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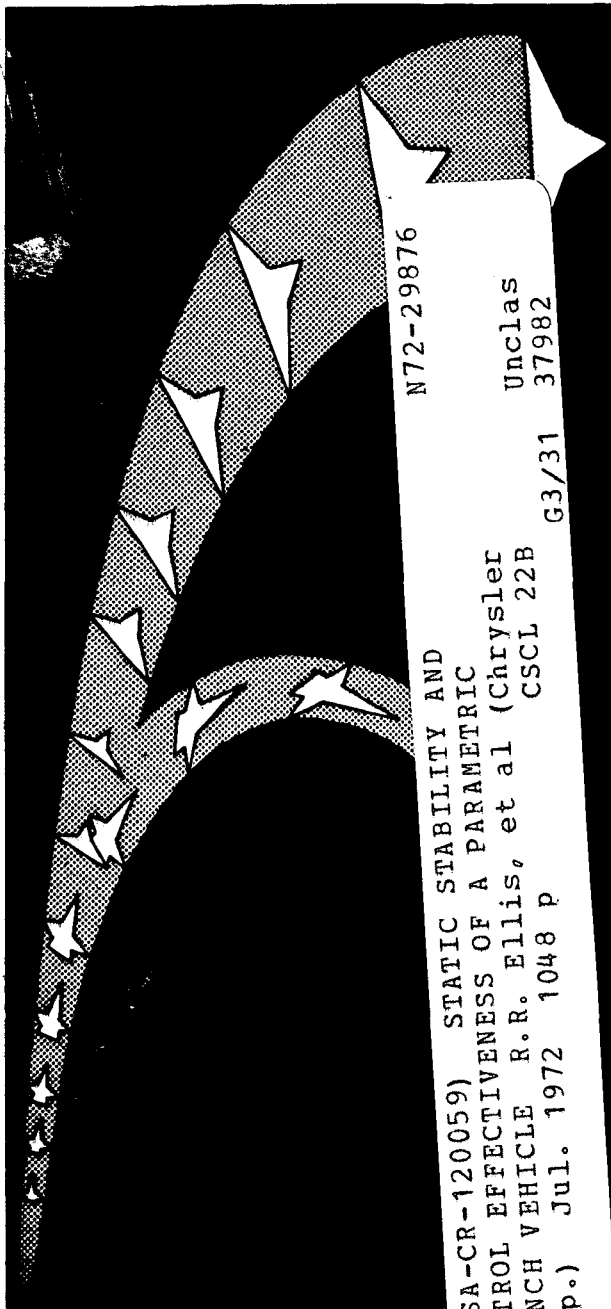
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CR-120,059

JULY 1972



N72-29876

(NASA-CR-120059) STATIC STABILITY AND CONTROL EFFECTIVENESS OF A PARAMETRIC LAUNCH VEHICLE

R.R. Ellis, et al (Chrysler Corp.) Jul. 1972 1048 p

Unclas 37982 G3/31

SADSAC SPACE SHUTTLE AEROTHERMODYNAMIC DATA MANAGEMENT SYSTEM

CONTRACT NAS8-4016 MARSHALL SPACE FLIGHT CENTER



—SPACE SHUTTLE—

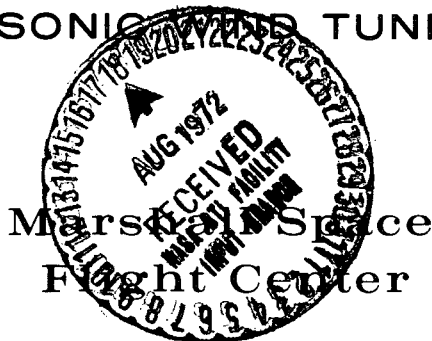
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# STATIC STABILITY AND CONTROL EFFECTIVENESS OF A PARAMETRIC LAUNCH VEHICLE

By

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MSFC 14 X 14-INCH TRISONIC TUNNEL



NASA

This document should be referenced as NASA CR-120,059

SADSAC/SPACE SHUTTLE

WIND TUNNEL TEST DATA REPORT

CONFIGURATION: NASA/MSFC PARAMETRIC LAUNCH VEHICLE

TEST PURPOSE: STATIC STABILITY AND CONTROL EFFECTIVENESS OF A PARAMETRIC  
LAUNCH VEHICLE

TEST FACILITY: NASA/MSFC 14 x 14 INCH TRISONIC TUNNEL

TESTING AGENCY: LOCKHEED - HUNTSVILLE

TEST NO. & DATE: MSFC TWT 544, 26 May - 8 June, 1972

FACILITY COORDINATOR: Jim Weaver, NASA/MSFC

PROJECT ENGINEER(S): Roger R. Ellis, IMSC/HREC  
Mickey Gamble, IMSC/HREC

DATA MANAGEMENT SERVICES

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FOR N. D. Kemp, Supervisor  
Aero Thermo Data Group

CONTRACT NAS 8-4016

AMENDMENT 158

DRL 297 - 84a

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



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STATIC STABILITY AND CONTROL EFFECTIVENESS  
OF A  
PARAMETRIC LAUNCH VEHICLE

By Roger R. Ellis and Mickey Gamble

SUMMARY

The National Aeronautics and Space Administration has established the general space shuttle launch configuration geometry. However, a continuing effort is being directed toward improving the launch vehicle aerodynamic characteristics. In support of this effort, this investigation was conducted to determine the static aerodynamic characteristics of a space shuttle parametric launch configuration. The orbiter control surfaces were deflected to obtain the control effectiveness for use in launch vehicle control studies. Experimental data were obtained for Mach numbers from 0.6 to 4.96, angles of attack from -10 to +10 degrees and angles of sideslip from -6 to 6 degrees at zero degrees angle of attack.

NOMENCLATURE  
General

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
a		speed of sound; m/sec, ft/sec
$C_p$	CP	pressure coefficient; $(p_1 - p_\infty)/q$
M	MACH	Mach number; $V/a$
p		pressure; N/m <sup>2</sup> , psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$ , N/m <sup>2</sup> , psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
$\alpha$	ALPHA	angle of attack, degrees
$\beta$	BETA	angle of sideslip, degrees
$\psi$	PSI	angle of yaw, degrees
$\phi$	PHI	angle of roll, degrees
$\rho$		mass density; kg/m <sup>3</sup> , slugs/ft <sup>3</sup>
<u>Reference &amp; C.G. Definitions</u>		
$A_b$		base area; m <sup>2</sup> , ft <sup>2</sup>
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
$\frac{l_{REF}}{c}$	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m <sup>2</sup> , ft <sup>2</sup>
	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
$\infty$	free stream

NOMENCLATURE (Continued)

Body-Axis System

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

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; $\frac{\text{pitching moment}}{qS l_{REF}}$
$C_n$	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qS b}$
$C_l$	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qS b}$
L/D	L/D	lift-to-drag ratio; $C_L/C_D$

NOMENCLATURE (Continued)

(Additions for MSFC Test 544)

<u>Symbol</u>	<u>SADSAC Symbol</u>	<u>Definition</u>
$S_e$		exposed area, $ft^2$
T		temperature, $^{\circ}F$
$x_s$	XS	longitudinal location of the nose of the solid rocket motors relative to HO tank nose
$i_o$	ORBINC	orbiter incidence angle relative to HO tank longitudinal $\xi$ ; positive when nose up; deg
$\gamma_z$	GAMZ	SRM nozzle position relative to HO tank longitudinal centerline
$\phi_s$	PHIS	radial position of solid rocket motors relative to the vertical plane, deg
$\Gamma$	DIHDRL	dihedral angle; deg
$\delta$		control surface deflection angle; deg positive deflections are:
	AILRON	aileron - left aileron trailing edge down
	ELEVTR	elevator- trailing edge down
	RUDDER	rudder - trailing edge to the left
	FLAP	flap - trailing edge down
$CLM_{\alpha}$	DCLMDA	pitching moment coefficient slope, ( $\alpha \pm 5^{\circ}$ ); per degree
$CN_{\alpha}$	DCN/DA	normal force coefficient slope, ( $\alpha \pm 5^{\circ}$ ); per degree
$CLM_{\alpha}/CN_{\alpha}$	CLM/CN	longitudinal static stability slope, pitching moment coefficient slope divided by the normal force coefficient slope, DCLMDA/DCN/DA
$Cy_{\beta}$	CYBETA	side force coefficient slope, ( $\beta \pm 5^{\circ}$ ); per degree

NOMENCLATURE (Continued)

(Additions for MSFC Test 544)

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
$C_{n\beta}$	DCYNDB	yawing moment coefficient slope, (beta $\pm 5^\circ$ ); per degree
$C_{l\beta}$	DCBLDB	rolling moment coefficient slope, (beta $\pm 5^\circ$ ); per degree

## CONFIGURATIONS INVESTIGATED

The launch configuration consists of the double delta wing orbiter with one large liquid hydrogen-oxygen tank (HO) and two solid rocket motors (SRM) underslung beneath the orbiter (see Figure 2). Configuration components investigated were:

### Symbol

F	HO tank vertical fin ( $S = 1.21 \text{ in}^2$ )
O1	baseline orbiter (including the abort solid rocket motors)
O2	baseline orbiter (less abort solid rocket motors)
O3	baseline orbiter without wings
T1	346-in. diam. HO tank with 22-deg nosecone (baseline) (with structural rings)
T2	346-in. diam. HO tank with 22-deg nosecone and retro rocket (with structural rings)
T3	346-in. diameter HO tank with 17-deg nosecone (with structural rings)
T4	346-in. diam. HO tank with 22-deg nosecone and one body diam. length extension (with structural rings)
T5	400-in. diam. HO tank with 22-deg. nosecone (with structural rings)
T6	400-in. diam. HO tank with 22-deg nosecone and retro rocket (with structural rings)
T7	Same as T1 without structural rings.
S1	156-in. diam. solid rocket motor with 17-deg nosecone (baseline)
S2	156-in. diam. solid rocket motor with 17-deg nosecone and one body diameter length extension
S3	156-in. diam. solid rocket motor with skewed nose tangent to HO tank.
S4	156-in. diam. solid rocket motor with skewed nose turned 180 deg relative to S3 position
S5	178-in. diam. solid rocket motor with 17-deg nosecone.

Combinations of these components as they were investigated are shown in Table II entitled Dataset Collations.



## TEST FACILITY DESCRIPTION

The MSFC 14 x 14 Inch Transonic Wind Tunnel is an intermittent blowdown tunnel which operates by high pressure air flowing from storage to either vacuum or atmospheric conditions. A Mach number range from 0.2 to 5.85 is covered by utilizing two interchangeable test sections. The transonic section permits testing at Mach 2.75 to 5.85. Mach numbers between 0.2 and 0.9 are obtained by using a controllable diffuser. The range from 0.95 to 1.3 is achieved through the use of plenum suction and perforated walls. Mach numbers of 1.46, 1.96 and 2.48 are produced by interchangeable sets of fixed contour nozzle blocks. Above Mach 2.48 a set of fixed contour nozzle blocks are tilted and translated automatically to produce any desired Mach number in 0.25 increments.

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

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

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

## MODEL DESCRIPTION

The model geometry is specified in Figs. 3 through 8. The SRM boosters and HO tanks are constructed of aluminum. The orbiter wing and body are aluminum and the elevons, fins and rudder flares are 17-4 PH stainless steel. The launch configuration has a complete build-up and parametric capability (SRM and HO tank nose shape, body diameter, body length, SRM longitudinal and radial location, HO tank vertical fin size, and orbiter incidence). In addition, the orbiter control surfaces can be deflected to provide additional control for the launch configuration. The launch vehicle SRMs and HO tanks were manufactured at MSFC and the orbiter was manufactured at Lockheed-Huntsville. All model components are available at the MSFC 14 x 14-inch Wind Tunnel facility.

## DATA REDUCTION

All model forces and moments were resolved in the body axis system and are presented in the form of non-dimensional coefficients. Model reference dimensions used in the data reduction are:

Parameter	Full Scale	Model Scale
Reference Area ( $S_{ref}$ ) (Wing Theoretical Area)	3420.0 ft <sup>2</sup>	7.880 in <sup>2</sup>
Reference Length ( $l_{ref}$ ) (M.A.C.)	507.0 in.	2.028 in.
Reference Span ( $b_{ref}$ ) (Wing Span)	1115.0 in.	4.460 in.
Moment Reference Point (MRP) (from base)	840.0 in.	3.360 in.

Base pressure coefficients were calculated using the following equations:

$$CAB_{O} = CPB1 \frac{A_{bO}}{S_{ref}} \text{ (Orbiter base axial force coefficient)}$$

$$CAB_{S} = -CPB2 \frac{A_{bS}}{S_{ref}} \text{ (SRM base axial force coefficient)}$$

$$CAB_{HO} = -CPB3 \frac{A_{bHO}}{S_{ref}} \text{ (HO tank base axial force coefficient)}$$

where:

$$CPB1 = (P_{bO} - P_{\infty})/q$$

$$CPB2 = (P_{bS} - P_{\infty})/q$$

$$CPB3 = (P_{bHO(avg)} - P_{\infty})/q$$

The following combinations of SRM and HO tank required the following base areas to be used for axial force corrections:

Configuration	$A_{bO}$ (in <sup>2</sup> )	$A_{bS}$ (in <sup>2</sup> )	$A_{bHO}$ (in <sup>2</sup> )
T101S1	0.732	0.306	1.504
T101S1			
T103S1			
T101S2			
T101S3			
T101S4			
T101S5		0.398	
T201S1		0.306	
T301S1			
T401S1			
T501S1			2.010
T601S1			2.010
T101S1F			1.504
T1	---	---	1.504
T5	---	---	2.010
T1S1	---	0.306	1.504
T5S1	---	0.306	2.010
T101	0.732	---	1.504
T501	0.732	---	2.010

Note:  $S_{ref} = 7.880 \text{ in}^2$  for all configurations.

Center of pressure calculations based on body length were made using:

$$\frac{XCP}{l_{body}} = \frac{XCG}{l_{body}} - \frac{CLM}{CN} \frac{l_{Ref}}{l_{body}}$$

where

$l_{Ref} = 2.028$  inches for all configurations.

The values of  $l_{body}$  and XCG varied with configurations and are:

TANK CONFIG.	$l_{body}$ (in.)	XCG (in.)
T1	7.586	4.226
T2	8.124	4.764
T3	8.097	4.737
T4	8.970	5.610
T5	7.853	4.493
T6	8.396	5.036
T7	7.586	4.226

Data was corrected for tunnel flow angularities, weight tares, and sting deflections.

## REFERENCES

1. Simon, Erwin, "The George C. Marshall Space Flight Center's 14 x 14-Inch Trisomic Wind Tunnel Handbook," NASA TMX-53185, 22 December 1964.

TABLE I.  
TEST CONDITIONS  
TEST TWT 544

MACH NUMBER	REYNOLDS NUMBER per unit length	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
0.80	5.0 x 10 <sup>6</sup>	4.3	100
0.90	6.3	7.4	100
1.10	6.6	8.7	100
1.20	6.1	8.3	100
1.30	6.0	8.6	100
1.46	6.5	9.5	100
1.96	7.0	10.2	100
3.50	6.3	6.9	140
4.96	4.8	2.7	140

BALANCE UTILIZED: MSFC 232

CAPACITY:

NF	<u>300 lbs</u>
SF	<u>143 lbs</u>
AF	<u>50 lbs</u>
PM	<u>400 in-lbs</u>
YM	<u>192 in-lbs</u>
RM	<u>100 in-lbs</u>

ACCURACY:

<u>+1.5 lbs</u>
<u>+0.72 lbs</u>
<u>+0.25 lbs</u>
<u>+2.00 in-lbs</u>
<u>+0.96 in-lbs</u>
<u>+0.50 in-lbs</u>

COEFFICIENT

TOLERANCE:  
(q = 9.2 lb/in<sup>2</sup>)

<u>+0.0207</u>
<u>+0.0099</u>
<u>+0.0035</u>
<u>+0.0136</u>
<u>+ 0.0030</u>
<u>+ 0.0016</u>

COMMENTS: NOTE: ACCURACY BASED ON +0.5% OF BALANCE CAPACITY.

TABLE II.  
TEST MSFC TWT 549 DATA SET COLLATION SHEET

PRETEST

1 OF 5

POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)										
		$\alpha$	B	$\phi_0$	$\phi_s$	$x_s$	$c_0$		$\delta_r$	$\gamma_E$	0.6	0.9	1.1	1.2	1.3	1.4	1.96	3.48	7.56
271001	T101S1	A	0	0	75	0	0	4	0	0	145	150		151					200
002				-1.5				7			131	132	315	133	314	306	257	135	11
003				-3.0				4			143	147		146					21
004				0	90			4			144	143		152					274
005				-1.5				7			130	135		134		307	295	136	197
006				-3.0				4			143	140		145					200
007				0	135			4			155	150		157					222
008				-1.5				7			137	138		135		308	293	139	133
009				-3.0				4			142	141		140					242
010		0	A	-1.5	75			6			124	125		122			240	130	195
011					90			5			125	126		127			240		191
012					135			5			130	129		129			231		190
013		A	0		75	0.029		2			15			14					
014		0	A					2			12			13					
015		A	0		90			2			16			17					
016		0	A					2			19			18					
017		A	0		135			2			23			22					
018		0	A					2			20			21					
019	T101S3	A	0		75	0		4		30				99					
020		0	A					4						78					

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

CLM    RN    CY    CBL    CYN    EA    CAB1    CAB2    CAB3    CAF    10

COEFFICIENTS:  
 $\alpha$  or B  
SCHEDULES

$\alpha$ : A = -10 deg to +10 deg  $\Delta\alpha = 2$  deg  
 $\beta$ : A = -10 deg to +10 deg  $\Delta\beta = 2$  deg  
 $x_s$ : OE position 0.075" and 0.150" at 0.035" from 156" DIA  
 EVEN WITH SURFACE OF NOSE, NO TANK

NDV = IDPVAR(1) | IDPVAR(2) | NDV  
 $\frac{1}{2}$  = 5FM NOZZLE RADIAL POSITIONS:  
 OE PARALLEL TO HUTANK  
 HORIZ &  
 30° = 30° ABOVE NO TANK  
 HORIZ &  
 NASA-MSFC-MAP

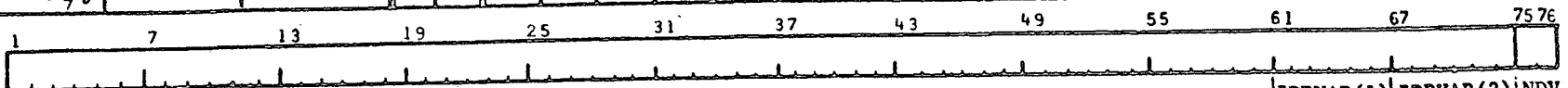
TABLE II. (CONTINUED)

TEST MSFC TWT 544 DATA SET COLLATION SHEET

PRETEST  
 POSTTEST

2 OF 5

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)										
		$\alpha$	$\beta$	$L_0$	$\phi_s$	$x_s$	$\delta_2$		$\delta_r$	$\gamma_z$		0.6	0.9	1.1	1.2	1.3	1.46	1.96	2.48
R71021	T101S3	A	0	-1.5	75	0	0		0	0				92/1			269/0	132/0	183/0
022	↓	0	A										78/1			272/0	153/0	153/0	
023	T101S4	A	0										93/1			270/0	181/0	191/0	
024	↓	0	A										79/1			271/0	161/0	160/0	
025	↓	A	0						30				98/0						
026	↓	0	A										79/0						
027	T101S2	A	0							0	94/1		90/1			268/0	174/0	175/0	
028	↓	0	A								81/1		80/1			273/0	162/0	162/0	
029	↓	A	0						30		94/0		95/0						
030	↓	0	A								81/0		80/0						
031	T201S1	A	0										96/0						
032	↓	0	A										85/0						
033	↓	A	0							0			96/1			259/0	177/0	176/0	
034	↓	0	A										85/1			253/0	165/0	168/0	
035	T301S1	A	0										97/1			260/0	173/0	173/0	
036	↓	0	A										84/1			275/0	166/0	167/0	
037	↓	A	0						30				97/0						
038	↓	0	A										84/0						
039	T401S1	A	0								93/0		92/0						
040	↓	0	A								82/0		83/0						



COEFFICIENTS:

SEE SH 1

a or B

SCHEDULES



TABLE II. (CONTINUED)

TEST MSFC TWT 544 DATA SET COLLATION SHEET

3 of 5

PRETEST  
 POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)										
		$\alpha$	$\beta$	$L_0$	$\phi_0$	$X_0$	$\delta_0$		$\delta_r$	$\gamma_z$	0.6	0.9	1.1	1.2	1.3	1.46	1.96	3.48	4.96
R71041	T401S1	A	0	-1.5	75	0	0		0	0	93/1			92/1			207/0	173/0	172/0
042	↓	0	A								82/1			32/1			271/0	150/0	151/0
043	T101S1F	A	0								83/1	90/1		91/1			272/0		171/0
044	↓	0	A								93/1	37/1		86/1			276/0		173/0
045	↓	A	0							30	88/0	90/0		91/0					
046	↓	0	A								88/0	87/0		86/0					
047	T501S1	A	0							0	102/0	101/0		100/0			300/0	207/0	203/0
048	↓	0	A								109/0	110/0		111/0			303/0	214/0	213/0
049	T601S1	A	0								103/0	109/0		105/0			301/0	210/0	203/0
050	↓	0	A								108/0	107/0		100/0			302/0	211/0	212/0
051	T101S5	A	0								75/0			74/0			290/0		236/0
052	↓	0	A								76/0			77/0			291/0		237/0
053	↓	A	0		90						72/0			73/0			289/0		235/0
054	↓	A	0		135						71/0			70/0			288/0		234/0
055	T101S1	A	0		75		-10				49/0	50/0		51/0					
056	↓	0	A								54/0	53/0		52/0					
057	↓	A	0				+10				48/0	47/0		46/0					
058	↓	0	A								55/0	56/0		57/0					
059	↓	A	0		90						60/0	59/0		58/0					
060	↓	A	0				-10				61/0	62/0		63/0					

1	7	13	19	25	31	37	43	49	55	61	67	75	76
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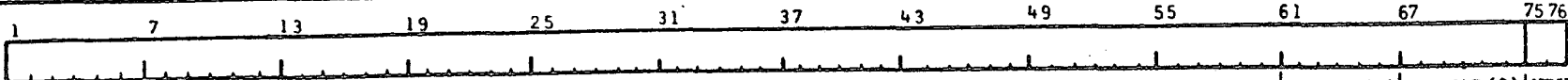
COEFFICIENTS: \_\_\_\_\_ IDPVAR(1) IDPVAR(2) NDV  
 or  $\beta$  \_\_\_\_\_  
 SCHEDULES \_\_\_\_\_

TABLE II. (CONTINUED)

TEST MSFC TWT 544 DATA SET COLLATION SHEET

4 of 5  PRETEST  POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)										
		$\alpha$	$\beta$	$L_0$	$\rho_0$	$x_0$	$\delta_0$		$\delta_r$	$\gamma_z$	0.6	0.9	1.1	1.2	1.3	1.46	1.9	2.48	4.9
061	T101S1	A	0	-1.5	135	0	-10		0	0	66/0	65/0		64/0					
062	↓						+10				67/0	69/0		68/0					
063	T102S1				75									45/0			279/0	228/0	229/0
064	↓						-10							44/0			280/0	231/0	230/0
065	↓						-30							43/0			281/0	232/0	233/0
066	T101S1						0	30			118/0	117/0		116/0			305/0		218/0
067	↓	0	A								119/0	120/0		121/0			306/0		219/0
068	T103S1	A	0					0					312/0	311/0	310/0	309/0			
069	T7	A	0	-	-	-	-	-	-		001/0	002/0		003/0					
070	T1S1	A	0		75	0	-	-	0		039/0	040/0		041/0			296/0	217/0	216/0
071	↓	0	A								038/0			037/0			297/0		215/0
072	T101	A	0	-1.5	-	-	0	0	-		024/0	025/0		026/0			287/0	196/0	195/0
073	↓	0	A								028/0			027/0			288/0		194/0
074	T5	A	0	-			-	-			006/0	005/0		004/0			294/0	200/0	199/0
075	T5S1	A	0		75	0			0		034/0	033/0		032/0			293/0	201/0	202/0
076	↓	0	A								035/0			036/0			292/0		203/0
077	T501	A	0	-1.5	-	-	0	0	-		007/0	008/0		009/0			299/0	206/0	205/0
078	↓	0	A								011/0			010/0			298/0		204/0
079	T102S1	A	0		75	0			0					042/0			278/0	227/0	226/0
080	T1	A	0	-	-	-	-	-	-		029/0	030/0		031/0			295/0	197/0	198/0



COEFFICIENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

$\alpha$  or  $\beta$   
 SCHEDULES

→ IDPVAR(1) | IDPVAR(2) | NDV

TABLE II. (CONTINUED)

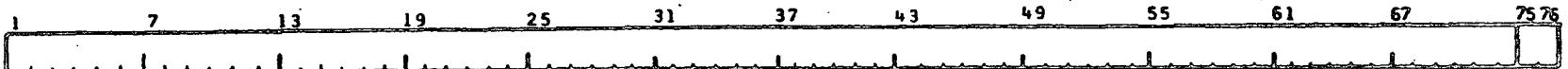
TEST TWT 544 DATA SET COLLATION SHEET

PRETEST

5 OF 5

POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
		a	B	$L_0$	$\phi_s$	$X_s$	$S_e$		$S_N$	$\tau_z$	0.6	0.9	1.1	1.2	1.3	1.46	1.96	3.48	4.96	
R71081	T501S1	A	0	-1.5	75	0	0	0	30			114 0			115 0					
082		0	A									113 0			112 0					
083	T101S1	A	0			.885			0			244 1			265 0			256 0	243 0	
084		0	A									255 0			256 0			261 1	238 0	
085		A	0		90							247 0			246 0			265 0	242 0	
086		0	A									252 0			253 0			262 0	239 0	
087		A	0		135							248 0			249 0			264 0	241 0	
088		0	A									251 0			250 0			263 0	240 0	



COEFFICIENTS: SEE 541 IDPVAR(1) IDPVAR(2) NDV

a or B \_\_\_\_\_

SCHEDULES \_\_\_\_\_

TABLE III.  
DIMENSIONAL DATA

MODEL COMPONENT: BODY - T1, T2, T3, T7

GENERAL DESCRIPTION: HYDROGEN-OXYGEN TANK (BASELINE DIAMETER) (T2, T3,  
SAME BODY WITH ALTERNATE NOSES). T7 SAME AS T1 W/O STRUCTURAL RINGS.

DRAWING NUMBER \_\_\_\_\_

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length	<u>1876.75 in.</u>	<u>7.507 in.</u>
Max Width	<u>346 in.</u>	<u>1.384 in.</u>
Max Depth	<u>346 in.</u>	<u>1.384 in.</u>
Fineness Ratio	<u>5.42</u>	<u>5.42</u>
Area		
Max Cross-Sectional	<u>652.95 ft<sup>2</sup></u>	<u>1.504 in<sup>2</sup></u>
Planform	<u>---</u>	<u>---</u>
Wetted	<u>---</u>	<u>---</u>
Base	<u>652.95 ft<sup>2</sup></u>	<u>1.504 in<sup>2</sup></u>

TABLE III. (CONTINUED)

MODEL COMPONENT: BODY - T4

GENERAL DESCRIPTION: HYDROGEN-OXYGEN TANK (SAME AS T1 WITH 1-CALIBER  
BODY EXTENSION)

DRAWING NUMBER \_\_\_\_\_

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length	<u>2222.75 in.</u>	<u>8.891 in.</u>
Max Width	<u>346 in.</u>	<u>1.384 in.</u>
Max Depth	<u>346 in.</u>	<u>1.384 in.</u>
Fineness Ratio	<u>6.42</u>	<u>6.42</u>
Area		
Max Cross-Sectional	<u>652.95 ft<sup>2</sup></u>	<u>1.504 in<sup>2</sup></u>
Planform	<u>---</u>	<u>---</u>
Wetted	<u>---</u>	<u>---</u>
Base	<u>652.95 ft<sup>2</sup></u>	<u>1.504 in<sup>2</sup></u>

TABLE III. (CONTINUED)

MODEL COMPONENT: BODY - T5, T6

GENERAL DESCRIPTION: HYDROGEN-OXYGEN TANK (INCREASED DIA.)

(T6 SAME BODY WITH ALTERNATE NOSE)

DRAWING NUMBER \_\_\_\_\_

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length	<u>1876.75 in.</u>	<u>7.507 in.</u>
Max Width	<u>400 in.</u>	<u>1.600 in.</u>
Max Depth	<u>400 in.</u>	<u>1.600 in.</u>
Fineness Ratio	<u>4.69</u>	<u>4.69</u>
Area		
Max Cross-Sectional	<u>872.50 ft<sup>2</sup></u>	<u>2.01 in<sup>2</sup></u>
Planform	<u>---</u>	<u>---</u>
Wetted	<u>---</u>	<u>---</u>
Base	<u>872.50 ft<sup>2</sup></u>	<u>2.01 in<sup>2</sup></u>

TABLE III. (CONTINUED)

MODEL COMPONENT: BODY - S1, S3, S4

GENERAL DESCRIPTION: SOLID ROCKET MOTOR (BASELINE DIA.) (S3, S4 SAME  
BODY WITH ALTERNATE NOSE)

DRAWING NUMBER \_\_\_\_\_

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length	<u>1743 in.</u>	<u>6.972 in.</u>
Max Width	<u>156 in.</u>	<u>0.624 in.</u>
Max Depth	<u>156 in.</u>	<u>0.624 in.</u>
Fineness Ratio	<u>11.17</u>	<u>11.17</u>
Area		
Max Cross-Sectional	<u>132.5 ft<sup>2</sup></u>	<u>0.306 in<sup>2</sup></u>
Planform	<u>---</u>	<u>---</u>
Wetted	<u>---</u>	<u>---</u>
Base	<u>132.5 ft<sup>2</sup></u>	<u>0.306 in<sup>2</sup></u>

TABLE III. (CONTINUED)

MODEL COMPONENT: BODY - S2

GENERAL DESCRIPTION: SOLID ROCKET MOTOR (SAME AS S1 WITH 1-CALIBER  
EXTENSION)

DRAWING NUMBER \_\_\_\_\_

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length	<u>158.25 ft</u>	<u>7.596 in.</u>
Max Width	<u>156 in.</u>	<u>0.624 in.</u>
Max Depth	<u>156 in.</u>	<u>0.624 in.</u>
Fineness Ratio	<u>12.17</u>	<u>12.17</u>
Area		
Max Cross-Sectional	<u>132.5 ft<sup>2</sup></u>	<u>0.306 in<sup>2</sup></u>
Planform	<u>---</u>	<u>---</u>
Wetted	<u>---</u>	<u>---</u>
Base	<u>132.5 ft<sup>2</sup></u>	<u>0.306 in<sup>2</sup></u>



TABLE III. (CONTINUED)

MODEL COMPONENT: BODY - S5

GENERAL DESCRIPTION: SOLID ROCKET MOTOR (INCREASED DIAMETER)

DRAWING NUMBER \_\_\_\_\_

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length	<u>1743 in.</u>	<u>6.972 in.</u>
Max Width	<u>178 in.</u>	<u>0.712 in.</u>
Max Depth	<u>178 in.</u>	<u>0.712 in.</u>
Fineness Ratio	<u>9.79</u>	<u>9.79</u>
Area		
Max Cross-Sectional	<u>172.73 ft<sup>2</sup></u>	<u>0.398 in<sup>2</sup></u>
Planform	<u>---</u>	<u>---</u>
Wetted	<u>---</u>	<u>---</u>
Base	<u>172.73 ft<sup>2</sup></u>	<u>0.398 in<sup>2</sup></u>

TABLE III. (CONTINUED)

MODEL COMPONENT: BODY - B1

GENERAL DESCRIPTION: BASIC BODY FOR 01, 02 & 03

DRAWING NUMBER \_\_\_\_\_

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u> (0.004)
Length	<u>1315 in.</u>	<u>5.260 in.</u>
Max Width (P.L. BAY/REAR END)	<u>208/220 in.</u>	<u>0.832/0.880 in.</u>
Max Depth	<u>235 in.</u>	<u>0.940 in.</u>
Fineness Ratio (LENGTH/P.L. BAY)	<u>6.32</u>	<u>6.32</u>
Area		
Max Cross-Sectional	<u>---</u>	<u>---</u>
Planform	<u>---</u>	<u>---</u>
Wetted	<u>6250 ft<sup>2</sup></u>	<u>14.40 in<sup>2</sup></u>
Base (PROJECTED)	<u>317.7 ft<sup>2</sup></u>	<u>0.732 in<sup>2</sup></u>

TABLE III. (CONTINUED)

MODEL COMPONENT: W4

GENERAL DESCRIPTION: WING (INCLUDING GLOVE) FOR 01 & 02

DRAWING NUMBER: \_\_\_\_\_

DIMENSIONS: FULL-SCALE MODEL SCALE

TOTAL DATA

(0.004)

Area		
Planform BASIC/GLOVE	3420/1187 ft <sup>2</sup>	7.880/2.735 in <sup>2</sup>
Wetted BASIC/GLOVE	4925/819 ft <sup>2</sup>	11.347/1.887 in <sup>2</sup>
Span (equivalent)	1115 in.	4.460 in.
Aspect Ratio	2.5/1.9	2.5/1.9
Rate of Taper	---	---
Taper Ratio	0.20/0.10	0.20/0.10
Diehedral Angle, degrees	7°	7°
Incidence Angle, degrees	1.5°	1.5°
Aerodynamic Twist, degrees	---	---
Toe-In Angle	---	---
Cant Angle	---	---
Sweep Back Angles, degrees		
Leading Edge BASIC/GLOVE	35°/75°	35°/75°
Trailing Edge	-19.6°	-19.6°
0.25 Element Line	---	---
Chords:		
Root (Wing Sta. 0.0) BASIC/GLOVE	736/720 in.	2.944/2.880 in.
Tip, (equivalent)	147 in.	0.588 in.
MAC (BASIC)	507 in.	2.028 in.
Fus. Sta. of .25 MAC	---	---
W.P. of .25 MAC	---	---
B.L. of .25 MAC	217 in.	0.868 in.
Airfoil Section		
Root	0008-64	0008-64
Tip	0008-64	0008-64

EXPOSED DATA

Area (BASIC/GLOVE)	1218.59/162.55 ft <sup>2</sup>	2.806/0.374 in <sup>2</sup>
Span, (equivalent)	453.5 in.	1.814 in.
Aspect Ratio	---	---
Taper Ratio	---	---
Chords		
Root BASIC/GLOVE	626.87/404.74 in.	2.507/1.619 in.
Tip	147 in.	0.588 in.
MAC	---	---
Fus. Sta. of .25 MAC	---	---
W.P. of .25 MAC	---	---
B.L. of .25 MAC	---	---

TABLE III. (CONTINUED)

MODEL COMPONENT: "V" TAIL STABILIZER

GENERAL DESCRIPTION: ORBITER (THE FOLLOWING DIMENSIONS ARE REPRESENTATIVE OF THE TWO VERTICAL STABILIZERS) i.e., PER SIDE (FOR 01, 02 & 03)

DRAWING NUMBER: \_\_\_\_\_

DIMENSIONS: FULL-SCALE MODEL SCALE

TOTAL DATA

Area	---	---
Planform	---	---
Wetted	525 ft <sup>2</sup>	1.21 in <sup>2</sup>
Span (equivalent)	---	---
Aspect Ratio	---	---
Rate of Taper	---	---
Taper Ratio	---	---
Diehedral Angle, degrees	75	75
Incidence Angle, degrees	0	0
Aerodynamic Twist, degrees	0	0
Toe-In Angle	0	0
Cant Angle	15	15
Sweep Back Angles, degrees		
Leading Edge	45	45
Trailing Edge	20	20
0.25 Element Line	---	---
Chords:		
Root (Wing Sta. 0.0)	---	---
Tip, (equivalent)	---	---
MAC	---	---
Fus. Sta. of .25 MAC	---	---
W.P. of .25 MAC	---	---
B.L. of .25 MAC	---	---
Airfoil Section		
Root	5° WEDGE (60/40)	5° WEDGE (60/40)
Tip	5° WEDGE (60/40)	5° WEDGE (60/40)

EXPOSED DATA

Area	250 ft <sup>2</sup>	0.576 in <sup>2</sup>
Span, (equivalent)	240 in.	0.96 in
Aspect Ratio	1.6	1.6
Taper Ratio	0.35	0.35
Chords		
Root	230 in.	0.920 in.
Tip	80 in.	0.320 in.
MAC	---	---
Fus. Sta. of .25 MAC	---	---
W.P. of .25 MAC	---	---
B.L. of .25 MAC	---	---

TABLE IV.  
INDEX OF MODEL FIGURES

FIGURE	DESCRIPTION	PAGE
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3	Baseline Launch Vehicle	36
4	156-Inch Solid Rocket Motor with Standard and Skewed Noses and One-Body Diameter Extension	37
5	178-Inch Solid Rocket Motor	38
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8	HO Tank Ventral Fin	41
9	Photograph of Oblique Side View of Configuration $T_1O_1S_1$	42

TABLE V.

## INDEX OF DATA FIGURES

Title	Plotted Coefficients Schedule	Conditions Varying	Pages
Configuration Build-Up (Longitudinal Characteristics) (Baseline HO Tank)	(A)	Configuration MACH	1-54
Configuration Build-Up (Lateral-Directional Characteristics) (Baseline HO Tank)	(B)	Configuration MACH	55-72
Configuration Build-Up (Longitudinal Characteristics) (Alternate HO Tank)	(A)	Configuration MACH	73-108
Configuration Build-Up (Lateral-Directional Characteristics) (Alternate HO Tank)	(B)	Configuration MACH	109-126
Effect of Orbiter Incidence on Longitudinal Characteristics (PHIS = 75 Deg)	(A)	ORBINC MACH	127-162
Effect of Orbiter Incidence on Longitudinal Characteristics (PHIS = 90 Deg)	(A)	ORBINC MACH	163-204
Effect of Orbiter Incidence on Longitudinal Characteristics (PHIS = 135 Deg)	(A)	ORBINC MACH	205-246
Effect of SRM Radial Position on Baseline HO Tank (ORBINC = 0 Deg)	(A)	PHIS MACH	247-270
Effect of SRM Radial Position on Baseline HO Tank (ORBINC = -1.5 Deg)	(A)	PHIS MACH	271-324
Effect of SRM Radial Position on Baseline HO Tank (ORBINC = -3.0 Deg)	(A)	PHIS MACH	325-348
Effect of SRM Radial Position on Baseline HO Tank (ORBINC = -1.5 Deg)	(B)	PHIS MACH	349-366

TABLE V. (continued)

Title	Plotted Coefficients Schedule	Conditions Varying	Pages
Effect of SRM Longitudinal Position (PHIS = 75 Deg)	(A)	XS MACH	367-390
Effect of SRM Longitudinal Position (PHIS = 90 Deg)	(A)	XS MACH	391-414
Effect of SRM Longitudinal Position (PHIS = 135 Deg)	(A)	XS MACH	415-438
Effect of SRM Longitudinal Position (PHIS = 75 Deg)	(B)	XS MACH	439-450
Effect of SRM Longitudinal Position (PHIS = 90 Deg)	(B)	XS MACH	451-462
Effect of SRM Longitudinal Position (PHIS = 135 Deg)	(B)	XS MACH	463-474
Effect of Baseline HO Tank Nose Shape	(A)	Configuration MACH	475-498
	(B)		499-510
Effect of HO Tank Nose Shape and Diameter	(A)	Configuration MACH	511-546
	(B)		547-564
Effect of Baseline HO Tank Length	(A)	Configuration MACH	565-600
	(B)		601-618

TABLE V. (continued)

Title	Plotted Coefficients Schedule	Conditions Varying	Pages
Effect of SRM Nose Shape and Length	(A)	Configuration MACH	619-642
	(B)		643-654
Effect of HO Tank Verticle Fin and SRM Nozzle Position	(A)	Configuration MACH	655-690
	(C)		691-696
	(B)		697-714
	(D)		715-720
Effect of SRM Diameter (PHIS = 75 Deg)	(A)	Configuration MACH	721-744
Effect of SRM Diameter (PHIS = 90 Deg)	(A)	Configuration MACH	745-768
Effect of SRM Diameter (PHIS = 135 Deg)	(A)	Configuration MACH	769-792
Effect of SRM Diameter (PHIS = 75 Deg)	(B)	Configuration MACH	793-804
Effect of SRM Nozzle Position with Alternate HO Tank	(A)	GAMZ MACH	805-816
	(C)		817-818
	(B)		819-824
	(D)		825-826
Effect of SRM Nozzle Position with Skewed Noses	(A)	Configuration GAMZ	827-832
	(C)		833
	(B)		834-836
	(D)		837



TABLE V. (continued)

Title	Plotted Coefficients Schedule	Conditions Varying	Pages
Effect of SRM Nozzle Position with Longer SRM	(A) (C) (B) (D)	GAMZ MACH	838-849  850-851 852-857 858-859
Effect of Orbiter Elevons (with Abort SRMS) (PHIS = 75 Deg)	(A)	ELEVTR MACH	860-877
Effect of Orbiter Elevons (with Abort SRMS) (PHIS = 90 Deg)	(A)	ELEVTR MACH	878-895
Effect of Orbiter Elevons (with Abort SRMS) (PHIS = 135)	(A)	ELEVTR MACH	896-913
Effect of Orbiter Elevons (with Abort SRMS) (PHIS = 75 Deg)	(B)	ELEVTR MACH	914-922
Effect of Orbiter Elevons (without Abort SRMS) (PHIS = 75 Deg)	(A)	ELEVTR MACH	923-946
Comparison of Fin and Rudder	(A)  (B)	Configuration RUDDER MACH	947-976  977-991
Effect of Orbiter Wing Off	(A)	Configuration MACH	992-1015
Effect of Structural Rings on Baseline HO Tank	(A)	Configuration MACH	1016-1033

TABLE V. (continued)

Title	Plotted Coefficients Schedule	Conditions Varying	Pages
Baseline Configuration Build-up (MACH Number Effects)	(E) (F)	Configuration	1034 1035
Alternate HO Tank Configuration Build-up (MACH Number Effects)	(E) (F)	Configuration	1036 1037
Baseline HO Tank Nose Shape and Length (MACH Number Effects)	(E) (F)	Configuration	1038 1039
Baseline SRM Nose Shape, Length, and Diameter (MACH Number Effects)	(E) (F)	Configuration	1040 1041
SRM Longitudinal Position (MACH Number Effects)	(E) (F)	XS	1042 1043
SRM Radial Position (MACH Number Effects)	(E) (F)	PHIS	1044 1045
Orbiter Incidence (MACH Number Effects)	(E)	ORBINC	1046

33

R

PLOTTED COEFFICIENTS SCHEDULE

(A) CLM, CN, CA, CAF, CAB versus ALPHA  
CN versus CLM

(B) CBL, CYN, CY versus BETA

(C) CY, CYN, CBL versus ALPHA

(D) CLM, CN, CA versus BETA

(E) CIM/CN, DCN/DA, DCIMDA versus MACH

(F) CYBETA, DCYNDB, DCBLDB versus MACH

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.

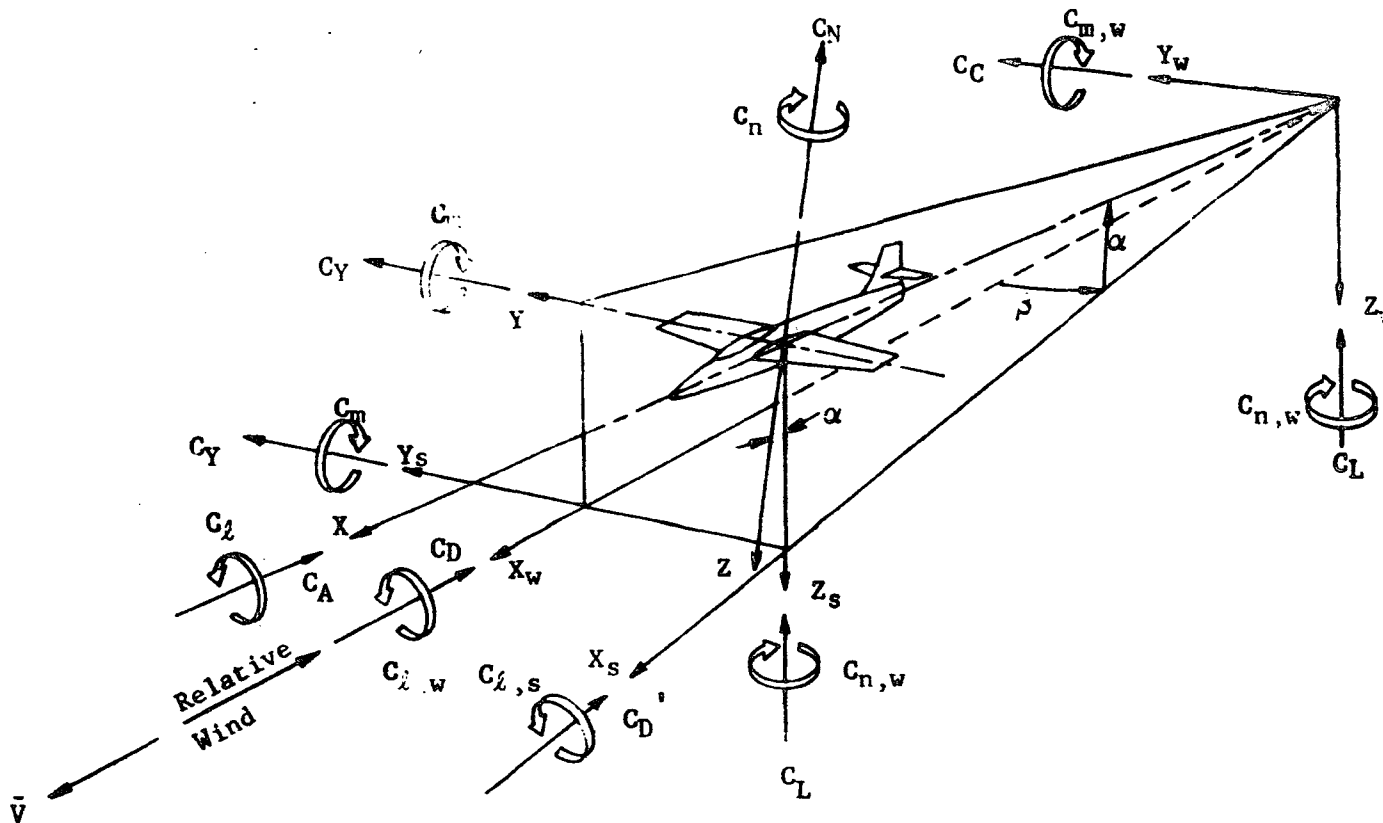


Figure 1. Axis systems, showing direction and sense of force and moment coefficients, angle of attack, and sideslip angle

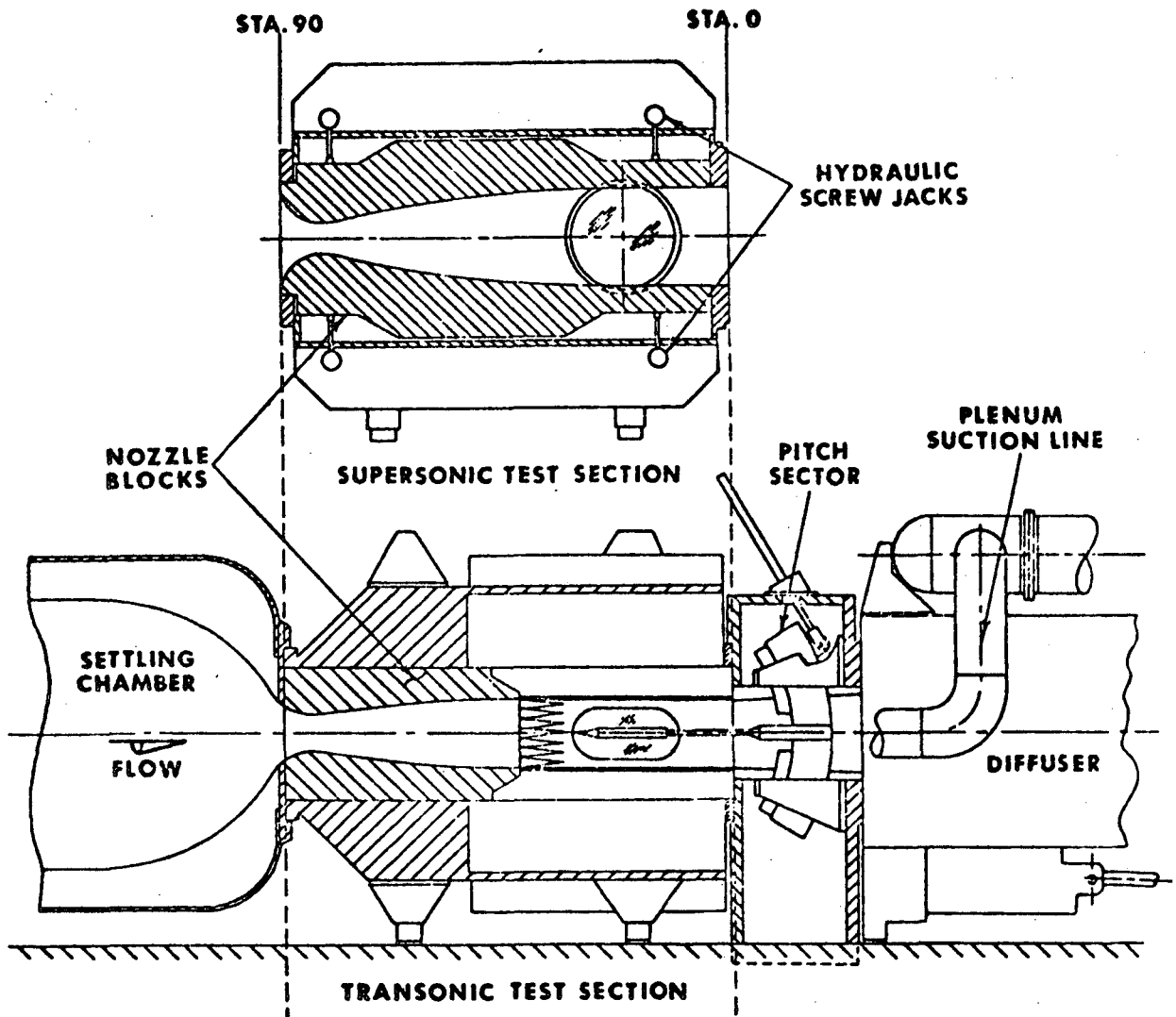


Fig. 2 - Cross Section of the MSFC 14 x 14-Inch Trisonic Wind Tunnel

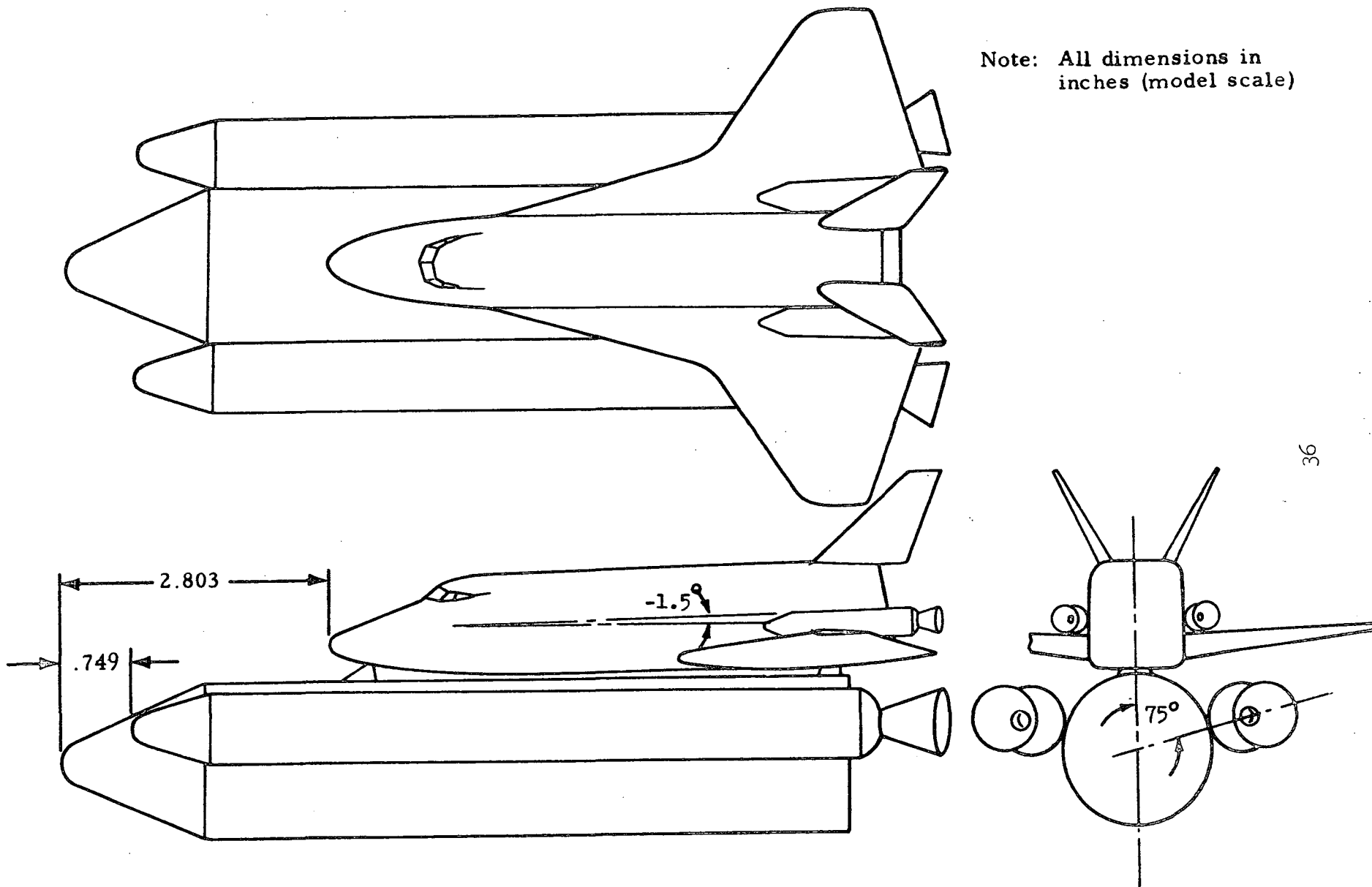


Fig. 3 - Baseline Launch Vehicle

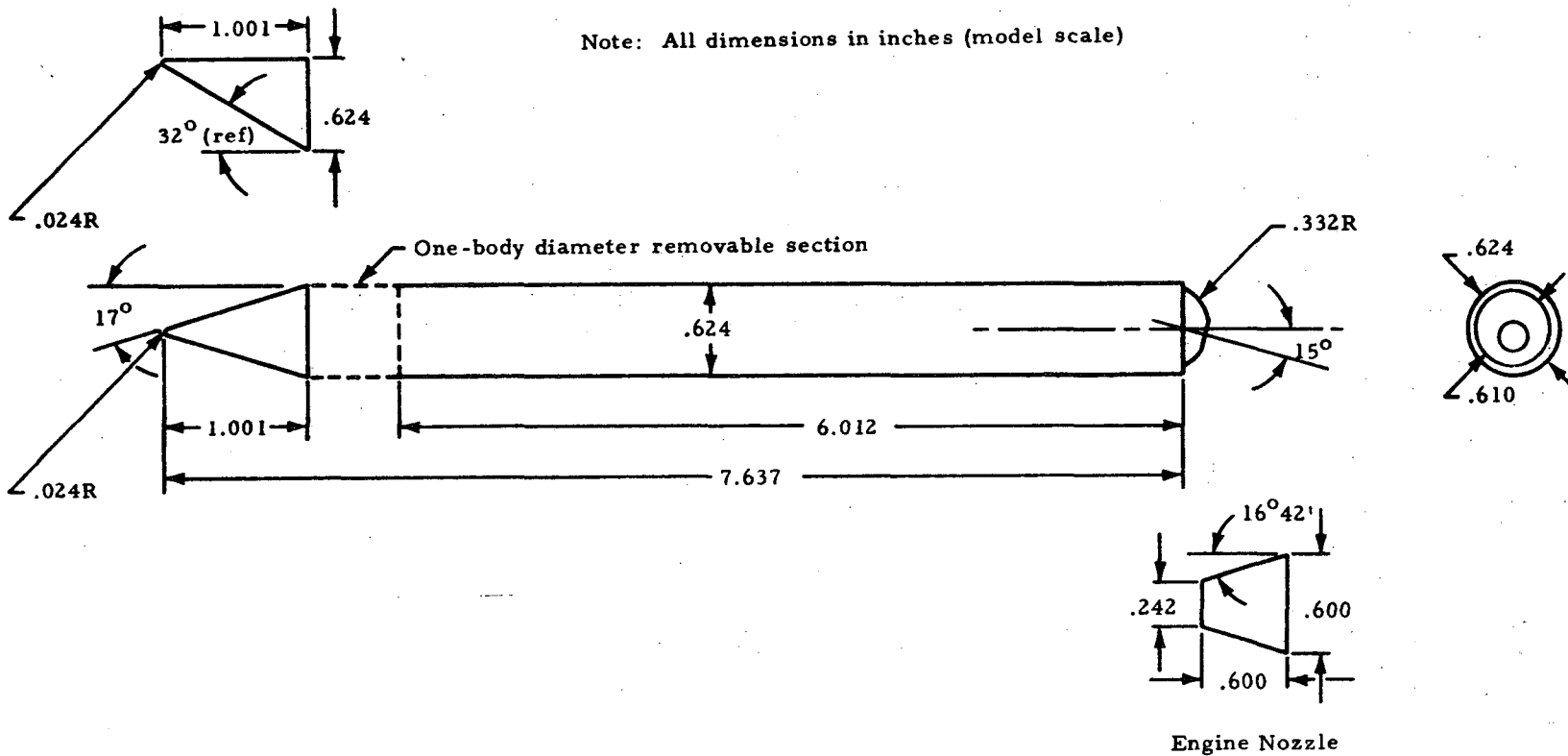


Fig. 4 - 156-Inch Solid Rocket Motor with Standard and Skewed Noses and One-Body Diameter Extension

Note: All dimensions in inches (model scale)

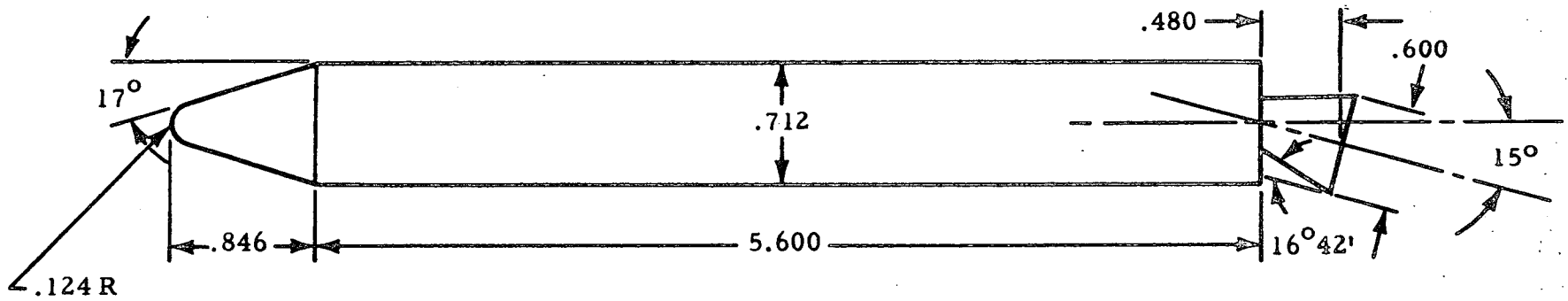


Fig. 5 - 178-Inch Solid Rocket Motor

Note: All dimensions in inches (model scale)

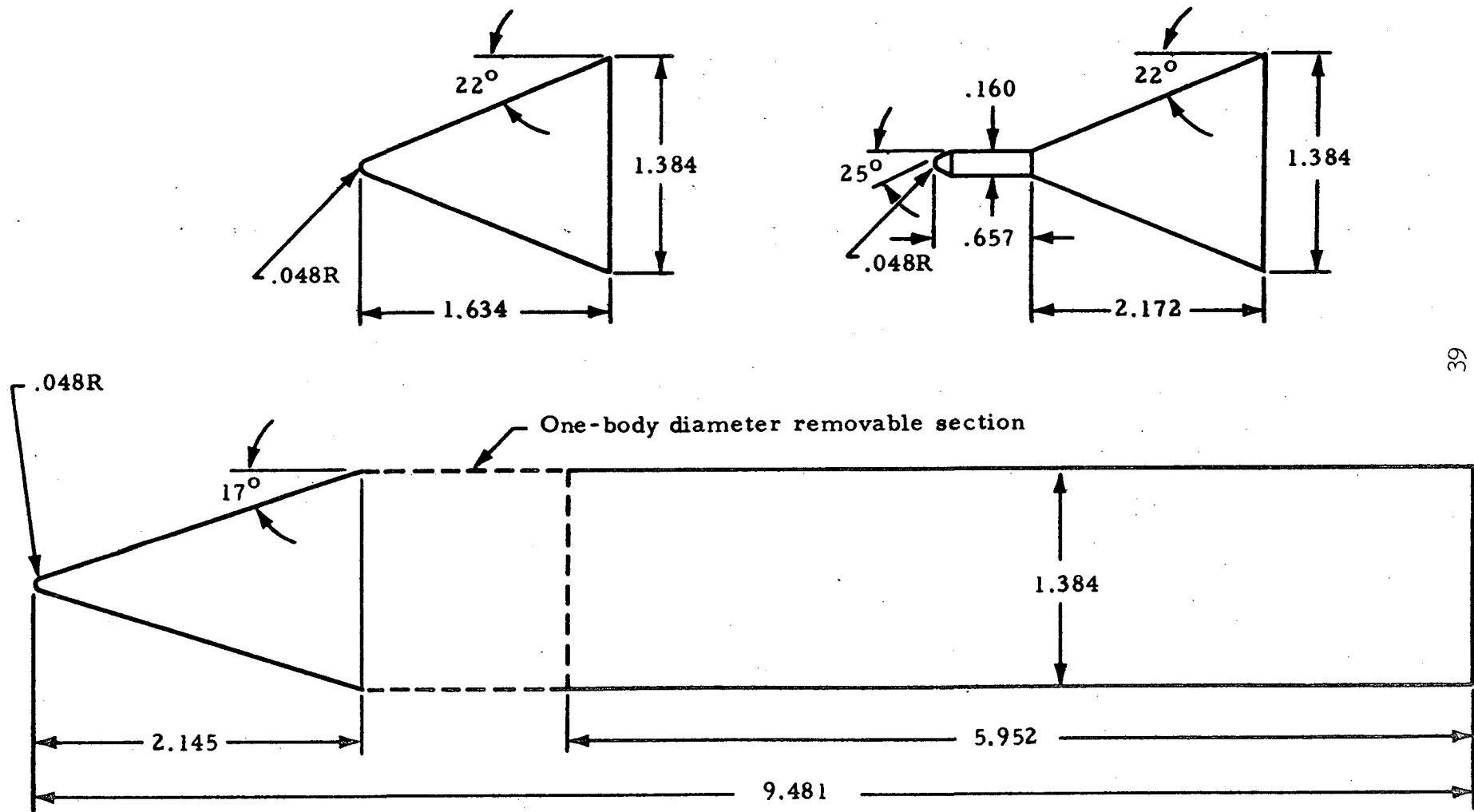


Fig. 6- 346-Inch HO Tank with Three Alternate Noses and One-Body Diameter Extension



Note: All dimensions in inches (model scale)

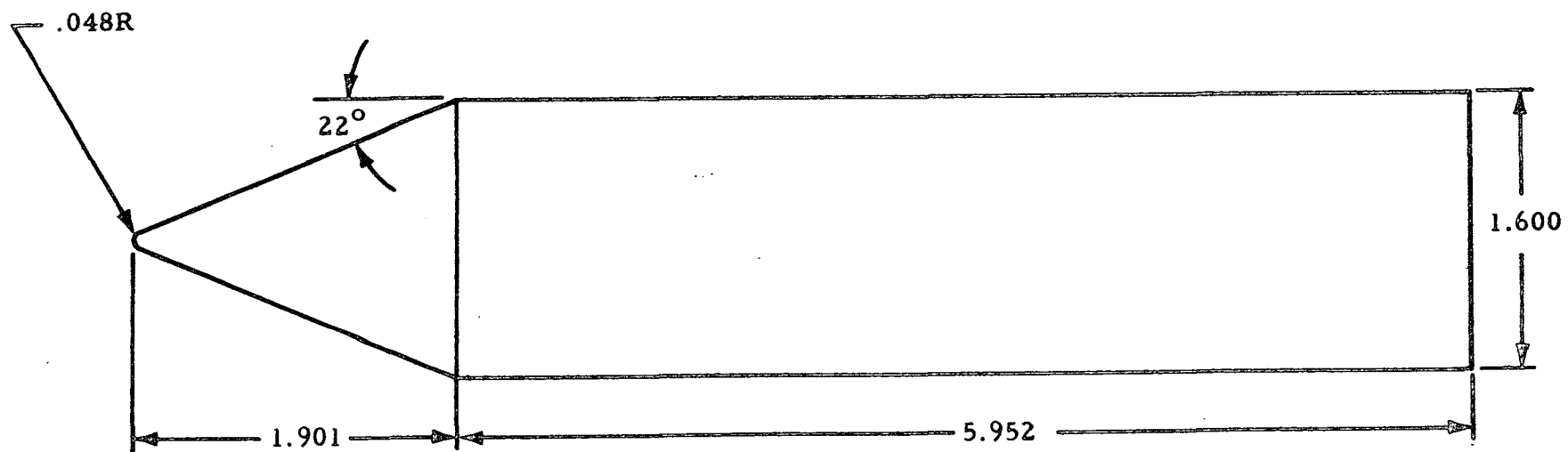
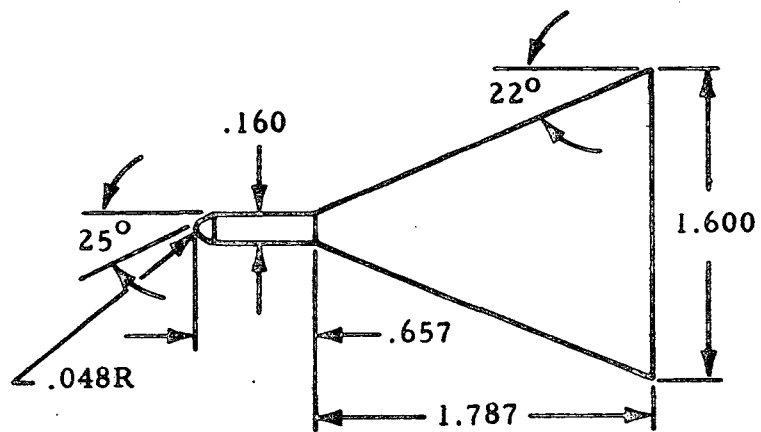


Fig. 7 - 400-Inch HO Tank with Two Alternate Noses

Note: All dimensions in inches (model scale)

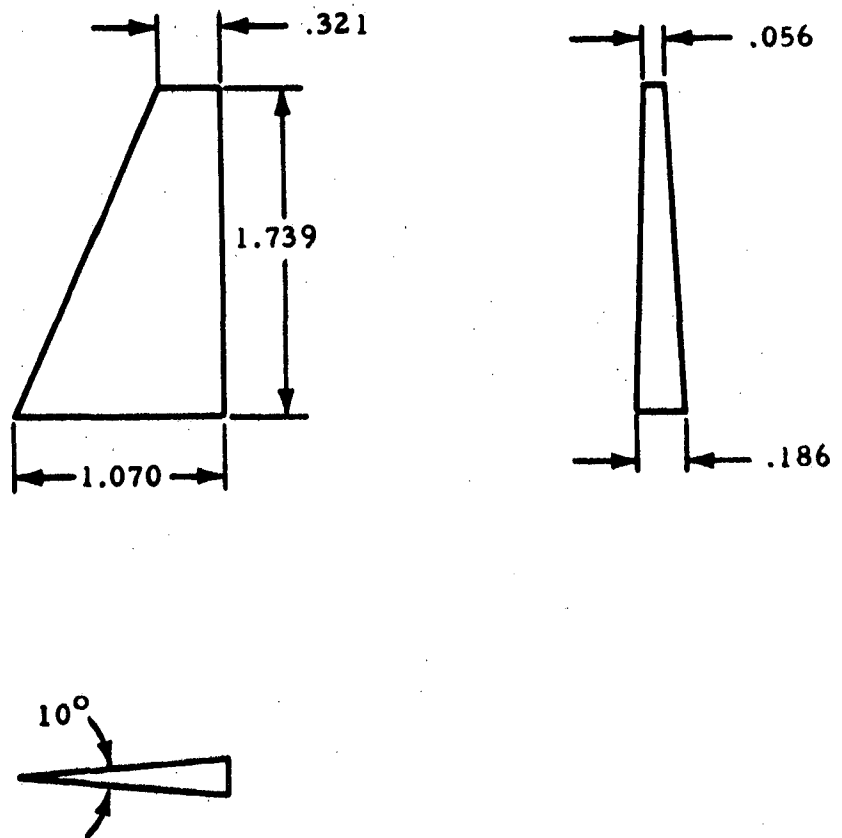


Fig. 8 - HO Tank Ventral Fin

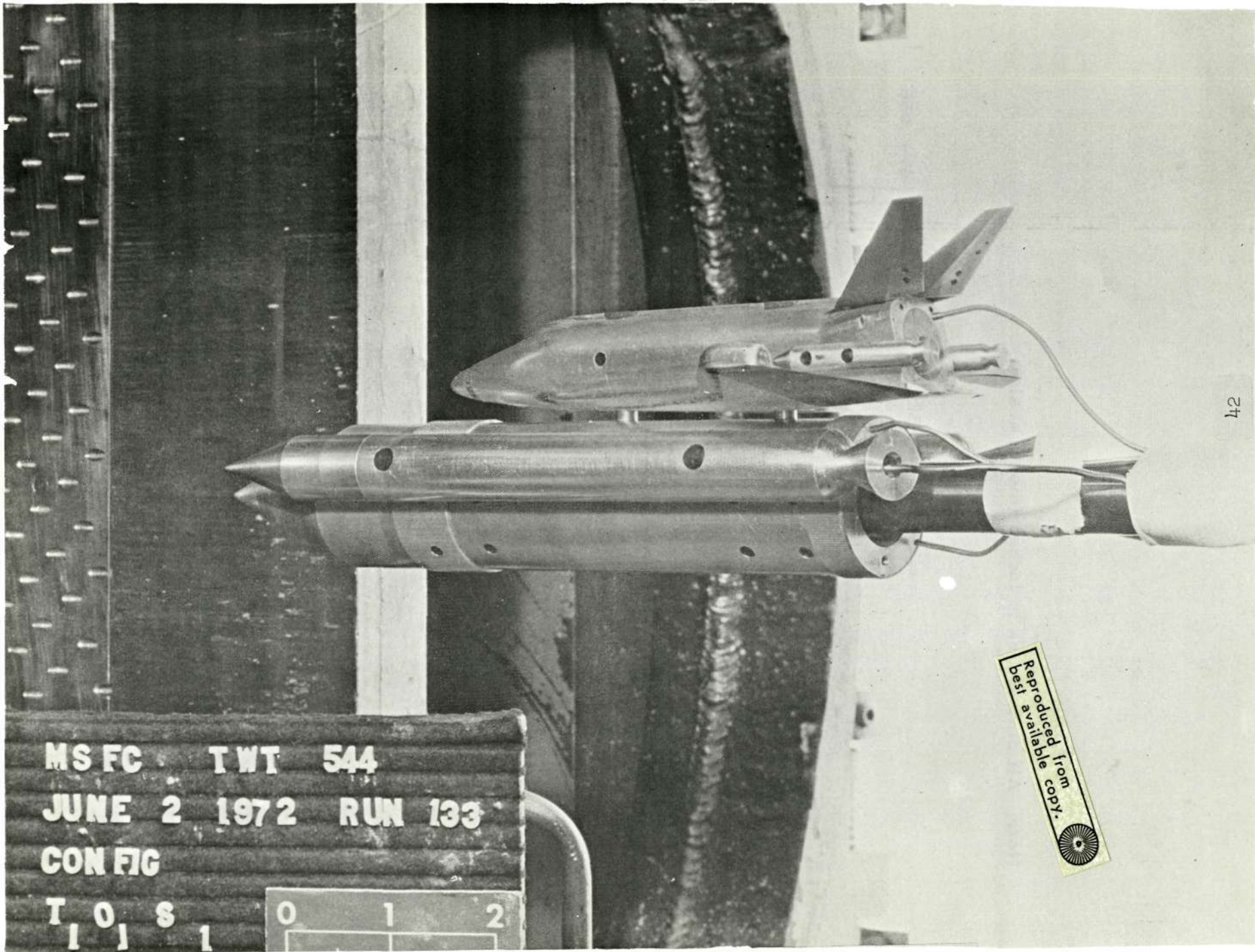


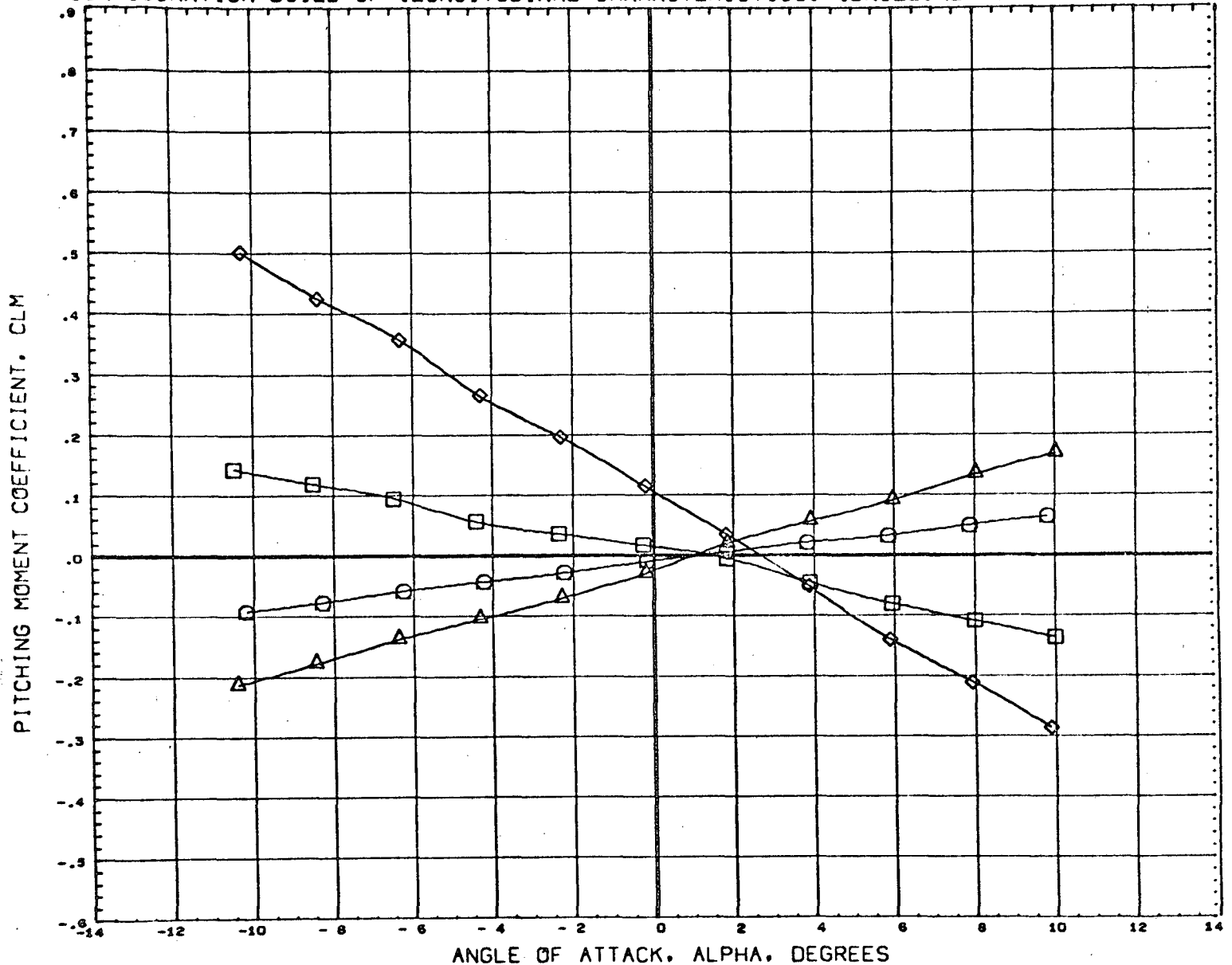
FIGURE 9. PHOTOGRAPH OF OBLIQUE SIDE VIEW OF CONFIGURATION T<sub>1</sub>O<sub>1</sub>S<sub>1</sub>

D A T A   F I G U R E S

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Tabulations of the plotted data and corresponding source data are available from SADSAC Operations.

