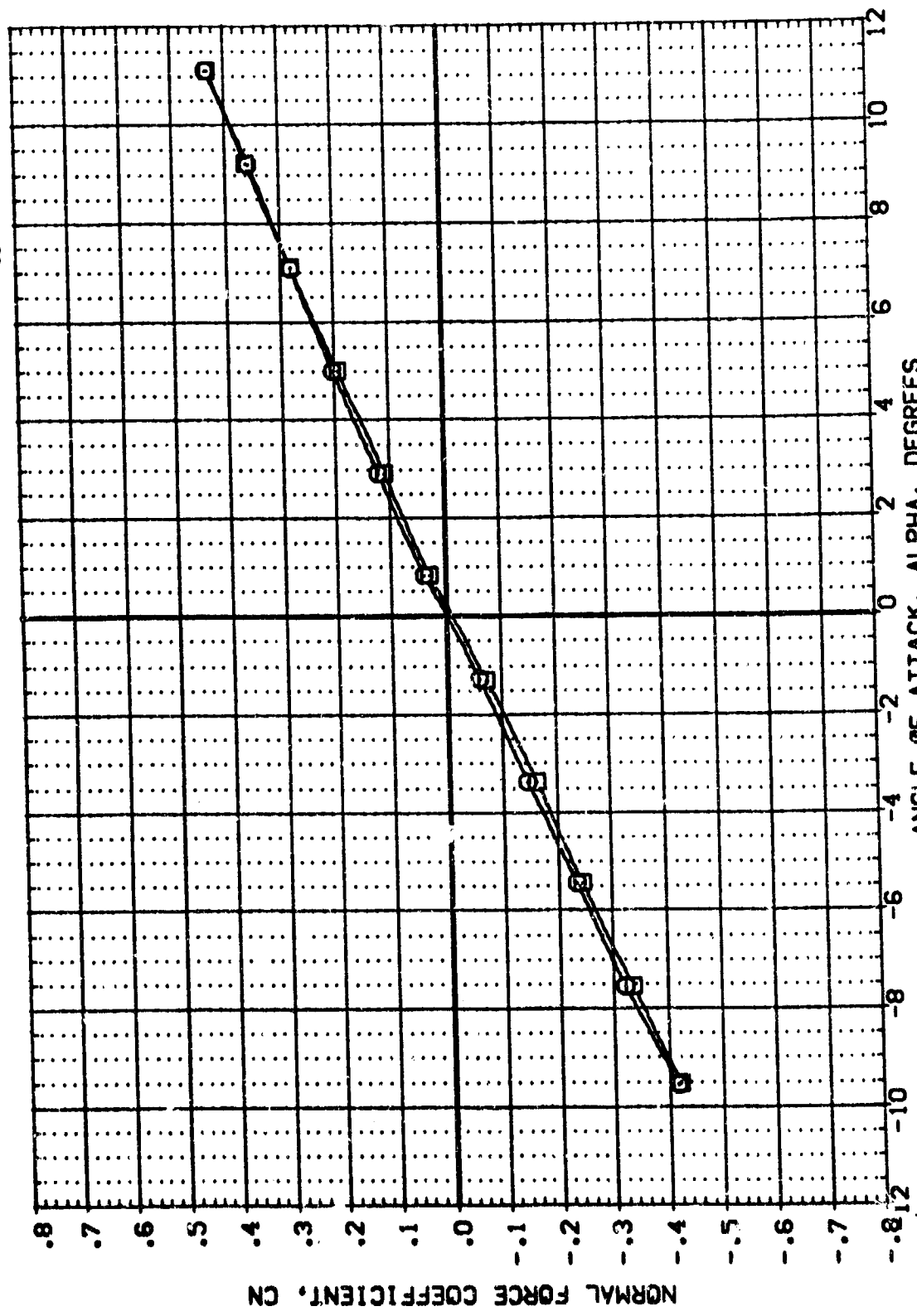
(D)MACH = 4.96

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REFERENCE INFORMATION
 SREF 8.1800 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA .000
 CRBINC .000

DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (888003) (888001) MSFC 579(1A37) (034)(114)(U7)
 MSFC 579(1A37) (034)(119)



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

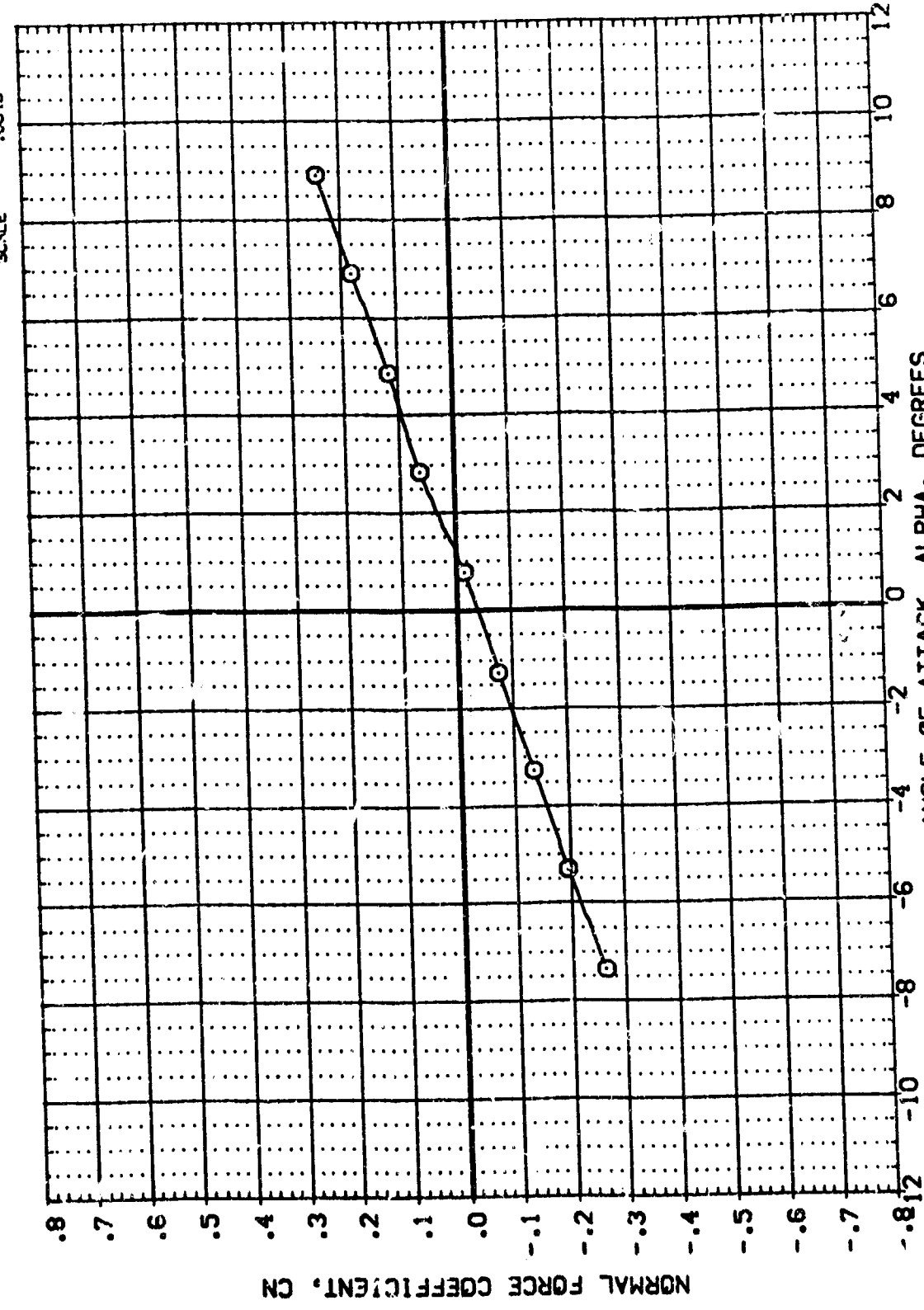
(A)MACH = 1.96



DATA SET SYMBOL: (888003) □
CONFIGURATION DESCRIPTION: MSFC 579(1A37) (034)(1141)(U7)
DATA NOT AVAILABLE

BETA: .000
ORBING: .000

REFERENCE INFORMATION:
SREF: 6.1980 SQ. IN.
LREF: 5.1600 IN.
BREF: 5.1600 IN.
VREF: 2.7200 IN.
YMRP: .0000 IN.
ZMRP: .0000 IN.
SCALE: .0040

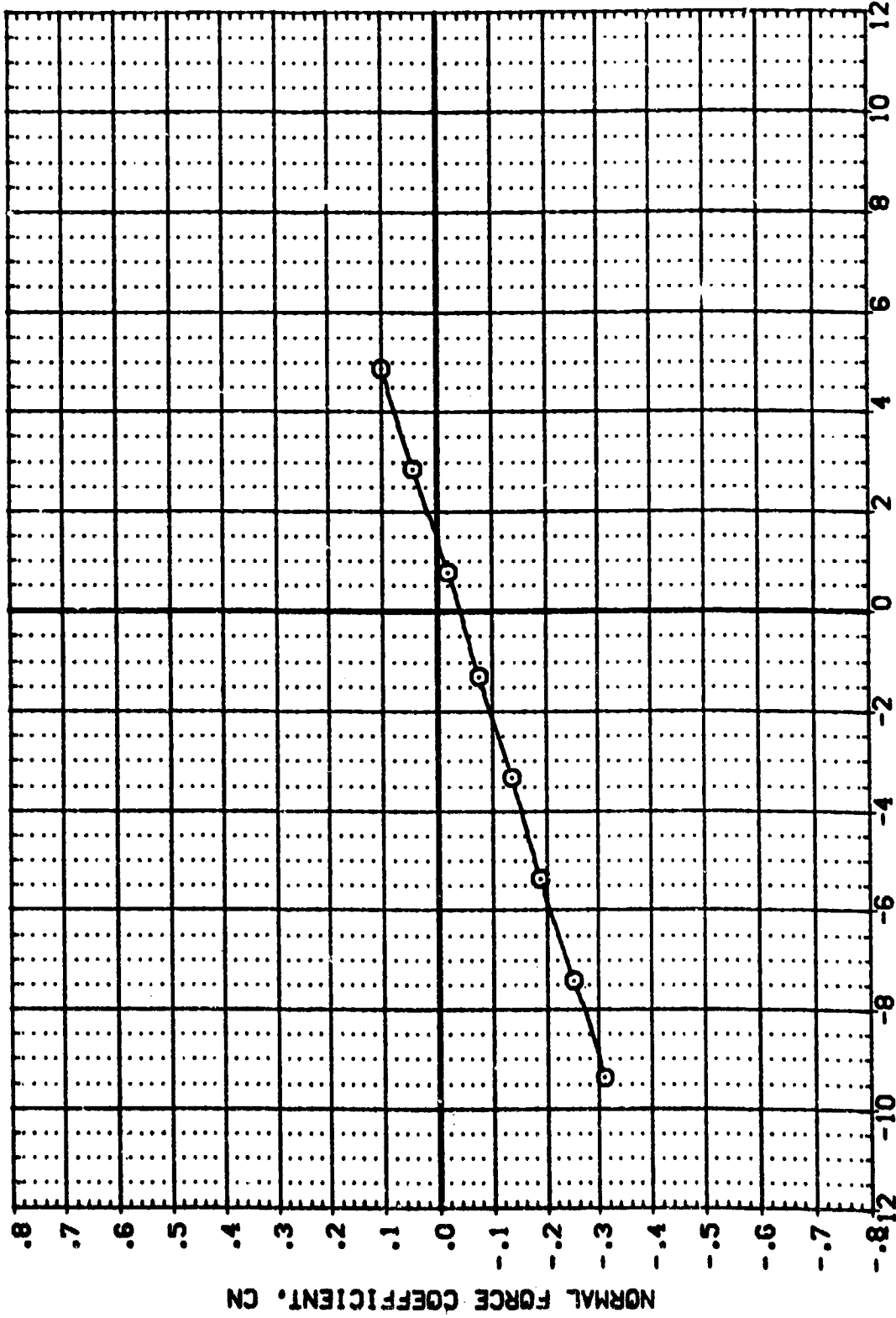


EFFECT OF ATTACH STRUCTURE AND PROTRUSANCES ON LONG. CHARACT. (SECOND STAGE)
(B)MACH = 2.99
PAGE 149

DATA SET SYMBOL: (888003)
 CONFIGURATION DESCRIPTION: MSFC 5794 (A37) (094)(114)(U7)
 DATA NOT AVAILABLE

BETA: .000
 ORIGIN: .000

REFERENCE INFORMATION:
 SREF: 5.1500 SQ. IN.
 LREF: 5.1500 IN.
 BREF: 5.1500 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0040

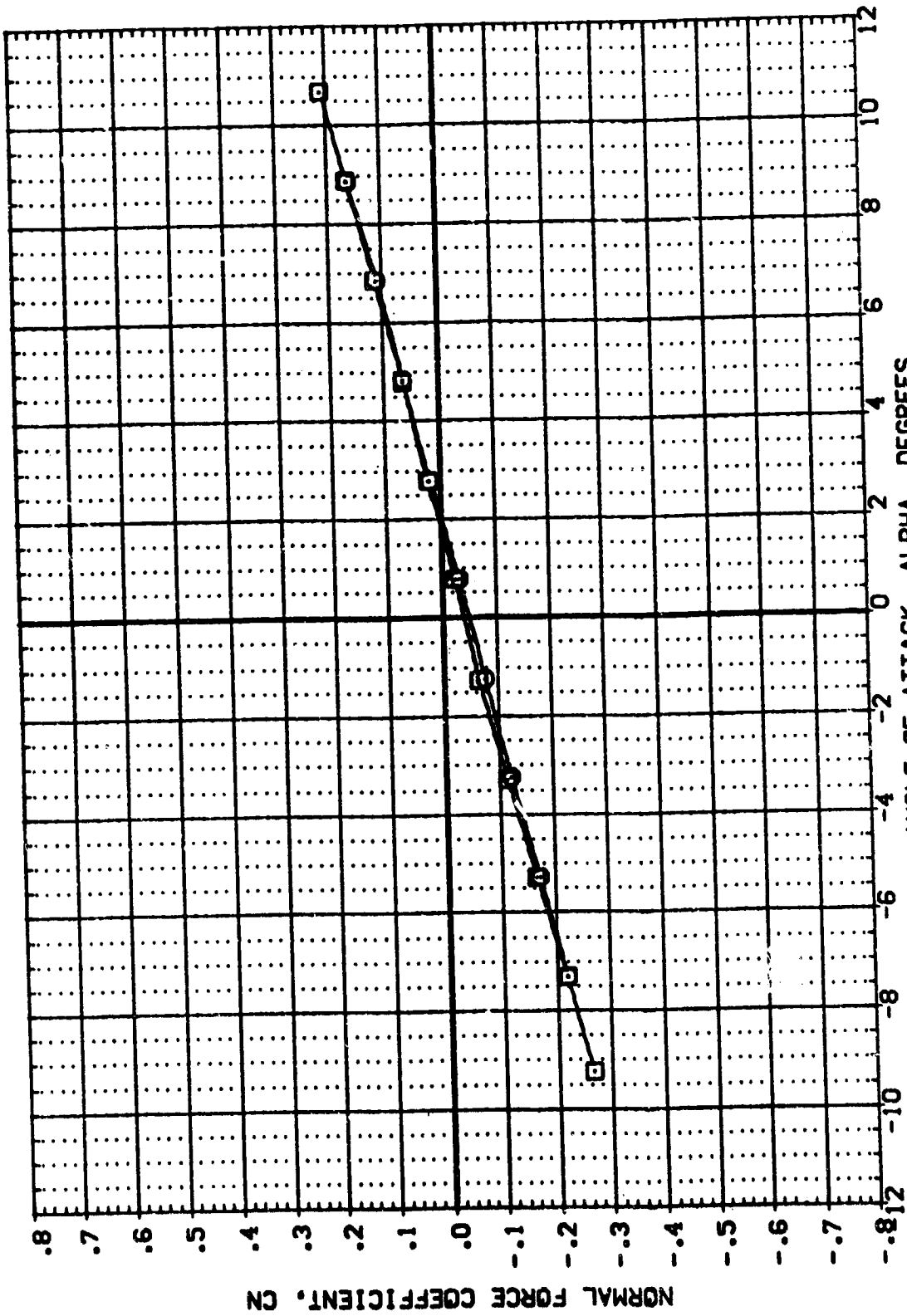


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)
 (CJMACH = 3.48)

REFERENCE INFORMATION
 SREF 6.1860 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010

BETA ORBING
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (886003) 3 MSFC 579(1A37) (034)(T14)(U7)
 (886001) MSFC 579(1A37) (034)(T9)



ANGLE OF ATTACK, ALPHA, DEGREES

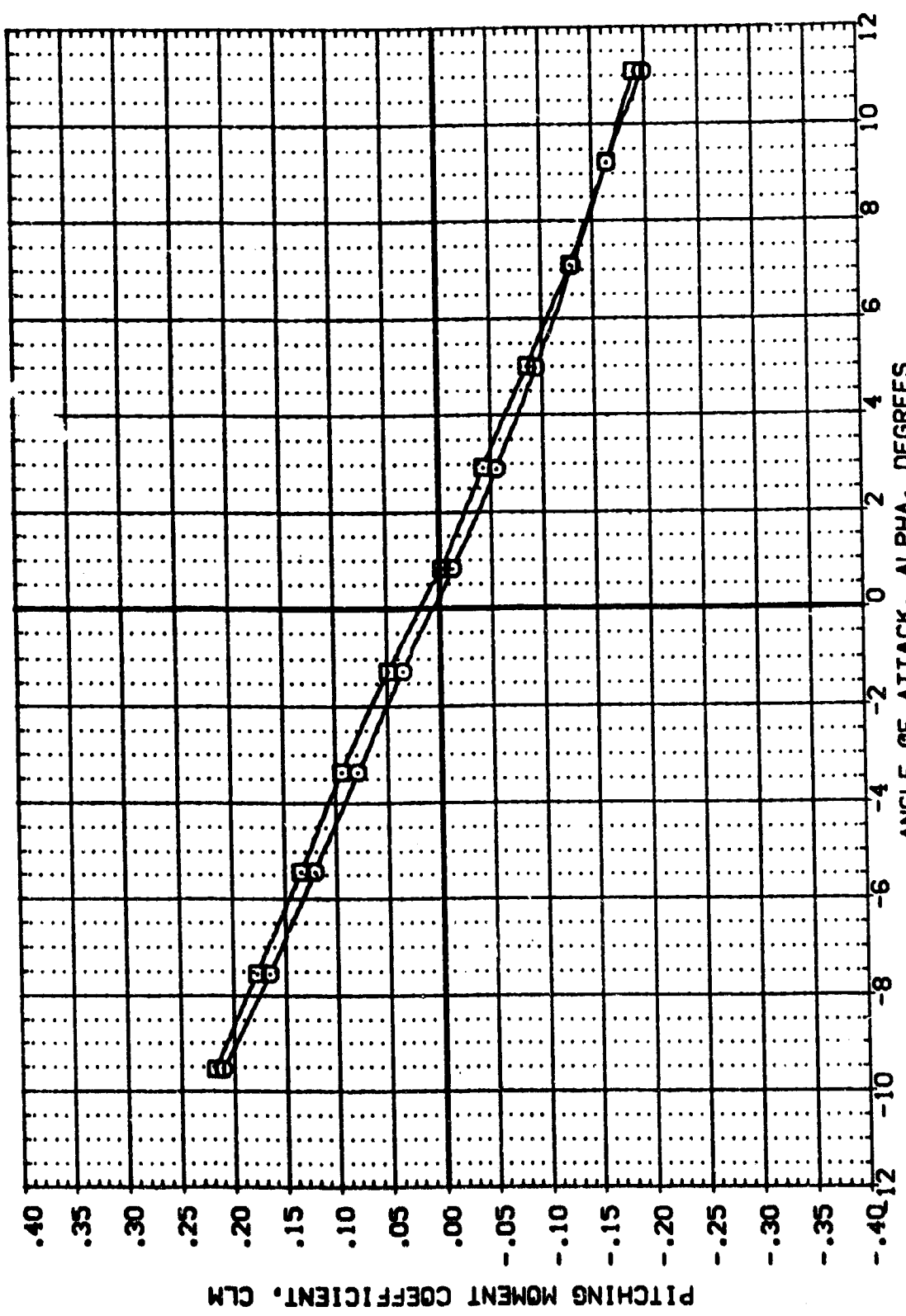
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

(O)MACH = 4.96

REFERENCE INFORMATION
 SREF 6.1900 IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA .000
 ORBINC .000

DATA SET SYMBOL (880003) (880001)
 CONFIGURATION DESCRIPTION
 MSFC 579(1A37) (034)(114)(U7)
 MSFC 579(1A37) (034)(19)



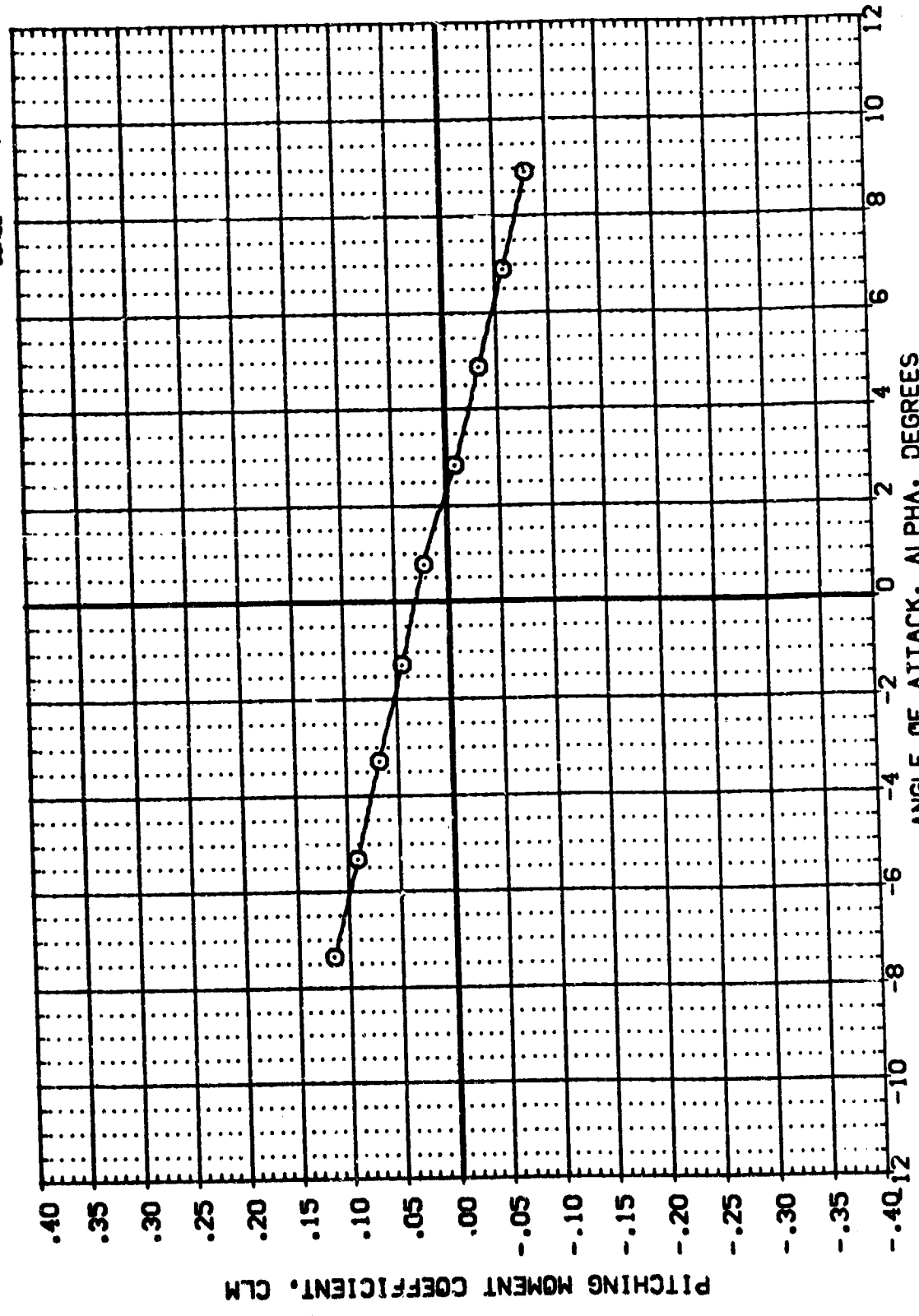
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)
 (A)MACH = 1.96
 PAGE 152



REFERENCE INFORMATION
SREF 6.1580 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0010

BETA ORBING
.000 .000
.000 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
(B88003) MSFC 575(1A37) (03A)(114)(U7)
(B88001) DATA NOT AVAILABLE

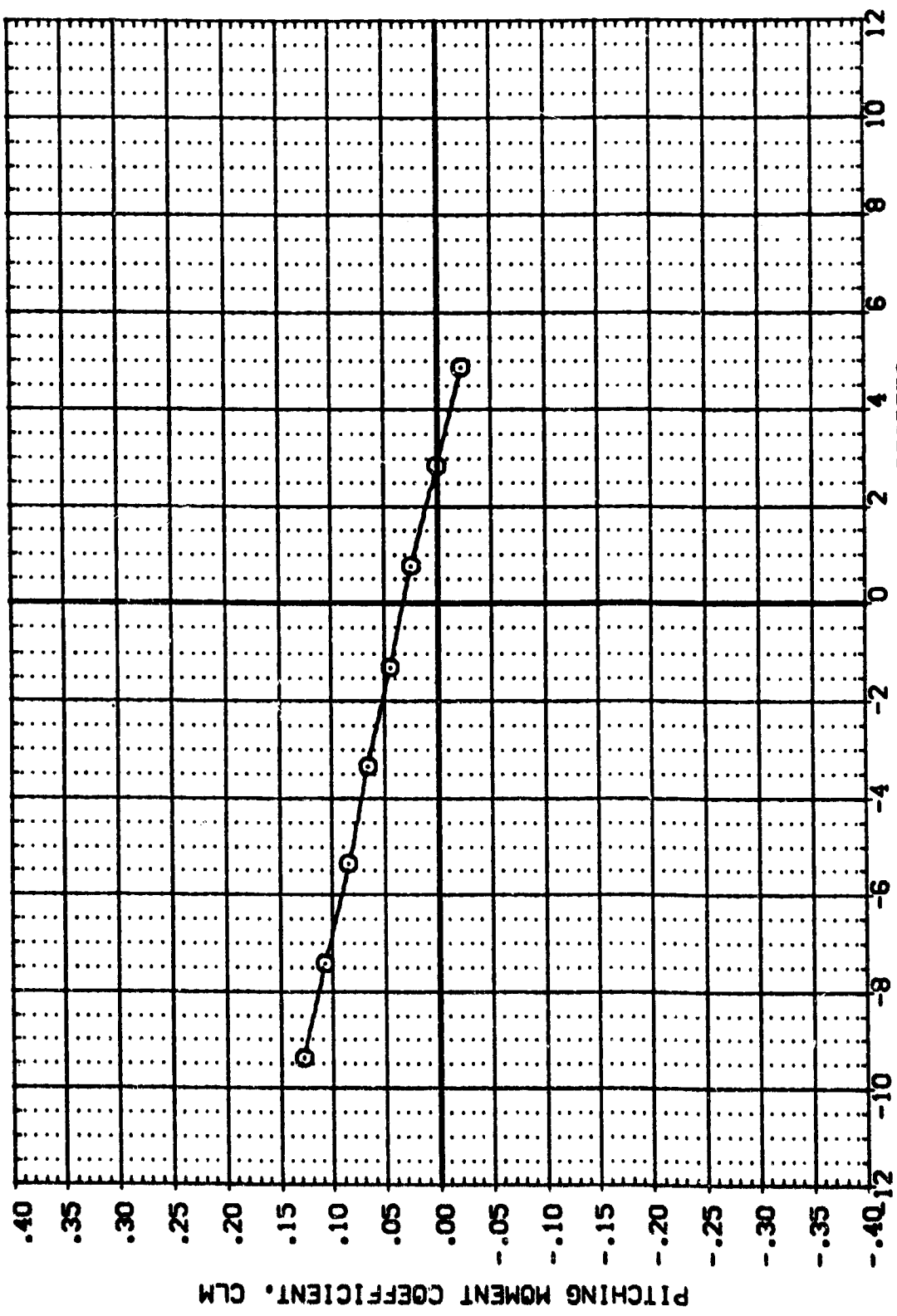


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

DATA SET SYMBOL: (880003) 9
 CONFIGURATION DESCRIPTION: MSFC 575(1A37) (CON)(14)(U7)
 DATA NOT AVAILABLE

REFERENCE INFORMATION
 SREF 6.1890 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA .000
 CRGINC .000



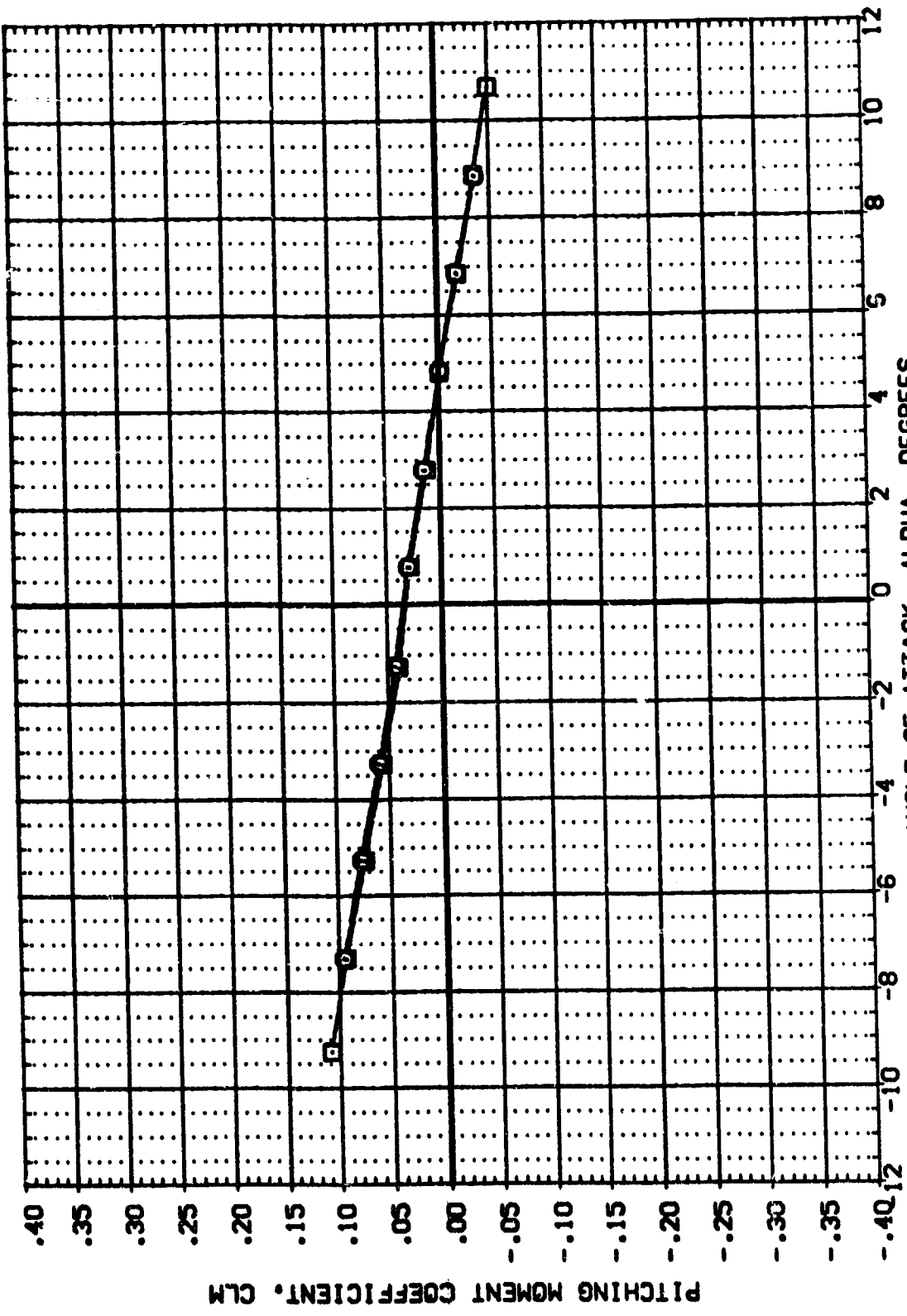
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT.(SECOND STAGE)



DATA SET SYMB. CONFIGURATION DESCRIPTION
 (888003) NSFC 578(1A37) (034)(14)(U7)
 (888001) NSFC 578(1A37) (034)(19)

BETA 0.000
 ORBINC 0.000

REFERENCE INFORMATION
 SREF 6.1880 30. IN.
 LREF 5.1600 IN.
 MREF 5.1600 IN.
 ZREF 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

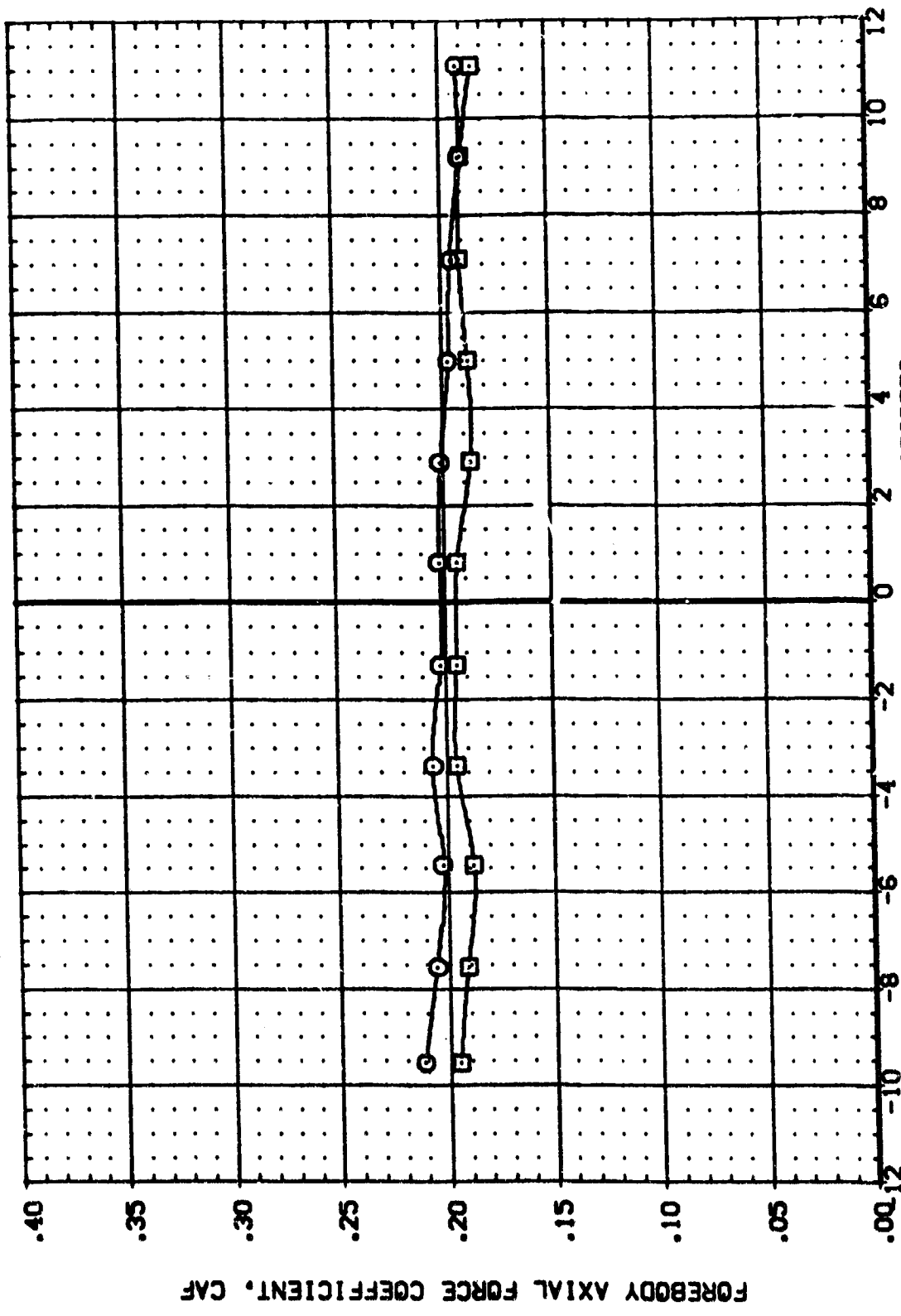


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)
 (O)MACH = 4.96
 PAGE 155

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YREF 2.7200 IN.
 ZREF .0000 IN.
 SCALE .0040

BETA 0.000
 ORBITING 0.000

DATA SET SYMBOL (880003) (880001)
 CONFIGURATION DESCRIPTION
 H5FC 579(1A37) (034)(T14)(U7)
 H5FC 575(1A37) (034)(T9)



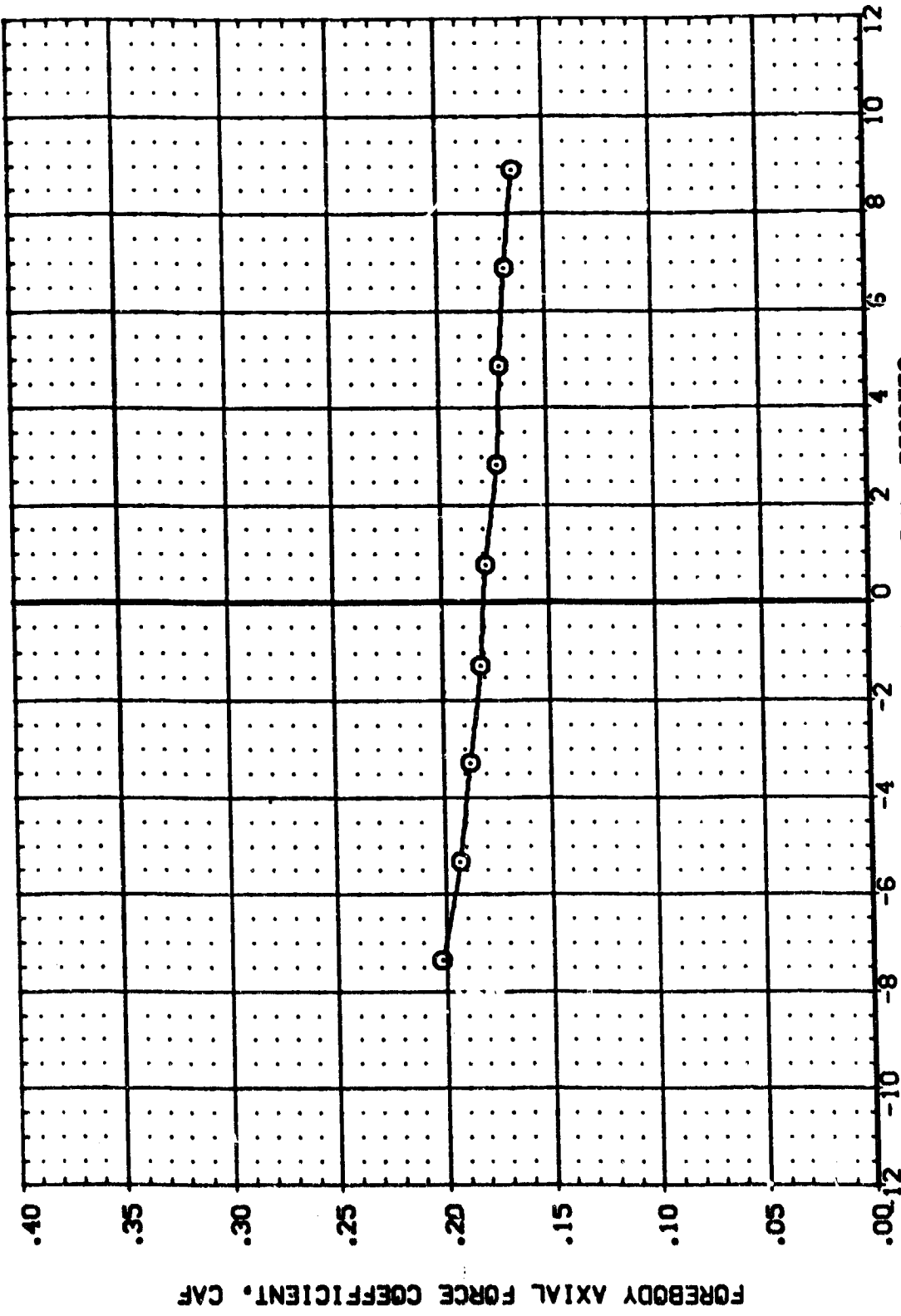
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)
 (A)MACH = 1.96
 PAGE 156



DATA SET SYMBL. CONFIGURATION DESCRIPTION
(888003) P8FC 579(1A37) (034)(114)(U7)
(888001) DATA NOT AVAILABLE

BETA .000
CRIBING .000

REFERENCE INFORMATION
SPEF 6.1800 SQ. IN.
LREF 9.1600 IN.
XREF 9.1600 IN.
YREF 2.7200 IN.
ZREF .0000 IN.
SCALE .0040



ANGLE OF ATTACK, ALPHA, DEGREES

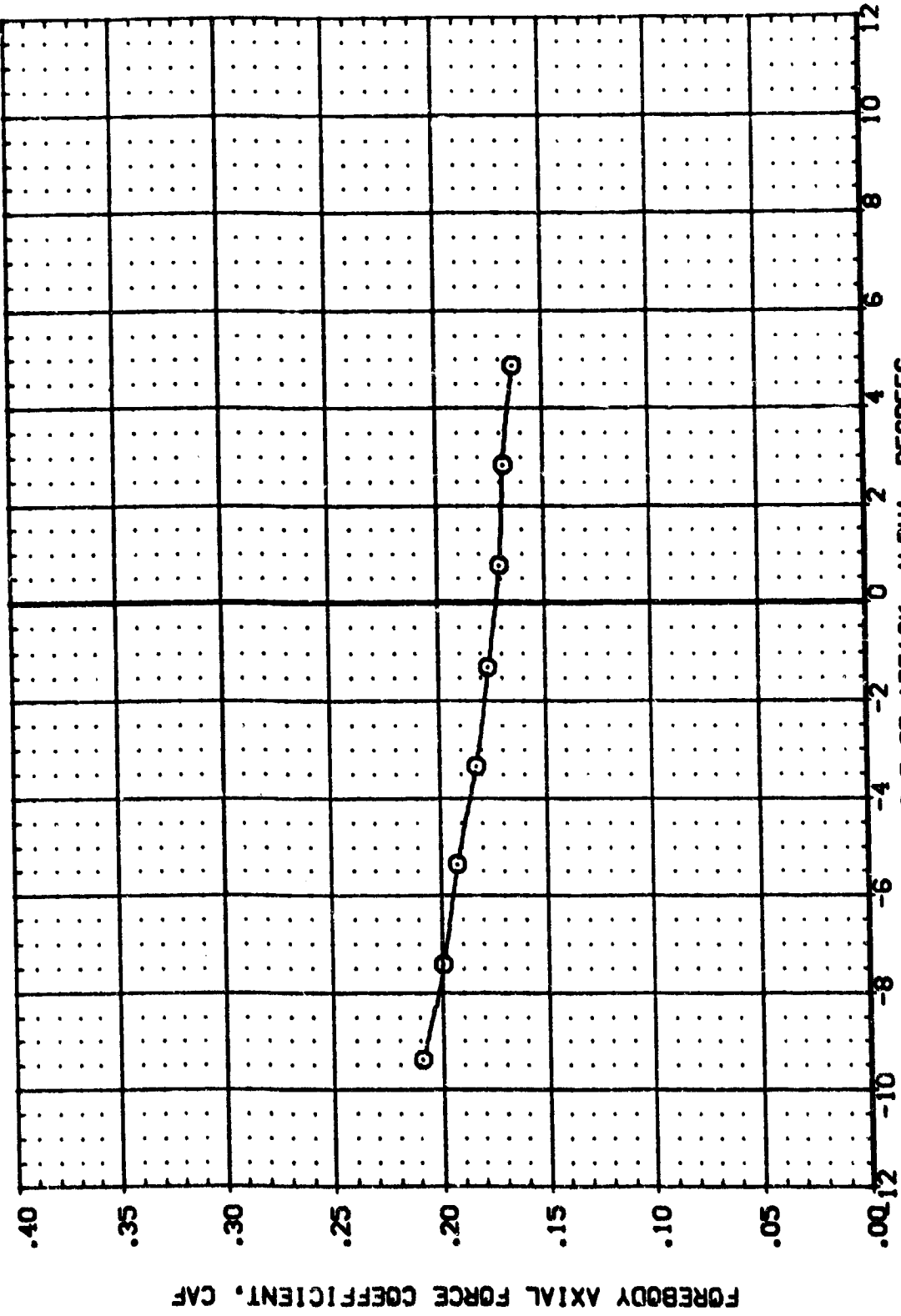
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

(8)MACH = 2.99

DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (888003) 8 NSFC 579(1A37) (024)(T14)(U7)
 (888001) DATA NOT AVAILABLE

BETA ORBING
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SNET 6.1880 SQ. IN.
 LINEF 5.1600 IN.
 BREF 5.1600 IN.
 XREF 2.7200 IN.
 YREF .0000 IN.
 ZREF .0000 IN.
 SCALE .0040



FOREBODY AXIAL FORCE COEFFICIENT, CAF

ANGLE OF ATTACK, ALPHA, DEGREES

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

(C)MACH = 3.48

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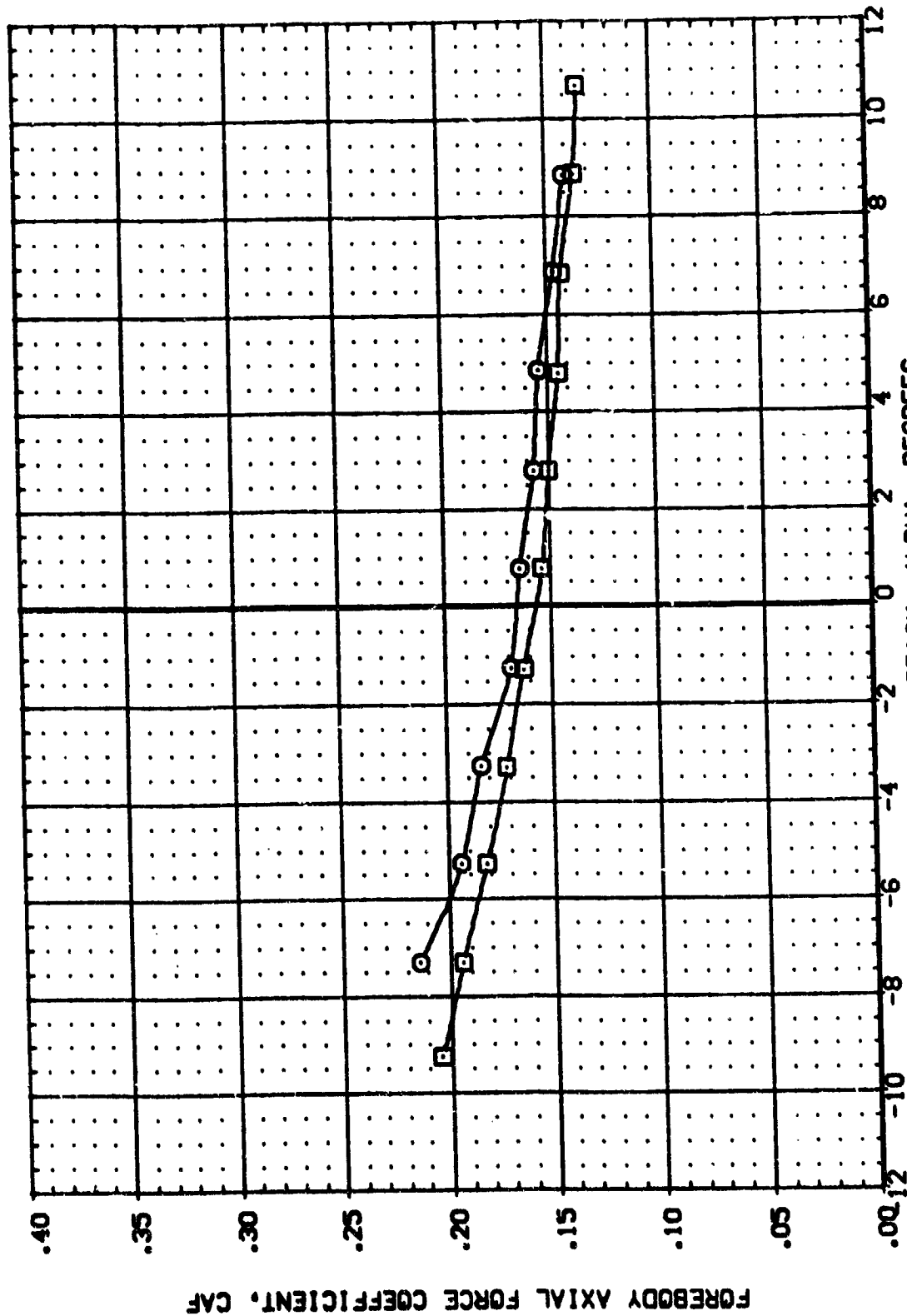


DATA SET SYMBOL: (000003) □ CONFIGURATION DESCRIPTION: MSFC S79(1A37) (02A)(1A)(U7) MSFC S79(1A37) (02A)(1A) MSFC S79(1A37) (02A)(1A) (19)

BETA: .000 .000 .000 .000

ORING: .000 .000

REFERENCE INFORMATION:
SHEET: 6, 1980 SQ. IN.
LAYER: 5, 1600 IN.
BREF: 5, 1600 IN.
XTRP: 2, 7200 IN.
YTRP: .0000 IN.
ZTRP: .0000 IN.
SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

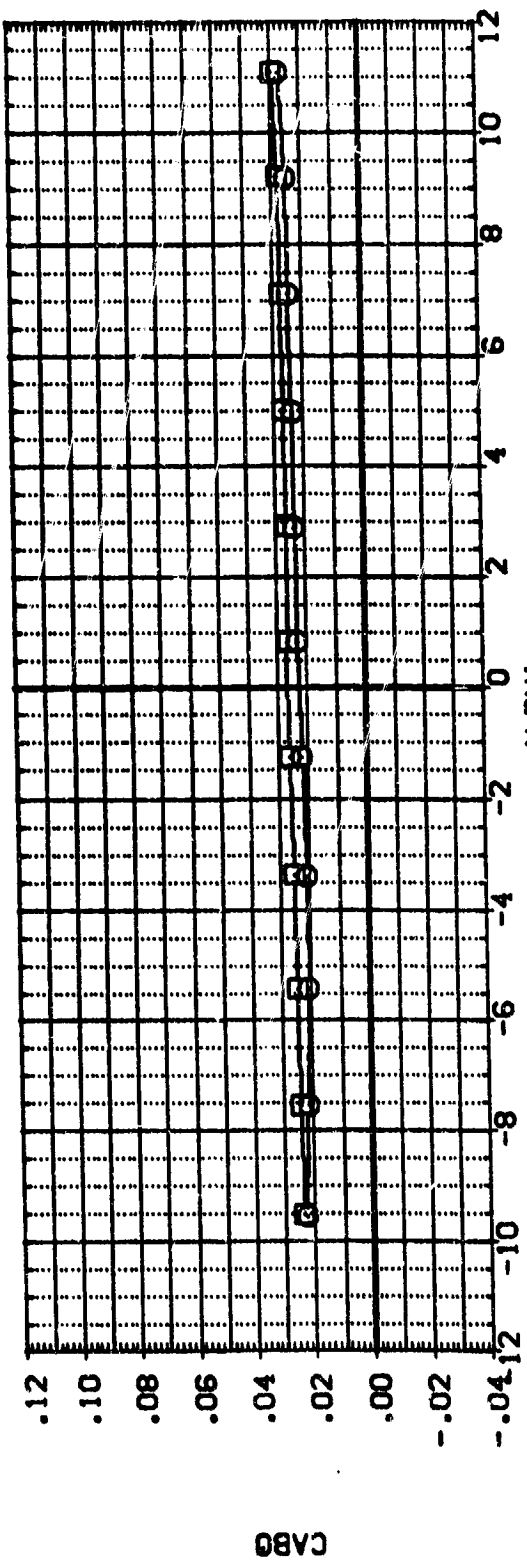
(0)MACH = 4.36

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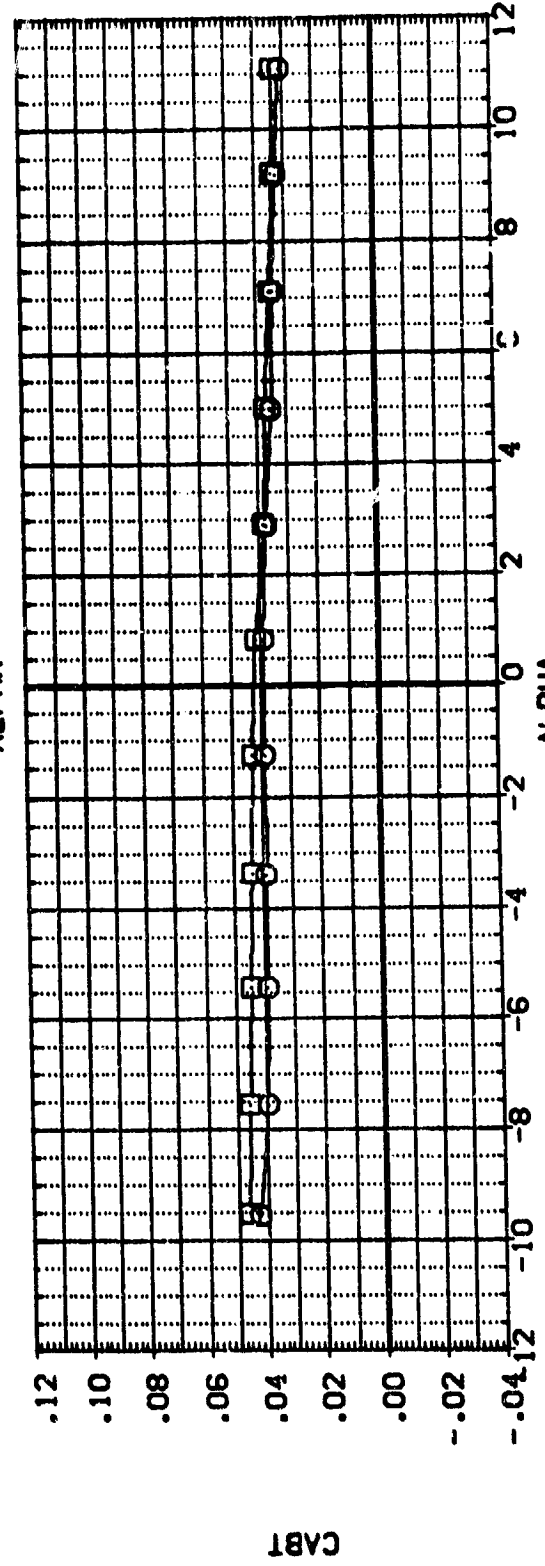
DATA SET SYM^{PL} CONFIGURATION DESCRIPTION
 (888003) 8 MSFC 579(A37) (034)(114)(U7)
 (888001) MSFC 579(A37) (034)(119)

BETA 0.000
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1900 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



CAB0



CAB1

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

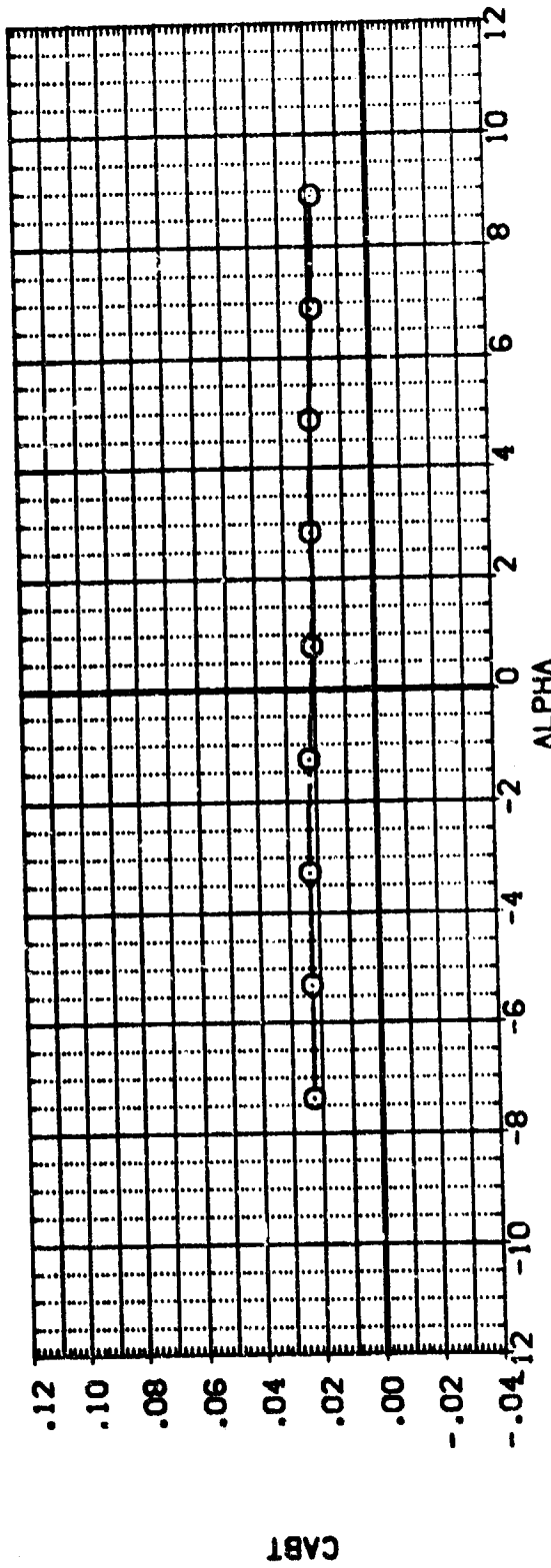
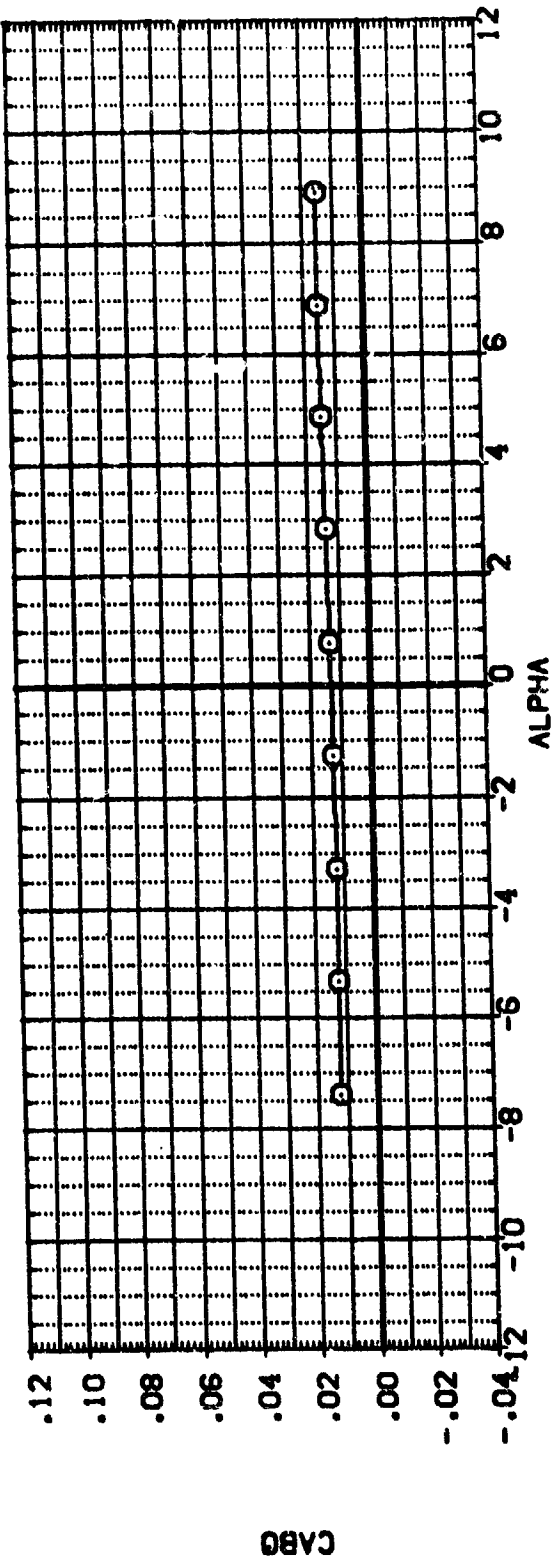
(A)MACH = 1.96



DATA SET SYMBOL (888003) (888001)
CONFIGURATION DESCRIPTION
MFC 579(1427) (024)(14)(07)
DATA NOT AVAILABLE

BETA .000
ORBING .000

REFERENCE INFORMATION
SREF 6.1500 SQ. IN.
LREF 2.1600 IN.
BREF 2.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040

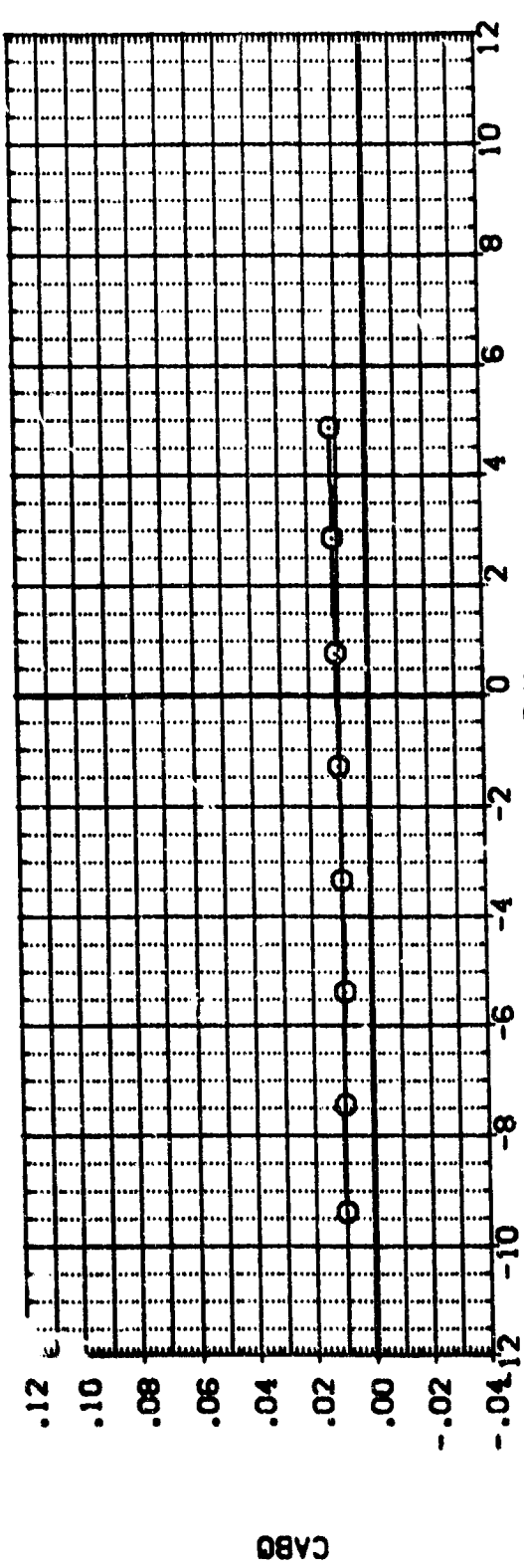


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

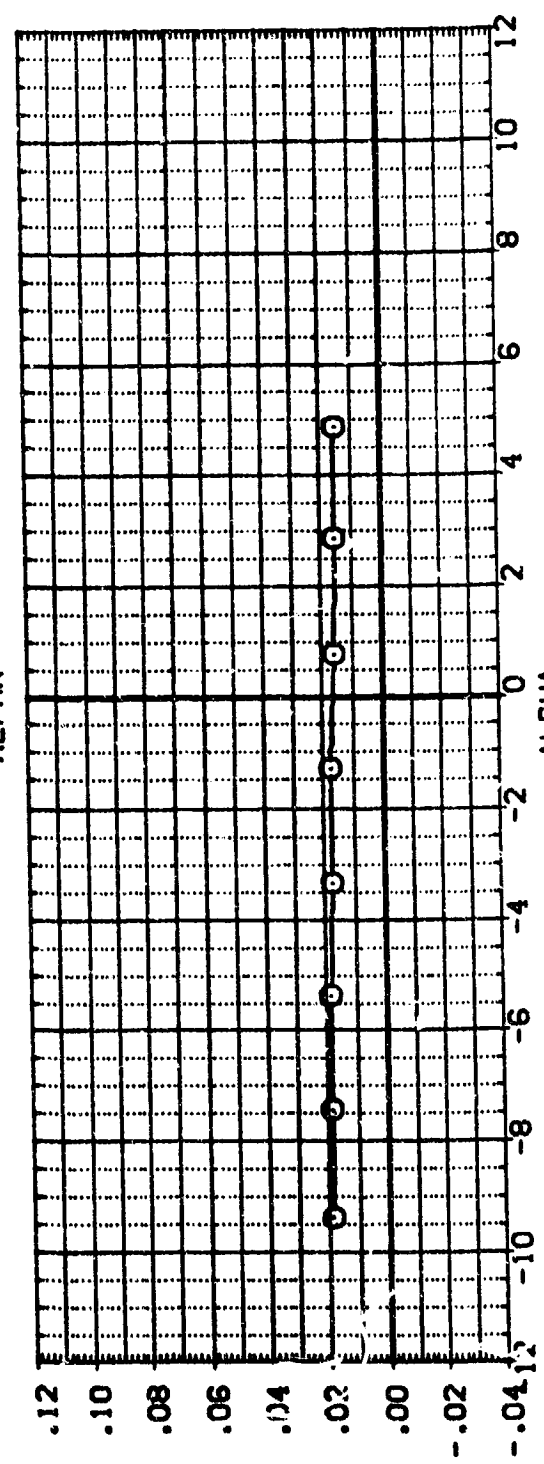
DATA SET SYMB. (888003) MSFC 579(1A37) (02A)(114)(U7)
 (888001) DATA NOT AVAILABLE

BETA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



CAB0



CAB1

EFFECT OF ATTACH STRUCTURE AND PROTUBERANCE ON LONG. CHARACT. (SECOND STAGE)

(C)MACH = 3.48

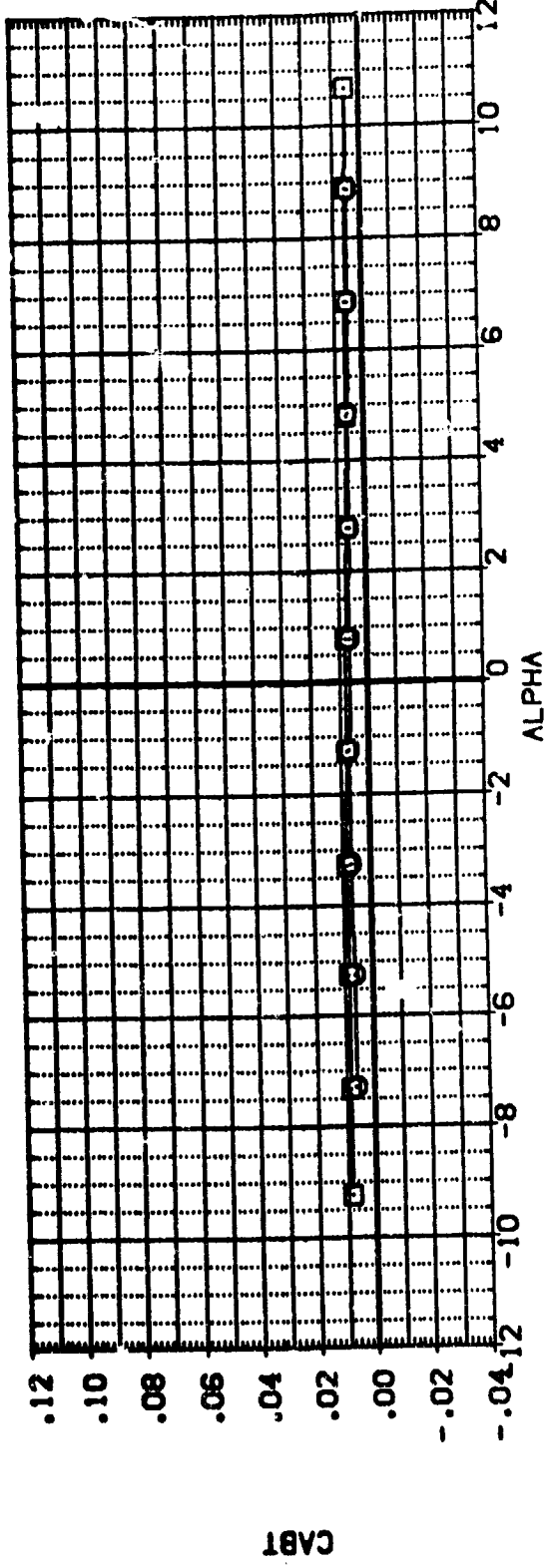
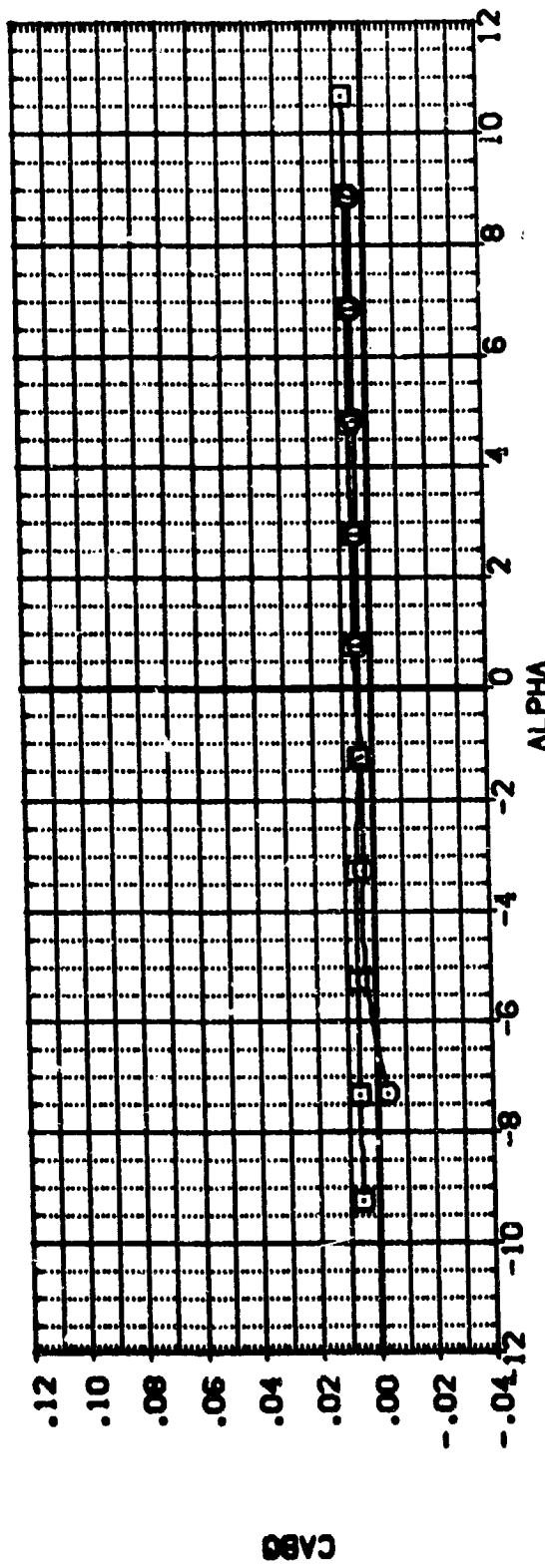


DATA SET SYMBOL: (S0000) } B
 CONFIGURATION DESCRIPTION: HPFC 578(1A37) (OM)(T14)(U7)
 HPFC 578(1A37) (OM)(T9)

BETA: .000
 .000

ORING: .000
 .000

REFERENCE INFORMATION:
 SREF: 6.1800 IN.
 LREF: 5.1670 IN.
 BREF: 5.1600 IN.
 XREF: 2.7200 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0040



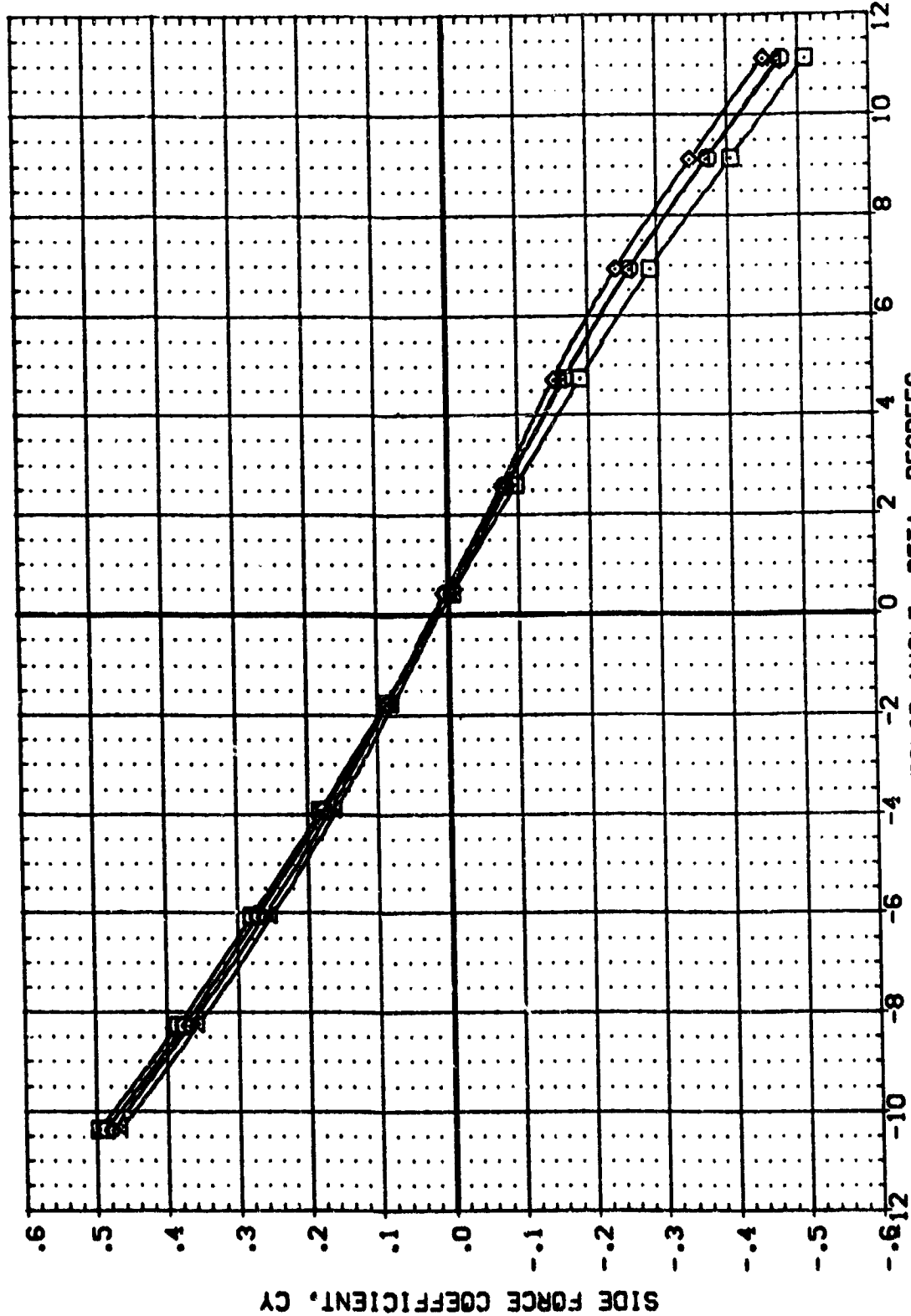
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON LONG. CHARACT. (SECOND STAGE)

(O)MACH = 4.96

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YTRP 2.7200 IN.
 ZTRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 5.000
 -5.000
 ORIGIN 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888005) □ MFC 579(1A37) (034)(114)(U7)
 (888004) □ MFC 579(1A37) (034)(114)(U7)
 (888006) □ MFC 579(1A37) (034)(114)(U7)
 (888002) □ MFC 579(1A37) (034)(119)



