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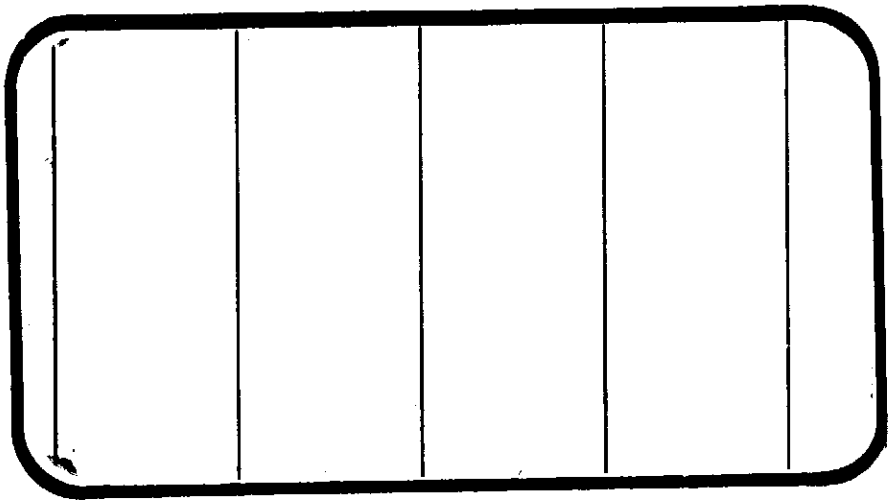
NASA CR-
141506



SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

February, 1975

DMS-DR-2189
NASA-CR-141,506

RESULTS OF INVESTIGATION IA110 ON A 0.015-SCALE INTEGRATED CONFIGURATION OF THE SPACE SHUTTLE VEHICLE IN THE ARC 9 x 7 SUPERSONIC WIND TUNNEL USING MODELS 67-TS AND 49-O

By

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Prepared under NASA Contract Number NAS9-13247

By

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for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:	ARC 97-052
NASA Series Number:	IA110
Model Number:	67-TS and 49-0
Test Dates:	8 through 11 July 1974
Occupancy Hours:	60

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ABSTRACT

Results of test IA110 are presented in this report. An 0.015-scale Space Shuttle Vehicle model was tested in the Ames Research Center 9 x 7 Supersonic Wind Tunnel during July 1974 to investigate Orbiter wing bending, elevon panel loads, and elevon effectiveness. Mach numbers from 1.5 through 2.5 were investigated. Angles of attack and sideslip were varied from -8 degrees through +8 degrees.

Post test analysis of raw wind tunnel data indicated a zero shift had occured in the wing bending and torsional gages during the test. The mechanism by which this shift occured was not determined. Therefore, all the wing root bending and torsional moment data is suspect.

Data figure 18 presents comparisons with data from test IA70 (DMS-DR-2175). The same model and instrumentation was used for both bests.

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(B) CHEO-L, CHEI-L, CBW-R, CTW-R versus ELV-IB

(C) CBW-R, CTW-R, CHEO-L, CHEI-L versus ALPHA

NOMENCLATURE
General

SYMBOL	SADSAC SYMBOL	DEFINITION
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(p_l - p_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m^2, psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$, N/m^2, psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
ψ	PSI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
ρ		mass density; kg/m^3, $slugs/ft^3$
		Reference & C.G. Definitions
A_b		base area; m^2, ft^2
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
ℓ_{REF} $\bar{c}$	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m^2, ft^2
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

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

NOMENCLATURE (Continued)

Body-Axis System

SYMBOL	NADSAC SYMBOL	DEFINITION
C_N	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
C_A	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_{A_b}	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(p_b - p_\infty)/qS$
C_{A_f}	CAF	forebody axial force coefficient, $C_A - C_{A_b}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
		Stability-Axis System
C_L	CL	lift coefficient; $\frac{\text{lift}}{qS}$
C_D	CD	drag coefficient; $\frac{\text{drag}}{qS}$
C_{D_b}	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
L/D	L/D	lift-to-drag ratio; C_L/C_D
L/D_f	L/DF	lift to forebody drag ratio; C_L/C_{D_f}

NOMENCLATURE (Continued)
Additions to Standard Nomenclature

Symbol	SADSAC Symbol	Definition
A_{b_1} through	10	model base area associated with base pressure numbers 1 through 10, respectively, for base axial force integration, ft^2
A_{SC}		sting cavity cross-sectional area, ft^2
A_{SC_1}, A_{SC_2}		sting cavity base area associated with sting cavity pressures number 1 and 2, respectively, ft^2
$\bar{C}_{BF}$		body flap mean aerodynamic chord, in
$\bar{C}_e$		elevon mean aerodynamic chord, in
C_{p_1} through	12	base pressure coefficient associated with orifice number 1 through 12, respectively
C_{PSC_1}, C_{PSC_2}		sting cavity pressure coefficient associated with orifice number 1 and 2, respectively
C_{A_u}	CAU	unadjusted axial-force coefficient
P_{b_1} through	10	base pressure measured at orifice 1 through 10, respectively, psia
P_{SC_1}, P_{SC_2}		sting cavity pressure measured at orifice number 1 and 2, respectively, psia
S_{BF}		body flap surface area, ft^2
S_e		elevon surface area, ft^2
X_O		Orbiter longitudinal station, in
Y_O		Orbiter lateral station, in
Z_O		Orbiter vertical station, in
X_T		external tank longitudinal station, in
Y_T		external tank lateral station, in
Z_T		external tank vertical station, in
δ_{BF}	BDFLAP	body flap, surface deflection angle, degrees

NOMENCLATURE (Concluded)
Additions to Standard Nomenclature

Symbol	SADSAC Symbol	Definition
δ_{SB}	SPDBRK	speedbrake, split rudder inclusive deflection angle between outer surfaces; degrees
δ_r	RUDDER	rudder, surface deflection angle, degrees.
$\delta_{e_{IB}}$	ELV-IB	inboard elevon deflection angle, degrees
$\delta_{e_{OB}}$	ELV-OB	outboard elevon deflection angle, degrees
C_{HEO_L}	CHEO-L	left outboard elevon hinge-moment coefficient
C_{HEI_L}	CHEI-L	left inboard elevon hinge-moment coefficient
CBW_r	CBW-R	right wing bending moment coefficient
CTW_r	CTW-R	right wing torsional moment coefficient
C_{HET_L}	CHET-L	total left elevon hinge-moment coefficient
C_{HET}	CHET	total elevon hinge-moment coefficient
C_{HEI}	CHEI	inboard elevon hinge-moment coefficient
C_{HEO}	CHEO	outboard elevon hinge-moment coefficient
C_{HBF}	CHBF	bodyflap hinge-moment coefficient
CBW1	CBW1	wing bending moment coefficient, station 1
CBW2	CBW2	wing bending moment coefficient, station 2
CTW3	CTW3	wing torsional moment coefficient, station 3
CBW	CBW	wing bending moment coefficient
CTW	CTW	wing torsional moment coefficient
X_{cp}/ℓ_B	XCP/L	longitudinal center of pressure location of total vehicle, percent reference body length

CONFIGURATIONS INVESTIGATED

The model was an 0.015-scale representation of the Rockwell International Space Shuttle integrated vehicle. The Orbiter was per VL70-000 140A/B lines. The external tank represented VL78-0000 31A and VL78-0000 41A lines. The solid rocket motors were per VL72-0000 88D and VL77-0000 36A lines. Figure 2 presents sketches of the model configuration. Model simulation included attach structure, protuberances, fairings, fuel feed lines, vent lines, etc. Basic model construction was of ARMCO 17-4 steel.

Model forces and moments were measured by a Task 1.5 inch MK VII A balance housed in the Orbiter. The balance attached to a sting entered the model through the Orbiter base. The left wing inboard and outboard elevon panels and body flap were instrumented with hinge moment gages as shown in figure 2h. The model right wing was instrumented with a balance which measured wing bending and torsional moments as shown in figure 2i. The model base was instrumented to measure fourteen (14) pressures as shown in figure 2g.

The OMS pod configuration (M_7) was investigated during this test. Inboard elevon deflections of 0°, 8°, and 12° were investigated. Outboard elevon deflections of -8°, -4°, and 0° were tested. The following shorthand configuration notation was used:

O_1 = Orbiter B_{26} C_9 M_7 F_8 W_{116} E_{43} V_8 R_5 N_{24}

T_{12} = External tank, T_{12}

CONFIGURATIONS INVESTIGATED (Concluded)

S_1 = Solid Rocket Booster, S_{12} N_{41}

P_2 = Fairings, PS_1 PS_2 PS_3

P_8 = Miscelaneous components, PT_1 PT_2 PT_3 AT_5 AT_6 AT_7 AT_8 AT_9 FL_1 FL_2 FR_6

TEST FACILITY DESCRIPTION

The tests were conducted in the Ames 9- by 7-Foot Supersonic Wind Tunnel. This tunnel is a variable density, continuous flow type with an adjustable nozzle to permit supersonic testing over a Mach number range continuously variable from 1.5 to 2.5. The nozzle is of the asymmetric, sliding-block type in which the variation of the test section Mach number is achieved by translating, in the streamwise direction, the fixed-contour block that forms the floor of the nozzle.

DATA REDUCTION

Main balance data were reduced to coefficient form about a MRP located at:

X_T = 979.0 in

Y_T = 0.0 in

Z_T = 400.0 in

The following reference dimensions were used:

S = 2690.0 ft^2

ℓ_b = 1290.3 in

= used for C_m, C_n, C_ℓ, X_{cp}/ℓ

Hinge moment data were reduced about their respective hingelines using the following reference values:

S_e = 210.0 ft^2

$\bar{c}_e$ = 90.7 in

S_{BF} = 142.6 ft^2

$\bar{c}_{BF}$ = 84.7 in

Wing normal force, torsional moment, and bending moment were reduced about:

X_o = 1307.0

Y_o = 106.0 (wing root chord)

The following reference dimensions*were used:

S = 2690.0 ft^2

$\bar{c}$ = 474.81 in

b = 936.68 in

DATA REDUCTION (Continued)

Torsional moment was reduced using $\bar{c}$ and bending moment was reduced using b.

Post test analysis of raw wind tunnel data indicated a zero shift had occured in the wing bending and torsional gages during the test. The mechanism by which this shift occured was not determined. Therefore, all wing root bending and torsional moment data is suspect.

In order to define the wing bending and torsional characteristics and determine where the zero shift occurred, gage interaction corrections were applied to the data. The wing bending and torsional moment individual gage values were corrected as indicated by the following method:

$$CBW1 = CBW1_u + CBW2_u \frac{\partial M_1}{\partial M_2} + \frac{\bar{c}}{b} CTW3_u \frac{\partial M_1}{\partial M_3}$$

$$CBW2 = CBW1_u \frac{\partial M_2}{\partial M_1} + CBW2_u + \frac{\bar{c}}{b} CTW3_u \frac{\partial M_2}{\partial M_3}$$

$$CTW3 = \frac{b}{\bar{c}} CBW1_u \frac{\partial M_3}{\partial M_1} + \frac{b}{\bar{c}} CBW2_u \frac{\partial M_3}{\partial M_2} + CTW3_u$$

where

b = 1.709 ft.

$\bar{c}$ = 0.5935 ft.

the subscript u denotes the uncorrected coefficient values.

The interaction corrections were defined as follows:

$\frac{\partial M_1}{\partial M_1}$	$\frac{\partial M_1}{\partial M_2}$	$\frac{\partial M_1}{\partial M_3}$
(+) 525.0748	(+) 0	(+) -0.010466
(-) 519.3585	(-) 0	(-) -0.011015

$\frac{\partial M_2}{\partial M_1}$	$\frac{\partial M_2}{\partial M_2}$	$\frac{\partial M_2}{\partial M_3}$
(+) 0	(+) 517.1286	(+) 0.029019
(-) 0	(-) 513.8207	(-) 0.029664
$\frac{\partial M_3}{\partial M_1}$	$\frac{\partial M_3}{\partial M_2}$	$\frac{\partial M_3}{\partial M_3}$
(+) -0.012681	(+) 0.019973	(+) 916.415
(-) -0.032586	(-) 0.052287	(-) 909.450

The plus and minus signs in parenthesis indicate the appropriate interaction correction term to be used based on the sign of the uncorrected coefficients (i.e., plus with positive coefficients and minus with negative coefficients).

The wing bending and torsional bending coefficients were calculated using the following equations:

$$CBW\text{-}R = CBW1\left(\frac{d}{am}\right) + CBW2\left(1 - \frac{d}{am}\right)$$

$$CTW\text{-}R = (CBW1 - CBW2)\left(\frac{em}{am}\right)\left(\frac{b}{\bar{c}}\right) + CTW3$$

where:

d = distance from M_2 to exposed wing chord (0.9448 in.)

am = distance from M_1 to M_2 (0.6737 in.)

em = distance from M_3 to torsion reference point (0.7050 in.)

DATA REDUCTION (Concluded)

Base pressures were reduced to coefficient form. Base pressures were integrated to compute base axial force using the following model areas:

A_{b_1}	= 0.0106 ft^2	A_{b_7}	= 0.0490 ft^2
A_{b_2}	= 0.0201 ft^2	A_{b_8}	= 0.03765 ft^2
A_{b_3}	= 0.0101 ft^2	A_{b_9}	= 0.03765 ft^2
A_{b_4}	= 0.0173 ft^2	$A_{b_{10}}$	= 0.0753 ft^2
A_{b_5}	= 0.0027 ft^2	$A_{b_{SC}}$	= 0.03409 ft^2
A_{b_6}	= 0.0414 ft^2		

* These reference dimensions appear on all plots and tabulated data; however, the data was reduced using the reference dimensions above as indicated.

TABLE I.

TEST # IA110 DATE # 7/8/74

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per ft.)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
1.5	2.5×10^6	550	105
1.8	2.5	550	105
2.0	2.5	550	105
2.2	2.5	550	105
2.5	2.5	550	105

BALANCE UTILIZED: TASK Corp. 1.5 inch MK VII A

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	500		
SF	250		
AF	300		
PM			
RM	800in-lbs		
YM			

COMMENTS:

TABLE II

TEST: IA 110 — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: 11 JULY 1974

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES S_{REF}	RN	S_{BF}	S_{SD}	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .55	1.8	2.0	2.2	2.5	TEST RUN NUMBERS
RE1001	ϕ, T_t, S, P_2, P_8	A	0	8/4	2.5	0	0						5	
02												7		
03											9			
04										11				
05		↓	↓	↓	↓	↓	↓		13					
06		0	A	8/4	2.5	0	0						6	
07												8		
08											10			
09										12				
10		↓	↓	↓	↓	↓	↓		14					
11		A	0	8/6	2.5	0	0						15	
12											17			
13		↓	↓	↓	↓	↓	↓		19					
14		0	A	8/6	2.5	0	0						16	
15											18			
16		↓	↓	↓	↓	↓	↓		20					
17		A	0	8/8	2.5	0	0						25	
18		↓	↓	↓	↓	↓	↓				23			

1 CN 7 CAU 13 CLM 19 CY 25 CYN 31 CBL 37 CL 43 CD 49 XCP/L 55 BETA 61 MACH 67 ALPHA 75 76

CHET-LCHEB-LCHET-LCBW1 CBW2 CTW3 BETA MACH ALPHA

IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

COEFFICENTS

(A) $\alpha = -8, -6, -4, -2, 0, 2, 4, 6, 8$

(A) $\beta = -8, -6, -4, -2, 0, 2, 4, 6, 8$

TABLE II (Concluded)

TEST: IA110 — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: 11 JULY 1974

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e%	RN	δ_{BF}	δ_{SB}	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.55	1.8	2.0	2.2	2.5	TEST RUN NUMBERS
RE1019	$\phi, T_{12}, S, P_t, P_s$	A	0	8/-8	2.5	0	0		21					
20		0	A	8/-8	2.5	0	0						26	
21		↓	↓	↓	↓	↓	↓				24			
22		↓	↓	↓	↓	↓	↓		22					
23		A	0	12/0	2.5	0	0		27					
24		↓	↓	12/0	2.76	0	0				28			
25		↓	↓	12/-4	2.5	0	0				30			
26		↓	↓	12/-4	2.5	0	0		29					
27		↓	↓	12/-8	2.5	0	0				32			
28		↓	↓	12/-8	2.5	0	0		31					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICENTS IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

TABLE III. - MODEL DIMENSIONAL DATA.

MODEL COMPONENT: Attach Structure AT_5

GENERAL DESCRIPTION: Forward Orbiter/ET Attach Structure (2 member structure)

Model Scale: 0.015

DRAWING NO. VL72-000088D

DIMENSION:	MEMBER		FULL SCALE	MODEL SCALE
	#1	X_o	391	5.865
		Y_o	0	0
		Z_o	LWR ML	LWR ML
		X_T	1132	16.980
		Y_T	44	0.66
		Z_T	562	8.43
	#2	X_o	391	5.865
		Y_o	0	0
		Z_o	LWR ML	LWR ML
		X_T	1132	16.980
		Y_T	-44	-.66
		Z_T	562	8.43

Diameter of Members: TBD

TABLE III. - Continued.

MODEL COMPONENT: Attach Structure AT_6

GENERAL DESCRIPTION: Left rear Orbiter/ET attach structure (2 member structure)

Model Scale: 0.015

DRAWING NO. VL78-000050

ENSION:	MEMBER		FULL SCALE	MODEL SCALE
	#1	X_o	1303	19.545
		Y_o	-96	-1.440
		Z_o	258	3.870
		X_T	1859	27.885
		Y_T	115	1.725
		Z_T	510	7.650
	#2	X_o	1317	19.755
		Y_o	-96	-1.440
		Z_o	258	3.870
		X_T	2058	30.870
		Y_T	115	1.725
		Z_T	510	7.650

Diameter of Members: TBD

TABLE III. - Continued.

MODEL COMPONENT: Attach Structure AT_7

GENERAL DESCRIPTION: Right rear orbiter/ET attach structure (3 member structure)

Model Scale: 0.015

MODEL NO. VL70-000050

DIMENSION:	MEMBER		FULL SCALE	MODEL SCALE
	#1	X_o	1313	19.695
		Y_o	+96	1.44
		Z_o	258	3.870
		X_T	1859	27.885
		Y_T	-115	-1.725
		Z_T	-510	7.650
	#2	X_o	1317	19.755
		Y_o	+96	1.440
		Z_o	258	3.870
		X_T	2058	30.870
		Y_T	-115	-1.725
		Z_T	510	7.650
	#3	X_o	1317	19.755
		Y_o	96	1.440
		Z_o	258	3.870
		X_T	2058	30.870
		Y_T	0	0
		Z_T	566	8.490

Diameter of Members: TBD

TABLE III. - Continued.

MODEL COMPONENT: Attach Structure ATa

GENERAL DESCRIPTION: Forward SRB/ET attach structure

Model Scale: 0.015

DRAWING NO: VL77-000051A

DIMENSION:		FULL SCALE	MODEL SCALE
	X_B	404	6.060
	Y_B	± 177	± 2.655
	Z_B	0	0
	X_T	947	14.205
	Y_T	± 167	± 2.505
	Z_T	400	6.000

TABLE III. - Continued.

MODEL COMPONENT: Attach Structure AT9

GENERAL DESCRIPTION: Aft SRB/ET attach structure (3 member structure)

Model Scale: 0.015

DRAWING NO: VL72-000106

DIMENSIONS:	MEMBER		FULL SCALE	MODEL SCALE
	#1	X_B	1515	22.725
		Y_B	± 56	± .840
		Z_B	50	.750
		X_T	2058	30.870
		Y_T	± 158	2.370
		Z_T	450	6.75
	#2	X_B	1515	22.725
		Y_B	± 76	± 1.140
		Z_B	18	.270
		X_T	2058	30.870
		Y_T	160	2.400
		Z_T	445	6.675
	#3	X_B	1515	22.725
		Y_B	± 56	± .840
		Z_B	- 50	- .750
		X_T	2058	30.870
		Y_T	± 158	± 2.370
		Z_T	350	5.250

Diameter of Members: TBD

*REVISED 4/24/74

TABLE II. - Continued.

MODEL COMPONENT : BODY - B_{26}

GENERAL DESCRIPTION Configuration 140A/B Orbiter Fuselage

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

MODEL SCALE: 0.015 MODEL DRAWING: SS-A00147, RELEASE 12

DRAWING NUMBER VL70-0001433, -000200, 000205, -006089, -000145, -000140A, 0001403

DIMENSIONS :	FULL SCALE	MODEL SCALE
*Length (OML: Fwd Sta. X_o=235)-In.	1293.3	19.400
*Length (IML: Fwd Sta. X_o=238)-In.	1290.3	19.350
* Max Width (@ X = 1528.3) - In.	264.0	3.960
Max Depth (@ X_o = 1464) - In.	250.0	3.750
Fineness Ratio		
Area - Ft^2		
Max. Cross-Sectional	340.88	0.077
Planform		
Wetted		
Base		

*REVISED 4/24/74

TABLE III. - Continued.

MODEL COMPONENT : CANOPY - C_9

GENERAL DESCRIPTION : Configuration 3A, Canopy used with Fuselage B_{26}.

MODEL SCALE: 0.015 MODEL DRAWING: SS-A00147, RELEASE 12

DRAWING NUMBER : VL70-0001434

DIMENSIONS :	FULL SCALE	MODEL SCALE
*Length (X_o = 434.643 to 578)	143.357	2.150
Max Width (@ X_o = 513.127)	152.412	2.286
Max Depth (@ X_o = 485.0)	25.000	0.375
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III. - Continued.

MODEL COMPONENT: SLOTTED ELEVON (6-INCH GAP) - E_{43}

GENERAL DESCRIPTION: Configuration A/B Orbiter elevon

NOTE: E_{43} is a slotted version of E_{26}. Data are for one side.

MODEL SCALE: 0.015

DRAWING NUMBER: VL70-000200, -006089, -006092

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area - Ft^2	210.0	0.0473
Span (equivalent) , In.	349.2	5.238
Inb'd equivalent chord , In.	118.004	1.770
Outb'd equivalent chord , In.	55.192	0.828
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Trailing Edge	- 10.056	- 10.056
Hingeline	0.00	0.00
Area Moment (Product of Area and $\bar{c}$)Ft^3	1587.25	0.00536
Mean Aerodynamic Chord, (c), In.	90.7	1.3605

TABLE III. - Continued.

MODEL COMPONENT : BODY FLAP - B_0

GENERAL DESCRIPTION : Configuration 140A/B Orbiter Body Flap. Hingeline located at X_o = 1528.3, Z_o = 284.3

MODEL SCALE: 0.015 MODEL DRAWING: SS-A00147

DRAWING NUMBER : VL70-000140A, -000145

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (X_o=1520 to X_o=1613), In.	93.000	1.395
Max Width , In.	262.000	3.930
Max Depth (X_o = 1520), In.	23.000	0.345
Fineness Ratio		
Area - Ft^2		
Max. Cross-Sectional		
Planform	150.5250	0.0339
Wetted	41.84722	0.00941
Base		

TABLE III. - Continued.

MODEL COMPONENT Feed line FL1

DESCRIPTION: LOX feed line between ET and orbiter

MODEL SCALE: 0.015

DRAWING NO: VL78-000050

DIMENSIONS:	FULL SCALE	MODEL SCALE
℄ at: X_T	2063.5	30.953
Y_T	-70	-1.053
X_o	1330.5	19.958
	-70	-1.053
Diameter	18.5	.278

TABLE III. - Continued.

MODEL COMPONENT: Feed line FL_2

DESCRIPTION: LH_2 feed line between ET and orbiter

MODEL SCALE: 0.015

DRAWING NO.: VL78-000050

DIMENSIONS:

		FULL SCALE	MODEL SCALE
℄ at	X_T	2063.5	30.953
	Y_T	70	1.053
	X_O	1330.5	19.958
	Y_O	70	1.053
Diameter		18.5	.279

TABLE III. - Continued.

MODEL COMPONENT: Fairing FR6

GENERAL DESCRIPTION: Cross Member between Aft ET/Orbiter attach Structures.

MODEL SCALE: 0.015

DRAWING NUMBER: VL78-000062B, VL78-000050

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Leading Edge at X_T	2035.50	25.533
Length	15.00	0.225
Width	193.00	2.895

TABLE III. - Continued.

7

MODEL COMPONENT : OMS/RCS PODS - M_7

GENERAL DESCRIPTION : Configuration 140A/B Orbiter OMS/RCS Pods

MODEL SCALE: 0.015 MODEL DRAWING: SS-A00147, RELEASE 12

DRAWING NUMBER : VL70-000145

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta X_o=1233.0)-In.	327.000	4.905
Max Width (@ X_o = 1450.0) - In.	94.5	1.418
Max Depth (@ X_o = 1493.0) - In.	109.000	1.635
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III. - Continued.

MODEL COMPONENT : OMS POD - M_{16}

GENERAL DESCRIPTION : Configuration 140 C/D Orbiter OMS pod - short pod.

MODEL SCALE: 0.015

DRAWING NUMBER VL70-008401; VL70-008410

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta. X_o=1310.5), In.	258.50	3.878
Max Width (@ X_o = 1511), In.	136.8	2.052
Max Depth (@ X_o = 1511), In.	74.70	1.121
Fineness Ratio	2.484	2.484
Area - Ft^2		
Max. Cross-Sectional	58.864	0.0132
Planform		
Wetted		
Base		

TABLE III. - Continued.

MODEL COMPONENT: MPS NOZZLES - N_{24}

GENERAL DESCRIPTION: Configuration 140A/B Orbiter MPS nozzles.

MODEL SCALE: 0.0150 MODEL DRAWING: 3S-A00147, Rel. 12

DRAWING NUMBER: VL70-005030A, VL70-000140A

DIMENSIONS:	FULL SCALE	MODEL SCALE
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane	157.0	2.355
Throat to Exit Plane	99.2	1.488
Diameter - In.		
Exit	91.000	1.410
Throat		
Inlet		
Area - ft^2		
Exit	45.166	0.0102
Throat		
Gimbal Point (Station) - In.		
Upper Nozzle		
X_o	1445.0	21.675
Y_o	0	0
Z_o	443	6.645
Lower Nozzles		
X_o	1468.170	22.023
Y_o	± 53.000	± 0.795
Z_o	342.640	5.140
Null Position - Deg.		
Upper Nozzle		
Pitch	16	10
Yaw	0	0
Lower Nozzle		
Pitch	10	10
Yaw	3.5	3.5

TABLE III. - Continued.

MODEL COMPONENT: NOZZLES - N_{41}

GENERAL DESCRIPTION: Configuration 4 BSRM nozzles.

MODEL SCALE: 0.0150

DRAWING NUMBER: VL72-000088E, VL77-000036A

DIMENSIONS:	FULL SCALE	MODEL SCALE
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane	141.3	2.120
Throat to Exit Plane		
Diameter - In.		
Exit	141.3	2.120
Throat		
Inlet		
Area - ft^2		
Exit	108.900	0.0245
Throat		
Gimbal Point (Station) - In.		
X	1796.15	26.942
Y	± 243.0	± 3.645
Z	400.0	6.0
Lower Nozzles		
X		
Y		
Z		
Null Position - Deg.		
Pitch	0	0
Yaw	0	0
FS of Nozzle Exit Plane (X_T), In.	2484.0	37.260
Lower Nozzle		
Pitch		
Yaw		

TABLE III. - Continued.

MODEL COMPONENT: SRB Protuberance PS1

DESCRIPTION: Electrical tunnel fairing on top of each SRB

MODEL SCALE: 0.015

DRAWING NO: None

DIMENSION: (Data for 1 of 2)

	FULL SCALE	MODEL SCALE
Leading edge at X_B	467	7.001
℄ of tunnel Y_B	0	0
Trailing edge at X_B	1820	27.30
Height	3	.045
Width	6	.090
Λ_{LE}, deg.	72	72

TABLE III. - Continued.

MODEL COMPONENT: SRB Protuberance PS_2

DESCRIPTION: SRB/ET attach ring

MODEL SCALE: 0.015

DRAWING NO.: VL77-000036A

DIMENSIONS: (Data for 1 of 2)

	FULL SCALE	MODEL SCALE
℄ at X_{B}	1515	22.725
Width	10	.15
Heighth	10	.15

TABLE III. - Continued.

MODEL COMPONENT: SRB Protuberance PS1

DESCRIPTION: Separation rocket fairing on each SRB nozzle shroud located 30° inboard from top centerline.

MODEL SCALE: 0.015

DRAWING NO.: VL77-000036A

DIMENSIONS: (Data for 1 of 2)

	FULL SCALE	MODEL SCALE
Leading edge at X_B	1796	26.940
Trailing edge at X_B	1889	28.335

Radial location is 30° inboard from top centerline.

TABLE III. - Continued.

MODEL COMPONENT: ET Protuberance PT_1

DESCRIPTION: LOX Vent Line Fairing on Tank T12 Nose

MODEL SCALE: .015

DRAWING NO. VL78-000031A

DIMENSIONS:	FULL SCALE	MODEL SCALE
Leading edge at X_T	321	4.815
Y_T	0	0
Trailing edge at X_T	947	14.205
Y_T	-70	1.053

TABLE III. - Continued.

MODEL COMPONENT: ET Protuberance PT_2

DESCRIPTION: LOX feed lines on vehicle 4 tank secured to tank by brackets with 50-inch spacing

MODEL SCALE: 0.015

DRAWING NO. VL78-000031A

		FULL SCALE	MODEL SCALE
DIMENSIONS:	Leading edge at X_T	947	14.205
	Y_T	-70	-1.053
	Trailing edge at X_T	1330	19.950
	Y_T	-70	-1.053
	Bracket spacing from X_T = 997	50	.85

TABLE III. - Continued.

MODEL COMPONENT: ET Protuberance PT3

DESCRIPTION: LH_2 feed line on vehicle 4 tank secured to tank by brackets with 50-inch spacing.

MODEL SCALE: 0.015

DRAWING NO. VL78-000031A

		FULL SCALE	MODEL SCALE
DIMENSIONS:	Leading edge at X_T	947	14.205
	Y_T	70	1.053
	Trailing edge at X_T	1330	19.950
	Y_T	70	1.053
	Bracket spacing from X_T = 997	50	.85

*REVISED 4/24/74

TABLE III. - Continued.

MODEL COMPONENT: RUDDER - R_5

GENERAL DESCRIPTION: 2A, 3, 3A and 140A/B Configurations

MODEL SCALE: 0.015

DRAWING NUMBER: VL70-000146A, VL70-000095, VL70-000139.

DIMENSIONS:	FULL-SCALE	MODEL SCALE
*Area- Ft^2	100.15	0.0225
Span (equivalent) - In	201.0	3.015
Inb'd equivalent chord - In.	91.585	1.3738
Outb'd equivalent chord - In.	50.833	0.7625
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	34.83	34.83
Trailing Edge	26.25	26.25
Hingeline	34.83	34.83
* Area Moment (Product of area & $\bar{c}$)-Ft^3	610.92	0.092
*Mean Aerodynamic Chord, In.	73.2	1.098

TABLE III. - Continued.

MODEL COMPONENT: BOOSTER SOLID ROCKET MOTOR - (S12)

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

Model Scale = 0.015

DRAWING NUMBER: VL72-000088D, VL77-000036A

DIMENSION:	FULL SCALE	MODEL SCALE
Length (Includes Nozzle) - IN.	1741.0	26.115
Max Width (Tank Dia) - IN.	142.3	2.135
Max Depth (Aft Shroud) - IN.	192.0	2.880
Fineness Ratio	9.06771	9.06771
Area - FT^2		
Max Cross-Sectional	201.06193	0.0452
Planform		
Wetted		
Base		
WP of BSRM Centerline (Z_T) - IN.	400	6.000
FS of BSRM Nose (X_T) - IN.	743	11.145

TABLE III. - Continued.

MODEL COMPONENT: EXTERNAL TANK - (T12)

GENERAL DESCRIPTION: External Oxygen Hydrogen Tank.

NOTE: Identical to T11 with external fuel lines added

Model Scale = 0.015

DRAWING NUMBER VL78-000031A
VL78-000041A

DIMENSION:	FULL SCALE	MODEL SCALE
Length - IN. (Nose @ X_T = 309)	1865	27.975
Max Width (Dia) - IN.	324	4.86
Max Depth		
Fineness Ratio	5.75617	5.75617
Area - FT^2		
Max Cross-Sectional	572.555	0.1288
Planform		
Wetted		
Base		
WP of Tank Centerline (Z_p) - IN.	400.0	6.000

*REVISED 4/24/74

TABLE III. - Continued.

MODEL COMPONENT: VERTICAL - V_8

GENERAL DESCRIPTION: Configuration 140A/B Orbiter Vertical Tail

MODEL SCALE: 0.015 MODEL DRAWING: SS-A00148, RELEASE 6

DRAWING NUMBER: VL70-0001464

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo) - Ft^2		
Planform	413.253	0.093
Span (Theo) - In.	315.720	4.736
Aspect Ratio	1.675	1.675
Rate of Taper	0.507	0.507
Taper Ratio	0.404	0.404
Sweep-Back Angles, Degrees.		
Leading Edge	45.000	45.000
* Trailing Edge	26.2	26.2
0.25 Element Line	41.130	41.130
Chords:		
Root (Theo) WP	268.500	4.028
Tip (Theo) WP	108.470	1.627
MAC	199.808	2.997
Fus. Sta. of .25 MAC	1463.50	21.953
W.P. of .25 MAC	635.522	9.533
B.L. of .25 MAC	0.00	0.00
Airfoil Section		
Leading Wedge Angle - Deg.	10.00	10.00
Trailing Wedge Angle - Deg.	14.920	14.920
Leading Edge Radius	2.00	0.030
Void Area	13.17	0.003
Blanketed Area	0.00	0.00

*REVISED 4/24/74

TABLE III. - Concluded.

MODEL COMPONENT: WING-W_{116}

GENERAL DESCRIPTION: Configuration 4

NOTE: Identical to W_{114} except airfoil thickness. Dihedral angle is along trailing edge of wing.

MODEL SCALE: 0.015

DWG. NO. VL70-000140A, -000200

TEST NO.

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2	2690.00	0.605
Planform	936.68	14.050
Span (Theo In.	2.265	2.265
Aspect Ratio	1.177	1.177
Rate of Taper	0.200	0.200
Taper Ratio	3.500	3.500
Dihedral Angle, degrees	0.500	0.500
Incidence Angle, degrees	+ 3.000	+ 3.000
Aerodynamic Twist, degrees		
Sweep Back Angles, degrees		
Leading Edge	45.000	45.000
Trailing Edge	- 10.056	- 10.056
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.0.0.	689.24	10.339
Tip, (Theo) B.P.	137.85	2.068
MAC	474.81	7.122
*Fus. Sta. of .25 MAC	1136.83	17.052
* W.P. of .25 MAC	290.58	4.359
* B.L. of .25 MAC	182.13	2.732
EXPOSED DATA		
* Area (Theo) Ft^2	1751.50	0.394
* Span, (Theo) In. BP108	720.68	10.810
* Aspect Ratio	2.059	2.059
Taper Ratio	0.245	0.245
Chords		
* Root BP108	562.03	8.431
Tip 1.00 $\frac{b}{2}$	137.85	2.068
* MAC	392.83	5.892
* Fus. Sta. of .25 MAC	1185.09	17.709
* W.P. of .25 MAC	294.30	4.415
* B.L. of .25 MAC	251.77	3.777
Airfoil Section (Rockwell Mod NASA) XXXX-64		
Root $\frac{b}{2}$ =	0.113	0.113
Tip $\frac{b}{2}$ =	0.12	0.12
Data for (1) of (2) Sides		
Leading Edge Cuff		
*Planform Area Ft^2	113.18	0.025
* Leading Edge Intersects Fus M. L. @ Sta	500.0	7.50
* Leading Edge Intersects Wing @ Sta	1024.00	15.36

Notes:

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

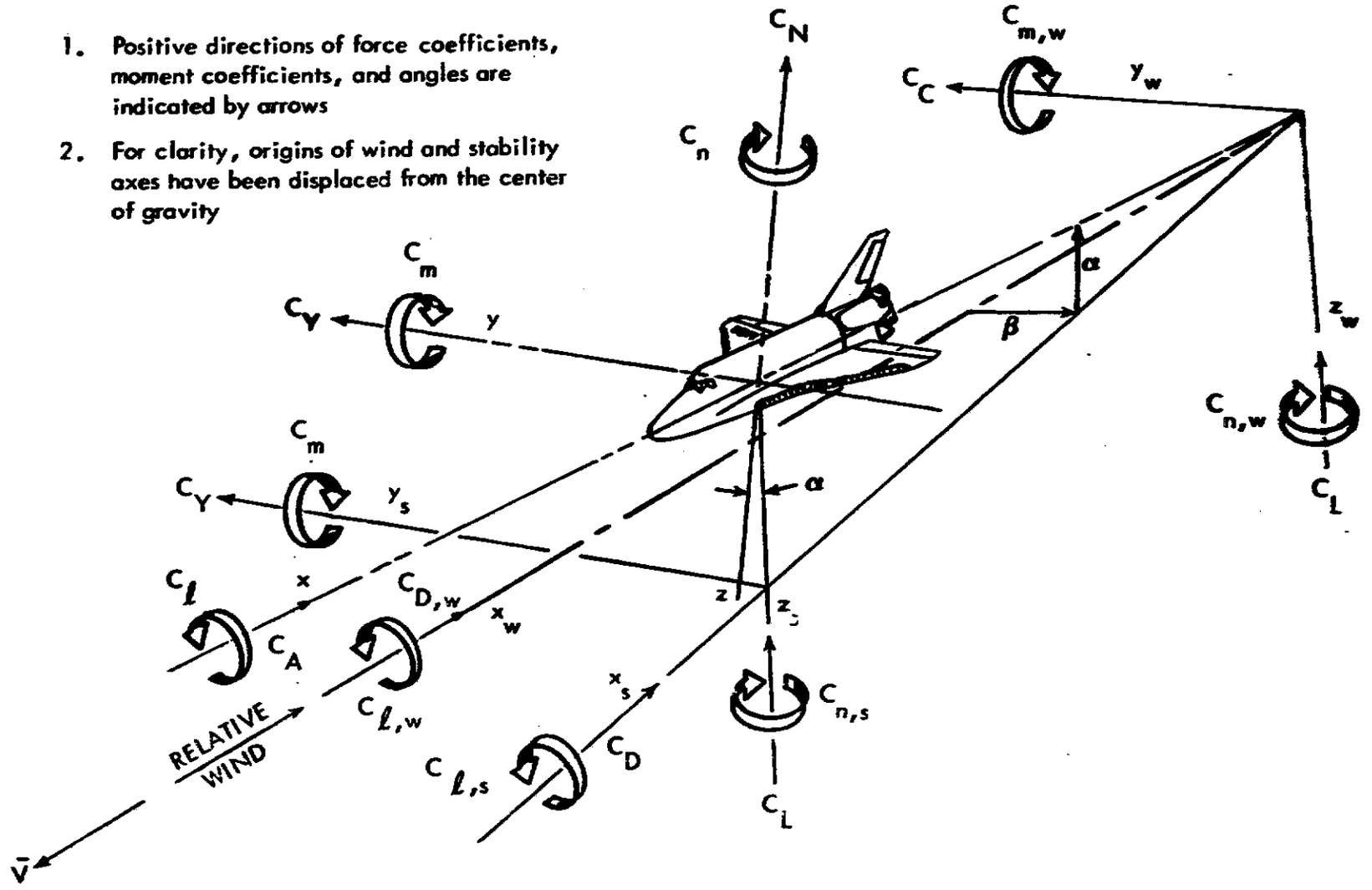
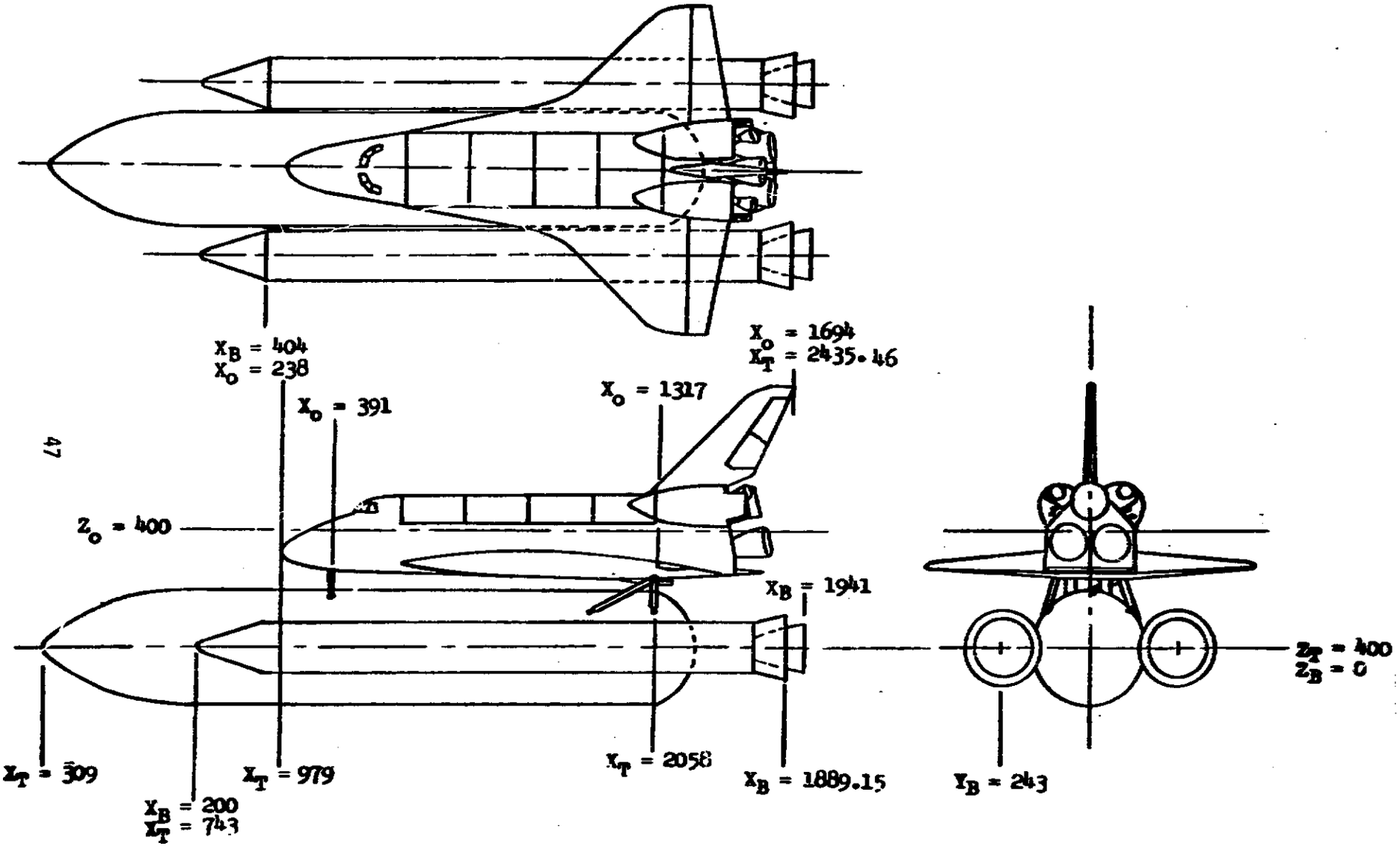
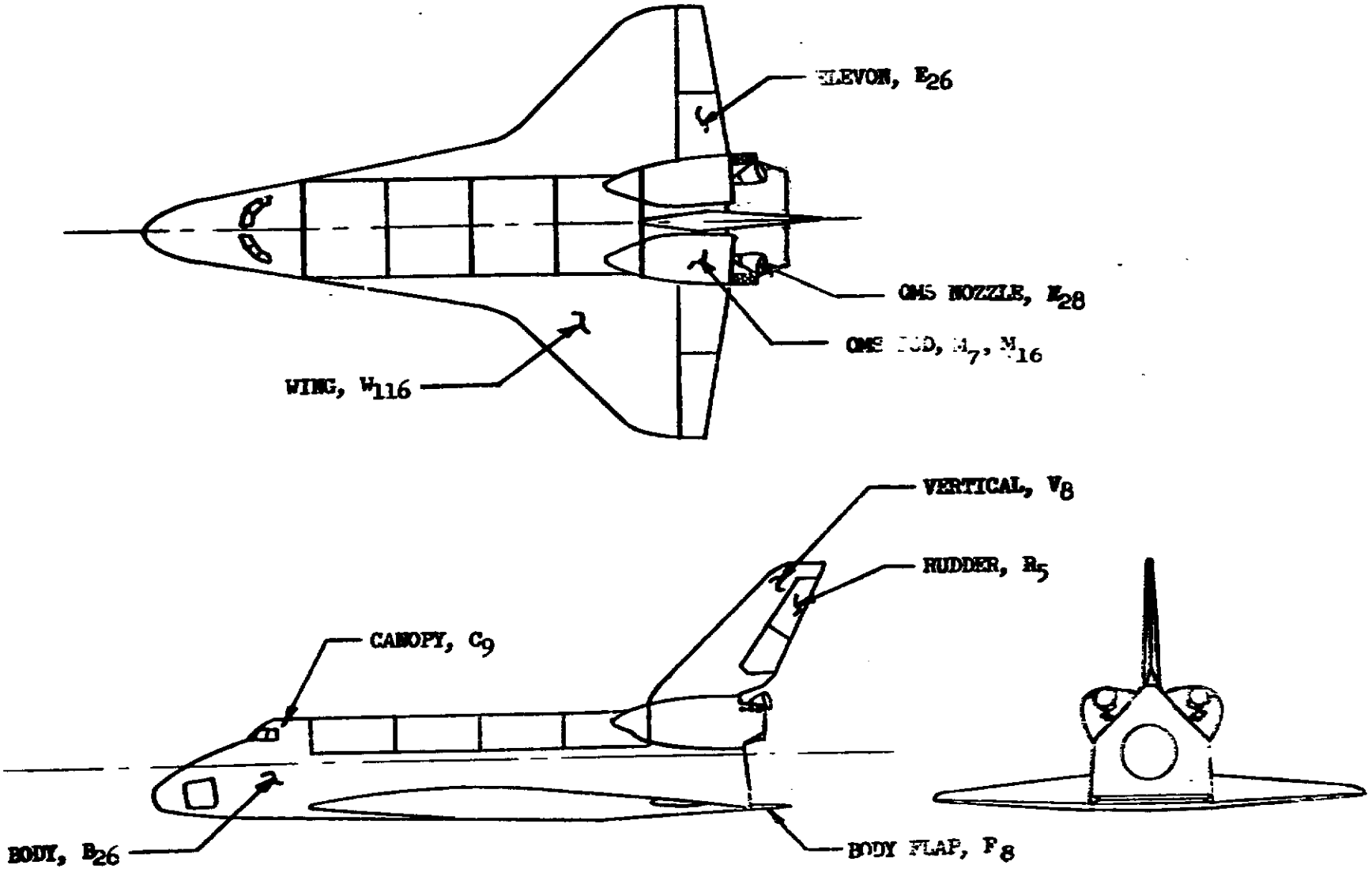


Figure 1. Axis systems.



a. Mated Vehicle

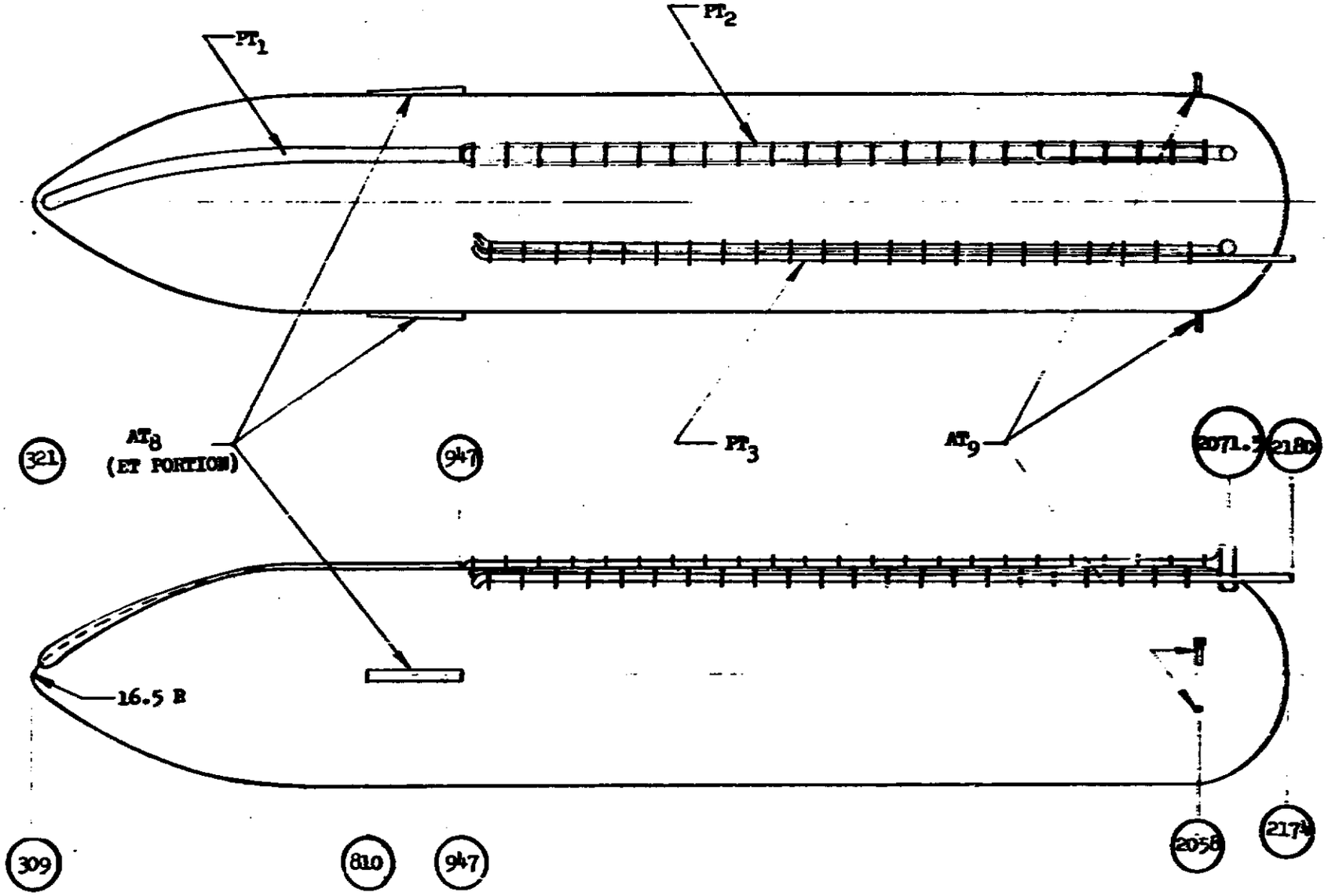
Figure 2. - Model sketches.



Orbiter Three View

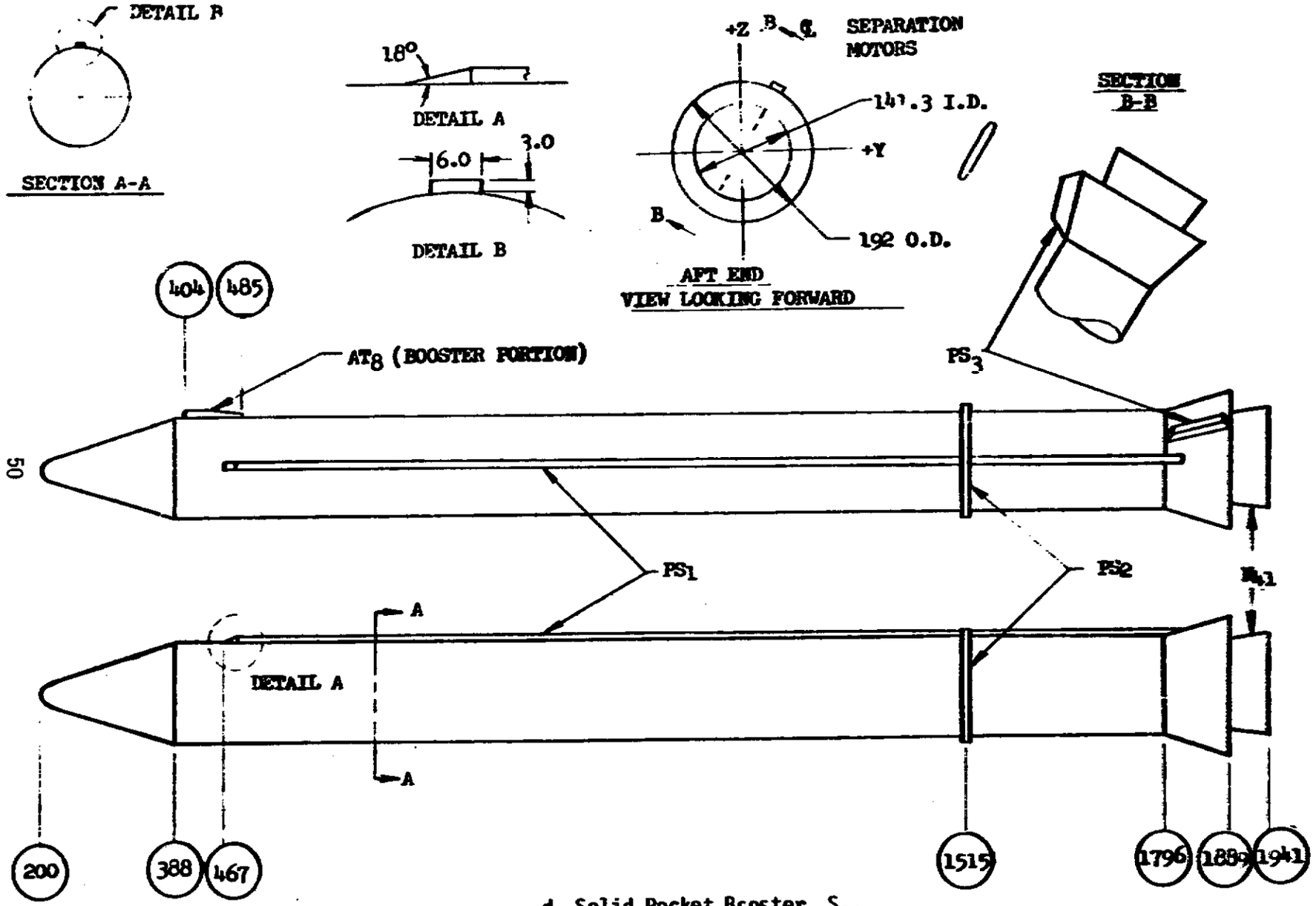
b. Orbiter

Figure 2. - Continued.



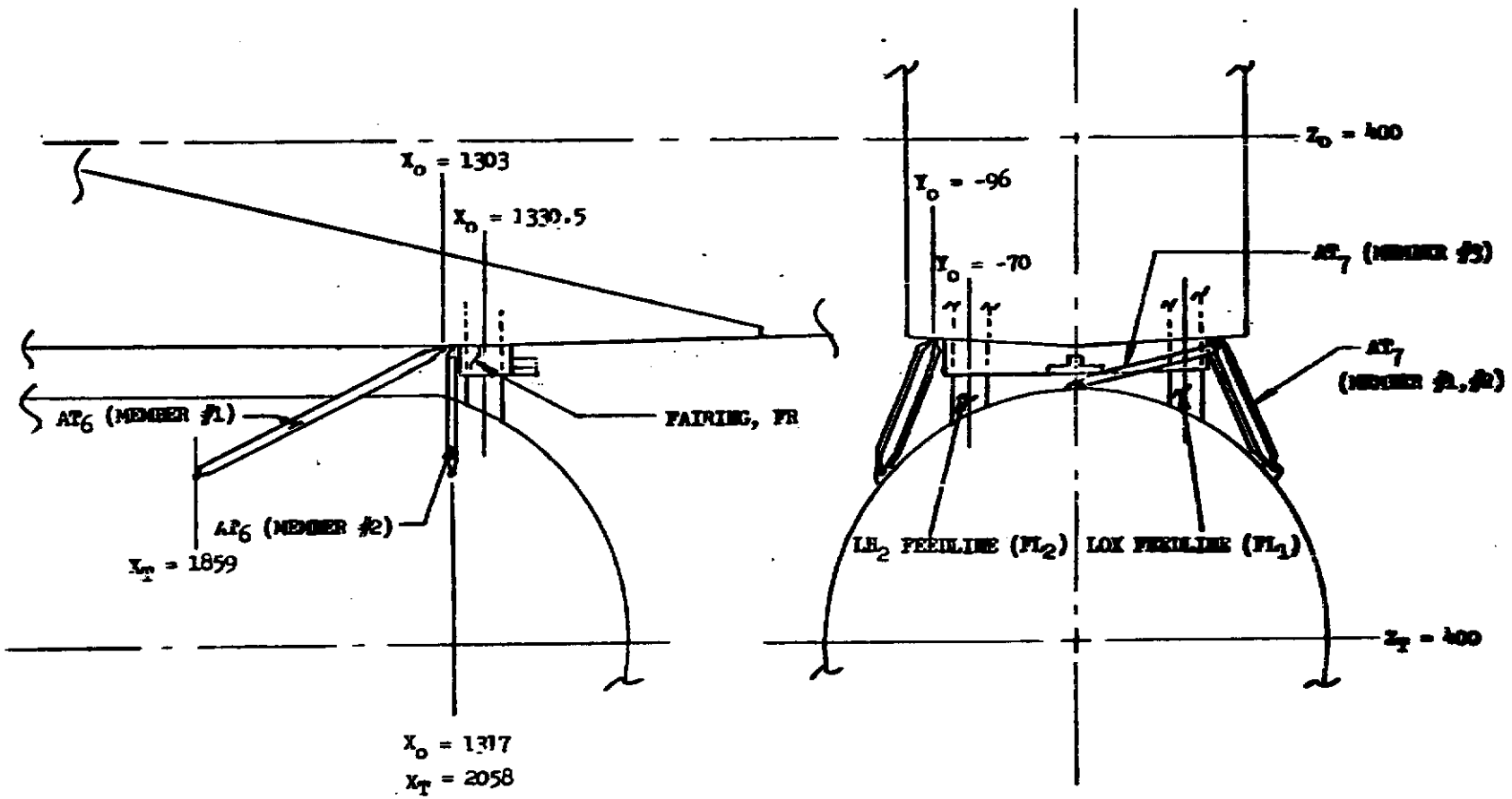
c. External Tank, T_{12}

Figure 2. - Continued.