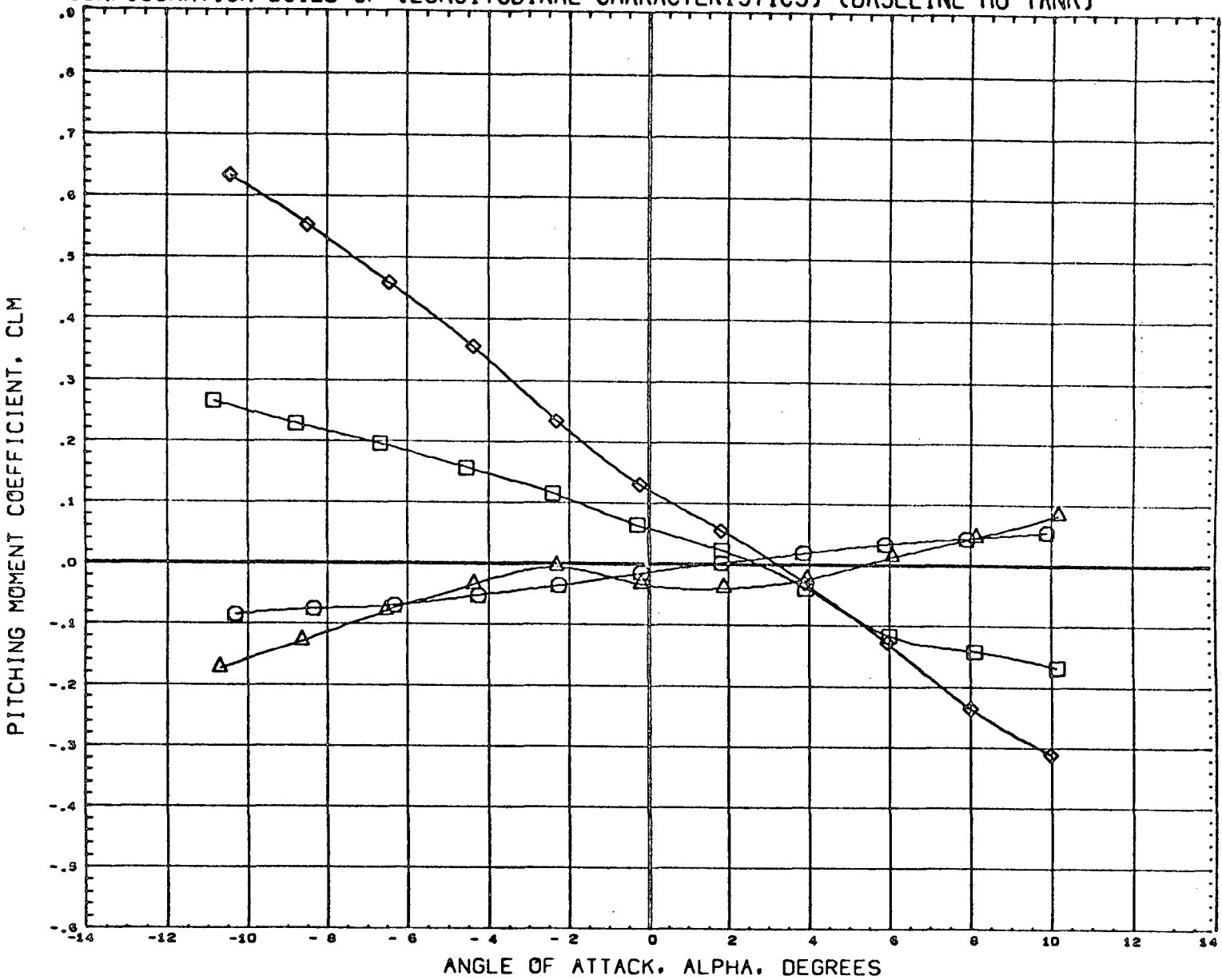
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8800 SQ. IN
(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4800 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .60

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE NO TANK)



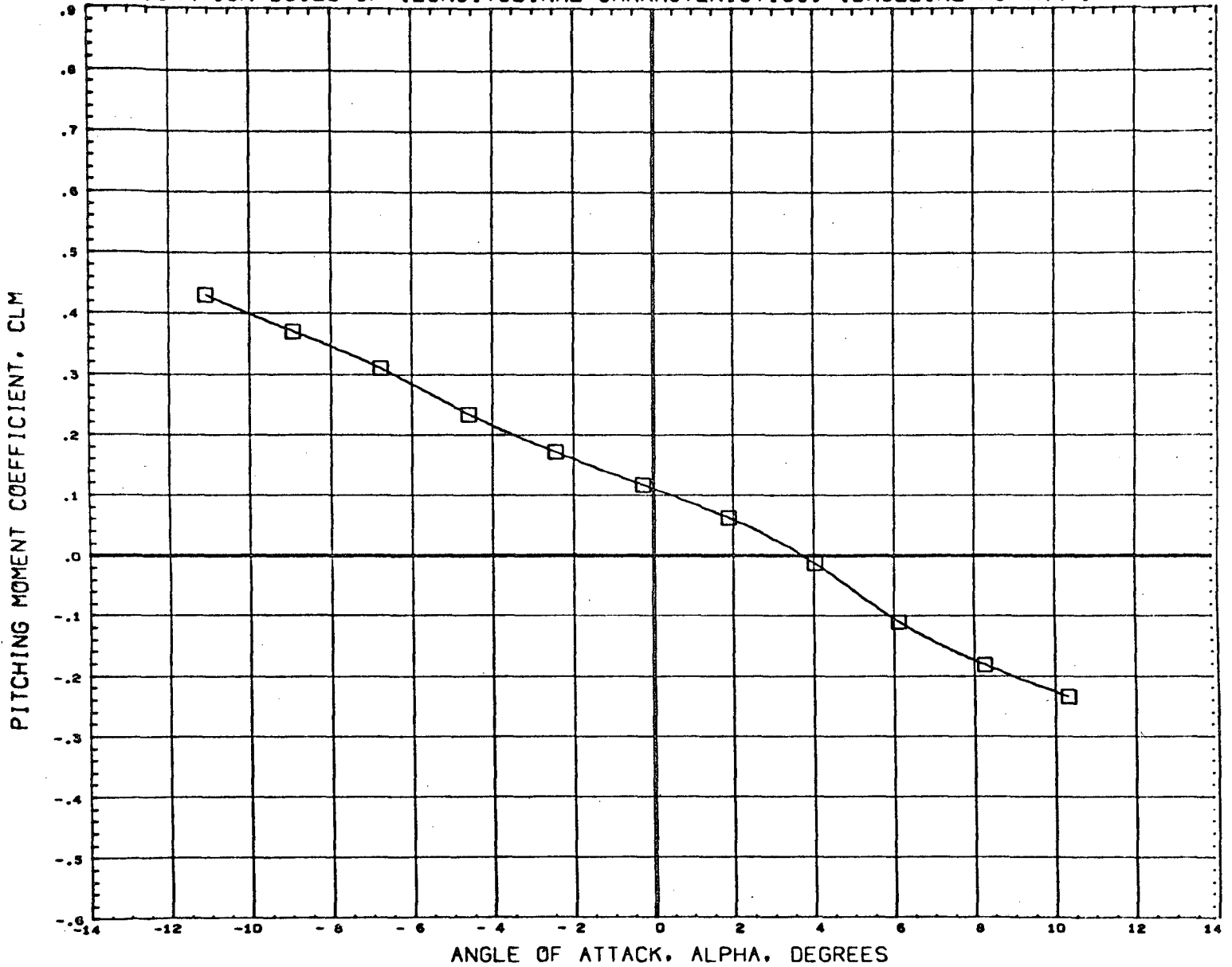
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(871080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8800 SQ. IN
(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2460 IN.
							SCALE 0.0040 SCALE

MACH .91

PAGE 2

F<sub>r</sub>

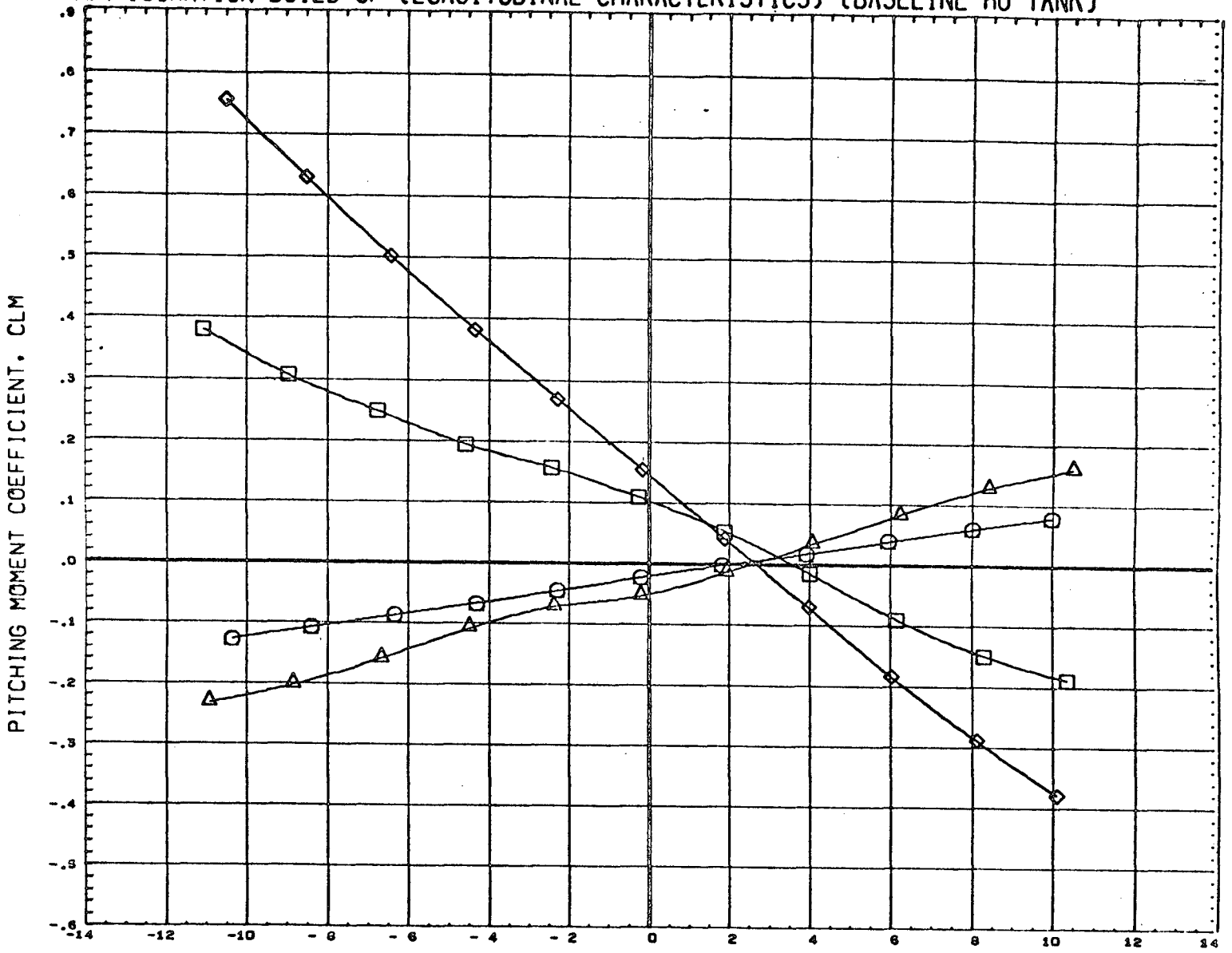
CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8600 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS				0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)

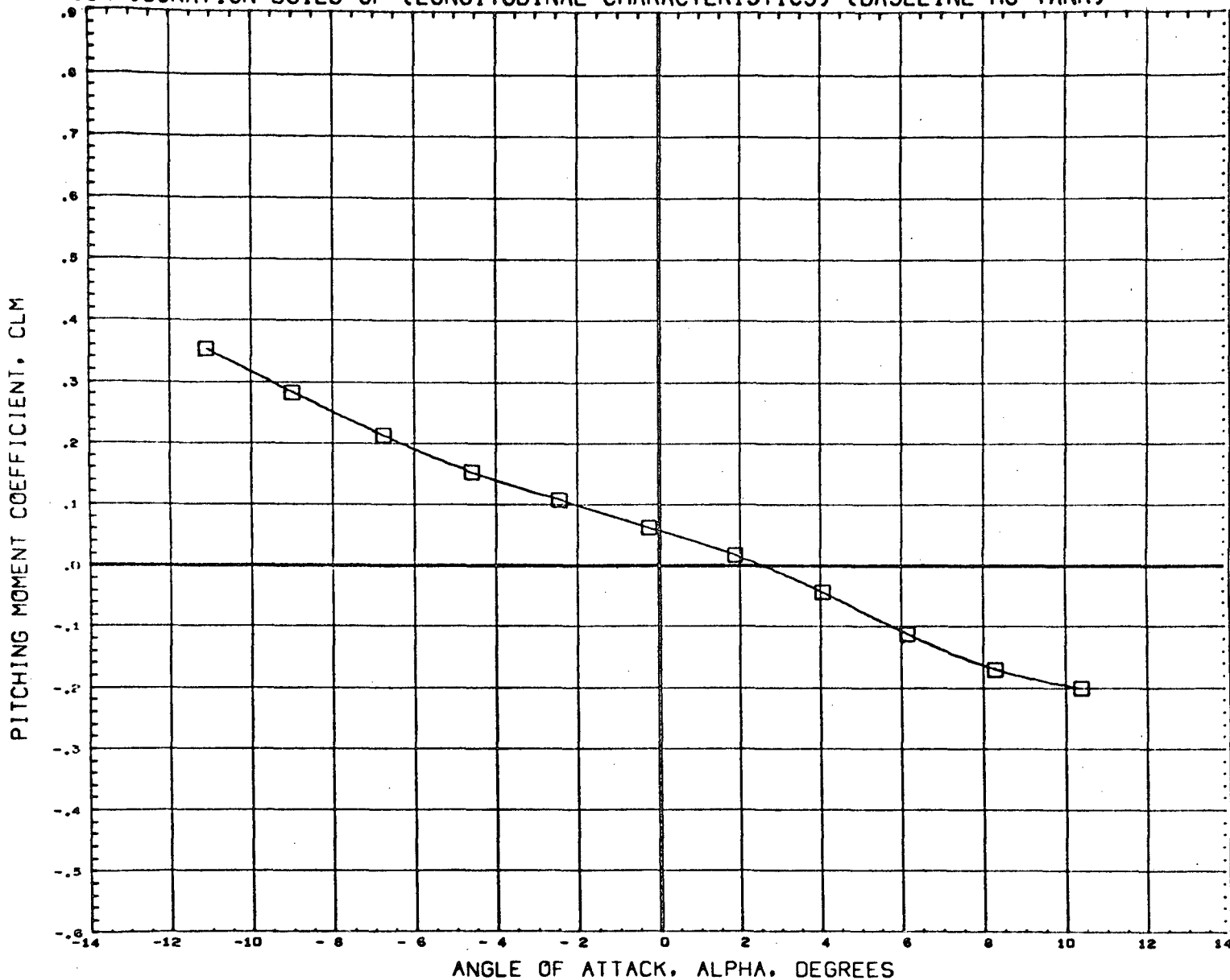


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



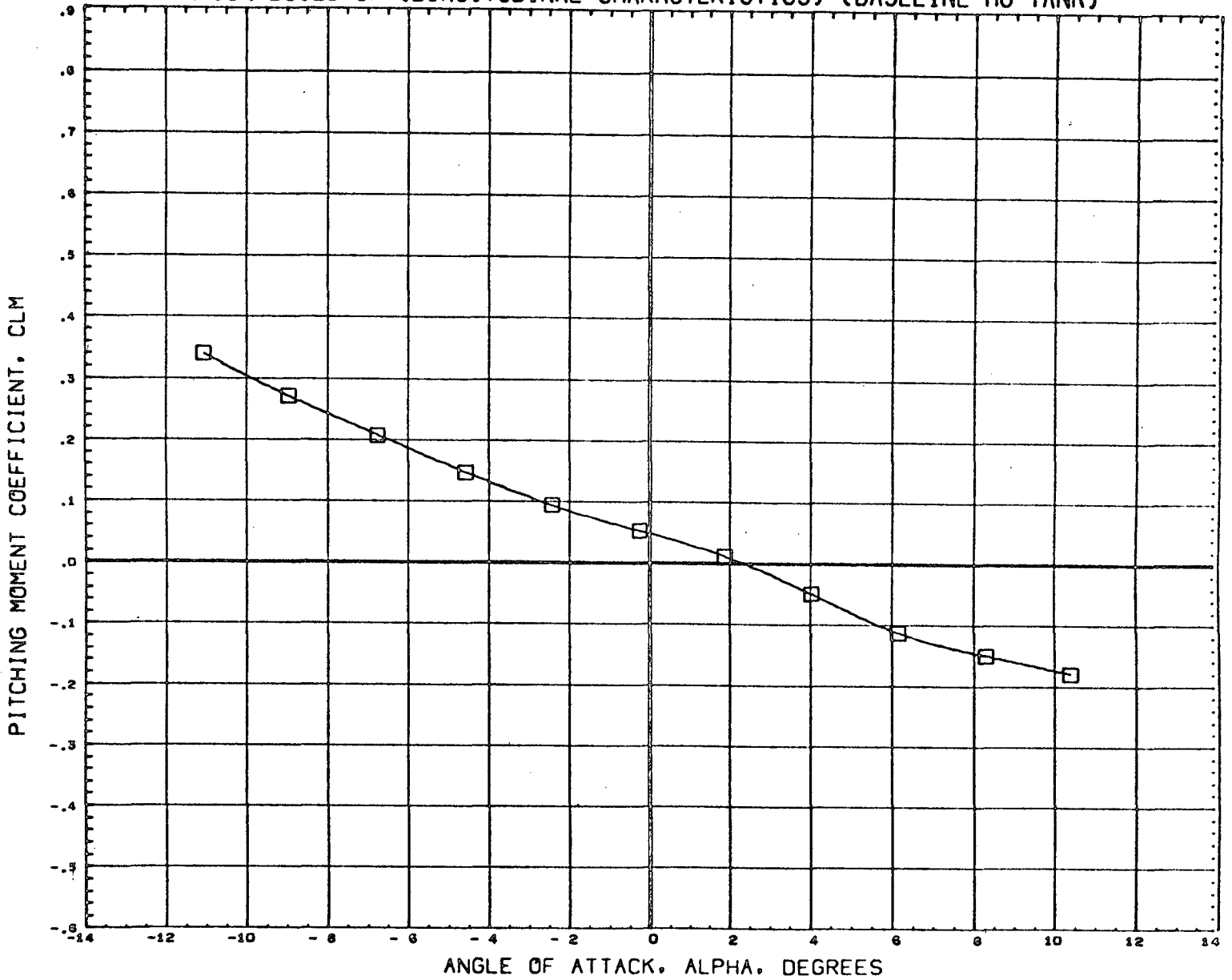
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8800 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

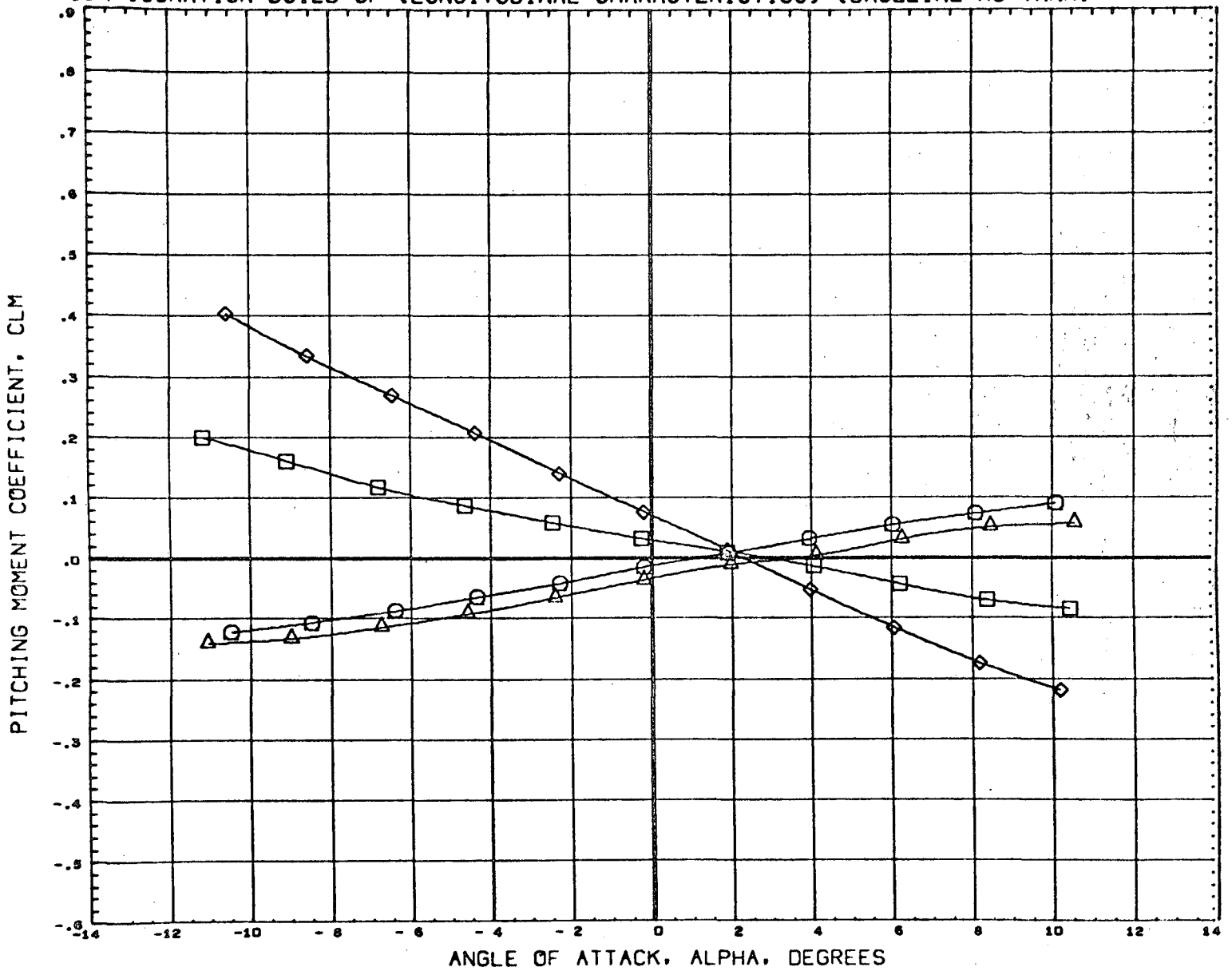


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS					LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(B71002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.45

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



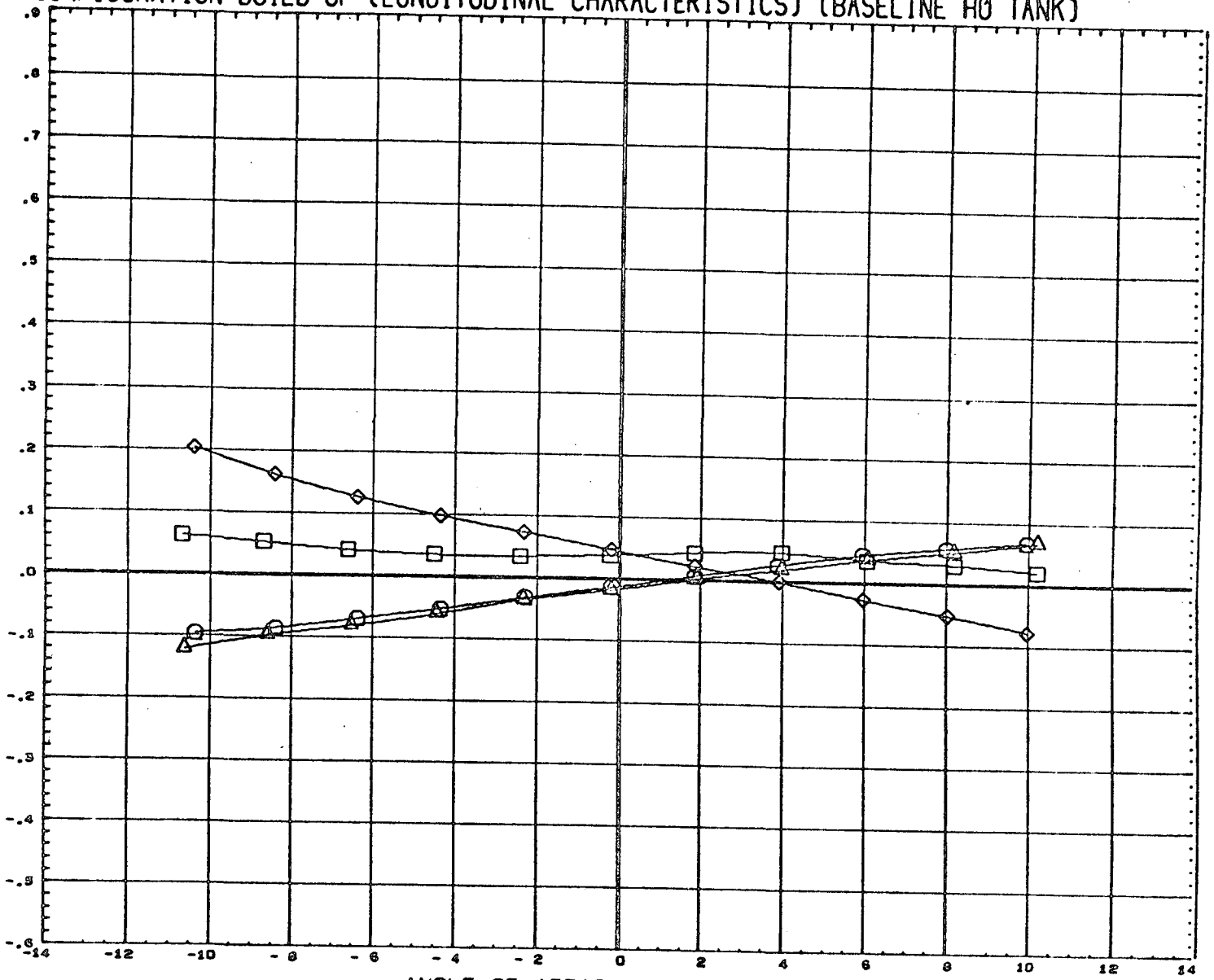
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(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.94

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)

PITCHING MOMENT COEFFICIENT, CLM



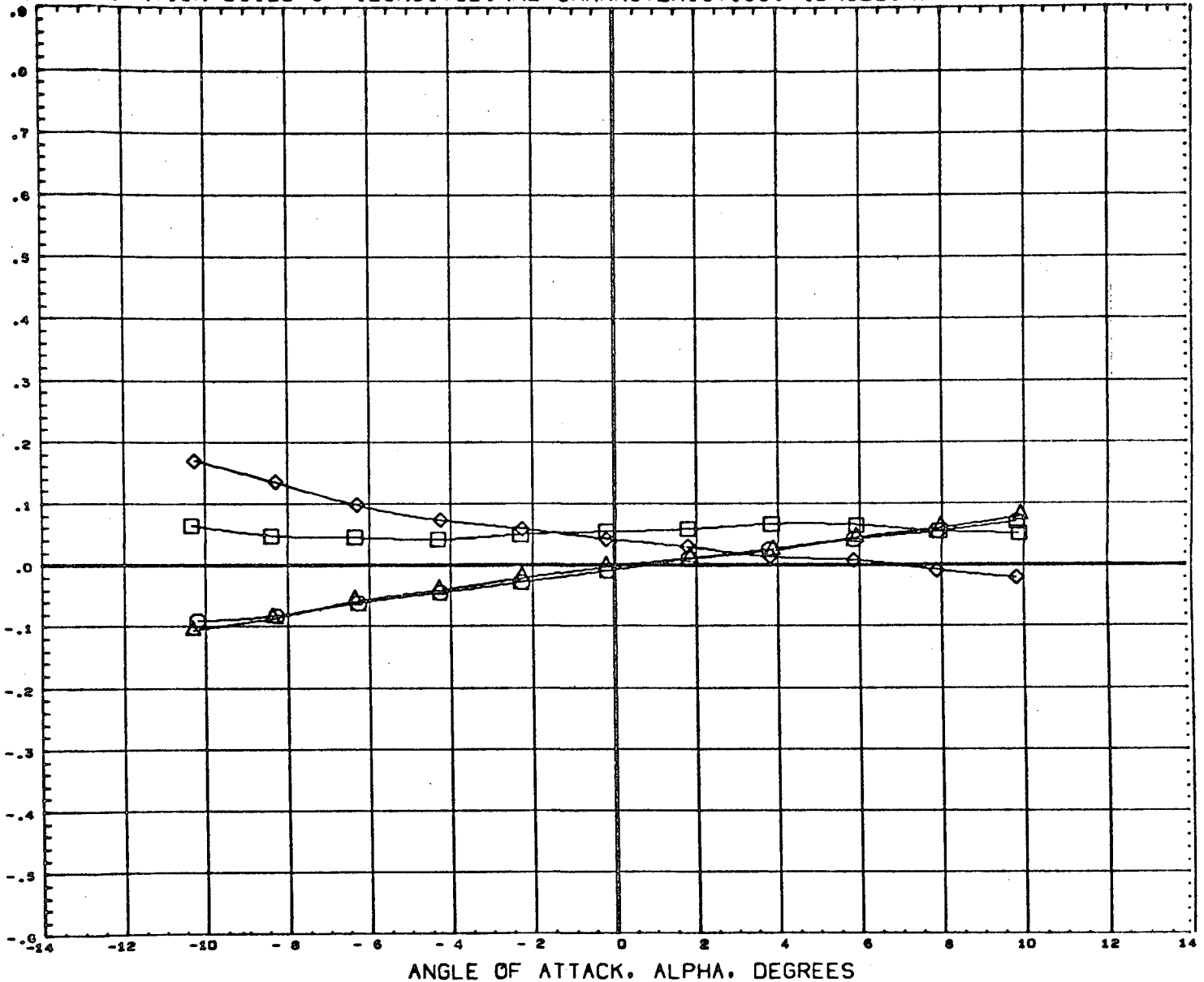
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 3.48

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

PITCHING MOMENT COEFFICIENT, CLM

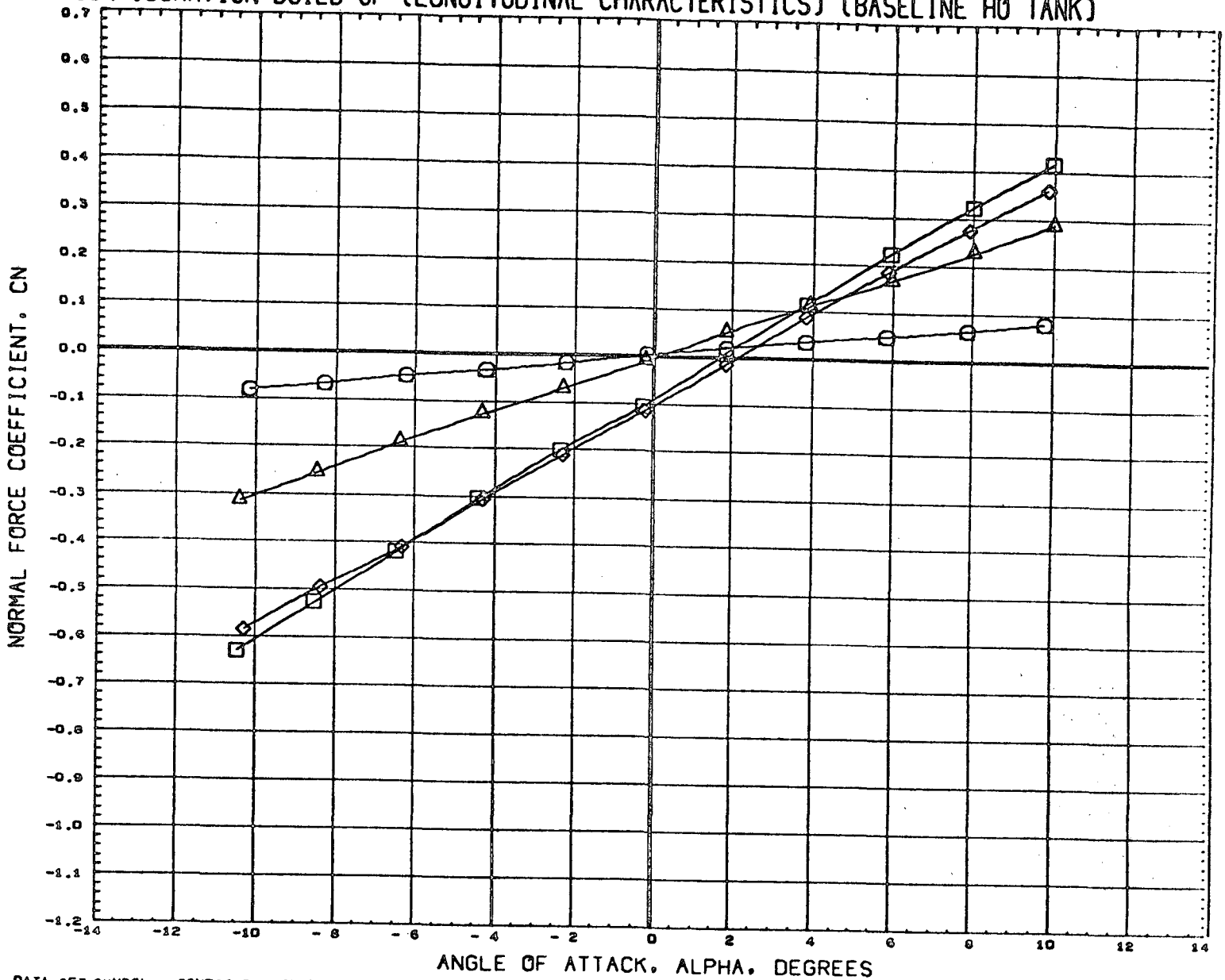


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(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000	0.000	LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500				BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

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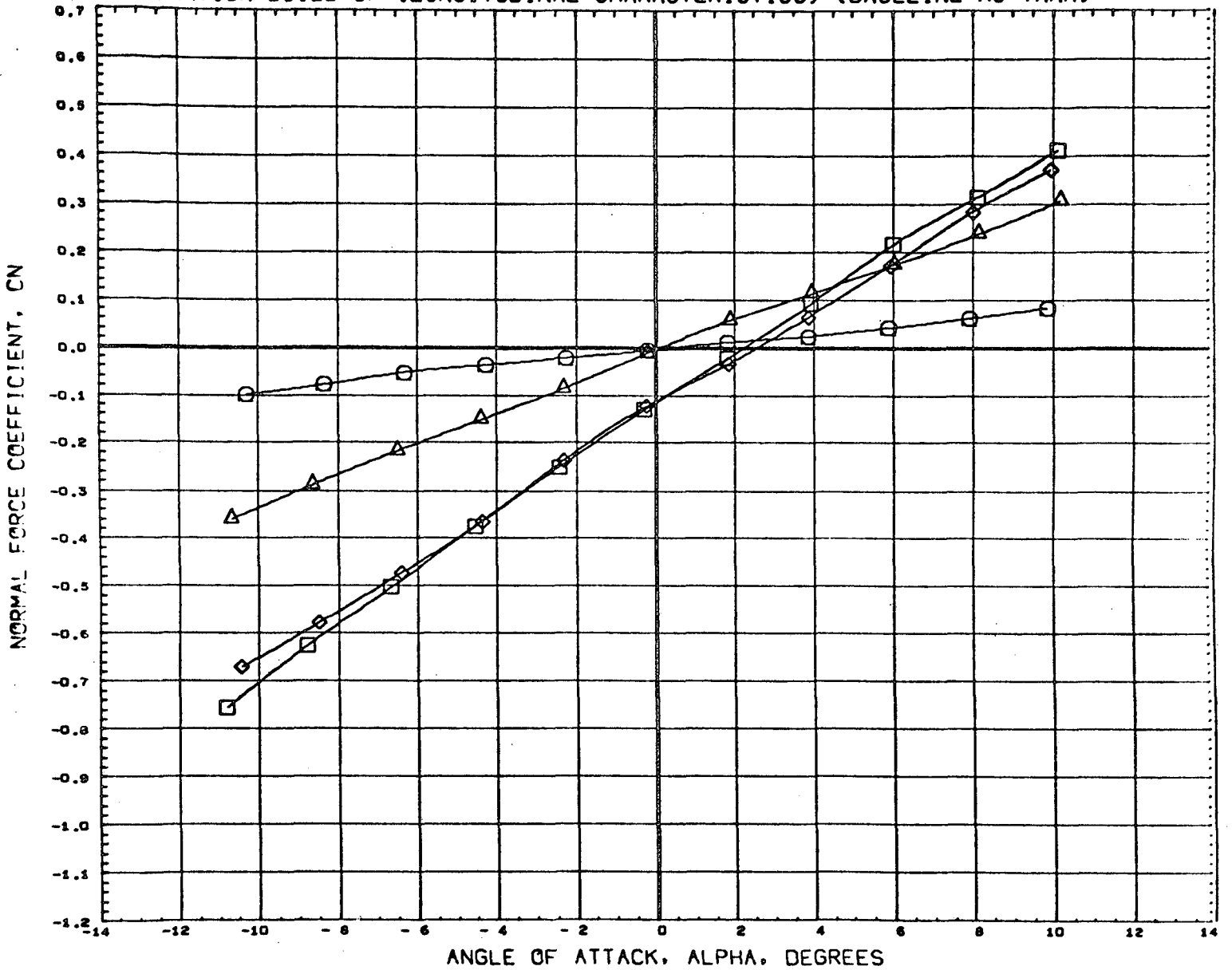
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



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(871080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8600 SQ. IN
(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1					LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

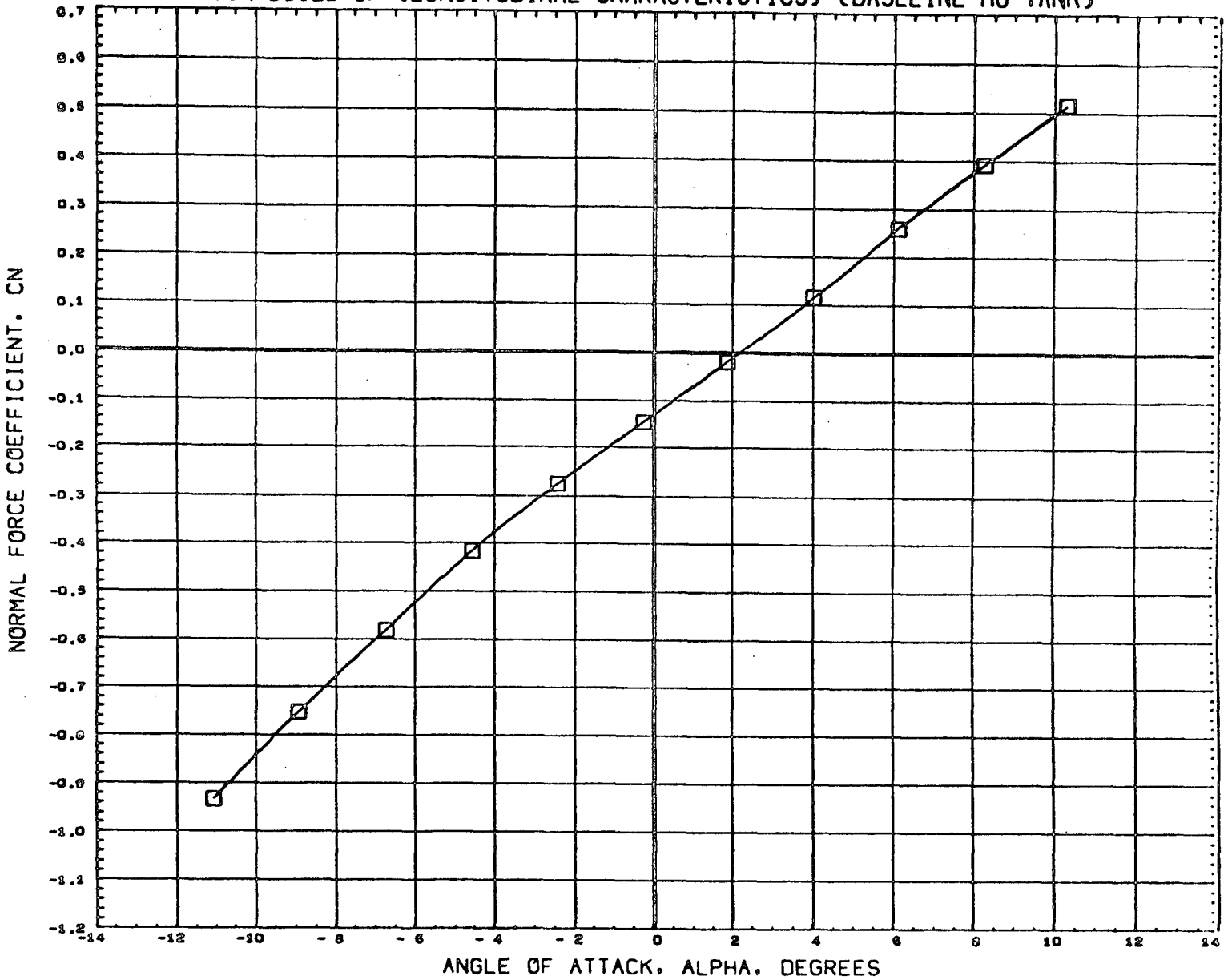
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1C1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1C1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .91

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

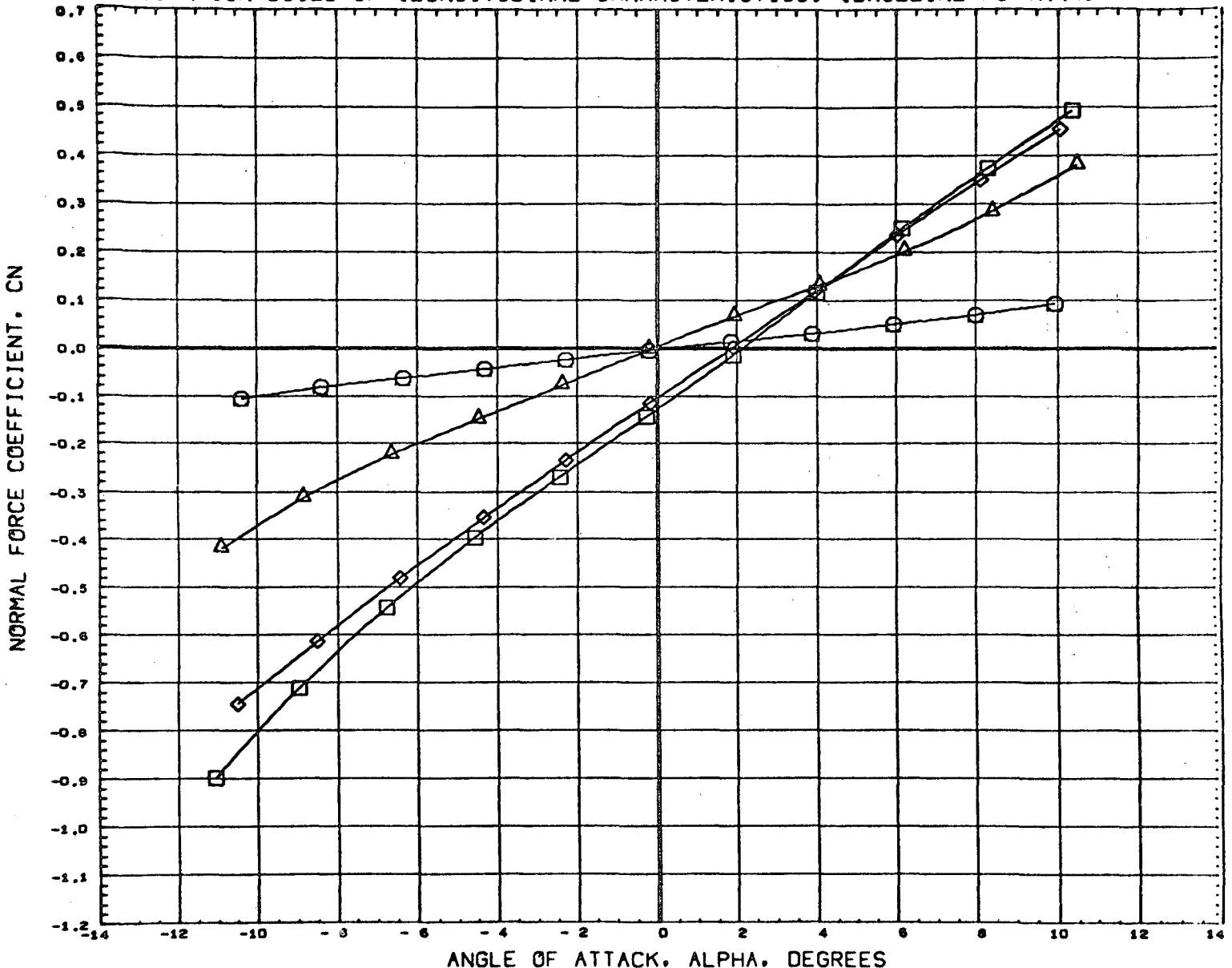


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(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(B71002)	MSFC TWT 944 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
		-1.500	75.000	0.000	0.000	YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10



# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



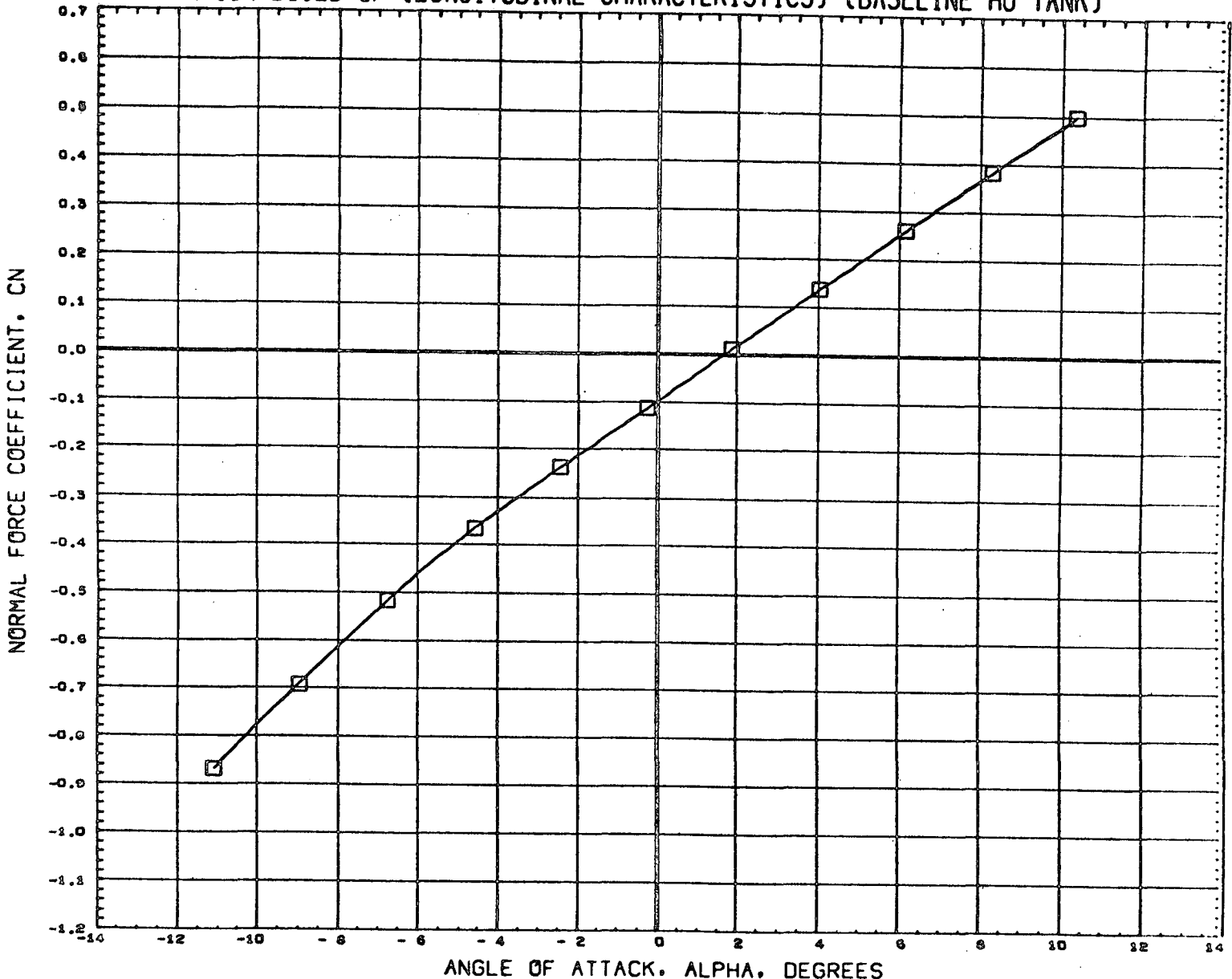
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT INC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

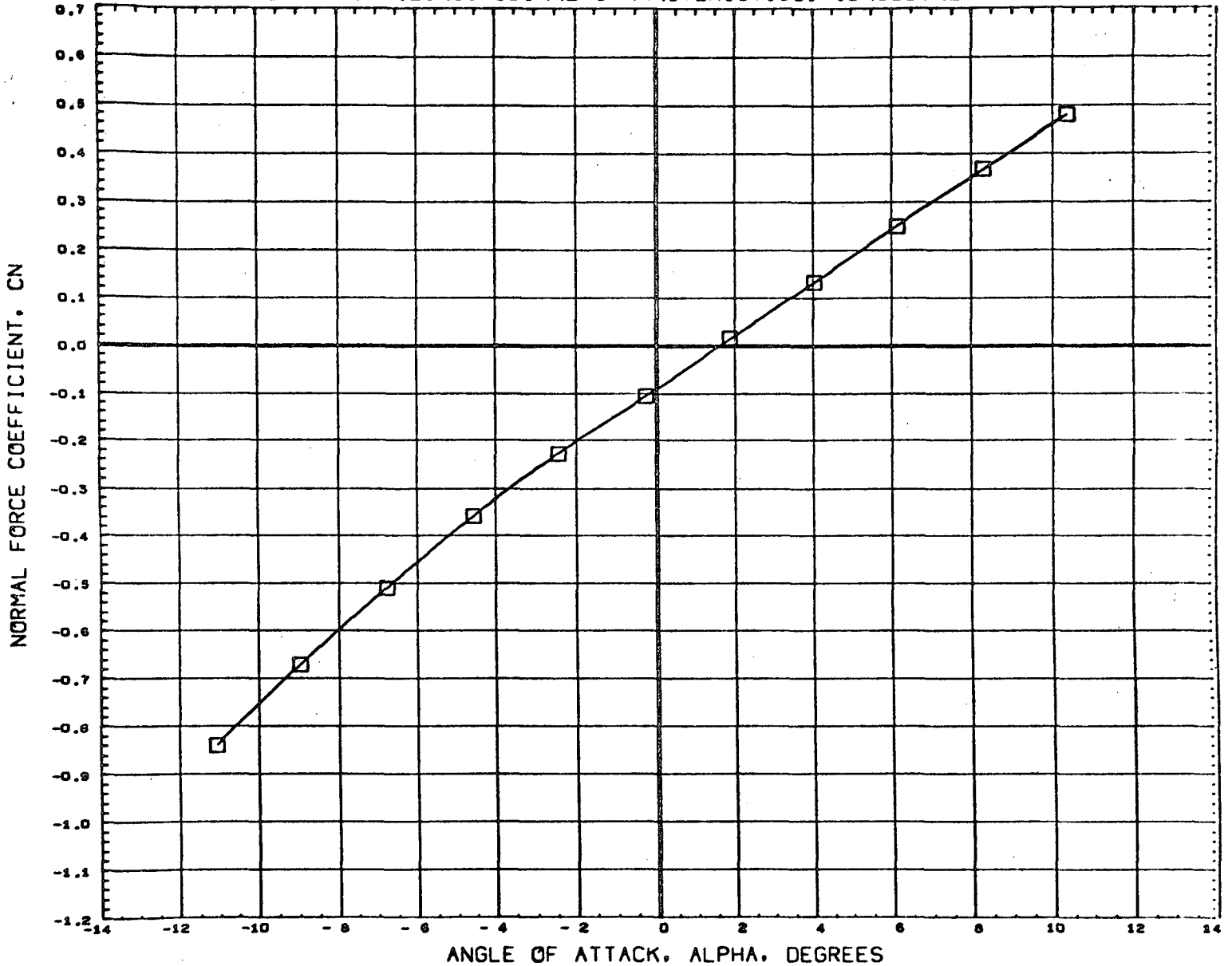


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(871072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(871002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2490 IN.
						SCALE 0.0040 SCALE

MACH 1.30

C2

CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(871070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0280 IN.
(871072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

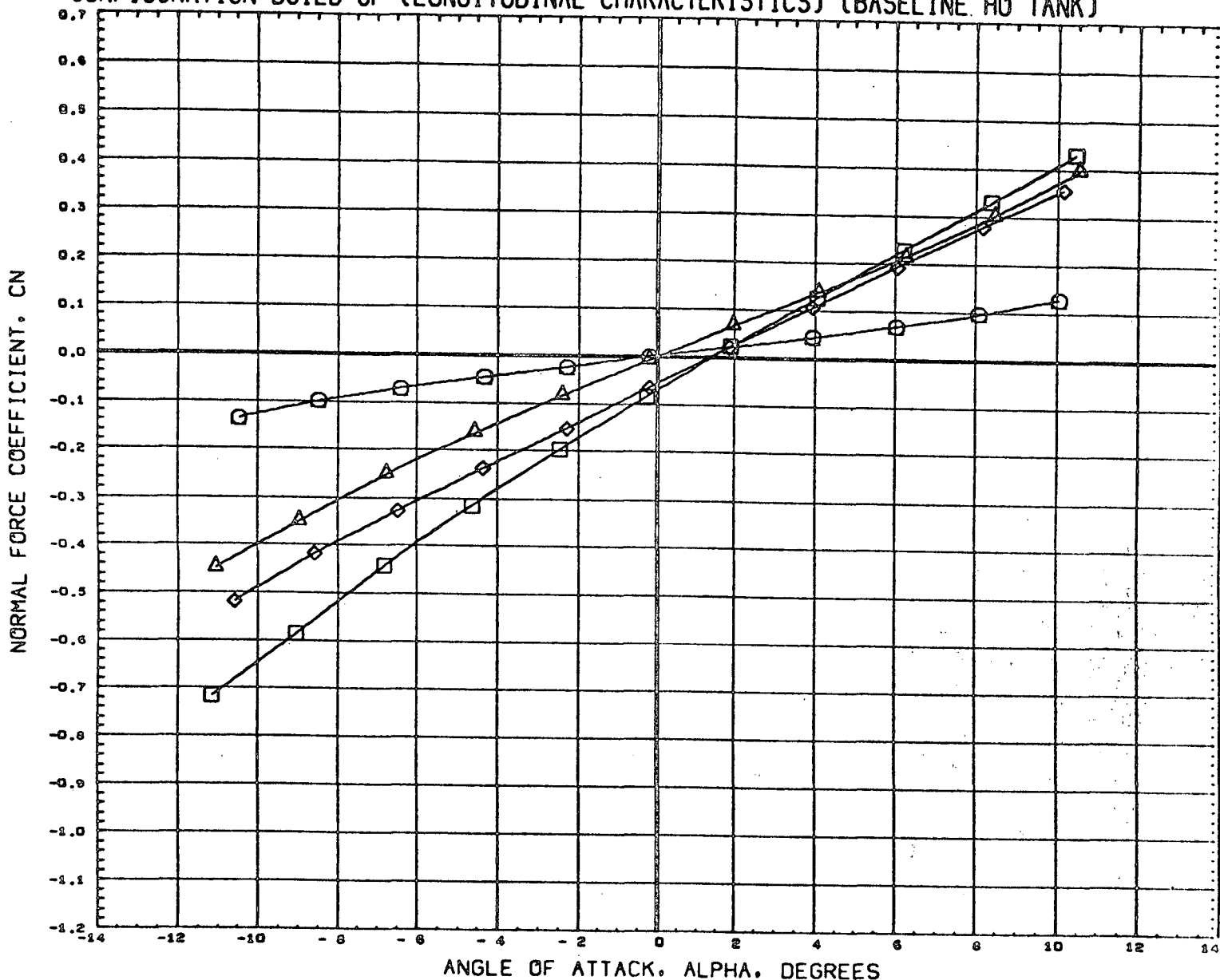
MACH

1.45

PAGE

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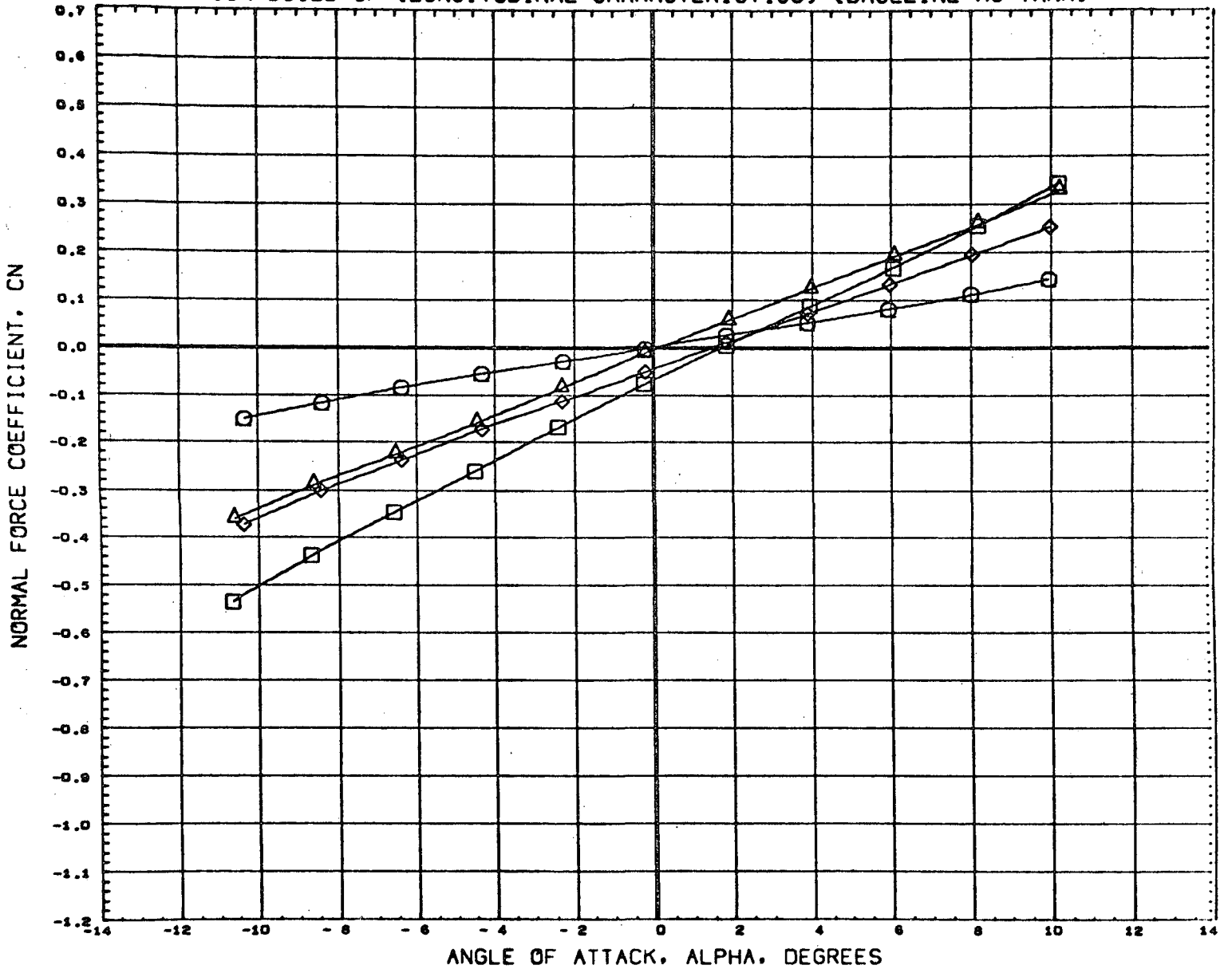
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8800 SQ. IN
(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.94

