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CR-120001

—SPACE SHUTTLE—

**EFFECT OF CONFIGURATION CHANGES
ON THE DIRECTIONAL CHARACTERISTICS
OF A GD/C BOOSTER
MACH NO. 1.2 - 4.96**

by

J. Brickey

T. Brice

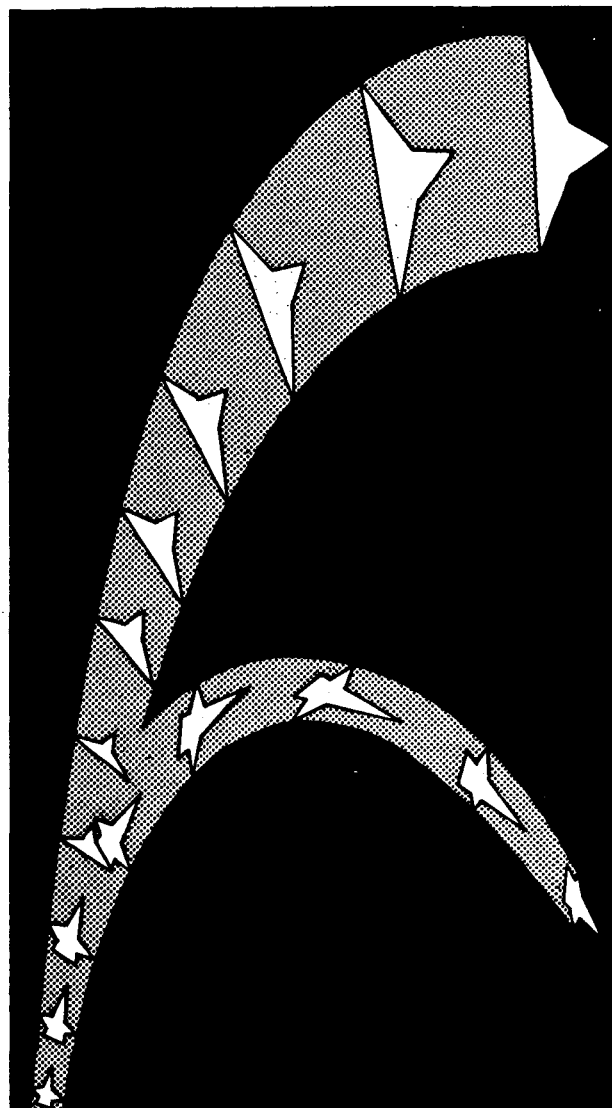
K. E. Marks

MSFC 14-INCH

TRISONIC WIND TUNNEL

MARSHALL

SPACE FLIGHT CENTER



FACILITY FORM 602

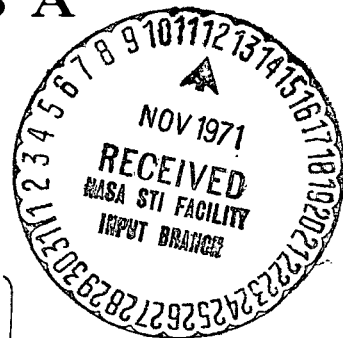
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SADSAC SPACE SHUTTLE
AEROTHERMODYNAMIC
DATA MANAGEMENT SYSTEM

CONTRACT NAS3-4016
MARSHALL SPACE FLIGHT CENTER



N A S A



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SADSAC/SPACE SHUTTLE
WIND TUNNEL TEST DATA REPORT

CONFIGURATION: GD/Convair Aerospace 0.0035 Scale Booster B-15B-1

TEST PURPOSE: Investigate Effects of Configuration Changes on
Directional Characteristics

TEST FACILITY: NASA/MSFC 14 x 14 Inch Trisonic Wind Tunnel

TESTING AGENCY: GD/Convair Aerospace

TEST NO. & DATE: MSFC TWT 495; June, 1971

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A B S T R A C T

Force tests on a 0.0035-scale model of the General Dynamics/Convair Aerospace Space Shuttle B-15B-1 booster were conducted in the MSFC Trisonic Wind Tunnel. The configuration has a low delta wing, all-movable delta-planform canard controls, and a single vertical tail. The test was devoted to investigating the effects of various configuration variables upon the lateral-directional characteristics. These variables included wing dihedral, rudder flare, and body flap deflection. Yaw runs were made at angles of attack of 6, 10, 15, 25, 30, and 35 degrees. The Mach number range for this test was 1.20 to 4.96.

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SUMMARY

Experimental aerodynamic wind tunnel test results on a 0.0035 scale model of the GD/C Booster B-15B-1 are presented in plotted form. The six component force and moment data are given in coefficient form in both the body and stability axis system. Tests were conducted during June, 1971 in the NASA/MSFC 14 x 14 inch Trisonic Wind Tunnel and cover a Mach number range from 1.2 to 4.96 over an angle of attack range from 5° to 45° degrees at zero degrees sideslip and a sideslip range from -10° to 10° at angles of attack of 6° , 10° , 15° , 25° , 35° .

The objectives of the tests were to determine the effects of selected configuration changes on the lateral-directional aerodynamic characteristics of the booster and to determine selected control surface effectiveness.

CONFIGURATIONS INVESTIGATED

Model components utilized during this test were:

- B₁₉ - basic B-15B-1 fuselage
- W₁₄ - basic B-15B-1 wing (modified wing, W₁₀)
- W₂₀ - wing W₁₄ modified to 6° dihedral
- W₂₁ - wing W₁₄ modified to 10° dihedral
- C_{4A} - basic canard for B-15B-1
- V₇ - basic vertical tail for B-15B-1
- V₁₂ - V₇ with rudder flared 25 degrees
- V₁₃ - V₇ with rudder flared 50 degrees
- F₉ - body flap

The dataset collation sheets (page 5) show the various combinations that these components were tested in. Pertinent dimensional information for these components are given in the Model Component Descriptor Sheets which follow the Figures. Some of the model components are sketched and shown in Figures 2 through 6.

In order to test at angles of attack greater than 24°, a blade-type sting was utilized. The use of this sting necessitated removing the vertical tail and a portion of the aft-upper body for adaptation to the model. Data corrections necessary due to this arrangement are discussed in the Data Reduction Section of this report.

TEST MSFC 495 DATA SET COLLATION SHEET

5

PRETEST
 POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES			NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
		a	B	P	Δr				1.2	1.3	1.46	1.96	2.74	2.97	4.96				
R37A31	B19W14C4AV7	A	0	3	0		7	35/0	3/0	37/0	33/0	57/1	58/0	59/0					
R37A32	B19W14C4A	B	↓		-		3				105/0		81/0	80/0					
R37Y31	B19W14C4AV7	6	C		0		3		1/0	45/0	24/0								
R37Y32	↓	15			↓		6		2/0	40/0	29/0	60/0	61/0	62/0					
R37Y33	B19W14C4A	25			-		2					73/0		72/0					
R37Y34	↓	35	↓	↓	-		2					71/0		70/0					
R37A61	B19W20C4AV7	A	0	6	0		6		15/0	48/0	20/0	59/0	55/0	56/0					
R37A62	B19W20C4A	B	↓		-		3				97/1		83/1	82/1					
R37Y61	B19W20C4AV7	6	C		0		3		17/0	46/0	18/0								
R37Y62	↓	15			↓		3		16/0	47/0	19/0								
R37Y63	B19W20C4A	25			-		2					87/0		86/0					
R37Y64	↓	35	↓	↓	-		2					85/0		84/0					
R37A01	B19W21C4AV7	A	0	10	0		6		14/0	49/0	21/0	51/0	52/0	53/0					
R37A02	B19W21C4A	B	↓		-		3				94/0	93/0		92/0					
R37Y01	B19W21C4AV7	6	C		0		2		12/0		23/0								
R37Y02	↓	15			↓		3		13/0	50/0	22/0								
R37Y03	B19W21C4A	25			-		2					89/0		88/0					
R37Y04	↓	35	↓	↓	-		2					91/0		90/0					
R37AR1	B19W14C4AV13	A	0	3	50		2		8/0		36/0								
R37YR1	↓	6	C	↓	↓		3		11/0	44/0	26/0								

1	7	13	19	25	31	37	43	49	55	61	67	75	76
CLM	ICN	ICYN	ICY	CBL	CA	CAB	CPI	CP2	CPC				10

COEFFICIENTS: $\alpha A = +5, 2, 9, 11, 13, 15, 17, 19, 21, 23$ DEG. \rightarrow IDPVAR(1) IDPVAR(2) NDV
 α or B $\alpha B = +25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45$ DEG.
 SCHEDULES RC = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10 DEG.

TEST MSFC 495 DATA SET COLLATION SHEET

6

PRETEST
 POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES			NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)												
		α	β	Γ	Δ	Υ		1.2	1.3	1.9L	1.96	2.74	2.99	4.96						
R37YR2	B19W14C4AV13	15	C	3	50		6		7/0	41/0	27/0	63/0	64/0	65/0						
R37AR2	B19W14C4AV12	A	0		25		2		9/0		34/0									
R37YR3		6	C				3		10/0	43/0	25/0									
R37YR4	↓	15	↓				3		6/0	42/0	26/0									
R37AL1	B19W14C4AV7F9L60	A	0		0		2			38/0	32/0									
R37AL2	B19W14C4AF9L60	B			-		3				103/0		77/0	76/0						
R37AL3	B19W14C4AF9L90	B			-		3				104/0		79/0	78/0						
R37AS1	B19W14C4AV7F9L60F9R60	A	↓		0		2		4/0		31/0									
R37YS1	↓	15	C				3		5/0	39/0	30/0									
R37YSR	B19W14C4AV13F9L60F9R60	↓			50		2						66/0	67/0						
R37YS2	B19W14C4AF9L60F9R60	25			-		2					75/0		74/0						
R37YS3	↓	35			-		2						69/0	68/0						
R37B01	B19C4A				-	-	1					98/0								
R37B02	B19FO	↓			-	-	1					99/0								
R37B03	↓	30			-	-	1					102/0								
R37B04	B19C4A				-	-	1					106/0								
R37B05	B19FOW14				3	-	1					107/0								
R37B06	B19W14C4A				↓	-	1					108/0								
R37B07	B19	↓			-	-	1					109/0								
R37B08	B19FO	10	↓		-	-	1					111/0								

1 7 13 19 25 31 37 43 49 55 61 67 75 76
 CLM ICN ICYN ICY ICBL CA CAB CPI CPR CPC | 10

COEFFICIENTS: _____ → IDPVAR(1) IDPVAR(2) NDV
 α or β _____
 SCHEDULES _____

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 2.50, and the supersonic section permits testing at Mach 2.74 through 5.85. Mach numbers between .2 and .9 are obtained by using a controllable diffuser. The range from .95 to 1.3 is achieved through the use of plenum suction and perforated walls. Mach numbers of 1.44, 1.93 and 2.50 are produced by interchangeable sets of fixed contour nozzle blocks. Above Mach 2.50 a set of fixed contour nozzle blocks are tilted and translated automatically to produce any desired Mach number in .25 increments.

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

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

Downstream of the test section is a hydraulically controlled pitch sector that provides a total angle of attack range of 20° ($\pm 10^{\circ}$). Sting offsets are available for obtaining various maximum angles of attack up to 25° .

Table I

TEST CONDITIONS
TEST MSFC 495

MACH NUMBER	REYNOLDS NUMBER per unit length	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
1.2	6.6×10^6	9.03	95-110 ↓
1.3	6.6×10^6	9.48	
1.46	6.6×10^6	9.55	
1.96	7.3×10^6	10.55	
2.74	5.0×10^6	6.12	
2.99	4.4×10^6	4.98	
4.96	4.8×10^6	2.73	

BALANCE UTILIZED: MSFC TWT MODEL 200

CAPACITY:

NF 175
SF 150
AF 100
PM 185
YM 160
RM 50

ACCURACY:

COEFFICIENT
TOLERANCE:

COMMENTS:

D A T A R E D U C T I O N

The reference dimensions are the following:

S_{ref}	=	15.656 sq. in. (theor. wing area)	}	as-built
l_{ref}	=	3.0948 in. (\bar{c} , or MAC)		wing
b_{ref}	=	6.099 in. (span)		dimensions

The moment reference point is at:

- MS 10.118, or 6.618 inches aft of the nose of the B19 body
- Vertical location on body centerline

Dimensions for base pressure corrections:

A conventional straight sting was used for angles of attack less than 24 degrees. A blade-type sting was used for angles of attack greater than 24 degrees. With the blade sting the vertical tail was removed and a cutout was made in the upper rear body. The cutout created an unsymmetrical balance cavity with a net area in planview, so that when the cavity pressure was not equal to external pressure on the upper rear body, a normal force increment (and pitching moment) was produced. The cutout also affected the axial projections of the areas upon which the base pressure and the balance cavity pressure were assumed to act. With the cutout, the front surface of the cutout is assumed to be acted upon by cavity pressure, not base pressure. Therefore, the base and cavity areas used in the data reduction were as follows:

Sting Configuration	Sq. In.				In.
	A_{b1}	A_{b2}	A_{CAVB}	A_{CAVS}	X_2
Straight	0.418	0.634	0.785	0	-
Blade ($\alpha > 24^\circ$)	0.364	0.634	0.839	0.1717	2.226

EQUATIONS:

$$CN = \left\{ C_N = F_N + (p_c - p_\infty) A_{CAVS} \right\} \cdot 1/qS_{ref}$$

$$CLM = \left\{ C_m = M_Y - (p_c - p_\infty) A_{CAVS} X_2 \right\} \cdot 1/qS_{ref} \bar{c}$$

$$CA = \left\{ C_A = F_A + (p_c - p_b) \right\} \cdot 1/qS_{ref}, \text{ when } p_b = \frac{p_{b1} + p_{b2}}{2}$$

$$CAB = C_{Ab} = - \left\{ (p_{b1} - p_\infty) A_{b1} + (p_{b2} - p_\infty) A_{b2} + (p_b - p_\infty) A_{CAVB} \right\} \cdot 1/qS_{ref}$$

$$CY = C_y = F_Y/qS_{ref}$$

$$CBL = C_\ell = M_x/qS_{ref} b$$

$$CYN = C_n = M_z/qS_{ref} b$$

$$CP1 = C_{p1} = (p_{b1} - p_\infty) / q, \text{ on upper half of base}$$

$$CP2 = C_{p2} = (p_{b2} - p_\infty) / q, \text{ on lower half of base}$$

$$CPC = C_{pc} = (p_c - p_\infty) / q, \text{ in balance cavity}$$

TABLE II-SADSAC NOMENCLATURE OF AERODYNAMIC COEFFICIENTS

COEFFICIENT	COEFFICIENT NAME	SADSAC NOMENCLATURE		
		BODY AXIS	STABILITY AXIS	WIND AXIS
C_A	Total Axial Force	CA	-	-
C_{AB}	Base Axial Force	CAB	--	-
C_{AF}	Forebody Axial Force	CAF	-	-
C_D	Total Drag Force	-	CD	CDTOTL
C_{DB}	Base Drag Force	-	CDB	CDBASE
C_{DF}	Forebody Drag Force	-	CDF	CDFORE
C_L	Lift Force	-	CL	CL
C_N	Normal Force	CN	-	-
C_Y	Side Force	CY	CY	CC
C_l	Rolling Moment	CBL	CSL	CWL
C_m	Pitching Moment	CLM	CLM	CPM
C_n	Yawing Moment	CYN	CLN	CLN
L/D	Lift-To-Drag Force Ratio	-	L/D	CL/CD
L/D	Lift-To-Forebody Drag Force Ratio	-	L/DF	CL/CDF
N/A	Normal-To-Axial Force Ratio	N/A	-	-
N/A	Normal-To-Forebody Axial Force Ratio	CN/CAF	-	-

SUMMARY DATA PLOT INDEX

TITLE	PLOTTED COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
Longitudinal Effects of Dihedral, Low Angle of Attack	A	Dihedral	1-42
Longitudinal Effects of Dihedral, High Angle of Attack	A	Dihedral	43-70
Directional Effects of Dihedral	B	Dihedral $\alpha = 6^\circ$	71-85
Directional Effects of Dihedral	B	Dihedral $\alpha = 15^\circ$	86-100
Directional Effects of Dihedral	B	Dihedral $\alpha = 25^\circ$	101-110
Directional Effects of Dihedral	B	Dihedral $\alpha = 35^\circ$	111-120
Longitudinal Effects of Rudder Flare	A	Rudder Flare	121-134
Directional Effects of Rudder Flare	B	Rudder Flare $\alpha = 6^\circ$	135-149
Directional Effects of Rudder Flare	B	Rudder Flare $\alpha = 15^\circ$	150-179
Control Effectiveness of Body Flaps	C	Body Flap	180-199
Control Effectiveness of Body Flaps	C	Body Flap	200-229
Longitudinal Body Flap Effects	A	Flap	230-243

SUMMARY DATA PLOT INDEX

TITLE	PLOTTED COEFFICIENTS SCHEDULE	CONDITIONS VARYING	PAGES
Directional Body Flap Effects	B	Flaps $\alpha = 15^\circ$	244-258
Directional Body Flap Effects	B	Flaps $\alpha = 25^\circ$	259-268
Directional Body Flap Effects	B	Flaps $\alpha = 35^\circ$	269-278
Directional Effects of Rudder Flare Plus Flaps	B	Flaps Rudder Flare	279-288
Body Build-up	B	Configuration $\alpha = 35^\circ$	289-293
Body Build-up	B	Configuration $\alpha = 30^\circ$	294-298
Body Build-up	B	Configuration $\alpha = 10^\circ$	299-303
Dihedral Effects on Sideslip Derivatives	D	Angle of Attack	304-318
Rudder Flare Effects on Sideslip Derivatives	E	Angle of Attack	319-327

PLOTTED COEFFICIENTS SCHEDULE:

- | | |
|---|--|
| (A) $C_N, C_A, C_L, L/D$ vs. ALPHA
CL vs. CD, CL vs. C _{LM} & C _N vs. C _{LM} | (D) $C_Y, C_{SL} \text{ \& } C_{LN}$ vs. DIHEDRL |
| (B) $C_Y, C_{YN}, C_{BL}, C_{LN} \text{ \& } C_{SL}$ vs. BETA | (E) C_Y, C_{SL}, C_{LN} vs. RDRFLR |
| (C) $C_N, C_A, C_L, L/D, C_Y, C_{YN}, C_{BL}$ vs. ALPHA
CL vs. CD, CL vs. C _{LM} , & C _N vs. C _{LM} | |

B-15B-1 GENERAL ARRANGEMENT

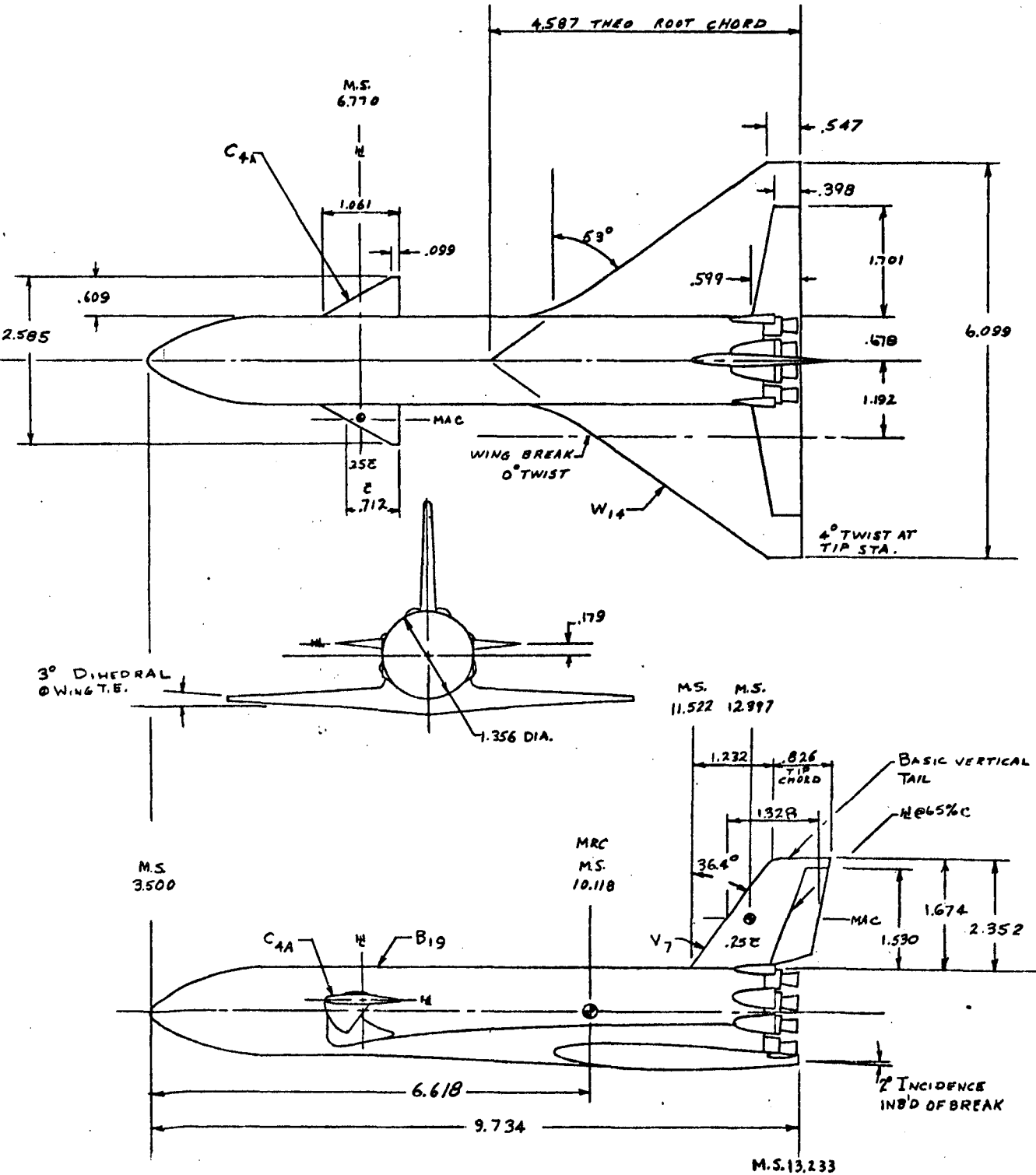


FIGURE 1. B-15B-1 GENERAL ARRANGEMENT

B19

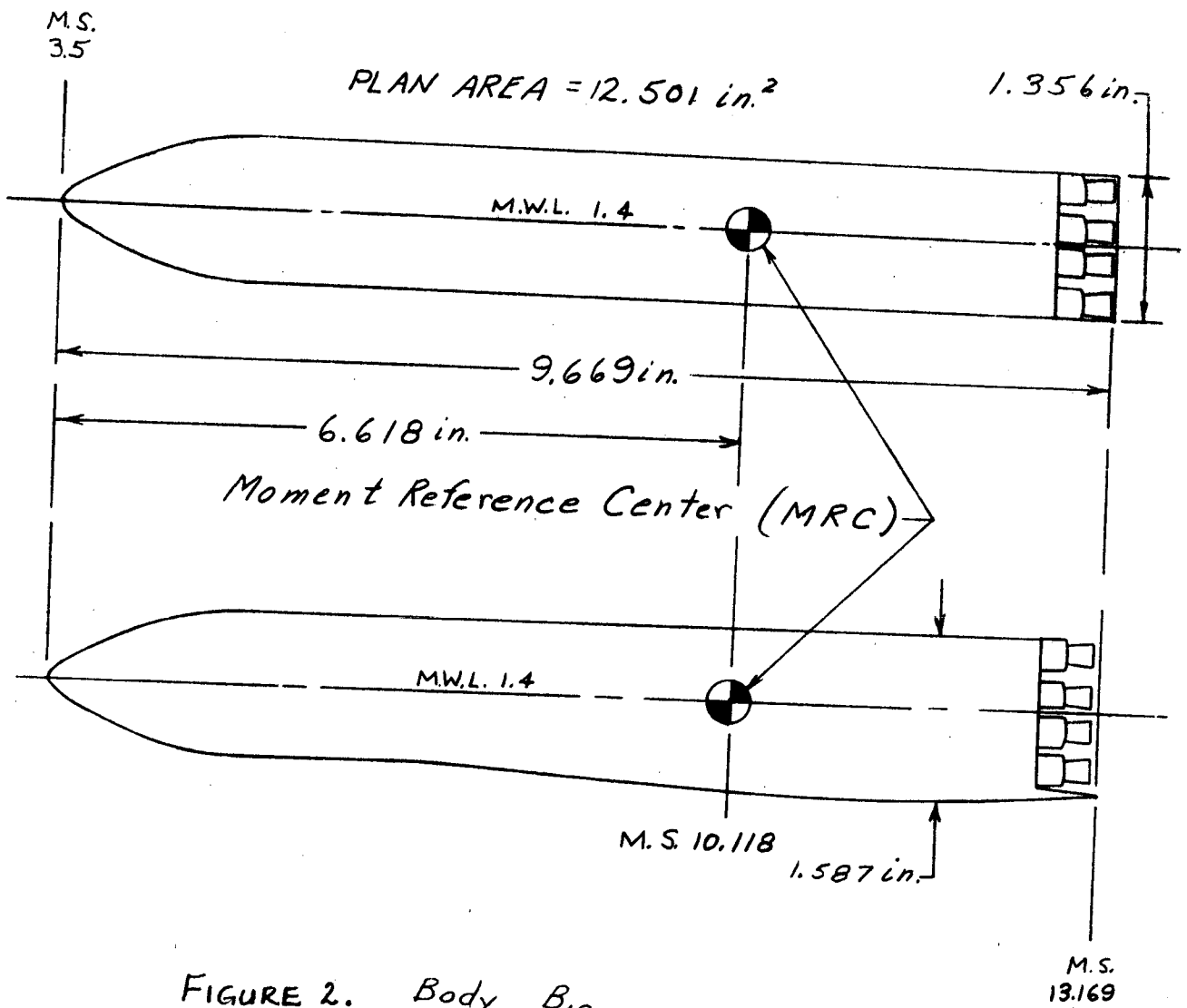
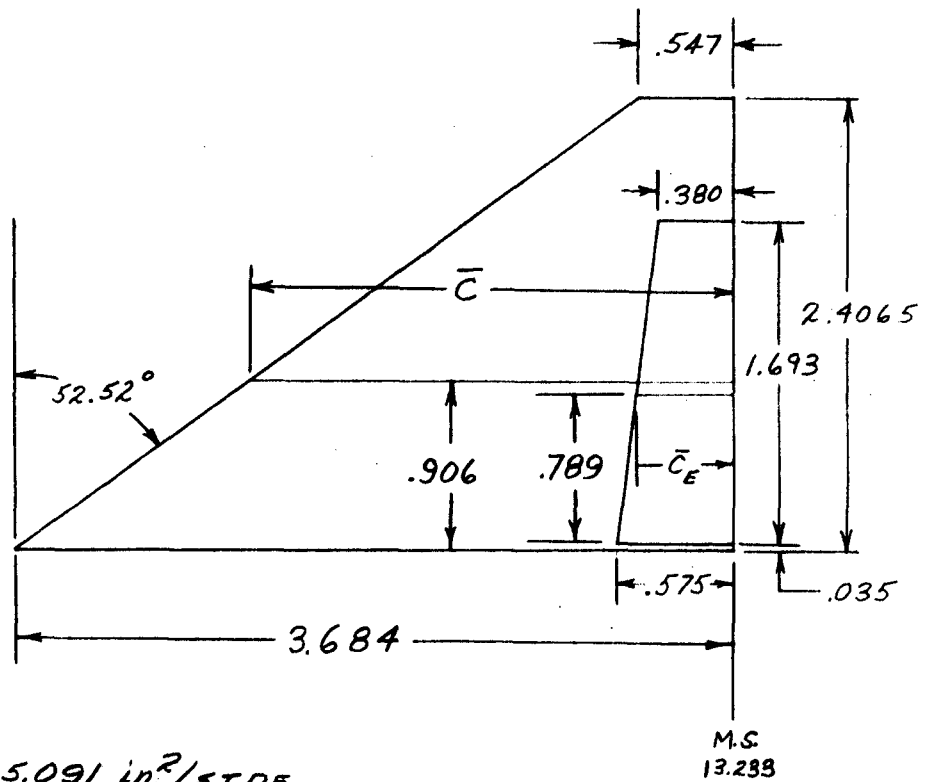


FIGURE 2. Body B₁₉

W14



$\lambda_{(EXP.)} = .14848$
EXPOSED AREA = 5.091 in.²/SIDE
 $\bar{C} = 2.503$ in.
ELEVON
AREA = .808 in.²/SIDE
 $\bar{C}_E = .484$ in.

FIGURE 3. WING W14

C4A

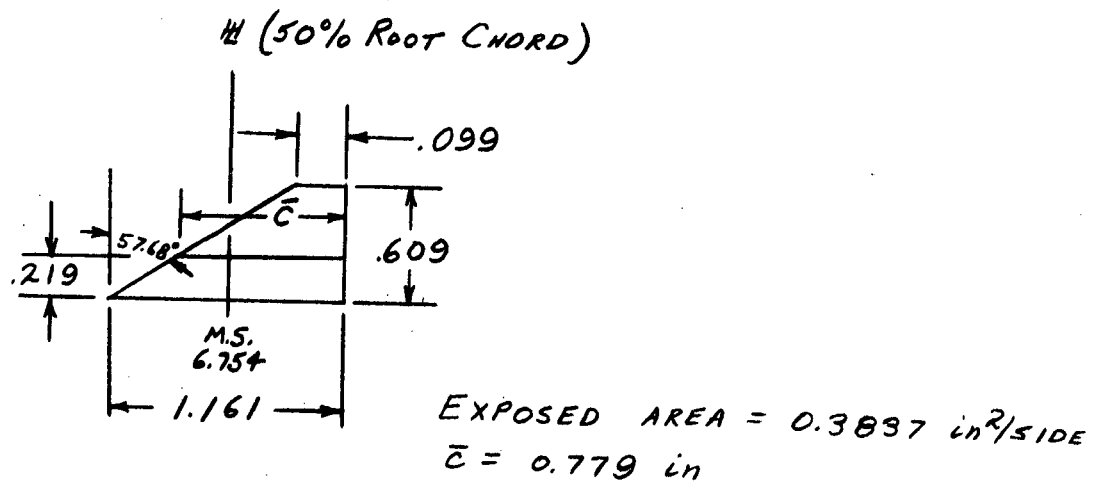


FIGURE 4. CANARD C4A

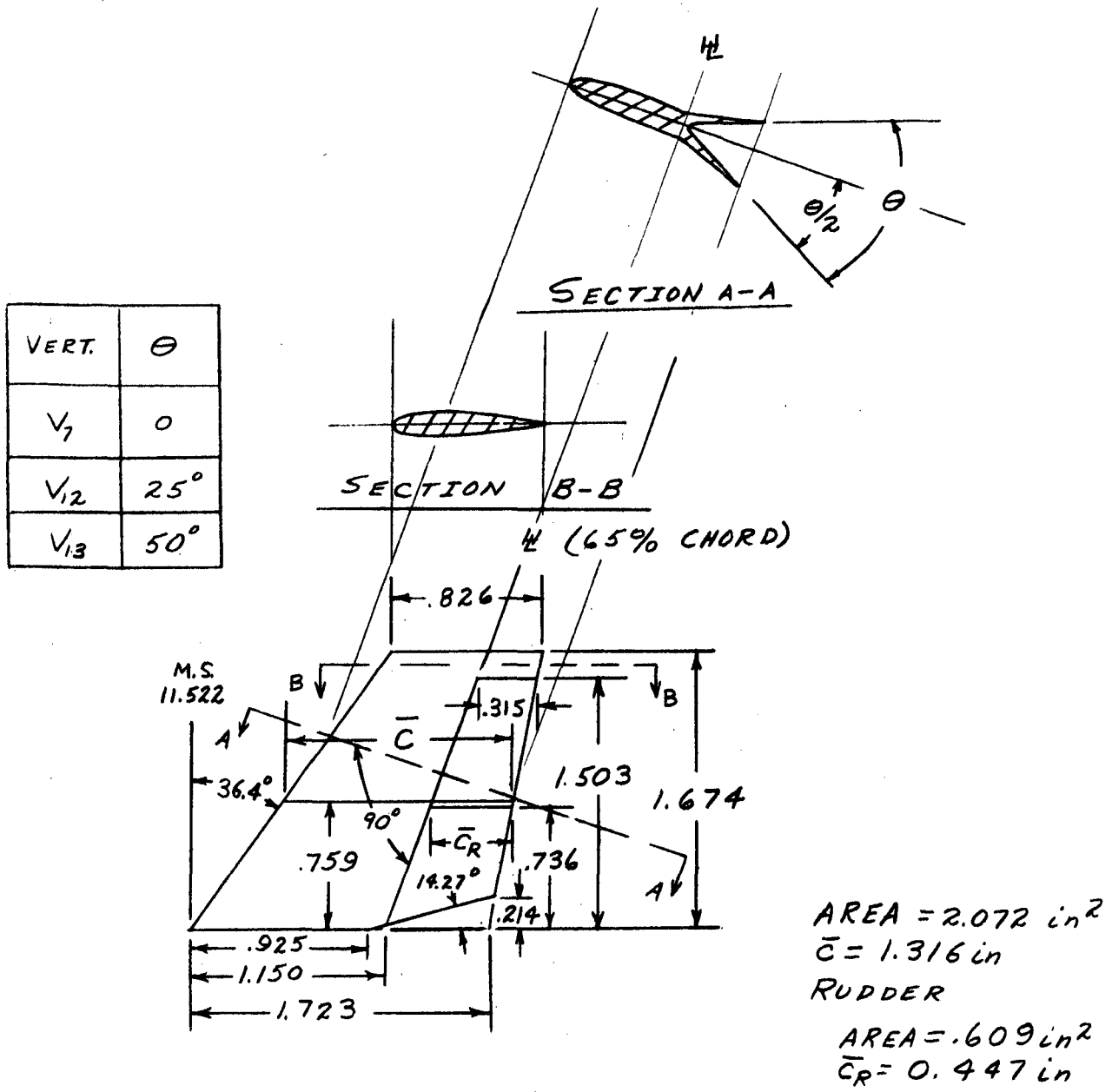


FIGURE 5. VERTICAL TAILS V_7 , V_{12} , V_{13}

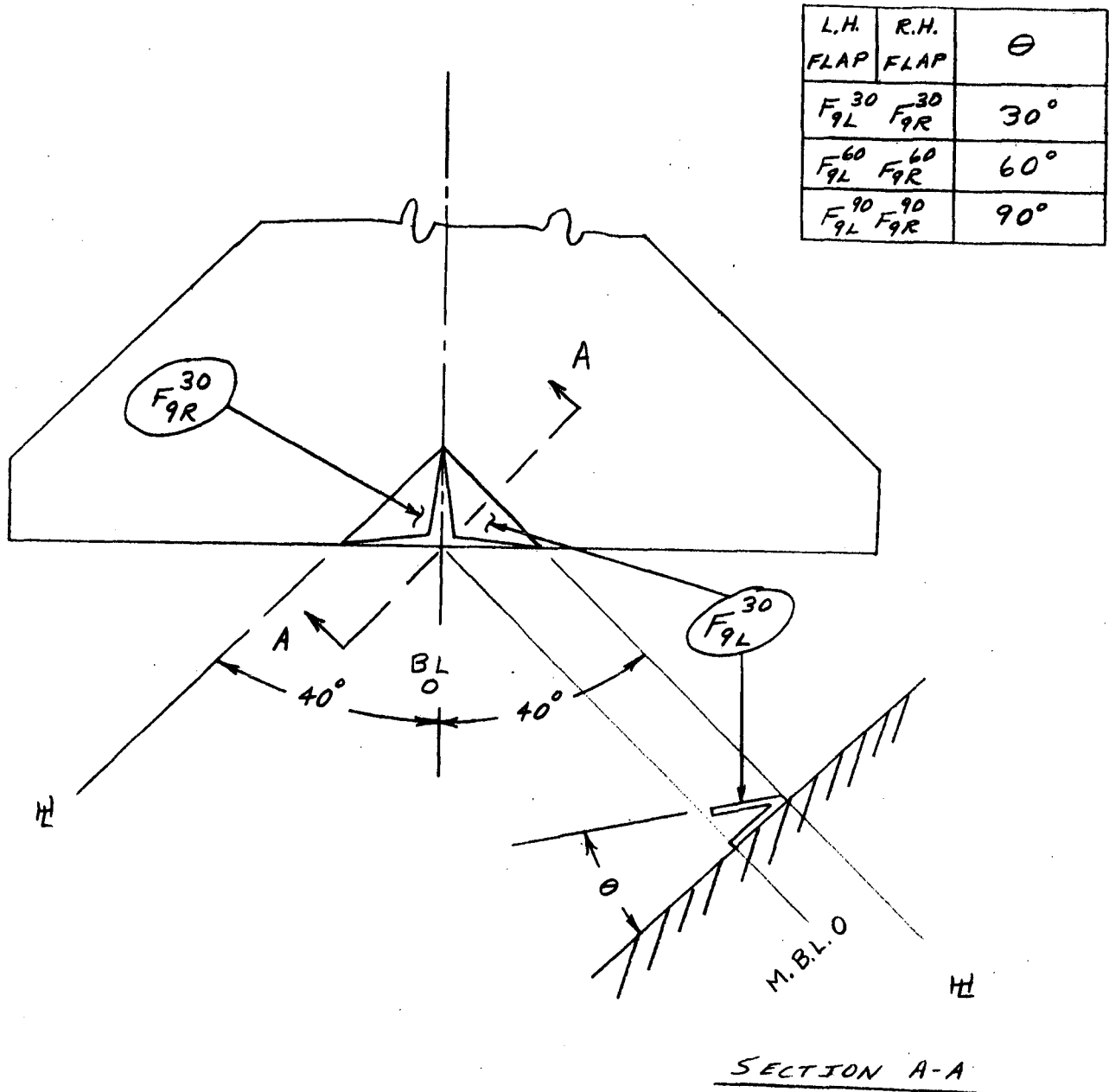


FIGURE 6. BODY FLAP F_9

45
TABLE III

MODEL COMPONENT: BODY - B-19

GENERAL DESCRIPTION: Body for B-15B Delta Wing Configuration, with circular cross section at nose, fairing to flat bottom at wing. Flats on sides to close gap at canard root forward of hinge line. Fairings over rocket engines.

DRAWING NUMBER: WT-70-105222

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length (Nose to Wing T. E.)	<u>2757</u>	<u>9.733</u>
Max. Width	<u>387</u>	<u>1.356</u>
Max. Depth	<u>453</u>	<u>1.587</u>
Fineness Ratio	<u>6.08</u>	<u>6.13</u>
Area		
Max. Cross-Sectional	<u>183837</u>	<u>2.252</u>
Planform	<u>1010612</u>	<u>12.501</u>
Wetted	<u> </u>	<u> </u>
Base	<u>150028</u>	<u>1.840</u>

TABLE IV

MODEL COMPONENT: WING - W₁₄

GENERAL DESCRIPTION: W₁₀ modified to unswept trailing edge and with twist
outboard of B. L. 340 linearly increasing to -4 degrees at tip and with leading edge
faired into fuselage (W₁₀ is the basic B-15B wing).

DRAWING NUMBER: WT-70-105222

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
<u>TOTAL DATA</u>		
Area		
Planform	1241959	15.656
Wetted		
Span (equivalent)	1739	6.099
Aspect Ratio	2.436	2.38
Rate of Taper		
Taper Ratio	0.106	0.1192
Dihedral Angle, degrees	3 at T. E.	3 at T. E.
Incidence Angle, degrees	2	2
Aerodynamic Twist, degrees	-4	-4
Toe-In Angle		
Cant Angle		
Sweep Back Angles, degrees		
Leading Edge	53	53
Trailing Edge	0	0
0.25 Element Line	44.85	44.85
Chords:		
Root (Wing Sta. 0.0)	1291	4.587
Tip, (equivalent)	137	0.547
MAC	869.4	3.095
Fus. Sta. of .25 MAC	3104.9	10.913*
W.P. of .25 MAC	219	0.766
B.L. of .25 MAC	136.9	1.126
Airfoil Section		
Root	NACA - 0010 - 64 (Mod)	
Tip	NACA - 0010 - 64 (Mod)	
<u>EXPOSED DATA</u>		
Area	812980	10.03
Span, (equivalent)	1373	4.743
Aspect Ratio	2.25	2.24
Taper Ratio	0.1306	0.1485
Chords		
Root	1048	3.684
Tip	137	0.547
MAC	709.1	2.504
Fus. Sta. of .25 MAC	3224.9	11.356*
W.P. of .25 MAC	222	0.624
B.L. of .25 MAC	438.6	1.572

* Fuselage stations are relative to an origin 3.500 inches ahead of the nose of B₁₉.

TABLE V

MODEL COMPONENT: WING - W20

GENERAL DESCRIPTION: W₁₄ Modified to 6 Degrees of Dihedral.

DRAWING NUMBER: WT-70-105222 "D"

DIMENSIONS: FULL-SCALE MODEL SCALE

TOTAL DATA

Area		
Planform	1241959	15.571
Wetted		
Span (equivalent)	1739	6.066
Aspect Ratio	2.436	2.35
Rate of Taper		
Taper Ratio	0.106	0.1192
Dihedral Angle, degrees	6 at T. E.	6 at T. E.
Incidence Angle, degrees	2	2
Aerodynamic Twist, degrees	-4	-4
Toe-In Angle		
Cant Angle		
Sweep Back Angles, degrees		
Leading Edge	53	53.1
Trailing Edge	0	0
0.25 Element Line	44.85	44.91
Chords:		
Root (Wing Sta. 0.0)	1291	4.587
Tip, (equivalent)	137	0.547
MAC	869.4	3.095
Fus. Sta. of .25 MAC	3104.9	10.913*
W.P. of .25 MAC	226	0.825
B.L. of .25 MAC	136.9	1.120
Airfoil Section		
Root	NACA-0010-64 (Mod)	
Tip	NACA-0010-64 (Mod)	

EXPOSED DATA

Area	812980	9.96
Span, (equivalent)	1373	4.710
Aspect Ratio	2.25	2.23
Taper Ratio	0.1306	0.1485
Chords		
Root	1048	3.684
Tip	137	0.547
MAC	709.1	2.504
Fus. Sta. of .25 MAC	3224.9	11.356*
W.P. of .25 MAC	245	0.706
B.L. of .25 MAC	438.6	1.566

* Fuselage stations are relative to an origin 3.500 inches ahead of the nose of B₁₉.

TABLE VI

MODEL COMPONENT: WING - W₂₁

GENERAL DESCRIPTION: W₁₄ Modified to 10 Degrees of Dihedral

DRAWING NUMBER: WT-70-105222 "D"

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
<u>TOTAL DATA</u>		
Area		
Planform	1241959	15.417
Wetted		
Span (equivalent)	1739	6.006
Aspect Ratio	2.436	2.34
Rate of Taper		
Taper Ratio	0.106	0.1192
Dihedral Angle, degrees	10 at T. E.	10 at T. E.
Incidence Angle, degrees	2	2
Aerodynamic Twist, degrees	-4	-4
Toe-In Angle		
Cant Angle		
Sweep Back Angles, degrees		
Leading Edge	53	53.38
Trailing Edge	0	0
0.25 Element Line	44.85	45.26
Chords:		
Root (Wing Sta. 0.0)	1291	4.587
Tip, (equivalent)	137	0.547
MAC	869.4	3.095
Fus. Sta. of .25 MAC	3104.9	10.913*
W.P. of .25 MAC	236	0.902
B.L. of .25 MAC	136.9	1.109
Airfoil Section		
Root	NACA-0010-64 (Mod)	
Tip	NACA-0010-64 (Mod)	
<u>EXPOSED DATA</u>		
Area	812980	9.84
Span, (equivalent)	1373	4.650
Aspect Ratio	2.25	2.20
Taper Ratio	0.1306	0.1485
Chords		
Root	1048	3.684
Tip	137	0.547
MAC	709.1	2.504
Fus. Sta. of .25 MAC	3224.9	11.356*
W.P. of .25 MAC	276	0.815
B.L. of .25 MAC	438.6	1.554

TABLE VII

MODEL COMPONENT: CANARD - C4A

GENERAL DESCRIPTION: Basic canard for the B-15B Delta Wing Configuration

DRAWING NUMBER: WT-70-105224

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area	<u>66286</u>	<u>0,706</u>
Span (equivalent)	<u>352</u>	<u>1,232</u>
Inb'd equivalent chord	<u>341</u>	<u>1,061</u>
Outb'd equivalent chord	<u>36</u>	<u>0,099</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u> </u>	<u> </u>
At Outb'd equiv. chord	<u> </u>	<u> </u>
Sweep Back Angles, degrees		
Leading Edge	<u>60</u>	<u>57,68</u>
Tailing Edge	<u>0</u>	<u>0</u>
Hingeline	<u> </u>	<u> </u>
Area Moment (Normal to hinge line)	<u> </u>	<u> </u>
Hinge Line Located at 25% of M. A. C. of Exposed Area		

TABLE VIII

MODEL COMPONENT: VERTICAL TAIL - V7

GENERAL DESCRIPTION: Basic vertical for B-15B delta wing configuration

DRAWING NUMBER: WT-70-105222

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area	<u>177306</u>	<u>2.135</u>
Span (equivalent)	<u>485</u>	<u>1.674</u>
Inb'd equivalent chord	<u>504</u>	<u>1.723</u>
Outb'd equivalent chord	<u>252</u>	<u>0.826</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.35</u>	<u>0.35</u>
At Outb'd equiv. chord	<u></u>	<u></u>
Sweep Back Angles, degrees		
Leading Edge	<u>35</u>	<u>36.40</u>
Tailing Edge	<u>10</u>	<u>11.29</u>
Hingeline	<u>19.83</u>	<u>19.83</u>
Area Moment (Normal to hinge line)	<u></u>	<u></u>

TABLE IX

MODEL COMPONENT: VERTICAL TAIL V12

GENERAL DESCRIPTION: V7 with Rudder Flared 25 Degrees

DRAWING NUMBER: _____

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area	<u>177306</u>	<u>2,135</u>
Span (equivalent)	<u>485</u>	<u>1.674</u>
Inb'd equivalent chord	<u>504</u>	<u>1.723</u>
Outb'd equivalent chord	<u>252</u>	<u>0.826</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.35</u>	<u>0.35</u>
At Outb'd equiv. chord	<u> </u>	<u> </u>
Sweep Back Angles, degrees		
Leading Edge	<u>35</u>	<u>36.40</u>
Tailing Edge	<u>10</u>	<u>11.29</u>
Hingeline	<u>19.83</u>	<u>19.83</u>
Area Moment (Normal to hinge line)	<u> </u>	<u> </u>

MODEL COMPONENT: VERTICAL TAIL — V13

GENERAL DESCRIPTION: V7 with Rudder Flared 50 Degrees

DRAWING NUMBER: _____

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area	<u>177306</u>	<u>2,135</u>
Span (equivalent)	<u>485</u>	<u>1.674</u>
Inb'd equivalent chord	<u>504</u>	<u>1.723</u>
Outb'd equivalent chord	<u>252</u>	<u>0.826</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.35</u>	<u>0.35</u>
At Outb'd equiv. chord	<u> </u>	<u> </u>
Sweep Back Angles, degrees		
Leading Edge	<u>35</u>	<u>36.40</u>
Tailing Edge	<u>10</u>	<u>11.29</u>
Hingeline	<u>19.83</u>	<u>19.83</u>
Area Moment (Normal to hinge line)	<u> </u>	<u> </u>

TABLE XI

MODEL COMPONENT: BODY FLAP — F9

GENERAL DESCRIPTION: Delta Planform Body Flap, T. E. of Undelected Flap is
at Same Model Station as Wing T. E.

DRAWING NUMBER: _____

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area	<u>21600</u>	<u>0.264</u>
Span (equivalent)	<u>269.25</u>	<u>0.942</u>
Inb'd equivalent chord	<u>160.44</u>	<u>0.561</u>
Outb'd equivalent chord	<u>0</u>	<u>0</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>1.0</u>	<u>1.0</u>
At Outb'd equiv. chord	<u> </u>	<u> </u>
Sweep Back Angles, degrees		
Leading Edge	<u>50</u>	<u>49.98</u>
Tailing Edge	<u>0</u>	<u>0</u>
Hingeline	<u>50</u>	<u>49.98</u>
Area Moment (Normal to hinge line)	<u> </u>	<u> </u>

NOMENCLATURE

(General)

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
α	ALPHA	angle of attack, angle between the projection of the wind X_w -axis on the body X, Z-plane and the body X-axis; degrees
β	BETA	sideslip angle, angle between the wind X_w -axis and the projection of this axis on the body X-Z-plane; degrees
ψ	PSI	yaw angle, angle of rotation about the body Z-axis, positive when the positive X-axis is rotated toward the positive Y-axis; degrees
ϕ	PHI	roll angle, angle of rotation about the body X-axis, positive when the positive Y-axis is rotated toward the positive Z-axis; degrees
ρ		air density; K_g/m^3 , slugs/ft ³
a		speed of sound; m/sec, ft/sec
V		speed of vehicle relative to surrounding atmosphere; m/sec, ft/sec
q	Q(PSI) Q(PSF)	dynamic pressure; $1/2\rho V^2$, psi, psf
M	MACH	Mach number; V/a
RN/L	RN/L	Reynolds number per unit length; million/ft
p		static pressure; psi
P		total pressure; psi
C_p	CP	pressure coefficient; $(p-p_\infty)/q$

NOMENCLATURE (Continued)

Reference & C. G. Definitions

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
S		wing area; m^2 , ft^2
S	SREF	reference area; m^2 , ft^2
\bar{c}		wing mean aerodynamic chord or reference chord; m, ft, in (see l_{ref} or LREF)
l_{ref}	LREF	reference length; m, ft, in.; (see \bar{c})
b_{ref}	BREF	wing span or reference span; m, ft, in
A_b		base area; m^2 , ft^2 , in^2
c. g.		center of gravity
MRP	MRP	abbreviation for moment reference point
	XMRP	abbreviation for moment reference point on X-axis
	YMRP	abbreviation for moment reference point on Y-axis
	ZMRP	abbreviation for moment reference point on Z-axis

NOMENCLATURE (Continued)

Axis System General

<u>SYMBOL</u>	<u>DEFINITION</u>
F	force; F, lbs
M	moment; M, in-lb

<u>Subscript</u>	<u>Definition</u>
N	normal force
A	axial force
L	lift force
D	drag force
Y	force or moment about the Y axis
Z	moment about the Z axis
X	moment about the X axis
s	stability axis system
w	wind axis system
ref	reference conditions
∞	free stream conditions
t	total conditions
b	base

NOMENCLATURE (Continued)
Body & Stability Axis System

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
<u>Body Axis System</u>		
C_N	CN	normal force coefficient; F_N/qS
C_A	CA	axial force coefficient; F_A/qS
C_{A_b}	CAB	base axial force coefficient; $\left[\begin{matrix} -1 \\ \end{matrix} \right] \left[\frac{(P_b - P_\infty)}{q} \right] (A_b/S)$
C_{A_f}	CAF	forebody axial force coefficient; $C_A - C_{A_b}$
C_n	CYN	yawing moment coefficient; $M_Z/qS b_{ref}$
C_l	CBL	rolling moment coefficient; $M_X/qS b_{ref}$
<u>Common to Both Axis Systems</u>		
C_m	CIM	pitching moment coefficient; $M_Y/qS l_{ref}$
C_y	CY	side force coefficient; F_Y/qS
<u>Stability Axis System</u>		
C_L	CL	lift force coefficient; F_L/qS
C_D	CD	drag force coefficient; F_D/qS
C_{D_b}	CDB	base drag coefficient
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_n	CLN	yawing moment coefficient; $M_{Z,s}/qS b_{ref}$
C_l	CSL	rolling moment coefficient; $M_{X,s}/qS b_{ref}$
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 (Continued)

Surface Definitions

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
1t	HORIZT	horizontal tail incidence; positive when trailing edge down; degrees
δ		symmetrical surface deflection angle; degrees; positive deflections are:
	AILRON	aileron - total aileron deflection; (left aileron - right aileron)/2
	CANARD	canard - trailing edge down
	ELEVON	elevon - trailing edge down
	ELEVTR	elevator - trailing edge down
	FLAP	flap - trailing edge down
	RUDDER	rudder - trailing edge to the left
	SPOILR	spoiler - trailing edge down
	TAB	tab - trailing edge down with respect to control surface
δ		antisymmetrical surface deflection angle, degrees; positive trailing edge down:
	AIL-L	left aileron - trailing edge down
	AIL-R	right aileron - trailing edge down
	ELVN-L	left elevon - trailing edge down
	ELVN-R	right elevon - trailing edge down
	SPLR-L	left spoiler - trailing edge down
	SPLR-R	right spoiler - trailing edge down

<u>SURFACE SUBSCRIPTS</u>	<u>DEFINITION</u>
a	aileron
b	base
c	canard
e	elevator or elevon
f	flap
r	rudder or ruddervator
s	spoiler
t	tail

A D D I T I O N S T O
N O M E N C L A T U R E

In addition to the standard SADSAC terms, the following nomenclature is used:

A_{CAVB}	=	Axial projection of area upon which the measured balance cavity pressure is assumed to act
A_{CAVS}	=	Normal projection of the area (equal to cutout) upon which the balance cavity pressure is assumed to act
A_{b1}	=	Area of base annulus above fuselage centerline
A_{b2}	=	Area of base annulus below fuselage centerline
RDRFLR	=	Included angle between left and right halves of flared rudder
DIHDRL (Γ)	=	Wing dihedral angle, deg.

TABULATED DATA LISTING

A tabulated data listing, consisting of all aero data sets, both original and those created in arriving at the plotted material to be presented subsequently, is available as an addendum to this report. The tabular listing is made up in two sections:

- (a) a brief summary list of all data sets containing the identifier, the descriptor, and the resident dependent variables.
- (b) a full list of all data sets containing all resident or selected aerodynamic coefficients of the data sets as well as the above mentioned information.

The listing is currently sent on limited distribution to the following organizations:

NASA AMES	Mr. V. Stevens
NASA MSFC	Mr. Jim Weaver
GD/C	Mr. R. Lenflisi

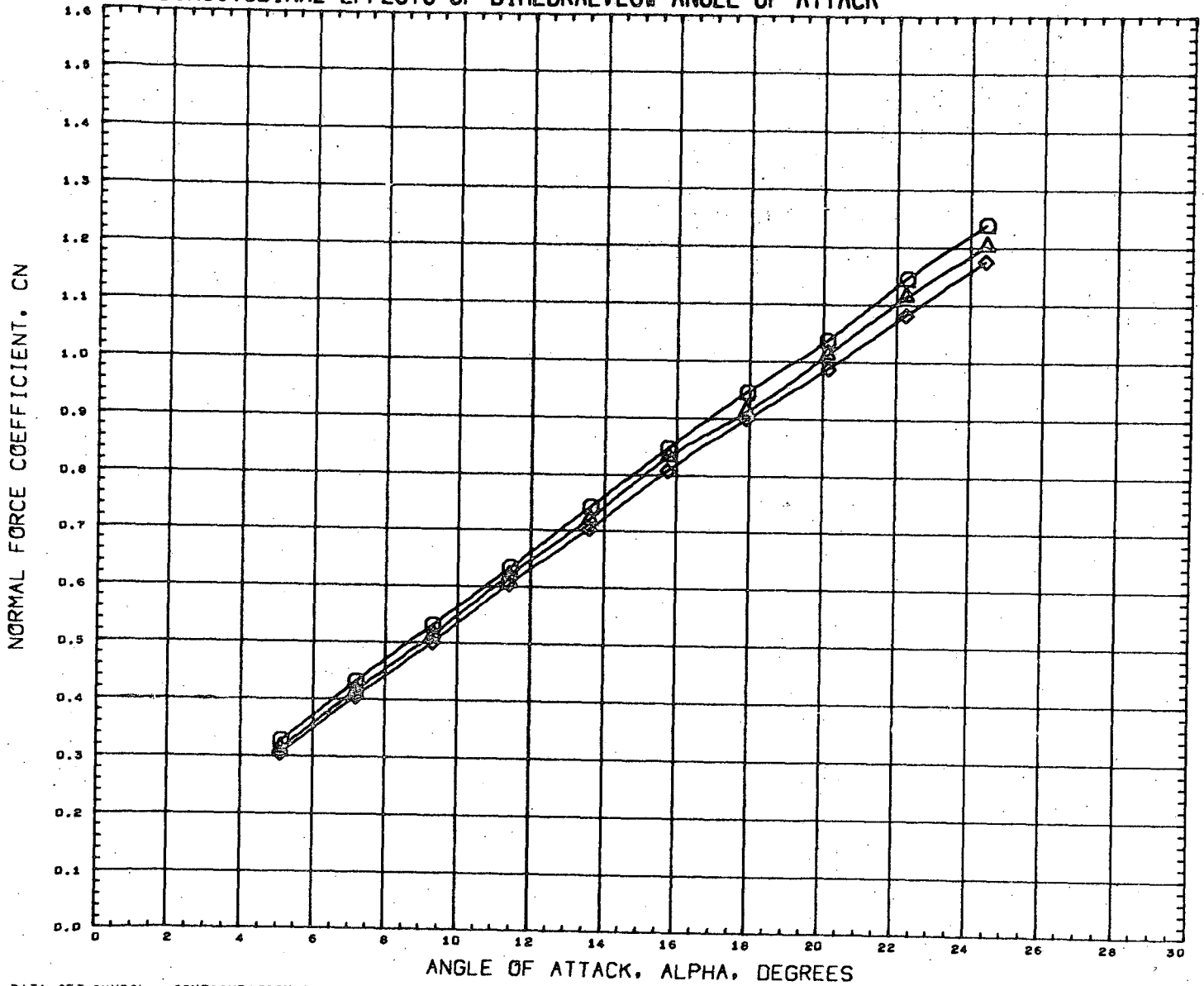
If copies of this listing are desired, please contact the above or the cognizant SADSAC personnel who, for this data, is:

Mr. W. R. Morgan
Department 2780
Chrysler Corporation Space Division
New Orleans, La. 70129

(504) 255-2304

PLOTTED DATA

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



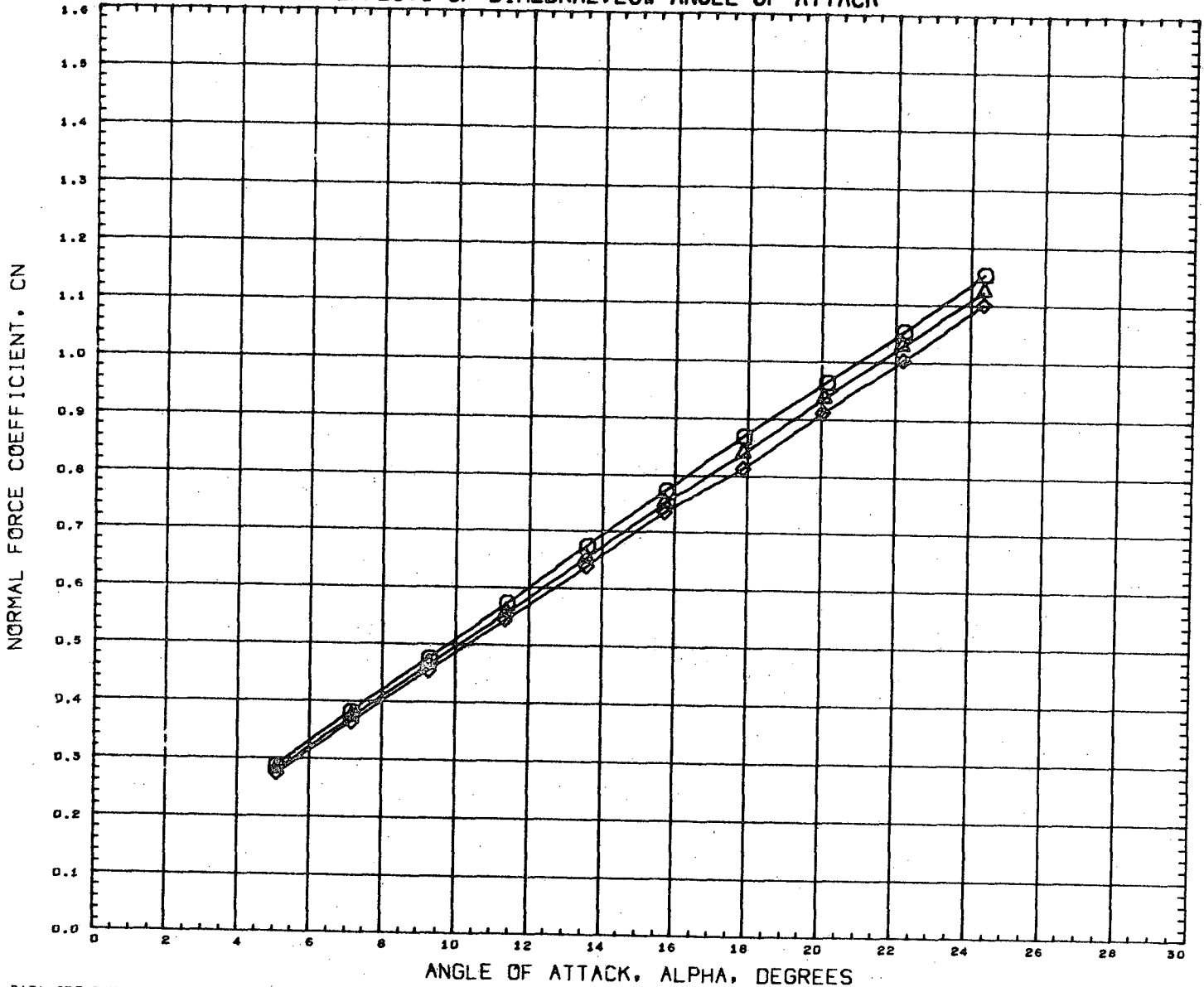
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(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHRL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.301

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



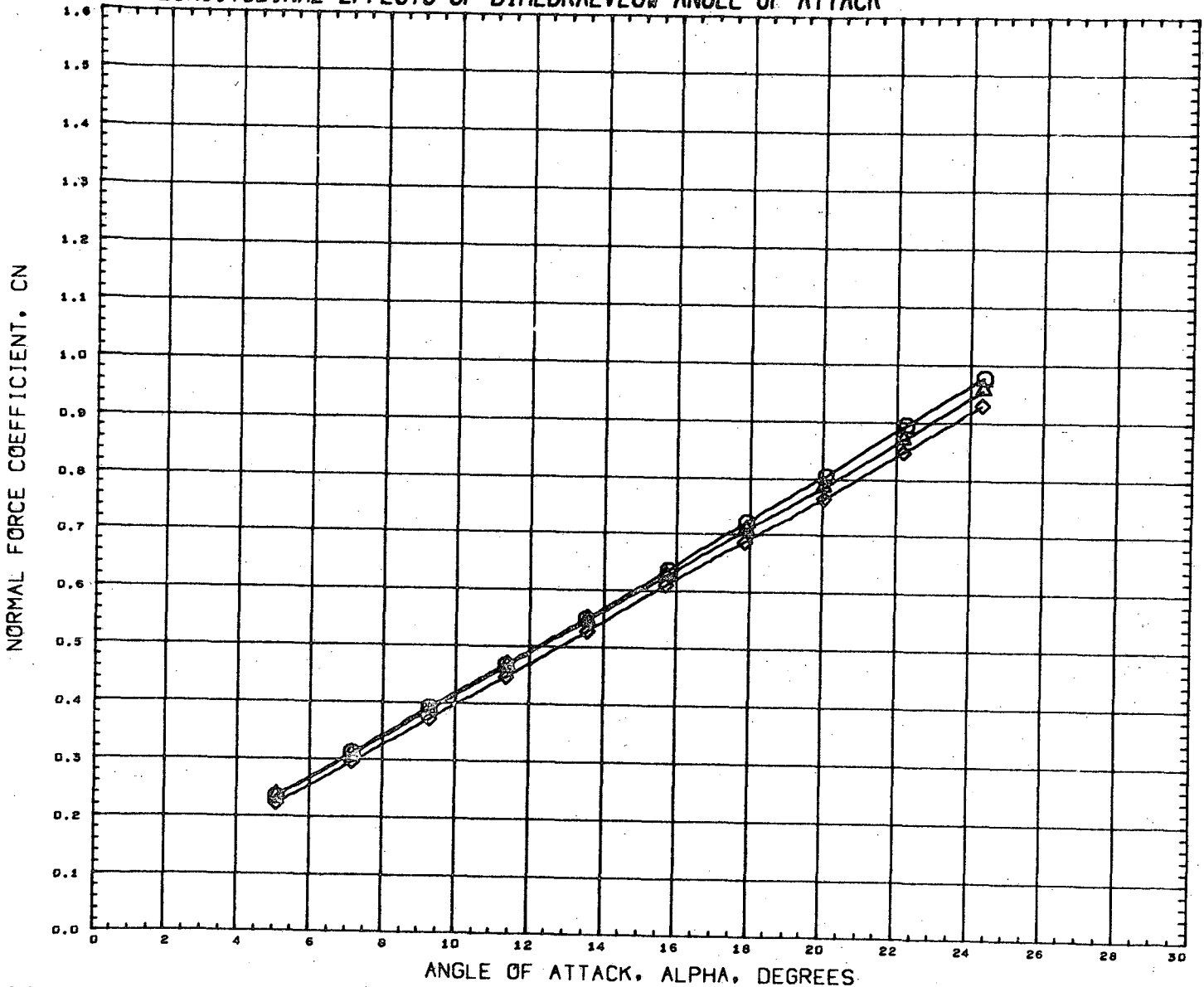
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(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37AD1)	MSFC 495 GD/C B19W21C4AV7

BETA	DINDRL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.455

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(D37A31)	⊙	MSFC 495 GD/C	B19W14C4AV7
(C37A61)	△	MSFC 495 GD/C	B19W20C4AV7
(C37A01)	◇	MSFC 495 GD/C	B19W21C4AV7

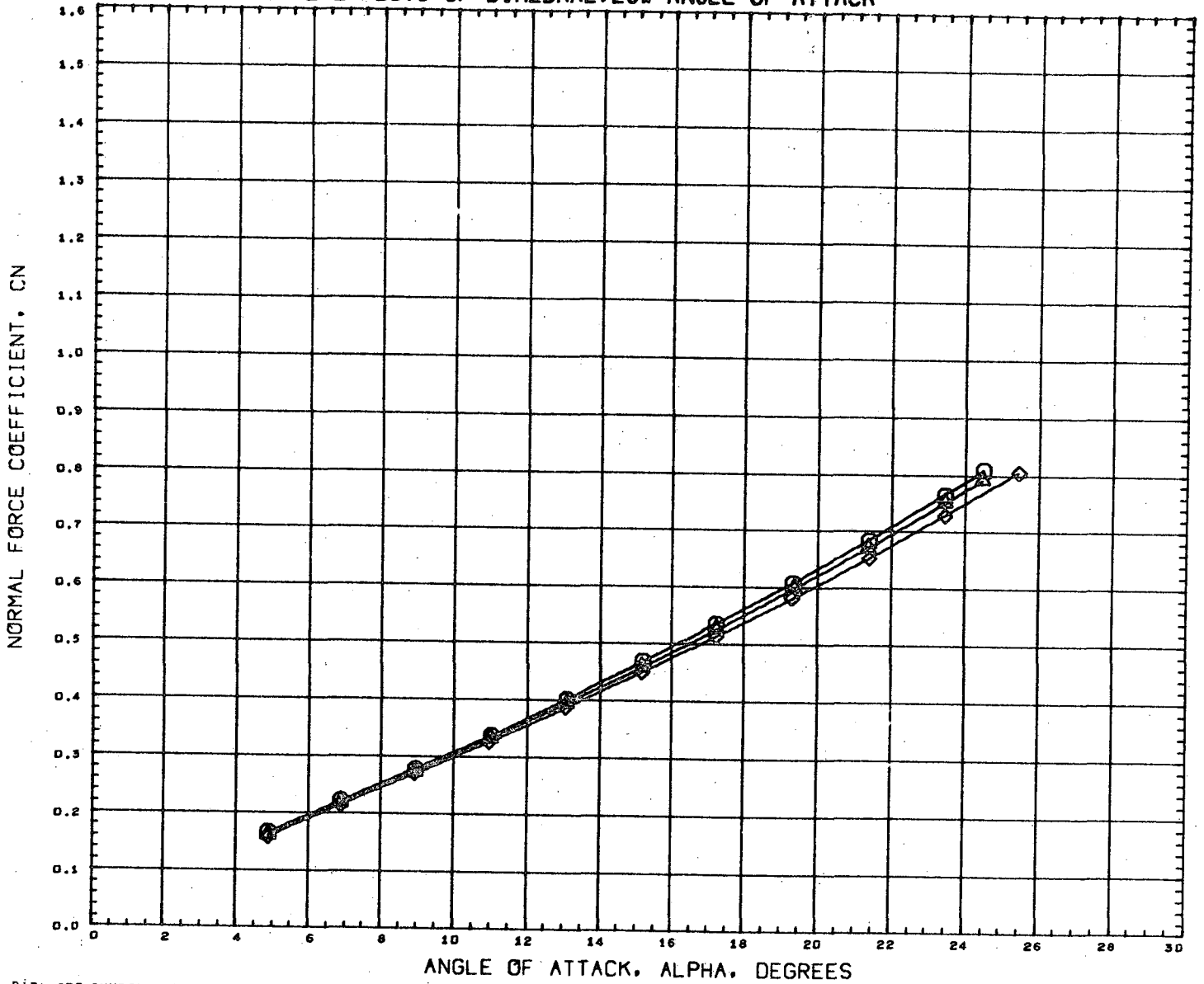
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0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.958

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



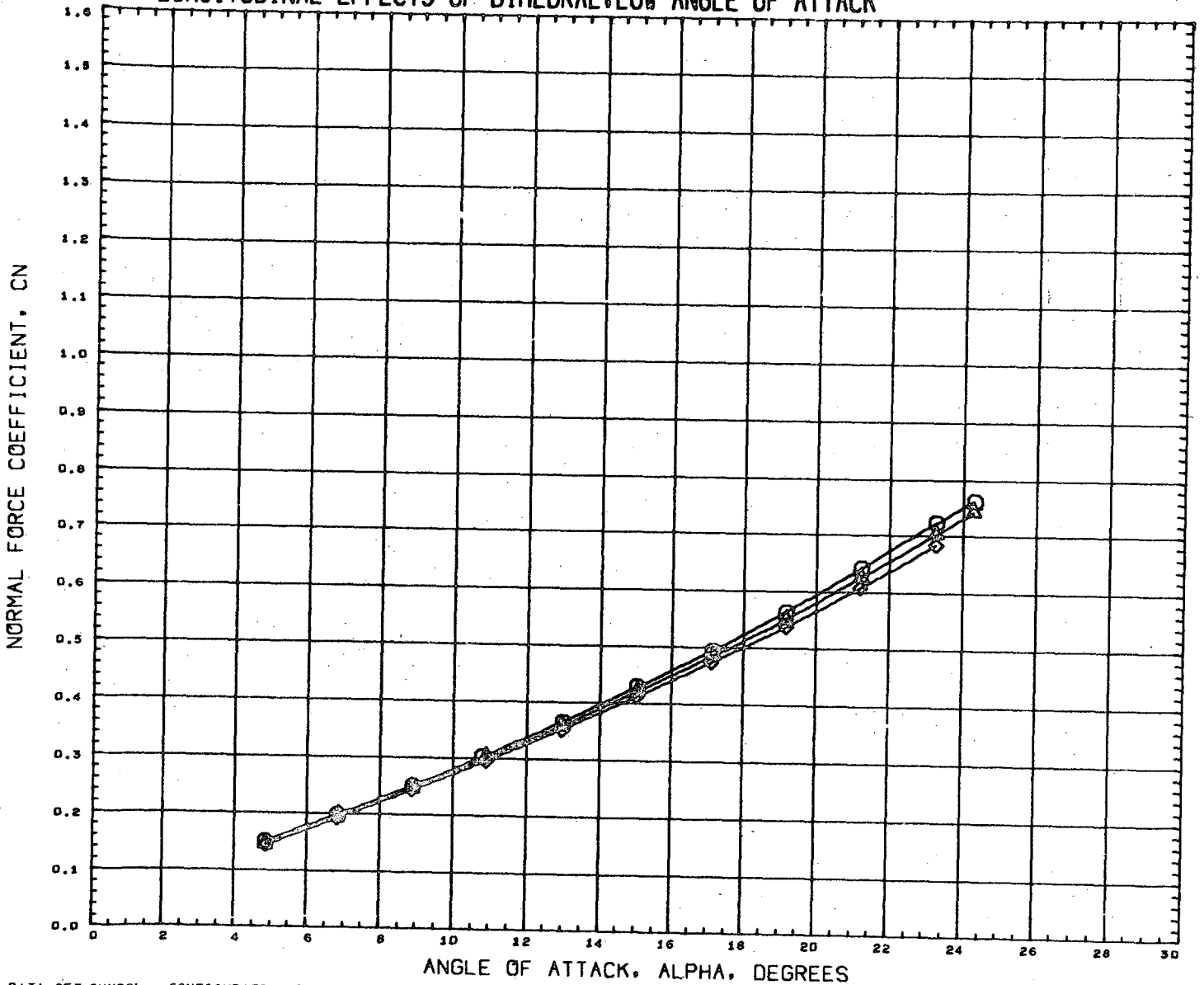
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(C37A61)	△	MSFC 495 GD/C B19W20C4AV7
(C37A01)	◇	MSFC 495 GD/C B19W21C4AV7

BETA	DIHDL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



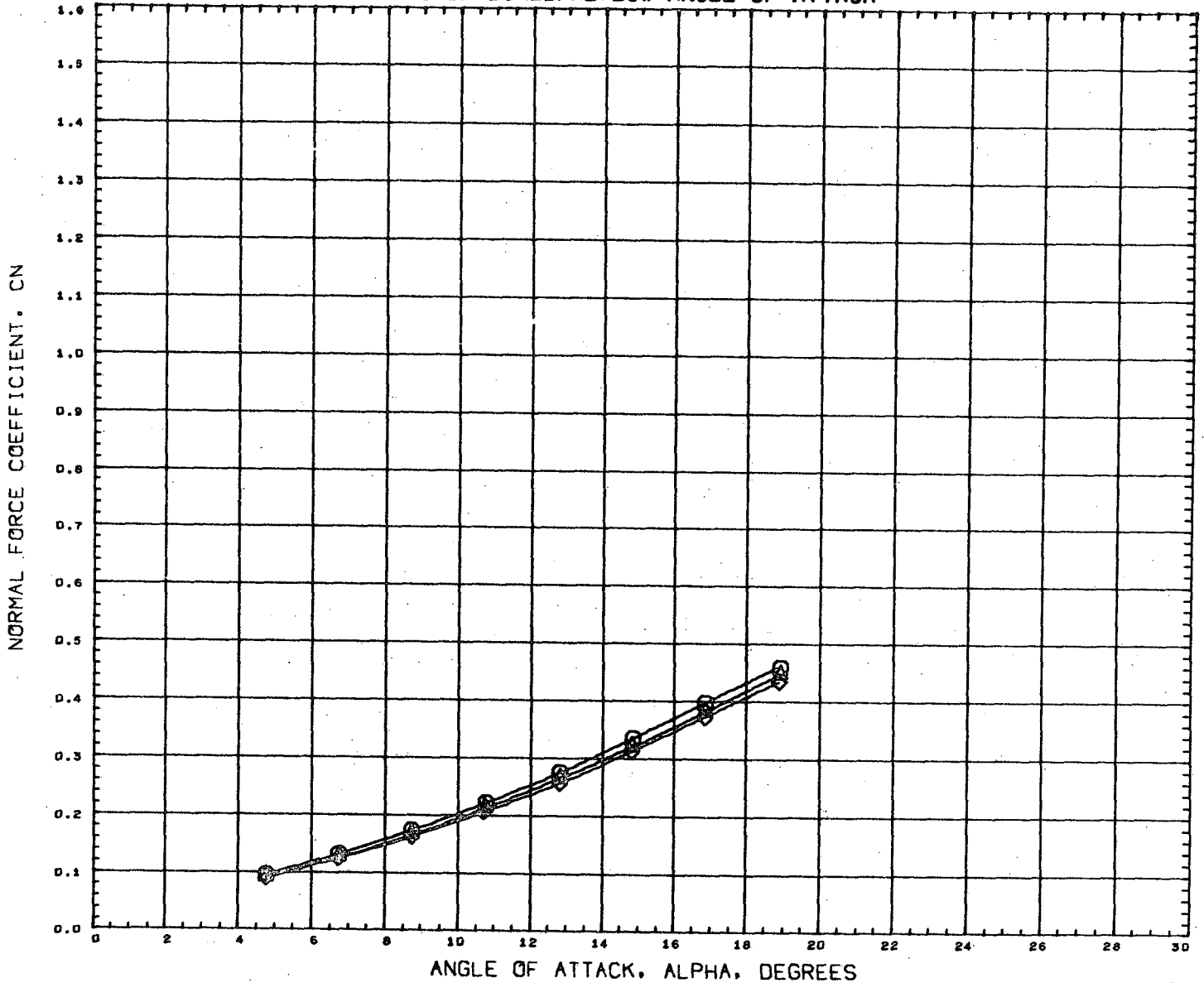
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(C37A61)	△	MSFC 495	GD/C B19W20C4AV7
(C37A01)	◇	MSFC 495	GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.990

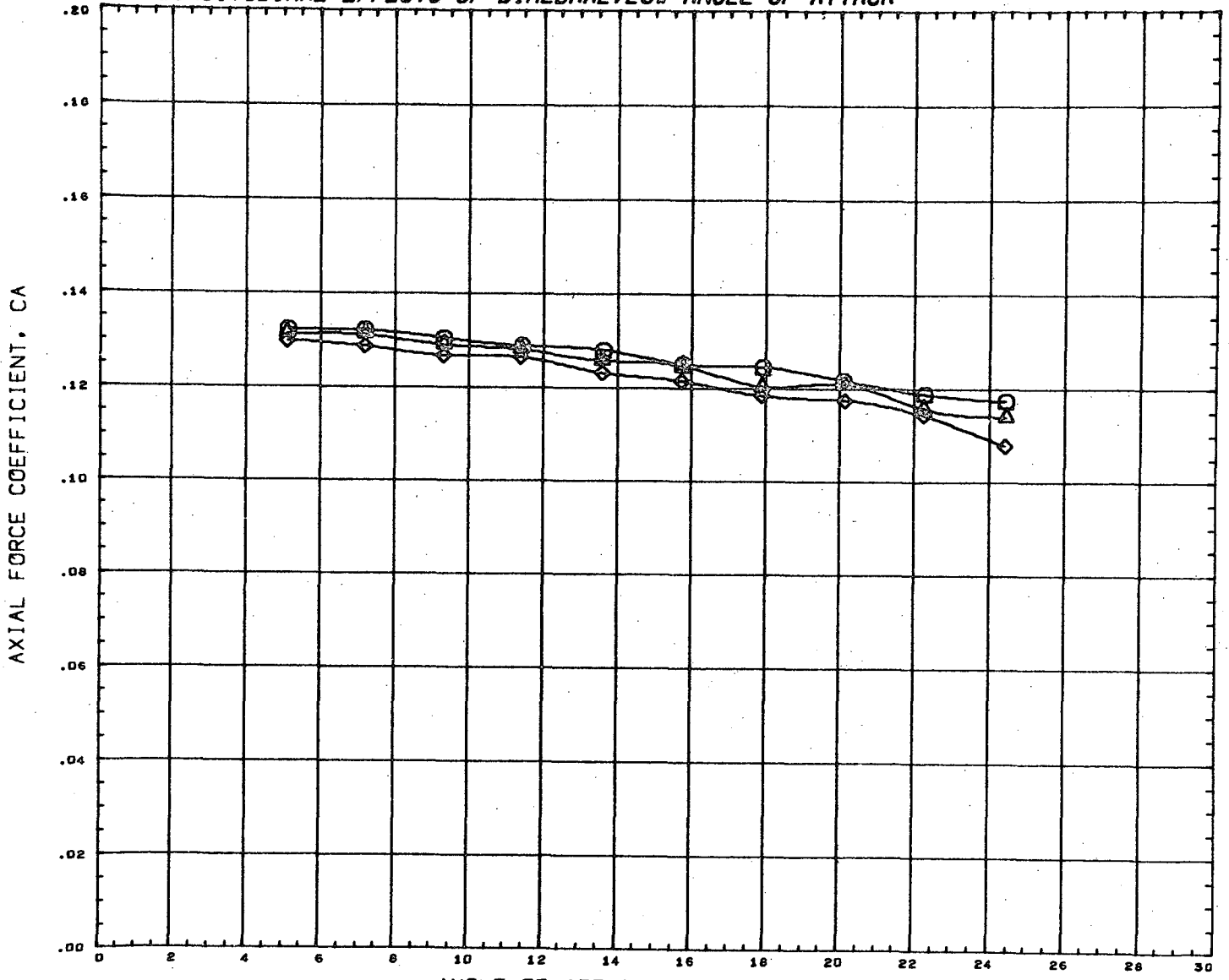
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	BETA	DIHEDRAL	RDRFLR	REFERENCE INFORMATION	
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(C37A61)	MSFC 495	GD/C B19W20C4AV7	0.000	6.000	0.000	LREF	3.0950 IN.
(C37AD1)	MSFC 495	GD/C B19W21C4AV7	0.000	10.000	0.000	BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



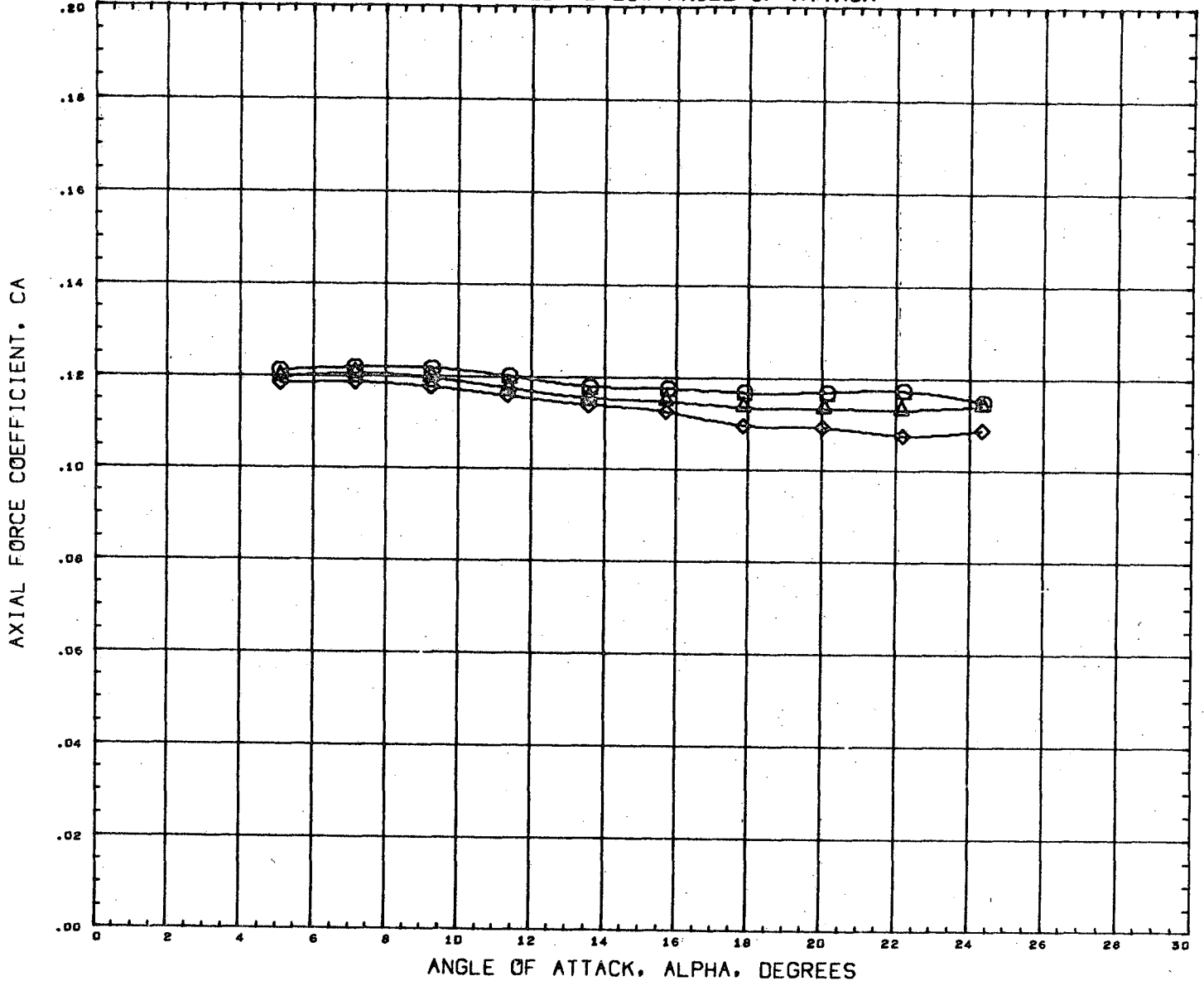
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(C37A61)	MSFC 495 GD/C	B19W20C4AV7
(C37A01)	MSFC 495 GD/C	B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF:	15.6560	SQ. IN.
LREF:	3.0950	IN.
BREF:	6.0990	IN.
XMRP:	6.6180	IN.
YMRP:	0.0000	IN.
ZMRP:	0.0000	IN.
SCALE:	0.0035	

MACH 1.301

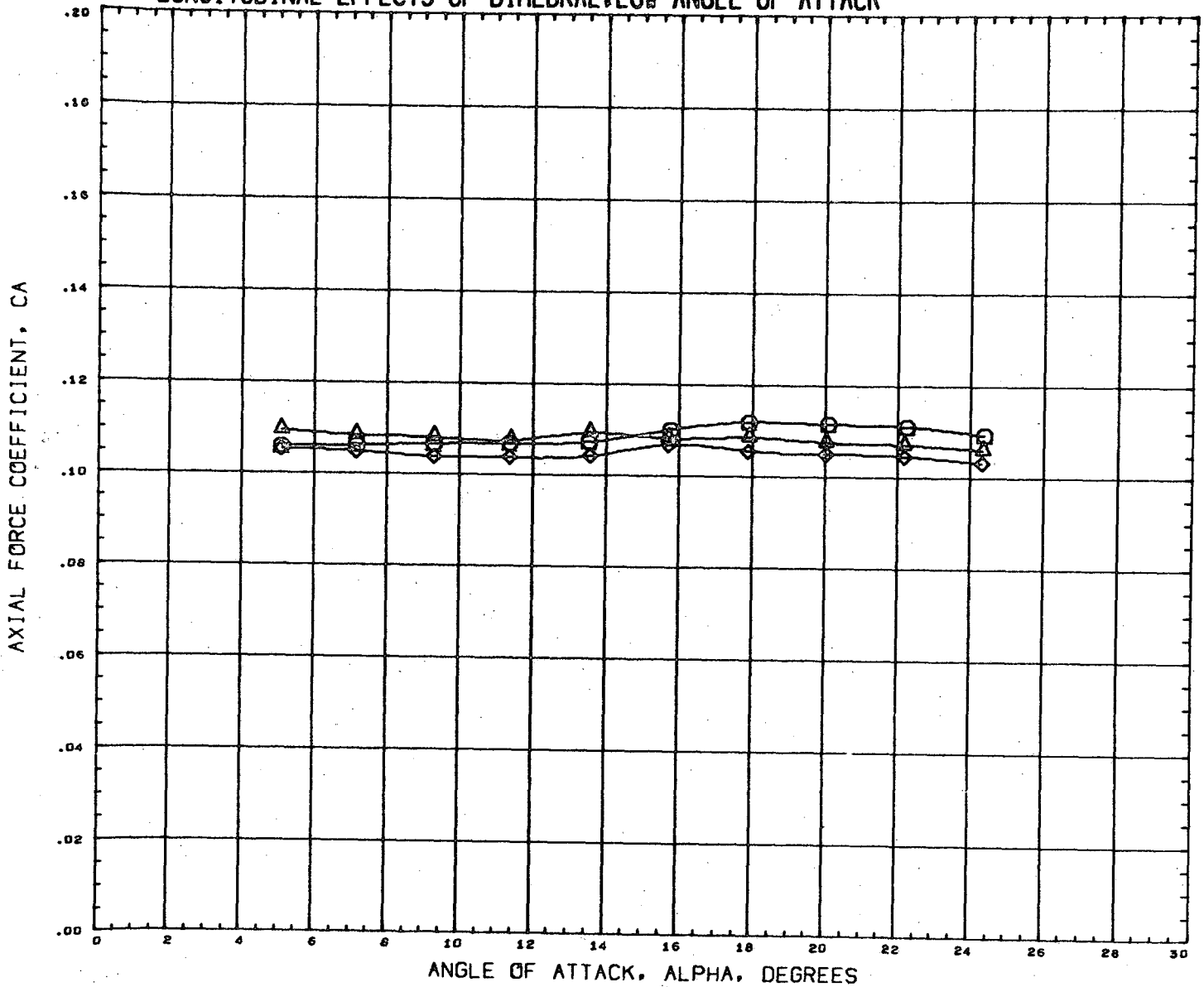
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHEDRAL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37A01)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.455

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(D37A31)	MSFC 495 GD/C	B19W14C4AV7
(C37A61)	MSFC 495 GD/C	B19W20C4AV7
(C37A01)	MSFC 495 GD/C	B19W21C4AV7

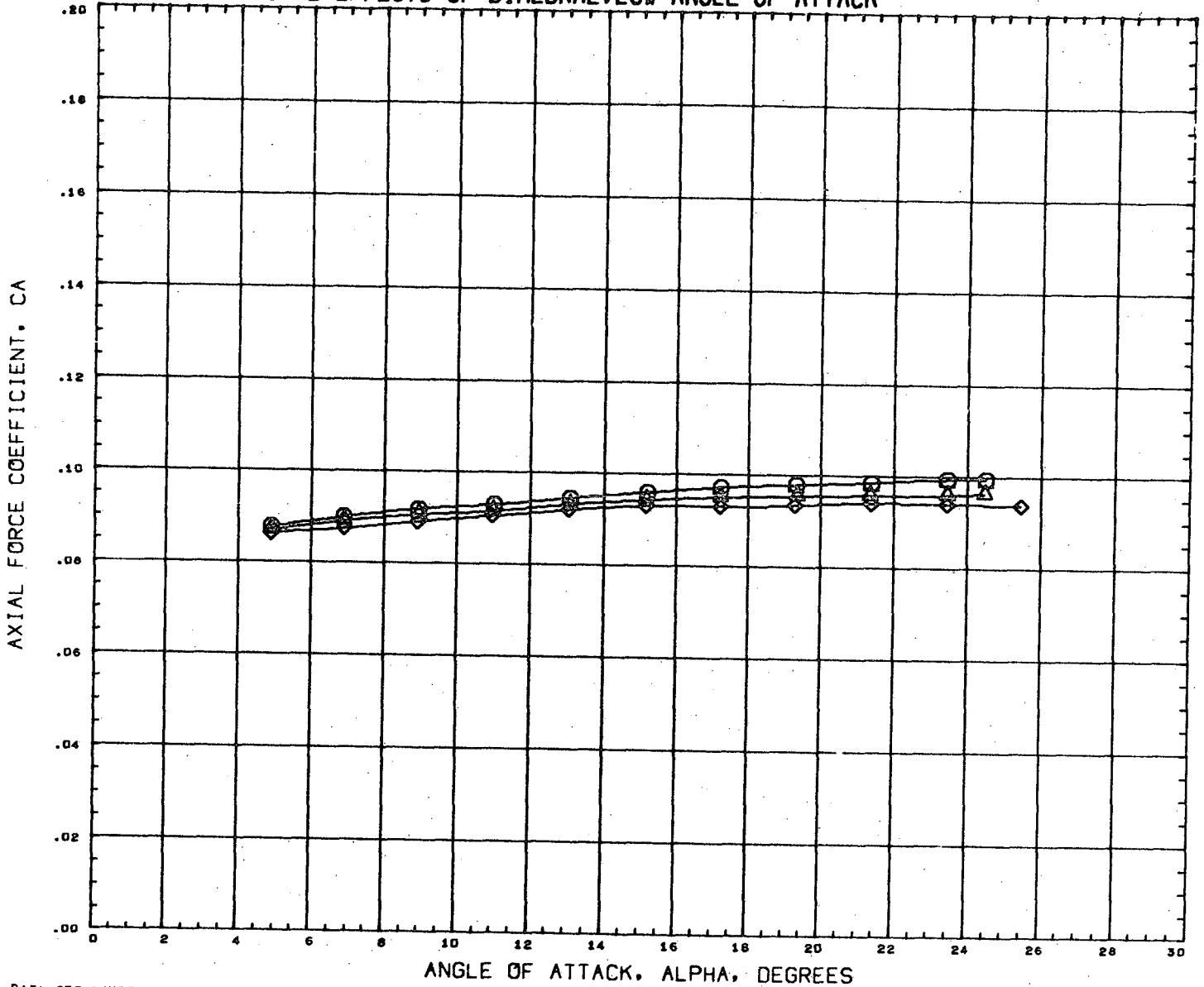
BETA	DIHDL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.958

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



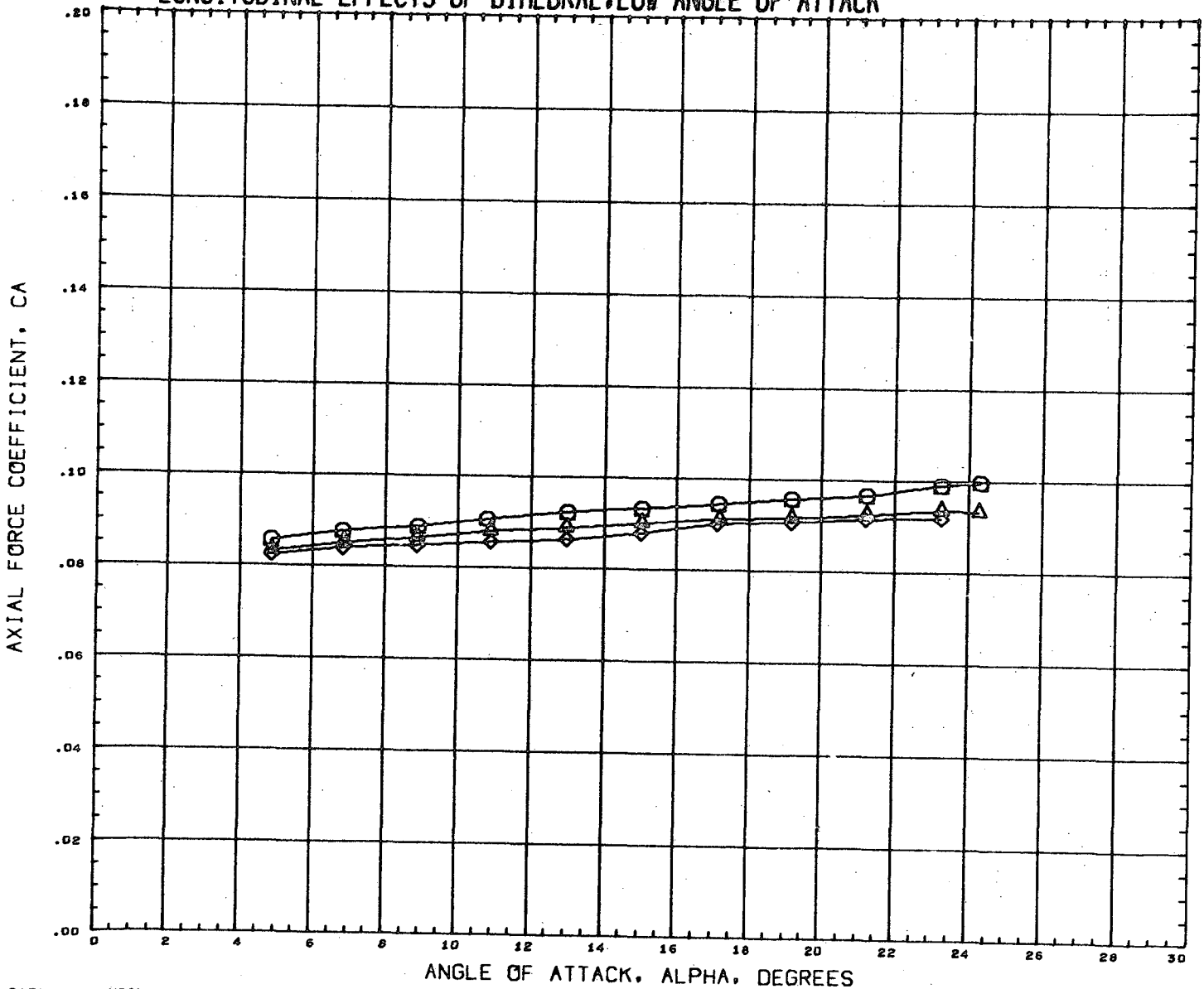
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DINDRL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

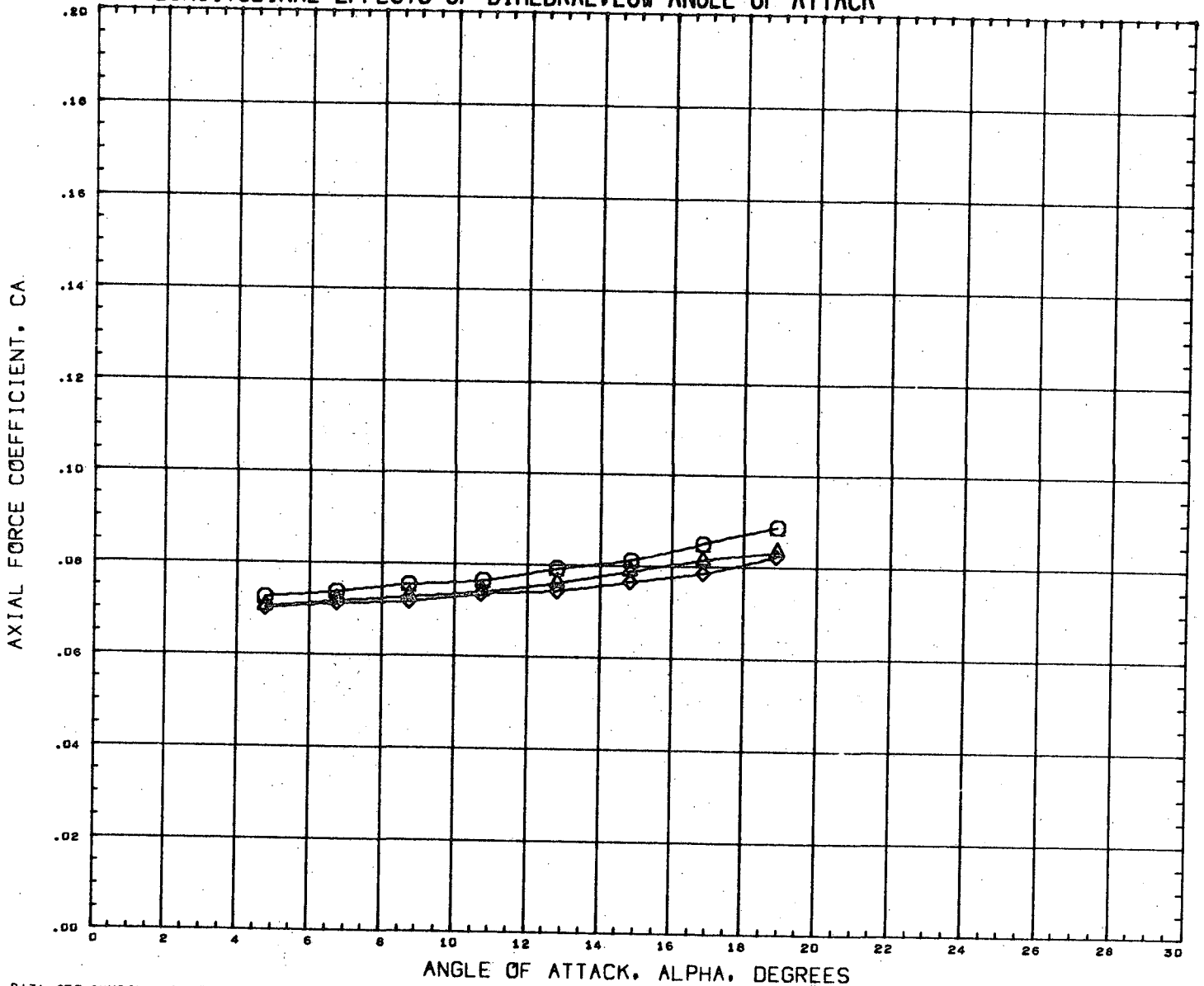
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHEDRAL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37A01)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



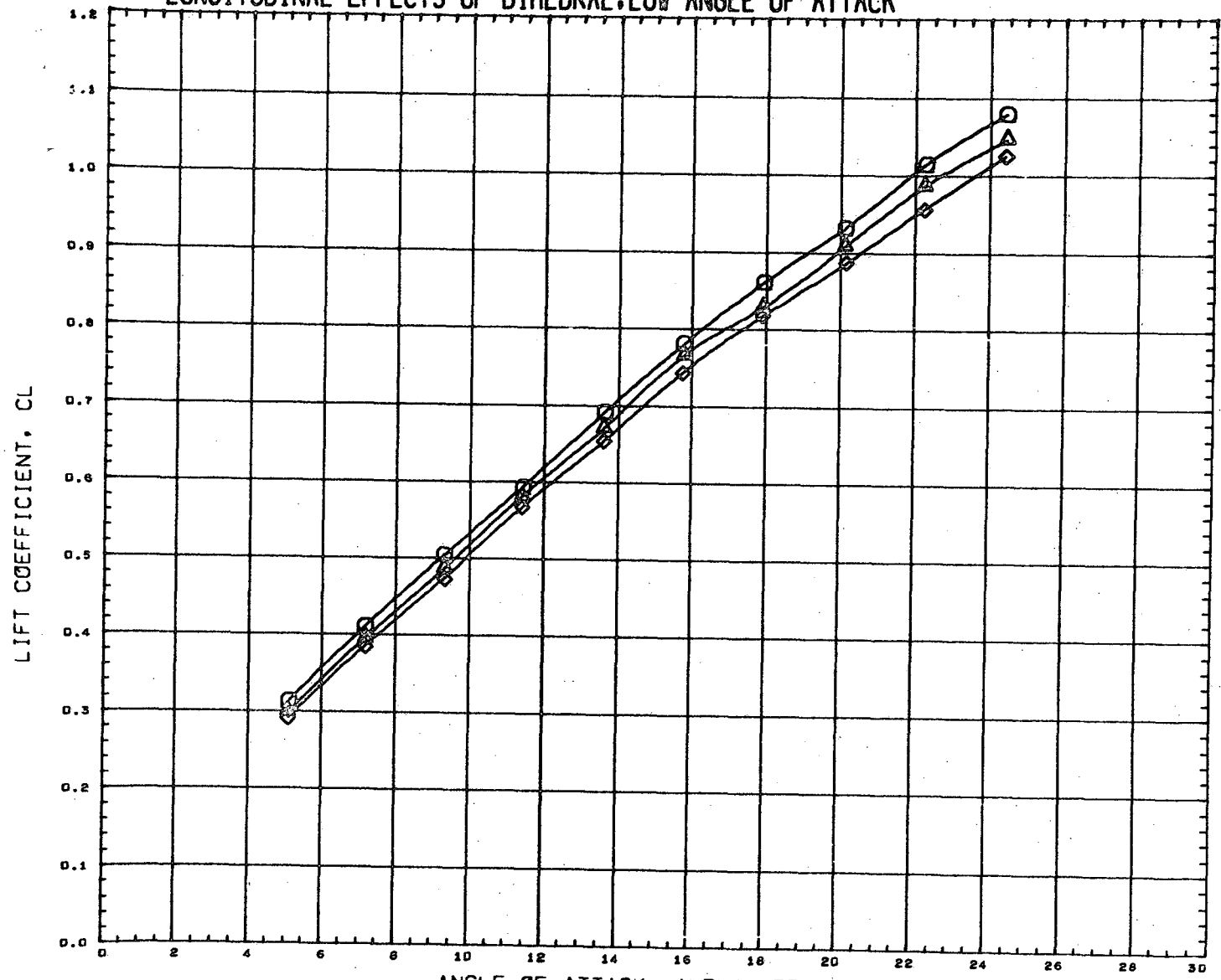
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(D37A31)	○	MSFC 495 GD/C	B19W14C4AV7
(C37A61)	△	MSFC 495 GD/C	B19W20C4AV7
(C37A01)	◇	MSFC 495 GD/C	B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

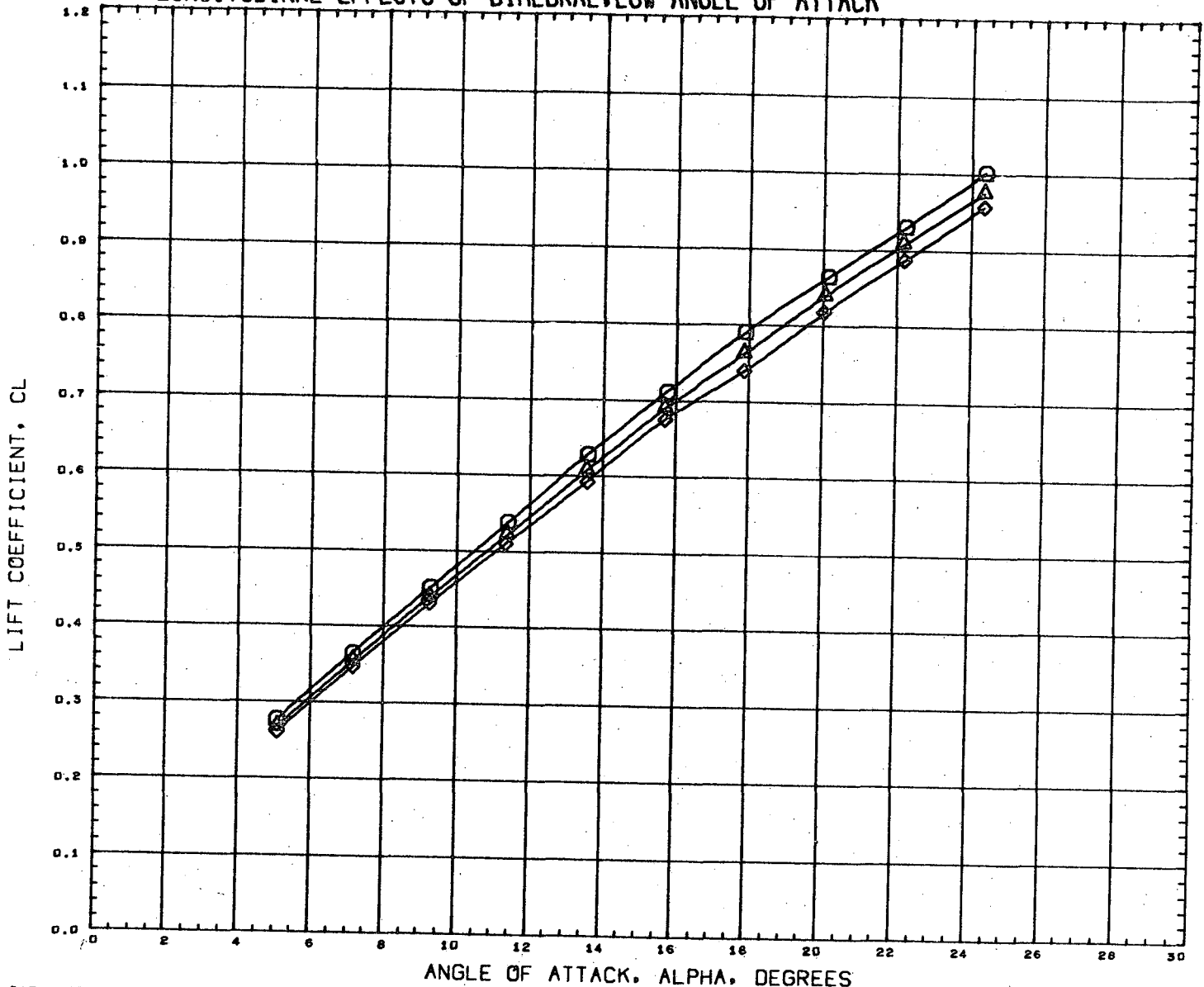
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHDL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37A01)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.301

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(D37A31)	○	MSFC 495 GD/C	B19W14C4AV7
(C37A61)	△	MSFC 495 GD/C	B19W20C4AV7
(C37A01)	◇	MSFC 495 GD/C	B19W21C4AV7

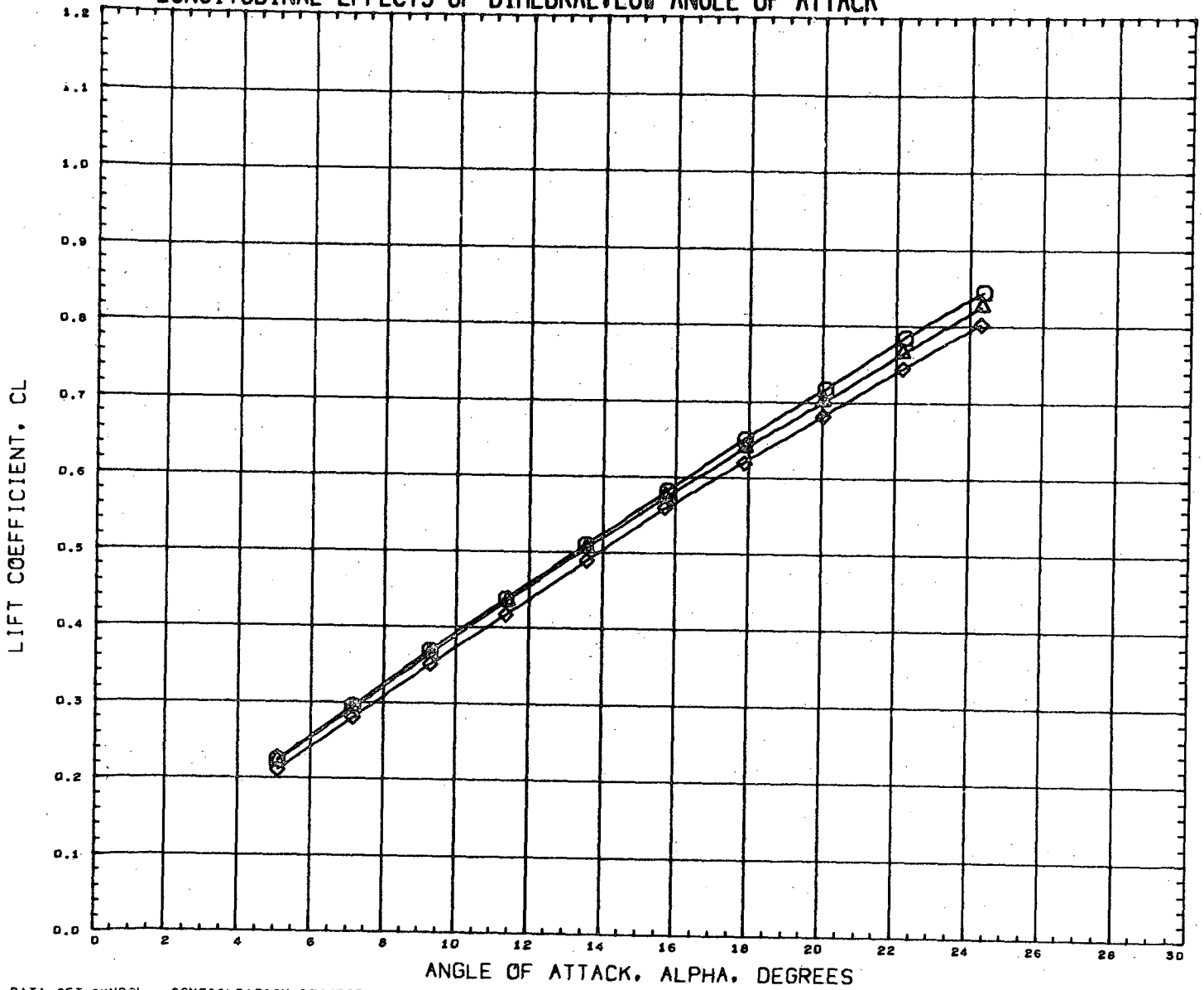
BETA	DIHDL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.455

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



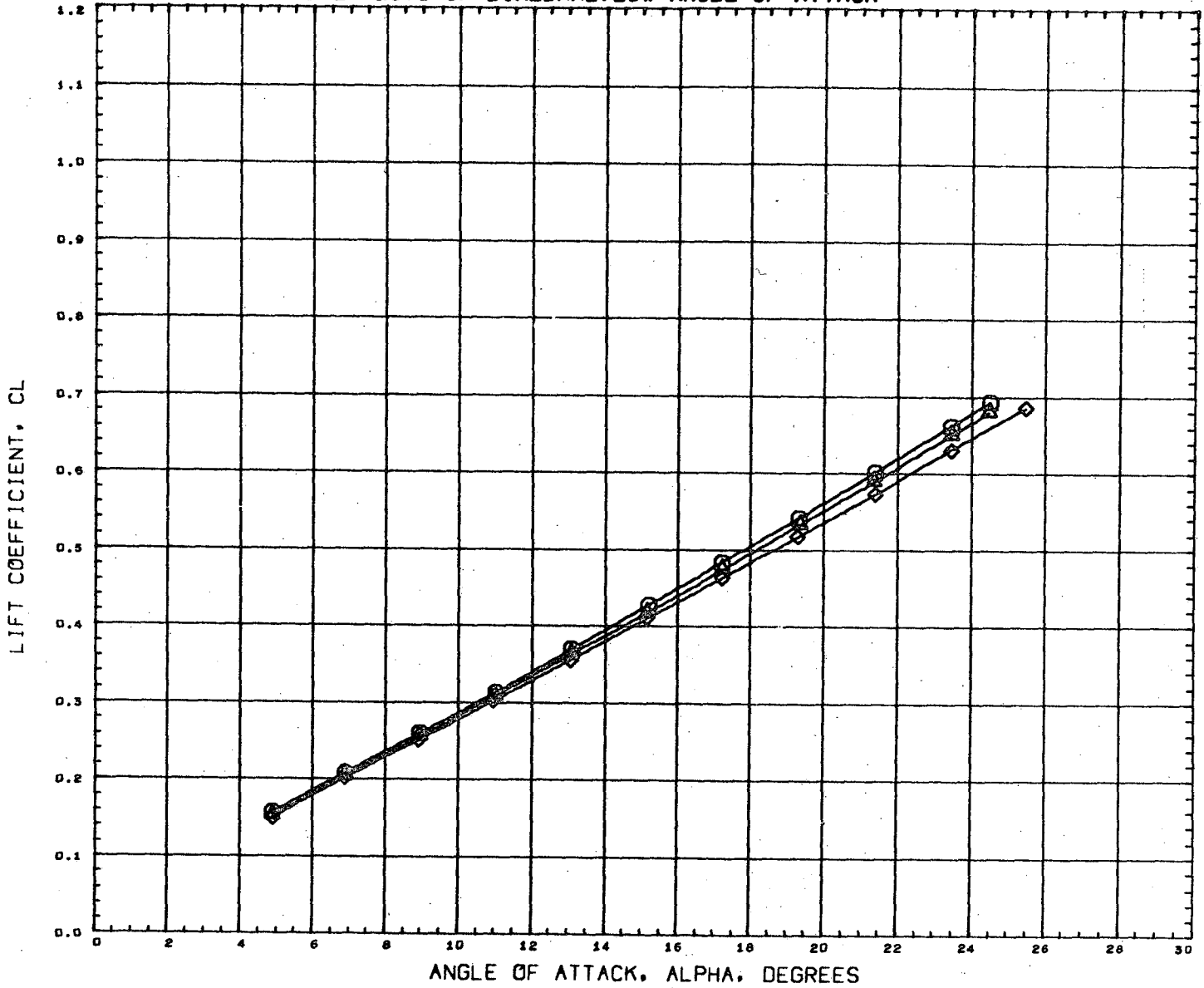
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(D37A31)	○	MSFC 495 GD/C	B19W14C4AV7
(C37A61)	△	MSFC 495 GD/C	B19W20C4AV7
(C37A01)	◇	MSFC 495 GD/C	B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 1.958

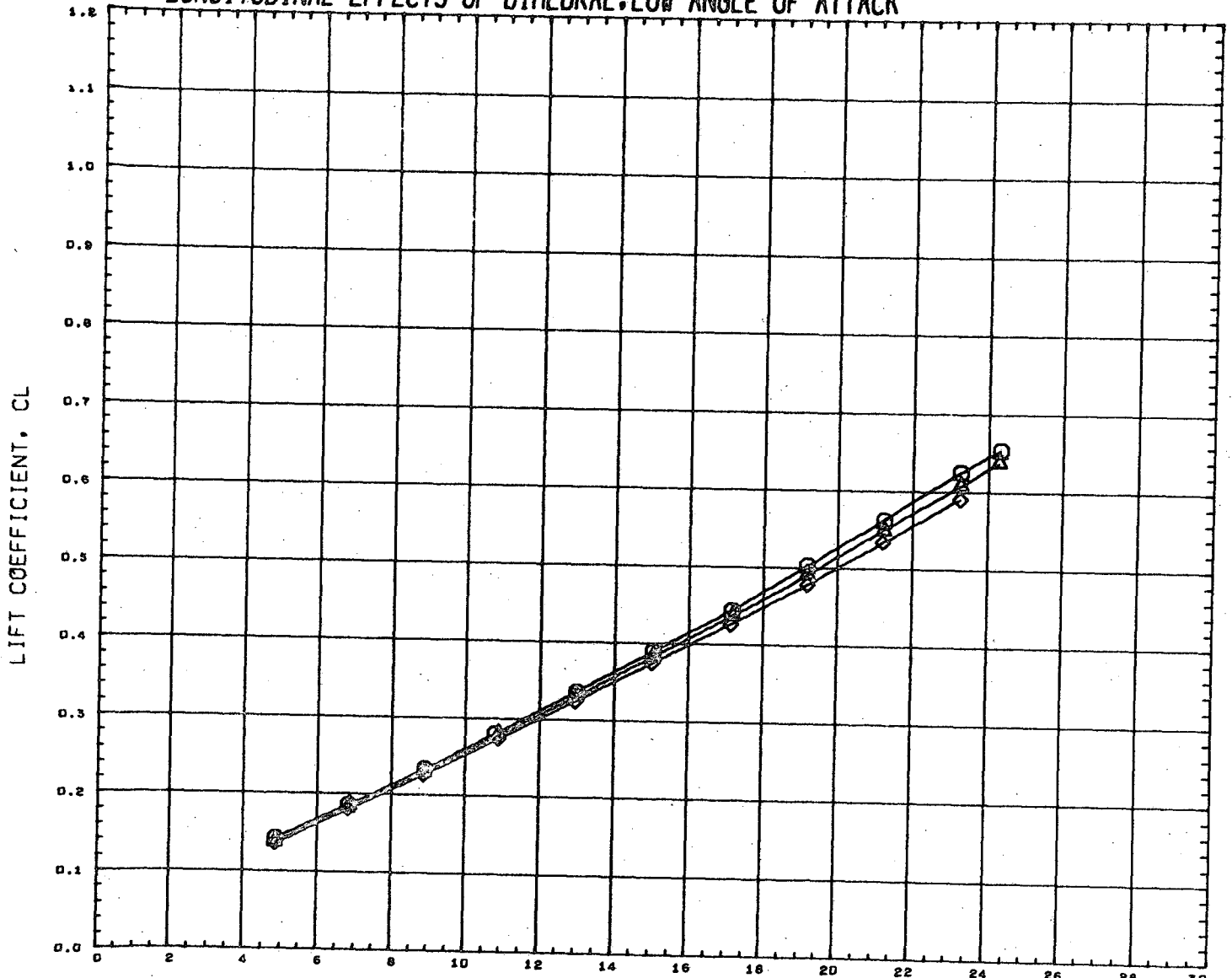
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHEDRAL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37A01)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



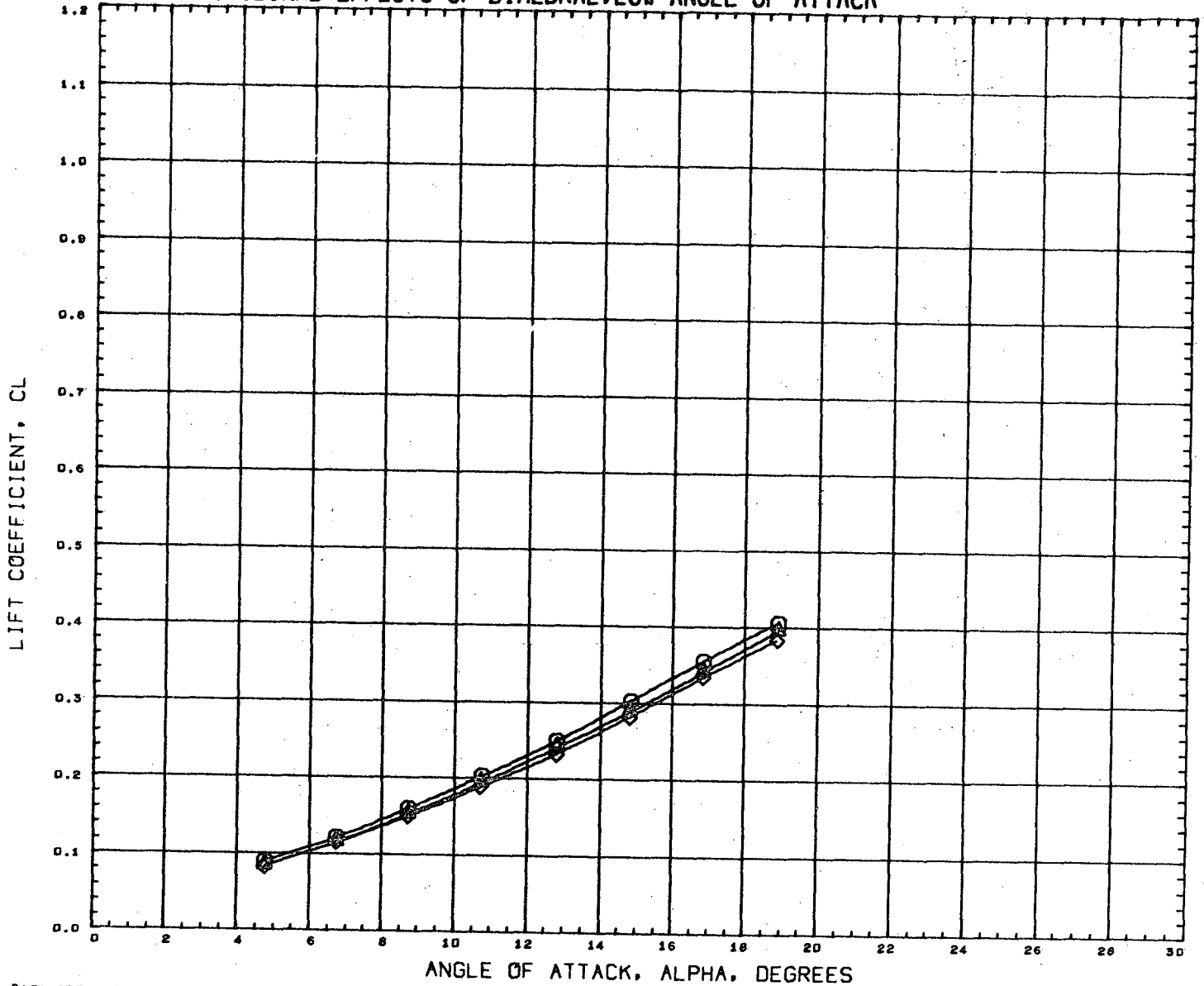
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(D37A31)	MSFC 495 GD/C	B19W14C4AV7
(C37A61)	MSFC 495 GD/C	B19W2DC4AV7
(C37AD1)	MSFC 495 GD/C	B19W21C4AV7

BETA	DIHEDRAL	CDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SG. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

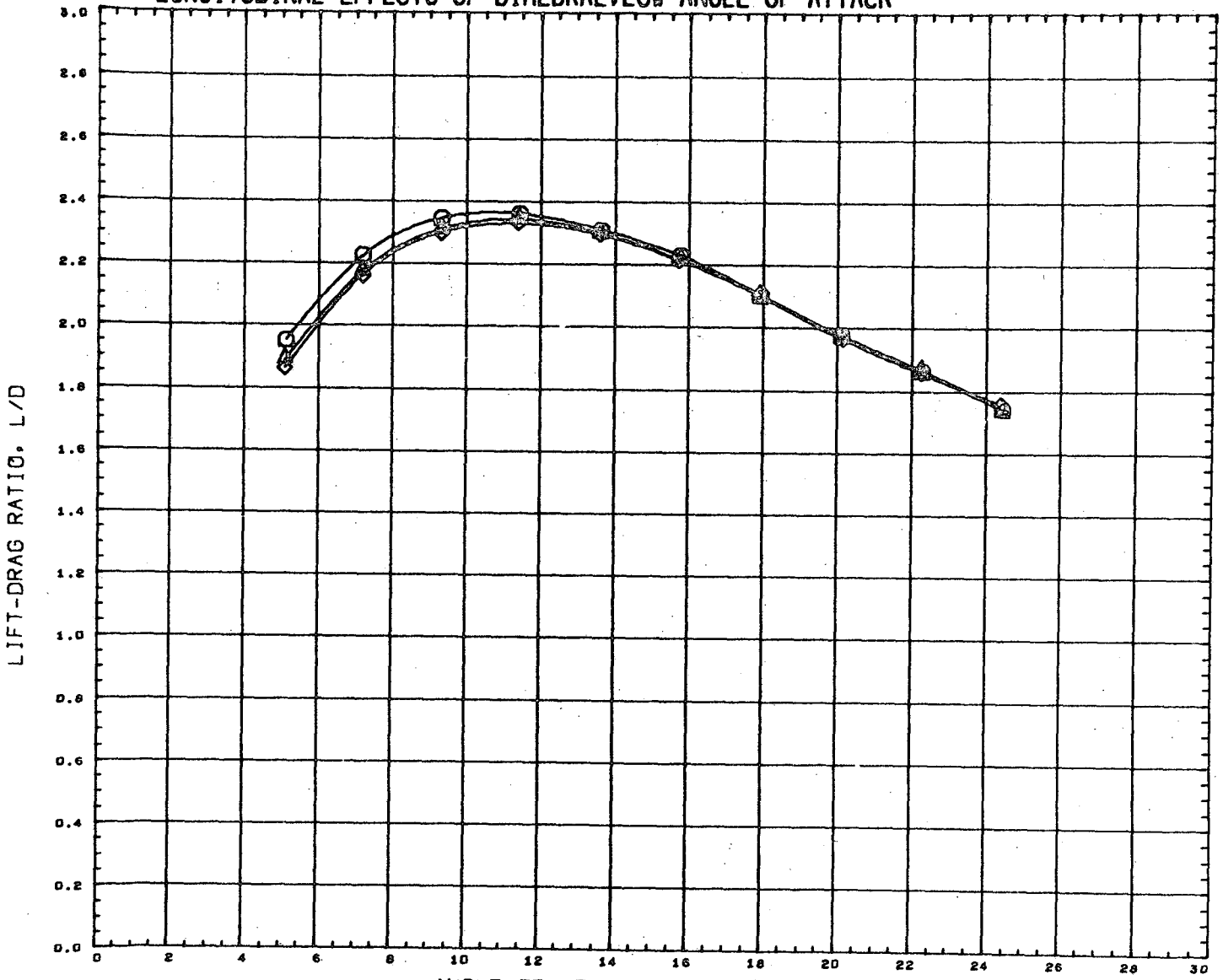
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHEDRAL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37A01)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



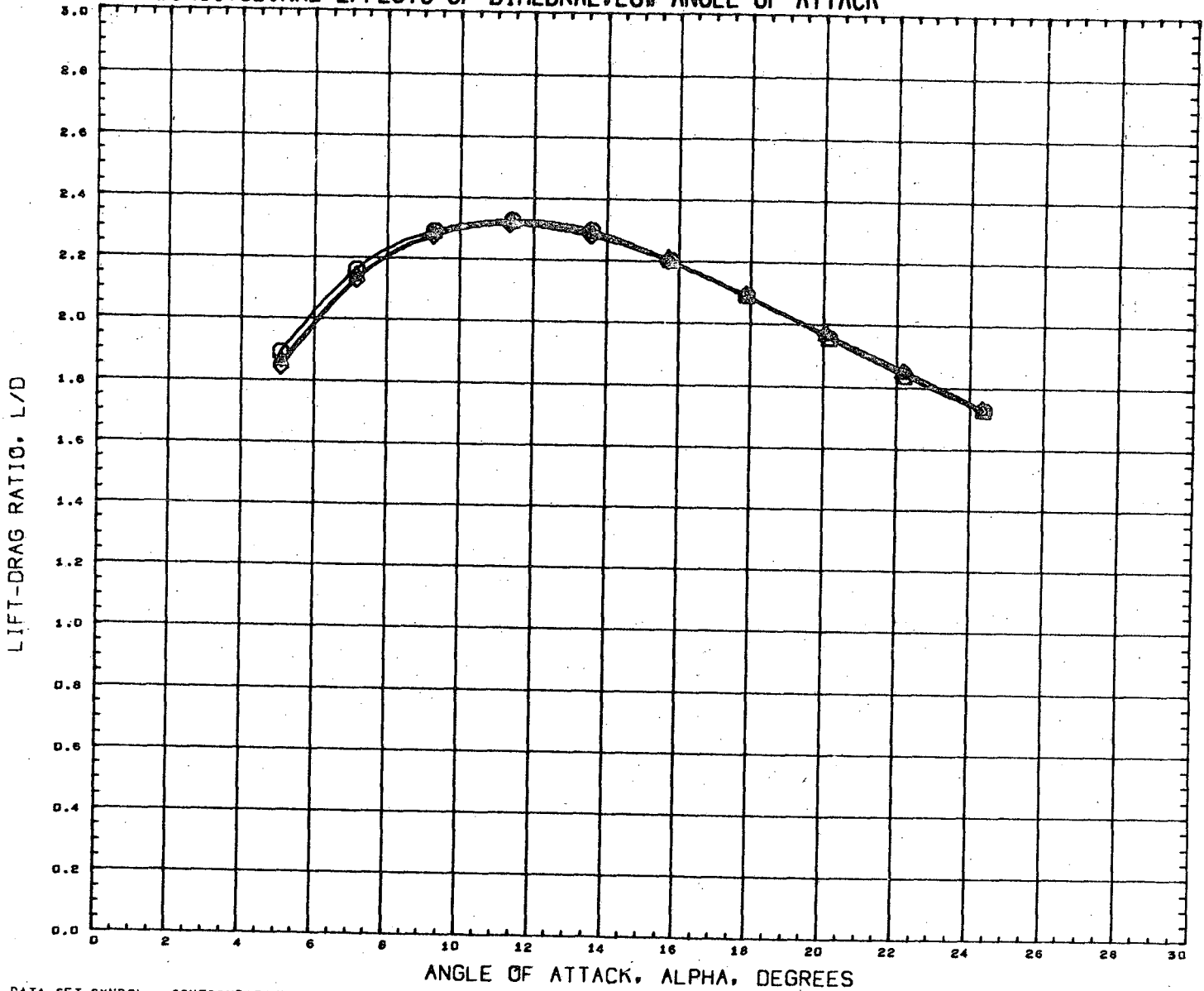
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(D37A31)	MSFC 495 GD/C	B19W14C4AV7
(C37A61)	MSFC 495 GD/C	B19W20C4AV7
(C37A01)	MSFC 495 GD/C	B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.301

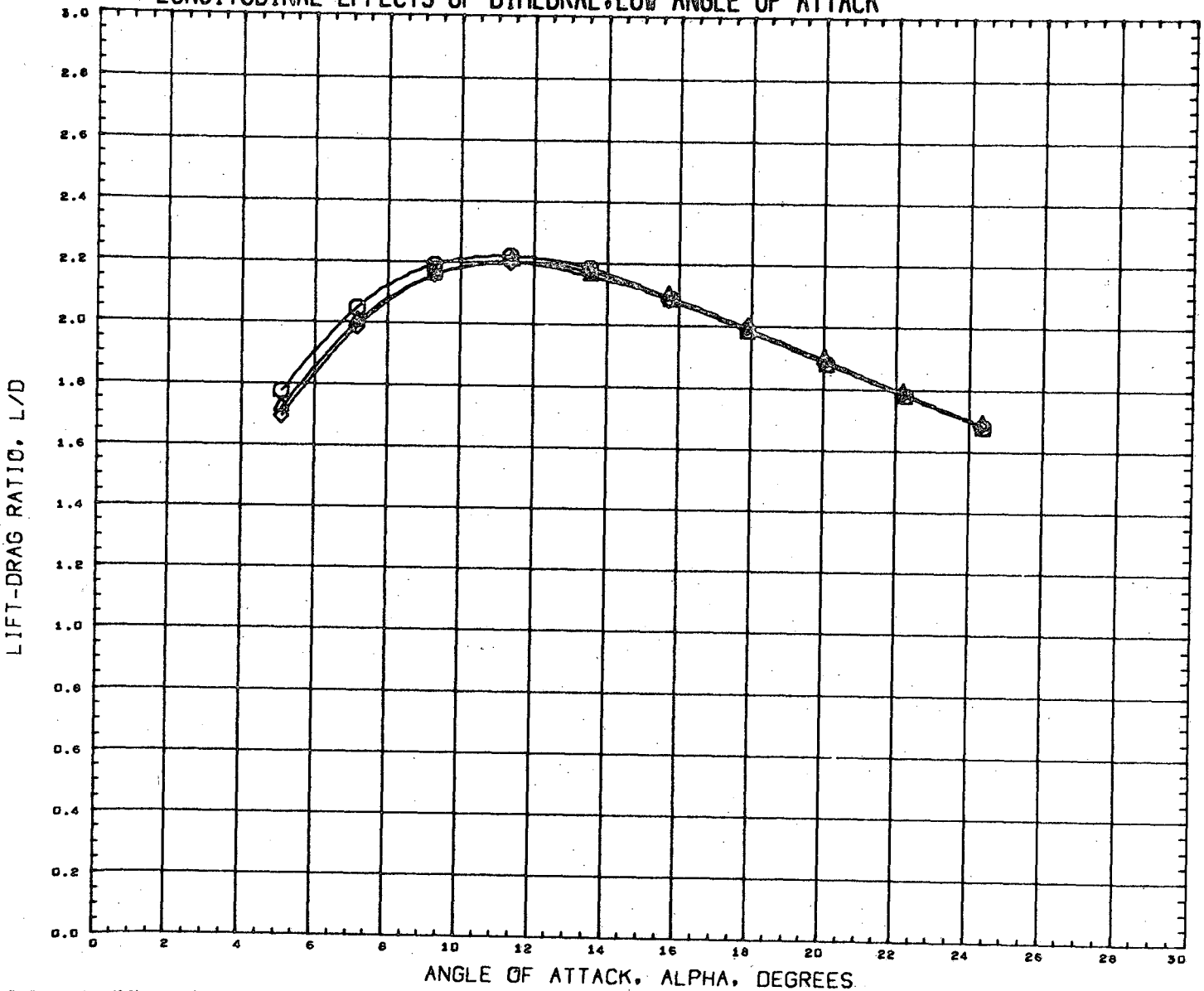
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHDL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37AD1)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.455

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



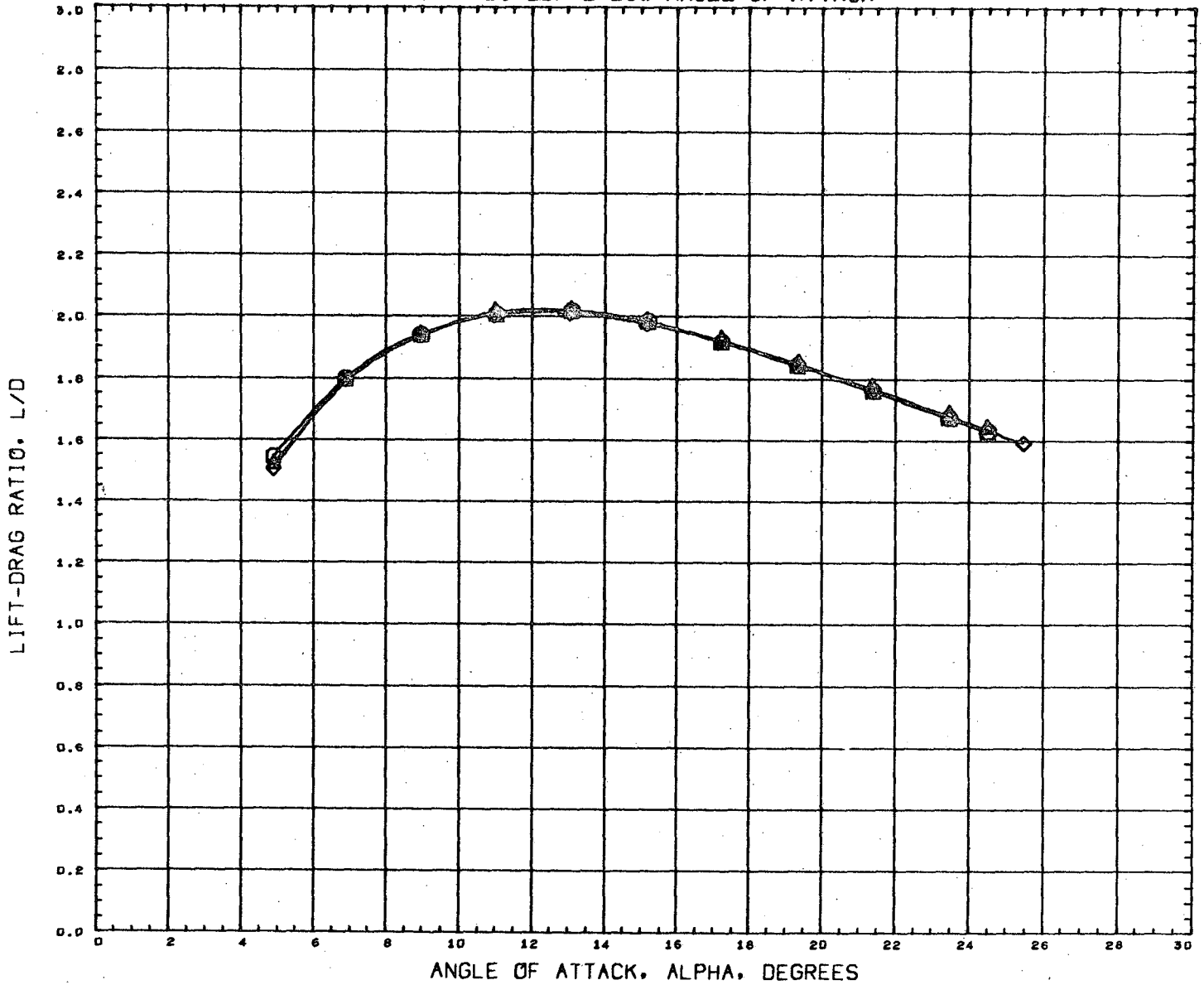
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37AD1)	MSFC 495 GD/C B19W21C4AV7

BETA	D1HDRL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.958

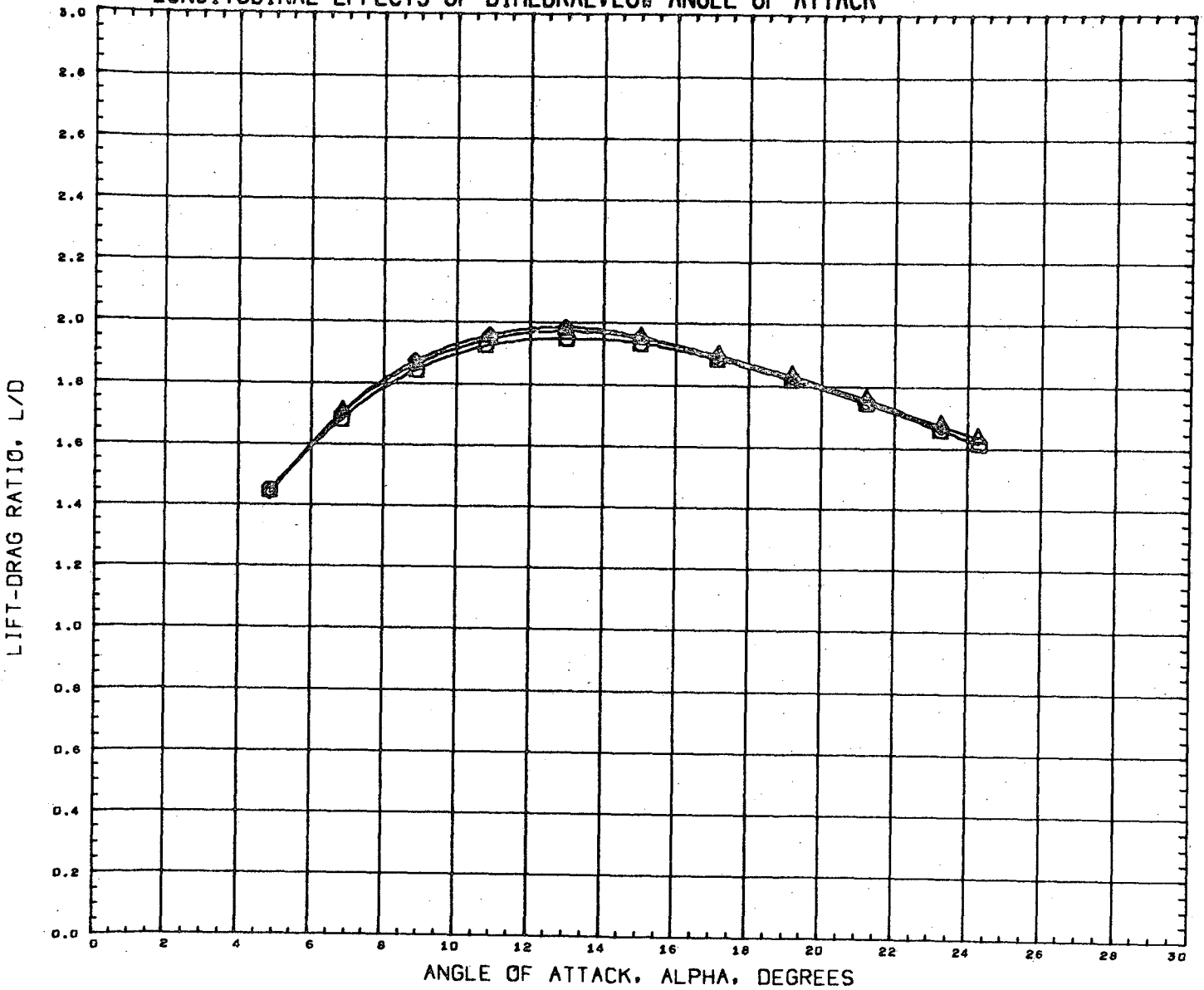
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHDL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37A01)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6100 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



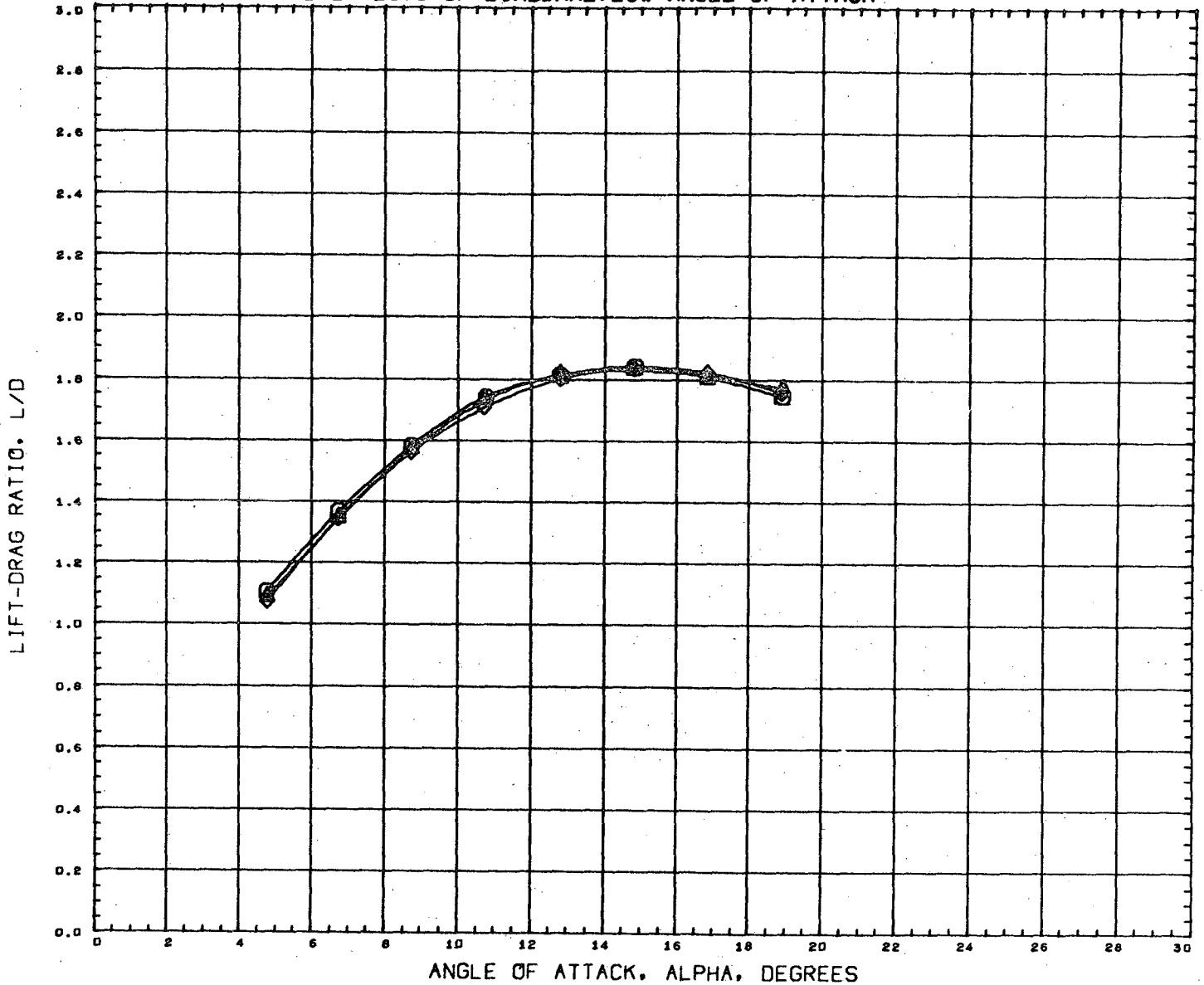
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHDL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6100	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



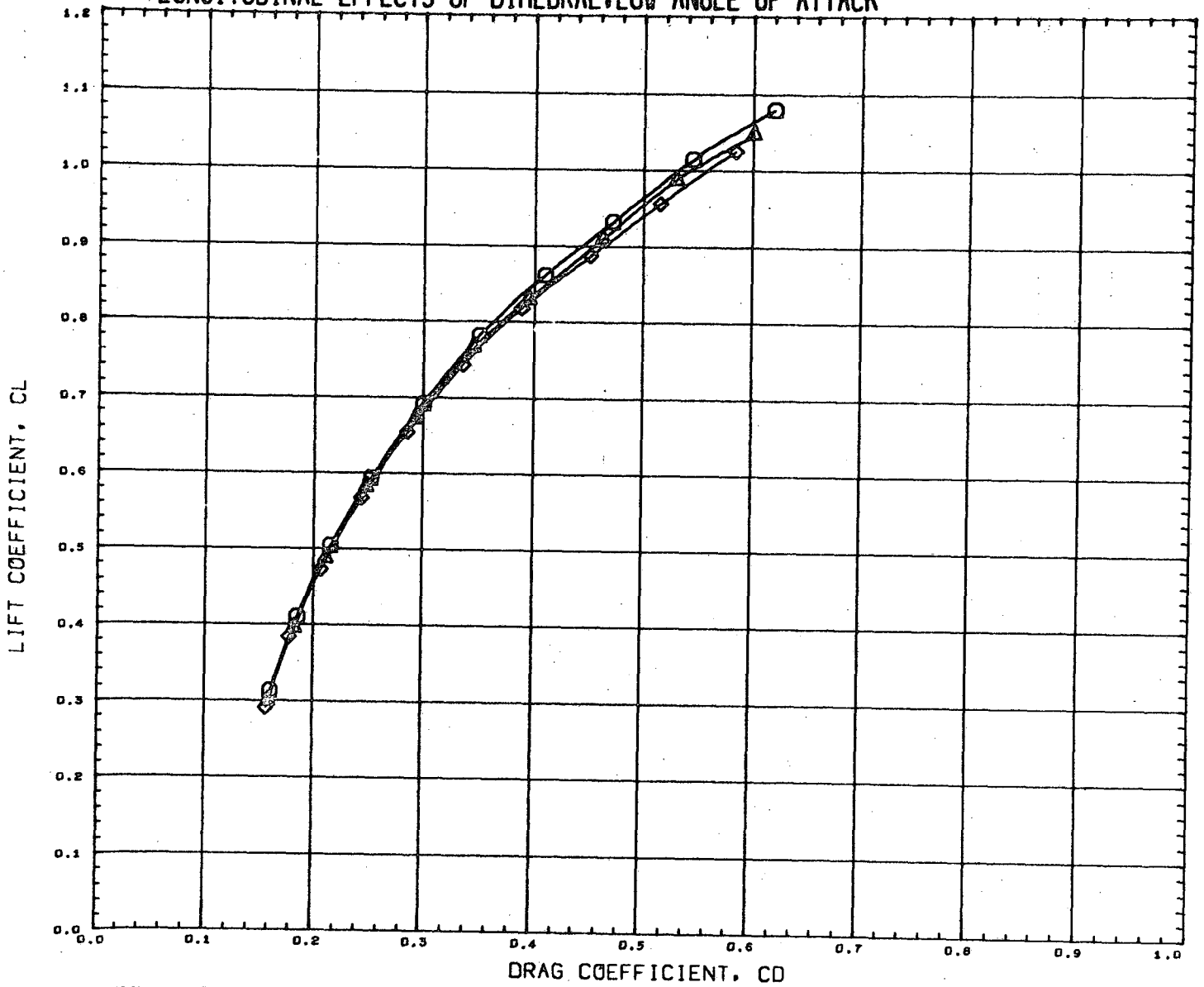
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



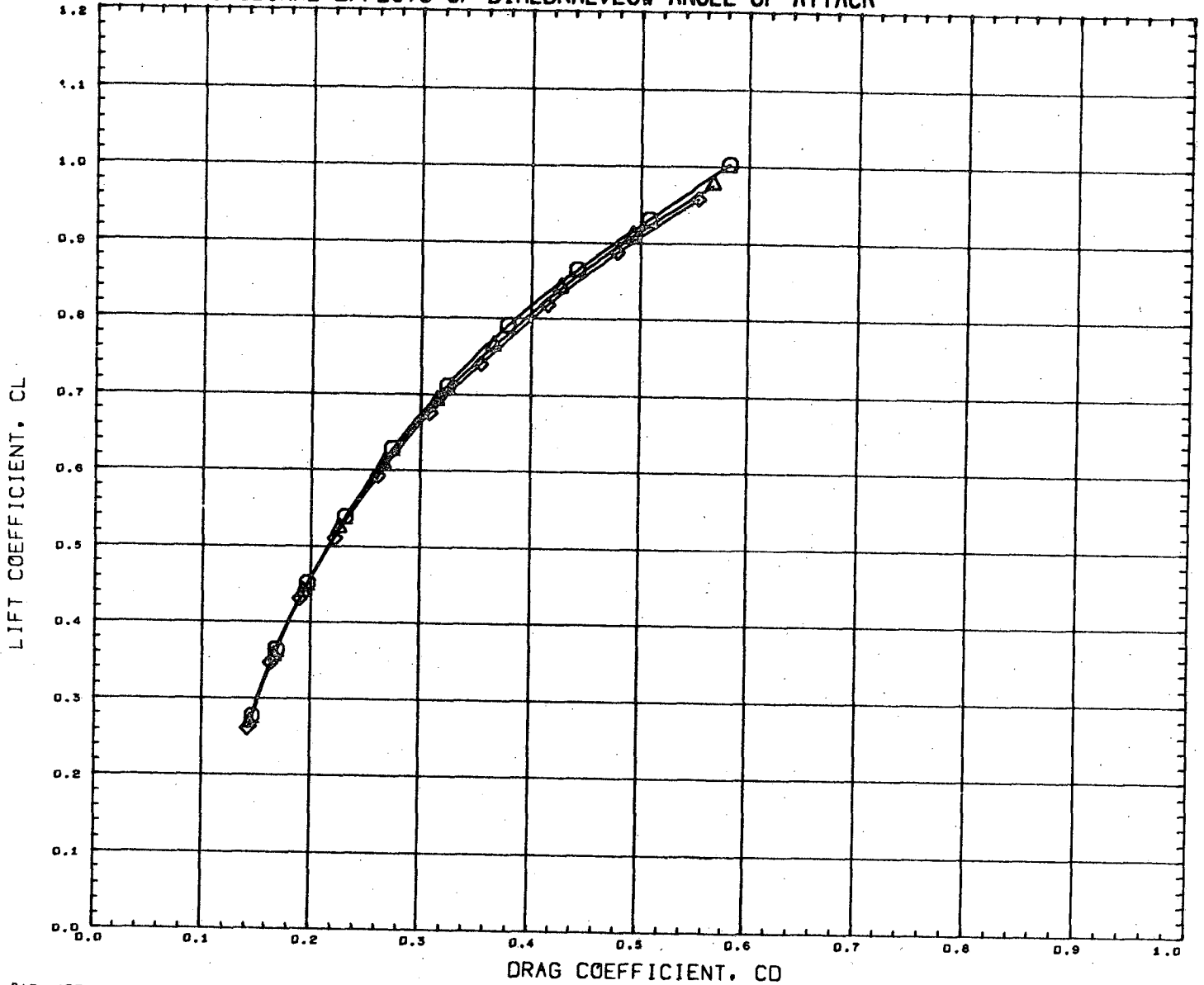
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37AD1)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHDL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6360	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.301

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



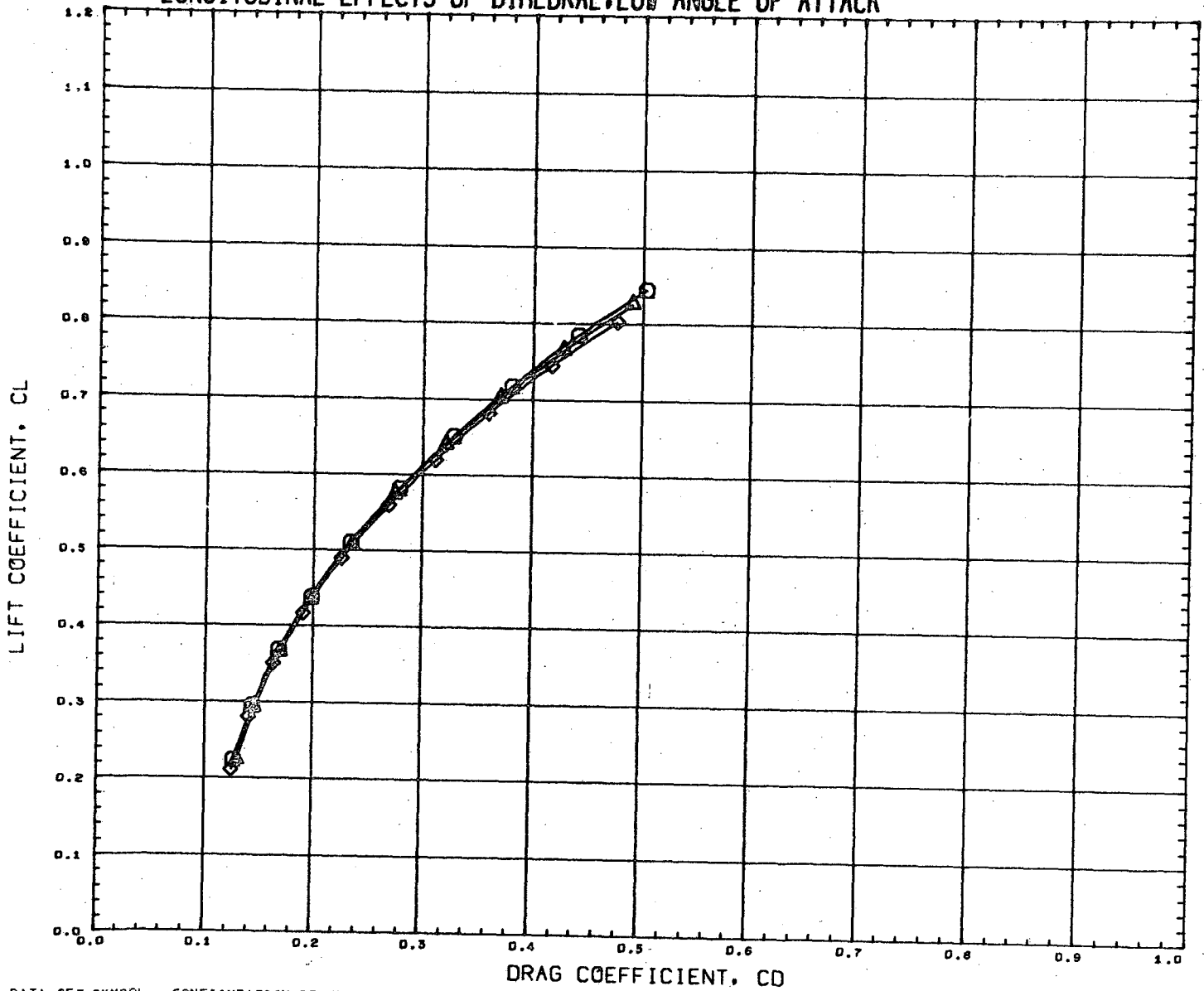
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W24C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 1.455

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DRAG COEFFICIENT, CD

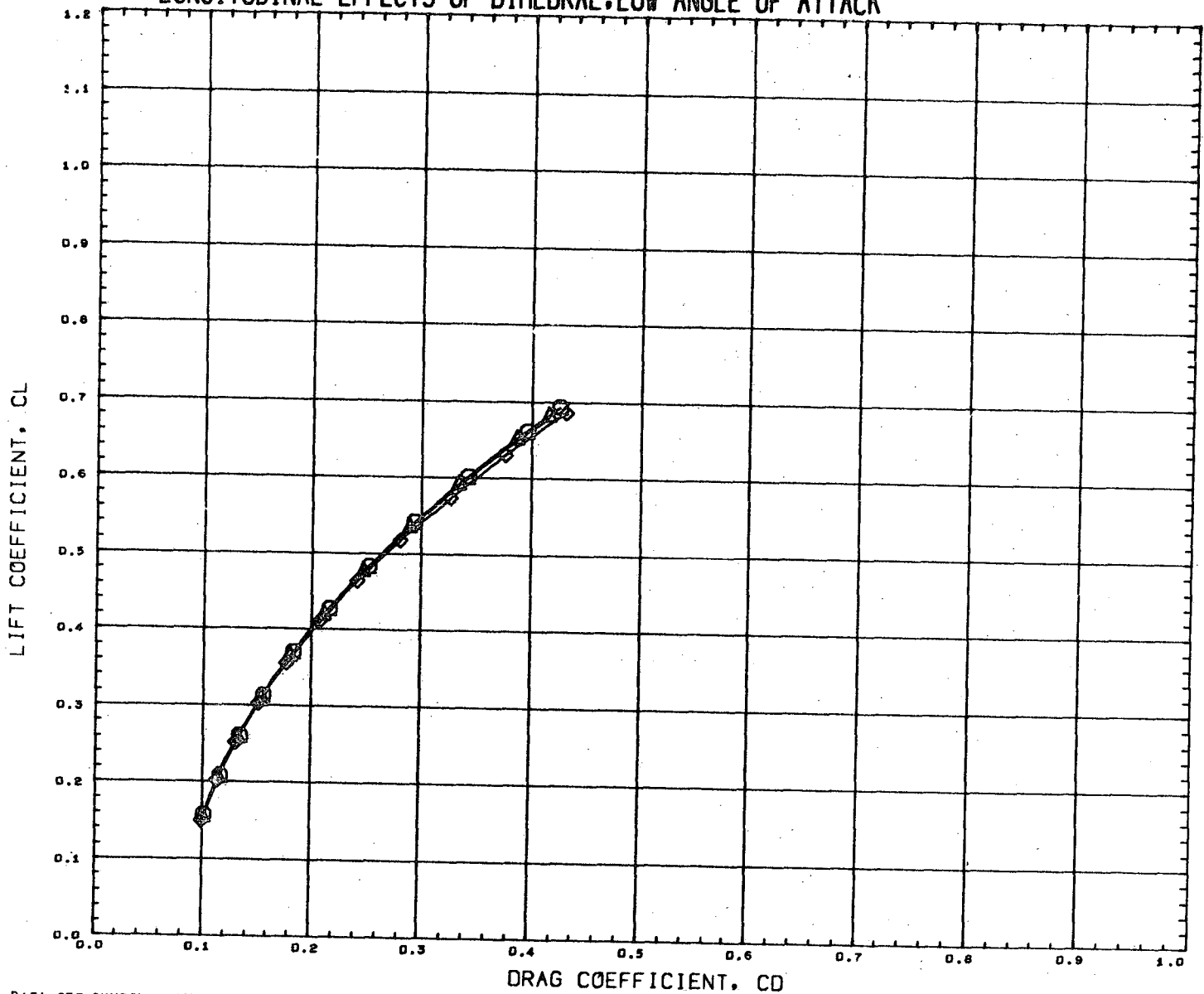
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.958

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



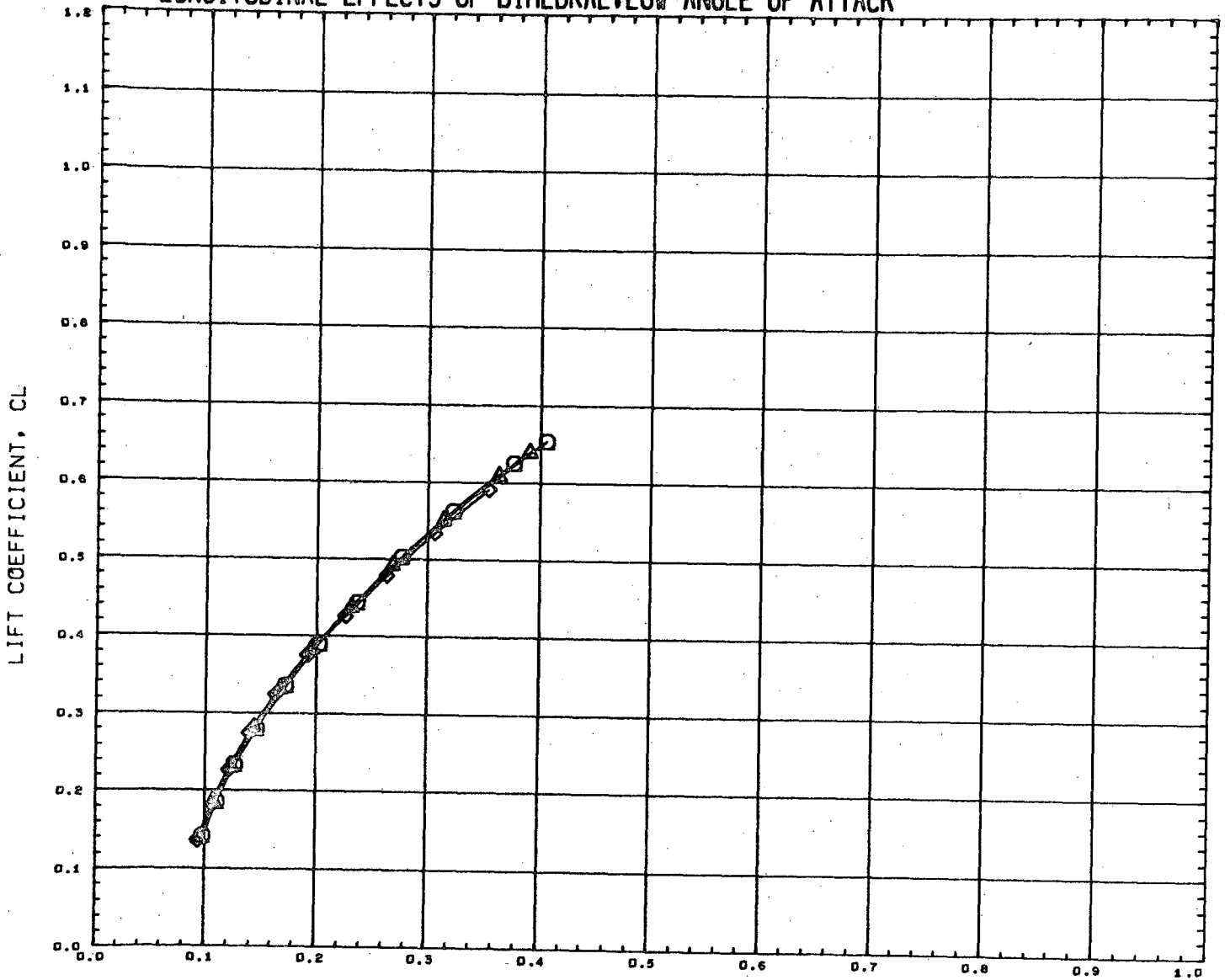
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DRAG COEFFICIENT, CD

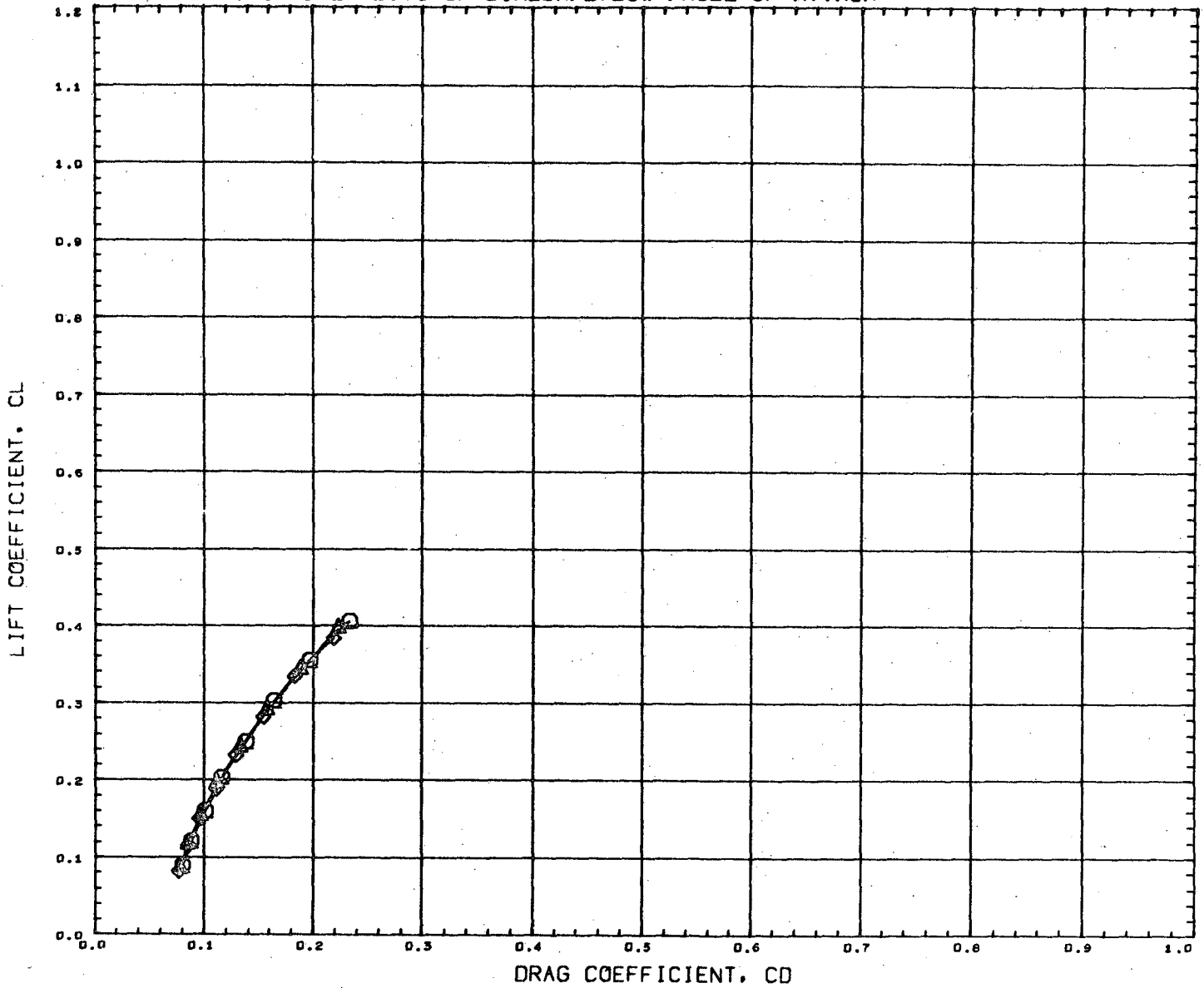
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(D37A31)	MSFC 495	GD/C B19W14C4AV7
(C37A61)	MSFC 495	GD/C B19W20C4AV7
(C37A01)	MSFC 495	GD/C B19W21C4AV7