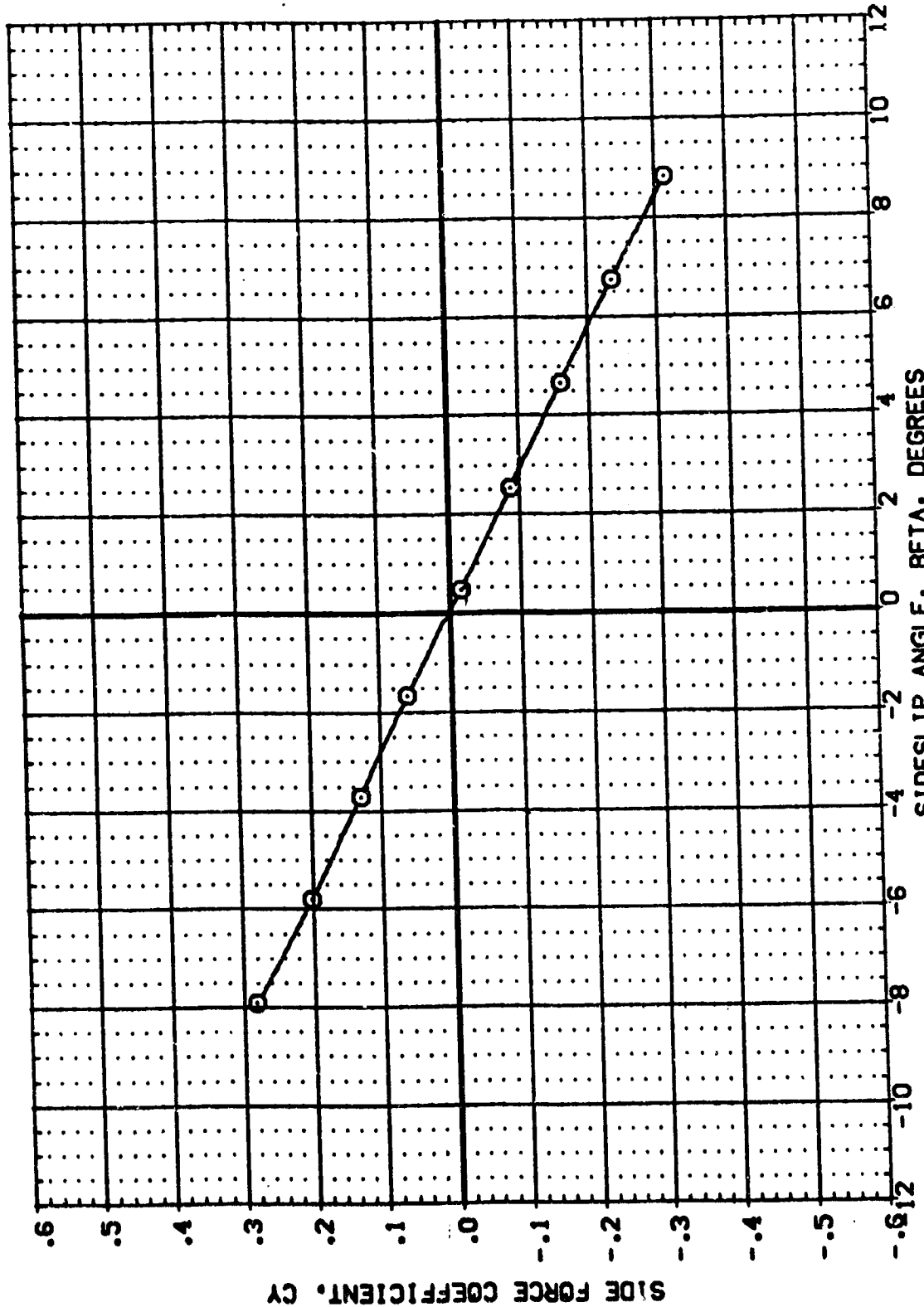
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (SECOND STAGE)
 (A)MACH = 1.96
 PAGE 164



DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (886005) HF8C 575(HA37) (02A)(T141U7)
 (886004) DATA NOT AVAILABLE
 (886006) DATA NOT AVAILABLE
 (886002) DATA NOT AVAILABLE

ALPHA ORBING
 .000
 -5.000
 5.000

REFERENCE INFORMATION
 SREF 5.1500 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

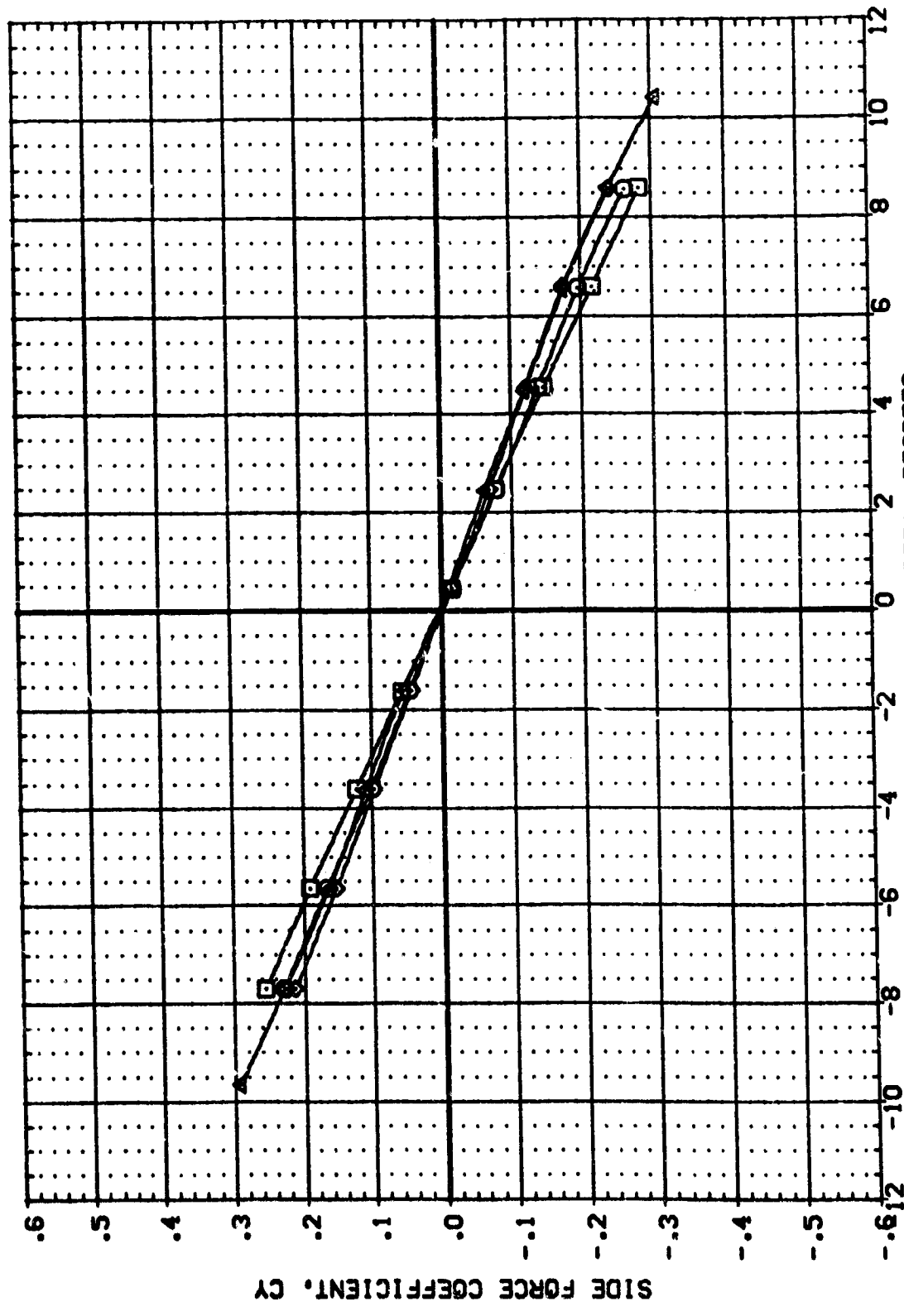


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (SECOND STAGE)
 (B)MACH = 3.48
 PAGE 165

REFERENCE INFORMATION
 SREF 6.1990 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 5.000
 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (8888 25) NSFC 579(1A37) (034)(114)(107)
 (8888 24) NSFC 579(1A37) (034)(114)(107)
 (8888 23) NSFC 579(1A37) (034)(114)(107)
 (8888 22) NSFC 579(1A37) (034)(114)(107)



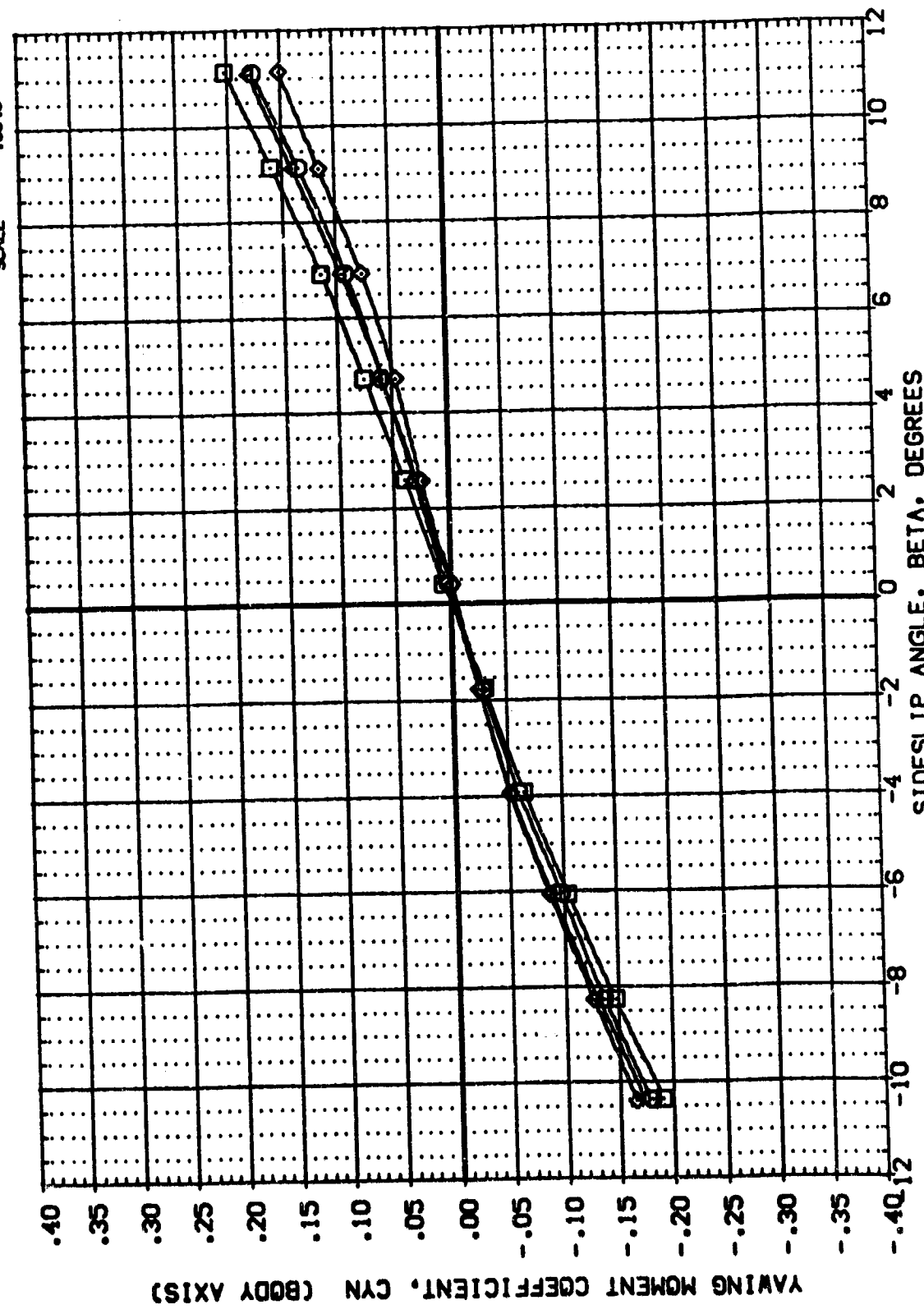
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (SECOND STAGE)





DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (888005) MSFC 573(A37) (034)(T14)(U7)
 (888004) MSFC 573(A37) (034)(T14)(U7)
 (888006) MSFC 573(A37) (034)(T14)(U7)
 (888002) MSFC 573(A37) (034)(T14)(U7)

ALPHA ORBING
 .000
 .000
 .000
 .000
 .000
 .000

REFERENCE INFORMATION
 REF 6.1580 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

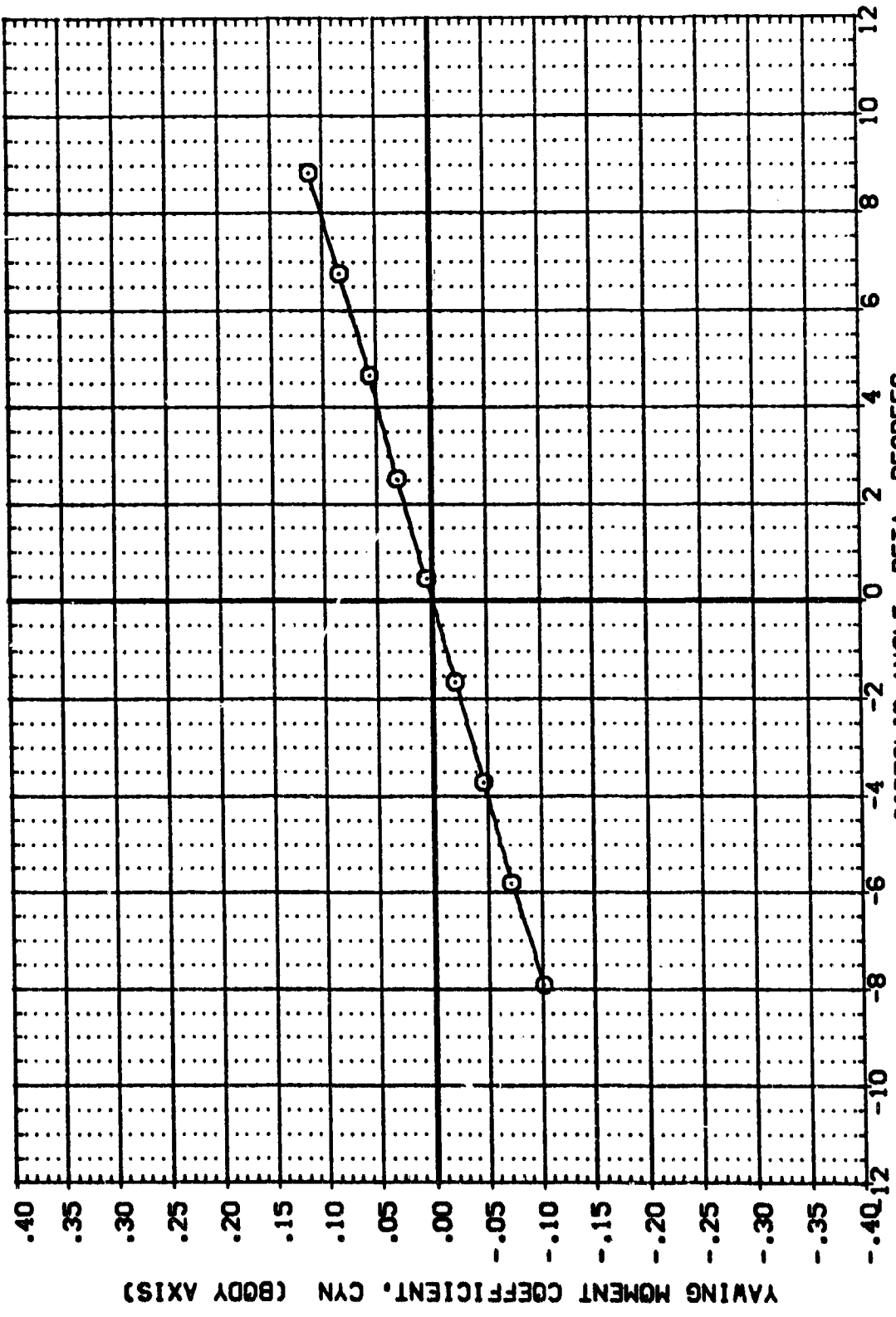


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (SECOND STAGE)
 (A)MACH = 1.96
 PAGE 167

DATA SET SYMBOL:  
 CONFIGURATION DESCRIPTION: MSFC 579(1A37) (03M)(T14)(U7)
 (888005) DATA NOT AVAILABLE
 (888004) DATA NOT AVAILABLE
 (888003) DATA NOT AVAILABLE
 (888002) DATA NOT AVAILABLE

ALPHA: .000
 -5.000
 5.000
 CRIBING: .000
 .000
 .000

REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XTRP: 2.7200 IN.
 YTRP: .0000 IN.
 ZTRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)

(B)MACH = 3.48

DATA SET SYMBOL CONFIGURATION DESCRIPTION

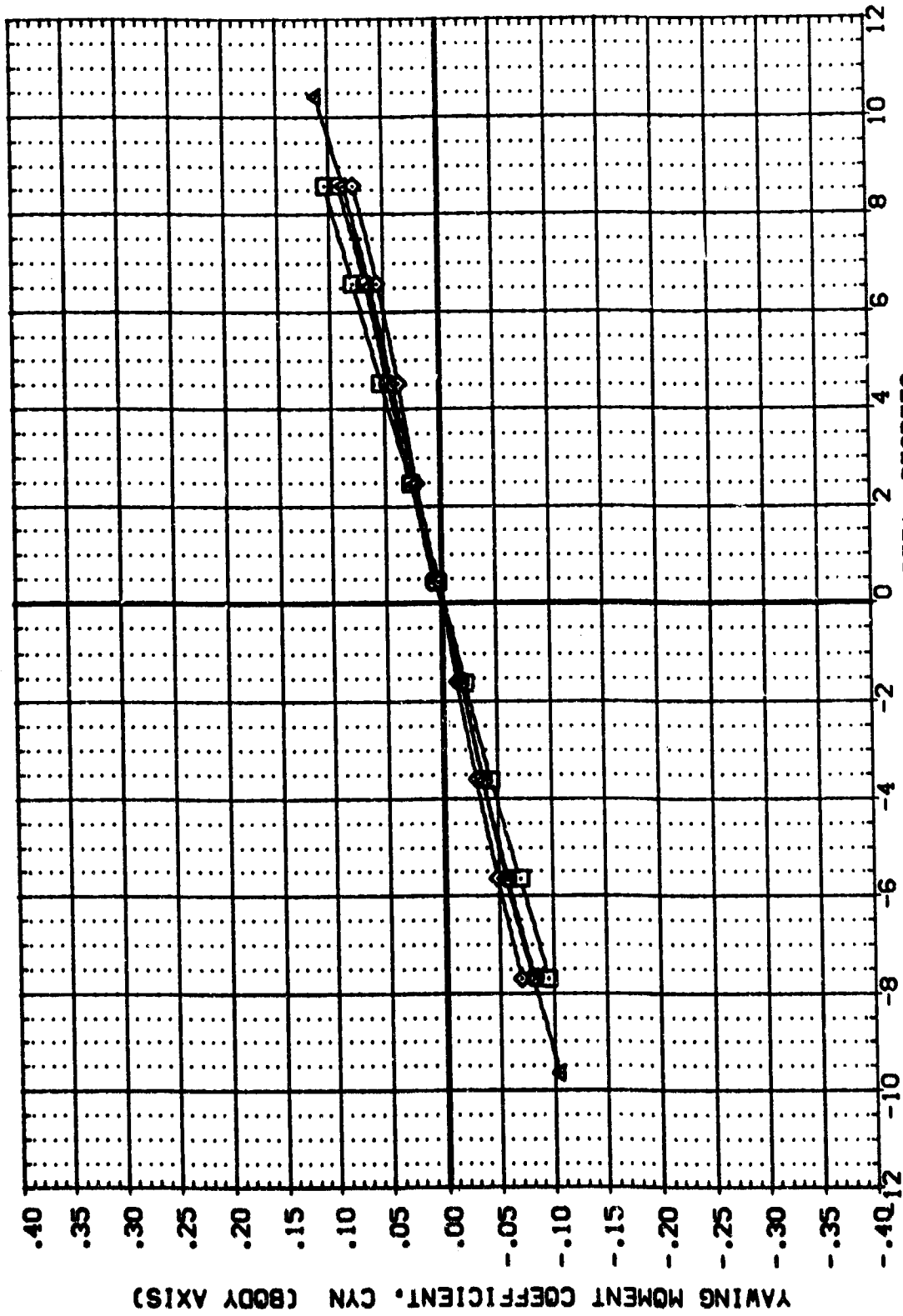
(B8003)	HSFC 5791(A37)	(034)(T14)(U7)
(B8004)	HSFC 5791(A37)	(034)(T14)(U7)
(B8005)	HSFC 5791(A37)	(034)(T14)(U7)
(B8002)	HSFC 5791(A37)	(034)(T19)

ALPHA ORBITING

.000	.000
-5.000	.000
5.000	.000

REFERENCE INFORMATION

REF	5.1580	50. IN.
LINEF	5.1600	IN.
BREF	5.1600	IN.
XPRP	2.7200	IN.
ZPRP	.0000	IN.
SCALE	.0040	

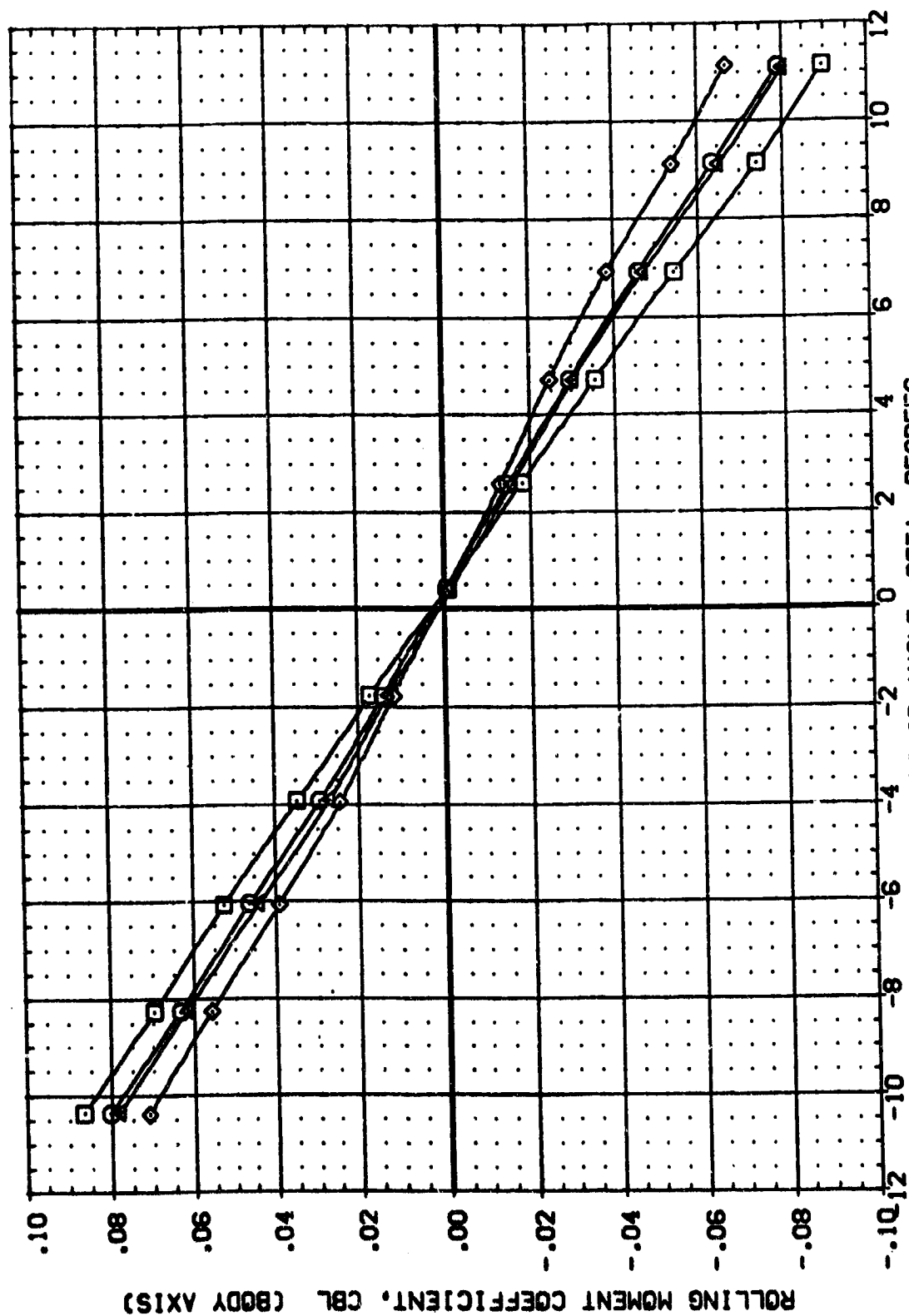


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (SECOND STAGE)

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

ALPHA 0.000
 5.000
 5.000
 0.000
 0.000
 0.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (886005) MSTC 579(1A37) (034)(114)(U7)
 (886004) MSTC 579(1A37) (034)(114)(U7)
 (886006) MSTC 579(1A37) (034)(114)(U7)
 (886002) MSTC 579(1A37) (034)(119)



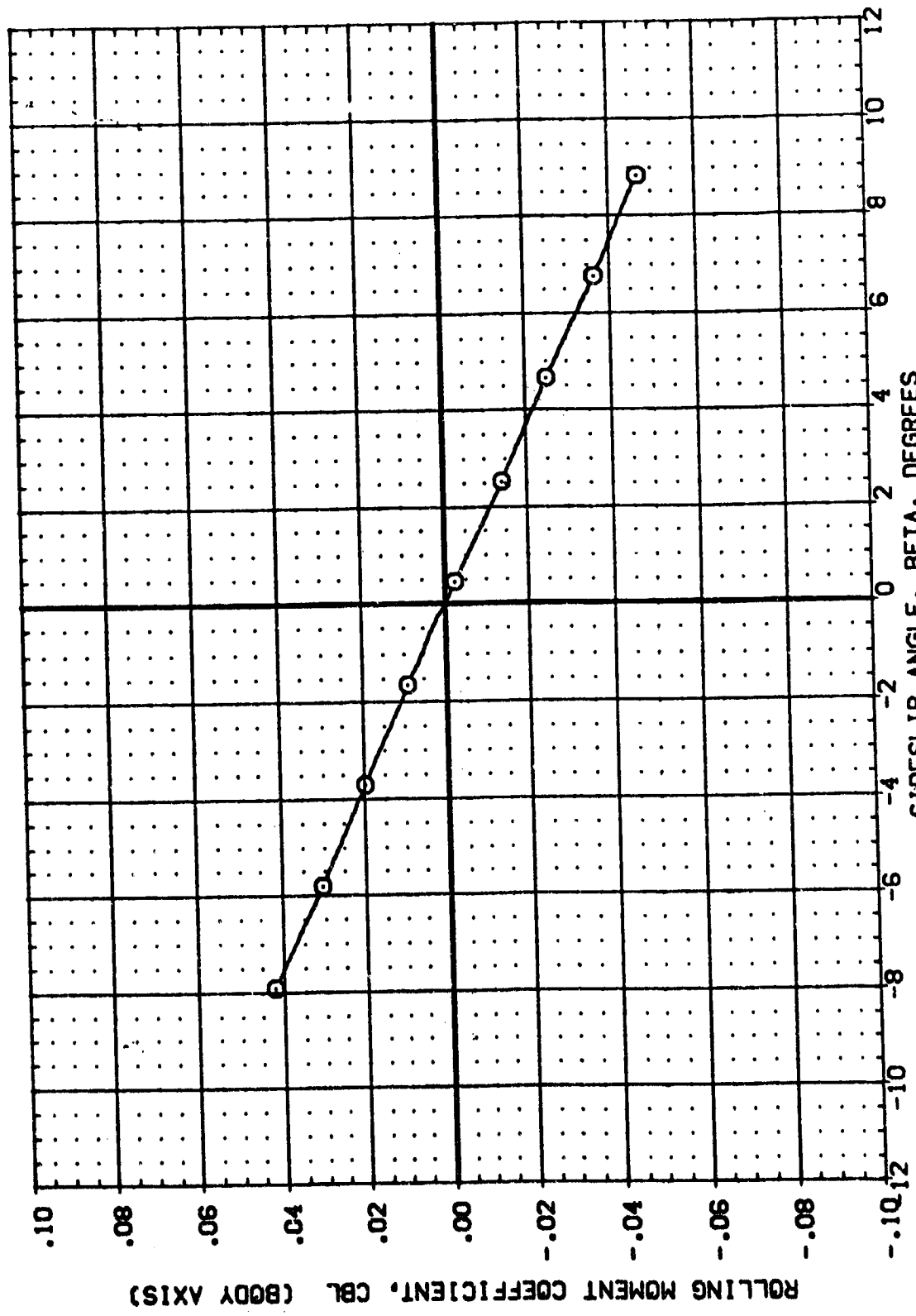
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)
 (A)MACH = 1.96
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REFERENCE INFORMATION
 SREF 6.1900 SO. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA 0RBINC
 .000
 .000
 .000
 .000

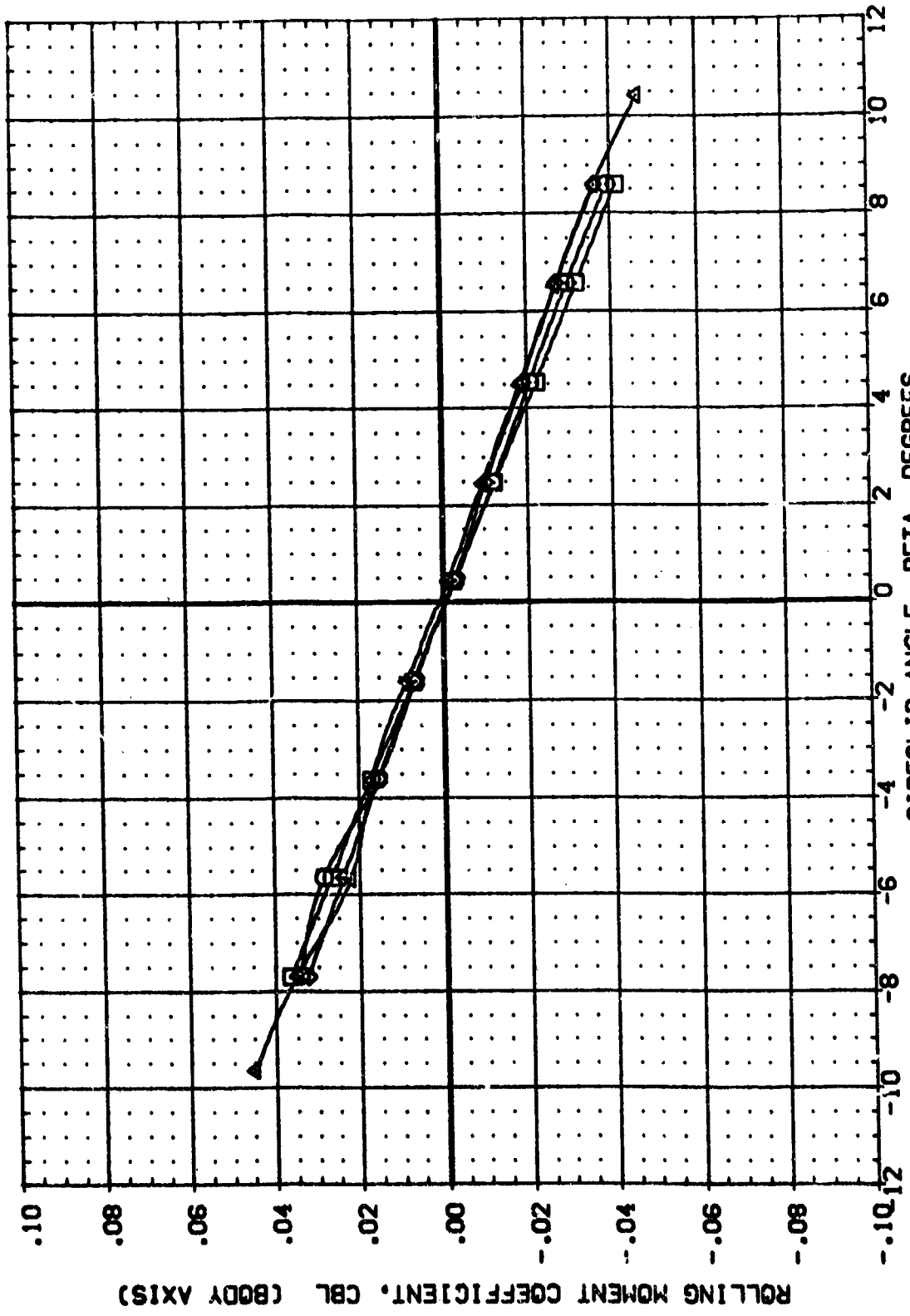
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (988005) (034)(T14)(U7)
 (988004) DATA NOT AVAILABLE
 (988006) DATA NOT AVAILABLE
 (988002) DATA NOT AVAILABLE



REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA 0.000
 ORBINC .000
 -5.000
 5.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B88005) MSFC 579(1A37) (034)(T14)(U7)
 (B88004) MSFC 579(1A37) (034)(T14)(U7)
 (B88006) MSFC 579(1A37) (034)(T14)(U7)
 (B88002) MSFC 579(1A37) (034)(T9)



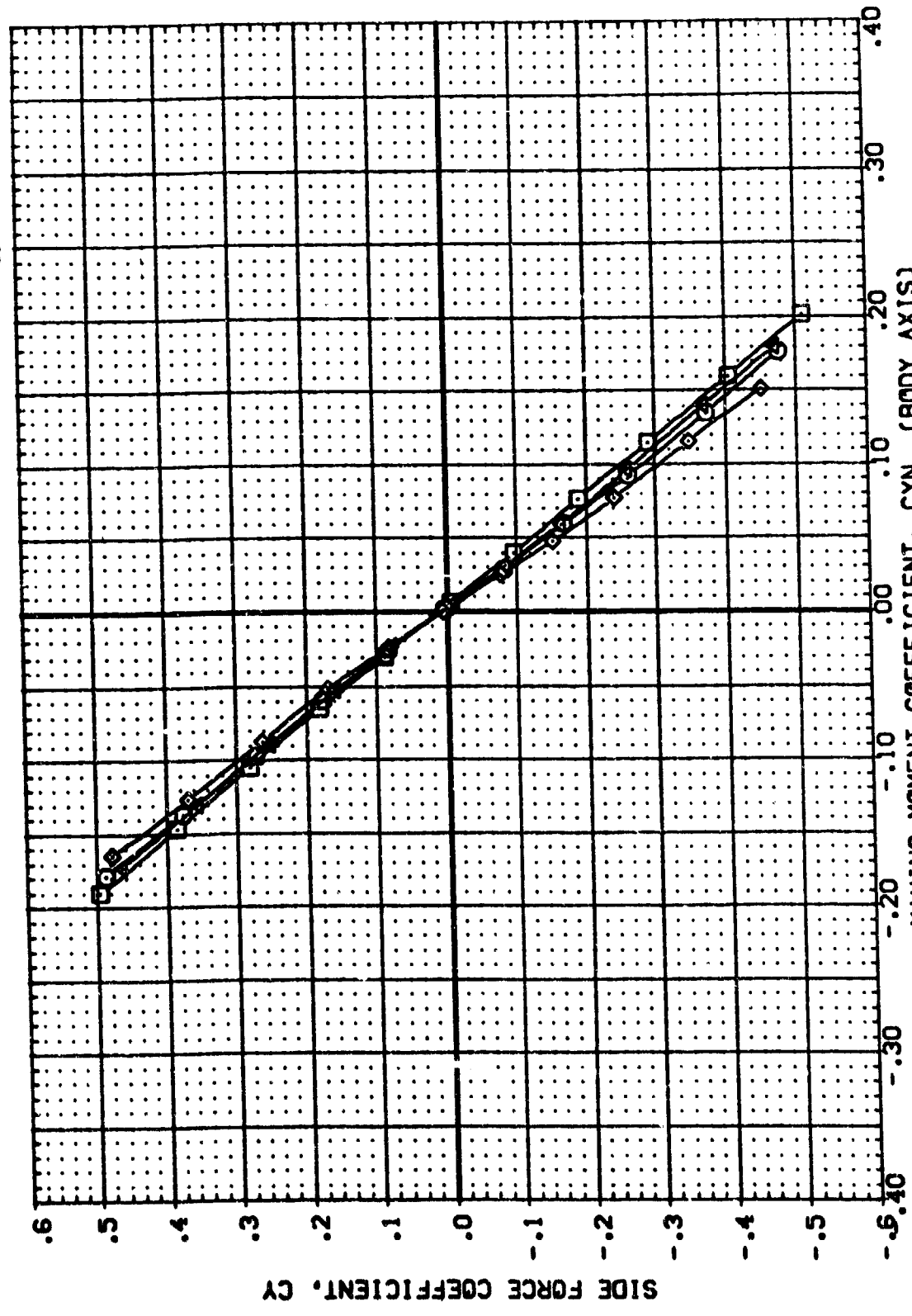
EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT.(SECOND STAGE)
 (C)MACH = 4.96
 PAGE 172



REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 GREF 5.1600 IN.
 X/RP 2.7200 IN.
 Y/RP .0000 IN.
 Z/RP .0000 IN.
 SCALE .0040

ALPHA 0.000
 -5.000
 5.000
 ORBING .000
 .000
 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (888005) NSFC 579(1A37) (004)(T14)(U7)
 (888004) NSFC 579(1A37) (004)(T14)(U7)
 (888006) NSFC 579(1A37) (004)(T14)(U7)
 (888002) NSFC 579(1A37) (004)(T9)

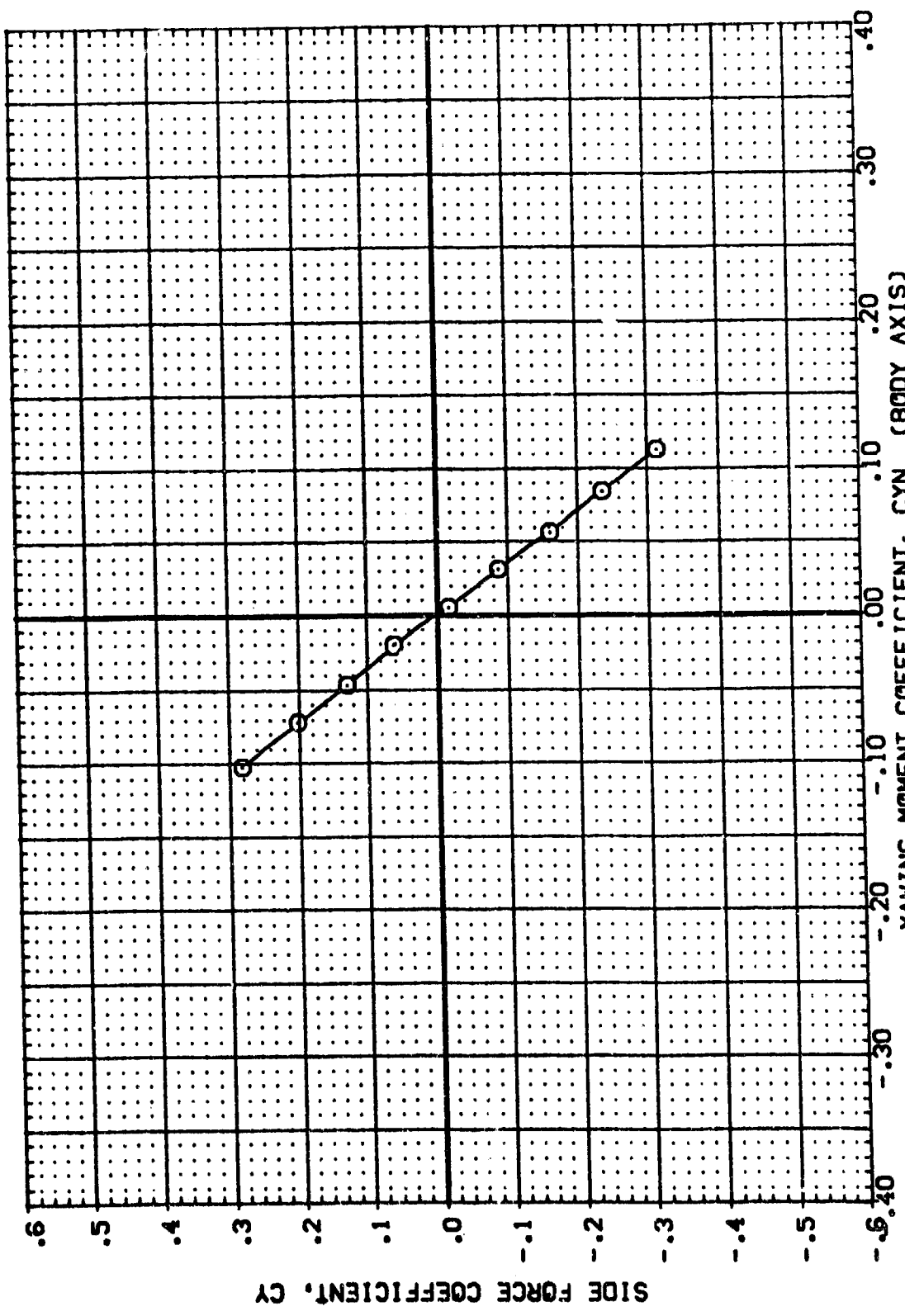


EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (SECOND STAGE)
 (A) MACH = 1.96
 PAGE 173

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000
 -5.000
 5.000
 .000
 .000
 .000

DATA SET SYMBOL. CONFIGURATION DESCRIPTION
 (888005) MSFC 579 (A37) (03A) (T14) (U7)
 (888004) DATA NOT AVAILABLE
 (888006) DATA NOT AVAILABLE
 (888002) DATA NOT AVAILABLE



EFFECT OF ATTACH STRUCTURE AND PROTUBERANCES ON DIRECT. CHARACT. (SECOND STAGE)

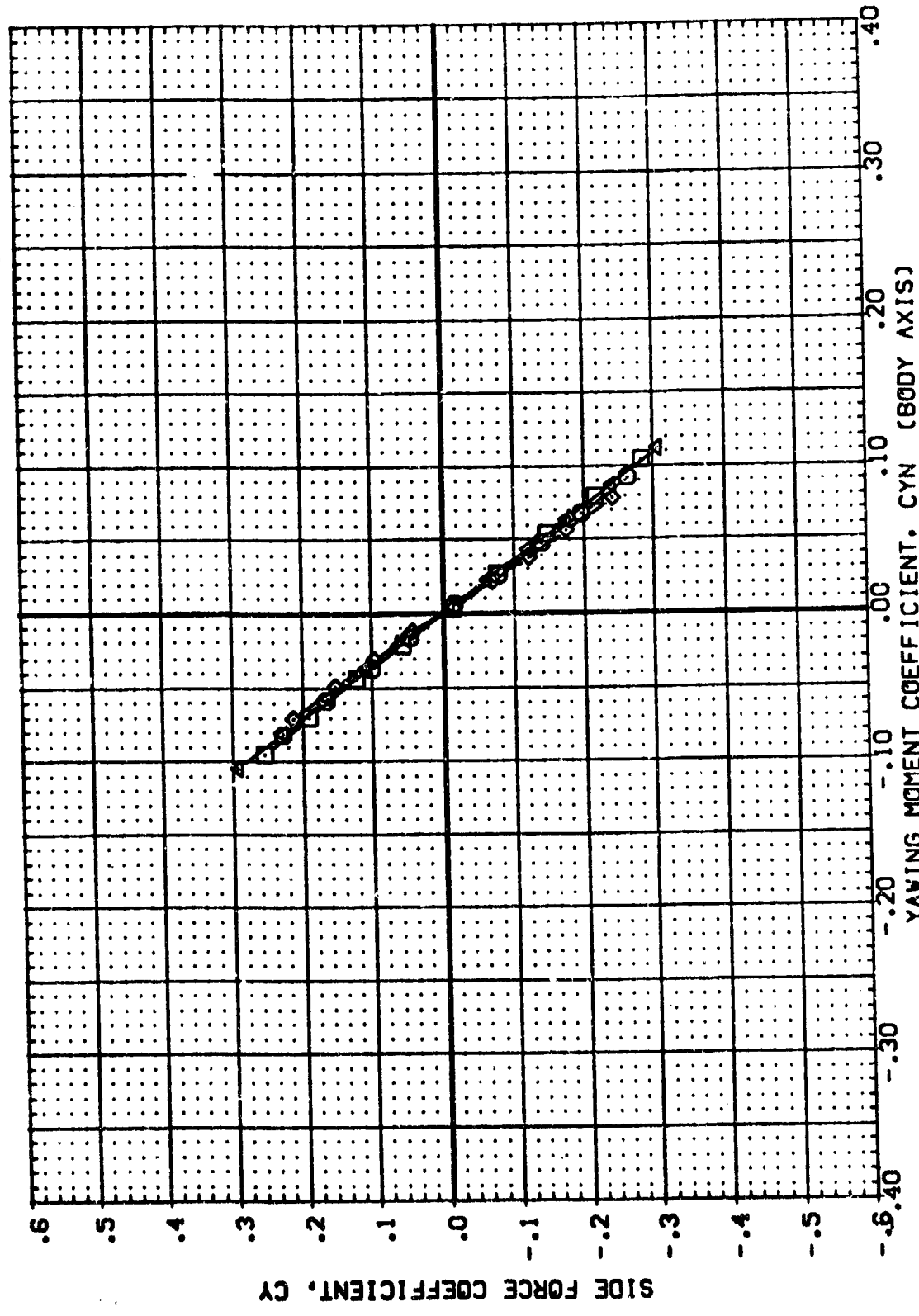


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888005) (888004) (888003) (888002)
 ⓧ ⓧ
 H57C 579(IA37) (034)(I14)(U7)
 H57C 579(IA37) (034)(I14)(U7)
 H57C 579(IA37) (034)(I14)(U7)
 H57C 579(IA37) (034)(I14)(U7)

ALPHA .000
 .5.000
 .5.000
 .000

OSBINC .000
 .000
 .000
 .000

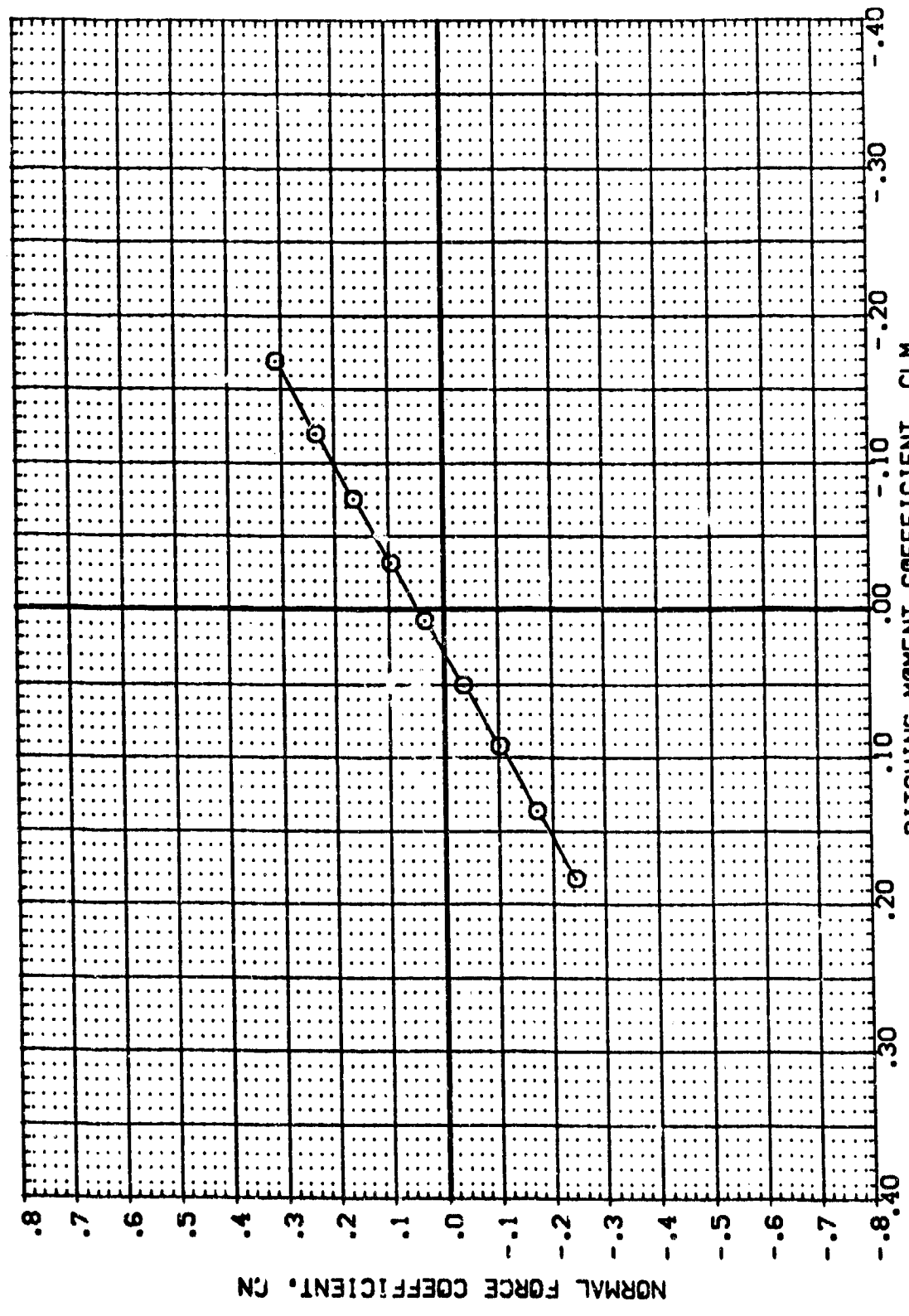
REFERENCE INFORMATION
 SREF 5.1500 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



DATA SET SYMB. CONFIGURATION DESCRIPTION
 (865005) MSFC 580(1A48) (0341)(T8)(S12)
 (865008) DATA NOT AVAILABLE

BETA ORBING
 .000 .000
 .000 .020

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

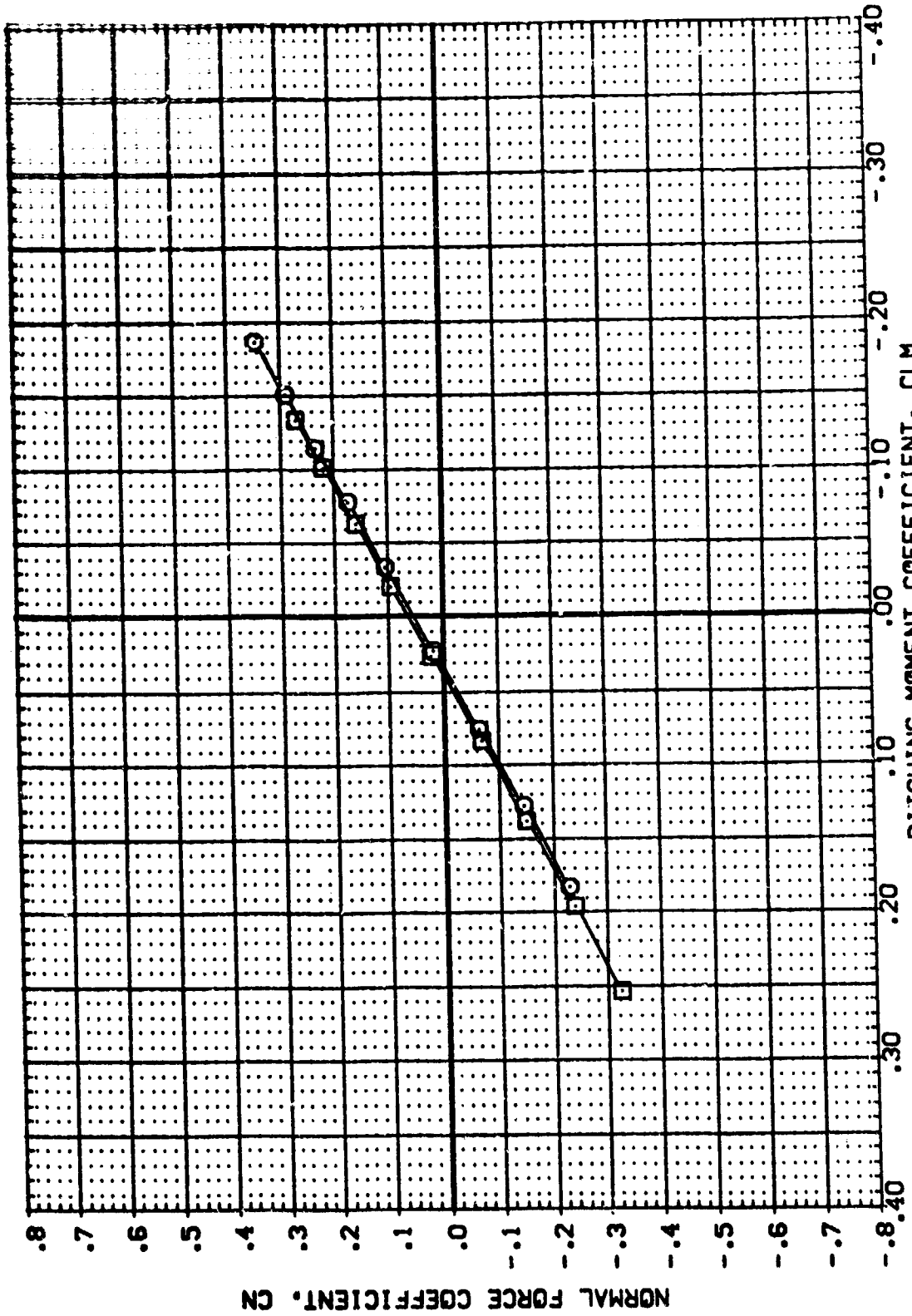
(A)MACH = .60



DATA SET SYMBOL: (B) (B550C8)
CONFIGURATION DESCRIPTION: (CON)(19)(S12)
REF: (CON)(148) (CON)(19)(S12) (ATTACH POST OFF)
MFC: (CON)(148) (CON)(19)(S12)

BETA: .000
CROSSING: .000

REFERENCE DESCRIPTION:
REF: (CON)(148) (CON)(19)(S12) (ATTACH POST OFF)
MFC: (CON)(148) (CON)(19)(S12)



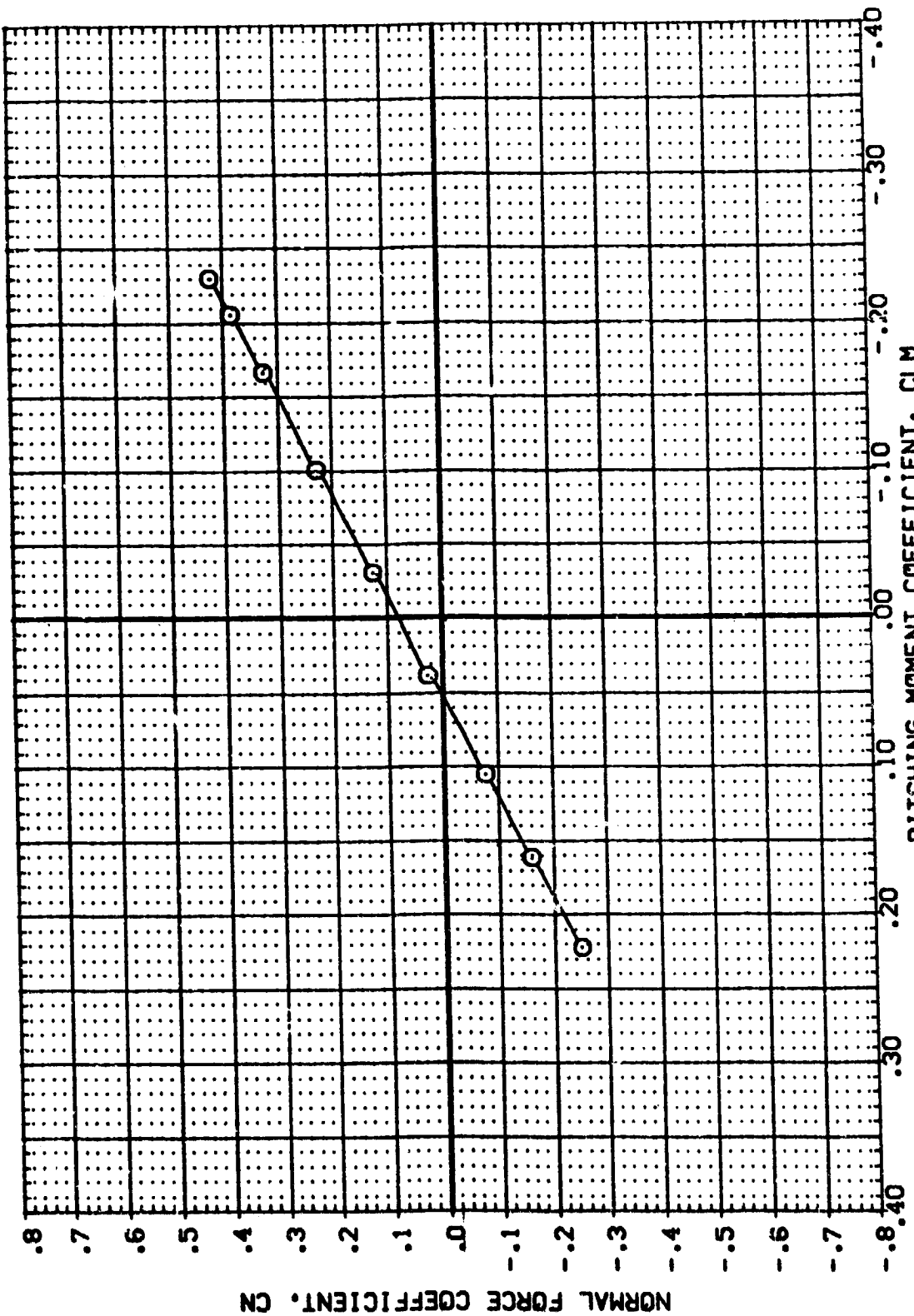
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(B)MACH = .90

DATA SET SYMBOL: (880005) (880008) CONFIGURATION DESCRIPTION: M5FC 580(1448) (024)(19)(S12) DATA NOT AVAILABLE

BETA: .000
ORBITING: .000

REFERENCE INFORMATION:
SREF: 6.1580 SQ. IN.
LREF: 5.1600 IN.
BREF: 5.1600 IN.
XFRP: 2.7700 IN.
YFRP: .0000 IN.
ZFRP: .0000 IN.
SCALE: .0010



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(C)MACH = 1.10

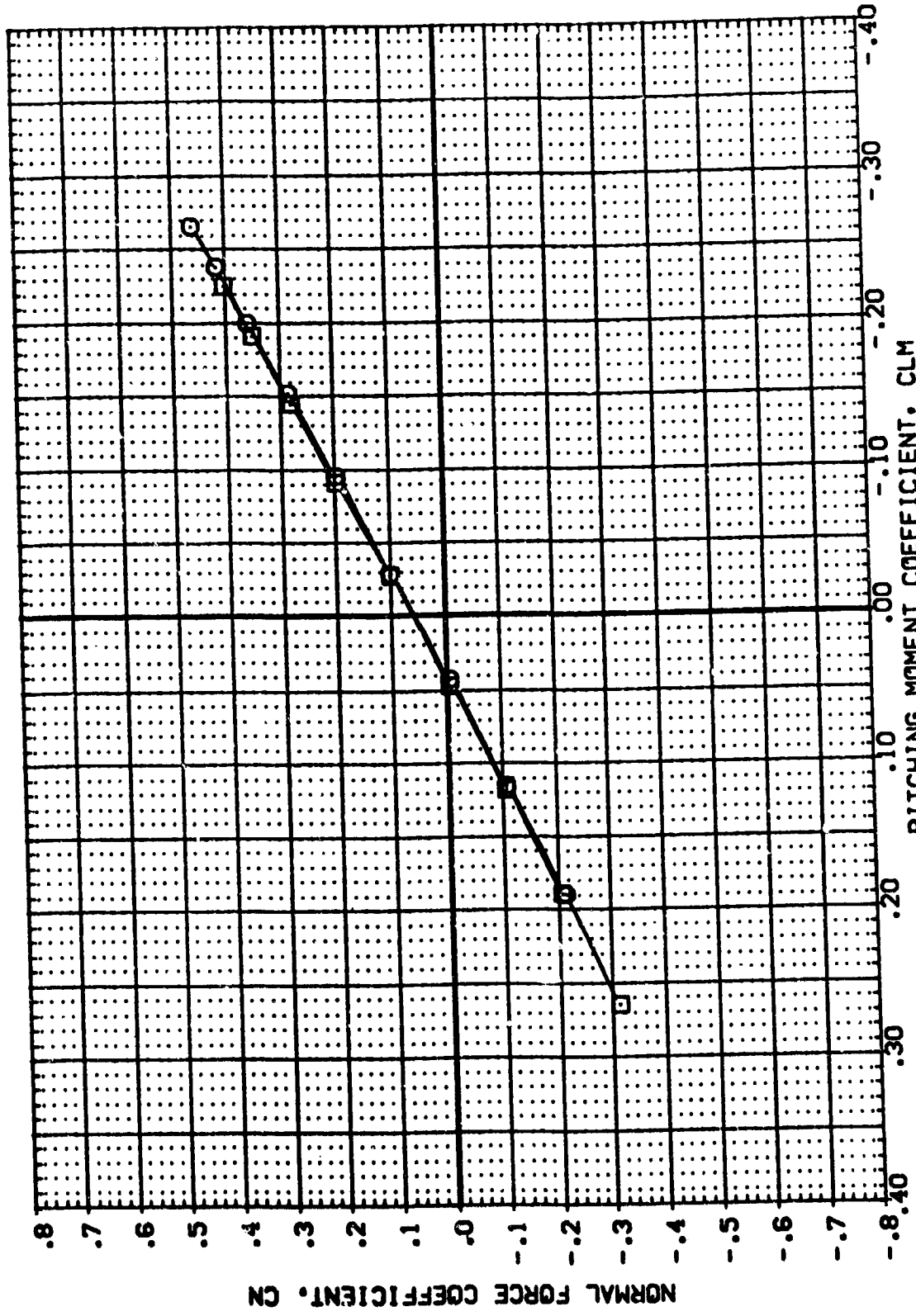


REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

BETA .000
 ORBINC .000

(ATTACH POST OFF)

DATA SET SYMBO (888005) (888006)
 CONFIGURATION DESCRIPTION
 MSFC 500(IAM8) (034)(TS)(S12)
 MSFC 500(IAM8) (034)(TS)(S12)



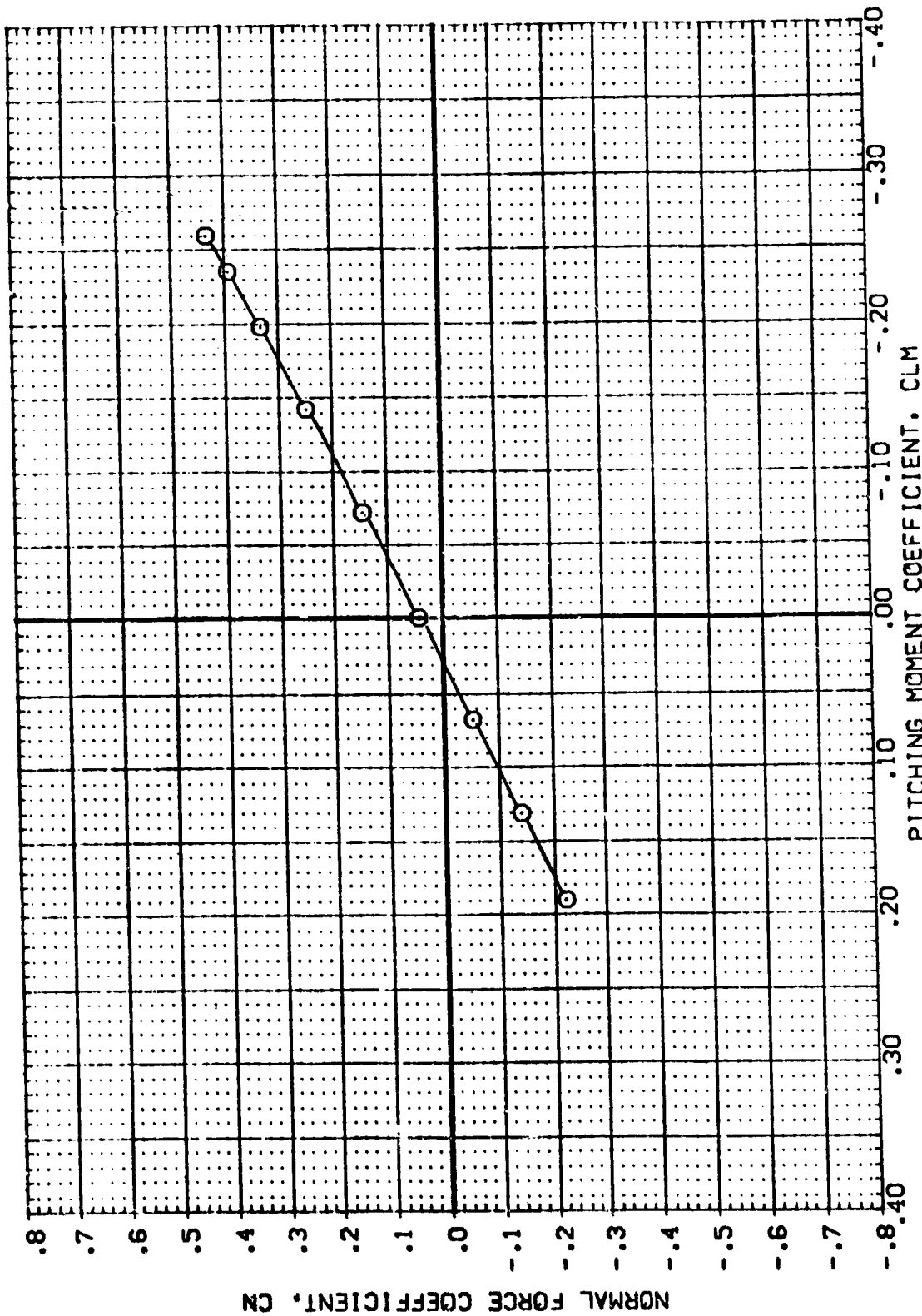
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(O)MACH = 1.25

REFERENCE INFORMATION
 SREF 6.1960 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

BETA ORBING
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (89505) MSC 50(1448) (034)(79)(S12)
 (365208) DATA NOT AVAILABLE



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

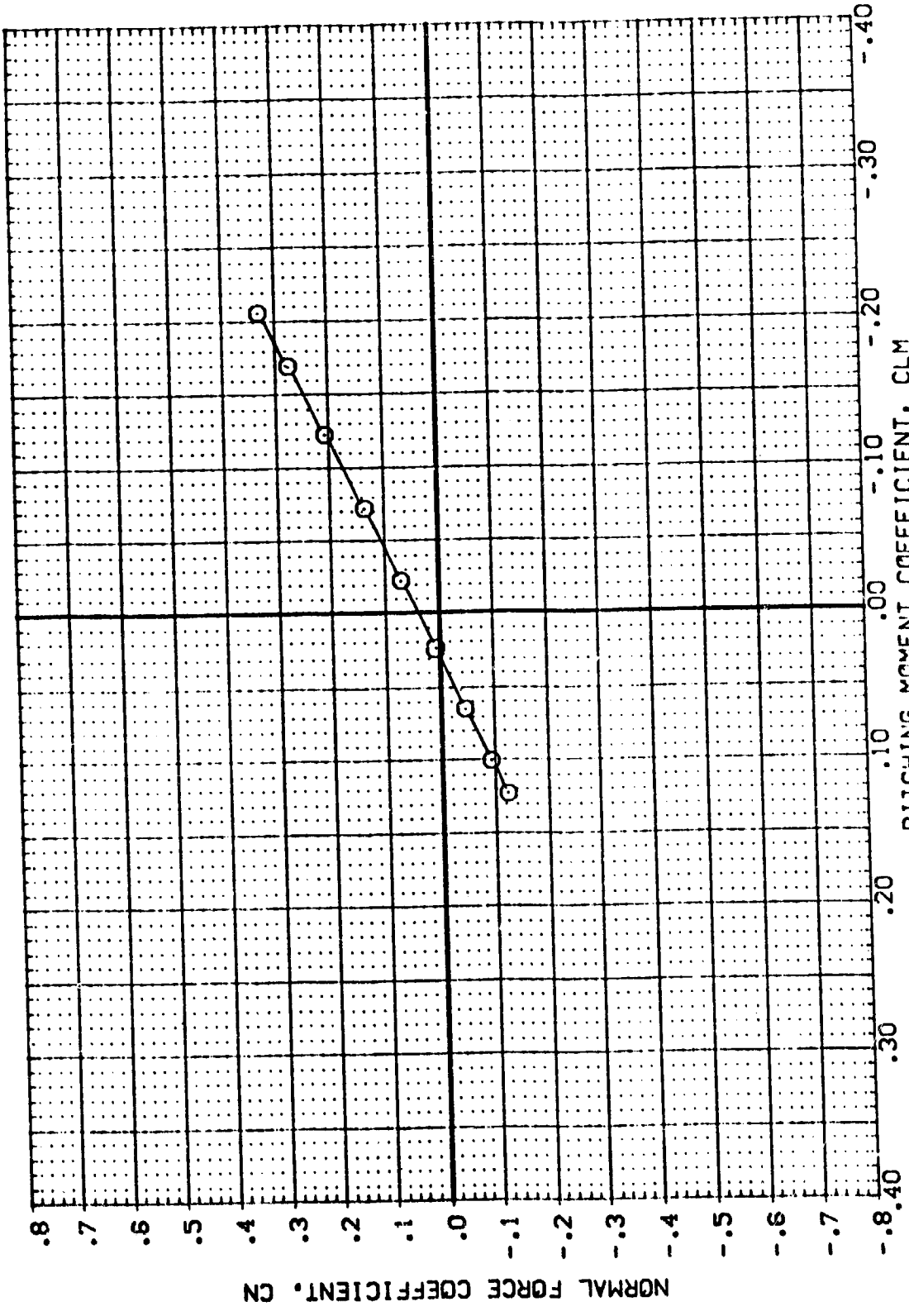
(E)MACH = 1.46



DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (B99005) MSC 580(1448) (034)(T9)(S12)
 (B99008) DATA NOT AVAILABLE

BETA ORBITING
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 BREF 5.1630 IN.
 XMRP 2.7230 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

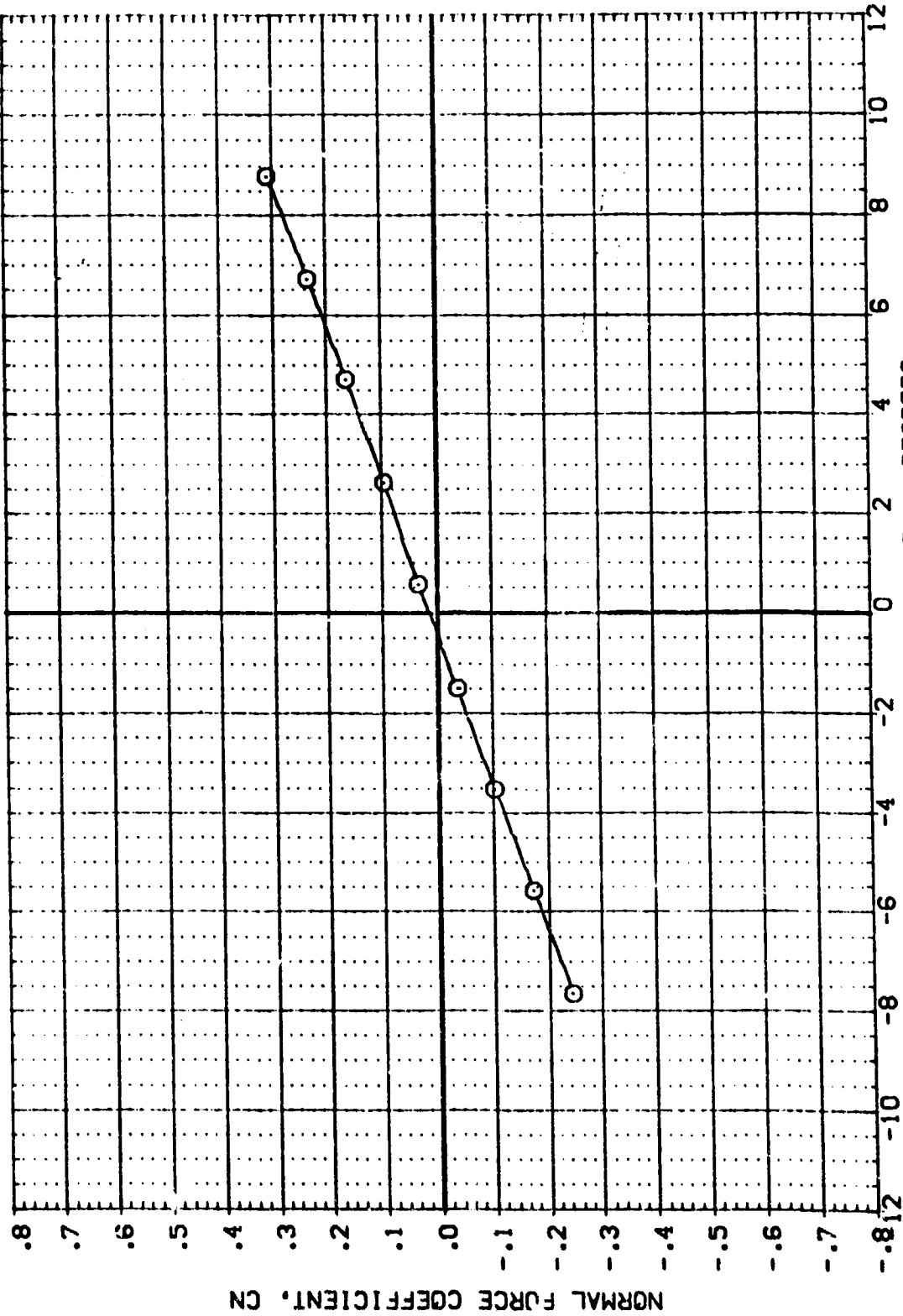


EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

DATA SET SYMBOL: (889005) (889008)
 CONFIGURATION DESCRIPTION: MSFC 56C1(A48) (C34)(19)(S12)
 DATA NOT AVAILABLE

BETA: .000
 ORBITAL: .000

REFERENCE INFORMATION:
 SREF: 6.1960 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

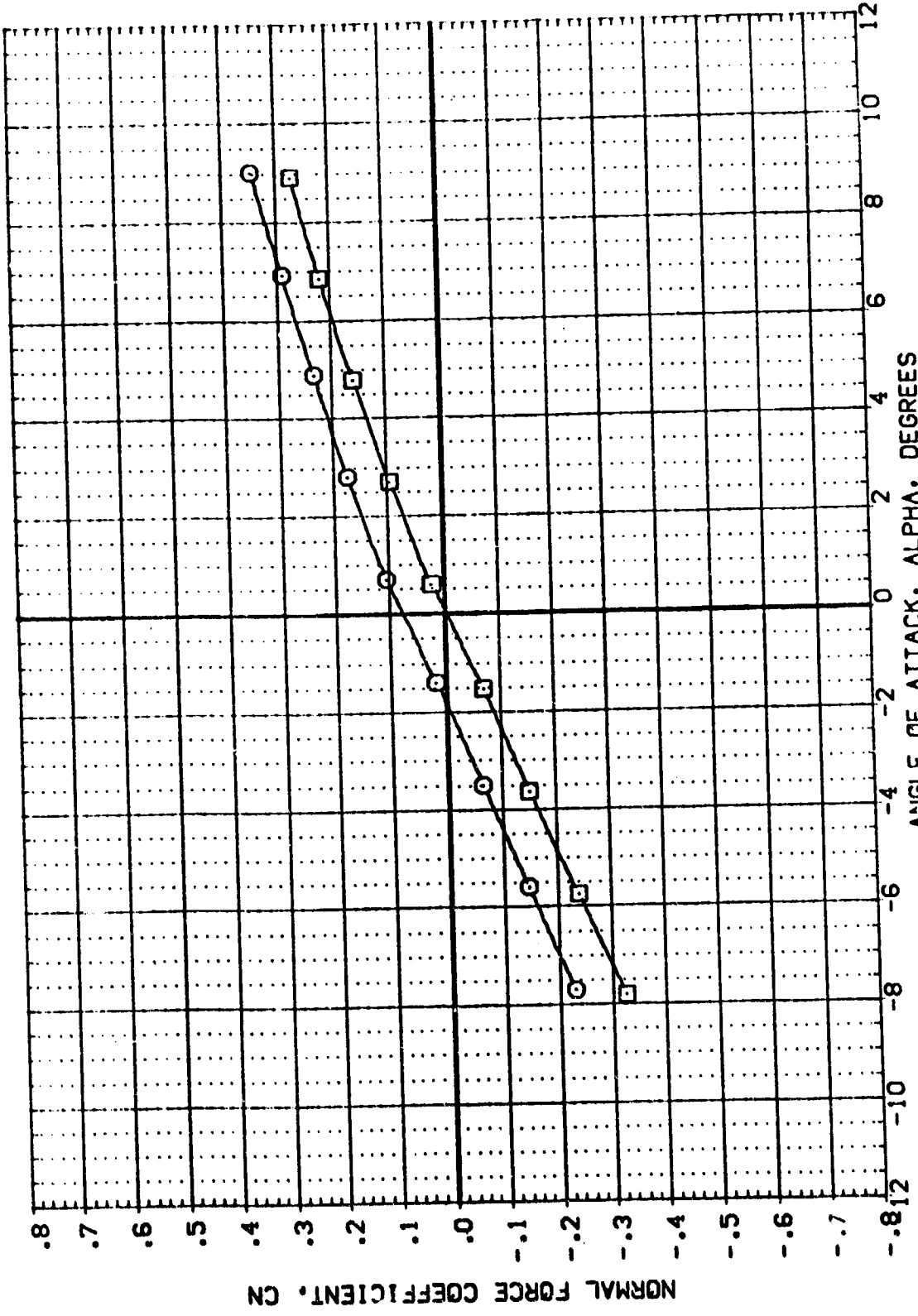
(A)MACH = .60



DATA SET SYMBO. (889005) (889008) MSFC 580(A48) (034)(T9)(S12) (ATTACH POS OFF) (034)(T9)(S12)

