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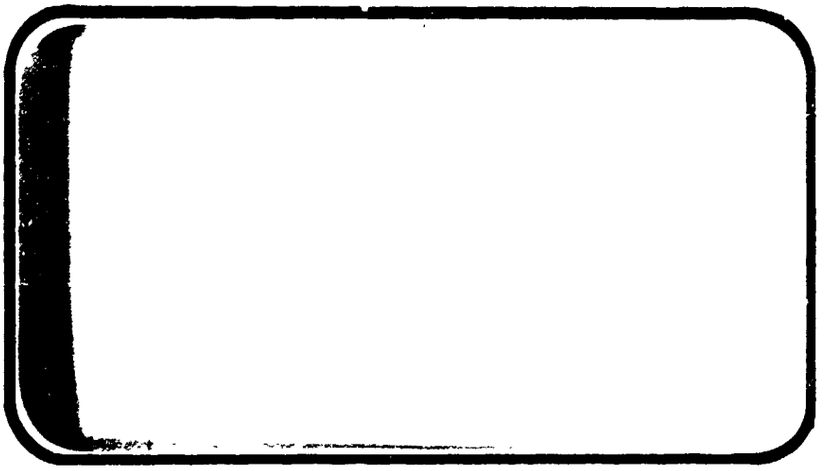

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

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WIND TUNNEL TEST RESULTS OF FAIRINGS ON A .004 SCALE MODEL ROCKWELL SPACE SHUTTLE INTEGRATED VEHICLE AERODYNAMIC CHARACTERISTICS AT MACH NUMBERS FROM 0.6 TO 4.96

(IA62F)

By

Ed Allen and Tom Hamilton
(Rockwell International)

Prepared under NASA Contract Number NAS9-13247

by

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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 589
NASA Series No.: IA62F
Date: November 15-19, 1973 (19 Occ. Hrs.)

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WIND TUNNEL TEST RESULTS OF FAIRINGS ON A .004 SCALE MODEL ROCKWELL SPACE SHUTTLE INTEGRATED VEHICLE AERODYNAMIC CHARACTERISTICS AT MACH NUMBERS FROM 0.6 TO 4.96 (IA62F)

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ABSTRACT

Experimental aerodynamic investigations were conducted on a .004 scale model (34-OTS) orbiter, external tank, and solid rocket booster combined as an integrated vehicle in the NASA/MSFC 14 x 14 inch Trisonic Wind Tunnel. The primary test objective was to determine the effect of a full length orbiter/external tank fairing on axial force. Secondary objectives were to define the static stability characteristics of the mated vehicle configuration with fairings over a Mach number range of 0.6 thru 4.96. Six component aerodynamic force and moment data were recorded over an angle of attack range from -10° to 10° at 0° sideslip angle and from -10° to 10° sideslip range at 0° and 5° angle of attack. Plotted and tabular results are presented herein.

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Plotted Coefficient Schedules:

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B) CY vs CYN; CY, CYN, CBL vs BETA

C) CABO, CABE, CABS, (CABF where applicable) vs ALPHA or BETA, as appropriate

NOMENCLATURE
General

SYMBOL	SADSAC SYMBOL	DEFINITION
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(p_l - p_\infty)/q$
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
ℓ_{REF} $\bar{c}$	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

SYMBOL	SADSAC SYMBOL	DEFINITION
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	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qSl_{REF}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_l	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$

Stability-Axis System

C_L	CL	lift coefficient; $\frac{\text{lift}}{qS}$
C_D	CD	drag coefficient; $\frac{\text{drag}}{qS}$
C_{D_b}	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qSl_{REF}}$
C_n	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_l	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
L/D	L/D	lift-to-drag ratio; C_L/C_D
L/D_f	L/DF	lift to forebody drag ratio; C_L/C_{D_f}

NOMENCLATURE
(ADDITIONAL TO STANDARD LIST)

SYMBOL	DMS SYMBOL	DEFINITION
$C_{A_{B_O}}$	CABO	axial force coefficient due to pressure force on orbiter base
$C_{A_{B_E}}$	CABE	axial force coefficient due to pressure force on external tank base
$C_{A_{B_S}}$	CABS	axial force coefficient due to pressure force on solid rocket booster base
$C_{A_{B_F}}$	CABF	axial force coefficient due to pressure force on fairing base
i_o	ORBINC	angle between the orbiter water plane ₀₀ line and the external tank center line, degrees
Z_o	DELTAZ	minimum vertical separation distance between the orbiter and external tank, inches
P_{b_O}		orbiter base measured pressure
P_{b_S}		SRB base measured pressure
P_{b_E}		external tank base measured pressure
P_{b_F}		fairing base measured pressure

CONFIGURATIONS INVESTIGATED

As a part of the continuing drag reduction program for the mated vehicle a full length (orbiter) fairing between the orbiter and external tank was tested on the 0.004-scale mated vehicle model (34-OTS). The orbiter used in this test was the vehicle 4 configuration (140 A/B). The tank was mounted on the sting/balance combination with both the orbiter and SRB's rigidly attached to the tank. The model geometry (0.004-s is shown in figure 2. Figure 3 is a side view of the model installe the tunnel. The configuration designation is given below:

Orbiter (034 modified to 140 A/B)

B26	Body
C9	Canopy
R5	Rudder
V8	Vertical tail
W116	Wing
F7	Body Flap
E26	Elevon
M7	OMS pods
T14	External tank with LOX and LH_2 Vent lines and LOX feed line (PT 1, 2, 3)
PT4	LOX vent fairing on tank nose vertical centerline
S12	Solid Rocket Booster with attach ring (PS2) and separation rocket fairing (PS3)
FR4	Full length orbiter/ET fairing
T9	External Tank

The speed brake, rudder, and body flap deflections were zero for the entire test. The orbiter/ET incidence angle was also zero.

The external tank was mounted on the TWT 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 for the rear attach points. The SRB's were also rigidly attached to the tank.

Base pressures were monitored at the six locations shown in Figure 4. A total of four base pressures were recorded. The two tubes monitoring the orbiter base pressure were "teed" together, as were the two tubes at the base of the external tank. The four base pressures recorded then were the orbiter, tank, solid rocket motor and fairing.

Model dimensional data sheets defining the various configuration designators are presented in Table III.

TEST FACILITY DESCRIPTION

The Marshall Space Flight Center 14" x 14" Trisonic 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 .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° (±10°). Sting offsets are available for obtaining various maximum angles of attack up to 90°.

DATA REDUCTION

All model forces and moments were resolved in the body axis system and presented in the form of nondimensional coefficients.

Data were corrected for weight tares and sting deflections.

Model reference dimensions used in the data reduction for this test are presented below:

PARAMETER	FULL SCALE	MODEL SCALE
Reference Area (S_{ref}) = wing planform area =	2960 ft.^{2}	6.198 in.^{2}
Reference Length (l_{ref}=b_{ref}) = orbiter body length =	1290.3 in.	5.160 in.
Moment Reference Center, from tank nose on tank $\mathcal{L}$	670 in.	2.680 in.
Base Areas		
Orbiter	417.4 ft.^{2}	0.9617 in.^{2}
Tank	572.55 ft.^{2}	1.319 in.^{2}
Fairing	107.7 ft.^{2}	0.2482 in.^{2}
SRB (2)	402.12 ft.^{2}	0.9265 in.^{2}

Pitching moments were corrected for the effects of orbiter and fairing base drag in the following manner:

$$CLM = CLMU - CABF \frac{Z_2}{l_{ref}} - CABO \frac{Z_1}{l_{ref}}$$, pitching moment coefficient corrected for orbiter and fairing base drag

where

$$CLMU = \frac{M_Y}{qS_{ref}l_{ref}}$$, balance measured pitching moment coefficient

Z_1 = 1.332 in., vertical moment arm for orbiter base drag

Z_2 = 0.680 in., vertical moment arm for fairing base drag

Axial force coefficients were determined as follows:

$$CA = \frac{F_A}{qS_{ref}}, \text{ axial force coefficient}$$

$$CAF = CA - CABO - CABS - CABE - CABF, \text{ forebody axial force coefficient}$$

$$CABO = -CPBO \frac{A_{b_o}}{S_{ref}}, \text{ orbiter base axial force coefficient}$$

$$CABS = -CAPS \frac{A_{b_s}}{S_{ref}}, \text{ SRB base axial force coefficient}$$

$$CABE = -CPBE \frac{A_{b_e}}{S_{ref}}, \text{ tank base axial force coefficient}$$

$$CABF = -CPBF \frac{A_{b_f}}{S_{ref}}, \text{ fairing base axial force coefficient}$$

Where:

$$CPBO = \frac{P_{b_o} - P_\infty}{q}, \text{ orbiter base pressure coefficient}$$

$$CPBS = \frac{P_{b_s} - P_\infty}{q}, \text{ SRB base pressure coefficient}$$

$$CPBE = \frac{P_{b_e} - P_\infty}{q}, \text{ tank base pressure coefficient}$$

$$CPBF = \frac{P_{b_f} - P_\infty}{q}, \text{ fairing base pressure coefficient}$$

TABLE I.

TEST: TWT-589 (IA-62F) DATE: 11-13-73

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq.inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)	STAGNATION PRESSURE (pounds/sq inch)
0.6	5.0 x 10^6/ft	[illegible]	100	22
0.9	6.2	7.37	100	22
1.0	6.5	8.24	100	22
1.2	6.7	9.29	100	22
1.46	6.5	9.47	100	22
2.99	4.0	5.19	140	30
4.96	4.8	3.07	140	90

BALANCE UTILIZED: MSFC 232

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	300 lbs.	±1.50 lbs.	±0.024
SF	143 lbs.	±0.72 lbs.	±0.012
AF	50 lbs.	±0.25 lbs.	±0.004
PM	400 in. -lbs.	±2.00 in. -lbs.	±0.006
RM	100 in. -lbs.	±0.50 in. -lbs.	±0.002
YM	192 in. -lbs.	±0.96 in. -lbs.	±0.003

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

TABLE II.

TEST : MSFC TWT 5E9 (IA-62F) — **DATA SET/RUN NUMBER COLLATION SUMMARY** — **DATE : 11-12-74**

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES i_0	PARAMETERS/VALUES Z_0	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.9	1.0	1.2	1.46	2.99	4.96	TEST RUN NUMBERS
R94001	Φ34 T14 S12	A	0	0°	333		30	31	32	33	22	21	20	
C2	↓	5	B	↓	↓		24	25		26	23		18	
C3	↓	0	B	↓	↓		29	28		27			19	
C4	Φ34 T9 S12 PT4 FR4	A	0	↓	↓		14	13	12	11	15	1	2	
C5	↓	5	B	↓	↓		8	9		10	16		17	
C6	↓	0	B	↓	↓		7	6		5			4	

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CLM	CY	CYN	CBL	CAF	CABΦ	CABE	CAF	CABF			1 0

α OR β SCHEDULES: A) = B) = -10° to 10° ($\Delta = 2^\circ$) COEFFICENTS

IDVAR (1) IDVAR (2) NDV

TABLE III. MODEL DIMENSIONAL DATA

MODEL COMPONENT: BODY - B_{26}

GENERAL DESCRIPTION: Orbiter Fuselage Configuration 140 A/B

NOTE: B_{26} identical to B_{24} except underside of fuselage refaired to accept B_{116}.

Model Scale = .004

DRAWING NUMBER: VL70-000193
VL70-000140A

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Length (Body Fwd Sta X_o = 238) - in.	1290.3	5.16120
Max. Width (at X_o = 1529) - in.	262.0	1.04800
Max. Depth (at X_o = 1464) - in.	250.0	1.000
Fineness Ratio	4.92481	4.92481
Area - ft^2		
Max. Cross-Sectional	340.88462	0.00545
Planform		
Wetted		
Base		

TABLE III. - CONT.

MODEL COMPONENT: CANOPY - Co

GENERAL DESCRIPTION: Configuration 3A

Model Scale = .004

DRAWING NUMBER VL70-000140A
VL70-000143

DIMENSION:	FULL SCALE	MODEL SCALE
Length (X_o=434.643 to 670)	235.357	0.94143
Max Width (@ X_o=513.127)	152.412	0.60965
Max Depth (@ X_o=485.0)	25.000	0.10000
Fineness Ratio		
Area		
Max Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III - CONT.

MODEL COMPONENT: Body Flap - F_2

GENERAL DESCRIPTION: Configuration 3.

NOTE: Body flap has variable centerline deflection of -13.75° and -24.2° from null position. Hinge line located at Y_o = 1528.3, Z_o = 284.3

Model Scale = .004

DRAWING NUMBER VL70-000140, VL70-000245

DIMENSION:	FULL SCALE	MODEL SCALE
Length (X_o=1520 to X_o=1613) - IN.	93.000	0.372
Max Width - IN.	262.000	1.048
Max Depth (X_o = 1520) - IN.	23.000	0.092
Fineness Ratio		
Area - Ft^2		
Max Cross-Sectional		
Planform	150.5250	0.00241
Wetted		
Base	41.84722	0.00067

TABLE III - CONT.

MODEL COMPONENT: [illegible]

GENERAL DESCRIPTION: Configuration 3A

Model Scale = .004

DRAWING NUMBER VL70-000140A
VL70-000145

DIMENSION:	FULL SCALE	MODEL SCALE
Length (OTS Fwd Ste X_o=1233.0) - IN.	327.000	1.30800
Max Width (@ X_o=1450.0) - IN.	94.5	0.37800
Max Depth (@ X_o=1493.0) - IN.	109.000	0.43600
Fineness Ratio		
Area		
Max Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III - CONT.

MODEL COMPONENT: WING-W116

GENERAL DESCRIPTION: Configuration 4

NOTE: Identical to W114 except airfoil thickness. Dihedral angle is along trailing edge of wing.

Model Scale = .004

TEST NO. DWG. NO. VL70-0001408 VL70-0[illegible]

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2		
Planform	2690.00	0.4304
Span (Theo In.	936.6816	3.74672
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.200
Dihedral Angle, degrees(at X_o=1506.623,Y_o=	3.500	3.500
Incidence Angle, degrees 105, Z_o= 282.75)	0.500	0.500
Aerodynamic Twist, degrees	+3.000	+3.000
Sweep Back Angles, degrees		
Leading Edge	45.00	45.00
Trailing Edge	-10.056	-10.056
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.0.0.	689.44.9	2.75697
Tip, (Theo) B.P.	137.8486	0.551[illegible]
MAC	474.8117	1.[illegible]
Fus. Sta. of .25 MAC	1126.721	4.5[illegible]
W.P. of .25 MAC	291.00	1.16400
B.L. of .25 MAC	187.35491	0.749[illegible]
EXPOSED DATA		
Area (Theo) Ft^2	1812.2205	0.02899
Span, (Theo) In. BP108	736.6816	2.94673
Aspect Ratio	2.058	2.058
Taper Ratio	0.2451	0.2451
Chords		
Root BP108	570.6230	2.28249
Tip 1.00 $\frac{b}{2}$	137.8512	0.55140
MAC	354.2376	1.41695
Fus. Sta. of .25 MAC	1164.237	4.65695
W.P. of .25 MAC	292.00	1.16800
B.L. of .25 MAC	239.67786	0.95871
Airfoil Section (Rockwell Mod NASA) XXXX-64		
Root $\frac{b}{2}$ = 0.425	0.113	0.113
Tip $\frac{b}{2}$ = 1.00	0.12	0.12
Data for (1) of (2) Sides		
Leading Edge Cuff		
Planform Area Ft^2	118.335	0.00189
Leading Edge Intersects Fus M. L. @ Sta	505.0	2.02000
Leading Edge Intersects Wing @ Sta	1003.5	4.01400

TABLE III - CONT.

MODEL COMPONENT: ELEVON - E_{26}

GENERAL DESCRIPTION: Configuration 4

NOTE: VL70-000400 data for (1) of (2) sides. Identical to E_{25} except airfoil thickness

Model Scale = .004

DRAWING NUMBER: VL70-000200
VL70-000140 B

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area ft.	223.5814	0.00358
Span (equivalent) in.	368.34	1.47336
Inb'd equivalent chord in.	119.623	0.47849
Outb'd equivalent chord in.	55.1922	0.22077
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Tailing Edge	-10.056	-10.056
Hingeline	0.00	0.00
Area Moment (Normal to hinge line)	851.1502	0.00005

TABLE III - CONT.

MODEL COMPONENT: VERTICAL - V 8

GENERAL DESCRIPTION: Configuration 3A

NOTE: Similar to V5 with radius on TE upper corner and LE lower corner where vertical meets fuselage.

Model Scale = .004

DRAWING NUMBER: VL70-000140, VL70-000146A

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo) Ft^2	413.253	0.00661
Planform		
Span (Theo) In	315.720	1.262
Aspect Ratio	1.675	1.675
Rate of Taper	0.547	0.547
Taper Ratio	0.40359	0.40359
Sweep Back Angles, degrees		
Leading Edge	45.00	45.00
Trailing Edge	25.947	25.947
0.25 Element Line	41.130	0.16452
Chords:		
Root (Theo) WP	268.500	1.07400
Tip (Theo) WP	108.420	0.43368
MAC	199.0772	0.79631
Fus. Sta. of .25 MAC	1463.00	5.85200
W. P. of .25 MAC	635.520	2.54208
B. L. of .25 MAC	0.00	0.00
Airfoil Section		
Leading Wedge Angle Deg	10.00	10.00
Trailing Wedge Angle Deg	14.893	14.893
Leading Edge Radius (Min) - IN.	2.00	0.00800
Void Area	13.17	0.05271
Blanketed Area	0.00	0.00

TABLE III - CONT.

MODEL COMPONENT: RUDDER - R5

GENERAL DESCRIPTION: 2A, 3 and 3A Configuration per Rockwell Lines VL70-000095

Model Scale = .004

DRAWING NUMBER: VL70-000095

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area - FT^2	106.38	0.00170
Span (equivalent) - IN.	201.0	0.80400
Inb'd equivalent chord	91.585	0.36634
Outb'd equivalent chord	50.833	0.20333
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	34.83	34.83
Tailing Edge	26.25	26.25
Hingeline	34.83	34.83
Area Moment (Normal to hinge line)- FT^3 Product of Area and Mean Chord	526.13	0.00003

TABLE III - CONT.

MODEL COMPONENT: External Tank T9

GENERAL DESCRIPTION: 2A Configuration Per NR Lines VL78-000018 and VL72-000618;
Body of Revolution

Scale Model = .004

DRAWING NUMBER: VL78-000018

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

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 - CONT.

MODEL COMPONENT: EXTERNAL TANK - T_{14}

GENERAL DESCRIPTION:

NOTE: T_{14} identical to T_9 but with external fuel lines added.

Model Scale = 0.004

DRAWING NUMBER: VL78-000018

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

TABLE III - CONT.

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

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

Notes:

1. Positive directions of force cofficients, 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

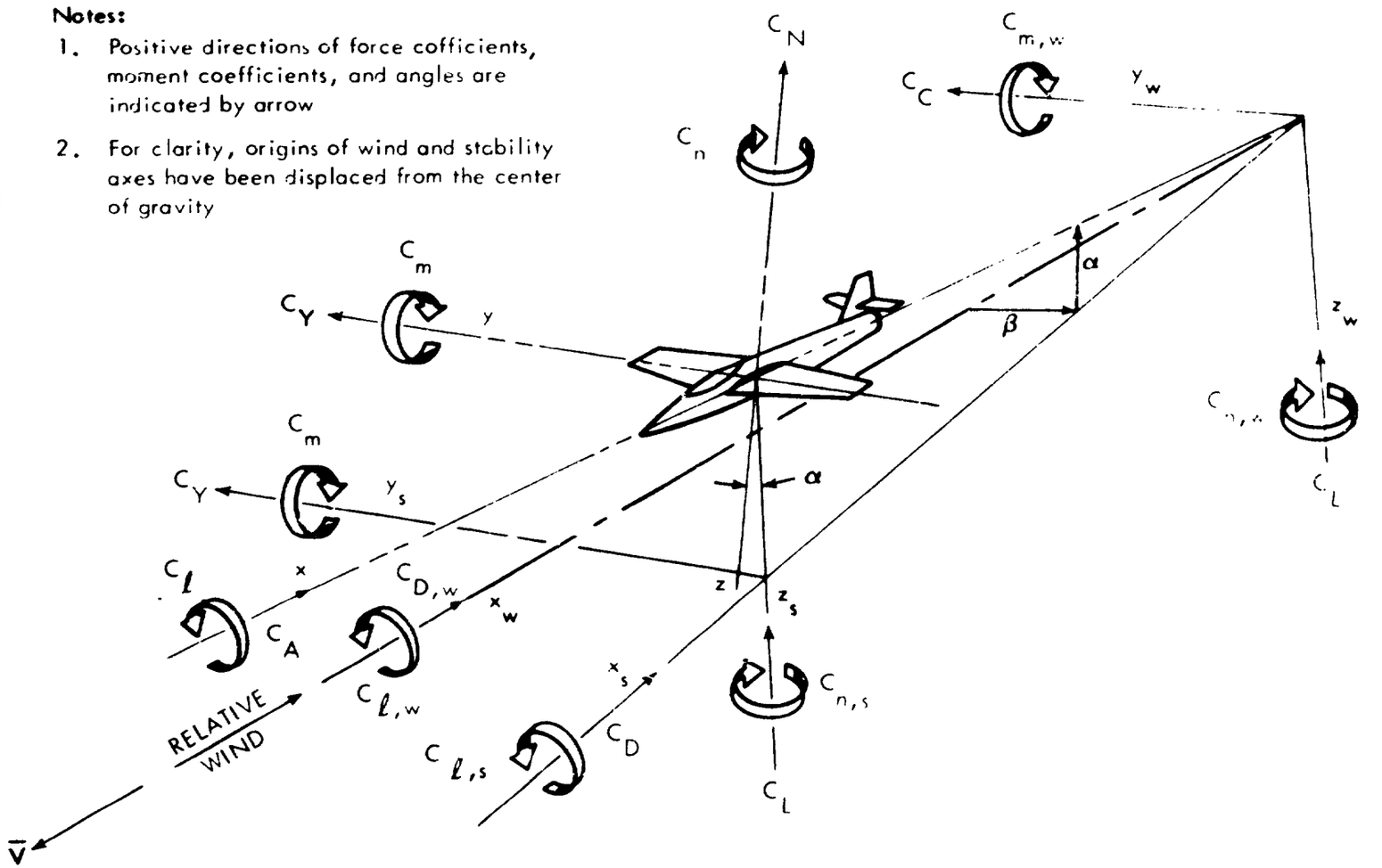


Figure 1. Axis Systems.

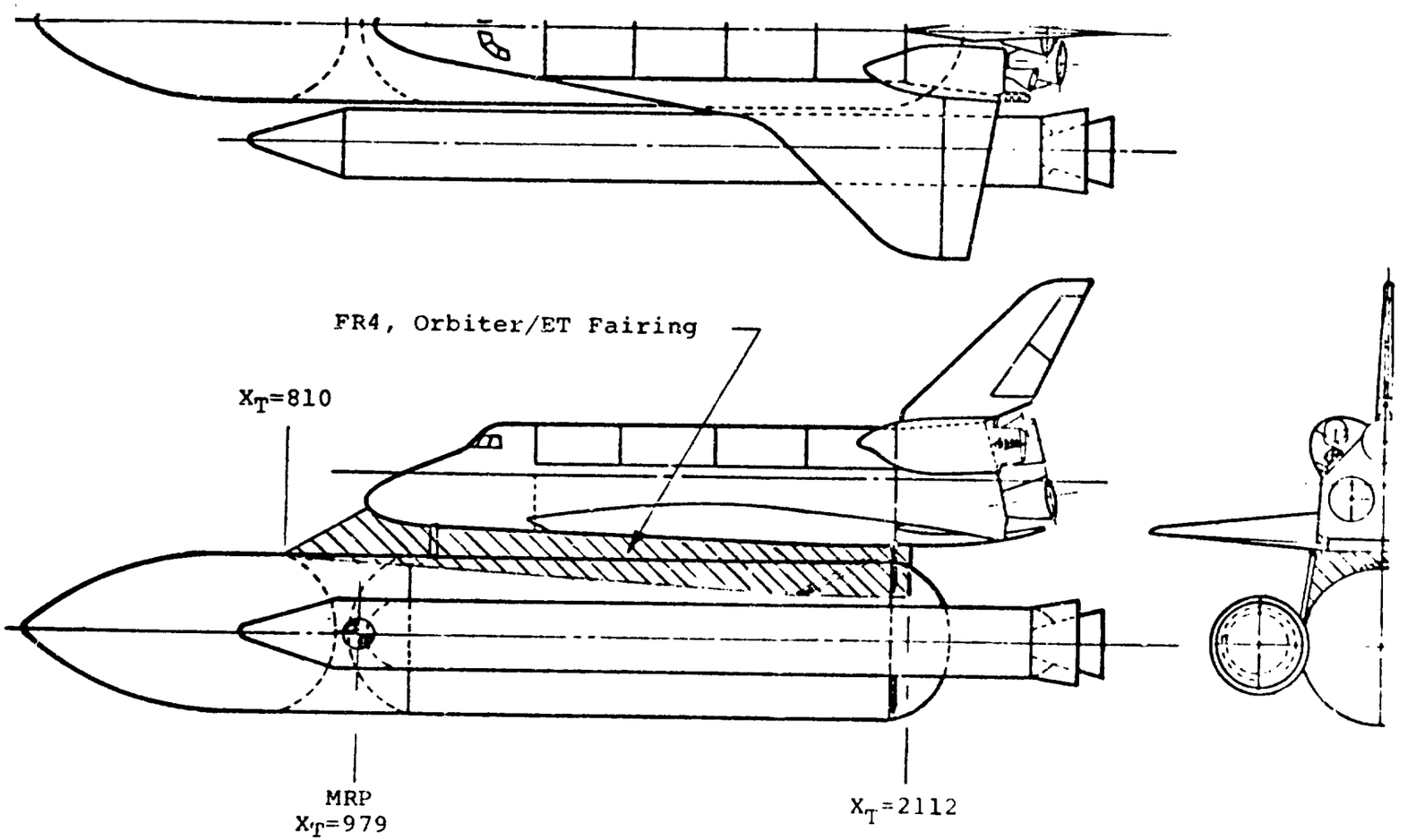


Figure 2. General Arrangement of the Integrated Vehicle Model.

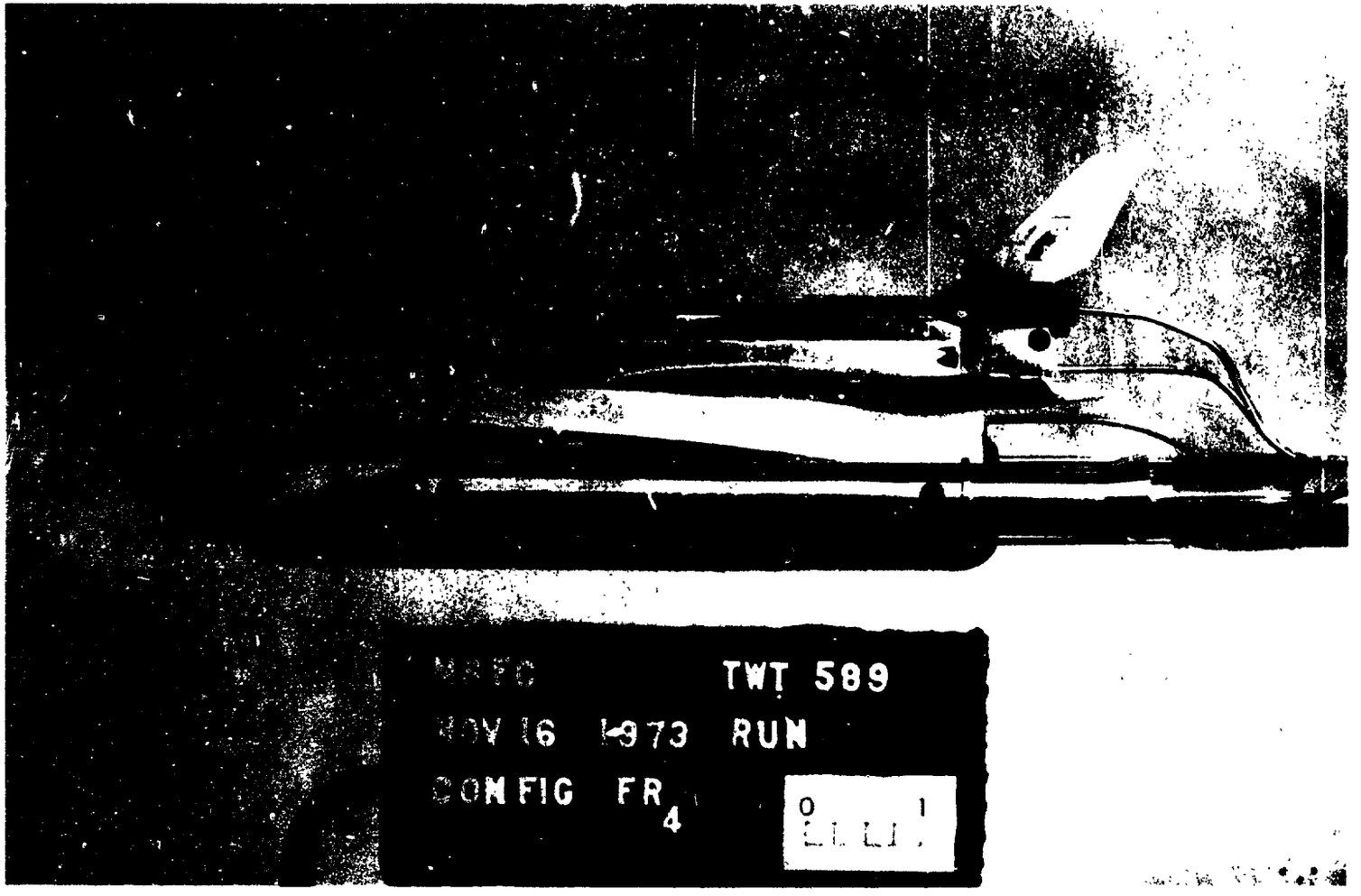


Figure 3. Side View of .004 Scale Model 34-OTS Installed in the NASA/MSFC 14 x 14 Inch Wind Tunnel.

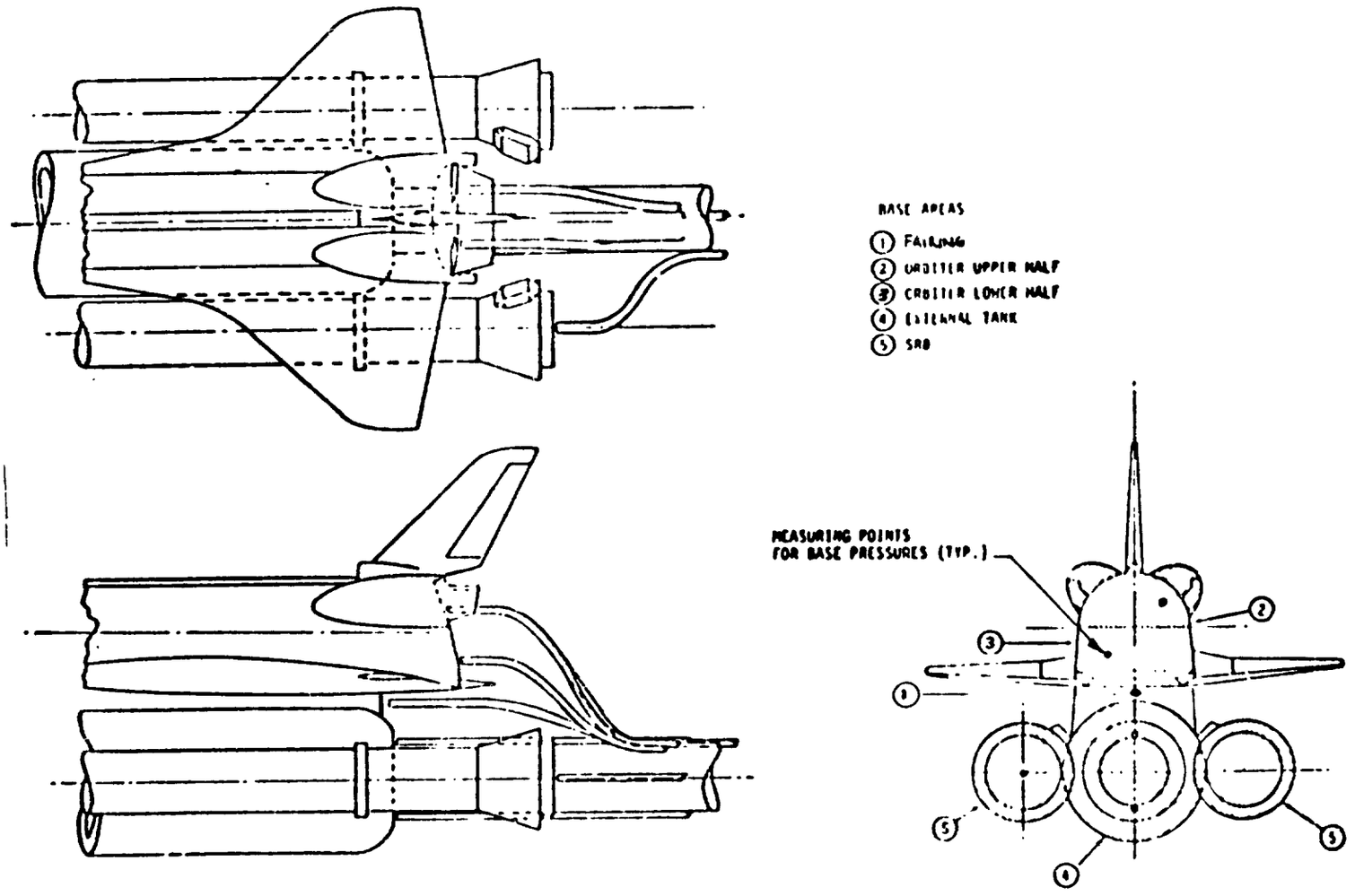


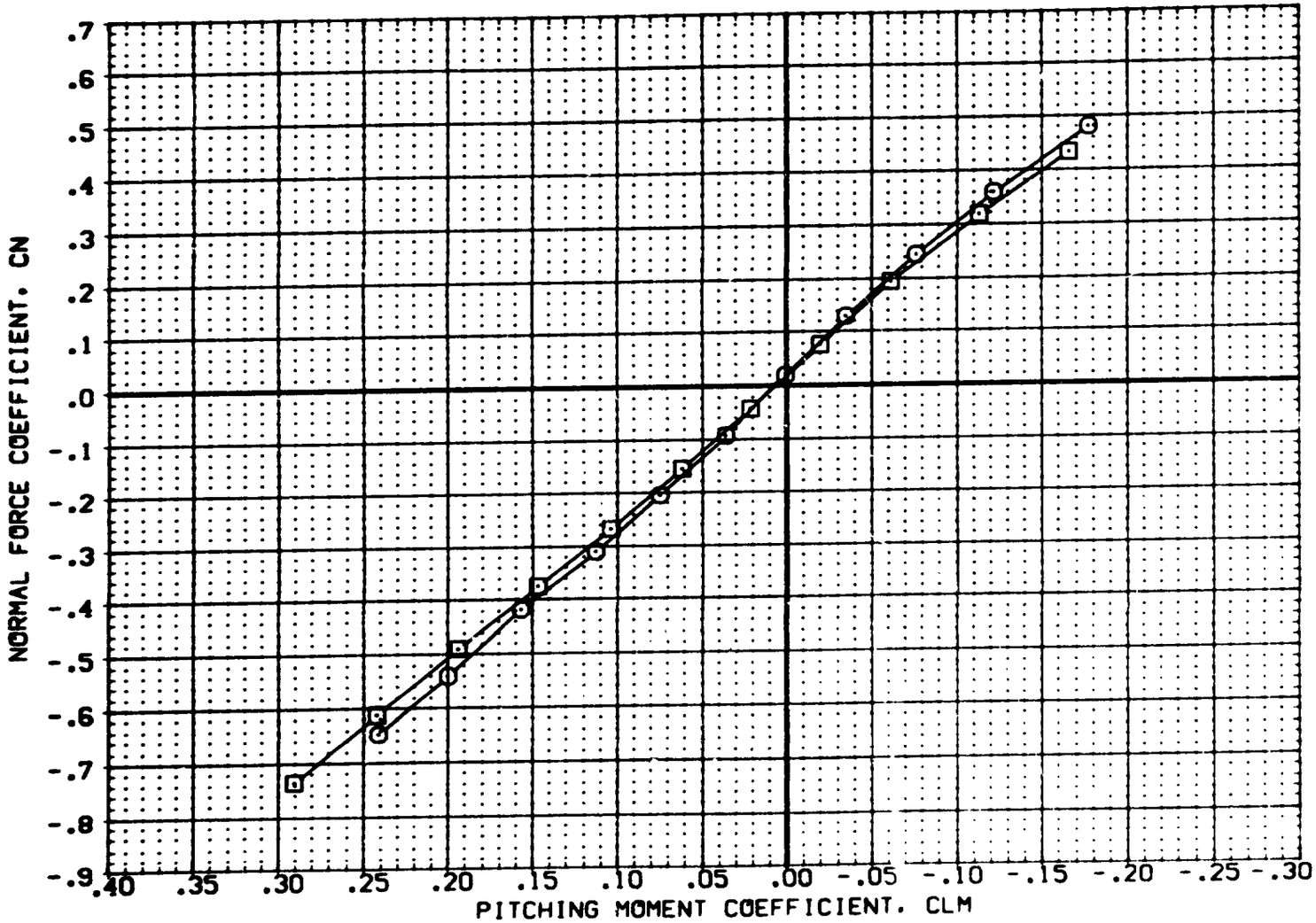
Figure 4. Base Pressure Measuring Tube Locations.

DATA FIGURES

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(Si2)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



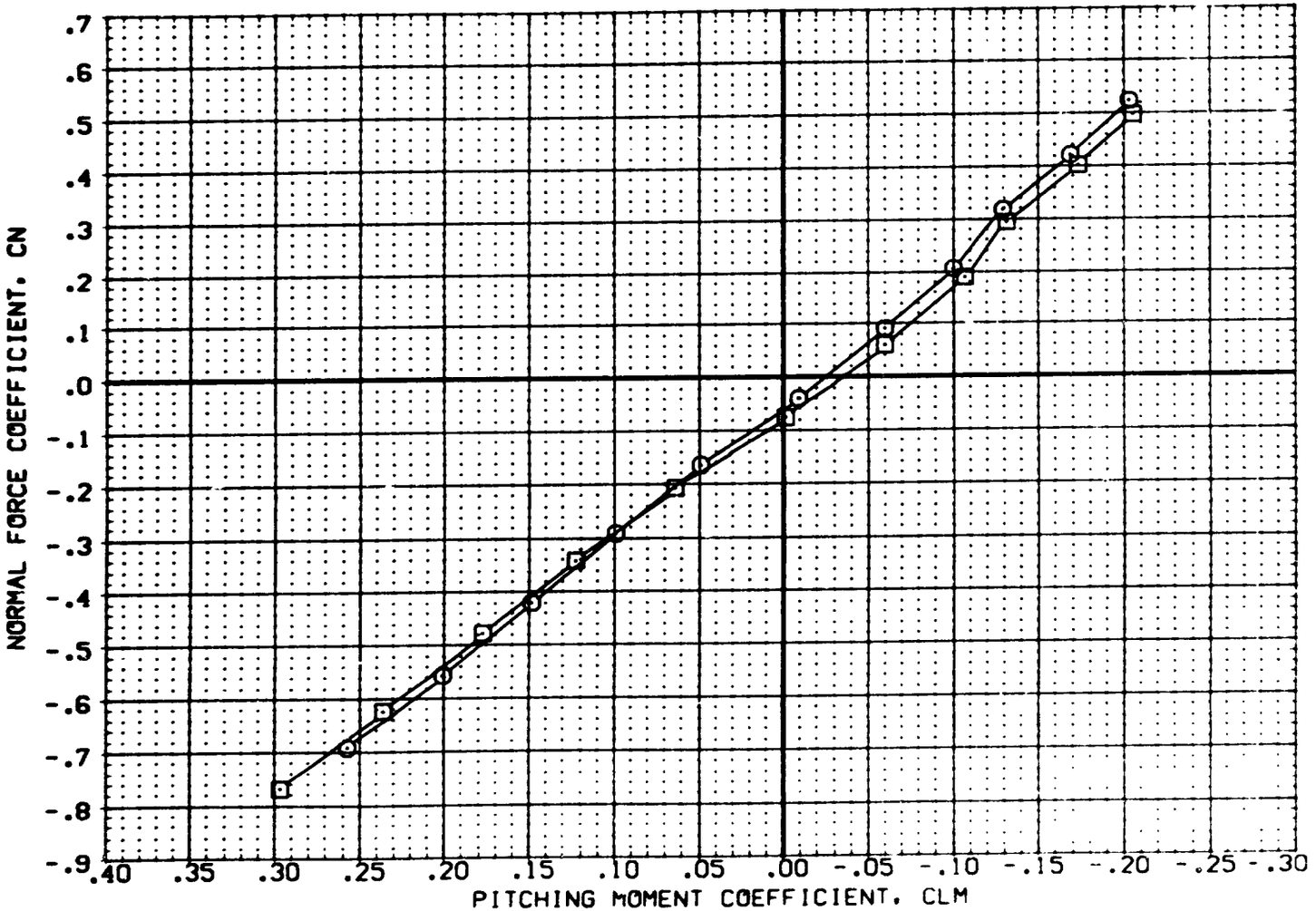
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(B94CC1) ○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(B94CC4) □	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

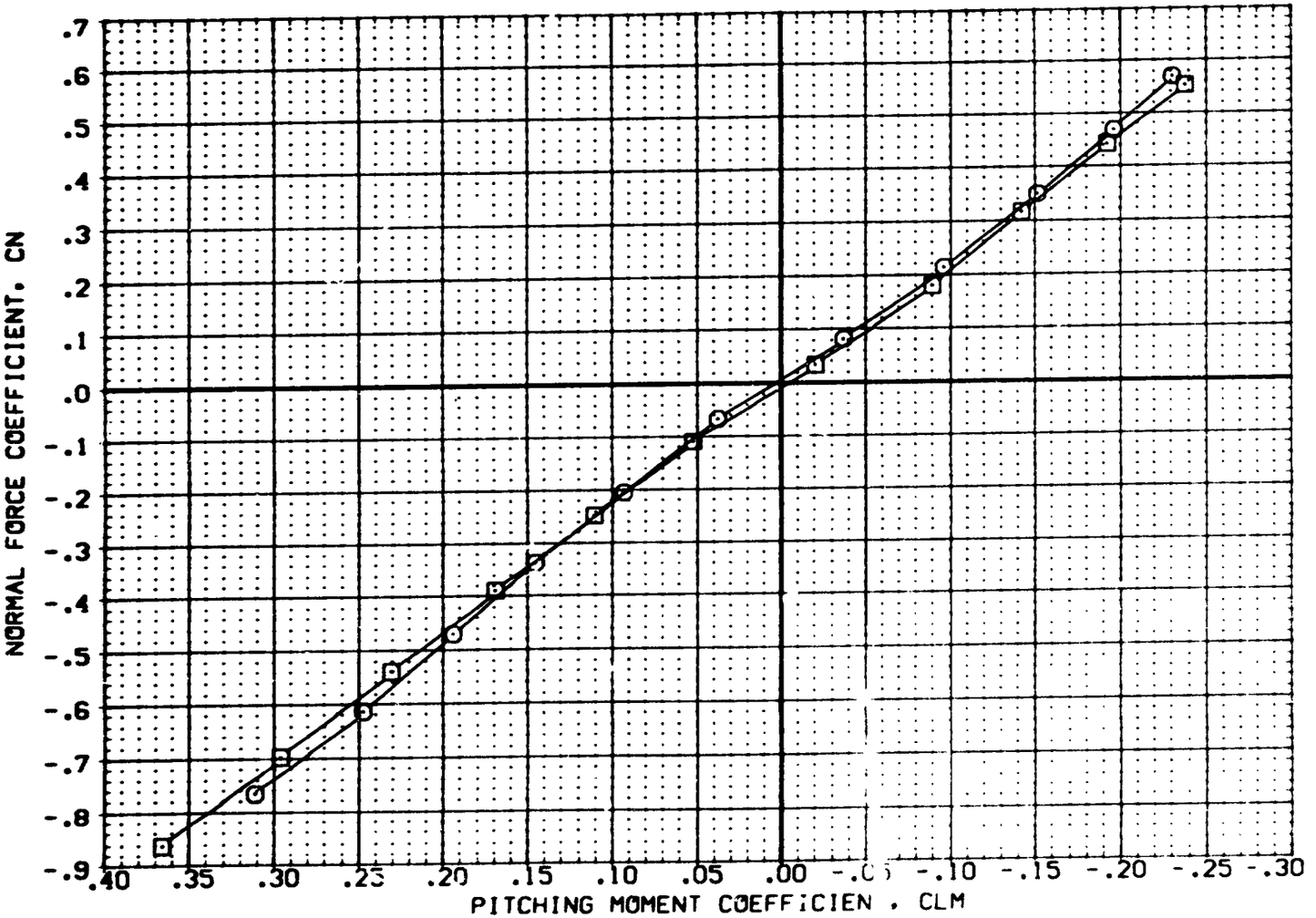


EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



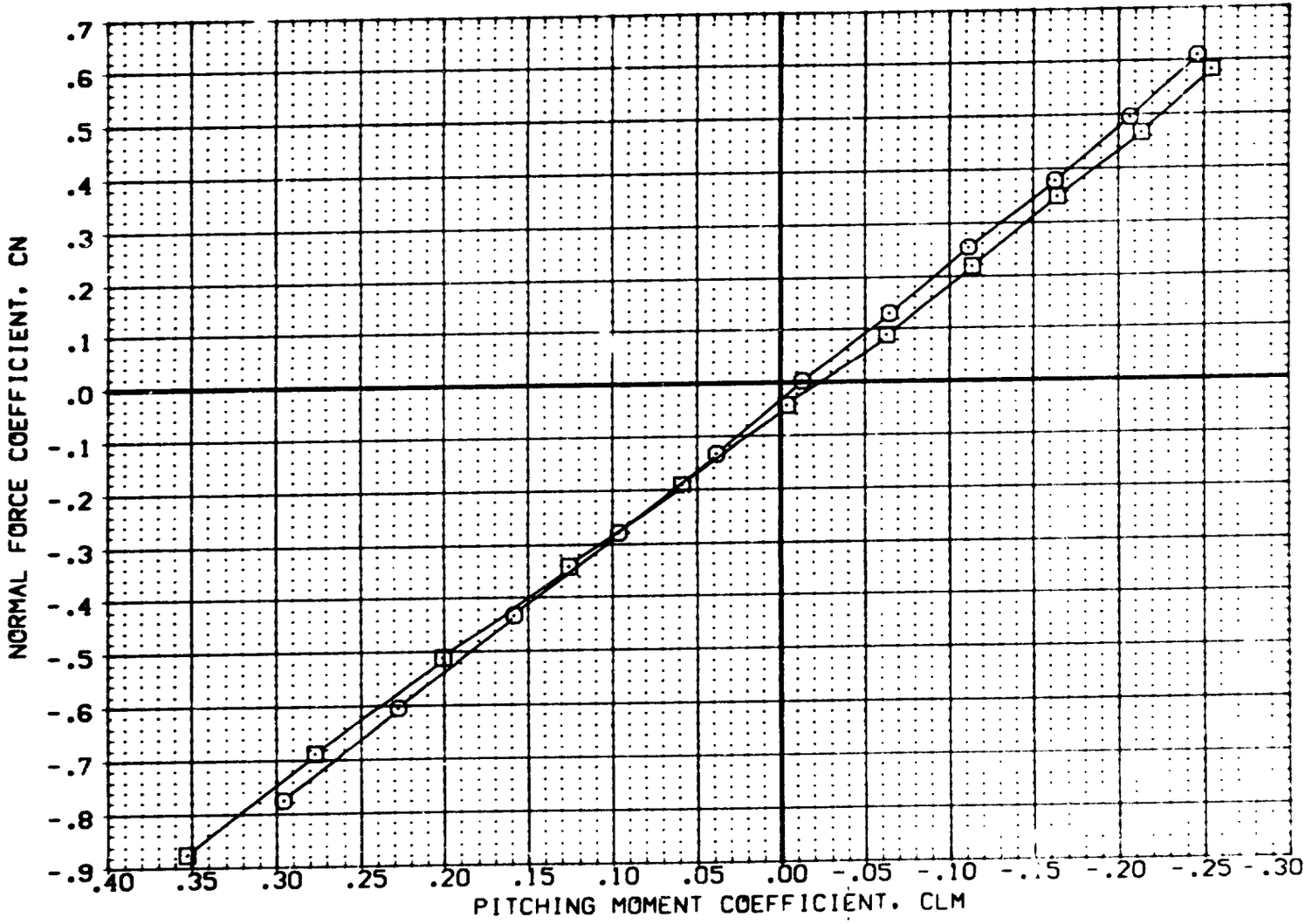
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(C)MACH = 1.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(B94OC1)	MSFC 589([A62F](034)(T14)(S12)	.000	.000	333.000
(B94OC4)	MSFC 589([A62F](034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1300	IN.
BREF	5.1300	IN.
XMRP	2.8900	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(D)MACH = 1.20

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(B94001) ○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(B94004) □	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

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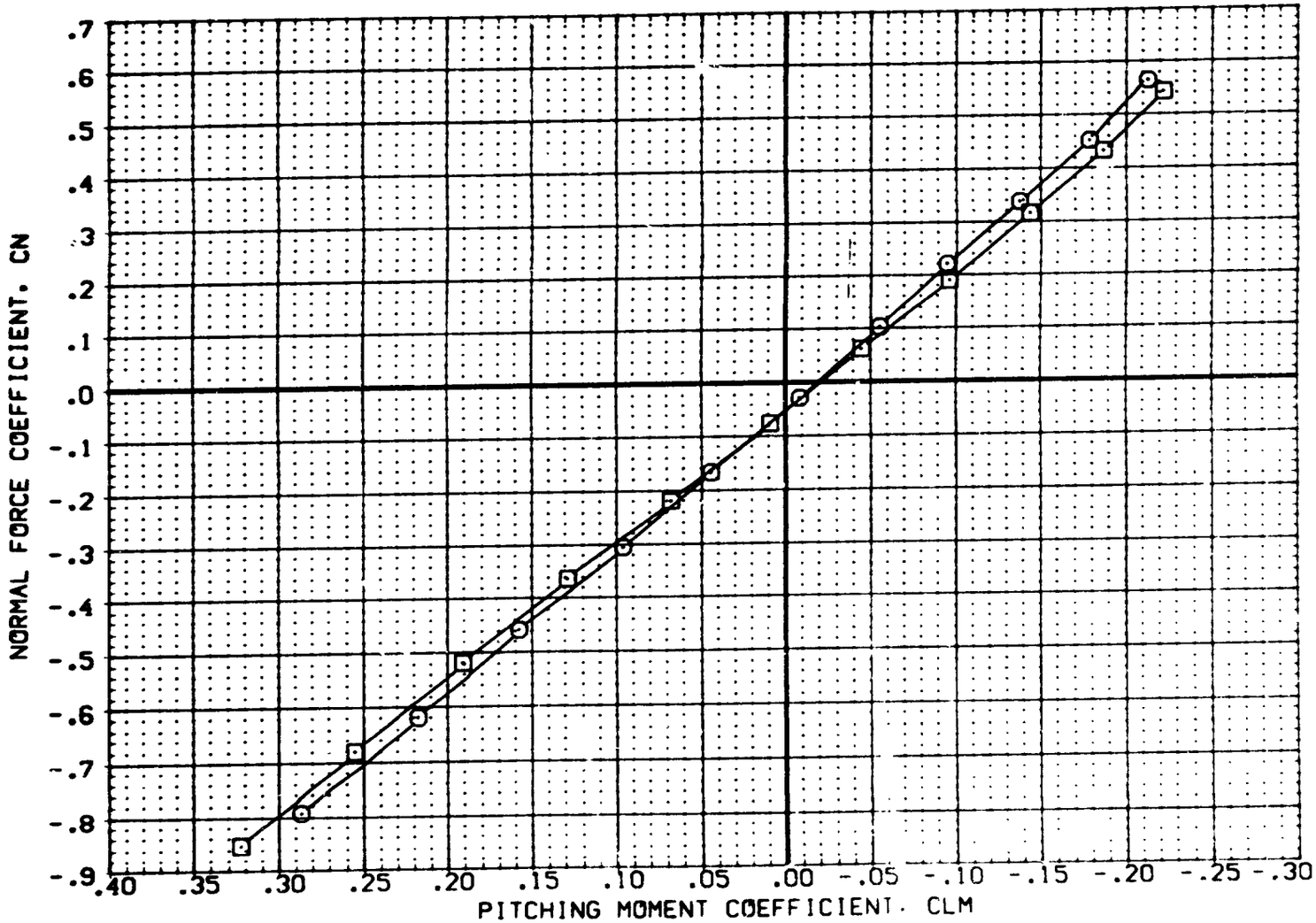
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



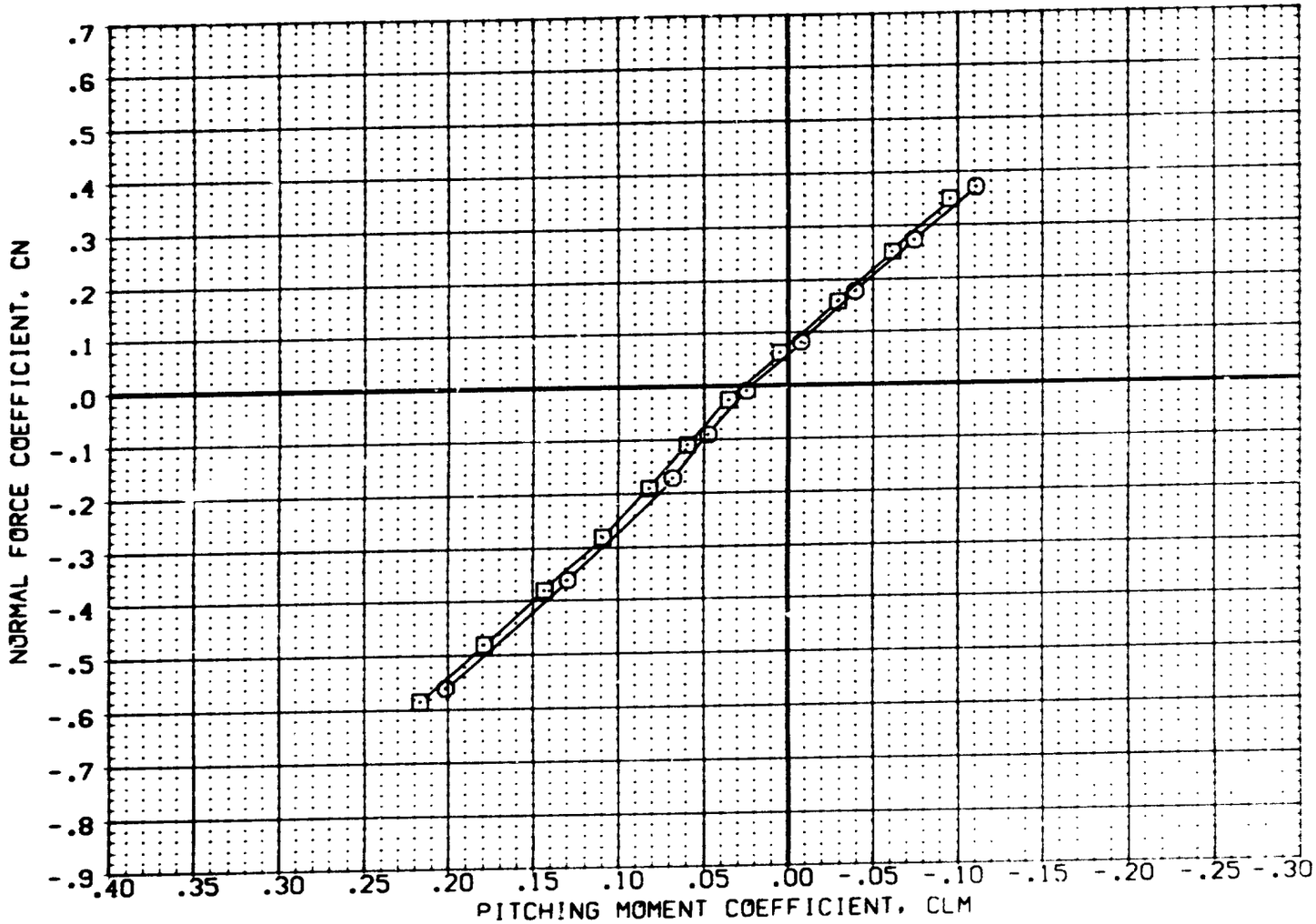
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(E)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



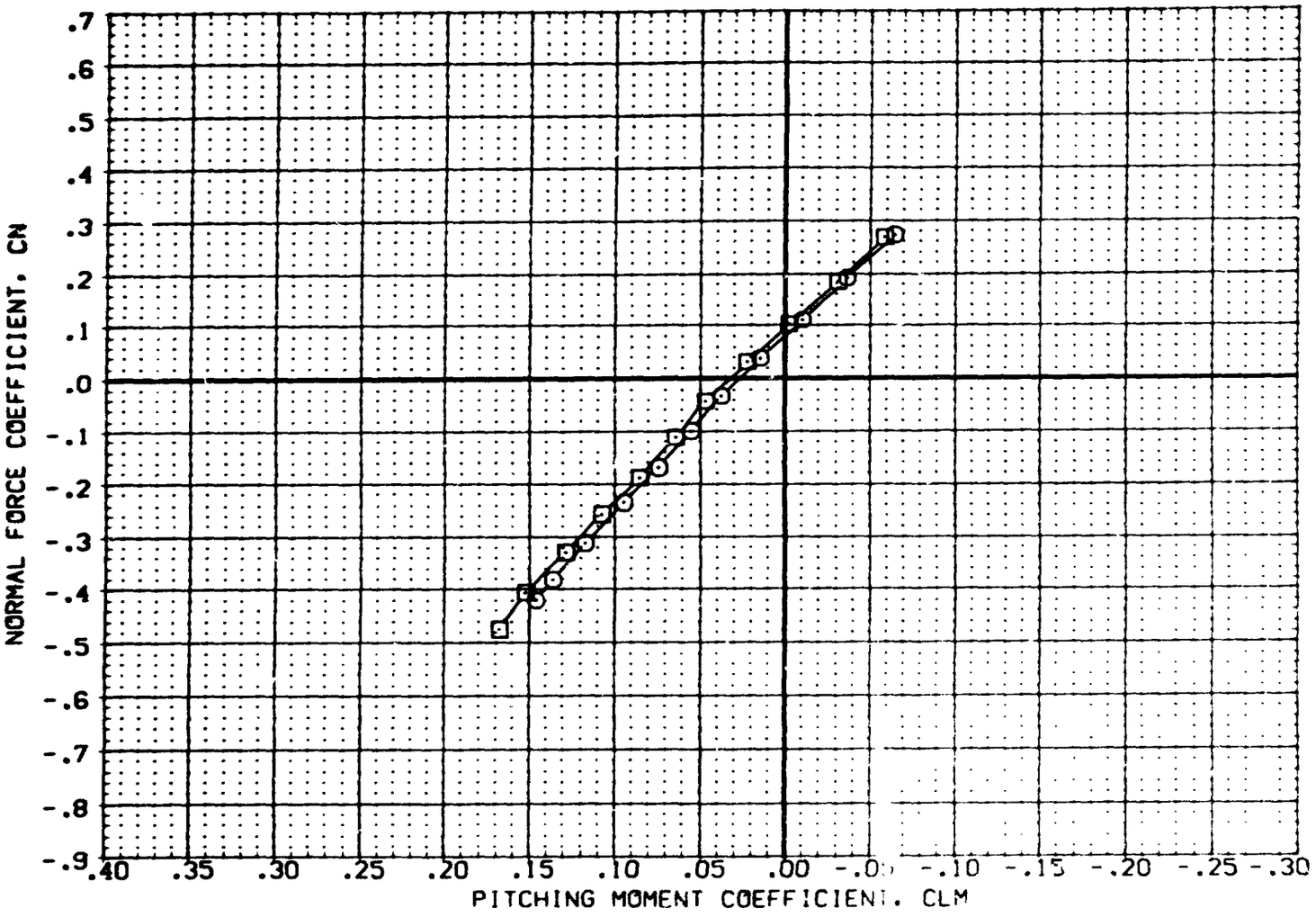
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(F)MACH = 2.99

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	MSFC 589(IA62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