BETA	DIHEDRAL	RORFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



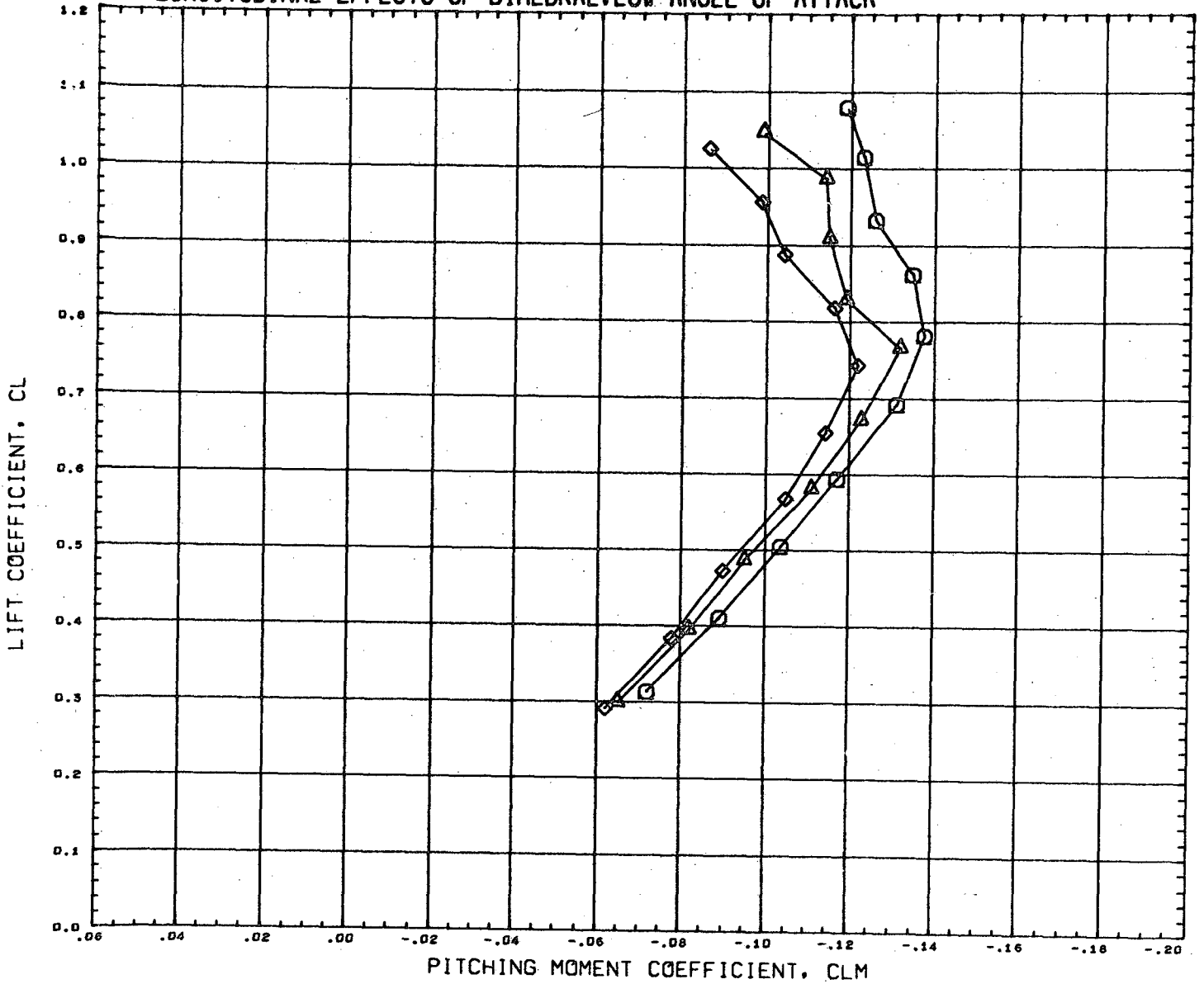
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



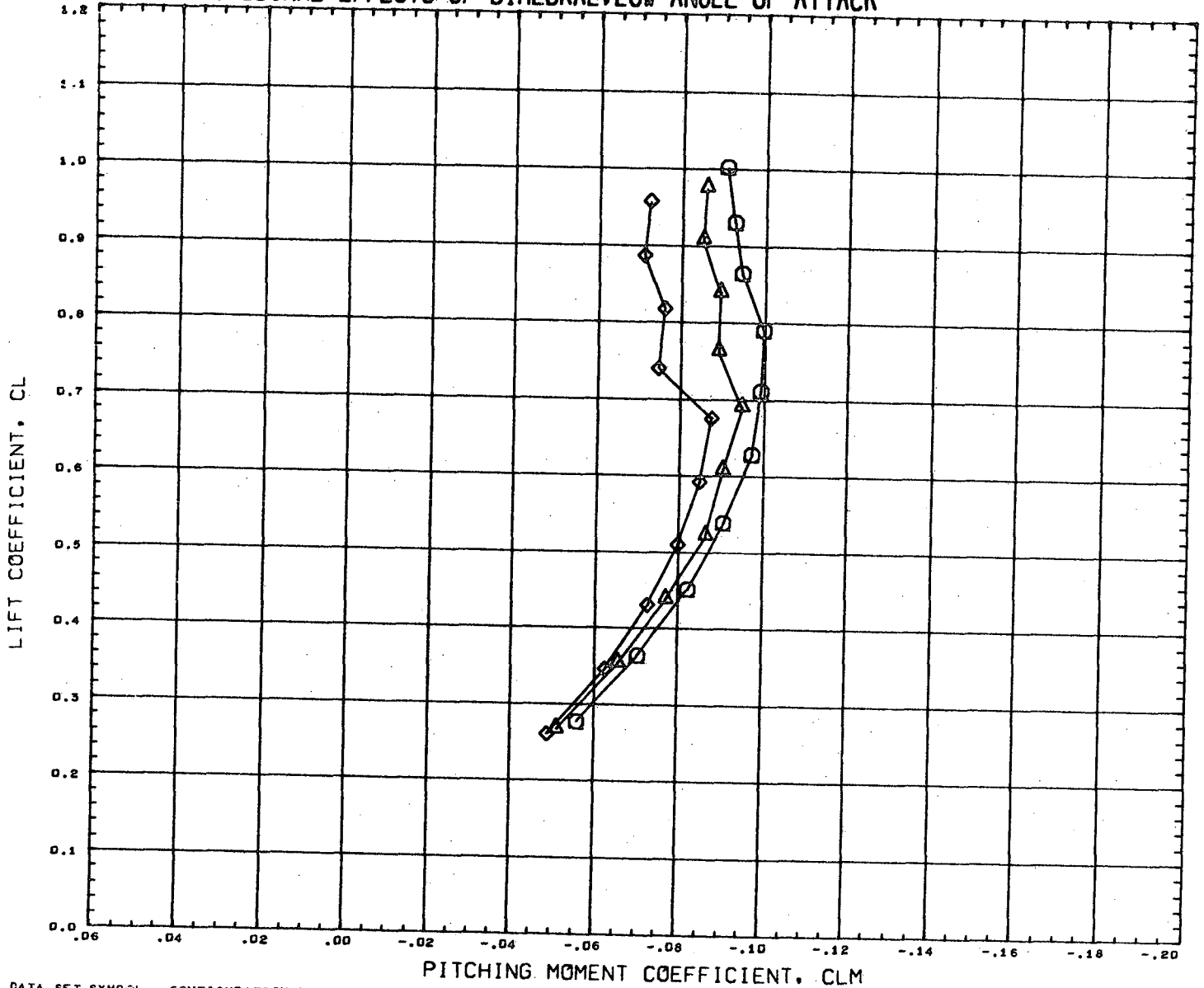
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31) ○	MSFC 495 GD/C B19W14C4AV7
(C37A61) △	MSFC 495 GD/C B19W20C4AV7
(C37A01) ◇	MSFC 495 GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 1.301

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



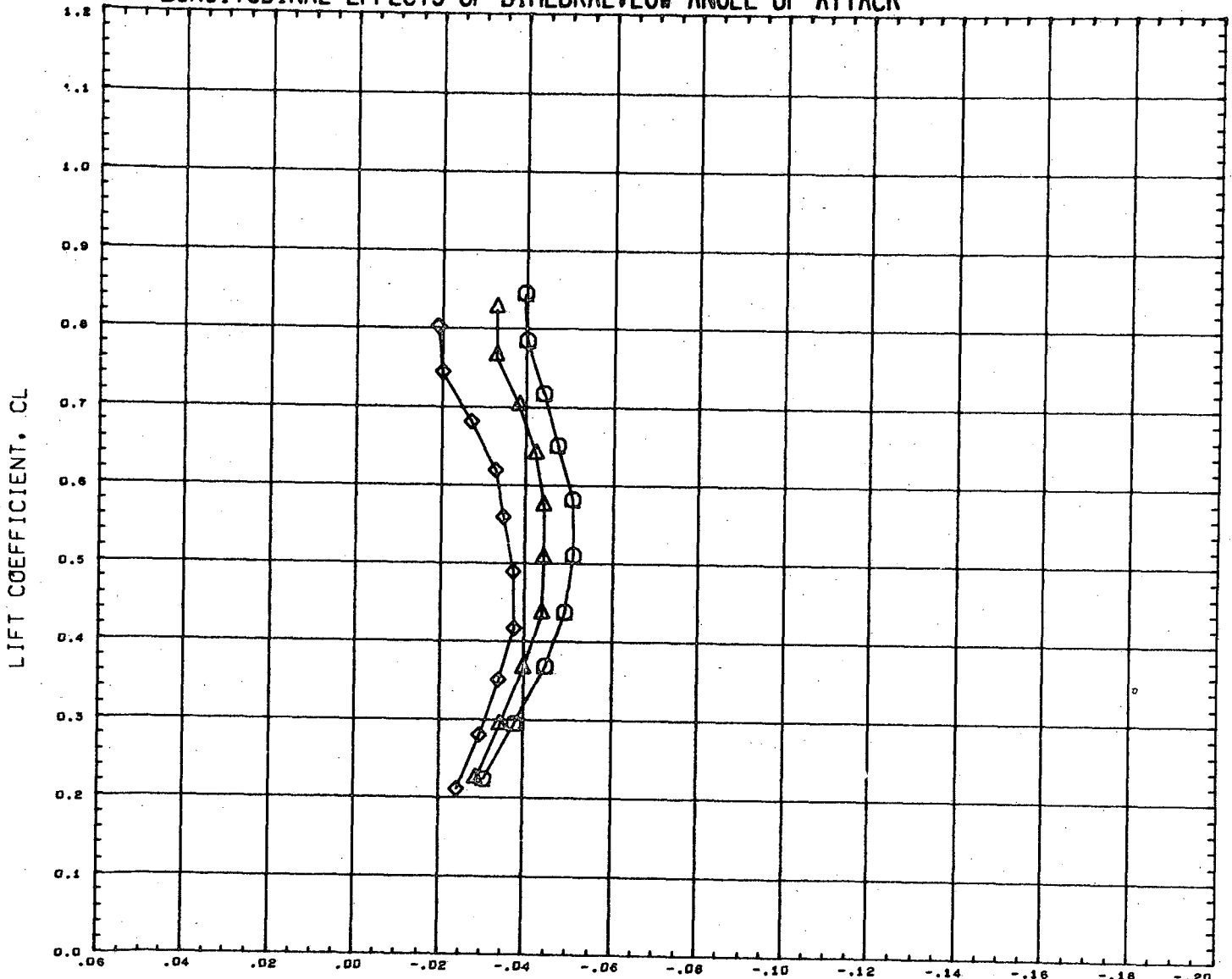
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37AD1)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.455

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL CONFIGURATION DESCRIPTION

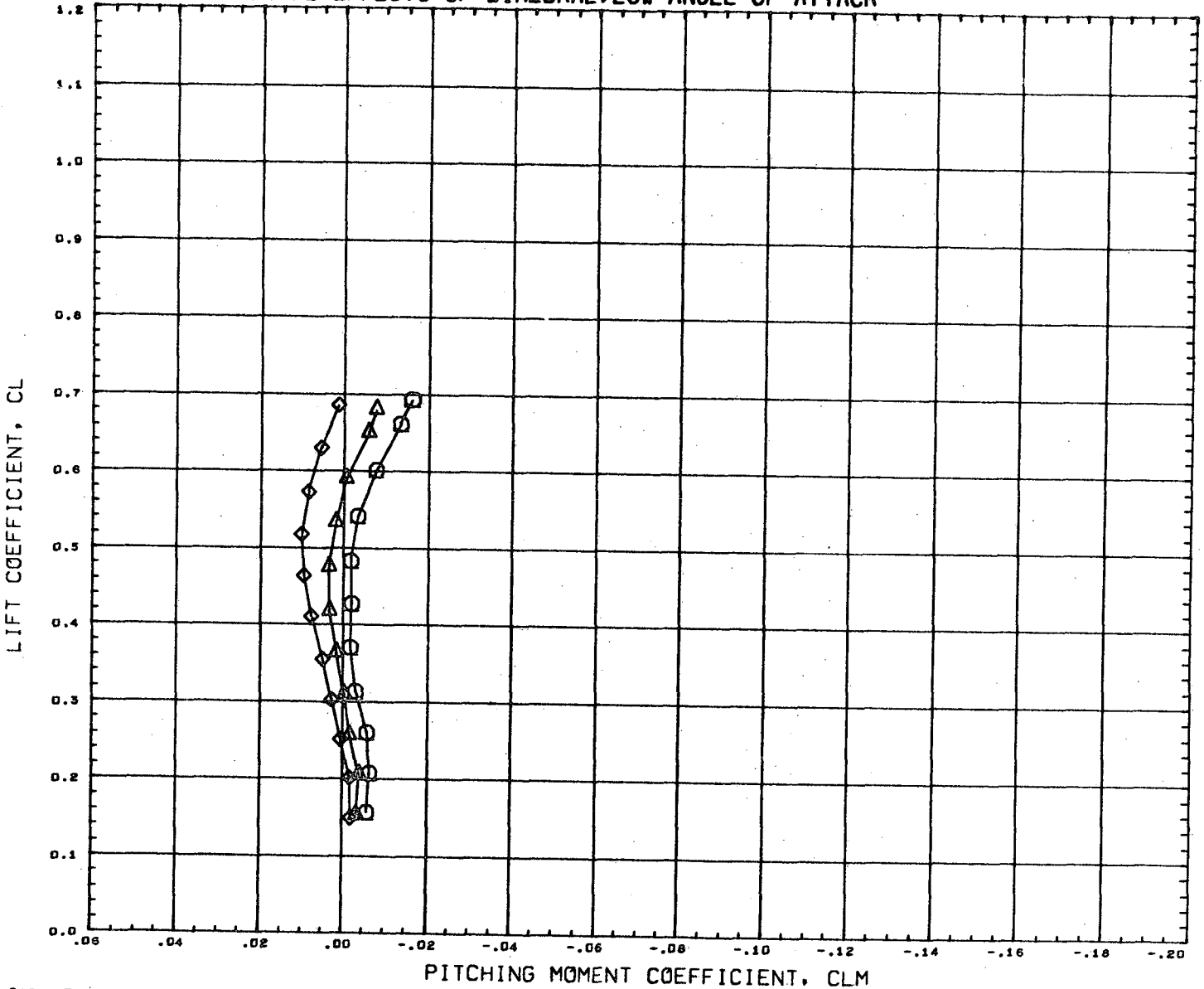
(D37A31) MSFC 495 GD/C B19W14C4AV7
 (C37A61) MSFC 495 GD/C B19W20C4AV7
 (C37A01) MSFC 495 GD/C B19W21C4AV7

BETA DIHDL RDRFLR
 0.000 3.000 0.000
 0.000 6.000 0.000
 0.000 10.000 0.000

REFERENCE INFORMATION
 SREF 15.6560 SQ. IN.
 LREF 3.0950 IN.
 BREF 6.0990 IN.
 XMRP 6.6180 IN.
 YMRP 0.0000 IN.
 ZMRP 0.0000 IN.
 SCALE 0.0035

MACH 1.958

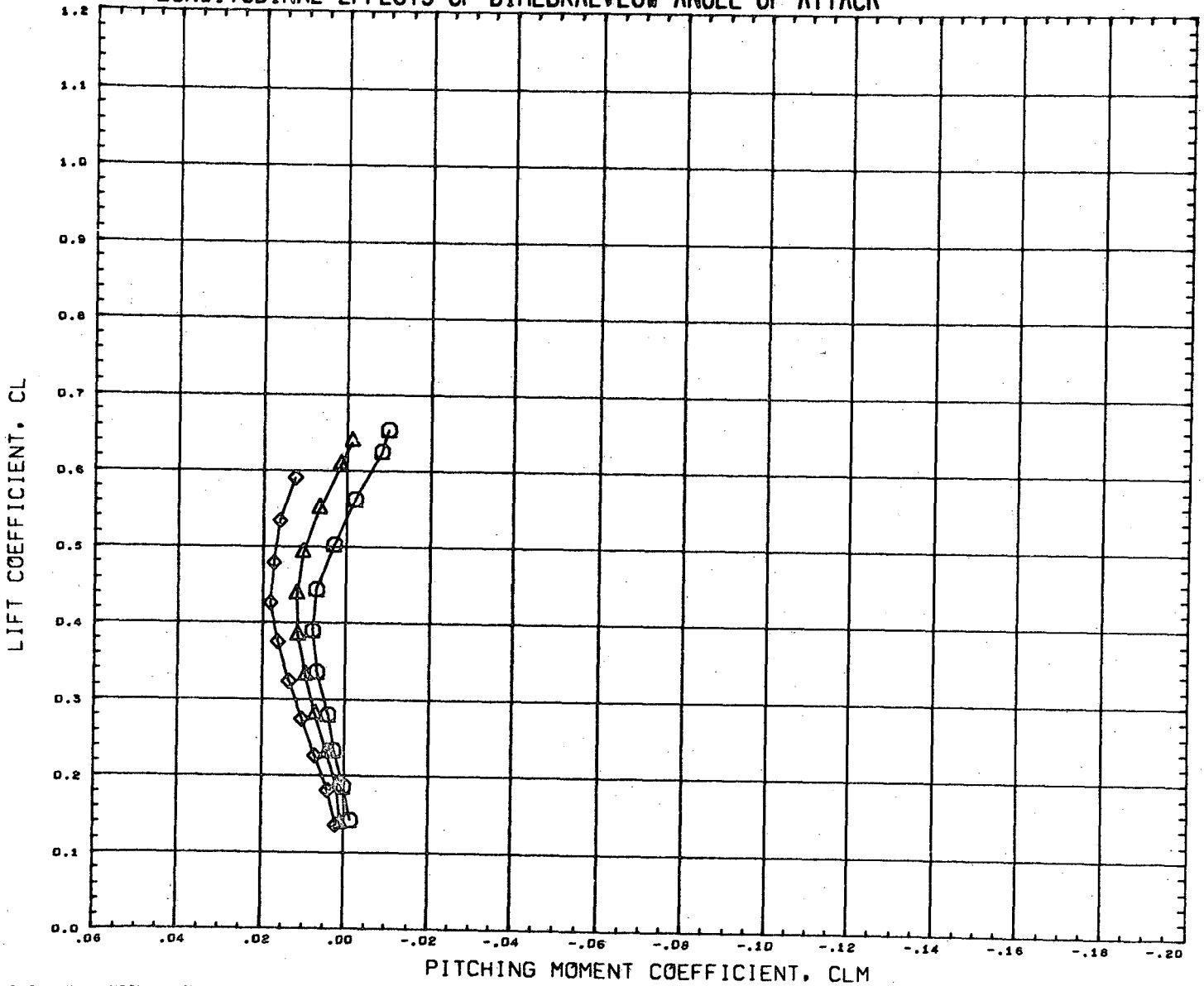
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHDL	RDRFLR	REFERENCE INFORMATION	
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF	15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF	3.0950 IN.
(C37A01)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF	6.0990 IN.
					XMRP	6.6180 IN.
					YMRP	0.0000 IN.
					ZMRP	0.0000 IN.
					SCALE	0.0035

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



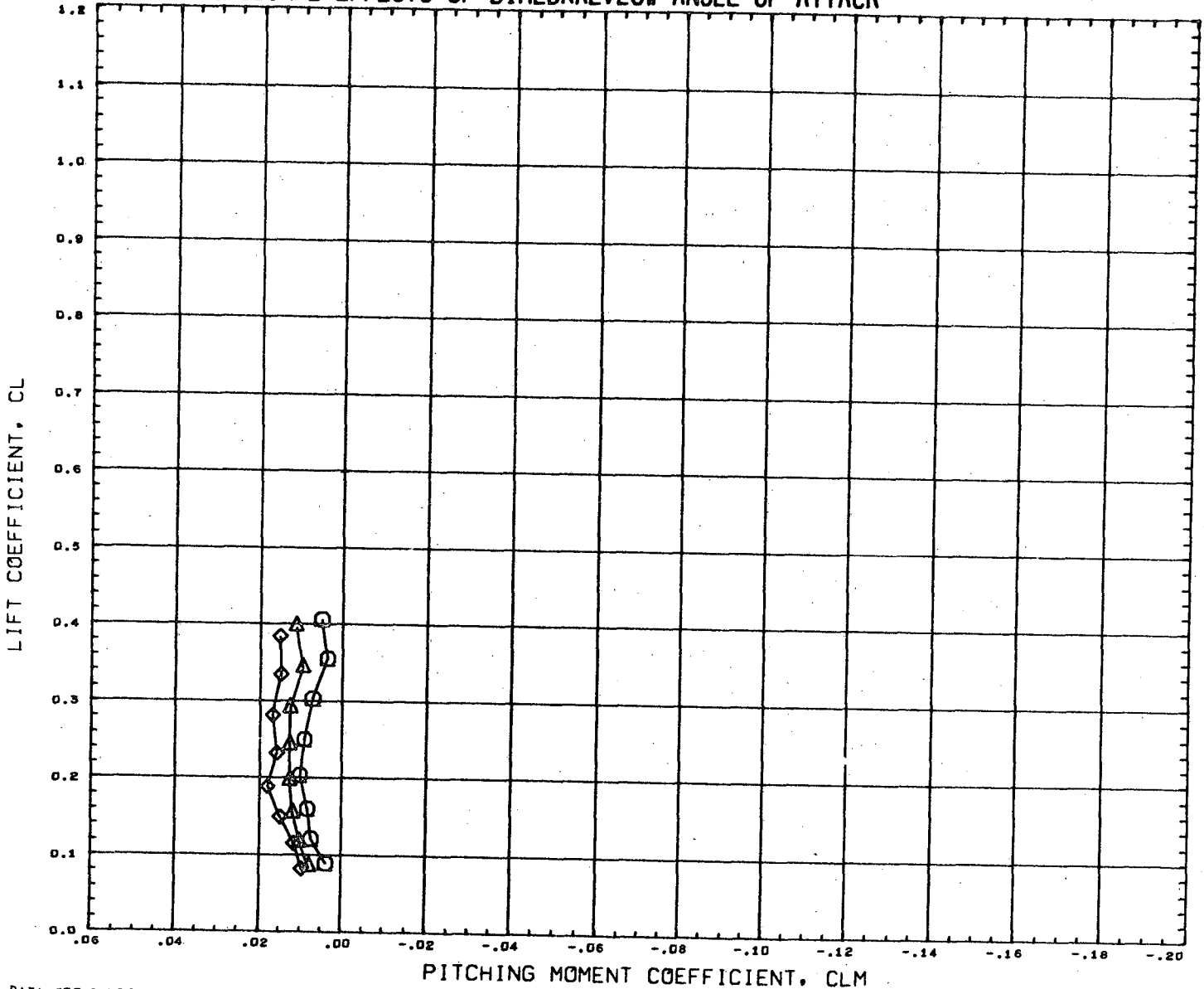
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6100 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



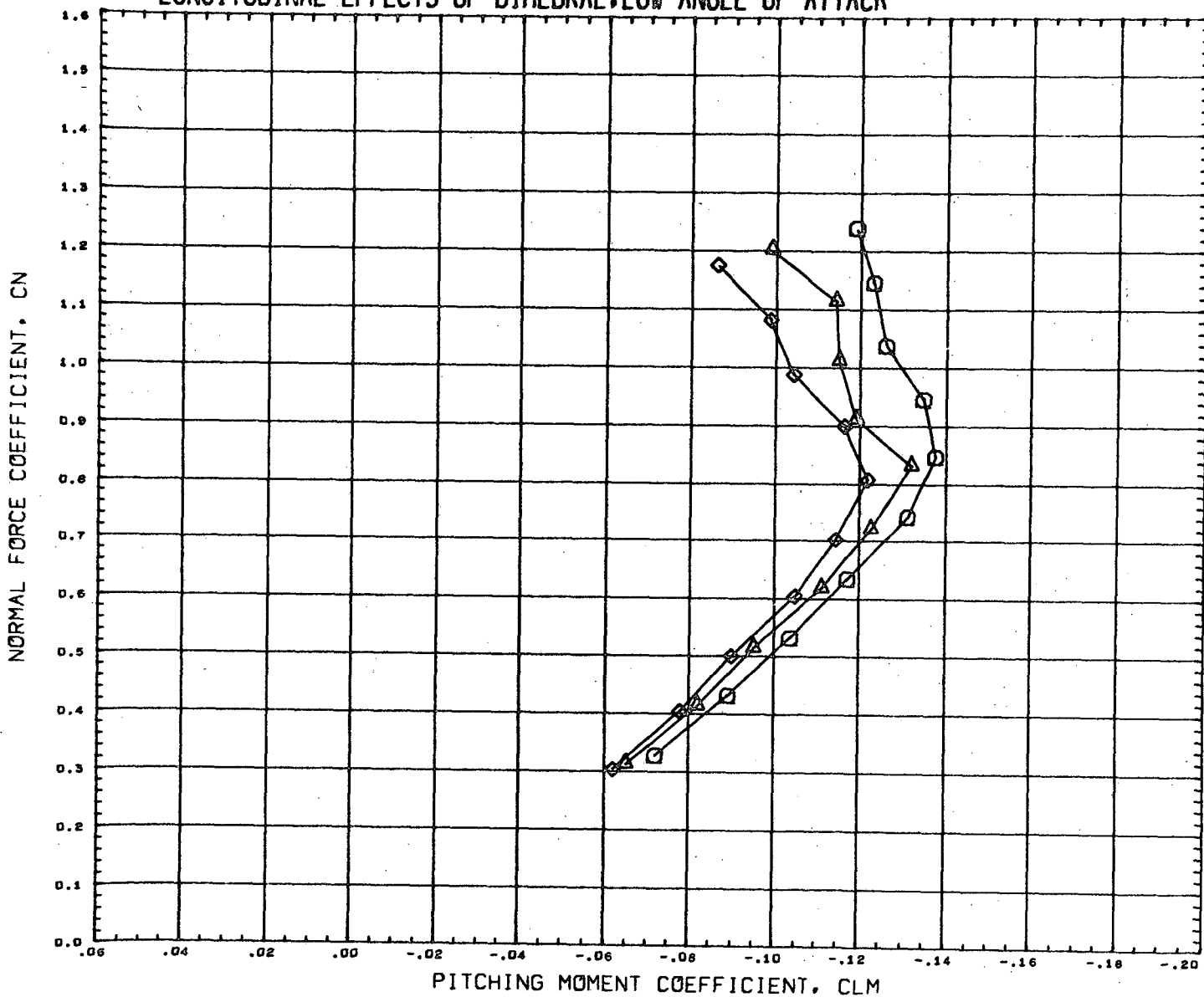
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(D37A31)	MSFC 495 GD/C	B19W14C4AV7
(C37A61)	MSFC 495 GD/C	B19W20C4AV7
(C37A01)	MSFC 495 GD/C	B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



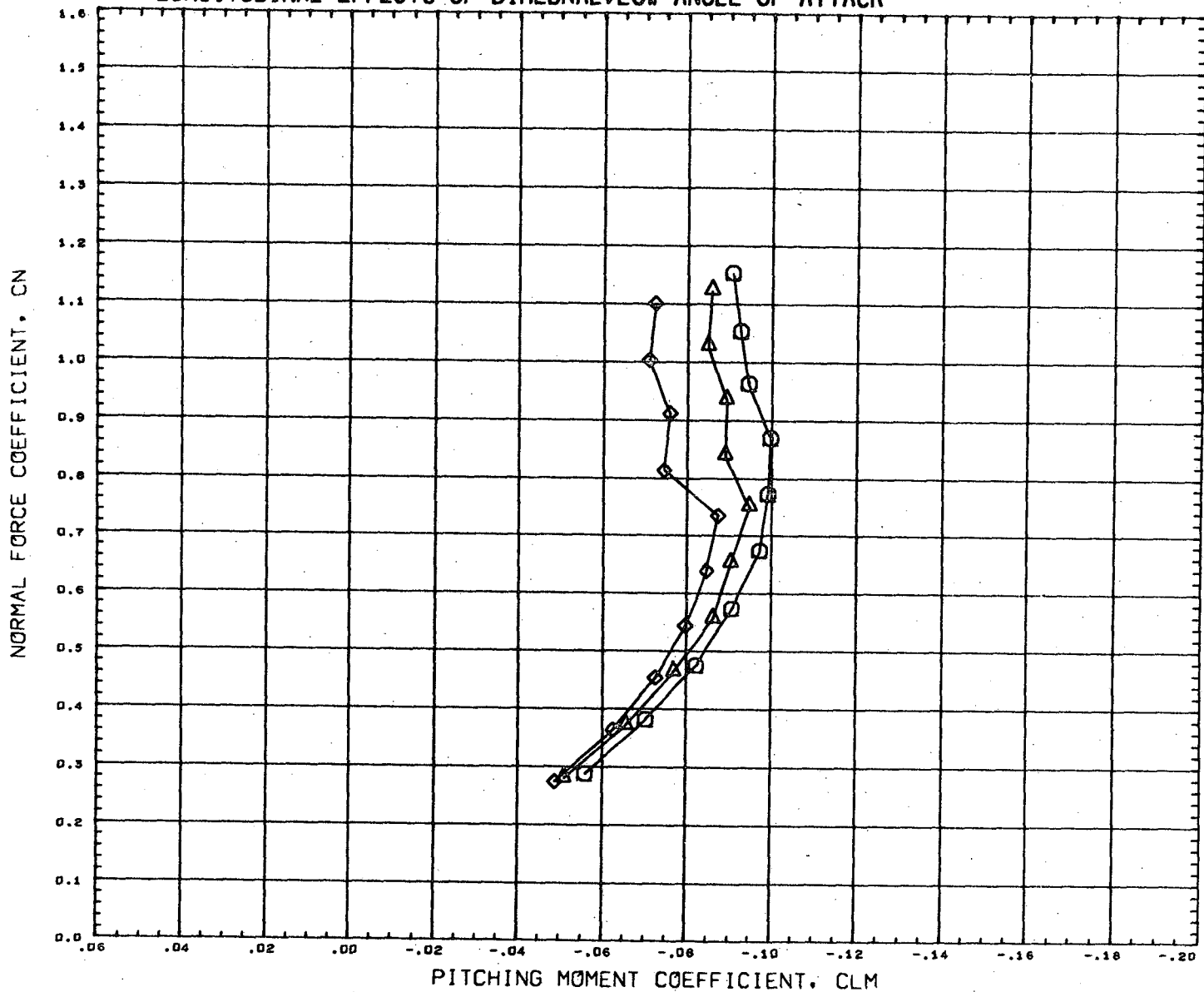
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHRL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.301

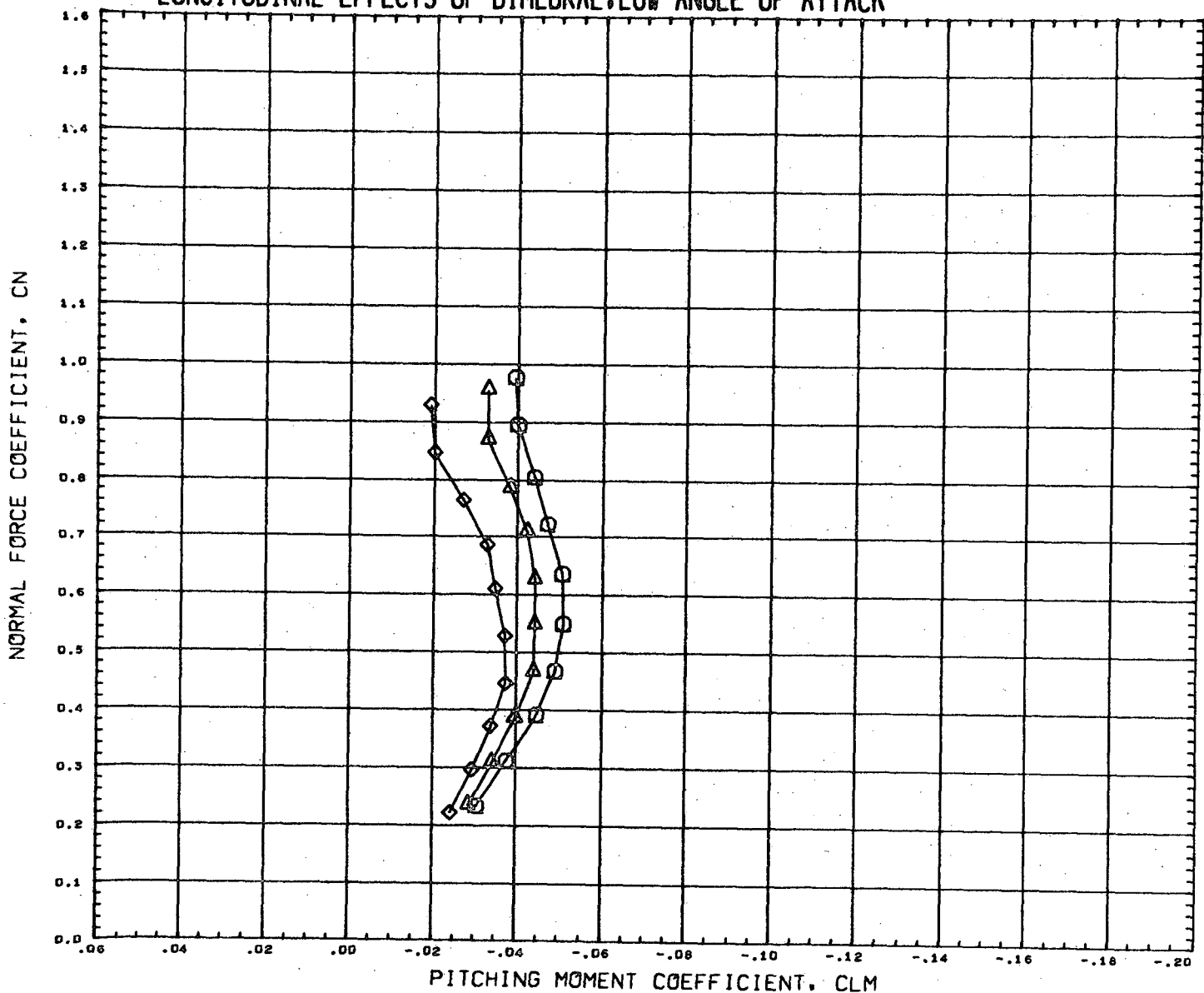
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHEDRAL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37A01)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.455

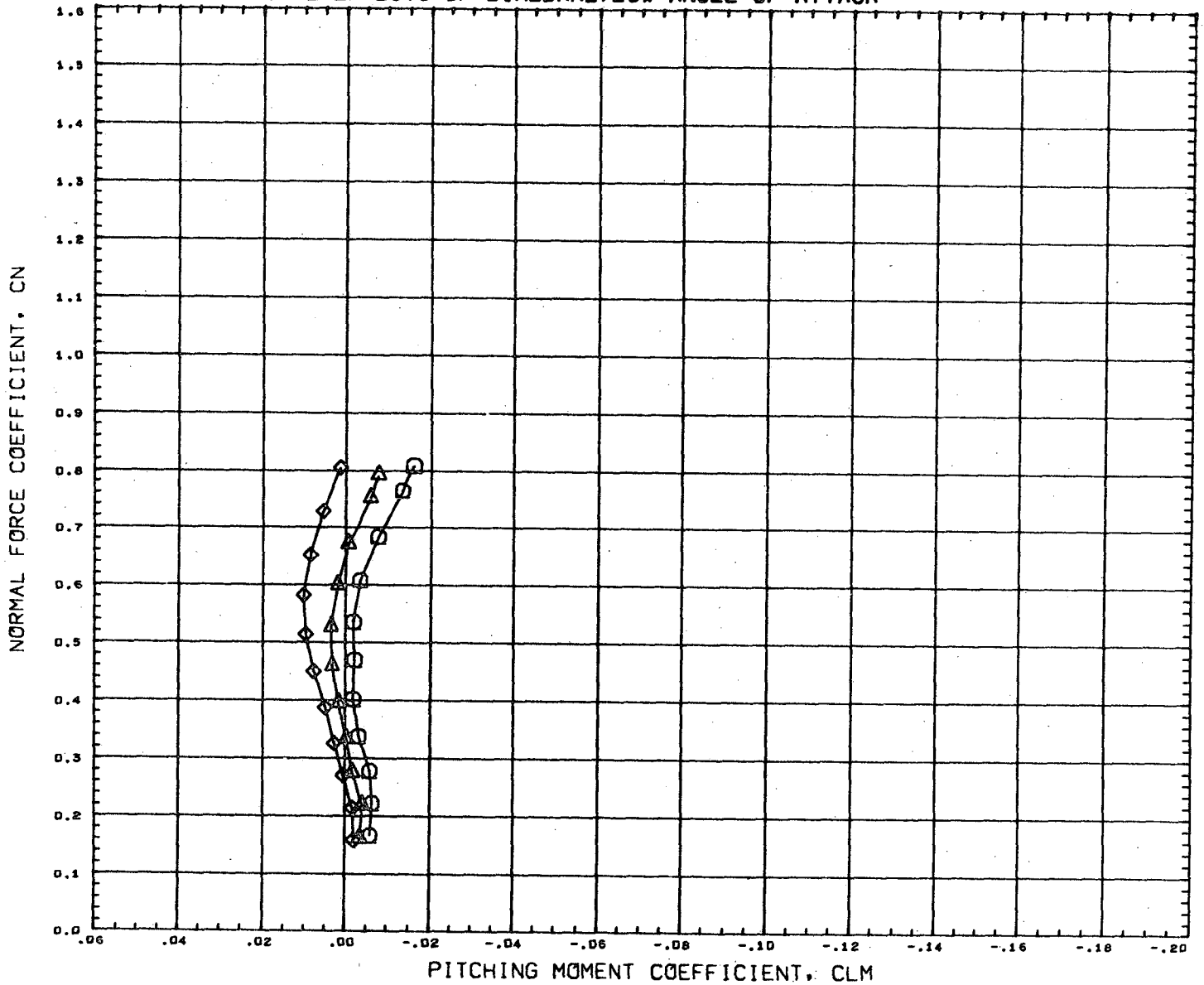
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHEDRAL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37AD1)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.958

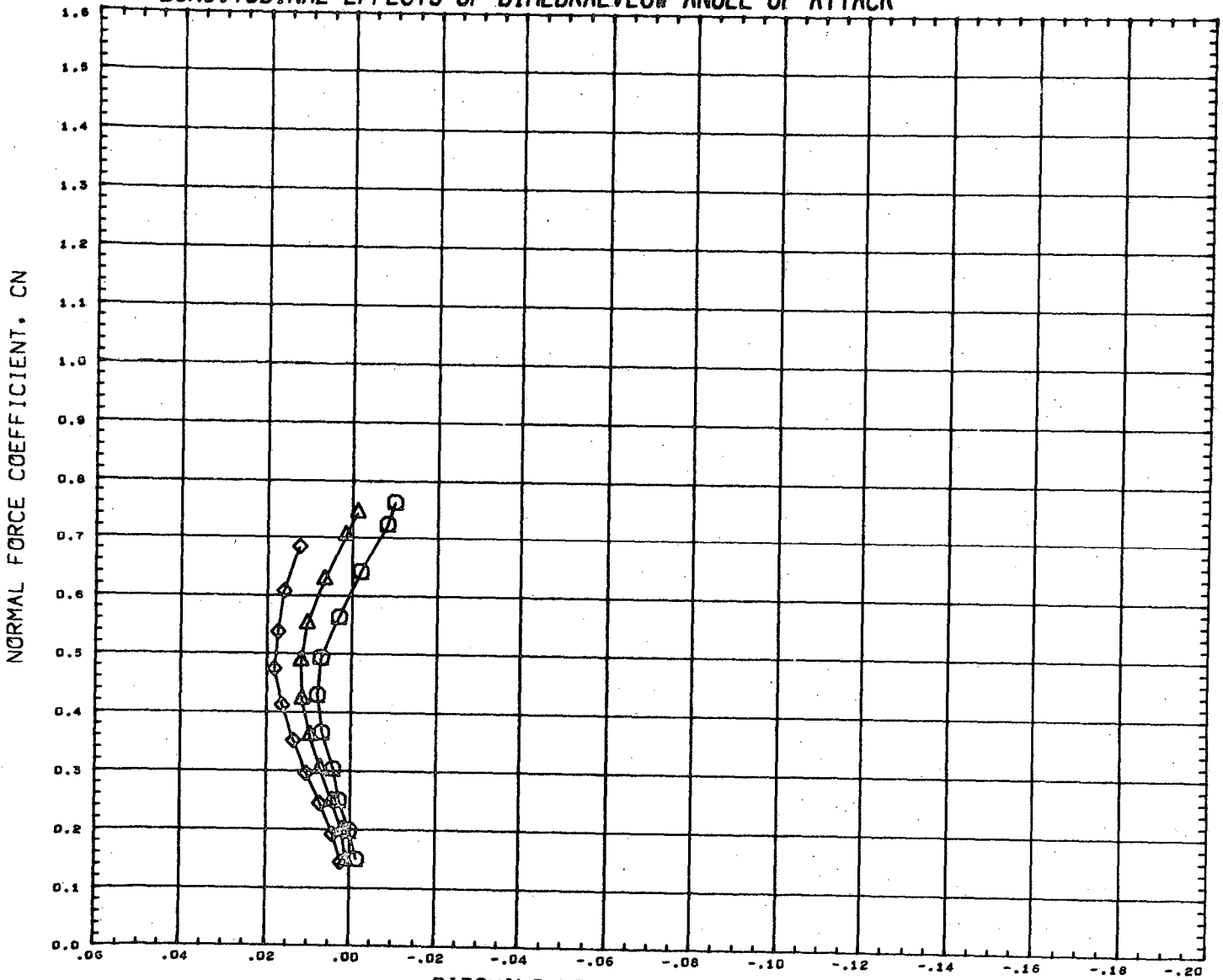
LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHEDRAL	RDRFLR	REFERENCE INFORMATION
(D37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37A61)	MSFC 495 GD/C B19W20C4AV7	0.000	6.000	0.000	LREF 3.0950 IN.
(C37A01)	MSFC 495 GD/C B19W21C4AV7	0.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



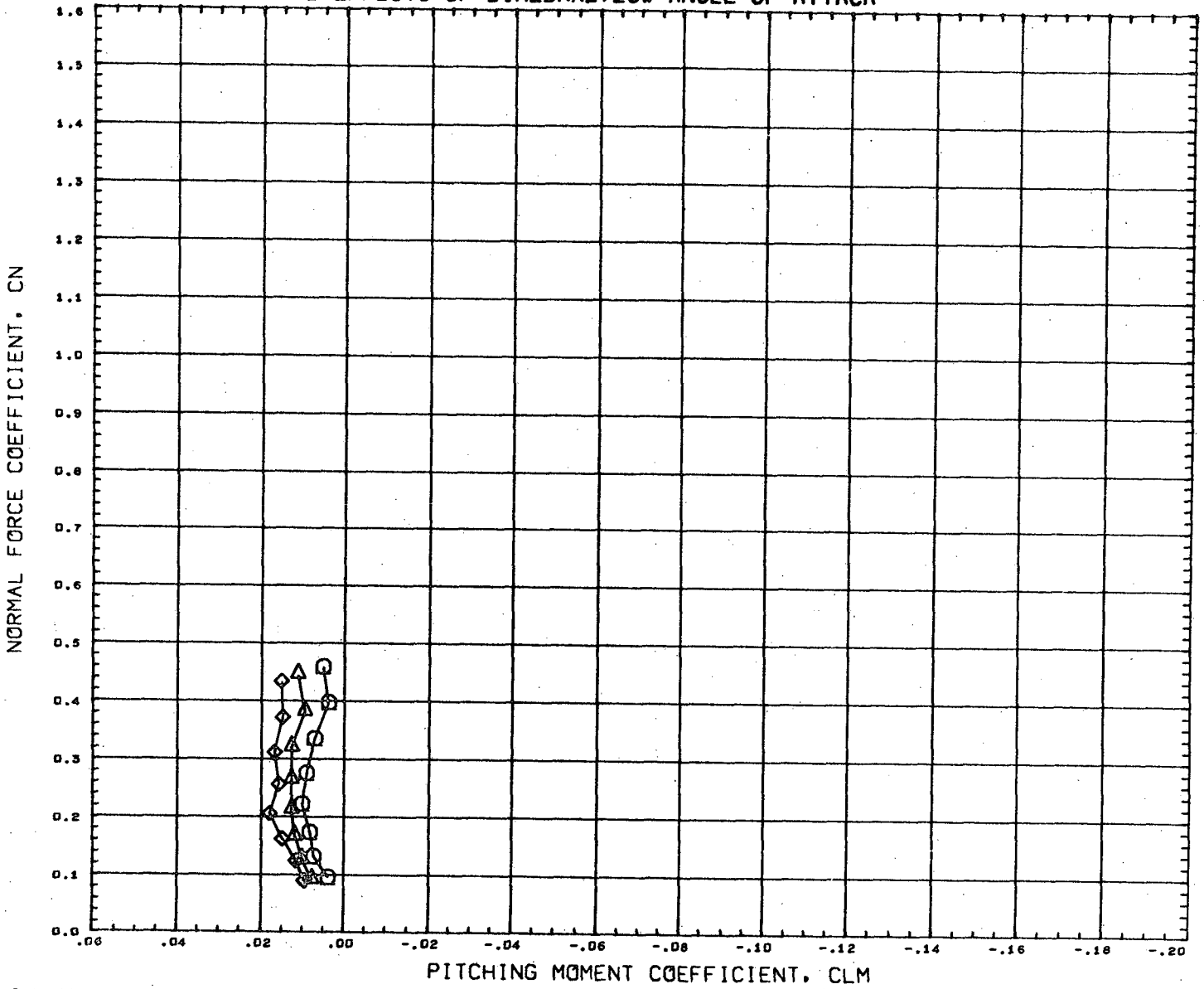
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37A01)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHEDRAL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, LOW ANGLE OF ATTACK



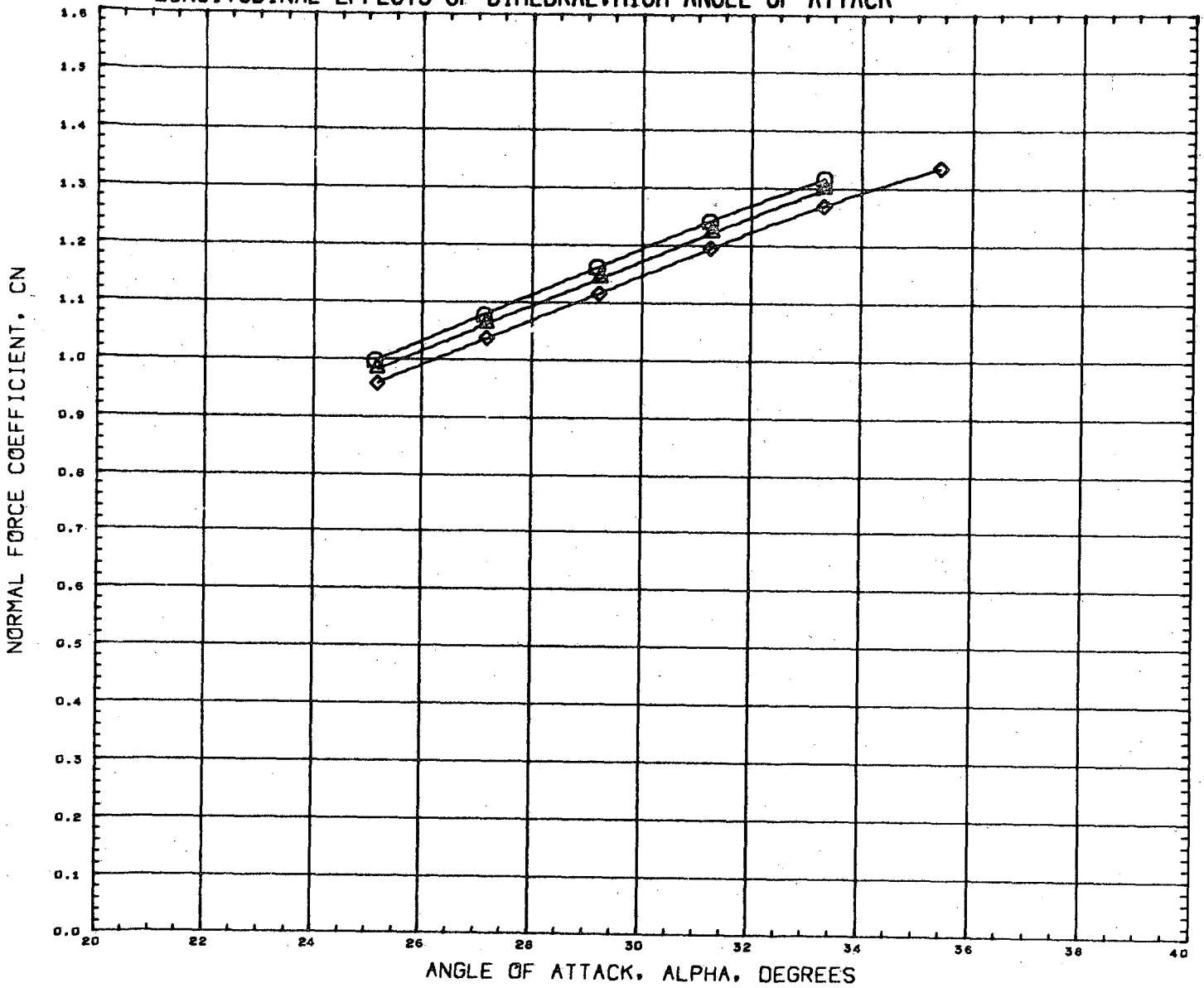
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37A31)	MSFC 495 GD/C B19W14C4AV7
(C37A61)	MSFC 495 GD/C B19W20C4AV7
(C37AD1)	MSFC 495 GD/C B19W21C4AV7

BETA	DIHRL	RDRFLR
0.000	3.000	0.000
0.000	6.000	0.000
0.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



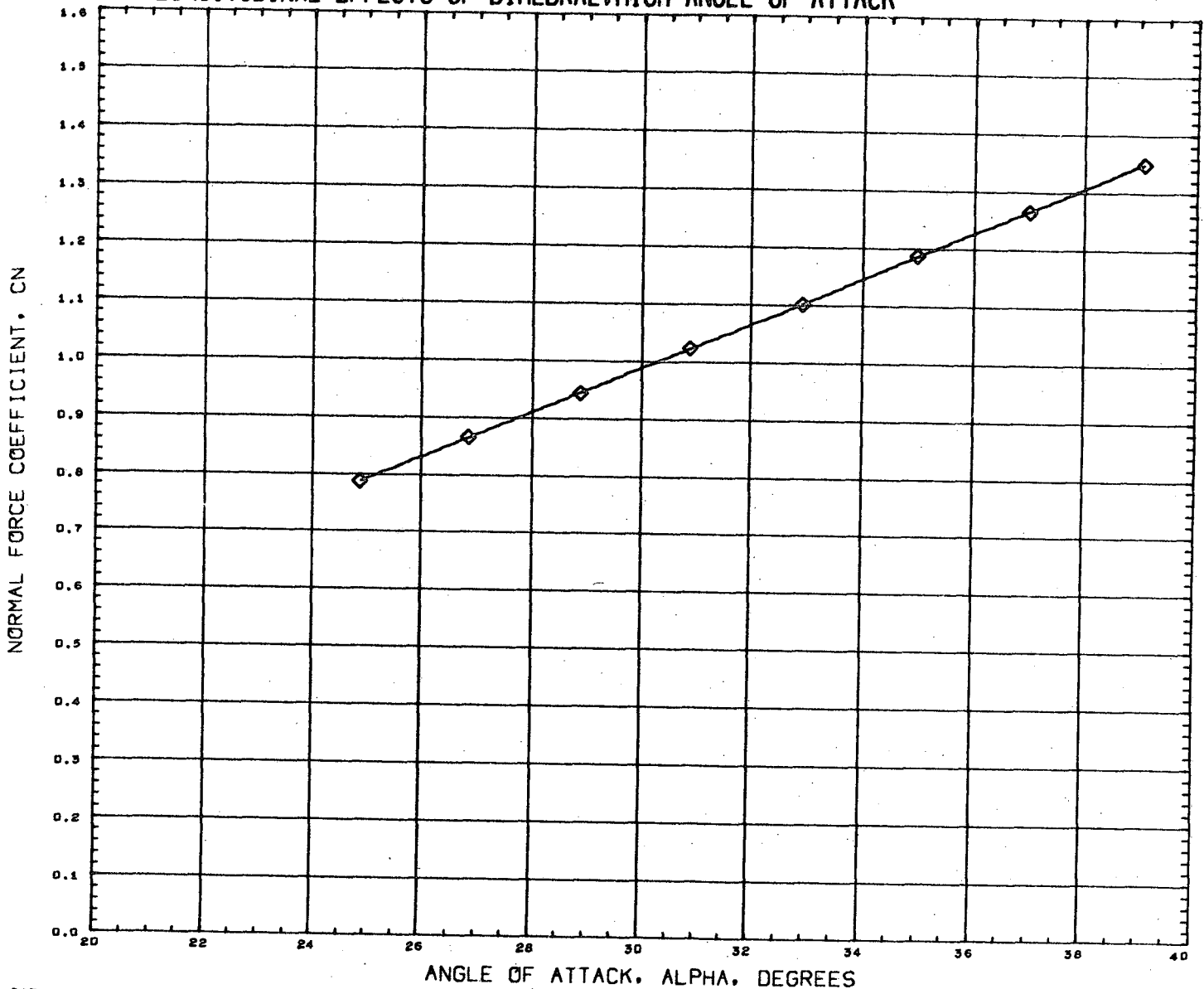
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	○	MSFC 495 GD/C	B19W14C4A
(C37A62)	△	MSFC 495 GD/C	B19W20C4A
(C37A02)	◇	MSFC 495 GD/C	B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



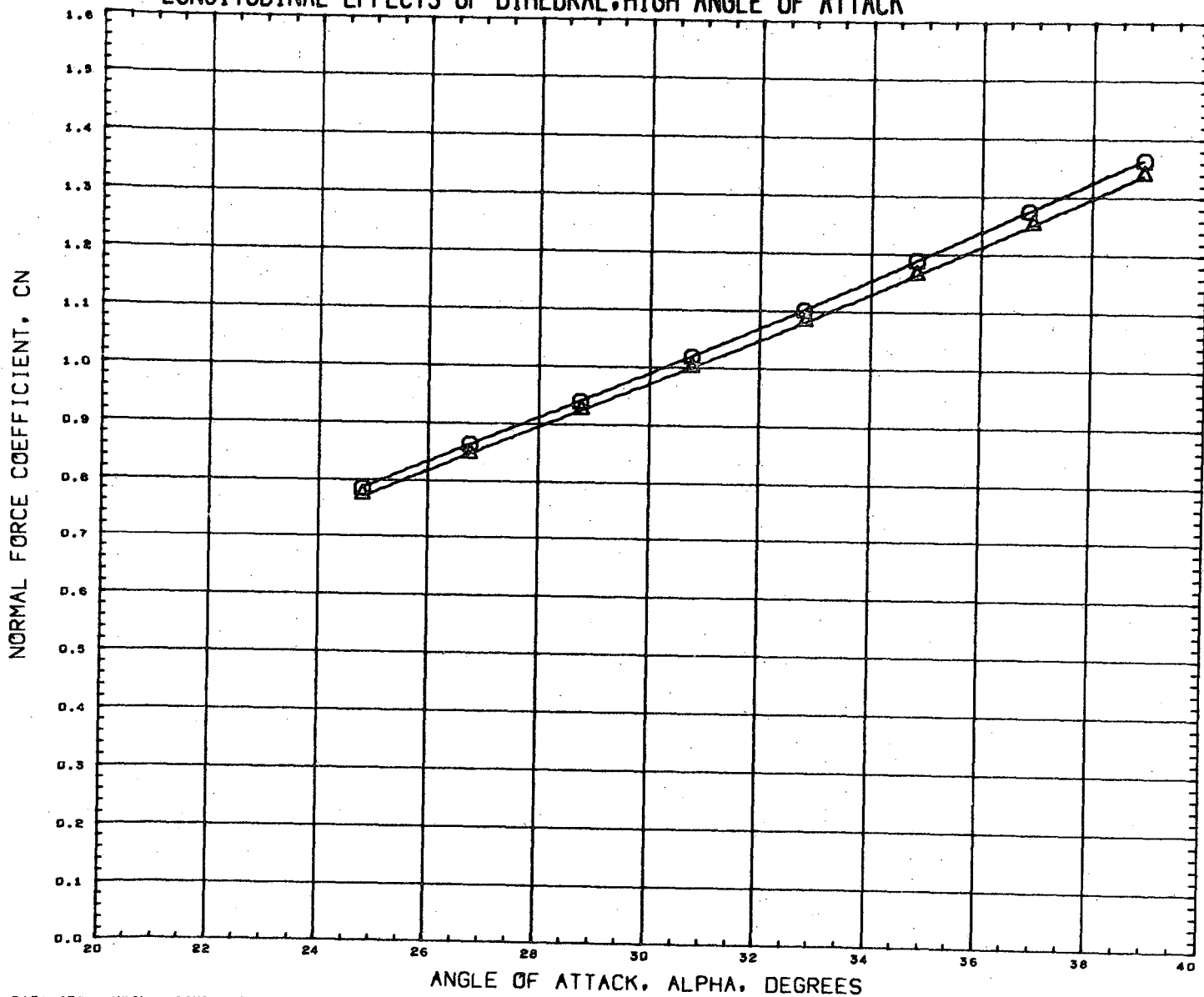
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A62)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



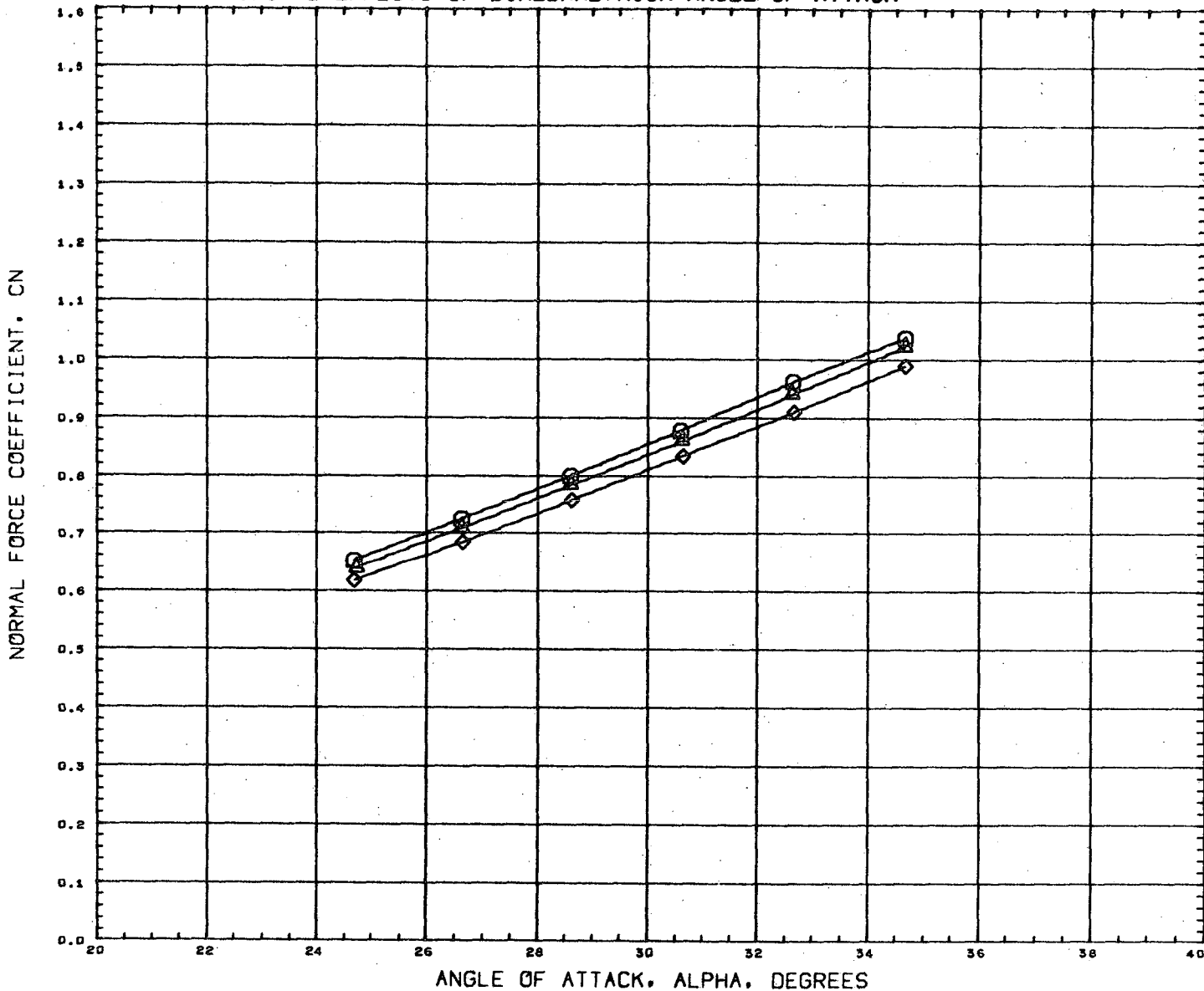
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32) ○	MSFC 495 GD/C B19W14C4A
(C37A62) △	MSFC 495 GD/C B19W20C4A
(C37A02) ◇	DATA NOT AVAILABLE FOR ALL CONDITIONS

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6160	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL HIGH ANGLE OF ATTACK



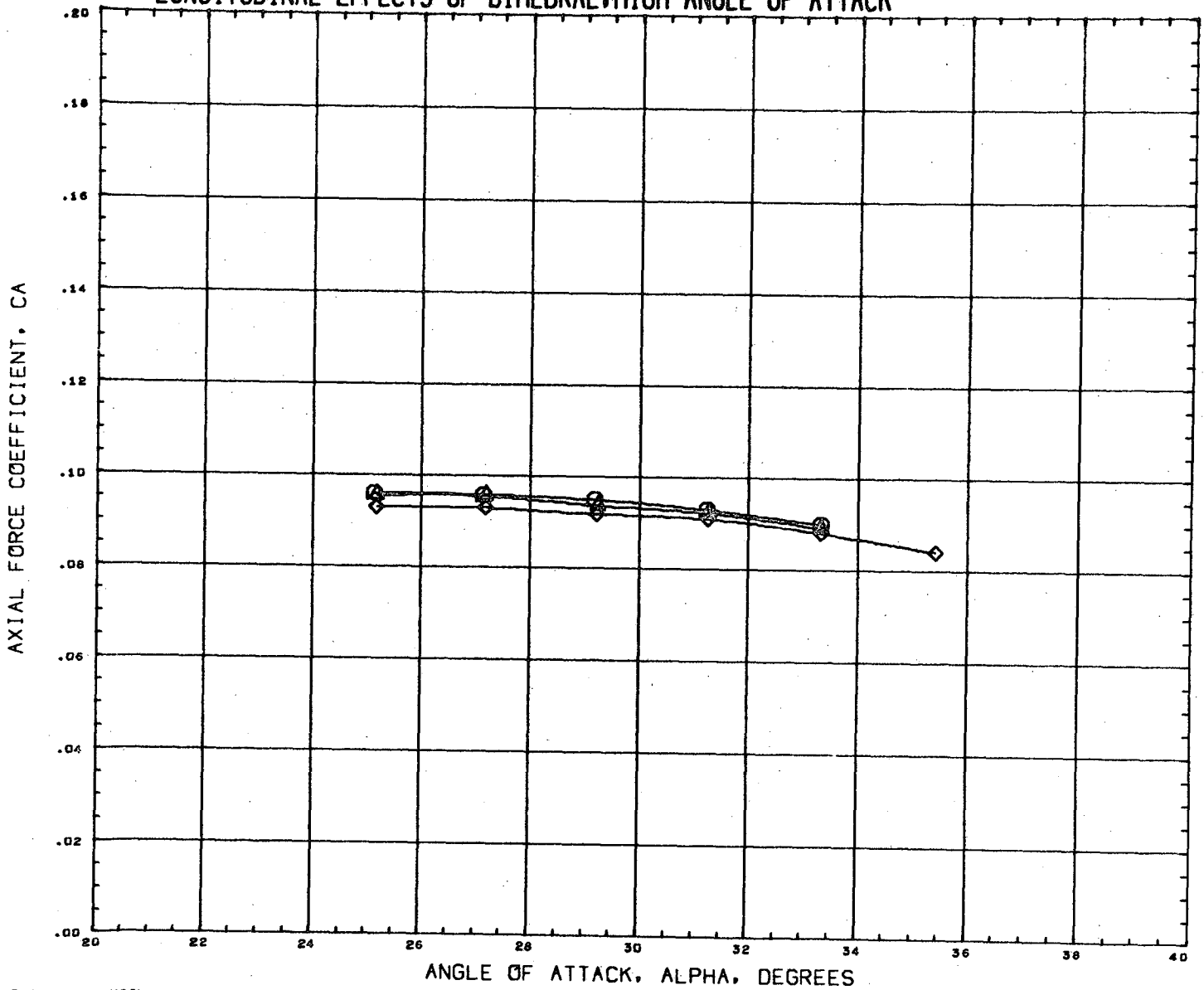
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	○	MSFC 495 GD/C	B19W14C4A
(C37A62)	△	MSFC 495 GD/C	B19W20C4A
(C37A02)	◇	MSFC 495 GD/C	B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6160	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



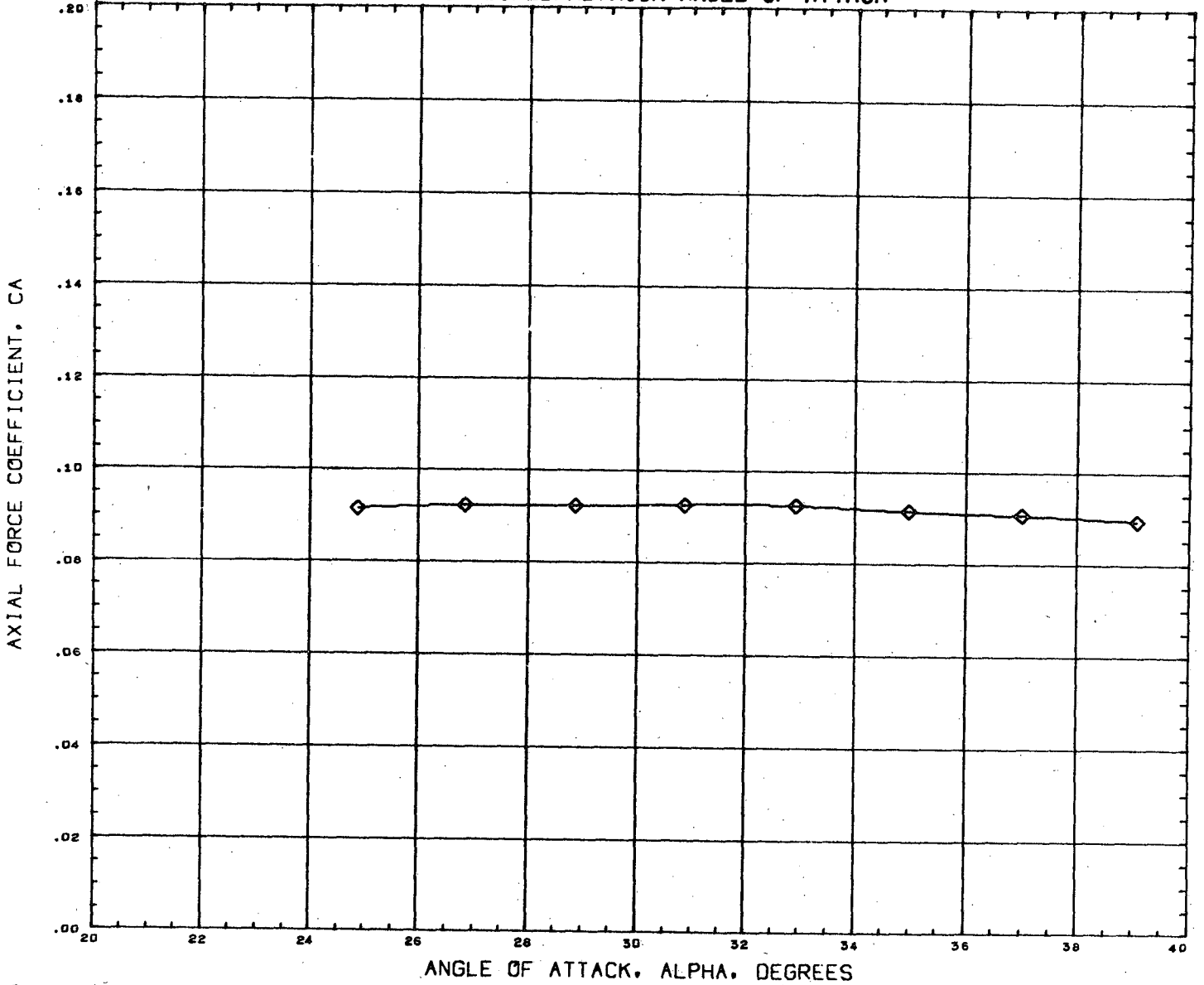
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	MSFC 495 GD/C	B19W14C4A
(C37A62)	MSFC 495 GD/C	B19W20C4A
(C37AD2)	MSFC 495 GD/C	B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.964

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



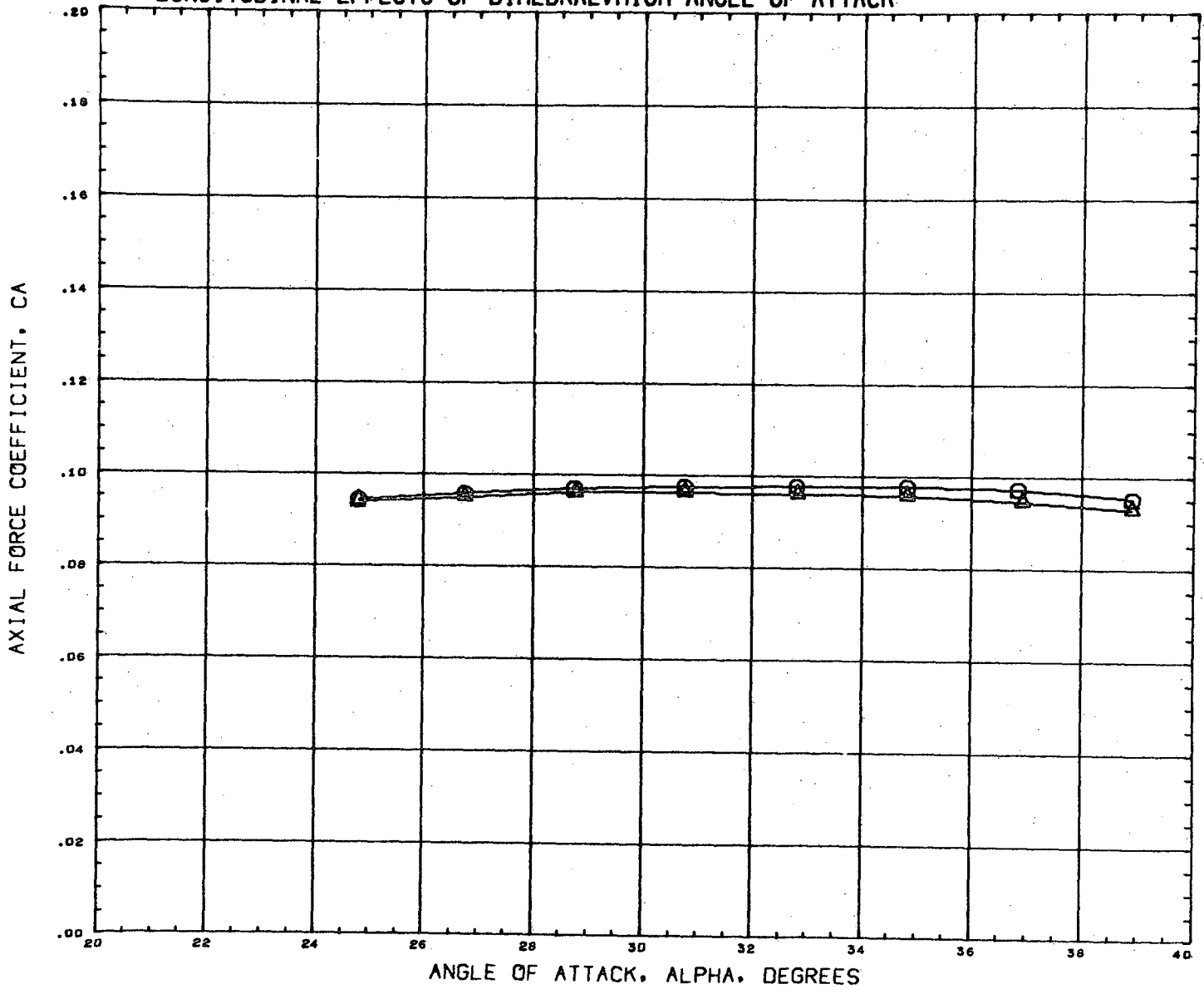
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A62)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A02)	MSFC 495 6D/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK

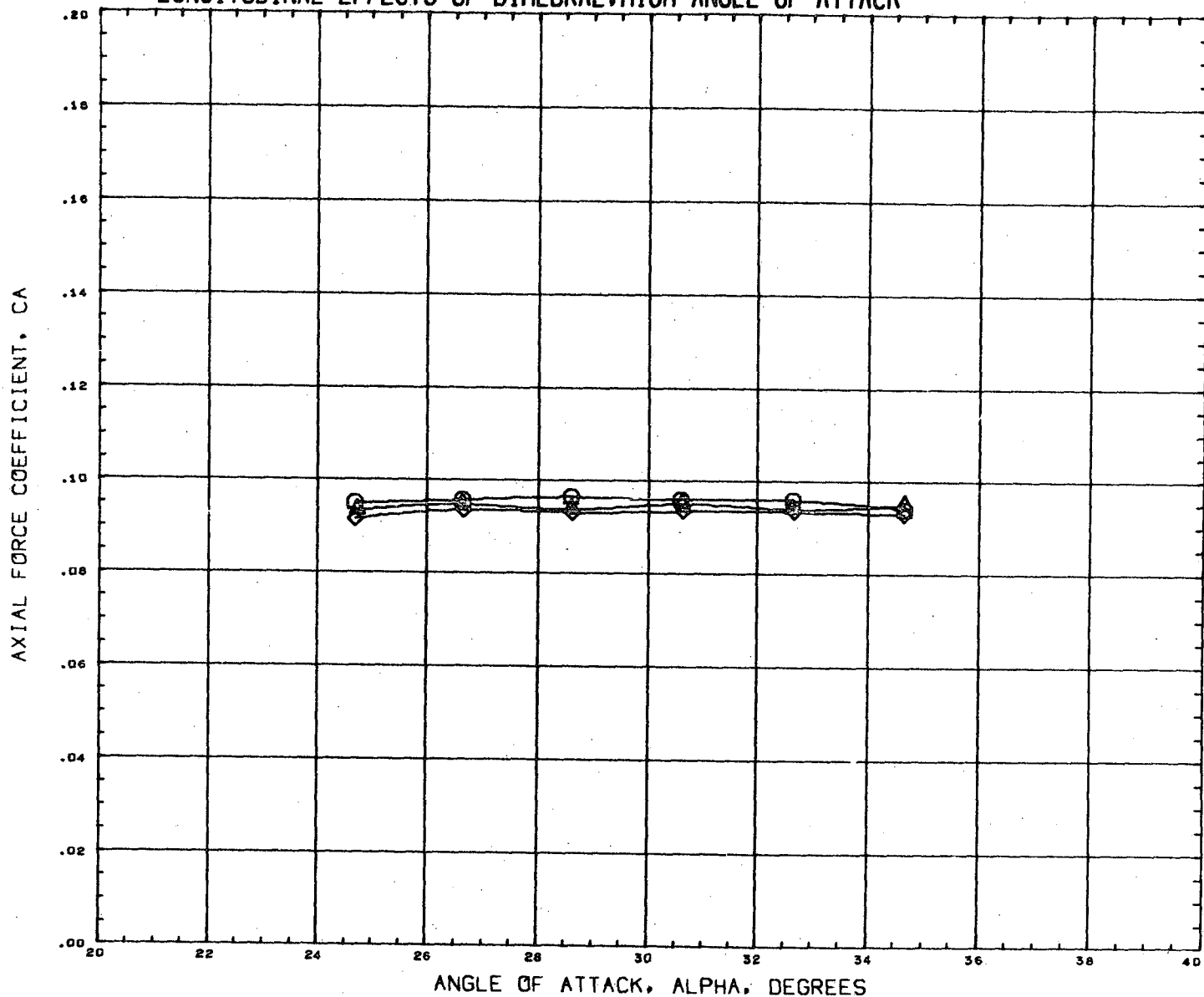


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHEDRAL
(C37A32)	MSFC 495 GD/C B19W14C4A	0.000	3.000
(C37A62)	MSFC 495 GD/C B19W20C4A	0.000	6.000
(C37A02)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



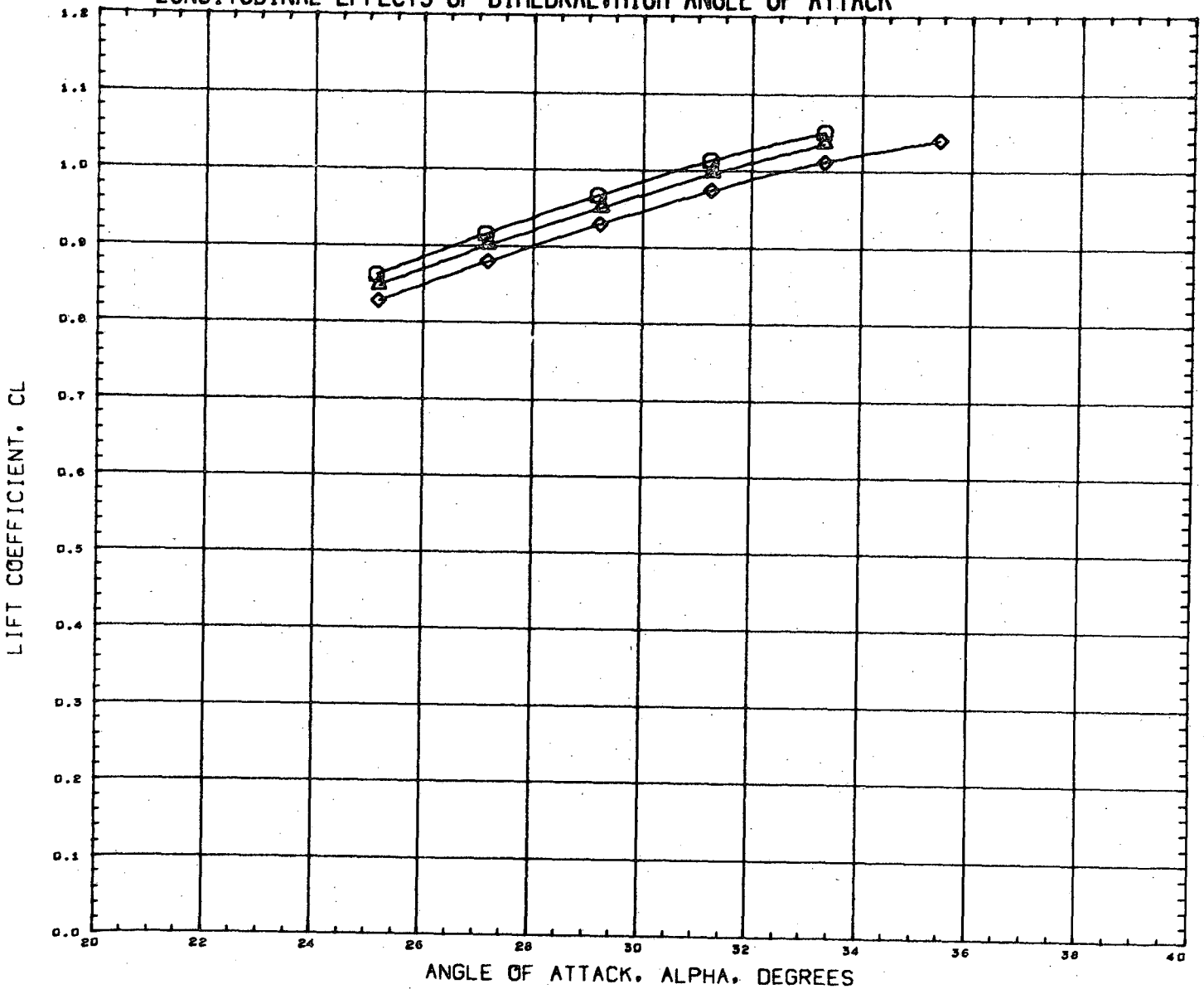
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL HIGH ANGLE OF ATTACK



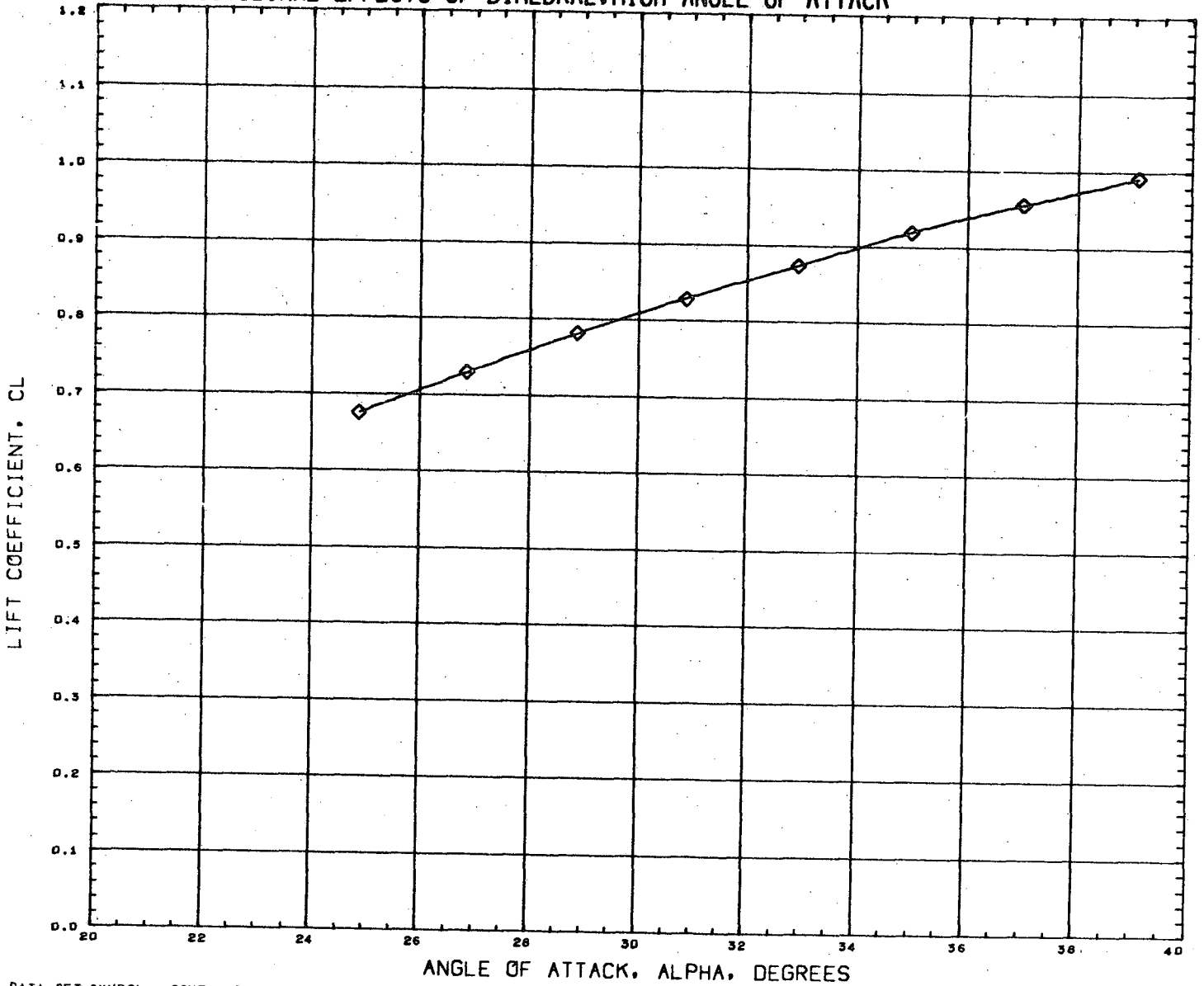
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37AD2)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.964

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



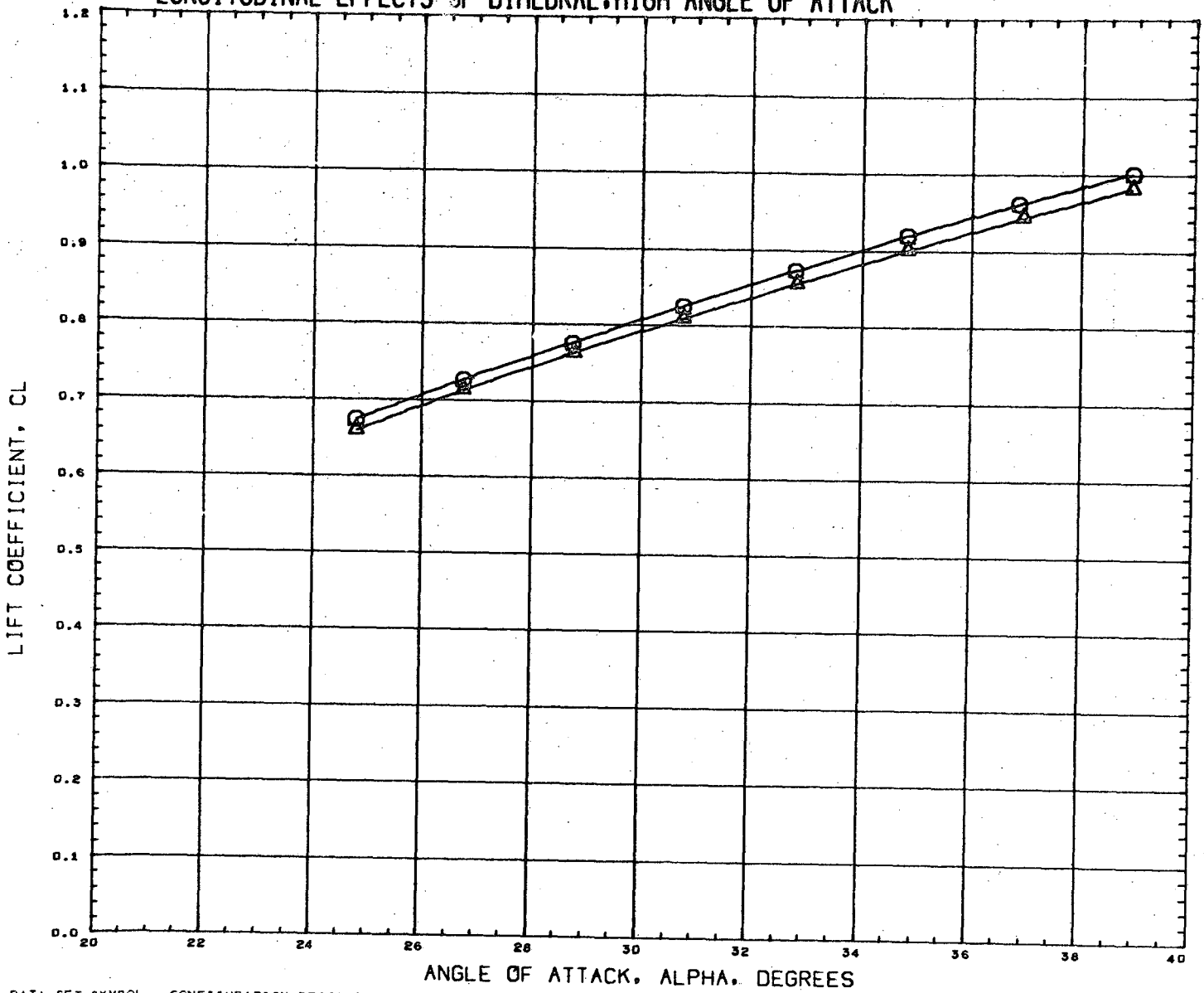
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (C37A32) DATA NOT AVAILABLE FOR ALL CONDITIONS
 (C37A62) DATA NOT AVAILABLE FOR ALL CONDITIONS
 (C37A02) MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0990 IN.
BREF	6.0990 IN.
XMRP	6.6160 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



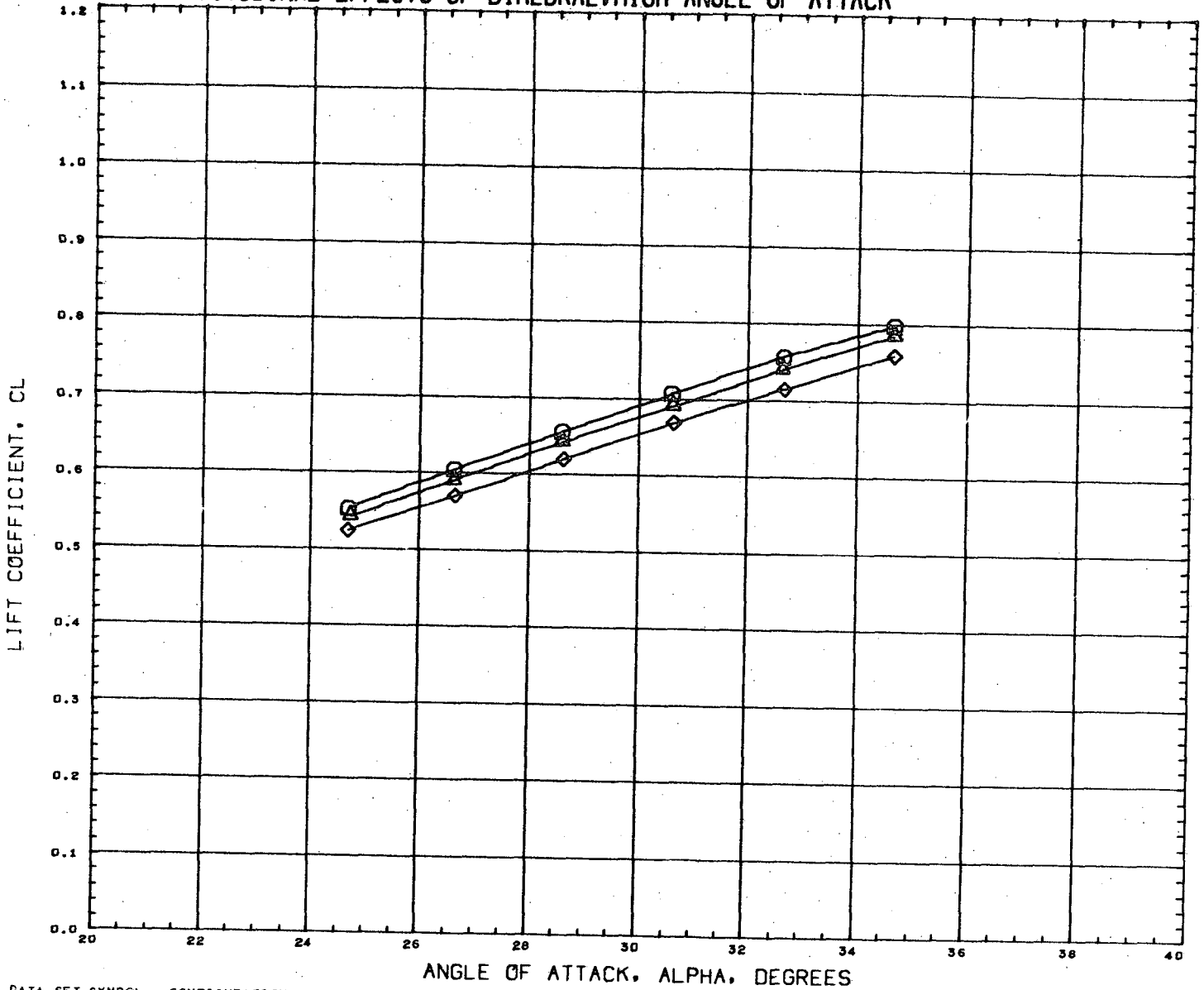
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	DATA NOT AVAILABLE FOR ALL CONDITIONS

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



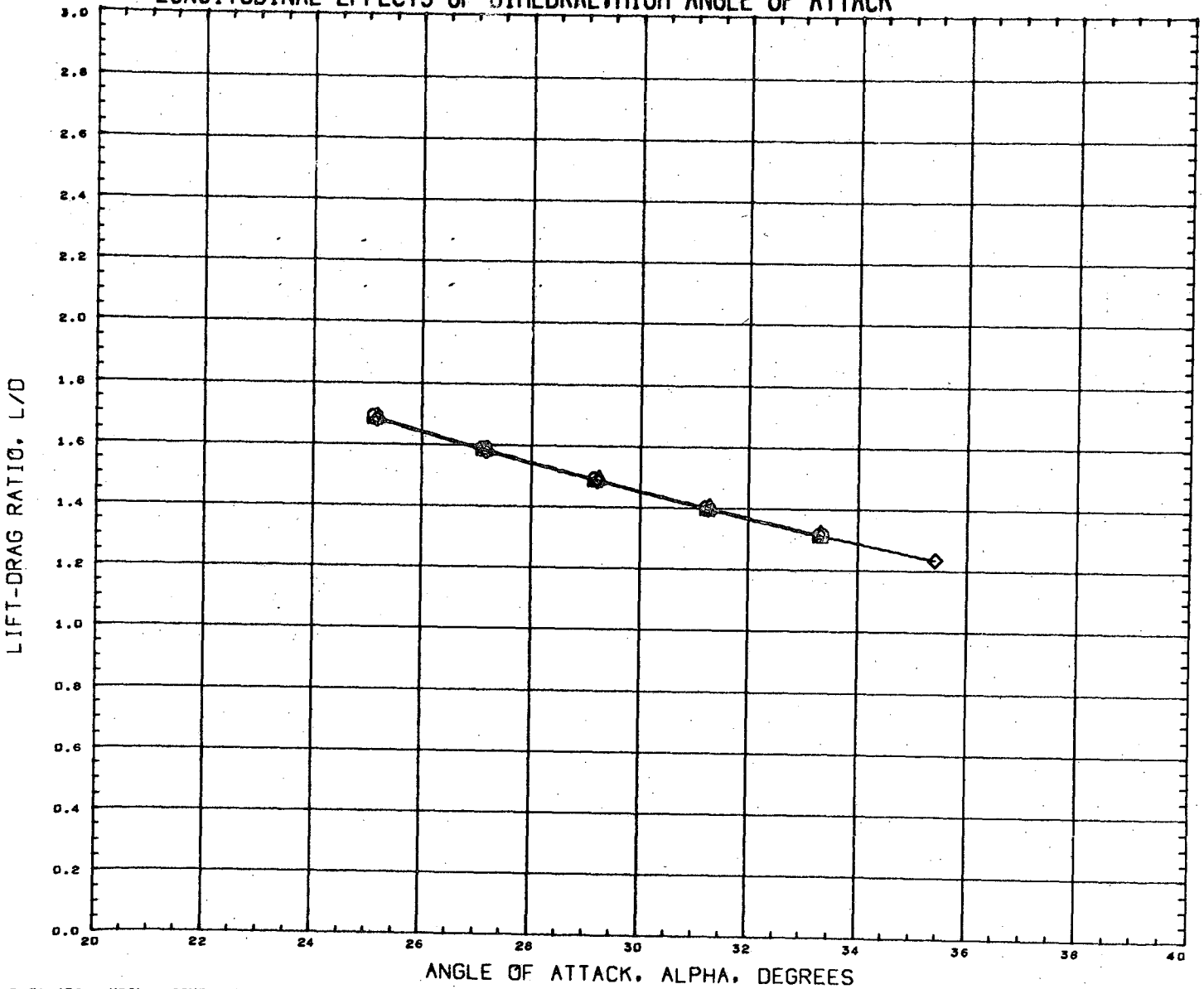
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRF	6.6180	IN.
YMRF	0.0000	IN.
ZMRF	0.0000	IN.
SCALE	0.0035	

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



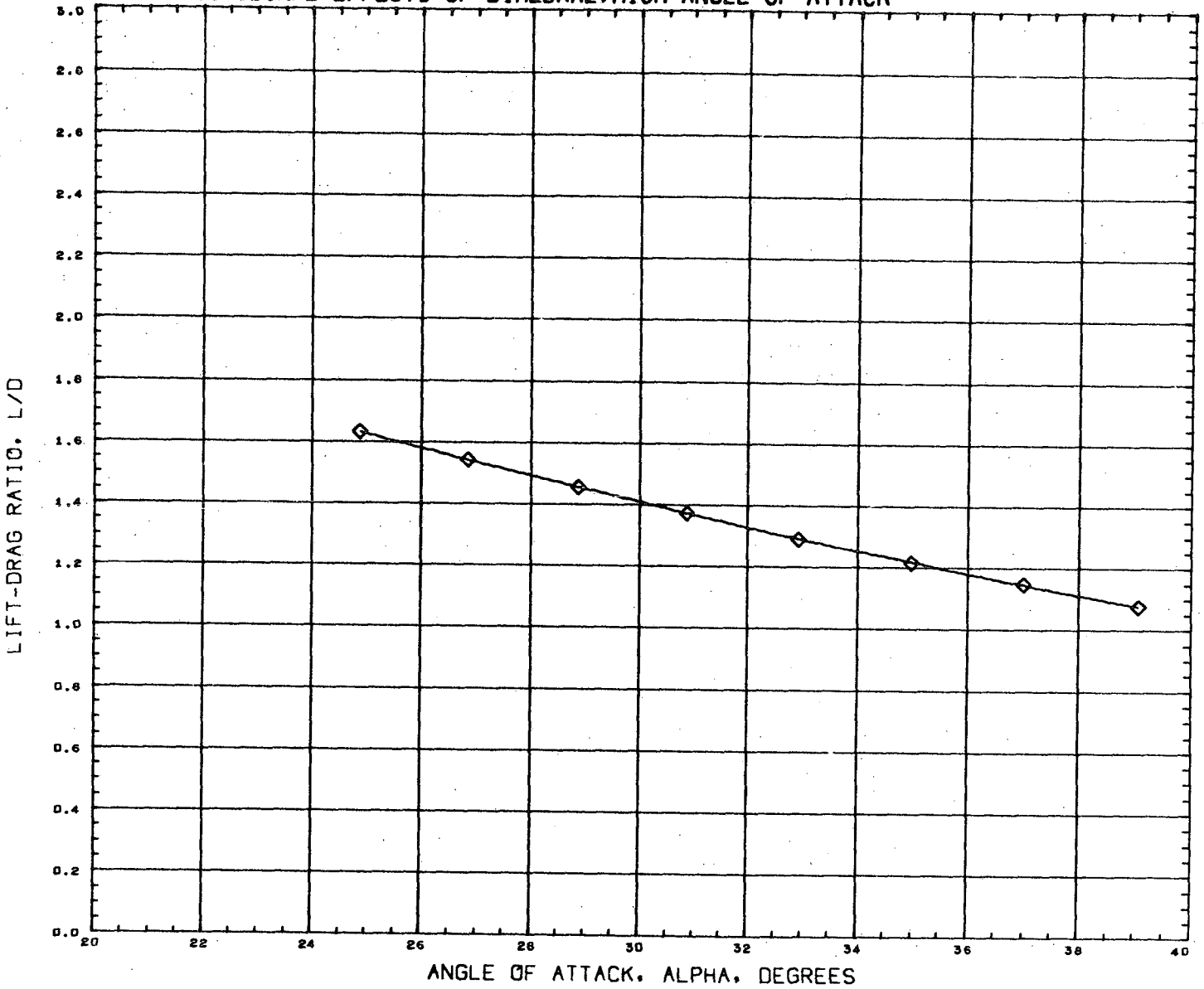
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



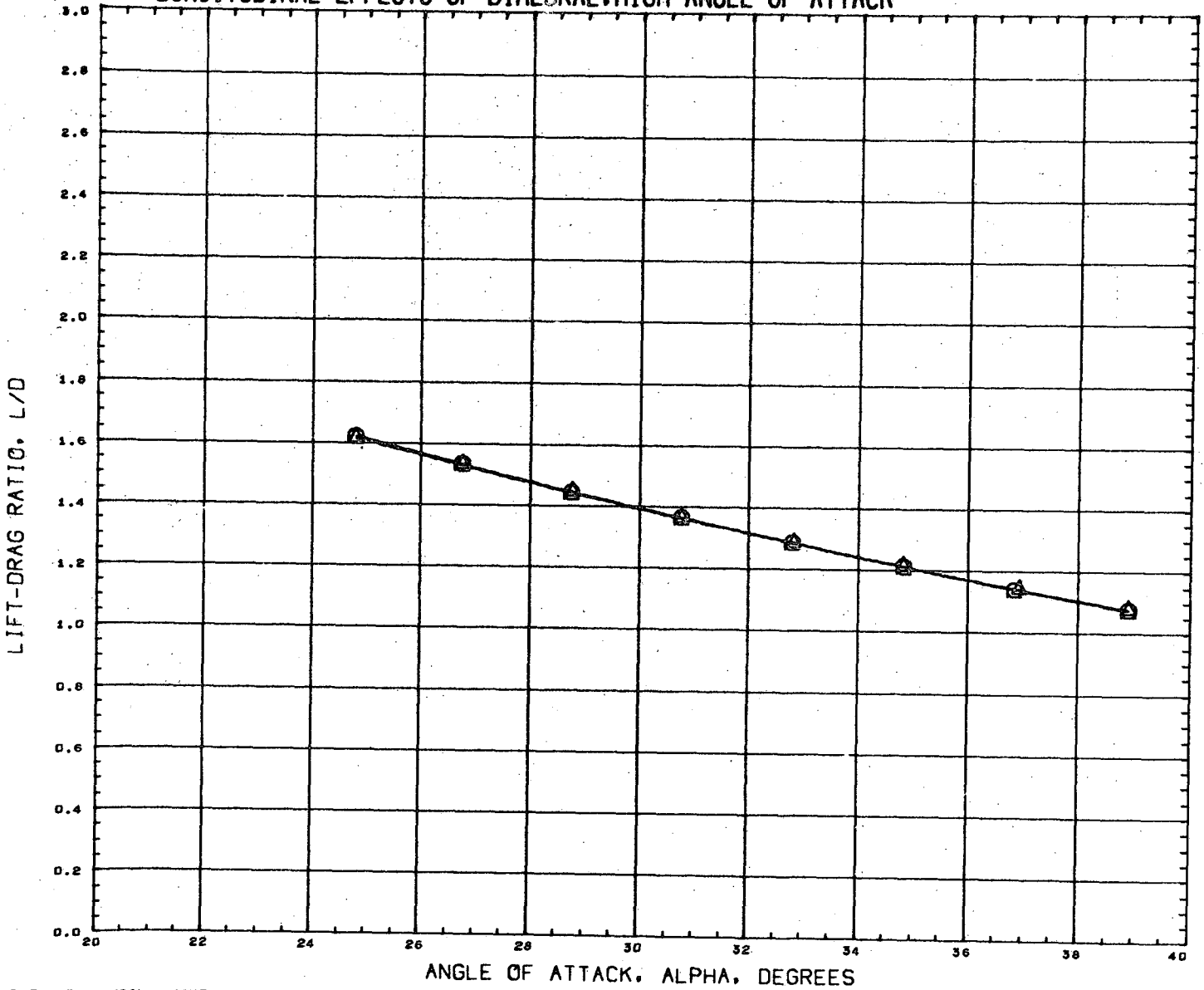
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A62)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



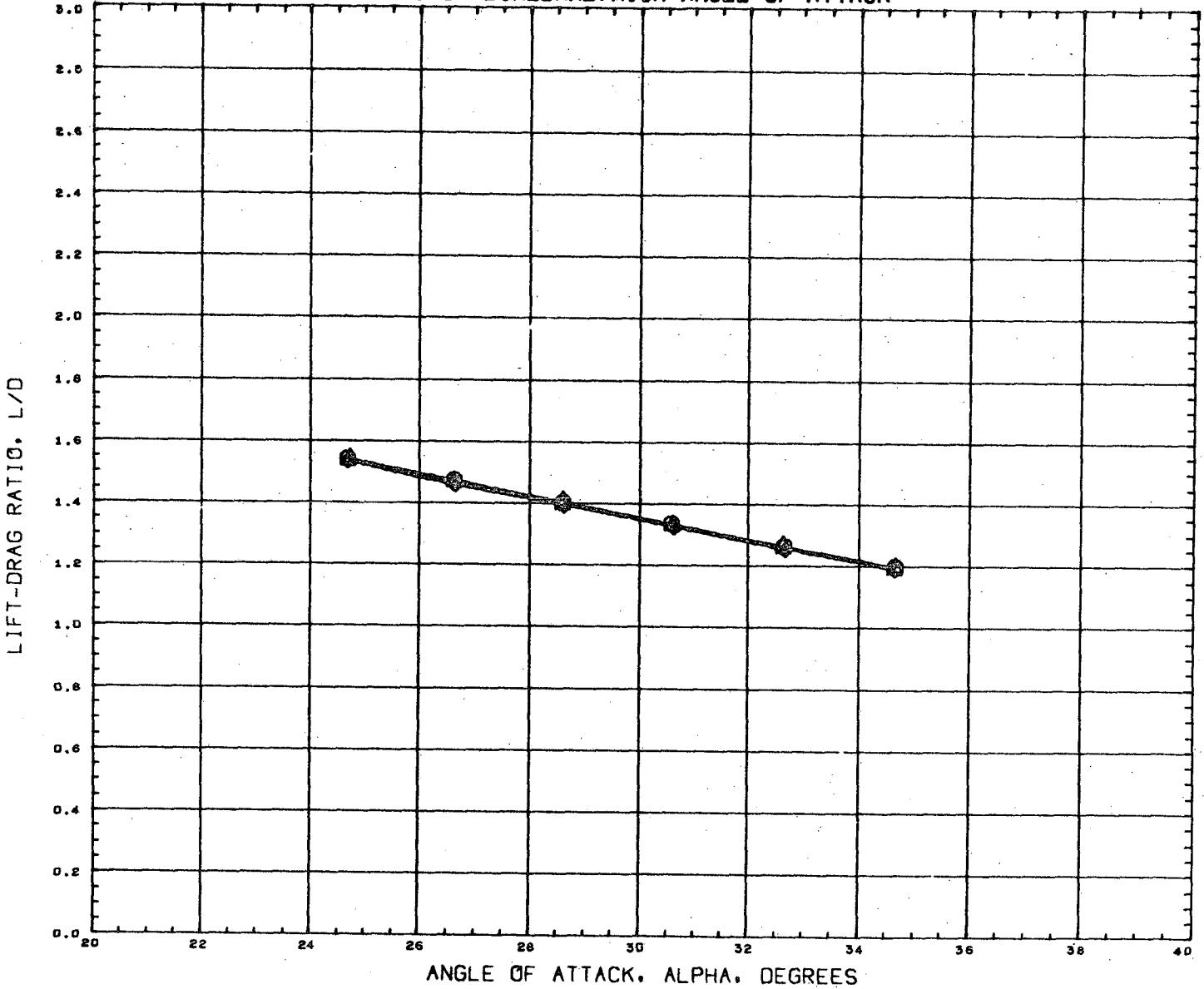
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 CD/C B19W14C4A
(C37A62)	MSFC 495 CD/C B19W20C4A
(C37A02)	DATA NOT AVAILABLE FOR ALL CONDITIONS

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6100	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



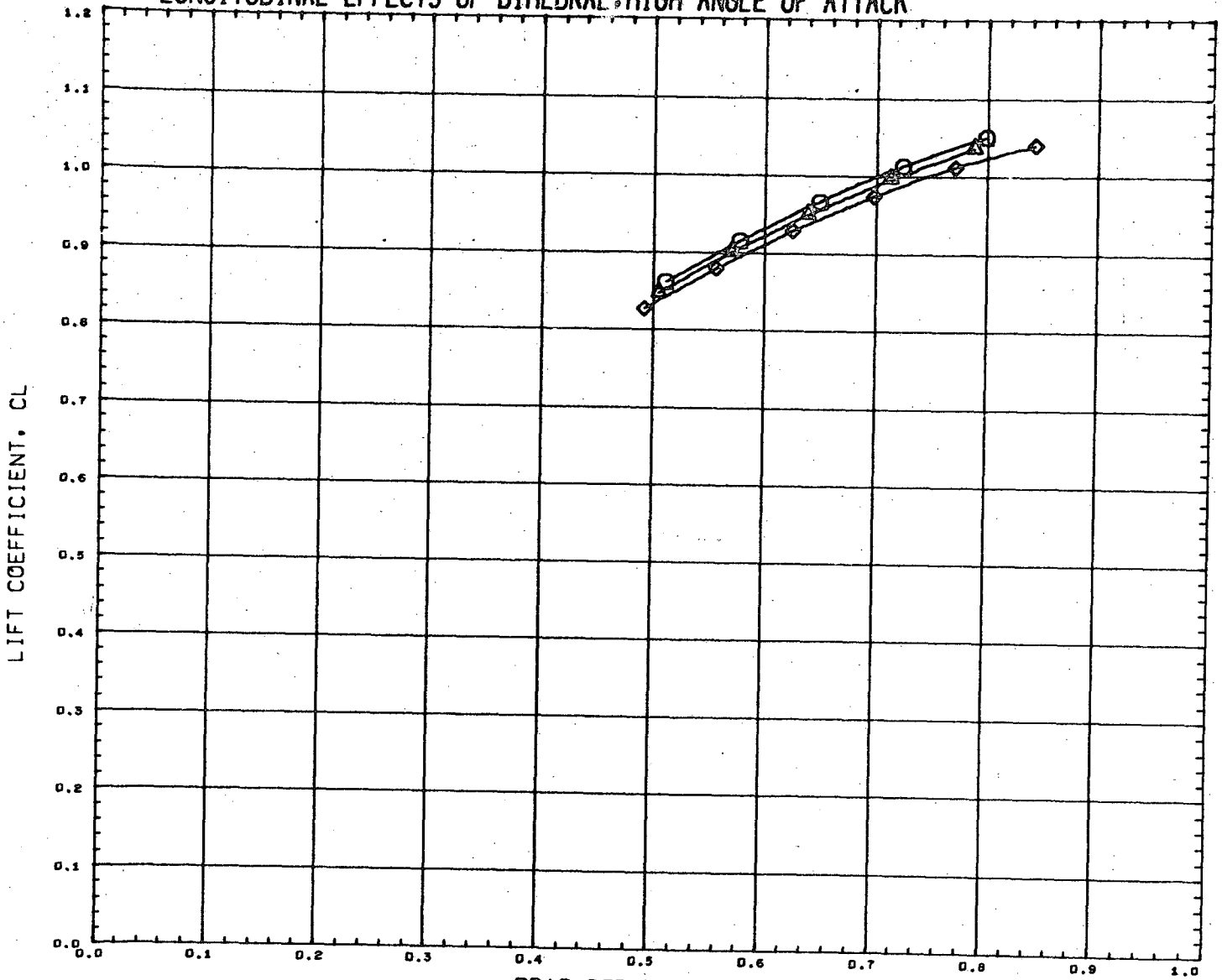
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	○	MSFC 495	GD/C B19W14C4A
(C37A62)	△	MSFC 495	GD/C B19W20C4A
(C37A02)	◇	MSFC 495	GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XHRP	6.6180 IN.
YHRP	0.0000 IN.
ZHRP	0.0000 IN.
SCALE	0.0035

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



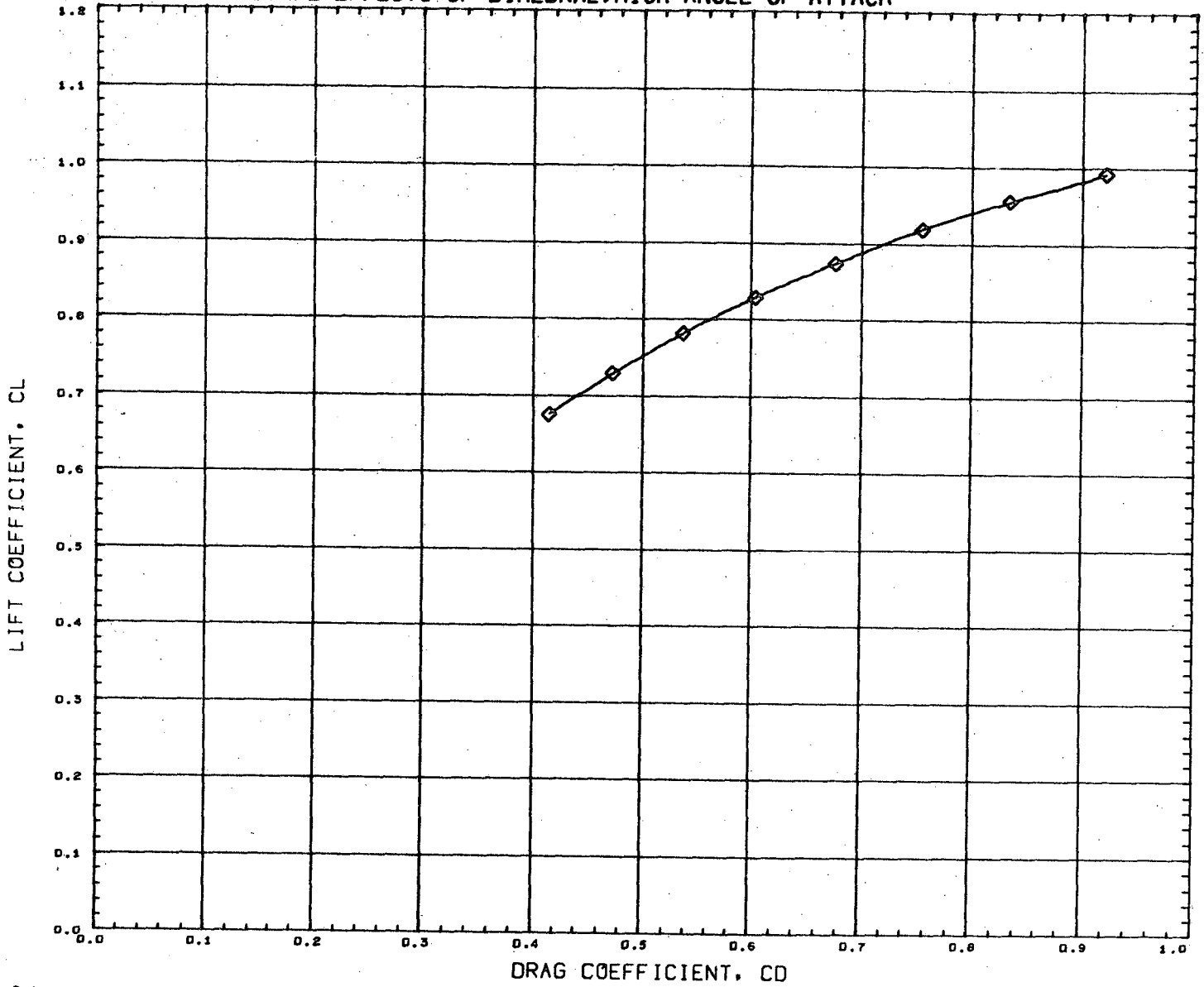
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XHRP	6.6180	IN.
YHRP	0.0000	IN.
ZHRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

LONGITUDINAL EFFECTS OF DIHEDRAL-HIGH ANGLE OF ATTACK



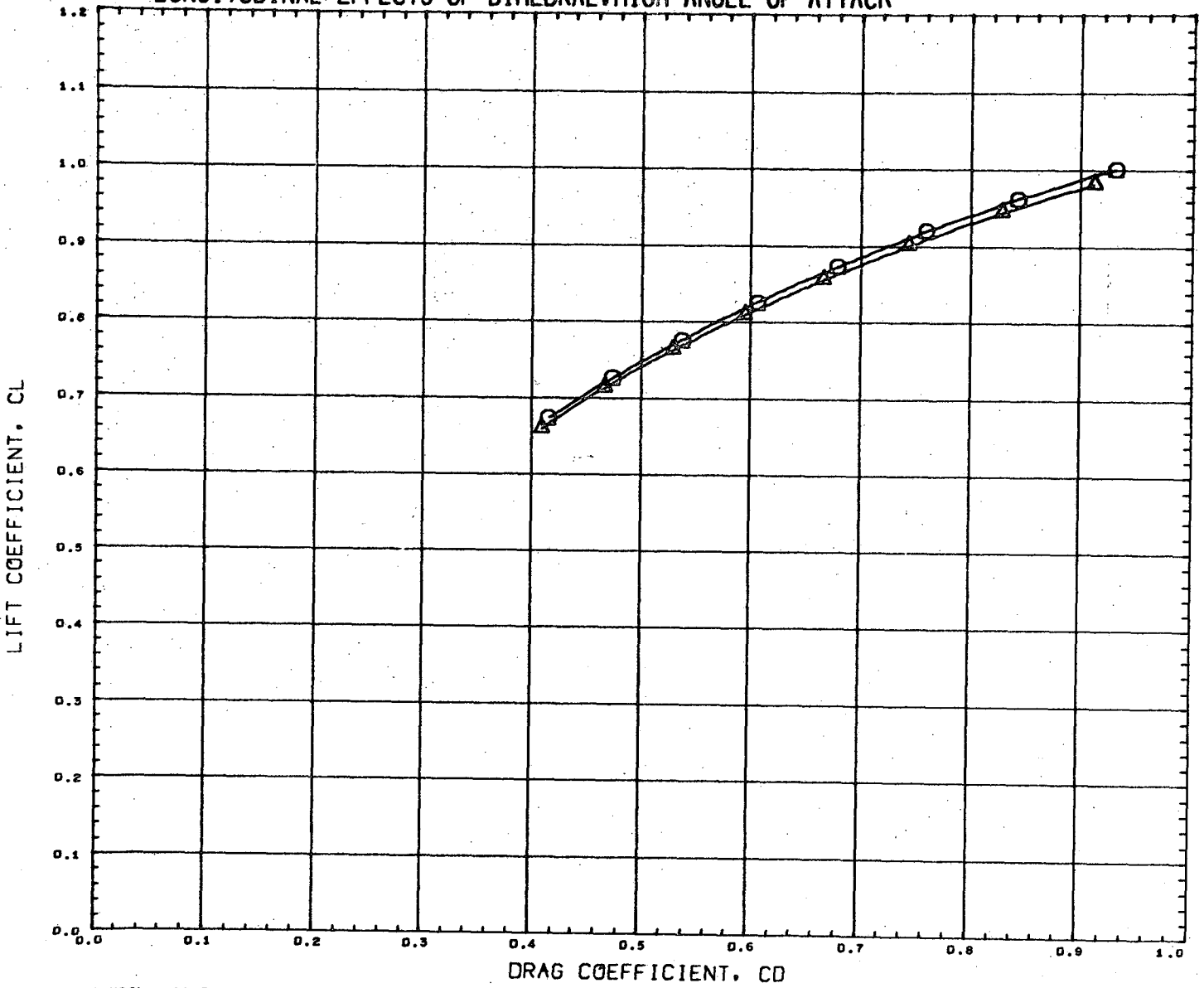
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A62)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37AD2)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL HIGH ANGLE OF ATTACK



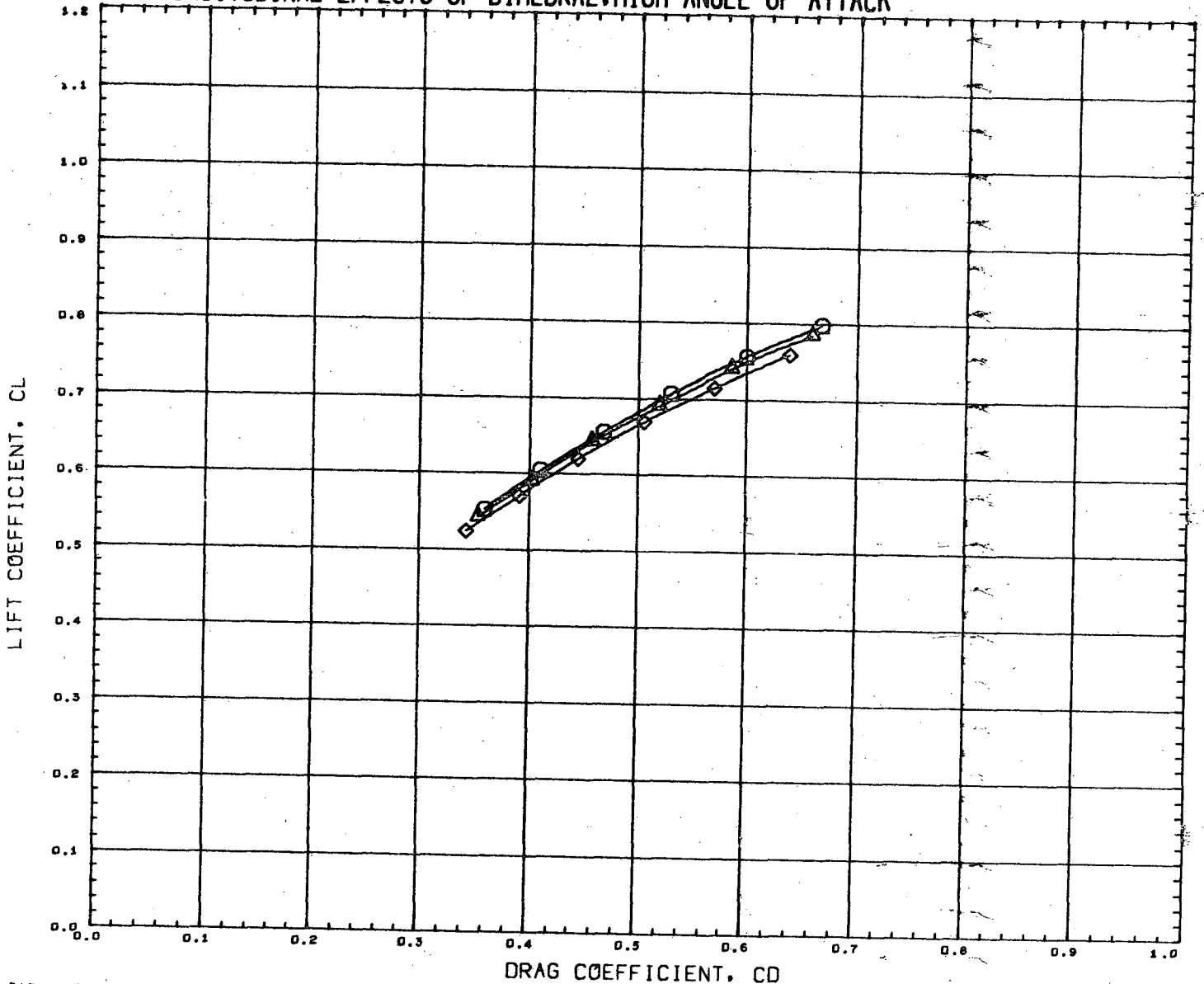
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	DATA NOT AVAILABLE FOR ALL CONDITIONS

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



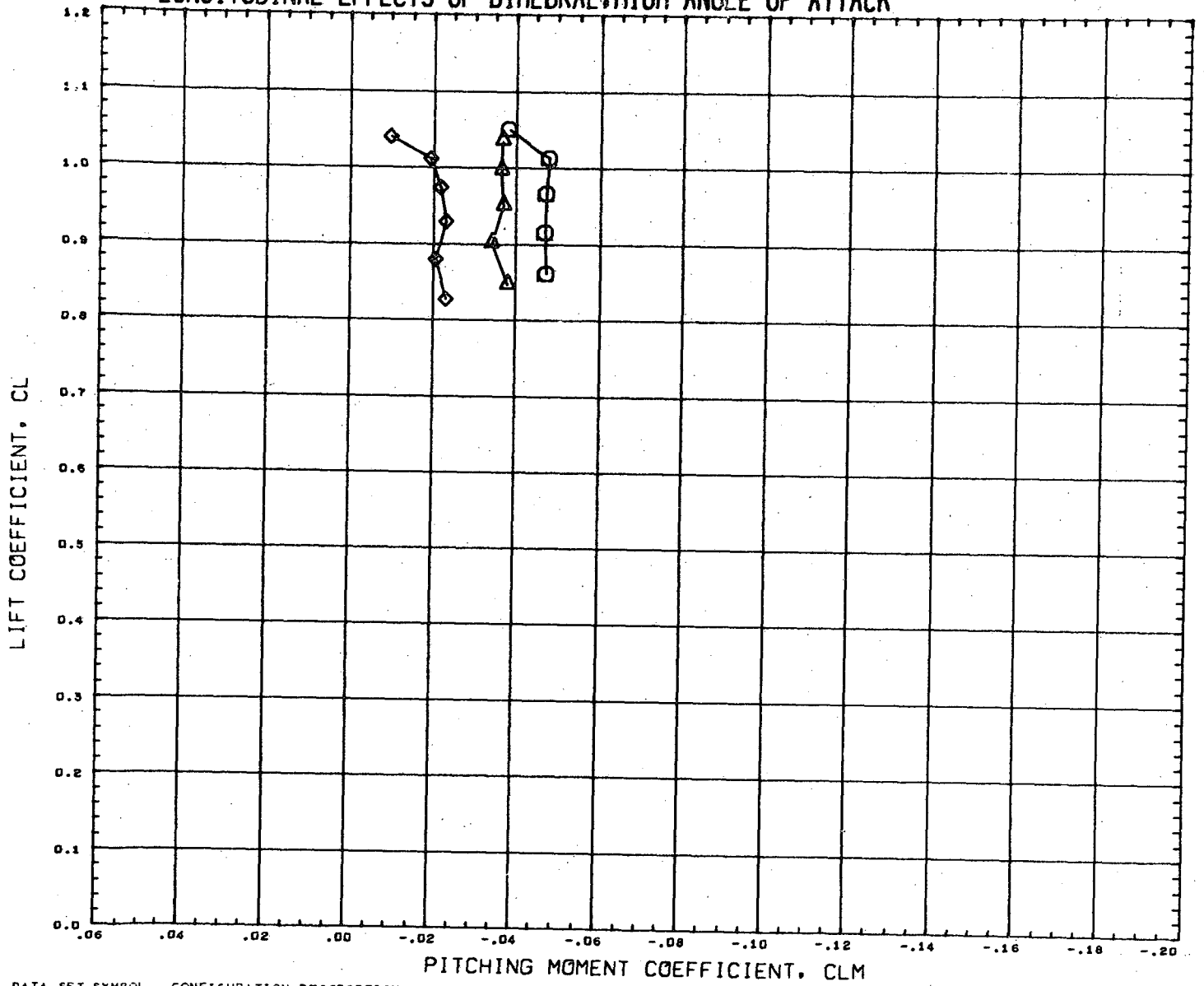
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



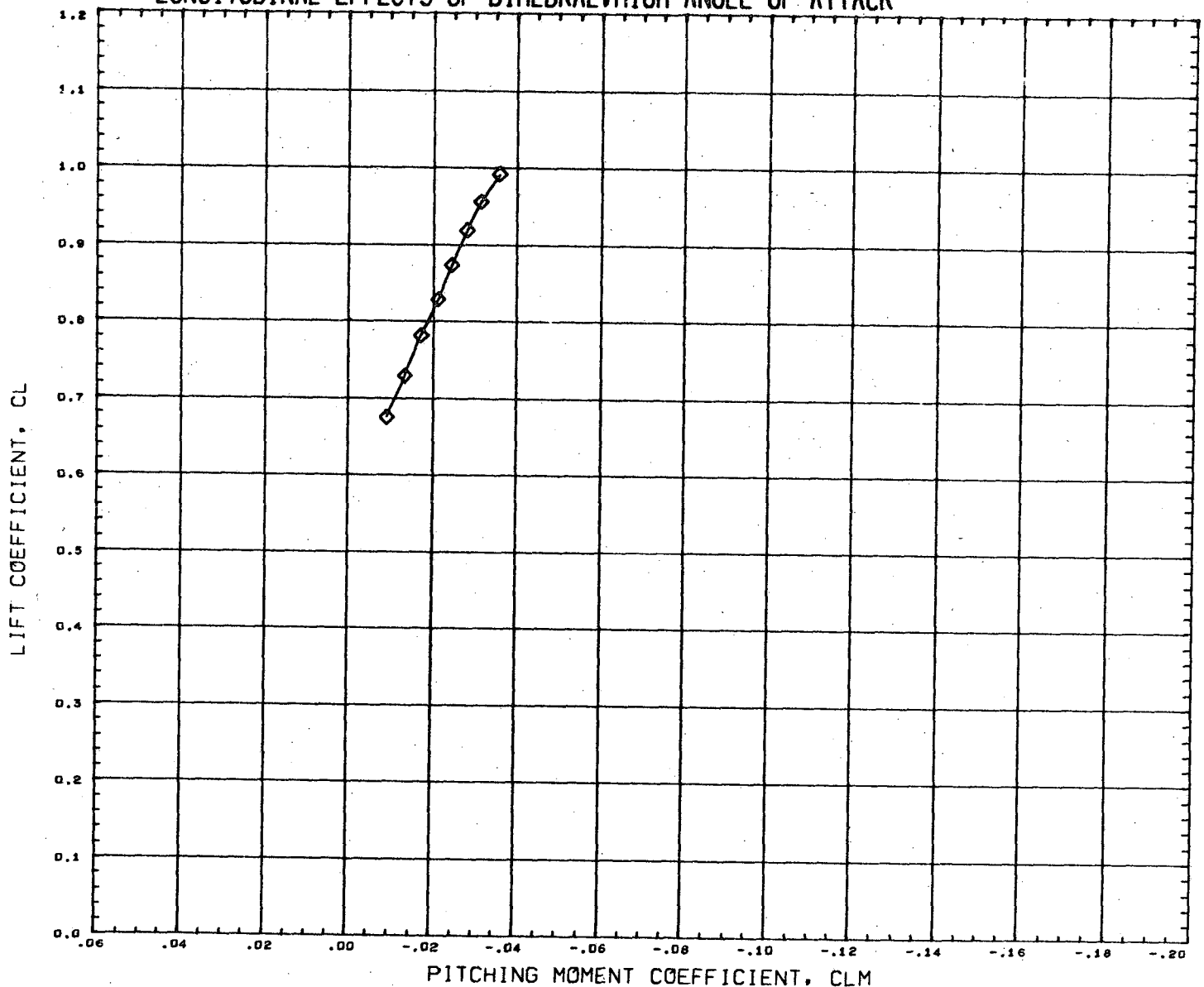
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHRL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



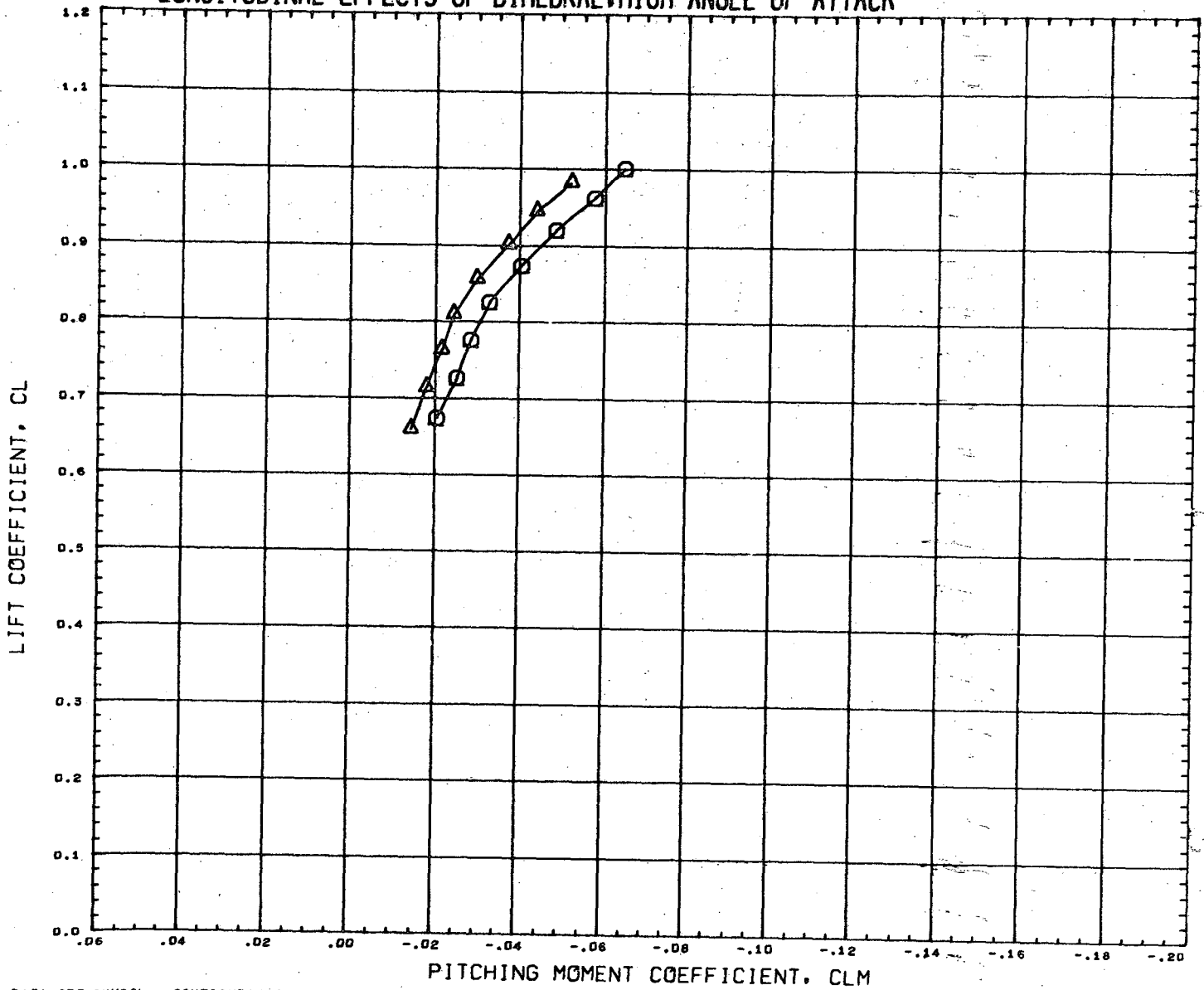
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A62)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



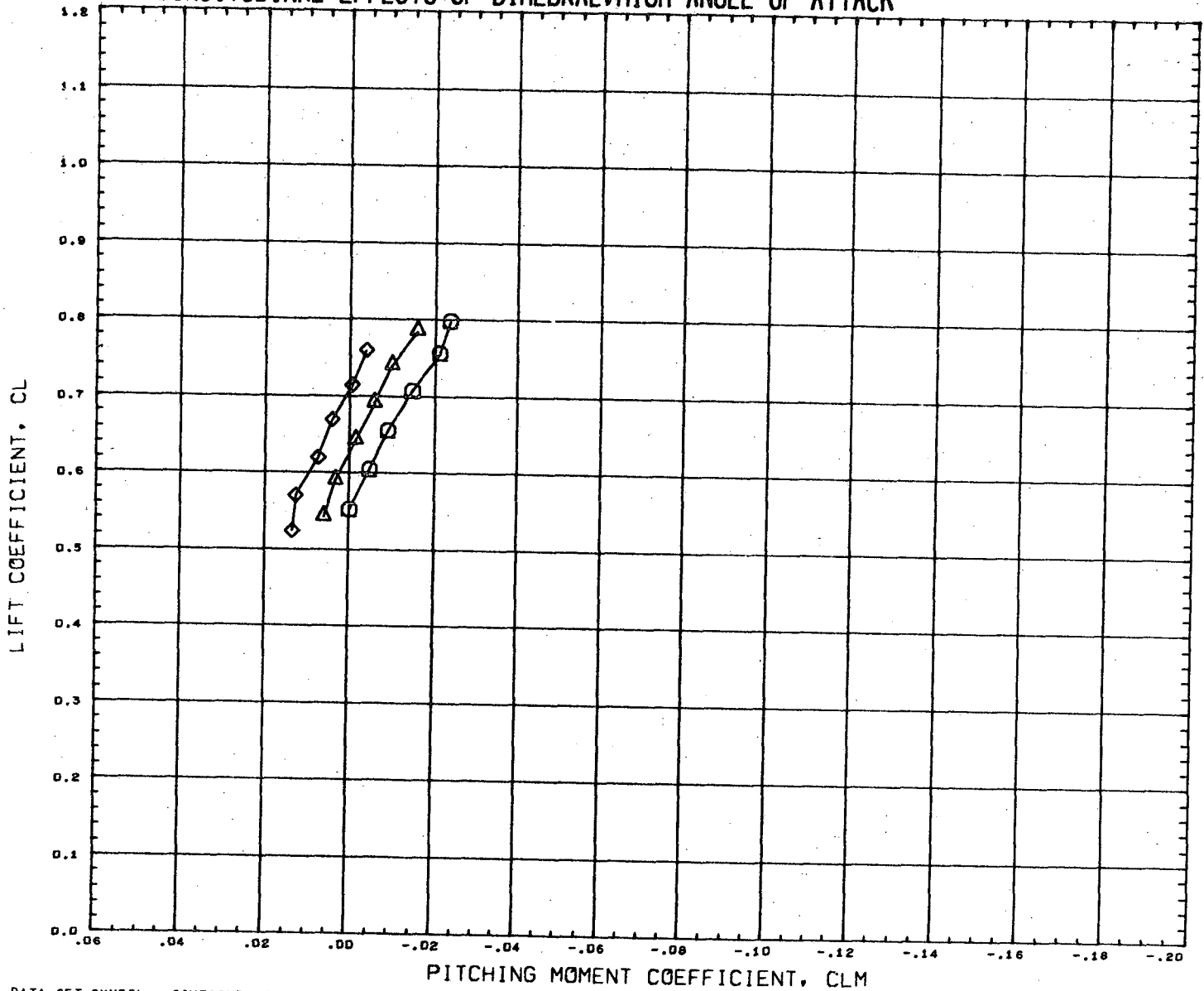
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	DATA NOT AVAILABLE FOR ALL CONDITIONS

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.990

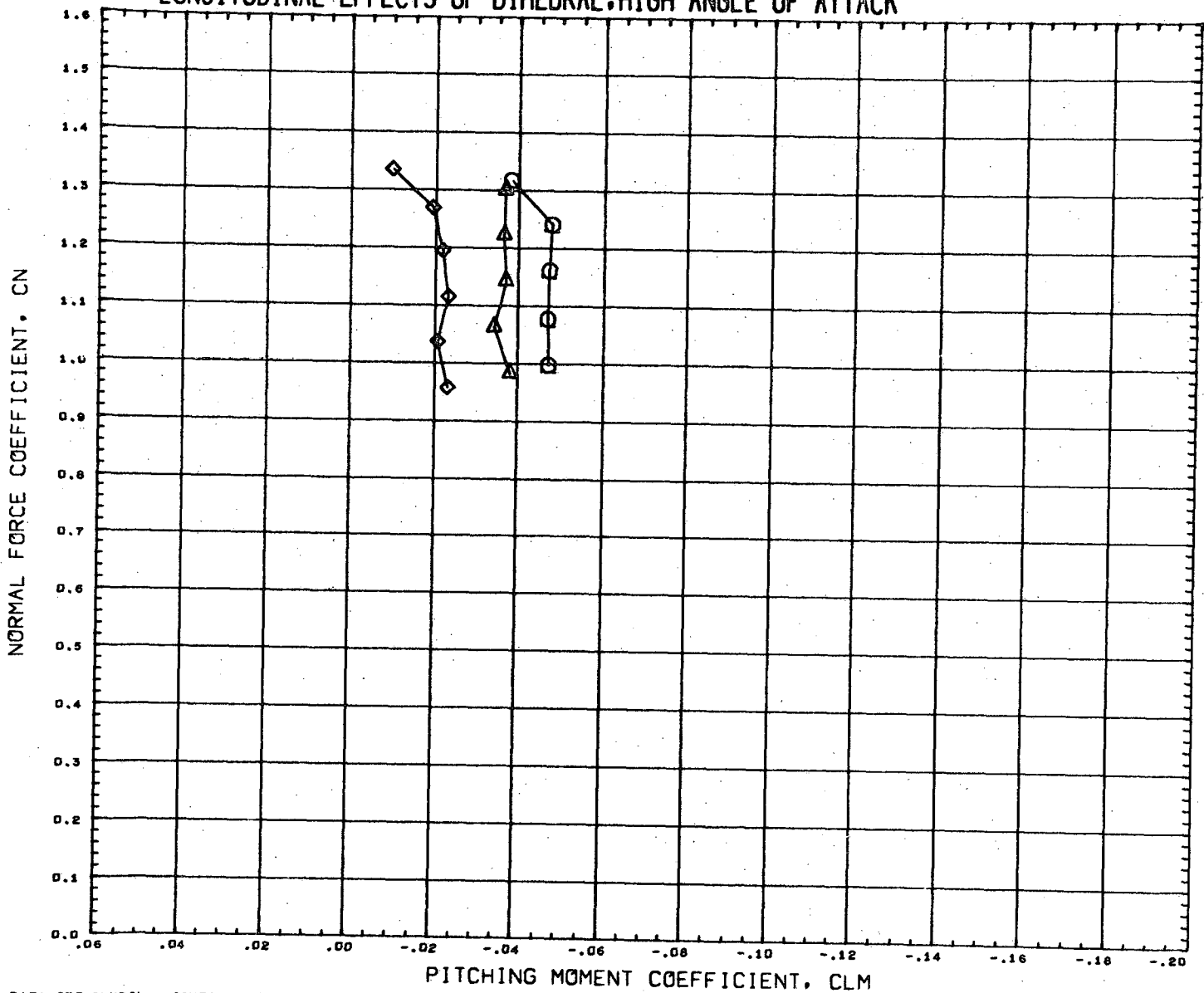
LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DIHEDRAL	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C B19W14C4A	0.000	3.000	SREF 15.6560 SQ. IN.
(C37A62)	MSFC 495 GD/C B19W20C4A	0.000	6.000	LREF 3.0950 IN.
(C37A02)	MSFC 495 GD/C B19W21C4A	0.000	10.000	BREF 5.0990 IN.
				XMRP 6.6100 IN.
				YMRP 0.0000 IN.
				ZMRP 0.0000 IN.
				SCALE 0.0035

MACH 4.960

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



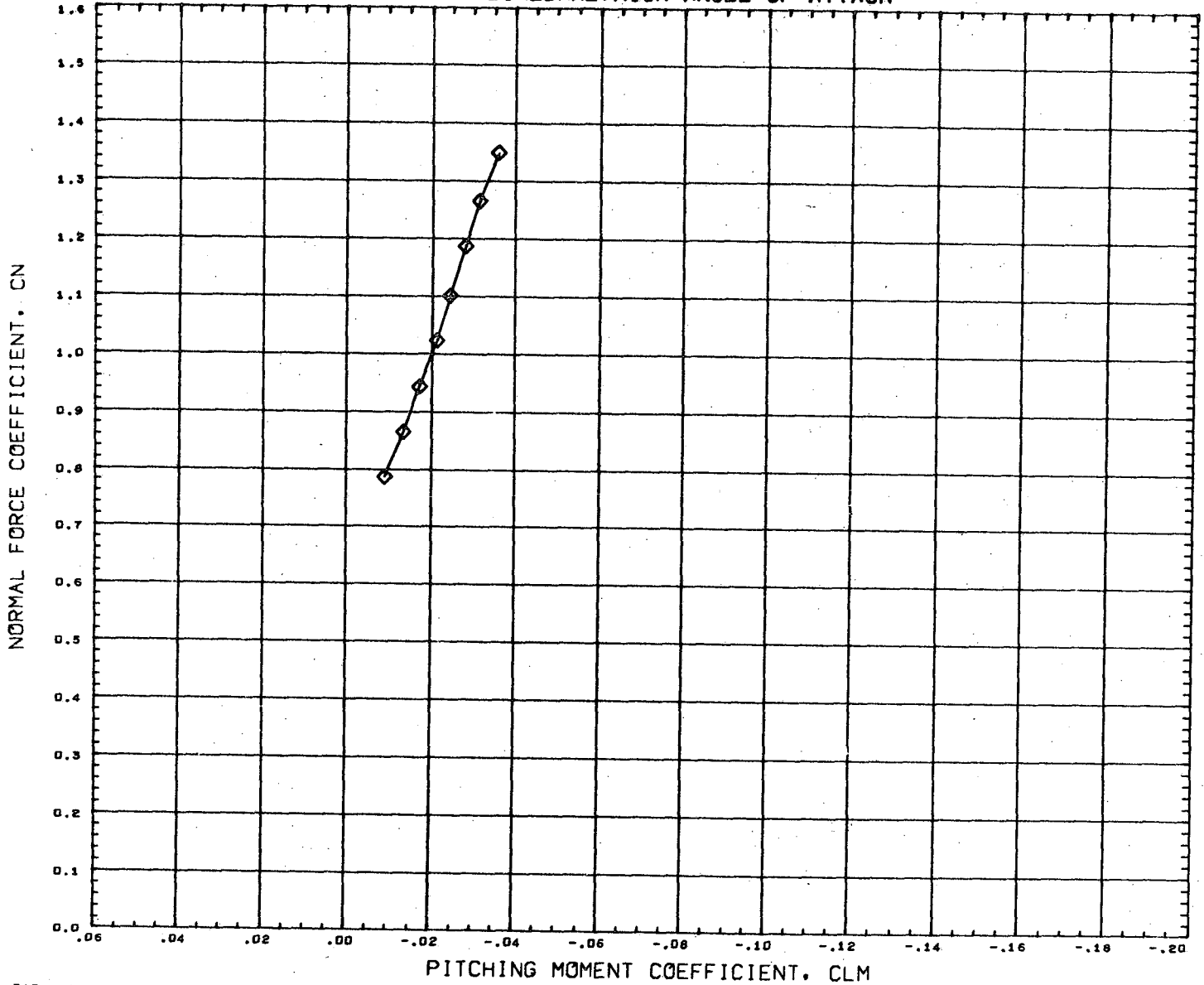
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



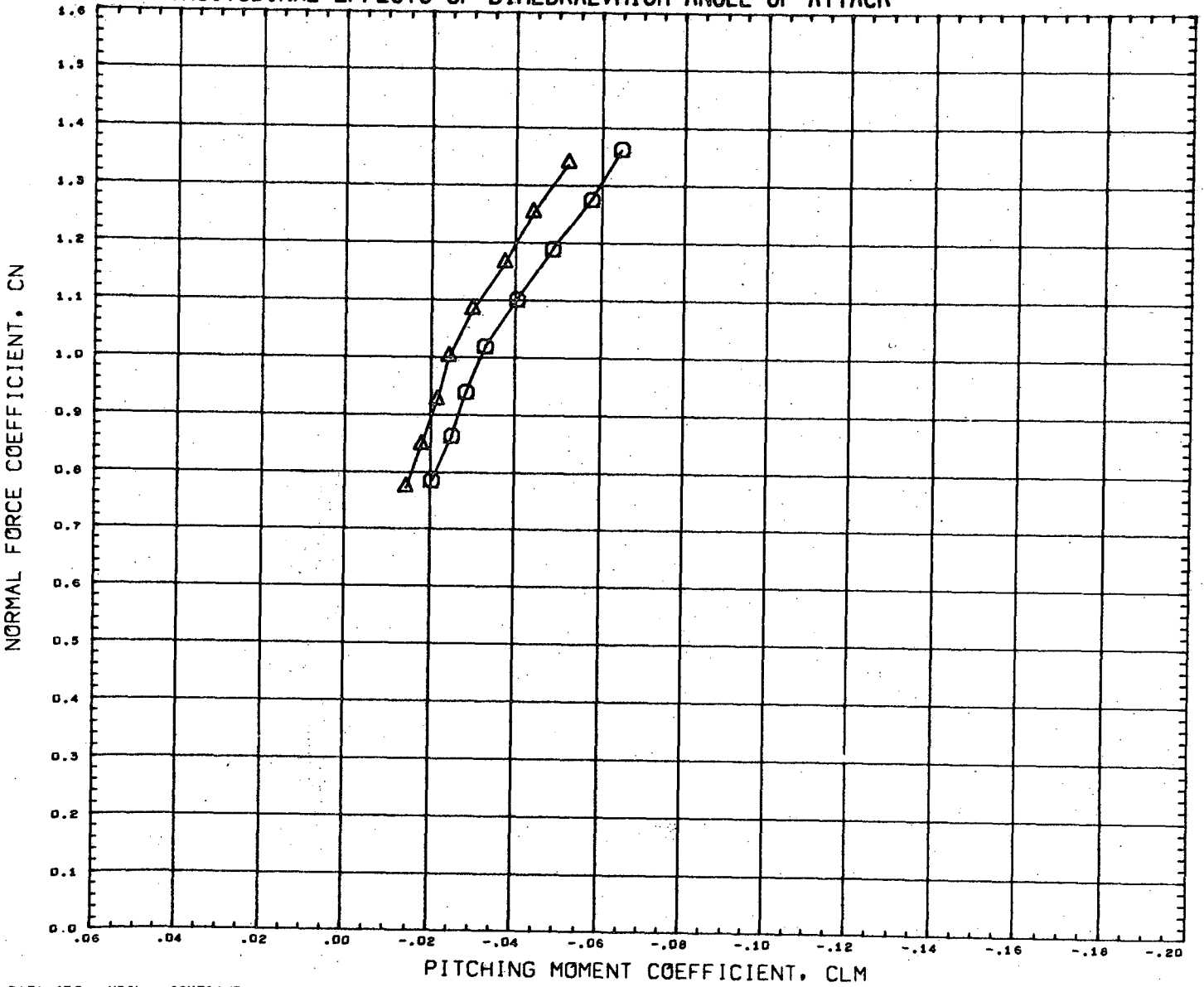
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A52)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



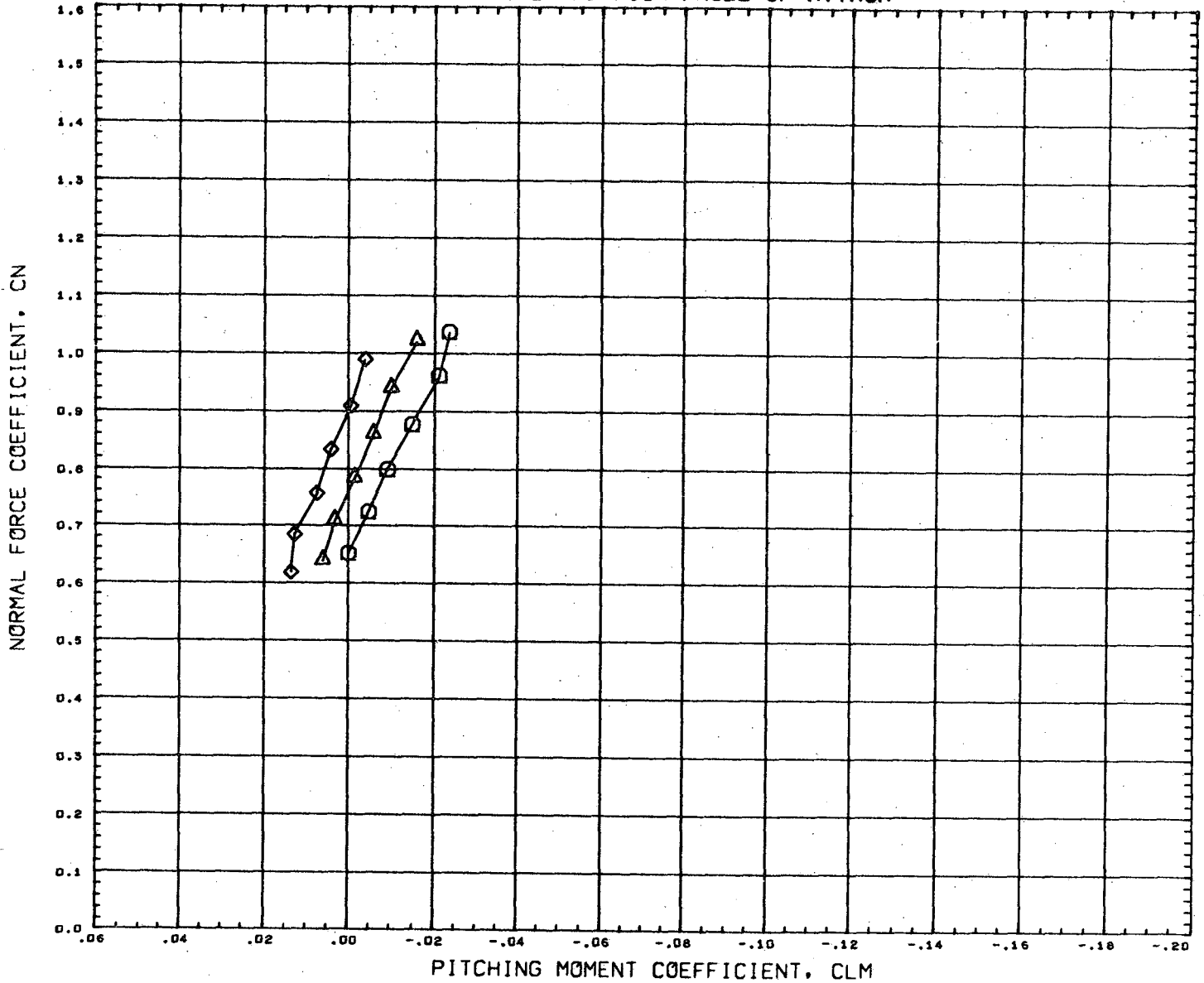
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32) ○	MSFC 495 GD/C B19W14C4A
(C37A62) △	MSFC 495 GD/C B19W20C4A
(C37A02) ◇	DATA NOT AVAILABLE FOR ALL CONDITIONS

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

LONGITUDINAL EFFECTS OF DIHEDRAL, HIGH ANGLE OF ATTACK



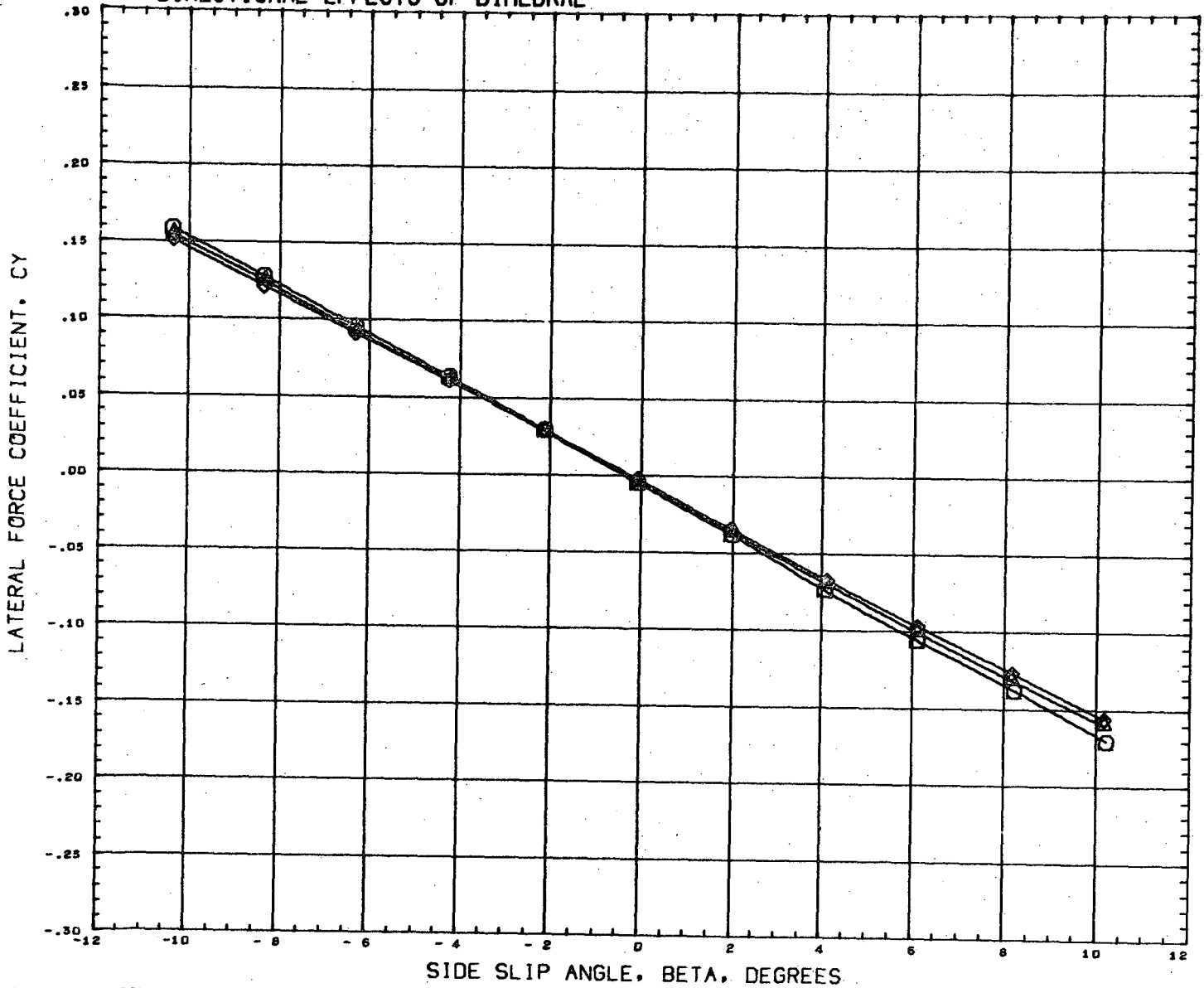
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37A62)	MSFC 495 GD/C B19W20C4A
(C37A02)	MSFC 495 GD/C B19W21C4A

BETA	DIHEDRAL
0.000	3.000
0.000	6.000
0.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.960

DIRECTIONAL EFFECTS OF DIHEDRAL



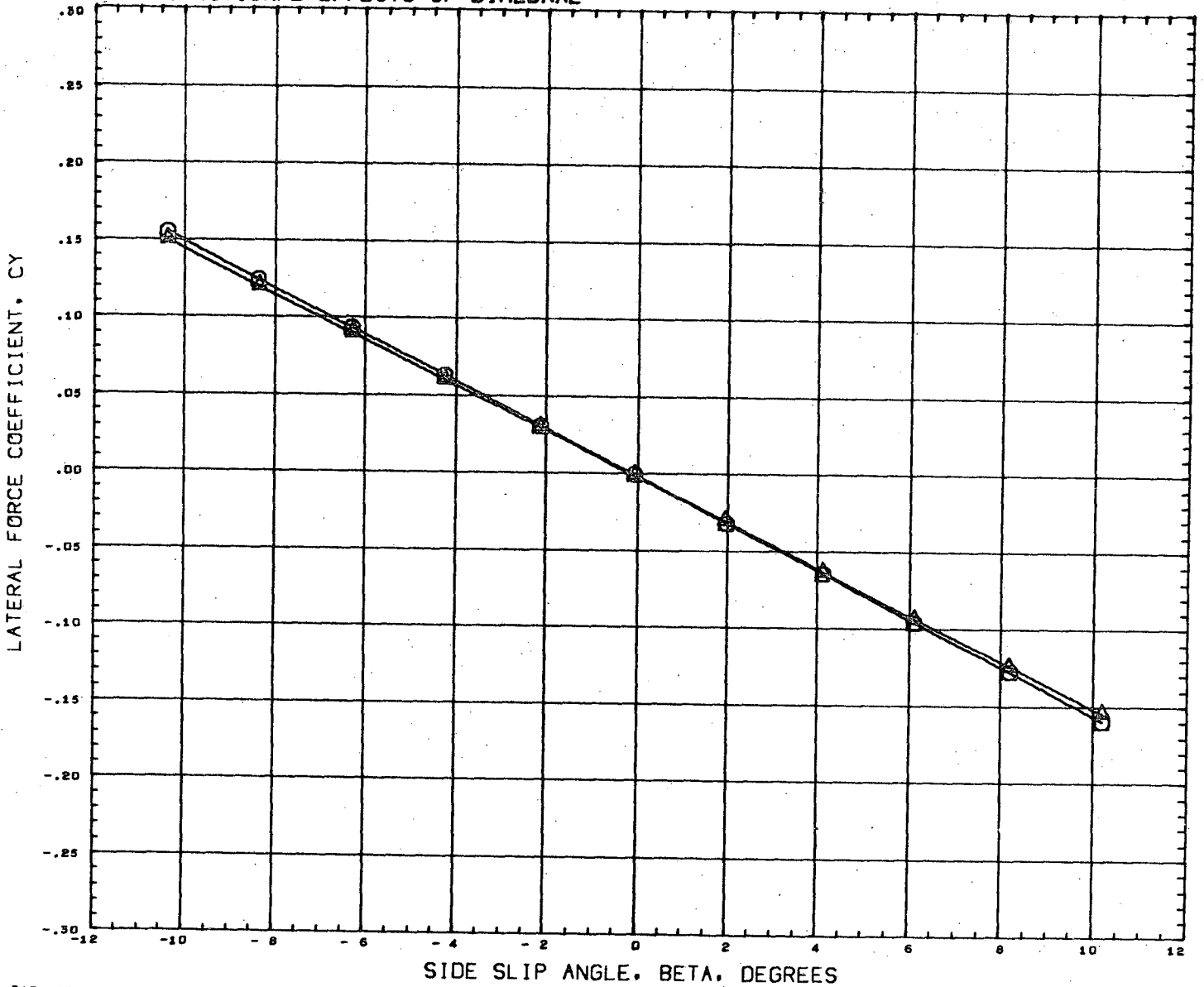
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37Y61)	MSFC 495 GD/C	B19W20C4AV7
(C37Y01)	MSFC 495 GD/C	B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.306

DIRECTIONAL EFFECTS OF DIHEDRAL



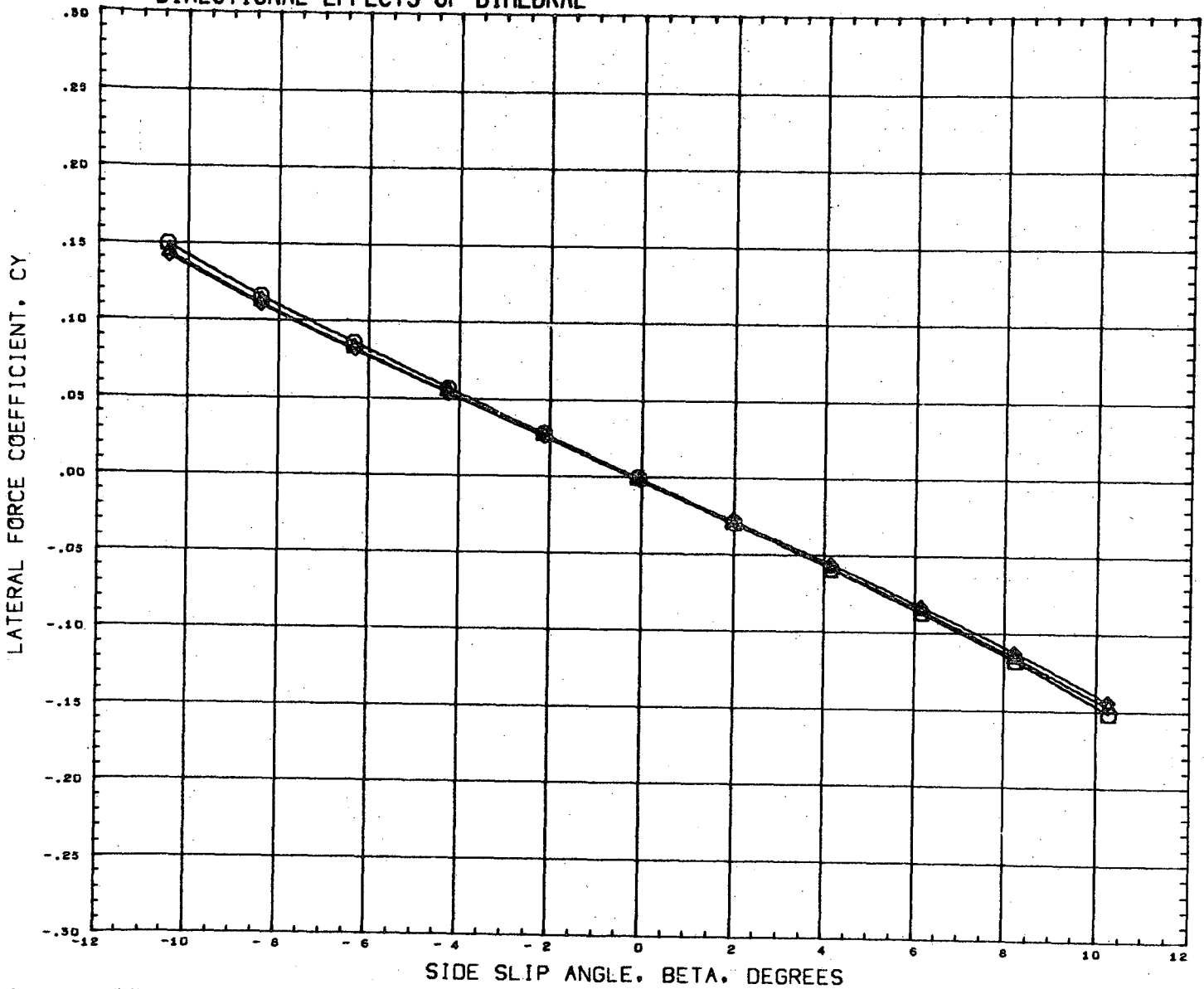
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37Y61)	MSFC 495 GD/C B19W20C4AV7
(C37Y01)	DATA NOT AVAILABLE FOR ALL CONDITIONS