BETA .000 .000
ORBING .000 .000

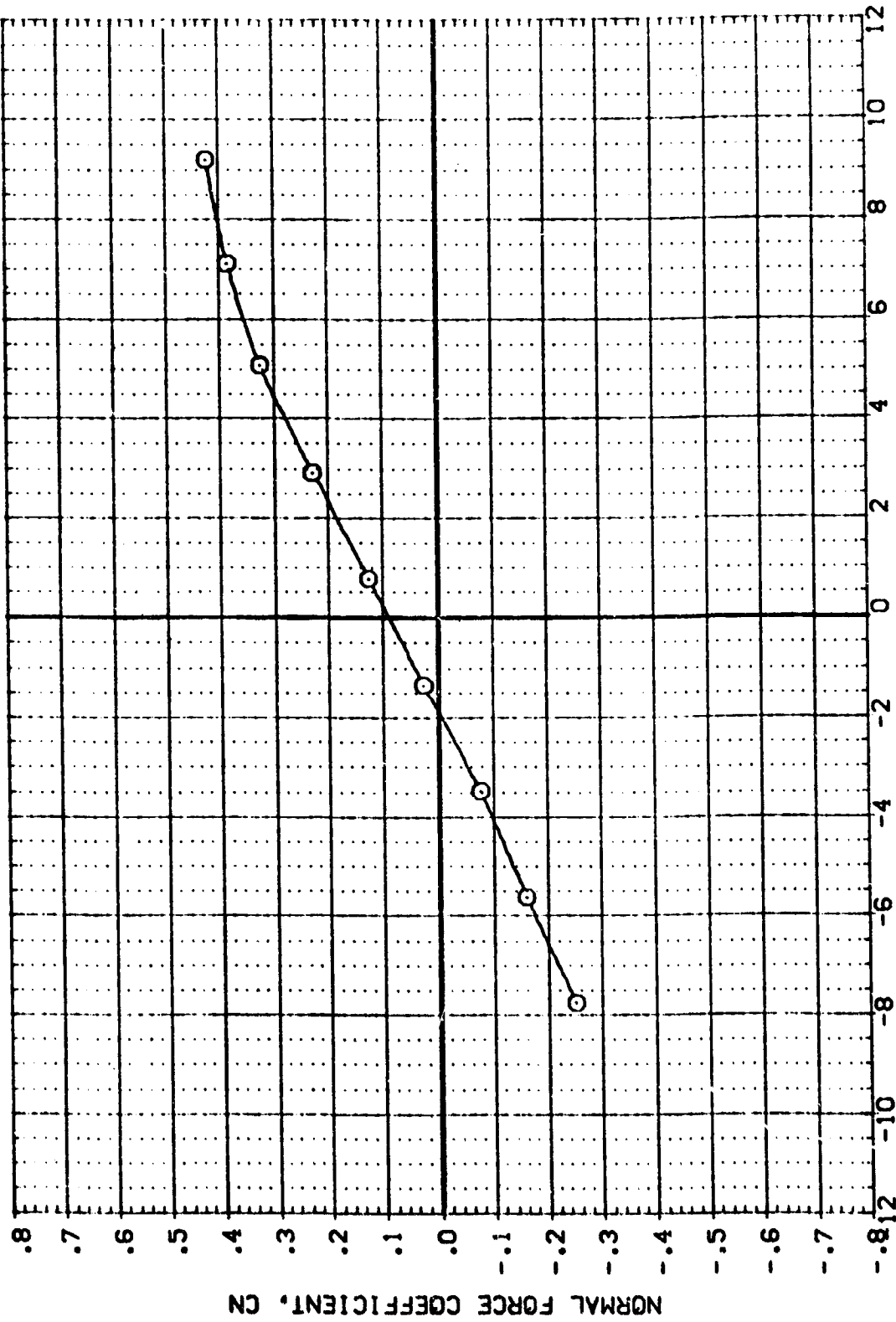
REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1600
BREF 5.1600
XREF 2.7200
YREF .0000
ZREF .0000
SCALE .0040



DATA SET SYMBOL: (885005) (885008)
 CONFIGURATION DESCRIPTION: MSC 580(1A18) (034)(19)(S12)
 DATA NOT AVAILABLE

BETA: .000
 ORBITING: .000

REFERENCE INFORMATION:
 SREF: 6.1800 SQ. IN.
 LREF: 3.1800 IN.
 BREF: 3.1800 IN.
 X*Y*Z: 2.7200
 Y*Y*Y: .0000
 Z*Z*Z: .0000
 SCALE: .0010



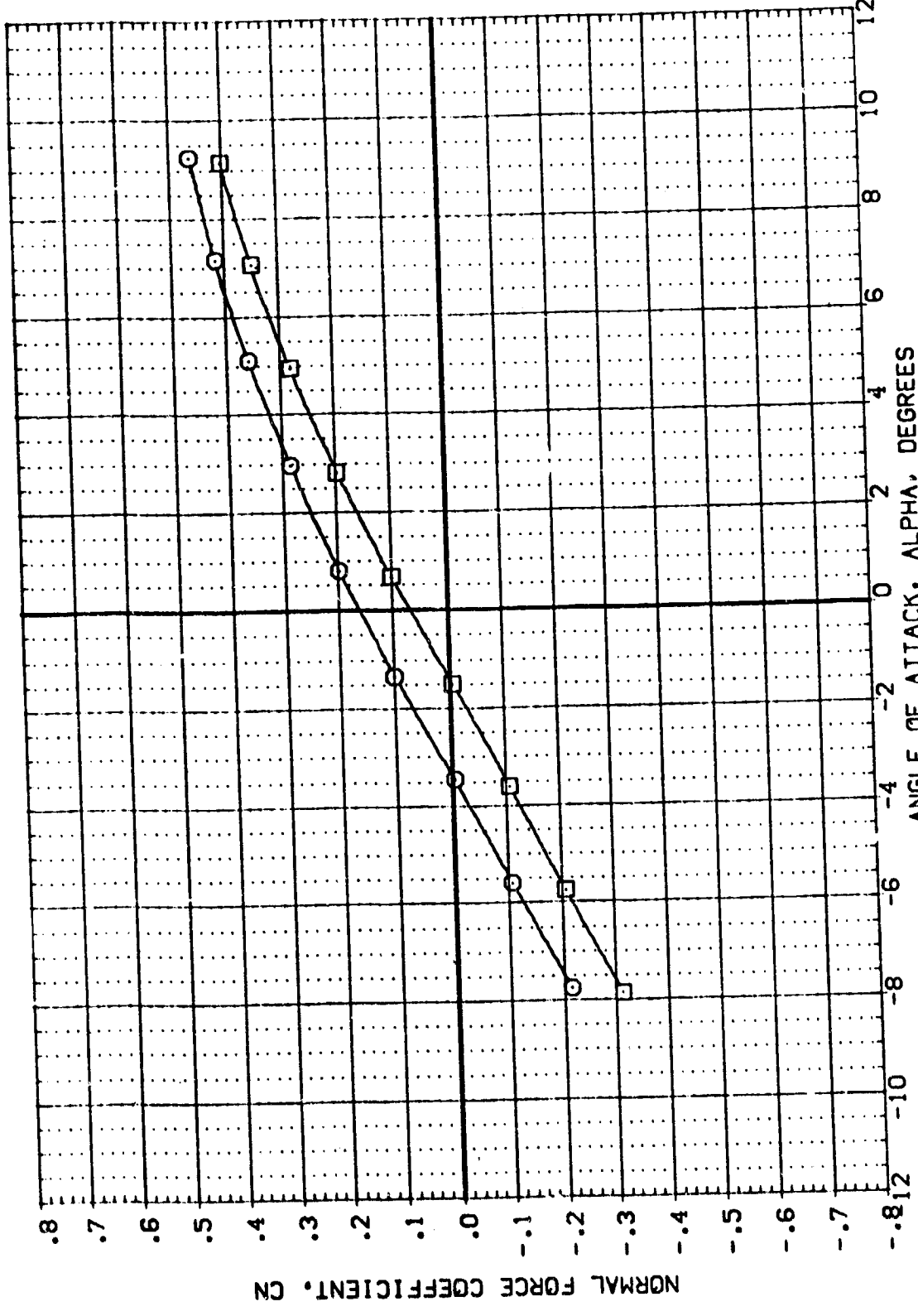
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER



REFERENCE INFORMATION
SREF 6.1980 SQ.IN.
LREF 5.1500 IN.
SPREF 2.1500 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040


BETA ORBINC
.000 .000
.000 .000

CONFIGURATION DESCRIPTION
(B89005) MSFC 580(1A48) (034)(19)(S12)
(B89008) MSFC 580(1A48) (034)(19)(S12) (ATTACH POST OFF)



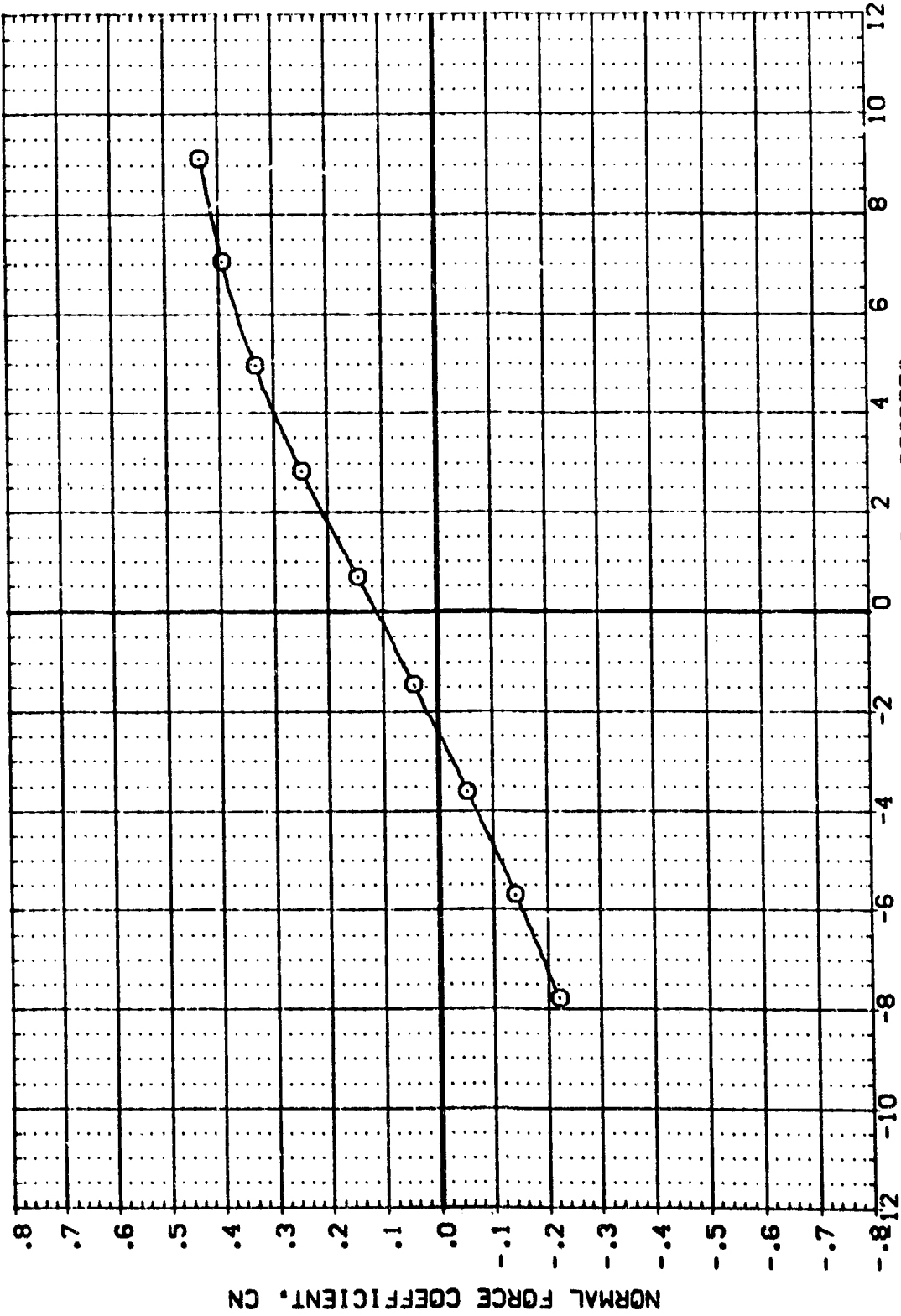
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(M)MACH = 1.25

DATA SET SYMBOL (B89005)  CONFIGURATION DESCRIPTION
 MSFC 560(1A18) (C34)(T9)(S12)
 DATA NOT AVAILABLE

BETA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



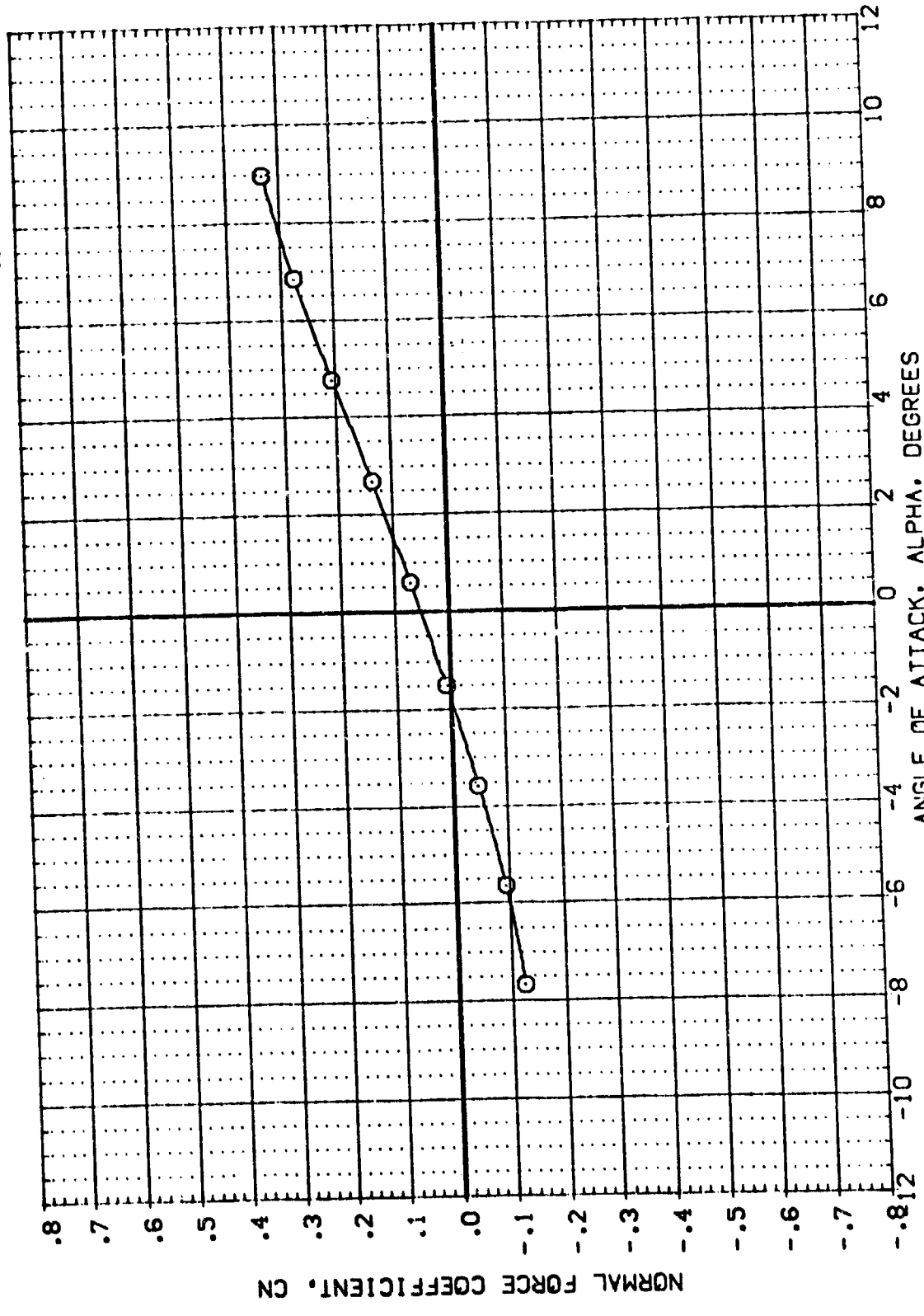
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(CE)MACH = 1.46

REFERENCE INFORMATION
 SREF 6.1980 SQ.IN.
 LREF 5.1600 IN.
 SREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA .000
 ORBINC .000

DATA SET SYMBOL (B69005) (B69008)
 CONFIGURATION DESCRIPTION MSFC 590(1A8) (034)(79)(S12)
 DATA NOT AVAILABLE

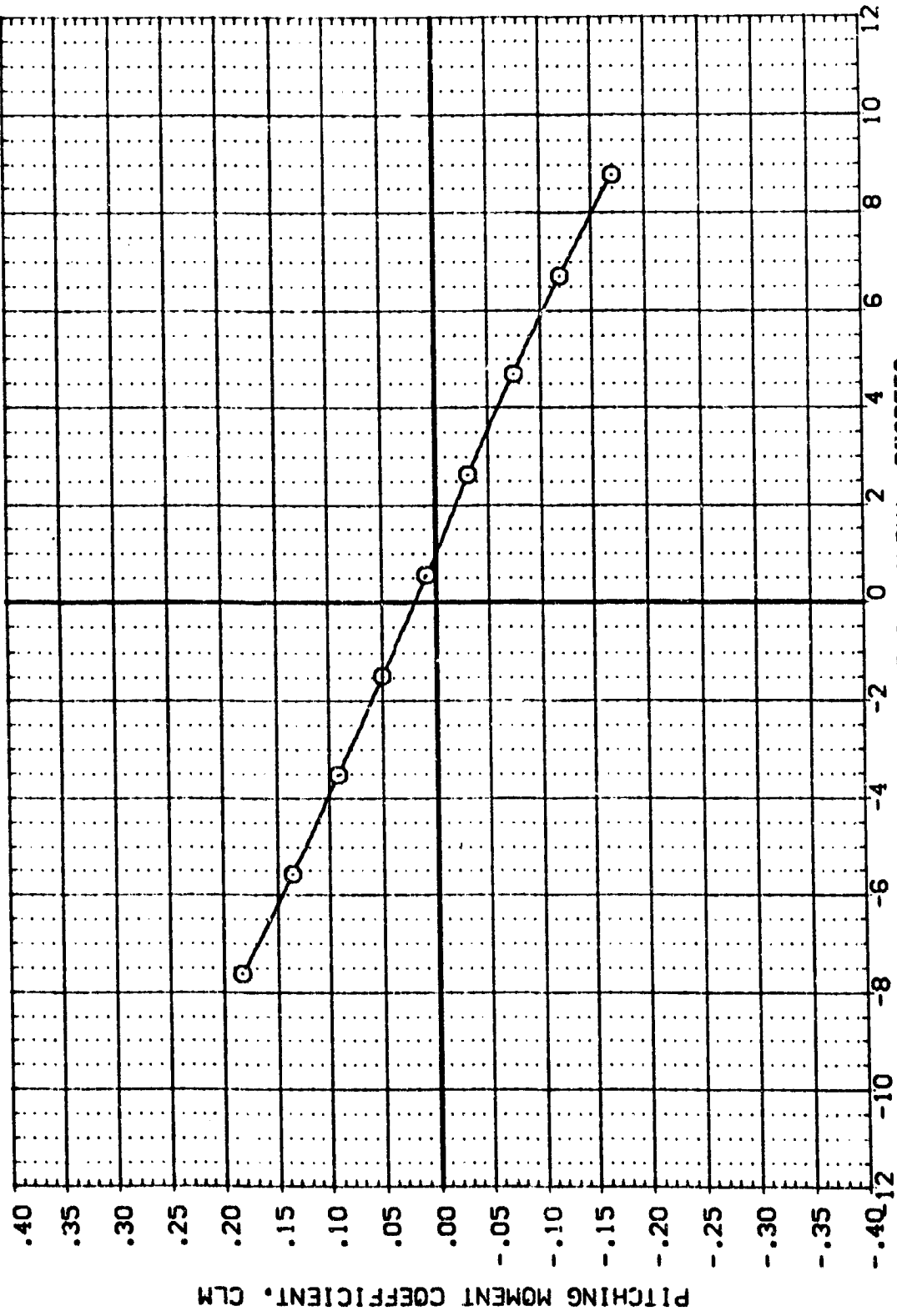


EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

DATA SET SYMBOL (885005) MSFC 5901(1A48) (034)(19)(512);
 (885008) DATA NOT AVAILABLE

BETA ORBING
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XMRP 2.7230 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



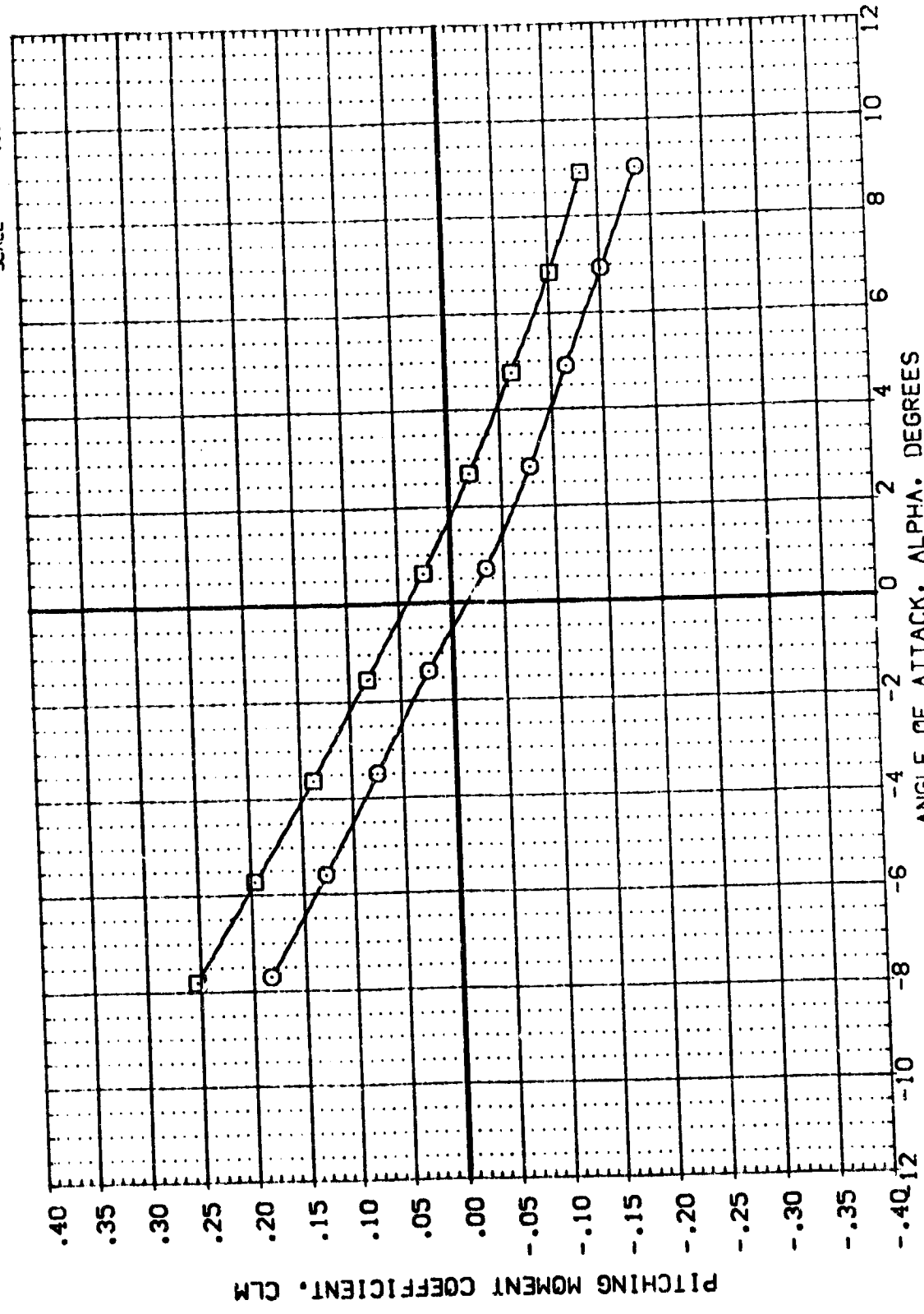
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(A)MACH = .60

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

BETA .000
 ORBINC .000

DATA SET SYMBOL (B89005) (B89008)
 CONFIGURATION DESCRIPTION
 MSFC 582((A48) (034))(T9)(S12)
 MSFC 583((A48) (034))(T9)(S12) (ATTACH POST OFF)



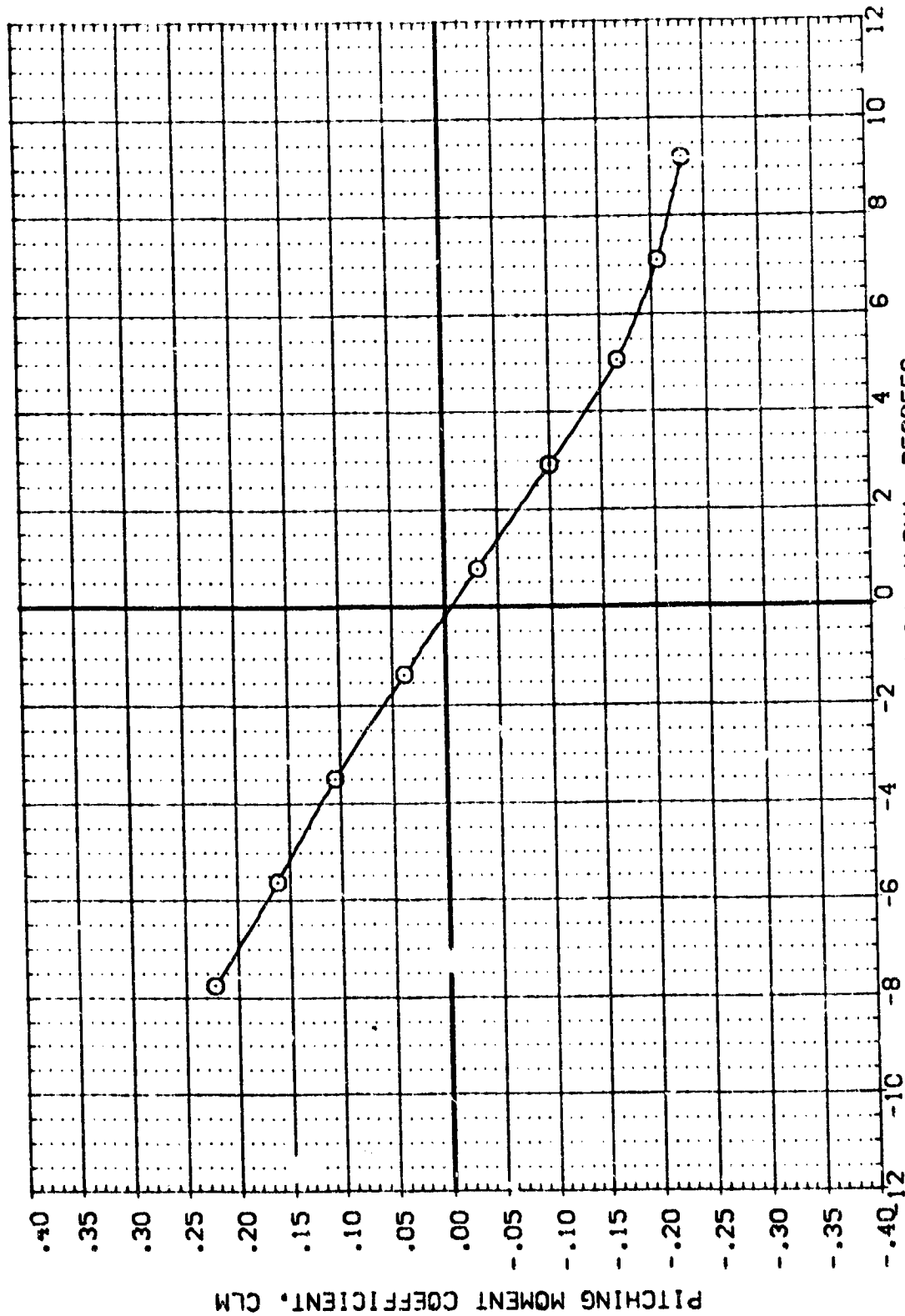
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(B)MACH = .90

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 L REF 5.1600 IN.
 B REF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA ORBITING
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (889005) MSC 580(1A48) (034)(T9)(S12)
 (889008) DATA NOT AVAILABLE

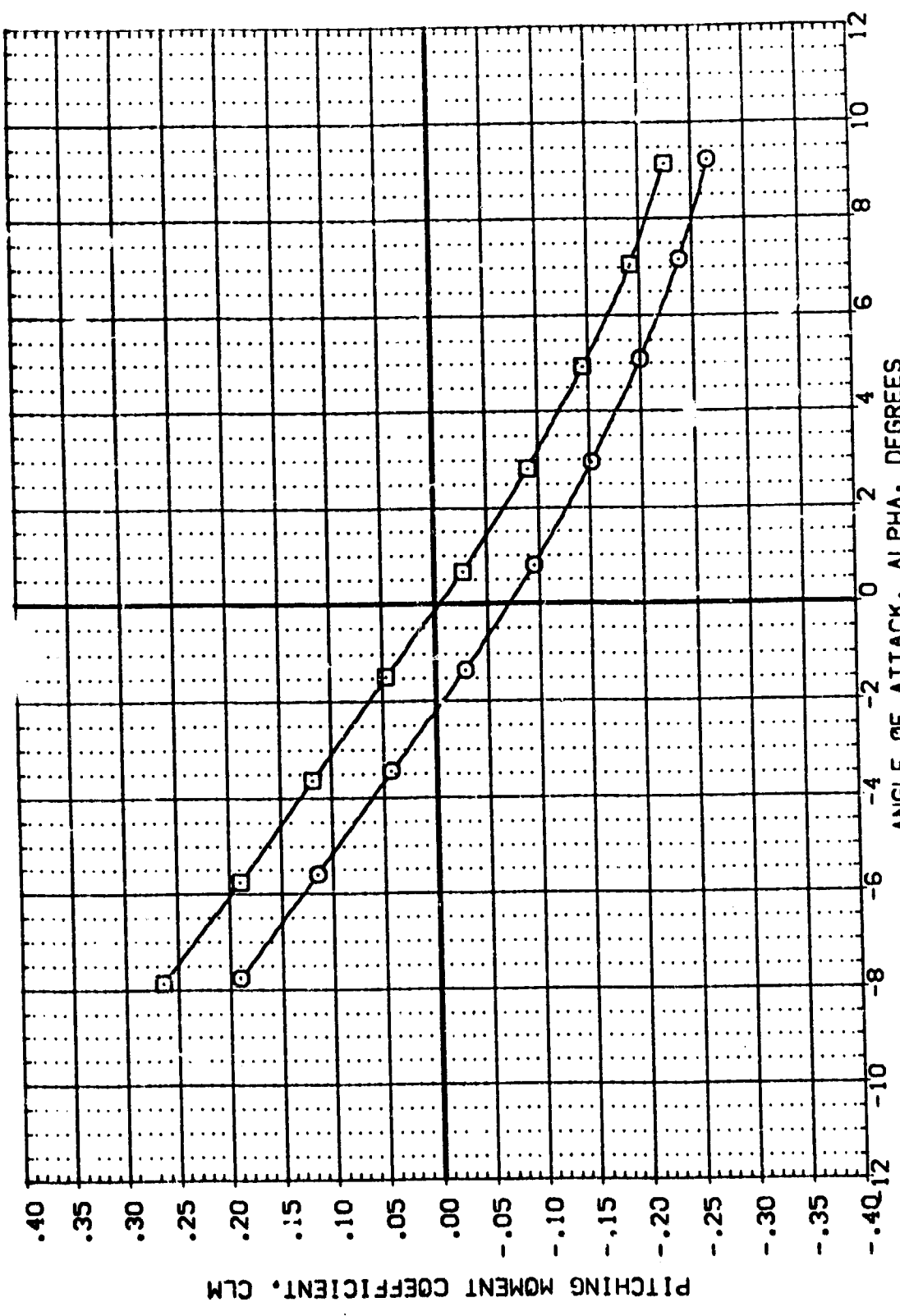


EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

REFERENCE INFORMATION
 SREF 6.1800 50. IN.
 LREF 5.1670 IN.
 BREF 5.1670 IN.
 YREF 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

BETA ORBING
 .000 .000
 .000 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (889005) X5FC 5801(A48) (034)(T9)(S12)
 (889006) X5FC 5801(A48) (034)(T9)(S12) (ATTACH POST)



ANGLE OF ATTACK, ALPHA, DEGREES

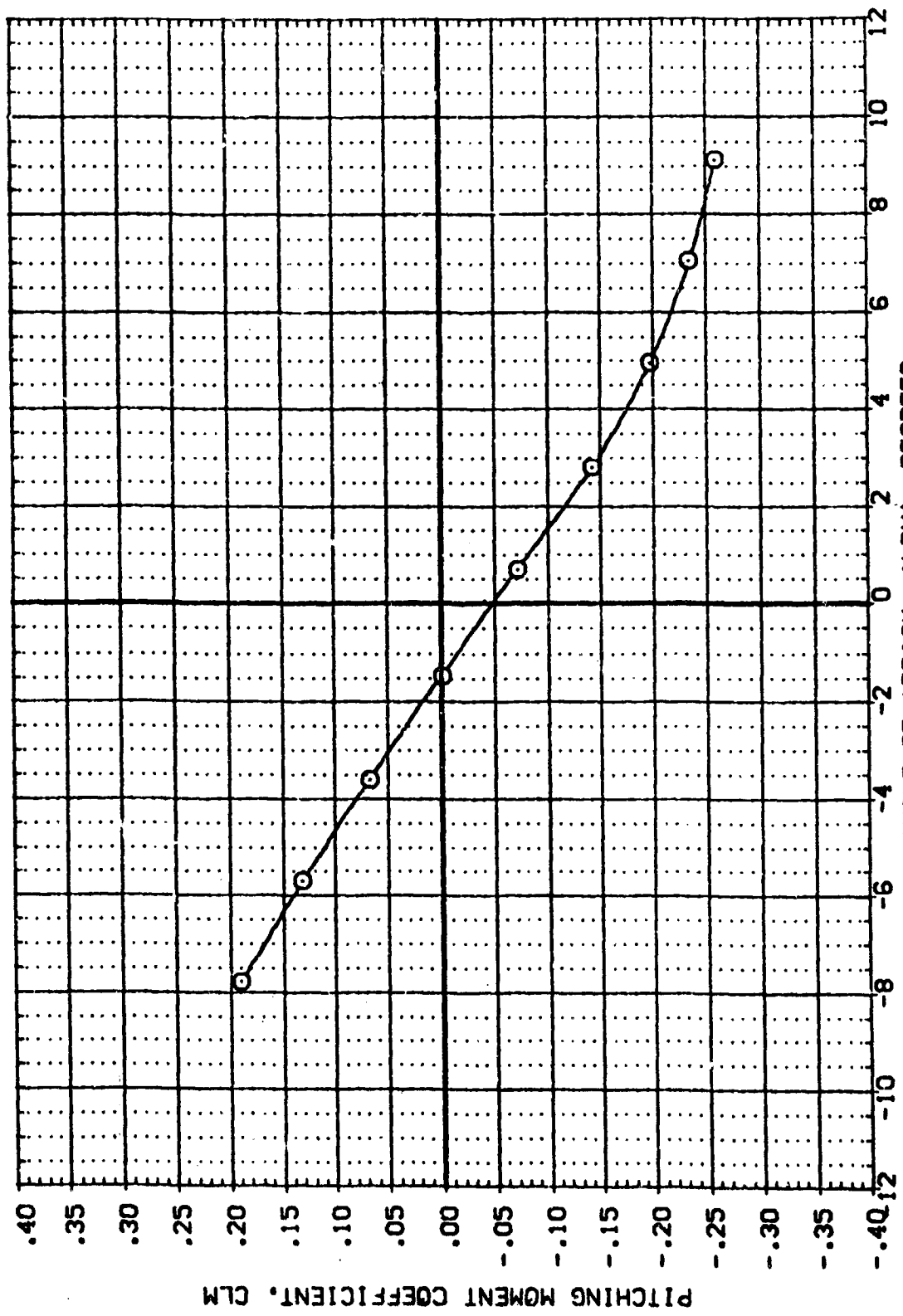
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(D)MACH = 1.25

DATA SET SYMBOL: (B85005) (B85006)
 CONFIGURATION DESCRIPTION: MSFC 590 (JA48) (034) (TS) (S12)
 DATA NOT AVAILABLE

BETA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1980 SO. IN.
 LREF: 5.1600 IN.
 BRREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0010



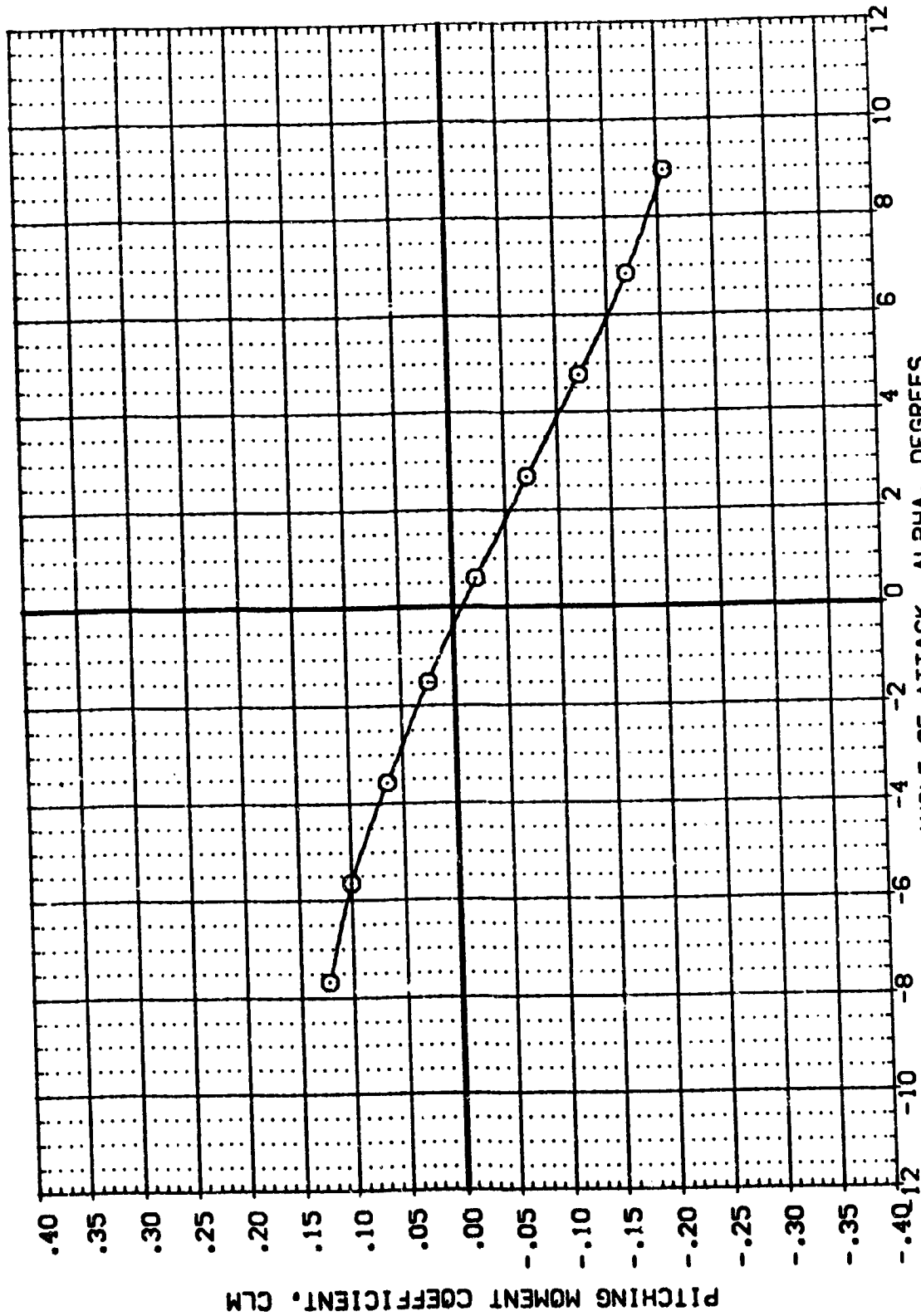
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER



DATA SET SYMBOL: NSFC 580(1A48) (0341)(TS)(S12)
 (B8505) □ DATA NOT AVAILABLE
 (B8508)

BETA: .000
 ORBINC: .000

REFERENCE INFORMATION
 SREF: 6.1580 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0040



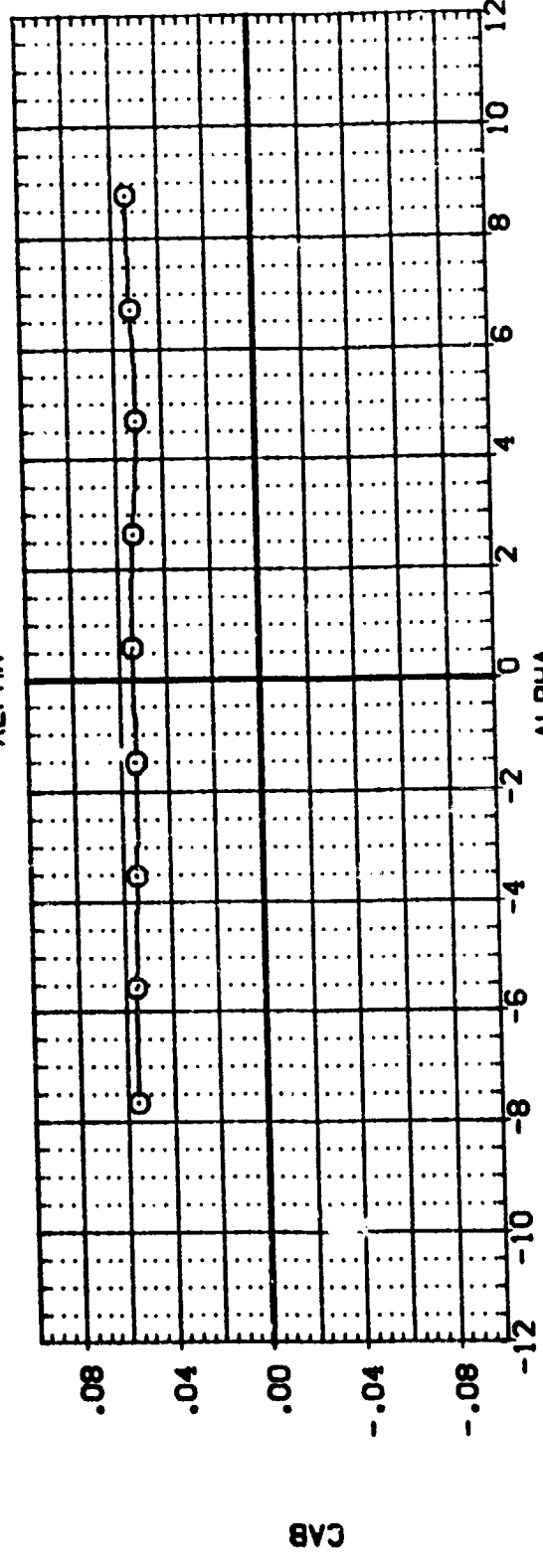
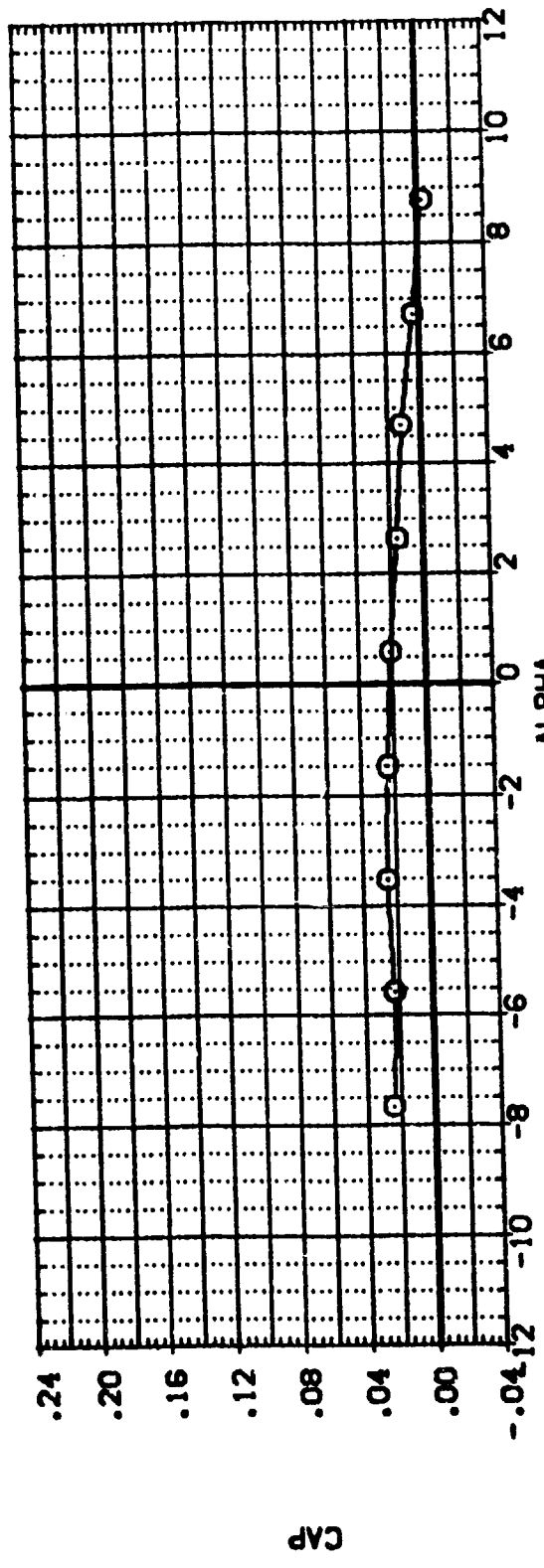
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(F)MACH = 1.97

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL (886005) (886008) (886009)
 CONFIGURATION DESCRIPTION MSFC 5801(A48) (C24)(T5)(S12)
 DATA NOT AVAILABLE



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(A)MACH = .60

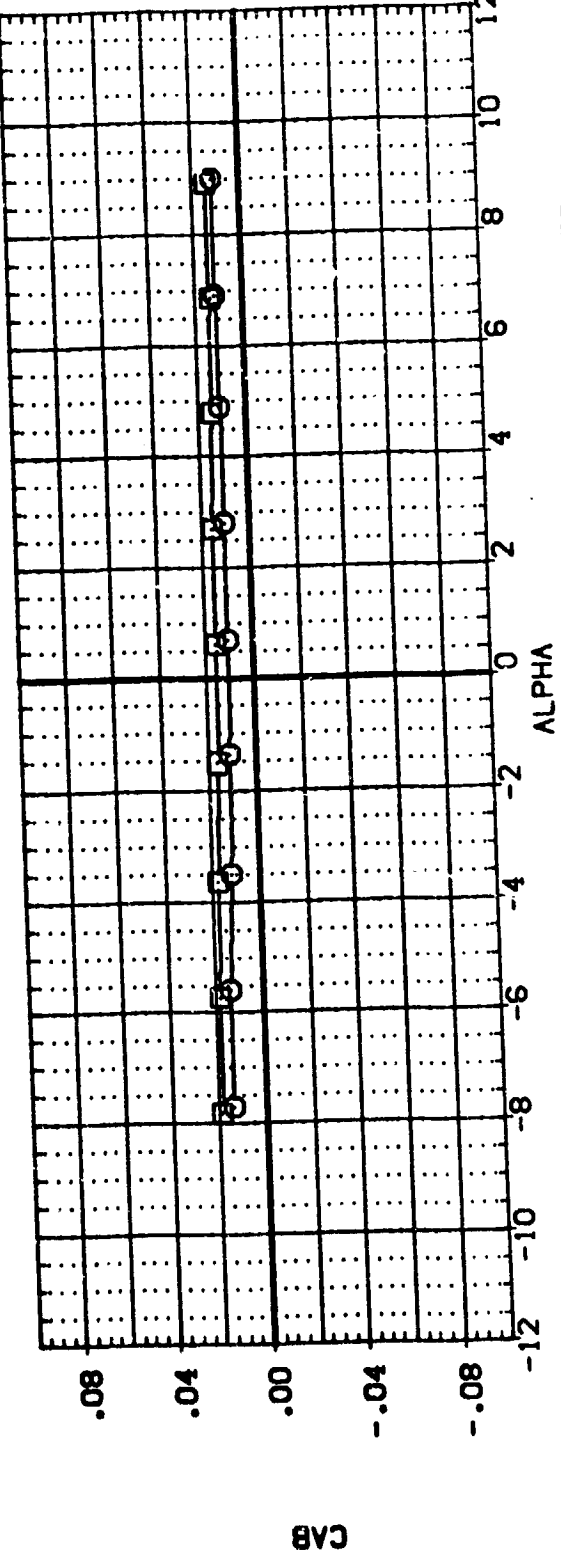
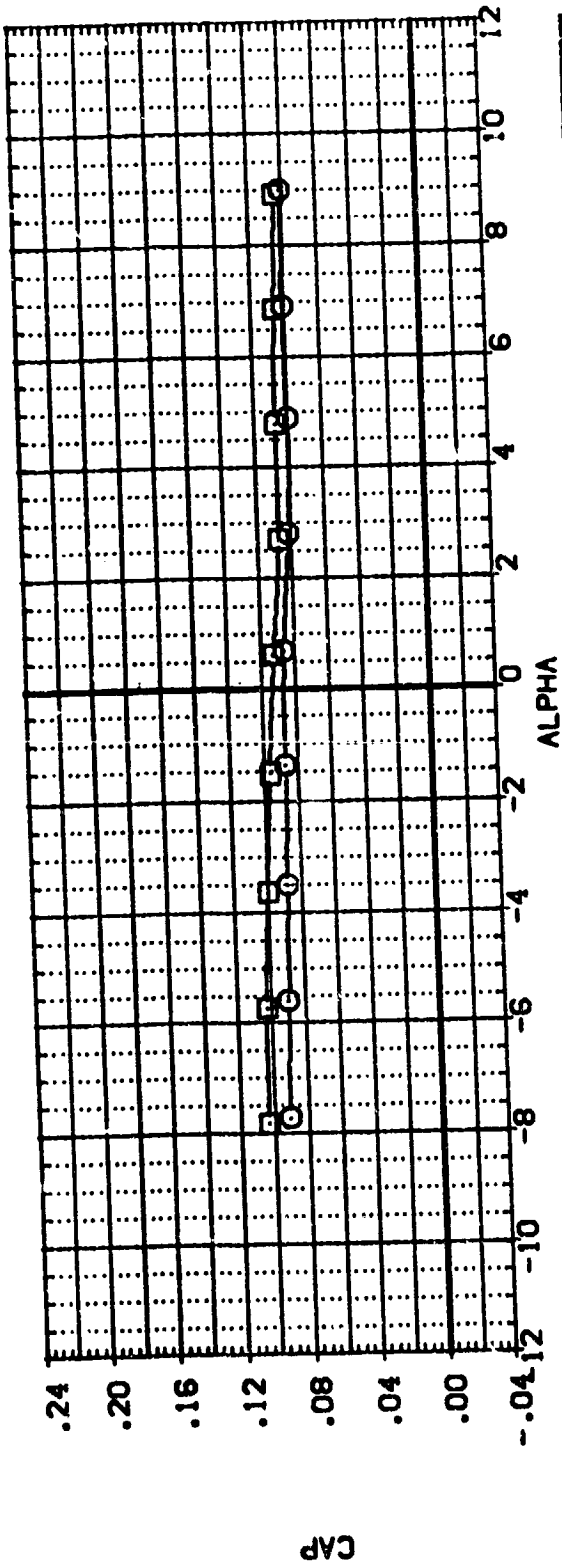


REFERENCE INFORMATION
SREF 6.1800 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040

BETA ORBINC
.000 .000
.000 .000

CONFIGURATION DESCRIPTION
(MSFC 580(1A48) (034)(19)(S12)
(MSFC 580(1A48) (034)(19)(S12) (ATTACH POST OFF)

DATA SET SYMBOL (B69005) (B69008)
□



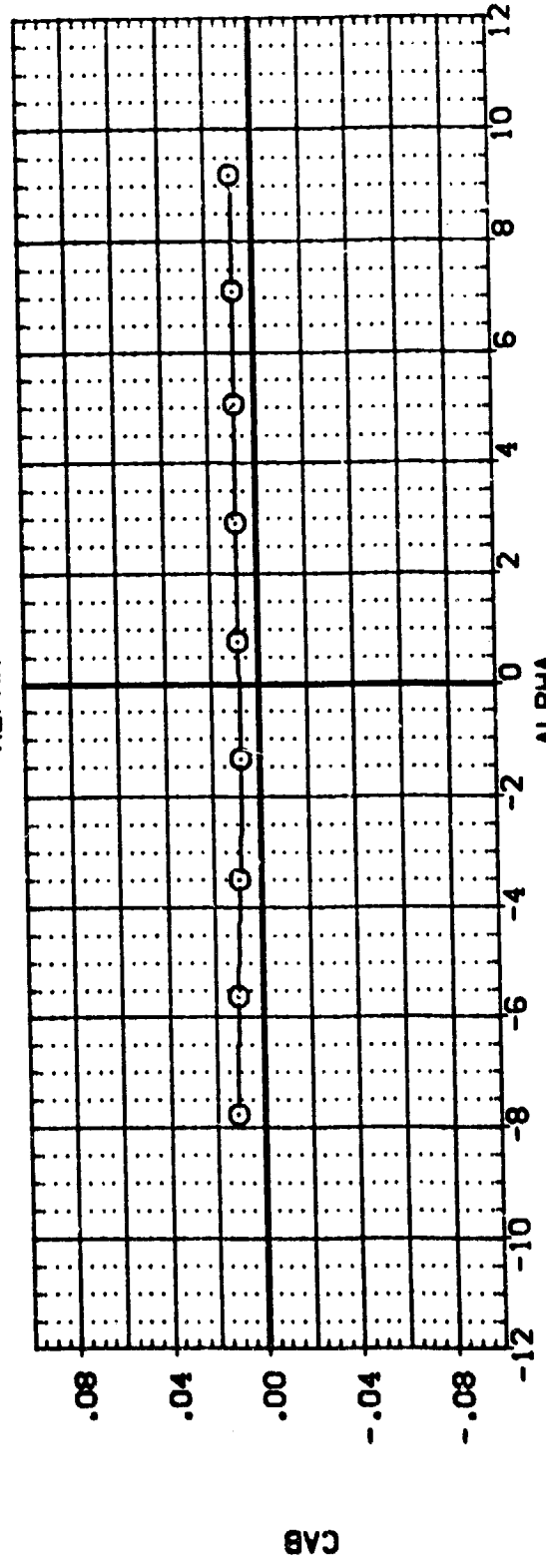
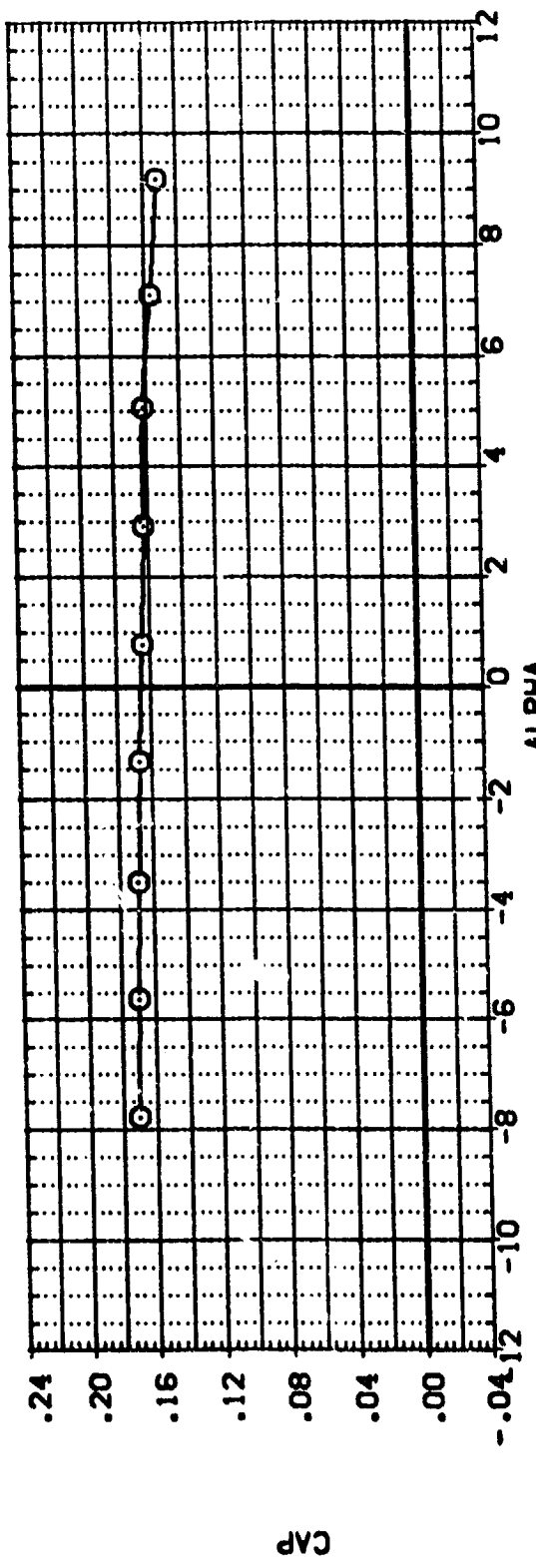
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(B)MACH = .90

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BRREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (B65005) MSC 560(1A48) (C24)(T9)(S12)
 (B65008) DATA NOT AVAILABLE



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

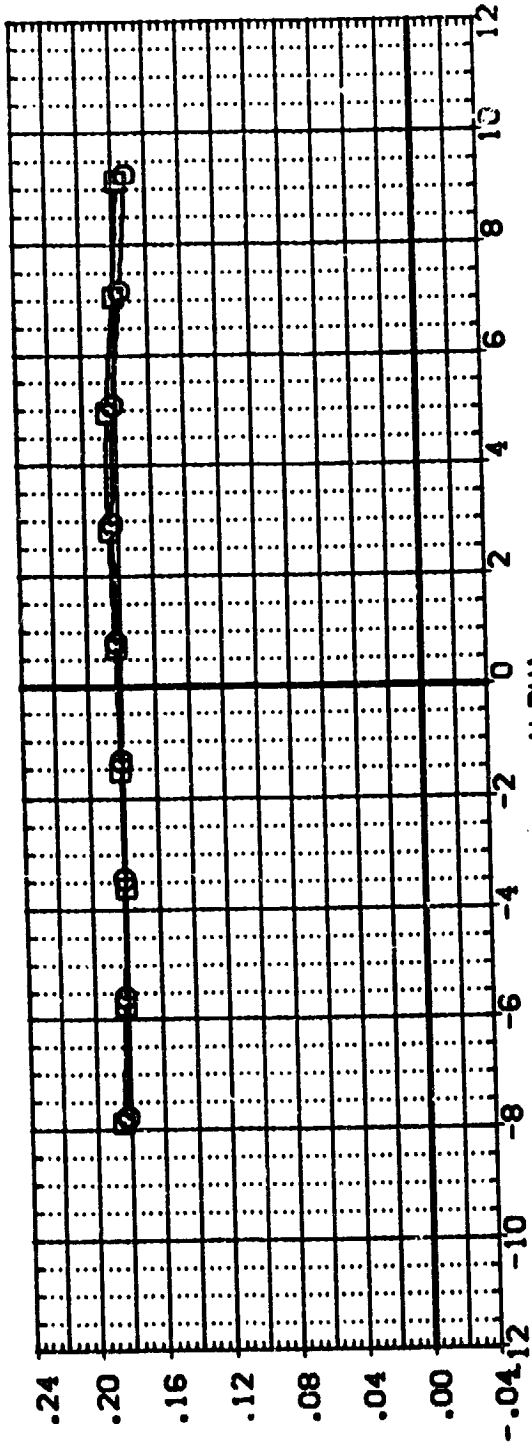


DATA SET SYMBO
 (888005)
 (888008)

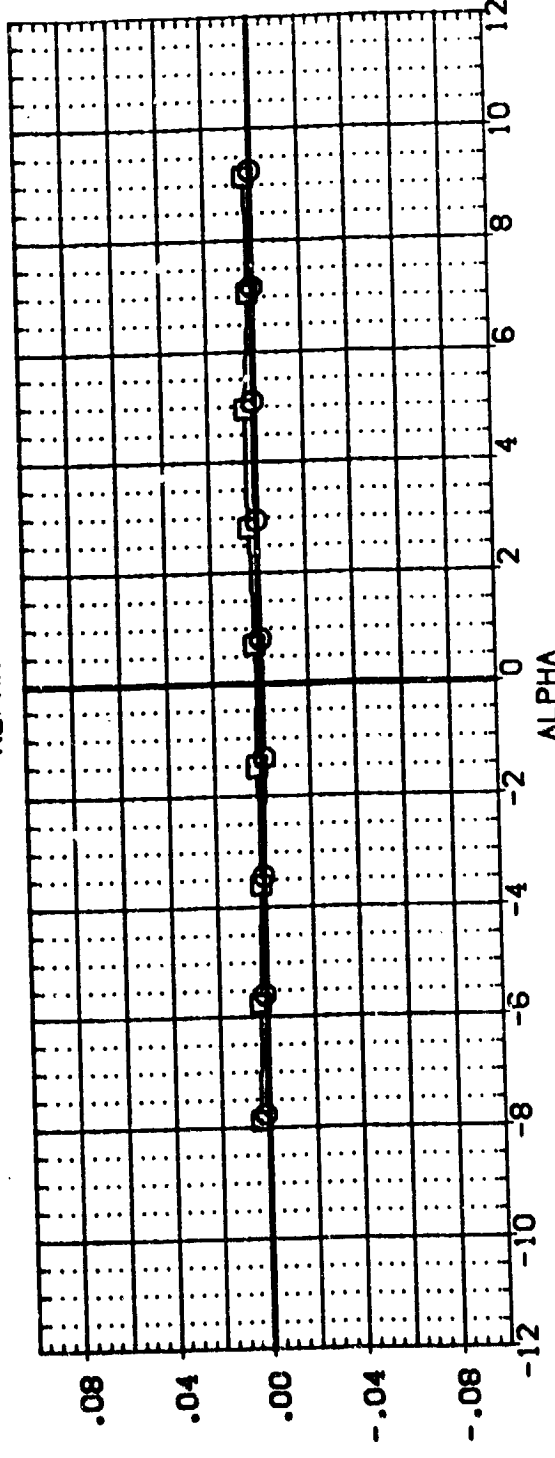
CONFIGURATION DESCRIPTION
 MSC 5801(A48) (034)(19)(S12)
 MSC 5801(A48) (034)(19)(S12) (ATTACH POST OFF)

BETA ORBINC
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



CAP



CAB

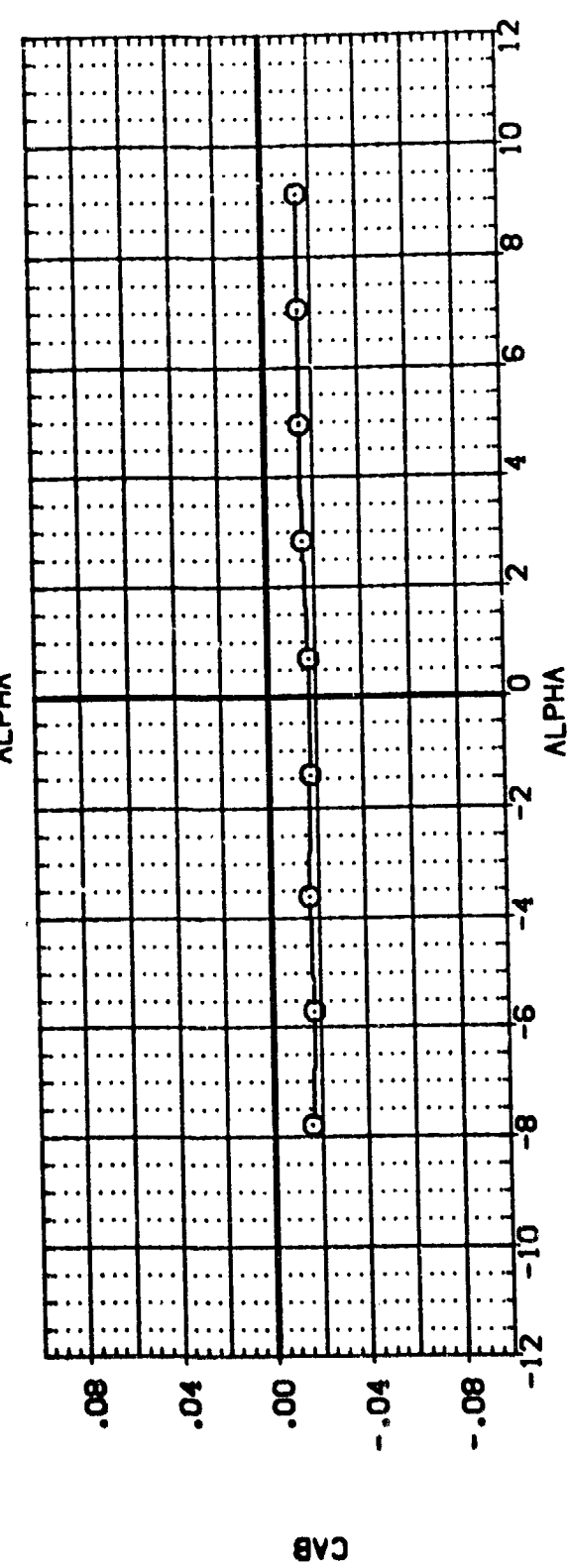
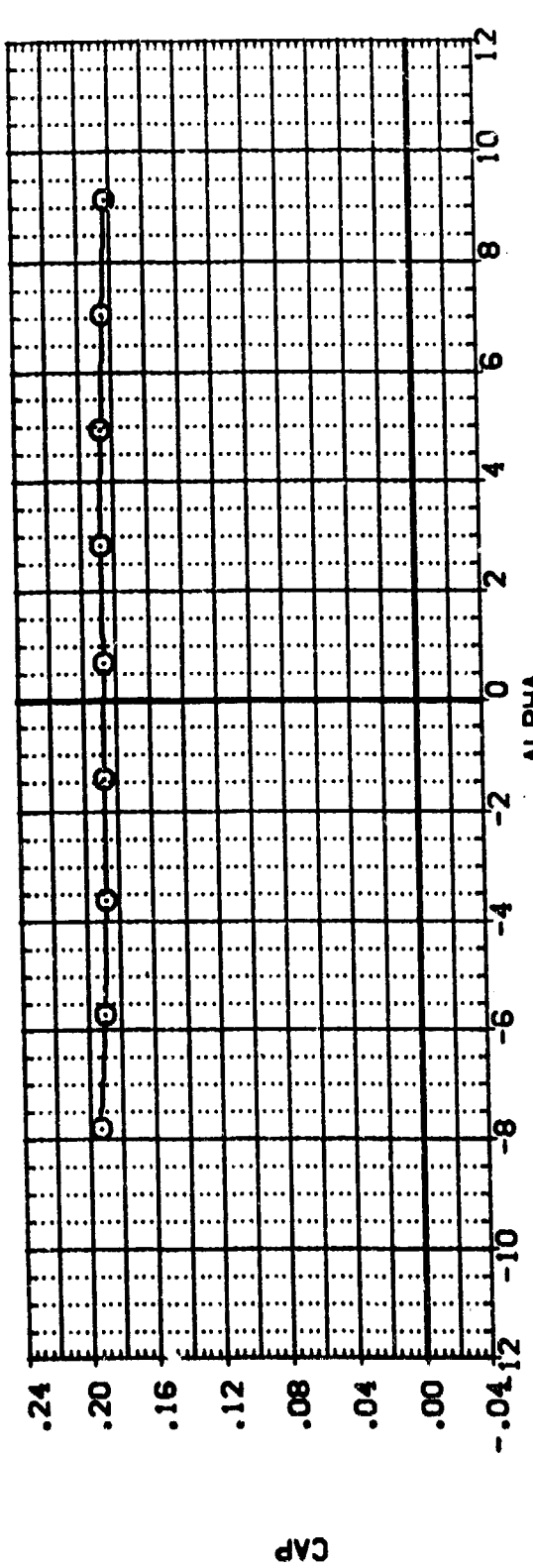
EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

(M)MACH = 1.25

REFERENCE INFORMATION
 SREF 6.1990 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (888005) MSFC 560(1448) (0341)(T9)(S12)
 (888006) DATA NOT AVAILABLE



EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

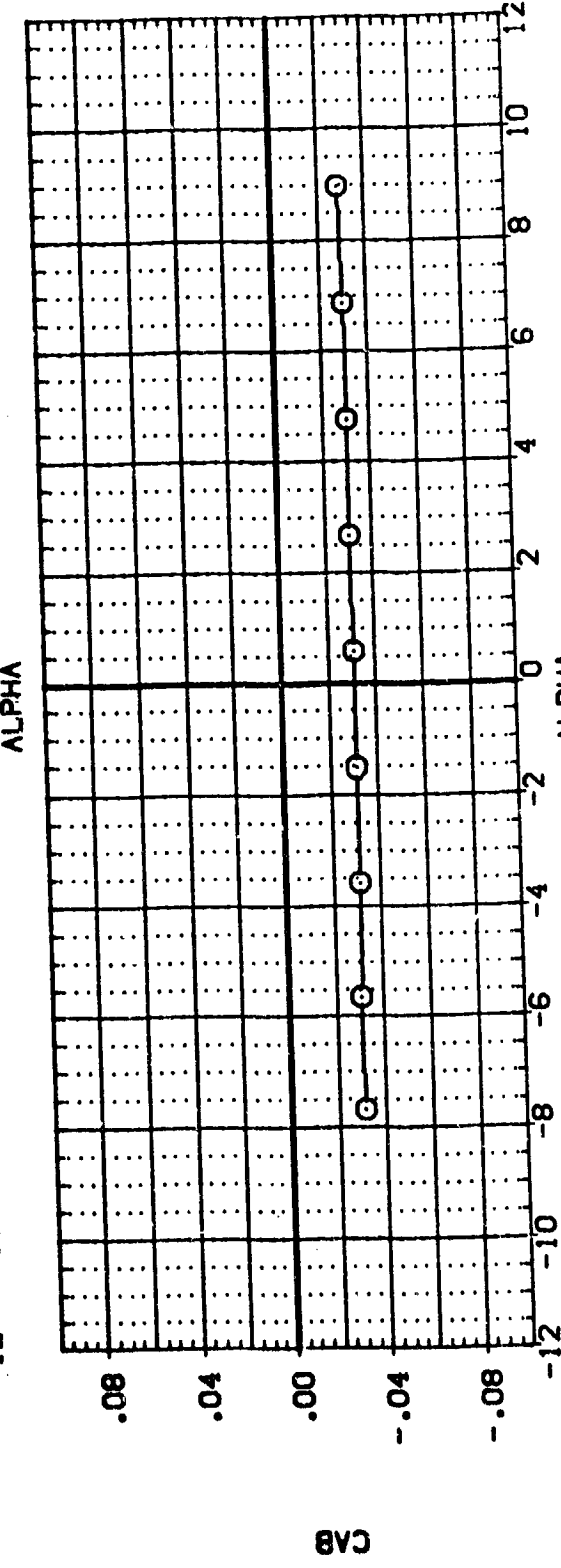
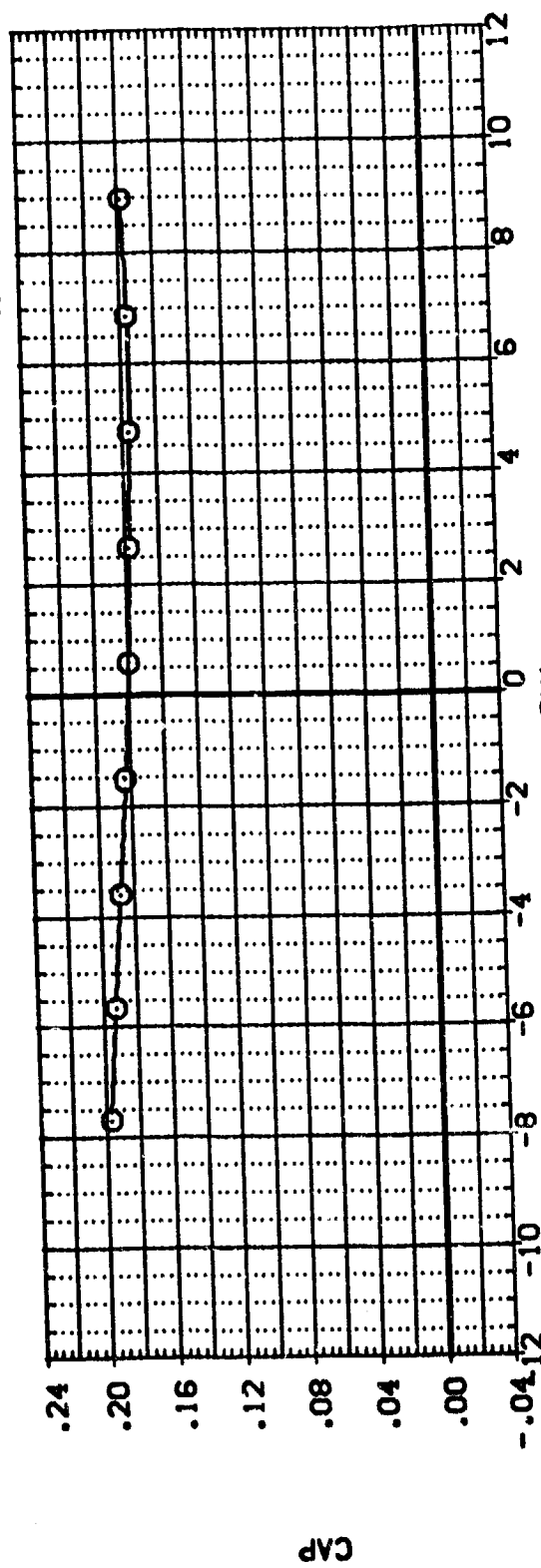
(E)MACH = 1.46



DATA SET SYMBOL (865005) (865008) CONFIGURATION DESCRIPTION MSFC 590(1A48) (034)(19)(S12) DATA NOT AVAILABLE

BETA ORBINC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 5.1590 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040