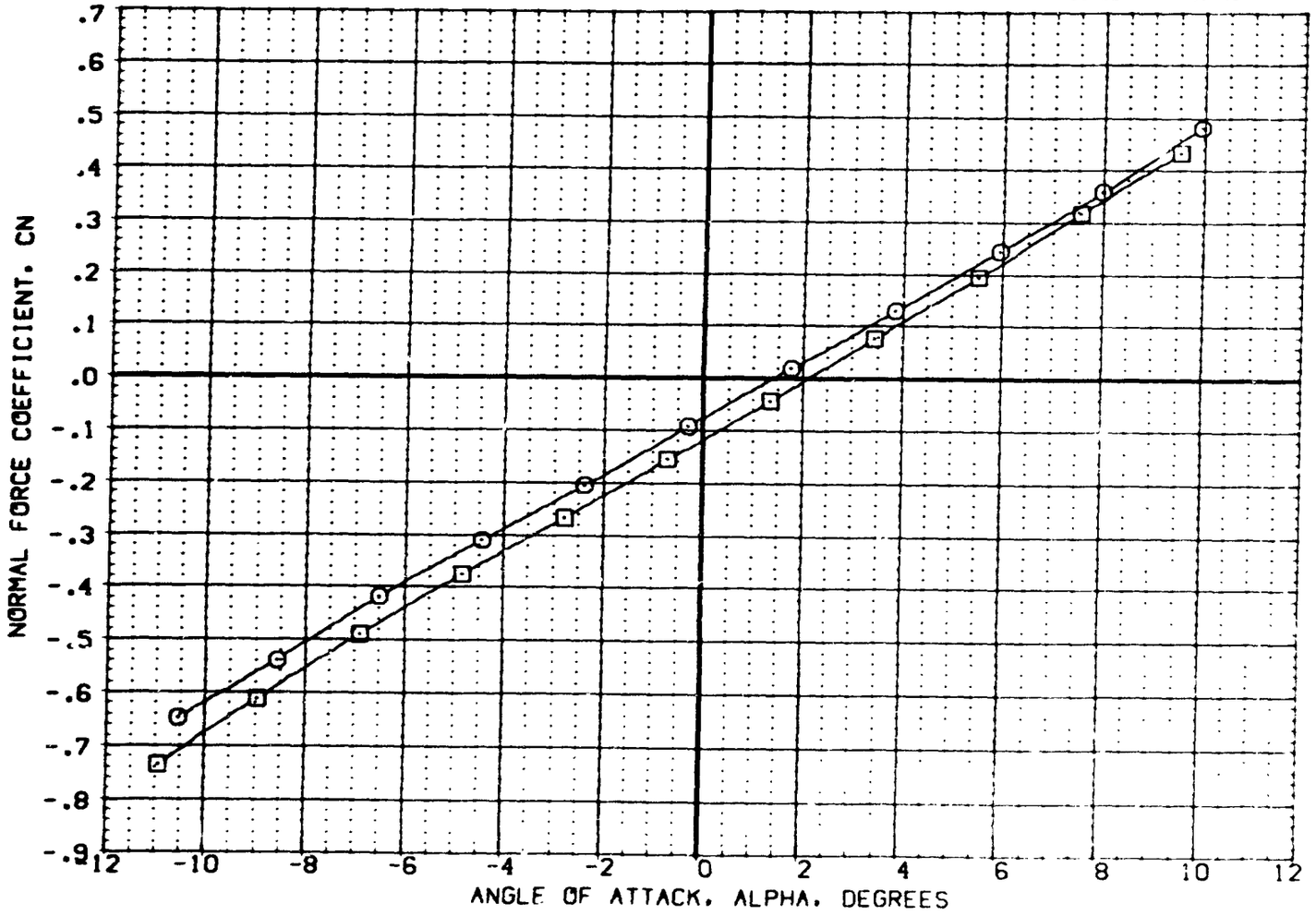
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(G)MACH = 4.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ. IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



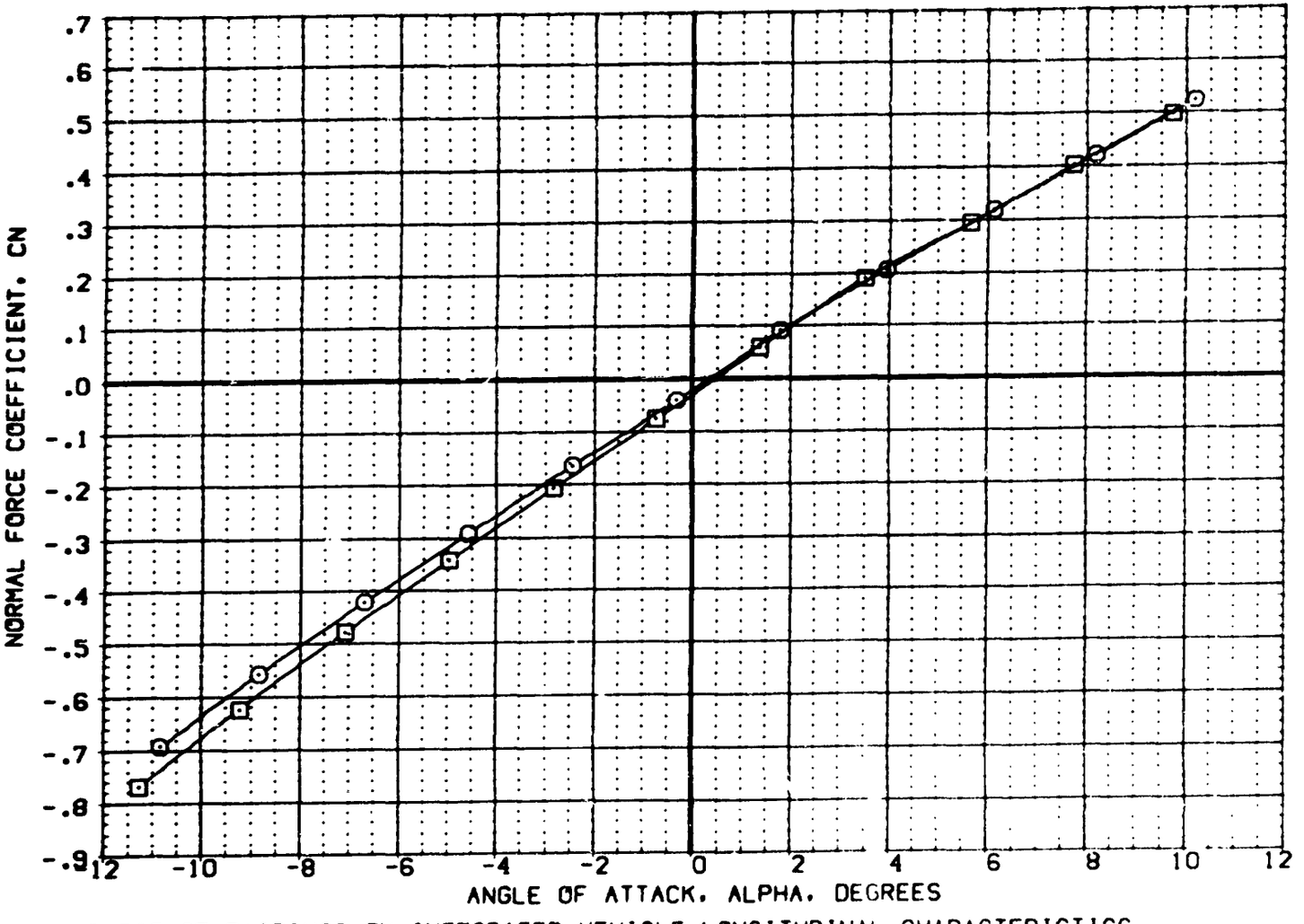
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589:(A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589:(A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



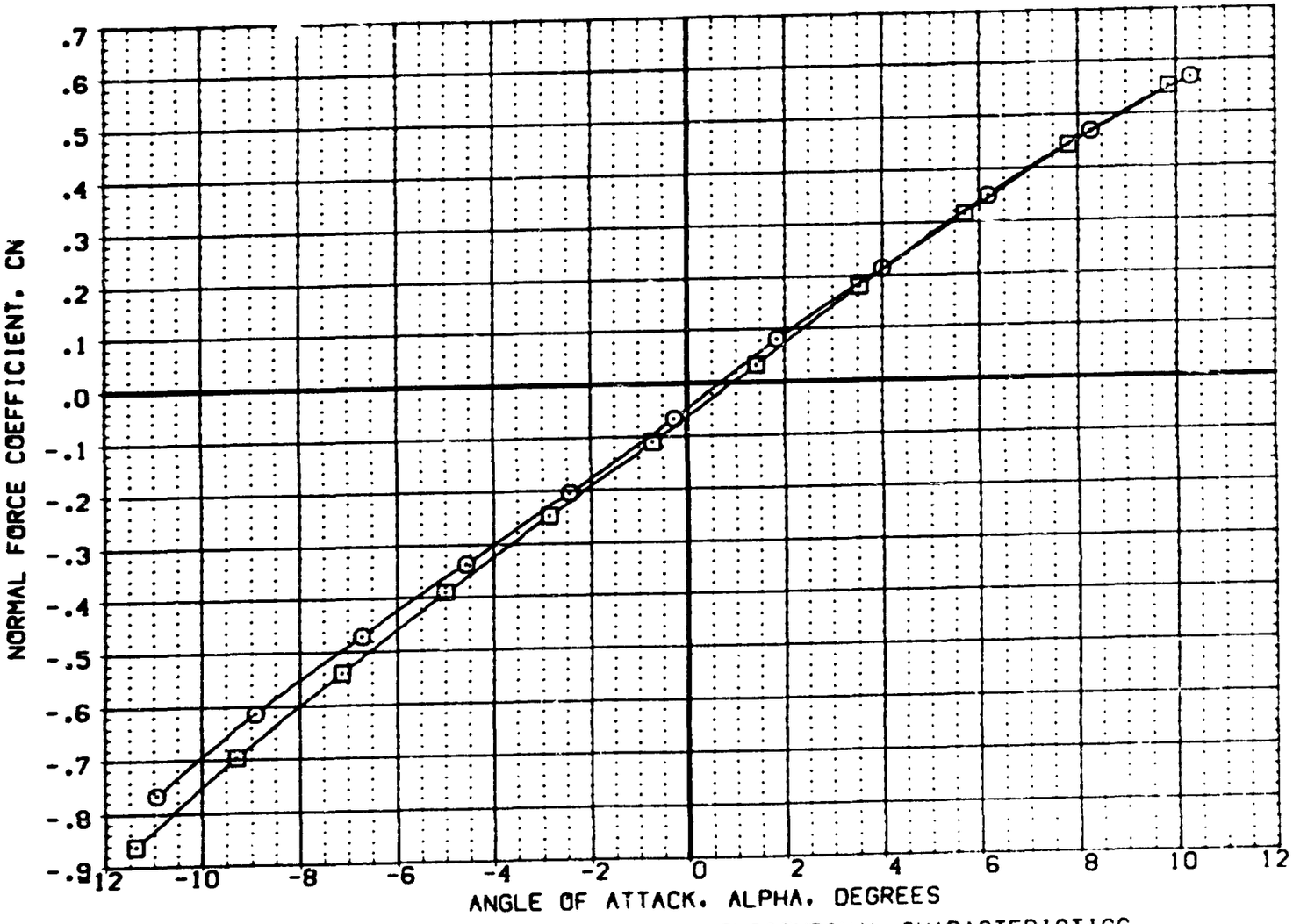
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(B)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(B94001)	MSFC S89(IA62F)(034)(T14)(S12)	.000	.000	333.000
(B94CC4)	MSFC S89(IA62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

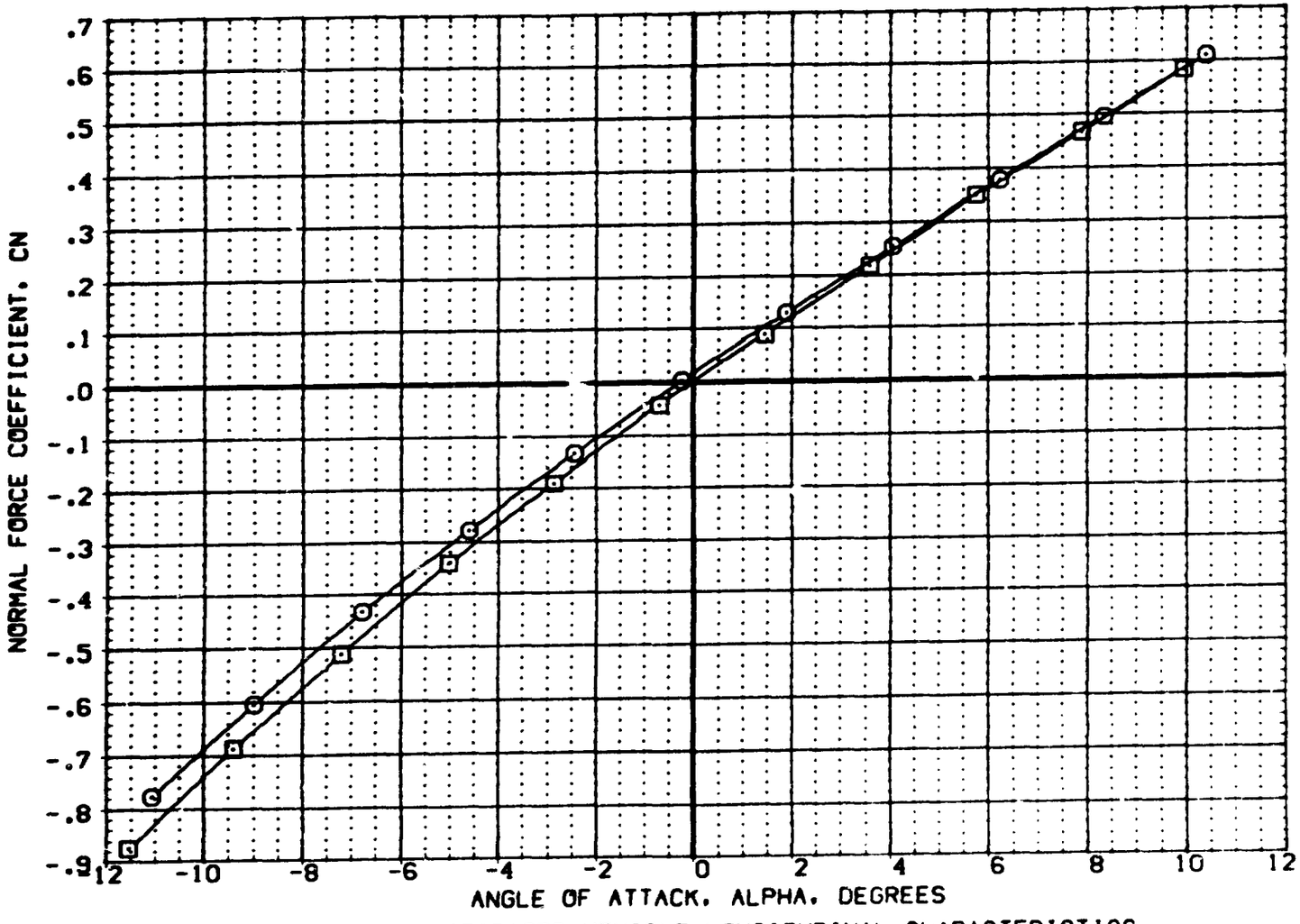
PAGE

(C)MACH = 1.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001) ○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004) □	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



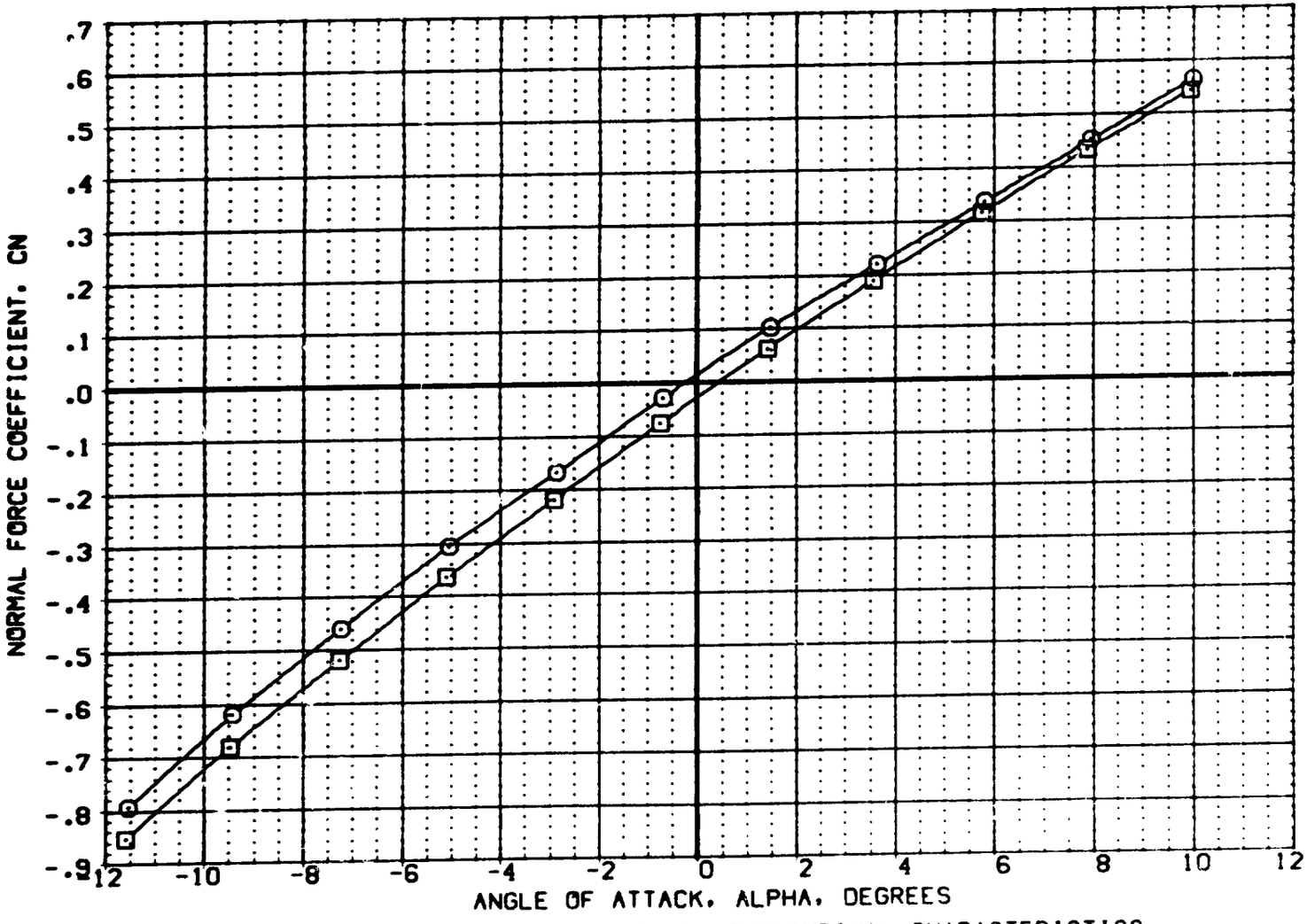
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(D)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)		MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)		MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



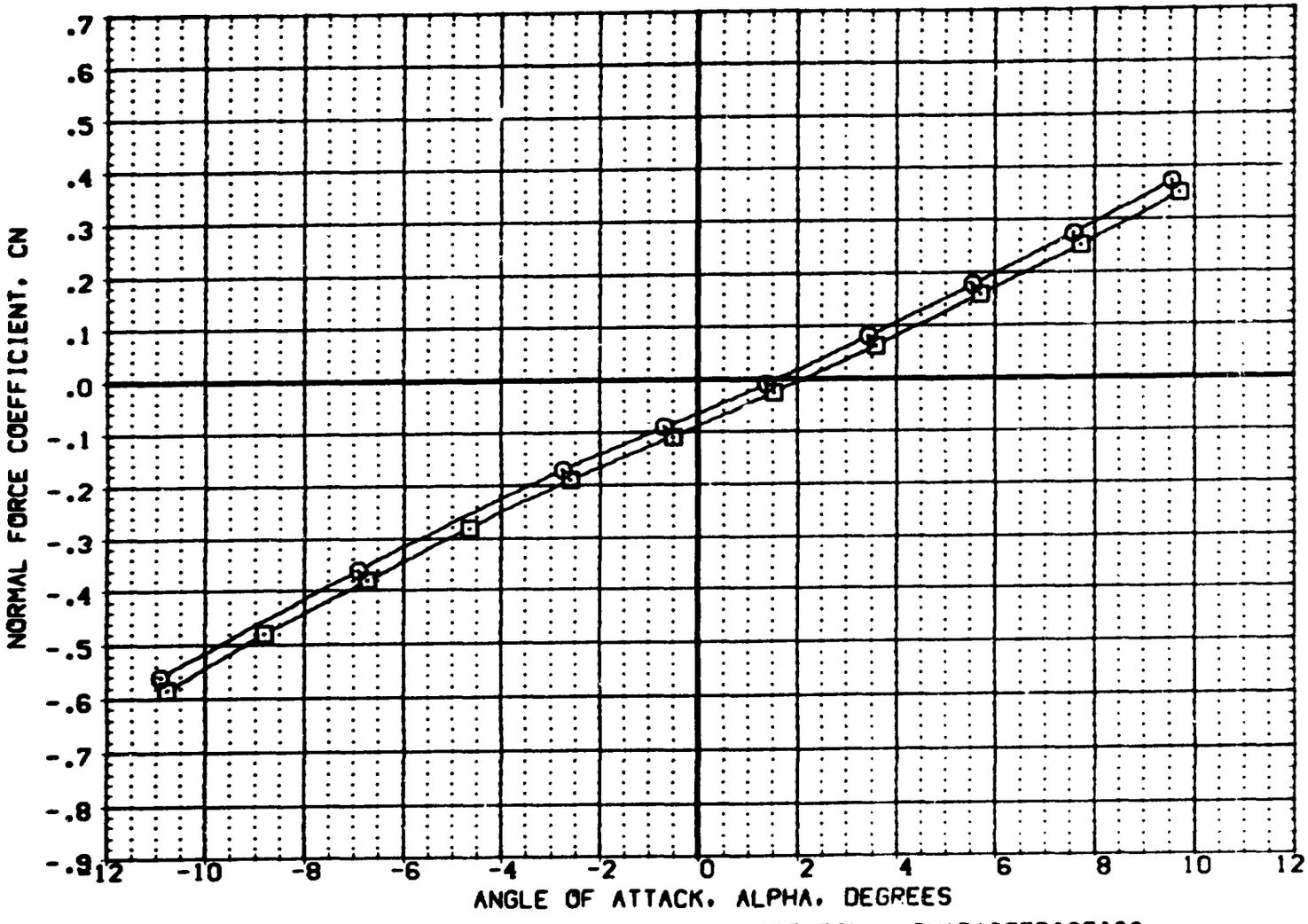
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(E)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)		MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)		MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



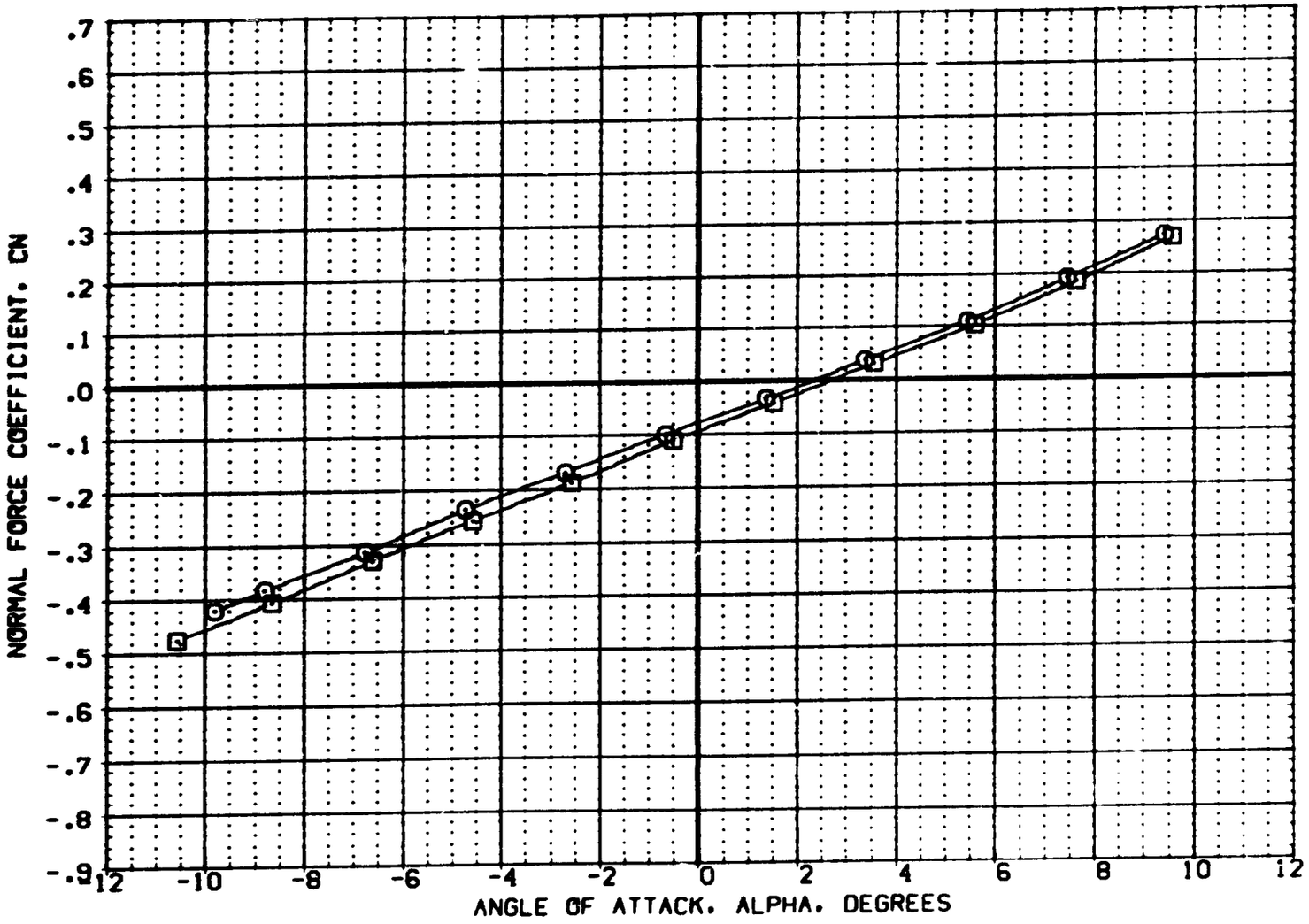
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(F)MACH = 2.99

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(B9400)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(B940C4)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



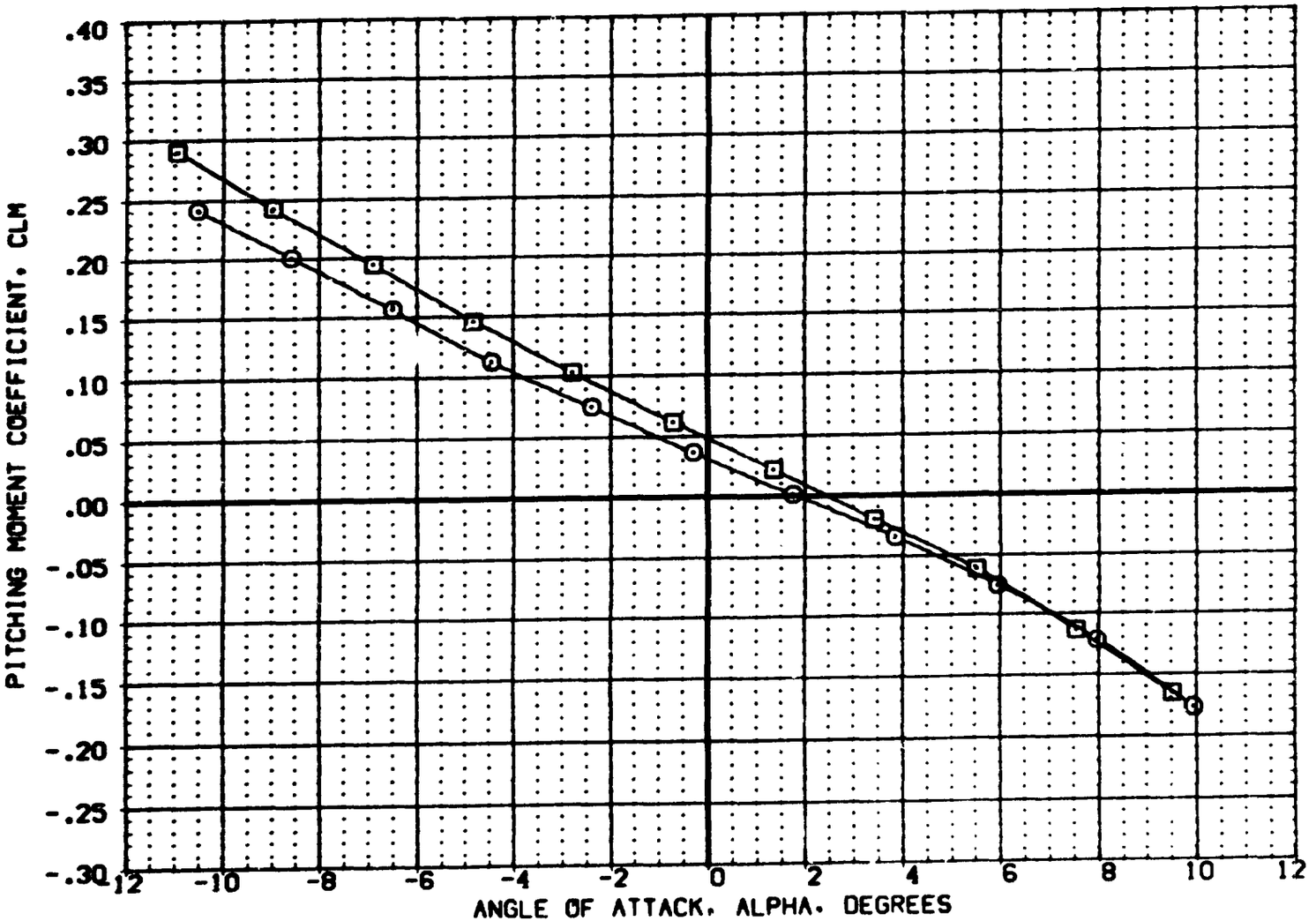
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(G)MACH = 4.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)		MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)		MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(A)MACH = .60

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(B94001)		MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
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REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
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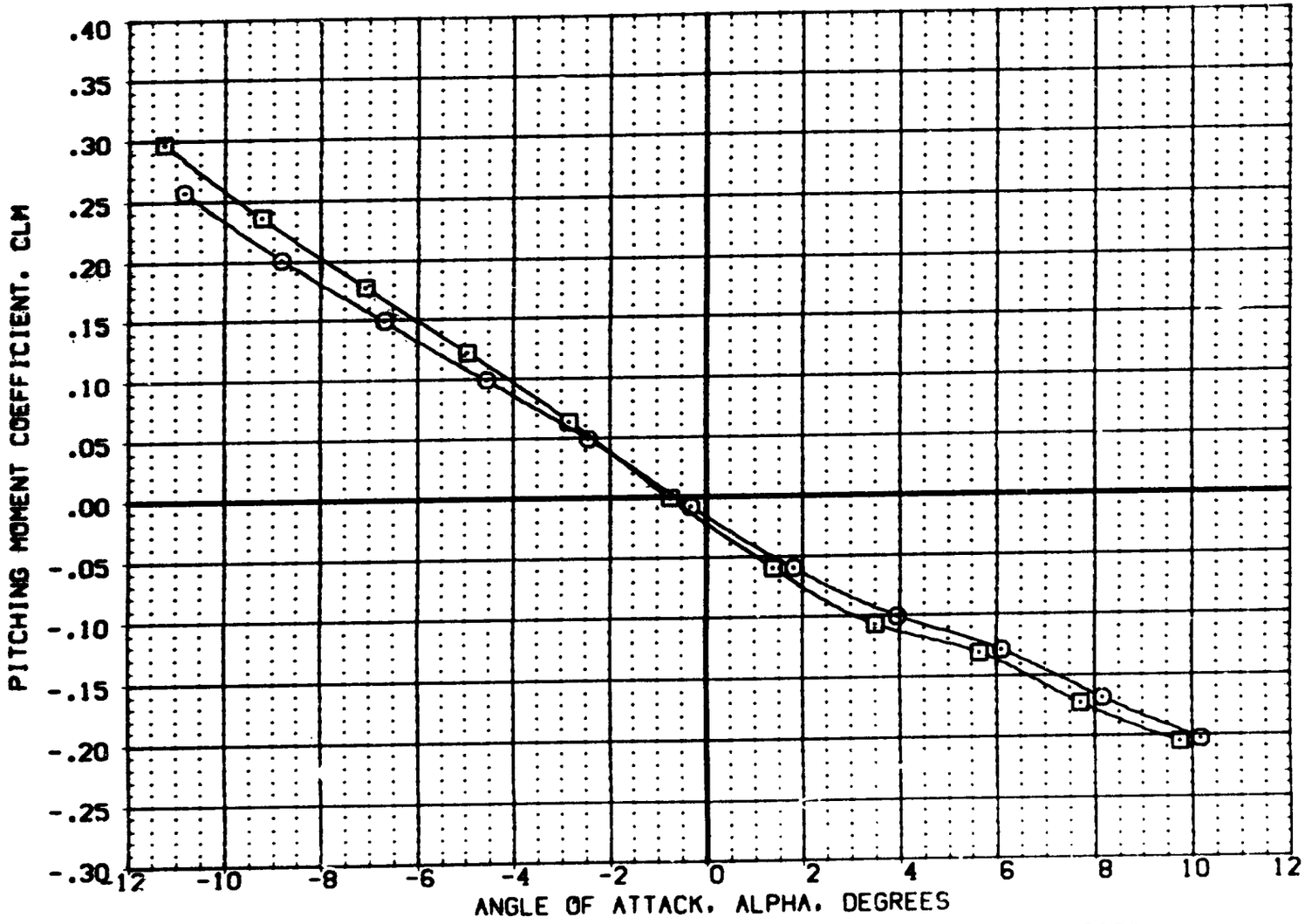
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



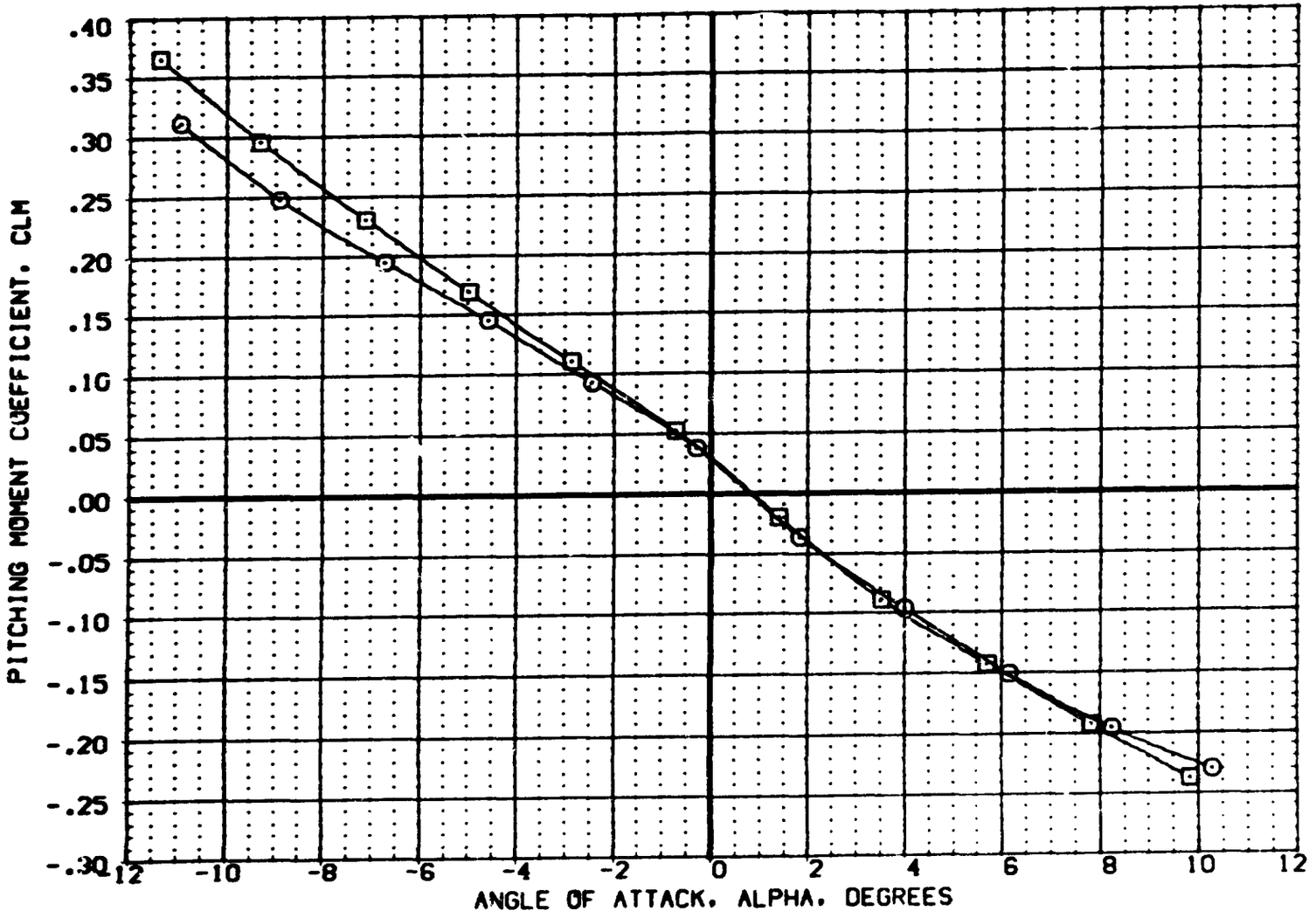
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)		MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)		MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(C)MACH = 1.00

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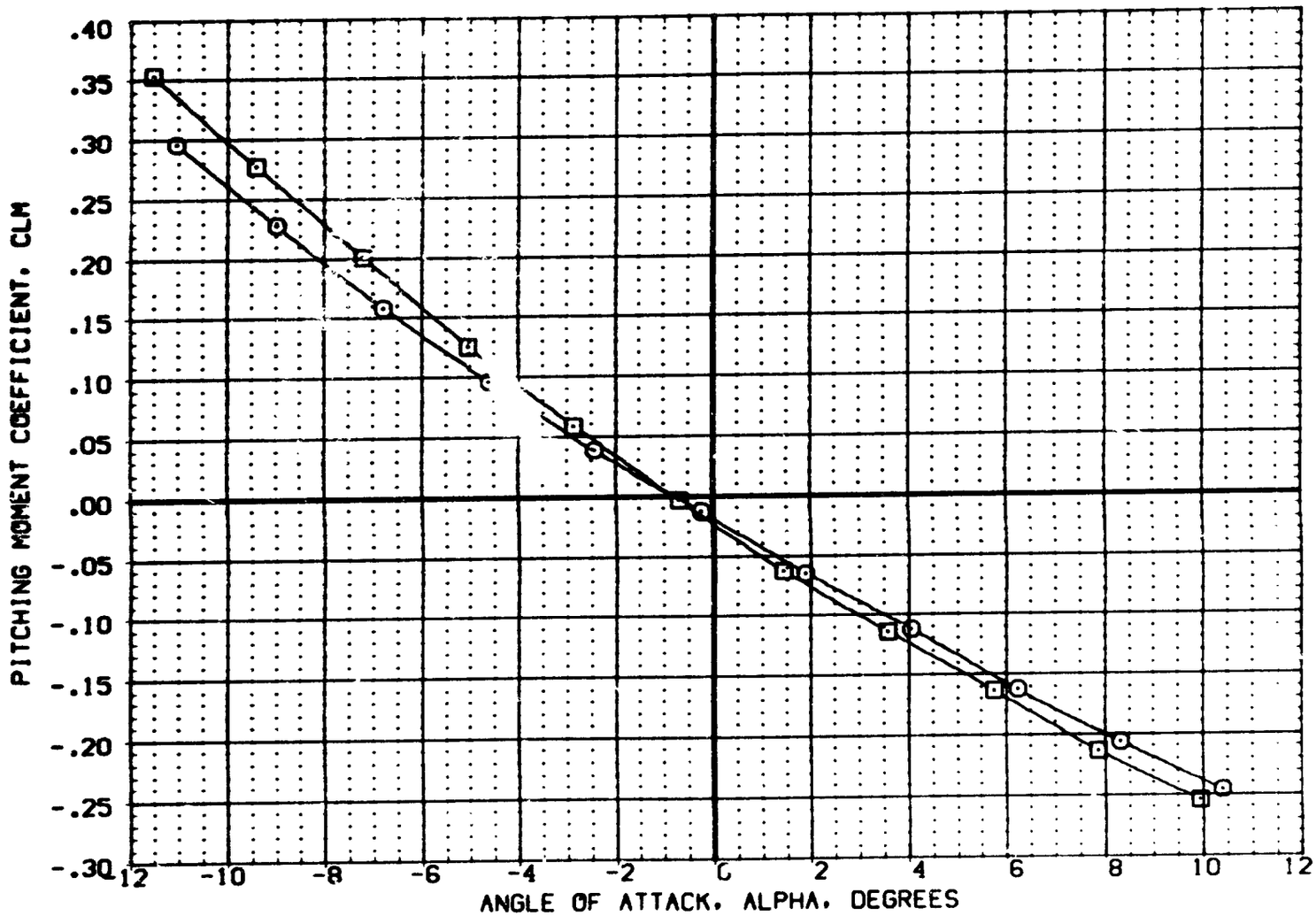
(B940C)	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(B94CC4)	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(D)MACH = 1.20

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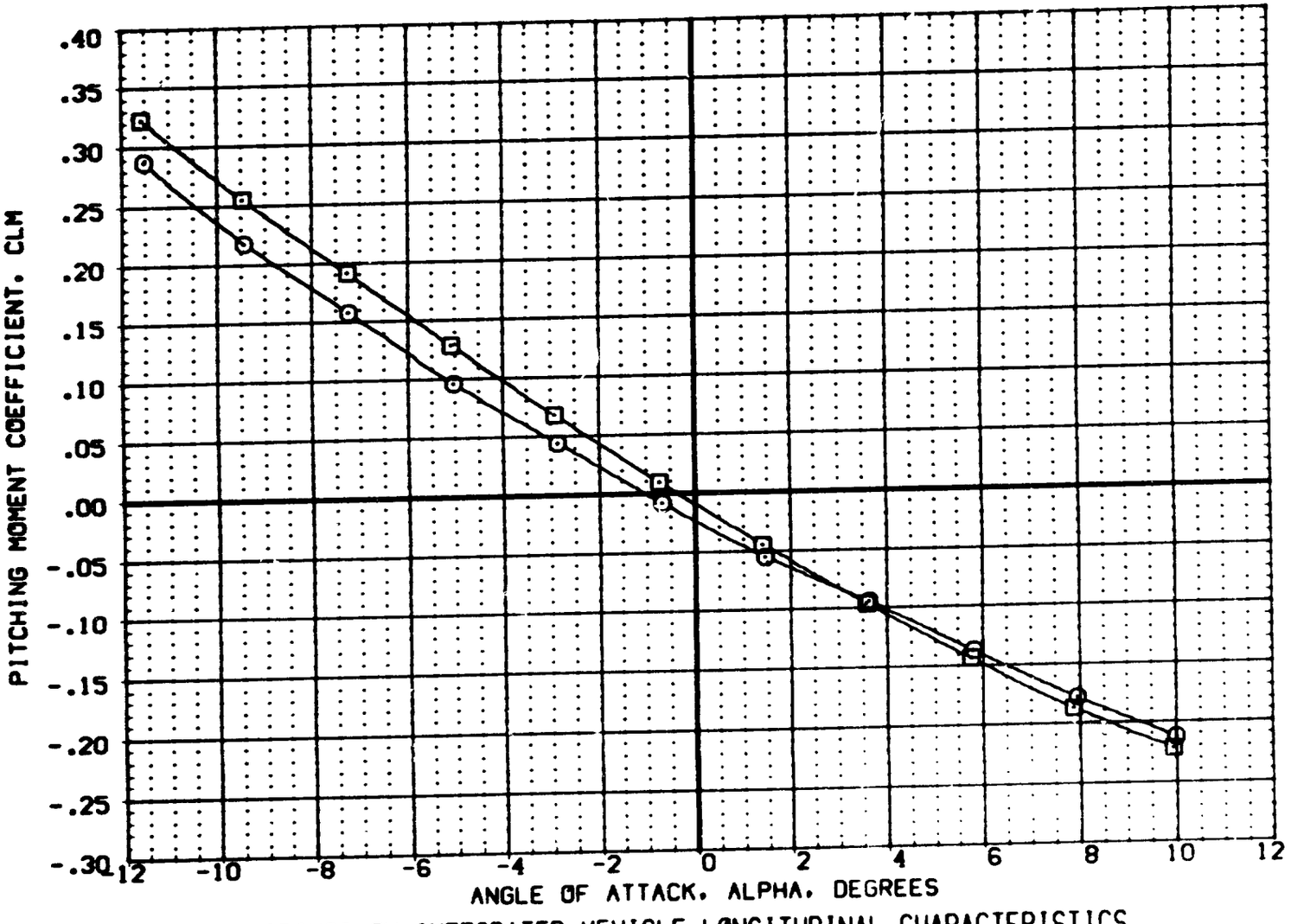
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(E)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

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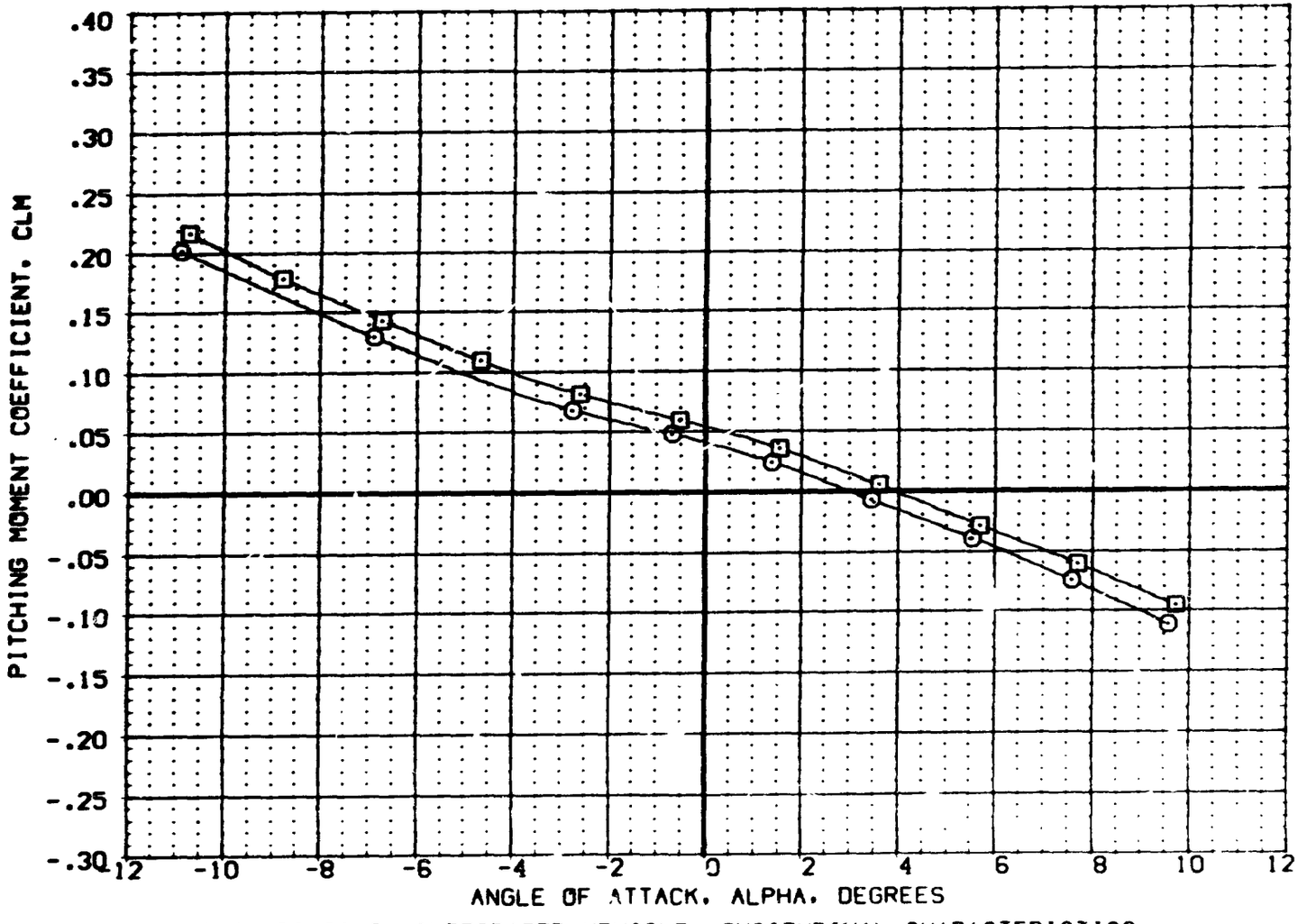
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(F)MACH = 2.99

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
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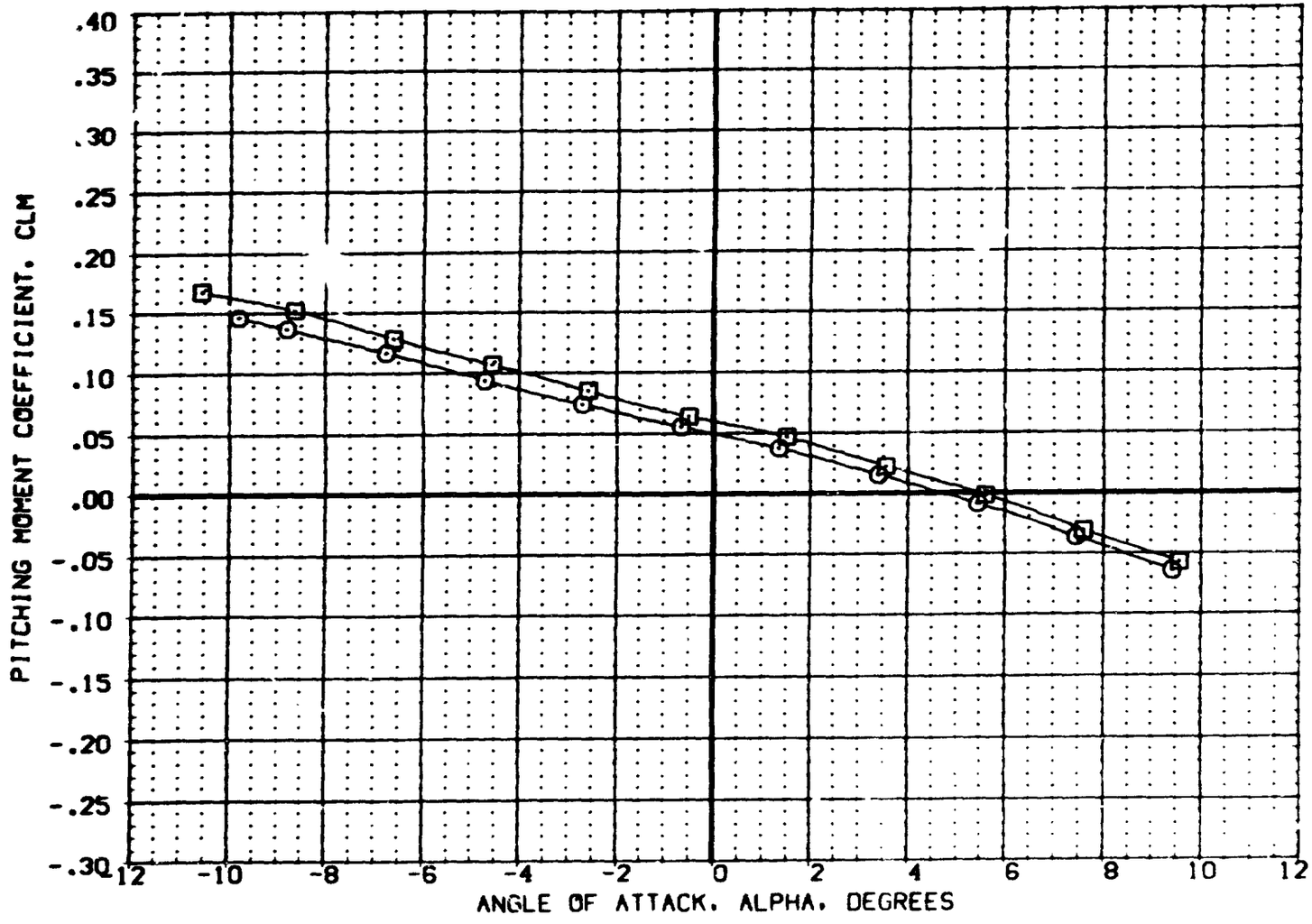
(B94C04)		MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



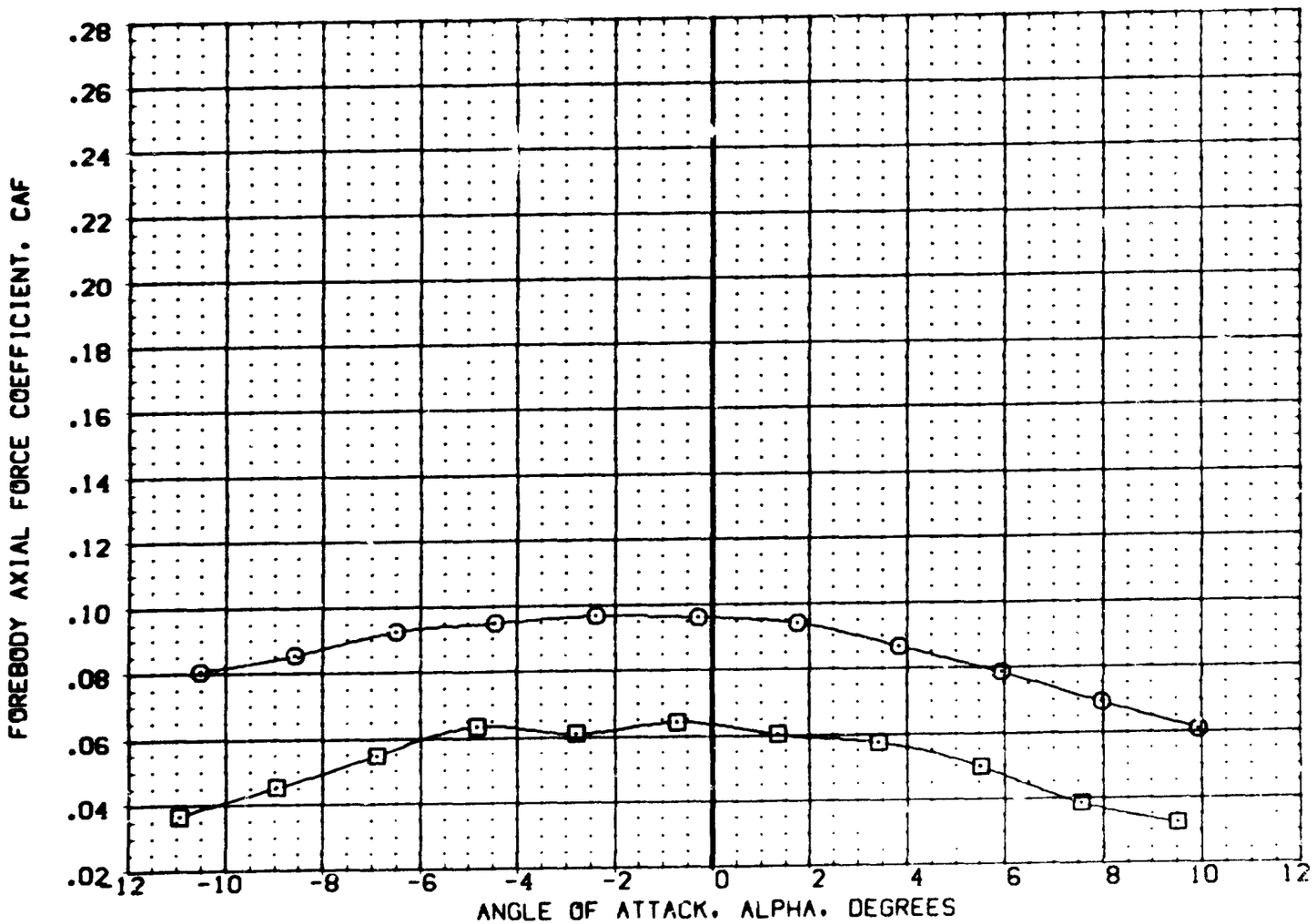
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(G)MACH = 4.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	□	MSFC 589(A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	⊟	MSFC 589(A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



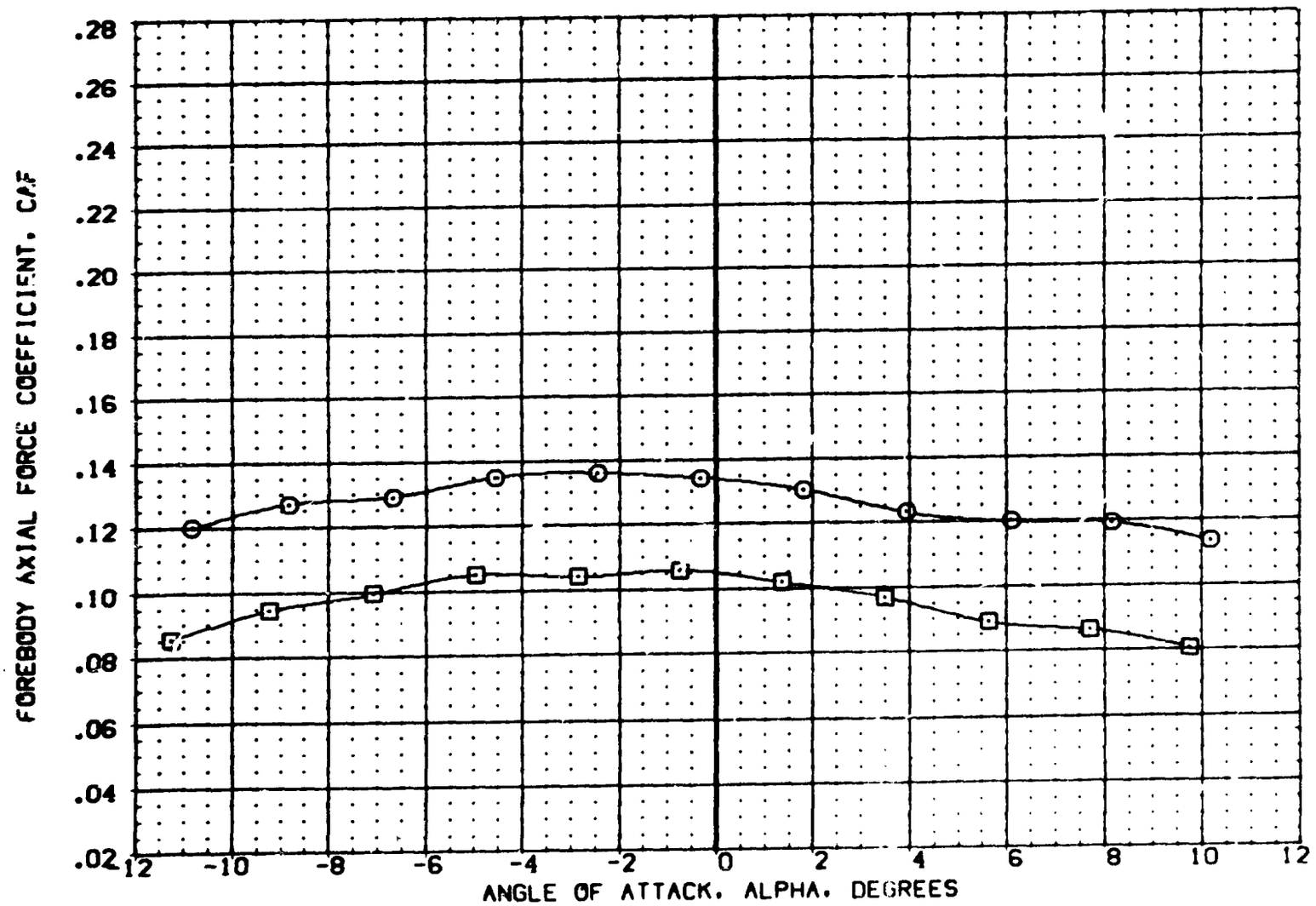
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)		MSFC 589([A62F])(034)([T4])(S12)	.000	.000	333.000
(894004)		MSFC 589([A62F])(034)([T4])(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