ALPHA	DIHDL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 1.464

DIRECTIONAL EFFECTS OF DIHEDRAL



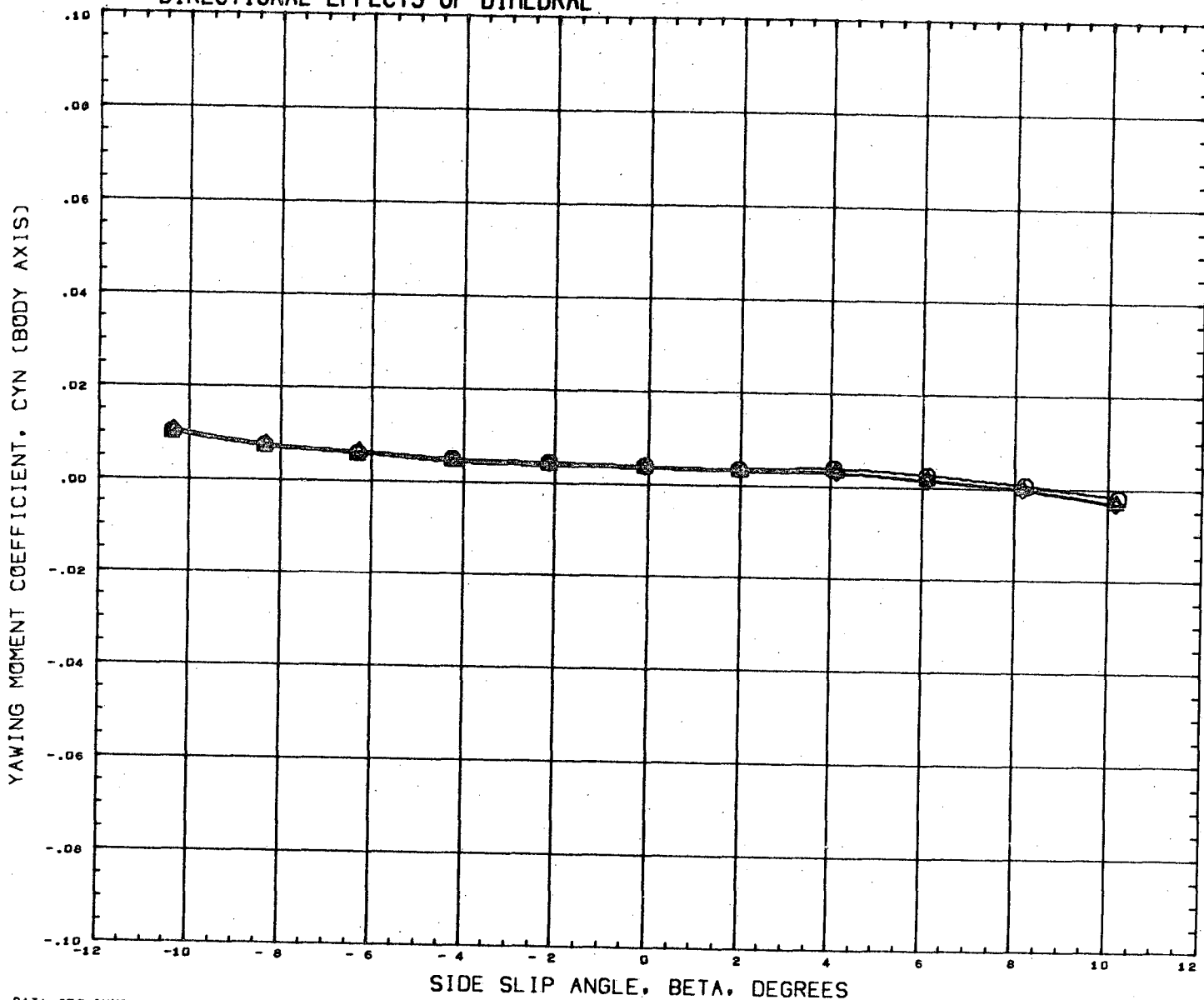
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37Y61)	MSFC 495 GD/C B19W20C4AV7
(C37Y01)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.967

DIRECTIONAL EFFECTS OF DIHEDRAL



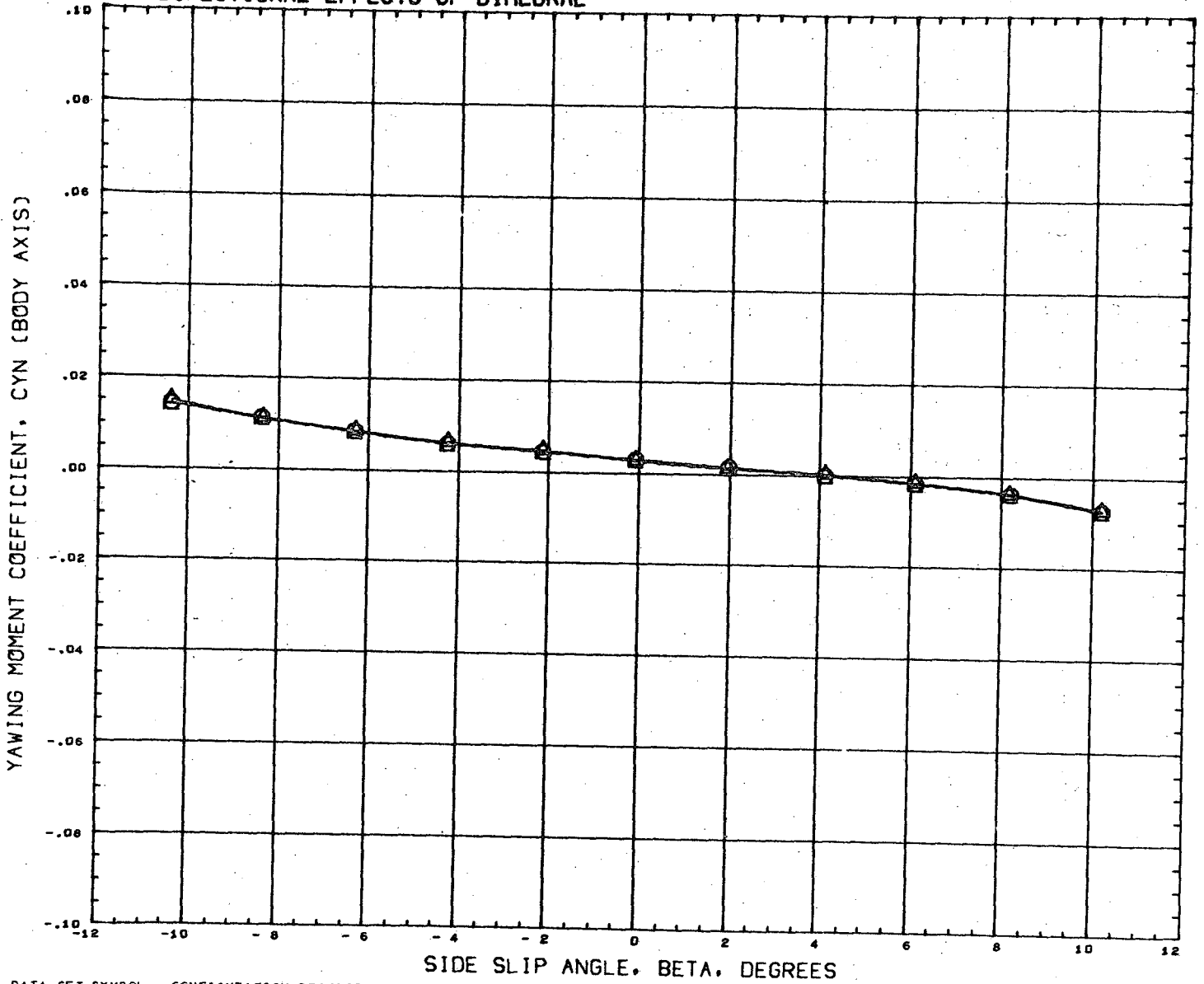
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37Y61)	MSFC 495 GD/C B19W20C4AV7
(C37Y01)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHDL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.306

DIRECTIONAL EFFECTS OF DIHEDRAL



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (C37Y31) MSFC 495 GD/C B19W14C4AV7
 (C37Y61) MSFC 495 GD/C B19W20CAAV7
 (C37Y01) DATA NOT AVAILABLE FOR ALL CONDITIONS

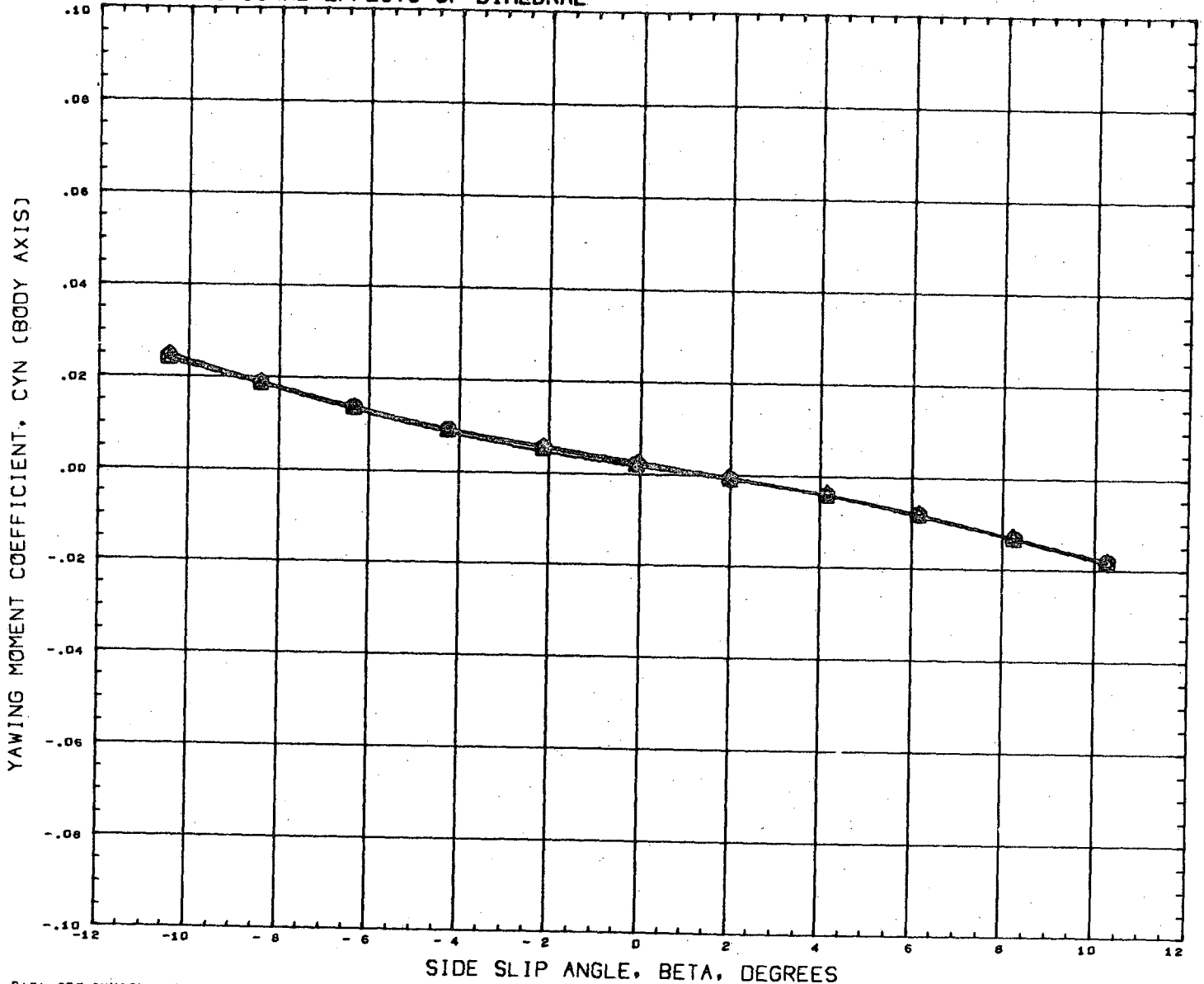
ALPHA	DIHDL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.464

DIRECTIONAL EFFECTS OF DIHEDRAL



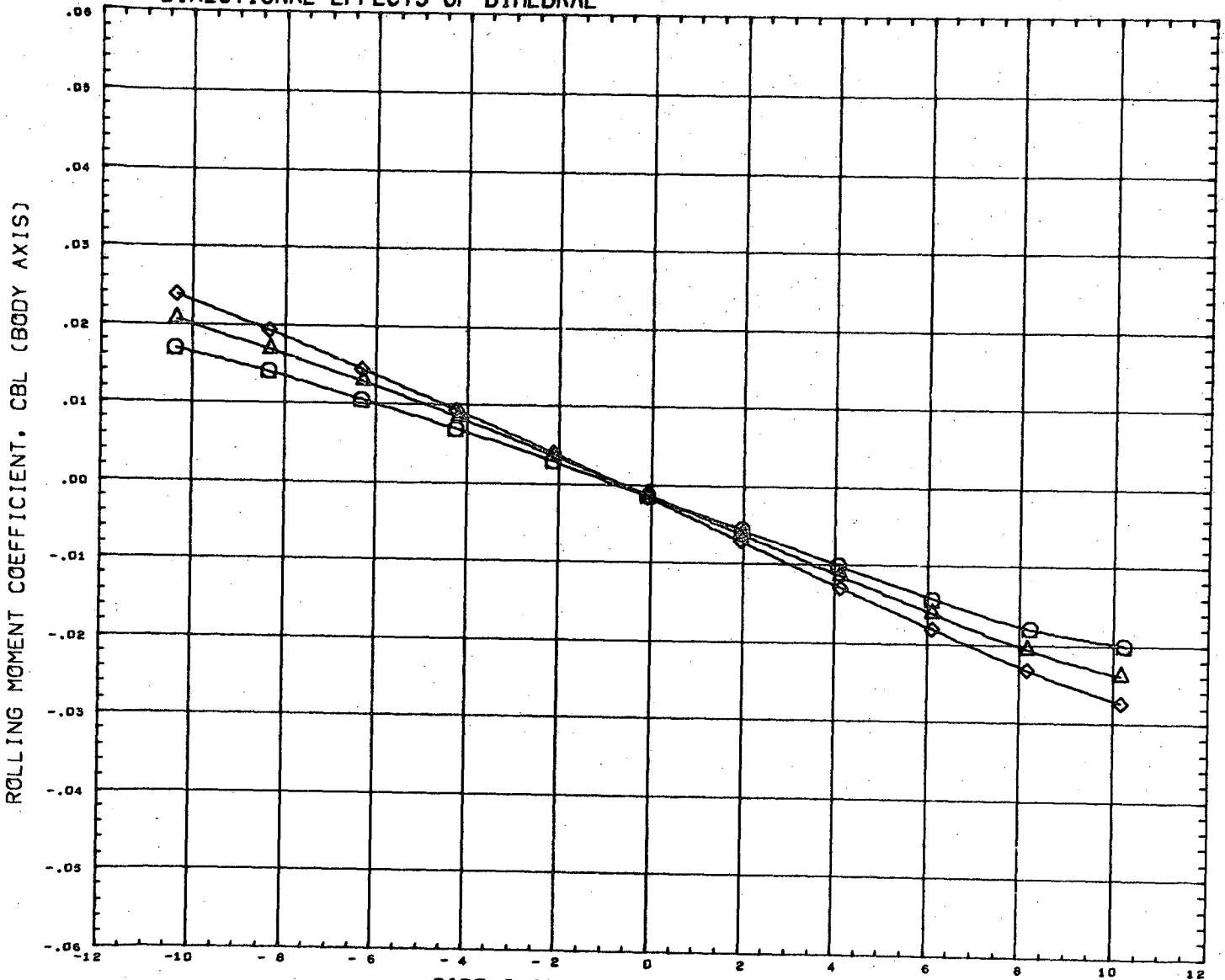
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37Y61)	MSFC 495 GD/C B19W20C4AV7
(C37Y01)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.967

DIRECTIONAL EFFECTS OF DIHEDRAL



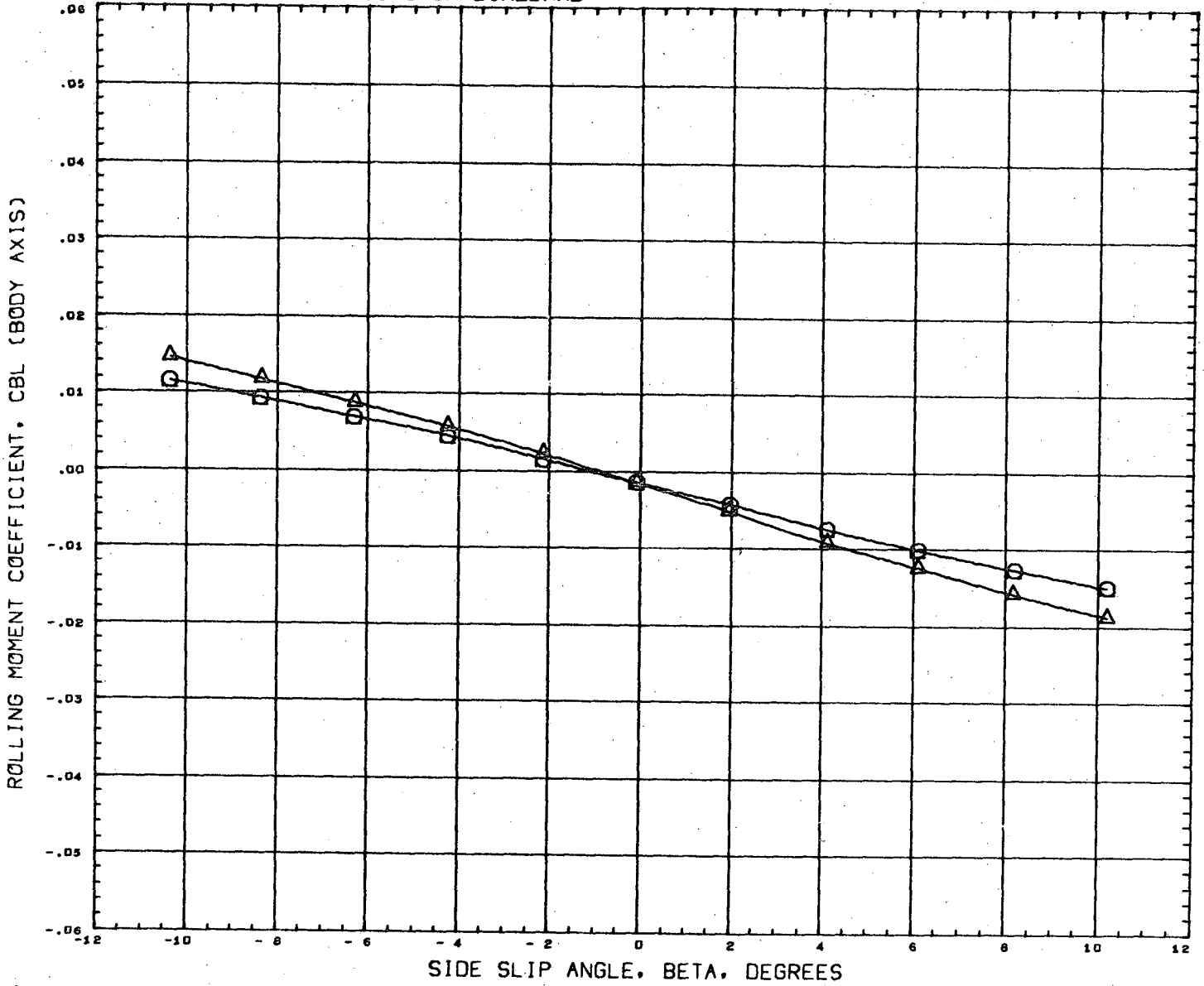
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37Y61)	MSFC 495 GD/C	B19W20C4AV7
(C37Y01)	MSFC 495 GD/C	B19W21C4AV7

ALPHA	DIHDL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.306

DIRECTIONAL EFFECTS OF DIHEDRAL



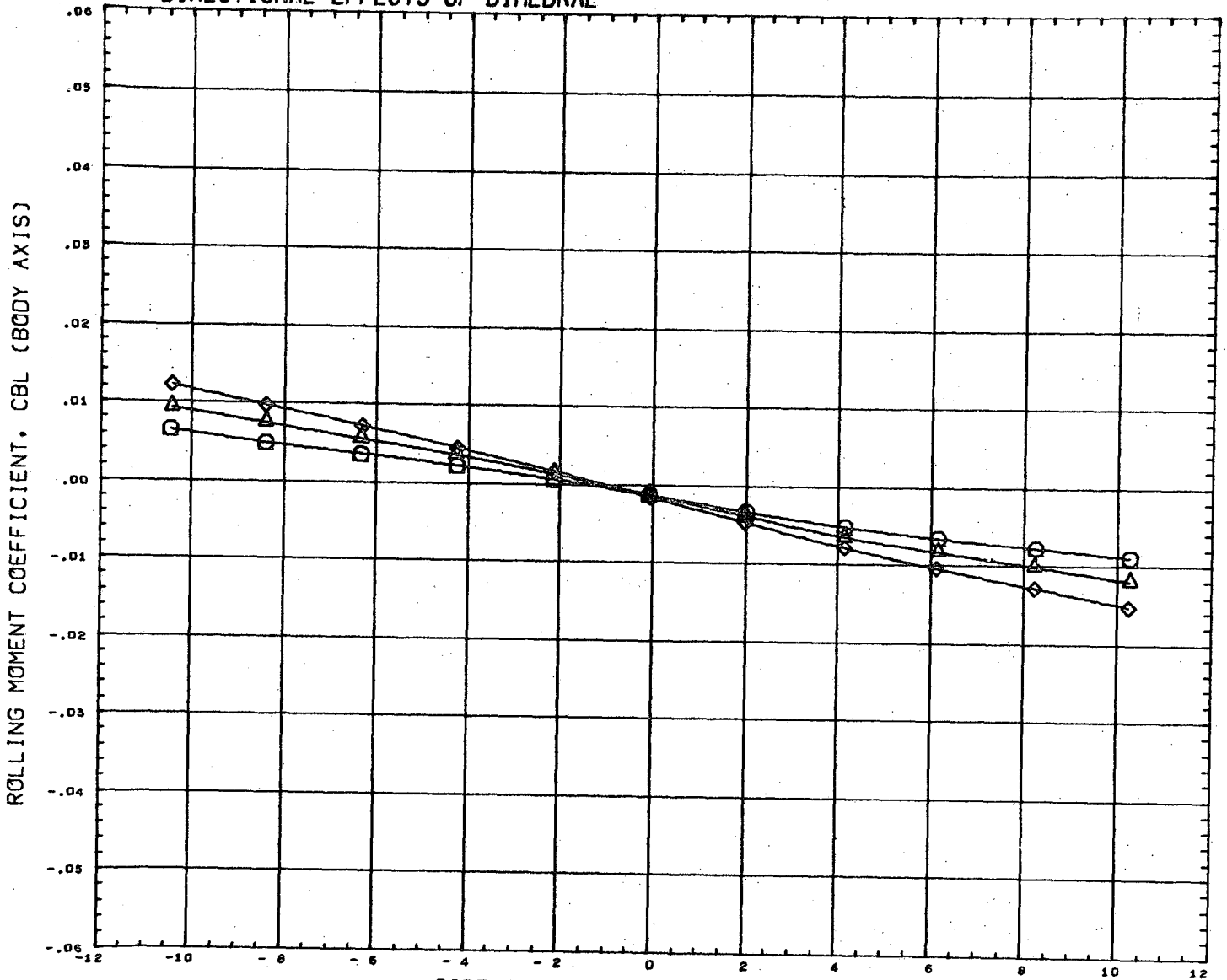
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37Y61)	MSFC 495 GD/C B19W2DC4AV7
(C37YD1)	DATA NOT AVAILABLE FOR ALL CONDITIONS

ALPHA	DIHEDRAL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.464

DIRECTIONAL EFFECTS OF DIHEDRAL



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37Y61)	MSFC 495 GD/C	B19W20C4AV7
(C37Y01)	MSFC 495 GD/C	B19W21C4AV7

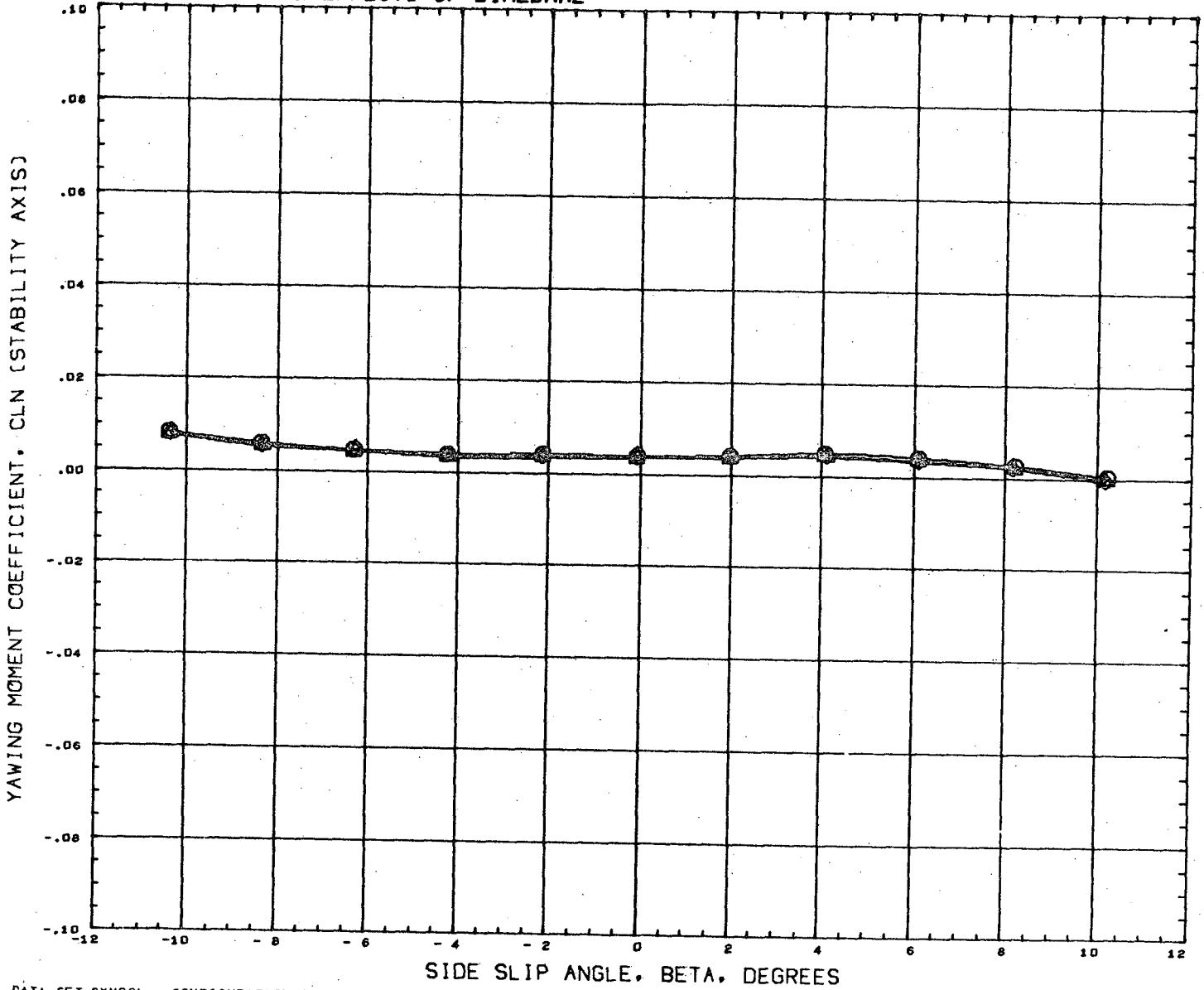
ALPHA	DIHDL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION

SREF	15.6560	sq. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.967

DIRECTIONAL EFFECTS OF DIHEDRAL



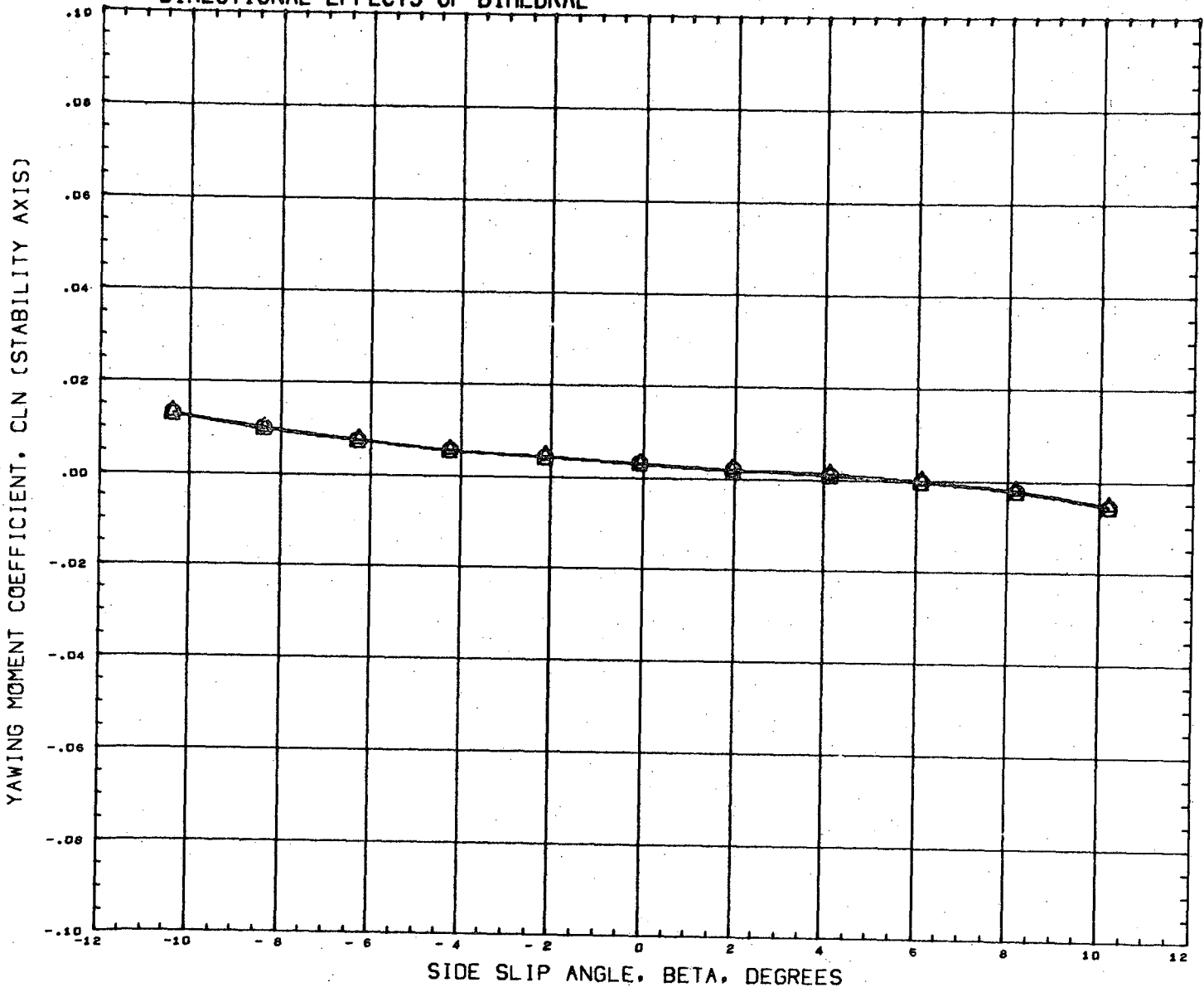
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37Y61)	MSFC 495 GD/C B19W20C4AV7
(C37Y01)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.306

DIRECTIONAL EFFECTS OF DIHEDRAL



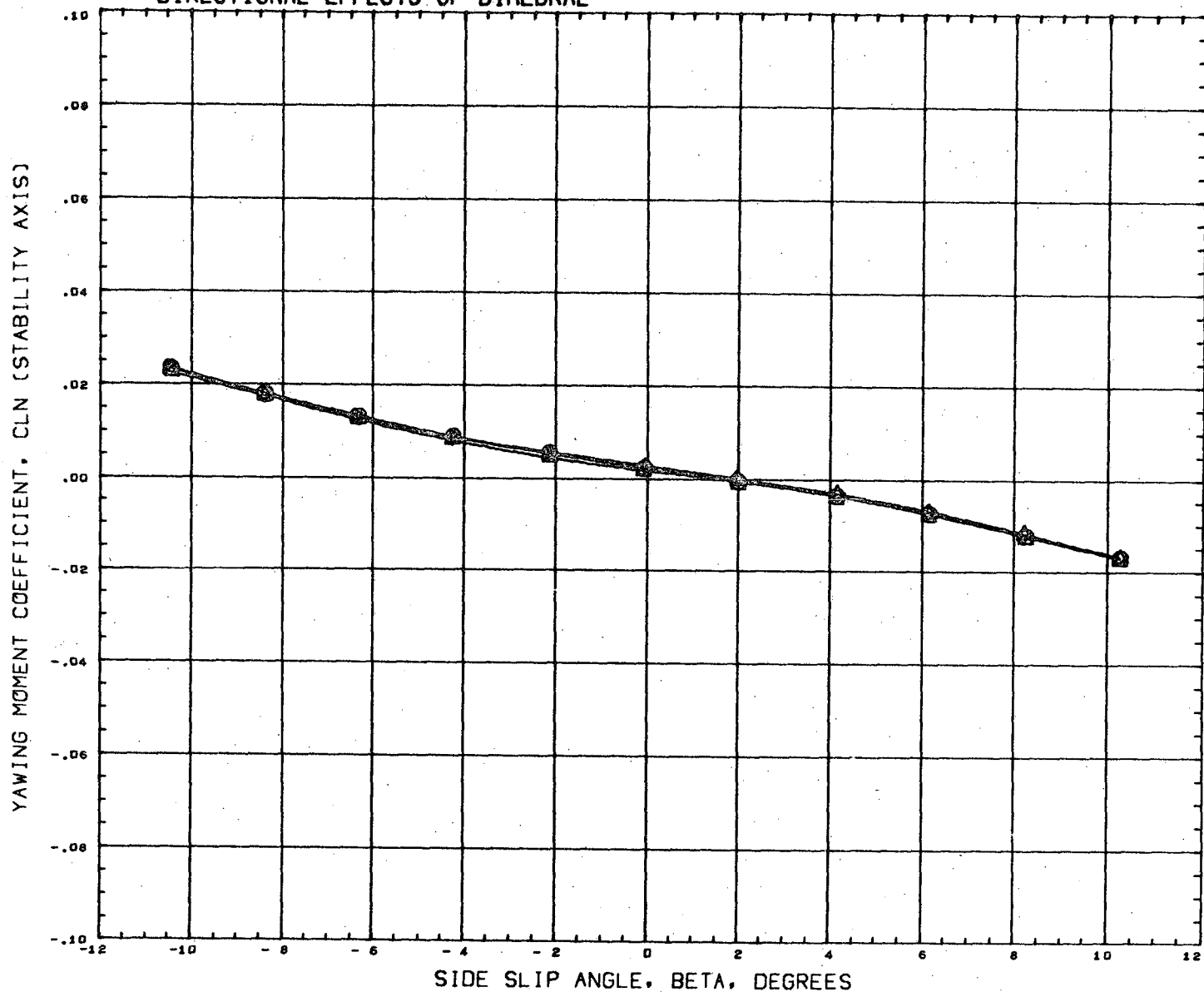
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37Y61)	MSFC 495 GD/C B19W20C4AV7
(C37Y01)	DATA NOT AVAILABLE FOR ALL CONDITIONS

ALPHA	DIHRL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 1.464

DIRECTIONAL EFFECTS OF DIHEDRAL



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37Y61)	MSFC 495 GD/C	B19W20C4AV7
(C37Y01)	MSFC 495 GD/C	B19W21C4AV7

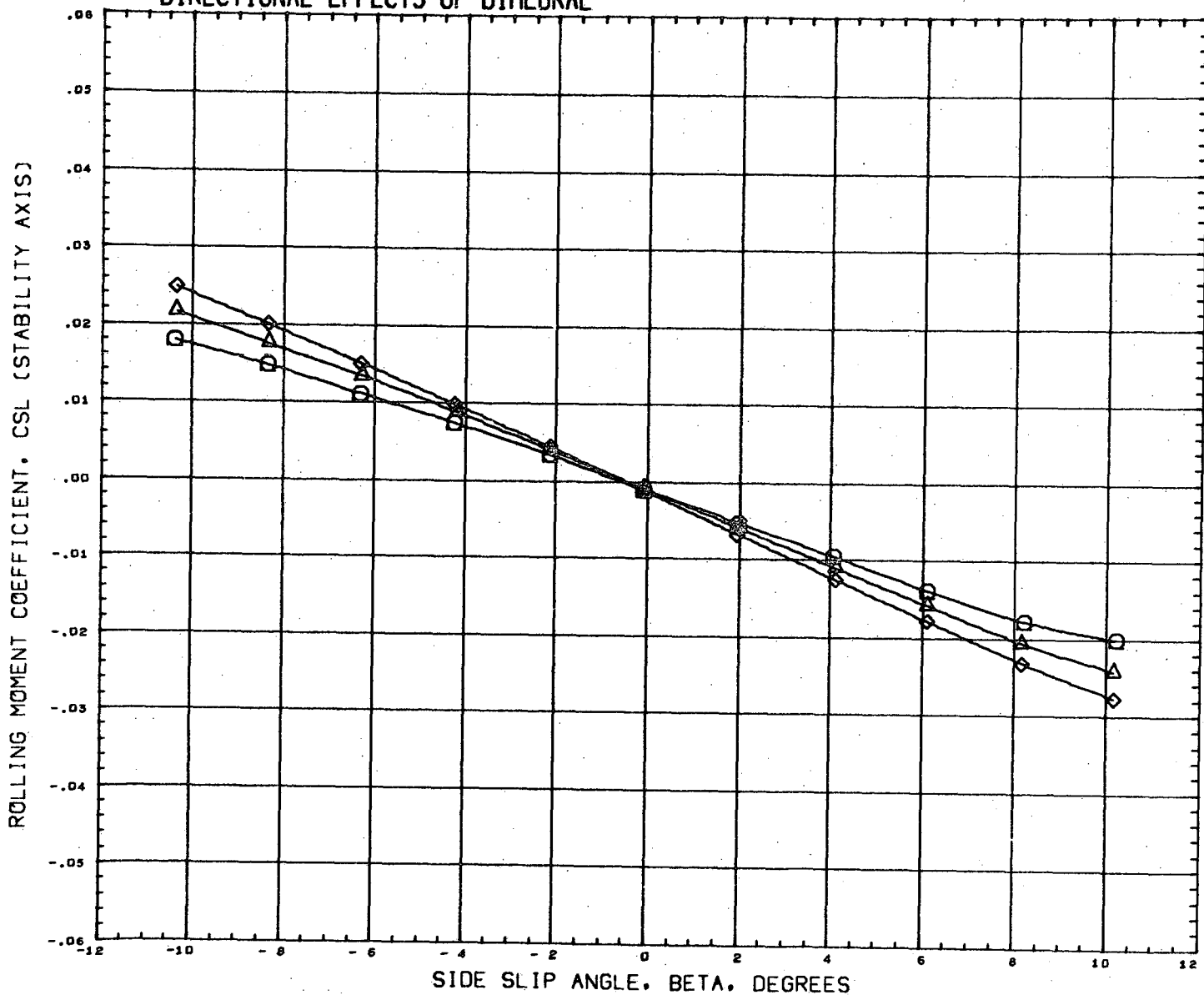
ALPHA	DIHEDRAL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.967

DIRECTIONAL EFFECTS OF DIHEDRAL



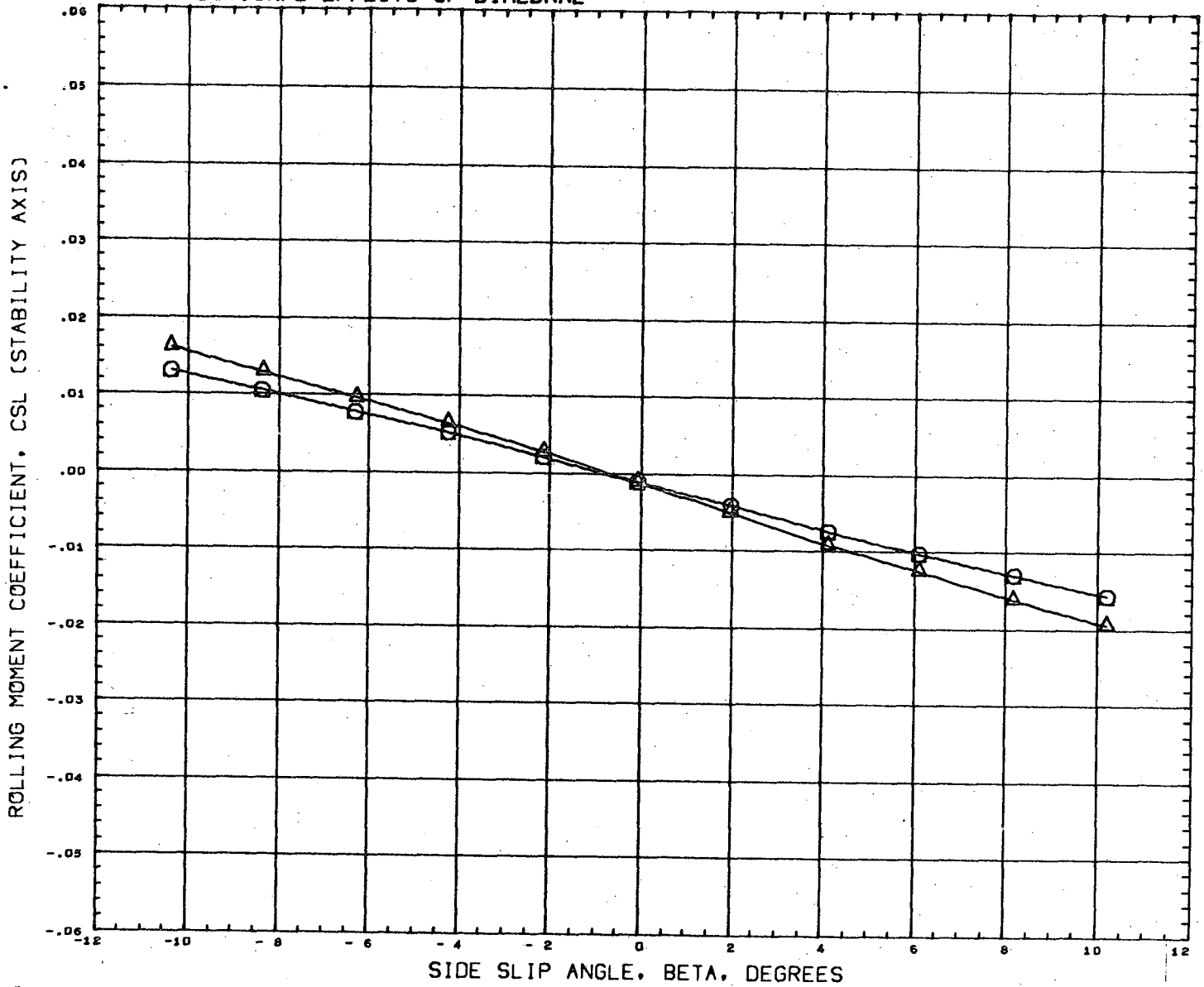
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37Y61)	MSFC 495 GD/C B19W20C4AV7
(C37Y01)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.306

DIRECTIONAL EFFECTS OF DIHEDRAL



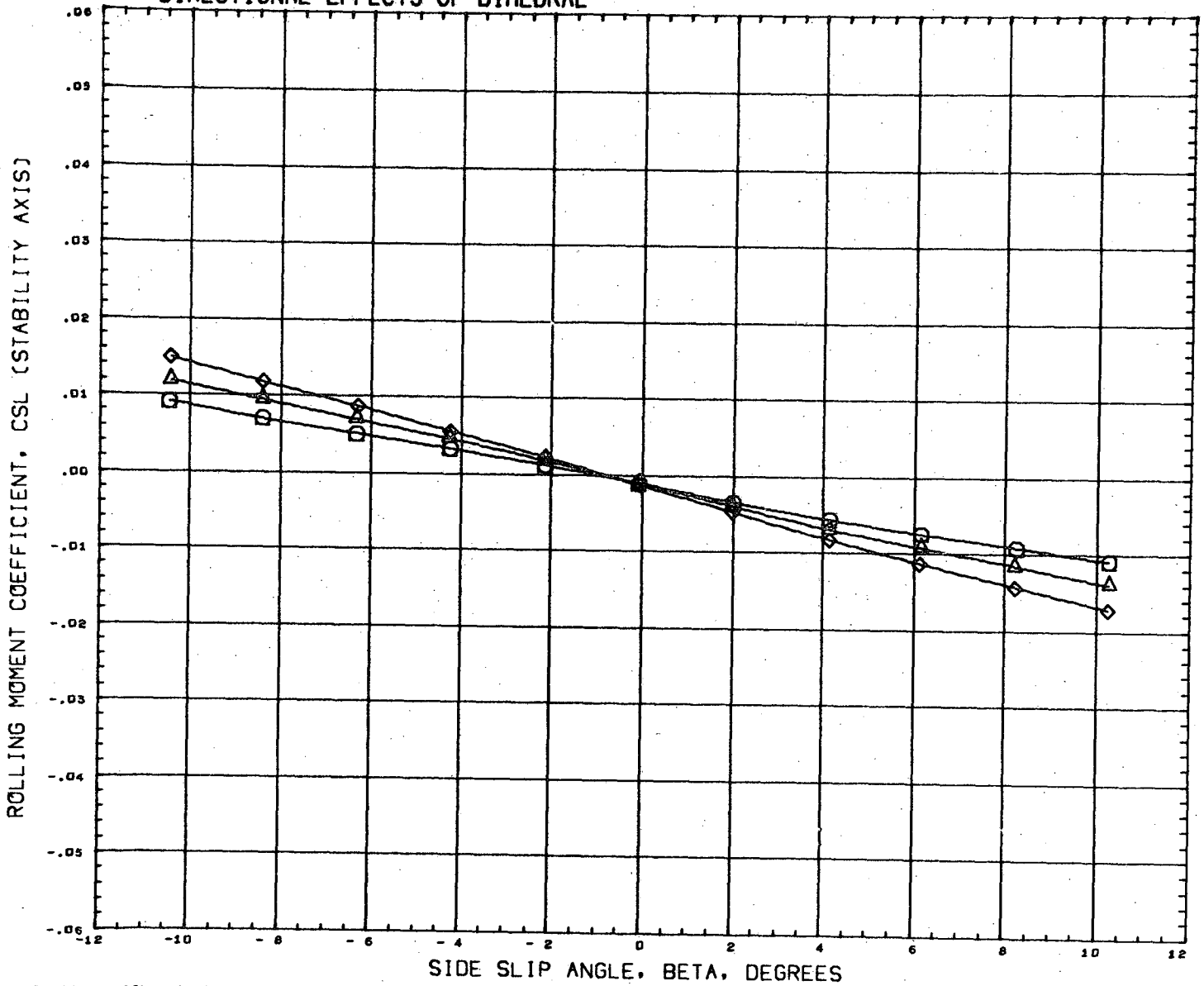
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37Y61)	MSFC 495 GD/C B19W20C4AV7
(C37Y01)	DATA NOT AVAILABLE FOR ALL CONDITIONS

ALPHA	DIHEDRAL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	50. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.464

DIRECTIONAL EFFECTS OF DIHEDRAL



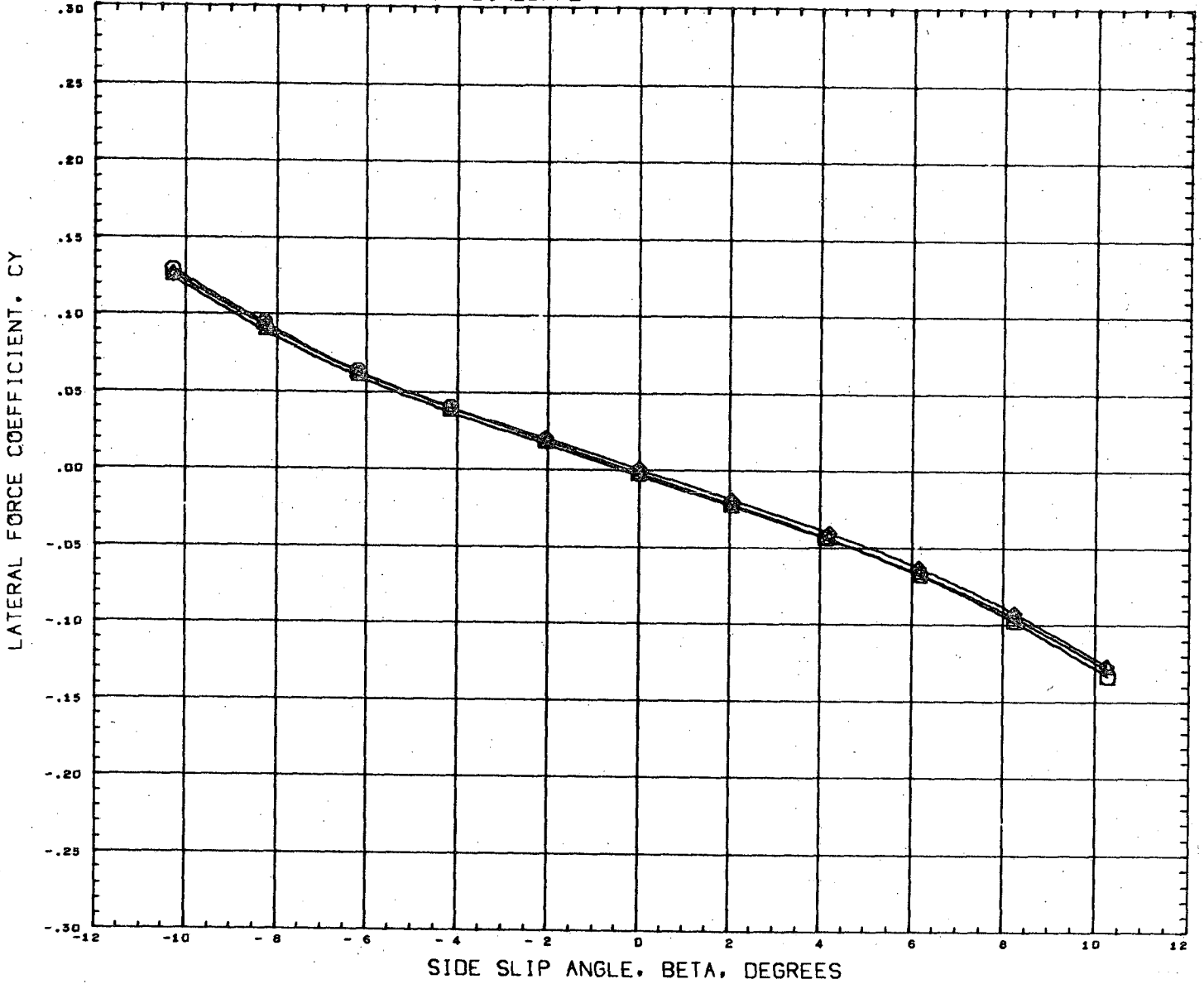
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37Y61)	MSFC 495 GD/C	B19W2DC4AV7
(C37Y01)	MSFC 495 GD/C	B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
6.000	3.000	0.000
6.000	6.000	0.000
6.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.967

DIRECTIONAL EFFECTS OF DIHEDRAL



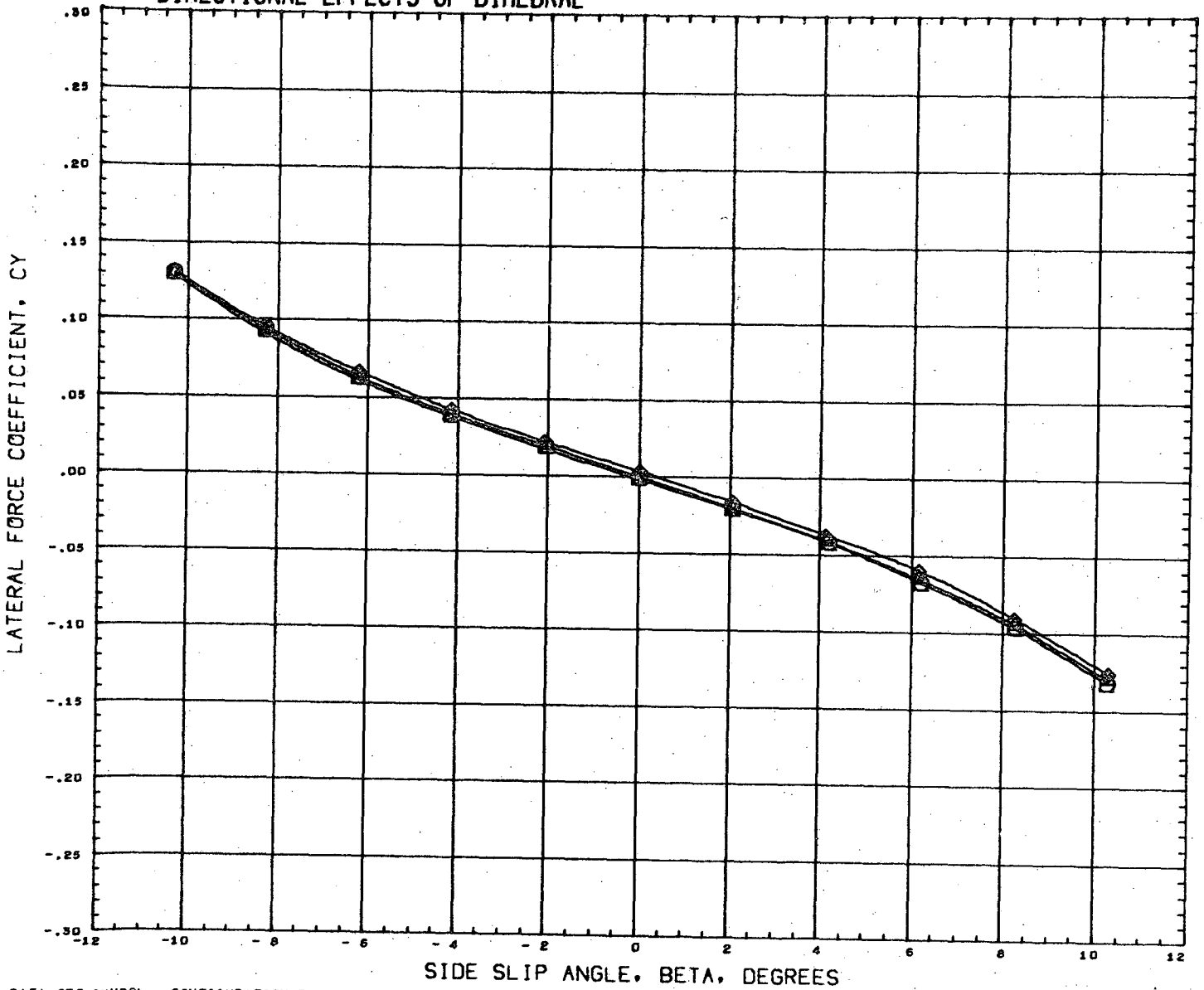
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(D37Y32)	◇	MSFC 495 GD/C	B19W14C4AV7
(C37Y62)	□	MSFC 495 GD/C	B19W20C4AV7
(C37Y02)	◇	MSFC 495 GD/C	B19W21C4AV7

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6960	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.299

DIRECTIONAL EFFECTS OF DIHEDRAL



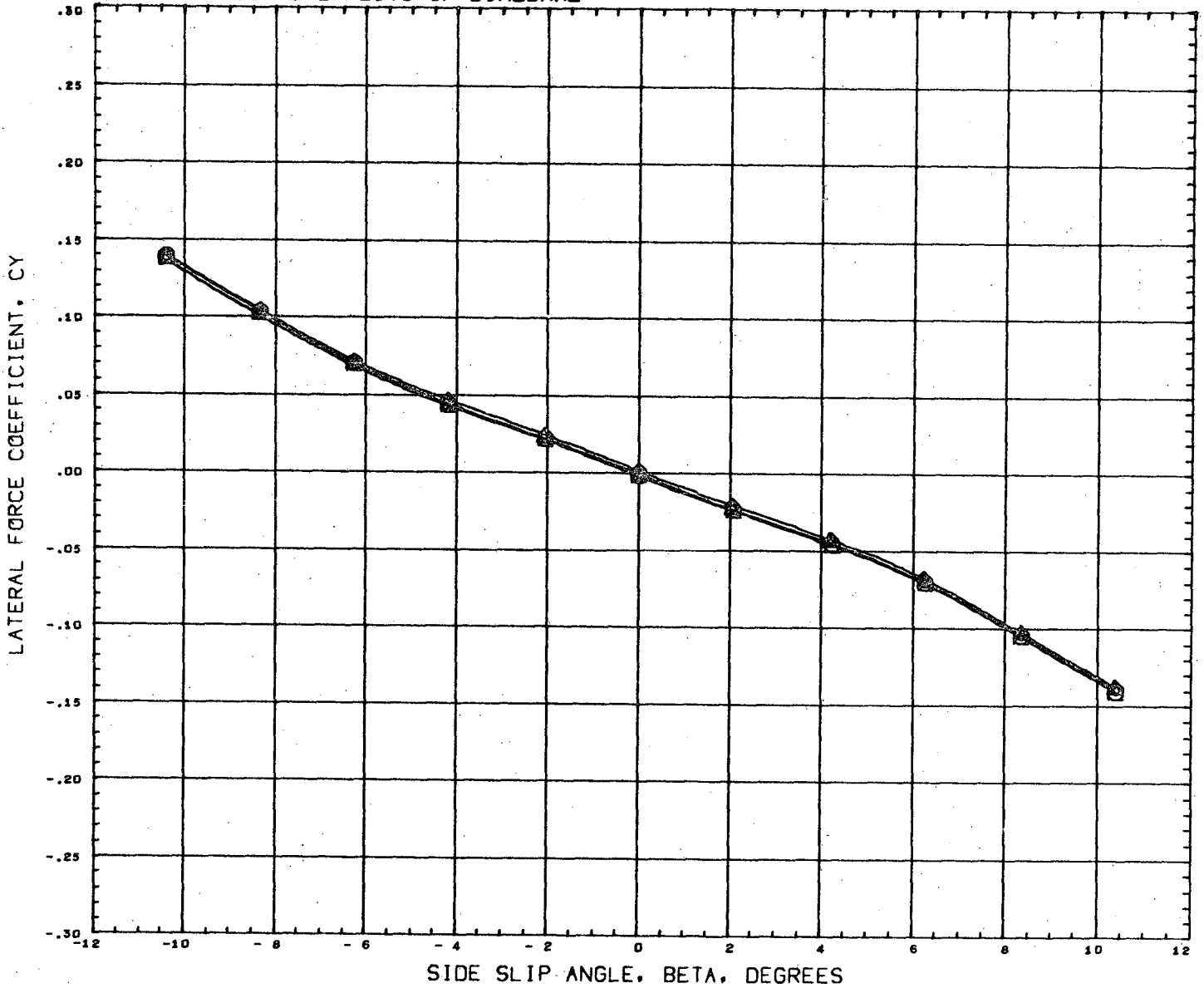
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37Y62)	MSFC 495 GD/C B19W20C4AV7
(C37Y02)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.457

DIRECTIONAL EFFECTS OF DIHEDRAL



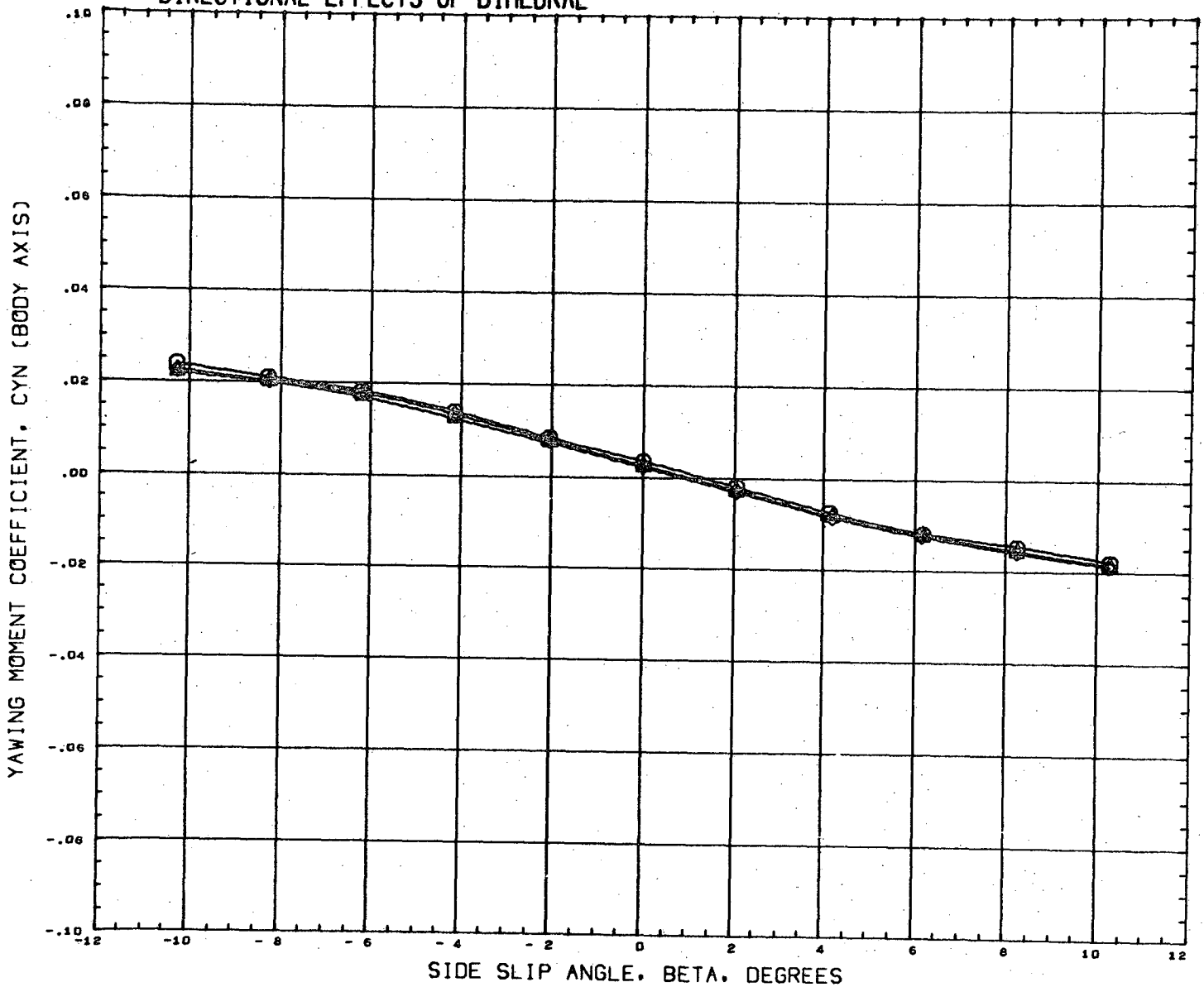
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37Y62)	MSFC 495 GD/C B19W20C4AV7
(C37Y02)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.957

DIRECTIONAL EFFECTS OF DIHEDRAL



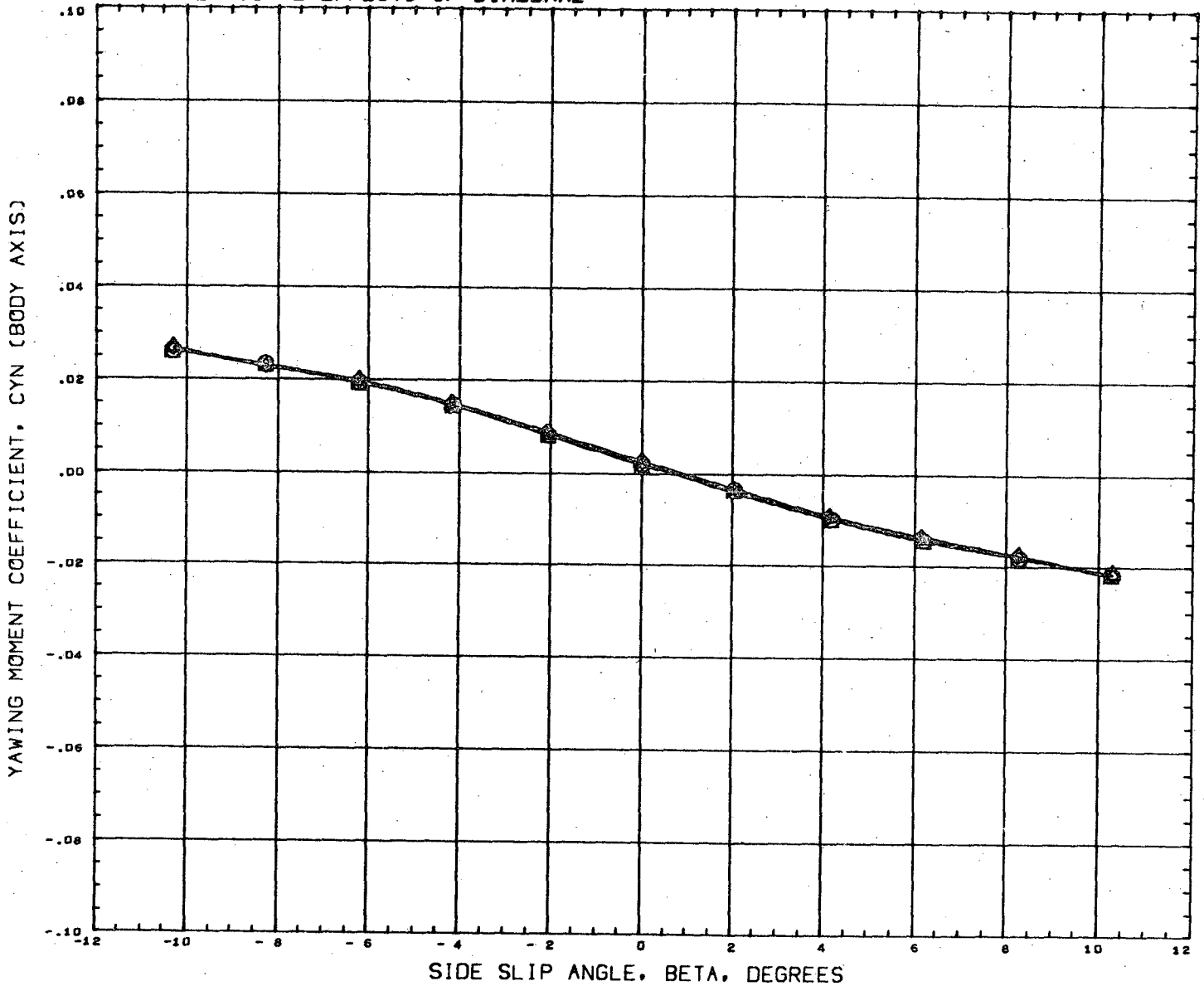
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37Y62)	MSFC 495 GD/C B19W20C4AV7
(C37Y02)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.299

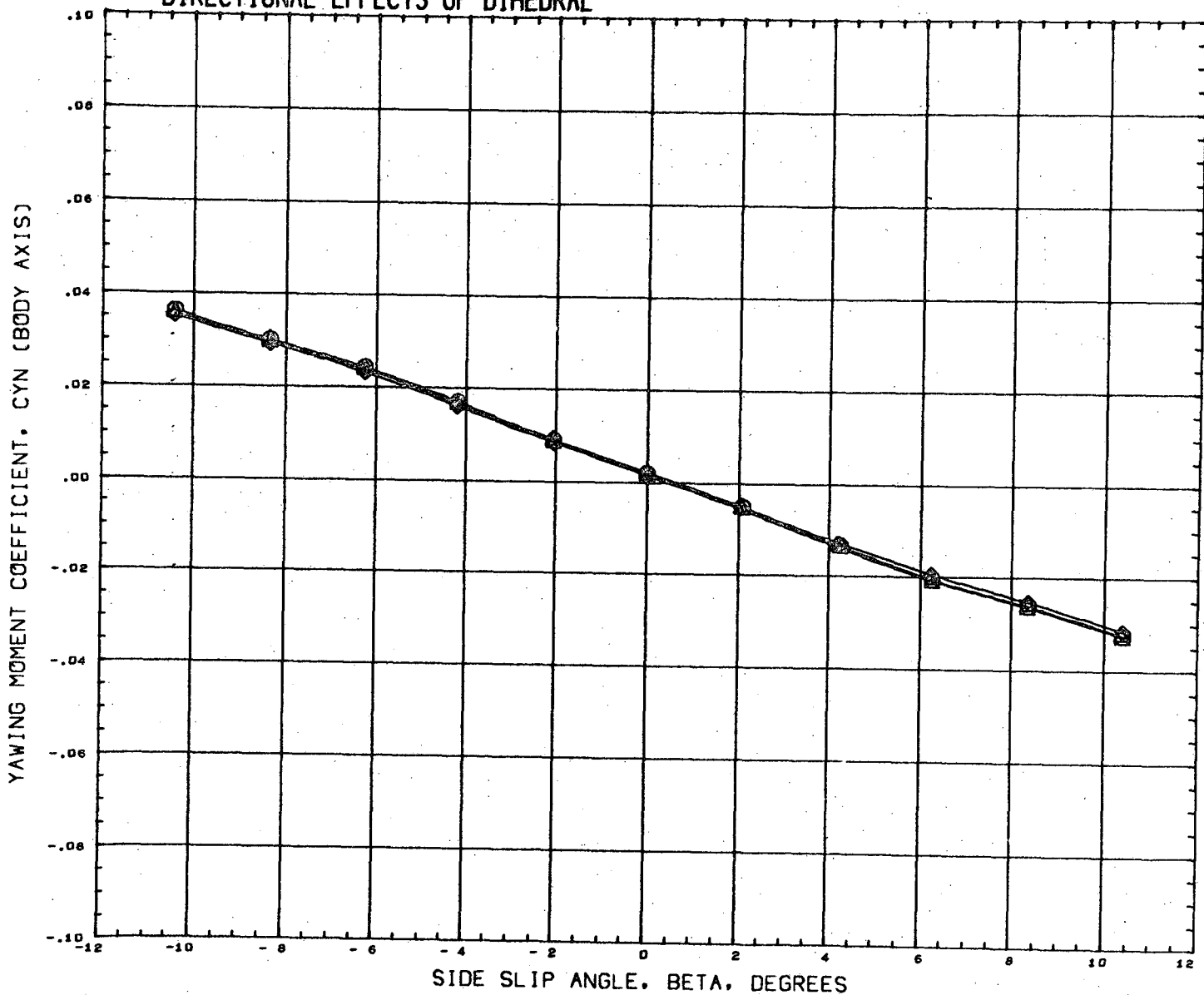
DIRECTIONAL EFFECTS OF DIHEDRAL



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	DIHEDRAL	RODFLR	REFERENCE INFORMATION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37Y62)	MSFC 495 GD/C B19W20C4AV7	15.000	6.000	0.000	LREF 3.0950 IN.
(C37Y02)	MSFC 495 GD/C B19W21C4AV7	15.000	10.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.457

DIRECTIONAL EFFECTS OF DIHEDRAL



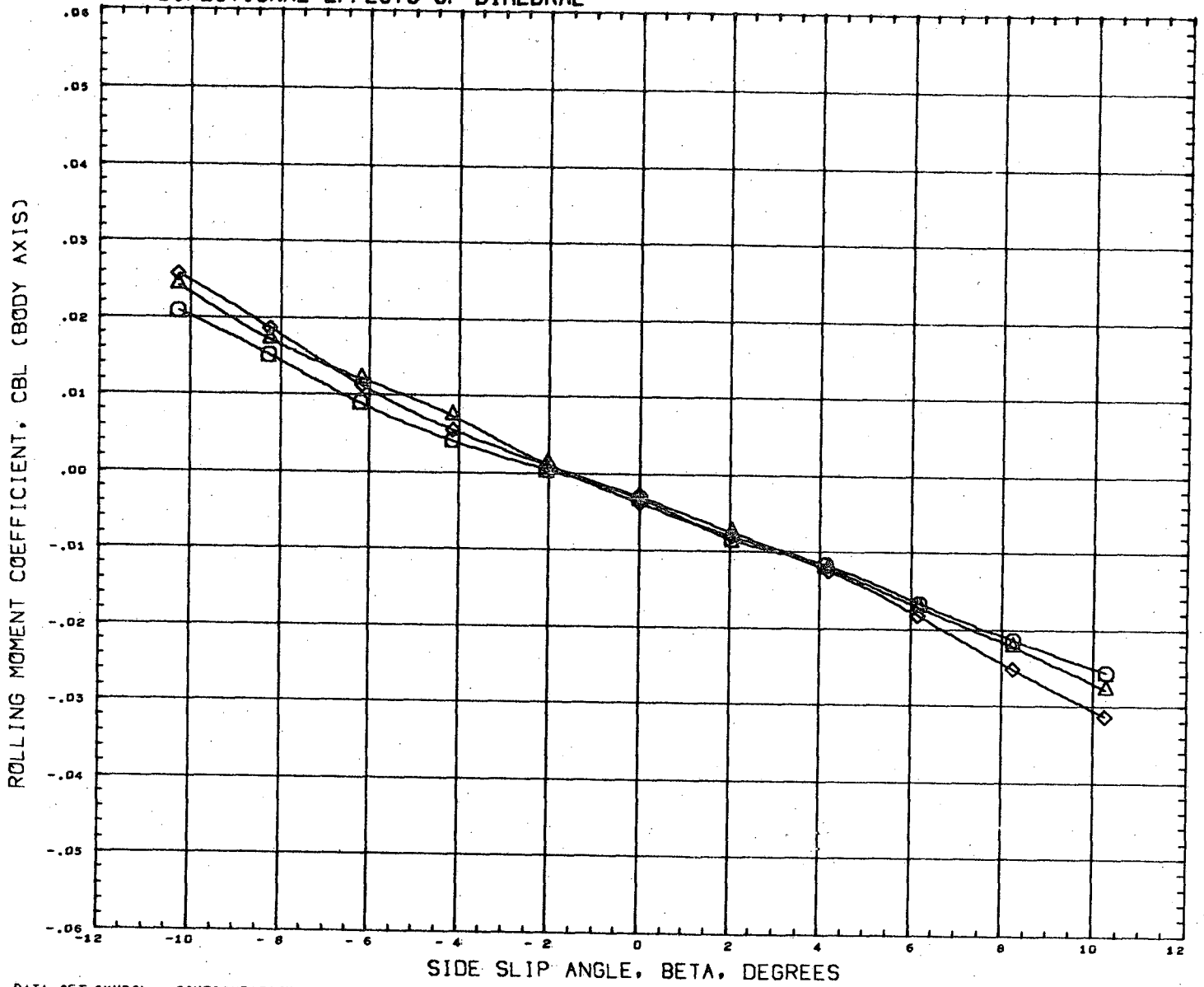
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37Y62)	MSFC 495 GD/C B19W20C4AV7
(C37Y02)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 1.957

DIRECTIONAL EFFECTS OF DIHEDRAL



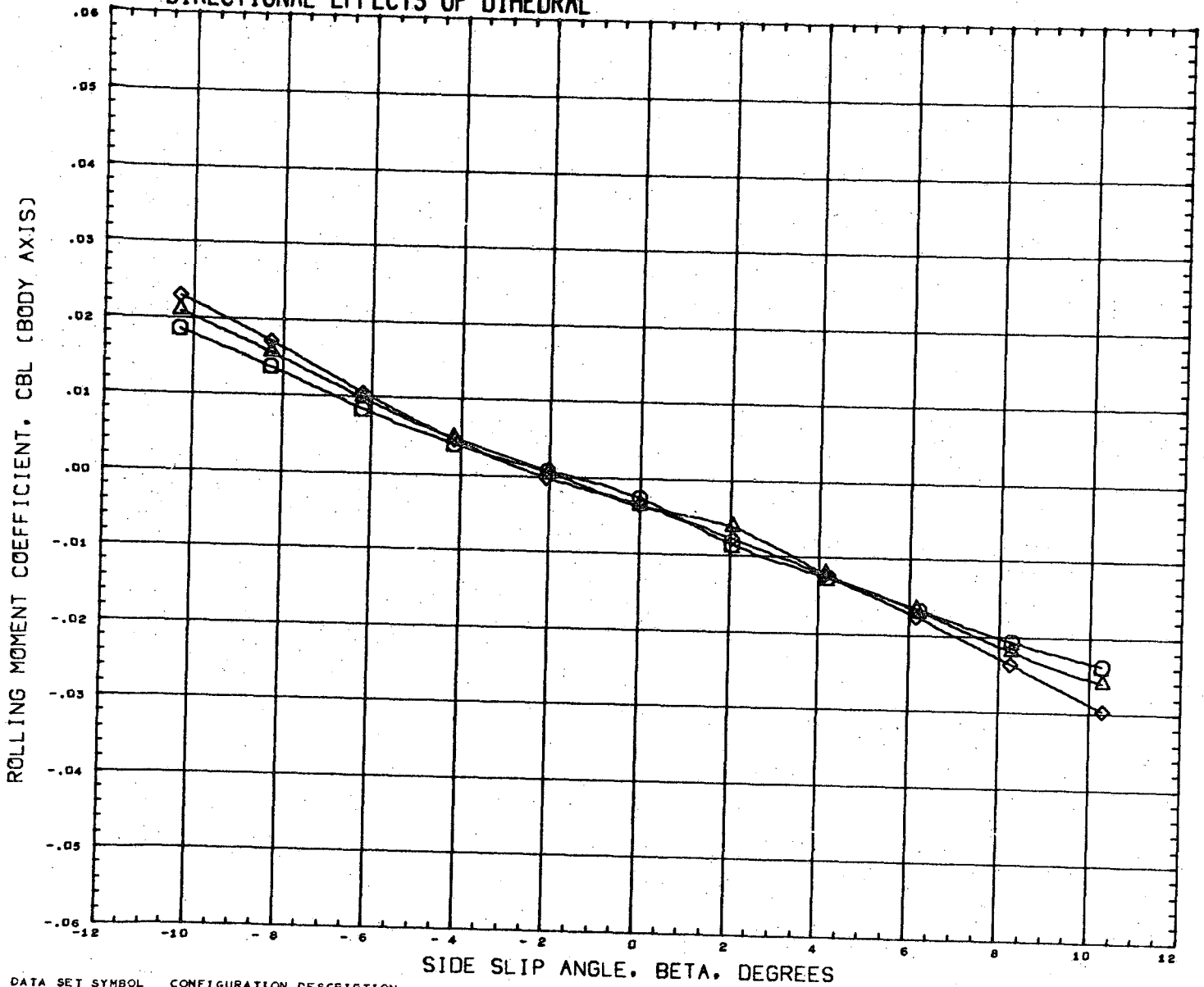
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y32)	MSFC 495 GD/C	B19W14C4AV7
(C37Y62)	MSFC 495 GD/C	B19W20C4AV7
(C37Y02)	MSFC 495 GD/C	B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.299

DIRECTIONAL EFFECTS OF DIHEDRAL



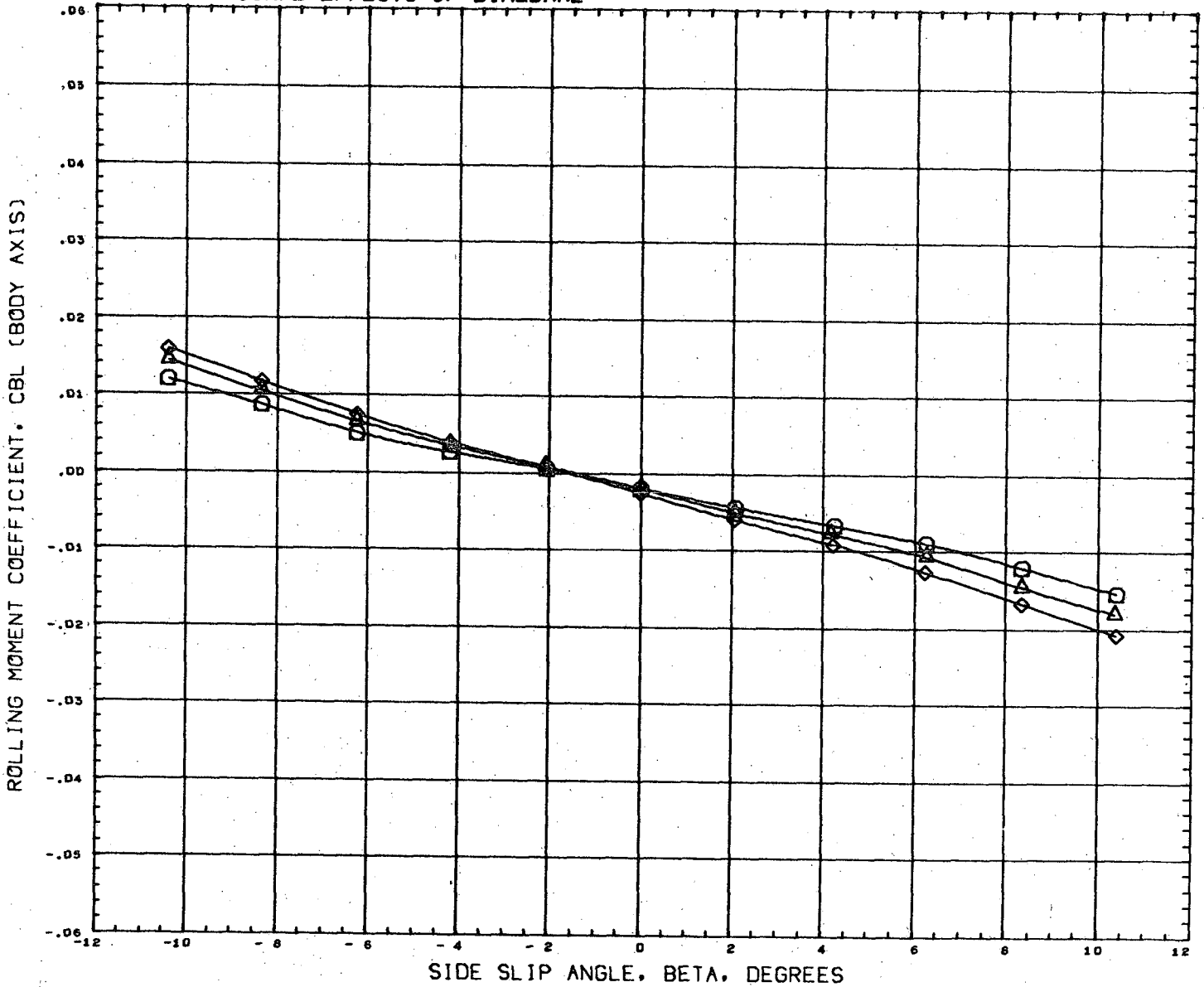
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(D37Y32)	○	MSFC 495 GD/C	B19W14C4AV7
(C37Y62)	△	MSFC 495 GD/C	B19W20C4AV7
(C37Y02)	◇	MSFC 495 GD/C	B19W21C4AV7

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.457

DIRECTIONAL EFFECTS OF DIHEDRAL



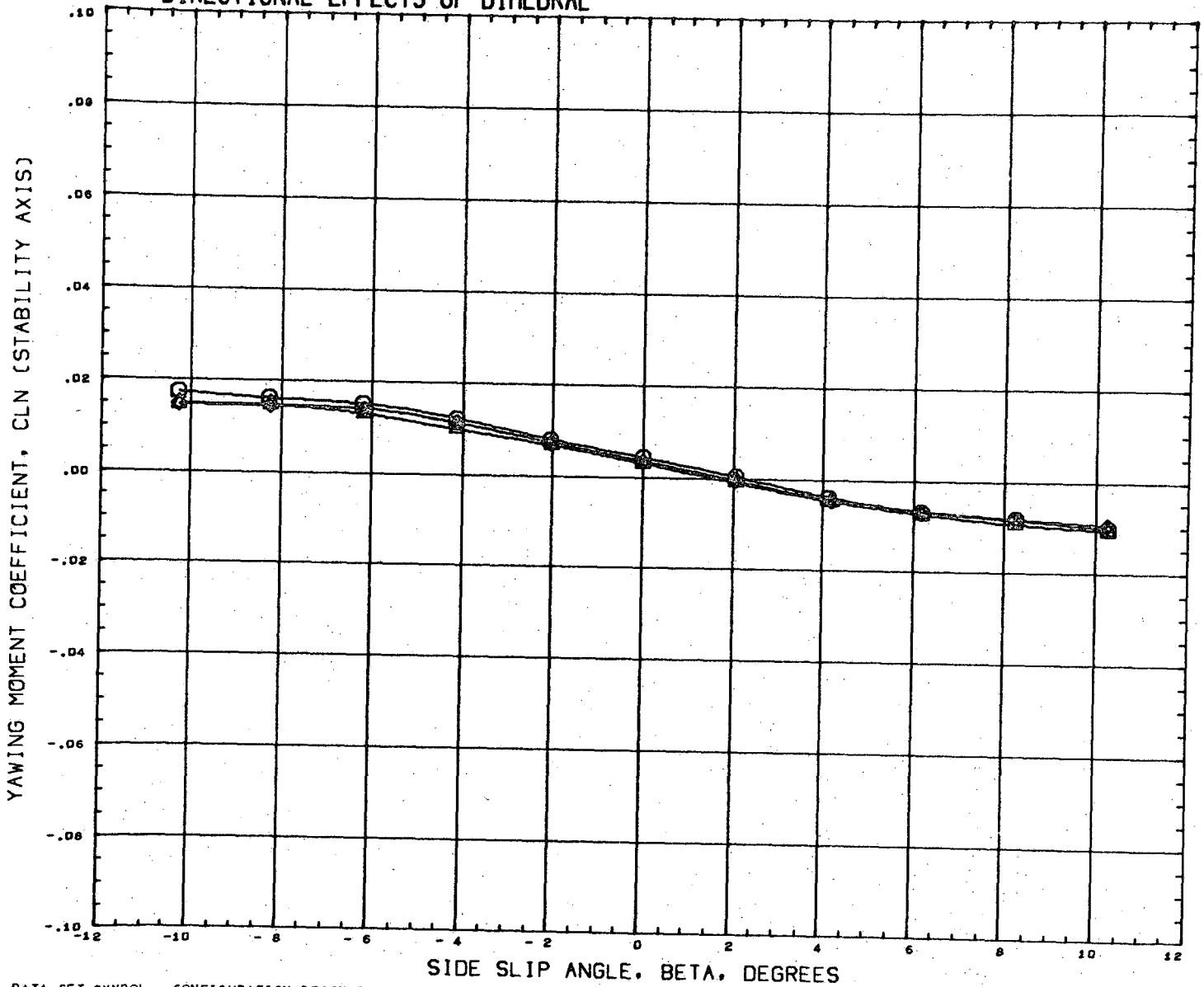
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37Y62)	MSFC 495 GD/C B19W20C4AV7
(C37Y02)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	80. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.957

DIRECTIONAL EFFECTS OF DIHEDRAL



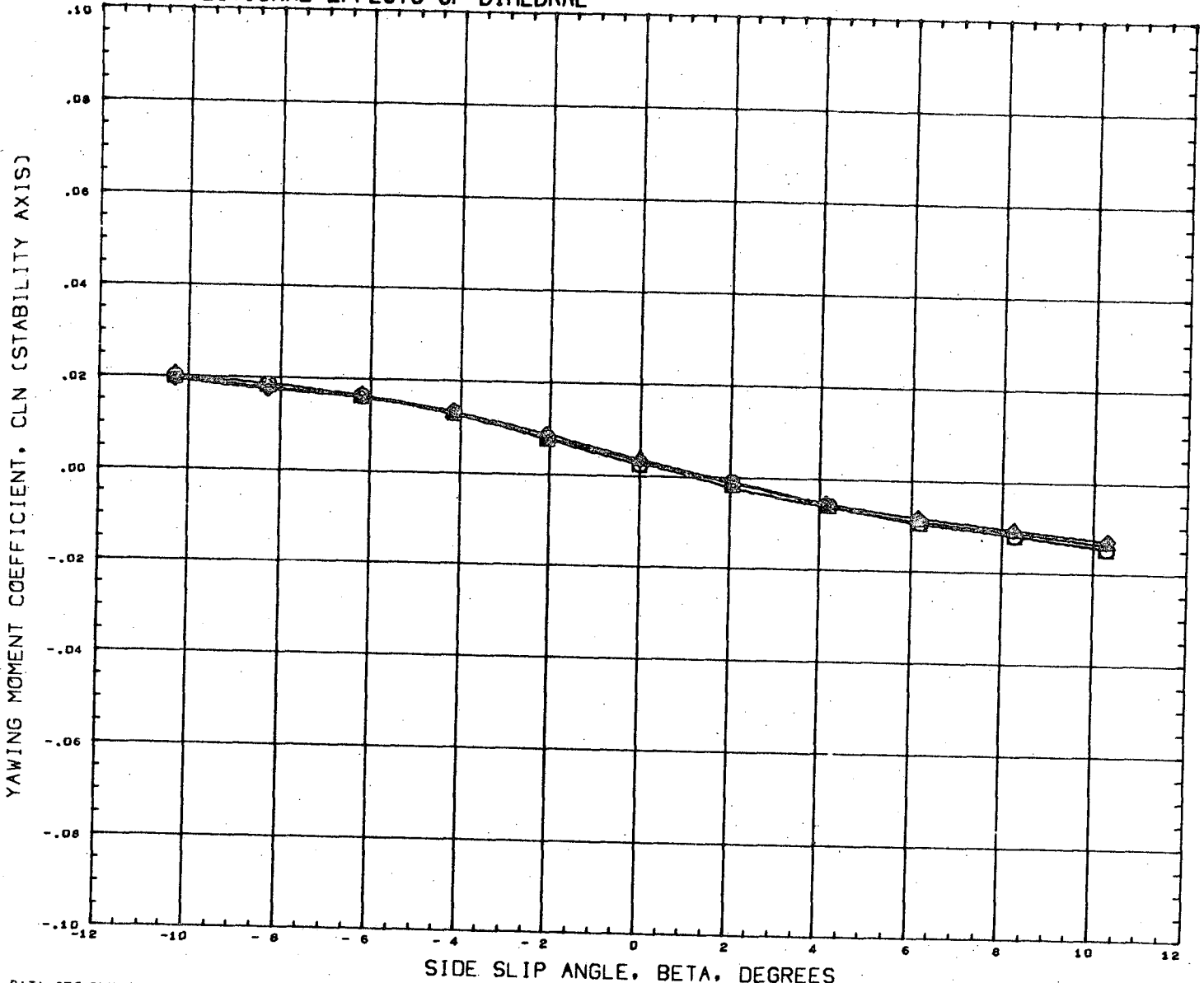
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37Y62)	MSFC 495 GD/C B19W20C4AV7
(C37Y02)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.299

DIRECTIONAL EFFECTS OF DIHEDRAL



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(D37Y32)	MSFC 495 GD/C	B19W14C4AV7
(C37Y62)	MSFC 495 GD/C	B19W20C4AV7
(C37Y02)	MSFC 495 GD/C	B19W21C4AV7

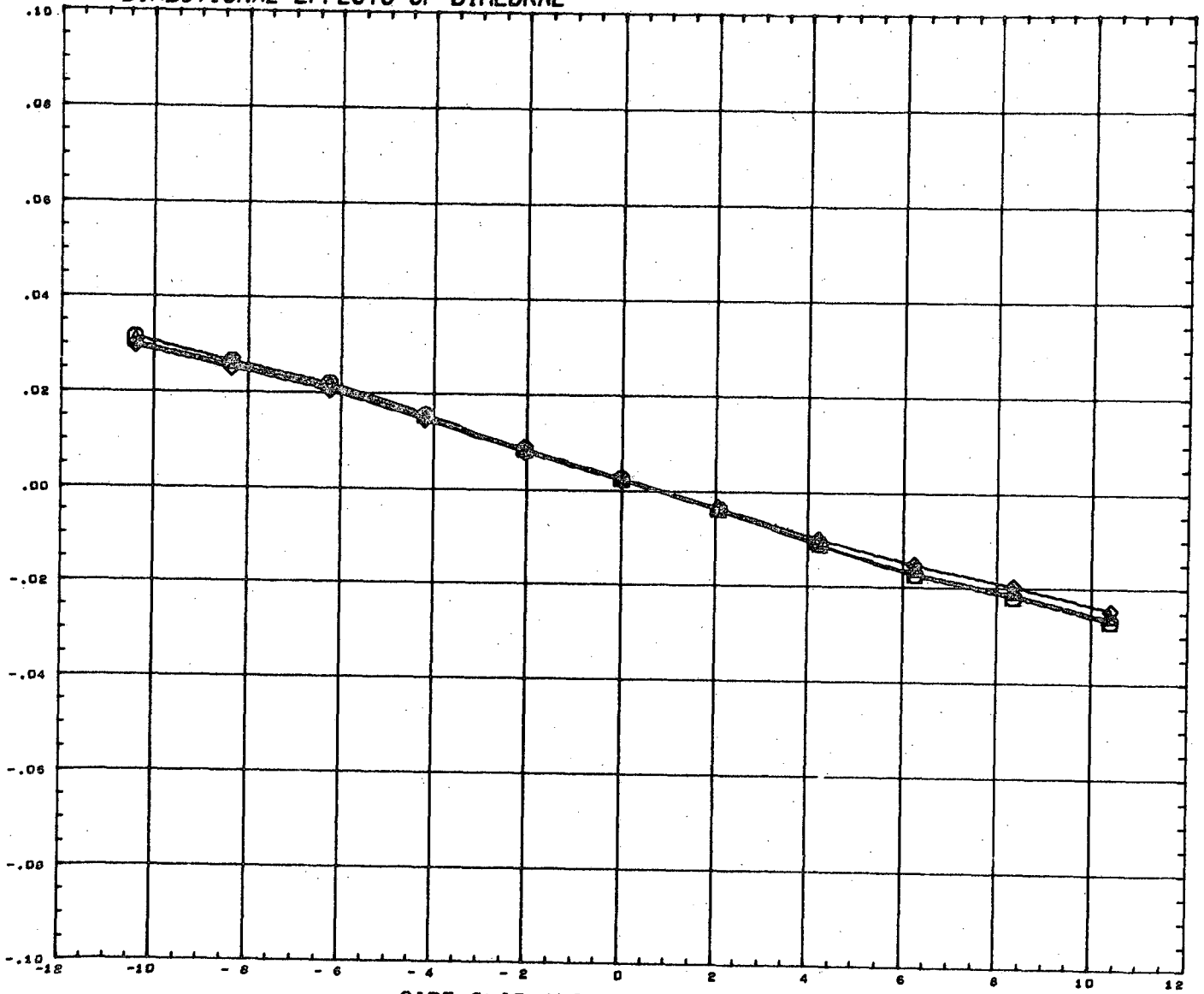
ALPHA	DIHRL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.457

DIRECTIONAL EFFECTS OF DIHEDRAL

YAWING MOMENT COEFFICIENT, CLN (STABILITY AXIS)



SIDE SLIP ANGLE, BETA, DEGREES

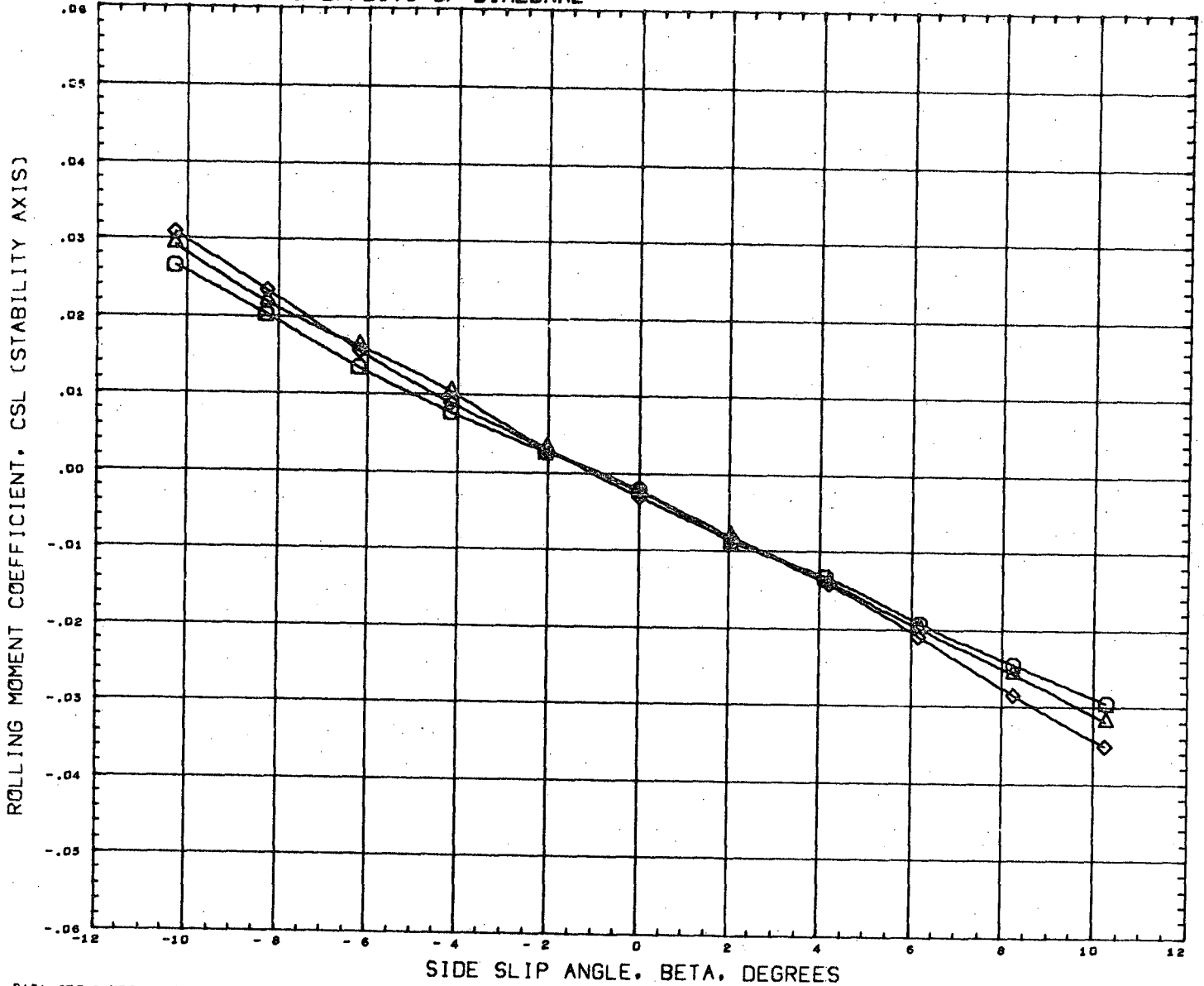
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37Y62)	MSFC 495 GD/C B19W20C4AV7
(C37YD2)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 Sq. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.957

DIRECTIONAL EFFECTS OF DIHEDRAL



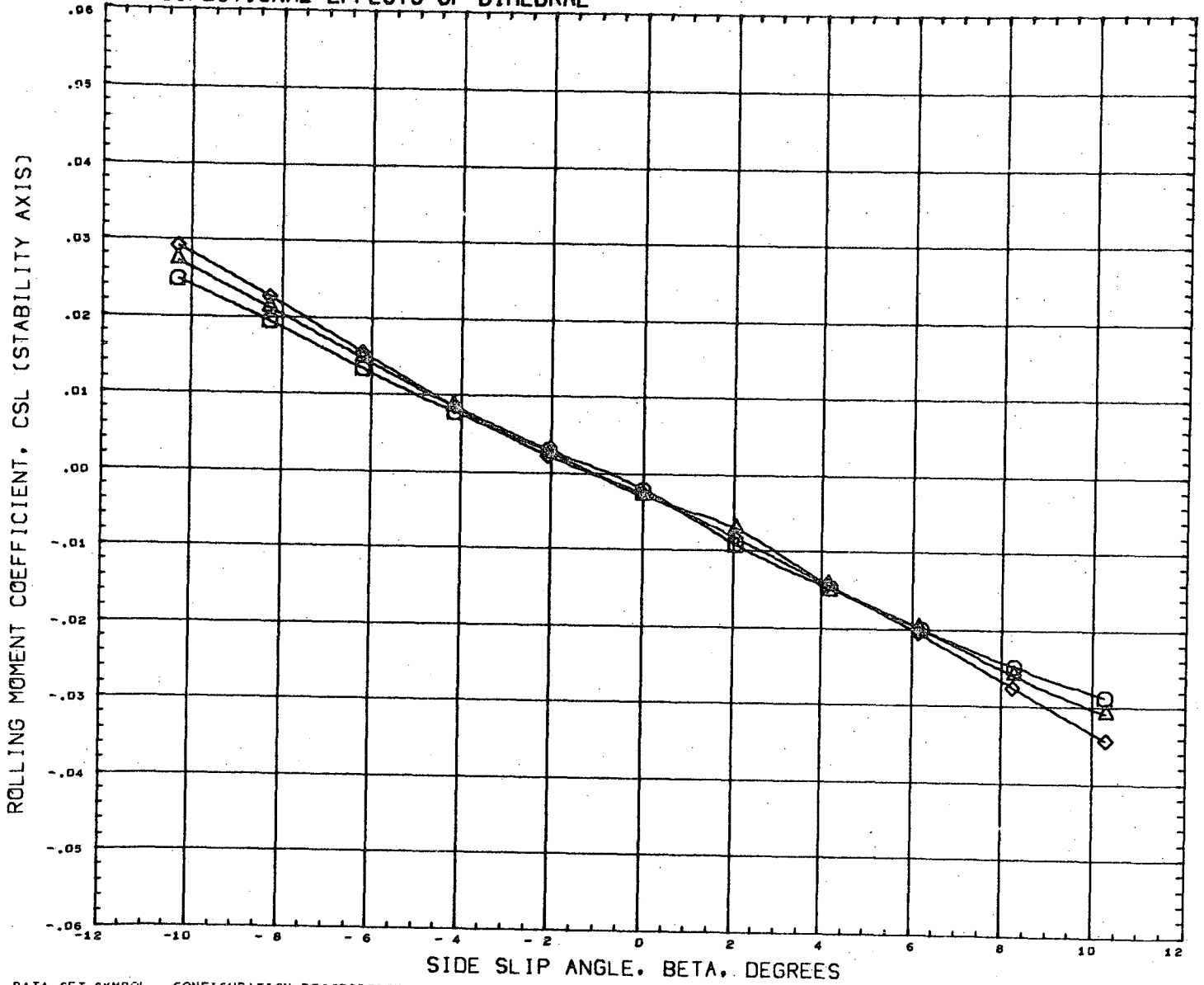
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37Y62)	MSFC 495 GD/C B19W20C4AV7
(C37Y02)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	90. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.299

DIRECTIONAL EFFECTS OF DIHEDRAL



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C37Y32)	MSFC 495 GD/C	B19W14C4AV7
(C37Y62)	MSFC 495 GD/C	B19W20C4AV7
(C37Y02)	MSFC 495 GD/C	B19W21C4AV7

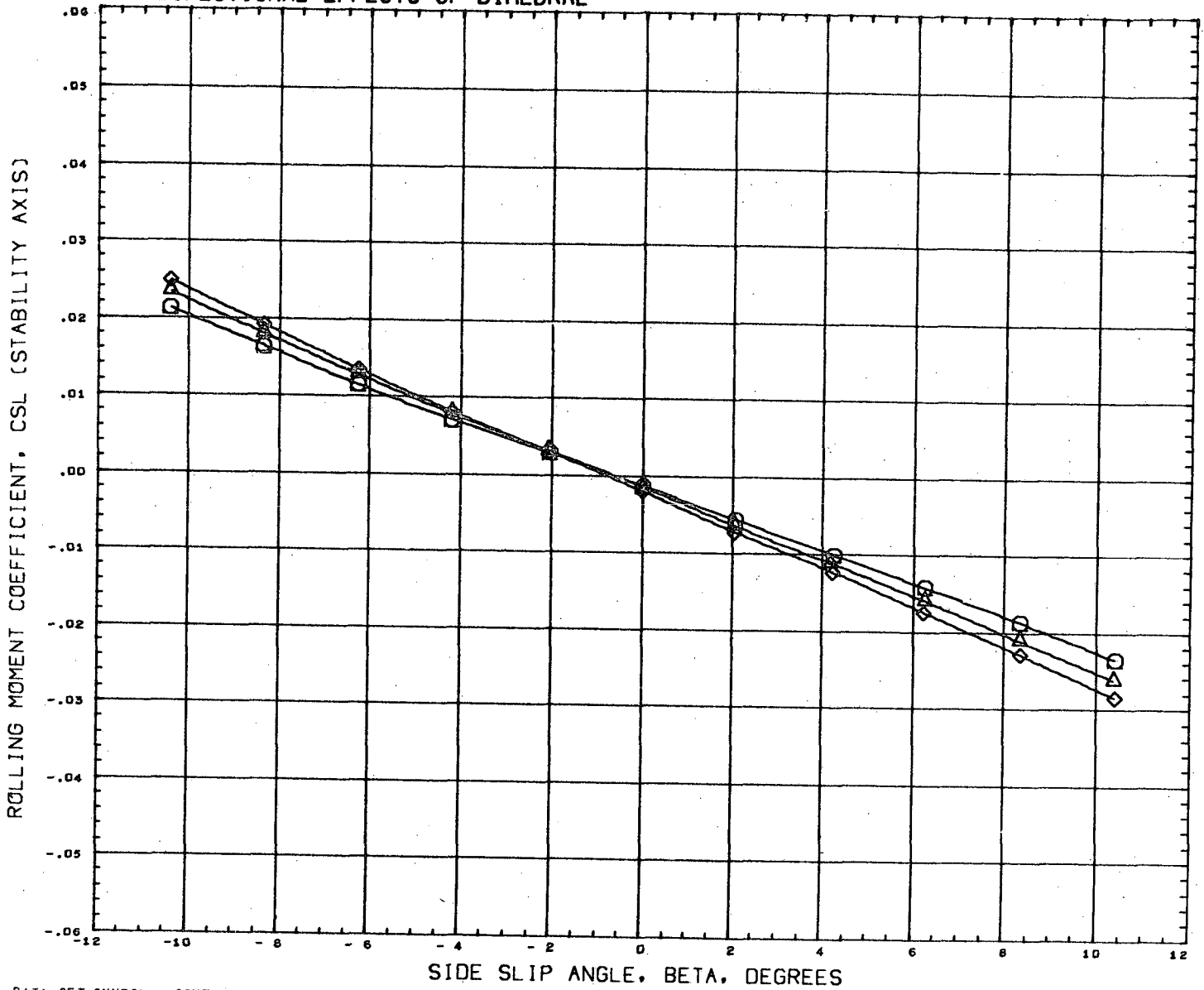
ALPHA	DIHEDRAL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.457

DIRECTIONAL EFFECTS OF DIHEDRAL



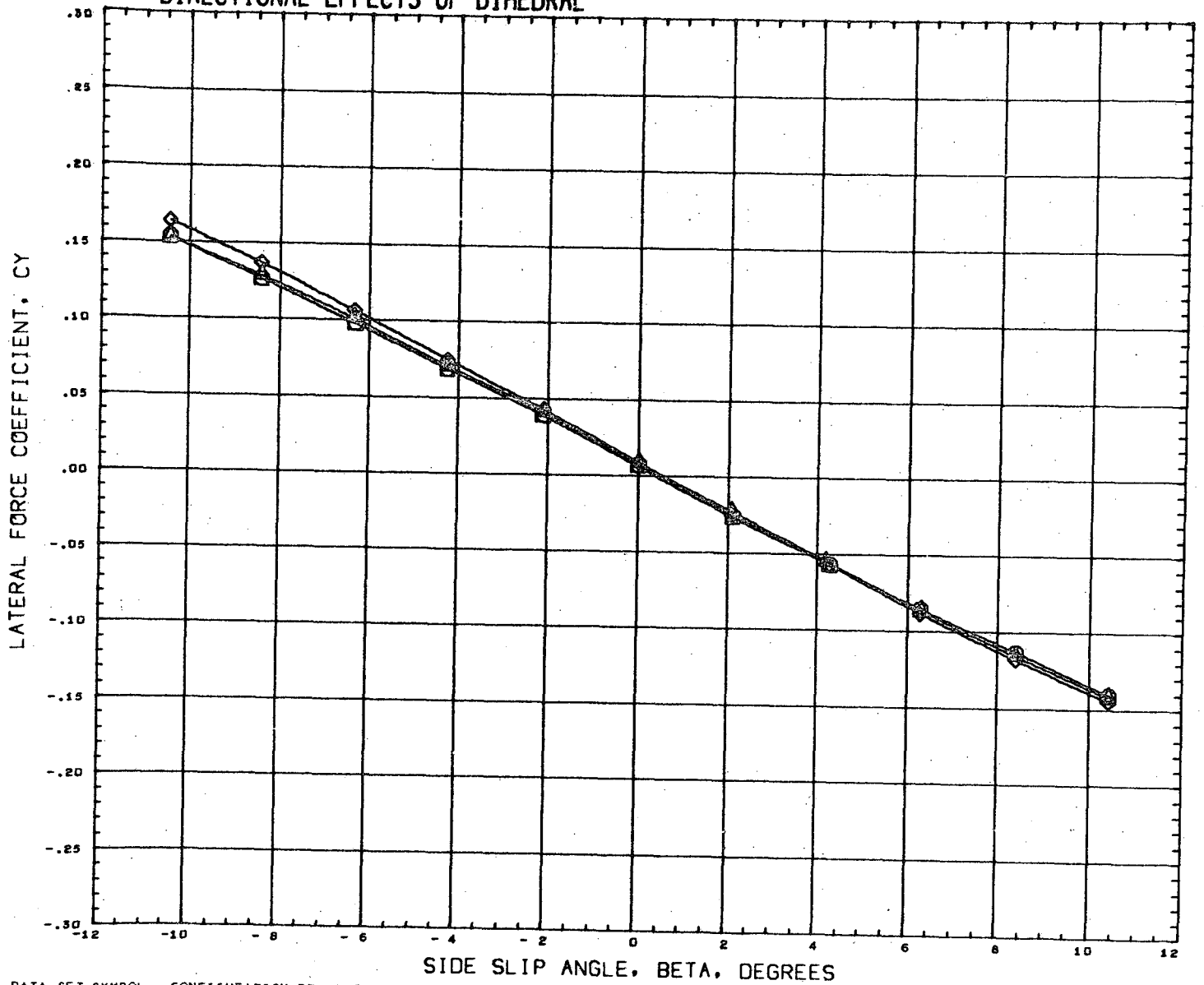
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37Y62)	MSFC 495 GD/C B19W20C4AV7
(C37Y02)	MSFC 495 GD/C B19W21C4AV7

ALPHA	DIHEDRAL	RDRFLR
15.000	3.000	0.000
15.000	6.000	0.000
15.000	10.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.957

DIRECTIONAL EFFECTS OF DIHEDRAL



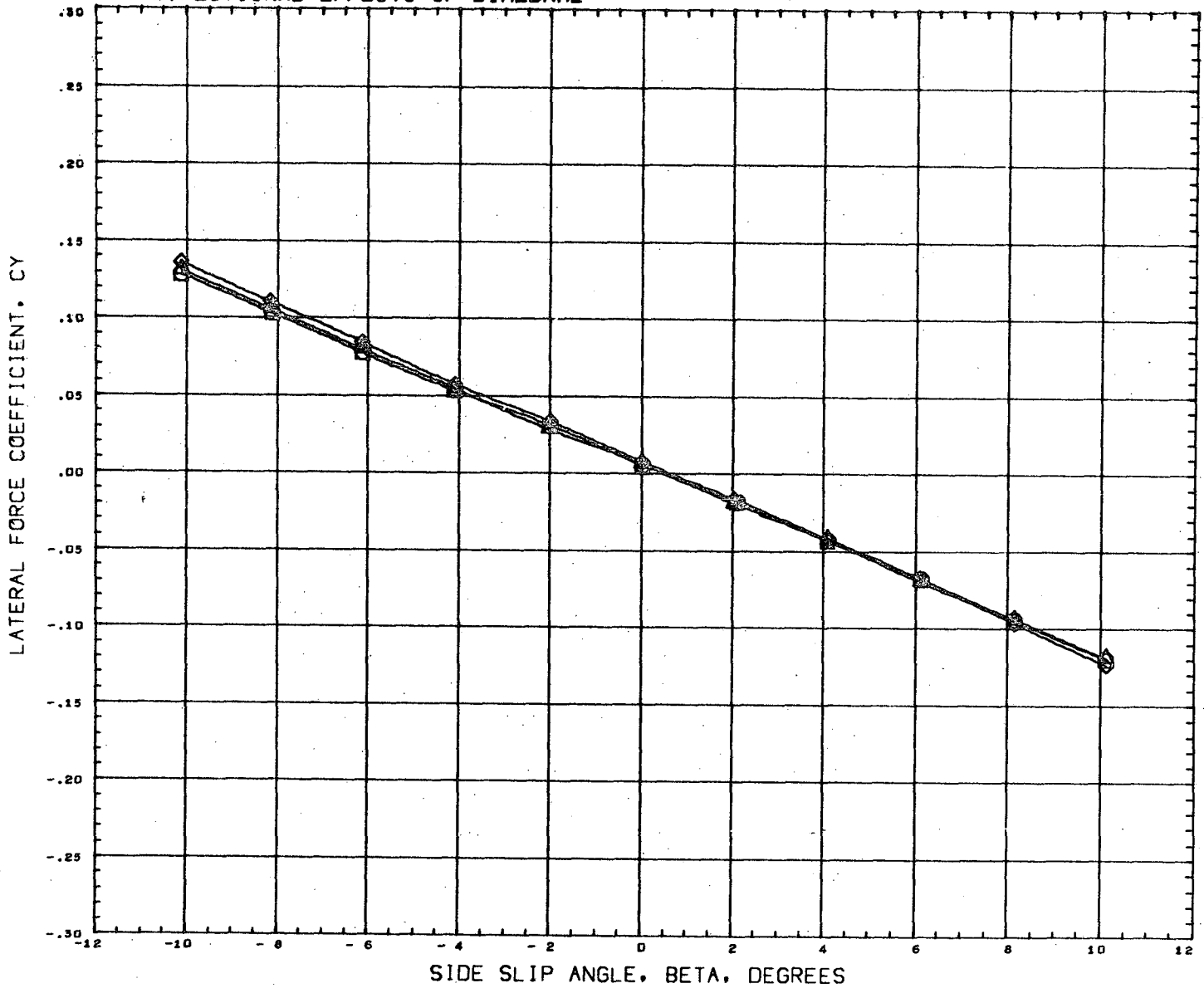
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y33)	MSFC 495 GD/C	B19W14C4A
(C37Y63)	MSFC 495 GD/C	B19W20C4A
(C37Y03)	MSFC 495 GD/C	B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



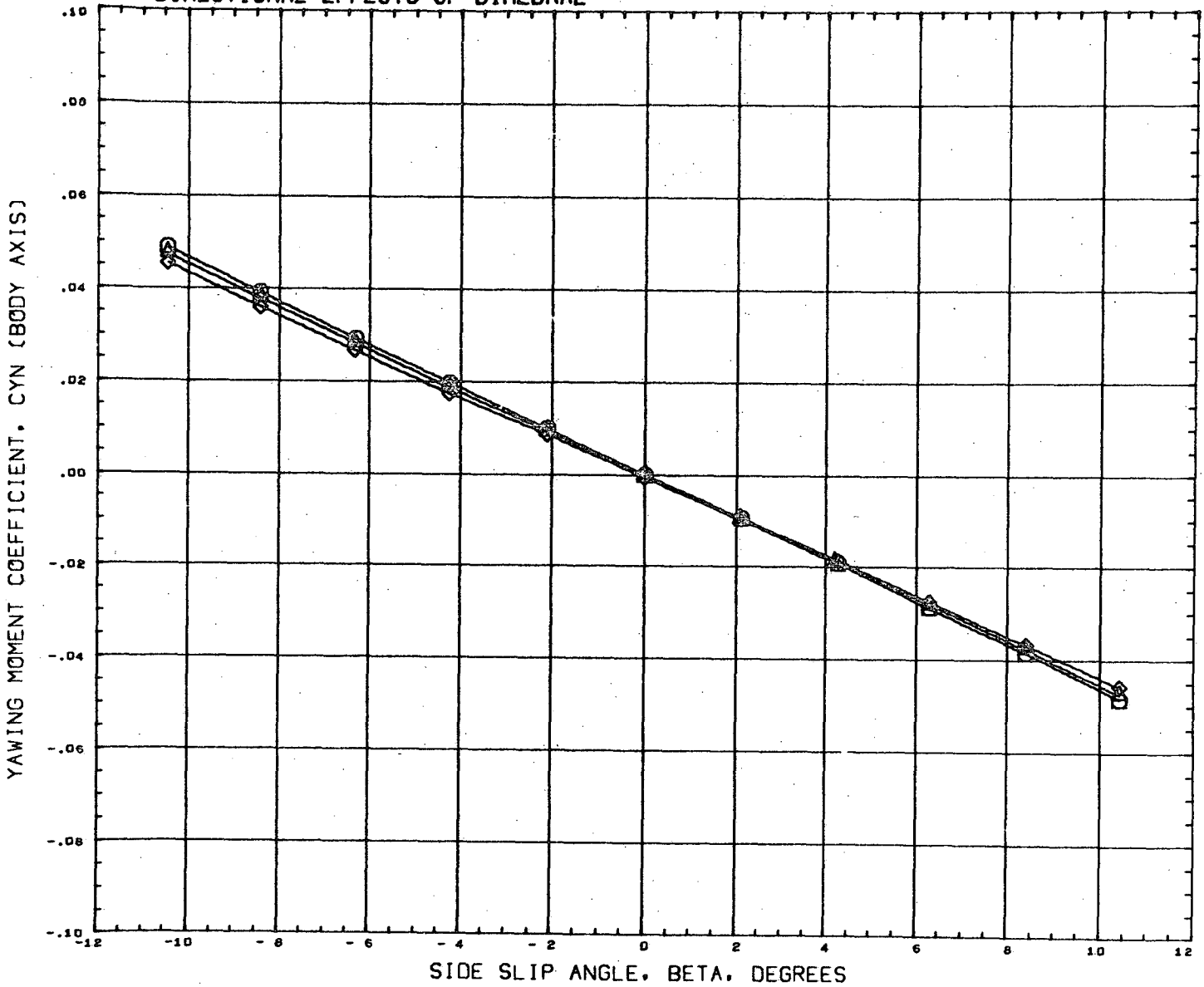
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y33)	MSFC 495 GD/C	B19W14C4A
(C37Y63)	MSFC 495 GD/C	B19W20C4A
(C37Y03)	MSFC 495 GD/C	B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF DIHEDRAL



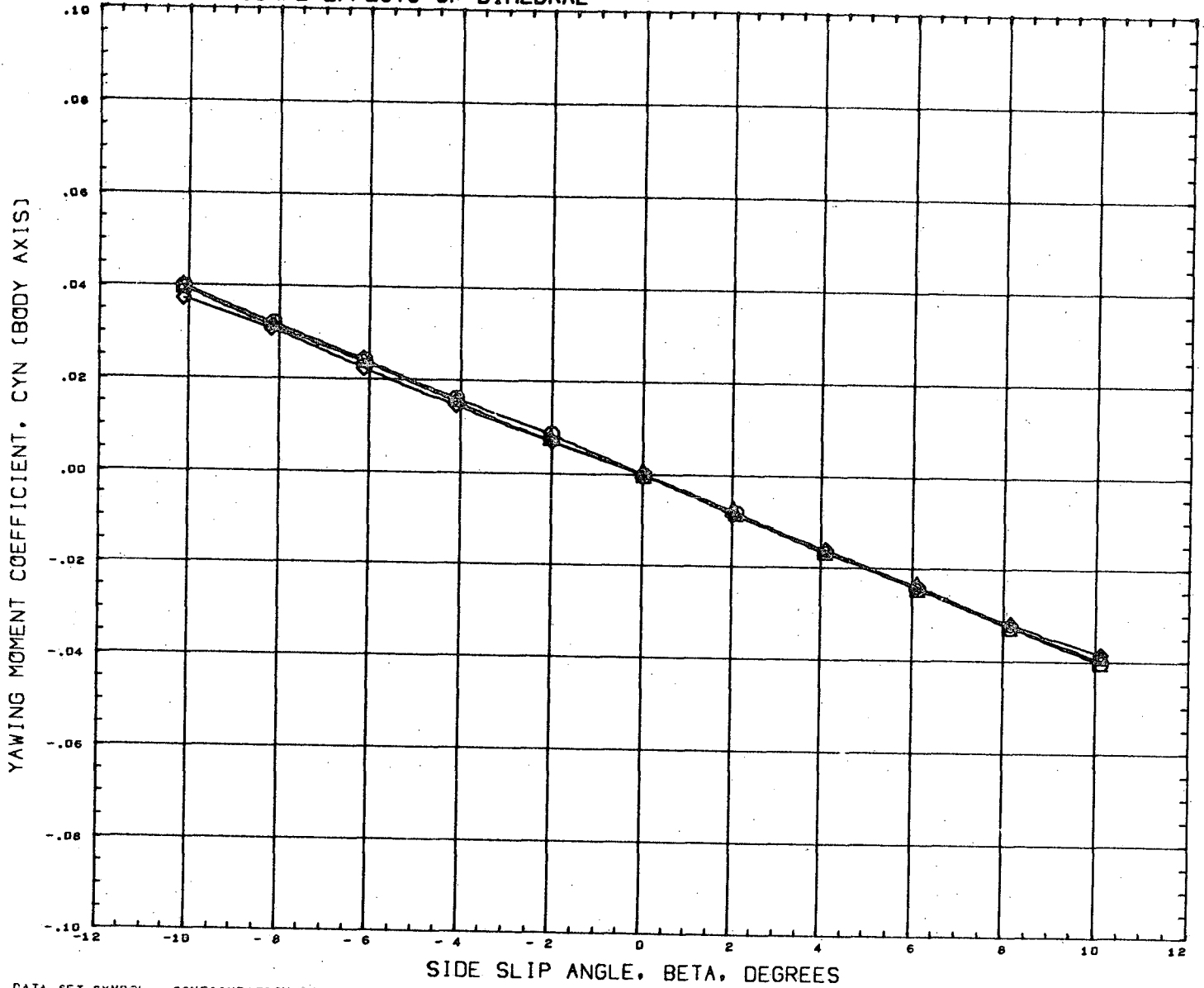
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37Y63)	MSFC 495 GD/C B19W20C4A
(C37Y03)	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



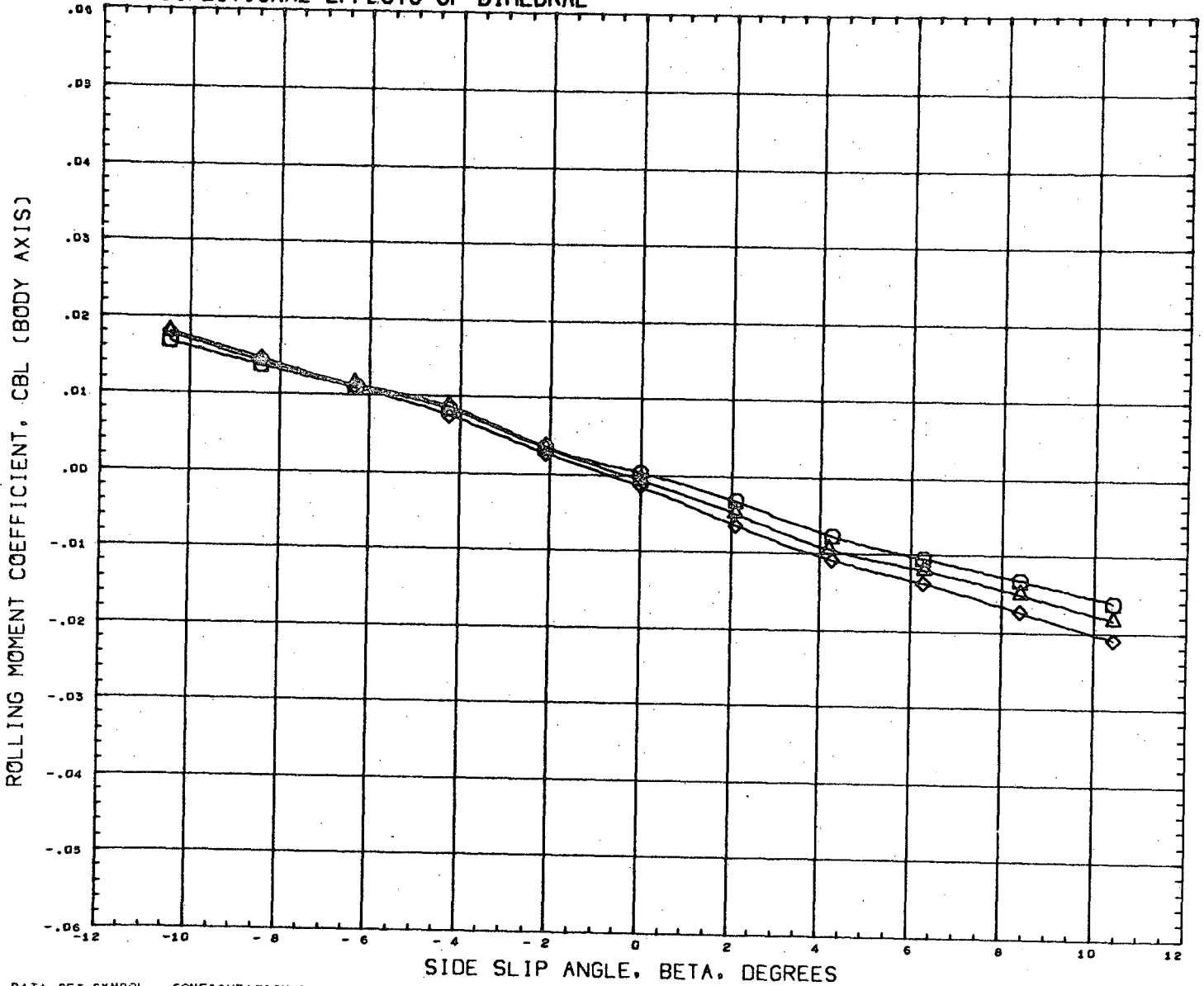
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37Y63)	MSFC 495 GD/C B19W20C4A
(C37Y03)	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

DIRECTIONAL EFFECTS OF DIHEDRAL



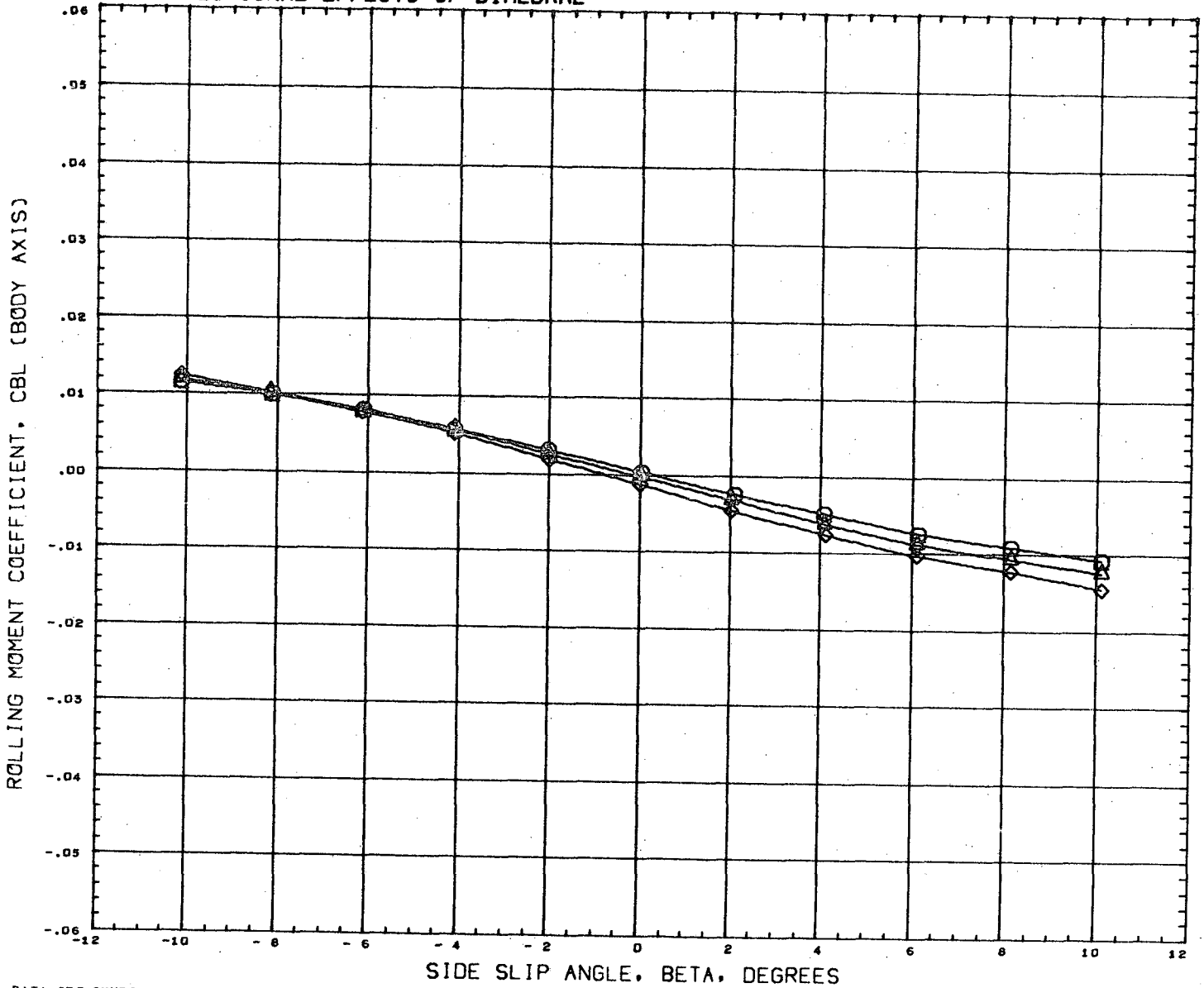
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37Y63)	MSFC 495 GD/C B19W2DC4A
(C37Y03)	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



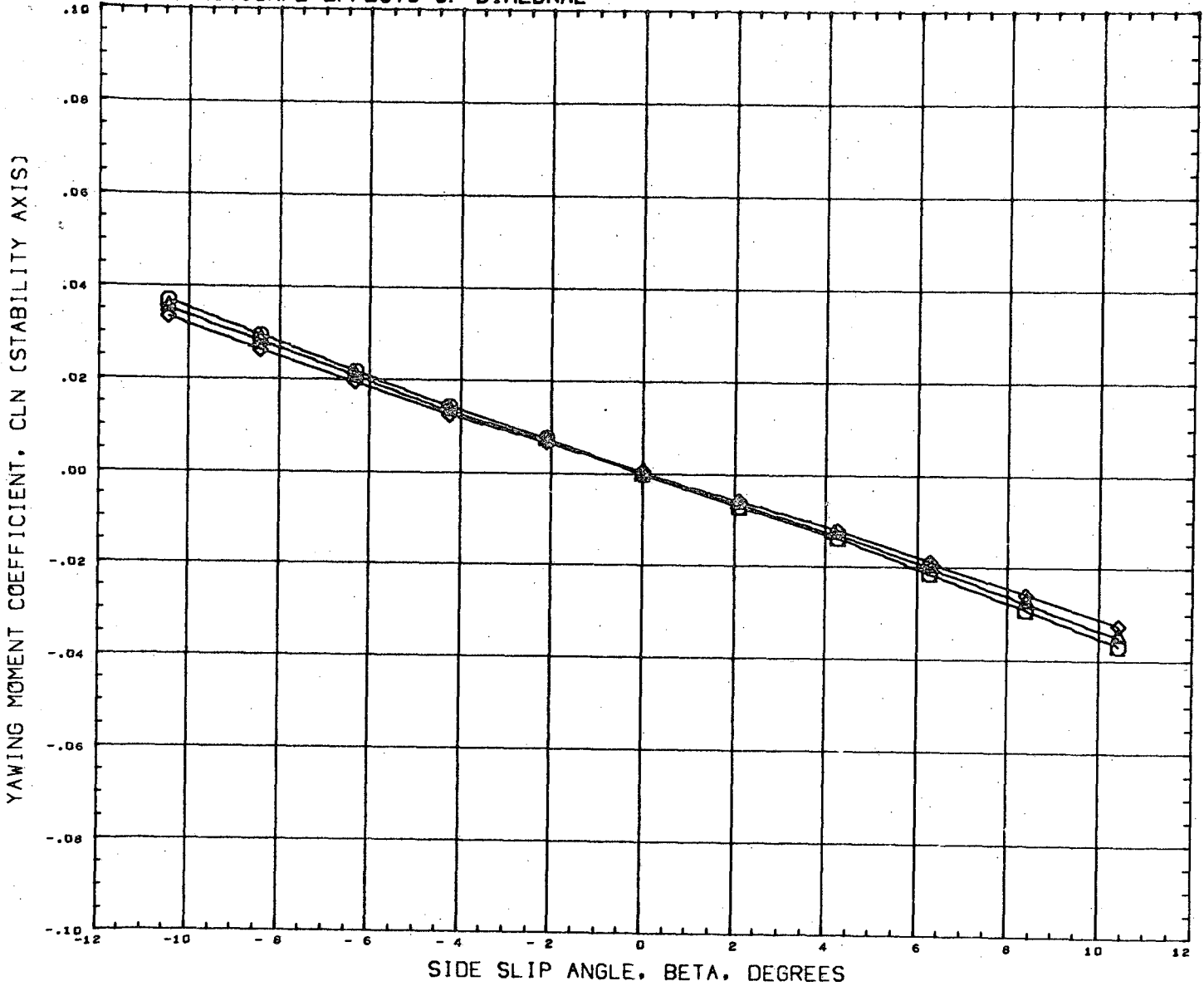
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	○	MSFC 495 GD/C B19W14C4A
(C37Y63)	△	MSFC 495 GD/C B19W20C4A
(C37Y03)	◇	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF DIHEDRAL



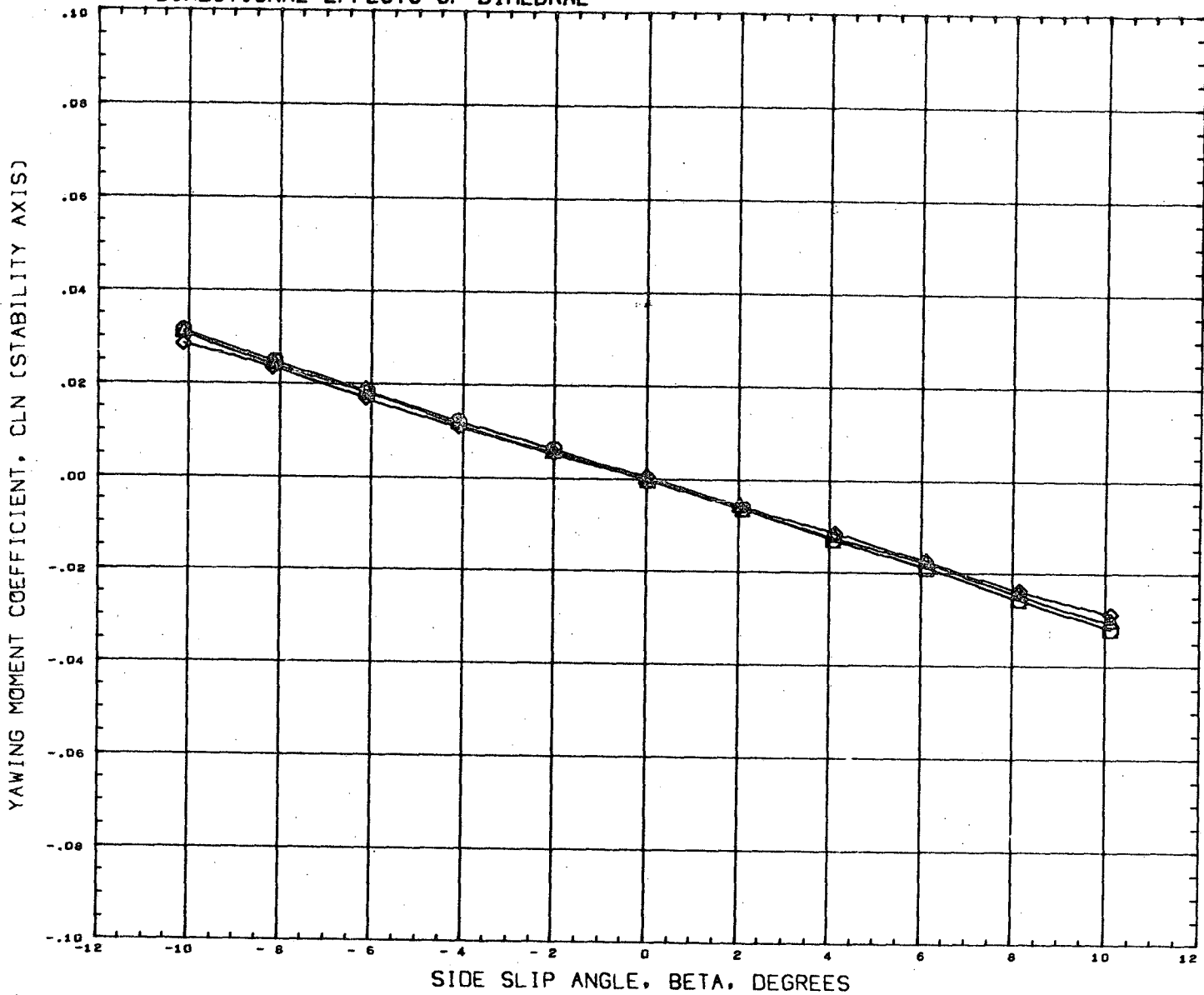
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33) ○	MSFC 495 GD/C B19W14C4A
(C37Y63) △	MSFC 495 GD/C B19W20C4A
(C37Y03) ◇	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



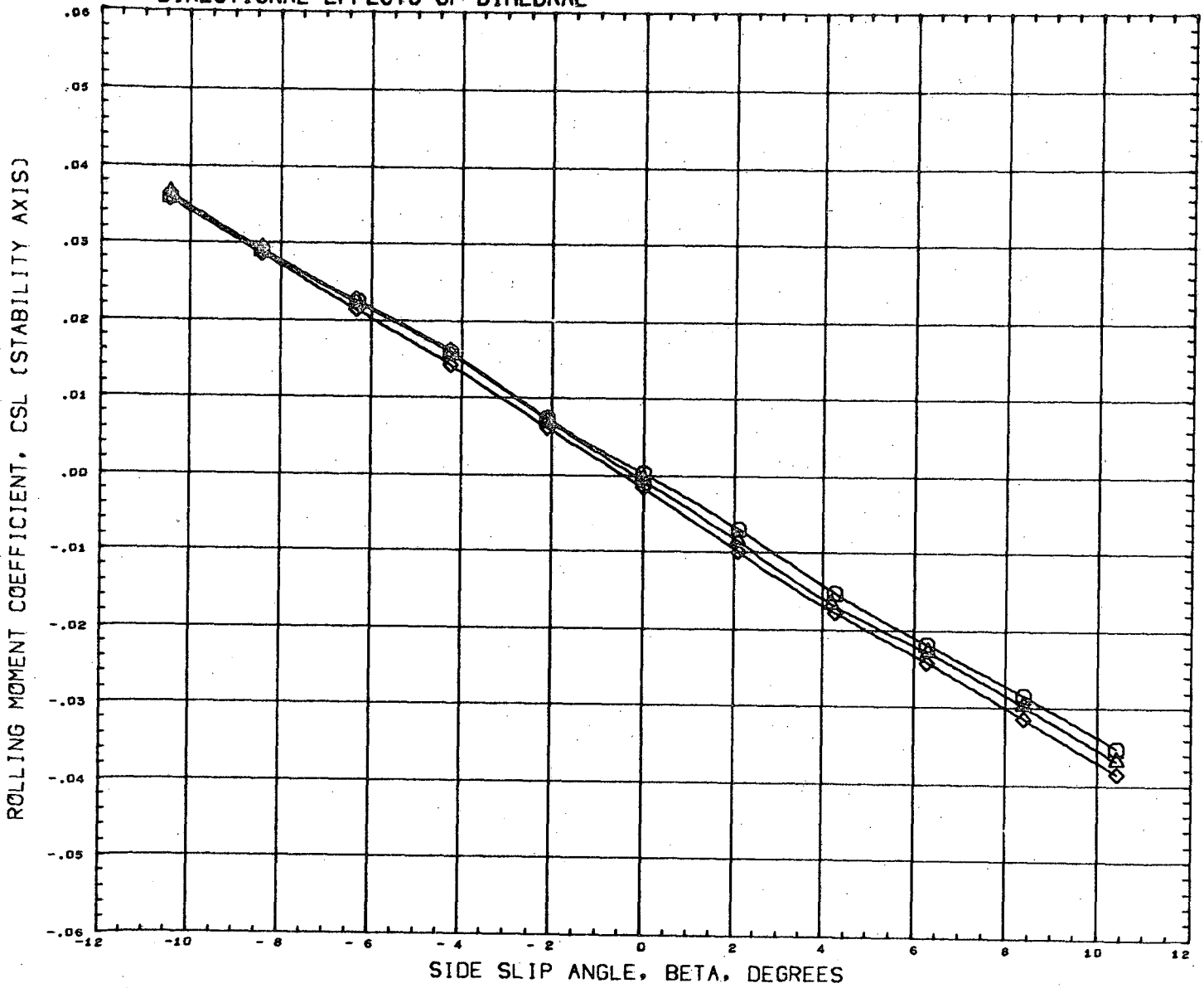
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y33)	MSFC 495 GD/C	B19W14C4A
(C37Y63)	MSFC 495 GD/C	B19W2DC4A
(C37Y03)	MSFC 495 GD/C	B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF DIHEDRAL



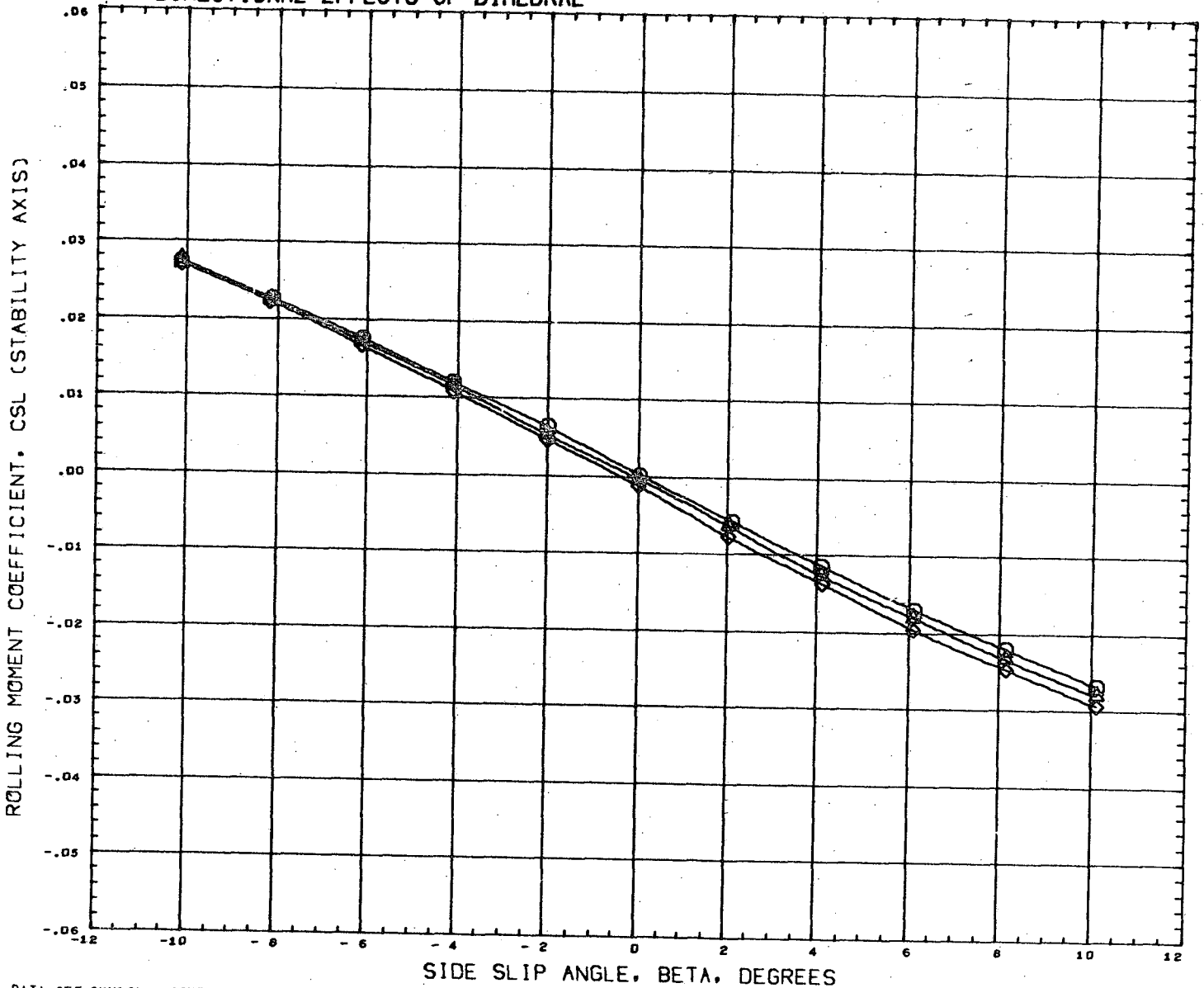
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y33)	MSFC 495 GD/C	B19W14C4A
(C37Y63)	MSFC 495 GD/C	B19W20C4A
(C37Y03)	MSFC 495 GD/C	B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



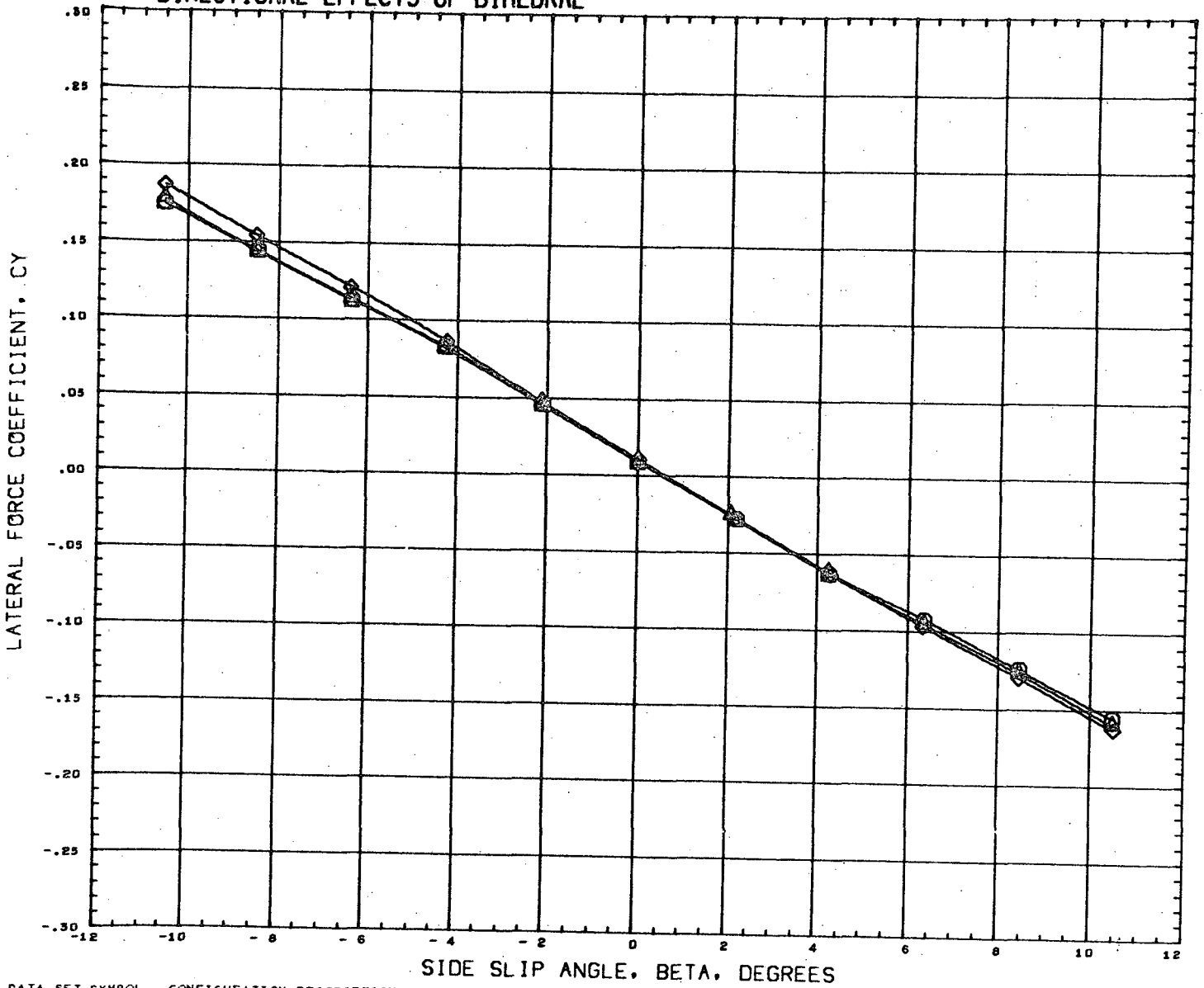
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37Y63)	MSFC 495 GD/C B19W20C4A
(C37Y03)	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
25.000	3.000
25.000	6.000
25.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRF	6.6180	IN.
YMRF	0.0000	IN.
ZMRF	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF DIHEDRAL



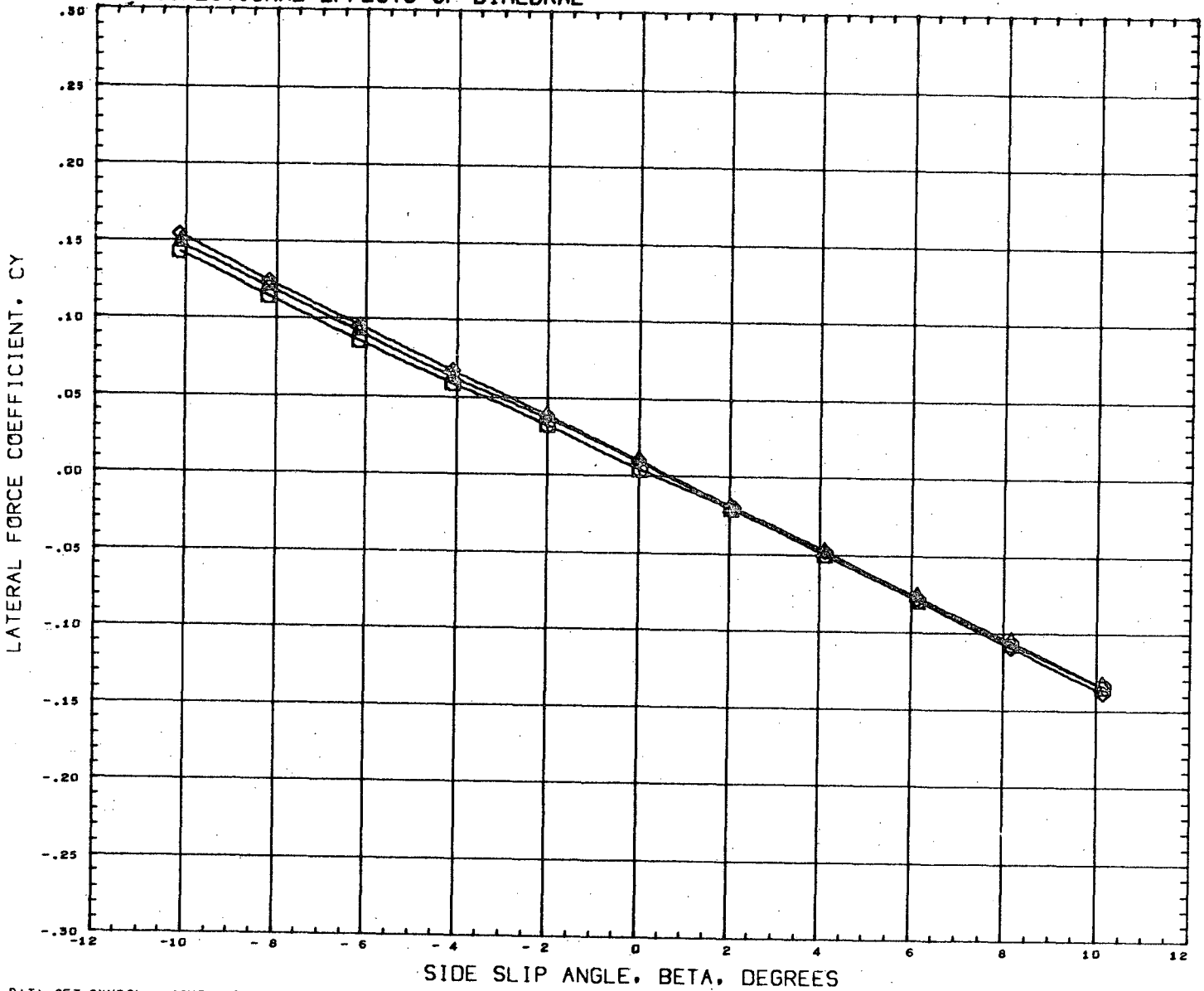
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	MSFC 495 GD/C B19W14C4A
(C37Y64)	MSFC 495 GD/C B19W20C4A
(C37Y04)	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



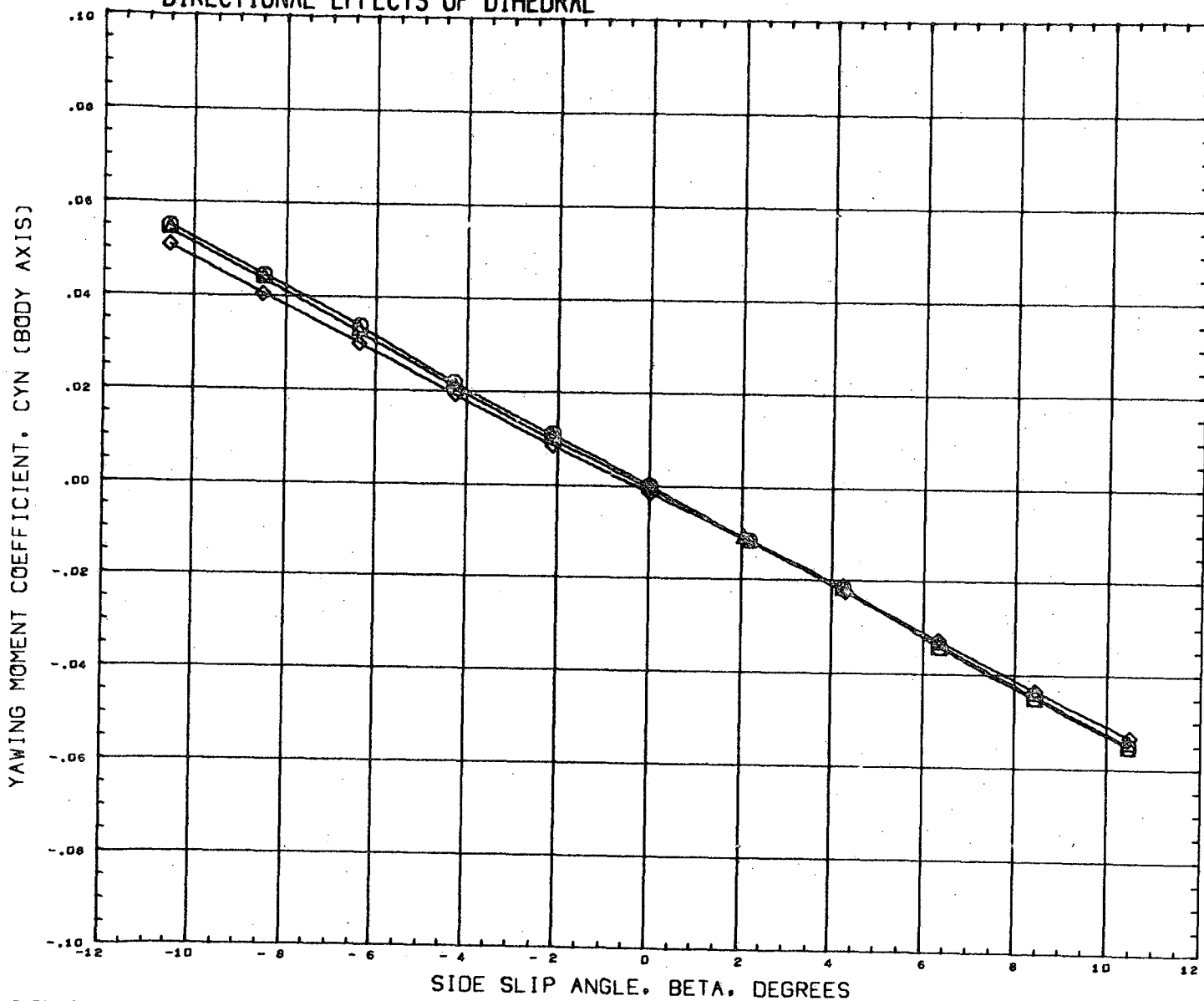
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y34)	MSFC 495 GD/C	B19W14C4A
(C37Y64)	MSFC 495 GD/C	B19W20C4A
(C37Y04)	MSFC 495 GD/C	B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF DIHEDRAL



SIDE SLIP ANGLE, BETA, DEGREES

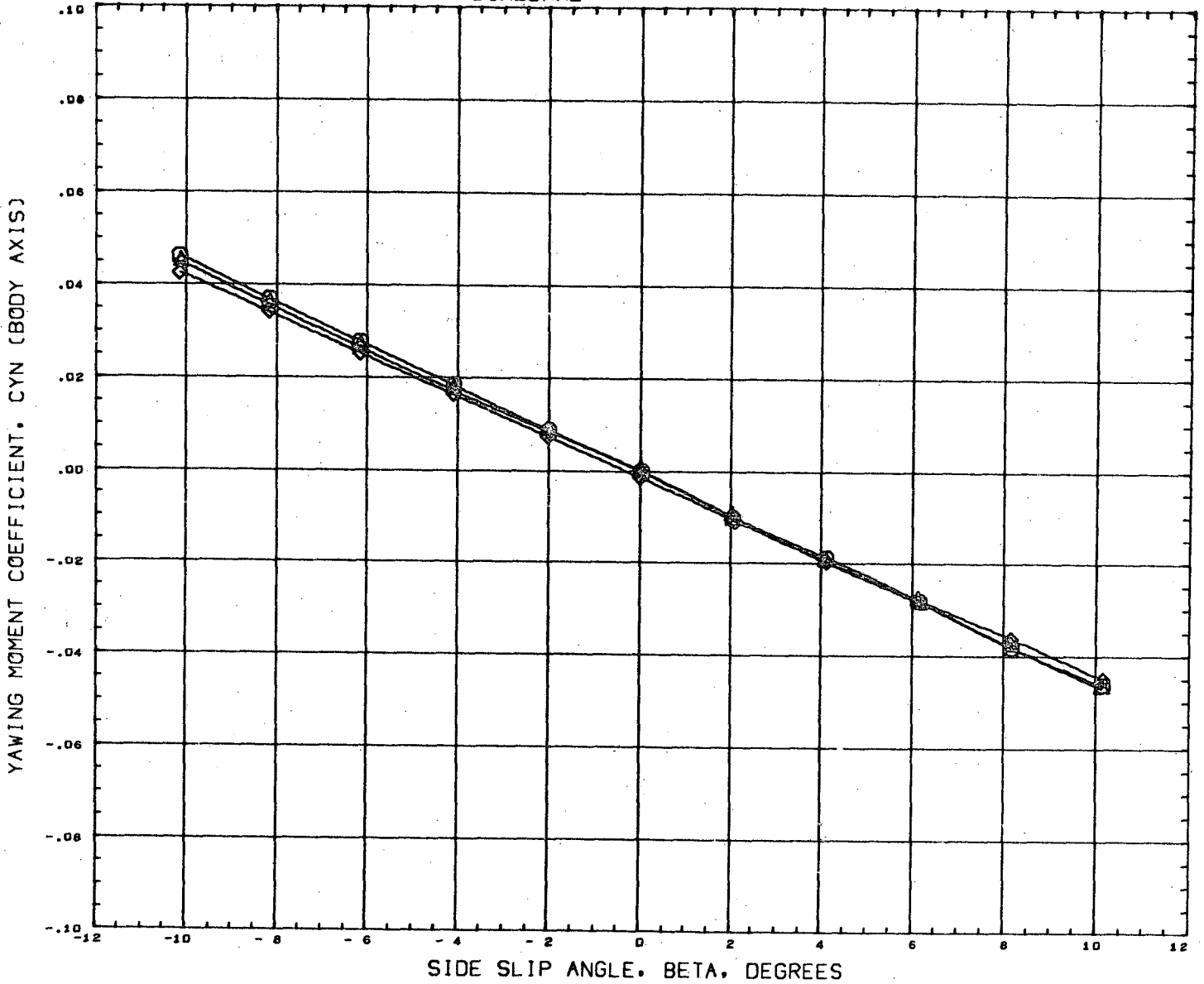
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y34)	MSFC 495 GD/C	B19W14C4A
(C37Y64)	MSFC 495 GD/C	B19W20C4A
(C37Y04)	MSFC 495 GD/C	B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



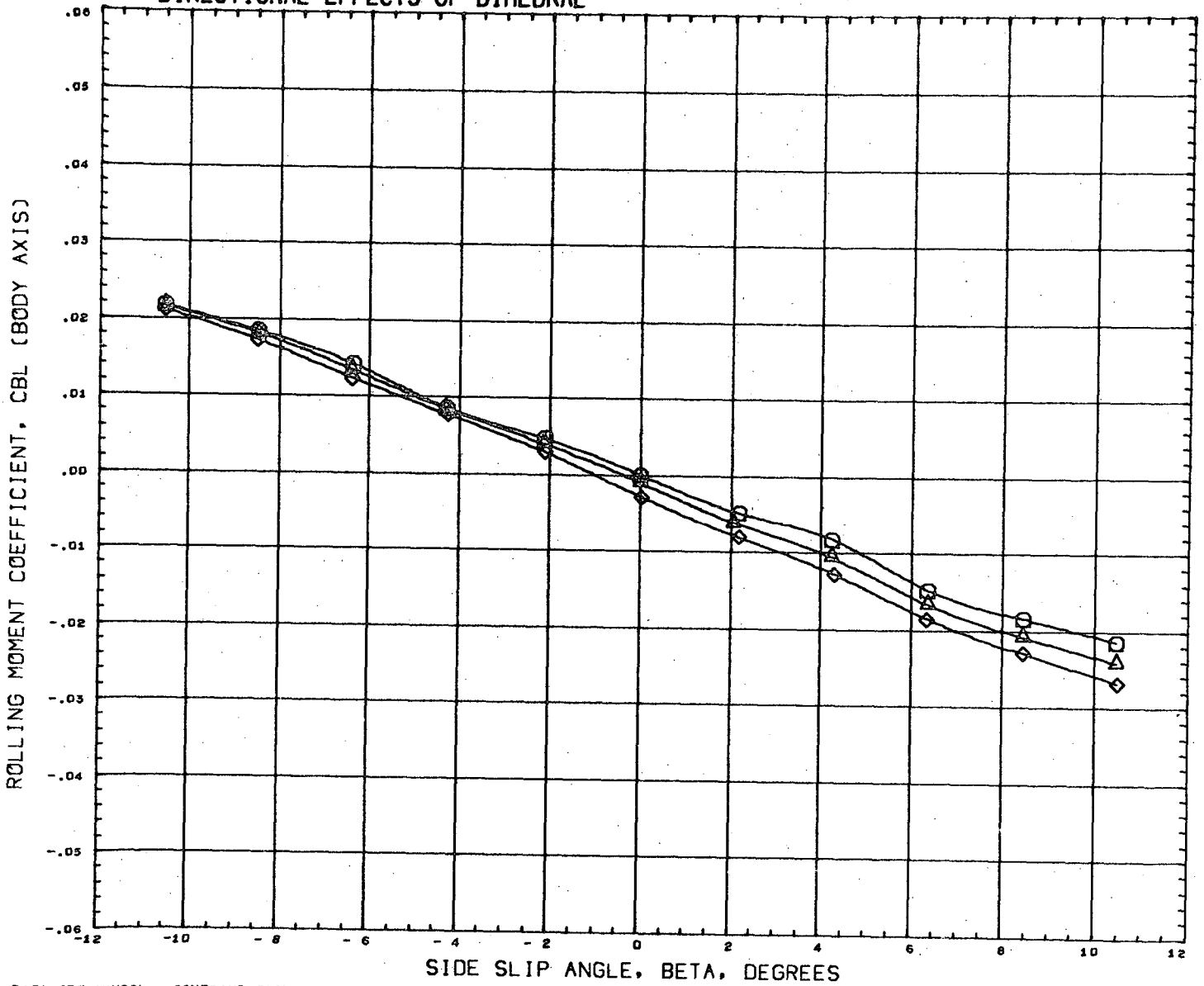
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y34)	○	MSFC 495 GD/C	B19W14C4A
(C37Y64)	△	MSFC 495 GD/C	B19W20C4A
(C37Y04)	◇	MSFC 495 GD/C	B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

DIRECTIONAL EFFECTS OF DIHEDRAL



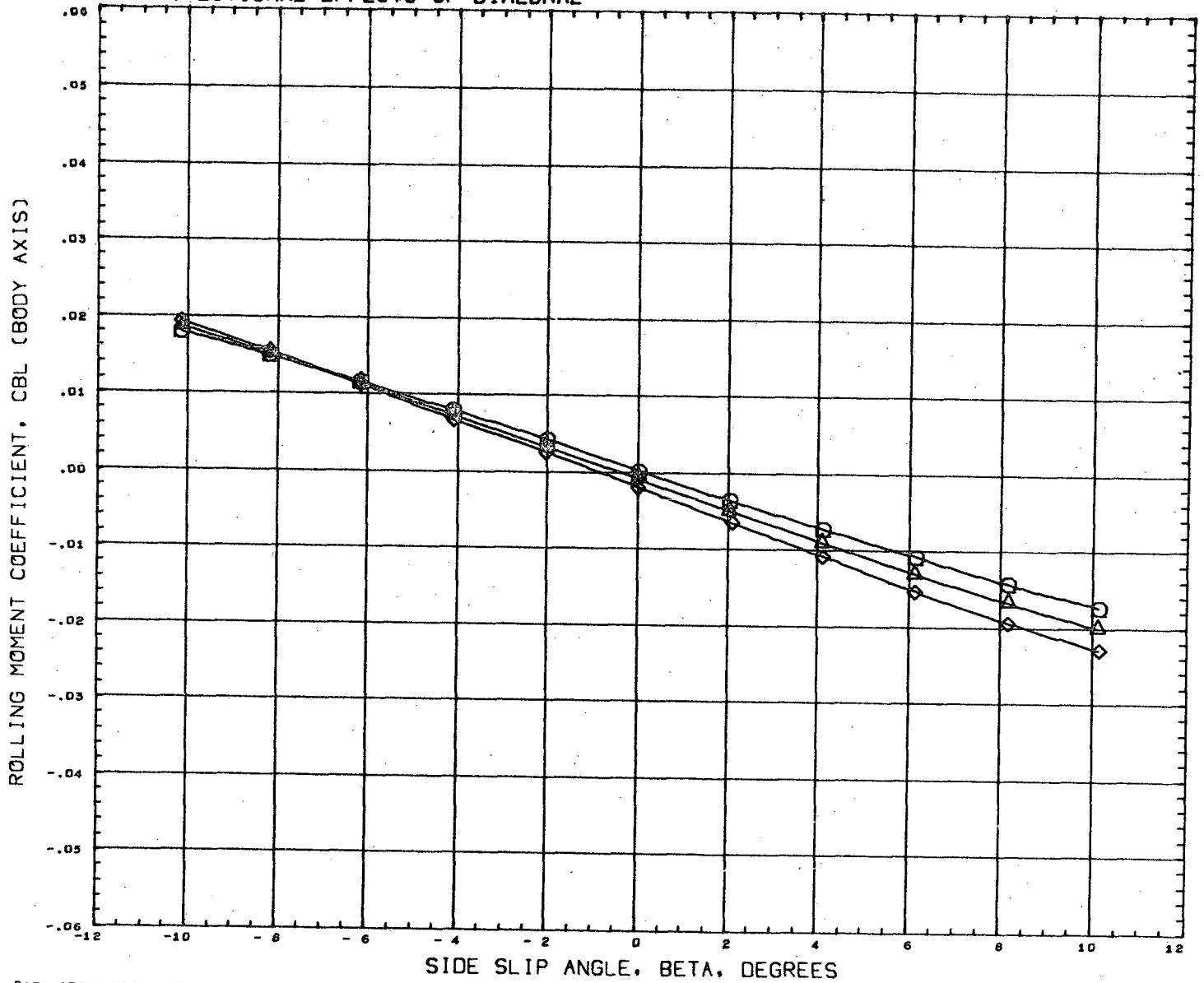
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y34)	○	MSFC 495 GD/C	B19W14C4A
(C37Y64)	△	MSFC 495 GD/C	B19W20C4A
(C37Y04)	◇	MSFC 495 GD/C	B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