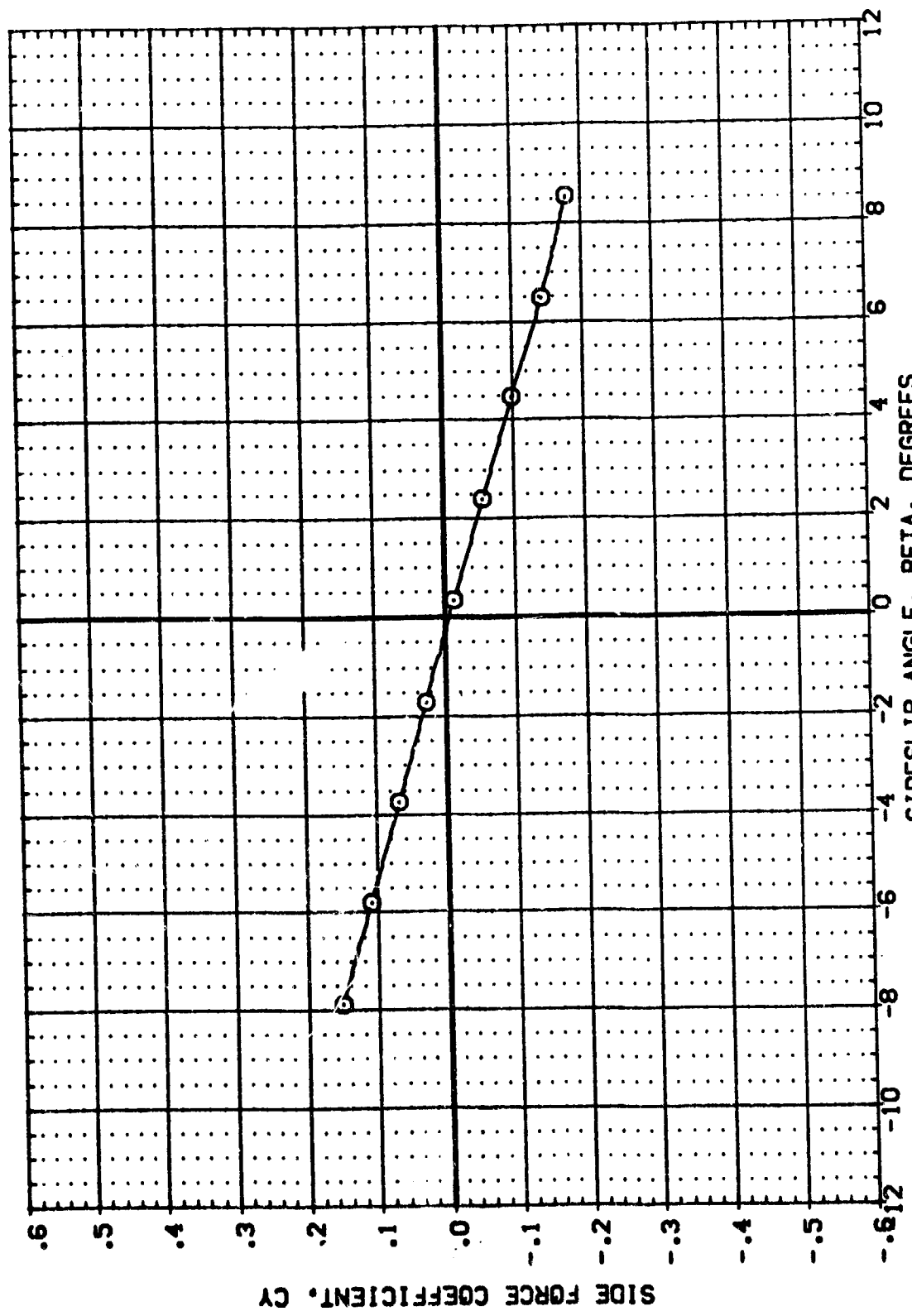


EFFECT OF ATTACHMENT POST ON LONGITUDINAL CHARACTERISTICS OF ORBITER

DATA SET SYMBOL (885005) MSFC 580(1A48) (034)(19)(S1?)
 (885007) DATA NOT AVAILABLE

ALPHA ORBING
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BRREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



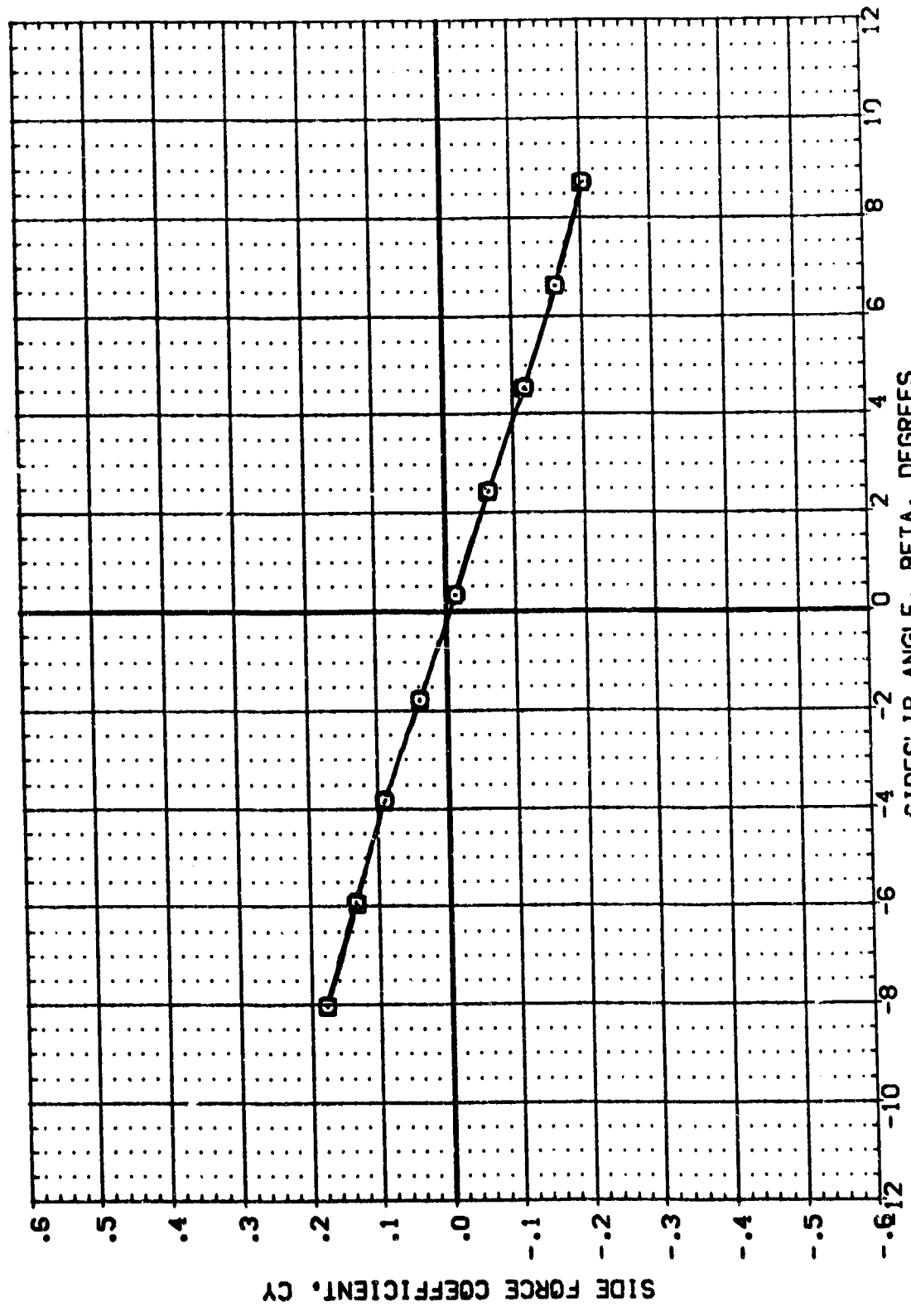
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER



DATA SET SYMBOL (889006) (889007) B
CONFIGURATION DESCRIPTION
HSFC 580(A48) (034)(T9)(S12)
HSFC 580(A48) (034)(T9)(S12) (ATTACH POST OFF)

ALPHA ORBINC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1880 50. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0010

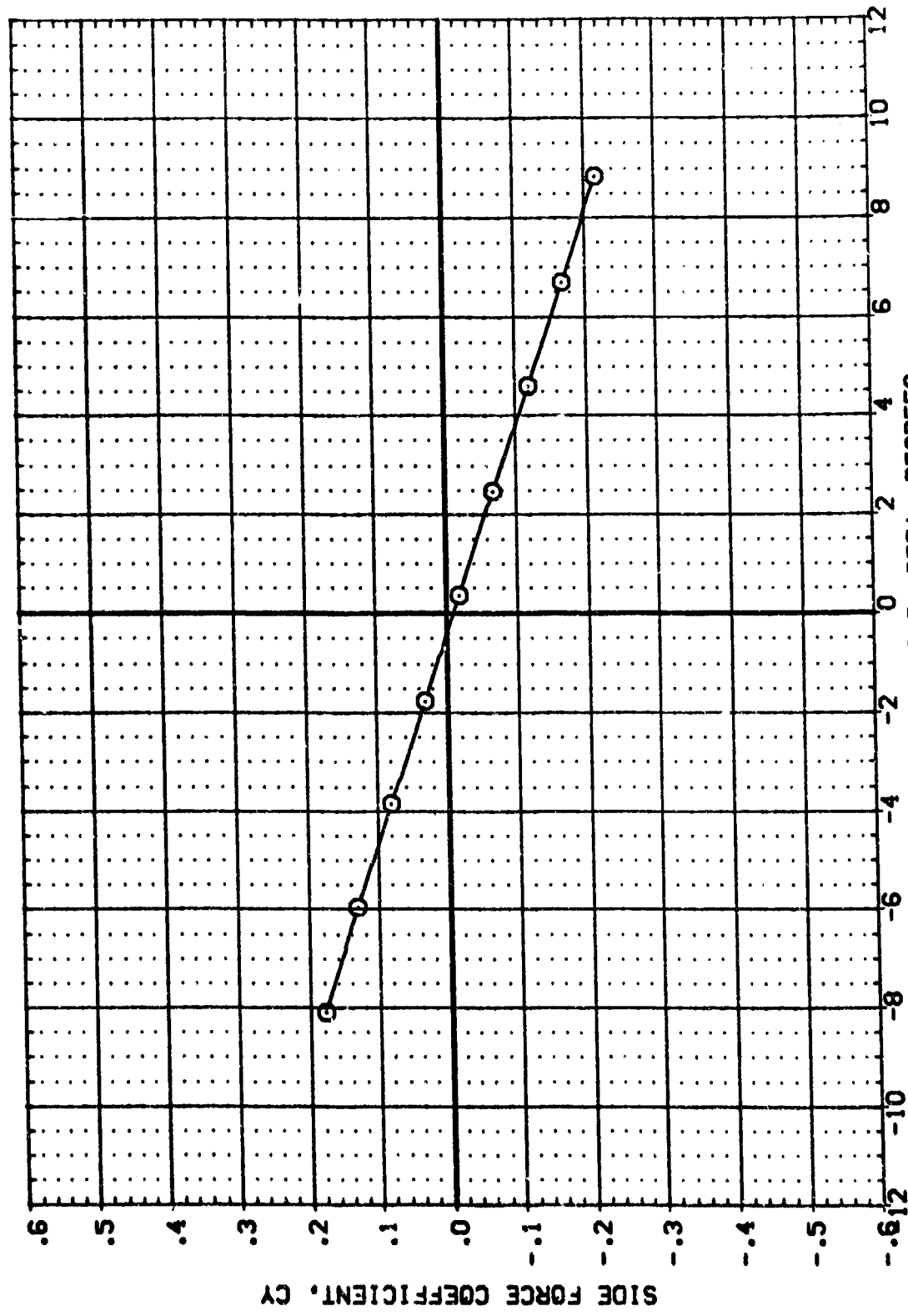


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

DATA SET SYMBOL: (885005) (885007)
 CONFIGURATION DESCRIPTION: MSC 580(1A8) (024)(T9)(S12)
 DATA NOT AVAILABLE

ALPHA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1880 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XTRP: 2.7200 IN.
 YTRP: .0000 IN.
 ZTRP: .0000 IN.
 SCALE: .0010



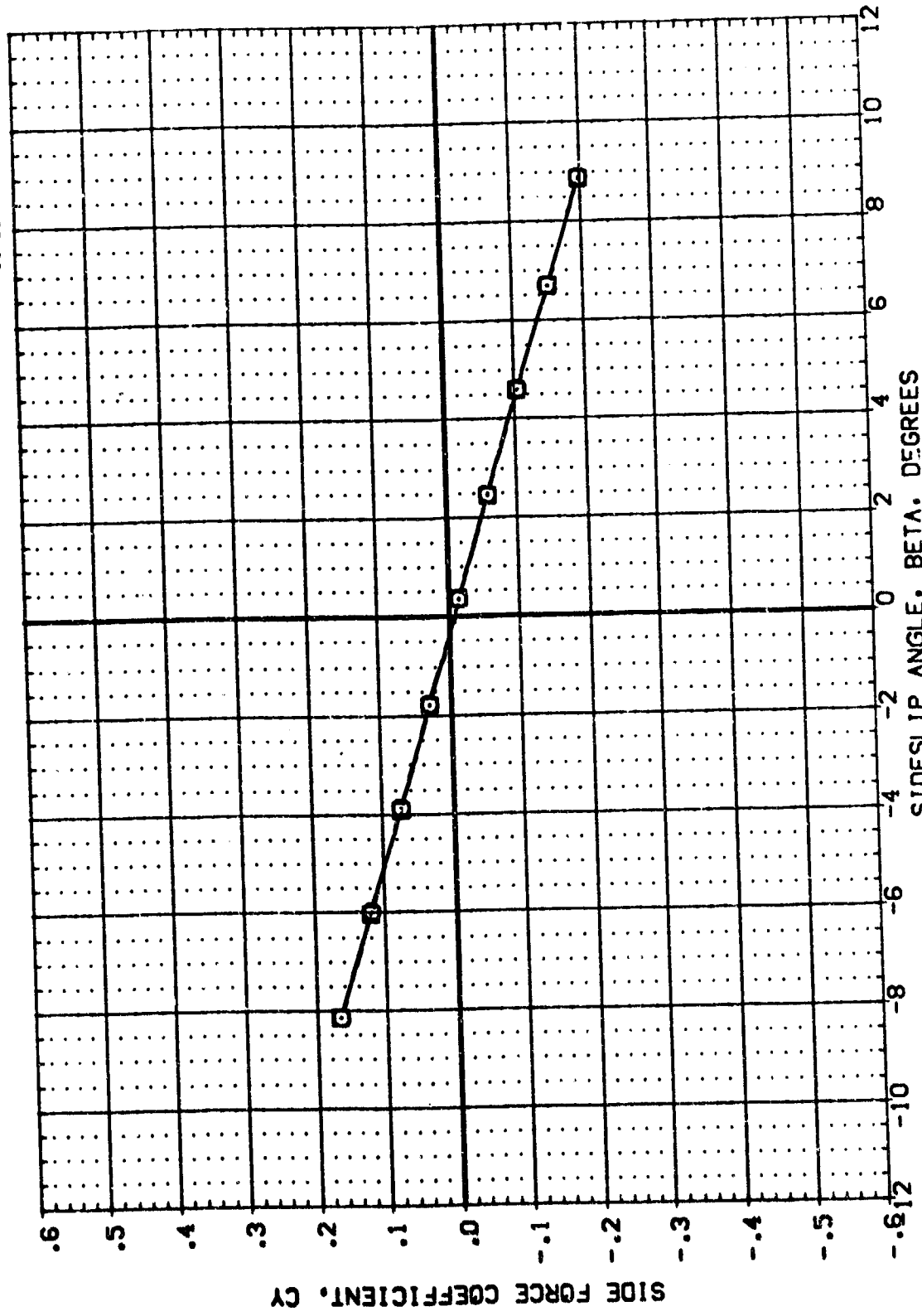
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER



DATA SET SYMBL. CONFIGURATION DESCRIPTION
(889006) HSC 560(1A48) (034)(T9)(S12)
(889007) HSC 560(1A48) (034)(T9)(S12) (ATTACH POST OFF)

ALPHA ORBINC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040

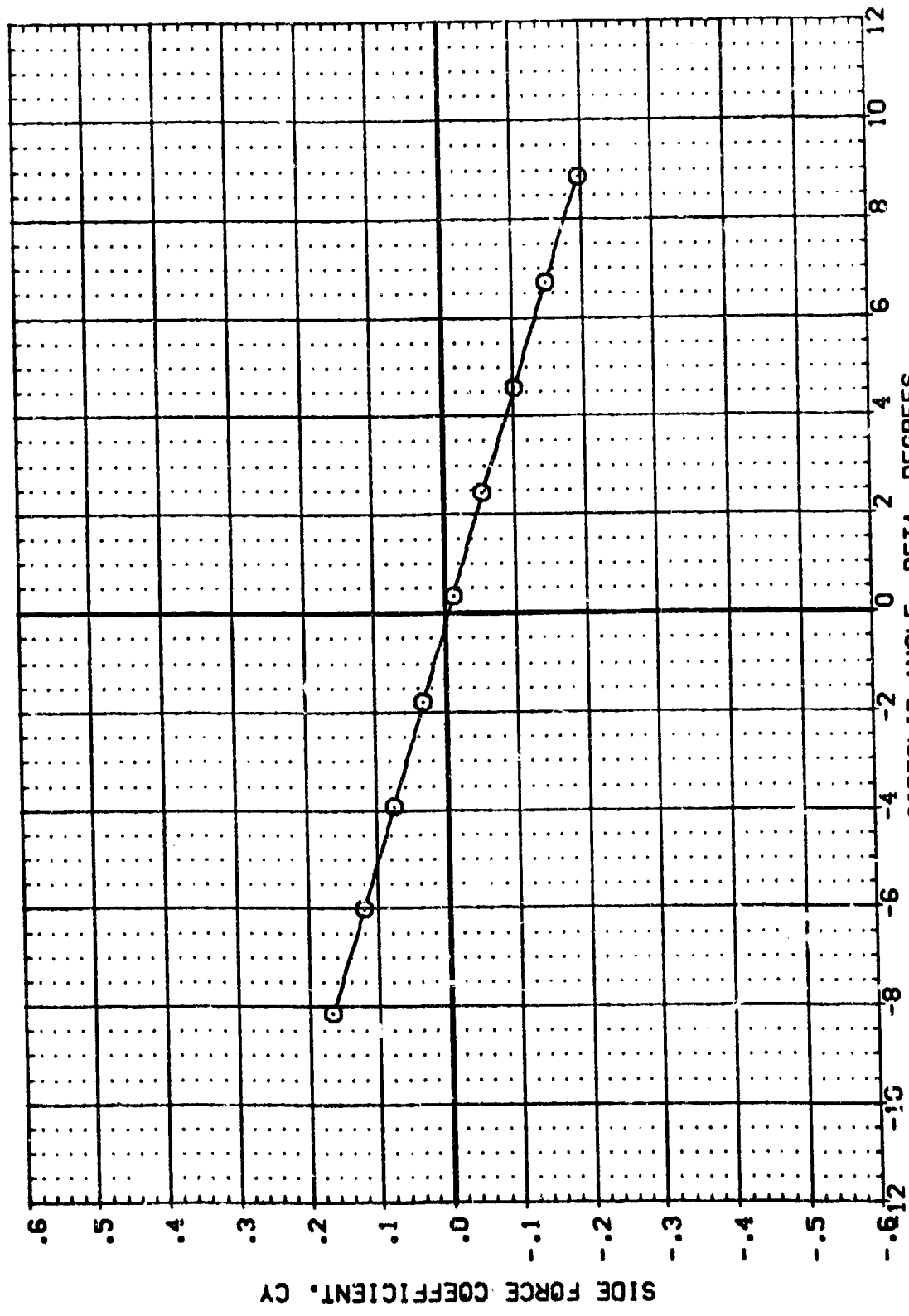


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

DATA SET SYMBOL: (B63006) (B69007) □
 CONFIGURATION DESCRIPTION: NSFC 560(1A48) (034)(179)(S12)
 DATA NOT AVAILABLE

ALPHA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1980 IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0010



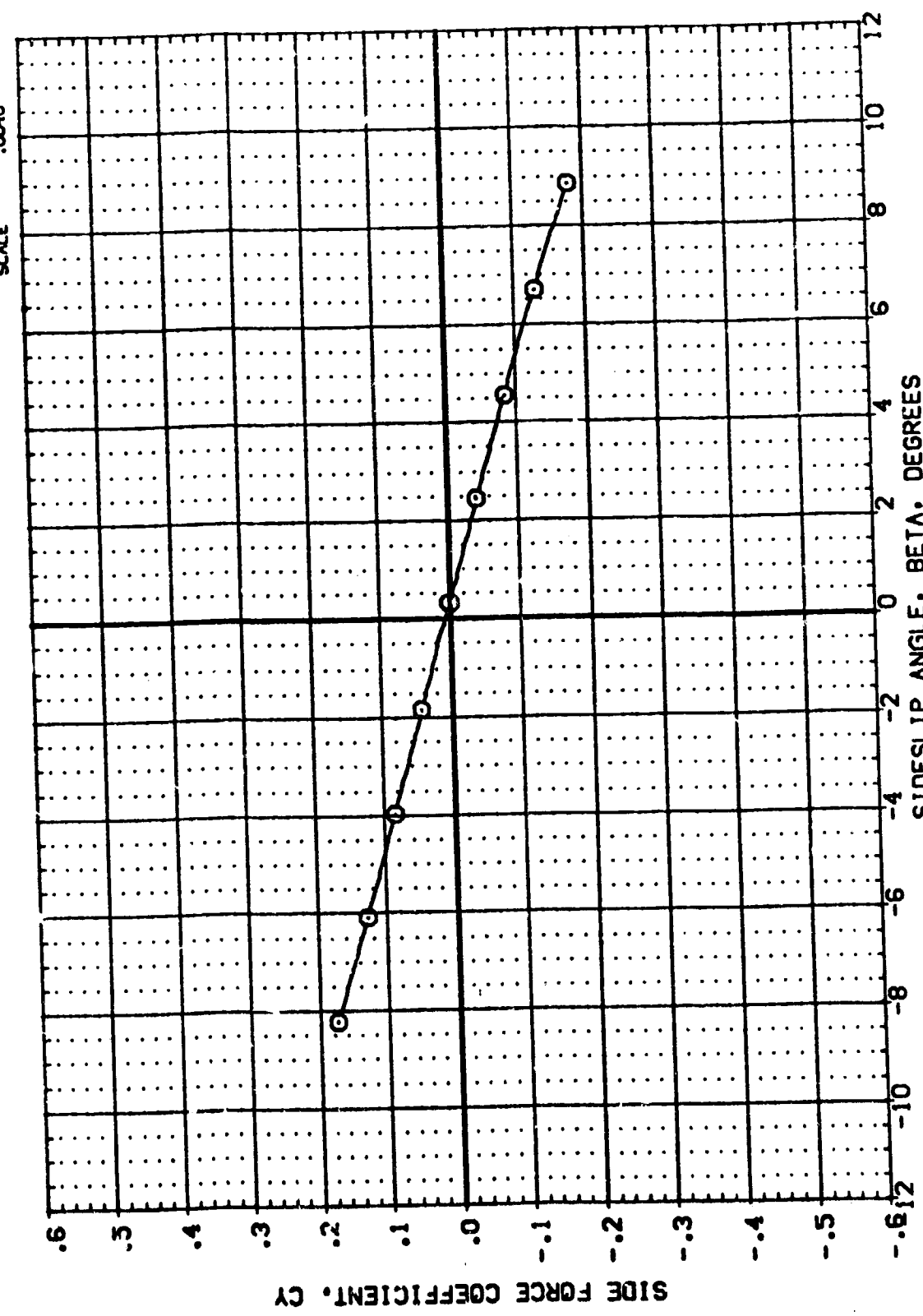
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(E)MACH = 1.46

DATA SET SYMBOL: (885006) (885007) □
 CONFIGURATION DESCRIPTION: MSFC 580(148) (034)(19)(S12)
 DATA NOT AVAILABLE

ALPHA ORBITING
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 YMRP 2.7200 IN.
 ZMRP .0000 IN.
 SCALE .0040

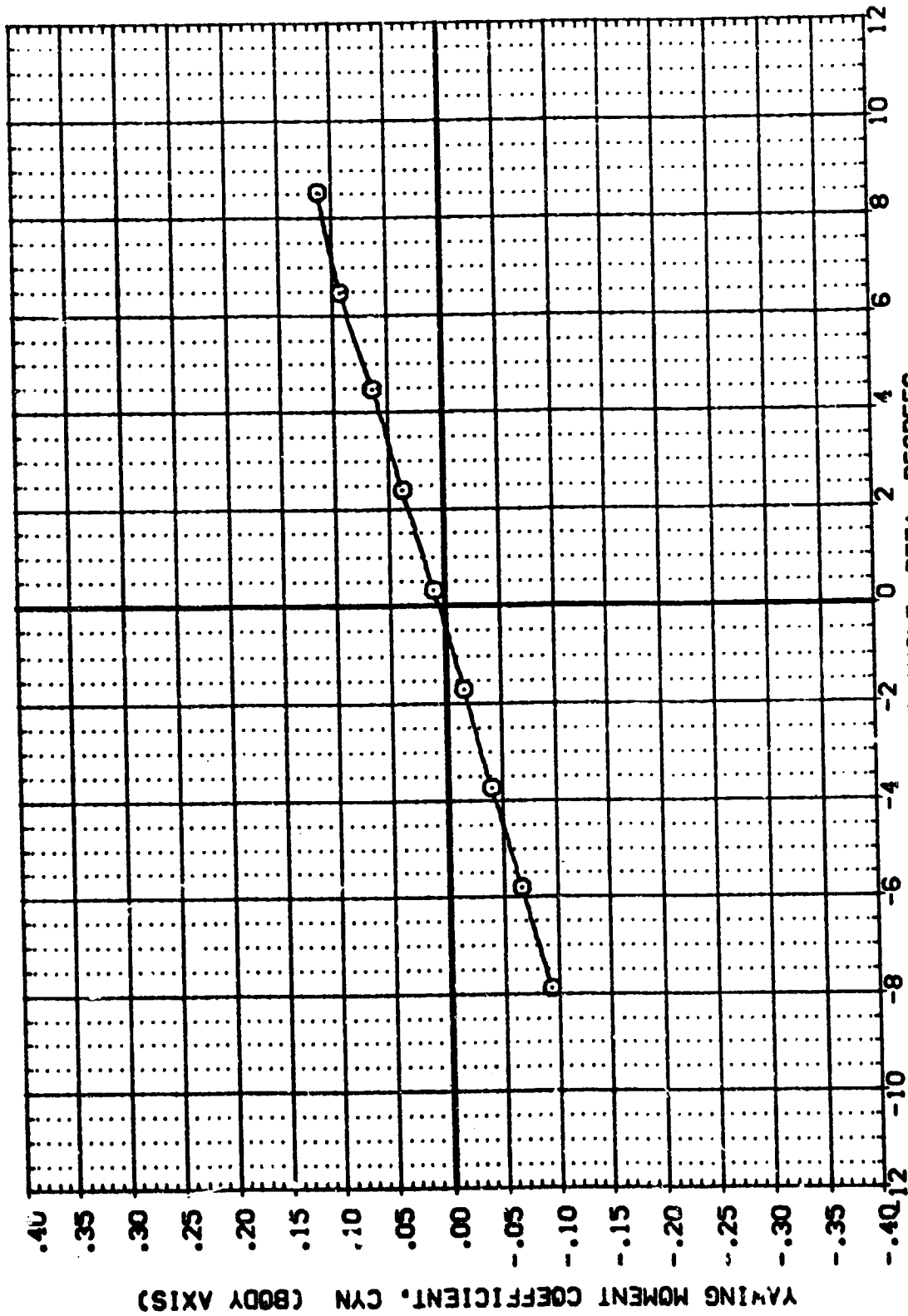


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER
 (F)MACH = 1.96

DATA SET SYMBOL: (886006) (886007) □
 CONFIGURATION DESCRIPTION: MSFC 560(JA49) (034)(79)(S12)
 DATA NOT AVAILABLE

ALPHA: .000
 ORB INC: .000

REFERENCE INFORMATION:
 SREF: 6.1960 SO. IN.
 LREF: 5.1600 IN.
 RREF: 5.1600 IN.
 XREF: 2.7200 IN.
 YREF: .0000 IN.
 ZREF: .0000 IN.
 SCALE: .0040

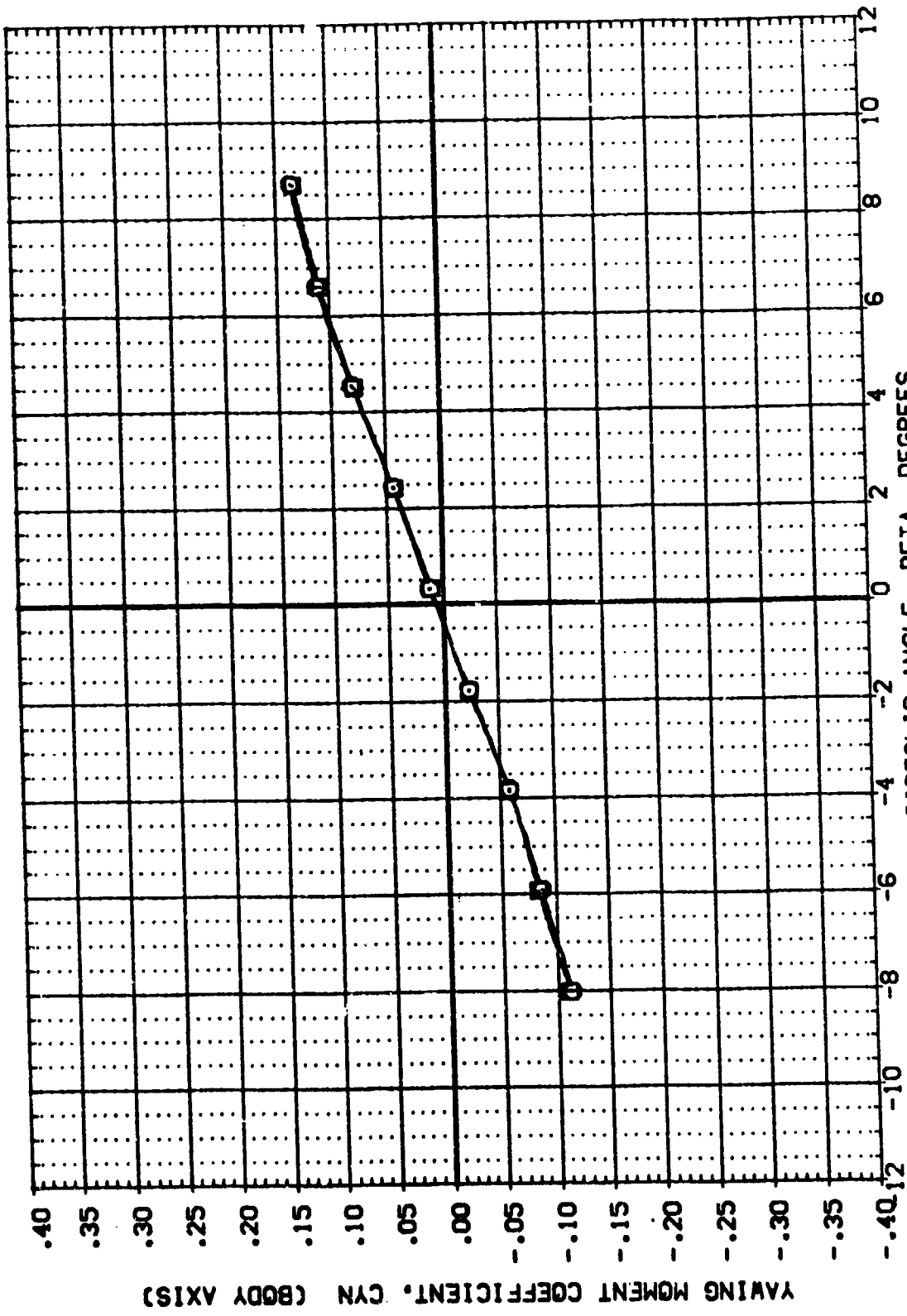


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER
 (A)MACH = .60

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000
 .000

DATA SET SYMBOL (885005) (885007) □
 CONFIGURATION DESCRIPTION MSFC 580(1A48) (034)(19)(S12) (ATTACH POST OFF)
 MSFC 580(1A48) (034)(19)(S12)

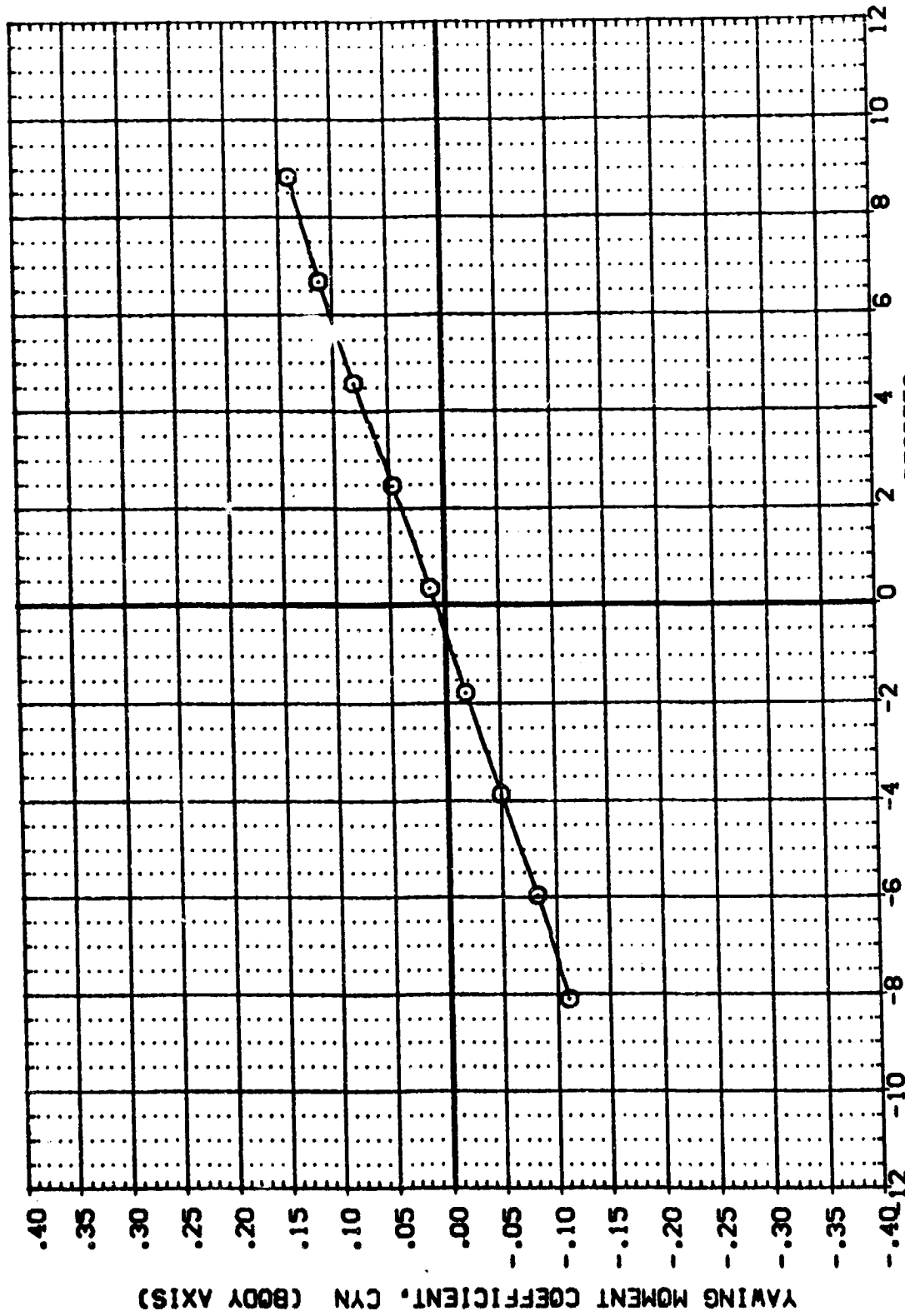


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER
 (8)MACH = .90

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885005) MSFC 580(1A48) (034)(T9)(S12)
 (885007) DATA NOT AVAILABLE

ALPHA 0.000
 D8111NC 0.000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



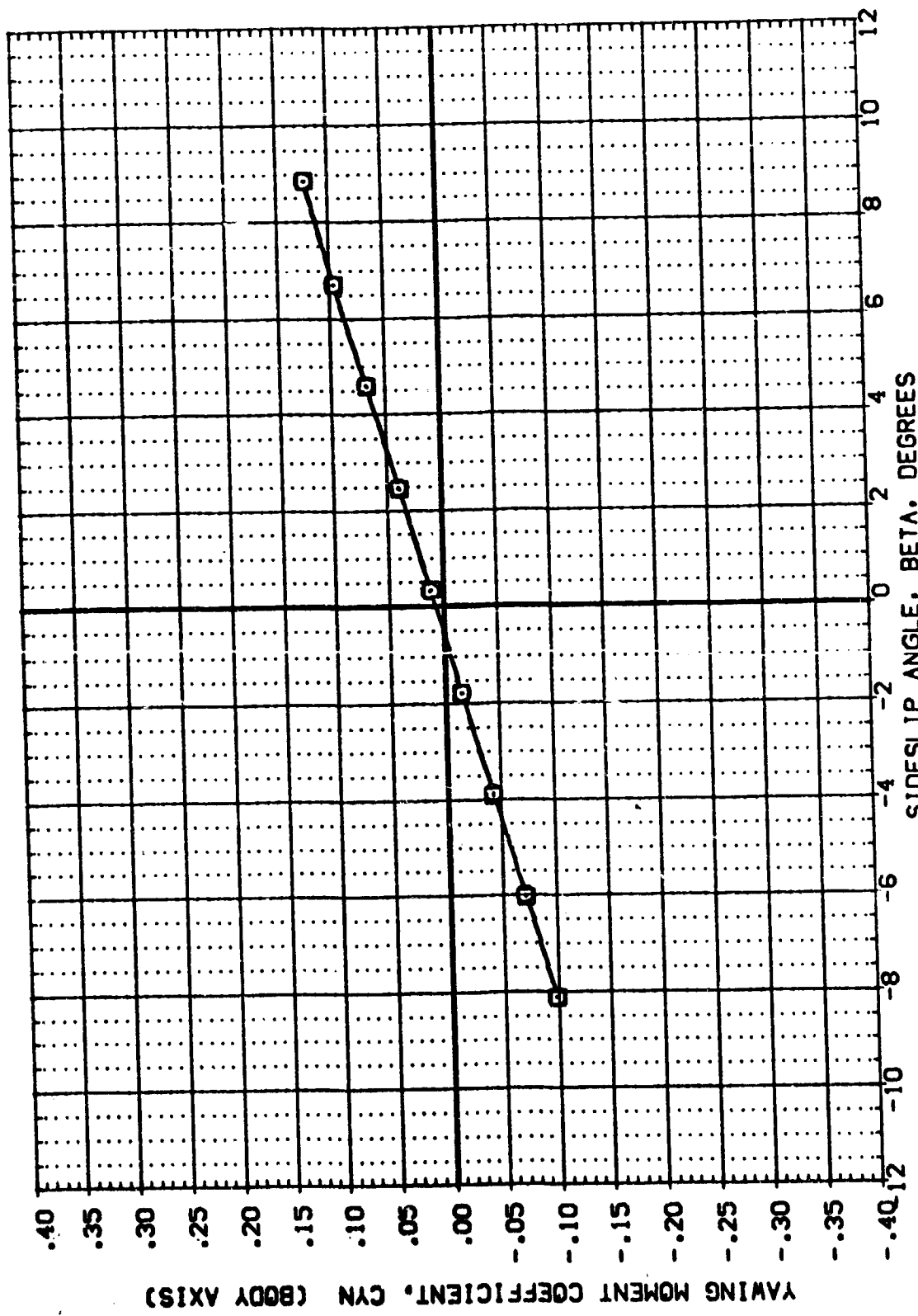
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER
 (CJ)MACH = 1.10
 SIDESLIP ANGLE, BETA, DEGREES
 PAGE 208



REFERENCE INFORMATION
SREF 6.1580 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0010

ALPHA ORBING
.000
.000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(885005) □ MSFC 580(1A48) (034)(T9)(S12)
(885007) □ MSFC 580(1A18) (034)(T9)(S12) (ATTACH POST OFF)

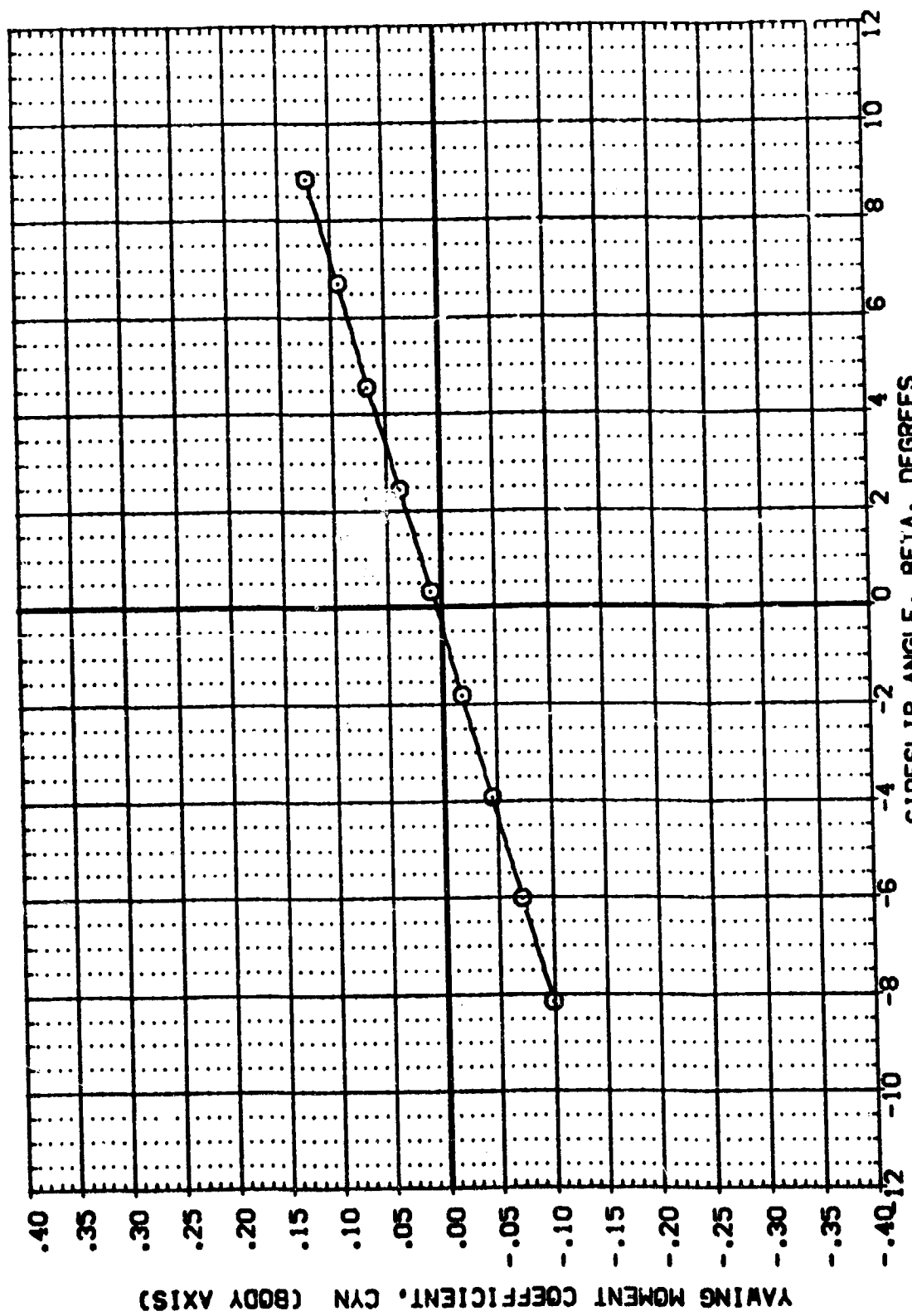


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 5.1600 IN.
 BRREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000
 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888006) MSFC 5801(M8) (09A)(19)(S12)
 (888007) DATA NOT AVAILABLE



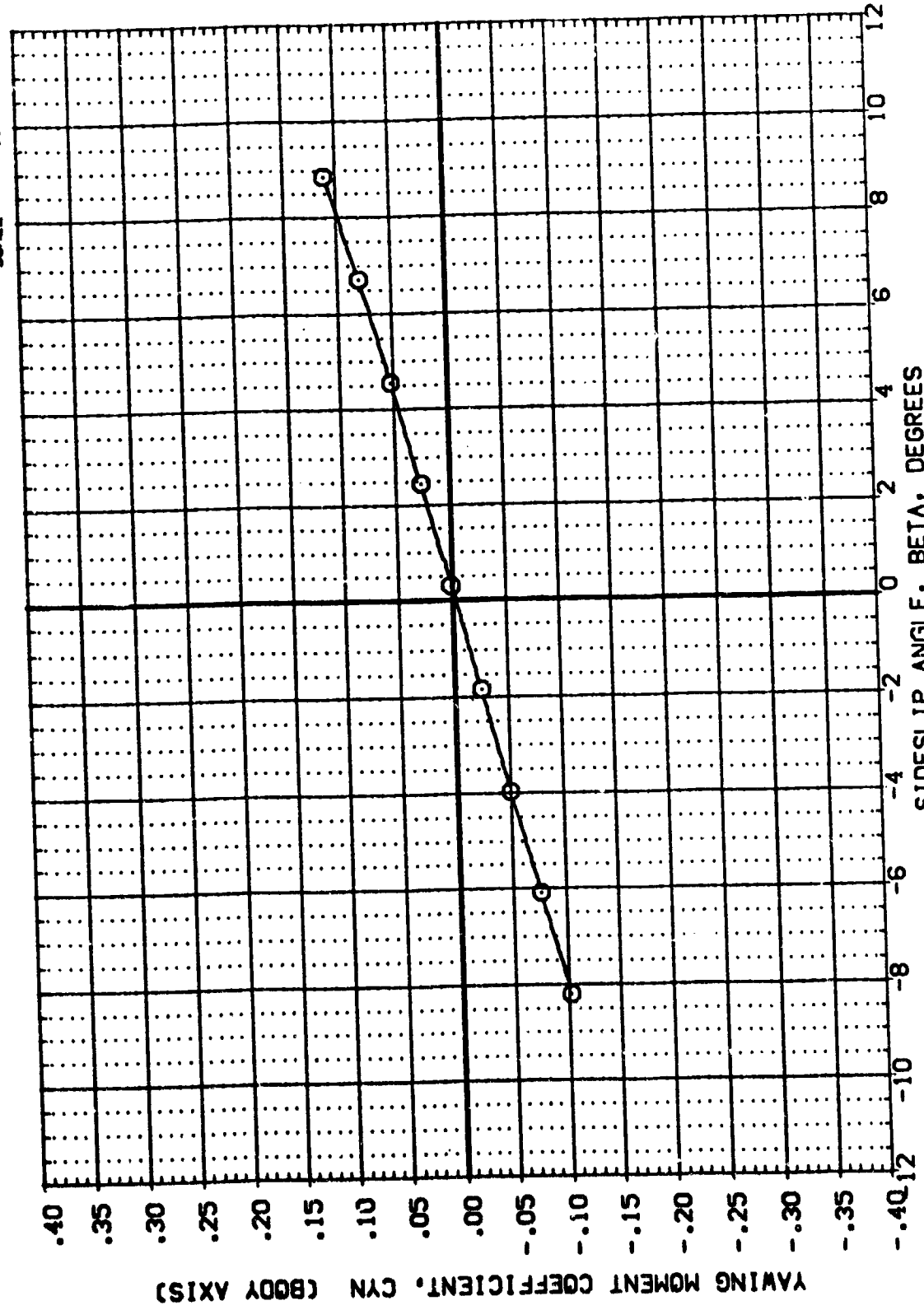
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(E)MACH = 1.46

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

ALPHA ORBING
 .000
 .000

DATA SET SYMBO. CONFIGURATION DESCRIPTION
 (B89005) MSFC 580(JA48) (034)(19)(S12)
 (B89007) DATA NOT AVAILABLE



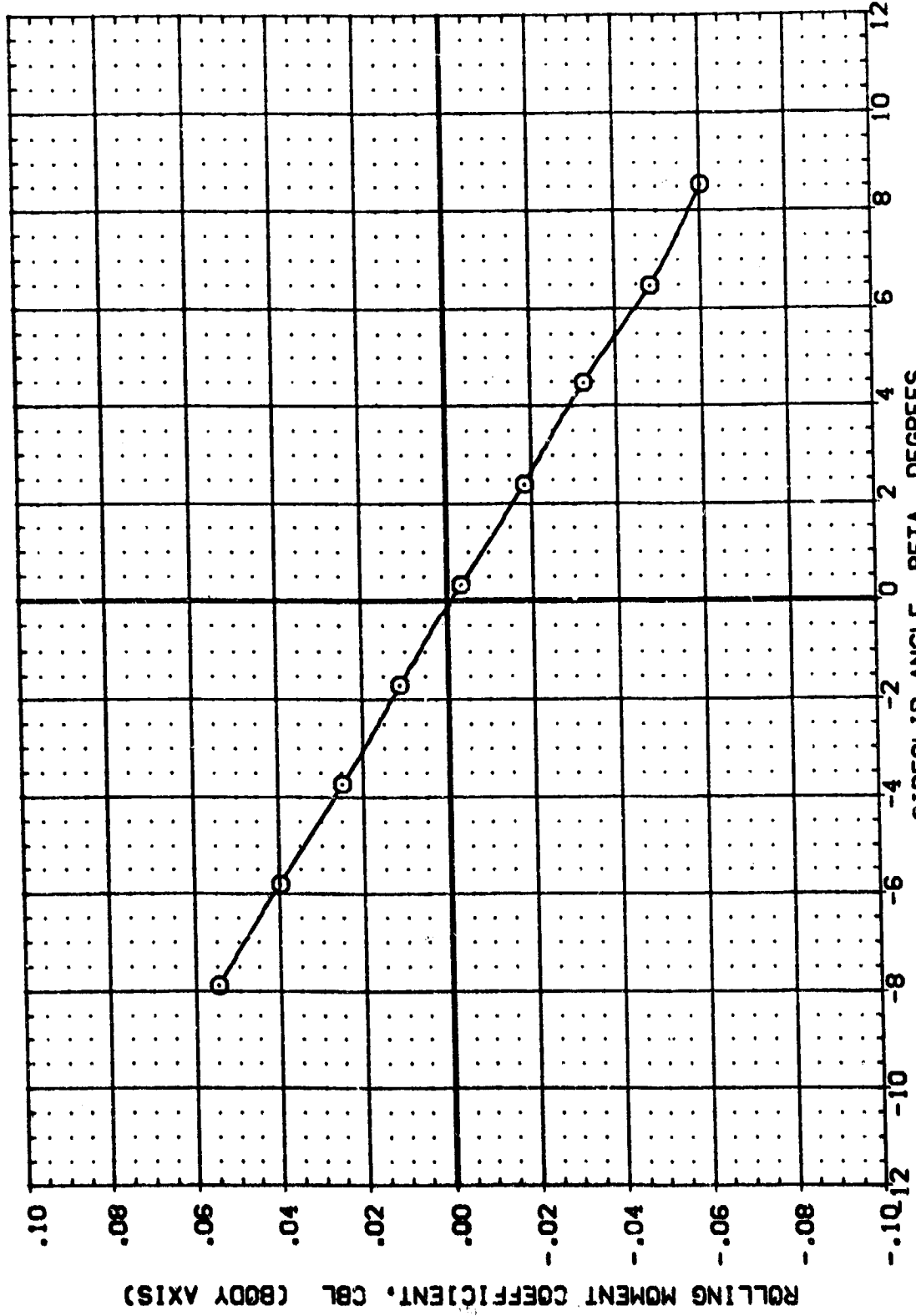
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(F)MACH = 1.96

DATA SET SYMBOL: (880006) (880007)
 CONFIGURATION DESCRIPTION: MSFC 580(1A48) (034)(19)(S12)
 DATA NOT AVAILABLE

ALPHA: .000
 ORBINC: .000

REFERENCE INFORMATION
 SREF: 6.1980 SQ. IN.
 LREF: 5.1600 IN.
 BRREF: 5.1600 IN.
 YMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0040



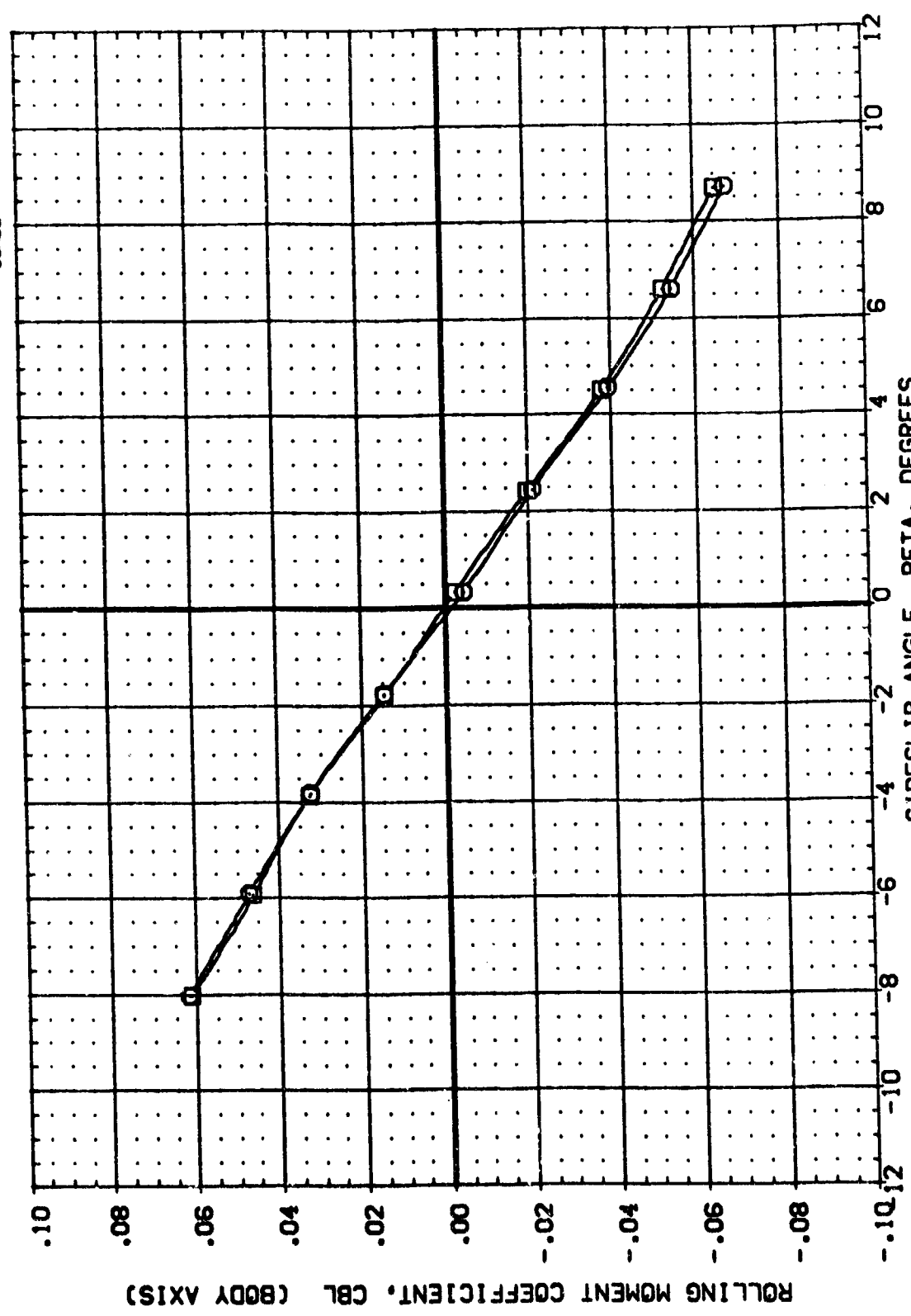
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER
 SIDESLIP ANGLE, BETA, DEGREES

(A)MACH = .60

REFERENCE INFORMATION
 SREF 5.1580 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010

ALPHA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (865006) □ MSFC 560(1A48) (034)(19)(S12)
 (865007) □ MSFC 560(1A48) (034)(19)(S12) (ATTACH POST OFF)



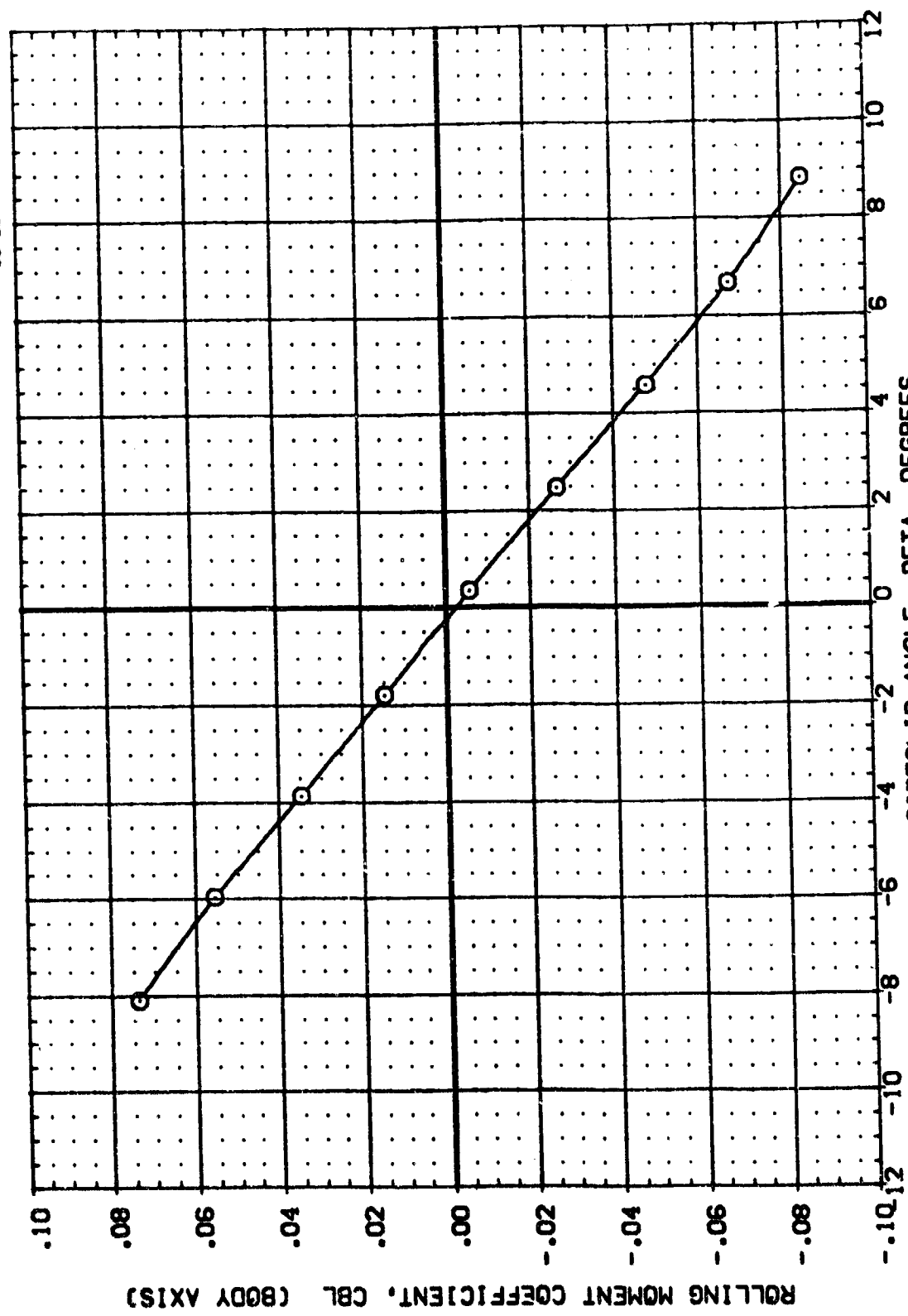
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(B)MACH = .90

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BRREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000 .000
 .000 .000


DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885006) MSFC 580(1A48) (03A)(19)(S12)
 (885007) DATA NOT AVAILABLE



EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

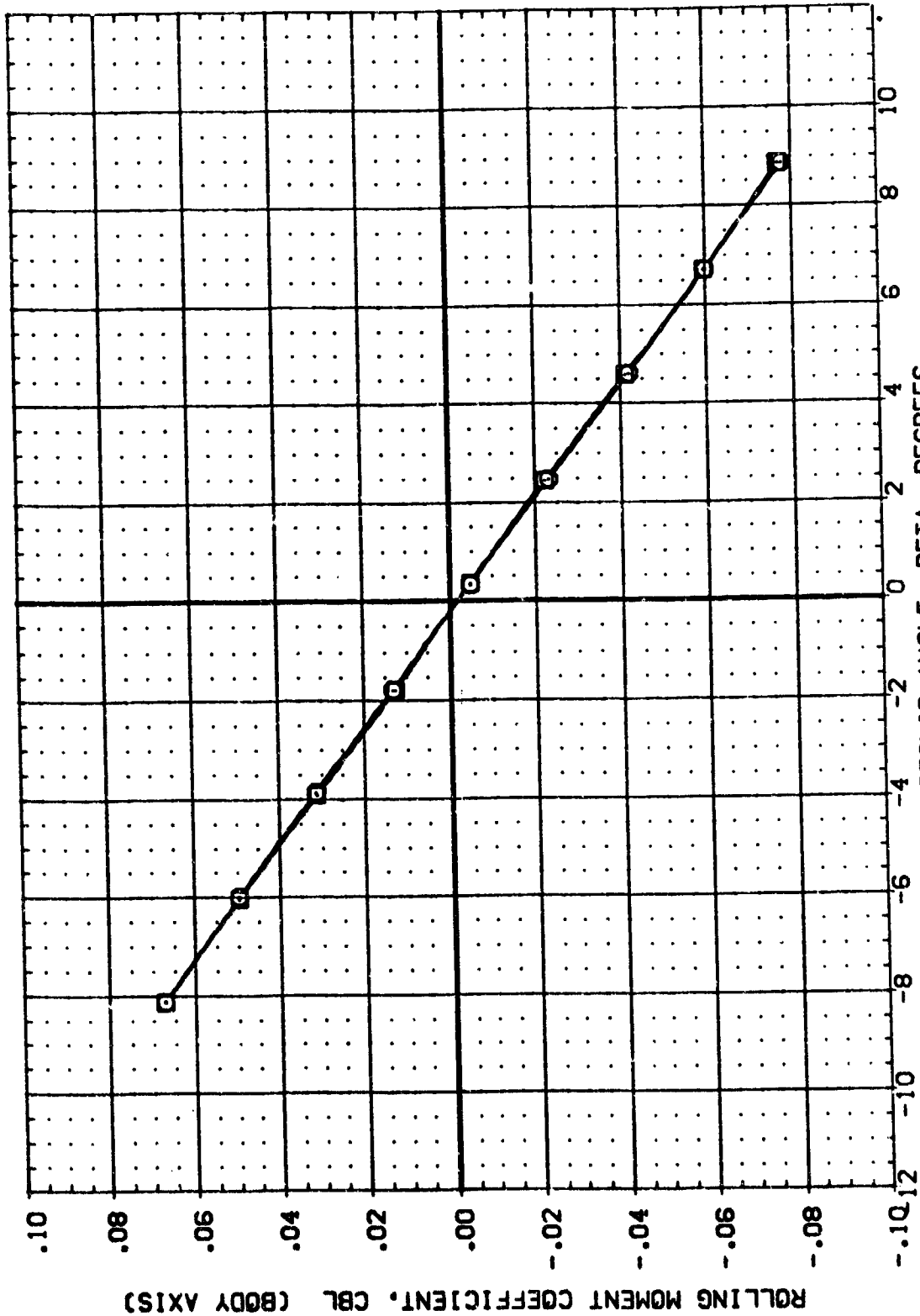
(C)MACH = 1.10



DATA SET SYMB. (885005) (885007)  CONFIGURATION DESCRIPTION
MFC 360(1A18) (034)(T9)(S12)
MFC 360(1A18) (034)(T9)(S12) (ATTACH POST OFF)

ALPHA ORBINC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040



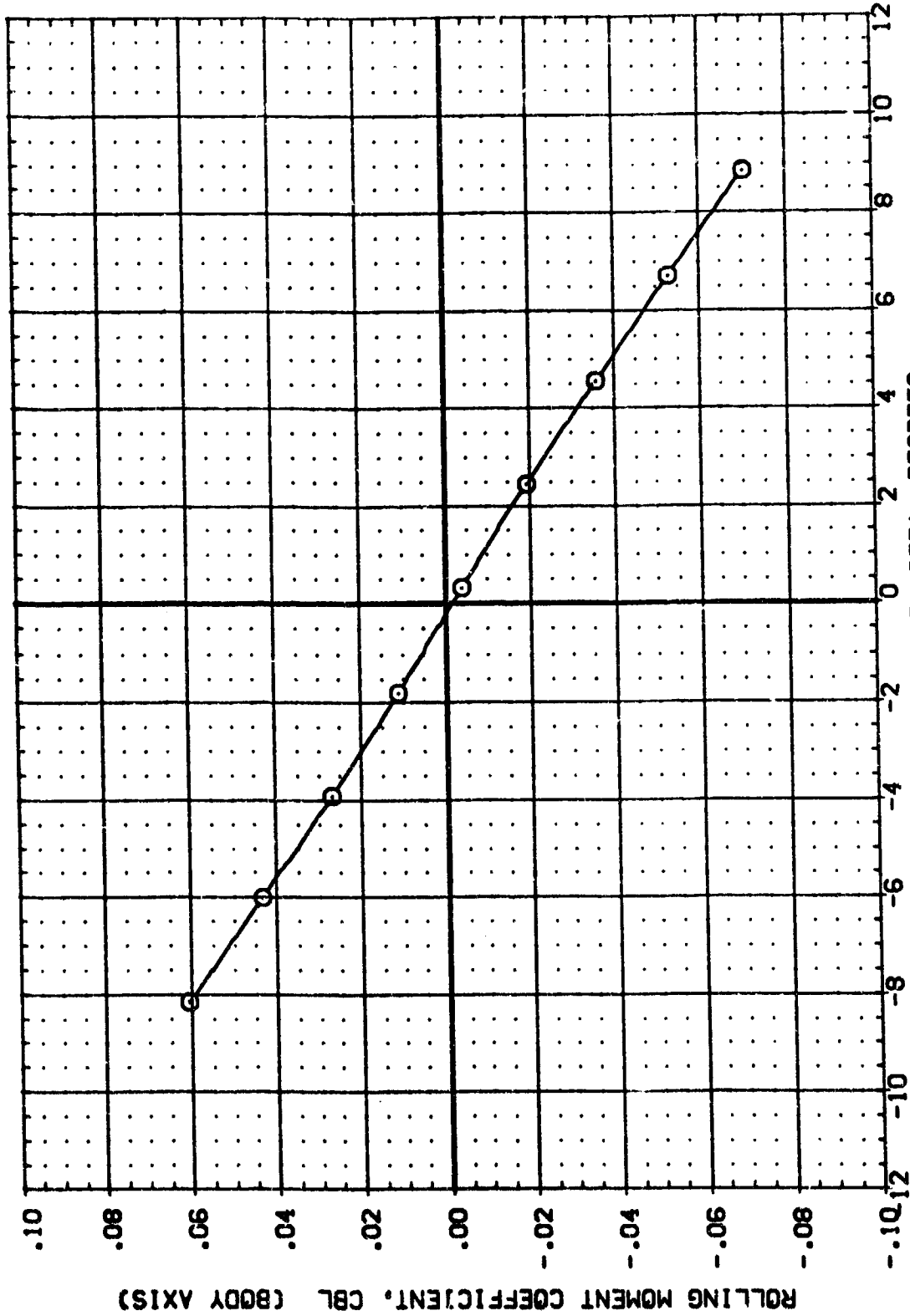
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(O)MACH = 1.25

DATA SET SYMBOL: (B85006) CONFIGURATION DESCRIPTION: MSC 560(1A48) (034)(T9)(S12)
 (B85007) DATA NOT AVAILABLE

ALPHA: .000
 ORBINC: .000

REFERENCE INFORMATION:
 SREF: 6.1980 SC.IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XTRP: 2.7200 IN.
 YTRP: .0000 IN.
 ZTRP: .0000 IN.
 SCALE: .0040



EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER
 SIDESLIP ANGLE, BETA, DEGREES

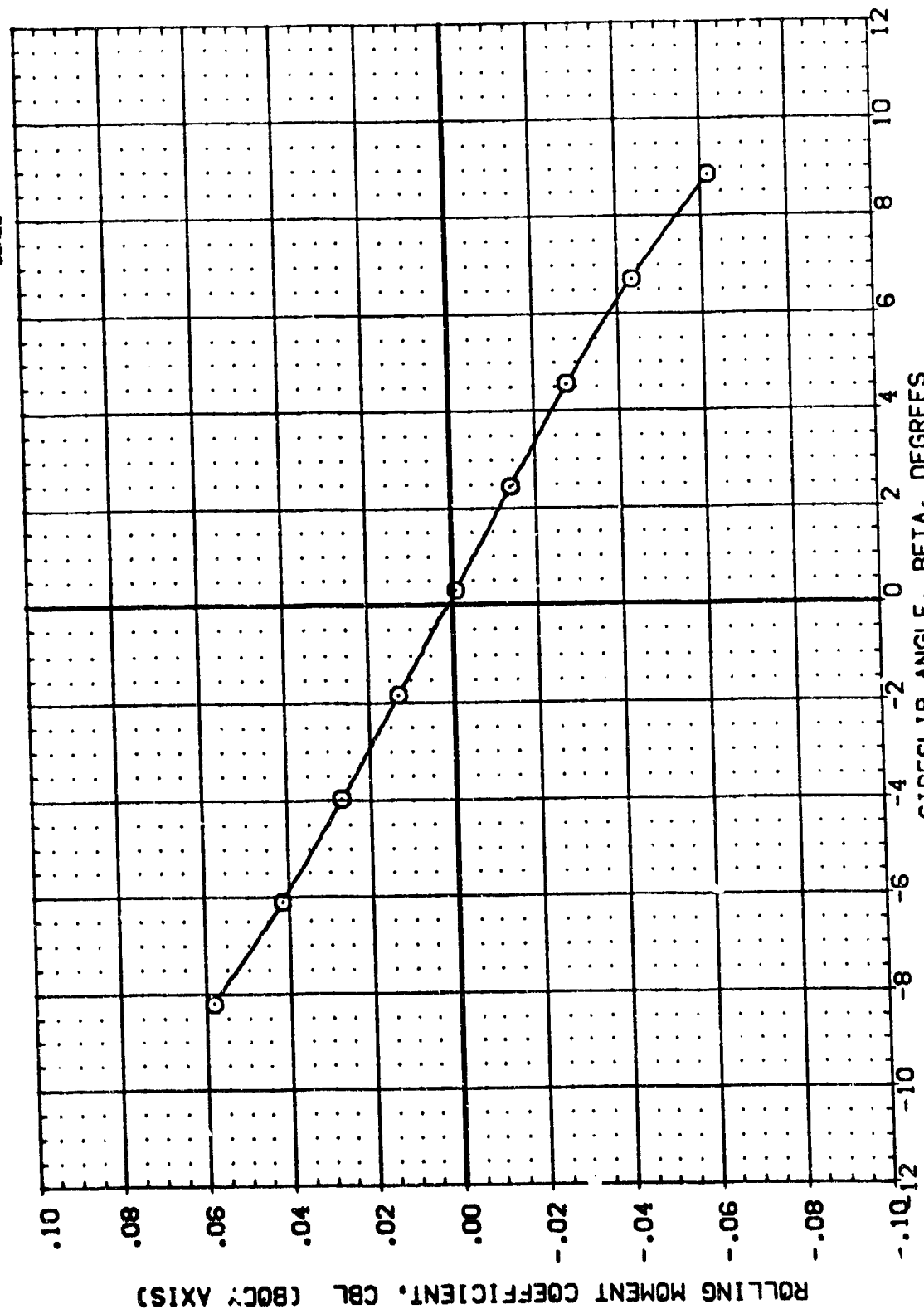
(C)MACH = 1.46



DATA SET SYMBL. CONFIGURATION DESCRIPTION
 (885006) MSC 580(1A48) (0341)T9(S12)
 (885007) DATA NOT AVAILABLE

ALPHA ORBINC
 .000
 .000

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

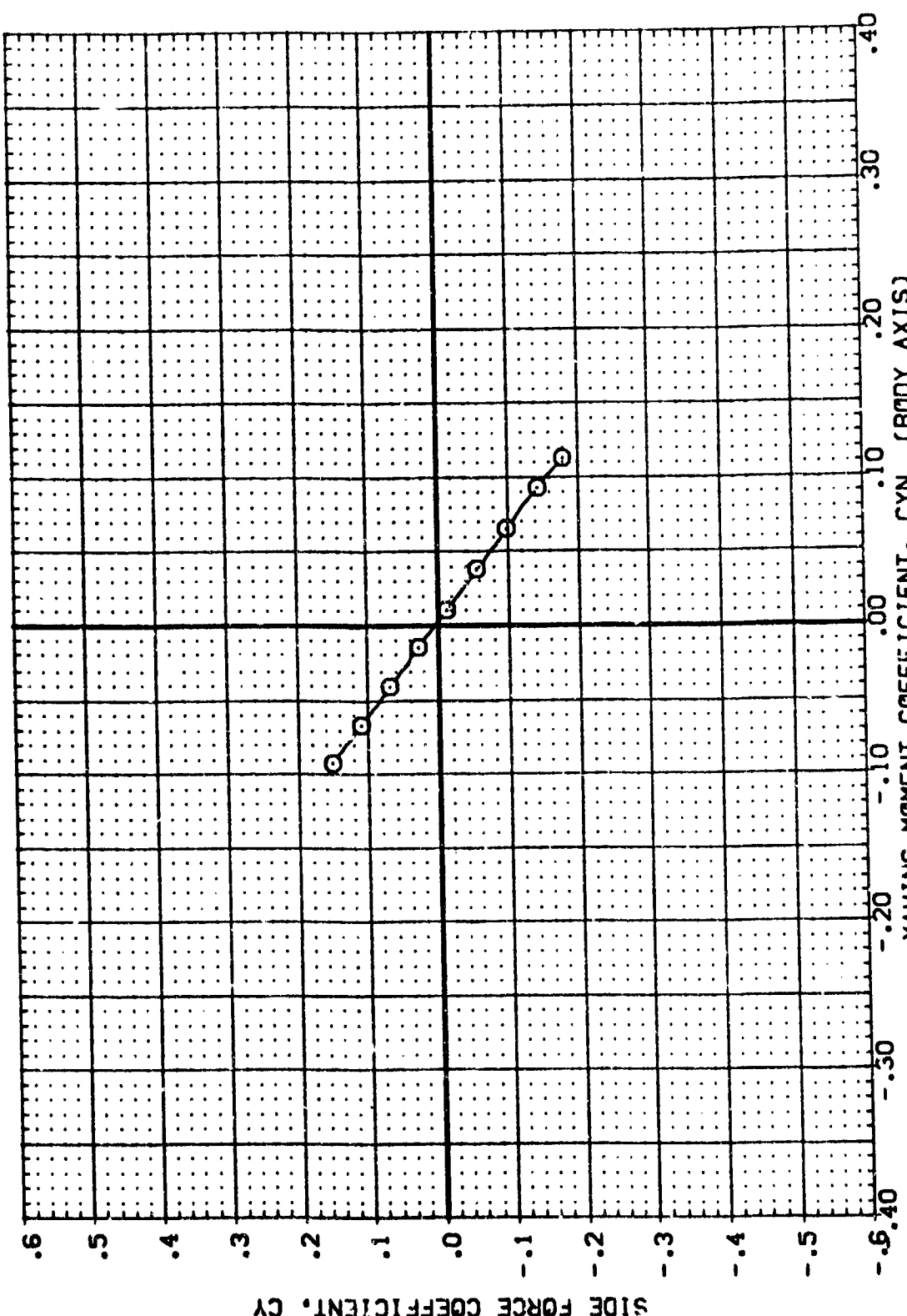


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

DATA SET SYMBOL (869006) MSFC 580(1A48) (034)(19)(S12)
 (869007) DATA NOT AVAILABLE

ALPHA .000
 ORBINC .000

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BRREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040