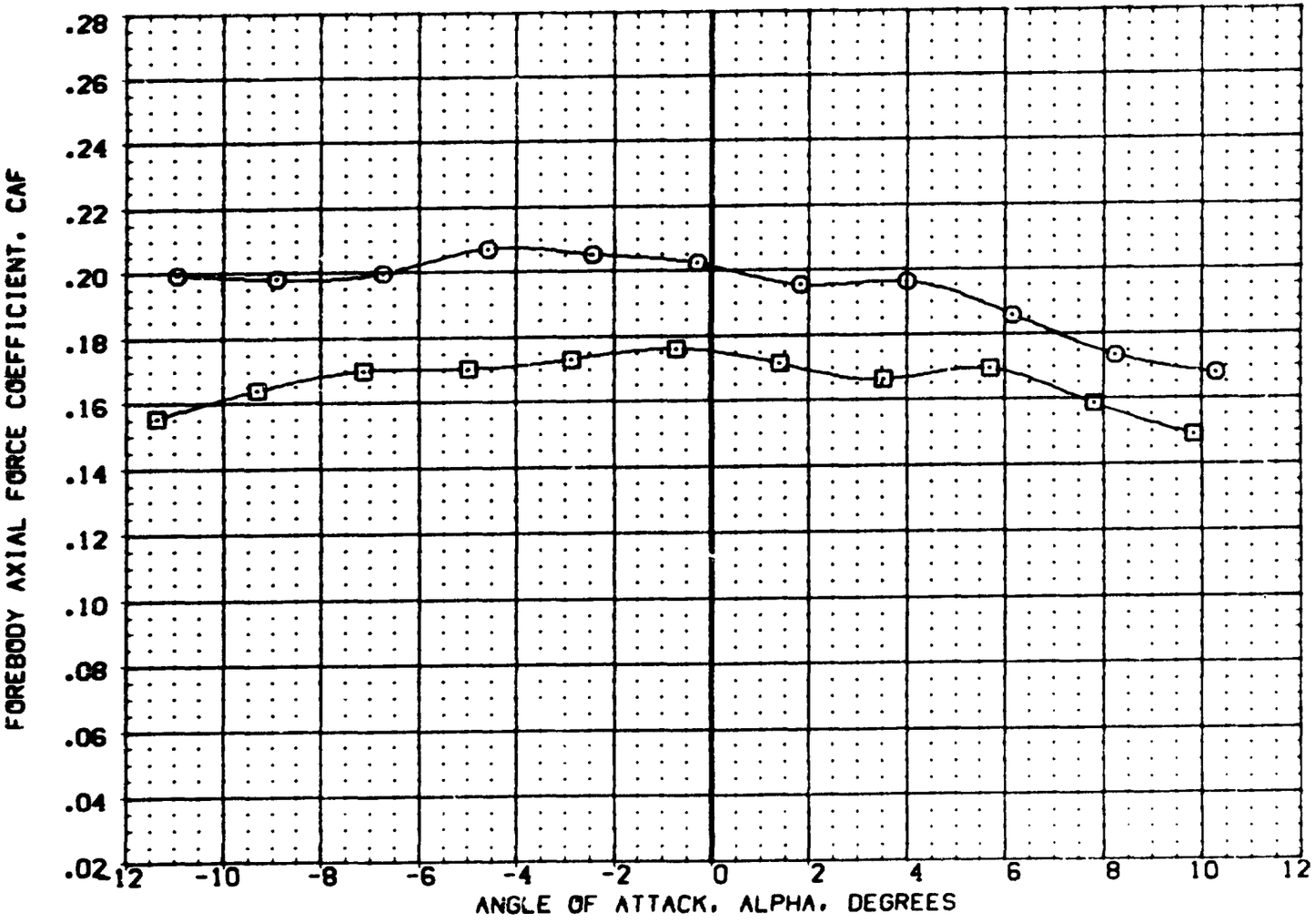
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	□	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.300	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6400	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



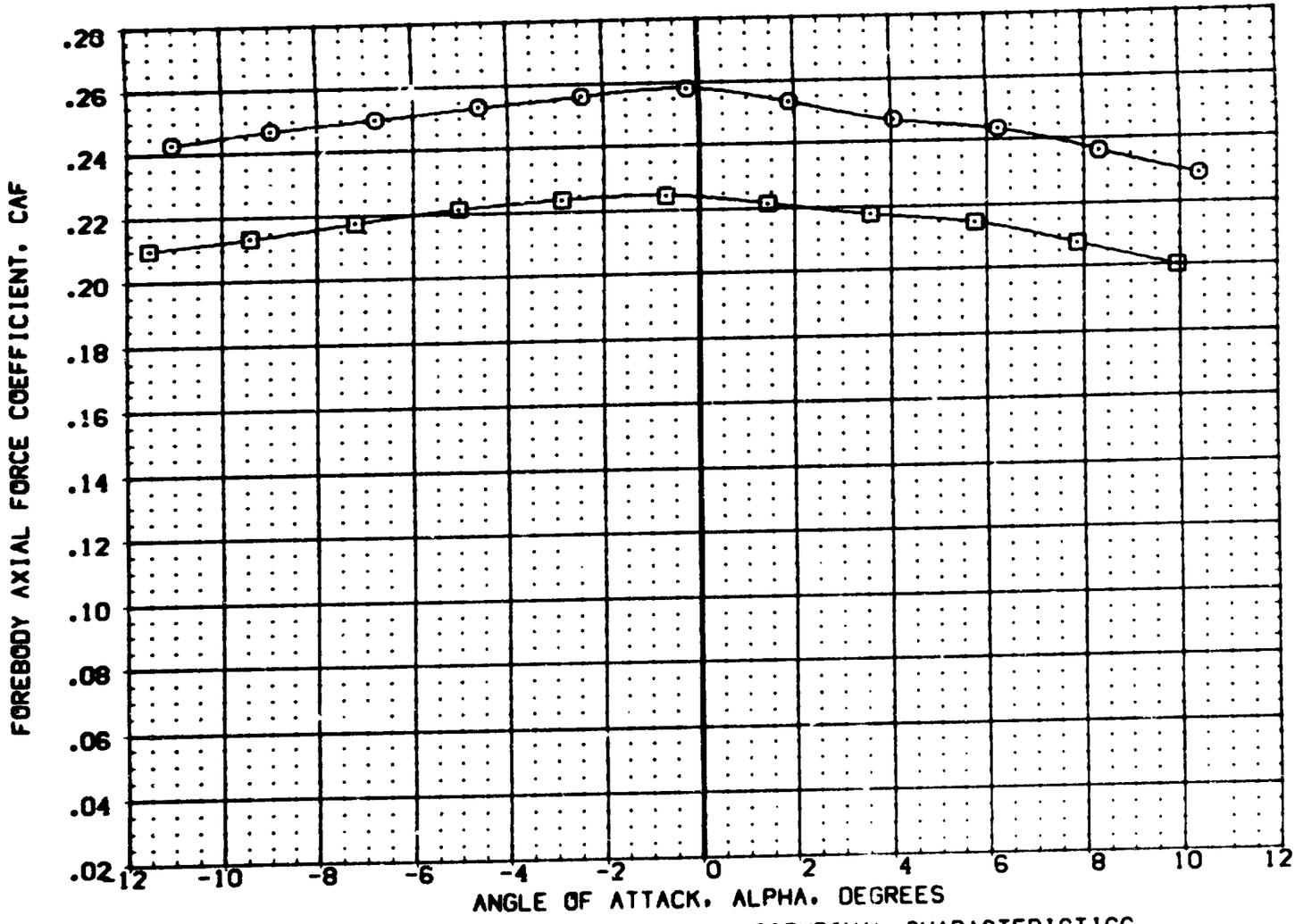
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(C)MACH = 1.00

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



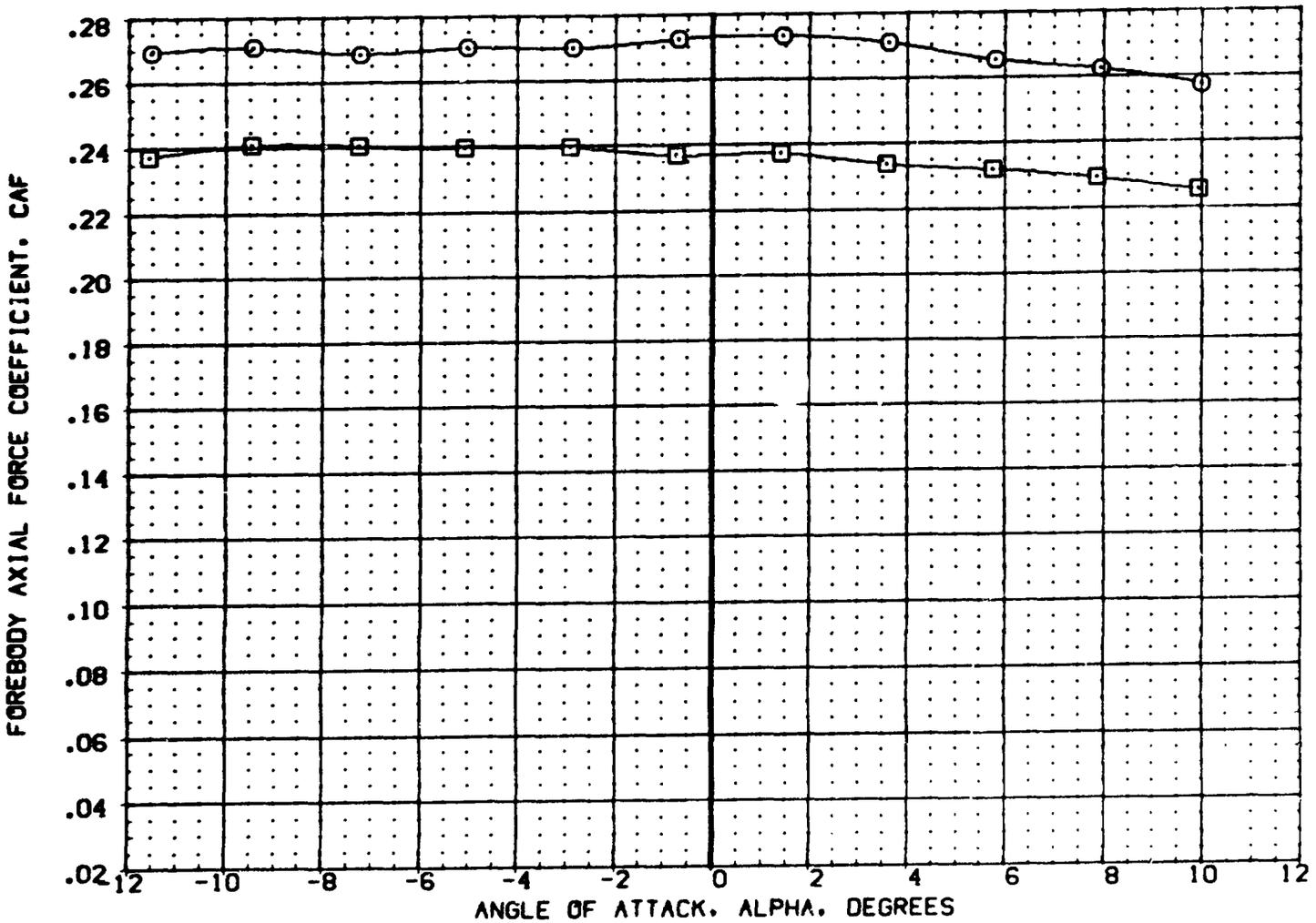
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(D)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

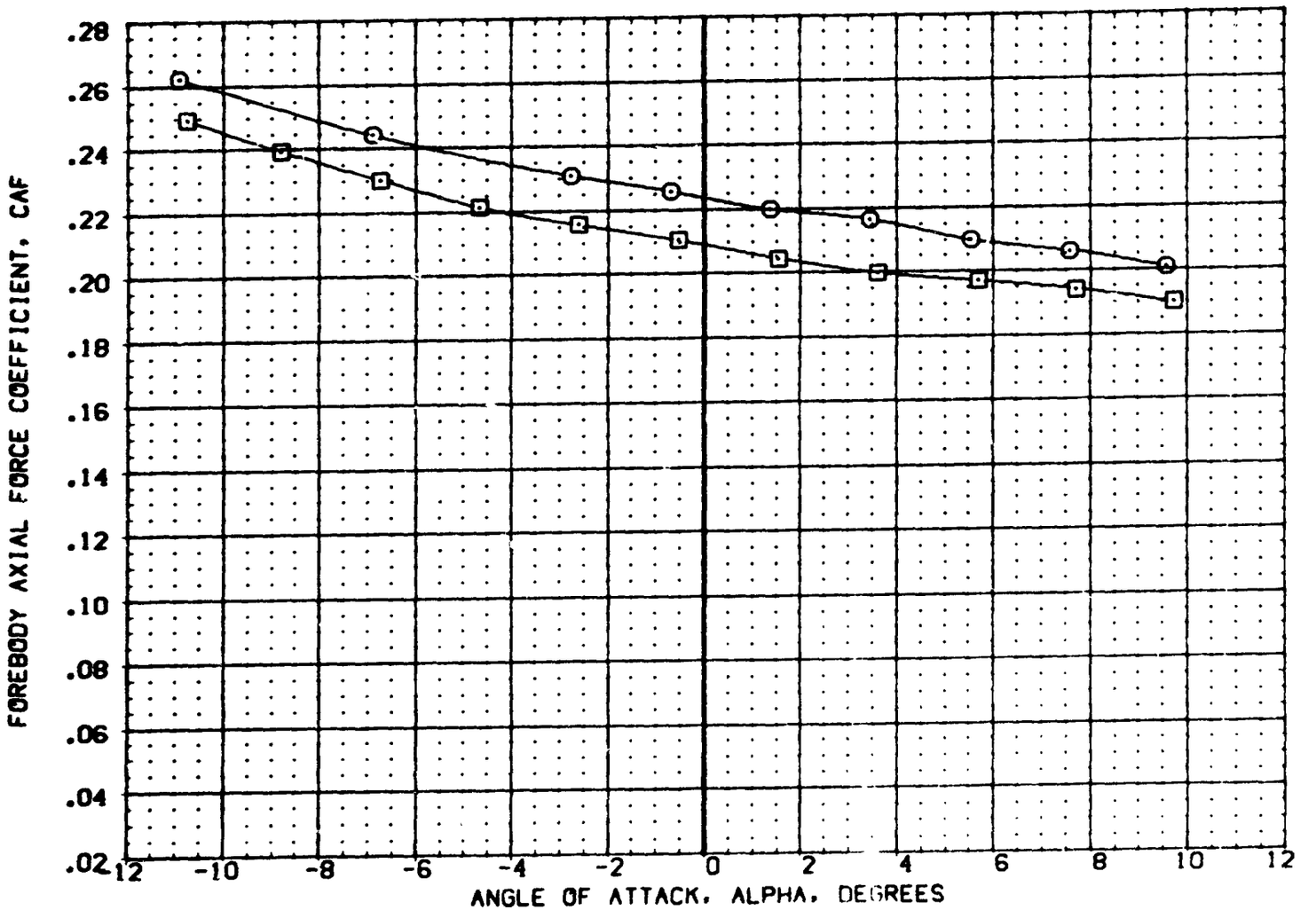


EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(E)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894DC1)	8	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894CC4)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



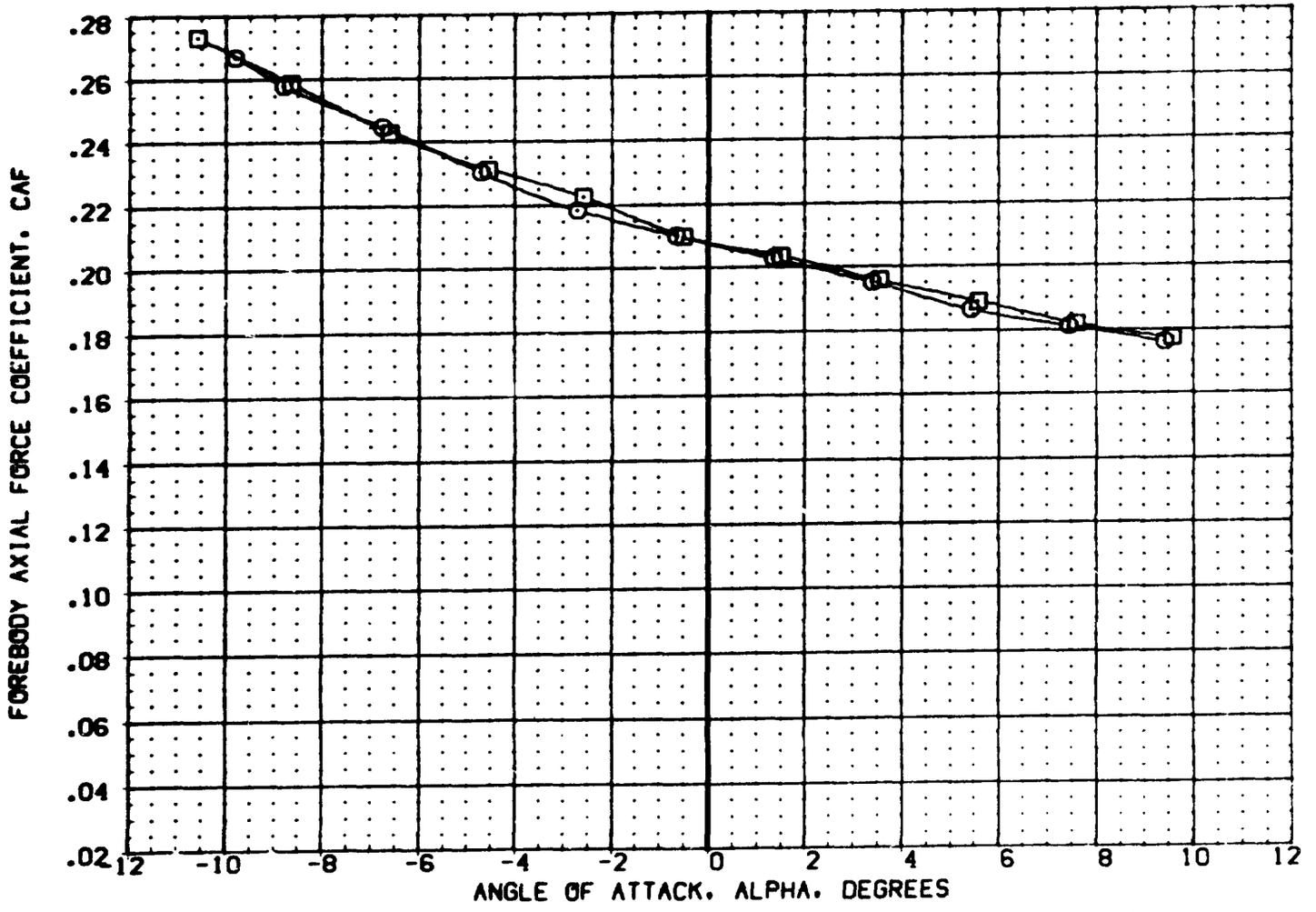
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(F)MACH = 2.99

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(B94C01)		MSFC 589(IA62F)(034)(T14)(S12)	.000	.000	333.000
(B94C04)		MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



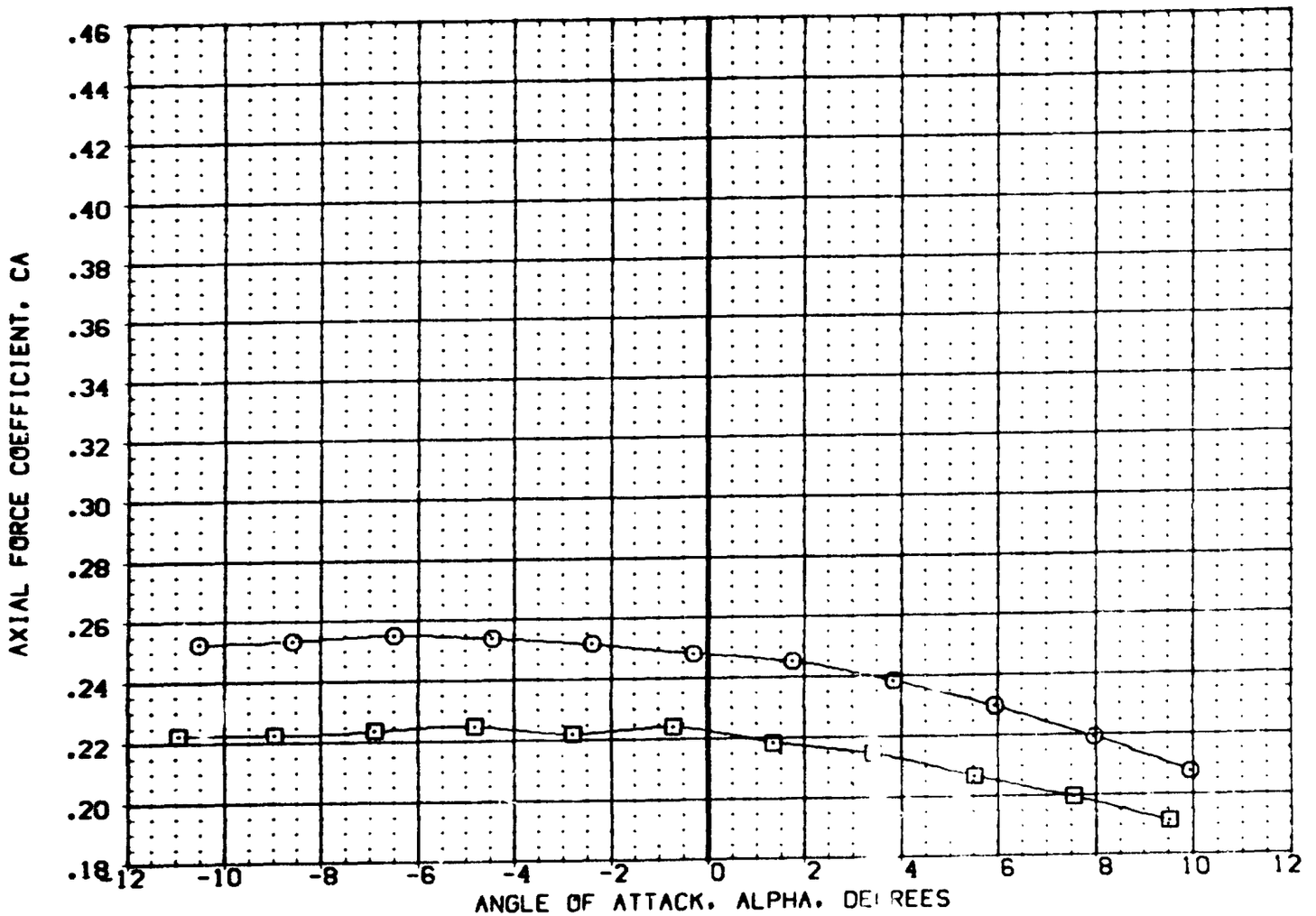
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(G)MACH = 4.96

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894031) ○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004) □	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



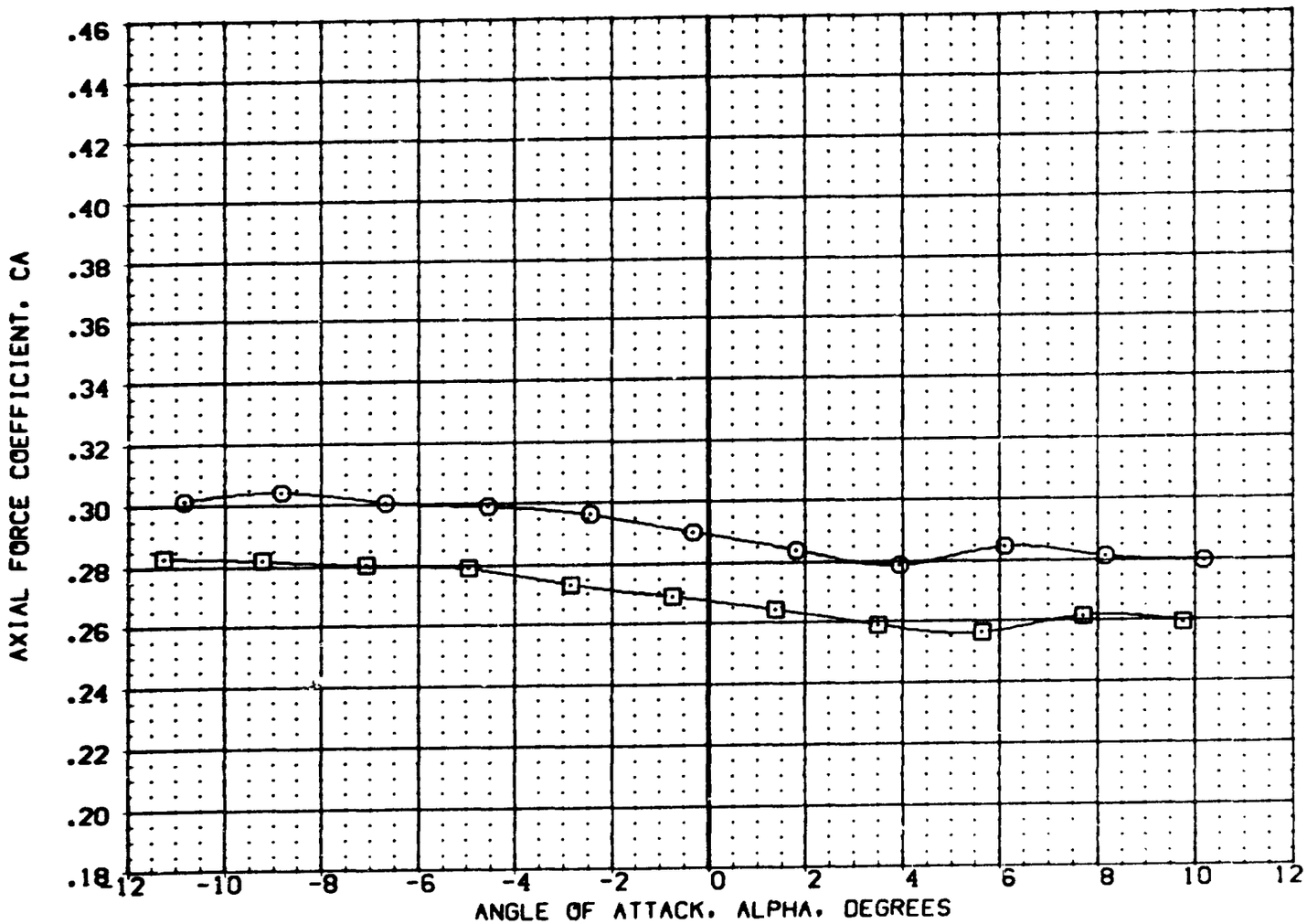
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



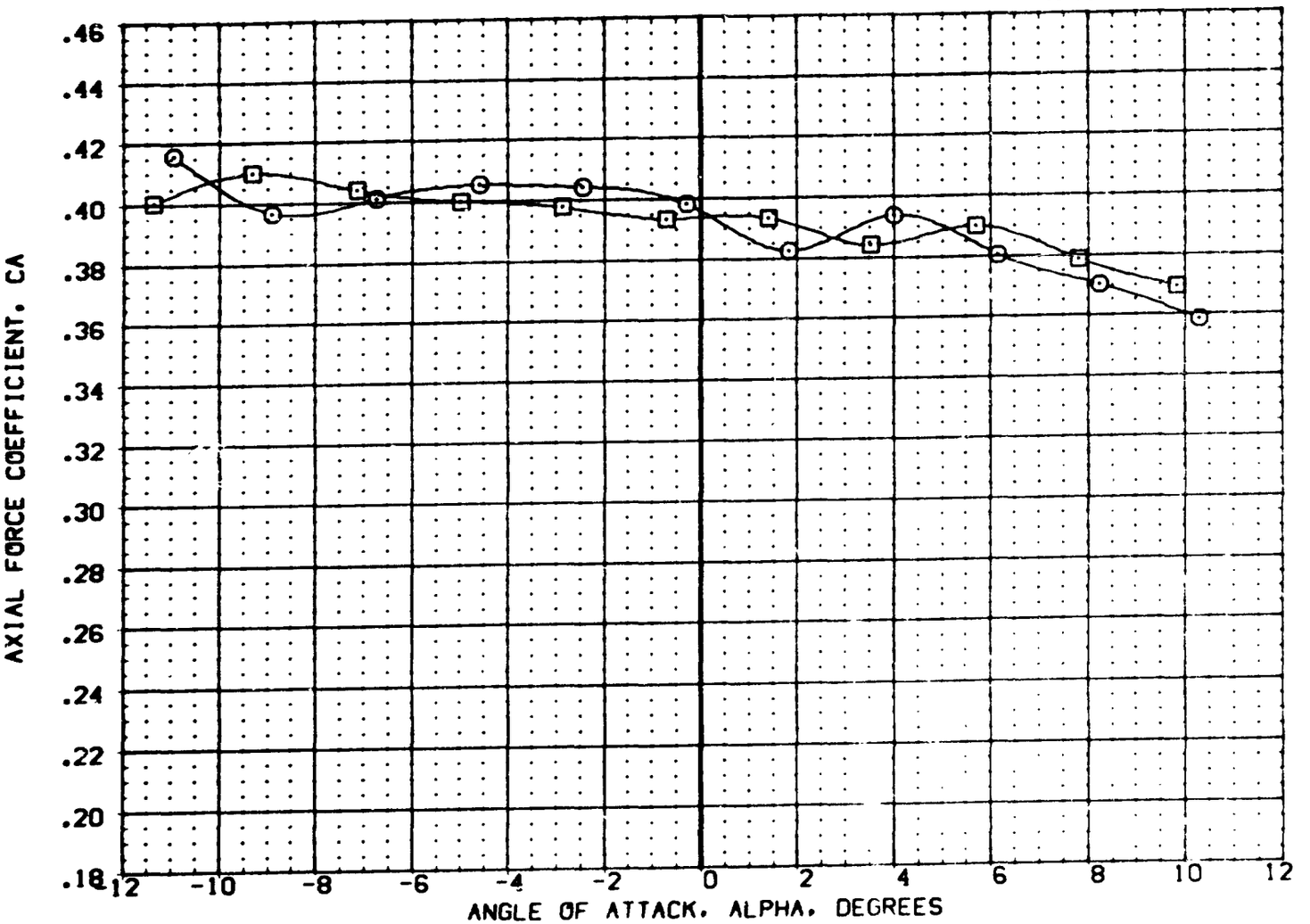
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



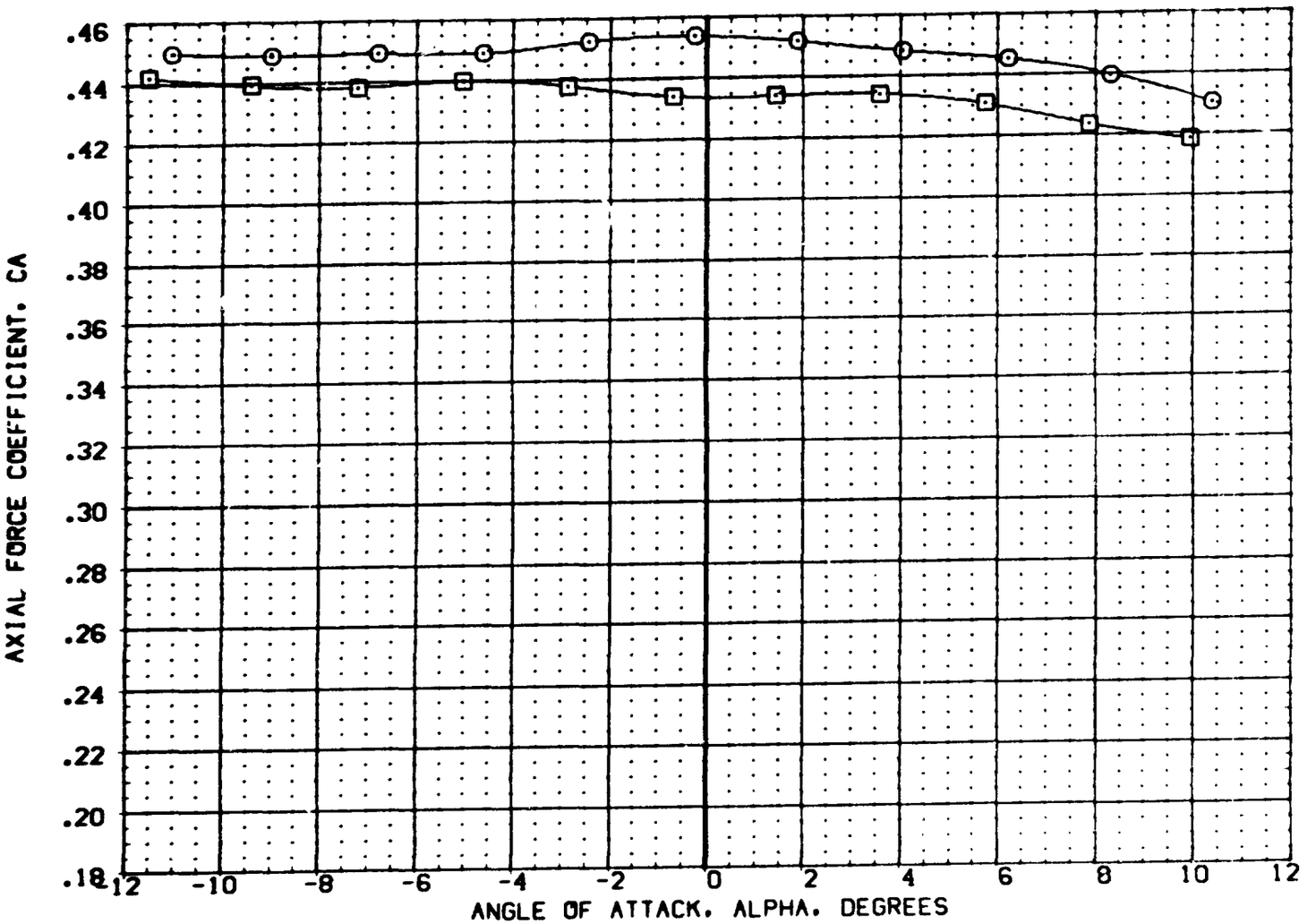
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(C)MACH = 1.00

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(IA62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

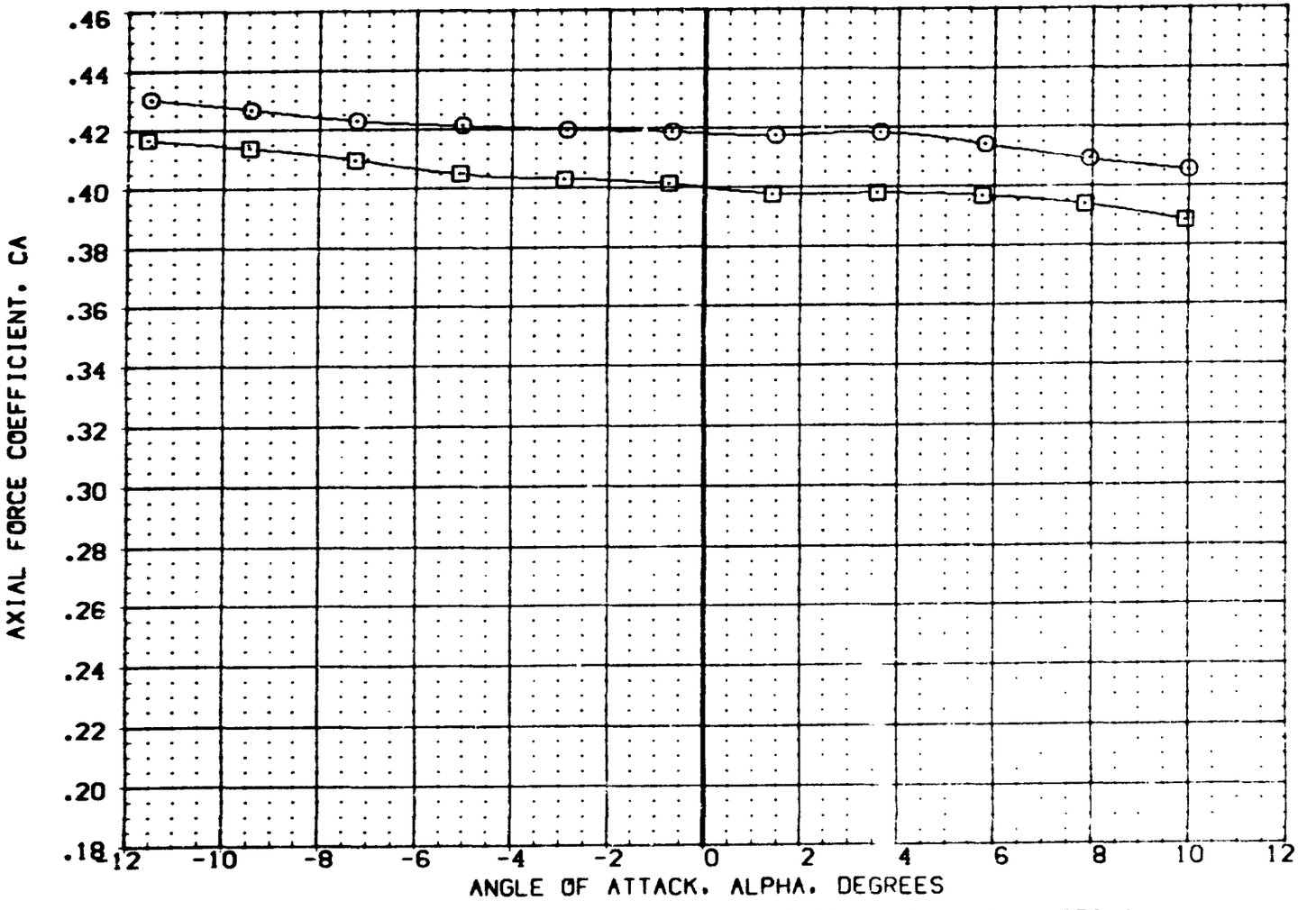


EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(D)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



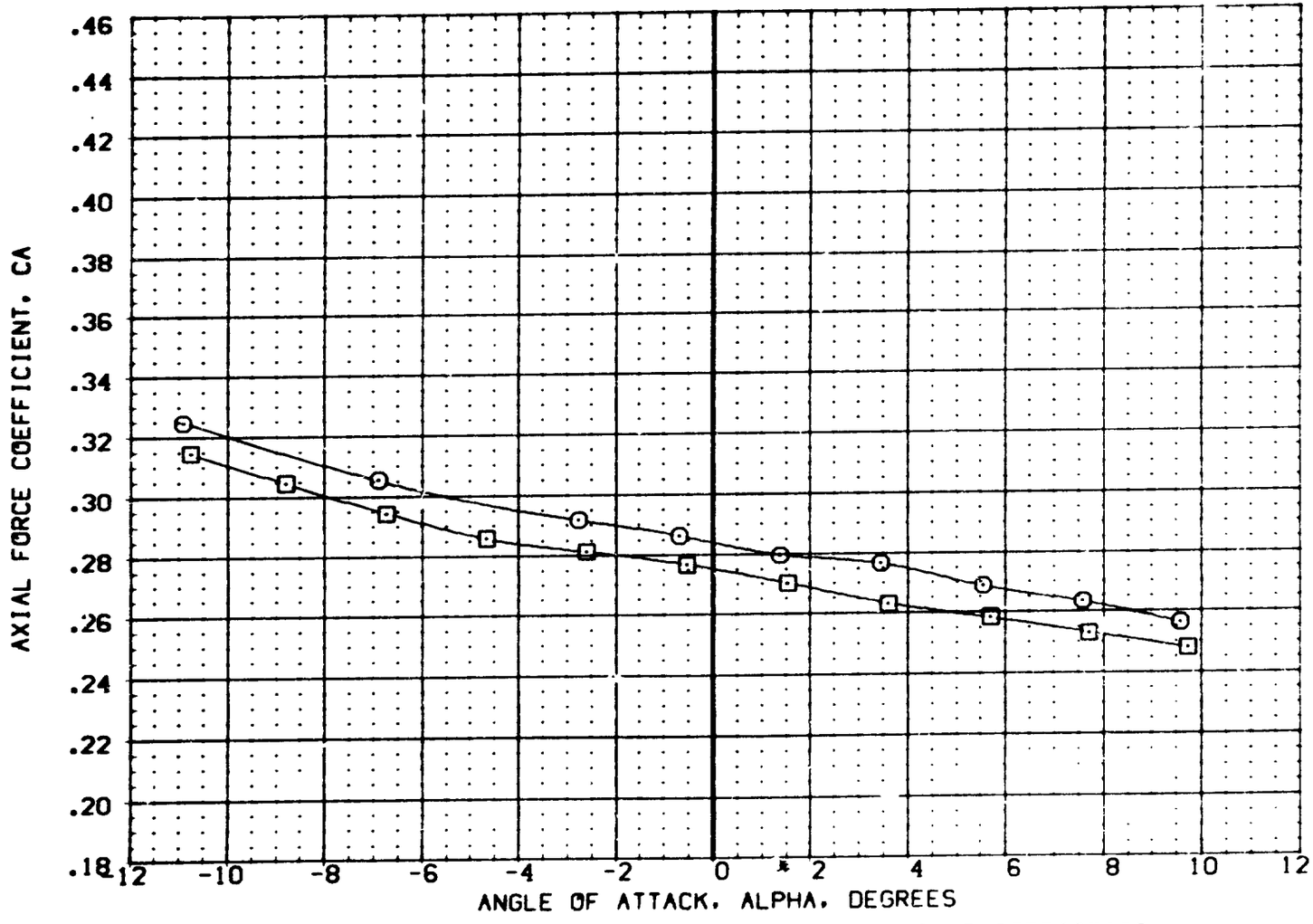
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(E)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
(894001)	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(894004) □	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



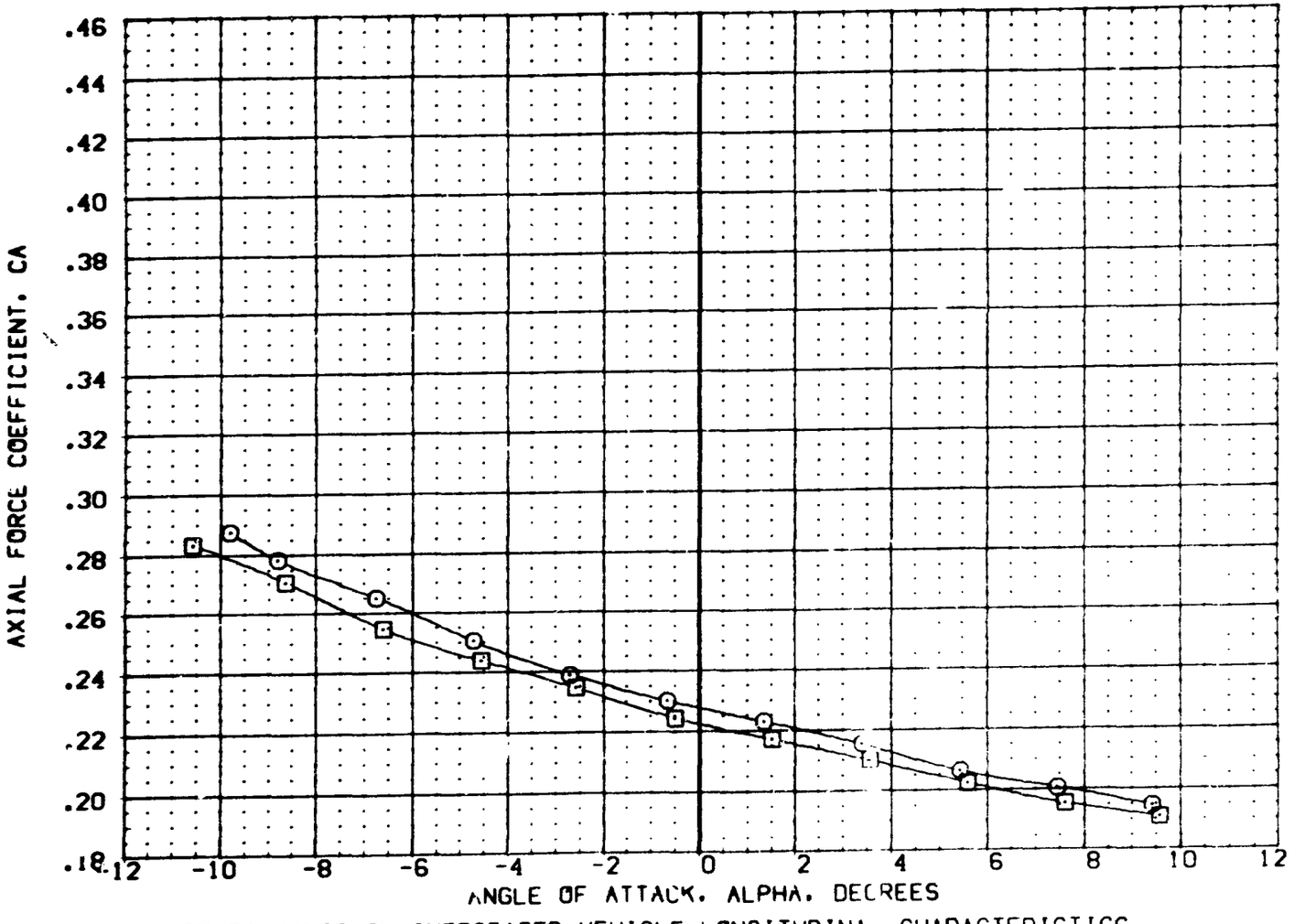
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(F)MACH = 2.99

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA	ORBINC	DELTAZ
894001	○	MSFC 589(,A62F)(034),T14)(S12)	.000	.000	333.000
894004	□	MSFC 589(,A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



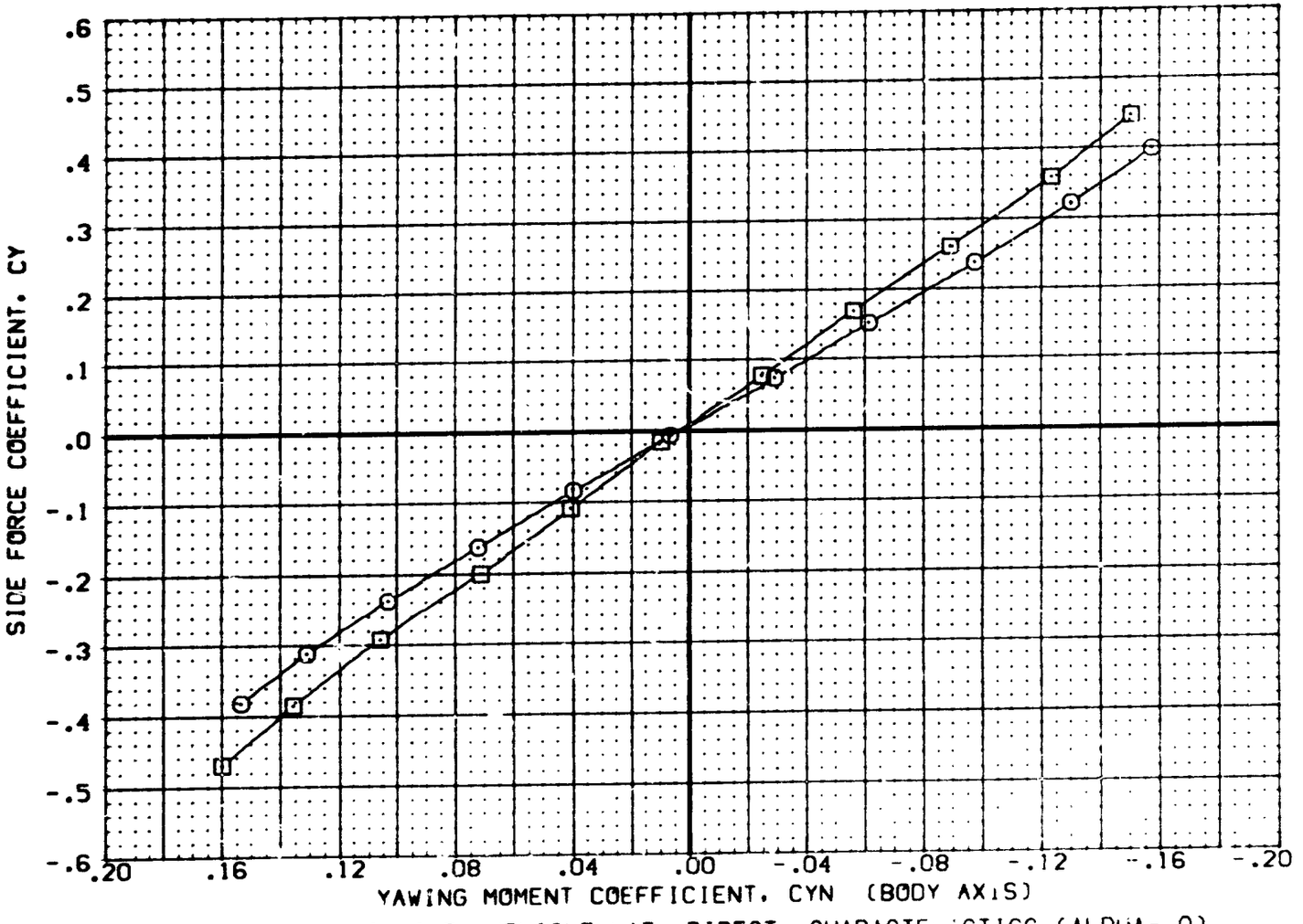
EFFECT OF FAIRINGS ON INTEGRATED VEHICLE LONGITUDINAL CHARACTERISTICS

(G)MACH = 4.96

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003) ○	MSFC 589(1A62F)(034)(T14)(SI2)	.000	.000	333.000
(A94006) □	MSFC 589.1A62F)(034)(T9)(SI2)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0140	



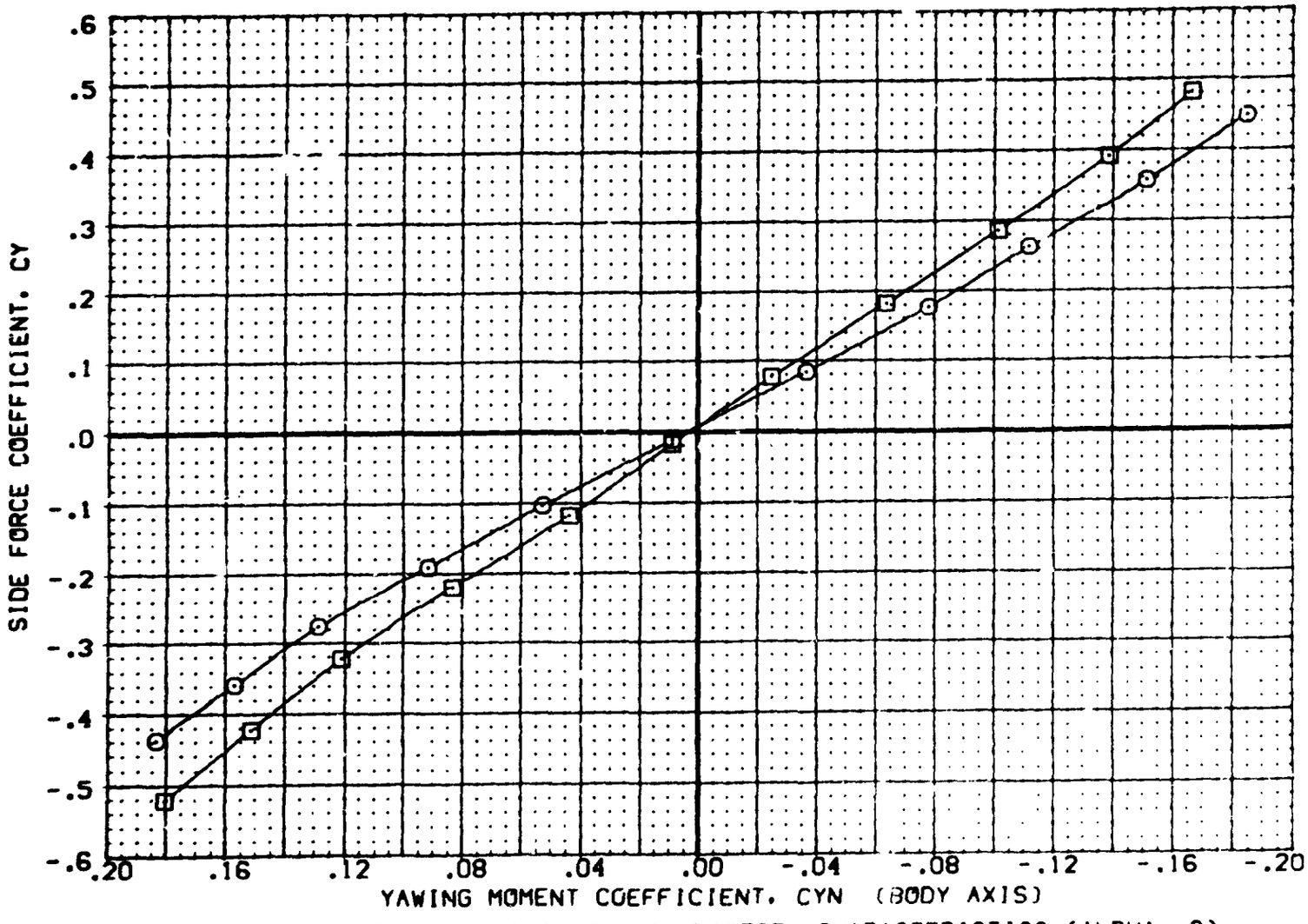
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)	MSFC 589((A62F)(034)(T14)(S12)	.000	.000	333.000
(A94006)	MSFC 589((A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



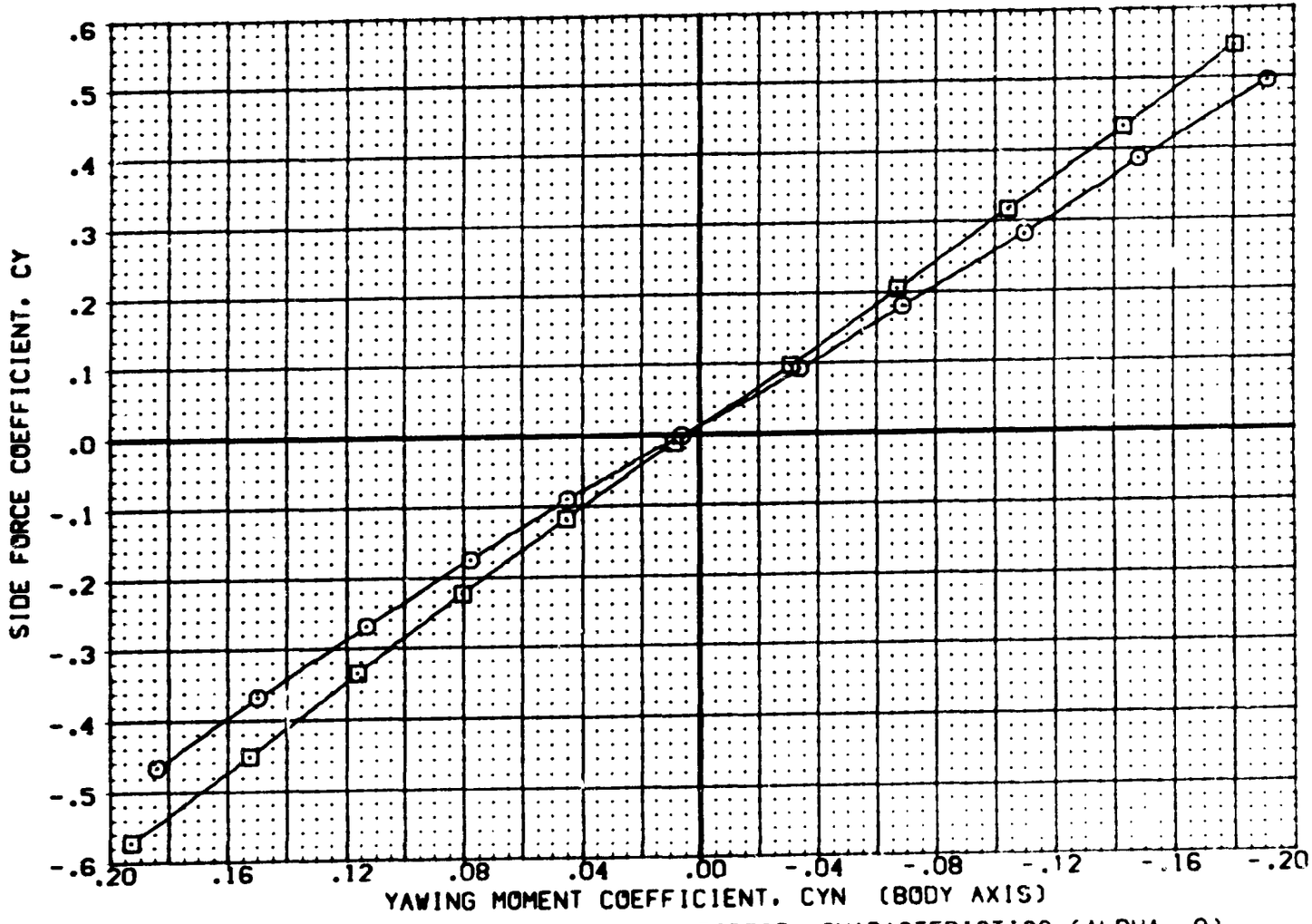
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(B)MACH = .90

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)	8	MSFC S89(1A62F)(034)(T14)(S12)	.000	.000	333.000
(A94006)		MSFC S89(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.16[illegible]	IN.
BREF	[illegible].16.00	IN.
XMRP	2.6[illegible]00	IN.
YMRP	.00[illegible]	IN.
ZMRP	.0[illegible]	IN.
SCALE	.0040	



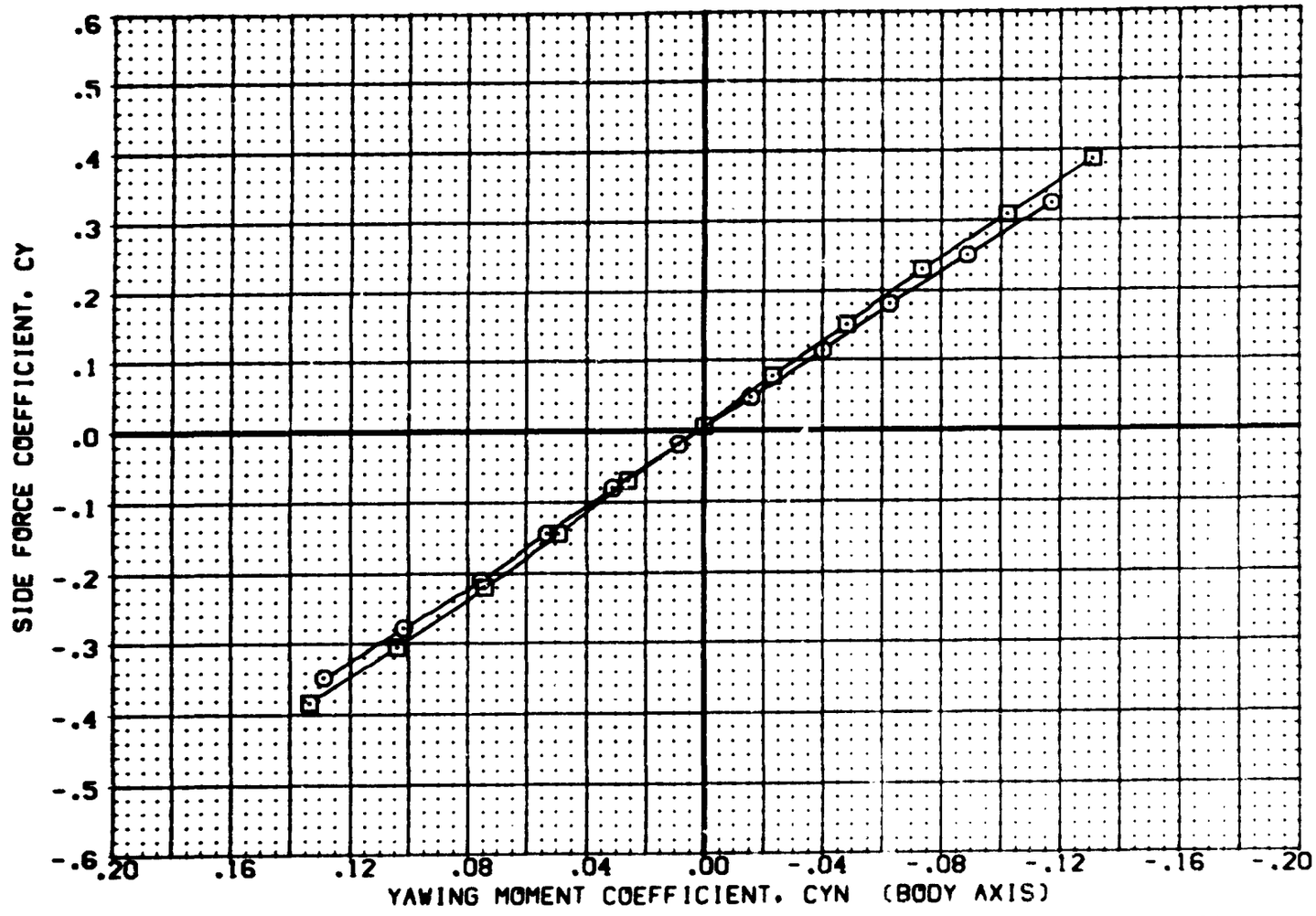
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
A94003	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
A94006	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