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

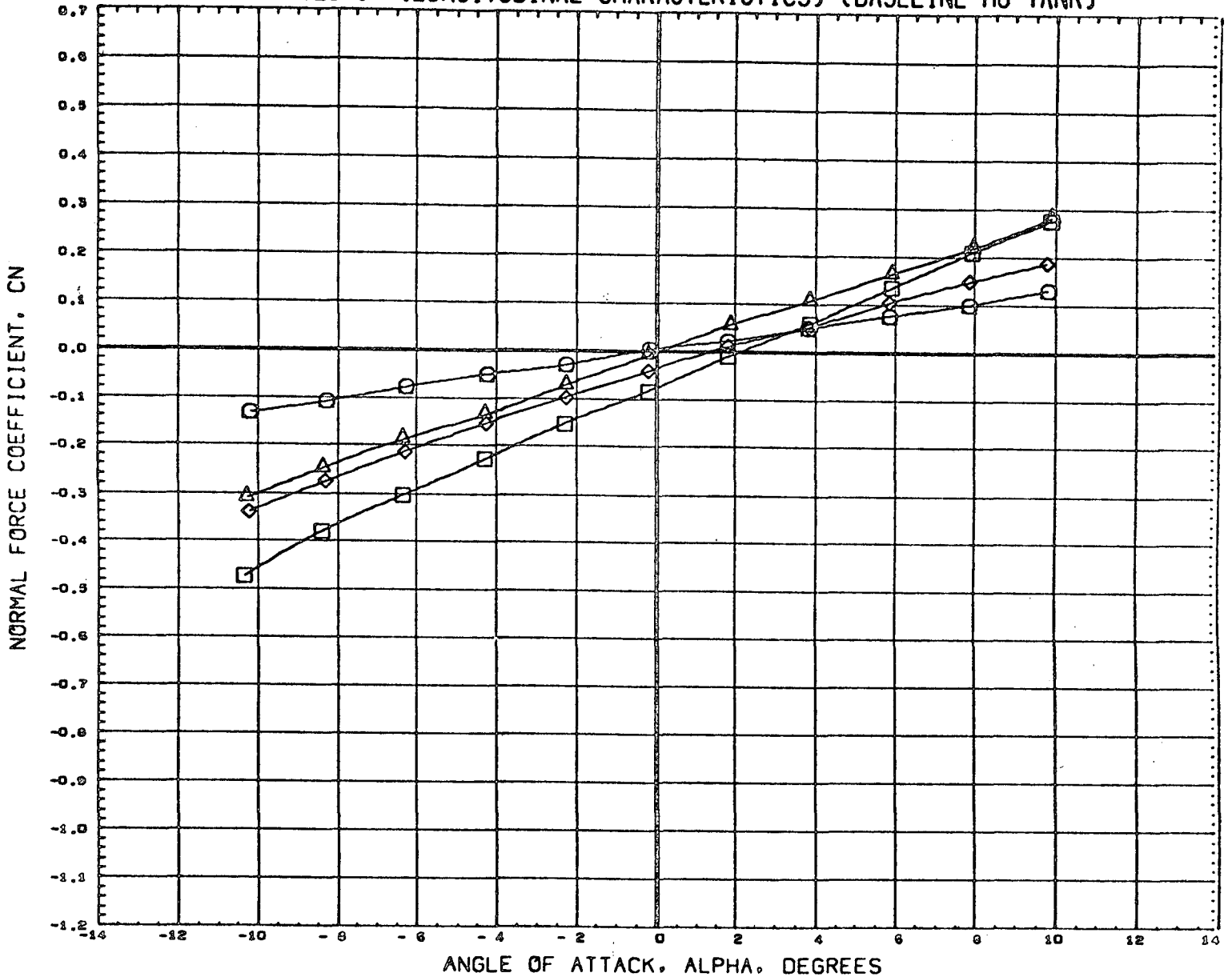


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000	0.000	LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 3.48

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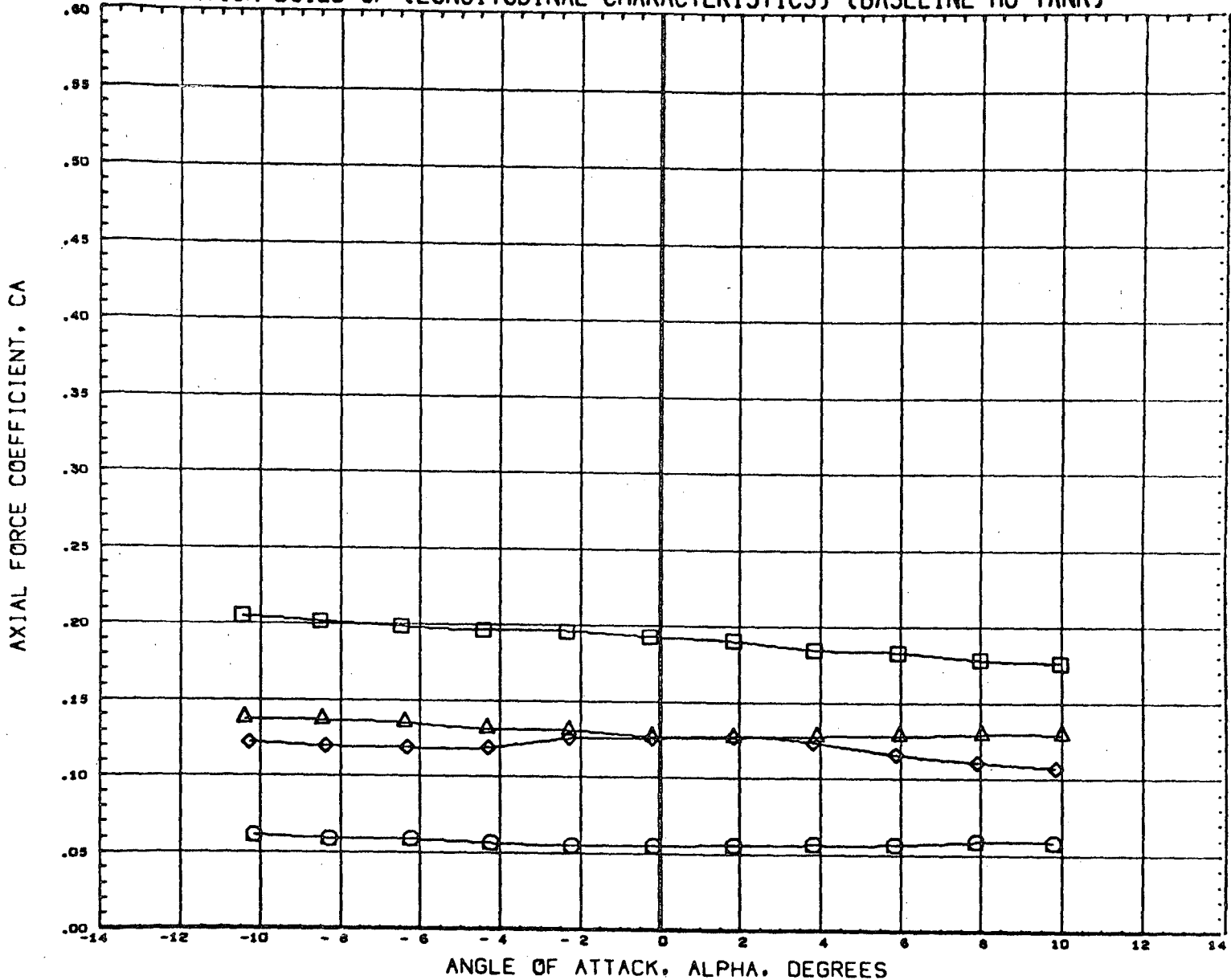
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1		75.000	0.000		SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1					LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)



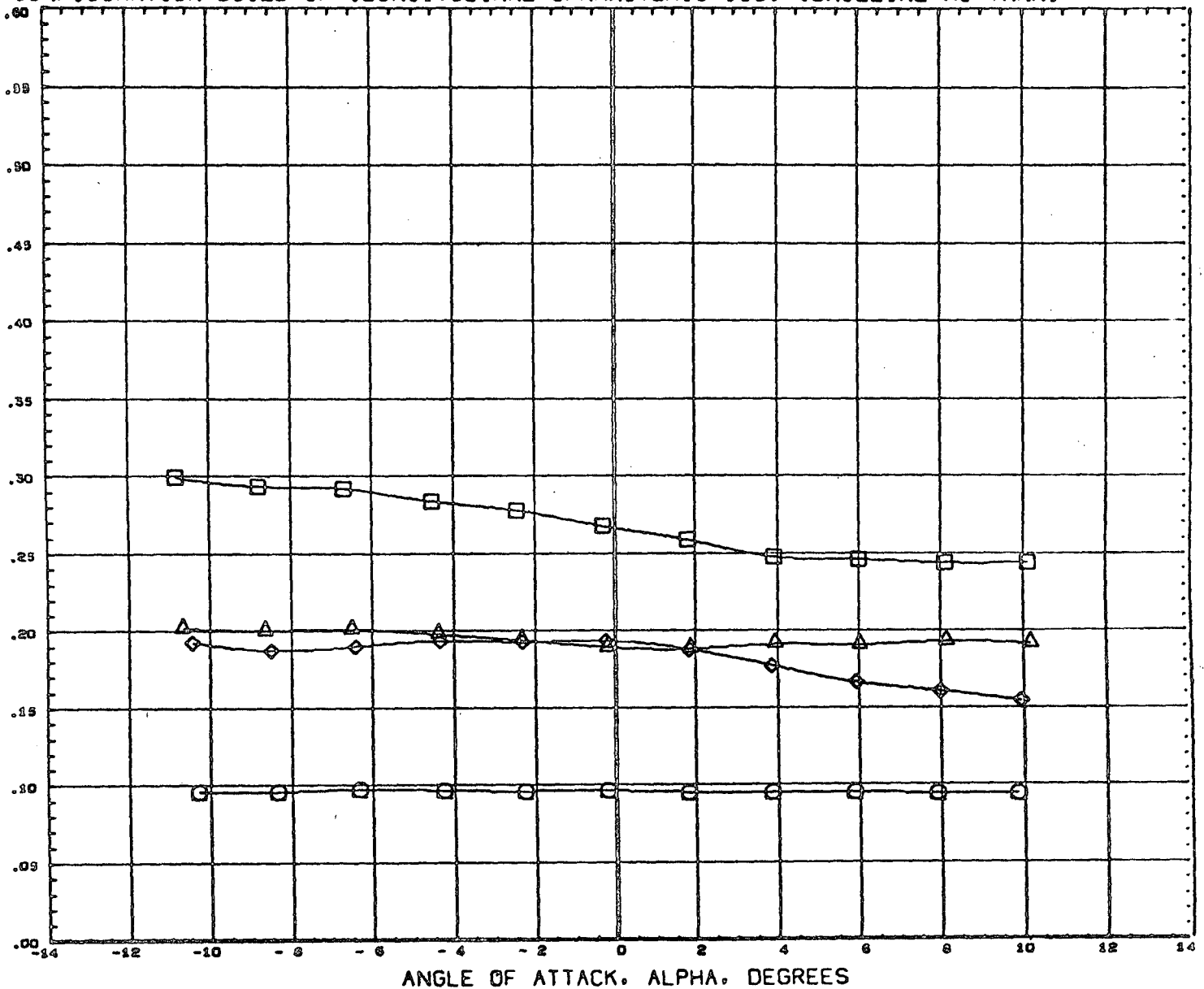
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0290 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4800 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

AXIAL FORCE COEFFICIENT, CA



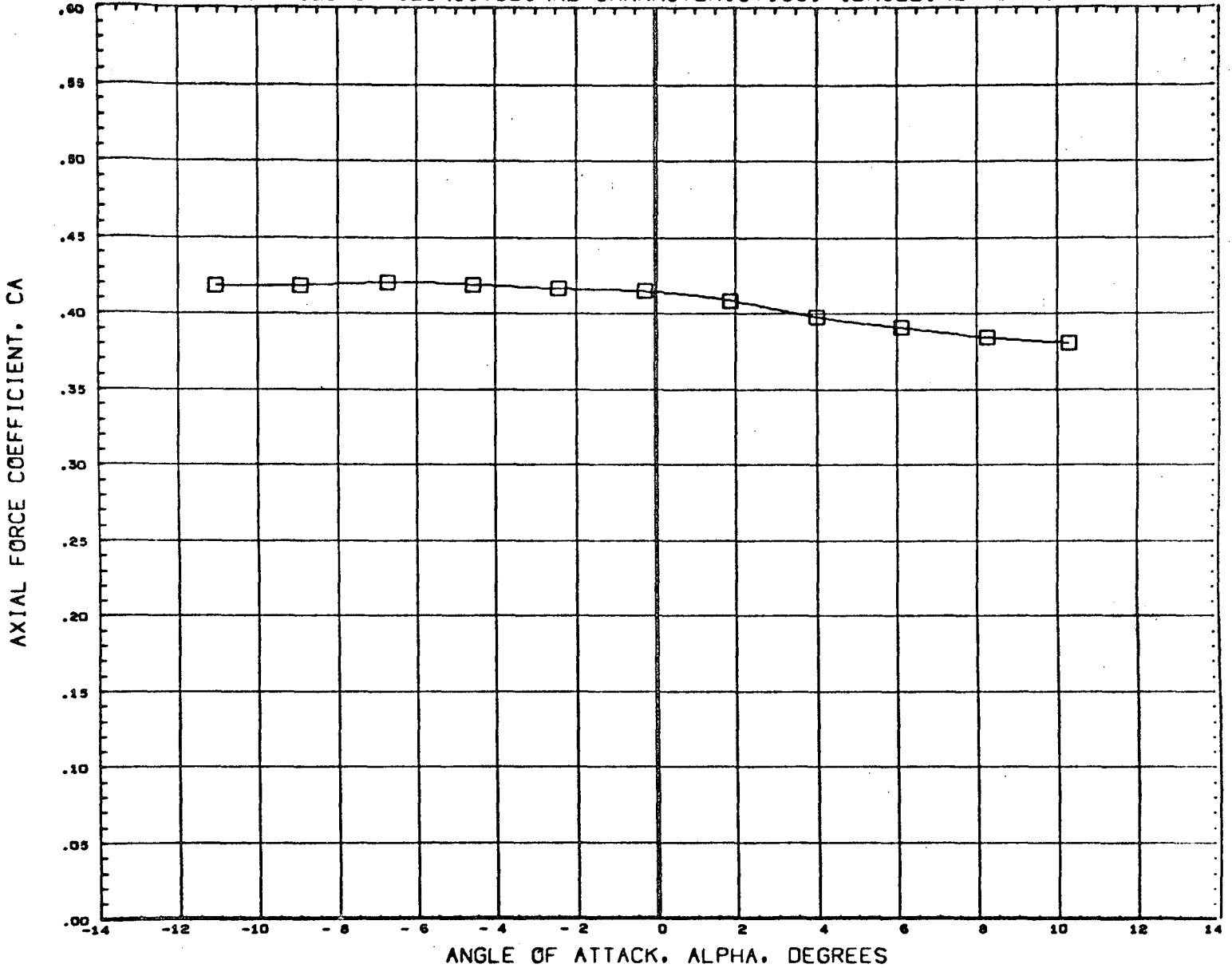
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4800 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .91

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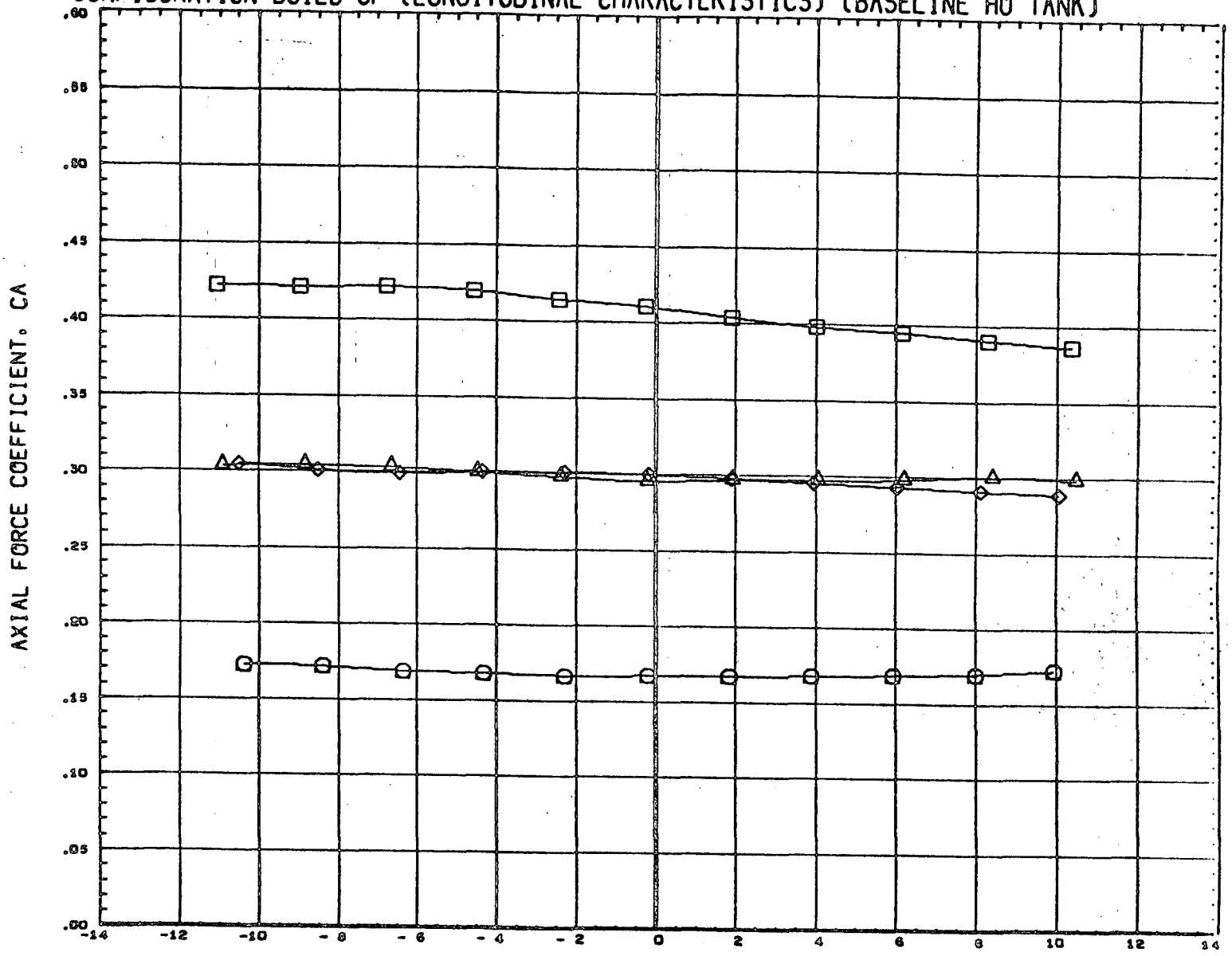
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8600 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

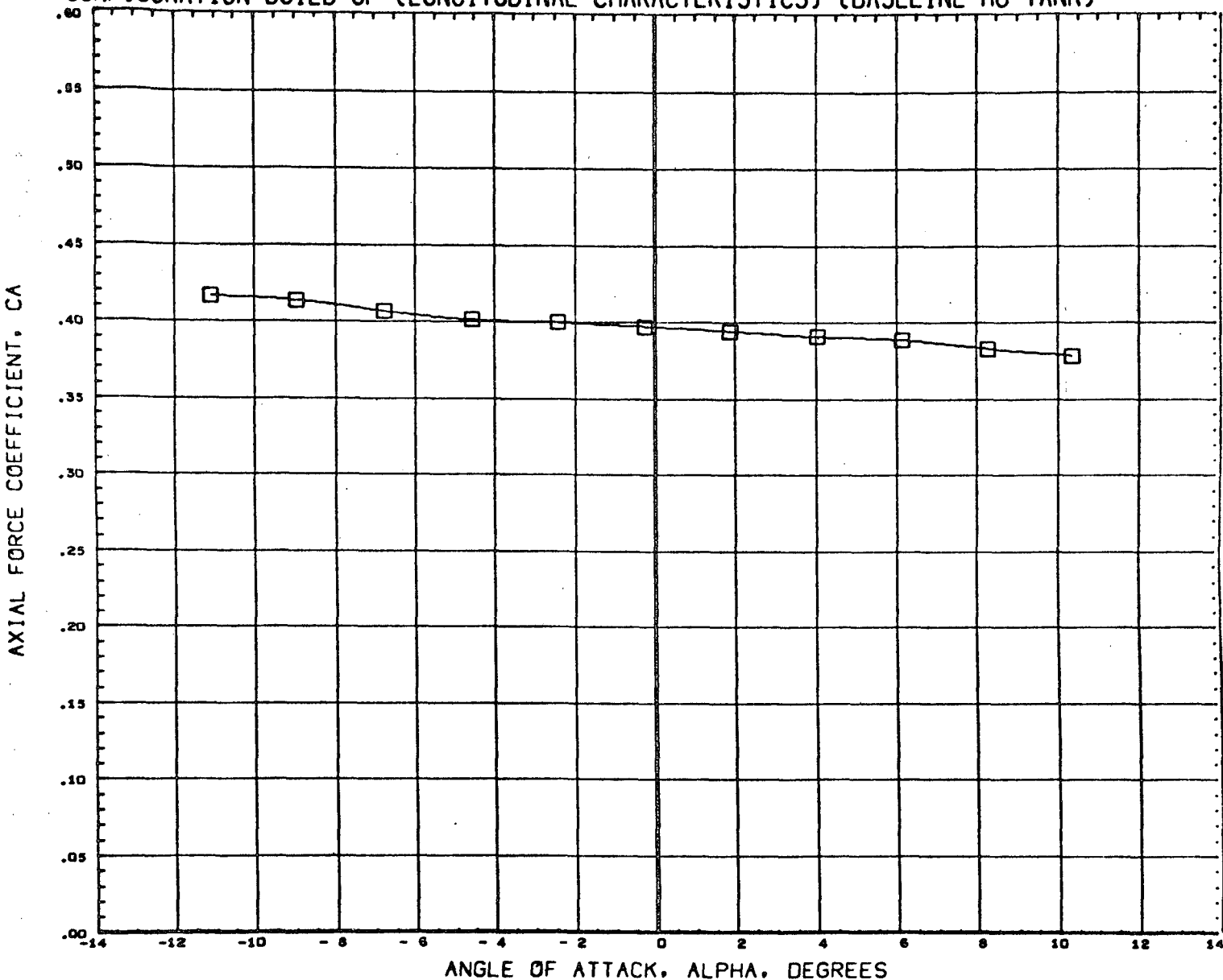
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8600 SQ. IN.
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0260 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4800 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

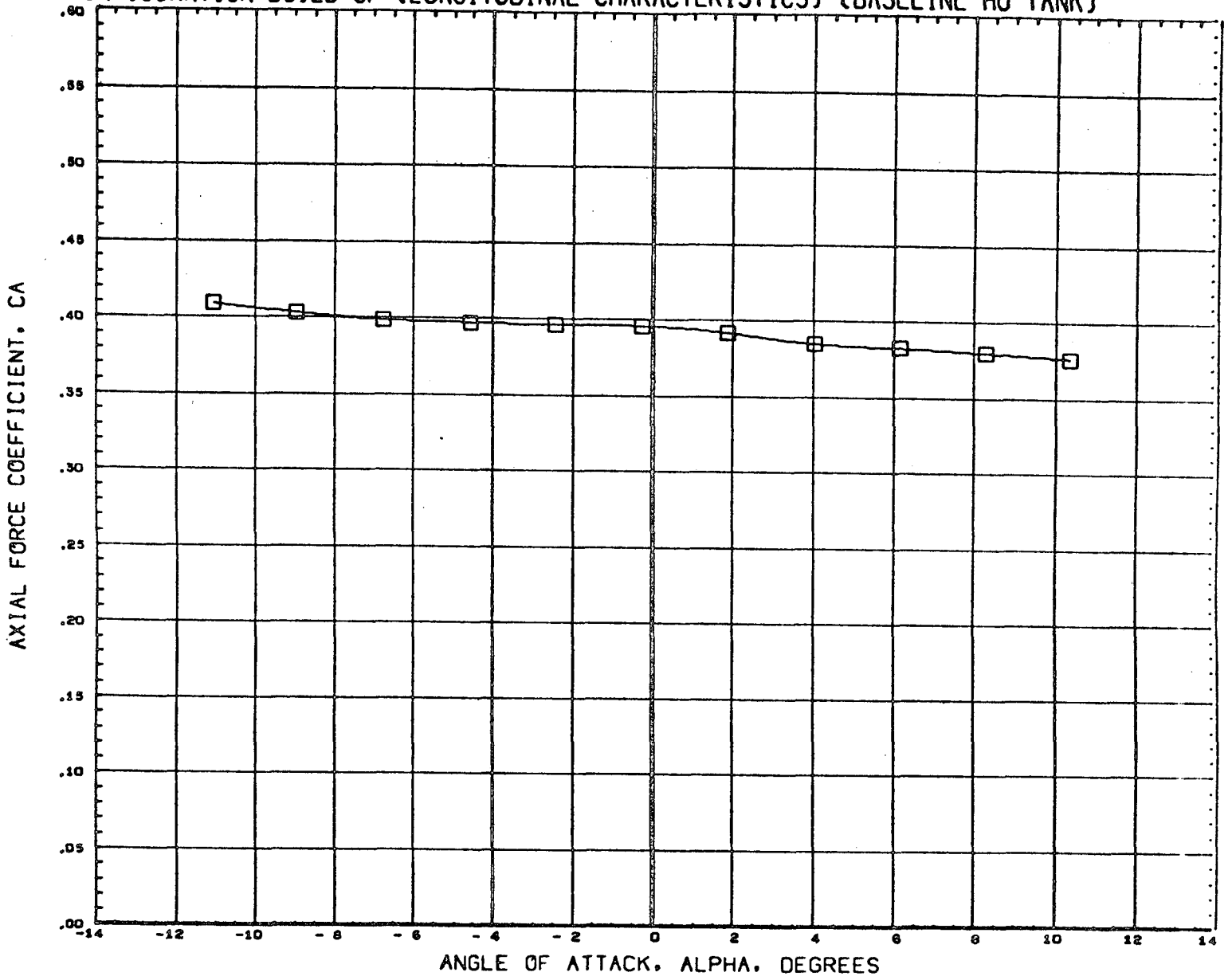
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8800 SQ. IN
(871070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0280 IN.
(871072)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4800 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

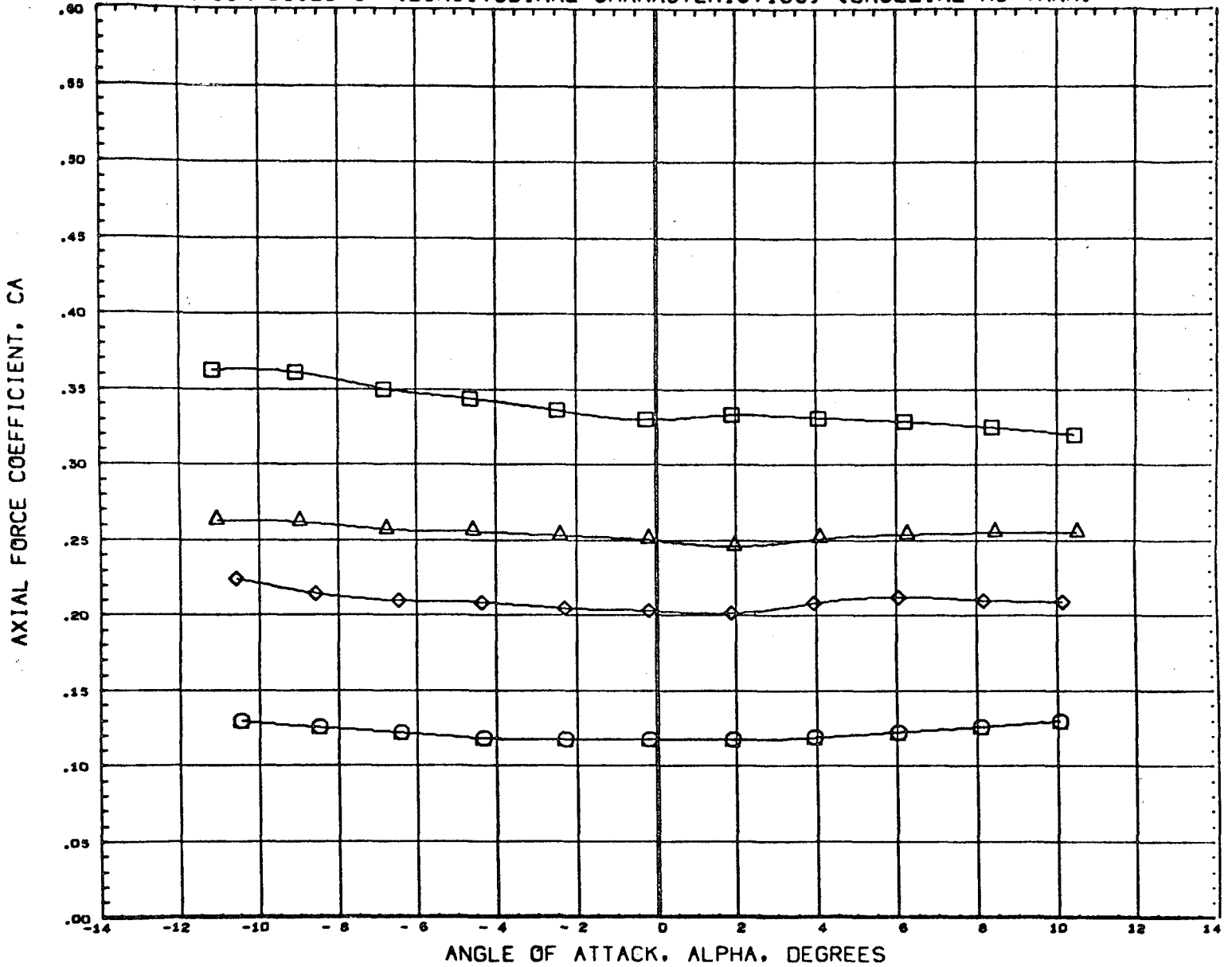
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8800 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS					LREF 2.0200 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3800 IN.
		-1.500	75.000	0.000	0.000	YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.45

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



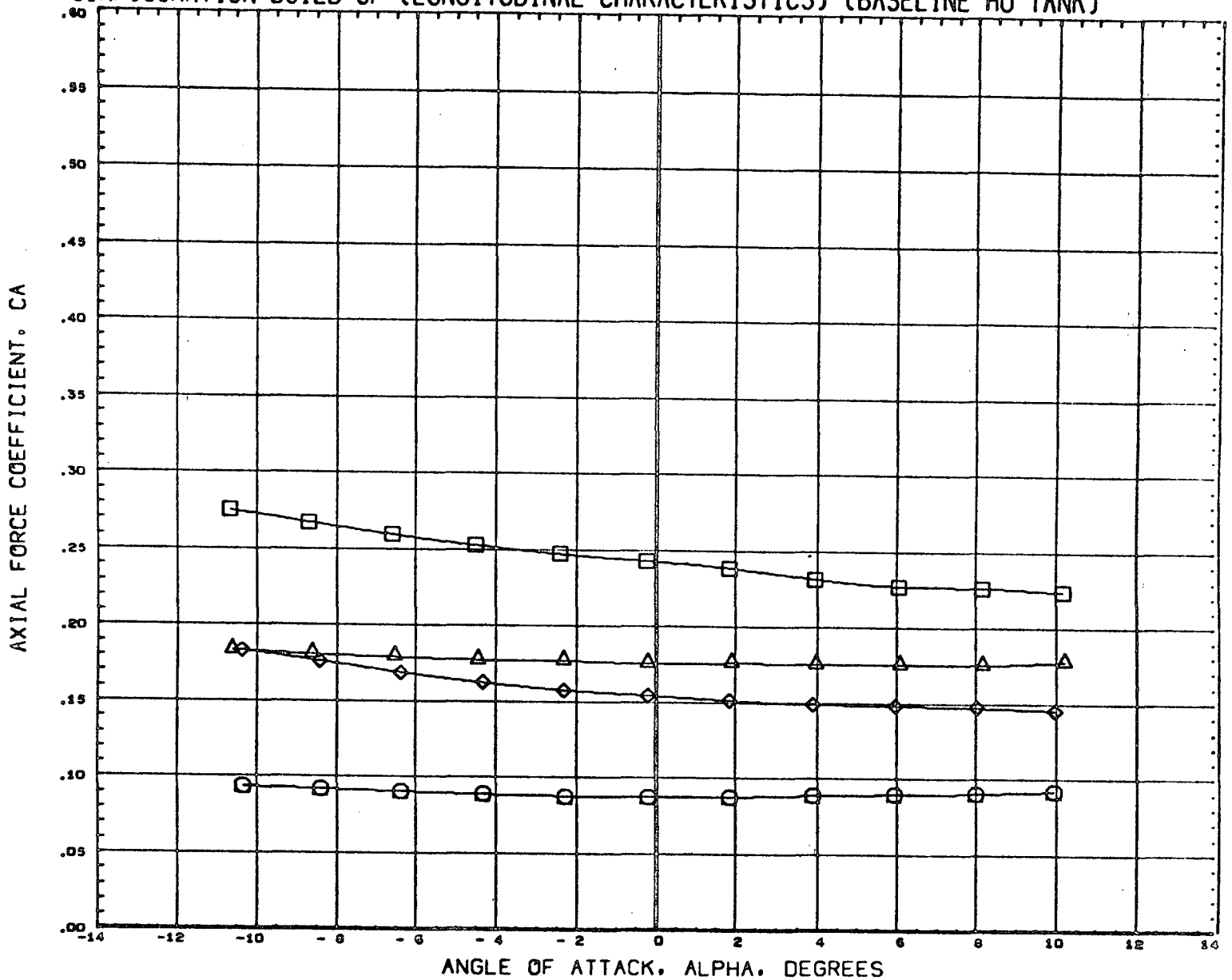
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8600 SQ. IN
(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1s1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.94

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RC

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)

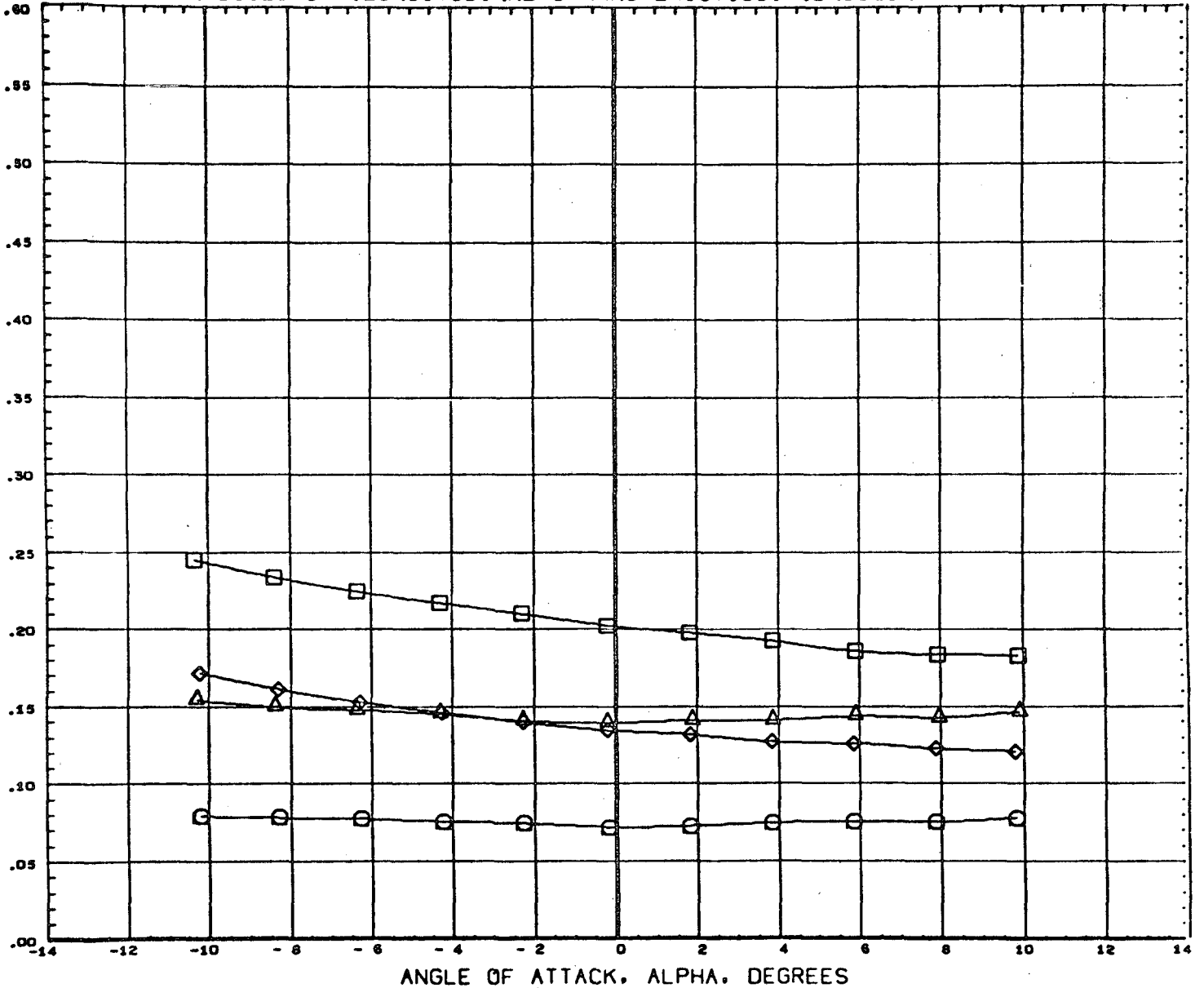


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1					LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H<sub>0</sub> TANK)

AXIAL FORCE COEFFICIENT, C<sub>A</sub>

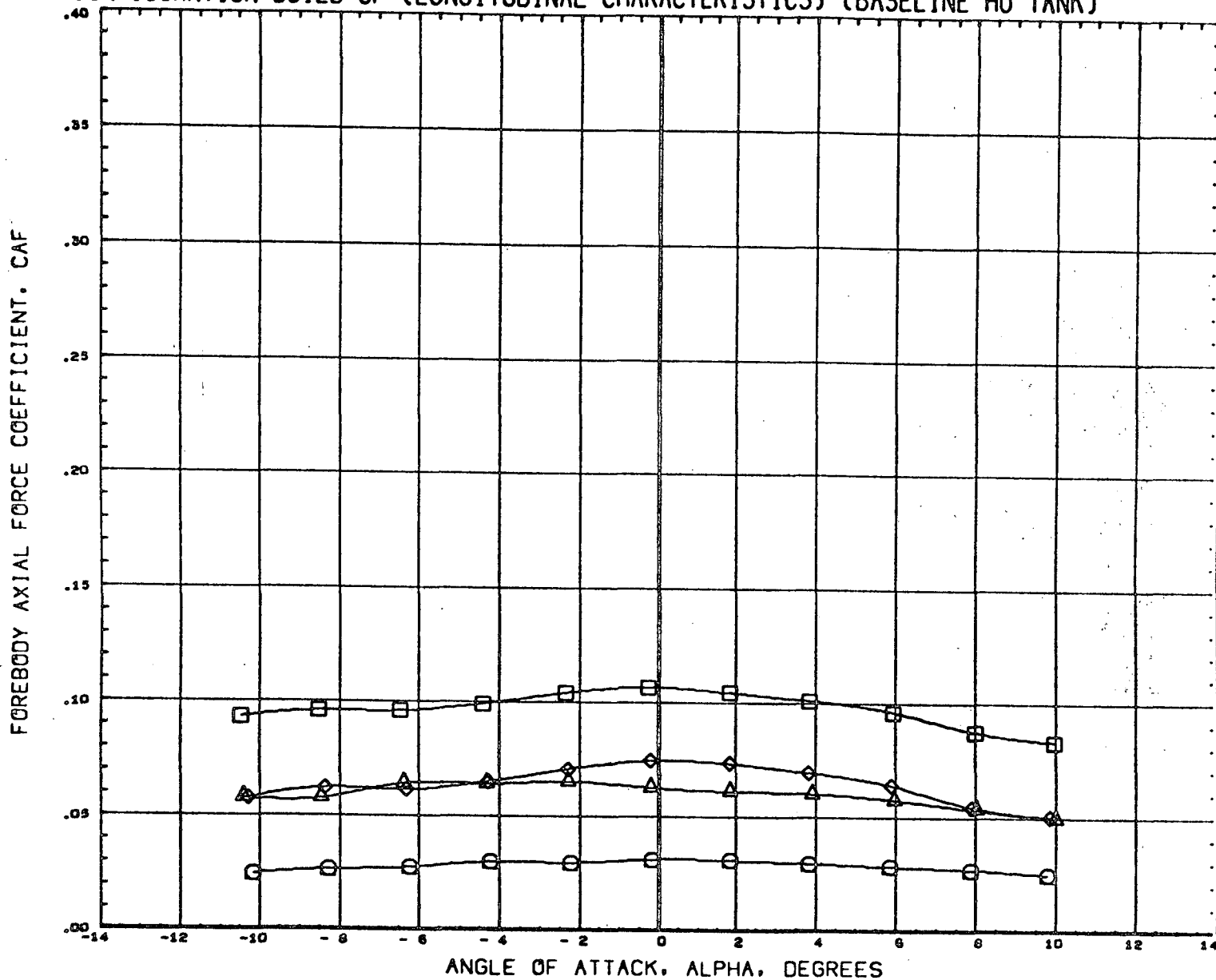


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(071070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(071072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)



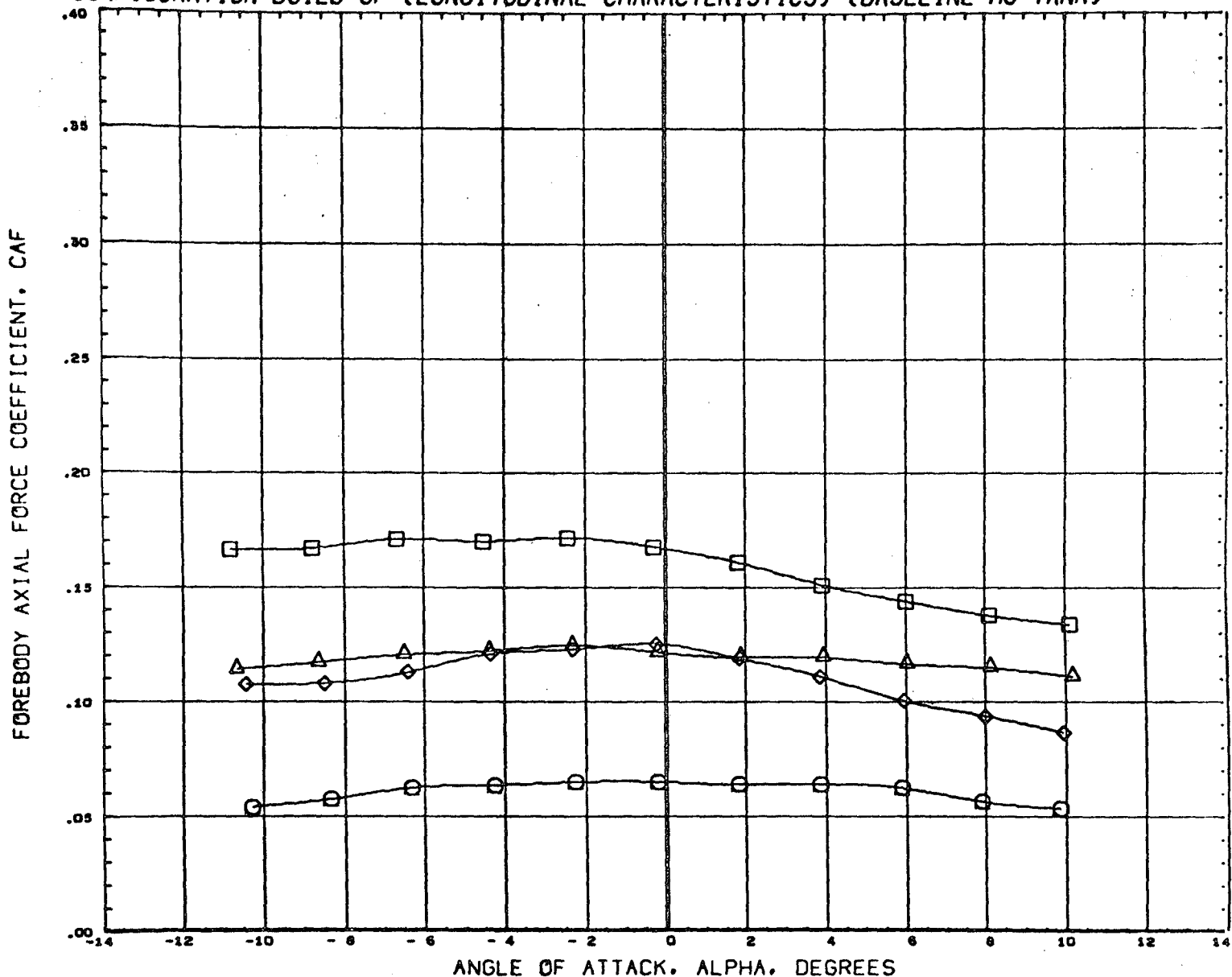
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71060)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8600 SQ. IN
(B71070)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	□	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
								YMRP 0.0000 IN.
								ZMRP 0.2480 IN.
								SCALE 0.0040 SCALE

MACH .60

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71090)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1		75.000	0.000		SREF 7.8900 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1					LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

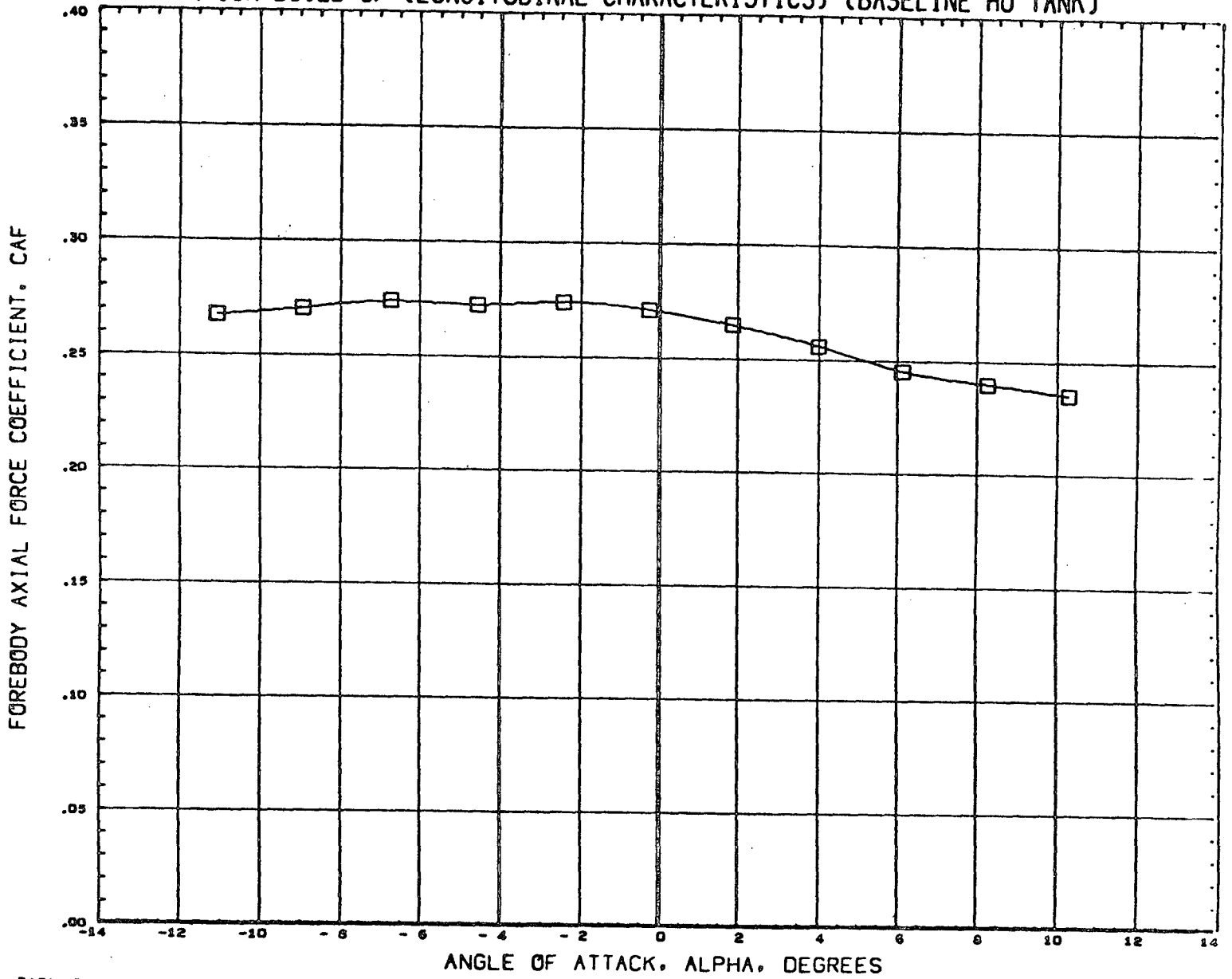
MACH

.91

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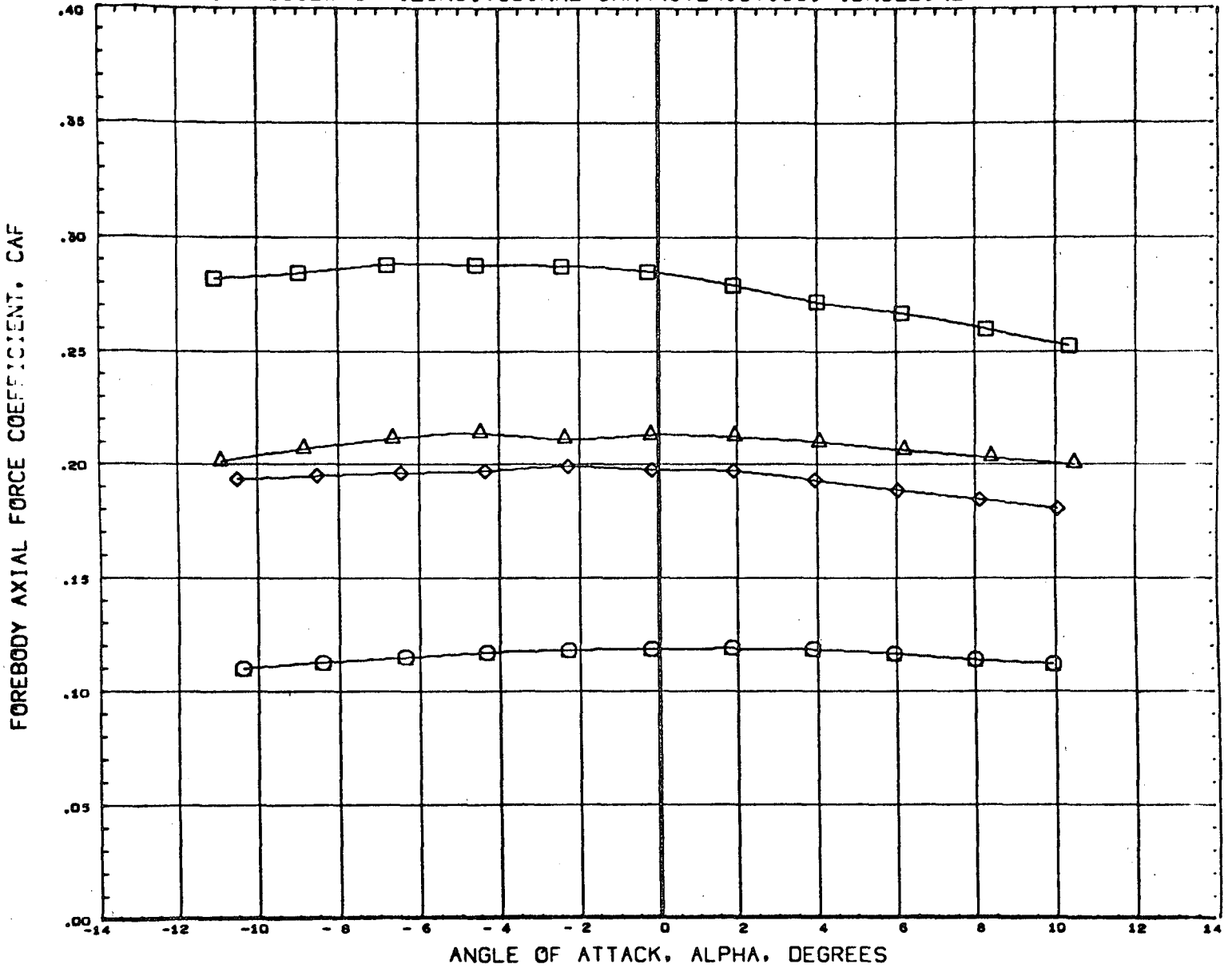
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71060)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8600 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(B71002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1		75.000	0.000		SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1					LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4800 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

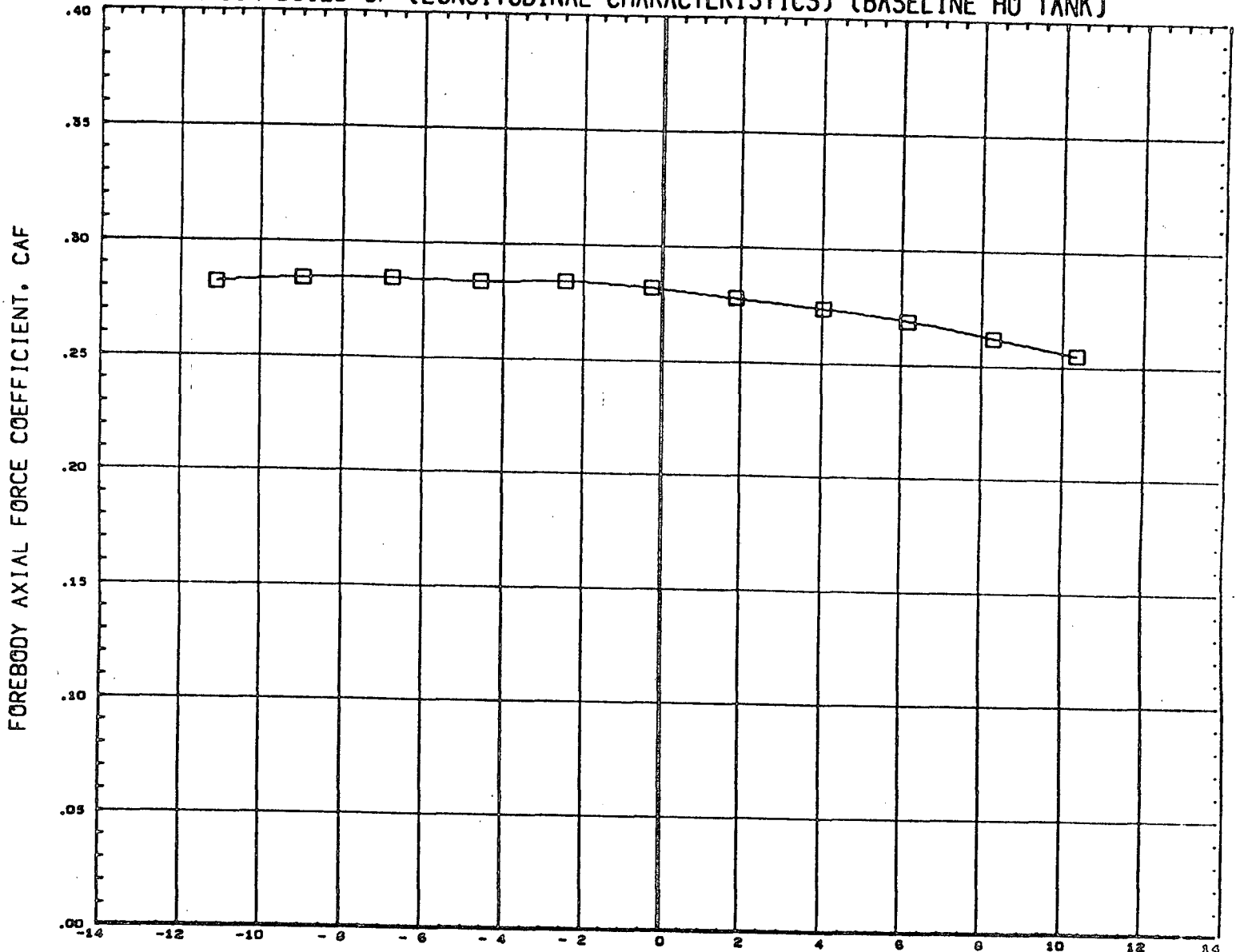
MACH

1.20

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

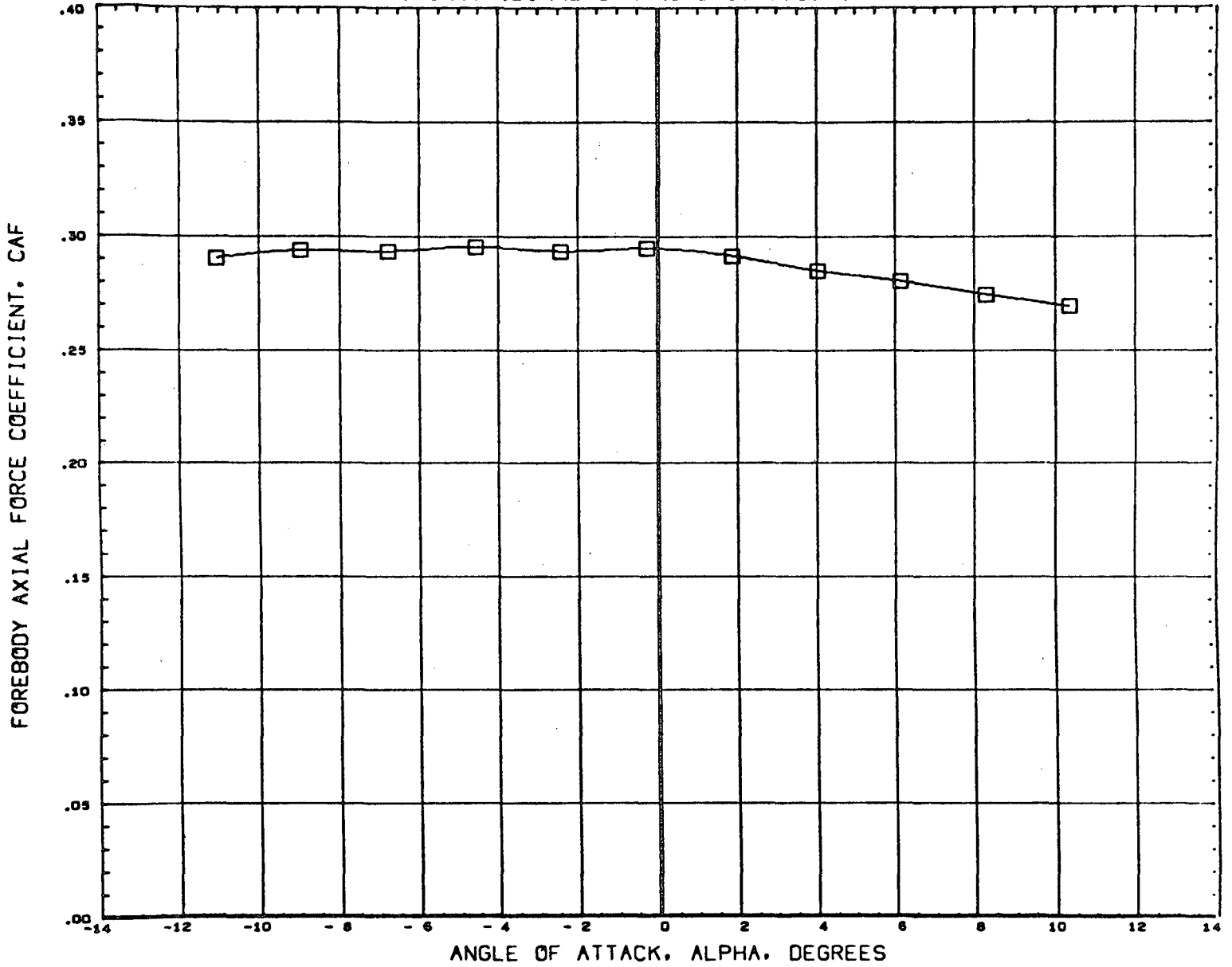


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8600 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
		-1.500	75.000	0.000	0.000	YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

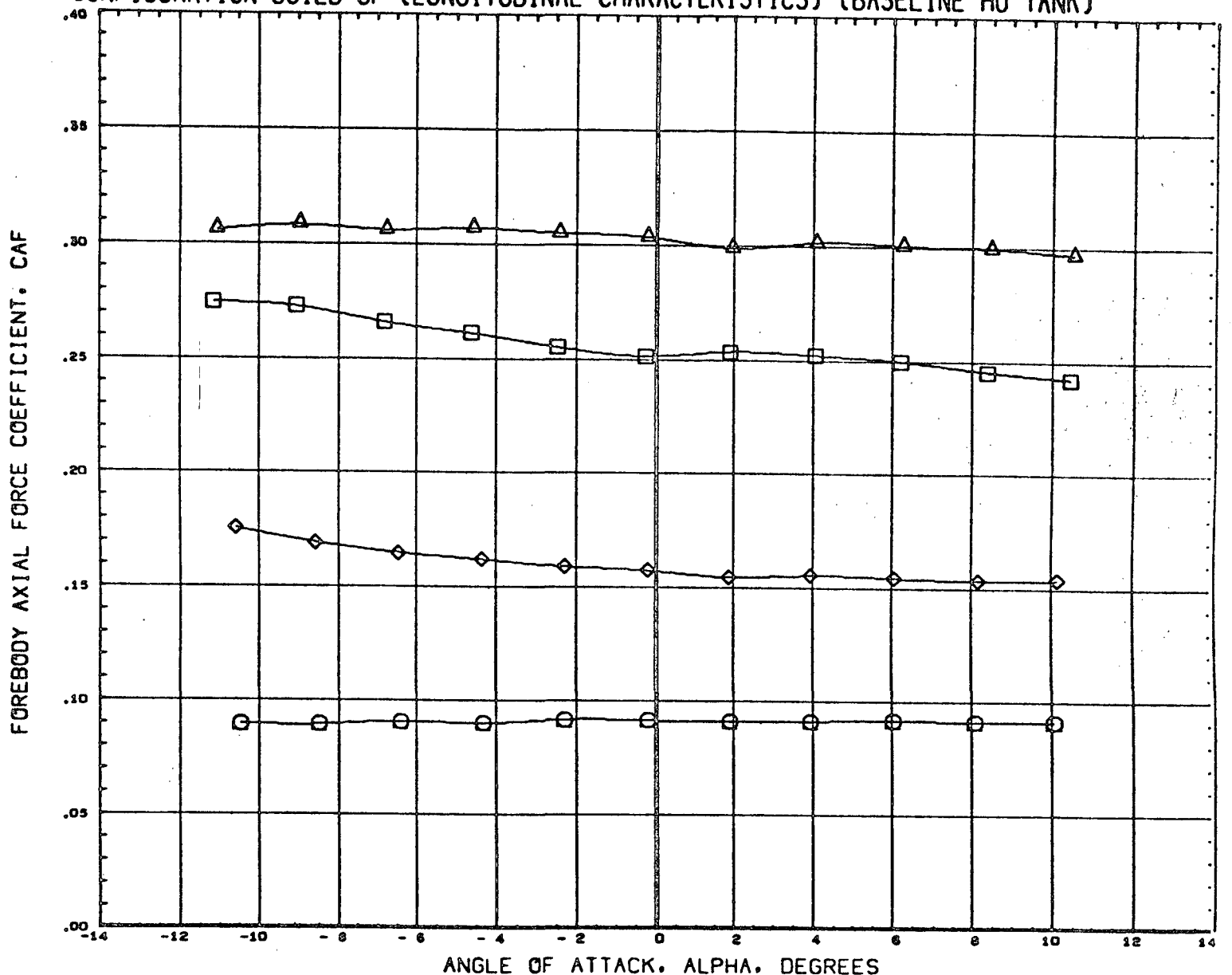
CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8800 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.45