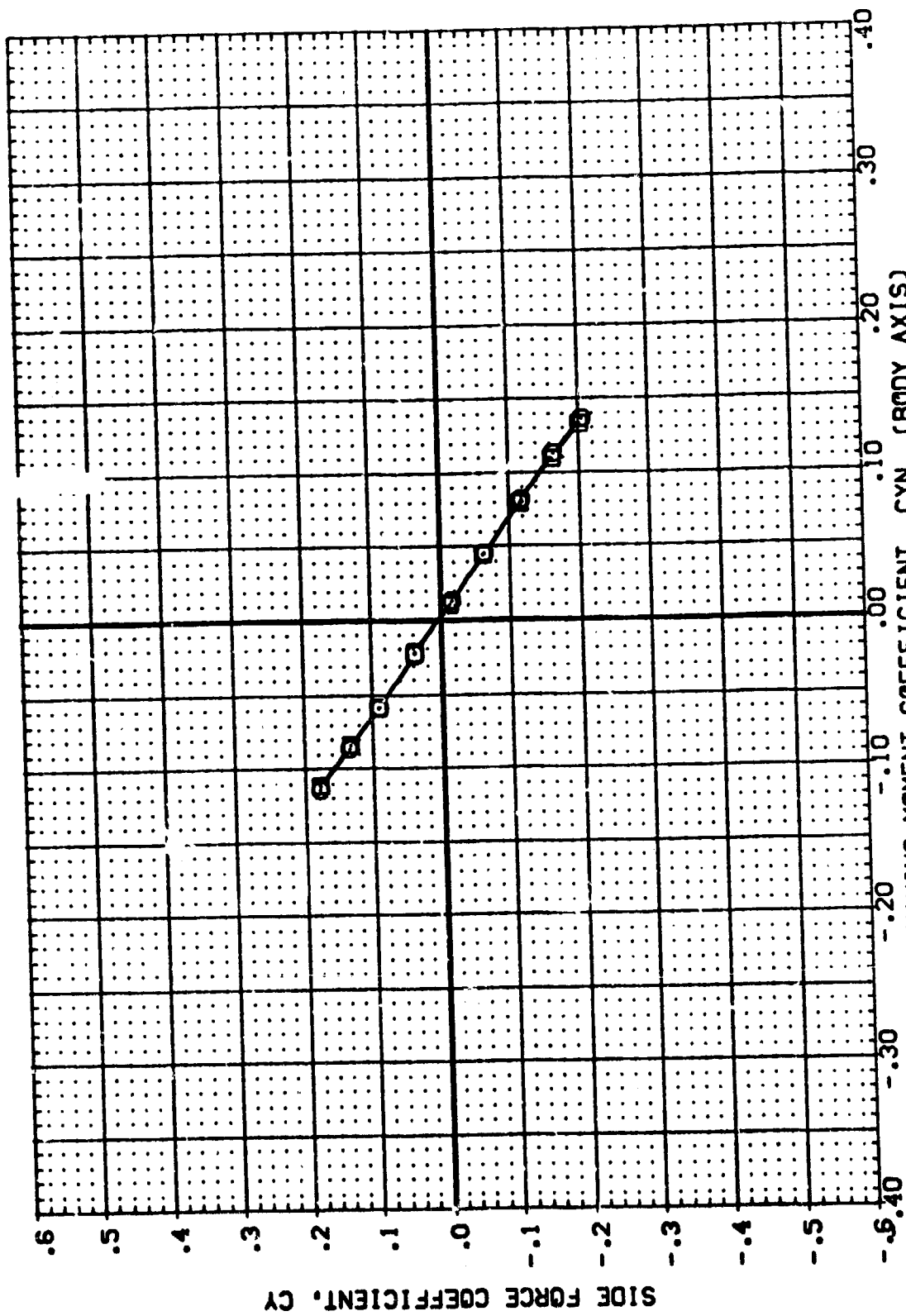
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER



REFERENCE INFORMATION
 SQCF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XFRP 2.7200 IN.
 YFRP .0000 IN.
 ZFRP .0000 IN.
 SCALE .0040

ALPHA ORBING
 .000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (885006) B MSFC 560 (A48) (034) (T9) (S12) (ATTACH POST OFF)
 (885007) MSFC 560 (A48) (034) (T9) (S12)



YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

SIDE FORCE COEFFICIENT, CY

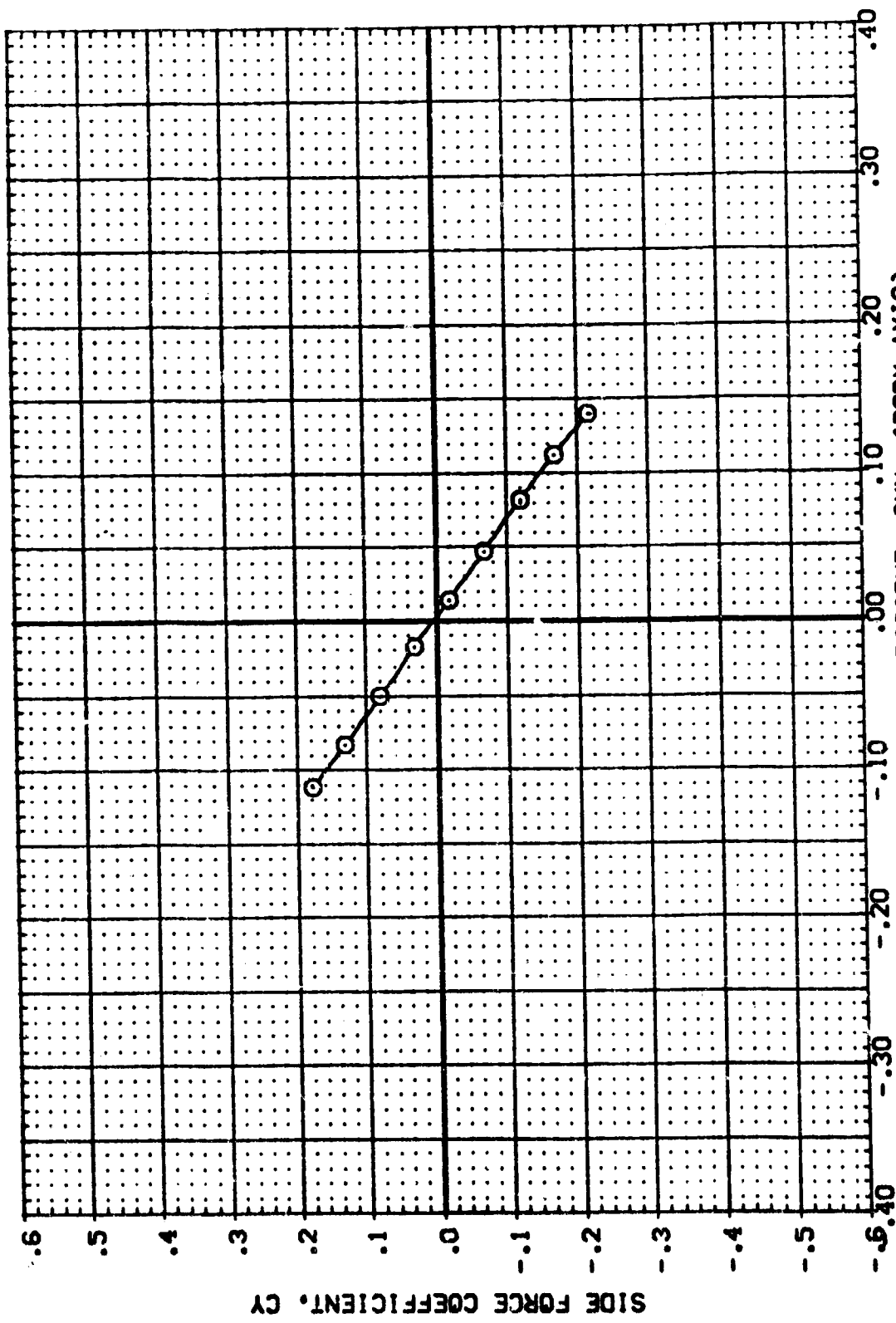
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

(B)MACH = .90

DATA SET SYMBOL: (888006) (888007) □
 CONFIGURATION DESCRIPTION: NSFC 590(JA48) (034)(TS)(S12)
 DATA NOT AVAILABLE

ALPHA (DEG) : .000
 (DEG) : .000

REFERENCE INFORMATION:
 SREF: 6.1960 SQ. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XMRP: 2.7200 IN.
 YMRP: .0000 IN.
 ZMRP: .0000 IN.
 SCALE: .0010

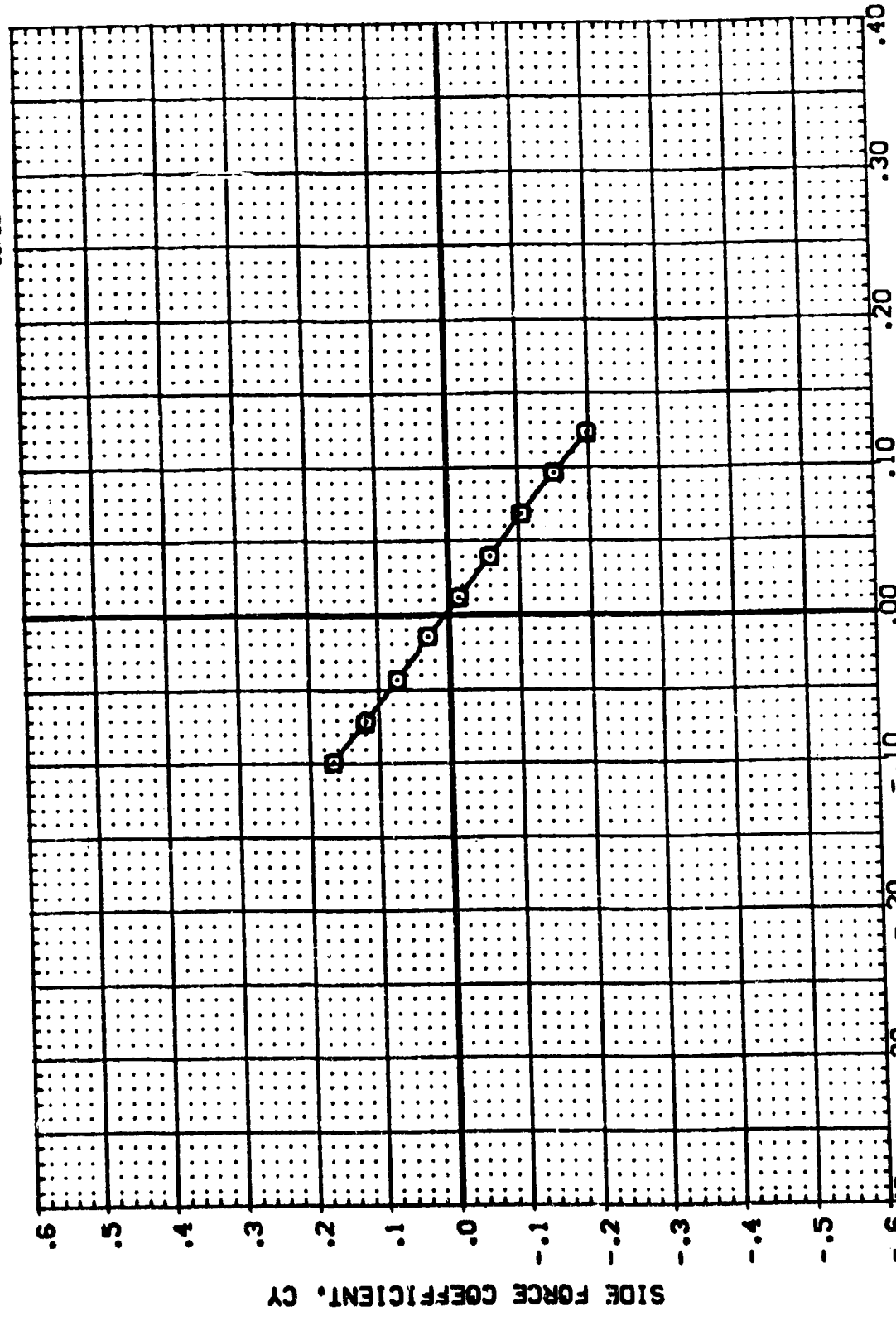


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

REFERENCE INFORMATION
 SREF 6.1800 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010

ALPHA 0.000
 OBLINC 0.000

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (889005) MSFC 980(1A48) (034)(19)(S12)
 (889007) MSFC 980(1A48) (034)(19)(S12) (ATTACH POST OFF)

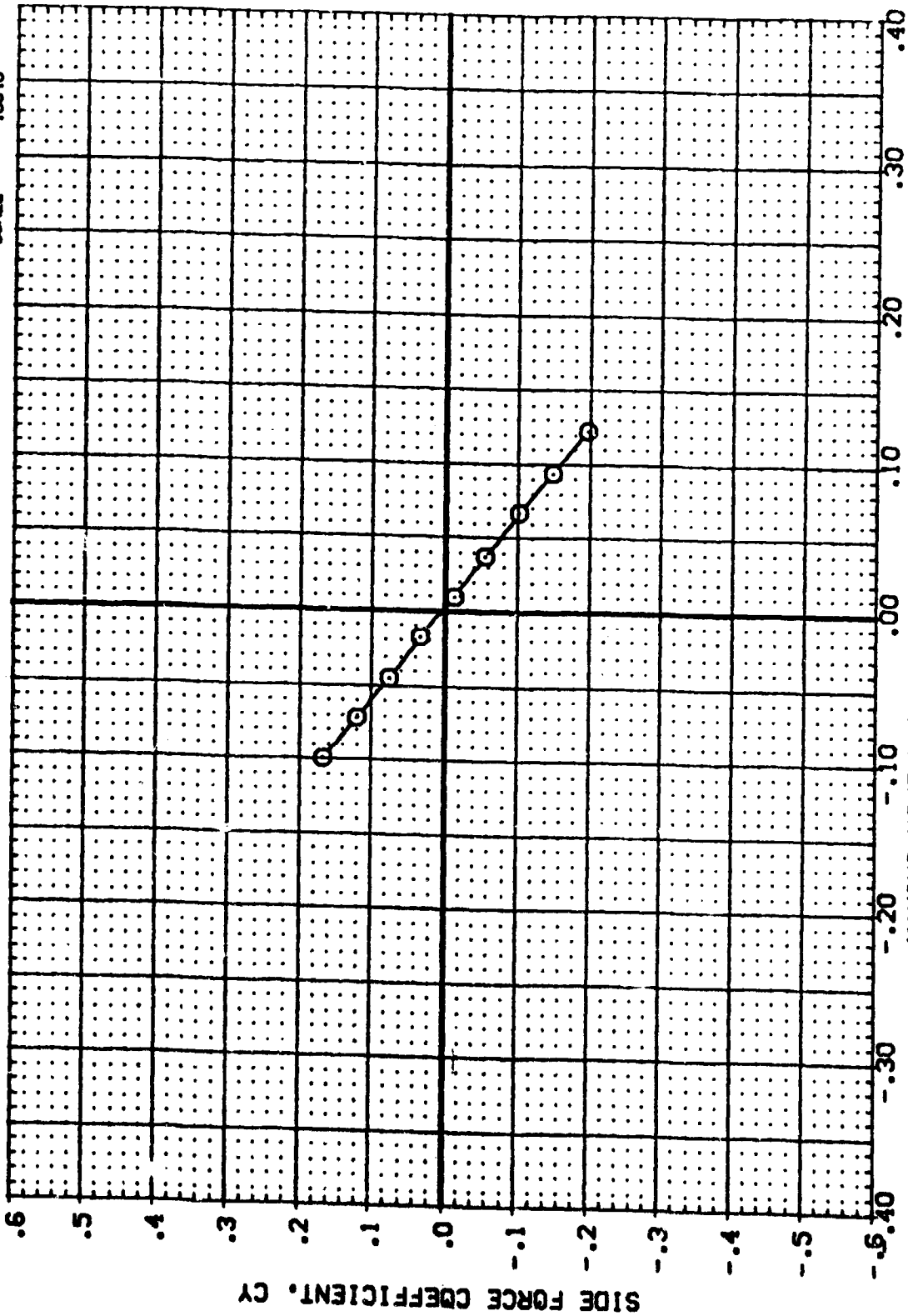


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER
 YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

DATA SET SYMBOL: (885006) (885007) CONFIGURATION DESCRIPTION: NSFC 580(1A48) (03A)(T9)(S12) DATA NOT AVAILABLE

ALPHA: .000
ORBIT: .000

REFERENCE INFORMATION:
SREF: 6.1800 SQ. IN.
LREF: 5.1600 IN.
BREF: 5.1600 IN.
XPRP: 2.7200 IN.
YPRP: .0000 IN.
ZPRP: .0000 IN.
SCALE: .0040



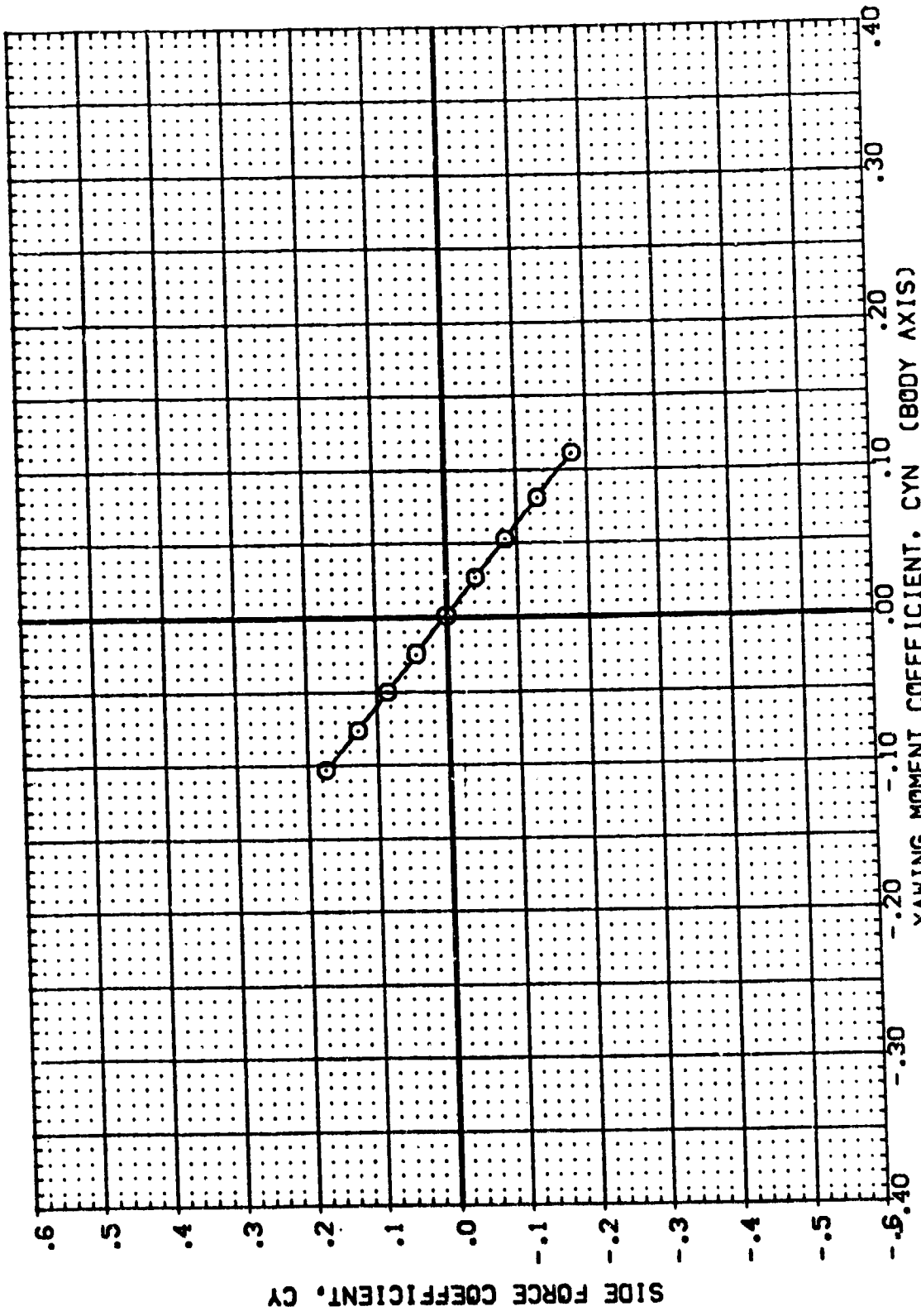
EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER
YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)

(E)MACH = 1.46

REFERENCE INFORMATION:
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0010

ALPHA ORBING
 .000
 .000

DATA SET SYMB. CONFIGURATION DESCRIPTION
 (895005) MSC 580(1A48) (034)(19)(S12)
 (895007) DATA NOT AVAILABLE

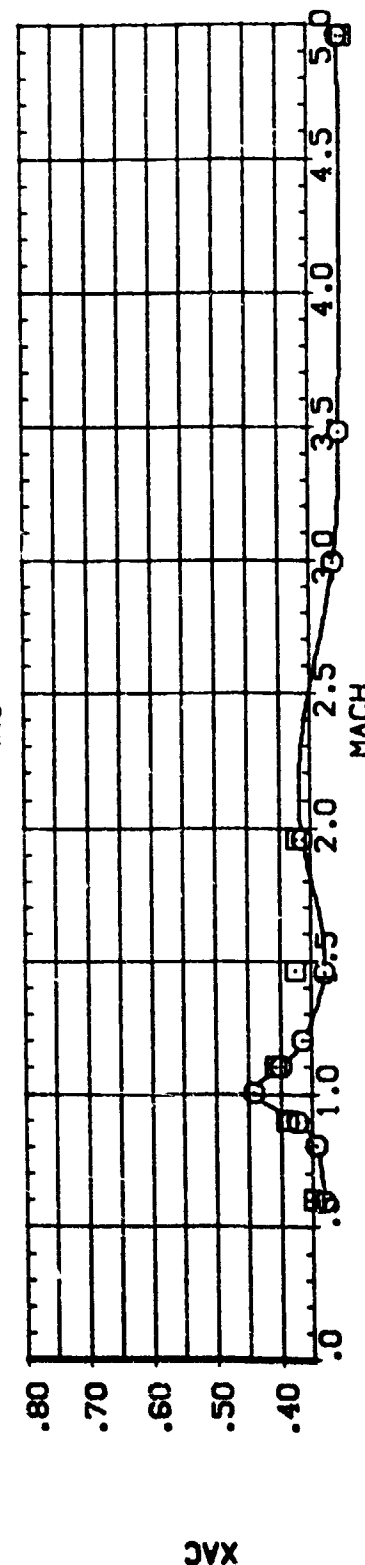
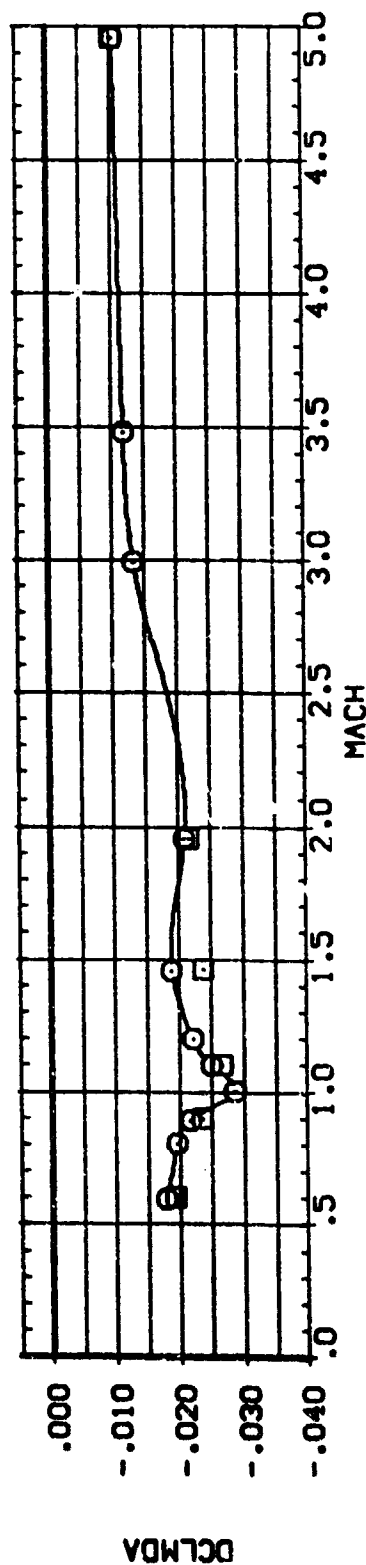
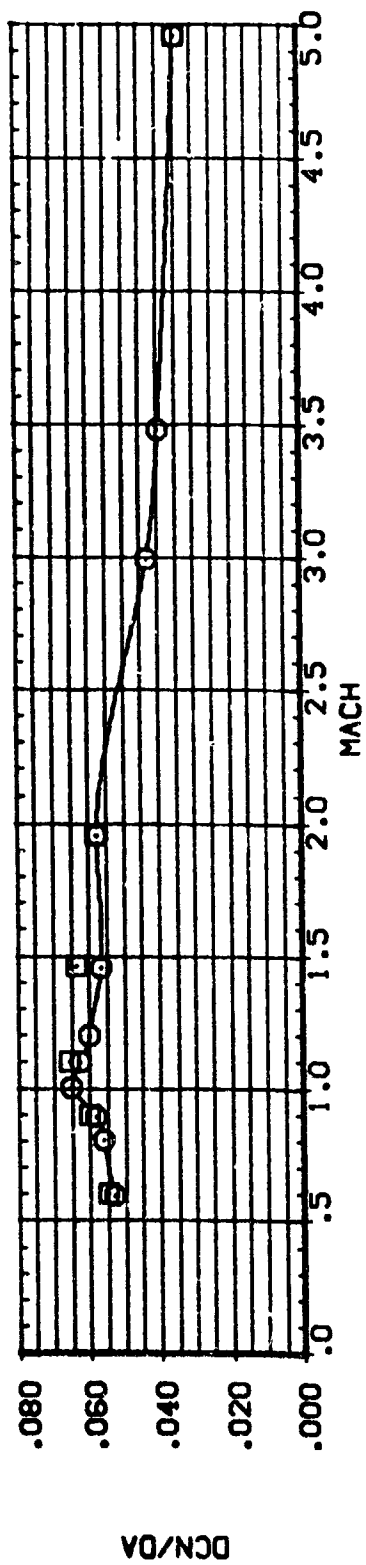


EFFECT OF ATTACHMENT POST ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER

DATA SET SYMBOL (888009) (888007) CONFIGURATION DESCRIPTION (034)(114)(S12)(US) (034)(119)(S12)

BETA ORBING
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1980 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
YPRP 2.7200 IN.
ZPRP .0000 IN.
SCALE .0040



EFFECT OF MACH NO. ON LONG. CHARACT. (FIRST STAGE) WITH AND W/O ATTACH-PROTUB.

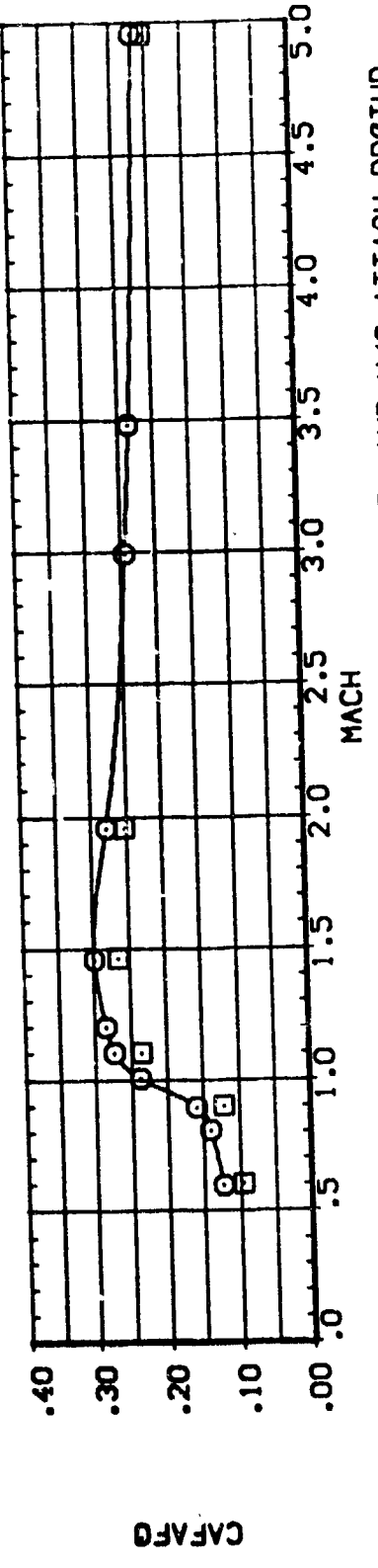
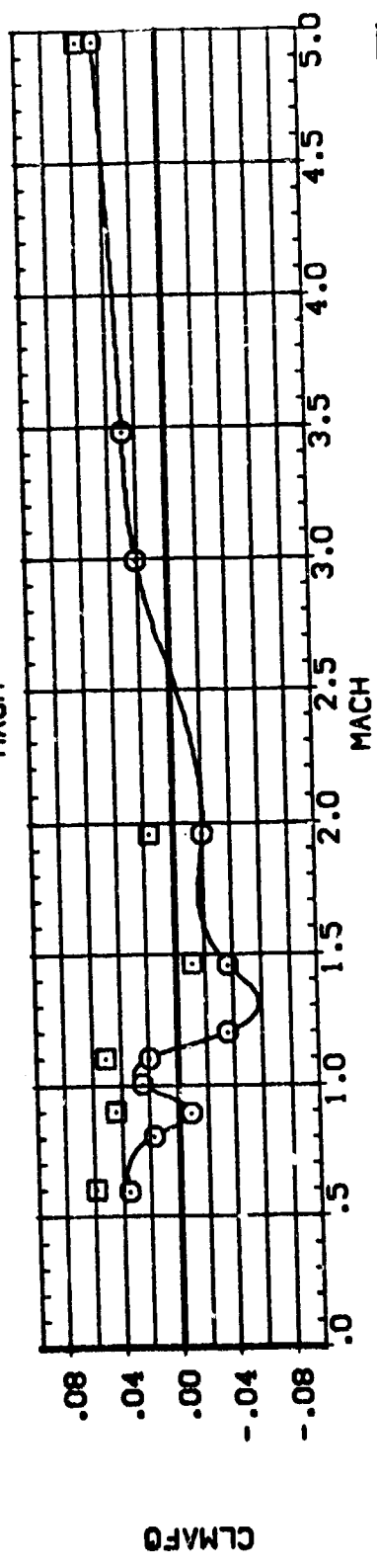
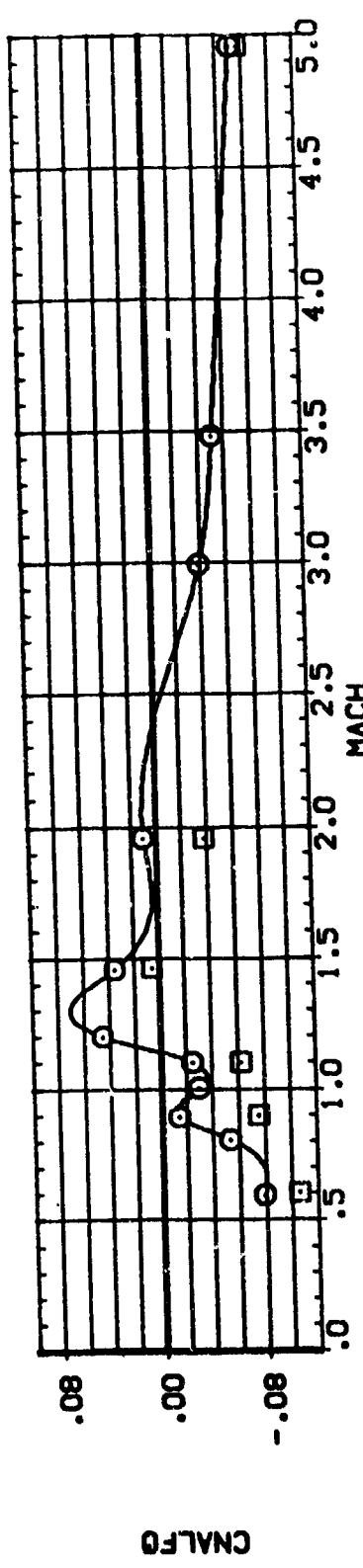


DATA SET SYMBOL (888008) (888007)

CONFIGURATION DESCRIPTION
M5C 579(1A37) (034)(114)(S12)(L6)
M5C 579(1A37) (034)(191)(S12)

BETA .000
ORBITING .000

REFERENCE INFORMATION
SREF 6.1560 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XMRP 2.7200 IN.
YMRP .0000 IN.
ZMRP .0000 IN.
SCALE .0040

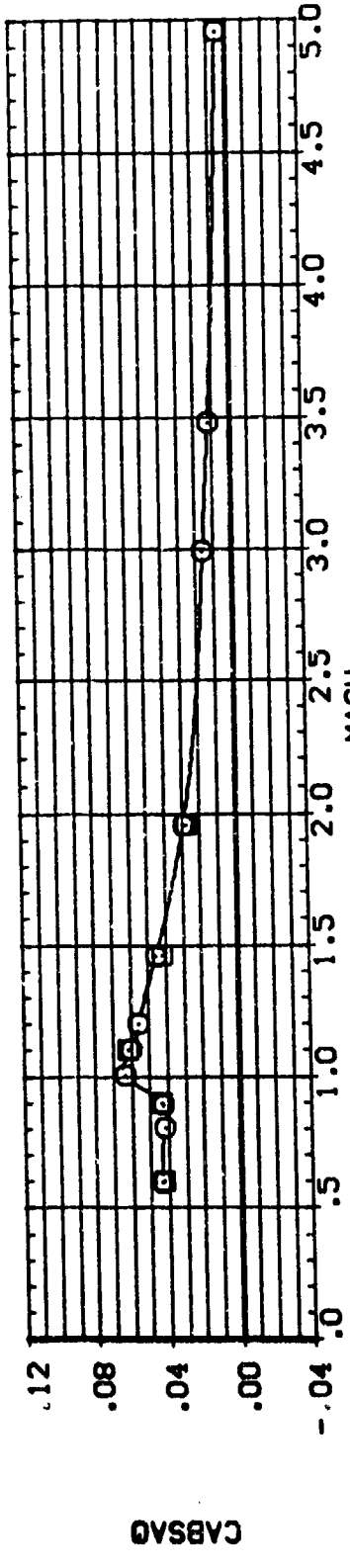
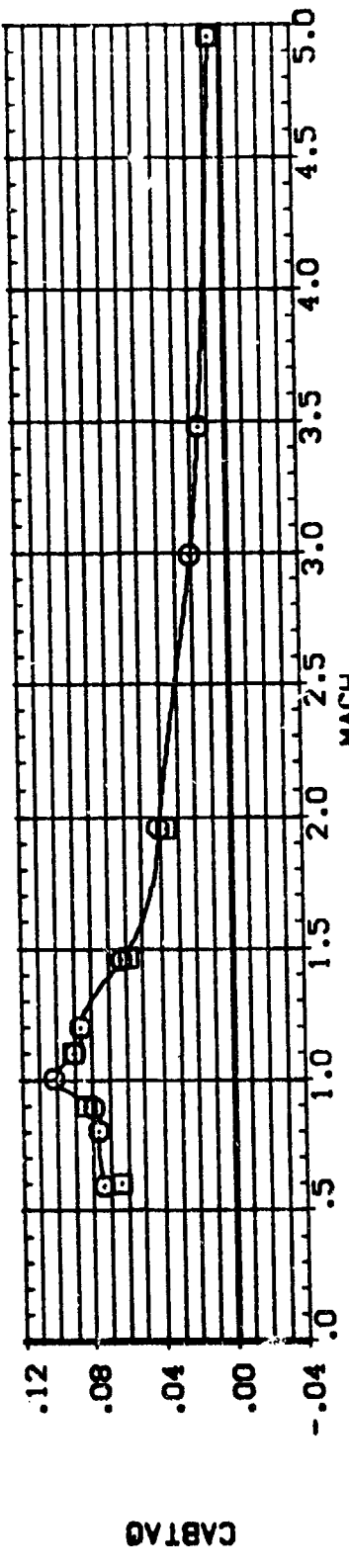
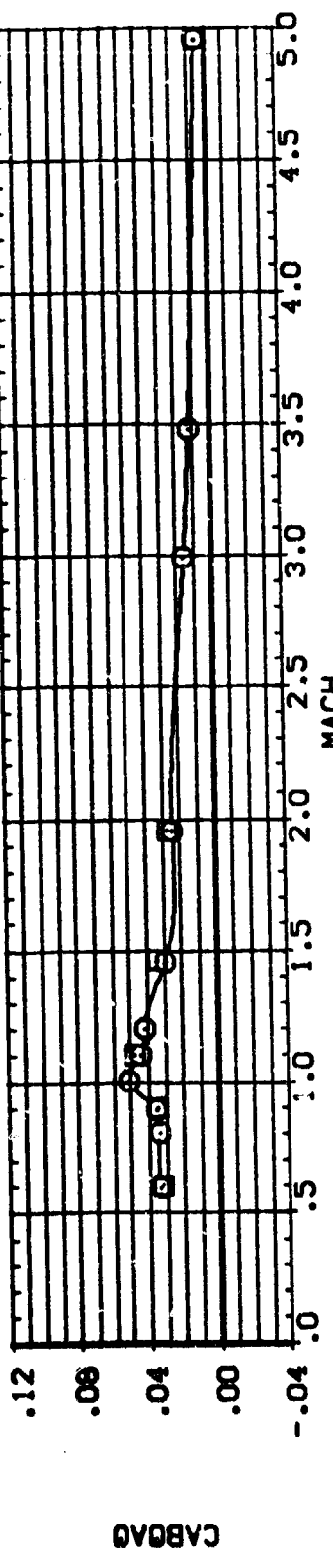


EFFECT OF MACH NO. ON LONG. CHARACT. (FIRST STAGE) WITH AND W/O ATTACH-PROTUB.

DATA SET SYMBOL: (888009) (888007)  CONFIGURATION DESCRIPTION: MSFC 579(A37) (034)(T14)(S12)(US) MSFC 579(A37) (034)(T9)(S12)

BETA: .000 .000 .000

REFERENCE INFORMATION:
 SREF: 6.1980 50. IN.
 LREF: 5.1600 IN.
 BREF: 5.1600 IN.
 XPRP: 2.7200 IN.
 YPRP: .0000 IN.
 ZPRP: .0000 IN.
 SCALE: .0040



EFFECT OF MACH NO. ON LONG. CHARACT. (FIRST STAGE) WITH AND W/O ATTACH-PROTUB.



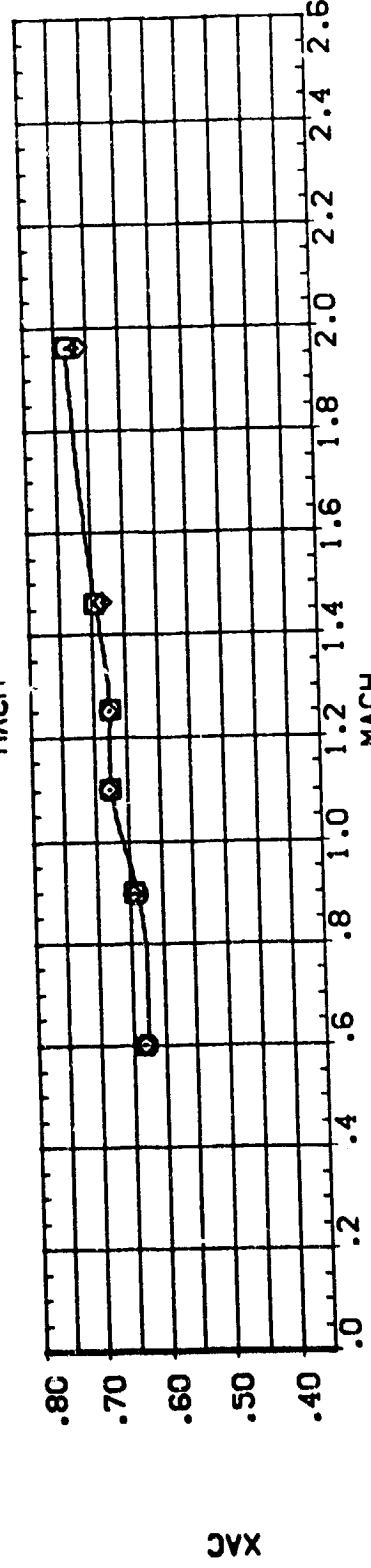
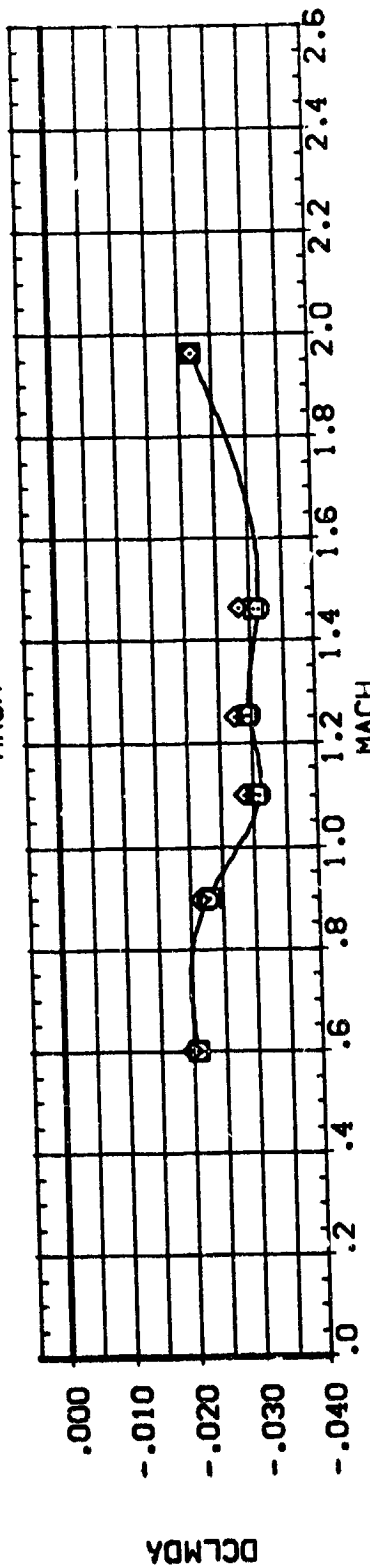
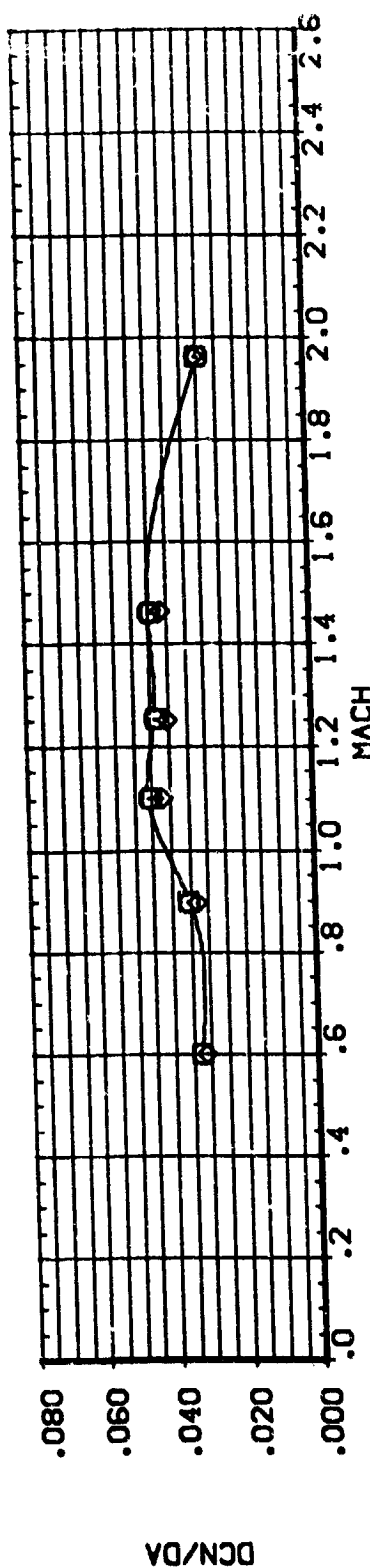
DATA SET SYMBOL: (B85005) (B85004) (B85001)

CONFIGURATION DESCRIPTION: MSFC 580(1A48) (034)(T9)(S12) MSFC 580(1A48) (034)(T14)(S12) MSFC 580(1A48) (034)(T14)(S12)(U6)

BETA: .000 .000 .000

ORBITING: .000 .000 .000

REFERENCE INFORMATION: SREF 6.1980 SO.IN. IN. IN. IN. IN. IN. IN. IN. XREF 5.1600 YREF 5.1600 ZREF 2.7200 YMRP .0000 ZMRP .0000 SCALE .0040



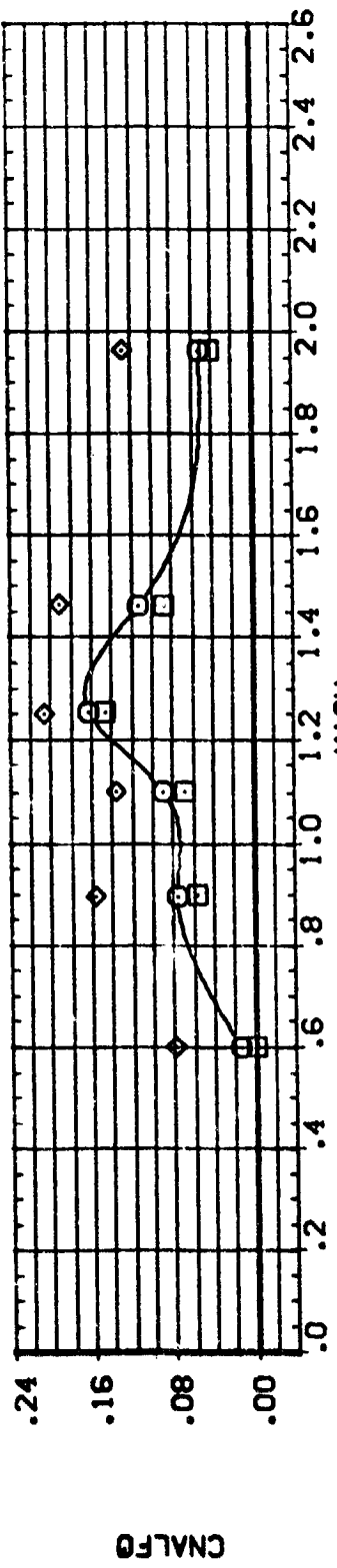
EFFECT OF MACH NO. ON LONG. CHARACT.(ORBITER ONLY) WITH AND W/O ATTACH-PROTUB.

DATA SET SYMBOL (889005) (889004) (889001)

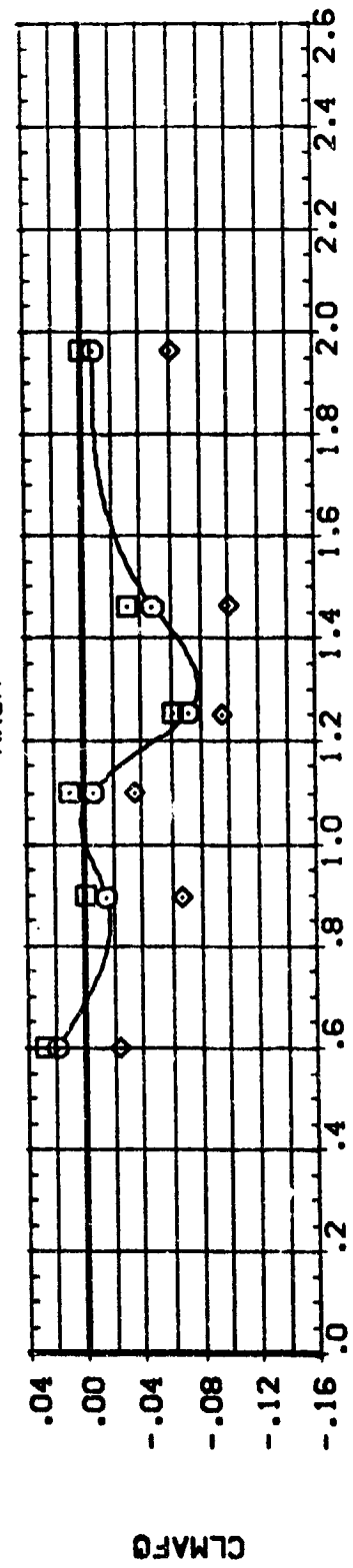
BETA .000 .000 .000

CONFIGURATION DESCRIPTION MSFC 580(IA48) (034)(T9)(S12) MSFC 580(IA48) (034)(T14)(S12) MSFC 580(IA48) (034)(T14)(S12)(U6)

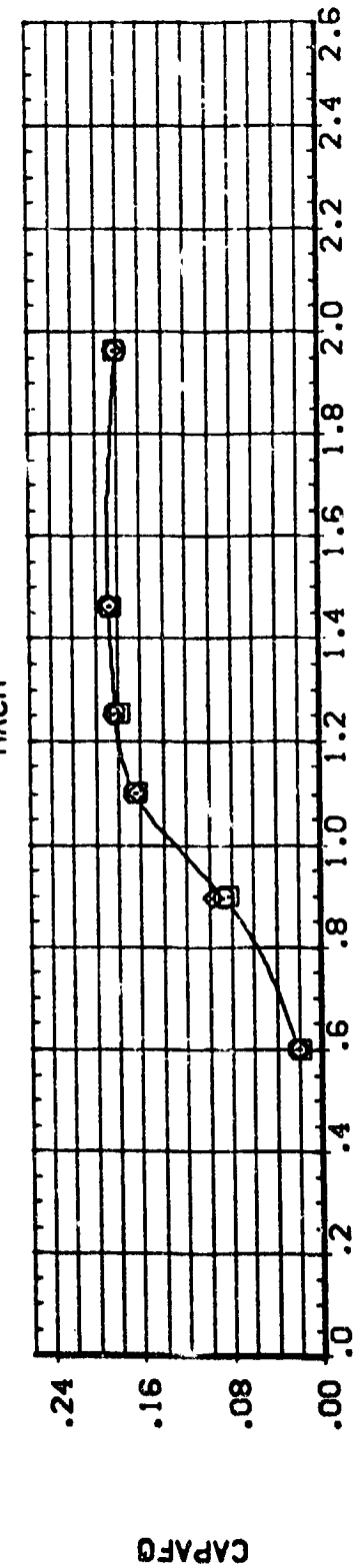
REFERENCE INFORMATION SREF 6.198C 50. IN. LREF 5.1600 IN. BREF 5.1600 IN. XMRP 2.7200 IN. YMRP .0000 IN. ZMRP .0000 IN. SCALE .0010



CNALF0



CLMAF0



CAPAF0

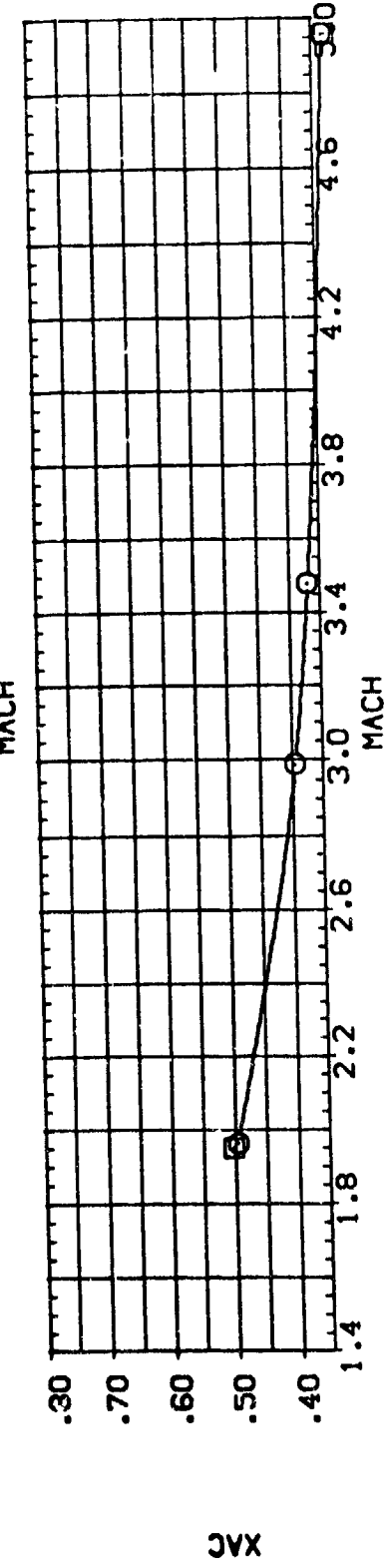
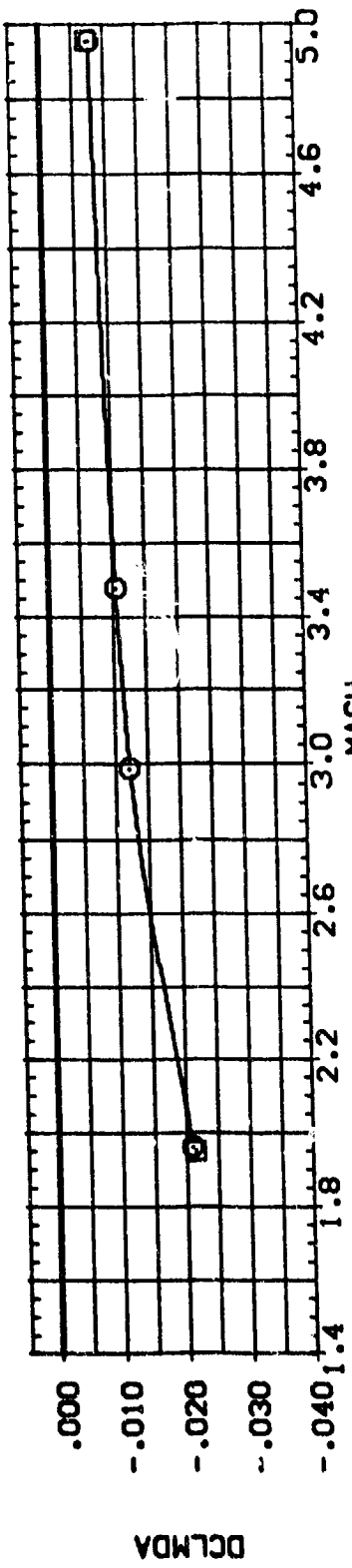
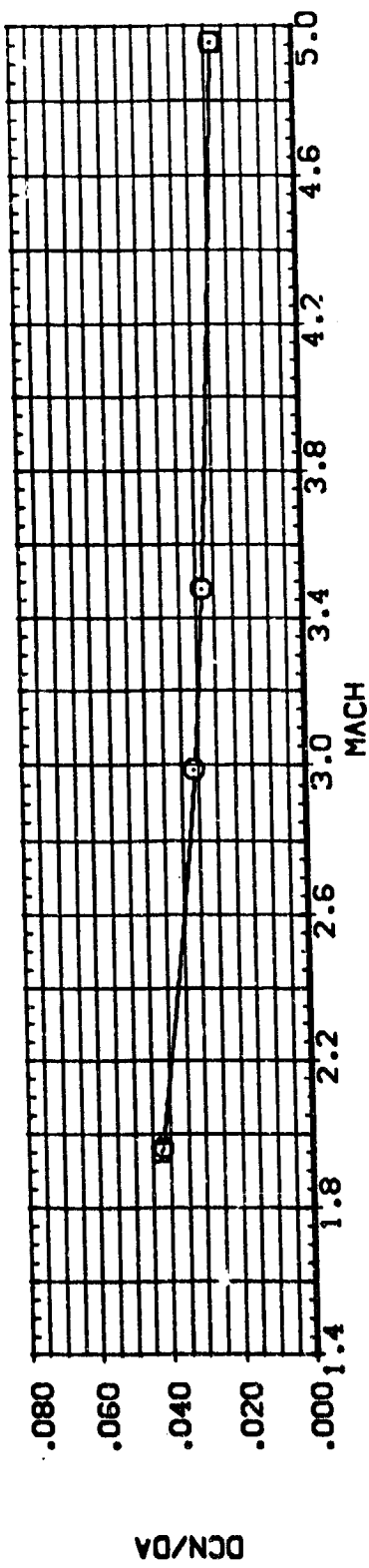
EFFECT OF MACH NO. ON LONG. CHARACT. (ORBITER ONLY) WITH AND W/O ATTACH-PROTUB.



DATA SET SYMBOL (888003)
 (888001)
 REFERENCE INFORMATION
 SREF 6.1980 SO. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

BETA .000
 ORBINC .000

CONFIGURATION DESCRIPTION
 MSFC 579(1A37) (034)(114)(U7)
 MSFC 579(1A37) (034)(119)



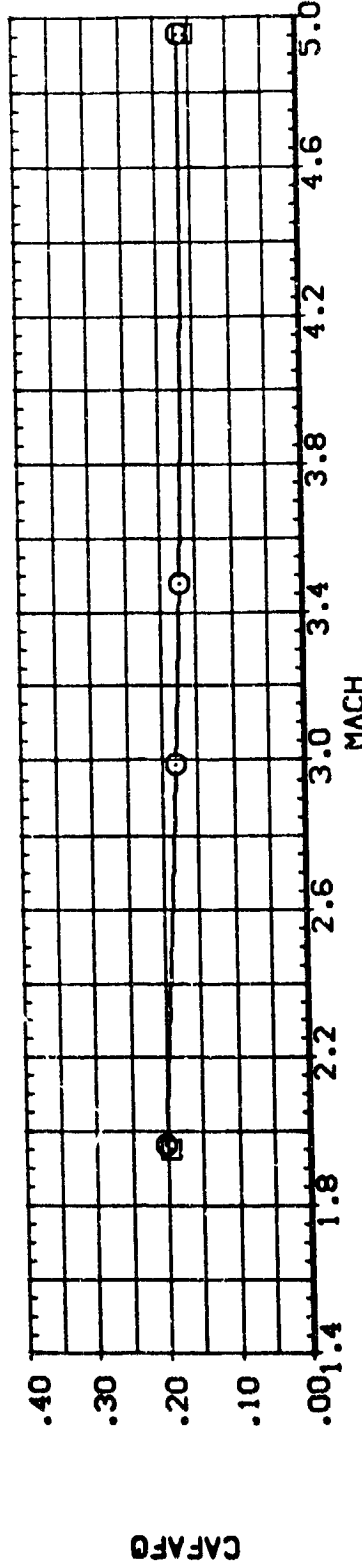
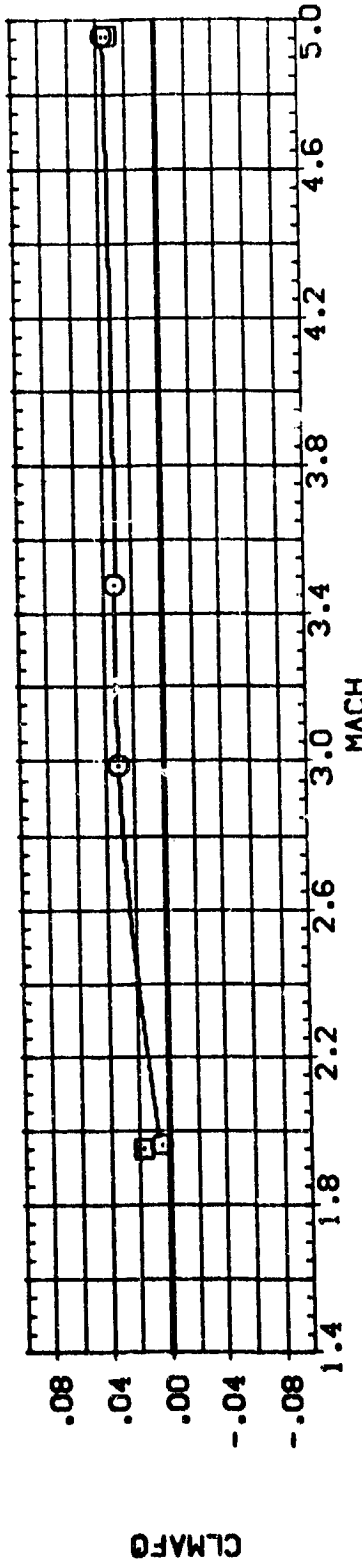
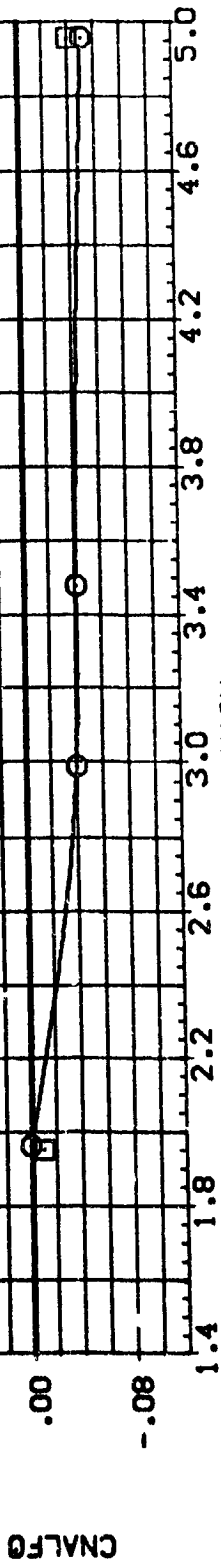
EFFECT OF MACH NO. ON LONG. CHARACT. (SECOND STAGE) WITH AND W/O ATTACH-PROTUB.

DATA SET SYMBOL (866003) E
 (866001) E

BETA .000
 ORBINC .000

REFERENCE INFORMATION
 SREF 6.1580 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1500 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0010

CONFIGURATION DESCRIPTION
 MSC 579(1A37) (034)(14)(U7)
 MSC 579(1A37) (034)(19)



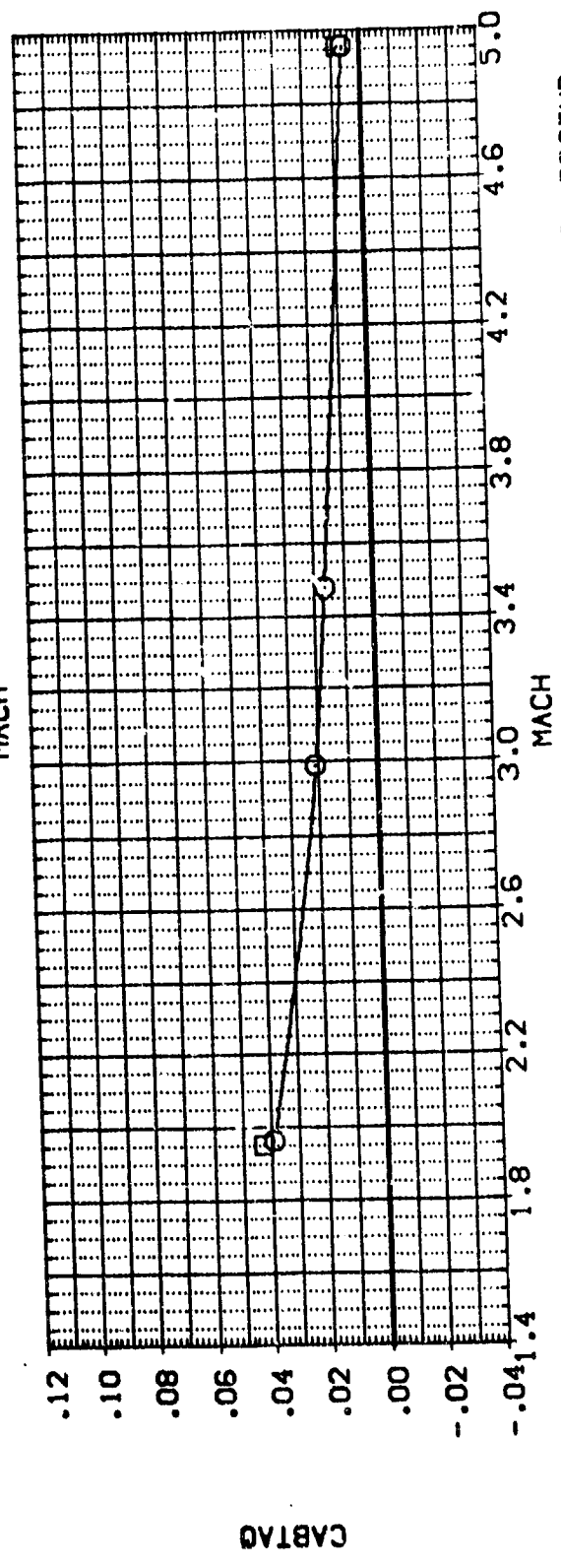
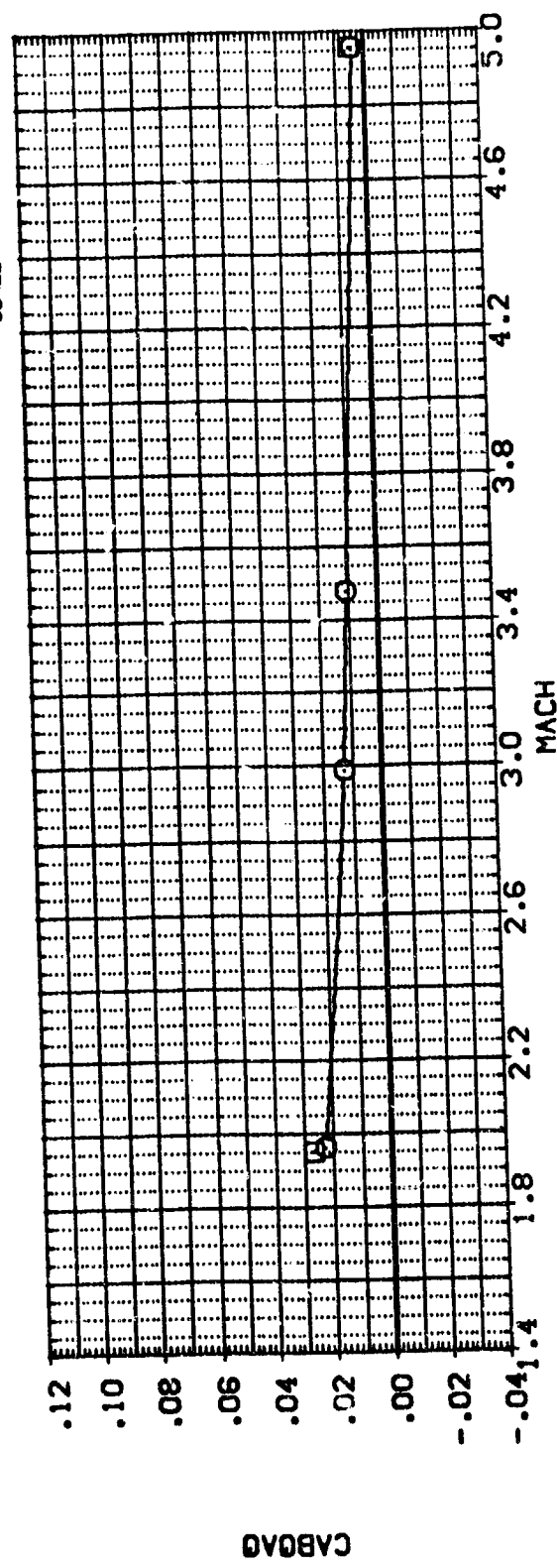
EFFECT OF MACH NO. ON LONG. CHARACT. (SECOND STAGE) WITH AND W/O ATTACH-PROTUB.



REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XFRP 2.7200 IN.
 YFRP .0000 IN.
 ZFRP .0000 IN.
 SCALE .0040

BETA .000
 CPBINC .000

DATA SET SYMBOL (888003) □
 (888001) □
 CONFIGURATION DESCRIPTION
 MSFC 579(1A37) (034)(114)(17)
 MSFC 579(1A37) (034)(119)



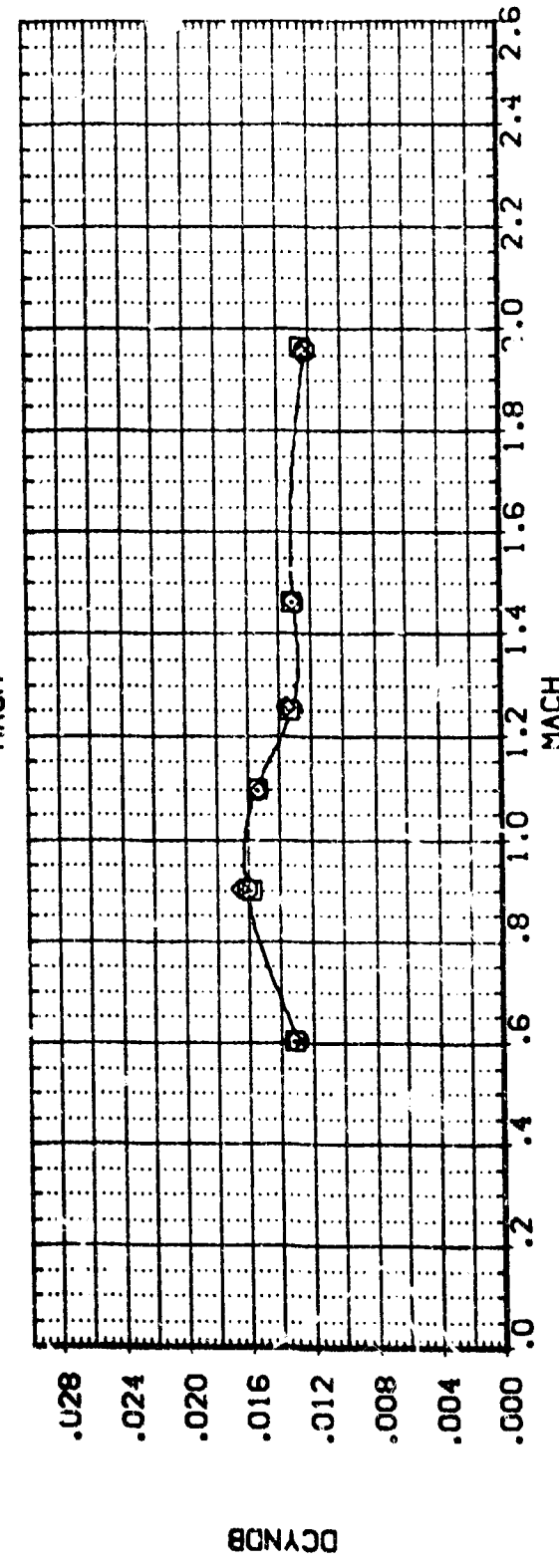
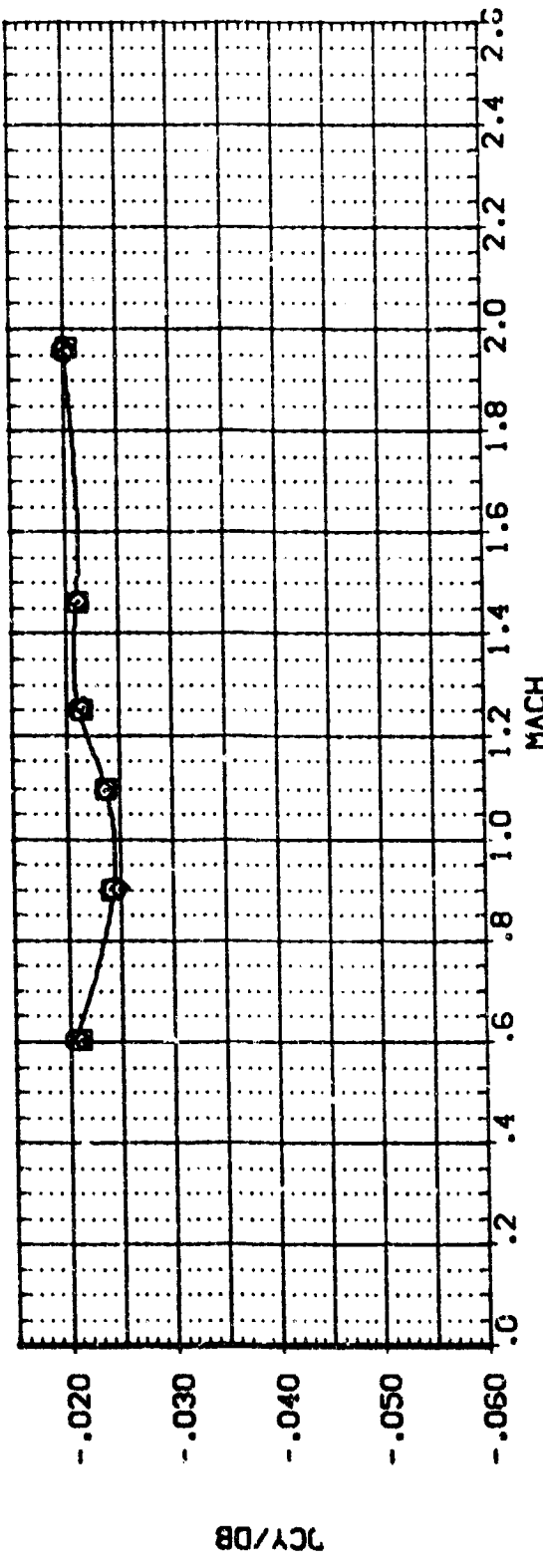
EFFECT OF MACH NO. ON LONG. CHARACT. (SECOND STAGE) WITH AND W/O ATTACH-PROTUB.
 PAGE 231

DATA SET SYMBOL
 (865005) □
 (865003) ◇
 (865002) △

CONFIGURATION DESCRIPTION
 HSC 560(1A48) (034)(T9)(S12)
 HSC 560(1A48) (034)(T14)(S12)
 HSC 560(1A48) (034)(T14)(S12)(U6)

ALPHA ORBINC
 .000 .000
 .000 .000
 .000 .000

REFERENCE INFORMATION
 SREF 6.1960 SQ. IN.
 LREF 5.1500 IN.
 BREF 5.1600 IN.
 XMRP 2.7200 IN.
 YMRP .0000 IN.
 ZMRP .0000 IN.
 SCALE .0040

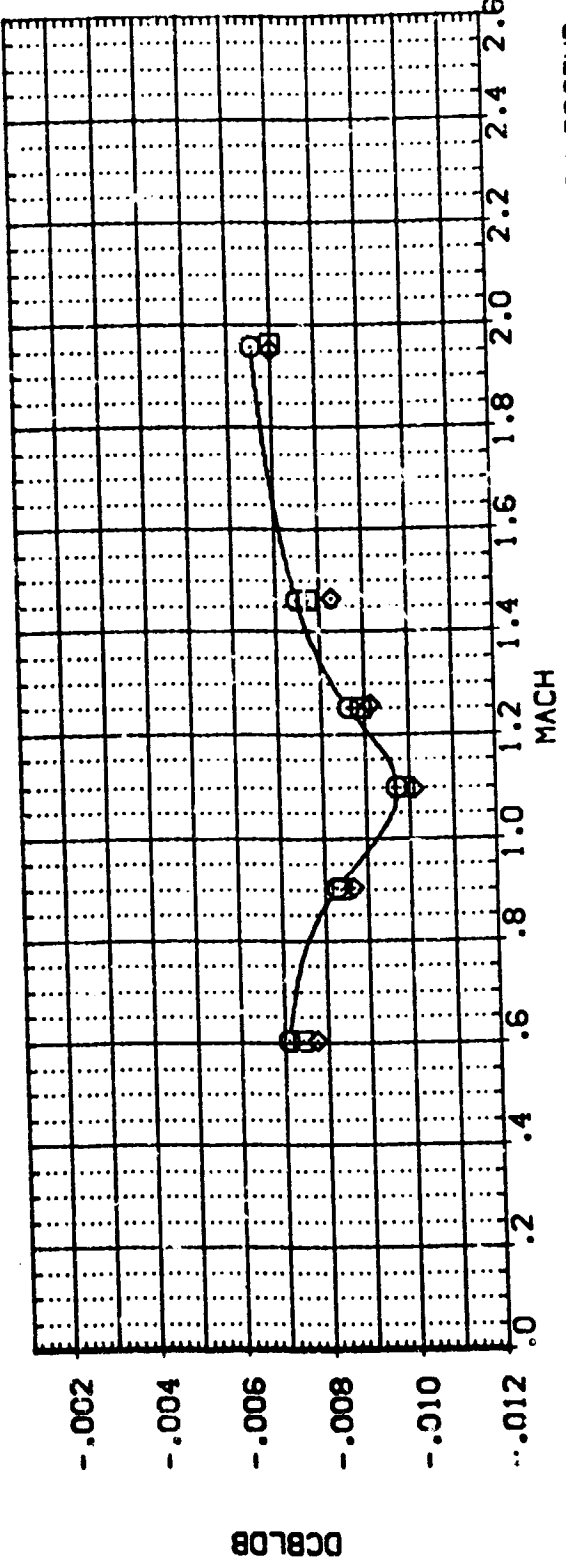
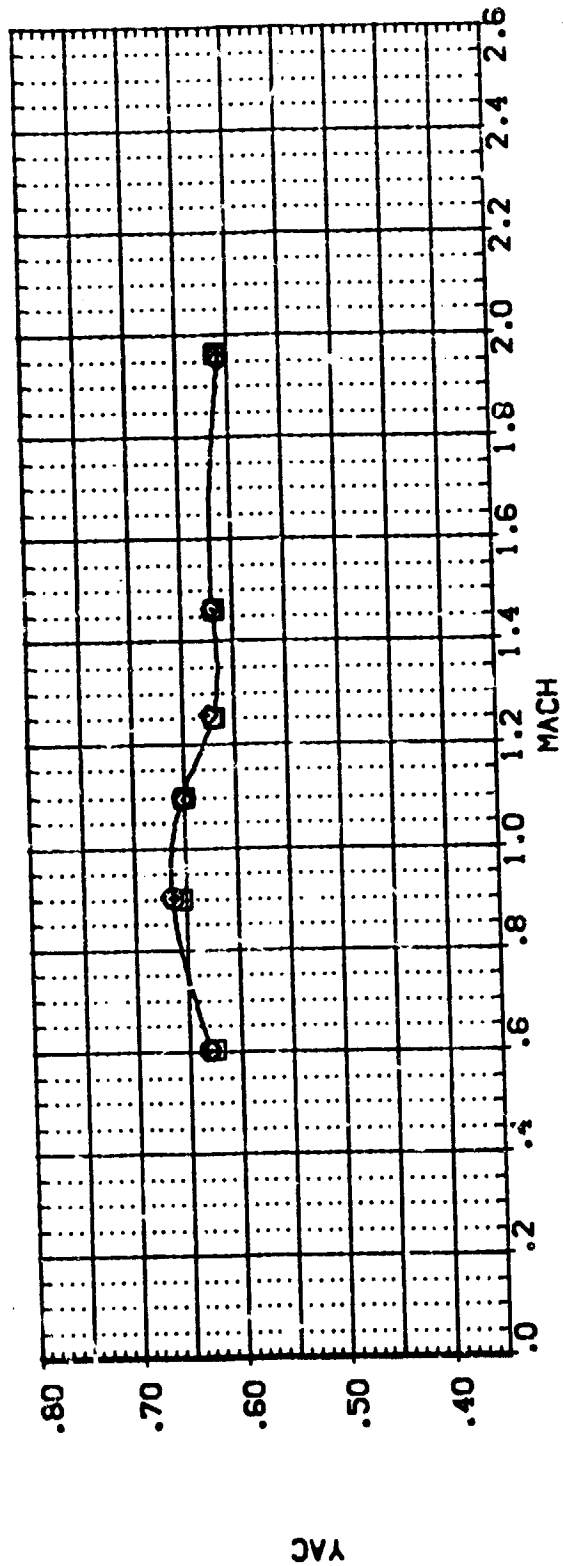


EFFECT OF MACH NO. ON DIRECT. CHARACT. (ORBITER ONLY) WITH AND W/O ATTACH-PROTUB.
 PAGE 232




REFERENCE INFORMATION
 SREF 6.1900 SD.IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010

ALPHA .000
 OREINC .000
 .000
 .000

DATA SET SYMBOL [889006]
 [889003]
 [889002]
 CONFIGURATION DESCRIPTION
 MSFC 580(1A48) (034)(T9)(S12)
 MSFC 580(1A48) (034)(T14)(S12)
 MSFC 580(1A48) (034)(T14)(S12)(U6)



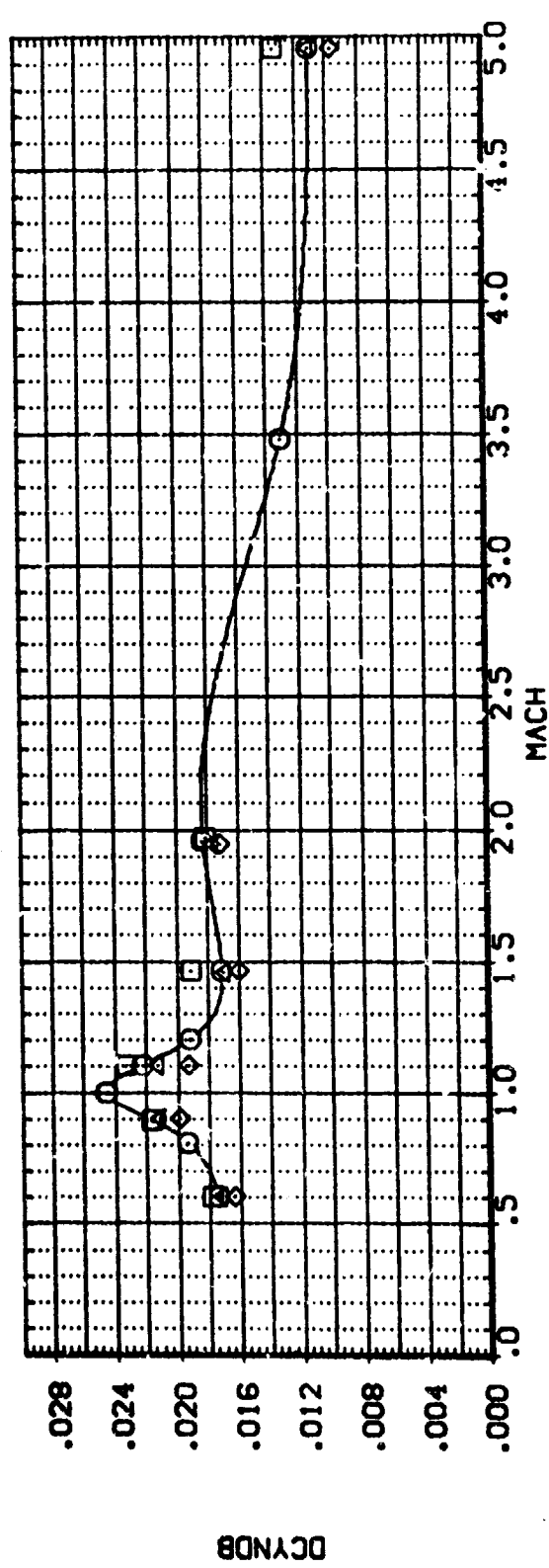
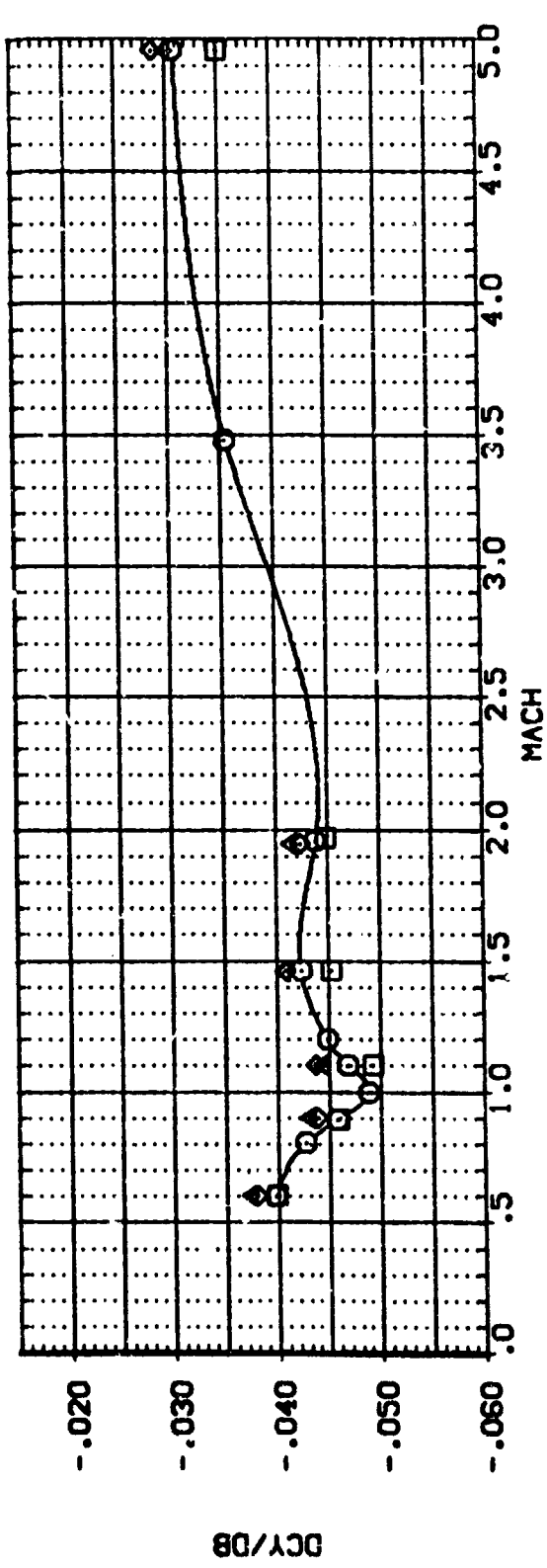
EFFECT OF MACH NO. ON DIRECT. CHARACT. (ORBITER ONLY) WITH AND W/O ATTACH-PROTUB.
 PAGE 233

DATA SET SYMBOL
 (888011) 
 (888010) 
 (888012) 
 (888008)

ALPHA ORBING
 .000
 -5.000
 5.000
 .000

CONFIGURATION DESCRIPTION
 PSC 579(1A37) (034)(T14)(S12)(U6)
 PSC 579(1A37) (034)(T14)(S12)(U6)
 PSC 579(1A37) (034)(T14)(S12)(U6)
 PSC 579(1A37) (034)(T14)(S12)(U6)

REFERENCE INFORMATION
 SREF 6 1980 50. IN.
 LREF 5 1600 IN.
 P REF 5 1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040



EFFECT OF MACH NO. ON DIRECT. CHARACT. (FIRST STAGE) WITH AND W/O ATTACH-PROTUB.