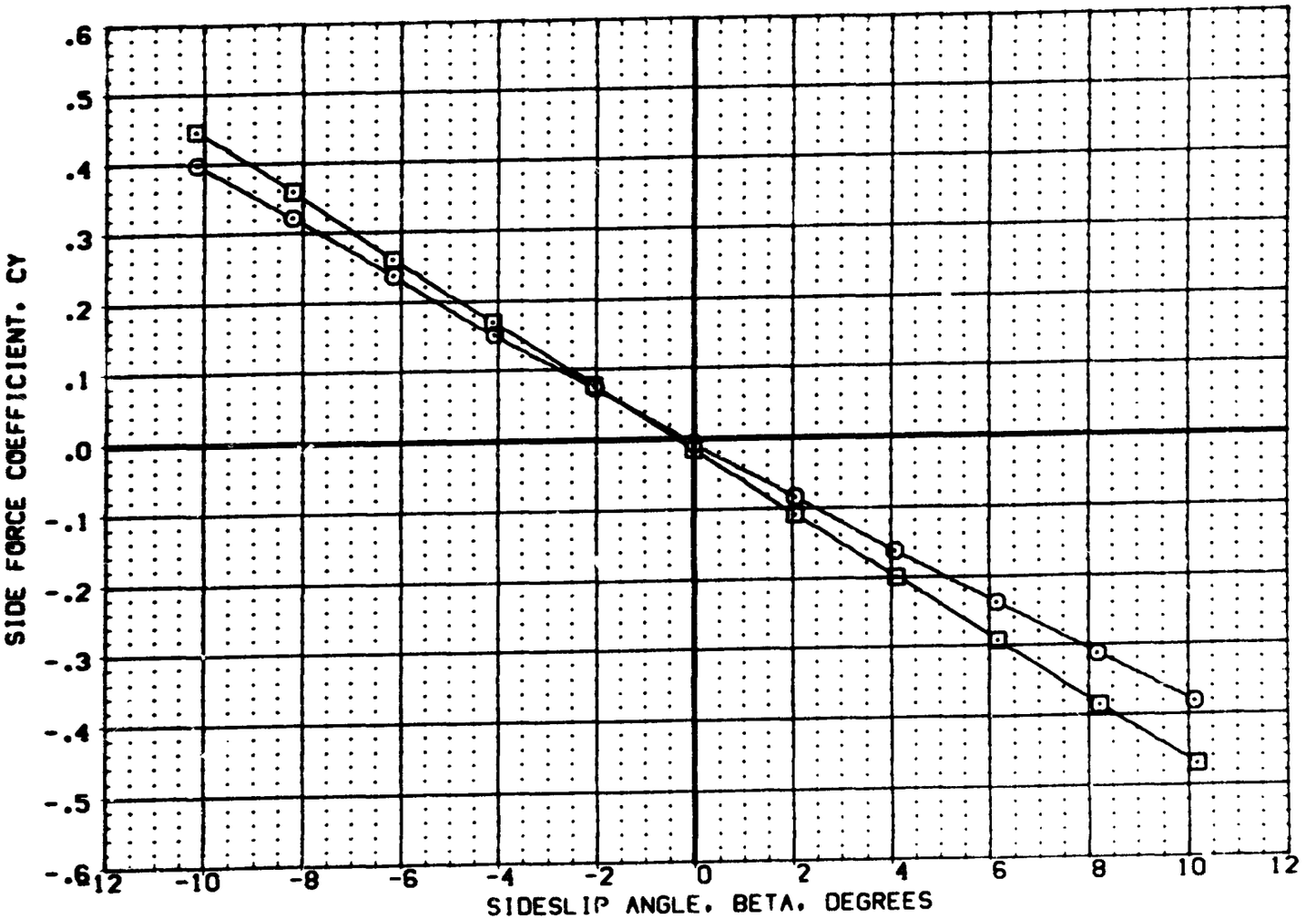
(O)MACH = 4.96

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(A94003) ○	MSFC 589(1A62F)(034)(T14)(S12)
(A94006) □	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)

ALPHA	ORBINC	DELTAZ
.000	.000	333.000
.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0140	



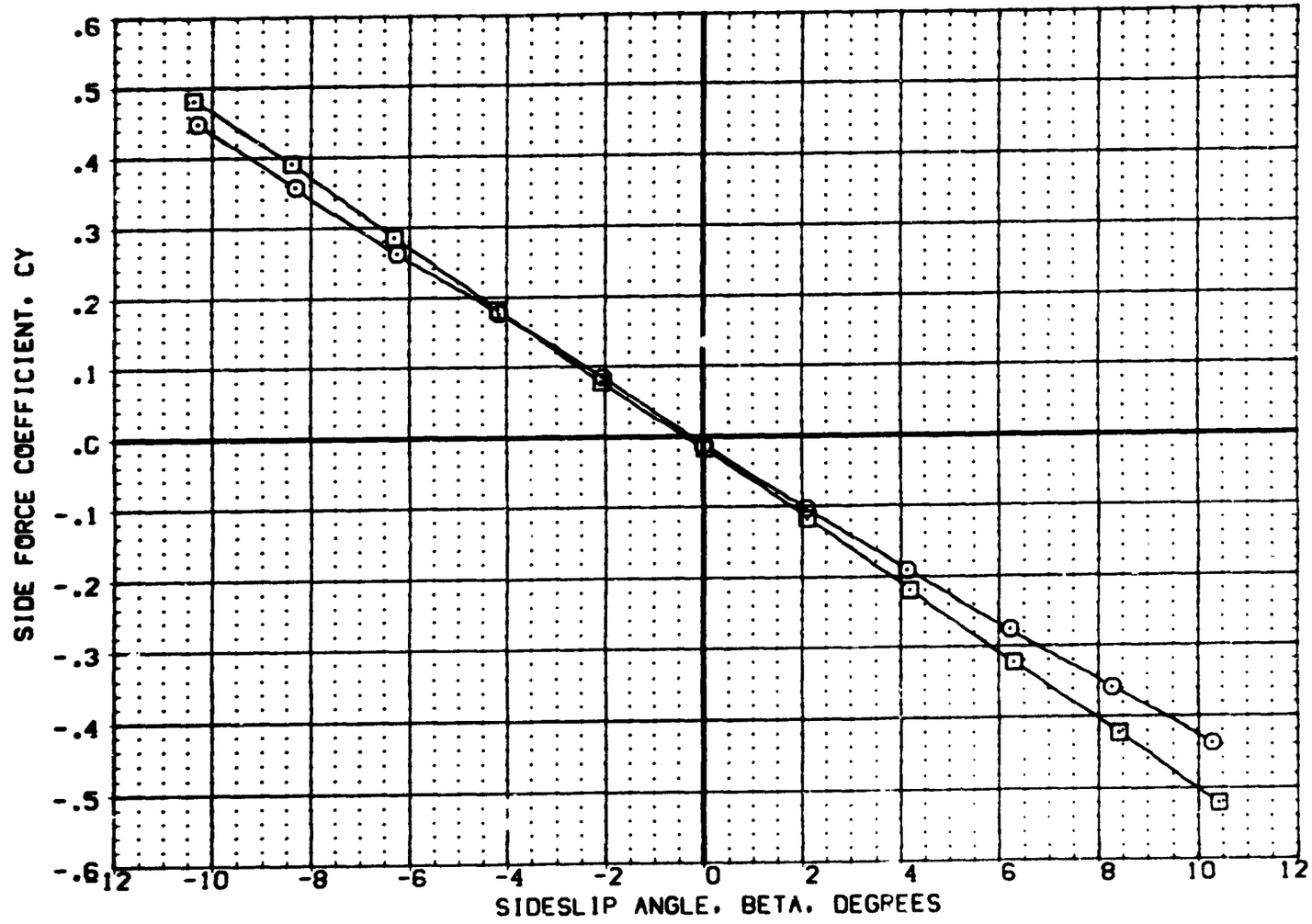
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)		MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(A94006)		MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



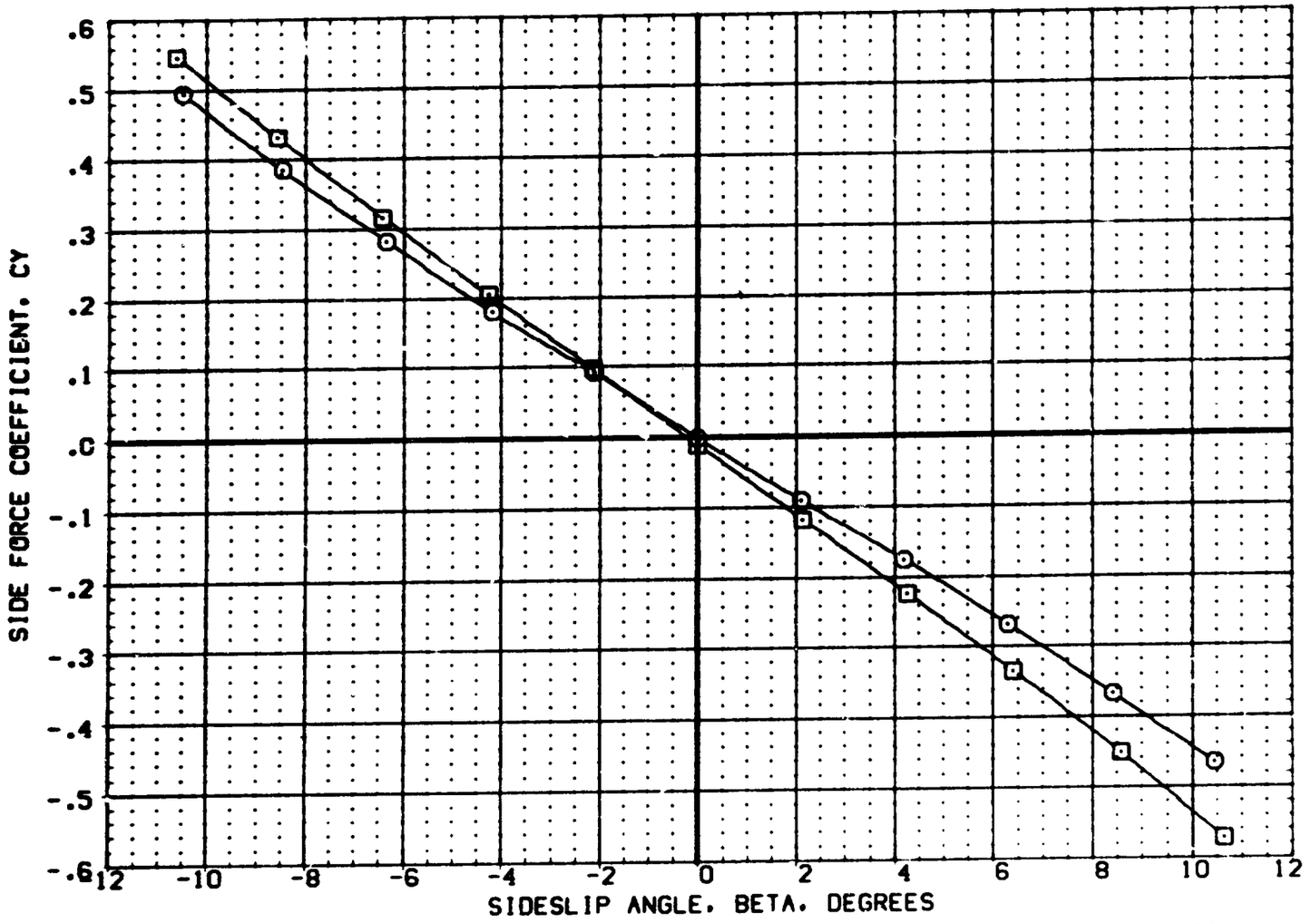
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)	○	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(A94006)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



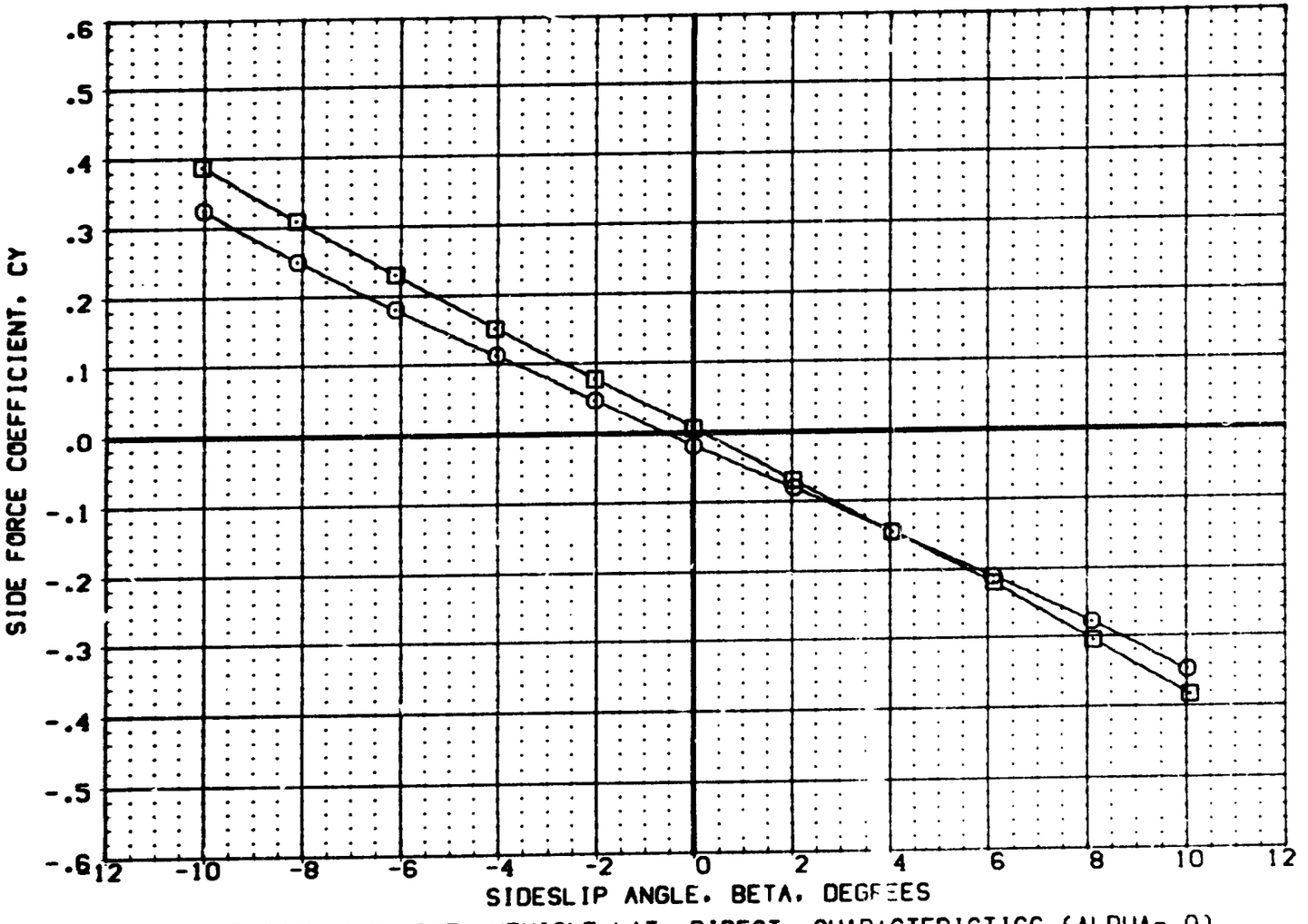
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(C)MACH = 1.20

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(A94006)	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



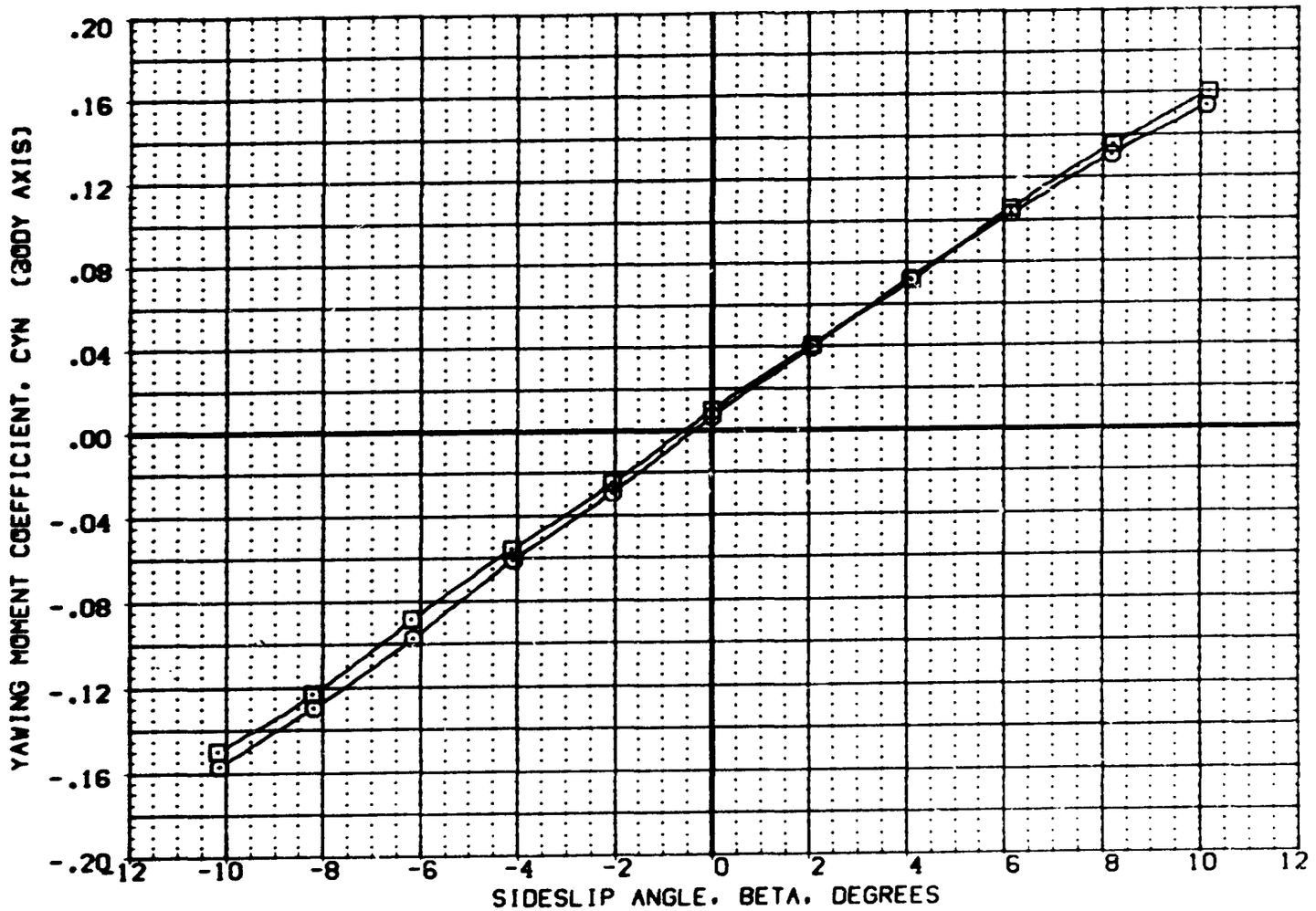
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(D)MACH = 4.96

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)	8	MSFC 589(1A62F)(034)(T18)(S12)	.000	.000	333.000
(A94006)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

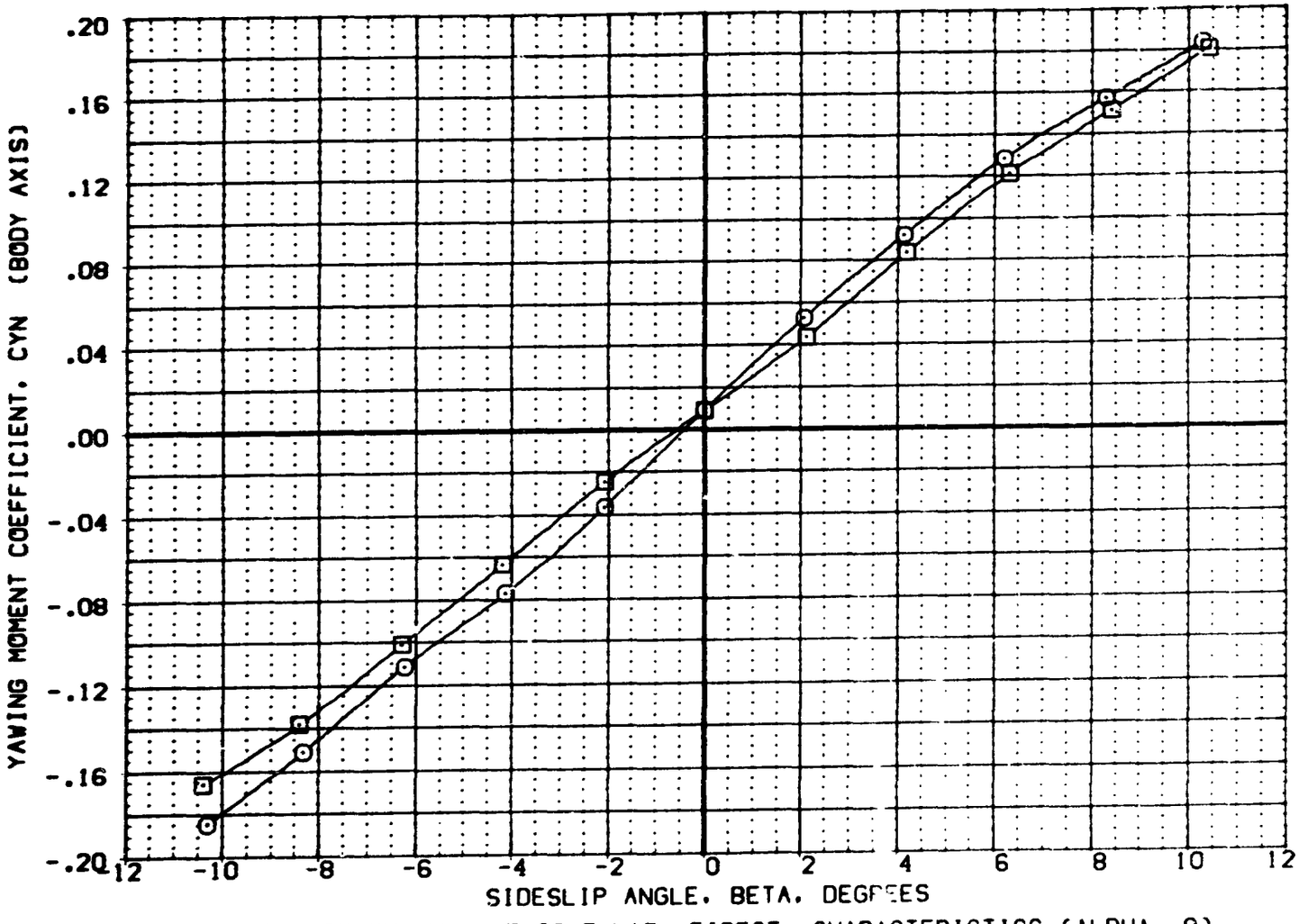


EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)	MSFC 589(1A62F)(034)(T14)(S12)	.000	.000	333.000
(A94006)	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



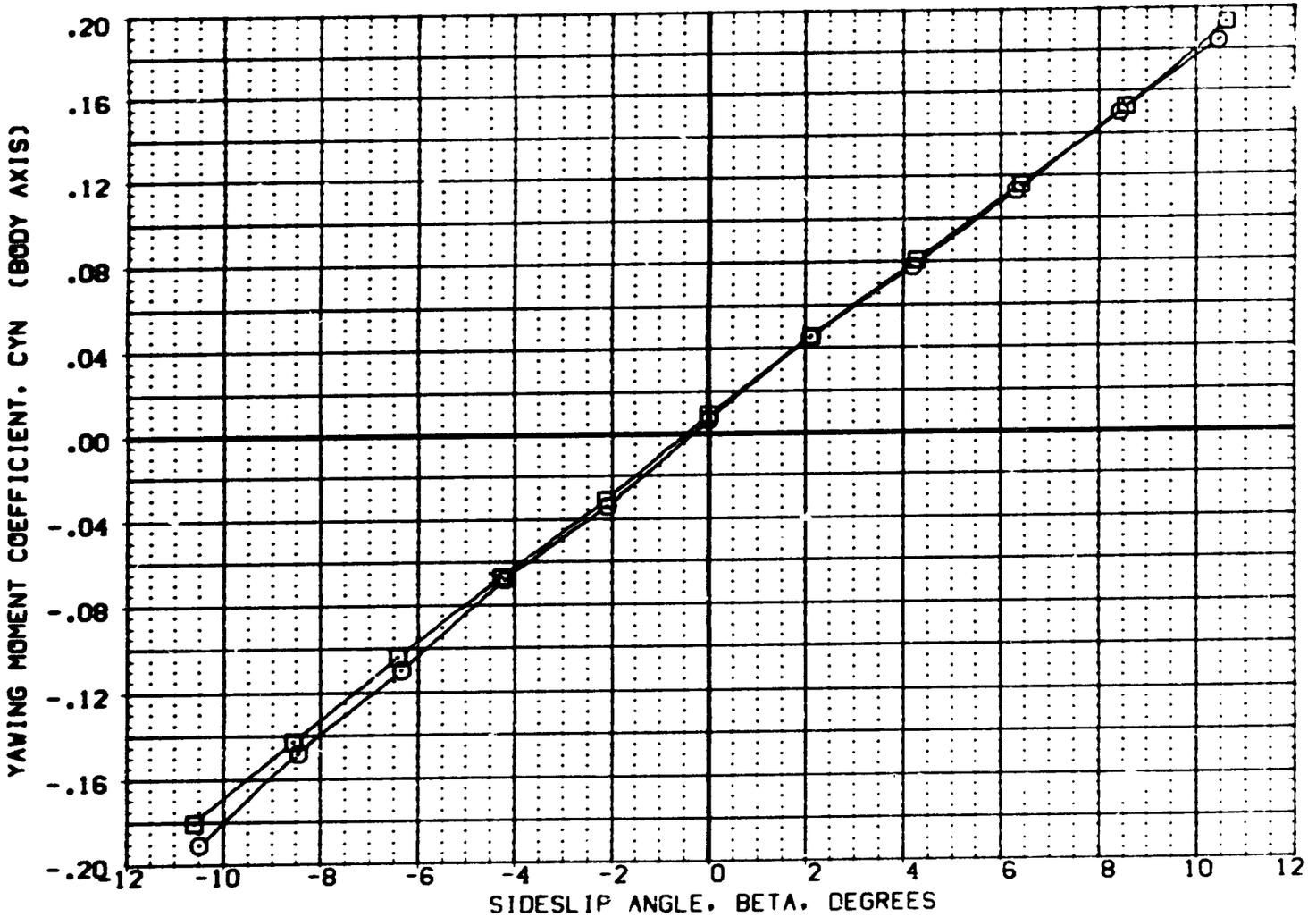
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(B)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)	MSFC 589(1A62[illegible])(034)(T14)(S12)	.000	.000	333.000
(A94006)	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



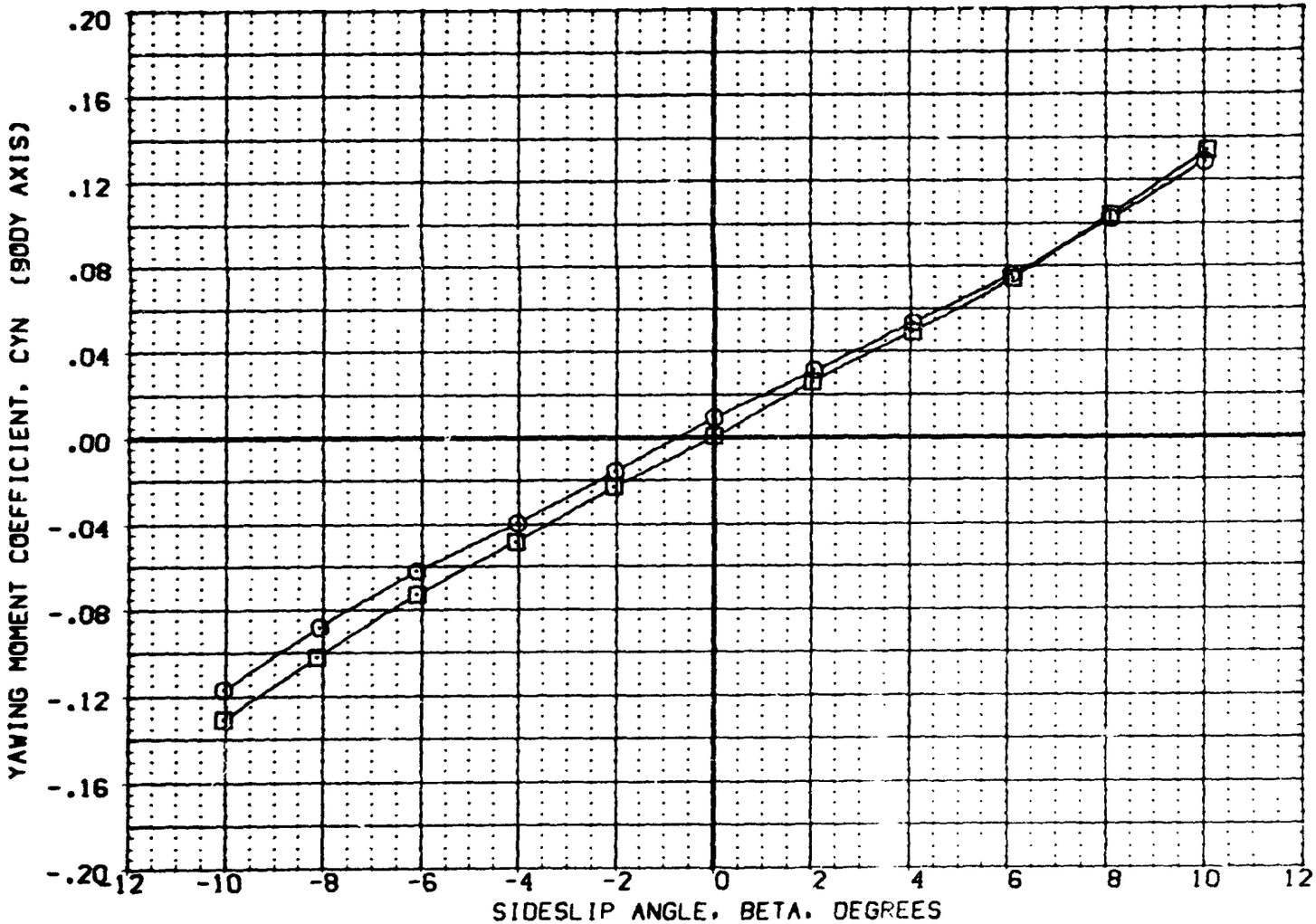
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)	○	MSFC S89(1A62F)(034)(T14)(S12)	.000	.000	333.000
(A94006)	□	MSFC S89(1A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



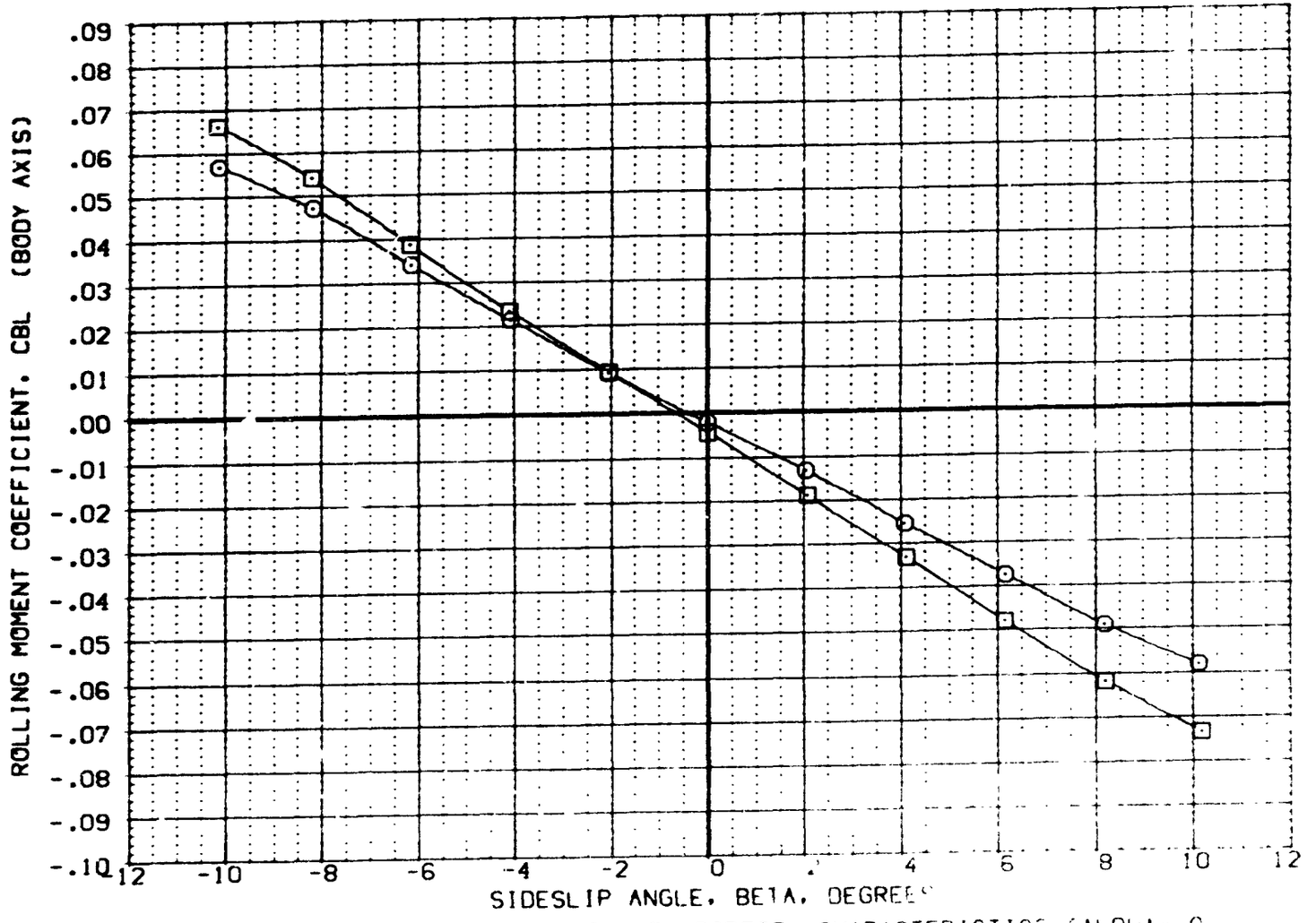
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(D)MACH = 4.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94003)	○	MSFC 589((A62F)((034)((T14)(S12)	.000	.000	333.000
(A94006)	□	MSFC 589((A62F)((034)((T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6000	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.40	



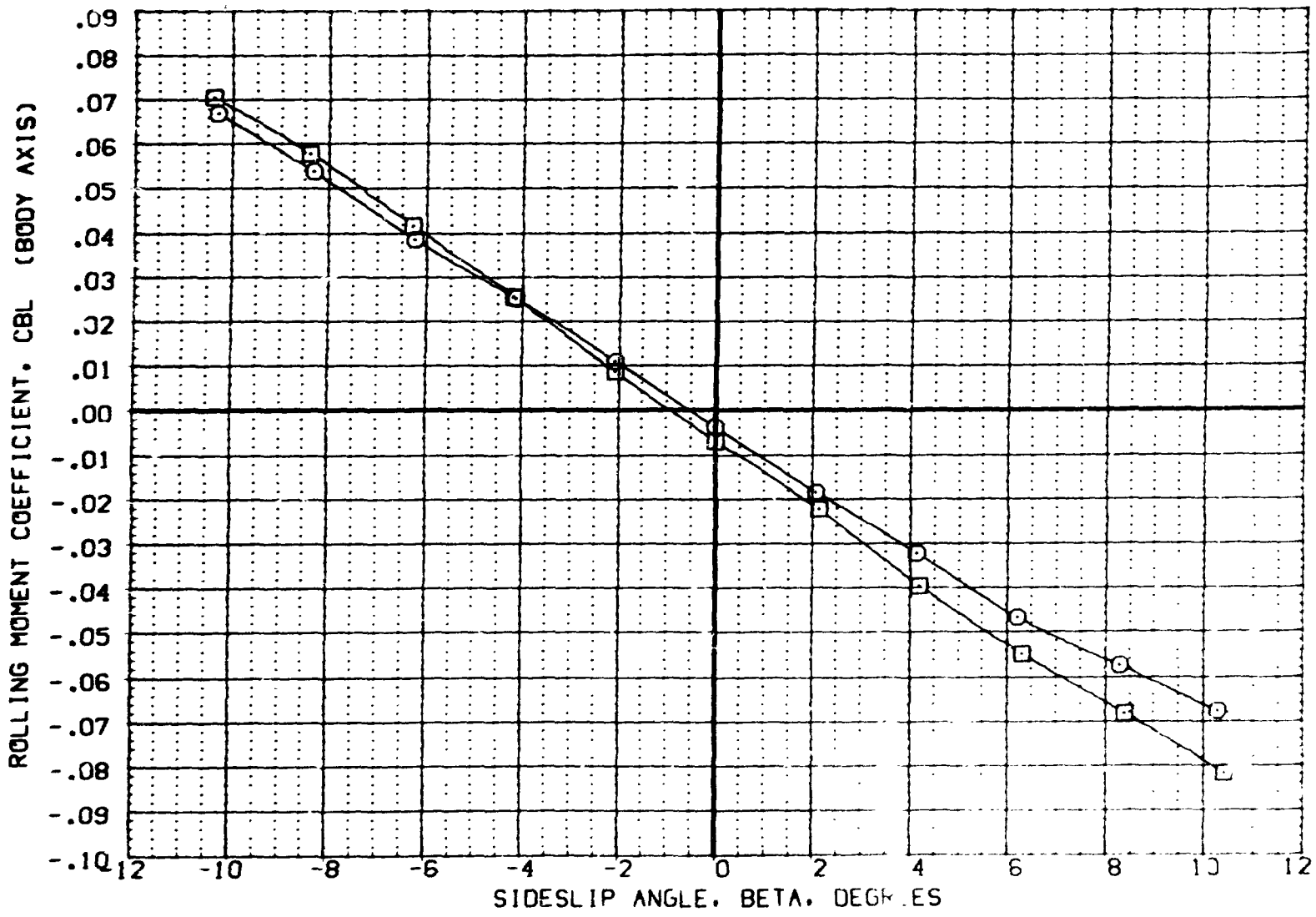
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0.

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
A94003	MSFC 089(A62F)(034)(T14)(S12)	.000	.000	333.000
A94004	MSFC 089(A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.68[illegible]	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

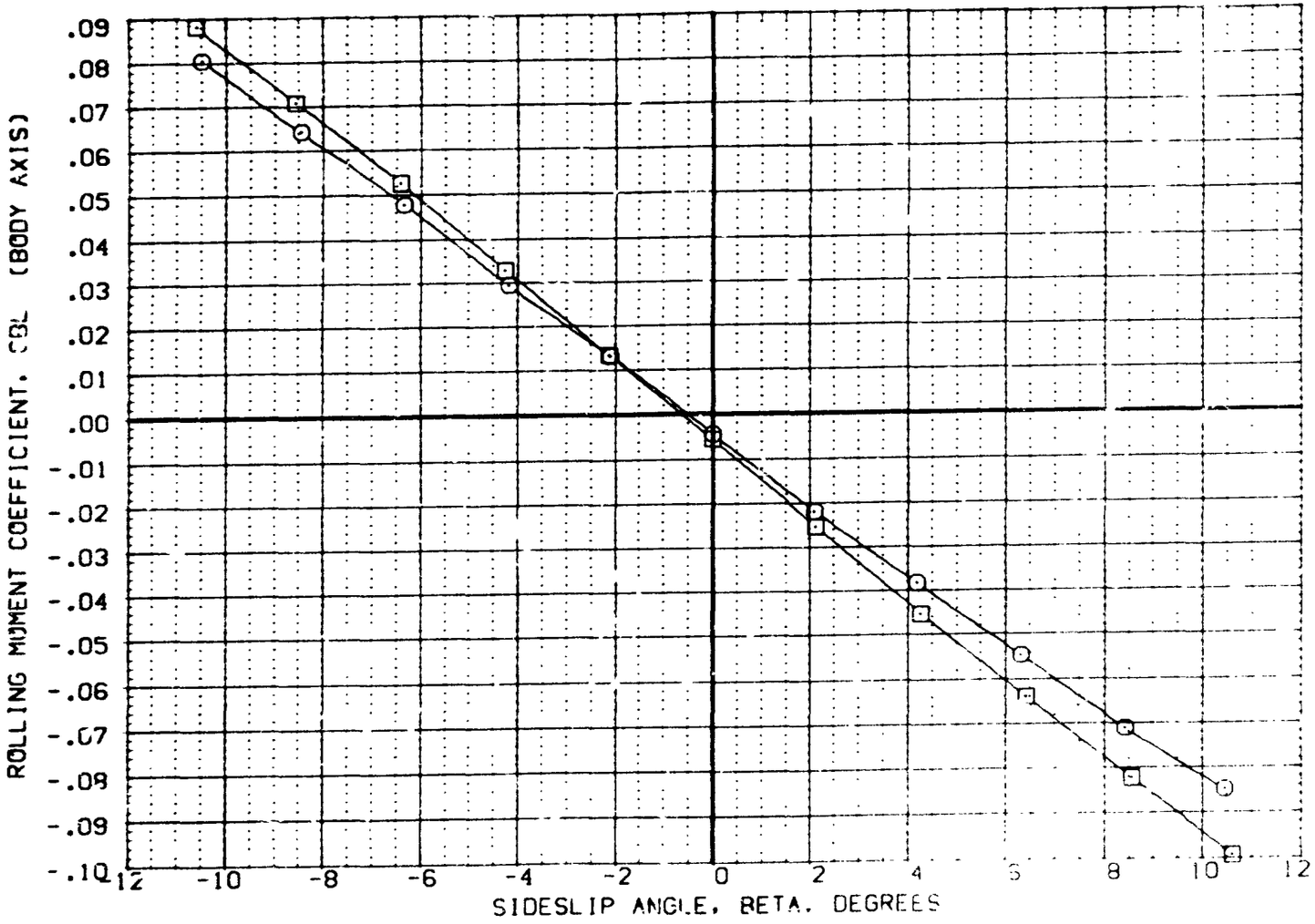
(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
A94003		MSFC 589(1A62F)(034A)(T14)(S12)
A94006	□	MSFC 589(1A62F)(034A)(T9)(S12)(PT4)(FR4)

ALPHA	ORBINC	DELTAZ
.000	.000	333.000
.000	.000	333.000

REFERENCE INFORMATION

SREF	6.198	SQ.IN.
LREF	9.16	IN.
BREF	9.16	IN.
XMRP	2.68	IN.
YMRP	.0000	IN.
ZMRP	.00	IN.
SCALE	.040	



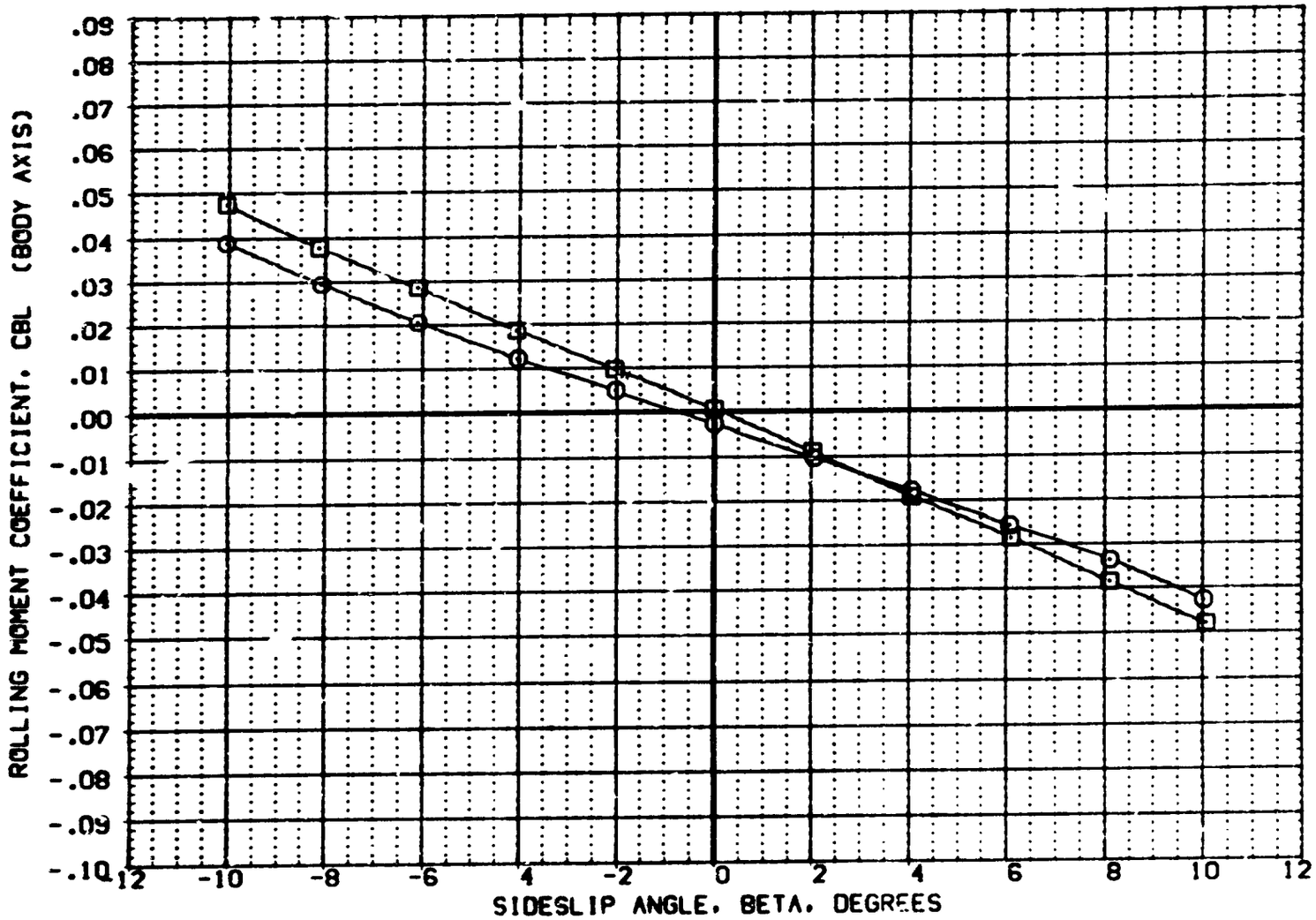
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(C)MACH = 1.20

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A5400₂) ○	MSFC 589((A62F)(034)(T14)(S12)	.000	.000	333.000
(A94C06) □	MSFC 589((A62F)(034)(T9)(S12)(PT4)(FR4)	.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



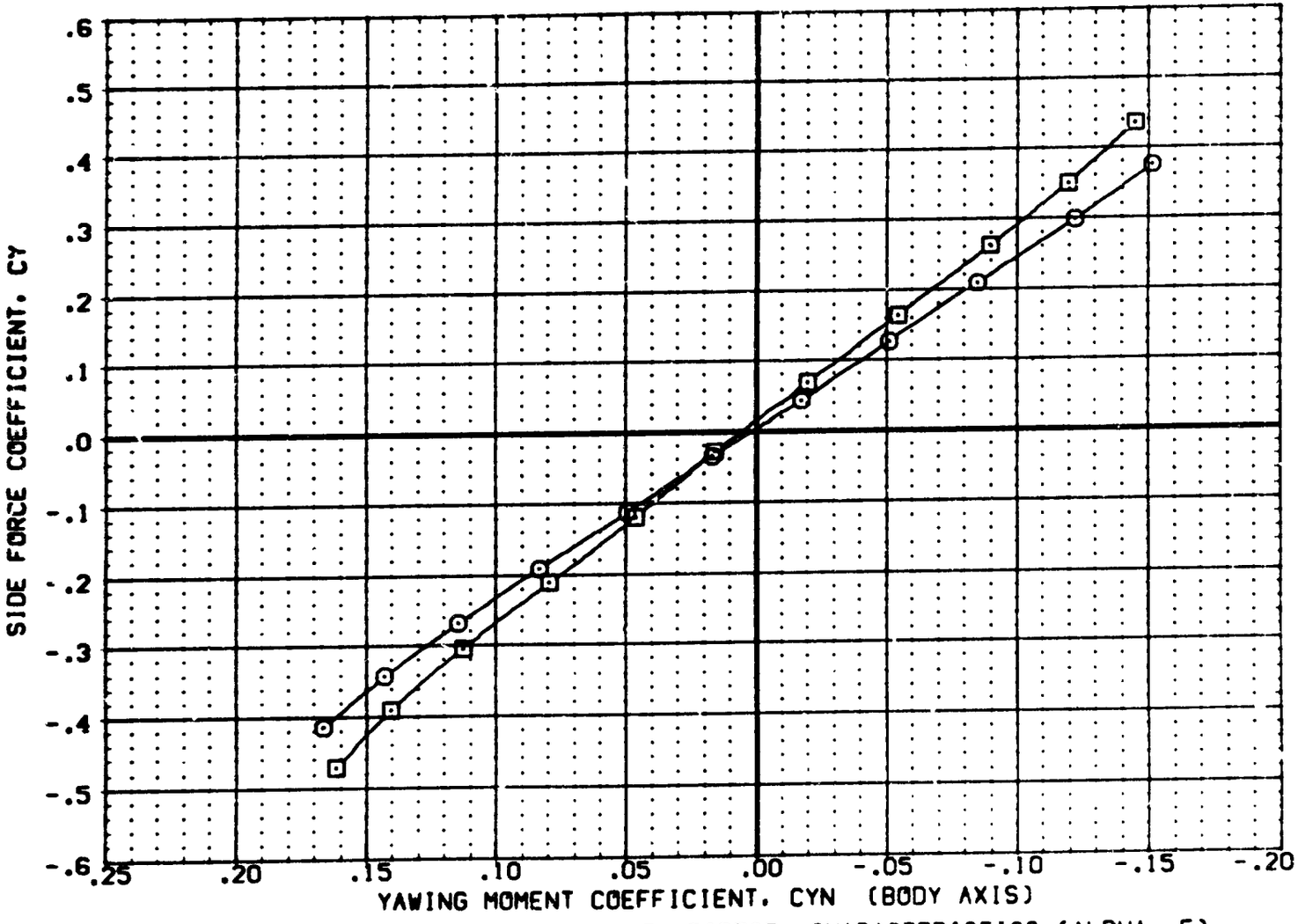
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 0)

(D)MACH = 4.96

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	MSFC 589(1A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94005)	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

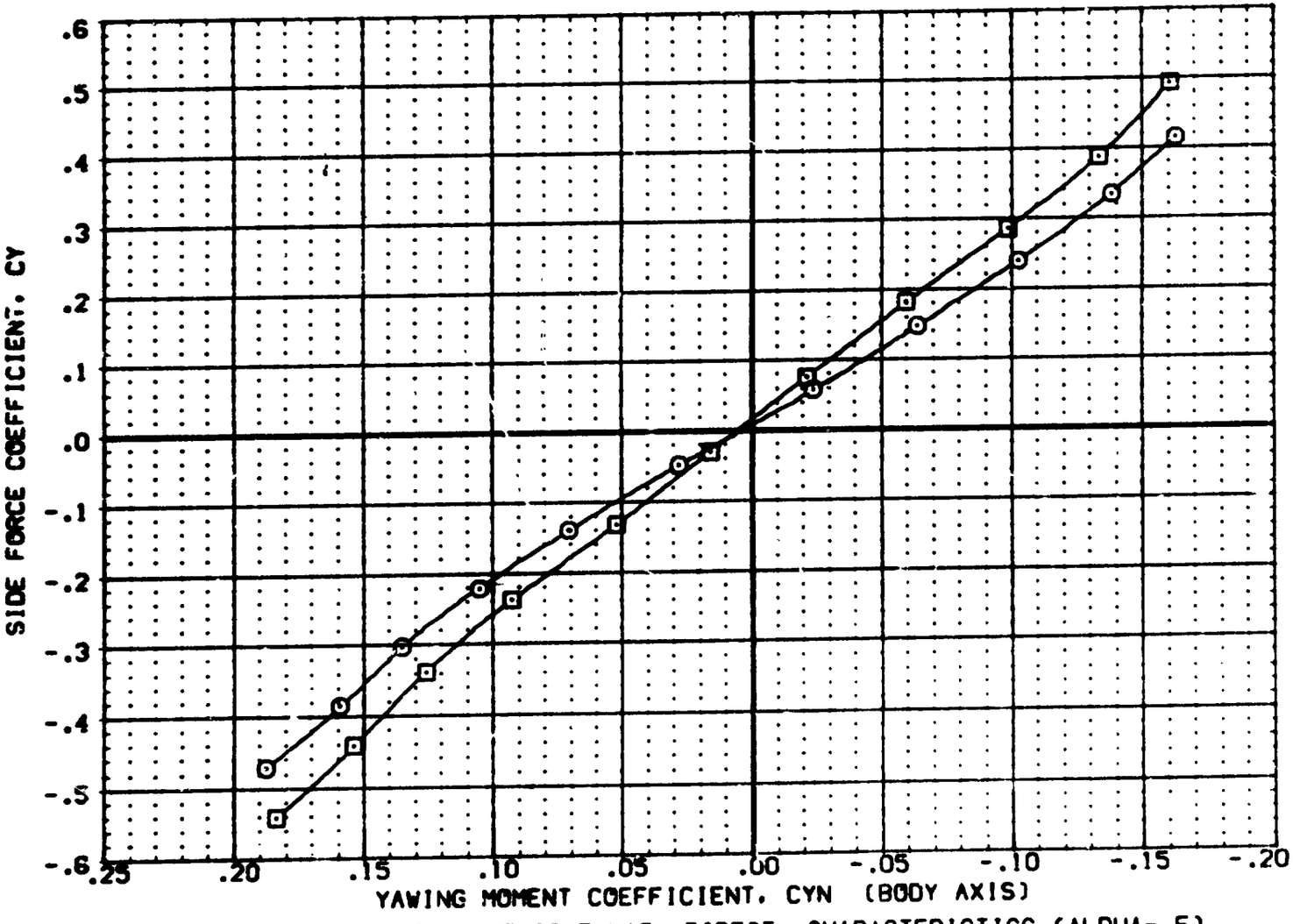


EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT CHARACTERISTICS (ALPHA= 5)

(A)MACH = .59

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	OPBINC	DELTAZ
(A94002)	MSFC 389(1A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94005)	MSFC 389(1A62F)(C34)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



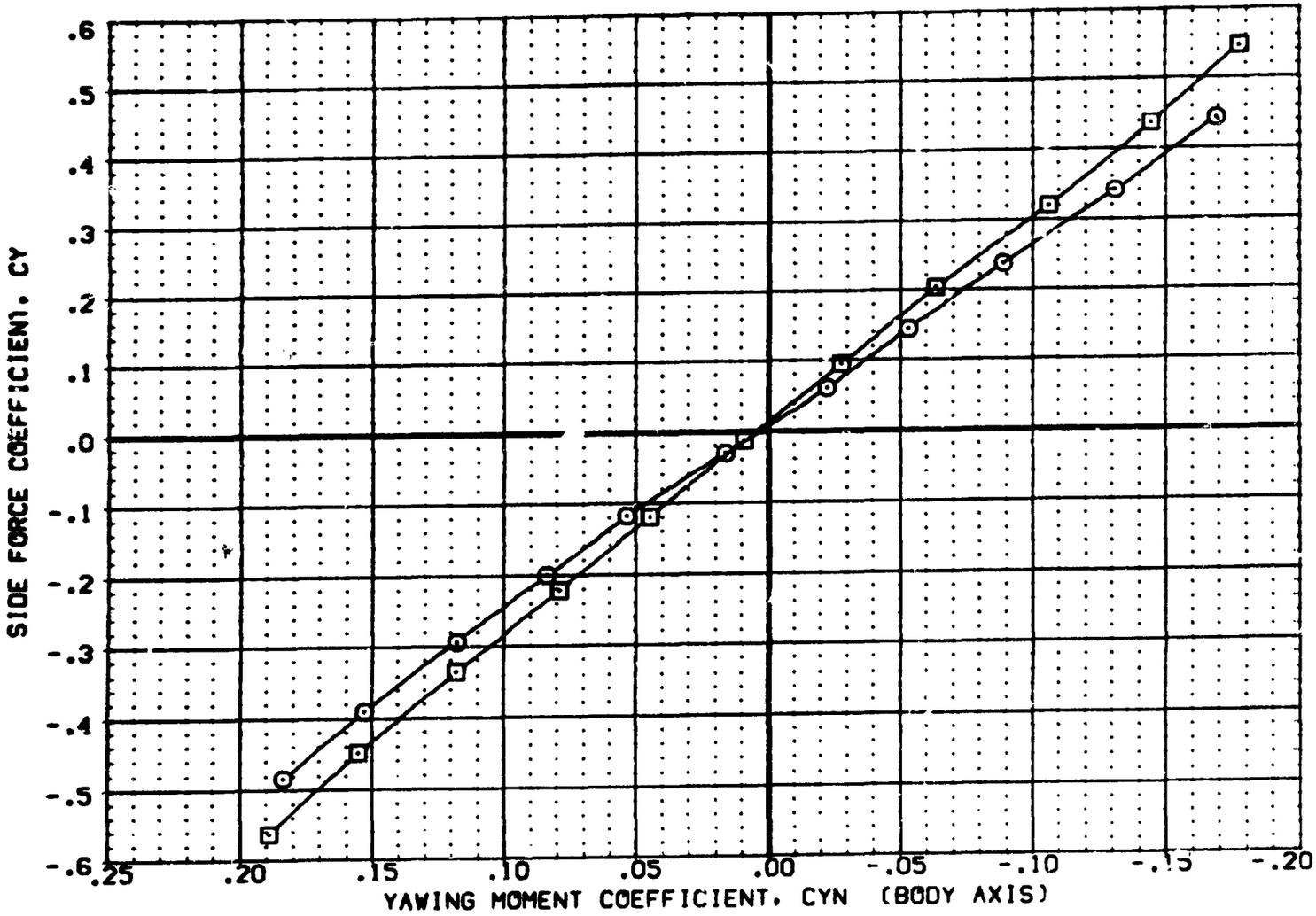
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(B)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	MSFC 589((A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94005)	MSFC 589((A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



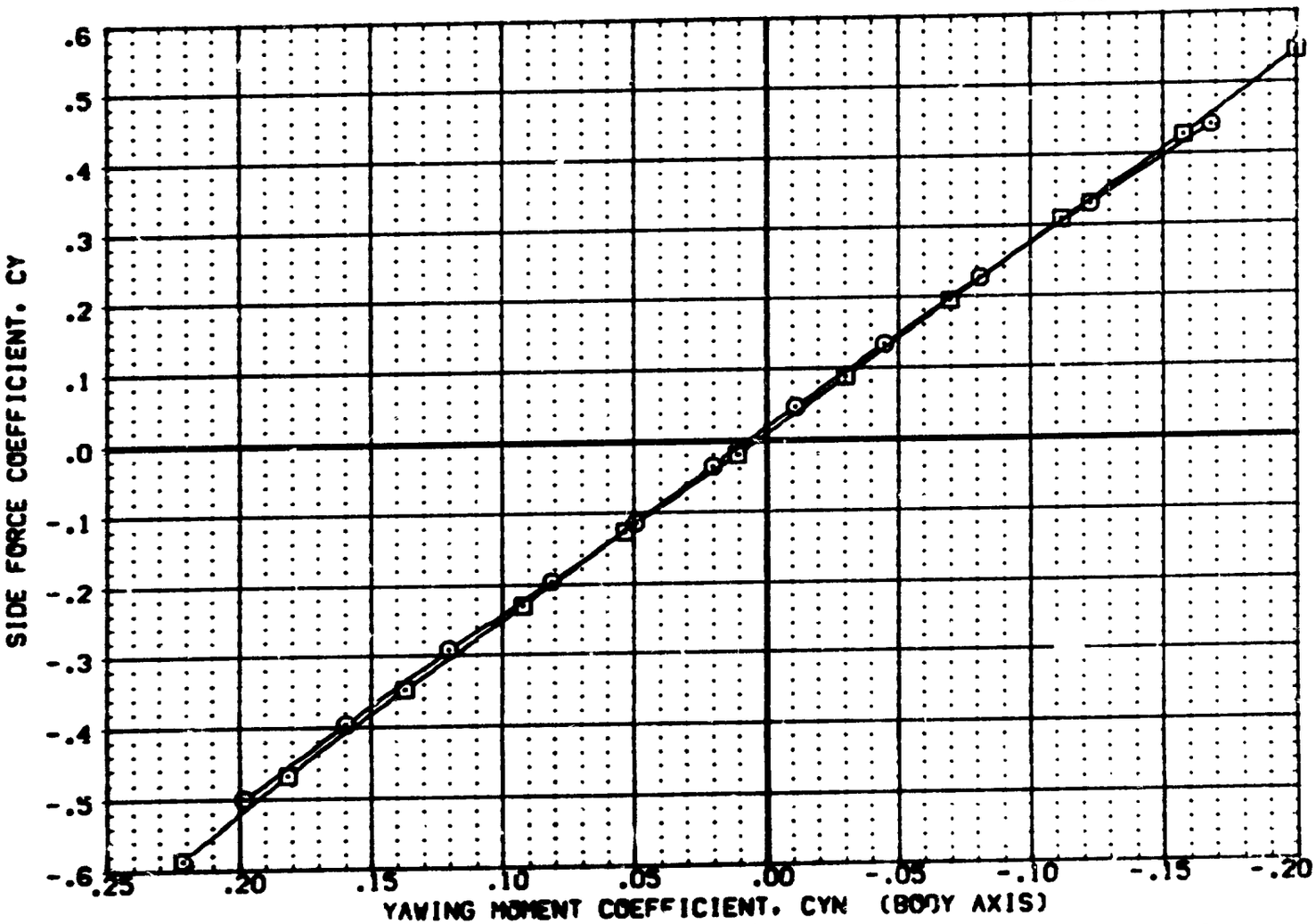
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(C)MACH = 1.20