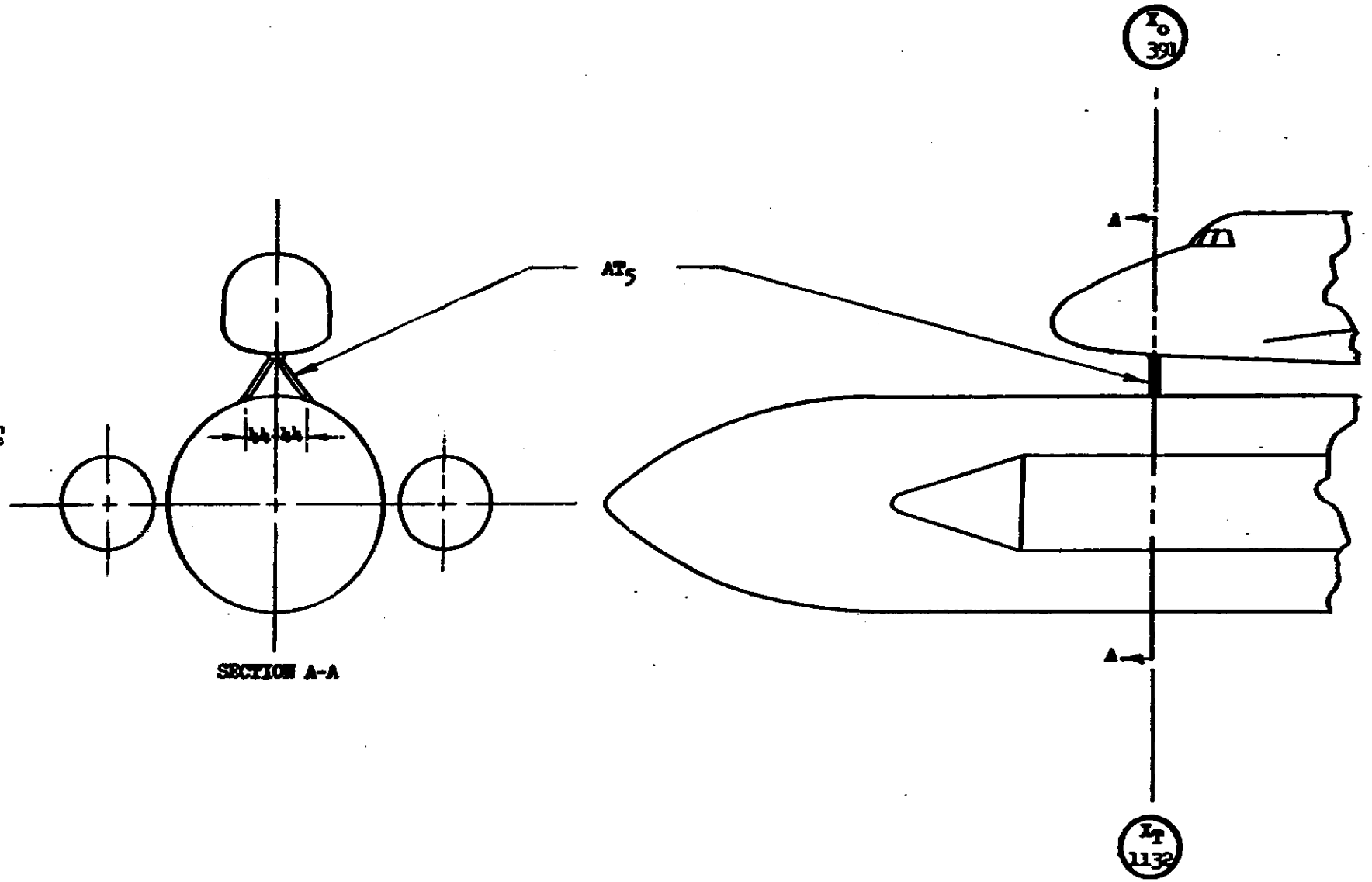
d. Solid Rocket Booster, S_{12}

Figure 2. - Continued.



e. Aft Orbiter/ET Attach Hardware

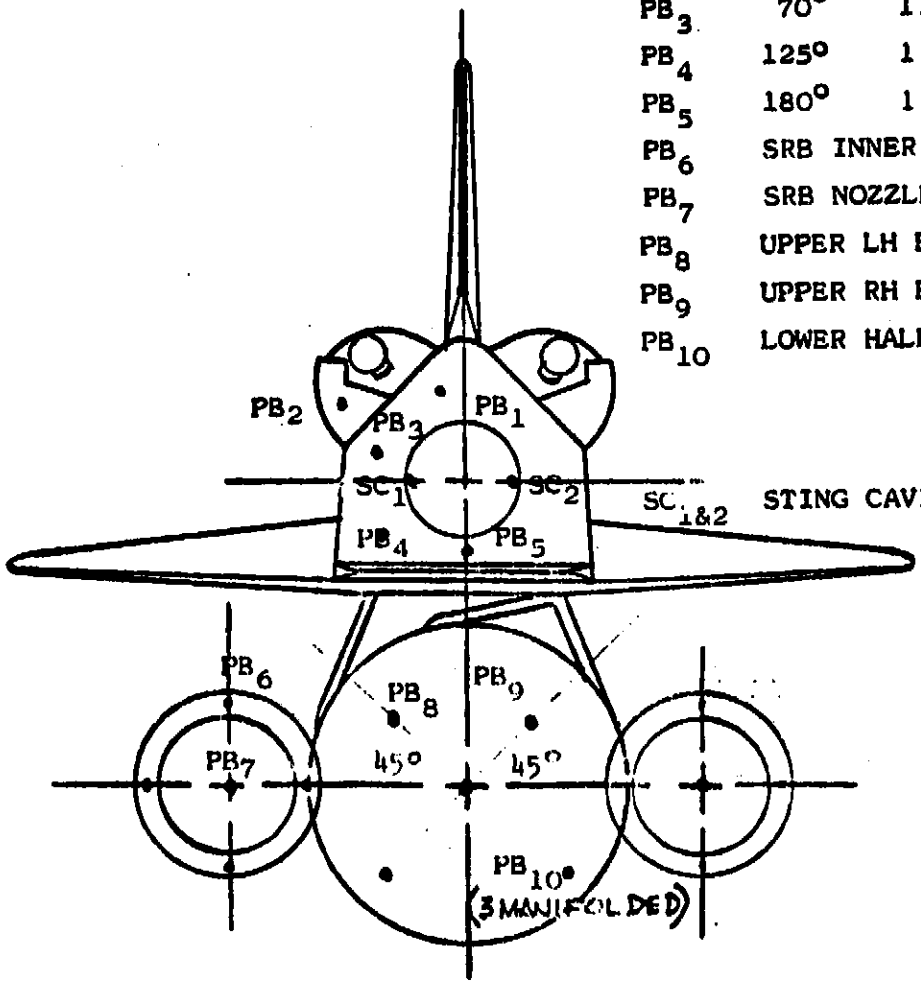
Figure 2. - Continued.



f. Front Orbiter/ET Attach Structure, AT_5

Figure 2. - Continued.

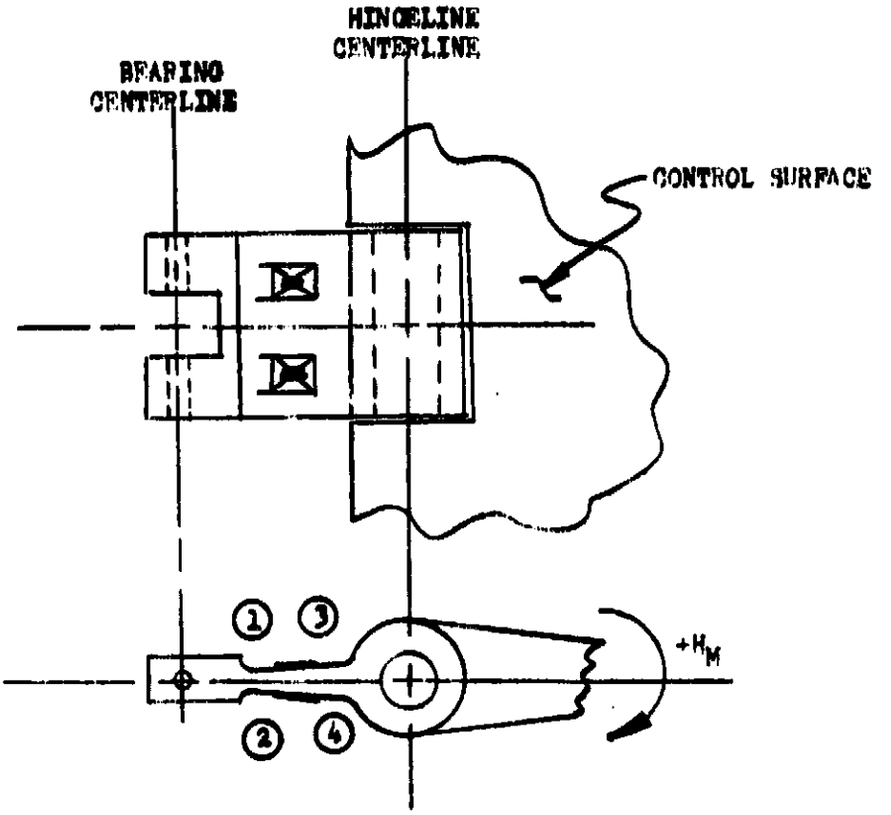
TAP	Θ	R
PB_1	20°	1.60 in.
PB_2	57°	2.10 in.
PB_3	70°	1.5 in.
PB_4	125°	1.76 in.
PB_5	180°	1.33 in.
PB_6	SRB INNER SHROUD BASE	
PB_7	SRB NOZZLE BASE ℄	
PB_8	UPPER LH ET BASE	
PB_9	UPPER RH ET BASE	
PB_{10}	LOWER HALF OF ET BASE	

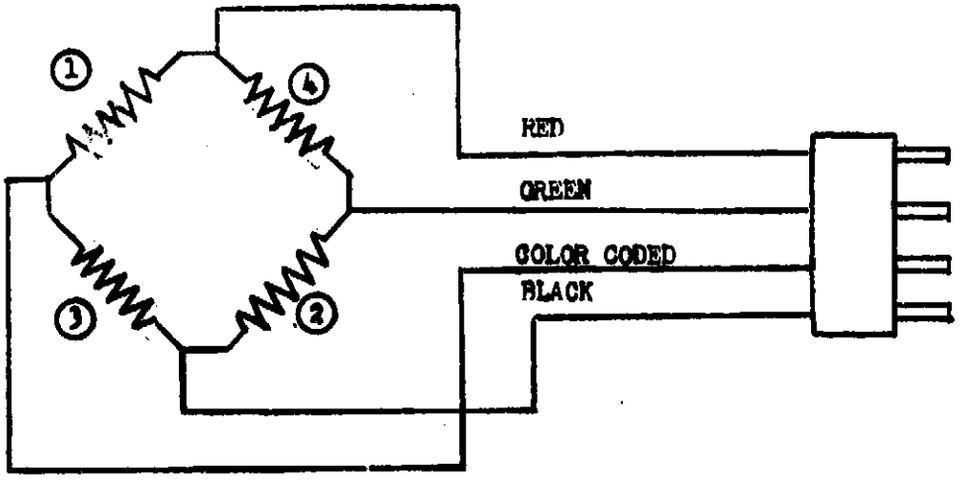


STING CAVITY PRESSURE

g. Model Base and Sting Cavity Pressures

Figure 2. - Continued.

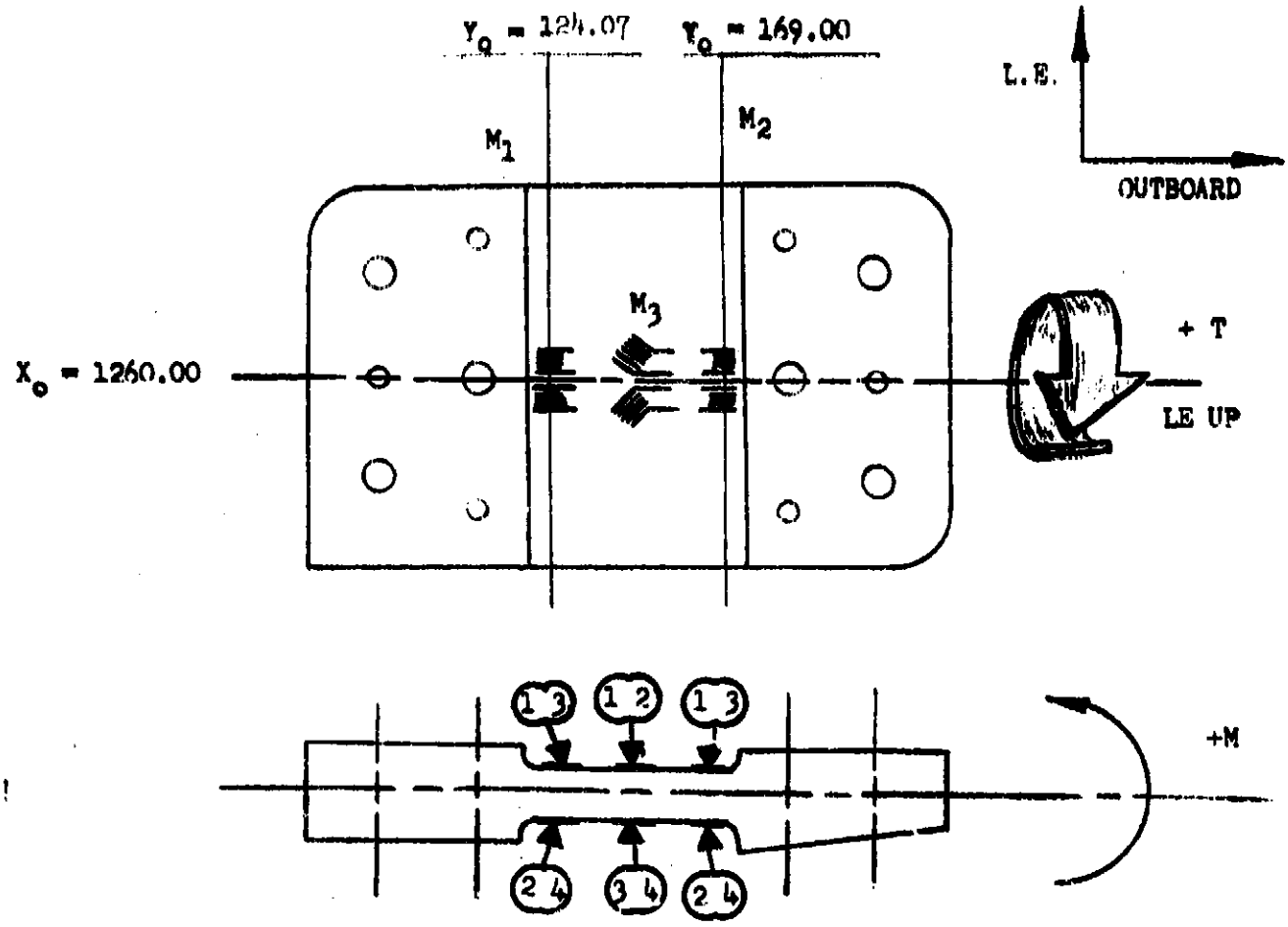


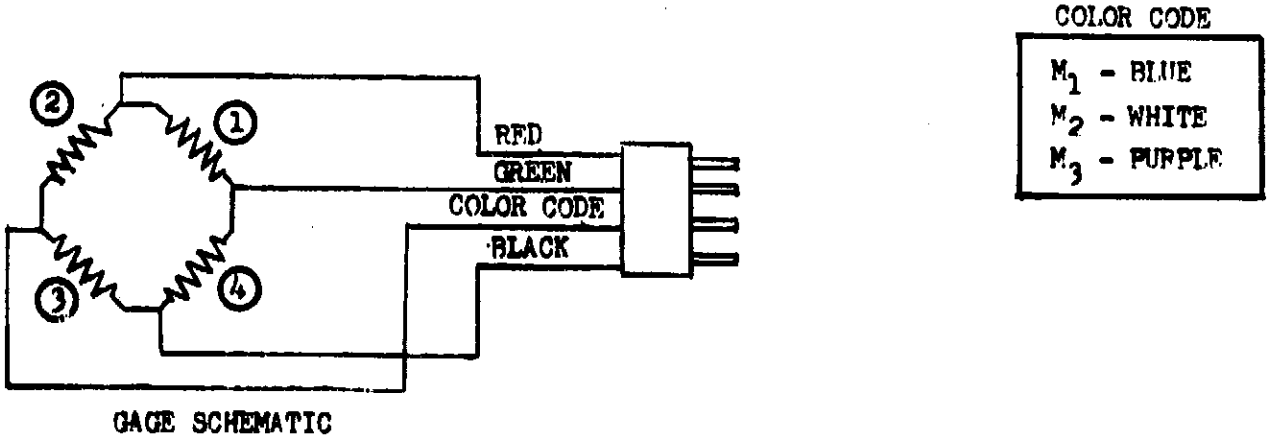


COLOR CODE		HINGELINE X_o
INBOARD ELEVON	GREY	1387.00
OUTBOARD ELEVON	YELLOW	1387.00
BODY FLAP	ORANGE	1532.00

h. Elevon and Body Flap Hinge Moment Gage

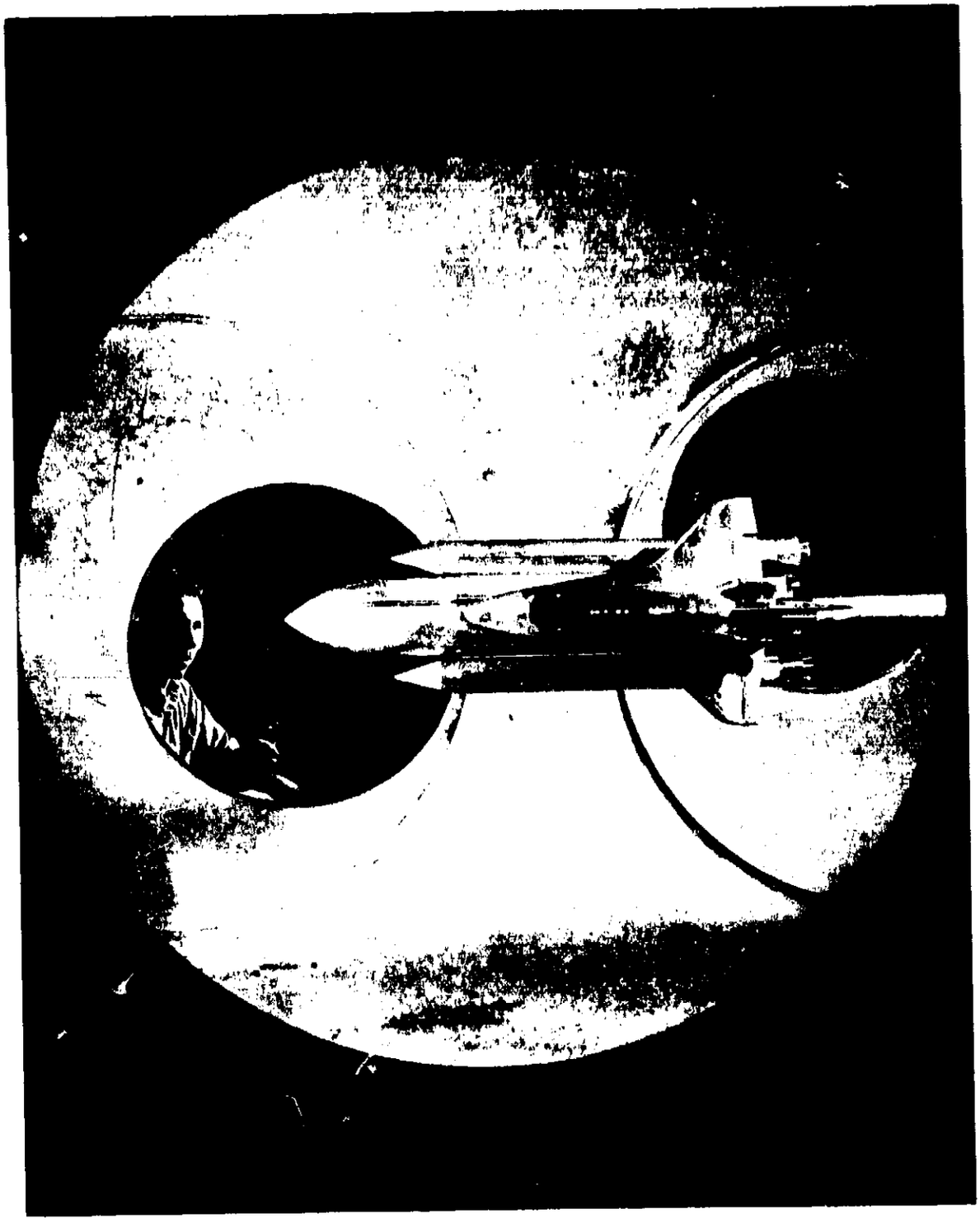
Figure 2. - Continued.





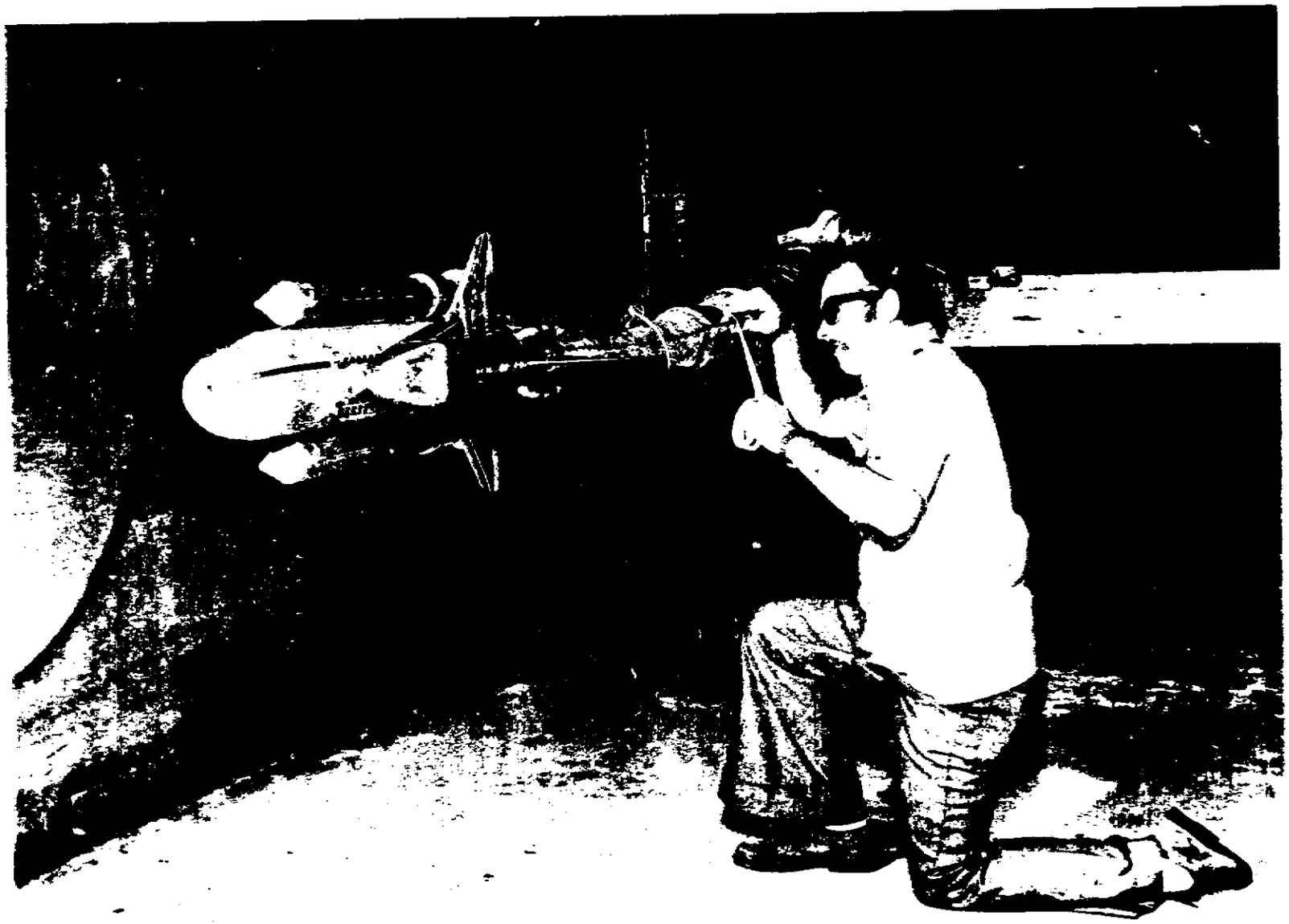
i. Wing Bending and Torsion Gage

Figure 2. - Concluded.



a. Top View

Figure 3. - Model installation photographs.

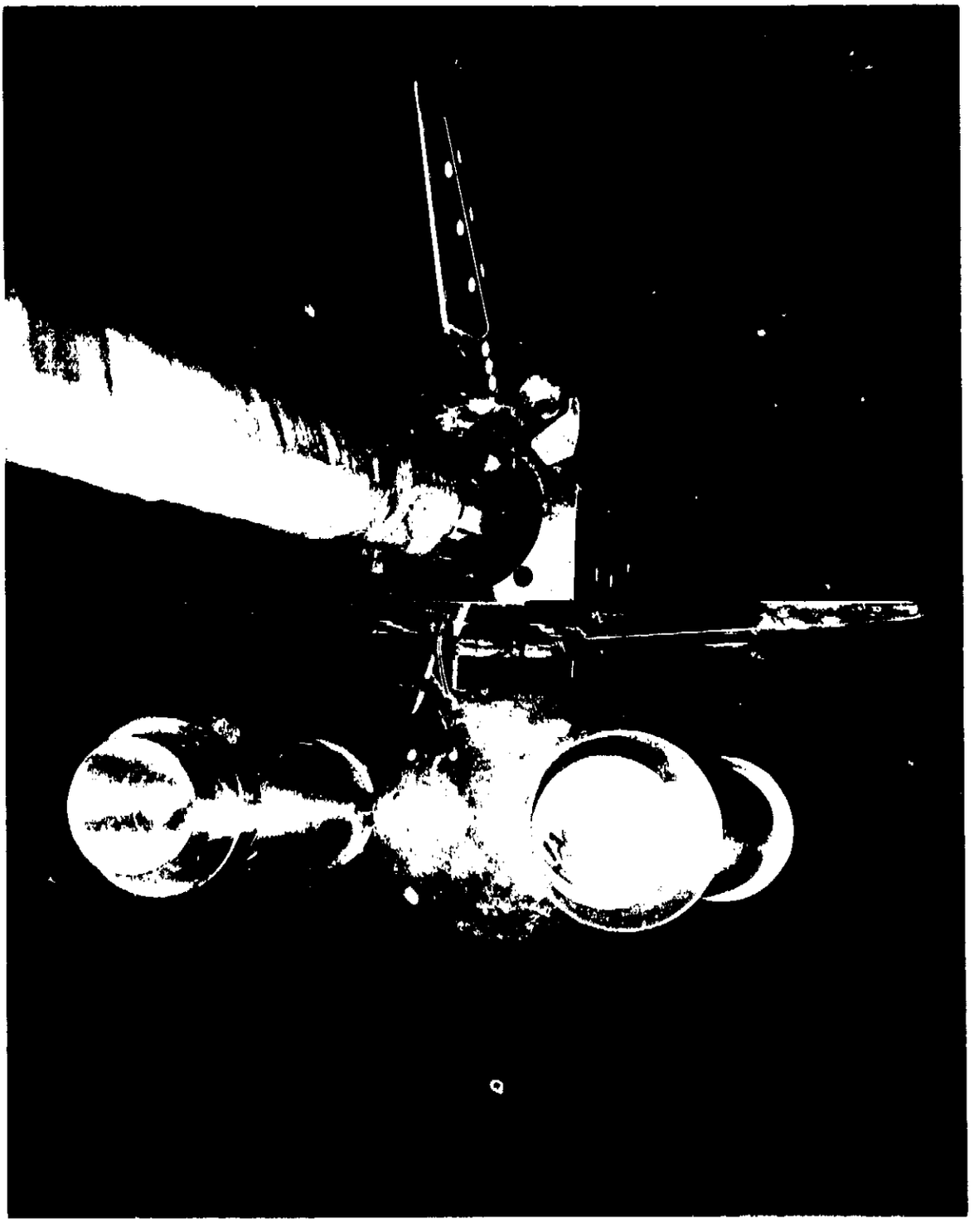


b. Upper Front View

Figure 3. - Continued.

c. Lower Front View

Figure 3. - Continued.



d. Rear View

Figure 3. - Concluded.

DATA FIGURES

Note: The 999.000 in the parametric values of ALPHA and BETA for Figures 4 through 17 is only a flag. The actual values for ALPHA and BETA are given in the individual datasets in the Appendix.

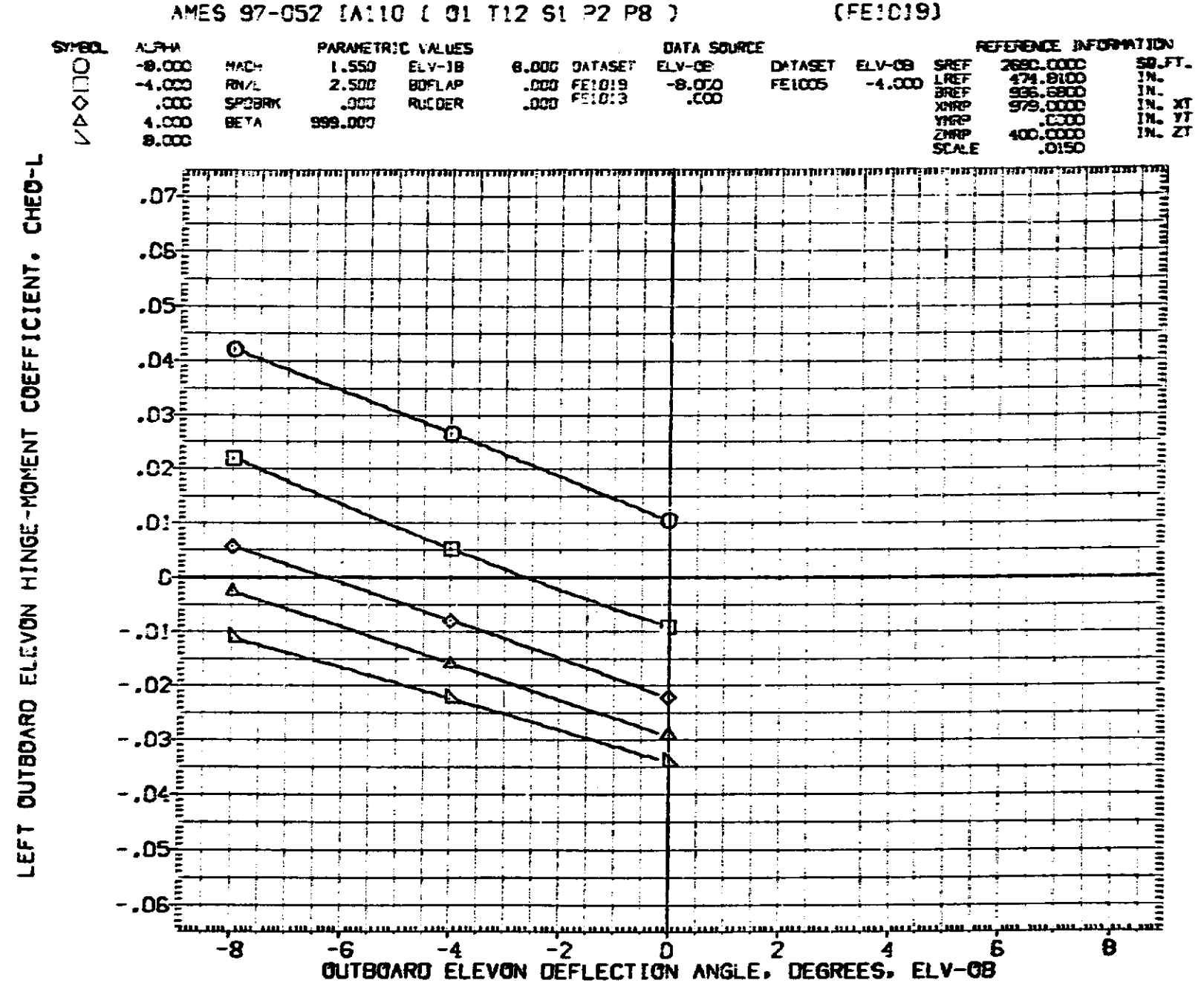


FIG. 4 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 8.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1D19)

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	1.550	ELV-IB	8.000	DATASET	ELV-OB	DATASET	ELV-OB	SREF	2680.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1019	-8.000	FE1005	-4.000	LREF	474.8100	IN.
◇	.000	SPOBRK	.000	RUDDER	.000	FE1013	.000			BREF	993.6800	IN. XT
△	4.000	BETA	999.000							XMRP	979.0000	IN. YT
▽	8.000									YMRP	.0000	IN. ZT
										ZMRP	400.0000	
										SCALE	.0150	

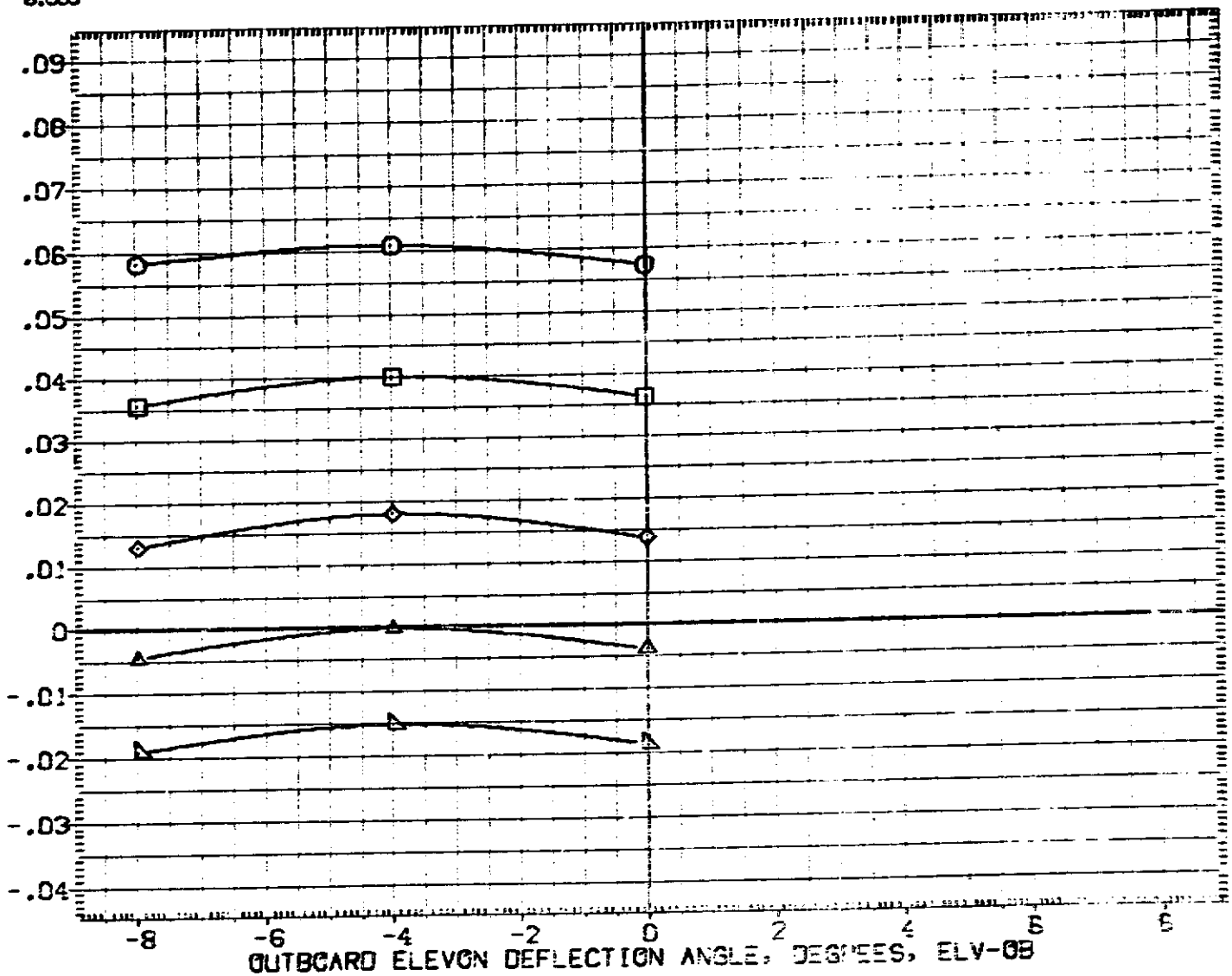


FIG. 4 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 8.0

PAGE 2

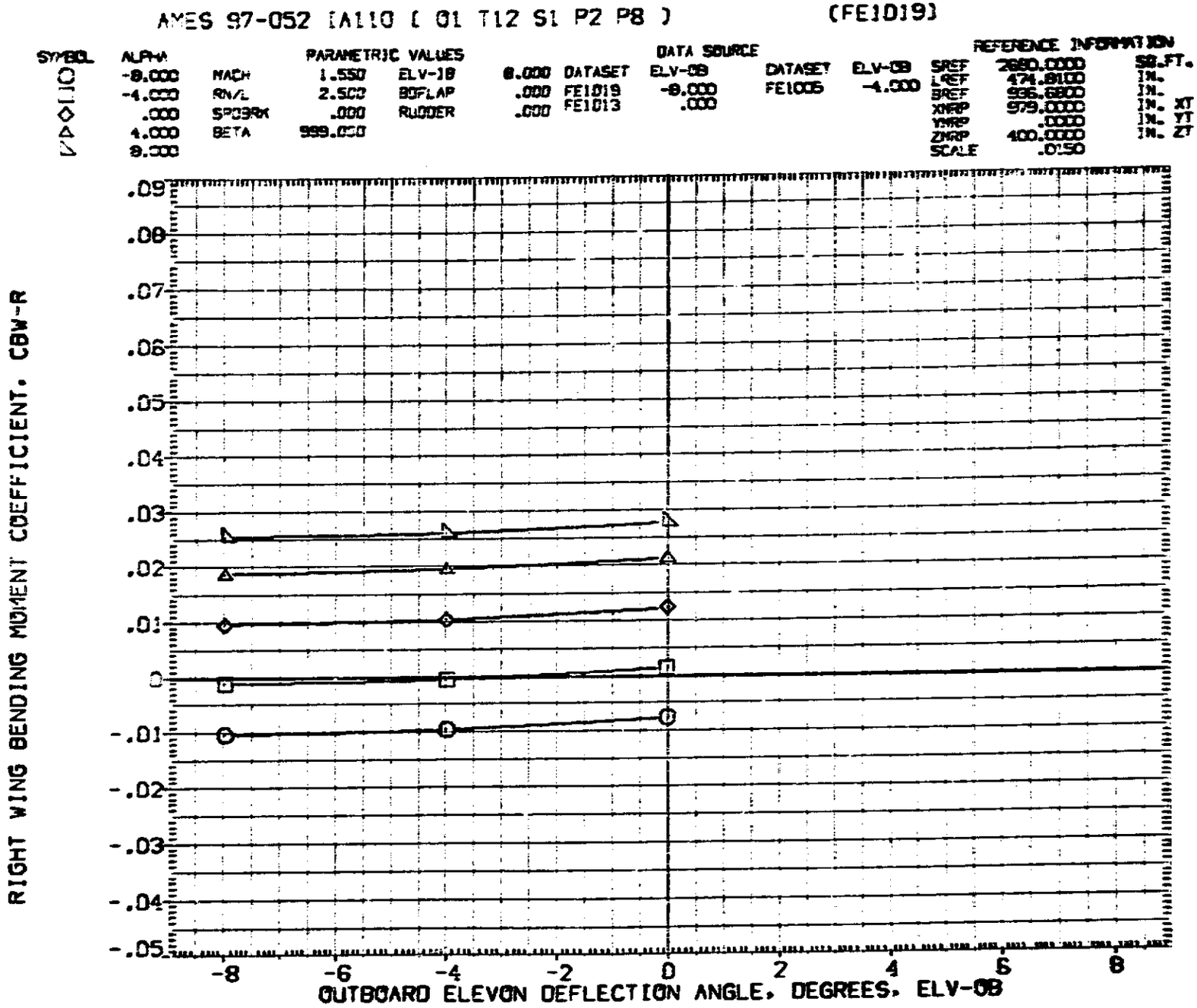


FIG. 4 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 8.0

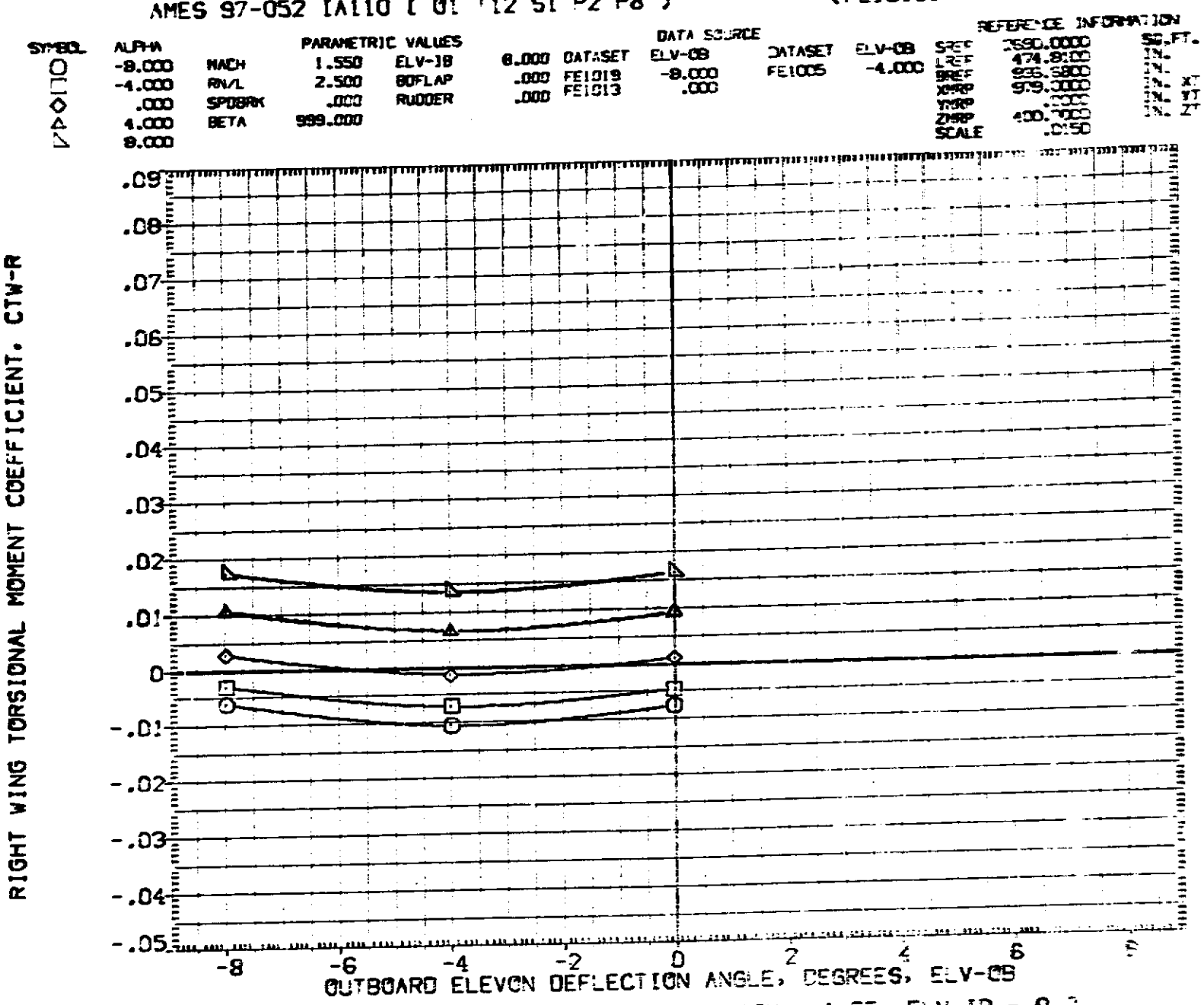


FIG. 4 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 8.0

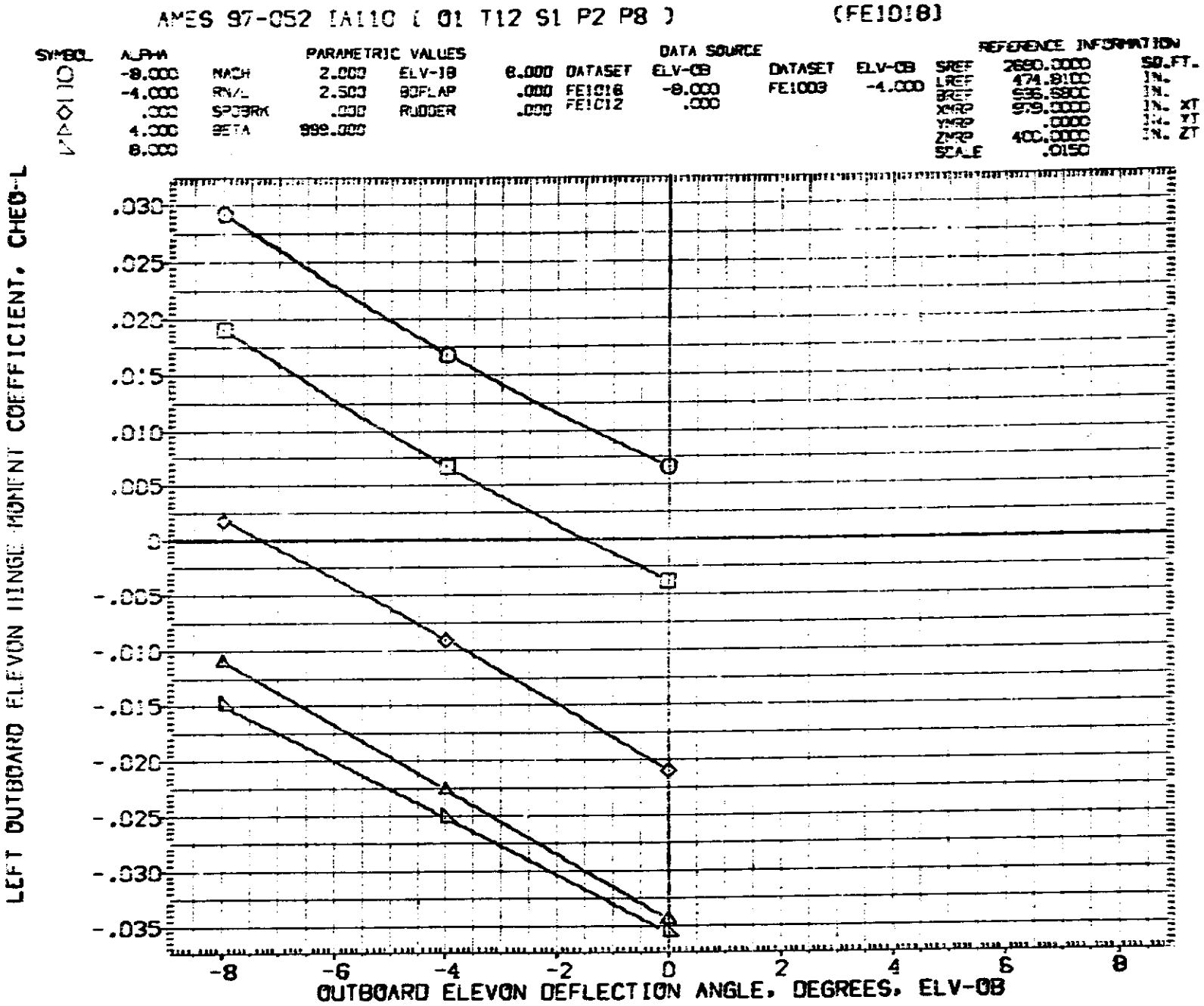


FIG. 5 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 8.0

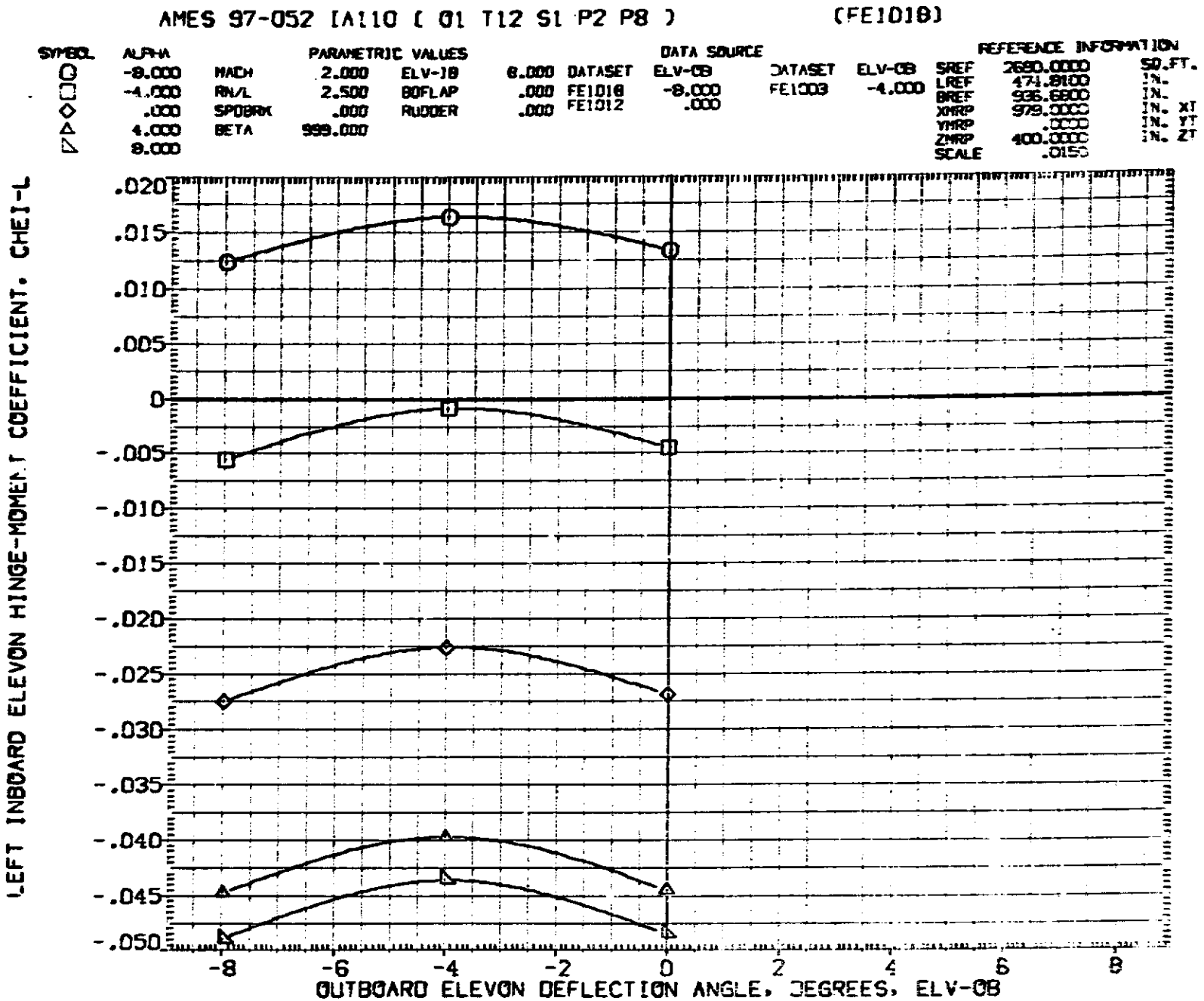


FIG. 5 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 8.0

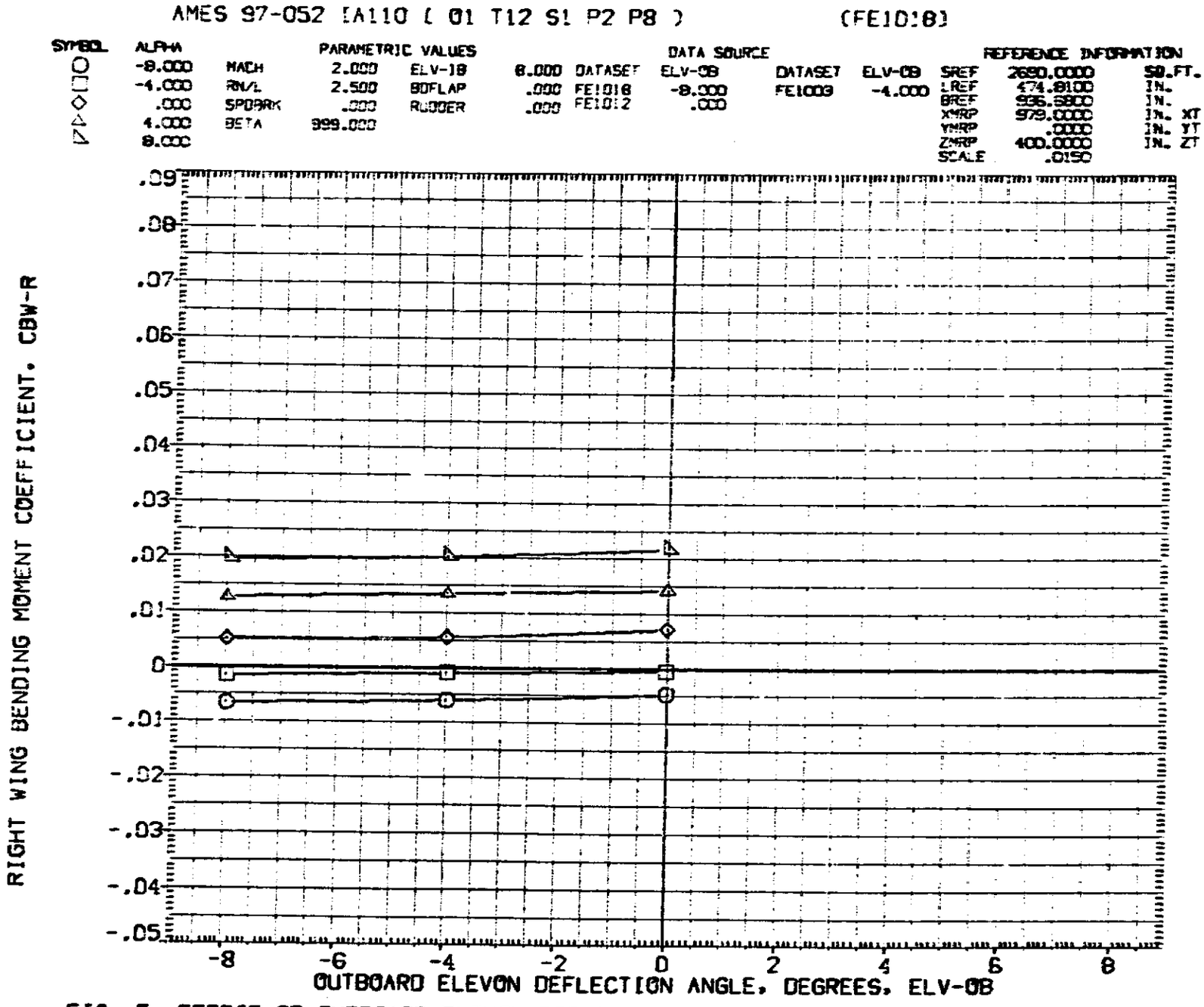


FIG. 5 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 8.0

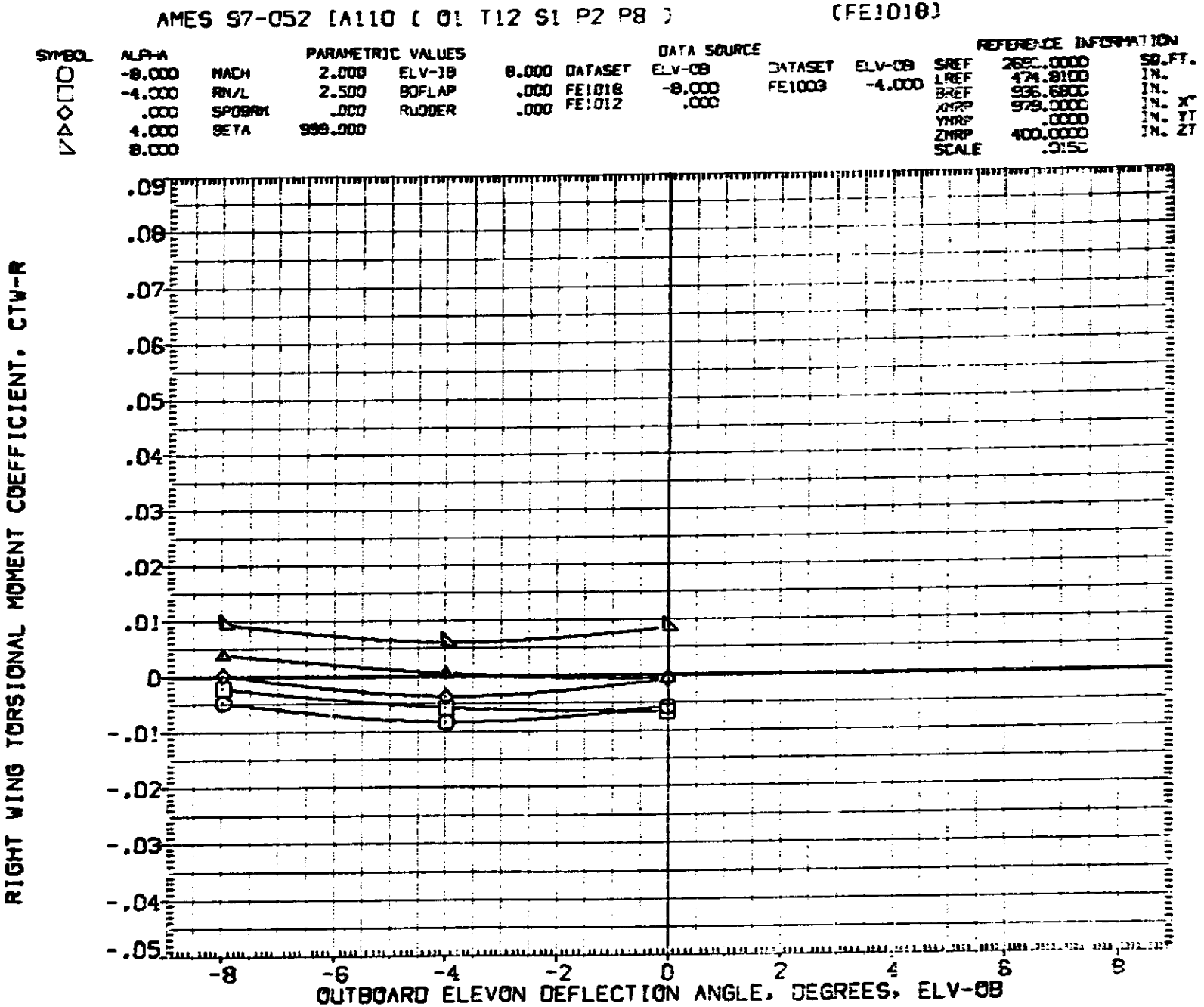


FIG. 5 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 8.0

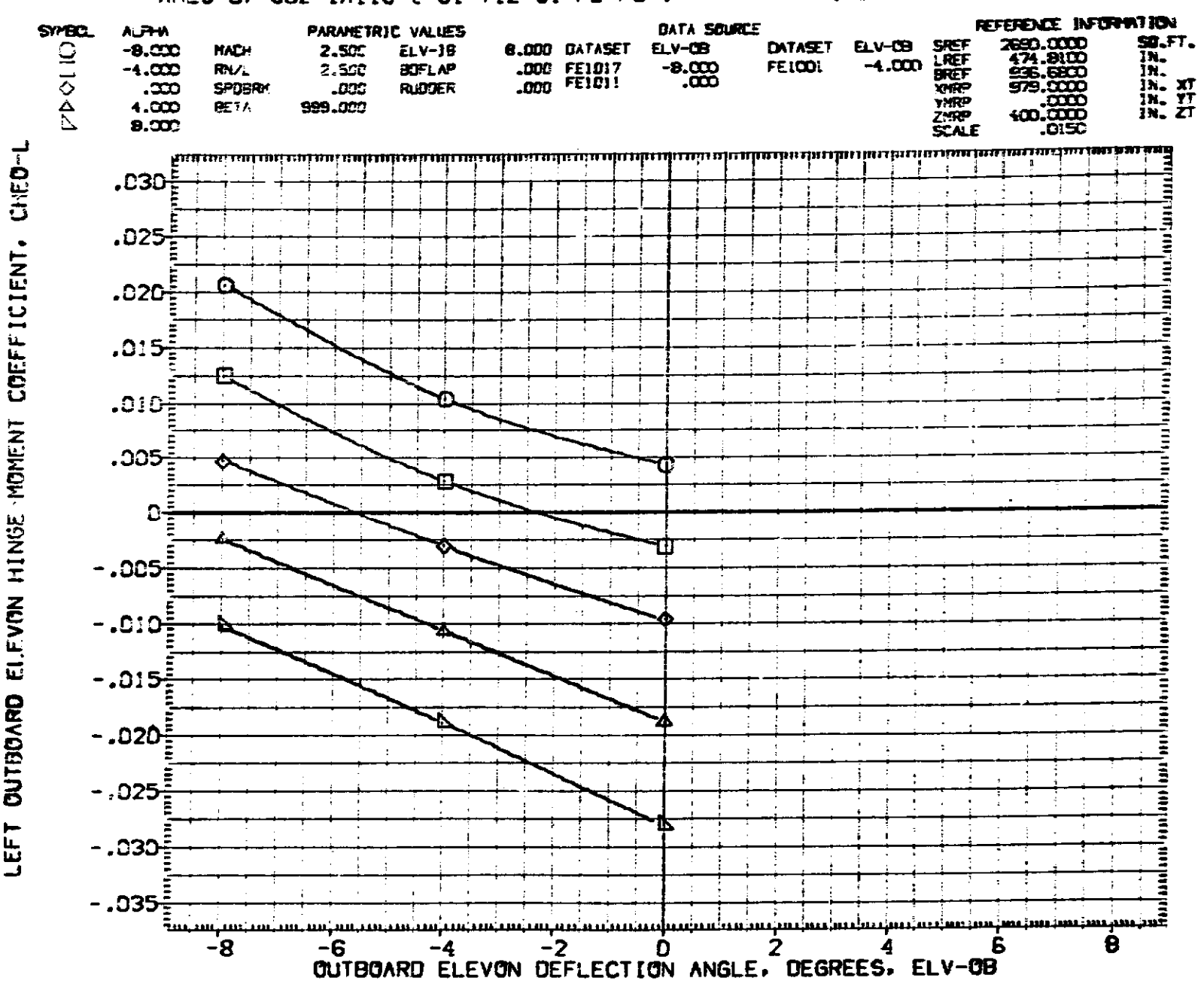


FIG. 6 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.50, ELV-IB = 8.0

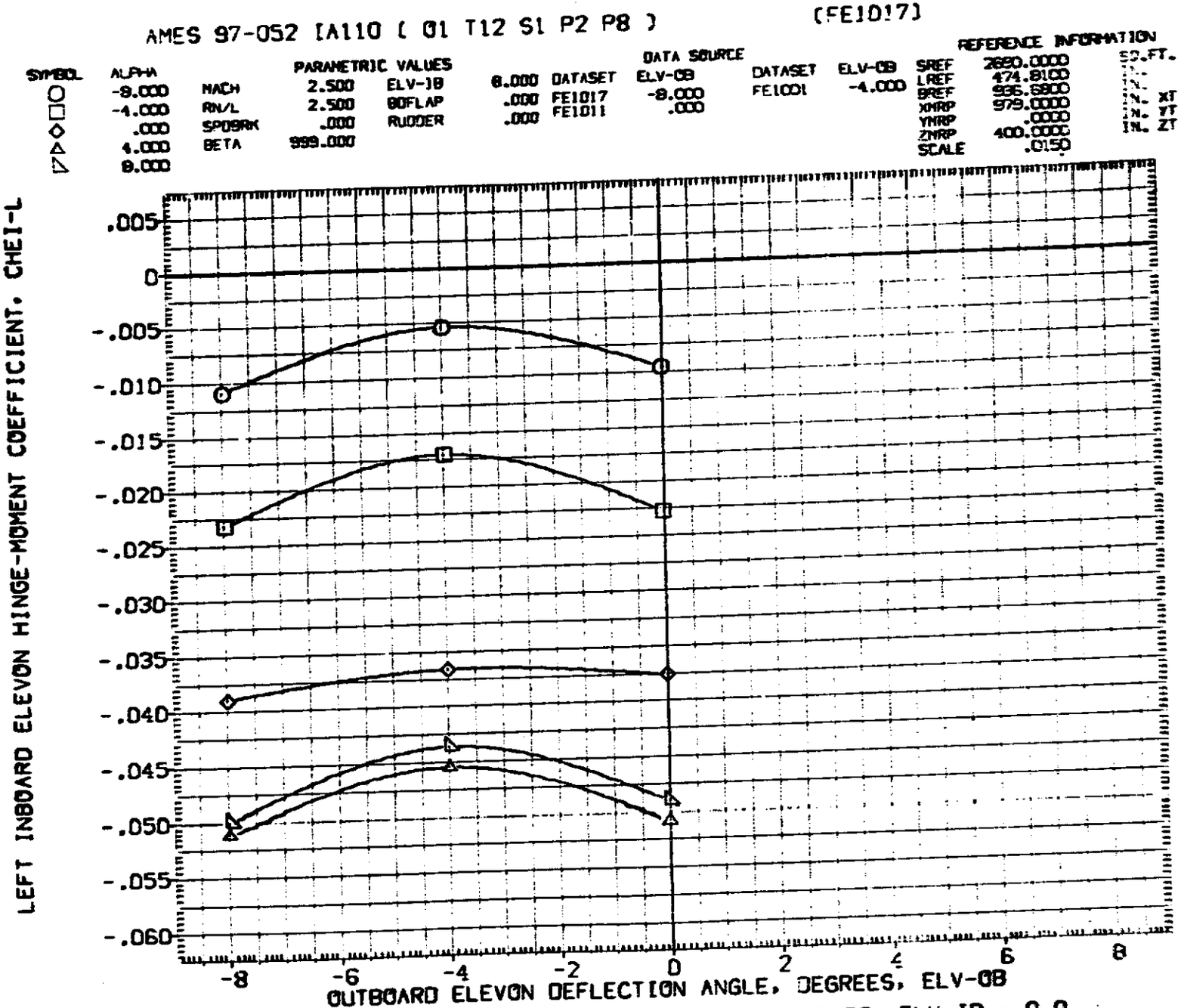


FIG. 6 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.50, ELV-IB = 8.0

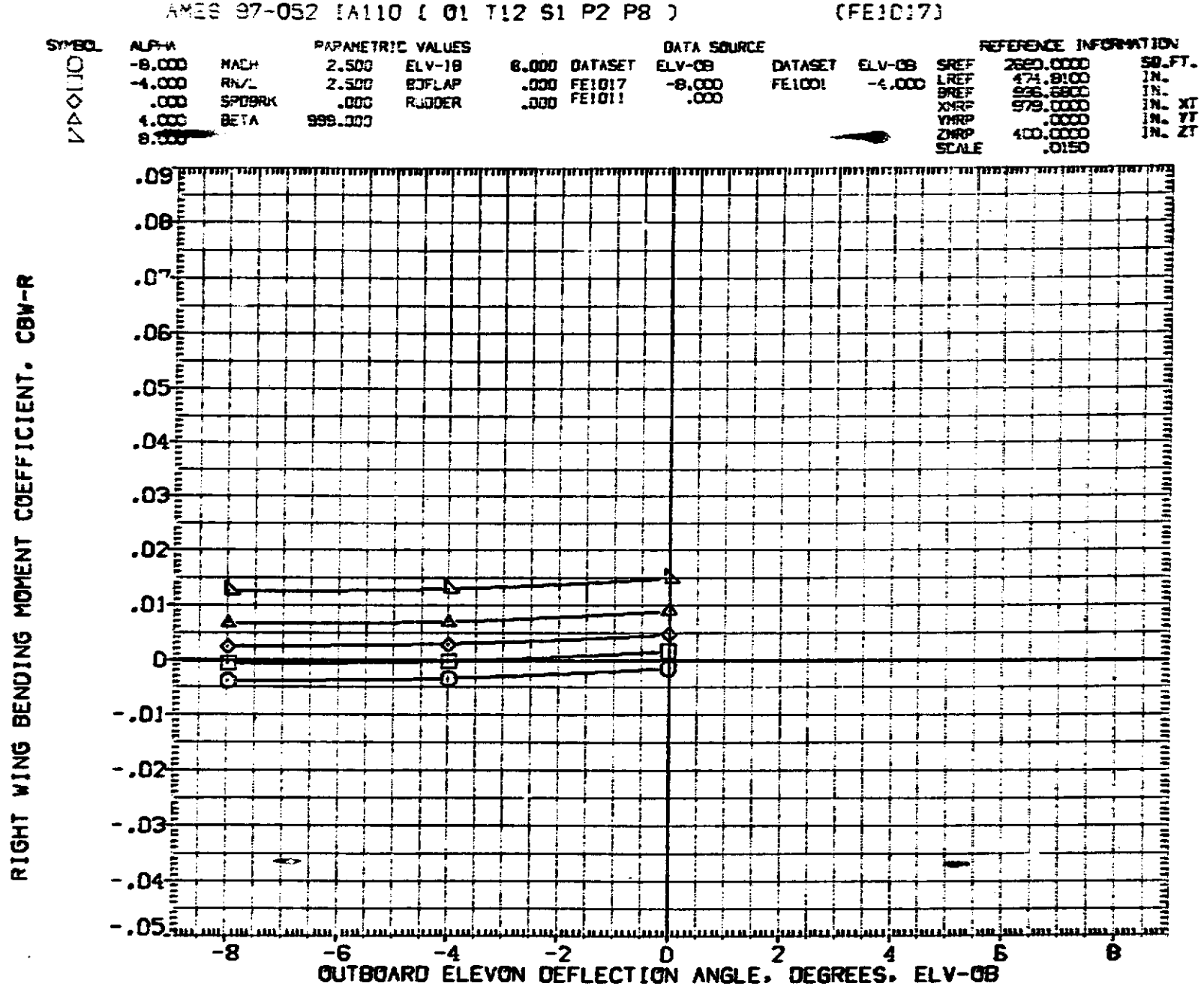


FIG. 6 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.50, ELV-IB = 8.0

AMES 97-052 IA110 (01 T12 S1 P2 P8) (FE1017)