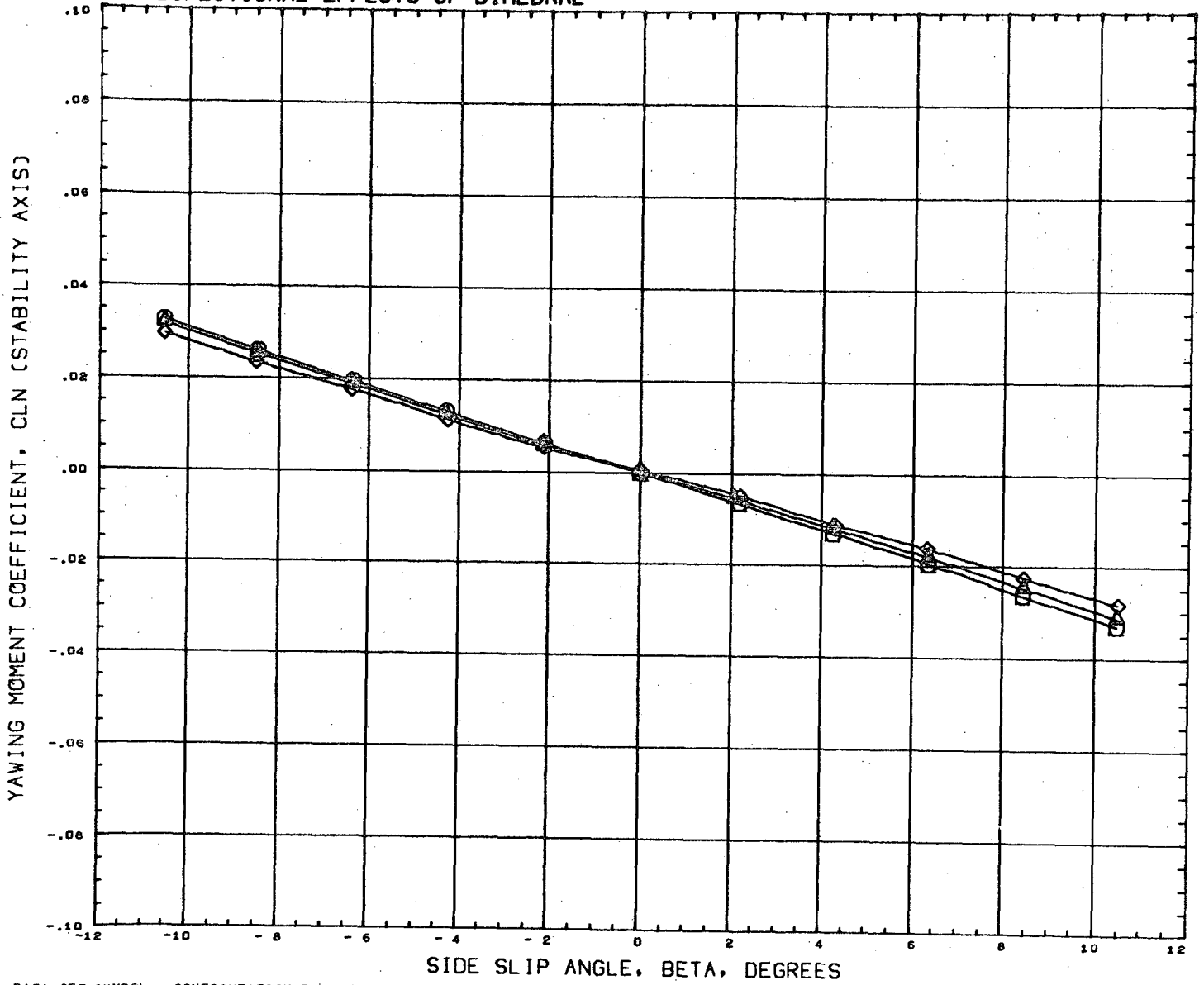
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	○	MSFC 495 GD/C B19W14C4A
(C37Y64)	△	MSFC 495 GD/C B19W20C4A
(C37YD4)	◇	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF DIHEDRAL



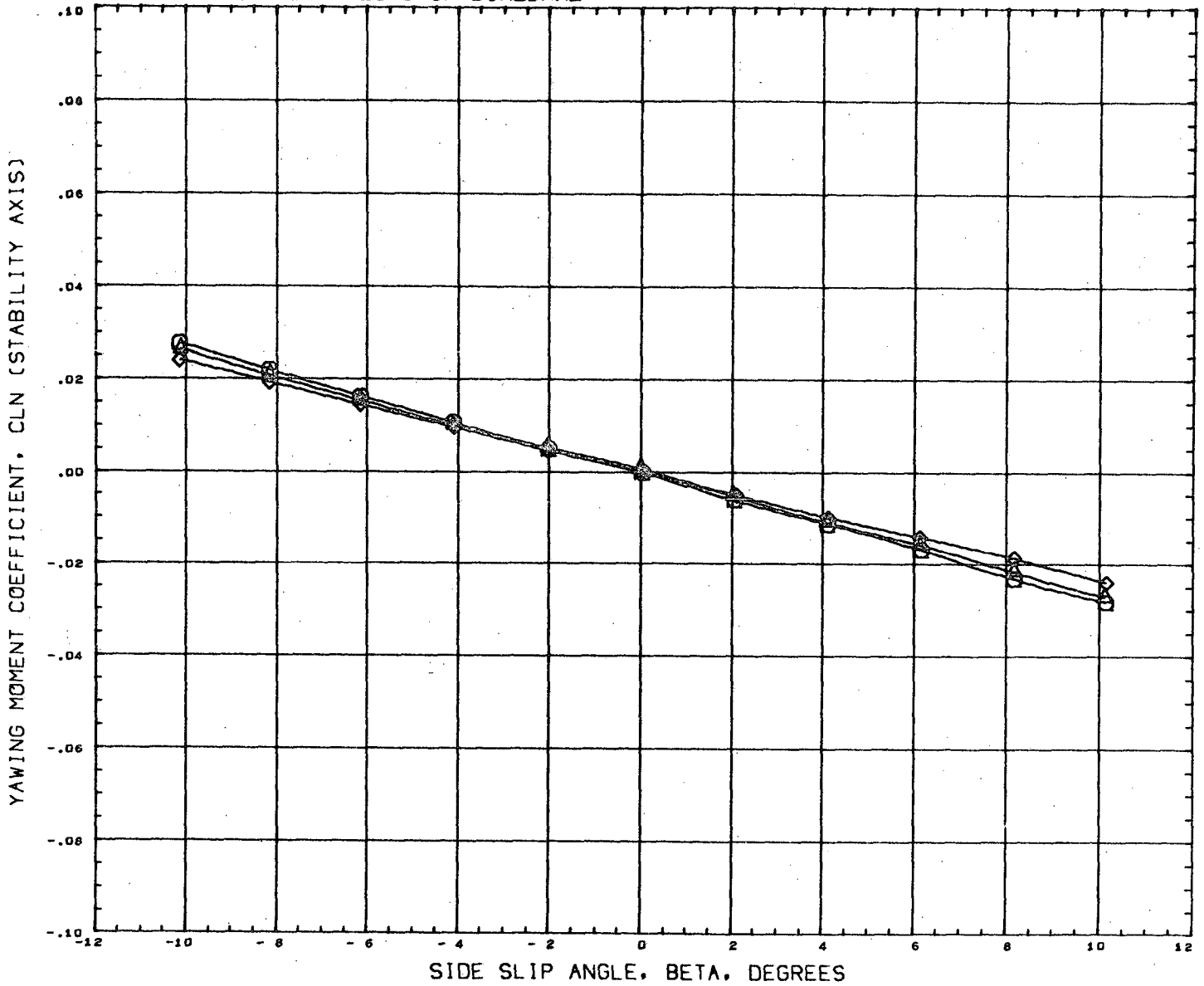
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	MSFC 495 GD/C B19W14C4A
(C37Y64)	MSFC 495 GD/C B19W20C4A
(C37Y04)	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



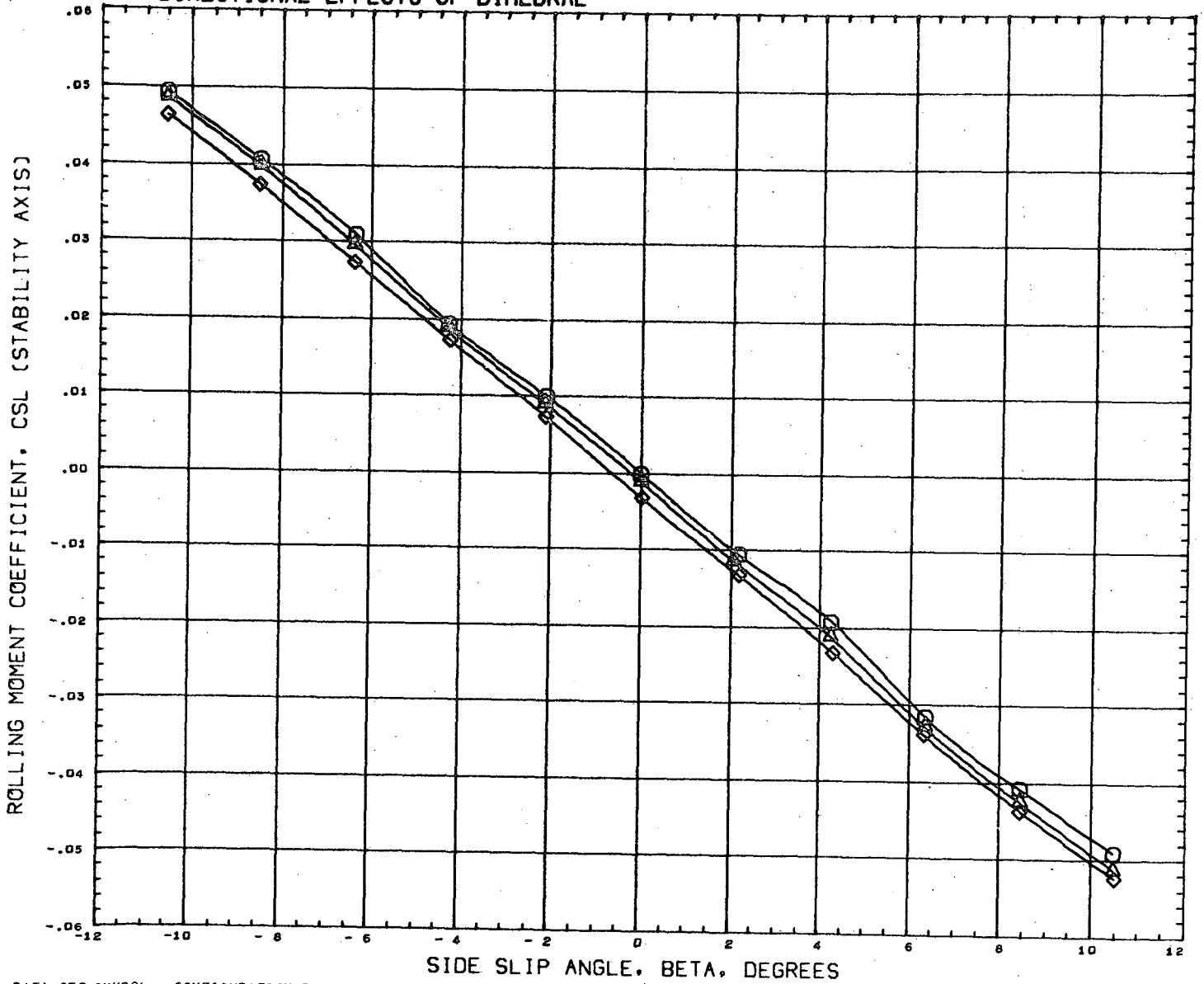
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	MSFC 495 GD/C B19W14C4A
(C37Y64)	MSFC 495 GD/C B19W20C4A
(C37Y04)	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF DIHEDRAL



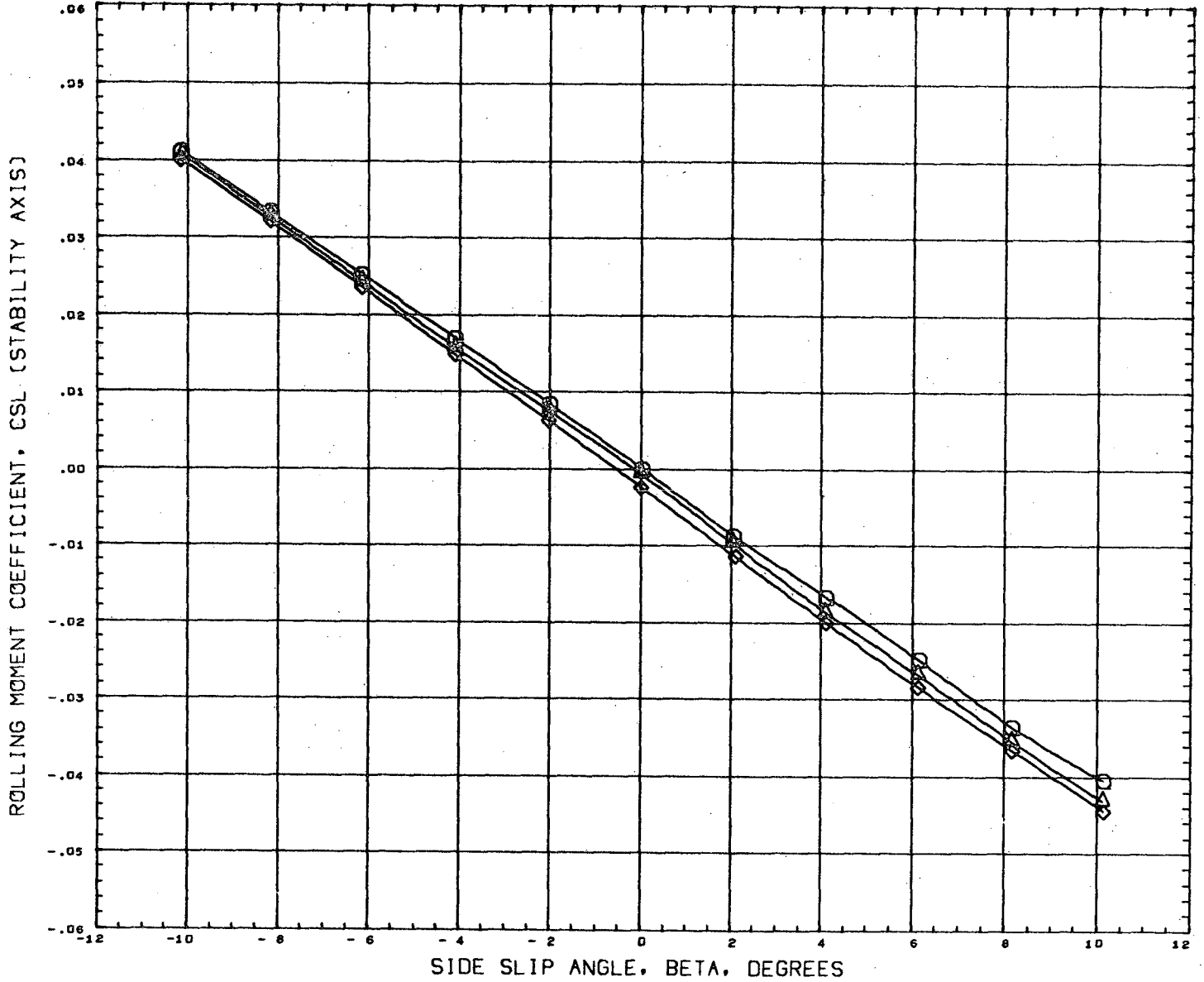
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y34)	MSFC 495 GD/C	B19W14C4A
(C37Y64)	MSFC 495 GD/C	B19W20C4A
(C37Y04)	MSFC 495 GD/C	B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL EFFECTS OF DIHEDRAL



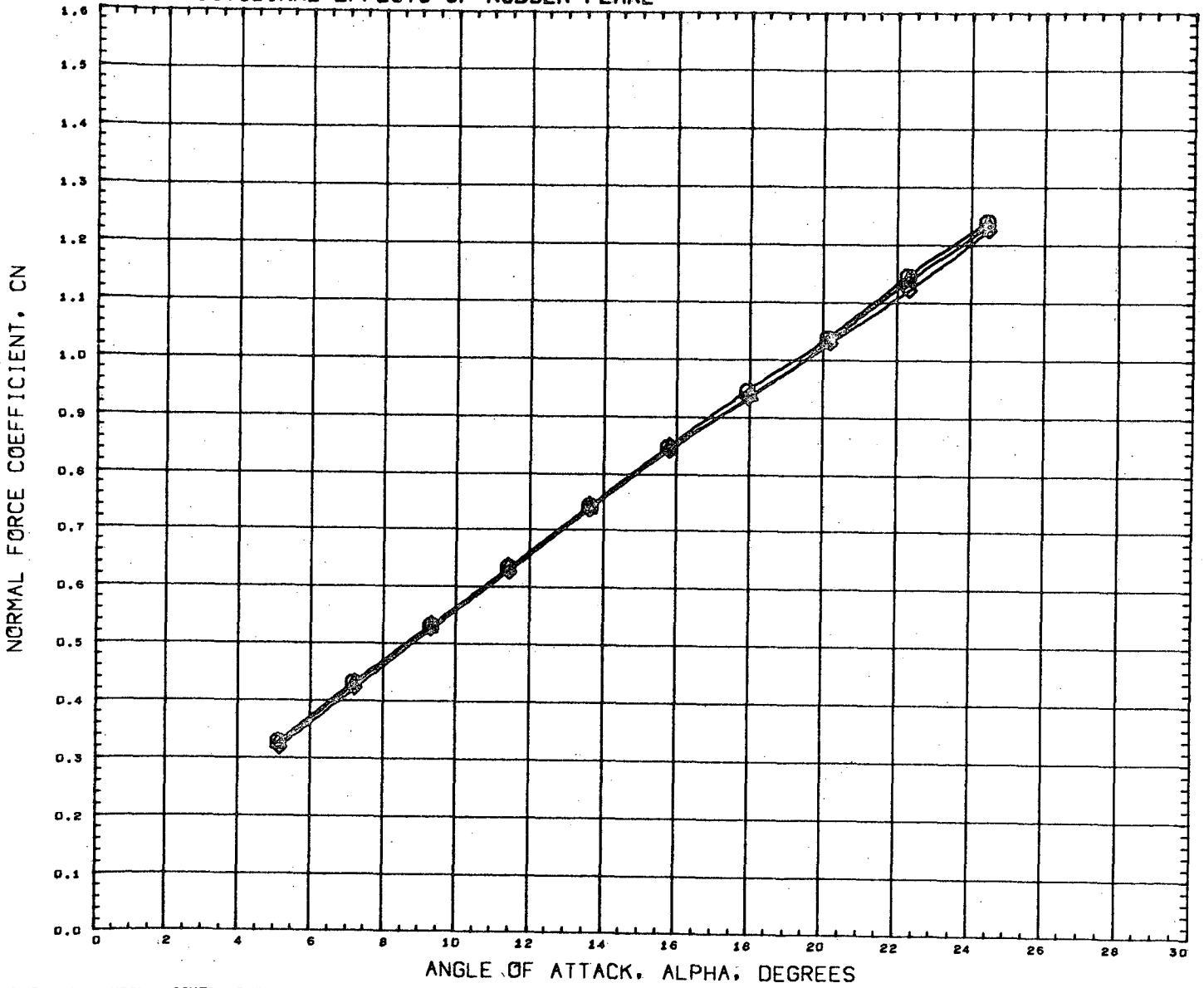
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	MSFC 495 GD/C B19W14C4A
(C37Y64)	MSFC 495 GD/C B19W20C4A
(C37Y04)	MSFC 495 GD/C B19W21C4A

ALPHA	DIHEDRAL
35.000	3.000
35.000	6.000
35.000	10.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

LONGITUDINAL EFFECTS OF RUDDER FLARE



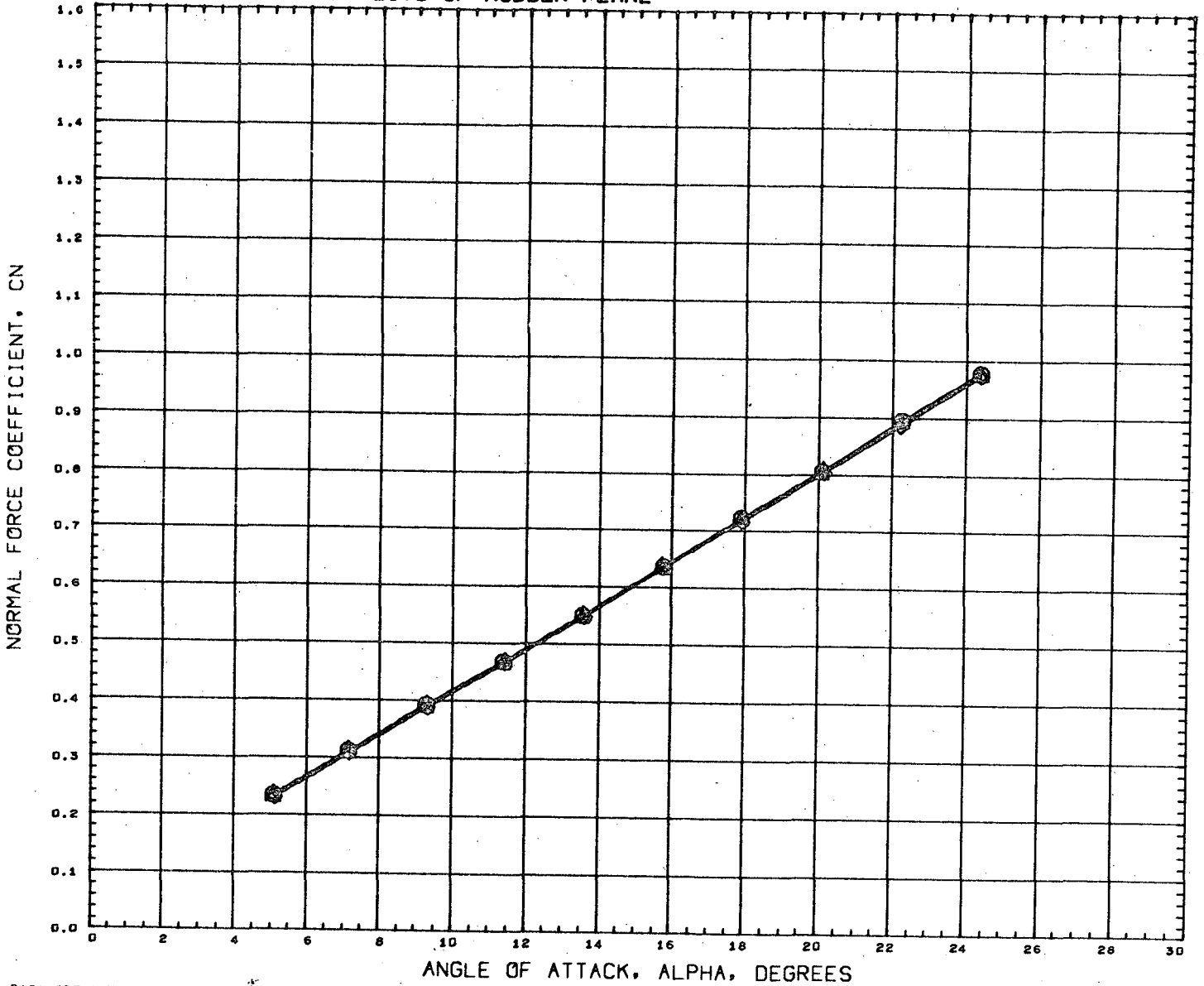
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(E37A31)	○	MSFC 495 GD/C	B19W14C4AV7
(C37AR2)	△	MSFC 495 GD/C	B19W14C4AV12
(C37AR1)	◇	MSFC 495 GD/C	B19W14C4AV13

BETA	D1HDRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	50. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.301

LONGITUDINAL EFFECTS OF RUDDER FLARE



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(E37A31)	MSFC 495 GD/C	B19W14C4AV7
(C37AR2)	MSFC 495 GD/C	B19W14C4AV12
(C37AR1)	MSFC 495 GD/C	B19W14C4AV13

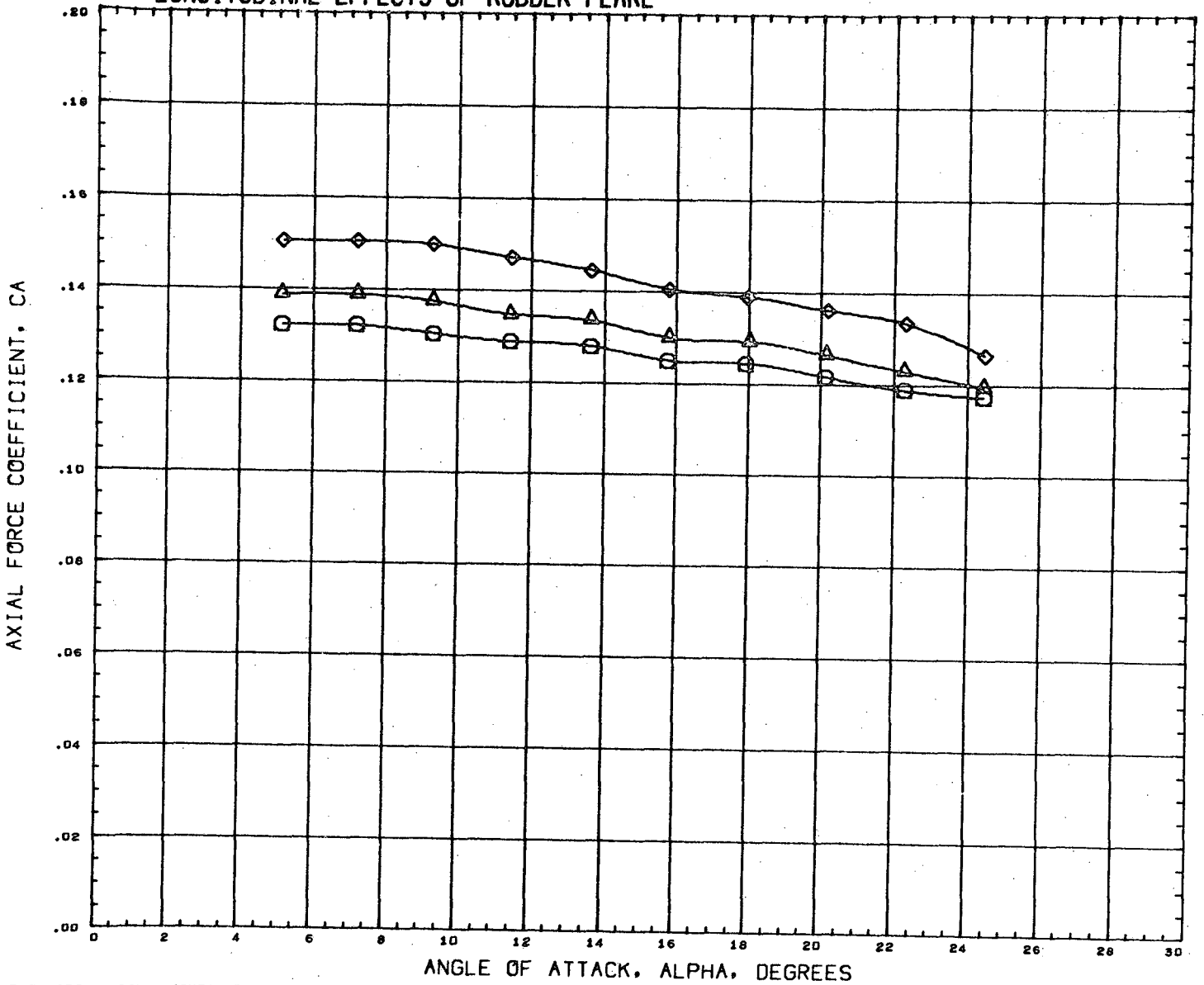
BETA	D1HDRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.958

LONGITUDINAL EFFECTS OF RUDDER FLARE



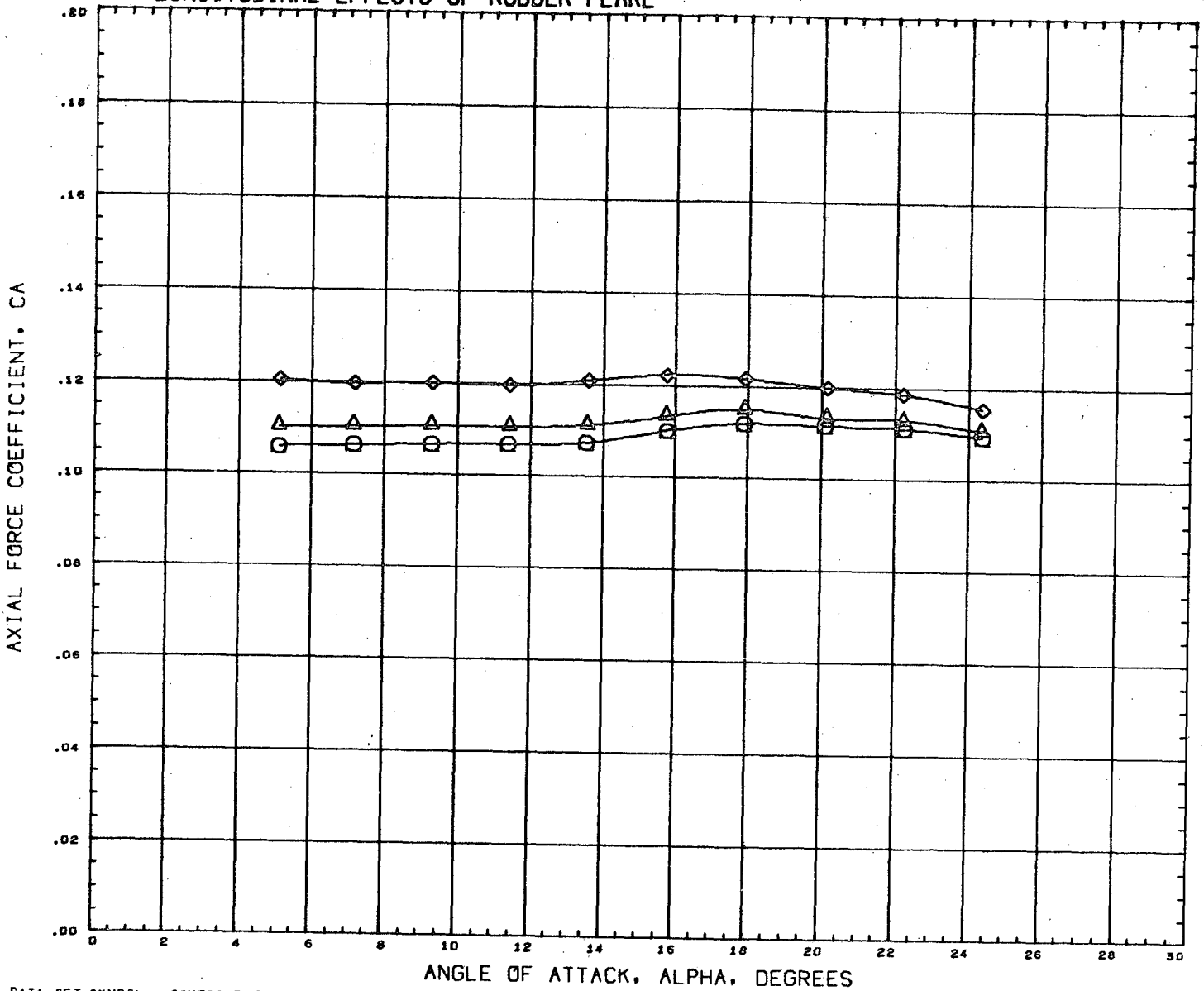
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(E37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AR2)	MSFC 495 GD/C B19W14C4AV12
(C37AR1)	MSFC 495 GD/C B19W14C4AV13

BETA	DIHDL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.301

LONGITUDINAL EFFECTS OF RUDDER FLARE



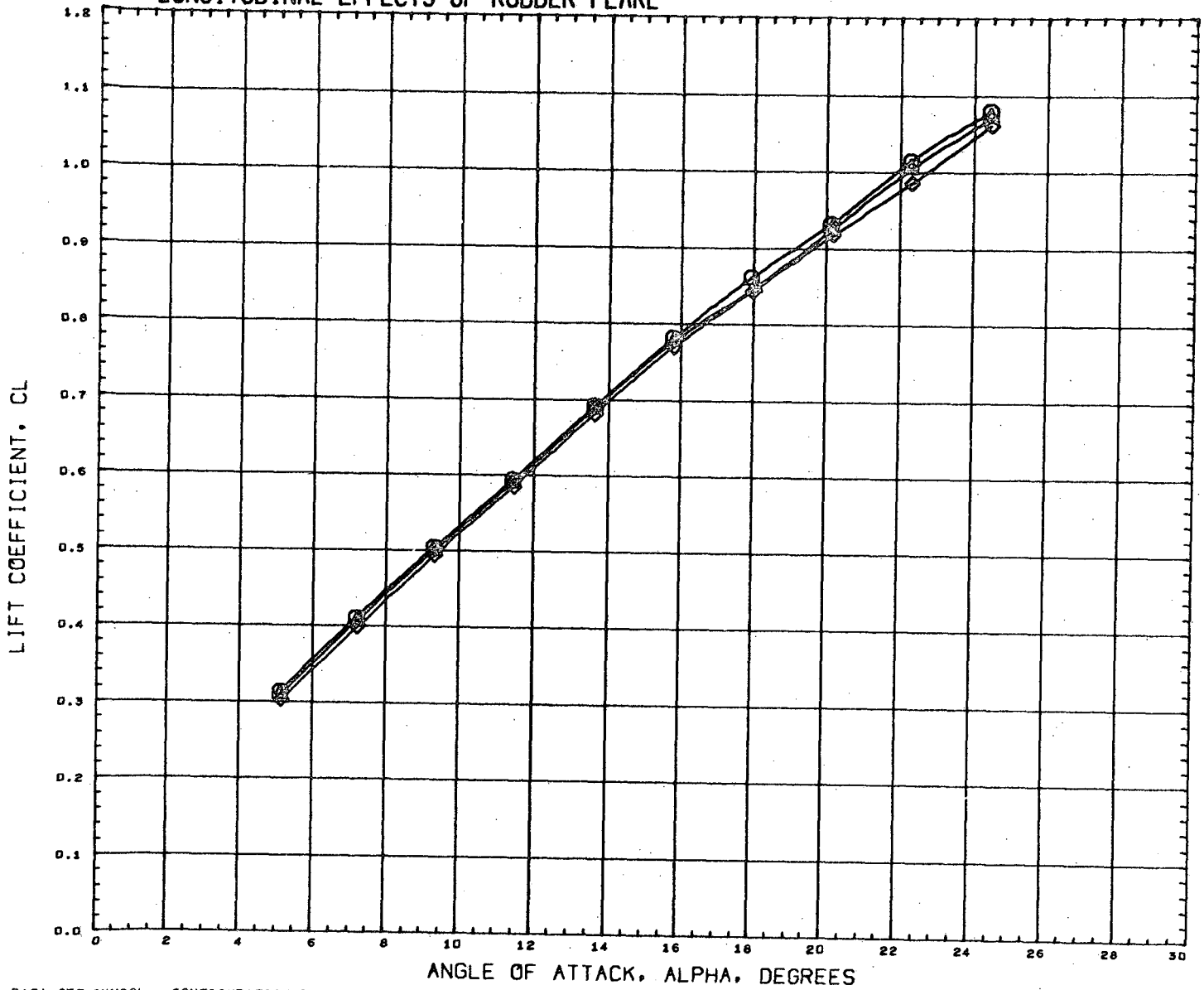
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(E37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AR2)	MSFC 495 GD/C B19W14C4AV12
(C37AR1)	MSFC 495 GD/C B19W14C4AV13

BETA	D1HDRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.958

LONGITUDINAL EFFECTS OF RUDDER FLARE



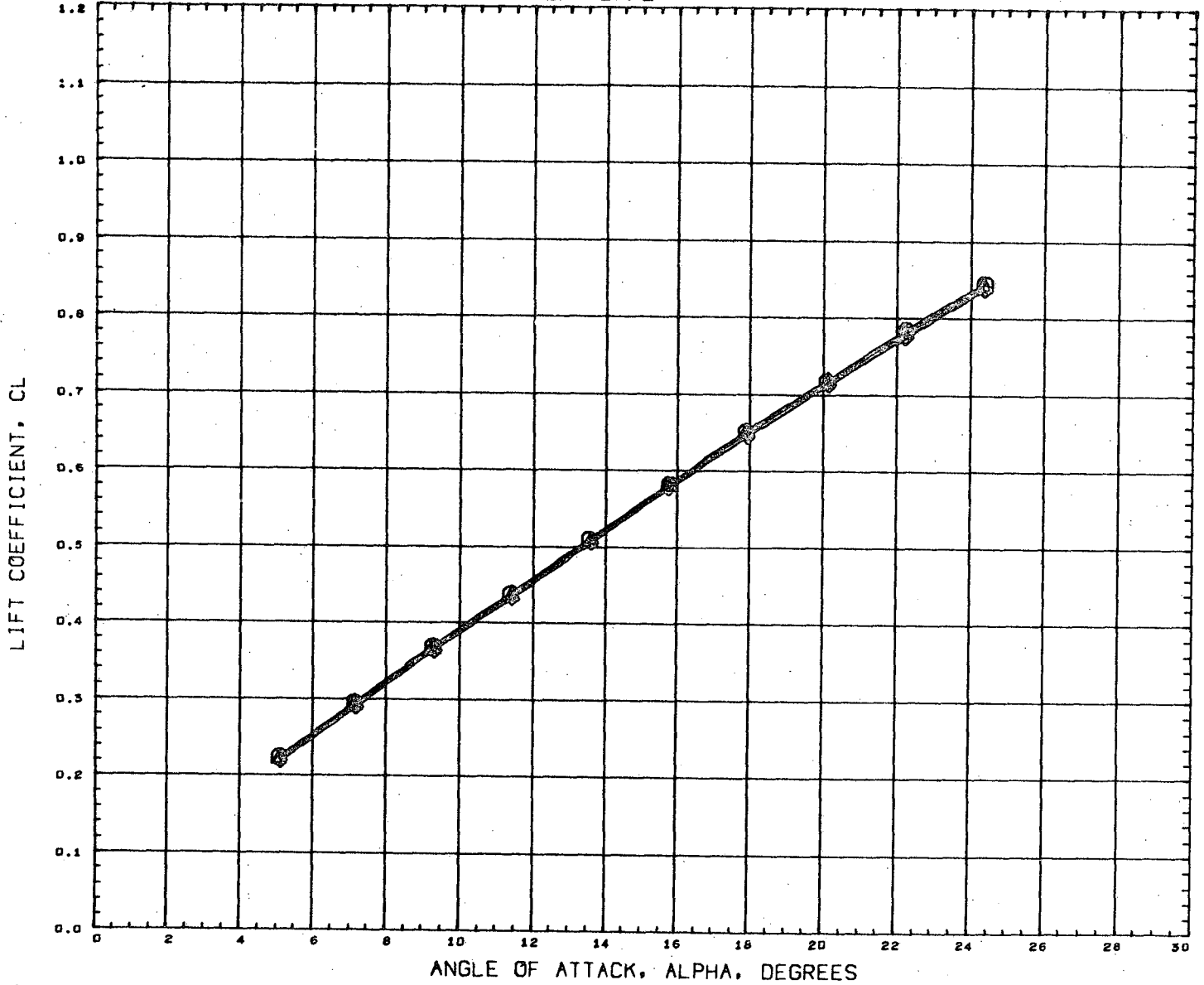
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(E37A31)	MSFC 495 GD/C	B19W14C4AV7
(C37AR2)	MSFC 495 GD/C	B19W14C4AV12
(C37AR1)	MSFC 495 GD/C	B19W14C4AV13

BETA	DIHRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.301

LONGITUDINAL EFFECTS OF RUDDER FLARE



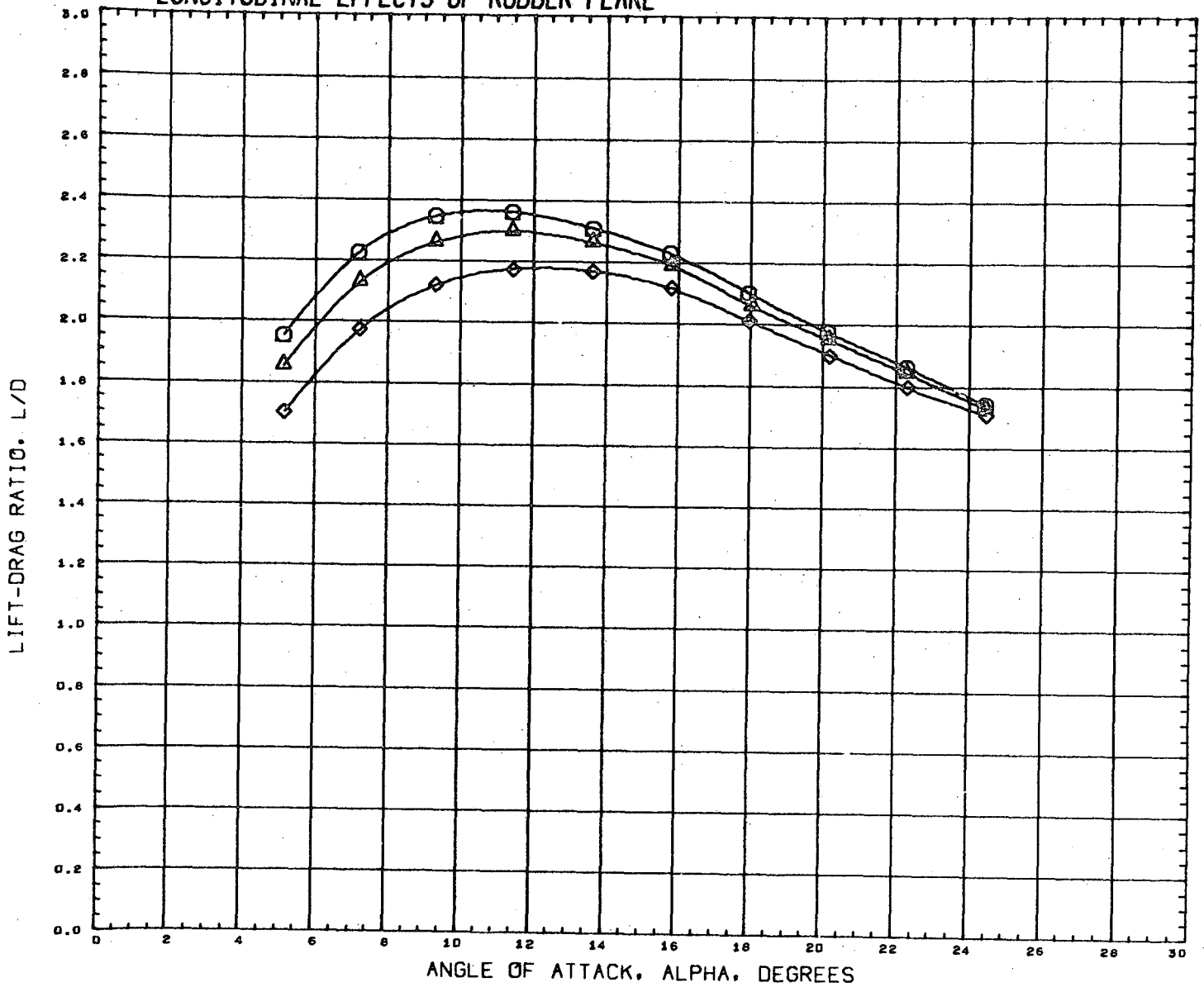
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(E37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AR2)	MSFC 495 GD/C B19W14C4AV12
(C37AR1)	MSFC 495 GD/C B19W14C4AV13

BETA	D1HDRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.958

LONGITUDINAL EFFECTS OF RUDDER FLARE



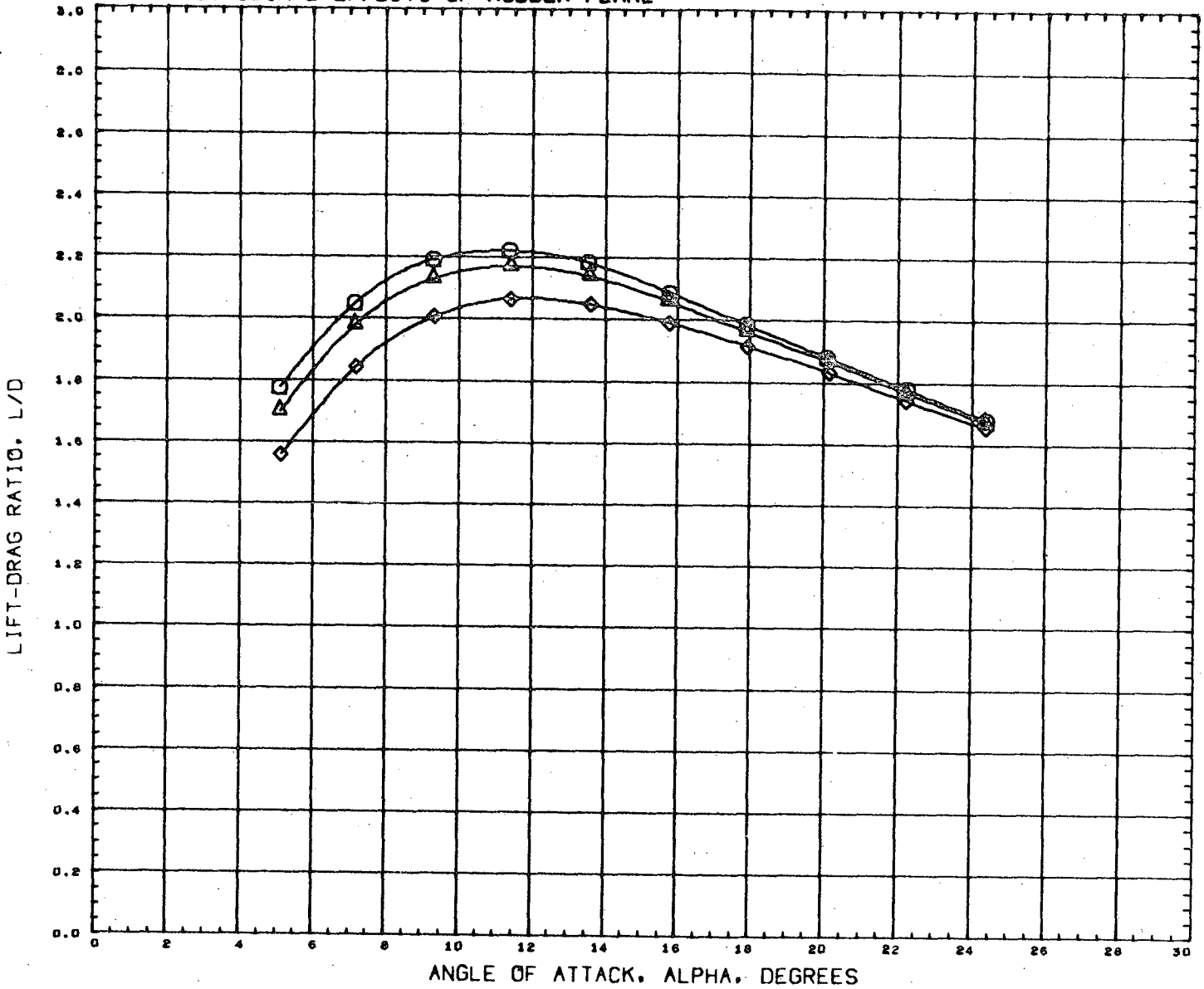
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(E37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AR2)	MSFC 495 GD/C B19W14C4AV12
(C37AR1)	MSFC 495 GD/C B19W14C4AV13

BETA	D1HDRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRF	6.6180	IN.
YMRF	0.0000	IN.
ZMRF	0.0000	IN.
SCALE	0.0035	

MACH 1.301

LONGITUDINAL EFFECTS OF RUDDER FLARE



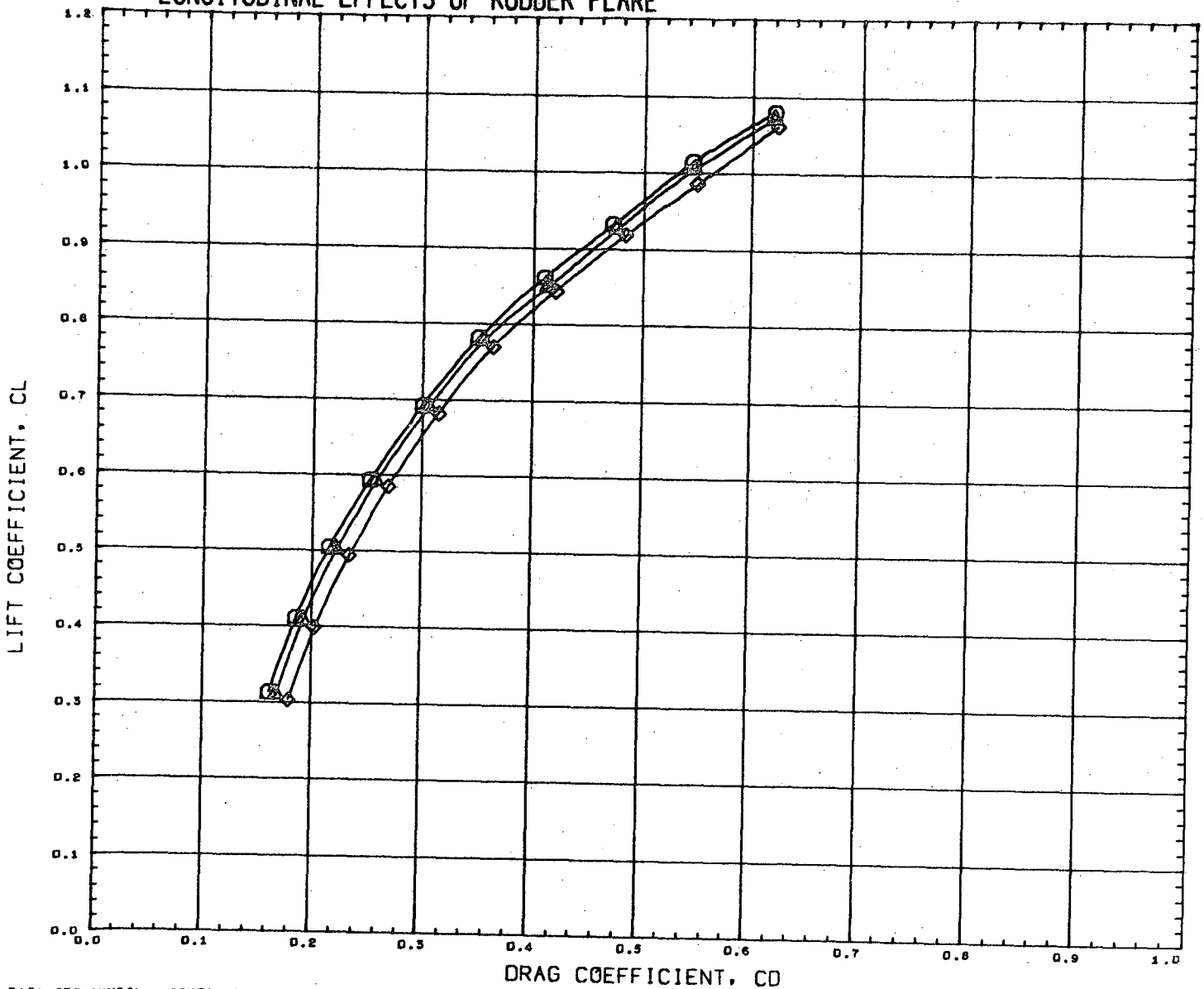
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(E37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AR2)	MSFC 495 GD/C B19W14C4AV12
(C37AR1)	MSFC 495 GD/C B19W14C4AV13

BETA	DINDRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRRP	6.6180	IN.
YMRRP	0.0000	IN.
ZMRRP	0.0000	IN.
SCALE	0.0035	

MACH 1.958

LONGITUDINAL EFFECTS OF RUDDER FLARE



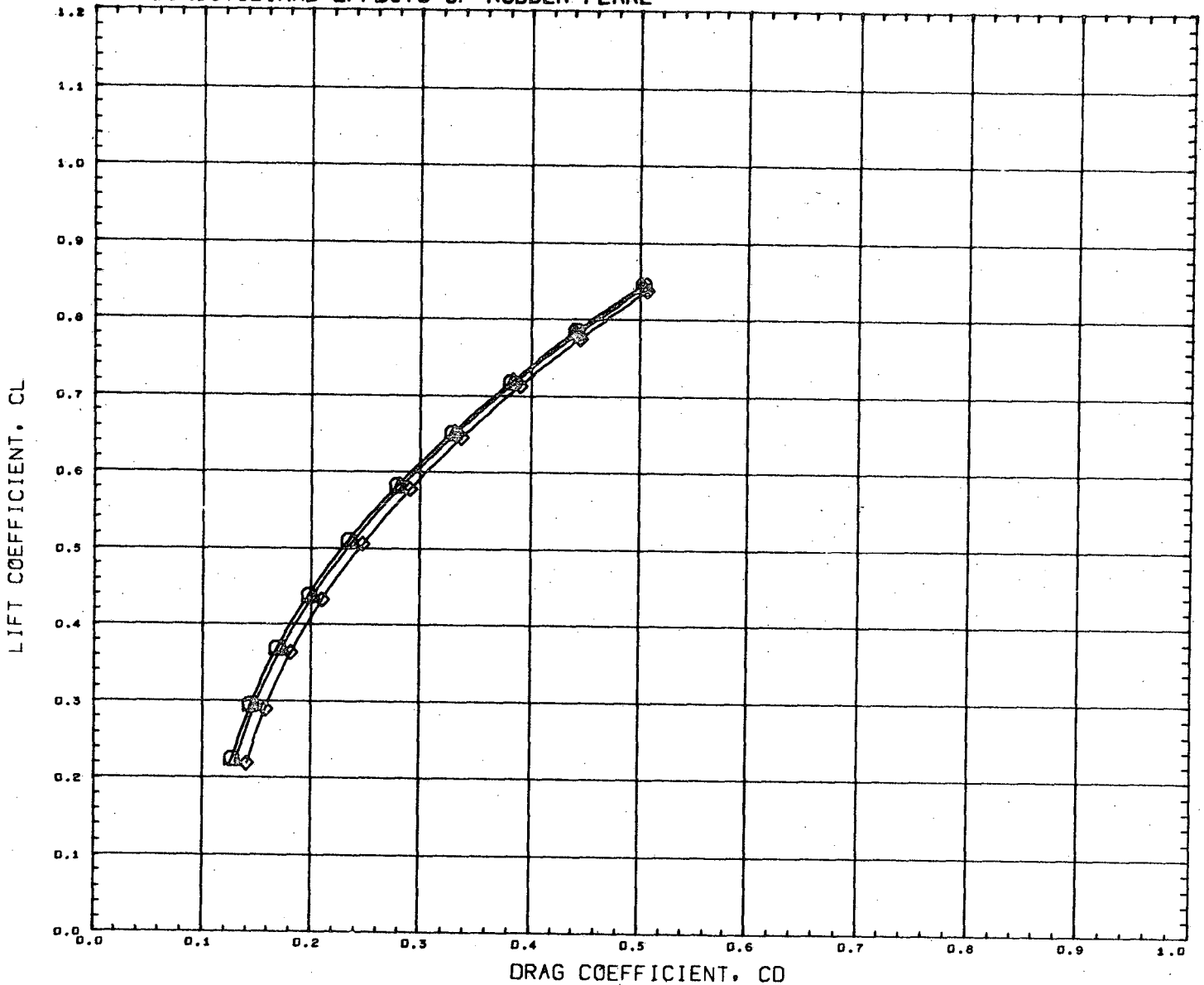
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(E37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AR2)	MSFC 495 GD/C B19W14C4AV12
(C37AR1)	MSFC 495 GD/C B19W14C4AV13

BETA	D1HDRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.301

LONGITUDINAL EFFECTS OF RUDDER FLARE



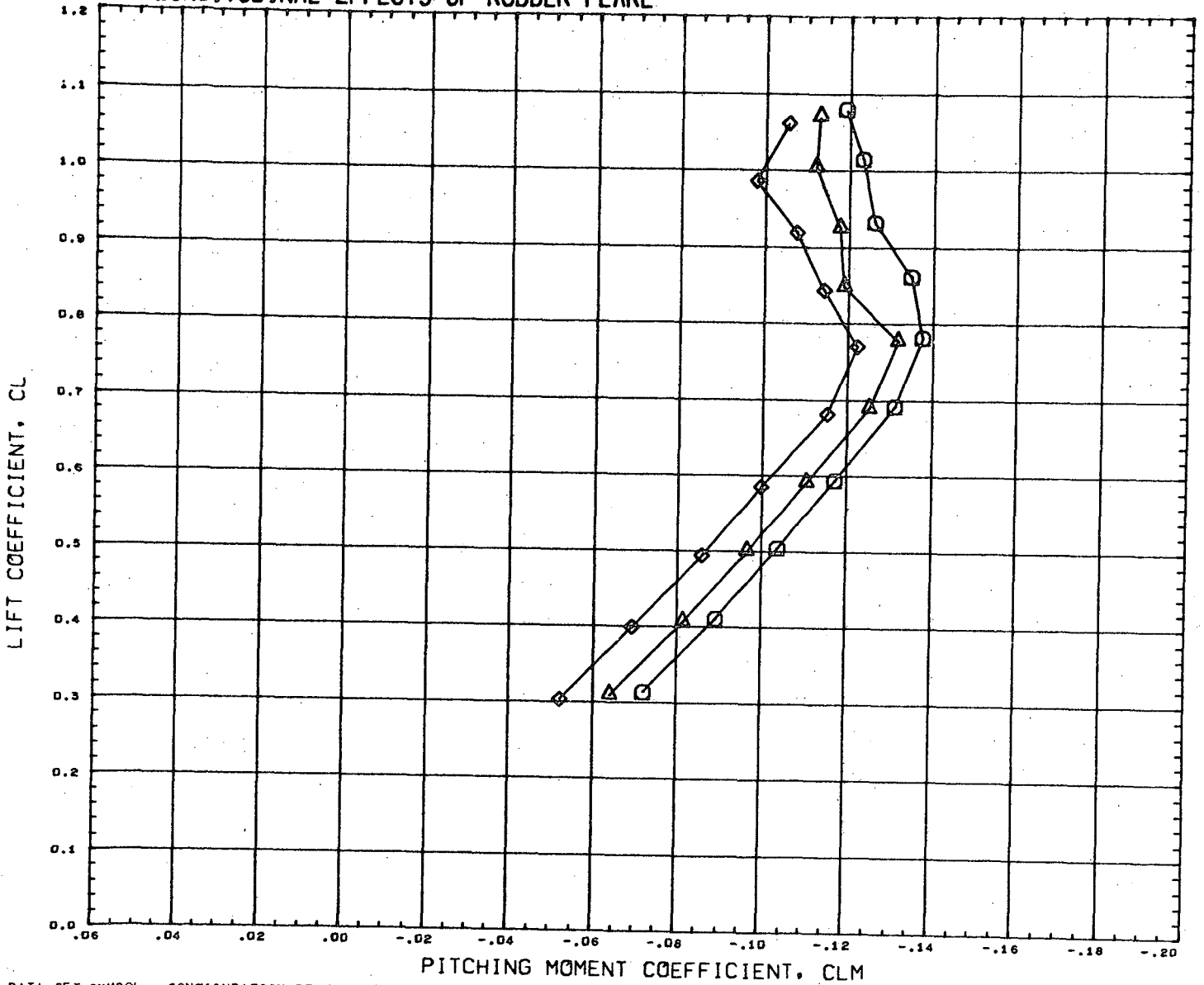
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(E37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AR2)	MSFC 495 GD/C B19W14C4AV12
(C37AR1)	MSFC 495 GD/C B19W14C4AV13

BETA	DIHDL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.958

LONGITUDINAL EFFECTS OF RUDDER FLARE



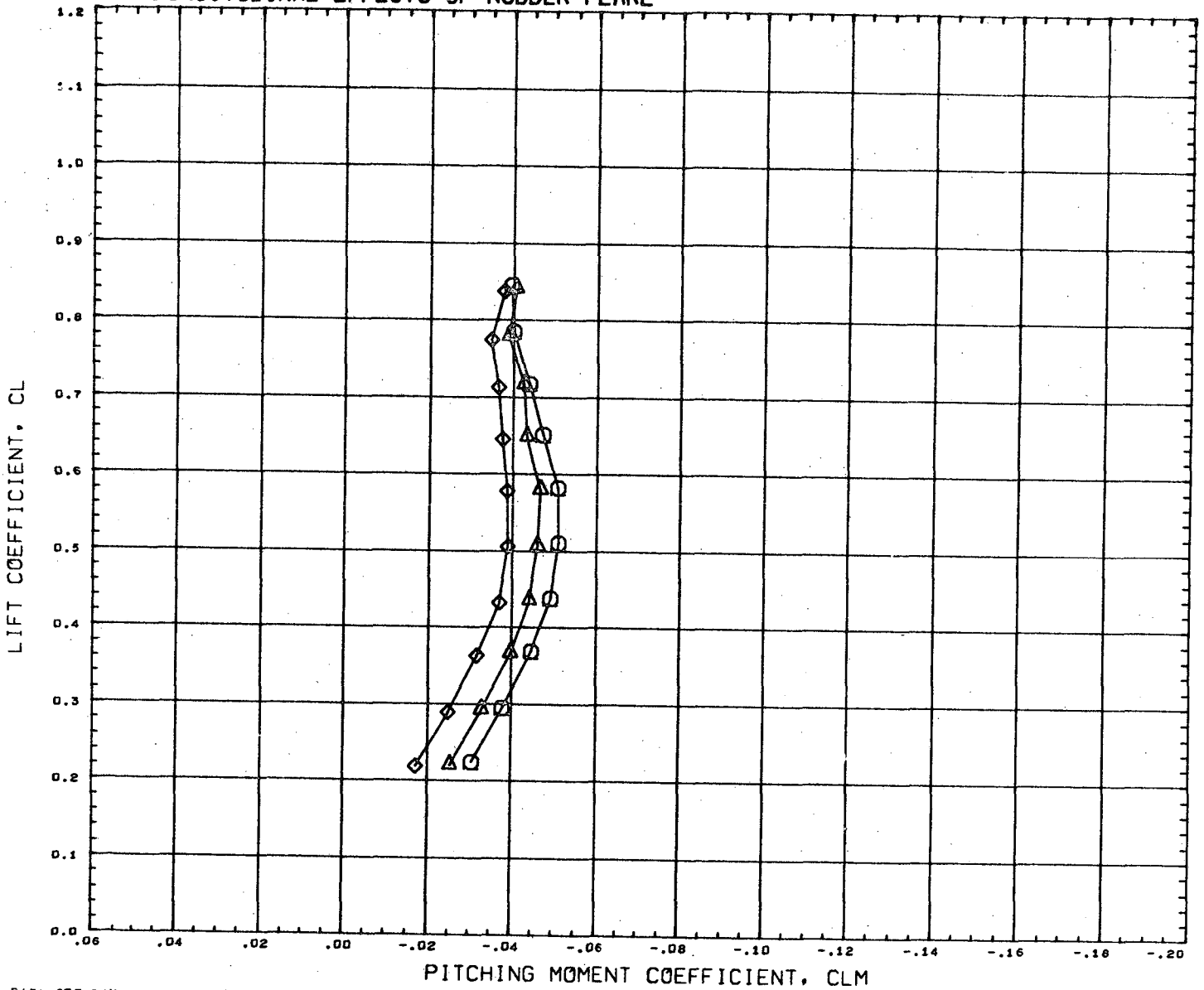
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(E37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AR2)	MSFC 495 GD/C B19W14C4AV12
(C37AR1)	MSFC 495 GD/C B19W14C4AV13

BETA	D1HDRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.301

LONGITUDINAL EFFECTS OF RUDDER FLARE



DATA SET SYMBOL CONFIGURATION DESCRIPTION

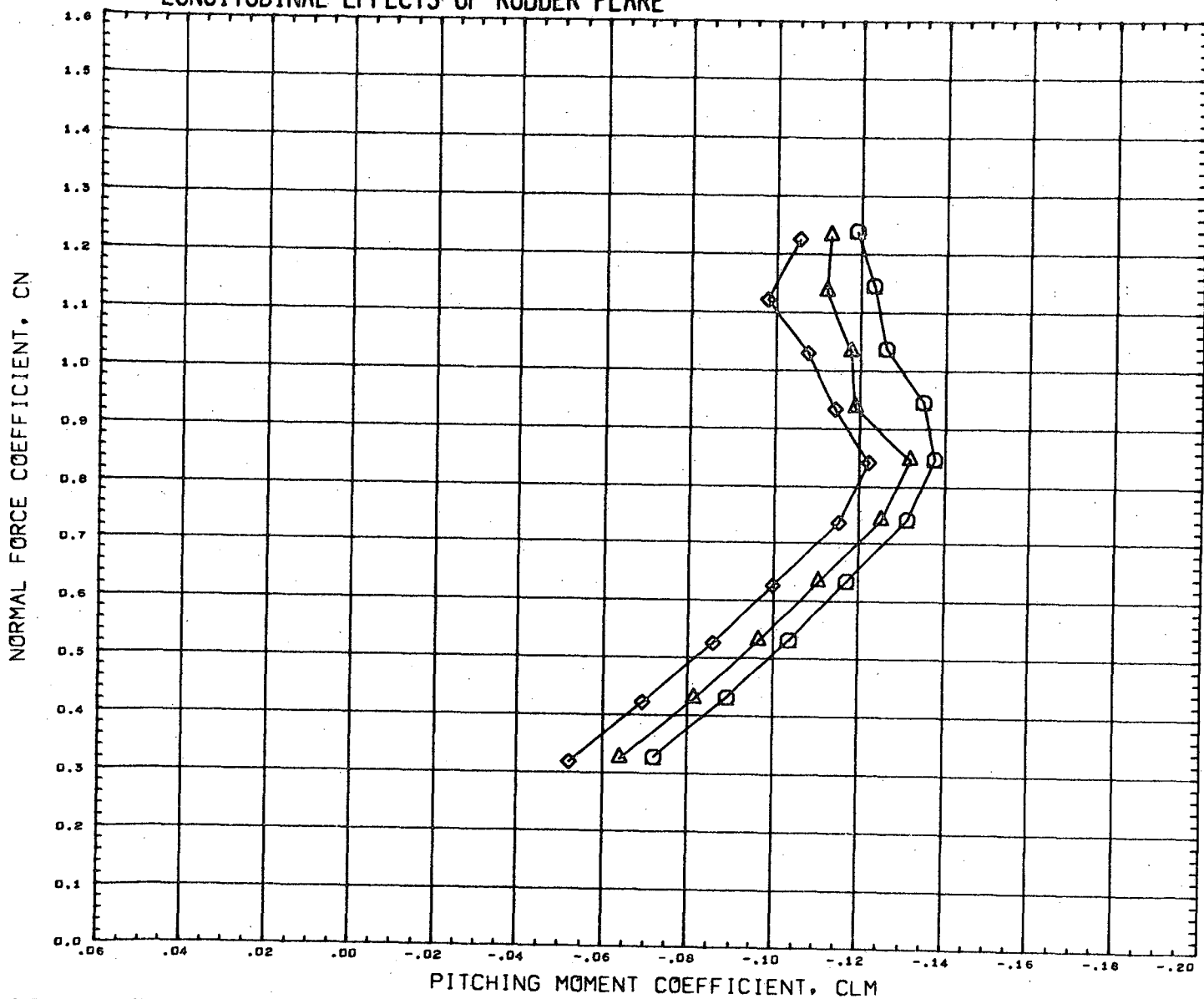
(E37A31) \square MSFC 495 GD/C B19W14C4AV7
 (C37AR2) \triangle MSFC 495 GD/C B19W14C4AV12
 (C37AR1) \diamond MSFC 495 GD/C B19W14C4AV13

BETA DIHDL RDRFLR
 0.000 3.000 0.000
 0.000 3.000 25.000
 0.000 3.000 50.000

REFERENCE INFORMATION
 SREF 15.6560 SQ.IN.
 LREF 3.0950 IN.
 BREF 6.0990 IN.
 XMRP 6.6180 IN.
 YMRP 0.0000 IN.
 ZMRP 0.0000 IN.
 SCALE 0.0035

MACH 1.958

LONGITUDINAL EFFECTS OF RUDDER FLARE



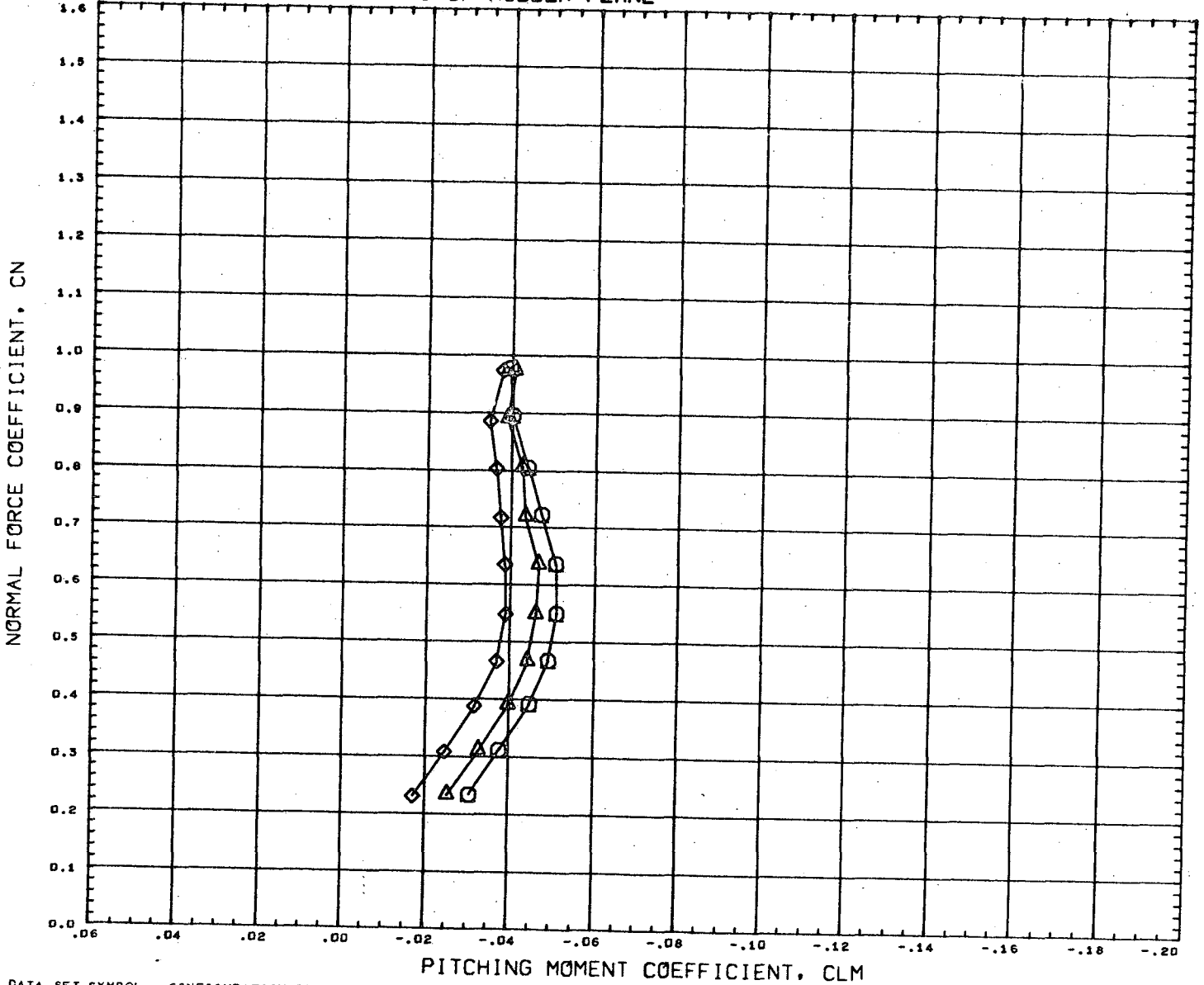
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(E37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AR2)	MSFC 495 GD/C B19W14C4AV12
(C37AR1)	MSFC 495 GD/C B19W14C4AV13

BETA	D1HDRL	RDRFLR
0.000	3.000	0.000
0.000	3.000	25.000
0.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.301

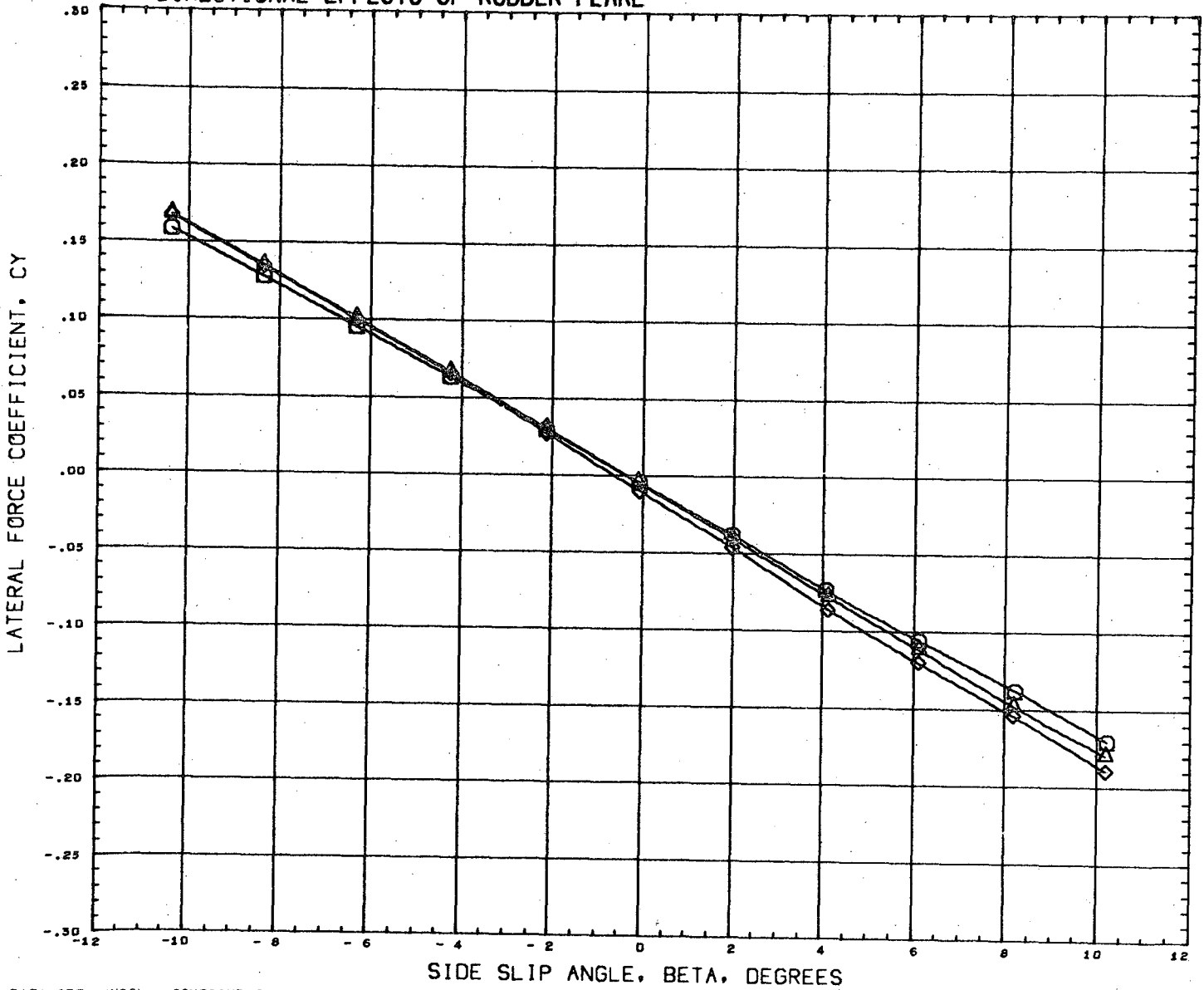
LONGITUDINAL EFFECTS OF RUDDER FLARE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DINHRL	RDRFLR	REFERENCE INFORMATION
(E37A31)	MSFC 495 GD/C B19W14C4AV7	0.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37AR2)	MSFC 495 GD/C B19W14C4AV12	0.000	3.000	25.000	LREF 3.0950 IN.
(C37AR1)	MSFC 495 GD/C B19W14C4AV13	0.000	3.000	50.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.958

DIRECTIONAL EFFECTS OF RUDDER FLARE



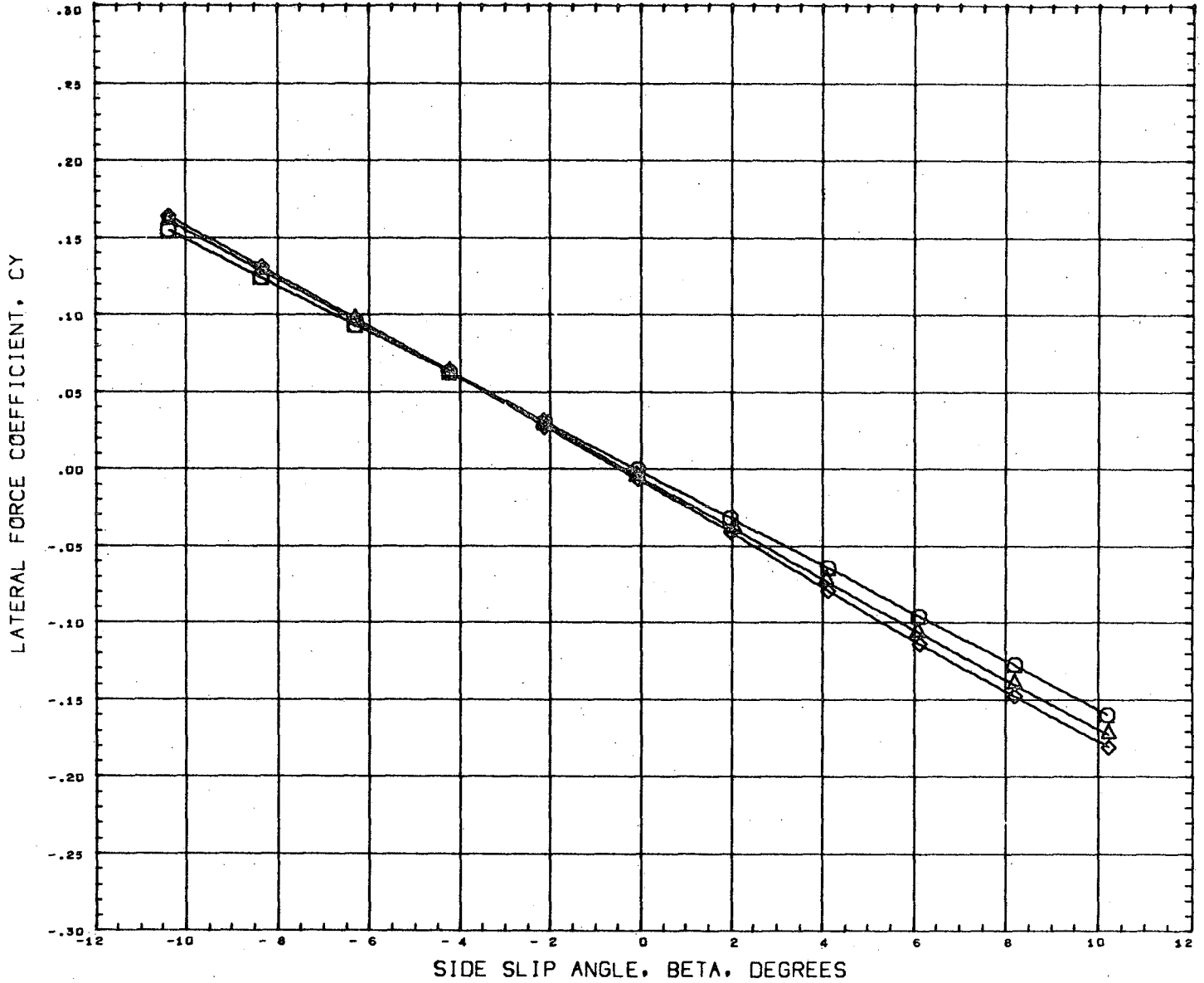
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y31)	○	MSFC 495 GD/C	B19W14C4AV7
(C37YR3)	△	MSFC 495 GD/C	B19W14C4AV12
(C37YR1)	◇	MSFC 495 GD/C	B19W14C4AV13

ALPHA	DIHDL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.306

DIRECTIONAL EFFECTS OF RUDDER FLARE



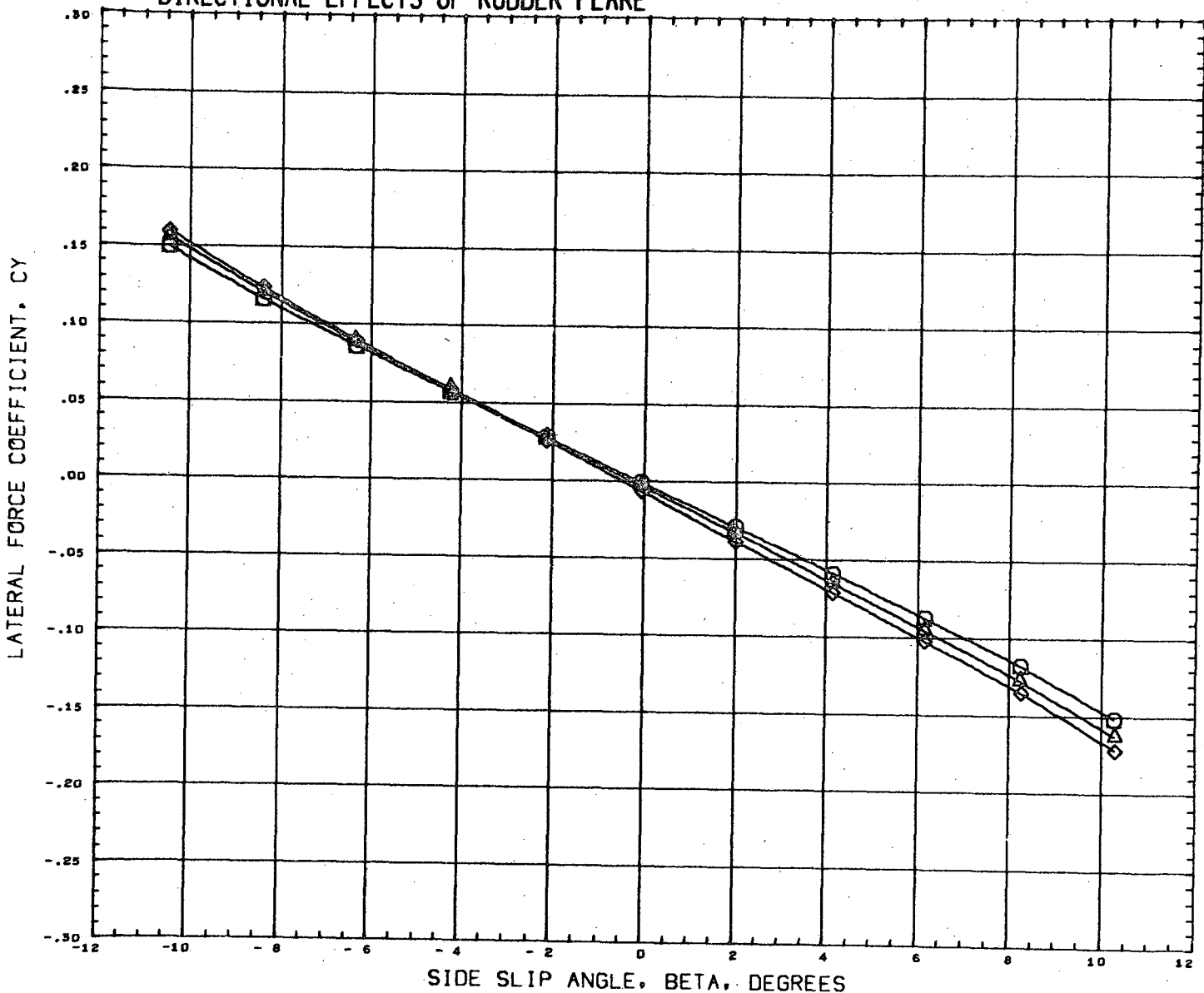
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	D1HDRL	RDRFLR
(C37Y31)	MSFC 495 GD/C B19W14C4AV7	6.000	3.000	0.000
(C37YR3)	MSFC 495 GD/C B19W14C4AV12	6.000	3.000	25.000
(C37YR1)	MSFC 495 GD/C B19W14C4AV13	6.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.464

A

DIRECTIONAL EFFECTS OF RUDDER FLARE



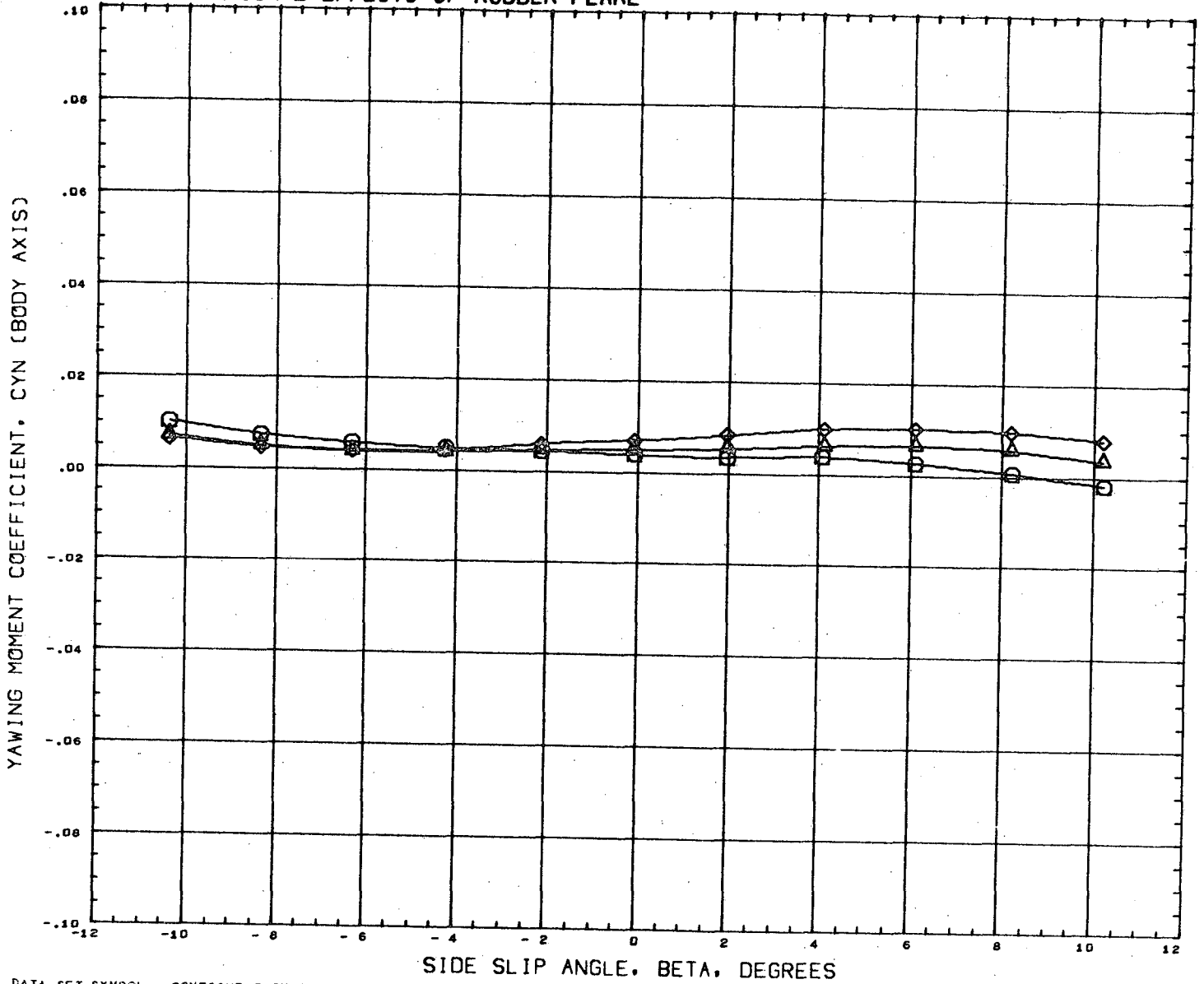
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37YR3)	MSFC 495 GD/C B19W14C4AV12
(C37YR1)	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.967

DIRECTIONAL EFFECTS OF RUDDER FLARE



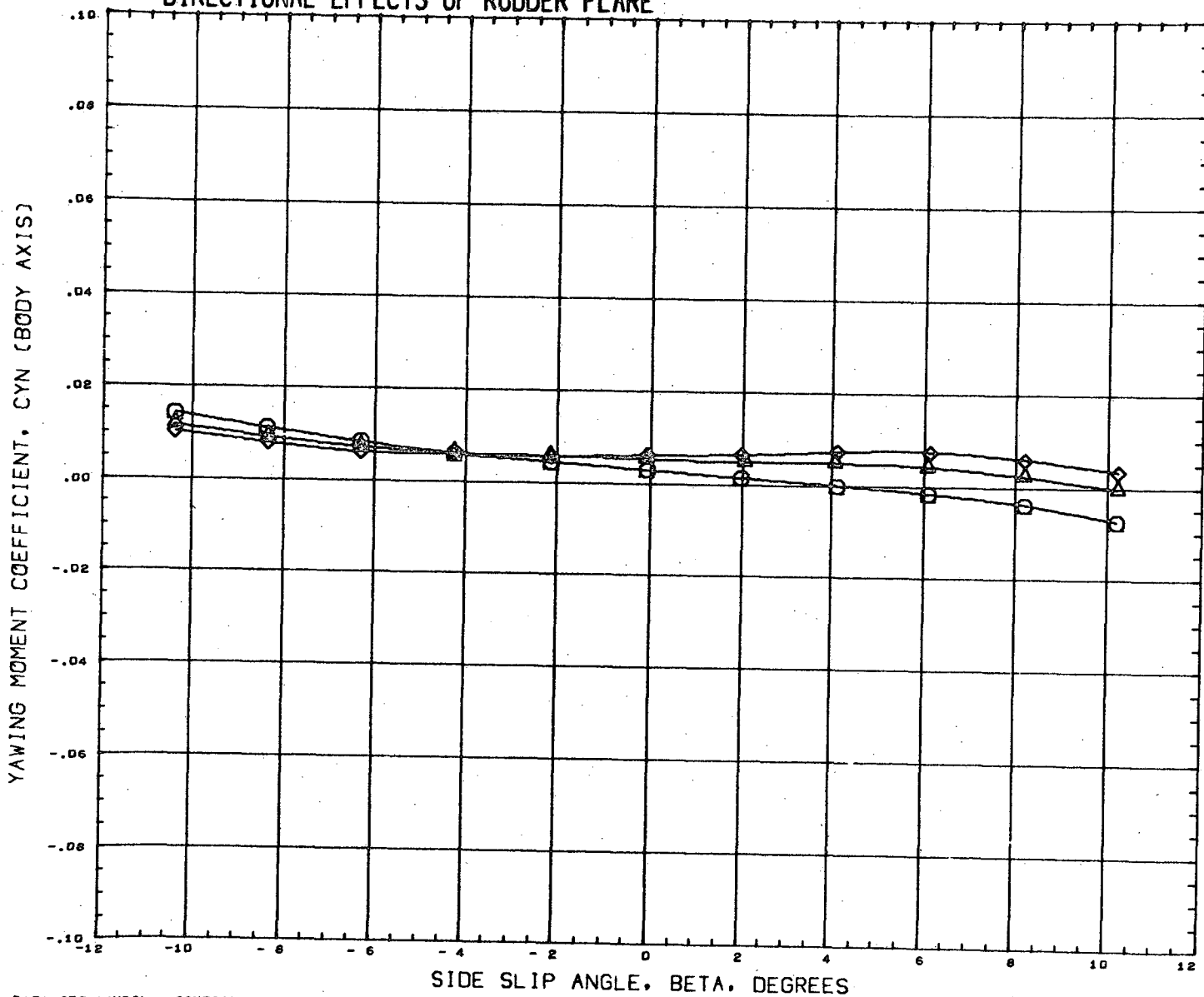
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y31)	MSFC 495	GD/C B19W14C4AV7
(C37YR3)	MSFC 495	GD/C B19W14C4AV12
(C37YR1)	MSFC 495	GD/C B19W14C4AV13

ALPHA	DIHDRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.306

DIRECTIONAL EFFECTS OF RUDDER FLARE



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37YR3)	MSFC 495 GD/C	B19W14C4AV12
(C37YR1)	MSFC 495 GD/C	B19W14C4AV13

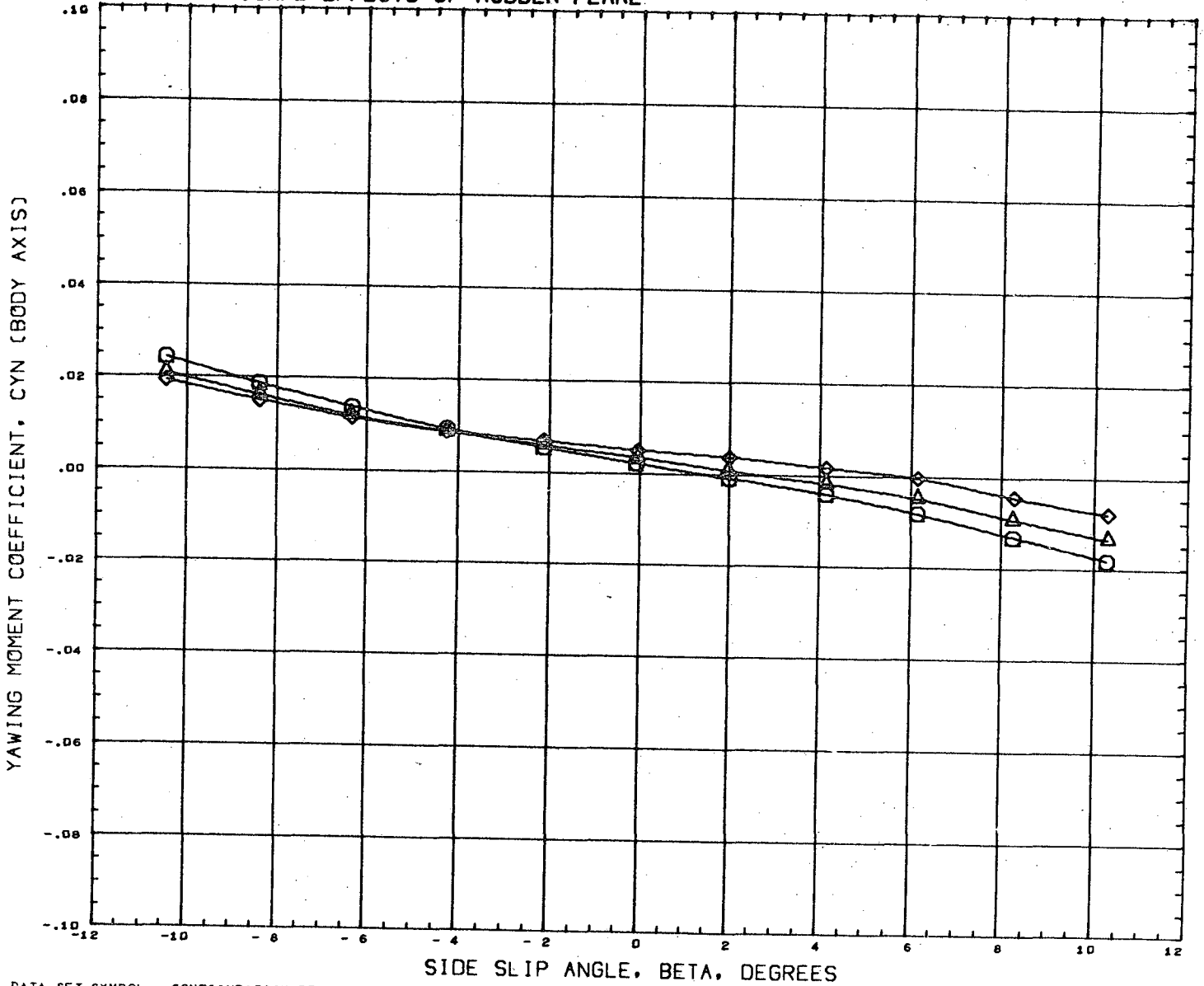
ALPHA	D1HDRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRR	0.0000	IN.
SCALE	0.0035	

HACH 1.464

DIRECTIONAL EFFECTS OF RUDDER FLARE



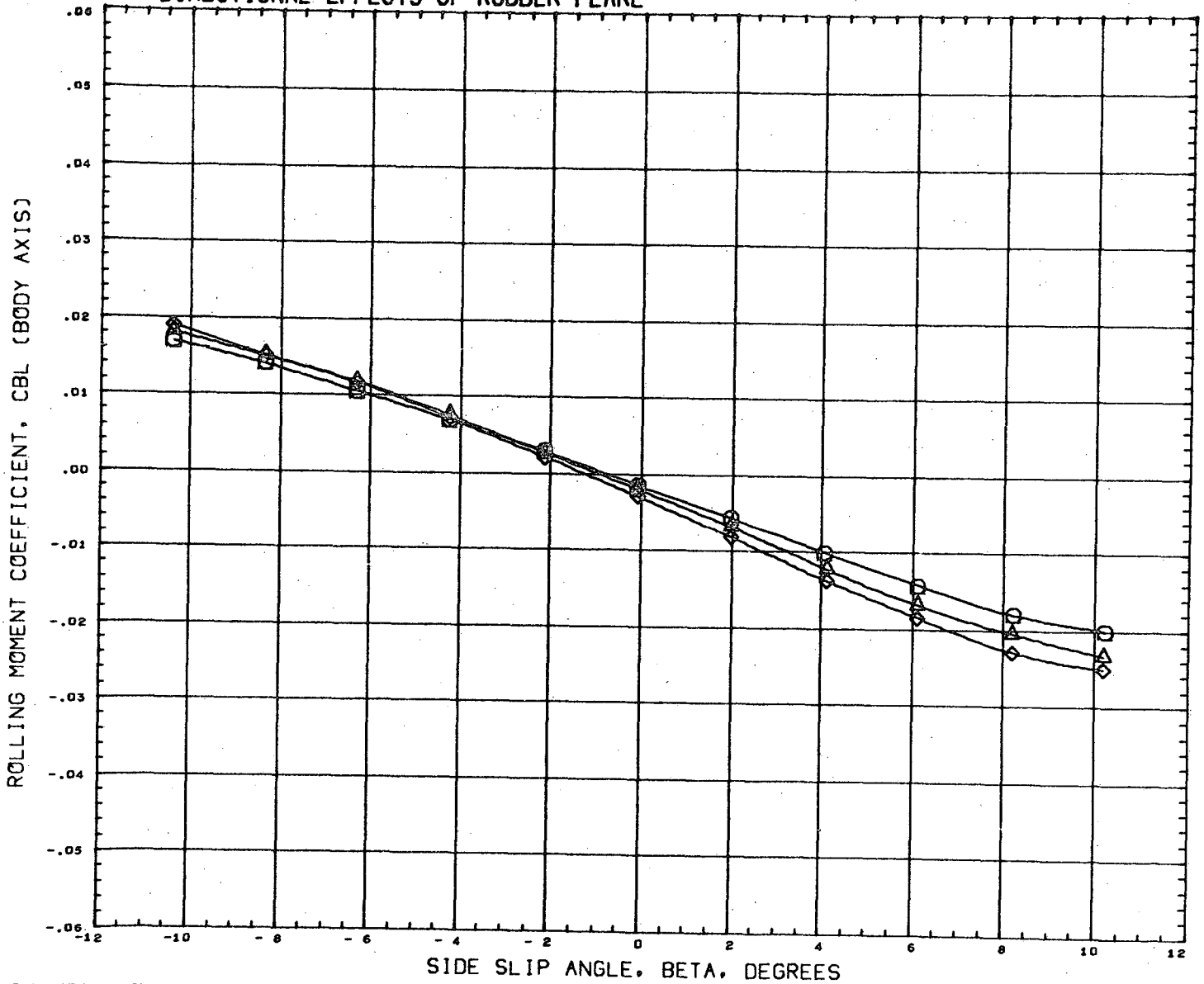
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37YR3)	MSFC 495 GD/C	B19W14C4AV12
(C37YR1)	MSFC 495 GD/C	B19W14C4AV13

ALPHA	DIHDL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.967

DIRECTIONAL EFFECTS OF RUDDER FLARE



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37YR3)	MSFC 495 GD/C	B19W14C4AV12
(C37YR1)	MSFC 495 GD/C	B19W14C4AV13

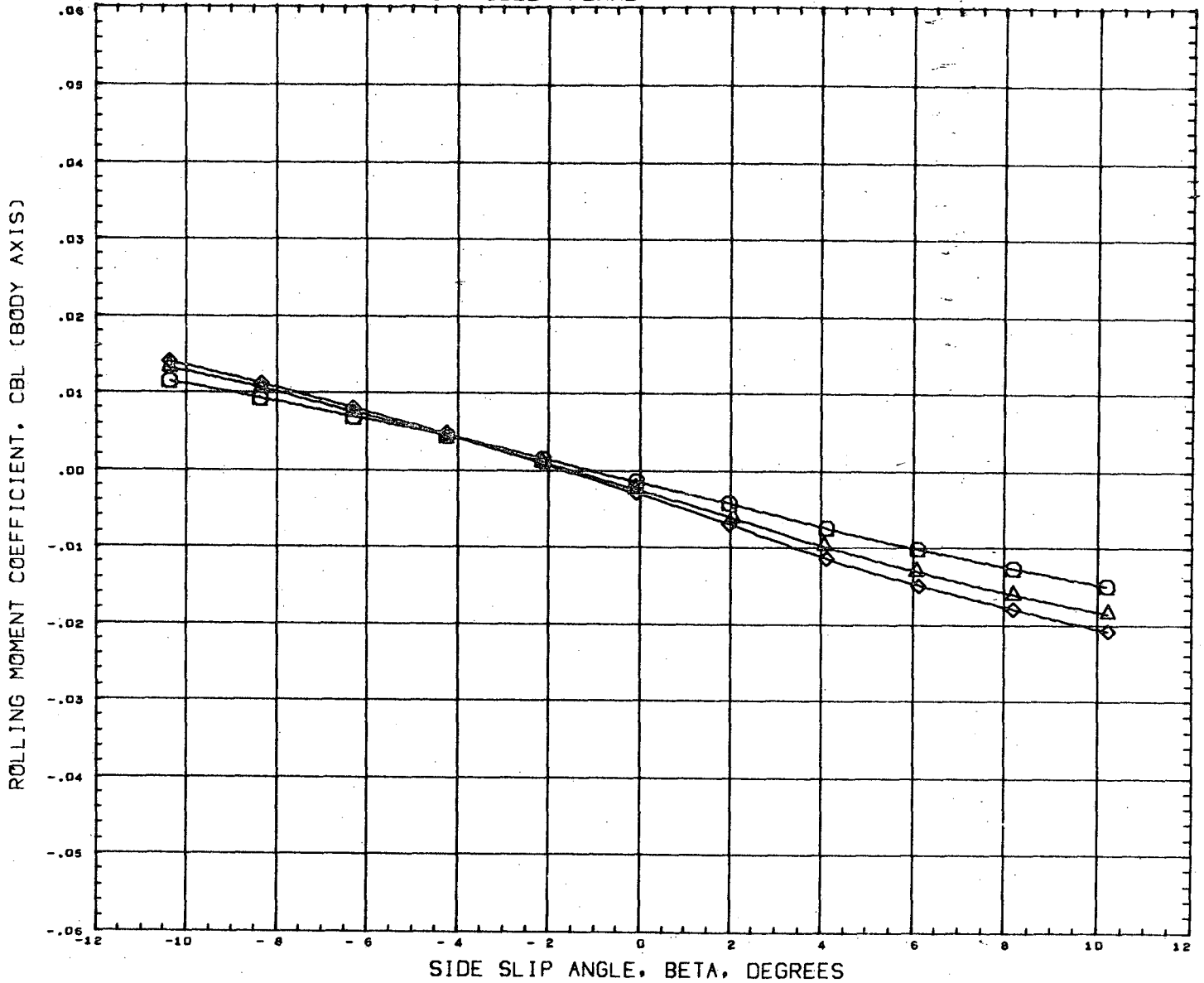
ALPHA	DIHRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
-6.000	3.000	50.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.306

DIRECTIONAL EFFECTS OF RUDDER FLARE



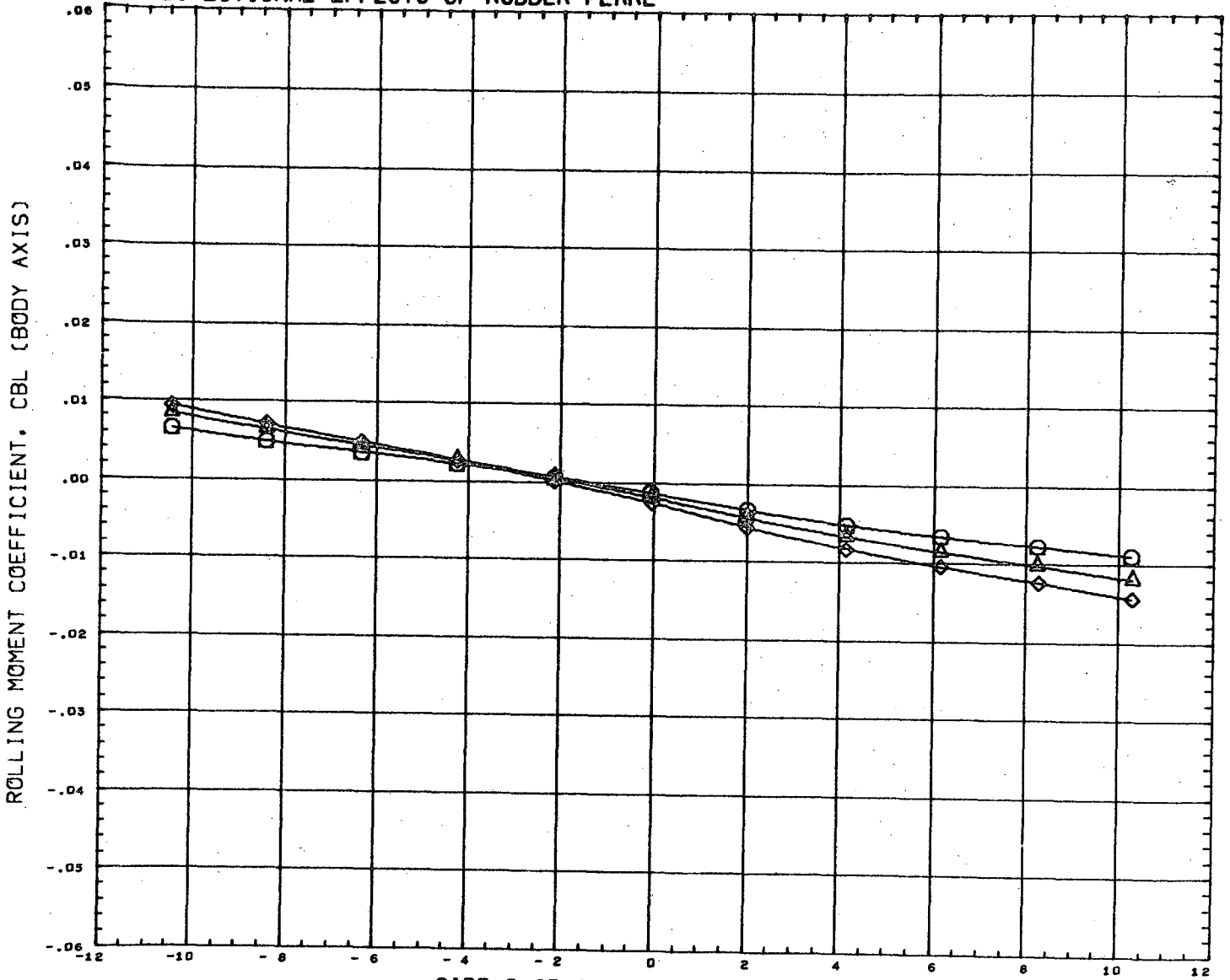
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y31)	○	MSFC 495 GD/C	B19W14C4AV7
(C37YR3)	△	MSFC 495 GD/C	B19W14C4AV12
(C37YR1)	◇	MSFC 495 GD/C	B19W14C4AV13

ALPHA	DIHDRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.464

DIRECTIONAL EFFECTS OF RUDDER FLARE



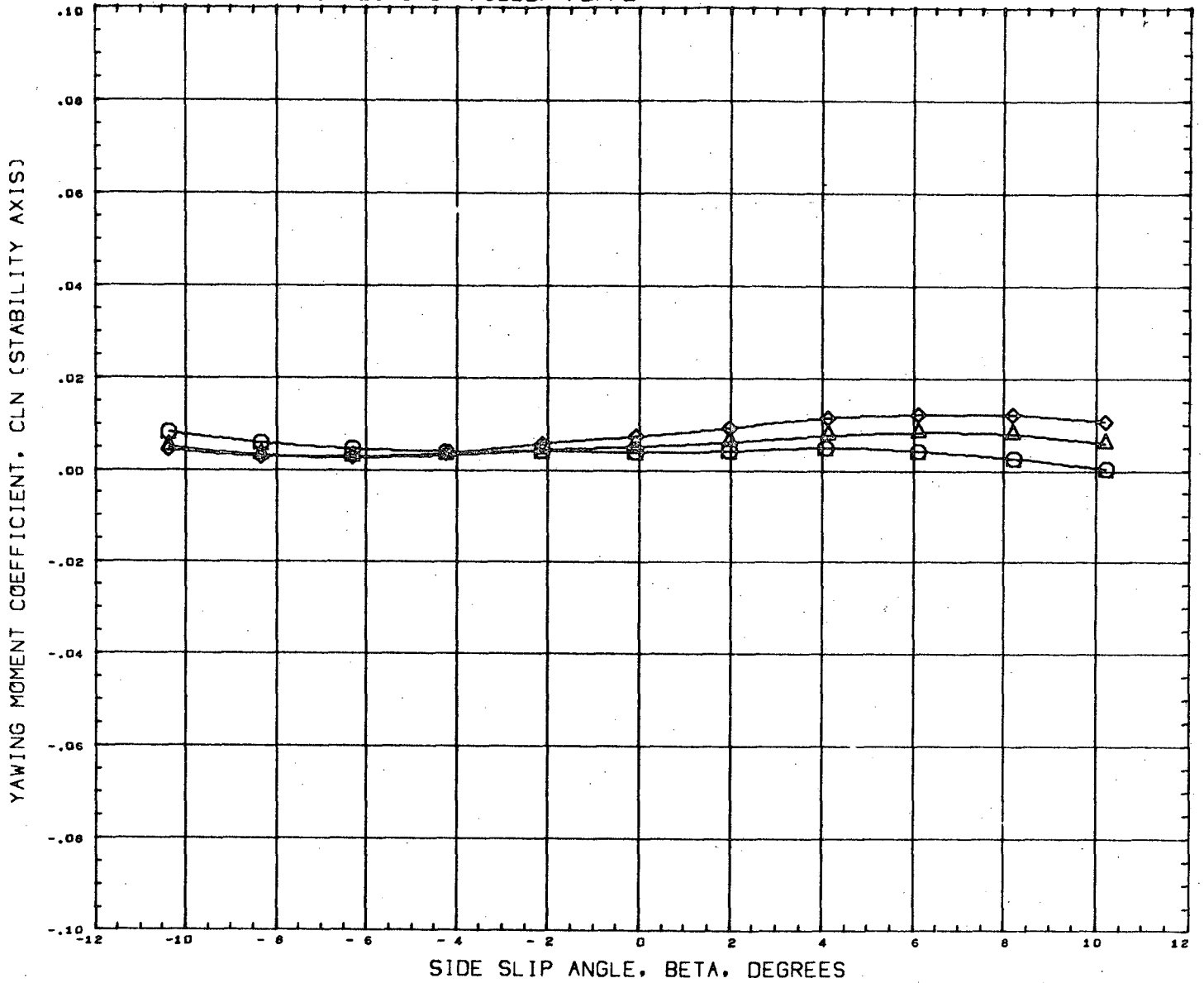
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37YR3)	MSFC 495 GD/C B19W14C4AV12
(C37YR1)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	sq. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.967

DIRECTIONAL EFFECTS OF RUDDER FLARE



DATA SET SYMBOL	SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	○	MSFC 495 GD/C B19W14C4AV7
(C37YR3)	△	MSFC 495 GD/C B19W14C4AV12
(C37YR1)	◇	MSFC 495 GD/C B19W14C4AV13

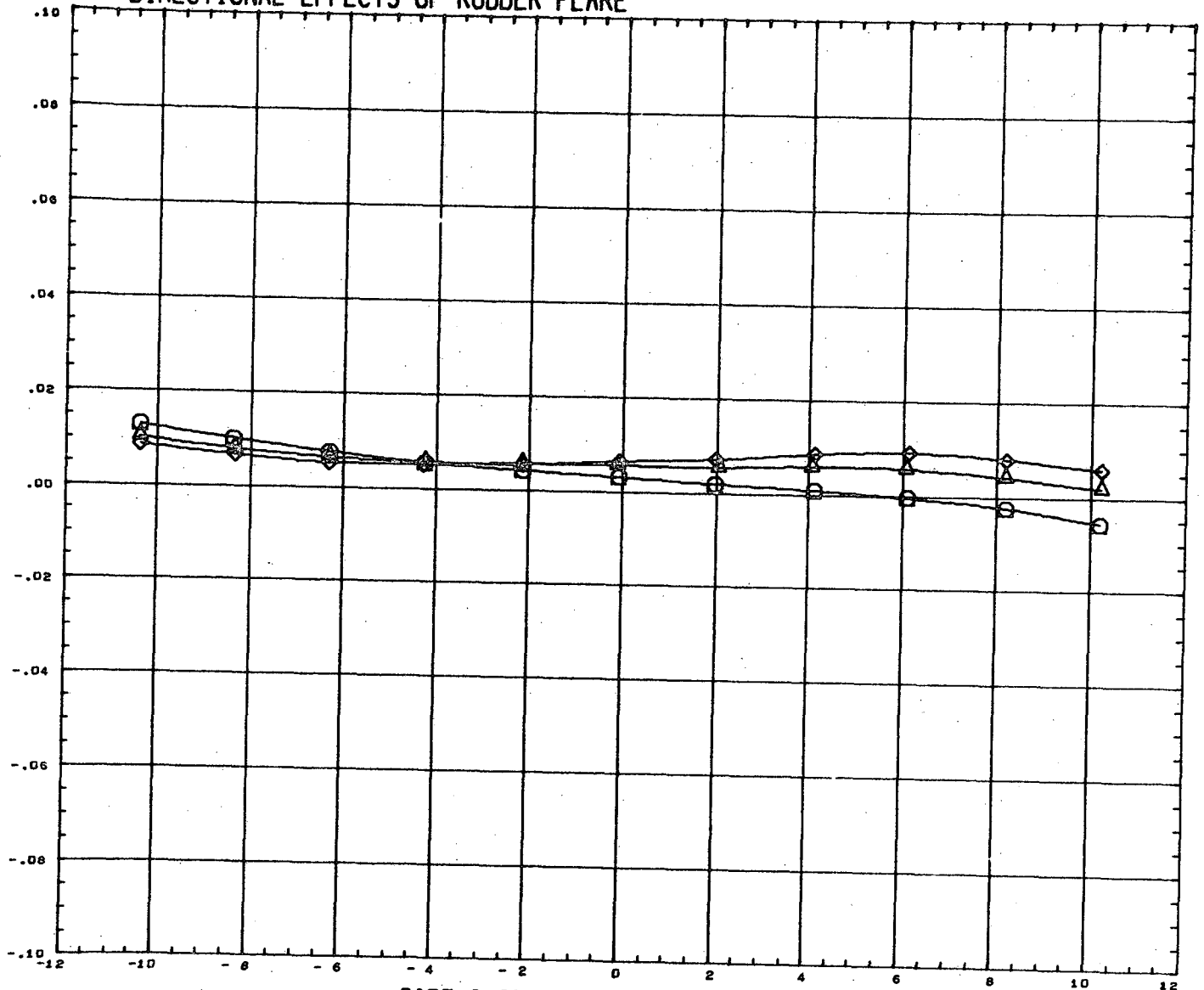
ALPHA	DIHDL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.306

DIRECTIONAL EFFECTS OF RUDDER FLARE

YAWING MOMENT COEFFICIENT, CLN (STABILITY AXIS)



SIDE SLIP ANGLE, BETA, DEGREES

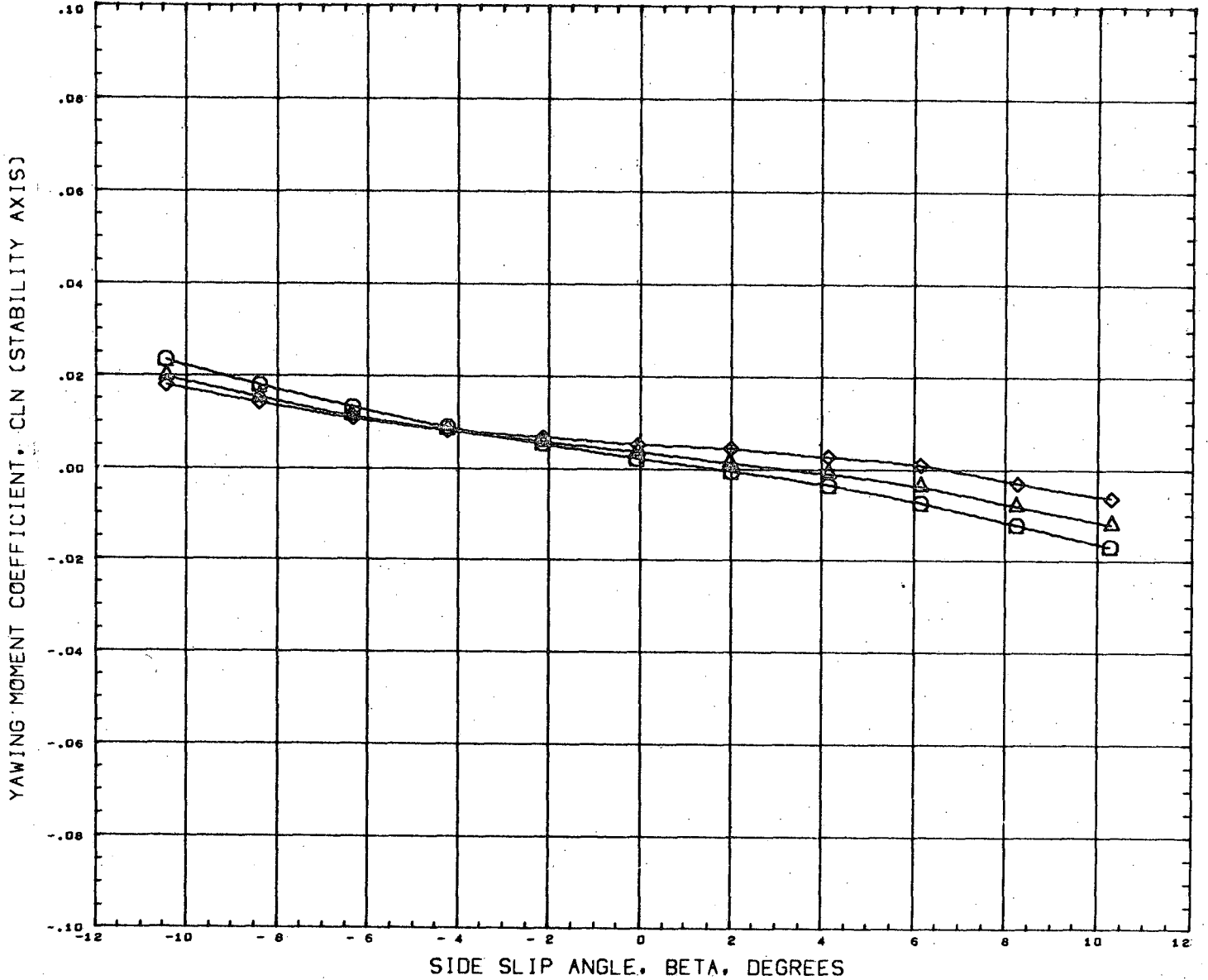
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37YR3)	MSFC 495 GD/C	B19W14C4AV12
(C37YR1)	MSFC 495 GD/C	B19W14C4AV13

ALPHA	DINDRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.464

DIRECTIONAL EFFECTS OF RUDDER FLARE



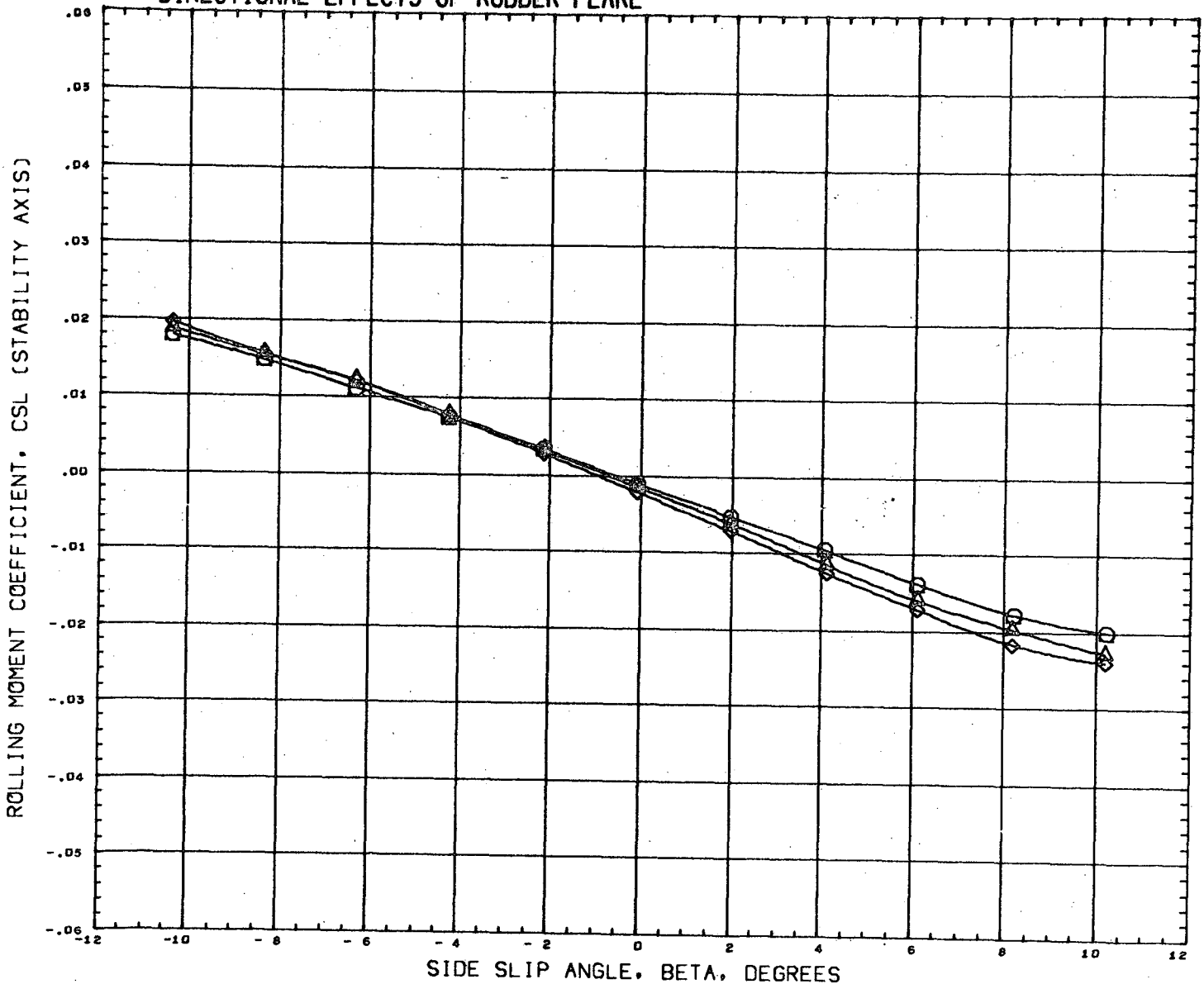
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37YR3)	MSFC 495 GD/C B19W14C4AV12
(C37YR1)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.967

DIRECTIONAL EFFECTS OF RUDDER FLARE



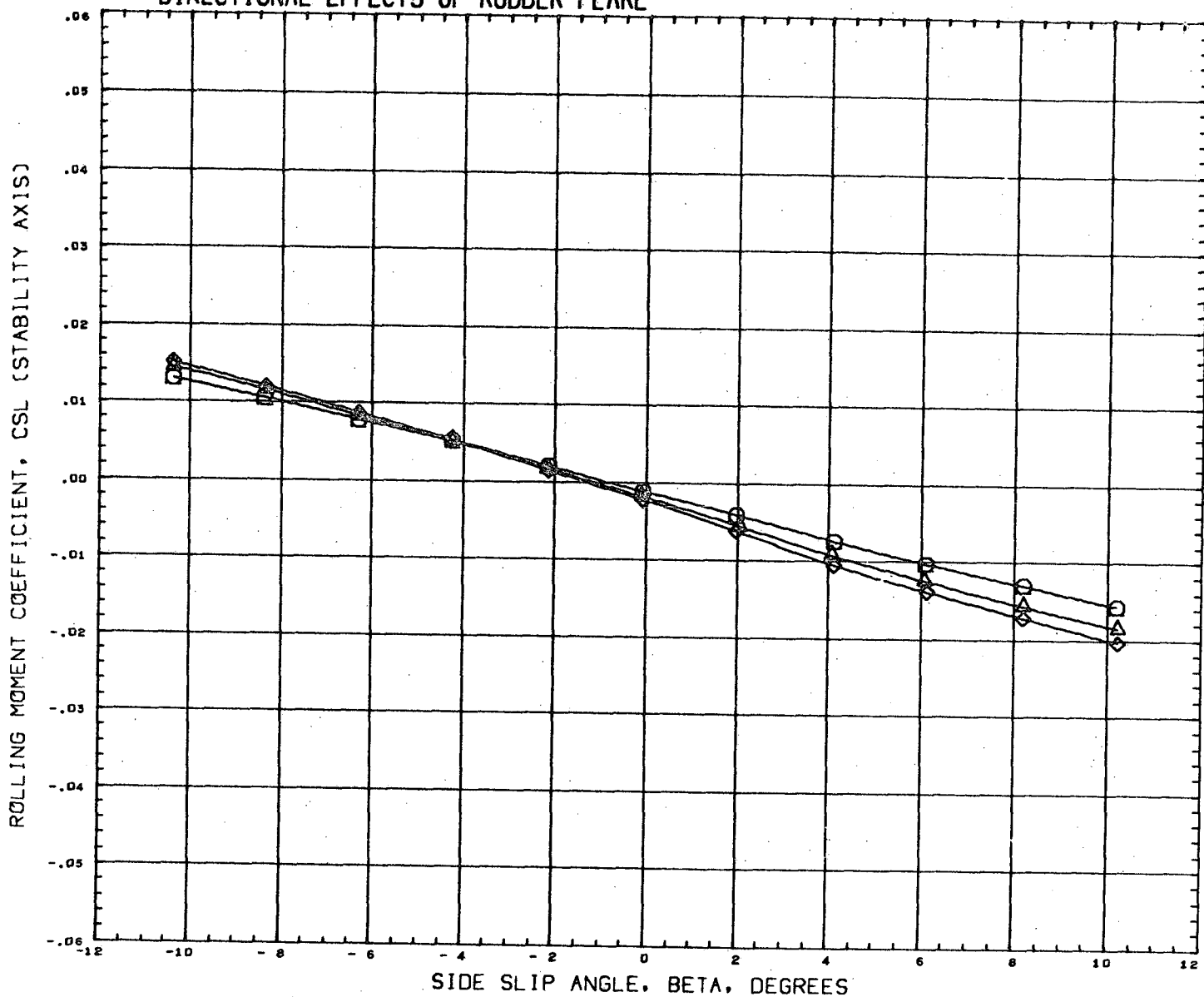
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31)	MSFC 495 GD/C B19W14C4AV7
(C37YR3)	MSFC 495 GD/C B19W14C4AV12
(C37YR1)	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.306

DIRECTIONAL EFFECTS OF RUDDER FLARE



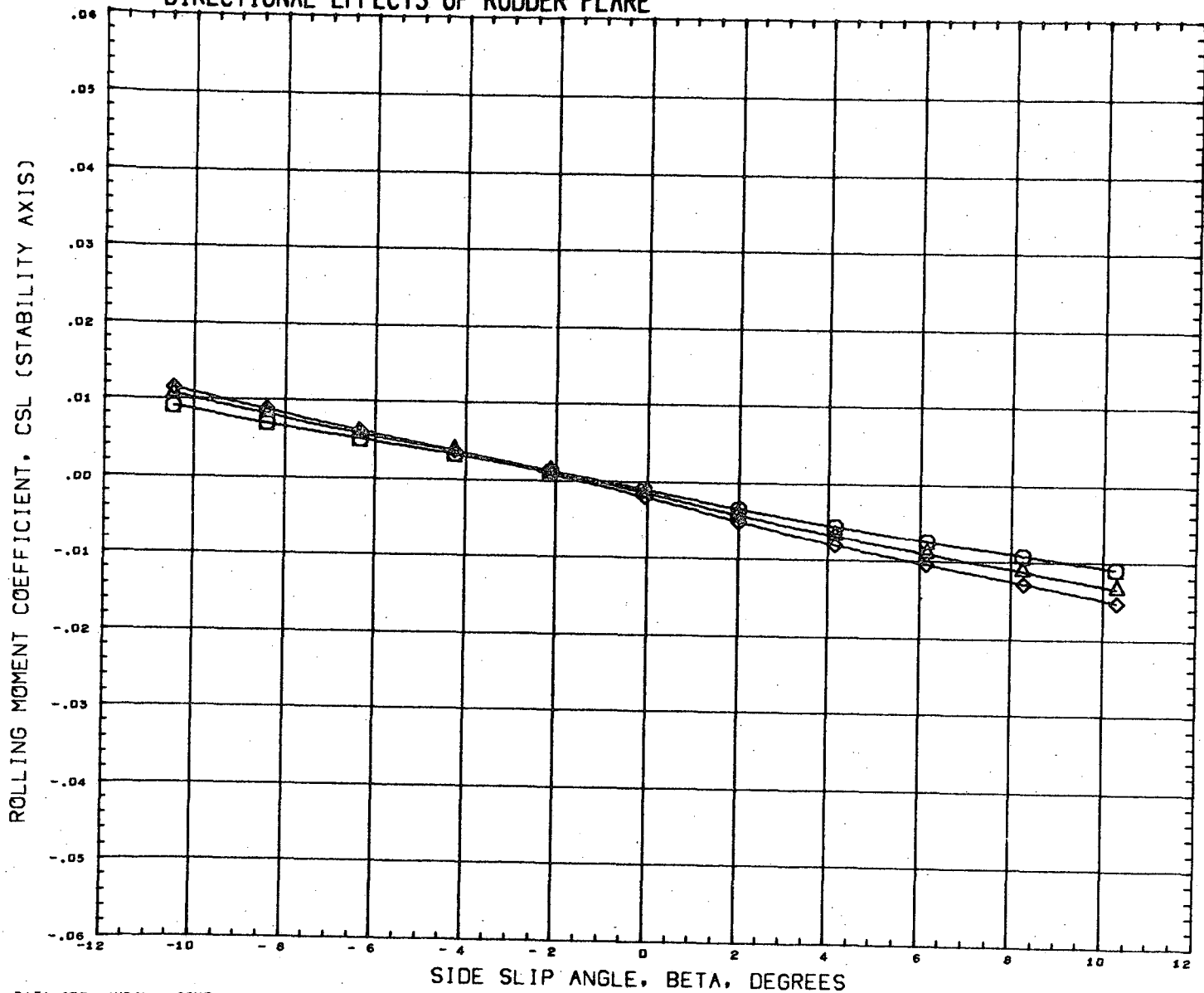
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y31)	MSFC 495 GD/C	B19W14C4AV7
(C37YR3)	MSFC 495 GD/C	B19W14C4AV12
(C37YR1)	MSFC 495 GD/C	B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.464

DIRECTIONAL EFFECTS OF RUDDER FLARE



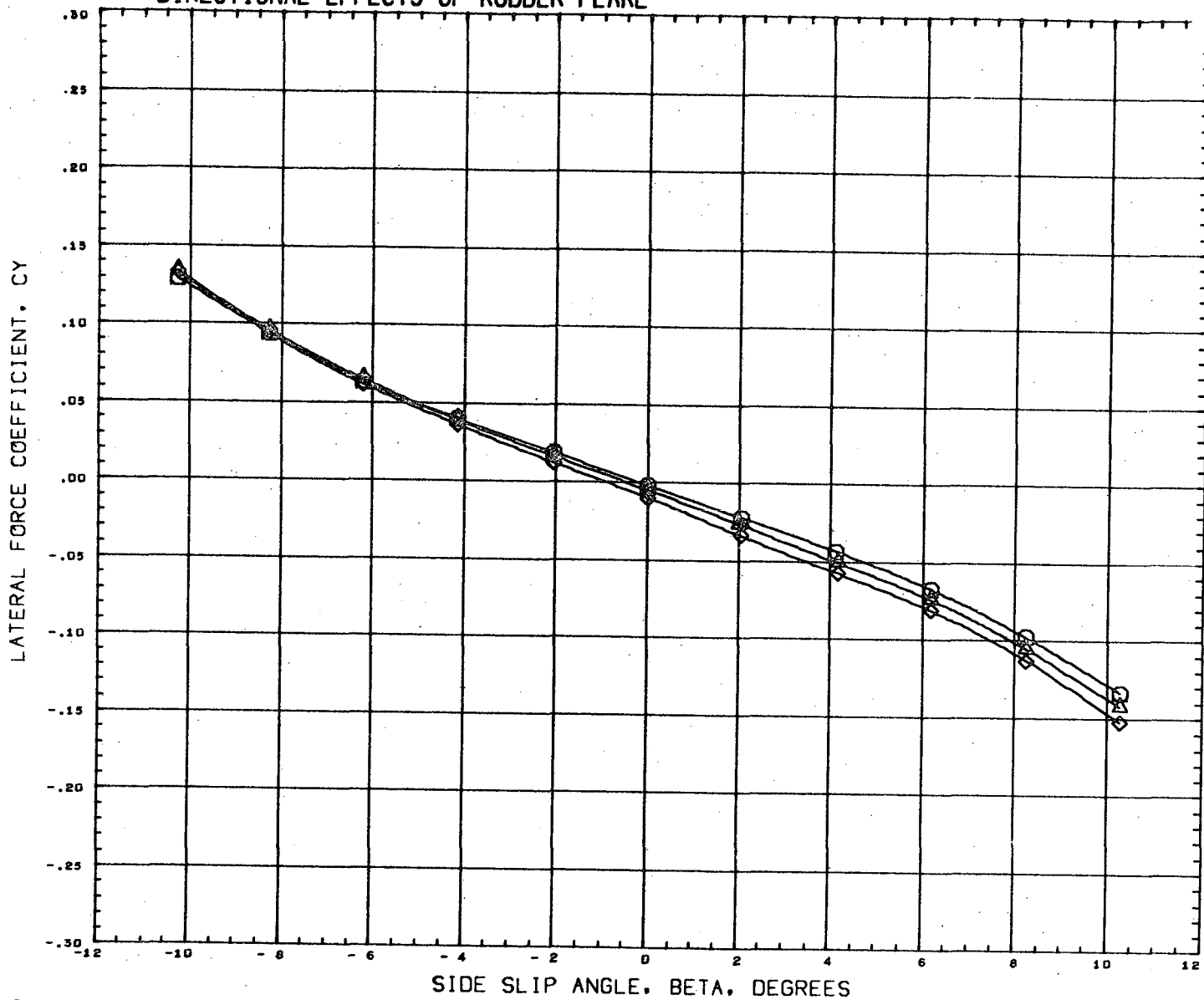
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y31) □	MSFC 495 GD/C B19W14C4AV7
(C37YR3) △	MSFC 495 GD/C B19W14C4AV12
(C37YR1) ◇	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDRL	RDRFLR
6.000	3.000	0.000
6.000	3.000	25.000
6.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.967

DIRECTIONAL EFFECTS OF RUDDER FLARE



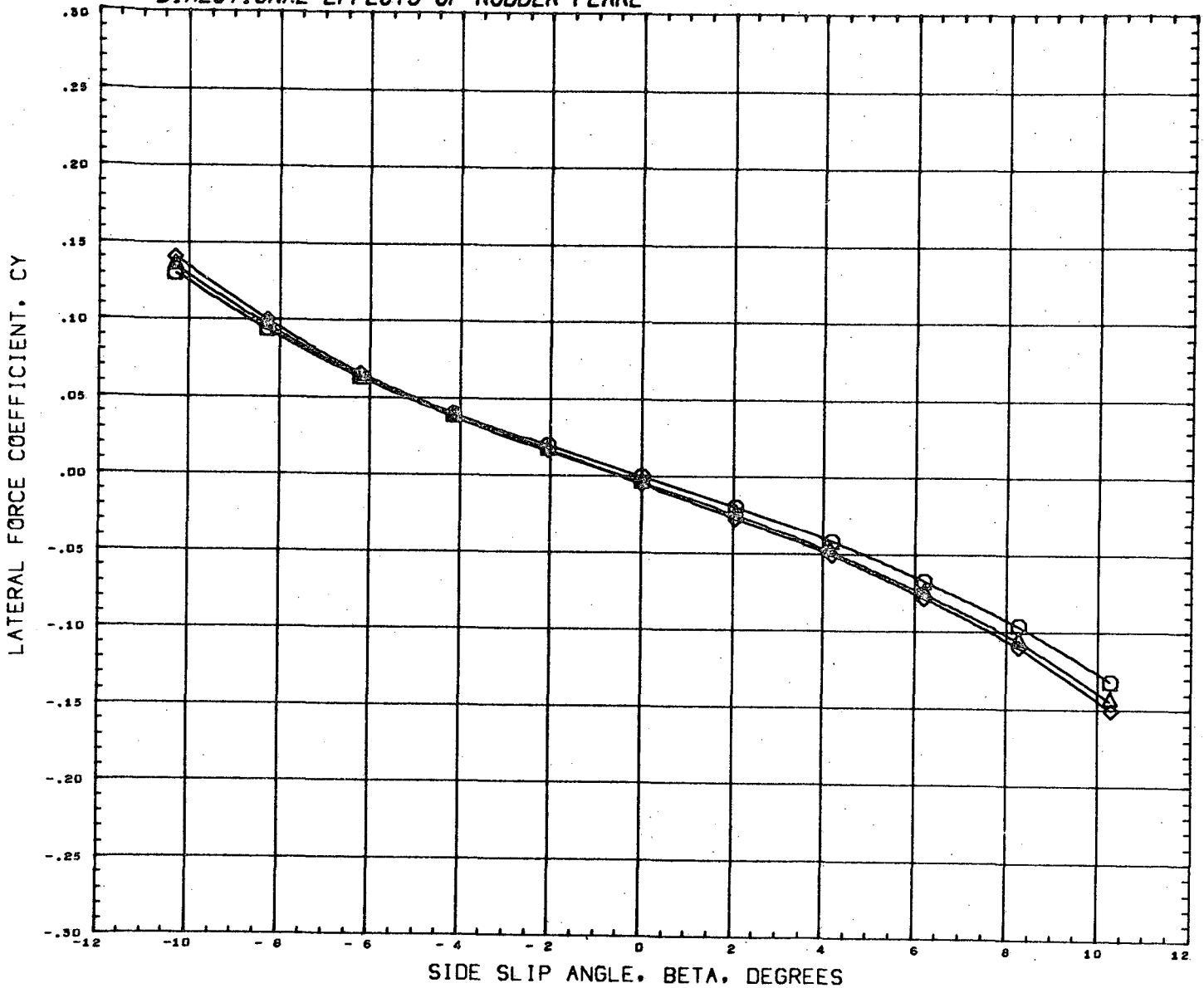
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y32)	MSFC 495 GD/C	B19W14C4AV7
(C37YR4)	MSFC 495 GD/C	B19W14C4AV12
(C37YR2)	MSFC 495 GD/C	B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.299

DIRECTIONAL EFFECTS OF RUDDER FLARE



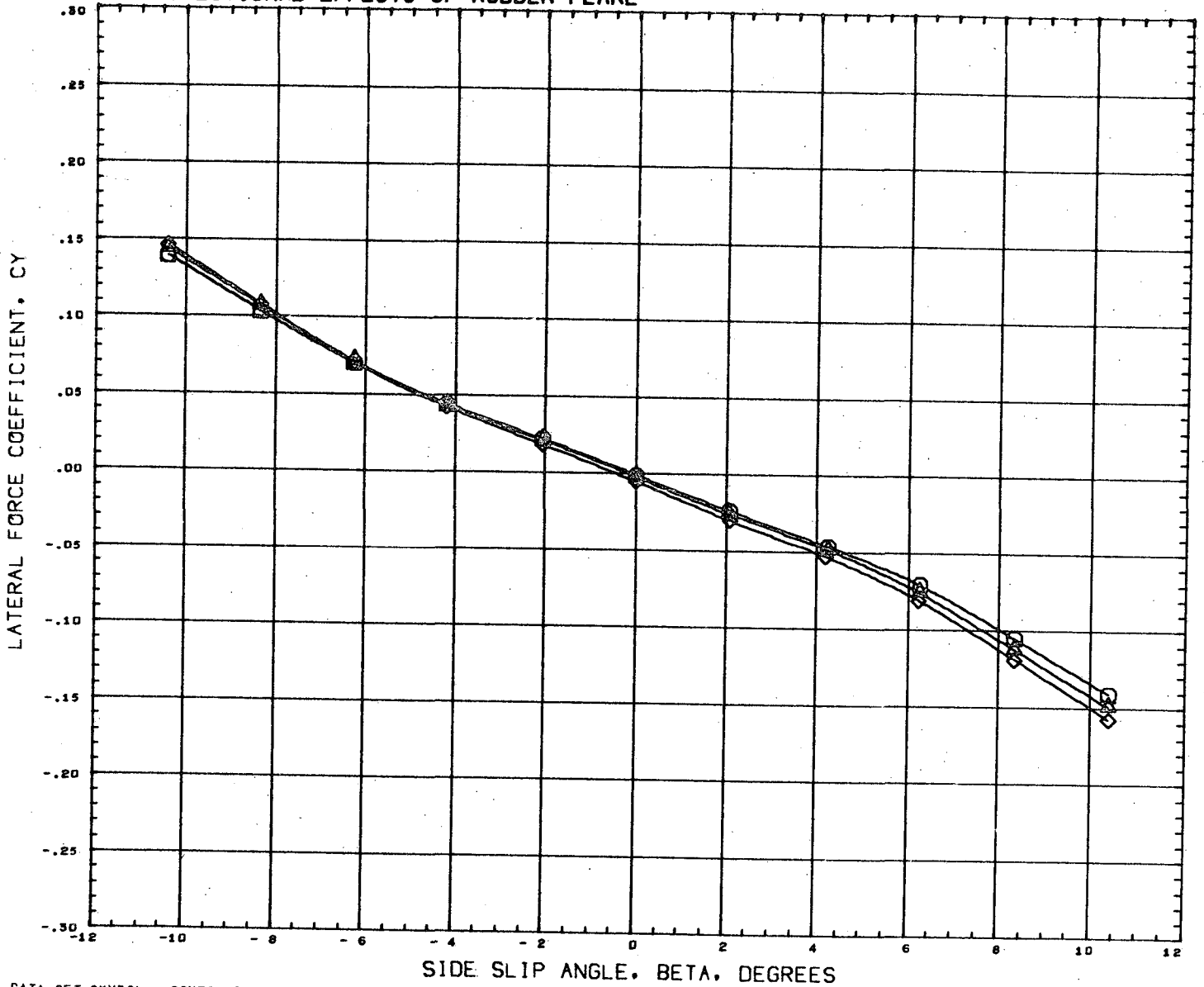
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y3Z)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	MSFC 495 GD/C B19W14C4AV12
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DINDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.457

DIRECTIONAL EFFECTS OF RUDDER FLARE



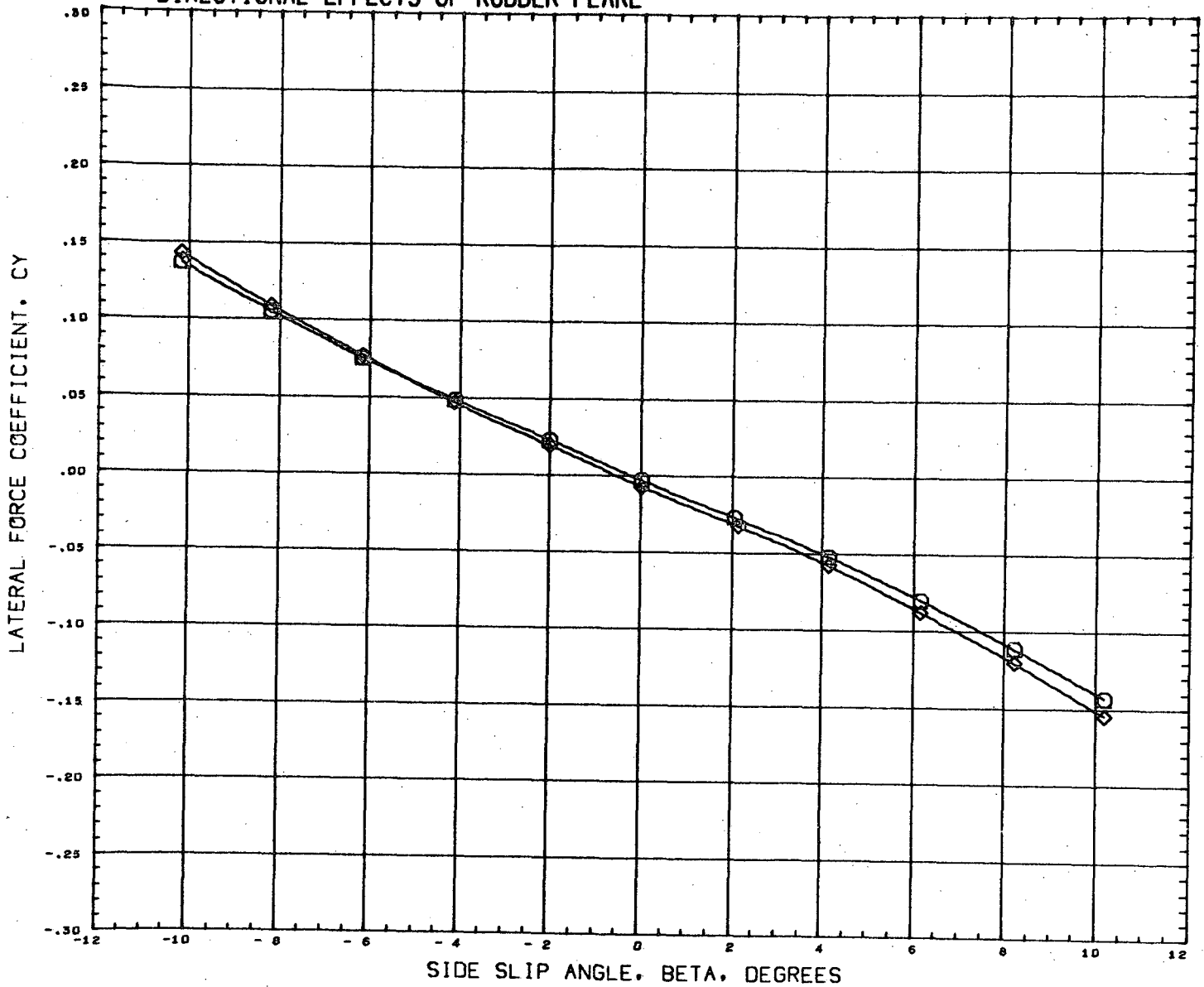
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	MSFC 495 GD/C B19W14C4AV12
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1MDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRF	6.6180	IN.
YMRF	0.0000	IN.
ZMRF	0.0000	IN.
SCALE	0.0035	

MACH 1.957

DIRECTIONAL EFFECTS OF RUDDER FLARE



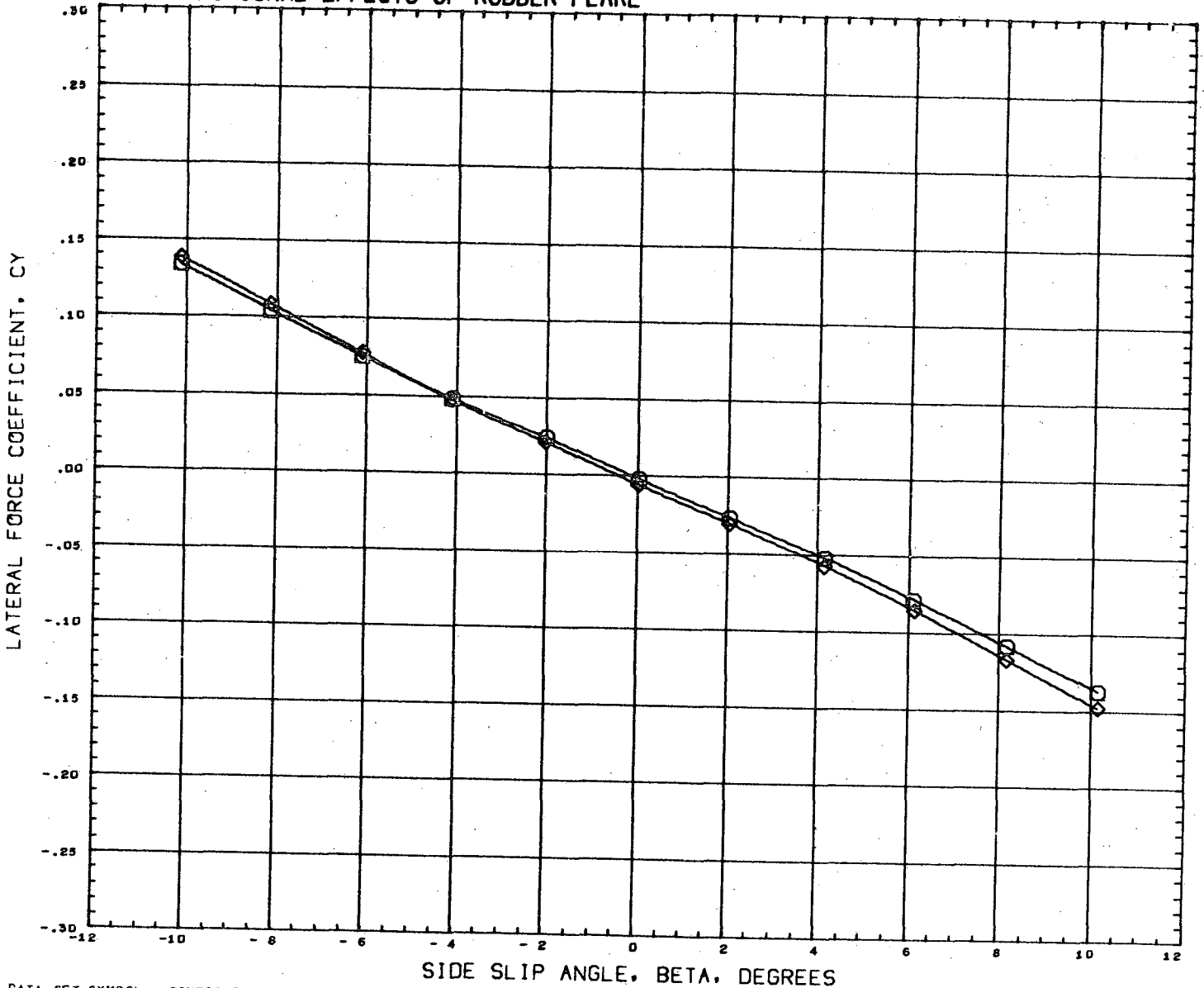
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL EFFECTS OF RUDDER FLARE

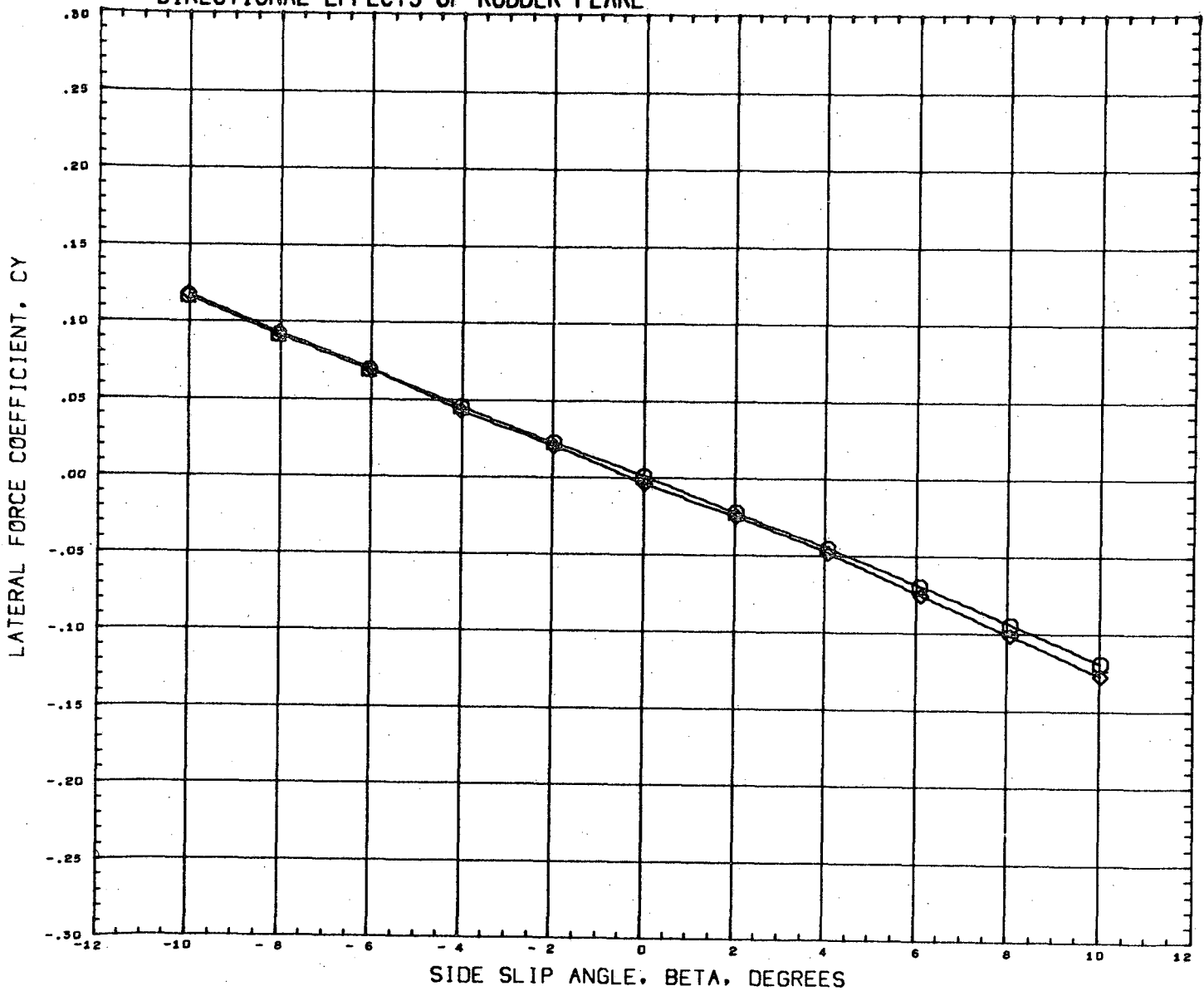


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	DINDRL	RDRFLR
(C37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	3.000	0.000
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS	15.000	3.000	25.000
(C37YR2)	MSFC 495 GD/C B19W14C4AV13	15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

DIRECTIONAL EFFECTS OF RUDDER FLARE



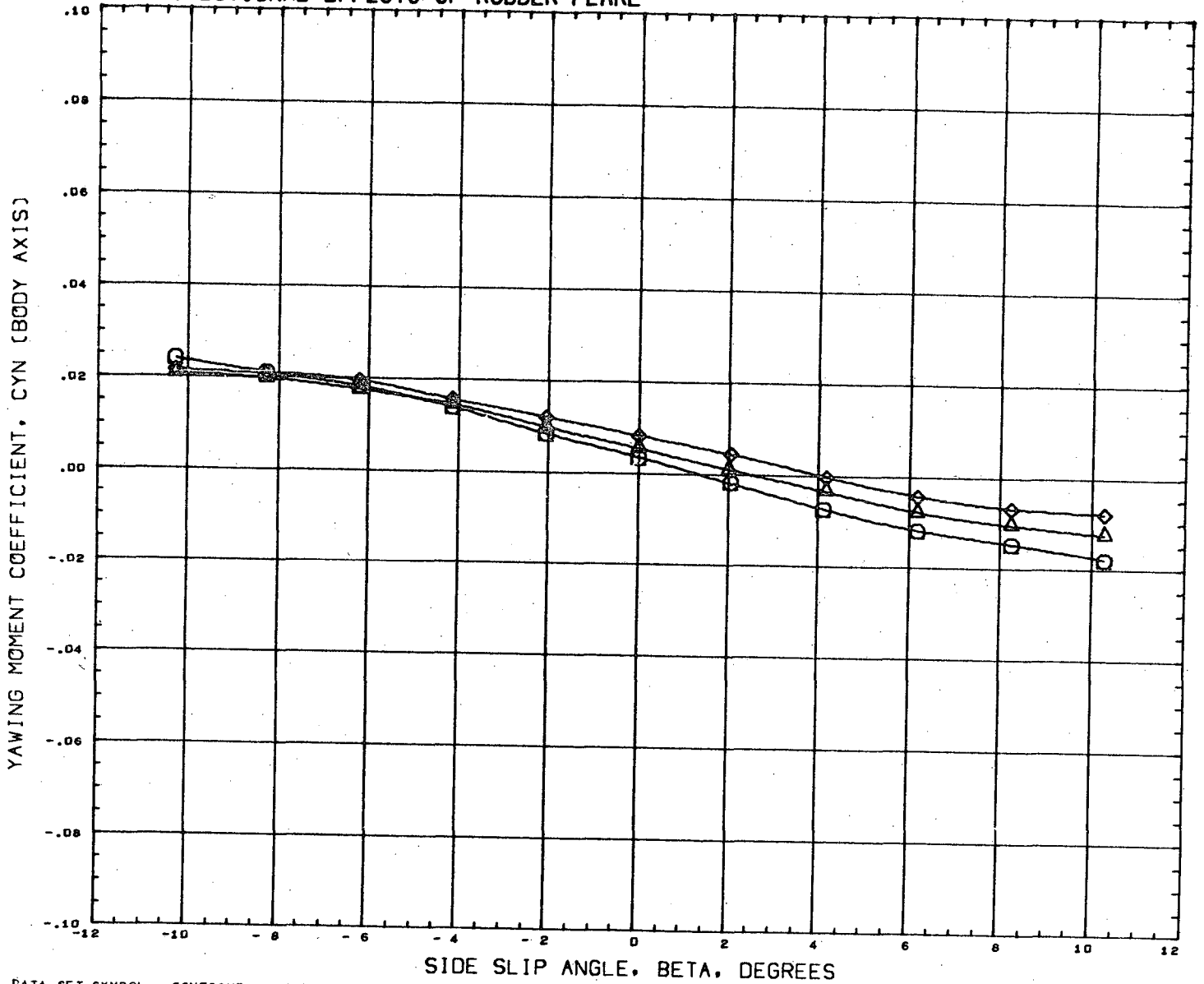
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	50. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF RUDDER FLARE



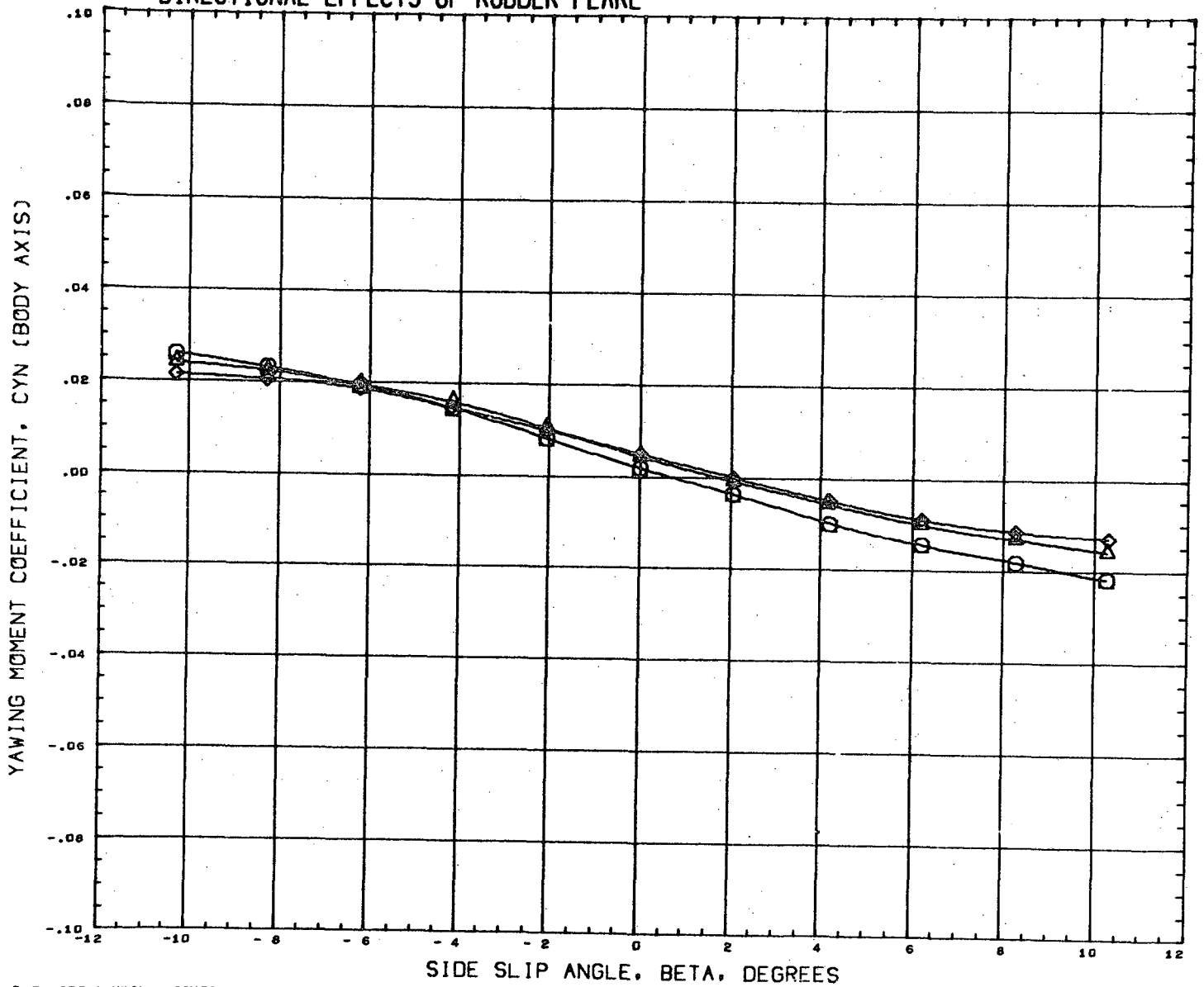
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	MSFC 495 GD/C B19W14C4AV12
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.299

DIRECTIONAL EFFECTS OF RUDDER FLARE



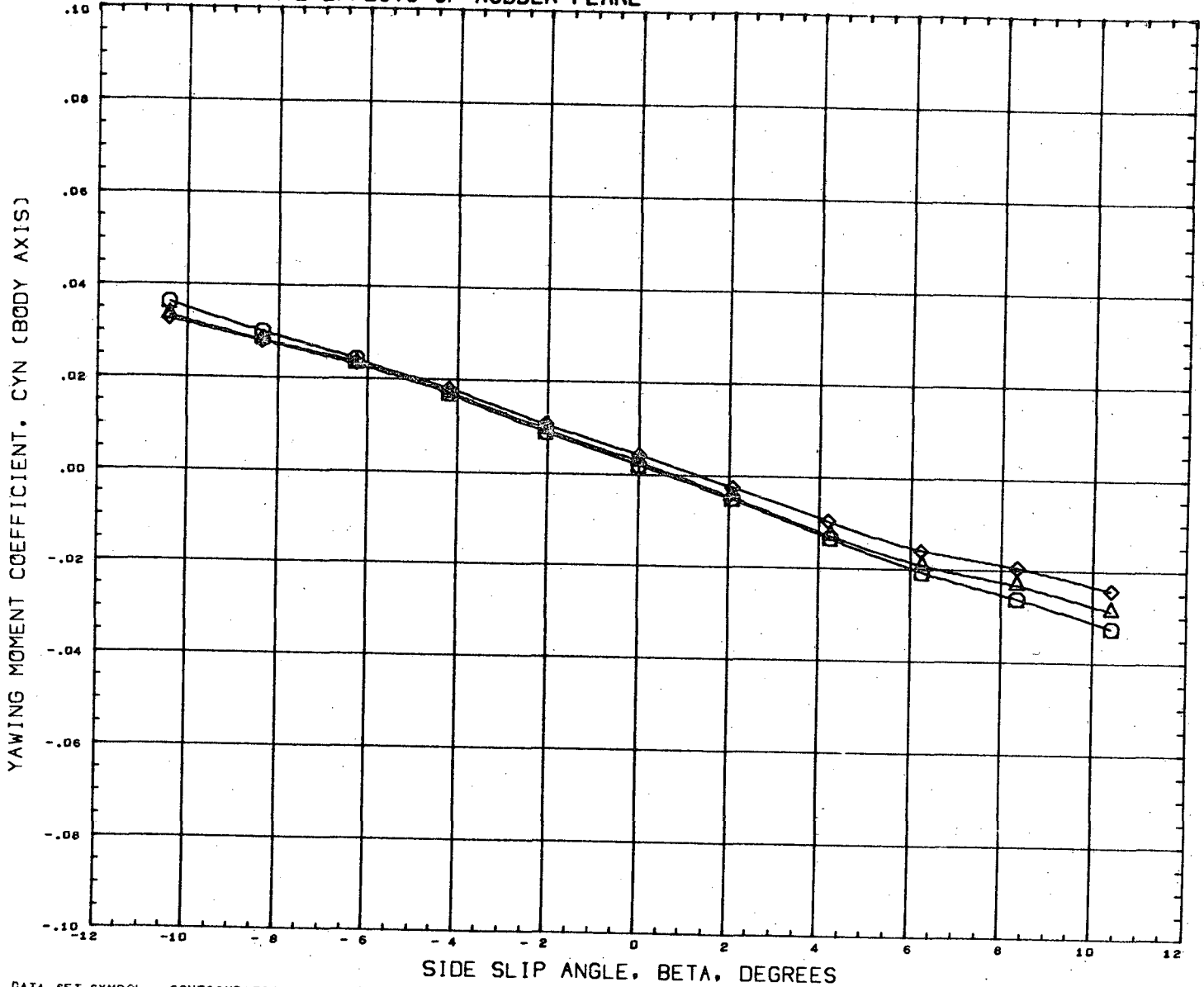
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	MSFC 495 GD/C B19W14C4AV12
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DINDRL	RDRFL#
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	sq. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.457