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94302)	MSFC 589((AL2F)(034)(T14)(S12)	5.000	.000	333.000
(A94305)	MSFC 589((AL2F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.004C	

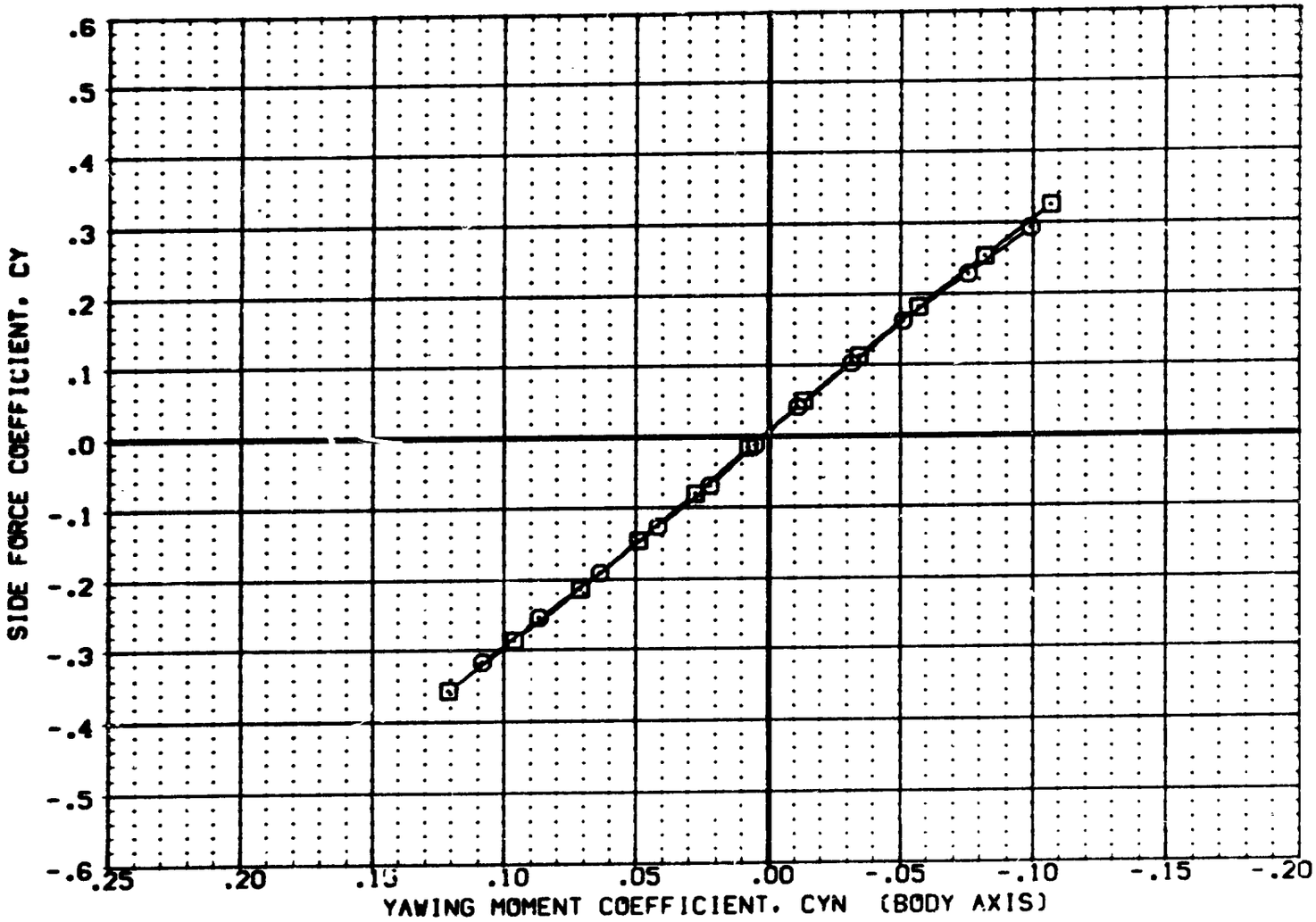


EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	MSFC 589((A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94005)	MSFC 589((A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



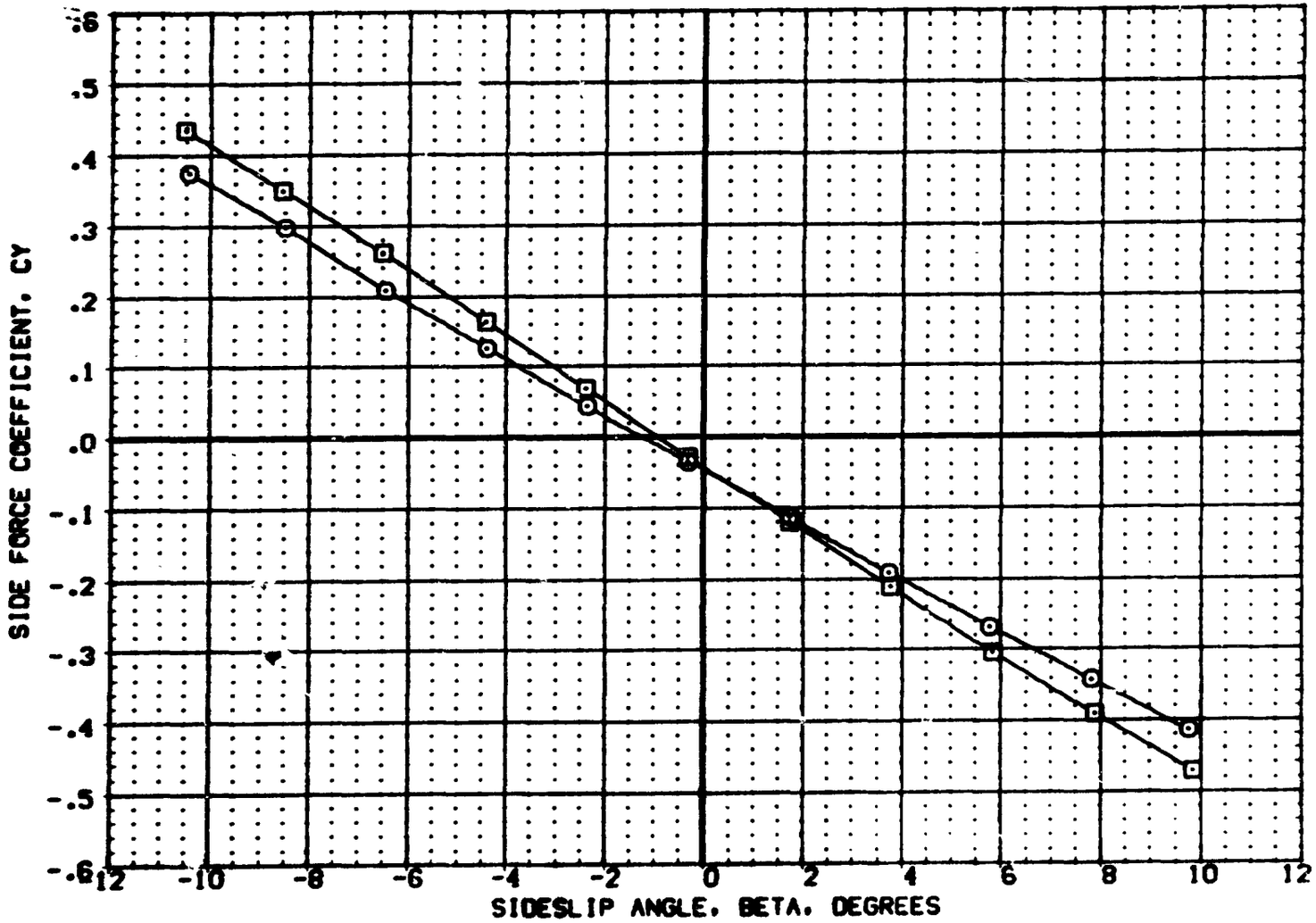
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(E)MACH = 4.96

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	⌂	MSFC 589([A62F)(334)(T14)(S12)	5.000	.000	333.000
(A94005)	⌂	MSFC 589([A62F)(334)(T9)(S12)(PT4 (FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.004C	



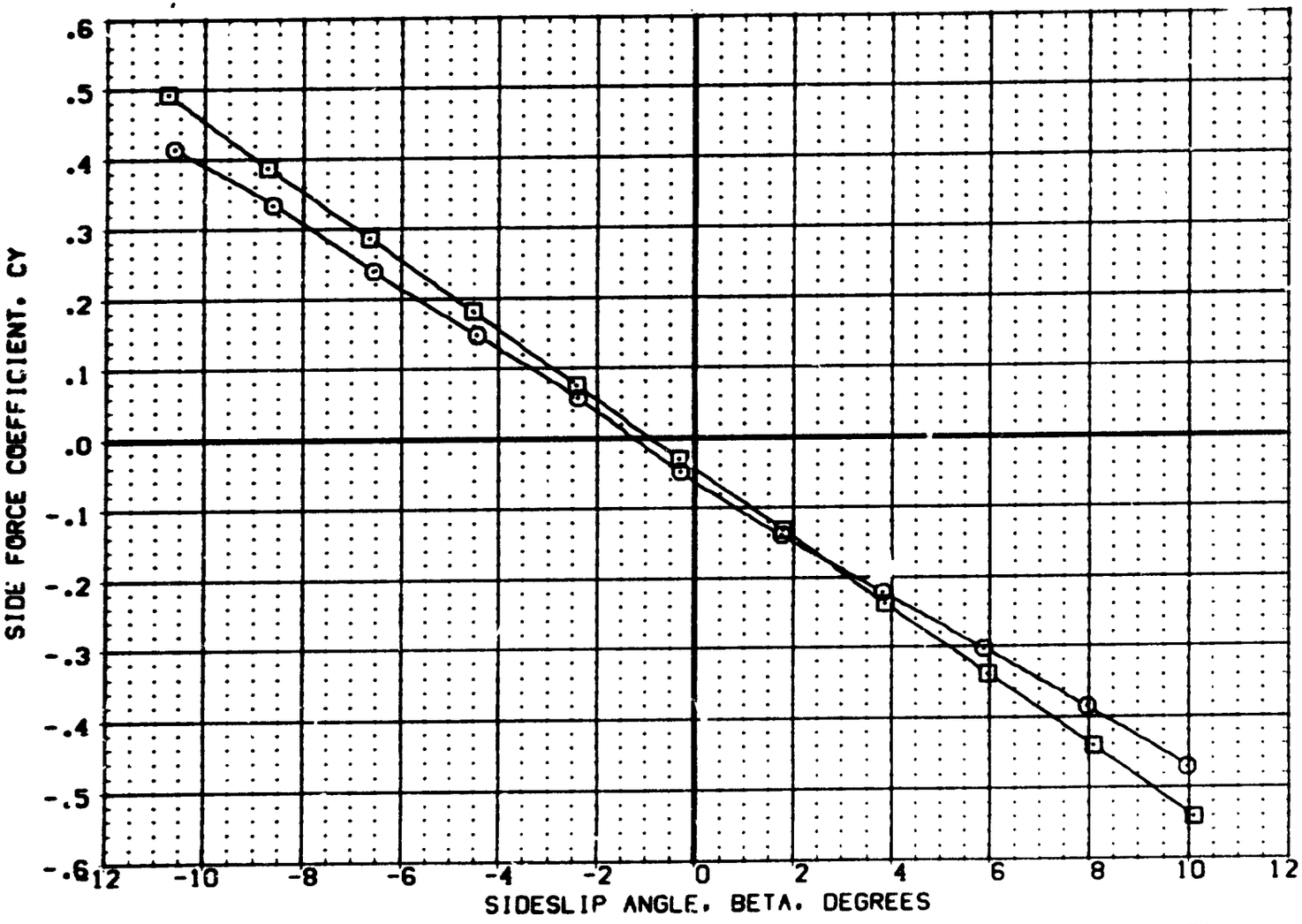
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	□	MSFC S89(1A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94005)	□	MSFC S89(1A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1990	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.004	



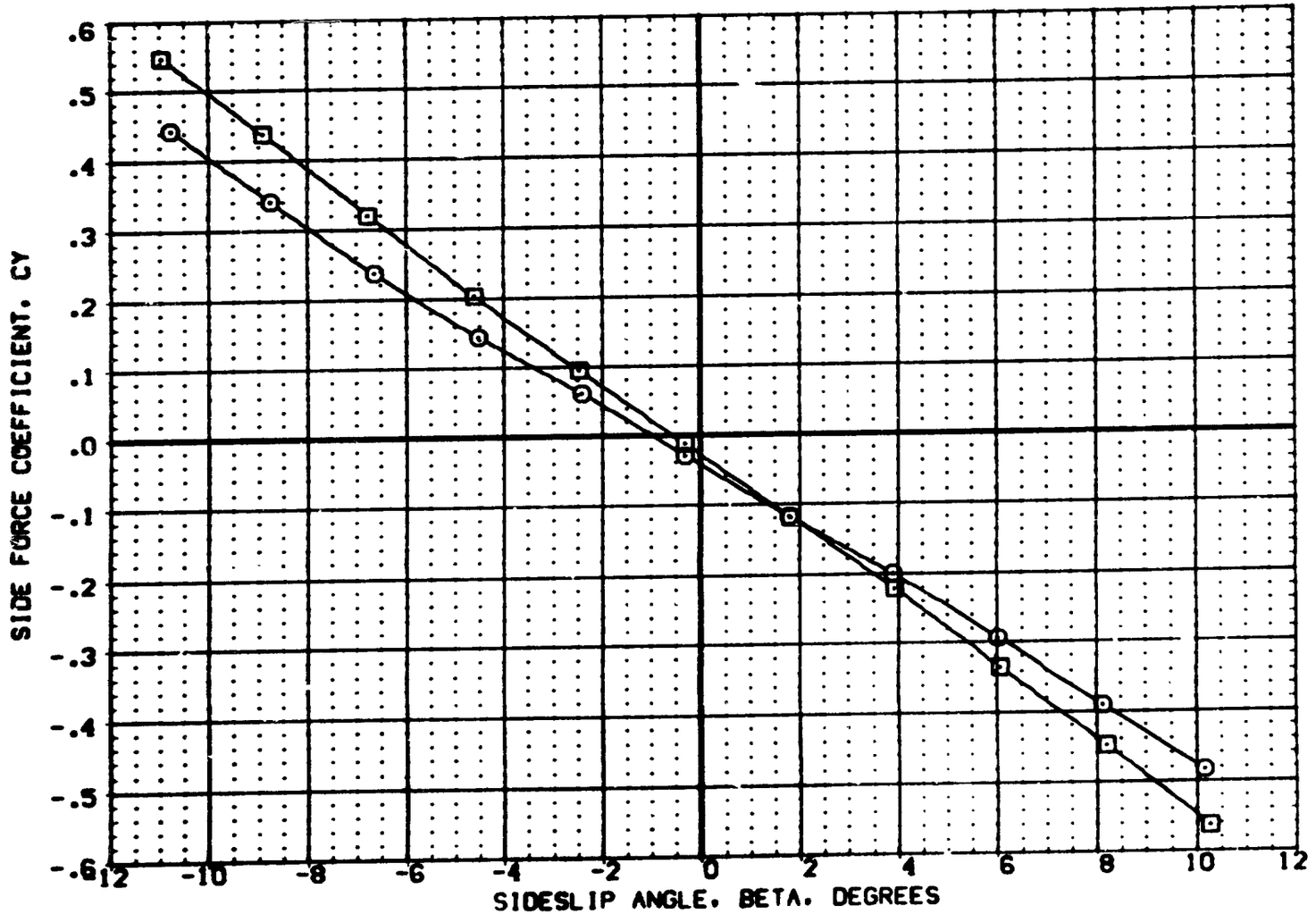
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	○	MSFC 589(1A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94005)	□	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

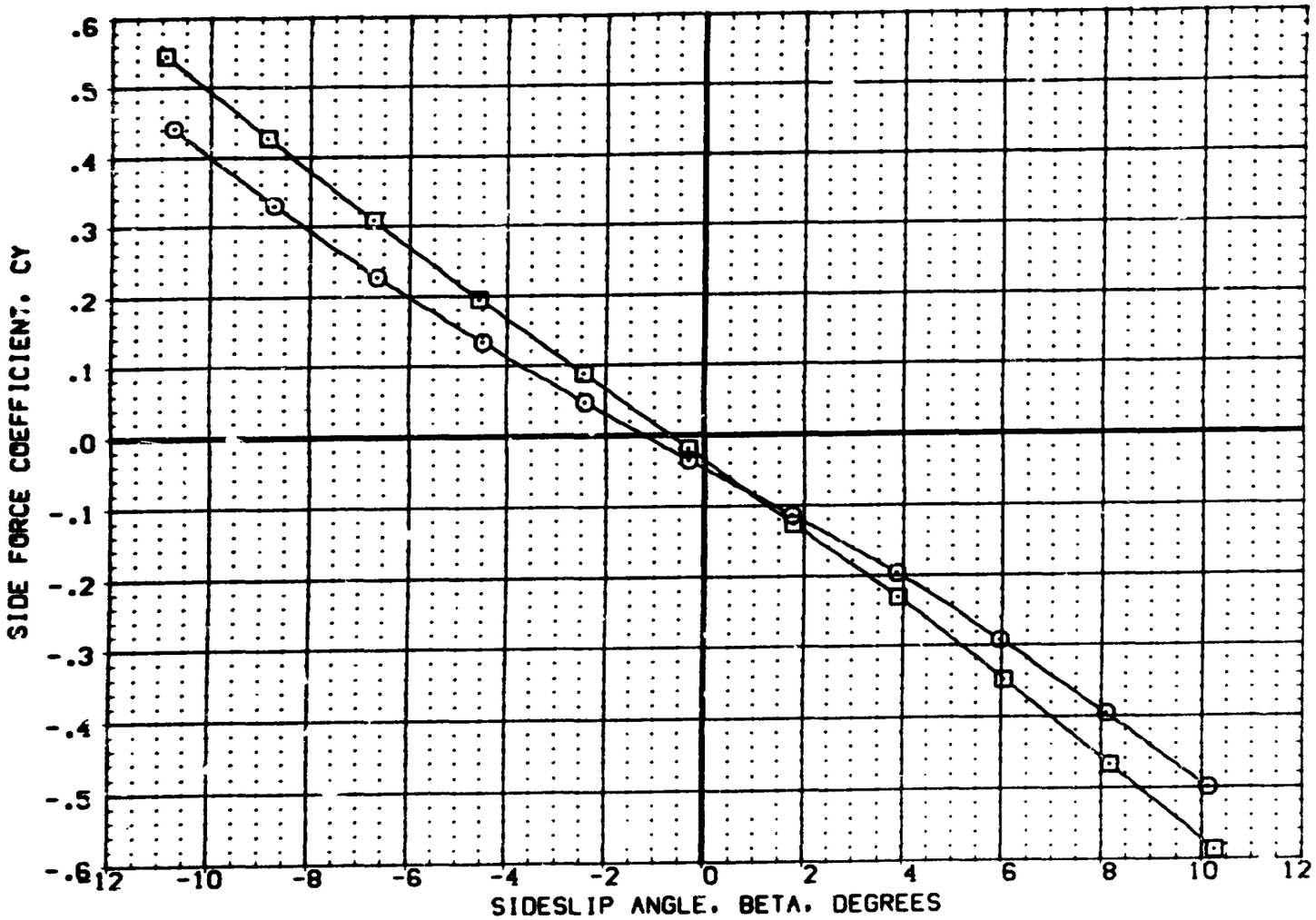


EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(C)MACH = 1.20

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A940C2)	MSFC 589(IA62F)(034)(T14)(S12)	5.000	.000	333.000
(A940C5)	MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6300	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

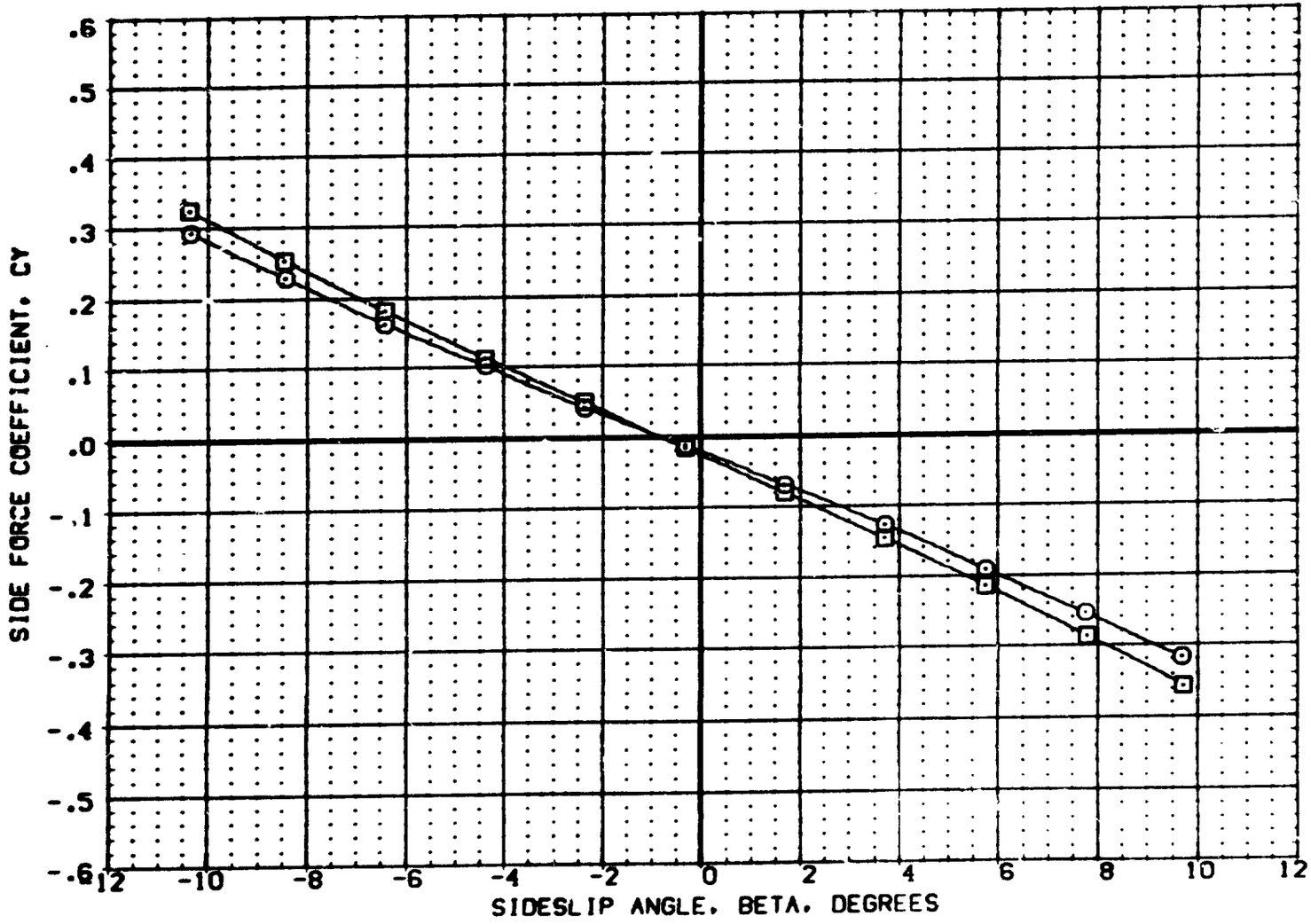


EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A34002) ○	MSFC 589(1AS2F)(034)(T14)(S12)	5.000	.000	333.000
(A34005) □	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



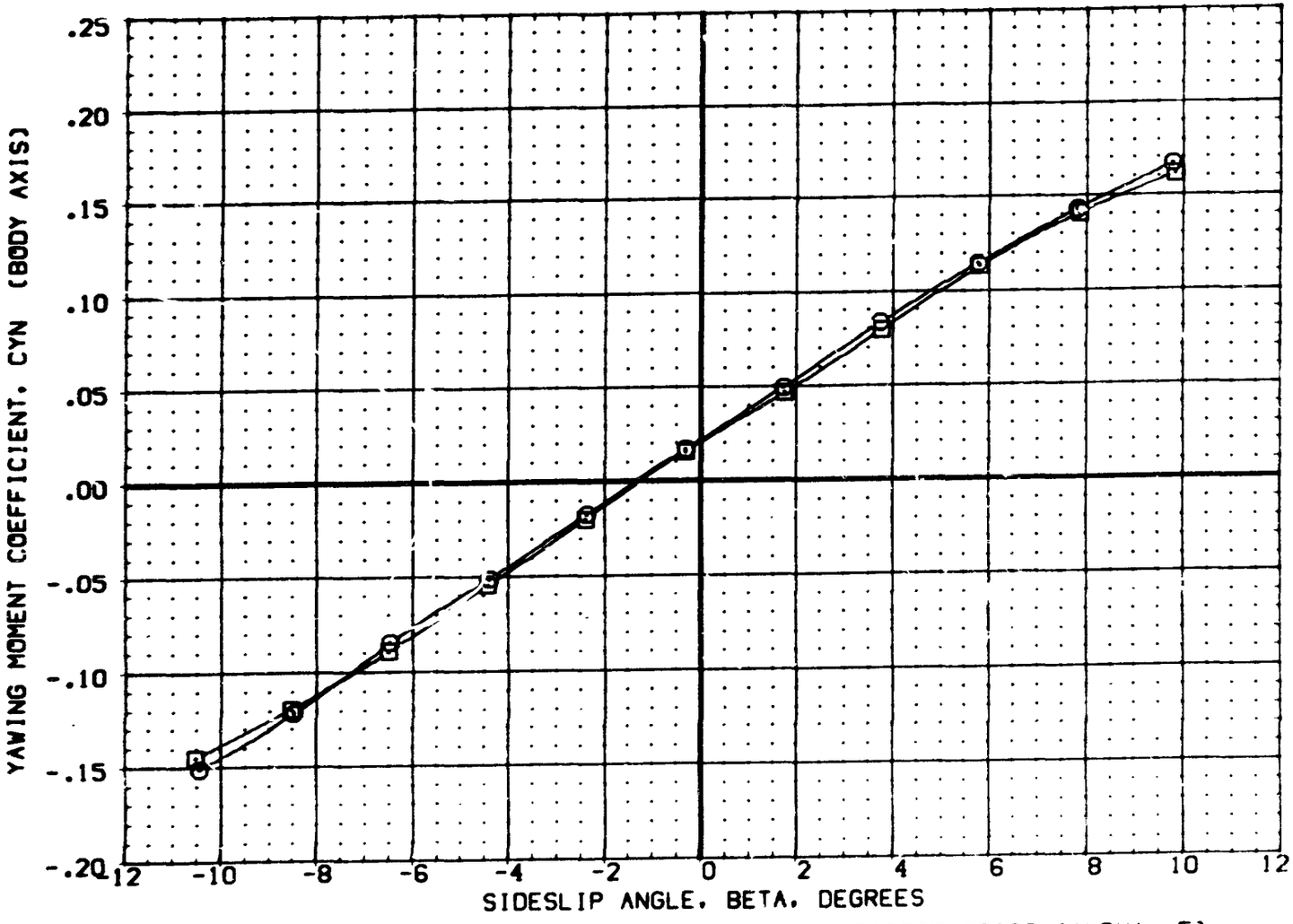
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(E)MACH = 4.96

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	MSFC 589(1A62F)(334)(114)(512)	5.000	.000	333.000
(A94005)	MSFC 589(1A62F)(034)(19)(512)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



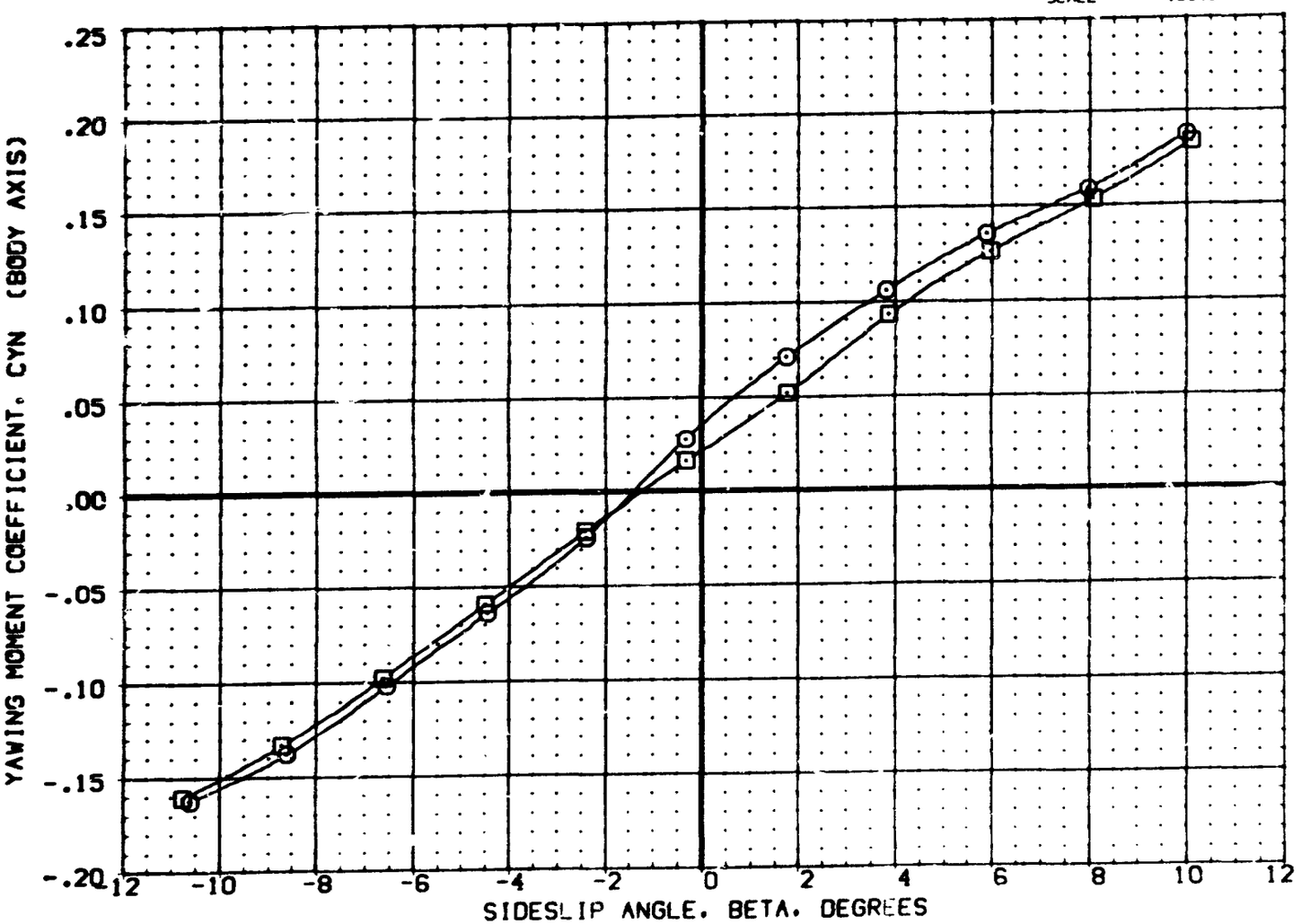
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(A)MACH = .59

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	MSFC 589([A62F])(034)([T14])(S12)	5.000	.000	333.000
(A94003)	MSFC 589([A62F])(034)([T9])(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



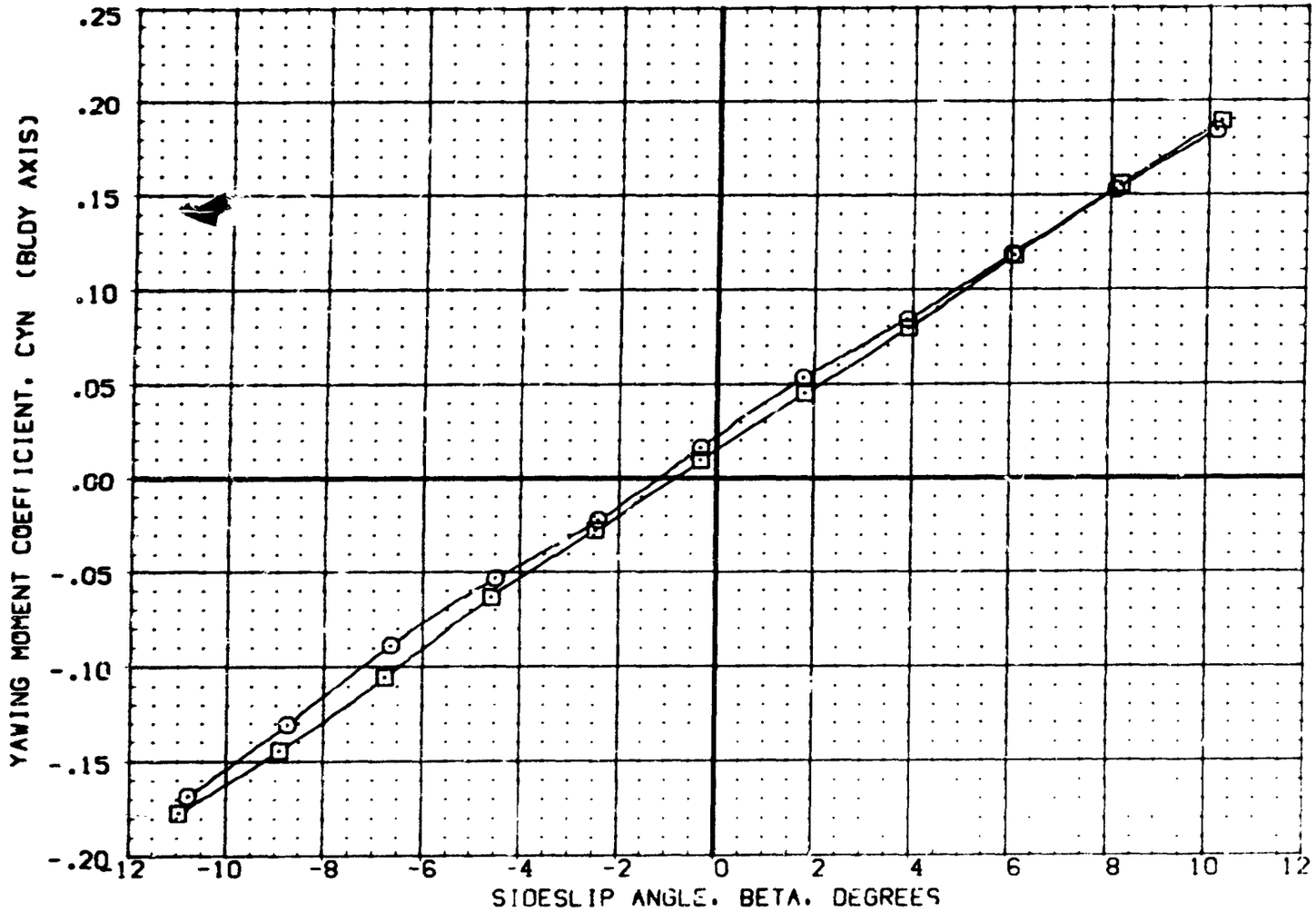
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(B)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	□ MSFC SB9(1A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94003)	□ MSFC SB9(1A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



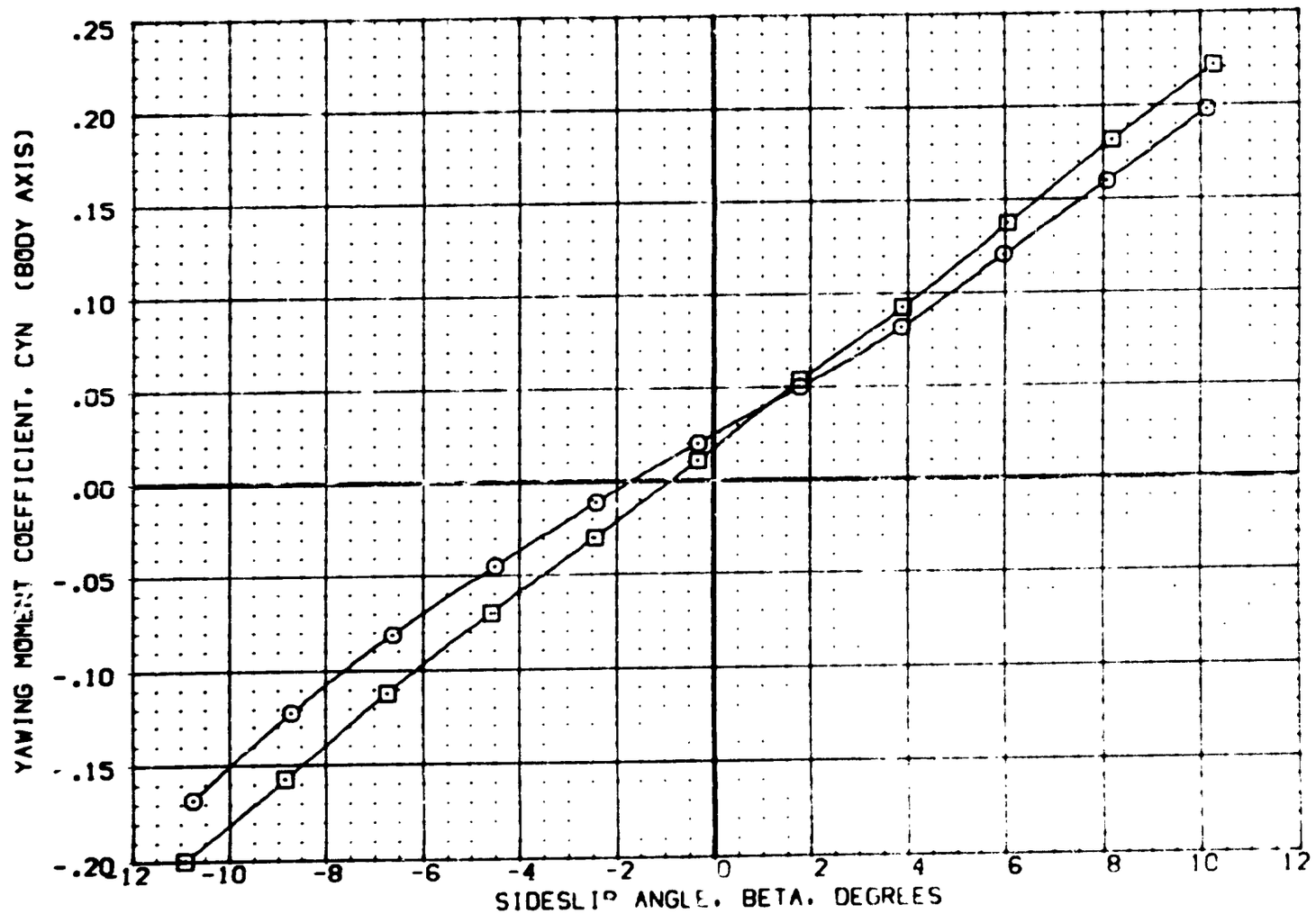
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(C)MACH = 1.20

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
A94002	MSFC 589(1A62F)(034)(114)(S12)	5.000	.000	333.000
A94003	MSFC 589(1A62F)(034)(119)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	3.1600	IN.
BREF	3.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



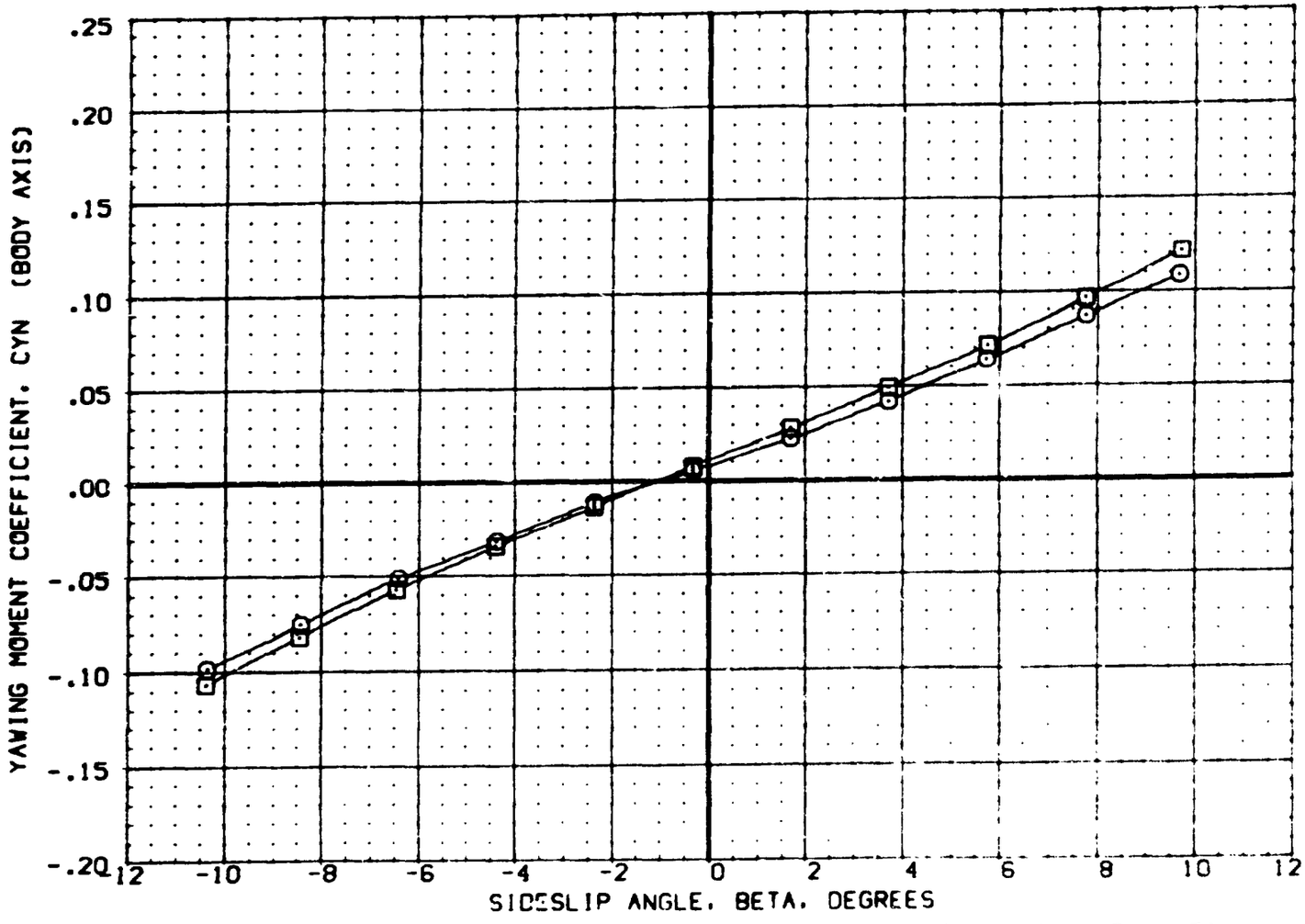
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)		MSFC 589((A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94005)	□	MSFC 589((A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6400	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



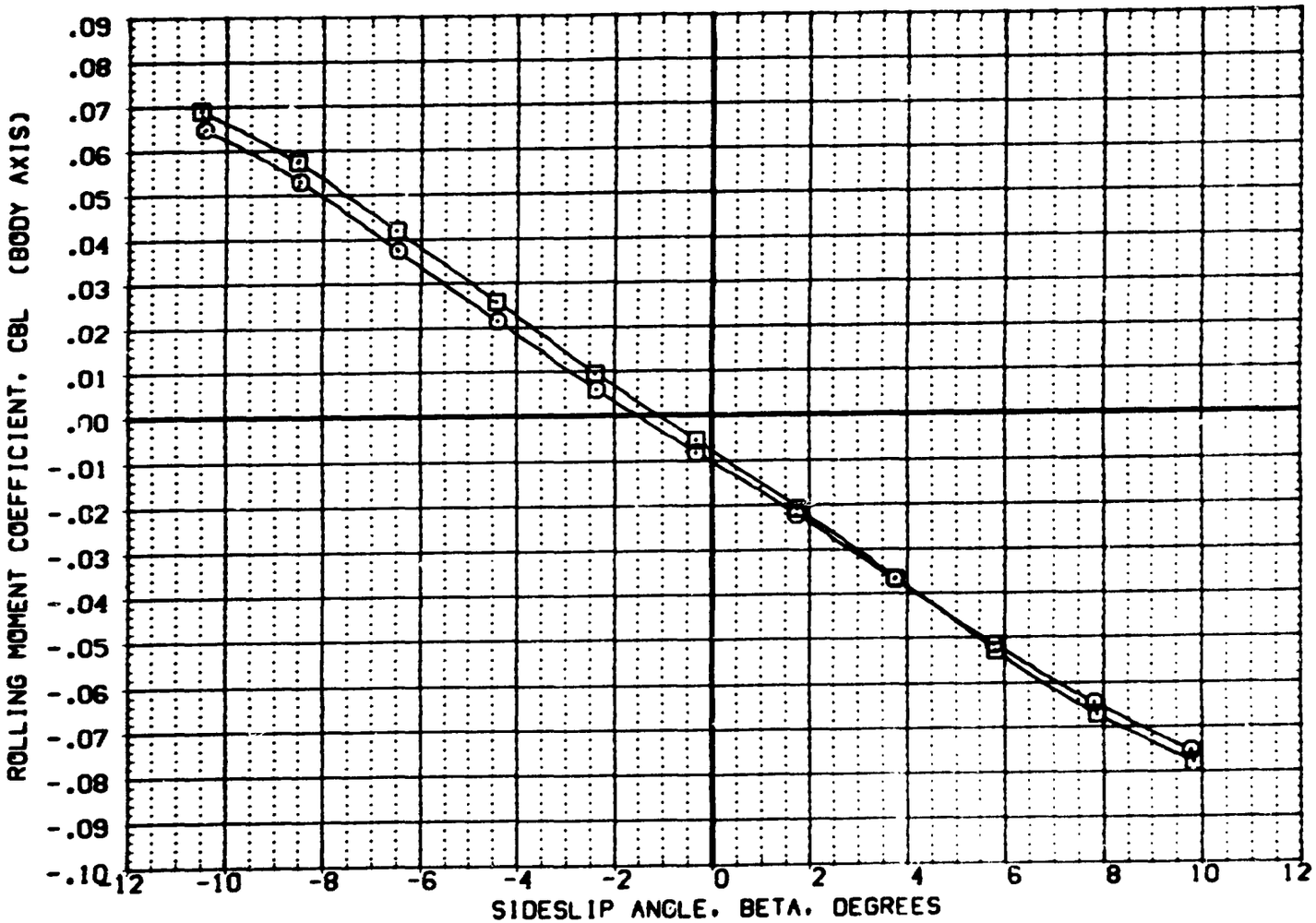
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(E)MACH = 4.36

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94022)	MSFC 589((A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94022) □	MSFC 589((A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



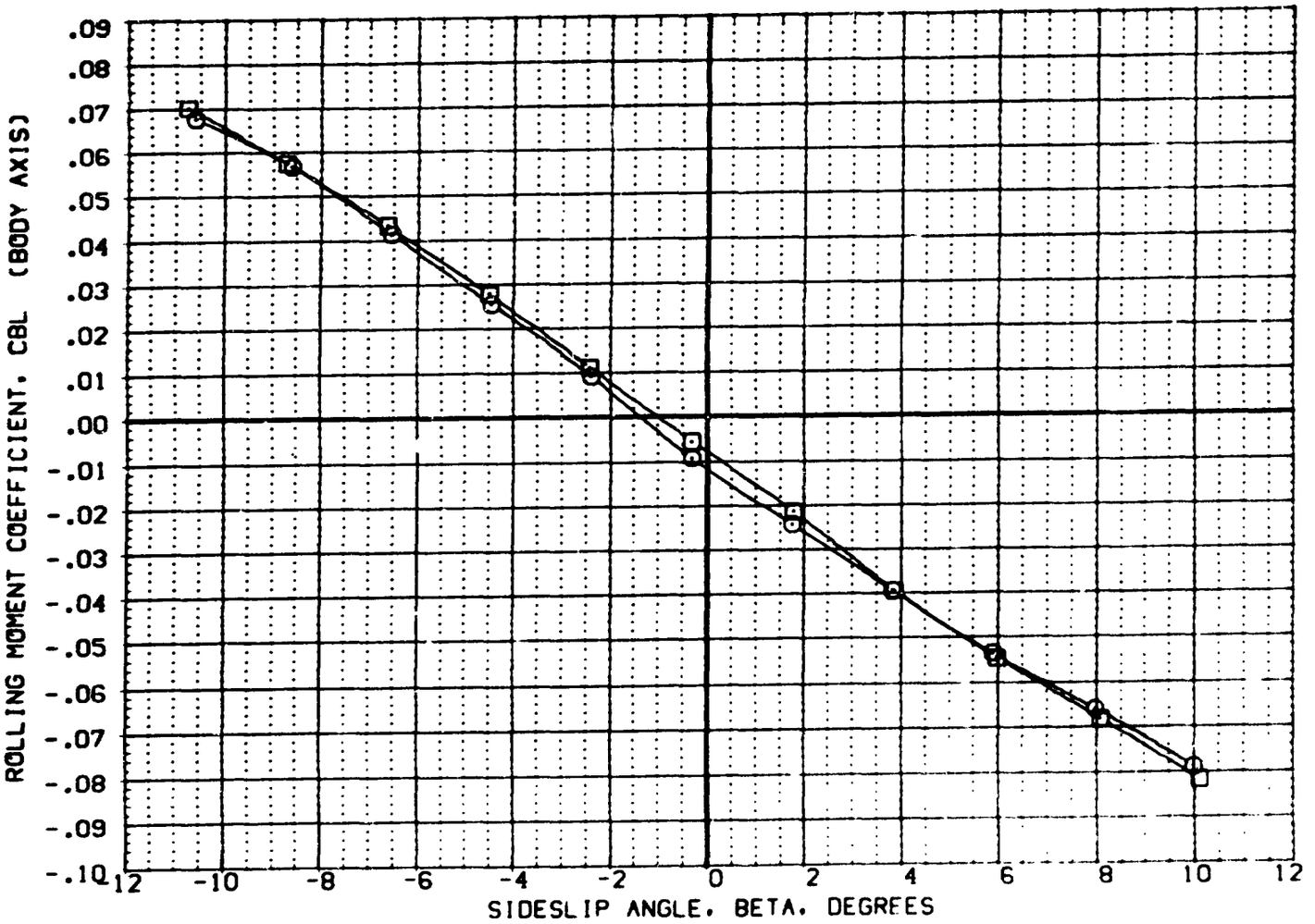
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(A)MACH = .59

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	MSFC 589(1A62F)(034)(T14)(SI2)	5.000	.000	333.000
(A94005)	MSFC 589(1A62F)(034)(T9)(SI2)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	

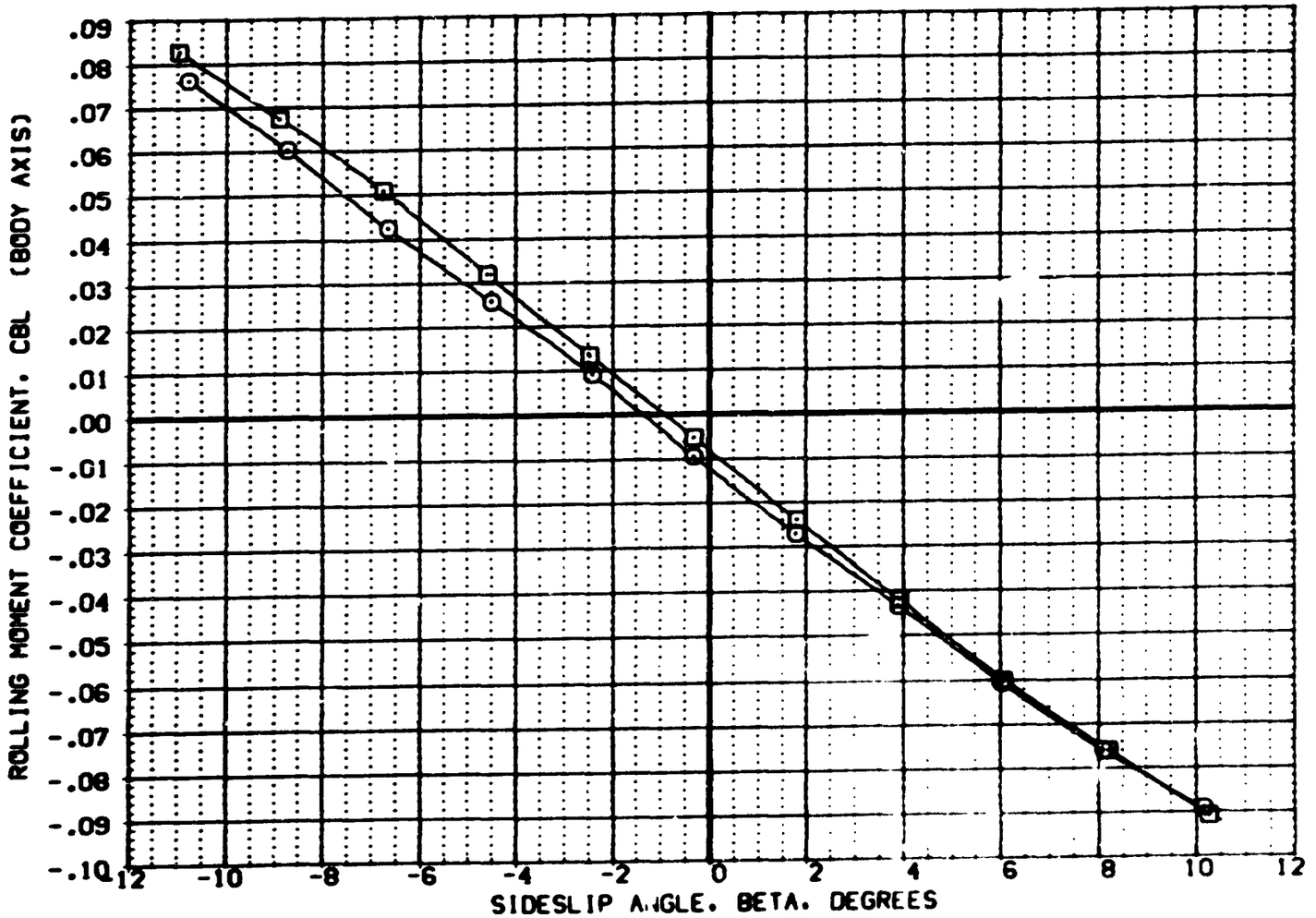


EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(B)MACH = .90

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	MSFC 589(1A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94005)	MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



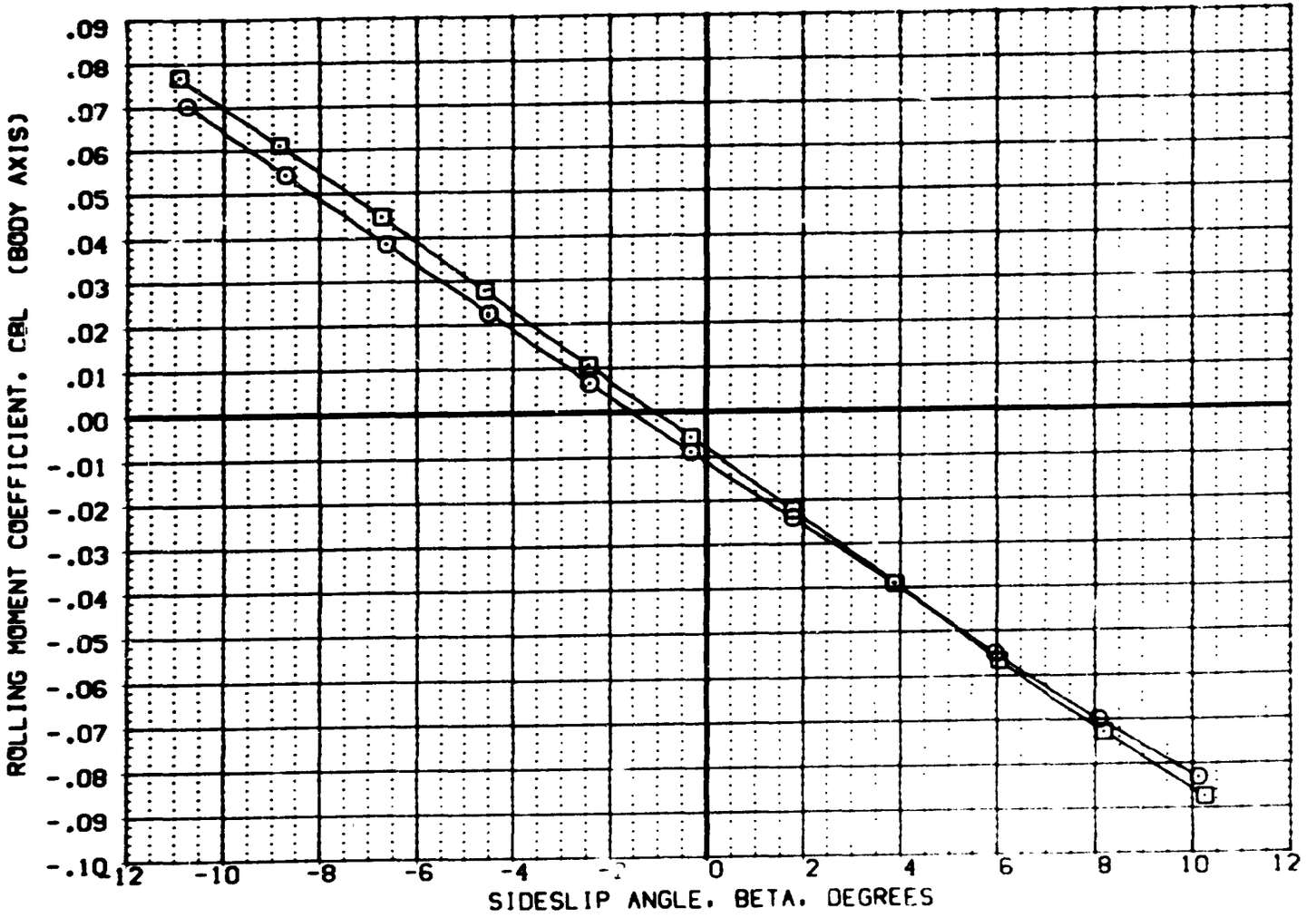
EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	DRBINC	DELTAZ
(A94[illegible]2)	○	MSFC 589,(A62F)(034)(T14)(S12)	5.000	.000	333.000
(A94[illegible]5)	□	MSFC 589,(A62F)(034)(T9)(S12)(PT4)(FF4)	5.000	.000	333.000

REFERENCE INFORMATION

SREF	6.[illegible]960	SQ.IN.
LREF	[illegible]	IN.
BMFS	5.16[illegible]	IN.
XMRP	2.6880[illegible]	IN.
YMRP	.00[illegible]	IN.
ZMRP	.00[illegible]	IN.
SCALE	.0041[illegible]	

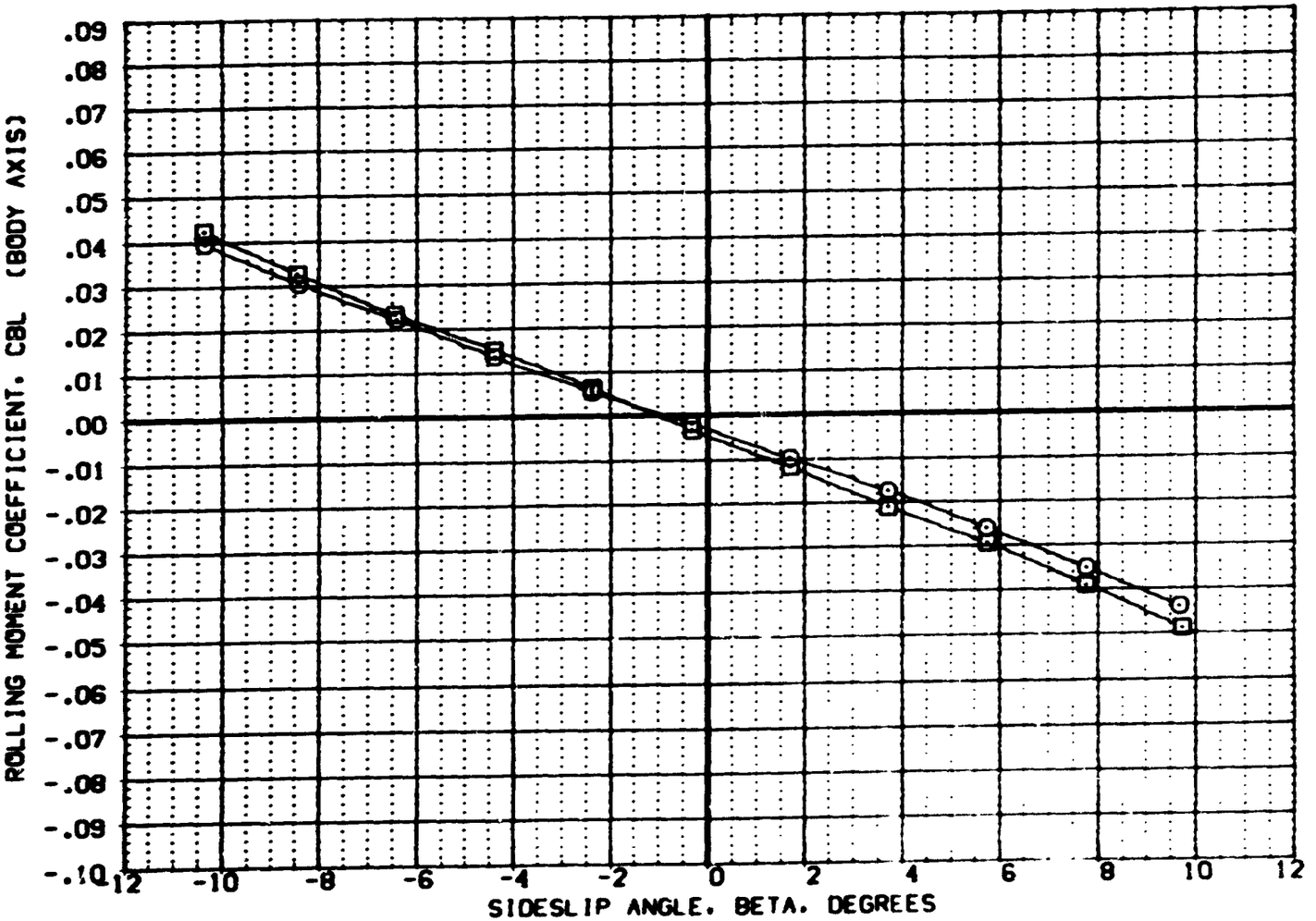


EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

(D)MACH = 1.46

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ORBINC	DELTAZ
(A94002)	MSFC 589((A62F)(034)((T14)(S12)	5.000	.000	333.000
(A94003)	MSFC 589((A62F)(034)((T9)(S12)(PT4)(FR4)	5.000	.000	333.000