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	2.500	ELV-IB	8.000	DATASET	ELV-OB	DATASET	ELV-OB	SREF	2690.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1017	-8.000	FE1001	-4.000	LREF	474.8100	IN.
◇	.000	SPOBRK	.000	RUDDER	.000	FE1011	.000			BREF	936.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0000	IN. XF
▽	8.000									YMRP	.0000	IN. YF
										ZMRP	400.0000	IN. ZF
										SCALE	.0150	

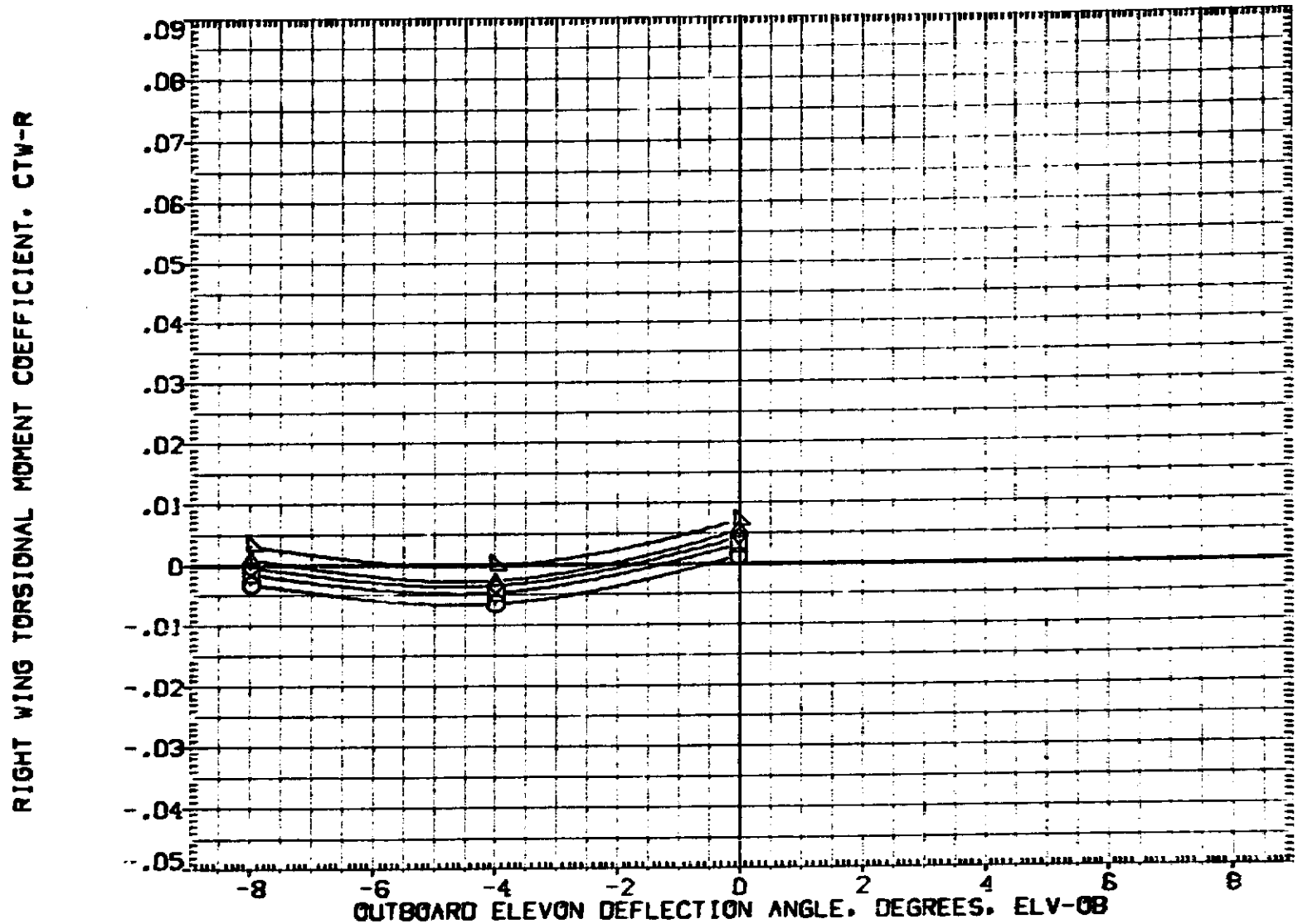


FIG. 6 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.50, ELV-IB = 8.0

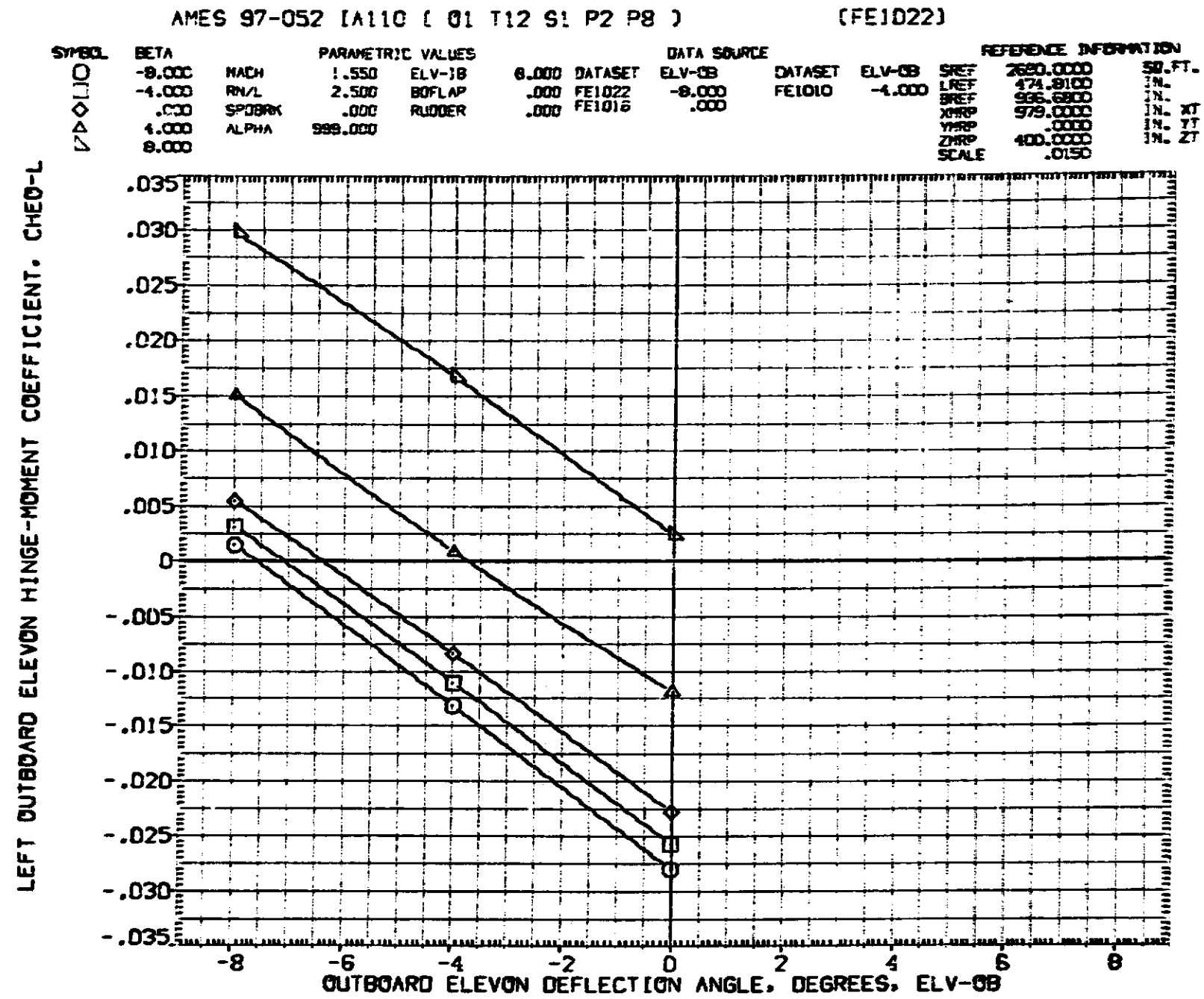


FIG. 7 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 8.0

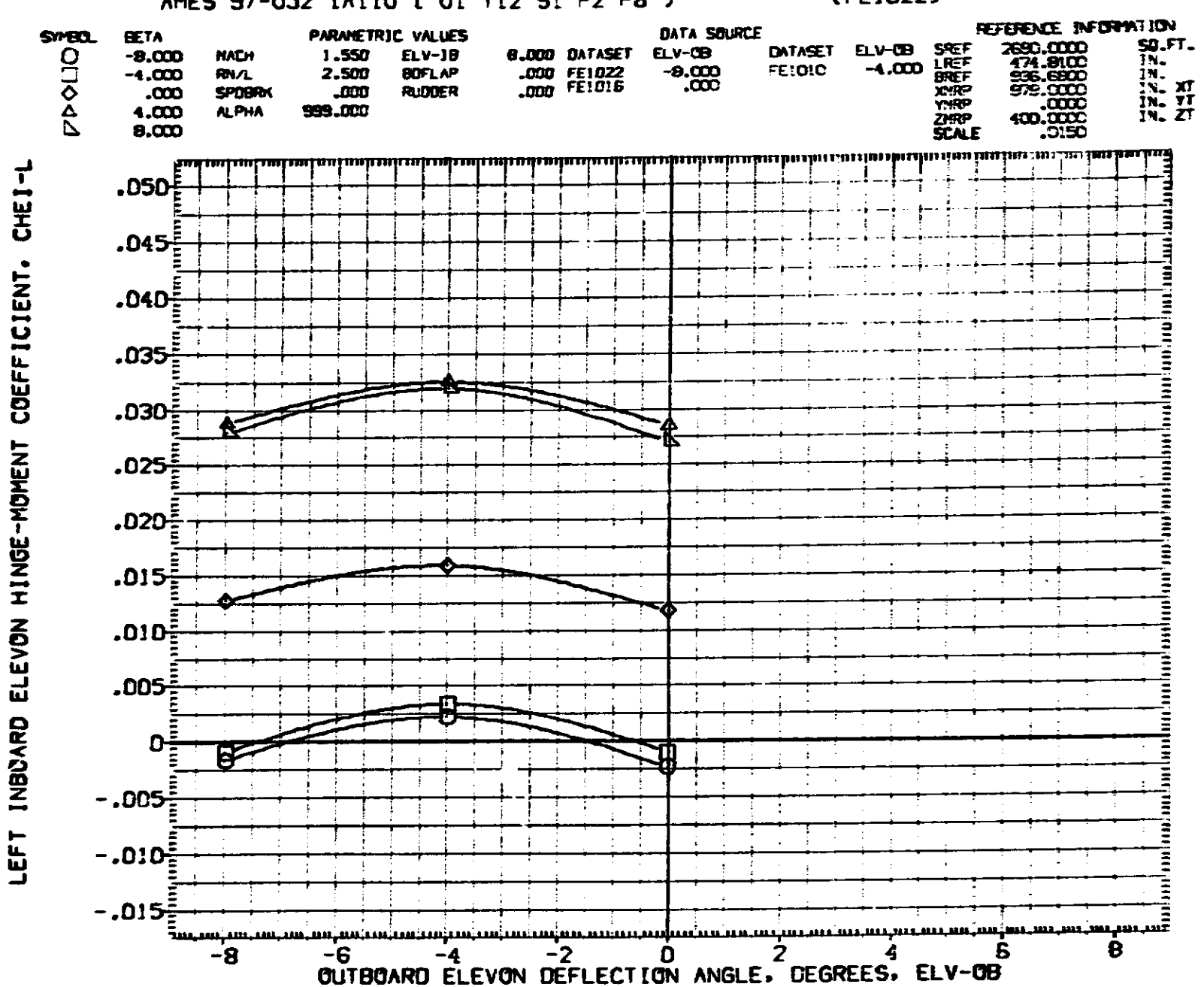


FIG. 7 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 8.0

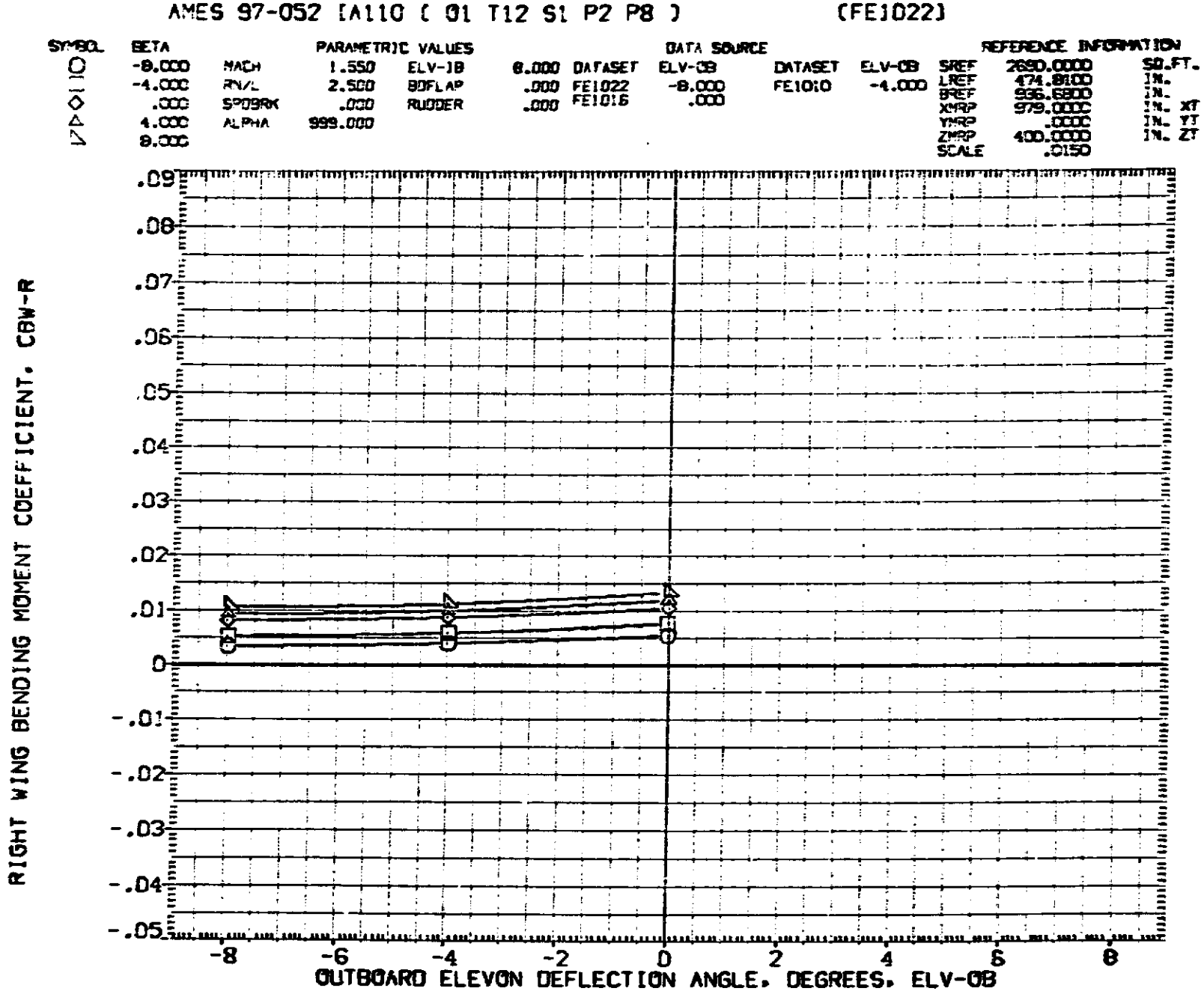


FIG. 7 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 8.0

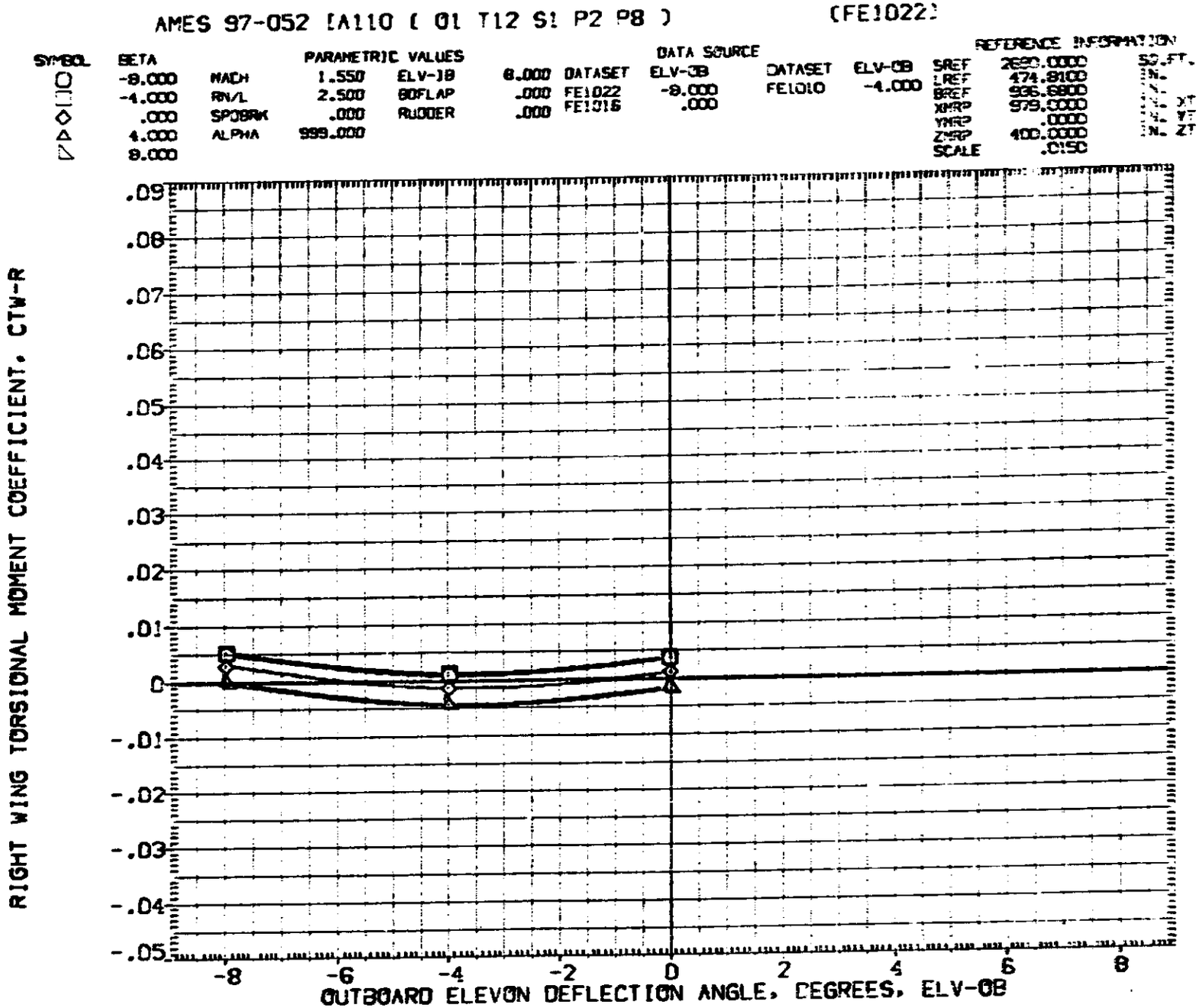


FIG. 7 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 8.0

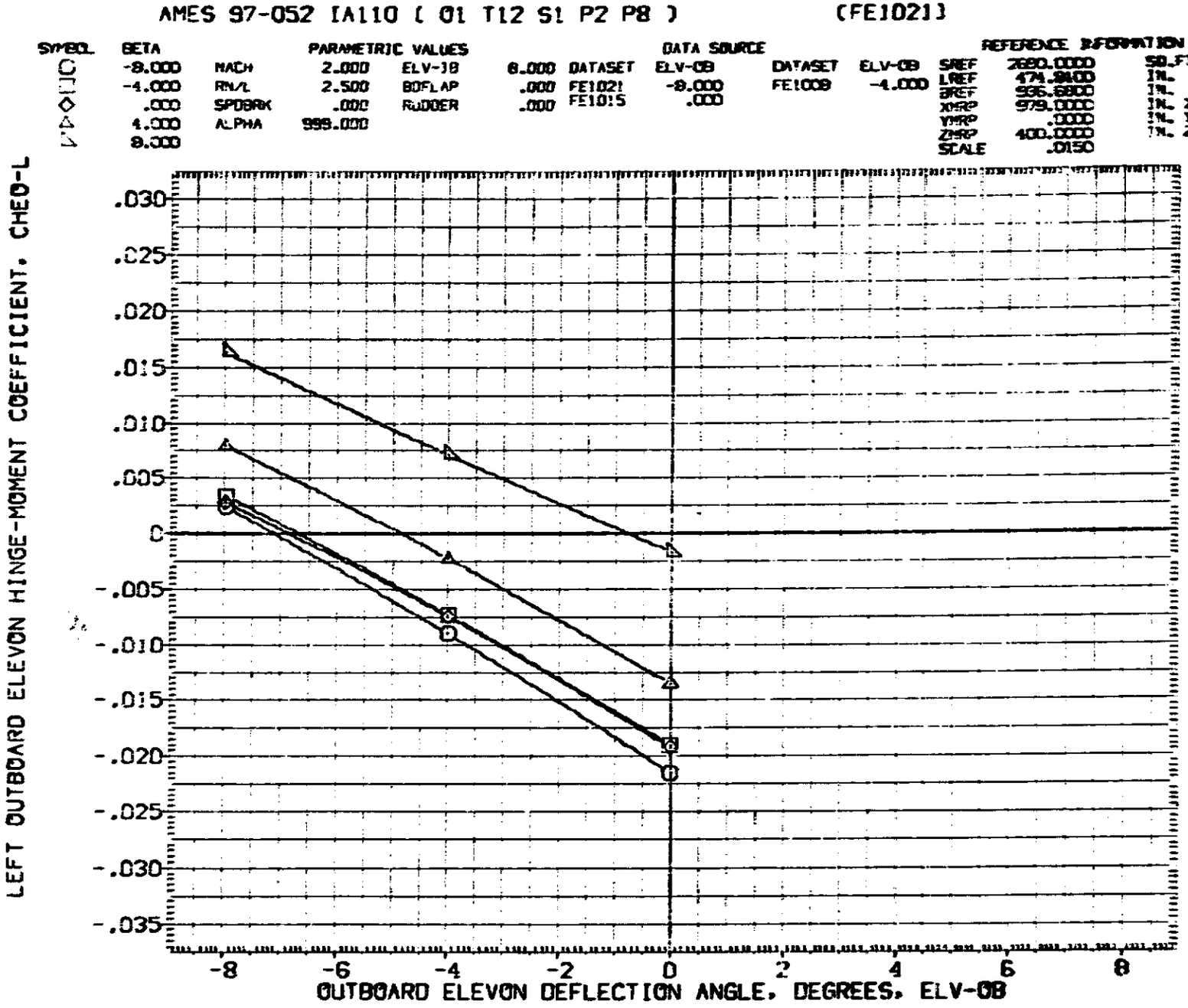


FIG. 8 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 8.0

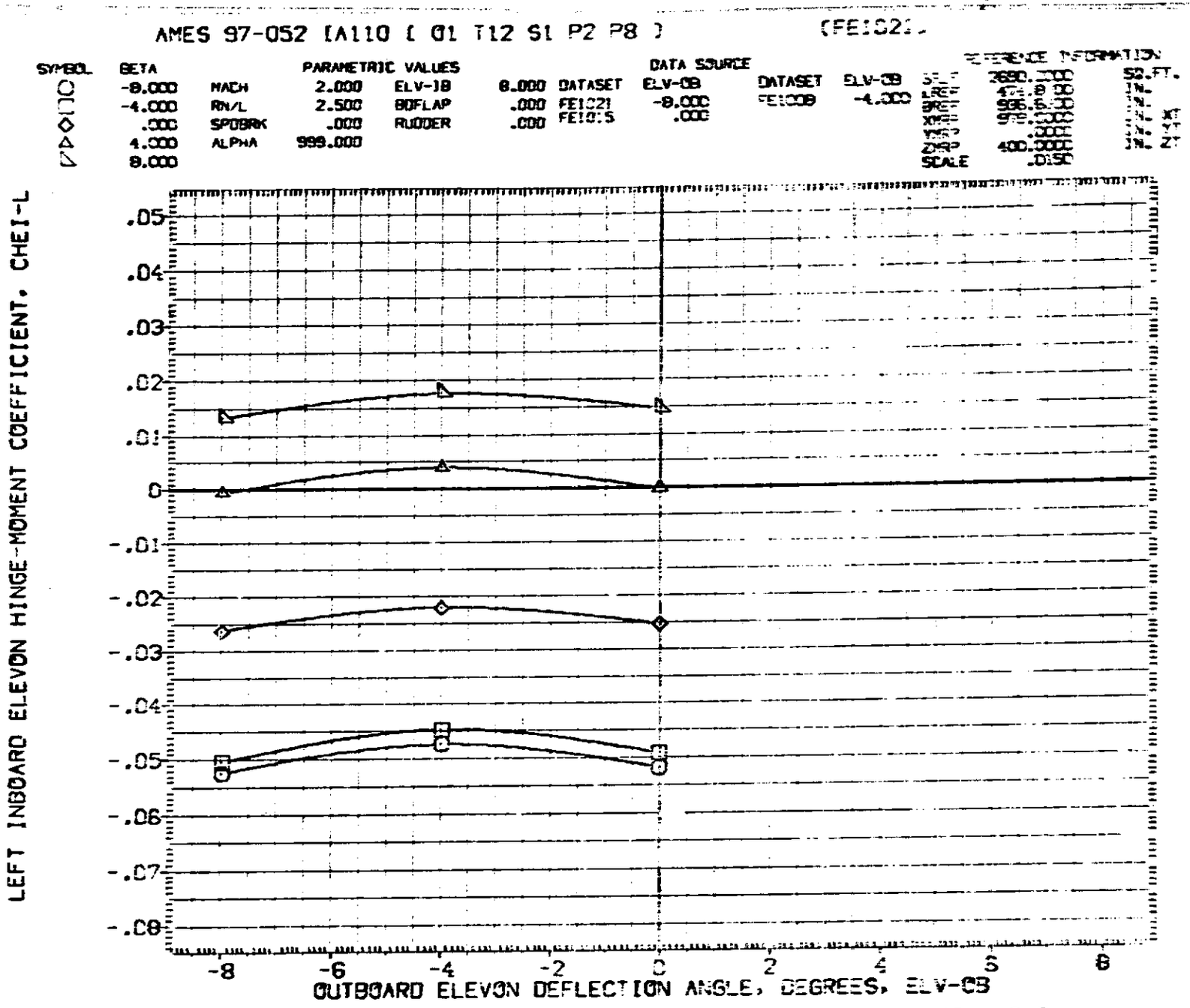


FIG. 8 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 8.0

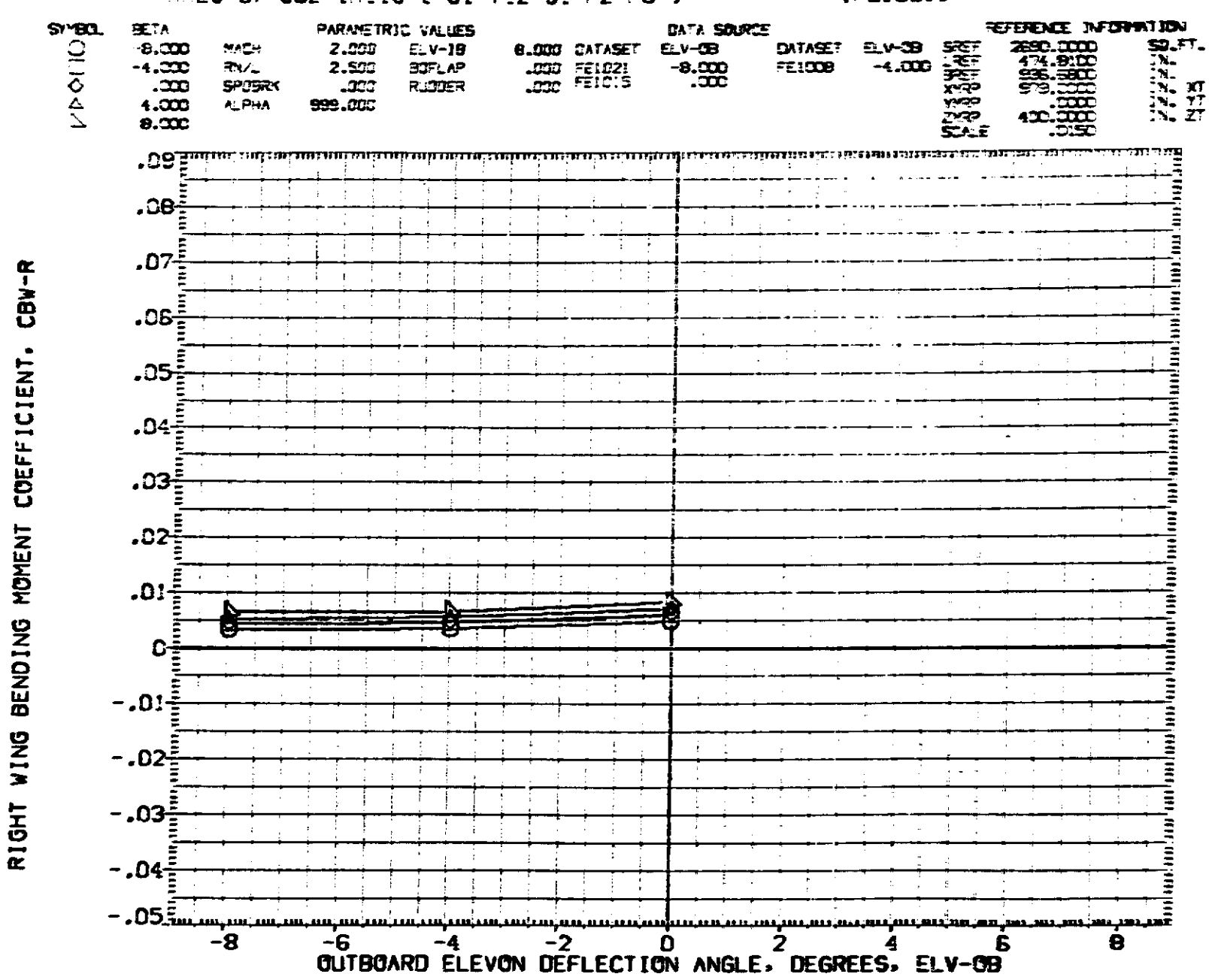


FIG. 8 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 8.0

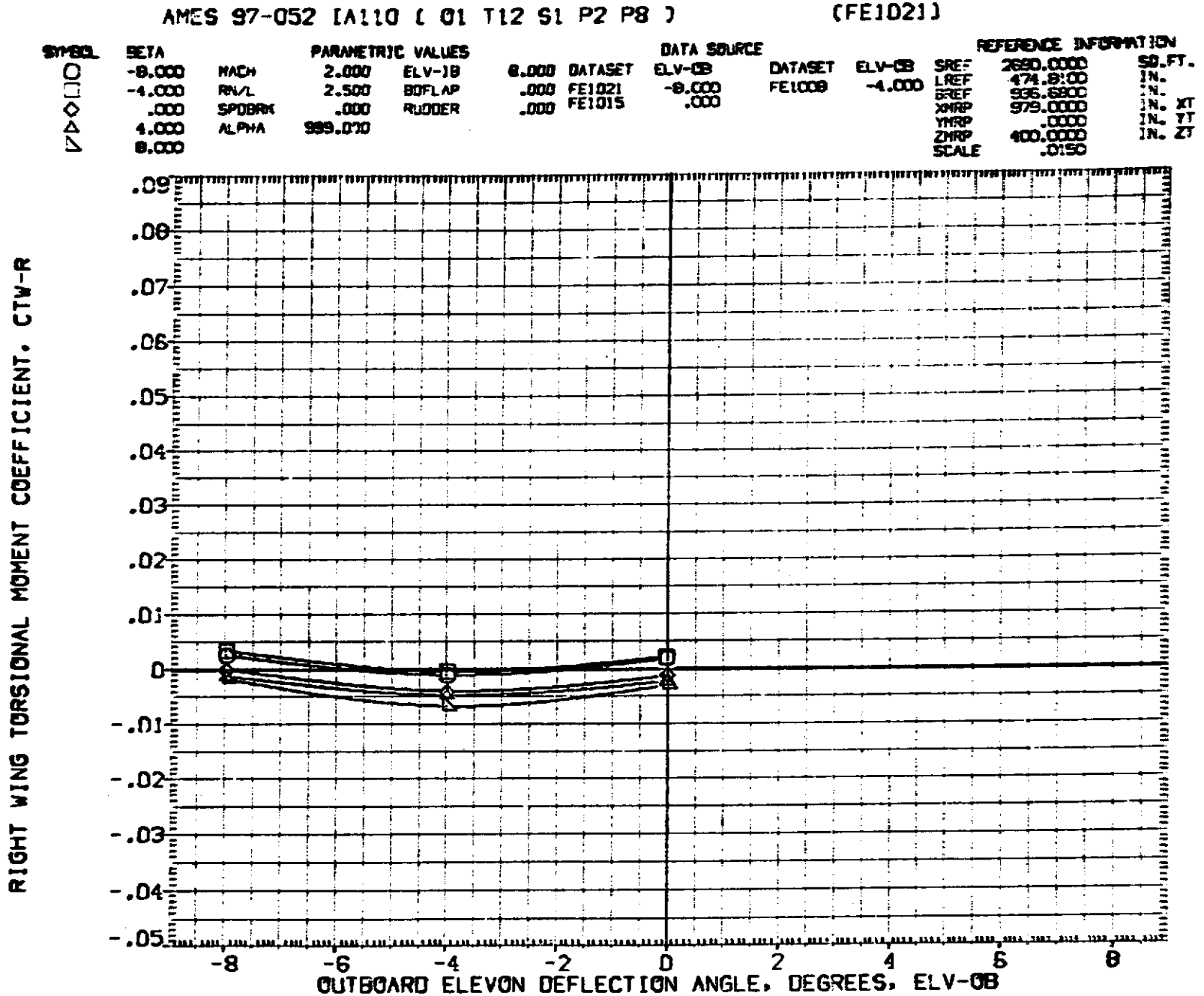


FIG. 8 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 8.0

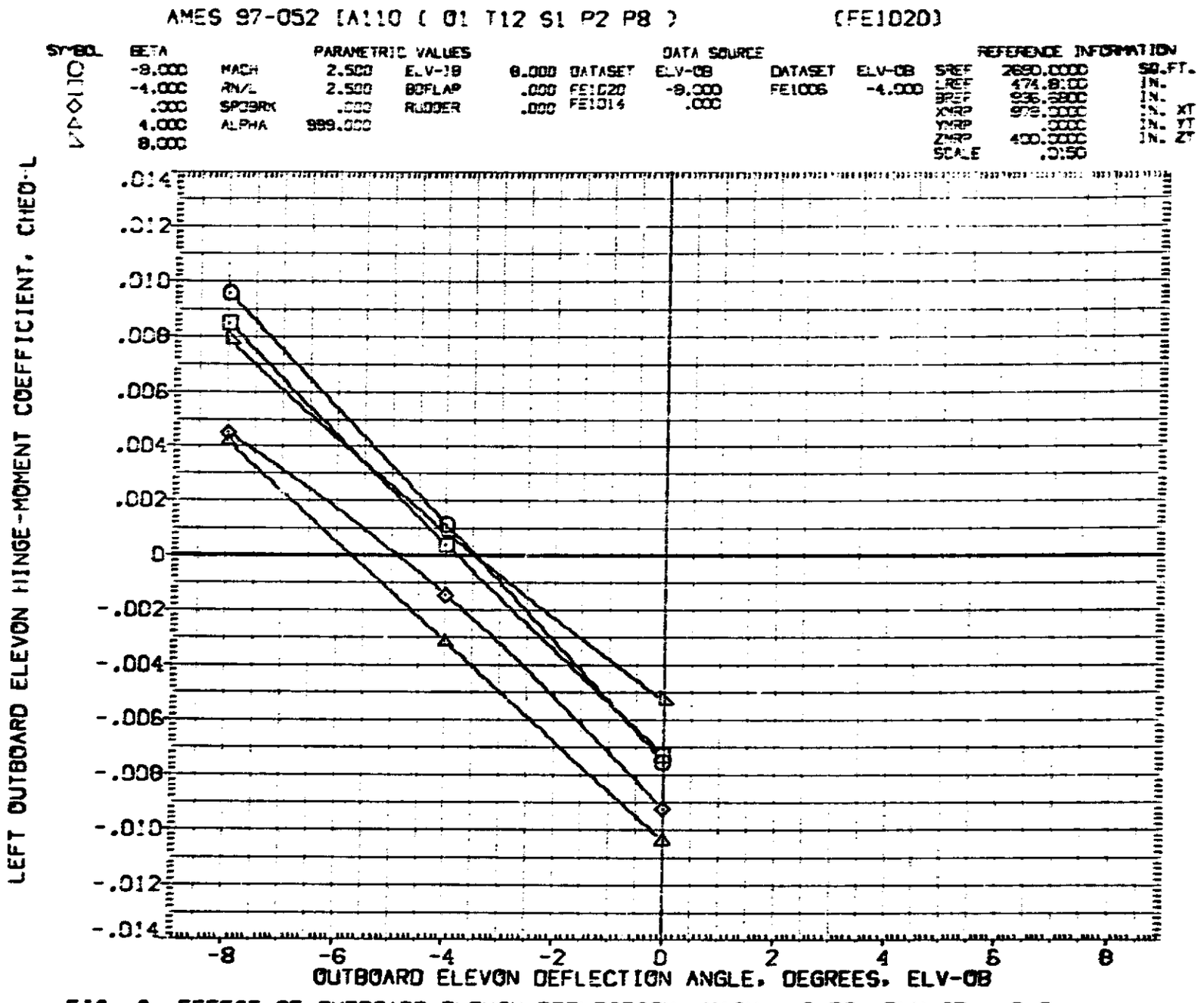


FIG. 9 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.50, ELV-IB = 8.0

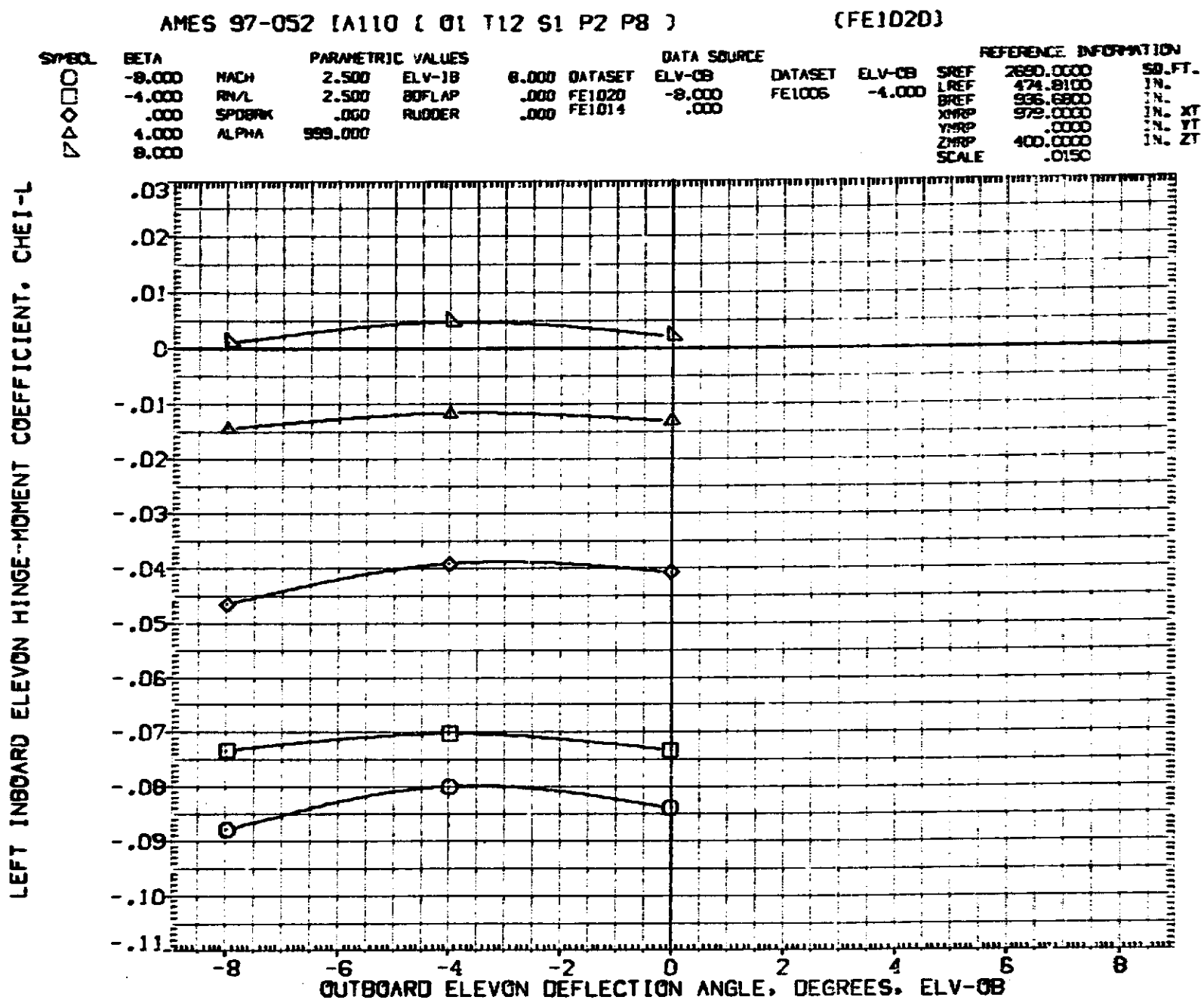


FIG. 9 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.50, ELV-IB = 8.0

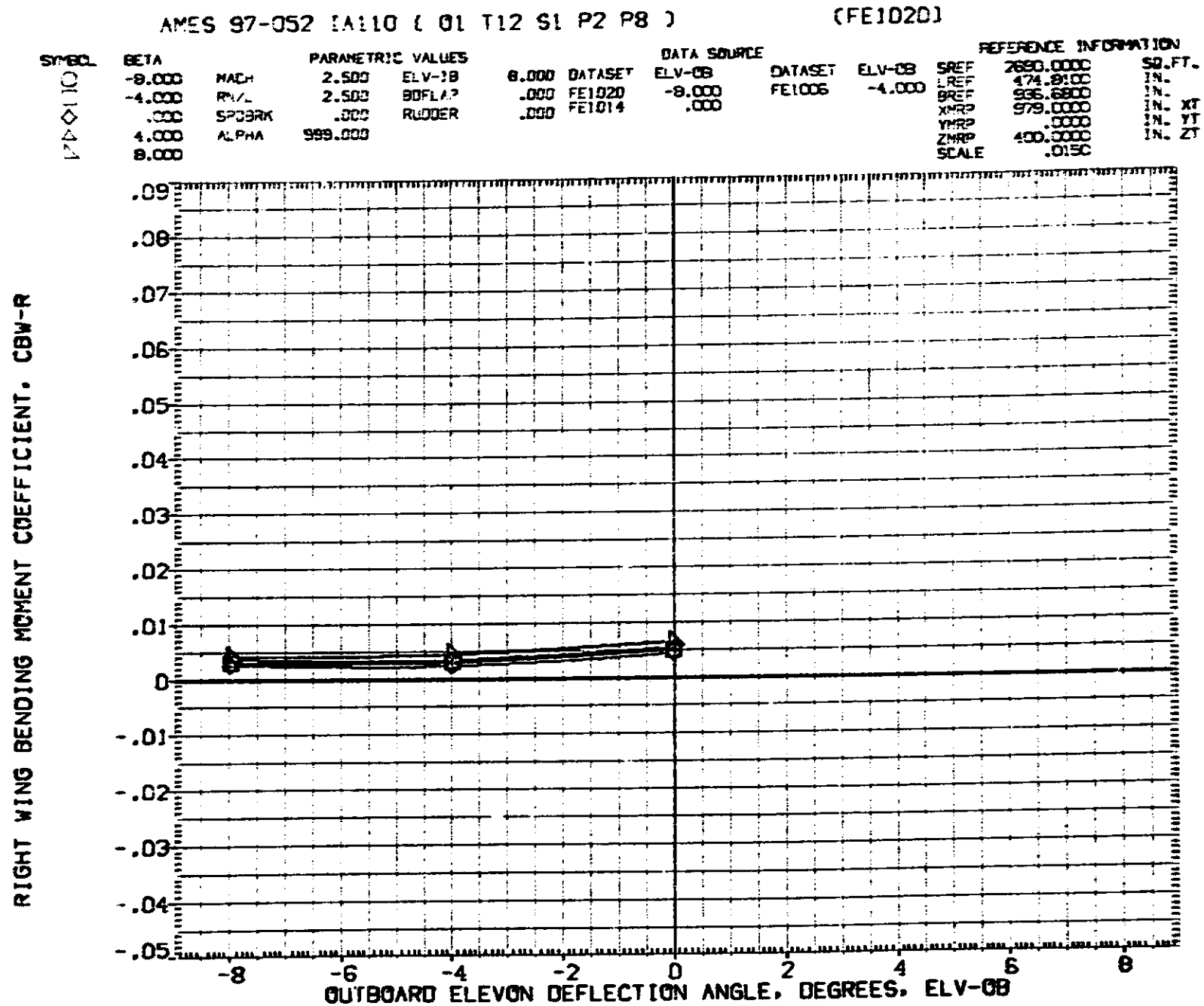


FIG. 9 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.50, ELV-IB = 8.0

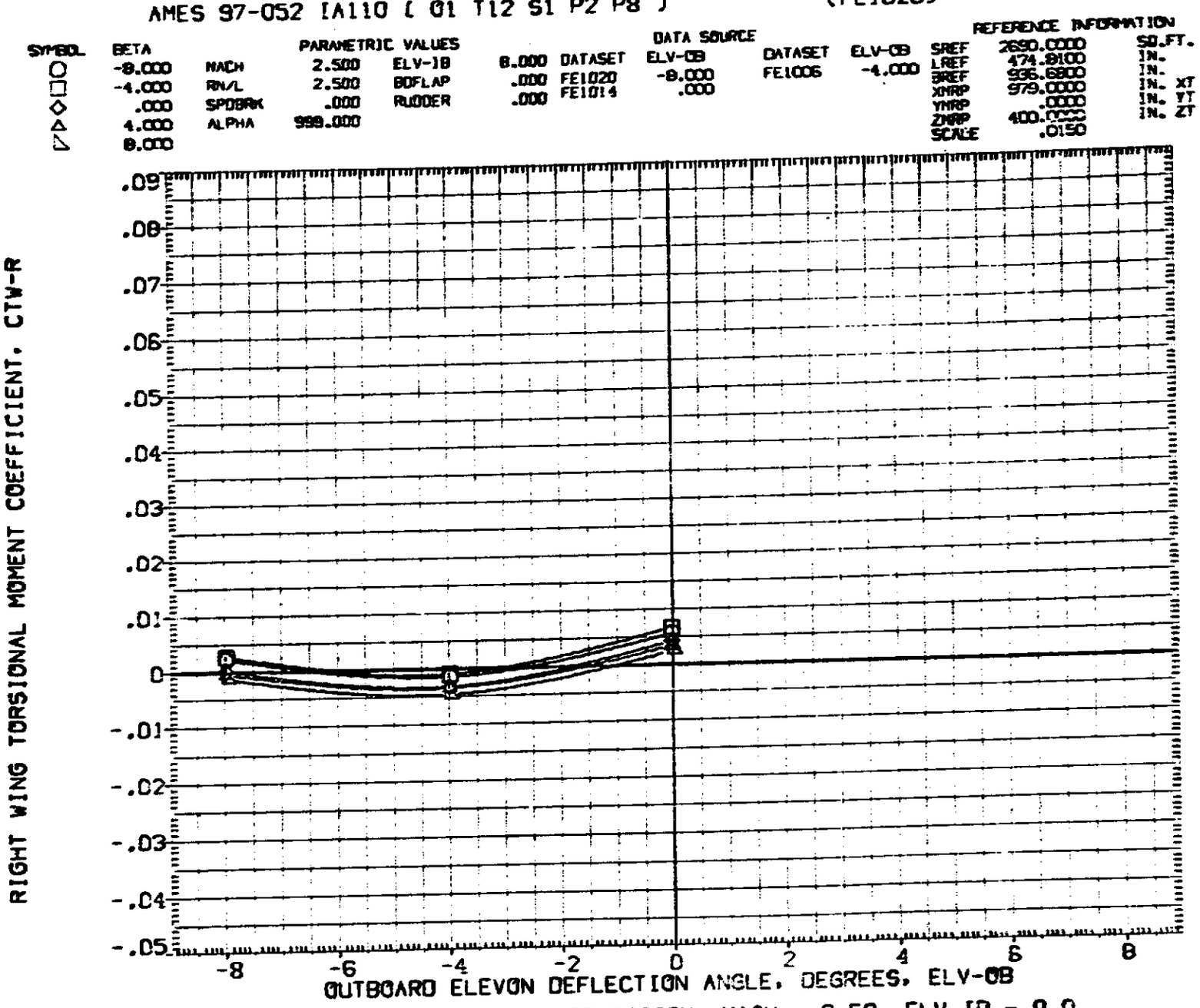


FIG. 9 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.50, ELV-IB = 8.0

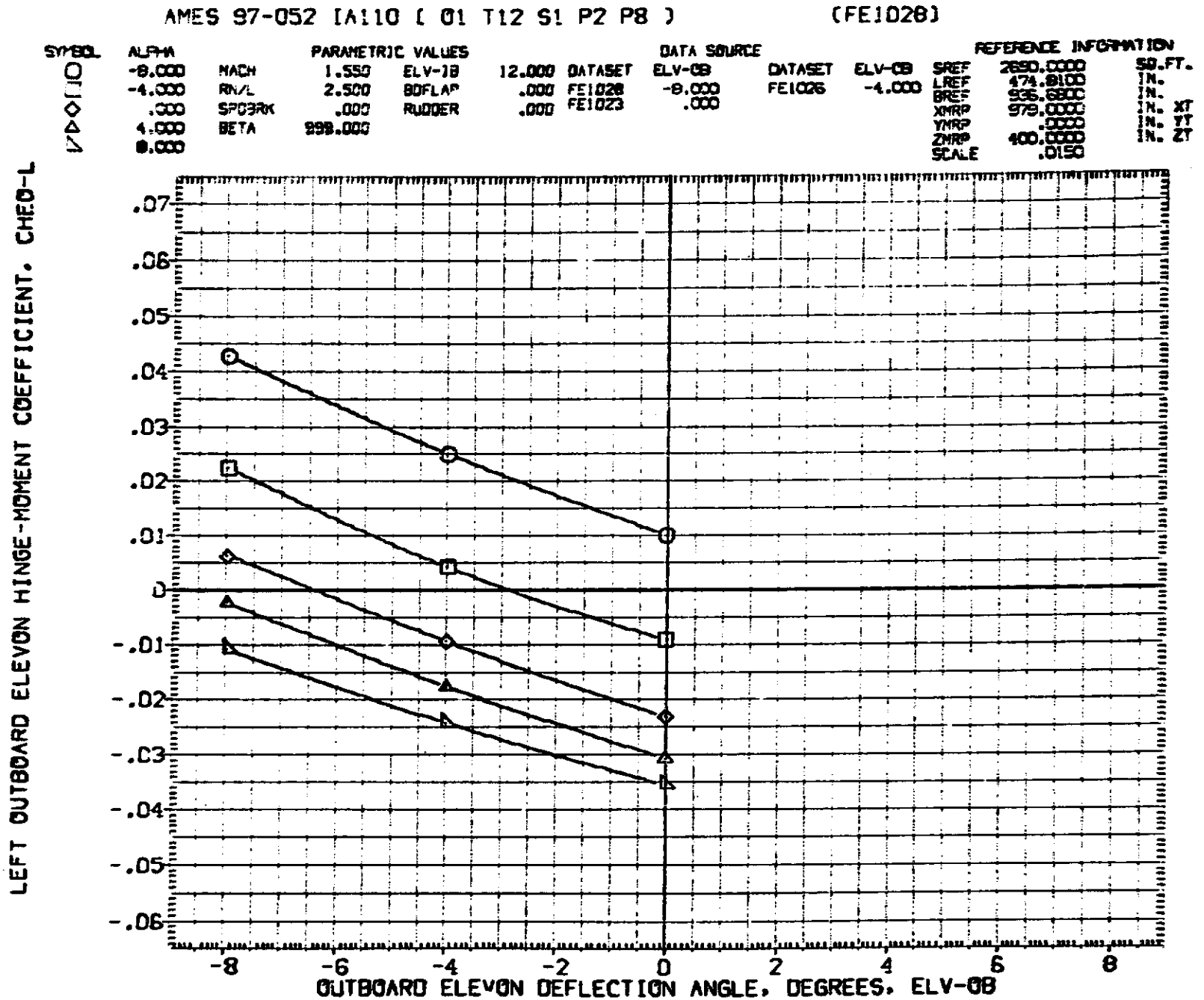


FIG. 10 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 12.0

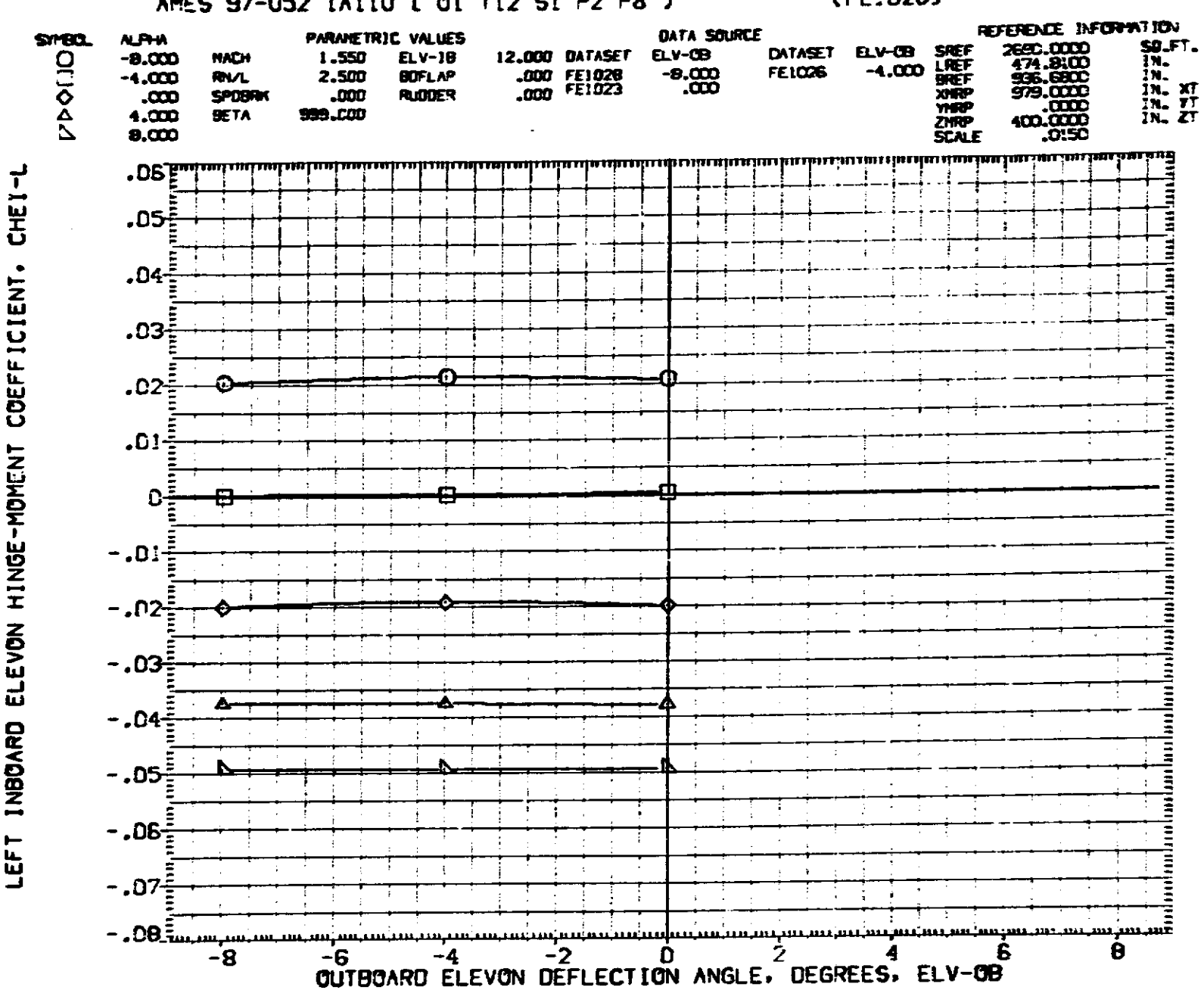


FIG. 10 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 12.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1028)