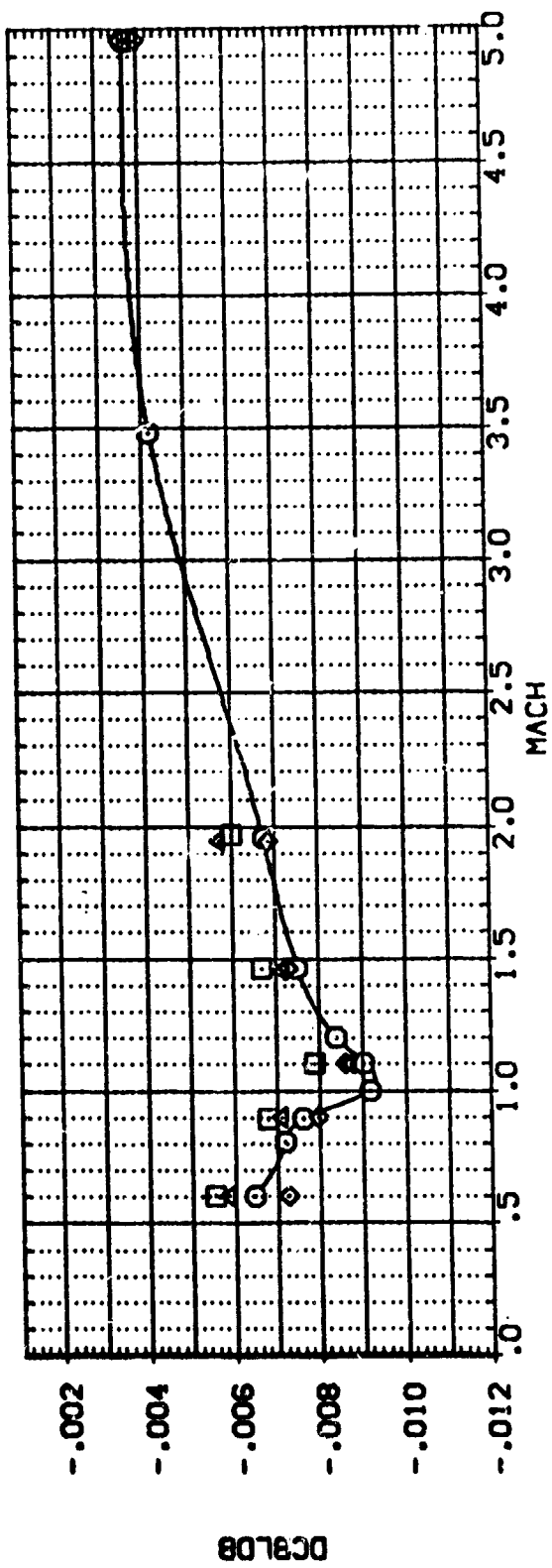
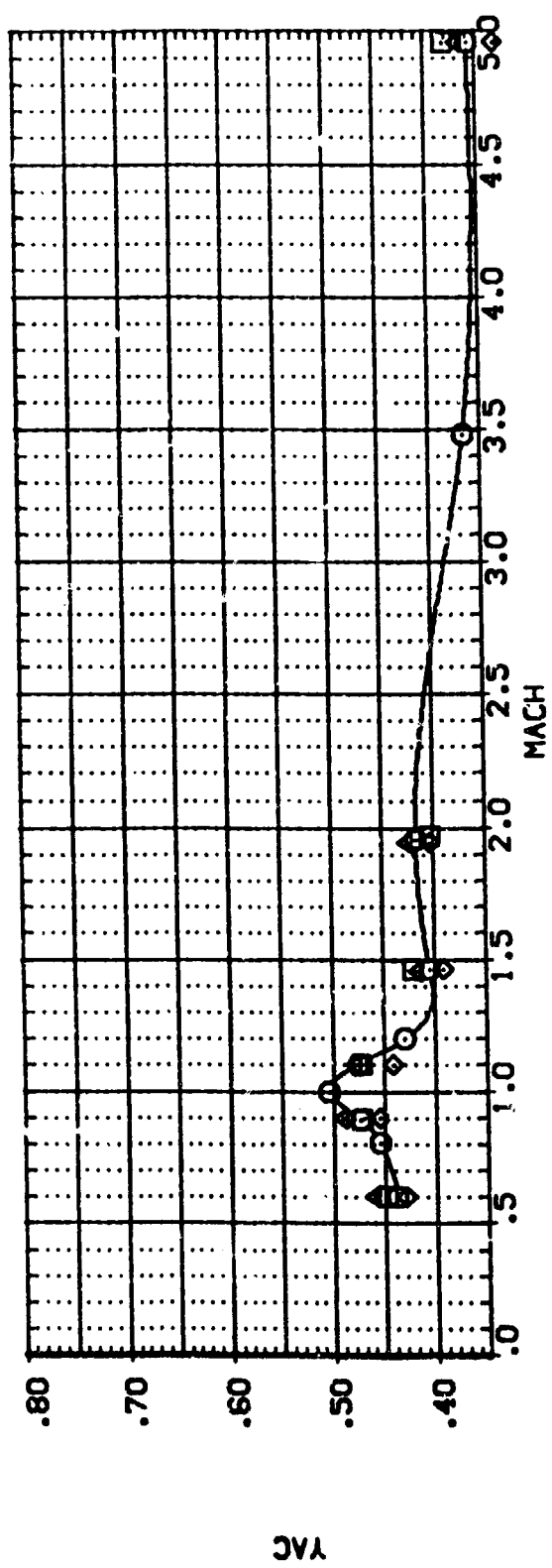
DATA SET SYMBOL: (888011), (888010), (888012), (888008)

CONFIGURATION DESCRIPTION: MSFC 579I(A37) (034)(T14)(S12)(U6), MSFC 579I(A37) (034)(T14)(S12)(U6), MSFC 579I(A37) (034)(T14)(S12)(U6), MSFC 579I(A37) (034)(T9)(S12)

ALPHA: .000, .000, -.000, .000, .000, .000

CRBINC: .000, .000, .000, .000, .000, .000

REFERENCE INFORMATION: SREF 6.1800 50. IN., LREF 5.1600 IN., BREF 5.1600 IN., XTRP 2.7200 IN., YTRP .0000 IN., ZTRP .0000 IN., SCALE .0040

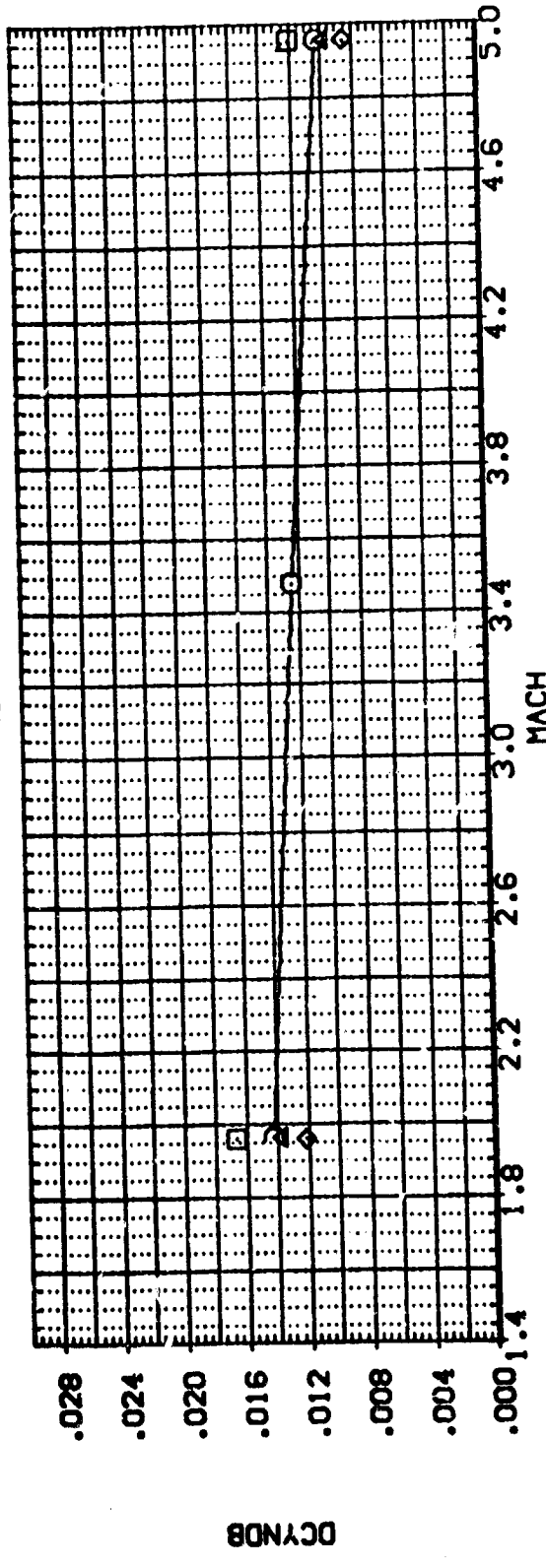
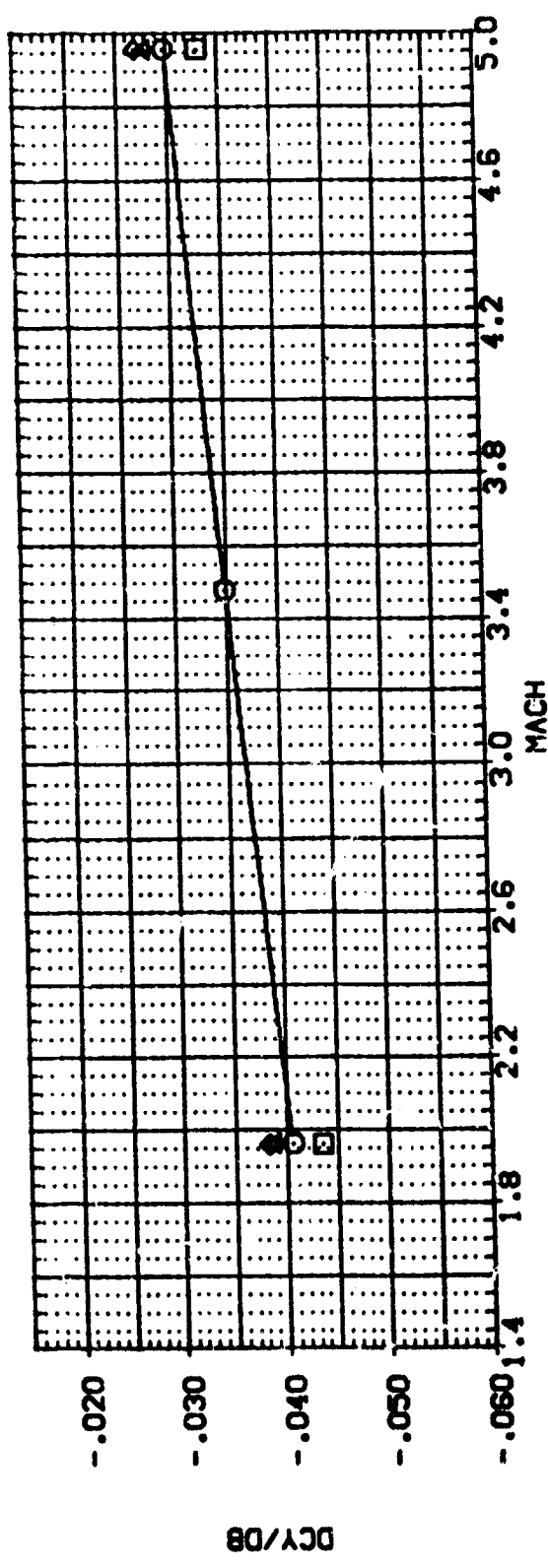


EFFECT OF MACH NO. ON DIRECT. CHARACT. (FIRST STAGE) WITH AND W/O ATTACH-PROTUB.

REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010



ALPHA CRIBINC
 .000 .000
 -.000 .000
 .000 .000

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (888003) (888002) MSFC 579(1A37) (034)(T14)(U7)
 (888004) (888002) MSFC 31(1A37) (034)(T14)(U7)
 (888005) (888002) MSFC 579(1A37) (034)(T14)(U7)
 (888006) (888002) MSFC 579(1A37) (034)(T14)(U7)



EFFECT OF MACH NO. ON DIRECT. CHARACT. (SECOND STAGE) WITH AND W/O ATTACH-PROTUB.

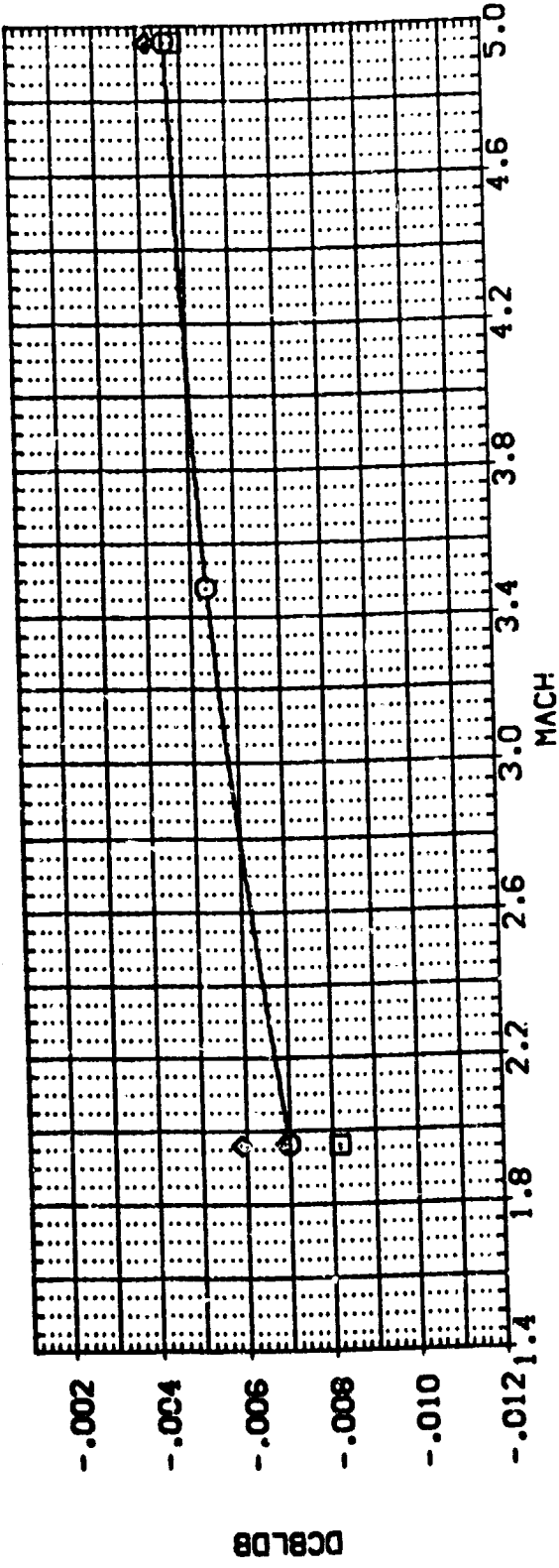
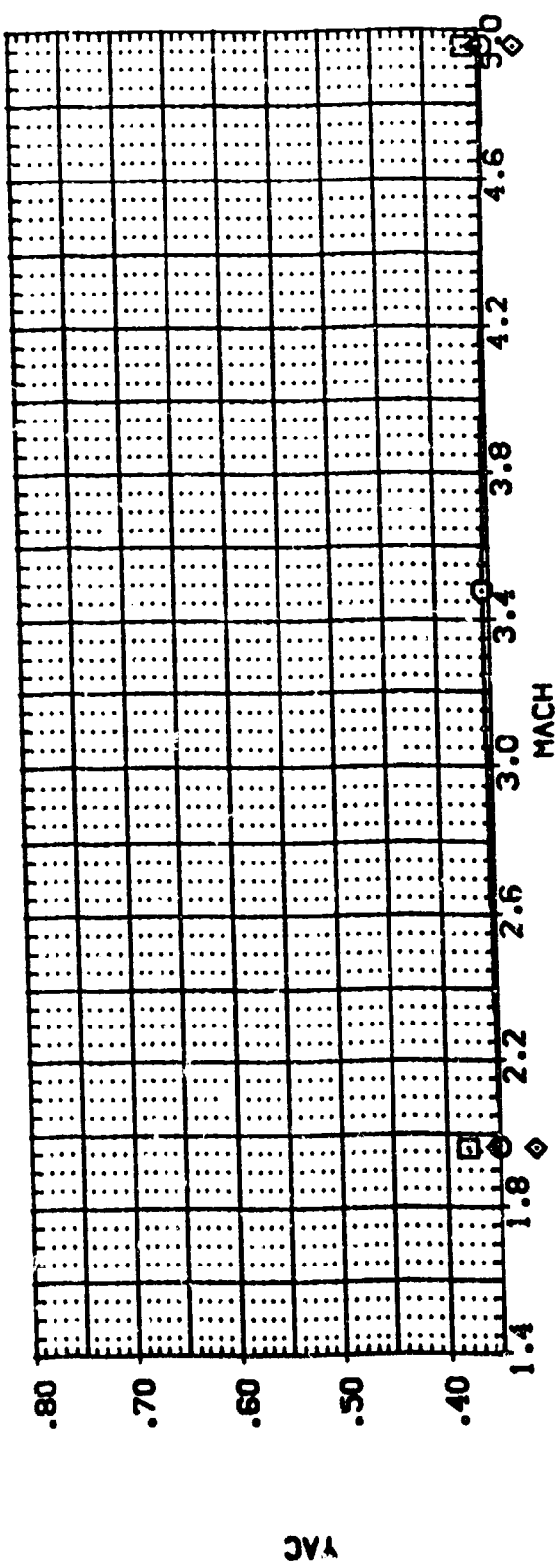


DATA SET SYMBOL:  
 (288605)
 (888004)
 (888006)
 (888002)

CONFIGURATION DESCRIPTION
 MSFC 579(1A37) (034)(114)(U7)
 MSFC 579(1A37) (034)(114)(U7)
 MSFC 579(1A37) (034)(114)(U7)
 MSFC 579(1A37) (034)(114)(U7)

ALPHA ORBINC
 .000 .000
 -5.000 .000
 5.000 .000

REFERENCE INFORMATION
 SREF 5.1980 SQ. IN.
 LREF 5.1600 IN.
 BRPREF 5.1600 IN.
 XPRP 2.7200 IN.
 YPRP .0000 IN.
 ZPRP .0000 IN.
 SCALE .0040

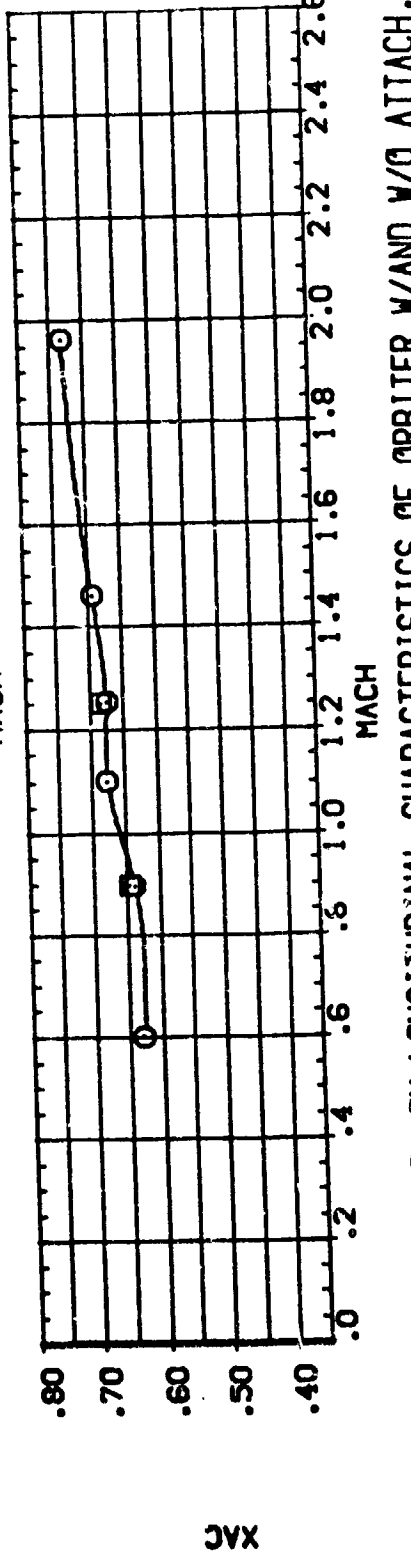
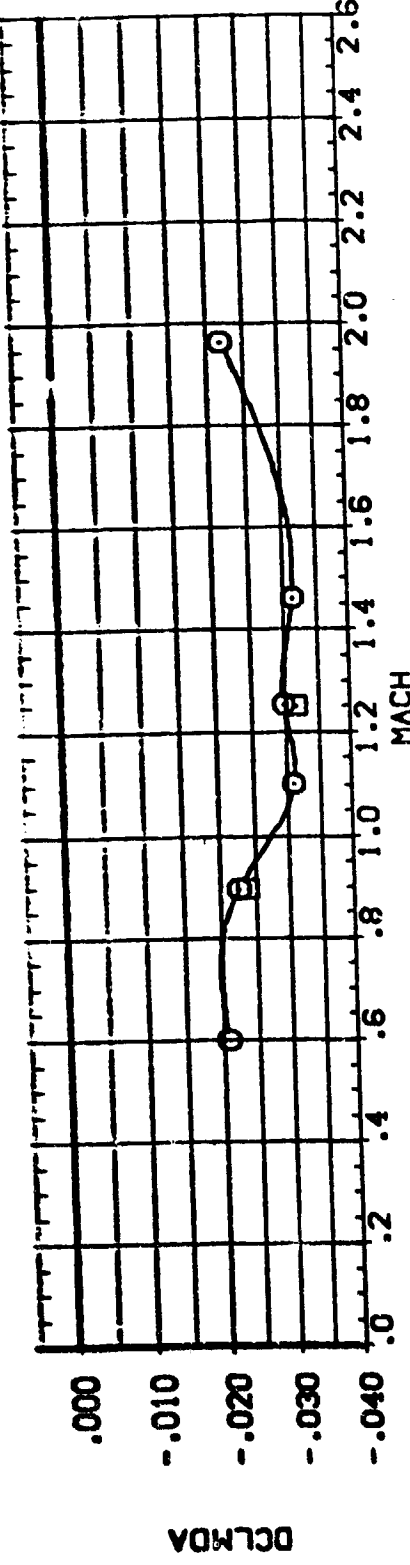
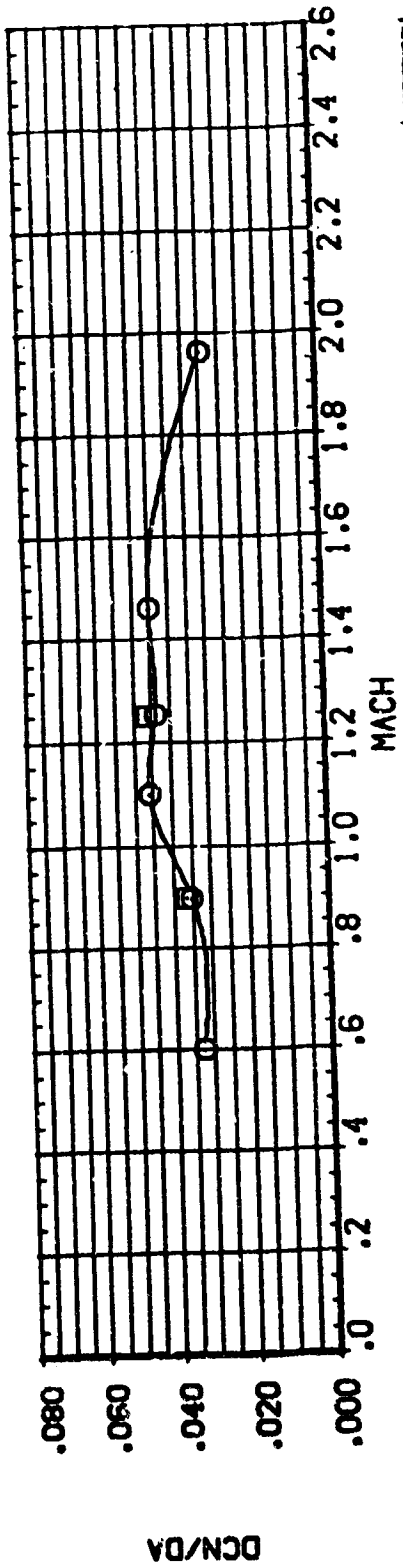


EFFECT OF MACH NO. ON DIRECT. CHARACT. (SECOND STAGE) WITH AND W/O ATTACH-PROTUB.
 PAGE 237

REFERENCE INFORMATION
 SREF 6.1980 SQ. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0040

BETA ORB INC
 .000 .000
 .000 .000

DATA SET SYMBOL (888005) (888008) □
 CONFIGURATION DESCRIPTION
 15FC 980(1A48) (024)(179)(S12)
 15FC 980(1A48) (034)(179)(S12) (ATTACH POST OFF)



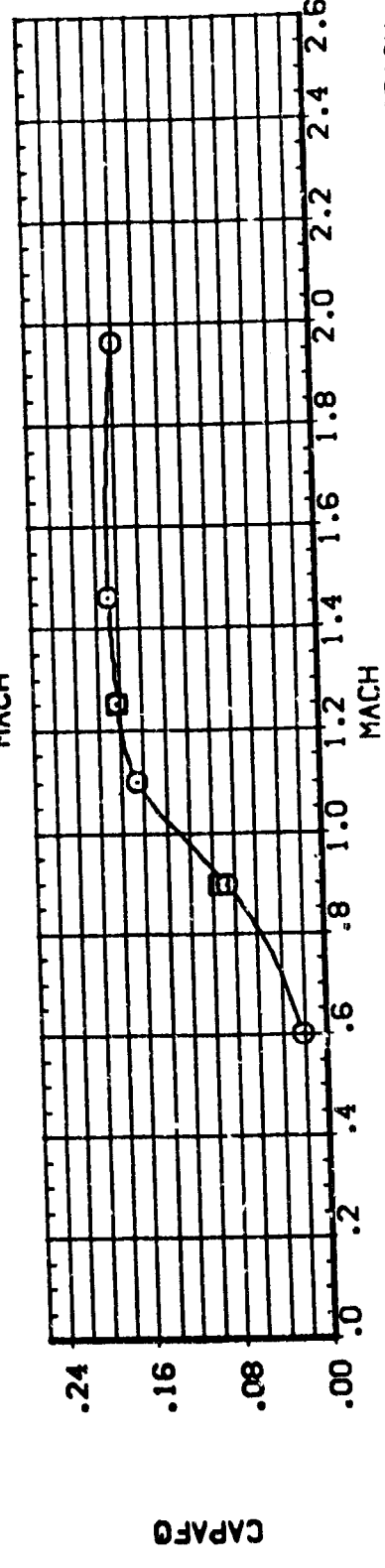
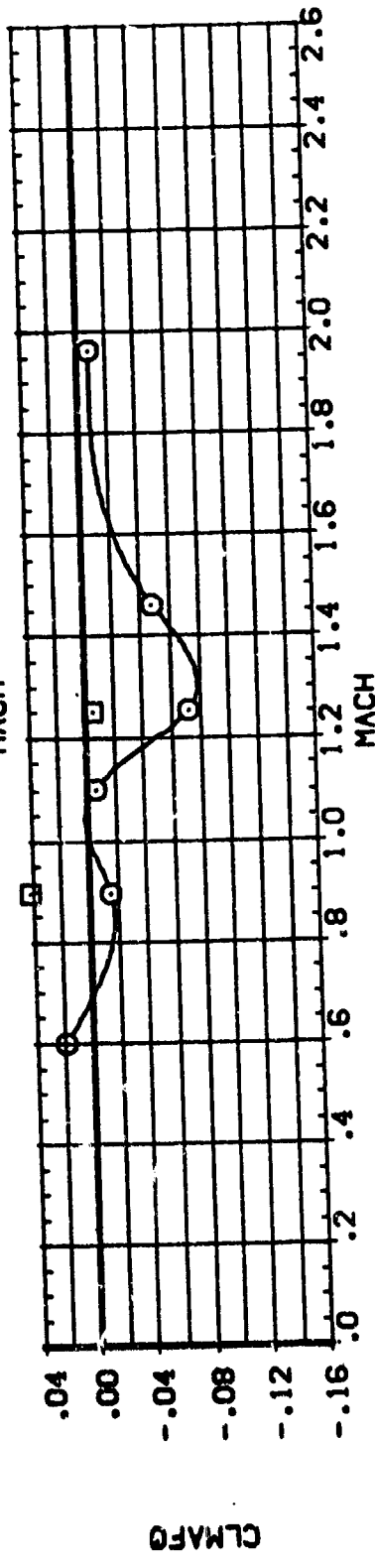
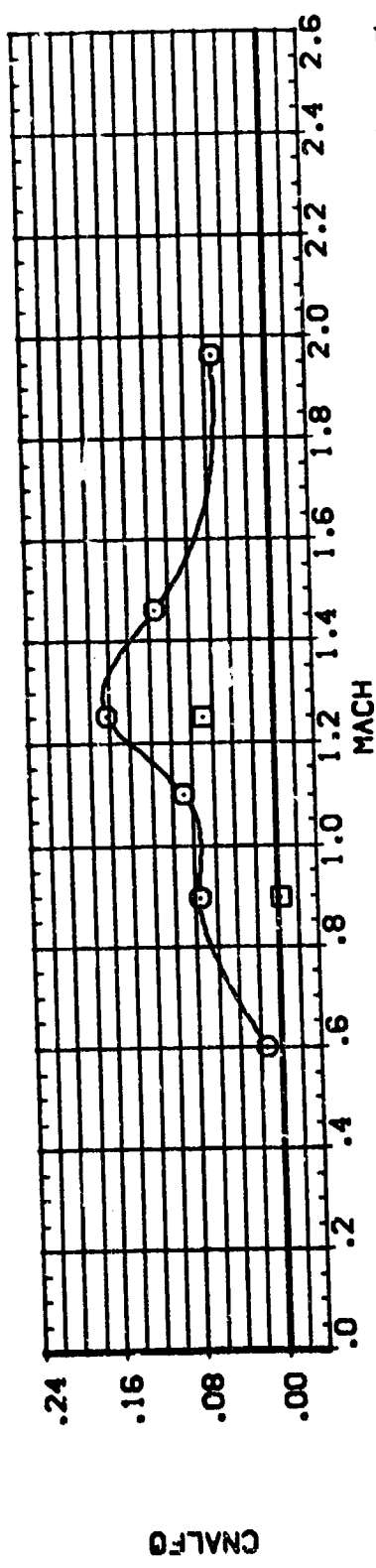
EFFECT OF MACH NO. ON LONGITUDINAL CHARACTERISTICS OF ORBITER W/AND W/O ATTACH.
 PAGE 238




REFERENCE INFORMATION
 SREF 6.1980 50. IN.
 LREF 5.1600 IN.
 BREF 5.1600 IN.
 XTRP 2.7200 IN.
 YTRP .0000 IN.
 ZTRP .0000 IN.
 SCALE .0010

BETA ORBINC
 .000 .000
 .000 .000

DATA SET SYMBOL (B89005) (B89008)
 CONFIGURATION DESCRIPTION MSFC 5801(A48) (034)(19)(S12) (ATTACH POST OFF) MSFC 5801(A48) (034)(19)(S12)

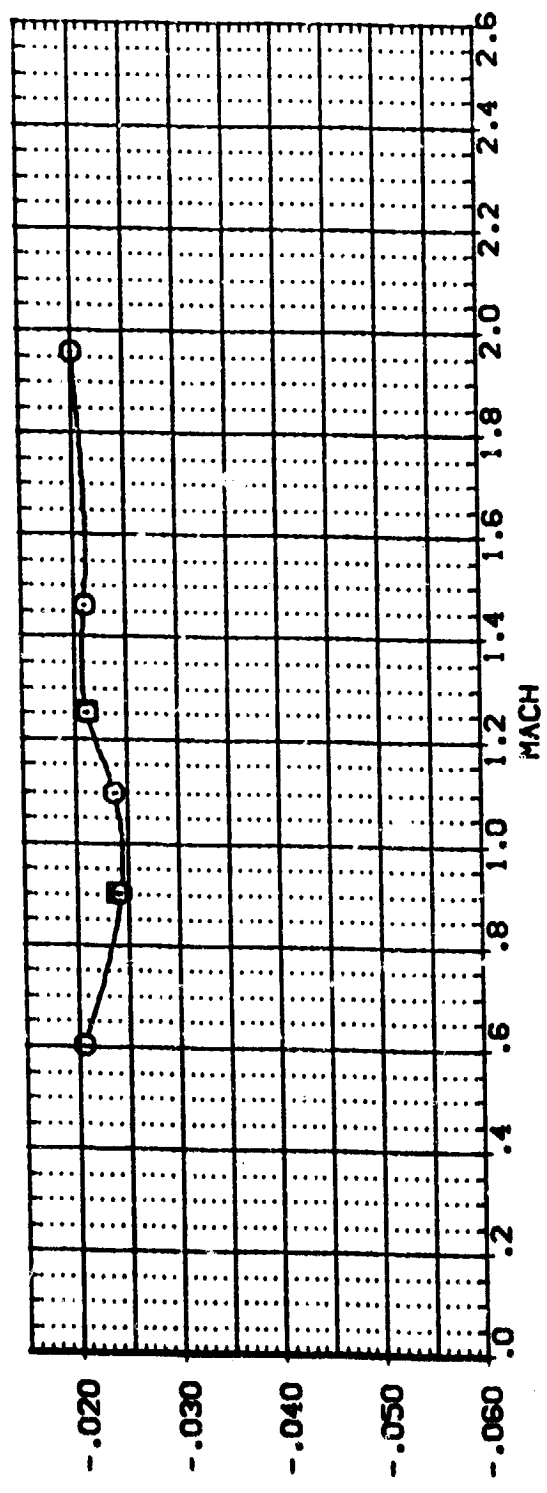


EFFECT OF MACH NO. ON LONGITUDINAL CHARACTERISTICS OF ORBITER W/AND W/O ATTACH.
 PAGE 239

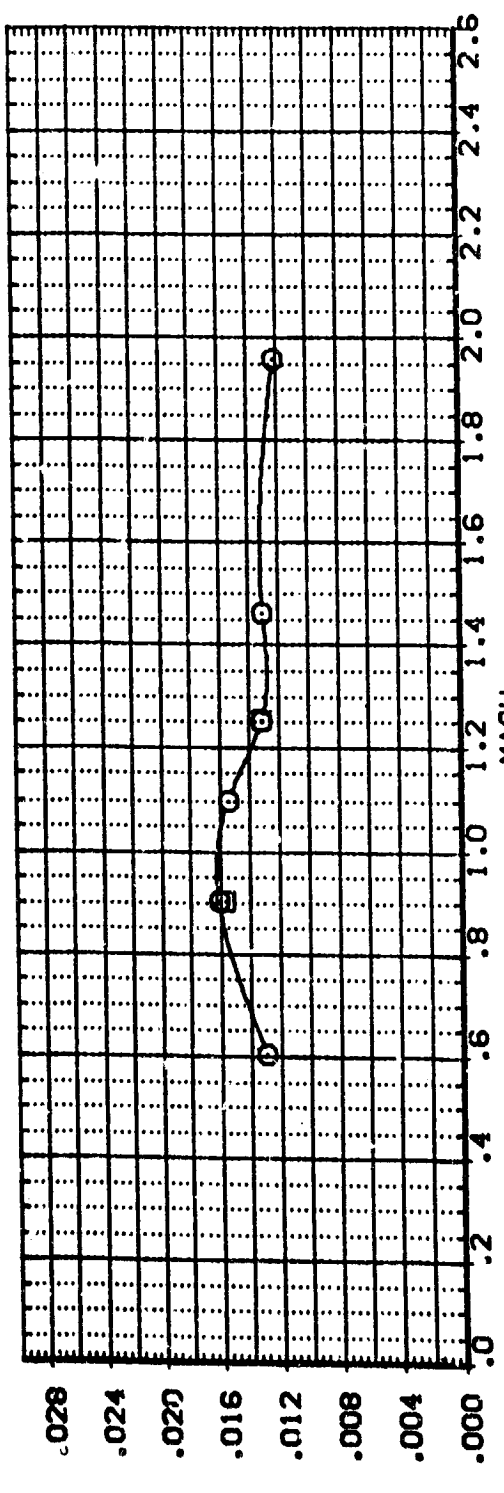
DATA SET SYMBOL (869006) (869007)  CONFIGURATION DESCRIPTION MSFC 580(1A48) (034)(19)(S12) (ATTACH POST OFF) MSFC 580(1A48) (034)(19)(S12) (ATTACH POST OFF)

ALPHA ORBINC .000 .000 .000 .000

REFERENCE INFORMATION SREF 6.1990 SQ. IN. LREF 5.1600 IN. BREF 5.1600 IN. YPRP 2.7300 IN. ZPRP .0000 IN. SCALE .0010



DCY/OB



DCYNDB

EFFECT OF MACH NO. ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER W/AND W/O ATTACH. PAGE 240

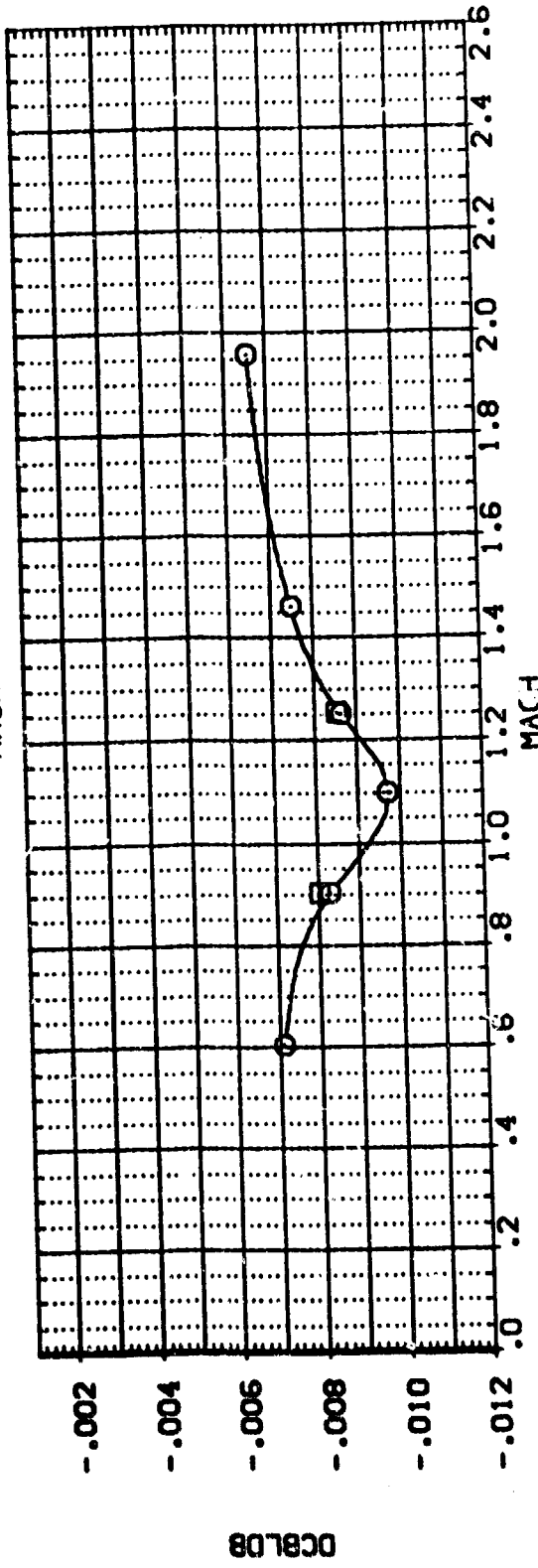
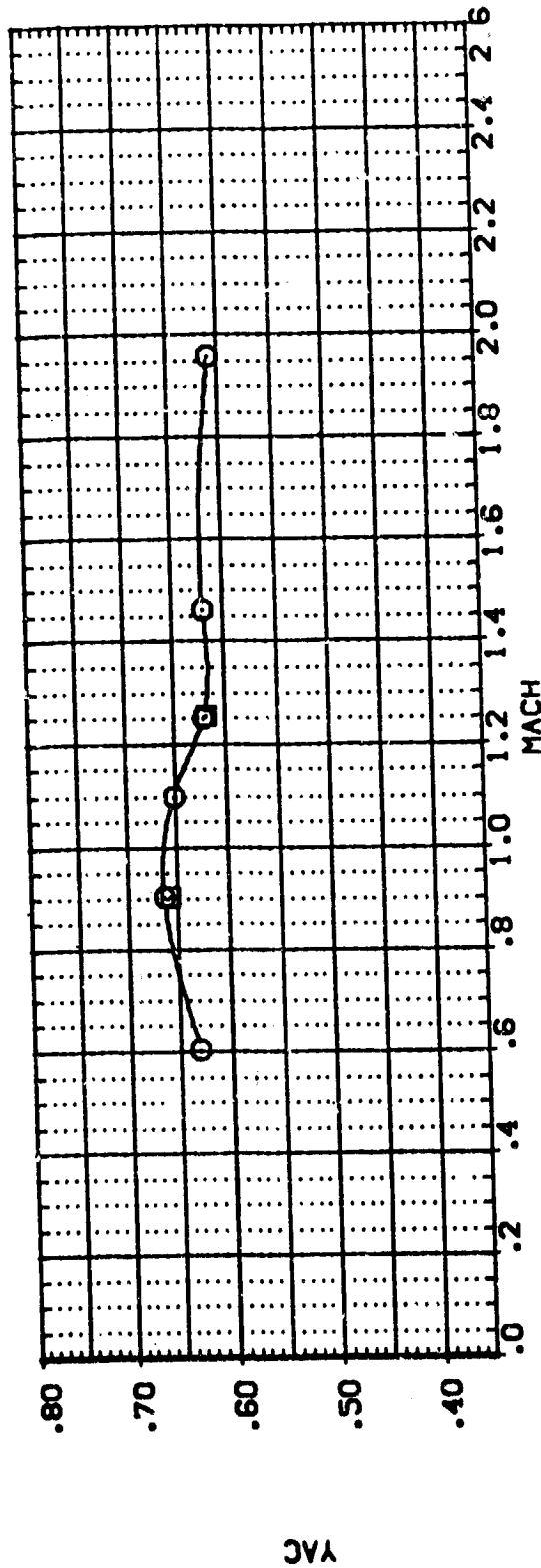


DATA SET SYMBO
(888006)
(888007)

CONFIGURATION DESCRIPTION
MSFC 580(1A48) (034)(19)(S12)
MSFC 580(1A48) (034)(19)(S12) (ATTACH POST OFF)

ALPHA ORBINC
.000 .000
.000 .000

REFERENCE INFORMATION
SREF 6.1580 SQ. IN.
LREF 5.1600 IN.
BREF 5.1600 IN.
XPRP 2.7200 IN.
YPRP .0000 IN.
ZPRP .0000 IN.
SCALE .0040



EFFECT OF MACH NO. ON LAT.-DIRECT. CHARACTERISTICS OF ORBITER W/AND W/O ATTACH.

APPENDIX
TABULATED SOURCE DATA

Plotted data tabulations are
available on request from DMS.

MFC 575 (IA37) (094) (T9)

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTA = 30.000

REFERENCE DATA

REF = 8.1600 IN. 1MRP = 2.7500 IN.
LREF = 5.1600 IN. 1MRP = .0300 IN.
BREF = 3.1600 IN. 2MRP = .0000 IN.
SCALE = .0040

MIN NO. 51/ 0 RVL = 7.01 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CBO	CABT	CABS
1.048	-9.540	-2.2070	.21800	-.00257	.00480	-.00080	.19250	.00500	.04850	.00000
1.049	-7.960	-.30480	.17740	-.00050	.00260	-.00110	.19130	.00510	.04350	.00000
1.049	-5.430	-.24050	.13450	.00140	.00220	-.00080	.19780	.00530	.04470	.00000
1.049	-9.370	-1.0270	.06440	.00170	.00190	-.00080	.19950	.00540	.04360	.00000
1.049	-1.800	-.07710	.04260	.00130	.00110	-.00170	.13460	.00560	.04310	.00000
1.049	.880	.02960	-.00210	.07260	.00260	-.00090	.19360	.00560	.04150	.00000
1.049	2.910	.11020	-.04280	.00240	.00120	-.00150	.16680	.00560	.03630	.00000
1.049	9.020	.19460	-.07290	.00360	.00210	-.00120	.16770	.00570	.03720	.00000
1.049	7.310	.28070	-.12740	.00120	.00060	-.00110	.19100	.00580	.03540	.00000
1.049	9.250	.34170	-.21620	.00260	.00210	-.00090	.16860	.00590	.03410	.00000
1.049	11.080	.42940	-.18050	.00170	.00060	-.00150	.16450	.00620	.03370	.00000
1.049	.820	.02100	.00210	.00260	.00140	-.00110	.16630	.00560	.02640	.00000
1.049	.0425E	-.02136	-.00016	.00020	-.00016	-.00004	-.00059	.00004	-.00076	.00000

MIN NO. 57/ 0 RVL = 5.05 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CBO	CABT	CABS
4.999	-9.250	-.26600	.10810	.00720	-.00080	.00050	.20410	.00120	.00610	.00000
4.999	-7.350	-.21800	.09570	.00540	.00010	.00030	.19410	.00120	.00620	.00000
4.999	-5.470	-.16540	.07430	.00760	-.00070	.00090	.18200	.00120	.00630	.00000
4.999	-3.530	-.11960	.05670	.00560	-.00060	.00060	.17170	.00120	.00630	.00000
4.999	-1.270	-.08960	.03910	.00360	-.00120	.00040	.16310	.00090	.00760	.00000
4.999	.760	-.02960	.02760	.00420	.00090	.00070	.15370	.00120	.00750	.00000
4.999	2.780	.02230	.01140	.00240	.00130	.00000	.15000	.00120	.00670	.00000
4.999	4.800	.04430	-.00070	.00290	.00070	.00010	.14460	.00130	.00620	.00000
4.999	6.640	.11400	-.01950	.00260	-.00020	.00000	.14260	.00130	.00990	.00000
4.999	8.980	.16960	-.03530	.00480	-.00010	.00040	.13630	.00130	.00540	.00000
4.999	10.680	.20810	-.04660	.00900	.00040	.00000	.13420	.00130	.00350	.00000
4.999	.760	-.02370	.02660	.00410	.00030	.00010	.15690	.00130	.00650	.00000
GRADIENT	.02273	.02273	-.00750	-.00044	.00012	-.00007	-.00327	.00004	-.00022	.00000

MFC 579 (IA37) (054) (19)

REFERENCE DATA

MFC = 6.1600 SR.IN. MFCP = 2.7500 IN.
 LREF = 9.1000 IN. YREF = .0000 IN.
 MFC = 9.1000 IN. ZREF = .0000 IN.
 SCALE = .0040

ALPHA = .000 CRBINC = .000
 DELTAZ = 30.000

PARAMETRIC DATA

NUM NO. 36/ 0 INVL = 7.01 GRADIENT INTERVAL = -7.00/ 7.00

NUM	BETA	CH	CLJ	CY	CIN	CEL	CAF	CMF	CBO	CABT	CABS
1.961	-10.300	.00780	-.00480	-.4640	-.17250	.07600	.17910	.00680	.03240	.04590	.00000
1.961	-9.240	.01070	-.00310	.39530	-.15010	.06170	.17980	.00680	.03090	.04260	.00000
1.961	-8.040	.00790	.00190	.25080	-.08670	.04990	.18450	.00600	.02950	.04050	.00000
1.961	-9.800	.00510	.00390	.15760	-.09250	.02660	.18950	.00610	.02860	.04110	.00000
1.961	-1.790	.00400	.01110	.07680	-.08430	.01270	.18950	.00570	.02720	.04150	.00000
1.961	.480	.00340	.01200	-.00590	-.00960	-.00190	.18950	.00580	.02630	.04170	.00000
1.961	2.570	.00250	.01160	-.06900	.00000	-.01590	.18950	.00570	.02690	.04060	.00000
1.961	4.720	.00260	.00960	-.16590	.00910	-.00040	.18950	.00600	.02640	.04080	.00000
1.961	6.810	.00360	.00760	-.26080	.08580	-.04720	.18950	.00650	.02600	.04310	.00000
1.961	9.110	.00270	.00410	-.37020	.14000	-.06920	.18950	.00650	.02600	.04900	.00000
1.961	11.080	-.00370	.00250	-.47250	.17950	-.08040	.18130	.00670	.02180	.04110	.00000
1.961	.480	.00360	.01210	-.04960	.00450	-.00260	.18030	.00950	.02610	.04110	.00000
	GRADIENT	-.00044	.00099	-.00679	.01377	-.00688	-.00008	.00001	.00002	.00010	.00000

NUM NO. 56/ 0 INVL = 5.16 GRADIENT INTERVAL = -7.00/ 7.00

NUM	BETA	CH	CLJ	CY	CIN	CEL	CAF	CMF	CBO	CABT	CABS
4.999	-9.680	-.01670	.01500	-.29180	-.10250	.04310	.17970	.00080	.00400	.00670	.00000
4.999	-7.780	-.02360	.01740	-.22770	-.08120	.05910	.26780	.00110	.00590	.00680	.00000
4.999	-9.670	-.02970	.02550	-.16530	-.09710	.02210	.16040	.00130	.00810	.00680	.00000
4.999	-9.640	-.02750	.02620	.10910	-.09700	.02710	.15770	.00130	.00630	.00530	.00000
4.999	-1.200	-.02940	.03030	.02870	-.01910	.00940	.15960	.00130	.00640	.00710	.00000
4.999	.480	-.02690	.02820	-.00950	.00250	-.00110	.15500	.00130	.00630	.00760	.00000
4.999	2.450	-.04040	.03240	-.06190	.02280	-.00920	.15650	.00130	.00650	.00710	.00000
4.999	4.480	-.02770	.03110	-.12030	.04270	-.01840	.15690	.00130	.00640	.00690	.00000
4.999	6.500	-.05110	.02650	-.17680	.03000	-.02700	.16410	.00140	.00690	.00680	.00000
4.999	8.590	-.03590	.02700	-.24060	.05690	-.03640	.16780	.00130	.00690	.00680	.00000
4.999	10.480	-.02550	.02110	-.30870	.11160	-.04870	.17180	.00140	.00670	.00700	.00000
4.999	.410	-.03590	.02680	-.00010	.00770	-.00130	.15970	.00140	.00680	.00710	.00000
	GRADIENT	-.00016	.00006	-.00900	.00945	-.00415	.00001	.00001	.00003	.00012	.00000

TABULATED SOURCE DATA, NRPC 579-560 (IA-37,IA48)

(080003) (31 AUG 75)

NRPC 579 (IA37) 0054) (T14) (U7)

DATE 18 SEP 75

PARAMETRIC DATA

BETA = .000 CRIBINC = .000
DELTA Z = 30.000

REFERENCE DATA

WREF = 6.1000 IN. YREF = 2.7500 IN.
LREF = 5.1000 IN. ZREF = .0000 IN.
SREF = 5.1000 IN. ZREF = .0000 IN.
SCALE = .0040

RUN NO. 56/ 0 RWL = 6.94 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
1.968	-9.560	-41.670	.21020	.00470	.00310	.00140	.21150	.00460	.02280	.04270	.00000
1.968	-7.150	-28.080	.16480	.00590	.00250	.00090	.20530	.00460	.02200	.03970	.00000
1.968	-5.440	-23.920	.12120	.00750	.00170	.00100	.21220	.00440	.02100	.03900	.00000
1.968	-3.380	-14.670	.7.760	.00710	.00100	.00080	.20620	.00450	.02130	.03970	.00000
1.968	-1.270	-09.690	.09500	.00790	.00040	.00020	.23240	.00460	.02210	.03680	.00000
1.968	.860	.03780	-.01310	.00680	.00010	-.00010	.20210	.00490	.02320	.03660	.00000
1.968	2.800	.12190	-.05990	.00770	-.00130	-.00030	.20110	.00500	.02360	.03790	.00000
1.968	4.860	.20320	-.09490	.00850	-.00210	-.00050	.19680	.00510	.02410	.03520	.00000
1.968	7.080	.28020	-.13090	.00910	-.00280	-.00080	.19350	.00530	.02500	.03430	.00000
1.968	9.200	.35260	-.16440	.00970	-.00350	-.00100	.19090	.00540	.02540	.03290	.00000
1.968	11.080	.41450	-.19670	.00980	-.00360	-.00100	.19170	.00560	.02740	.03140	.00000
1.968	.860	.03360	-.01020	.00810	-.00000	.00000	.19610	.00470	.02230	.03790	.00000
GRADIENT	.04220	-.02096	-.02001	.0001	-.00036	-.00013	-.00058	.00007	.00032	-.00031	.00000

RUN NO. 1/ 0 RWL = 4.49 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
2.980	-7.360	-.28800	.11600	-.01540	.00640	-.00590	.20190	.00260	.01240	.02260	.00000
2.980	-5.350	-.19720	.08060	-.01650	.00780	-.00540	.19260	.00260	.01220	.02250	.00000
2.980	-3.280	-.13730	.06840	-.01500	.00640	-.00300	.16740	.00260	.01290	.02290	.00000
2.980	-1.280	-.07910	.04480	-.01370	.00590	-.00300	.16200	.00270	.01290	.02210	.00000
2.980	.770	-.01400	.02180	-.01340	.00590	-.00270	.17920	.00260	.01340	.02060	.00000
2.980	2.840	.06870	-.00950	-.01200	.00510	-.00260	.17310	.00300	.01480	.02030	.00000
2.980	4.970	.11690	-.03300	-.01300	.00310	-.00200	.17130	.00310	.01490	.02020	.00000
2.980	6.620	.16210	-.05920	-.01090	.00240	-.00150	.16840	.00330	.01560	.01910	.00000
2.980	8.910	.20310	-.08120	-.01090	.00110	-.00170	.16430	.00330	.01570	.01850	.00000
2.980	.770	-.01630	-.02260	-.01340	.00590	-.00270	.17990	.00260	.01330	.02040	.00000
GRADIENT	.09124	-.01232	-.01050	.00040	-.00041	.00015	-.00200	.00006	.00029	-.00032	.00000

RUN NO. 2/ 0 RWL = 6.95 GRADIENT INTERVAL = -7.00/ 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CEL	CAF	QBO	CBO	CABT	CABS
3.479	-9.560	-.31200	.12940	-.01460	.00710	-.00330	.20670	.00210	.01000	.01630	.00000
3.479	-7.430	-.22600	.10740	-.01350	.00870	-.00310	.19920	.00210	.01000	.01650	.00000
3.479	-5.370	-.16660	.08440	-.01410	.00640	-.00260	.19210	.00200	.00940	.01640	.00000
3.479	-3.330	-.13590	.06600	-.01400	.00590	-.00290	.18260	.00200	.00970	.01770	.00000
3.479	-1.290	-.07560	.04440	-.01360	.00530	-.00260	.17640	.00230	.01020	.01730	.00000
3.479	.770	-.01940	.02360	-.01270	.00400	-.00220	.17060	.00230	.01090	.01610	.00000
3.479	2.870	.04370	-.00260	-.01160	.00360	-.00200	.16840	.00240	.01140	.01560	.00000
3.479	4.870	.10000	-.02260	-.01040	.00320	-.00200	.16340	.00250	.01180	.01520	.00000
3.479	.860	.02639	-.01050	.00037	-.00040	.00025	-.00266	.00005	.00025	-.00033	.00000

MSFC 579 (1A37) (094) (114) (U7)

(R86003) (31 AUG 73)

REFERENCE DATA

XREF = 6.1600 IN. XREF = 2.7500 IN.
 YREF = 5.1600 IN. YREF = .0000 IN.
 ZREF = 5.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORBINC = .000
 DELTAZ = 30.000

RUN NO. 3/0 RWL = 5.20 GRADIENT INTERVAL = -7.00/ 7.00

INCH	ALPHA	ON	CLJ	C	CYN	CEL	CAF	CSO	CBO	CABO	CABT	CASS
4.889	-7.310	-.58060	.08630	-.01190	.00860	-.00170	.21370	-.00060	-.00370	.00680	.00680	.00000
4.926	-8.270	-.57250	.07860	-.01170	.00610	-.00140	.19390	.00060	.00310	.00630	.00630	.00000
4.969	-3.250	-.52280	.05960	-.01590	.00640	-.00190	.16360	.00070	.00370	.00680	.00680	.00000
4.989	-1.250	-.07750	.04360	-.02900	.00900	-.00190	.16920	.00080	.00370	.00640	.00640	.00000
4.999	.780	-.05130	.02960	-.01360	.00190	-.00160	.16400	.00060	.00410	.00680	.00680	.00000
4.977	2.760	.01810	.01360	-.01310	.00390	-.00140	.15720	.00080	.00420	.00560	.00560	.00000
4.999	4.840	.06360	-.00190	-.01300	.00290	-.00160	.15400	.00090	.00430	.00540	.00540	.00000
4.999	6.860	.10960	-.01790	-.01090	.00170	-.00130	.14640	.00090	.00450	.00500	.00500	.00000
4.999	8.860	.16310	-.03700	-.01260	.00290	-.00110	.14110	.00090	.00450	.00460	.00460	.00000
4.999	.760	-.02790	.02860	-.01310	.00390	-.00040	.16610	.00090	.00490	.00560	.00560	.00000
GRADIENT		.02922	-.00777	.00051	-.00047	.0002	-.00377	.00002	.00010	-.00012	-.00012	.00000

TABULATED SOURCE DATA, NSFC 579-360 (1A-37,1A48)

DATE 18 SEP 73

NSFC 579 (1A37) (084) (71.4) (U7)

(080004) (31 AUG 73)

PARAMETRIC DATA

ALPHA = -9.000 ORIGIN = .000
DELTA Z = 30.000

REFERENCE DATA

NSFC = 6.1800 84. IN. ZMRP = 2.7200 IN.
LREF = 8.1803 IN. YMRP = .0000 IN.
NSFC = 8.1800 IN. ZMRP = .0000 IN.
SCALE = .0040

RUN NO. 95 / 0 RVL = 6.98 GRADIENT INTERVAL = -7.00 / 7.00

MACH	BETA	CH	CLM	CY	CYN	CEL	CAF	CSO	CBO	CST	CBS
1.000	-10.340	-.2190	.0860	-.0750	-.1040	.0870	.2040	.0080	.0280	.0490	.0000
1.000	-8.270	-.2100	.0860	.3450	-.1460	.0870	.2010	.0080	.0280	.0480	.0000
1.000	-6.070	-.2060	.1000	.2830	-.1040	.0330	.2040	.0080	.0270	.0480	.0000
1.000	-5.930	-.2050	.1040	.1800	-.0840	.0340	.2040	.0080	.0270	.0480	.0000
1.000	-1.760	-.2070	.1090	.0860	-.0800	.0340	.2040	.0080	.0270	.0480	.0000
1.000	.410	-.2100	.1140	-.0040	.0050	-.0180	.2040	.0080	.0270	.0480	.0000
1.000	2.880	-.2170	.1170	-.0970	.0400	-.0180	.2040	.0080	.0270	.0480	.0000
1.000	4.720	-.2180	.1180	-.1930	.0760	-.0180	.2040	.0080	.0270	.0480	.0000
1.000	6.800	-.2190	.1180	-.2900	.1140	-.0440	.2040	.0080	.0270	.0480	.0000
1.000	9.140	-.2200	.1190	-.4070	.1560	-.0740	.2040	.0080	.0270	.0480	.0000
1.000	11.180	-.2240	.1190	-.5130	.2010	-.0960	.2040	.0080	.0270	.0480	.0000
1.000	.410	-.2290	.1190	-.0860	.0080	-.0220	.2040	.0080	.0270	.0480	.0000
GRADIENT		-.0006	.0036	-.0432	.0166	-.0316	.0008	-.0009	-.0001	.0002	.0000

RUN NO. 9 / 0 RVL = 4.87 GRADIENT INTERVAL = -7.00 / 7.00

MACH	BETA	CH	CLM	CY	CYN	CEL	CAF	CSO	CBO	CST	CBS
4.000	-1.710	-.1480	.0850	.2390	-.0850	.0340	.2010	.0080	.0280	.0710	.0000
4.000	-3.680	-.1510	.0850	.1890	-.0700	.0340	.1990	.0080	.0280	.0710	.0000
4.000	-3.680	-.1580	.0780	.1890	-.0430	.0340	.1990	.0080	.0280	.0710	.0000
4.000	-1.880	-.1640	.0780	.0390	-.0210	.0340	.1910	.0080	.0280	.0710	.0000
4.000	.480	-.1630	.0780	-.0190	.0050	-.0340	.1890	.0080	.0280	.0710	.0000
4.000	2.460	-.1640	.0780	-.0770	.0260	-.0190	.1890	.0080	.0280	.0710	.0000
4.000	4.540	-.1740	.0800	-.1470	.0330	-.0220	.1970	.0080	.0280	.0710	.0000
4.000	6.980	-.1740	.0740	-.2170	.0790	-.0320	.2060	.0080	.0280	.0710	.0000
4.000	9.980	-.1870	.0720	-.2830	.1040	-.0410	.2040	.0080	.0280	.0710	.0000
4.000	.440	-.1990	.0700	-.0180	.0040	-.0330	.1890	.0080	.0280	.0710	.0000
GRADIENT		-.0014	.0009	-.0316	.0120	-.0048	.0004	-.0004	-.0001	.0006	.0000

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MPFC 379 (1A37) (054) (714) (077)

(088008) (31 AUG 73)

REFERENCE DATA

ORF = 6.150 08. IN. 198P = 2.7500 IN.
 L98P = 3.1600 7H. 198P = .0000 IN.
 BRP = 5.1600 IN. 298P = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
 DELTA Z = 30.000

RUN NO. 50/ 0 RVAL = 6.96 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	ON	CLM	CY	CYN	CEL	CAF	CSO	CASO	CAST	CABS
1.96E	-10.360	.0282	-.01467	-.48863	-.17980	.08050	.19400	.00960	.09150	.04680	.00000
1.96E	-8.860	.00780	-.01280	-.37860	-.13980	.06950	.19540	.00820	.02280	.04400	.00000
1.96E	-6.080	.01360	-.01130	-.27160	-.09780	.04680	.19720	.03560	.02740	.04010	.00000
1.96E	-3.890	.01600	-.00980	-.17330	-.05930	.02950	.20080	.00750	.06820	.04080	.00000
1.96E	-1.770	.01360	-.00880	-.06960	-.02800	.01360	.20080	.00460	.02460	.04100	.00000
1.96E	.410	.01140	-.00810	.00100	.00000	-.00000	.20000	.00480	.02290	.03970	.00000
1.96E	2.370	.00700	-.00480	-.08250	.03350	-.01900	.19910	.00310	.02440	.04300	.00000
1.96E	4.790	.01210	.00070	-.16880	.02860	-.02960	.20060	.00540	.02540	.04160	.00000
1.96E	6.800	.00890	.00160	-.26150	.06150	-.04900	.19830	.00370	.02720	.04820	.00000
1.96E	9.140	.00000	.00000	-.37820	.13440	-.08360	.19800	.00810	.02970	.04660	.00000
1.96E	11.120	-.02870	.00190	-.47730	.17970	-.07930	.19260	.00860	.03080	.04680	.00000
1.96E	.410	.01140	.00140	.07230	.00160	-.00190	.19640	.00460	.02300	.03960	.00000
GRADIENT	-.00009	.00087	-.04054	.01422	-.00086	.00002	.00002	-.00071	-.00004	.00037	.00000

RUN NO. 5/ 0 RVAL = 6.29 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	ON	CLM	CY	CYN	CEL	CAF	CSO	CASO	CAST	CABS
3.479	-7.980	-.02210	.01410	.26080	-.10180	.04820	.18010	.00280	.01330	.01680	.00000
3.479	-5.800	-.02680	.02040	.20080	-.07210	.03050	.17770	.00260	.01230	.01770	.00000
3.479	-3.710	-.03440	.02980	.13000	-.04980	.01960	.17630	.00130	.01200	.01780	.00000
3.479	-1.660	-.03630	.03080	.06040	-.02050	.00860	.17370	.00040	.01150	.01760	.00000
3.479	.450	-.03680	.03120	-.01540	.00980	-.00250	.17410	.00040	.01160	.01670	.00000
3.479	2.920	-.04000	.03310	-.06770	.03130	-.01400	.17380	.00270	.01280	.01760	.00000
3.479	4.980	-.03810	.03340	-.16100	.02640	-.02300	.17590	.00260	.01380	.01710	.00000
3.479	6.750	-.03860	.02450	-.23470	.06430	-.03680	.17780	.00280	.01340	.01710	.00000
3.479	8.680	-.02860	.01940	-.31400	.11280	-.04600	.18040	.00290	.01380	.01740	.00000
3.479	.460	-.03680	.03190	-.01780	.00980	-.00360	.17410	.00230	.01200	.01680	.00000
GRADIENT	-.00043	.00055	-.03487	.01242	-.00036	-.00002	.00002	.00003	.01012	-.00007	.00000

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TABULATED SOURCE DATA, NPFC 579-900 (IA-37, 1A48)

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NPFC 579 (IA37) (034) (T14) (U7)

(000000) (31 AUG 73)

REFERENCE DATA

XREF = 6.1000 IN. XREF = 2.7500 IN.
 YREF = 5.1000 IN. YREF = .0000 IN.
 ZREF = 5.1000 IN. ZREF = .0000 IN.
 SCALE = .0040

ALPHA = .000 ORBINC = .000
 DELTAZ = 30.000

PARAMETRIC DATA

BLK NO. 4/ 0 REV. = 5.05 GRADIENT INTERVAL = -7.00/ 7.00

WAVE	BETA	CH	CLM	CY	CYN	CSL	CAF	CBO	CBO	CMT	CAB
4.889	-7.700	-0.0000	.01600	.22740	-.00000	.00410	.17760	.00000	.00410	.00000	.00000
4.979	-9.600	-.00040	.02000	.16970	-.00000	.02000	.17340	.00000	.00430	.00000	.00000
4.089	-9.610	-.00040	.02000	.10100	-.00000	.01530	.17010	.00000	.00460	.00000	.00000
4.859	-1.600	-.00000	.02040	.04480	-.01000	.00640	.16790	.00000	.00410	.00000	.00000
4.909	-.400	-.00010	.02140	-.01530	.00000	-.00000	.16940	.00000	.00410	.00000	.00000
4.909	2.400	-.00070	.02110	-.07950	.00000	-.00000	.16700	.00000	.00430	.00000	.00000
4.909	4.940	-.01400	.02400	-.13000	.04710	-.00000	.17470	.00000	.00440	.00000	.00000
4.909	6.570	-.00000	.02000	-.19750	.00000	-.00000	.17630	.00000	.00460	.00000	.00000
4.909	8.500	-.00000	.02440	-.26400	.00000	-.00000	.16200	.00000	.00440	.00000	.00000
4.909	4.500	-.00000	.03000	-.01000	.00000	-.00000	.16540	.00000	.00440	.00000	.00000
4.909	4.500	.00000	.00000	-.00000	.00000	-.00000	.00000	.00000	.00000	.00000	.00000
4.909	4.500	.00000	.00000	-.00000	.00000	-.00000	.00000	.00000	.00000	.00000	.00000

GRADIENT

REFERENCE DATA

XREF = 9.1600 56. IN. XREF = 2.7500 IN.
 YREF = 9.1600 IN. YREF = .0000 IN.
 ZREF = 9.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

ALPHA = 5.000 ORBINC = .000
 DELTAZ = 30.000

PARAMETRIC DATA

RUN NO. 54/ 0 RVL = 6.86 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CEL	CAF	ORBO	CABO	CABT	CARS
1.988	-10.400	.24100	-.12850	.47800	-.16910	.07120	.16960	.00730	.03530	.04380	.00000
1.988	-8.270	.22850	-.11800	.36940	-.12960	.05600	.16820	.00660	.03210	.04210	.00000
1.988	-8.080	.22720	-.11330	.36870	-.08720	.05630	.16230	.00630	.02980	.03980	.00000
1.988	-3.840	.22630	-.10940	.36830	-.09190	.02440	.19680	.00590	.02760	.03960	.00000
1.988	-1.770	.22410	-.10630	.36810	-.02490	.21130	.19630	.00590	.02590	.03720	.00000
1.998	.400	.22350	-.10310	.36510	-.00090	-.00060	.19760	.00530	.02530	.03540	.00000
1.998	2.370	.21930	-.10240	.36490	.02490	-.01380	.19240	.00590	.02630	.03630	.00000
1.998	4.720	.22040	-.10250	.36470	.04700	-.02470	.19340	.00590	.02910	.03750	.00700
1.999	6.860	.22440	-.10330	.36250	.07680	-.03630	.19360	.00640	.03010	.04040	.00000
1.998	9.130	.22340	-.10260	.36230	.11530	-.05410	.18760	.00690	.03260	.04260	.00000
1.998	11.130	.22180	-.11080	.36200	.15080	-.06880	.18320	.00740	.03320	.04430	.00000
1.998	.410	.22170	-.10370	.36270	.00000	-.00170	.19260	.00620	.02470	.07480	.00000
GRADIENT		-.00041	.00079	-.03619	.01216	-.00367	-.00010	.00001	.00003	-.00004	.00000