REFERENCE INFORMATION		
SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



EFFECT OF FAIRINGS ON INT. VEHICLE LAT.-DIRECT. CHARACTERISTICS (ALPHA= 5)

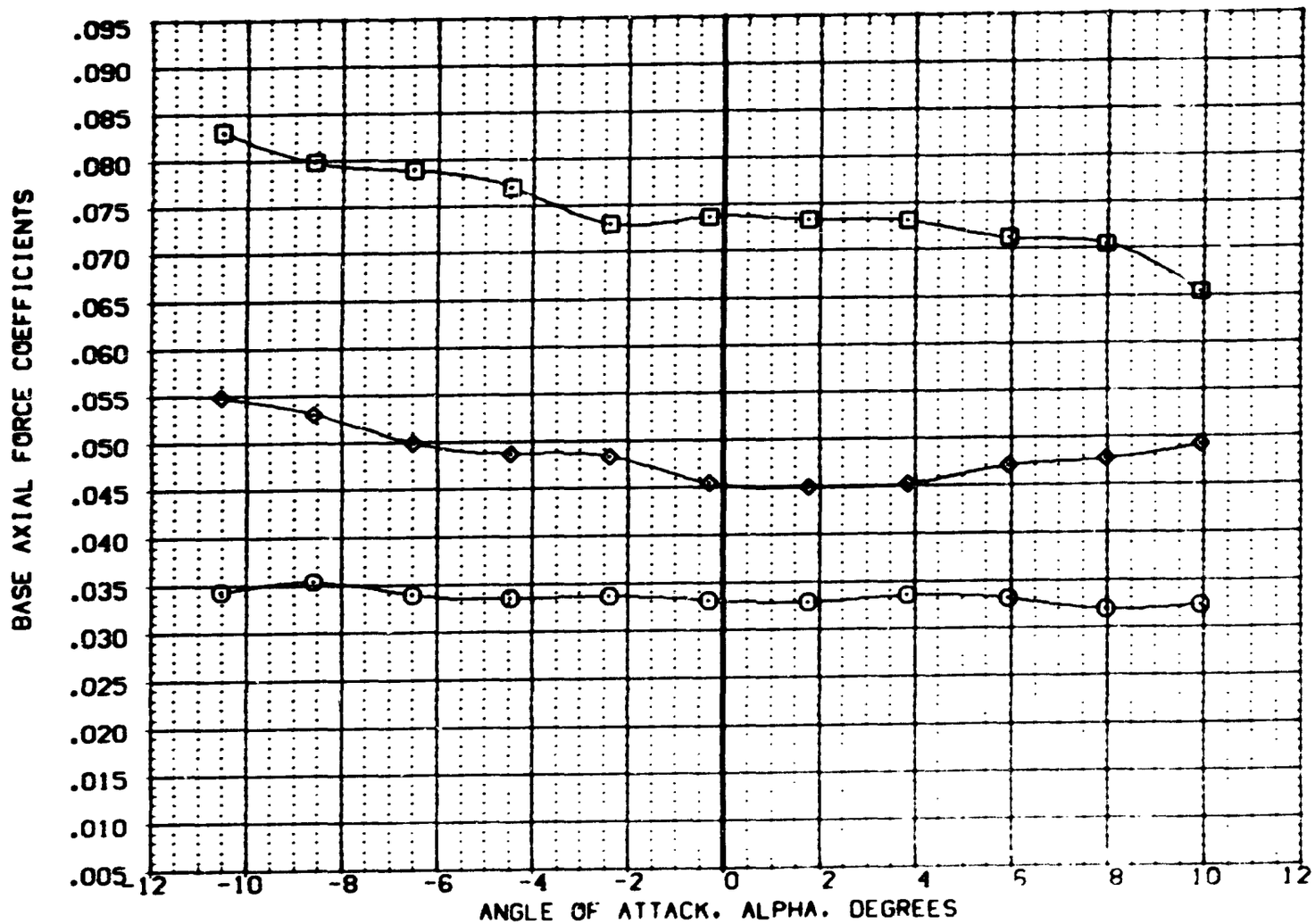
(E)MACH = 4.96

MSFC 589(1A62F)(034)(T14)(S12) (A94001)

SYMBOL	DATA	PARAMETRIC VALUES			
○	CABO	MACH	.597	BETA	.000
□	CABE	ORBINC	.000	DELTAZ	333.000
◇	CABS				

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

PAGE 12

MSFC 589(1A62F)(034)(T14)(S12) (A94001)

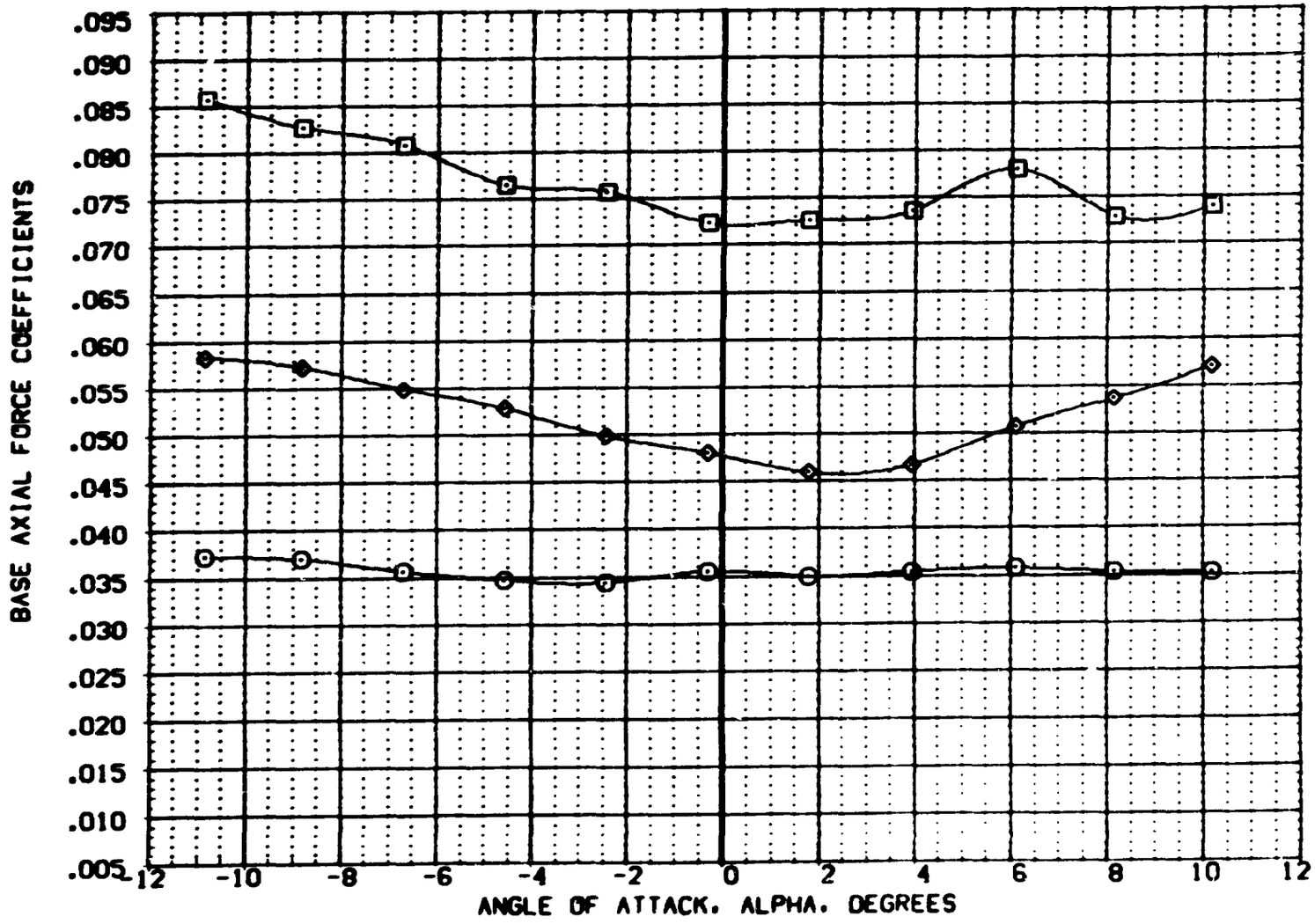
SYMBOL	DATA
○	CABD
□	CABE
◇	CABS

PARAMETRIC VALUES

MACH	.902	BETA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(C34)(T14)(S12) (A94001)

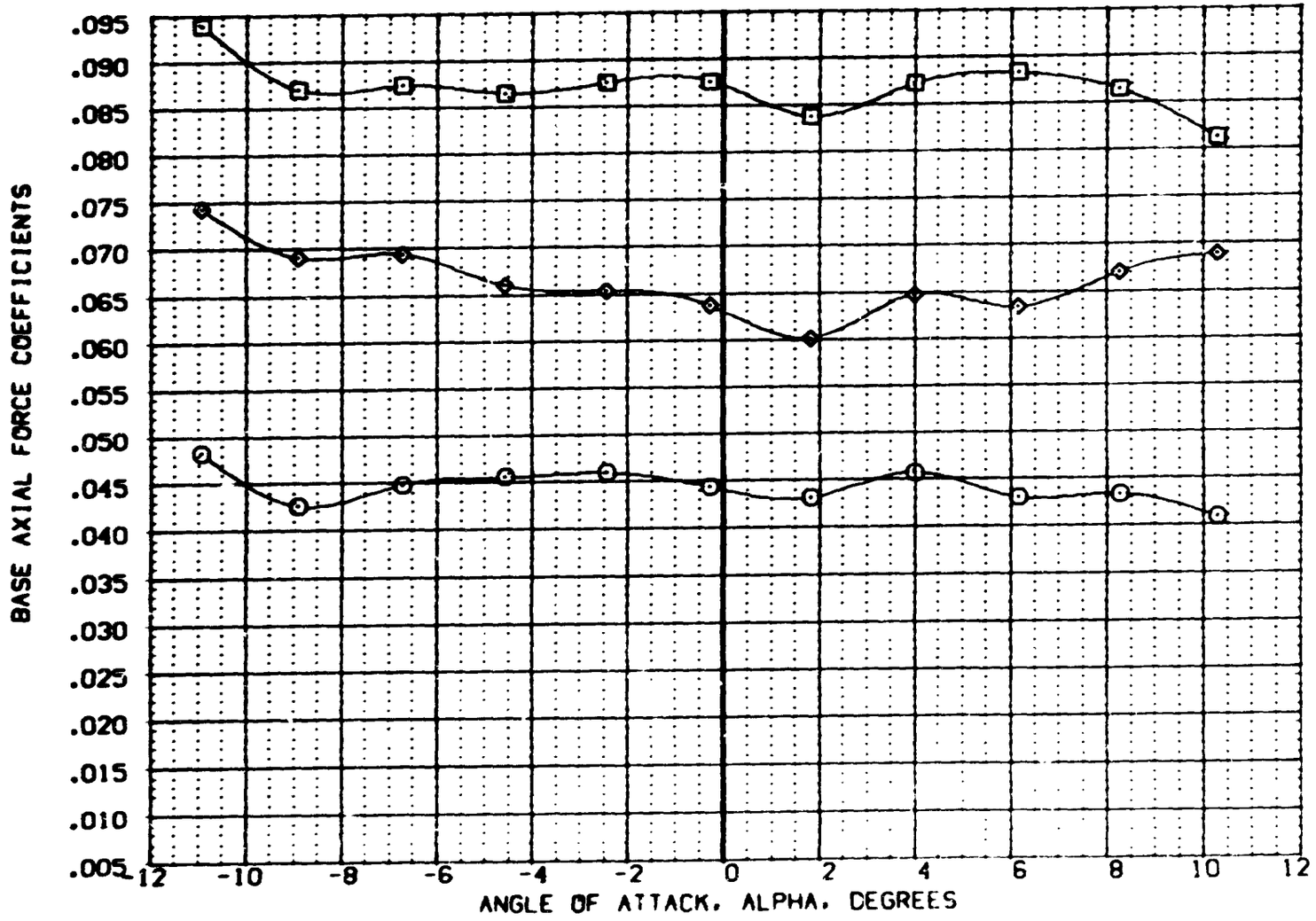
SYMBOL	DATA
□	CABC
◇	CABE
	CABS

PARAMETRIC VALUES

MACH	.996	BETA	.000
ORBINC	.000	DELTAZ	330.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	3.1600	IN.
BREF	5.1600	IN.
XMRP	7.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(IA62F)(034)(T14)(S12) (A94001)

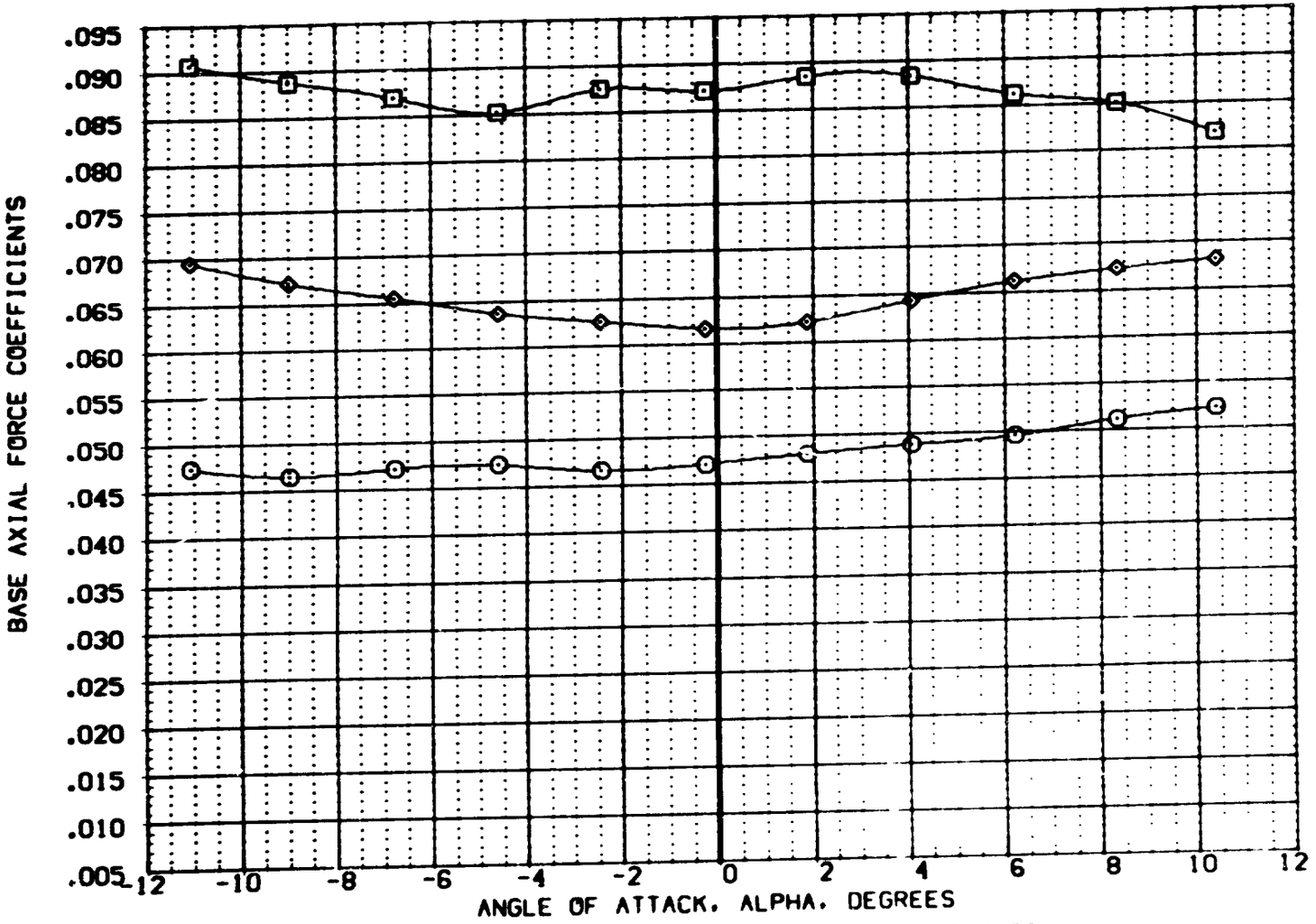
SYMBOL	DATA
△	CABO
□	CABE
◇	CABS

PARAMETRIC VALUES

MACH	1.200	BETA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



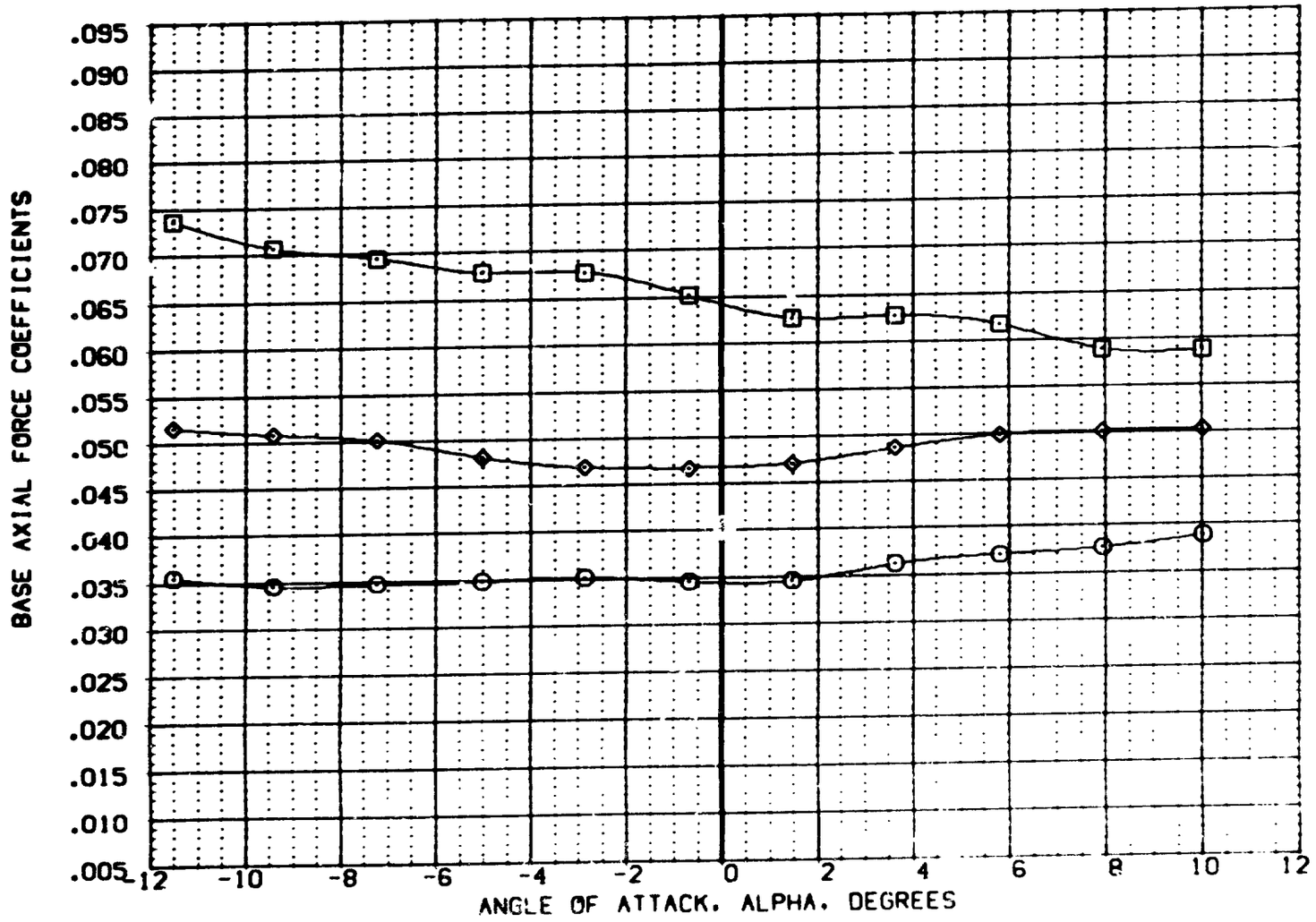
BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T14)(S12) (A94001)

SYMBOL	DATA	PARAMETRIC VALUES			
○	CABC	MACH	1.463	BETA	.000
□	CABE	ORBINC	.000	DELTAZ	333.000
◇	CABS				

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1500	IN.
BREF	5.1600	IN.
XMRP	2.6900	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

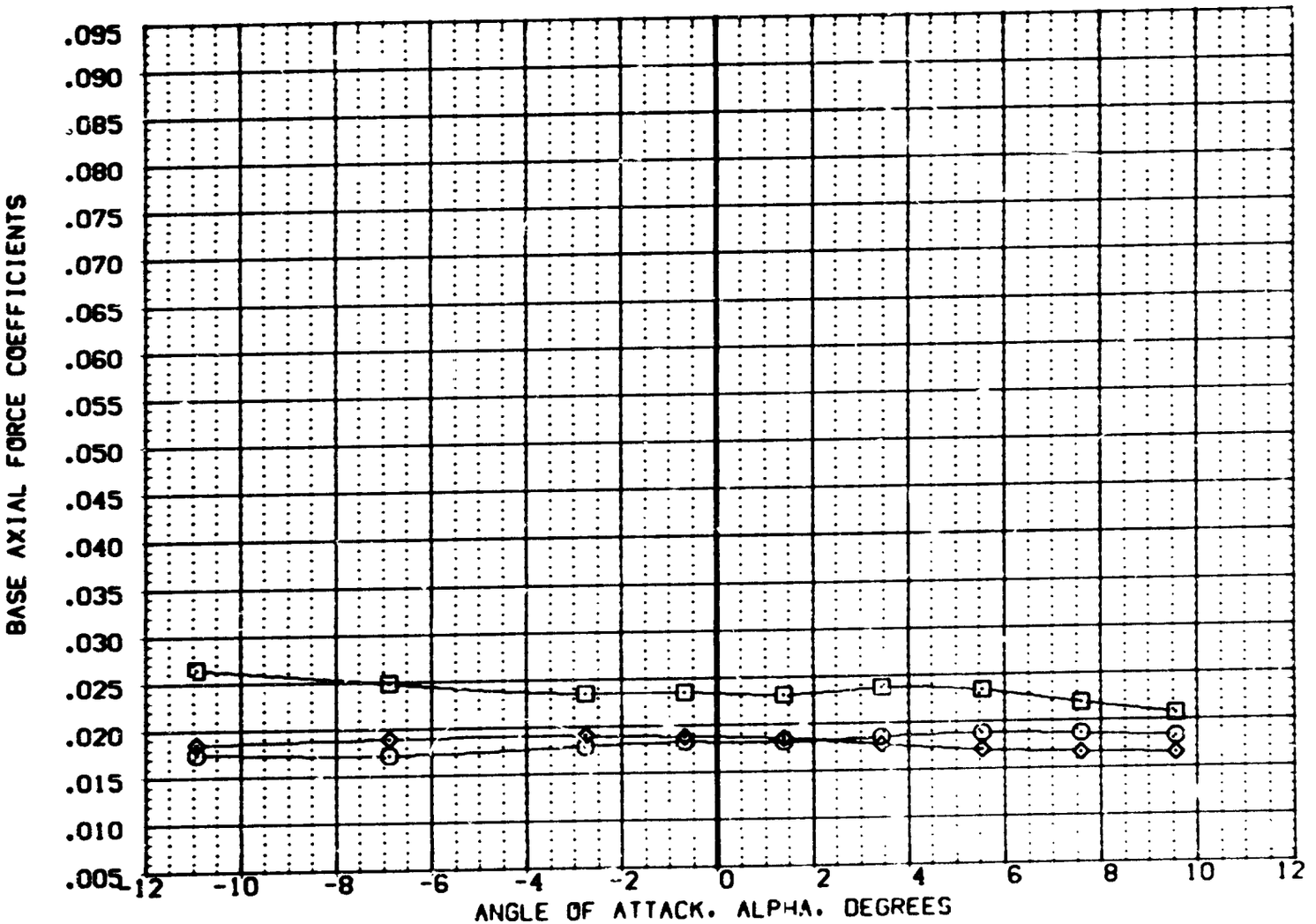
MSFC 589(1A62F)(034)(T14)(S12)

(A94001)

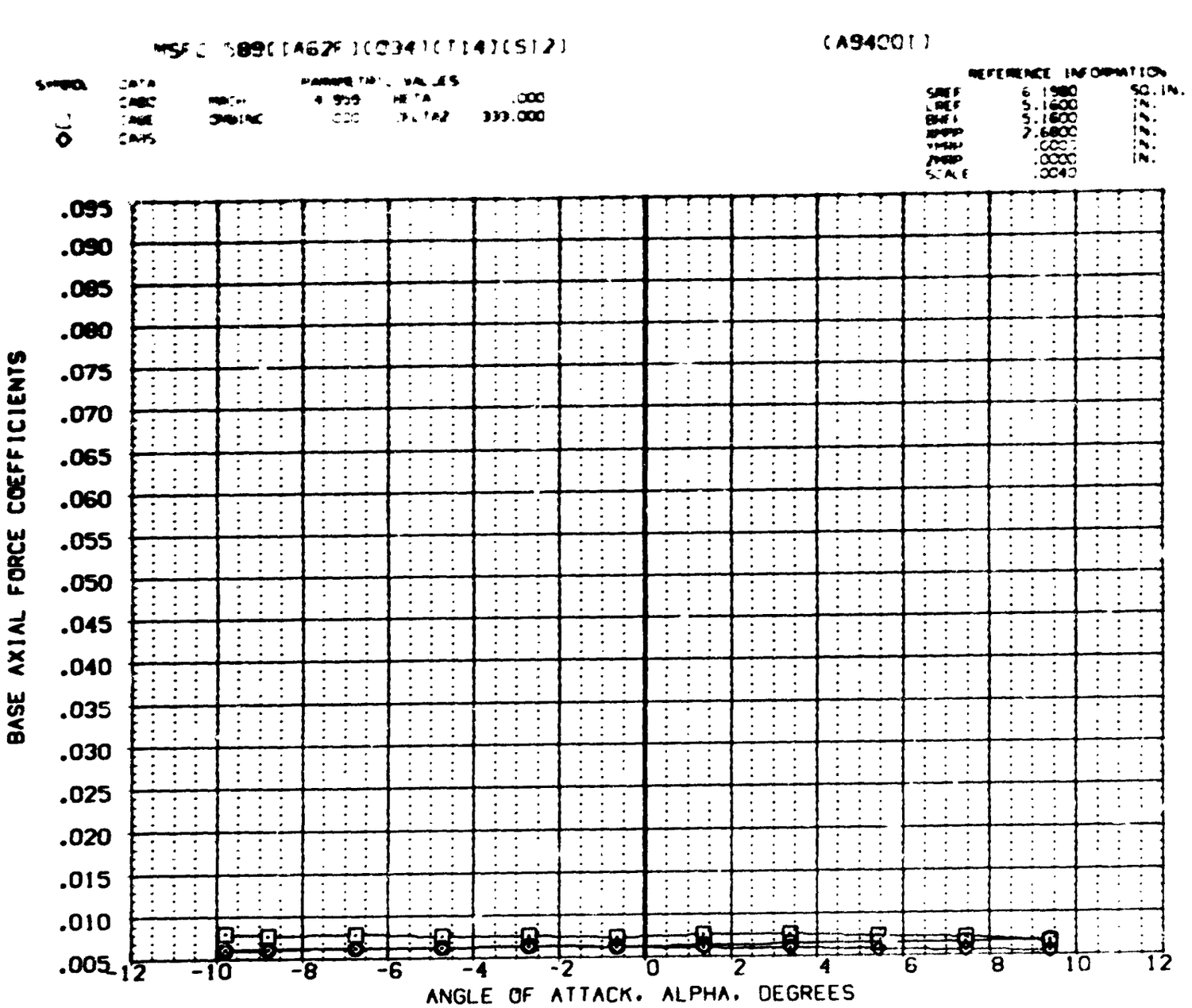
SYMBOL	DATA	PARAMETRIC VALUES			
○	CARC	MACH	2.990	BETA	.000
□	CARE	ORBINC	.000	DELTAZ	333.000
◇	CARS				

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4) (A94004)

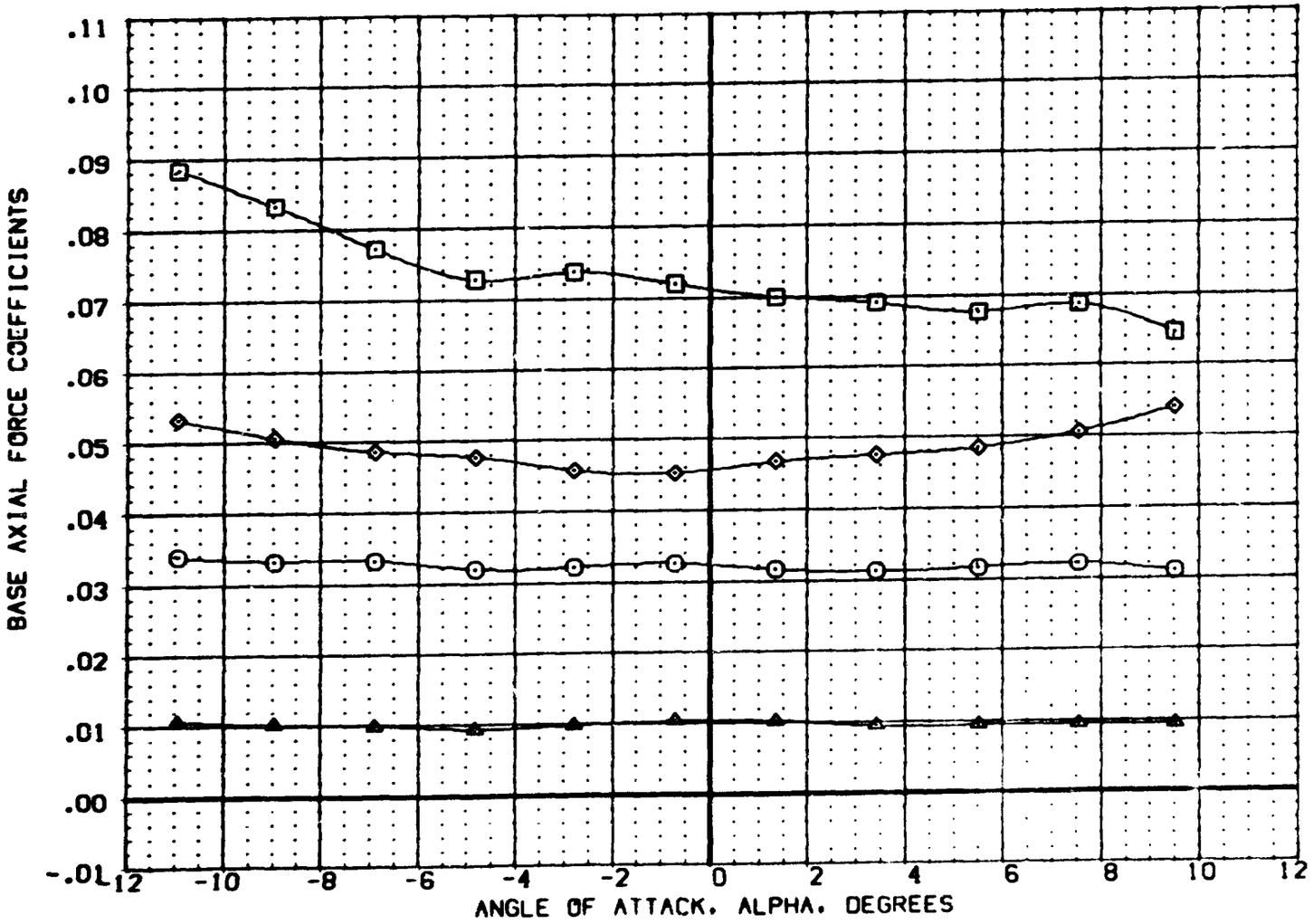
SYMBOL	DATA
○	CABC
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	.596	BETA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4) (A94004)

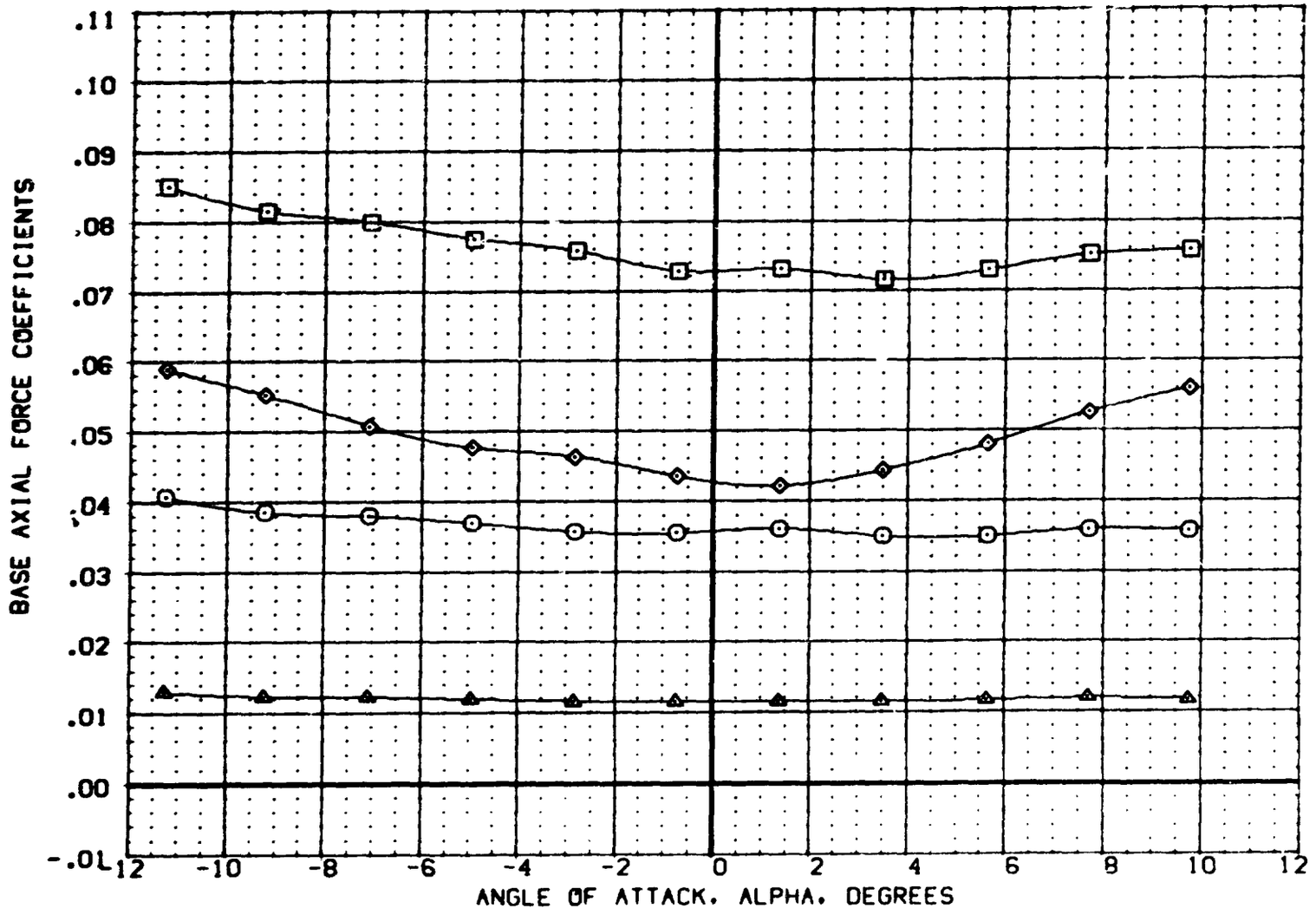
SYMBOL	DATA
○	CABC
□	CABE
◇	CABS
△	CAB#

PARAMETRIC VALUES

MACH	.900	BETA	.000
ORGINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4) (A94004)

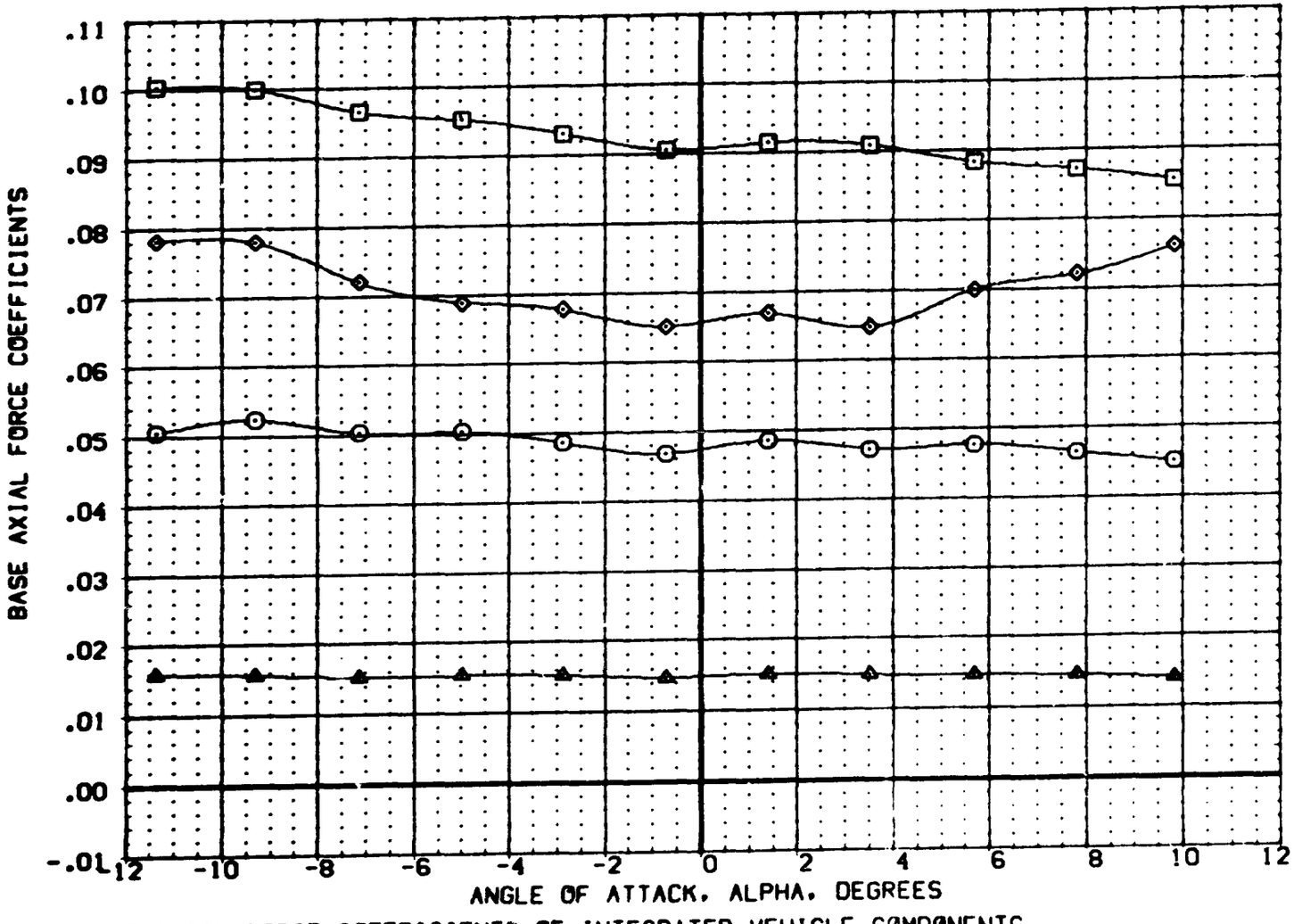
SYMBOL	DATA
○	CABD
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	.998	BETA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589([A62F](034)(T9)(S12)(PT4)(FR4) (A94004)

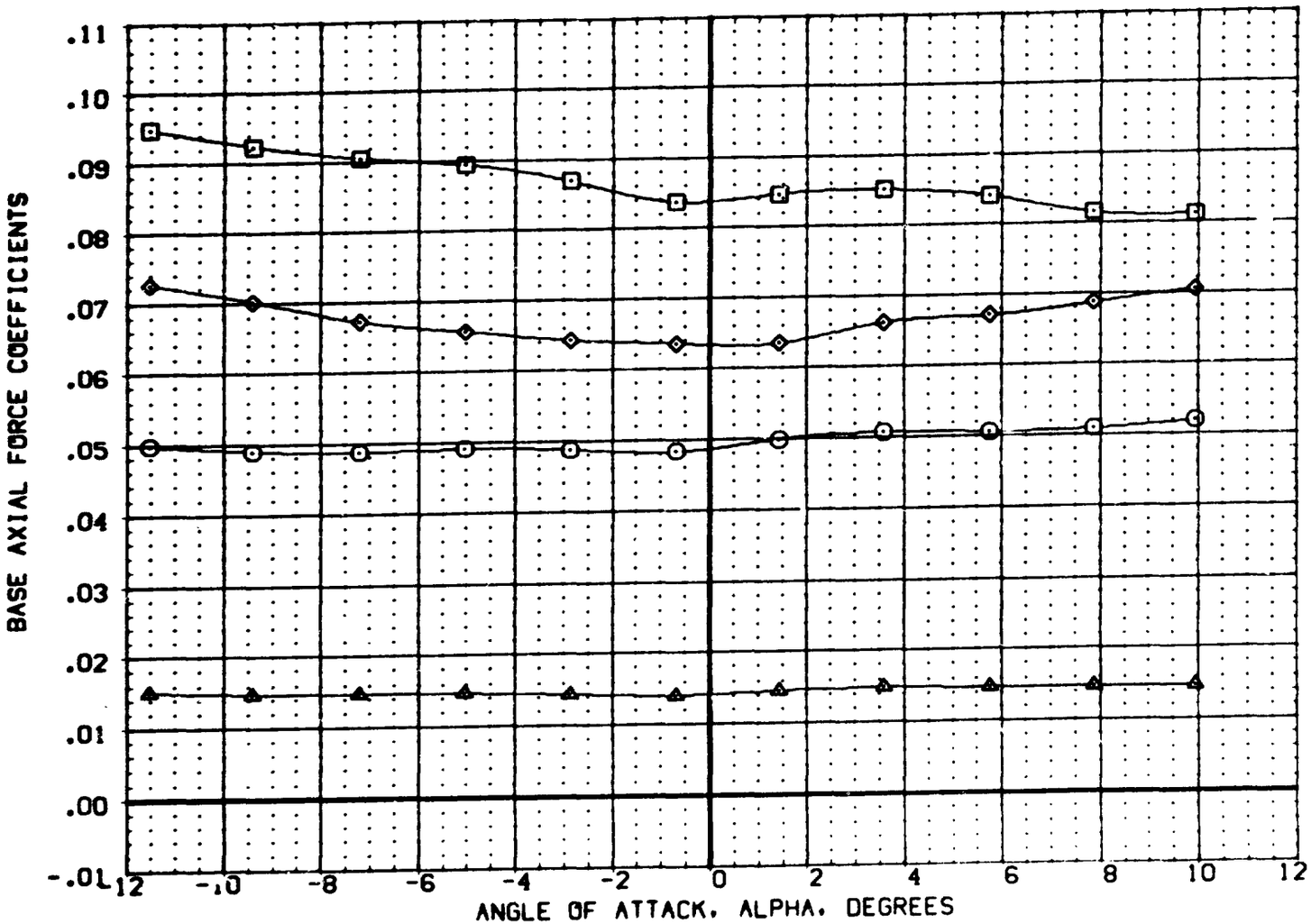
SYMBOL	DATA
○	CABO
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	1.202	BETA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4) (A94004)

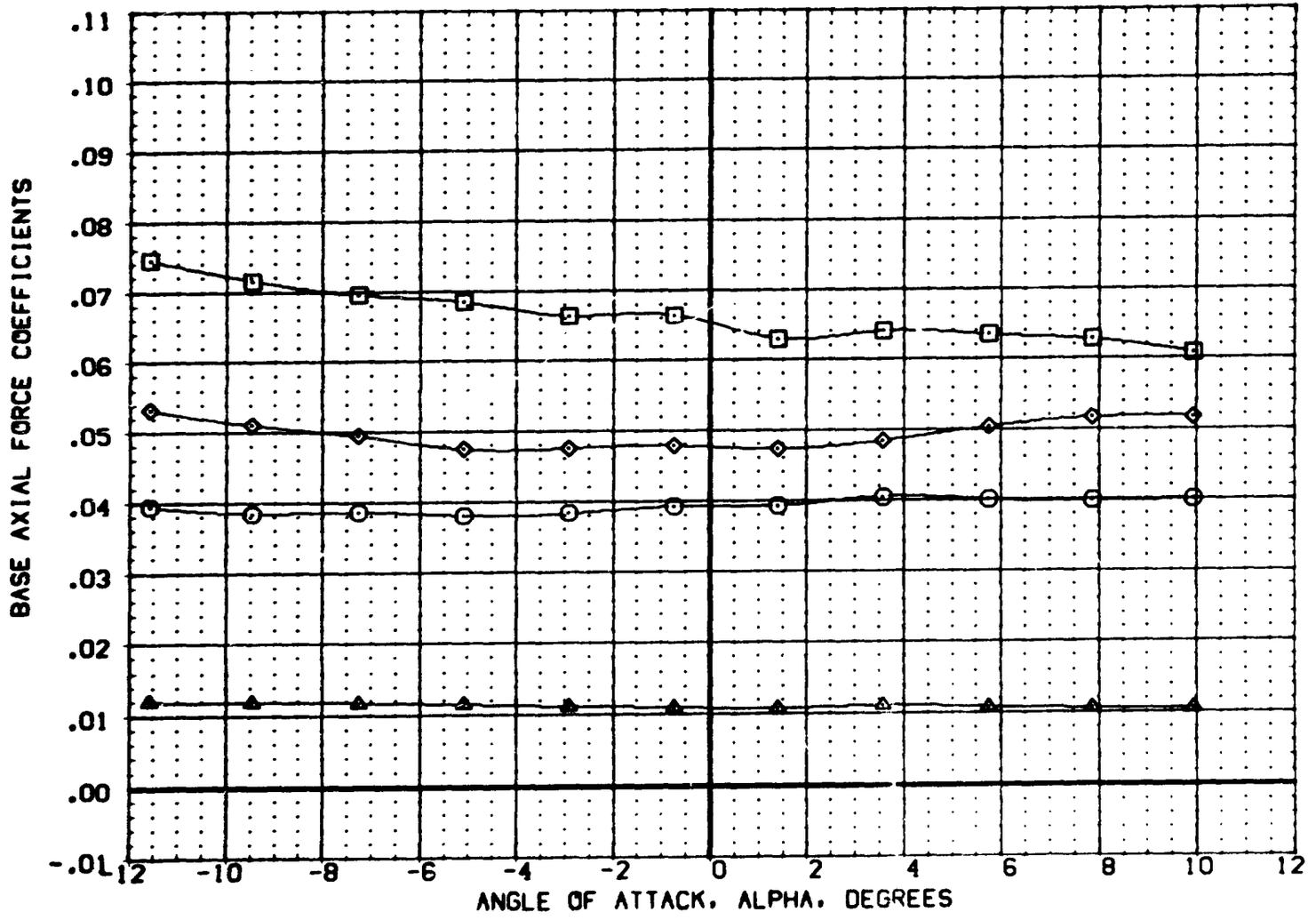
SYMBOL	DATA
○	CABC
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	1.458	BETA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4) (A94004)

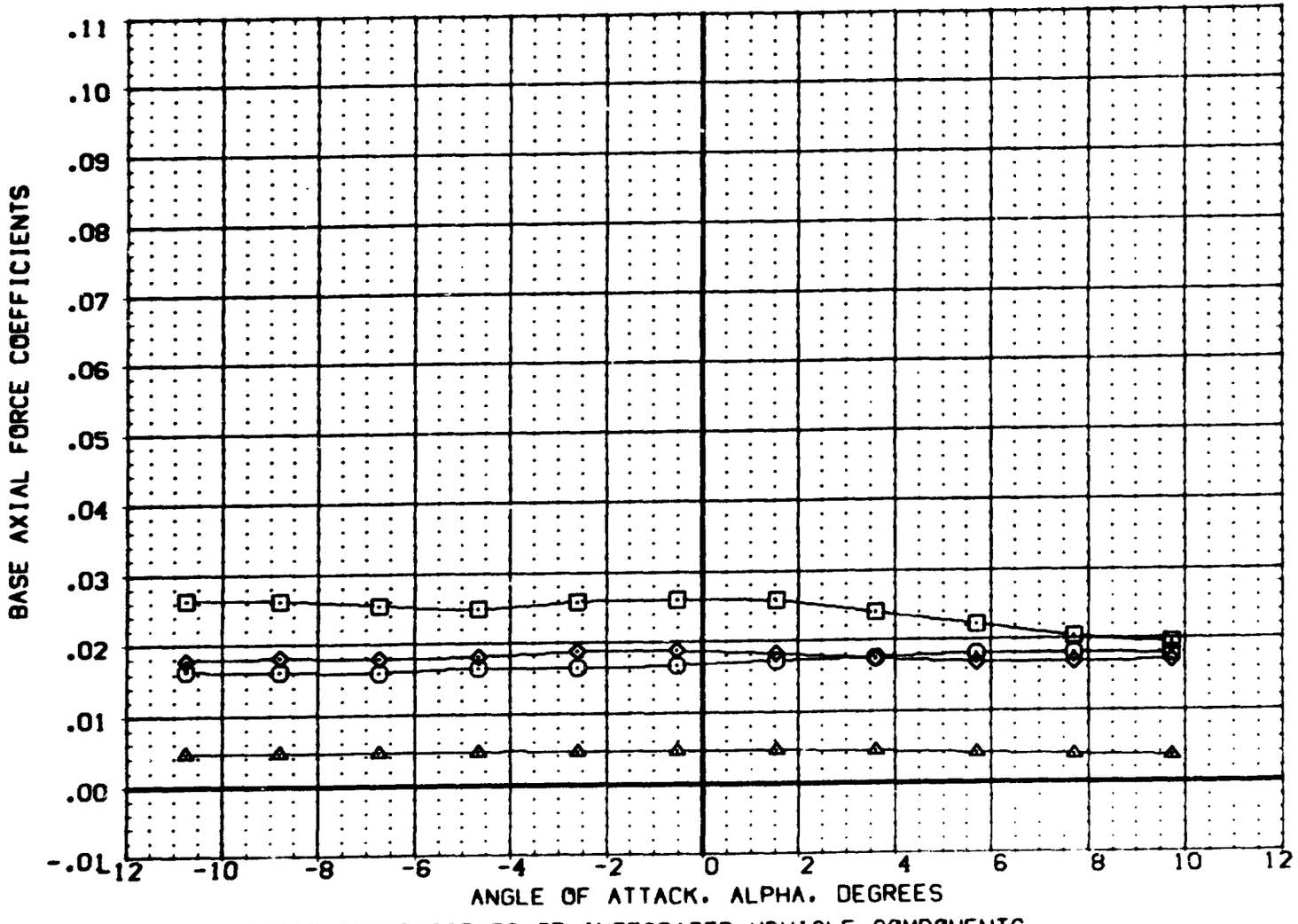
SYMBOL	DATA
○	CA&C
□	CABF
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	2.990	BETA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(!A62F)(034)(T9)(S12)(PT4)(FR4) (A94004)

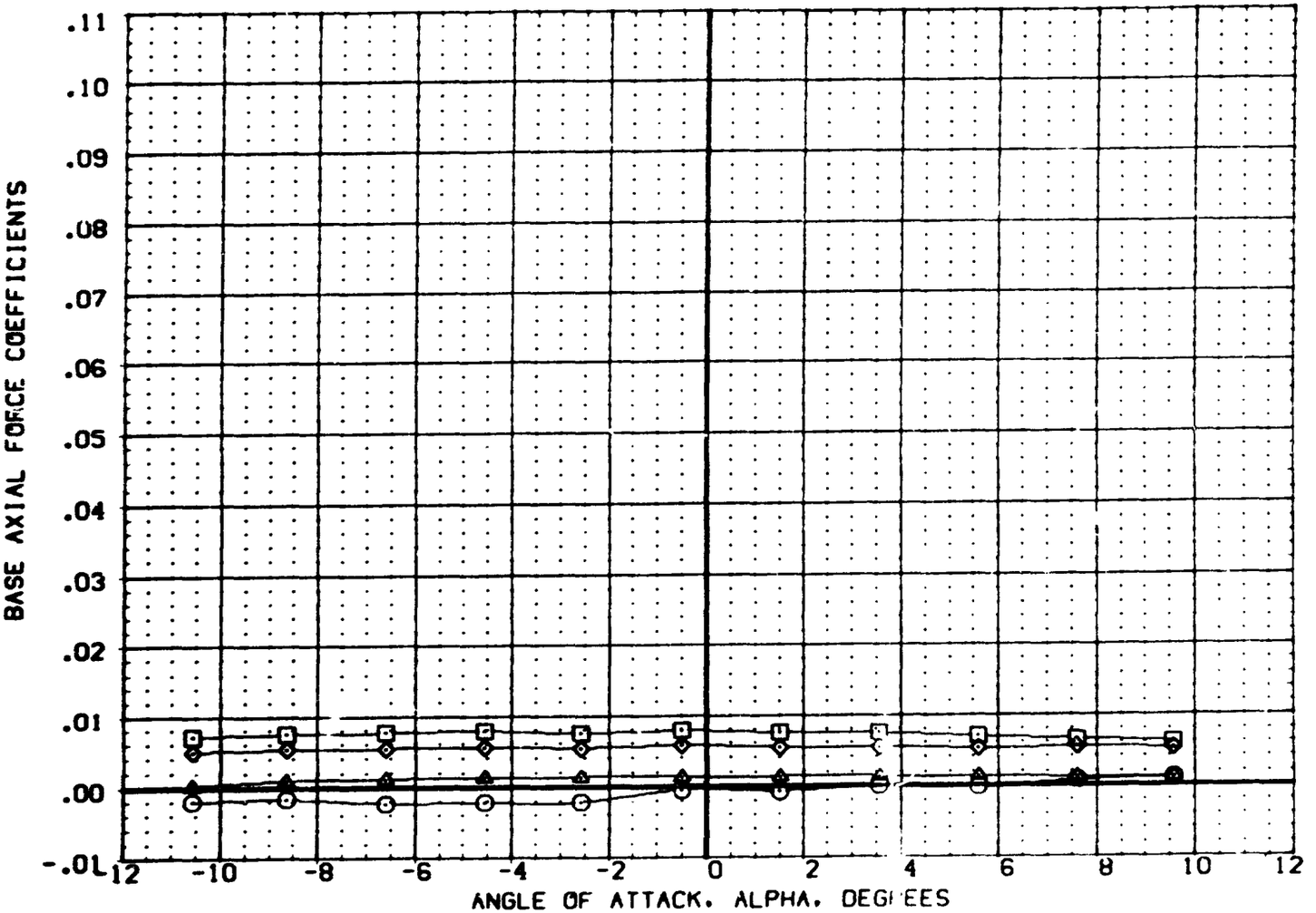
SYMBOL	DATA
○	CABC
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	4.959	BETA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T14)(S12) (A94003)

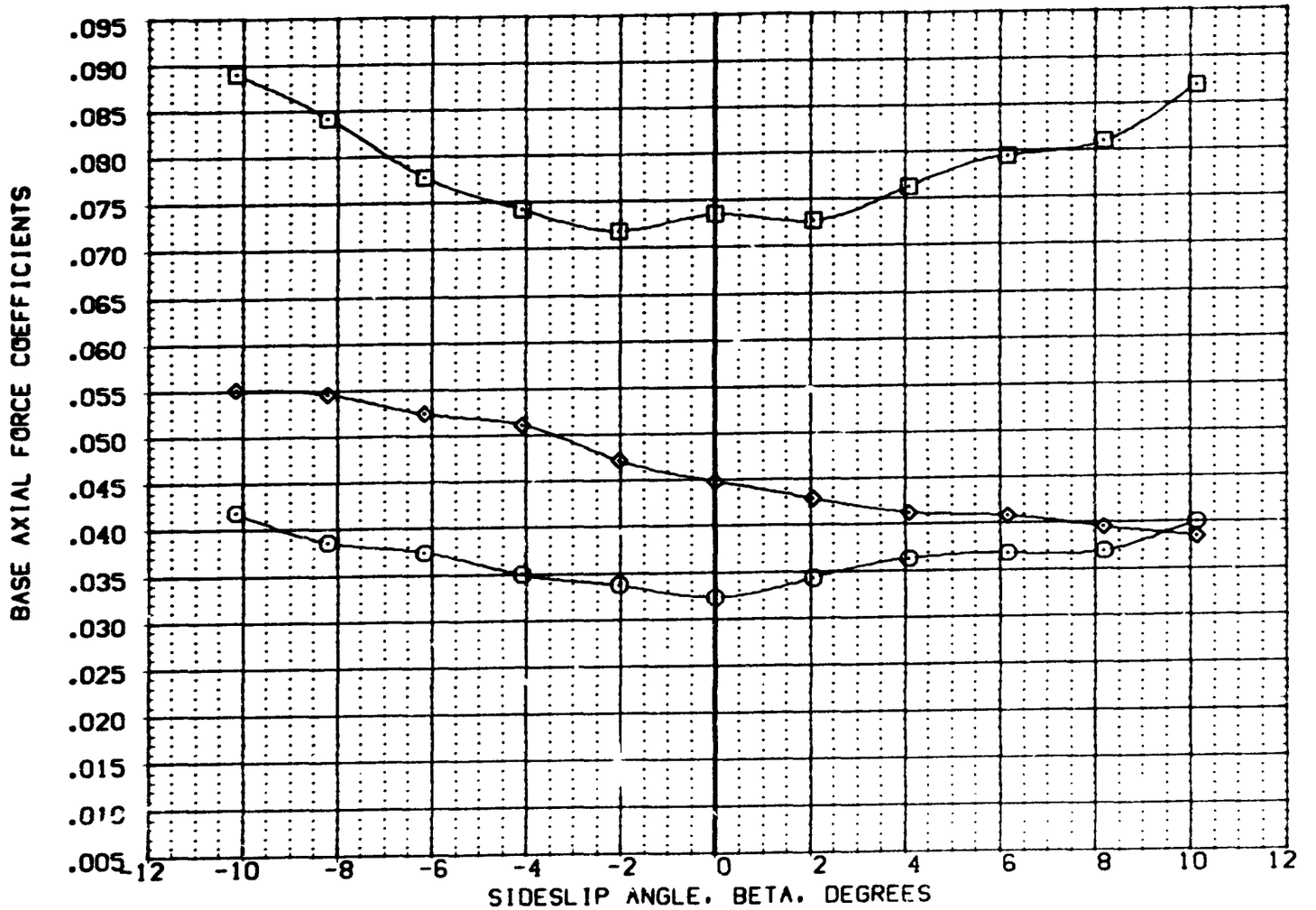
SYMBOL	DATA
○	CABC
◇	CABE
	CAPS

PARAMETRIC VALUES

MACH	.599	ALPHA	.000
DXBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(IA62F)(034)(T14)(S12) (A94003)