SYMBOL	ALPHA
○	-8.000
□	-4.000
◇	.000
△	4.000
▱	8.000

PARAMETRIC VALUES

MACH	1.550	ELV-IB	12.000
RN/L	2.500	BOFLAP	.000
SPOBRK	.000	RUDDER	.000
BETA	999.000		

DATA SOURCE

DATASET	ELV-OB	DATASET	ELV-OB
FE1028	-8.000	FE1026	-4.000
FE1023	.000		

REFERENCE INFORMATION

SREF	2680.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

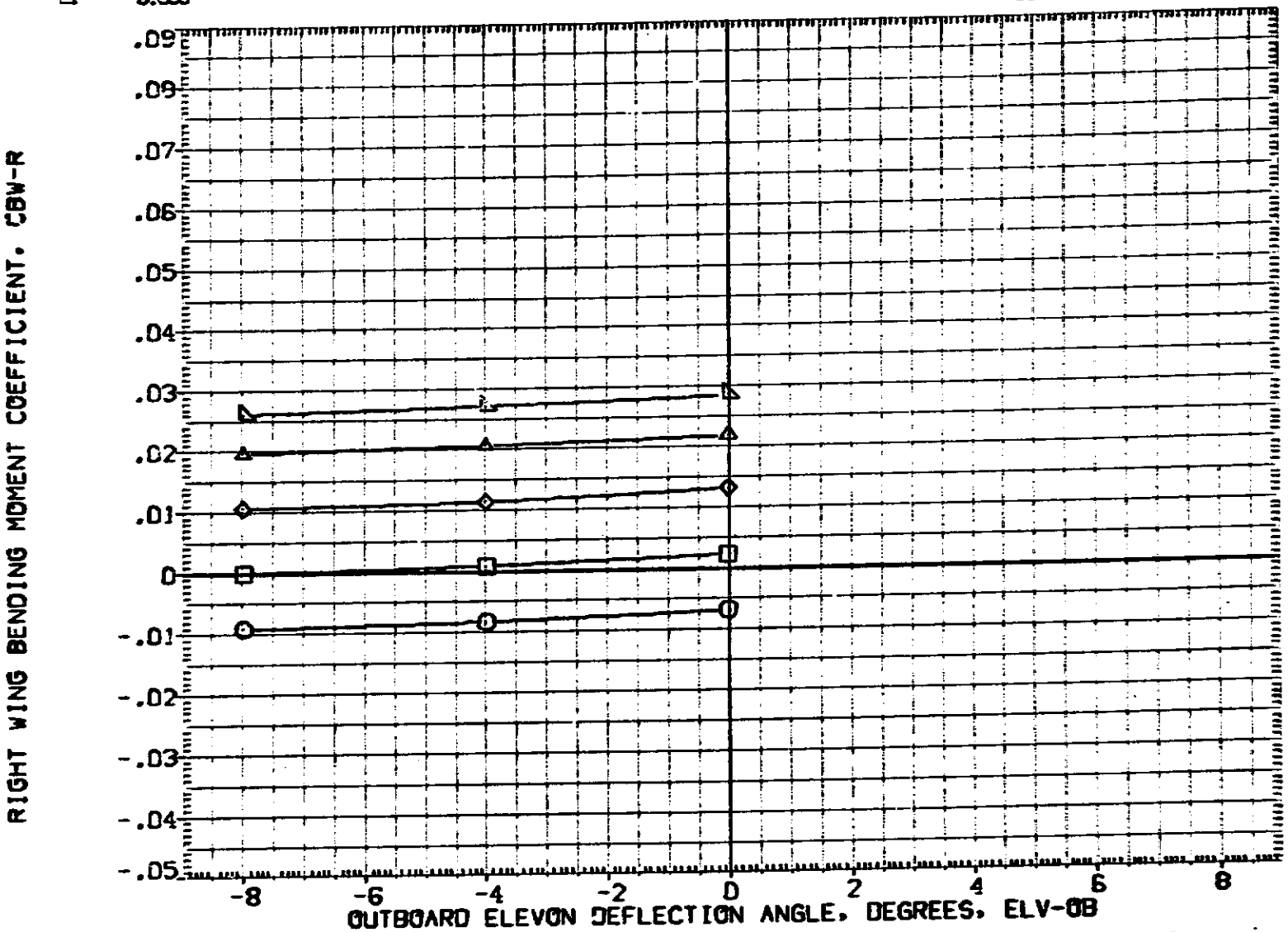


FIG. 10 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 12.0

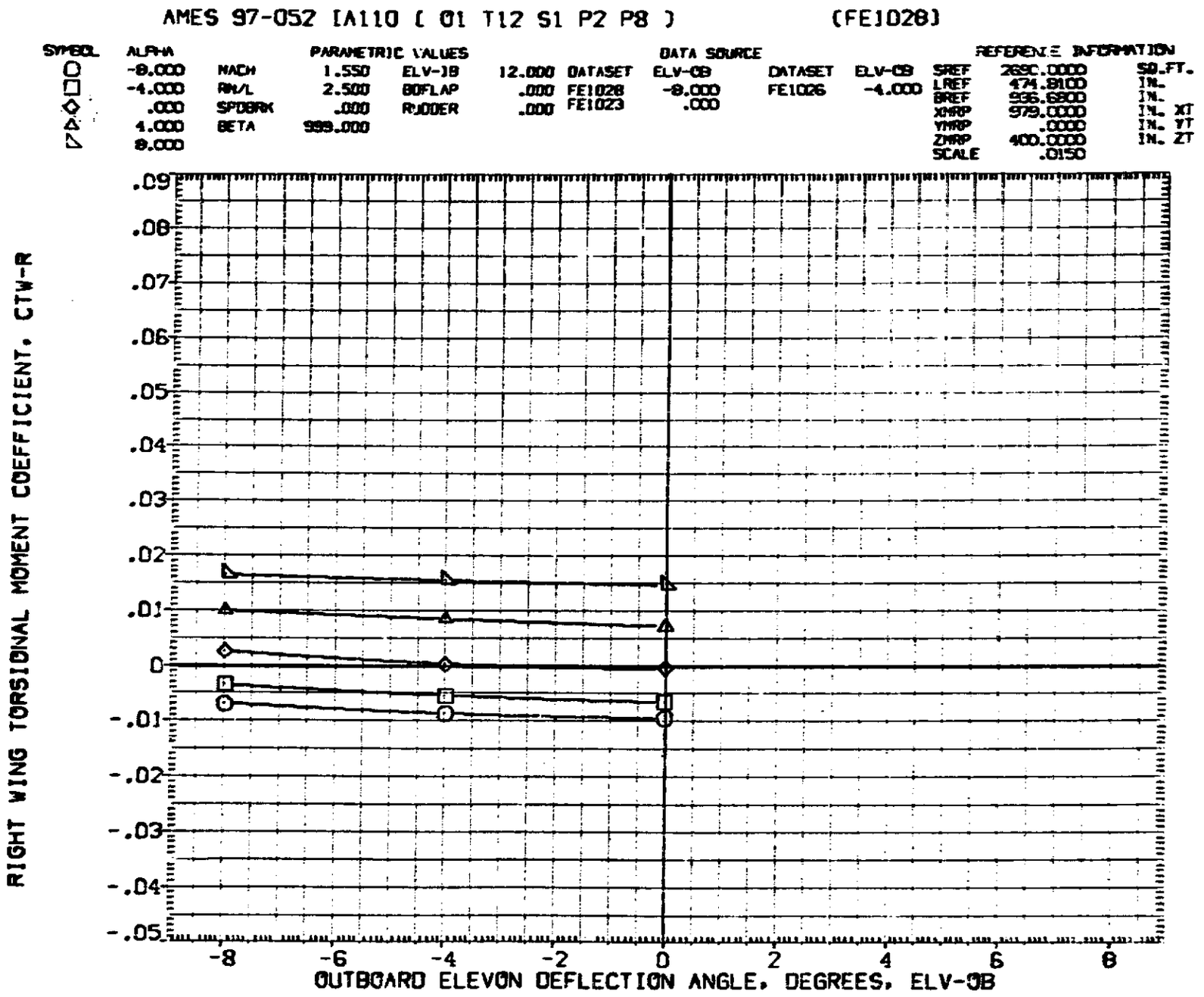


FIG. 10 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-IB = 12.0

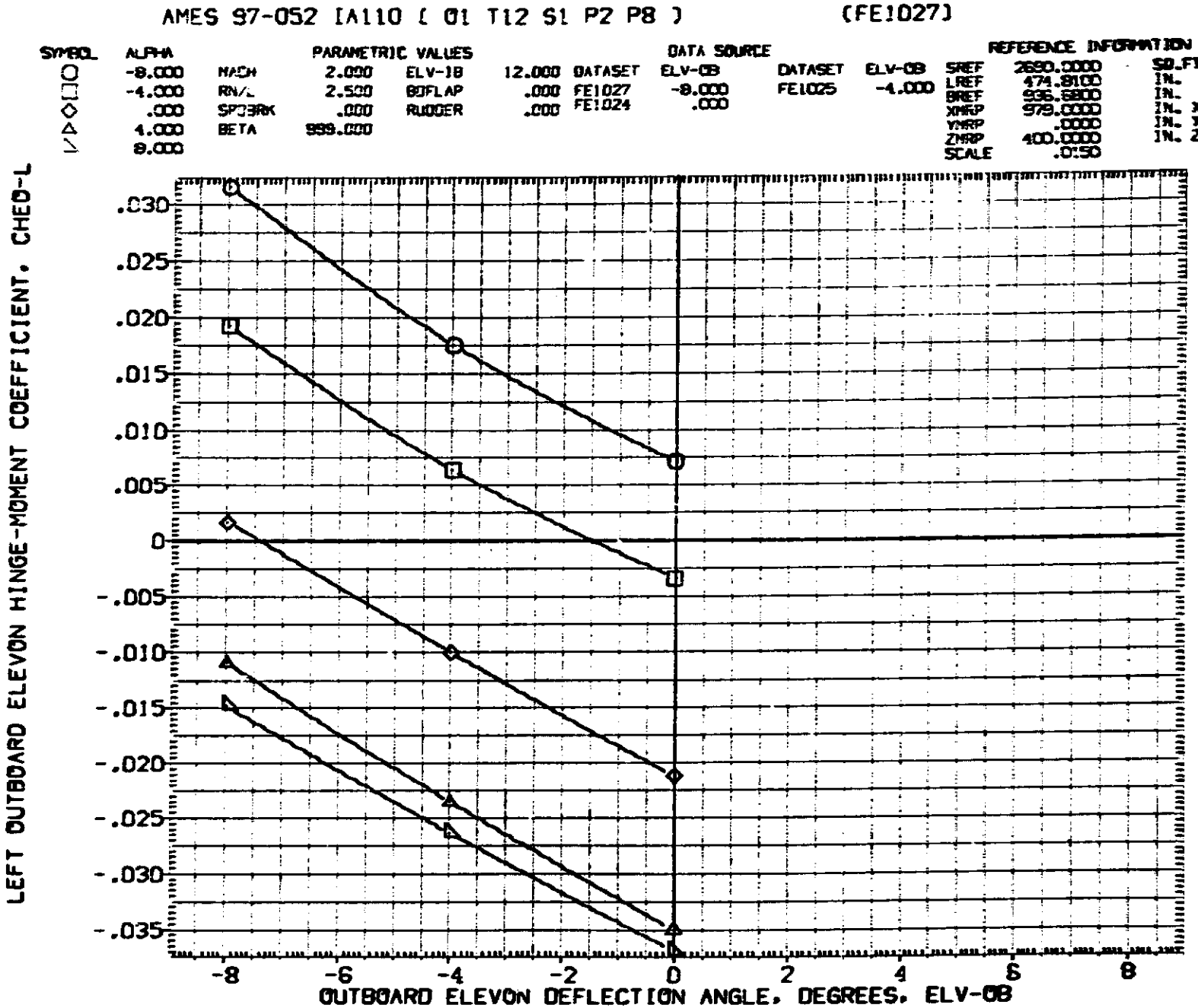


FIG. 11 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 12.0

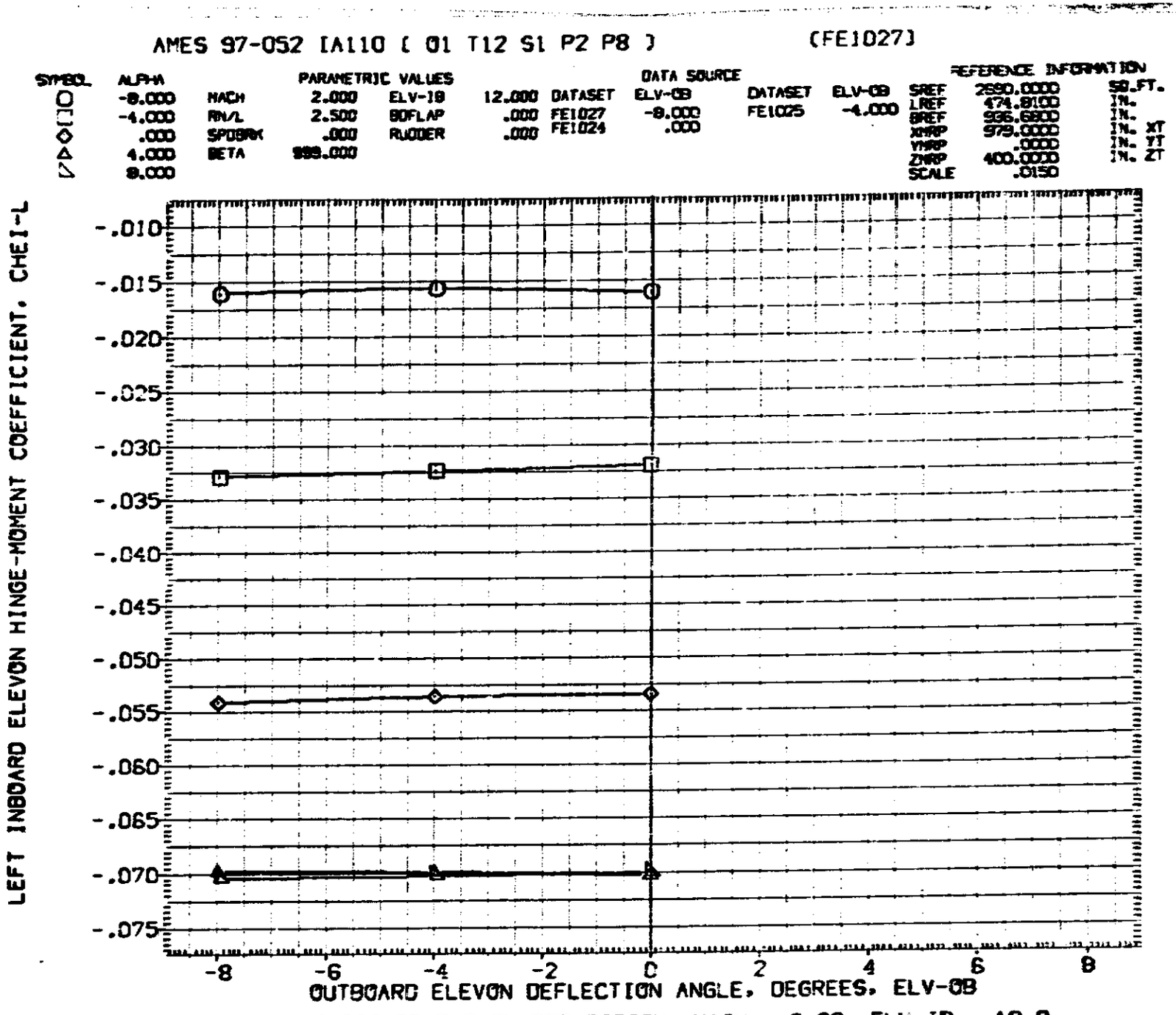


FIG. 11 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 12.0

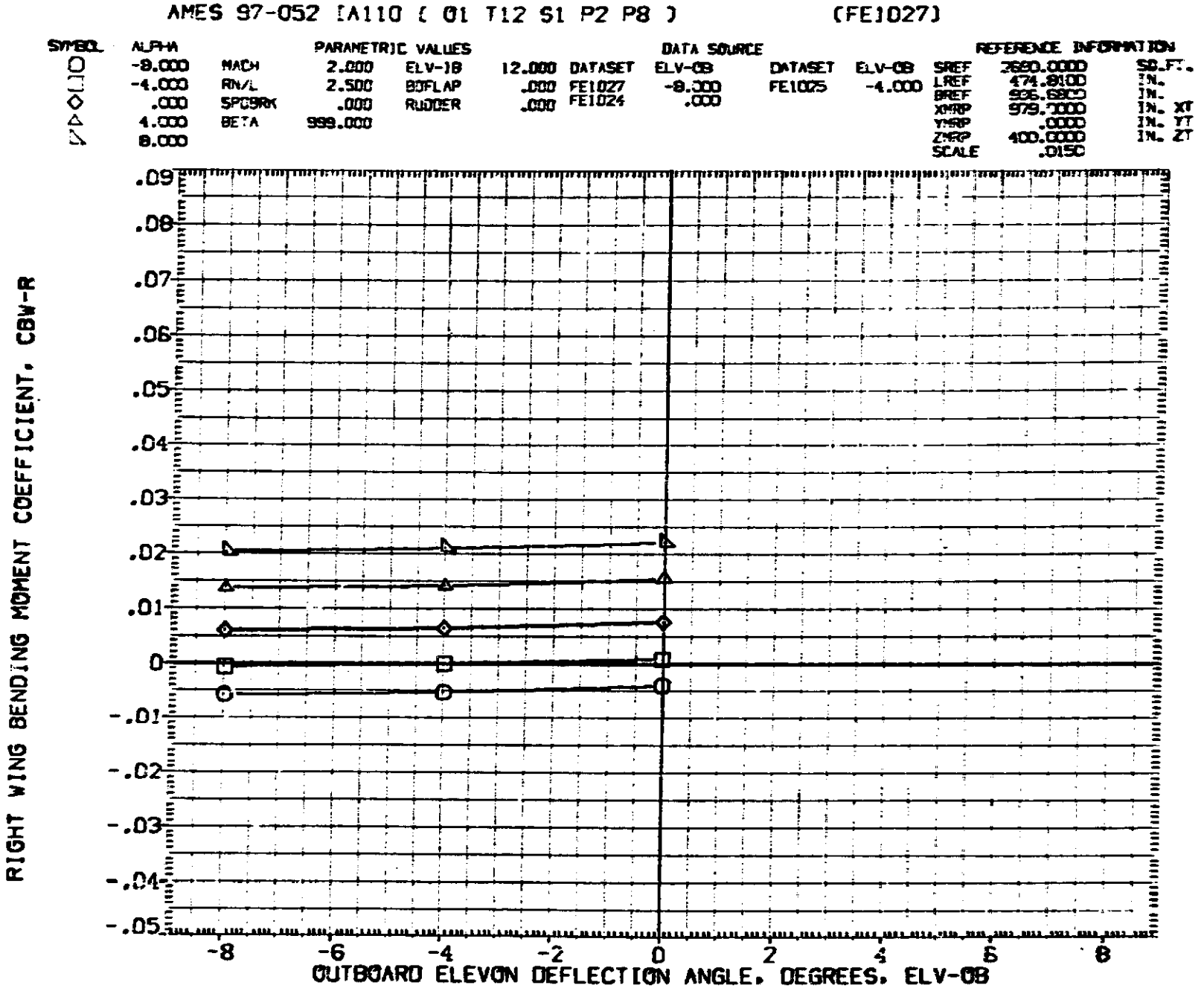


FIG. 11 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 12.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1027)

SYMBOL	ALPHA	PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
	-8.000	MACH	2.000	ELV-IB	12.000	DATASET	ELV-OB	DATASET	ELV-IB	SREF	2690.0000 SQ.FT.
	-4.000	RN/L	2.500	BOFLAP	.000	FE1027	-8.000	FE1025	-4.000	LREF	474.8100 IN.
	.000	SPOBRK	.000	RUDDER	.000	FE1024	.000			BREF	936.6800 IN.
	4.000	BETA	999.000							XMRP	979.3000 IN. XT
	8.000									YMRP	.0000 IN. YT
										ZMRP	400.0000 IN. ZT
										SCALE	.0150

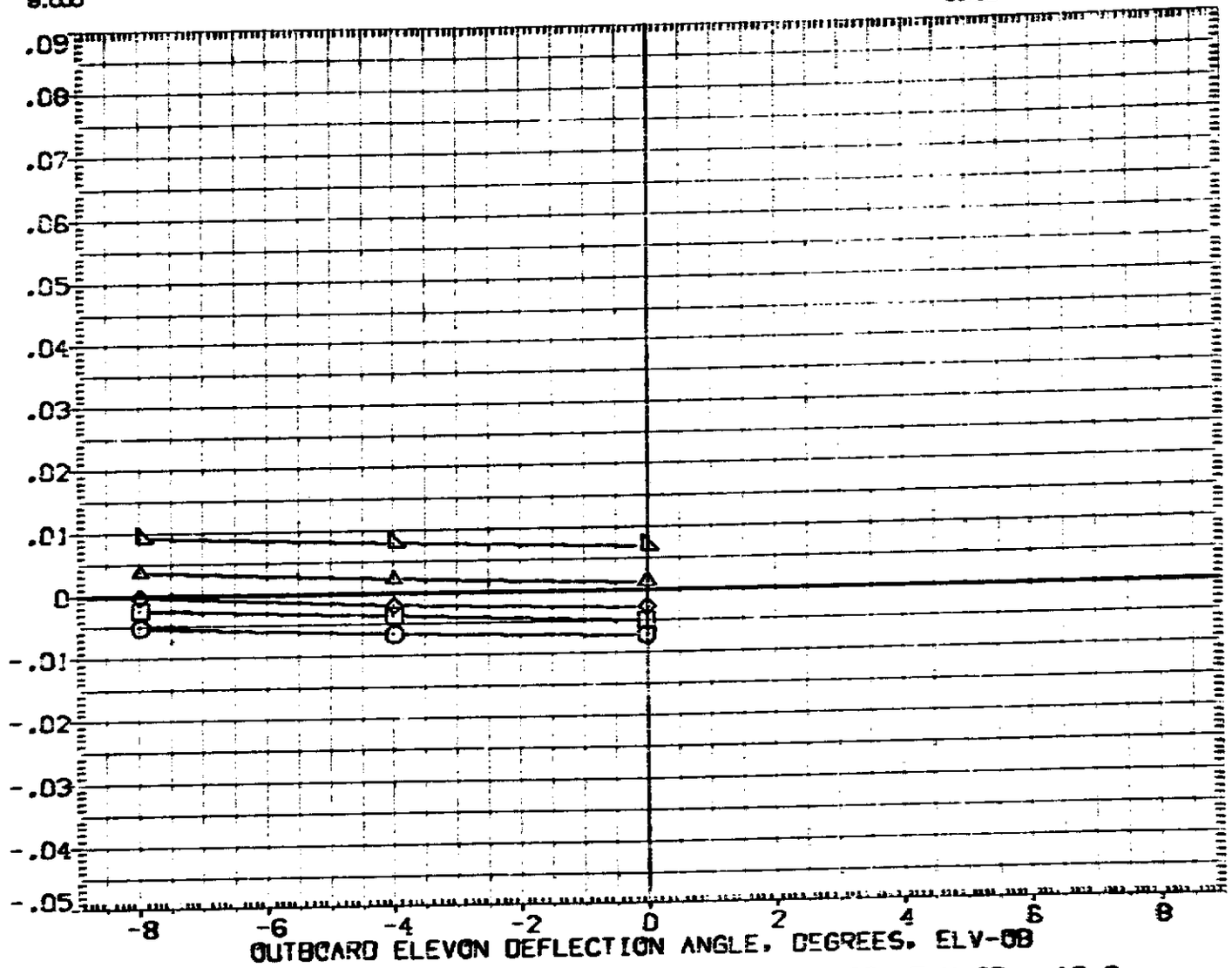


FIG. 11 EFFECT OF OUTBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-IB = 12.0

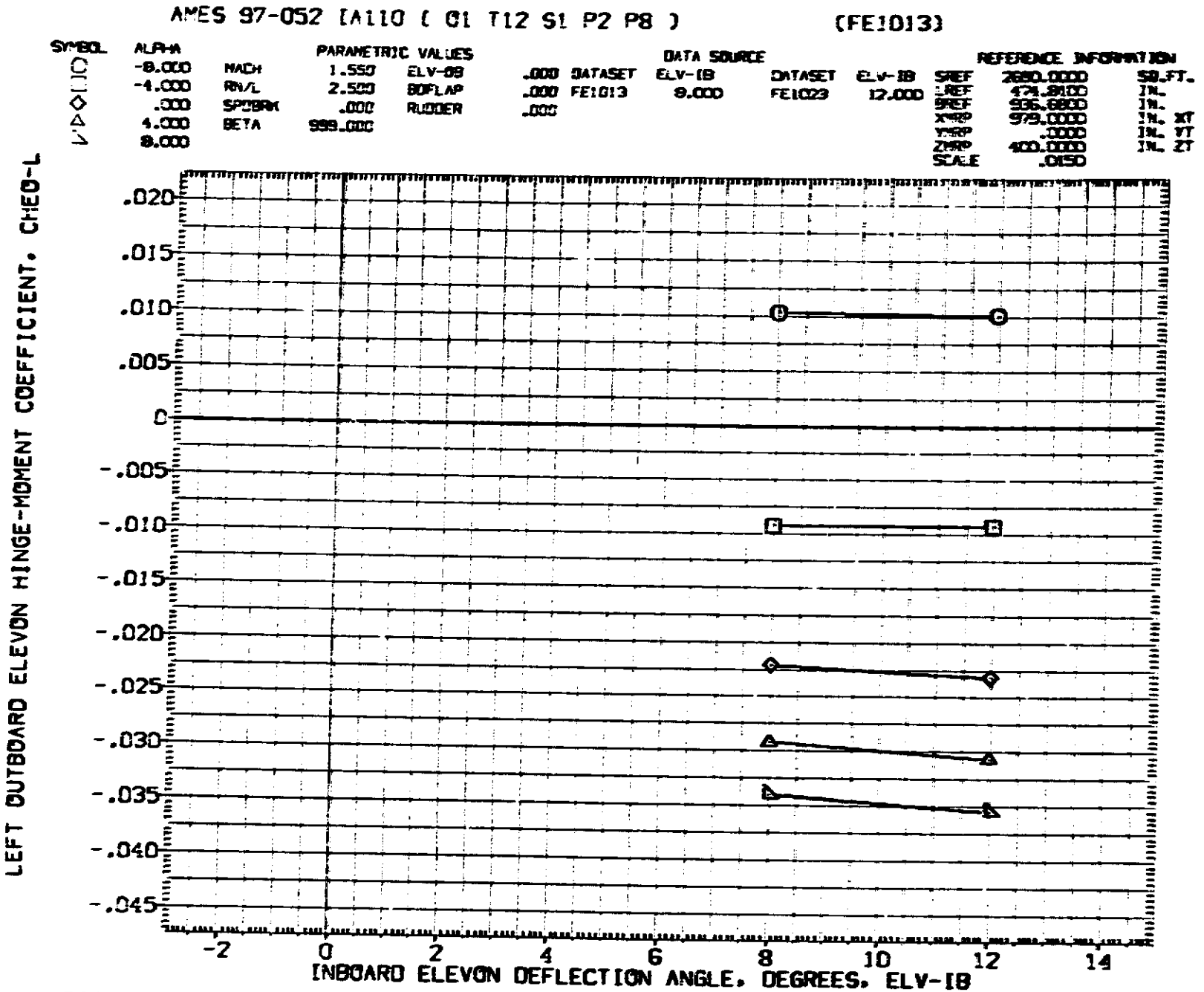


FIG. 12 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = 0.0

AMES 97-052 [A113 (0: T12 S1 P2 P8) (FE1013]

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	1.550	ELV-OB	.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2680.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1013	8.000	FE1023	12.000	LREF	474.9100	IN.
◇	.000	SPOBRK	.000	GLODER	.000					BREF	936.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0000	IN. XT
▽	8.000									YMRP	.0000	IN. YT
										ZMRP	405.0000	IN. ZT
										SCALF	.0150	

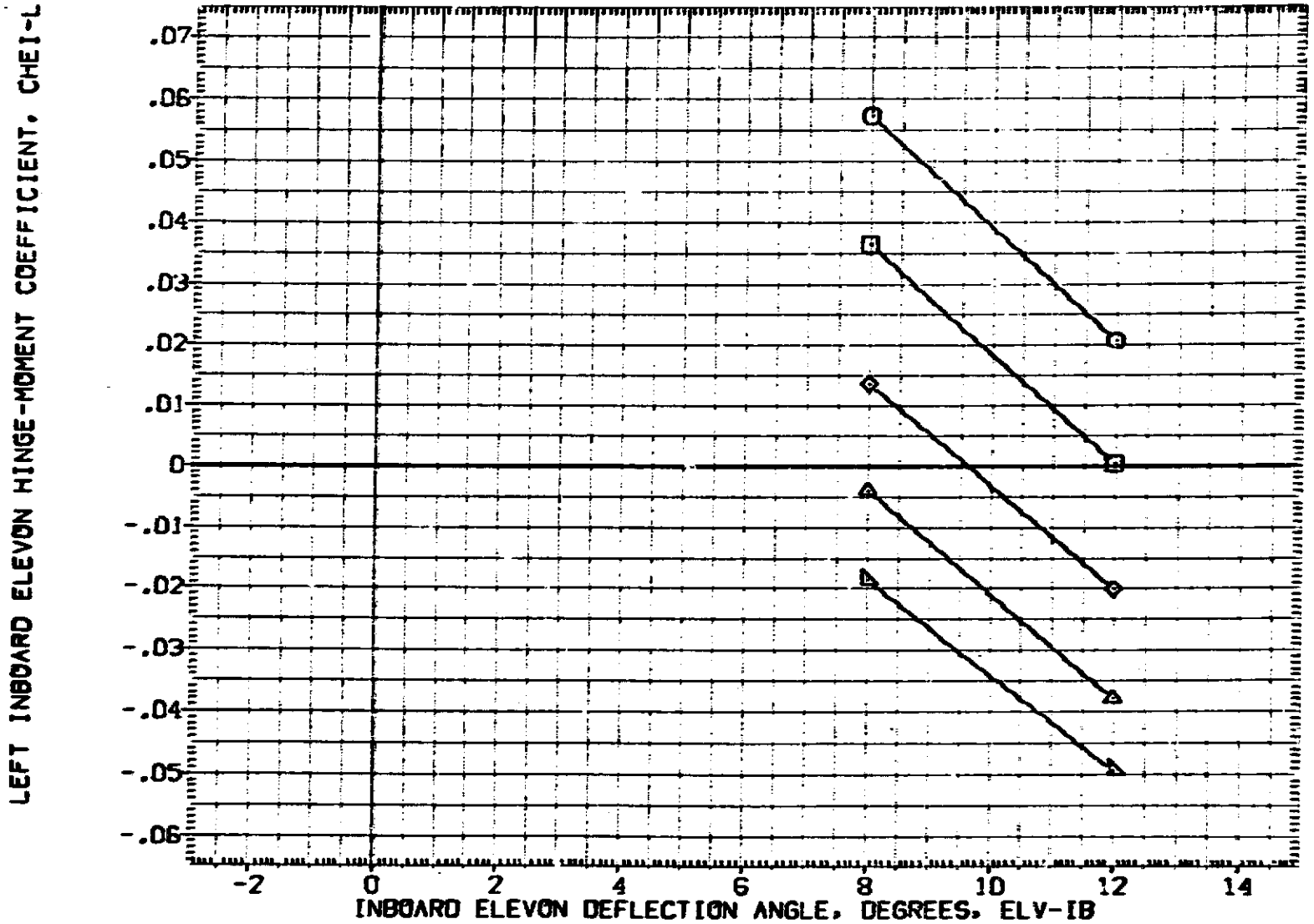


FIG. 12 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = 0.0

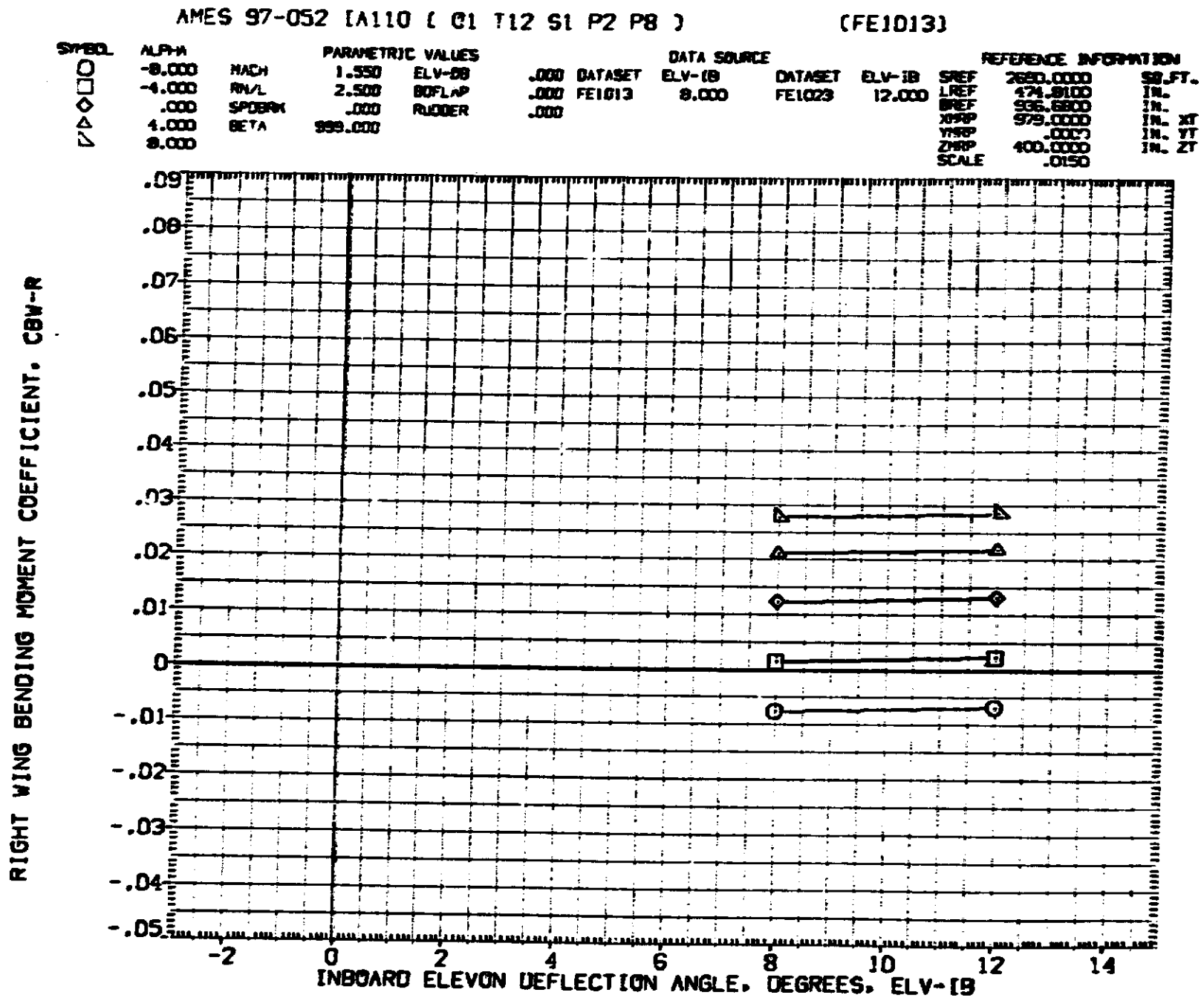


FIG. 12 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = 0.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1013]

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	1.550	ELV-OB	.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2690.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1013	8.000	FE1023	12.000	LREF	474.8100	IN.
◇	.000	SPDBRK	.000	RUDDER	.000					BREF	996.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0000	IN. XT
▽	8.000									YMRP	.0000	IN. YT
										ZMRP	400.0000	IN. ZT
										SCALE	.0150	

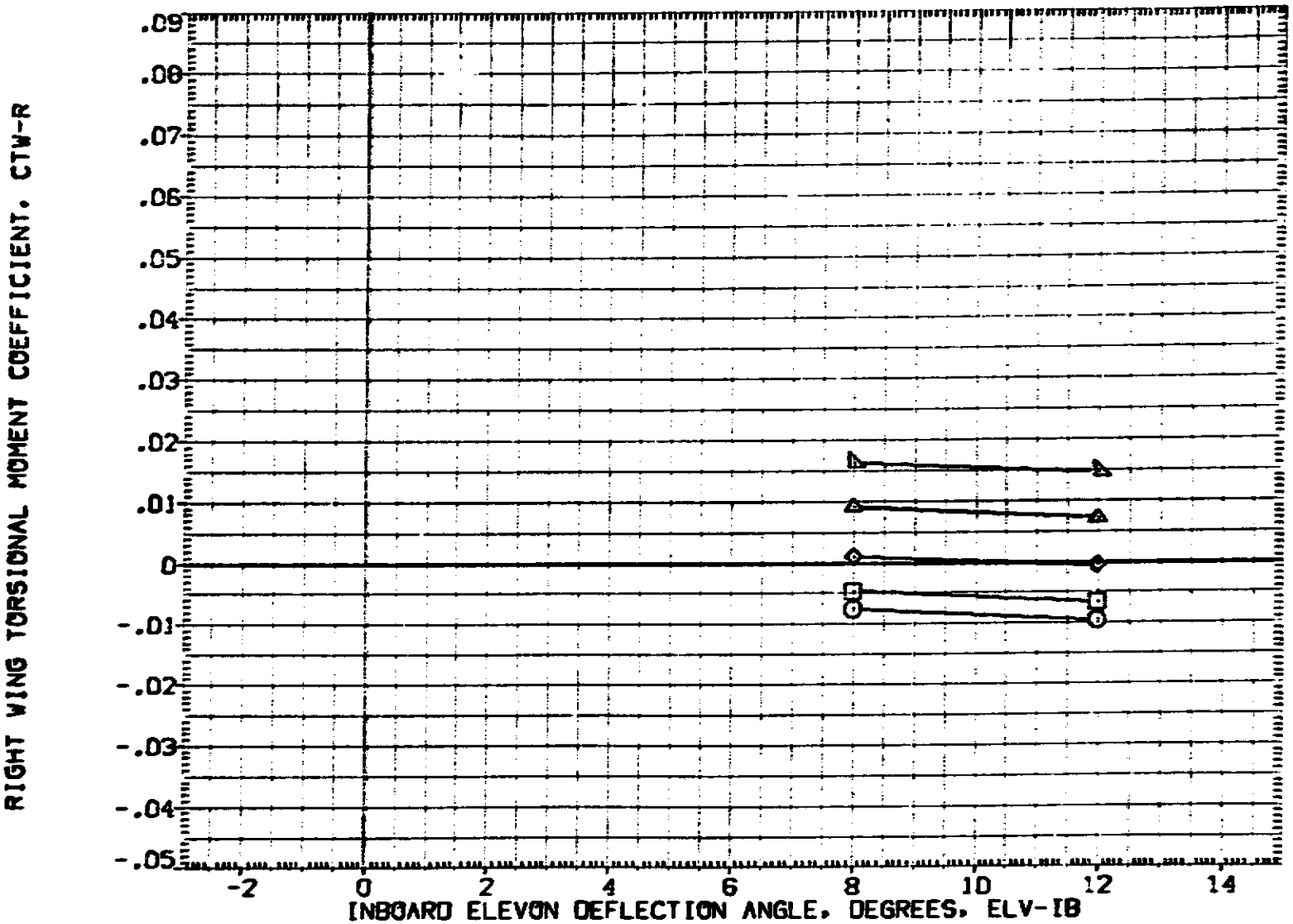


FIG. 12 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = 0.0

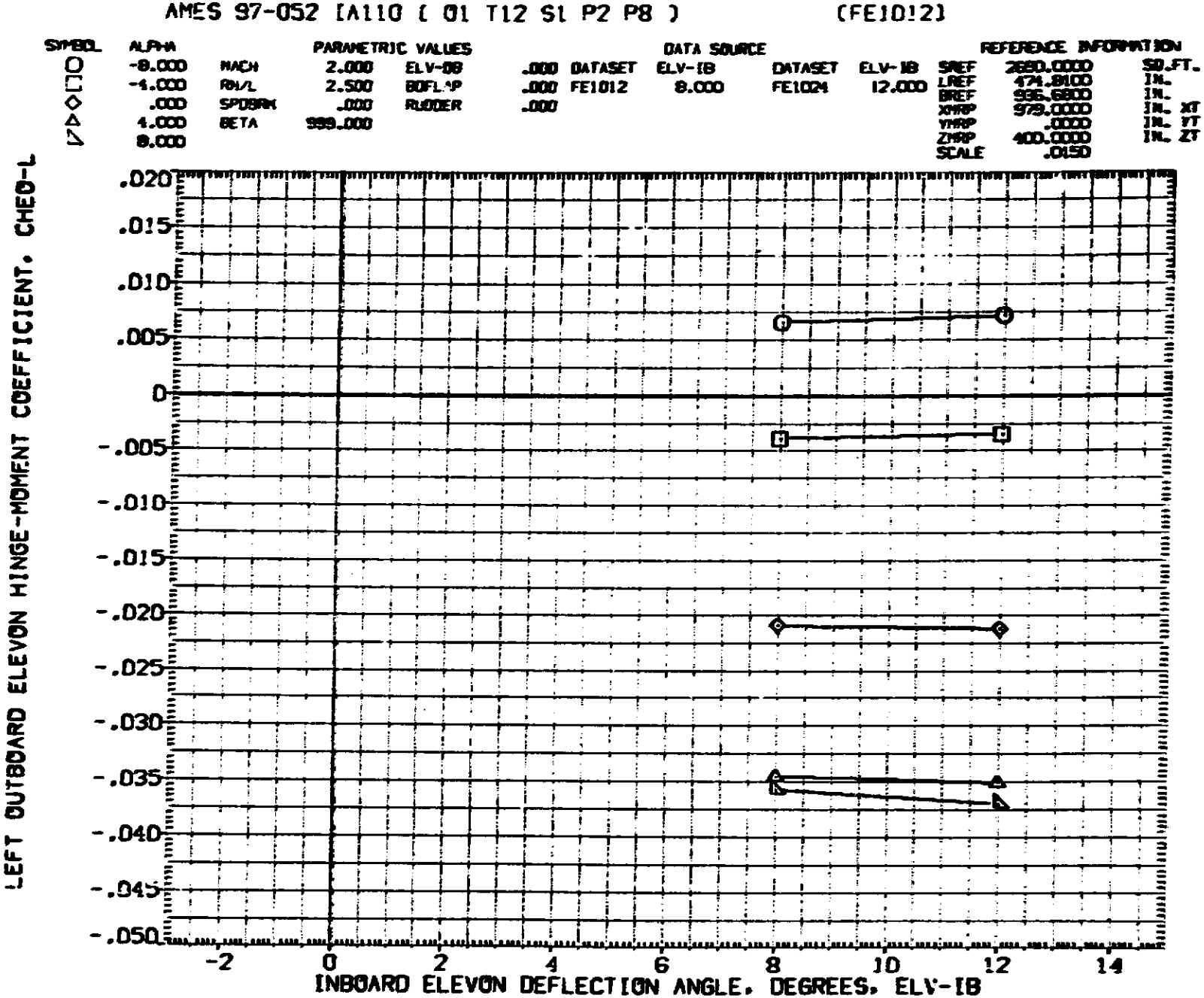


FIG. 13 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = 0.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1012]

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	2.000	ELV-OB	.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2690.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1012	8.000	FE1024	12.000	LREF	474.8100	IN.
◇	.000	SPOBRK	.000	RUDDER	.000					BREF	936.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0000	IN. XT
▽	8.000									YMRP	.0000	IN. YT
										ZMPP	400.0000	IN. Z
										SCALE	.0150	

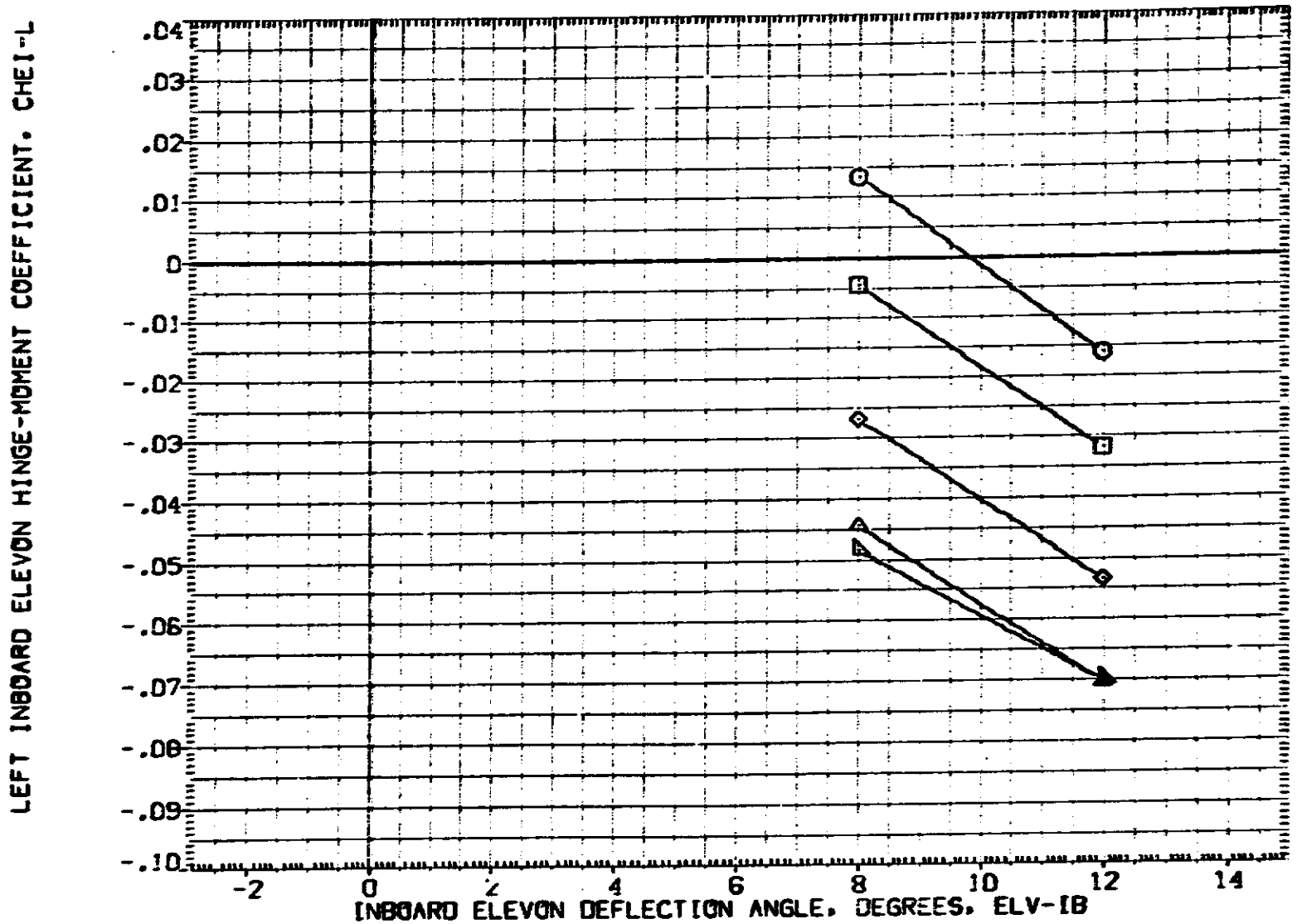


FIG. 13 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = 0.0

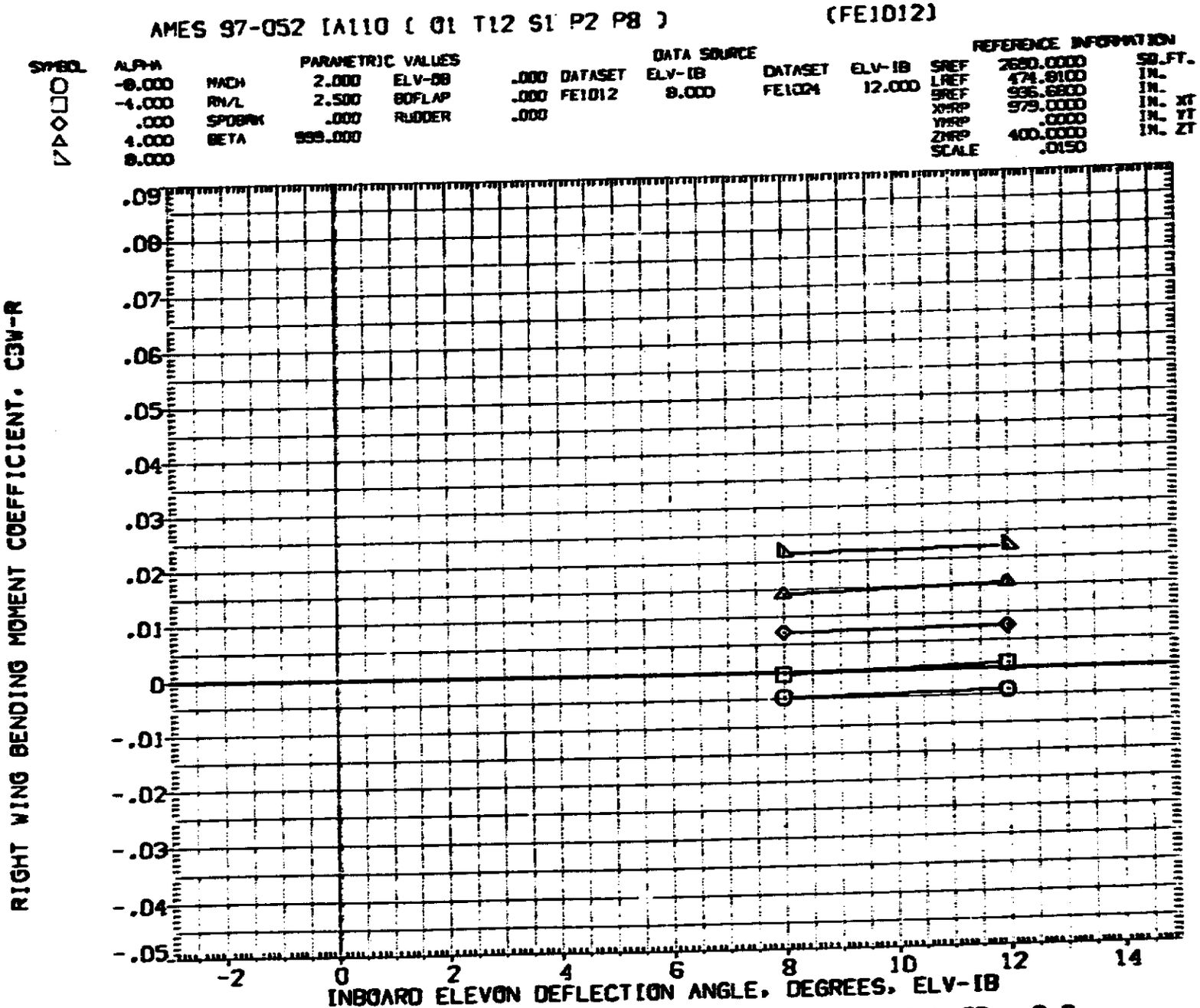


FIG. 13 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = 0.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1012)

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
	-8.000	MACH	2.000	ELV-OB	.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2690.0000	SQ.FT.
	-4.000	RN/L	2.500	BOFLAP	.000	FE1012	8.000	FE1024	12.000	LREF	474.8100	IN.
	.000	SPOBRK	.000	RUDDER	.000					BREF	935.6800	IN.
	4.000	BETA	999.000							XMRP	979.0000	IN. XT
	8.000									YMRP	.0000	IN. YT
										ZMRP	400.0000	IN. ZT
										SCALE	.0150	

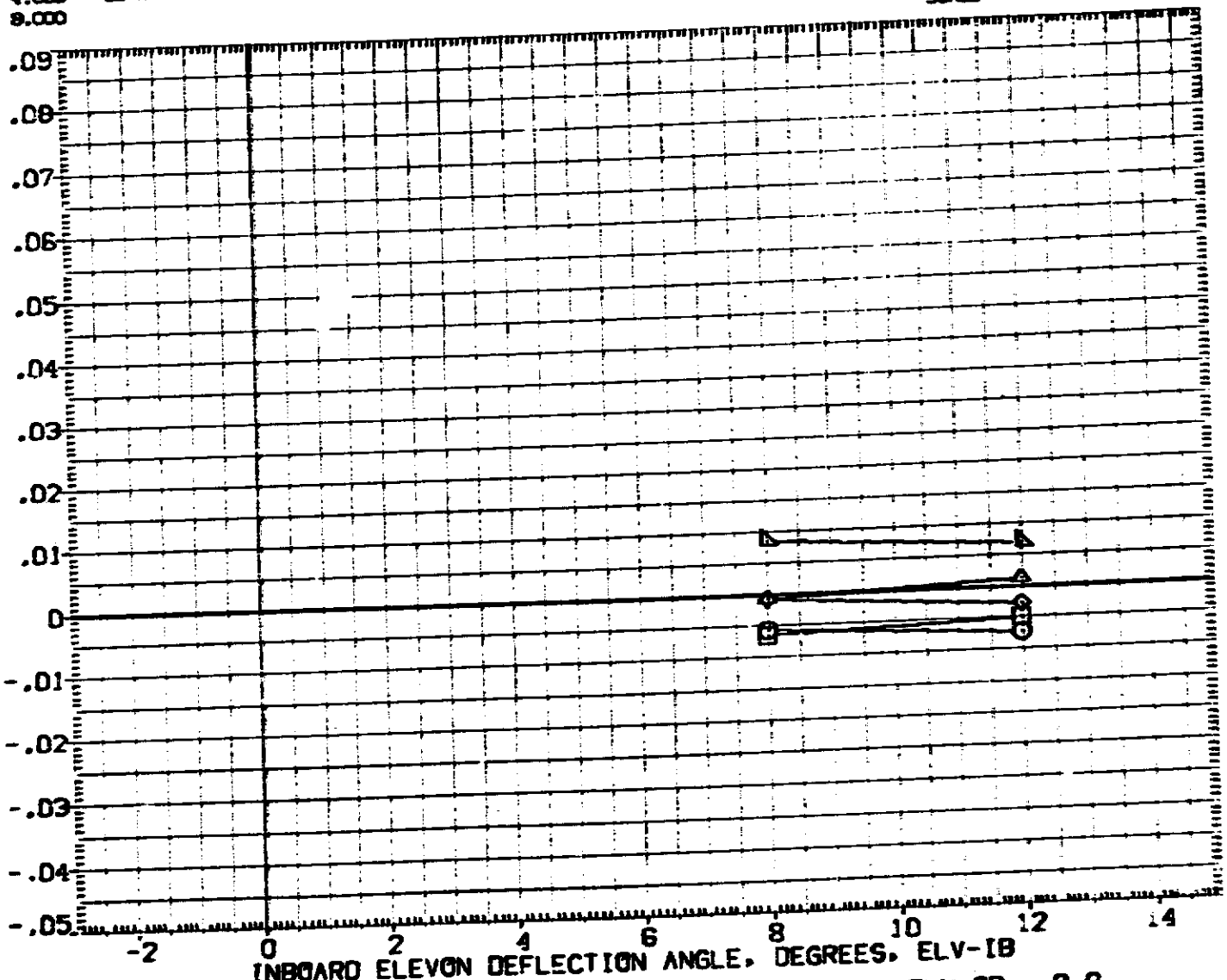


FIG. 13 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = 0.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1005]

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	1.550	ELV-OB	-4.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2680.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1005	8.000	FE1026	12.000	LREF	474.8100	IN.
◇	.000	SPOBRK	.000	RUDDER	.000					BREF	936.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0000	IN. XT
▽	8.000									YMRP	.0000	IN. YT
										ZMRP	400.0000	IN. ZT
										SCALE	.0150	

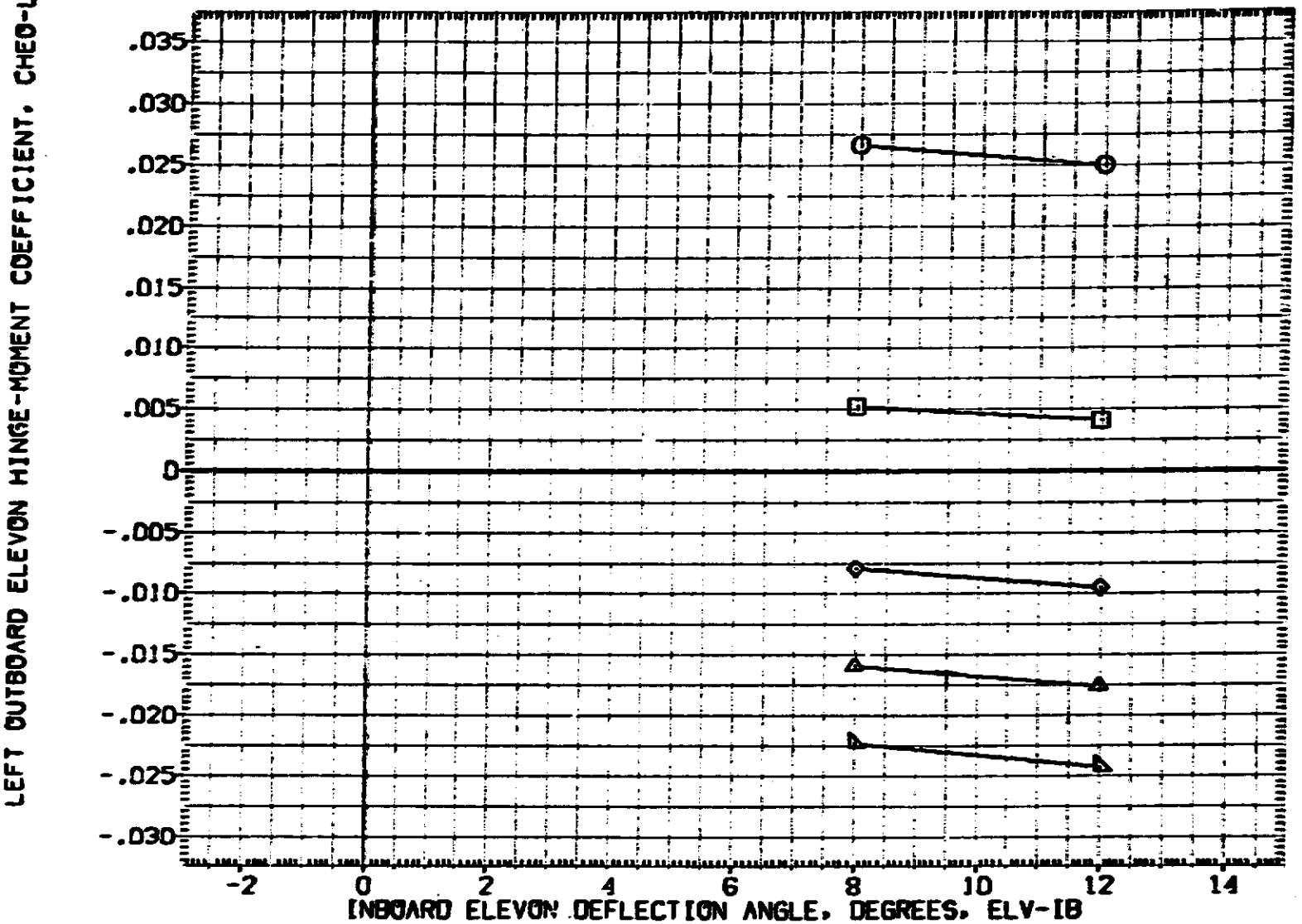


FIG. 14 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = -4.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1005]

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	1.550	ELV-OB	-4.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2680.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1005	8.000	FE1026	12.000	LREF	474.8100	IN.
◇	.000	SPOBRK	.000	RUDDER	.000					BREF	996.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0000	IN. XT
⌀	8.000									YMRP	.0000	IN. YT
										ZMRP	400.0000	IN. ZT
										SCALE	.0150	