DIRECTIONAL EFFECTS OF RUDDER FLARE



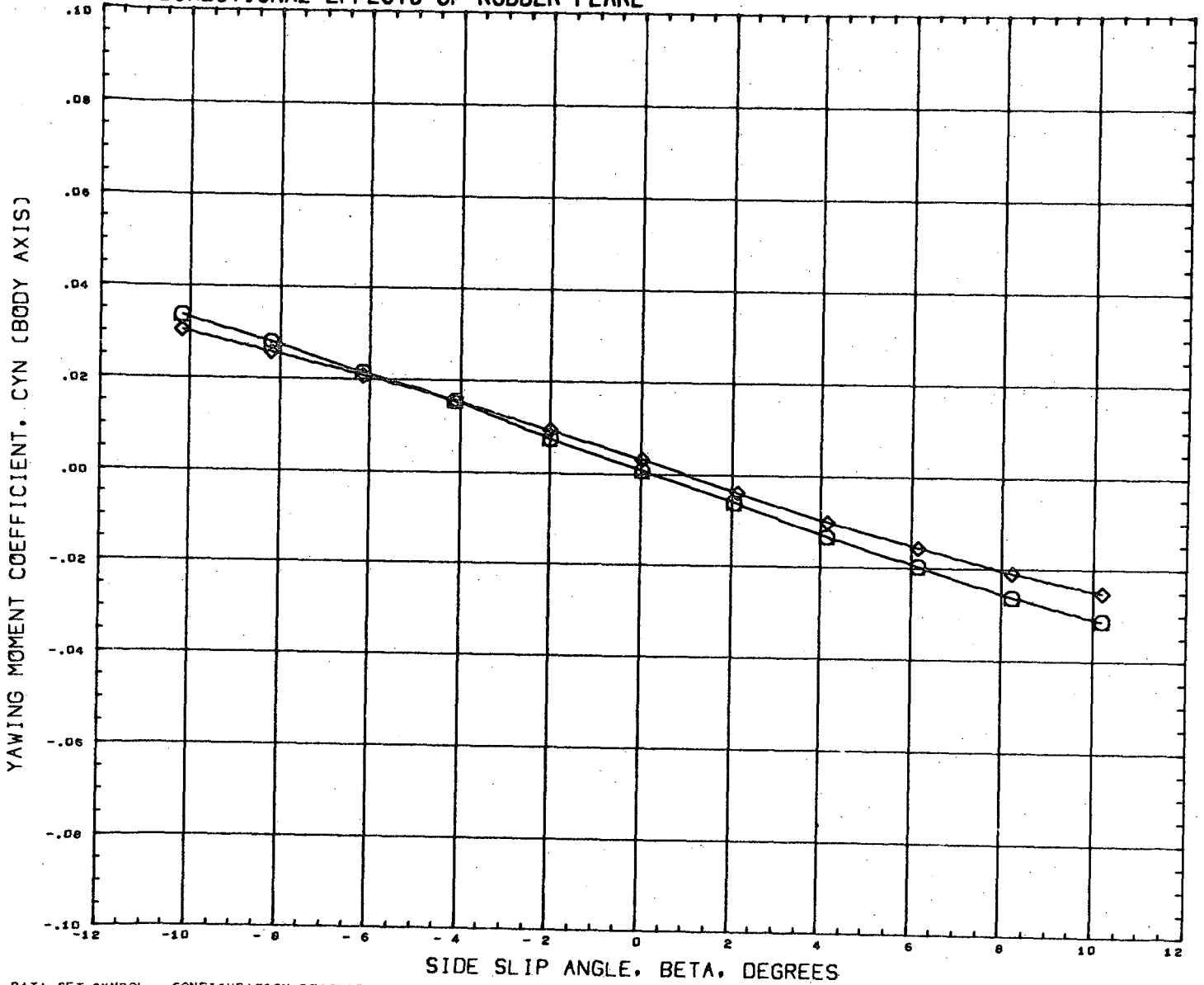
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y32)	MSFC 495 GD/C	B19W14C4AV7
(C37YR4)	MSFC 495 GD/C	B19W14C4AV12
(C37YR2)	MSFC 495 GD/C	B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	Sq. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6160	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.957

DIRECTIONAL EFFECTS OF RUDDER FLARE



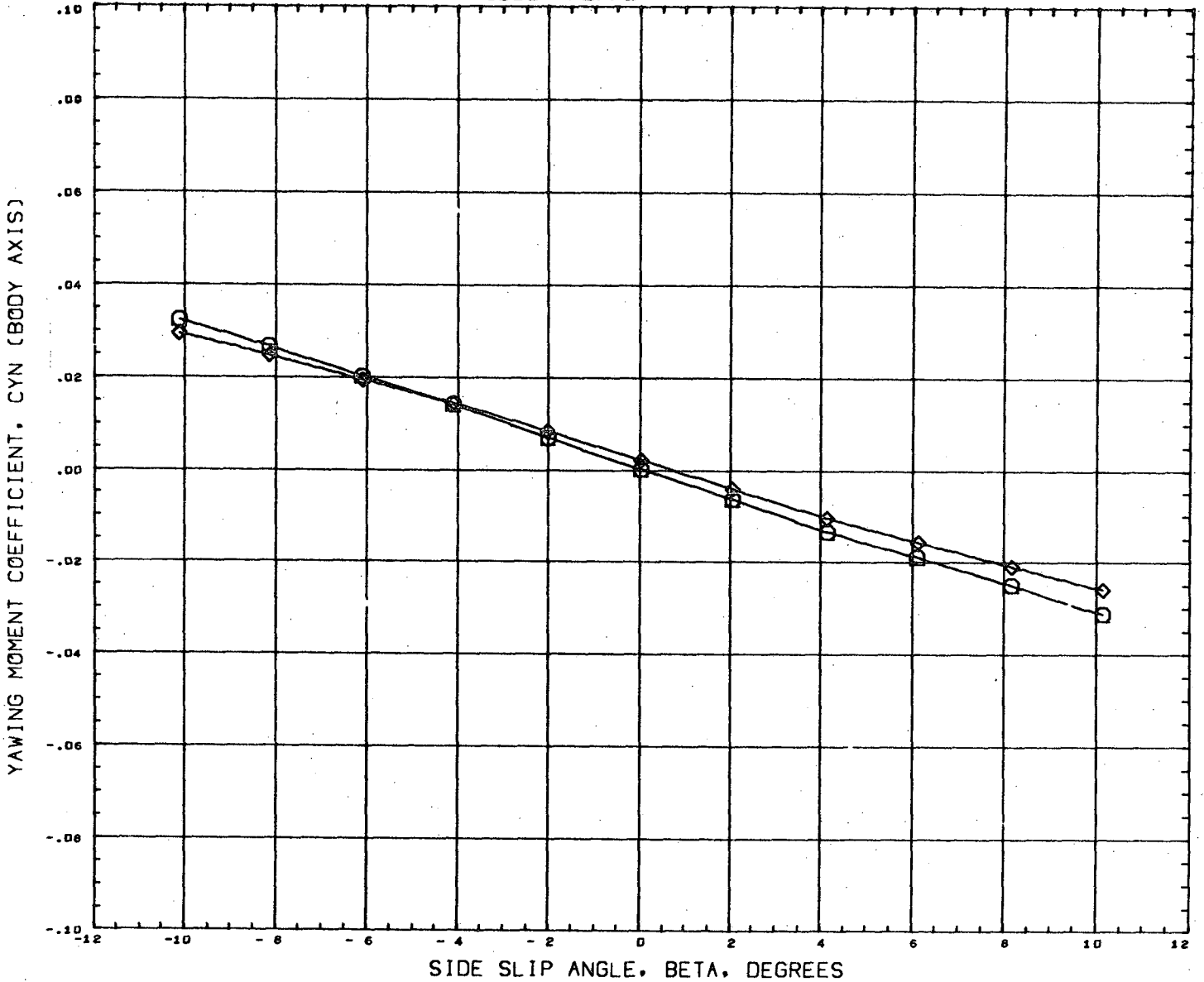
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DINDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL EFFECTS OF RUDDER FLARE



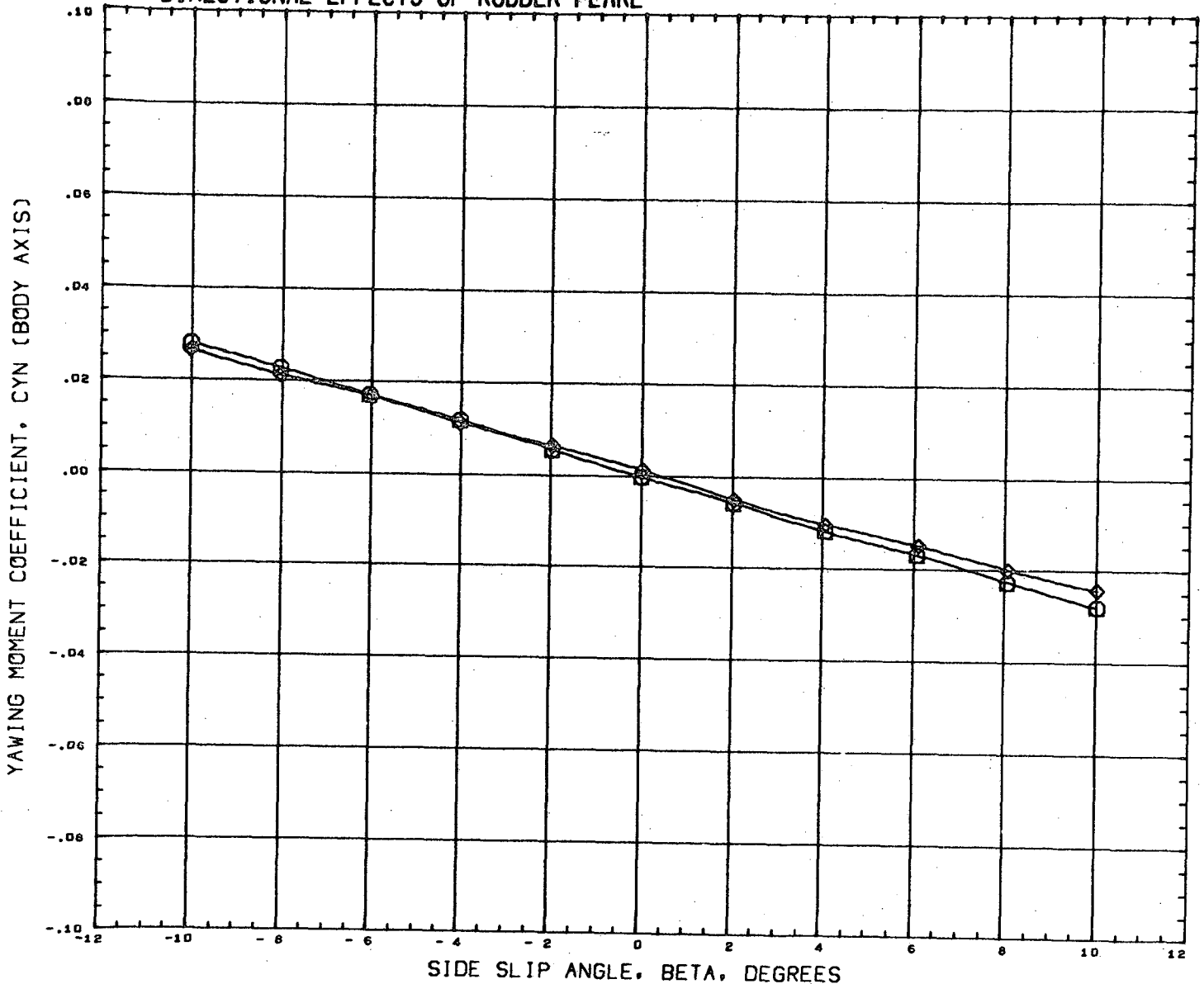
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.990

DIRECTIONAL EFFECTS OF RUDDER FLARE



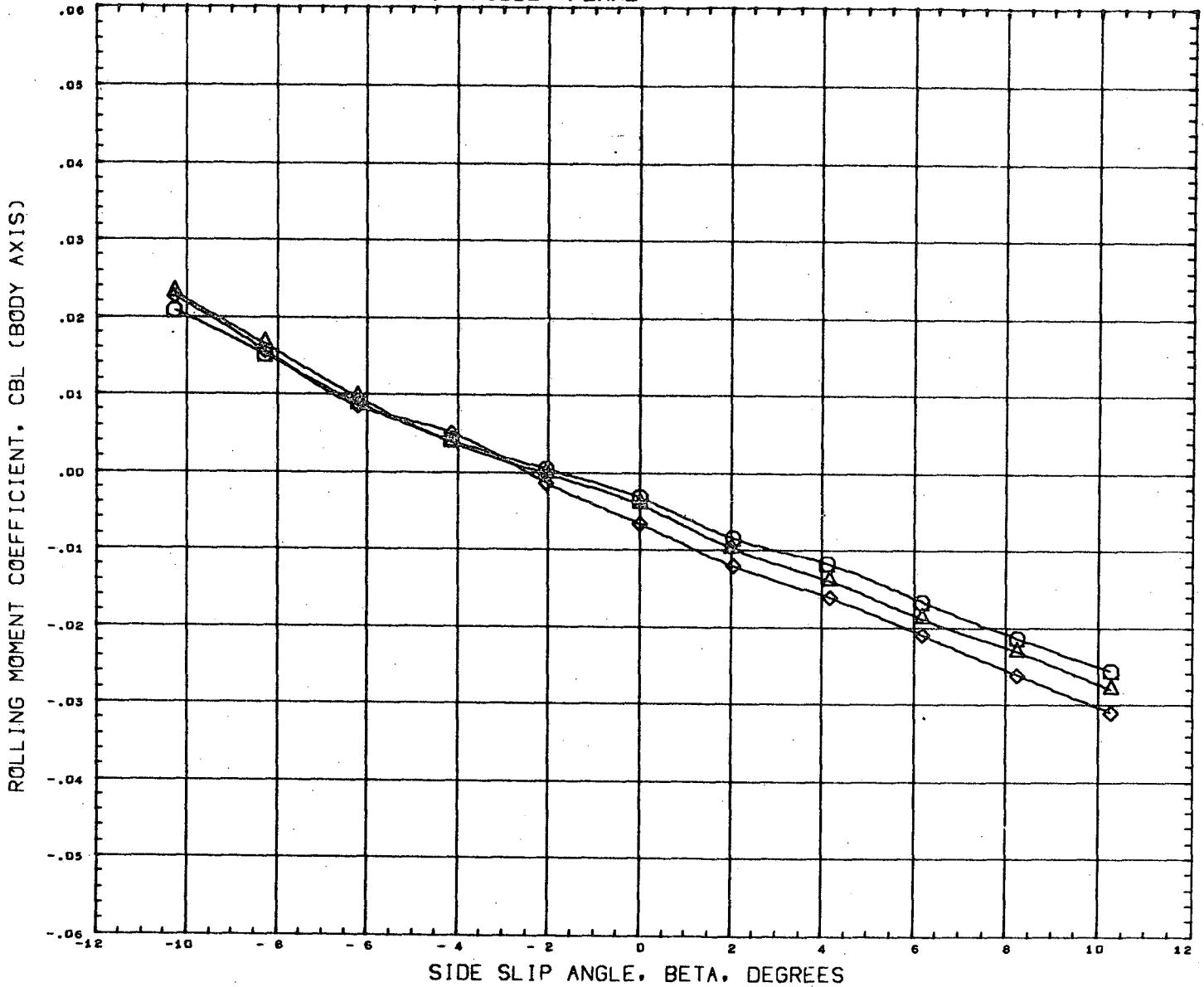
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF RUDDER FLARE



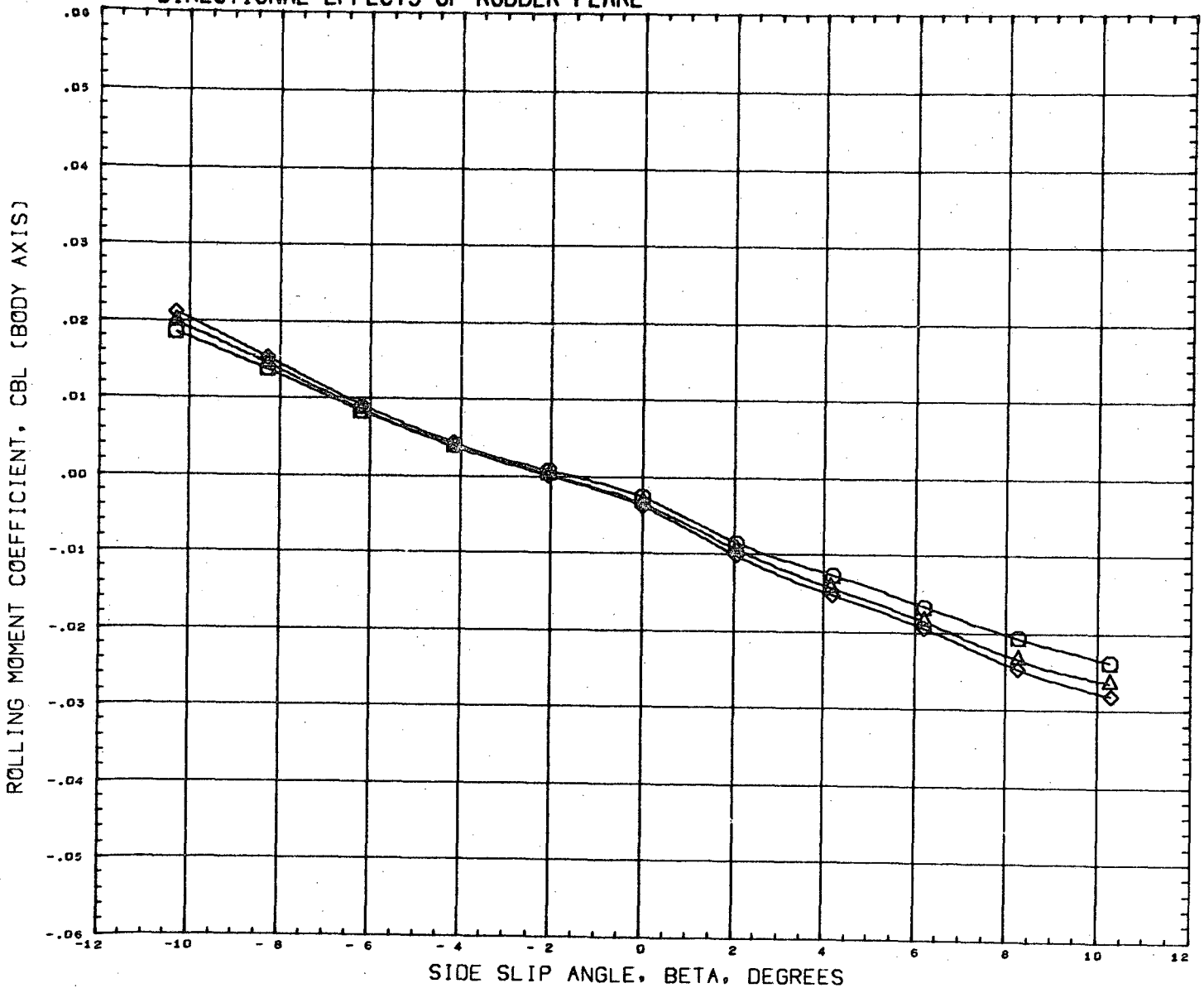
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	MSFC 495 GD/C B19W14C4AV12
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.299

DIRECTIONAL EFFECTS OF RUDDER FLARE



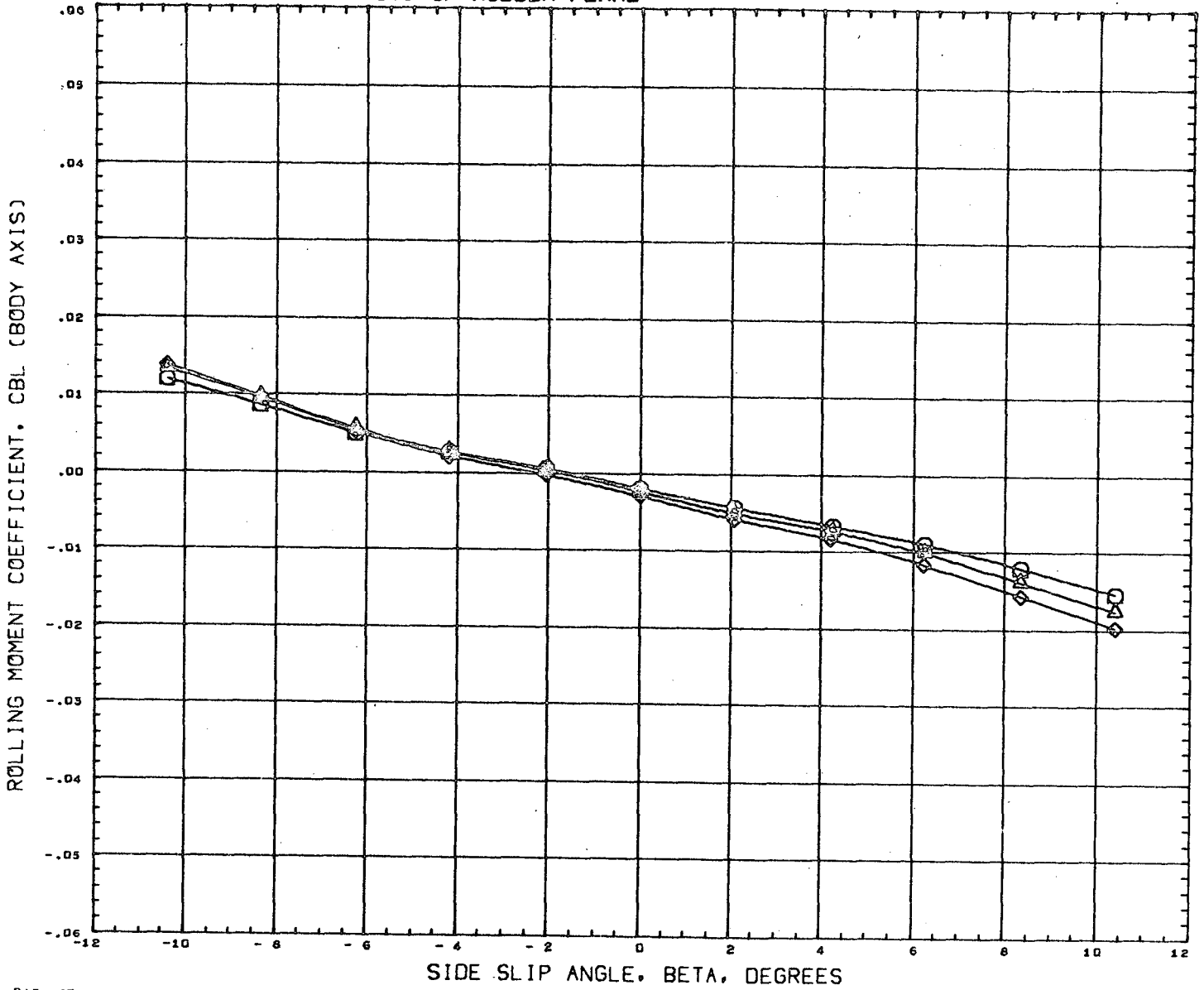
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	MSFC 495 GD/C B19W14C4AV12
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.457

DIRECTIONAL EFFECTS OF RUDDER FLARE



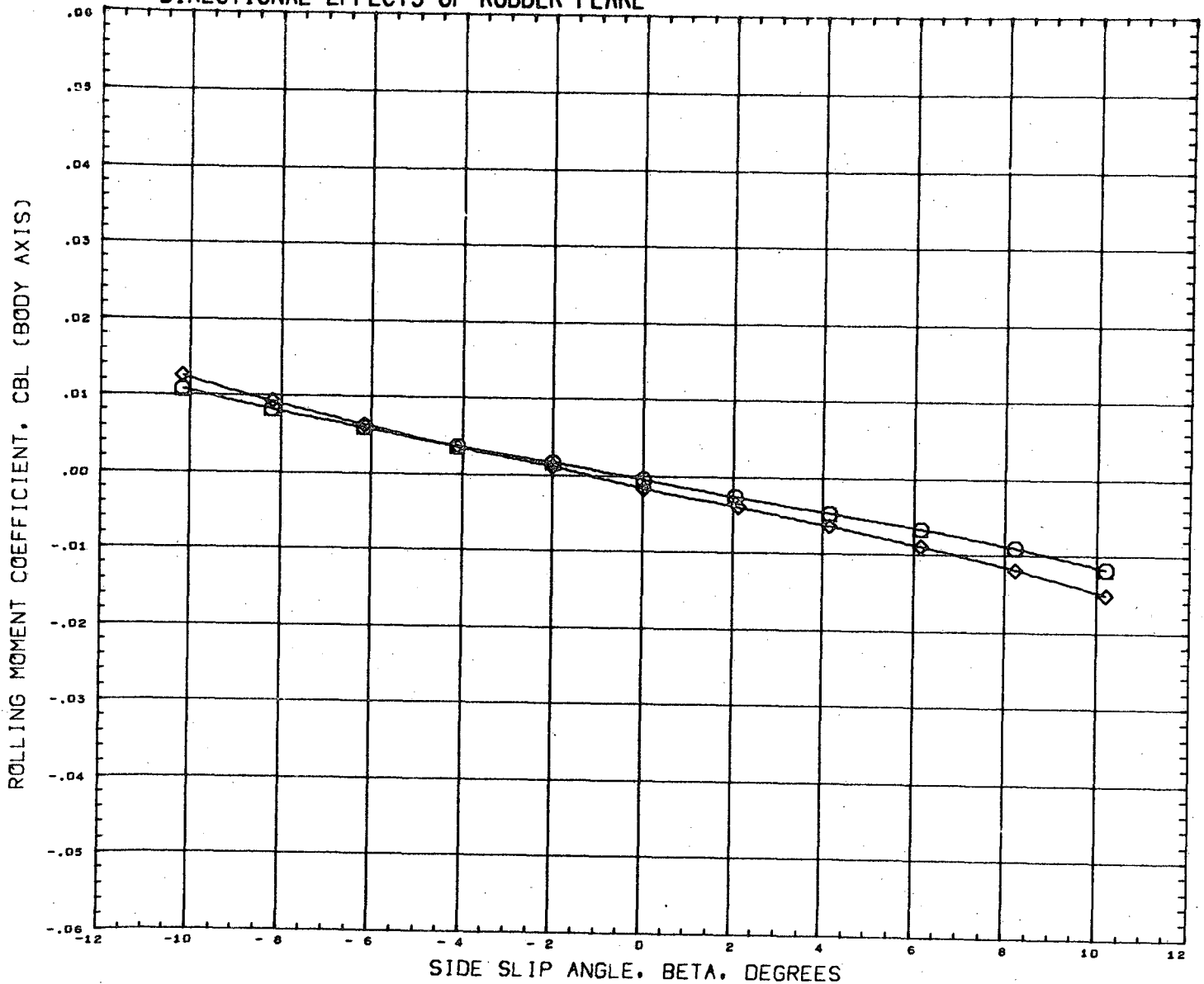
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	MSFC 495 GD/C B19W14C4AV12
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.957

DIRECTIONAL EFFECTS OF RUDDER FLARE



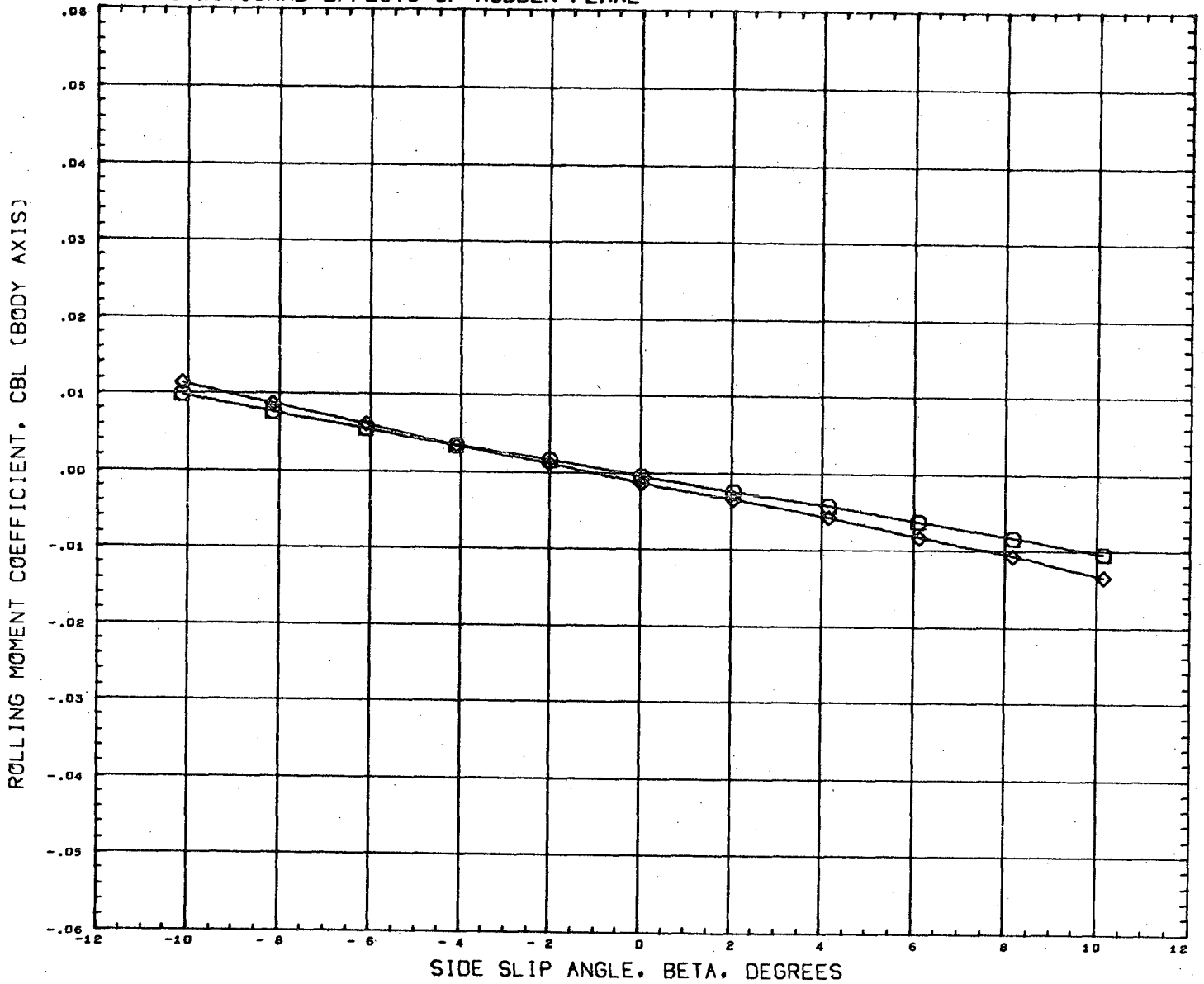
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL EFFECTS OF RUDDER FLARE



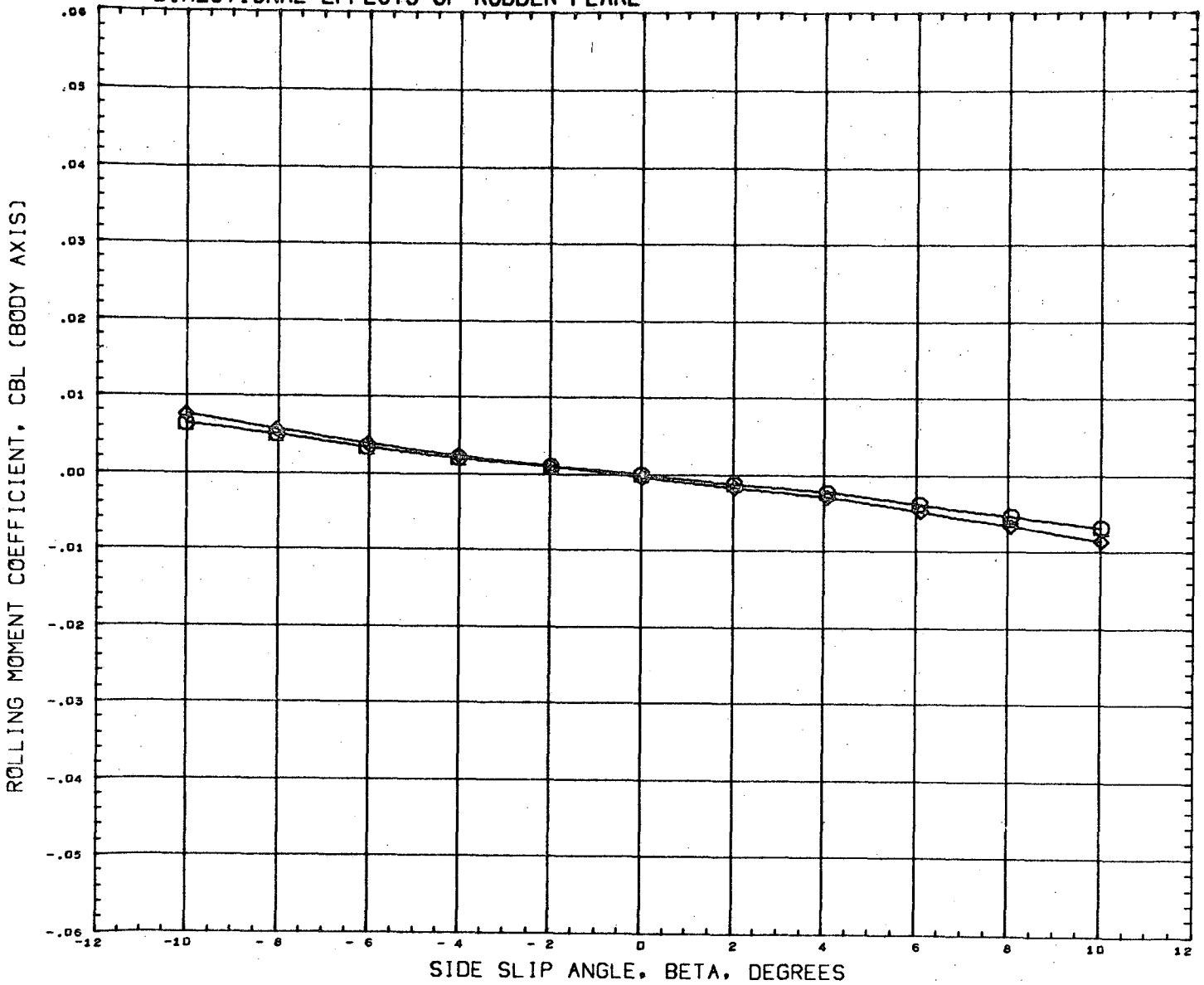
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

DIRECTIONAL EFFECTS OF RUDDER FLARE



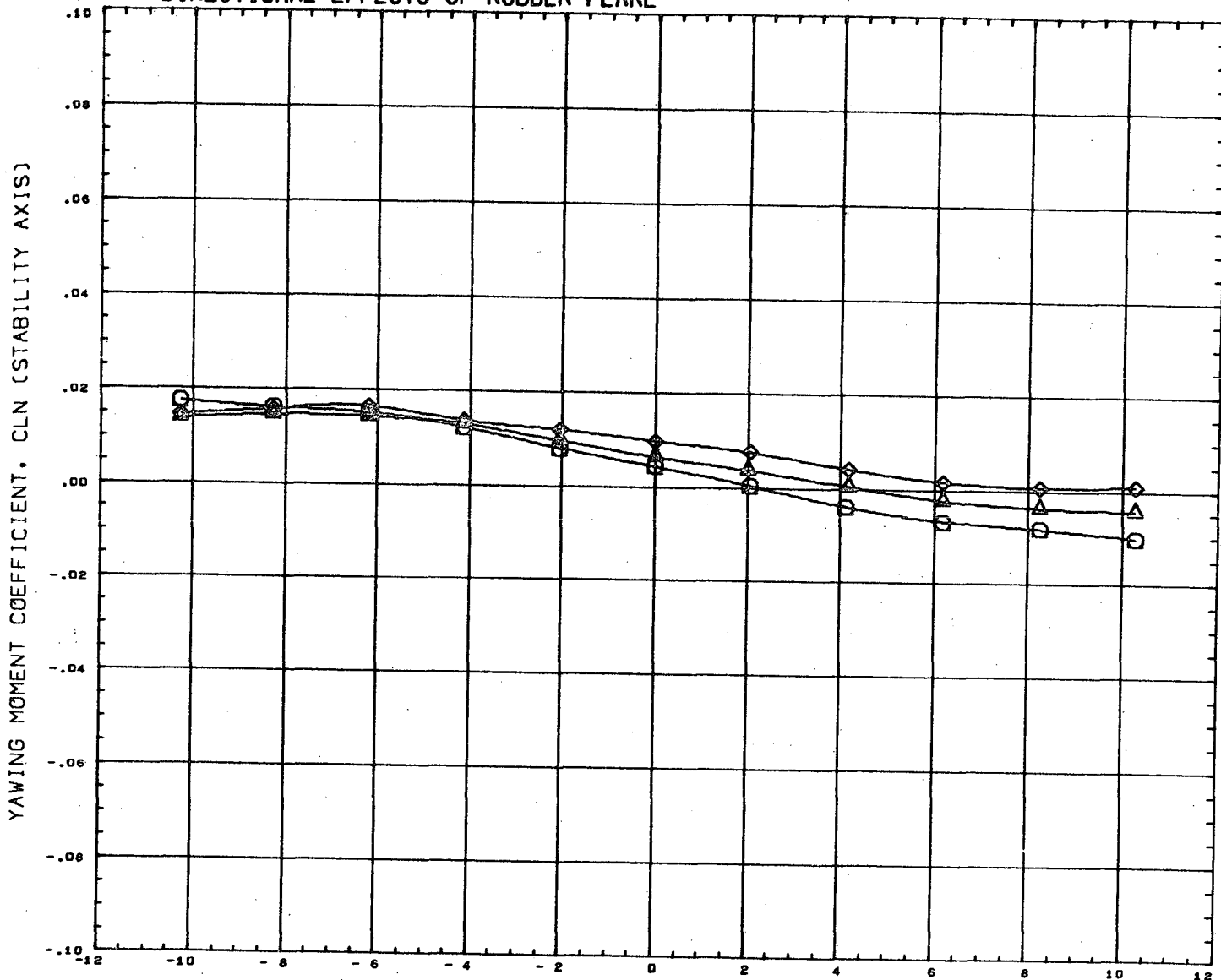
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

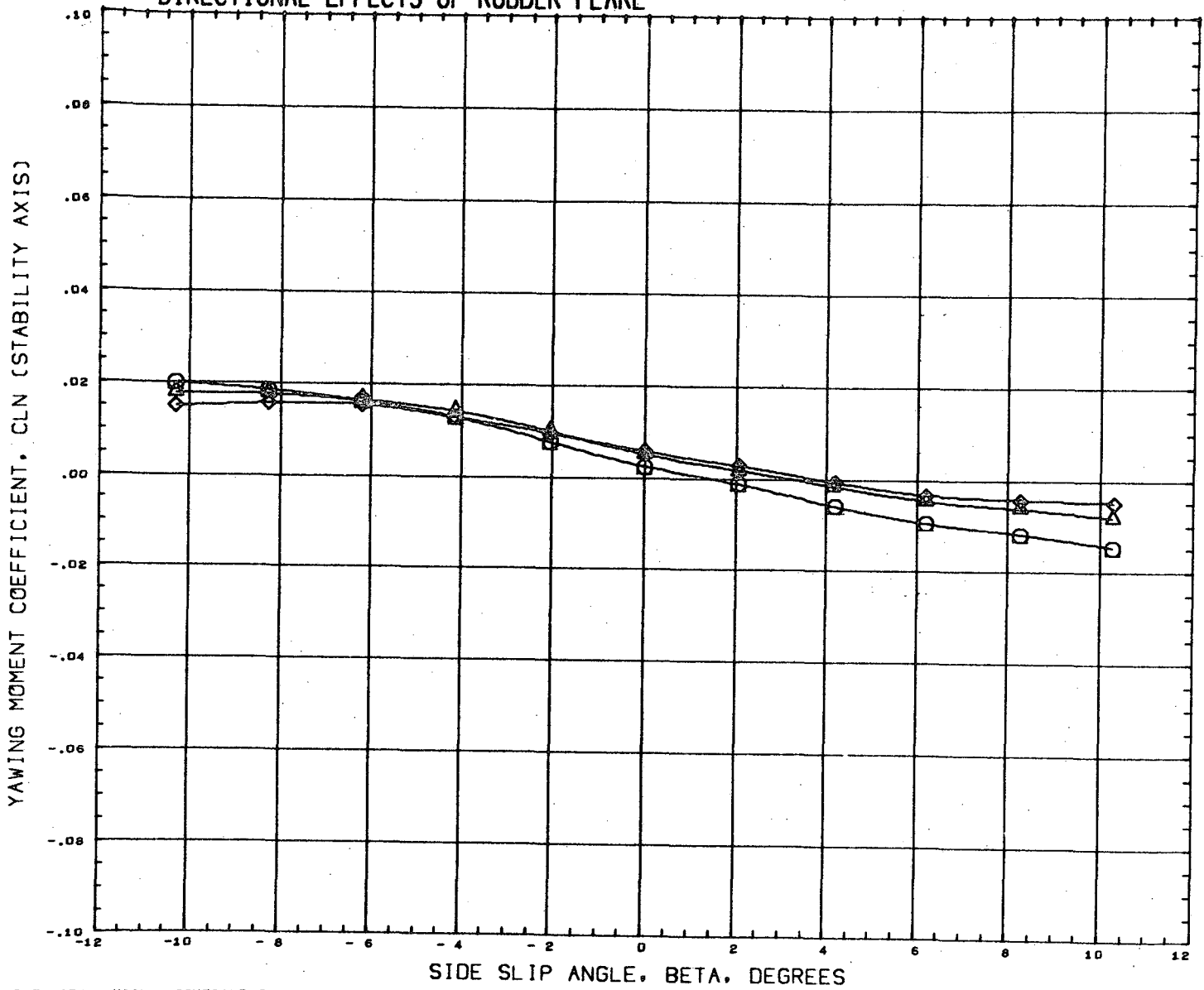
DIRECTIONAL EFFECTS OF RUDDER FLARE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	DIHDL	RDRFLR	REFERENCE INFORMATION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	3.000	0.000	SREF 15.6560 SQ. IN.
(C37YR4)	MSFC 495 GD/C B19W14C4AV12	15.000	3.000	25.000	LREF 3.0950 IN.
(C37YR2)	MSFC 495 GD/C B19W14C4AV13	15.000	3.000	50.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.299

DIRECTIONAL EFFECTS OF RUDDER FLARE



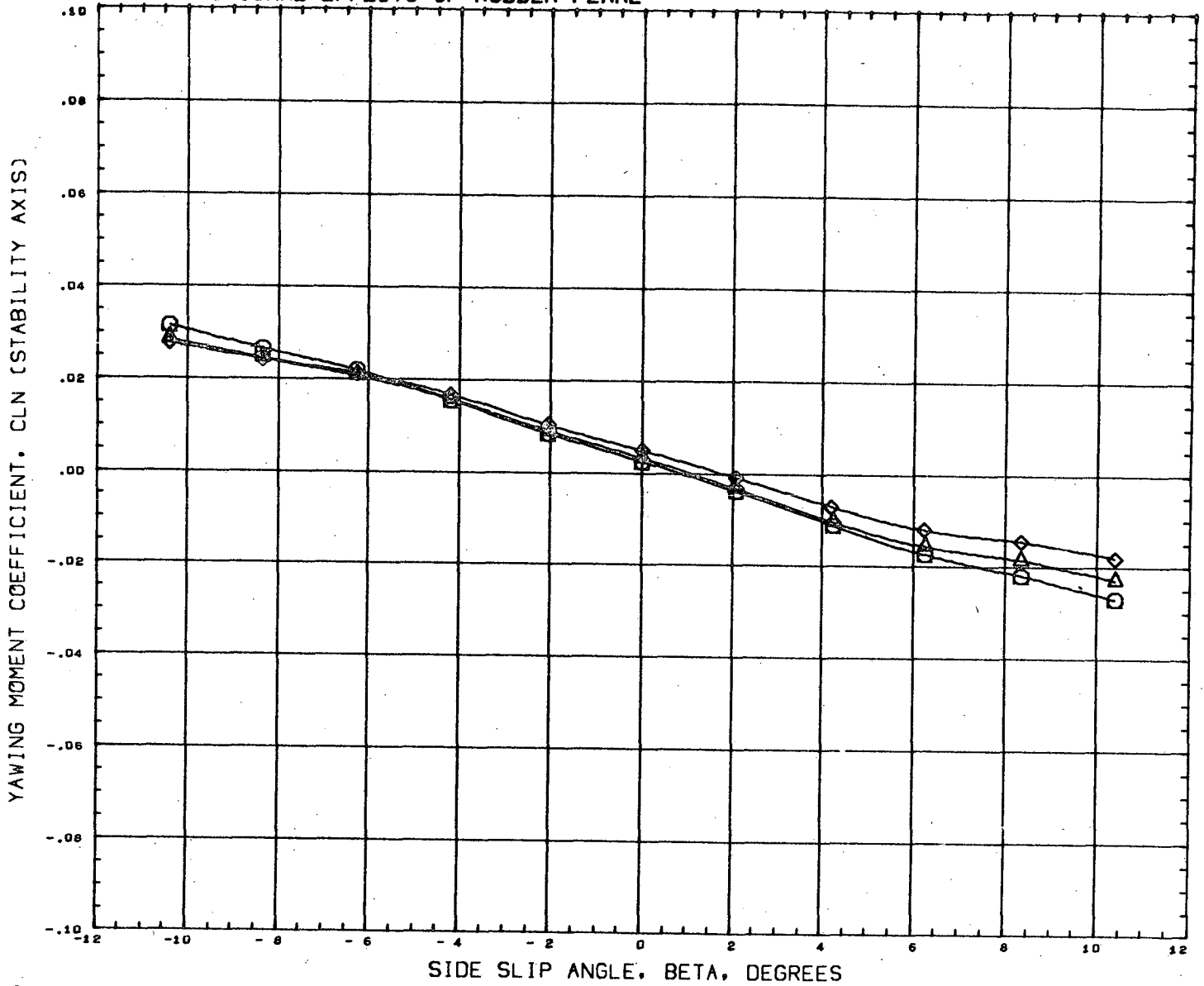
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y32)	○	MSFC 495 GD/C	B19W14C4AV7
(C37YR4)	△	MSFC 495 GD/C	B19W14C4AV12
(C37YR2)	◇	MSFC 495 GD/C	B19W14C4AV13

ALPHA	DIHDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.457

DIRECTIONAL EFFECTS OF RUDDER FLARE



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C37Y32)	○	MSFC 495 GD/C	B19W14C4AV7
(C37YR4)	△	MSFC 495 GD/C	B19W14C4AV12
(C37YR2)	◇	MSFC 495 GD/C	B19W14C4AV13

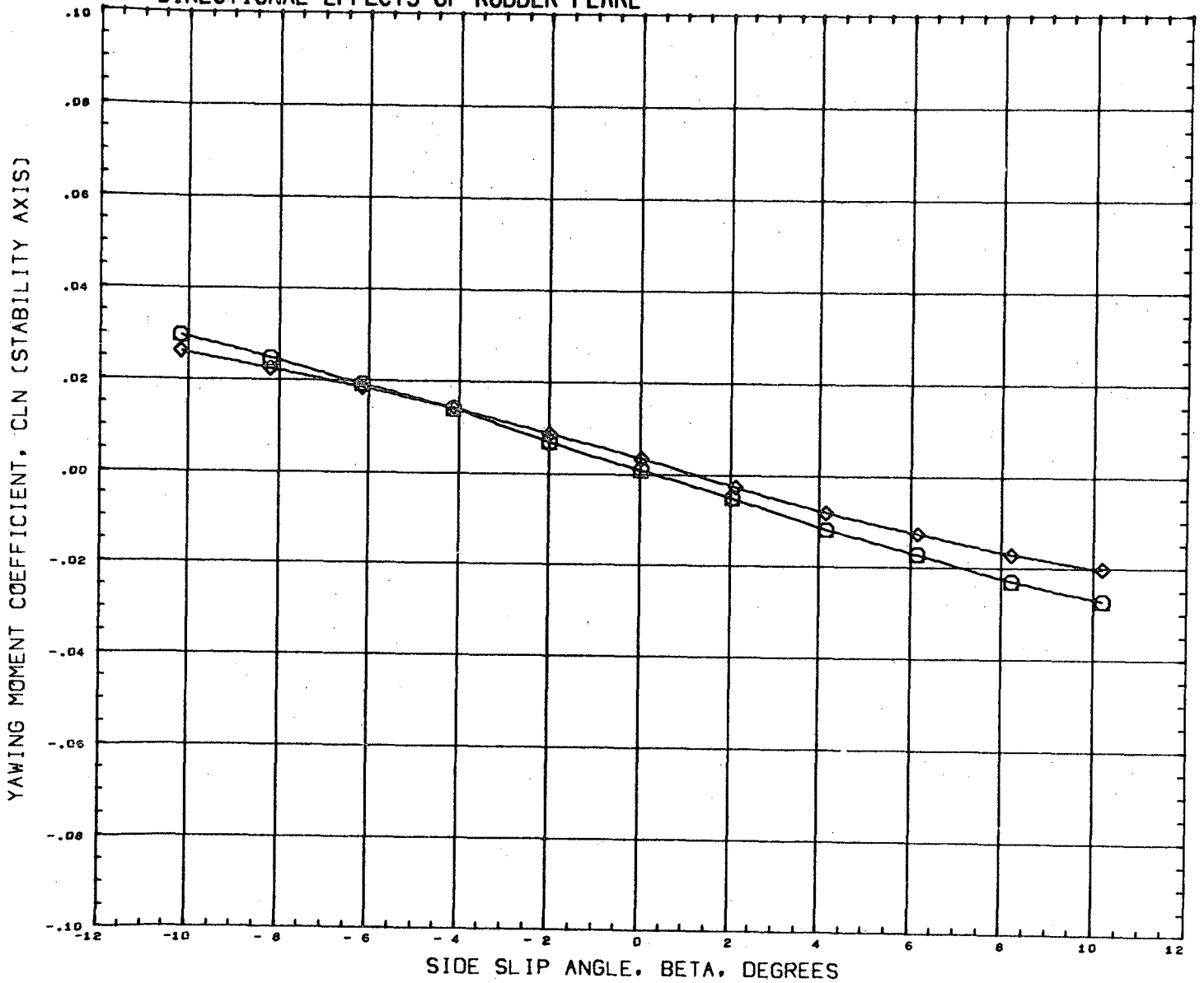
ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.957

DIRECTIONAL EFFECTS OF RUDDER FLARE



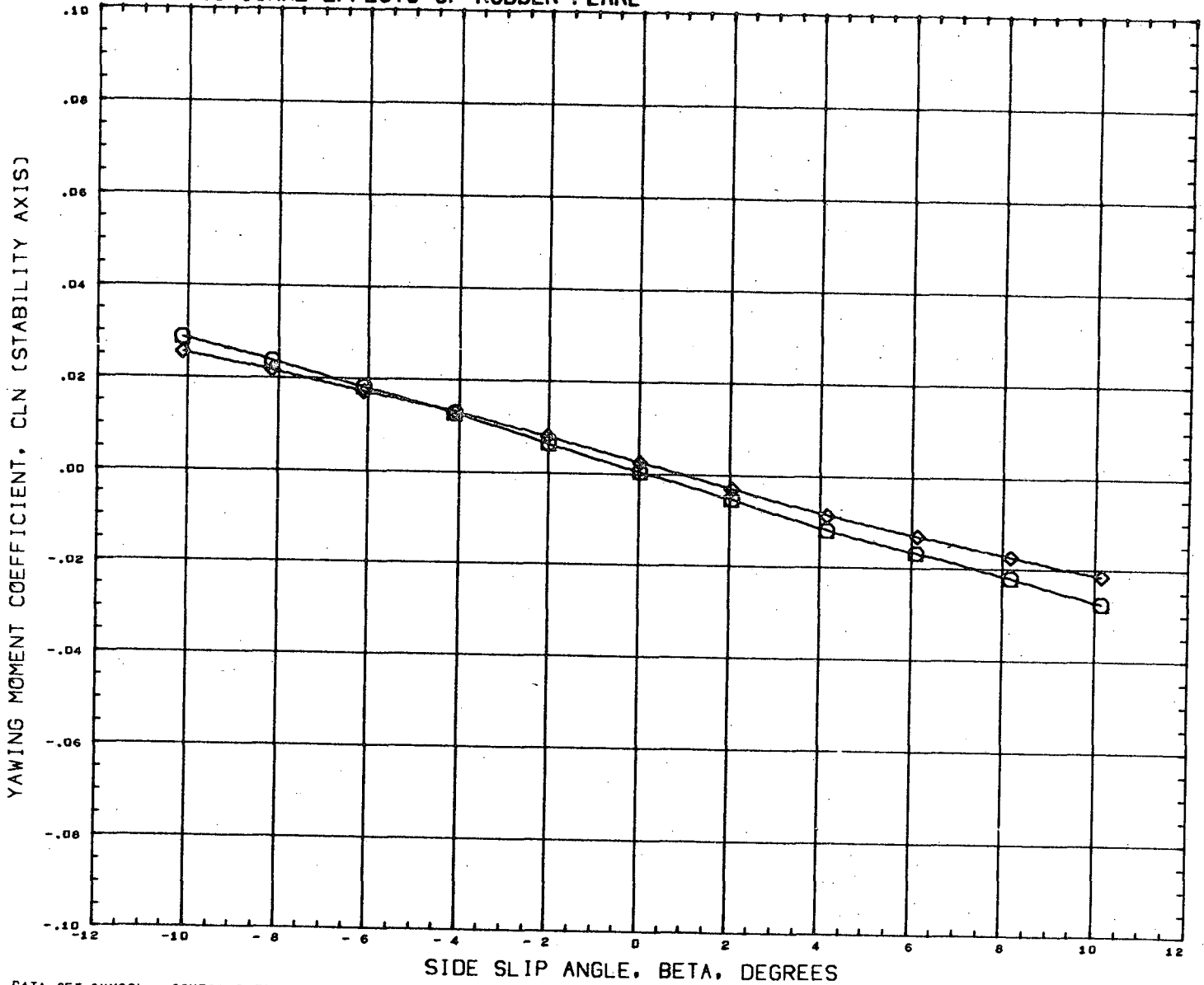
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL EFFECTS OF RUDDER FLARE



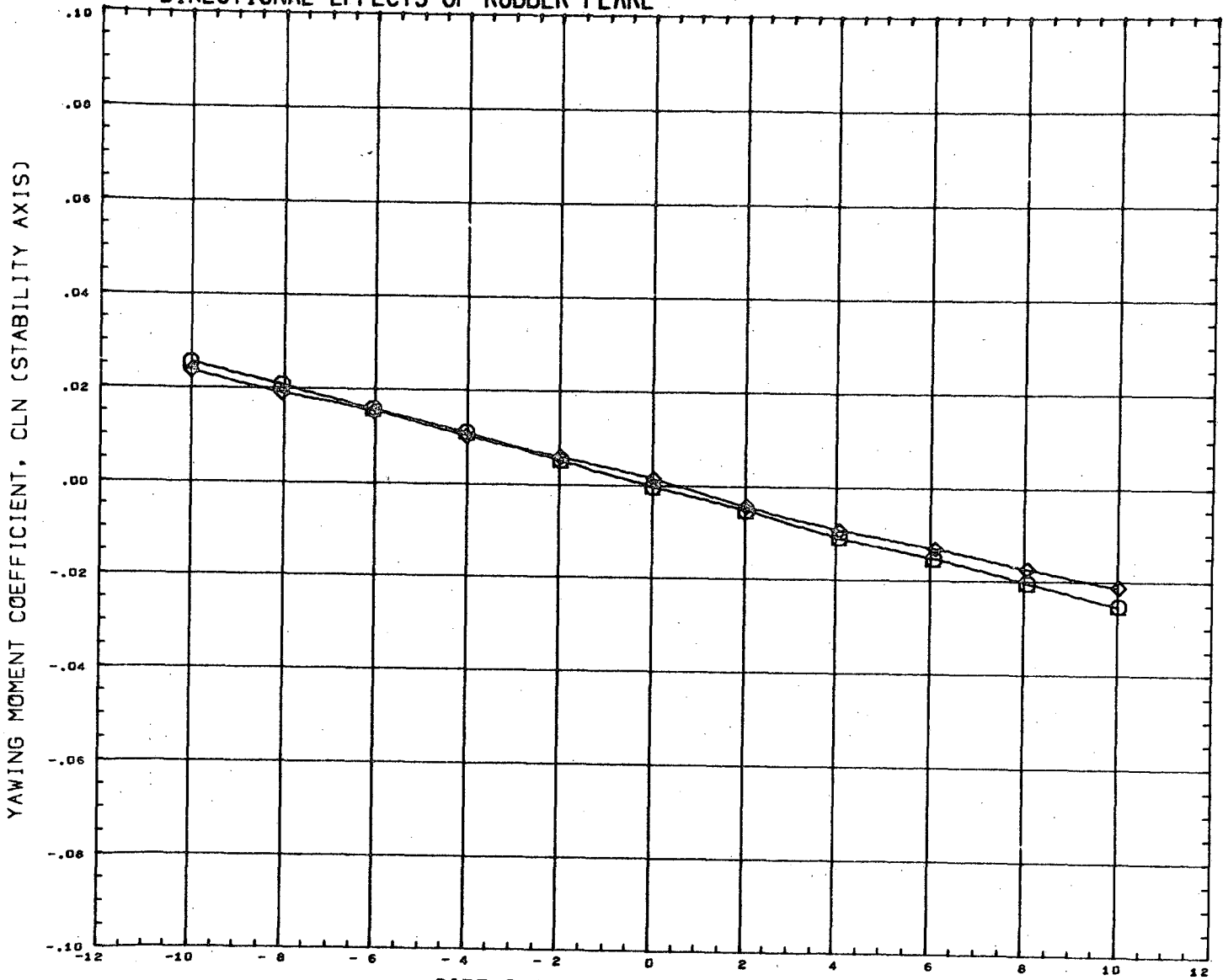
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	○	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	△	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	◇	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.990

DIRECTIONAL EFFECTS OF RUDDER FLARE



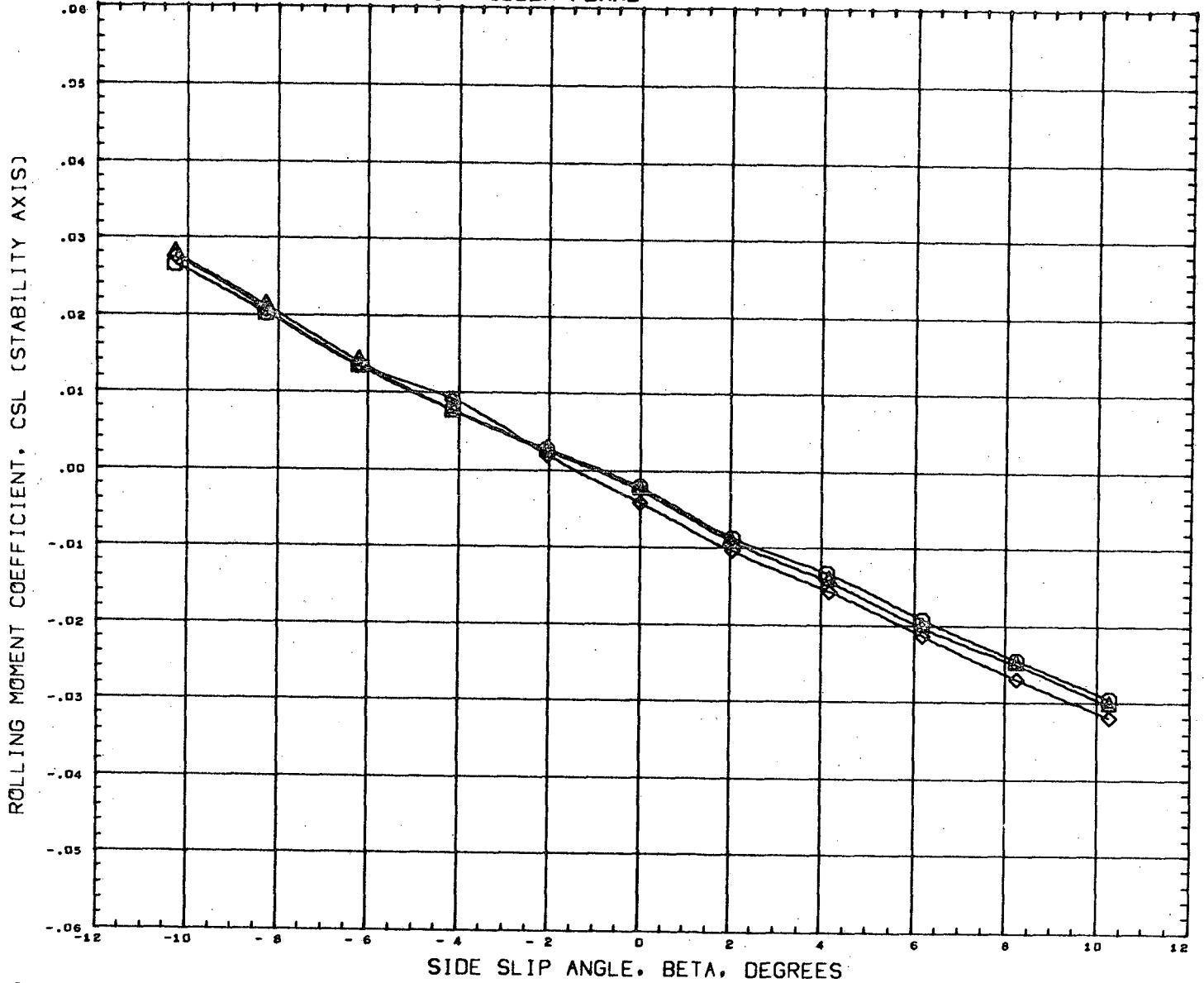
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRF	6.6180	IN.
YMRF	0.0000	IN.
ZMRF	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL EFFECTS OF RUDDER FLARE



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C37Y32)	MSFC 495 GD/C	B19W14C4AV7
(C37YR4)	MSFC 495 GD/C	B19W14C4AV12
(C37YR2)	MSFC 495 GD/C	B19W14C4AV13

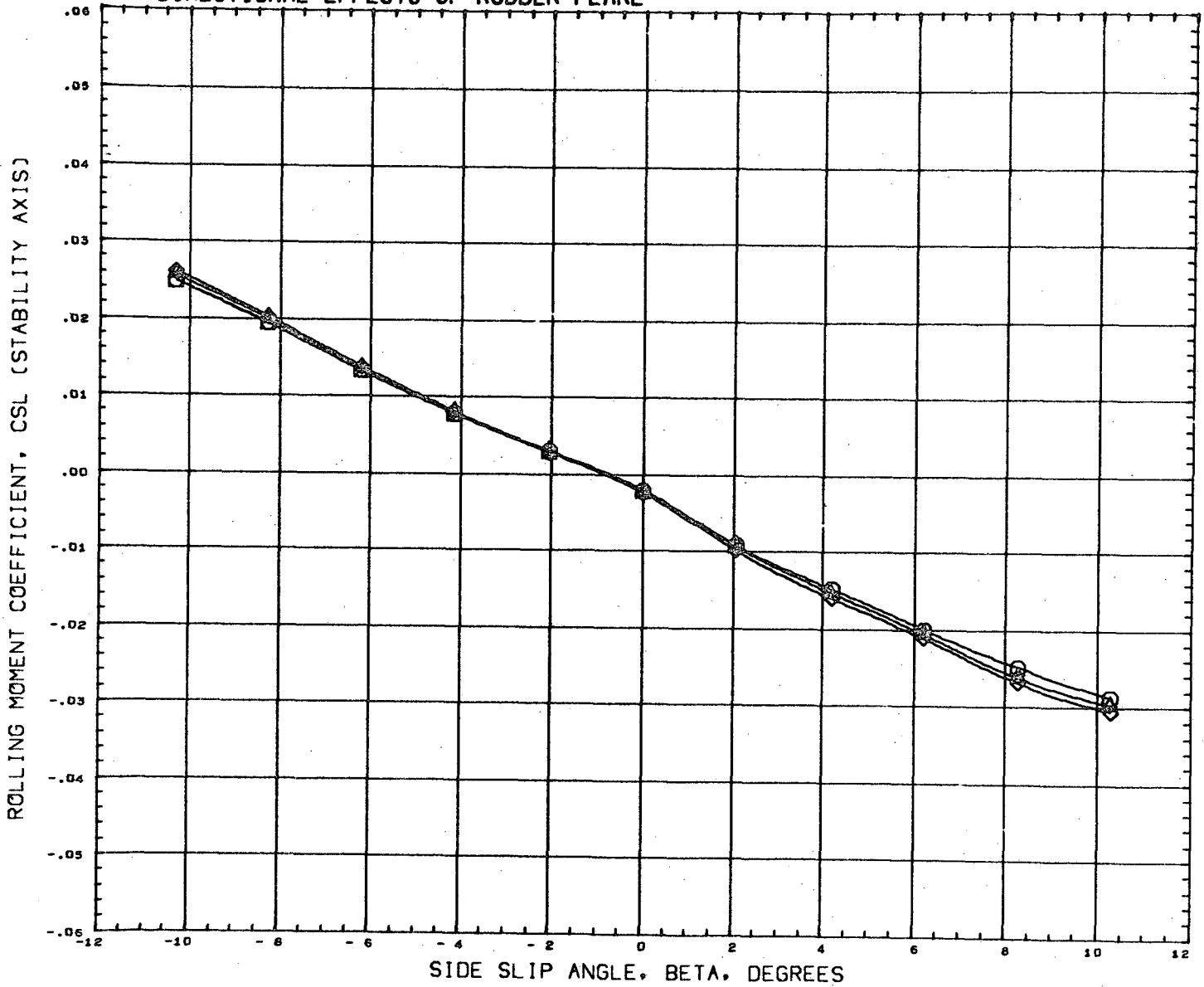
ALPHA	DIHRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.299

DIRECTIONAL EFFECTS OF RUDDER FLARE



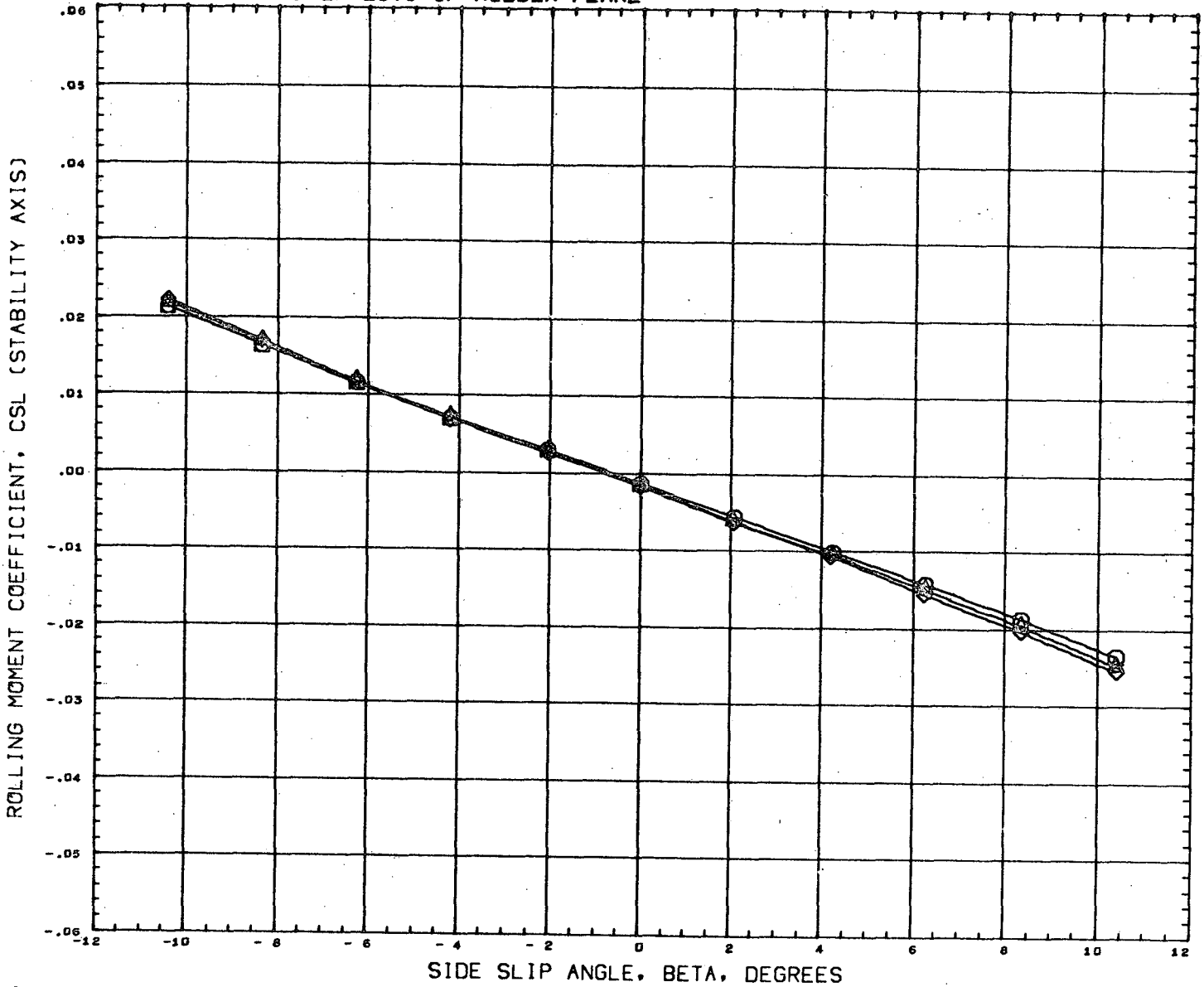
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	MSFC 495 GD/C B19W14C4AV12
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DINHRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.457

DIRECTIONAL EFFECTS OF RUDDER FLARE



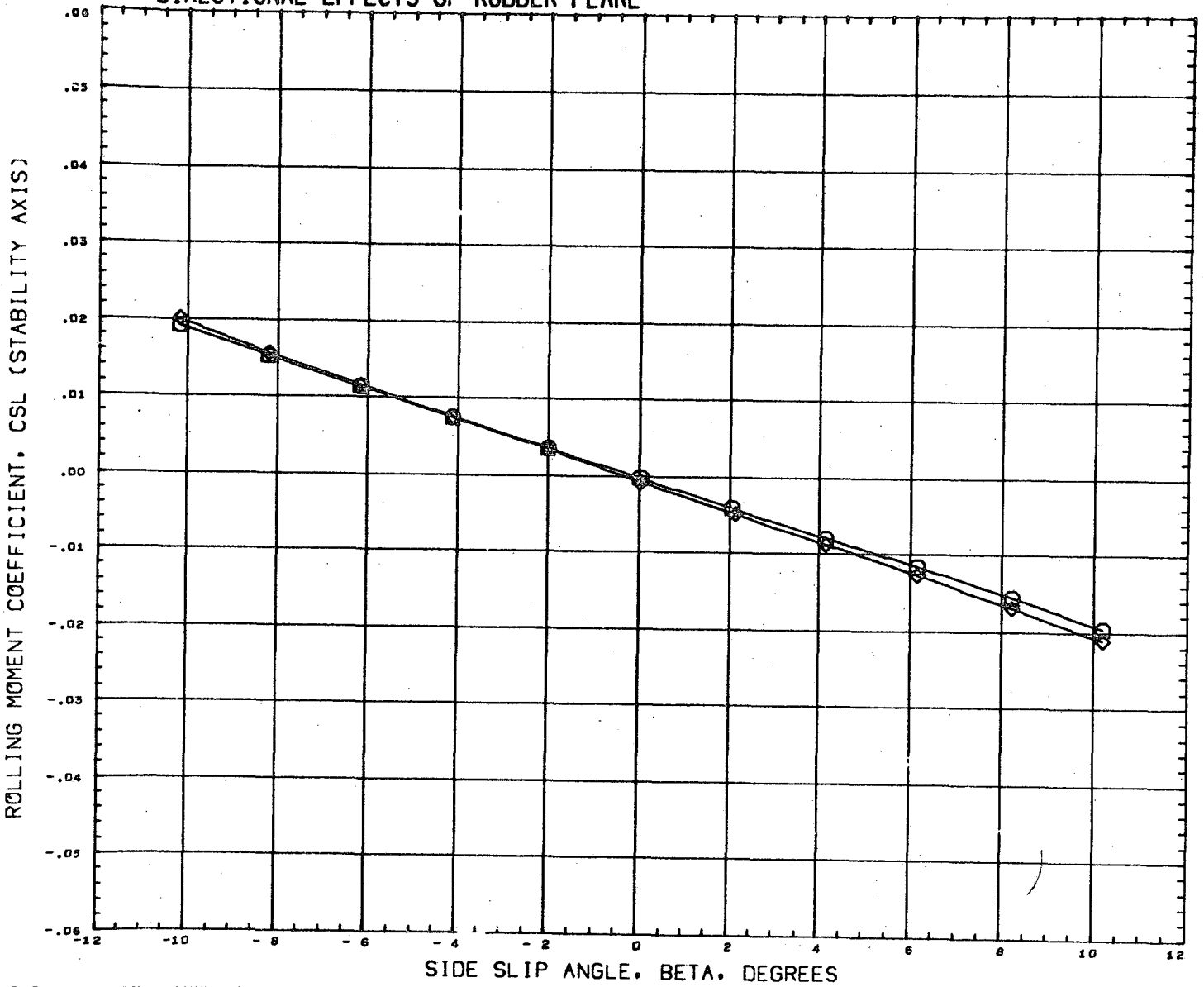
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y32)	○	MSFC 495 GD/C	B19W14C4AV7
(C37YR4)	△	MSFC 495 GD/C	B19W14C4AV12
(C37YR2)	◇	MSFC 495 GD/C	B19W14C4AV13

ALPHA	DINDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.957

DIRECTIONAL EFFECTS OF RUDDER FLARE



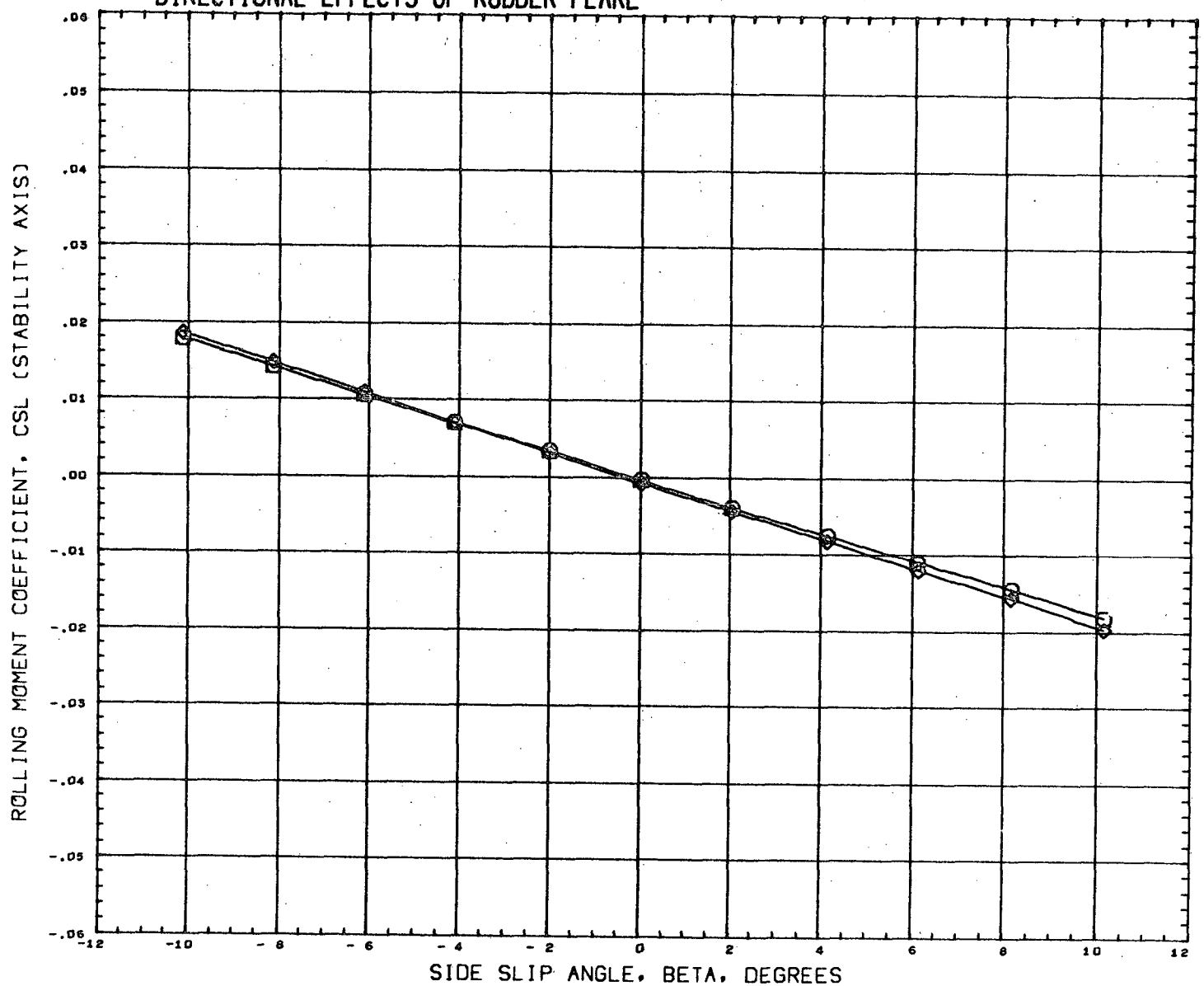
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIMDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL EFFECTS OF RUDDER FLARE



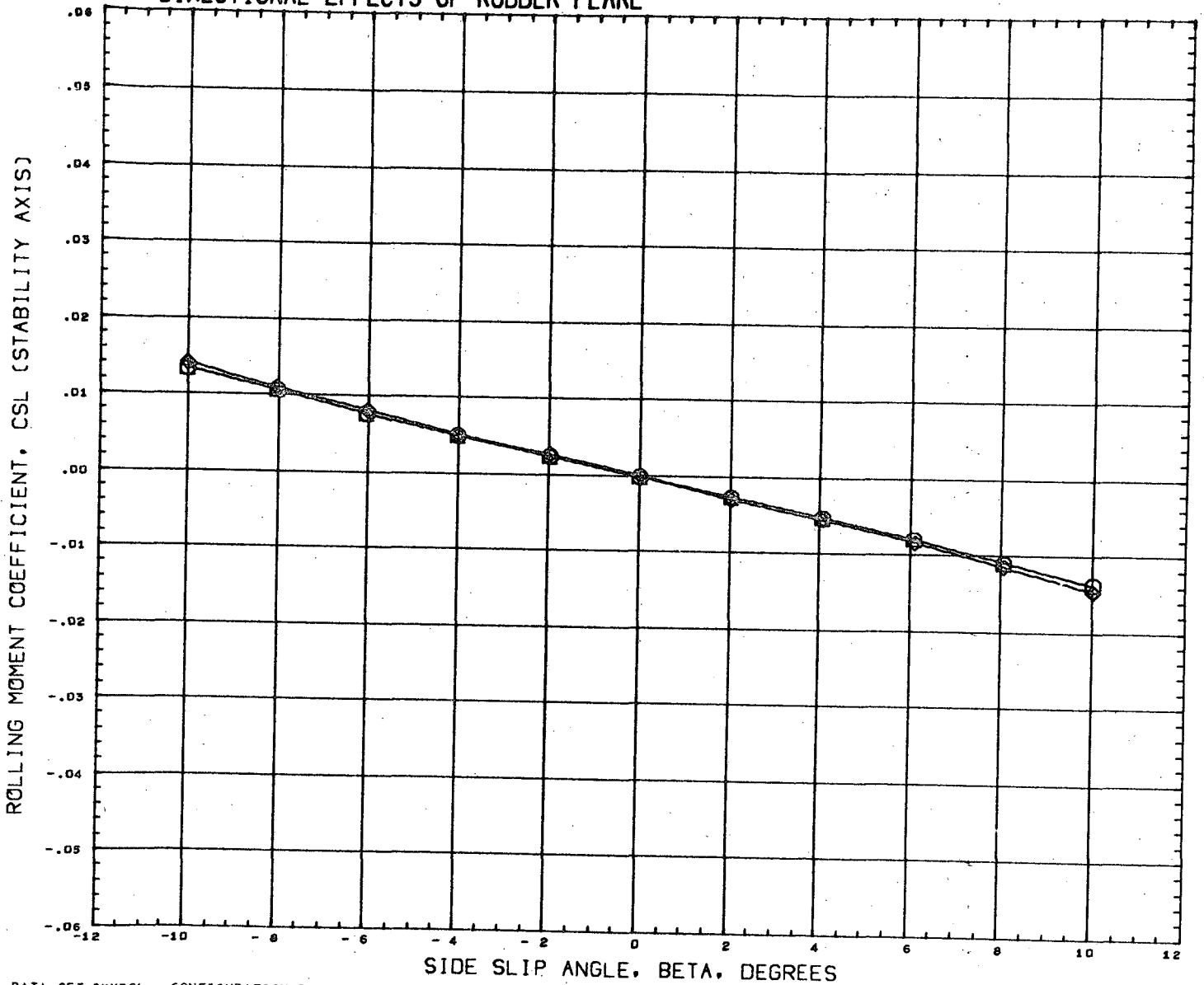
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	D1HDRL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.990

DIRECTIONAL EFFECTS OF RUDDER FLARE



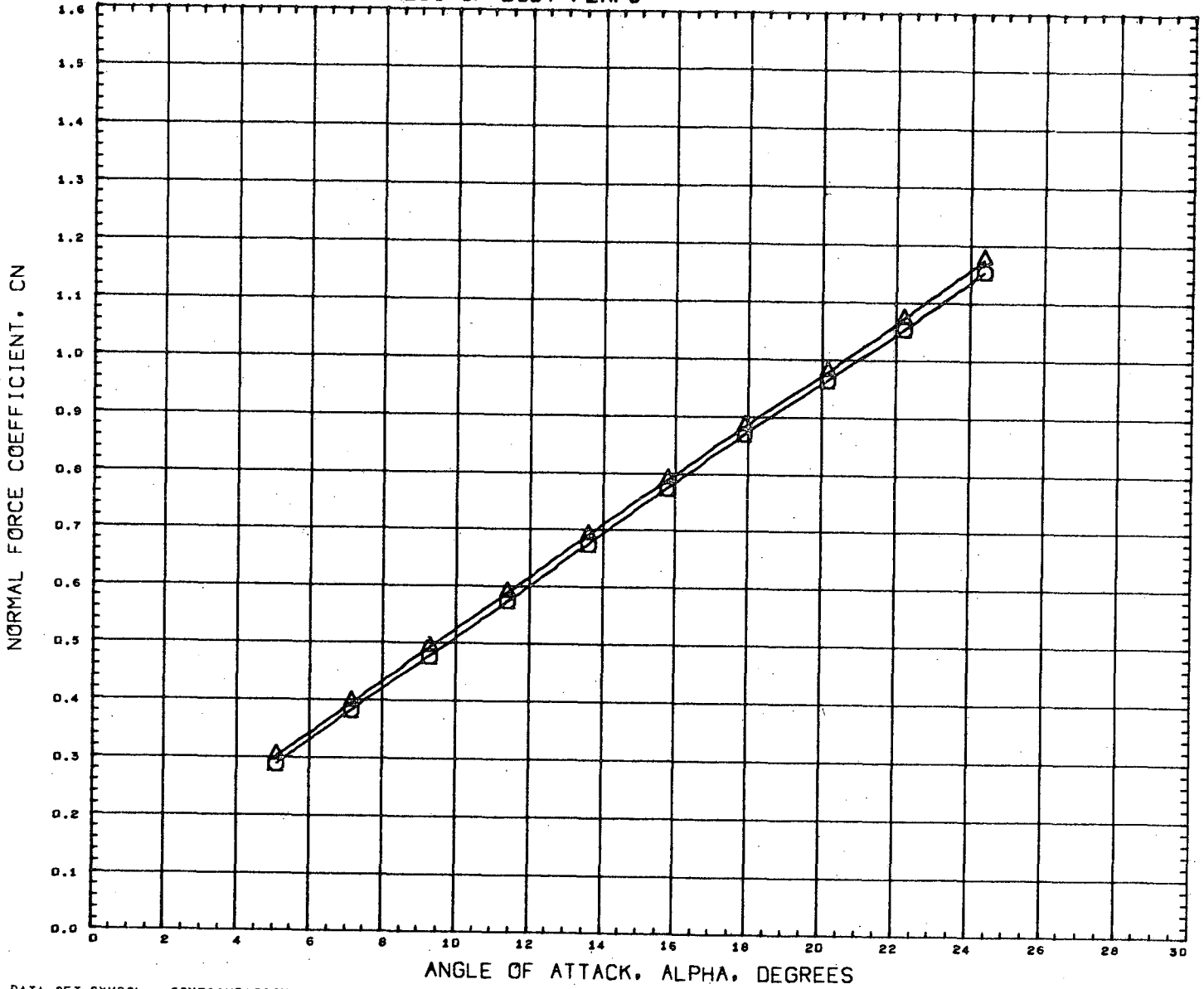
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YR4)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(C37YR2)	MSFC 495 GD/C B19W14C4AV13

ALPHA	DIHDL	RDRFLR
15.000	3.000	0.000
15.000	3.000	25.000
15.000	3.000	50.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

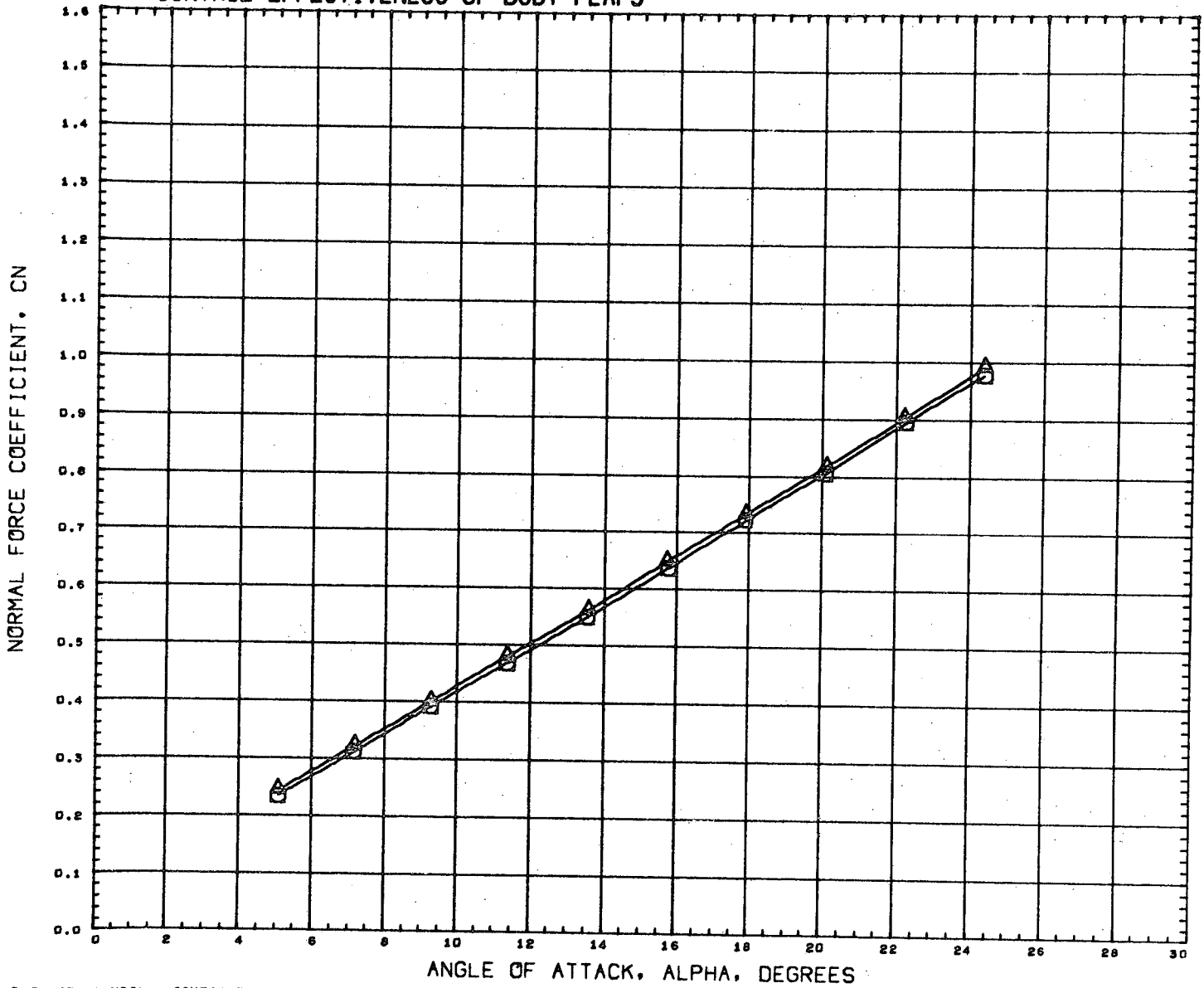
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	DIHDL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(F37A31)	MSFC 495	GD/C	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL1)	MSFC 495	GD/C	3.000	0.000	60.000	0.000	LREF	3.0950 IN.
							BREF	6.0990 IN.
							XMRP	6.6180 IN.
							YMRP	0.0000 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 1.455

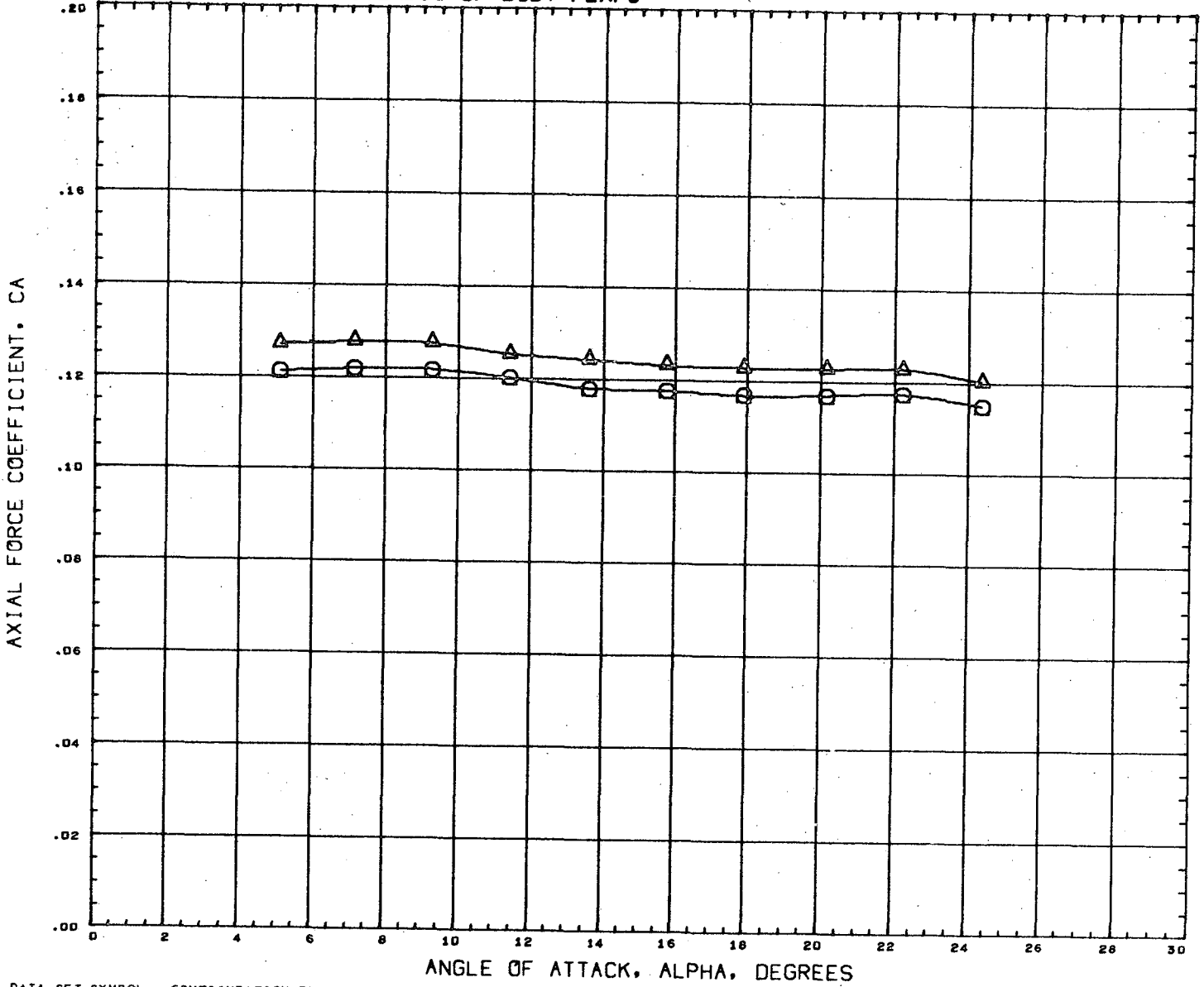
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DINHRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L60	3.000	0.000	60.000	0.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.958

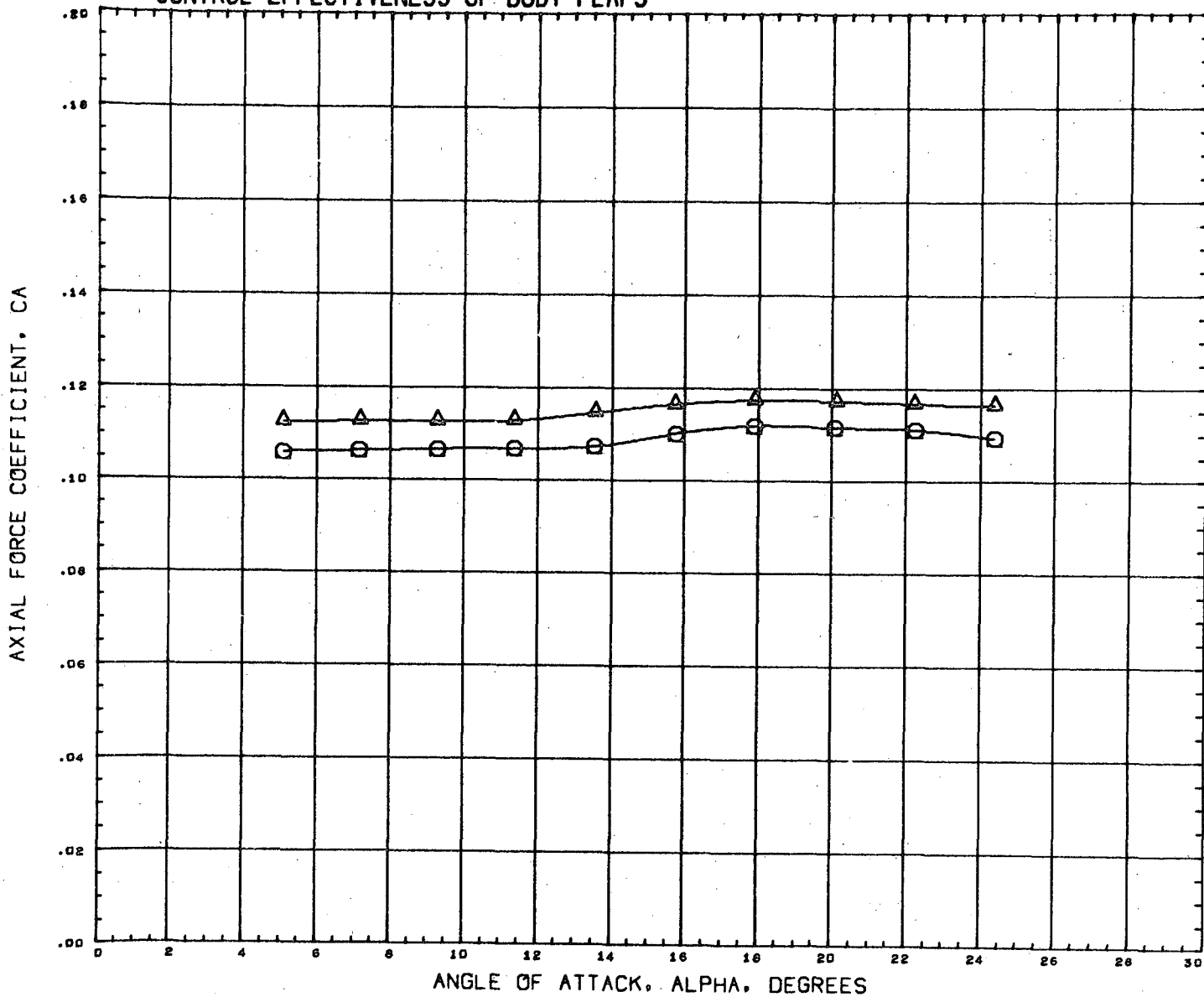
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	DIHDL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(F37A31)	MSFC 495	GD/C	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL1)	MSFC 495	GD/C	3.000	0.000	60.000	0.000	LREF	3.0950 IN.
		B19W14C4AV7					BREF	6.0990 IN.
		B19W14C4AV7F9L60					XMRP	6.6180 IN.
							YMRP	0.0000 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 1.455

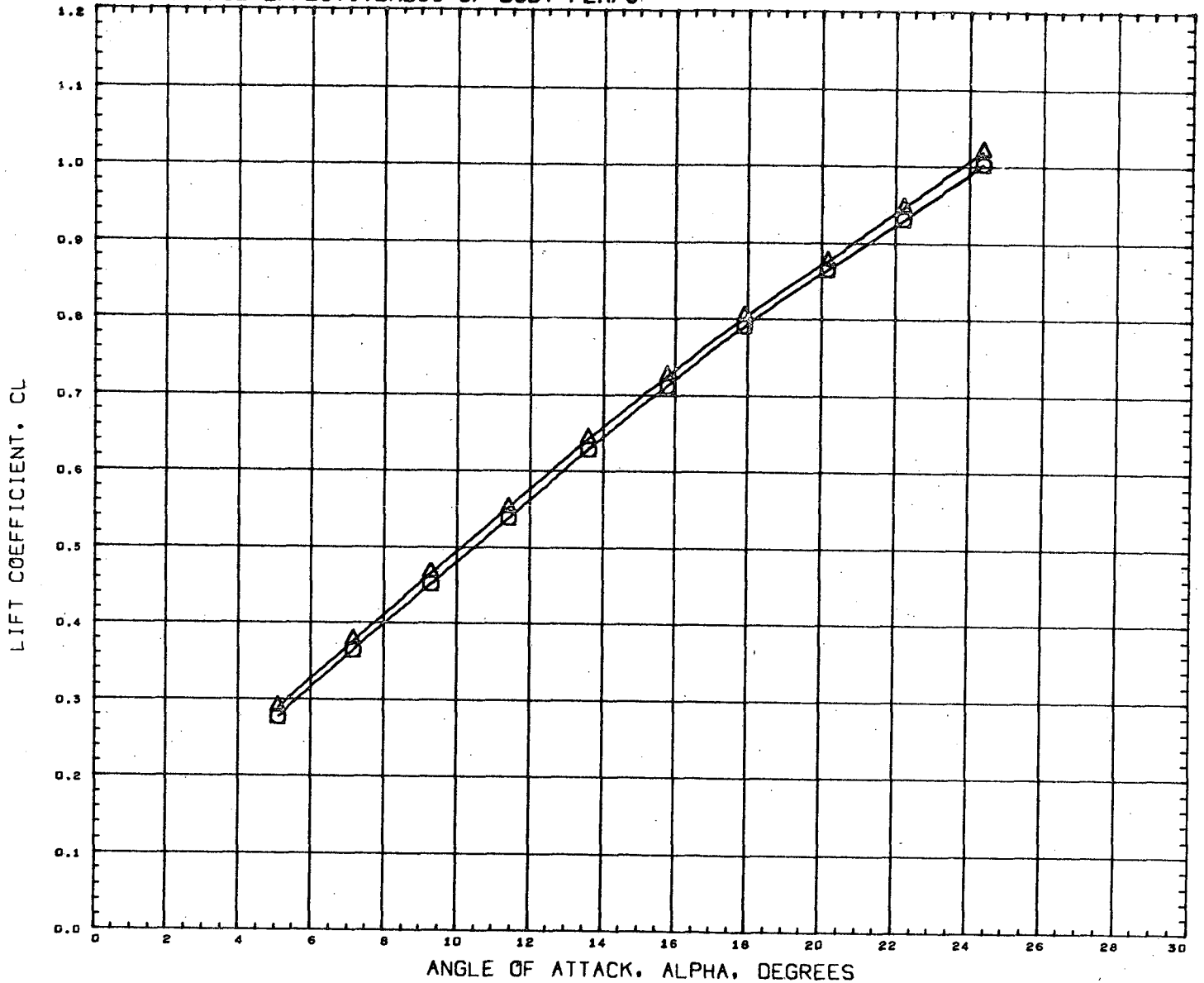
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L6D	3.000	0.000	60.000	0.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.958

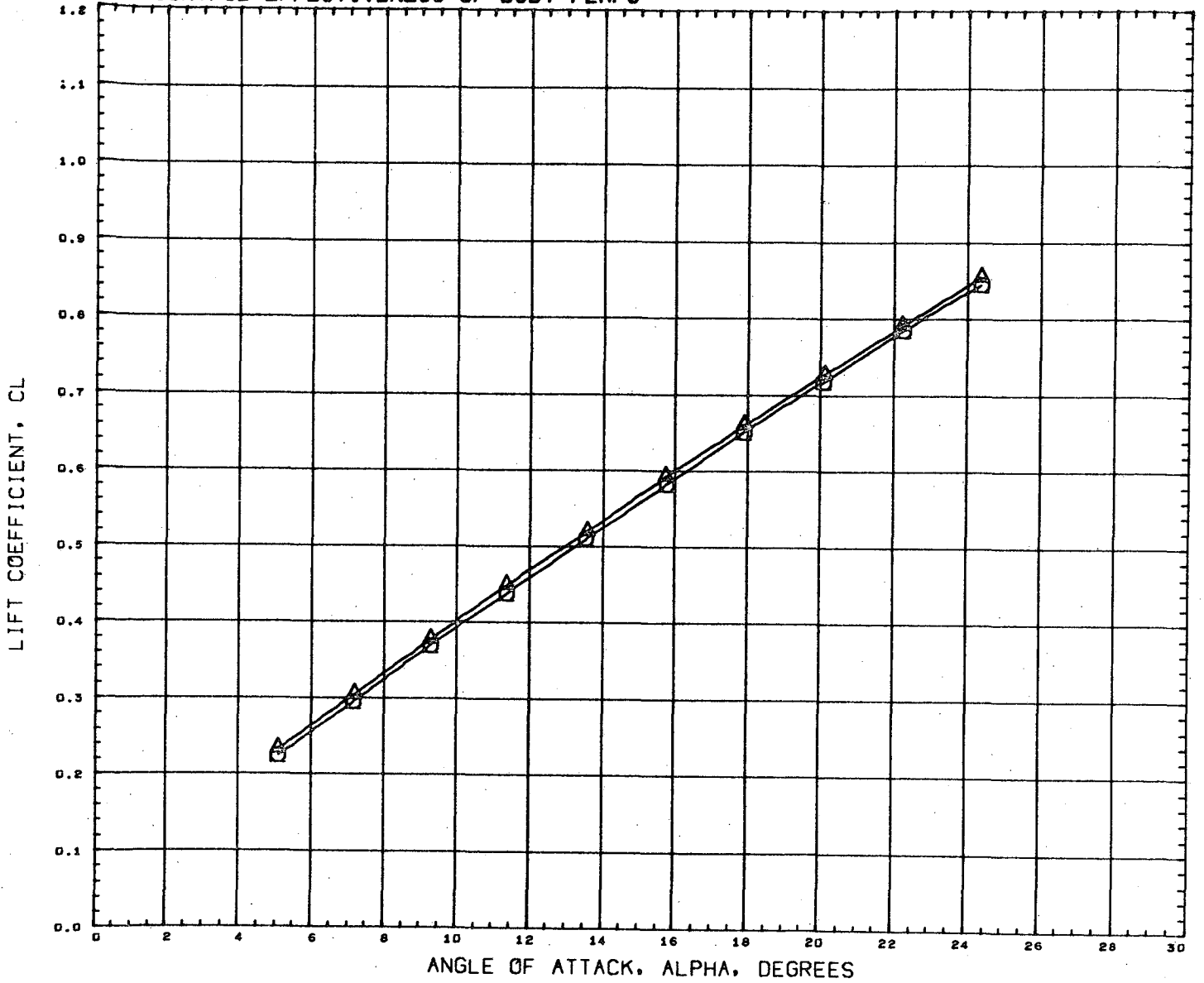
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	D1HDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L6D	3.000	0.000	60.000	0.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.455

CONTROL EFFECTIVENESS OF BODY FLAPS



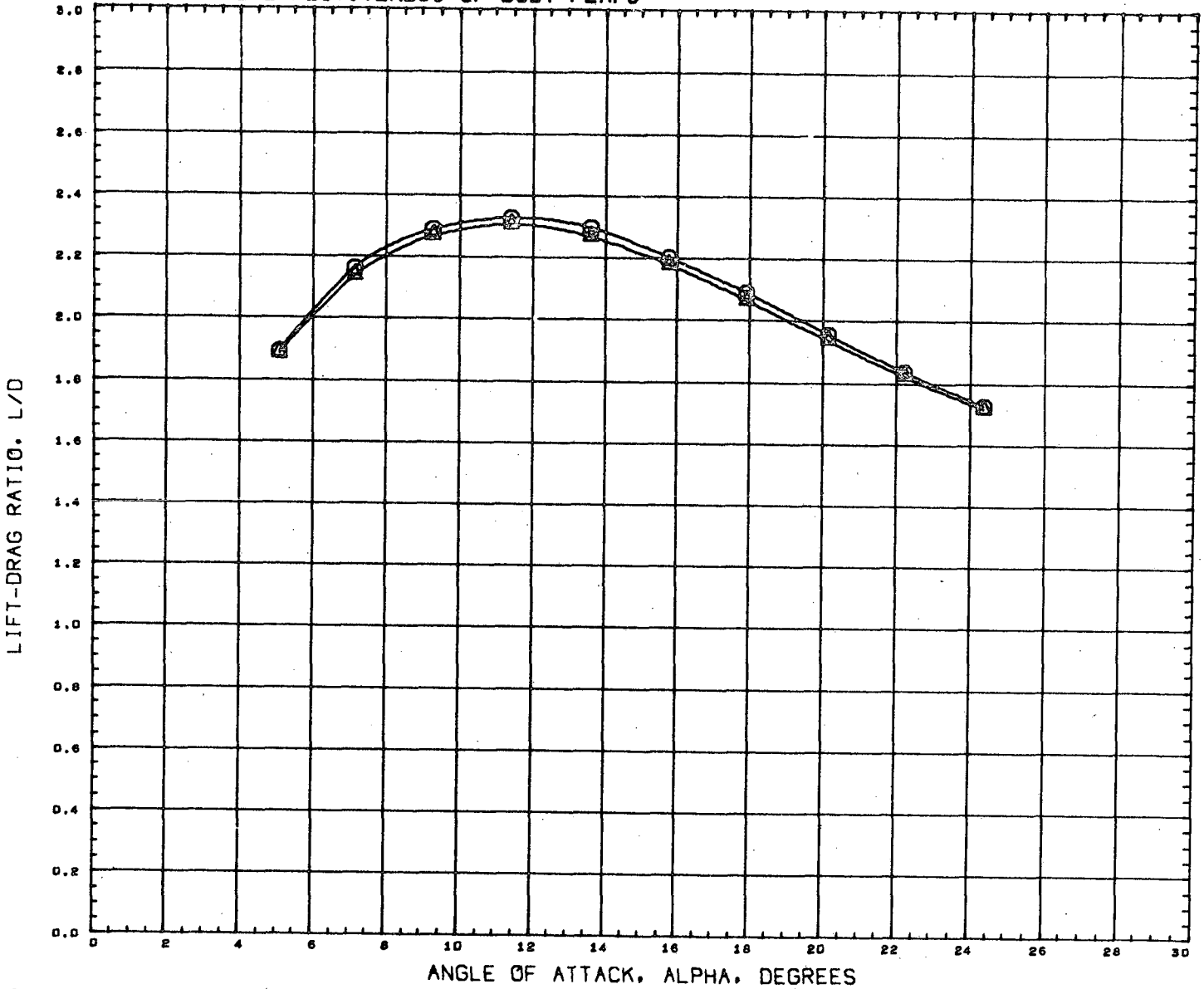
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(F37A31)	MSFC 495 GD/C	B19W14C4AV7
(C37AL1)	MSFC 495 GD/C	B19W14C4AV7F9L6G

DIHDL	RDRFLR	L-BFLP	R-BFLP
3.000	0.000	0.000	0.000
3.000	0.000	60.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.958

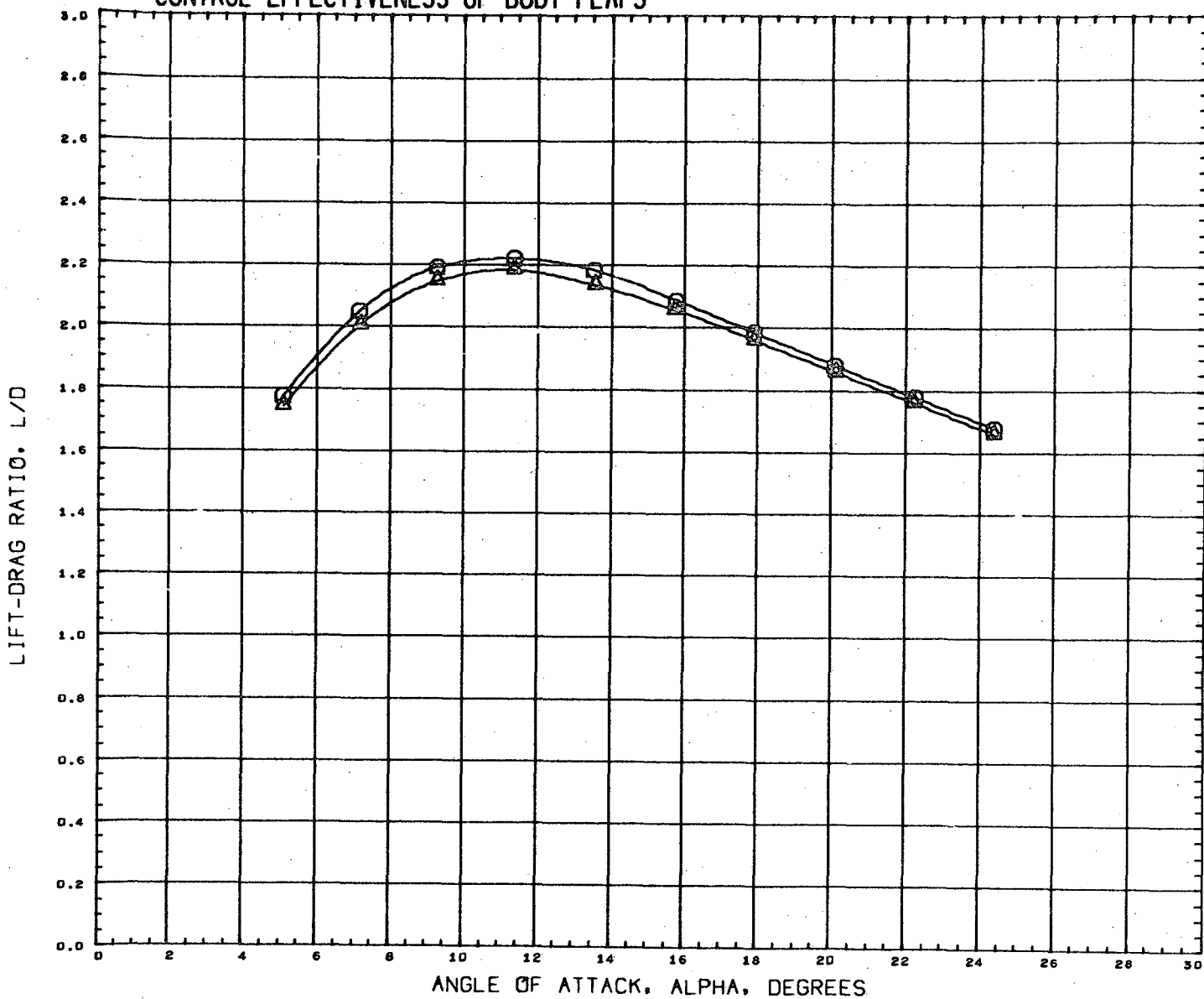
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIMDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L6D	3.000	0.000	60.000	0.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.455

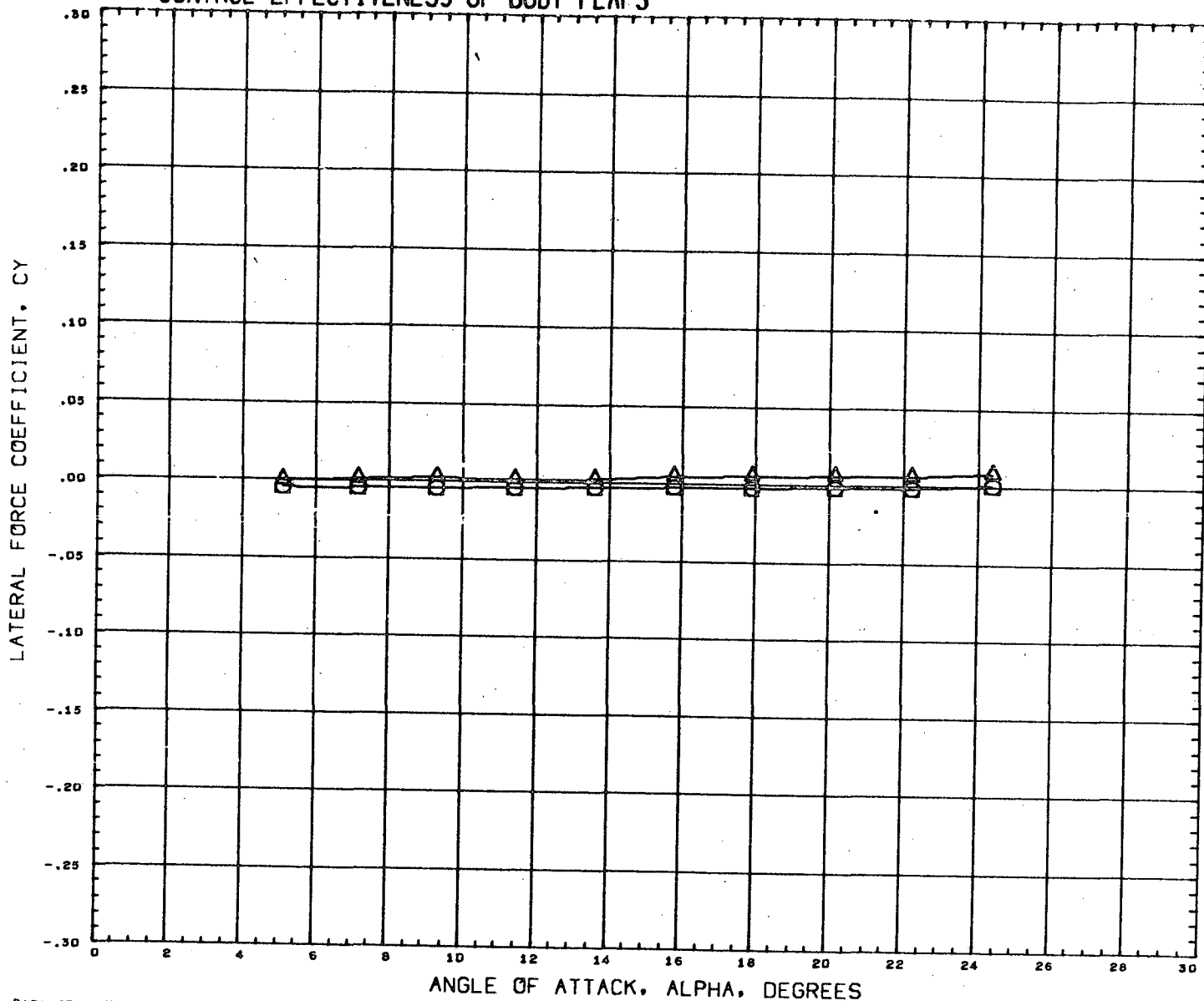
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L6D	3.000	0.000	60.000	0.000	LREF 3.0950 IN. BREF 6.0990 IN. XMRP 6.6180 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035

MACH 1.958

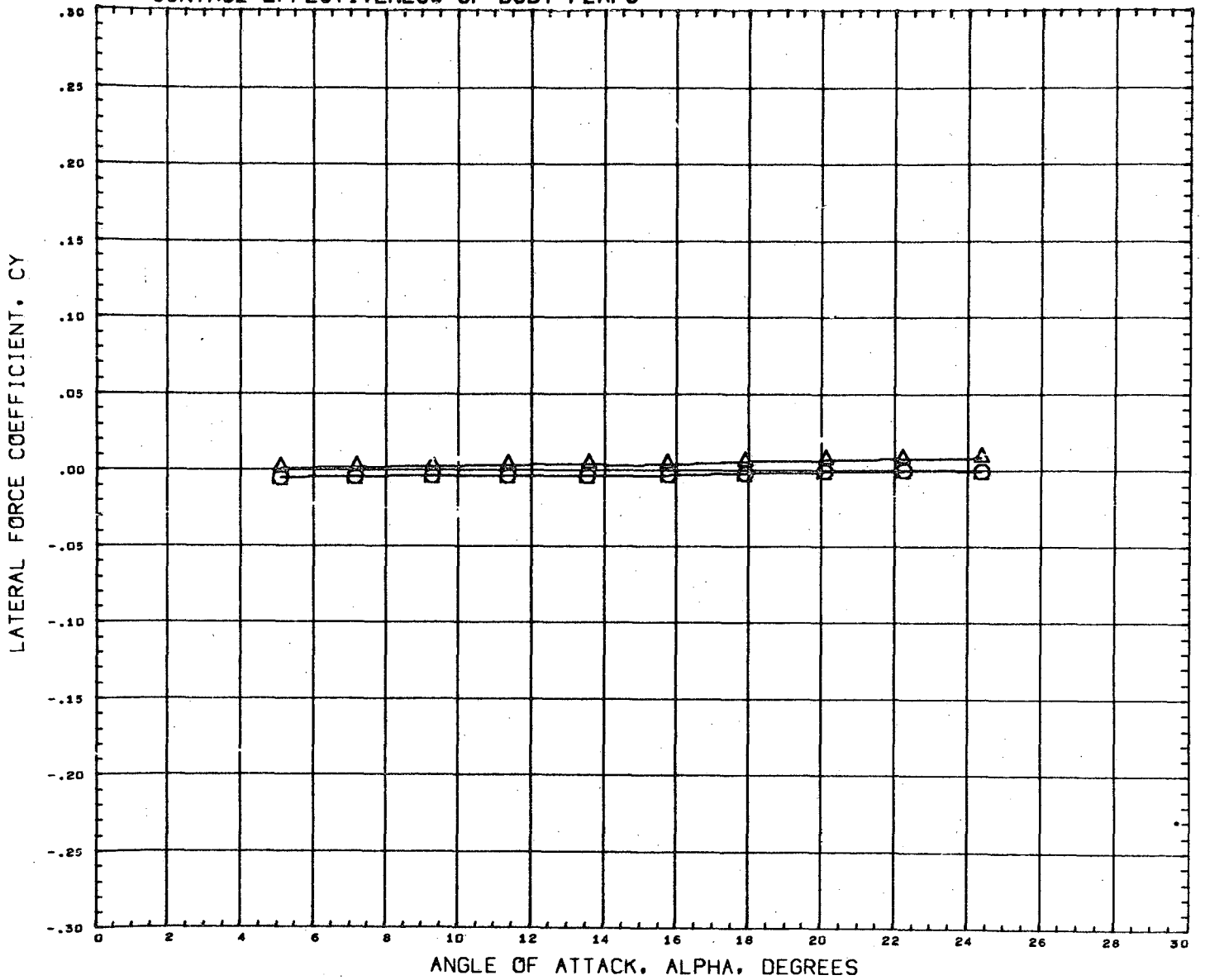
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DINDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L60	3.000	0.000	60.000	0.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.455

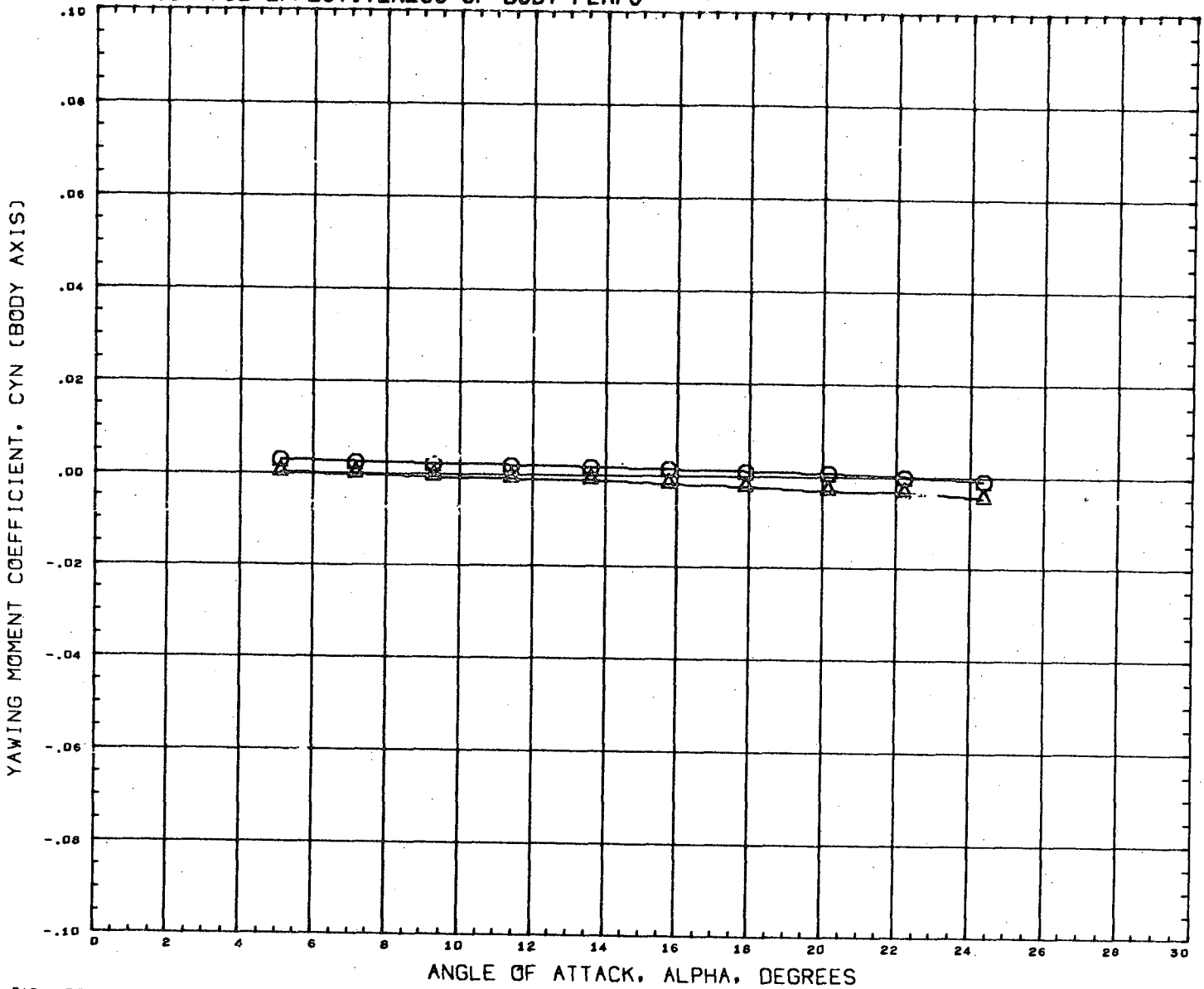
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	D1HDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(F37A31)	MSFC 495	GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL1)	MSFC 495	GD/C B19W14C4AV7F9L6D	3.000	0.000	60.000	0.000	LREF	3.0950 IN.
							BREF	6.0990 IN.
							XMRP	6.6180 IN.
							YMRP	0.0000 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 1.958

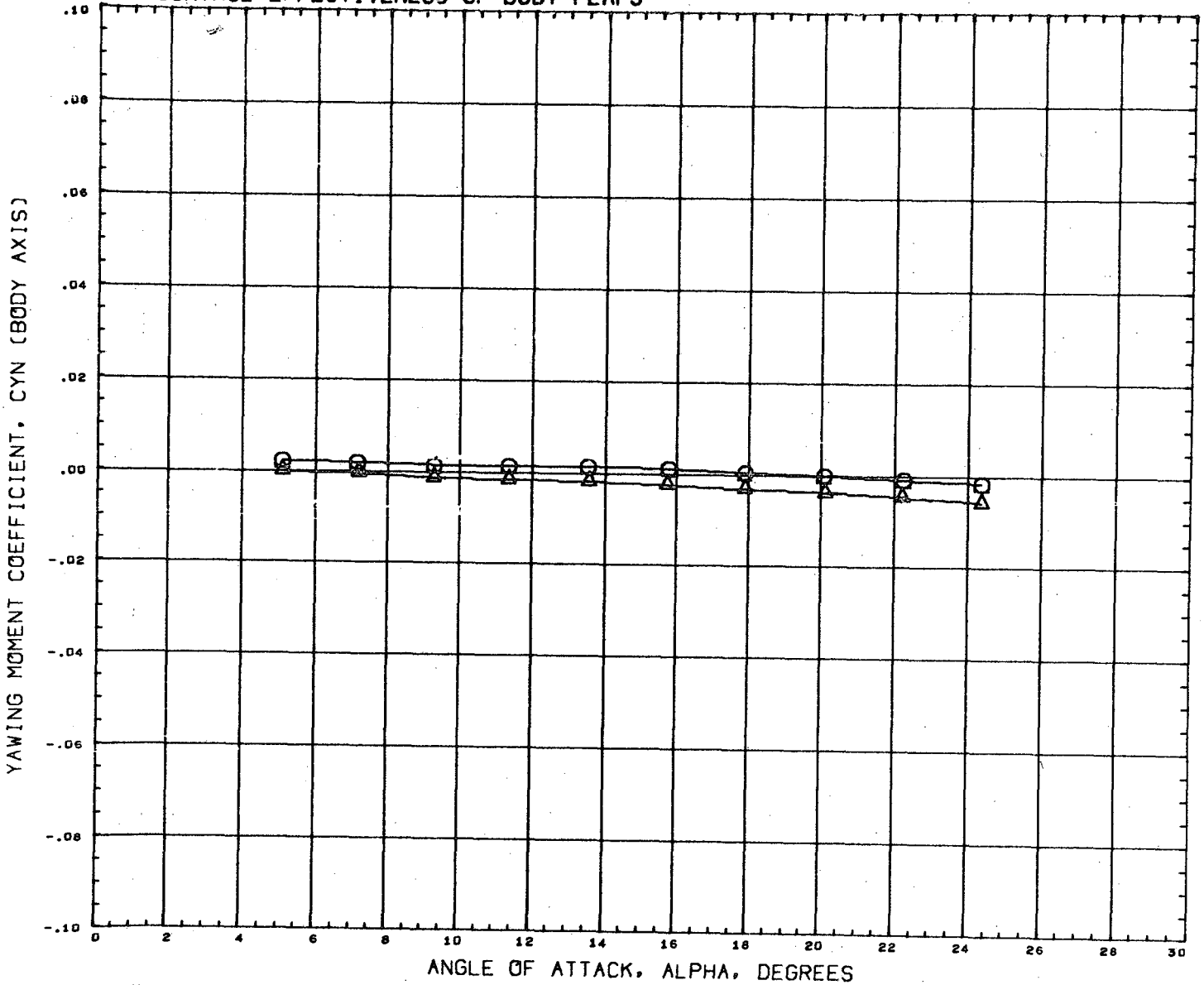
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DINHRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L60	3.000	0.000	60.000	0.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.455

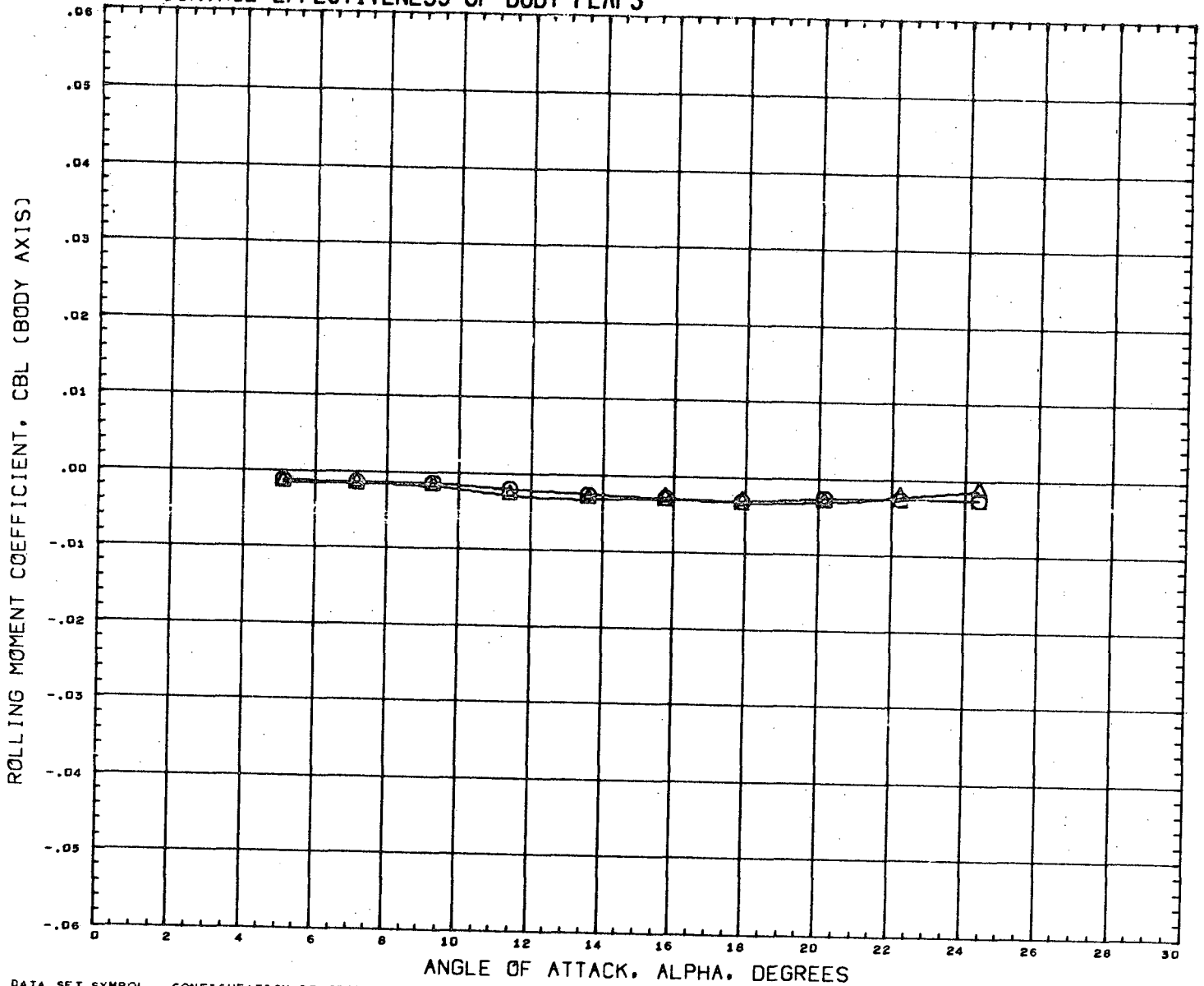
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	D1HDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION			
(F37A31)	MSFC 495	GD/C	B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560	SQ. IN.
(C37AL1)	MSFC 495	GD/C	B19W14C4AV7F9L60	3.000	0.000	60.000	0.000	LREF	3.0950	IN.
								BREF	6.0990	IN.
								XMRP	6.6180	IN.
								YMRP	0.0000	IN.
								ZMRP	0.0000	IN.
								SCALE	0.0035	

MACH 1.958

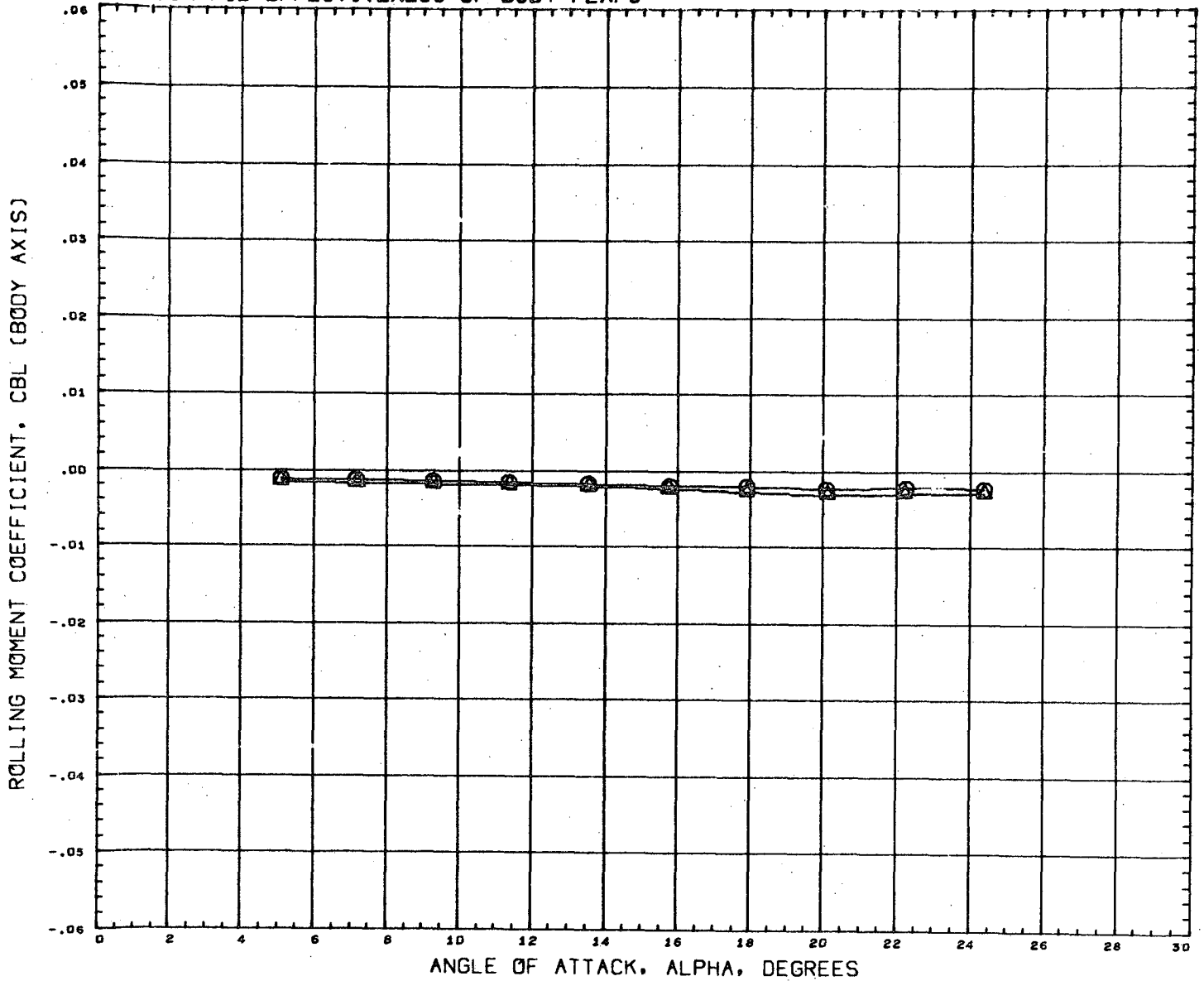
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION	DIHDL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(F37A31)	○	MSFC 495	GD/C	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL1)	△	MSFC 495	GD/C	3.000	0.000	60.000	0.000	LREF	3.0950 IN.
								BREF	6.0990 IN.
								XMRP	6.6180 IN.
								YMRP	0.0000 IN.
								ZMRP	0.0000 IN.
								SCALE	0.0035

MACH 1.455

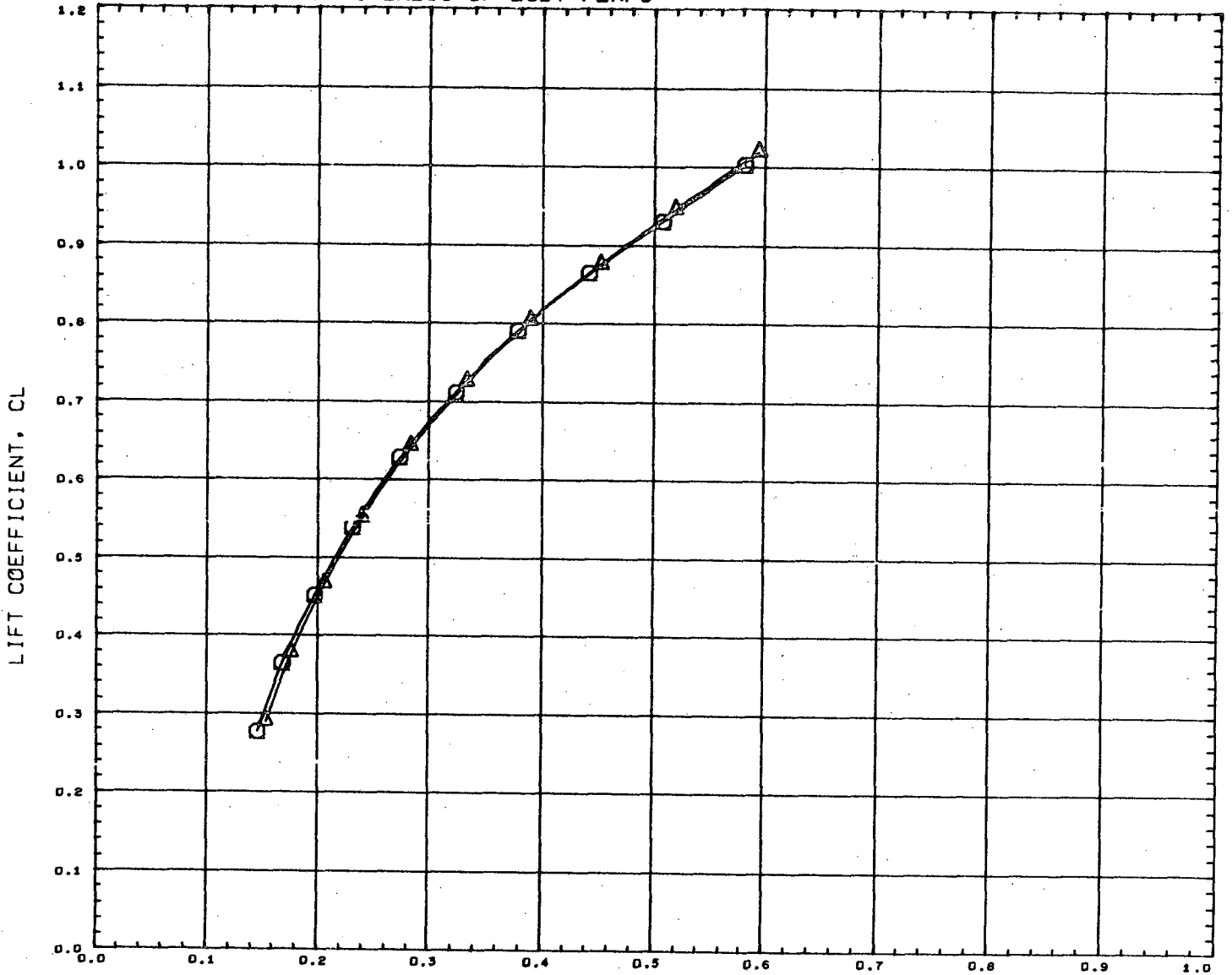
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	DIMDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(F37A31)	MSFC 495	GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL1)	MSFC 495	GD/C B19W14C4AV7F9L6D	3.000	0.000	60.000	0.000	LREF	3.0950 IN.
							BREF	6.0990 IN.
							YMRP	6.6180 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 1.958

CONTROL EFFECTIVENESS OF BODY FLAPS

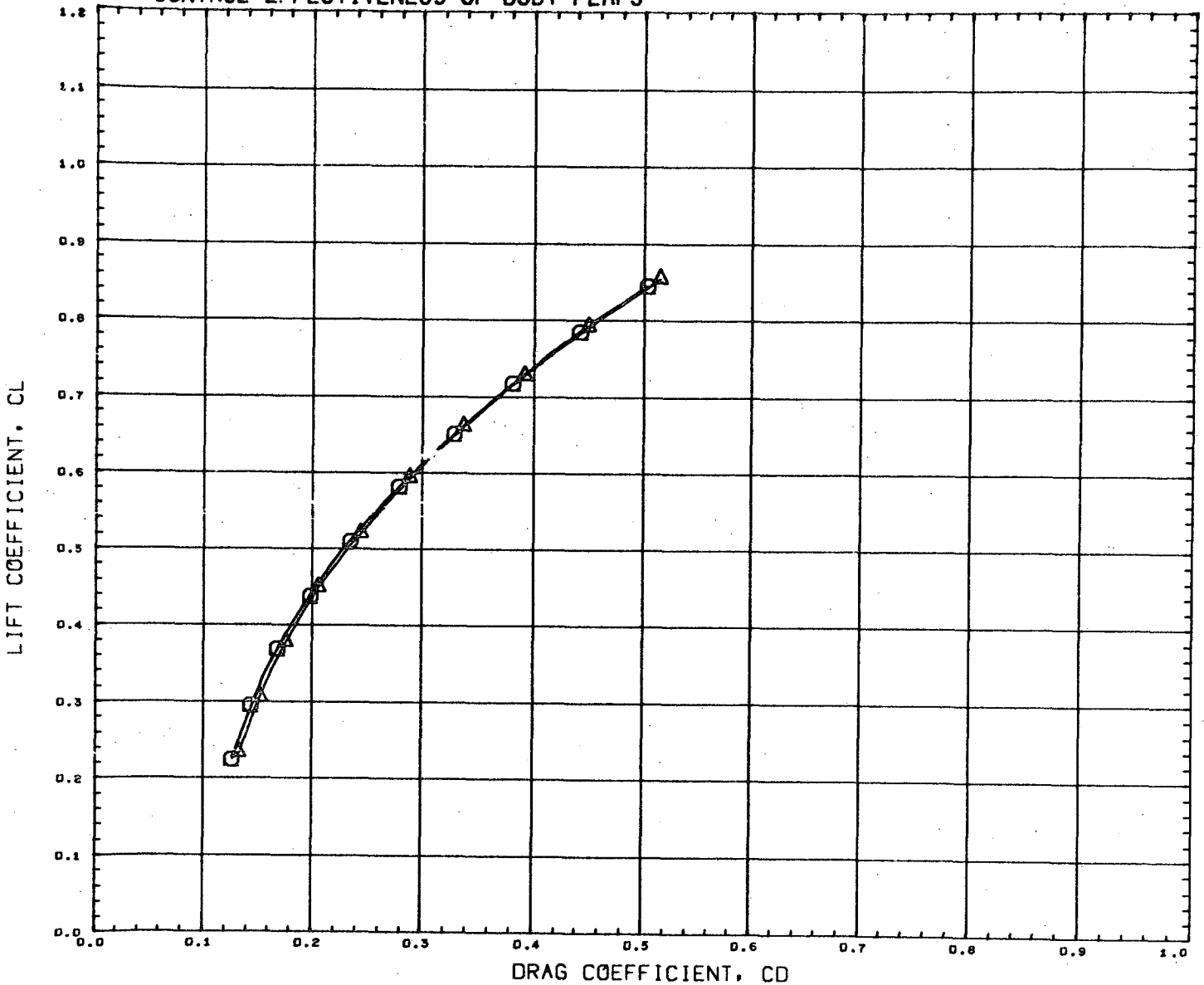


DRAG COEFFICIENT, CD

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIMDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L60	3.000	0.000	60.000	0.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.455

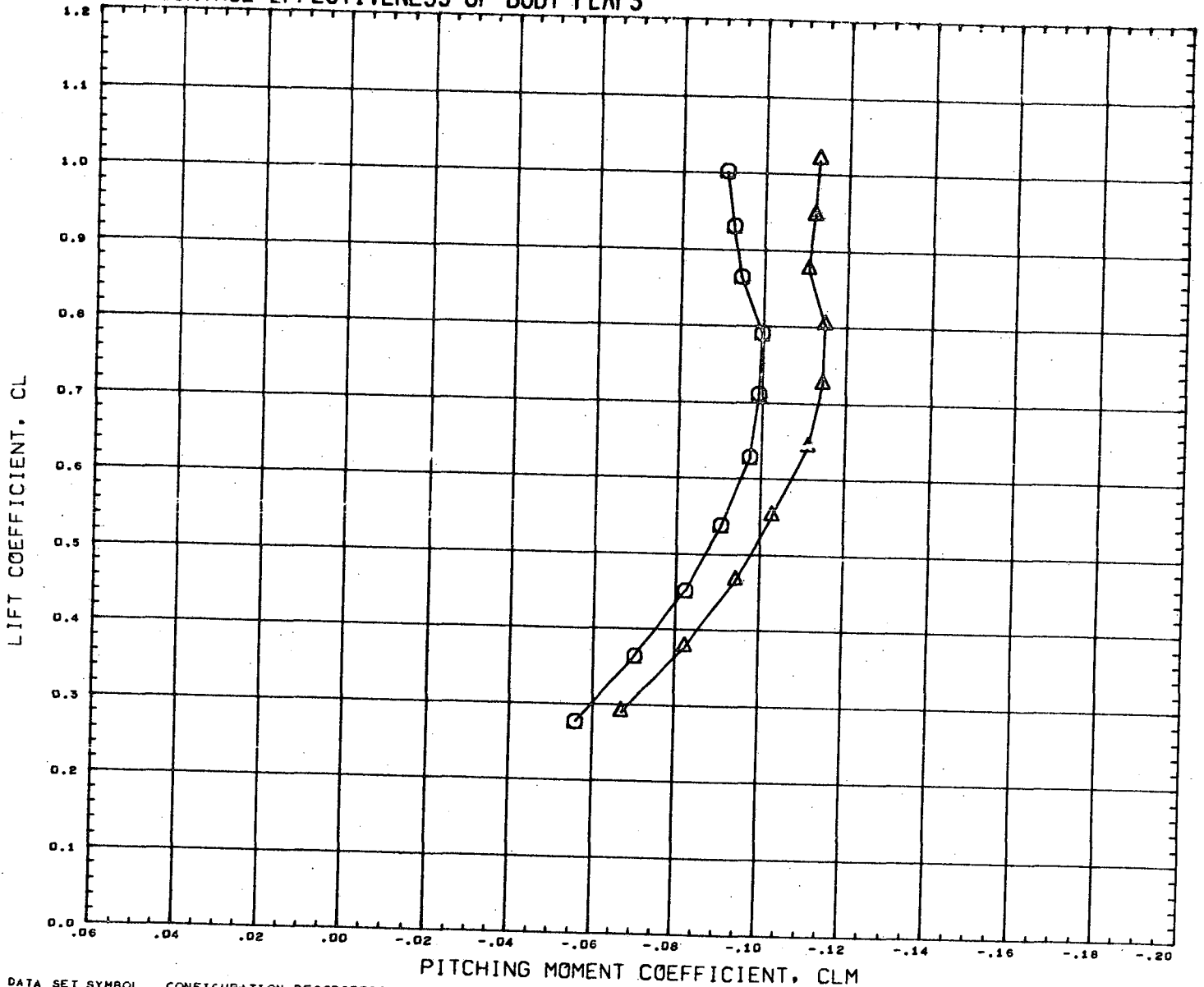
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	D1HDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L6D	3.000	0.000	60.000	0.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.958

CONTROL EFFECTIVENESS OF BODY FLAPS



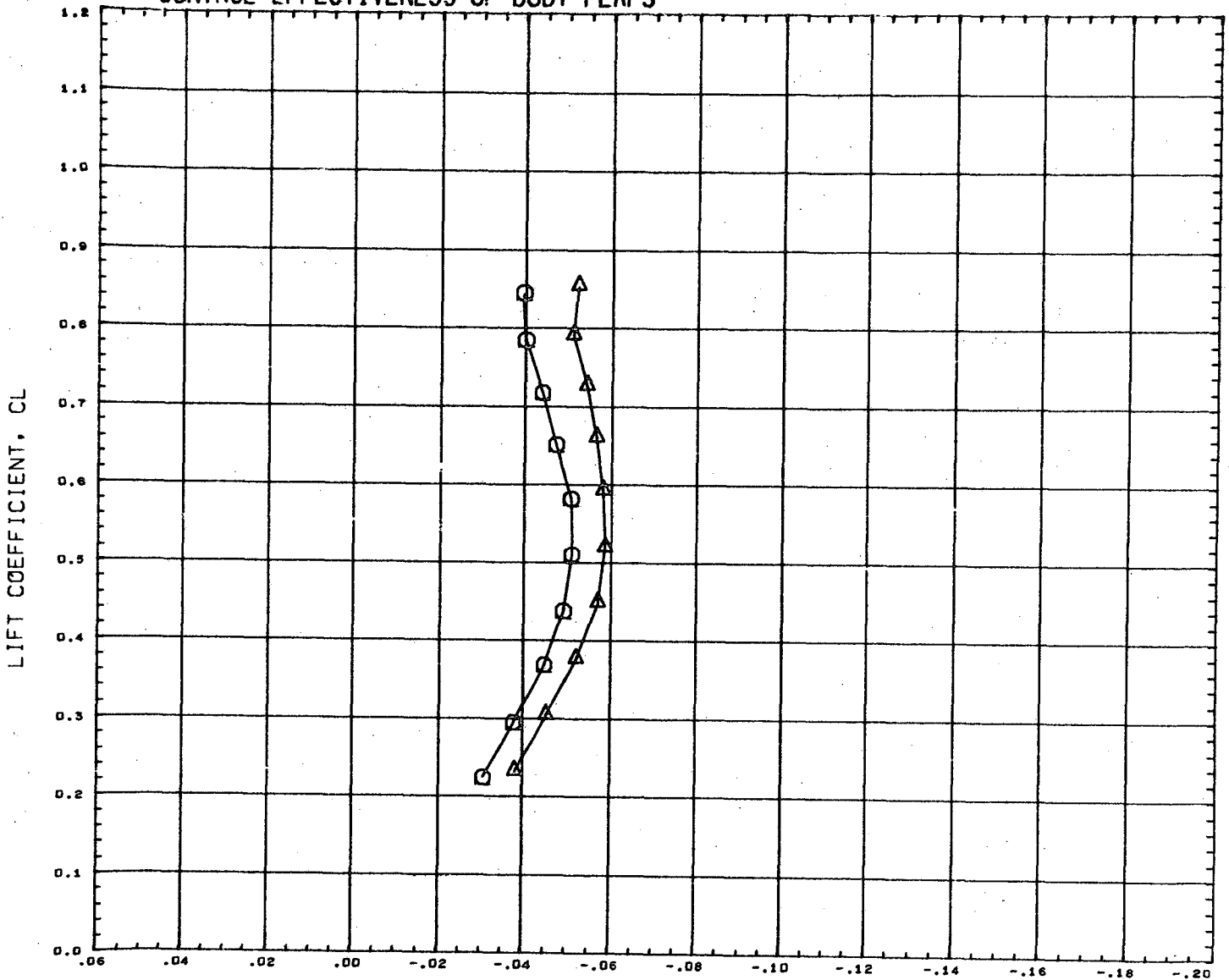
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(F37A31)	MSFC 495 GD/C B19W14C4AV7
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L60

DIMDRL	RDRFLR	L-BFLP	R-BFLP
3.000	0.000	0.000	0.000
3.000	0.000	60.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.455

CONTROL EFFECTIVENESS OF BODY FLAPS

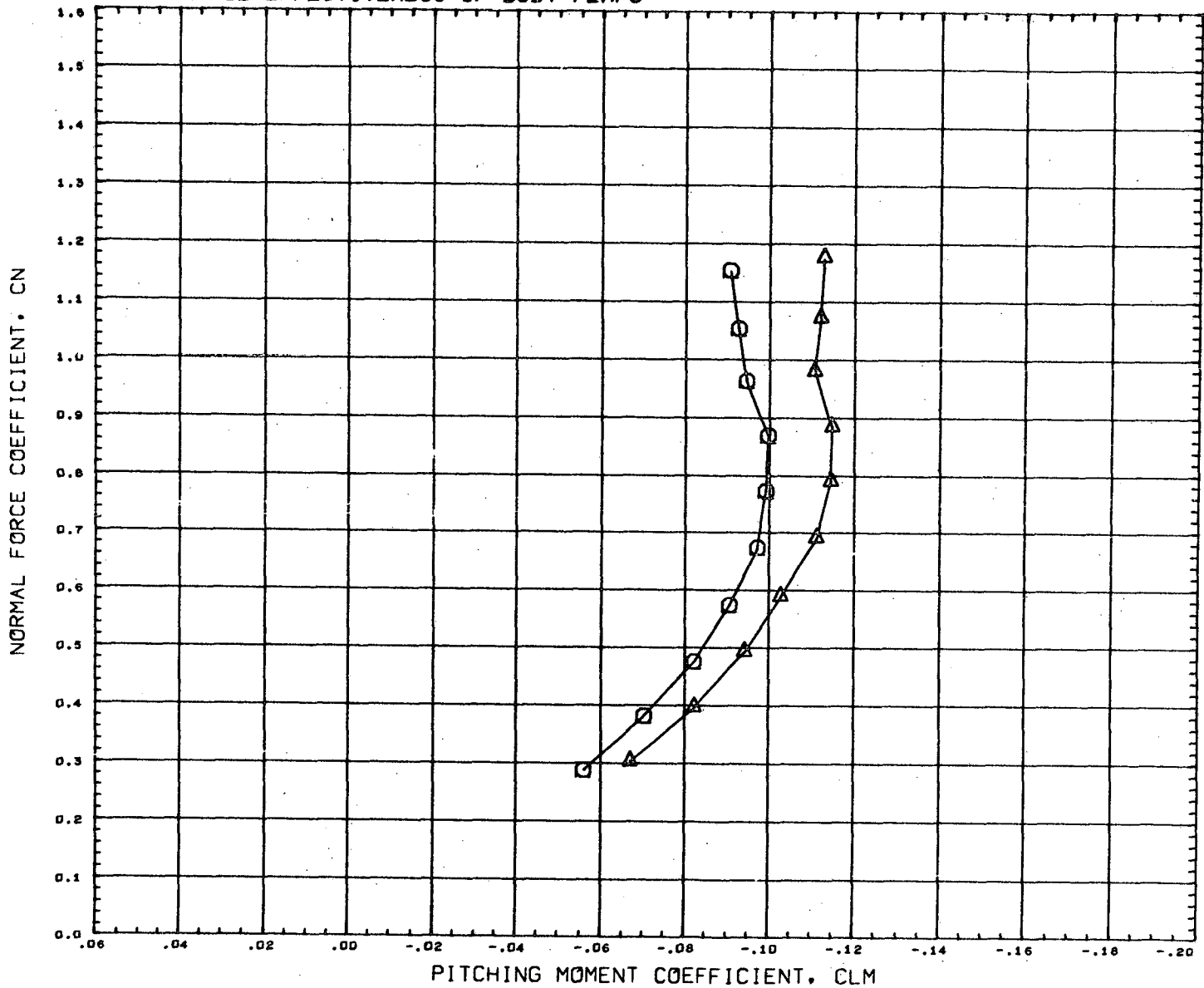


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(F37A31) \circ MSFC 495 GD/C B19W14C4AV7	
(C37AL1) \triangle MSFC 495 GD/C B19W14C4AV7F9L6D	

D1HDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
3.000	0.000	60.000	0.000	LREF 3.0950 IN.
				BREF 6.0990 IN.
				XMRP 6.6180 IN.
				YMRP 0.0000 IN.
				ZMRP 0.0000 IN.
				SCALE 0.0035

MACH 1.958

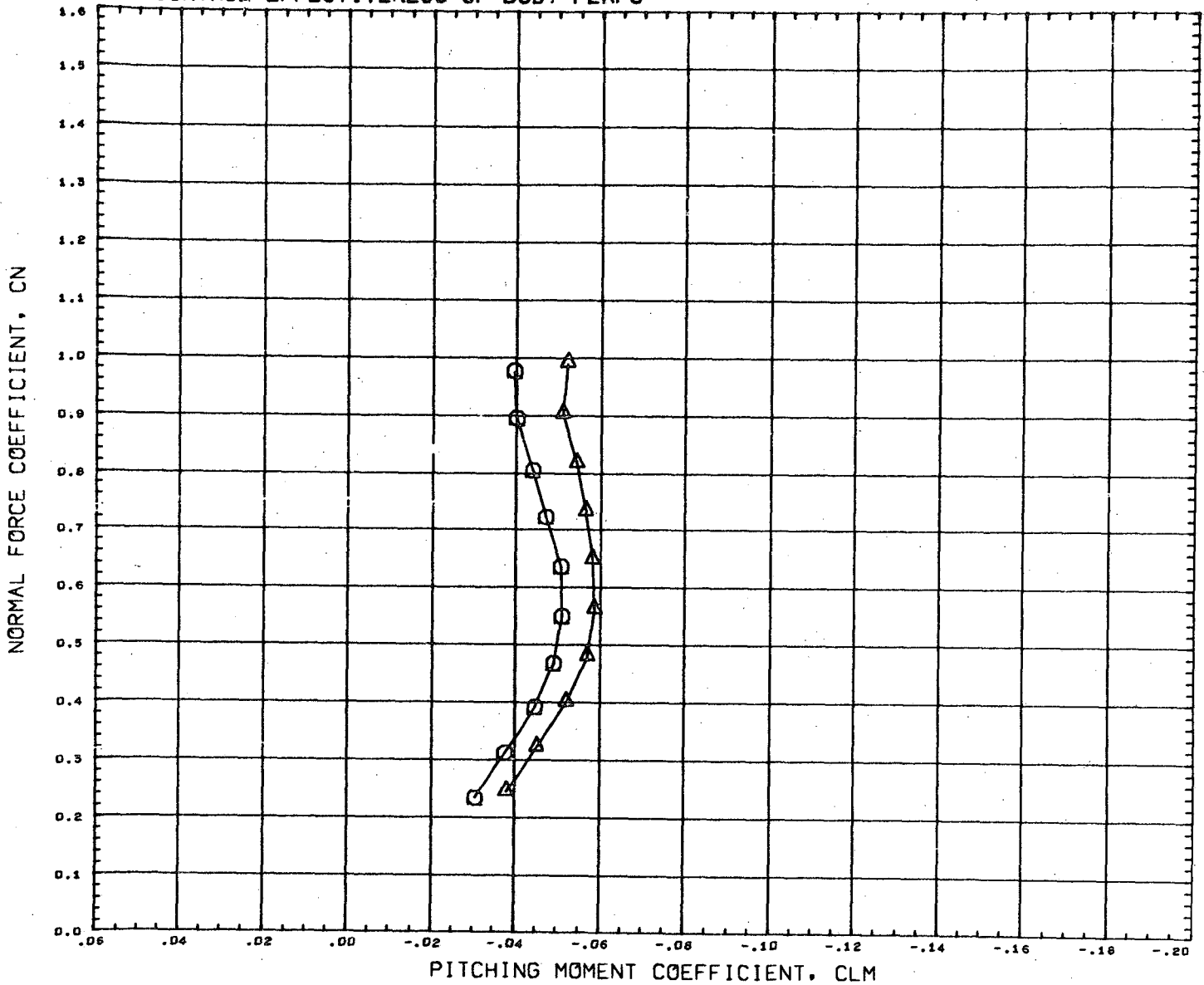
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(F37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL1)	MSFC 495 GD/C B19W14C4AV7F9L6D	3.000	0.000	60.000	0.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.455

CONTROL EFFECTIVENESS OF BODY FLAPS

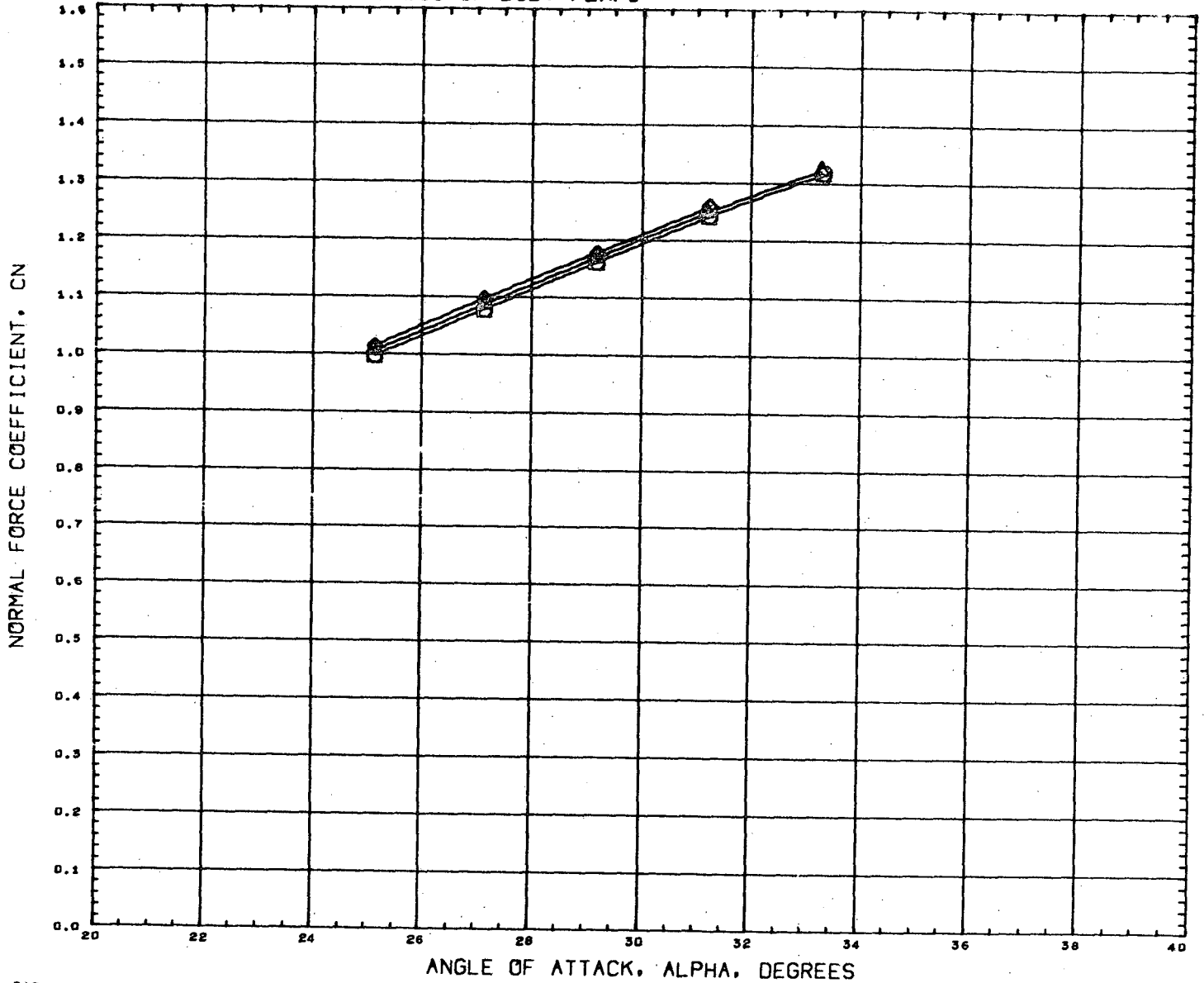


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(F37A31) ○	MSFC 495 GD/C B19W14C4AV7
(C37AL1) △	MSFC 495 GD/C B19W14C4AV7F9L60

DIMDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
3.000	0.000	60.000	0.000	LREF 3.0950 IN.
				BREF 6.0990 IN.
				XMRP 6.6180 IN.
				YMRP 0.0000 IN.
				ZMRP 0.0000 IN.
				SCALE 0.0035

MACH 1.958

CONTROL EFFECTIVENESS OF BODY FLAPS



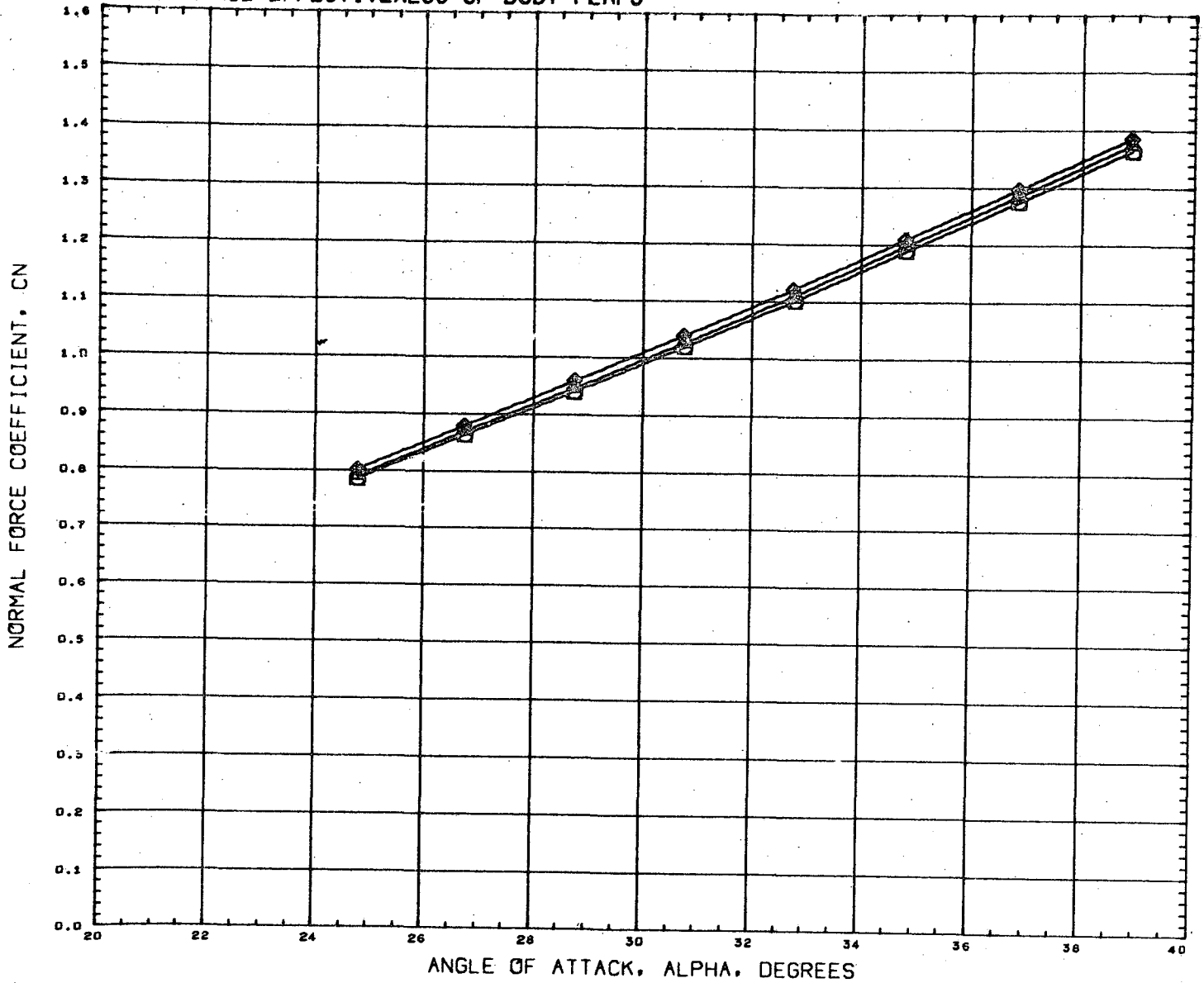
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	MSFC 495 GD/C	B19W14C4A
(C37AL2)	MSFC 495 GD/C	B19W14C4AF9L60
(C37AL3)	MSFC 495 GD/C	B19W14C4AF9L90