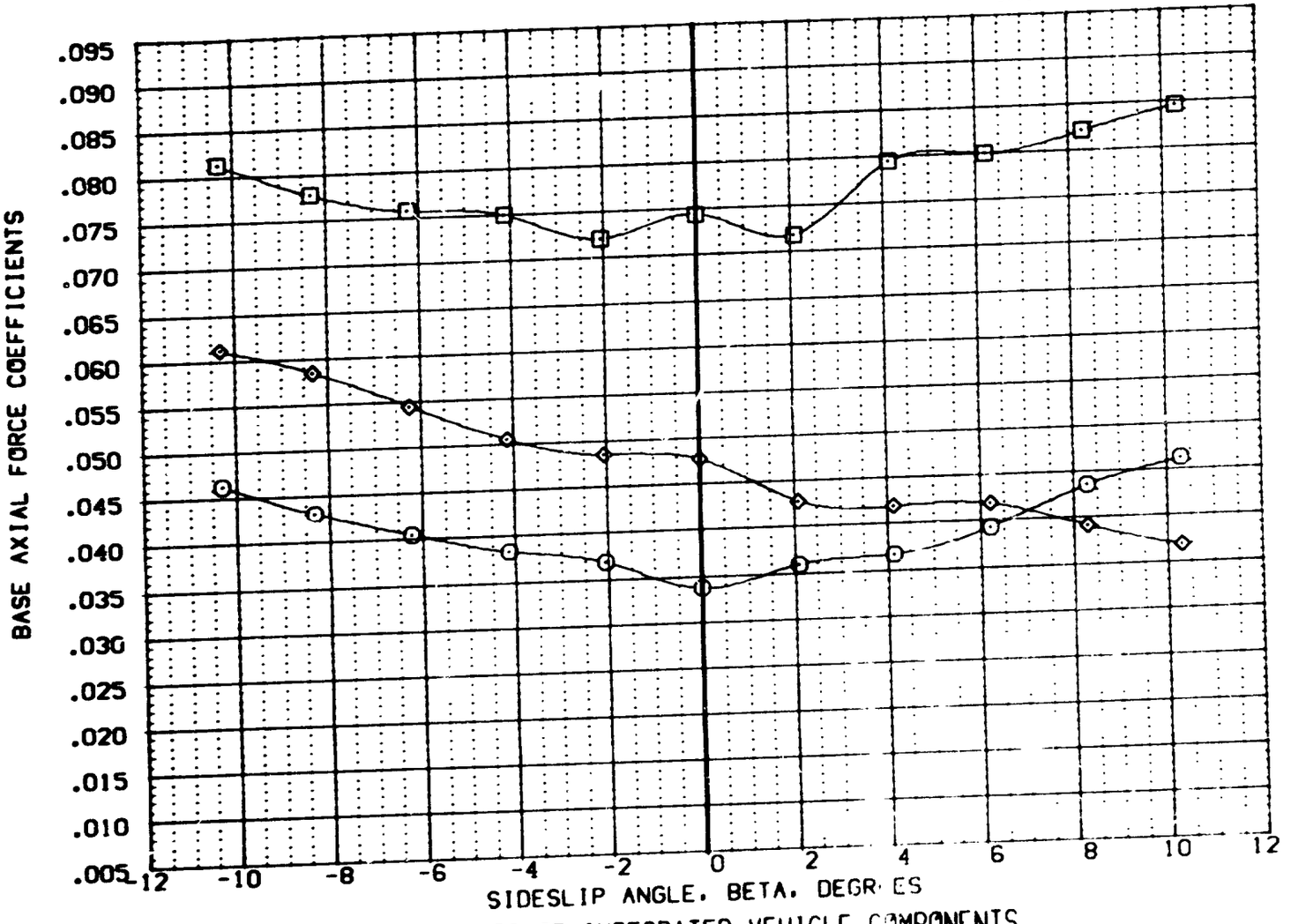
SYMBOL	DATA
○	CABC
□	CABE
◇	CABS

PARAMETRIC VALUES

MACH	.901	ALPHA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BRLF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



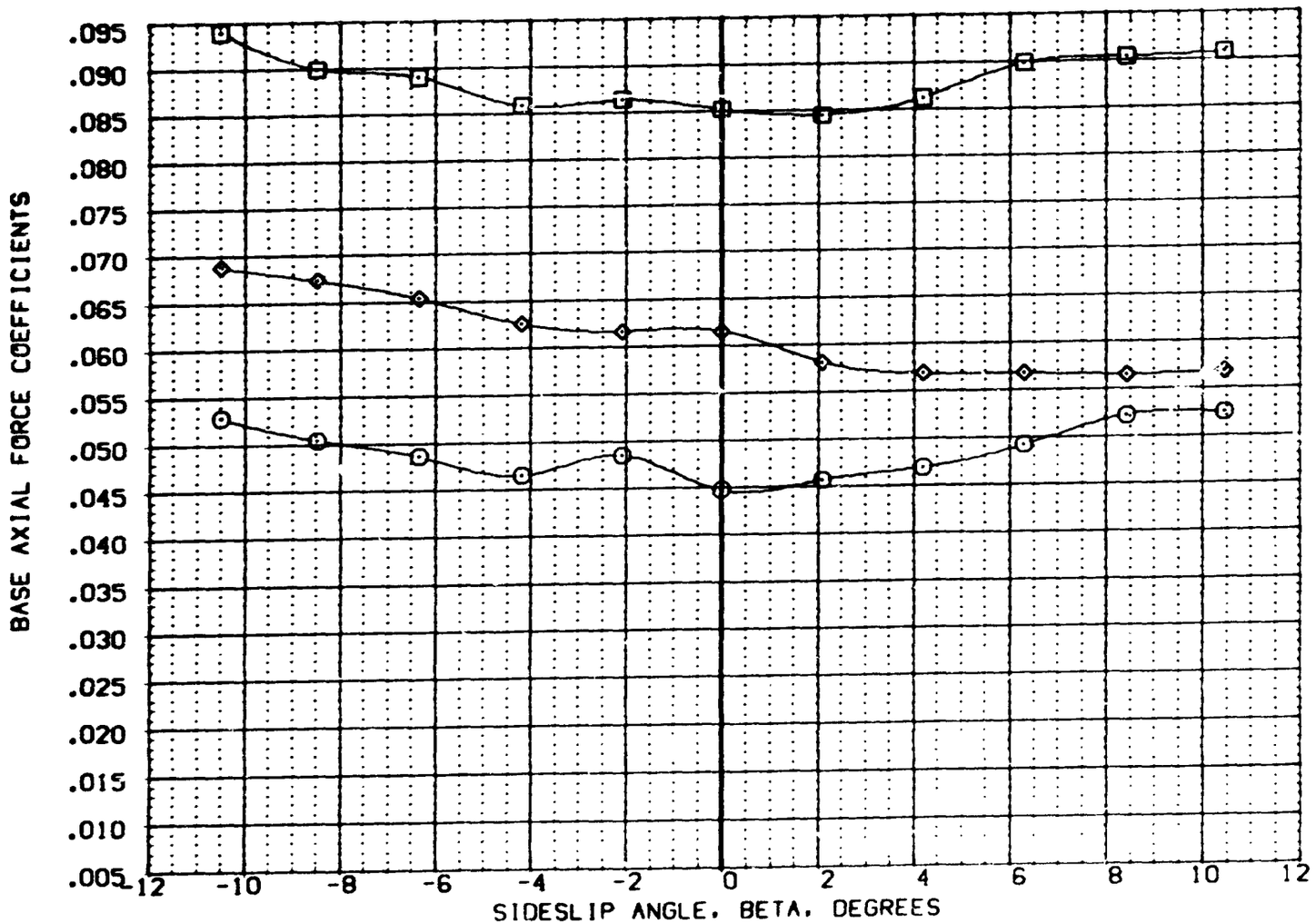
BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T14)(S12) (A94003)

SYMBOL	DATA	PARAMETRIC VALUES			
	CABO	MACH	1.197	ALPHA	.000
□	CAWB	ORIENC	.000	DELTAZ	333.000
◇	CABS				

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T14)(S12) (A94003)

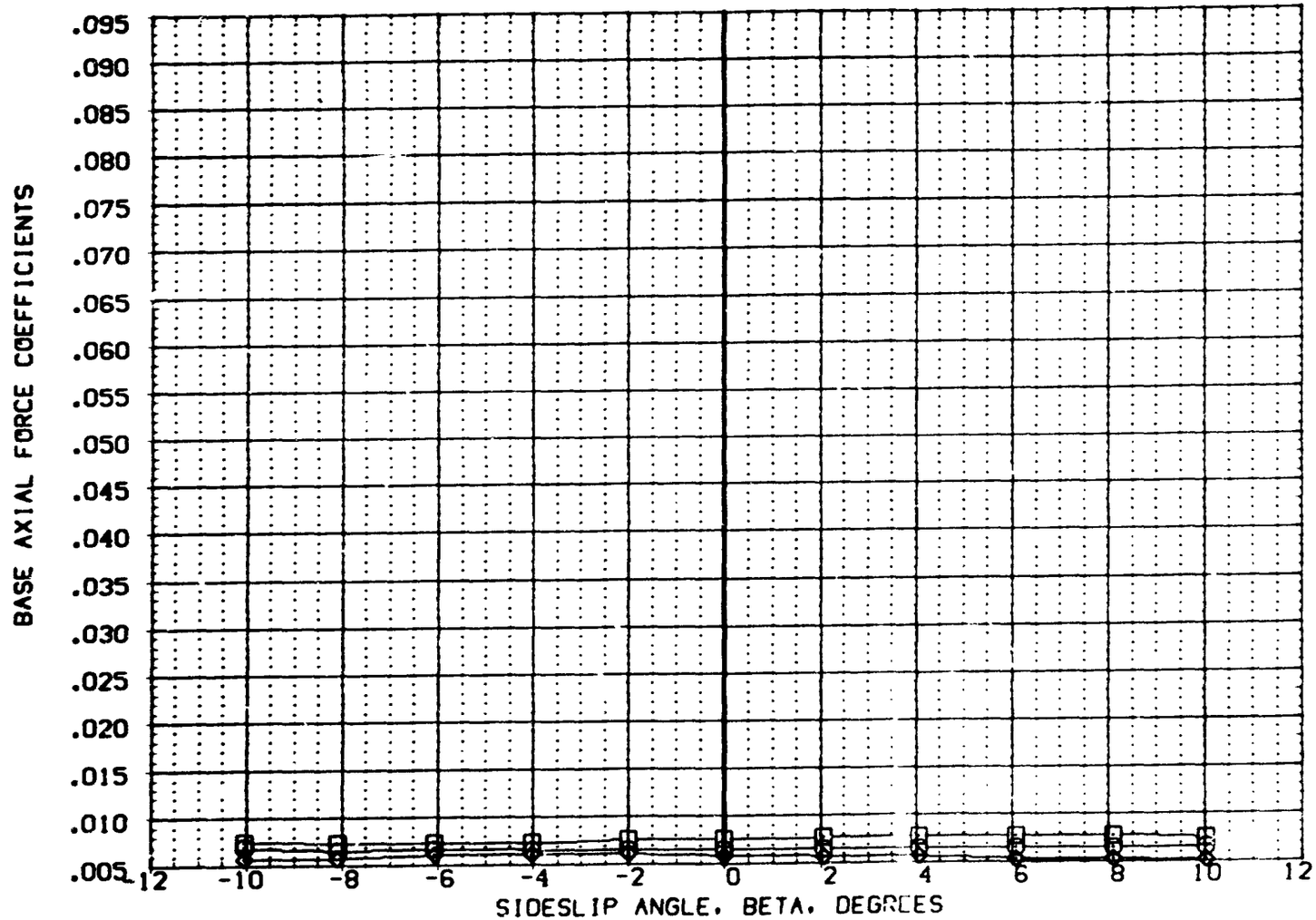
SYMBOL	DATA
○	CABS
□	CABE
◇	CABS

PARAMETRIC VALUES

MACH	4.959	ALPHA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589[IA62F][034][T9][S12][PT4][FR4] (A94006)

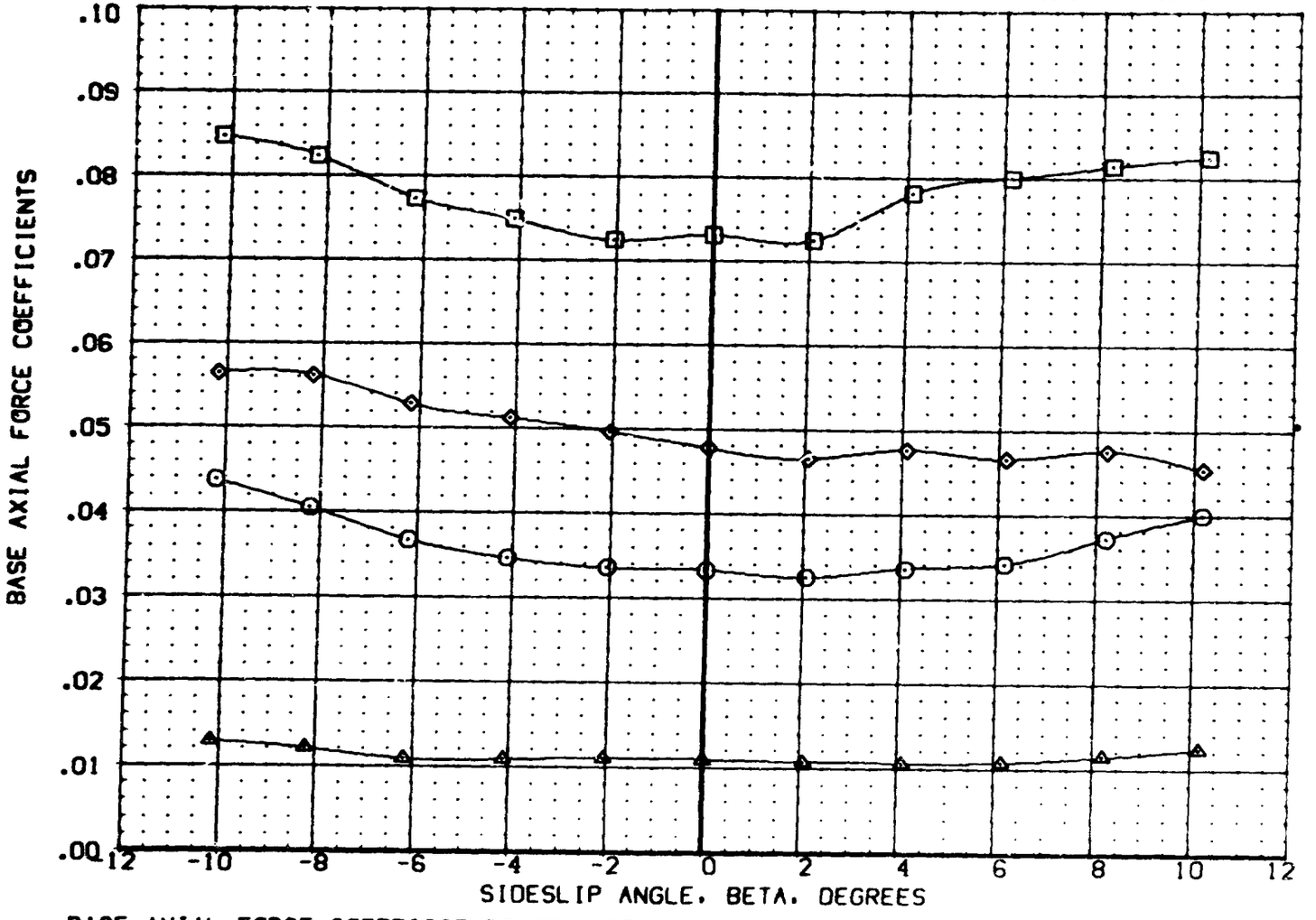
SYMBOL	DATA
○	CAHC
□	CABE
◇	CABS
△	CA??

PARAMETRIC VALUES

MACH	.600	ALPHA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4) (A94006)

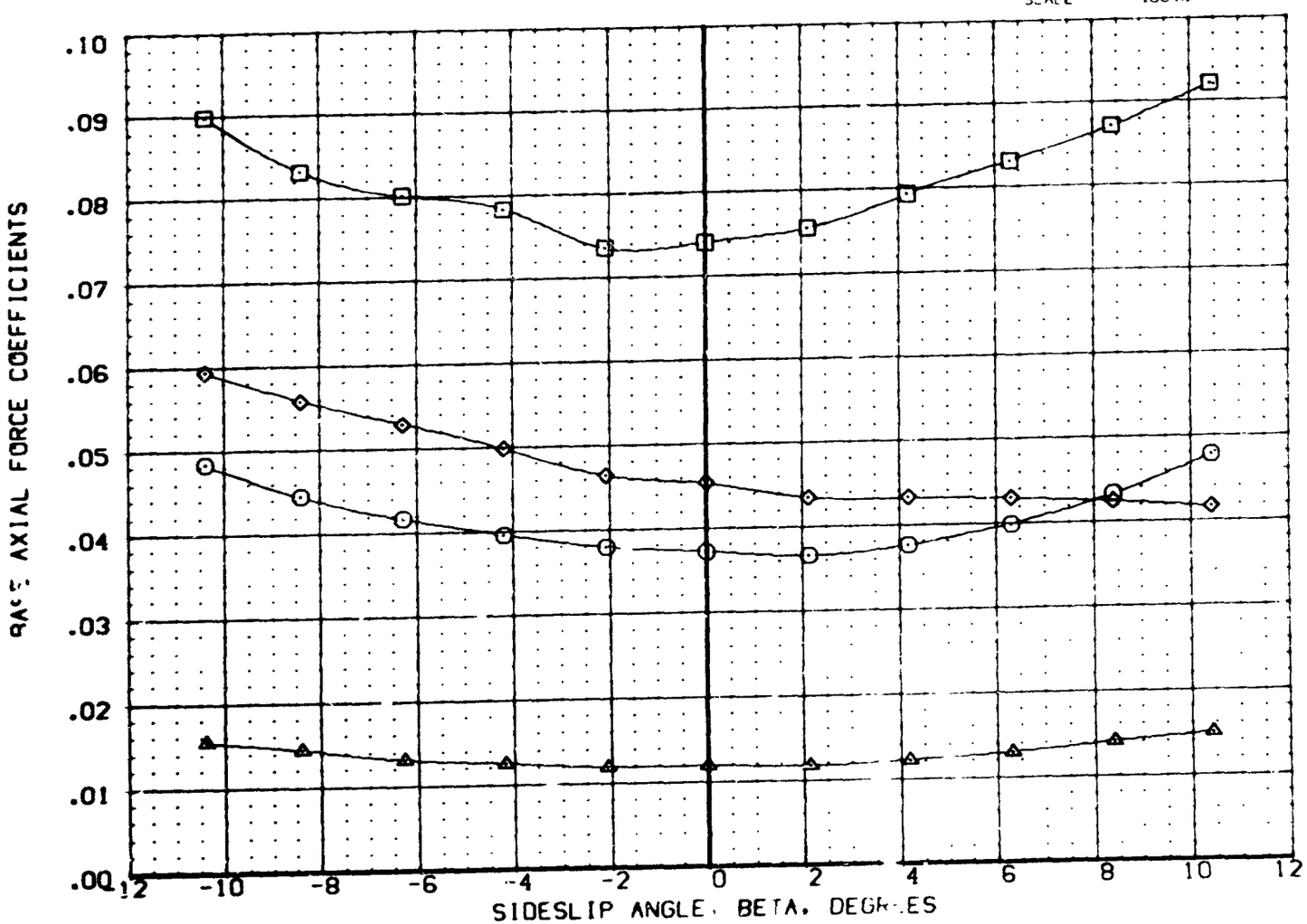
SYMBOL	DATA
	CAFC
□	CAFE
◇	CAFS
△	CAF#

PARAMETRIC VALUES

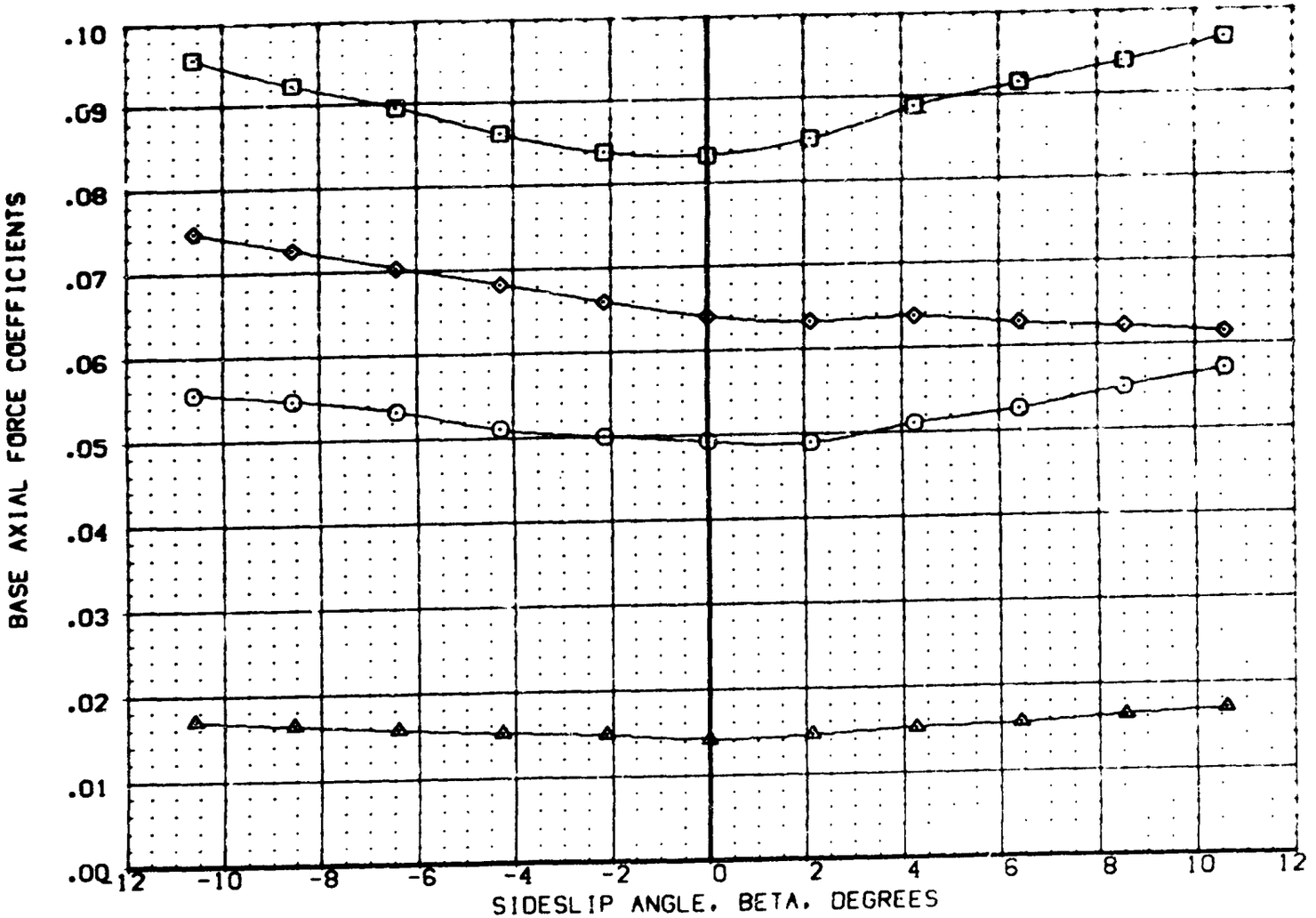
MACH	.904	ALPHA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4) (A94006)

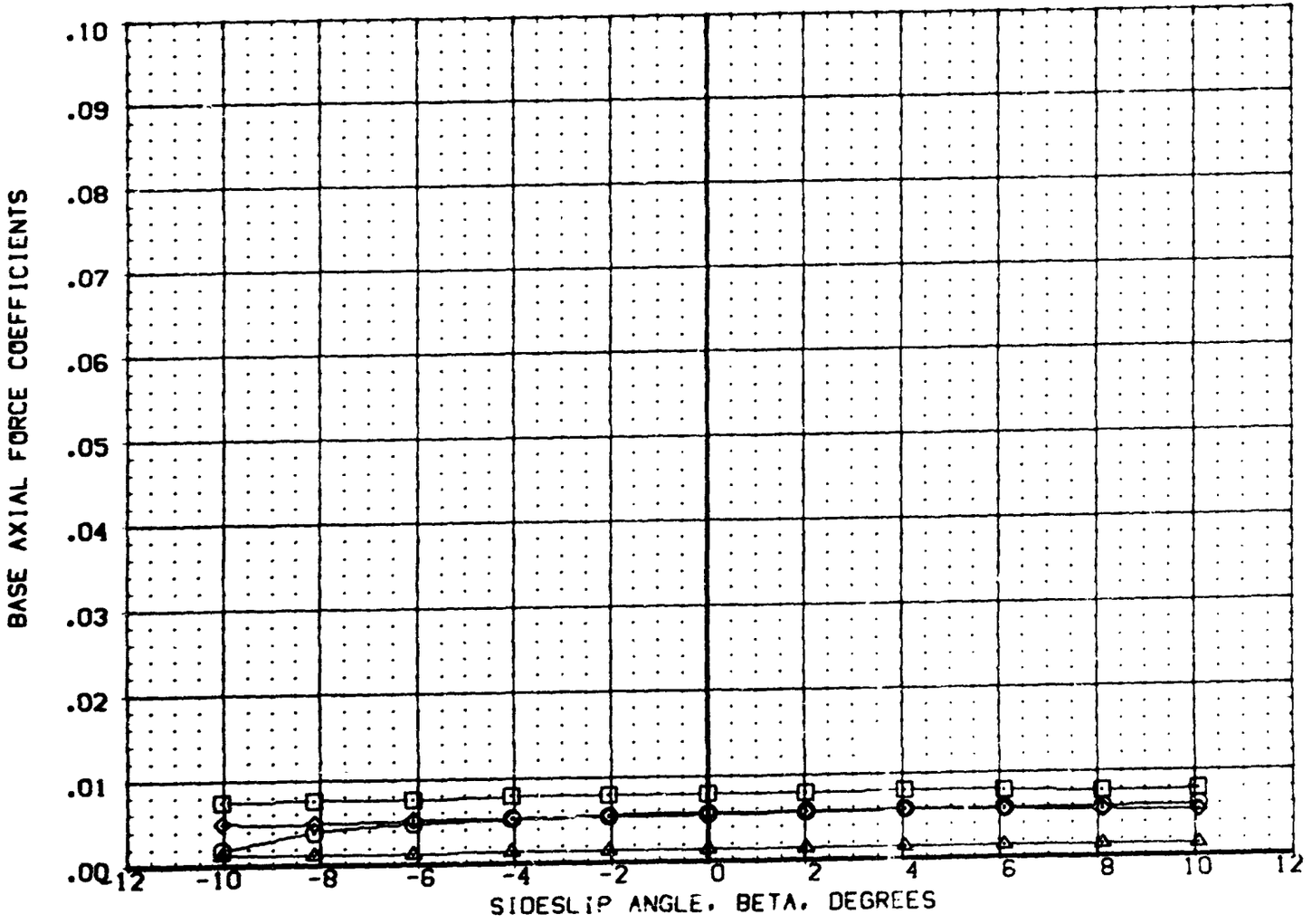
SYMBOL	DATA
○	CABC
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	4.959	ALPHA	.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	2.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T14)(S12) (A94002)

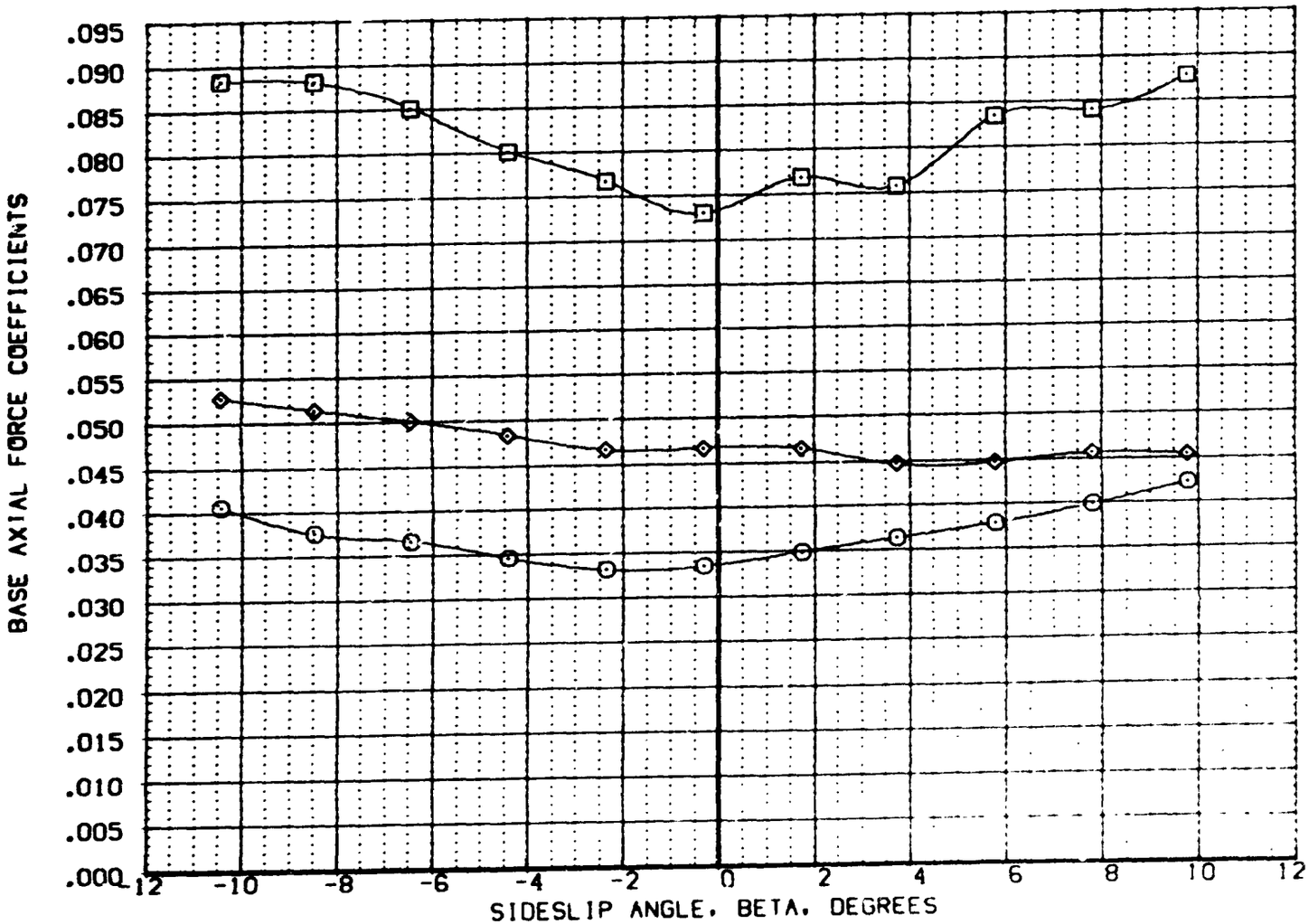
SYMBOL	DATA
○	CARC
□	CABL
◇	CARS

PARAMETRIC VALUES

MACH	.59	ALPHA	5.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.004	



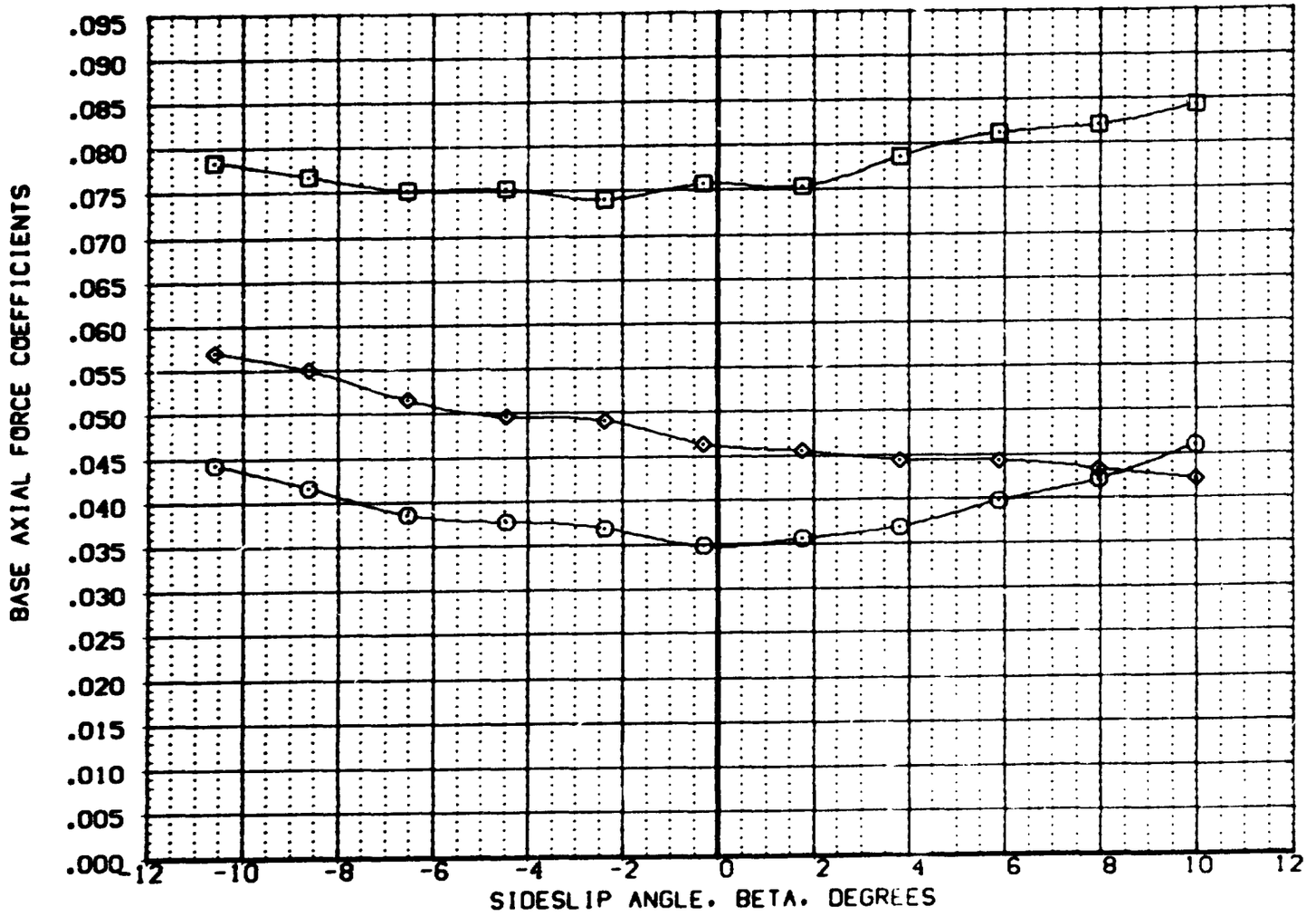
BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T14)(S12) (A94002)

SYMBOL	DATA	PARAMETRIC VALUES			
	CABO	MACH	.902	ALPHA	5.000
□	CABL	ORBINC	.000	DELTAZ	333.000
◇	CABS				

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T14)(S12) (A94002)

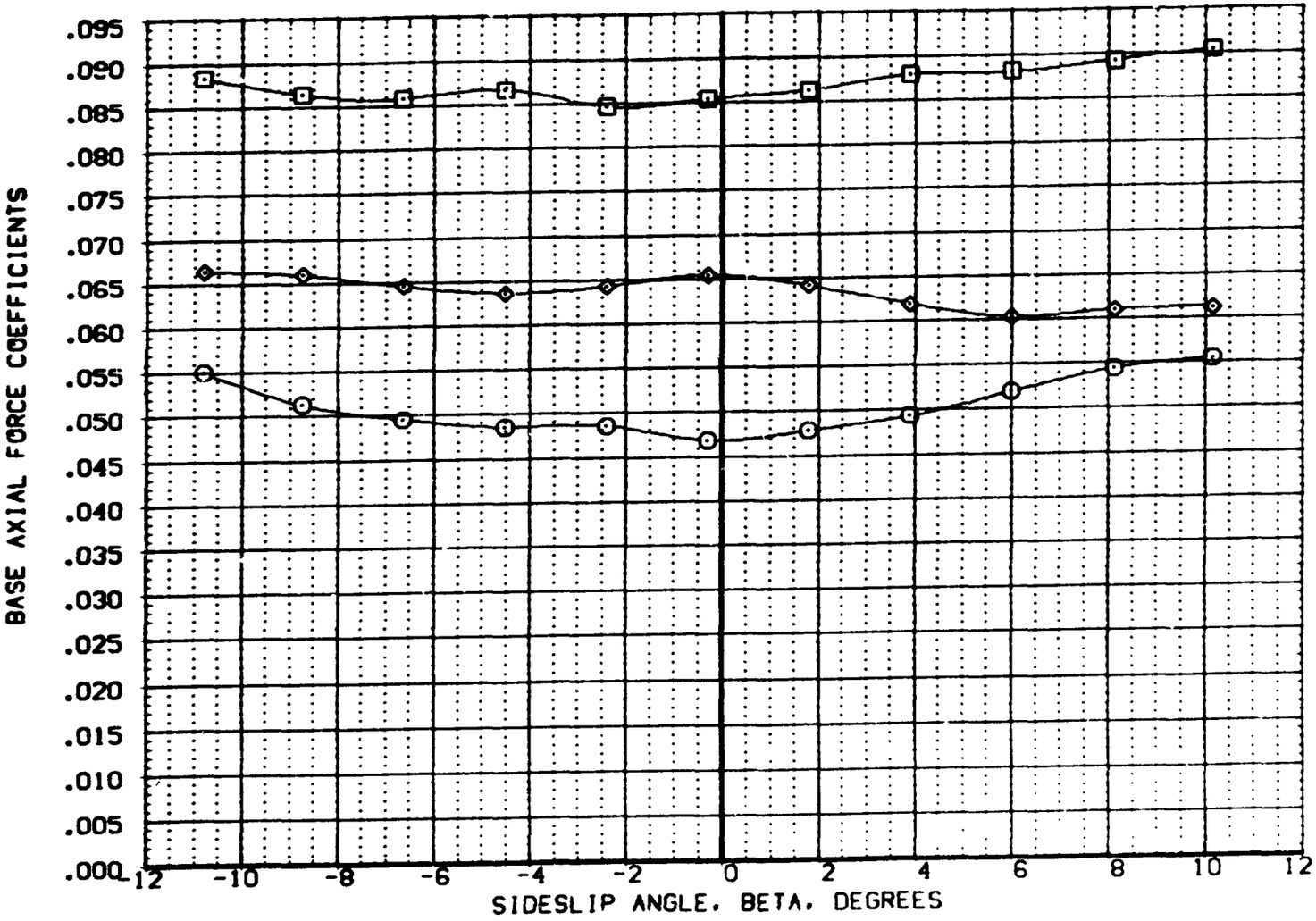
SYMBOL	DATA
○	CAB2
□	CAB1
◇	CAB5

PARAMETRIC VALUES

MACH	1.198	ALPHA	5.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0340	



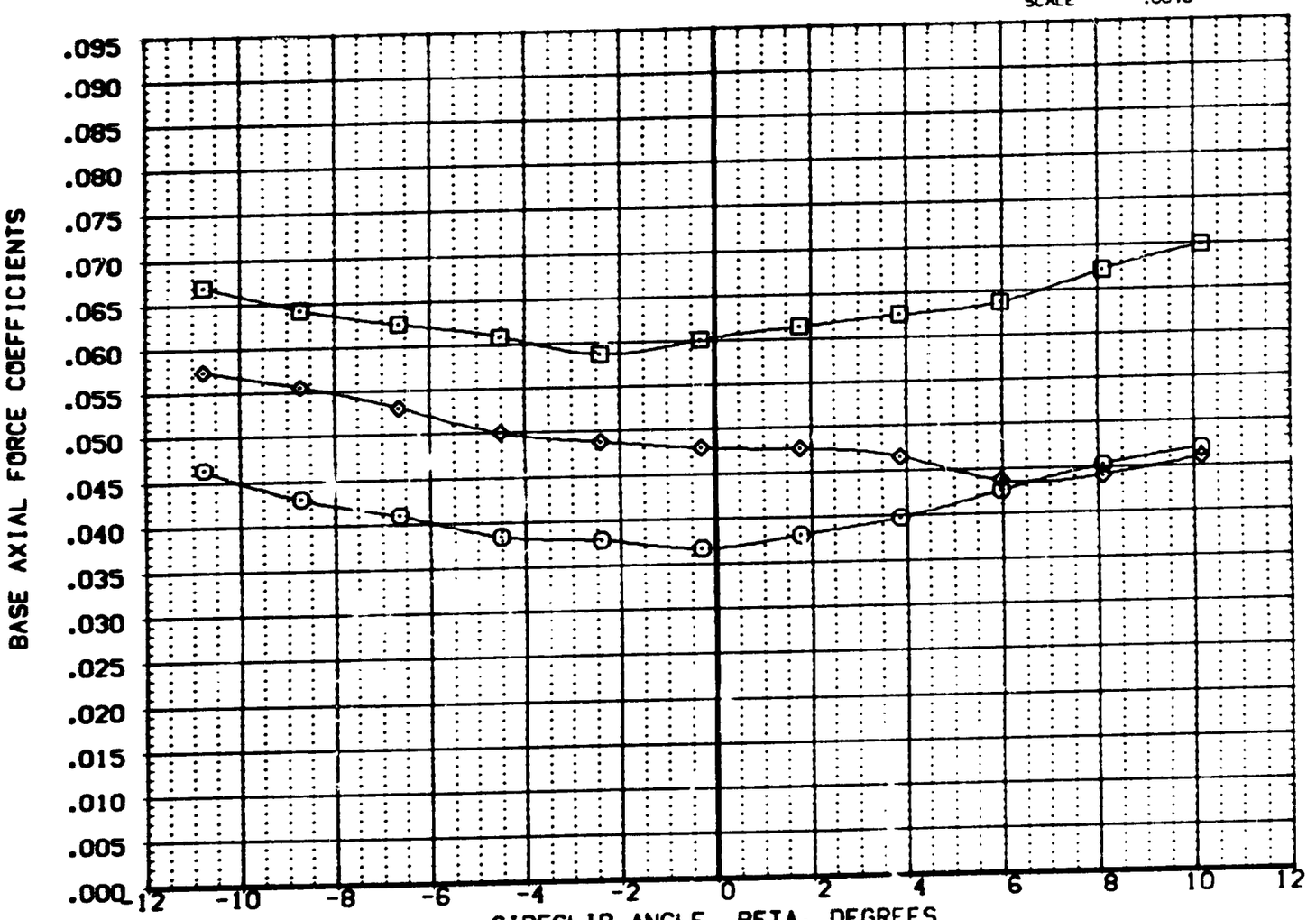
BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T14)(S12) (A94002)

SYMBOL	DATA		PARAMETRIC VALUES		
	CABC	MACH	1.461	ALPHA	5.000
□	CABE	ORBINC	.000	DELTAZ	333.000
◇	CABS				

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



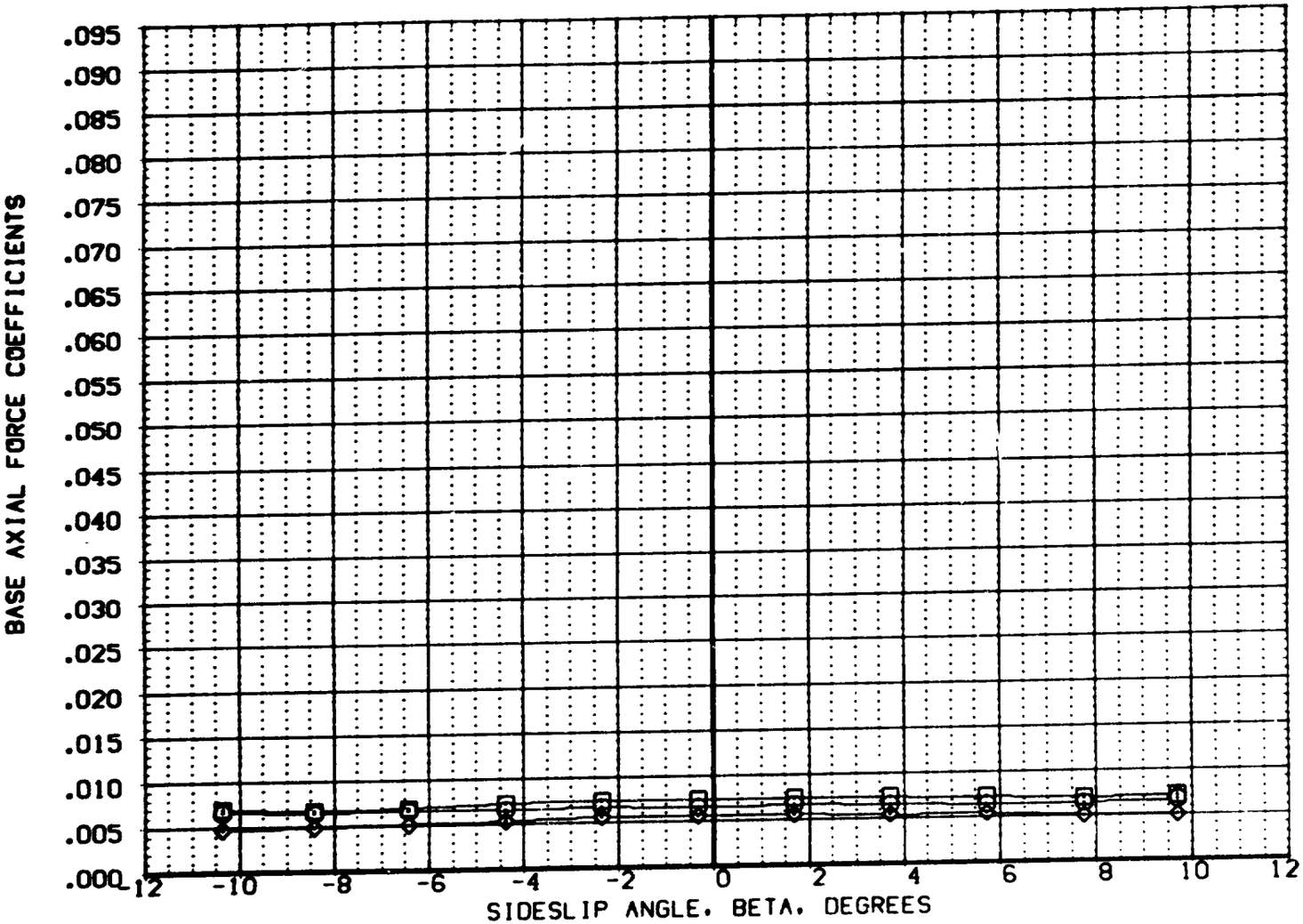
BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(IA62F)(034)(T14)(S12) (A94002)

SYMBOL	DATA		PARAMETRIC VALUES		
○	CABO	MACH	4.959	ALPHA	5.000
□	CABE	ORBINC	.000	DELTAZ	333.000
◇	CABS				

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4) (A94005)

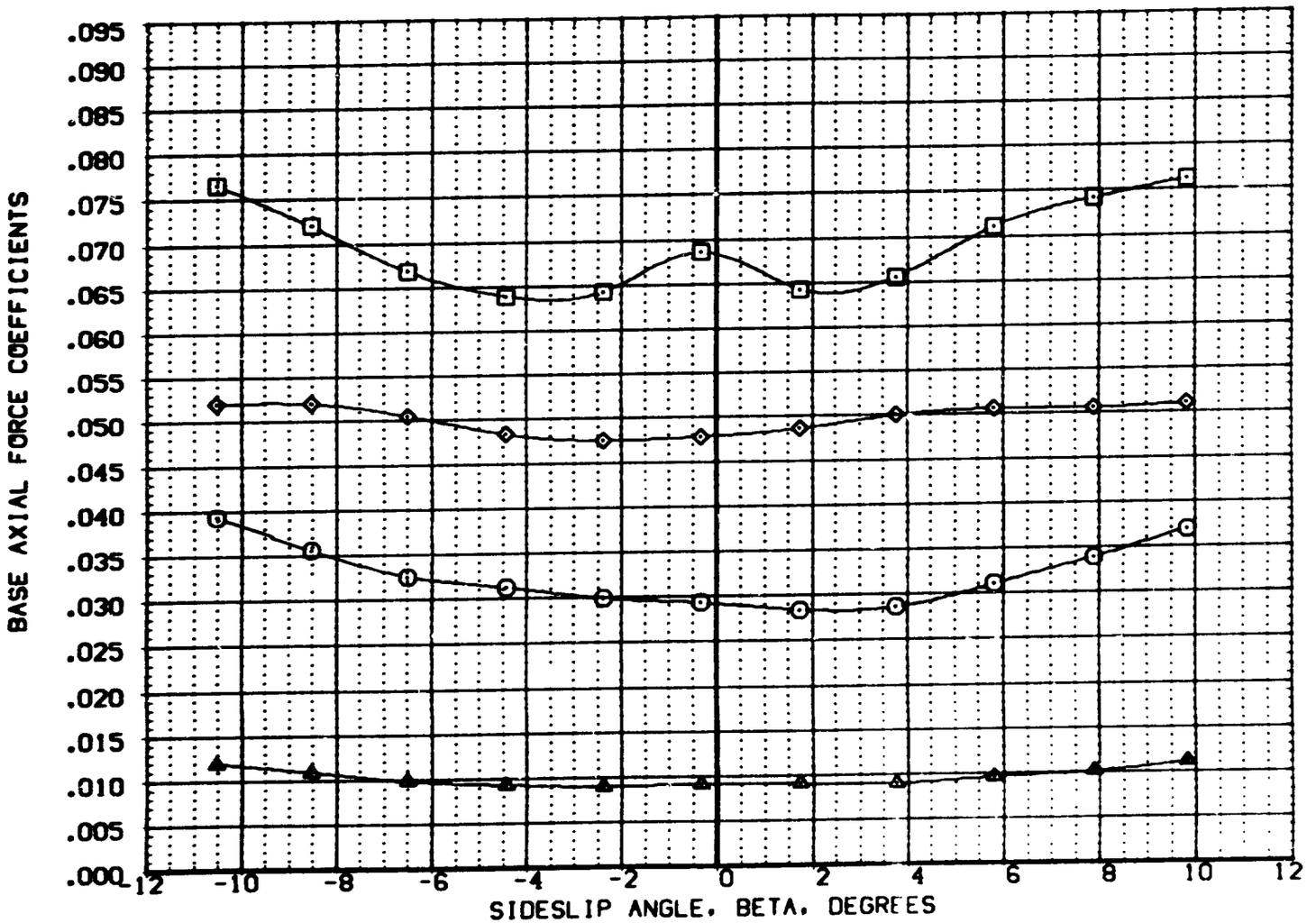
SYMBOL	DATA
○	CABC
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	.600	ALPHA	5.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4) (A94005)

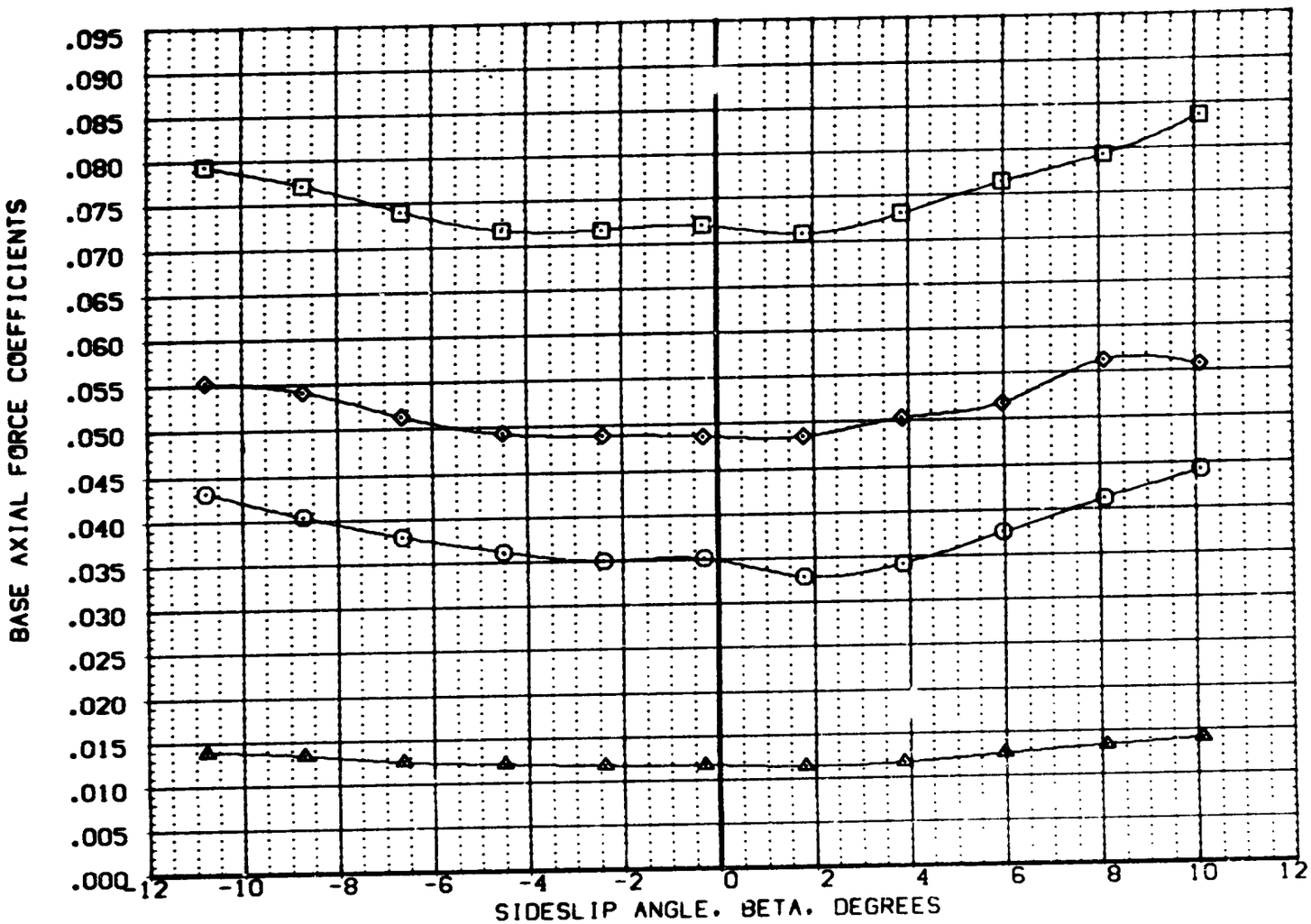
SYMBOL	DATA
○	CABC
□	CABL
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	.902	ALPHA	5.000
DHBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4) (A94005)

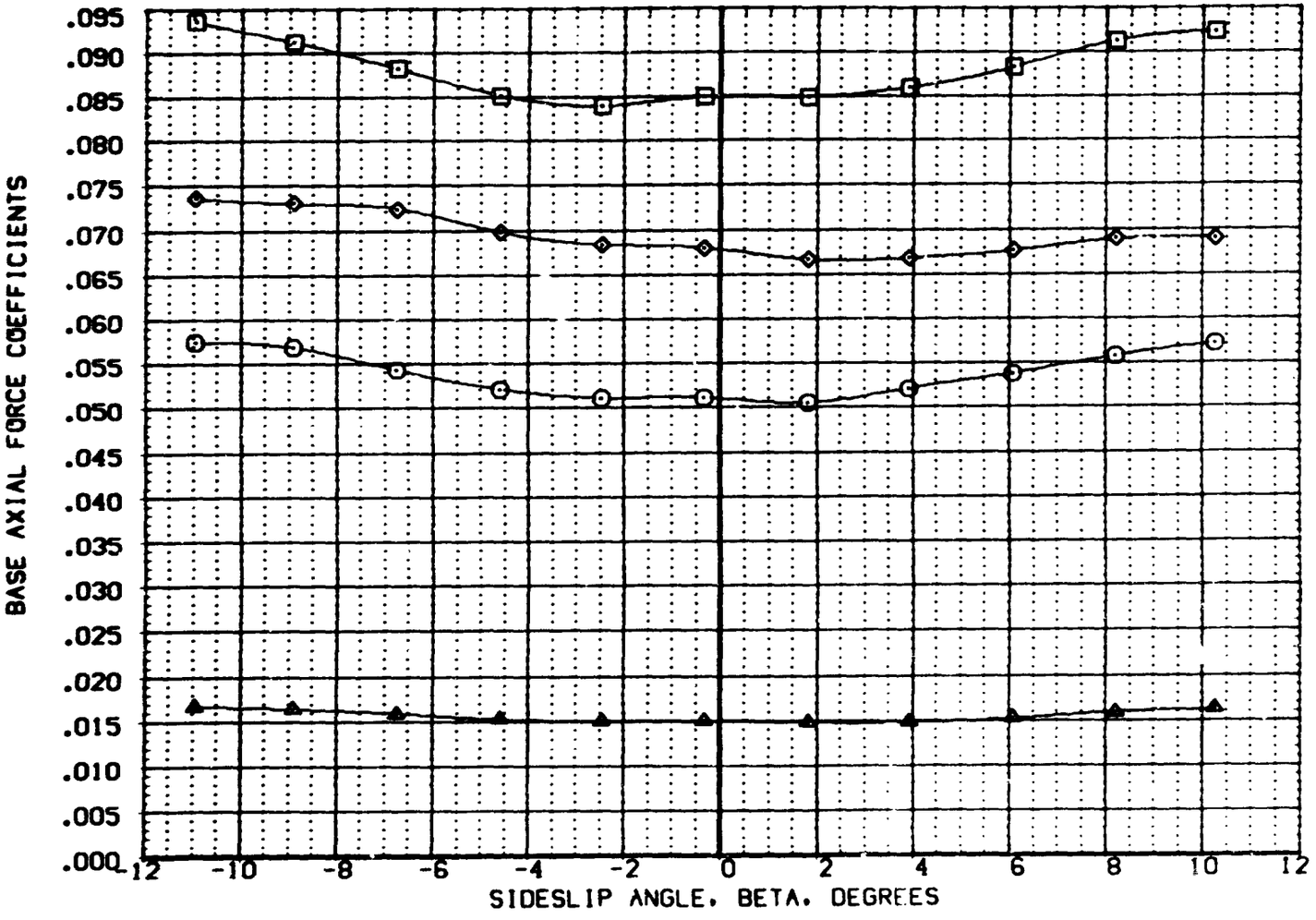
SYMBOL	DATA
○	CABD
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	1.195	ALPHA	5.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(1A62F)(034)(T9)(S12)(PT4)(FR4) (A94005)

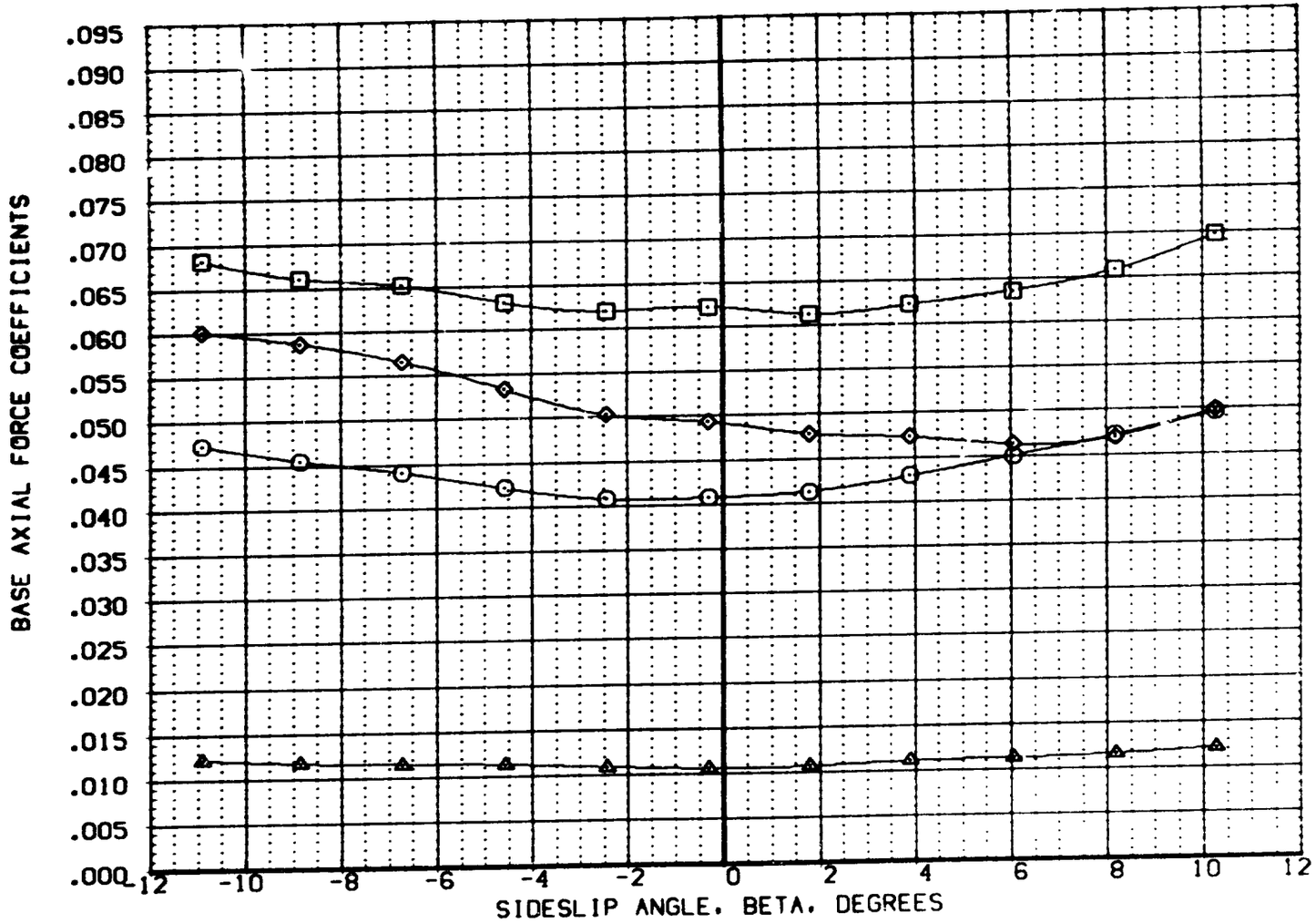
SYMBOL	DATA
	CABC
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	1.467	ALPHA	5.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

MSFC 589(IA62F)(034)(T9)(S12)(PT4)(FR4) (A94005)

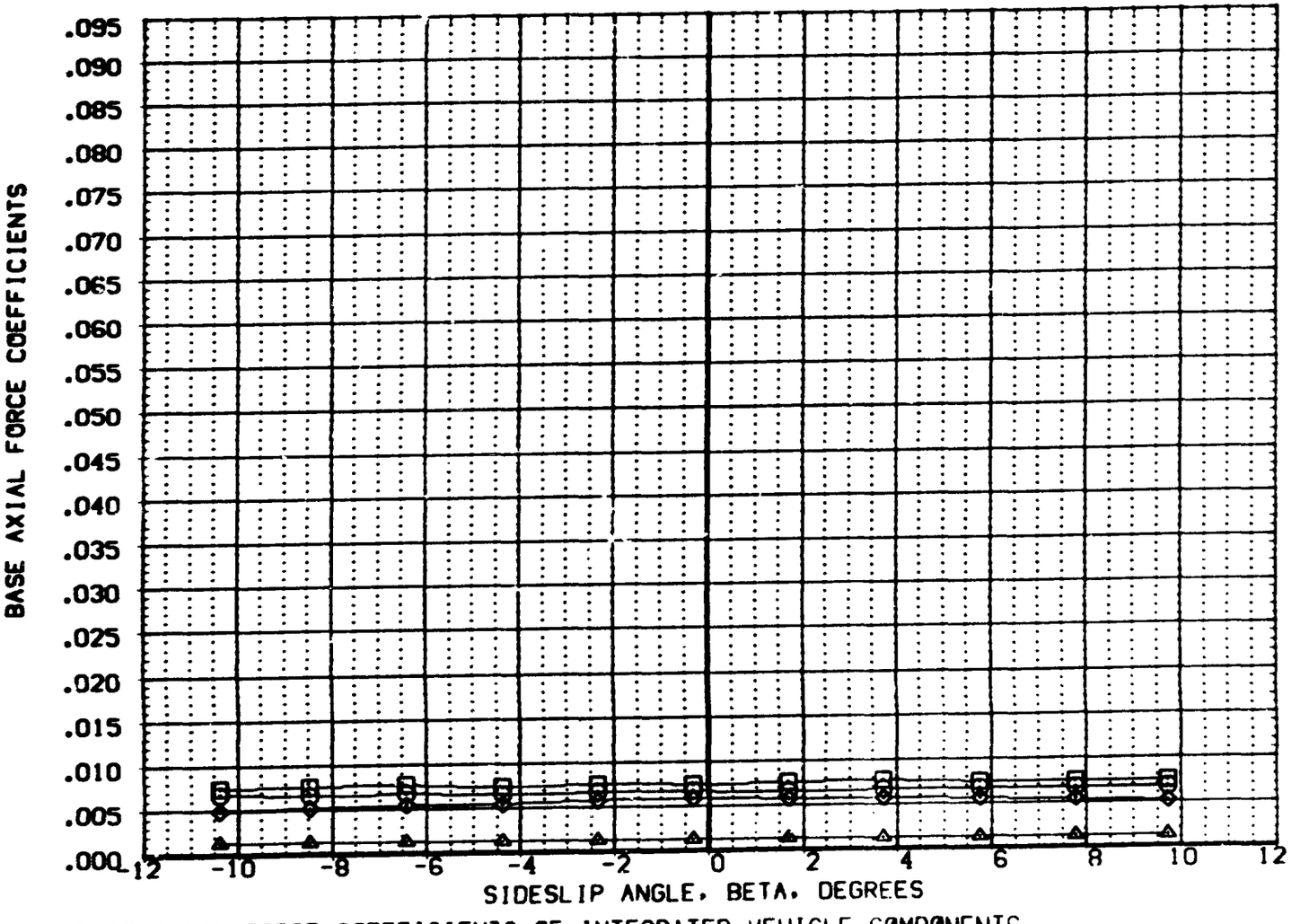
SYMBOL	DATA
○	CABC
□	CABE
◇	CABS
△	CABF

PARAMETRIC VALUES

MACH	4.959	ALPHA	5.000
ORBINC	.000	DELTAZ	333.000

REFERENCE INFORMATION

SREF	6.1980	SQ.IN.
LREF	5.1600	IN.
BREF	5.1600	IN.
XMRP	2.6800	IN.
YMRP	.0000	IN.
ZMRP	.0000	IN.
SCALE	.0040	



BASE AXIAL FORCE COEFFICIENTS OF INTEGRATED VEHICLE COMPONENTS

APPENDIX

TABULATED SOURCE DATA

Plotted Data Tabulations Available
From DMS on Request.