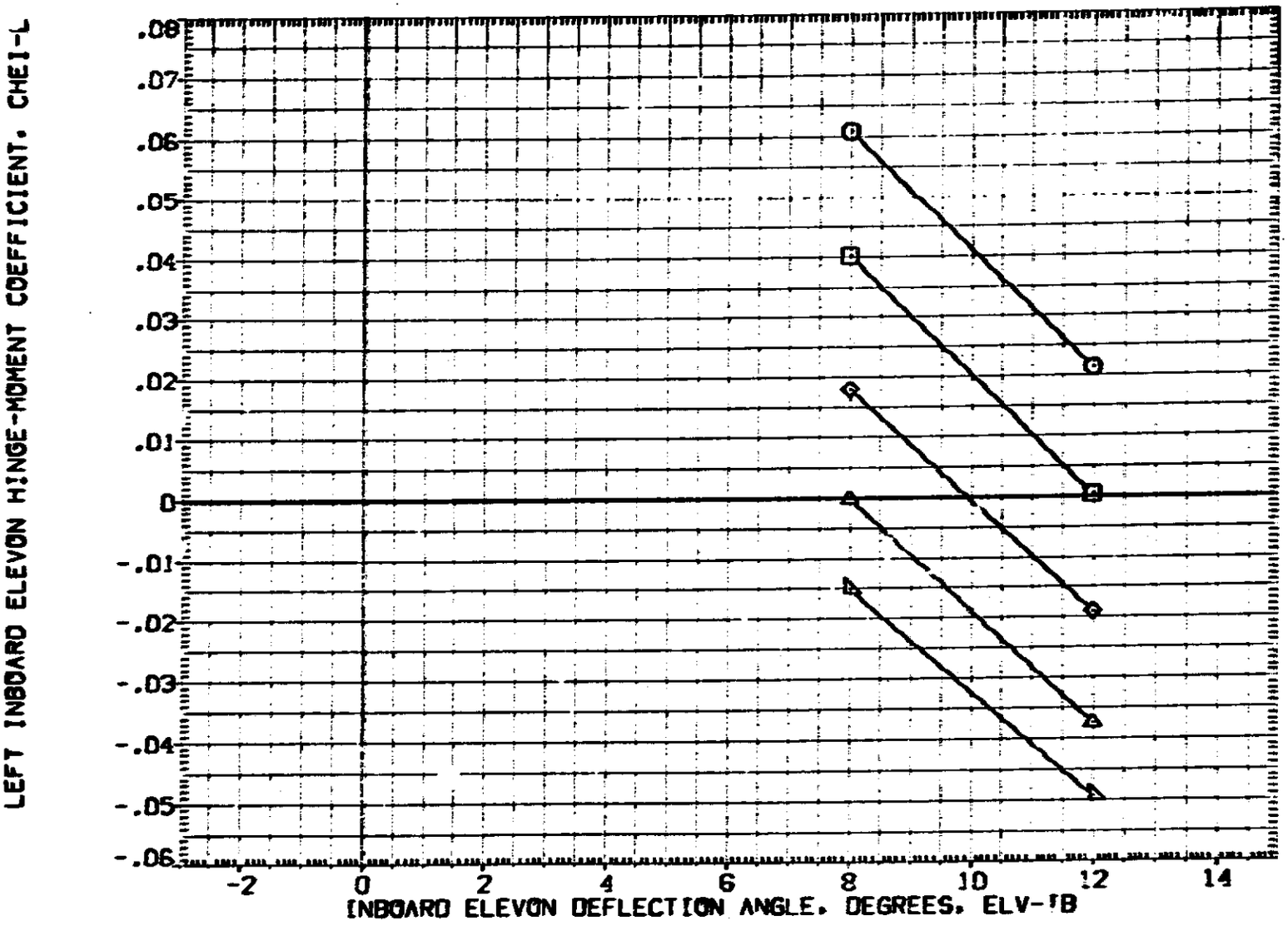


FIG. 14 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = -4.0

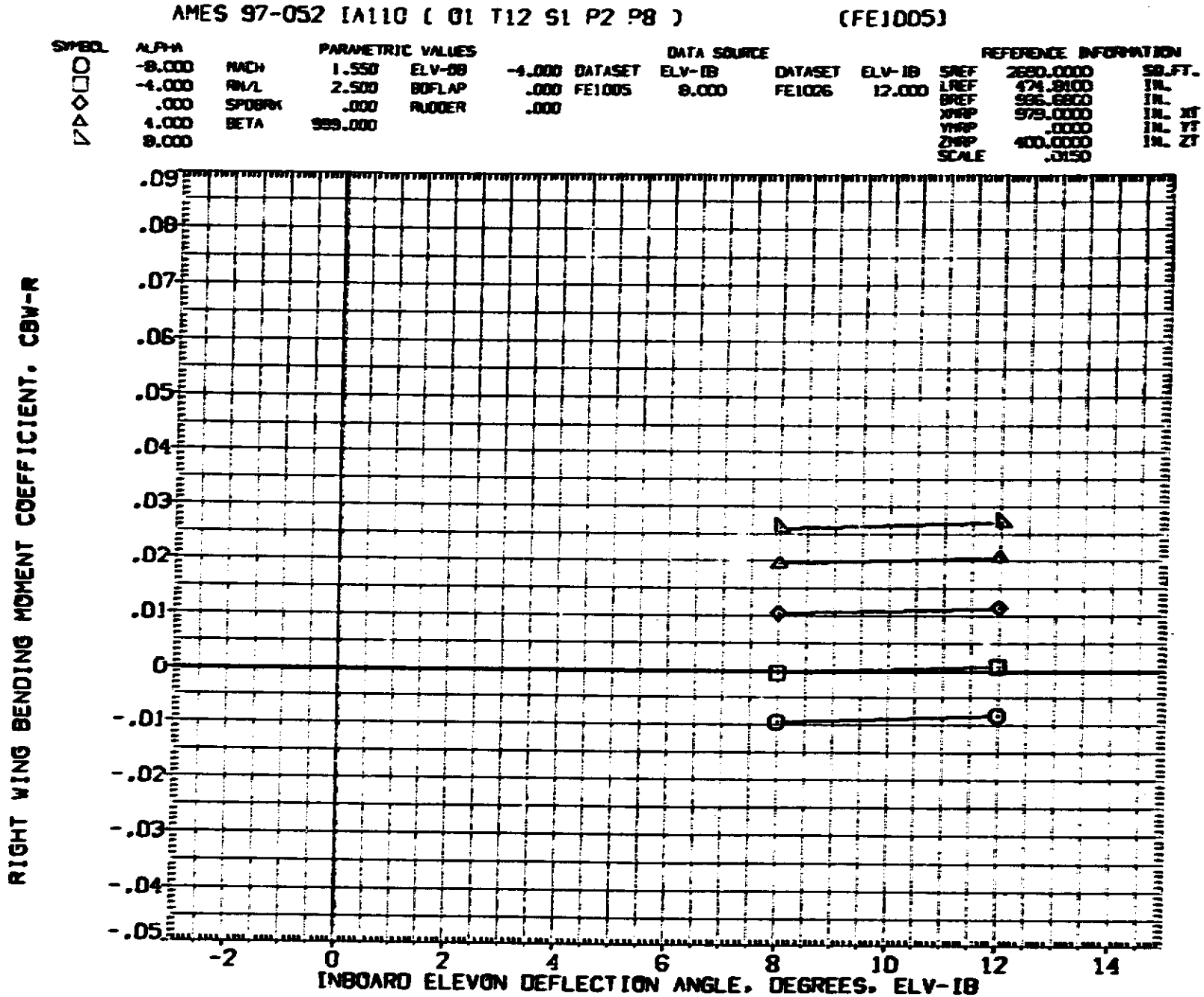


FIG. 14 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = -4.0

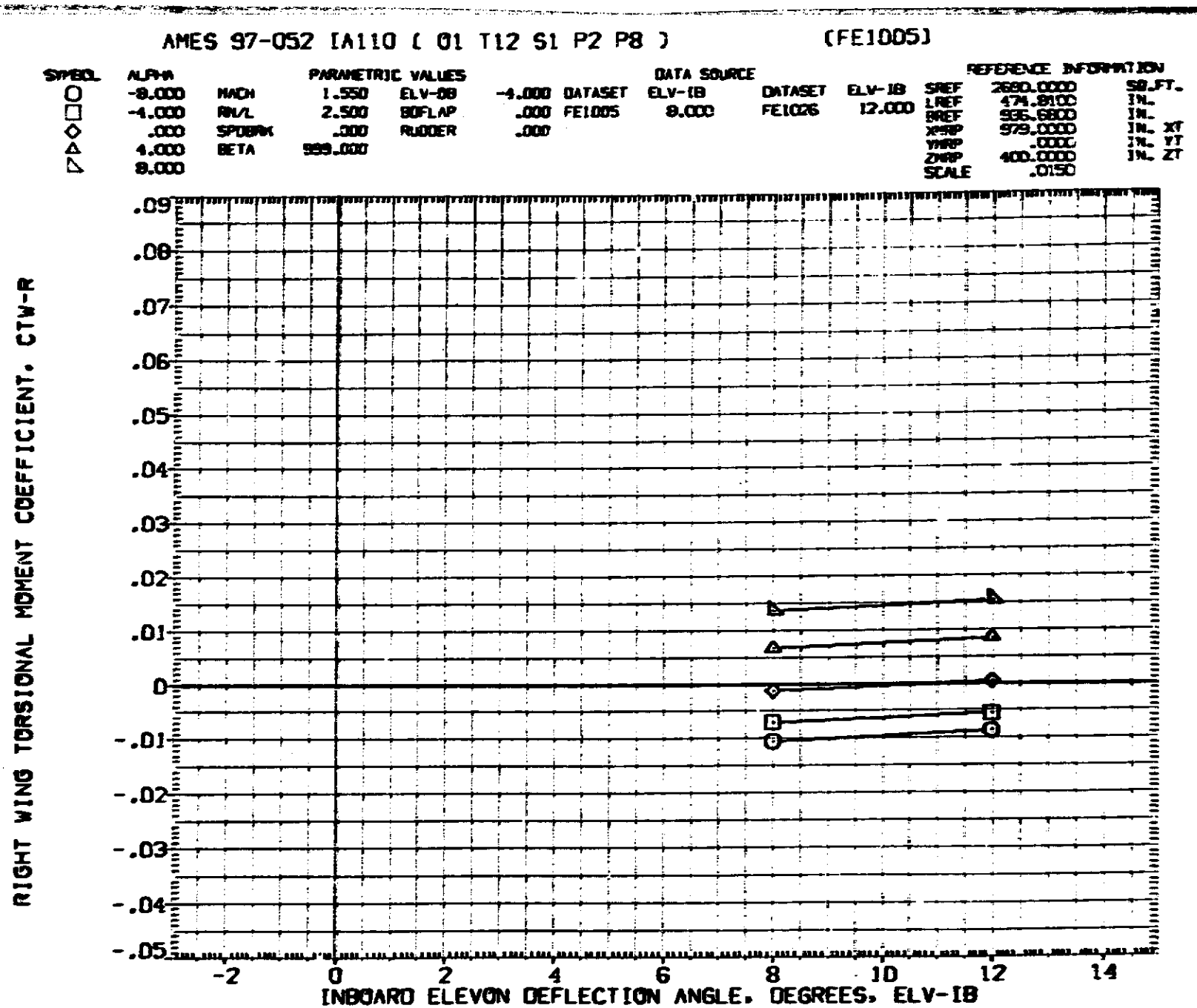


FIG. 14 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = -4.0

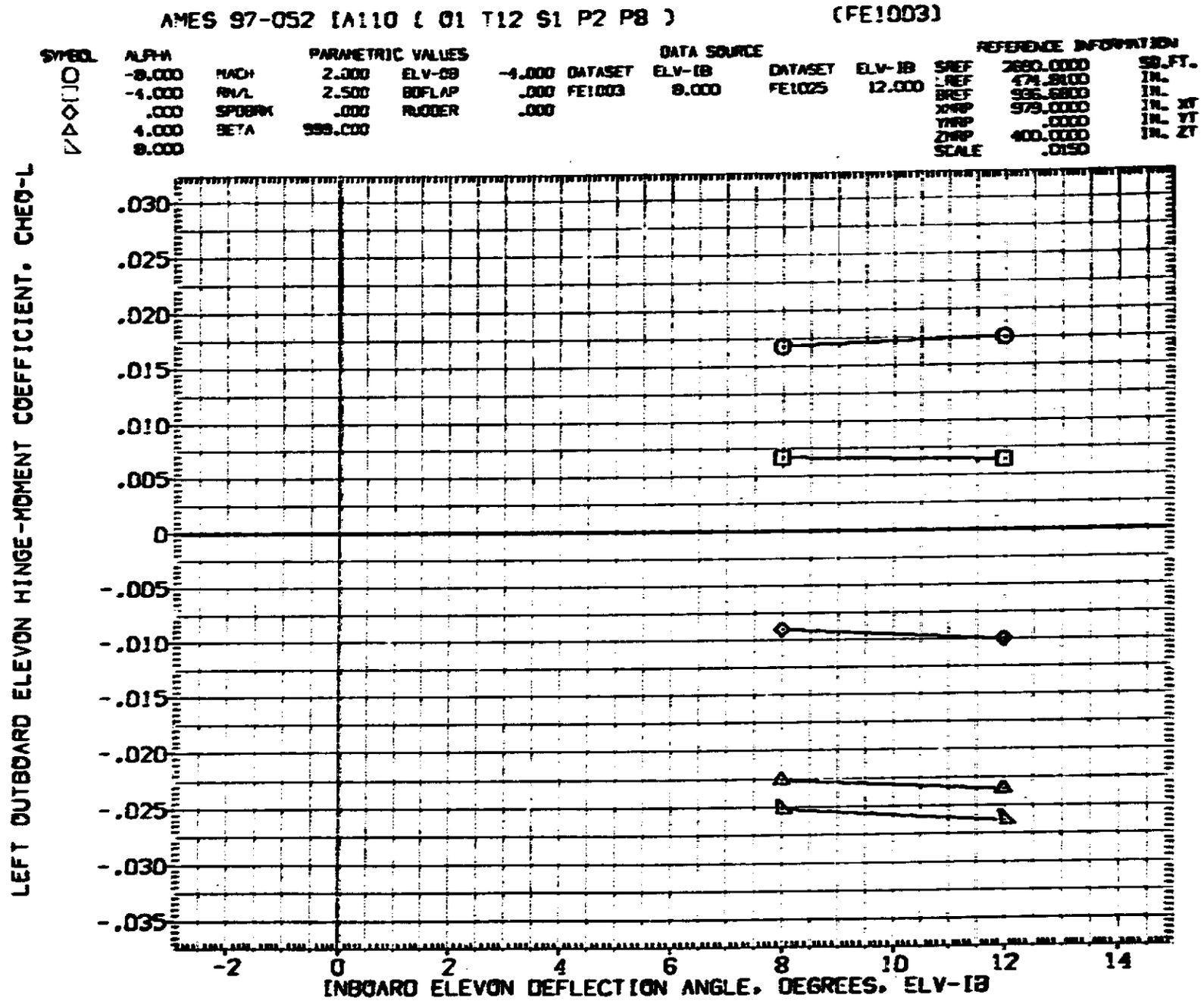


FIG. 15 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = -4.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1003)

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	2.000	ELV-OB	-4.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2690.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1003	0.000	FE1025	12.000	LREF	474.8100	IN.
◇	.000	SPOBRK	.000	RUDDER	.000					BREF	936.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0000	IN. XT
▽	8.000									YMRP	.0000	IN. YT
										ZMRP	400.0000	IN. ZT
										SCALE	.0150	

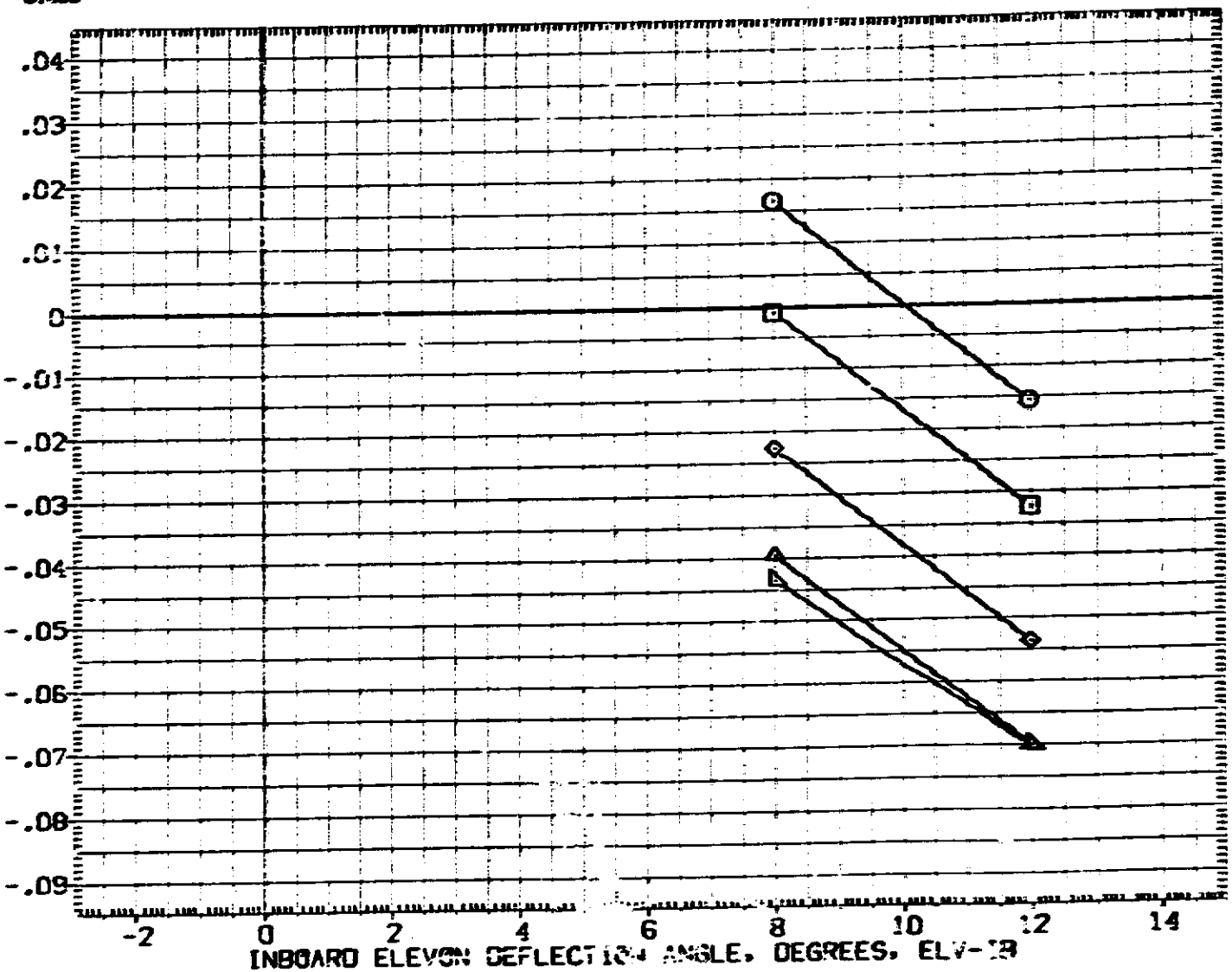


FIG. 15 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = -4.0

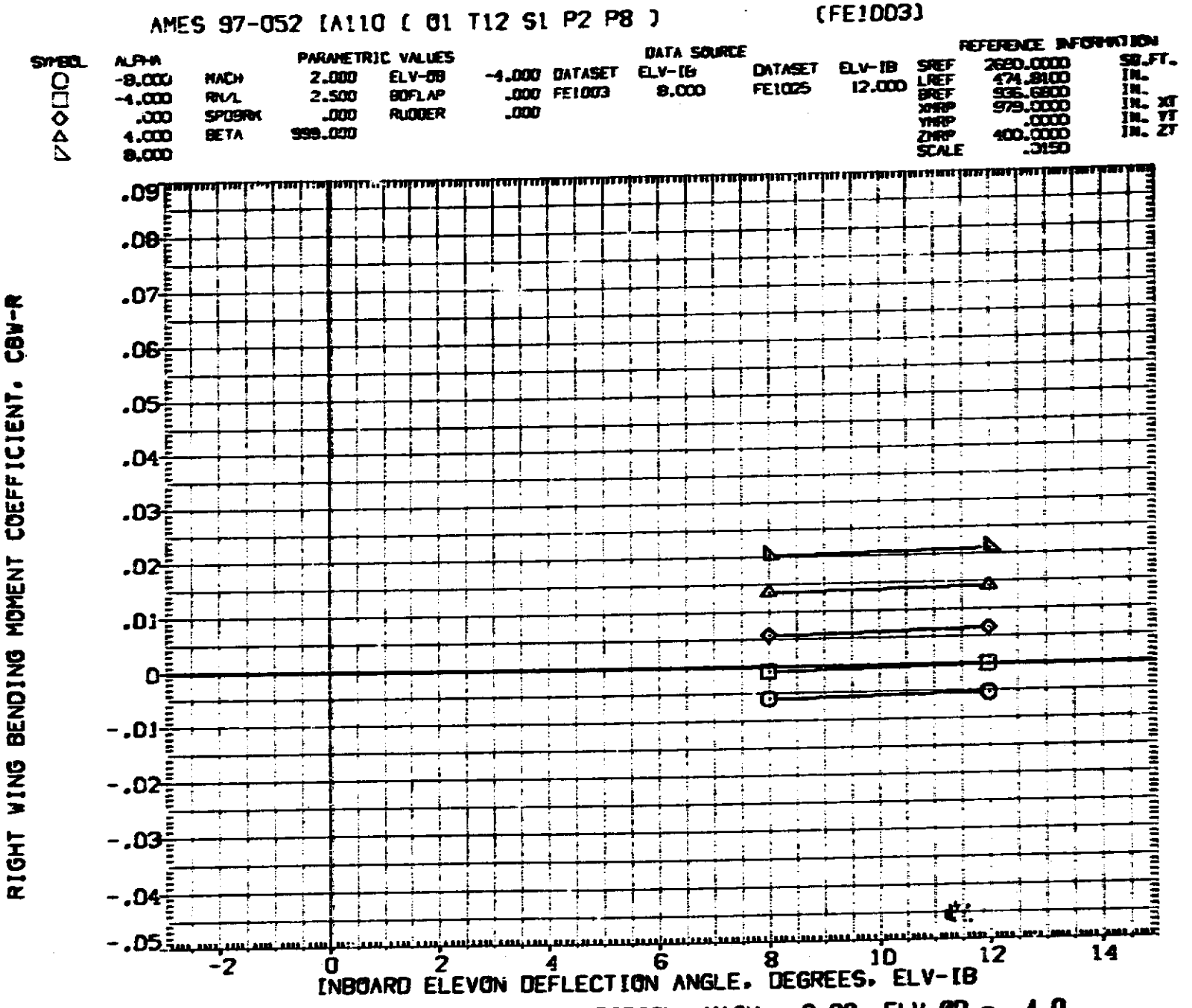


FIG. 15 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = -4.0

AMES 97-052 IA110 (01 T12 S1 P2 P8) (FE1003)

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	2.000	ELV-OB	-4.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2690.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1003	8.000	FE1025	12.000	LREF	474.8100	IN.
◇	.000	SPOSRK	.000	RUDDER	.000					BREF	936.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0000	IN. XT
▽	8.000									YMRP	.0000	IN. YT
										ZMRP	400.0000	IN. ZT
										SCALE	.0150	

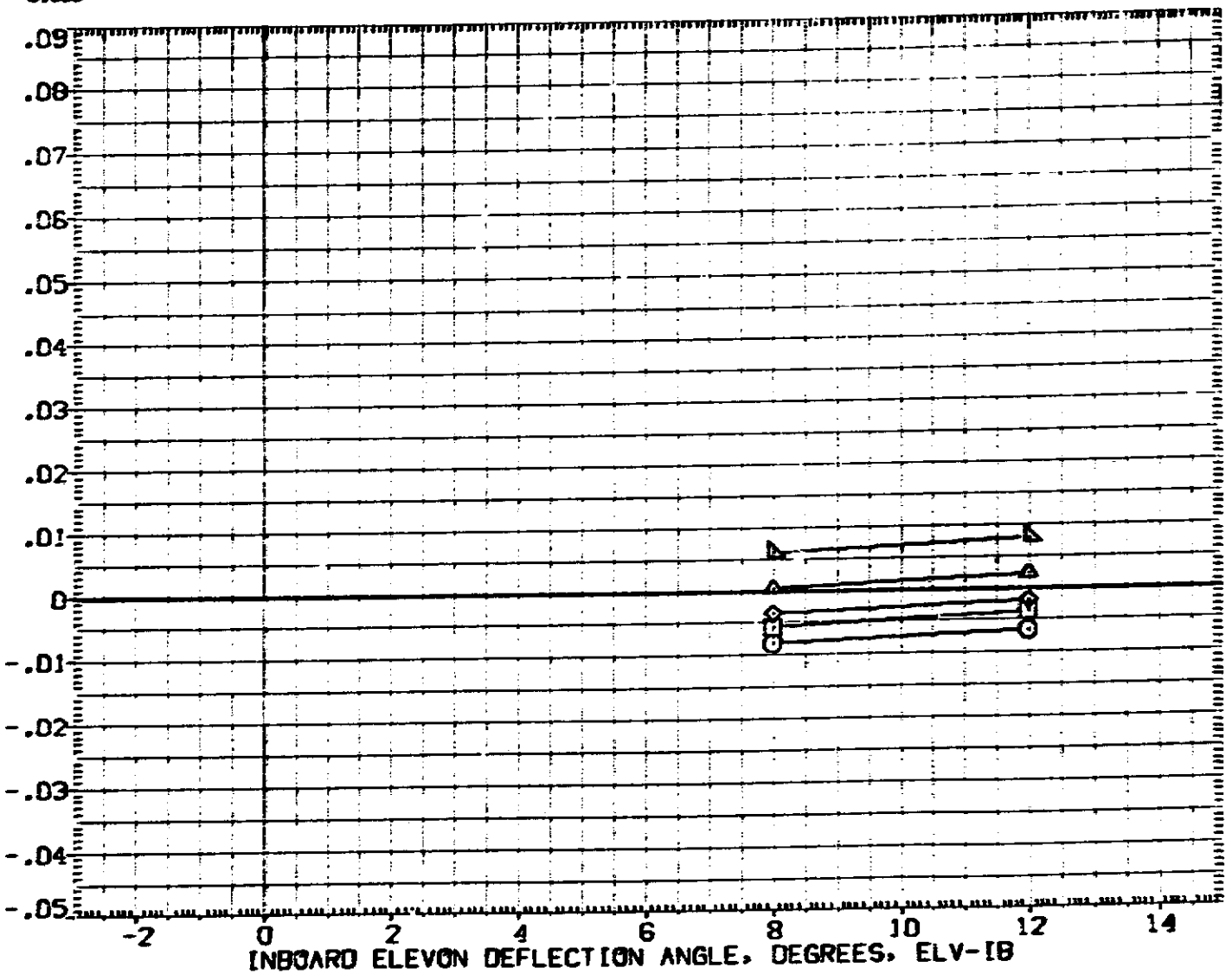


FIG. 15 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = -4.0

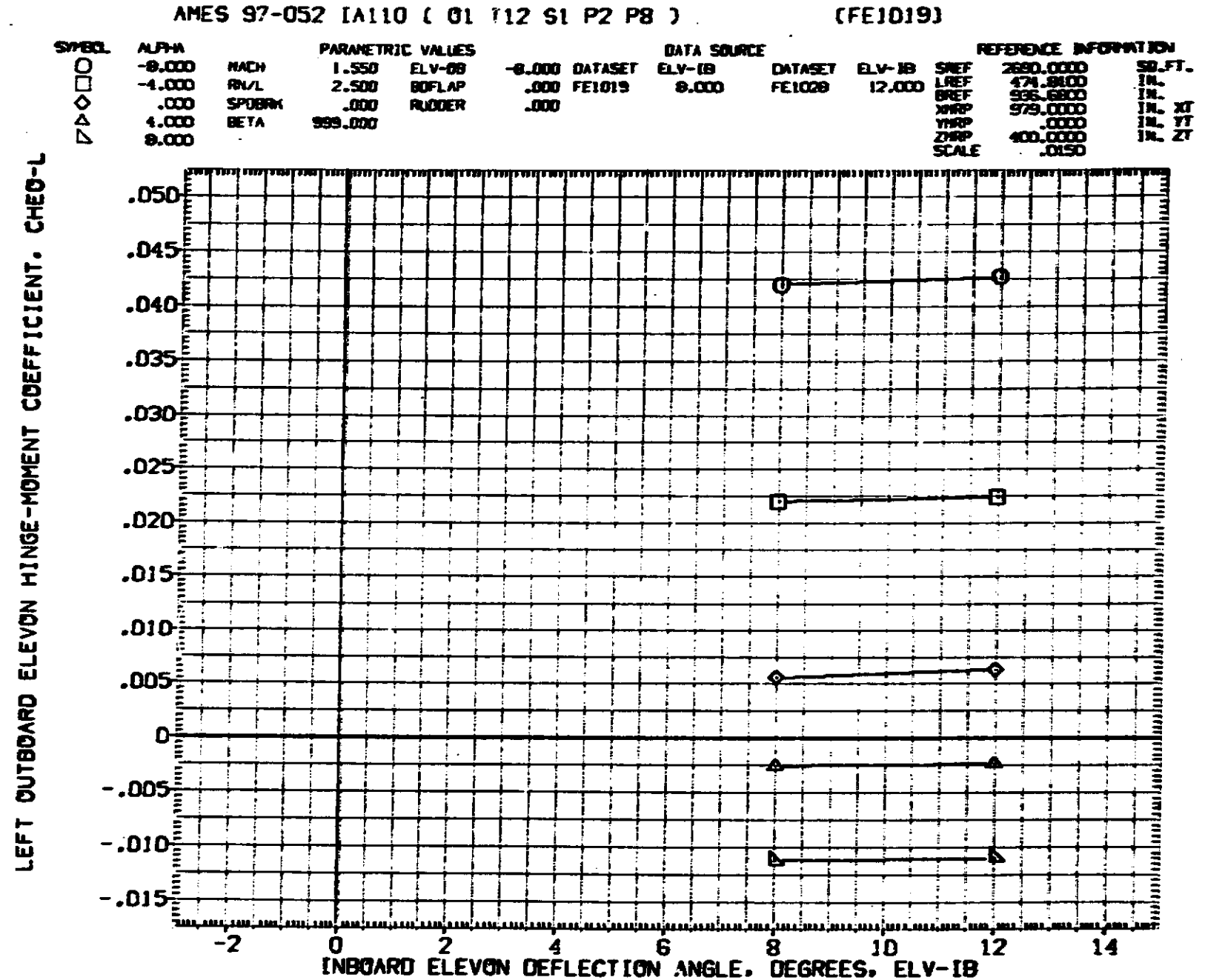


FIG. 16 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = -8.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1019)

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE					REFERENCE INFORMATION		
○	-8.000	MACH	1.550	ELV-OB	-8.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2690.0000	SQ.FT.
□	-4.000	RN/L	2.500	BOFLAP	.000	FE1019	8.000	FE1028	12.000	LREF	474.8100	IN.
◇	.000	SPOBRK	.000	RUDDER	.000					BREF	936.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0020	IN. XT
⊿	8.000									YMRP	.0000	IN. YT
										ZMRP	400.0000	IN. ZT
										SCALE	.0150	

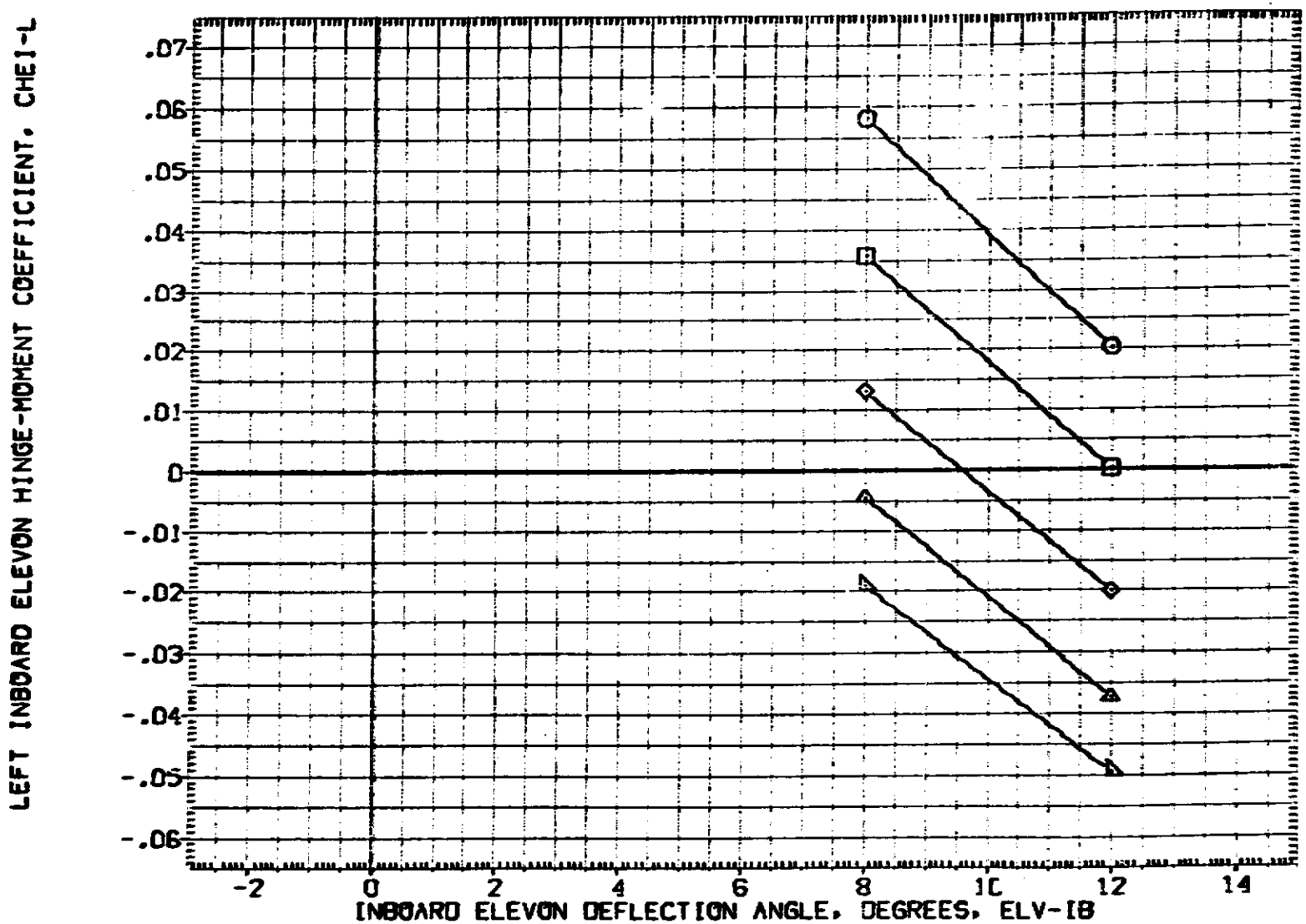


FIG. 16 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = -8.0

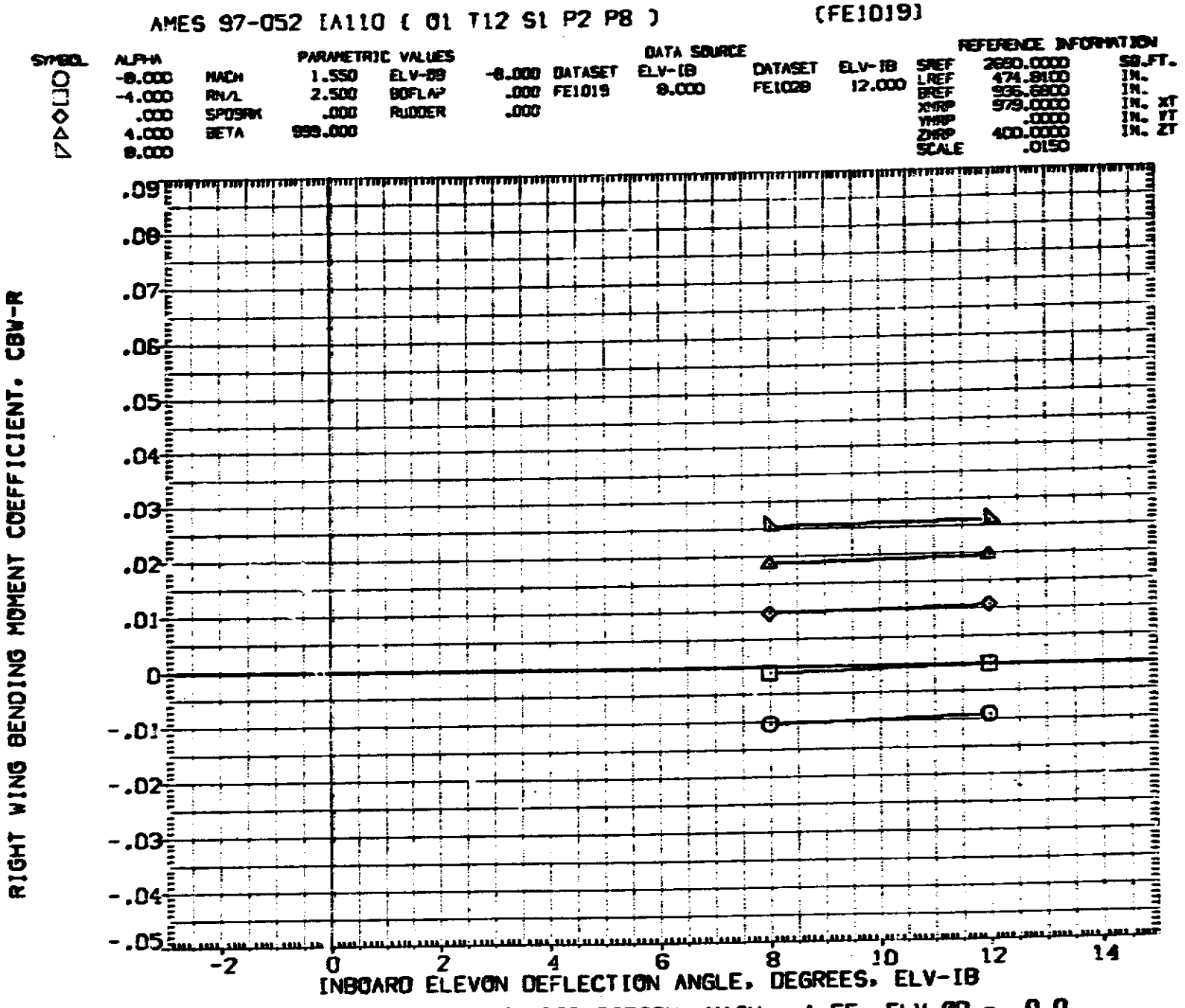


FIG. 16 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = -8.0

AMES 97-052 [A110 (01 T12 S1 P2 P8) (FE1019]

SYMBOL	ALPHA		PARAMETRIC VALUES			DATA SOURCE				REFERENCE INFORMATION		
○	-8.000	MACH	1.550	ELV-OB	-8.000	DATASET	ELV-IB	DATASET	ELV-IB	SREF	2680.0000	SQ.FT.
△	-4.000	RN/L	2.500	BOFLAP	.000	FE1019	8.000	FE1020	12.000	LREF	474.8100	IN.
◇	.300	SPOSRK	.000	RUDDER	.000					BREF	936.6800	IN.
△	4.000	BETA	999.000							XMRP	979.0000	IN. XT
	8.000									YMRP	.0000	IN. YT
										ZMRP	400.0000	IN. ZT
										SCALE	.0150	

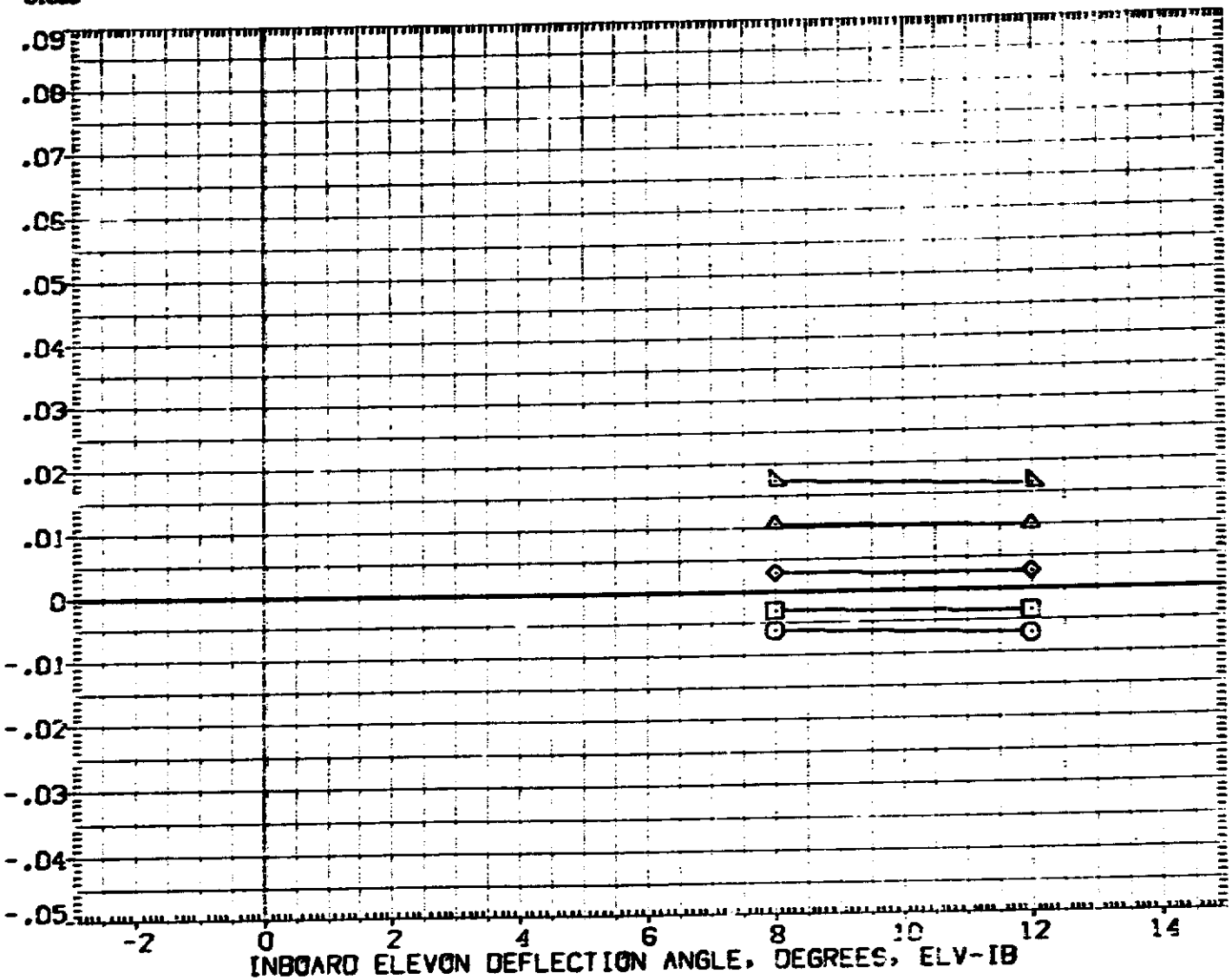


FIG. 16 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 1.55, ELV-OB = -8.0

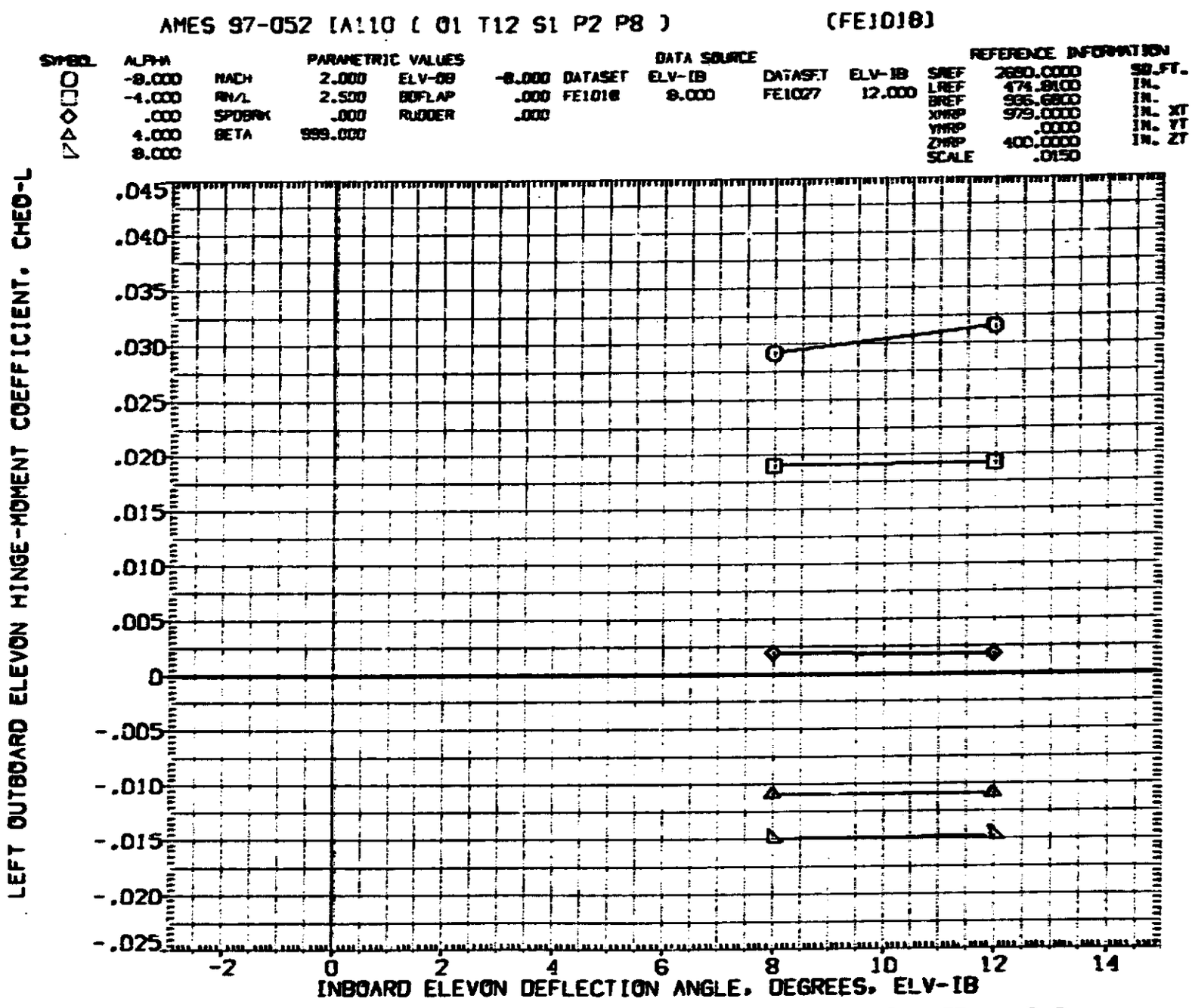


FIG. 17 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = -8.0

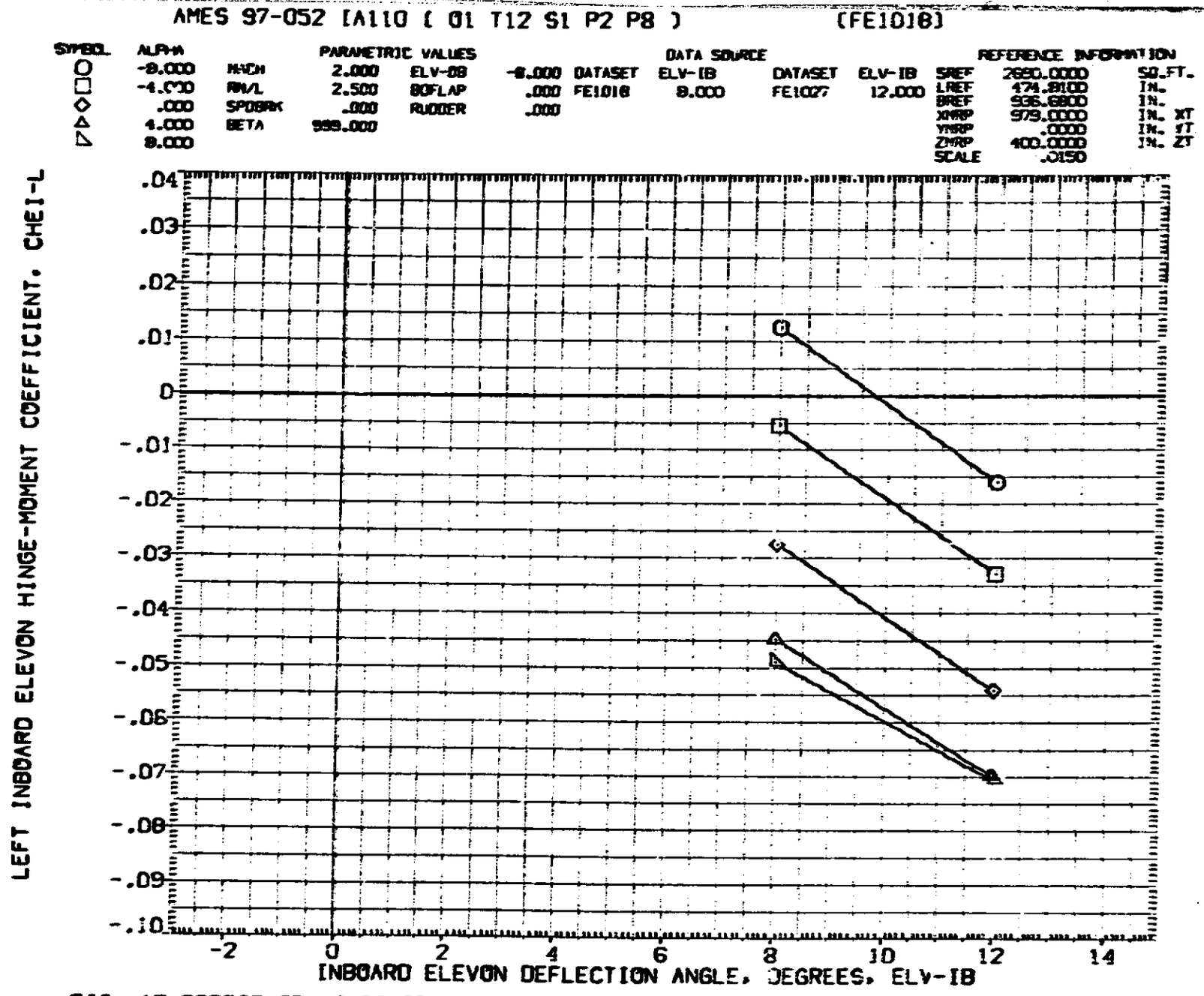


FIG. 17 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = -8.0

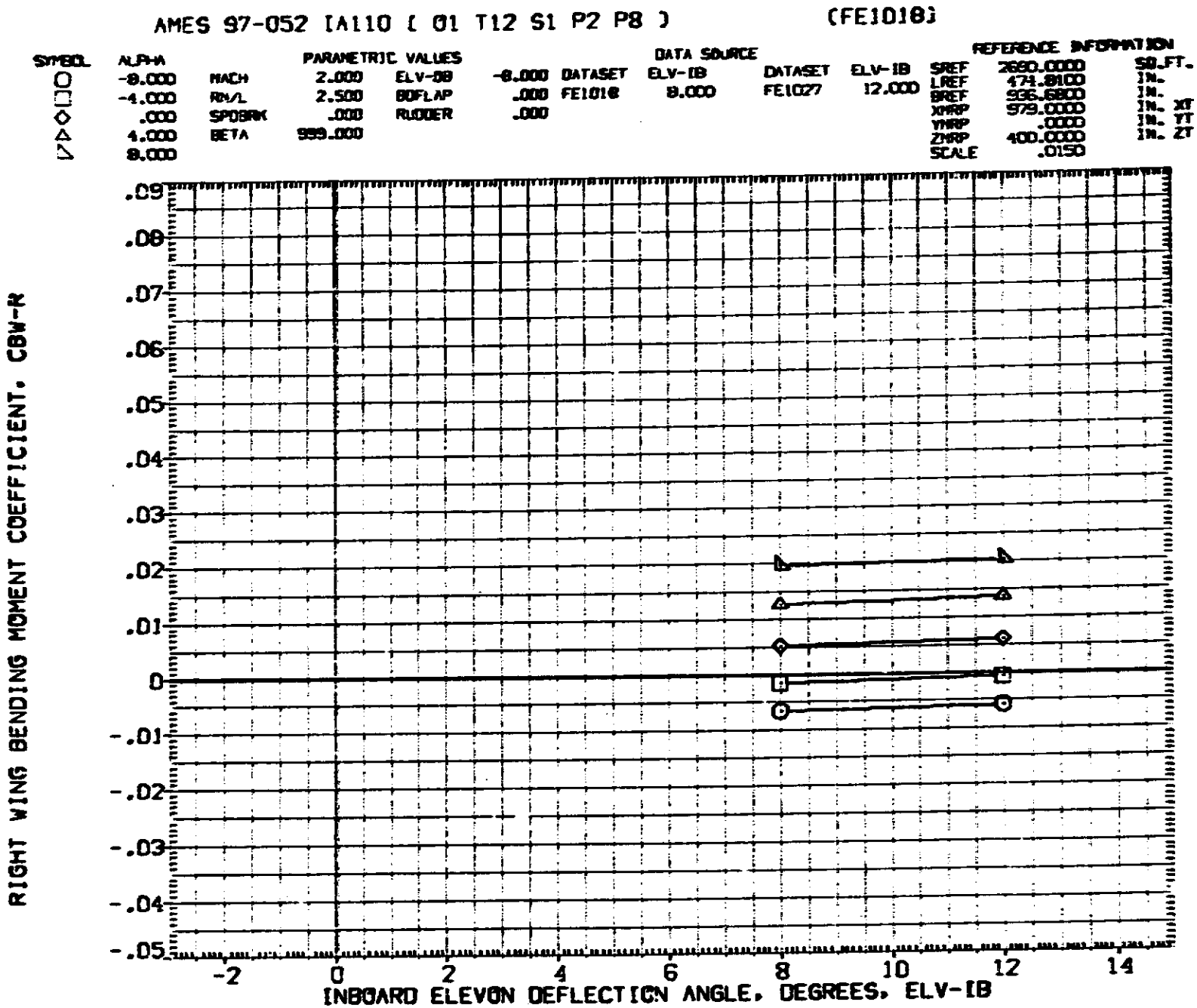


FIG. 17 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = -8.0

AMES 97-052 [A:10 (01 T12 S1 P2 P8)

SYMBOL	ALPHA
○	-8.000
□	-4.000
◇	.000
△	4.000
▽	8.000

PARAMETRIC VALUES

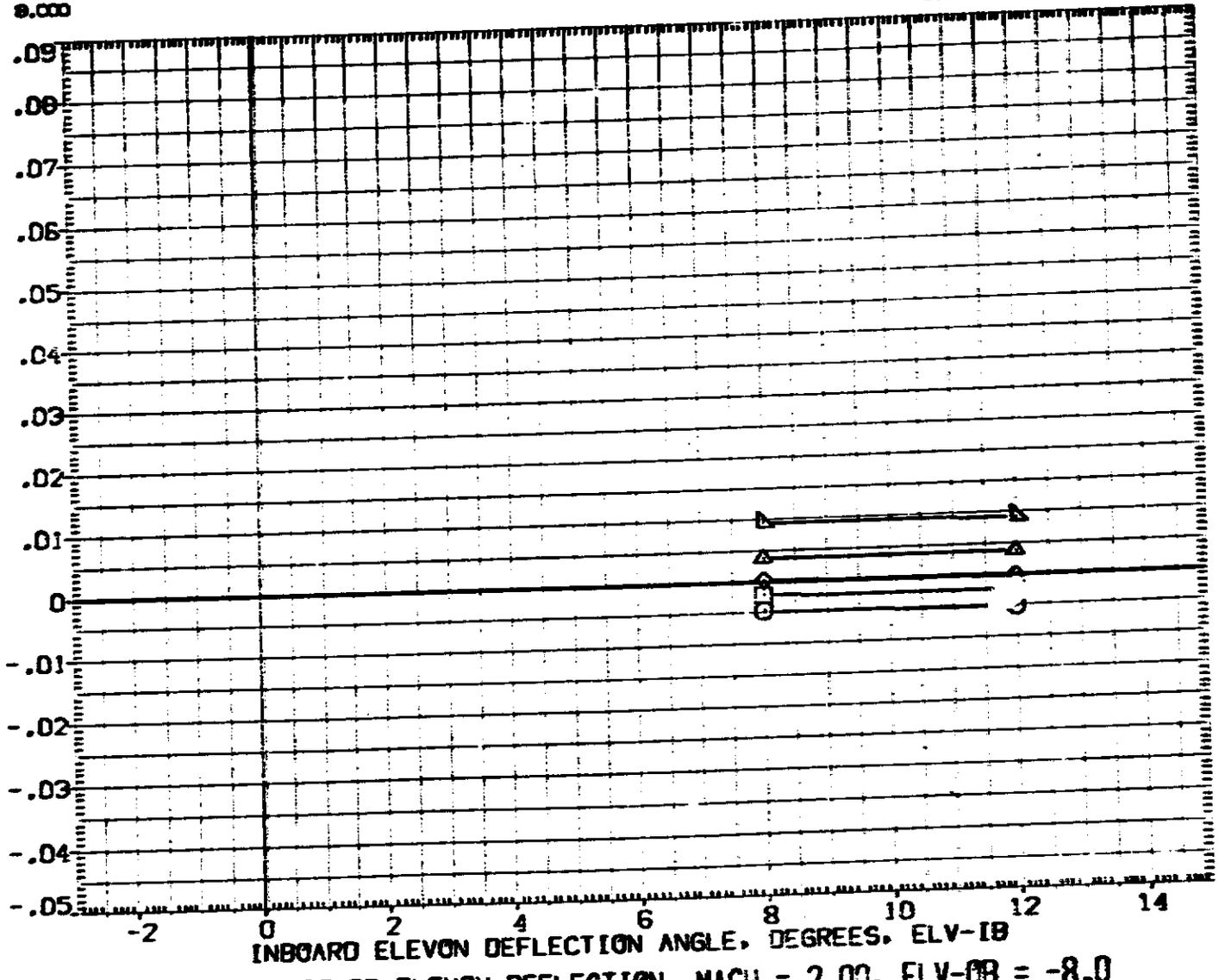
MACH	2.000	ELV-OB	-8.000
RN/L	2.500	BOFLAP	.000
SPOBRK	.000	RUDDER	.000
BETA	999.000		

DATA SOURCE

DATASET	ELV-IB	DATASET	ELV-IB
FE1018	8.000	FE1027	12.000

REFERENCE INFORMATION

SREF	2880.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	



RIGHT WING TORSIONAL MOMENT COEFFICIENT, CTW-R

FIG. 17 EFFECT OF INBOARD ELEVON DEFLECTION, MACH = 2.00, ELV-OB = -8.0

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FE1013) AMES 97-052 IA110 I 01 T12 S1 P2 PB 1
(XF7004) IA70 01T12S1P2PB

ELV-CB
.000
.000

REFERENCE INFORMATION

SREF	2880.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

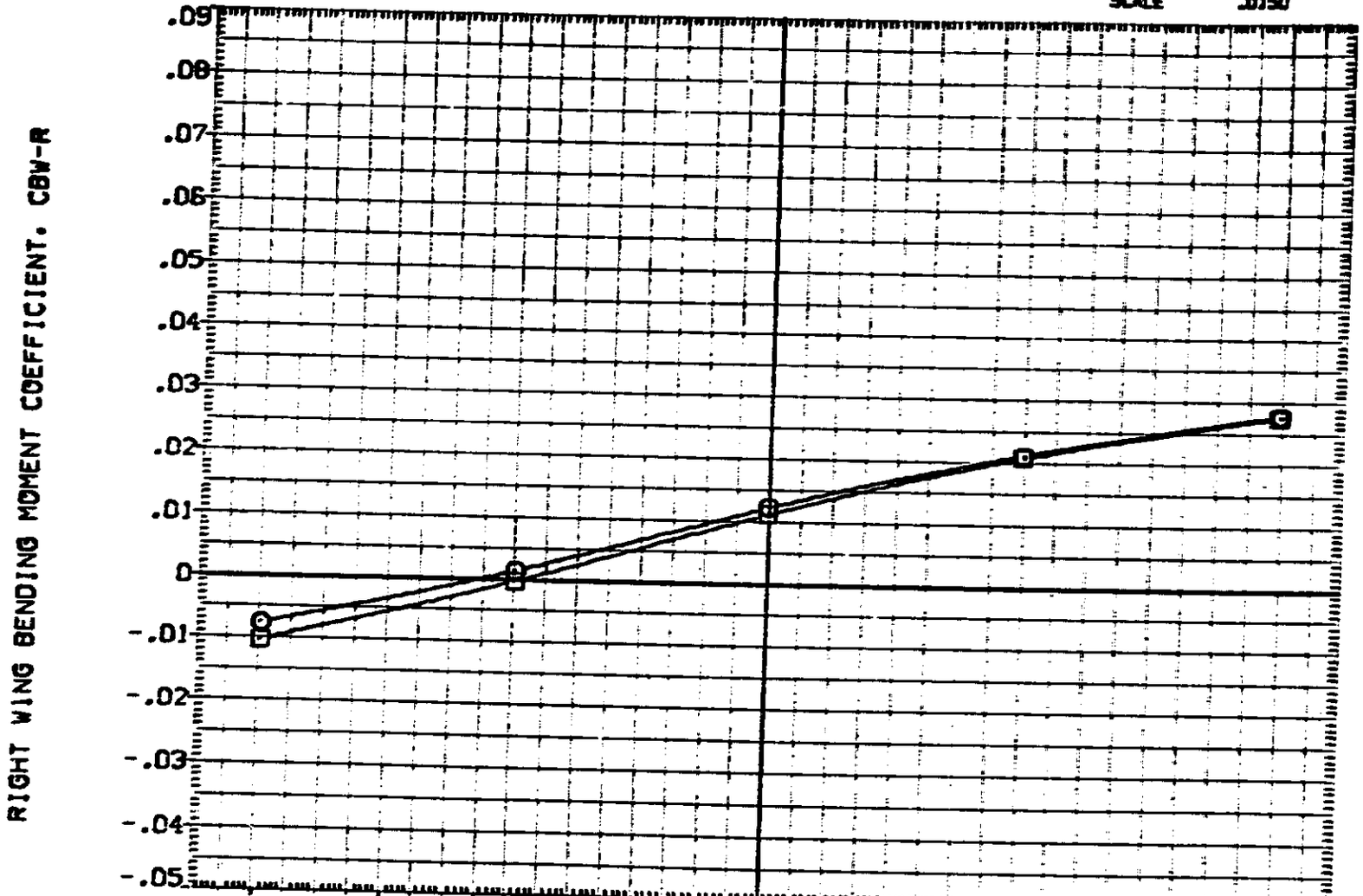


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A) MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-DB
(FE1013)	AMES 97-052 IA110 I 01 T12 S1 P2 P0 I	.000
(XF700L)	IA70 B1T12S1P2P0	.000