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

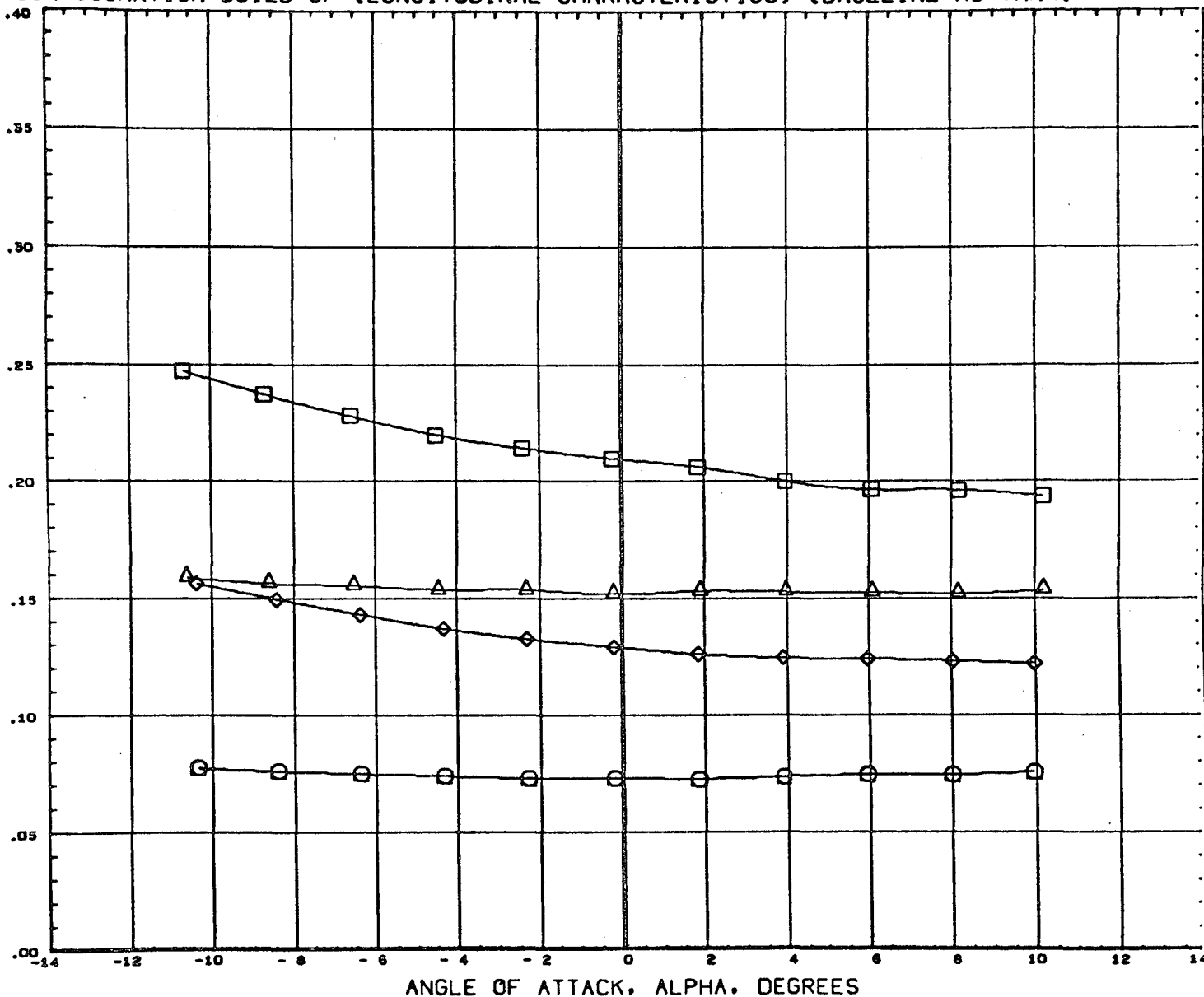


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.94

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

FOREBODY AXIAL FORCE COEFFICIENT, CAF

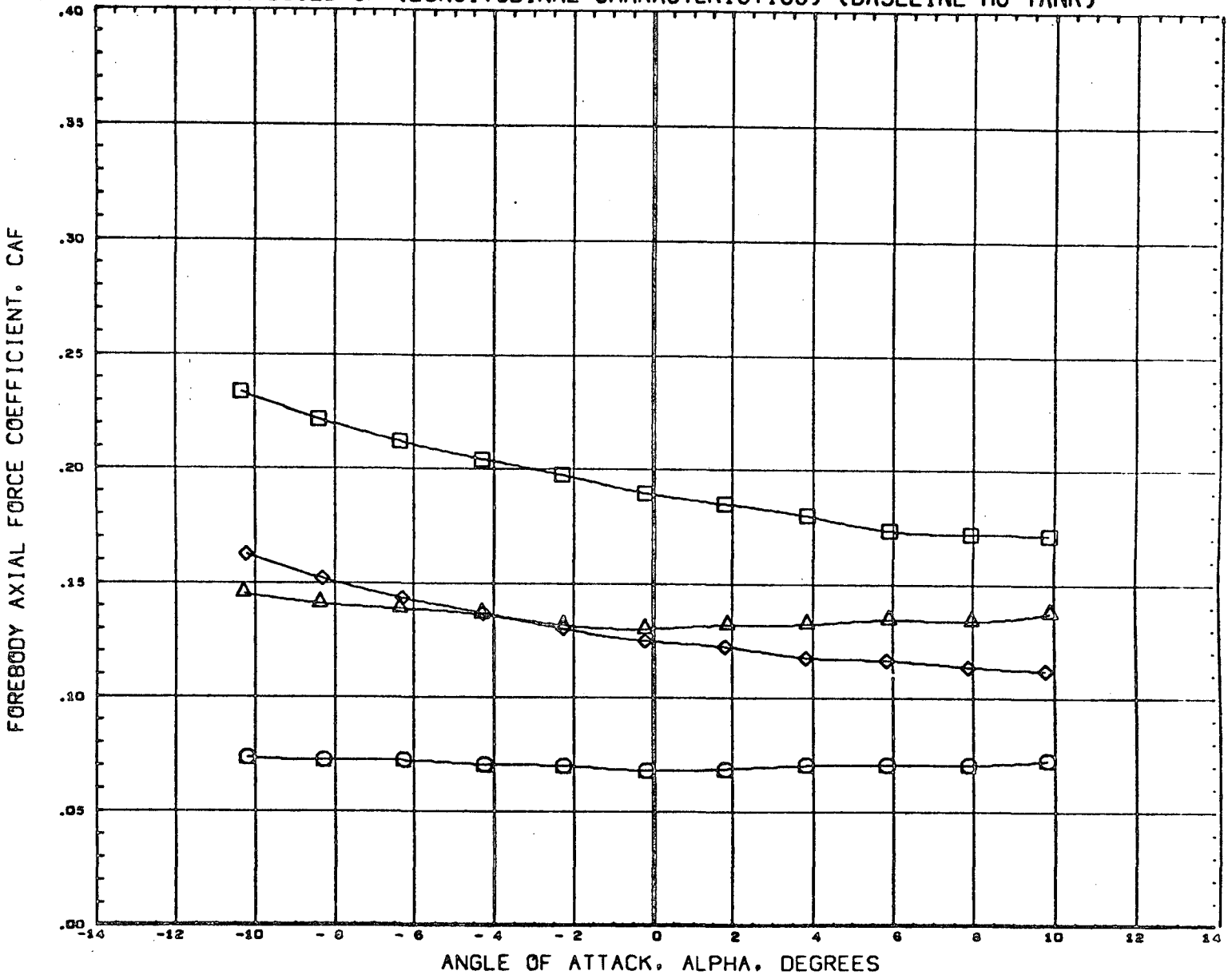


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1		75.000	0.000		SREF 7.8800 SQ. IN
(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1					LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 3.48

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

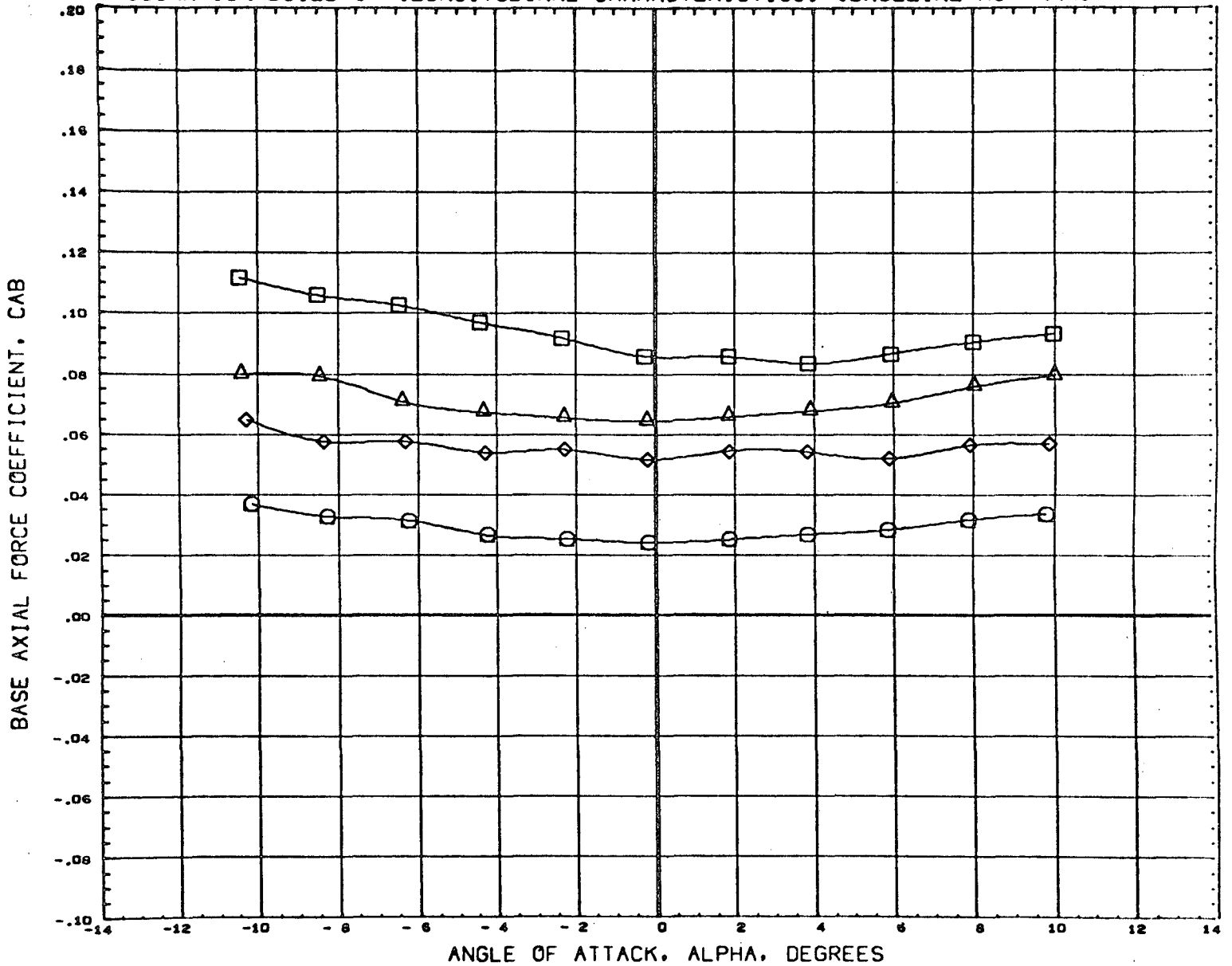


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8600 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96



# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

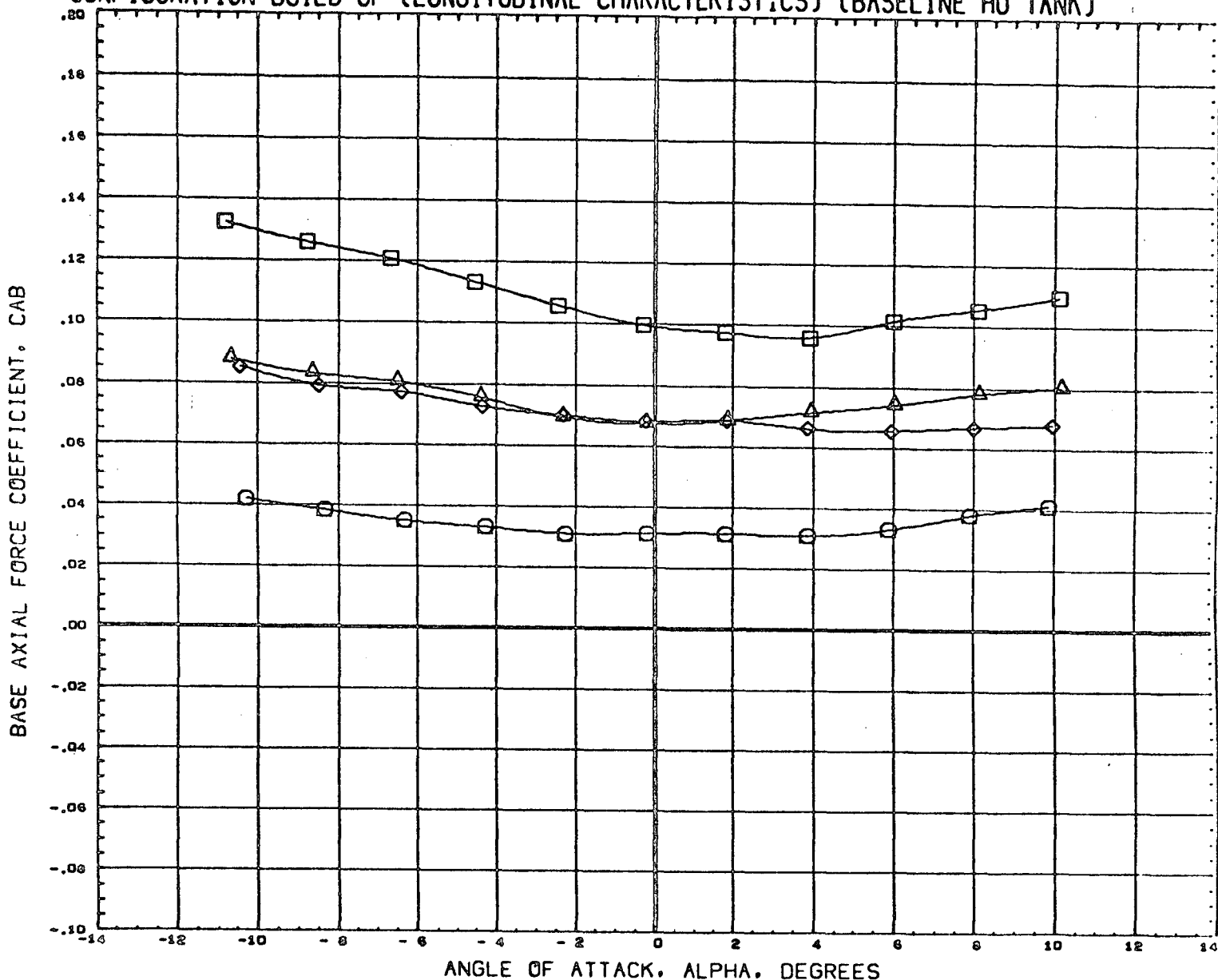


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8600 SQ. IN
(871070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(871072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

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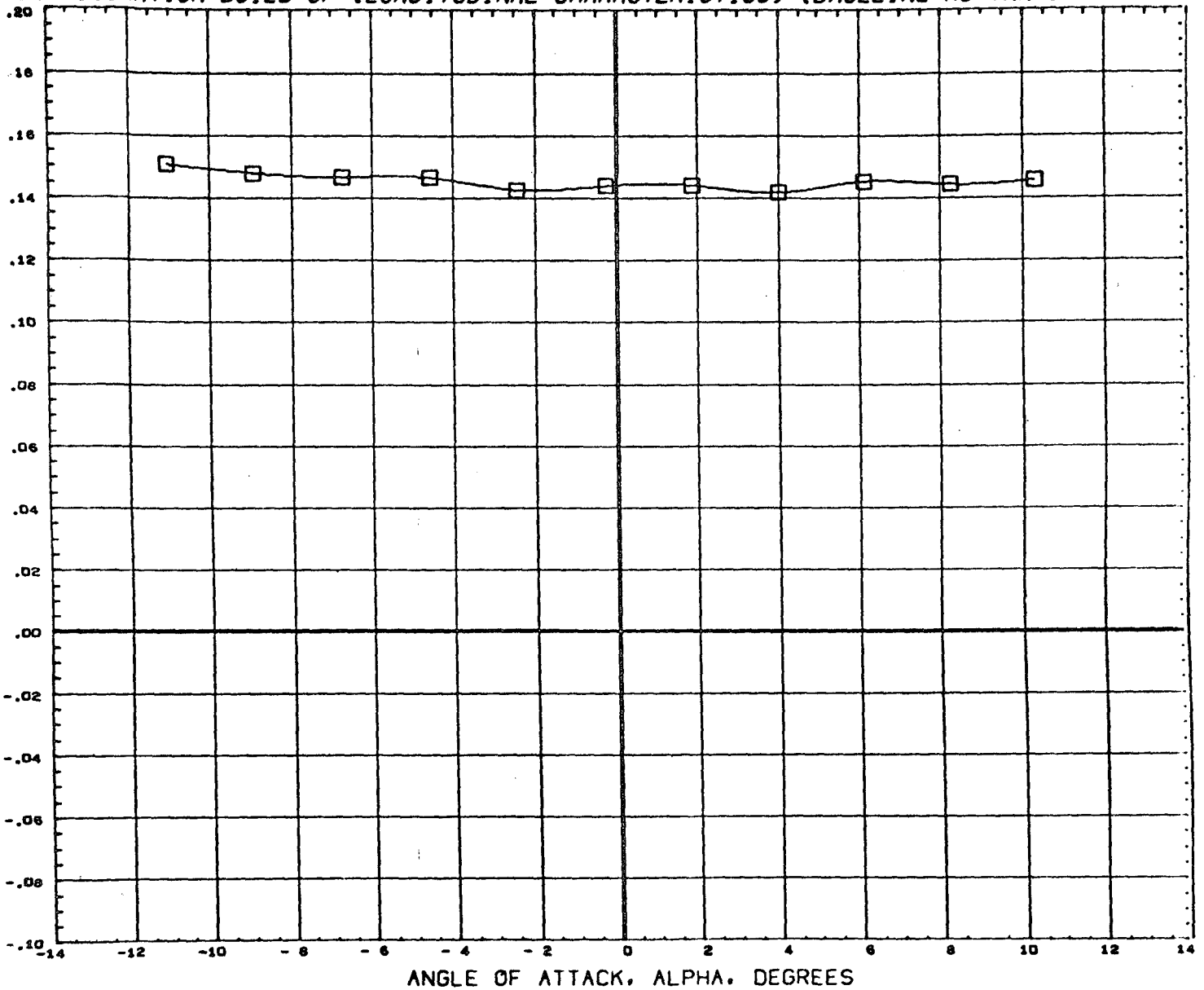
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SO. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4800 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91

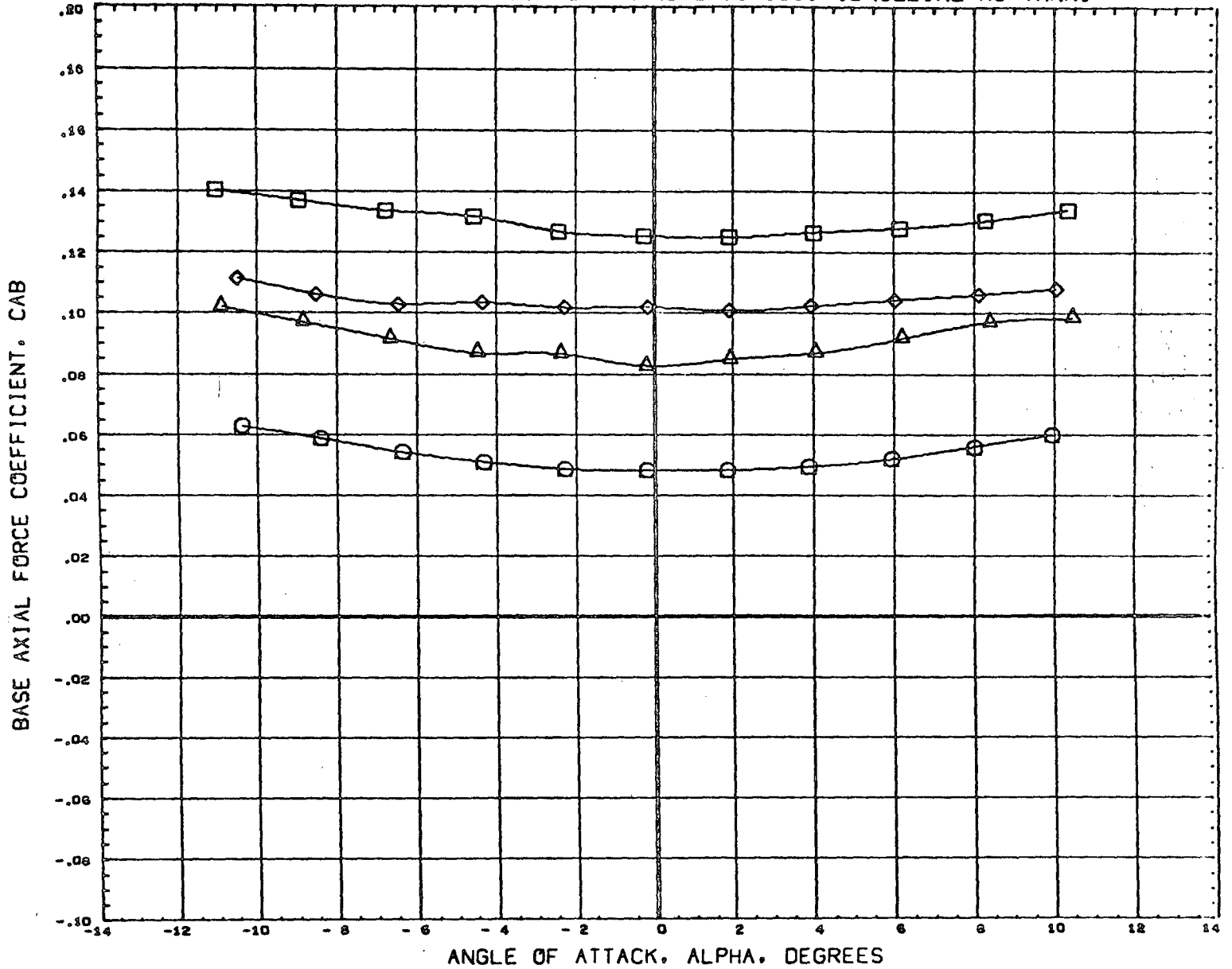
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.6800 sq. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0260 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)

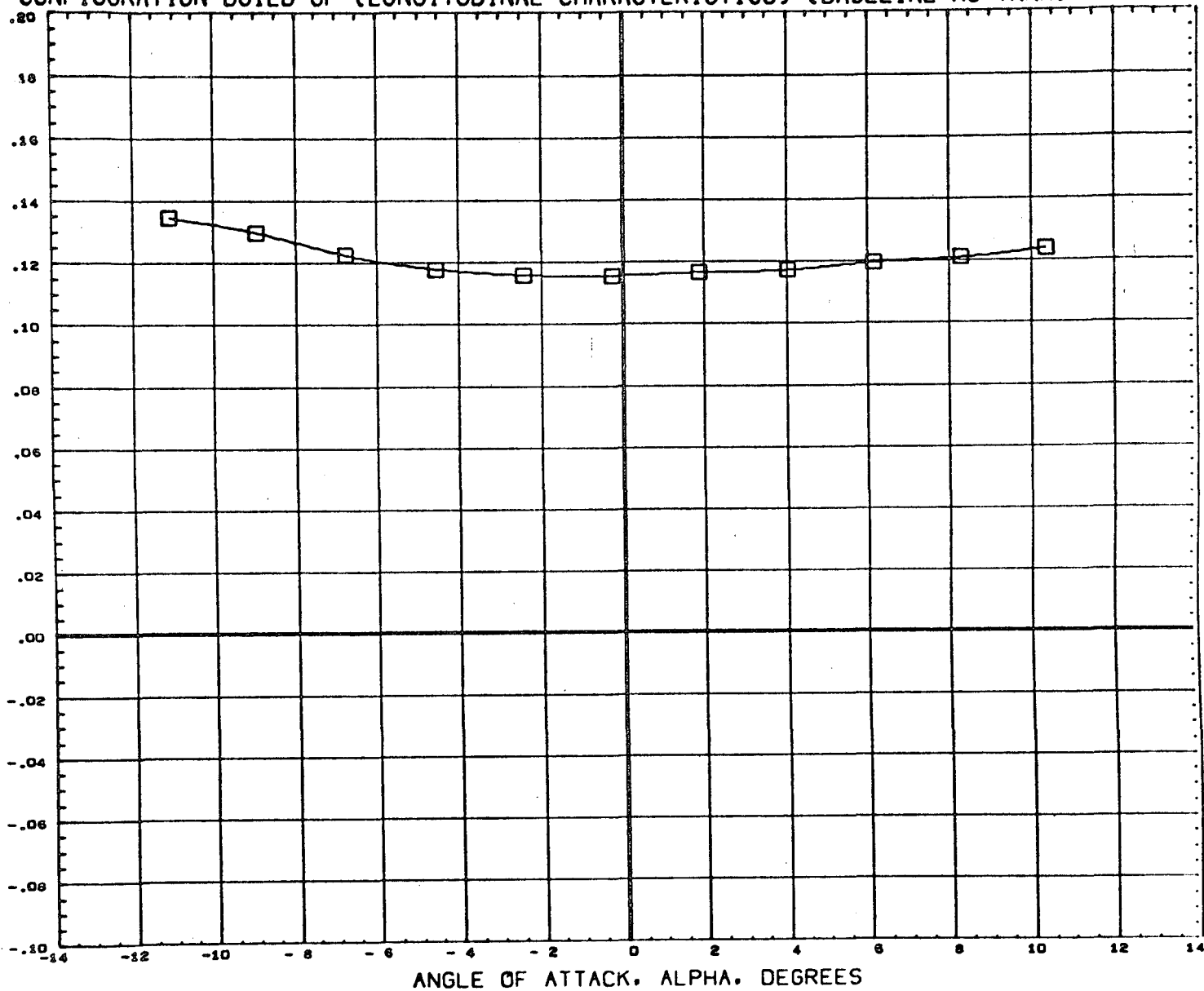


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)

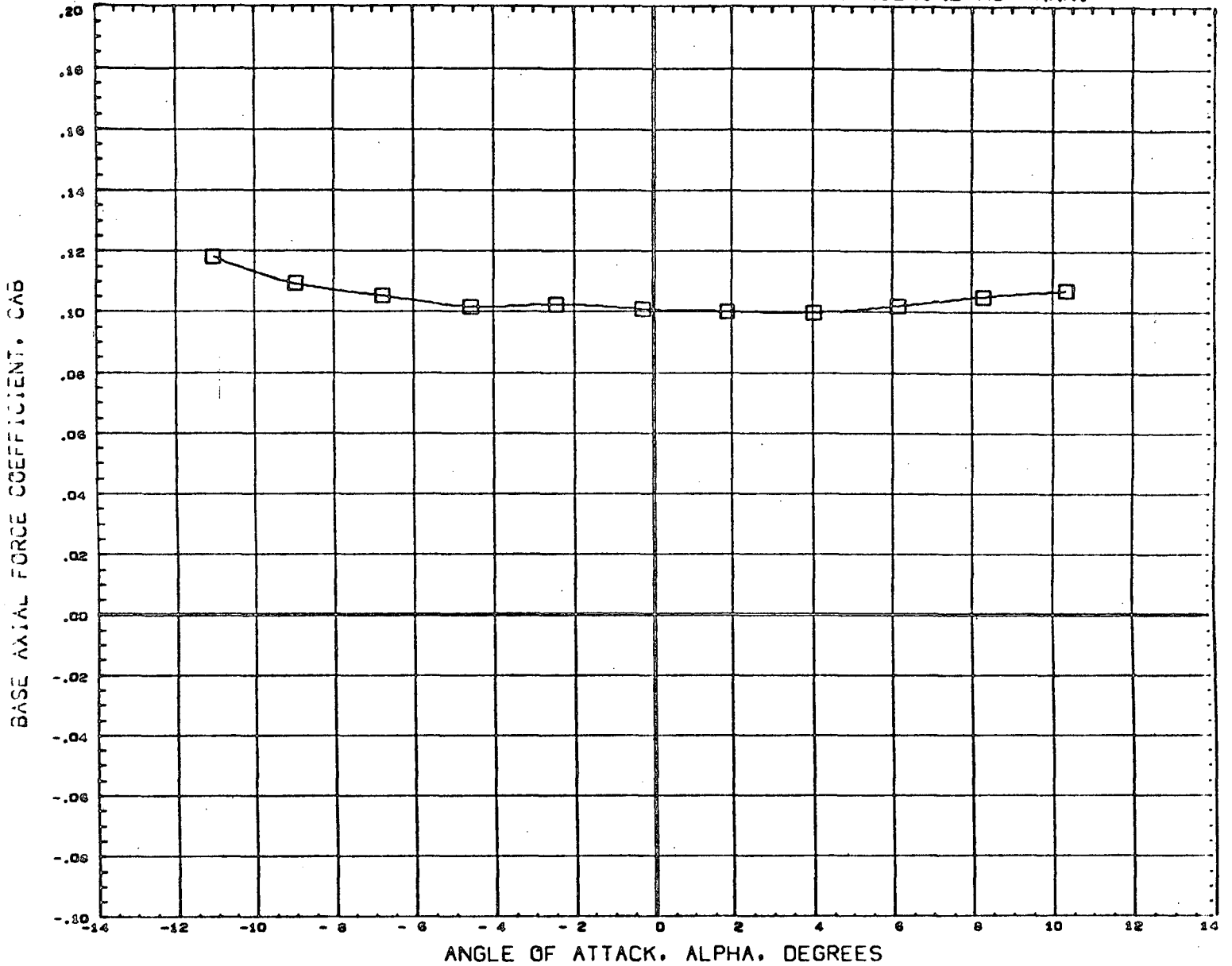
BASE AXIAL FORCE COEFFICIENT, CAB



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8800 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

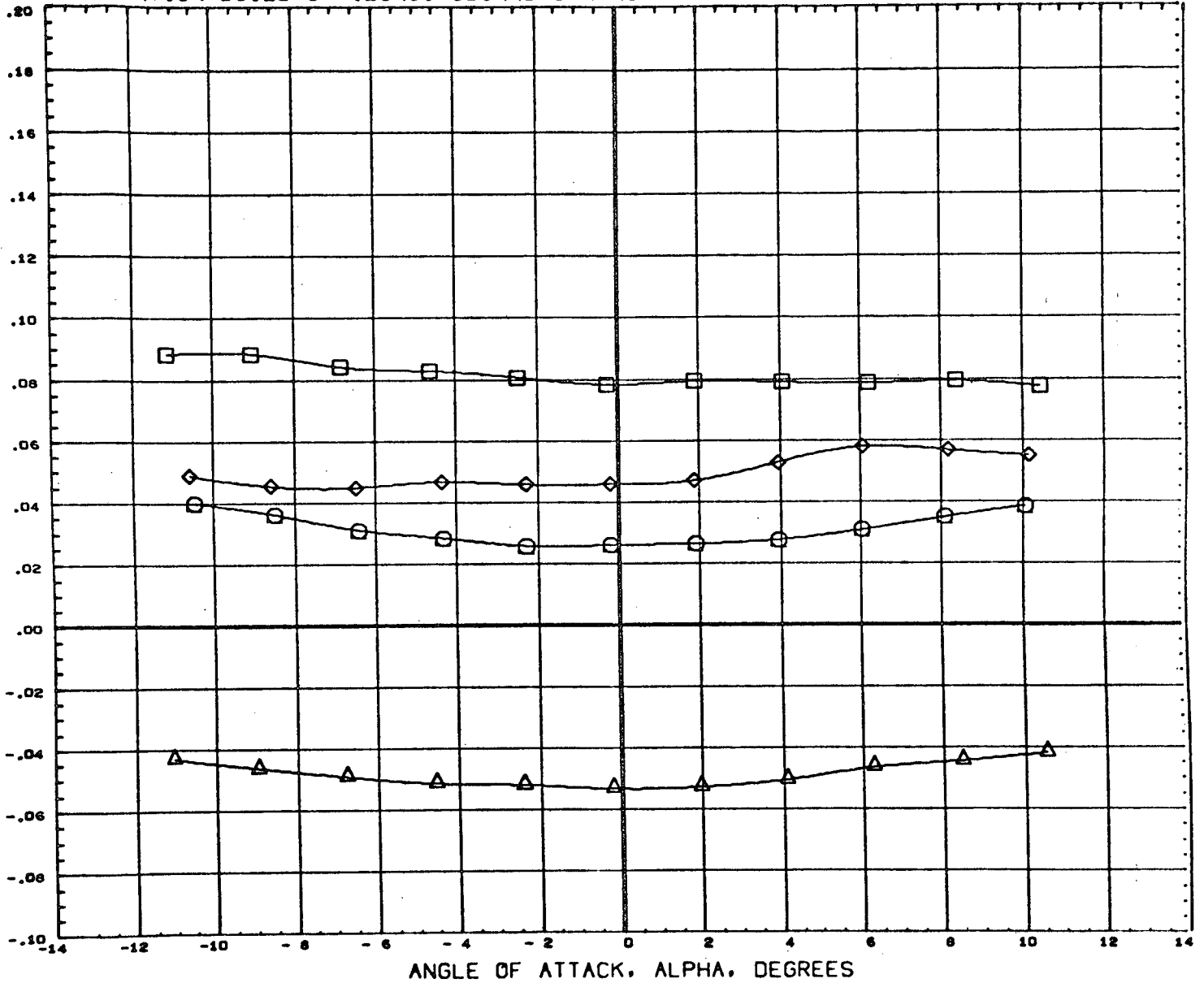


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71060)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8600 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000	0.000	LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(B71002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.45

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)

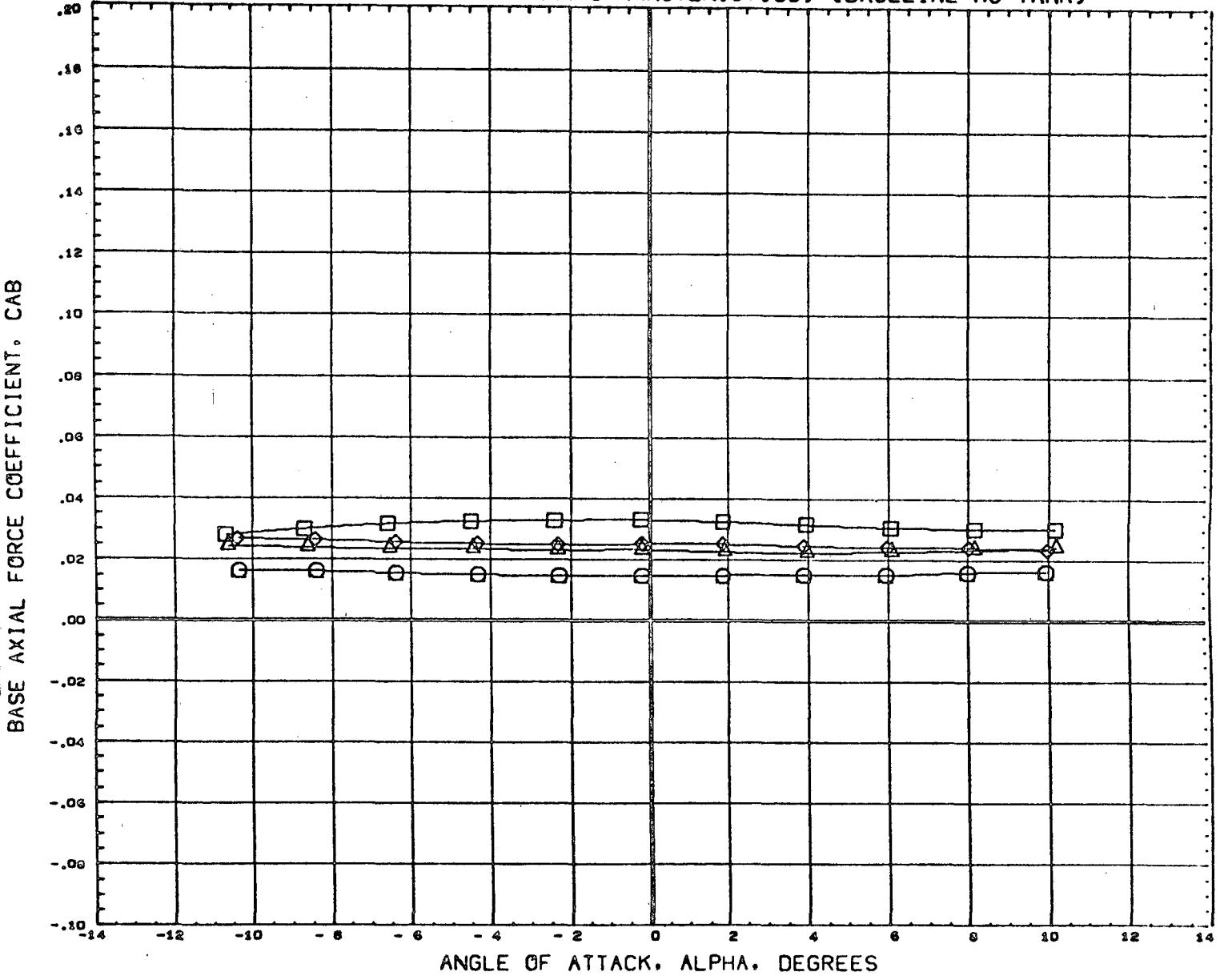
BASE AXIAL FORCE COEFFICIENT, CAB



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.94

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



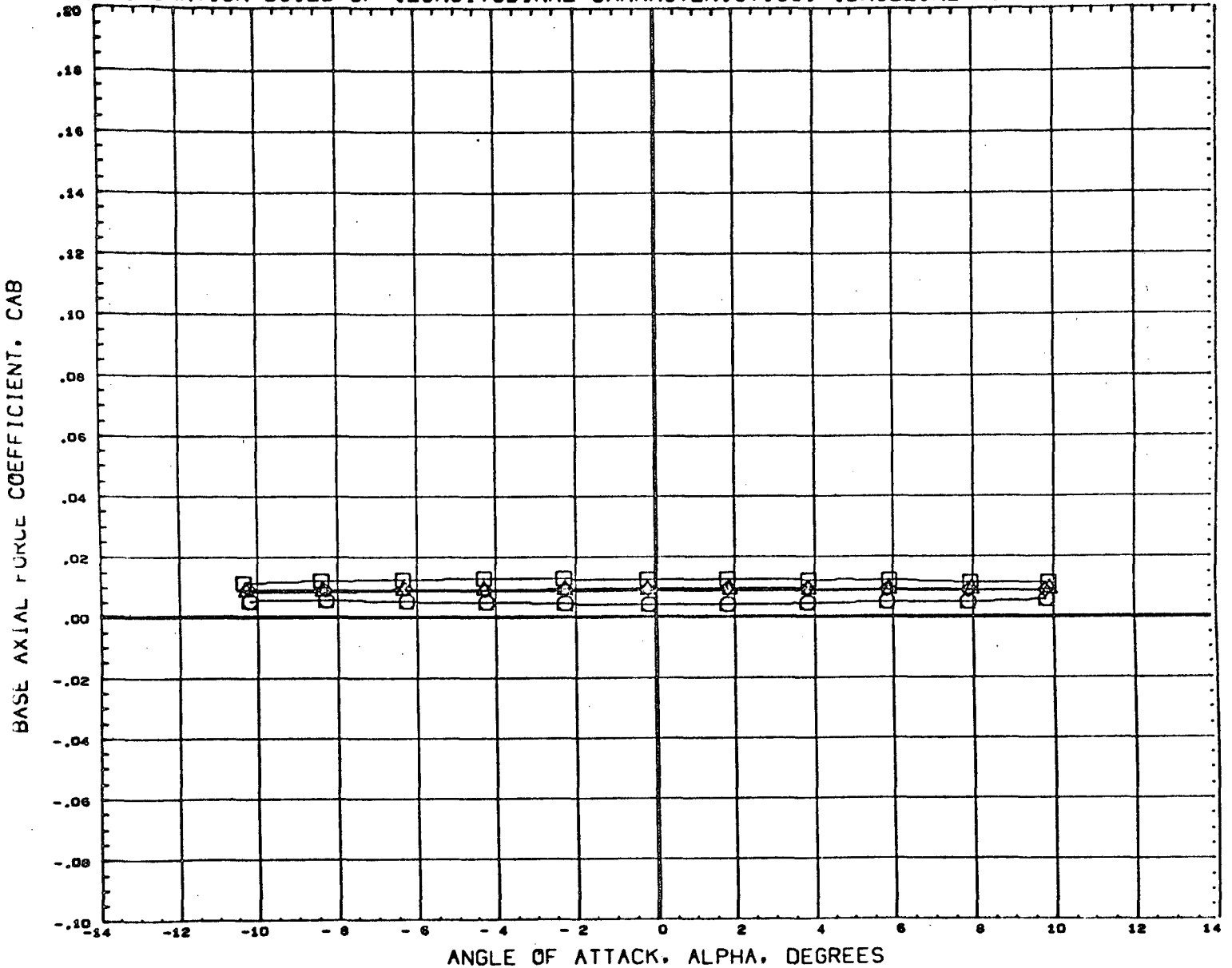
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

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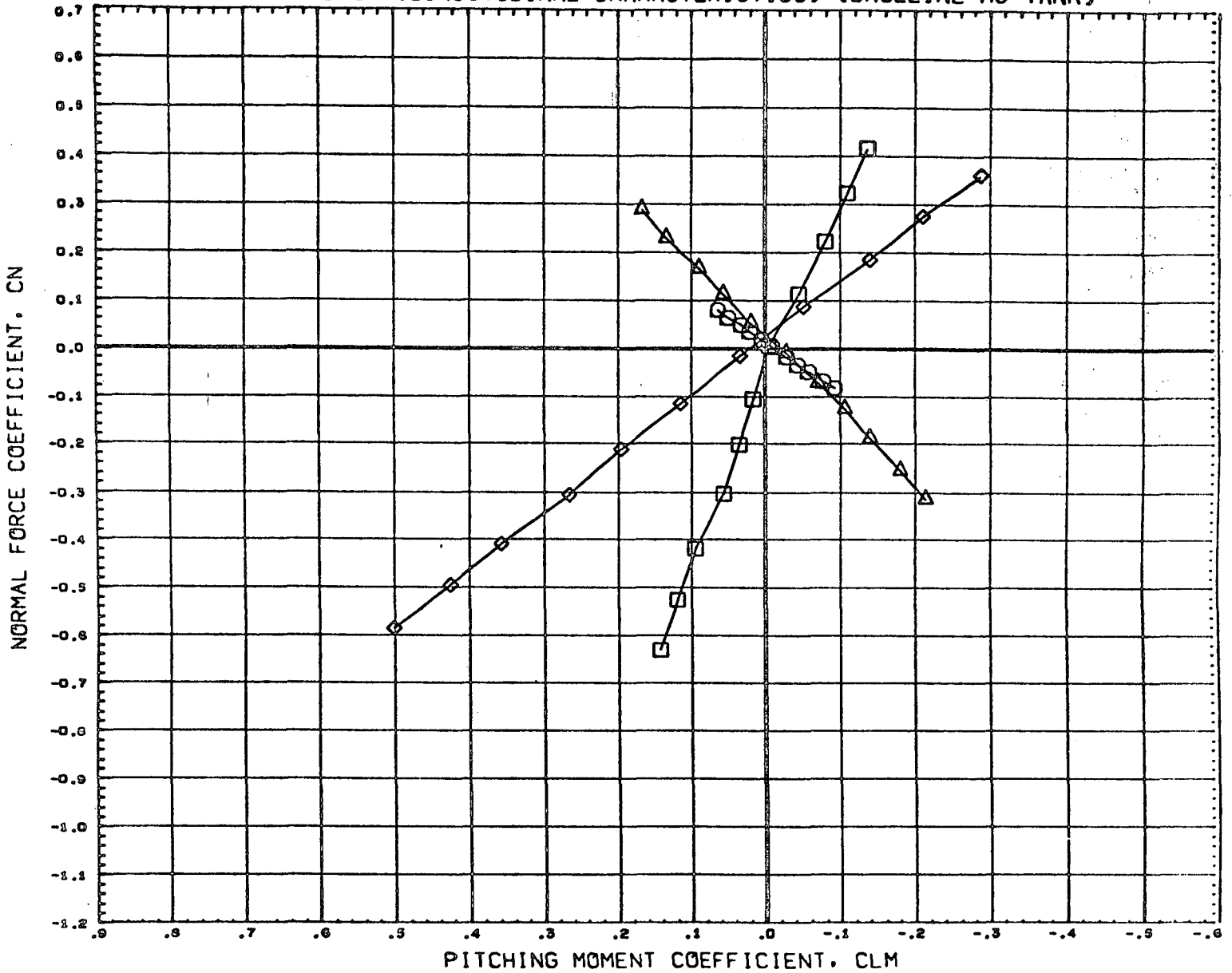
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(B71070) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002) □	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

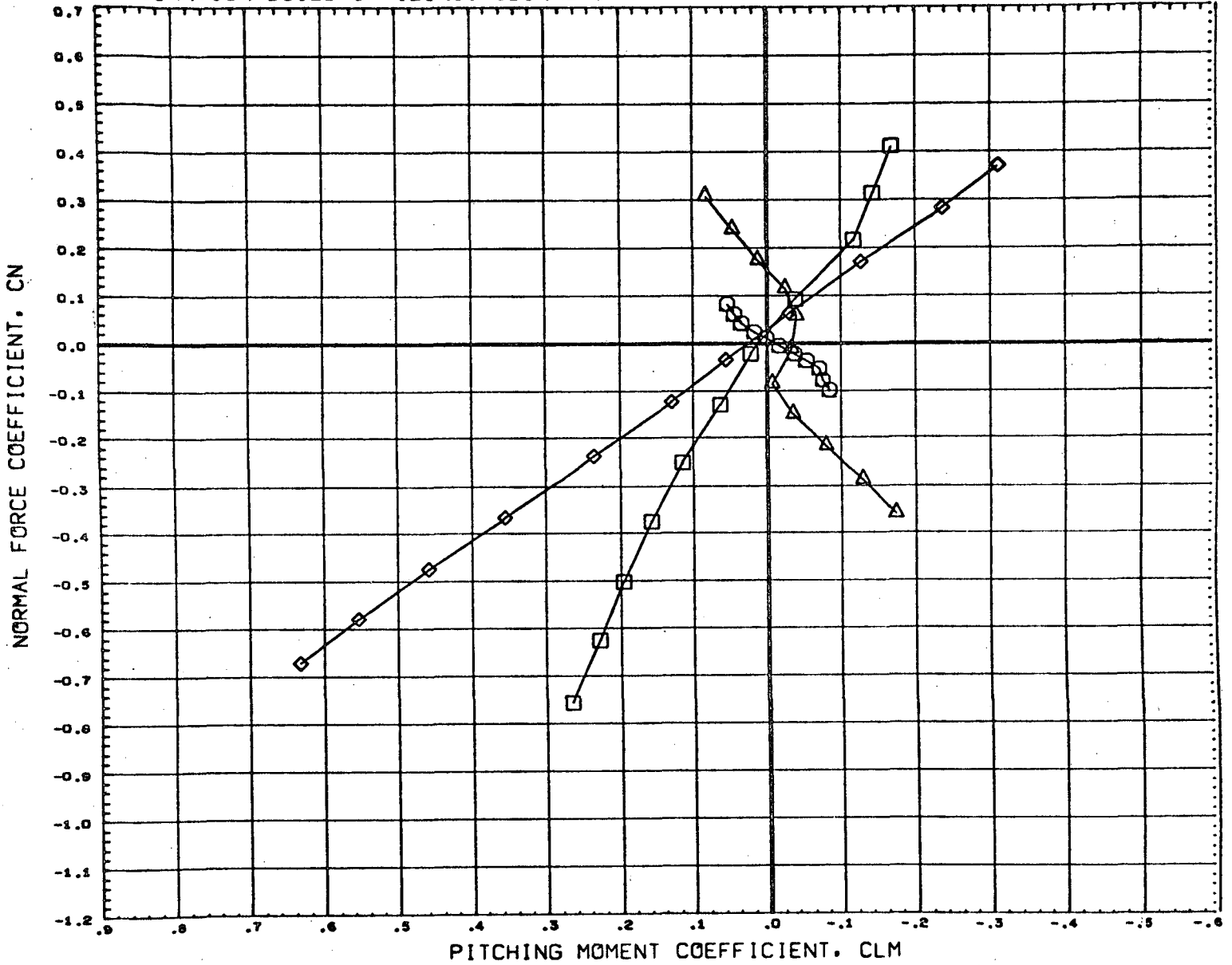
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

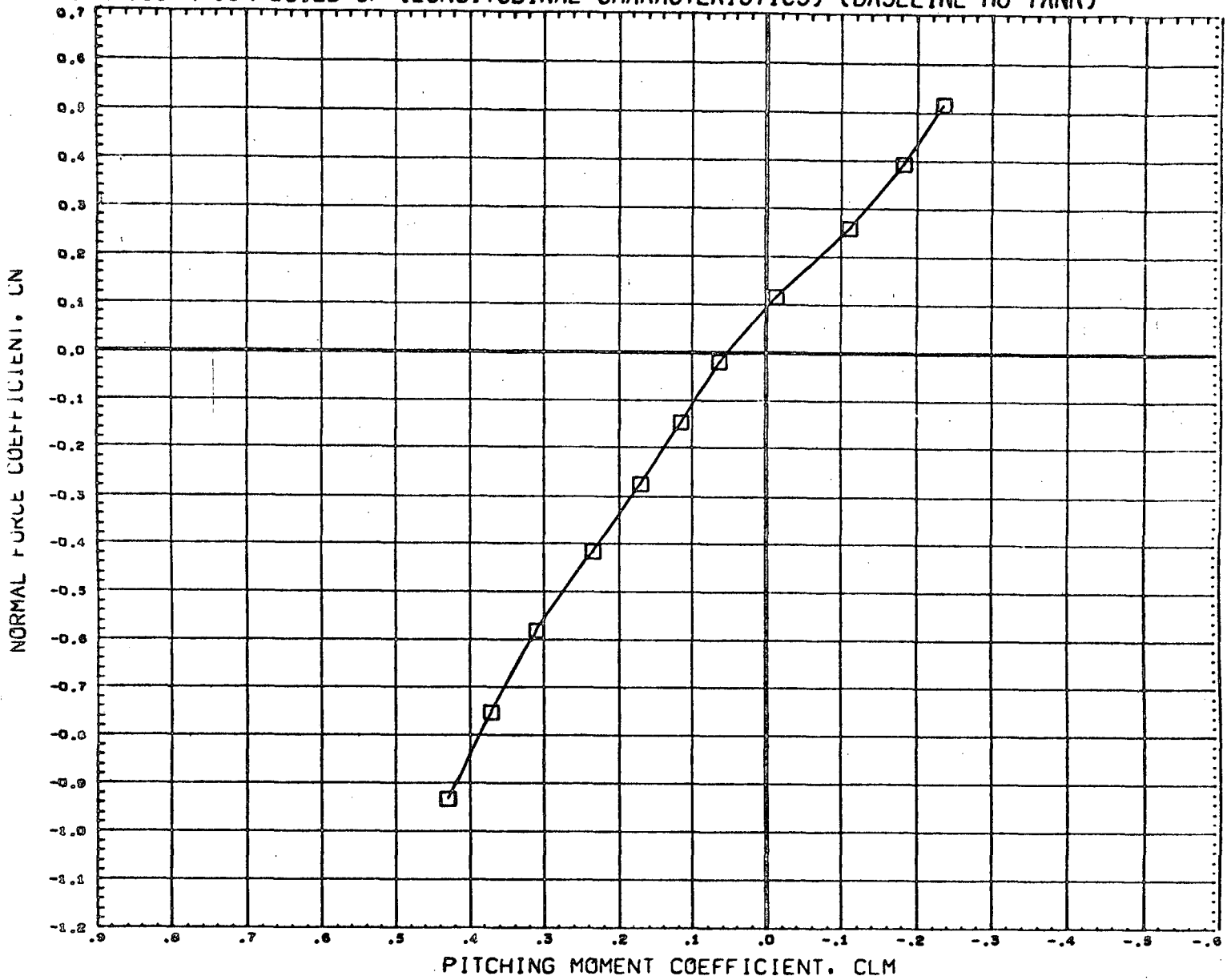
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HQ TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0260 IN.
(B71072)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4800 IN.
(B71002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91

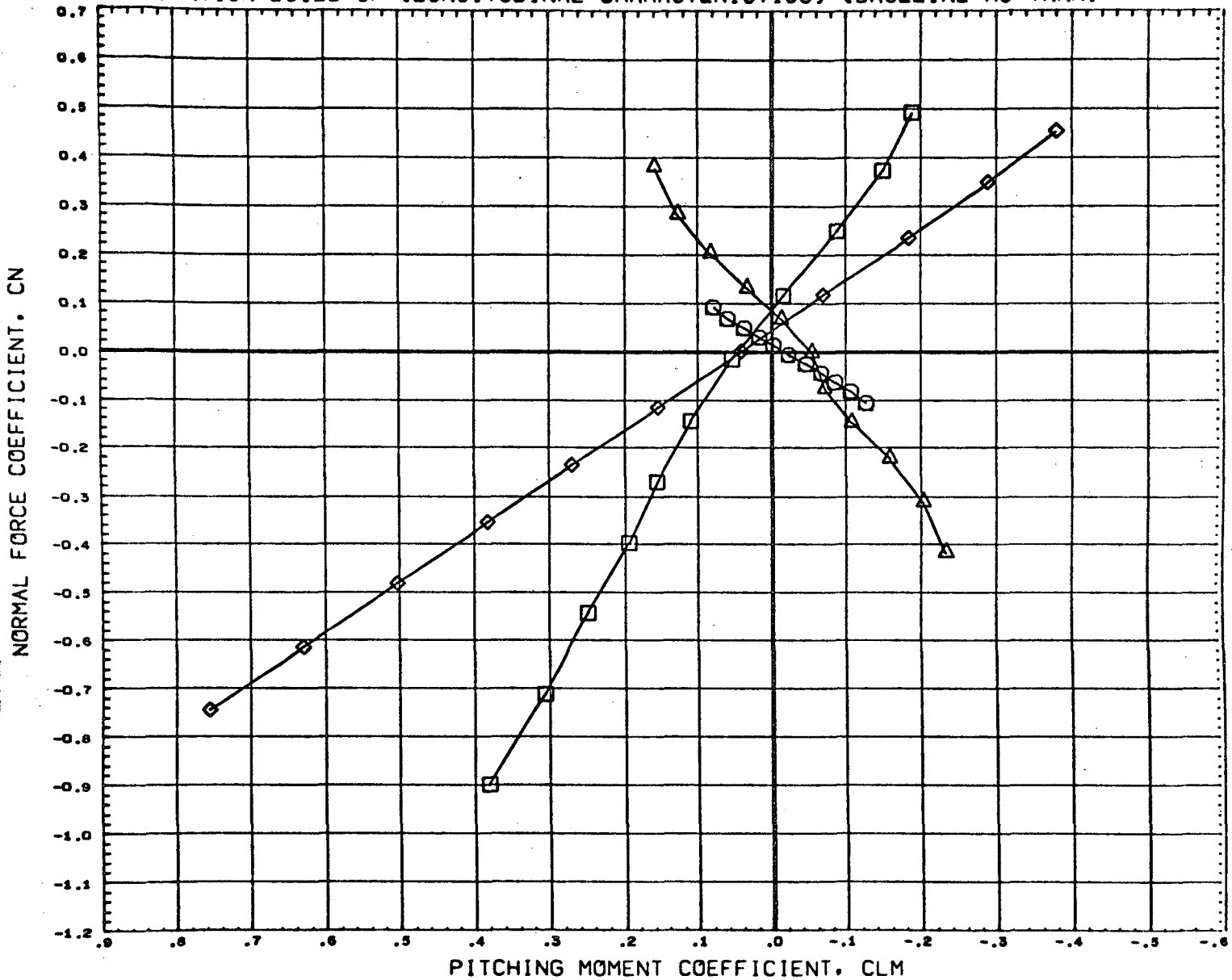
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8800 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000	0.000	LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



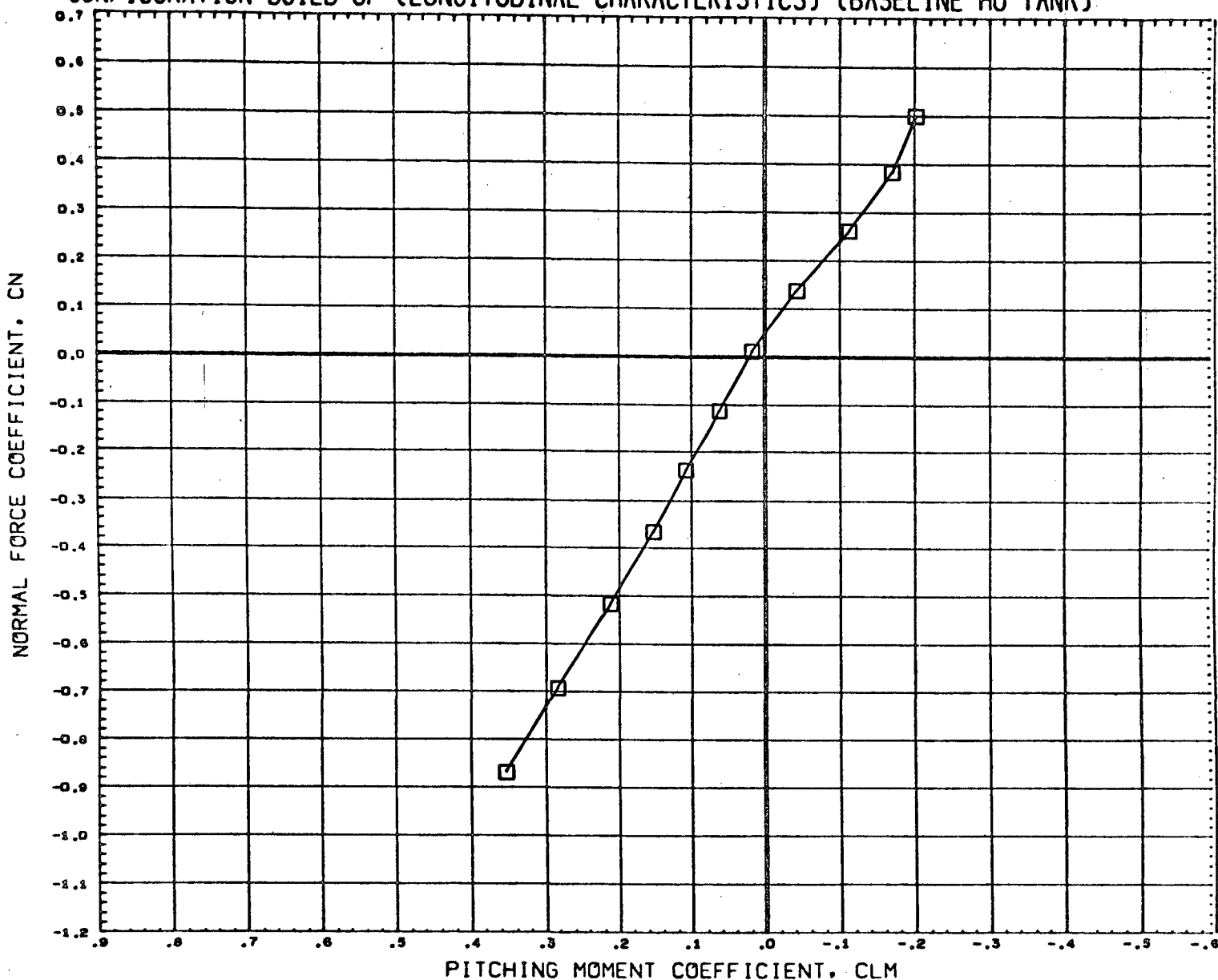
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0260 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1C1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1C1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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Re

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE HQ TANK)

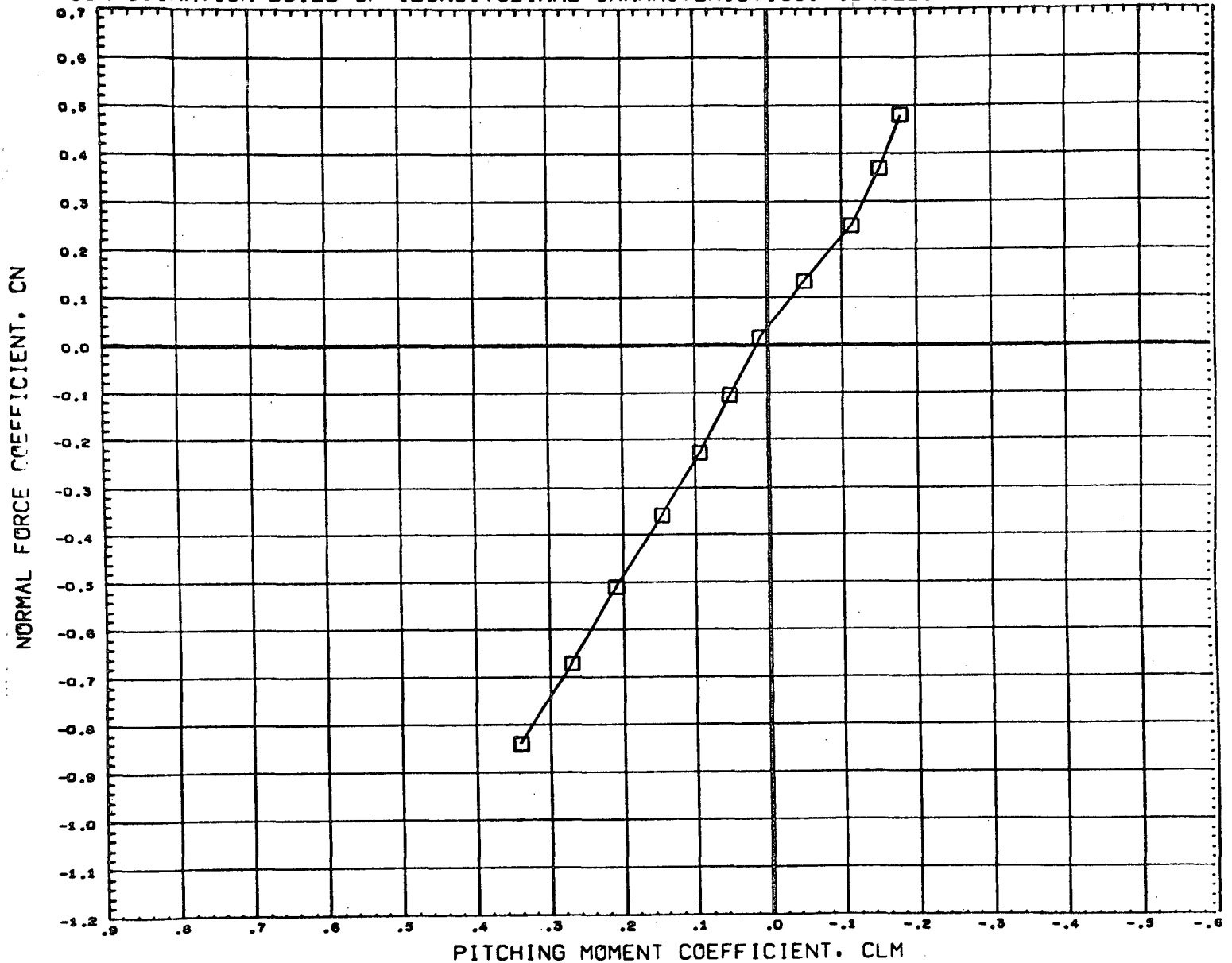


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8600 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000	0.000	LREF 2.0280 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS					BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T10181	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

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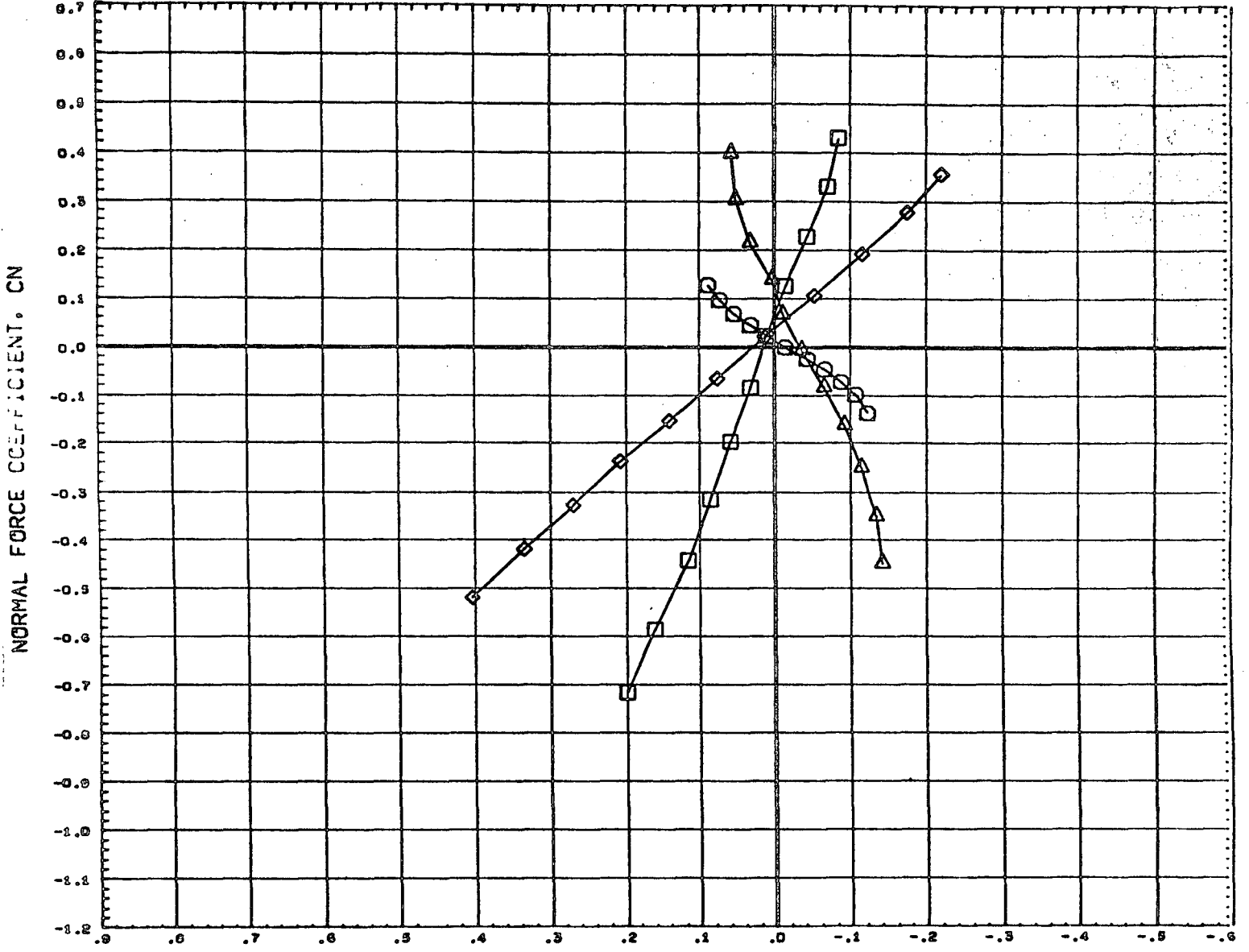
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8800 SQ. IN
(B71070)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		LREF 2.0260 IN.
(B71072)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.45

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)

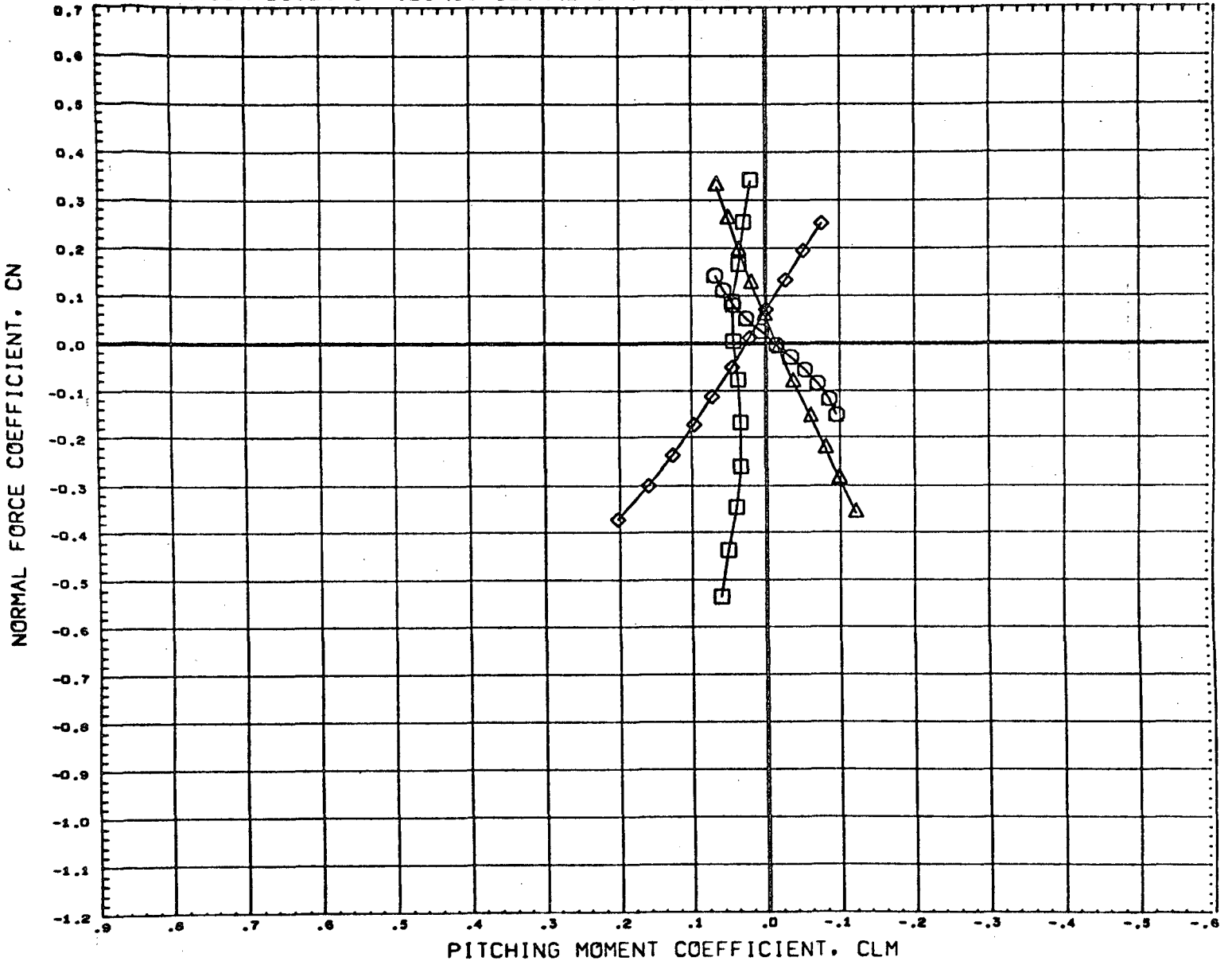


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBNIC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T1					SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		LREF 2.0280 IN.
(B71072)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.94



# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1		75.000	0.000		SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1					LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