DIMDRL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

CONTROL EFFECTIVENESS OF BODY FLAPS



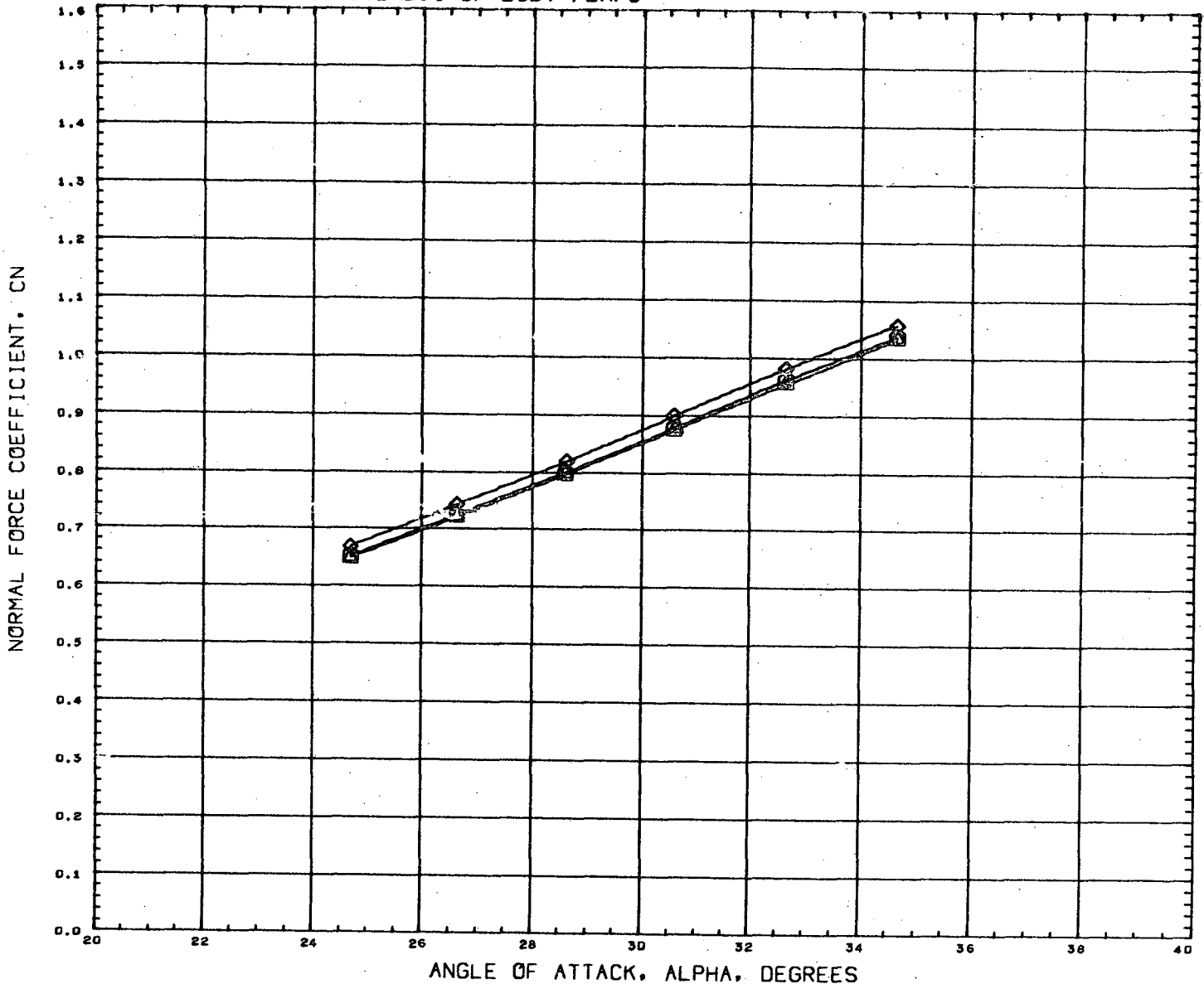
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	MSFC 495 GD/C	B19W14C4A
(C37AL2)	MSFC 495 GD/C	B19W14C4AF9L6D
(C37AL3)	MSFC 495 GD/C	B19W14C4AF9L9D

DIHDL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	sq. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

CONTROL EFFECTIVENESS OF BODY FLAPS

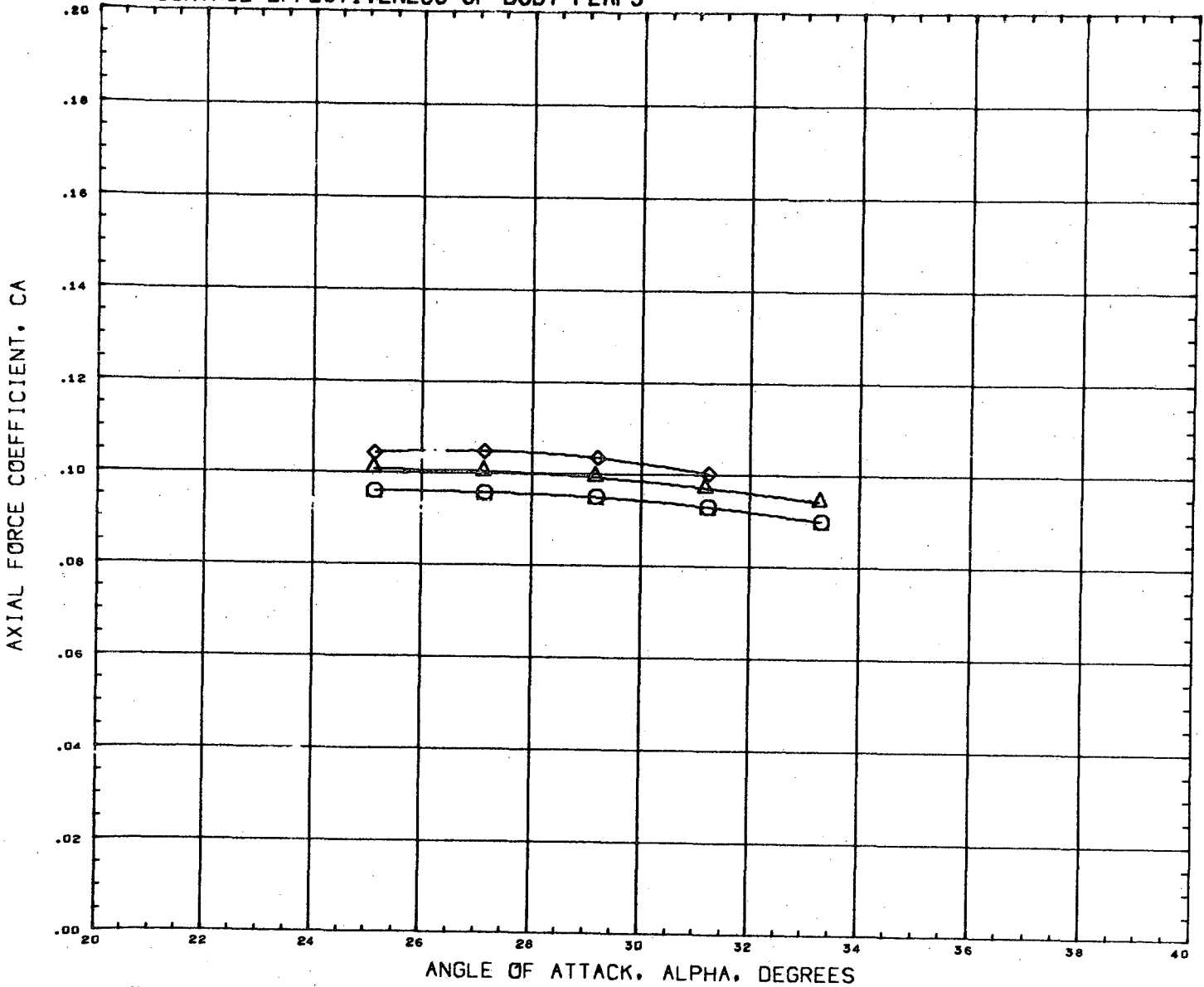


DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION	DIMDRL	L-BFLP	R-BFLP
(C37A32)	◇	MSFC 495 GD/C	B19W14C4A	3.000	0.000	0.000
(C37AL2)	◇	MSFC 495 GD/C	B19W14C4AF9L6D	3.000	60.000	0.000
(C37AL3)	◇	MSFC 495 GD/C	B19W14C4AF9L9D	3.000	90.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.960

CONTROL EFFECTIVENESS OF BODY FLAPS

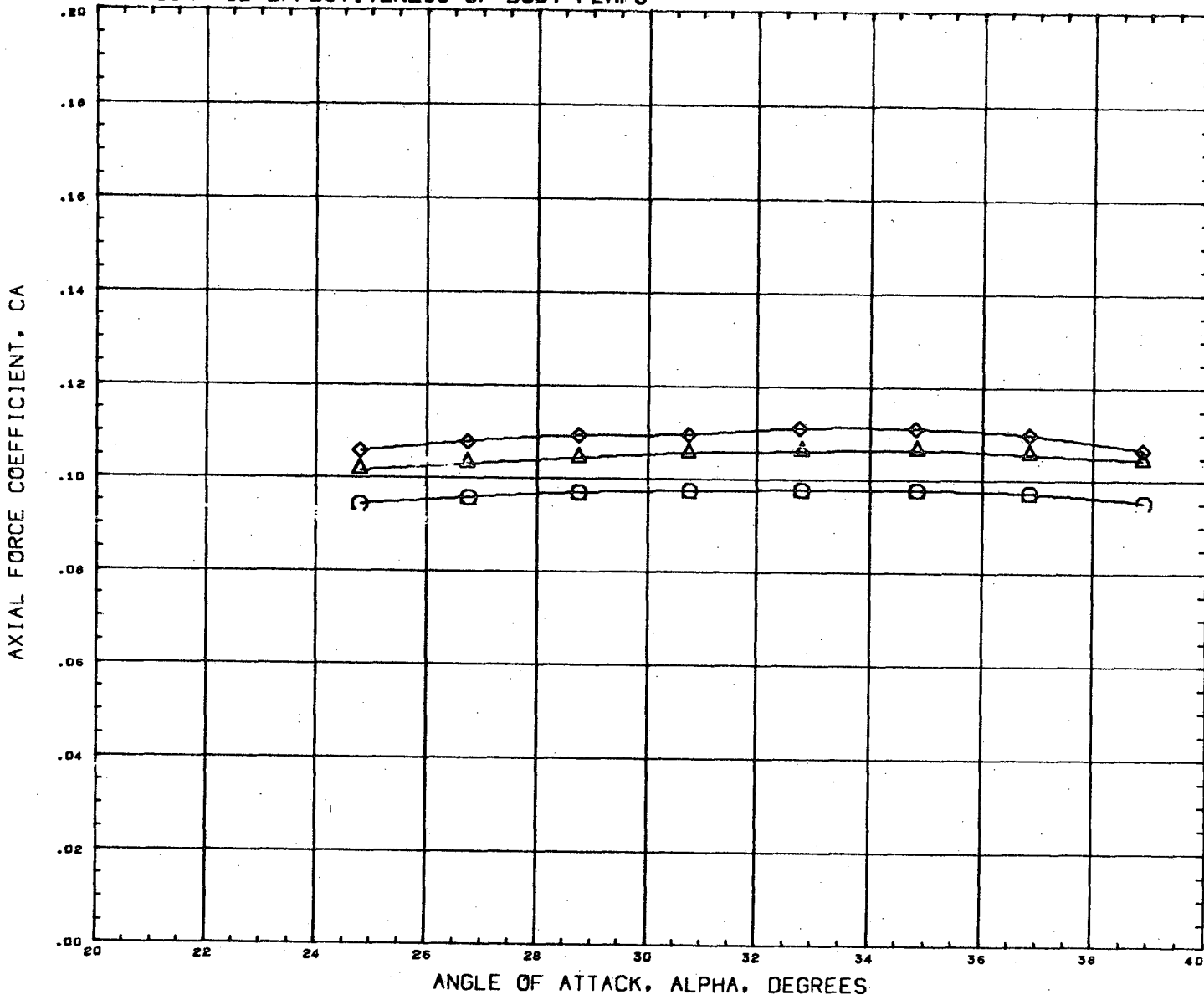


DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	DIMDRL	L-BFLP	R-BFLP
(C37A32)	MSFC 495 GD/C	B19W14C4A	3.000	0.000	0.000
(C37AL2)	MSFC 495 GD/C	B19W14C4AF9L60	3.000	60.000	0.000
(C37AL3)	MSFC 495 GD/C	B19W14C4AF9L90	3.000	90.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.964

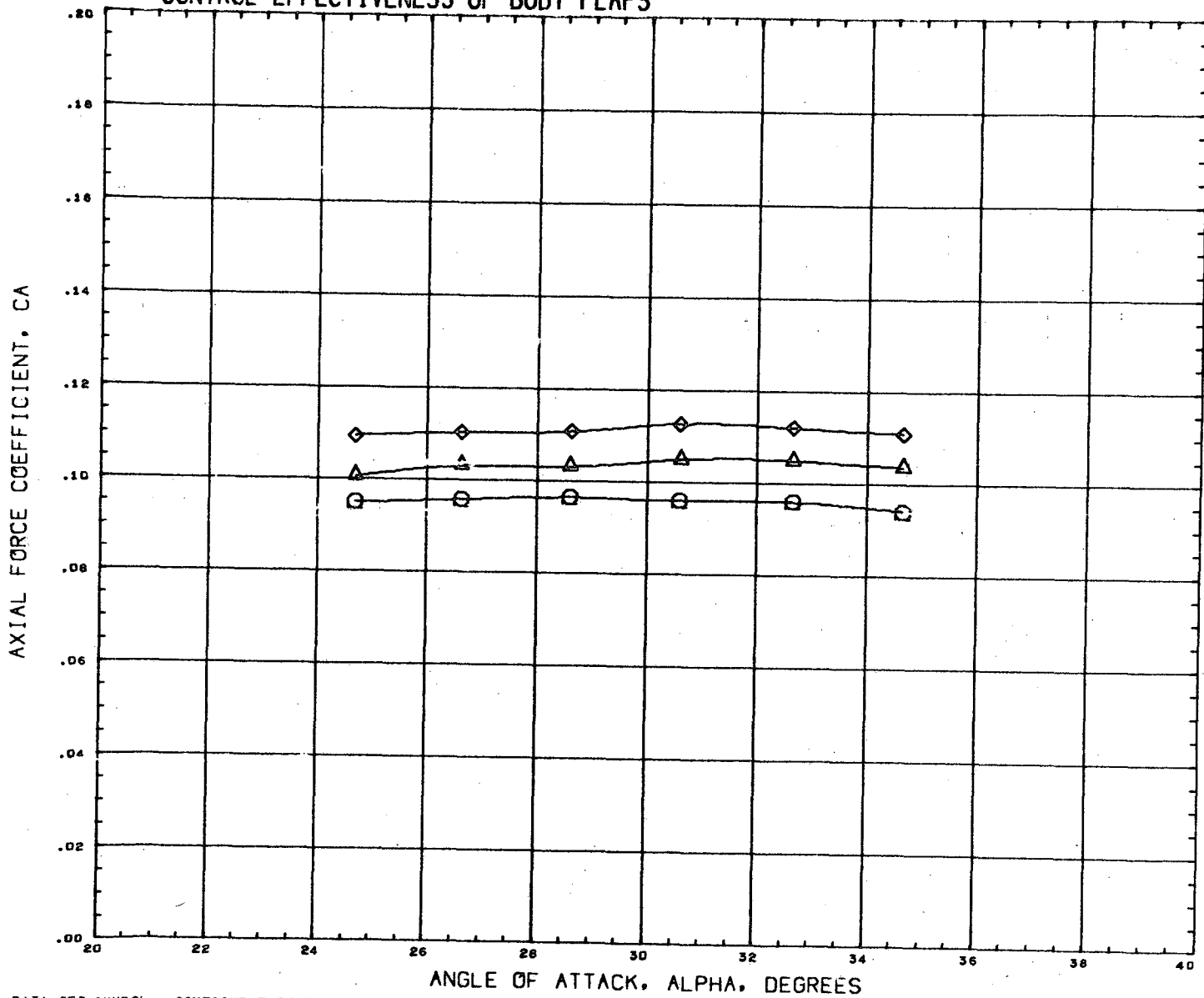
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L6D	3.000	60.000	0.000	LREF 3.0950 IN.
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L9G	3.000	90.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 2.990

CONTROL EFFECTIVENESS OF BODY FLAPS



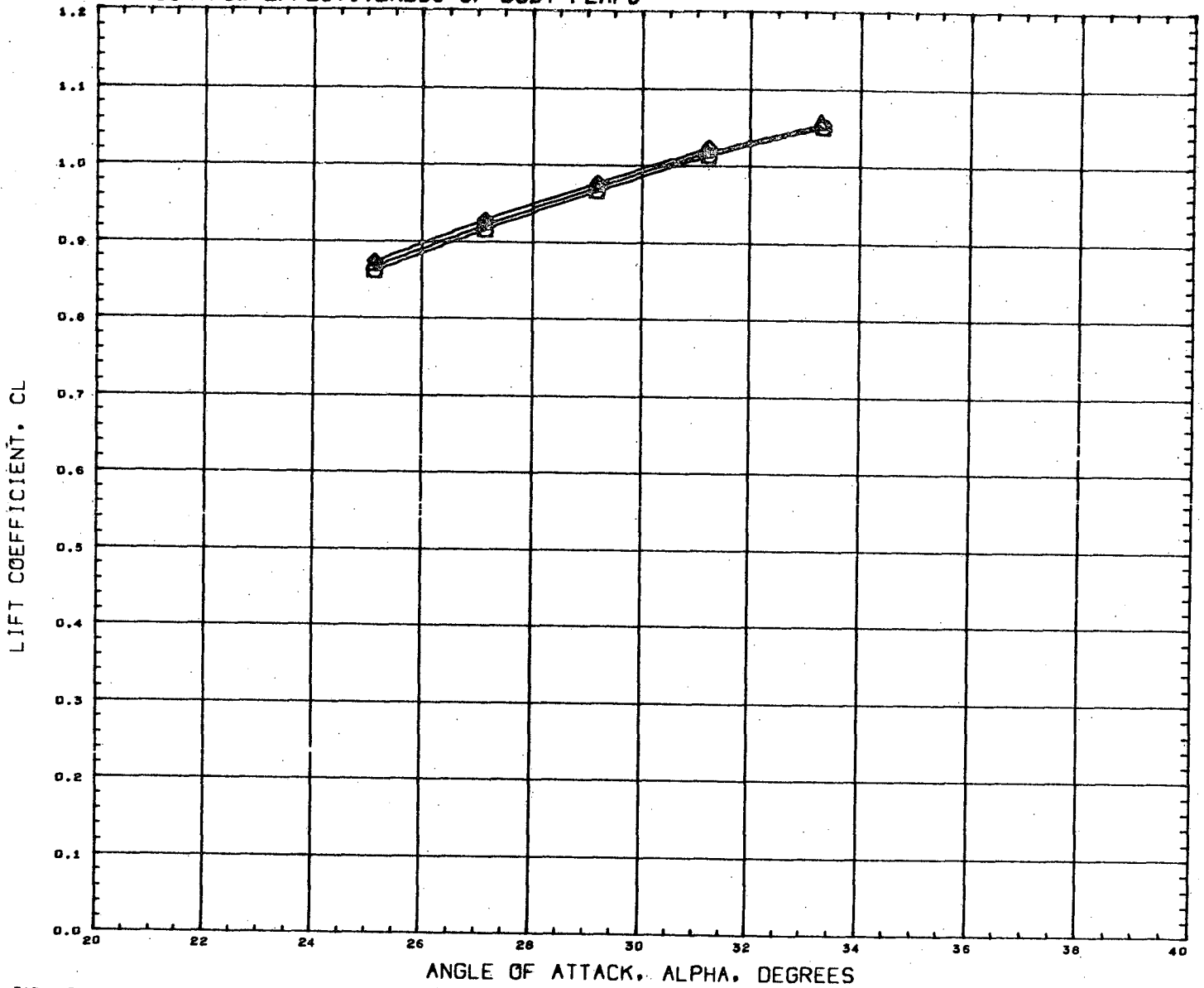
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	MSFC 495	GD/C B19W14C4A
(C37A12)	MSFC 495	GD/C B19W14C4AF9L6D
(C37A13)	MSFC 495	GD/C B19W14C4AF9L9D

DIHDR	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.960

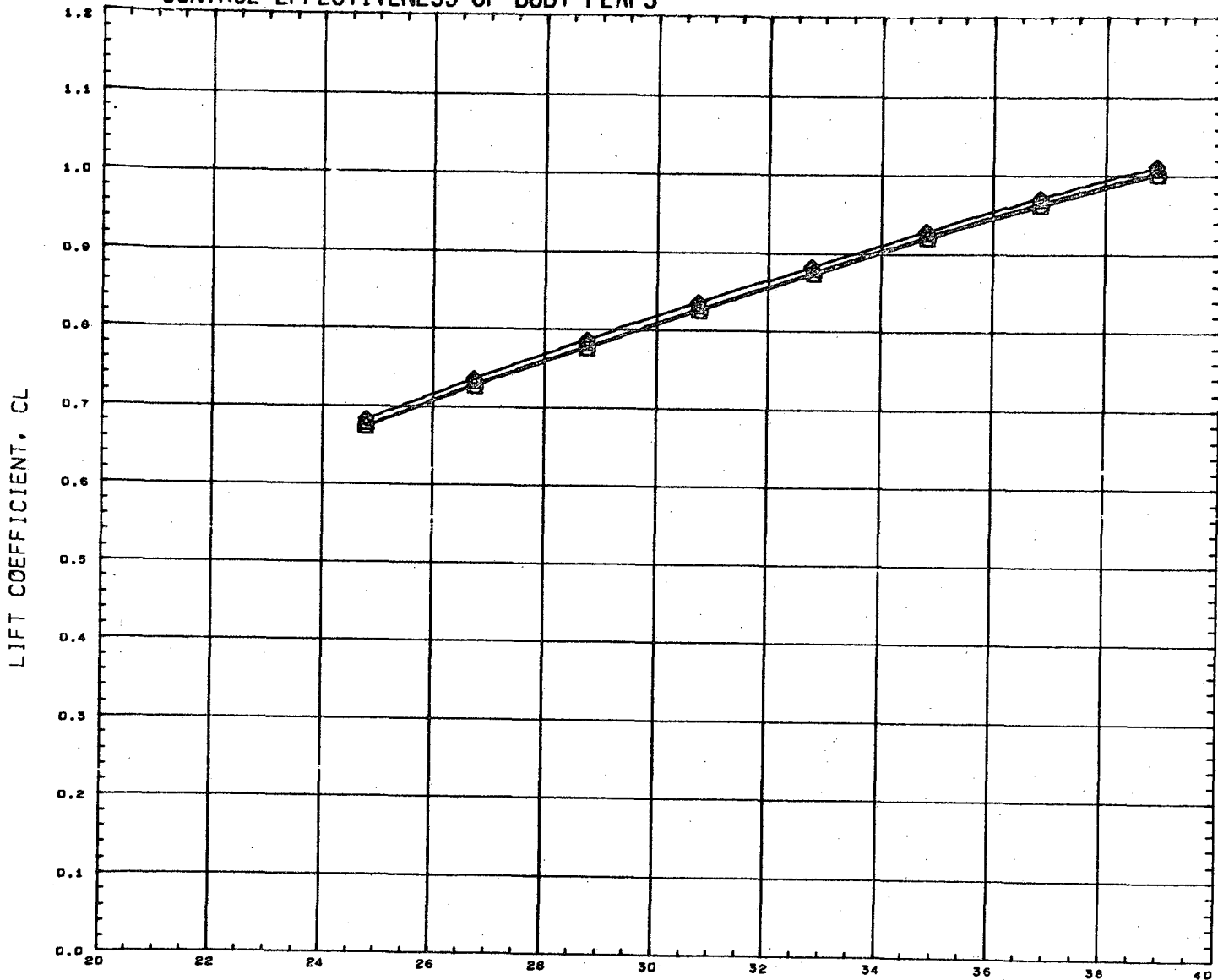
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L60	3.000	60.000	0.000	LREF 3.0950 IN.
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L90	3.000	90.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.964

CONTROL EFFECTIVENESS OF BODY FLAPS



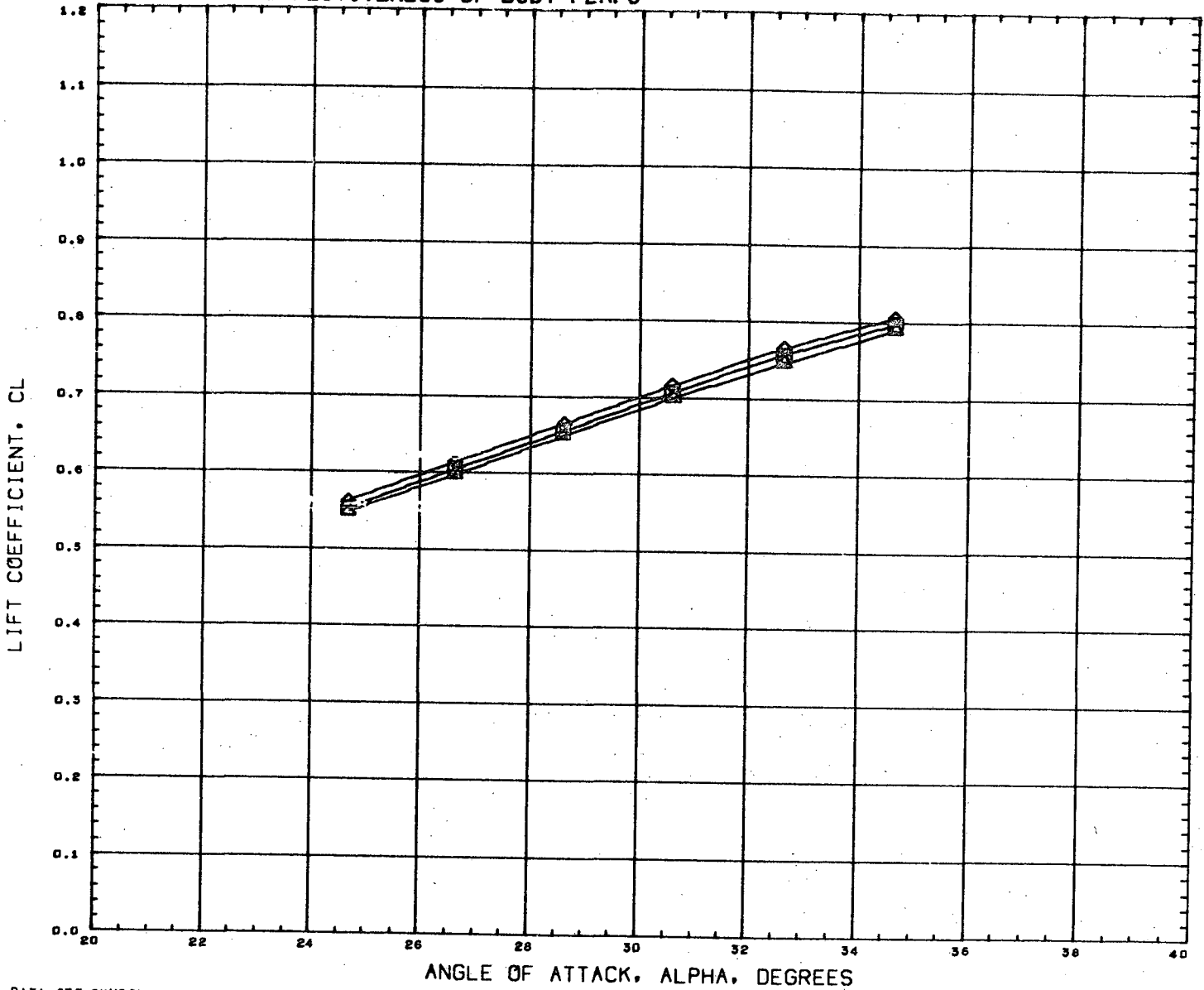
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	MSFC 495 GD/C	B19W14C4
(C37AL2)	MSFC 495 GD/C	B19W14C4AF9L60
(C37AL3)	MSFC 495 GD/C	B19W14C4AF9L90

DIMDRL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

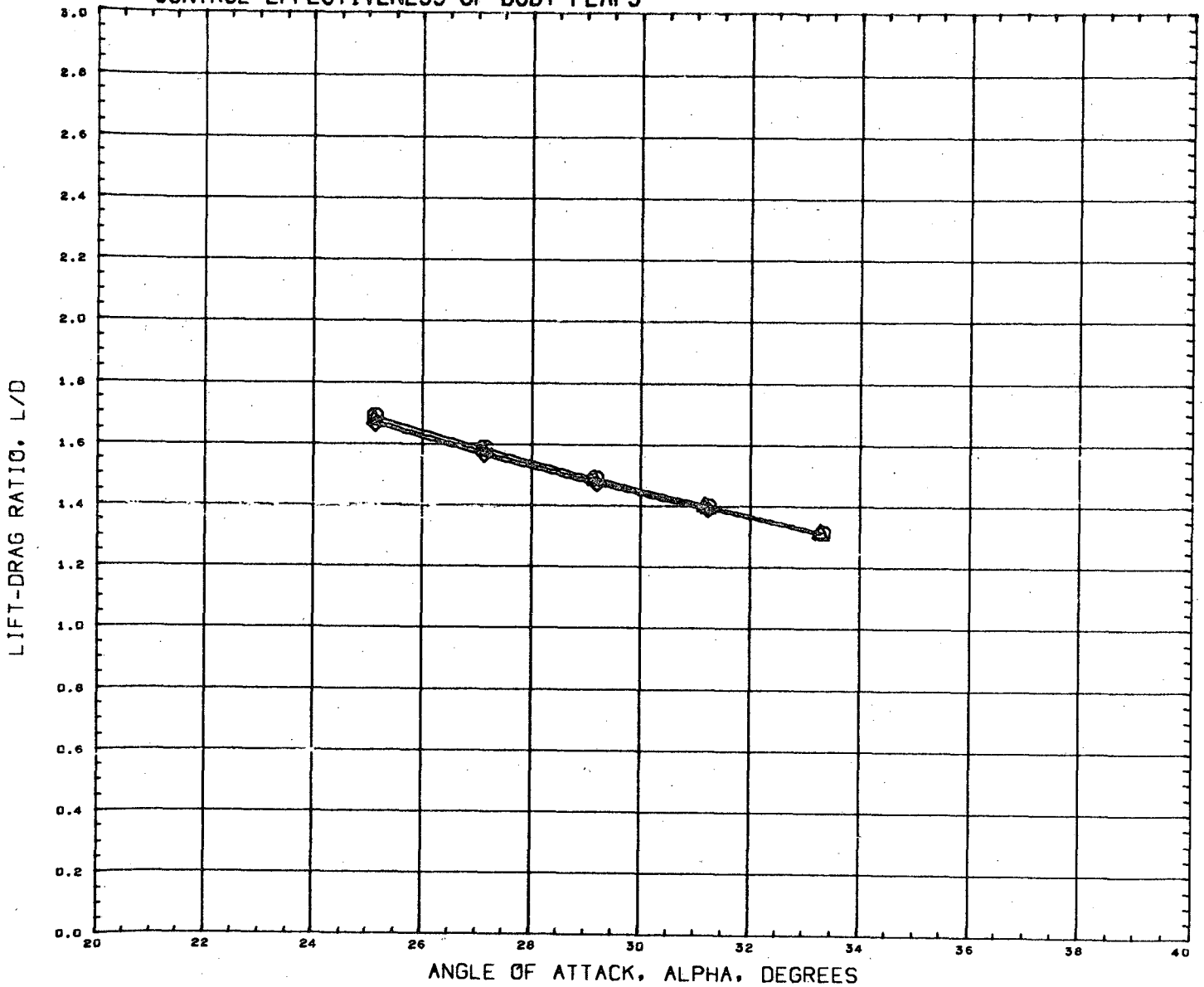
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	DIHDR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(C37A32)	MSFC 495 GD/C	B19W14C4A	3.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C	B19W14C4AF9L6D	3.000	60.000	0.000	LREF	3.0950 IN.
(C37AL3)	MSFC 495 GD/C	B19W14C4AF9L9D	3.000	90.000	0.000	BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 4.960

CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C37A32)	□	MSFC 495 GD/C	B19W14C4A
(C37AL2)	△	MSFC 495 GD/C	B19W14C4AF9L6D
(C37AL3)	◇	MSFC 495 GD/C	B19W14C4AF9L9D

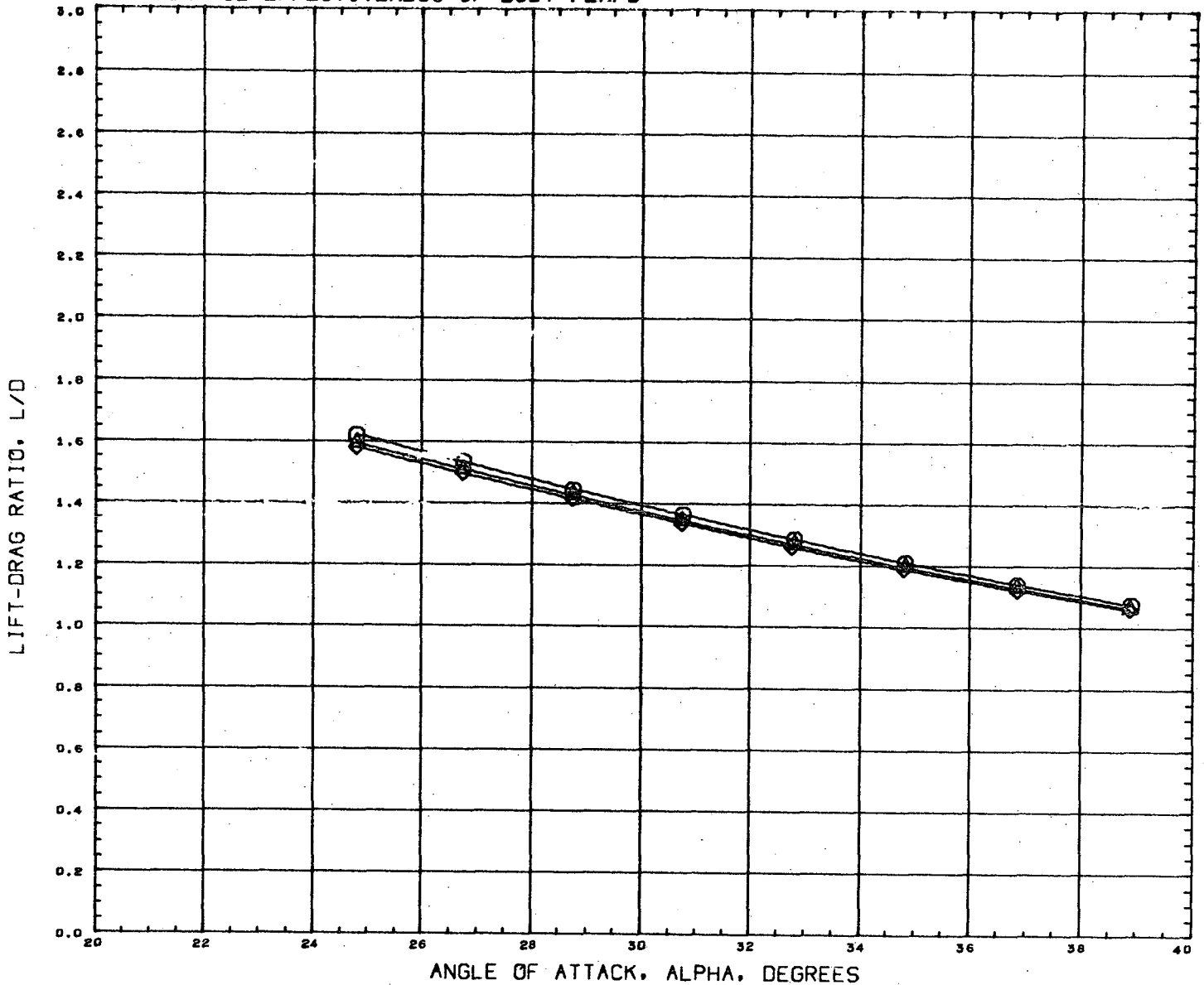
DINDRL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

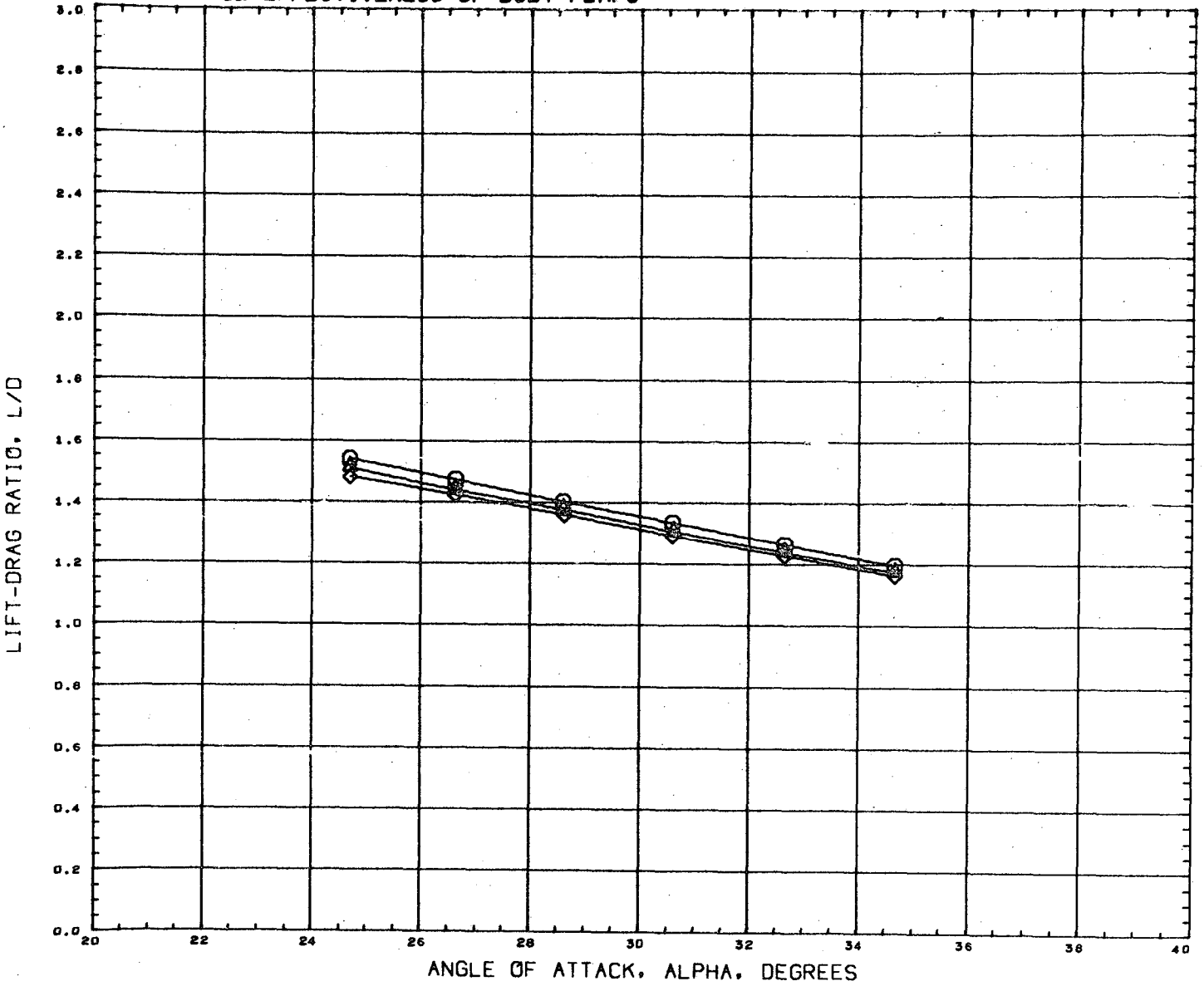
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	D1HDRL	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(C37A32)	MSFC 495 GD/C	B19W14C4A	3.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C	B19W14C4AF9L6D	3.000	60.000	0.000	LREF	3.0950 IN.
(C37AL3)	MSFC 495 GD/C	B19W14C4AF9L9D	3.000	90.000	0.000	BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 2.990

CONTROL EFFECTIVENESS OF BODY FLAPS



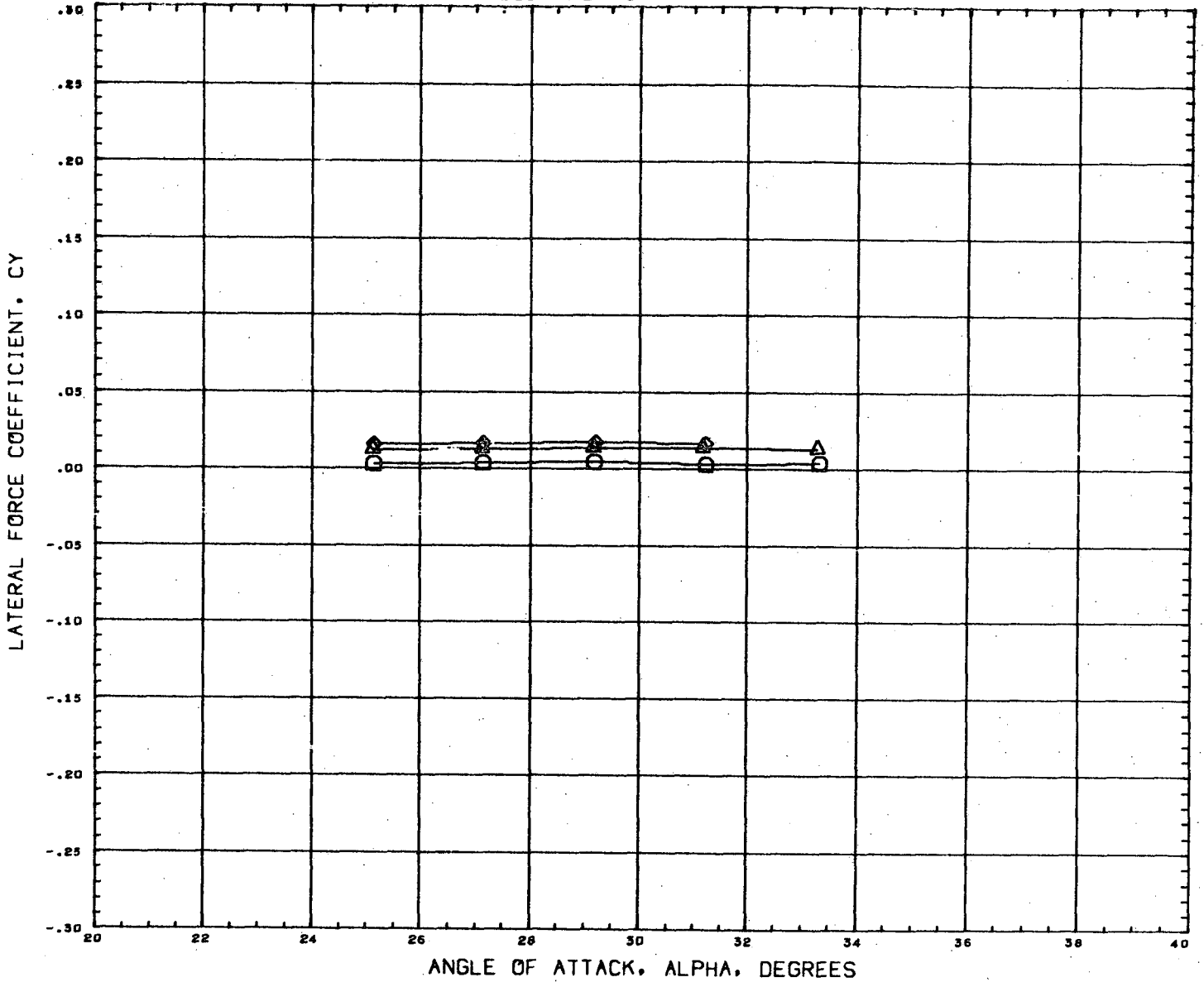
DATA SET SYMBOL	SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	○	MSFC 495 GD/C B19W14C4A
(C37AL2)	△	MSFC 495 GD/C B19W14C4AF9L6D
(C37AL3)	◇	MSFC 495 GD/C B19W14C4AF9L9D

DIHDR	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

CONTROL EFFECTIVENESS OF BODY FLAPS



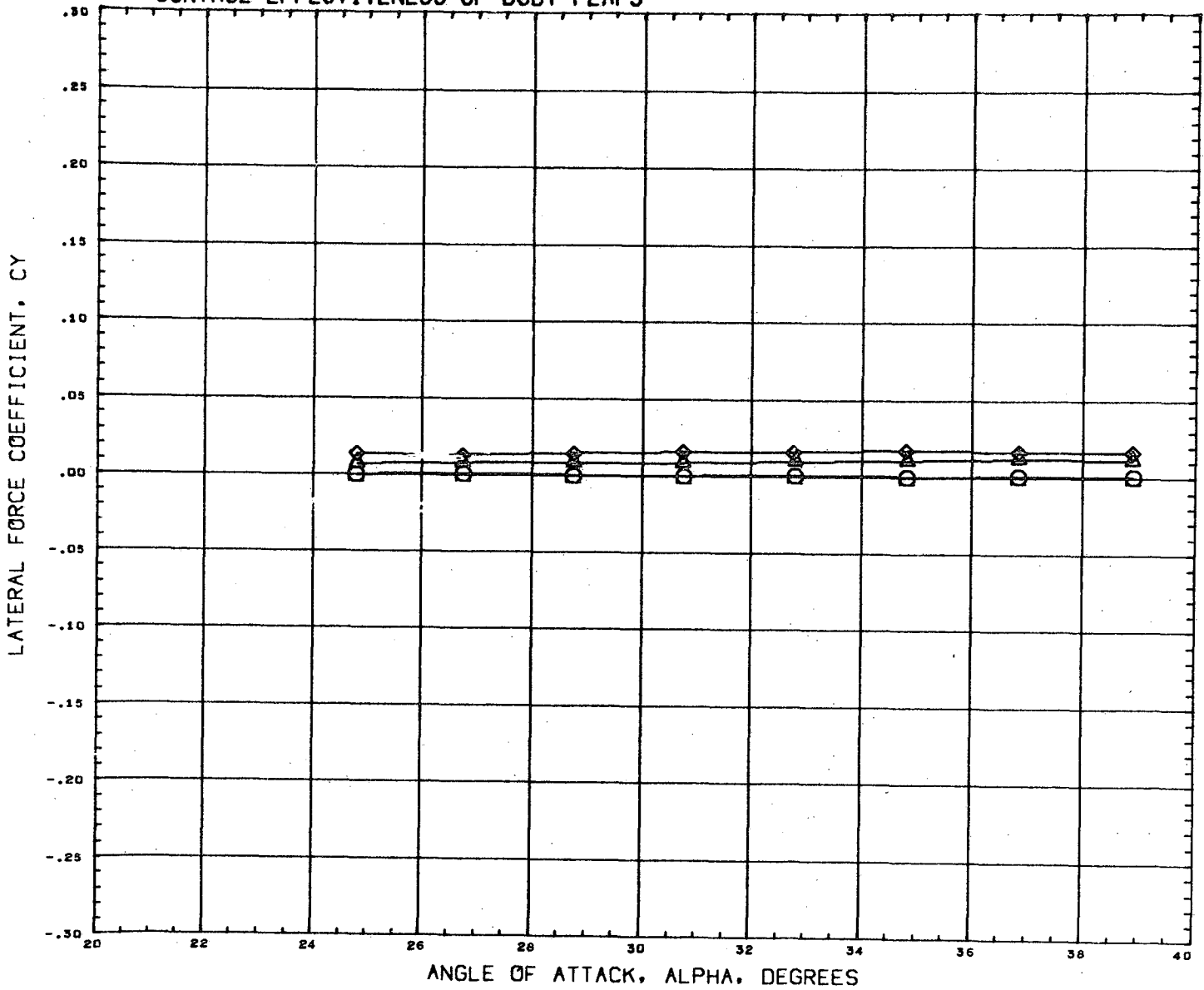
DATA SET SYMBOL	SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	○	MSFC 495 GD/C B19W14C4A
(C37AL2)	△	MSFC 495 GD/C B19W14C4AF9L6D
(C37AL3)	◇	MSFC 495 GD/C B19W14C4AF9L9D

DIMDRL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

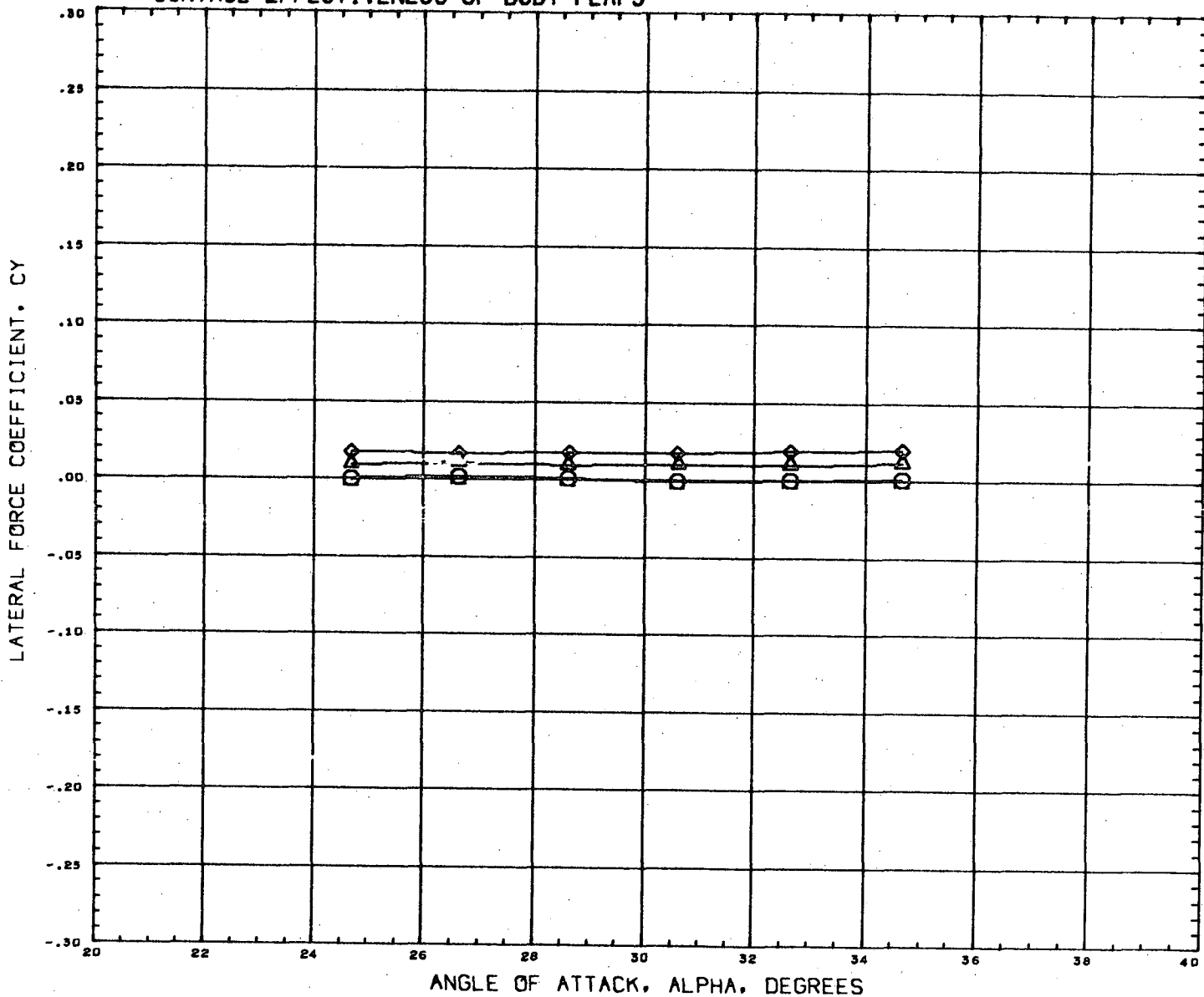
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L60	3.000	60.000	0.000	LREF 3.0950 IN.
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L90	3.000	90.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 2.990

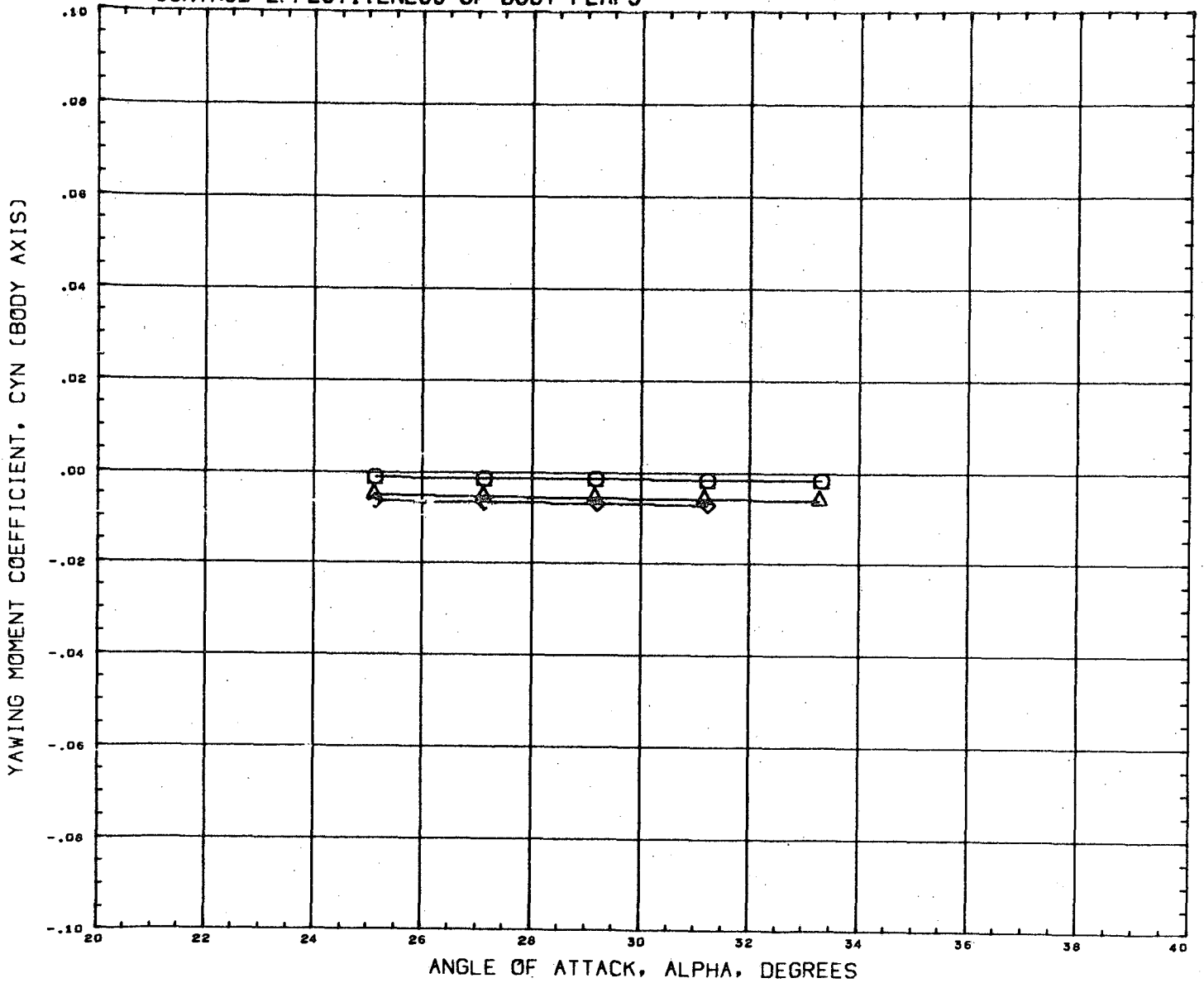
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L6D	3.000	60.000	0.000	LREF 3.0950 IN.
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L9D	3.000	90.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 4.960

CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C37A32)	○	MSFC 495 GD/C	B19W14C4A
(C37AL2)	△	MSFC 495 GD/C	B19W14C4AF9L6D
(C37AL3)	◇	MSFC 495 GD/C	B19W14C4AF9L9D

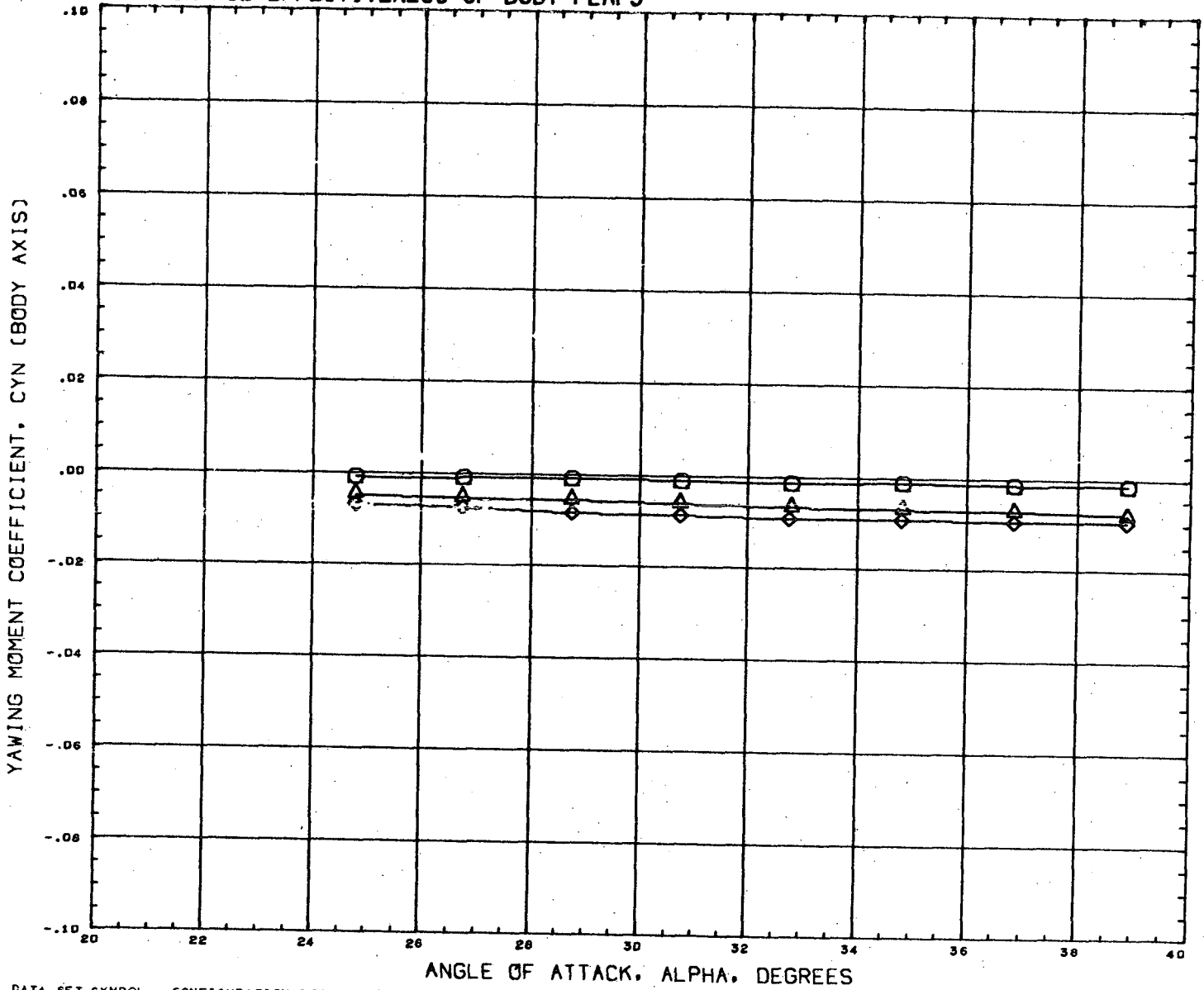
DINDRL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

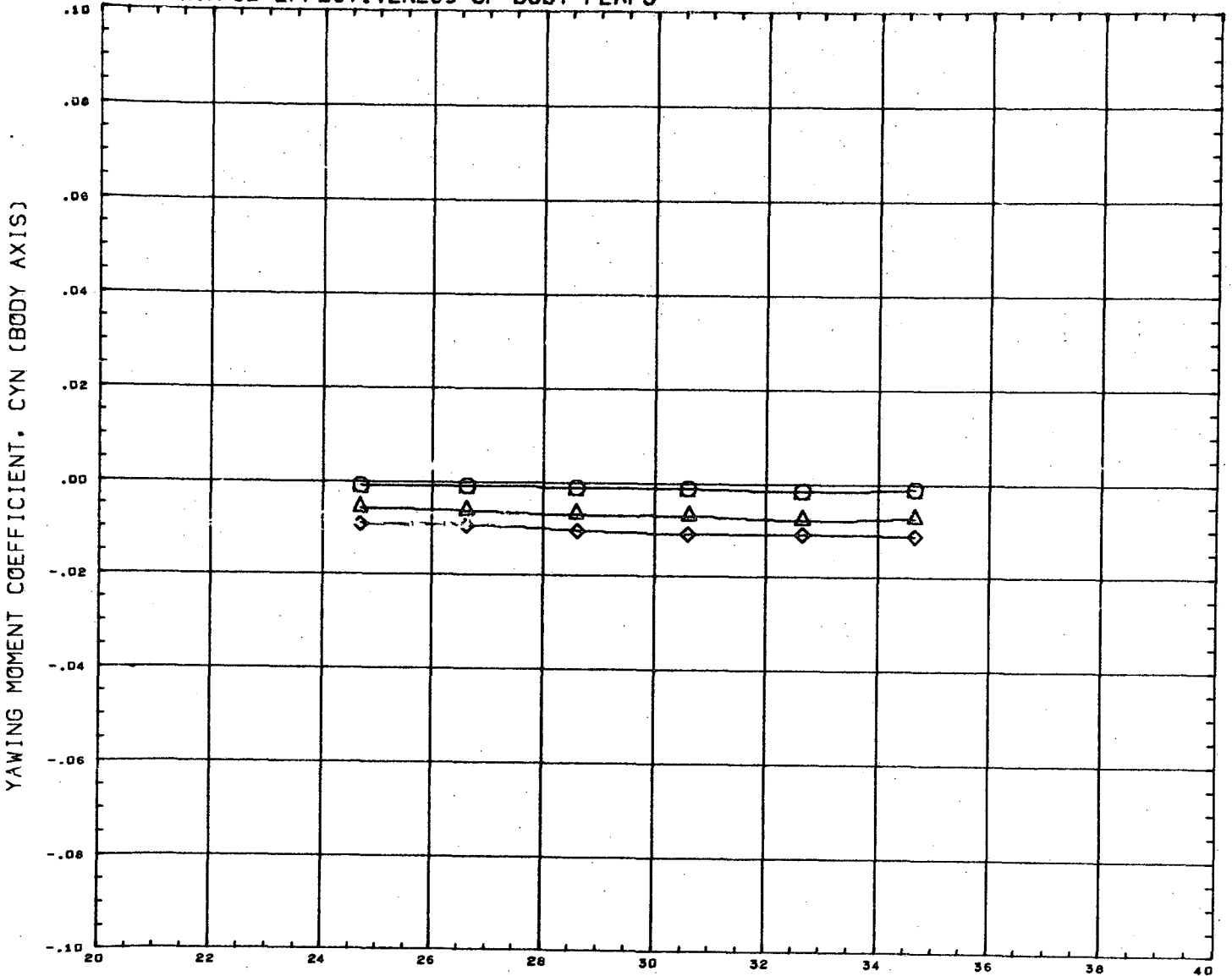
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	DINDRL	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(C37A32)	MSFC 495	GD/C B19W14C4A	3.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL2)	MSFC 495	GD/C B19W14C4AF9L60	3.000	60.000	0.000	LREF	3.0950 IN.
(C37AL3)	MSFC 495	GD/C B19W14C4AF9L90	3.000	90.000	0.000	BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 2.990

CONTROL EFFECTIVENESS OF BODY FLAPS

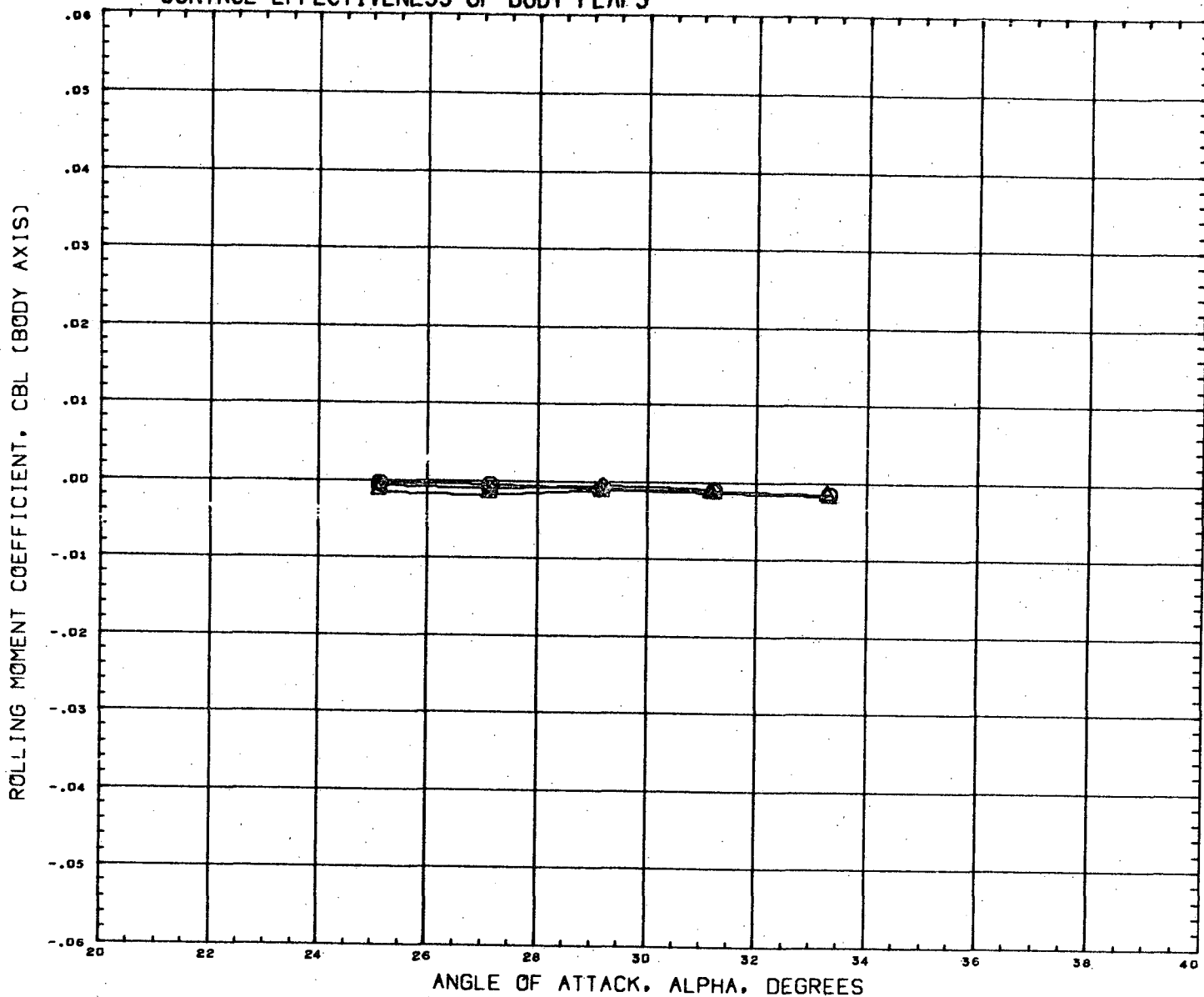


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDL	L-BFLP	R-BFLP
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L6D	3.000	60.000	0.000
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L9D	3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	sq. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

CONTROL EFFECTIVENESS OF BODY FLAPS



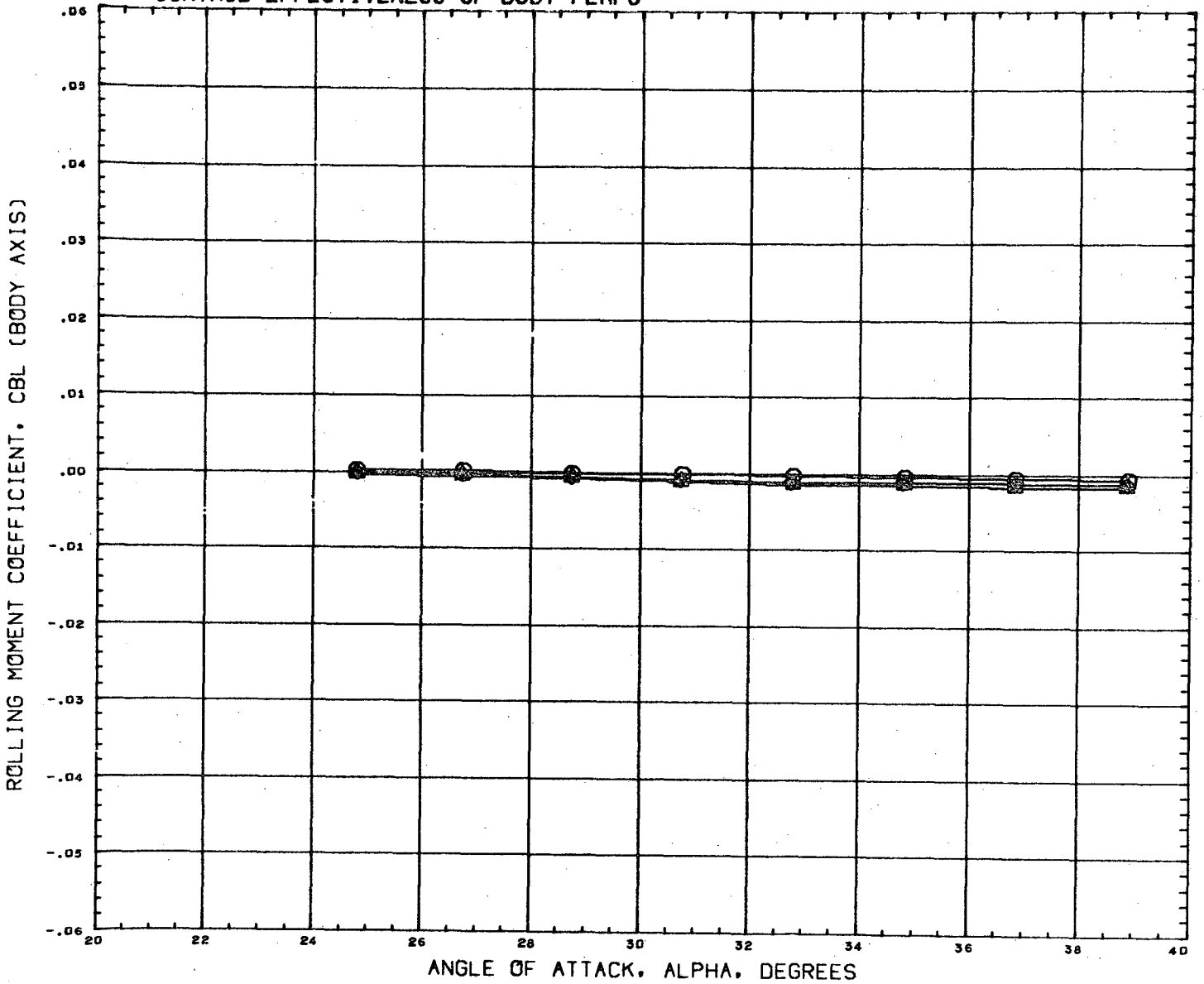
DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	○	MSFC 495 GD/C	B19W14C4A
(C37AL2)	△	MSFC 495 GD/C	B19W14C4AF9L6D
(C37AL3)	◇	MSFC 495 GD/C	B19W14C4AF9L9D

D/DNDRL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

CONTROL EFFECTIVENESS OF BODY FLAPS



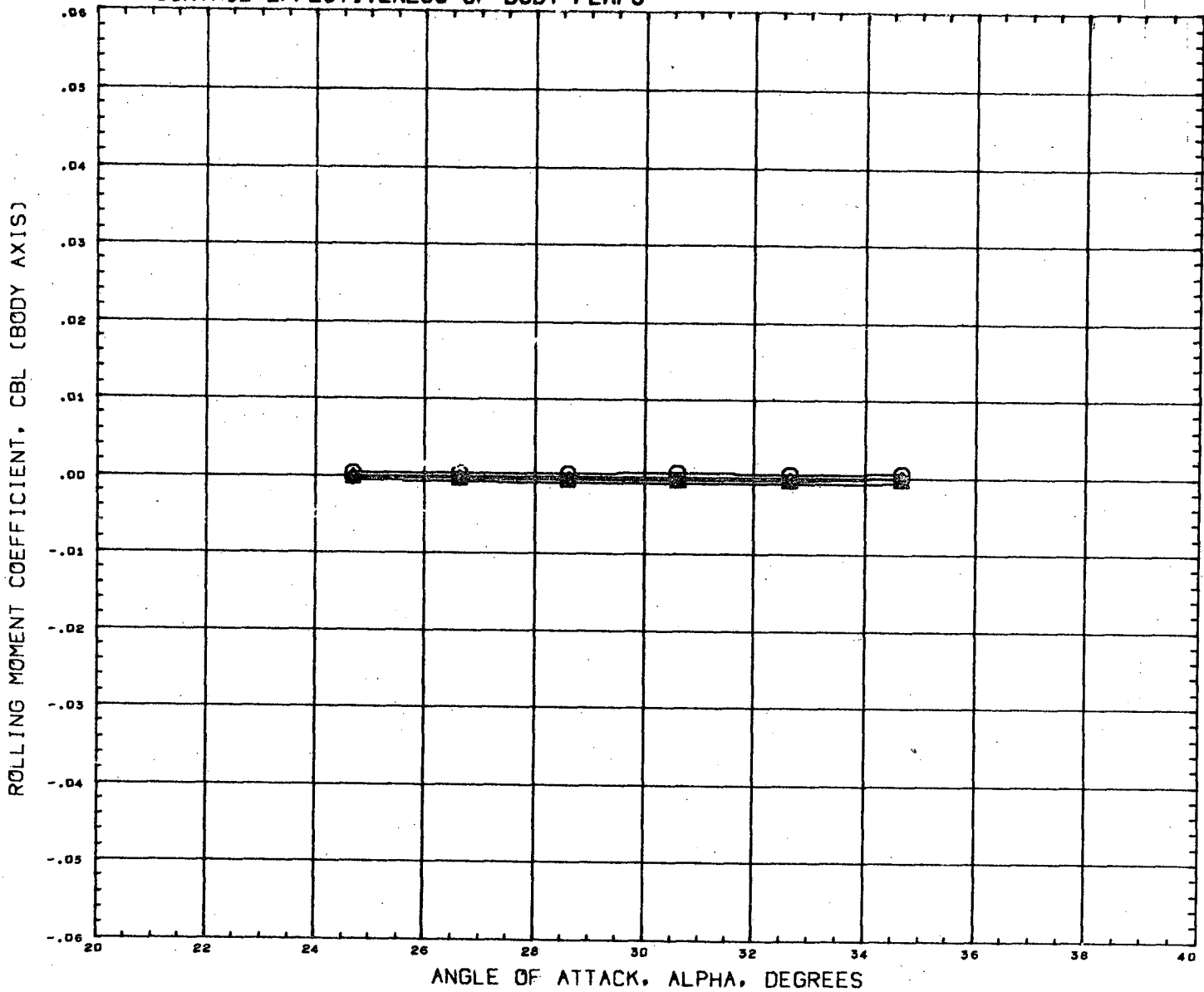
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	MSFC 495 GD/C	B19W14C4A
(C37AL2)	MSFC 495 GD/C	B19W14C4AF9L60
(C37AL3)	MSFC 495 GD/C	B19W14C4AF9L90

D1HDRL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.990

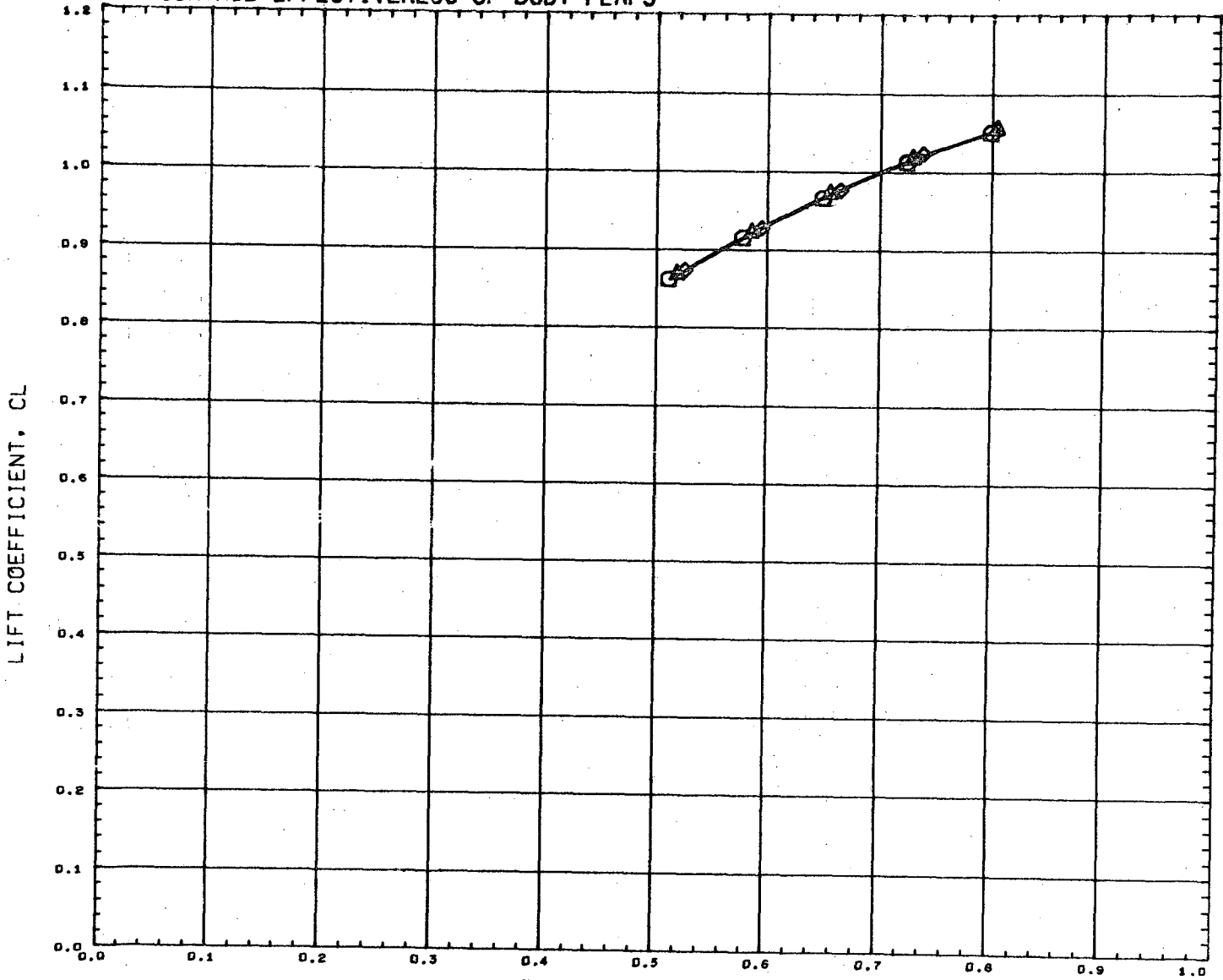
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	DIH/DRL	L-BFLP	R-BFLP	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C	B19W14C4A	3.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C	B19W14C4AF9L6D	3.000	60.000	0.000	LREF 3.0950 IN.
(C37AL3)	MSFC 495 GD/C	B19W14C4AF9L9D	3.000	90.000	0.000	BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 4.960

CONTROL EFFECTIVENESS OF BODY FLAPS



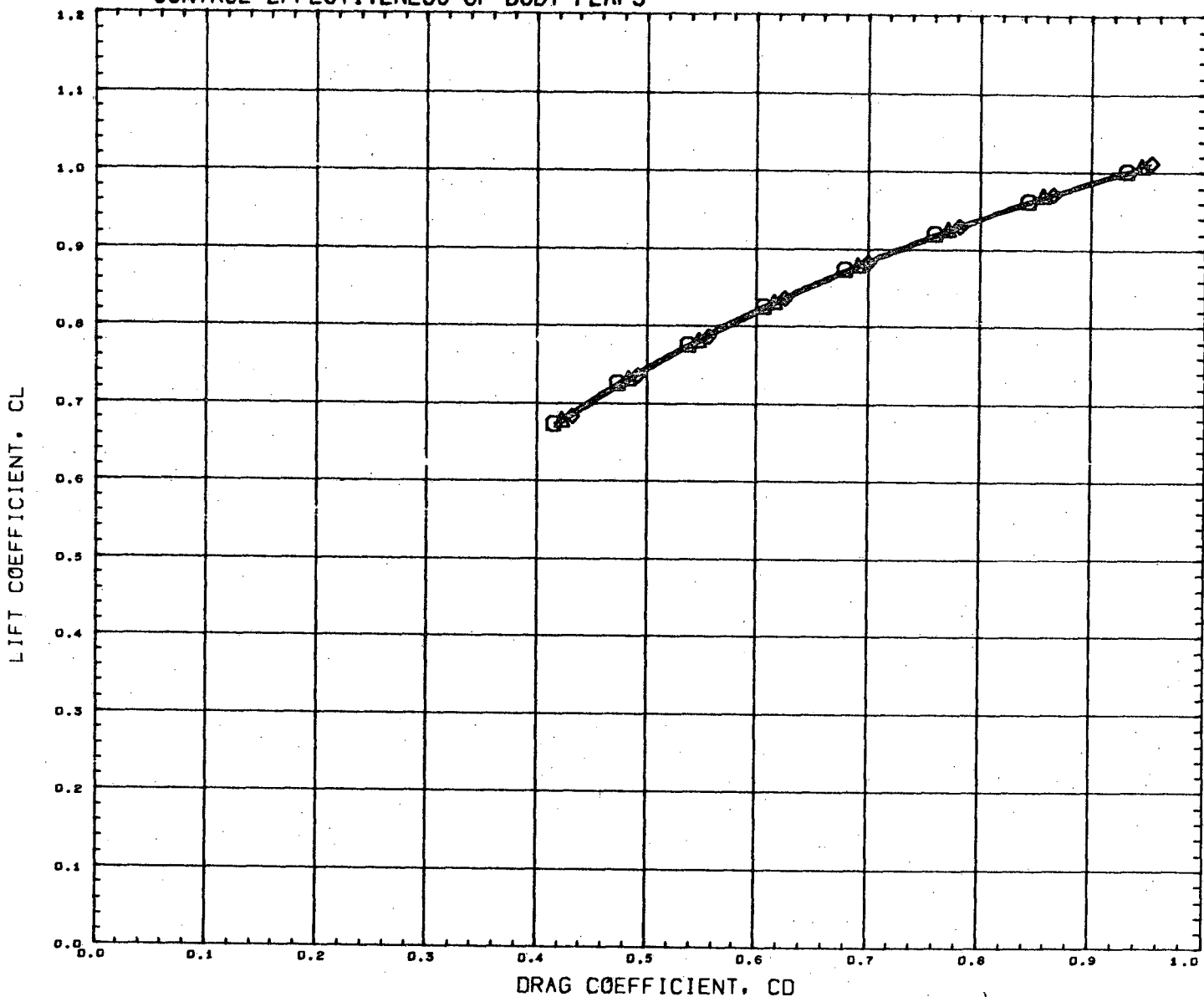
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L6D
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L9D

DINHRL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.964

CONTROL EFFECTIVENESS OF BODY FLAPS



DRAG COEFFICIENT, CD

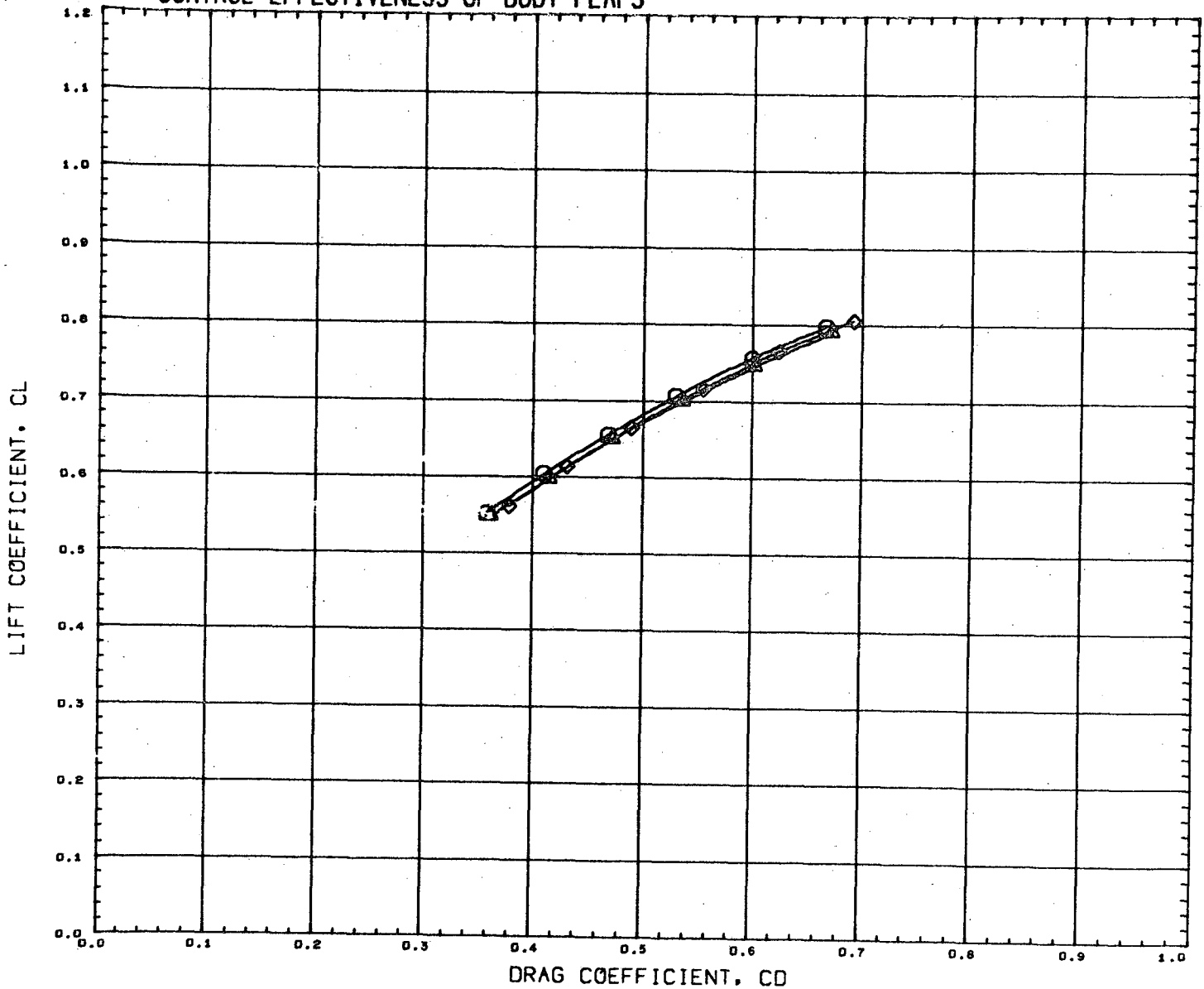
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L6D
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L9D

DINDRL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.990

CONTROL EFFECTIVENESS OF BODY FLAPS



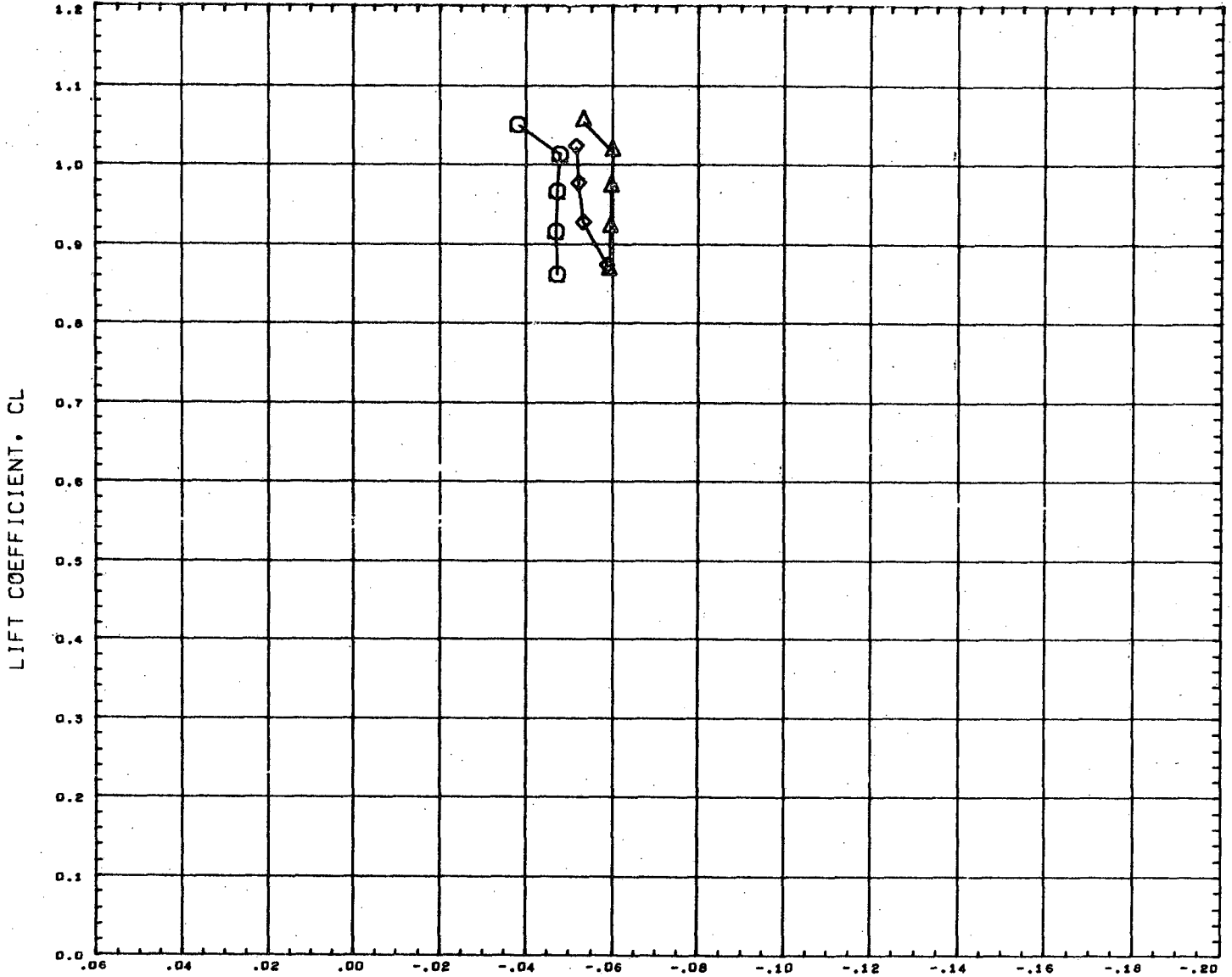
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37A32)	MSFC 495 GD/C	B19W14C4A
(C37AL2)	MSFC 495 GD/C	B19W14C4AF9L6D
(C37AL3)	MSFC 495 GD/C	B19W14C4AF9L9D

DIHDL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	sq. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.960

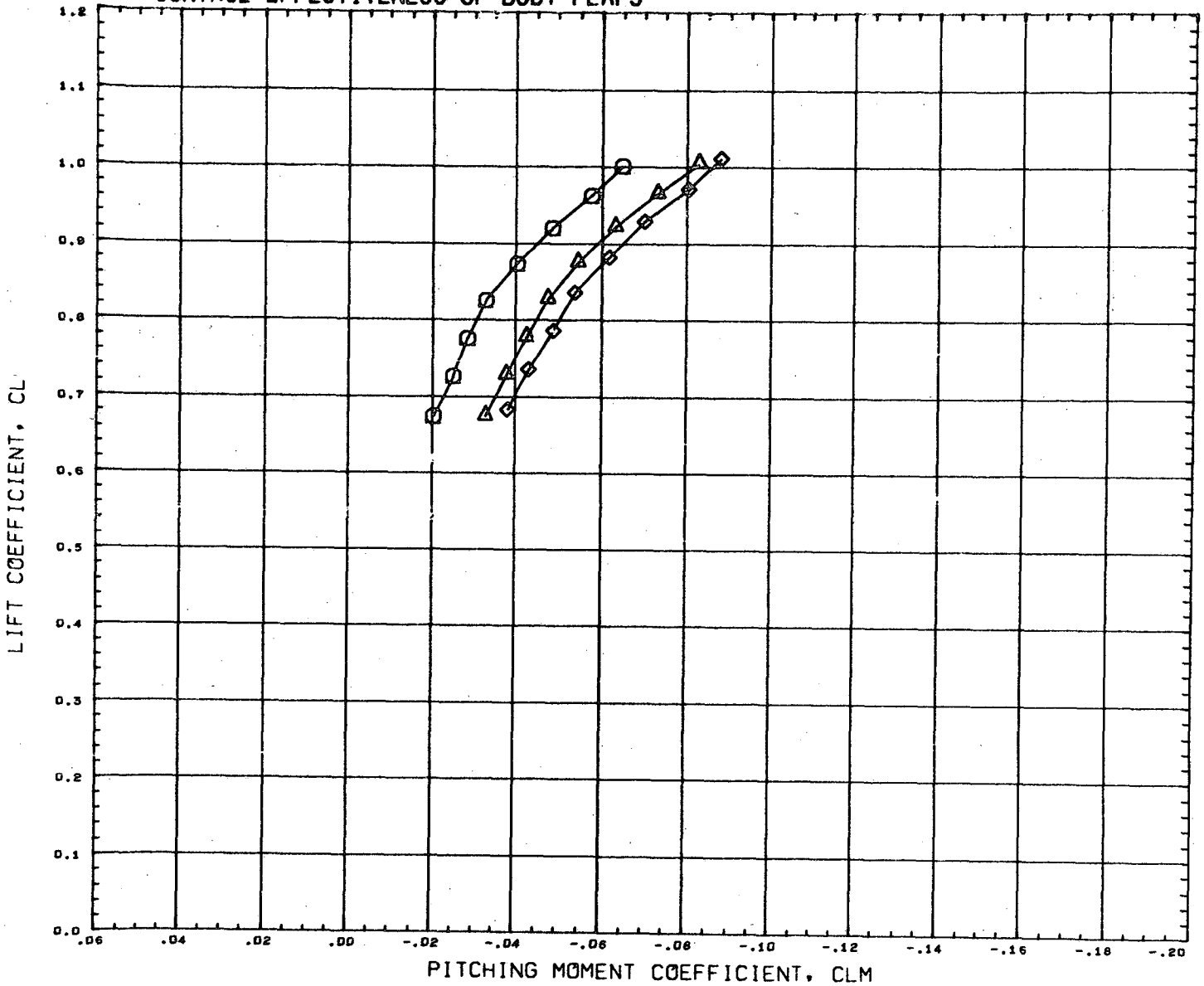
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L6D	3.000	60.000	0.000	LREF 3.0950 IN.
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L9D	3.000	90.000	0.000	BREF 6.0990 IN.
					XMRP 6.6160 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 1.964

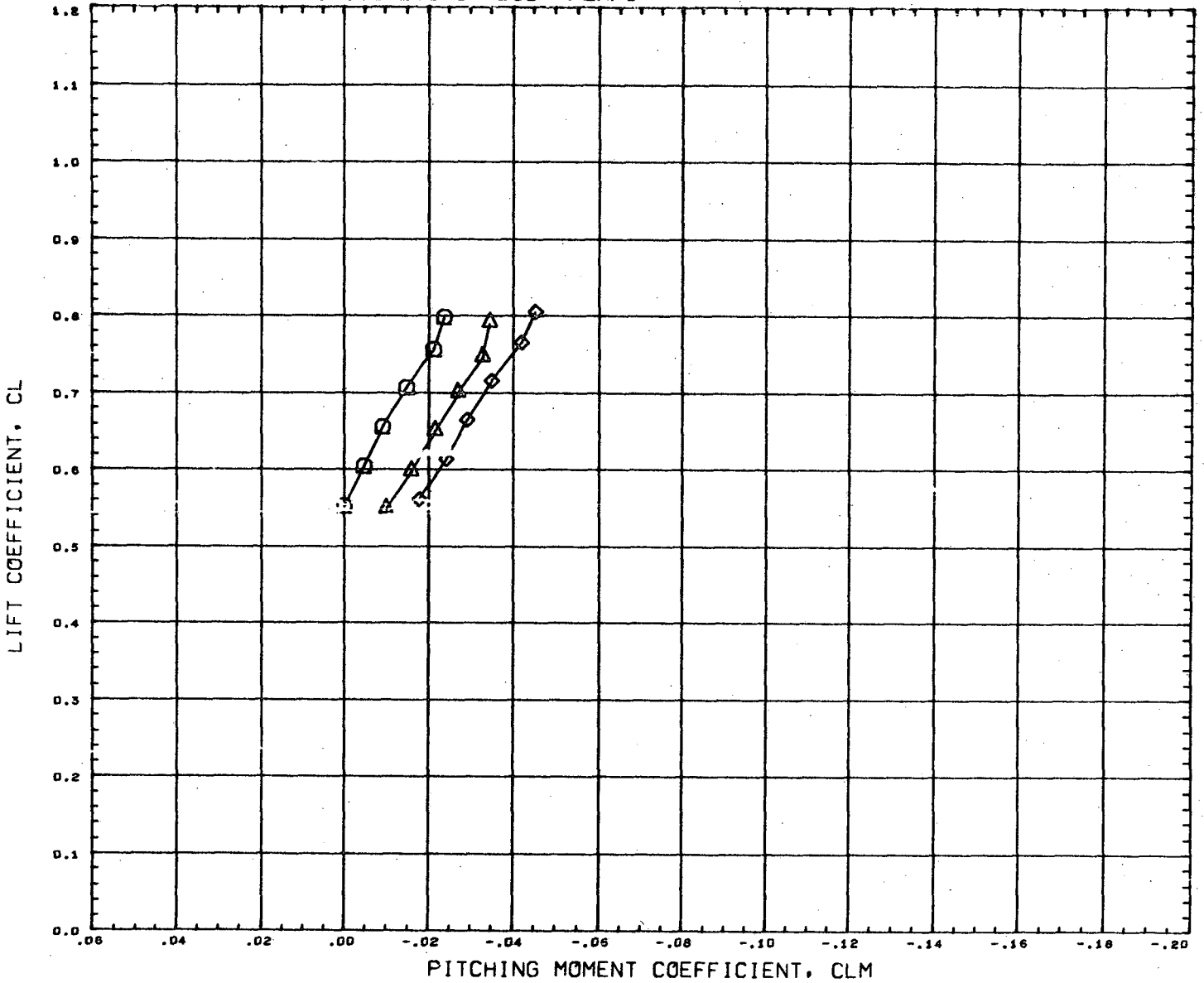
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDRL	L-BFLP	R-BFLP	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L6D	3.000	60.000	0.000	LREF 3.0950 IN.
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L9D	3.000	90.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 2.990

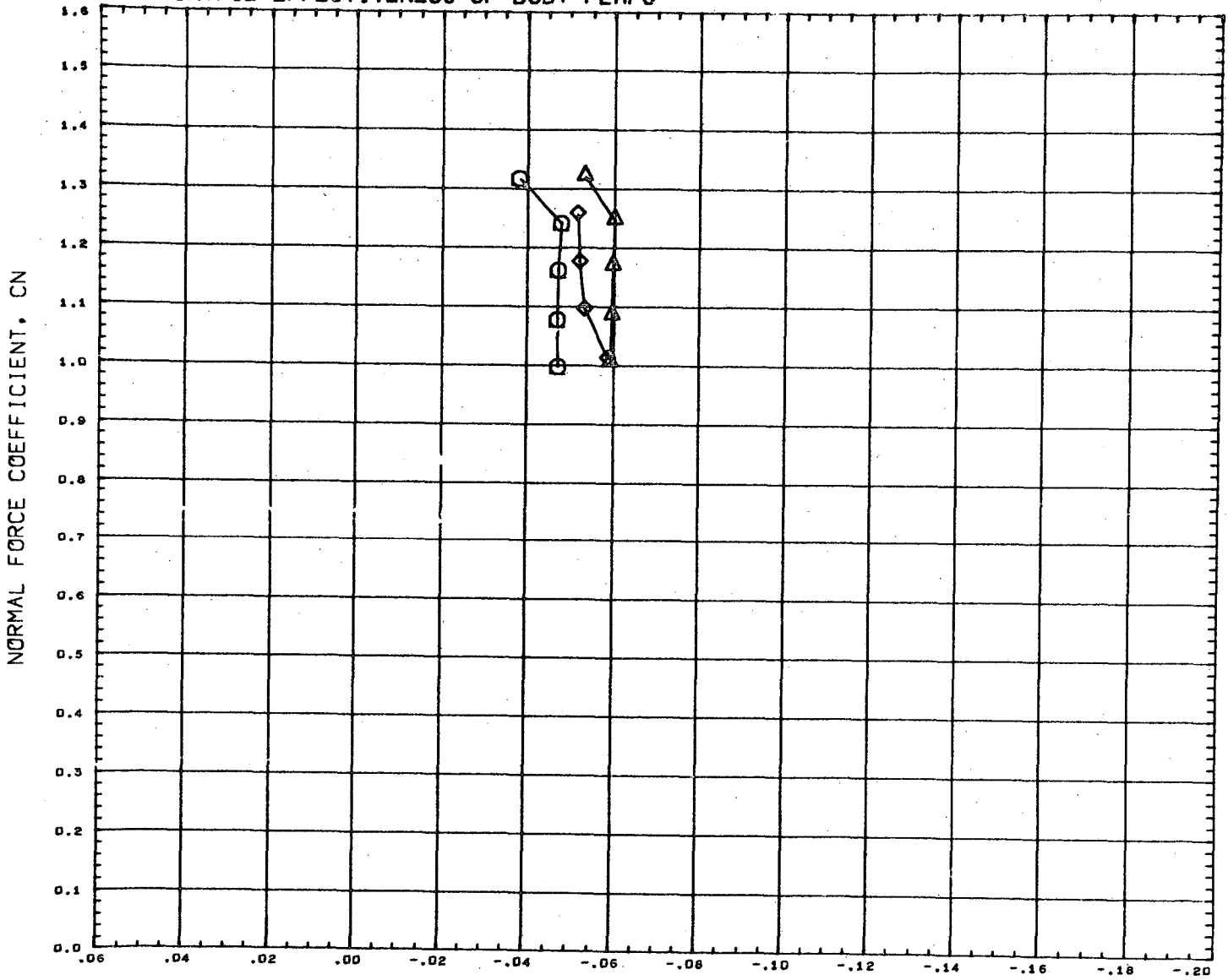
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDL	L-BFLP	R-BFLP	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000	SREF 15.6560 SQ.IN.
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L6D	3.000	60.000	0.000	LREF 3.0950 IN.
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L9D	3.000	90.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 4.960

CONTROL EFFECTIVENESS OF BODY FLAPS



PITCHING MOMENT COEFFICIENT, CLM

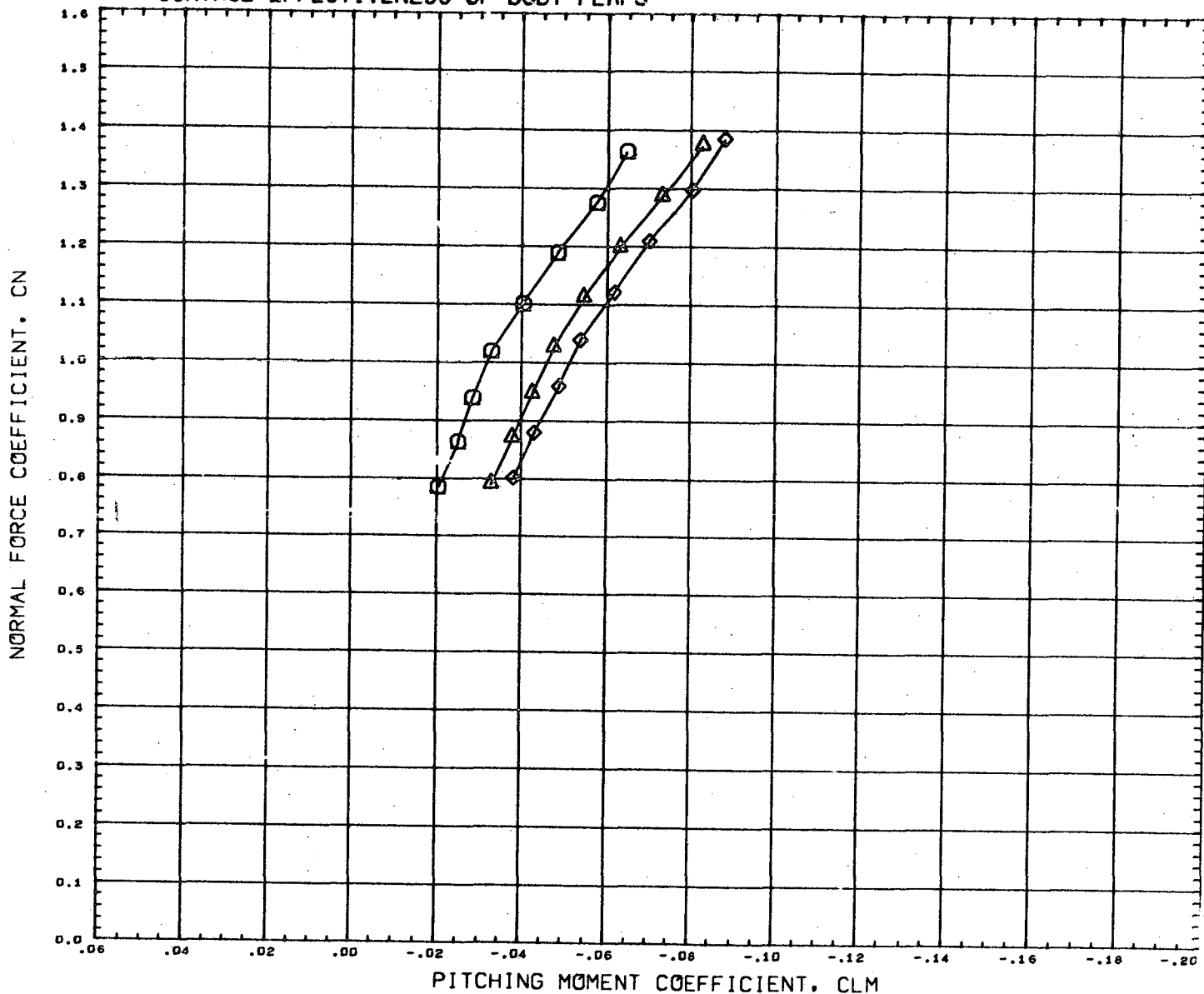
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37A32)	MSFC 495 GD/C B19W14C4A
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L6D
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L9D

DIHDL	L-BFLP	R-BFLP
3.000	0.000	0.000
3.000	60.000	0.000
3.000	90.000	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.964

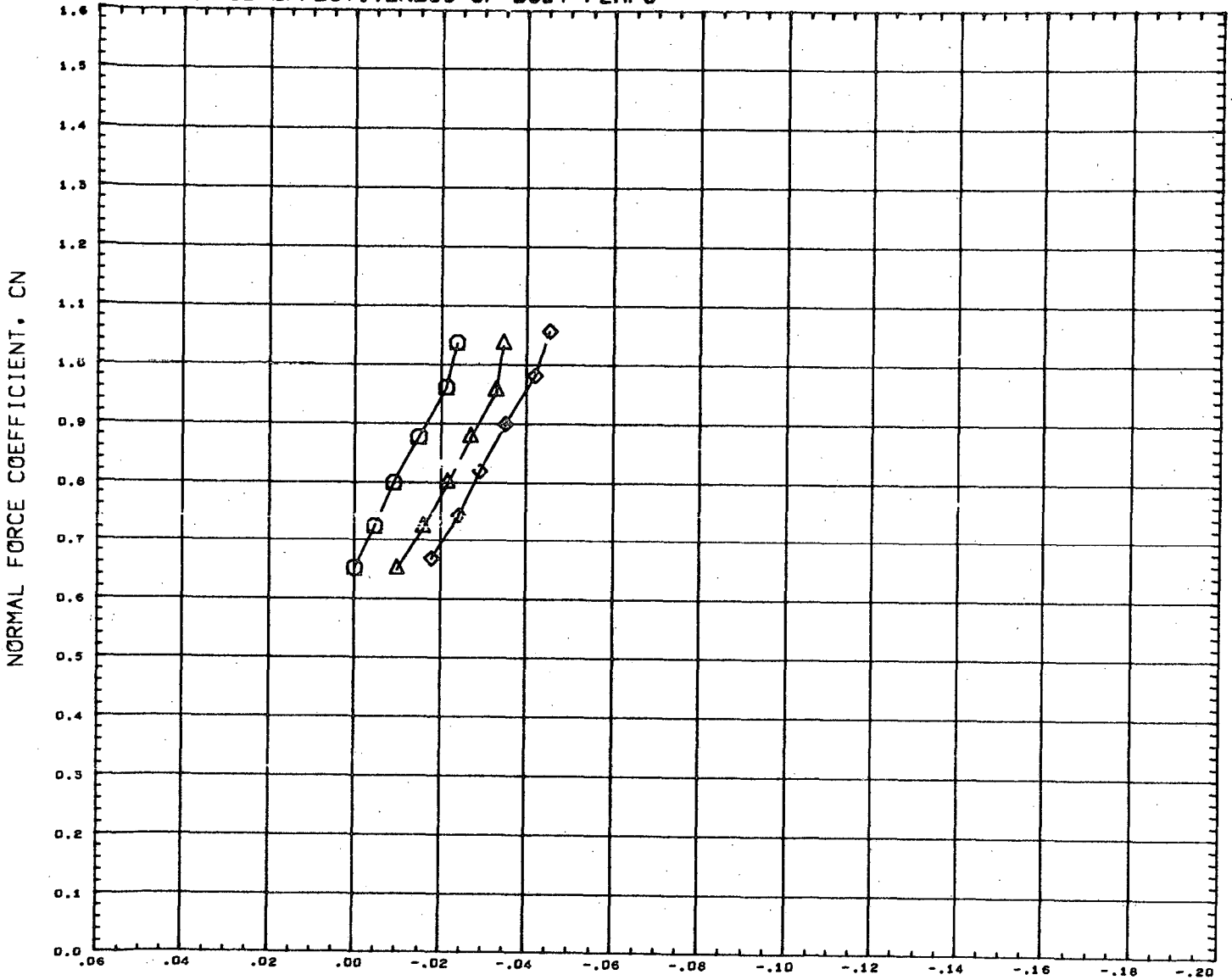
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DINDRL	L-BFLP	R-BFLP	REFERENCE INFORMATION
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L60	3.000	60.000	0.000	LRCF 3.0950 IN.
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L90	3.000	90.000	0.000	BREF 6.0990 IN.
					XMRP 6.6180 IN.
					YMRP 0.0000 IN.
					ZMRP 0.0000 IN.
					SCALE 0.0035

MACH 2.990

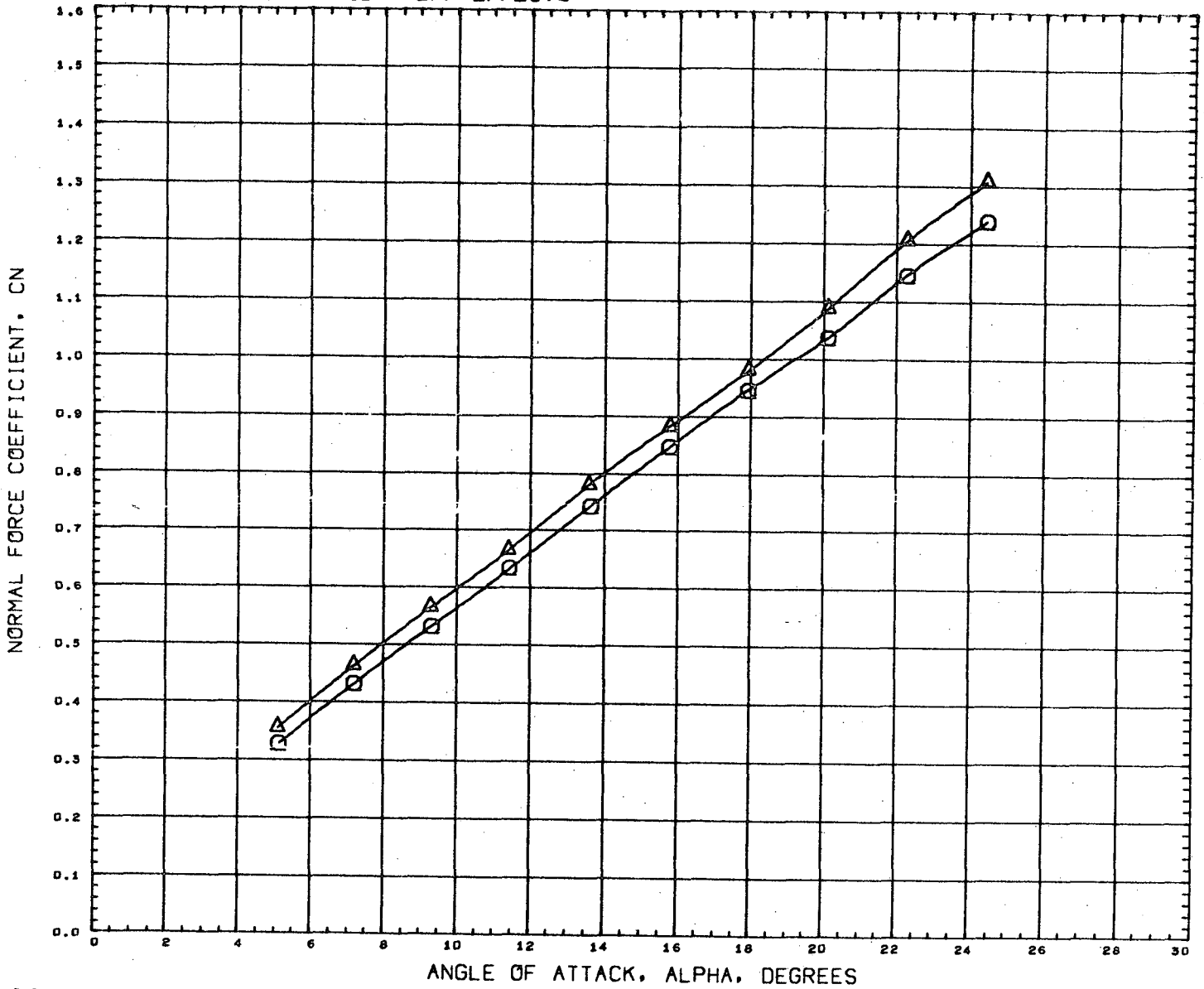
CONTROL EFFECTIVENESS OF BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIMDRL	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(C37A32)	MSFC 495 GD/C B19W14C4A	3.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AL2)	MSFC 495 GD/C B19W14C4AF9L60	3.000	60.000	0.000	LREF	3.0950 IN.
(C37AL3)	MSFC 495 GD/C B19W14C4AF9L90	3.000	90.000	0.000	BREF	6.0990 IN.
					XMRP	6.6180 IN.
					YMRP	0.0000 IN.
					ZMRP	0.0000 IN.
					SCALE	0.0035

MACH 4.960

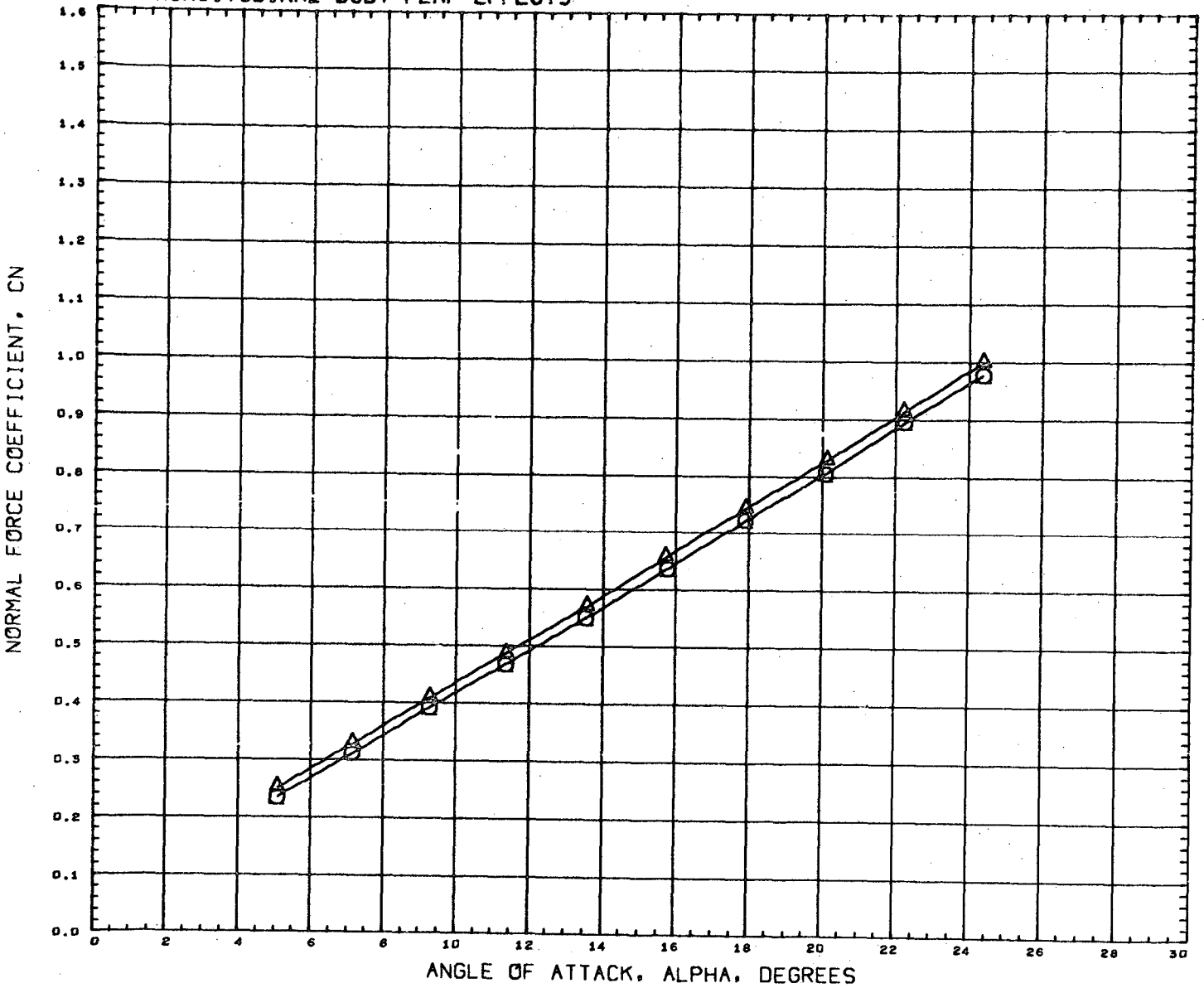
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AS1)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.301

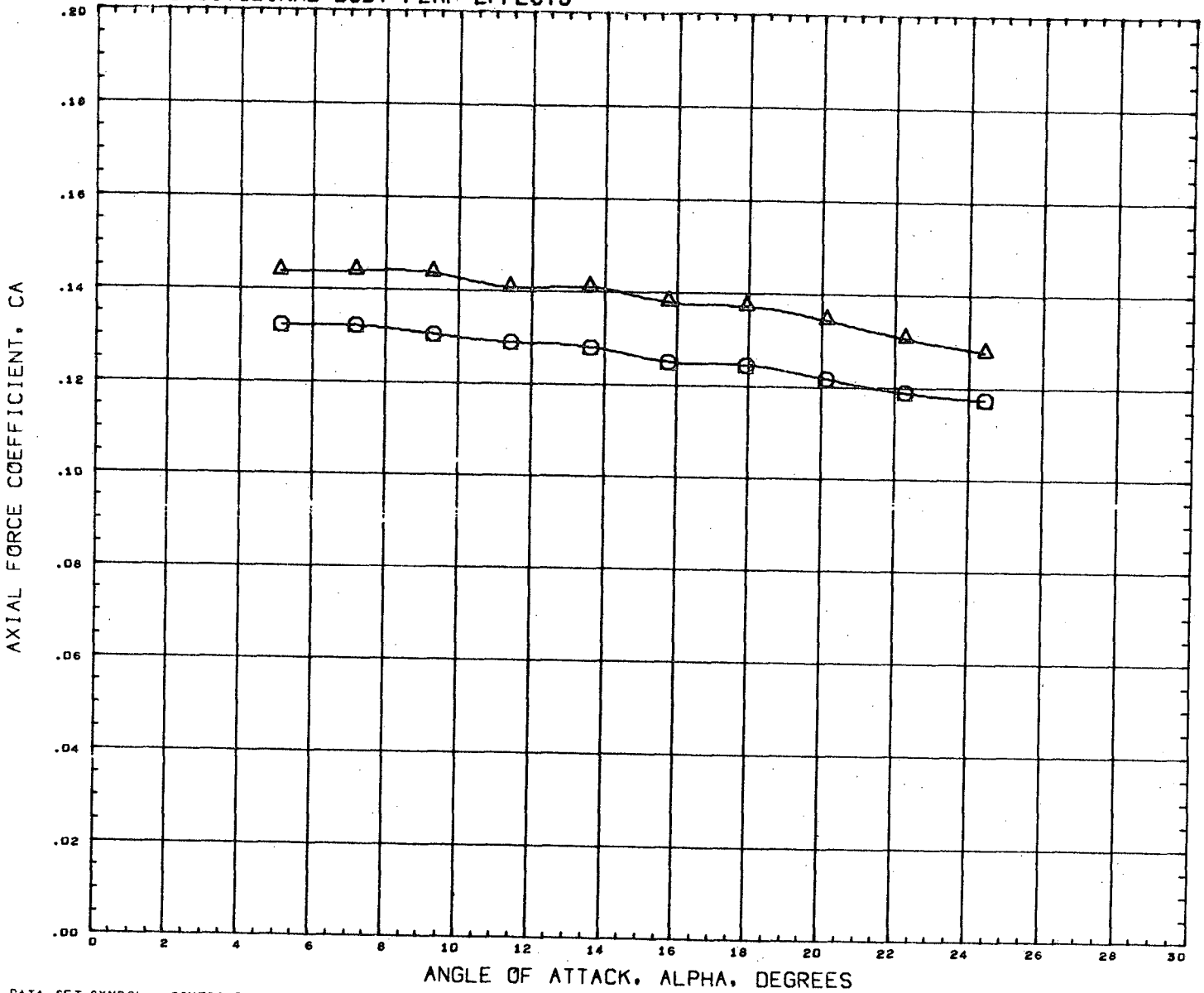
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37A51)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.958

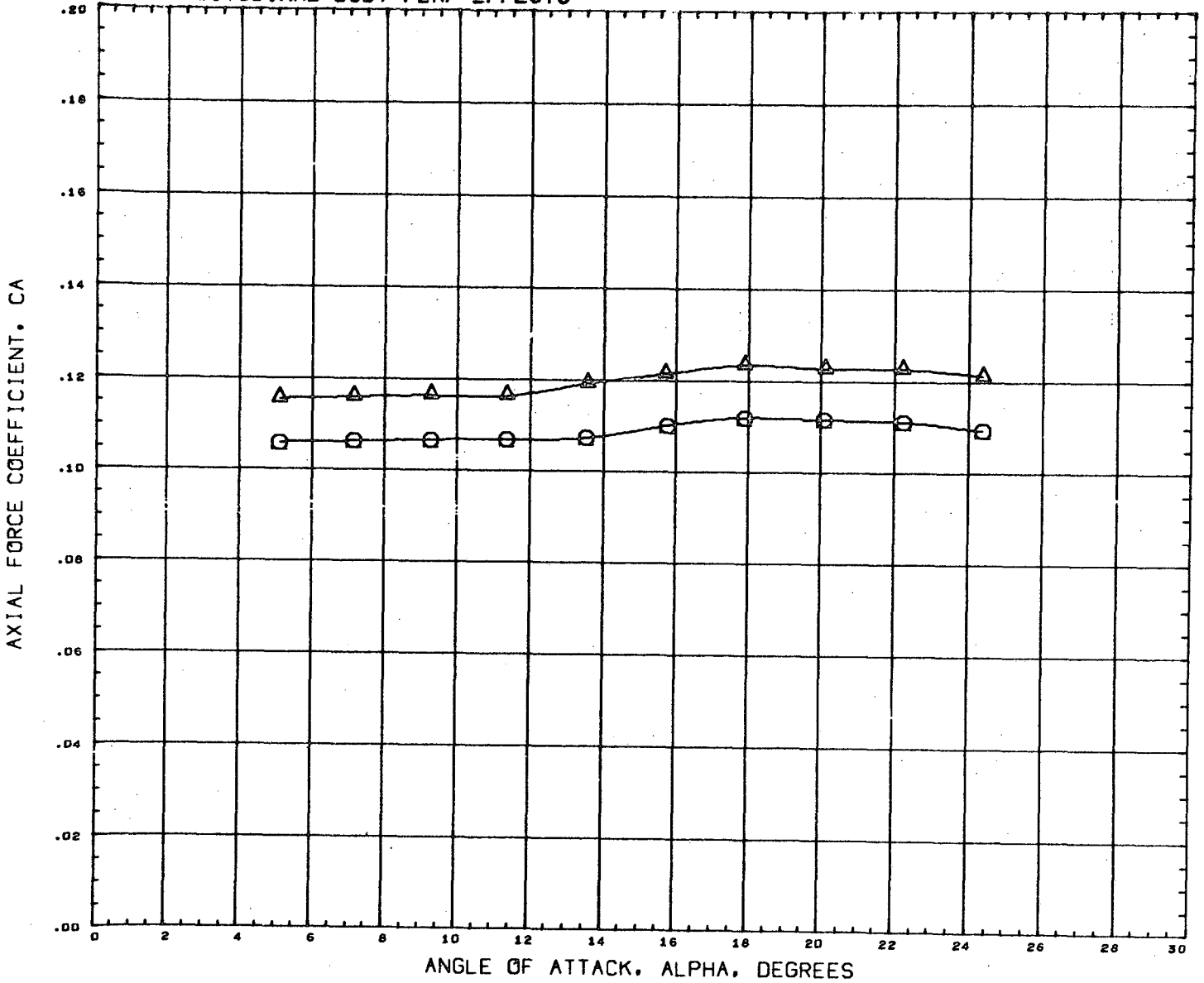
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AS1)	MSFC 495 GD/C B19W14C4AV7F9L6DF9R6D	3.000	0.000	60.000	60.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.301

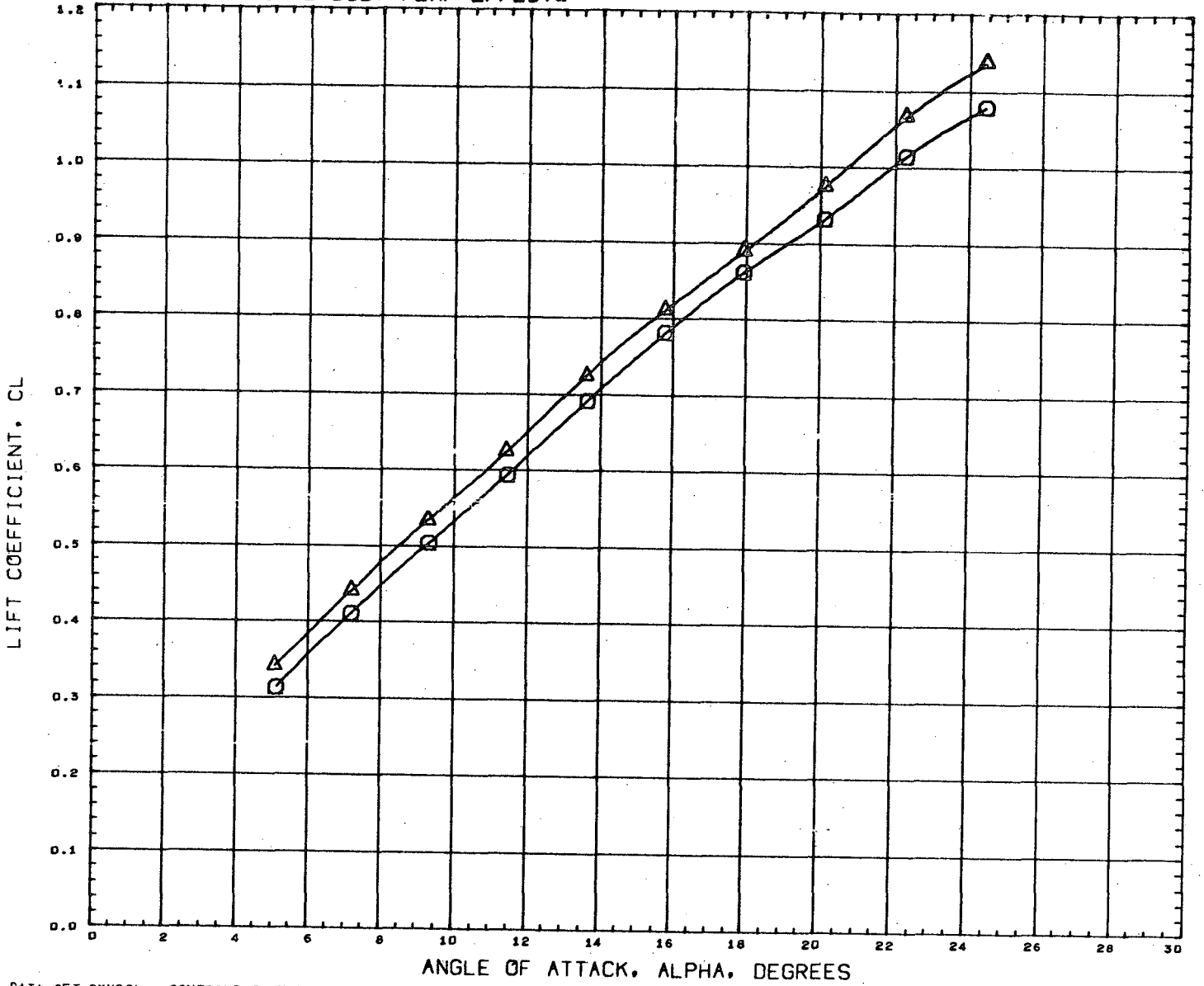
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AS1)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	3.000	0.000	60.000	60.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.958

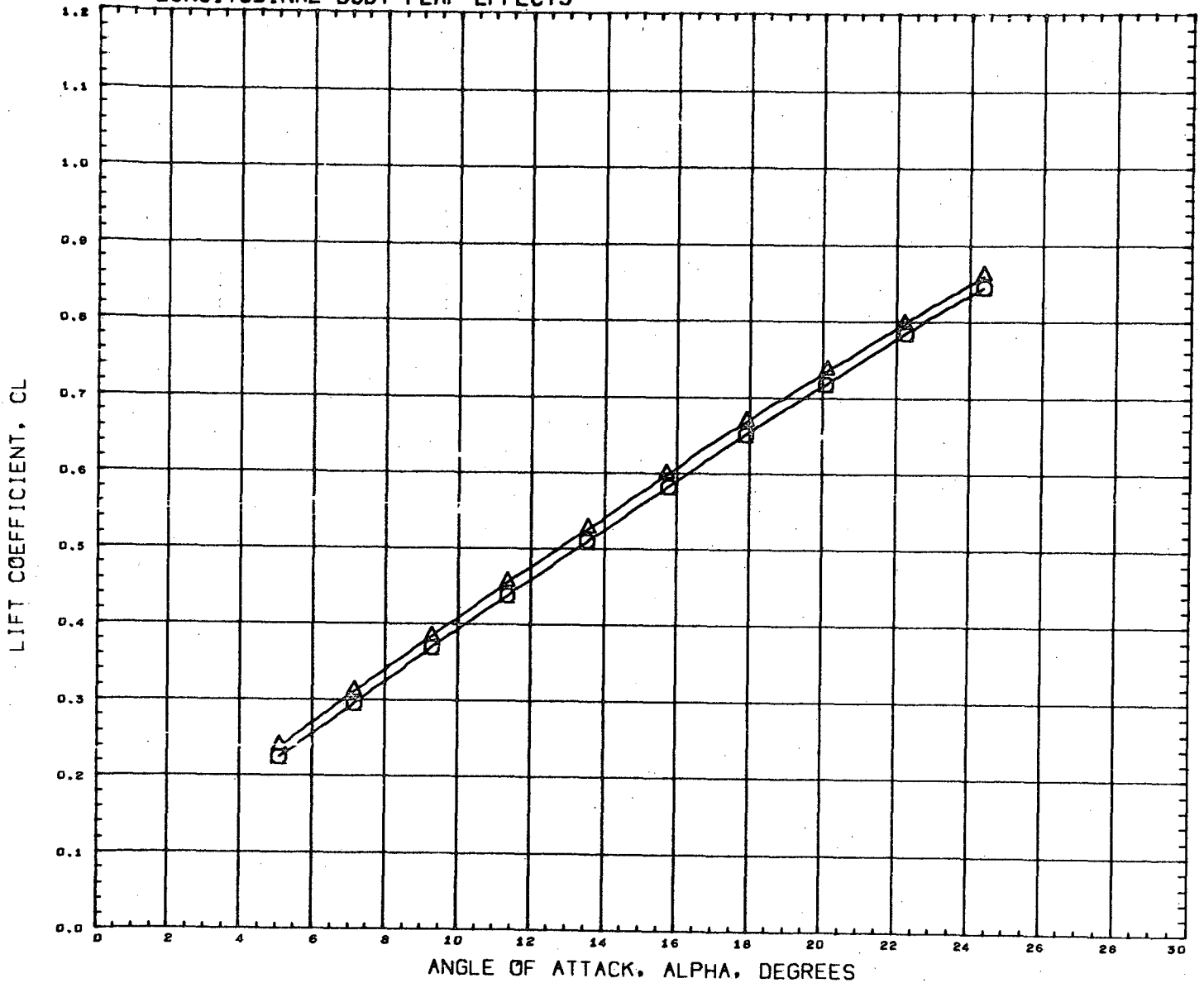
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DINDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37A31)	MSFC 495 GD/C B19W14C4AV7F9L6DF9R6D	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.301

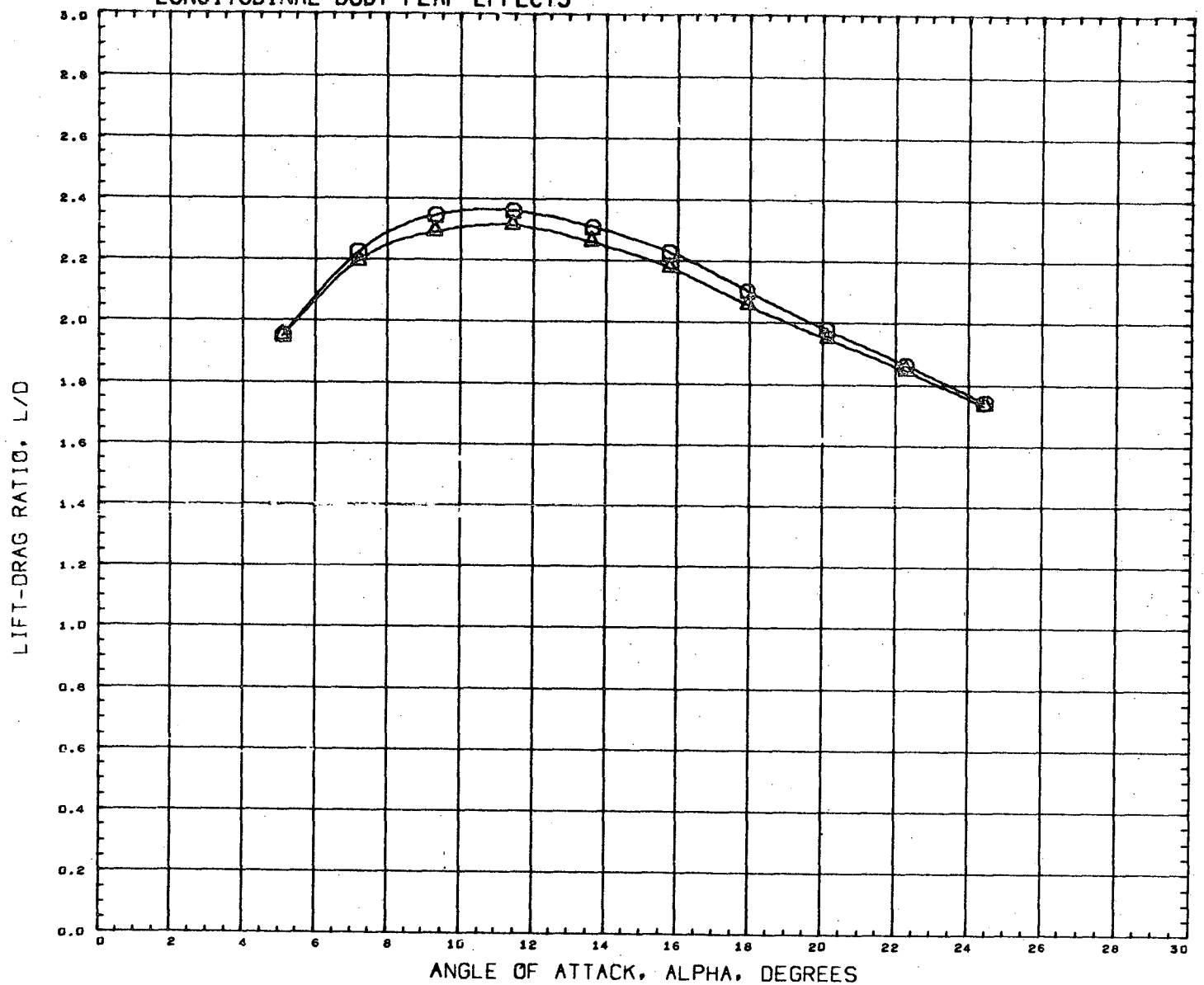
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 Sq. IN.
(C37A51)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.958

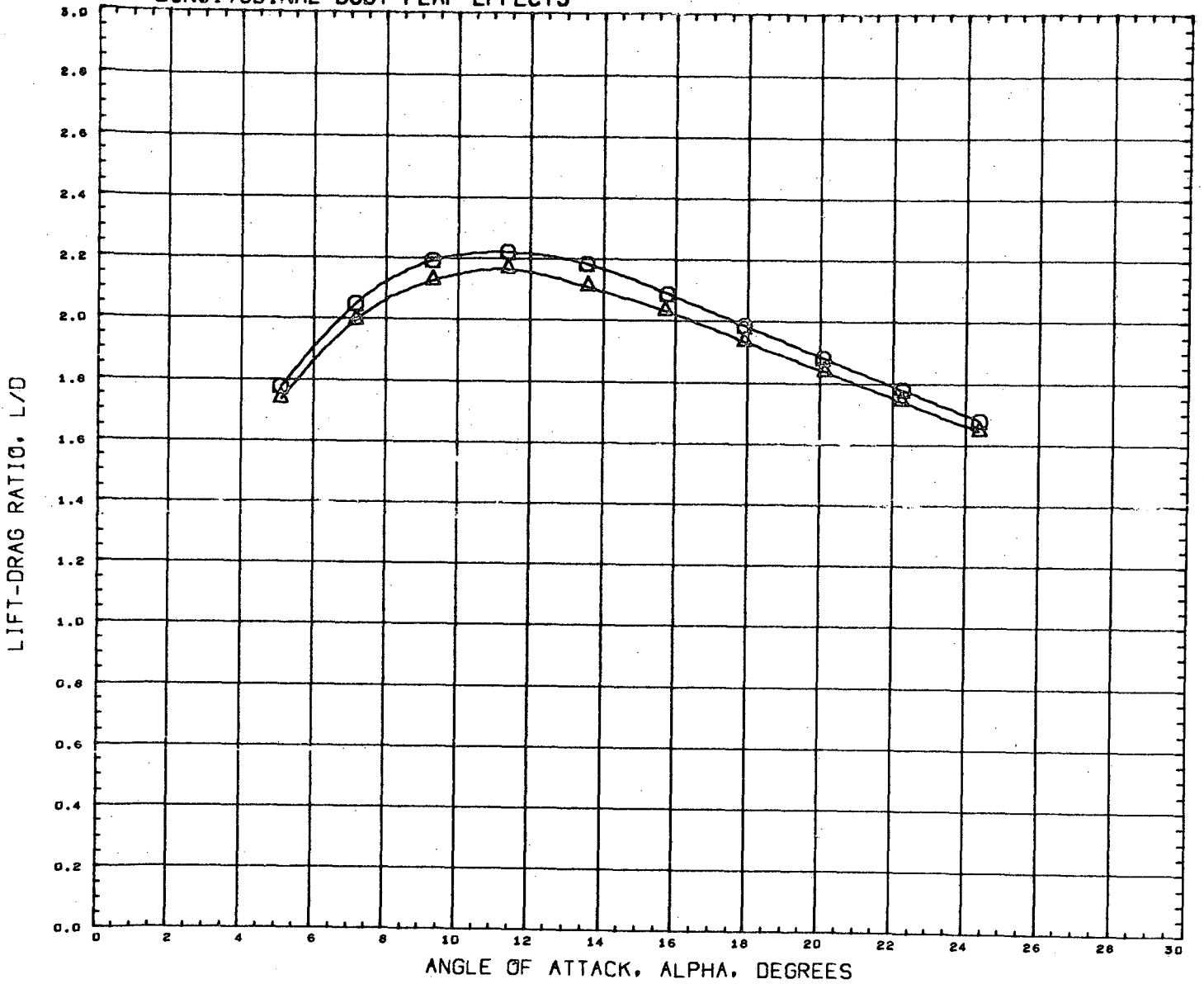
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	DIHDR	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495	GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37A51)	MSFC 495	GD/C B19W14C4AV7F9L60F9R60	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
							BREF	6.0990 IN.
							XMRF	6.6180 IN.
							YMRF	0.0000 IN.
							ZMRF	0.0000 IN.
							SCALE	0.0035

MACH 1.301

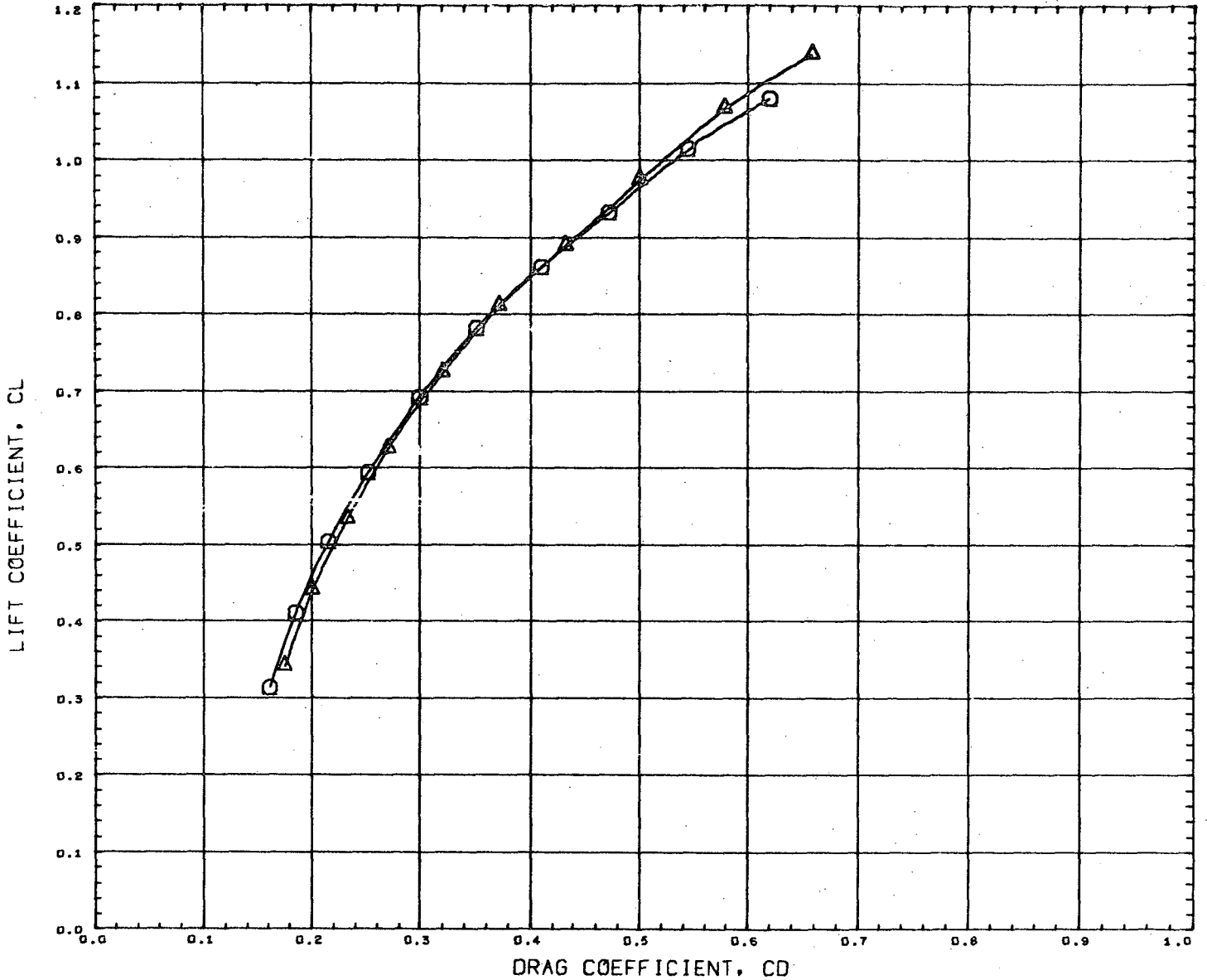
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37A51)	MSFC 495 GD/C B19W14C4AV7F9L6DF9R6D	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.958

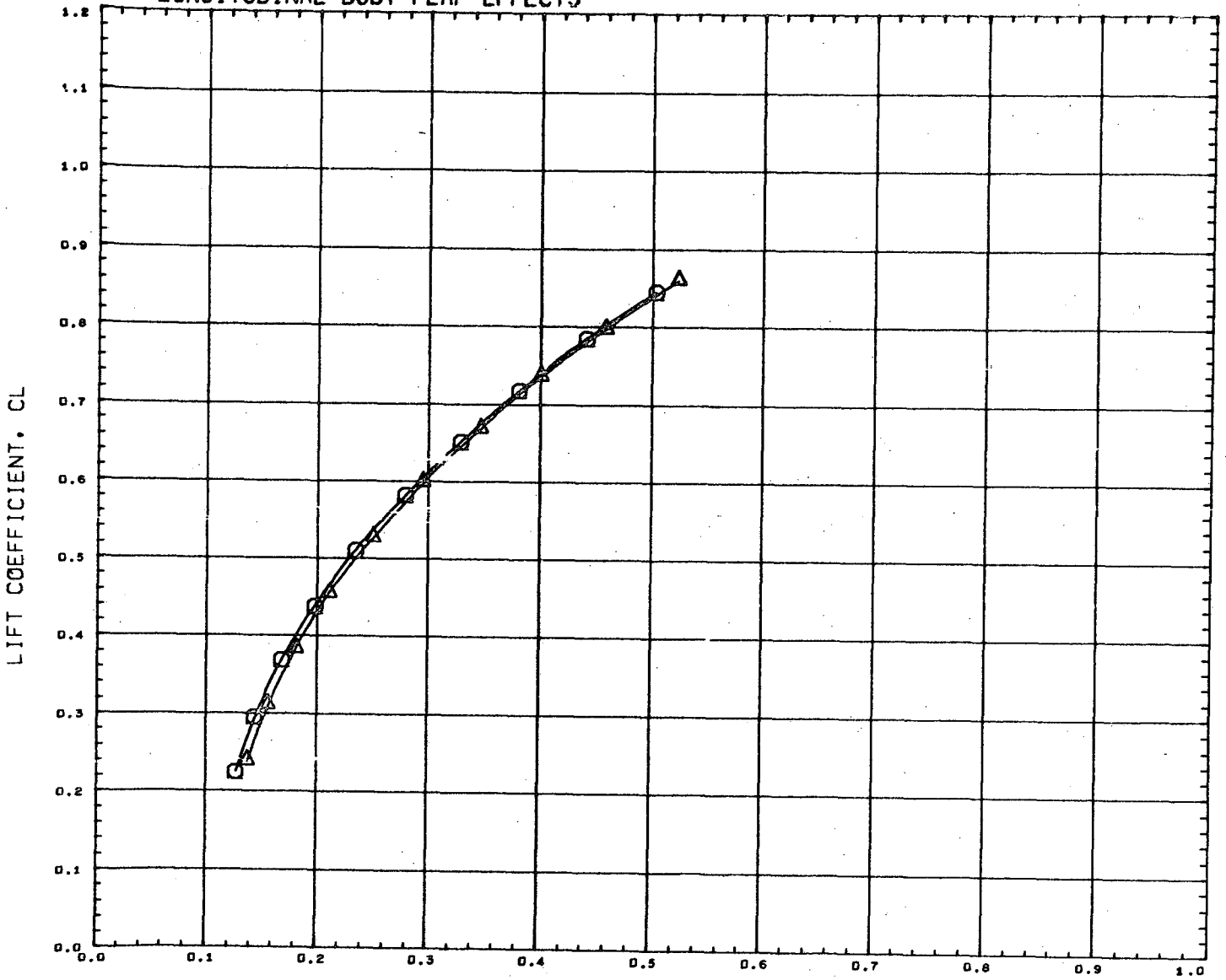
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	D1HDRL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37AS1)	MSFC 495 GD/C B19W14C4AV7F9L6DF9R6D	3.000	0.000	60.000	60.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.301

LONGITUDINAL BODY FLAP EFFECTS

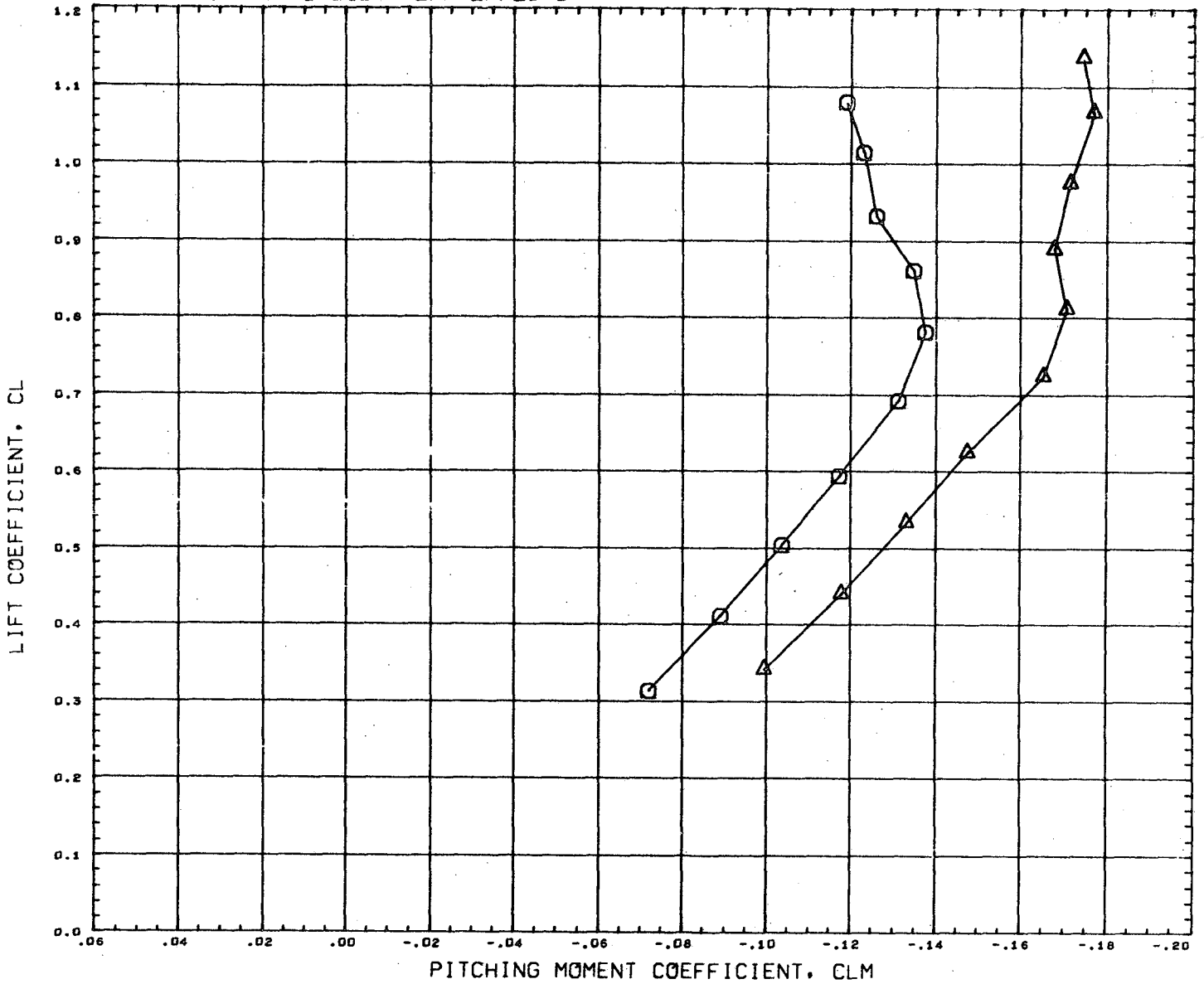


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DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	DIHDL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495	GD/C	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37A31)	MSFC 495	GD/C	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
							BREF	6.0990 IN.
							XMRP	6.6160 IN.
							YMRP	0.0000 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 1.958

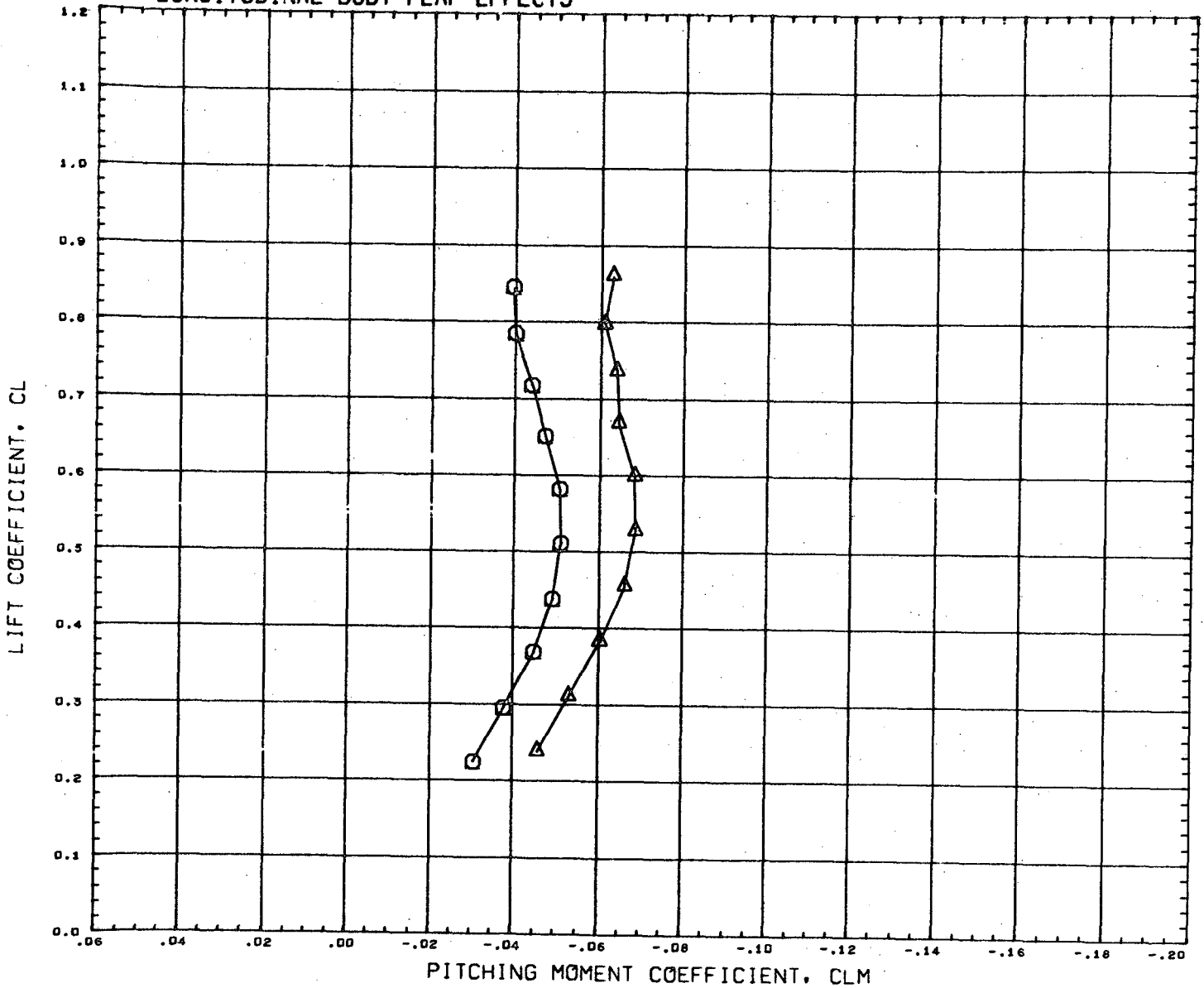
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37AS1)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.301

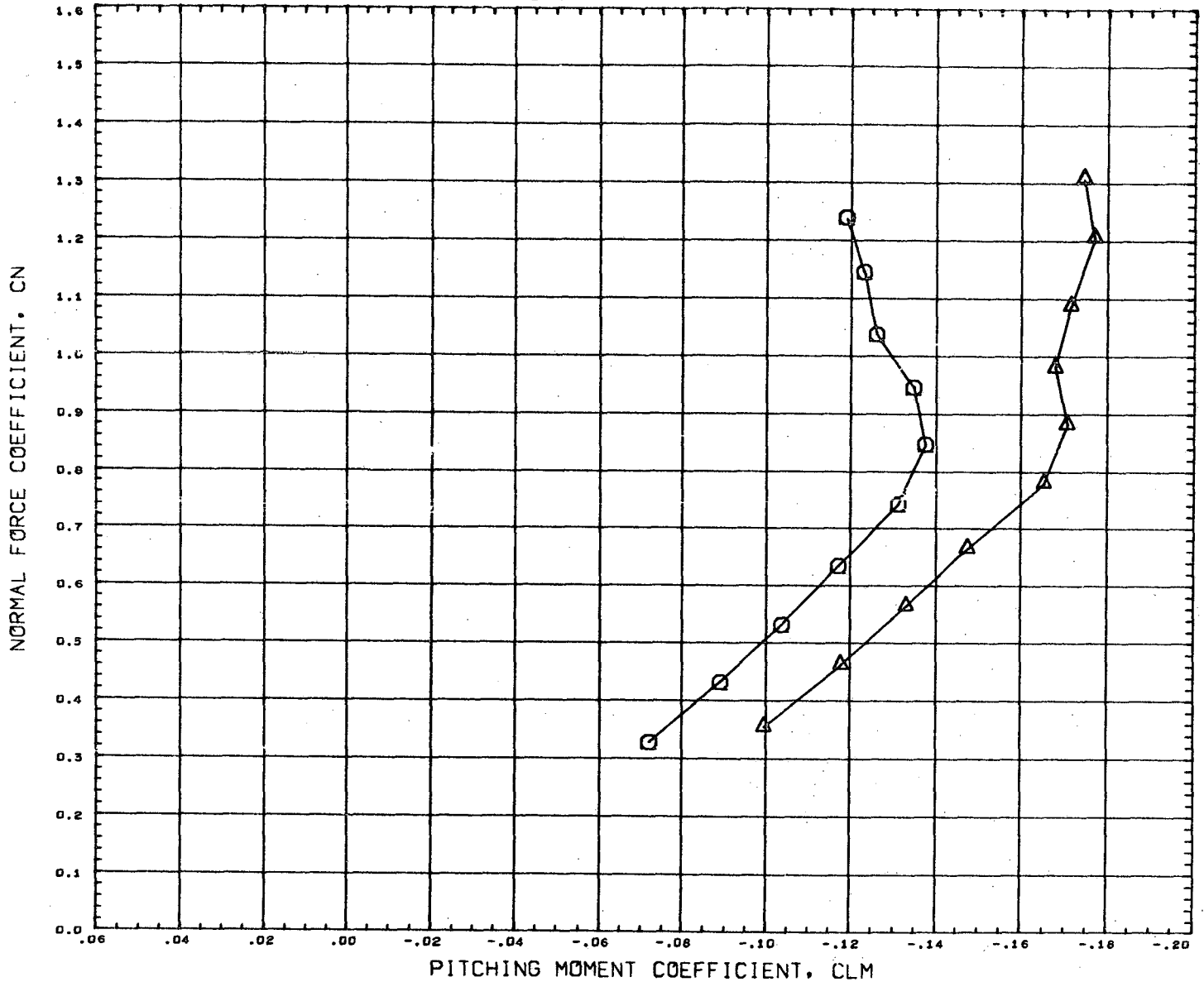
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR1	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37A51)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.958

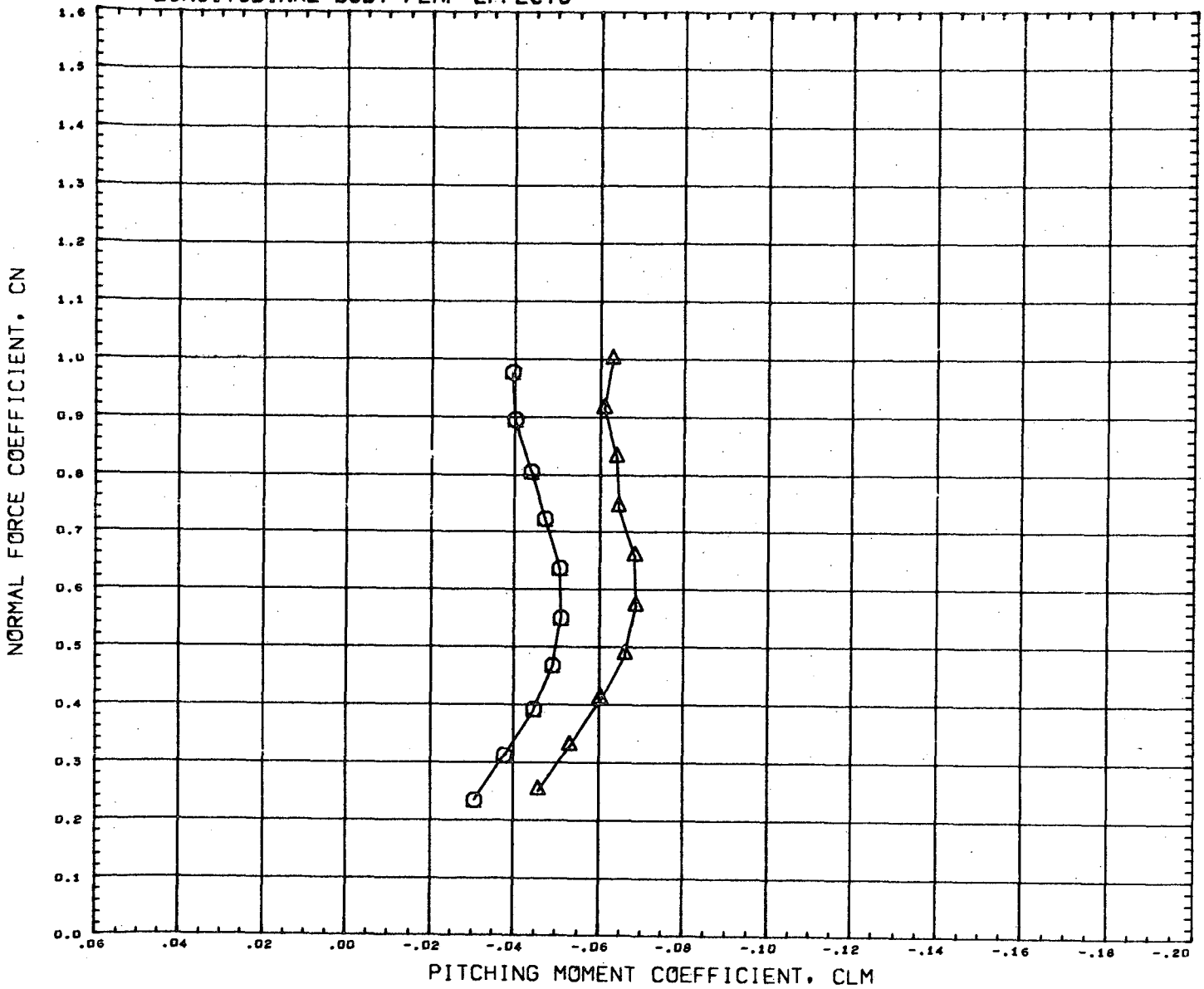
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDL	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37A81)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	3.000	0.000	60.000	60.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.301

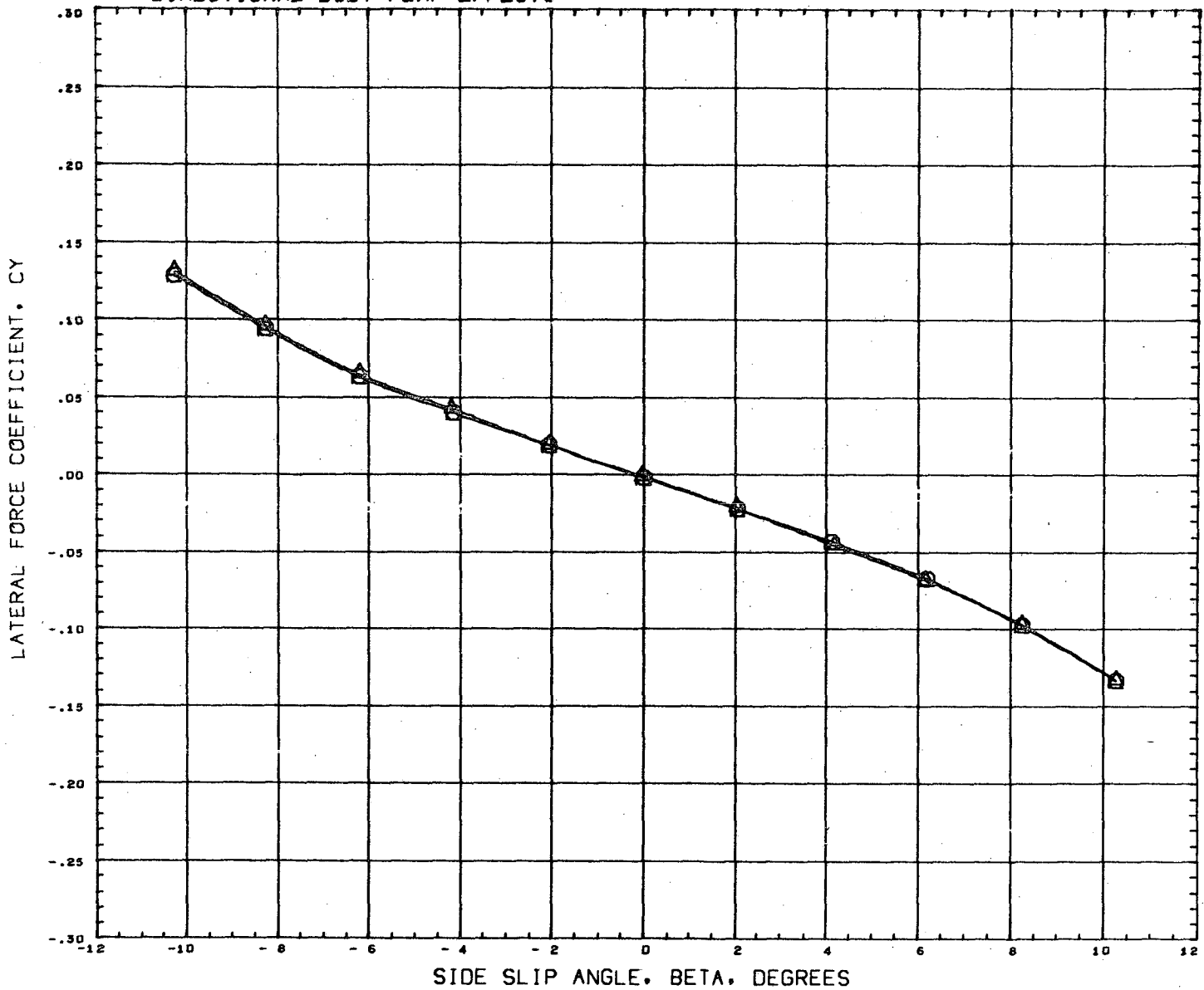
LONGITUDINAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DIHDR	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37A31)	MSFC 495 GD/C B19W14C4AV7	3.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37A51)	MSFC 495 GD/C B19W14C4AV7F9L6DF9R6D	3.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.958