REFERENCE INFORMATION

SREF	2590.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

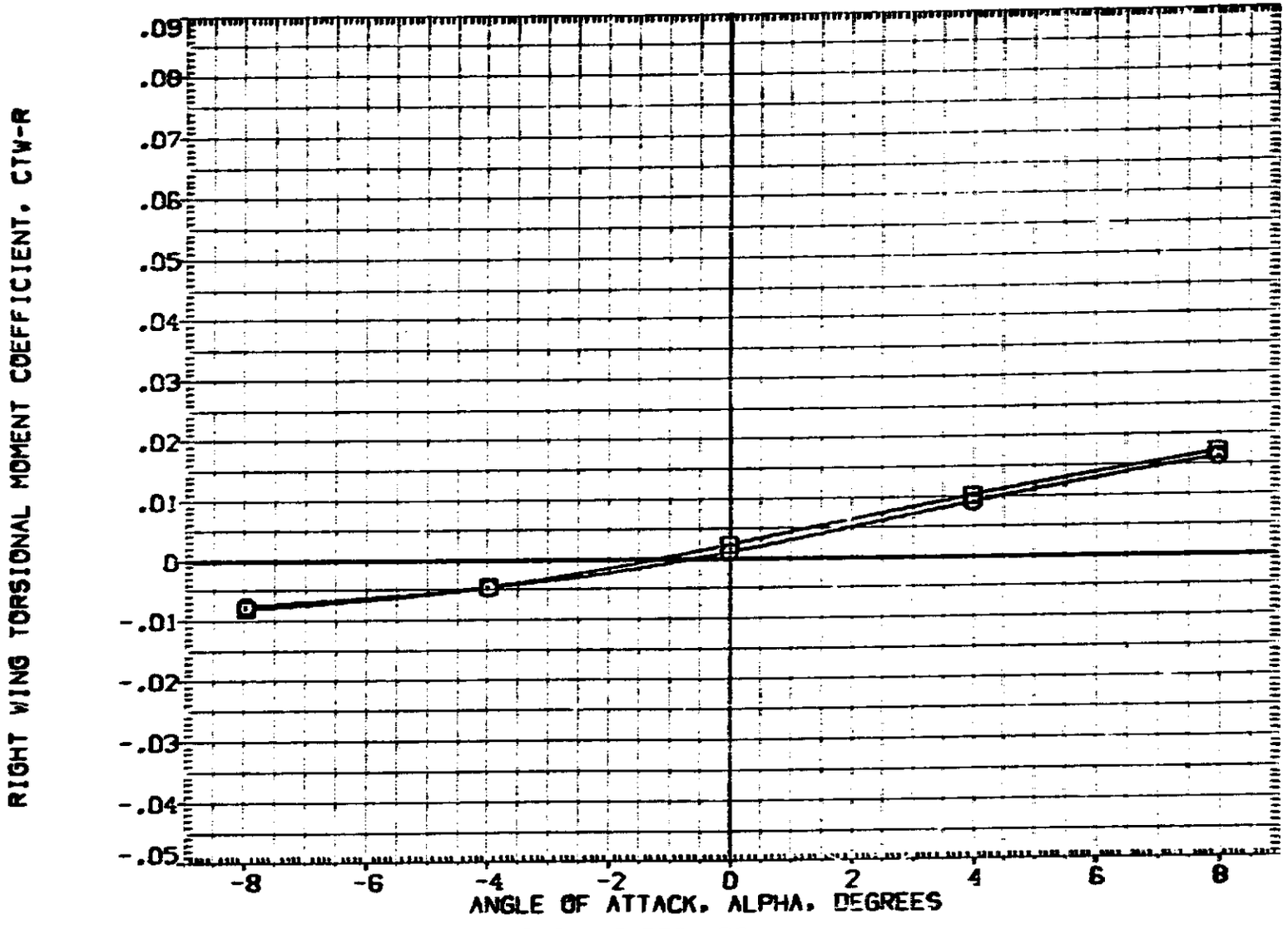


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

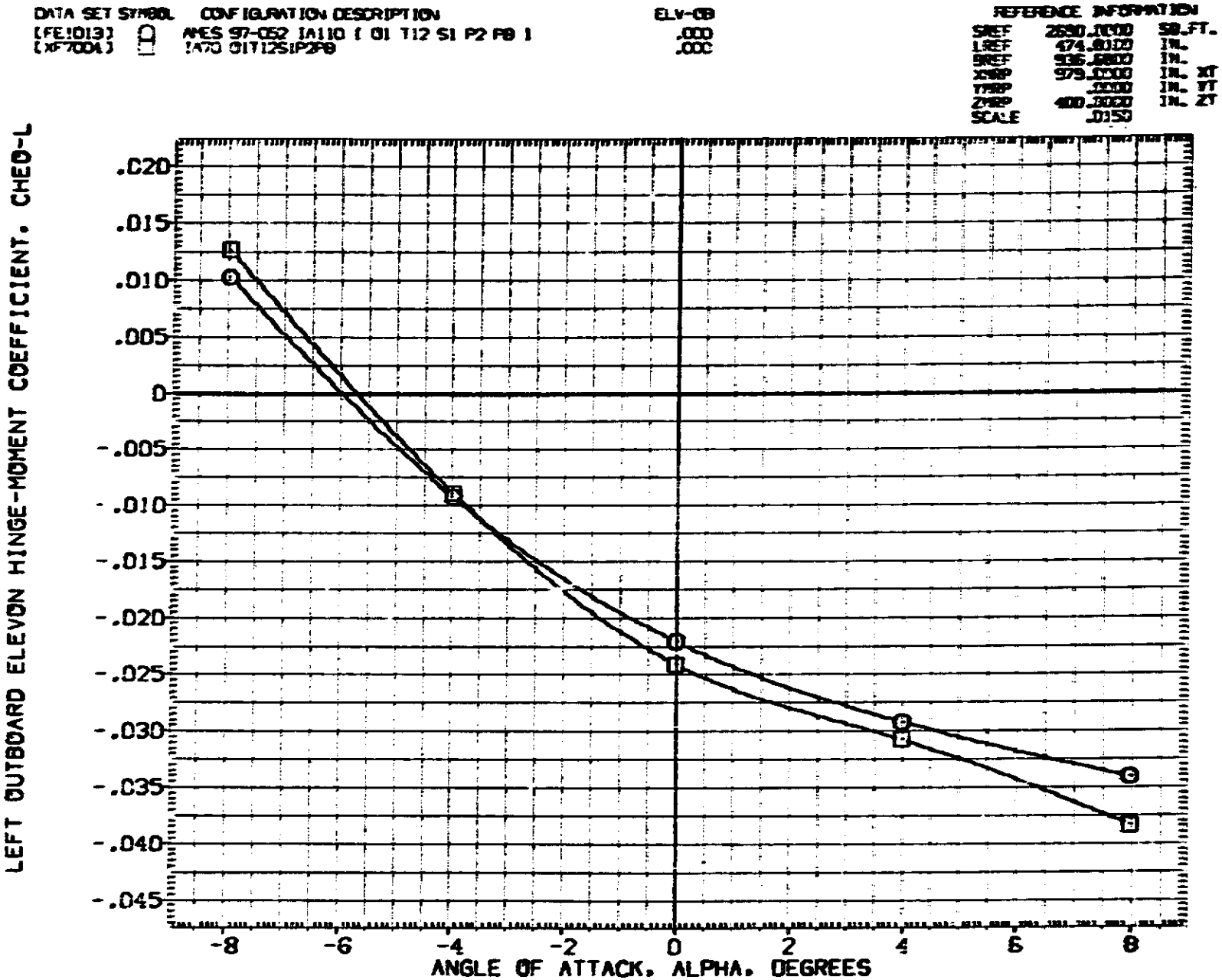


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-DB
(FE1013)	AMES 97-052 IA110 (01 T12 S1 P2 P8)	.000
(XF7004)	IA70 01T12S1P2P8	.000

REFERENCE INFORMATION

SREF	2580.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.8800	IN.
XMRP	979.3000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

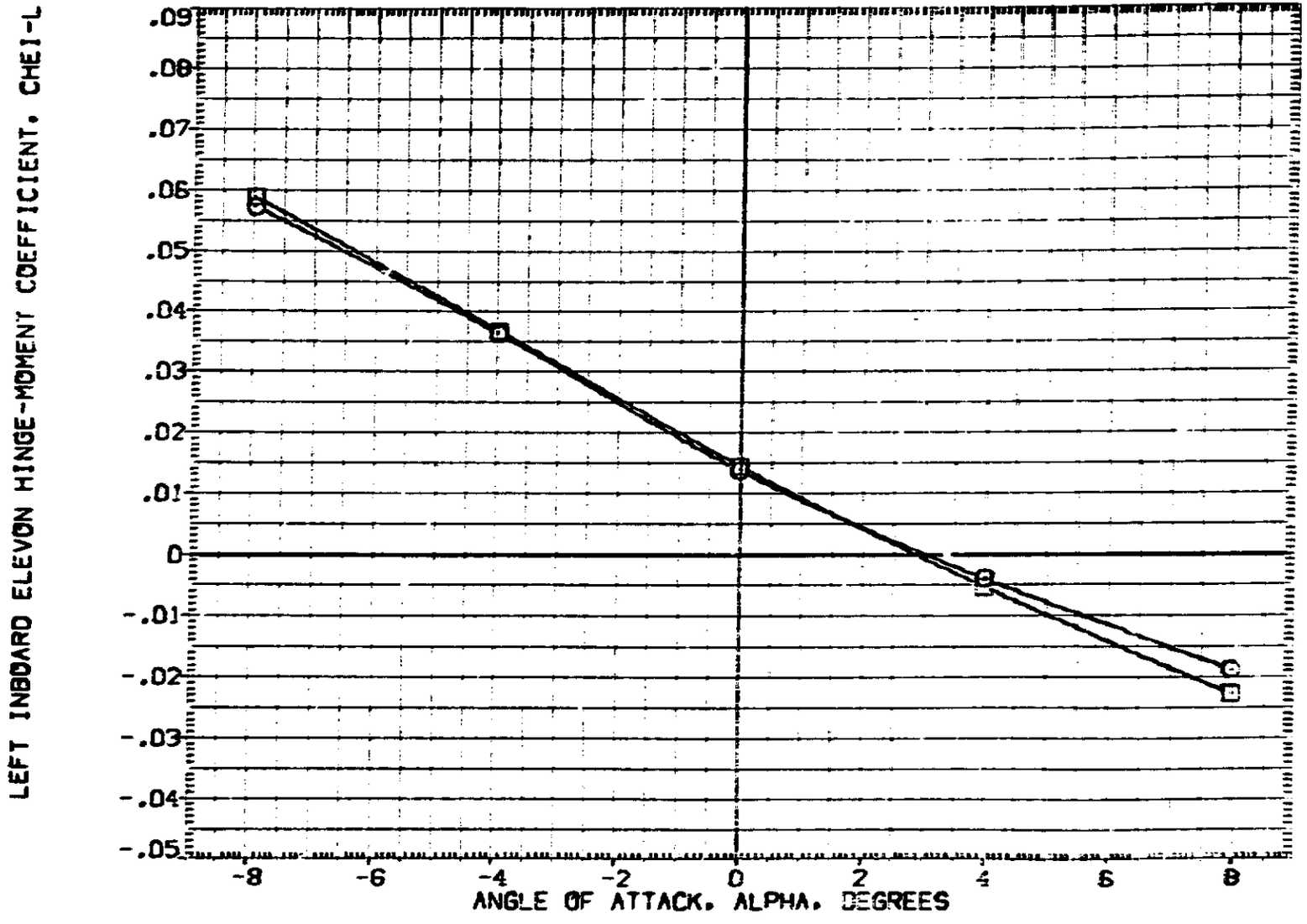


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-CB
(FE1019)	AMES 97-052 IA110 (01 T12 S1 P2 P8)	-8.000
(XF7019)	IA70 01T12S1P2P8	-8.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.0100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

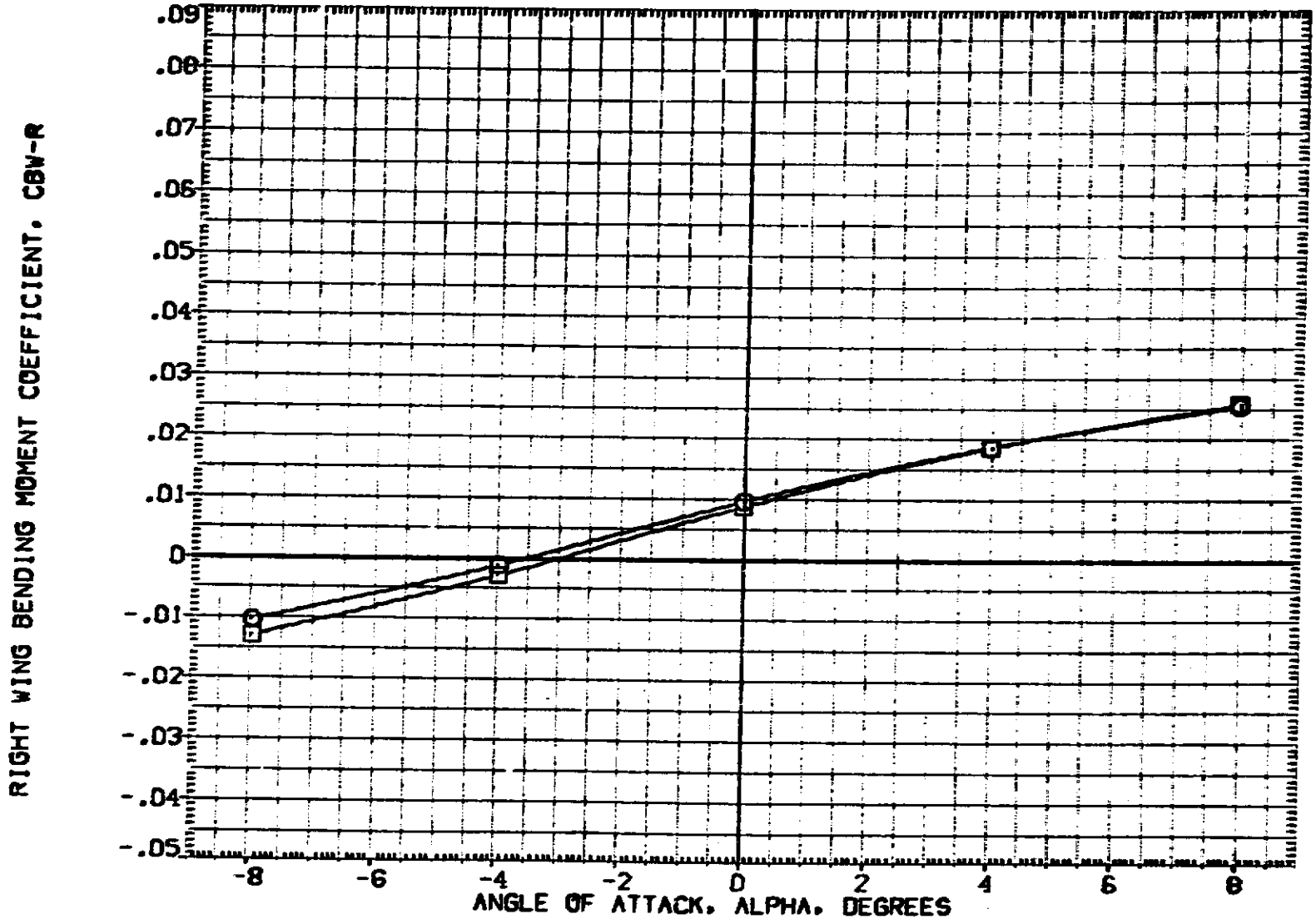


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-DB
(FE:019) ○	AMES 97-052 IA110 (01 T12 S1 P2 P8)	-8.000
(XF7019) □	IA70 01T12S1P2P8	-8.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

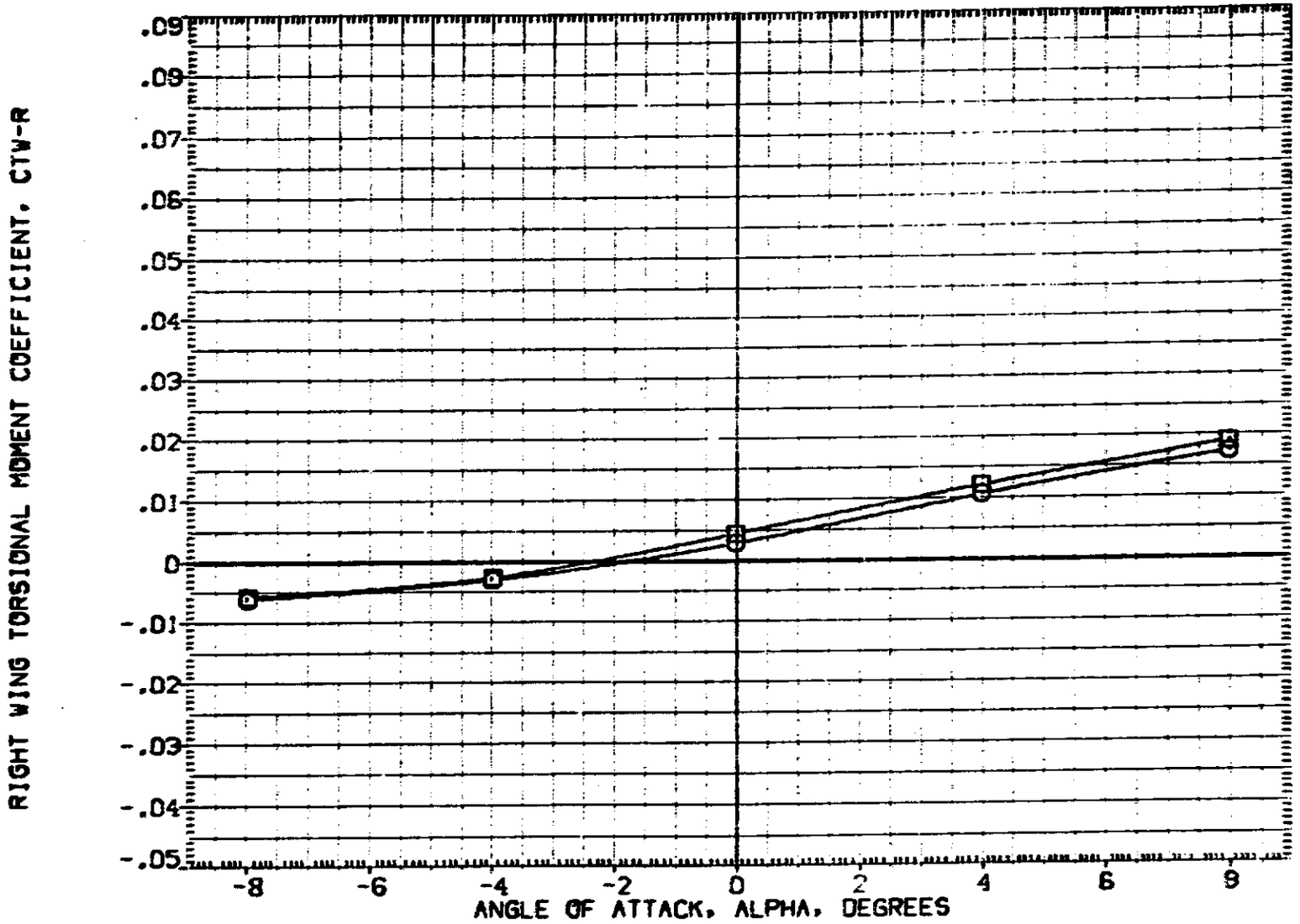


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FE1019) AMES 97-052 IA110 I 01 T12 S1 P2 P8 1

(XF7019) IA70 01T12S1P2P8

ELV-CB
-8.000
-8.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BRCF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

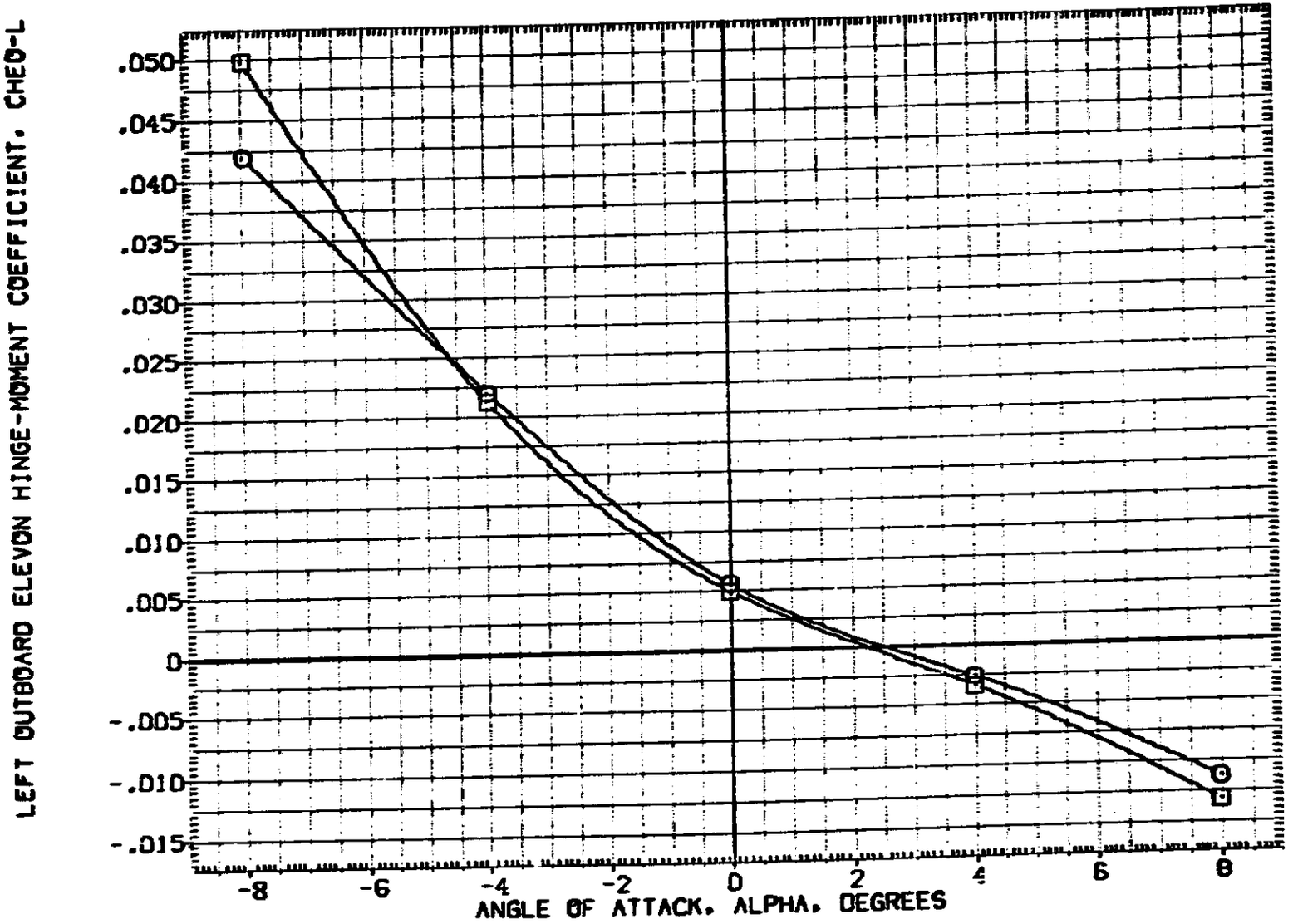


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A) MACH = 1.55

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FE1019) ☐ AMES 97-052 IA110 I 01 T12 S1 P2 PB 1

(XF7019) ☐ IA70 01T12S1P2PB

ELV-DB
-8.000
-8.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

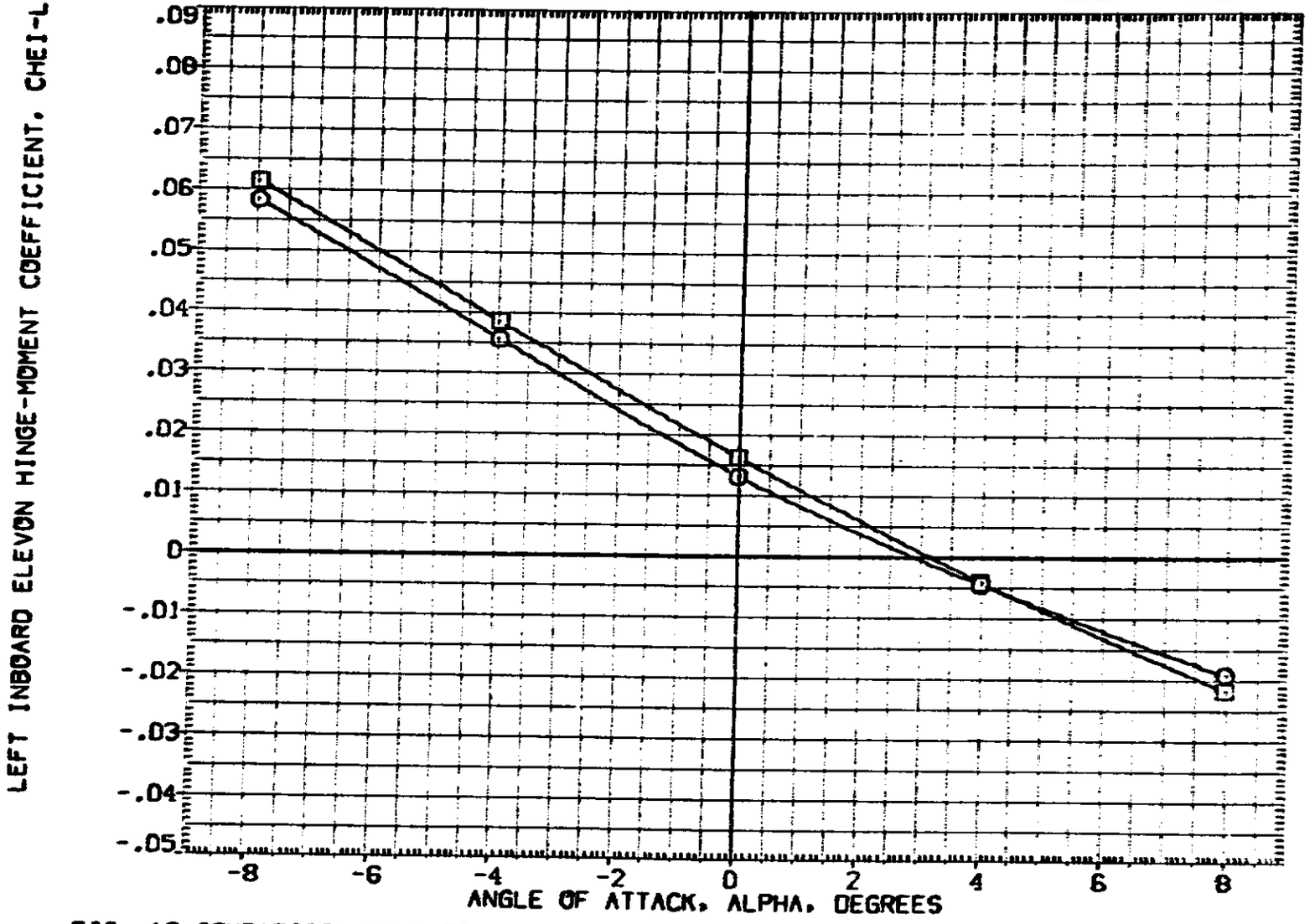


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELV-DB
(FC1023)	◻	AMES 97-052 IA110 (01 T12 S1 P2 P8 1	.000
(XF7005)	⬚	IA70 01T12S1P2P8	.000

REFERENCE INFORMATION

SREF	2590.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	973.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

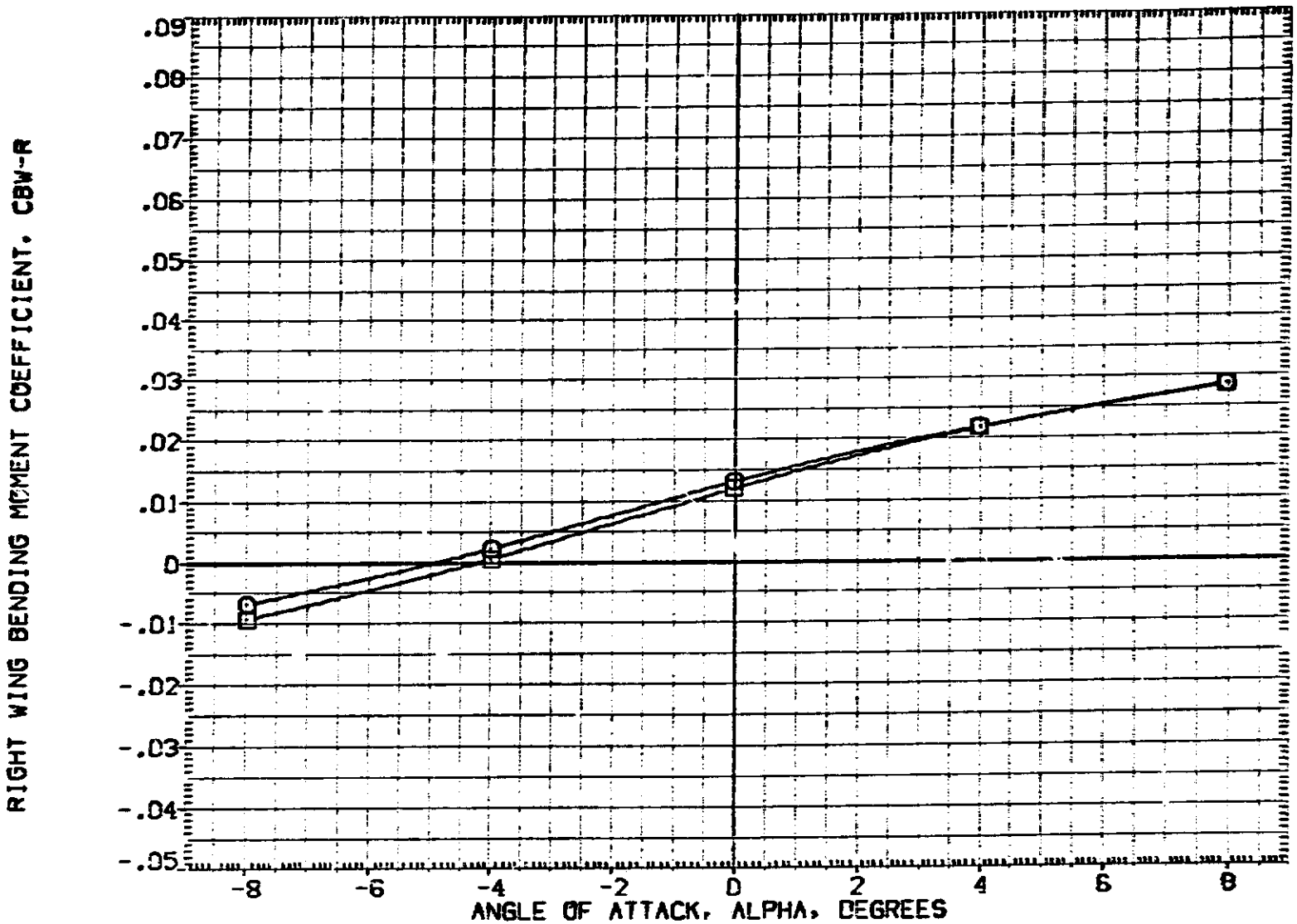


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-DB
(FE1023)	AMES 97-052 IA110 I 01 T12 S1 P2 P8 1	.000
(X-7005)	IA70 01T12S1P2P8	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.8800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

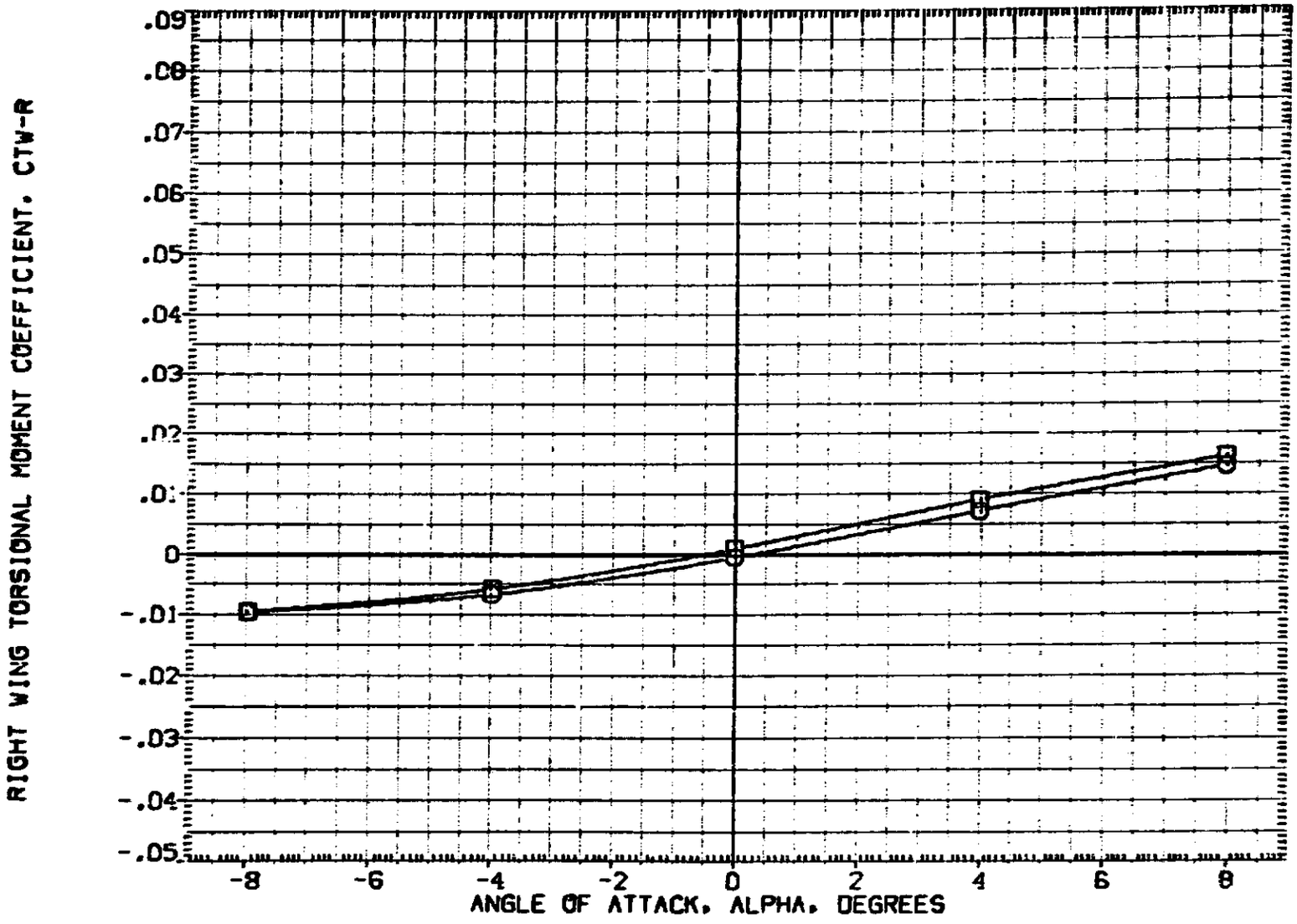


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

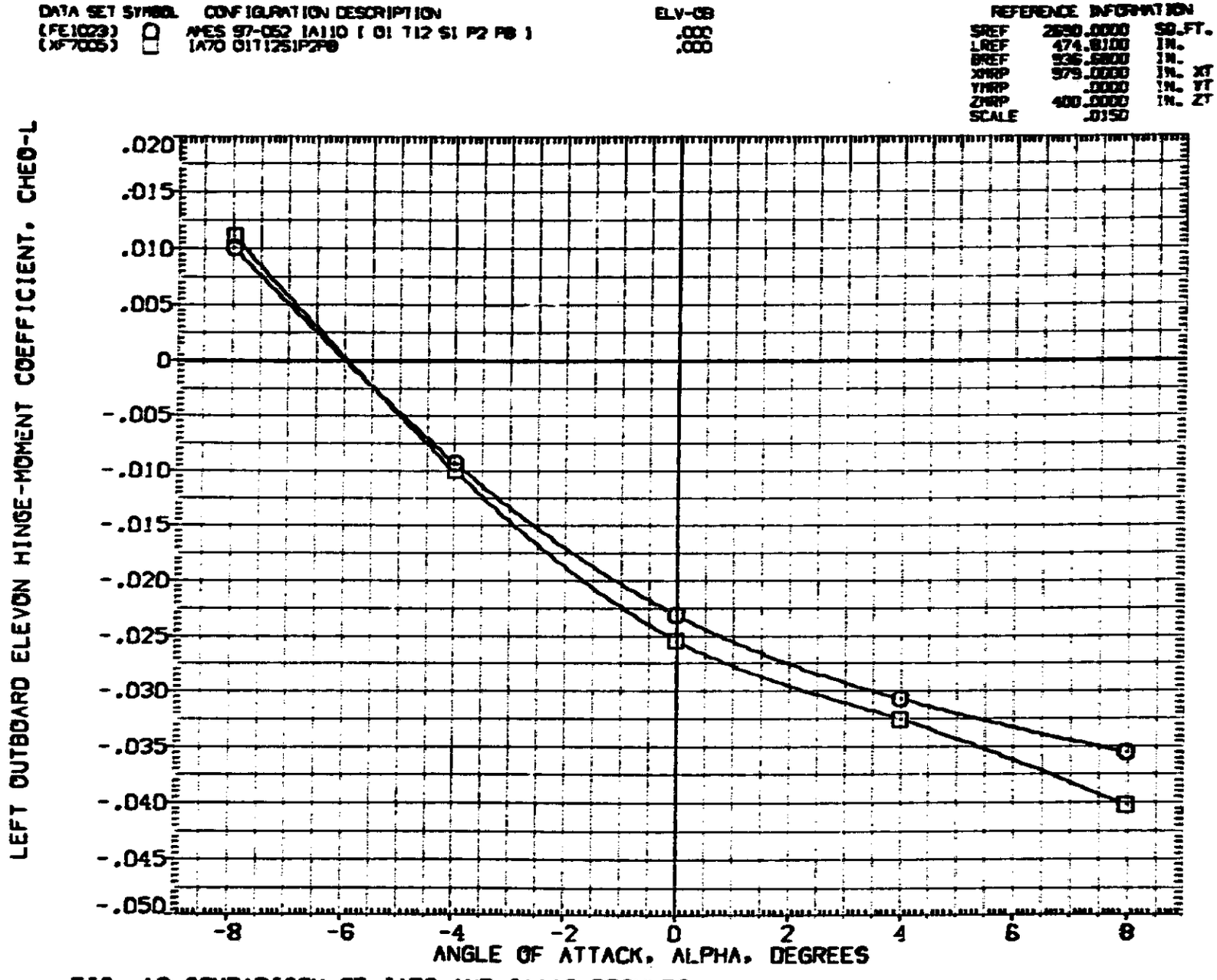


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-DB
[FE1023] ○	AMES 97-052 IA110 (01 T12 S1 P2 P8)	.000
[XF7005] □	IA70 01T12S1P2P8	.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.5800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

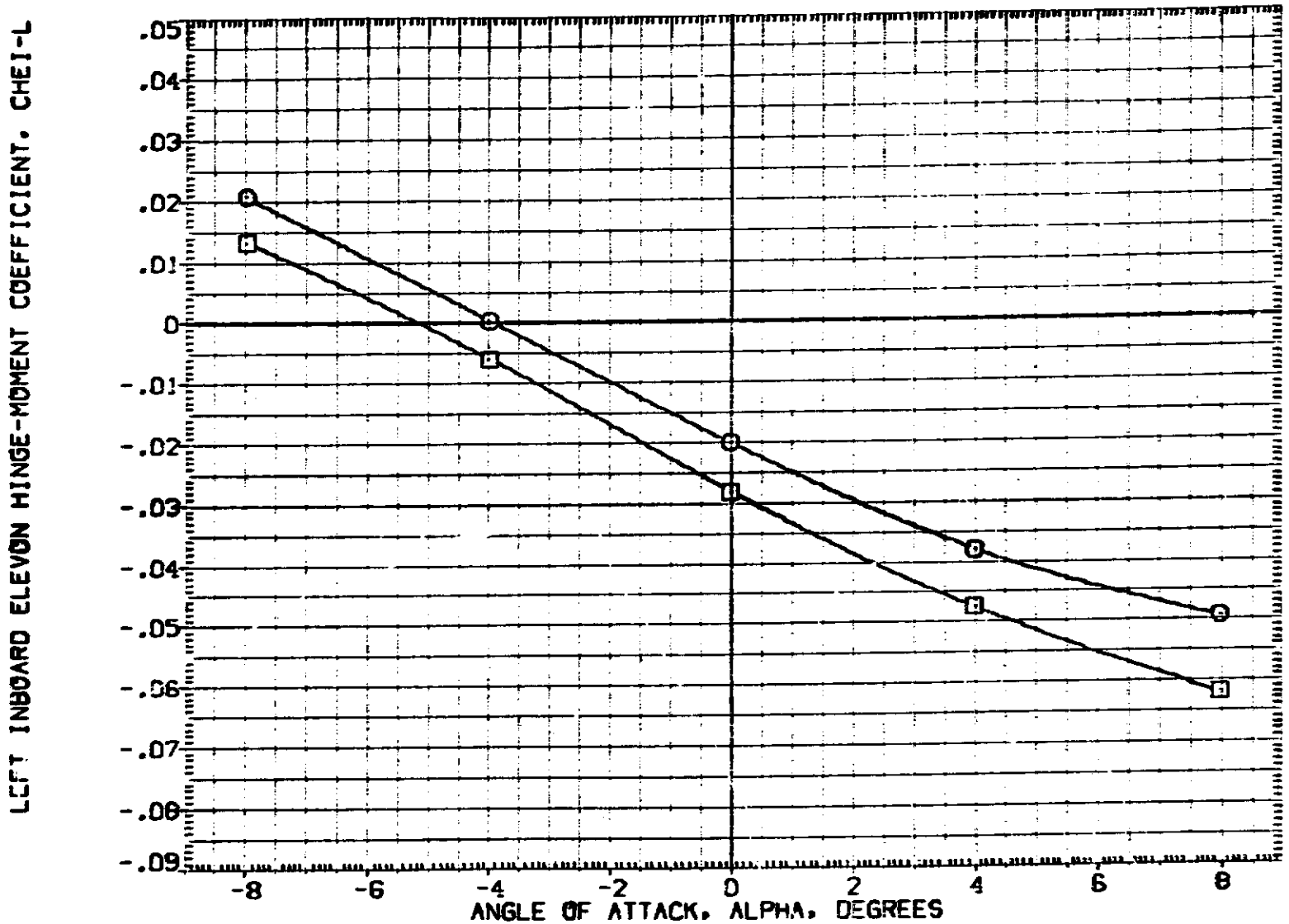


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-DB
(FE1026) □	AMES 97-052 IA110 (01 T12 S1 P2 PB 1	-4.000
(XF7015) □	IA70 01T12S1P2PB	-4.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	975.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

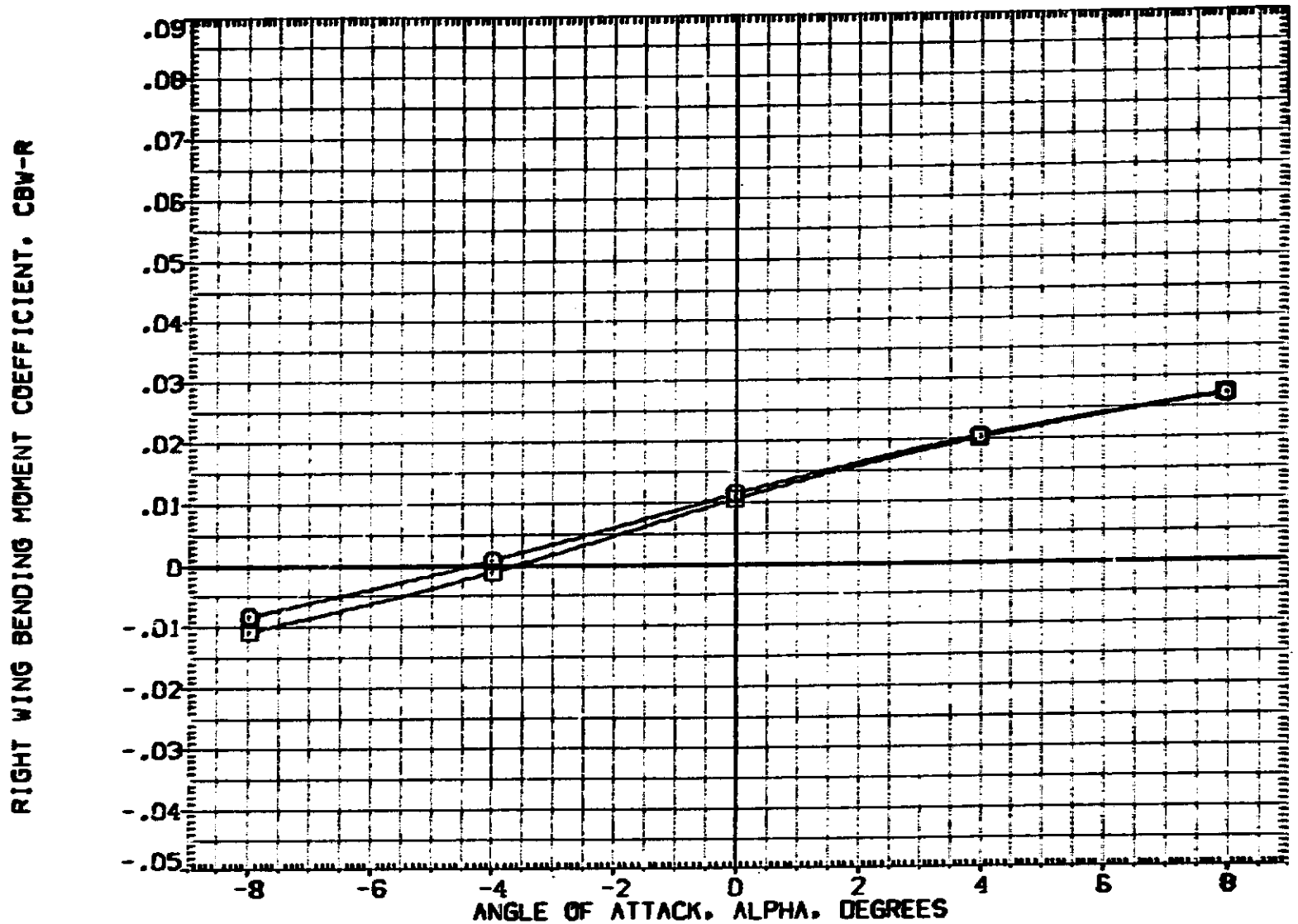


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-DB
(FE1026) ○	AMES 97-052 IA110 I 01 T12 S1 P2 P8 1	-4.000
(XF7015) □	IA70 01T12S1P2P8	-4.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.5800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

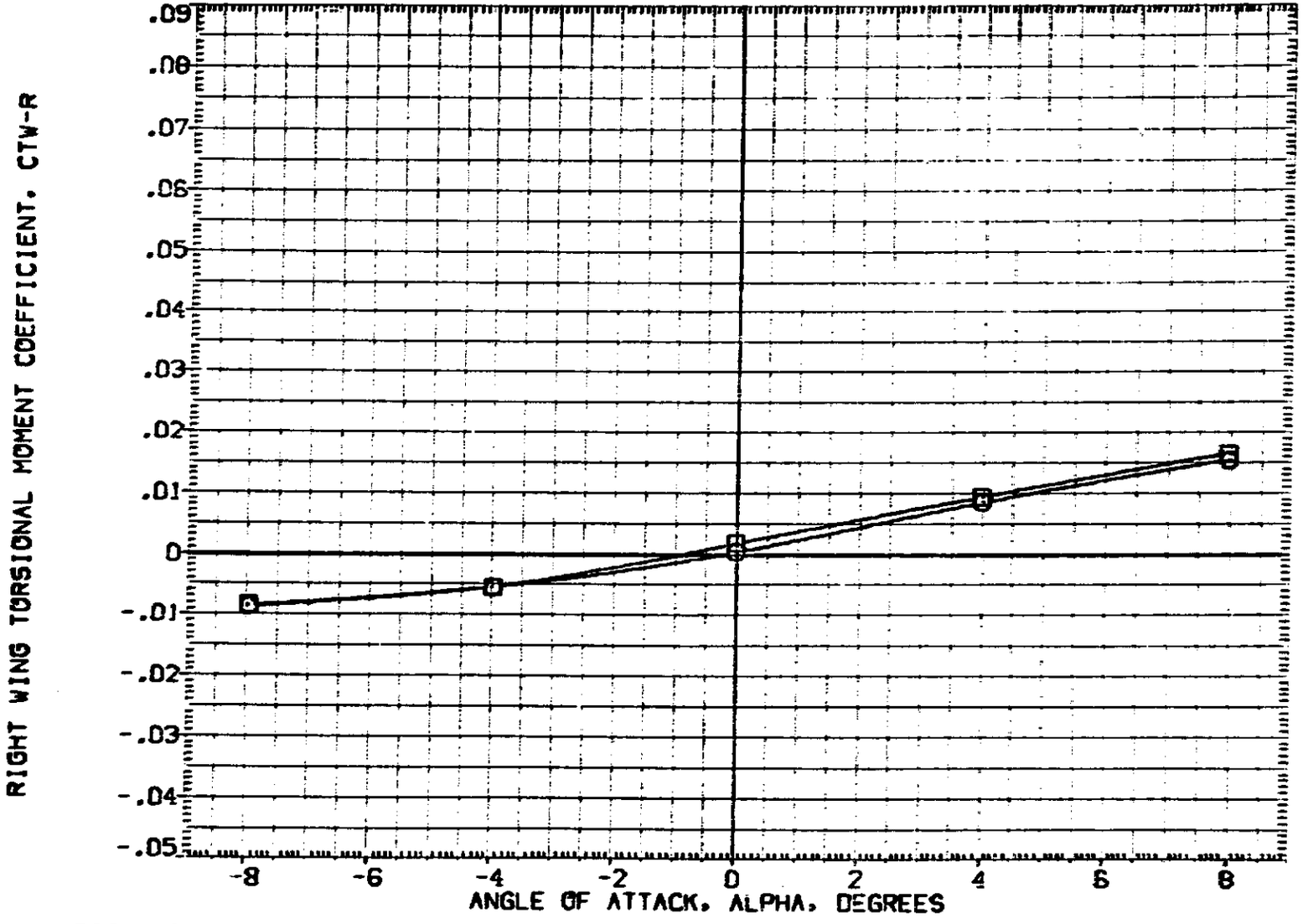


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELV-OB
(FE1006)	□	AMES 97-052 IA110 (01 T12 S1 P2 P8 1	-4.000
(XF7015)	▭	IA70 01T12S1P2P8	-4.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	536.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

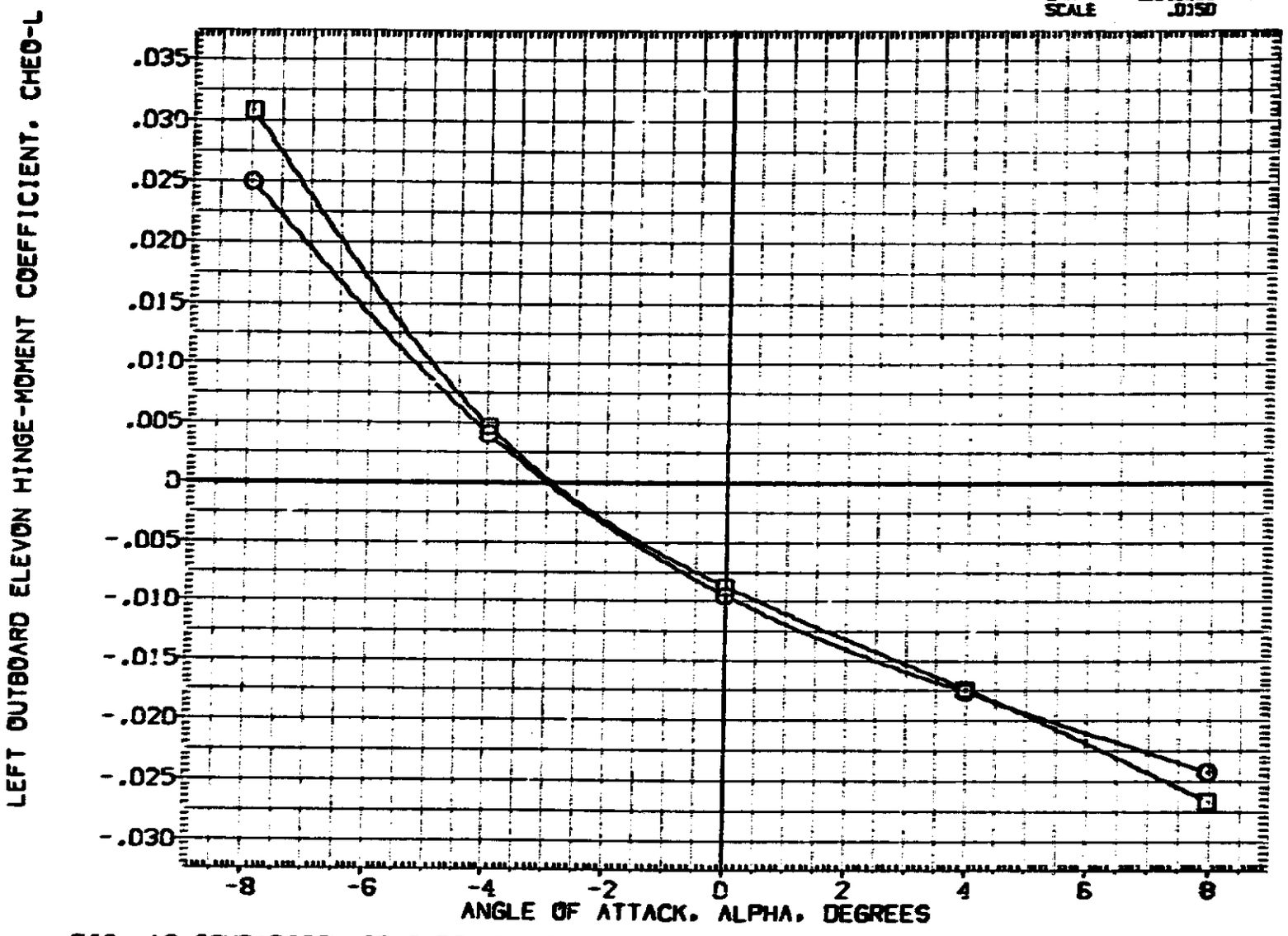


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FE1026) ☐ AMES 97-052 IA110 I 01 T12 S1 P2 P8 1
(XF7015) ☐ IA70 01T12S1P2P8

ELV-OB
-4.000
-4.000

REFERENCE INFORMATION

SREF	2680.0000	SQ.FT.
LREF	474.8100	IN.
BREF	935.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

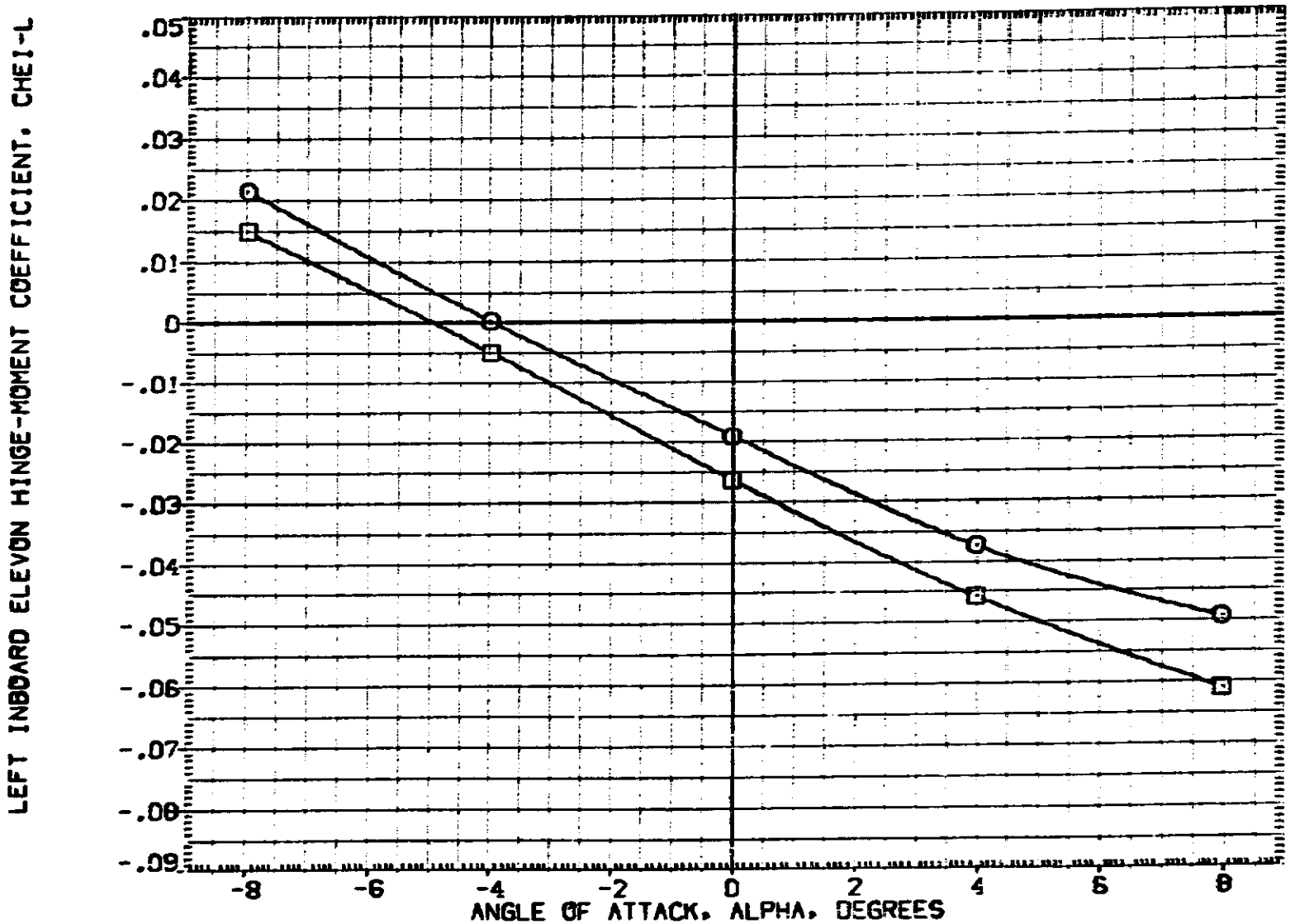


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-CB
(FE1020) ○	AMES 97-052 IA110 I 01 T12 S1 P2 PB 1	-8.000
(XF7020) □	IA70 01T12S1P2PB	-8.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.0100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