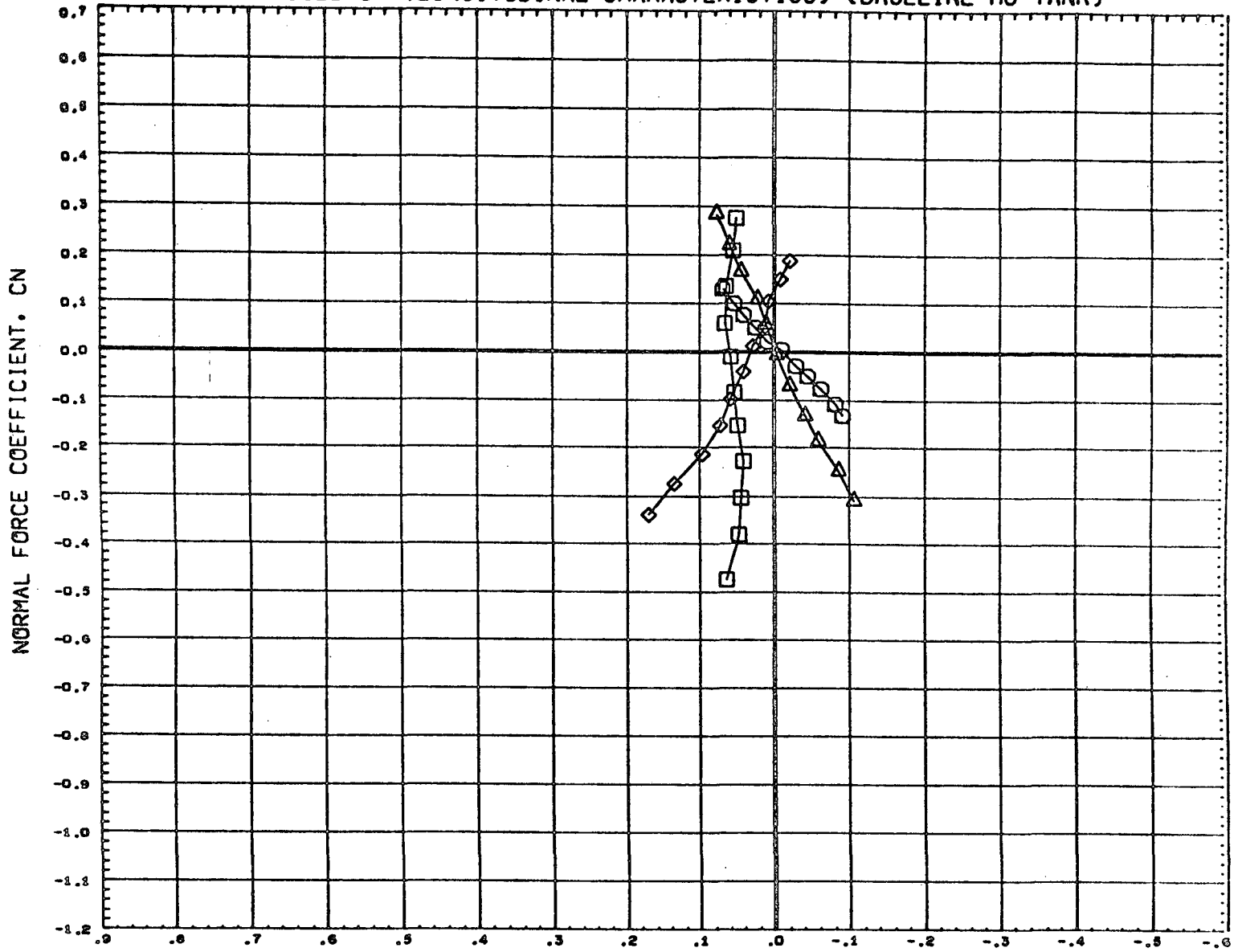
MACH

3.48

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (BASELINE H0 TANK)



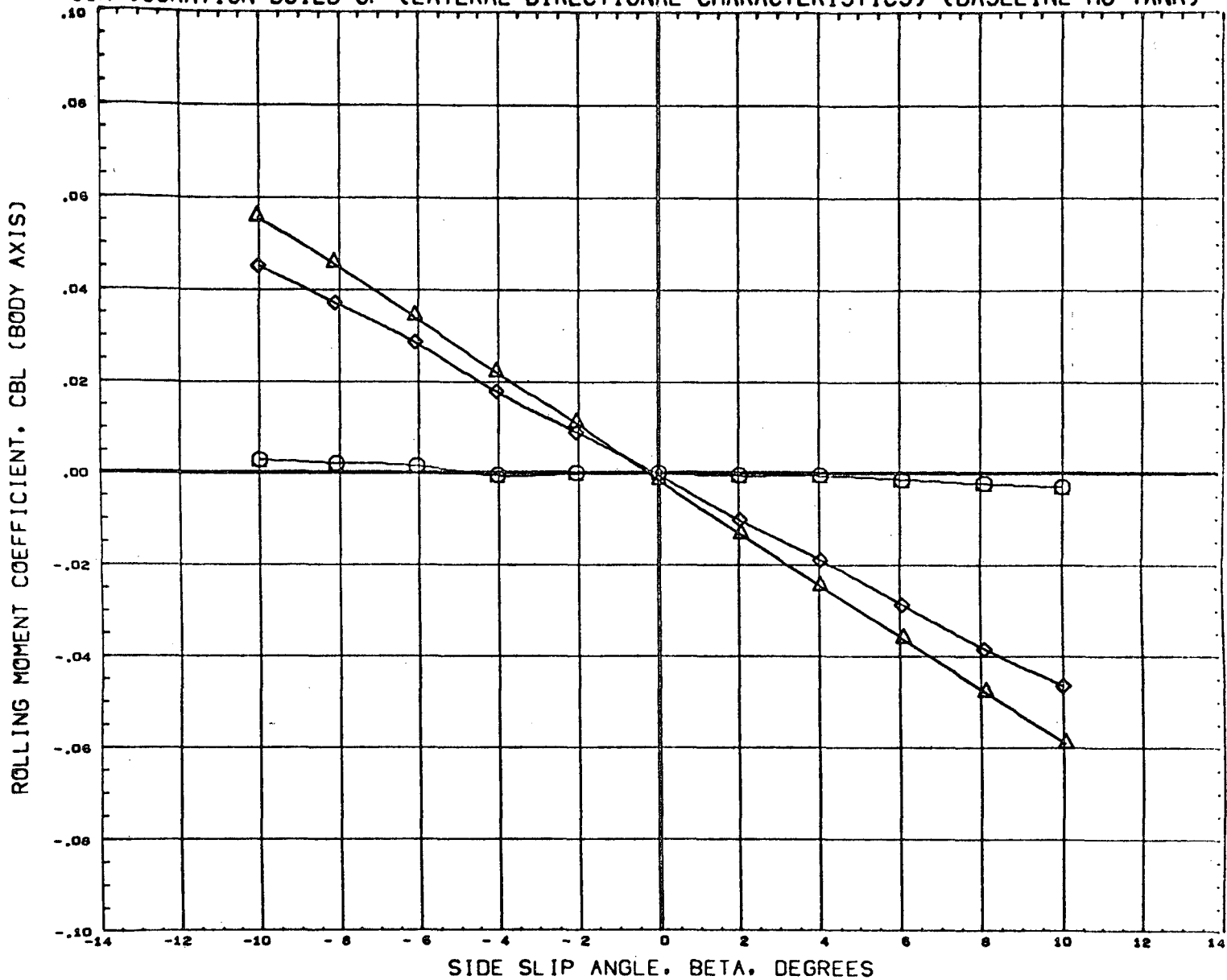
PITCHING MOMENT COEFFICIENT, CLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1		75.000	0.000		SREF 7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1					LREF 2.0280 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500			0.000	BREF 4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE HO TANK)

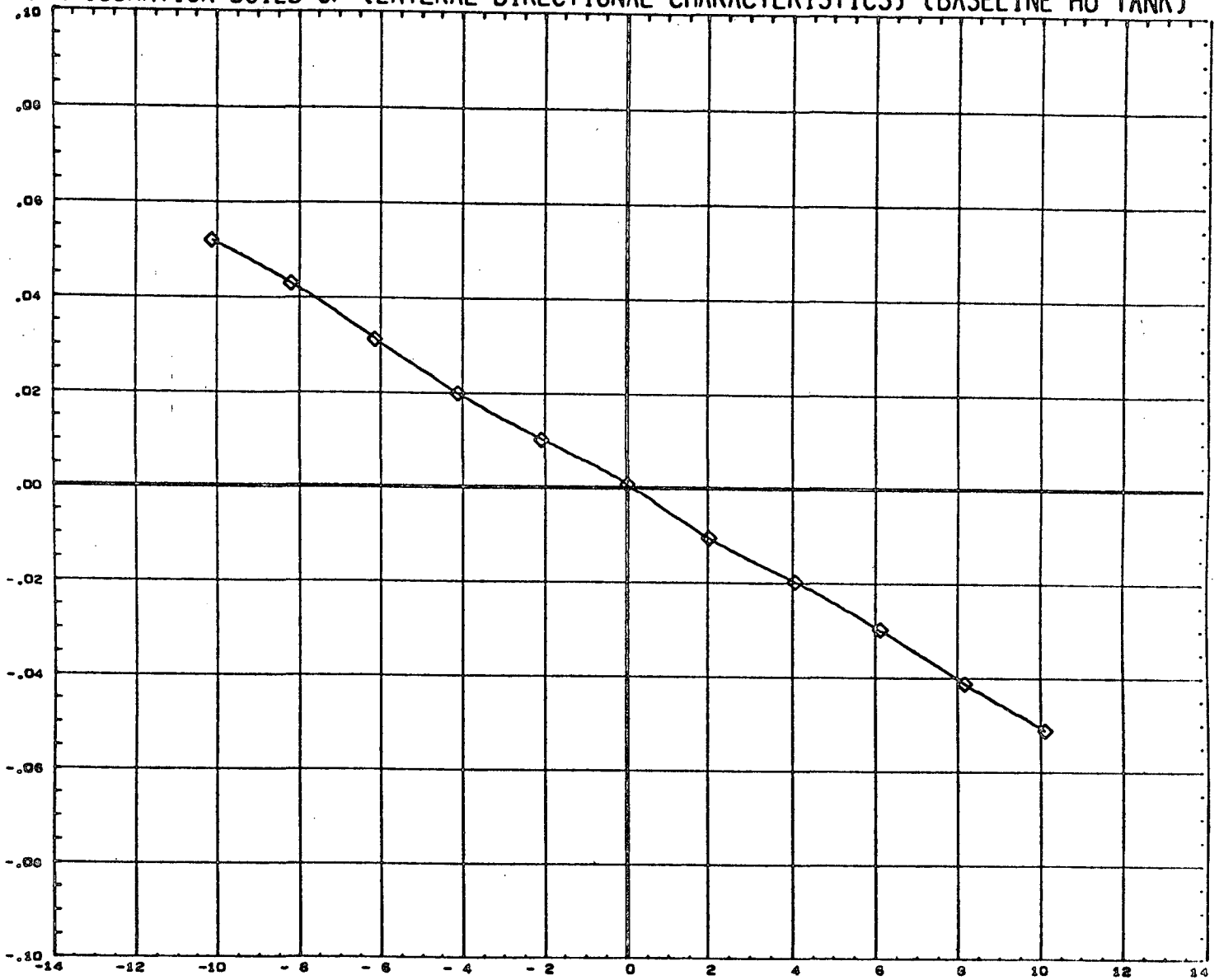


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1 S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1 S1		75.000	0.000		SREF 7.8900 SQ. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1 O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1 O1 S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .60

# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE HO TANK)

ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)



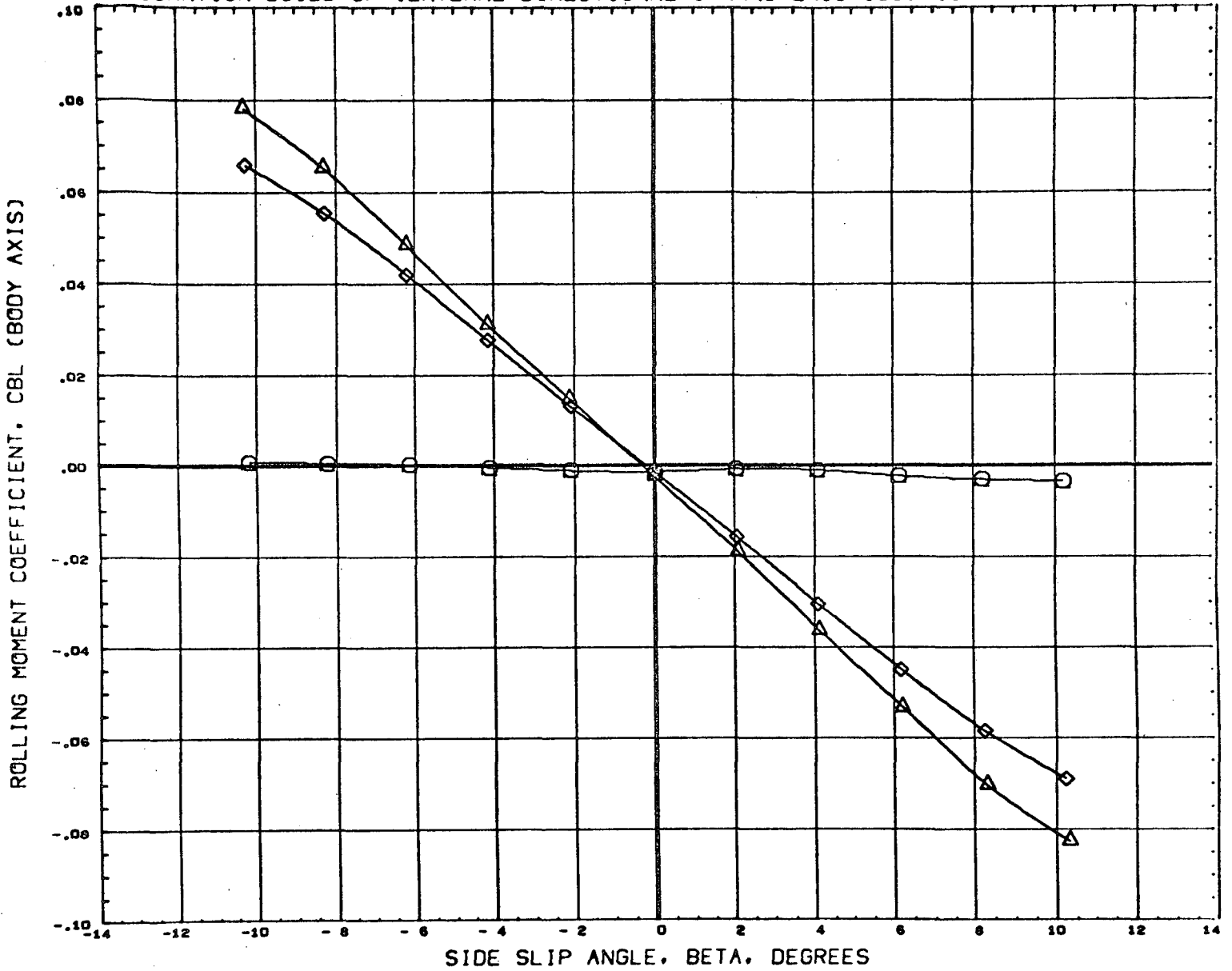
SIDE SLIP ANGLE, BETA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF 7.8800 SQ. IN
(A71073)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

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CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1s1		75.000	0.000		SREF 7.8800 SQ. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

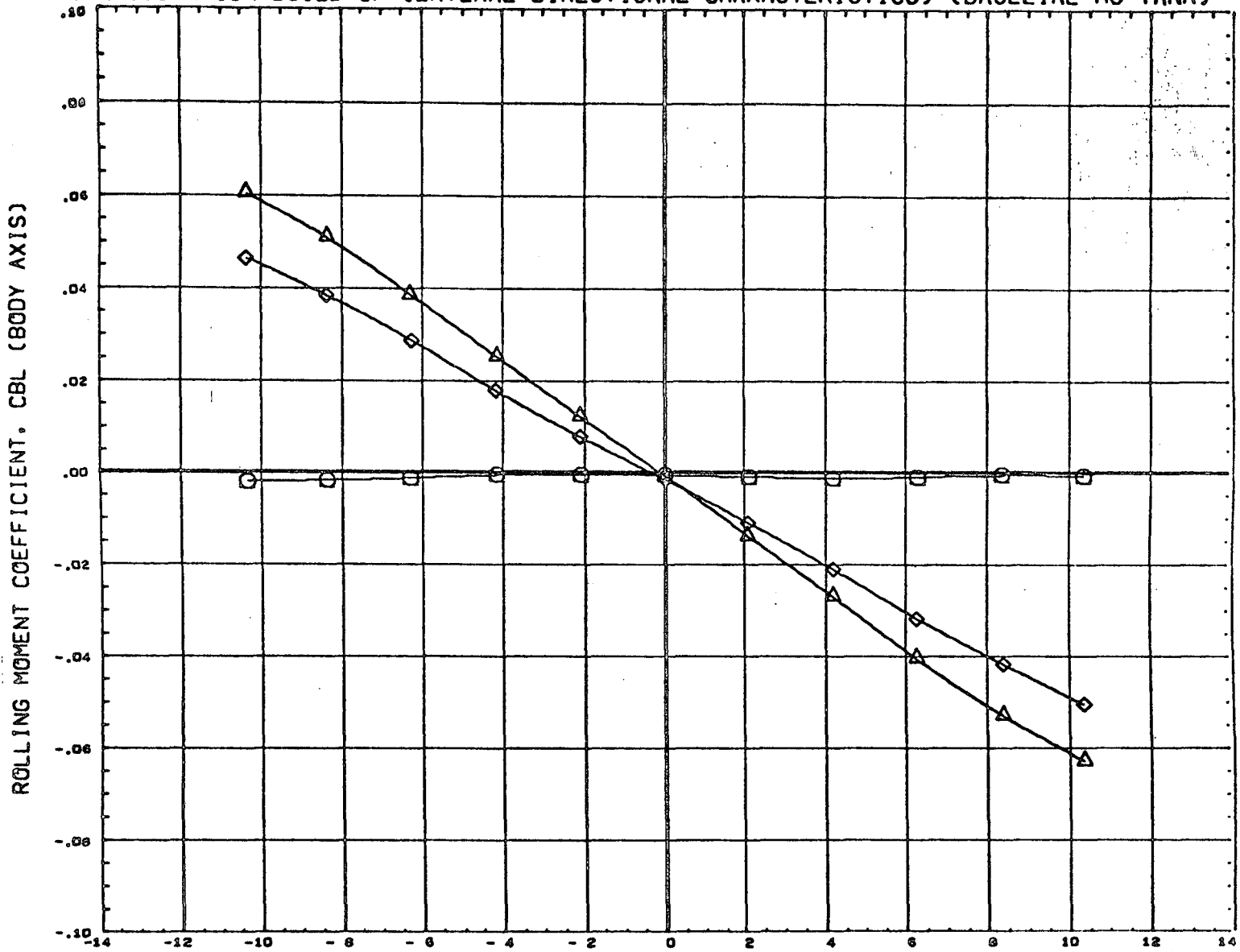
MACH

1.20

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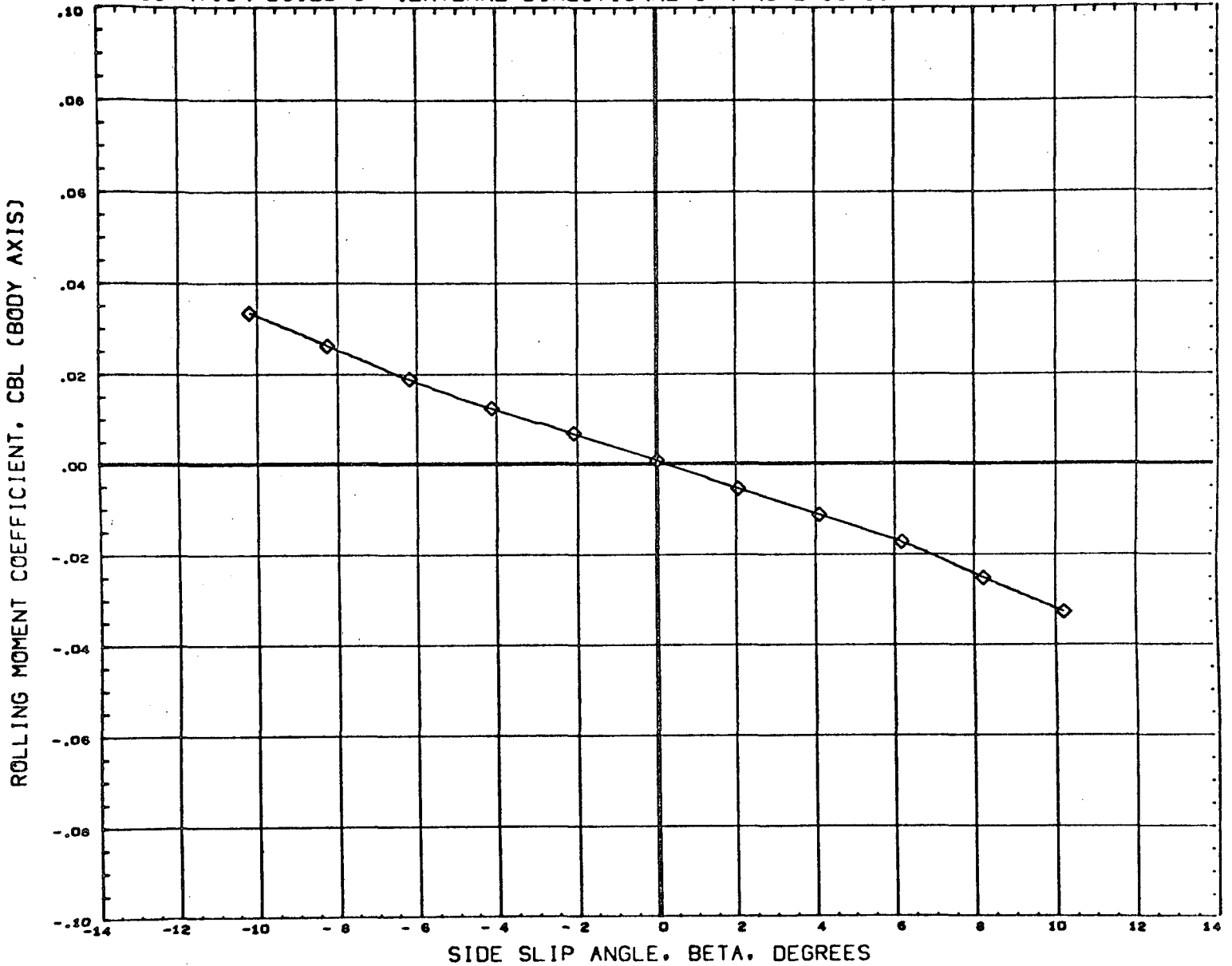
# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		SREF 7.8800 SQ. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

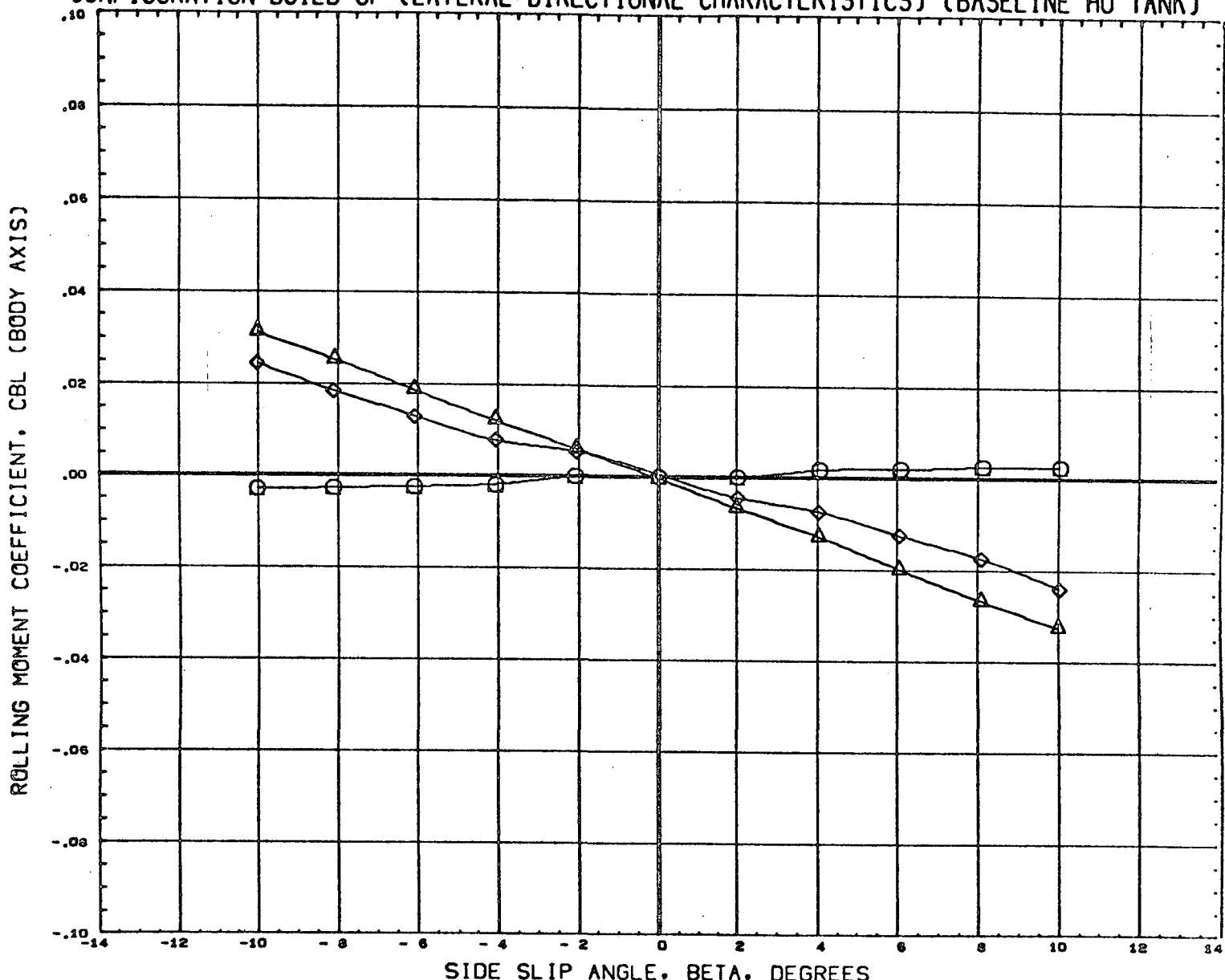
MACH 1.95

CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(A71071)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF	7.8800 SQ. IN
(A71073)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	LREF	2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	75.000	0.000	0.000	BREF	4.4600 IN.
						XMRP	3.3800 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)

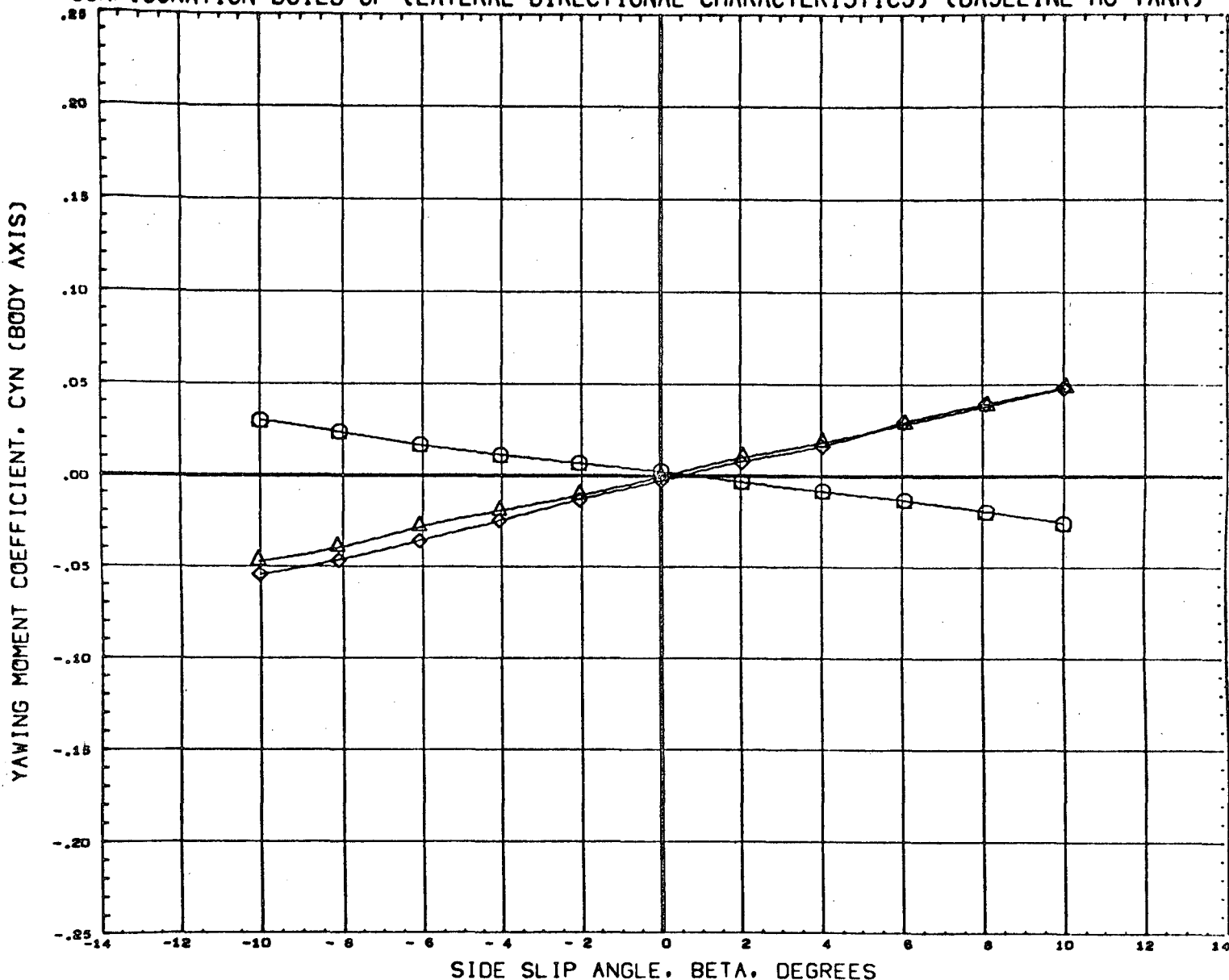


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		SREF 7.8800 80. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96



# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)

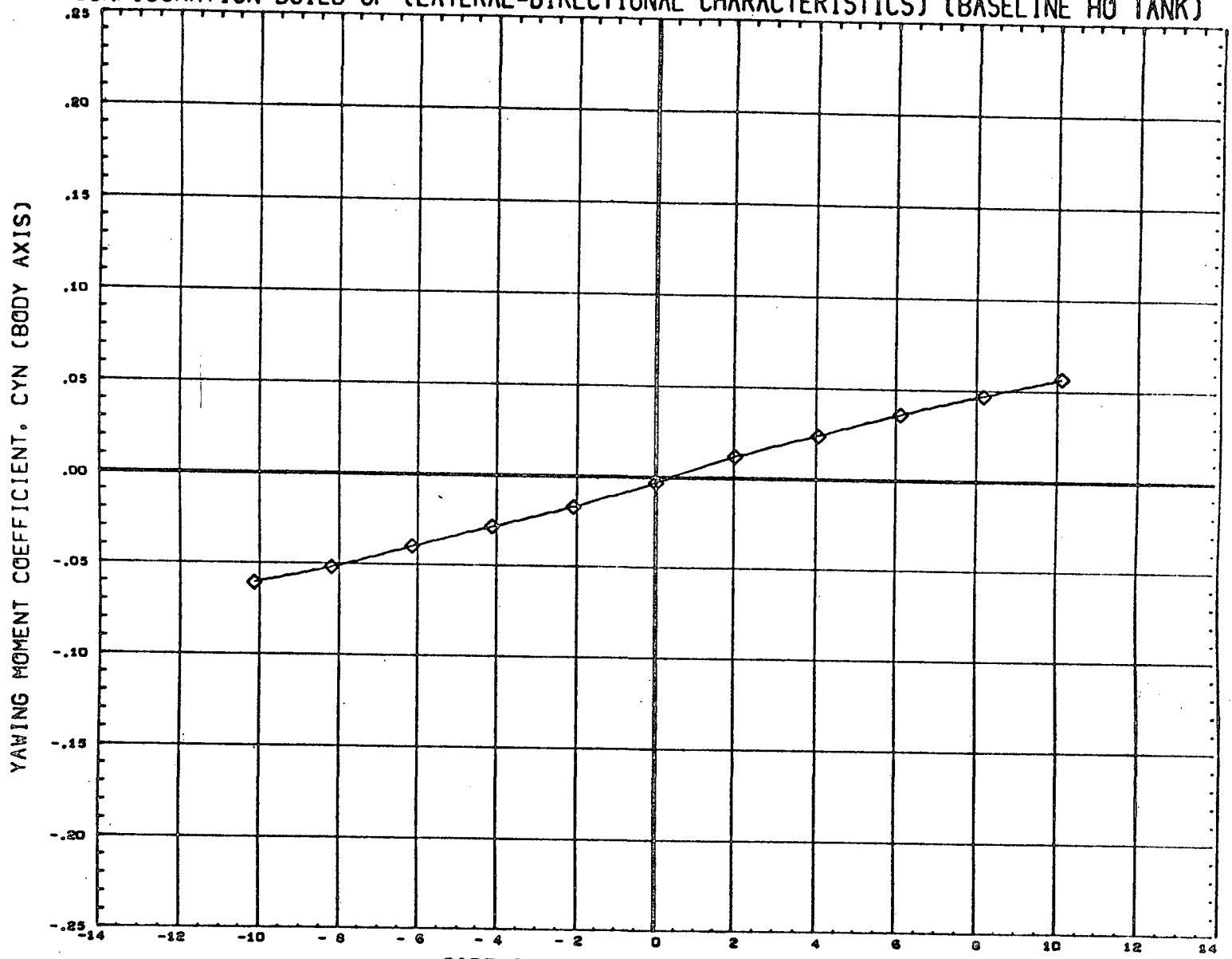


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		SREF 7.8800 SQ. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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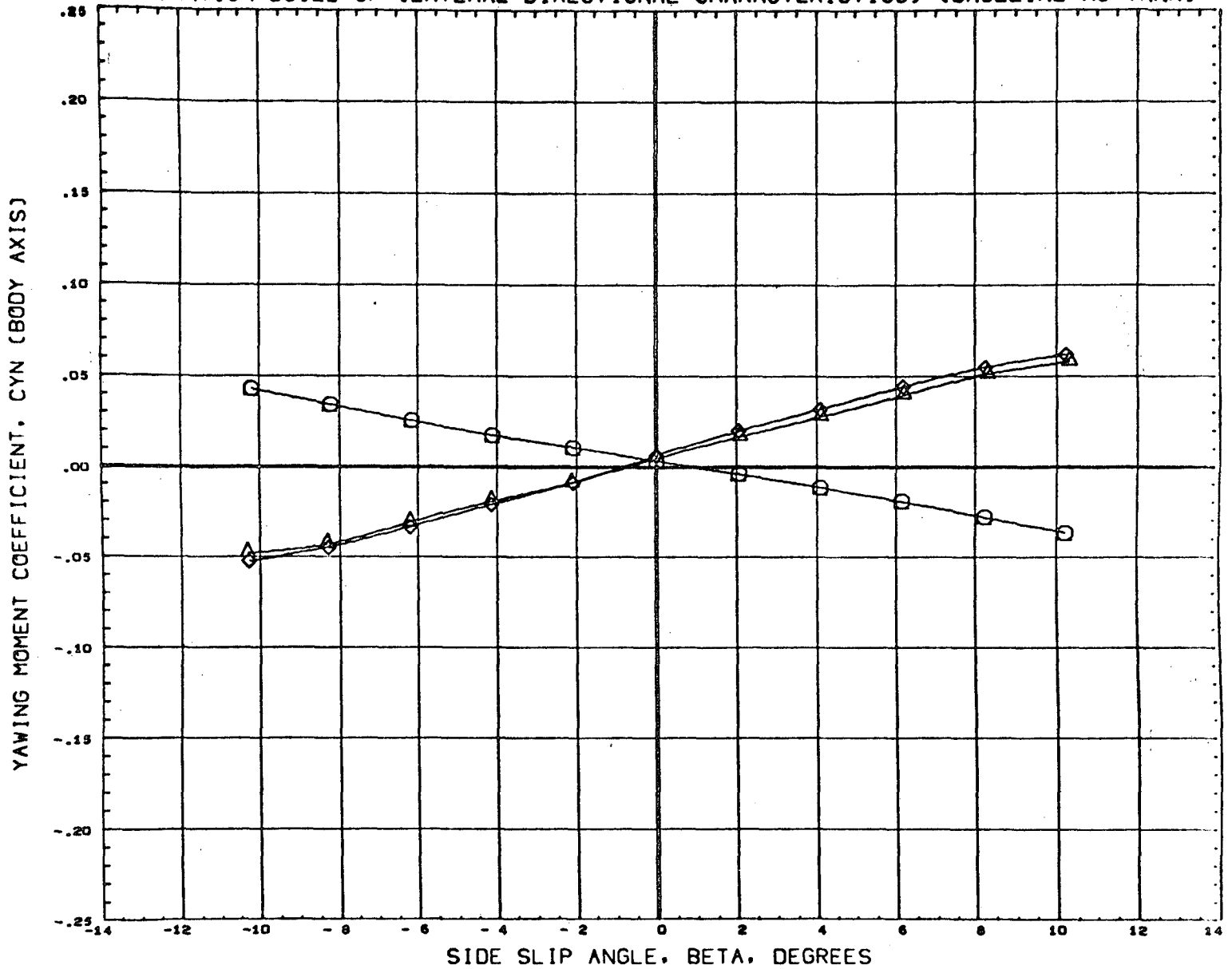
# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE HQ TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	DATA NOT AVAILABLE FOR ALL CONDITIONS					SREF 7.8600 SQ. IN
(A71073)	DATA NOT AVAILABLE FOR ALL CONDITIONS					LREF 2.0280 IN.
(A71010)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

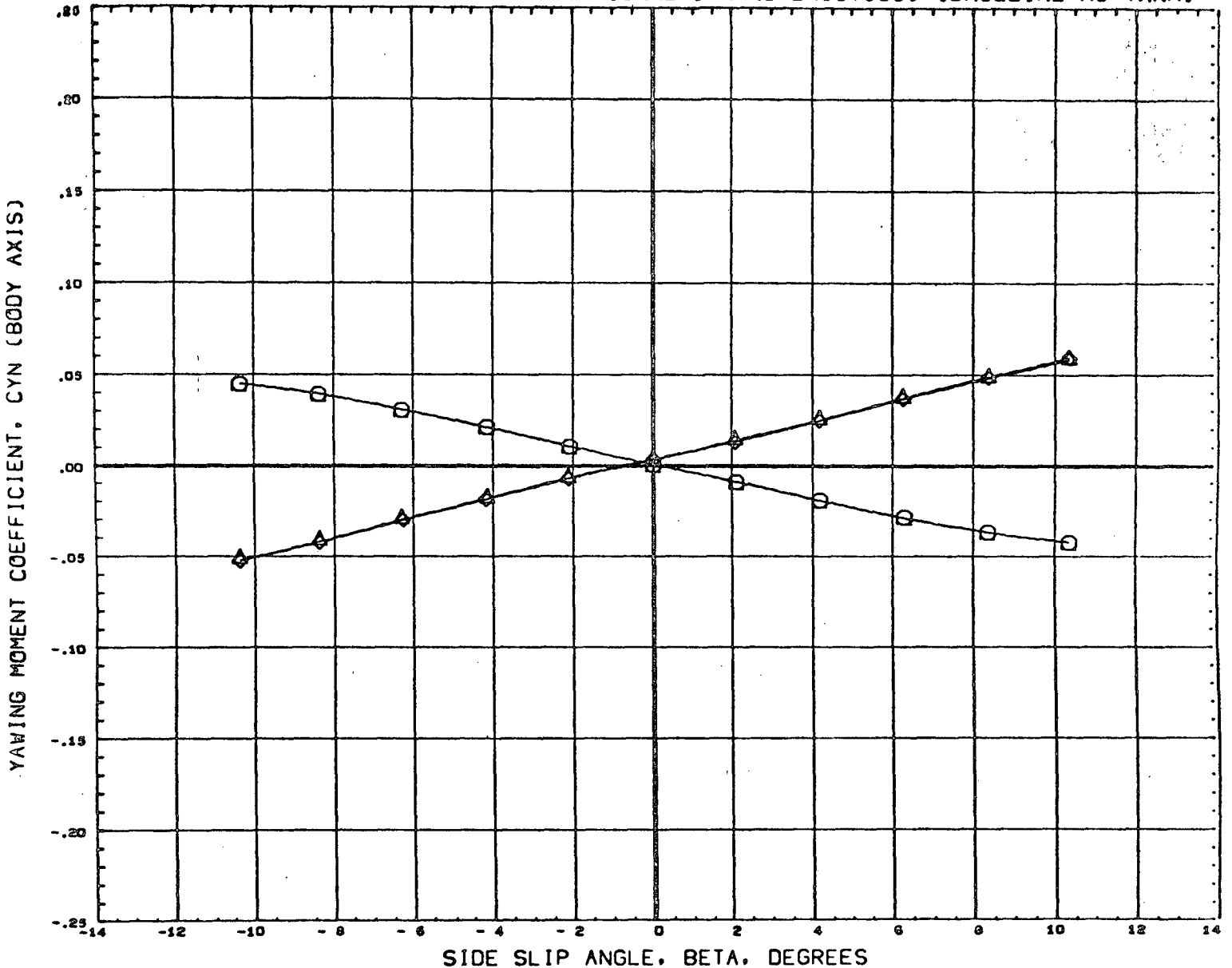
# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1		75.000	0.000		SREF 7.8800 sq. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

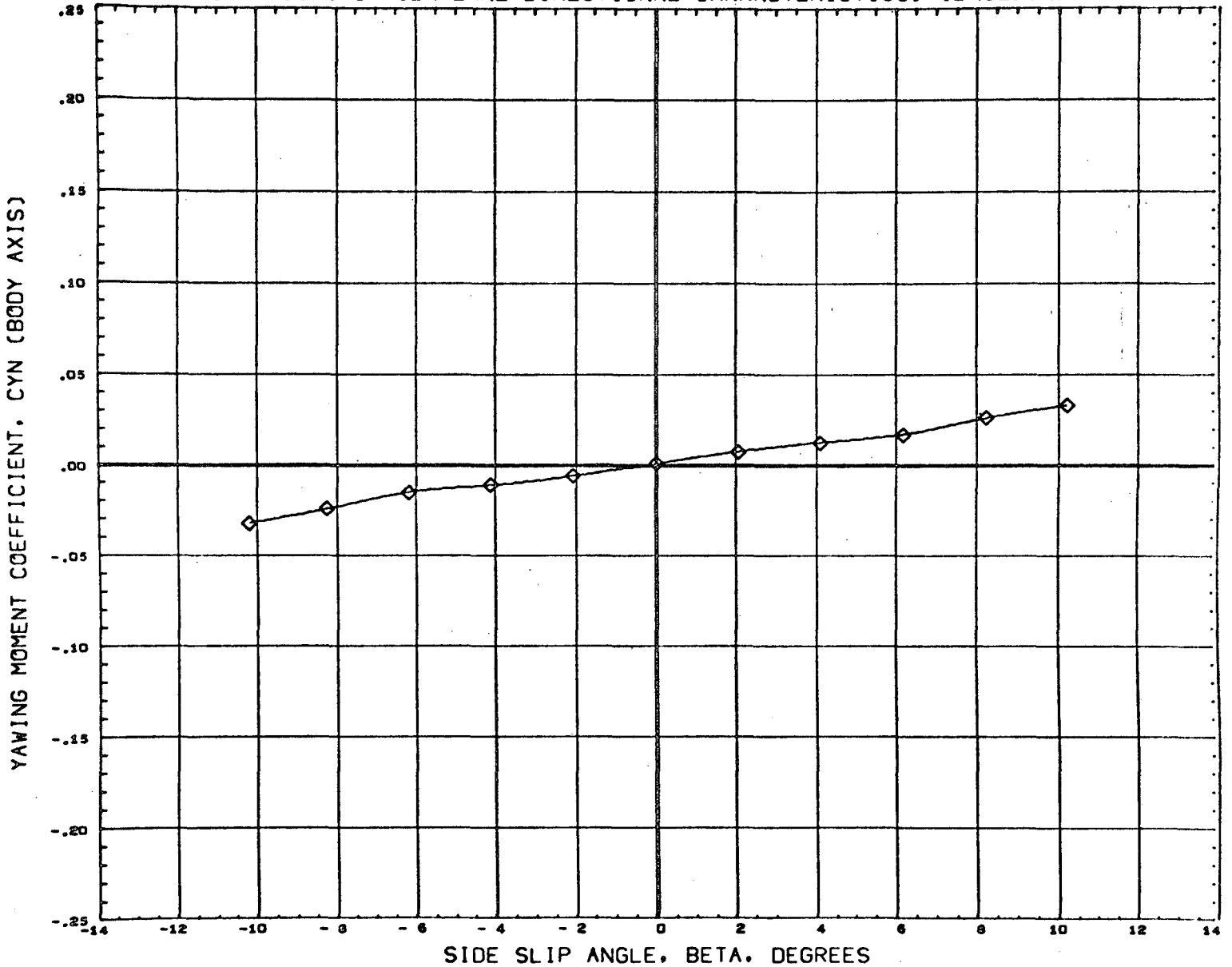
CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE HO TANK)



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	T1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1	-1.500	75.000	0.000	0.000	SREF 7.8600 IN.
(A71073)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
								XMRP 3.3600 IN.
								YMRP 0.0000 IN.
								ZMRP 0.2480 IN.
								SCALE 0.0040 SCALE

MACH 1.95

CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)

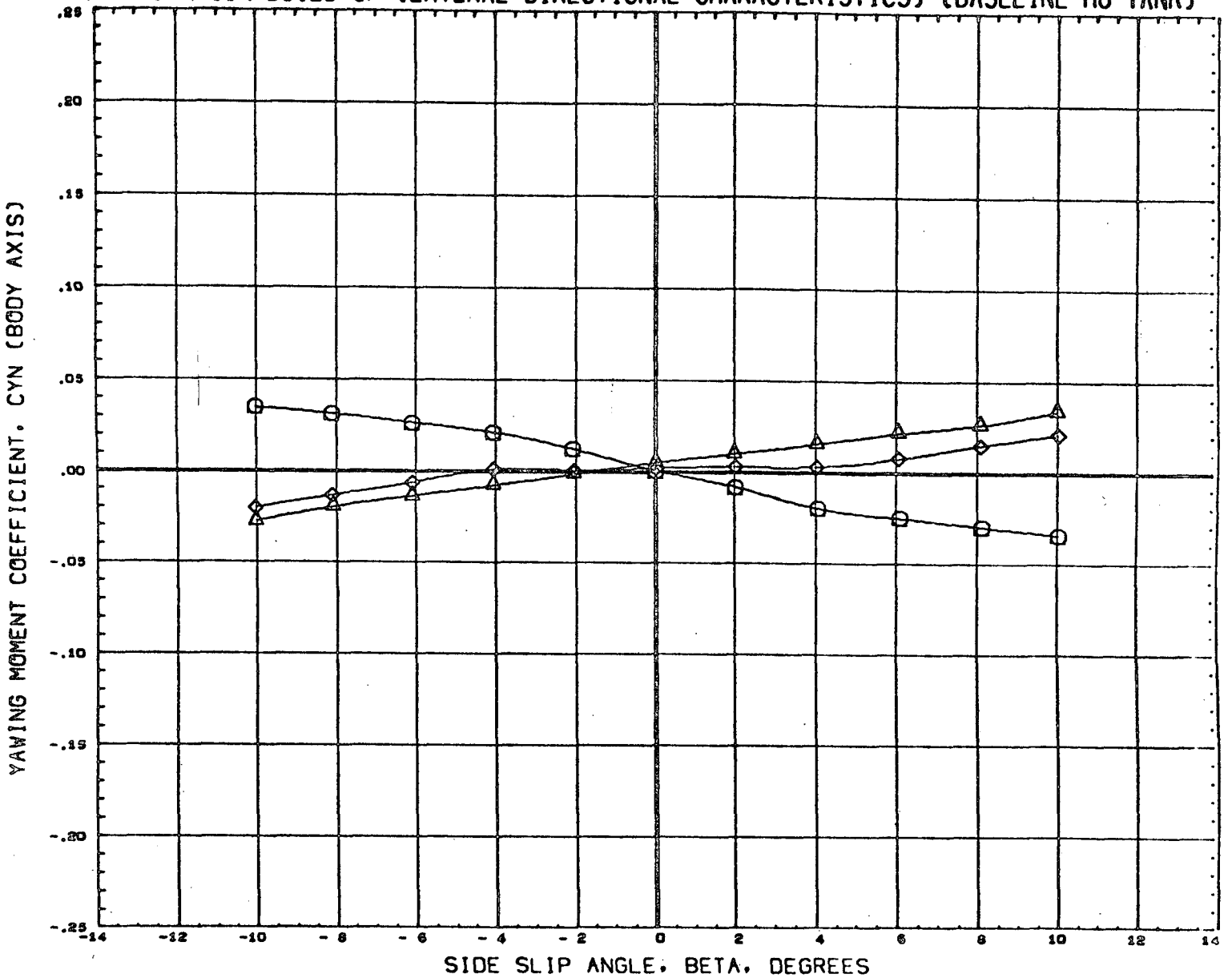


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF 7.8800 SQ. IN
(A71073)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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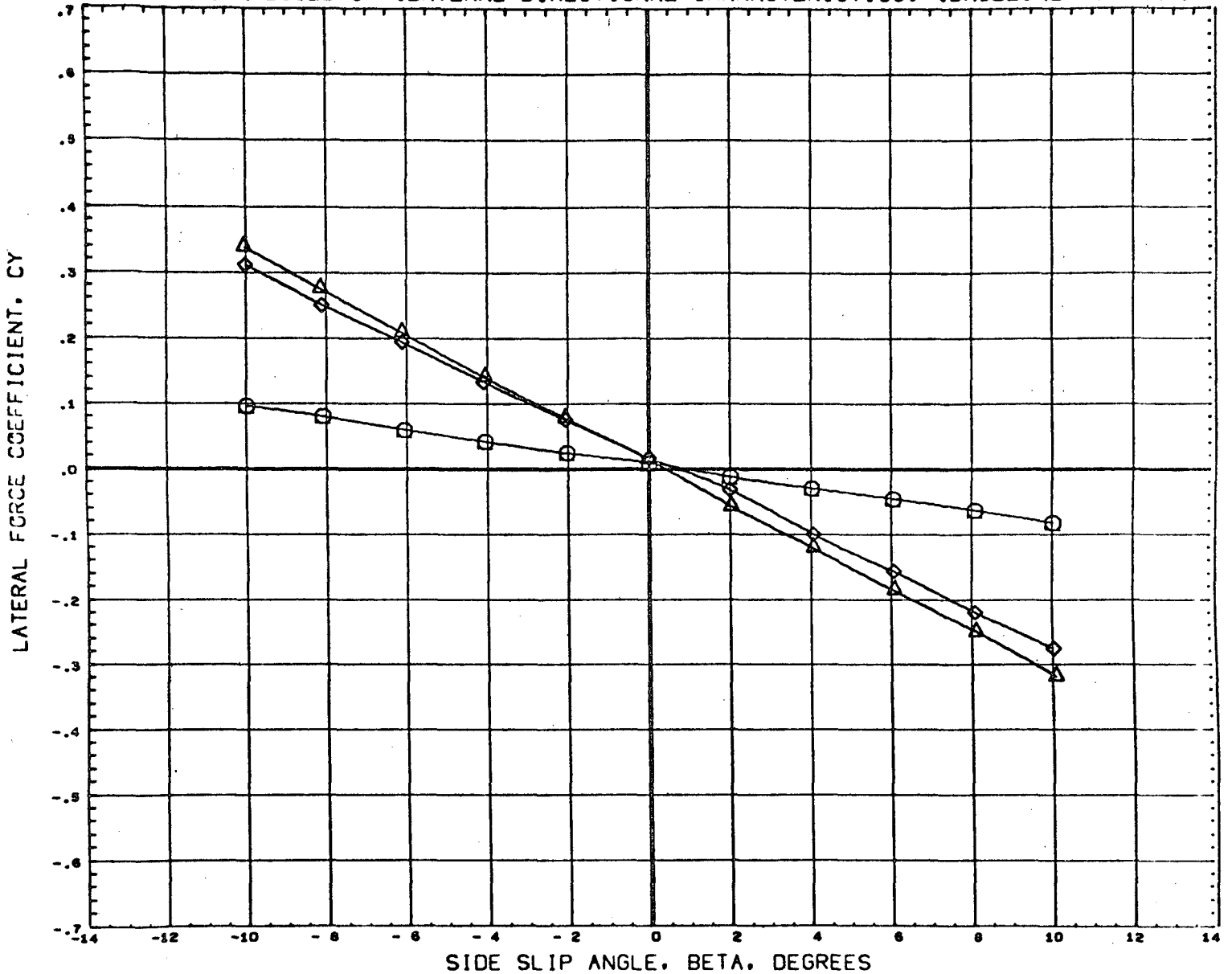
# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE NO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		SREF 7.8800 80. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)

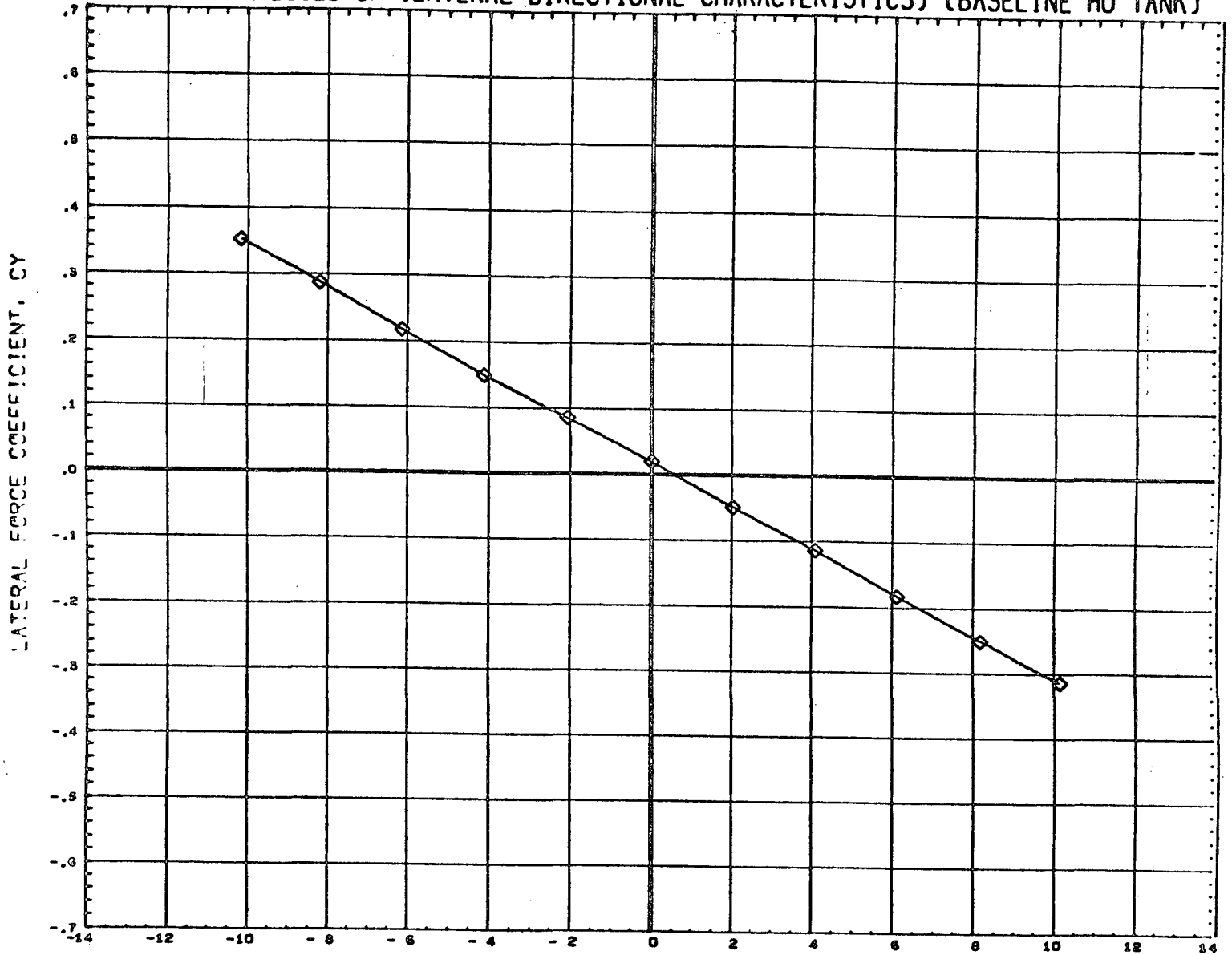


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		SREF 7.8800 SQ. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500			0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)

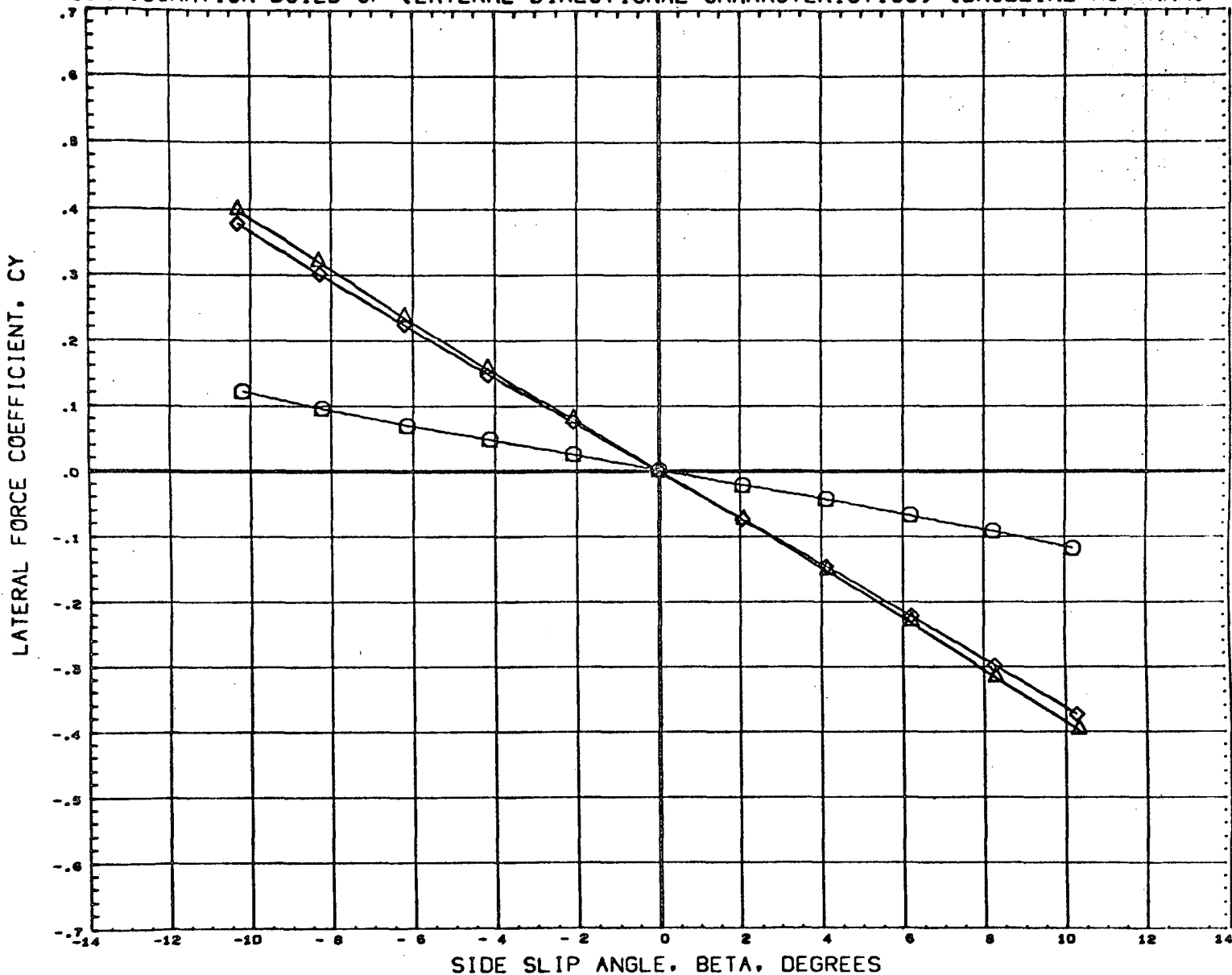


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF 7.8800 SQ. IN
(A71073)	DATA NOT AVAILABLE FOR ALL CONDITIONS					LREF 2.0280 IN.
(A71010)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE HO TANK)

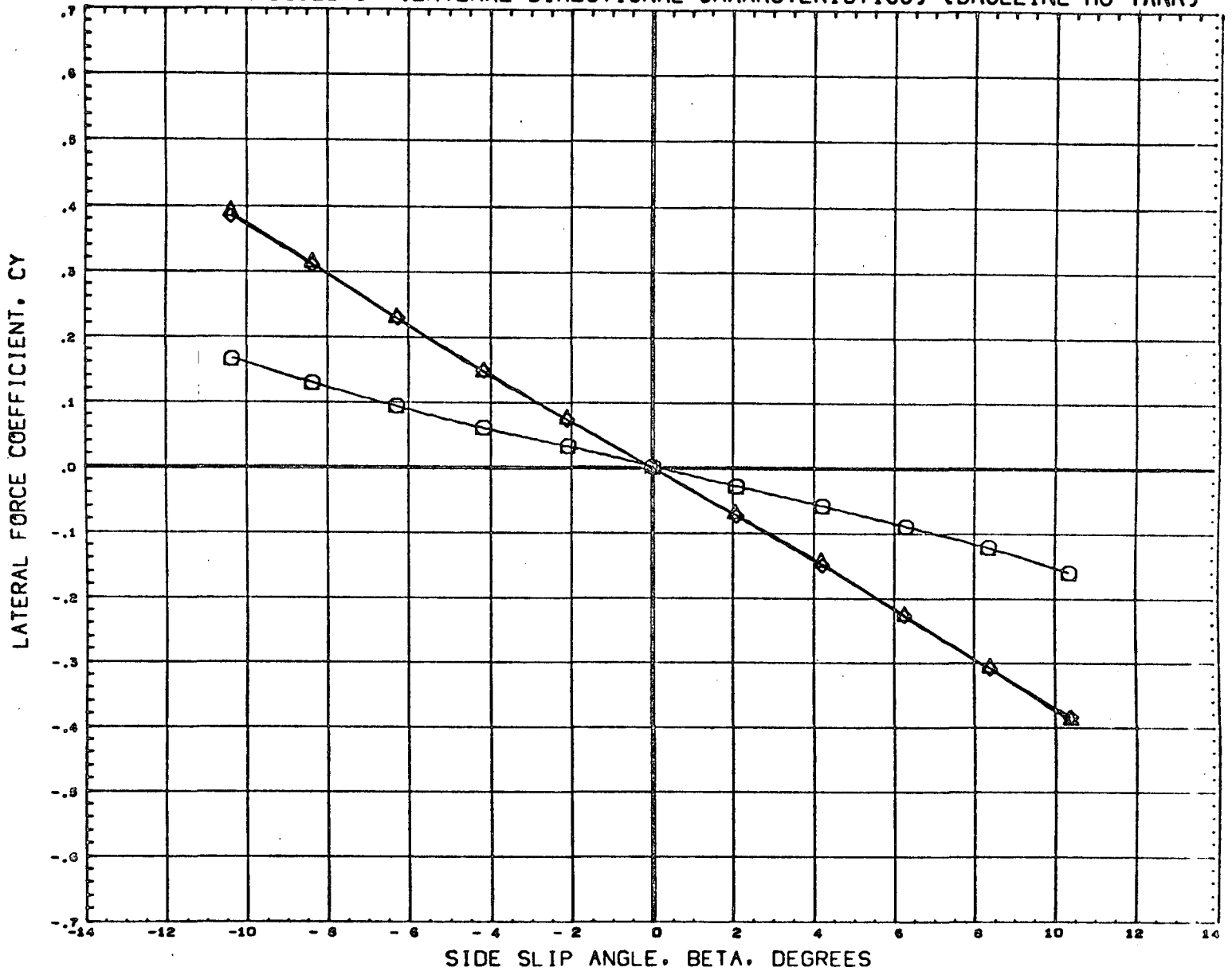


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1		75.000	0.000		SREF 7.8800 SQ. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE HQ TANK)

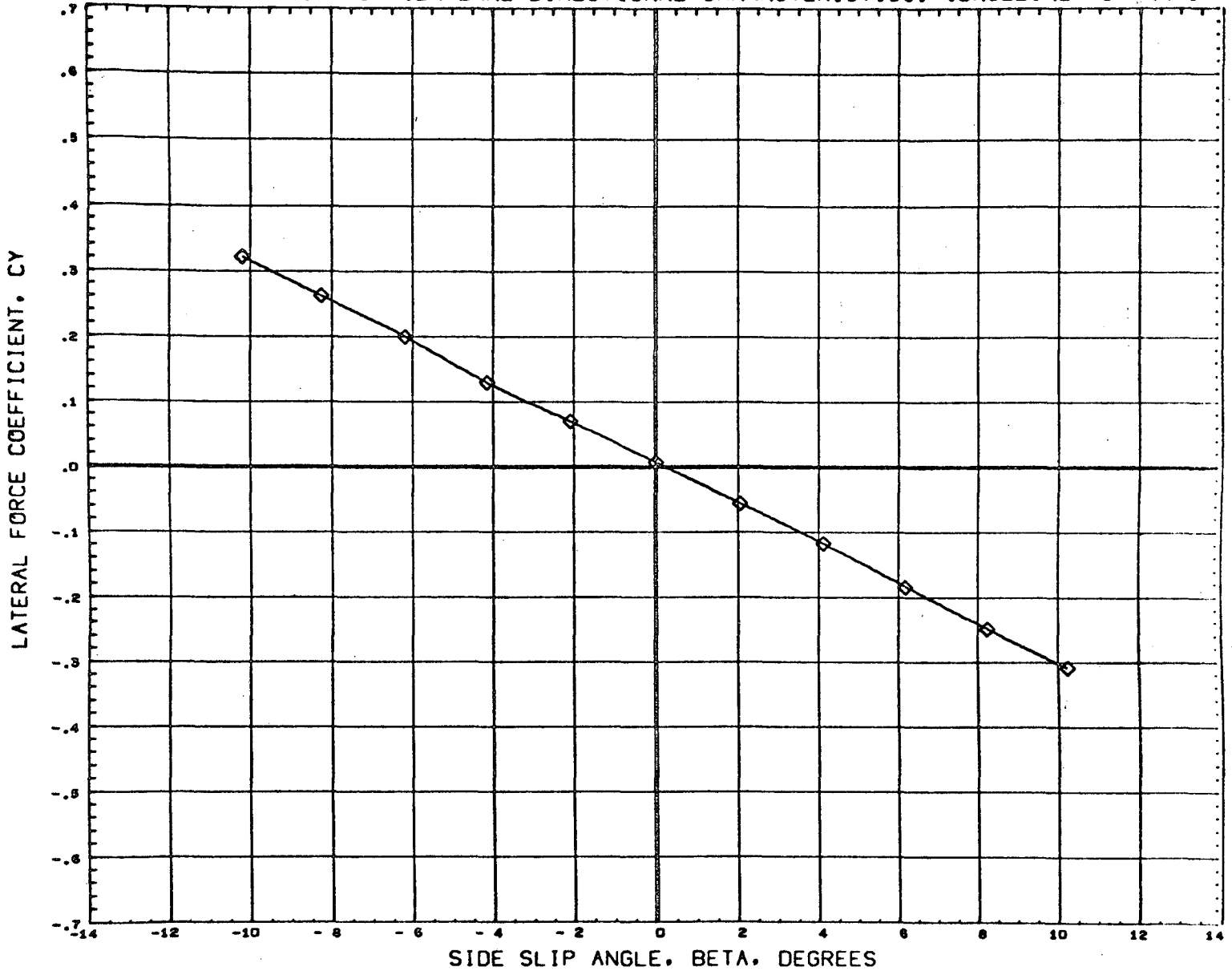


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1s1		75.000	0.000		SREF 7.8000 80. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1s1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.95