RUN NO. 7/ 0 RVL = 4.97 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CEL	CAF	ORBO	CABO	CABT	CARS
4.998	-7.780	.10840	-.02710	.21270	-.07080	.03230	.13640	.00130	.00600	.00590	.00000
4.998	-5.630	.09400	-.01910	.19230	-.04980	.02390	.15550	.00130	.00680	.00580	.00000
4.998	-3.610	.08350	-.01600	.09810	-.03070	.01530	.15440	.00080	.00310	.00380	.00000
4.998	-1.600	.08410	-.01140	.04190	-.01290	.00670	.15100	.00120	.00980	.00590	.00000
4.998	.490	.07960	-.00810	-.01500	.00380	-.00260	.15020	.00130	.00860	.00590	.00000
4.998	2.480	.08130	-.01030	-.06840	.02140	-.01090	.14940	.00130	.00630	.00610	.00000
4.998	4.530	.08790	-.01990	-.12200	.03790	-.01910	.13240	.00130	.00680	.00600	.00000
4.998	6.580	.09810	-.01890	-.17640	.05370	-.02730	.15470	.00140	.00680	.00600	.00000
4.998	8.540	.10820	-.02790	-.24240	.07750	-.03650	.15710	.00140	.00680	.00600	.00000
4.998	.420	.07880	-.00900	-.01300	.00340	-.00240	.15190	.00140	.00680	.00600	.00000
GRADIENT		-.00002	.00010	-.02689	.00951	-.00420	-.00021	.00003	.00014	.00002	.00000

NSPC 579 (IA37) (CS4) (T9) (S12)

(R00007) (31 AUG 75)

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTAZ = 30.000

REFERENCE DATA

SNIP = 6.1600 IN. YMRP = 2.7200 IN.
LNEP = 9.1600 IN. YMRP = .0000 IN.
SNIP = 9.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

RUN NO. 46/ 0 RWL = 4.95 GRADIENT INTERVAL = -7.00/ 7.00

SNIP	ALPHA	CN	CLM	CY	CYN	CEL	CAF	CHSO	CASO	CABT	CABS
.500	-6.370	-6.2700	.2700	.00000	-.00180	.07130	.07140	.03480	.03480	.09410	.09070
.500	-7.410	-7.3100	.21470	.00060	-.00170	.08640	.08640	.03330	.03330	.09080	.09080
.500	-8.380	-8.2800	.19530	.00750	-.00140	.09640	.09640	.03340	.03340	.08700	.08690
.500	-9.290	-9.1900	.17500	.00880	-.00160	.09350	.09350	.03350	.03350	.08910	.08910
.500	-1.250	-1.1700	.06170	.00670	-.00110	.09410	.09410	.03320	.03320	.08650	.08650
.500	.690	-.0590	.04340	.00680	-.00040	.09410	.09410	.03400	.03400	.08410	.08410
.500	2.890	.0680	.02680	.00570	-.00010	.08720	.08720	.03350	.03350	.08800	.08800
.500	5.000	.18000	-.03330	.00460	-.00010	.08210	.08210	.03360	.03360	.07980	.07980
.500	7.080	.30380	-.06360	.00340	-.00040	.06980	.06980	.03370	.03370	.07280	.07280
.500	9.140	.42700	-.13770	.00210	-.00040	.05980	.05980	.03380	.03380	.06640	.06640
.500	11.080	.54450	-.18880	.00170	-.00150	.05130	.05130	.03390	.03390	.05980	.05980
.500	.690	-.0590	.04340	.00150	-.00150	.04410	.04410	.03600	.03600	.04820	.04820
GRADIENT	.09510	-.01967	-.01028	.00330	.00532	-.00054	-.00002	-.00013	-.00013	.00078	-.00052

RUN NO. 45/ 0 RWL = 6.21 GRADIENT INTERVAL = -7.00/ 7.00

SNIP	ALPHA	CN	CLM	CY	CYN	CEL	CAF	CHSO	CASO	CABT	CABS
.500	-9.850	-9.7500	.27500	.00250	.00440	-.00190	.11020	.00910	.03850	.09410	.09070
.500	-7.970	-7.8700	.25340	.00430	.07910	-.00160	.11400	.00920	.03970	.09080	.09080
.500	-8.480	-8.3800	.17960	.00480	.07260	-.00110	.12190	.00780	.03700	.08470	.08460
.500	-9.360	-9.2600	.15970	.00550	.06830	-.00130	.12370	.00770	.03620	.08340	.08340
.500	-1.280	-1.1800	.07680	.00270	.00770	-.00210	.12140	.00740	.03510	.08480	.08480
.500	.970	-.0210	.03000	.00510	.00770	-.00150	.11980	.00730	.03470	.08210	.08210
.500	3.000	.10990	-.02810	.00330	.00490	-.00030	.11620	.00750	.03460	.08280	.08280
.500	5.180	.22740	-.06590	.00350	.00450	-.00100	.11600	.00750	.03530	.08370	.08370
.500	7.340	.34460	-.11480	.00430	.00380	-.00050	.11490	.00750	.03540	.08080	.08080
.500	9.370	.45980	-.15465	.00450	.00390	-.00140	.11250	.00760	.03580	.07990	.07990
.500	11.250	.56990	-.19460	.00360	.00440	-.00140	.10630	.00770	.03630	.07900	.07900
.500	.690	-.0590	.04340	.00490	.00790	-.00190	.12960	.00750	.03530	.08270	.08270
GRADIENT	.06015	-.02546	-.00012	.00048	.00012	.00004	-.00059	-.00004	-.00019	-.00014	-.00049

0800077 (31 AUG 73)

NSPC 579 (IA37) (254) (79) (812)

PARAMETRIC DATA

BETA = .000 CRIBINC = .000
DELTA Z = 30.000

REFERENCE DATA

WREF = 0.1000 IN. YREF = 2.7000 IN.
LREF = 0.1000 IN. ZREF = .0000 IN.
SREF = 0.1000 IN. ZREF = .0000 IN.
SCALE = .0040

RUN NO. 44/ 0 RWL = 6.97 GRADIENT INTERVAL = -7.00/ 7.00

WICH	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CSO	CBO	CABT	CABS
1.101	-9.780	-71.880	.89880	.00980	.00100	-.00090	.22310	.00980	.04840	.00880	.07080
1.102	-7.730	-.89880	.29780	.00980	.00080	-.00080	.23040	.00970	.04890	.00980	.06700
1.101	-9.910	-.41960	.19570	.00120	-.00110	-.00010	.23580	.00980	.04880	.00980	.06480
1.101	-3.380	-.29160	.13880	.00980	.00080	-.00070	.23890	.01000	.04740	.09170	.06340
1.101	-1.250	-.14960	.09340	.00910	.00080	-.00110	.23300	.01010	.04780	.08870	.06870
1.101	.580	.00140	.02270	.00160	.00080	-.00080	.23320	.01020	.04820	.08800	.08070
1.101	3.070	.15080	-.04450	.00140	.00080	-.00140	.22740	.01040	.04890	.08720	.08100
1.101	5.580	.28280	-.09380	.00010	.00080	-.00080	.22370	.01050	.04980	.08600	.08190
1.101	7.980	.40710	-.15110	-.00440	.00080	-.00120	.21670	.01060	.04980	.08100	.08440
1.101	9.980	.52070	-.21690	-.00400	.00070	-.00120	.20870	.01070	.05080	.07840	.08810
1.101	11.440	.62000	-.28100	-.00070	.00110	-.00130	.20110	.01080	.05100	.07540	.09010
1.101	.980	.00000	-.02960	.00080	.00080	-.00180	.20180	.01080	.04980	.08870	.08110
1.101	.08000	.00000	-.00000	.00000	.00000	-.00000	-.00000	.00000	.00000	-.00000	-.00000

RUN NO. 47/ 0 RWL = 6.46 GRADIENT INTERVAL = -7.00/ 7.00

WICH	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CSO	CBO	CABT	CABS
1.404	-9.470	-.89920	.29640	-.00480	.00080	-.00040	.23980	.00780	.03640	.00880	.04480
1.404	-7.780	-.89920	.19130	-.00480	.00080	-.00040	.23940	.00780	.03680	.00900	.04480
1.404	-6.230	-.34970	.12980	.00120	.00210	-.00160	.24800	.00710	.03340	.00890	.04080
1.404	-5.400	-.21940	.07140	.00040	.00210	-.00160	.25240	.00710	.03480	.00870	.04080
1.404	-1.200	-.08000	.01950	-.00210	.00000	-.00160	.25870	.00720	.03400	.00870	.04110
1.404	.980	.08830	-.03550	-.00160	.00000	-.00140	.26440	.00710	.03380	.00880	.04140
1.404	3.080	.19300	-.06470	-.00120	.00000	-.00140	.26420	.00740	.03480	.00880	.04080
1.404	5.830	.31180	-.12750	-.00190	.00000	-.00130	.26210	.00760	.03600	.00880	.04180
1.404	7.400	.43010	-.18870	-.00190	.00040	-.00120	.25990	.00760	.03610	.00880	.04240
1.404	9.580	.54870	-.24470	-.00060	.00400	-.00120	.25470	.00780	.03680	.00880	.04190
1.404	11.580	.66800	-.31300	-.00000	.00910	-.00070	.25250	.00780	.03680	.00880	.04110
1.404	.980	.08830	-.03560	.00130	.00000	-.00170	.25340	.00780	.03480	.00870	.04110
1.404	.08000	.00000	-.00000	-.00000	.00000	.00000	.00000	.00000	.00000	-.00000	.00000

MFPC 579 (IA37) (004) (T9) (812)

REFERENCE DATA

STEP = 0.1600 IN. XMP = 2.7500 IN.
LWUP = 9.1600 IN. YMP = 0.0000 IN.
BREP = 9.1600 IN. ZMP = 0.0000 IN.
SCALE = .0040

PARAMETRIC DATA

BETA = .000 CRIBINC = .000
DELTAZ = 90.000

NUM NO. 50/ 0 RVL = 7.00 GRADIENT INTERVAL = -7.00/ 7.00

NUM	ALPHA	CN	CLM	CY	CYN	CEL	CAF	CBO	CBO	CABT	CABS
1.999	-9.680	-0.8780	0.22540	0.00010	0.00330	-0.00160	0.81330	0.05980	0.05350	0.04670	0.02900
1.999	-7.800	-0.69640	0.17210	0.00110	0.00260	-0.00170	0.25980	0.05660	0.05680	0.04590	0.02970
1.999	-5.600	-0.30180	0.12480	0.00100	0.00250	-0.00140	0.25980	0.05660	0.06770	0.04410	0.02790
1.999	-3.450	-0.25160	0.08250	0.00190	0.00160	-0.00210	0.25440	0.05660	0.06730	0.04310	0.02770
1.999	-1.280	-0.11080	0.04170	0.00010	0.00330	-0.00210	0.25060	0.05660	0.06730	0.03900	0.02760
1.999	.000	0.01950	-0.00400	0.00170	0.00330	-0.00250	0.24970	0.05660	0.06730	0.03970	0.02670
1.999	3.080	0.16780	-0.09640	0.00190	0.00330	-0.00250	0.24970	0.05660	0.06730	0.03950	0.02530
1.999	5.210	0.27110	-0.10980	0.00210	0.00330	-0.00250	0.24970	0.05660	0.06730	0.03950	0.02540
1.999	7.360	0.39480	-0.14310	0.00250	0.00330	-0.00180	0.24950	0.05660	0.06710	0.03820	0.02390
1.999	9.560	0.51700	-0.19340	0.00300	0.00330	-0.00130	0.24310	0.05660	0.06710	0.03500	0.02430
1.999	11.960	0.62280	-0.26030	0.00330	0.00330	-0.00130	0.24280	0.05660	0.06680	0.03470	0.02350
1.999	.000	0.01210	-0.02170	0.00330	0.00330	-0.00010	0.24280	0.05660	0.06680	0.03470	0.02350
1.999	0.000	0.03780	-0.02134	0.00007	0.00010	-0.00002	-0.00009	0.00003	0.00014	-0.00002	-0.00040

GRADIENT

NUM NO. 60/ 0 RVL = 9.00 GRADIENT INTERVAL = -7.00/ 7.00

NUM	ALPHA	CN	CLM	CY	CYN	CEL	CAF	CBO	CBO	CABT	CABS
4.999	-9.210	-0.39140	0.14480	0.00460	-0.00080	0.00280	0.25040	0.00080	0.05990	0.03880	0.02570
4.999	-7.280	-0.32970	0.12210	0.00330	-0.00100	0.00300	0.24010	0.00290	0.05700	0.03690	0.02560
4.999	-5.210	-0.25710	0.10430	0.00260	-0.00110	-0.00280	0.23330	0.00300	0.04600	0.03680	0.02570
4.999	-3.200	-0.18460	0.08330	0.00260	-0.00130	-0.00240	0.21910	0.00380	0.04500	0.03470	0.02540
4.999	-1.160	-0.11280	0.06440	0.00260	-0.00000	-0.00000	0.20770	0.00100	0.04480	0.03480	0.02510
4.999	.000	-0.04650	0.04640	0.00260	0.00000	0.00010	0.20070	0.00100	0.04470	0.03480	0.02490
4.999	2.910	0.01260	0.02780	0.00260	0.00000	-0.00040	0.19400	0.00100	0.04480	0.03480	0.02480
4.999	4.860	0.09180	0.00900	0.00260	0.00000	-0.00010	0.18790	0.00100	0.04480	0.03480	0.02450
4.999	6.970	0.18930	-0.02330	0.00110	0.00000	-0.00050	0.18110	0.00100	0.04480	0.03480	0.02450
4.999	9.080	0.24640	-0.05000	0.00130	0.00000	-0.00040	0.17590	0.00100	0.04480	0.03480	0.02450
4.999	10.960	0.32910	-0.07980	0.00150	0.00000	-0.00010	0.17100	0.00100	0.04480	0.03480	0.02450
4.999	.000	-0.02080	0.04680	0.00000	-0.00010	-0.00010	0.20020	0.00100	0.04480	0.03480	0.02450
4.999	.000	0.03456	-0.01022	-0.00007	0.00017	-0.00000	-0.00003	0.00001	0.00004	-0.00003	-0.00010

GRADIENT

DEPENDENT DATA

WREF = 6.1800 IN. IN. WREF = 2.7500 IN.
 LREF = 5.1620 IN. IN. LREF = .0000 IN.
 SREF = 5.1600 IN. IN. SREF = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
 DELTAZ = 30.000

RUN NO. 42/ 0 RWL = 4.95 GRADIENT INTERVAL = -7.00V 7.00

WACH	BETA	CH	CLM	CY	CYN	CEL	CAF	CEO	CBO	CABT	CAB8
.896	-.400	-.07600	0.1880	.00960	.00000	.00100	.09040	.00710	.00370	.08740	.04300
.896	-8.740	-.04150	.32180	.37240	-.19000	.05780	.08780	.00970	.04100	.09000	.05000
.896	-7.810	-.08440	.02780	.30740	-.13460	.04800	.07490	.00660	.03860	.07980	.04610
.896	-8.770	-.08530	.03440	.25060	-.10180	.03580	.08000	.00780	.03600	.07500	.04340
.896	-3.700	-.08820	.08810	.15580	-.06800	.02250	.08000	.00750	.03430	.07100	.04580
.896	-1.630	-.07380	.04440	.08640	-.03750	.01180	.08650	.00700	.03330	.07130	.04380
.896	.400	-.07830	.04810	.00880	.00910	.00000	.05450	.00680	.03280	.06810	.04400
.896	2.430	-.07860	.04890	-.01430	.00950	-.01190	.10070	.00670	.03180	.06410	.04080
.896	4.500	-.07240	.04680	-.14780	.07240	-.02560	.08450	.00740	.03520	.07040	.04040
.896	6.570	-.07870	.04630	-.22260	.10800	-.03710	.09350	.00760	.03800	.07460	.04000
.896	8.650	-.07200	.04080	-.30160	.13480	-.04880	.08590	.00630	.03910	.07660	.04100
.896	10.470	-.07430	.04080	-.37080	.16450	-.05930	.08070	.00600	.04230	.08310	.04180
GRADIENT		-.00080	.00080	-.03741	.01725	-.00386	.00126	-.00000	.00001	-.00017	-.00054

RUN NO. 41/ 0 RWL = 6.19 GRADIENT INTERVAL = -7.00V 7.00

WACH	BETA	CH	CLM	CY	CYN	CEL	CAF	CEO	CBO	CABT	CAB8
.897	-8.960	-.02800	.01850	.48330	-.18750	.08960	.08770	.00860	.04840	.00780	.06150
.897	-7.960	-.02830	.01670	.35820	-.18130	.09800	.10000	.00860	.04080	.00810	.05860
.897	-5.890	-.02460	.01400	.28850	-.12820	.04330	.11100	.00840	.03980	.00130	.05470
.897	-3.780	-.02650	.01750	.18700	-.08860	.09080	.11670	.00850	.03850	.00130	.04830
.897	-1.690	-.02850	.02220	.10060	-.04780	.01810	.12170	.00800	.03170	.07920	.04680
.897	.400	-.04020	.02910	.00810	.00130	.00040	.11950	.00750	.03470	.08320	.04450
.897	2.480	-.05750	.02400	-.09090	.03040	-.01330	.12690	.00770	.03680	.07980	.03990
.897	4.560	-.03500	.02130	-.17370	.08110	-.02960	.12420	.00810	.03840	.08270	.04130
.897	6.650	-.03480	.02210	-.26450	.13260	-.01480	.12880	.00860	.04080	.08630	.04060
.897	8.750	-.04040	.03010	-.34880	.16740	-.05740	.12030	.00910	.04320	.08630	.04010
.897	10.640	-.05680	.03800	-.41360	.19050	-.08950	.12960	.00980	.04680	.08710	.03940
.897	.990	-.03200	.02950	.00840	.00080	-.00080	.12460	.00740	.03300	.08210	.04530
GRADIENT		-.00068	.00038	-.04302	.02116	-.00712	.00116	-.00000	-.00002	.00032	-.00107

TABULATED SOURCE DATA, NPFC 579-360 (IA-37,1A48)

0940008 (31 AUG 72)

NPFC 579 (IA37) (254) (T9) (812)

DATE 18 SEP 73

PARAMETRIC DATA

ALPHA = .000 CRBINC = .030
DELTAZ = 30.000

REFERENCE DATA

WREF = 0.1000 SR.IN. WREF = 2.7500 IN.
LREF = 0.1000 IN. YREF = .0000 IN.
ZREF = 0.1000 IN. ZREF = .0000 IN.
SCALE = .0040

RUN NO. 45/ 0 RWL = 6.56 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CEL	CAF	CRBO	CRBO	CABT	CABS
1.000	-10.120	.00000	.00000	-49710	-.10000	.00010	.21040	.01130	.05320	.09130	.00270
1.000	-6.080	.00000	.00000	-34710	-.15000	.00000	.22040	.01100	.00210	.00340	.00440
1.000	-5.000	.00000	.00000	-27750	-.12500	.00040	.22570	.01090	.05000	.00000	.00000
1.000	-3.800	.00000	.00000	-18000	-.08000	.00000	.22000	.01050	.04070	.00000	.00430
1.000	-1.700	.00000	.00000	-08000	-.04000	.00000	.22000	.01040	.04000	.00000	.00000
1.000	.000	.00000	.00000	.00000	.00000	-.00000	.22000	.01000	.04000	.00000	.00000
1.000	2.310	.00000	.00000	.00000	.00000	-.00000	.22000	.01000	.04000	.00000	.00000
1.000	4.810	.00000	.00000	-.10000	.00000	-.00000	.22000	.01110	.00000	.00000	.00000
1.000	6.750	.00000	.00000	-.27000	.00000	-.00000	.22000	.01140	.00000	.00000	.00000
1.000	8.900	.00000	.00000	-.30000	.10000	-.07000	.22000	.01190	.00000	.00000	.00000
1.000	10.900	.00000	.00000	-.45000	.10000	-.07000	.22000	.01000	.00000	.00000	.00000
1.000	.000	.00000	.00000	.00000	.00000	-.00000	.22000	.00000	.00000	.00000	.00000
GRADIENT		.00000	.00000	-.04000	.00000	-.00000	.00000	.00000	.00000	.00000	-.00000

RUN NO. 46/ 0 RWL = 6.45 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CEL	CAF	CRBO	CRBO	CABT	CABS
1.400	-10.200	.00000	.00000	-40000	-.10000	.07000	.22000	.00000	.04000	.00000	.00000
1.400	-6.100	.00000	.00000	-30000	-.14000	.00000	.22000	.00000	.00000	.00000	.00000
1.400	-5.000	.00000	.00000	-20000	-.10000	.04000	.22000	.00000	.00000	.00000	.00000
1.400	-3.800	.00000	.00000	-10000	-.08000	.00000	.22000	.00000	.00000	.00000	.00000
1.400	-1.700	.00000	.00000	-.00000	-.00000	.00000	.22000	.00000	.00000	.00000	.00000
1.400	.000	.00000	.00000	.00000	.00000	-.00000	.22000	.00000	.00000	.00000	.00000
1.400	2.300	.00000	.00000	.00000	.00000	-.00000	.22000	.00000	.00000	.00000	.00000
1.400	4.800	.00000	.00000	-.10000	.00000	-.00000	.22000	.00000	.00000	.00000	.00000
1.400	6.700	.00000	.00000	-.20000	.00000	-.00000	.22000	.00000	.00000	.00000	.00000
1.400	8.900	.00000	.00000	-.30000	.10000	-.00000	.22000	.00000	.00000	.00000	.00000
1.400	10.900	.00000	.00000	-.40000	.10000	-.00000	.22000	.00000	.00000	.00000	.00000
1.400	.000	.00000	.00000	.00000	.00000	-.00000	.22000	.00000	.00000	.00000	.00000
GRADIENT		.00000	.00000	-.04000	.00000	-.00000	.00000	.00000	.00000	.00000	-.00000

H87C ST9 (IA37) (284) (79) (812)

REFERENCE DATA

SIZE = 6.1600 IN. XZPP = 2.7600 IN.
 LAMP = 5.1600 IN. YZPP = .0000 IN.
 WIRE = 9.1600 IN. ZPP = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = .000 CRDINC = .000
 DELTAZ = 30.000

RUN NO. 487 0 REV. = 7.02 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CH	CLN	CY	CYN	CEL	CAF	CBO	CASO	CAS7	CABS
1.847	-10.280	-.00370	-.00310	.46780	-.11940	.04480	.84980	.00680	.03600	.04170	.02120
1.847	-9.180	-.00280	-.00250	.36870	-.11070	.04980	.24730	.00680	.03120	.03600	.02230
1.847	-8.010	-.00270	-.00210	.26810	-.11060	.05940	.25680	.00640	.03050	.03740	.02380
1.847	-6.860	-.00480	.00130	.17470	-.07230	.02150	.23950	.00620	.02780	.03790	.02650
1.847	-1.740	-.01870	.00690	.08260	-.05410	-.00970	.23560	.00810	.02870	.04070	.02740
1.847	.410	-.01150	.00690	-.00250	.00330	-.02040	.23950	.00800	.02860	.03680	.02960
1.847	2.590	-.00570	.00670	-.00960	.04030	-.01340	.23850	.00810	.02760	.03700	.02810
1.847	4.880	.00240	.00200	-.17480	.07730	-.02530	.26170	.00820	.02680	.03770	.02440
1.847	6.840	.00360	-.00310	-.27250	.11730	-.09950	.26720	.00850	.02600	.03980	.02390
1.847	9.040	.00430	-.00250	-.37610	.16130	-.08580	.26980	.00860	.02500	.04210	.02360
1.847	11.080	-.00480	-.00450	-.46320	.20470	-.07010	.26630	.00860	.02470	.04270	.02370
1.847	.410	-.01490	.00910	-.00900	.00280	-.00300	.25180	.00800	.02630	.03710	.02630
GRADIENT	.00070	.00004	-.04147	.01763	-.00870	.00001	.00047	.00001	.00002	.00003	-.00017

RUN NO. 567 0 REV. = 4.97 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CH	CLN	CY	CYN	CEL	CAF	CBO	CASO	CAS7	CABS
4.888	-9.880	-.05700	.04470	.31440	-.11980	.05970	.22130	.00380	.00480	.00380	.00380
4.888	-7.750	-.06180	.04680	.24230	-.08880	.02880	.21810	.00380	.00480	.00380	.00340
4.888	-6.670	-.06820	.04990	.18040	-.04980	.00980	.20950	.00380	.00430	.00330	.00400
4.888	-5.680	-.06970	.04680	.11620	-.04190	.01220	.20810	.00380	.00480	.00380	.00440
4.888	-1.620	-.06080	.04600	.05630	-.01910	.00580	.20240	.00380	.00430	.00340	.00490
4.888	.410	-.06150	.03200	.00280	.00230	-.00340	.20280	.00380	.00480	.00380	.00510
4.888	2.470	-.06970	.04780	-.06170	.02560	-.00950	.20250	.00100	.00490	.00350	.00500
4.888	4.480	-.06960	.05030	-.12340	.04810	-.01380	.20540	.00100	.00500	.00380	.00500
4.888	6.540	-.05730	.04770	-.18970	.07070	-.02410	.20960	.00110	.00580	.00380	.00490
4.888	8.980	-.05160	.04720	-.25970	.09380	-.03330	.22970	-.00170	-.00600	.00380	.00480
4.888	10.480	-.06280	.06130	-.32160	.12130	-.04220	.22170	.00090	.00430	.00380	.00510
4.888	.410	-.06960	.06290	.00250	.00160	.00160	.20300	.00090	.00410	.00340	.00500
GRADIENT	.00011	.00016	-.00000	.01108	-.00039	-.00001	-.00001	.00006	.00006	.00002	.00008

NSPC 579 (1A37) (034) (714) (312) (UN)

(038008) (28 AUG 73)

REFERENCE DATA

REF = 6.1900 SR.IN. XREF = 2.7800 IN.
LREF = 5.1600 IN. YREF = .0000 IN.
SREF = 5.1600 IN. ZREF = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

BETA = .000 CRIMEC = .000
DELTAZ = 30.000

RUN NO. 29/ 0 RWL = 5.01 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	CN	CLM	CY	CYN	CEL	CAF	CEO	CBO	CABT	CABS
.997	-9.560	-37030	.21260	.01690	-.00480	.00170	.11210	.00750	.03560	.06080	.04680
.997	-7.400	-46470	.17480	.01680	-.00450	.00150	.11680	.00760	.03580	.07670	.04680
.997	-5.320	-34780	.13310	.01430	-.00360	.00130	.12300	.00750	.03480	.07430	.04480
.997	-3.280	-25130	.08670	.01190	-.00210	.00090	.12470	.00760	.03480	.07360	.04400
.997	-1.200	-14300	.05750	.00960	-.00110	.00060	.12470	.00750	.03410	.07340	.04290
.997	.960	-.05100	.02080	.01140	-.00120	.00010	.12590	.00750	.03290	.07250	.04220
.997	2.930	.06370	-.01250	.00860	.00110	-.00120	.11600	.00690	.03210	.07100	.04210
.997	5.000	.20080	-.05080	.00530	.00130	-.00140	.10730	.00680	.03170	.07040	.04260
.997	7.080	.31290	-.07740	.00260	.00090	-.00160	.09640	.00670	.03230	.06870	.04460
.997	9.140	.45850	-.10080	.00070	.00070	-.00160	.08330	.00660	.03220	.06700	.04530
.997	11.000	.59800	-.12010	.00050	.00050	-.00240	.06040	.00660	.03240	.07140	.04210
.997	.960	-.03060	.06350	.00720	-.00050	-.00050	.12300	.00690	.03240	-.00031	-.00033
.997	.960	.05337	-.01774	-.00083	.00046	-.00068	-.00150	-.00006	-.00026	-.00031	-.00033

GRADIENT

RUN NO. 27/ 0 RWL = 5.99 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	CN	CLM	CY	CYN	CEL	CAF	CEO	CBO	CABT	CABS
.808	-7.530	-36280	.21220	.00480	-.00040	.00070	.13160	.00740	.03490	.06330	.04580
.808	-7.540	-46340	.16880	.00070	.00130	.00030	.13670	.00750	.03570	.06160	.04590
.808	-5.460	-34480	.12410	.00060	.00160	-.00010	.14110	.00720	.03410	.07750	.04380
.808	-3.340	-23150	.08250	.00510	.00000	-.00060	.13750	.00750	.03560	.07790	.04470
.808	-1.250	-12290	.04830	.00280	.00130	-.00080	.14040	.00750	.03492	.07390	.04600
.808	.970	-.02160	.03000	.00410	.00130	-.00110	.13760	.00750	.03430	.07680	.04130
.808	2.960	.12220	-.03720	.00260	.00260	-.00140	.13410	.00720	.03360	.07360	.03960
.808	5.090	.24710	-.06160	.00210	.00150	-.00220	.12990	.00720	.03430	.07370	.04080
.808	7.180	.36120	-.08200	.00070	.00110	-.00220	.12310	.00720	.03460	.07470	.04310
.808	9.290	.47600	-.10360	.00480	.00070	-.00170	.12300	.00740	.03460	.07410	.04540
.808	11.170	.59650	-.12060	.00400	-.00160	-.00310	.11960	.00750	.03492	.07370	.04160
.808	.960	-.01170	.06170	.00410	.00110	-.00060	.13800	.00730	.03492	.07370	.04160
.808	.960	.05627	-.01942	-.00003	.00021	-.00021	-.00085	-.00001	-.00026	-.00026	-.00039

GRADIENT

MSFC 579 (IA37) (054) (714) (512) (UB)

GRAND09 (31 AUG 73)

REFERENCE DATA

WREP = 6.1600 IN. XREP = 2.7200 IN.
 LREP = 5.1600 IN. YREP = .0000 IN.
 BREP = 5.1600 IN. ZREP = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

BETA = .000 CRBINC = .000
 DELTAZ = 30.000

RUN NO. 88/ 0 RWL = 6.33 GRADIENT INTERVAL = -7.00/ 7.00

WREP	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CRBO	CABO	CABT	CABB
.898	-9.600	-1.9000	.21810	-.00760	.00840	-.00150	.14830	.00860	.03960	.09010	.04750
.899	-7.980	-1.4880	.17040	-.00480	.00680	-.00120	.13340	.00780	.03700	.08680	.04670
.900	-5.440	-1.33410	.12780	-.00280	.00440	-.00080	.10060	.00790	.03610	.08210	.04580
.901	-3.340	-.21330	.07980	-.00480	.00370	-.00160	.13750	.00770	.03630	.08080	.04380
.902	-1.240	-.09160	.02640	-.00310	.00250	-.00240	.15840	.00760	.03560	.07910	.04220
.903	.680	.04220	-.03120	-.00420	.00330	-.00210	.13930	.00770	.03500	.07790	.04310
.904	3.010	.16330	-.07040	-.00450	.00380	-.00260	.12660	.00770	.03430	.07680	.04300
.905	5.130	.27540	-.10040	-.00480	.00470	-.00280	.11340	.00760	.03360	.07560	.04300
.906	7.240	.39060	-.12960	-.00500	.00560	-.00300	.10060	.00760	.03290	.07440	.04280
.907	9.350	.49780	-.15880	-.00520	.00650	-.00320	.13750	.00760	.03220	.07320	.04280
.908	11.470	.60190	-.18800	-.00540	.00740	-.00340	.13670	.00760	.03150	.07200	.04260
.909	.980	.04040	-.05040	-.00420	.00600	-.00220	.12660	.00770	.03080	.07080	.04260
GRADIENT	.02804	-.02188	-.00028	-.00028	.00032	-.00016	-.00045	.00000	.00001	-.00051	-.00027

RUN NO. 88/ 0 RWL = 6.54 GRADIENT INTERVAL = -7.00/ 7.00

WREP	ALPHA	CH	CLM	CY	CYN	CEL	CAF	CRBO	CABO	CABT	CABB
1.001	-9.670	-1.63810	.25620	.00050	.00680	.00000	.23140	.01150	.05450	.10970	.09760
1.002	-7.610	-.58880	.25400	.00010	.00600	-.00080	.23480	.01120	.05300	.10870	.09670
1.003	-5.420	-.34630	.17710	.00050	.00780	-.00050	.24130	.01080	.05140	.10510	.09390
1.004	-3.340	-.25010	.12880	.00080	.00800	-.00080	.24150	.01070	.05070	.10140	.08290
1.005	-1.210	-.11440	.08270	-.00090	.01010	-.00150	.23900	.01060	.05000	.10120	.08300
1.006	.980	.03760	-.02670	-.00030	.00940	-.00250	.23270	.01060	.05110	.10180	.08330
1.007	3.050	.17620	-.07340	-.00070	.00700	-.00220	.22550	.01060	.05190	.09610	.08340
1.008	5.170	.29430	-.11610	-.00030	.00700	-.00180	.22470	.01060	.05100	.09630	.08470
1.009	7.290	.41360	-.16170	.00080	.00180	-.00150	.21080	.01080	.05160	.09270	.08310
1.001	9.440	.52760	-.20990	.00000	-.00060	-.00140	.20020	.01080	.05120	.08620	.08310
1.002	11.340	.61940	-.25380	.01080	-.00080	-.00080	.20830	.01080	.05120	.09210	.08720
1.003	.980	.03770	-.02680	-.00060	.00980	-.00220	.22980	.01080	.05130	.10900	.08310
GRADIENT	.04605	-.02888	-.00008	-.00010	-.00016	-.00016	-.00163	.00000	.00001	-.00058	.00008

TABULATED SOURCE DATA, MFC 579-960 (IA-37, IA46)

GRAC009 (31 AUG 73)

DATE 18 SEP 73

MFC 579 (IA37) (654) (T14) (S12) (J6)

PARAMETRIC DATA

BETA = .000
DELTA Z = 30.000
ORIGIN = .000

REFERENCE DATA

REF = 6.1800 IN. WHP = 2.7500 IN.
LREF = 5.1800 IN. YHP = .0000 IN.
SREF = 5.1800 IN. ZHP = .0000 IN.
SCALE = .0040

RUN NO. 24/ 0 RVL = 6.71 GRADIENT INTERVAL = -7.00V 7.00

WCH	ALPHA	OH	CLM	CLJ	CT	CYN	CEL	CAF	CMO	CBO	CMT	CABL
1.801	-9.150	-64500	23150	00220	00450	00050	00050	26980	041010	04780	08440	00300
1.801	-7.670	-48600	18270	00540	00570	00250	00250	27150	00060	04650	08310	00240
1.801	-5.480	-34150	14580	00680	00710	00050	00050	27110	00080	04540	08450	00370
1.801	-3.370	-23010	10800	00820	00850	00110	00110	27240	00090	04460	08250	00570
1.801	-1.250	-10500	6920	00960	00990	00050	00050	27280	00040	04460	08030	00980
1.801	.840	03850	3090	01100	01130	00070	00070	26920	00040	04330	08090	00990
1.801	3.070	17550	08810	01240	01270	00040	00040	25980	00060	04300	08050	00800
1.801	7.210	30040	11450	01380	01410	00010	00010	25350	00080	04260	08080	00820
1.801	7.370	41740	16510	01520	01550	00000	00000	24870	00080	04230	08040	00830
1.801	9.480	56530	19530	01660	01690	00000	00000	24210	00090	04190	08050	00820
1.801	11.410	61970	22570	01800	01830	00000	00000	23470	00090	04150	08050	00810
1.801	.950	08250	00500	00000	00000	00000	00000	23470	00040	04040	08040	00000
1.801	08/262.57	08250	00498	00000	00000	00000	00000	00000	00000	00001	00000	00007

RUN NO. 25/ 0 RVL = 6.72 GRADIENT INTERVAL = -7.00V 7.00

WCH	ALPHA	OH	CLM	CLJ	CT	CYN	CEL	CAF	CMO	CBO	CMT	CABL
1.801	-9.800	-62130	21380	00310	00330	00080	00080	27330	00140	04440	08020	00370
1.801	-7.750	-45200	14740	00460	00410	00010	00010	27780	00060	04360	08740	00400
1.801	-5.560	-32980	10860	00600	00590	00000	00000	28250	00080	04250	08410	00570
1.801	-3.370	-18140	6800	00740	00730	00000	00000	28240	00000	04270	08680	00410
1.801	-1.220	-08500	3090	00880	00870	00050	00050	28440	00080	04190	08380	00550
1.801	.880	10480	0570	01020	01010	00070	00070	27210	00060	04240	08680	00560
1.801	3.100	22770	10690	01160	01150	00020	00020	26300	00060	04330	08500	00570
1.801	5.220	34910	15050	01300	01290	00010	00010	26300	00040	04430	08220	00600
1.801	7.370	45860	19870	01440	01430	00000	00000	25800	00040	04430	08140	00610
1.801	9.540	56530	22530	01580	01570	00000	00000	24940	00040	04590	08030	00620
1.801	11.500	66290	24360	01720	01710	00000	00000	24110	01000	04700	08130	00620
1.801	.940	10350	00680	00000	00000	00000	00000	26280	00090	04210	08600	00560
1.801	08/262.57	08250	00623	00000	00000	00000	00000	00000	00000	00016	00000	00001

MFC 579 (IA37) (CS4) (T14) (S12) (U)

880008 (31 AUG 73)

REFERENCE DATA

MFC = 6.1800 IN. SUP = 2.7850 IN.
 LWP = 2.1850 IN. VWP = .0000 IN.
 MFC = 2.1850 IN. SUP = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

META = .000
 DELTA Z = 30.070
 CRSTIC = .000

RUN NO. 887 0 RVL = 6.12 GRADIENT INTERVAL = -7.00/ 7.00

PROB	ALPHA	CN	CLJ	CY	CVN	CEL	CAF	CBO	CAS	CAS
1.000	-6.800	-2.8800	-1.8070	-2.8840	.01450	-.00880	.82060	.03260	.07080	.04720
1.000	-7.770	-4.8970	-3.2940	-3.2940	.01260	-.00320	.82910	.02230	.04840	.04000
1.000	-8.900	-7.0000	-4.7750	-4.7750	.01250	-.00640	.82750	.02130	.04770	.04480
1.000	-9.410	-8.4030	-6.2770	-6.2770	.01080	-.00280	.82680	.02000	.04600	.04330
1.000	-1.220	-1.0000	-1.0000	-1.0000	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	.000	.00000	.00000	.00000	.02680	-.00340	.82910	.02290	.04340	.04590
1.000	2.000	.00200	-.00440	-.00440	.02680	-.00340	.82910	.02290	.04340	.04590
1.000	3.000	.01380	-.18970	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	4.000	.02000	-.17870	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	5.000	.02000	-.17870	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	6.000	.02000	-.17870	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	7.000	.02000	-.17870	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	8.000	.02000	-.17870	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	9.000	.02000	-.17870	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	10.000	.02000	-.17870	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	11.000	.02000	-.17870	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
1.000	12.000	.02000	-.17870	-.04480	.02680	-.00440	.82910	.02290	.04340	.04590
GRADIENT	.00000	.00000	-.01875	.00000	-.00000	-.00000	-.00000	.00000	-.00000	.00000

RUN NO. 187 0 RVL = 6.91 GRADIENT INTERVAL = -7.00/ 7.00

PROB	ALPHA	CN	CLJ	CY	CVN	CEL	CAF	CBO	CAS	CAS
1.000	-6.870	-2.8800	-1.8070	-.00120	.01450	-.00040	.82600	.02000	.04610	.03070
1.000	-7.770	-4.8970	-3.2940	.00080	.01250	.00000	.82640	.02000	.04610	.03130
1.000	-8.900	-7.0000	-4.7750	.00180	.01240	.00000	.82680	.02000	.04500	.03000
1.000	-9.410	-8.4030	-6.2770	.00280	.01180	-.00010	.82610	.02000	.04410	.02930
1.000	-1.200	-1.0000	-1.0000	.00270	.01080	-.00000	.82610	.02000	.04380	.02960
1.000	.000	.00000	.00000	.00270	.01080	-.00010	.82610	.02000	.04380	.02960
1.000	2.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	3.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	4.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	5.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	6.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	7.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	8.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	9.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	10.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	11.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
1.000	12.000	.00200	-.00440	.00260	.01080	-.00110	.82610	.02000	.04380	.02960
GRADIENT	.00000	.00000	-.00000	.00012	.00000	-.00000	-.00000	.00000	-.00000	-.00000

0000000 (31 AUG 73)

NPFC 579 (1A37) (2B4) (714) (812) (UB)

PARAMETRIC DATA

BETA = .000 CRIBINC = .000
DELTAZ = 30.000

REFERENCE DATA

WPP = 6.1000 IN. WPP = 2.7000 IN.
LWP = 5.1000 IN. YWP = .0000 IN.
SWP = 5.1000 IN. ZWP = .0000 IN.
SCALE = .0040

RUN NO. 13/ 0 RWL = 4.11 GRADIENT INTERVAL = -7.00/ 7.00

WICH	ALPHA	CN	CLM	CY	CYN	CEL	CAF	QBO	CABO	CABT	CABS
2.980	-7.450	-3.9800	.12270	-.01110	.00000	-.00140	.26670	.00080	.01540	.02340	.01710
2.980	-5.300	-2.7110	.06660	-.01410	.00060	-.00170	.25717	.00080	.01530	.02330	.01690
2.980	-3.230	-1.7260	.02630	-.01150	.00030	-.00200	.24650	.00030	.01530	.02200	.01690
2.980	-1.180	-.0860	.00570	-.01250	.00000	-.00230	.24050	.00030	.01540	.02080	.01590
2.980	.670	-.00080	.01000	-.01210	.00080	-.00260	.23700	.00030	.01590	.02090	.01540
2.980	2.660	.06600	-.02130	-.01410	.00720	-.00290	.23300	.00040	.01600	.02090	.01490
2.980	5.060	.17600	-.03160	-.01370	.00980	-.00320	.23180	.00040	.01610	.01940	.01480
2.980	7.060	.27770	-.03940	-.01250	.00980	-.00350	.22970	.00040	.01630	.01790	.01510
2.980	9.180	.36000	-.04500	-.01080	.00780	-.00380	.22610	.00030	.01590	.02090	.01540
2.980	.670	.00080	.00840	-.01350	.00780	-.00410	.22010	.00002	.00007	-.00002	-.00002
GRADIENT	.04002	-.01344	-.00008	.00006	-.00015	-.00234	.00002	.00002	.00004	-.00016	-.00003

RUN NO. 12/ 0 RWL = 6.34 GRADIENT INTERVAL = -7.00/ 7.00

WICH	ALPHA	CN	CLM	CY	CYN	CEL	CAF	QBO	CABO	CABT	CABS
3.478	-7.460	-3.9000	.11760	-.01080	.00040	-.00150	.26220	.00060	.01250	.01710	.01300
3.478	-5.360	-2.6500	.06660	-.01060	.00080	-.00160	.25310	.00060	.01200	.01650	.01270
3.478	-3.270	-1.7270	.02440	-.01050	.00430	-.00200	.24340	.00050	.01200	.01620	.01260
3.478	-1.180	-.08780	.00310	-.01000	.00070	-.00170	.23610	.00040	.01200	.01510	.01260
3.478	.680	-.00170	.00300	-.01250	.00070	-.00220	.22760	.00040	.01250	.01590	.01160
3.478	2.640	.06660	-.01140	-.01250	.00060	-.00260	.22590	.00040	.01230	.01490	.01150
3.478	5.080	.15360	-.02080	-.01360	.00060	-.00280	.22120	.00060	.01250	.01460	.01090
3.478	7.110	.24250	-.02890	-.01290	.00220	-.00270	.21760	.00060	.01220	.01430	.00950
3.478	9.280	.32000	-.03510	-.01140	.00450	-.00310	.21290	.00060	.01230	.01290	.00860
3.478	.670	-.01450	.01840	-.01340	.00680	-.00260	.20960	.00060	.01250	.01540	.01170
GRADIENT	.03654	-.01195	-.00025	.00016	-.00007	-.00302	.00004	.00004	-.00016	-.00003	-.00003

RUN NO. 14/ 0 RWL = 4.96 GRADIENT INTERVAL = -7.00/ 7.00

WICH	ALPHA	CN	CLM	CY	CYN	CEL	CAF	QBO	CABO	CABT	CABS
4.928	-7.260	-3.1260	.11450	-.00060	.00000	-.00050	.25610	.00120	.00560	.00690	.00570
4.928	-5.230	-2.4610	.06460	-.00050	.00170	-.00150	.24590	.00120	.00560	.00660	.00590
4.928	-3.200	-1.7330	.02440	-.00070	.00460	-.00200	.23360	.00120	.00590	.00630	.00570
4.928	-1.170	-.10600	.00540	-.00060	.00460	-.00220	.22400	.00120	.00590	.00660	.00540
4.928	.660	-.00080	.00600	-.00070	.00450	-.00200	.21610	.00120	.00600	.00670	.00510
4.928	2.660	.03730	.01060	-.00070	.00430	-.00200	.21170	.00120	.00600	.00670	.00490
4.928	4.840	.10210	-.00670	-.00090	.00210	-.00090	.20190	.00120	.00600	.00630	.00470
4.928	6.970	.17910	-.03410	-.00060	.00470	-.00270	.19480	.00120	.00600	.00600	.00460
4.928	9.010	.25720	-.06460	-.00050	.00420	-.00200	.19090	.00120	.00600	.00550	.00450
4.928	.650	-.04300	.03440	-.00090	.00560	-.00250	.21650	.00130	.00610	.00660	.00500
GRADIENT	.03463	-.01046	-.00042	.00003	-.00010	-.00403	-.00000	-.00000	.00001	-.00003	-.00011

TABULATED SOURCE DATA, NDFC 578-960 (IA-37,1A48)

(060010) (31 AUG 73)

NDFC 578 (IA37) (054) (T14) (S12) (U8)

REFERENCE DATA

BETA = 8.1600 IN.
 CN = 2.7500 IN.
 CLM = 8.1600 IN.
 CY = .0000 IN.
 CYN = .0000 IN.
 CEL = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = -.5.000
 OMBINC = .000
 DELTAZ = 30.000

RUN NO. 37/0 RVAL = 4.00 GRADIENT INTERVAL = -7.00/ 7.00

POACH	BETA	CN	CLM	CY	CYN	CEL	CAF	CRBO	CASO	CABT	CABS
.898	-9.770	-2.7700	.08250	.36970	-1.16080	.03210	.10500	.00800	.04270	.08460	.05960
.899	-7.770	-2.7750	.08310	.36390	-1.15960	.04940	.10860	.00960	.04210	.08190	.05230
.900	-5.770	-2.7750	.08440	.34870	-1.15970	.05450	.11250	.00890	.04060	.07660	.05030
.901	-3.770	-2.8060	.08640	.33300	-1.07510	.02500	.12000	.00760	.03700	.07640	.04710
.902	-1.840	-2.8900	.10370	.27960	-1.03650	.01140	.12380	.00760	.03690	.07530	.04680
.903	.480	-3.0260	.11480	.23000	.00000	.00000	.12660	.00710	.03370	.07520	.04530
.904	2.470	-3.0460	.11750	.19770	.04010	-.01160	.13350	.00700	.03300	.07370	.04390
.905	4.460	-3.0340	.11480	.16420	.07430	-.02270	.13070	.00700	.03330	.07370	.04250
.906	6.450	-2.9950	.10710	.12710	.10750	-.03360	.12540	.00780	.03690	.06310	.04130
.907	8.440	-2.9670	.10480	.10480	.13610	-.04160	.12270	.00640	.03970	.06060	.04160
.908	10.430	-2.9200	.10940	.06570	.16050	-.05050	.11910	.00820	.04330	.06220	.04220
.909	.410	-3.0590	.11670	.02210	.00000	.00000	.12610	.00730	.03460	.07400	.04650
.910	GRADIENT	-.00171	.00211	-.03662	.01798	-.00552	.00126	-.00008	-.00037	.00039	-.00069

RUN NO. 36/0 RVAL = 8.19 GRADIENT INTERVAL = -7.00/ 7.00

POACH	BETA	CN	CLM	CY	CYN	CEL	CAF	CRBO	CASO	CABT	CABS
.898	-10.000	-2.7070	.07330	.46300	-.13440	.06530	.14050	.01020	.04660	.09340	.05750
.899	-8.000	-2.8260	.07160	.37430	-.16130	.03210	.14900	.01000	.04710	.08960	.05400
.900	-6.000	-2.8960	.07080	.28150	-.18920	.03630	.15640	.00840	.04450	.08540	.04910
.901	-4.000	-2.9760	.07370	.19180	-.08690	.02610	.16070	.00660	.04800	.08160	.04470
.902	-2.000	-2.7600	.09390	.09560	-.04480	.01400	.16440	.00680	.03670	.07970	.04150
.903	.410	-2.9560	.10540	.00670	.00000	-.00110	.16250	.00760	.03600	.08240	.04440
.904	2.410	-2.9410	.10440	.10940	.05960	-.01750	.16560	.00780	.03670	.08160	.04330
.905	4.400	-2.7500	.09500	.19540	.09600	-.03050	.16750	.00600	.03760	.08160	.04400
.906	6.400	-2.7710	.08970	.14010	.14010	-.04410	.16770	.00640	.03970	.08120	.04360
.907	8.400	-2.9160	.08650	.06200	.17750	-.05590	.16690	.00940	.04440	.08450	.04360
.908	10.400	-2.9220	.08400	.00000	.20220	-.06460	.16340	.00990	.04690	.09140	.04280
.909	.420	-2.9000	.10900	-.00770	.00660	-.00820	.16100	.00790	.03720	.08260	.04560
.910	GRADIENT	-.00166	.00185	-.04568	.02196	-.00679	.00083	-.00009	-.00043	-.00016	-.00029

NSFC 579 (IA37) 624) (T14) (S12) (UN)

0806010) (31 AUG 75)

REFERENCE DATA

500P = 6.1600 IN. 100P = 2.7200 IN.
 1000P = 5.1600 IN. 1000P = .0000 IN.
 5000P = 9.1600 IN. 2000P = .0000 IN.
 SCALE = .0040

ALPHA = -.9.000
 DELTAZ = 30.000
 CRIBINC = .000

PARAMETRIC DATA

RUN NO. 35/ 0 RVL = 6.56 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLM	CY	CTN	CEL	CAF	CRBO	CASO	CASB	CABS
1.000	-10.150	-.25610	.10460	.50090	-.20290	.07620	.23560	.01150	.05430	.09760	.06950
1.000	-6.150	-.25980	.12800	.40370	-.17560	.06370	.26170	.01110	.08260	.09290	.06820
1.000	-2.850	-.25140	.10580	.30110	-.13600	.04780	.26800	.01070	.05070	.09290	.06810
1.000	-3.840	-.25630	.11240	.20170	-.09370	.03160	.26950	.01010	.04770	.09110	.06430
1.000	-1.720	-.30330	.12540	.09680	-.04600	.01600	.27360	.00990	.04700	.09030	.06200
1.000	.480	-.31570	.13000	-.01290	.01080	-.00460	.27340	.00940	.04460	.08900	.06160
1.000	2.540	-.31240	.12960	-.12100	.06250	-.01990	.27370	.00940	.04430	.08900	.05830
1.000	4.660	-.31170	.12410	-.21950	.10870	-.03350	.29130	.00960	.04640	.09070	.05810
1.000	6.790	-.31840	.12960	-.32110	.15770	-.05220	.27690	.01090	.05160	.08820	.05600
1.000	8.940	-.32490	.13180	-.41740	.18630	-.06630	.27560	.01140	.05370	.08600	.05670
1.000	10.900	-.32950	.13200	-.50750	.22070	-.07920	.27220	.01180	.05580	.08700	.06150
1.000	.360	-.31690	.13220	-.01100	.01000	-.00280	.27190	.00960	.04320	.08940	.06150
1.000	.00196	-.00167	.00167	-.04824	.02308	-.00791	.00110	-.00001	-.00004	.00004	-.00062

RUN NO. 20/ 0 RVL = 6.25 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	ON	CLM	CY	CTN	CEL	CAF	CRBO	CASO	CASB	CABS
1.462	-10.250	-.25460	.07500	.47730	-.19240	.06770	.26640	.00630	.03910	.06840	.05060
1.462	-6.170	-.25690	.06940	.37530	-.15380	.05430	.26380	.00760	.05670	.06680	.04680
1.462	-2.940	-.27120	.08200	.26820	-.11080	.03670	.25510	.00710	.03350	.06820	.04590
1.462	-3.830	-.25240	.06340	.16790	-.06790	.02260	.25970	.00700	.03000	.06540	.04570
1.462	-1.710	-.26950	.08600	.07210	-.02710	.00970	.25660	.00680	.03270	.06540	.04530
1.462	.440	-.26860	.06560	-.02690	.01580	-.00400	.25650	.00660	.03130	.06260	.04340
1.462	2.570	-.27560	.07040	-.12020	.05950	-.01900	.26930	.00690	.03290	.06490	.04250
1.462	4.780	-.27650	.07080	-.21630	.09490	-.03290	.30120	.00790	.03460	.06630	.04170
1.462	6.900	-.26300	.07240	-.31810	.13660	-.04730	.30160	.00780	.03670	.06730	.03950
1.462	9.100	-.30300	.08450	-.42630	.17660	-.06330	.29930	.00810	.03920	.07010	.04000
1.462	11.070	-.31350	.08200	-.53130	.21850	-.07840	.29430	.00830	.03940	.07220	.04110
1.462	.440	-.26970	.06590	-.03100	.01770	-.00560	.25660	.00650	.03100	.06350	.04320
1.462	.00113	-.00163	.00063	-.04532	.01911	-.00667	.00054	.00005	.00022	.00008	-.00050

MFPC 579 (IA37) (034) (714) (812) (U8)

(086010) (31 AUG 73)

REFERENCE DATA

WREF = 6.1600 IN. YREF = 2.7600 IN.
 LREF = 5.1600 IN. YREF = .0000 IN.
 WREF = 5.1600 IN. ZREF = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

ALPHA = -9.000 ORBINC = .000
 DELTA = 30.000

RUN NO. 17/ 0 RVL = 6.82 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	CN	CLM	CY	CYN	CEL	CAF	ONBO	CASO	CABT	CABS
1.970	-10.880	-28780	.08040	.48130	-.18480	.08240	.28080	.00640	.03080	.04960	.03080
1.970	-9.880	-28540	.08030	.37600	-.15120	.04800	.28330	.00580	.02780	.04800	.02000
1.970	-8.030	-28610	.08140	.28830	-.10750	.03430	.28630	.00560	.02650	.04430	.02980
1.970	-3.880	-28320	.08480	.16480	-.08360	.02140	.28130	.00540	.02550	.04630	.02980
1.970	-1.720	-28640	.08600	.07140	-.02380	.00880	.28460	.00510	.02400	.04440	.02840
1.970	.440	-28860	.08880	-.02360	.01300	-.00370	.28780	.00520	.02480	.04440	.02930
1.970	2.600	-28860	.08960	-.11970	.05160	-.01780	.28250	.00530	.02500	.04410	.02800
1.970	4.780	-29180	.09080	-.21410	.08890	-.03000	.28500	.00550	.02620	.04810	.02850
1.970	6.950	-29720	.09350	-.31880	.13390	-.04330	.28680	.00590	.02680	.04680	.02680
1.970	9.140	-30320	.09580	-.42880	.17580	-.05780	.28570	.00590	.02790	.04790	.02750
1.970	11.130	-30940	.09670	-.53230	.21750	-.07180	.28370	.00610	.02910	.04880	.02790
1.970	.440	-28860	.08670	-.02350	.01390	-.00900	.28000	.00600	.02370	.04270	.02800
GRADIENT	-.00085	.00078	.00078	-.04481	.01611	-.00299	.00012	.00000	.00003	.00011	-.00016

RUN NO. 9/ 0 RVL = 4.97 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	CN	CLM	CY	CYN	CEL	CAF	ONBO	CASO	CABT	CABS
4.928	-7.780	-21950	.08580	.27040	-.10420	.08000	.25780	.00130	.00610	.00580	.00480
4.928	-5.880	-20980	.08280	.19500	-.07360	.02100	.25080	.00130	.00610	.00590	.00490
4.928	-3.820	-21380	.08330	.12320	-.04810	.01230	.24490	.00130	.00620	.00640	.00530
4.928	-1.800	-21120	.08500	.05370	-.02250	.00800	.23920	.00120	.00600	.00660	.00540
4.928	.450	-20800	.08200	-.02180	.00870	-.00310	.23990	.00100	.00480	.00670	.00580
4.928	2.460	-21680	.08670	-.09130	.03520	-.01100	.24100	.00120	.00570	.00670	.00570
4.928	4.540	-21790	.08880	-.15890	.06010	-.01820	.24870	.00120	.00580	.00670	.00550
4.928	6.580	-21500	.08880	-.23430	.08680	-.02480	.25440	.00120	.00600	.00690	.00550
4.928	8.600	-22780	.09850	-.30990	.11630	-.03900	.25940	.00130	.00620	.00690	.00550
4.928	.480	-21180	.08320	-.01970	.00850	-.00960	.23420	.00130	.00610	.00700	.00520
GRADIENT	-.00077	.00075	.00075	-.03497	.01333	-.00361	.00036	-.00001	-.00002	.00006	.00004

(R00011) (31 AUG 75)

MFTC 579 (IA37) (084) (T14) (812) (U8)

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
DELTA Z = 30.000

REFERENCE DATA

ERRP = 6.1940 84. IN. XERRP = 2.7500 IN.
LERRP = 5.1600 IN. YERRP = .0000 IN.
SERRP = 5.1600 IN. ZERRP = .0000 IN.
SCALE = .0040

RUN NO. 29/ 0 RVL = 4.94 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CH	CLM	CY	CYN	CEL	CAF	CBO	CABT	CABS
.600	-9.790	-.02300	-.00150	.42140	-.17360	.06410	.09480	.04090	.08060	.05480
.600	-7.690	-.01300	-.00700	.34330	-.14490	.05430	.10960	.03790	.07990	.05110
.600	-5.790	-.01650	-.00390	.25520	-.10940	.04070	.11260	.03660	.07140	.05010
.600	-3.710	-.02260	.00410	.17250	-.07470	.02760	.11500	.03670	.07040	.04960
.600	-1.660	-.03110	.01260	.08750	-.04310	.01560	.12000	.03590	.07130	.04560
.600	.400	-.03960	.02240	.01660	-.00540	.00210	.12430	.03360	.07230	.04300
.600	2.460	-.03970	.02330	-.07240	.03460	-.01240	.12940	.03310	.07260	.04190
.600	4.510	-.03610	.01920	-.13260	.06960	-.02560	.12610	.03390	.07660	.04050
.600	6.560	-.03100	.01600	-.23270	.10360	-.03630	.12360	.03450	.07990	.03990
.600	8.640	-.02710	.01140	-.30760	.13300	-.04660	.12320	.03600	.08100	.03910
.600	10.460	-.02300	.01140	-.36390	.16130	-.05950	.11810	.04160	.08190	.04050
.600	.400	-.03020	.01940	.01540	-.00460	.00140	.12400	.03390	.07160	.04390
GRADIENT		-.00135	.00174	-.00974	.01741	-.00646	.00119	-.00003	.00066	-.00094

RUN NO. 30/ 0 RVL = 5.91 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CH	CLM	CY	CYN	CEL	CAF	CBO	CABT	CABS
.600	-9.940	.00430	-.01790	.45150	-.16710	.06950	-.11400	.04320	.07870	.05760
.600	-7.970	.00960	-.02080	.37000	-.15670	.05660	.12460	.04060	.07610	.05290
.600	-5.690	.01330	-.02260	.29010	-.12220	.04460	.12760	.03900	.07670	.04960
.600	-3.760	.01900	-.02020	.19160	-.08330	.03040	.13360	.03760	.07590	.04710
.600	-1.700	.02170	-.01120	.10790	-.04690	.01660	.13710	.03690	.07900	.04440
.600	.360	-.01440	.00180	.01660	-.00460	.00160	.13690	.03900	.07650	.04260
.600	2.460	-.00770	-.00330	-.06010	.04040	-.01630	.13930	.03590	.07740	.04160
.600	4.510	-.00900	-.00700	-.16260	.07620	-.02910	.14160	.03640	.07790	.04060
.600	6.560	-.00400	-.00760	-.25020	.11790	-.04430	.14300	.03690	.07610	.03920
.600	8.790	-.00990	-.00610	-.32710	.14490	-.05260	.14490	.04070	.07760	.03910
.600	10.690	-.02040	.00090	-.40760	.17640	-.06430	.14320	.04440	.08100	.03960
.600	.360	-.01610	.00290	-.02040	-.00630	.00140	.13960	.03520	.07600	.04150
GRADIENT		-.00160	.00156	-.04264	.01336	-.00719	.00108	-.00006	.00016	-.00061

REFERENCE DATA
 M8FC 578 (IA37) (054) (714) (812) (U6)
 RUN NO. 31/ 0 RVAL = 6.19 GRADIENT INTERVAL = -7.00/ 7.00
 ALPHA = .000 ORBINC = .000
 DELTAZ = 30.000
 M8FC 579-580 (IA-37,IA48)
 RUN NO. 32/ 0 RVAL = 6.47 GRADIENT INTERVAL = -7.00/ 7.00

PARAMETRIC DATA

MACH	BETA	ON	CLM	CY	CTN	CEL	CAF	CEO	CBO	CABT	CABS
.894	-10.080	.01980	-.02920	.47380	-.25210	.07370	.13670	.00960	.04650	.08470	.09870
.894	-8.080	.02810	-.02910	.39140	-.16700	.05950	.14290	.00940	.04430	.08150	.05510
.894	-6.880	.05480	-.03180	.29910	-.15410	.04680	.13130	.00680	.04210	.08030	.03180
.894	-5.610	.09680	-.03460	.20380	-.09510	.03250	.15460	.00840	.03980	.07750	.04830
.894	-1.710	.08580	-.02780	.11280	-.05000	.01750	.16040	.00820	.03660	.07550	.04530
.894	.890	.02580	-.02460	.03440	-.03330	.00130	.16190	.00780	.03680	.07850	.04280
.894	2.480	.02260	-.02340	-.09210	.04950	-.01750	.16120	.00780	.03700	.08120	.04080
.894	4.570	.02600	-.02580	-.17880	.08110	-.03180	.16080	.00880	.03680	.08270	.04080
.894	6.880	.02080	-.03400	-.27110	.13180	-.04690	.16420	.00970	.04180	.07870	.04030
.894	8.800	.00770	-.01070	-.35540	.16460	-.05870	.16620	.00950	.04500	.08250	.03860
.894	10.780	-.01130	.00470	-.43180	.19300	-.06980	.16480	.01010	.04770	.08670	.03770
.894	GRADIENT	-.08170	-.02950	.01410	-.02250	-.00010	.16470	.00780	.03710	.07940	.04300
		-.00146	.00078	-.04572	.02167	-.00780	.00086	-.00002	-.00010	.00024	-.00091

MACH	BETA	ON	CLM	CY	CTN	CEL	CAF	CEO	CBO	CABT	CABS
1.000	-10.110	.00690	.00080	.50330	-.22480	.08740	.21320	.01280	.05960	.10110	.07630
1.000	-8.070	.04680	-.02770	.40720	-.18980	.07180	.21960	.01210	.05680	.09950	.07460
1.000	-6.880	.08800	-.01330	.30780	-.14490	.05530	.22780	.01180	.05560	.09730	.07250
1.000	-5.680	.09180	-.01500	.21080	-.10170	.03780	.23350	.01140	.05380	.09620	.06910
1.000	-1.780	.02130	-.03560	.11410	-.05480	.02040	.23530	.01130	.05330	.09830	.06680
1.000	.790	.01730	-.02180	-.00110	.00780	-.00180	.23340	.01080	.05090	.10040	.06380
1.000	2.800	.01730	-.03100	-.10830	.06410	-.02250	.23600	.01110	.05260	.10080	.06030
1.000	4.890	.01840	.00250	-.20370	.11220	-.04100	.23900	.01150	.05420	.10160	.05890
1.000	6.700	.01380	.00710	-.29590	.15570	-.05800	.23650	.01200	.05650	.10080	.05680
1.000	8.880	-.00380	.01630	-.39580	.19310	-.07330	.23880	.01230	.05810	.10180	.05730
1.000	10.790	-.01880	.02810	-.48820	.22640	-.08610	.23640	.01290	.06070	.10090	.05570
1.000	GRADIENT	.06040	-.00800	.00250	.00630	-.00230	.23030	.01080	.05110	.10110	.06400
		-.00129	.00187	-.04677	.02459	-.00918	.00064	-.00001	.00004	.00039	-.00116

TABULATED SOURCE DATA, HFPC 579-960 (IA-37,IA48)

DATE 10 SEP 75

0680211 (31 AUG 75)

HFPC 579 (IA37) 6241 (T14) (S12) (US)

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
DELTAZ = 30.000

REFERENCE DATA

WAVE = 9.1600 CM. IN. WAVE = 9.1600 IN.
LWAVE = 9.1600 IN. WAVE = 9.0000 IN.
SWAVE = 9.1600 IN. WAVE = 9.0000 IN.
SCALE = .0040

RUN NO. 23/ 0 RWL = 6.56 GRADIENT INTERVAL = -7.00/ 7.00

WAVE	BETA	ON	CLM	CY	CYN	CEL	CAF	CSO	CASO	CASB	CASG
1.101	-10.180	.02260	-.01140	-.50910	-.21960	.09010	.25110	.01040	.04910	.08540	.06460
1.101	-8.180	.03980	-.02140	-.40370	-.17930	.07350	.23740	.01000	.04720	.06590	.06450
1.101	-6.990	.04180	-.02260	-.30310	-.13790	.05860	.20460	.00940	.04440	.06080	.06200
1.101	-5.840	.04250	-.02430	-.20260	-.09260	.03740	.16680	.00860	.04350	.06140	.05970
1.101	-1.750	.02800	-.00850	-.10910	-.05170	.01990	.12870	.00800	.04240	.06300	.05620
1.101	.400	.02130	-.00390	-.00060	.00260	-.00060	.07150	.00830	.04030	.06260	.05370
1.101	2.310	.02220	-.00110	-.05650	.05410	-.02110	.27510	.00880	.04230	.06510	.05110
1.101	4.650	.02410	-.00260	-.19220	.09790	-.05960	.27510	.00930	.04460	.06680	.05040
1.101	6.770	.02590	-.00160	-.26680	.13780	-.05770	.27310	.00970	.04580	.06370	.04890
1.101	8.910	.01840	.00030	-.36300	.17430	-.07330	.27210	.01010	.04760	.06510	.04740
1.101	10.650	.00720	.00710	-.47390	.21000	-.08770	.27130	.01060	.04990	.06680	.04740
1.101	.370	.02000	-.00010	-.00700	.00110	-.00070	.27130	.00860	.04070	.06390	.05370
GRADIENT		-.00165	.00003	-.04676	.02226	-.00803	.00105	.00002	.00012	.00039	-.00106

RUN NO. 34/ 0 RWL = 6.65 GRADIENT INTERVAL = -7.00/ 7.00

WAVE	BETA	ON	CLM	CY	CYN	CEL	CAF	CSO	CASO	CASB	CASG
1.100	-10.290	.07000	-.05720	-.48460	-.12160	.05540	.26970	.01060	.04990	.08140	.06660
1.100	-8.180	.06290	-.06060	-.36680	-.15180	.06880	.27050	.01020	.04800	.06940	.06480
1.100	-6.000	.06910	-.06890	-.26350	-.11330	.05070	.27690	.00960	.04540	.06780	.06220
1.100	-3.870	.06960	-.07140	-.16610	-.07690	.03360	.26170	.00940	.04430	.06460	.06050
1.100	-1.740	.04960	-.06010	-.05490	-.03780	.01710	.23460	.00930	.04360	.06370	.05790
1.100	.400	.06300	-.05870	-.00590	.00660	-.00220	.20610	.00910	.04320	.06590	.05460
1.100	2.530	.06360	-.05110	-.10360	.05410	-.02110	.26990	.00940	.04460	.06460	.05330
1.100	4.660	.06360	-.05330	-.19360	.09140	-.05690	.29120	.00990	.04660	.06510	.05360
1.100	6.810	.07640	-.05320	-.26770	.12680	-.05570	.29210	.01010	.04770	.06570	.05240
1.100	9.000	.07060	-.04770	-.36680	.16010	-.07160	.28600	.01050	.04950	.06690	.05390
1.100	10.970	.06120	-.04270	-.46230	.19410	-.08540	.28330	.01060	.05060	.06950	.05310
1.100	.400	.06190	-.05190	-.00540	.00660	-.00310	.26610	.00900	.04230	.06450	.05430
GRADIENT		-.00092	.00132	-.04478	.01923	-.00841	.00119	.00004	.00021	-.00037	-.00060

REFERENCE DATA

BREP = 6.1860 IN. XREP = 2.7500 IN.
LREP = 5.1600 IN. YREP = .0000 IN.
BREP = 5.1600 IN. ZREP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
DELTAZ = 30.000

RUN NO. 21/ 0 RVAL = 6.25 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	CBO	CABO	CABT	CABS
1.463	-10.290	.09540	-.03640	.48300	-.19820	.07830	.26410	.00790	.03720	.06990	.04720
1.463	-6.170	.04820	-.04320	.36830	-.14790	.06140	.29080	.00770	.03610	.06720	.04760
1.463	-5.960	.04870	-.04290	.26310	-.10560	.04490	.29260	.00710	.03390	.06630	.04770
1.430	-3.830	.02190	-.04290	.16410	-.06990	.02870	.29320	.00670	.03190	.06630	.04740
1.463	-1.710	.05310	-.04330	.07710	-.03120	.01330	.29930	.00660	.03110	.05990	.04700
1.463	.430	.05900	-.04200	-.01290	.00690	-.00290	.29970	.00620	.02990	.06130	.04450
1.463	2.960	.09110	-.03690	-.08990	.04110	-.01930	.30450	.00670	.03150	.06020	.04340
1.463	4.700	.04970	-.03760	-.16390	.07740	-.03390	.30340	.00710	.03390	.06270	.04210
1.463	6.890	.04440	-.03560	-.28660	.11680	-.05160	.30000	.00740	.03900	.06420	.04120
1.463	9.090	.04000	-.03370	-.59500	.15770	-.06790	.29690	.00770	.03690	.06440	.04090
1.463	11.040	.03990	-.03240	-.90060	.19740	-.08280	.29390	.00810	.03830	.06310	.04050
1.463	.440	.05520	-.04210	-.01870	.00990	-.00460	.29610	.00810	.02880	.06080	.04360
GRADIENT		-.00091	.00061	-.04627	.01713	-.00792	.00080	.00003	.00014	-.00020	-.00055

RUN NO. 16/ 0 RVAL = 6.89 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	CBO	CABO	CABT	CABS
1.956	-10.260	.01680	-.02680	.47200	-.19400	.06980	.27130	.00640	.03030	.04370	.02940
1.956	-6.180	.01890	-.02470	.36390	-.15060	.05440	.27410	.00600	.02860	.04370	.02970
1.956	-3.080	.02290	-.02610	.28880	-.11140	.04090	.28560	.00570	.02700	.04320	.03120
1.956	-3.870	.02360	-.02560	.16820	-.06950	.02520	.28410	.00530	.02520	.04180	.03120
1.956	-1.790	.02590	-.02470	.07790	-.02920	.01130	.28200	.00510	.02410	.04100	.03070
1.956	.430	.02660	-.02530	-.01490	.00960	-.00270	.28370	.00490	.02340	.03860	.02920
1.956	2.990	.02410	-.02320	-.11000	.04750	-.01800	.28270	.00530	.02500	.04090	.02940
1.956	4.790	.02640	-.02470	-.20280	.06770	-.03140	.28660	.00570	.02690	.04220	.02730
1.956	6.920	.02140	-.02100	-.30190	.12690	-.04710	.28930	.00580	.02770	.04440	.02710
1.956	9.100	.01860	-.02200	-.40700	.18340	-.06300	.28340	.00610	.02900	.04930	.02730
1.956	11.060	.01290	-.01990	-.51990	.21900	-.07620	.28740	.00640	.03090	.04460	.02740
1.956	.440	.02570	-.02480	-.01680	.00960	-.00400	.27890	.00490	.02310	.03890	.02870
GRADIENT		-.00000	.00031	-.04380	.01828	-.00674	.00028	.00002	.00011	.00007	-.00035

TABULATED SOURCE DATA, MSFC 579-580 (IA-37,IA48)

(068011) (31 AUG 75)

MSFC 579 (IA37) (CS4) (T14) (S1.) (US)

PARAMETRIC DATA

ALPHA = .000 ORGINC = .000
DELTAZ = 30.000

REFERENCE DATA

REF = 6.1860 IN. XREF = 2.7200 IN.
LREF = 5.1800 IN. YREF = .0000 IN.
BREF = 5.1800 IN. ZREF = .0000 IN.
SCALE = .0040

RUN NO. 11/ 0 RV/L = 6.35 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	CBO	CABO	CABT	CABS
3.479	-7.820	-.02890	.01350	.29080	-.10990	-.03950	.23920	.00290	.01370	.01490	.01020
3.479	-5.630	-.02880	.01820	.20920	-.07790	.02320	.23630	.02260	.01330	.01490	.01090
3.479	-3.720	-.03120	.02170	.13470	-.04870	.01950	.23250	.02280	.01310	.01470	.01190
3.479	-1.650	-.02970	.02370	.06270	-.02160	.00600	.22770	.02260	.01250	.01660	.01240
3.479	.450	-.03500	.02700	-.01330	.00670	-.00260	.23100	.02260	.01240	.01570	.01180
3.479	2.320	-.03480	.02650	-.06720	.03250	-.01140	.23180	.02270	.01300	.01650	.01070
3.479	4.630	-.03440	.02560	-.15990	.05620	-.01920	.23410	.02270	.01300	.01560	.01050
3.479	6.720	-.02890	.02060	-.23700	.08710	-.02720	.23930	.02280	.01320	.01530	.01000
3.479	8.820	-.02850	.01980	-.32300	.12160	-.04060	.24410	.02280	.01340	.01550	.00980
3.479	4.30	-.03520	.02660	-.01860	.00810	-.00390	.23170	.02260	.01240	.01570	.01150
GRADIENT		-.00052	.00031	-.03590	.01304	-.00418	.07029	-.00000	.00000	.00005	-.00012

RUN NO. 10/ 0 RV/L = 4.97 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAF	CBO	CABO	CABT	CABS
4.959	-7.790	-.04290	.03160	.24830	-.09040	-.05020	.22720	.00130	.00630	.00610	.00310
4.959	-5.670	-.04790	.03310	.17850	-.06440	.02100	.22270	.00130	.00630	.00620	.00370
4.959	-3.640	-.04930	.03610	.11260	-.04110	.01320	.21670	.00130	.00640	.00670	.00430
4.959	-1.600	-.05370	.03730	.04960	-.01660	.00500	.21350	.00130	.00620	.00700	.00470
4.959	.440	-.05490	.03670	-.01710	.00650	-.00220	.21280	.00130	.00620	.00700	.00490
4.959	2.430	-.04920	.03510	-.07340	.02690	-.00960	.21420	.00130	.00630	.00700	.00500
4.959	4.910	-.04940	.03720	-.13540	.04830	-.01700	.21940	.00130	.00640	.00700	.00480
4.959	6.530	-.04680	.03600	-.20120	.07150	-.02390	.22290	.00130	.00650	.00680	.00460
4.959	8.990	-.04430	.03570	-.27110	.09610	-.03310	.22690	.00140	.00660	.00680	.00480
4.959	4.40	-.05100	.03630	-.01140	.00490	-.00250	.21390	.00130	.00640	.00710	.00490
GRADIENT		.00014	.00013	-.03062	.01105	-.00368	.00010	-.00100	.00001	.00004	.00007

NSFC 579 (1A37) (0B4) (114) (812) (US)

(R66012) (31 AUG 75)

REFERENCE DATA

NSFC = 6.1800 IN. XRRP = 2.7800 IN.
LRRP = 3.1800 IN. YRRP = .0000 IN.
BRRP = 5.1800 IN. ZRRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = 5.000 ORBINC = .000
DELTA = 30.000

RUN NO. 39/ 0 RVL = 4.93 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CH	CLM	CY	CYN	CSL	CAF	CNSO	CASO	CABT	CABS
.598	-9.790	.29440	-.09840	.41040	-.16710	.07270	.07990	.00890	.04040	.09280	.05190
.598	-7.830	.26330	-.08680	.33700	-.14280	.06170	.06620	.00790	.03720	.07990	.04810
.598	-5.750	.25990	-.08080	.25390	-.10320	.04660	.09470	.00750	.03530	.07530	.04690
.599	-5.710	.24810	-.07630	.16700	-.06800	.03020	.09970	.00700	.03330	.07270	.04610
.599	-1.640	.24270	-.06970	.08910	-.03970	.01990	.10160	.00680	.03210	.07170	.04480
.599	.400	.23620	-.06390	.01510	-.02270	.00130	.10360	.00660	.03110	.07140	.04440
.599	2.430	.23740	-.06480	-.06200	-.03090	-.01400	.10280	.00670	.03150	.07260	.04230
.599	4.500	.25080	-.06880	-.13790	.06240	-.02810	.10920	.00670	.03190	.07270	.04020
.599	6.570	.24080	-.07270	-.21900	.09800	-.04330	.10840	.00740	.03480	.07650	.03980
.599	8.630	.24890	-.08110	-.29230	.12790	-.05680	.10480	.00800	.03780	.07680	.04010
.599	10.500	.25430	-.08630	-.36590	.15790	-.06780	.10320	.00860	.04080	.07950	.04040
.599	.400	.24007	-.08630	.01360	-.00190	.00020	.10620	.00650	.03080	.07120	.04320
GRADIENT	-.00142	.00108	-.03794	.01633	-.00725	.00112	.00112	-.00002	-.00009	.00008	-.00062