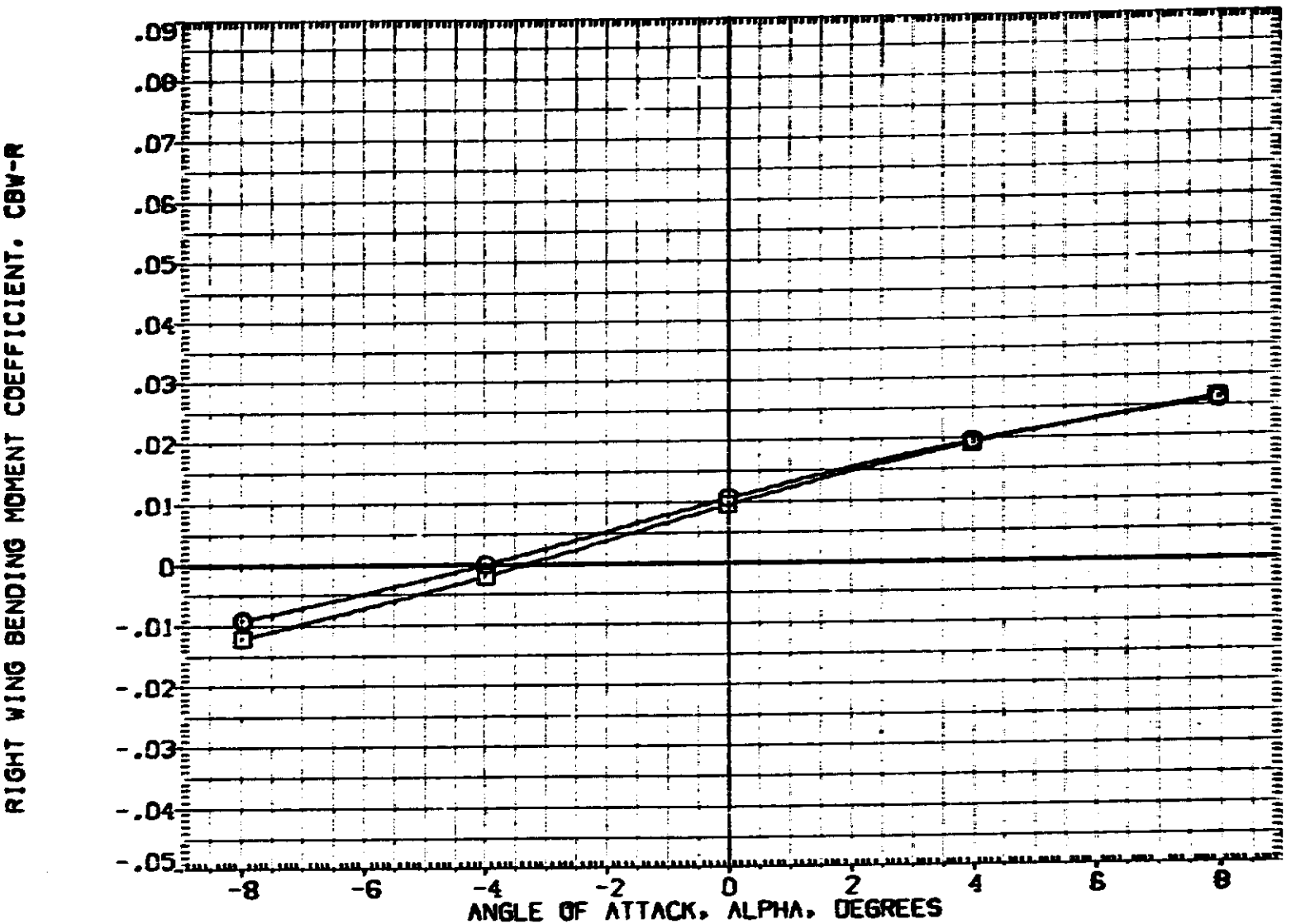


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FE1028) AMES 97-052 IA110 I 01 T12 S1 P2 P8 1

(XF7020) IA70 01T12S1P2P8

ELV-CB
-8.000
-8.000

REFERENCE INFORMATION:

SREF	2630.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

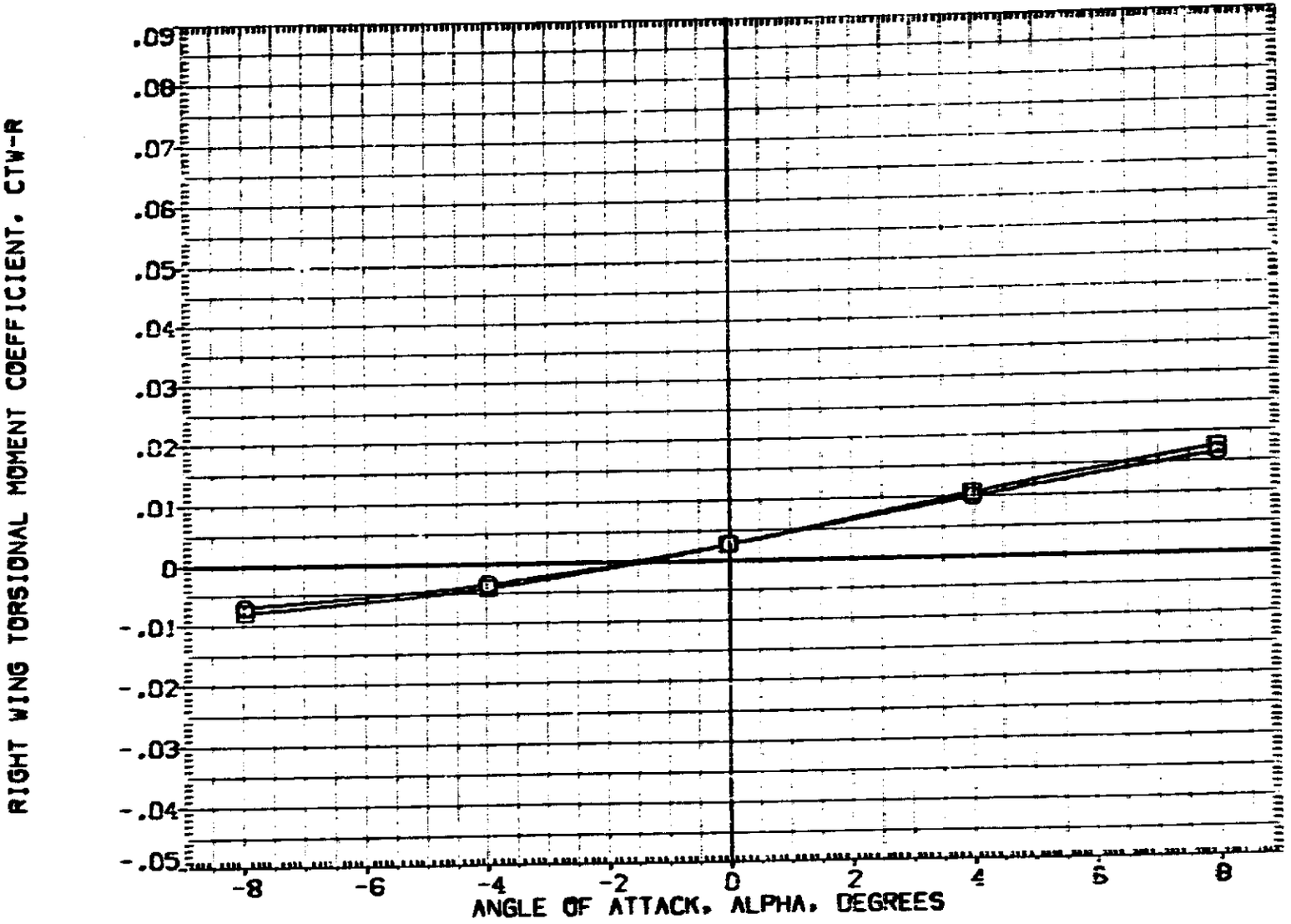


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-CB
(FE1028)	AMES 67-052 IA110 (01 T12 S1 P2 P8 1	-8.000
(XF7020)	IA70 01T12S1P2P8	-8.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

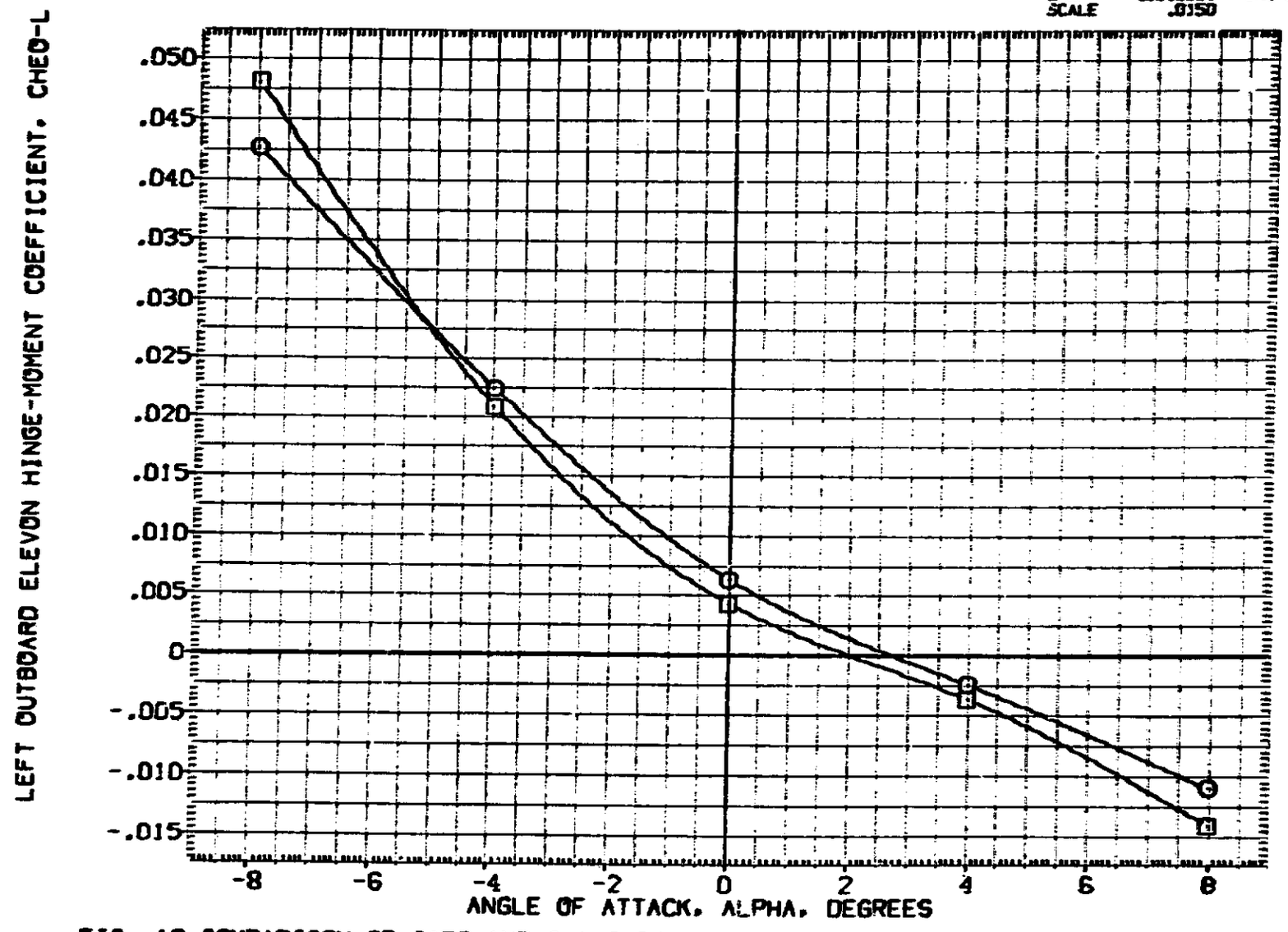


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(FE1028) AMES 97-052 IA110 (01 T12 S1 P2 P8)
(XF7020) IA70 01T12S1P2P8

ELV-DB
-0.000
-0.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	935.5800	IN.
XMRP	979.0300	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

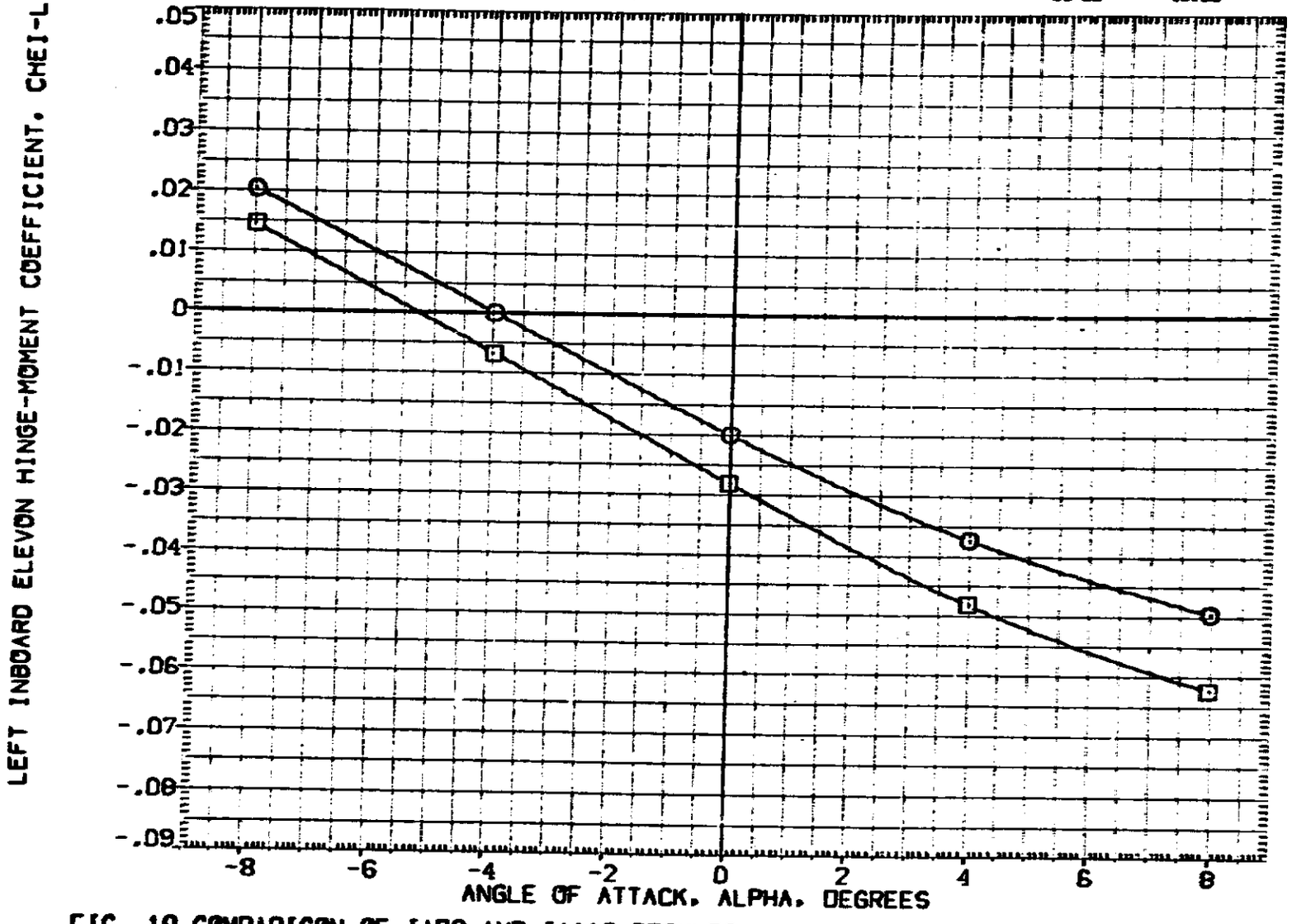


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

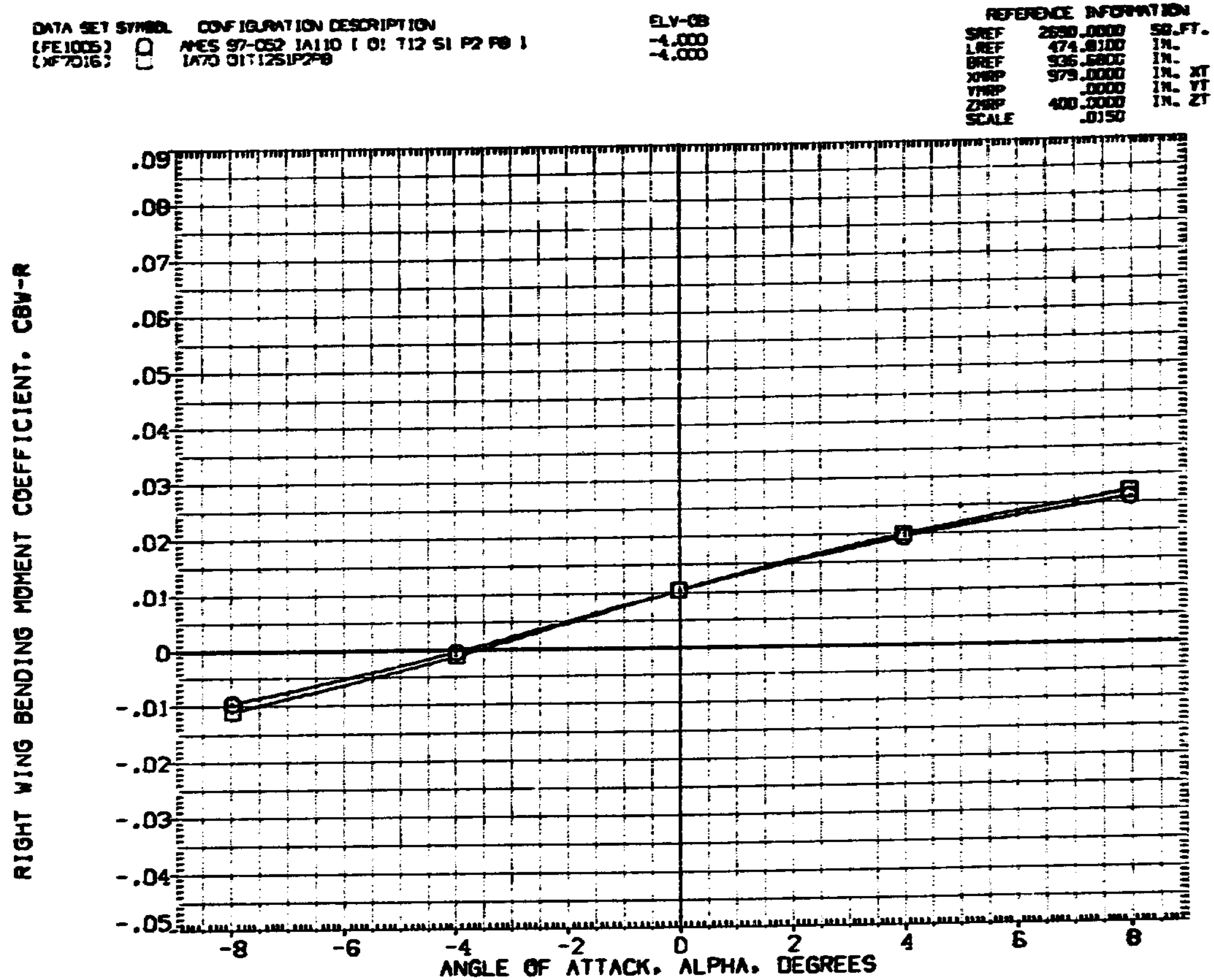


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELV-OB
(FE1005) O	AMES 97-052 IA110 (01 T12 S1 P2 P8)	-4.000
(XF7016) □	IA70 01T12S1P2P8	-4.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8120	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

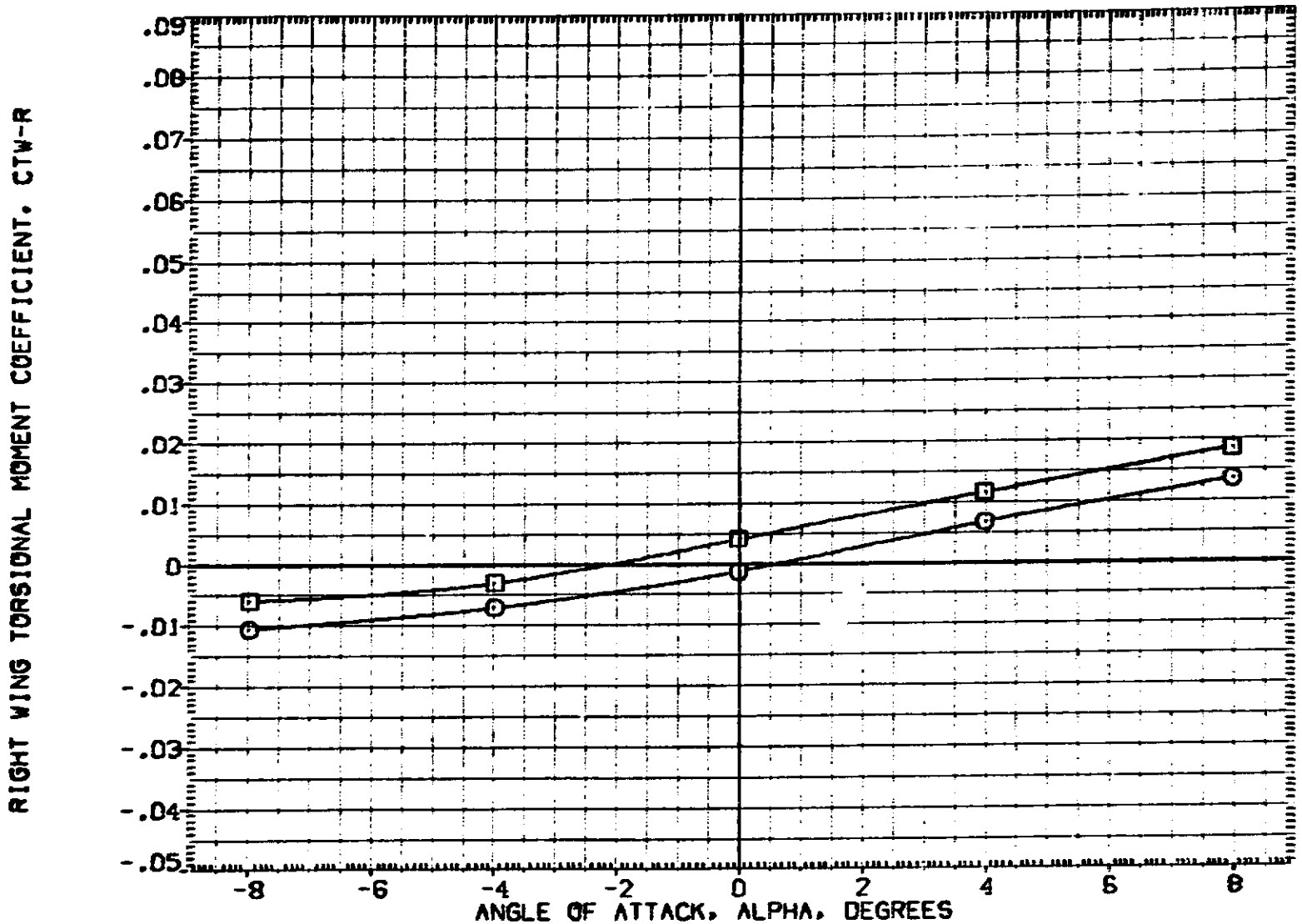


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(FE1005) AMES 97-052 IA110 (01 T12 S1 P2 P8)

(XF7016) IA70 01T12S1P2P8

ELV-OB
-4.000
-4.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

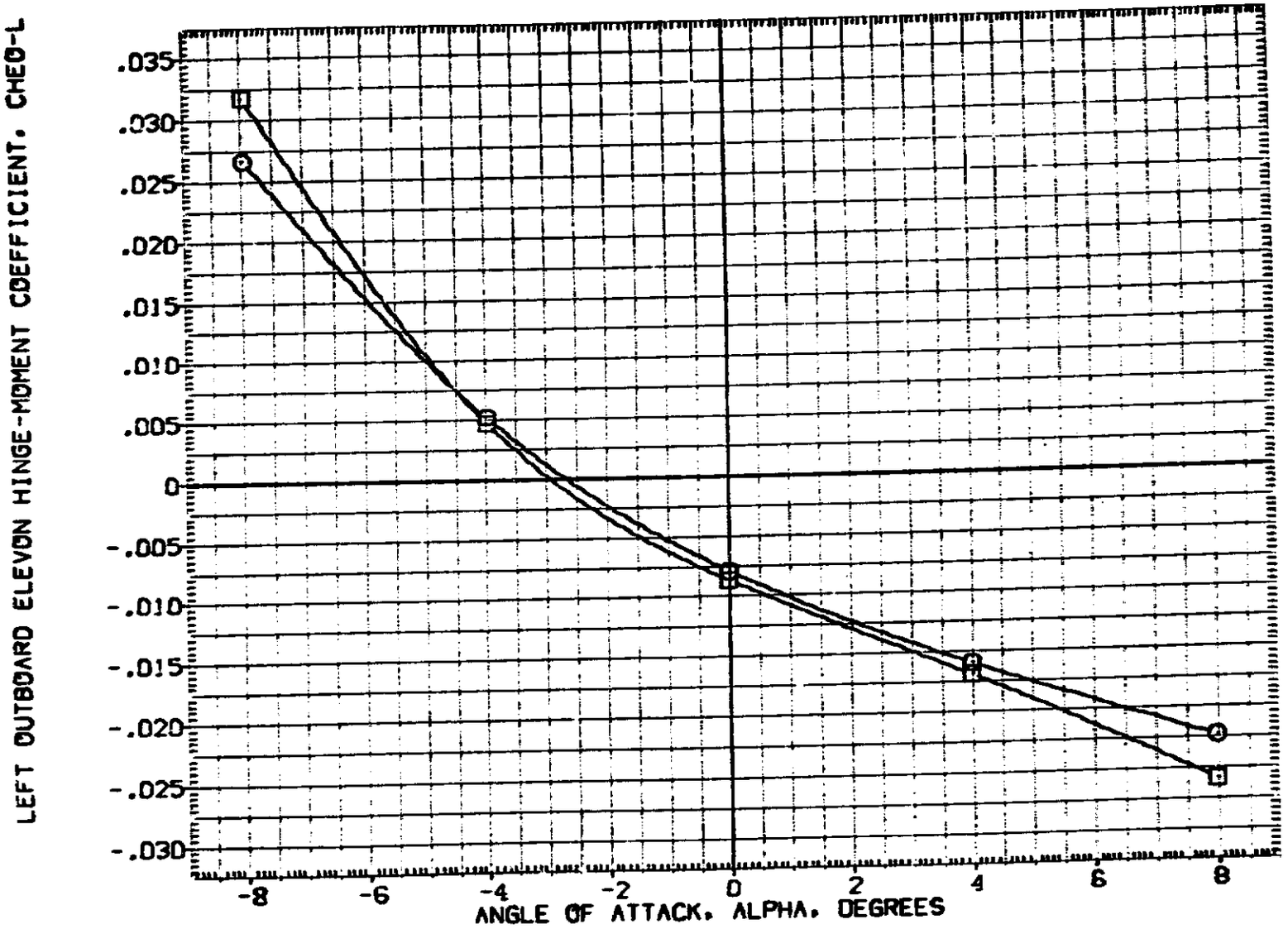


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELV-DB
(FE1005)	○	AMES 97-052 IA110 (01 T12 S1 P2 P8)	-4.000
(XF7016)	□	IA70 01T12S1P2P8	-4.000

REFERENCE INFORMATION

SREF	2699.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	979.0000	IN. XT
YMRP	.0000	IN. YT
ZMRP	400.0000	IN. ZT
SCALE	.0150	

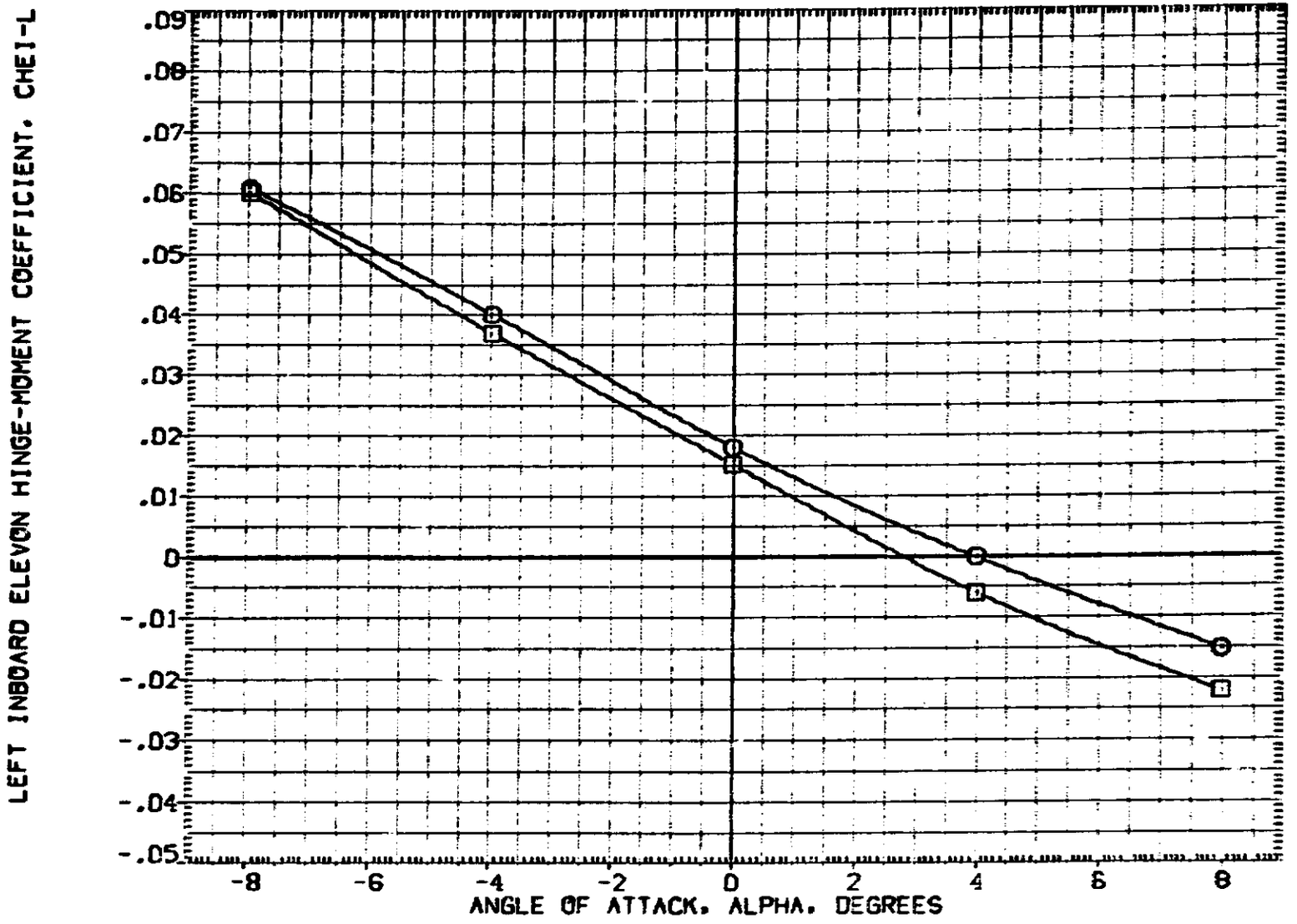


FIG. 18 COMPARISON OF IA70 AND IA110 RESULTS

(A)MACH = 1.55

APPENDIX

TABULATED SOURCE DATA

Note: Data from test IA70 used in this report are included in the source data listing.

Tabulations of plotted data are available on request from Data Management Services.

AMES 97-052 IA110 (01 T12 S1 P2 P0) (RE1001) (03 AUG 74)

REFERENCE DATA

SREF =	2880.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.0100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.8800 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	0.000	ELV-OB =	-4.000
RN/L =	2.500	BOFLAP =	.000
SPOERK =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 5/ 0 RN/L = 2.17 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHI-L	CHID-L	CHIT-L	CBM	CBN	CTN	BETA
2.498	-8.994	-.00270	.01230	.00960	-.00390	-.00300	-.00340	.77000
2.498	-6.842	-.00680	.00820	-.00040	-.00240	-.00210	-.00330	.77310
2.498	-4.681	-.01490	.00420	-.01070	-.00090	-.00110	-.00340	.77190
2.498	-2.517	-.02500	.00000	-.02290	.00050	-.00010	-.00370	.77210
2.498	-.341	-.03500	-.00260	-.03760	.00210	.00090	-.00600	.76410
2.498	1.756	-.04260	-.00800	-.04860	.00360	.00190	-.00700	.76230
2.498	3.925	-.04540	-.01090	-.05590	.00360	.00340	-.00770	.75800
2.498	6.105	-.04490	-.01360	-.06050	.00860	.00520	-.00860	.74680
2.498	8.279	-.04340	-.01930	-.06270	.01150	.00720	-.00900	.74240
	GRADIENT	-.00376	-.00165	-.00541	.00077	.00051	-.00027	-.00193

AMES 97-052 IA110 (01 T12 S1 P2 P0) (RE1002) (03 AUG 74)

REFERENCE DATA

SREF =	2880.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.0100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.8800 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	0.000	ELV-OB =	-4.000
RN/L =	2.500	BOFLAP =	.000
SPOERK =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 7/ 0 RN/L = 2.32 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHI-L	CHID-L	CHIT-L	CBM	CBN	CTN	BETA
2.197	-8.018	-.00290	.01440	.01190	-.00450	-.00330	-.00480	-.01250
2.197	-5.992	-.01050	.00980	-.00090	-.00260	-.00210	-.00480	-.00580
2.197	-3.970	-.01690	.00470	-.01410	-.00070	-.00080	-.00480	-.00470
2.197	-1.986	-.02820	-.00080	-.02700	.00120	.00050	-.00500	-.00160
2.197	-.406	-.03920	-.00550	-.04510	.00310	.00170	-.00550	-.00590
2.197	.110	-.03970	-.00780	-.04730	.00360	.00210	-.00580	-.00160
2.197	1.414	-.04650	-.01140	-.05790	.00540	.00340	-.00650	.00100
2.197	3.965	-.05490	-.01680	-.07370	.00910	.00570	-.00710	-.01490
2.197	6.196	-.05240	-.02250	-.07490	.01270	.00920	-.00710	-.02090
2.197	8.431	-.05360	-.02370	-.07720	.01530	.01010	-.00640	-.02570
	GRADIENT	-.00474	-.00299	-.00774	.00124	.00085	-.00032	-.00992

AMES 97-052 IA110 (01 T12 S1 P2 P8) (RE1003) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -4.000
RN/L = 2.500 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 9/ 0 RN/L = 2.54 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBM1	CBM2	CTM3	BETA
1.995	-8.087	.01680	.01700	.03380	-.00530	-.00380	-.00490	.25830
1.995	-6.046	.00780	.01250	.02010	-.00330	-.00240	-.00530	.25690
1.995	-4.065	-.00060	.00690	.00630	-.00110	-.00090	-.00590	.25910
1.995	-2.068	-.01070	-.00090	-.01170	.00140	.00070	-.00610	.26230
1.995	-.410	-.02190	-.00780	-.02970	.00420	.00250	-.00720	.25970
1.995	-.015	-.02260	-.00900	-.03170	.00470	.00290	-.00730	.26150
1.995	1.780	-.03330	-.01520	-.04850	.00770	.00490	-.00900	.25670
1.995	4.001	-.03970	-.02260	-.06240	.01170	.00750	-.00930	.24650
1.995	6.140	-.04000	-.02340	-.06340	.01540	.01010	-.00740	.23650
1.995	8.379	-.04460	-.02570	-.07030	.01810	.01200	-.00620	.23180
	GRADIENT	-.00502	-.00366	-.00869	.00160	.00105	-.00037	-.00146

AMES 97-052 IA110 (01 T12 S1 P2 P8) (RE1004) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -4.000
RN/L = 2.500 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 11/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBM1	CBM2	CTM3	BETA
1.800	-8.075	.03290	.02070	.05370	-.00680	-.00470	-.00560	.64370
1.800	-6.074	.02400	.01510	.03910	-.00430	-.00300	-.00570	.65080
1.800	-4.072	.01300	.00560	.01870	-.00150	-.00110	-.00620	.65090
1.800	-2.045	.00320	-.00270	.00050	.00240	.00140	-.00750	.65240
1.800	-.082	-.00470	-.00750	-.01210	.00490	.00310	-.00790	.64790
1.800	-.086	-.00910	-.01050	-.01960	.00620	.00400	-.00810	.64920
1.800	1.466	-.01830	-.01630	-.03470	.00940	.00610	-.00800	.64920
1.800	3.981	-.02680	-.02160	-.04860	.01450	.00960	-.00730	.63950
1.800	5.958	-.02930	-.02400	-.05330	.01790	.01180	-.00570	.63000
1.800	7.936	-.03320	-.02630	-.05950	.02020	.01350	-.00430	.62790
	GRADIENT	-.00511	-.00345	-.00858	.00199	.00133	-.00012	-.00146

AMES 97-052 IA110 (01 T12 S1 P2 P8) (RE1005) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 8.000 ELV-OB = -4.000
RN/L = 2.500 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 13/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBM	CBM2	CTM3	BETA
1.547	-8.074	.06120	.02710	.08830	-.00980	-.00970	-.00480	.57430
1.547	-6.060	.05110	.01500	.06600	-.00510	-.00540	-.00580	.58910
1.547	-4.031	.04030	.00550	.04580	-.00050	-.00020	-.00680	.57980
1.547	-2.048	.03050	-.00110	.02940	.00420	.00500	-.00710	.57420
1.547	-.099	.01870	-.00760	.01110	.00890	.00810	-.00720	.57130
1.547	1.867	.00580	-.01290	-.00730	.01310	.00900	-.00660	.56950
1.547	3.931	.00000	-.01580	-.01580	.01710	.01170	-.00470	.56830
1.547	5.968	-.00780	-.01930	-.02710	.02040	.01390	-.00290	.55330
1.547	7.993	-.01510	-.02230	-.03740	.02310	.01590	-.00160	.54820
	GRADIENT	-.00531	-.00272	-.00803	.00222	.00150	.00024	-.00147

AMES 97-052 IA110 (01 T12 S1 P2 P8) (RE1006) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 8.000 ELV-OB = -4.000
RN/L = 2.500 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 6/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBM	CBM2	CTM3	ALPHA
2.498	-7.878	-.07970	.00120	-.07850	.00290	.00200	-.00330	-.42360
2.498	-5.720	-.07580	.00170	-.07410	.00280	.00190	-.00320	-.41720
2.498	-3.575	-.06830	.00000	-.06830	.00250	.00140	-.00350	-.41240
2.498	-1.389	-.05360	-.00100	-.05490	.00230	.00100	-.00470	-.41290
2.498	.793	-.03140	-.00200	-.03340	.00190	.00090	-.00490	-.41190
2.498	2.952	-.01820	-.00380	-.02200	.00280	.00100	-.00660	-.40650
2.498	5.097	-.00480	-.00190	-.00670	.00270	.00100	-.00740	-.39980
2.498	7.249	.00370	.00000	.00370	.00330	.00140	-.00840	-.39520
2.498	9.379	.00560	.00280	.00830	.00420	.00200	-.00990	-.39710
	GRADIENT	.00794	-.00057	.00737	-.00000	-.00006	-.00051	.00086

AMES 97-052 IA110 (OI T12 S1 P2 P0) (RE1007) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8900 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -4.000
RNVL = 2.500 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 8/ 0 RNVL = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBM1	CBM2	CTM3	ALPHA
2.197	-8.797	-.06850	-.00400	-.07050	.00300	.00250	-.00270	-.45370
2.197	-6.887	-.06710	-.00380	-.07090	.00310	.00230	-.00300	-.45070
2.197	-4.812	-.06370	-.00360	-.06730	.00340	.00220	-.00280	-.44850
2.197	-2.106	-.05380	-.00440	-.05800	.00320	.00160	-.00390	-.44580
2.197	-.846	-.04210	-.00550	-.04770	.00330	.00180	-.00470	-.44430
2.197	1.198	-.02670	-.00530	-.03200	.00300	.00150	-.00690	-.44370
2.197	3.154	-.01000	-.00440	-.01440	.00350	.00160	-.00790	-.43440
2.197	5.225	.00340	-.00050	.00290	.00390	.00180	-.00890	-.42490
2.197	7.161	.00830	.00360	.01190	.00450	.00220	-.01010	-.42080
	GRADIENT	.00689	-.00013	.00676	-.00052	-.00009	-.00069	.00156

AMES 97-052 IA110 (OI T12 S1 P2 P0) (RE1008) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8900 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -4.000
RNVL = 2.500 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 10/ 0 RNVL = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBM1	CBM2	CTM3	ALPHA
1.995	-7.795	-.04730	-.00690	-.05620	.00330	.00270	-.00230	-.46530
1.995	-5.694	-.04680	-.00770	-.05450	.00370	.00270	-.00260	-.45730
1.995	-3.679	-.04400	-.00730	-.05130	.00410	.00280	-.00330	-.45230
1.995	-1.727	-.03630	-.00730	-.04380	.00400	.00260	-.00310	-.44960
1.995	.193	-.02030	-.00740	-.02790	.00400	.00240	-.00340	-.44730
1.995	2.382	-.00830	-.00530	-.01160	.00440	.00240	-.00350	-.44060
1.995	4.355	.00390	-.00140	.00450	.00470	.00260	-.00350	-.42890
1.995	6.322	.01390	.00430	.01820	.00510	.00450	-.01040	-.42540
1.995	8.353	.01820	.00750	.02570	.00580	.00330	-.01090	-.42330
	GRADIENT	.00645	.00069	.00715	.00008	-.00003	-.00079	.00293

AMES 97-052 IA110 (O8 T12 S1 PE P8) (RE1008) (03 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 8.000 ELV-OB = -4.000
RWL = 2.500 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 12/ 0 RWL = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBLA	CBLE	CTLB	ALPHA
1.800	-7.386	-.02510	-.01350	-.03870	.00370	.00290	-.00180	-.50800
1.800	-5.851	-.02800	-.01210	-.03810	.00410	.00319	-.00210	-.50108
1.800	-3.859	-.02520	-.01070	-.03580	.00480	.00320	-.00270	-.50350
1.800	-1.542	-.02130	-.00990	-.03110	.00500	.00340	-.00490	-.49680
1.800	.527	-.00880	-.00880	-.01960	.00550	.00350	-.00650	-.49680
1.800	2.383	.00430	-.00470	-.00040	.00550	.00330	-.00950	-.49319
1.800	4.344	.01770	.00000	.01770	.00570	.00330	-.01520	-.49050
1.800	6.395	.02570	.00520	.03190	.00620	.00373	-.01570	-.47578
1.800	8.385	.02730	.01120	.03850	.00700	.03420	-.01110	-.46720
	GRADIENT	.00557	.00132	.00688	.00014	.00001	-.00099	.00262

AMES 97-052 IA110 (O8 T12 S1 PE P8) (RE1010) (03 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 8.000 ELV-OB = -4.000
RWL = 2.500 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 14/ 0 RWL = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBLA	CBLE	CTLB	ALPHA
1.547	-8.127	.00220	-.01320	-.01110	.00360	.00310	-.00030	-.53880
1.547	-6.099	.00250	-.01220	-.00980	.00450	.00370	-.00130	-.53750
1.547	-4.099	.00330	-.01110	-.00780	.00520	.00380	-.00180	-.53540
1.547	-2.009	.00720	-.01020	-.00300	.00620	.00450	-.00310	-.52700
1.547	-.218	.01470	-.00880	.00580	.00780	.00530	-.00590	-.52450
1.547	1.870	.02620	-.00370	.02250	.00810	.00539	-.00830	-.52230
1.547	3.867	.03230	.00050	.03270	.00880	.00550	-.01070	-.51450
1.547	5.848	.03440	.00780	.04210	.00910	.00580	-.01120	-.51210
1.547	7.965	.03200	.01850	.04850	.00970	.00630	-.01180	-.51180
	GRADIENT	.00309	.00150	.00538	.00044	.00021	-.00121	.00235

AMES 97-052 IA110 (01 T12 S1 P2 P6) (RE1011) (03 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6600 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RN/L = 2.500 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 15/ 0 RN/L = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBM	CB.2	CTMB	BETA
2.498	-7.839	-.01010	.00400	-.00810	-.00240	-.00460	-.00310	.77870
2.498	-5.861	-.01650	.00020	-.01620	-.00110	-.00380	-.00310	.78300
2.498	-3.878	-.02320	-.00340	-.02680	.00050	-.00290	-.00330	.79110
2.498	-1.927	-.02940	-.00700	-.03640	.00150	-.00200	-.00360	.77990
2.498	.127	-.03830	-.01000	-.04830	.00300	-.00100	-.00400	.77550
2.498	1.413	-.04500	-.01280	-.05770	.00400	-.00040	-.00470	.77220
2.498	3.925	-.05080	-.01860	-.06940	.00480	.00150	-.00550	.76140
2.498	5.131	-.04960	-.02410	-.07370	.00980	.00330	-.00790	.75340
2.498	6.330	-.04900	-.02980	-.07780	.01240	.00330	-.00790	.74990
	GRADIENT	-.00370	-.00191	-.00562	.00080	.00055	-.00029	-.00245

AMES 97-052 IA110 (01 T12 S1 P2 P6) (RE1012) (03 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6600 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RN/L = 2.500 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 17/ 0 RN/L = 2.54 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBM	CB.2	CTMB	BETA
1.996	-8.080	.01380	.00680	.02060	-.00450	-.00350	-.00360	.25230
1.996	-6.048	.00410	.00180	.00590	-.00220	-.00020	-.00390	.25790
1.996	-4.070	-.00420	-.00360	-.00780	-.00010	.00120	-.00410	.25740
1.996	-2.073	-.01440	-.01270	-.02710	.00240	.00290	-.00450	.25995
1.996	-.020	-.02680	-.02090	-.04770	.00590	.00330	-.00620	.26115
1.996	1.747	-.03710	-.02740	-.06450	.00890	.00710	-.00690	.25670
1.996	3.908	-.04450	-.03490	-.07900	.01280	.00970	-.00730	.24650
1.996	6.123	-.04460	-.03450	-.07910	.01670	.01070	-.00640	.23690
1.996	8.365	-.04960	-.03610	-.08570	.01930	.01260	-.00520	.23130
	GRADIENT	-.00517	-.00383	-.00900	.00162	.00106	-.00042	-.00124

AMES 97-052 IA110 (C4 T12 S1 P2 P8) (RE1013) (03 AUG 74)

REFERENCE DATA

SREF = 2000.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8900 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RNVL = 2.500 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 19/ 0 RNVL = 2.55 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHET-L	CHED-L	CHET-L	CBM	CBM2	CTMB	BETA
1.547	-8.072	.05770	.01080	.06840	-.00700	-.00500	-.00360	.57300
1.547	-6.063	.04720	-.00100	.04620	-.00550	-.00280	-.00480	.57100
1.547	-4.045	.03680	-.00810	.02750	.00100	.00050	-.00570	.57000
1.547	-2.055	.02610	-.01800	.01000	.00980	.00380	-.00820	.57700
1.547	-.120	.01450	-.02180	-.00730	.01040	.00880	-.00640	.57570
1.547	1.858	.00140	-.02680	-.02540	.01480	.00990	-.00540	.57000
1.547	3.912	-.00370	-.02910	-.03280	.01650	.01240	-.00370	.56200
1.547	5.958	-.01100	-.03180	-.04280	.02180	.01470	-.00190	.55670
1.547	7.963	-.01850	-.03400	-.05250	.02450	.01640	-.00050	.54970
	GRADIENT	-.00530	-.00256	-.00786	.00222	.00151	.00025	-.00175

AMES 97-052 IA110 (C4 T12 S1 P2 P8) (RE1014) (03 AUG 74)

REFERENCE DATA

SREF = 2000.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8900 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RNVL = 2.500 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 18/ 0 RNVL = 2.55 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHET-L	CHED-L	CHET-L	CBM	CBM2	CTMB	ALPHA
2.498	-7.980	-.08400	-.00750	-.09150	.00360	.00010	-.00180	-.42320
2.498	-6.036	-.08130	-.00800	-.08730	.00350	-.00020	-.00140	-.41840
2.498	-3.992	-.07320	-.00750	-.08040	.00340	-.00050	-.00130	-.41280
2.498	-1.985	-.05840	-.00840	-.06480	.00300	-.00090	-.00300	-.41080
2.498	-.064	-.04140	-.00920	-.05060	.00280	-.00100	-.00360	-.41430
2.498	1.956	-.02880	-.01050	-.03930	.00300	-.00100	-.00470	-.41310
2.498	3.884	-.01400	-.01050	-.02450	.00350	-.00080	-.00540	-.40590
2.498	5.934	-.00400	-.00750	-.01190	.00360	-.00090	-.00620	-.40450
2.498	7.853	.00170	-.00550	-.00380	.00440	-.00020	-.00795	-.40523
	GRADIENT	.00760	-.00044	.00715	.00001	-.00004	-.00034	.00081

AMES 97-052 IA110 (01 T12 S1 P2 P0) (RE1015) (03 AUG 74)

REFERENCE DATA

SREF =	2080.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.6800 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	0.000	ELV-OB =	.000
RN/L =	2.500	SDFLAP =	.000
SPDBRK =	.000	RUDDER =	.000
ALPHA =	.000		

RUN NO. 18/ 0 RN/L = 2.54 GRADIENT INTERVAL = -3.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBw3	CBw2	CTw5	ALPHA
1.998	-7.724	-.05180	-.02130	-.07310	.00430	.00310	-.00080	-.47790
1.998	-5.704	-.05140	-.01990	-.07140	.00470	.00320	-.00130	-.47990
1.998	-3.678	-.04840	-.01900	-.06740	.00520	.00330	-.00190	-.48370
1.998	-1.732	-.04020	-.01910	-.05930	.00520	.00320	-.00370	-.49090
1.998	.180	-.02390	-.01920	-.04310	.00510	.00290	-.00600	-.49980
1.998	2.333	-.01050	-.01700	-.02720	.00550	.00290	-.00720	-.45360
1.998	4.355	.00180	-.01250	-.01070	.00590	.00310	-.00820	-.43990
1.998	6.315	.01080	-.00590	.00530	.00640	.00340	-.00910	-.43490
1.998	8.346	.01520	-.00120	.01400	.00710	.00390	-.00960	-.43680
	GRADIENT	.00647	.00076	.00724	.00009	-.00003	-.00090	.00276

AMES 97-052 IA110 (01 T12 S1 P2 P0) (RE1016) (03 AUG 74)

REFERENCE DATA

SREF =	2080.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.6800 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	0.000	ELV-OB =	.000
RN/L =	2.500	SDFLAP =	.000
SPDBRK =	.000	RUDDER =	.000
ALPHA =	.000		

RUN NO. 20/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBw4	CBw2	CTw5	ALPHA
1.547	-8.117	-.00230	-.02810	-.03040	.00490	.00370	.00100	-.55250
1.547	-6.091	-.00230	-.02720	-.02950	.00590	.00440	.00000	-.55630
1.547	-4.096	-.00110	-.02580	-.02680	.00670	.00470	-.00050	-.54780
1.547	-2.010	.00250	-.02480	-.02230	.00770	.00530	-.00190	-.54240
1.547	-.208	.01050	-.02320	-.01280	.00910	.00620	-.00480	-.53590
1.547	1.868	.02250	-.01750	.00500	.00970	.00620	-.00830	-.52790
1.547	3.865	.02850	-.01230	.01610	.01020	.00630	-.00960	-.53200
1.547	5.891	.03000	-.00560	.02440	.01070	.00670	-.01020	-.53060
1.547	7.961	.02719	.00220	.02930	.01150	.00730	-.01070	-.52340
	GRADIENT	.00398	.00174	.00571	.00045	.00021	-.00124	.00233

AMES 97-052 IA110 (01 T12 S1 P2 P0) (RE1017) (03 AUG 74)

REFERENCE DATA

SREF =	2880.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.0000 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	0.000	ELV-OB =	-0.000
RN/L =	2.500	BDFLAP =	.000
SPOBRK =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 23/ 0 RN/L = 2.52 GRADIENT INTERVAL = -3.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBw1	CBw2	CTw3	BETA
2.497	-7.913	-.01120	.02050	.00980	-.00360	-.00310	-.00210	.78030
2.497	-5.930	-.01750	.01660	-.00070	-.00250	-.00220	-.00210	.78260
2.497	-3.951	-.02340	.01230	-.01100	-.00090	-.00130	-.00240	.78200
2.497	-2.004	-.03000	.00770	-.02240	.00040	-.00040	-.00280	.78270
2.497	.289	-.04040	.00430	-.03620	.00210	.00070	-.00320	.77190
2.497	2.118	-.04850	.00070	-.04780	.00360	.00180	-.00390	.77330
2.497	4.096	-.05120	-.00280	-.05380	.00560	.00290	-.00460	.76330
2.497	6.043	-.05040	-.00630	-.05670	.00620	.00460	-.00570	.75620
2.497	8.034	-.05000	-.01030	-.06050	.01070	.00630	-.00600	.74900
	GRADIENT	-.00367	-.00182	-.00550	.00090	.00051	-.00028	-.00251

AMES 97-052 IA110 (01 T12 S1 P2 P0) (RE1018) (03 AUG 74)

REFERENCE DATA

SREF =	2880.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.0000 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	0.000	ELV-OB =	-0.000
RN/L =	2.500	BDFLAP =	.000
SPOBRK =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 23/ 0 RN/L = 2.53 GRADIENT INTERVAL = -3.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBw1	CBw2	CTw3	BETA
1.996	-8.014	.01250	.02920	.04170	-.00600	-.00450	-.00170	.25030
1.996	-5.990	.00280	.02450	.02710	-.00380	-.00300	-.00200	.25340
1.996	-4.015	-.00550	.01910	.01370	-.00160	-.00160	-.00230	.25730
1.996	-2.019	-.01570	.01090	-.00540	.00090	.00010	-.00300	.25990
1.996	.034	-.02770	.00170	-.02600	.00430	.00220	-.00420	.25410
1.996	2.022	-.03890	-.00470	-.04310	.00750	.00440	-.00490	.25240
1.996	4.042	-.04480	-.01100	-.05590	.01100	.00670	-.00510	.24290
1.996	6.028	-.04480	-.01220	-.05710	.01460	.00920	-.00420	.23570
1.996	8.012	-.04900	-.01500	-.06390	.01710	.01100	-.00320	.22630
	GRADIENT	-.00503	-.00373	-.00878	.00159	.00104	-.00037	-.00175

AMES 97-052 IA110 (O1 T12 S1 P2 M8) (RE1019) (05 AUG 74)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.6000 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	8.000	ELV-OB =	-8.000
RNVL =	2.500	SDFLAP =	.000
SPDBRK =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 21/ 0 RNVL = 2.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBw1	CBw2	CTw3	BETA
1.547	-8.050	.05850	.04230	.10080	-.00940	-.00680	-.00070	.38809
1.547	-6.037	.04730	.03150	.07880	-.00590	-.00440	-.00190	.38819
1.547	-4.041	.03590	.02220	.05810	-.00130	-.00120	-.00290	.37349
1.547	-2.049	.02620	.01390	.04000	.00340	.00190	-.00340	.37129
1.547	-.122	.01393	.00600	.01990	.00810	.00520	-.00340	.37059
1.547	1.956	.00170	.00020	.00190	.01260	.00920	-.00260	.35649
1.547	3.898	-.00410	-.00240	-.00650	.01620	.01070	-.00110	.36019
1.547	5.938	-.01200	-.00680	-.01870	.01970	.01300	.00050	.35269
1.547	7.936	-.01899	-.01110	-.03008	.02240	.01490	.00190	.34399
	GRADIENT	-.00526	-.00316	-.00841	.00222	.00151	.00022	-.00159

AMES 97-052 IA110 (O1 T12 S1 P2 M8) (RE1020) (05 AUG 74)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.6000 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	8.000	ELV-OB =	-8.000
RNVL =	2.500	SDFLAP =	.000
SPDBRK =	.000	RUDDER =	.000
ALPHA =	.000		

RUN NO. 28/ 0 RNVL = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBw1	CBw2	CTw3	ALPHA
2.497	-8.084	-.08820	.00950	-.07870	.00320	.00190	-.00050	.27800
2.497	-6.045	-.08190	.01060	-.07130	.00250	.00130	-.00050	-.34360
2.497	-4.116	-.07390	.00860	-.06530	.00240	.00100	-.00030	-.34440
2.497	-2.060	-.06170	.00740	-.05430	.00190	.00050	-.00150	-.34120
2.497	.019	-.04630	.00450	-.04180	.00210	.00070	-.00280	.27930
2.497	1.957	-.03040	.00370	-.02660	.00200	.00030	-.00350	-.33970
2.497	4.031	-.01430	.00420	-.01010	.00230	.00050	-.00420	-.33750
2.497	6.030	-.00490	.00630	.00150	.00250	.00050	-.00490	-.33540
2.497	8.050	.00110	.00790	.00910	.00320	.00100	-.00590	-.33290
	GRADIENT	.00741	-.00062	.00680	-.00001	-.00006	-.00048	.00149

AMES 97-052 IA110 (01 T12 S1 P2 P8) (RE1021) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.0100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.500 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 24/ 0 RN/L = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBM1	CBM2	CTM3	ALPHA
1.996	-8.040	-.05240	.00260	-.05000	.00290	.00210	.00080	-.41390
1.996	-6.028	-.05220	.00300	-.04930	.00320	.00210	.00040	-.41400
1.996	-4.019	-.05040	.00340	-.04700	.00360	.00210	.00020	-.40960
1.996	-2.061	-.04270	.00340	-.03930	.00380	.00190	-.00140	-.40360
1.996	-.038	-.02850	.00280	-.02560	.00350	.00170	-.00370	-.40190
1.996	2.006	-.01290	.00490	-.00800	.00380	.00170	-.00500	-.39440
1.996	3.994	-.00040	.00790	.00740	.00420	.00190	-.00600	-.39250
1.996	5.998	.00950	.01310	.02250	.00480	.00210	-.00700	-.39330
1.996	8.012	.01330	.01690	.02960	.00520	.00240	-.00750	-.37670
	GRADIENT	.00644	.00052	.00698	.00007	-.00003	-.00060	.00314

AMES 97-052 IA110 (01 T12 S1 P2 P8) (RE1022) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.0100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.500 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 22/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CHEI-L	CHEO-L	CHET-L	CBM1	CBM2	CTM3	ALPHA
1.547	-7.979	-.00160	.00150	-.00010	.00300	.00220	.00340	-.55410
1.547	-5.981	-.00160	.00190	.00030	.00360	.00270	.00250	-.55180
1.547	-3.979	-.00090	.00320	.00230	.00400	.00300	.00200	-.55280
1.547	-2.012	.00290	.00400	.00690	.00550	.00360	.00070	-.55210
1.547	-.107	.01220	.00540	.01760	.00690	.00430	-.00230	-.54050
1.547	1.982	.02250	.00990	.03240	.00720	.00490	-.00550	-.53340
1.547	3.960	.02870	.01490	.04360	.00780	.00440	-.00680	-.52950
1.547	5.954	.02990	.02160	.05150	.00840	.00480	-.00760	-.53270
1.547	8.033	.02790	.02960	.05760	.00900	.00530	-.00790	-.52260
	GRADIENT	.00998	.00148	.00546	.00041	.00018	-.00120	.00329

AMES 97-052 IA110 (01 T12 S1 P2 P8) (RE1023) (05 AUG 74)

REFERENCE DATA

SREF = 2890.0300 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 12.000 ELV-OB = .000
RN/L = 2.500 BOFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 27/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHET-L	CHEO-L	CHET-L	CBw1	CBw2	CTW3	BETA
1.547	-8.054	.02100	.01040	.03140	-.00630	-.00450	-.00610	.56450
1.547	-6.052	.01020	-.00100	.00920	-.00280	-.00210	-.00710	.56770
1.547	-4.024	.00050	-.00920	-.00870	.00180	.00100	-.00930	.56970
1.547	-2.035	-.00760	-.01700	-.02470	.00650	.00420	-.00860	.57270
1.547	-.106	-.01930	-.02250	-.04220	.01120	.00730	-.00980	.56760
1.547	1.972	-.03210	-.02810	-.06050	.01560	.01040	-.00900	.56590
1.547	3.923	-.03770	-.03060	-.06820	.01910	.01260	-.00610	.56070
1.547	5.969	-.04380	-.03320	-.07700	.02240	.01500	-.00420	.55160
1.547	7.971	-.04930	-.03550	-.08480	.02510	.01680	-.00260	.54410
	GRADIENT	-.00507	-.00271	-.00777	.00220	.00150	.00025	-.00135

AMES 97-052 IA110 (01 T12 S1 P2 P8) (RE1024) (05 AUG 74)

REFERENCE DATA

SREF = 2890.0300 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 12.000 ELV-OB = .000
RN/L = 2.760 BOFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 28/ 0 RN/L = 2.76 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHET-L	CHEO-L	CHET-L	CBw1	CBw2	CTW3	BETA
1.995	-8.208	-.01520	.00770	-.00750	-.00400	-.00300	-.00550	.25180
1.995	-6.148	-.02350	.00250	-.02100	-.00170	-.00140	-.00580	.25550
1.995	-4.137	-.03130	-.00290	-.03420	.00040	.00000	-.00590	.25360
1.995	-2.120	-.04130	-.01280	-.05410	.00300	.00160	-.00660	.26050
1.995	-.042	-.05320	-.02110	-.07430	.00640	.00390	-.00800	.25770
1.995	1.977	-.06460	-.02860	-.09320	.00980	.00610	-.00880	.25590
1.995	4.017	-.07030	-.03510	-.10540	.01340	.00850	-.00900	.24260
1.995	6.025	-.06880	-.03520	-.10400	.01700	.01100	-.00820	.23620
1.995	8.043	-.07010	-.03700	-.10710	.01950	.01290	-.00680	.22990
	GRADIENT	-.00497	-.00393	-.00890	.00161	.00105	-.00041	-.00133

AMES 97-052 1A110 (Q1 T12 S1 P2 P6) (RE1025) (05 AUG 74)