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# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)

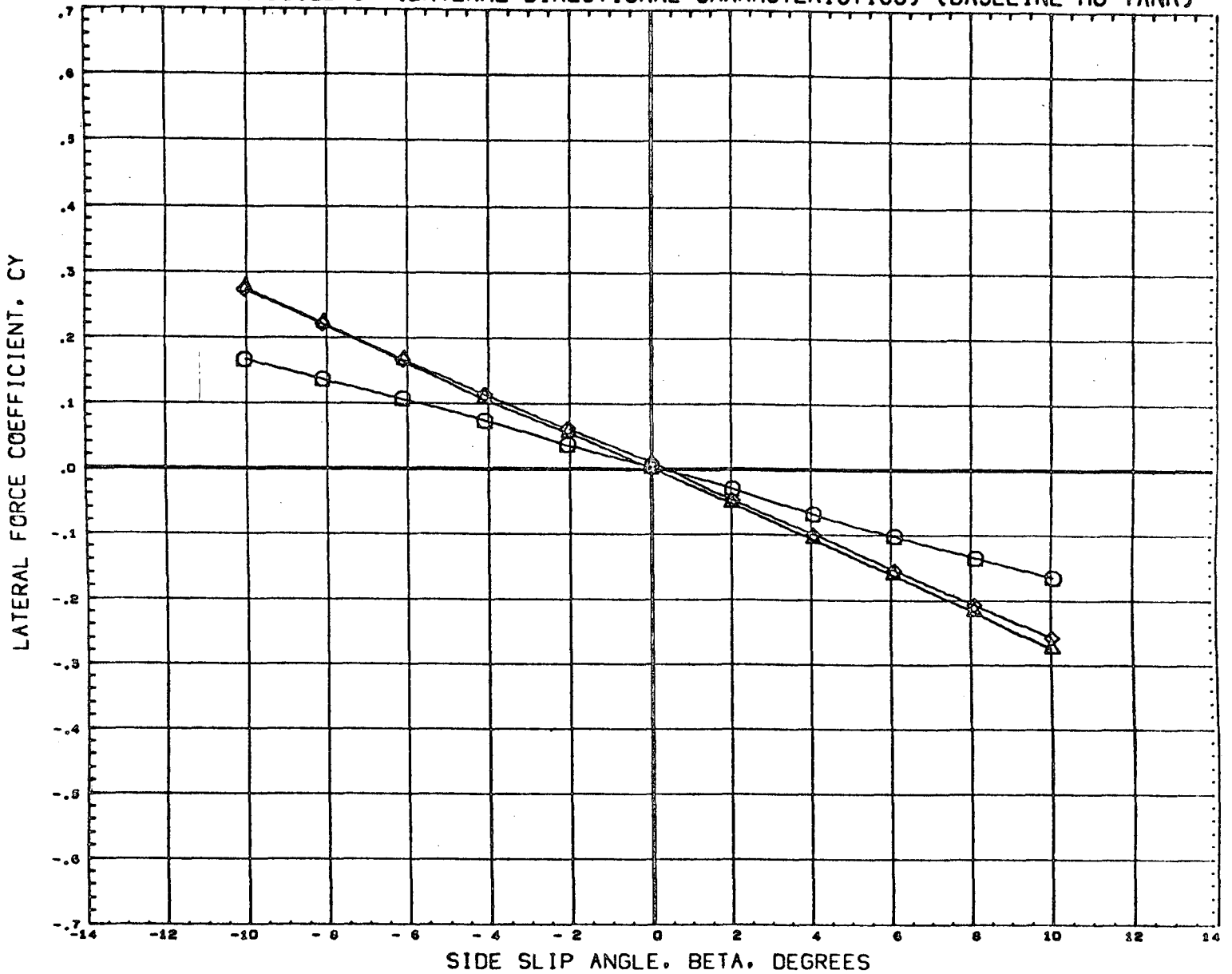


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF 7.8800 SQ. IN
(A71073)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (BASELINE H0 TANK)

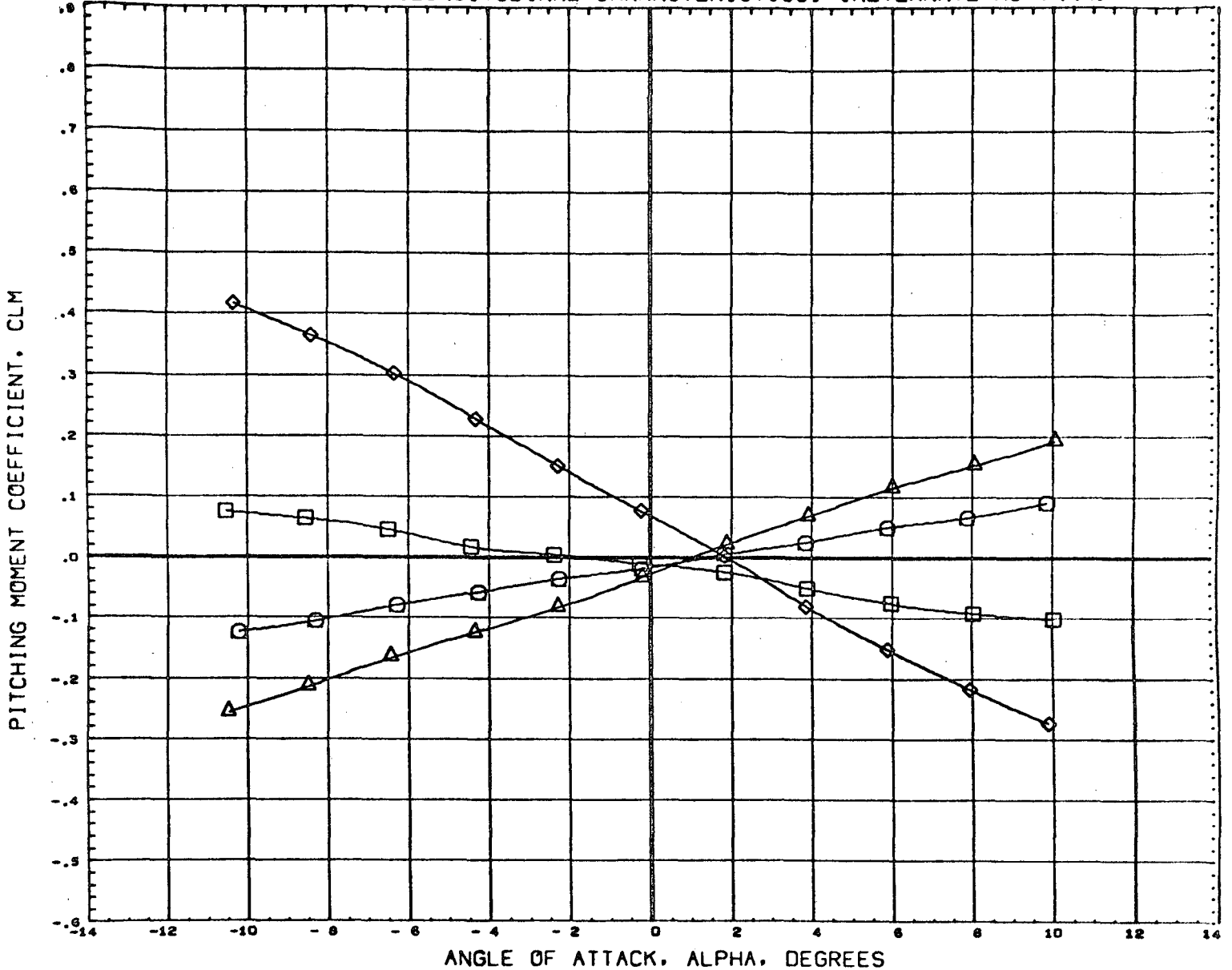


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T131		75.000	0.000		SREF 7.8800 80. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE HO TANK)

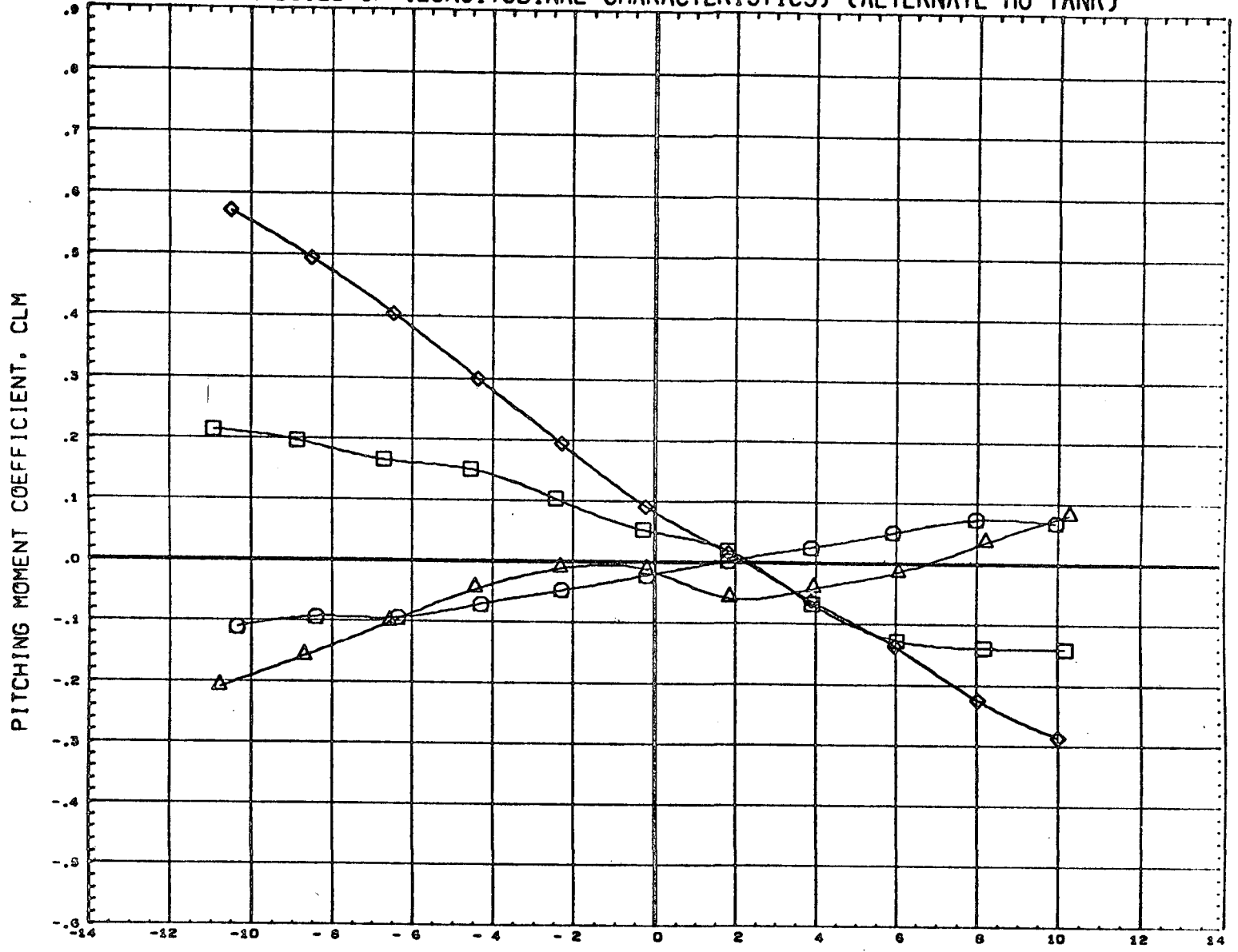


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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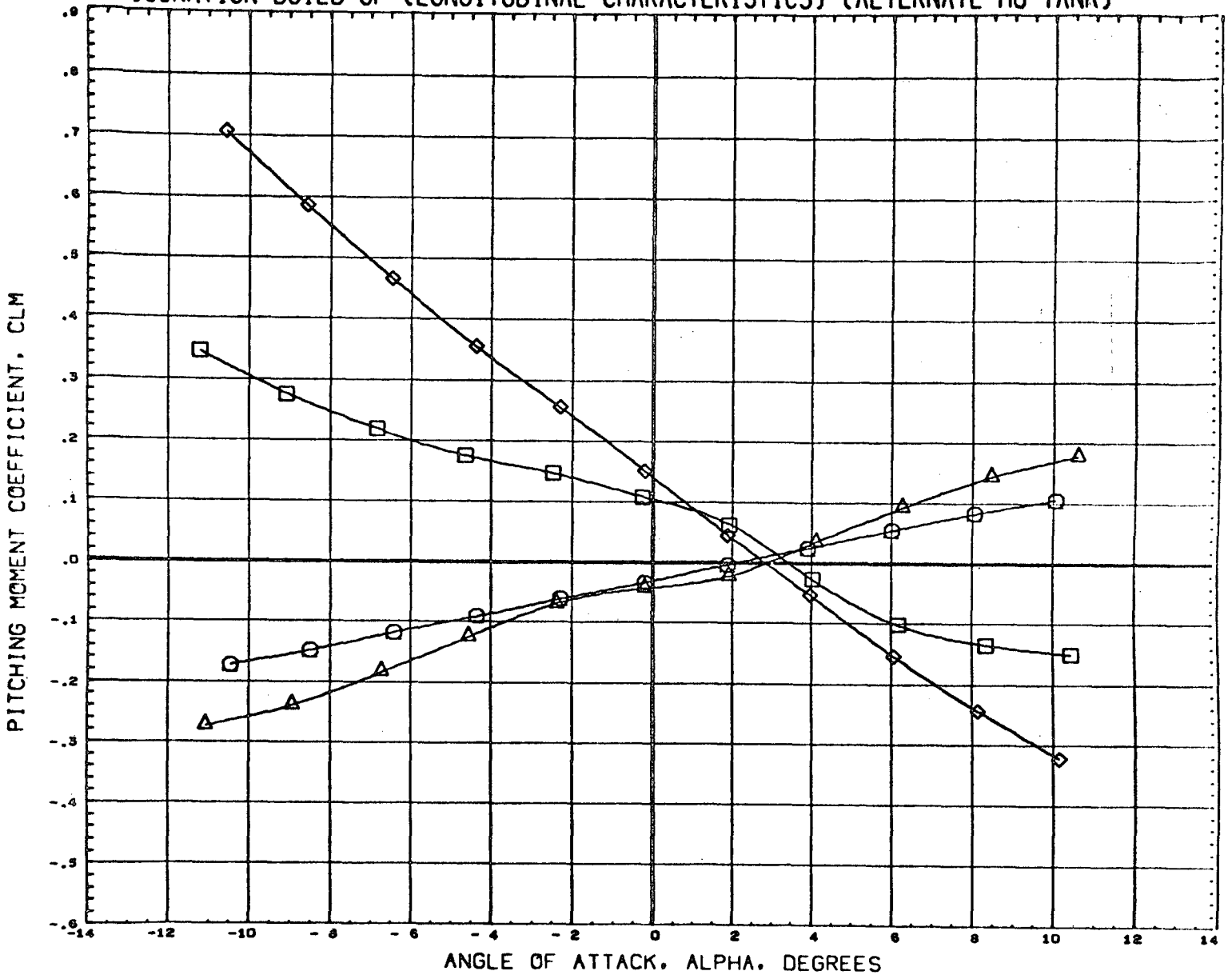
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8600 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0260 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501	-1.500			0.000	BREF 4.4800 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

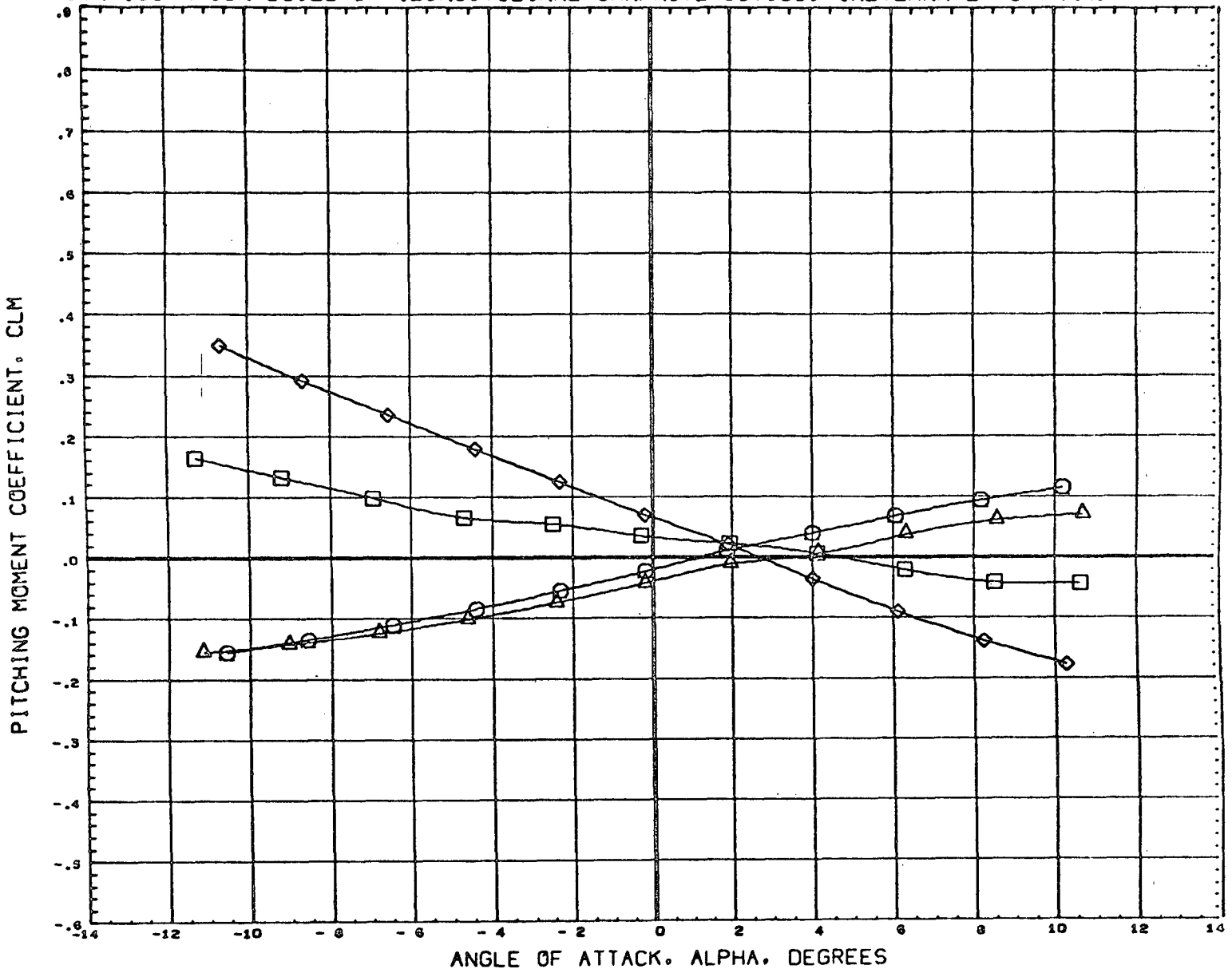
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5s1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5o1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5o1s1	-1.500	75.000	0.000	0.000	XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)

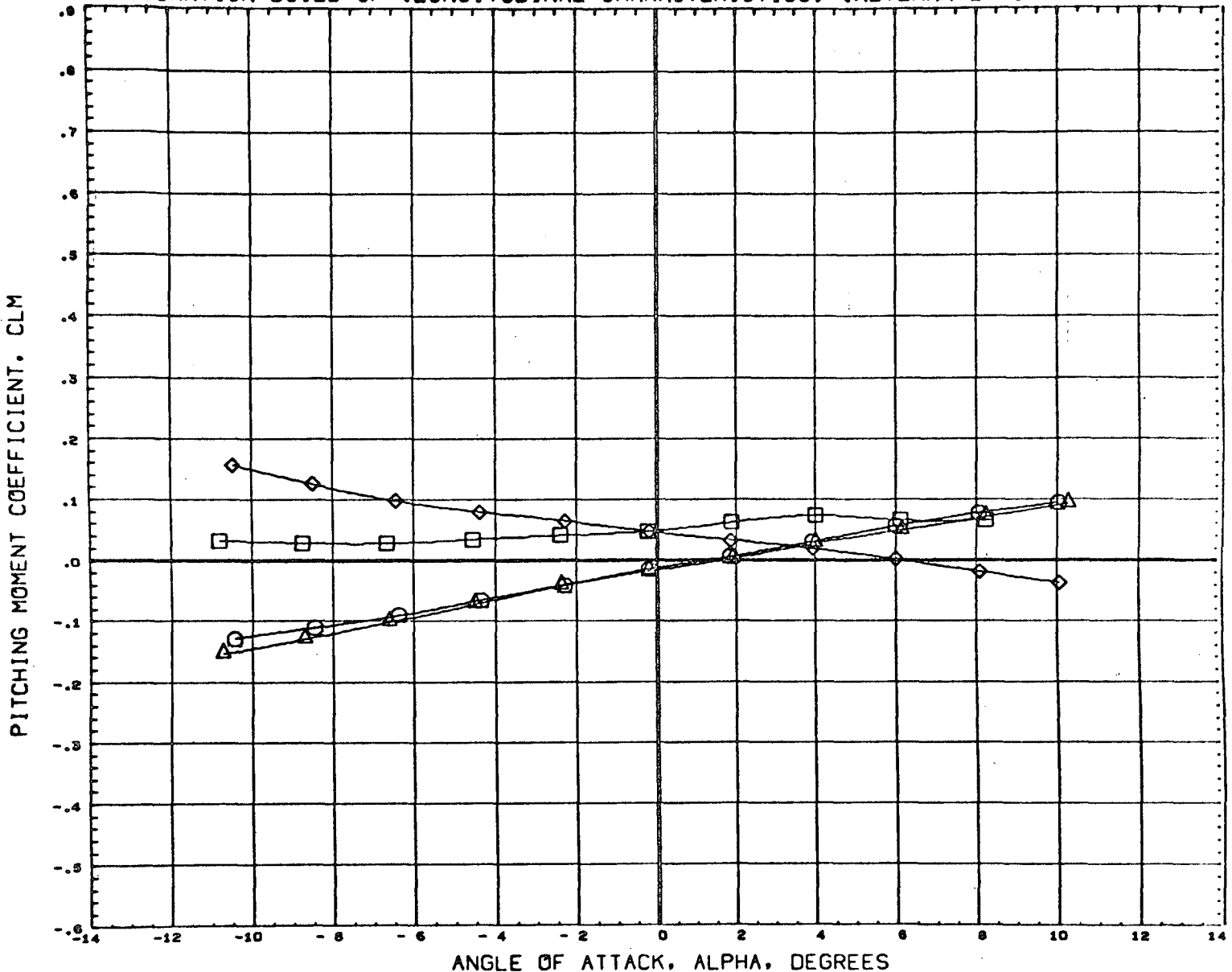


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.95



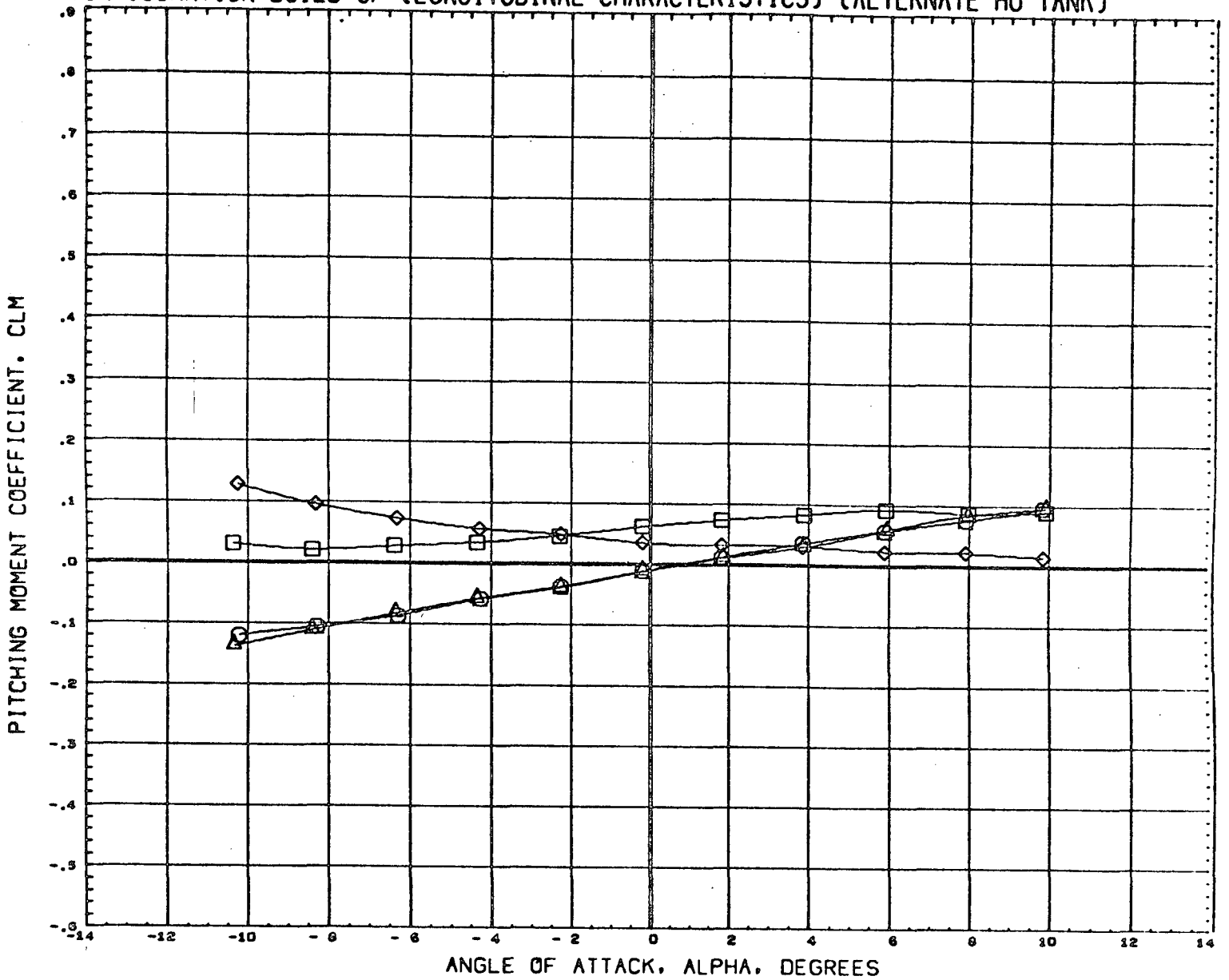
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8600 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H<sub>0</sub> TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBNIC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

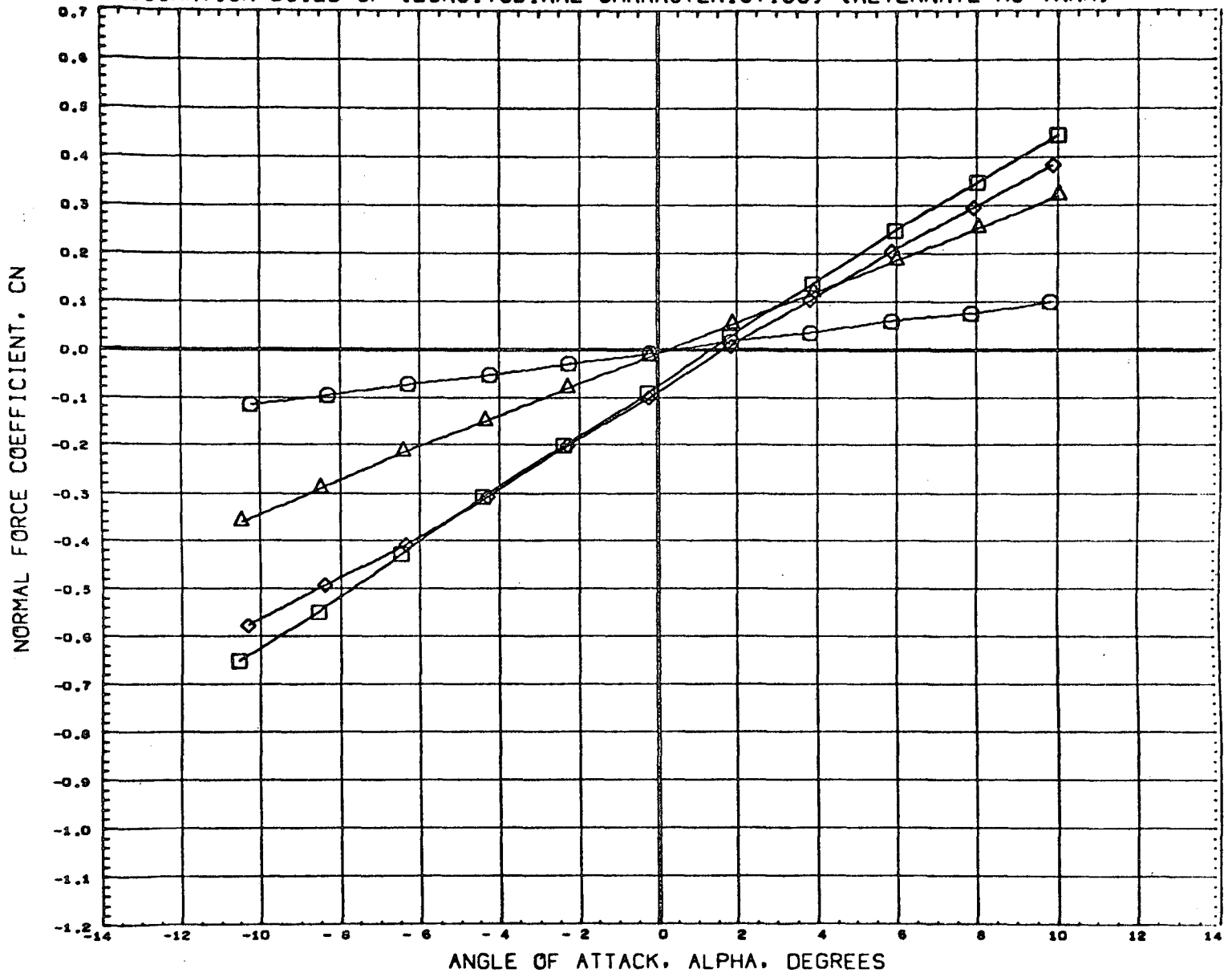
MACH

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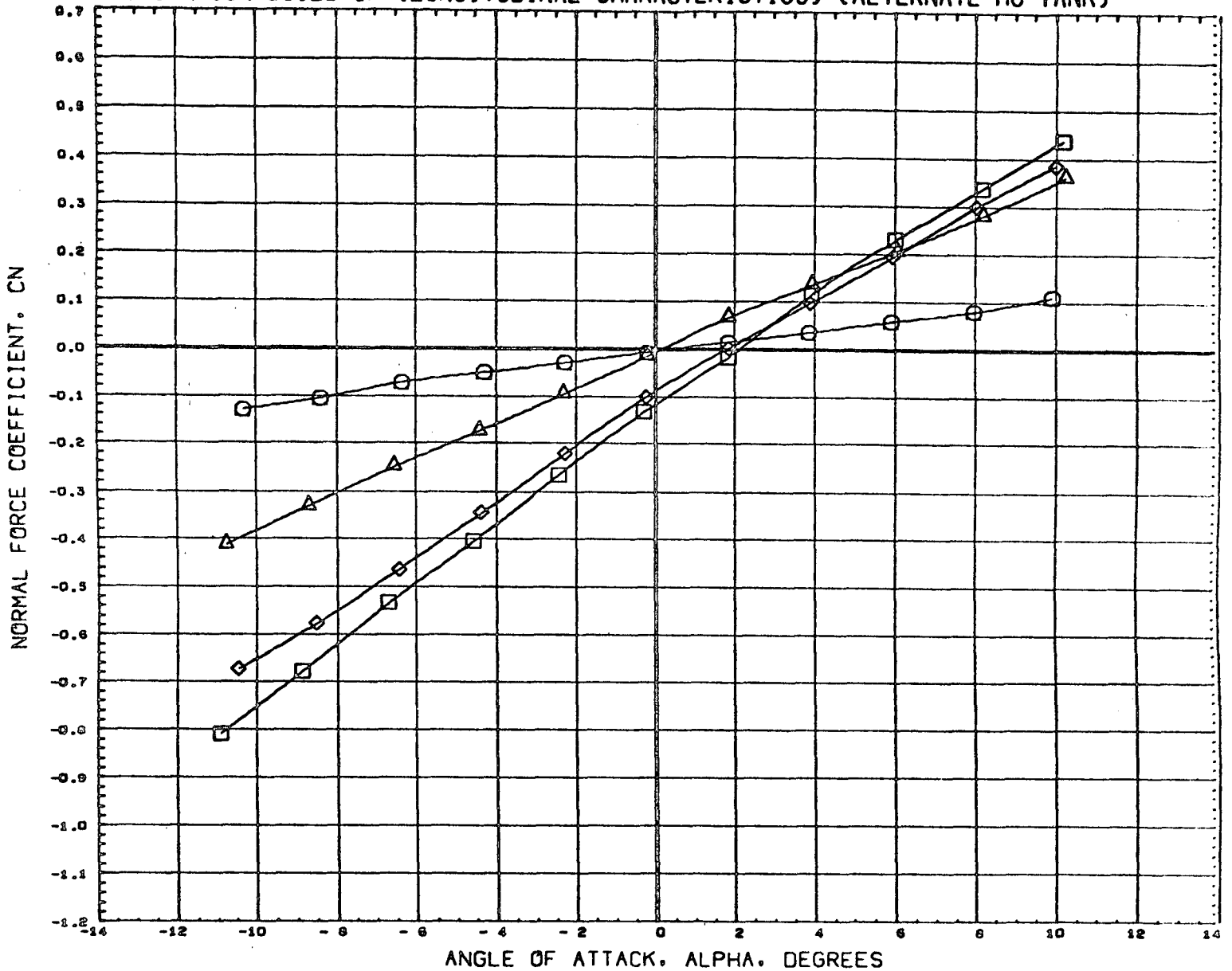
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)

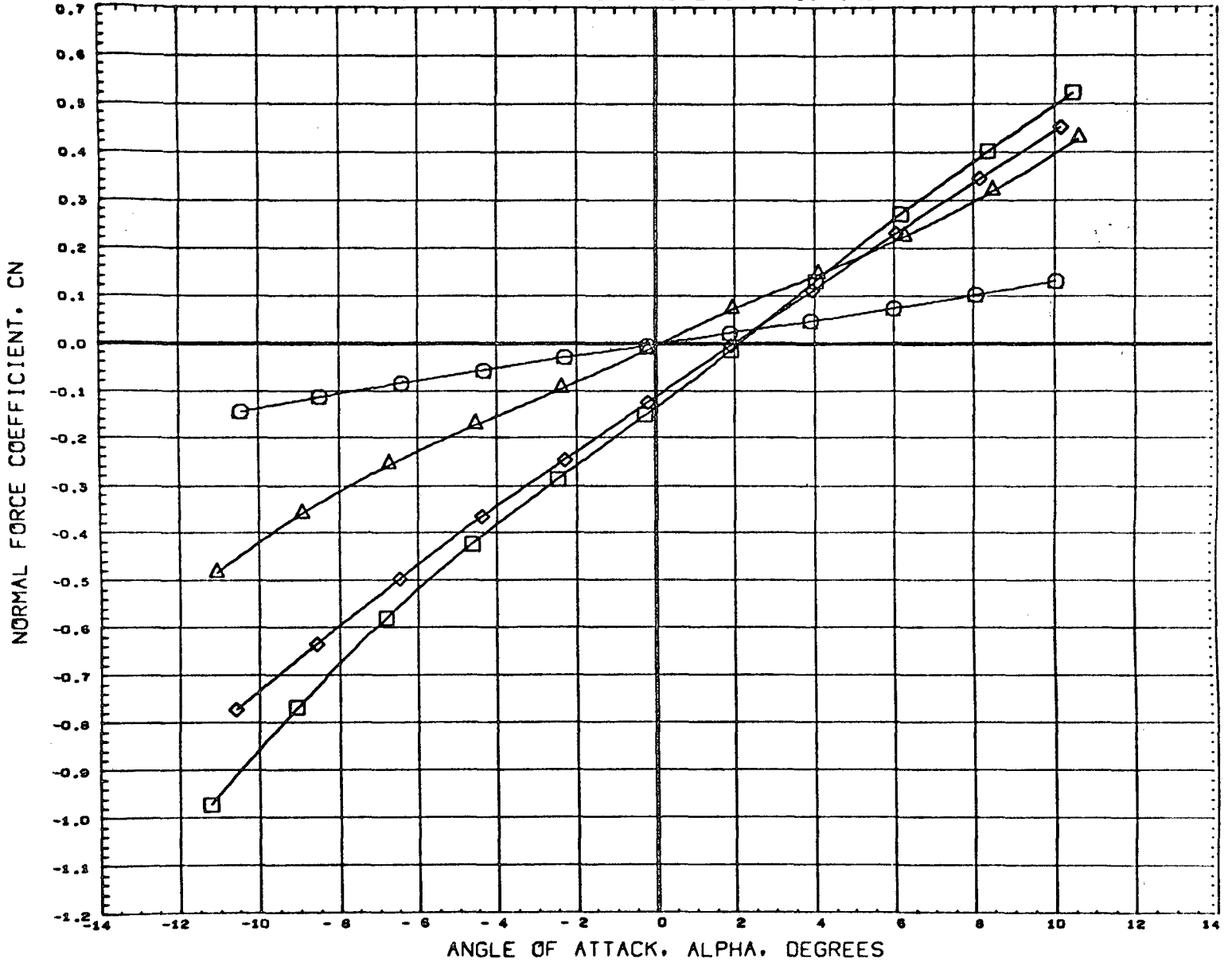


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(871075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000	0.000	LREF 2.0280 IN.
(871077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(871047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

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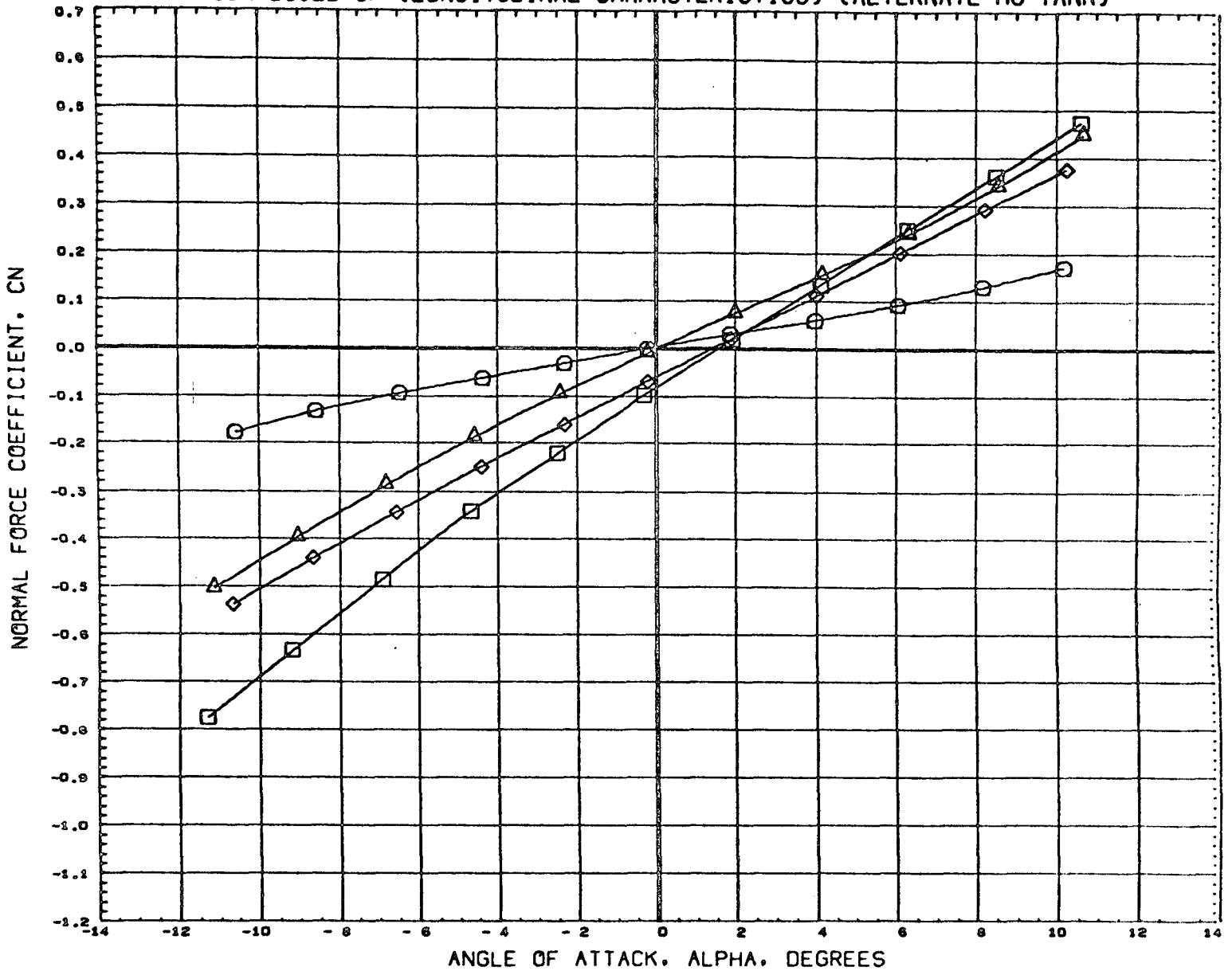
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

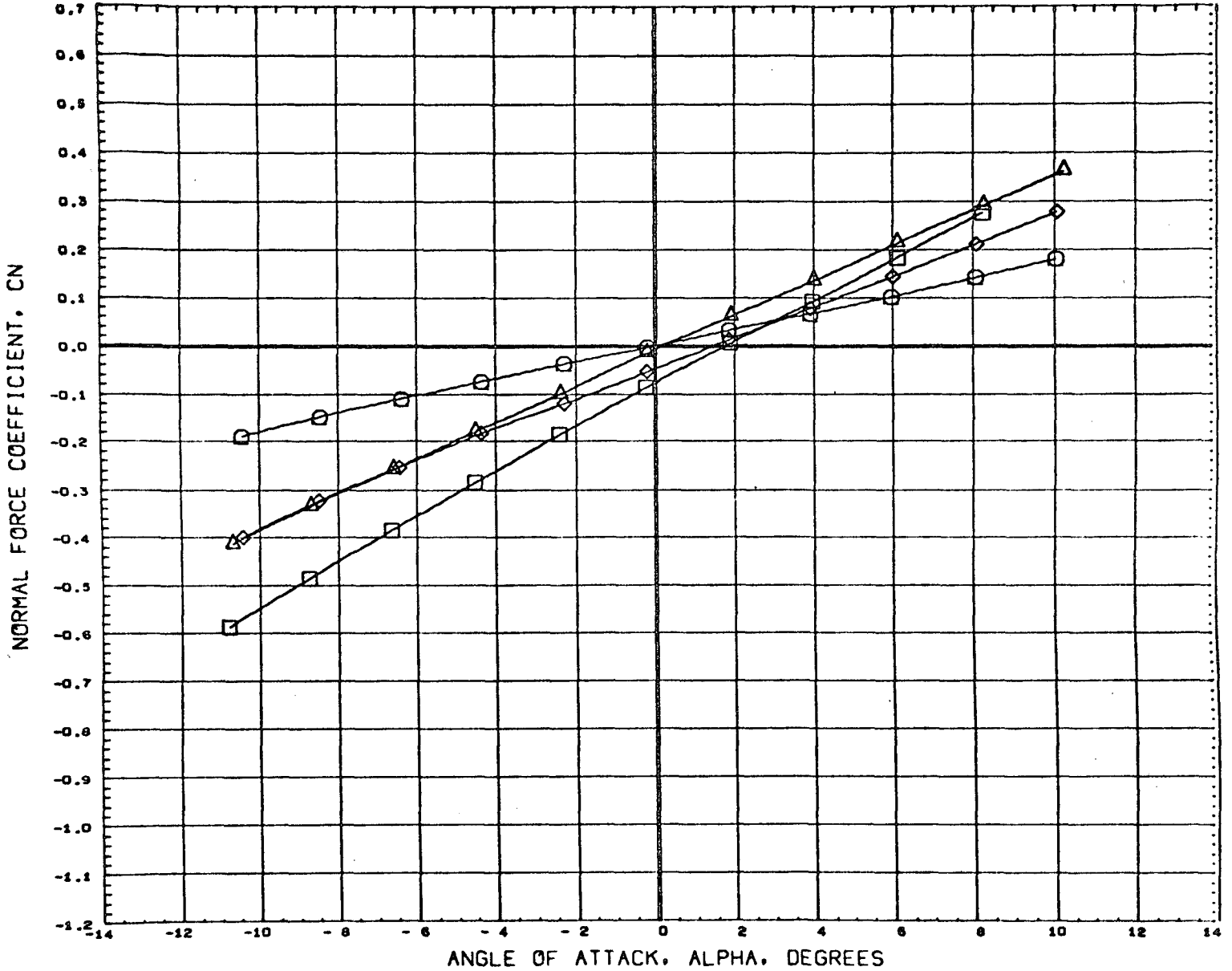
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(871075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000	0.000	LREF 2.0280 IN.
(871077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(871047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.95

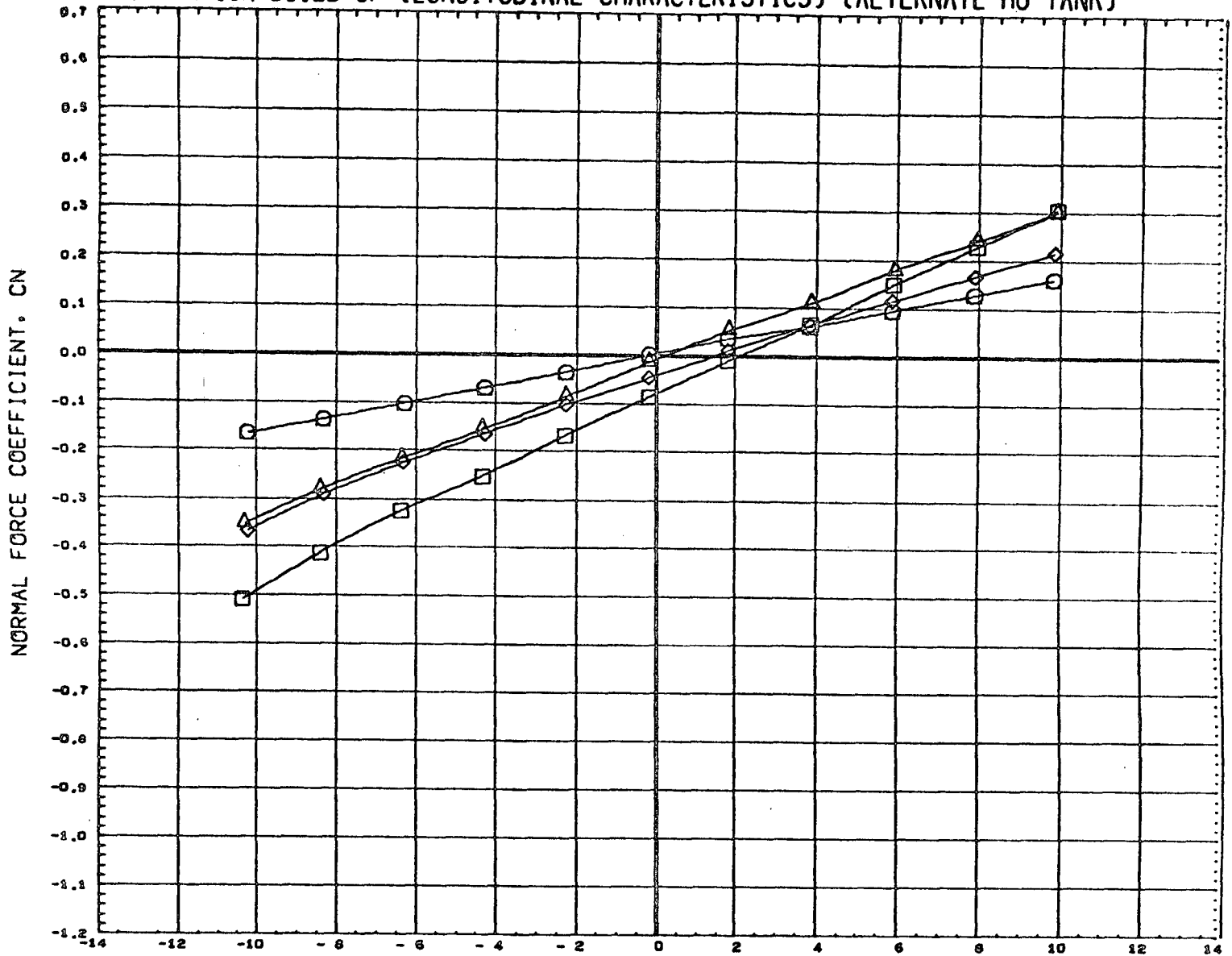
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871074) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(871075) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(871077) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(871047) □	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

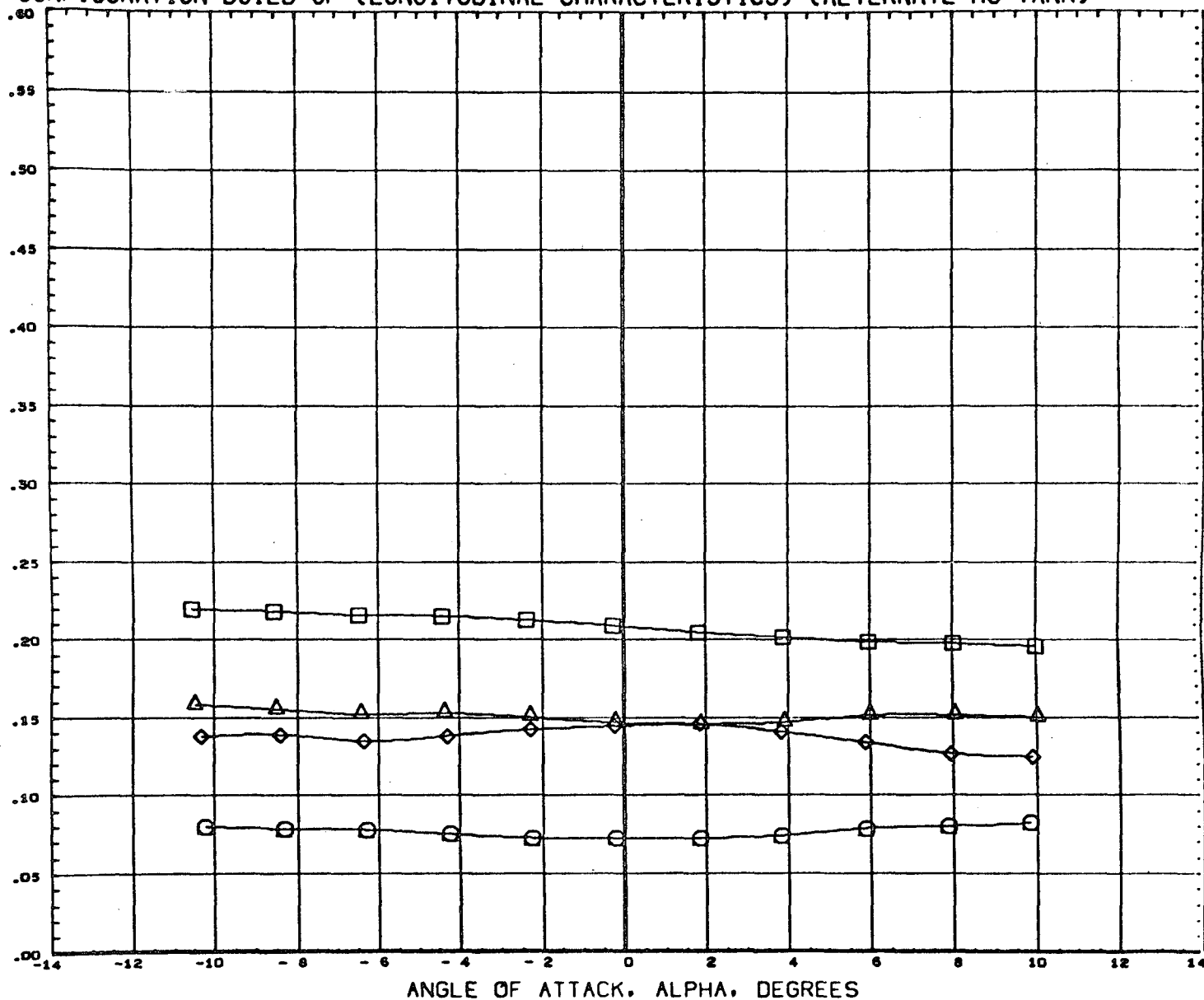
MACH 4.96

RC



# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)

AXIAL FORCE COEFFICIENT, CA

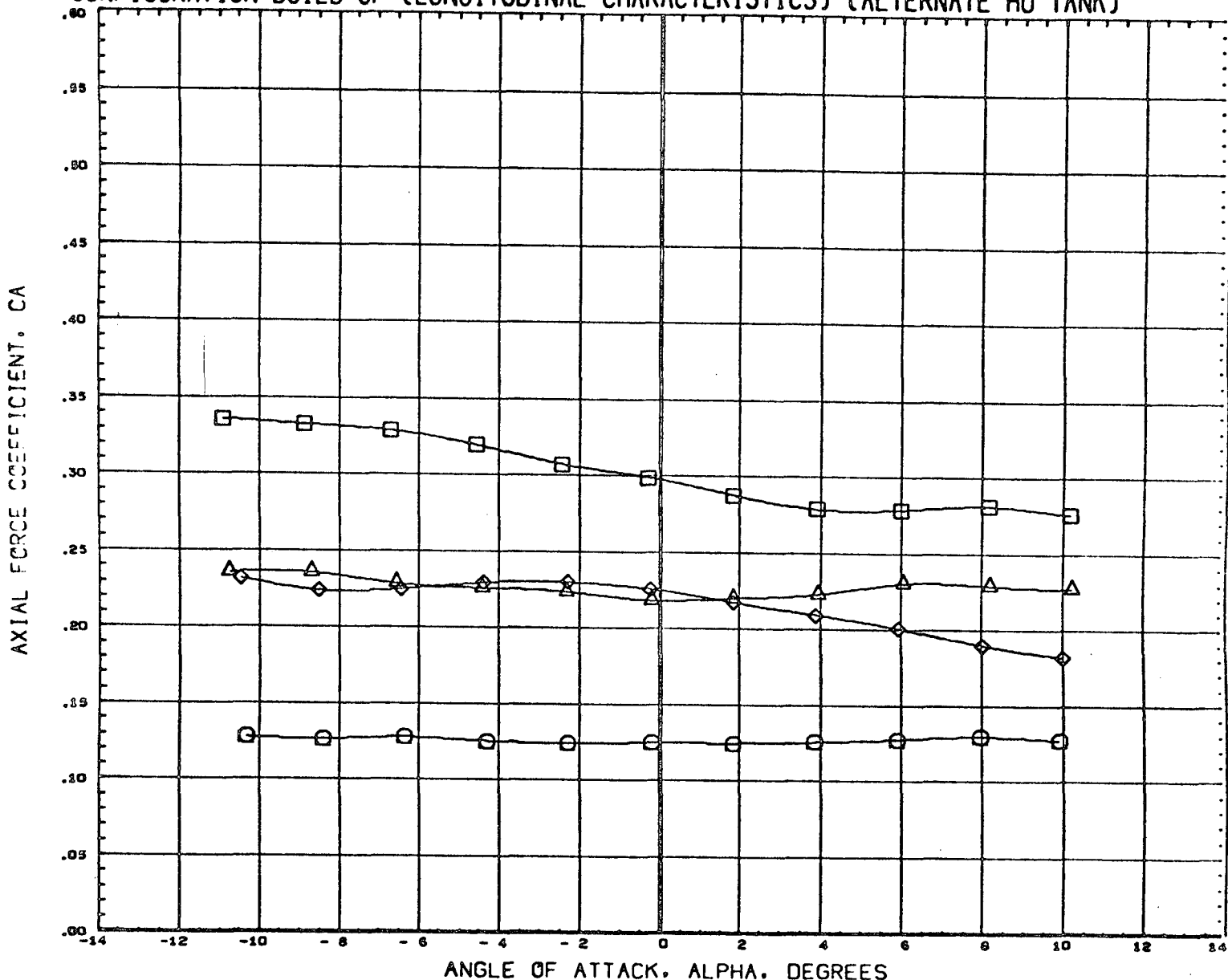


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

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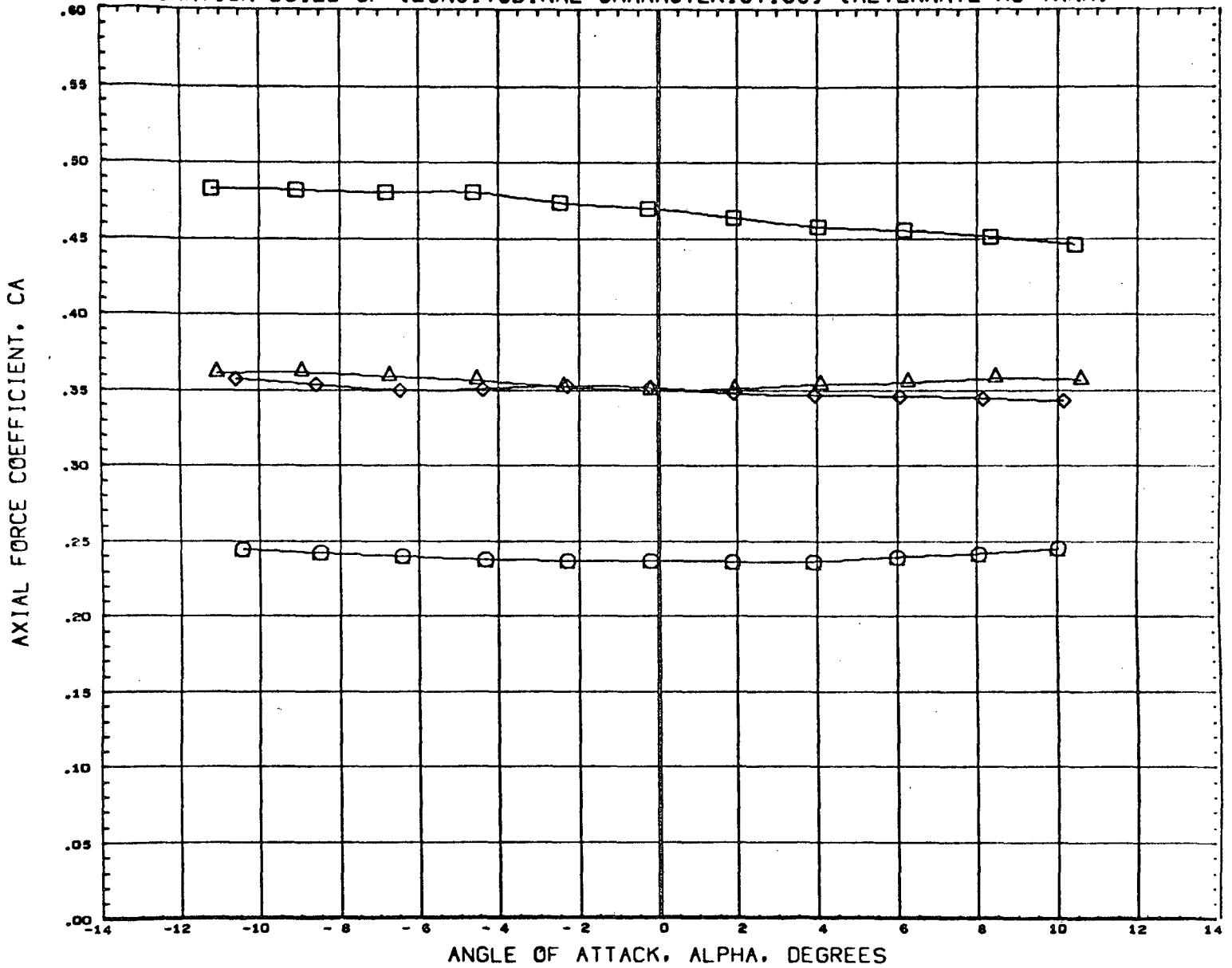
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0260 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2460 IN. SCALE 0.0040 SCALE

MACH .90

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH

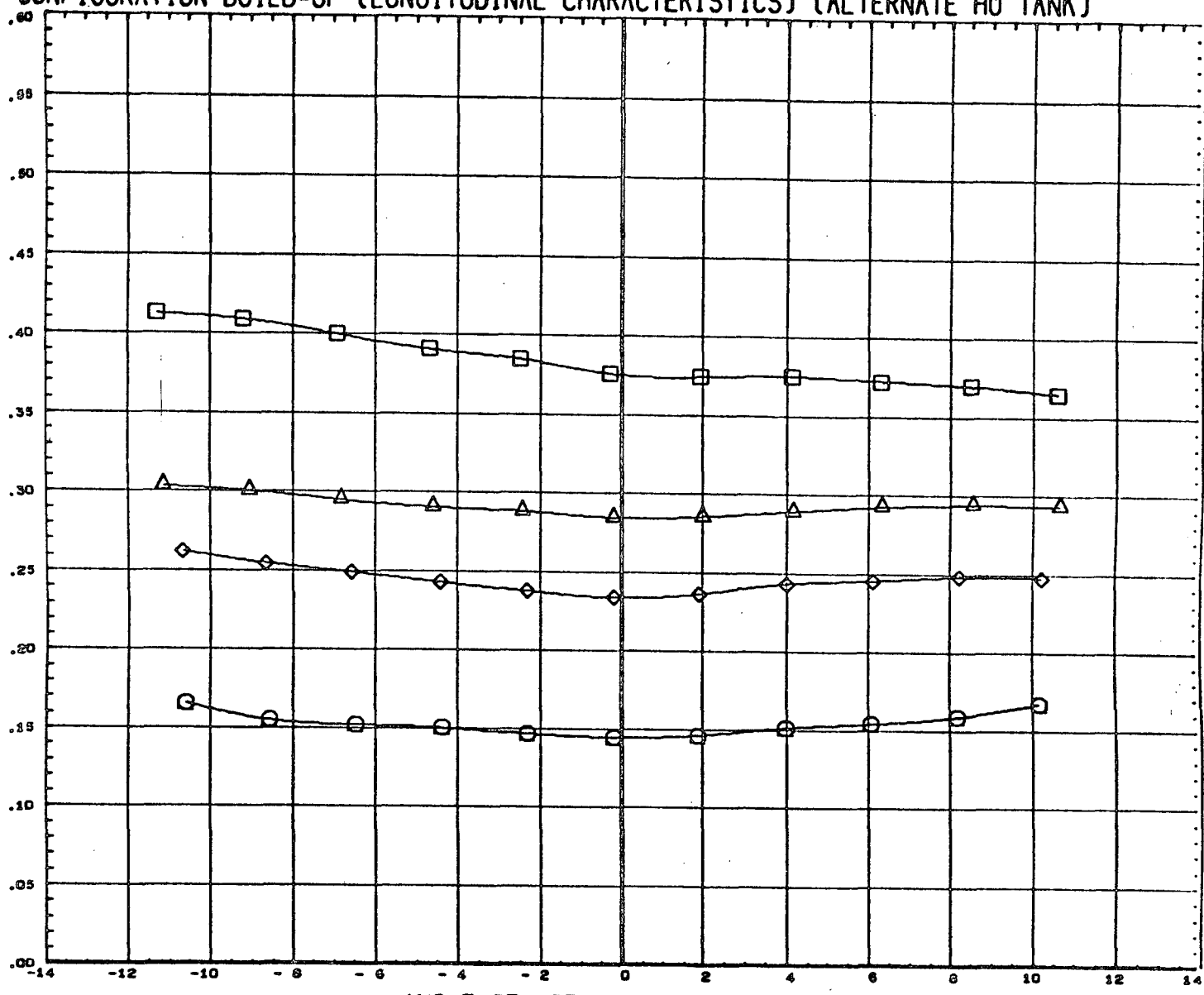
1.20

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)

AXIAL FORCE COEFFICIENT, CA

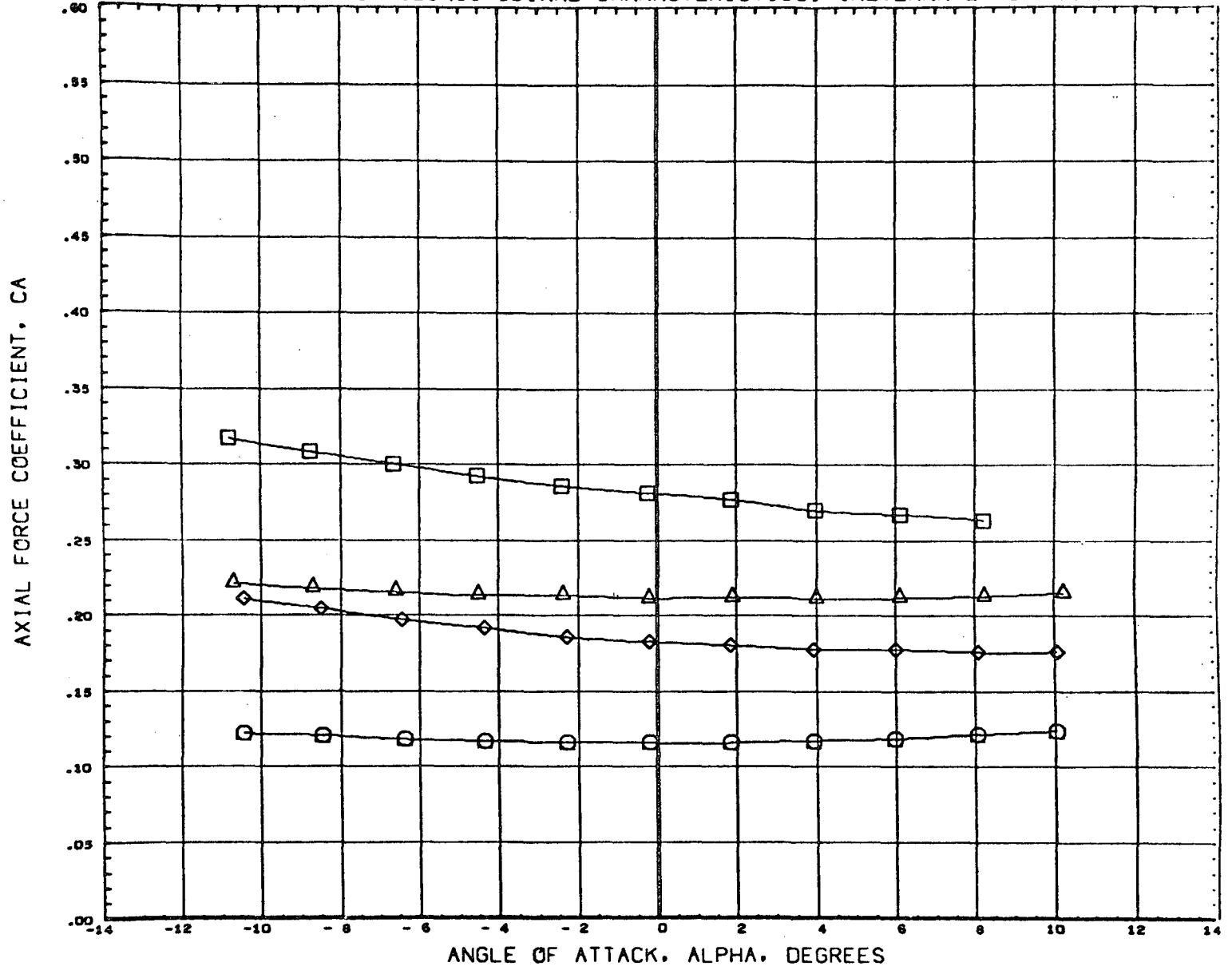


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0260 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.95