MSFC 509([A62F)(084)(714)(512) (A94001) (8/ NOV /3)

REFERENCE DATA

SREF = 6.1980 SQ.IN. XMRP = 2.6900 IN.
LREF = 3.1600 IN. YMRP = .0000 IN.
BREF = 3.1600 IN. ZMRP = .0000 IN.
SCALE = .0049

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 30/ 0 RN/L = 6.44 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.90/	-10.340	-.64760	.24160	.01650	-.00290	.00260	.08050	.03420	.06310	.05480	.00000
.90/	-8.380	-.53880	.20050	.01650	-.00380	.00200	.08550	.03530	.0/980	.05300	.00000
.90/	-6.310	-.41850	.15660	.01680	-.0047/0	.00150	.09240	.03390	.0/890	.04993	.00000
.90/	-4.450	-.30880	.112/0	.01/20	-.00540	.00130	.09480	.03340	.0//00	.048/0	.00000
.90/	-2.380	-.20630	.07460	.01480	-.00360	.0006C	.0967/0	.03360	.0/300	.04830	.00000
.90/	-.300	-.08010	.03620	.01390	-.00310	.00090	.09600	.03310	.0/3/0	.04540	.00000
.90/	1./60	.01950	.0007/0	.01150	-.002/0	.0006/0	.09400	.03280	.0/330	.04490	.00000
.90/	3.850	.12850	-.034/0	.00900	-.00260	-.00030	.08660	.03340	.0/310	.04520	.00000
.90/	5.940	.24440	-.0/560	.00820	-.001/0	.00000	.0/830	.03300	.0/120	.04/00	.00000
.90/	/.980	.35800	-.12120	.00560	-.001/0	.00000	.06910	.03190	.0/050	.04//0	.00000
.90/	9.940	.48230	-.1//20	.00610	-.00200	-.00030	.06060	.03230	.06530	.04920	.00000
	GRADIENT	.09313	-.01///	-.00095	.00031	-.00015	-.00092	-.00004	-.00036	-.00050	.00000

RUN NO. 31/ 0 RN/L = 8.15 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.902	-10.030	-.60410	.25/50	.00690	.00130	-.00100	.11990	.03/20	.08580	.05840	.00000
.902	-8.080	-.50620	.20100	.01290	-.00140	-.00080	.12/20	.03690	.082/0	.05/30	.00000
.902	-6.080	-.42140	.14090	.011/0	-.00130	-.0011/0	.12920	.03560	.08080	.05490	.00000
.902	-4.5/0	-.291/0	.088/0	.00810	-.00040	-.00150	.13490	.034/0	0/650	.05280	.00000
.902	-2.440	-.164/0	.04090	.00620	.00020	-.00130	.13610	.03440	.0/5/0	.04980	.00000
.902	-.320	-.04110	-.008/0	.00340	.00240	-.001/0	.13420	.03550	.0/230	.04800	.00000
.902	1.800	.08040	-.0602/0	.003/0	.00130	-.00220	.13020	.03500	.0/260	.04590	.00000
.902	3.940	.20660	-.10030	.002/0	.00190	-.00100	.12300	.03540	.0/360	.046/0	.00000
.902	6.110	.31/60	-.12090	.00150	.00130	-.00120	.11990	.035/0	.0/800	.050/0	.00000
.902	8.1/0	.42050	-.168/0	-.00040	.00250	-.000/0	.11920	.03530	.0/290	.05360	.00000
.902	10.180	.52440	-.232/0	-.00640	.00320	-.000/0	.11350	.03520	.0/590	.05/00	.00000
	GRADIENT	.058/6	-.02360	-.00062	.0002/	.00001	-.00140	.00009	-.00042	-.000/9	.00000

MSFC 500(1A06F) (084) (T14) (B12) (A060D1) (2/ NOV /3)

REFERENCE DATA

SREF = 6.1900 SQ.IN. XMRP = 2.4800 IN.
LREF = 3.1600 IN. YMRP = .0000 IN.
BREF = 3.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 32/ 0 RN/L = 8.43 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.996	-10.940	-.76/20	.311	.02130	-.008/0	.00140	.19940	.04820	.09390	.0/440	.00000
.996	-8.900	-.61310	.24/·	.02060	-.00880	.00110	.19800	.04260	.08/00	.06810	.00000
.996	-6./30	-.46080	.19430	.018/0	-.00/00	.00090	.19980	.04480	.08/40	.06940	.00000
.996	-4.580	-.339/0	.14520	.01840	-.00/40	.00080	.20/30	.04550	.08650	.06600	.00000
.996	-2.440	-.20440	.09280	.01800	-.00930	.00030	.20930	.04590	.08/50	.06540	.00000
.996	-.280	-.06810	.03/40	.01910	-.00890	-.00040	.20250	.04430	.08/60	.06370	.00000
.996	1.830	.08160	-.03680	.01240	-.00950	-.00190	.19540	.04310	.08380	.06010	.00000
.996	4.000	.21360	-.09650	.00//0	.00000	-.00240	.19620	.045/0	.08/20	.064/0	.00000
.996	6.160	.34900	-.15130	.004/0	.001/0	-.00130	.18580	.04300	.08830	.06330	.00000
.996	8.260	.46810	-.19630	-.00210	.00420	-.00080	.1/340	.04330	.08640	.06/00	.00000
.996	10.280	.568/0	-.230/0	-.00380	.00330	-.00060	.16//0	.04080	.09120	.06890	.00000
	GRADIENT	.06461	-.02861	-.00126	.00091	-.00040	-.00150	-.00011	-.00011	-.0003/	.00000

RUN NO. 33/ 0 RN/L = 8./1 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.200	-11.0/0	-.///30	.29590	.02910	-.015/0	.00290	.242/0	.04/40	.090/0	.06950	.00000
1.200	-8.990	-.60490	.22/60	.02500	-.01560	.00260	.246/0	.04650	.08880	.06/20	.00000
1.200	-6./90	-.43290	.15810	.02160	-.01250	.00140	.24990	.04/20	.08/00	.06550	.00000
1.200	-4.610	-.2/8/0	.09620	.02030	-.01100	.00060	.25320	.04/40	.08520	.06360	.00000
1.200	-2.440	-.13390	.03810	.01960	-.00640	-.00010	.25610	.04660	.08/50	.06250	.00000
1.200	-.290	.00380	-.01290	.0148)	-.00510	-.00050	.25820	.04/10	.08/10	.06160	.00000
1.200	1.880	.12940	-.064/0	.01490	-.005/0	-.00090	.25330	.04800	.08850	.06210	.00000
1.200	4.050	.25290	-.11190	.01300	-.00500	-.00080	.24/00	.04680	.08840	.06430	.00000
1.200	6.220	.37950	-.162/0	.00900	-.00260	-.00090	.24360	.04960	.08620	.06610	.00000
1.200	8.340	.49600	-.20660	.00550	-.00150	-.00050	.23640	.05110	.08510	.06/30	.00000
1.200	10.390	.61030	-.24630	.00590	-.00210	-.00090	.228/0	.05210	.081/0	.06820	.00000
	GRADIENT	.06128	-.02398	-.000/3	.00059	-.0001/	-.000/0	.00019	.00004	.00005	.00000

NSFC 500(IA6BF)(034)(T14)(S12) (A94001) (27 NOV 73)

REFERENCE DATA

SREF = 9.1600 SQ.IN. XMRP = 2.6800 IN.
LREF = 9.1600 IN. YMRP = .0000 IN.
BREF = 9.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 22/ 0 RN/L = 8.55 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.463	-11.540	-.79320	.28720	-.03480	.01720	-.00120	.26830	.03550	.03730	.09160	.00000
1.463	-8.430	-.68000	.21790	-.03170	.01600	-.00480	.27080	.03450	.03070	.09080	.00000
1.463	-7.230	-.49800	.19750	-.02920	.01620	-.00620	.26870	.03460	.06950	.09010	.00000
1.463	-5.040	-.30510	.09620	-.02870	.01620	-.00670	.27040	.03480	.06790	.04810	.00000
1.463	-2.860	-.10640	.04400	-.02830	.01640	-.00700	.27000	.03510	.06780	.04680	.00000
1.463	-.680	-.02740	-.00850	-.03100	.01850	-.00770	.27240	.03490	.06520	.04670	.00000
1.463	1.470	.10410	-.09920	-.03300	.02040	-.00850	.27320	.03490	.06270	.04710	.00000
1.463	3.630	.22050	-.08460	-.03380	.02020	-.00800	.27080	.03610	.06280	.04860	.00000
1.463	5.800	.33680	-.13750	-.03580	.02080	-.00920	.26950	.03700	.06170	.04990	.00000
1.463	7.950	.45220	-.17830	-.03900	.01940	-.00930	.26230	.03760	.05890	.05020	.00000
1.463	10.010	.56600	-.21270	-.03580	.01900	-.00930	.25740	.03880	.05670	.05030	.00000
	GRADIENT	.05974	-.02136	-.00006	.00062	-.00031	.00015	.00014	-.00081	.00025	.00000

RUN NO. 21/ 0 RN/L = 6.18 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
2.980	-10.930	-.56140	.20160	-.02660	.01660	-.00500	.26240	.01750	.02640	.01850	.00000
2.980	-8.880	-.36010	.12940	-.02710	.01520	-.00500	.24430	.01720	.02480	.01690	.00000
2.980	-2.760	-.17180	.06800	-.02520	.01410	-.00470	.23100	.01790	.02350	.01500	.00000
2.980	-.680	-.08040	.04760	-.02380	.01240	-.00430	.22970	.01820	.02350	.01680	.00000
2.980	1.380	-.00870	.02430	-.02120	.01060	-.00360	.21980	.01810	.02310	.01850	.00000
2.980	3.440	.08160	-.00780	-.02210	.01110	-.00460	.21650	.01850	.02370	.01770	.00000
2.980	5.540	.17680	-.03950	-.02180	.01030	-.00410	.20970	.01880	.02330	.01700	.00000
2.980	7.580	.27410	-.07460	-.02250	.01070	-.00420	.20610	.01860	.02190	.01670	.00000
2.980	9.570	.37170	-.11080	-.02340	.01010	-.00440	.20080	.01830	.02070	.01690	.00000
	GRADIENT	.04078	-.01213	.00058	-.00052	.00004	-.00239	.00008	.00001	-.00020	.00000

RUN NO. 20/ 0 RN/L = 7.67 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
4.990	-9.810	-.42100	.14660	-.02020	.01370	-.00290	.26710	.00690	.00800	.00610	.00000
4.990	-8.800	-.30290	.13690	-.02020	.01130	-.00290	.25800	.00610	.00780	.00620	.00000
4.990	-6.760	-.31380	.11730	-.02180	.01270	-.00310	.24480	.00650	.00790	.00630	.00000
4.990	-4.730	-.23710	.09440	-.02160	.01260	-.00330	.23040	.00630	.00760	.00630	.00000
4.990	-2.710	-.16020	.07430	-.01950	.01080	-.00360	.21850	.00640	.00780	.00640	.00000
4.990	-.660	-.08820	.05510	-.01910	.01070	-.00250	.21010	.00630	.00740	.00630	.00000
4.990	1.360	-.03420	.03730	-.01920	.00680	-.00300	.20270	.00640	.00760	.00610	.00000
4.990	3.300	.03890	.01480	-.01900	.00680	-.00330	.19510	.00690	.00760	.00600	.00000
4.990	5.440	.11120	-.00860	-.01660	.00620	-.00300	.18640	.00660	.00730	.00580	.00000
4.990	7.460	.19190	-.03660	-.01240	.00360	-.00270	.18110	.00660	.00710	.00560	.00000
4.990	9.410	.27220	-.06470	-.01420	.00320	-.00320	.17590	.00670	.00690	.00590	.00000
	GRADIENT	.03974	-.00866	.00086	-.00089	.00003	-.00429	.00002	-.00000	-.00004	.00000

MSFC 909(IA62F) (084) (T14) (S12) (A84002) (2/ NOV /3)

REFERENCE DATA

SREF = 6.1900 SQ.IN. XMRP = 2.6400 IN.
LREF = 5.1600 IN. YMRP = .0000 IN.
BREF = 5.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = 5.000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 24/ 0 RN/L = 6.43 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.909	-10.440	.22290	-.07780	.37490	-.19130	.06480	.03650	.04060	.08840	.05280	.00000
.909	-8.480	.20800	-.07820	.29780	-.12180	.05300	.06400	.03750	.08820	.05140	.00000
.909	-6.460	.20840	-.06870	.20890	-.03480	.03720	.07000	.03660	.08520	.05010	.00000
.909	-4.400	.19880	-.06330	.12630	-.05100	.02140	.07730	.03460	.08020	.04840	.00000
.909	-2.360	.19180	-.05800	.04260	-.01720	.00590	.08180	.03310	.07680	.04660	.00000
.909	-.320	.18870	-.05780	-.03500	.01700	-.00830	.08510	.03340	.07300	.04670	.00000
.909	1.730	.19950	-.06500	-.11320	.04950	-.02220	.08100	.03490	.07690	.04650	.00000
.909	3.740	.20320	-.07110	-.19180	.08330	-.03680	.08380	.03630	.07580	.04460	.00000
.909	5.780	.20850	-.07360	-.26850	.11460	-.05150	.07480	.03790	.08340	.04470	.00000
.909	7.820	.20730	-.07890	-.34320	.14290	-.06460	.07200	.03980	.08400	.04560	.00000
.909	9.780	.20820	-.08300	-.41510	.16670	-.07550	.06790	.04230	.08770	.04540	.00000
	GRADIENT	.00081	-.00111	-.03688	.01646	-.00109	.00060	.00025	-.00043	-.00038	.00000

RUN NO. 25/ 0 RN/L = 8.15 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.902	-10.480	.26470	-.11500	.41440	-.16260	.06780	.11960	.04430	.07850	.05700	.00000
.902	-8.610	.26090	-.11880	.33410	-.13190	.05670	.11860	.04160	.07680	.05500	.00000
.902	-6.590	.27570	-.12210	.23890	-.10220	.04130	.12380	.03860	.07520	.05160	.00000
.902	-4.490	.27180	-.12320	.14690	-.06380	.02540	.12760	.03770	.07930	.04960	.00000
.902	-2.380	.27370	-.12280	.05670	-.02380	.00920	.12780	.03690	.07400	.04910	.00000
.902	-.310	.27480	-.12110	-.04890	.02800	-.00940	.13120	.03480	.07570	.04640	.00000
.902	1.760	.28010	-.12560	-.14060	.07090	-.02430	.13360	.03560	.07540	.04550	.00000
.902	3.810	.27100	-.11980	-.22170	.10550	-.03930	.13440	.03690	.07860	.04440	.00000
.902	5.860	.26400	-.11370	-.30310	.13530	-.05360	.13390	.03970	.08120	.04430	.00000
.902	7.980	.25550	-.10790	-.38640	.15910	-.06600	.13410	.04210	.08200	.04350	.00000
.902	9.980	.24790	-.10140	-.47090	.18770	-.07880	.13250	.04600	.08430	.04210	.00000
	GRADIENT	-.00035	.00019	-.04524	.02098	-.00789	.00494	-.00014	.00039	-.00068	.00000

NSFC 500(IA68F) (CB4) (T14) (S12) (A94008) (27 NOV 73)

REFERENCE DATA

SREF = 6.1000 SQ.IN. XMRP = 2.6000 IN.
LREF = 3.1600 IN. YMRP = .0000 IN.
BREF = 3.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = 3.000 CRBINC = .000
DELTAZ = 333.000

RUN NO. 26/ 0 RN/L = 8.71 GRADIENT INTERVAL = -3.00/ 3.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.198	-10.000	.31040	-.14380	.44370	-.16080	.07620	.23670	.03500	.08840	.06640	.00000
1.198	-8.760	.30880	-.14100	.34070	-.13060	.06030	.24330	.03130	.08640	.06380	.00000
1.198	-6.680	.31130	-.14080	.23680	-.08880	.04230	.24750	.04950	.08580	.06450	.00000
1.198	-4.320	.30700	-.13480	.14420	-.06320	.02970	.24860	.04850	.08470	.06360	.00000
1.198	-2.410	.30280	-.12880	.06120	-.02230	.00820	.24880	.04850	.08470	.06430	.00000
1.198	-.380	.30400	-.12960	-.02980	.01640	-.00860	.25030	.04680	.08540	.06540	.00000
1.198	1.780	.30710	-.13250	-.11080	.05340	-.02720	.25260	.04780	.08630	.06410	.00000
1.198	3.800	.30710	-.13560	-.20160	.08410	-.04340	.25350	.04930	.08800	.06190	.00000
1.198	6.010	.30810	-.13810	-.29330	.11840	-.06060	.25360	.05190	.08820	.06030	.00000
1.198	8.120	.31060	-.14170	-.38070	.15290	-.07610	.25020	.05440	.08930	.06100	.00000
1.198	10.150	.31080	-.14580	-.48460	.18380	-.08920	.24480	.05550	.09040	.06120	.00000
	GRADIENT	.00021	-.00029	-.04143	.01665	-.00830	.00066	.00004	.00020	-.00017	.00000

RUN NO. 23/ 0 RN/L = 8.55 GRADIENT INTERVAL = -3.00/ 3.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.404	-10.770	.28720	-.12960	.44080	-.16780	.07040	.25010	.04630	.06700	.05750	.00000
1.404	-8.730	.28600	-.12840	.33060	-.12240	.05430	.25740	.04290	.06430	.05560	.00000
1.404	-6.640	.28680	-.12450	.22660	-.08100	.03650	.26310	.04080	.06250	.05310	.00000
1.404	-4.310	.28720	-.12420	.13300	-.04480	.02260	.26700	.03840	.06080	.05000	.00000
1.404	-2.410	.28640	-.12100	.04660	-.01100	.00670	.26880	.03780	.05870	.04880	.00000
1.404	-.380	.28380	-.11840	-.05550	.02050	-.00800	.27130	.03670	.06010	.04790	.00000
1.404	1.770	.28910	-.12140	-.11470	.04970	-.02410	.26850	.03800	.06140	.04760	.00000
1.404	3.870	.28620	-.12490	-.19740	.08140	-.03910	.27040	.03970	.06250	.04650	.00000
1.404	5.970	.28400	-.12660	-.29290	.12040	-.05510	.27000	.04250	.06370	.04360	.00000
1.404	8.080	.28720	-.12950	-.38670	.15980	-.07010	.26440	.04520	.06710	.04400	.00000
1.404	10.140	.29040	-.13340	-.90110	.19820	-.08380	.25850	.04700	.06980	.04590	.00000
	GRADIENT	-.00016	-.00009	-.03826	.01496	-.00736	.00035	.00013	.00028	-.00039	.00000

MSFC 909(IA6EF)(084)(T14)(812) (A94002) (2/ NOV /3)

REFERENCE DATA

BREF = 6.1980 SQ.IN. XMRP = 2.6800 IN.
LREF = 5.1600 IN. YMRP = .0000 IN.
SREF = 5.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = 5.000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 18/ 0 RN/L = /.6/ GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABB	CABF
4.990	-10.380	.12880	-.08080	.29230	-.08810	.03060	.20100	.00660	.00/00	.00470	.00000
4.990	-8.430	.12010	-.01610	.22620	-.07950	.03050	.19580	.00650	.0067/0	.00490	.00000
4.990	-6.430	.11520	-.012/0	.16230	-.05130	.02230	.19200	.00640	.00680	.00510	.00000
4.990	-4.380	.11010	-.00830	.10190	-.03170	.01370	.18080	.00660	.00/30	.00550	.00000
4.990	-2.360	.10910	-.00490	.041/0	-.01110	.00560	.18770	.0067/0	.00/50	.00560	.00000
4.990	-.330	.10360	-.00280	-.012/0	.00540	-.00190	.18/60	.00660	.00/40	.00560	.00000
4.990	1.680	.10230	-.00470	-.06020	.02220	-.00080	.18950	.0067/0	.00/50	.00560	.00000
4.990	3.710	.10900	-.00680	-.12/40	.04200	-.01/50	.19190	.00660	.00/40	.00540	.00000
4.990	5.740	.11130	-.01040	-.19150	.0638/0	-.02610	.19500	.00650	.00730	.00540	.00000
4.990	7.760	.11770	-.01980	-.25560	.08670	-.03510	.20130	.00650	.00/10	.00510	.00000
4.990	9.680	.12420	-.02050	-.31/80	.10640	-.04400	.20750	.0067/0	.00/20	.00500	.00000
	GRADIENT	-.00064	.00015	-.02615	.00093	-.00385	.00039	-.00000	.00001	.00001	.00000

MSFC 500(IA&2F)6084)(T14)(S12) (A94003) (2/ NOV 13)

REFERENCE DATA

SREF =	6.1980 SQ.IN.	XMRP =	2.6800 IN.		
LREF =	9.1600 IN.	YMRP =	.0000 IN.		
BREF =	9.1600 IN.	ZMRP =	.0000 IN.		
SCALE =	.0040				

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 29/ 0 RN/L = 6.45 GRADIENT INTERVAL = -9.00/ 9.00

MACH	BETA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.900	-10.140	-.0/140	.01050	.59/60	-.19/00	.05/00	.06630	.04180	.08900	.05510	.00000
.900	-8.200	-.08040	.0177/0	.32100	-.12960	.04720	.07440	.03860	.08420	.05460	.00000
.900	-6.150	-.09410	.02180	.23620	-.09/30	.03410	.08180	.03/40	.07/70	.05240	.00000
.900	-4.080	-.0/960	.02330	.14990	-.06080	.02150	.09820	.03490	.0/420	.05110	.00000
.900	-2.030	-.08120	.03090	.0/270	-.02910	.00810	.09530	.0337/0	.0/180	.04720	.00000
.900	.000	-.08680	.03010	-.00800	.00660	-.00210	.09520	.03230	.0/350	.04480	.00000
.900	2.050	-.08430	.02/40	-.084/0	.03960	-.01330	.09800	.03430	.0/270	.04280	.00000
.900	4.080	-.08000	.02240	-.16330	.0/260	-.02940	.09/10	.03630	.0/630	.04130	.00000
.900	6.150	-.0/270	.01600	-.23840	.10320	-.03730	.09400	.03680	.0/990	.04080	.00000
.900	8.190	-.0/930	.0107/0	-.31160	.13100	-.04900	.09310	.03/00	.08090	.03950	.00000
.900	10.130	-.0//80	.01850	-.38120	.15380	-.05810	.08660	.04000	.08690	.03840	.00000
	GRADIENT	.00030	-.00025	-.03835	.01642	-.00560	.00091	.00017	.00025	-.00117	.00000

RUN NO. 28/ 0 RN/L = 8.15 GRADIENT INTERVAL = -9.00/ 9.00

MACH	BETA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.901	-10.3/0	-.03810	-.00/50	.44930	-.18470	.06680	.11560	.04630	.08130	.06110	.00000
.901	-8.380	-.02710	-.01470	.35610	-.15110	.053/0	.12260	.04300	.0/780	.05890	.00000
.901	-6.240	-.02360	-.01850	.26190	-.11180	.03850	.12320	.04050	.0/580	.05490	.00000
.901	-4.130	-.02310	-.02190	.17610	-.0/740	.02510	.12960	.03830	.0/500	.05050	.00000
.901	-2.060	-.02980	-.01800	.08500	-.03630	.01100	.12930	.03680	.0/210	.04850	.00000
.901	.000	-.02700	-.01410	-.01170	.00910	-.00390	.13240	.0337/0	.0/440	.04//0	.00000
.901	2.080	-.022/0	-.01030	-.10410	.052/0	-.01890	.14220	.03590	.0/180	.04280	.00000
.901	4.140	-.02180	-.02020	-.19150	.09210	-.03230	.142/0	.036/0	.0/940	.04190	.00000
.901	6.210	-.02080	-.01850	-.2//10	.12880	-.04680	.14650	.03930	.08000	.04190	.00000
.901	8.290	-.020/0	-.01010	-.35080	.15/30	-.05/60	.14540	.04350	.08210	.03910	.00000
.901	10.300	-.04440	.00080	-.43/20	.183/0	-.06/90	.14280	.04620	.08460	.03680	.00000
	GRADIENT	.00025	.00019	-.04461	.02066	-.00686	.00189	-.00020	.00041	-.00111	.00000

MSFC 909(IA6EF)(054)(T14)(S12) (AB4003) (2/ NOV /3)

REFERENCE DATA

SREF = 6.1900 SQ.IN. XBRP = 2.6800 IN.
LREF = 9.1600 IN. YMRP = .0000 IN.
BREF = 9.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 2// 0 RN/L = 8./1 GRADIENT INTERVAL = -9.00/ 9.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.19/	-10.480	-.01630	-.016/0	.49560	-.19100	.08050	.24810	.05280	.09400	.06860	.00000
1.19/	-8.4/0	-.00380	-.02290	.38490	-.14810	.06420	.23670	.05040	.09030	.06/30	.00000
1.19/	-6.350	-.00410	-.01800	.28230	-.10890	.04/80	.26030	.04860	.08900	.06550	.00007
1.19/	-4.200	.00350	-.02090	.1/920	-.06830	.02940	.26190	.04650	.08590	.06250	.00000
1.19/	-2.100	-.00810	-.00820	.09090	-.03390	.01330	.25890	.04850	.08640	.06160	.00000
1.19/	-.010	-.00/40	-.01160	-.00200	.00630	-.00430	.26070	.044/0	.08520	.06150	.00000
1.19/	2.090	-.00090	-.01530	-.09090	.04490	-.02190	.264/0	.045/0	.08450	.05810	.00000
1.19/	4.180	-.00030	-.01570	-.1/530	.0/800	-.03830	.27000	.04690	.08620	.05680	.00000
1.19/	6.310	-.00180	-.01620	-.26910	.11310	-.05480	.26950	.04920	.08980	.056/0	.00000
1.19/	8.420	-.00480	-.01/00	-.36850	.15010	-.0/110	.26990	.05220	.09043	.05650	.00000
1.19/	10.440	-.01180	-.01500	-.46/00	.18410	-.08490	.26590	.05240	.090/0	.056/0	.00000
	GRADIENT	.00005	.00021	-.04252	.01773	-.00814	.00105	-.00010	-.00006	-.000/1	.00000

RUN NO. 19/ 0 RN/L = 7.6/ GRADIENT INTERVAL = -9.00/ 9.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
4.950	-10.040	-.07440	.05020	.32340	-.11690	.038/0	.21650	.00690	.00/50	.00580	.00000
4.950	-8.100	-.06/80	.04570	.25020	-.08830	.02950	.21380	.00660	.00/40	.00580	.00000
4.950	-6.080	-.04800	.04480	.1/850	-.06220	.02060	.20980	.006/0	.00/40	.00610	.00000
4.950	-4.040	-.0/800	.05070	.11250	-.03960	.01240	.20650	.00660	.00/30	.00610	.00000
4.950	-2.010	-.0/910	.05090	.04660	-.01560	.00480	.20490	.00650	.00/60	.00610	.00000
4.950	.000	-.08020	.05100	-.01910	.00880	-.00280	.20510	.00650	.00/60	.00590	.00000
4.950	2.050	-.0/750	.05070	-.08120	.03090	-.01040	.20480	.00660	.00/70	.00580	.00000
4.950	4.050	-.08250	.05320	-.14520	.05330	-.01/80	.20950	.00660	.00/80	.005/6	.00000
4.950	6.080	-.09000	.05200	-.21110	.0/590	-.025/0	.21320	.00660	.00/80	.00540	.00000
4.950	8.110	-.0/710	.05080	-.27880	.10200	-.03360	.21680	.00650	.00/80	.00530	.00000
4.950	10.030	-.0/820	.05190	-.34840	.12880	-.04280	.22430	.00650	.00/50	.00520	.00000
	GRADIENT	-.00036	.00024	-.03178	.01148	-.00374	.00029	.00000	.00005	-.00005	.00000

MSFC 500(IA68F) (CB4) (T9) (B12) (PT4) (FR4) (AE4004) (2/ NOV /3)

REFERENCE DATA

SREF = 9.1900 SQ.IN. XMRP = 2.6800 IN.
LREF = 5.1600 IN. YMRP = .0000 IN.
BREF = 5.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 14/ 0 RN/L = 5.68 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.900	-10.990	-.73960	.25080	-.03650	.01800	-.00520	.03460	.03380	.08640	.05320	.01060
.900	-8.060	-.61100	.24210	-.03090	.01840	-.00550	.04530	.03320	.08330	.05050	.01010
.900	-6.900	-.48080	.19410	-.03700	.01780	-.00550	.0947/0	.03320	.0/720	.04860	.00980
.900	-4.830	-.37430	.14670	-.03680	.01730	-.00590	.06330	.03190	.0/2/0	.04770	.00930
.900	-2.780	-.26480	.10360	-.03500	.01550	-.00580	.06080	.03210	.0/360	.04570	.00980
.900	-.710	-.15560	.06180	-.03610	.01670	-.00640	.06410	.03250	.0/190	.04520	.01030
.900	1.340	-.04370	.0217/0	-.04120	.01770	-.00750	.06010	.03150	.0/000	.04670	.01020
.900	3.420	.07640	-.01980	-.03990	.01870	-.00770	.05740	.03110	.06900	.04750	.00940
.900	5.510	.19340	-.06180	-.04050	.01720	-.00840	.04960	.03160	.06760	.04840	.00940
.900	7.550	.31820	-.11300	-.04030	.01770	-.00850	.03850	.03210	.06860	.05060	.00950
.900	9.530	.43250	-.16580	-.04000	.01700	-.00830	.03210	.03080	.06450	.05390	.00950
	GRADIENT	.05454	-.02015	-.00056	.00024	-.00025	-.00061	-.00011	-.00053	00003	.00003

RUN NO. 13/ 0 RN/L = 11.24 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.900	-11.280	-.76860	.25680	-.03980	.01980	-.00700	.08530	.04060	.08510	.05080	.01280
.900	-9.230	-.62260	.23580	-.03550	.01770	-.00730	.09430	.03850	.08160	.05520	.01220
.900	-7.080	-.47770	.17730	-.03250	.01680	-.00710	.09830	.03790	.08000	.05080	.01210
.900	-4.970	-.34220	.12260	-.03120	.01510	-.00740	.10500	.03680	.0/750	.04760	.01180
.900	-2.840	-.20680	.06410	-.03180	.01520	-.00740	.10400	.03560	.0/580	.04630	.01150
.900	-.740	-.07700	-.00140	-.03070	.01310	-.00720	.10580	.03540	.0/280	.04350	.01140
.900	1.370	.05940	-.06020	-.03360	.01350	-.00790	.10170	.03600	.0/310	.04210	.01150
.900	3.900	.18860	-.10700	-.03320	.01430	-.00700	.09690	.03490	.0/150	.04430	.01140
.900	5.640	.29390	-.13110	-.03850	.01770	-.00610	.08880	.03490	.0/290	.04800	.01160
.900	7.730	.40140	-.17300	-.03840	.01650	-.00730	.08610	.03590	.0/510	.05260	.01190
.900	9.750	.49810	-.20850	-.04300	.01840	-.00660	.08050	.03570	.0/960	.05600	.01170
	GRADIENT	.06287	-.02798	-.00027	-.00016	.00001	-.00088	-.00017	-.00040	-.00051	-.00004

MSFC 509(IA62F) (CB4) (T9) (S12) (PT4) (FR4) (A94004) (2/ NOV /3)

REFERENCE DATA

PARAMETRIC DATA

SREF = 0.1980 SQ.IN. XMRP = 2.6800 IN. BETA = .000 ORBINC = .000
LREF = 5.1600 IN. YMRP = .0000 IN. DELTAZ = 333.000
BREF = 5.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

RUN NO. 12/ 0 RN/L = 14.90 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.900	-11.380	-.86330	.36610	-.03210	.01740	-.00980	.15560	.05050	.10040	.0/810	.01580
.900	-9.300	-.69480	.29610	-.03150	.01640	-.00630	.16400	.05230	.10000	.0/790	.01560
.900	-/.140	-.53880	.23040	-.03200	.01660	-.00680	.16890	.05030	.09660	.0/200	.01520
.900	-4.980	-.39010	.16890	-.03140	.01650	-.00700	.17030	.05030	.09530	.06890	.01530
.900	-2.860	-.24830	.11040	-.03100	.015/0	-.00/20	.1/310	.04860	.09310	.06//0	.01520
.900	-./10	-.11000	.05190	-.02930	.01360	-.00760	.17610	.04680	.09060	.06510	.014/0
.900	1.410	.03420	-.02010	-.031/0	.01450	-.00950	.1/130	.04860	.09140	.06680	.01510
.900	3.530	.1/990	-.08950	-.03310	.01550	-.01000	.16630	.04720	.09090	.064/0	.01480
.900	5./00	.31520	-.14230	-.03500	.01630	-.00920	.16930	.04//0	.08840	.06990	.01460
.900	/.810	.44330	-.19260	-.03950	.02000	-.00760	.15840	.04650	.08/20	.0/200	.01450
.900	9.840	.55240	-.23/80	-.04280	.02190	-.00/80	.14900	.04500	.08550	.0/600	.01400
	GRADIENT	.06675	-.03037	-.00019	-.00016	-.00039	-.00046	-.00029	-.00049	-.00044	-.00005

RUN NO. 11/ 0 RN/L = 23.64 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.202	-11.340	-.87970	.35300	-.03440	.00860	-.00650	.20990	.04980	.09480	.0/260	.01500
1.202	-9.410	-.69930	.2/680	-.02930	.00/40	-.00670	.21330	.04900	.09240	.0/010	.014/0
1.202	-/.210	-.51180	.20080	-.03010	.00860	-.00870	.21/50	.048/0	.09060	.06/20	.01460
1.202	-5.030	-.34160	.12540	-.03220	.01110	-.00980	.22160	.04910	.08940	.06560	.01460
1.202	-2.860	-.19010	.05680	-.03290	.01150	-.01010	.22400	.04880	.08690	.06420	.01430
1.202	-./00	-.04160	-.00340	-.03360	.01490	-.01020	.22480	.04830	.083/0	.06350	.01400
1.202	1.440	.09010	-.062/0	-.03650	.01550	-.01020	.221/0	.04990	.084/0	.06340	.01450
1.202	3.560	.21/20	-.11420	-.03420	.01240	-.00960	.21760	.050/0	.08510	.06620	.01480
1.202	5./40	.34880	-.16390	-.03680	.01480	-.00940	.21440	.05060	.08410	.06/00	.014/0
1.202	/.080	.46/10	-.21380	-.03530	.01340	-.00940	.20//0	.05090	.08150	.06860	.014/0
1.202	9.040	.56400	-.25460	-.03610	.01380	-.00910	.20010	.05190	.08120	.0/050	.01460
	GRADIENT	.06308	-.02684	-.00022	.00016	.00007	-.00104	.00034	-.00021	.00027	.00008

MSFC 500(1A6EF)(OB4)(T9)(S12)(PT4)(FR4) (A94004) (2/ NOV /3)

REFERENCE DATA

SREF = 6.1900 SQ.IN. XMRP = 2.6800 IN.
LREF = 3.1600 IN. YMRP = .0000 IN.
BREF = 3.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 19/ 0 RN/L = 35.25 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.498	-11.600	-.85260	.32330	-.04380	.01830	-.00850	.23750	.03940	.07450	.05320	.01190
1.498	-8.670	-.68100	.25530	-.03830	.01520	-.00800	.24080	.03840	.07160	.05100	.01180
1.498	-7.270	-.51920	.1916[illegible]	-.03600	.01420	-.00800	.24050	.03860	.06950	.04940	.01170
1.498	-5.080	-.36400	.12860	-.03360	.01290	-.00800	.23960	.03800	.06840	.04740	.01140
1.498	-2.920	-.21910	.06770	-.03250	.01290	-.00820	.23970	.03830	.06640	.04750	.01110
1.498	-.750	-.07020	.00830	-.03380	.01470	-.00820	.23690	.03920	.06640	.04780	.01090
1.498	1.410	.08560	-.04480	-.03660	.01700	-.00870	.23730	.03930	.06300	.04730	.01070
1.498	3.570	.23000	-.09620	-.03660	.01730	-.00870	.23380	.04040	.06400	.04840	.01110
1.498	5.750	.37630	-.14400	-.03860	.01850	-.00890	.23200	.04000	.06340	.05040	.01080
1.498	7.870	.49290	-.18130	-.03820	.01760	-.00820	.22910	.03970	.06270	.05160	.01060
1.498	9.950	.54310	-.22190	-.03840	.01800	-.00800	.22530	.04000	.06080	.05170	.01050
	GRADIENT	.06316	-.02523	-.00069	.00072	-.00009	-.00080	.00030	-.00049	.00010	-.00001

RUN NO. 1/ RN/L = 12.93 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
2.980	-10.780	-.90640	.21700	-.03030	.01330	-.00560	.24950	.01620	.02640	.01780	.00460
2.980	-8.800	-.68000	.17860	-.02760	.01220	-.00530	.23950	.01610	.02620	.01800	.00460
2.980	-6.730	-.48080	.14330	-.02640	.01240	-.00450	.23020	.01600	.02550	.01790	.00460
2.980	-4.660	-.28070	.10930	-.02570	.01180	-.00440	.22150	.01650	.02490	.01810	.00470
2.980	-2.580	-.19040	.08120	-.02770	.01170	-.00500	.21550	.01640	.02580	.01870	.00470
2.980	-.520	-.10860	.05950	-.02620	.01130	-.00450	.21050	.01670	.02590	.01870	.00470
2.980	1.550	-.02470	.03530	-.02480	.01080	-.00470	.20460	.01720	.02570	.01820	.00460
2.980	3.600	.06370	.00450	-.02450	.01110	-.00440	.19980	.01760	.02400	.01740	.00440
2.980	5.690	.15870	-.02930	-.02520	.01160	-.00450	.19700	.01810	.02220	.01690	.00410
2.980	7.730	.25180	-.06120	-.02260	.01080	-.00440	.19410	.01810	.02040	.01680	.00380
2.980	9.720	.34930	-.09570	-.02350	.01100	-.00500	.18990	.01790	.01950	.01700	.00360
	GRADIENT	.04140	-.01238	.00026	-.00011	.00001	-.00263	.00015	-.00009	-.00009	-.00003

MSFC 509(IA6BF) (094) (T9) (S12) (PT4) (FR4) (A94004) (2/ NOV /3)

REFERENCE DATA

SREF = 6.1980 SQ.IN. XMRP = 2.6800 IN.
LREF = 3.1600 IN. YMRP = .0000 IN.
BREF = 3.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

BETA = .000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 2/ 0 RN/L = 19.66 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
4.950	-10.580	-.47490	.16790	-.02450	.01050	-.00420	.2/310	-.00210	.00710	.00500	.00020
4.950	-8.640	-.40580	.13240	-.02420	.01090	-.00390	.25870	-.00170	.00740	.00530	.00080
4.950	-6.610	-.32940	.12870	-.02400	.00980	-.00380	.24300	-.00230	.00760	.00540	.00110
4.950	-4.570	-.25670	.10720	-.02370	.00960	-.00360	.23140	-.00220	.00780	.00560	.00120
4.950	-2.540	-.18770	.08520	-.02350	.00990	-.00380	.22250	-.00220	.00750	.00540	.00130
4.950	-.500	-.11110	.06380	-.02320	.00880	-.00330	.20990	-.00050	.00780	.00570	.00130
4.950	1.520	-.04180	.04640	-.01910	.00820	-.00330	.20350	-.00070	.00750	.00540	.00130
4.950	3.550	.03100	.02200	-.01880	.00850	-.00320	.19570	.00000	.00740	.00540	.00130
4.950	5.600	.10380	-.00220	-.02050	.00910	-.00350	.18900	-.00020	.00690	.00520	.00120
4.950	7.620	.16400	-.03140	-.02020	.00750	-.00320	.18180	.00060	.00650	.00530	.00110
4.950	9.570	.22640	-.05820	-.01800	.00710	-.00350	.17730	.00110	.00610	.00520	.00110
	GRADIENT	.03550	-.01029	.00070	-.00019	.00008	-.00445	.00029	-.00004	-.00002	.00001

MSFC 500(IA68F) (OB4) (T5) (S12) (PT4) (FR4) (A94008) (27 NOV /3)

REFERENCE DATA

SREF = 6.1988 SQ.IN. XBRP = 2.6000 IN.
LREF = 9.1680 IN. YBRP = .0000 IN.
BREF = 9.1680 IN. ZBRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = 9.000 ORBINC = .000
DELTAZ = 335.000

RUN NO. 8/ 0 RN/L = 9.70 GRADIENT INTERVAL = -9.00/ 9.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CA3F
.600	-10.980	.21840	-.08080	.43990	-.14490	.06010	.02650	.03930	.07660	.05200	.01190
.600	-8.340	.21290	-.08340	.35000	-.11940	.05740	.03470	.03560	.07200	.05200	.01080
.600	-6.910	.20910	-.07810	.29120	-.09890	.04180	.04420	.03250	.06680	.05050	.00980
.600	-4.430	.19340	-.06810	.16380	-.05450	.02580	.05520	.03120	.06380	.04830	.00930
.600	-2.380	.18290	-.05490	.06820	-.01980	.00960	.05910	.02990	.06430	.04750	.00800
.600	-.330	.16670	-.06640	-.02900	.01580	-.00560	.05730	.02930	.06060	.04780	.00820
.600	1.740	.18440	-.09580	-.11950	.04630	-.02080	.0608	.02840	.06430	.04860	.00910
.600	3.770	.18610	-.06470	-.21220	.07850	-.03640	.0571	.02860	.06560	.05000	.00900
.600	5.820	.19180	-.07140	-.30470	.11300	-.05300	.0463	.03100	.07110	.05060	.00960
.600	7.880	.19230	-.07460	-.39130	.14080	-.06770	.04130	.03390	.07420	.05040	.01010
.600	9.840	.19600	-.07850	-.47180	.16160	-.07780	.03520	.03680	.07620	.05100	.01110
	GRADIENT	-.00062	.00025	-.04580	.01628	-.00754	.00027	-.00033	.00017	.00022	-.00002

RUN NO. 9/ 0 RN/L = 11.32 GRADIENT INTERVAL = -9.00/ 9.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CA3F
.902	-10.770	.28750	-.13380	.40340	-.16080	.07030	.07520	.04310	.07940	.05530	.01380
.902	-8.290	.28080	-.13960	.36740	-.13330	.05750	.07660	.04040	.07720	.05420	.01340
.902	-6.640	.30160	-.14080	.28580	-.09830	.04330	.08270	.03800	.07410	.05130	.01250
.902	-4.580	.30240	-.14160	.18060	-.06820	.02770	.09130	.03620	.07180	.04830	.01210
.902	-2.480	.30400	-.14280	.07930	-.02100	.01130	.09830	.03500	.07170	.04890	.01180
.902	-.380	.30670	-.14900	-.02970	.01610	-.00550	.09850	.03510	.07200	.04870	.01170
.902	1.790	.31190	-.14730	-.13830	.05220	-.02160	.10290	.03290	.07090	.04850	.01140
.902	3.870	.29860	-.14120	-.23860	.08270	-.03930	.09950	.03420	.07300	.05030	.01170
.902	5.970	.28730	-.13110	-.33840	.12600	-.05060	.09400	.03750	.07640	.05180	.01250
.902	8.100	.28270	-.12820	-.44160	.15380	-.06830	.08500	.04110	.07930	.05630	.01330
.902	10.110	.26860	-.12110	-.54160	.18350	-.08160	.07960	.04420	.08350	.05970	.01400
	GRADIENT	.00010	-.00008	-.04982	.01796	-.00795	.00100	-.00029	.00008	.00008	-.00006

NSPC 500(1A6SF) (CB4) (T9) (S12) (-3T4) (FR4) (A94009) (27 NOV 83)

REFERENCE DATA

SREF = 6.1900 SQ IN. XMRP = 2.6900 IN.
LREF = 5.1600 IN. YMRP = .0000 IN.
BREF = 5.1600 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 5.000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 10/ 0 RN/L = 23.46 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.199	-10.970	.36410	-.16360	.54770	-.17780	.08270	.19040	.05750	.09360	.07360	.01670
1.199	-8.910	.35410	-.17760	.43730	-.14460	.06790	.19750	.05690	.09120	.07300	.01640
1.199	-6.760	.34780	-.17210	.32000	-.10580	.05100	.20080	.05430	.08820	.07240	.01590
1.199	-4.600	.34910	-.17090	.20200	-.06320	.03180	.20800	.05210	.08520	.06980	.01520
1.199	-2.470	.34730	-.16820	.09380	-.02780	.01340	.21430	.05110	.08400	.06840	.01500
1.199	-.330	.34360	-.16490	-.01260	.00820	-.00550	.21520	.05110	.08500	.06800	.01500
1.199	1.810	.33880	-.16490	-.11940	.04490	-.02410	.21690	.05050	.08490	.06660	.01480
1.199	3.980	.34180	-.16710	-.22220	.07920	-.04200	.21420	.05210	.08600	.06680	.01480
1.199	6.070	.34490	-.16870	-.33610	.11800	-.06000	.21260	.05380	.08820	.06760	.01520
1.199	8.210	.34830	-.16990	-.44930	.15520	-.07610	.20810	.05580	.09130	.06890	.01590
1.199	10.270	.35300	-.17310	-.56300	.18910	-.09080	.20250	.05720	.09230	.06900	.01620
	GRADIENT	-.00071	.00096	-.04984	.01677	-.00868	.00061	-.00003	.00012	-.00037	-.00005

RUN NO. 16/ 0 RN/L = 36.25 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.467	0.980	.33280	-.16700	.54960	-.19970	.07670	.20570	.04740	.06820	.06020	.01220
1.467	990	.32250	-.15710	.42730	-.15750	.06110	.21400	.04550	.06610	.05870	.01170
1.467	2.730	.31350	-.14980	.30800	-.11190	.04470	.21950	.04410	.06520	.05660	.01150
1.467	-4.580	.30920	-.14760	.19450	-.06960	.02760	.22680	.04220	.06310	.05550	.01130
1.467	-2.490	.30980	-.14360	.08790	-.03000	.01070	.23130	.04080	.06200	.05030	.01090
1.467	-.380	.29880	-.13870	-.01920	.01110	-.00560	.23200	.04080	.06230	.04930	.01060
1.467	1.790	.30080	-.14210	-.12700	.05360	-.02240	.23440	.04130	.06130	.04780	.01070
1.467	3.910	.30500	-.14390	-.23130	.09240	-.03900	.23410	.04290	.06220	.04730	.01110
1.467	6.090	.30840	-.14710	-.34830	.13710	-.05670	.23130	.04500	.06360	.04630	.01130
1.467	8.190	.31910	-.15490	-.46880	.18190	-.07300	.22710	.04720	.06580	.04700	.01160
1.467	10.270	.32880	-.16280	-.58630	.22150	-.08750	.21790	.04960	.06960	.04990	.01220
	GRADIENT	-.00073	.00042	-.09026	.01921	-.00784	.00783	.00009	-.00012	-.00068	-.00003

MSFC 909(IA6EF) (CB4) (T9) (^12) (PT4) (FR4) (A94009) (2/ NOV /3)

REFERENCE DATA

SREF = 6.1900 SQ.IN. XMRP = 2.6800 IN.
LREF = 3.1600 IN. YMRP = .0000 IN.
BREF = 3.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = 5.000 ORBINC = .000
DELTAZ = 333.000

RUN NO. 17/ 0 RN/L = 19.98 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CLM	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
4.950	-10.400	.11440	-.01970	.39520	-.10670	.04230	.18670	.00680	.00750	.00490	.00140
4.950	-8.470	.10840	-.01130	.25340	-.08200	.03280	.18230	.00660	.00760	.00530	.00140
4.950	-6.440	.10040	-.00740	.18150	-.05680	.02340	.17970	.00670	.00770	.00540	.00140
4.950	-4.380	.09800	-.00440	.11360	-.03440	.01550	.17730	.00660	.00740	.00550	.00140
4.950	-2.360	.09360	-.00190	.04940	-.01740	.00640	.17810	.00670	.00760	.00580	.00140
4.950	-.330	.09230	-.00180	-.01670	.00770	-.00320	.17690	.00670	.00750	.00590	.00130
4.950	1.680	.09080	-.00070	-.08080	.02770	-.01190	.17820	.00660	.00760	.00580	.00140
4.950	3.720	.08920	-.00290	-.14680	.04940	-.02110	.17970	.00670	.00770	.00580	.00140
4.950	5.750	.08930	-.00740	-.21480	.07130	-.02950	.18250	.00680	.00750	.00560	.00140
4.950	7.780	.09780	-.01200	-.28670	.09640	-.03900	.18690	.00680	.00750	.00540	.00130
4.950	9.730	.10420	-.01340	-.35650	.12130	-.04870	.19210	.00670	.00740	.00520	.00130
	GRADIENT	-.00072	.00021	-.03213	.01030	-.00449	.00024	.00000	.00003	.00003	-.00000

MSFC , 70(IAABF) (CB4) (T9) (S12) (PT4) (PR4) (A84006) (2/ NOV /5)

REFERENCE DATA

PARAMETRIC DATA

SREF =	9.1000 SQ.IN.	XBRP =	2.6000 IN.	ALPHA =	.000 ORBINC = .000
LREF =	9.1600 IN.	YBRP =	.0000 IN.	DELTAZ =	333.000
BREF =	9.1600 IN.	ZBRP =	.0000 IN.		
SCALE =	.0040				

RUN NO. // 0 RN/L = 5.73 GRADIENT INTERVAL = -8.00/ 8.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABF	CABS	CABF
.600	-10.180	-.06660	.01680	.44720	-.15010	.06640	.01960	.04370	.08480	.09650	.01890
.600	-8.210	-.07190	.02100	.35060	-.12380	.06400	.02780	.04040	.08260	.09620	.01800
.600	-6.170	-.07800	.02580	.26070	-.09870	.03060	.03640	.03670	.07740	.09280	.01080
.600	-4.100	-.07740	.02710	.16870	-.09570	.02330	.04090	.03440	.07490	.08120	.01080
.600	-2.040	-.08480	.03290	.07700	-.08460	.00890	.05800	.03330	.07250	.04960	.01100
.600	.000	-.08080	.03540	-.01630	.00860	-.00430	.04830	.03330	.07320	.04770	.01080
.600	2.060	-.08080	.03420	-.10080	.04060	-.01890	.06020	.03290	.07260	.04660	.01070
.600	4.110	-.08170	.02900	-.20000	.07160	-.03320	.09080	.03360	.07820	.04760	.01060
.600	6.160	-.07780	.02570	-.29190	.10980	-.04790	.04610	.03420	.08010	.04660	.01070
.600	8.220	-.07180	.02200	-.38580	.13970	-.06190	.04120	.03720	.08150	.04750	.01140
.600	10.180	-.06870	.01730	-.46080	.16030	-.07340	.03850	.04000	.08260	.04530	.01230
	GRADIENT	-.00056	.00028	-.04504	.01559	-.00601	.00024	-.00019	.00033	-.00050	-.00003

RUN NO. 6/ 0 RN/L = 11.38 GRADIENT INTERVAL = -9.00/ 9.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
.904	-10.400	-.00680	-.02370	.48290	-.16660	.07050	.06140	.04830	.08990	.09840	.01540
.904	-8.400	.00830	-.03300	.38130	-.13830	.05780	.07560	.04440	.08320	.09580	.01440
.904	-6.290	.01730	-.04220	.28910	-.10110	.04170	.08660	.04160	.08080	.09290	.01310
.904	-4.180	.02010	-.04740	.19190	-.06380	.02550	.09460	.03960	.07840	.04980	.01250
.904	-2.080	.01680	-.04930	.07720	-.02460	.00860	.10360	.03790	.07360	.04640	.01180
.904	.010	.01510	-.04300	-.01790	.00800	-.00680	.10470	.03720	.07410	.04530	.01190
.904	2.110	.01380	-.04190	-.11780	.04360	-.02240	.10950	.03650	.07550	.04340	.01170
.904	4.200	.00070	-.03970	-.22050	.08370	-.03960	.10730	.03760	.07940	.04320	.01220
.904	6.300	-.00230	-.02950	-.32300	.12110	-.05490	.10300	.03990	.08320	.04290	.01290
.904	8.410	-.01730	-.01480	-.42240	.15150	-.06830	.09840	.04320	.08720	.04240	.01400
.904	10.480	-.01980	-.00880	-.52240	.18080	-.08170	.09220	.04780	.09210	.04160	.01490
	GRADIENT	-.00202	.00149	-.04770	.01728	-.00768	.00149	-.00026	.00019	-.00077	-.00004

MSFC 500(IA68F) (CB4) (T8) (S12) (PT4) (FB4) (AB4CBb) (27 NOV 73)

REFERENCE DATA

SREF = 0.1900 SQ.IN. XMRP = 2.6800 IN.
LREF = 0.1600 IN. YMRP = .0000 IN.
BREF = 0.1600 IN. ZMRP = .0000 IN.
SCALE = .0040

PARAMETRIC DATA

ALPHA = .000 ORBINC = .000
DELTAZ = 355.000

RUN NO. 3/ 0 RN/L = 23.56 GRADIENT INTERVAL = -9.00/ 9.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
1.197	-10.080	.08080	-.04080	.54780	-.18040	.08810	.19080	.08640	.08970	.07480	.01680
1.197	-8.070	.08080	-.04080	.43180	-.14080	.07080	.20080	.08470	.08840	.07860	.01630
1.197	-6.080	.08080	-.04080	.31640	-.10480	.08860	.21180	.09330	.08860	.07040	.01570
1.197	-4.060	.08440	-.03080	.20080	-.06480	.08880	.21910	.09100	.08630	.06830	.01520
1.197	-2.120	.08480	-.03810	.09670	-.03080	.01340	.21860	.09000	.08360	.06600	.01480
1.197	.000	.08890	-.03310	-.01180	.00870	-.00870	.22370	.04080	.08340	.06410	.01420
1.197	2.130	.08880	-.03440	-.11780	.04960	-.03940	.22960	.04080	.08910	.06330	.01490
1.197	4.060	.08830	-.03480	-.22380	.08090	-.04820	.22900	.09100	.08080	.06370	.01520
1.197	6.410	.08940	-.03880	-.33600	.11810	-.06410	.22940	.09260	.08190	.06280	.01560
1.197	8.060	.08380	-.03870	-.49160	.19280	-.08830	.22330	.09300	.08400	.06220	.01640
1.197	10.080	.08180	-.03870	-.57160	.19280	-.08940	.21890	.09710	.08670	.06140	.01680
	GRADIENT	-.00090	.00082	-.08027	.01746	-.02016	.00126	-.00005	.00029	-.00056	-.00001

RUN NO. 4/ 0 RN/L = 30.01 GRADIENT INTERVAL = -9.00/ 9.00

MACH	BETA	CN	CLN	CY	CYN	CBL	CAF	CABO	CABE	CABS	CABF
4.000	-10.060	-.12380	.06670	.30080	-.13080	.04740	.22260	.00180	.00740	.00480	.00130
4.000	-8.130	-.12780	.06840	.30860	-.10800	.03760	.21600	.00380	.00750	.00480	.00130
4.000	-6.100	-.12080	.06840	.22980	-.07810	.08840	.21120	.00470	.00750	.00810	.00130
4.000	-4.060	-.12880	.06880	.15150	-.04080	.01870	.20800	.00910	.00780	.00820	.00140
4.000	-2.080	-.12080	.06880	.07770	-.02280	.00880	.20670	.00830	.00780	.00850	.00140
4.000	.000	-.12160	.06720	.00880	.00080	.00060	.20710	.00940	.00780	.00960	.00140
4.000	2.080	-.11980	.06700	-.06870	.02980	-.00810	.20330	.00960	.00780	.00960	.00140
4.000	4.060	-.12130	.06710	-.14960	.04880	-.01910	.20680	.00570	.00800	.00970	.00150
4.000	6.110	-.12670	.06860	-.22130	.07440	-.02850	.20880	.00580	.00780	.00960	.00140
4.000	8.120	-.12440	.06840	-.30470	.10410	-.03840	.21380	.00580	.00770	.00970	.00140
4.000	10.070	-.12940	.06850	-.38410	.13380	-.04800	.21760	.00600	.00780	.00930	.00140
	GRADIENT	.00016	.00025	-.08689	.01201	-.00466	-.00034	.00007	.00001	.00005	-.00000