REFERENCE DATA

SREF =	2890.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.6800 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	12.000	ELV-OB =	-4.000
RN/L =	2.500	SDFLAP =	.000
SPDBRK =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 30/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHET-L	CHED-L	CHET-L	CDwB	CDwB	CTwB	BETA
1.998	-8.075	-.01530	.01770	.00240	-.00490	-.00370	-.00420	.24730
1.998	-6.053	-.02380	.01280	-.01100	-.00260	-.00220	-.00440	.25480
1.998	-4.078	-.03210	.00670	-.02530	-.00040	-.00080	-.00470	.25420
1.998	-2.075	-.04050	-.00190	-.04230	.00210	.00080	-.00540	.25710
1.998	-.019	-.05350	-.01000	-.06350	.00540	.00310	-.00670	.25980
1.998	1.973	-.06450	-.01750	-.08180	.00980	.00520	-.00740	.25340
1.998	3.966	-.06990	-.02350	-.09340	.01220	.00750	-.00750	.24360
1.998	5.978	-.06860	-.02430	-.09300	.01580	.01000	-.00690	.23480
1.998	7.963	-.07020	-.02630	-.09660	.01830	.01160	-.00560	.22780
	GRADIENT	-.00494	-.00376	-.00871	.00158	.00104	-.00038	-.00125

AMES 97-052 1A110 (Q1 T12 S1 P2 P6) (RE1026) (05 AUG 74)

REFERENCE DATA

SREF =	2890.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.6800 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	12.000	ELV-OB =	-4.000
RN/L =	2.500	SDFLAP =	.000
SPDBRK =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 29/ 0 RN/L = 2.51 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHET-L	CHED-L	CHET-L	CDwB	CDwB	CTwB	BETA
1.547	-8.084	.02170	.02540	.04700	-.00780	-.00550	-.00450	.58950
1.547	-6.053	.01090	.01280	.02370	-.00410	-.00320	-.00550	.57220
1.547	-4.031	.00040	.00420	.00480	.00050	.00000	-.00650	.57360
1.547	-2.042	-.00690	-.00200	-.00890	.00520	.00320	-.00700	.57100
1.547	-.120	-.01830	-.00910	-.02740	.00960	.00620	-.00690	.56950
1.547	1.965	-.03110	-.01480	-.04580	.01430	.00930	-.00630	.57100
1.547	3.908	-.03720	-.01750	-.05470	.01790	.01160	-.00440	.56250
1.547	5.960	-.04370	-.02080	-.06450	.02120	.01400	-.00270	.55520
1.547	7.966	-.04930	-.02420	-.07350	.02390	.01590	-.00120	.54430
	GRADIENT	-.00500	-.00282	-.00781	.00221	.00149	.00025	-.00113

AMES 97-052 IA110 (O1 T12 S1 P2 P0) (RE1027) (05 AUG 74)

REFERENCE DATA

SREF =	2890.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.6100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.8800 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	12.000	ELV-OB =	-8.000
RN/L =	2.500	BDFLAP =	.000
SPOBRK =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 32/ 0 RN/L = 2.55 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBM1	CBM2	CTM3	BETA
1.996	-8.070	-.01570	.03180	.01610	-.00550	-.00440	-.00300	.23400
1.996	-6.036	-.02420	.02590	.00160	-.00320	-.00290	-.00340	.24250
1.996	-4.061	-.03260	.01950	-.01320	-.00100	-.00150	-.00360	.24200
1.996	-2.071	-.04060	.01020	-.03060	.00150	.00020	-.00430	.24290
1.996	-.022	-.03400	.00180	-.05220	.00490	.00240	-.00540	.24170
1.996	1.970	-.06520	-.00470	-.06990	.00820	.00460	-.00620	.24450
1.996	3.975	-.06980	-.01090	-.08070	.01170	.00690	-.00690	.23220
1.996	5.956	-.06900	-.01210	-.08120	.01520	.00930	-.00540	.22520
1.996	7.945	-.07040	-.01470	-.08510	.01760	.01110	-.00450	.22120
	GRADIENT	-.00491	-.00376	-.00867	.00160	.00105	-.00036	-.00099

AMES 97-052 IA110 (O1 T12 S1 P2 P0) (RE1029) (05 AUG 74)

REFERENCE DATA

SREF =	2890.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.6100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.8800 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	12.000	ELV-OB =	-8.000
RN/L =	2.500	BDFLAP =	.000
SPOBRK =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 31/ 0 RN/L = 2.55 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEI-L	CHEO-L	CHET-L	CBM1	CBM2	CTM3	BETA
1.547	-8.034	.02090	.04290	.06340	-.00650	-.00680	-.00300	.56440
1.547	-6.031	.00930	.03060	.03990	-.00500	-.00430	-.00490	.56360
1.547	-4.021	.00020	.02250	.02270	-.00050	-.00120	-.00310	.57340
1.547	-2.039	-.00780	.01470	.00690	.00410	.00200	-.00540	.56770
1.547	-.117	-.01930	.00680	-.01250	.00870	.00500	-.00520	.56740
1.547	1.952	-.03060	.00040	-.03030	.01320	.00810	-.00490	.56390
1.547	3.895	-.03700	-.00220	-.03920	.01680	.01060	-.00310	.55990
1.547	5.935	-.04400	-.00700	-.05090	.02020	.01290	-.00150	.54860
1.547	7.939	-.04930	-.01090	-.06020	.02280	.01480	-.00020	.54390
	GRADIENT	-.00490	-.00321	-.00812	.00220	.00150	.00023	-.00156

AMES 97-052 1A110 (04 T12 S1 P2 P8) (BE1001) (05 AUG 74)

REFERENCE DATA

SREF =	2880.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.6900 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	0.000	ELV-OB =	-4.000
RN/L =	2.500	BDFLAP =	.000
SPOERN =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 5/ 0 RN/L = 2.17 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
2.498	-8.994	-.31790	.34580	.10620	-.04070	.02790	-.00930	-.45790	.42250	.35360	.77000
2.498	-8.842	-.39040	.33910	.13630	-.04150	.02930	-.00950	-.34720	.36520	.35420	.77310
2.498	-4.661	-.27080	.33330	.09700	-.03870	.02780	-.00870	-.24290	.33430	.35040	.77100
2.498	-2.517	-.18430	.32970	.06420	-.03780	.02660	-.00840	-.16980	.33660	.35060	.772.0
2.498	-.341	-.06700	.32690	.03600	-.03230	.02260	-.00690	-.08500	.32730	.59190	.78410
2.498	1.758	.02170	.32250	.01460	-.02730	.01810	-.00570	.01190	.32500	-.67380	.78250
2.498	3.925	.11880	.31800	-.01780	-.02180	.01310	-.00450	.09880	.32540	.14780	.75800
2.498	6.103	.22600	.31340	-.03790	-.01570	.00860	-.00220	.19320	.33790	.25210	.74880
2.498	8.279	.34290	.31210	-.09660	-.01540	.00920	-.00250	.29430	.35820	.28815	.74240
	GRADIENT	.04501	-.00178	-.01300	.00206	-.00178	.00052	.03920	-.00333	-.06970	-.00193

AMES 97-052 1A110 (04 T12 S1 P2 P8) (BE1002) (05 AUG 74)

REFERENCE DATA

SREF =	2880.0000 SQ.FT.	XMRP =	979.0000 IN. XT		
LREF =	474.8100 IN.	YMRP =	.0000 IN. YT		
BREF =	936.6900 IN.	ZMRP =	400.0000 IN. ZT		
SCALE =	.0150				

PARAMETRIC DATA

ELV-IB =	0.000	ELV-OB =	-4.000
RN/L =	2.500	BDFLAP =	.000
SPOERN =	.000	RUDDER =	.000
BETA =	.000		

RUN NO. 7/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
2.197	-8.018	-.49130	.37730	.17270	.00880	.00080	-.00080	-.45390	.44210	.35180	-.01250
2.197	-5.992	-.36770	.37180	.12740	.00420	.00260	-.00170	-.32690	.40790	.34660	-.00380
2.197	-3.970	-.24840	.36770	.08690	.00530	.00140	-.00140	-.22240	.38400	.34960	-.00470
2.197	-1.986	-.14460	.36520	.05490	.00460	.00130	-.00170	-.13190	.37000	.39300	-.00180
2.197	-.406	-.06280	.36340	.03150	.00700	-.00090	-.00090	-.06030	.36380	.50040	-.00380
2.197	.110	-.03720	.36180	.02370	.00710	-.00240	-.00060	-.03790	.36190	.63940	-.00160
2.197	1.414	.02490	.36010	.00300	.00430	.00040	-.00150	.01600	.36060	-.15300	.03190
2.197	3.969	.15150	.35360	-.04000	.01370	-.00650	.00160	.12660	.36330	.26420	-.01400
2.197	6.196	.27110	.35140	-.08460	.01630	-.00780	.00290	.23160	.37060	.31209	-.02090
2.197	8.431	.39390	.35080	-.12530	.01750	-.00680	.00330	.33820	.40490	.31820	-.02870
	GRADIENT	.05029	-.00173	-.01505	.00091	-.00091	.00034	.04369	-.00257	-.03985	-.00292

AMES 97-052 IA110 (01 T12 31 P2 P6) (BE1003) (03 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6000 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-1B = 8.000 ELV-OB = -4.000
RN/L = 2.500 BOFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 9/ 0 RN/L = 2.54 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.995	-8.087	-.50860	.39580	.17680	-.02290	.01530	-.00570	-.44990	.46310	.34900	.23600
1.995	-6.046	-.37710	.39030	.12920	-.02180	.01540	-.00590	-.33390	.42790	.34250	.23680
1.995	-4.065	-.25740	.38470	.08900	-.02160	.01570	-.00570	-.22990	.40250	.34590	.23910
1.995	-2.068	-.14060	.38220	.05340	-.02290	.01610	-.00990	-.13470	.39750	.35900	.26250
1.995	-.410	-.05220	.38010	.02090	-.01990	.01360	-.00520	-.04950	.38050	.40050	.23970
1.995	-.015	-.03390	.38010	.01460	-.02230	.01990	-.00360	-.03390	.38010	.43500	.26190
1.995	1.760	.06230	.37700	-.01660	-.01950	.01400	-.00490	.05060	.37890	.39150	.23670
1.995	4.001	.17910	.37070	-.06060	-.01290	.00950	-.00220	.15280	.39230	.33950	.24690
1.995	6.140	.29630	.36910	-.10440	-.00990	.00660	-.00120	.25530	.39770	.35230	.23690
1.995	8.379	.41360	.36840	-.14120	-.00740	.00510	-.00090	.35550	.42470	.34140	.23190
	GRADIENT	.05425	-.00167	-.01960	.00105	-.00093	.00042	.04754	-.00234	-.00362	-.00146

AMES 97-052 IA110 (01 T12 31 P2 P6) (BE1004) (03 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6000 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-1B = 8.000 ELV-OB = -4.000
RN/L = 2.500 BOFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 11/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.000	-8.073	-.91640	.41060	.18050	-.04030	.03250	-.00840	-.45360	.47930	.34960	.64570
1.000	-6.074	-.39140	.40370	.13630	-.04210	.03420	-.00970	-.34630	.44490	.34810	.65090
1.000	-4.072	-.26330	.40110	.09170	-.04150	.03430	-.00970	-.23410	.41860	.34840	.65090
1.000	-2.045	-.14220	.40010	.04770	-.04260	.03560	-.01060	-.12780	.40500	.33980	.65240
1.000	-.002	-.06880	.39930	.02160	-.03930	.03330	-.00990	-.06240	.40030	.31770	.64790
1.000	-.098	-.02940	.39830	.00840	-.03990	.03410	-.01000	-.02680	.39840	.29570	.64920
1.000	1.486	.08410	.39580	-.02480	-.04140	.03580	-.01010	.05390	.39730	.30715	.64920
1.000	3.901	.20160	.39760	-.07530	-.03410	.02950	-.00620	.17400	.40370	.37360	.63950
1.000	5.930	.30470	.38770	-.11240	-.03050	.02730	-.00670	.26280	.41720	.35900	.63000
1.000	7.938	.40900	.38800	-.14690	-.02900	.02470	-.00660	.35180	.43890	.35900	.62790
	GRADIENT	.05774	-.00132	-.02067	.00083	-.00051	.00019	.05070	-.00178	.00521	-.00148

AMES 97-052 1A11D (01 T12 S1 P2 P8) (DE1005) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6900 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -6.000
RN/L = 2.500 SDFLAP = .000
SPOERK = .000 RUDDER = .000
BETA = .000

RUN NO. 13/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.547	-8.074	-.32100	.43080	.18410	-.09580	.02780	-.00750	-.45530	.49980	.35340	.57458
1.547	-6.060	-.20880	.42950	.13570	-.03030	.02360	-.00650	-.34170	.46420	.34820	.58010
1.547	-4.051	-.24380	.42150	.08020	-.09500	.02700	-.00820	-.21580	.43770	.32630	.57988
1.547	-2.048	-.12180	.42210	.03390	-.03240	.02580	-.00800	-.10860	.42620	.27870	.57420
1.547	-.099	.00490	.42040	-.01130	-.03110	.02570	-.00770	.00560	.42040	2.30909	.57150
1.547	1.887	.11520	.41830	-.04990	-.03080	.02590	-.00770	.10150	.42180	.43338	.58085
1.547	3.951	.22440	.41350	-.09010	-.02750	.02190	-.00640	.19550	.42059	.40150	.58630
1.547	5.986	.33470	.41210	-.12900	-.02070	.01790	-.00420	.29990	.44480	.39345	.55350
1.547	7.993	.43960	.40760	-.16560	-.01660	.01520	-.00450	.37870	.46490	.37700	.54920
	GRADIENT	.05933	-.00100	-.02138	.00084	-.00051	.00020	.05191	-.00119	.01419	-.00147

AMES 97-052 1A11D (01 T12 S1 P2 P8) (DE1006) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6900 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -6.000
RN/L = 2.500 SDFLAP = .000
SPOERK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 6/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
2.498	-7.876	-.08590	.33390	.02870	.30280	-.15380	.04870	-.06340	.33430	.43630	-.42300
2.498	-5.720	-.08700	.33340	.03370	.21900	-.11310	.03270	-.06480	.33360	.30280	-.41720
2.498	-3.575	-.06670	.33100	.03550	.12900	-.06770	.01850	-.06430	.33150	.53190	-.41240
2.498	-1.389	-.06910	.32950	.03800	.04710	-.02280	.00530	-.06660	.32990	.54690	-.41250
2.498	.793	-.07100	.32490	.03920	-.03720	.02450	-.00790	-.06960	.32540	.55270	-.41190
2.498	2.932	-.07010	.32250	.03910	-.11480	.06990	-.02120	-.06780	.32300	.55860	-.40630
2.498	5.097	-.06750	.32040	.03900	-.19490	.11320	-.03460	-.06530	.32090	.57730	-.39980
2.498	7.249	-.06640	.32130	.03840	-.27610	.15380	-.04780	-.06410	.32170	.57910	-.39520
2.498	9.378	-.06880	.32580	.03870	-.36870	.20830	-.06550	-.06630	.32630	.59070	-.39710
	GRADIENT	-.00056	-.00138	.00055	-.03746	.02113	-.00606	-.00057	-.00138	.00589	.00086

AMES 97-052 IA110 (O1 T12 S1 P2 P8) (BE1007) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -4.000
RN/L = 2.500 BDFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 9/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
2.197	-8.797	-.05880	.36910	.01800	.35540	-.10580	.05880	-.05590	.36390	.30330	-.45370
2.197	-6.867	-.05980	.36460	.02120	.27860	-.14810	.04600	-.05700	.36510	.35390	-.45370
2.197	-4.812	-.06300	.36370	.02800	.19910	-.11040	.03320	-.06010	.36420	.41370	-.44950
2.197	-2.186	-.06500	.36470	.03020	.09420	-.05070	.01400	-.06220	.36520	.46540	-.44380
2.197	-.846	-.06500	.36390	.03060	.03700	-.01830	.00410	-.06220	.36440	.47130	-.44450
2.197	1.196	-.06890	.36070	.03350	-.04610	.05120	-.01010	-.06610	.36120	.48600	-.44370
2.197	3.154	-.06140	.35930	.02880	-.12920	.07930	-.02480	-.05870	.35970	.46550	-.43440
2.197	5.225	-.05840	.35600	.02610	-.21710	.12970	-.04030	-.05570	.35640	.46350	-.42490
2.197	7.161	-.05600	.35600	.02590	-.30030	.17640	-.05590	-.05330	.35640	.45590	-.42090
	GRADIENT	-.00005	-.00064	.00046	-.04123	.02996	-.00723	-.00007	-.00065	.00669	.00196

AMES 97-052 IA110 (O4 T12 S1 P2 P8) (BE1008) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -4.000
RN/L = 2.500 BDFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 10/ 0 RN/L = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
1.995	-7.795	-.05210	.38960	.01110	.30890	-.10460	.05460	-.04900	.39000	.21290	-.46350
1.995	-5.684	-.05120	.38090	.01360	.21380	-.10960	.03780	-.04810	.38930	.26850	-.45750
1.995	-3.679	-.05160	.38750	.01630	.12750	-.08060	.02110	-.04850	.38790	.31810	-.45250
1.995	-1.727	-.05360	.38400	.01990	.05120	-.02220	.00700	-.05060	.38440	.37030	-.44840
1.995	.193	-.05580	.37960	.02140	-.02280	.01490	-.00540	-.05270	.38000	.38440	-.44600
1.995	2.322	-.05390	.37660	.02060	-.10090	.06030	-.02000	-.05100	.37710	.38250	-.44060
1.995	4.355	-.04580	.37600	.01700	-.18470	.11050	-.03650	-.04300	.37640	.37140	-.42890
1.995	6.322	-.04400	.37570	.01620	-.27270	.16240	-.05400	-.04120	.37600	.36960	-.42040
1.995	8.353	-.04460	.37690	.01580	-.36820	.21780	-.07260	-.04180	.37720	.35470	-.42330
	GRADIENT	.00058	-.00151	.00009	-.03880	.02113	-.00709	.00054	-.00193	.00999	.00293

AMES 97-052 IA110 (O1 T12 S1 P2 P8) (DE1000) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.500 SDFLAP = .000
SPOIRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 12/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
1.800	-7.508	-.04200	.40780	.00330	.30880	-.17280	.03980	-.05840	.40790	.07928	-.90980
1.800	-5.651	-.04200	.40620	.00610	.21820	-.11940	.04180	-.05640	.40650	.14398	-.99000
1.800	-3.699	-.04780	.40450	.01140	.12940	-.06270	.02340	-.04400	.40490	.23930	-.99990
1.800	-1.542	-.04710	.40280	.01380	.04410	-.01220	.00580	-.04360	.40300	.29180	-.49880
1.800	.527	-.04880	.39890	.01500	-.03780	.03210	-.00950	-.04520	.39890	.30920	-.49880
1.800	2.385	-.04770	.39590	.01450	-.10330	.06440	-.02130	-.04440	.39580	.29920	-.49880
1.800	4.344	-.04430	.39510	.01450	-.18090	.10610	-.03730	-.04100	.39550	.32790	-.49880
1.800	6.395	-.04100	.39620	.01360	-.26410	.15140	-.05490	-.03780	.39690	.33630	-.47070
1.800	8.385	-.03820	.39790	.01190	-.33920	.20840	-.07590	-.03500	.39820	.31120	-.46720
	GRADIENT	.00029	-.00130	.00034	-.03891	.02081	-.00745	.00025	-.00131	.00939	.00252

AMES 97-052 IA110 (O1 T12 S1 P2 P8) (DE1010) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.500 SDFLAP = .000
SPOIRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 14/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
1.347	-8.127	-.02190	.43520	-.00980	.33980	-.19420	.07210	-.01780	.43540	-.26380	-.53080
1.347	-6.099	-.02400	.43210	-.00410	.24290	-.13520	.05140	-.01990	.43230	-.17250	-.53730
1.347	-4.099	-.02630	.42780	-.00110	.15140	-.08230	.03180	-.02230	.42800	-.04570	-.53540
1.347	-2.008	-.02420	.42530	-.00070	.06350	-.03960	.01220	-.02040	.42550	-.02740	-.52700
1.347	-.218	-.02320	.42040	-.00150	-.00970	.00840	-.00190	-.01930	.42080	-.06290	-.52450
1.347	1.870	-.02490	.41980	.00000	-.07940	.05240	-.01840	-.02110	.42000	.09180	-.52250
1.347	3.867	-.02080	.41900	-.00150	-.15040	.09950	-.03710	-.01700	.41920	-.07410	-.51450
1.347	5.848	-.01890	.42150	-.00220	-.23900	.14720	-.05440	-.01530	.42170	-.11730	-.51210
1.347	7.985	-.02130	.42490	.00020	-.33810	.20440	-.07630	-.01750	.42510	.01090	-.51180
	GRADIENT	.00052	-.00108	-.00000	-.03849	.02251	-.00850	.00090	-.00106	-.00153	.00253

AMES 97-052 IA110 (01 T12 S1 P2 P0) (0E1011) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RN/L = 2.500 BDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 15/ 0 RN/L = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
2.498	-7.838	-.44800	.33900	.15860	-.03790	.02610	-.00840	-.39780	.35690	.35400	.77970
2.498	-5.881	-.33910	.33310	.12000	-.04050	.02710	-.00910	-.30330	.36800	.35450	.79580
2.498	-3.878	-.23540	.32930	.08550	-.03680	.02830	-.00870	-.21260	.34440	.36220	.78190
2.498	-1.927	-.14200	.32650	.05820	-.03420	.02500	-.00810	-.13090	.33090	.41000	.77980
2.498	.127	-.05350	.32310	.03480	-.03290	.02120	-.00710	-.05420	.32500	.69000	.77580
2.498	1.413	.00210	.32070	.01990	-.02950	.01670	-.00650	-.00980	.32073	-9.43950	.77220
2.498	3.925	.11350	.31800	-.01570	-.02150	.01230	-.00440	.09140	.32300	.13900	.78140
2.498	6.131	.22500	.31340	-.05880	-.01740	.00800	-.00290	.19080	.33579	.25240	.73390
2.498	8.330	.34000	.31080	-.09780	-.01590	.00920	-.00270	.29140	.35560	.29780	.74490
	GRADIENT	.04443	-.00170	-.01272	.00217	-.00107	.00054	.03971	-.00276	-.42759	-.50045

AMES 97-052 IA110 (02 T12 S1 P2 P0) (0E1012) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RN/L = 2.500 BDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 17/ 0 RN/L = 2.54 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.996	-8.080	-.30810	.39500	.17990	-.08030	.01370	-.00530	-.44730	.48230	.34650	.23230
1.996	-6.048	-.38080	.38000	.12960	-.08250	.01570	-.00600	-.33780	.42000	.34080	.23790
1.996	-4.070	-.28170	.38430	.09020	-.02150	.01530	-.00620	-.23960	.40190	.34650	.23740
1.996	-2.073	-.19200	.39210	.05370	-.02180	.01530	-.00600	-.13800	.39740	.35370	.23950
1.996	-.020	-.03040	.37960	.01600	-.02240	.01570	-.00625	-.03060	.37960	.41300	.26110
1.996	1.747	.05750	.37710	-.01780	-.01970	.01370	-.00590	.04600	.37570	.32970	.23570
1.996	3.988	.17340	.37080	-.05920	-.01380	.00930	-.00300	.14720	.36200	.34150	.24660
1.996	6.125	.28490	.36850	-.10240	-.00990	.00750	-.00200	.24960	.35710	.35370	.25000
1.996	8.363	.40870	.36682	-.14010	-.00760	.00530	-.00140	.35070	.42410	.34290	.23130
	GRADIENT	.05414	-.00161	-.01657	.00088	-.00088	.00057	.04744	-.00242	-.02229	-.00124

AMES 97-052 IA110 (O4 T12 S1 P2 P0) (0E1013) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RN/L = 2.500 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 15/ 0 RN/L = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.547	-0.072	-.32050	.45000	.10150	-.03550	.02750	-.00770	-.45480	.49000	.34980	.57380
1.547	-0.083	-.39270	.42550	.13610	-.03270	.02570	-.00770	-.34580	.46480	.34858	.57298
1.547	-4.045	-.25460	.42150	.08250	-.03520	.02700	-.00860	-.22430	.43940	.32350	.57990
1.547	-2.055	-.12500	.42150	.03390	-.03340	.02660	-.00850	-.10960	.42570	.27110	.57980	
1.547	-.120	-.00810	.42040	-.00820	-.03280	.02675	-.00850	-.00550	.42040	-1.33508	.57370
1.547	1.858	.11090	.41800	-.04920	-.03180	.02700	-.00850	[illegible]	.42130	.44920	.57000
1.547	3.912	.21690	.41420	-.08780	-.02720	.02200	-.00700	.10810	[illegible]	.48458	.56920
1.547	5.958	.32440	.41240	-.12560	-.02320	.01920	-.00580	.27950	.44390	[illegible]	.55870
1.547	7.963	.42930	.40790	-.16250	-.02000	.01680	-.00560	.38870	.46340	.37980	.54970
	GRADIENT	.05944	-.00092	-.02136	.00092	-.00049	.00016	.05252	-.00126	.01402	-.00175

AMES 97-052 IA110 (O4 T12 S1 P2 P0) (0E1014) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RN/L = 2.530 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 16/ 0 RN/L = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
2.498	-7.980	-.06940	.33370	.02980	.30630	-.13740	.04710	-.06100	.33420	.42750	-.42320
2.498	-6.038	-.07070	.33360	.03410	.22720	-.11810	.03430	-.05930	.33410	.40108	-.41960
2.498	-3.992	-.06960	.33150	.03570	.14360	-.07710	.02120	-.06740	.33200	.39070	-.41280
2.498	-1.985	-.07190	.32910	.03860	.04620	-.02280	.00520	-.06960	.32960	.39940	-.41080
2.498	-.064	-.07619	.32580	.04100	-.00550	.00398	-.00280	-.07370	.32630	.39920	-.41438
2.498	1.958	-.07570	.32210	.04120	-.07770	.04780	-.01480	-.07340	.32260	.54450	-.41389
2.498	3.884	-.07350	.32030	.04020	-.14950	.08870	-.02740	-.07120	.32090	.54690	-.40389
2.498	5.934	-.07370	.31890	.04090	-.22560	.12850	-.03980	-.07130	.31940	.55430	-.40439
2.498	7.853	-.07190	.32140	.03960	-.30350	.16910	-.05350	-.06960	.32199	.55290	-.40329
	GRADIENT	-.00058	-.00152	.00060	-.03740	.02108	-.00614	-.00055	-.00152	.00421	.00081

AMES 97-052 IA110 (O1 T12 S1 P2 P8) (BE1015) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 938.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RN/L = 2.500 BOFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 18/ 0 RN/L = 2.54 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
1.996	-7.724	-.05910	.36920	.01250	.30800	-.16640	.05550	-.05580	.36970	.21860	-.47750
1.996	-5.704	-.05850	.36860	.01360	.21910	-.10970	.03790	-.05530	.36900	.28590	-.47090
1.996	-3.678	-.05780	.36720	.01780	.12890	-.06020	.02060	-.05460	.36770	.30760	-.46870
1.996	-1.732	-.05840	.36570	.02090	.05160	-.02240	.00690	-.05530	.36420	.35060	-.45690
1.996	.180	-.06240	.37990	.02340	-.02210	.01490	-.00990	-.05930	.38000	.37540	-.45390
1.996	2.333	-.05920	.37610	.02160	-.10300	.06170	-.02090	-.05620	.37660	.38540	-.45380
1.996	4.355	-.05200	.37540	.01850	-.18630	.11160	-.03710	-.04910	.37390	.35490	-.43490
1.996	8.315	-.05040	.37500	.01820	-.27090	.16180	-.05420	-.04760	.37530	.36060	-.43490
1.996	8.346	-.05070	.37630	.01760	-.36790	.21740	-.07520	-.04790	.37670	.36740	-.43690
	GRADIENT	.00055	-.00155	.00011	-.03880	.02126	-.00710	.00052	-.00196	.00533	.00276

AMES 97-052 IA110 (O1 T12 S1 P2 P8) (BE1018) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 938.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = .000
RN/L = 2.500 BOFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 20/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
1.547	-8.117	-.02990	.43490	-.00410	.33610	-.19360	.07090	-.02970	.43510	-.13780	-.55250
1.547	-6.091	-.03430	.43220	-.00090	.23980	-.13390	.05050	-.03010	.43250	-.02550	-.55630
1.547	-4.096	-.03320	.42730	.00070	.15120	-.08260	.03130	-.02910	.42760	.02020	-.54790
1.547	-2.010	-.03260	.42320	.00170	.06350	-.03020	.01210	-.02960	.42393	.05350	-.54240
1.547	-.208	-.02930	.42060	.00020	-.00860	.01140	-.00350	-.02540	.42090	.00340	-.53990
1.547	1.888	-.02630	.41910	-.00020	-.08010	.05280	-.01900	-.02240	.41930	-.00670	-.52790
1.547	3.865	-.02960	.41900	.00050	-.15790	.09910	-.03720	-.02570	.41930	.01340	-.53200
1.547	5.851	-.02890	.42150	.00070	-.24260	.15020	-.05640	-.02500	.42170	.02410	-.53060
1.547	7.961	-.02600	.42480	.00130	-.33710	.20390	-.07640	-.02210	.42500	.04830	-.52340
	GRADIENT	.00068	-.00104	-.00011	-.03847	.02234	-.00949	.00065	-.00105	-.00342	.00233

AMES 97-052 1A110 (01 T12 31 P2 P8) (DE1017) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 956.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.500 SDFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 25/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	BETA
2.497	-7.913	-.46360	.33960	.10810	-.04010	.02590	-.00690	-.41240	.40040	.36280	.78080
2.497	-5.930	-.35400	.33360	.12910	-.04080	.02730	-.00870	-.31780	.36850	.36470	.78280
2.497	-3.931	-.24930	.32920	.09330	-.03960	.02730	-.00870	-.22600	.34360	.37510	.78280
2.497	-2.004	-.15620	.32370	.06540	-.03930	.02700	-.00860	-.14470	.33090	.41080	.79270
2.497	.289	-.05680	.32280	.03980	-.03400	.02240	-.00720	-.05940	.32250	.70990	.77700
2.497	2.118	.02070	.31830	.01840	-.03020	.01860	-.00640	.00990	.31890	-.89090	.77350
2.497	4.096	.10990	.31490	-.01110	-.02510	.01290	-.00460	.08710	.32290	.10150	.76390
2.497	6.043	.20680	.31270	-.04600	-.01960	.01050	-.00320	.17290	.33270	.22250	.75620
2.497	8.034	.31190	.31000	-.08370	-.01600	.00770	-.00240	.26560	.35060	.28920	.74950
	GRADIENT	.04429	-.00178	-.01266	.00210	-.00184	.00051	.03957	-.00295	-.09966	-.00251

AMES 97-052 1A110 (01 T12 31 P2 P8) (DE1018) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 956.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.500 SDFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 25/ 0 RN/L = 2.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.998	-8.014	-.31830	.39520	.18530	-.08050	.01310	-.00500	-.43010	.46360	.35750	.25050
1.998	-5.990	-.39080	.38970	.13830	-.02250	.01500	-.00390	-.34800	.42830	.35580	.25340
1.998	-4.015	-.27250	.38400	.09920	-.02310	.01590	-.00410	-.24550	.40220	.36540	.25730
1.998	-2.019	-.16150	.38150	.06200	-.02320	.01590	-.00590	-.14800	.38690	.38400	.25880
1.998	.034	-.04920	.37930	.02480	-.01910	.01250	-.00470	-.04940	.37930	.39050	.25410
1.998	2.022	.05590	.37560	-.01160	-.01870	.01240	-.00410	.04260	.37780	.20660	.25240
1.998	4.042	.16260	.36940	-.04990	-.01270	.00780	-.00210	.13610	.37990	.39720	.24250
1.998	6.028	.27000	.36700	-.09010	-.00990	.00630	-.00110	.22990	.39330	.33360	.25570
1.998	8.012	.37460	.36750	-.12580	-.00340	.00300	-.00010	.31970	.41610	.37090	.22530
	GRADIENT	.05400	-.00173	-.01845	.00126	-.00096	.00049	.04799	-.00268	-.01429	-.00175

AMES 97-052 IA110 (01 T12 S1 P2 P8) (BE1019) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.990 BDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 21/ 0 RN/L = 2.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.547	-8.050	-.53500	.43050	.19490	-.03410	.02600	-.00710	-.48950	.50120	.36430	.56900
1.547	-6.057	-.40950	.42500	.15000	-.03210	.02450	-.00740	-.36240	.46580	.38620	.56910
1.547	-4.041	-.26790	.42110	.09440	-.03410	.02560	-.00810	-.23750	.43900	.35260	.57340
1.547	-2.049	-.13710	.42120	.04520	-.03250	.02530	-.00800	-.12190	.42580	.33010	.57120
1.547	-.122	-.01960	.41970	.00380	-.03250	.02570	-.00810	-.01870	.41980	.19260	.57080
1.547	1.936	.10390	.41660	-.03970	-.03130	.02600	-.00780	.08960	.41990	.39180	.56840
1.547	3.898	.20380	.41260	-.07670	-.02620	.02090	-.00610	.17530	.42550	.37610	.56010
1.547	5.936	.31100	.41120	-.11470	-.0219[illegible]	.01730	-.00470	.26680	.44120	.36990	.55260
1.547	7.936	.41530	.40680	-.15180	-.01780	.01430	-.00420	.35510	.46020	.36560	.54390
	GRADIENT	.09957	-.00109	-.02148	.00085	-.00046	.00021	.09216	-.00165	.00519	-.00158

AMES 97-052 IA110 (01 T12 S1 P2 P8) (BE1020) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.8800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.990 BDFLAP = .000
SPOBRK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 28/ 0 RN/L = 2.93 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLM	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
2.497	-8.084	-.04580	.33250	.02570	.31320	-.18280	.04840	-.04720	.33210	.56500	.27800
2.497	-6.045	-.07700	.33350	.03980	.22720	-.11780	.03380	-.07500	.33400	.51780	-.34380
2.497	-4.118	-.07800	.33180	.04200	.15060	-.07910	.02190	-.07800	.33220	.53010	-.34440
2.497	-2.040	-.07880	.32900	.04420	.07000	-.03480	.00880	-.07890	.32950	.56080	-.34120
2.497	.019	-.05670	.32420	.03920	-.00730	.00710	-.00280	-.05820	.32390	.69250	.27950
2.497	1.957	-.08090	.32120	.04570	-.07760	.04680	-.01420	-.07900	.32170	.56520	-.33970
2.497	4.031	-.08090	.31930	.04640	-.15500	.09180	-.02690	-.07900	.31980	.57410	-.33750
2.497	8.030	-.08030	.31850	.04660	-.22890	.12960	-.03990	-.07850	.31900	.59010	-.33540
2.497	8.050	-.07730	.32180	.04550	-.30930	.17180	-.05360	-.07550	.32209	.58640	-.33200
	GRADIENT	-.00036	-.00162	.00050	-.03740	.02085	-.00605	-.00038	-.00161	.00394	.00149

AMES 97-052 1A110 (01 T12 S1 P2 P0) (DE1021) (05 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.900 SDFLAP = .000
SPORK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 24/ 0 RN/L = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
1.998	-8.040	-.08810	.38850	.02070	.31080	-.17300	.05680	-.08350	.38900	.31310	-.41390
1.998	-8.028	-.08810	.38950	.02330	.22680	-.11630	.03940	-.08520	.39000	.34250	-.41400
1.998	-4.019	-.08930	.38720	.02080	.14330	-.08090	.02480	-.08650	.38770	.39350	-.40940
1.998	-2.001	-.07020	.38380	.02970	.08140	-.02990	.00980	-.06750	.38430	.42380	-.40980
1.998	-.038	-.07240	.37940	.03270	-.01290	.00870	-.00340	-.06970	.37990	.45130	-.40100
1.998	2.008	-.08900	.37590	.03080	-.08970	.05270	-.01600	-.06640	.37640	.44810	-.39440
1.998	3.994	-.08190	.37550	.02770	-.16810	.09990	-.03280	-.05940	.37590	.44750	-.39250
1.998	5.998	-.08280	.37490	.02790	-.25330	.15190	-.05040	-.06010	.37530	.44540	-.38330
1.998	8.012	-.09930	.37580	.02580	-.34780	.20500	-.06800	-.05690	.37590	.43390	-.37870
	GRADIENT	.00080	-.00156	.00016	-.03871	.02101	-.00710	.00076	-.00157	.00748	.00514

AMES 97-052 1A110 (01 T12 S1 P2 P0) (DE1022) (05 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 0.000 ELV-OB = -0.000
RN/L = 2.900 SDFLAP = .000
SPORK = .000 RUDDER = .000
ALPHA = .000

RUN NO. 22/ 0 RN/L = 2.92 GRADIENT INTERVAL = -5.00/ 5.00

MACH	BETA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	ALPHA
1.547	-7.979	-.04300	.43490	.00790	.32580	-.18700	.06870	-.03980	.43530	.18260	-.55410
1.547	-5.981	-.04450	.43210	.01010	.23570	-.13210	.04990	-.04010	.43250	.22760	-.55190
1.547	-3.979	-.04780	.42710	.01250	.14650	-.08030	.03070	-.04350	.42750	.28320	-.55270
1.547	-2.012	-.04940	.42360	.01420	.08510	-.03170	.01270	-.04530	.42400	.28790	-.55210
1.547	-.107	-.04370	.41970	.01200	-.00950	.01120	-.00320	-.03990	.42010	.27390	-.54090
1.547	1.902	-.04120	.41860	.01220	-.08310	.05350	-.01910	-.03730	.41890	.29700	-.53340
1.547	3.940	-.04040	.41840	.01140	-.15820	.09800	-.03670	-.03650	.41880	.28310	-.52950
1.547	5.954	-.04210	.42100	.01250	-.24140	.14720	-.05490	-.03820	.42140	.29720	-.53270
1.547	8.033	-.03880	.42400	.01390	-.33730	.20230	-.07590	-.03490	.42430	.35690	-.52280
	GRADIENT	.00114	-.00113	-.00021	-.03917	.02227	-.00840	.00111	-.00113	.00240	.00329

AMES 97-052 IA110 (01 T12 S1 P2 P6) (BE1023) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.0100 IN. YMRP = .0000 IN. YT
BREF = 936.0800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 12.000 ELV-OB = .000
RN/L = 2.500 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 27/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.547	-8.036	-.31910	.43470	.17650	-.03280	.02480	-.00720	-.44910	.50260	.34280	.36490
1.547	-6.052	-.36570	.42890	.12910	-.03420	.02680	-.00860	-.33630	.46720	.33480	.36770
1.547	-4.024	-.24120	.42470	.07500	-.03420	.02860	-.00900	-.21060	.44080	.30280	.36970
1.547	-2.035	-.11380	.42480	.02540	-.03610	.02850	-.00960	-.09850	.42840	.22360	.37270
1.547	-.106	.00510	.42380	-.01600	-.03330	.02730	-.00910	.00590	.42360	3.14606	.36780
1.547	1.972	.12420	.42120	-.03720	-.03130	.02610	-.00830	.10960	.42520	.46030	.36390
1.547	3.923	.22630	.41690	-.09450	-.02610	.02090	-.00640	.19730	.43140	.41770	.36070
1.547	5.969	.33230	.41500	-.13170	-.02190	.01820	-.00500	.29740	.44740	.39540	.35190
1.547	7.971	.43600	.41050	-.16840	-.01770	.01430	-.00410	.37490	.46700	.39620	.34410
	GRADIENT	.05892	-.00096	-.02098	.00106	-.00070	.00034	.05146	-.00108	.01995	-.00135

AMES 97-052 IA110 (01 T12 S1 P2 P6) (BE1024) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.0100 IN. YMRP = .0000 IN. YT
BREF = 936.0800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 12.000 ELV-OB = .000
RN/L = 2.760 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 28/ 0 RN/L = 2.76 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.995	-8.208	-.31070	.39800	.17390	-.01990	.01340	-.00510	-.44880	.46690	.34040	.25180
1.995	-6.148	-.38200	.39250	.12690	-.02020	.01380	-.00520	-.33770	.43120	.33220	.25330
1.995	-4.137	-.28080	.38710	.08690	-.01840	.01250	-.00510	-.23220	.40490	.33300	.25380
1.995	-2.120	-.14740	.38430	.04870	-.02140	.01460	-.00560	-.13310	.38950	.33040	.26060
1.995	-.042	-.03250	.38230	.01020	-.01940	.01310	-.00500	-.03220	.38230	.31370	.25770
1.995	1.977	.07670	.37810	-.02800	-.01870	.01280	-.00460	.06360	.38050	.36320	.25995
1.995	4.017	.18410	.37240	-.06890	-.01130	.00740	-.00180	.15750	.38440	.36330	.24260
1.995	6.025	.29180	.37010	-.10710	-.00970	.00700	-.00160	.25130	.39870	.36700	.23620
1.995	8.043	.39790	.37070	-.14030	-.00640	.00440	-.00090	.34210	.42270	.35260	.22990
	GRADIENT	.05459	-.00174	-.01883	.00083	-.00059	.00037	.04784	-.00245	.00466	-.00133

AMES 97-052 IA110 (01 T12 S1 P2 P8) (BE1025) : 03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 12.000 ELV-OB = -4.000
RN/L = 2.500 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 30/ 0 RN/L = 2.52 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.998	-8.075	-.50780	.39730	.17600	-.01810	.01120	-.00440	-.44890	.46470	.34870	.26730
1.998	-6.053	-.38080	.39210	.12970	-.02120	.01350	-.00540	-.33730	.45300	.34560	.25480
1.998	-4.078	-.26260	.38640	.09040	-.02010	.01320	-.00500	-.23440	.44400	.34420	.25420
1.998	-2.073	-.14870	.38390	.05210	-.02090	.01350	-.00540	-.13470	.38910	.33980	.25710
1.998	-.019	-.03650	.38160	.01480	-.01970	.01260	-.00510	-.03640	.38160	.40410	.25560
1.998	1.973	.07160	.37760	-.02320	-.01840	.01170	-.00410	.05850	.37990	.32400	.25340
1.998	3.988	.17550	.37190	-.06080	-.01270	.00780	-.00210	.14920	.36320	.34560	.24360
1.998	5.978	.28440	.36920	-.10150	-.00930	.00590	-.00120	.24440	.39690	.35700	.23680
1.998	7.963	.38600	.36960	-.13430	-.00610	.00350	-.00060	.33500	.42000	.34620	.22780
	GRADIENT	.05436	-.00175	-.01671	.00066	-.00064	.00035	.04762	-.00252	-.00115	-.00125

AMES 97-052 IA110 (04 T12 S1 P2 P8) (BE1026) (05 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.6800 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 12.000 ELV-OB = -4.000
RN/L = 2.500 BDFLAP = .000
SPDBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 29/ 0 RN/L = 2.51 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.547	-8.084	-.52290	.43470	.18280	-.03380	.02540	-.00690	-.45680	.50380	.34950	.58950
1.547	-6.055	-.38910	.42810	.13390	-.03330	.02470	-.00740	-.34170	.46670	.34410	.57220
1.547	-4.031	-.24920	.42420	.07940	-.03320	.02490	-.00800	-.21880	.44060	.31870	.57360
1.547	-2.042	-.12040	.42410	.03120	-.03160	.02460	-.00800	-.10520	.42810	.23940	.57100
1.547	-.120	-.00800	.42270	-.00850	-.03150	.02550	-.00800	-.00510	.42270	-1.40700	.56950
1.547	1.965	.11770	.41970	-.05160	-.03320	.02710	-.00640	.10320	.42350	.43620	.57190
1.547	3.908	.21680	.41810	-.08810	-.02670	.02110	-.00630	.18800	.42990	.40620	.56230
1.547	5.980	.32700	.41400	-.12680	-.02350	.01890	-.00530	.28220	.44570	.38780	.55520
1.547	7.986	.43370	.40900	-.16450	-.01780	.01450	-.00400	.37280	.46520	.37940	.54490
	GRADIENT	.05684	-.00104	-.02101	.00057	-.00025	.00015	.05139	-.00130	.02053	-.00113

AMES 97-052 IA110 (O1 T12 S1 P2 P8) (BE1027) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.0000 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 12.000 ELV-OB = -8.000
RN/L = 2.900 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 32/ 0 RN/L = 2.55 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.998	-8.070	-.31740	.38880	.18380	-.00800	.00430	-.00340	-.43630	.46740	.35520	.23480
1.998	-6.030	-.38650	.39340	.13550	-.01250	.00640	-.00420	-.34270	.43190	.39080	.24250
1.998	-4.081	-.28710	.38780	.09800	-.01120	.00580	-.00380	-.25900	.40360	.39940	.24250
1.998	-2.071	-.13640	.38510	.05860	-.01080	.00510	-.00340	-.14240	.39040	.37500	.24280
1.998	-.022	-.04310	.38300	.02030	-.00900	.00360	-.00330	-.04300	.38900	.47000	.24170
1.998	1.970	.06820	.37850	-.01810	-.01080	.00450	-.00290	.05310	.38050	.27390	.24450
1.998	3.975	.18980	.37280	-.05510	-.00390	-.00010	-.00090	.14240	.38360	.32690	.23220
1.998	5.958	.27530	.37010	-.09550	-.00150	-.00090	.00040	.23540	.39670	.34620	.22520
1.998	7.945	.38110	.37040	-.12900	-.00050	-.00170	.00060	.32630	.41950	.35890	.22120
	GRADIENT	.09439	-.00180	-.01884	.00073	-.00062	.00035	.04765	-.00268	-.00925	-.00099

AMES 97-052 IA110 (O1 T12 S1 P2 P8) (BE1028) (03 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = 979.0000 IN. XT
LREF = 474.8100 IN. YMRP = .0000 IN. YT
BREF = 936.0000 IN. ZMRP = 400.0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

ELV-IB = 12.000 ELV-OB = -8.000
RN/L = 2.900 SDFLAP = .000
SPOBRK = .000 RUDDER = .000
BETA = .000

RUN NO. 31/ 0 RN/L = 2.53 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CN	CAU	CLN	CY	CYN	CBL	CL	CD	XCP/L	BETA
1.547	-8.034	-.32570	.43400	.18650	-.03190	.02450	-.00690	-.45990	.50320	.35480	.56440
1.547	-6.031	-.39250	.42760	.13790	-.03080	.02570	-.00720	-.34540	.46640	.35140	.56560
1.547	-4.021	-.29300	.42420	.08460	-.03390	.02530	-.00830	-.22460	.44100	.33190	.57340
1.547	-2.039	-.12910	.42360	.03790	-.03070	.02420	-.00790	-.11300	.42800	.29360	.56770
1.547	-.117	-.01150	.42200	-.00290	-.03060	.02440	-.00780	-.01060	.42200	-.25360	.56740
1.547	1.932	.10340	.42000	-.04280	-.02910	.02400	-.00730	.09100	.42330	.40690	.56380
1.547	3.895	.20810	.41580	-.08000	-.02550	.02000	-.00600	.17740	.42890	.38900	.55990
1.547	5.935	.31480	.41380	-.11830	-.01950	.01580	-.00390	.27010	.44410	.37600	.54880
1.547	7.939	.42090	.40880	-.15630	-.01750	.01390	-.00380	.36040	.46280	.37140	.54390
	GRADIENT	.05829	-.00104	-.02067	.00093	-.00054	.00026	.05064	-.00145	.01207	-.00156

IA70 O1T1251P2P0 (ZF7004) (08 AUG 74)

REFERENCE DATA

SREF = 2888.0000 SQ.FT. XMRP = .0000 IN. XT
LREF = 474.8000 IN. YMRP = .0000 IN. YT
BREF = 936.7000 IN. ZMRP = .0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELV-LO = .000
ELV-LI = 0.000 ELV-RI = 0.000
ELV-RO = .000 DFLAP = .000

RUN NO. 25/ 2 RN/L = 8.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBM	CTM
.897	-8.580	.02980	.02720	.05710	.02000	-.01210	-.01240
.897	-6.370	.02710	.02610	.05330	.01650	-.00660	-.00640
.897	-4.210	.02620	.02590	.05220	.01500	-.00010	.00000
.897	-2.120	.02070	.02410	.04490	.01500	.00510	.00500
.897	.010	.02060	.02690	.04780	.01750	.01050	.01180
.897	2.140	.02150	.03280	.05440	.01430	.01590	.01600
.897	4.280	.02510	.03750	.06240	.01500	.01960	.02420
.897	6.430	.01670	.03470	.05150	.01590	.02310	.02920
.897	8.560	.00520	.03110	.03640	.00920	.02620	.03230
	GRADIENT	-.00006	.00149	.00141	.00015	.00236	.00299

RUN NO. 24/ 2 RN/L = 8.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBM	CTM
1.090	-8.840	.04060	.05790	.09860	.01000	-.01740	-.01020
1.090	-6.620	.03770	.05050	.08830	.00350	-.01070	-.00460
1.090	-4.450	.03970	.04260	.08230	-.00120	-.00350	.00160
1.090	-2.240	.04260	.03850	.08120	-.00380	.00410	.00780
1.090	-.060	.02710	.03960	.06700	-.00610	.01110	.01180
1.090	2.120	.01510	.03910	.05420	-.00740	.01710	.01700
1.090	4.330	.00320	.03420	.03740	-.00990	.02240	.02090
1.090	6.550	-.00670	.02540	.01860	-.01440	.02730	.02370
1.090	8.680	-.01670	.01400	-.00280	-.01760	.03160	.02580
	GRADIENT	-.00459	-.00074	-.00534	-.00096	.00296	.00218

RUN NO. 25/ 2 RN/L = 7.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBM	CTM
1.200	-8.720	.03880	.06080	.09960	.00190	-.01690	-.00780
1.200	-6.440	.03550	.05390	.08940	-.00090	-.00820	-.00290
1.200	-4.270	.02840	.04610	.07480	-.00450	-.00150	.00080
1.200	-2.090	.01840	.03910	.05750	-.00750	.00270	.00430
1.200	.130	.00690	.03470	.04170	-.00980	.01240	.00880
1.200	2.330	-.00090	.03250	.03150	-.01250	.01810	.01350
1.200	4.520	-.00970	.02790	.01820	-.01340	.02320	.01840
1.200	6.730	-.01880	.01910	.00030	-.01840	.02800	.02220
1.200	8.960	-.02640	.00820	-.01820	-.02140	.03180	.02330
	GRADIENT	-.00434	-.00195	-.00631	-.00105	.00281	.00204

IA7D O1T12S1P2F0 (2F7004) (08 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = .0000 IN. XT
LREF = 474.0000 IN. YMRP = .0000 IN. YT
BREF = 936.7000 IN. ZMRP = .0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELV-LO = .000
ELV-LI = 0.000 ELV-RI = 0.000
ELV-RO = .000 BFLAP = .000

RUN NO. 60/ 2 RNVL = 7.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBM	CTM
1.504	-8.010	.01660	.06160	.06050	-.02550	-.01190	-.00880
1.504	-6.560	.00320	.05280	.05580	-.02900	-.00720	-.00690
1.504	-4.340	-.00730	.03660	.03150	-.02250	-.00130	-.00500
1.504	-2.130	-.01770	.02660	.00910	-.02330	.00520	-.00150
1.504	.110	-.02440	.01370	-.01060	-.02330	.01140	.00250
1.504	2.330	-.02850	.00200	-.02640	-.02860	.01690	.00670
1.504	4.550	-.03160	-.00780	-.03940	-.02580	.02190	.01140
1.504	6.790	-.03620	-.01900	-.05530	-.02690	.02590	.01540
1.504	9.000	-.03980	-.02470	-.06480	-.04160	.02890	.01850
	GRADIENT	-.00267	-.00531	-.00797	-.00052	.00261	.00184

IA7D O1T12S1P2F0 (2F7005) (08 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = .0000 IN. XT
LREF = 474.0000 IN. YMRP = .0000 IN. YT
BREF = 936.7000 IN. ZMRP = .0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELV-LO = .000
ELV-LI = 12.000 ELV-RI = 12.000
ELV-RO = .000 BFLAP = .000

RUN NO. 28/ 2 RNVL = 8.10 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBM	CTM
.897	-8.280	.02670	.00910	.03580	.01780	-.01080	-.01310
.897	-6.090	.02590	.01120	.03710	.01350	-.00460	-.00670
.897	-3.950	.02520	.01050	.03580	.01210	.00090	-.00090
.897	-1.820	.02070	.00850	.02920	.01380	.00630	.00390
.897	.300	.02060	.00800	.02860	.01500	.01200	.01130
.897	2.450	.02340	.00370	.02710	.00850	.01720	.01760
.897	4.590	.02190	.01040	.03240	.01080	.02120	.02340
.897	6.740	.00960	.00880	.01830	.01140	.02550	.02750
.897	8.850	-.00130	.00100	-.00030	.00530	.02850	.03050
	GRADIENT	-.00018	-.00021	-.00040	-.00038	.00241	.00287

IA70 OIT125IP2P0 (2F7083) (08 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN. XT
LREF = 474.8000 IN. YMRP = .0000 IN. YT
BREF = 936.7000 IN. ZMRP = .0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELV-LO = .000
ELV-LI = 12.000 ELV-RI = 12.000
ELV-RO = .000 BFLAP = .000

RUN NO. 27/ 2 RN/L = 6.60 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBW	CTW
1.092	-8.570	.03720	-.00190	.03570	.00520	-.01590	-.01310
1.092	-6.410	.03540	-.00530	.03000	-.00080	-.00930	-.00600
1.092	-4.240	.03620	-.00990	.02830	-.00560	-.00230	-.00070
1.092	-2.060	.03920	-.01310	.02600	-.00790	.00500	.00460
1.092	.140	.02410	-.01100	.01310	-.00970	.01200	.00900
1.092	2.310	.01230	-.01060	.00150	-.01180	.01760	.01330
1.092	4.510	.00060	-.01700	-.01620	-.01390	.02260	.01670
1.092	6.680	-.00930	-.02620	-.03550	-.01630	.02770	.02000
1.092	8.870	-.01960	-.03960	-.05950	-.02070	.03200	.02210
	GRADIENT	-.00465	-.00054	-.00519	-.00093	.00265	.00199

RUN NO. 28/ 2 RN/L = 7.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBW	CTW
1.199	-8.780	.03620	.00600	.04220	-.00030	-.01570	-.00970
1.199	-6.610	.03320	.00180	.03480	-.00370	-.00840	-.00550
1.199	-4.400	.02650	-.00350	.02290	-.00780	-.00060	-.00150
1.199	-2.200	.01660	-.00630	.00830	-.01070	.00670	.00220
1.199	.010	.00580	-.01220	-.00630	-.01390	.01340	.00640
1.199	2.210	-.00210	-.01420	-.01630	-.01520	.01910	.01120
1.199	4.420	-.01190	-.01890	-.03090	-.01700	.02430	.01620
1.199	6.620	-.02110	-.02700	-.04810	-.02160	.02890	.01990
1.199	8.810	-.02840	-.03750	-.06990	-.02530	.03270	.02300
	GRADIENT	-.00433	-.00166	-.00600	-.00106	.00282	.00201

RUN NO. 81/ 2 RN/L = 7.40 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBW	CTW
1.504	-8.870	.01720	.01570	.03300	-.01930	-.01100	-.01030
1.504	-6.560	.00220	.00620	.01040	-.02160	-.00620	-.00830
1.504	-4.410	-.00600	-.00360	-.01160	-.02200	-.00060	-.00630
1.504	-2.170	-.01890	-.01570	-.03460	-.02420	.00390	-.00290
1.504	.050	-.02560	-.02840	-.05410	-.02530	.01210	.00100
1.504	2.280	-.03020	-.04000	-.07080	-.02990	.01790	.00540
1.504	4.500	-.03330	-.04930	-.08290	-.02790	.02270	.01000
1.504	6.710	-.03780	-.05780	-.09540	-.03250	.02680	.01420
1.504	8.930	-.04190	-.06500	-.10890	-.03840	.02970	.01740
	GRADIENT	-.00270	-.00521	-.00600	-.00079	.00263	.00184

IA70 O1T1251P2P0 (2F7015) (08 AUG 74)

REFERENCE DATA			
SREF = 2690.0000 SQ.FT.	XMRP = .0000 IN. XT		
LREF = 474.8000 IN.	YMRP = .0000 IN. YT		
BREF = 936.7000 IN.	ZMRP = .0000 IN. ZT		
SCALE = .0150			

PARAMETRIC DATA	
BETA = .000	ELV-LO = -4.000
ELV-LI = 12.000	ELV-RI = 12.000
ELV-RO = -4.000	BFLAP = .000

RUN NO. 34/ 3 RN/L = 7.40 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBW	CTW
1.504	-8.630	.03570	.01670	.05250	-.01940	-.01210	-.00850
1.504	-6.480	.01950	.00920	.02680	-.02100	-.00750	-.00750
1.504	-4.280	.00810	-.00330	.00270	-.02130	-.00190	-.00580
1.504	-2.080	-.00300	-.01510	-.01820	-.02300	.00450	-.00223
1.504	.170	-.00920	-.02740	-.03670	-.02490	.01100	.00250
1.504	2.400	-.01440	-.03910	-.05380	-.02810	.01880	.00590
1.504	4.620	-.01080	-.04830	-.06890	-.02880	.02150	.01070
1.504	6.840	-.02420	-.05730	-.08150	-.03080	.02580	.01480
1.504	9.050	-.02880	-.06380	-.09250	-.03330	.02870	.01800
	GRADIENT	-.00273	-.00312	-.00784	-.00072	.00265	.00185

IA70 O1T1251P2P0 (2F7016) (08 AUG 74)

REFERENCE DATA	
SREF = 2690.0000 SQ.FT.	XMRP = .0000 IN. XT
LREF = 474.8000 IN.	YMRP = .0000 IN. YT
BREF = 936.7000 IN.	ZMRP = .0000 IN. ZT
SCALE = .0150	

PARAMETRIC DATA	
BETA = .000	ELV-LO = -4.000
ELV-LI = 8.000	ELV-RI = 8.000
ELV-RO = -4.000	BFLAP = .000

RUN NO. 35/ 3 RN/L = 7.40 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHEO	CHEI	CHET	CHBF	CBW	CTW
1.504	-8.730	.03720	.06300	.10030	-.02420	-.01240	-.00670
1.504	-6.5[illegible]0	.02130	.05330	.07470	-.02490	-.00790	-.00480
1.504	-4.360	.00680	.03910	.04580	-.02290	-.00220	-.00350
1.504	-8.180	-.00280	.02700	.02400	-.02240	.00420	[illegible]
1.504	.050	-.00880	.01480	.00550	-.02340	.01050	.00410
1.504	2.270	-.01370	.00210	-.01160	-.02730	.01600	.00800
1.504	4.490	-.01790	-.00820	-.02810	-.02340	.02100	.01260
1.504	6.690	-.02310	-.01800	-.04120	-.02680	.02520	.01670
1.504	8.910	-.02780	-.02430	-.05200	-.04170	.02830	.01980
	GRADIENT	-.00271	-.00543	-.00815	-.00025	.00263	.00182

1A70 O1T12S1P2P0 (ZF7019) (08 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = .0000 IN. XT
LREF = 474.8000 IN. YMRP = .0000 IN. YT
BREF = 936.7000 IN. ZMRP = .0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELV-LO = -8.000
ELV-LI = 8.000 ELV-RI = 8.000
ELV-RO = -8.000 BFLAP = .000

RUN NO. 64/ 2 RN/L = 7.50 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHED	CHEI	CHET	CHBF	CBM	CTM
1.504	-8.660	.05680	.08470	.12140	-.02420	-.01470	-.00650
1.504	-6.660	.03940	.05530	.09480	-.02490	-.01000	-.00470
1.504	-4.470	.02390	.04150	.06550	-.02560	-.00420	-.00320
1.504	-2.210	.01300	.02860	.04170	-.02550	.00240	.00040
1.504	-.050	.00510	.01650	.02170	-.02590	.00860	.00430
1.504	2.170	.00000	.00390	.00400	-.02850	.01450	.00940
1.504	4.440	-.00450	-.00600	-.01030	-.02560	.01950	.01290
1.504	6.610	-.00970	-.01670	-.02650	-.02650	.02370	.01700
1.504	8.820	-.01510	-.02400	-.03920	-.03720	.02690	.02000
	GRADIENT	-.00312	-.00539	-.00852	-.00022	.00267	.00161

1A70 O1T12S1P2P0 (ZF7020) (08 AUG 74)

REFERENCE DATA

SREF = 2880.0000 SQ.FT. XMRP = .0000 IN. XT
LREF = 474.8000 IN. YMRP = .0000 IN. YT
BREF = 936.7000 IN. ZMRP = .0000 IN. ZT
SCALE = .0150

PARAMETRIC DATA

BETA = .000 ELV-LO = -8.000
ELV-LI = 12.000 ELV-RI = 12.000
ELV-RO = -8.000 BFLAP = .000

RUN NO. 65/ 2 RN/L = 7.40 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	CHED	CHEI	CHET	CHBF	CBM	CTM
1.504	-8.740	.05390	.01690	.07080	-.01960	-.01360	-.00660
1.504	-6.560	.03730	.00850	.04580	-.02130	-.00880	-.00650
1.504	-4.300	.02250	-.00500	.01750	-.02080	-.00280	-.00450
1.504	-2.130	.01220	-.01650	-.00420	-.02350	.00330	-.00110
1.504	.120	.00400	-.02690	-.02480	-.02510	.00980	.00260
1.504	2.300	-.00030	-.04140	-.04180	-.02790	.01540	.00710
1.504	4.540	-.00490	-.05020	-.05520	-.02795	.02040	.01160
1.504	6.760	-.01105	-.05920	-.07030	-.02990	.02450	.01570
1.504	8.930	-.01620	-.06390	-.08010	-.04030	.02775	.01970
	GRADIENT	-.00304	-.00521	-.00827	-.00077	.00265	.00193