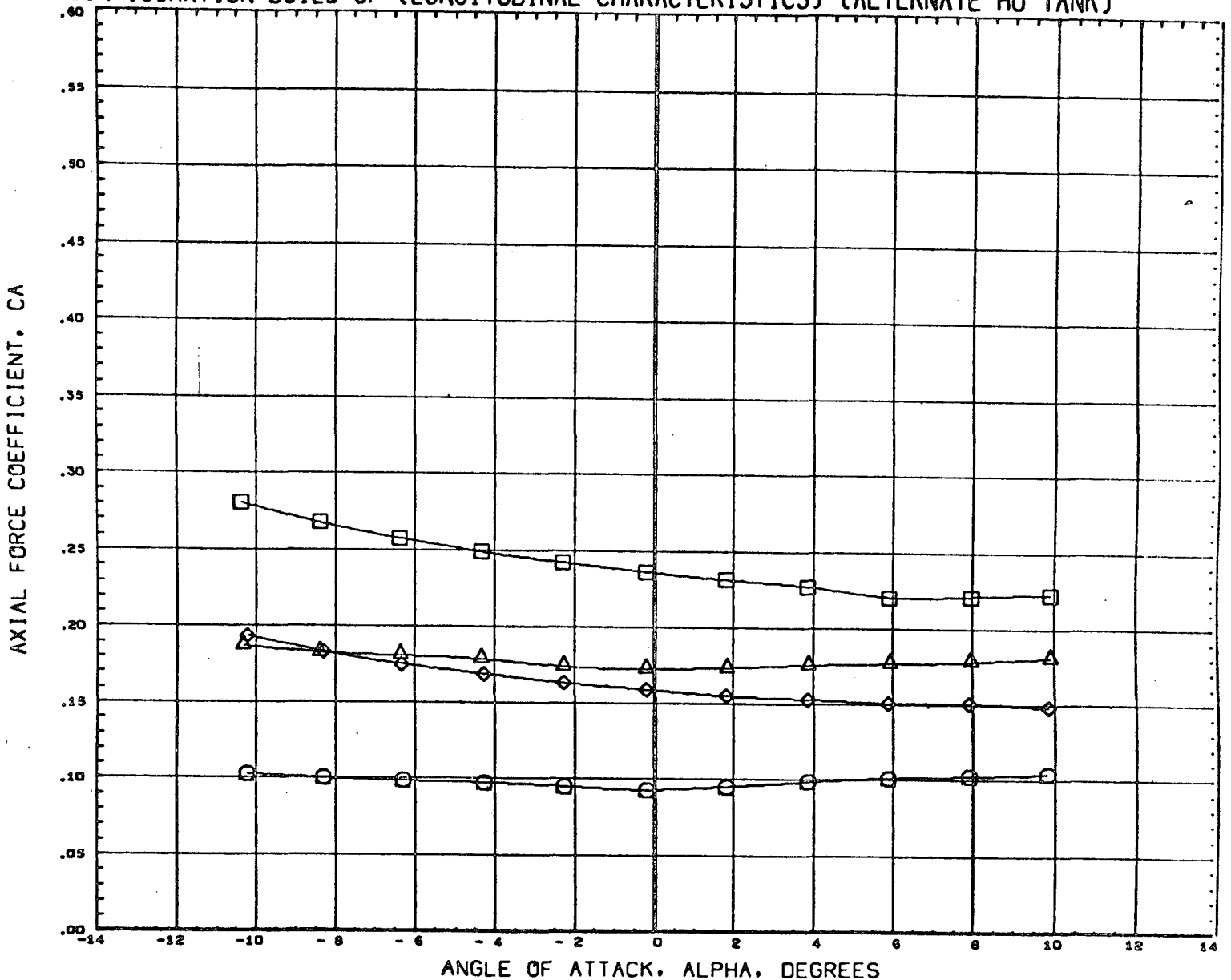
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1					LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

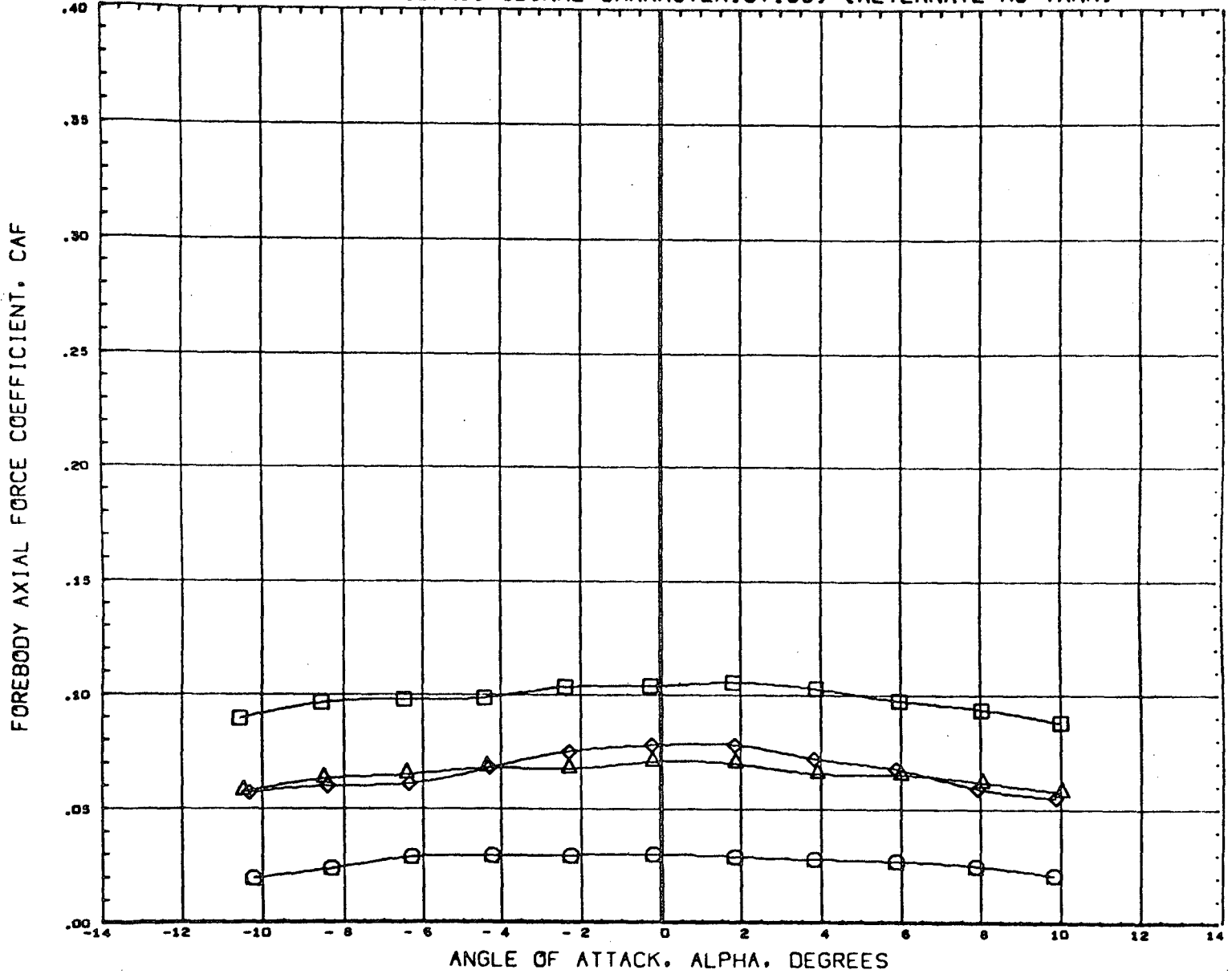
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5		75.000	0.000		SREF 7.8900 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5s1					LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501s1	-1.500	75.000	0.000	0.000	XMRP 0.0000 IN.
							YMRP 3.3600 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)

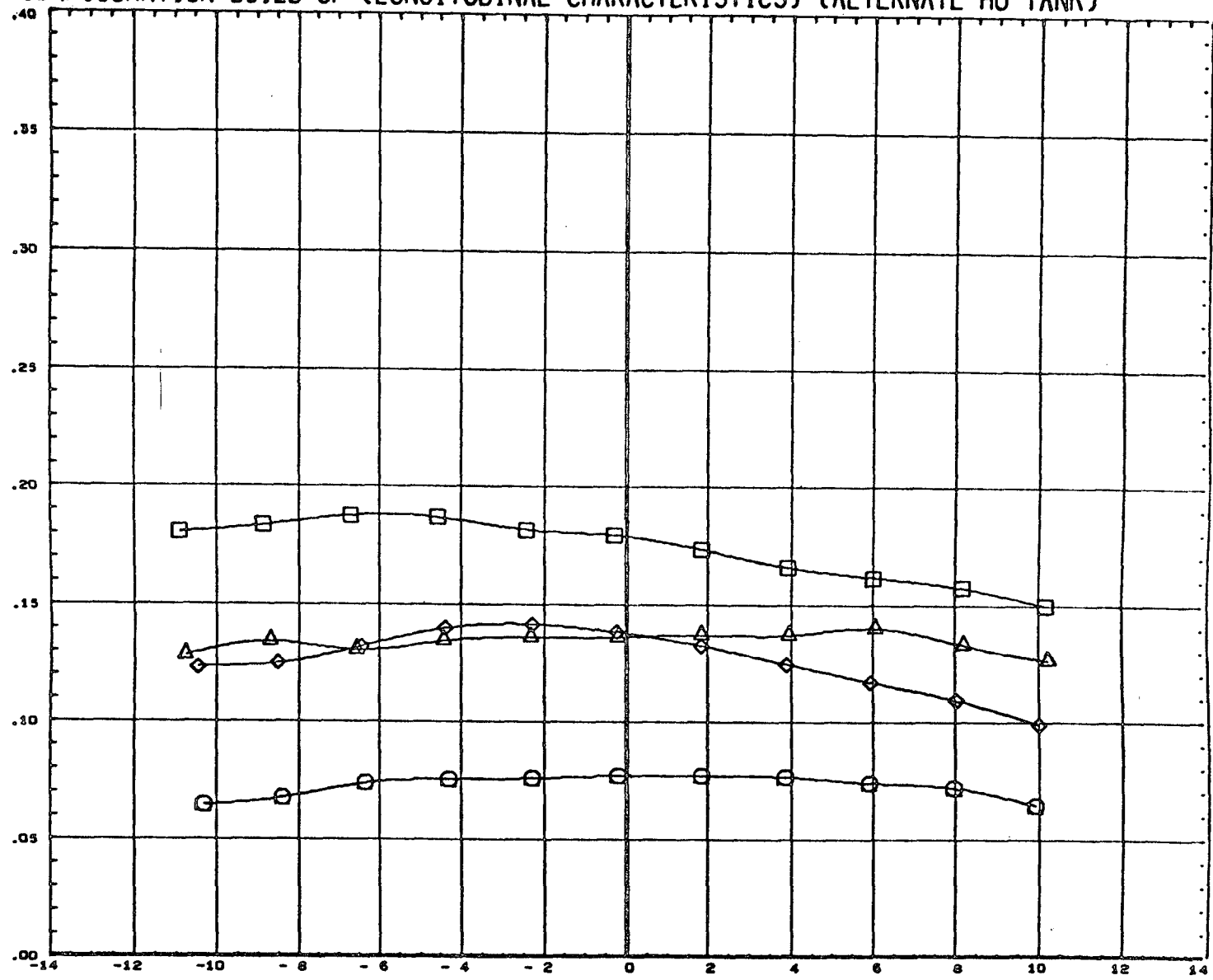


DATA SET SYMBO	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T581					LREF 2.0260 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501s1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .60

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)

FOREBODY AXIAL FORCE COEFFICIENT, CAF



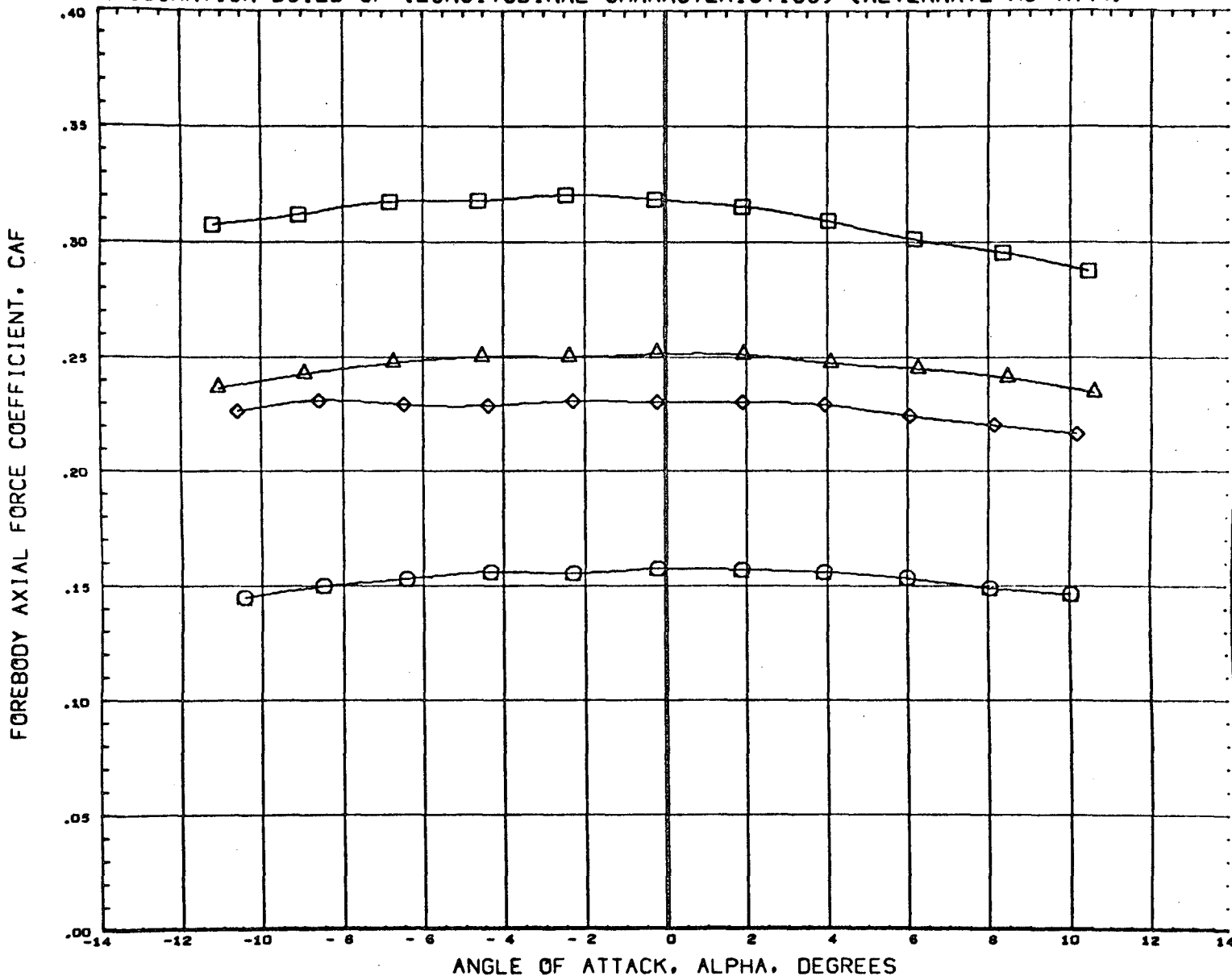
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5		75.000	0.000		SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1					LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4500 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



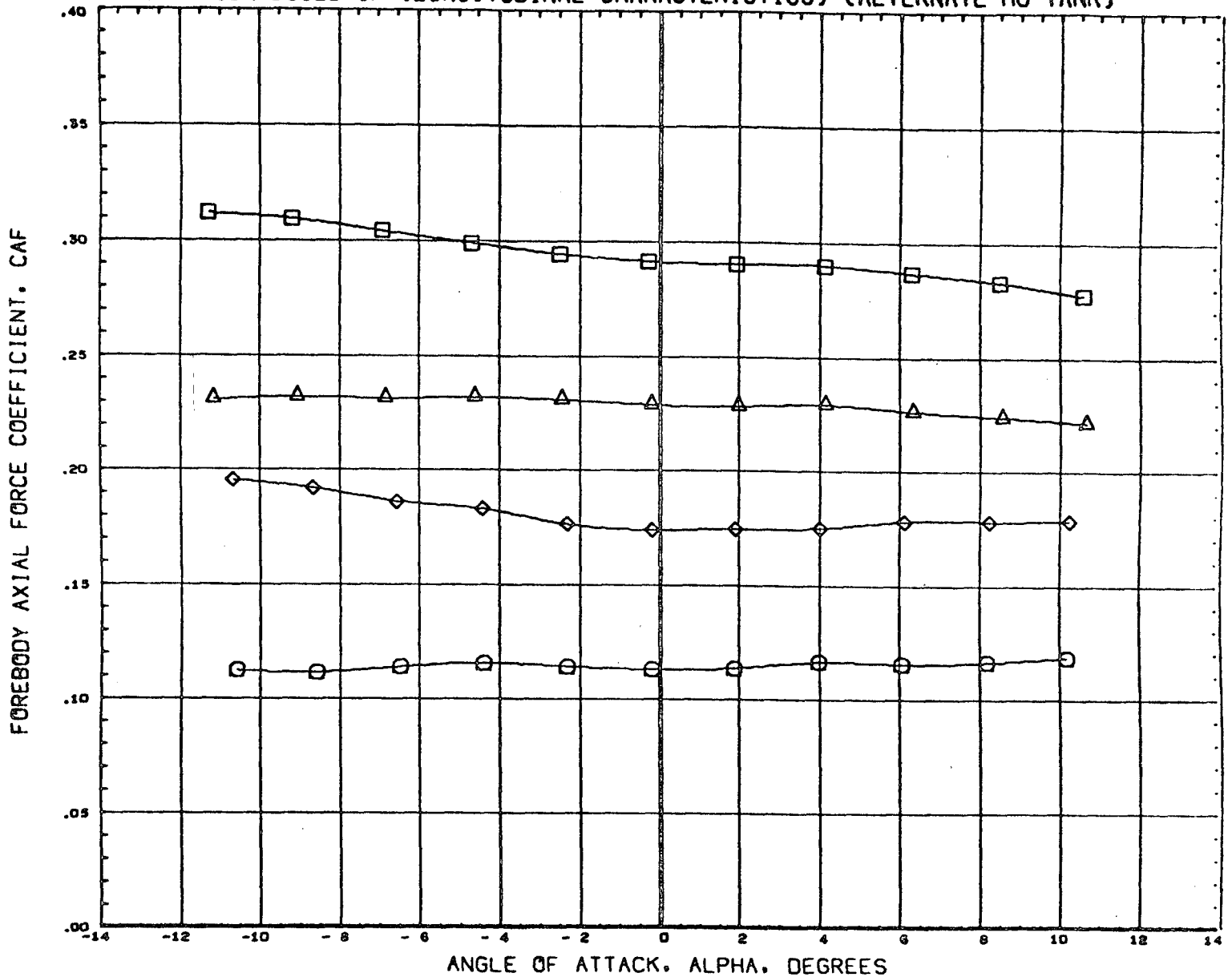
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000	0.000	LREF 2.0260 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500				BREF 4.4800 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

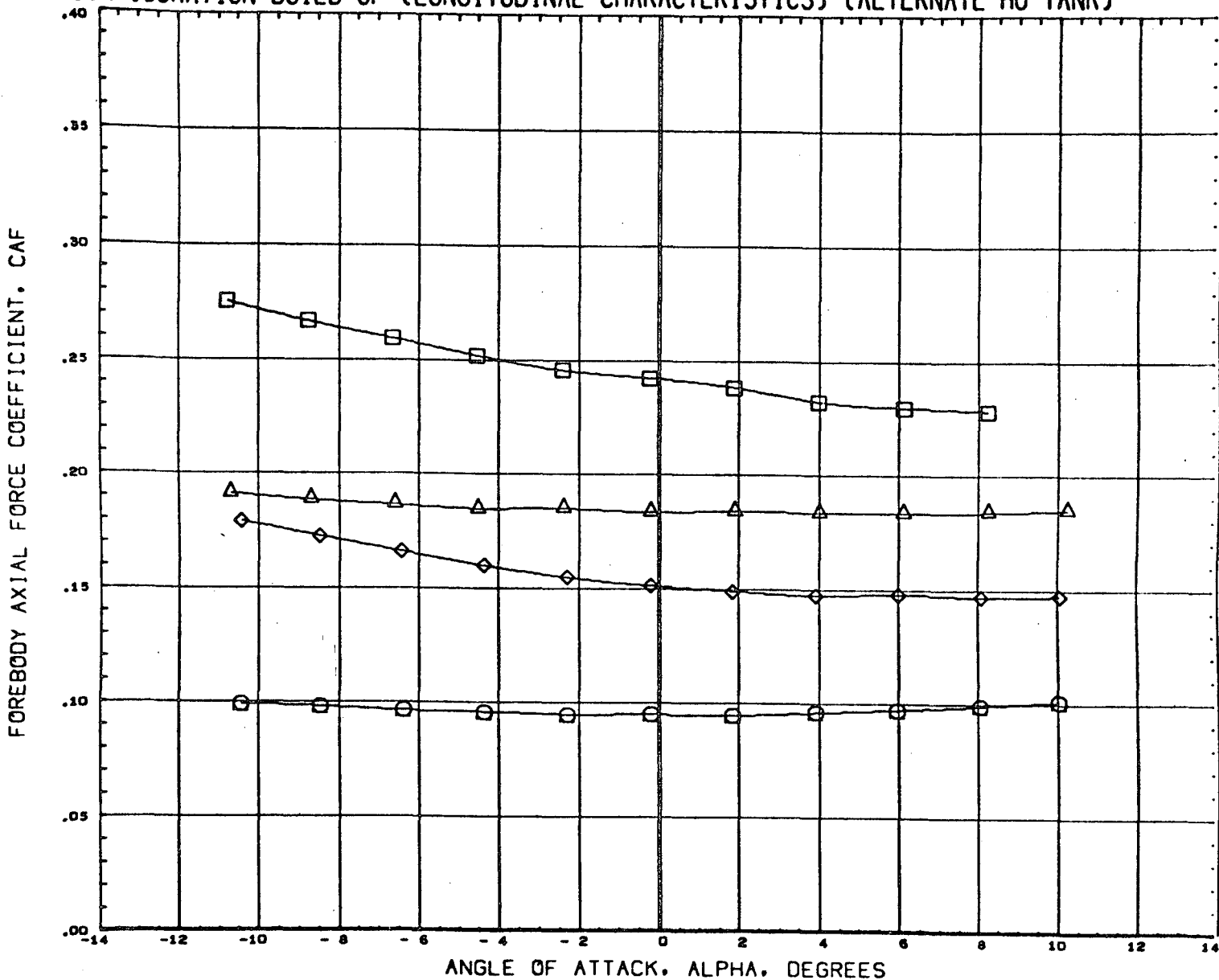
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TS	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2460 IN. SCALE 0.0040 SCALE

MACH 1.95

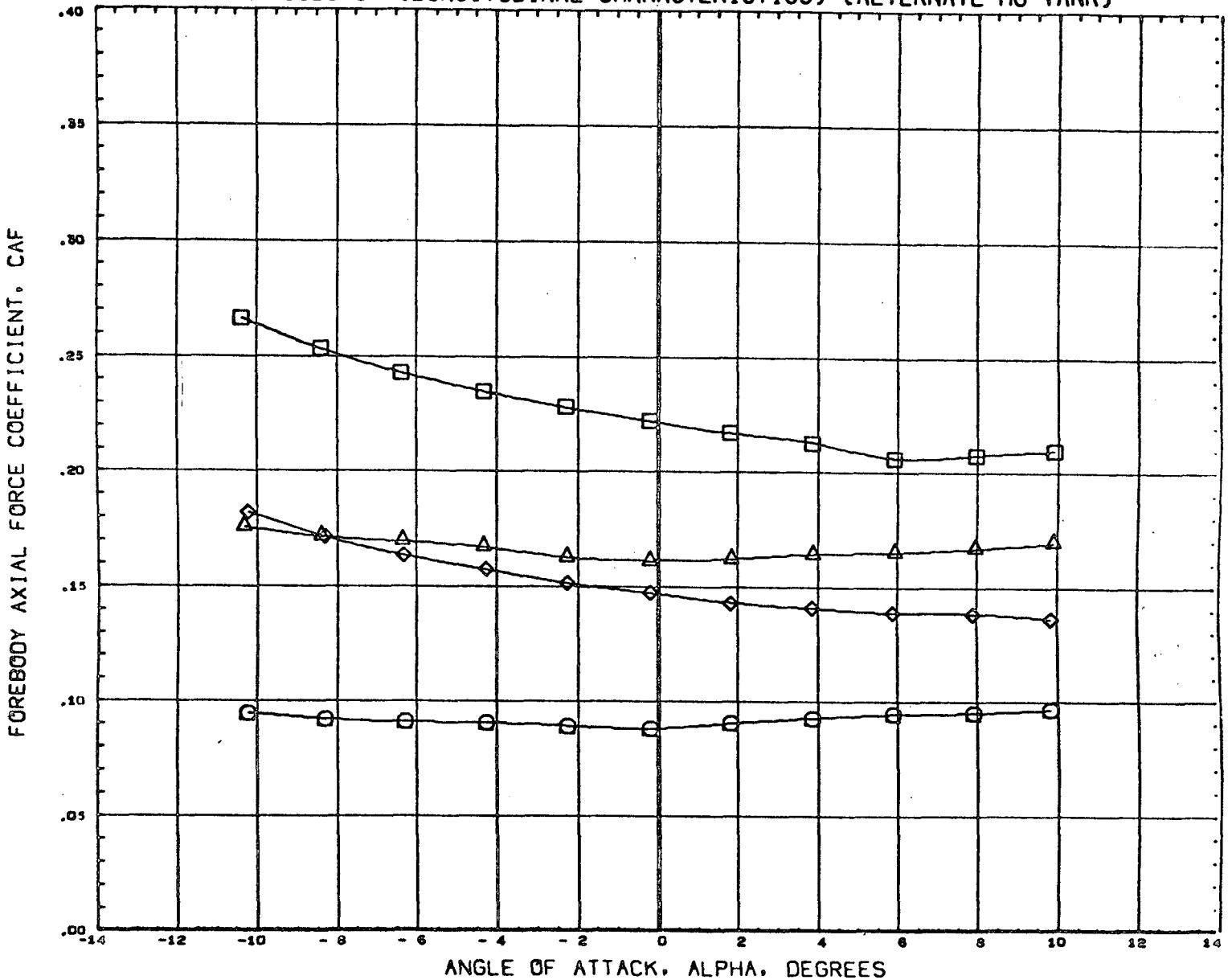
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5		75.000	0.000		SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1					LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



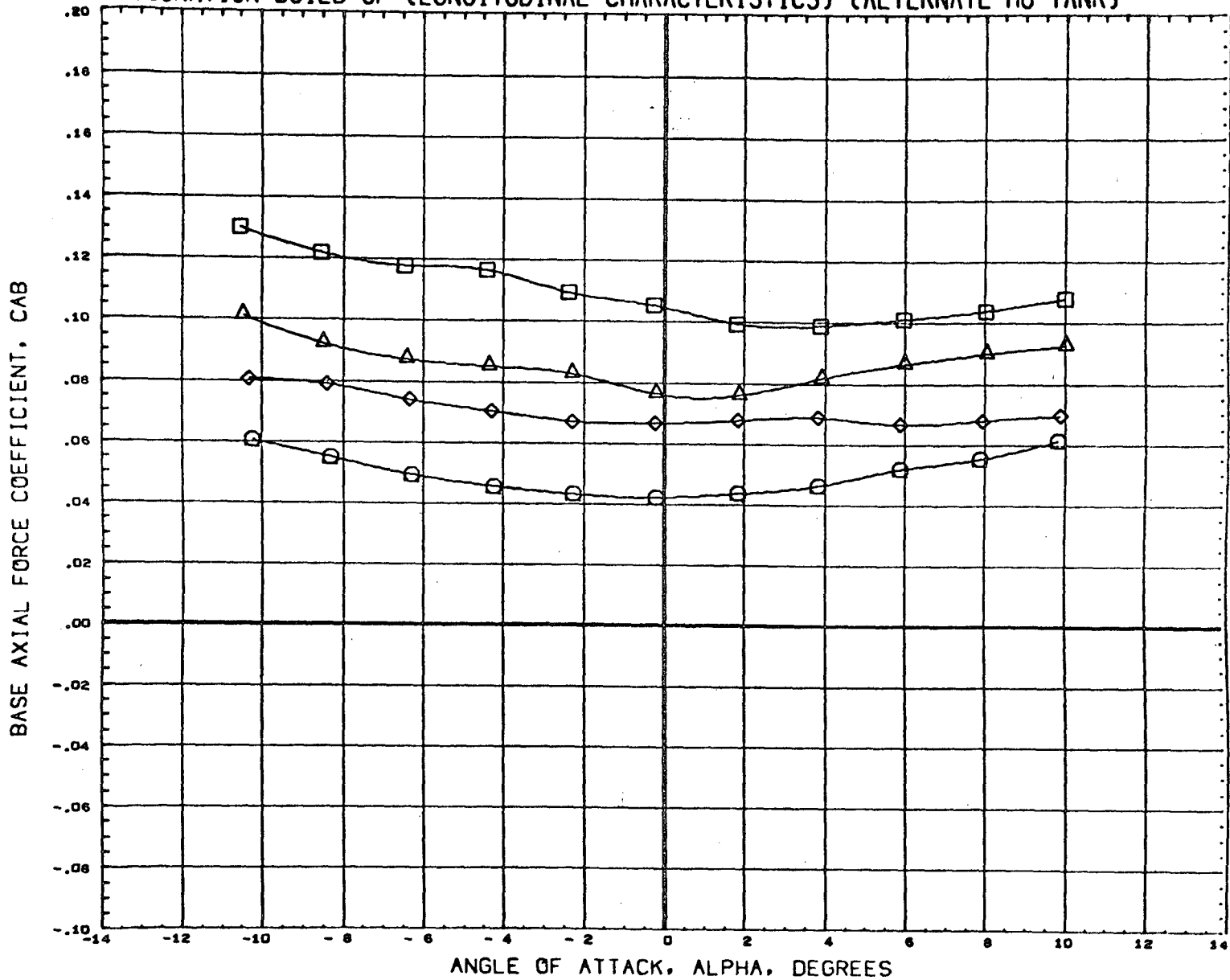
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5		75.000	0.000		SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1					LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4800 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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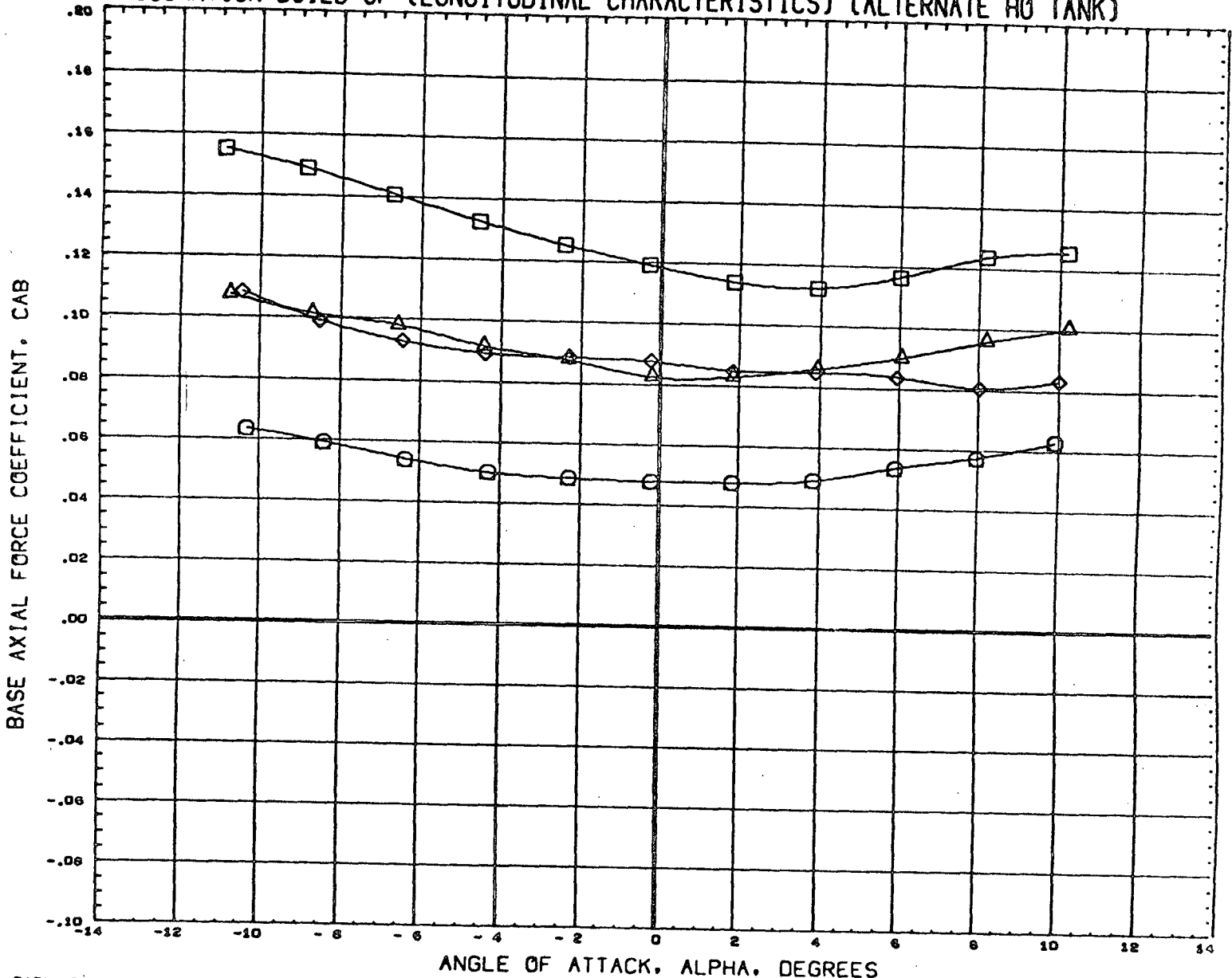
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5		75.000	0.000		SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1					LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .60

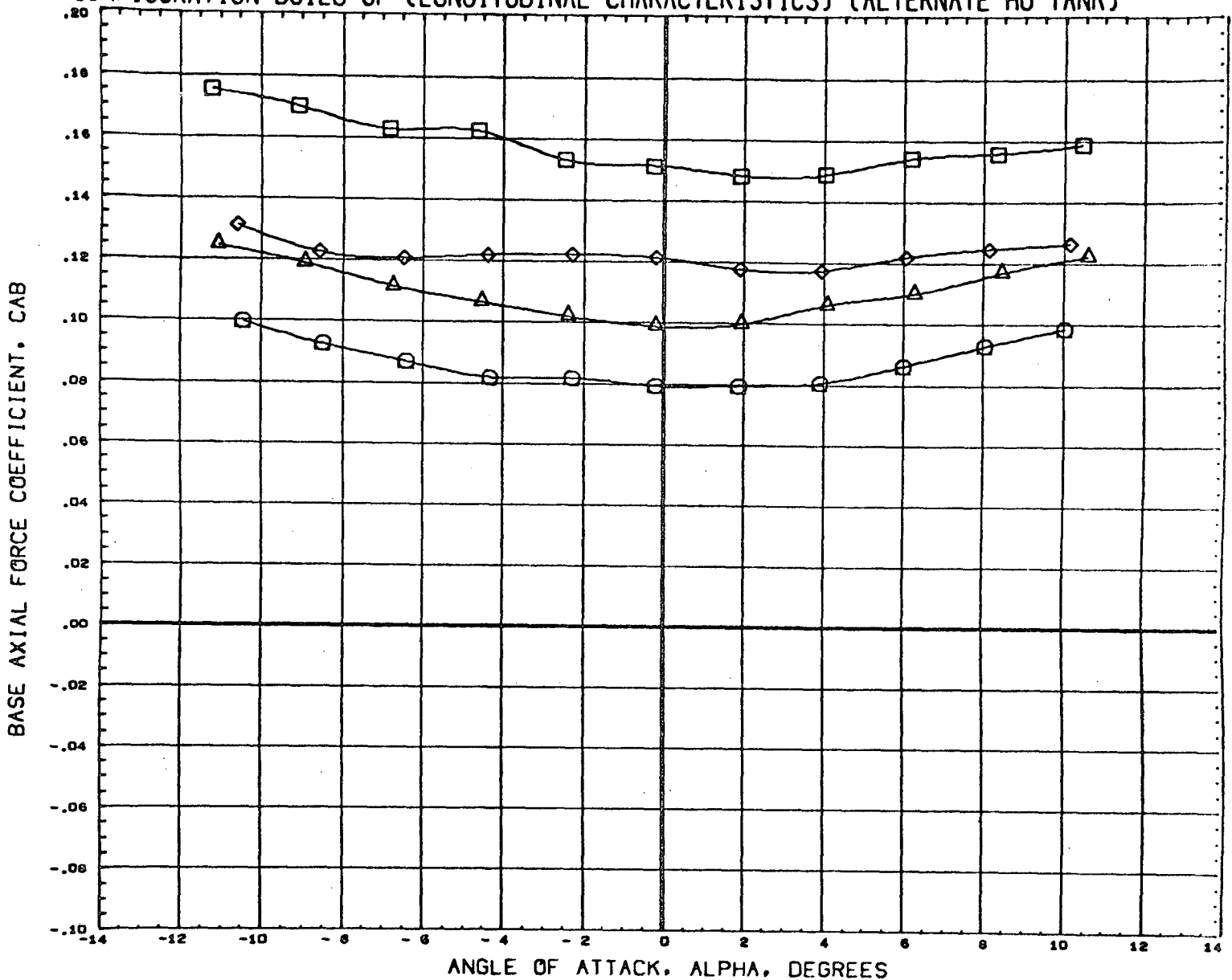
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE HQ TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					BREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0260 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501	-1.500			0.000	BREF 4.4800 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2460 IN. SCALE 0.0040 SCALE

MACH .90

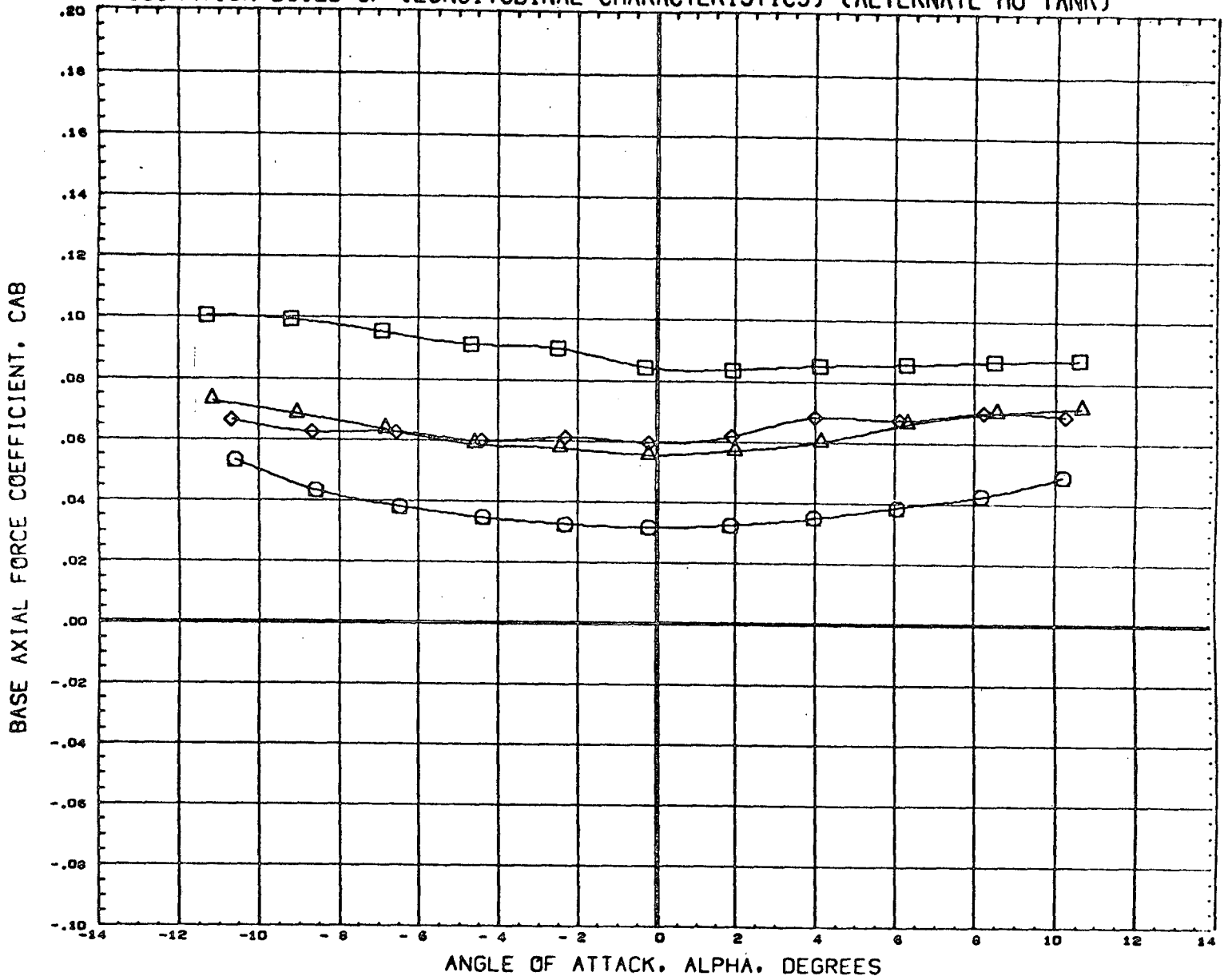
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					SREF 7.6600 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5s1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501s1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE HO TANK)



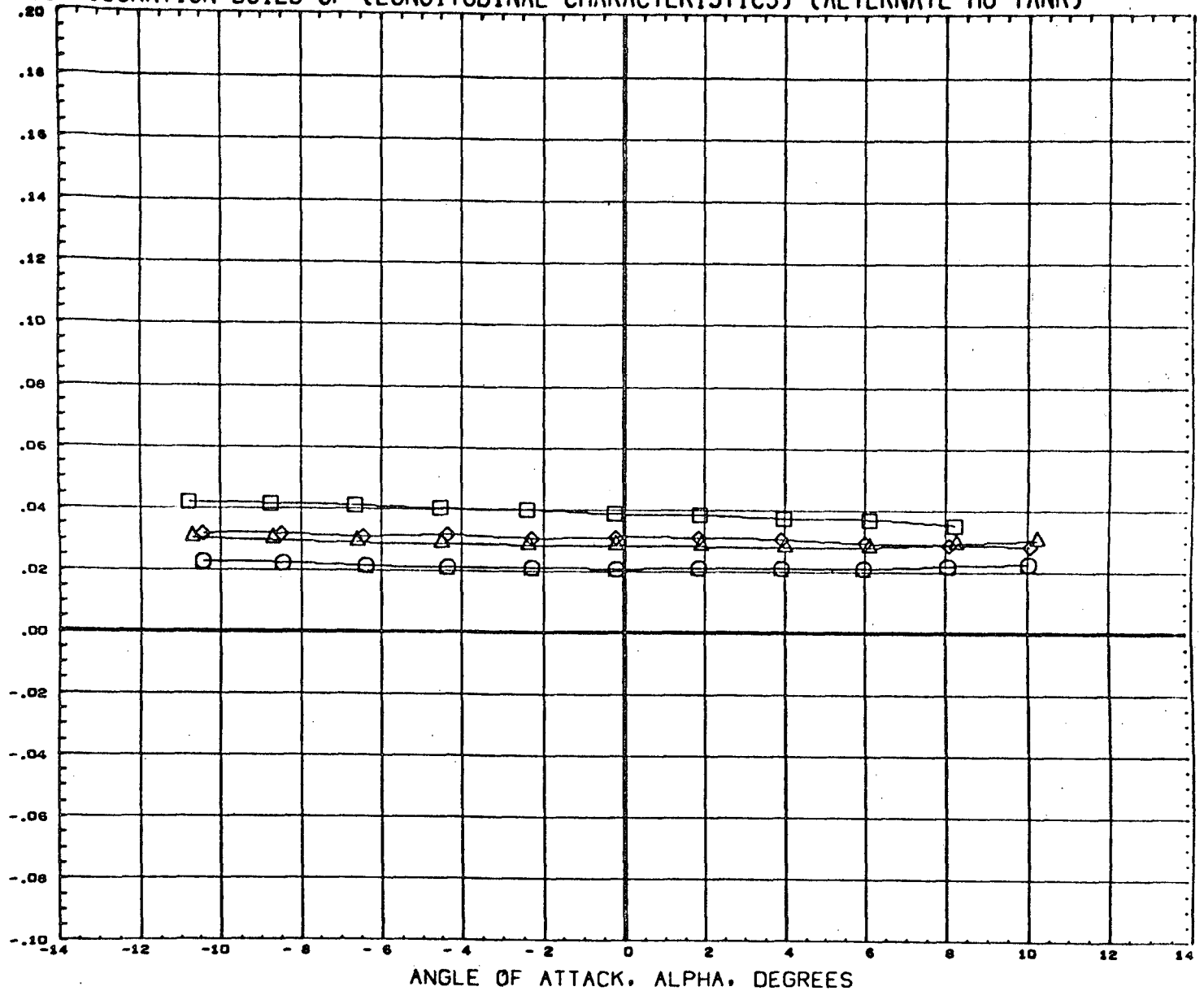
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.95



# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)

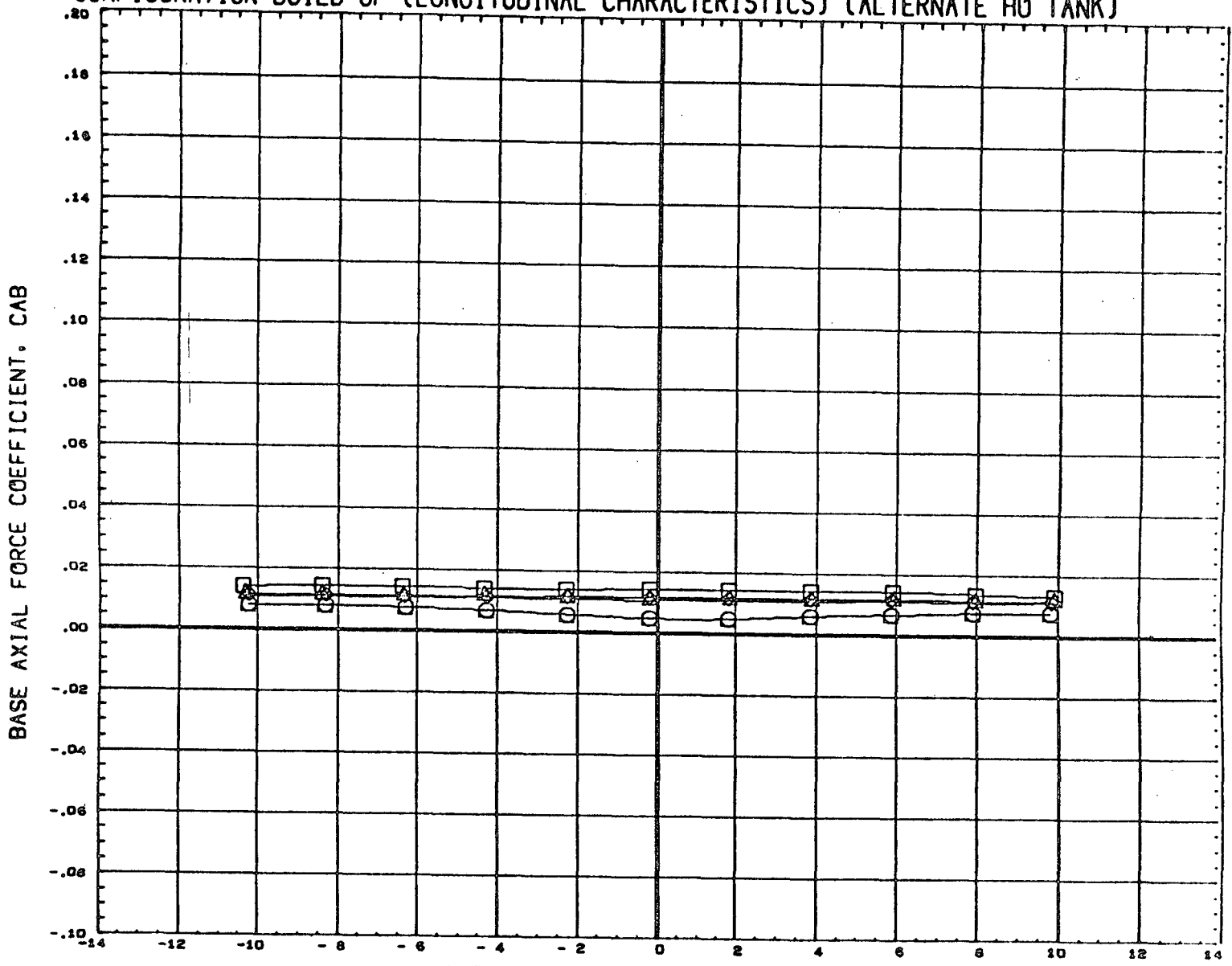
BASE AXIAL FORCE COEFFICIENT, CAB



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN.
(871075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1					LREF 2.0280 IN.
(871077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(871047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

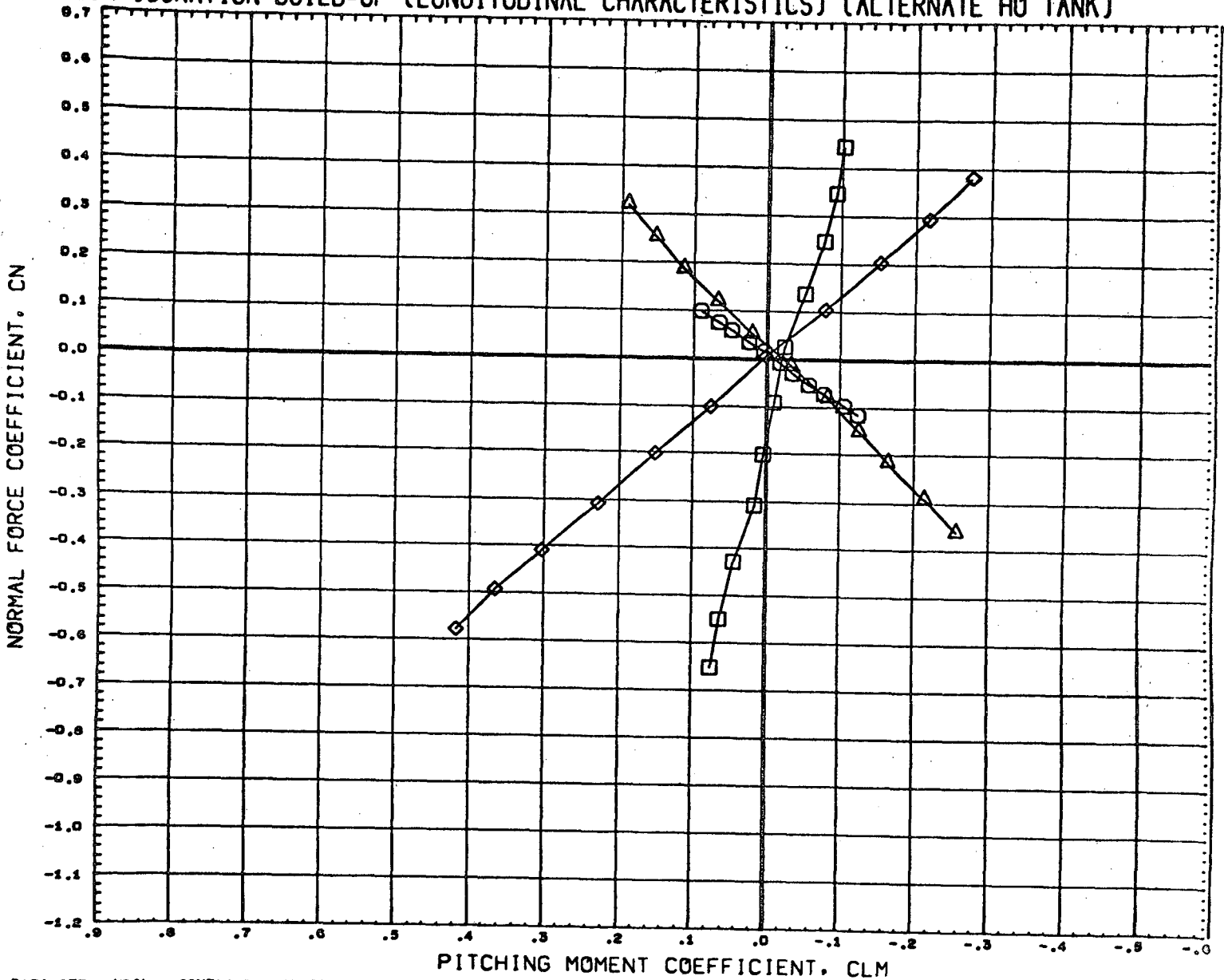
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 344 LAUNCH VEHICLE STUDIES	T5					SREF 7.8600 SQ. IN
(B71075)	MSFC TWT 344 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 344 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 344 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

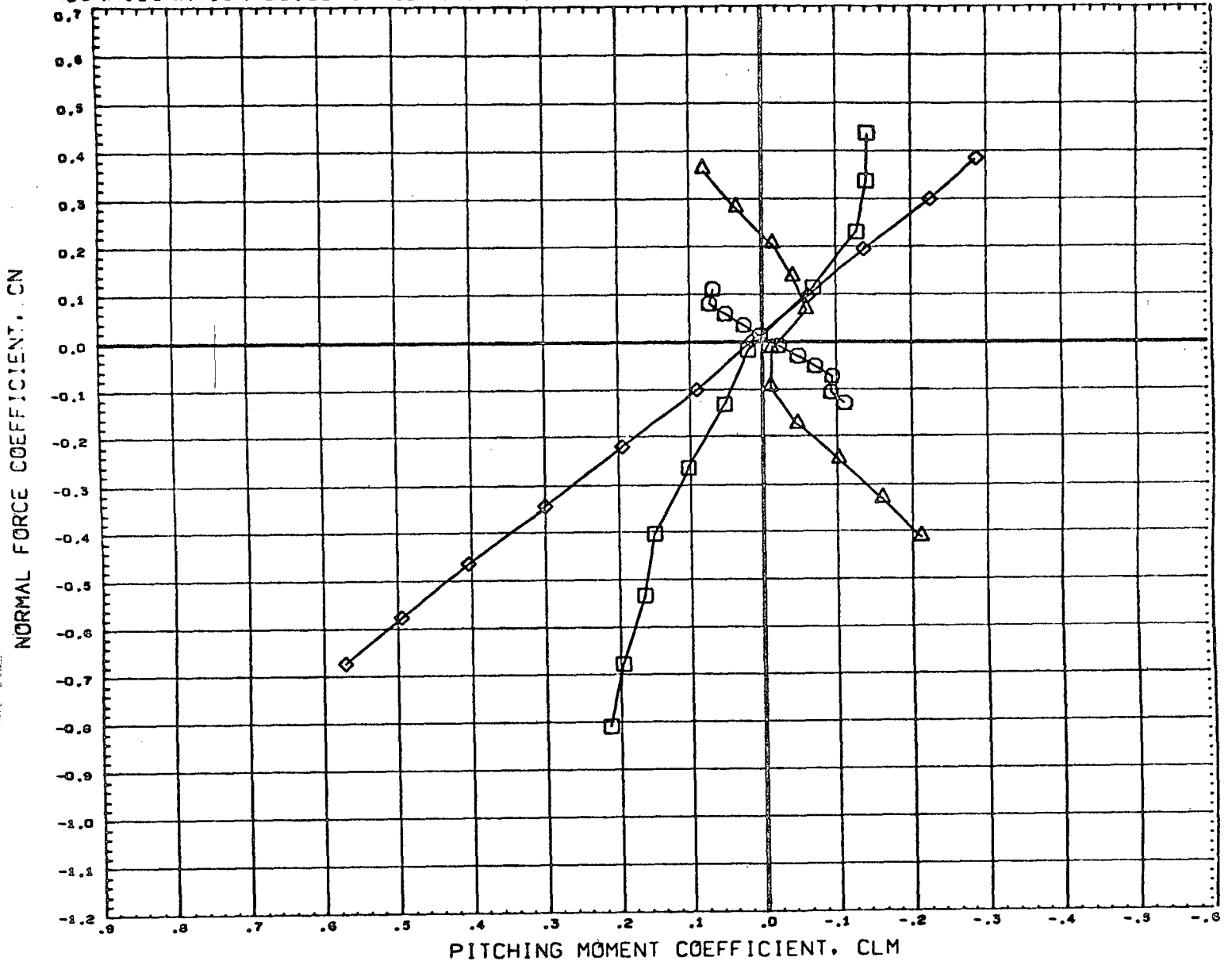
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TS	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TS					SREF 7.6800 SQ. IN
(871075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0280 IN.
(871077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501	-1.500			0.000	BREF 4.4600 IN.
(871047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

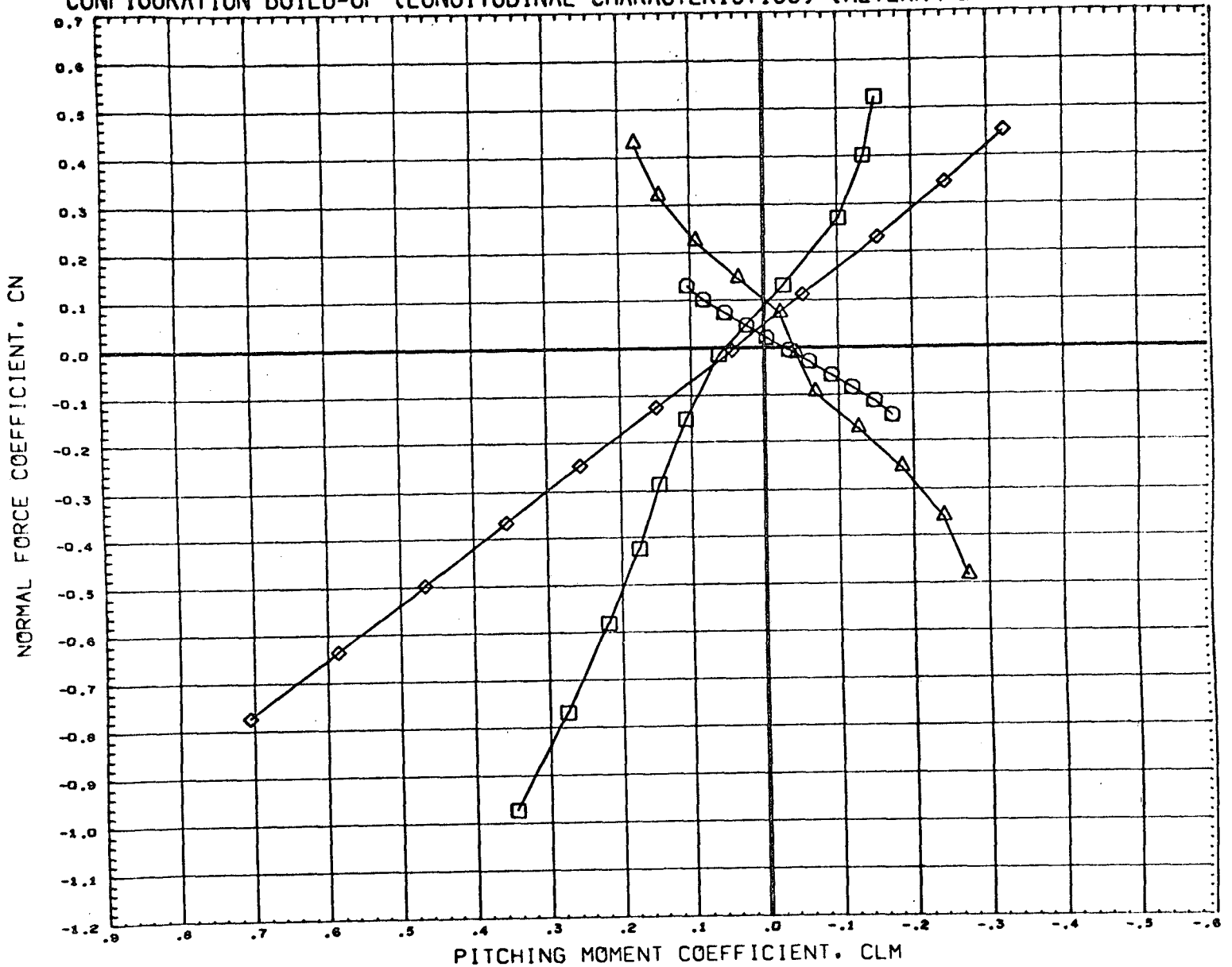
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8600 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

MACH .90

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)

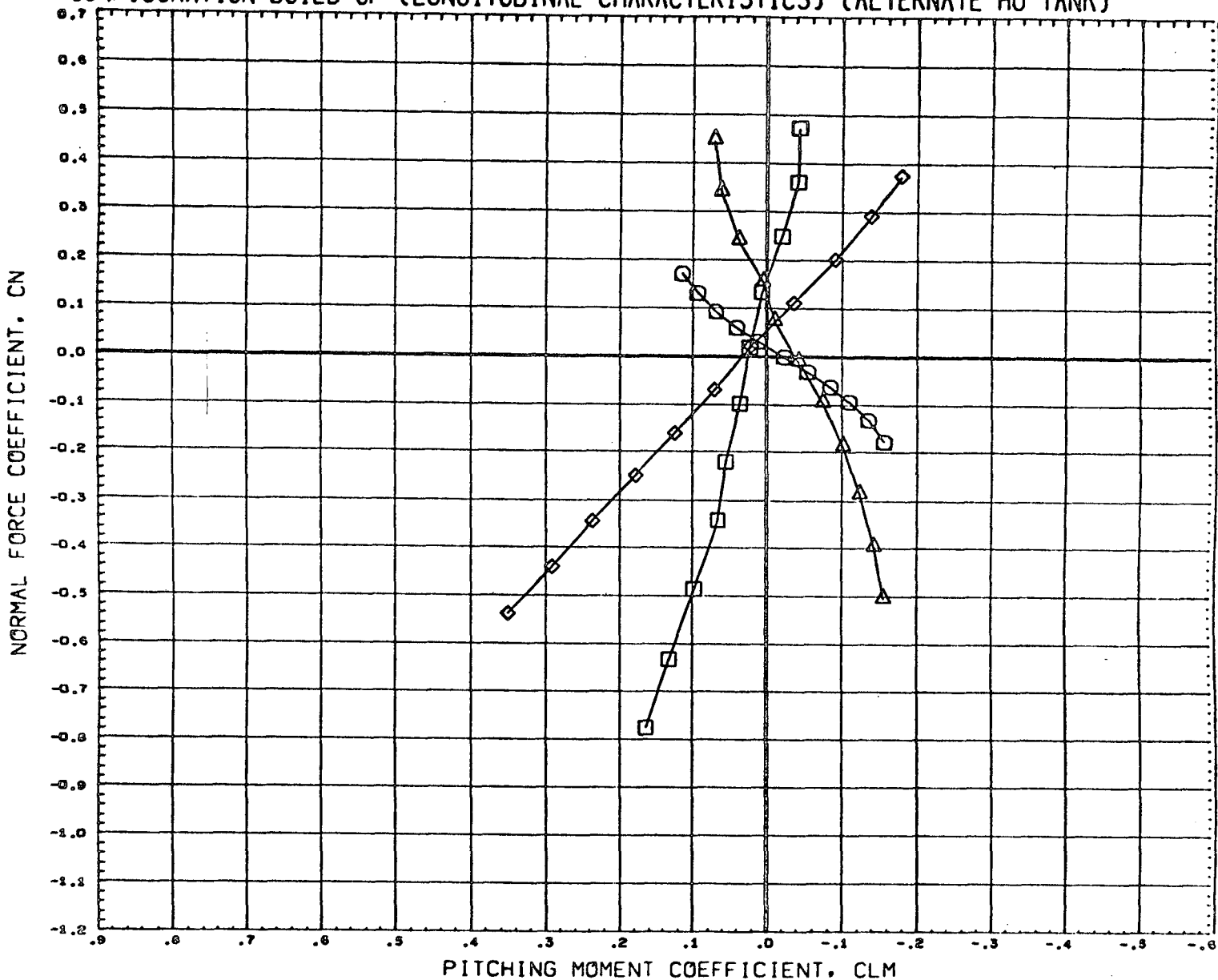


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5		75.000	0.000		SREF 7.8800 SQ. IN
(071075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1					LREF 2.0280 IN.
(071077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4600 IN.
(071047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.20

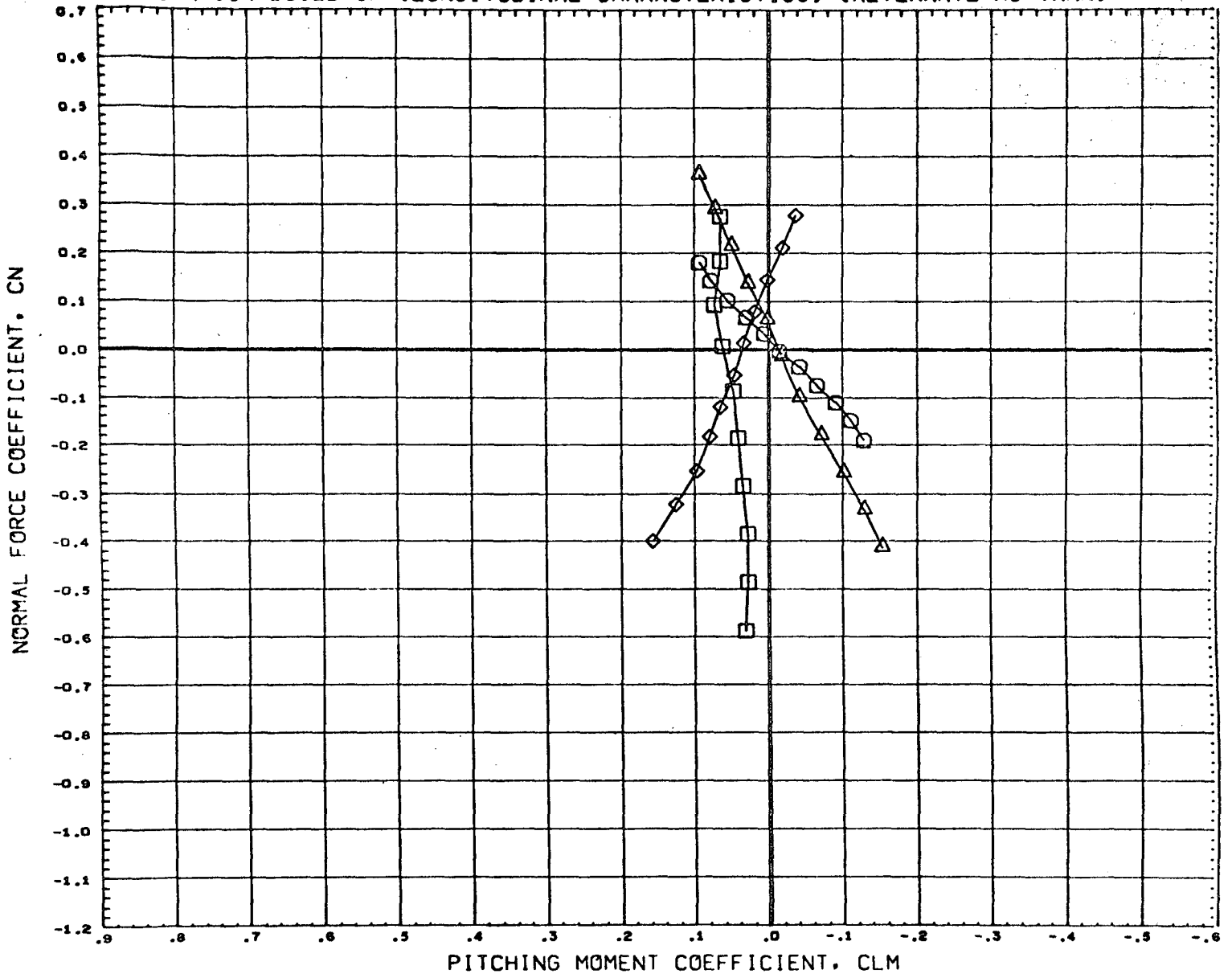
# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H<sub>0</sub> TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0290 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	BREF 4.4800 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.95

# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE HO TANK)