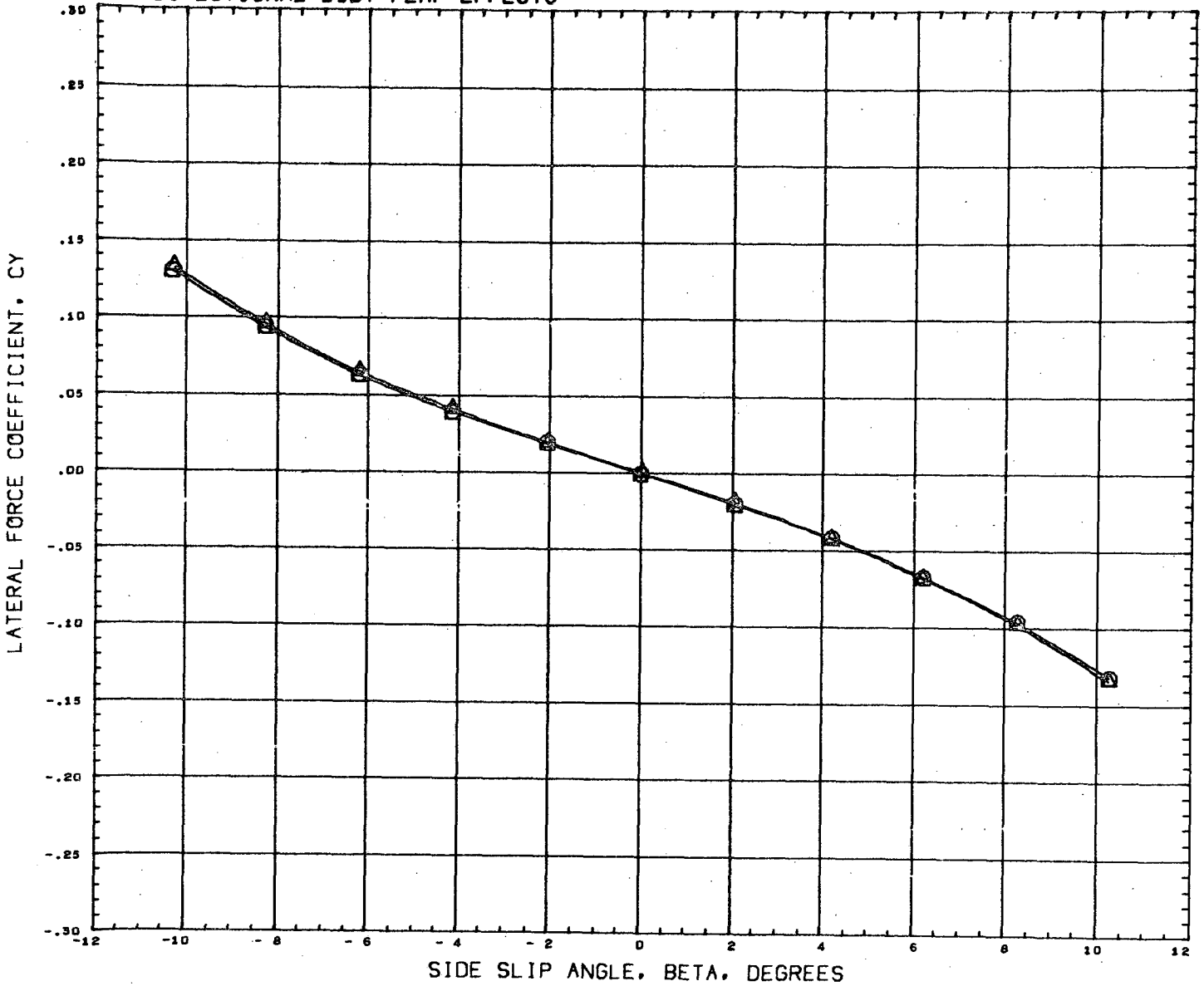
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(D37Y32)	MSFC 495 GD/C	B19W14C4AV7	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37Y51)	MSFC 495 GD/C	B19W14C4AV7F9L6DF9R60	15.000	0.000	60.000	60.000	LREF	3.0950 IN.
							BREF	6.0990 IN.
							XMRP	6.6180 IN.
							YMRP	0.0000 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 1.299

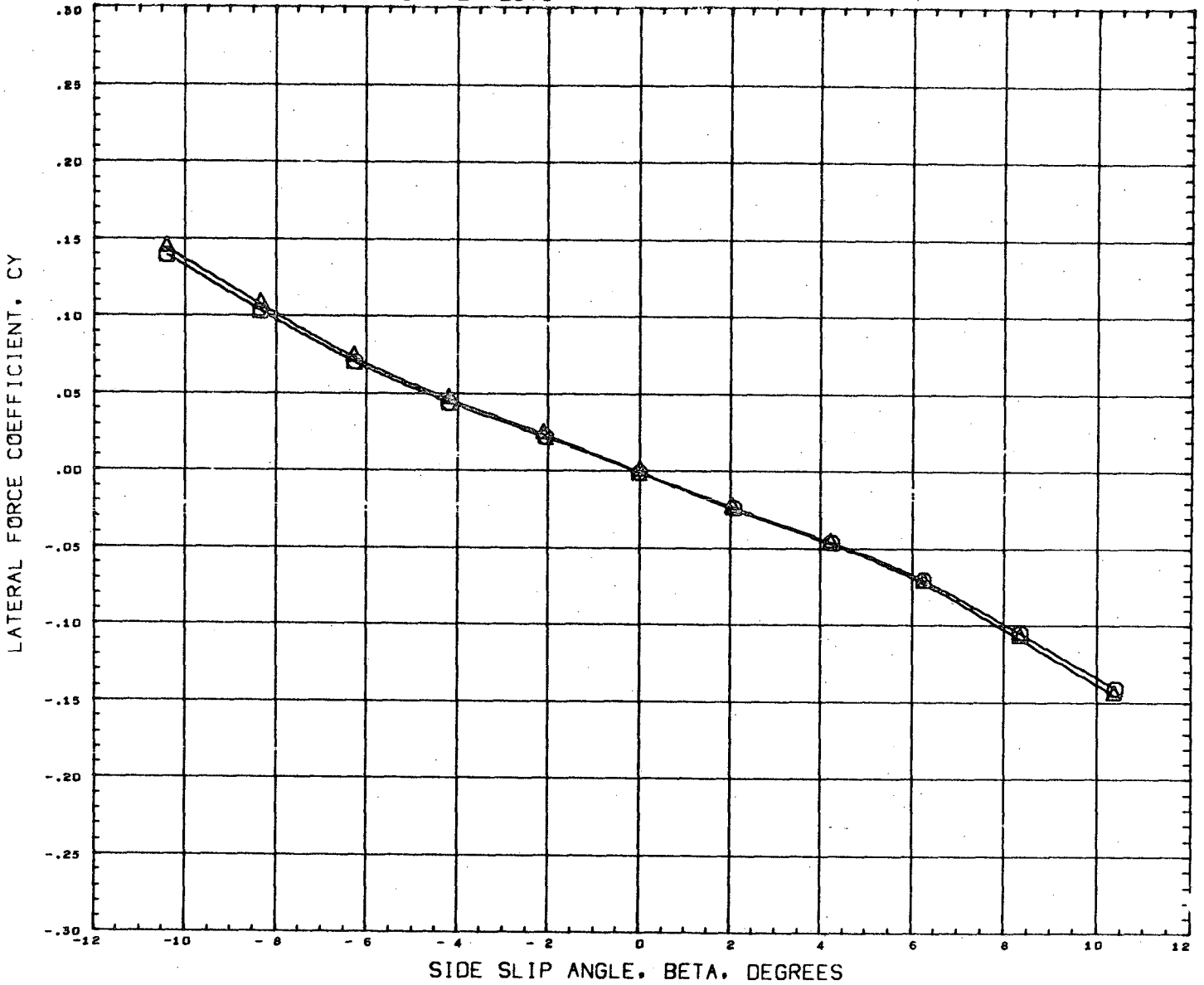
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION		
(D37Y32)	MSFC 495	GD/C	15.000	0.000	0.000	0.000	SREF	15.6560	SQ. IN.
(C37YS1)	MSFC 495	GD/C	15.000	0.000	60.000	60.000	LREF	3.0950	IN.
							BREF	6.0990	IN.
							XMRP	6.6180	IN.
							YMRP	0.0000	IN.
							ZMRP	0.0000	IN.
							SCALE	0.0035	

MACH 1.457

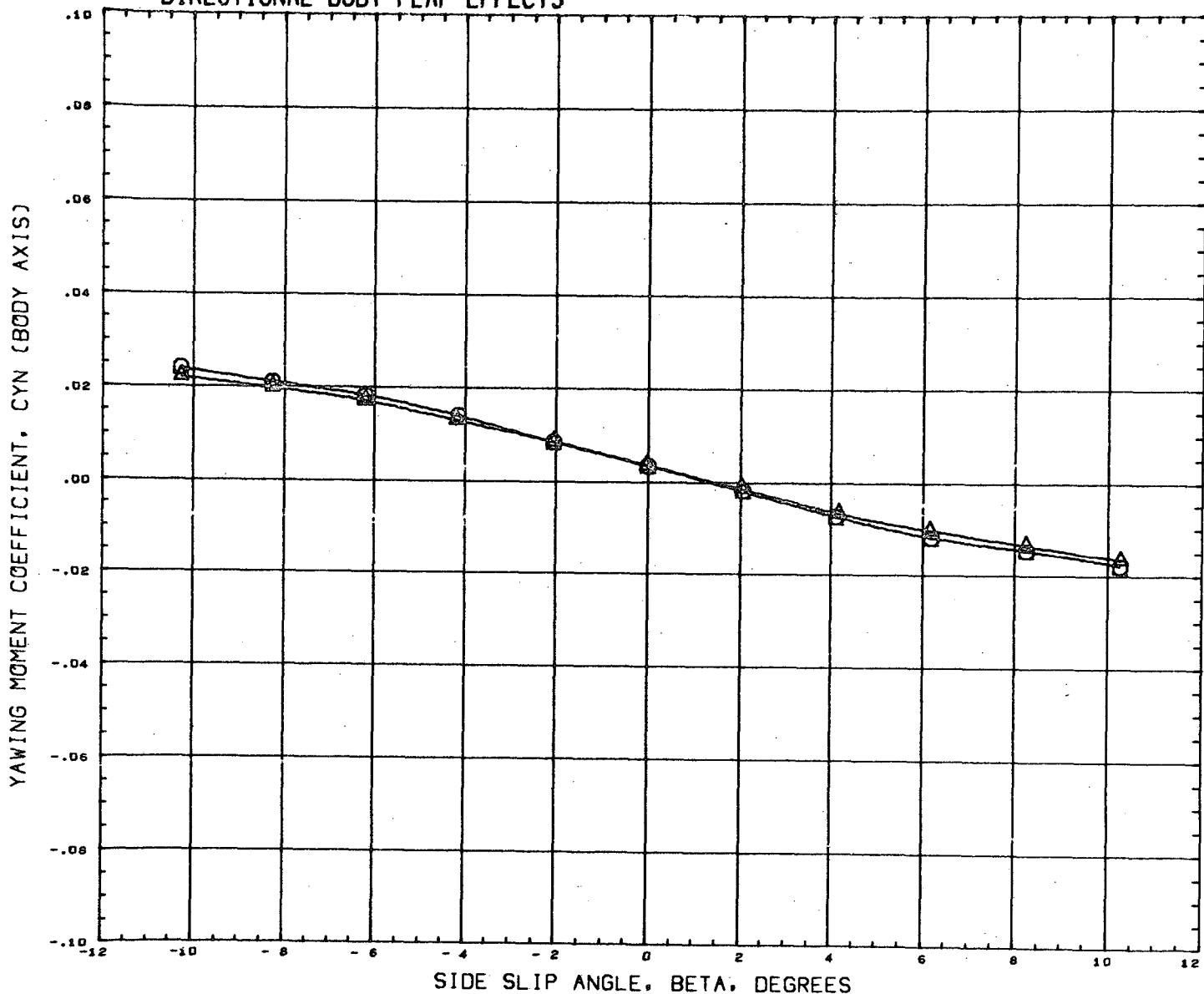
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37YS1)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	15.000	0.000	60.000	60.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.957

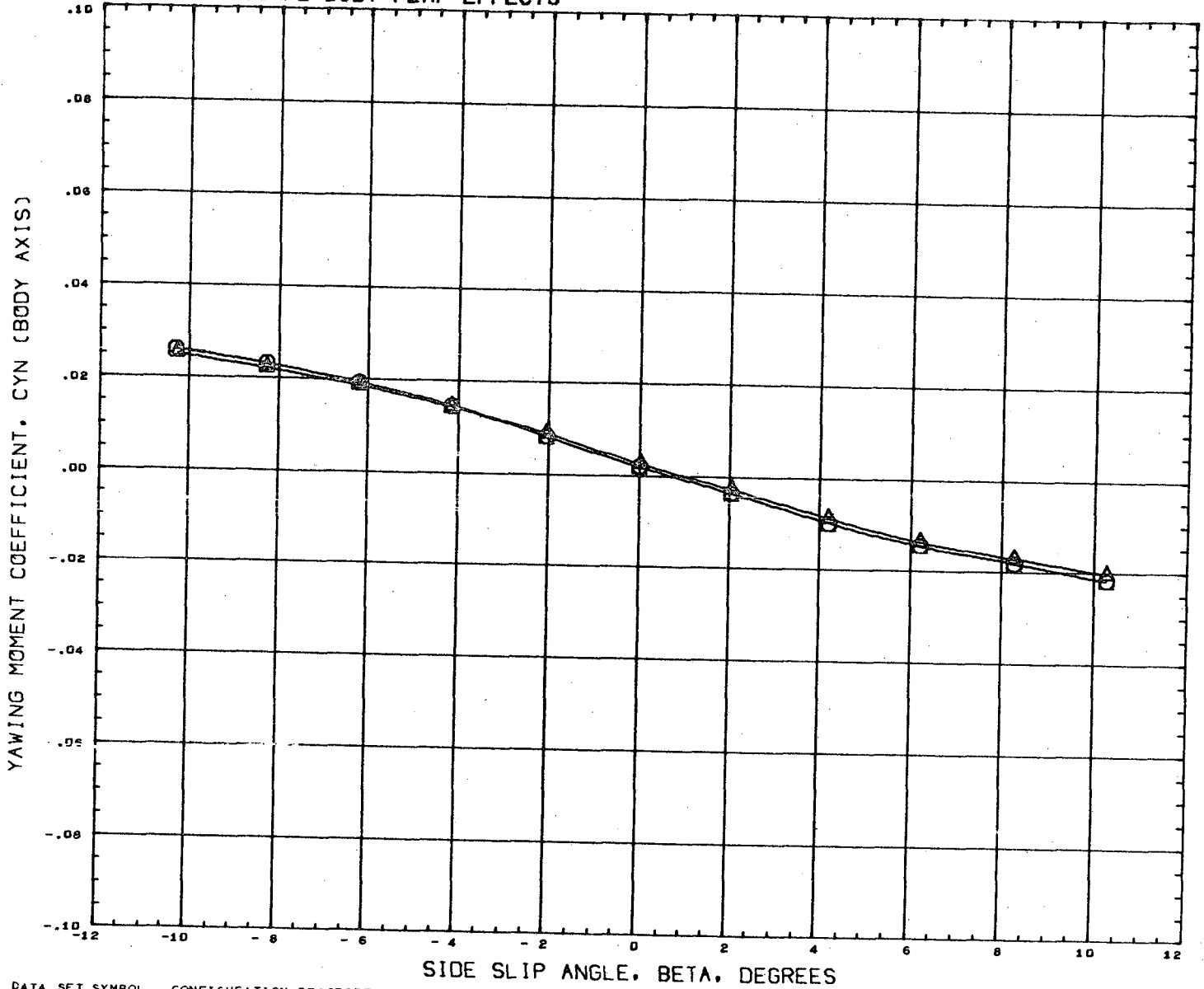
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(D37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37YS1)	MSFC 495 GD/C B19W14C4AV7F9L60F9R6D	15.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.299

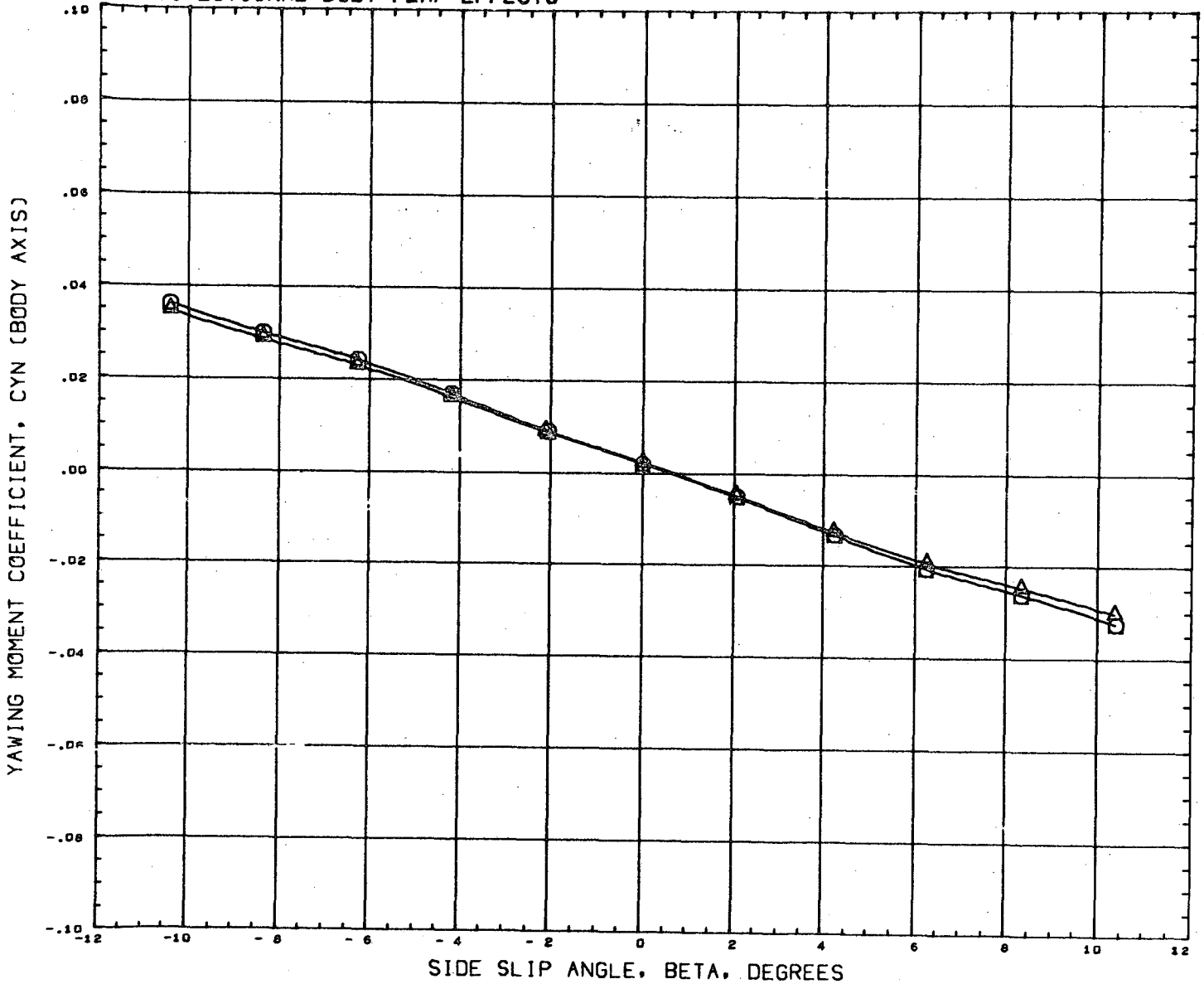
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(D37Y32)	MSFC 495	GD/C	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37Y51)	MSFC 495	GD/C	15.000	0.000	60.000	60.000	LREF 3.0950 IN.
							BREF 6.0990 IN.
							XMRF 6.6180 IN.
							YMRF 0.0000 IN.
							ZMRF 0.0000 IN.
							SCALE 0.0035

MACH 1.457

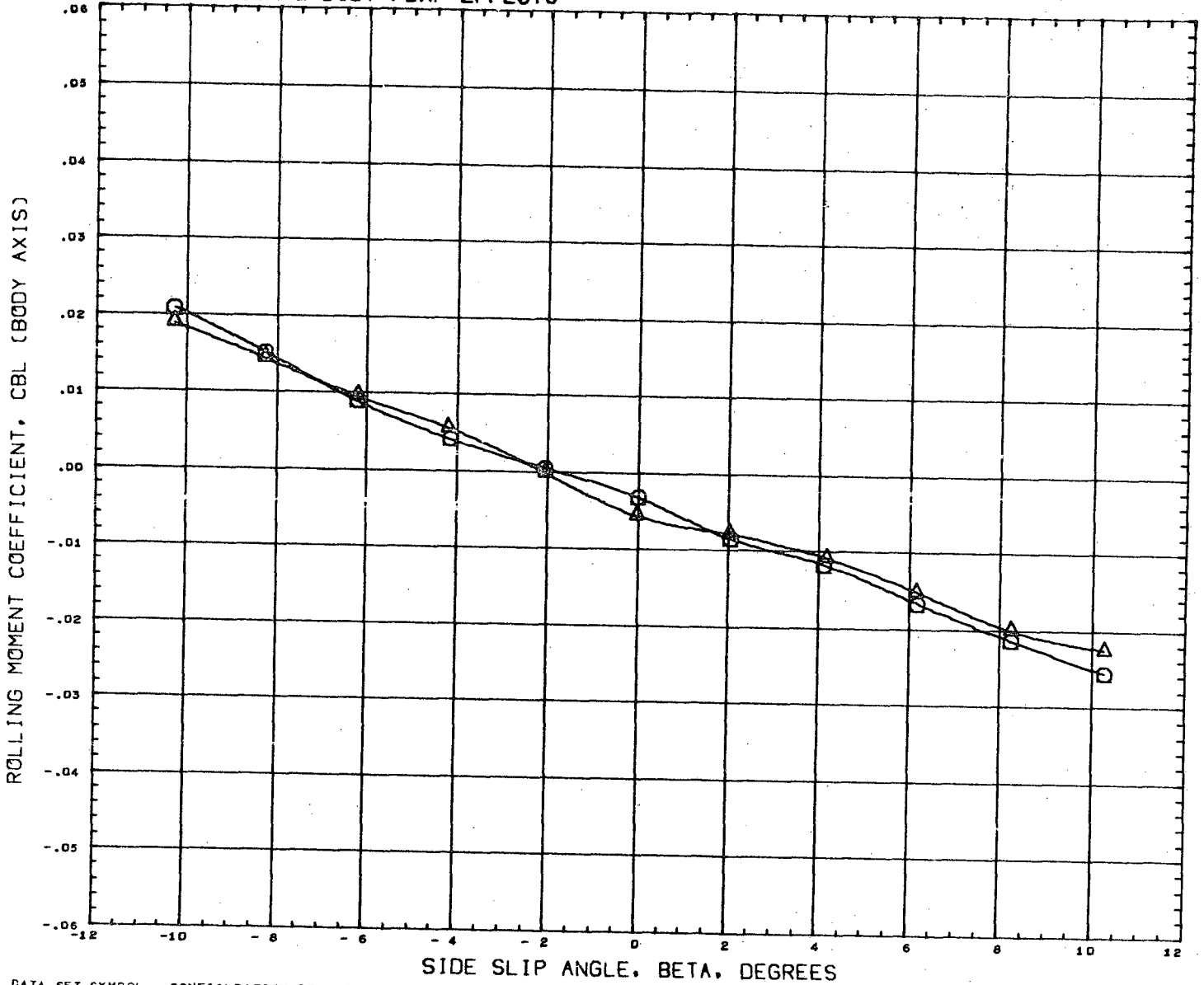
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(D37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37Y51)	MSFC 495 GD/C B19W14C4AV7F9L6DF9R6D	15.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.957

DIRECTIONAL BODY FLAP EFFECTS



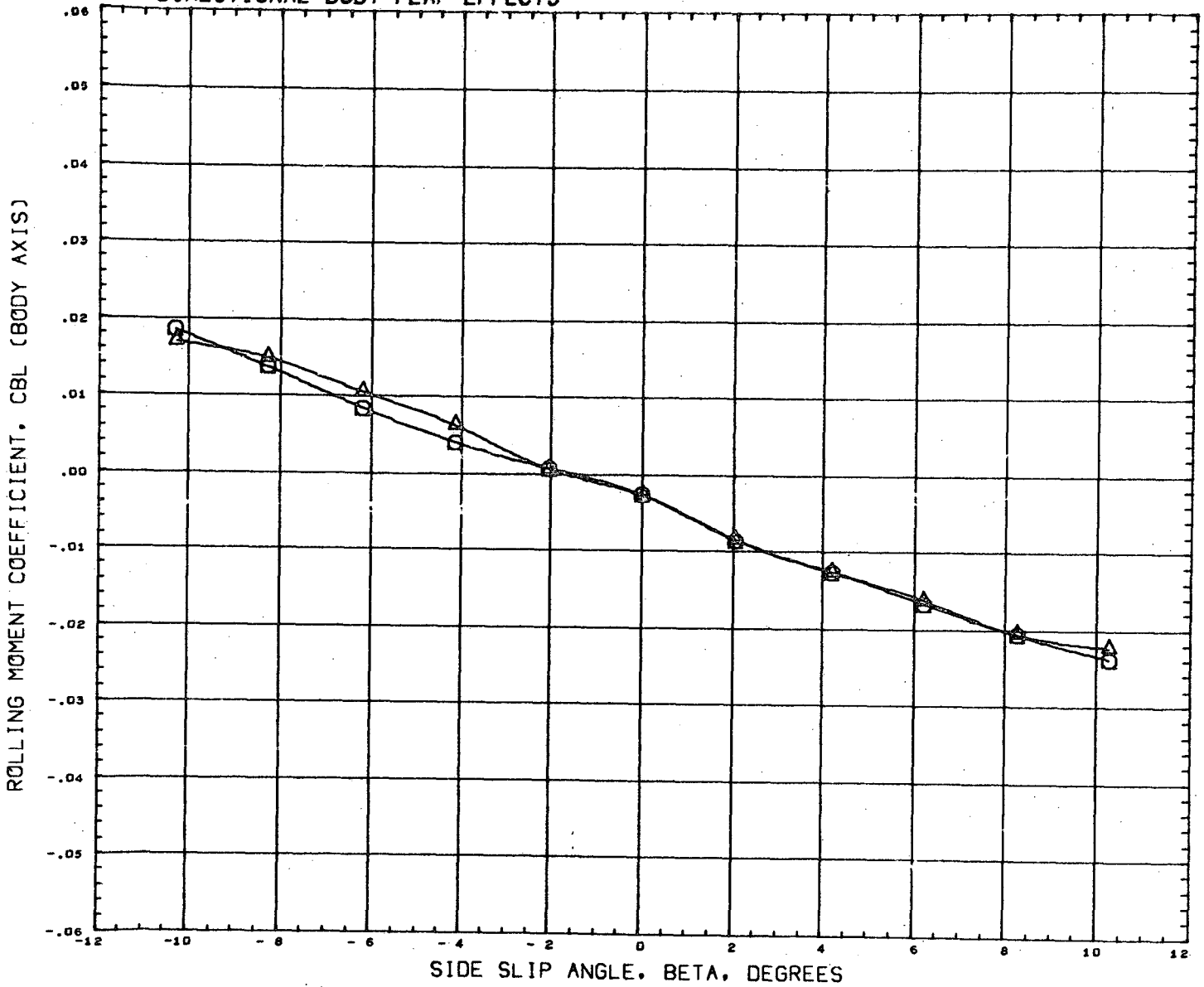
DATA SET SYMBOL (D37Y32) (C37YS1) CONFIGURATION MSFC 495 GD/C MSFC 495 GD/C DESCRIPTION B19W14C4AV7 B19W14C4AV7F9L6DF9R6D

ALPHA 15.000 15.000 RDRFLR 0.000 0.000 L-BFLP 0.000 60.000 R-BFLP 0.000 60.000

REFERENCE INFORMATION
 SREF 15.6560 SQ. IN.
 LREF 3.0950 IN.
 BREF 6.0990 IN.
 XMRP 6.6180 IN.
 YMRP 0.0000 IN.
 ZMRP 0.0000 IN.
 SCALE 0.0035

MACH 1.299

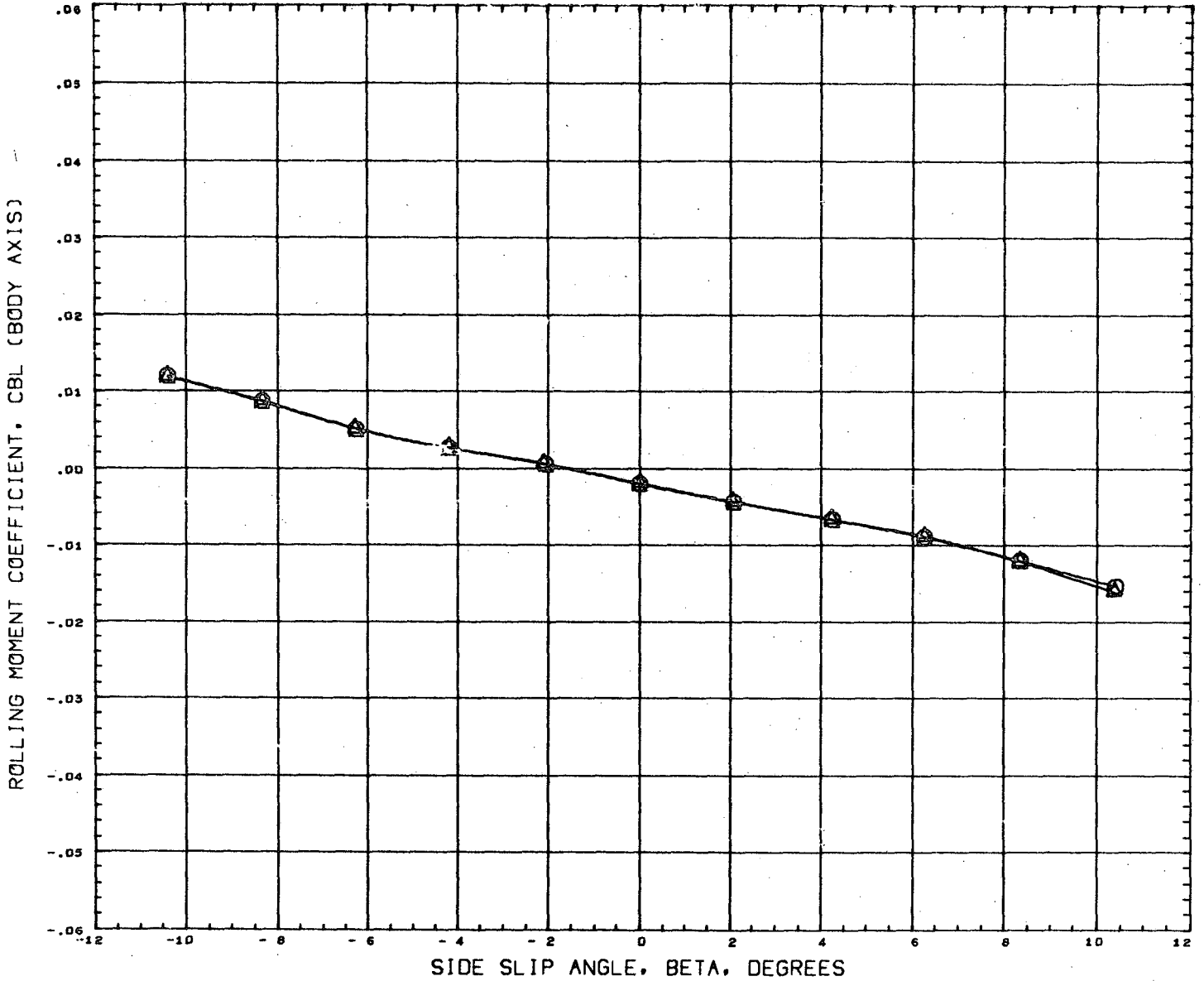
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(D37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37YS1)	MSFC 495 GD/C B19W14C4AV7F9L6GF9R6D	15.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.457

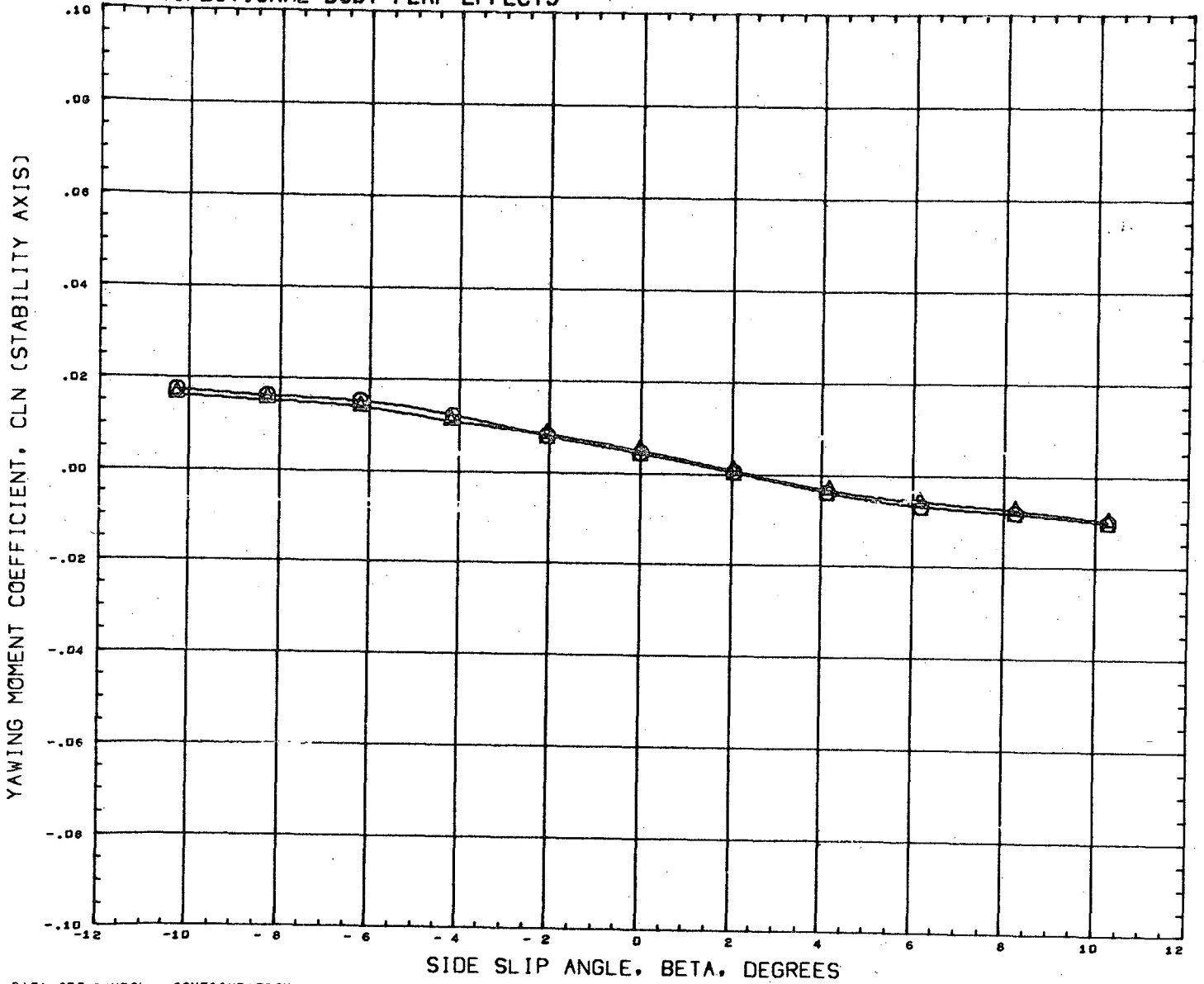
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37YS1)	MSFC 495 GD/C B19W14C4AV7F9L6DF9R60	15.000	0.000	60.000	60.000	LREF 3.0950 IN.
						BREF 6.0990 IN.
						XMRP 6.6180 IN.
						YMRP 0.0000 IN.
						ZMRP 0.0000 IN.
						SCALE 0.0035

MACH 1.957

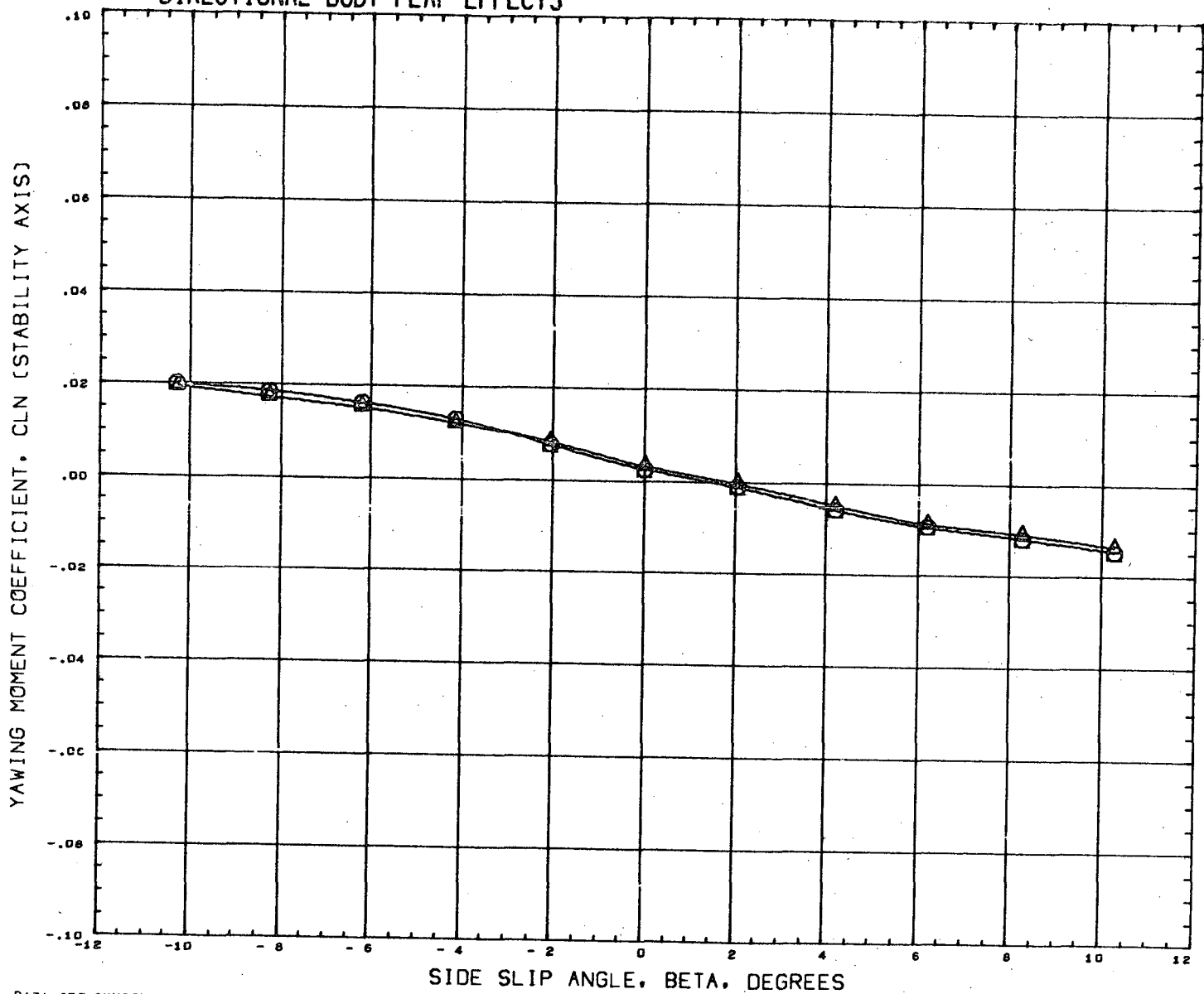
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(D37Y32)	MSFC 495	GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37Y51)	MSFC 495	GD/C B19W14C4AV7F9L6DF9R6D	15.000	0.000	60.000	60.000	LREF	3.0950 IN.
							BREF	6.0990 IN.
							XMRP	6.6180 IN.
							YMRP	0.0000 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 1.299

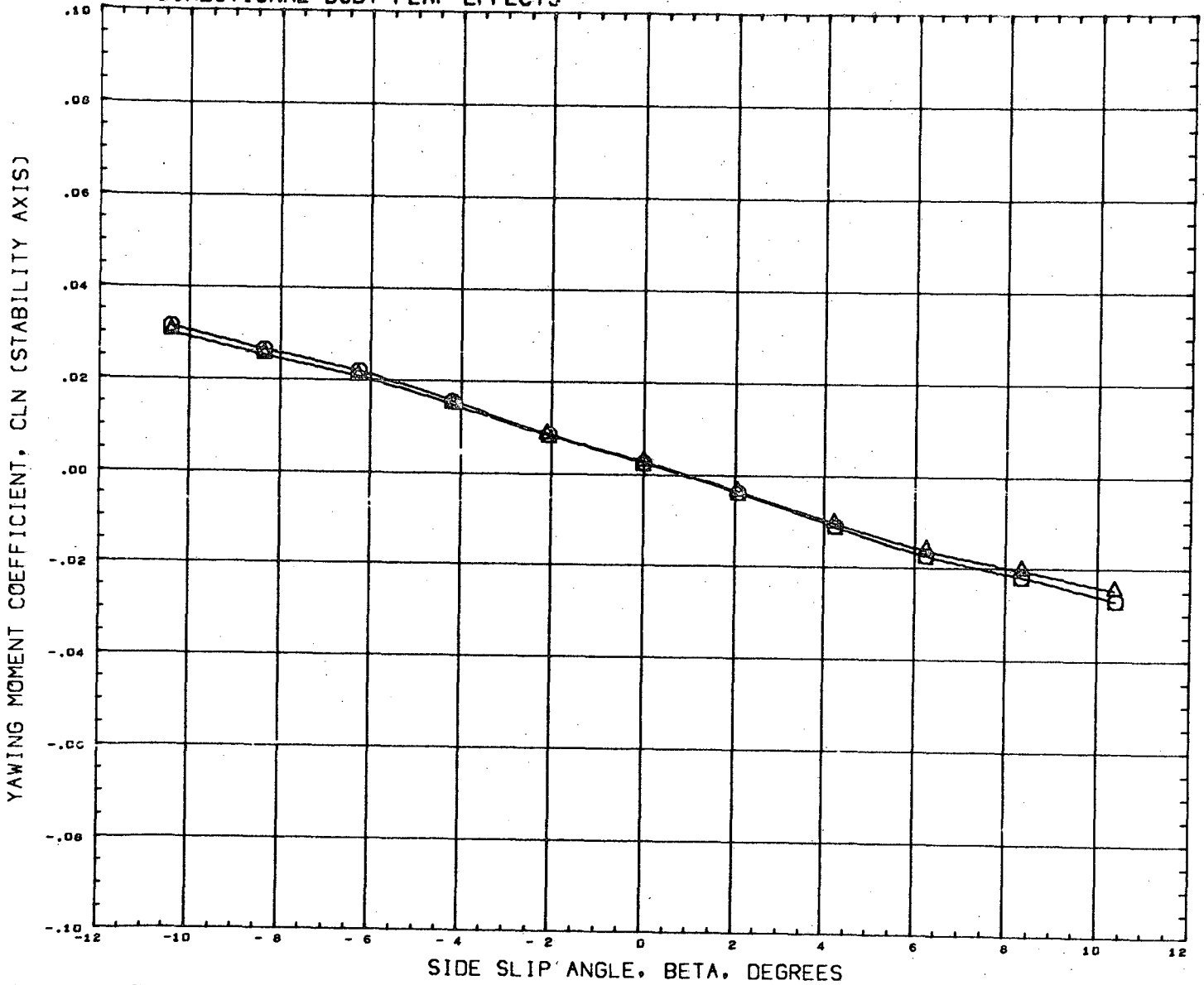
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(D37Y32)	MSFC 495	GD/C	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37Y51)	MSFC 495	GD/C	15.000	0.000	60.000	60.000	LREF	3.0950 IN.
		B19W14C4AV7					BREF	6.0990 IN.
		B19W14C4AV7F9L6DF9R6D					XMRP	6.6180 IN.
							YMRP	0.0000 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 1.457

DIRECTIONAL BODY FLAP EFFECTS

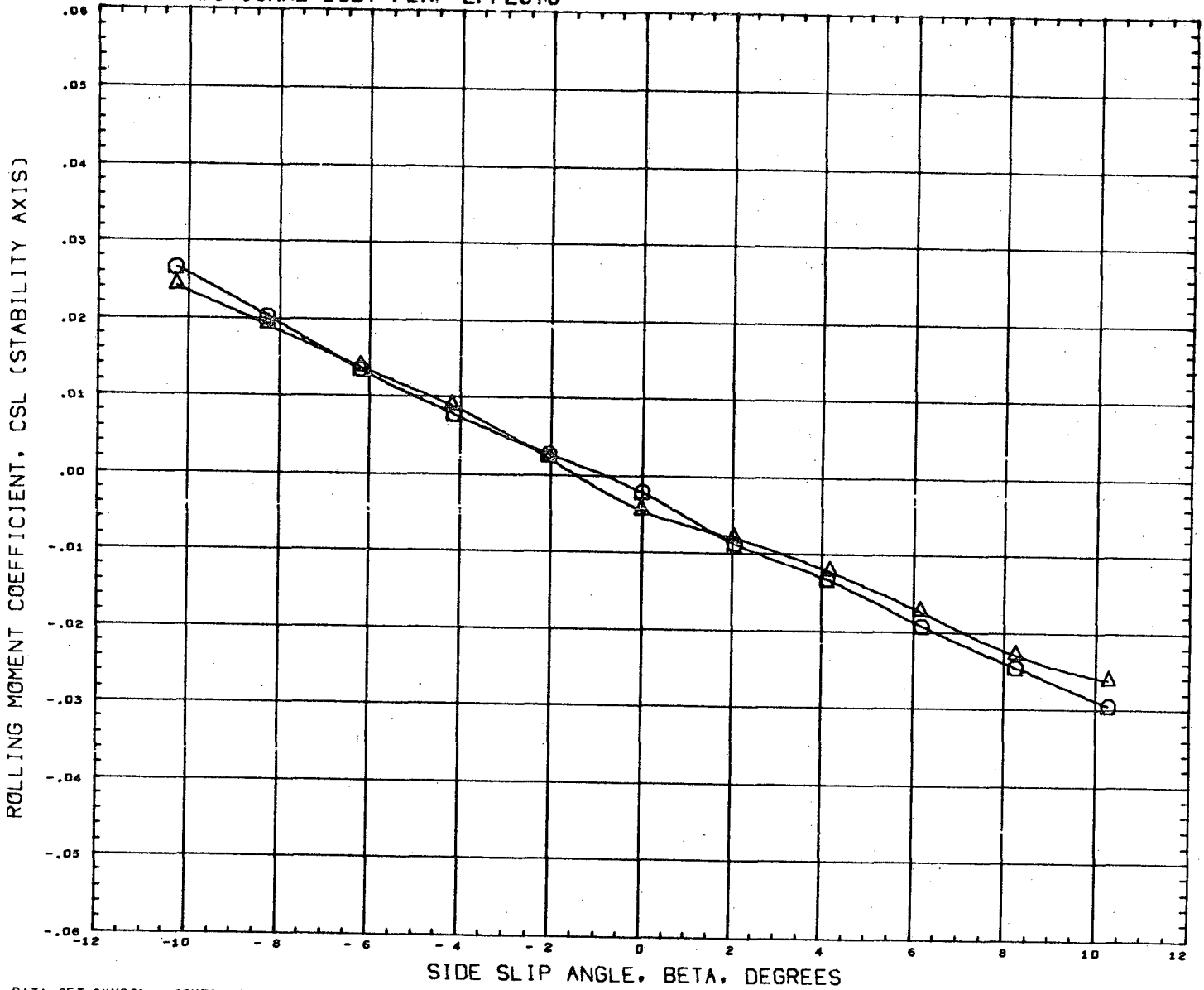


DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7
(C37YS1)	MSFC 495 GD/C B19W14C4AV7F9L6DF9R60

ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
15.000	0.000	60.000	60.000	LREF 3.0950 IN.
				BREF 6.0990 IN.
				XMRP 6.6180 IN.
				YMRP 0.0000 IN.
				ZMRP 0.0000 IN.
				SCALE 0.0035

MACH 1.957

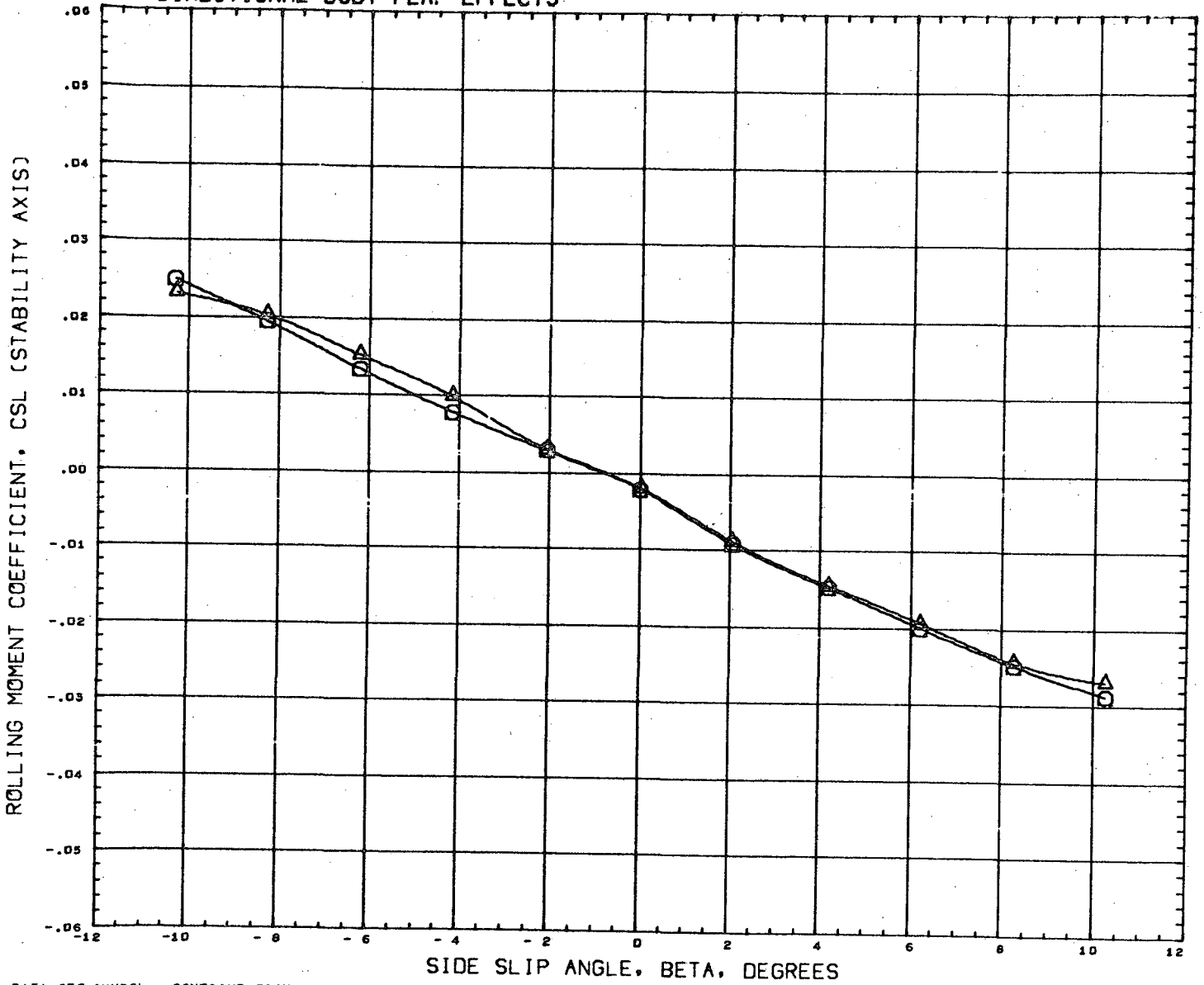
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(D37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(C37Y61)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	15.000	0.000	60.000	60.000	LREF 3.0950 IN. BREF 6.0990 IN. XMRP 6.6180 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035

MACH 1.299

DIRECTIONAL BODY FLAP EFFECTS

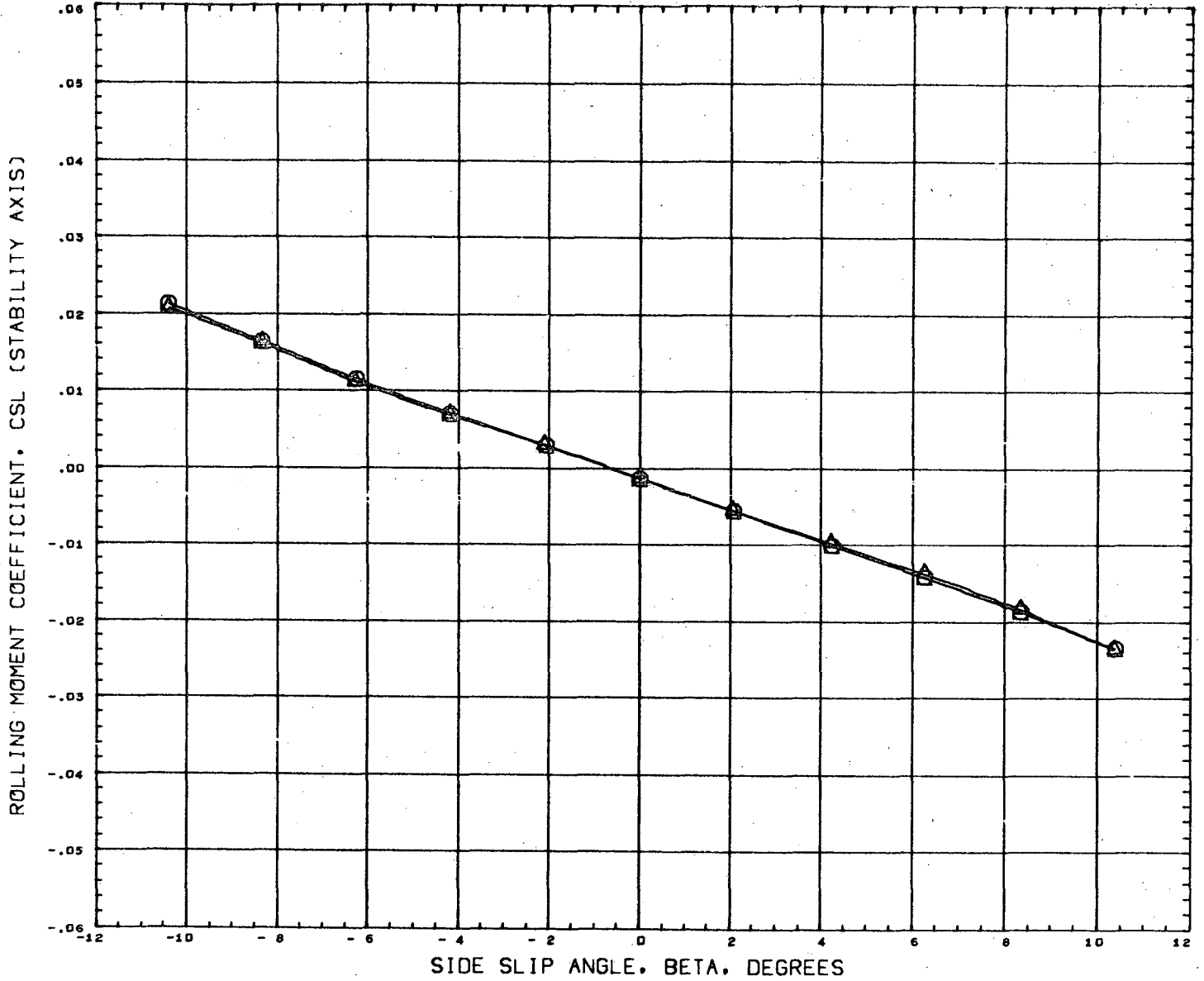


DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(D37Y32)	MSFC 495 GD/C	B19W14C4AV7
(C37YS1)	MSFC 495 GD/C	B19W14C4AV7F9L60F9R6D

ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
15.000	0.000	60.000	60.000	LREF 3.0950 IN.
				BREF 6.0990 IN.
				XMRP 6.6180 IN.
				YMRP 0.0000 IN.
				ZMRP 0.0000 IN.
				SCALE 0.0035

MACH 1.457

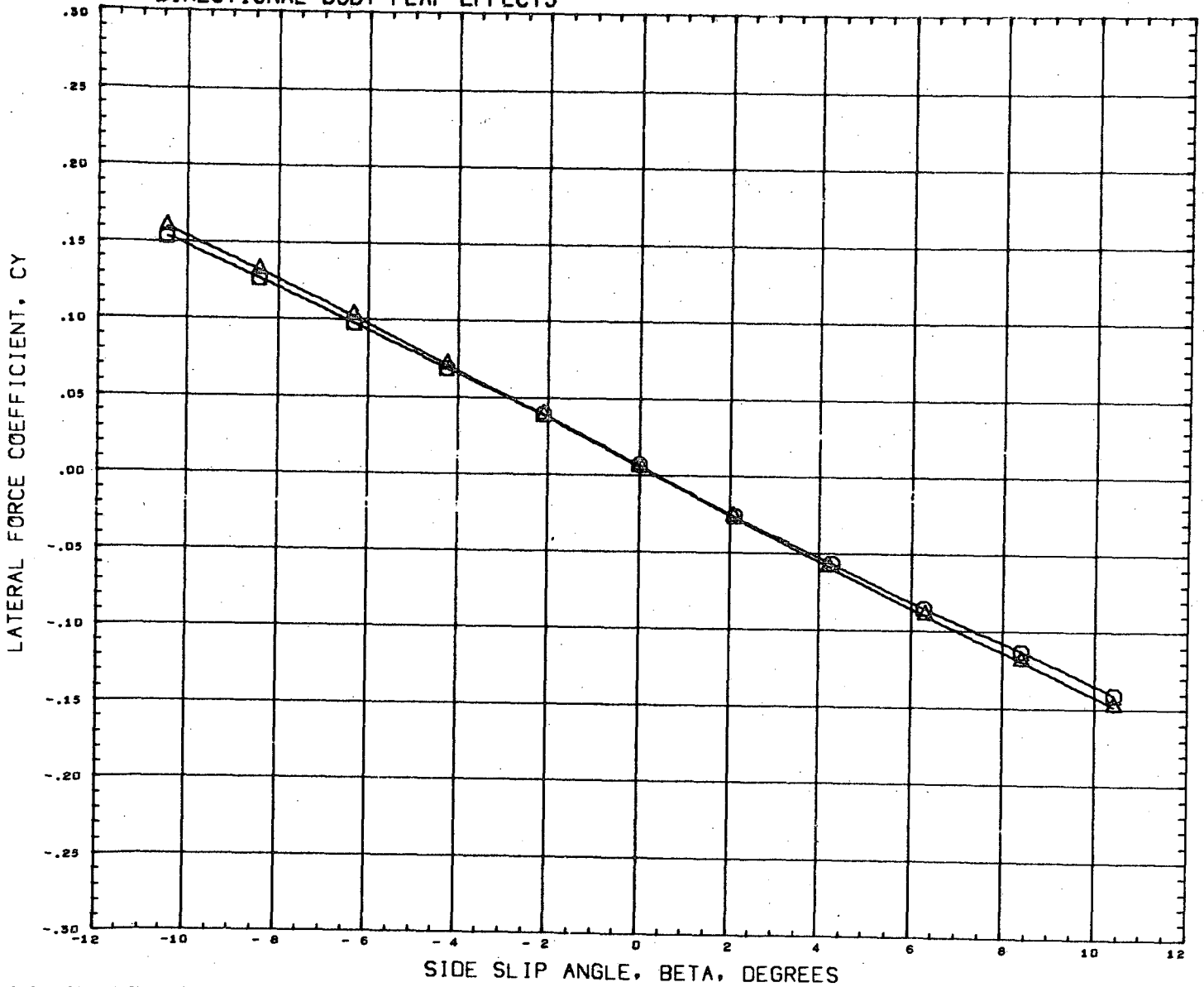
DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(D37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(C37Y51)	MSFC 495 GD/C B19W14C4AV7F9L60F9R60	15.000	0.000	60.000	60.000	LREF	3.0950 IN.
						BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 1.957

DIRECTIONAL BODY FLAP EFFECTS



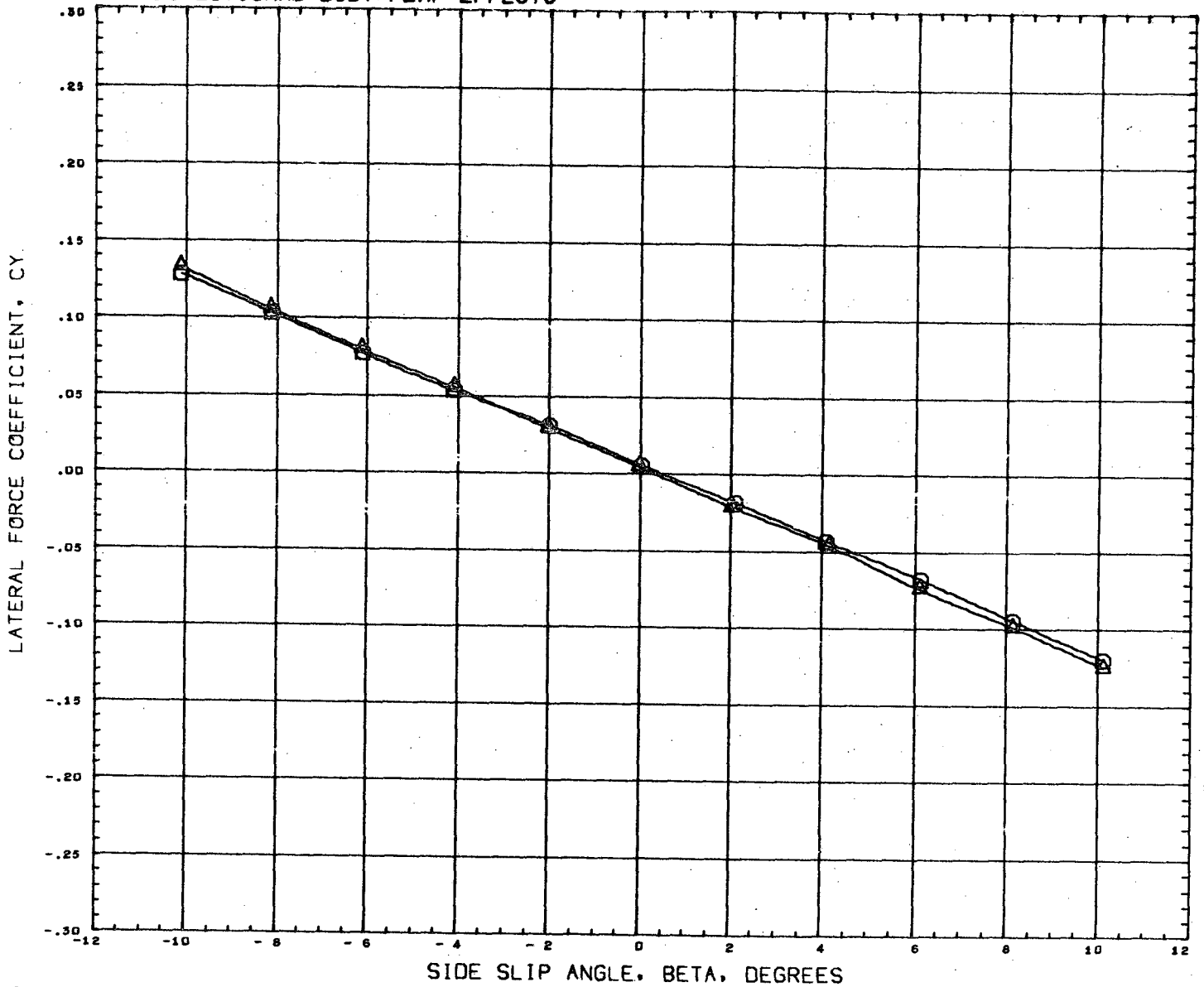
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37Y32)	MSFC 495 GD/C B19W14C4AF9L60F9R6D

ALPHA	L-BFLP	R-BFLP
25.000	0.000	0.000
25.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	50. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS



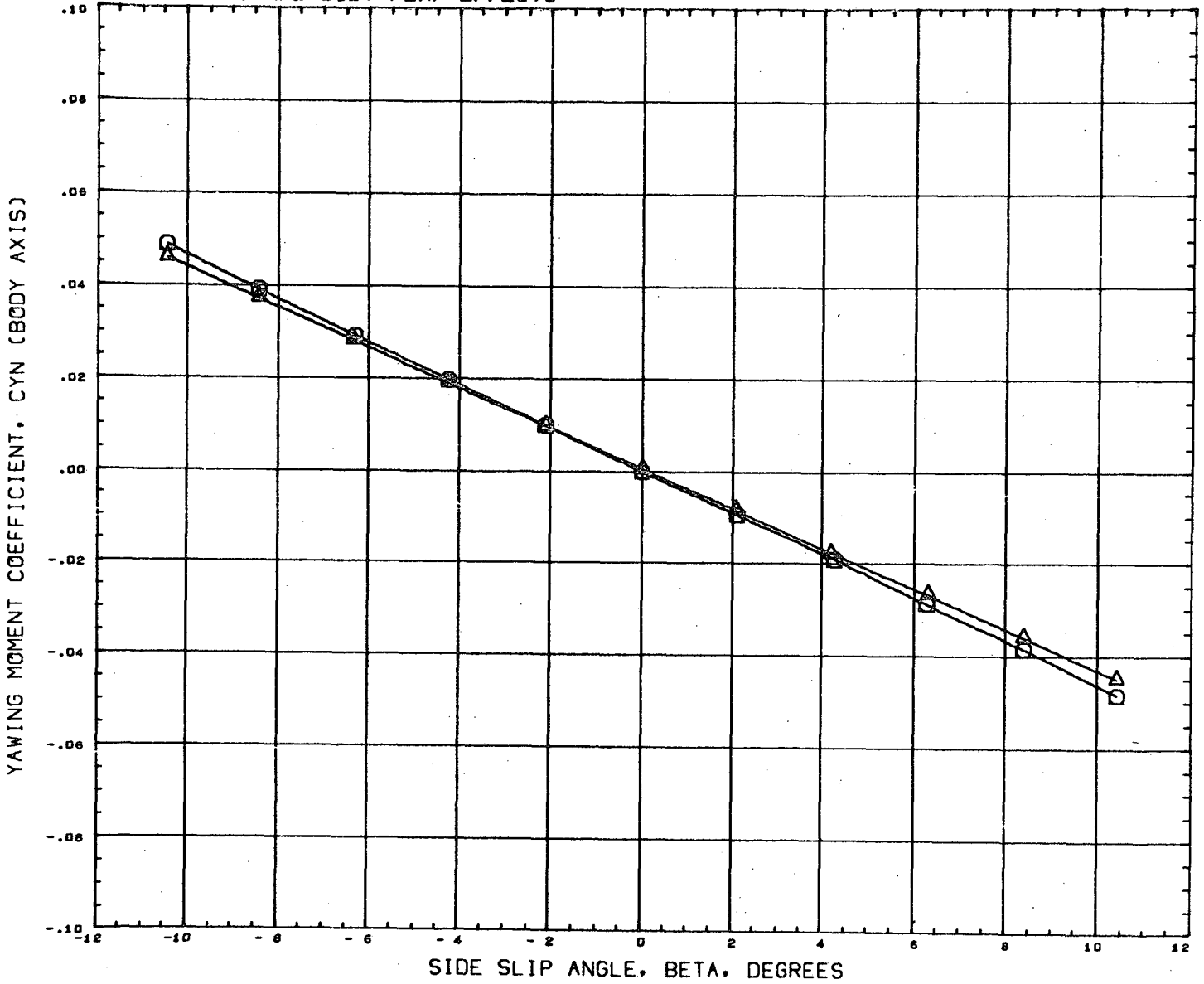
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37YS2)	MSFC 495 GD/C B19W14C4AF9L6DF9R6D

ALPHA	L-BFLP	R-BFLP
25.000	0.000	0.000
25.000	60.000	60.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

DIRECTIONAL BODY FLAP EFFECTS



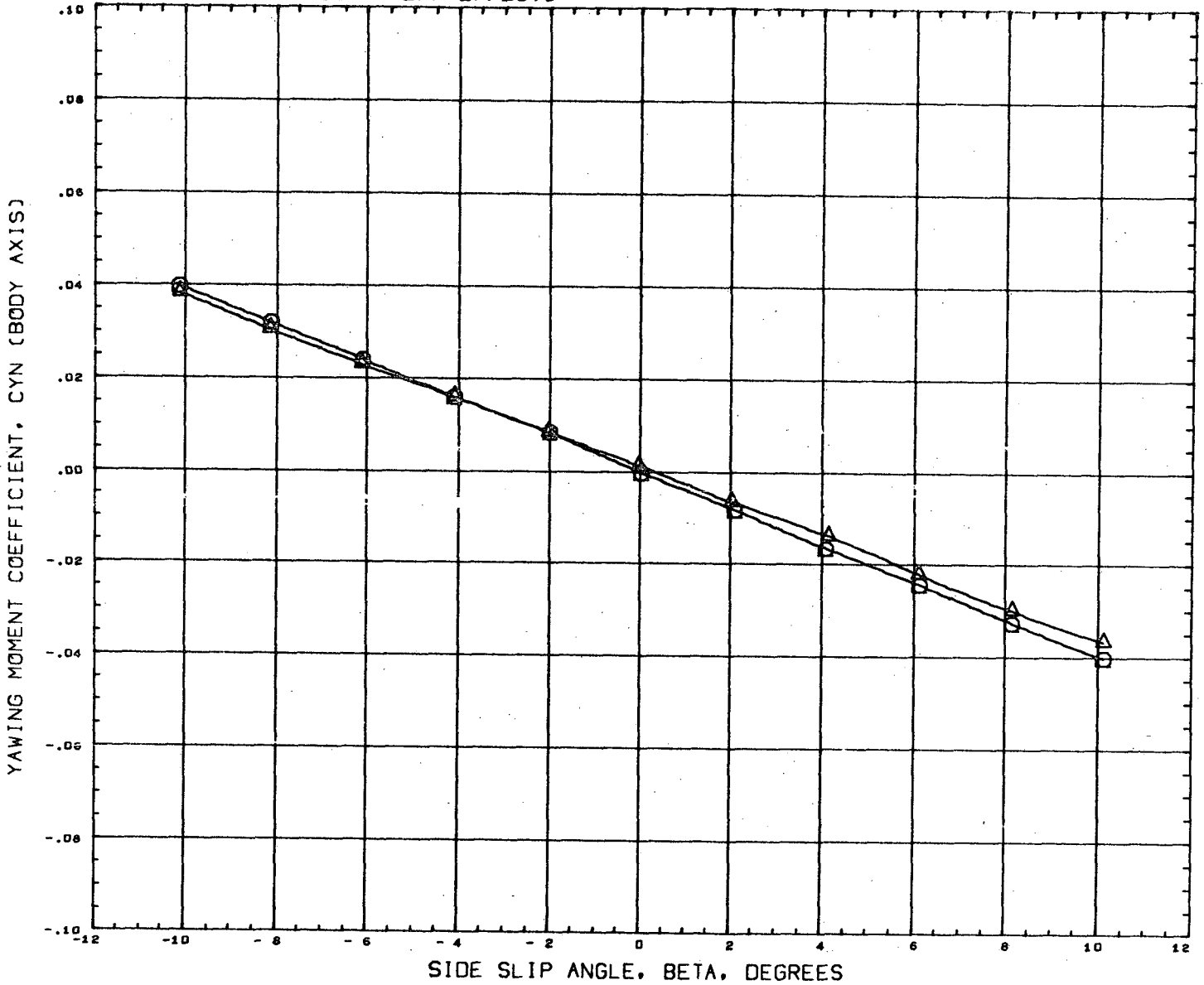
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33) □	MSFC 495 GD/C B19W14C4A
(C37Y32) △	MSFC 495 GD/C B19W14C4AF9L60F9R60

ALPHA	L-BFLP	R-BFLP
25.000	0.000	0.000
25.000	60.000	60.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS



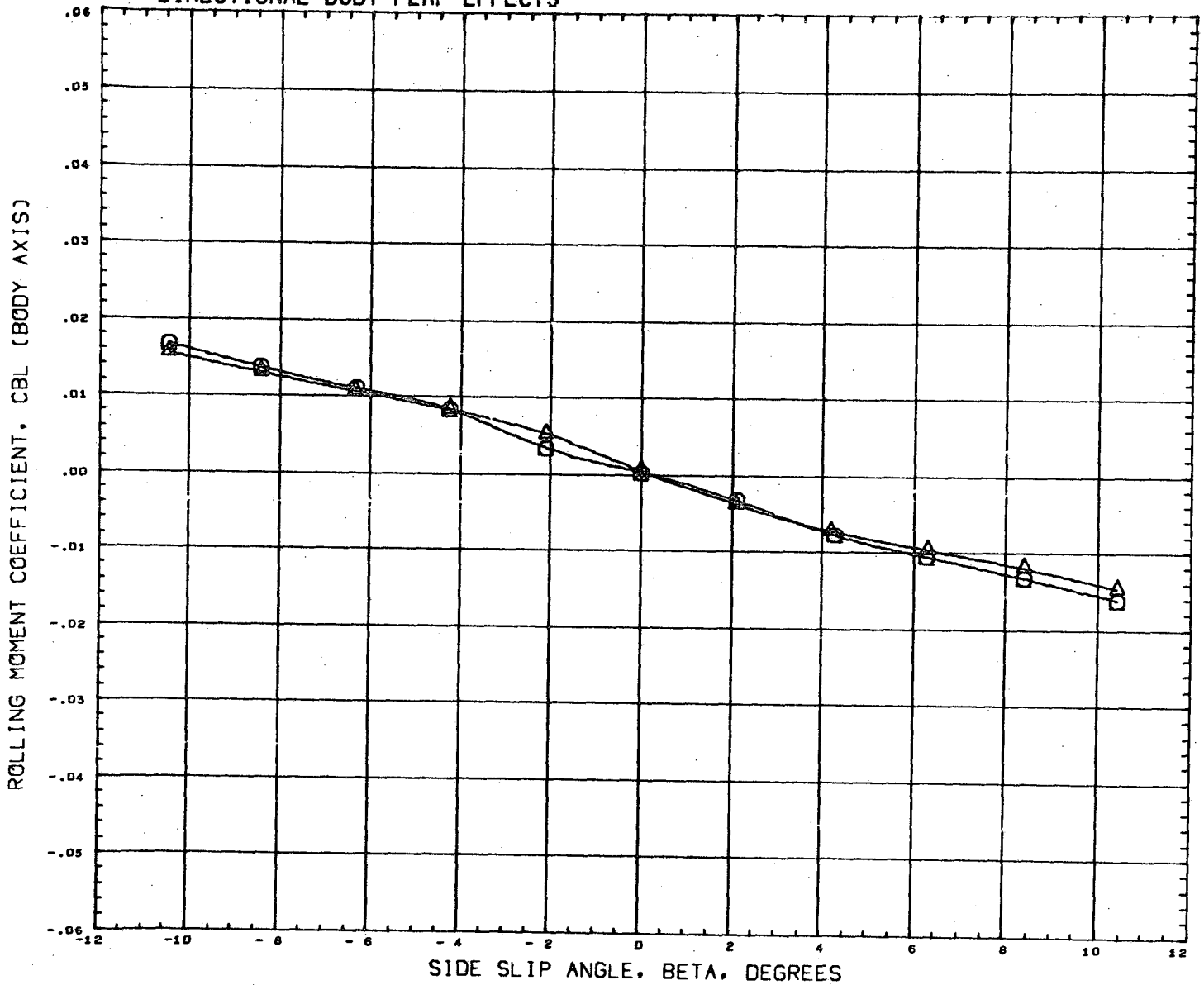
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37Y32)	MSFC 495 GD/C B19W14C4AF9L6DF9R6D

ALPHA	L-BFLP	R-BFLP
25.000	0.000	0.000
25.000	60.000	60.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

DIRECTIONAL BODY FLAP EFFECTS



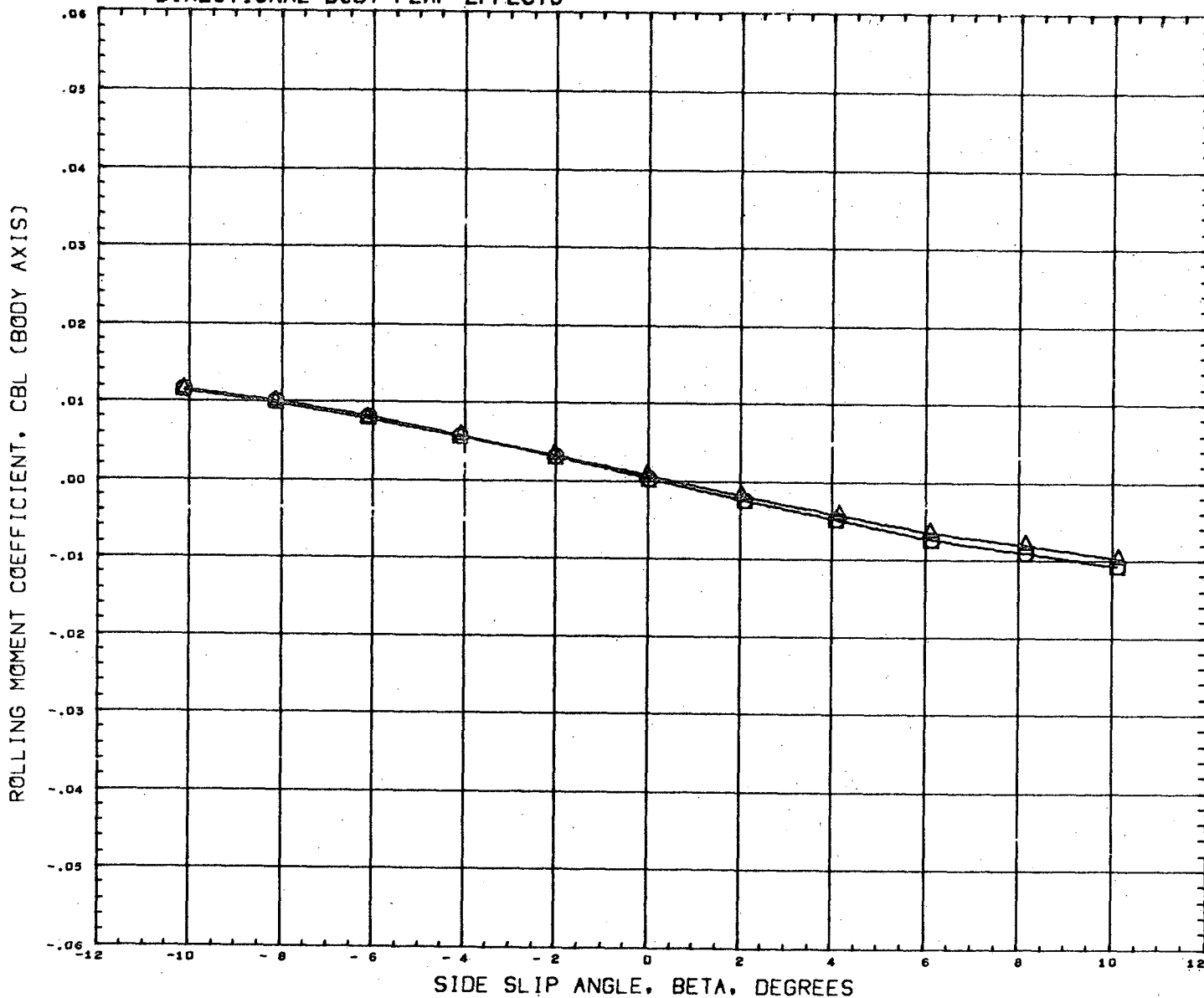
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37YS2)	MSFC 495 GD/C B19W14C4AF9L60F9R60

ALPHA	L-BFLP	R-BFLP
25.000	0.000	0.000
25.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS



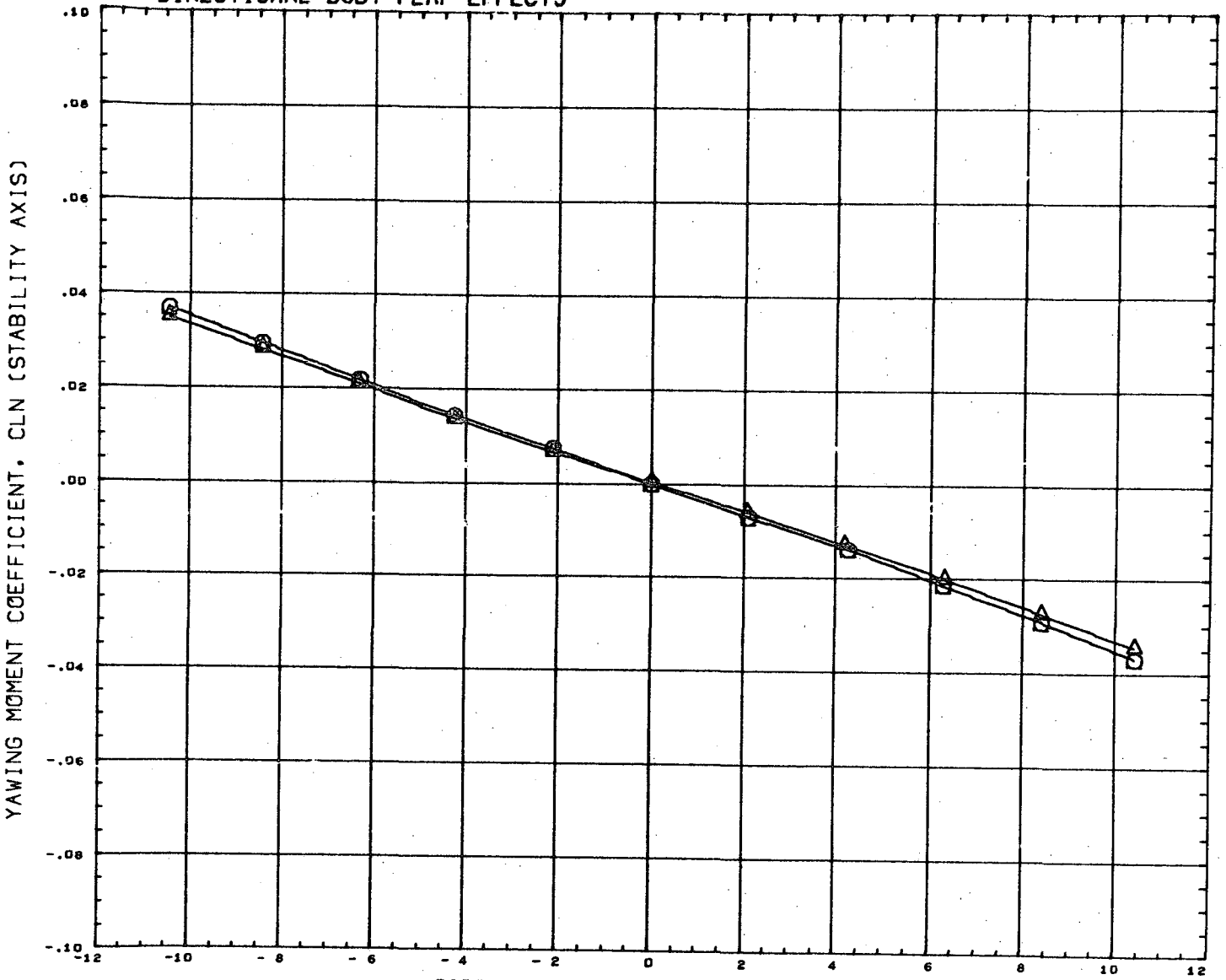
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37Y52)	MSFC 495 GD/C B19W14C4AF9L6DF9R6D

ALPHA	L-BFLP	R-BFLP
25.000	0.000	0.000
25.000	60.000	60.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

DIRECTIONAL BODY FLAP EFFECTS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37Y52)	MSFC 495 GD/C B19W14C4AF9L60F9R60

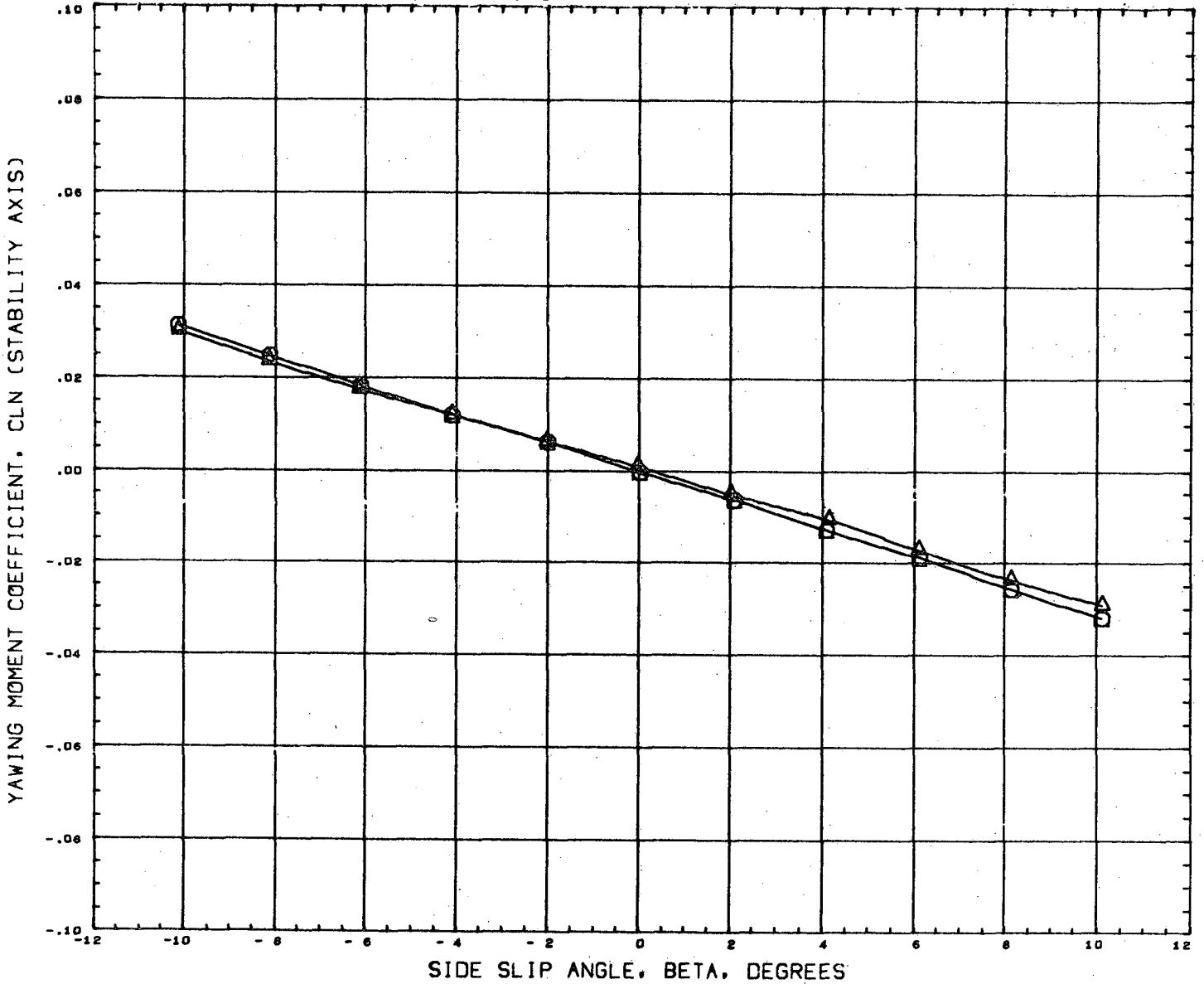
ALPHA	L-BFLP	R-BFLP
25.000	0.000	0.000
25.000	60.000	60.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS

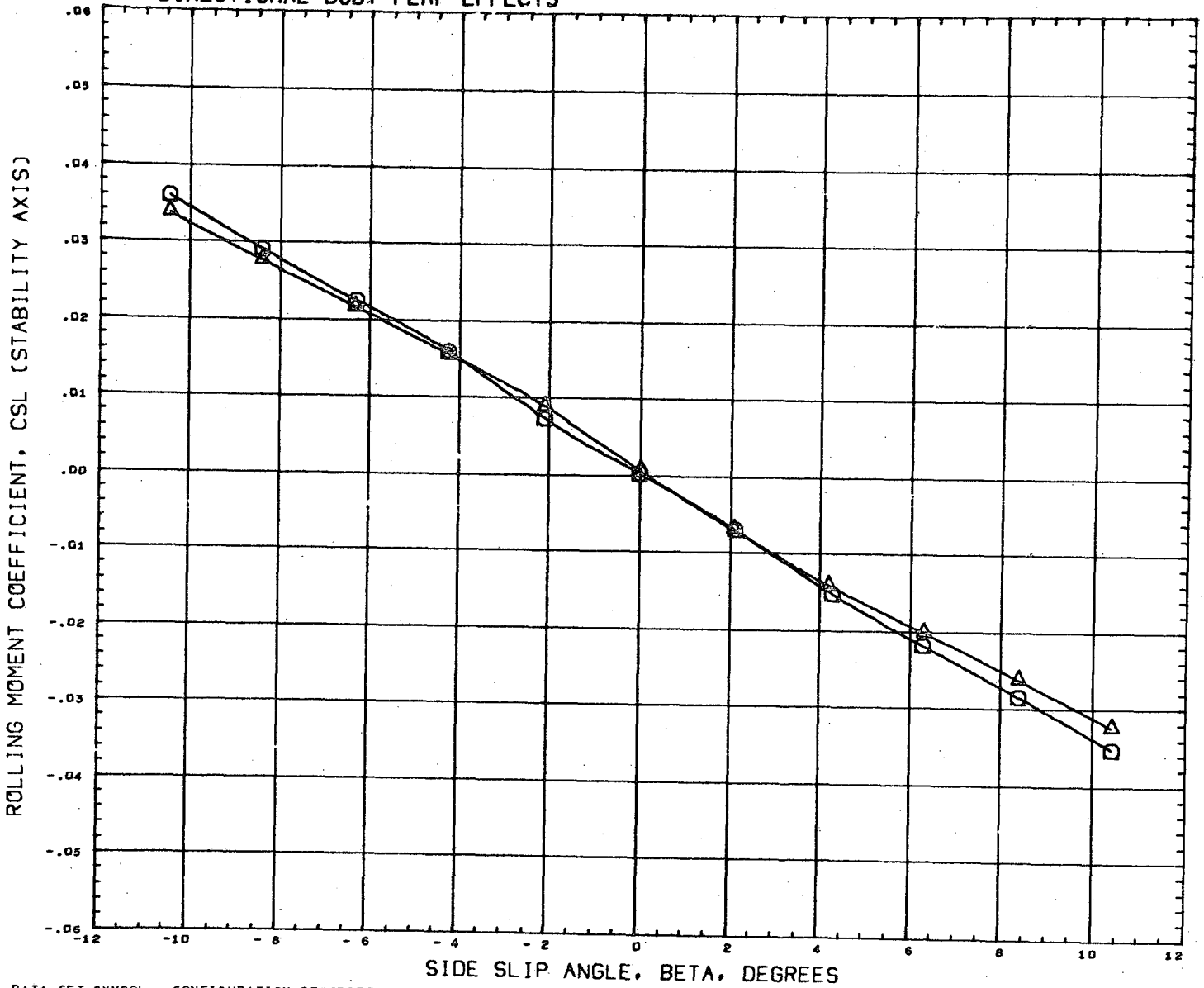


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	L-BFLP	R-BFLP
(C37Y33)	MSFC 495 GD/C B19W14C4A	25.000	0.000	0.000
(C37Y92)	MSFC 495 GD/C B19W14C4AF9L6DF9R6D	25.000	60.000	60.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

DIRECTIONAL BODY FLAP EFFECTS



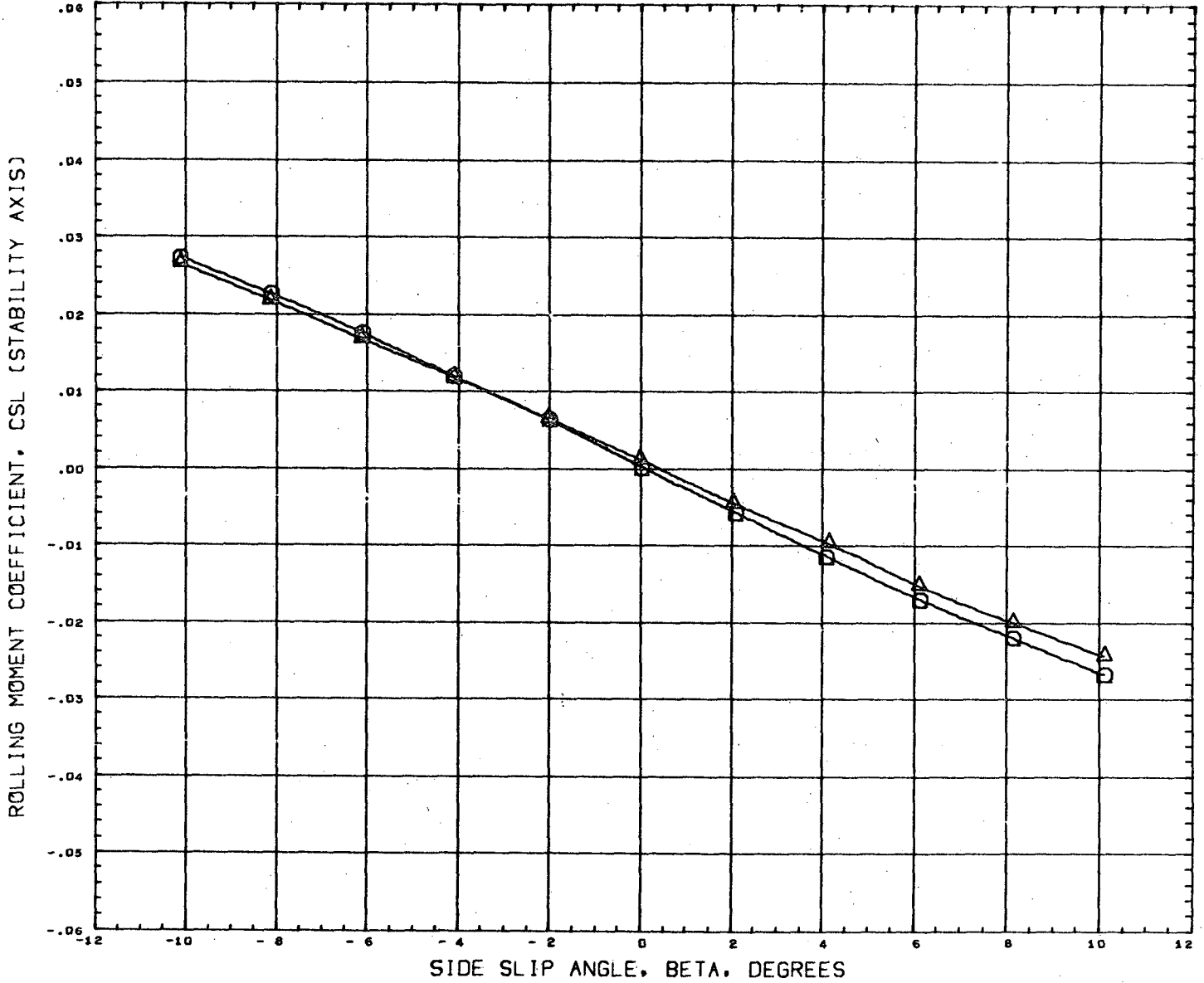
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33) \circ	MSFC 495 GD/C B19W14C4A
(C37YS2) \triangle	MSFC 495 GD/C B19W14C4AF9L6DF9R6D

ALPHA	L-BFLP	R-BFLP
25.000	0.000	0.000
25.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	sq. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS



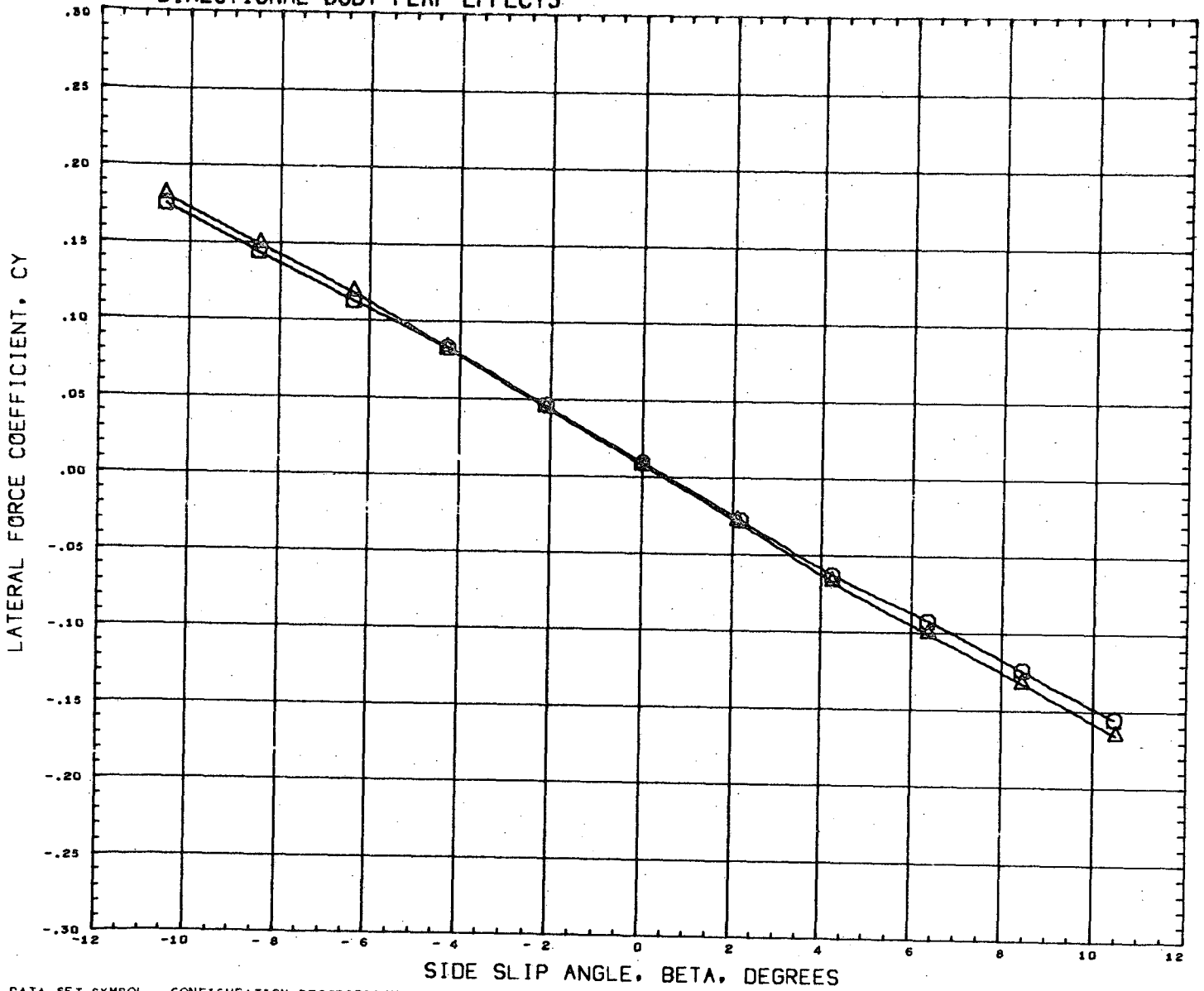
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y33)	MSFC 495 GD/C B19W14C4A
(C37YS2)	MSFC 495 GD/C B19W14C4AF9L6DF9R6D

ALPHA	L-BFLP	R-BFLP
25.000	0.000	0.000
25.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL BODY FLAP EFFECTS



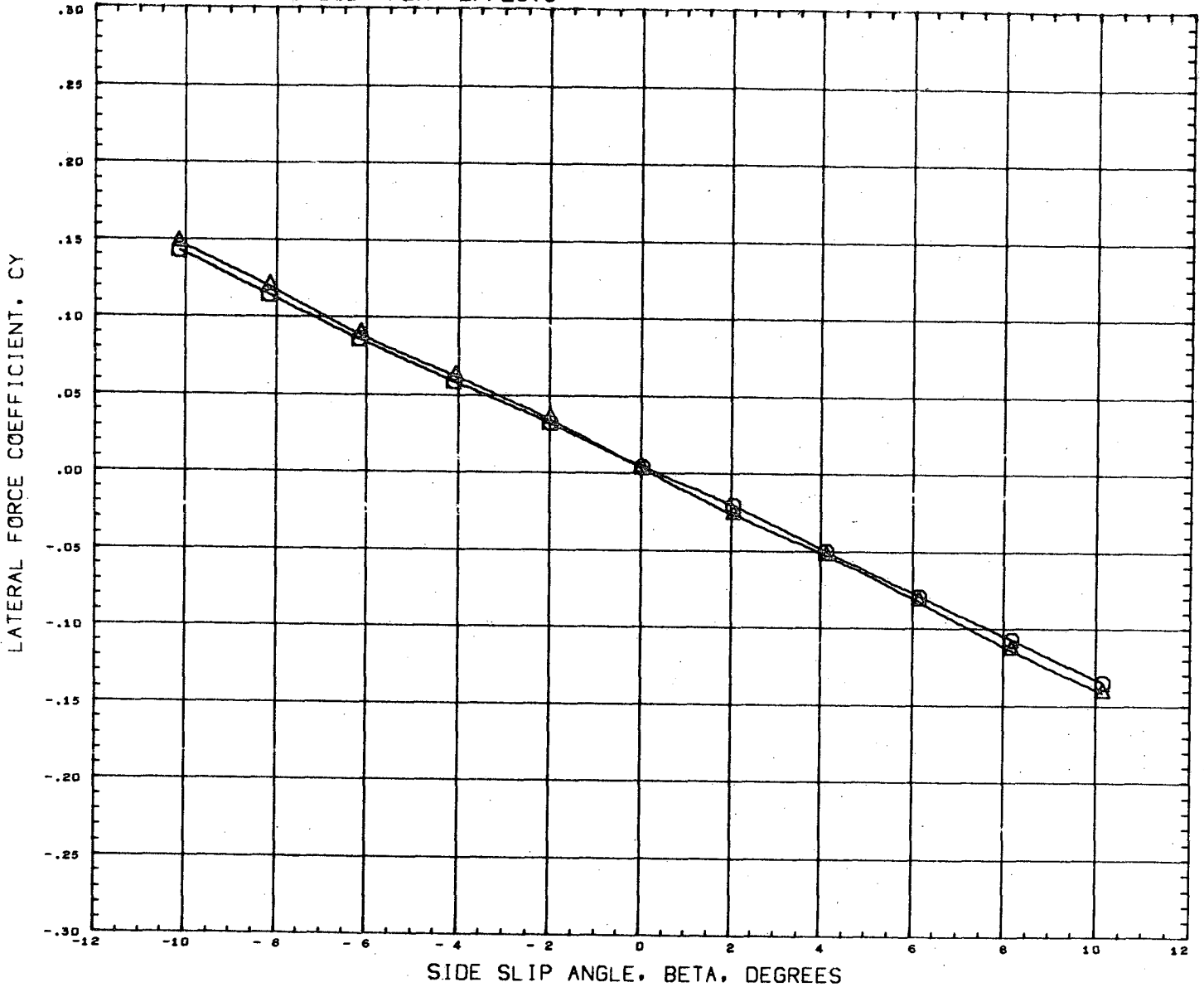
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	MSFC 495 GD/C B19W14C4A
(C37Y53)	MSFC 495 GD/C B19W14C4AF9L6DF9R6D

ALPHA	L-BFLP	R-BFLP
35.000	0.000	0.000
35.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS



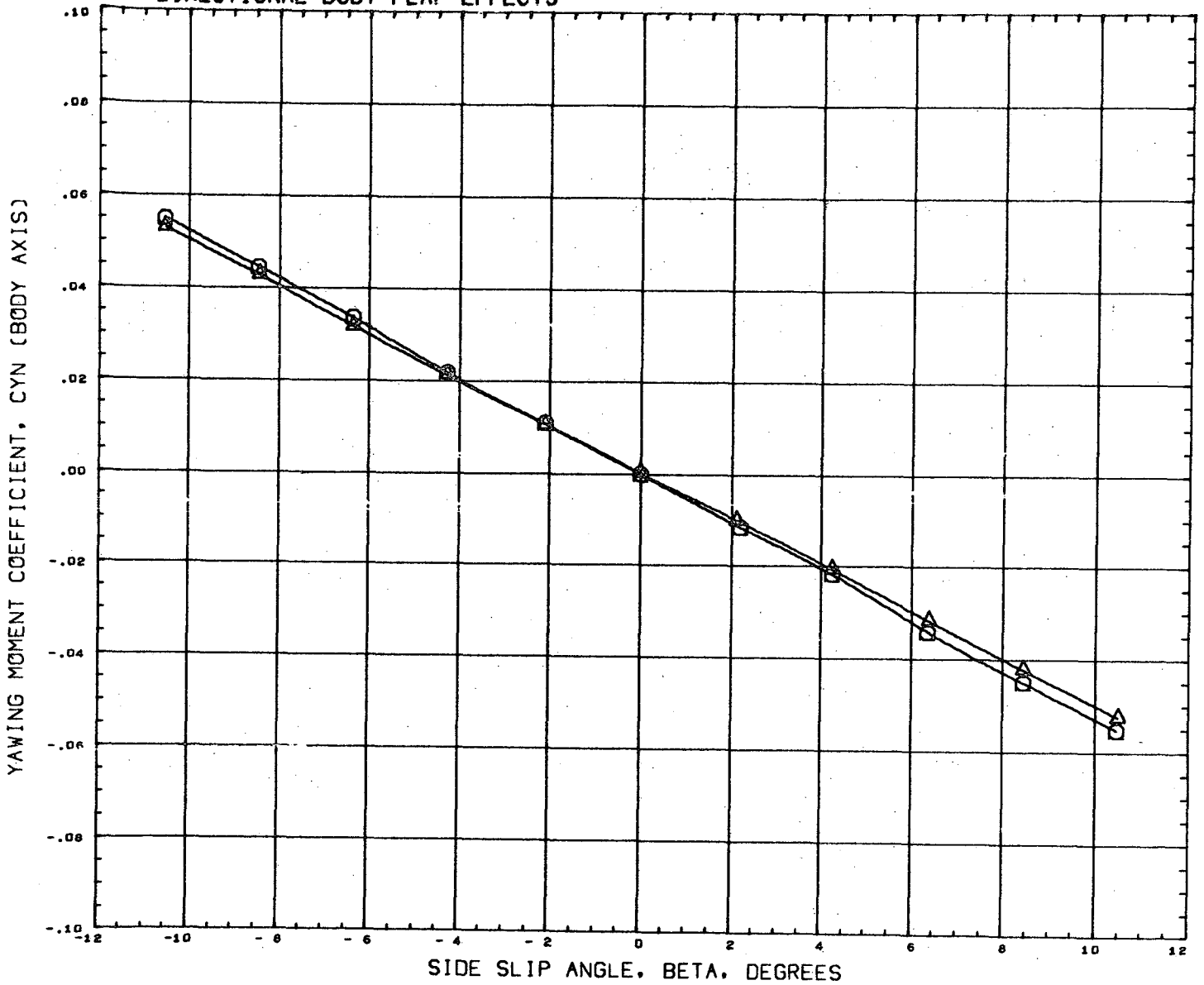
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34) \square	MSFC 495 GD/C B19W14C4A
(C37Y33) \triangle	MSFC 495 GD/C B19W14C4AF9L6DF9R6D

ALPHA	L-BFLP	R-BFLP
35.000	0.000	0.000
35.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL BODY FLAP EFFECTS



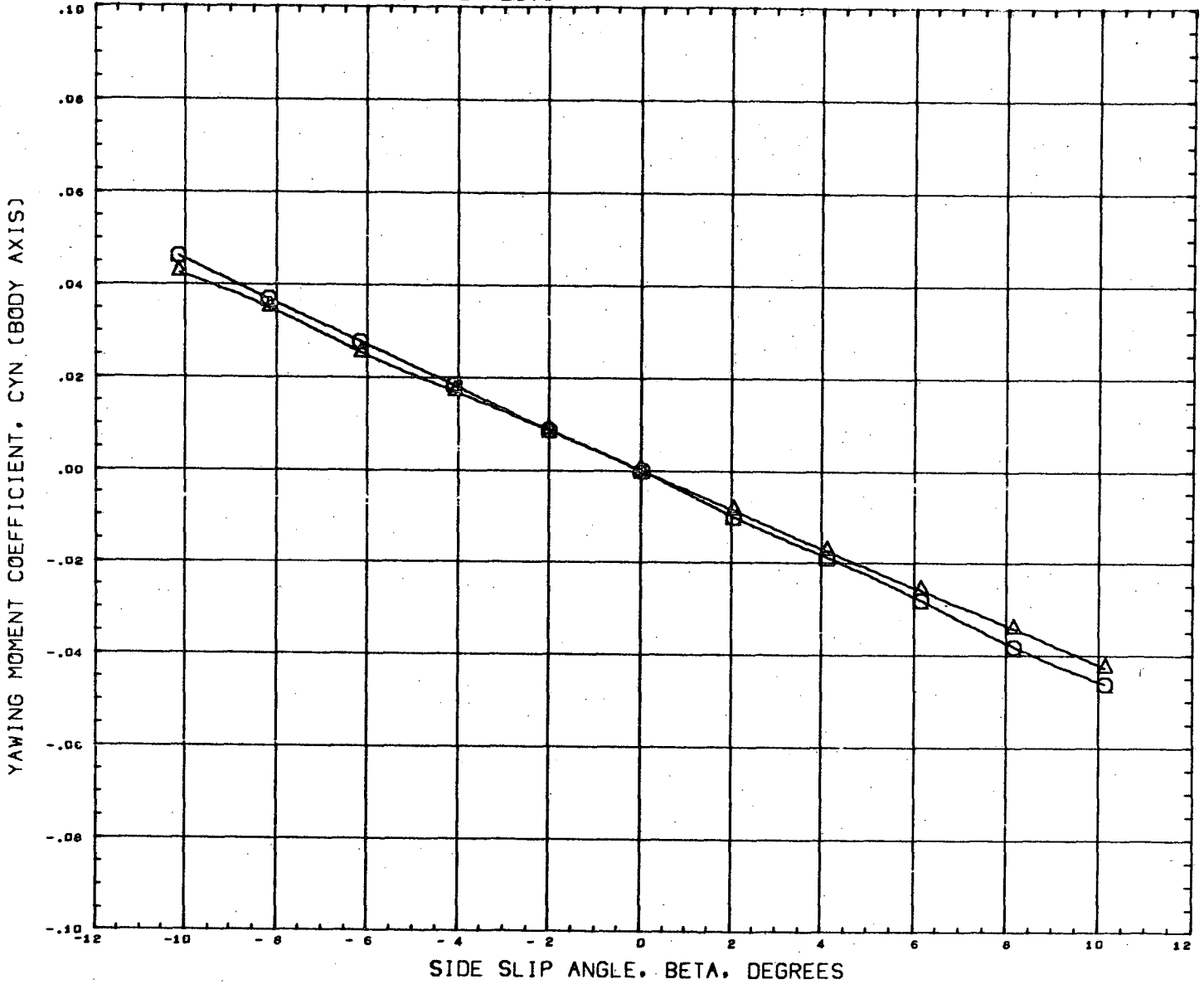
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34) □	MSFC 495 GD/C B19W14C4A
(C37Y53) △	MSFC 495 GD/C B19W14C4AF9L60F9R60

ALPHA	L-BFLP	R-BFLP
35.000	0.000	0.000
35.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS



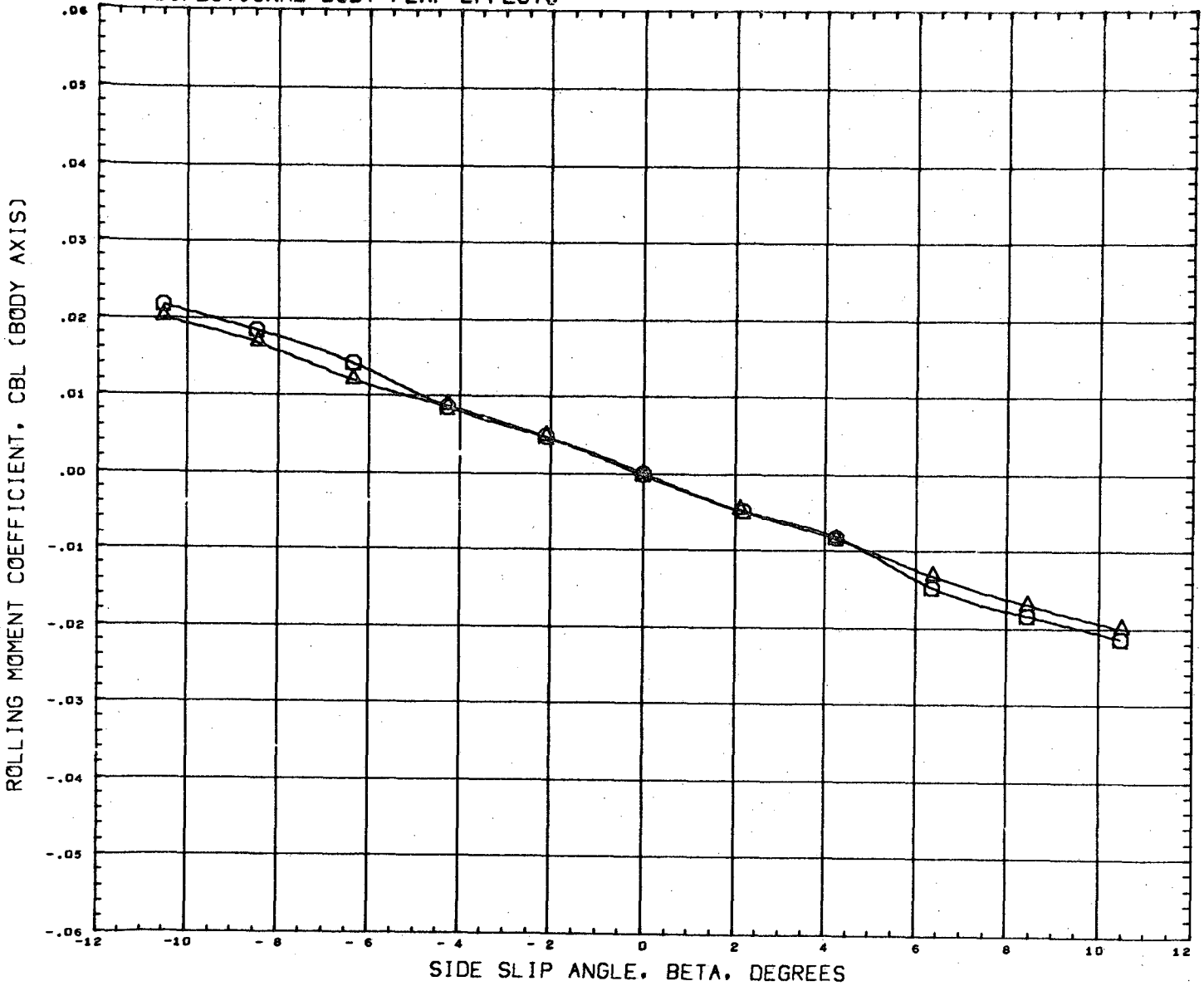
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	MSFC 495 GD/C B19W14C4A
(C37Y33)	MSFC 495 GD/C B19W14C4AF9L60F9R6D

ALPHA	L-BFLP	R-BFLP
35.000	0.000	0.000
35.000	60.000	60.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

DIRECTIONAL BODY FLAP EFFECTS



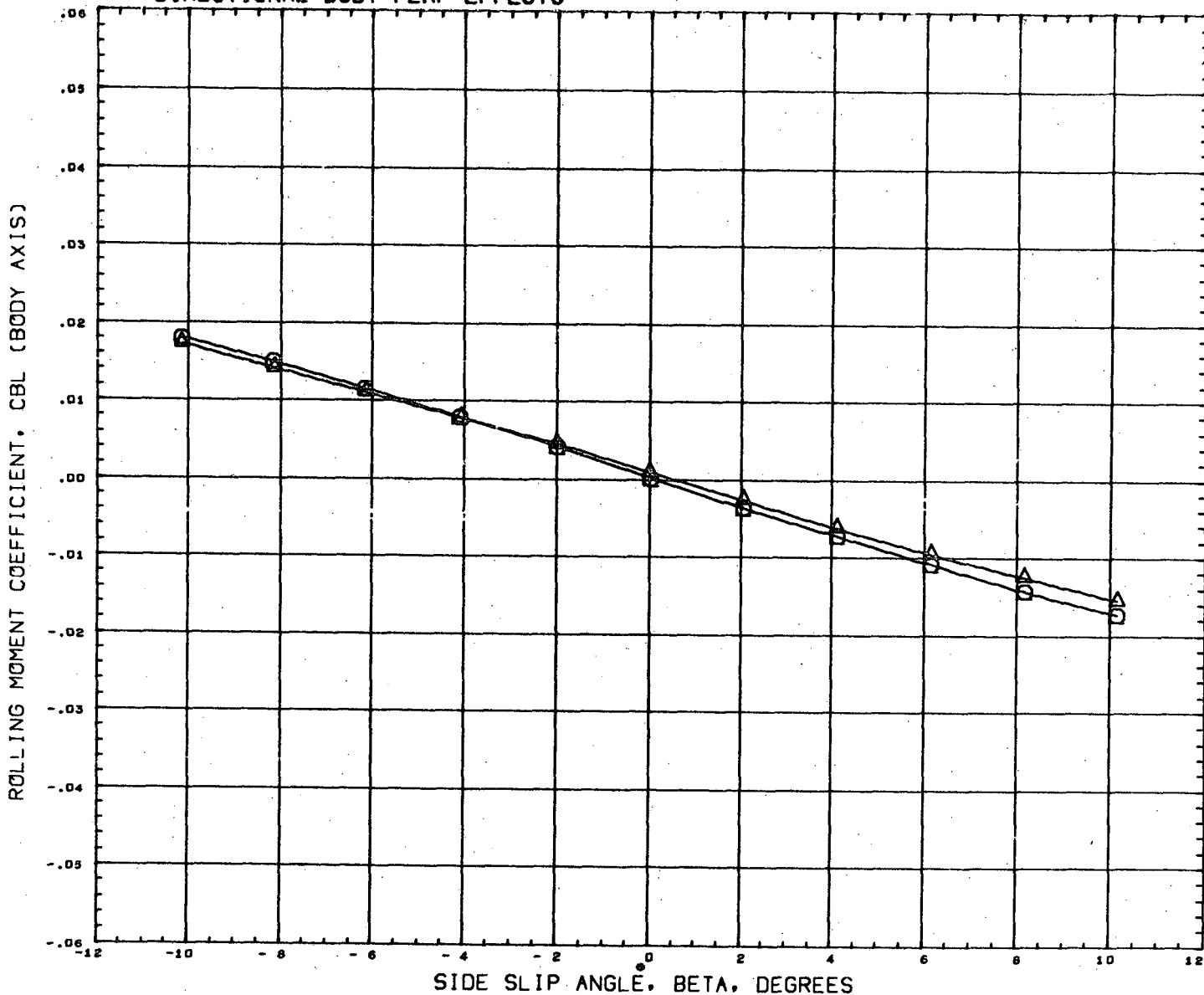
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37Y34)	MSFC 495 GD/C	B19W14C4A
(C37YS3)	MSFC 495 GD/C	B19W14C4AF9L60F9R60

ALPHA	L-BFLP	R-BFLP
35.000	0.000	0.000
35.000	60.000	60.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS



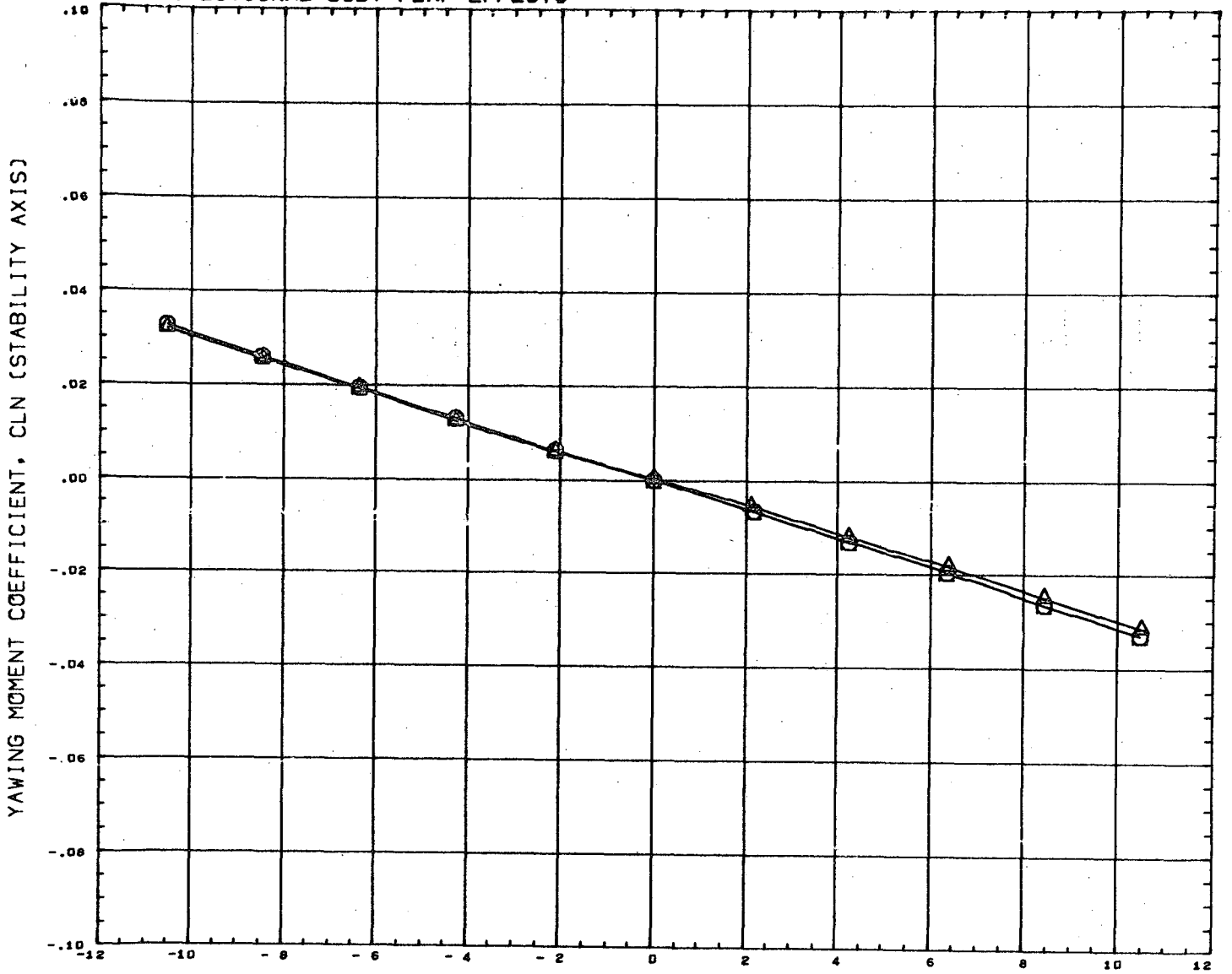
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34) □	MSFC 495 GD/C B19W14C4A
(C37Y53) △	MSFC 495 GD/C B19W14C4AF9L60F9R60

ALPHA	L-BFLP	R-BFLP
35.000	0.000	0.000
35.000	60.000	60.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

DIRECTIONAL BODY FLAP EFFECTS



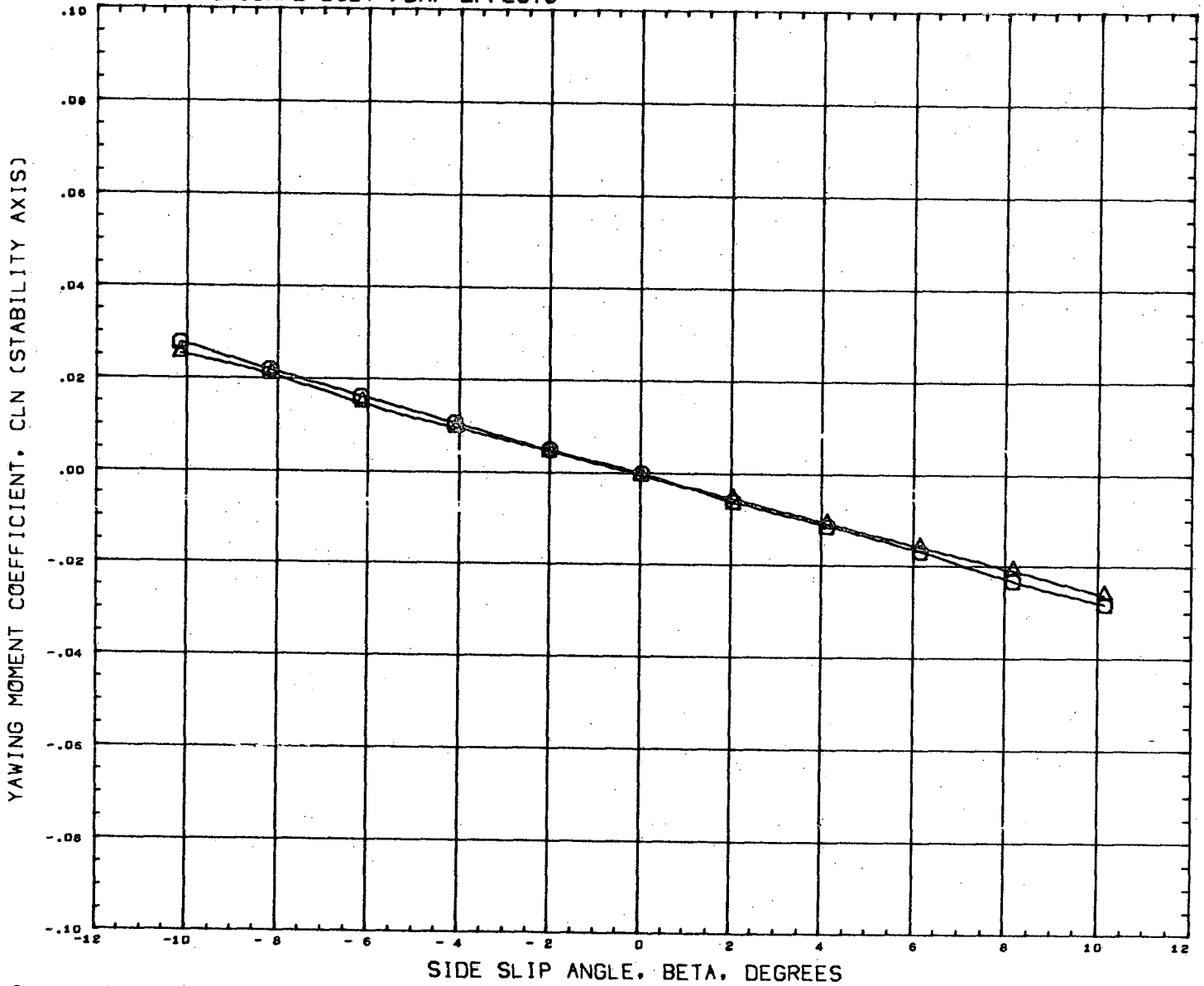
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	MSFC 495 GD/C B19W14C4A
(C37Y53)	MSFC 495 GD/C B19W14C4AF9L60F9R60

ALPHA	L-BFLP	R-BFLP
35.000	0.000	0.000
35.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS



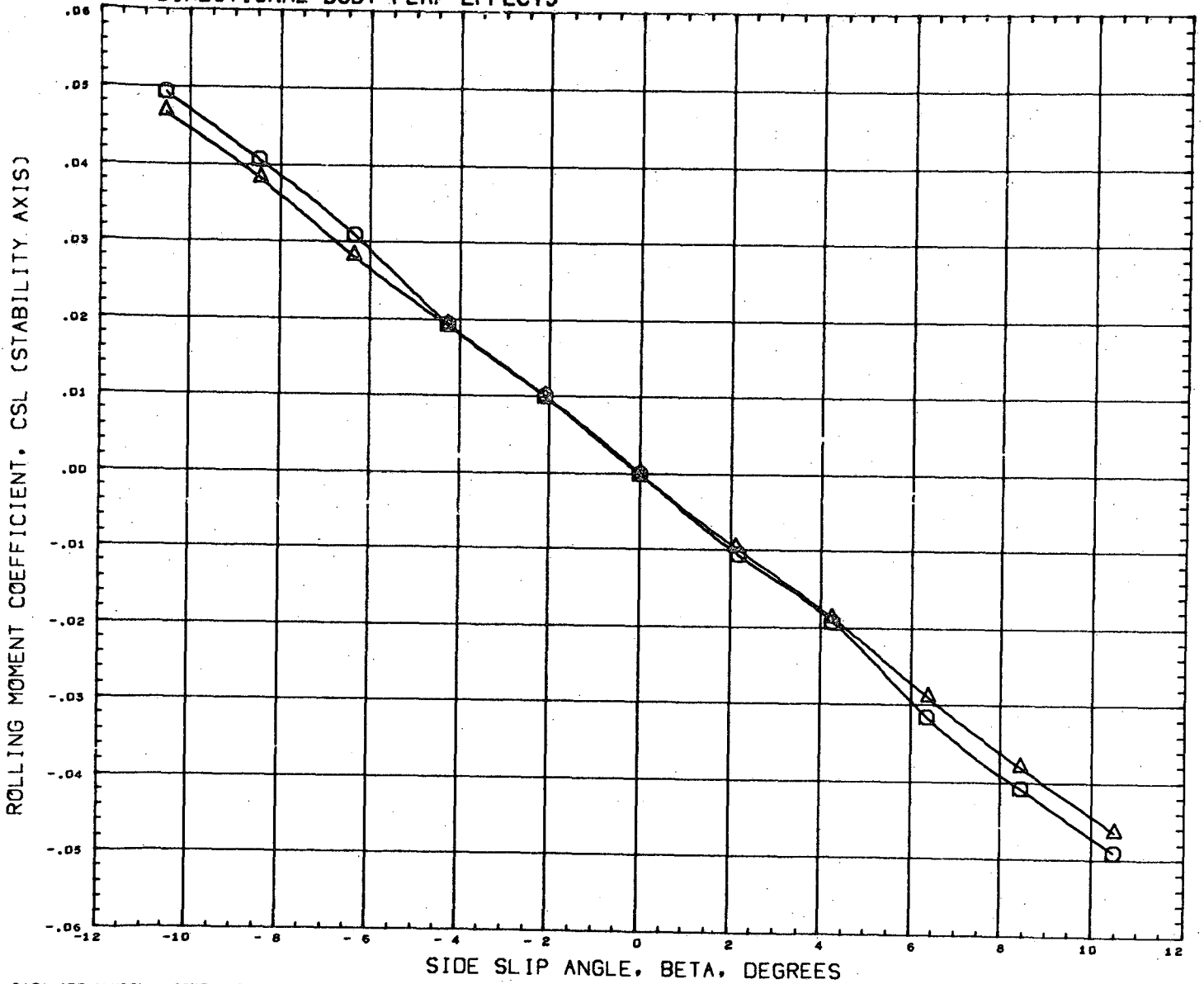
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	MSFC 495 GD/C B19W14C4A
(C37Y33)	MSFC 495 GD/C B19W14C4AF9L6DF9R6D

ALPHA	L-BFLP	R-BFLP
35.000	0.000	0.000
35.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 4.959

DIRECTIONAL BODY FLAP EFFECTS

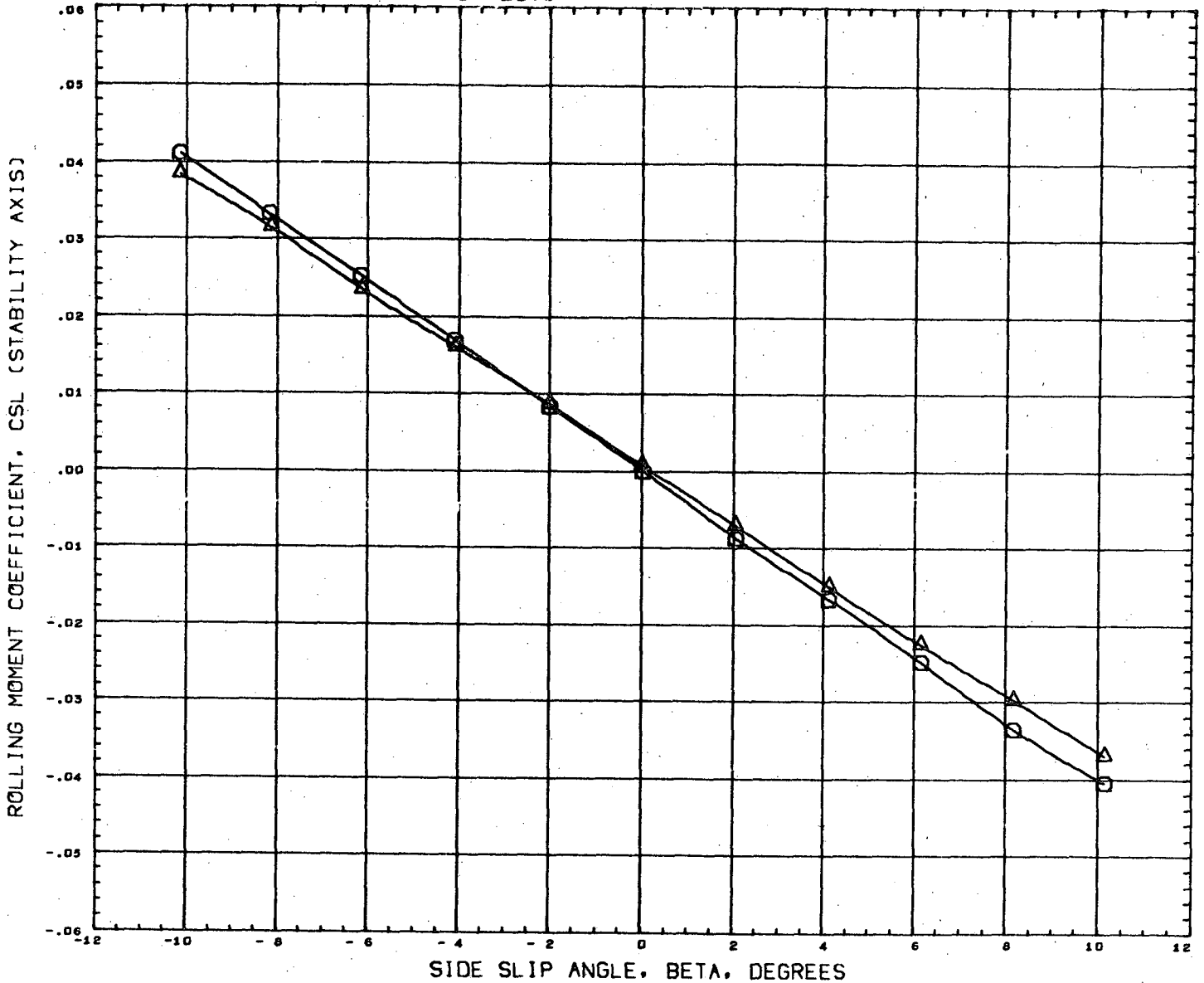


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	L-BFLP	R-BFLP
(C37Y34)	MSFC 495 GD/C B19W14C4A	35.000	0.000	0.000
(C37Y53)	MSFC 495 GD/C B19W14C4AF9L60F9R6G	35.000	60.000	60.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 2.740

DIRECTIONAL BODY FLAP EFFECTS



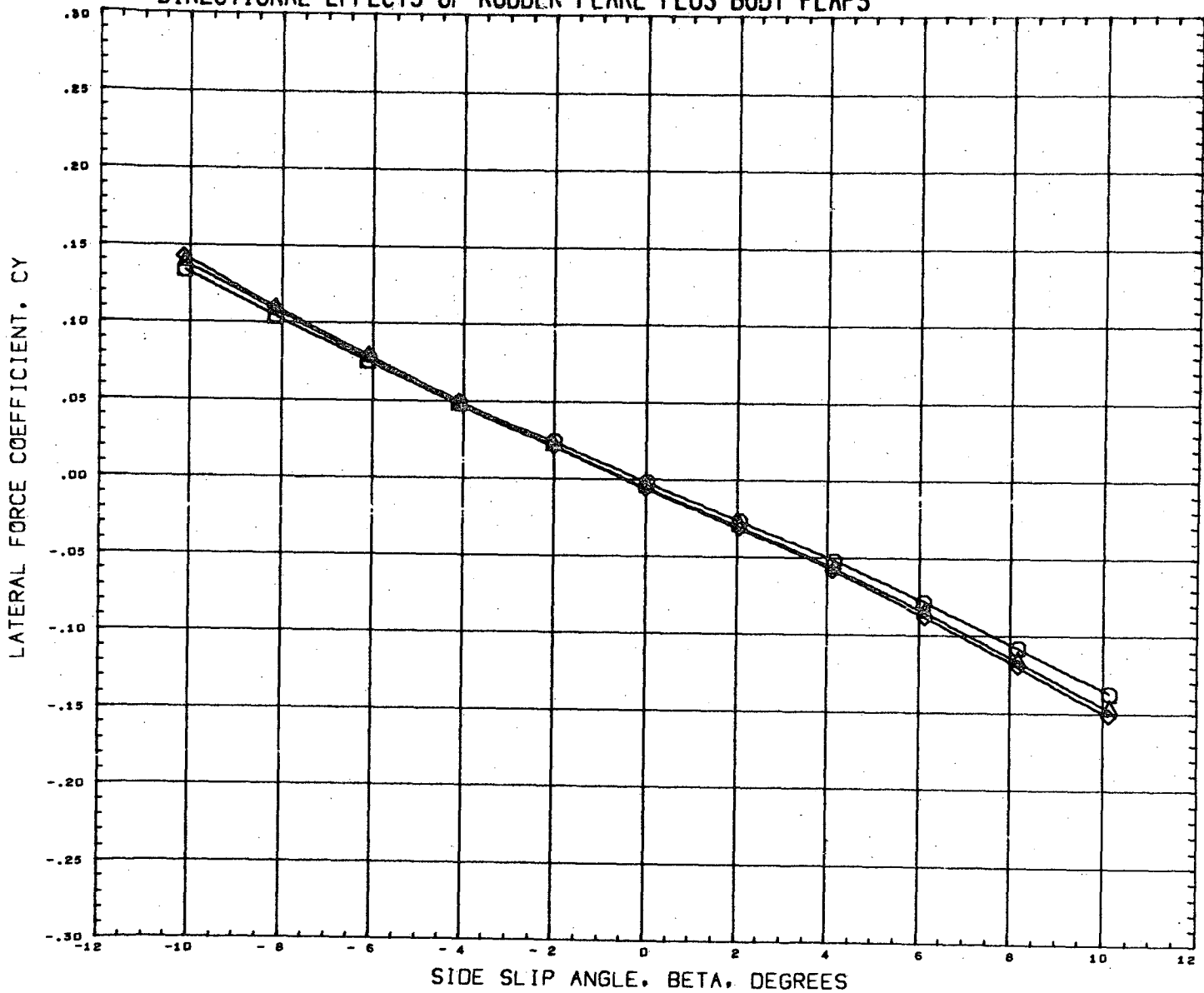
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37Y34)	MSFC 495 GD/C B19W14C4A
(C37Y33)	MSFC 495 GD/C B19W14C4AF9L60F9R60

ALPHA	L-BFLP	R-BFLP
35.000	0.000	0.000
35.000	60.000	60.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 4.959

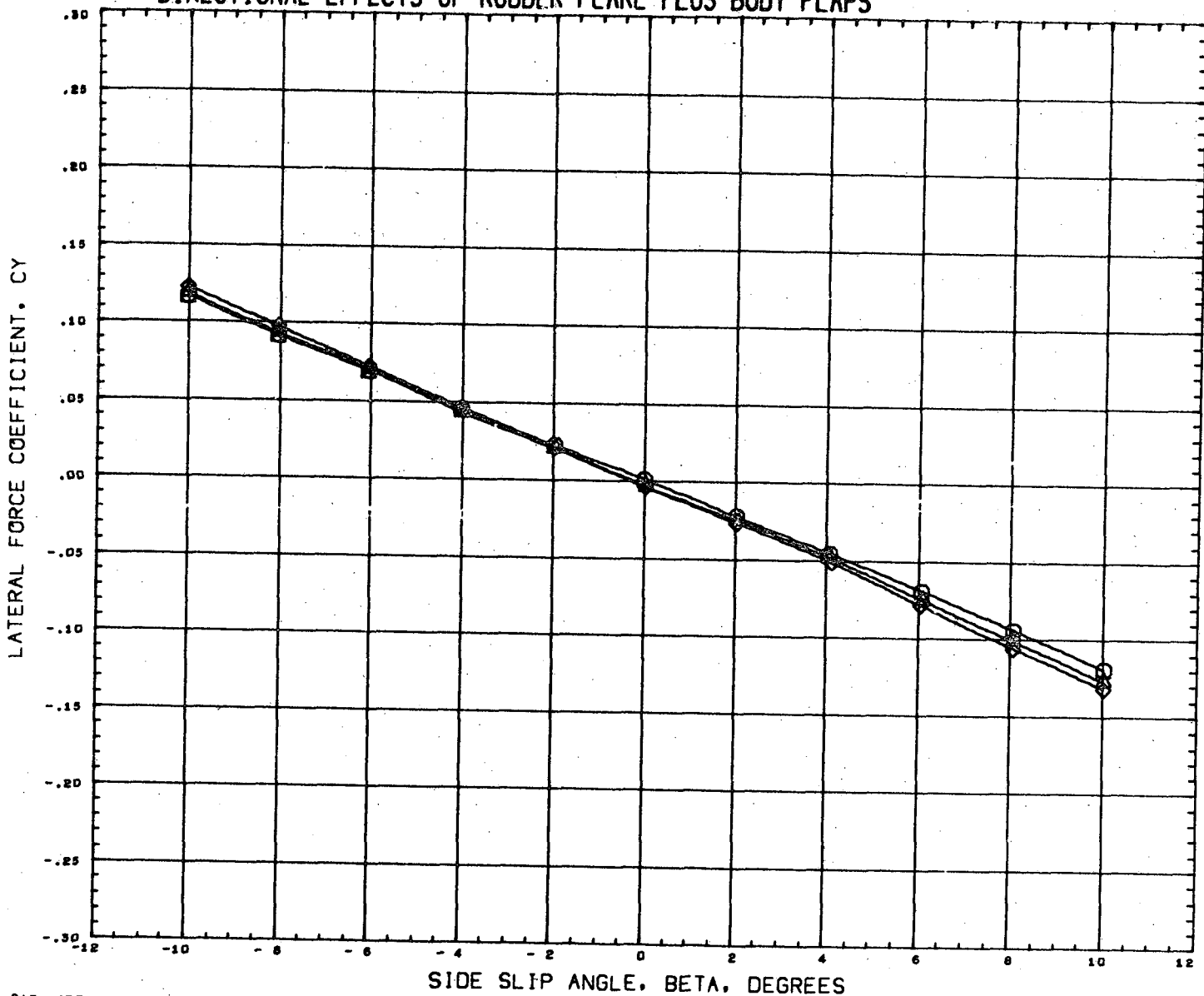
DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37Y3Z)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(D37YR2)	MSFC 495 GD/C B19W14C4AV13	15.000	50.000	0.000	0.000	LREF 3.0950 IN.
(C37YSR)	MSFC 495 GD/C B19W14C4AV13F9L6DF9R60	15.000	50.000	60.000	60.000	BREF 6.0990 IN. XMRP 6.6180 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035

MACH 2.990

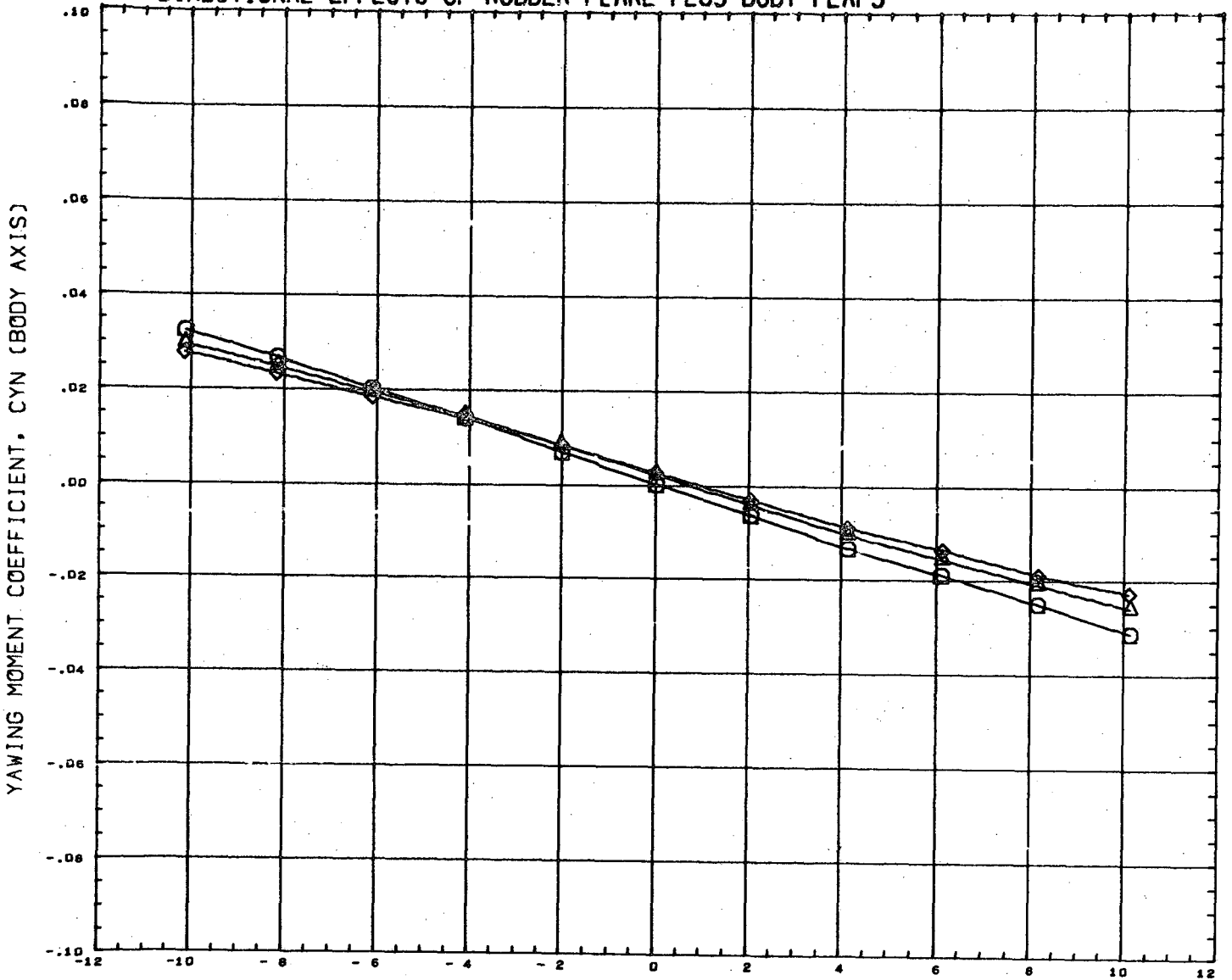
DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37Y32)	MSFC 495	GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(D37YR2)	MSFC 495	GD/C B19W14C4AV13	15.000	50.000	0.000	0.000	LREF	3.0950 IN.
(C37Y8R)	MSFC 495	GD/C B19W14C4AV13F9L6DF9R6D	15.000	50.000	60.000	60.000	BREF	6.0990 IN.
							XMRP	6.6180 IN.
							YMRP	0.0000 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 4.959

DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS

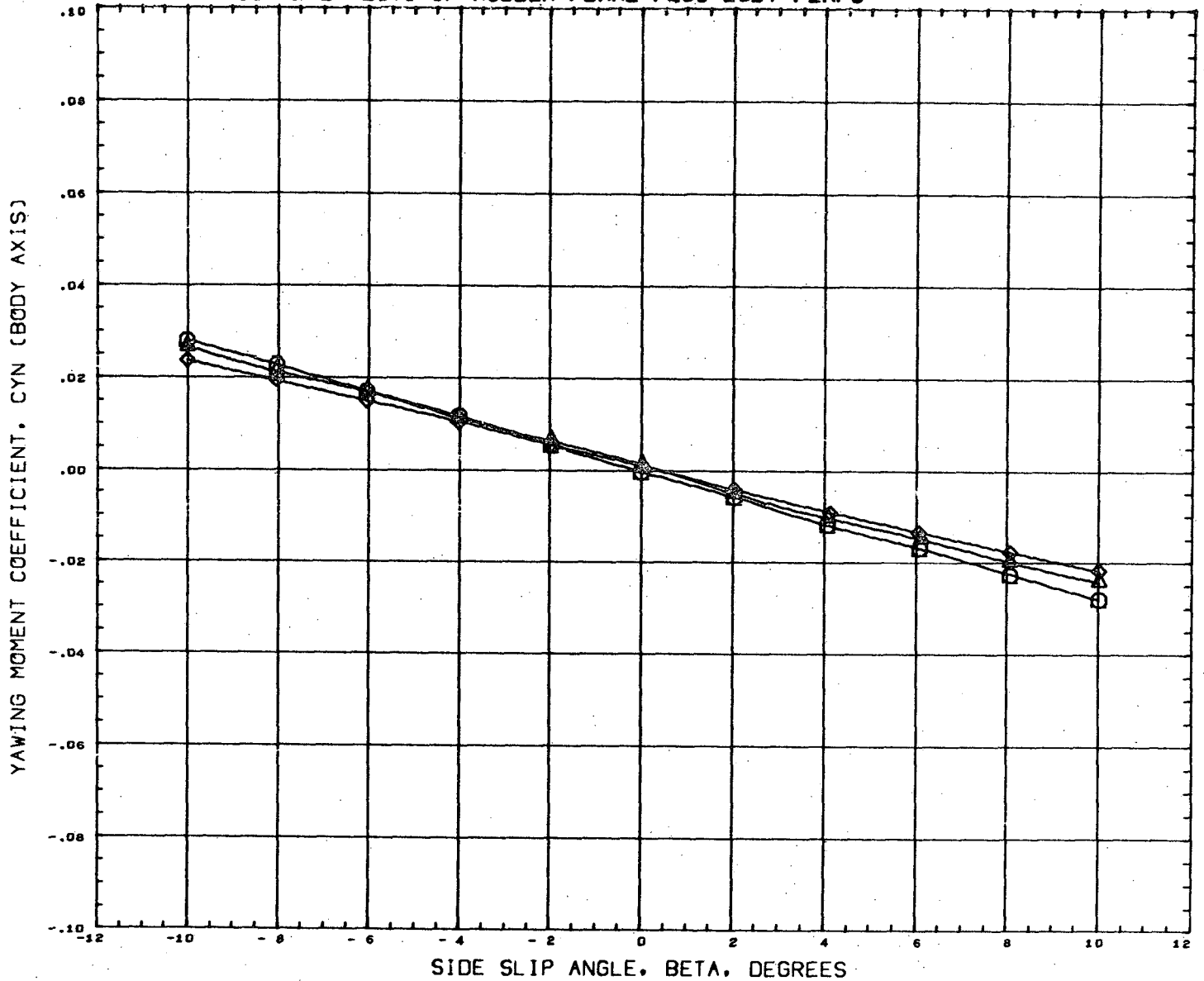


SIDE SLIP ANGLE, BETA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37Y3Z)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(D37YR2)	MSFC 495 GD/C B19W14C4AV13	15.000	50.000	0.000	0.000	LREF 3.0990 IN.
(C37Y5R)	MSFC 495 GD/C B19W14C4AV13F9L6DF9R60	15.000	50.000	60.000	60.000	BREF 6.0990 IN. XMRP 6.6180 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035

MACH 2.990

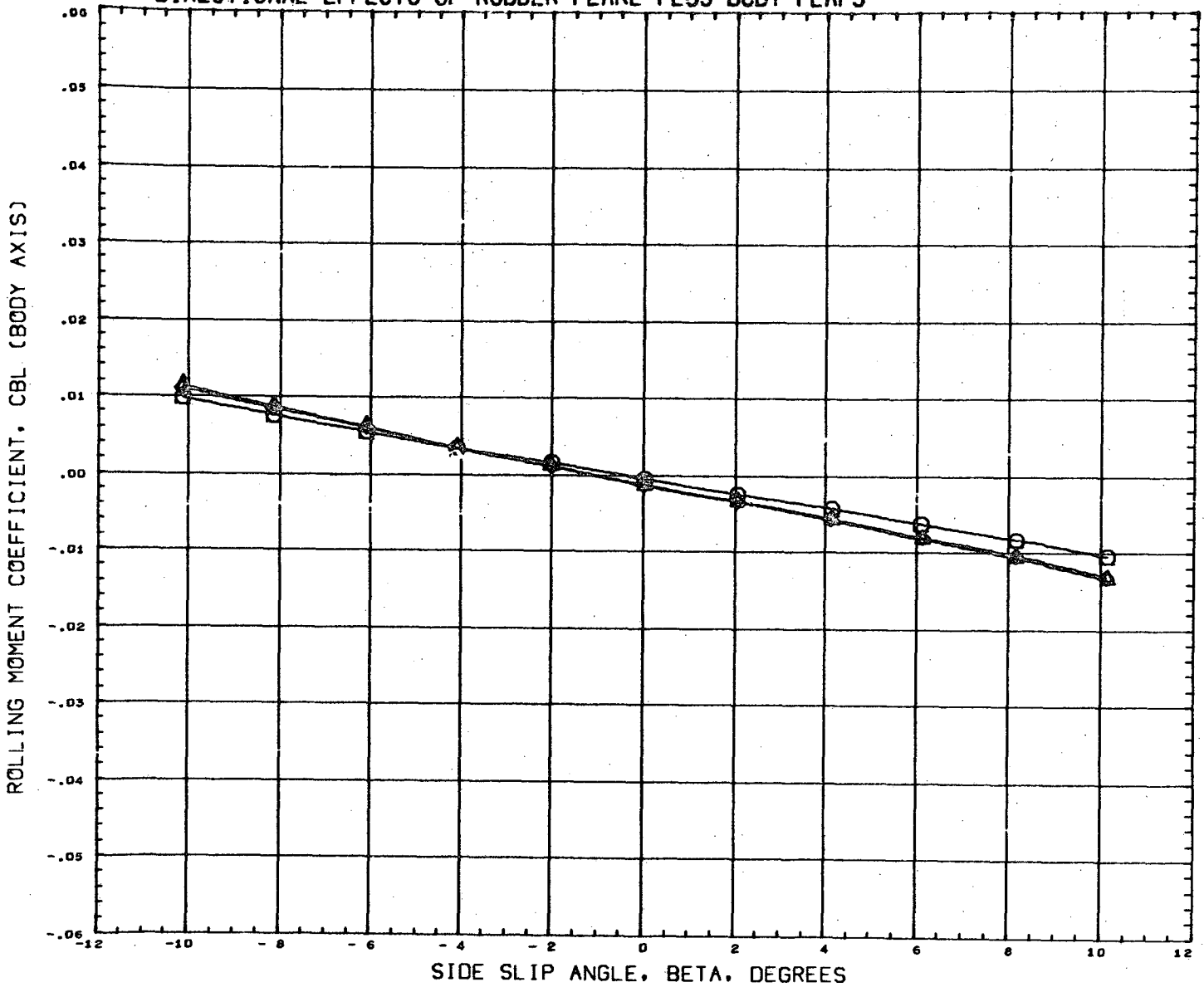
DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(D37YR2)	MSFC 495 GD/C B19W14C4AV13	15.000	50.000	0.000	0.000	LREF 3.0950 IN.
(C37YSR)	MSFC 495 GD/C B19W14C4AV13F9L6DF9R6D	15.000	50.000	60.000	60.000	BREF 6.0990 IN. XMRP 6.6180 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035

MACH 4.959

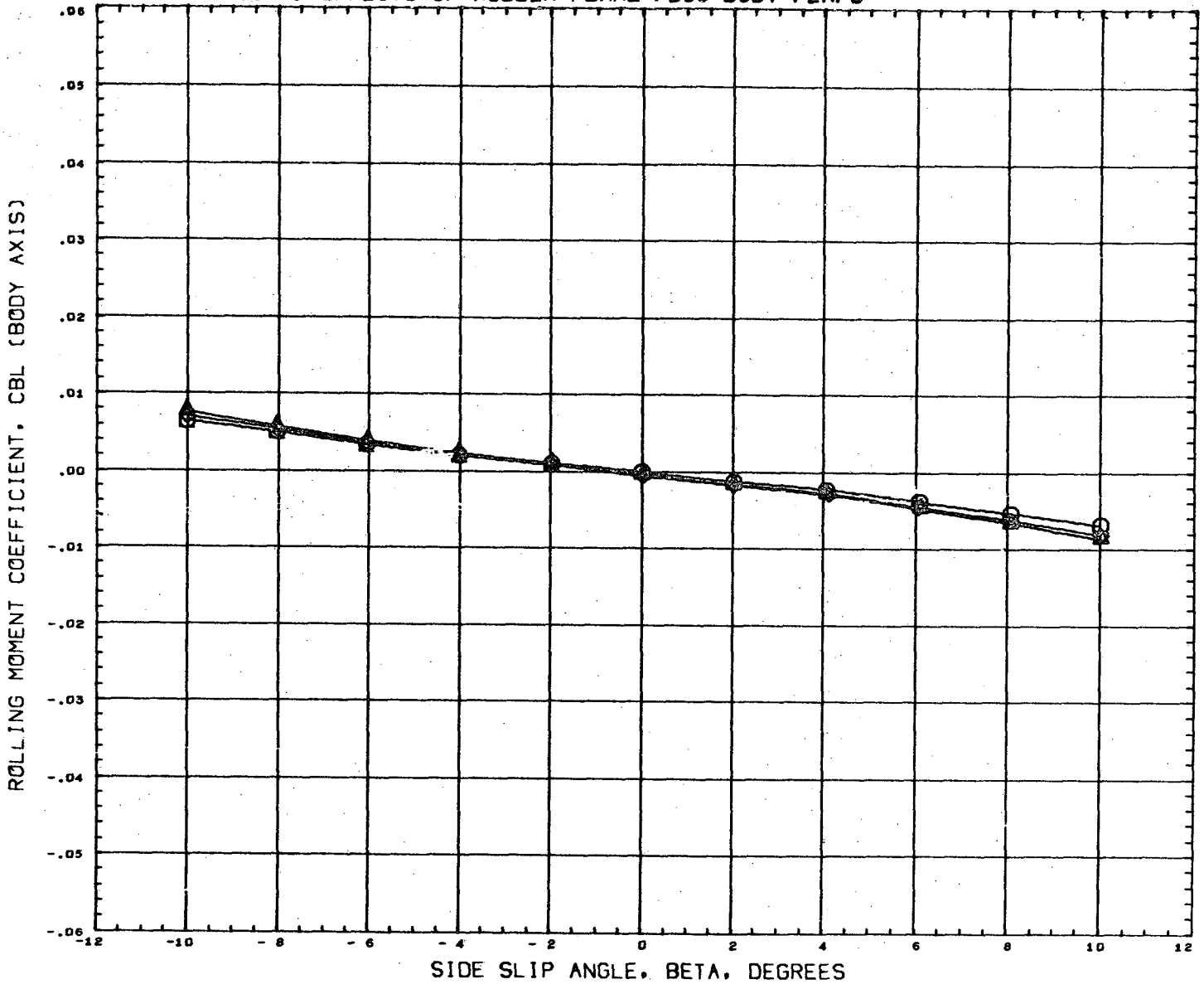
DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37Y32)	MSFC 495	GD/C	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(D37YR2)	MSFC 495	GD/C	15.000	50.000	0.000	0.000	LREF	3.0950 IN.
(C37YSR)	MSFC 495	GD/C	15.000	50.000	60.000	60.000	BREF	6.0990 IN.
							XMRP	6.6180 IN.
							YMRP	0.0000 IN.
							ZMRP	0.0000 IN.
							SCALE	0.0035

MACH 2.990

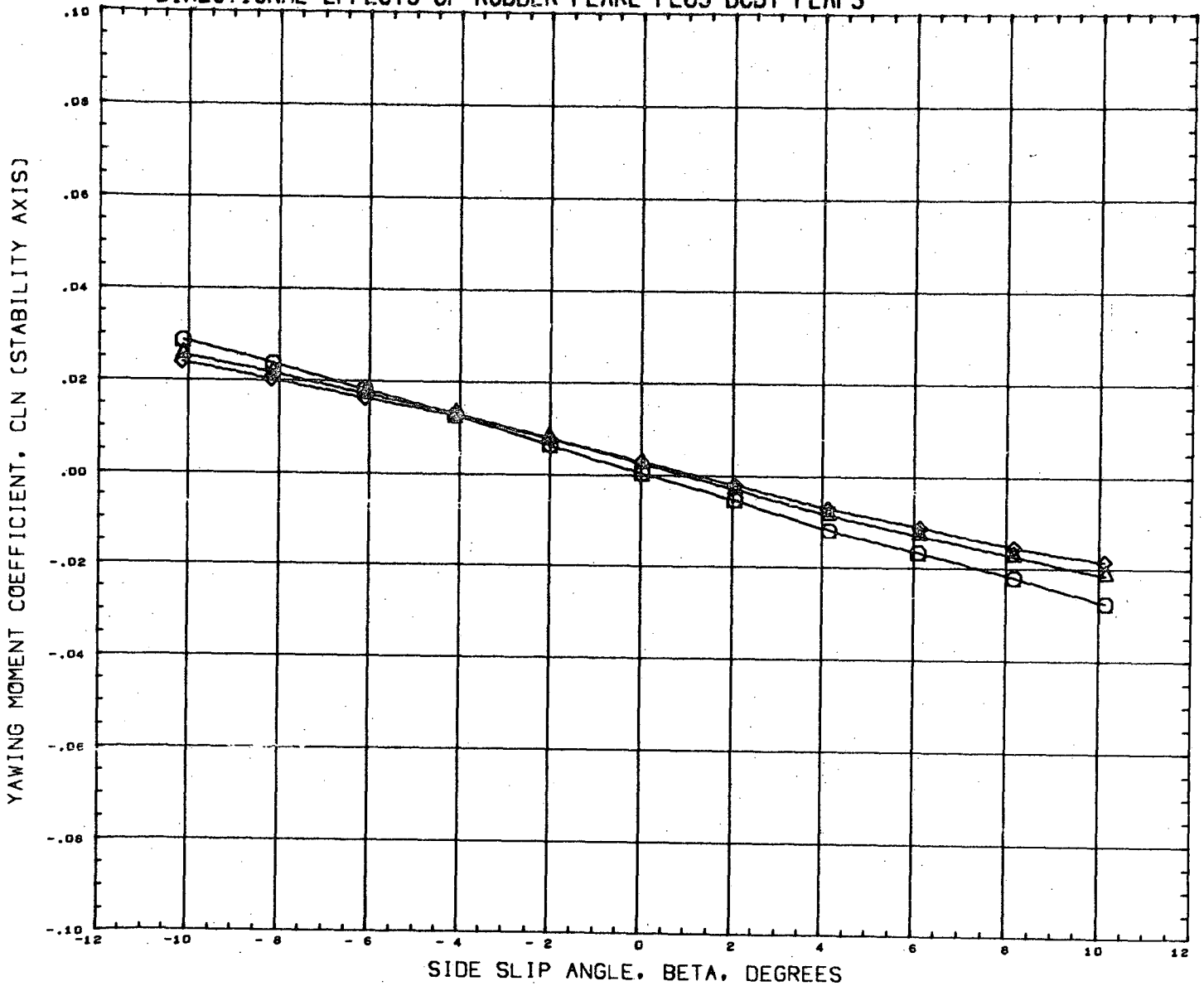
DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37Y3Z)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(D37YR2)	MSFC 495 GD/C B19W14C4AV13	15.000	50.000	0.000	0.000	LREF 3.0950 IN.
(C37Y5R)	MSFC 495 GD/C B19W14C4AV13F9L60F9R60	15.000	50.000	60.000	60.000	BREF 6.0990 IN. XMRP 6.6100 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035

MACH 4.959

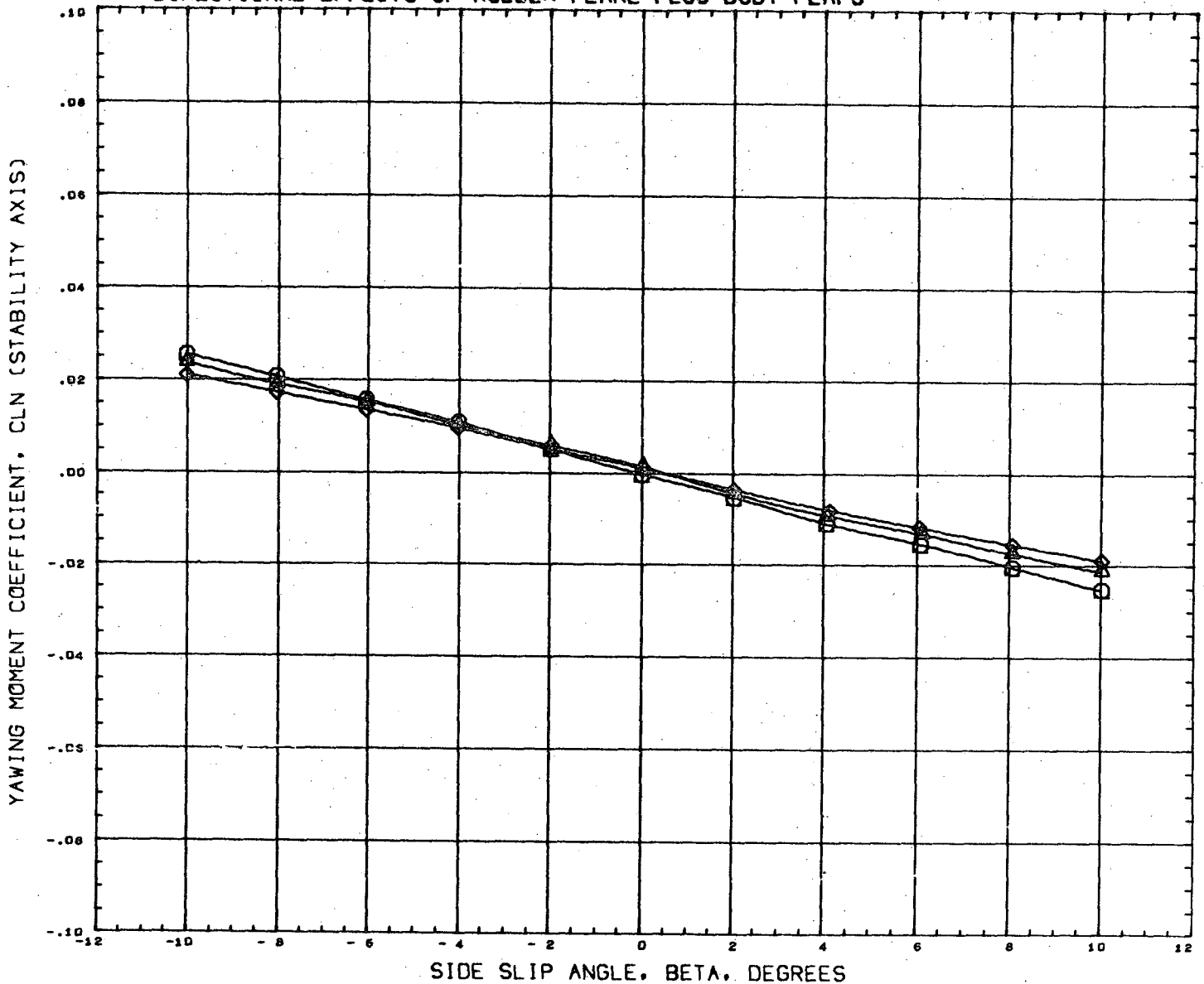
DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(D37YR2)	MSFC 495 GD/C B19W14C4AV13	15.000	50.000	0.000	0.000	LREF 3.0950 IN.
(C37YSR)	MSFC 495 GD/C B19W14C4AV13F9L6DF9R6D	15.000	50.000	60.000	60.000	BREF 6.0990 IN. XMRP 6.6180 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035