RUN NO. 39/ 0 RVL = 6.17 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CH	CLM	CY	CYN	CSL	CAF	CNSO	CASO	CABT	CABS
.698	-10.090	.31000	-.12960	.45940	-.18330	.07480	.13320	.00960	.04540	.08540	.05550
.698	-8.090	.32170	-.13900	.36340	-.15940	.06330	.13980	.00980	.04210	.08360	.05290
.698	-6.300	.32250	-.13340	.29890	-.12330	.04830	.14470	.00940	.03950	.07990	.05010
.698	-3.820	.32100	-.12940	.22200	-.08790	.03500	.14710	.00820	.03880	.08130	.04740
.698	-1.720	.30840	-.11630	.11180	-.04830	.01790	.15150	.00790	.03750	.07990	.04560
.698	.290	.29740	-.10830	.01690	-.00500	.00140	.15440	.00770	.03640	.08030	.04440
.698	2.480	.30570	-.11240	-.08020	.04350	-.01790	.15920	.00750	.03570	.07970	.04190
.698	4.870	.30830	-.11690	-.16900	.08990	-.03480	.15820	.00790	.03710	.08120	.04060
.698	7.080	.31320	-.12200	-.25780	.12170	-.05090	.15810	.00840	.03970	.08050	.04070
.698	8.810	.31280	-.12270	-.34270	.15270	-.06300	.15850	.00910	.04310	.08400	.04090
.698	10.750	.30820	-.11620	-.42420	.18100	-.07410	.15670	.00970	.04580	.08650	.03980
.698	.390	.30330	-.11000	-.01200	-.00120	-.00080	.15490	.00760	.03610	.07980	.04440
GRADIENT	-.00094	.00104	-.04378	.01950	-.00795	.00119	.00119	-.00002	-.00006	.00003	-.00077

TABULATED SOURCE DATA, MSFC 378-560 (IA-27, 1A48)

DATE 18 SEP 73

(088012) (31 AUG 73)

MSFC 378 (1A37) (084) (71.4) (812) (U6)

PARAMETRIC DATA

ALPHA = 5.000 ORBINC = .000
DELTA Z = 30.000

REFERENCE DATA

SREF = 6.1600 IN. XREF = 2.7200 IN.
LREF = 5.1600 IN. YREF = .0000 IN.
BREF = 5.1600 IN. ZREF = .0000 IN.
SCALE = .0040

RUN NO. 40/ 0 RVL = 6.57 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	CN	CLM	CY	CYN	CEL	CAF	CSBO	CABT	CABS
1.099	-10.800	.33970	-1.4820	.46720	-.19960	.08710	.24420	.03100	.06770	.06390
1.099	-8.130	.33960	-1.4310	.39230	-.16430	.07170	.24610	.05110	.08600	.06320
1.099	-5.970	.34180	-.14170	.29820	-.12140	.02860	.25030	.04760	.08570	.06460
1.099	-3.650	.34450	-1.4030	.19250	-.08230	.03510	.24830	.04680	.08670	.06590
1.099	-1.750	.33850	-1.3410	.10810	-.04670	.01650	.25160	.04680	.08540	.06610
1.099	.390	.33460	-1.3080	.00920	.00170	-.00190	.25060	.04530	.08600	.06450
1.099	2.510	.33290	-1.2920	-.09080	.04750	-.02140	.25360	.04720	.08770	.06190
1.099	4.620	.33760	-1.3470	-.17580	.08170	-.03620	.25920	.04820	.08620	.05900
1.099	6.770	.33330	-1.3580	-.26660	.12020	-.05950	.25980	.05090	.08770	.05750
1.099	8.910	.33080	-1.3890	-.36230	.15670	-.08630	.25760	.05220	.08790	.05760
1.099	10.060	.32920	-1.3070	-.45410	.18090	-.06630	.25240	.05370	.08640	.05670
1.099	.403	.33610	-.13070	.02470	.00390	-.00960	.25080	.04530	.08610	.06460
GRADIENT		-.00066	.00360	-.04367	.01932	-.00863	.00064	.00022	.00719	-.00066

RUN NO. 19/ 0 RVL = 8.27 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	CN	CLM	CY	CYN	CEL	CAF	CSBO	CABT	CABS
1.461	-10.250	.33990	-1.5390	.46040	-.17950	.07480	.27400	.04130	.06310	.05230
1.461	-8.170	.33820	-1.5030	.31930	-.13940	.05960	.27690	.03870	.06150	.05130
1.461	-5.960	.34060	-1.4910	.25470	-.09960	.04360	.28220	.03640	.06090	.05010
1.461	-3.690	.34250	-1.4650	.15900	-.06040	.02900	.28730	.03440	.05870	.04820
1.461	-1.720	.34090	-1.4210	.07200	-.02630	.01280	.29240	.03310	.05970	.04780
1.461	.430	.34270	-1.4100	-.01280	.00690	-.00260	.29350	.03170	.05330	.04750
1.461	2.560	.34420	-1.4270	-.09220	.03850	-.01630	.29090	.03340	.05490	.04650
1.461	4.700	.34380	-1.4530	-.17990	.07080	-.03400	.29100	.03540	.05620	.04490
1.461	6.970	.34470	-1.4330	-.27930	.11070	-.05000	.28840	.03700	.05930	.04000
1.461	9.040	.34910	-1.4960	-.37990	.14810	-.06430	.28410	.03790	.05960	.03880
1.461	11.010	.35310	-1.5450	-.48070	.18310	-.07660	.27640	.03970	.06130	.04040
1.461	.440	.34510	-1.4110	-.01770	.00860	-.00470	.29130	.03920	.05190	.04590
GRADIENT		.00050	-.00023	-.04066	.01600	-.00728	.01041	.00007	-.00009	-.00064

(R8601E) (31 AUG 73)

PARAMETRIC DATA

ALPHA = 5.000
DELTA Z = 30.000
ORF INC = .000

REFERENCE DATA

REFP = 6.1600 IN. XAPP = 2.7500 IN.
LREF = 9.1600 IN. YAPP = .0000 IN.
BREF = 9.1600 IN. ZAPP = .0000 IN.
SCALE = .0040

RUN NO. 16/ 0 RVL = 6.66 GRADIENT INTERVAL = -7.00/ 7.00

KACH	BETA	ON	GLN	CY	CYN	CEL	CAF	CSBO	CABO	CABT	CABS
1.943	-10.260	.56040	-1.14180	.45670	-.16310	.06670	.56610	.03190	.03190	.04190	.02190
1.943	-9.800	.51610	-1.13640	.56140	-.14490	.09600	.27000	.02900	.02900	.04220	.02690
1.943	-6.010	.31670	-1.13670	.25760	-.10300	.04060	.27590	.02560	.02560	.04060	.02690
1.943	-3.860	.32300	-1.13670	.16350	-.06310	.02510	.28350	.02460	.02460	.03690	.02720
1.943	-1.750	.32170	-1.13600	.07200	-.02500	.01040	.28270	.02300	.02300	.03640	.02490
1.943	.480	.33100	-1.14310	-.01440	.00960	-.00980	.28600	.02340	.02340	.03580	.02620
1.943	2.580	.33180	-1.14140	-.10090	.04270	-.01730	.28650	.02600	.02600	.03700	.02820
1.943	4.740	.33680	-1.14250	-.19640	.08040	-.03270	.29350	.02620	.02620	.03980	.02830
1.943	6.960	.33650	-1.14060	-.29660	.12290	-.04910	.28910	.02600	.02600	.04060	.02720
1.943	9.110	.34220	-1.14470	-.40260	.16390	-.06270	.26410	.03000	.03000	.04170	.02560
1.943	11.080	.34610	-1.14750	-.49850	.19850	-.07400	.28340	.03220	.03220	.04260	.02470
1.943	.450	.32980	-1.14080	-.08040	.01190	-.00340	.27910	.02270	.02270	.03930	.02590
GRADIENT		.00167	-.00046	-.04236	.01711	-.00664	.00104	.00025	.00025	.00006	.00006

RUN NO. 6/ 0 RVL = 4.96 GRADIENT INTERVAL = -7.00/ 7.00

KACH	BETA	ON	GLN	CY	CYN	CEL	CAF	CSBO	CABO	CABT	CABS
4.959	-7.760	.14480	-.00040	.22430	-.07670	.03070	.21160	.00120	.00600	.00540	.00310
4.959	-5.650	.13600	-.02570	.16080	-.05470	.02200	.20750	.00130	.00620	.00590	.00370
4.959	-3.610	.13060	-.02130	.09960	-.03620	.01340	.20270	.00130	.00610	.00580	.00430
4.959	-1.660	.14160	-.02240	.04170	-.01340	.00590	.19650	.00120	.00600	.00590	.00470
4.959	.430	.12990	-.01730	-.04170	.00660	-.00280	.19900	.00120	.00590	.00580	.00490
4.959	2.480	.12370	-.01580	-.07300	.02230	-.01120	.20010	.00130	.00610	.00600	.00500
4.959	4.500	.11700	-.02800	-.11920	.04160	-.01630	.20410	.00130	.00610	.00610	.00480
4.959	6.570	.14030	-.02530	-.19520	.04390	-.02670	.20790	.00130	.00630	.00600	.00460
4.959	8.580	.14340	-.02740	-.27930	.04690	-.03560	.21490	.00130	.00640	.00600	.00480
4.959	.460	.12510	-.01690	-.01470	.00410	-.00330	.20060	.00120	.00570	.00570	.00490
GRADIENT		.00084	-.00010	-.02674	.00959	-.00397	.00011	.00000	.00001	.00004	.00007

MSFC 580 (1A48) (054) (114) (812) (06)

(060001) (27 JUL 75)

REFERENCE DATA

SWP = 6.1600 IN. XSWP = 2.7800 IN.
LWSP = 5.1600 IN. YWSP = .0000 IN.
RWSP = 5.1600 IN. ZWSP = .0000 IN.
SCALE = .0040

BETA = .000
DELTA Z = .140
CRBINC = .000

PARAMETRIC DATA

RUN NO. 1 / 2 RVL = 4.92 GRADIENT INTERVAL = -7.00 / 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.001	-7.560	-1.2930	-0.0160	-0.0110	-0.0040	.02780	.05990	-.15400	.04270	-.3.17290	
.002	-9.960	-0.6480	-0.0110	-0.0110	-0.0150	.02760	.05910	-.08030	.05670	-2.45770	
.003	-3.470	-0.4410	-0.0430	-0.0430	-0.0430	.02760	.05430	-.02350	.02960	-0.87370	
.004	-1.440	-0.0280	-0.0160	-0.0160	-0.0160	.02760	.03430	.03960	.02200	1.76360	
.005	.600	-0.0740	-0.0340	-0.0340	-0.0340	.02060	.03340	-.09710	.02160	4.48760	
.006	2.670	-0.0790	-0.0160	-0.0160	-0.0160	.01460	.05320	.16270	.02220	7.31700	
.007	4.790	-0.1630	-0.0170	-0.0170	-0.0170	.01960	.05160	.22500	.02830	7.86310	
.008	6.760	-0.1990	-0.0160	-0.0160	-0.0160	.00360	.03370	.29140	.03910	8.28410	
.009	8.600	-0.2060	-0.0190	-0.0190	-0.0190	.00000	.05300	.35560	.04800	7.23460	
.010	.600	-0.0330	-0.0160	-0.0160	-0.0160	.02170	.05370	.09790	.02290	4.29660	
.011	GRADIENT	.03125	-.01975	-.00017	-.00021	-.00219	-.00019	.03084	-.00010	.96338	

RUN NO. 2 / 0 RVL = 6.21 GRADIENT INTERVAL = -7.00 / 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.001	-7.610	-1.3210	-0.0220	-0.0170	-0.0070	.17660	.01610	-.11660	.12330	-.92960	
.002	-5.480	-0.6150	-0.0190	-0.0190	-0.00610	.10810	.01630	-.04110	.11090	-3.37170	
.003	-3.390	-0.2370	-0.0180	-0.0180	-0.0050	.10010	.01460	.03150	.09640	.32090	
.004	-1.310	-0.0330	-0.0160	-0.0160	-0.0040	.09930	.01630	.10700	.09660	1.10610	
.005	.760	-0.0460	-0.0170	-0.0170	-0.0040	.09510	.01630	.18330	.09760	1.67640	
.006	2.860	-0.12580	-0.0160	-0.0160	-0.0040	.09190	.01490	.24160	.10480	2.31640	
.007	4.960	-0.16240	-0.0170	-0.0170	-0.0040	.09130	.01600	.29640	.11760	2.53560	
.008	7.000	-0.19630	-0.0160	-0.0160	-0.0040	.08950	.01580	.34390	.13260	2.59590	
.009	9.080	-0.23080	-0.0160	-0.0160	-0.0040	.08780	.01340	.38970	.15130	2.57550	
.010	.760	-0.0440	-0.0160	-0.0160	-0.0040	.09590	.01610	.18360	.09840	1.86610	
.011	GRADIENT	.03310	-.02131	.00014	-.00013	-.00128	-.00012	.03123	.00191	.24922	

RUN NO. 4 / 0 RVL = 6.53 GRADIENT INTERVAL = -7.00 / 7.00

WACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.101	-7.640	-1.7700	-0.7660	-0.01750	-0.01470	-.00470	.17140	.00860	-.15260	.19340	-.76900
1.101	-9.510	-0.9570	-0.12130	-0.01690	-0.01420	-.00440	.16970	.00720	-.07910	.17720	-.44670
1.101	-3.390	-0.1220	-0.06540	-0.01630	-0.01400	-.00430	.16610	.00590	-.00240	.16660	-.01450
1.101	-1.290	-0.07930	-0.0370	-0.01590	-0.01390	-.00390	.16460	.00530	-.08200	.16270	.50400
1.101	.630	-0.1780	-0.06010	-0.01680	-0.01360	-.00380	.16200	.01470	.16930	.16450	1.03030
1.101	2.970	-0.2270	-0.12250	-0.01720	-0.01520	-.00370	.15950	.01520	.25300	.17300	1.47420
1.101	5.100	-0.34480	-0.17790	-0.01900	-0.01560	-.00360	.15490	.00830	.32960	.18500	1.76150
1.101	7.160	-0.40270	-0.21540	-0.01920	-0.01650	-.00360	.15140	.00510	.40750	.21480	1.69700
1.101	9.230	-0.43670	-0.23720	-0.01630	-0.01640	-.00330	.14660	.00680	.47420	.24800	1.05090
1.101	.630	-0.17660	-0.06375	-0.01750	-0.01470	-.00330	.16320	.00681	.17420	.16560	1.05090
GRADIENT		.04207	-.02859	-.00019	-.00022	-.00008	-.00123	-.00010	.03910	.00061	.21723

0900001 (27 JUL 73)

MSFC 580(1A48) (034) (T14) (812) (J8)

MSFC 580(1A48) (034) (T14) (812) (J8)

PARAMETRIC DATA

REFERENCE DATA

BETA = .000
DELTA Z = .147

WIND = 6.1800 54 IN. XWPP = 2.7800 IN.
LWPP = 5.1600 IN. YWPP = .0000 IN.
SWPP = 5.1600 IN. ZWPP = .0000 IN.
SCALE = .0040

RUN NO. 3/ 0 R/V/L = 6.64 GRADIENT INTERVAL = -7.00/ 7.00

WIND	ALPHA	CN	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.251	-7.630	-1.3310	1.3650	-0.1370	0.1080	-0.0030	1.8350	-0.0040	-1.0760	0.1990	-0.25490
1.251	-5.460	-0.0370	0.7240	-0.1350	0.1090	-0.0040	1.8360	-0.0060	-0.1970	0.16640	-0.10680
1.251	-3.340	0.0970	0.0630	-0.0180	0.1000	-0.0080	1.6540	-0.0040	0.06940	0.18170	0.36240
1.251	-1.240	0.1570	-0.0570	-0.0120	0.1020	-0.0070	1.6460	-0.0110	0.15570	0.18150	0.65770
1.251	.880	0.2490	-0.1160	-0.0100	0.0970	-0.0030	1.6330	-0.0190	0.23000	0.18730	1.27810
1.251	3.080	0.3180	-0.1690	-0.0100	0.0900	-0.0020	1.6380	-0.0080	0.30880	0.19960	1.54480
1.251	5.150	0.3690	-0.2150	-0.0120	0.1050	-0.0050	1.6140	0.0010	0.37100	0.21560	1.72010
1.251	7.200	0.4380	-0.2470	-0.0120	0.0900	-0.0020	1.7710	0.0010	0.41330	0.23070	1.79100
1.251	9.280	0.4780	-0.2770	-0.0110	0.0860	-0.0080	1.7370	0.0040	0.44430	0.24680	1.78630
1.251	.990	0.2480	-0.1200	-0.0120	0.0960	-0.0030	1.6380	-0.0260	0.24560	0.18710	1.30270
1.251	0.4030	-0.0270	-0.0015	-0.0006	-0.0006	-0.0015	-0.0005	-0.0002	0.09708	0.02877	-0.17533

RUN NO. 35/ 0 R/V/L = 6.51 GRADIENT INTERVAL = -7.00/ 7.00

WIND	ALPHA	CN	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.468	-7.680	-1.3380	1.3010	-0.0030	0.0260	-0.0050	1.9680	-0.0160	-1.10570	0.21290	-0.49650
1.468	-5.970	-0.0540	0.7360	-0.0030	0.0310	-0.0040	1.9160	-0.0180	-0.03630	0.19610	-0.10680
1.468	-3.470	0.03670	0.0780	-0.0080	0.0030	0.0040	1.9030	-0.0120	0.04820	0.18770	0.25680
1.468	-1.320	0.13340	-0.0600	-0.0070	0.0020	0.0070	1.8790	-0.0200	0.13770	0.18470	0.74520
1.468	.810	0.22670	-0.1290	-0.0080	0.0030	0.0100	1.8710	-0.0200	0.22400	0.19090	1.17710
1.468	2.930	0.31030	-0.1790	-0.0160	0.0060	0.0060	1.8780	-0.0180	0.30030	0.20350	1.47550
1.468	5.050	0.36090	-0.2240	-0.0130	0.0030	0.0130	1.8400	-0.0170	0.36000	0.21990	1.6370
1.468	7.140	0.43160	-0.2560	-0.0030	0.0030	0.0160	1.8660	-0.0190	0.40540	0.23680	1.71590
1.468	9.200	0.46690	-0.2760	-0.0080	0.0290	0.0160	1.8200	-0.0170	0.43170	0.25440	1.69680
1.468	.810	0.22670	-0.1250	-0.0040	0.0020	0.0100	1.8980	-0.0190	0.22600	0.19200	1.17710
1.468	0.4159	-0.02643	-0.0005	-0.0005	0.0005	-0.0013	-0.0045	-0.0011	0.03816	0.02828	-0.17854

RUN NO. 26/ 0 R/V/L = 7.05 GRADIENT INTERVAL = -7.00/ 7.00

WIND	ALPHA	CN	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.965	-7.600	-0.0680	0.7780	0.0410	-0.0040	0.0070	2.0060	-0.03070	-0.03570	0.20750	-0.17220
1.965	-5.560	0.2090	0.4600	0.0010	-0.0070	0.0140	1.9580	-0.03070	-0.00140	0.19660	-0.00740
1.965	-3.480	0.2760	0.1170	0.0040	-0.0060	0.0160	1.6960	-0.03060	0.09910	0.18760	0.08660
1.965	-1.400	0.0820	-0.0260	0.0040	-0.0060	0.0160	1.8560	-0.03080	0.08710	0.18350	0.47490
1.965	.700	0.15130	-0.0760	0.0040	-0.0040	0.0200	1.6240	-0.03150	0.14910	0.18330	0.81350
1.965	2.800	0.22370	-0.1300	0.0040	-0.0010	0.0170	1.8000	-0.03090	0.21480	0.19070	1.12510
1.965	4.910	0.29170	-0.17760	0.0040	-0.0010	0.0140	1.7920	-0.03040	0.27530	0.20340	1.25270
1.965	7.000	0.35280	-0.21840	0.0030	-0.0010	0.0110	1.6110	-0.02940	0.32810	0.22260	1.47210
1.965	9.070	0.39080	-0.24410	0.0020	-0.0010	0.0100	1.7890	-0.02960	0.35740	0.23620	1.50020
1.965	.710	0.15110	-0.08090	0.0030	-0.0010	0.0220	1.8040	-0.03160	0.15290	0.18250	0.83680
1.965	0.03051	-0.08173	-0.00001	-0.00001	-0.00001	-0.00001	-0.00119	-0.00006	0.02708	0.02801	-0.18576

MPFC 580 (1A48) (054) (T14) (312) (US)

REFERENCE DATA

BWP = 6.1860 IN. ZWP = 2.7200 IN.
 LWP = 5.1800 IN. YWP = .0000 IN.
 SWP = 5.1800 IN. ZWP = .0000 IN.
 SCALE = .0040

ALPHA = .000 CRINC = .000
 DELTAZ = .140

PARAMETRIC DATA

RUN NO. 21/ 0 RVAL = 4.99 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
.604	-7.860	.14040	-.08250	.15840	-.09700	.06040	.01860	.05810	.14080	.01860	7.06190
.604	-7.830	.12730	-.09960	.11680	-.07080	.04480	.01960	.05490	.12710	.02120	5.97390
.604	-7.790	.11440	-.04700	.07140	-.04260	.02860	.02060	.05200	.11420	.02200	5.16980
.604	-1.750	.10020	-.03600	.02900	-.02820	.01310	.02900	.05070	.09990	.02400	4.14940
.604	.370	.09700	-.03560	-.01520	.01170	-.00340	.02230	.05120	.09670	.02330	4.13970
.604	2.380	.09410	-.03360	-.04930	.03660	-.01960	.02170	.03260	.09390	.02270	4.12980
.604	4.430	.09780	-.00840	-.09910	.06400	-.03440	.02170	.03570	.09760	.02270	4.28530
.604	6.480	.09480	-.03660	-.14490	.09360	-.05040	.02160	.05420	.09460	.02270	4.15400
.604	8.530	.09960	-.04340	-.17860	.11230	-.06120	.01900	.05830	.09960	.02290	4.86380
.604	.320	.09480	-.03220	-.01420	.01090	-.00320	.02190	.05160	.09450	.02290	4.11690
GRADIENT		-.00258	.00124	-.02108	.01327	-.00779	.00011	.00006	-.00236	.00006	-.12617

RUN NO. 22/ 0 RVAL = 6.25 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
.608	-6.040	.21650	-.10580	.18480	-.11630	.06670	.09670	.01900	.21420	.09960	2.13190
.608	-5.970	.21220	-.10450	.16040	-.09030	.05070	.09770	.01710	.21060	.10070	2.09330
.608	-5.980	.21300	-.10700	.09540	-.06270	.03540	.09730	.01560	.21160	.10030	2.10840
.608	-1.780	.20310	-.10100	.04000	-.02490	.01600	.08650	.01280	.20390	.09940	2.04940
.608	.330	.18440	-.06530	-.01330	.01080	-.00370	.09340	.01460	.18310	.09990	1.90940
.608	2.420	.16860	-.08960	-.06920	.04310	-.01190	.09470	.01650	.16690	.10220	1.92120
.608	4.500	.19250	-.09540	-.12180	.06360	-.04740	.09960	.01730	.19090	.10220	1.66700
.608	6.600	.17940	-.09640	-.16660	.11300	-.05990	.09810	.01930	.17710	.09840	1.79690
.608	8.700	.17030	-.09200	-.21100	.14080	-.07040	.10060	.02140	.16900	.10280	1.64260
.608	.330	.18210	-.06300	-.01460	.01170	-.00440	.09270	.01580	.18060	.09320	1.89900
GRADIENT		-.10272	.07192	-.02469	.01657	-.00868	-.00003	.00023	-.00272	-.00009	-.02548

RUN NO. 23/ 0 RVAL = 6.80 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.087	-6.130	.21070	-.09630	.16150	-.11330	.07930	.16710	.00990	.20810	.17030	1.22170
1.087	-6.010	.19470	-.07600	.13210	-.06330	.09940	.16380	.01010	.19220	.16690	1.15470
1.087	-5.900	.17970	-.08840	.08160	-.05090	.05730	.16340	.00760	.17330	.16600	1.06200
1.087	-1.790	.16620	-.05780	.03200	-.01850	.01630	.16240	.00820	.16580	.16490	1.00810
1.087	.340	.18200	-.05920	-.01700	.01300	-.00540	.16310	.00630	.16260	.16750	.97100
1.087	2.450	.19900	-.08270	-.06680	.04590	-.02710	.16790	.00950	.15660	.17010	.92090
1.087	4.540	.19460	-.05560	-.11830	.06030	-.04840	.16900	.01290	.15730	.17120	.81830
1.087	6.640	.15510	-.05370	-.16610	.11040	-.06960	.17100	.01260	.15280	.17310	.68230
1.087	8.600	.15470	-.05690	-.21230	.13600	-.08630	.16770	.01520	.15240	.16980	.69770
1.087	.340	.16780	-.05660	-.01960	.01340	-.00700	.16330	.00790	.16370	.16370	.99660
GRADIENT		-.00261	.00166	-.02353	.01532	-.01012	.00066	.00036	-.00279	.00060	-.02008

0890002 (27 JUL 73)

MSFC 580 (IA48) (054) (T14) (S12) (US)

PARAMETRIC DATA

ALPHA = .000
DELTA Z = .140
OSBINC = .000

REFERENCE DATA

MSRP = 8.1800 IN.
LMSRP = 5.1800 IN.
ZMSRP = 5.1800 IN.
SCALE = .0040
XMRP = 2.7200 IN.
YMRP = .0000 IN.
ZMRP = .0000 IN.

RUN NO. 24/ 0 RVAL = 6.67 GRADIENT INTERVAL = -7.00/ 7.00

MSFC	BETA	ON	CLM	CY	CYN	CBL	CAP	CAS	CL	CD	L/D
1.256	-0.210	.24160	-.11970	.17150	-.10280	.07480	.18410	.00130	.25670	.16760	1.27110
1.255	-0.040	.23420	-.11710	.12420	-.07500	.05450	.16560	-.00000	.23300	.16720	1.24620
1.254	-3.920	.23960	-.11540	.07630	-.04540	.03480	.18440	-.00100	.23100	.16790	1.22950
1.253	-1.800	.22960	-.11180	.03080	-.01670	.01510	.18310	-.00270	.22660	.16660	1.21540
1.252	.330	.22790	-.11150	-.01470	-.00450	.18300	.00260	-.00260	.22320	.16160	1.20750
1.251	2.450	.22030	-.10650	-.05960	.03990	-.02950	.16600	-.00100	.21790	.18720	1.14920
1.250	4.570	.21130	-.10030	-.10490	.08630	-.04320	.16790	.00190	.20850	.19360	1.08390
1.249	6.700	.20010	-.09450	-.15290	.13600	-.06320	.16790	.00450	.19740	.19070	1.01550
1.248	8.840	.18440	-.08970	-.19780	.18310	-.08030	.16630	.07460	.19180	.16690	1.01500
1.247	.340	.22640	-.10930	-.01590	.01250	-.00350	.18400	-.00220	.22360	.18740	1.19320
1.246	GRADIENT	-.00274	.00174	-.02180	.01351	-.00916	.00037	-.00037	-.00275	.00031	-.01632

RUN NO. 36/ 0 RVAL = 6.92 GRADIENT INTERVAL = -7.00/ 7.00

MSFC	BETA	ON	CLM	CY	CYN	CBL	CAP	CAS	CL	CD	L/D
1.468	-0.210	.22230	-.11790	.18570	-.11150	.07400	.18080	-.01310	.22020	.19410	1.13430
1.467	-0.070	.21330	-.11240	.13730	-.08260	.05300	.18210	-.01420	.21060	.19310	1.07960
1.466	-3.960	.21100	-.11140	.08000	-.05370	.03640	.18420	-.01480	.20630	.19710	1.03640
1.465	-1.800	.20240	-.11040	.04380	-.02910	.01830	.18360	-.01650	.20560	.19610	1.04940
1.464	.300	.21280	-.11420	.00040	.00140	.19090	.00110	-.01660	.20990	.19360	1.06330
1.463	2.420	.20450	-.10810	-.04420	.02960	-.01650	.18410	-.01690	.20190	.19680	1.02570
1.462	4.540	.19410	-.10040	-.08910	.05760	-.03320	.19570	-.01900	.19190	.19620	.93720
1.461	6.660	.18590	-.09510	-.13490	.08600	-.05150	.19320	-.01290	.18340	.19570	.91220
1.460	8.810	.17960	-.08920	-.18310	.11420	-.06940	.19190	-.01300	.17720	.19420	.81220
1.459	.310	.21370	-.11470	-.00210	.00310	.00000	.19070	-.01860	.21110	.19370	1.06990
1.458	GRADIENT	-.00202	.00128	-.02124	.01318	-.00829	.00012	-.00011	-.00200	.00008	-.01064

RUN NO. 25/ 0 RVAL = 7.10 GRADIENT INTERVAL = -7.00/ 7.00

MSFC	BETA	ON	CLM	CY	CYN	CBL	CAP	CAS	CL	CD	L/D
1.992	-0.240	.17730	-.09680	.17720	-.10530	.06190	.18170	-.02820	.17500	.18400	.95110
1.991	-0.120	.15770	-.09310	.12570	-.07900	.04610	.18090	-.02930	.15540	.18290	.84990
1.990	-3.960	.14390	-.07250	.08840	-.05220	.03080	.18240	-.02990	.14170	.18420	.76930
1.989	-1.800	.13920	-.06930	.04570	-.02820	.01590	.18370	-.02960	.13730	.18540	.74060
1.988	.290	.14000	-.06930	.00270	.00000	.06110	.18410	-.02970	.13780	.18590	.74140
1.987	2.420	.13070	-.06390	-.04040	.02620	-.01400	.18460	-.02940	.12960	.18610	.69060
1.986	4.540	.12520	-.06180	-.08290	.05160	-.02950	.18390	-.02820	.12300	.18490	.66540
1.985	6.700	.13780	-.07080	-.12910	.08030	-.04420	.18370	-.02860	.13550	.18750	.72410
1.984	8.840	.12770	-.06980	-.17940	.11090	-.06220	.18760	-.02740	.13060	.18910	.69070
1.983	.300	.15940	-.06820	-.00060	.00190	-.00040	.18300	-.03050	.13720	.18470	.74270
1.982	GRADIENT	-.00177	.00107	-.02029	.01234	-.00701	.00029	-.00006	-.00176	.00026	-.01061

M TC 560 (IA49) (234) (T14) (812)

(0190005) (27 JUL 75)

REFERENCE DATA

MEZ = 6.1800 IN. MPFC = 2.7000 IN.
 LMEZ = 5.1600 IN. YMPFC = .0000 IN.
 RMEZ = 5.1600 IN. ZMPFC = .0000 IN.
 SCALE = .0040

ALPHA = .000
 DELTAZ = .140
 CRIBINC = .000

RUN NO. 17/ 0 RW/L = 4.96 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	ON	CLK	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
.002	-7.847	.09970	-.00000	.13700	-.08490	.02660	.01260	.05470	.05560	.01670	3.31190
.002	-5.610	.08710	.00650	.11740	-.07060	.04440	.01710	.05390	.03680	.01750	2.10400
.002	-3.780	.08710	.01320	.07590	-.04300	.02900	.01960	.05250	.06400	.02010	1.25910
.002	-1.700	.01800	.01810	.02960	-.01660	.01240	.01940	.05340	.01780	.01960	.90900
.002	.320	.01530	.01960	-.01240	.00860	-.02010	.02220	.09220	.01510	.02010	.75360
.002	2.400	.02540	.02450	-.05970	.03650	-.01750	.02010	.05430	.00320	.01640	.26030
.002	4.470	.07700	.02190	-.08930	.06440	-.03230	.01630	.05620	.00990	.01630	.50720
.002	6.460	.00910	.02190	-.14300	.09220	-.04740	.01400	.05700	.00130	.01400	.06910
.002	8.530	.00140	.02220	-.17630	.11130	-.05970	.01400	.05700	.00130	.01400	.06910
.002	.390	.01650	.02670	-.01420	.01070	-.03940	.01910	.05300	.01600	.01930	.63140
.002	GRADIENT	-.00282	.00121	-.02108	.01317	-.00742	-.00308	.00017	-.00252	-.00011	-.13336

RUN NO. 18/ 0 RW/L = 6.26 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	ON	CLK	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
.002	-6.050	.13180	-.04600	.18280	-.11320	.02660	.06650	.01570	.13040	.09120	1.42900
.002	-5.930	.11170	-.03660	.13610	-.09610	.04660	.06530	.01340	.11060	.08670	1.27560
.002	-3.640	.08660	-.02960	.08960	-.05720	.03370	.06350	.01160	.08790	.08470	1.15430
.002	-1.740	.08660	-.02040	.03790	-.02290	.01590	.06360	.00990	.08590	.08490	1.01270
.002	.330	.07460	-.01220	-.01220	.00890	-.00160	.06300	.01110	.07560	.06390	.67670
.002	2.440	.07180	-.01090	-.06400	.04970	-.02070	.06380	.01290	.07090	.06400	.69370
.002	4.560	.06610	-.01060	-.11670	.07960	-.02270	.06200	.01300	.06720	.06290	.61200
.002	6.610	.07210	-.01900	-.16990	.10950	-.03410	.06790	.01540	.07110	.06670	.60220
.002	8.720	.05940	-.02670	-.20270	.13160	-.03710	.06470	.01800	.07630	.06530	.59560
.002	.390	.06000	-.01600	-.01390	.01070	-.00270	.06410	.01110	.07890	.06900	.93310
.002	GRADIENT	-.00354	.00180	-.02415	.01579	-.00841	.00007	.00019	-.00333	.00002	-.03687

RUN NO. 20/ 0 RW/L = 6.79 GRADIENT INTERVAL = -7.00/ 7.00

INCH	BETA	ON	CLK	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.100	-6.130	.15900	-.04600	.16620	-.11300	.07630	.16630	.01750	.19070	.16830	.69440
1.100	-6.060	.13050	-.03510	.13370	-.09390	.05660	.16330	.01140	.12620	.16710	.76770
1.100	-3.920	.11070	-.02070	.06330	-.05170	.03690	.16460	.00960	.10950	.16610	.65370
1.100	-1.790	.09690	-.01050	.03320	-.01920	.01600	.16350	.00750	.09490	.16470	.57590
1.100	.340	.08200	-.00710	-.01640	.01270	-.00490	.16480	.00790	.08990	.16570	.54230
1.100	2.450	.06670	-.00510	-.06540	.04540	-.02570	.16630	.00890	.08480	.16740	.50560
1.100	4.560	.06690	-.00840	-.11760	.07990	-.04700	.16670	.01130	.08480	.16780	.50560
1.100	6.690	.06630	-.00900	-.16720	.11070	-.06700	.16940	.01100	.08430	.17050	.49440
1.100	8.810	.06600	-.01190	-.21570	.13780	-.06490	.16890	.01310	.08400	.16980	.49470
1.100	.340	.09290	-.00930	-.01860	.01470	-.00600	.16270	.00860	.09090	.16360	.55460
1.100	GRADIENT	-.00322	.00183	-.02370	.01538	-.00969	.00033	.00009	-.00319	.00026	-.02002

TABULATED SOURCE DATA, NSFC 978-580 (IA-37, 1A48)

DATE 16 SEP 75

(R69003) (27 JUL 75)

NSFC 590 (1A48) (CS4) (T14) (S12)

PARAMETRIC DATA

REFERENCE DATA

REF = 6.1800 IN. 100P = 2.7800 IN.
 LREF = 5.1800 IN. YREF = .0000 IN.
 BREF = 5.1800 IN. ZREF = .0000 IN.
 SCALE = .0040

ALPHA = .000 ORBINC = .000
 DELTAZ = .140

RUN NO. 19/ 0 RVL = 6.82 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CH	CLM	CY	CYN	CBL	CAP	CAS	CL	CD	L/D
1.250	-6.180	.16660	-.04660	.17500	-.10260	.07260	.16340	.00310	.18700	.18600	1.00590
1.250	-6.180	.17670	-.07690	.12500	-.07470	.05360	.16360	.00210	.17420	.18610	.93570
1.250	-6.180	.16620	-.07360	.07710	-.04530	.03360	.16330	.00090	.16360	.18590	.86310
1.250	-6.180	.19610	-.06860	.03100	-.01660	.01470	.16160	-.00100	.15670	.18370	.85290
1.250	-.330	.19610	-.06860	-.01330	.01060	-.00370	.16310	-.00140	.15660	.18300	.85670
1.250	2.450	.14660	-.06310	-.03600	.03630	-.02220	.18440	.00110	.14740	.18630	.79150
1.250	4.970	.14030	-.05660	-.10460	.06750	-.04140	.18620	.00430	.13790	.18790	.75410
1.250	6.700	.12910	-.04640	-.18230	.08700	-.06060	.18630	.00670	.12690	.18680	.66630
1.250	8.660	.13160	-.06310	-.19650	.12270	-.07850	.18220	.00980	.12940	.18670	.69290
1.250	.330	.13960	-.06460	-.01510	.01180	-.00460	.18700	.00020	.15140	.18400	.82300
1.250	GRADIENT	-.02643	.00221	-.02129	.01336	-.00662	.00037	.00036	-.00341	.00031	-.01933

RUN NO. 33/ 0 RVL = 6.51 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CH	CLM	CY	CYN	CBL	CAP	CAS	CL	CD	L/D
1.482	-6.170	.18200	-.07910	.17170	-.10000	.06930	.16670	-.01110	.15960	.19160	.83290
1.482	-6.050	.14980	-.06620	.12430	-.07470	.04700	.19160	-.01150	.14350	.19340	.74210
1.482	-3.980	.13220	-.06000	.07750	-.04590	.02930	.18240	-.01320	.13000	.19390	.67020
1.482	-1.800	.13120	-.05970	.03310	-.01630	.01260	.19080	-.01500	.12690	.19040	.67010
1.482	.330	.13270	-.06160	-.00930	.00930	-.00260	.19060	-.01340	.13050	.19210	.67940
1.482	2.450	.12530	-.05500	-.05540	.03640	-.01660	.19330	-.01390	.12110	.19470	.62220
1.482	4.970	.11110	-.05090	-.10210	.06570	-.03590	.19140	-.01070	.11500	.19160	.59070
1.482	6.710	.11670	-.05230	-.14800	.08320	-.05290	.19350	-.01170	.11690	.19270	.60310
1.482	8.650	.12100	-.05660	-.19630	.12150	-.07030	.18970	-.01040	.11690	.19100	.62230
1.482	.340	.13100	-.06000	-.01370	.01050	-.00410	.19020	-.01490	.12860	.19170	.67200
1.482	GRADIENT	-.00201	.00123	-.02127	.01315	-.00777	.00006	.00014	-.00199	.00003	-.01039

RUN NO. 28/ 0 RVL = 7.10 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CH	CLM	CY	CYN	CBL	CAP	CAS	CL	CD	L/D
1.964	-6.240	.10330	-.04360	.17690	-.10660	.06230	.17990	-.02660	.10130	.18070	.56060
1.964	-6.110	.08480	-.03140	.13240	-.07910	.04620	.17810	-.03090	.08230	.17690	.46000
1.964	-3.960	.06660	-.01960	.08730	-.05190	.03010	.17970	-.03100	.06180	.18040	.34260
1.964	-1.820	.05723	-.01100	.04430	-.02510	.01800	.18130	-.03070	.05350	.18190	.30560
1.964	.300	.05030	-.00570	.00060	.00130	.00030	.18230	-.03060	.04830	.18260	.26520
1.964	2.420	.04770	-.00463	-.04190	.02710	-.01400	.18290	-.03020	.04990	.18330	.25060
1.964	4.950	.04720	-.00590	-.08410	.03220	-.02290	.18170	-.03010	.04950	.18210	.24990
1.964	6.670	.04890	-.00600	-.12930	.04100	-.04430	.18040	-.03020	.04720	.18090	.26090
1.964	8.630	.05770	-.01750	-.17500	.10630	-.06000	.18190	-.02930	.05000	.18240	.30700
1.964	.310	.05190	-.00690	-.00270	.00340	-.00090	.17960	-.03350	.05010	.18030	.27600
1.964	GRADIENT	-.00249	.00136	-.02034	.01243	-.00701	.00021	.00007	-.00247	.00016	-.01403

TABULATED SOURCE DATA, MFC 579-560 (IA-37, IA48)

MFC 560 (IA48) (284) (T14) (312)

DATE 18 SEP 73

(080004) (27 JUL 73)

REFERENCE DATA

SIZE = 5.1600 IN. XREF = 2.7000 IN.
LREF = 5.1600 IN. YREF = .0000 IN.
SREF = 5.1600 IN. ZREF = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

BETA = .000 CRBINC = .000
DELTAZ = .140

RUN NO. 6/ 0 RVL = 5.00 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	CN	CLM	CY	CYN	CEL	CAP	CAS	C	CD	L/D
.601	-7.660	-2.9960	.19410	-0.1540	.01060	-0.00300	.02240	.05500	-.25430	.05660	-4.47420
.601	-5.560	-1.7820	.14240	-0.1630	.01210	-0.00360	.02510	.05500	-.17310	.04030	-4.34560
.601	-3.530	-1.1260	.09960	-0.1600	.01110	-0.00390	.02160	.05390	-.11120	.02850	-3.89770
.601	-1.900	-.05200	.06060	-0.1700	.01200	-0.00370	.02070	.05320	-.05140	.02200	-2.33110
.601	.540	.01670	.01660	-0.1540	.01120	-0.00270	.01870	.05360	.01850	.01690	.97930
.601	2.660	.06200	-.02250	-0.1550	.0115	-0.00230	.01450	.05380	.08130	.01620	4.44900
.601	4.680	.15090	-.06630	-0.1720	.01300	-0.00270	.00680	.05300	.14960	.02110	7.07990
.601	6.710	.22390	-.11360	-0.1870	.01430	-0.00290	.00290	.05260	.22200	.02900	7.63550
.601	8.760	.28470	-.16110	-0.2120	.01610	-0.00360	-.00480	.05320	.29190	.04020	7.25140
.601	.540	.01770	.01760	-0.1560	.01190	-0.00300	.02000	.05360	.01750	.02010	.06950
GRADIENT		.03232	-.02061	-.00004	.00012	.00009	-.00160	-.00004	.03214	-.00091	1.12678

RUN NO. 7/ 0 RVL = 6.67 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	CN	CLM	CY	CYN	CEL	CAP	CAS	C	CD	L/D
.696	-7.740	-2.4970	.19030	-0.1780	.01370	-0.00460	.05060	.01360	-.23520	.12340	-1.90560
.696	-5.660	-1.6460	.14190	-0.1710	.01320	-0.00390	.06900	.01190	-.15510	.10470	-1.48140
.696	-3.320	-.06450	.08690	-0.1720	.01300	-0.00370	.06640	.01060	-.07910	.09140	-.86480
.696	-1.440	-.00190	.03550	-0.1620	.01210	-0.00320	.06460	.01070	.00010	.06460	.00210
.696	.670	.06320	-.01940	-0.1690	.01240	-0.00300	.08200	.01070	.08220	.08300	.99110
.696	2.790	.16130	-.06600	-0.1500	.01160	-0.00230	.06000	.01040	.15720	.06770	1.79140
.696	4.860	.22090	-.10370	-0.1590	.01160	-0.00230	.07910	.01110	.21340	.09770	2.16360
.696	6.910	.27620	-.14350	-0.1650	.01270	-0.00250	.08210	.01090	.26630	.11500	2.31360
.696	9.000	.32900	-.17700	-0.1460	.01180	-0.00210	.08070	.01110	.31230	.13120	2.36070
.696	.670	.06370	-.01790	-0.1400	.01090	-0.00210	.06300	.01060	.06270	.06400	.96510
GRADIENT		.03587	-.02302	.00011	-.00008	.00013	-.00068	-.00004	.03423	.00079	.32903

RUN NO. 5/ 0 RVL = 6.62 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	CN	CLM	CY	CYN	CEL	CAP	CAS	C	CD	L/D
1.101	-7.780	-2.7130	.23720	-0.1660	.01400	-0.00430	.16900	.00950	-.24600	.20320	-1.21050
1.101	-5.640	-1.6060	.17330	-0.1650	.01360	-0.00410	.16700	.00810	-.16330	.18400	-.86760
1.101	-3.510	-.09410	.11840	-0.1660	.01430	-0.00420	.16610	.00740	-.06360	.17160	-.46620
1.101	-1.360	.00360	.05290	-0.1770	.01330	-0.00370	.16520	.00650	.00760	.16510	.04630
1.101	.750	.10160	-.01370	-0.1840	.01360	-0.00400	.16280	.00780	.09950	.16390	.60720
1.101	2.860	.20060	-.06170	-0.1970	.01680	-0.00450	.15950	.00940	.19230	.16940	1.13550
1.101	5.030	.29680	-.14680	-0.1790	.01600	-0.00340	.15630	.00660	.28180	.18360	1.53300
1.101	7.090	.36050	-.18960	-0.1680	.01690	-0.00310	.15350	.00370	.35860	.19680	1.72100
1.101	9.170	.39620	-.21310	-0.1920	.01710	-0.00310	.14930	.00790	.36940	.20980	1.75990
1.101	.750	.10790	-.01620	-0.1640	.01350	-0.00390	.16360	.00630	.10580	.16500	.64140
GRADIENT		.04314	-.03052	.00023	-.00027	.00003	-.00068	-.00003	.04215	-.00011	.23493

MSFC 960 (1A48) (084) (714) (812)

DATE 10 SEP 73

(089004) (27 JUL 73)

PARAMETRIC DATA

REFERENCE DATA

MACH = 6.1820 98. IN. XMRP = 2.7200 IN.
 LINEP = 5.1600 IN. YMRP = .0000 IN.
 SREF = 5.1600 IN. ZMRP = .0000 IN.
 SCALE = .0040

BETA = .000 ORBINC = .000
 DELTAZ = .140

RUN NO. 6/ 0 RVL = 6.67 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	OK	CLM	CY	CYN	CEL	CAP	CAS	C.	CD	L/D
1.252	-7.770	-1.2280	.19910	-.01450	.01180	-.00460	.17610	-.00090	-.20070	.20710	-.96890
1.252	-5.610	-1.2250	.12620	-.01350	.01060	-.00410	.17840	-.00090	-.10520	.18960	-.55490
1.252	-3.470	-.02020	.05440	-.01420	.01130	-.00410	.17820	-.00150	-.00940	.17910	-.05250
1.252	-1.350	.06450	-.01820	-.01390	.01110	-.00360	.17800	-.00220	.06850	.17590	.50300
1.252	.770	.17940	-.08250	-.01250	.00990	-.00320	.17900	-.00200	.17700	.18140	.97590
1.252	2.820	.26250	-.13620	-.01160	.00940	-.00280	.18000	-.00050	.25300	.19320	1.30910
1.252	5.080	.33680	-.18400	-.01110	.00940	-.00250	.17920	.00010	.31960	.20820	1.53490
1.252	7.110	.39910	-.21700	-.01240	.01020	-.00290	.17490	.00010	.36490	.22170	1.64340
1.252	9.210	.43390	-.24560	-.01250	.01010	-.00340	.17110	.00030	.40090	.23630	1.69210
1.252	.780	.18110	-.08310	-.01230	.00990	-.00310	.18110	-.00040	.17870	.18360	.97320
GRADIENT		.04345	-.02930	-.00017	-.00017	.00014	.00014	.00007	.04018	.00189	.20099

RUN NO. 34/ 0 RVL = 6.52 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	OK	CLM	CY	CYN	CEL	CAP	CAS	C.	CD	L/D
1.461	-7.620	-.23750	.20180	-.00200	.00390	-.00120	.19400	-.01570	-.20860	.22450	-.92990
1.461	-5.720	-.18170	.14660	-.00210	.00400	-.00080	.19010	-.01790	-.14190	.20330	-.69140
1.461	-3.650	-.07700	.06520	-.00150	.00360	-.00020	.18730	-.01740	-.04490	.19180	-.33670
1.461	-1.510	.01860	.01750	-.00160	.00340	.00030	.18670	-.01770	.02350	.18620	-.12650
1.461	.640	.11750	-.05180	-.00090	.00290	.00050	.18590	-.01720	.11540	.18730	.61650
1.461	2.780	.21620	-.11860	-.00060	.00250	.00080	.18740	-.01530	.20690	.19770	1.04640
1.461	4.920	.30270	-.17610	-.00180	.00290	.00090	.18580	-.01490	.28580	.21110	1.35260
1.461	7.020	.36360	-.21440	-.00110	.00320	.00080	.18500	-.01490	.33630	.22810	1.48310
1.461	9.100	.41180	-.24510	-.00190	.00350	.00060	.18320	-.01420	.37760	.24610	1.53430
.680		.12930	-.05460	-.00130	.00310	.00020	.19080	-.01440	.12090	.19200	.62970
GRADIENT		.04426	-.03077	.00007	-.00008	.00015	-.00029	.00023	.04063	.00063	.19932

RUN NO. 27/ 0 RVL = 7.06 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	OK	CLM	CY	CYN	CEL	CAP	CAS	C.	CD	L/D
1.965	-7.990	-.13610	.13580	.00360	-.00020	.00090	.19900	-.03130	-.11020	.21570	-.51060
1.965	-5.860	-.10020	.10770	.00430	-.00050	.00140	.19430	-.03180	-.08250	.20340	-.40560
1.965	-3.800	-.03710	.07360	.00390	-.00040	.00190	.18940	-.03090	-.04510	.19260	-.23430
1.965	-1.520	-.02240	.03240	.00360	-.00050	.00150	.18480	-.03100	.00250	.18480	.01560
1.965	.570	.05930	-.01350	.00440	-.00100	.00160	.18060	-.03090	.03750	.18130	.31730
1.965	2.680	.12660	-.06280	.00390	-.00110	.00190	.17810	-.03030	.11820	.18380	.64320
1.965	4.780	.19690	-.11450	.00350	-.00070	.00110	.17680	-.03020	.18350	.19270	.95210
1.965	6.870	.26850	-.16220	.00310	.00060	.00080	.17800	-.02920	.24330	.20690	1.17400
1.965	8.930	.31770	-.19680	.00300	.00040	.00130	.17710	-.02900	.28630	.22440	1.27560
1.965	.960	.08190	-.01400	.00480	-.00140	.00180	.17870	-.03220	.06010	.17930	.33330
GRADIENT		.02998	-.02191	-.00007	.00001	-.00004	-.00136	.00014	.02662	.00026	.13237

TABULATED SOURCE DATA, NSFC 578-580 (IA-37, IA48)

DATE 18 SEP 73

NSFC 580 (IA48) (CS4) (TS) (S12)

(R68003) (27 JUL 73)

PARAMETRIC DATA

BETA = .000 CRBINC = .000
DELTAZ = .140

REFERENCE DATA

REF = 6.1880 IN. XREF = 2.7500 IN.
LREF = 9.1800 IN. YREF = .0000 IN.
BREF = 5.1800 IN. ZREF = .0000 IN.
SCALE = .0040

RUN NO. 9/ 0 RV/L = 5.00 GRADIENT INTERVAL = -7.00/ 7.00

	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.601	-7.680	-1.8200	.18270	-.01460	.01080	-.00430	.02590	.05590	-.25960	.05640	-4.24730
.601	-5.580	-1.1270	.13570	-.01280	.01190	-.00460	.02270	.05380	-.16970	.03940	-4.30560
.601	-3.550	-1.0340	.09210	-.01900	.01080	-.00410	.02350	.05400	-.10160	.03180	-3.19420
.601	-1.490	-.03900	.04990	-.01810	.01140	-.00440	.02390	.05390	-.03430	.02440	-1.40570
.601	.980	.03300	.00760	-.01490	.01080	-.00340	.02090	.05410	.03260	.02120	1.54400
.601	2.830	.09600	-.03190	-.01900	.01100	-.00300	.01950	.05300	.09320	.01970	4.81490
.601	4.700	.16440	-.07490	-.01570	.01170	-.00290	.01110	.05090	.25110	.02450	6.62960
.601	6.720	.23320	-.11960	-.01920	.01360	-.00360	.00390	.03230	.30990	.03090	7.46660
.601	8.790	.30510	-.16940	-.01790	.01390	-.00370	-.00270	.05370	.04460	.04460	6.85780
.601	.590	.02640	.01060	-.01480	.01050	-.00350	.02020	.05330	.02820	.02050	1.57370
GRADIENT	.03278	-.02055	-.00014	-.00011	.00014	.00012	-.00164	-.00028	.03237	-.03078	1.06477

RUN NO. 10/ 0 RV/L = 6.29 GRADIENT INTERVAL = -7.00/ 7.00

	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.697	-7.720	-.22690	.18270	-.01710	.01360	-.00590	.09120	.01400	-.21490	.12120	-1.77020
.697	-5.600	-1.4350	.12770	-.01670	.01570	-.00470	.08960	.01350	-.13610	.10340	-1.31610
.697	-3.500	-.06920	.07510	-.01820	.01390	-.00500	.08820	.01160	-.05970	.09200	-.64880
.697	-1.390	.01720	.02290	-.01800	.01390	-.00500	.08710	.01060	.01930	.06660	.22360
.697	.690	.10440	-.03310	-.01790	.01370	-.00470	.06620	.01090	.10340	.08750	1.18160
.697	2.600	.17550	-.07770	-.01740	.01340	-.00430	.06430	.01090	.17130	.08990	1.90430
.697	4.900	.23480	-.11470	-.01650	.01260	-.00390	.06390	.01080	.22690	.10000	2.26740
.697	6.920	.29020	-.15100	-.01640	.01300	-.00360	.08130	.01190	.27830	.11570	2.40450
.697	9.010	.34340	-.18620	-.01800	.01390	-.00470	.08070	.01190	.32650	.13350	2.44510
.697	.690	.10910	-.03560	-.01820	.01420	-.00460	.08750	.01140	.10600	.08880	1.21600
GRADIENT	.03328	-.02249	-.00008	-.00005	.00011	.00011	-.00079	-.00014	.03363	-.00295	.31921

RUN NO. 12/ 0 RV/L = 6.67 GRADIENT INTERVAL = -7.00/ 7.00

	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.1102	-7.760	-.25090	.22230	-.01630	.01360	-.00460	.17120	.01100	-.22350	.20390	-1.10810
.1102	-5.620	-1.6110	.16190	-.01660	.01420	-.00490	.17030	.01040	-.14370	.16520	-.77570
.1102	-3.490	-.07540	.10510	-.01650	.01440	-.00470	.16900	.00860	-.06500	.17300	-.37510
.1102	-1.350	.02370	.03770	-.01760	.01540	-.00420	.16750	.00760	.02960	.16680	.17780
.1102	.760	.12610	-.03090	-.01810	.01580	-.00430	.16520	.00640	.12390	.16620	.74250
.1102	2.920	.22970	-.10060	-.01870	.01640	-.00450	.16300	.00650	.22010	.17440	1.26160
.1102	5.070	.32520	-.14640	-.01810	.01620	-.00380	.16210	.00850	.30960	.19030	1.62660
.1102	7.110	.38440	-.19370	-.01990	.01600	-.00350	.15670	.00860	.36200	.20310	1.78180
.1102	9.200	.42370	-.23000	-.01960	.01770	-.00370	.15190	.00880	.39390	.21780	1.90860
.1102	.760	.13290	-.03540	-.01830	.01600	-.00430	.16790	.00930	.13060	.16960	.77010
GRADIENT	.04603	-.03106	-.00022	-.00008	.00022	.00008	-.00082	-.00013	.04500	-.00039	.23379

MSFC 560 (IA48) (CB4) (T9) (S12)

(R69005) (27 JUL 75)

REFERENCE DATA

MACH = 6.1960 56. IN. ZAPP = 2.7200 IN.
 LREF = 5.1600 IN. YAPP = .0000 IN.
 BREF = 5.1600 IN. ZAPP = .0000 IN.
 SCALE = .0040

PARAMETRIC DATA

BETA = .000 CRDINC = .000
 DELTAZ = .140

RUN NO. 11/ 0 RVAL = 6.72 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.254	-7.760	-21480	.18970	-.01350	.01080	-.00500	.18190	.00110	-.18610	.20920	-.89870
1.254	-5.600	-10830	.11520	-.01340	.01070	-.00470	.18190	.00080	-.09000	.19180	-.46990
1.254	-3.440	-03360	.04290	-.01350	.01100	-.00440	.18100	.00000	.00700	.16090	.03910
1.254	-1.340	.09930	-.02930	-.01360	.01100	-.00420	.18120	-.00140	.10350	.17880	.57920
1.254	.800	.19870	-.09550	-.01160	.00980	-.00340	.18280	-.00060	.19610	.18990	1.05660
1.254	2.850	.29410	-.15160	-.01150	.00960	-.00320	.18350	.00020	.27430	.19790	1.34820
1.254	5.090	.39840	-.19970	-.01190	.00970	-.00310	.18180	.00080	.34080	.21290	1.60080
1.254	7.150	.41700	-.23760	-.01080	.00920	-.00280	.17660	.00000	.39180	.22710	1.72490
1.254	9.240	.46140	-.26600	-.01150	.00950	-.00320	.17180	.00000	.42780	.24370	1.75920
1.254	.800	.20690	-.10190	-.01240	.01030	-.00380	.18410	-.00070	.20360	.18700	1.08970
1.254	.800	.04408	-.02972	.00023	-.00014	.00017	.00012	.00003	.04074	.00220	.19873

RUN NO. 31/ 0 RVAL = 6.49 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.482	-7.800	-22180	.18960	-.00190	.00380	-.00180	.19420	-.01650	-.19310	.22250	-.86780
1.482	-5.700	-14190	.13130	-.00220	.00400	-.00140	.19050	-.01750	-.12190	.20360	-.59860
1.482	-3.810	-.05290	.06750	-.00140	.00340	-.00100	.18880	-.01650	-.04090	.19180	-.21350
1.482	-1.450	.04410	-.00060	-.00190	.00340	-.00060	.18670	-.01730	.04890	.18750	.26090
1.482	.680	.14600	-.07160	-.00150	.00330	-.00040	.18790	-.01730	.14370	.18970	.75780
1.482	2.680	.24880	-.14270	-.00110	.00290	-.00040	.18670	-.01570	.23910	.20060	1.19090
1.482	4.960	.33300	-.19770	-.00200	.00340	.00020	.18720	-.01500	.31580	.21330	1.46330
1.482	7.080	.39280	-.23480	-.00230	.00370	.00040	.18590	-.01500	.36700	.23240	1.57860
1.482	9.130	.43240	-.25930	-.00230	.00380	.00010	.18340	-.01480	.39780	.24980	1.59260
1.482	.890	.15330	-.07830	-.00160	.00340	-.00080	.19090	-.01600	.15180	.19230	.78630
1.482	.890	.04923	-.03138	.00003	-.00006	.00013	-.00024	.00020	.04179	.00118	.20115

RUN NO. 30/ 0 RVAL = 7.12 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.965	-7.880	-12510	.12270	.00200	.00000	-.00060	.19770	-.03110	-.09750	.21260	-.45880
1.965	-5.850	-.09320	.10010	.00280	-.00020	-.00040	.19340	-.03080	-.07370	.20170	-.36540
1.965	-3.590	-.04630	.06470	.00290	-.00060	-.00010	.18860	-.03190	-.03440	.19110	-.18030
1.965	-1.310	.00750	.02400	.00330	-.00090	.00000	.18360	-.03120	.01240	.18330	.06790
1.965	.580	.07010	-.02200	.00350	-.00080	.00010	.17990	-.03110	.06830	.18060	.37820
1.965	2.870	.13700	-.07160	.00300	-.00070	-.00010	.17810	-.03070	.12850	.18430	.69730
1.965	4.770	.20780	-.12210	.00300	-.00050	-.00010	.17620	-.03070	.19220	.19290	.99630
1.965	6.830	.27590	-.16810	.00270	.00000	.00000	.17620	-.03010	.23250	.20780	1.21480
1.965	8.960	.32940	-.20370	.00200	.00090	.00080	.17840	-.02870	.29750	.22760	1.30740
1.965	.800	.07340	-.02290	.00380	-.00140	.00030	.17680	-.03400	.07150	.17750	.40310
1.965	.800	.02986	-.02187	-.00053	.00002	.00002	-.00140	.00008	.02651	.00040	.13226

TABULATED SOURCE DATA, M8FC 578-580 (1A-37,1A48)

(M89006) (27 JUL 73)

M8FC 380 (1A48) (094) (79) (S12)

PARAMETRIC DATA

ALPHA = .000 CRBINC = .000
DELTAZ = .140

DATE 18 SEP 73

M8FC 380 (1A48) (094) (79) (S12)

REFERENCE DATA

MACH = 6.1800 88. IN. XAPP = 2.7200 IN.
LREF = 5.1600 IN. YAPP = .0000 IN.
BREF = 5.1600 IN. ZAPP = .0000 IN.
SCALE = .0040

RUN NO. 16/ 0 RVL = 5.00 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.603	-7.890	.04810	-.00810	.15120	-.09280	.05470	.01530	.05970	.04790	.01570	3.03760
.603	-5.800	.04250	-.00220	.10960	-.06680	.03990	.01700	.05400	.04230	.01740	2.42960
.603	-3.790	.04220	.00060	.06770	-.04050	.02480	.02040	.05180	.02060	.02080	2.01580
.603	-1.700	.03700	.00910	.02780	-.01560	.01100	.02060	.05200	.03680	.02120	1.73380
.603	.320	.03400	.00750	-.01280	.00990	-.00330	.02180	.05140	.03380	.02210	1.52440
.603	2.400	.02920	.00930	-.05640	.03740	-.01840	.02220	.05290	.02900	.02150	1.35240
.603	4.470	.02810	.00850	-.05930	.06460	-.03290	.02090	.05410	.02590	.02060	1.25870
.603	6.480	.01540	.01400	-.14350	.09290	-.04830	.01780	.05470	.01520	.01800	.84930
.603	8.590	.01590	.01140	-.17890	.11260	-.06090	.01700	.05810	.01530	.01710	.89520
.603	GRADIENT	.03330	.00820	-.01370	.01030	-.00370	.02100	.05200	.03310	.02140	1.54900
.603		-.00211	.00123	-.02032	.01293	-.00712	.00005	.00015	-.00211	.00003	-.11562

RUN NO. 15/ 0 RVL = 6.27 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.801	-8.130	.12160	-.05160	.17610	-.11410	.06180	.08970	.01810	.12070	.09080	1.33670
.801	-5.920	.12980	-.05070	.13520	-.06680	.04720	.08630	.01390	.12270	.08780	1.39770
.801	-3.830	.12330	-.04630	.09000	-.05830	.03240	.08570	.01130	.12190	.06720	1.39770
.801	-1.780	.11510	-.04090	.03780	-.02310	.01470	.06650	.01030	.11400	.06800	1.29580
.801	.330	.10570	-.03380	-.01550	.01230	-.00440	.09390	.01080	.10460	.08710	1.20040
.801	2.440	.10040	-.03100	-.06470	.04480	-.02130	.08590	.01190	.09930	.08710	1.14100
.801	4.500	.09380	-.03120	-.11840	.08090	-.03960	.06370	.01310	.09480	.08410	1.12760
.801	6.610	.09700	-.03470	-.16590	.11230	-.05460	.08850	.01460	.09390	.08960	1.07070
.801	8.720	.07970	-.02540	-.20610	.13570	-.06770	.08690	.01900	.07880	.08930	.88000
.801	GRADIENT	.10320	-.03180	-.01690	.01300	-.00530	.08900	.01160	.10220	.08620	1.18480
.801		-.00255	.00156	-.02429	.01611	-.00829	.00001	.00013	-.00255	-.00003	-.02661

RUN NO. 13/ 0 RVL = 6.67 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	ON	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.100	-8.110	.11780	-.03670	.17820	-.11160	.07990	.16750	.01210	.11390	.16890	.63550
1.100	-5.970	.11470	-.03150	.13070	-.08280	.05590	.16600	.01120	.11270	.16740	.67380
1.100	-3.860	.11310	-.02670	.08020	-.04590	.03460	.16790	.00940	.11100	.16930	.65560
1.100	-1.770	.11000	-.02260	.03100	-.01760	.01460	.16730	.00850	.10790	.16870	.63970
1.100	.340	.11220	-.02410	-.01740	.01340	-.00380	.16760	.00800	.11000	.16900	.65100
1.100	2.470	.10420	-.01910	-.06770	.04640	-.02660	.17030	.01020	.10200	.17160	.59460
1.100	4.800	.09410	-.01560	-.12030	.08170	-.04790	.17020	.01260	.09200	.17130	.53740
1.100	6.880	.09060	-.01650	-.16980	.11190	-.06750	.17020	.01190	.08950	.17130	.51730
1.100	8.640	.08140	-.01430	-.21890	.13960	-.08500	.17140	.01370	.07930	.17230	.46140
1.100	GRADIENT	.10160	-.01790	-.01940	.01530	-.00650	.16570	.00950	.10960	.16700	.59640
1.100		-.00197	.00120	-.02365	.01542	-.00973	.00034	.00017	-.00197	.00031	-.01268

(0890006) (27 JUL 73)

MSFC 560 (1A48) (C84) (79) (S12)

PARAMETRIC DATA

REFERENCE DATA

SREF = 6.1800 IN. YMRP = 2.7200 IN.
 LREF = 5.1600 IN. YMRP = .0000 IN.
 SREF = 5.1800 IN. ZMRP = .0000 IN.
 SCALE = .0040

ALPHA = .000
 DELTA Z = .140
 ORBINC = .000

RUN NO. 14/ 0 RVL = 6.73 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CBL	CAP	CAB	CL	CD	L/D
1.249	-8.150	.16740	-.08090	.16330	-.09830	.06730	.18230	.00200	.16310	.18440	.69320
1.249	-5.990	.17130	-.06030	.11870	-.07100	.04930	.16230	.00070	.16920	.16450	.91130
1.249	-3.870	.17340	-.08000	.07330	-.04320	.03130	.16310	.00030	.17090	.19340	.92170
1.249	-1.770	.17310	-.07980	.02910	-.01390	.01320	.16340	-.00060	.17260	.19570	.92980
1.249	.330	.17920	-.08280	-.01460	.01170	-.00470	.16260	-.00090	.17670	.19500	.93340
1.249	2.470	.16740	-.07320	-.09930	.03920	-.02340	.18360	.00170	.16500	.18760	.87850
1.249	4.610	.15450	-.06730	-.10330	.06850	-.04210	.18670	.00300	.15210	.18660	.80630
1.249	6.700	.14210	-.06170	-.11530	.09640	-.06010	.18610	.00370	.13980	.18780	.74420
1.249	8.870	.12990	-.05680	-.11990	.12330	-.07810	.18490	.00480	.12770	.18640	.68510
1.249	.340	.17460	-.07830	-.01590	.01250	-.00570	.18340	.00000	.17210	.18570	.92690
GRADIENT		-.00221	.00145	-.02119	.01317	-.00655	.00093	.00023	-.00220	.00031	-.01323

RUN NO. 32/ 0 RVL = 6.51 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CBL	CAP	CAB	CL	CD	L/D
1.481	-8.150	.13750	-.07120	.16660	-.09980	.06060	.16670	-.01230	.13360	.18830	.72130
1.481	-6.020	.14040	-.06970	.11990	-.07180	.04340	.19120	-.01260	.13620	.19290	.71660
1.481	-3.920	.14490	-.07070	.07560	-.04490	.02690	.19250	-.01390	.14260	.19420	.73400
1.481	-1.800	.14740	-.07160	.03170	-.01760	.01110	.19270	-.01470	.14510	.19450	.74610
1.481	.330	.15090	-.07430	-.01190	.00920	-.00400	.19200	-.01490	.14860	.19380	.76690
1.481	2.450	.14420	-.06990	-.10560	.03720	-.01940	.19520	-.01240	.14190	.19690	.72090
1.481	4.570	.13740	-.06460	-.11490	.06640	-.03600	.19520	-.01090	.13520	.19660	.69690
1.481	6.710	.12970	-.06200	-.11490	.09370	-.05290	.19320	-.01090	.12750	.19460	.63520
1.481	8.860	.12370	-.06280	-.11780	.12220	-.07010	.19170	-.00960	.12360	.19310	.64020
1.481	.340	.15030	-.07330	-.01430	.01110	-.00310	.19230	-.01440	.14620	.19410	.76390
GRADIENT		-.00095	.00064	-.02104	.01302	-.00749	.00023	.00023	-.00065	.00021	-.00512

RUN NO. 29/ 0 RVL = 7.11 GRADIENT INTERVAL = -7.00/ 7.00

WACH	BETA	CH	CLM	CY	CYN	CBL	CAP	CAB	CL	CD	L/D
1.939	-8.220	.07490	-.03070	.17330	-.10340	.05840	.17710	-.03020	.07310	.17790	.41120
1.939	-6.100	.07190	-.02700	.12820	-.07650	.04170	.17790	-.03070	.07010	.17960	.39280
1.939	-3.970	.06820	-.02220	.08480	-.04930	.02690	.17940	-.03360	.06410	.18010	.36890
1.939	-1.840	.06180	-.01560	.04260	-.02460	.01290	.18060	-.03100	.05000	.18120	.33120
1.939	.300	.06110	-.01430	.00060	-.00060	-.00290	.18090	-.03090	.05920	.18150	.32660
1.939	2.430	.06200	-.01590	-.04170	.02690	-.01430	.18150	-.03040	.06020	.18210	.33060
1.939	4.560	.06160	-.01690	-.08420	.03280	-.02790	.18160	-.03000	.05980	.18220	.32820
1.939	6.700	.06110	-.01840	-.13020	.08060	-.04350	.18340	-.02930	.05930	.18400	.32260
1.939	8.860	.05840	-.01840	-.18070	.11110	-.06190	.18470	-.02830	.05670	.18520	.30620
1.939	.310	.06140	-.01450	-.00190	.00230	-.00200	.17980	-.03130	.05960	.18050	.33030
GRADIENT		-.00076	.00060	-.02005	.01220	-.00637	.00036	.00031	-.00076	.00036	-.00490



TABULATED SOURCE DATA, NSFC 579-590 (IA-37,1A48)

(R69007) (27 JUL 75)

DATE 18 SEP 75

NSFC 590(1A48) (C54) (T9) (S12) (ATTACH POST OFF)

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
DELTA Z = .140

REFERENCE DATA

SPRF = 6.1000 IN. XPRP = 2.7800 IN.
LREF = 5.1000 IN. YPRP = .0000 IN.
BREF = 5.1000 IN. ZPRP = .0000 IN.
SCALE = .0040

RUN NO. 36/ 0 RV/L = 6.25 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
.901	-6.040	.04780	.02240	.17670	-.11170	.08120	.09380	.01910	.04690	.09570	.48690
.901	-5.980	.03270	.00150	.13270	-.06410	.04650	.09560	.01670	.05170	.09620	.53750
.901	-5.970	.03630	-.00120	.09060	-.03860	.03270	.09540	.01450	.05720	.09600	.59630
.901	-1.760	.04110	.01270	.03720	-.02230	.01450	.09180	.01510	.04010	.09230	.43540
.901	.330	.03640	.01640	-.01230	-.02230	-.02230	.09090	.01510	.03540	.09120	.38620
.901	2.420	.03760	.01420	-.06390	.04360	-.02000	.09290	.01590	.03660	.09330	.39230
.901	4.560	.02320	.02120	-.11670	.07910	-.03810	.09160	.01670	.02230	.09190	.24300
.901	6.610	.02150	.02070	-.16320	.10920	-.05250	.09720	.01850	.02050	.09740	.21300
.901	8.700	.00630	.02840	-.20330	.13260	-.06510	.09700	.02140	.00530	.09700	.05560
.901	.330	.04080	.01270	-.01510	.01170	-.00350	.08320	.01510	.03980	.09360	.42570
GRADIENT:		-.00285	.00177	-.02392	.01571	-.70905	-.00003	.00017	-.00285	-.00006	-.02947

RUN NO. 37/ 0 RV/L = 6.66 GRADIENT INTERVAL = -7.00/ 7.00

MACH	BETA	CN	CLM	CY	CYN	CEL	CAP	CAB	CL	CD	L/D
1.253	-6.190	.10200	-.03280	.16650	-.09930	.06720	.16500	.00550	.09980	.18620	.53640
1.253	-6.040	.10980	-.03200	.12790	-.07220	.04950	.18740	.02470	.10170	.18660	.53910
1.253	-3.920	.10660	-.03430	.07420	-.04340	.03100	.18700	.03590	.10640	.18630	.56530
1.253	-1.790	.11130	-.03960	.02850	-.01490	.01260	.18550	.00270	.10910	.18690	.58400
1.253	.340	.11280	-.03660	-.01490	.01130	-.00470	.18400	.00160	.11040	.18530	.59610
1.253	2.450	.10320	-.03070	-.03860	.03860	-.02240	.18910	.00390	.10300	.18930	.54400
1.253	4.580	.09590	-.02360	-.10470	.06720	-.04120	.18690	.00330	.09170	.19000	.48280
1.253	6.700	.07630	-.01440	-.15200	.09620	-.05980	.18930	.00720	.07620	.19050	.40040
1.253	8.660	.07690	-.01700	-.19860	.12190	-.07720	.18930	.00670	.07480	.18910	.39590
1.253	.340	.10780	-.03170	-.01650	.01260	-.00550	.18630	.00320	.10560	.18760	.56310
GRADIENT		-.00189	.00133	-.02125	.01312	-.00853	.00022	.00019	-.00188	.00019	-.01044

REFERENCE DATA
 MACH = 6.1880 88. IN. Δ REF = 2.7200 IN.
 LREF = 5.1600 IN. Δ REF = .0000 IN.
 SREF = 5.1600 IN. Δ REF = .0000 IN.
 SCALE = .0040

BETA = .000 ORBINC = .000
 DELTAZ = .140

PARAMETRIC DATA

RUN NO. 39/ 0 RVAL = 6.24 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
.896	-7.860	-3.3110	.25340	-.00590	.00560	-.00100	.0360	.01860	-.30790	.14890	-2.09560
.896	-5.740	-2.5810	.18560	-.00320	.00520	-.00020	.0300	.01800	-.22660	.12630	-1.79390
.896	-3.630	-1.5100	.13760	-.00150	.00650	-.00040	.0240	.01740	-.14430	.10960	-1.51430
.896	-1.530	-.06870	.08280	-.00490	.00560	-.00020	.09660	.01800	-.06600	.09860	-.66950
.896	.800	.02170	.02370	-.00720	.00670	-.00050	.09250	.01570	.02070	.09250	.22400
.896	2.690	.09490	-.02080	-.00570	.00530	.00010	.09740	.01590	.09060	.09180	.96680
.896	4.780	.16040	-.06280	-.00810	.00740	.00000	.09760	.01450	.15260	.10070	1.51900
.896	6.890	.22020	-.10130	-.00900	.00800	-.00060	.06620	.01400	.20830	.11190	1.86170
.896	8.910	.27010	-.13390	-.00960	.00890	-.00170	.06450	.01440	.25370	.12530	2.02410
.896	.600	.02270	.02460	-.00740	.00890	-.00090	.09310	.01510	.02170	.09340	.23280
GRADIENT		.0366/6	-.02374	-.00040	.00018	-.00010	-.00145	-.00031	.03495	-.00117	.31096

RUN NO. 40/ 0 RVAL = 6.68 GRADIENT INTERVAL = -7.00/ 7.00

MACH	ALPHA	ON	CLM	CY	CYN	CEL	CAP	CAS	CL	CD	L/D
1.249	-7.670	-3.1250	.26450	-.00050	.00500	.00000	.16450	.00320	-.29430	.22550	-1.26040
1.249	-5.750	-2.0710	.18990	-.00150	.00660	.00000	.16220	.00240	-.19780	.20200	-.92960
1.249	-3.820	-1.0770	.11760	-.00160	.00960	.00040	.16070	.00140	-.09610	.16760	-.51320
1.249	-1.490	-.00590	.04820	-.00280	.00450	.00010	.18160	.00170	-.00070	.16190	-.00430
1.249	.670	.10160	-.02720	-.00360	.00510	-.00010	.18340	.00170	.09940	.16460	.53640
1.249	2.810	.19750	-.09060	-.00510	.00570	-.00020	.18990	.00330	.18810	.19540	.96260
1.249	4.940	.28100	-.14500	-.00520	.00600	-.00010	.18570	.00390	.26400	.20920	1.26170
1.249	7.080	.35010	-.19120	-.00590	.00620	.00000	.18070	.00160	.32530	.22230	1.46310
1.249	9.140	.40260	-.22490	-.00660	.00610	-.00010	.17760	.00290	.36930	.23930	1.54270
1.249	.600	.11660	-.03690	-.00370	.00490	-.00040	.16600	.00280	.11430	.18740	.61000
GRADIENT		.04824	-.03162	-.00040	.00025	-.00003	-.00046	.00018	.04288	-.00065	.21266

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