MACH 2.990

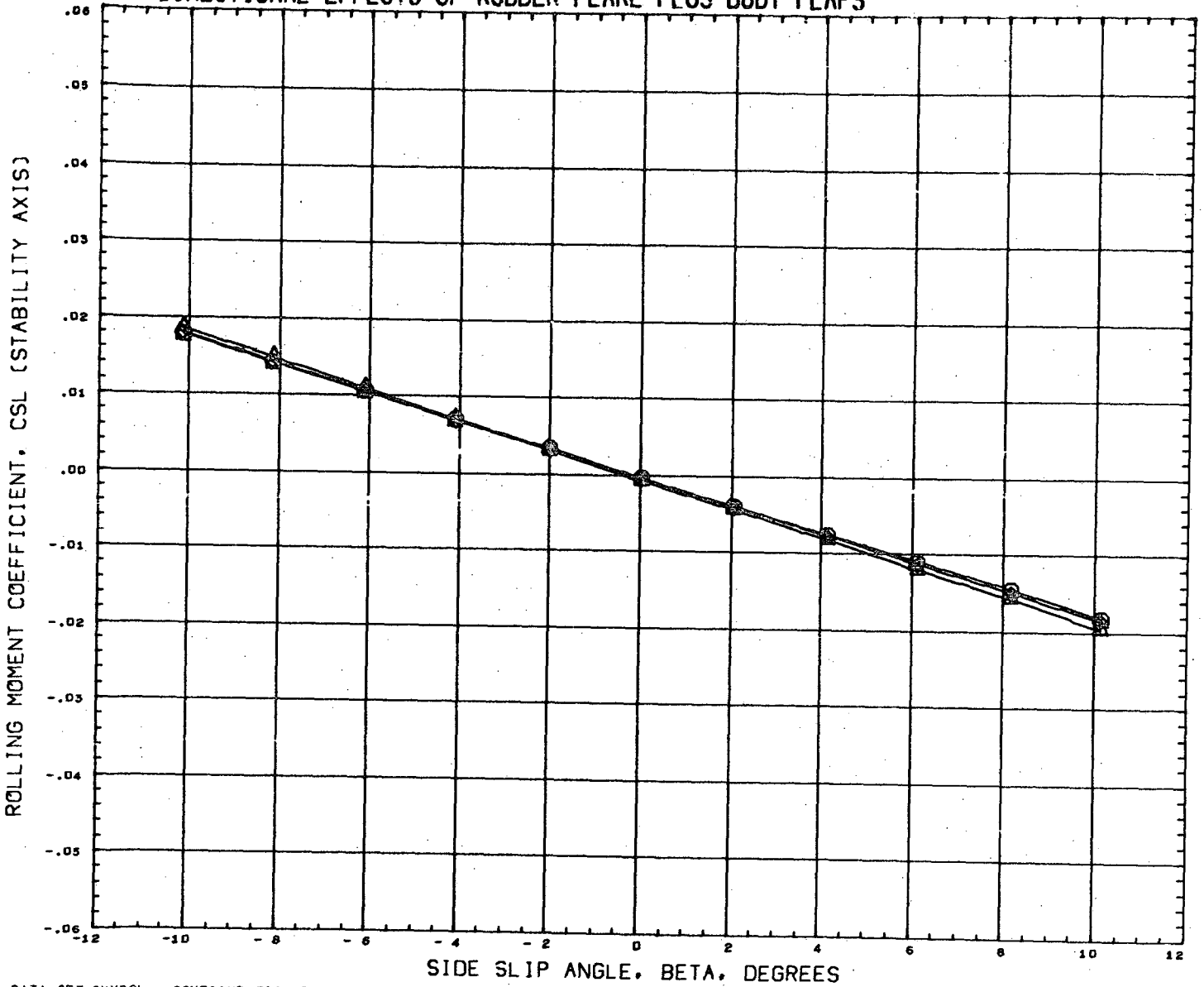
DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION
(E37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF 15.6560 SQ. IN.
(D37YR2)	MSFC 495 GD/C B19W14C4AV13	15.000	50.000	0.000	0.000	LREF 3.0950 IN.
(C37YSR)	MSFC 495 GD/C B19W14C4AV13F9L6DF9R60	15.000	50.000	60.000	60.000	BREF 6.0990 IN. XMRP 6.6180 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035

MACH 4.959

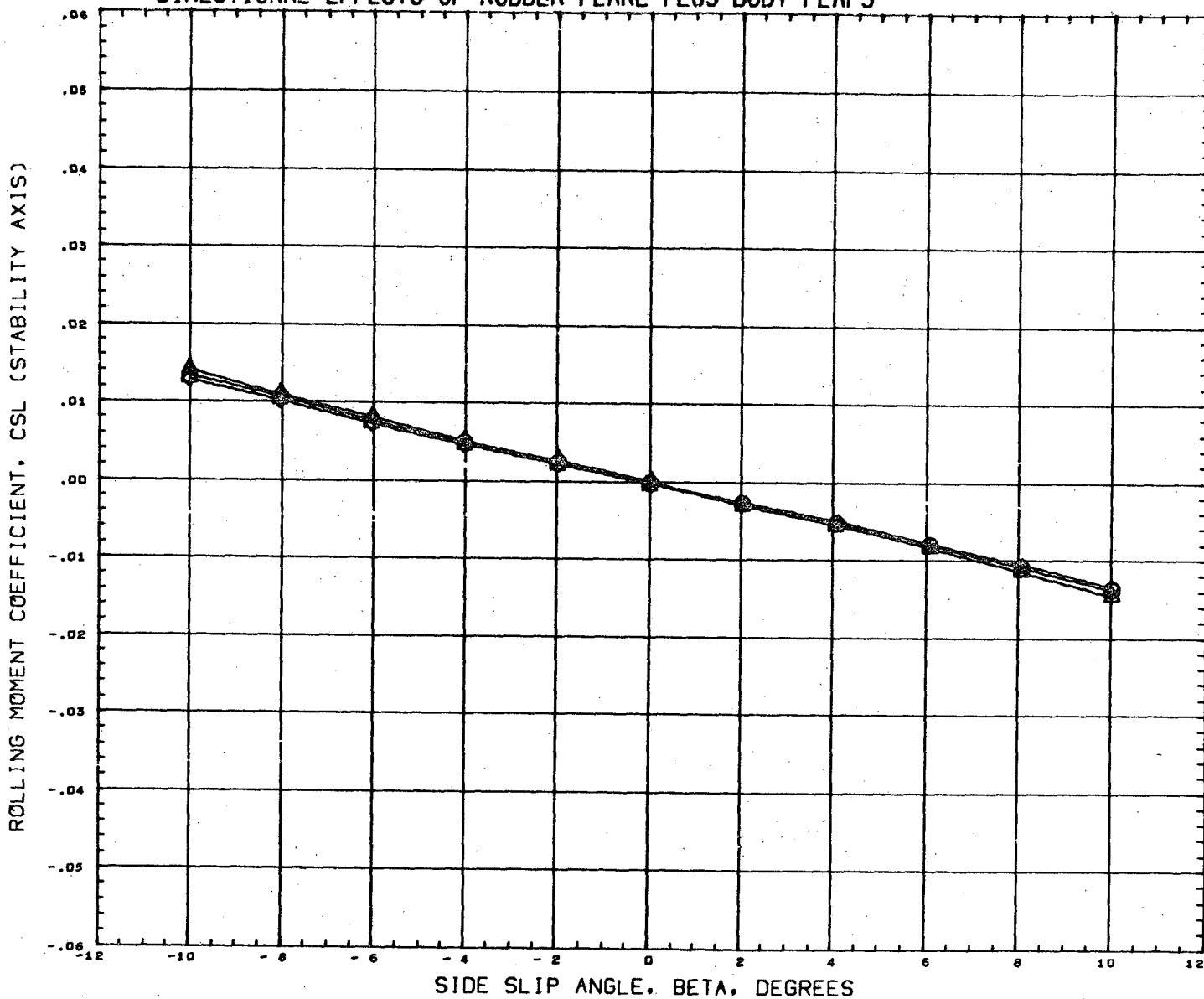
DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS



DATA SET SYMBOL	SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37Y32)	○	MSFC 495	GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(D37YR2)	△	MSFC 495	GD/C B19W14C4AV13	15.000	50.000	0.000	0.000	LREF	3.0950 IN.
(C37YSR)	◇	MSFC 495	GD/C B19W14C4AV13F9L6DF9R6D	15.000	50.000	60.000	60.000	BREF	6.0990 IN.
								XMRP	6.6180 IN.
								YMRP	0.0000 IN.
								ZMRP	0.0000 IN.
								SCALE	0.0035

MACH 2.990

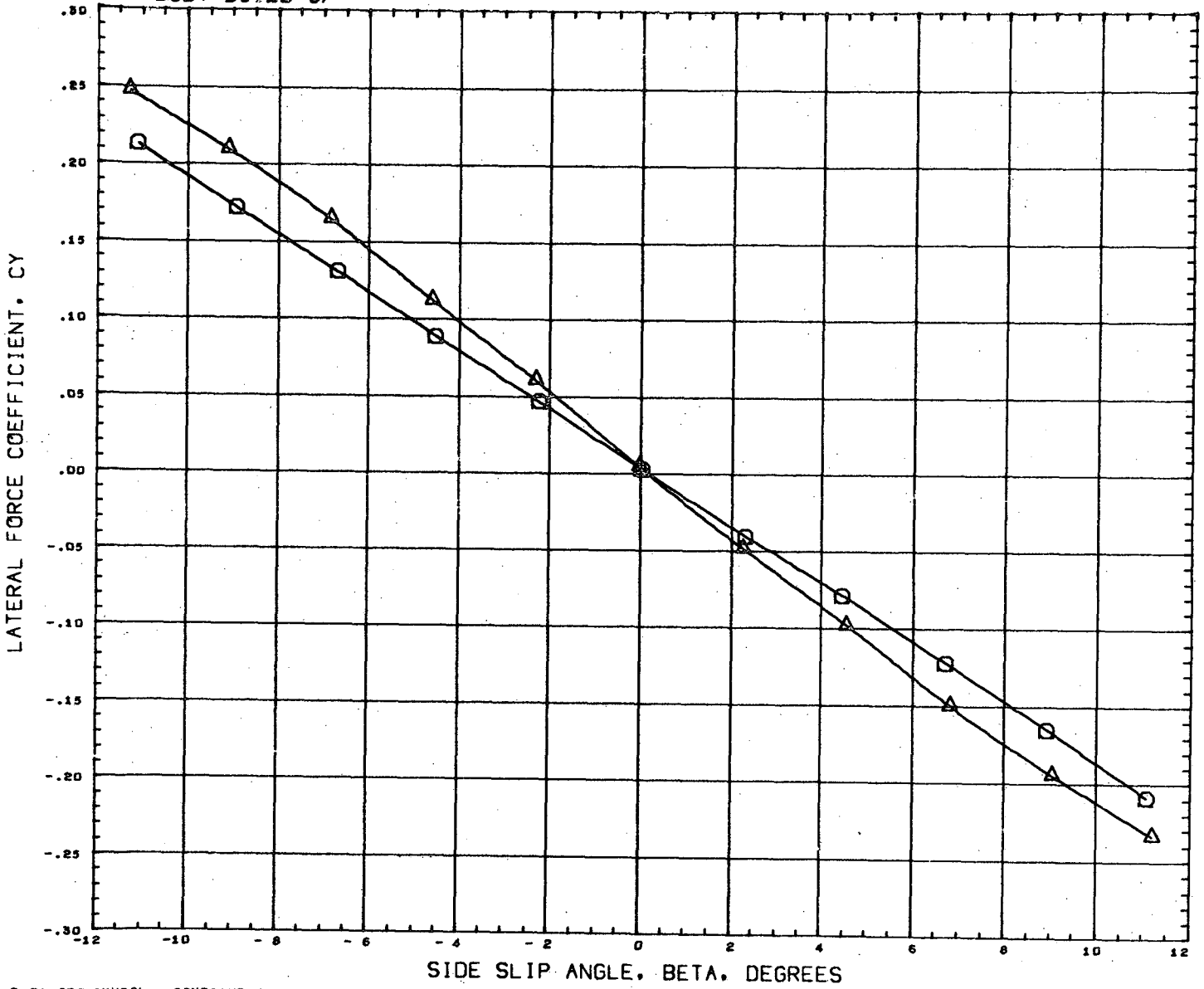
DIRECTIONAL EFFECTS OF RUDDER FLARE PLUS BODY FLAPS



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	RDRFLR	L-BFLP	R-BFLP	REFERENCE INFORMATION	
(E37Y32)	MSFC 495 GD/C B19W14C4AV7	15.000	0.000	0.000	0.000	SREF	15.6560 SQ. IN.
(D37YR2)	MSFC 495 GD/C B19W14C4AV13	15.000	50.000	0.000	0.000	LREF	3.0950 IN.
(C37YSR)	MSFC 495 GD/C B19W14C4AV13F9L60F9R60	15.000	50.000	60.000	60.000	BREF	6.0990 IN.
						XMRP	6.6180 IN.
						YMRP	0.0000 IN.
						ZMRP	0.0000 IN.
						SCALE	0.0035

MACH 4.959

BODY BUILD-UP



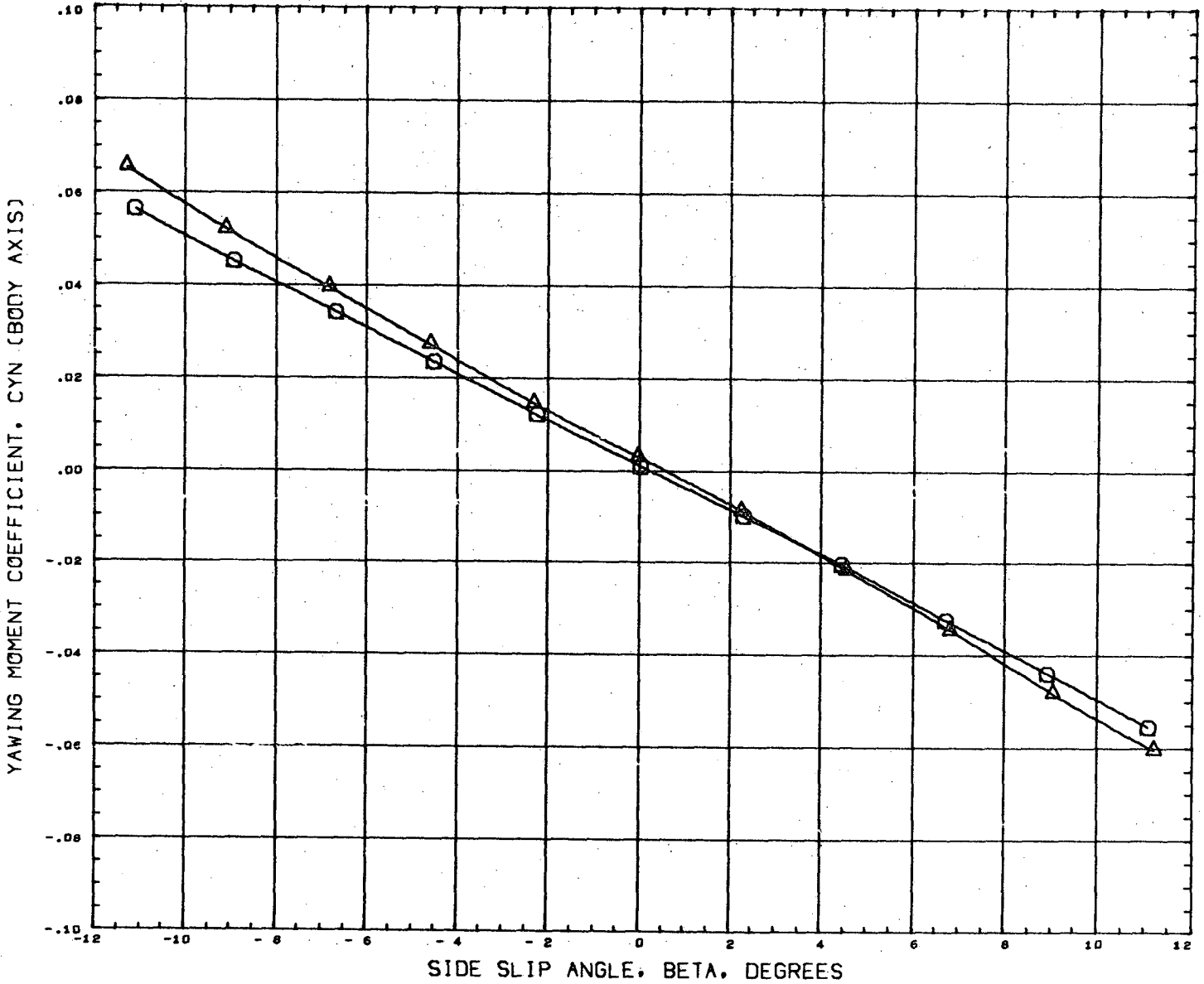
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37B02) ○	MSFC 495 GD/C B19FD
(C37B01) △	MSFC 495 GD/C B19C4A

ALPHA
35.000
35.000

REFERENCE INFORMATION
SREF 15.6560 SQ. IN.
LREF 3.0950 IN.
BREF 6.0990 IN.
XMRP 6.6180 IN.
YMRP 0.0000 IN.
ZMRP 0.0000 IN.
SCALE 0.0035

MACH 1.966

BODY BUILD-UP



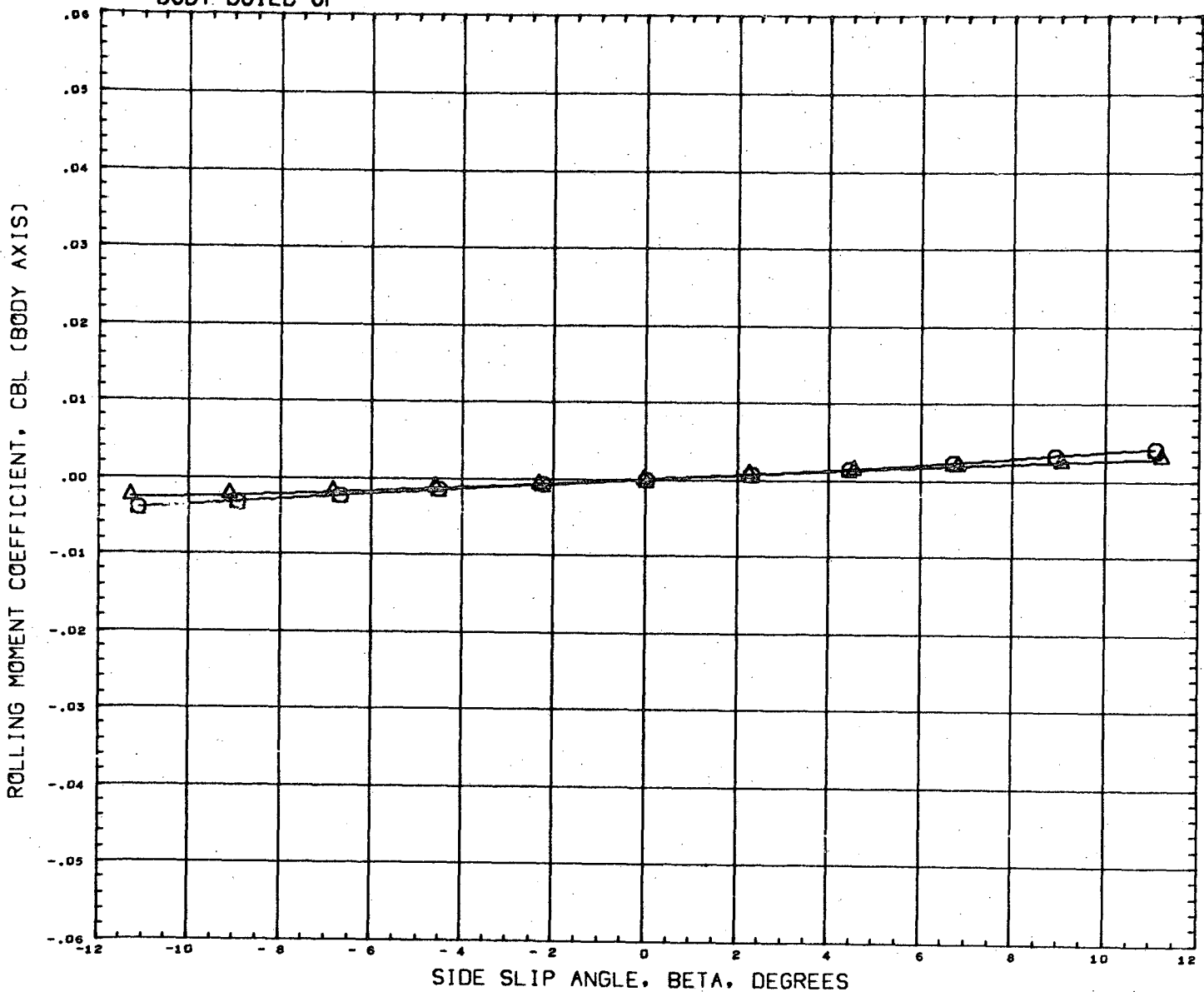
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37BD2)	MSFC 495 GD/C B19FD
(C37BD1)	MSFC 495 GD/C B19C4A

ALPHA
35.000
35.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.966

BODY BUILD-UP



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37B02)	MSFC 495 GD/C	B19F0
(C37B01)	MSFC 495 GD/C	B19C4A

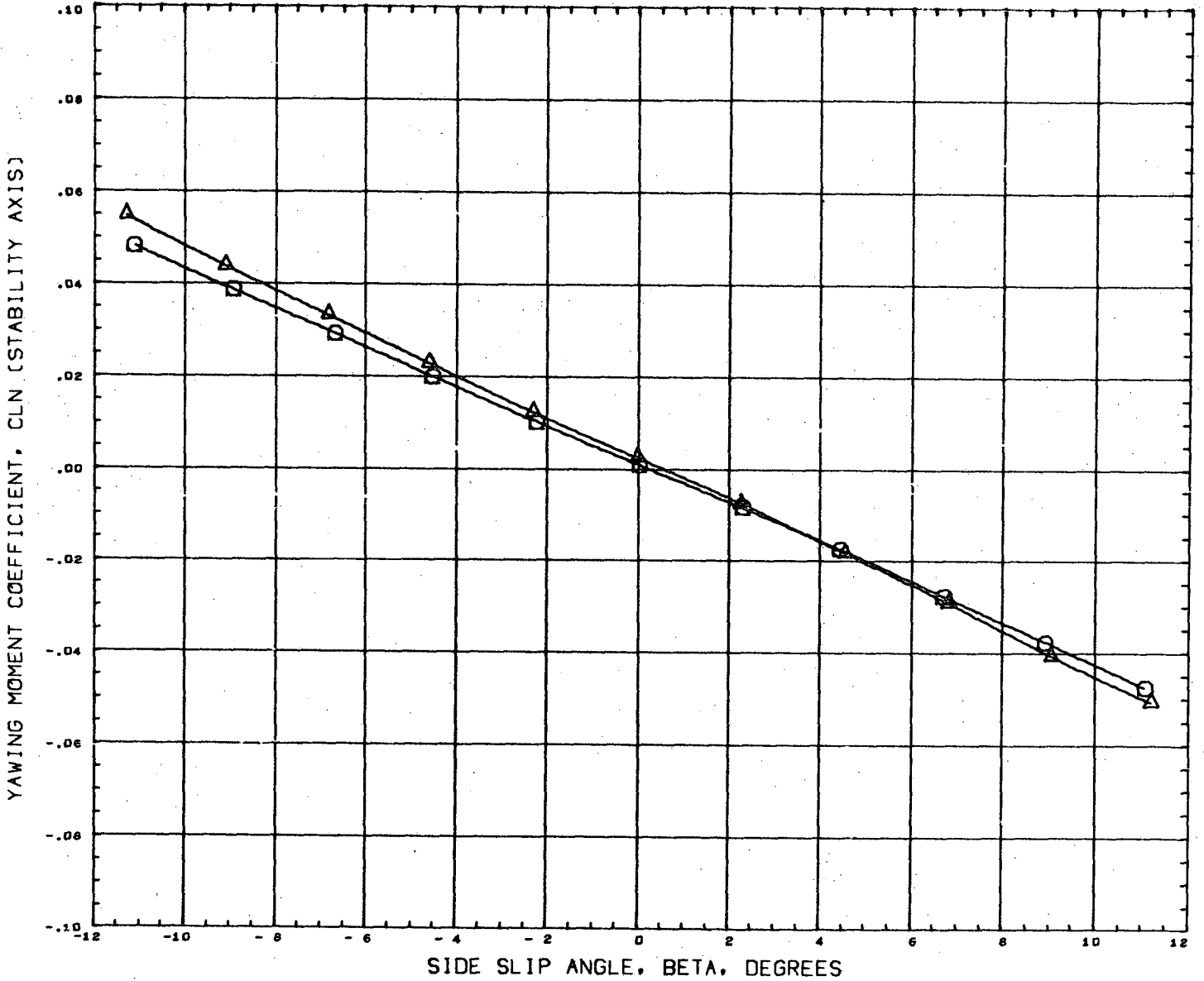
ALPHA
35.000
35.000

REFERENCE INFORMATION

SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6100	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

MACH 1.966

BODY BUILD-UP



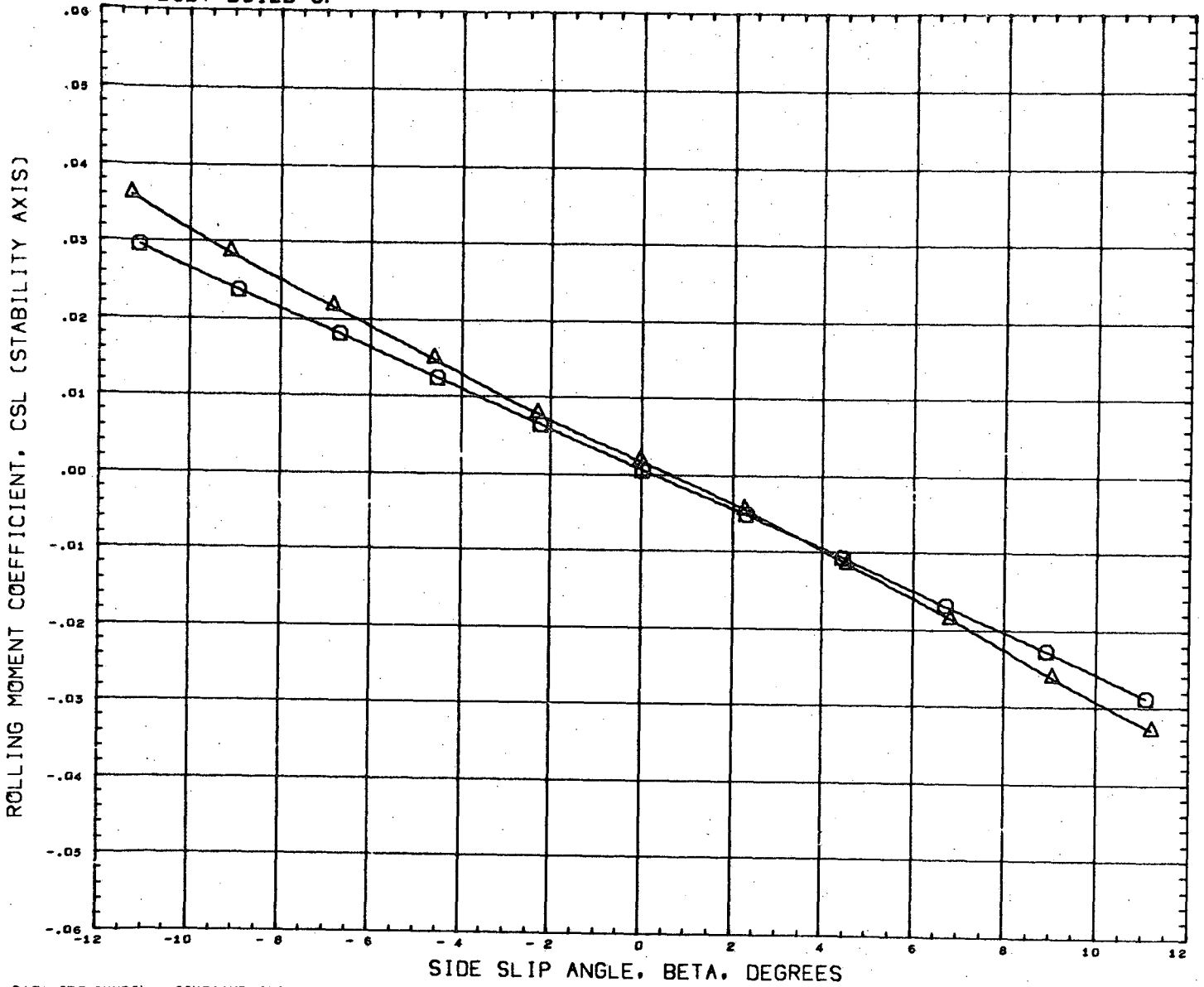
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37B02)	MSFC 495 GD/C B19F0
(C37B01)	MSFC 495 GD/C B19C4A

ALPHA
35.000
35.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.966

BODY BUILD-UP



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37B02)	MSFC 495 GD/C B19FD
(C37B01)	MSFC 495 GD/C B19C4A

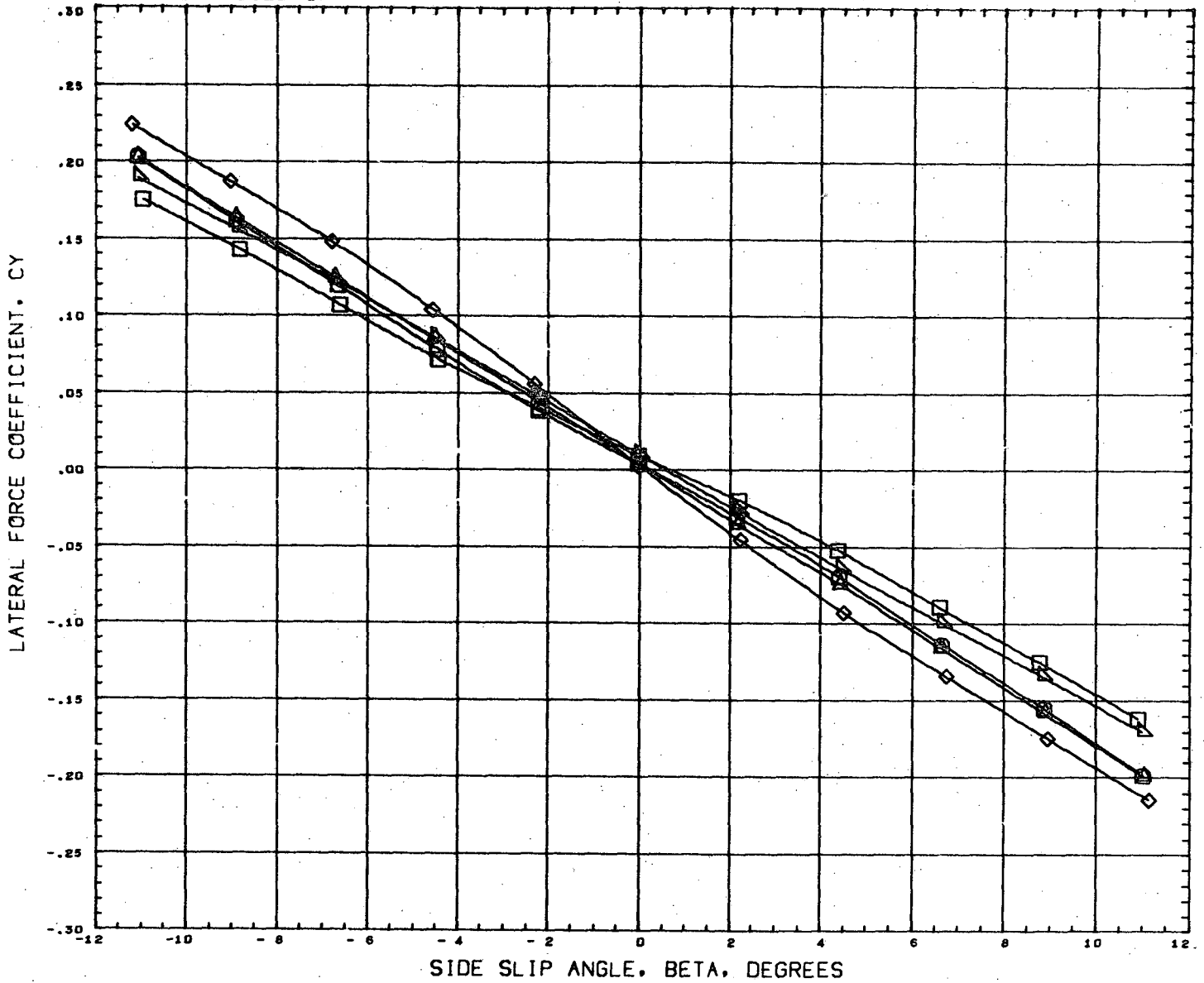
ALPHA
35.000
35.000

REFERENCE INFORMATION

SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.966

BODY BUILD-UP



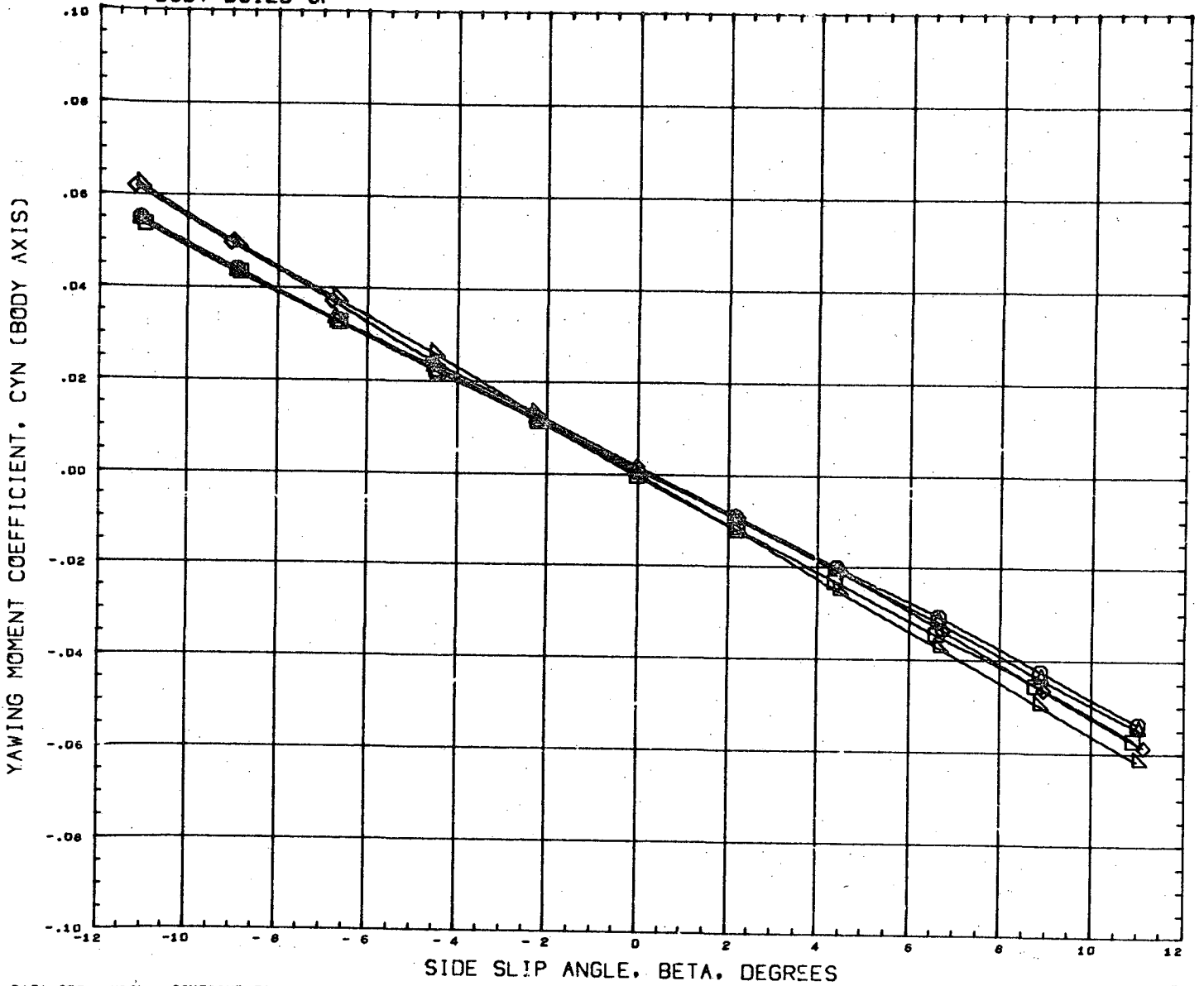
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37807)	MSFC 495 GD/C B19
(C37803)	MSFC 495 GD/C B19FD
(C37804)	MSFC 495 GD/C B19C4A
(C37805)	MSFC 495 GD/C B19FDW14
(C37806)	MSFC 495 GD/C B19W14C4A

ALPHA	DIHRL
30.000	
30.000	
30.000	
30.000	3.000
30.000	3.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.968

BODY BUILD-UP



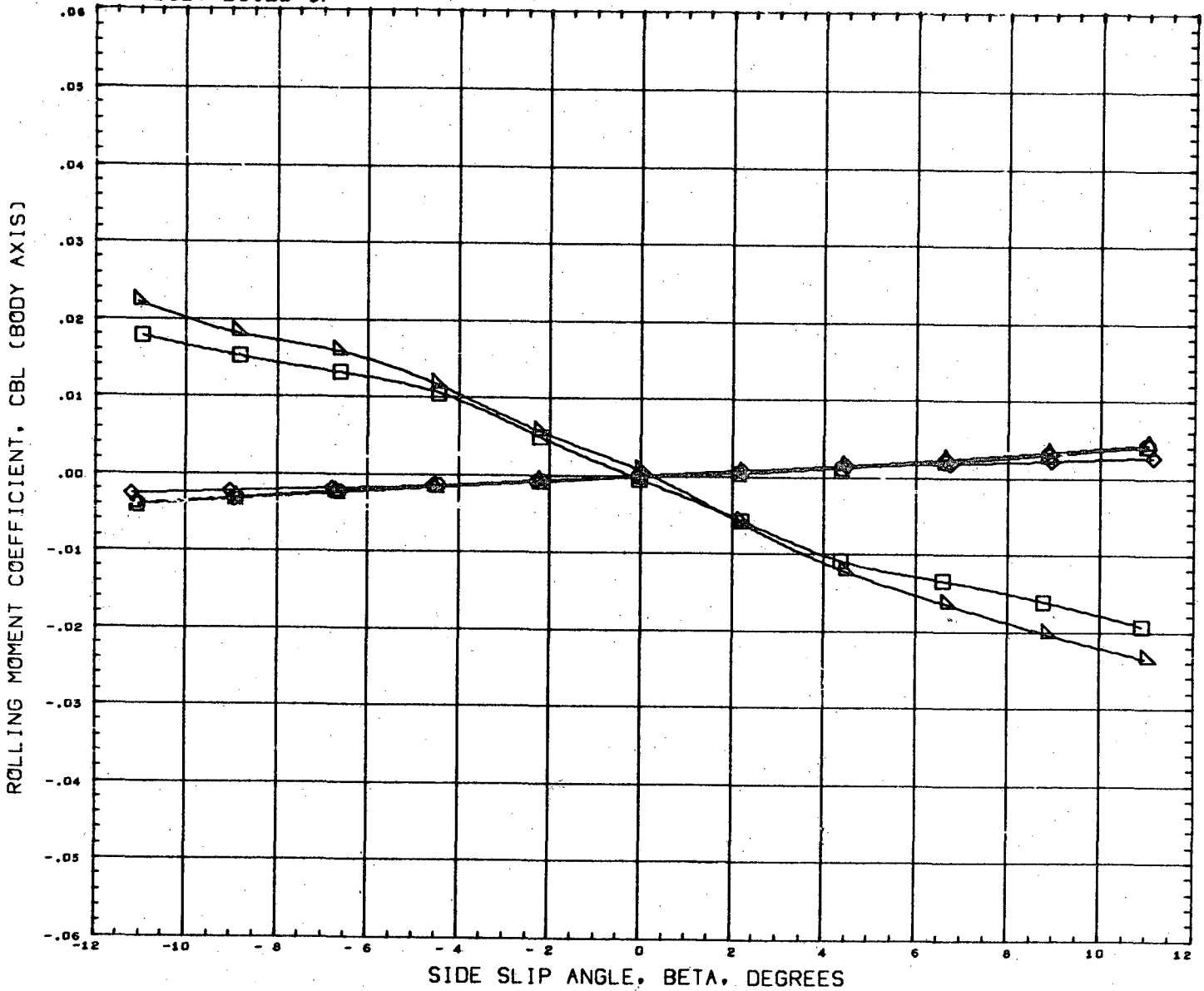
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37B07)	MSFC 495 GD/C	B19
(C37B03)	MSFC 495 GD/C	B19FD
(C37B04)	MSFC 495 GD/C	B19C4A
(C37B05)	MSFC 495 GD/C	B19FDW14
(C37B06)	MSFC 495 GD/C	B19W14C4A

ALPHA	DIHDR
30.000	
30.000	
30.000	
30.000	3.000
30.000	3.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.968

BODY BUILD-UP

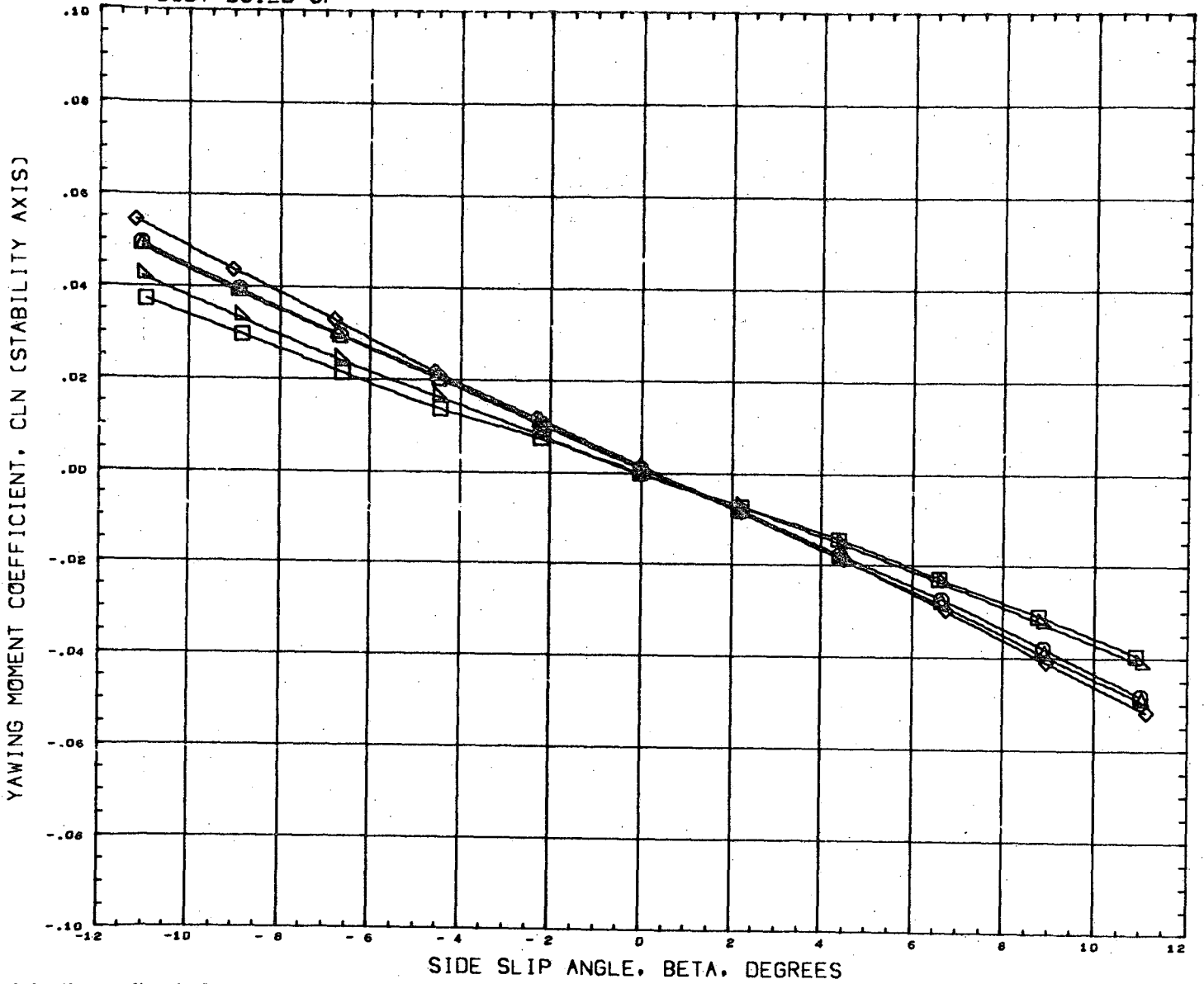


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	Dihedral
(C37B07)	MSFC 495 GD/C B19	30.000	
(C37B03)	MSFC 495 GD/C B19FD	30.000	
(C37B04)	MSFC 495 GD/C B19C4A	30.000	
(C37B05)	MSFC 495 GD/C B19FDW14	30.000	3.000
(C37B06)	MSFC 495 GD/C B19W14C4A	30.000	3.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.968

BODY BUILD-UP

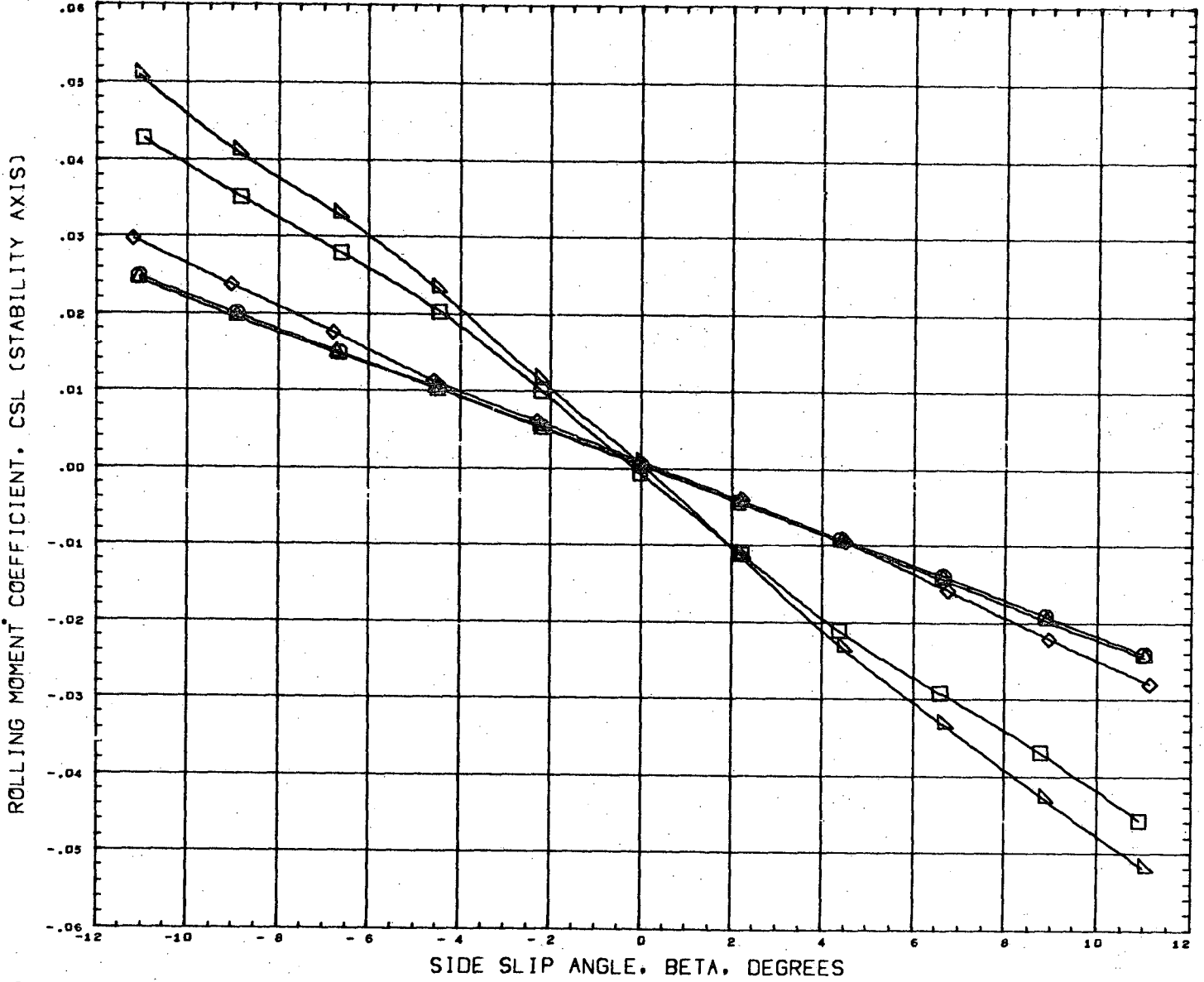


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	Dihedral
(C37B07)	MSFC 495 GD/C B19	30.000	
(C37B03)	MSFC 495 GD/C B19FD	30.000	
(C37B04)	MSFC 495 GD/C B19C4A	30.000	
(C37B05)	MSFC 495 GD/C B19FDW14	30.000	3.000
(C37B06)	MSFC 495 GD/C B19W14C4A	30.000	3.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.968

BODY BUILD-UP



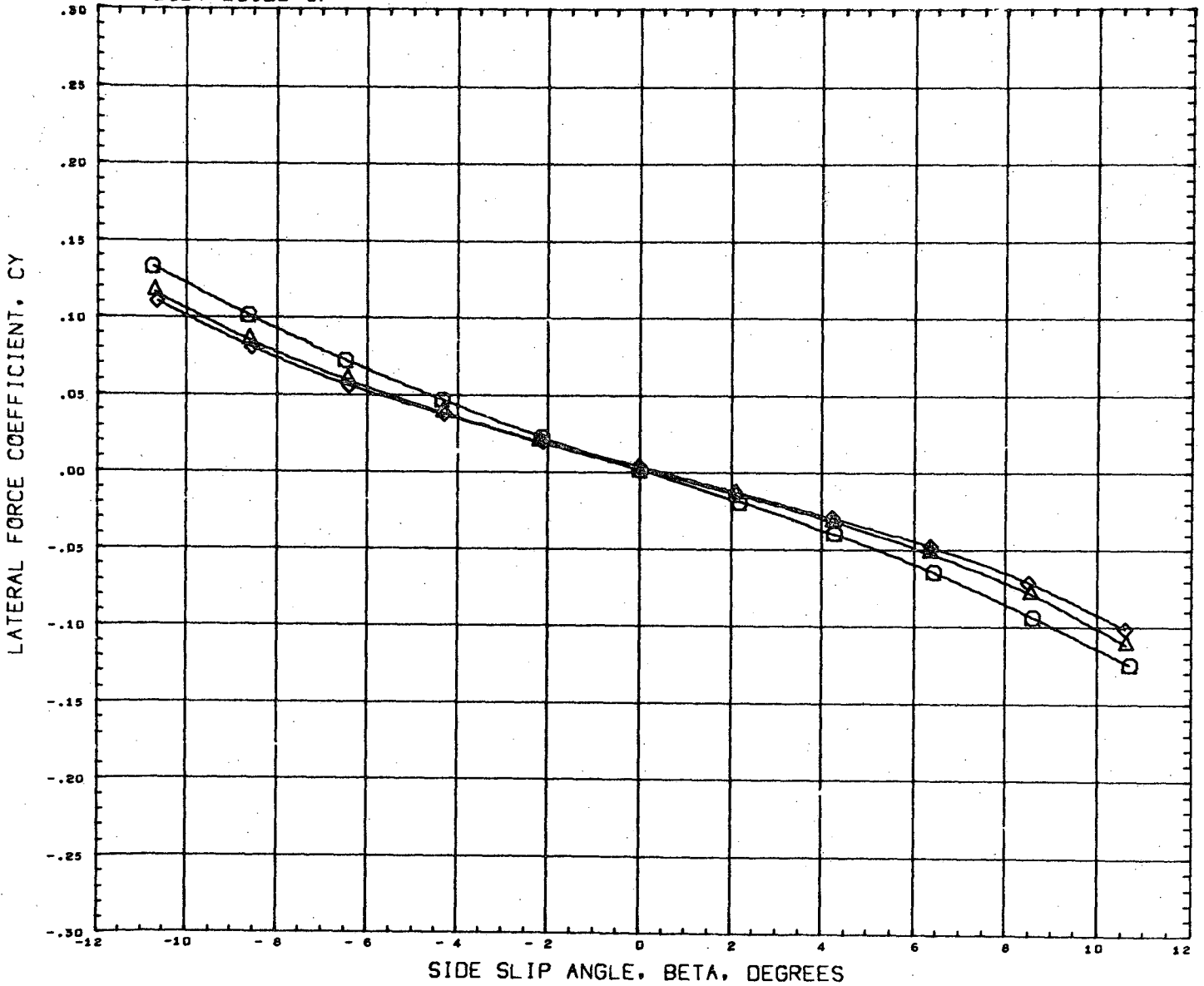
DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(C37B07)	MSFC 495 GD/C	B19
(C37B03)	MSFC 495 GD/C	B19FD
(C37B04)	MSFC 495 GD/C	B19C4A
(C37B05)	MSFC 495 GD/C	B19FDW14
(C37B06)	MSFC 495 GD/C	B19W14C4A

ALPHA	DIHDL
30.000	
30.000	
30.000	
30.000	3.000
30.000	3.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.968

BODY BUILD-UP

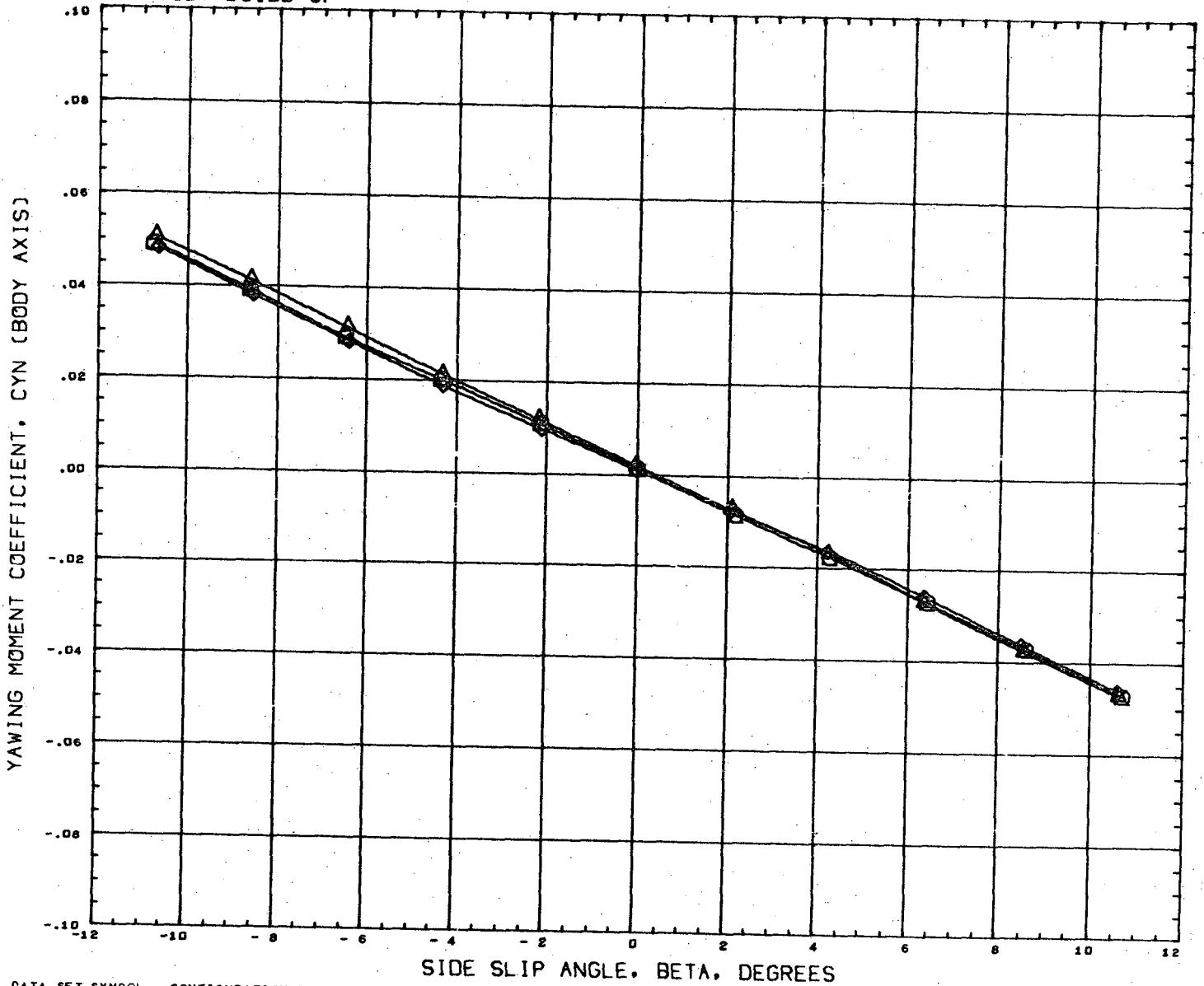


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	DIHRL
(C37B08)	MSFC 495 GD/C B19FD	10.000	
(C37B09)	MSFC 495 GD/C B19C4A	10.000	
(C37B10)	MSFC 495 GD/C B19W14C4A	10.000	3.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.972

BODY BUILD-UP



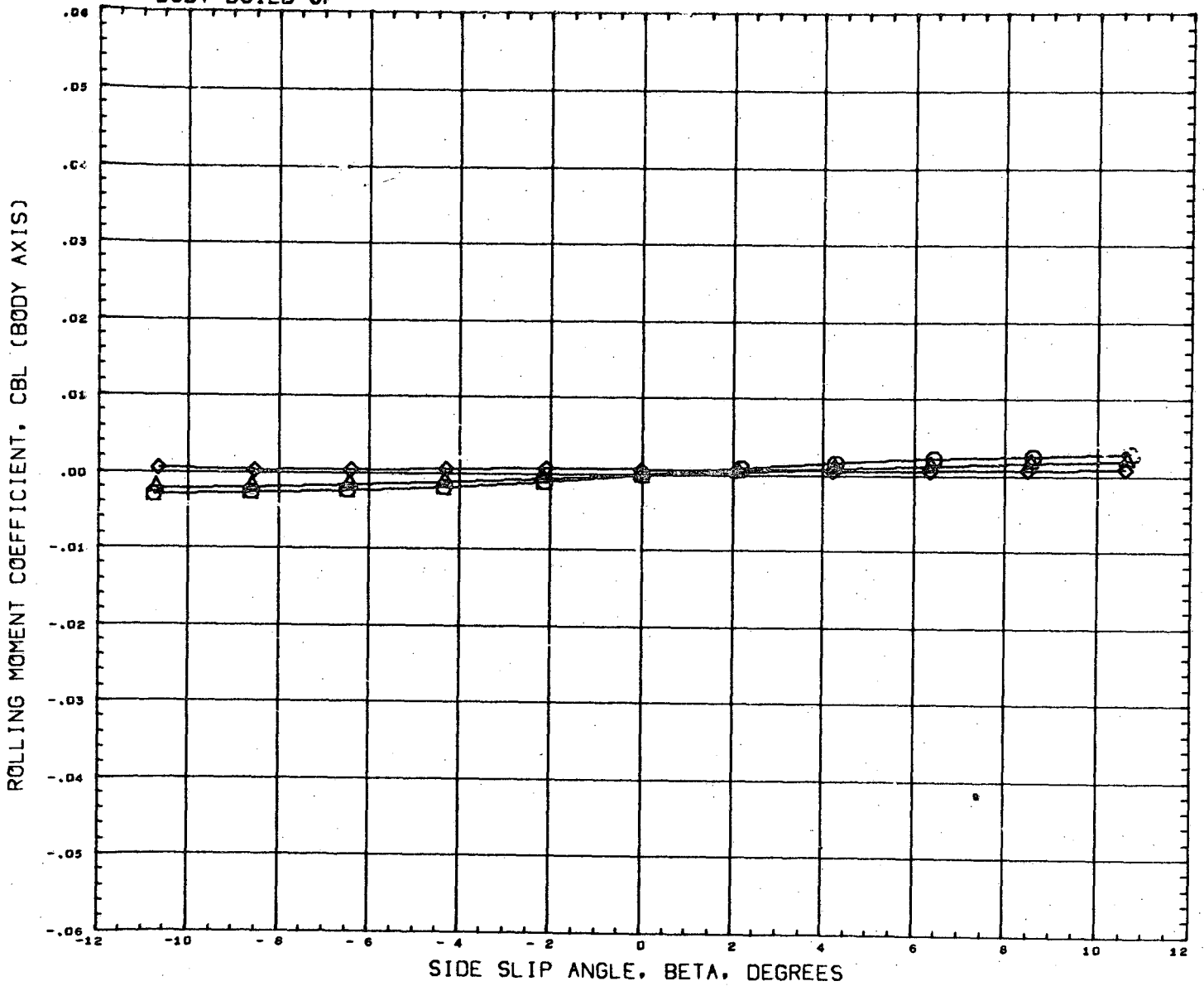
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37B08)	MSFC 495 GD/C B19FD
(C37B09)	MSFC 495 GD/C B19C4A
(C37B10)	MSFC 495 GD/C B19W14C4A

ALPHA	DINDRL
10.000	
10.000	
10.000	3.000

REFERENCE INFORMATION	
SREF	15.6560 SQ. IN.
LREF	3.0950 IN.
BREF	6.0990 IN.
XMRP	6.6180 IN.
YMRP	0.0000 IN.
ZMRP	0.0000 IN.
SCALE	0.0035

MACH 1.972

BODY BUILD-UP



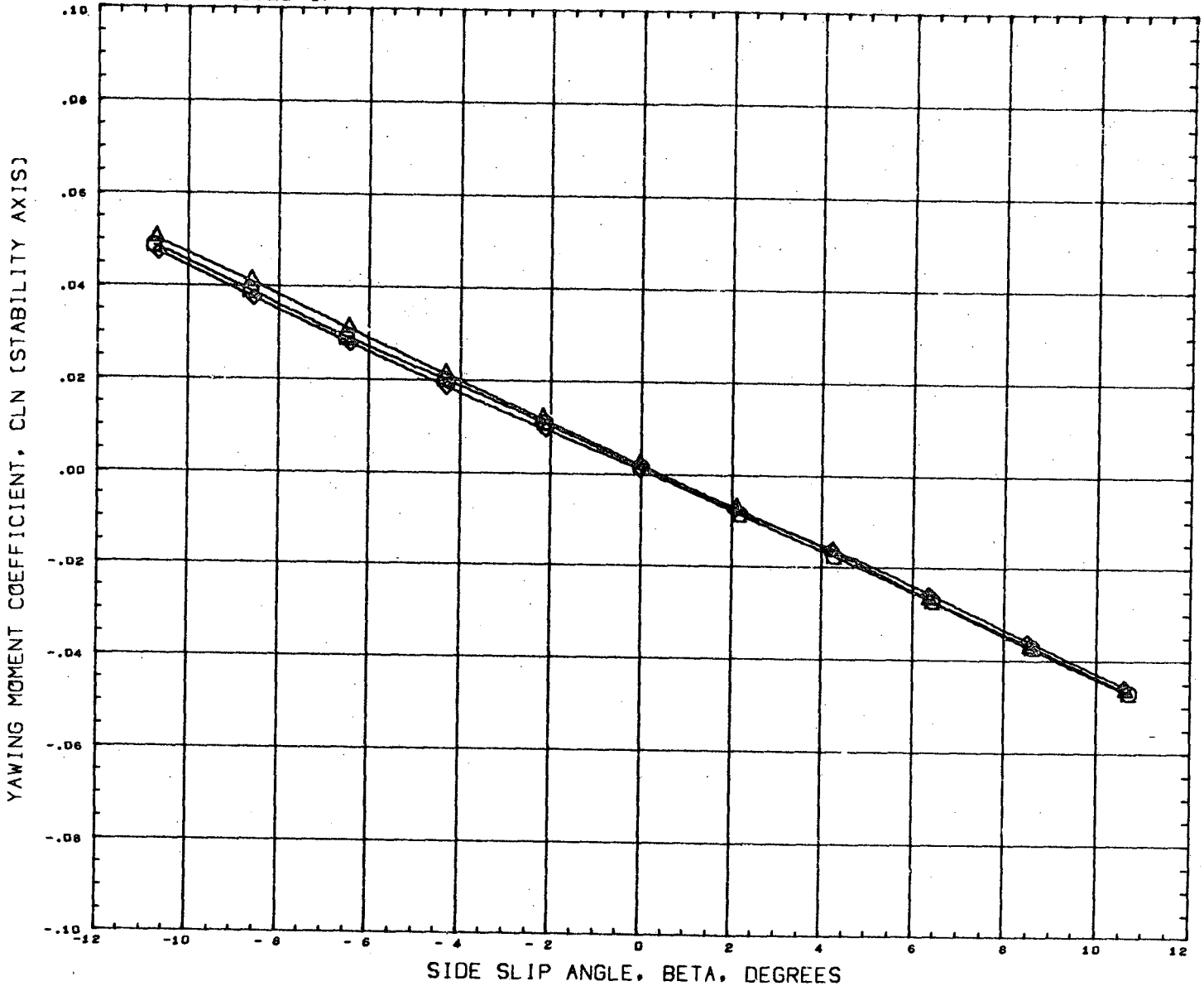
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37B08)	MSFC 495 GD/C B19F0
(C37B09)	MSFC 495 GD/C B19C4A
(C37B10)	MSFC 495 GD/C B19W14C4A

ALPHA	DihDRl
10.000	
10.000	
10.000	3.000

REFERENCE INFORMATION		
SREF.	15.6560	sq. in.
LREF.	3.0950	in.
BREF.	6.0990	in.
XMRP.	6.6180	in.
YMRP.	0.0000	in.
ZMRP.	0.0000	in.
SCALE	0.0035	

MACH 1.972

BODY BUILD-UP



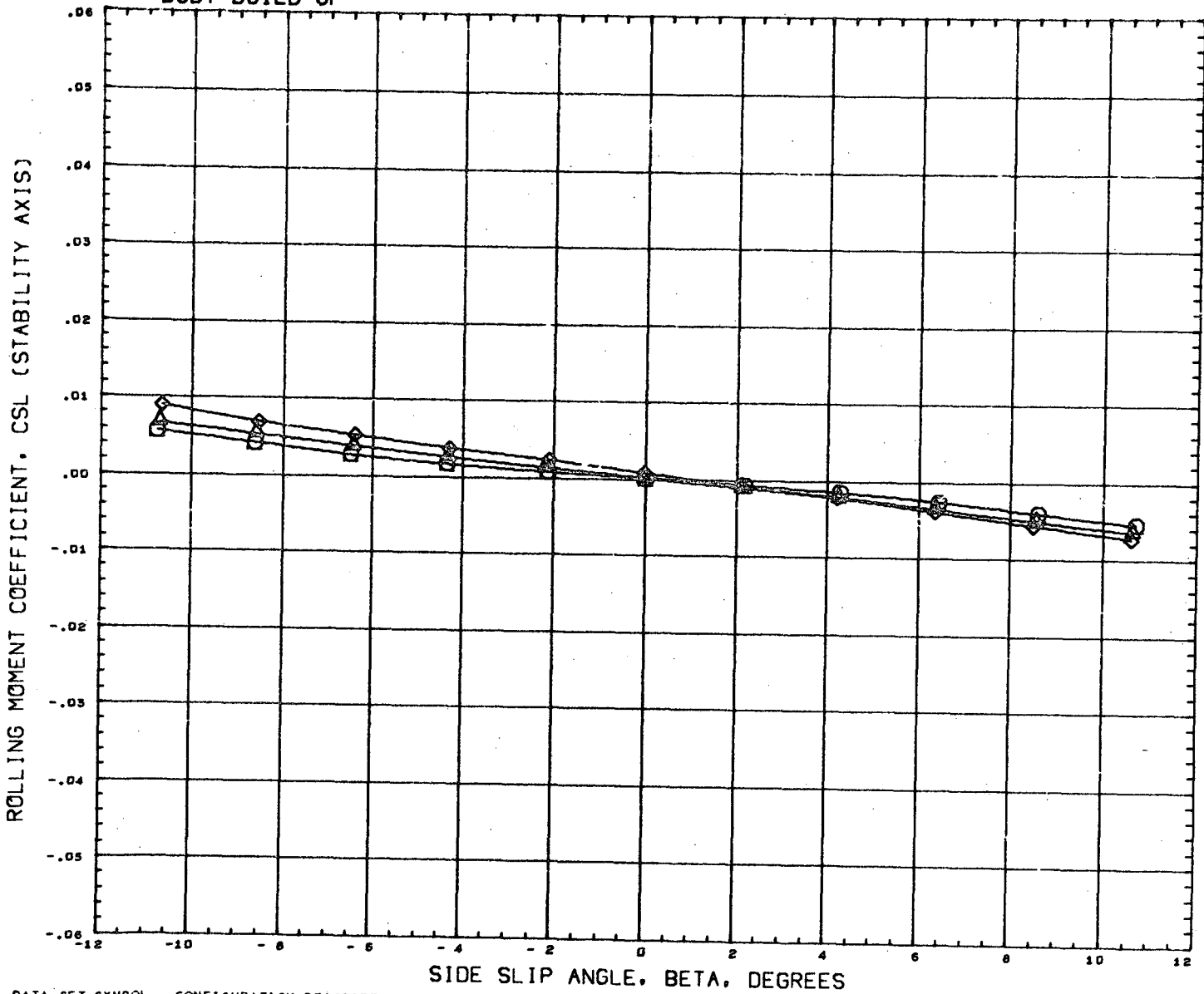
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37B08)	MSFC 495 GD/C B19F0
(C37B09)	MSFC 495 GD/C B19C4A
(C37B10)	MSFC 495 GD/C B19W14C4A

ALPHA	DIHDL
10.000	
10.000	
10.000	3.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.972

BODY BUILD-UP



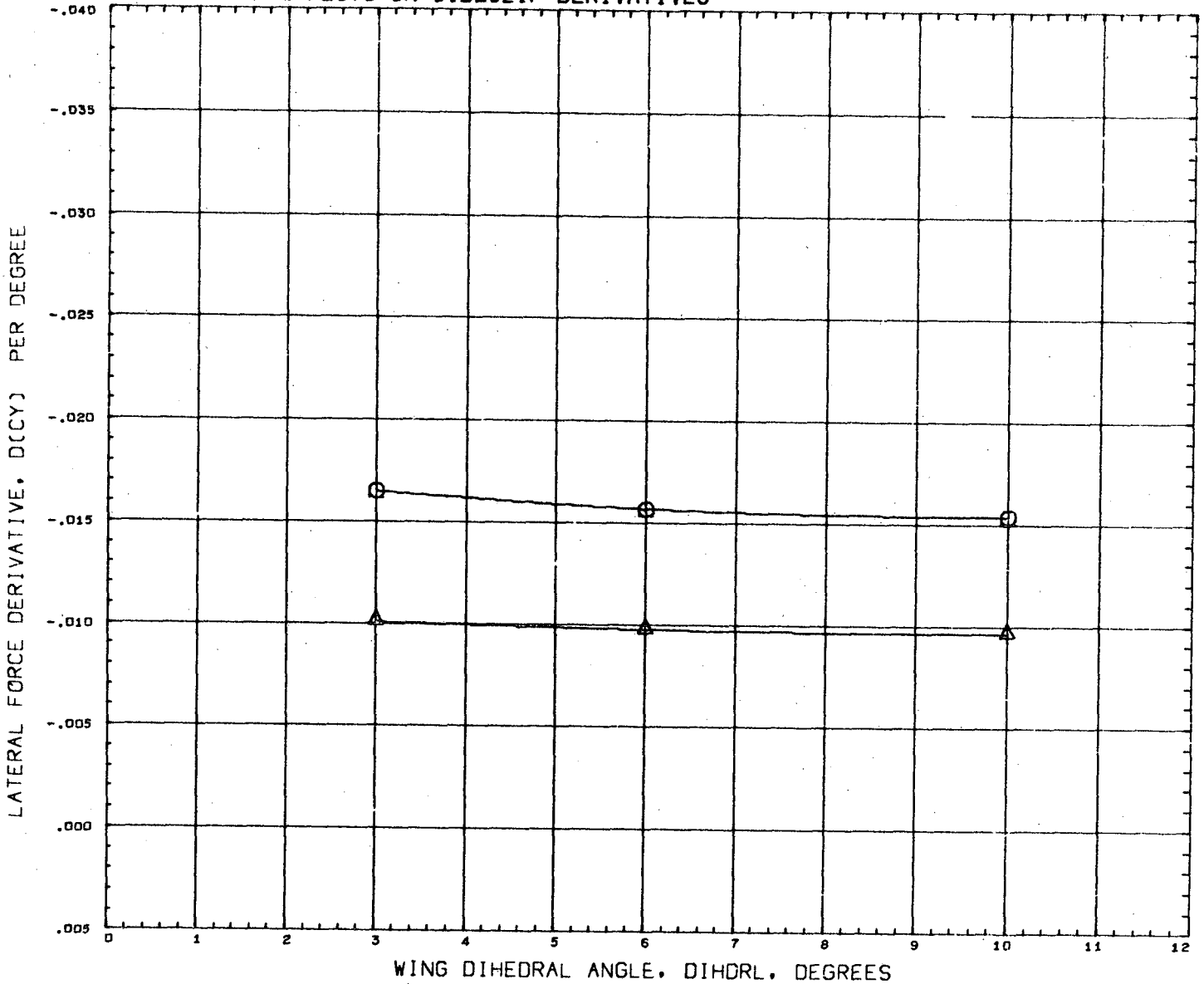
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(C37B08) ○	MSFC 495 GD/C B19FD
(C37B09) △	MSFC 495 GD/C B19C4A
(C37B10) ◇	MSFC 495 GD/C B19W14C4A

ALPHA	DIMDRL
10.000	
10.000	
10.000	3,000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

MACH 1.972

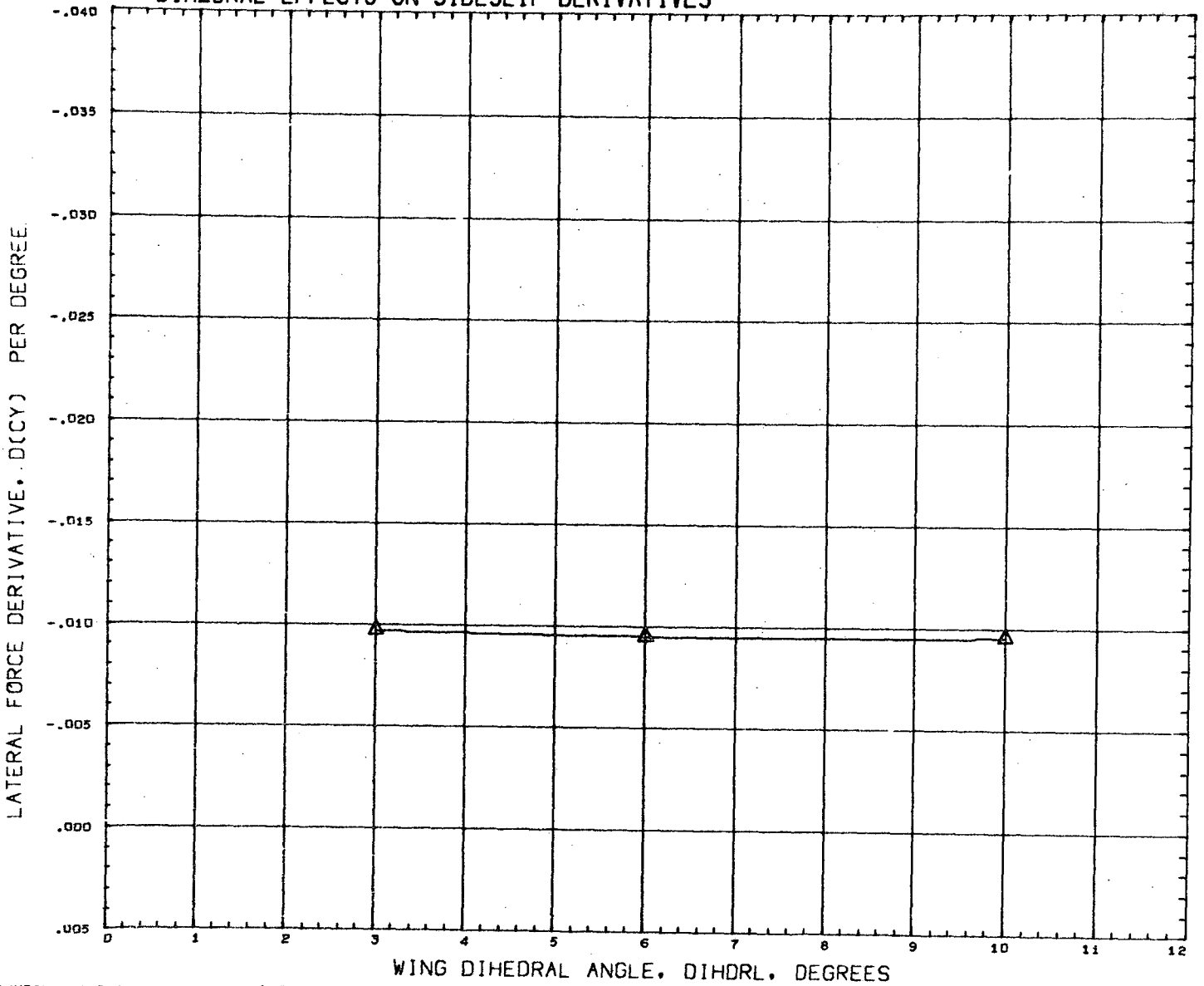
DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL ◻ ◻ ◻ ◻	ALPHA 6.000 15.000 25.000 35.000	PARAMETRIC VALUES MACH 1.306 L-BFLP 0.000 RDRFLR 0.000 R-BFLP 0.000	REFERENCE INFORMATION SREF 15.6560 SQ. IN. LREF 3.0950 IN. BREF 6.0990 IN. XMRP 6.6180 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035
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DATA HIST. CODE *E*AI

DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES

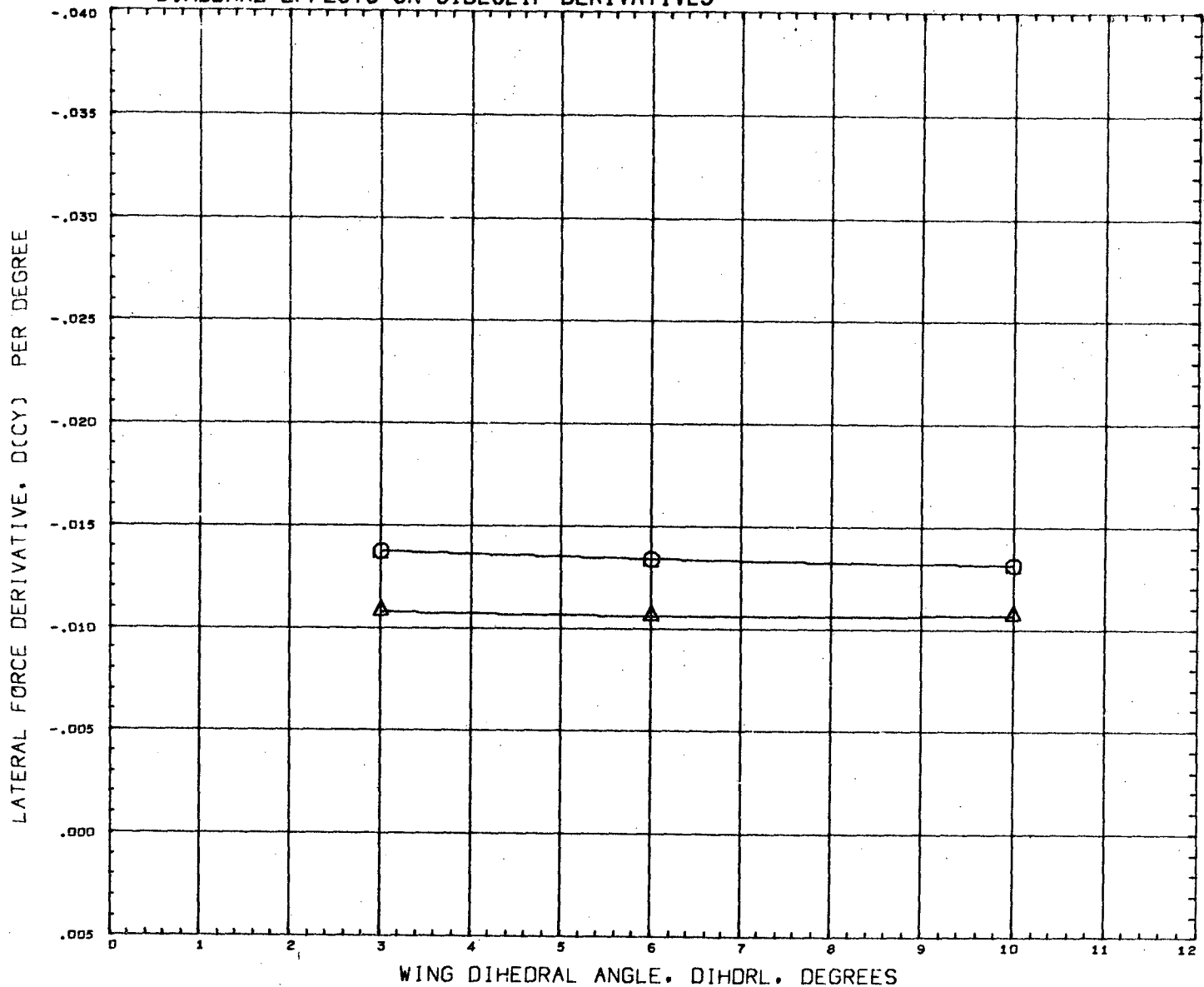


SYMBOL	ALPHA	PARAMETRIC VALUES			
○	6.000	MACH	1.457	RDRFLR	0.000
△	15.000	L-BFLP	0.000	R-BFLP	0.000
◇	25.000				
□	35.000				

REFERENCE INFORMATION		
SREF	15.6560	sq. in.
LREF	3.0950	in.
BREF	6.0990	in.
XMRP	6.6180	in.
YMRP	0.0000	in.
ZMRP	0.0000	in.
SCALE	0.0035	

DATA HIST. CODE #E#AI

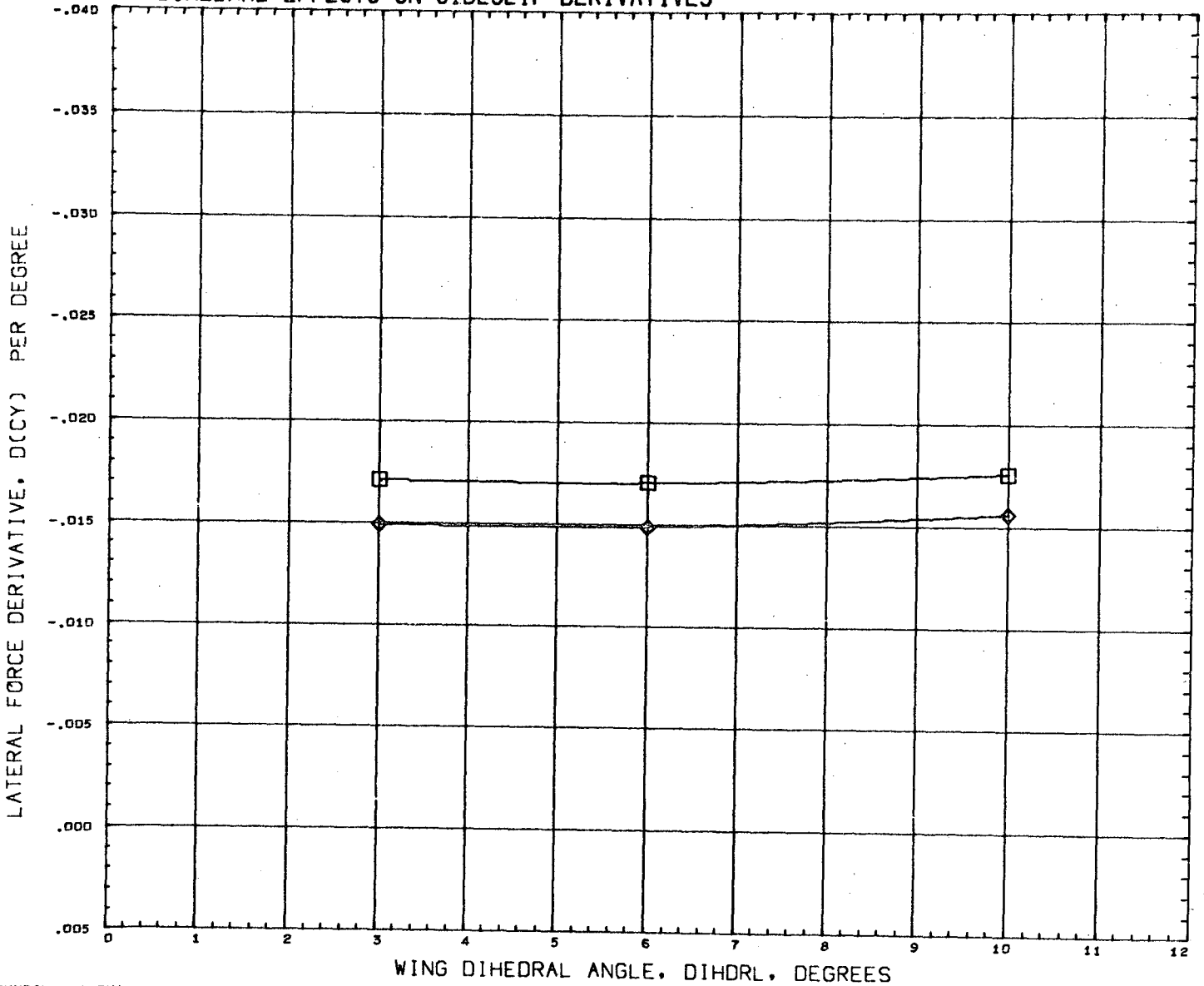
DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL	ALPHA	PARAMETRIC VALUES				REFERENCE INFORMATION		
<div style="display: flex; flex-direction: column; gap: 5px;"> ○ ◇ △ □ </div>	<div style="display: flex; flex-direction: column; gap: 5px;"> 6.000 15.000 25.000 35.000 </div>	<div style="display: flex; flex-direction: column; gap: 5px;"> <u>MACH</u> L-BFLP </div>	<div style="display: flex; flex-direction: column; gap: 5px;"> 1.967 0.000 </div>	<div style="display: flex; flex-direction: column; gap: 5px;"> RDRFLR R-BFLP </div>	<div style="display: flex; flex-direction: column; gap: 5px;"> 0.000 0.000 </div>	<div style="display: flex; flex-direction: column; gap: 5px;"> SREF LREF BREF XMRF YMRF ZMRF SCALE </div>	<div style="display: flex; flex-direction: column; gap: 5px;"> 15.6560 3.0950 6.0990 6.6180 0.0000 0.0000 0.0035 </div>	<div style="display: flex; flex-direction: column; gap: 5px;"> SQ. IN. IN. IN. IN. IN. IN. </div>

DATA HIST. CODE *E#A1

DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES

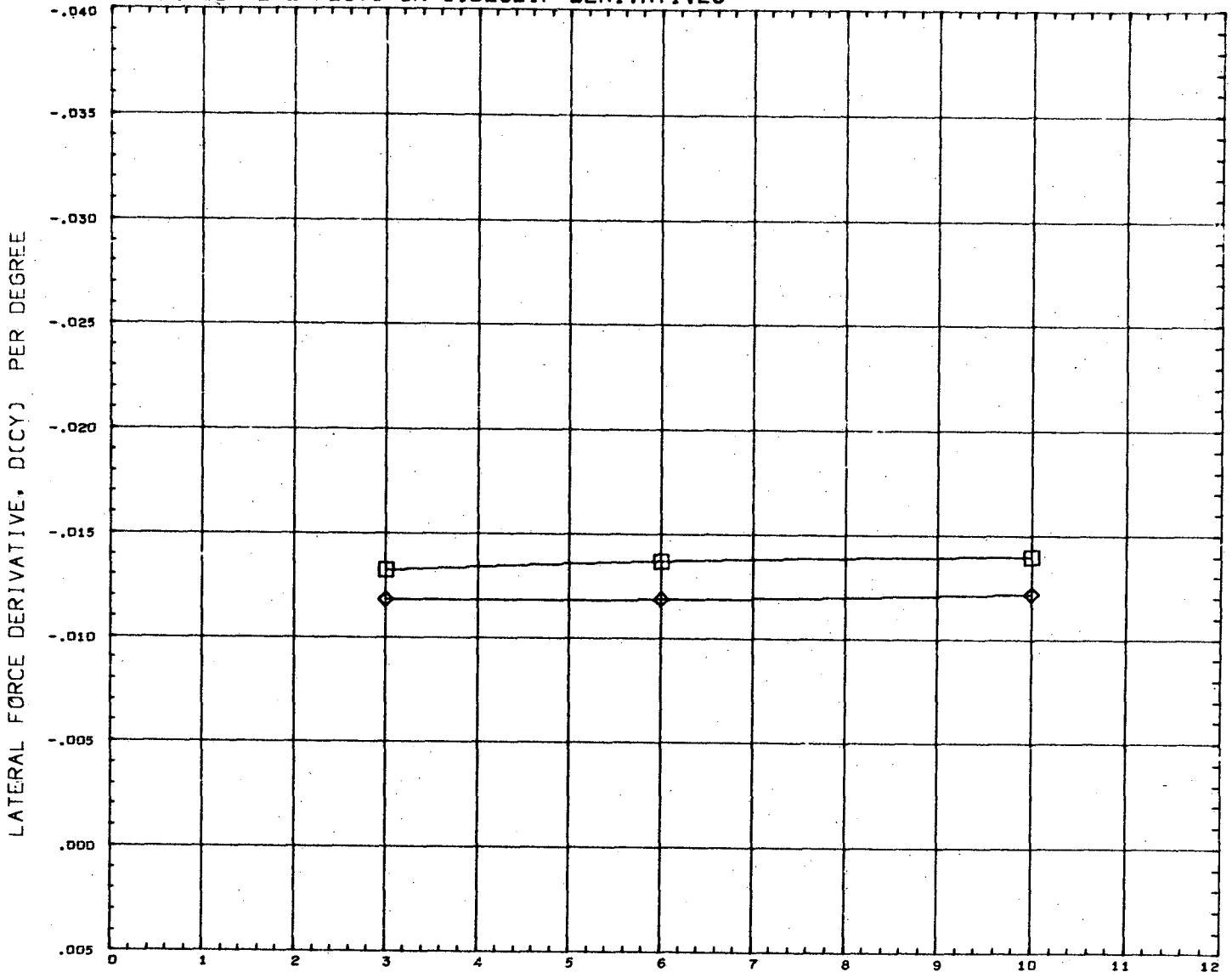


SYMBOL	ALPHA	PARAMETRIC VALUES			
◇	6.000	MACH	2.740	RDRFLR	0.000
◇	15.000	L-BFLP	0.000	R-BFLP	0.000
◇	25.000				
□	35.000				

REFERENCE INFORMATION		
SREF	15.6560	sq. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
YMRP	6.6180	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	IN.

DATA HIST. CODE *E*AI

DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES



WING DIHEDRAL ANGLE, DIHDL, DEGREES

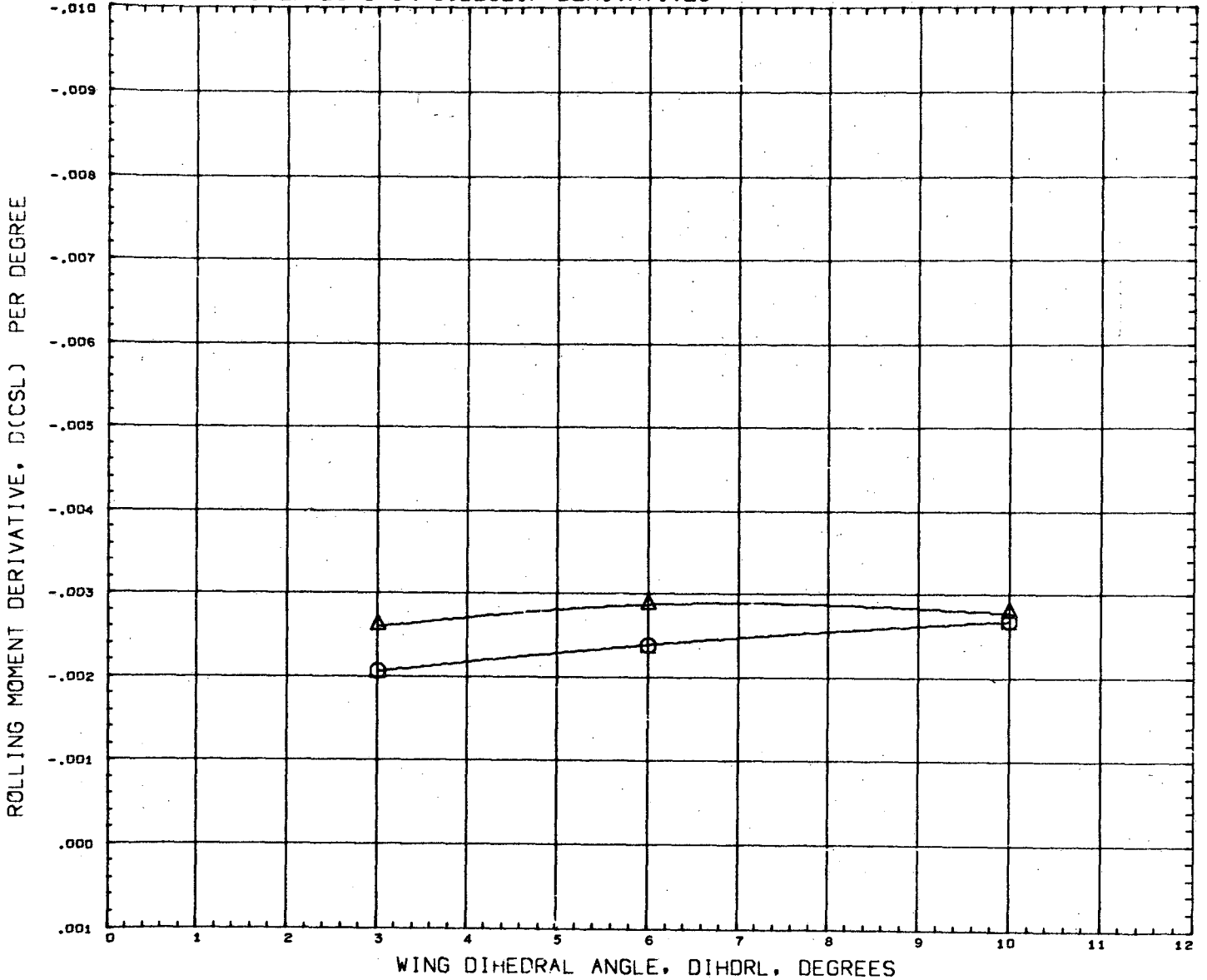
SYMBOL	ALPHA	PARAMETRIC VALUES				REFERENCE INFORMATION		
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△	15.000	L-BFLP	0.000	R-BFLP	0.000	LREF	3.0950	IN.
◇	25.000					DREF	6.0990	IN.
□	35.000					XMRP	6.6180	IN.
						YMRP	0.0000	IN.
						ZMRP	0.0000	IN.
						SCALE	0.0035	

DATA HIST. CODE #E*AI

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DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES



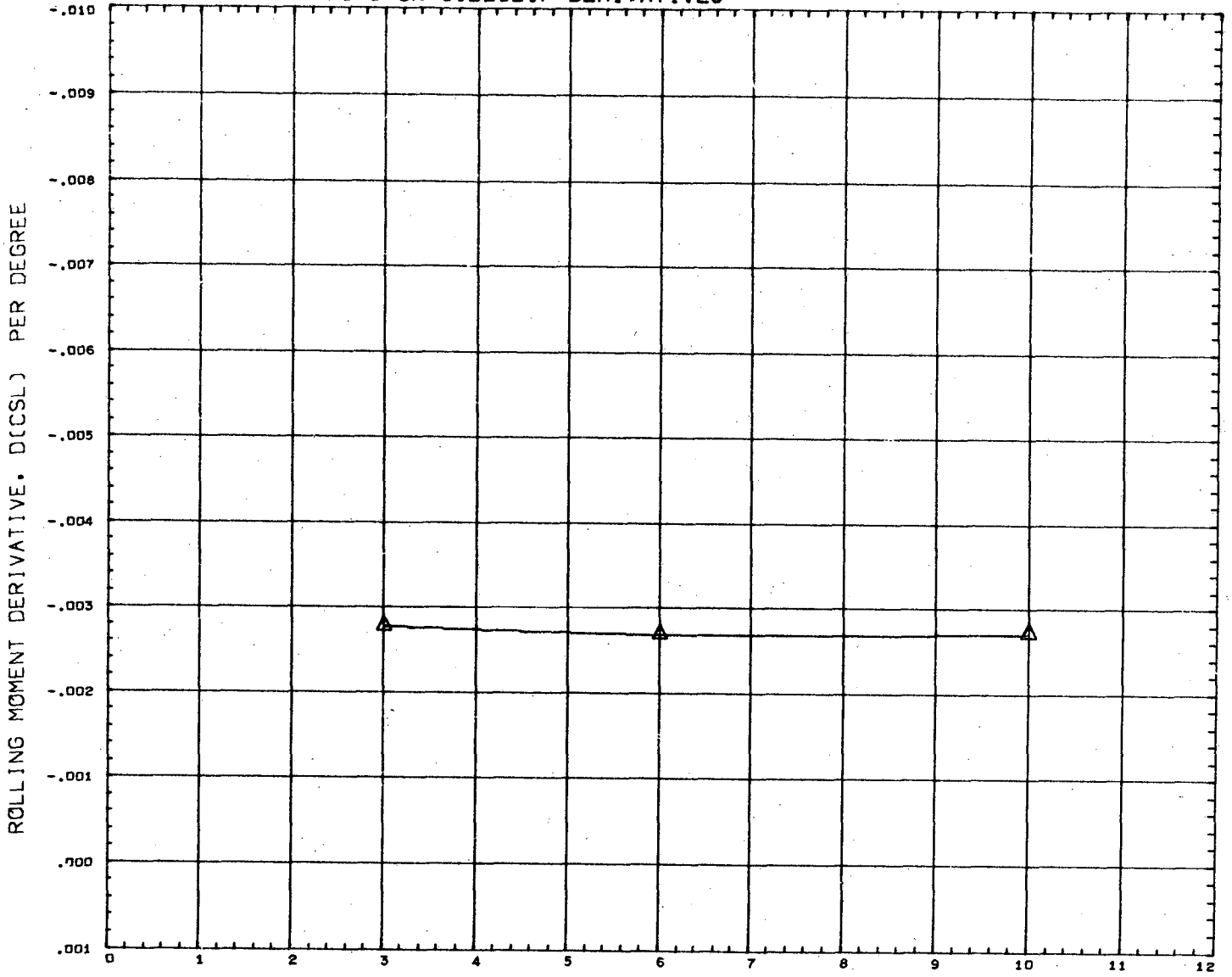
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△	25.000					BREF	6.0990	IN.
□	35.000					XMRP	6.6180	IN.
						YMRP	0.0000	IN.
						ZMRP	0.0000	IN.
						SCALE	0.0035	

DATA HIST. CODE #E#AI

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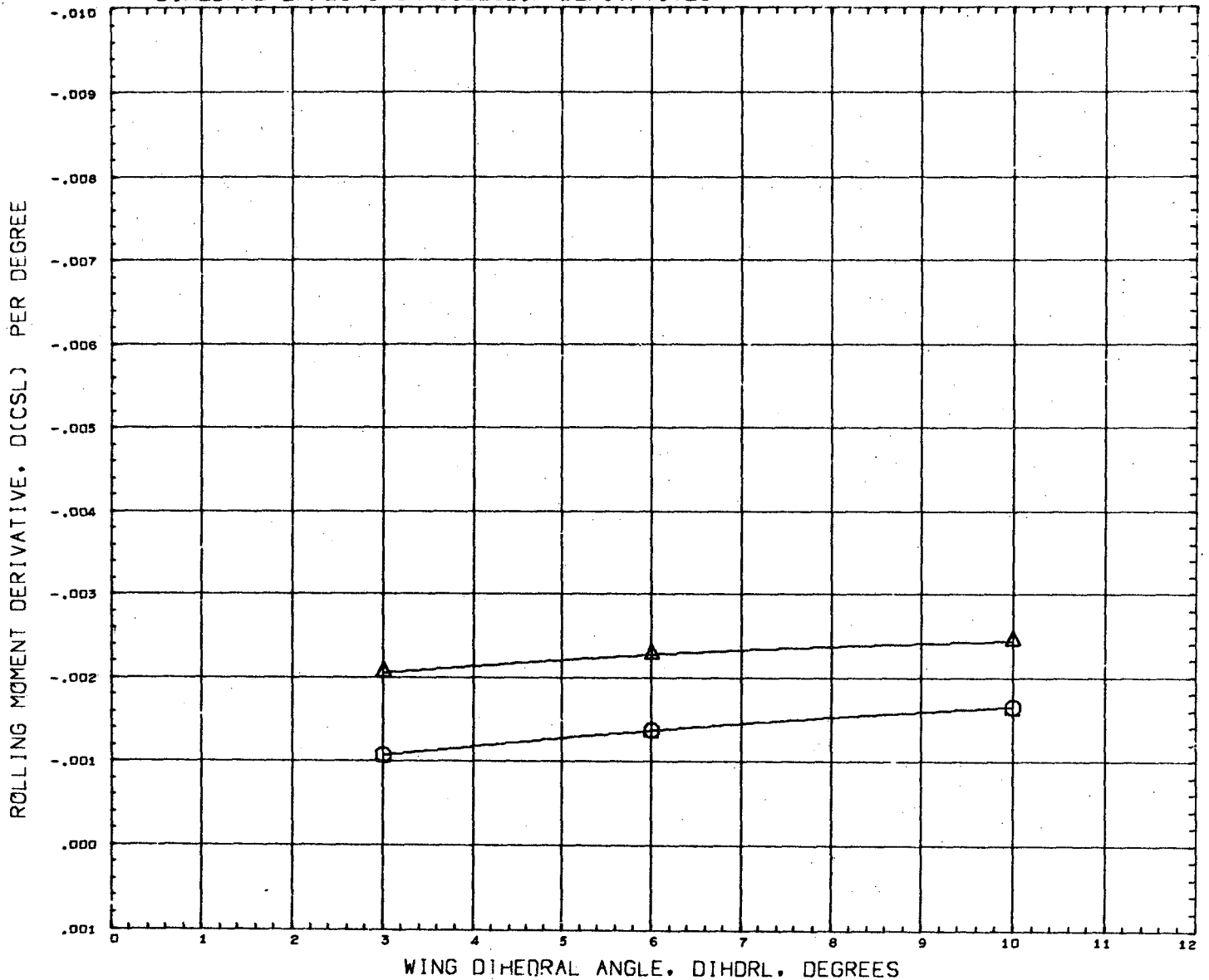
DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL	ALPHA	PARAMETRIC VALUES				REFERENCE INFORMATION		
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DATA HIST. CODE *E#AI

DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES



WING DIHEDRAL ANGLE, DIHDL, DEGREES

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	6.000	<u>MACH</u>	1.967	RDRFLR	0.000
◇	15.000	L-BFLP	0.000	R-BFLP	0.000
◇	25.000				
□	35.000				

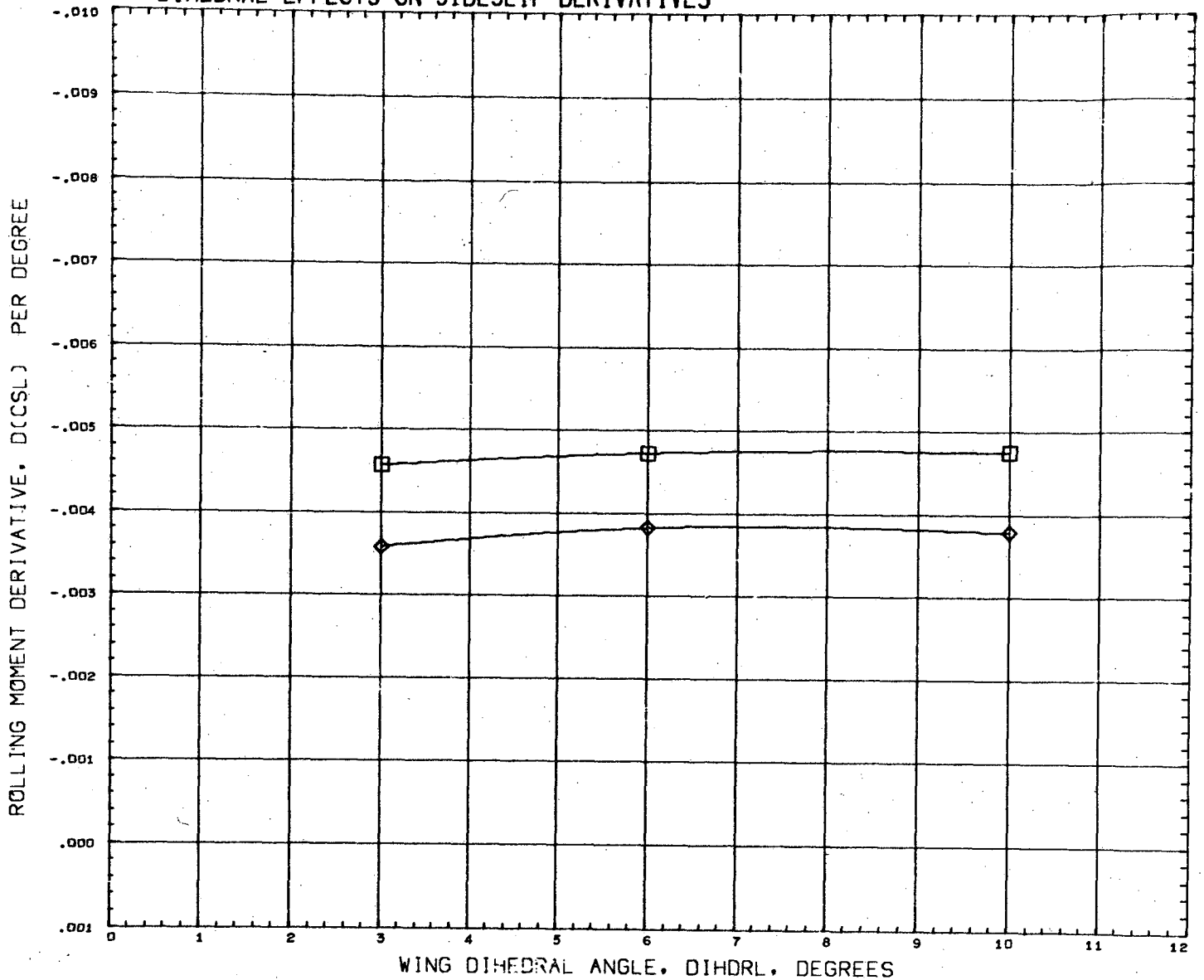
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YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE #E#AI

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DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES



WING DIHEDRAL ANGLE, DIHEDRAL, DEGREES

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	6.000	MACH	2.740	RDRFLR	0.000
△	15.000	L-BFLP	0.000	R-BFLP	0.000
◇	25.000				
□	35.000				

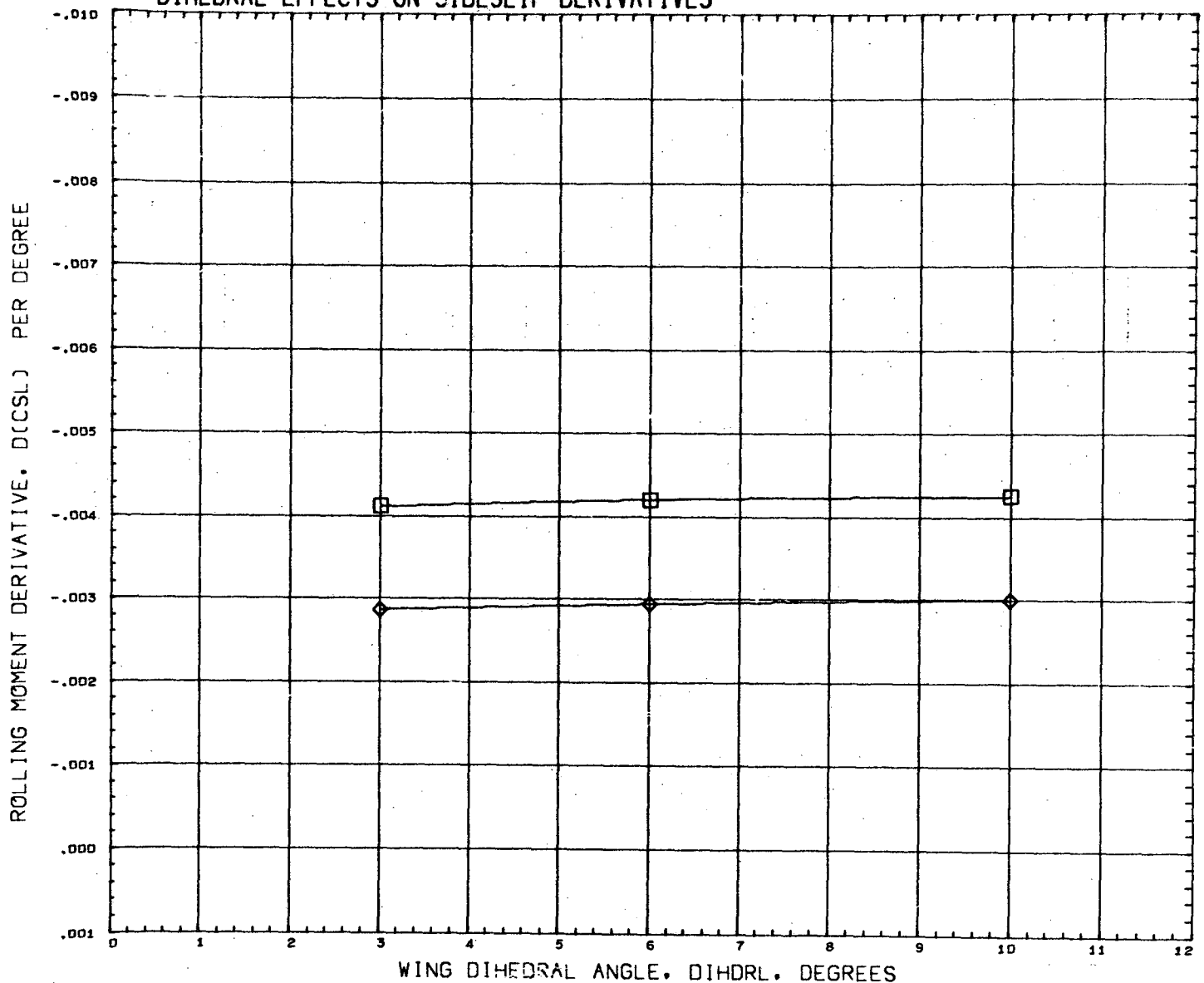
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LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE #E#AI

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DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES

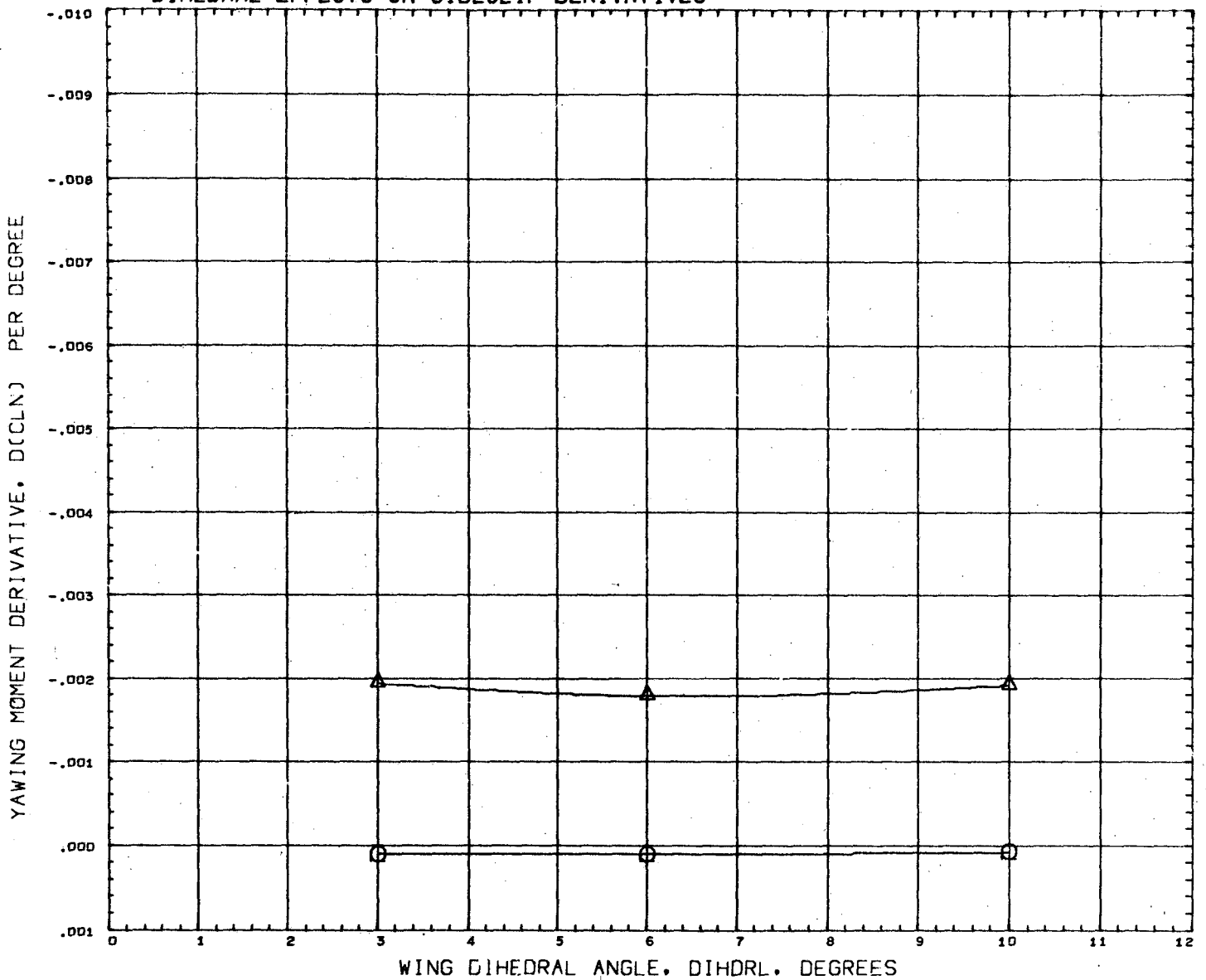


WING DIHEDRAL ANGLE, DIHDRL, DEGREES

<p>SYMBOL</p> <p>○</p> <p>◇</p> <p>◇</p> <p>□</p>	<p>ALPHA</p> <p>6.000</p> <p>15.000</p> <p>25.000</p> <p>35.000</p>	<p>PARAMETRIC VALUES</p> <p>MACH 4.959</p> <p>RDRFLR 0.000</p> <p>L-BFLP 0.000</p> <p>R-BFLP 0.000</p>	<p>REFERENCE INFORMATION</p> <p>SREF 15.6560 SQ. IN.</p> <p>LREF 3.0950 IN.</p> <p>BREF 6.0990 IN.</p> <p>XMRP 6.6180 IN.</p> <p>YMRP 0.0000 IN.</p> <p>ZMRP 0.0000 IN.</p> <p>SCALE 0.0035</p>
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DATA HIST. CODE #E#AI

DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL		ALPHA	PARAMETRIC VALUES				REFERENCE INFORMATION		
○	△	6.000	MACH	1.300	RDRFLR	0.000	SREF	15.6560	SQ. IN.
◇	□	15.000	L-BFLP	0.000	R-BFLP	0.000	LREF	3.0950	IN.
		25.000					BREF	6.0990	IN.
		35.000					XMRP	6.6180	IN.
							YMRP	0.0000	IN.
							ZMRP	0.0000	IN.
							SCALE	0.0035	

DATA HIST. CODE #E*AI

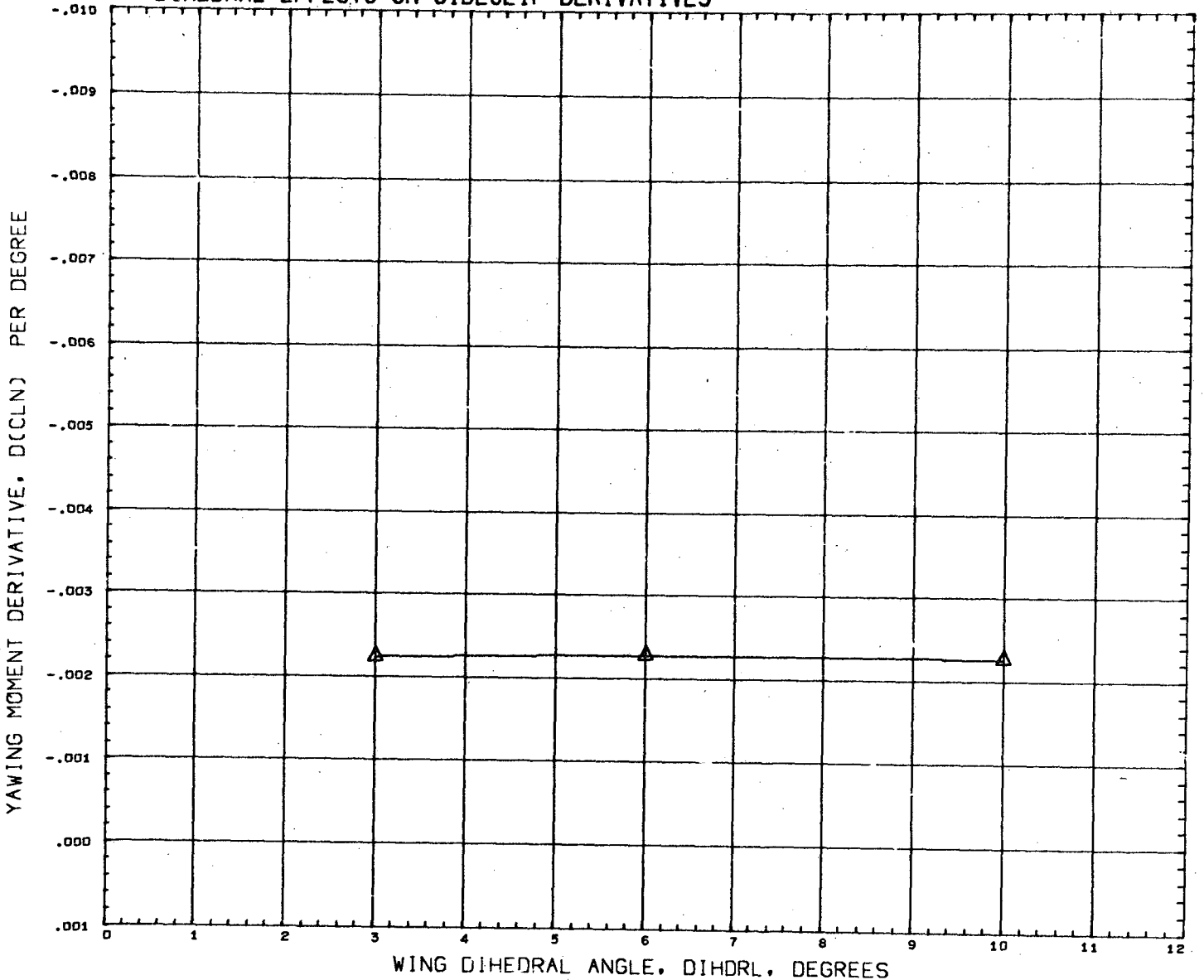
MSFC 495 GD/C

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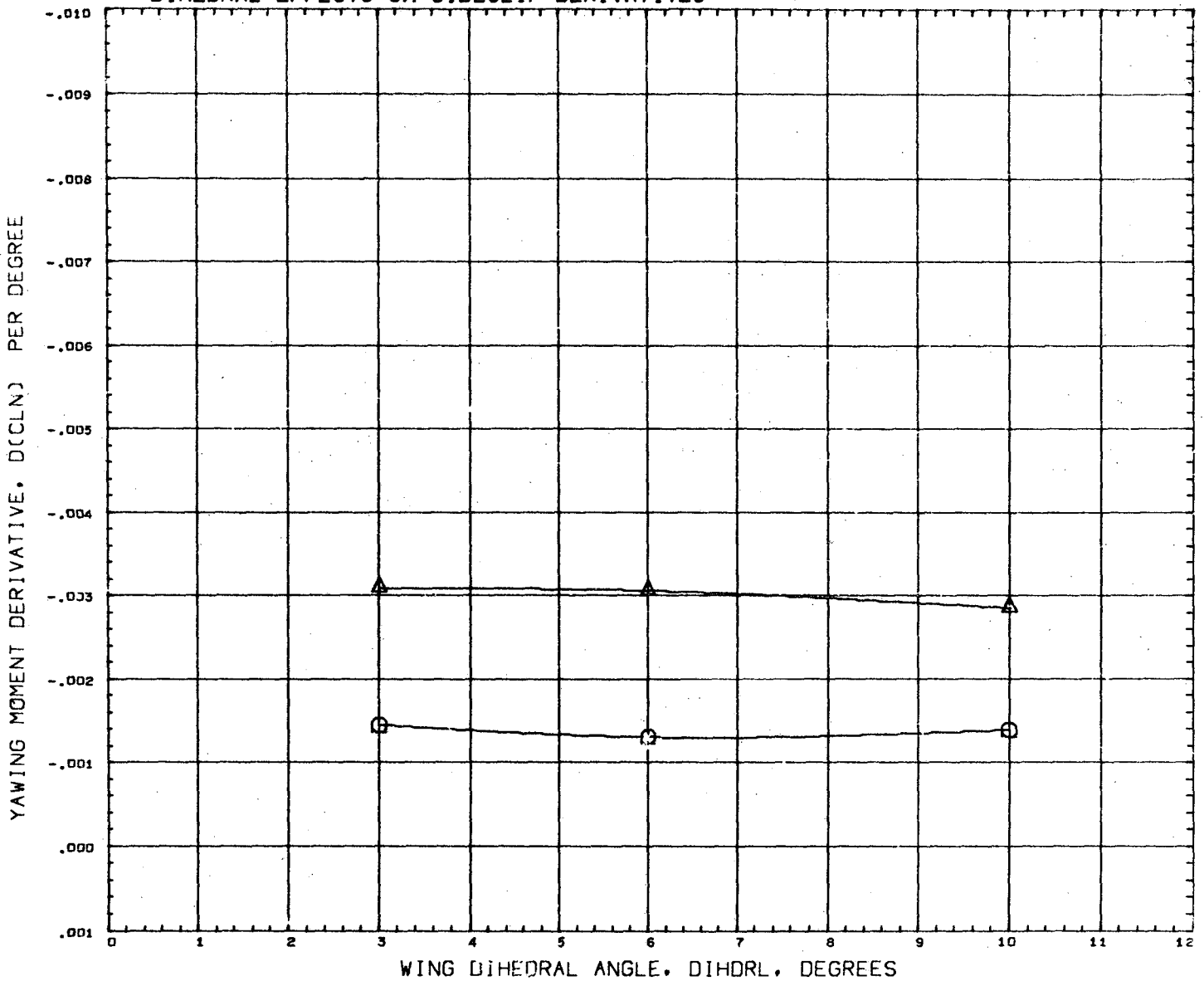
DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL ○ ◇ □	ALPHA 6.000 15.000 25.000 35.000	PARAMETRIC VALUES MACH 1.457 RDRFLR 0.000 L-BFLP 0.000 R-BFLP 0.000	REFERENCE INFORMATION SREF 15.6560 SQ. IN. LREF 3.0950 IN. BREF 6.0990 IN. XMRP 6.6180 IN. YMRP 0.0000 IN. ZMRP 0.0000 IN. SCALE 0.0035
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DATA HIST. CODE #E*AI

DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES

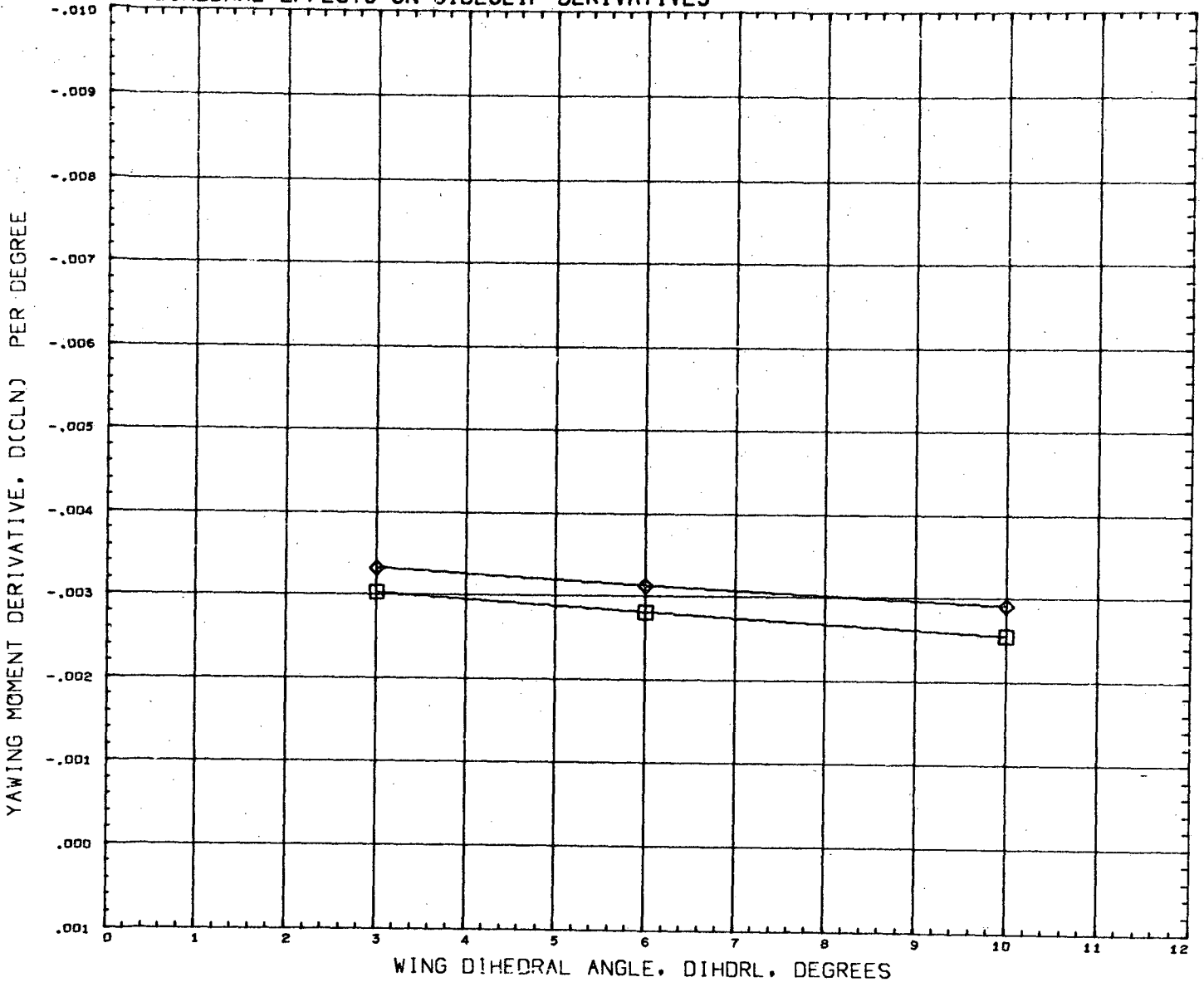


SYMBOL	ALPHA	PARAMETRIC VALUES				REFERENCE INFORMATION		
○	6.000	<u>MACH</u>	1.967	RDRFLR	0.000	SREF	15.6560	SQ. IN.
△	15.000	L-BFLP	0.000	R-BFLP	0.500	LREF	3.0950	IN.
◇	25.000					BREF	6.0990	IN.
□	35.000					XMRP	6.6180	IN.
						YMRP	0.0000	IN.
						ZMRP	0.0000	IN.
						SCALE	0.0035	

DATA HIST. CODE #E*AI

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DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES

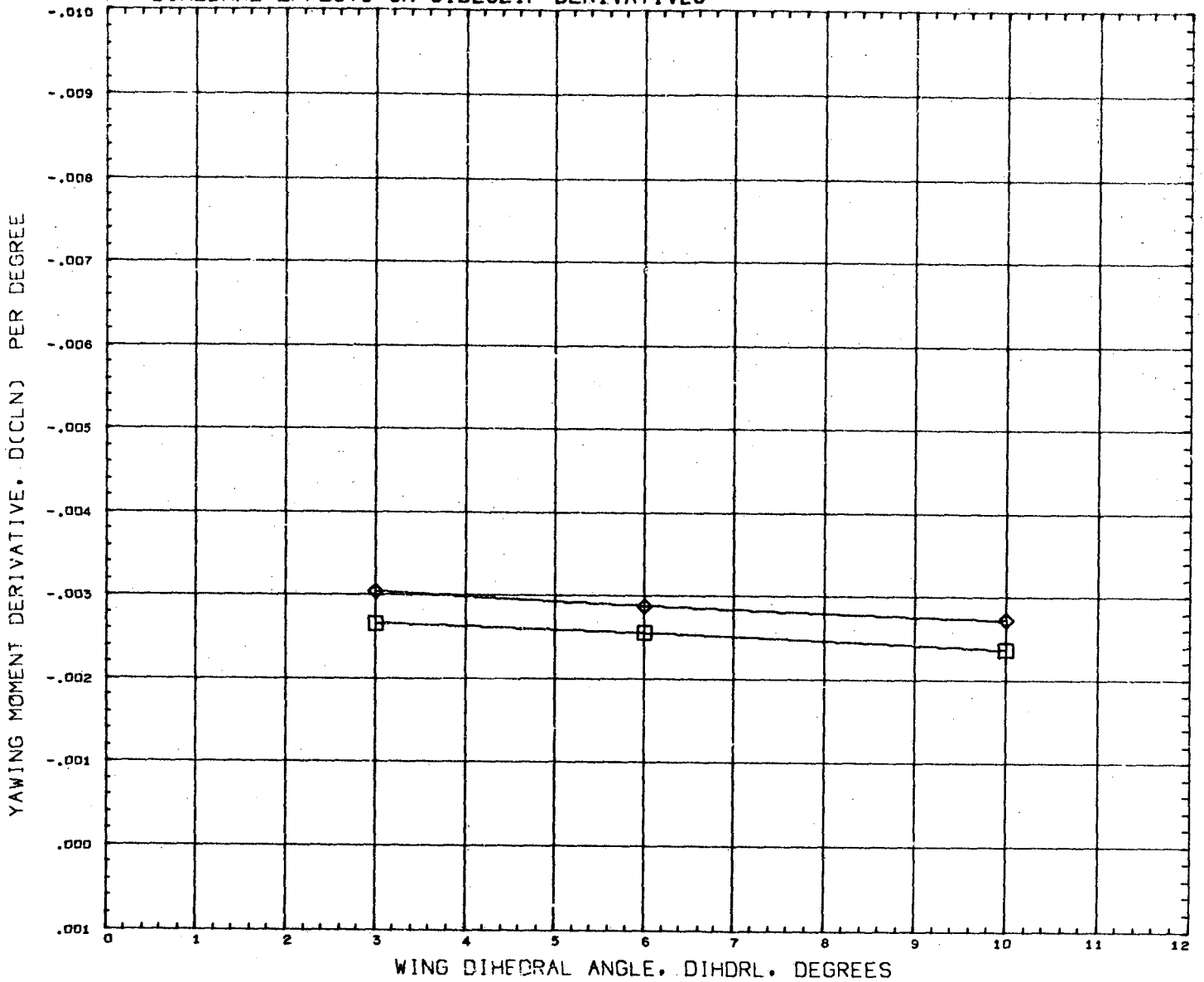


SYMBOL	ALPHA	PARAMETRIC VALUES			
○	6.000	MACH	2.740	RDRFLR	0.000
△	15.000	L-BFLP	0.000	R-BFLP	0.000
◇	25.000				
□	35.000				

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE #E*AI

DIHEDRAL EFFECTS ON SIDESLIP DERIVATIVES

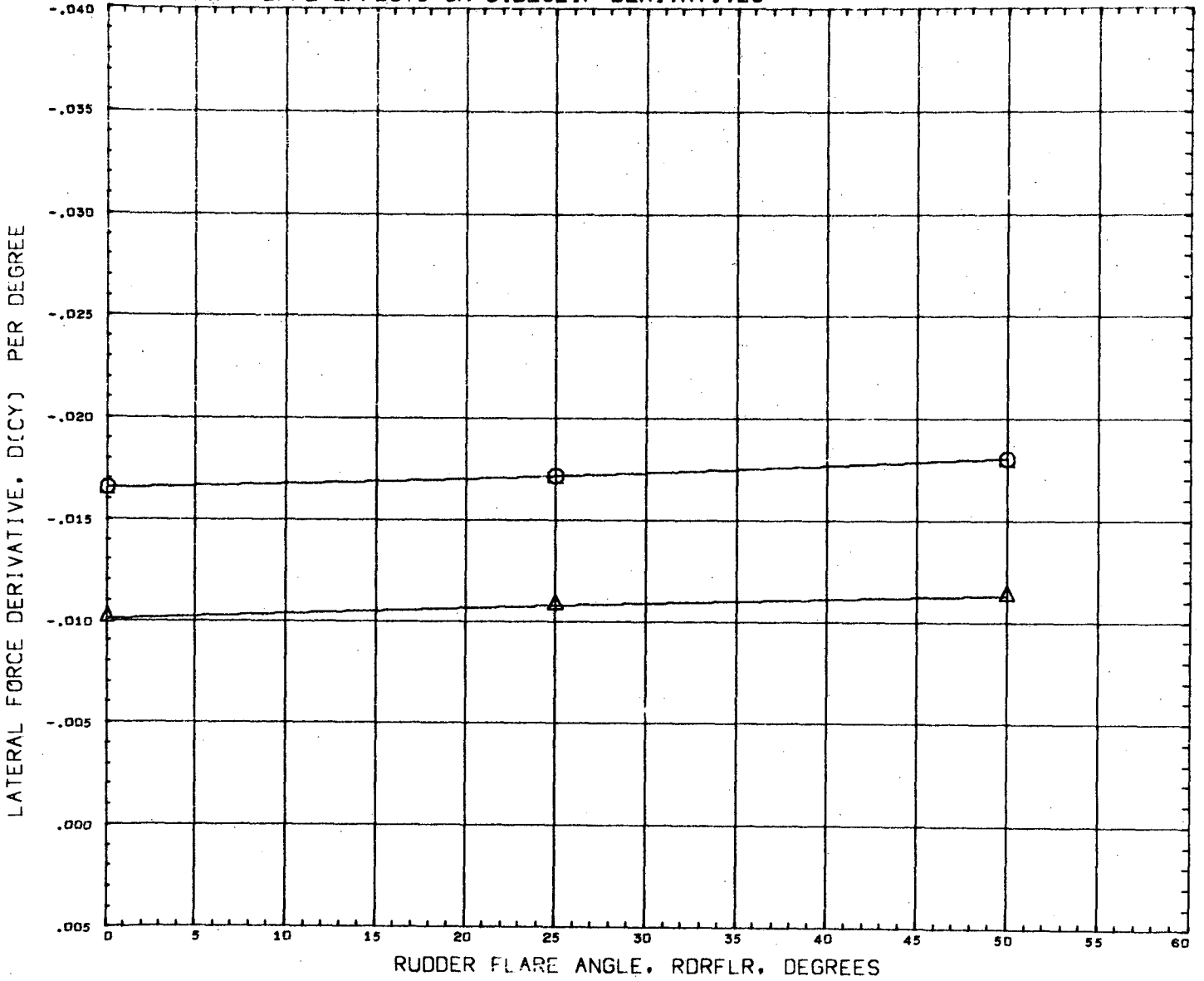


SYMBOL	ALPHA	PARAMETRIC VALUES			
○	6.000	MACH	4.959	RDRFLR	0.000
△	15.000	L-BFLP	0.000	R-BFLP	0.000
◇	25.000				
□	35.000				

REFERENCE INFORMATION		
SREF	15.6560	30. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE *E*AI

RUDDER FLARE EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL	ALPHA	PARAMETRIC VALUES			
○	6.000	MACH	1.300	DIHCL	3.000
△	15.000	L-BFLP	0.000	R-BFLP	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE *EI

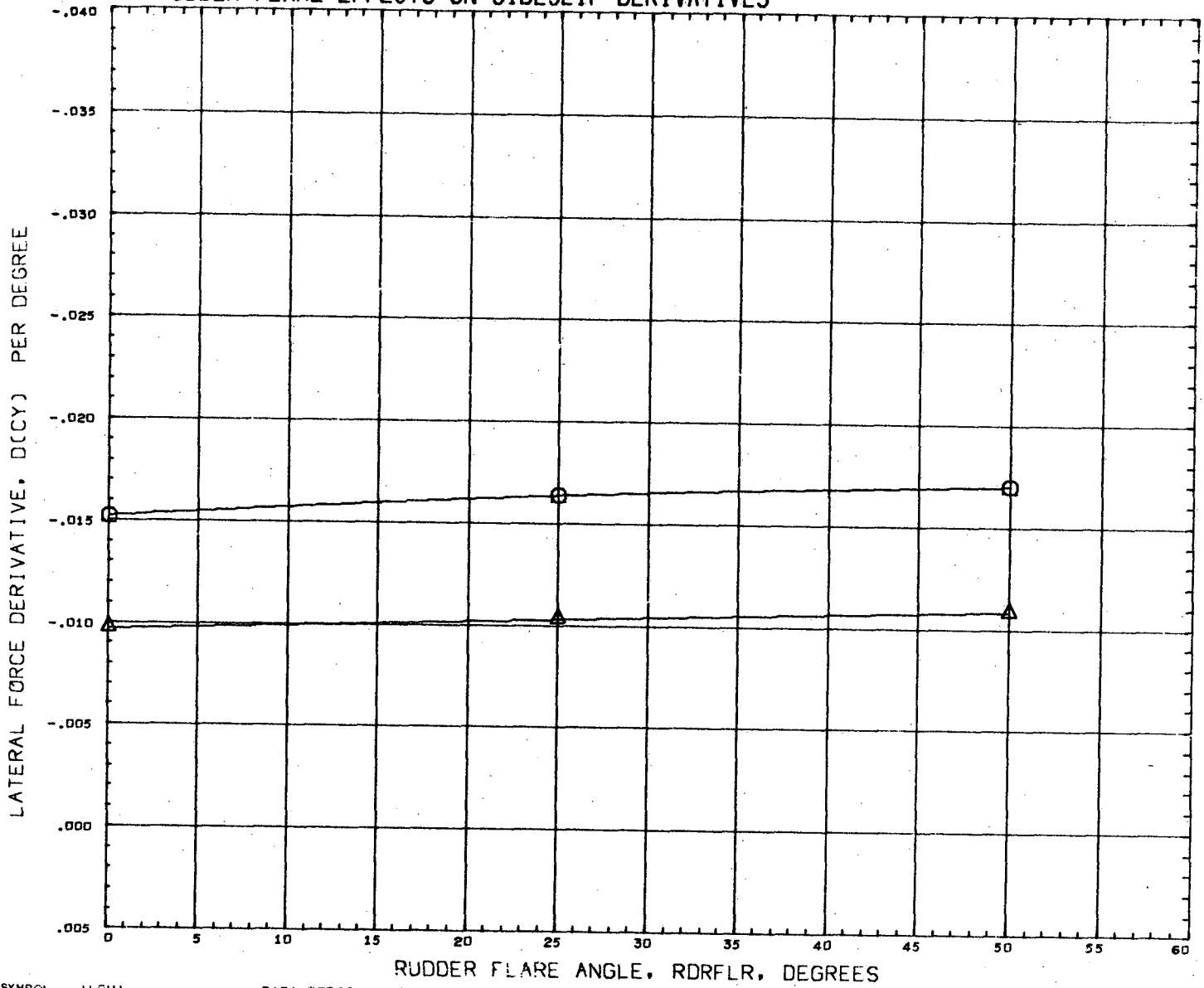
MSFC 495 GD/C

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RUDDER FLARE EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL	ALPHA	PARAMETRIC VALUES	
○	6.000	MACH	1.457
△	15.000	L-BFLP	0.000
		R-BFLP	0.000

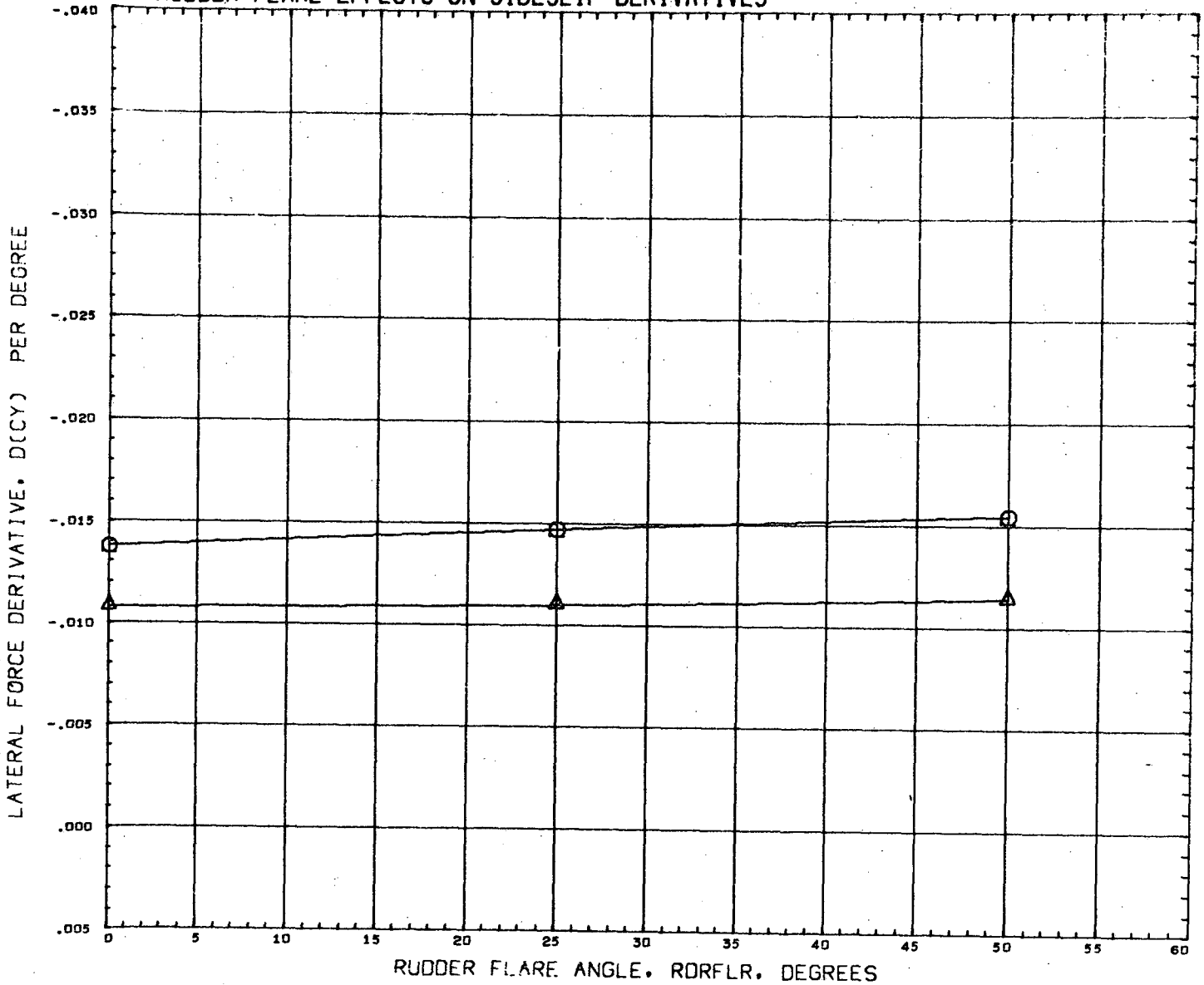
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XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE *E1

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RUDDER FLARE EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL	ALPHA	PARAMETRIC VALUES			
○	6.000	<u>MACH</u>	1.950	DIHDRL	3.000
△	15.000	L-BFLP	0.000	R-BFLP	0.000

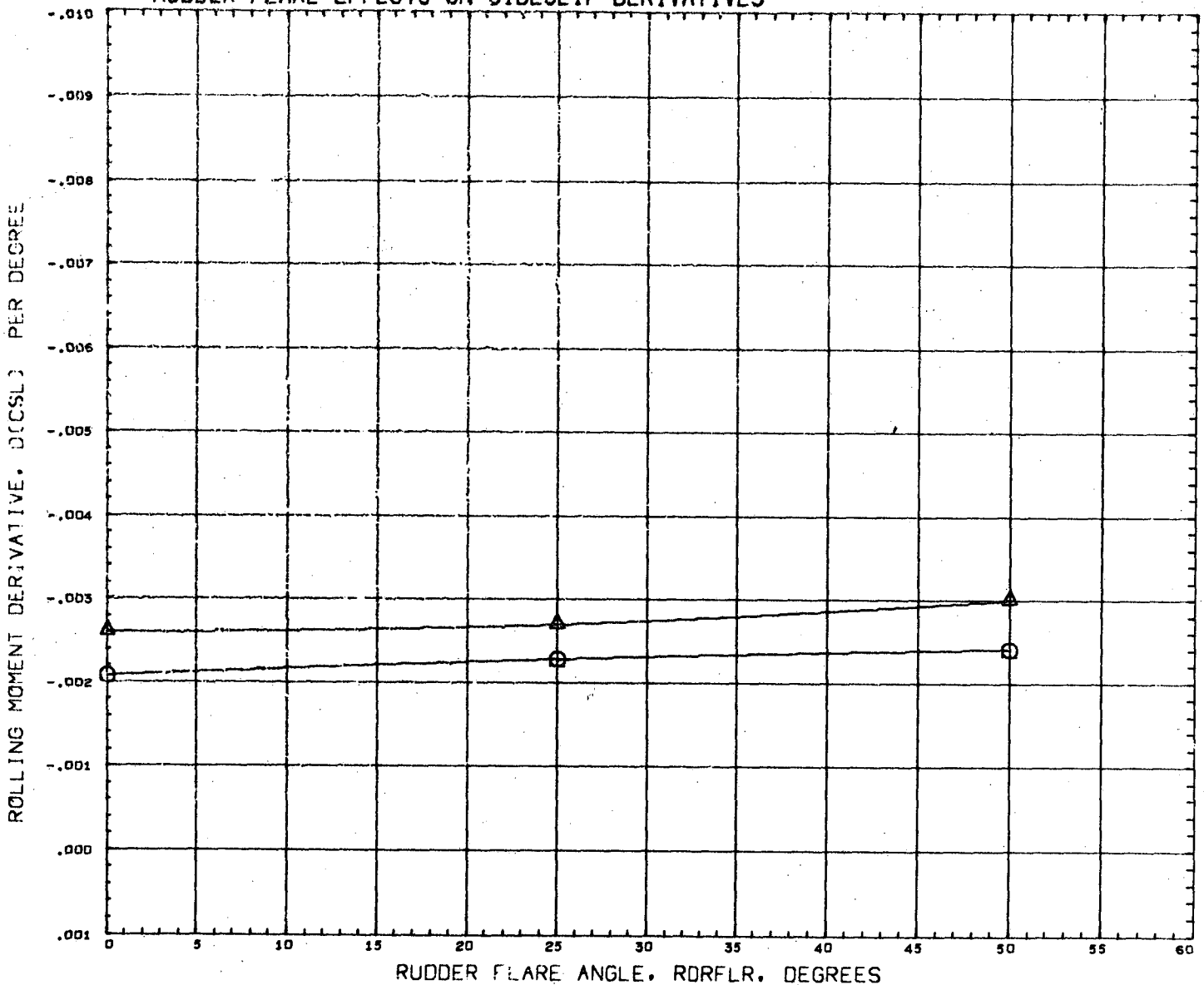
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XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE #EI

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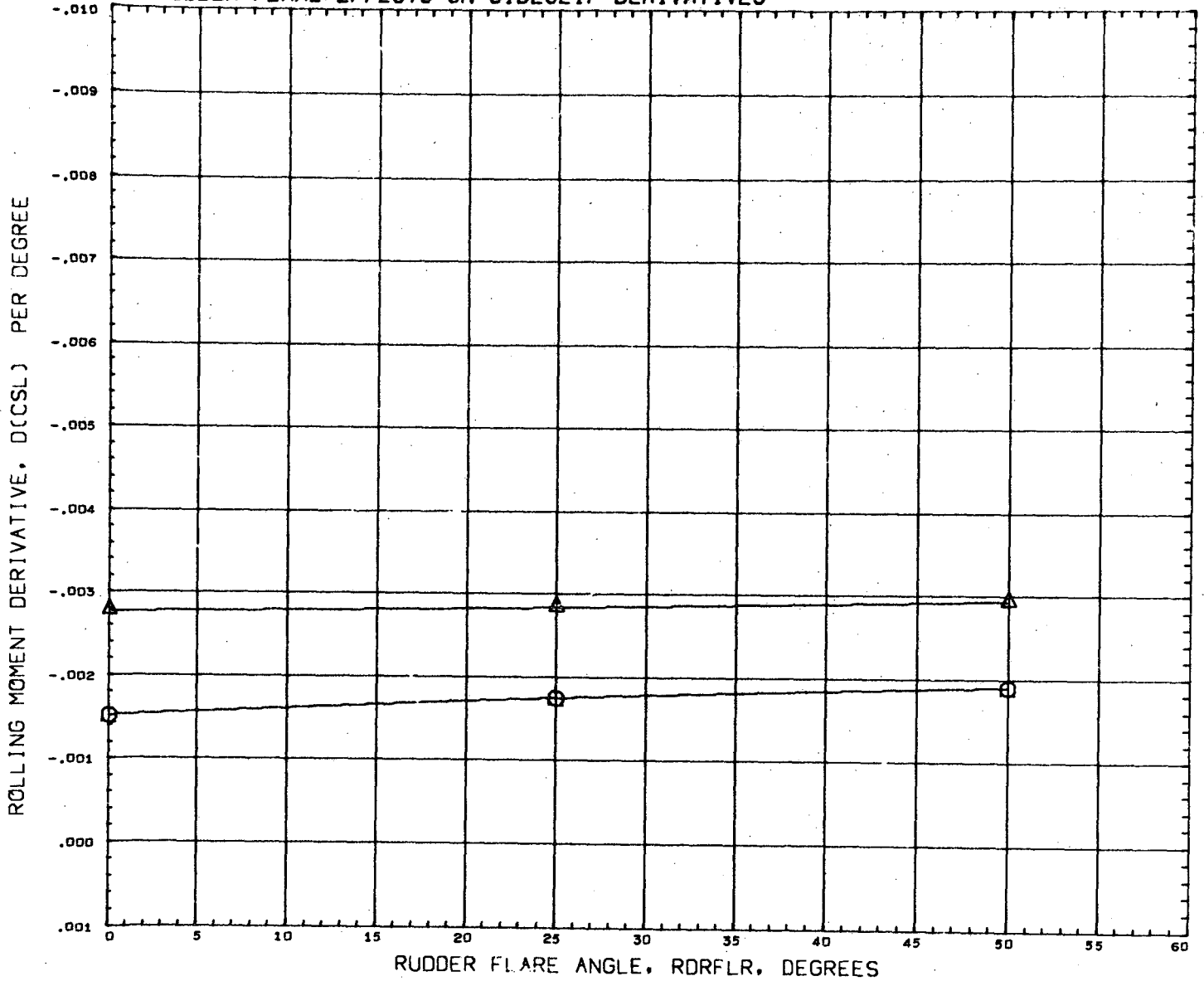
RUDDER FLARE EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL	ALPHA	<u>MACH</u>	PARAMETRIC VALUES			REFERENCE INFORMATION		
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△	15.000	L-BFLP	0.000	R-BFLP	0.000	LREF	3.0950	IN.
						BREF	6.0990	IN.
						XMRP	6.6180	IN.
						YMRP	0.0000	IN.
						ZMRP	0.0000	IN.
						SCALE	0.0035	

DATA HIST. CODE #EI

RUDDER FLARE EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL	ALPHA	PARAMETRIC VALUES			
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△	15.000	L-BFLP	0.000	R-BFLP	0.000

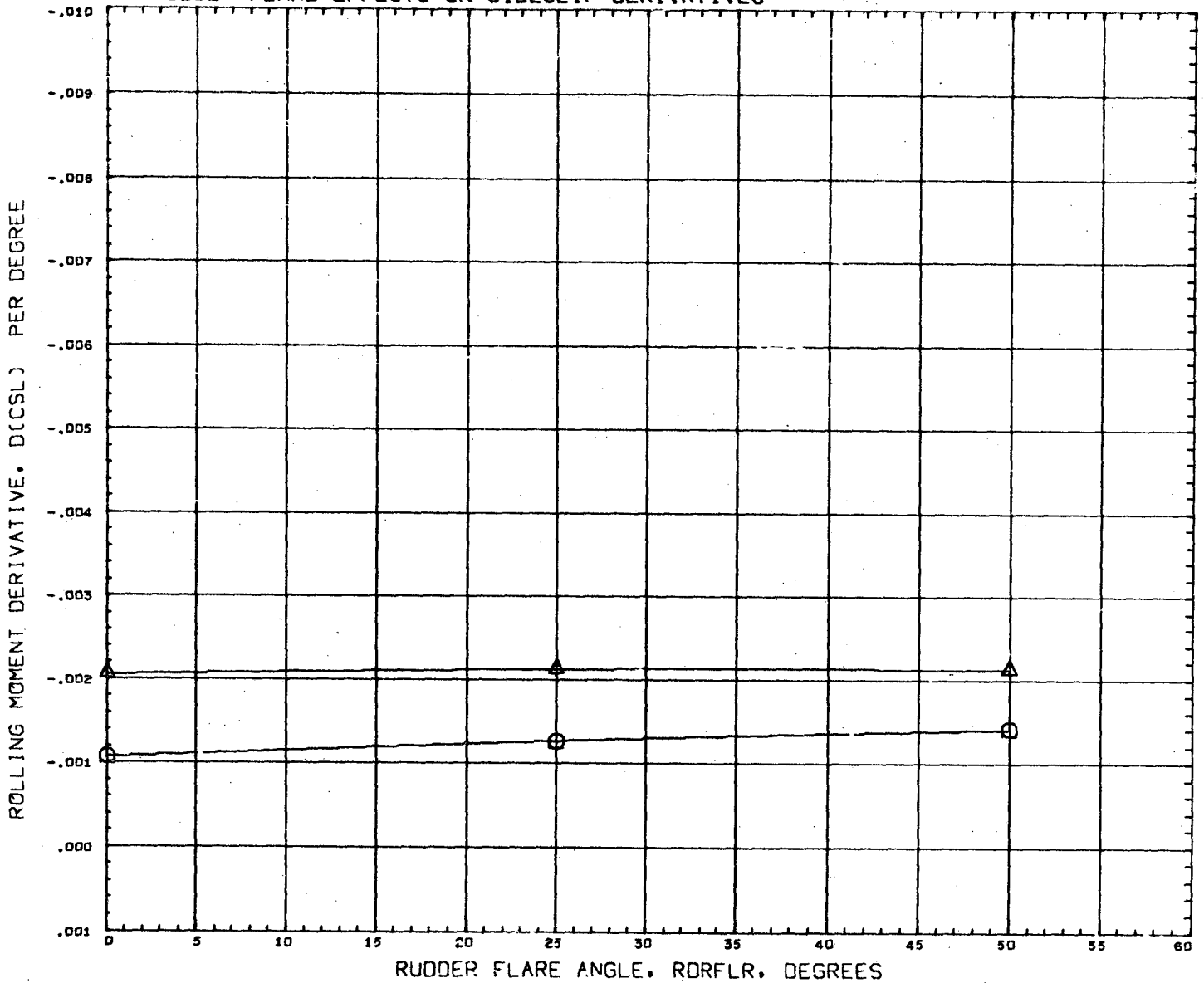
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YMRF	0.0000	IN.
ZHRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE #EI

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RUDDER FLARE EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL	ALPHA	PARAMETRIC VALUES			
○	6.000	MACH	1.950	DIHRL	3.000
△	15.000	L-BFLP	0.000	R-BFLP	0.000

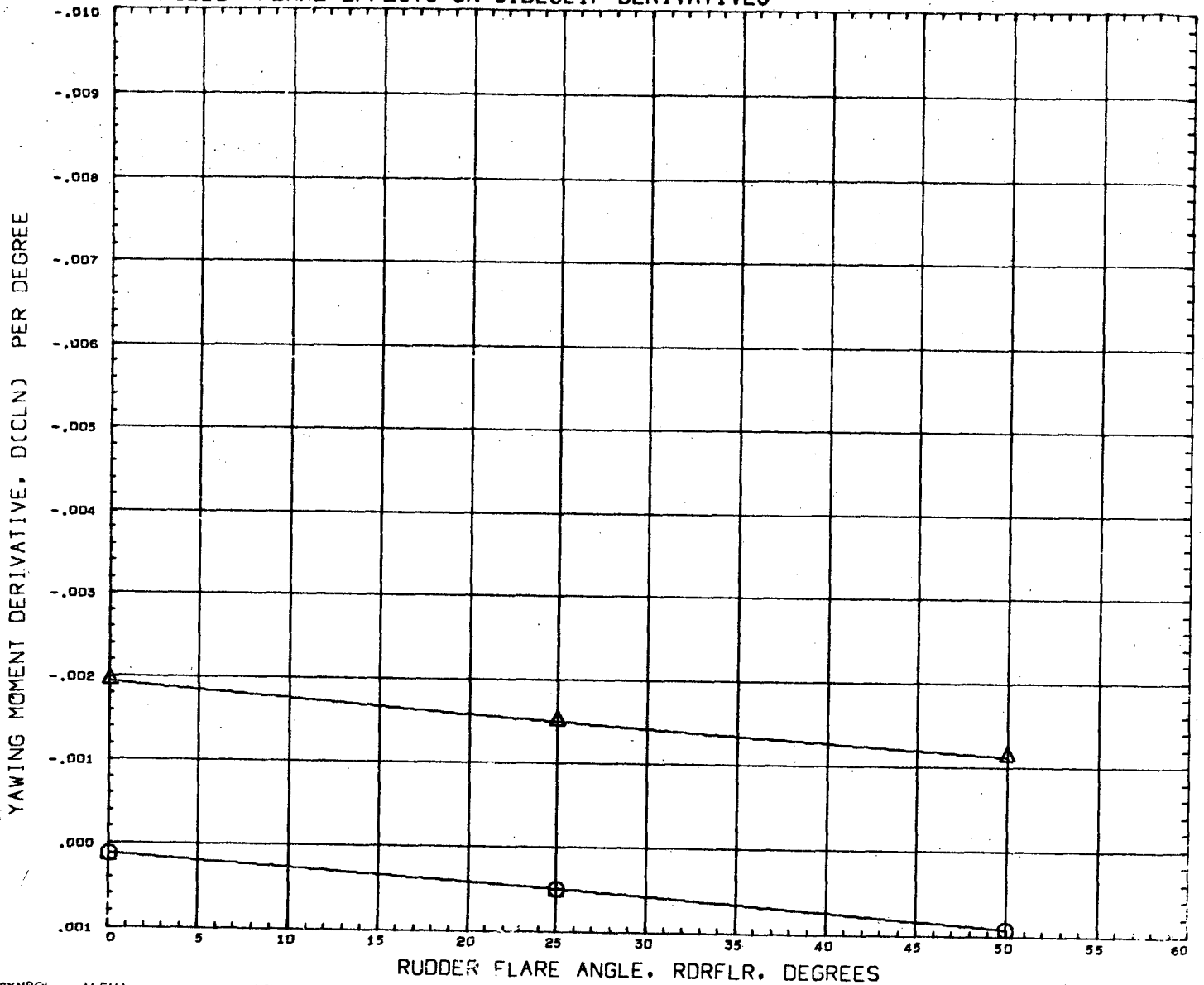
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BREF	6.0990	IN.
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YMRF	0.0000	IN.
ZMRF	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE #EI

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RUDDER FLARE EFFECTS ON SIDESLIP DERIVATIVES

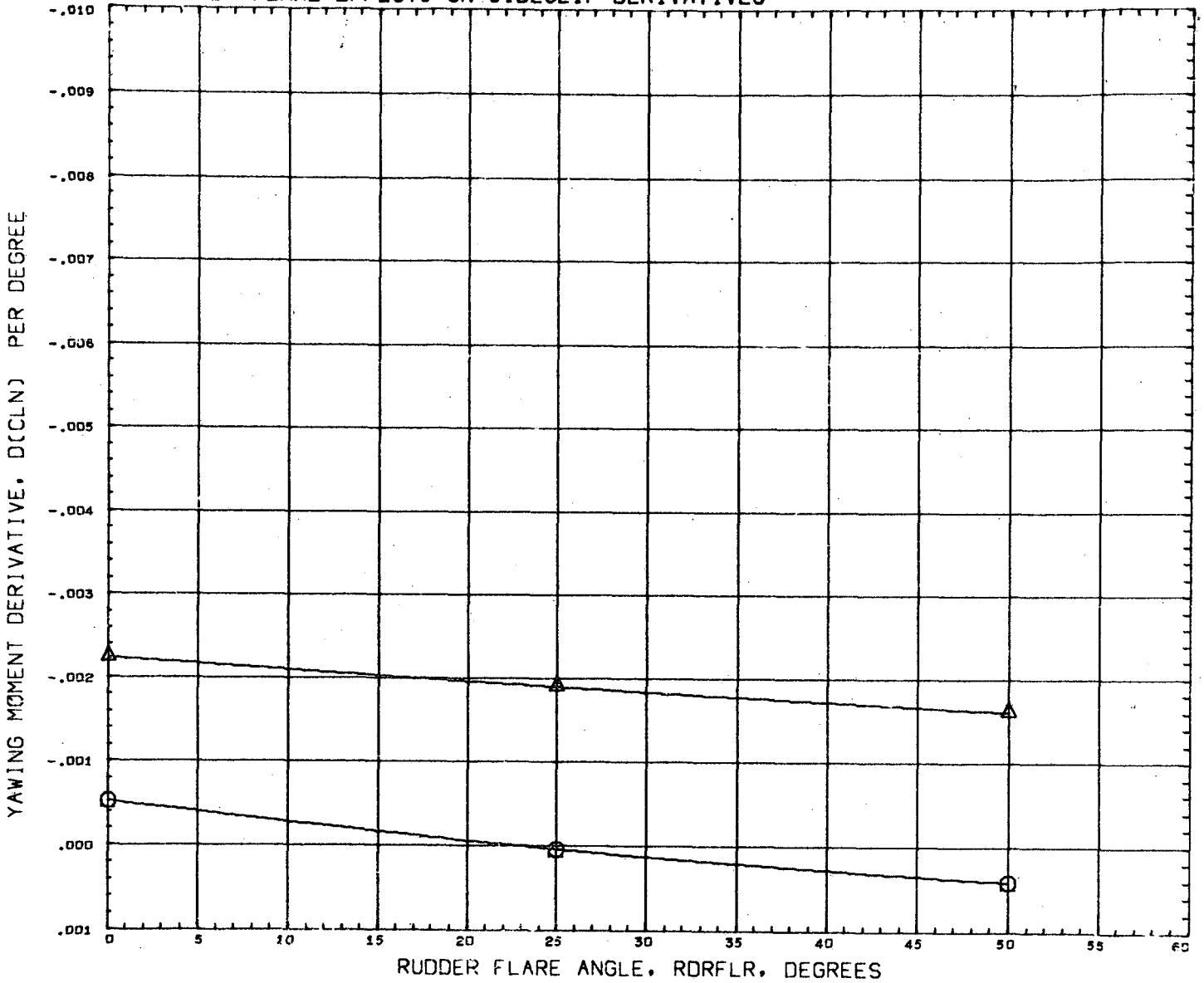


SYMBOL	ALPHA	PARAMETRIC VALUES			
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REFERENCE INFORMATION		
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LREF	3.0950	IN.
DREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
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SCALE	0.0035	

DATA HIST. CODE #EI

RUDDER FLARE EFFECTS ON SIDESLIP DERIVATIVES

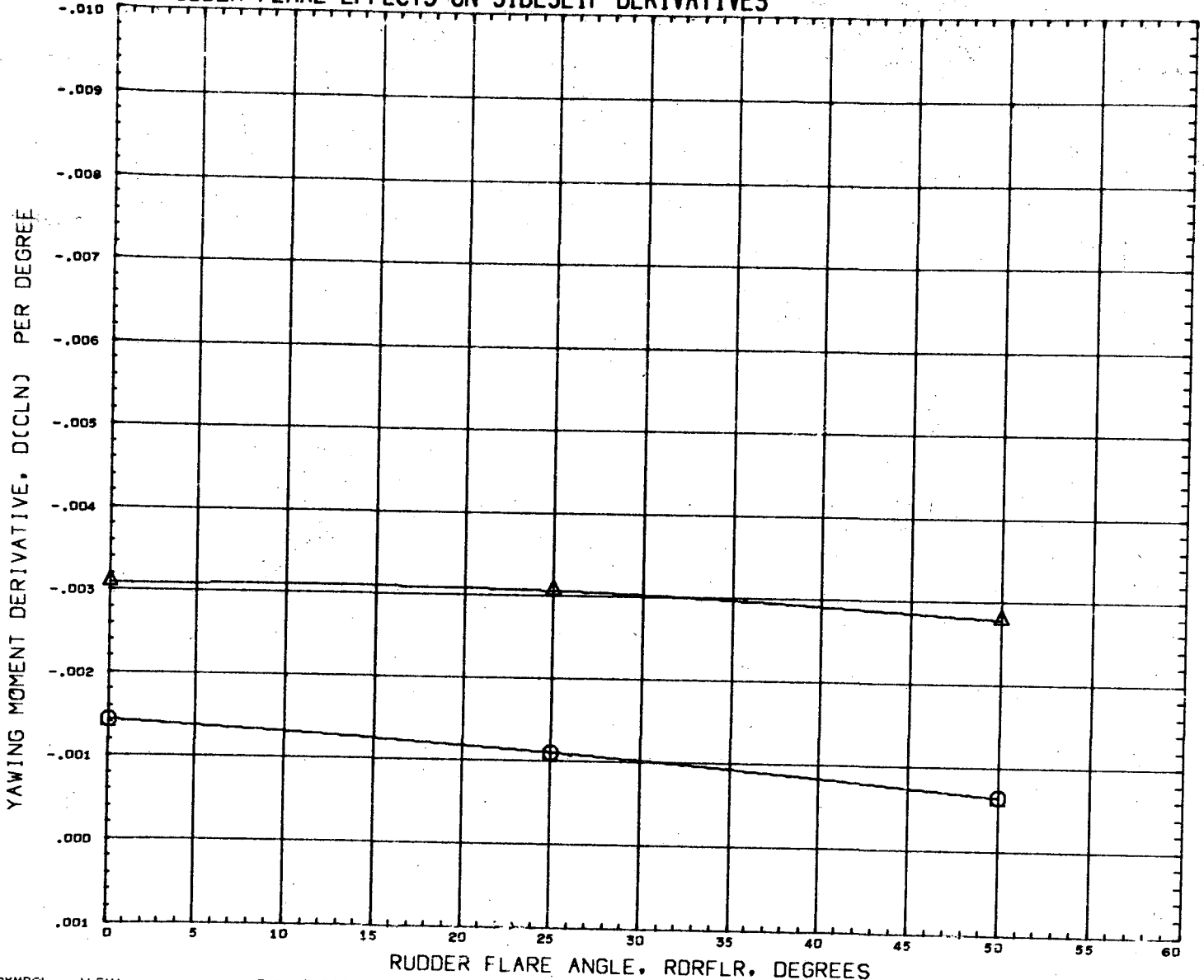


SYMBOL	ALPHA	PARAMETRIC VALUES			
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△	15.000	1-BFLP	0.000	R-BFLP	0.000

REFERENCE INFORMATION		
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BREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE #EI

RUDDER FLARE EFFECTS ON SIDESLIP DERIVATIVES



SYMBOL	ALPHA	PARAMETRIC VALUES			
○	6.000	MACH	1.950	DINDRL	3.000
△	15.000	L-BFLP	0.000	R-BFLP	0.000

REFERENCE INFORMATION		
SREF	15.6560	SQ. IN.
LREF	3.0950	IN.
RREF	6.0990	IN.
XMRP	6.6180	IN.
YMRP	0.0000	IN.
ZMRP	0.0000	IN.
SCALE	0.0035	

DATA HIST. CODE *EI