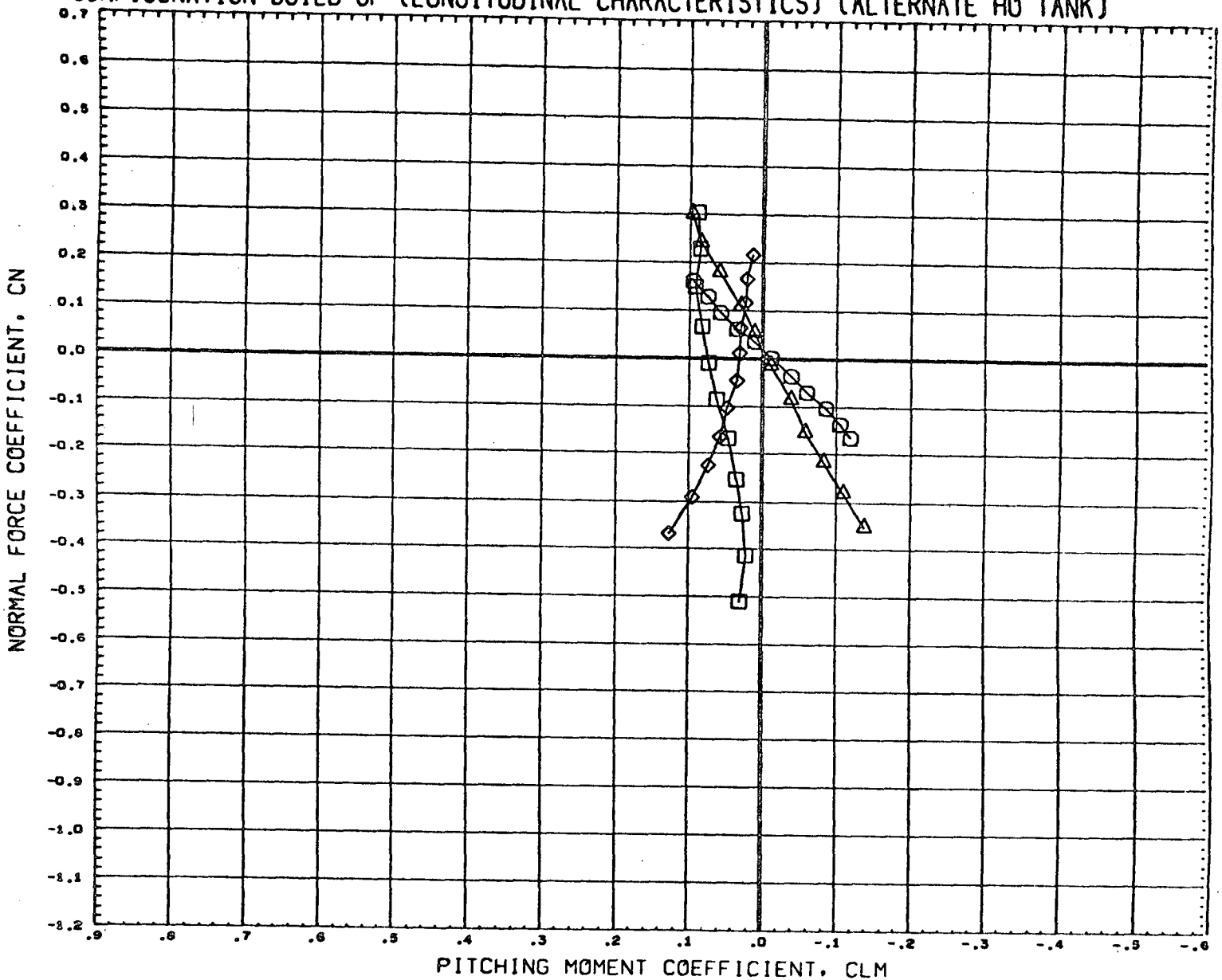


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF 7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		LREF 2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501	-1.500			0.000	BREF 4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

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# CONFIGURATION BUILD-UP (LONGITUDINAL CHARACTERISTICS) (ALTERNATE H0 TANK)

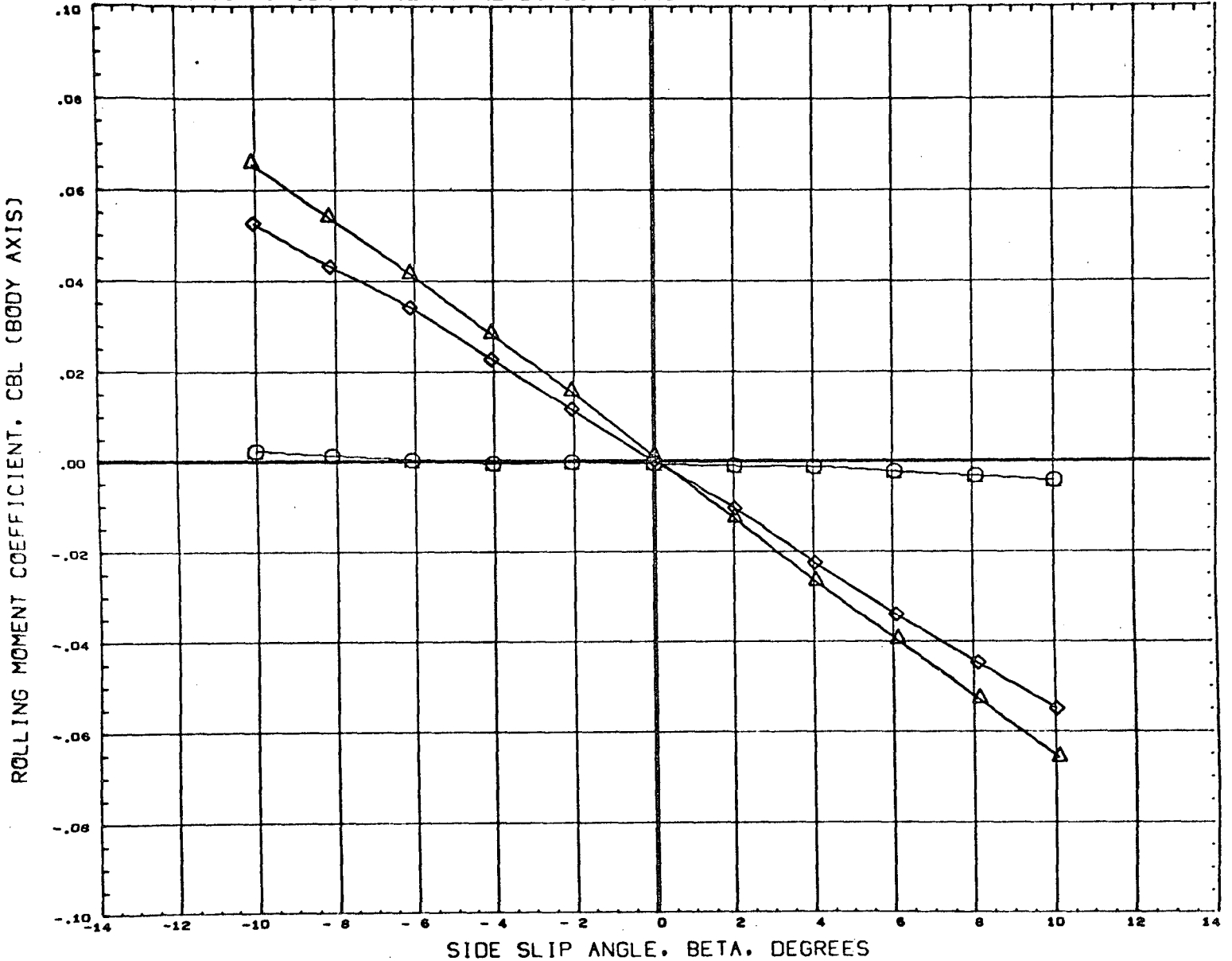


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5					SREF 7.8800 sq. IN
(071075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		LREF 2.0280 IN.
(071077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1	-1.500			0.000	BREF 4.4600 IN.
(071047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5O1S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96



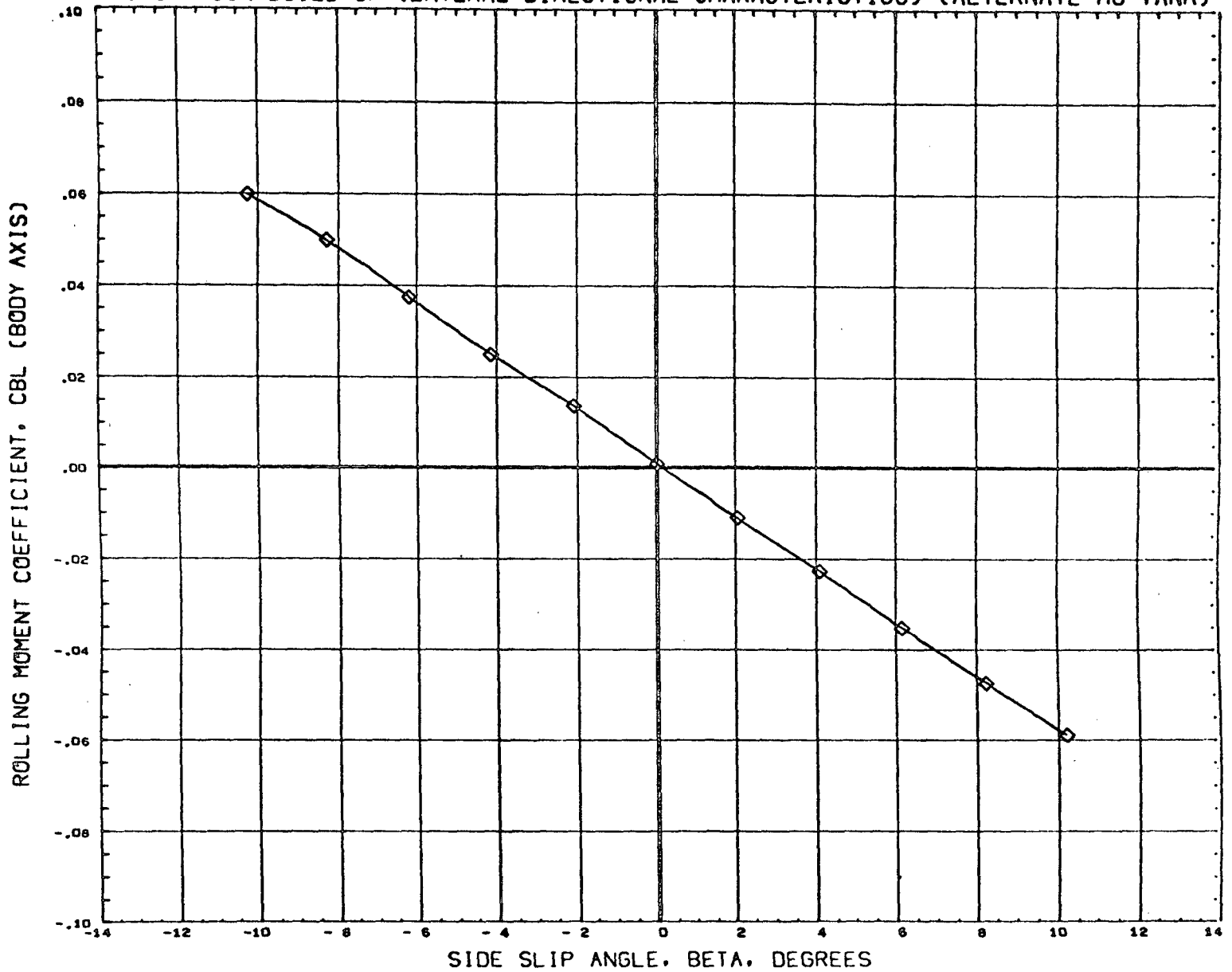
CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H<sub>0</sub> TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		SREF 7.8600 SQ. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

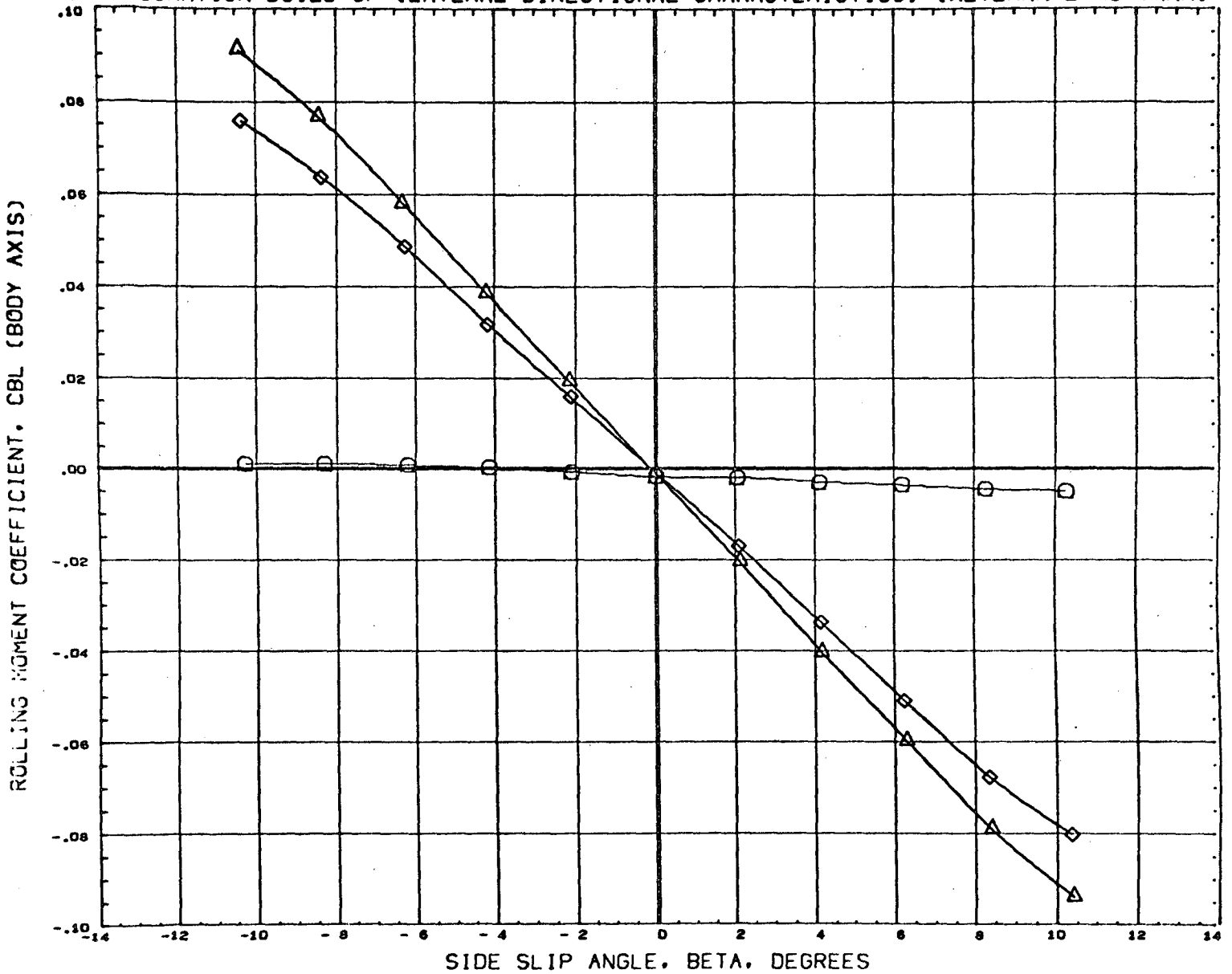
CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF 7.8800 SQ. IN
(A71078)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501s1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

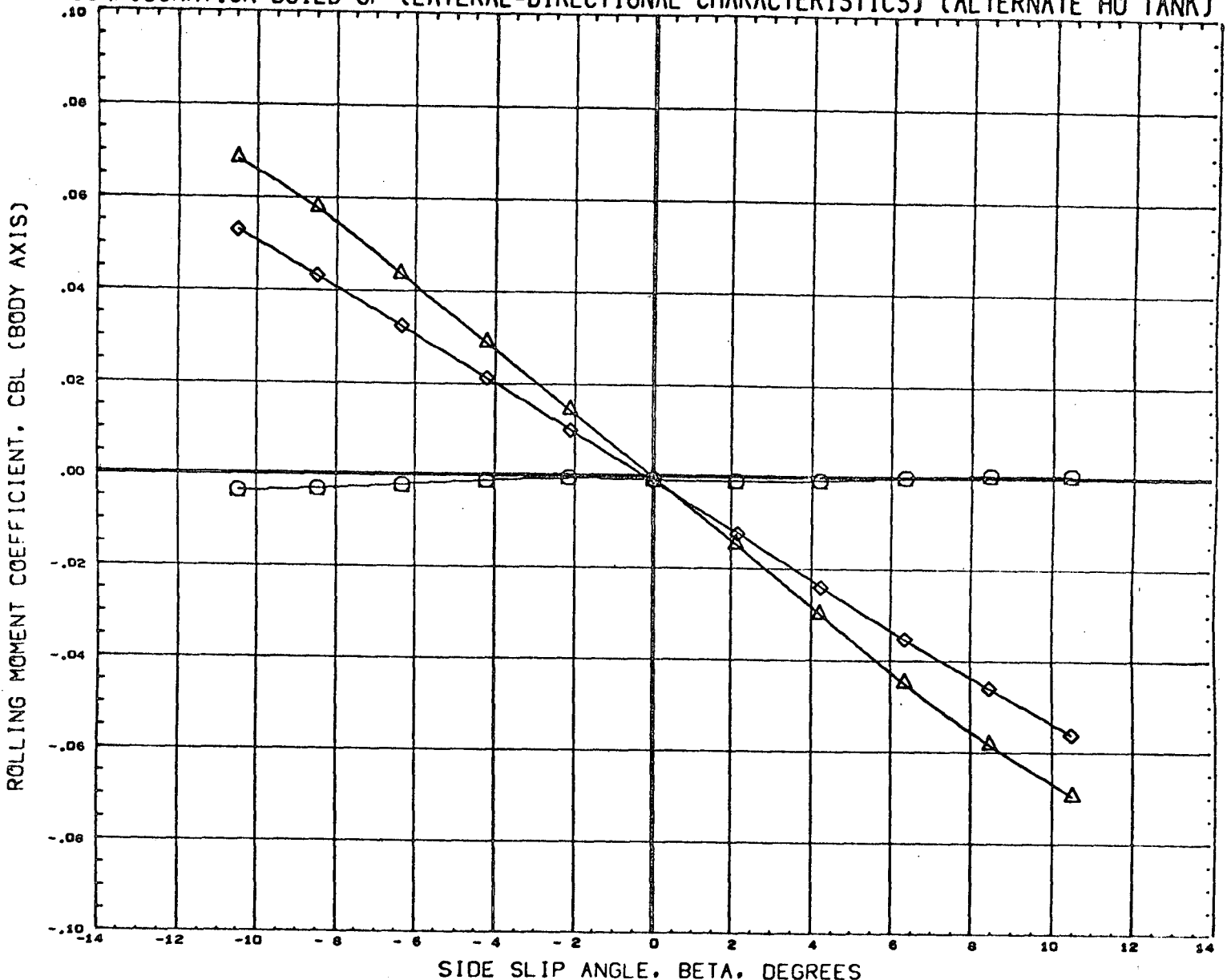
# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

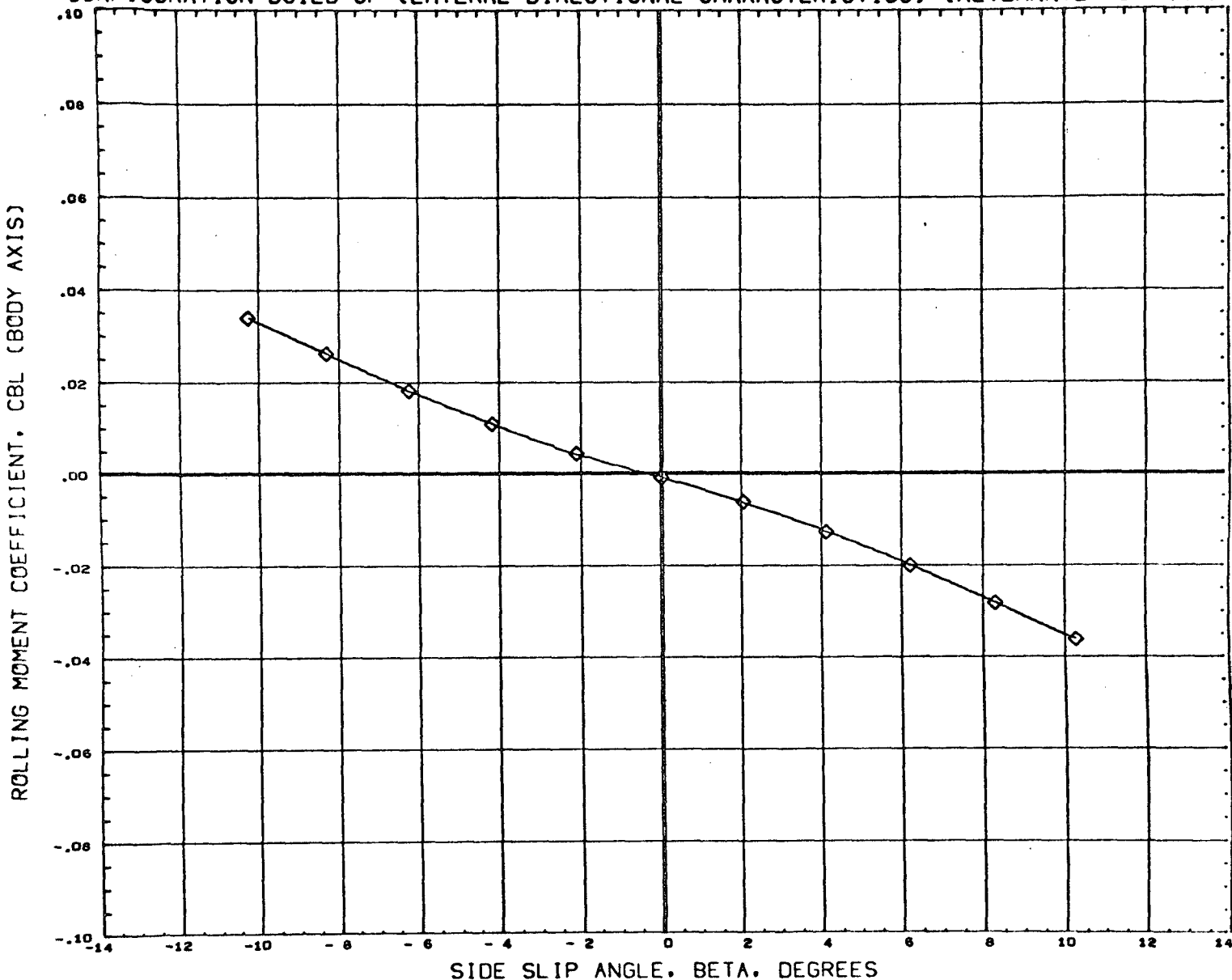
# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE NO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		SREF 7.8800 80. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

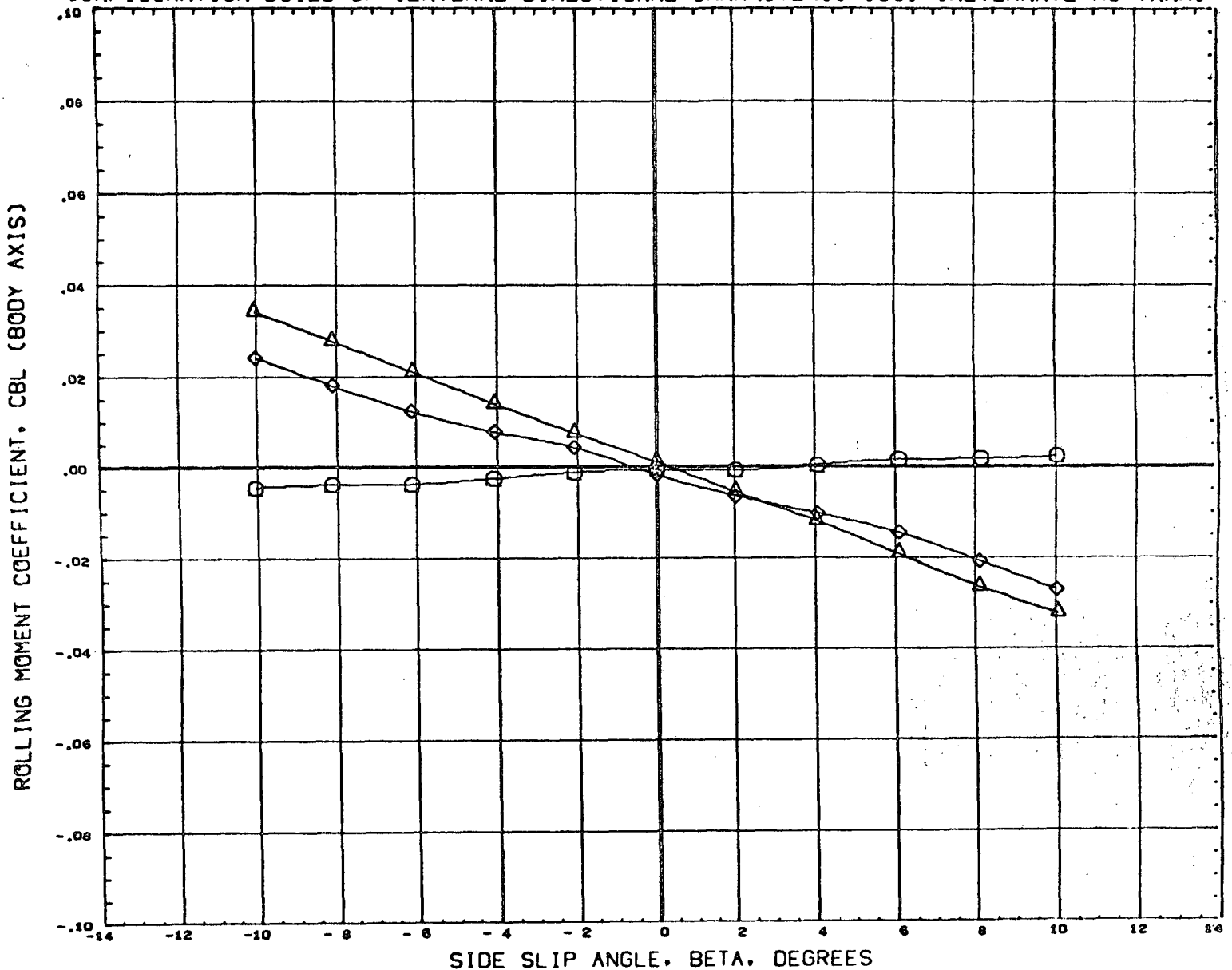
# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(A71076)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF	7.8600 SQ. IN
(A71078)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	LREF	2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 3.48

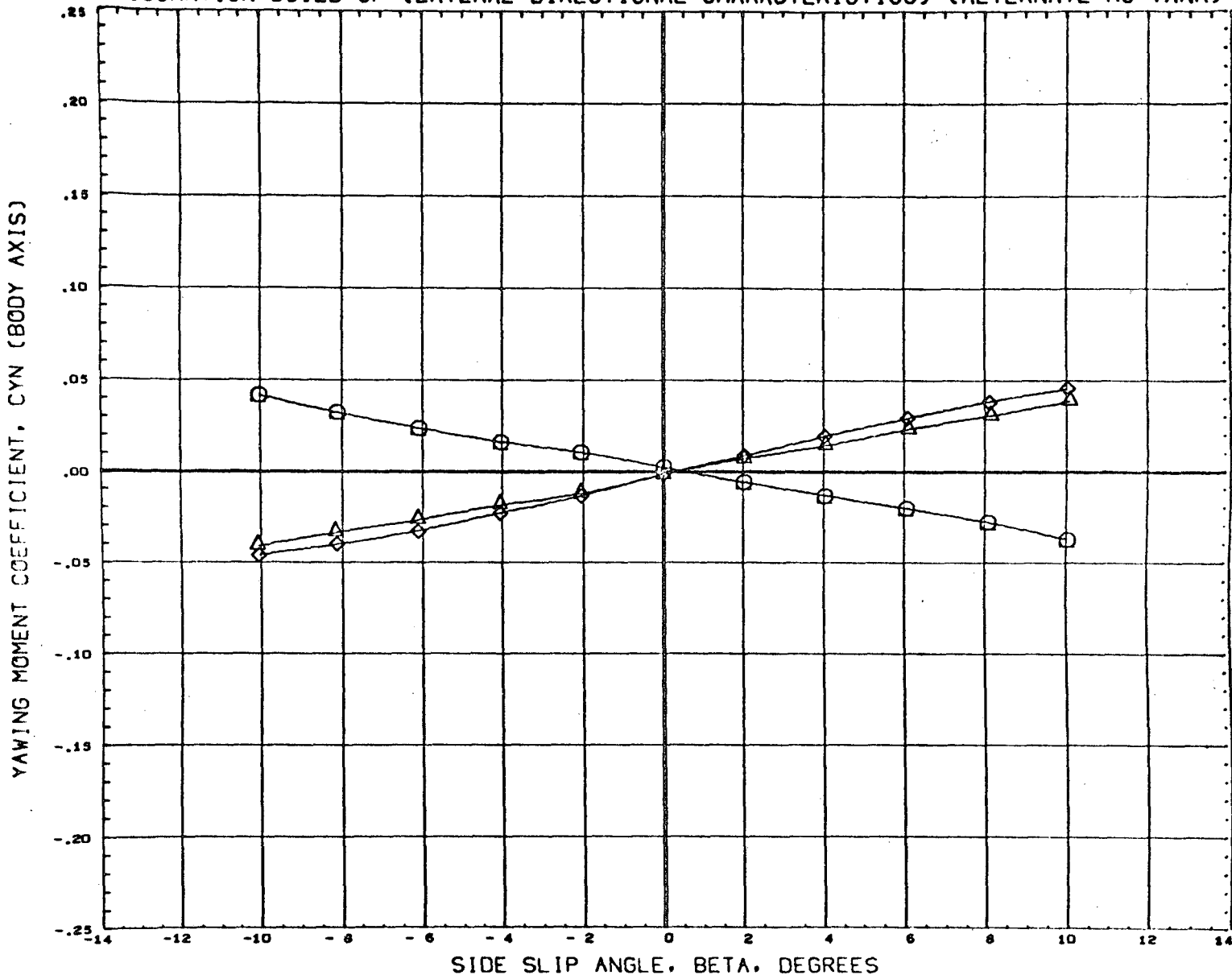
CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H<sub>0</sub> TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

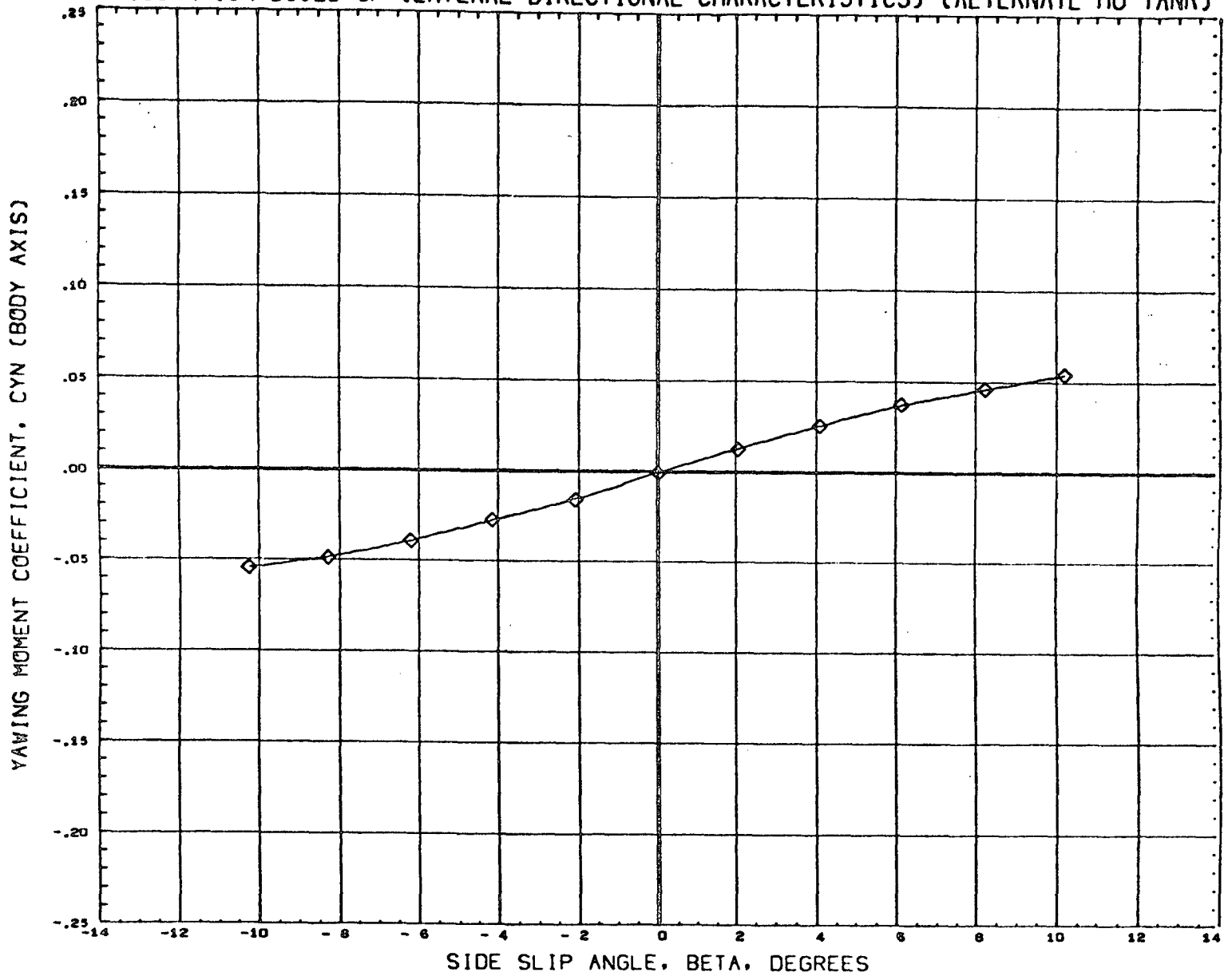
# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE HO TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T551		75.000	0.000		SREF 7.8800 SQ. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE HO TANK)



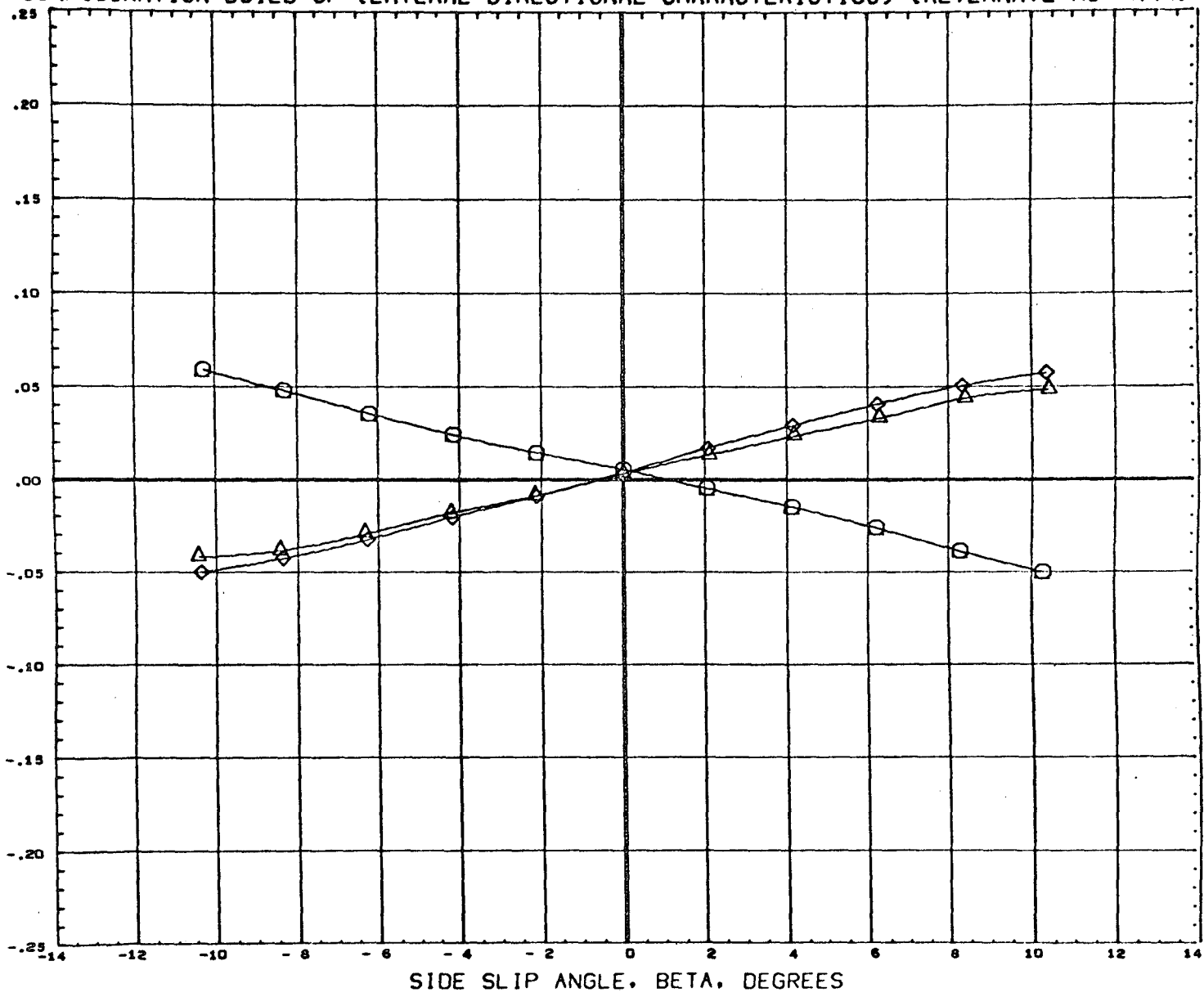
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF 7.8800 SQ. IN
(A71078)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)

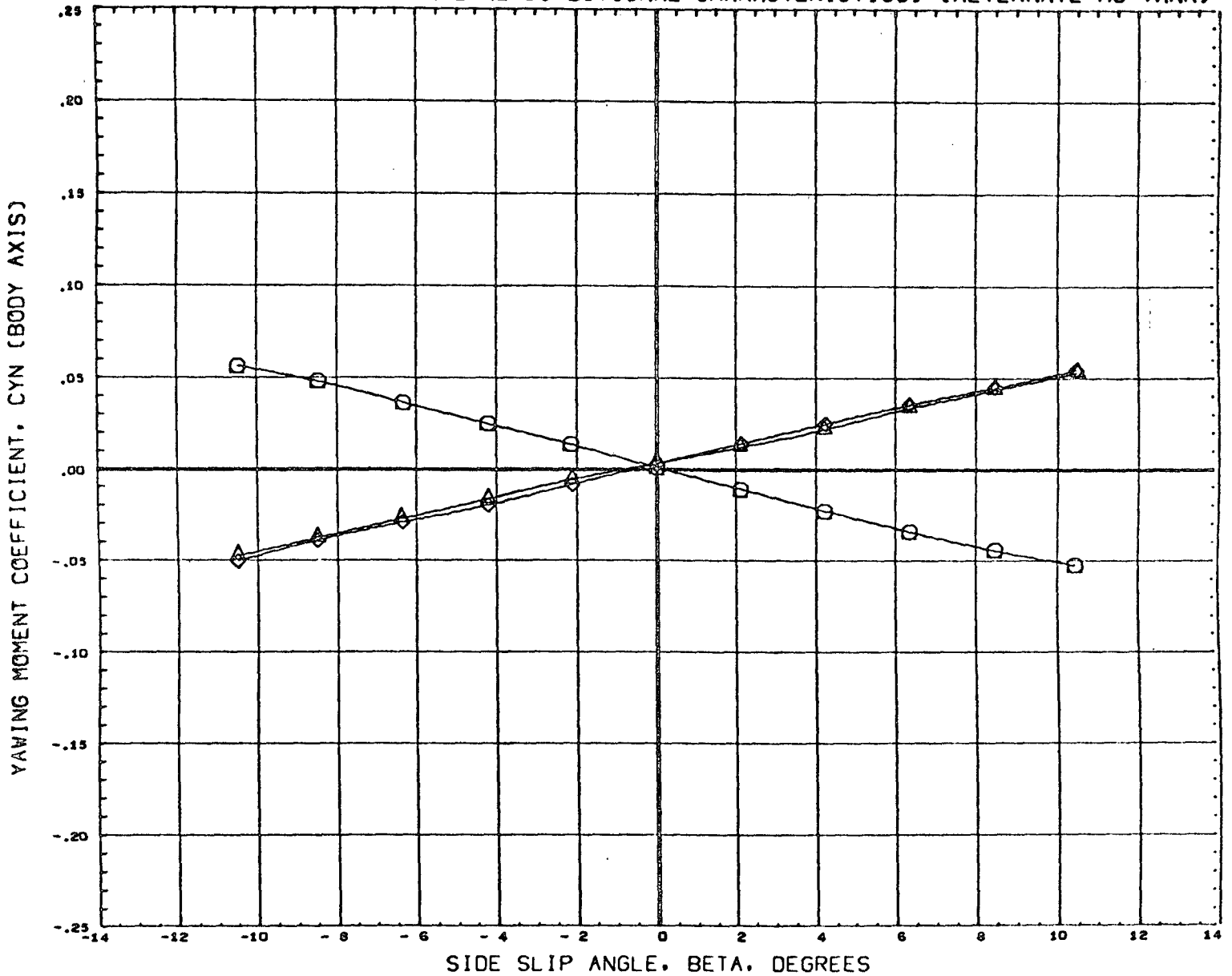
YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)



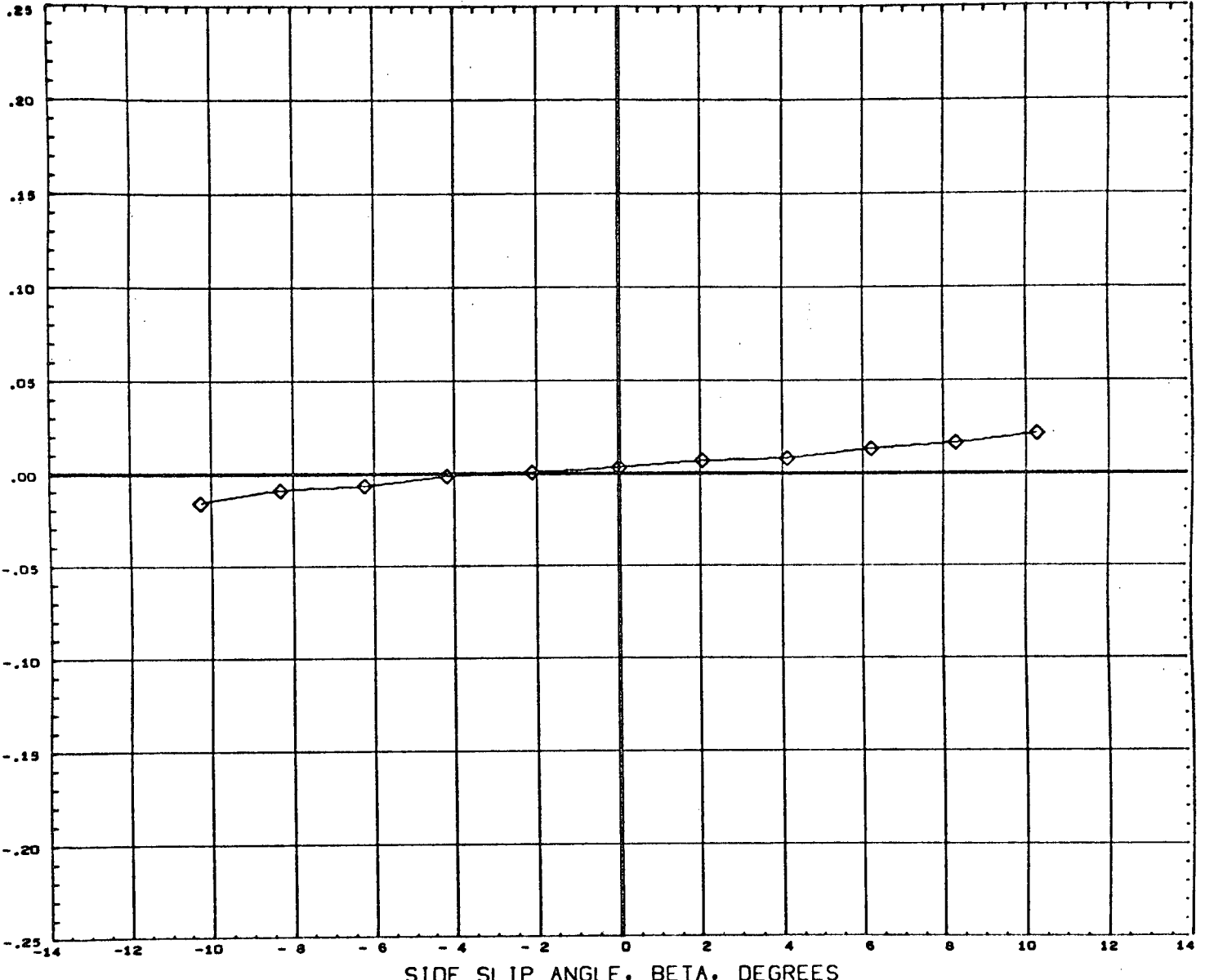
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T531	-1.500	75,000	0,000	0,000	SREF 7.8800 SQ. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501	-1.500	75,000	0,000	0,000	LREF 2.0280 IN.
(A71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75,000	0,000	0,000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.97

# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)

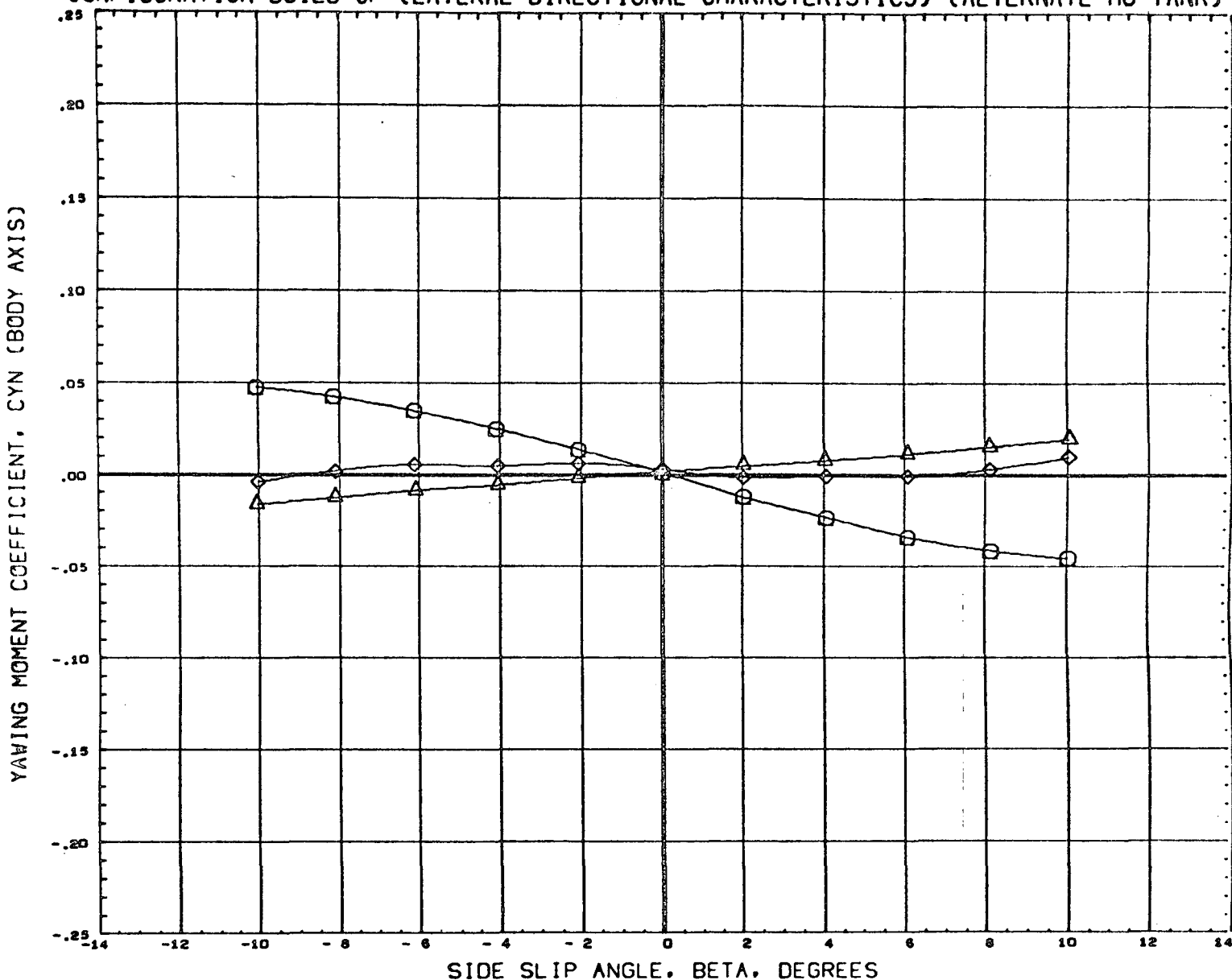
YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF 7.8800 SQ. IN
(A71078)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500			0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)



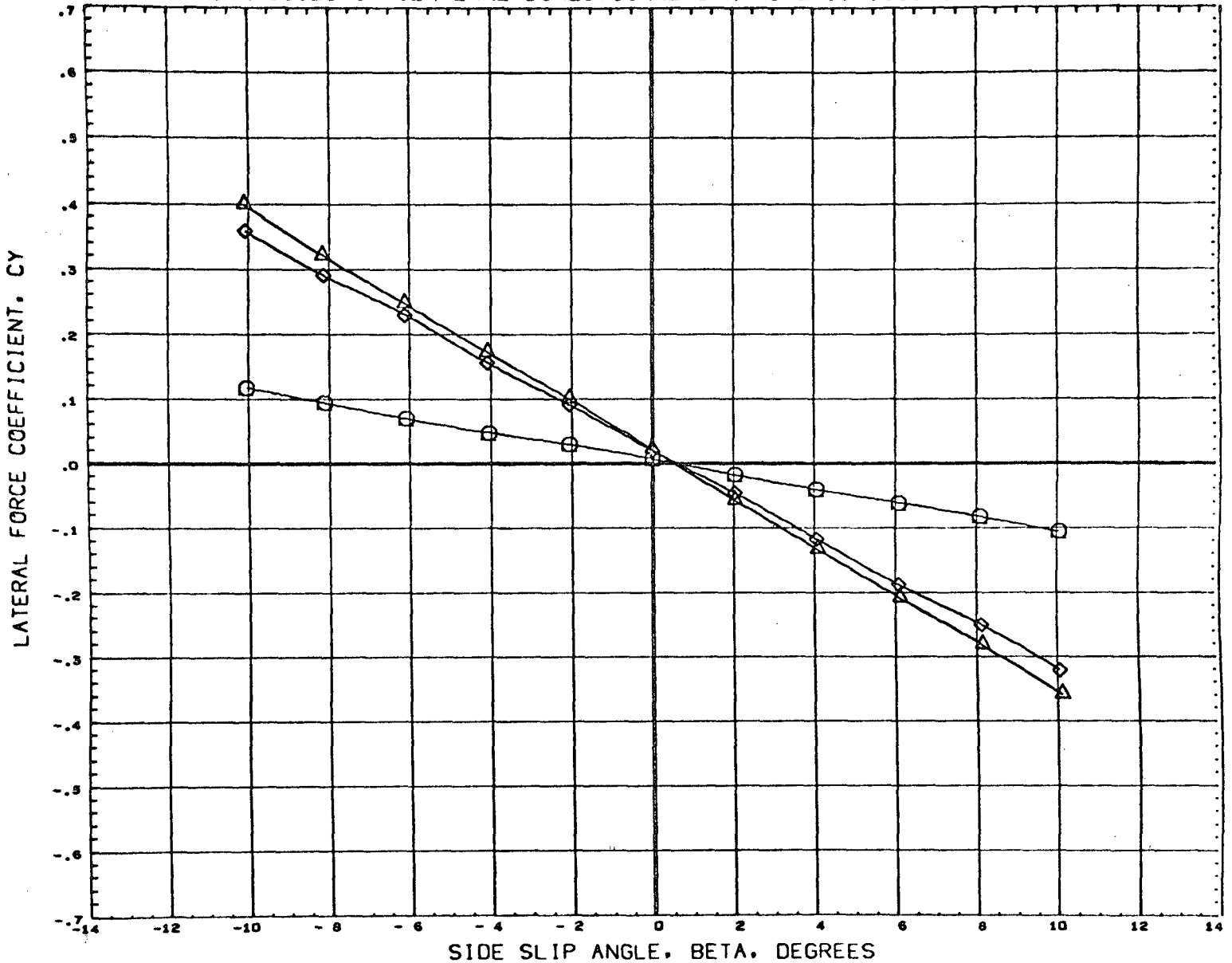
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		SREF 7.8800 SQ. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

4.96

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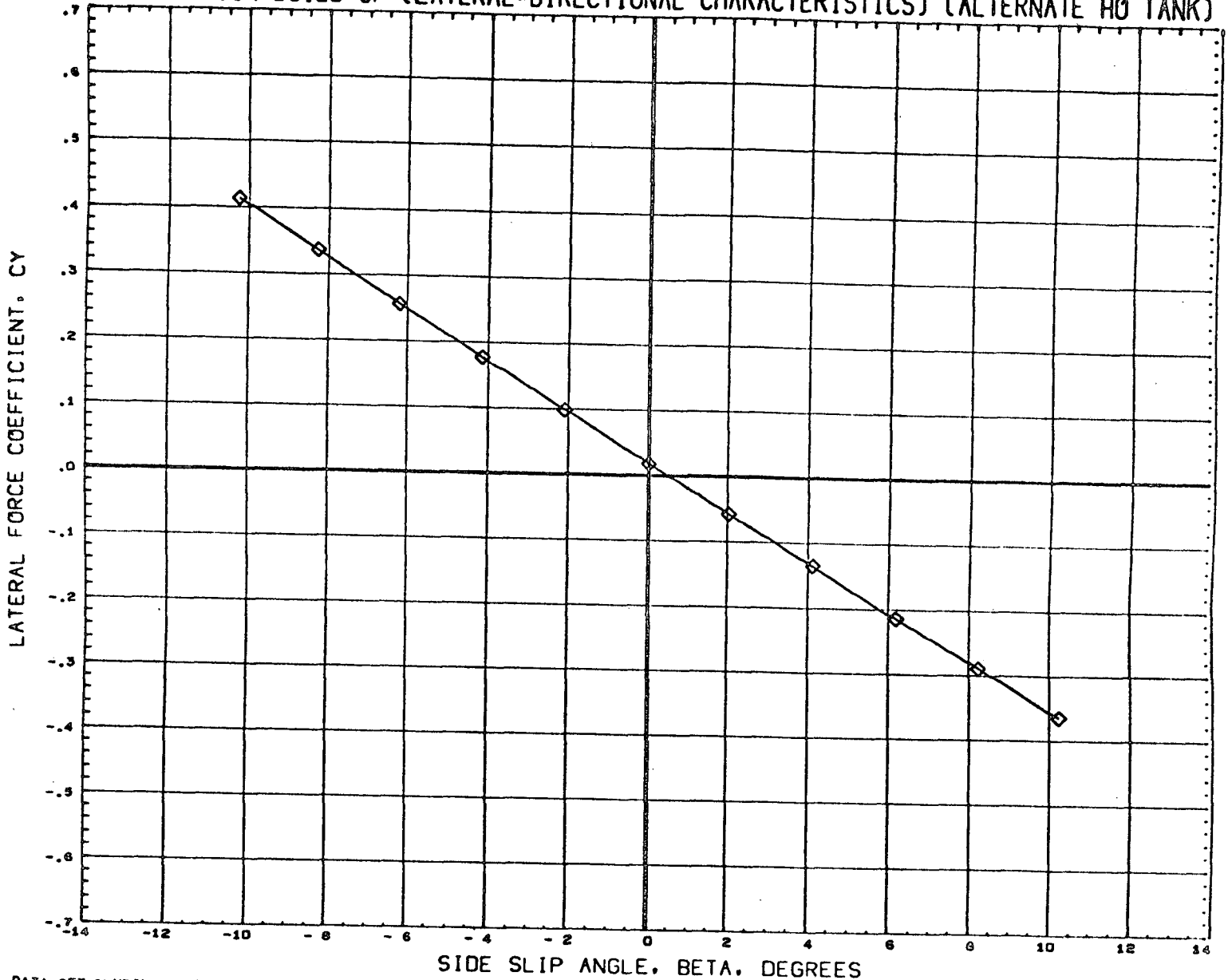
CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		SREF 7.8800 SQ. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)

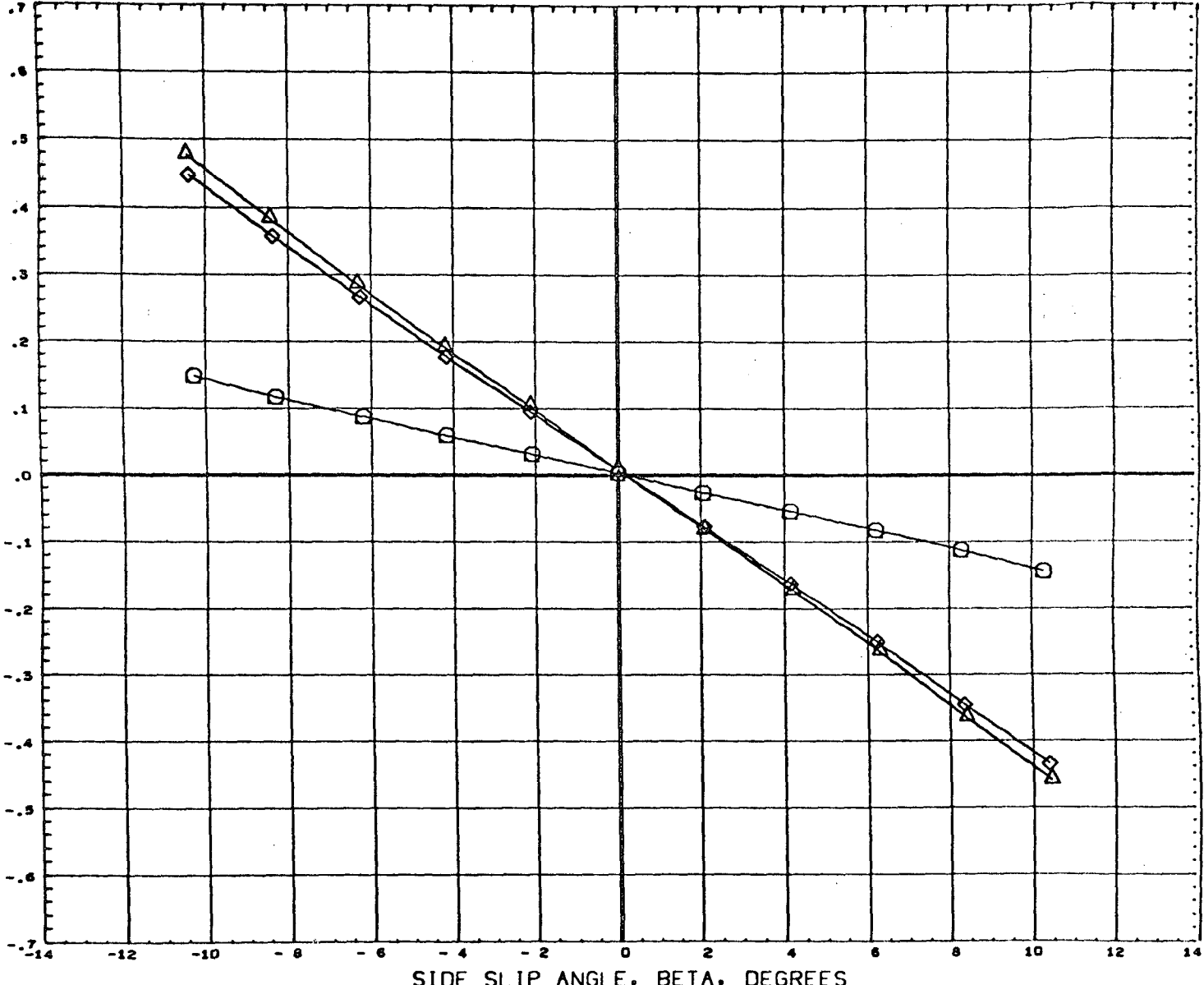


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71078)	DATA NOT AVAILABLE FOR ALL CONDITIONS					LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H<sub>0</sub> TANK)

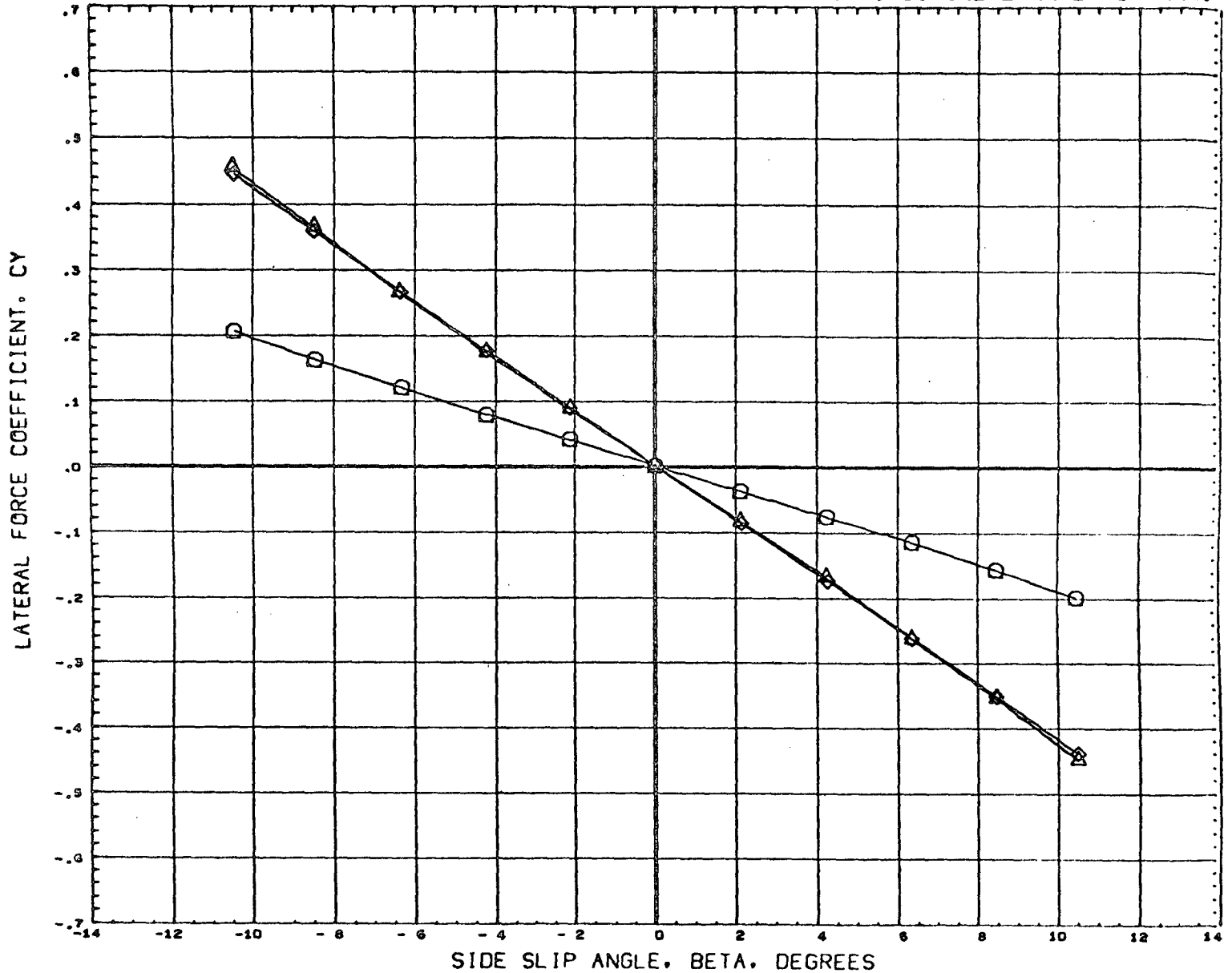
LATERAL FORCE COEFFICIENT, C<sub>Y</sub>



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		SREF 7.8800 SQ. IN
(A71078) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	LREF 2.0280 IN.
(A71048) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)

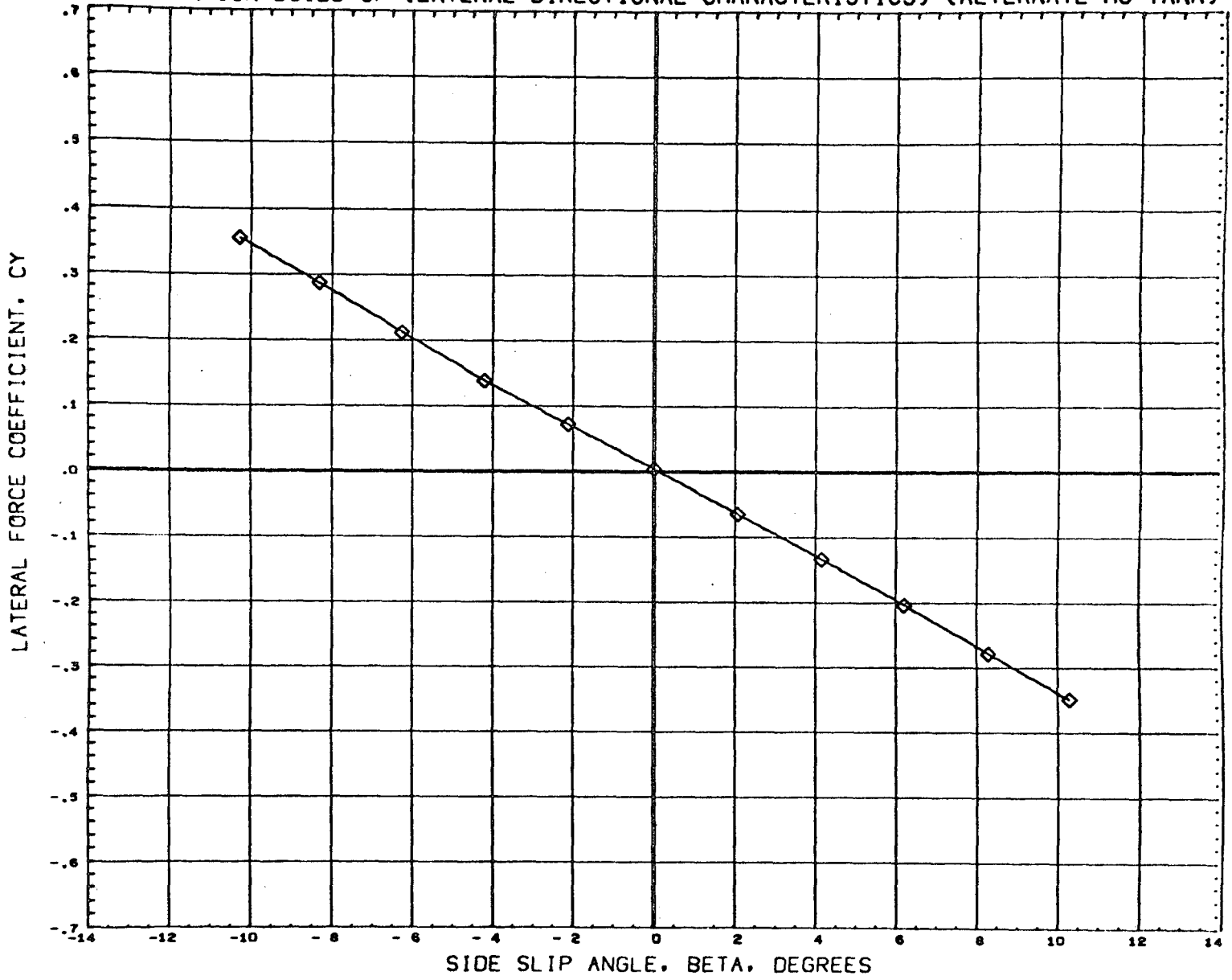


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1		75.000	0.000		SREF 7.8800 sq. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1	-1.500			0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97



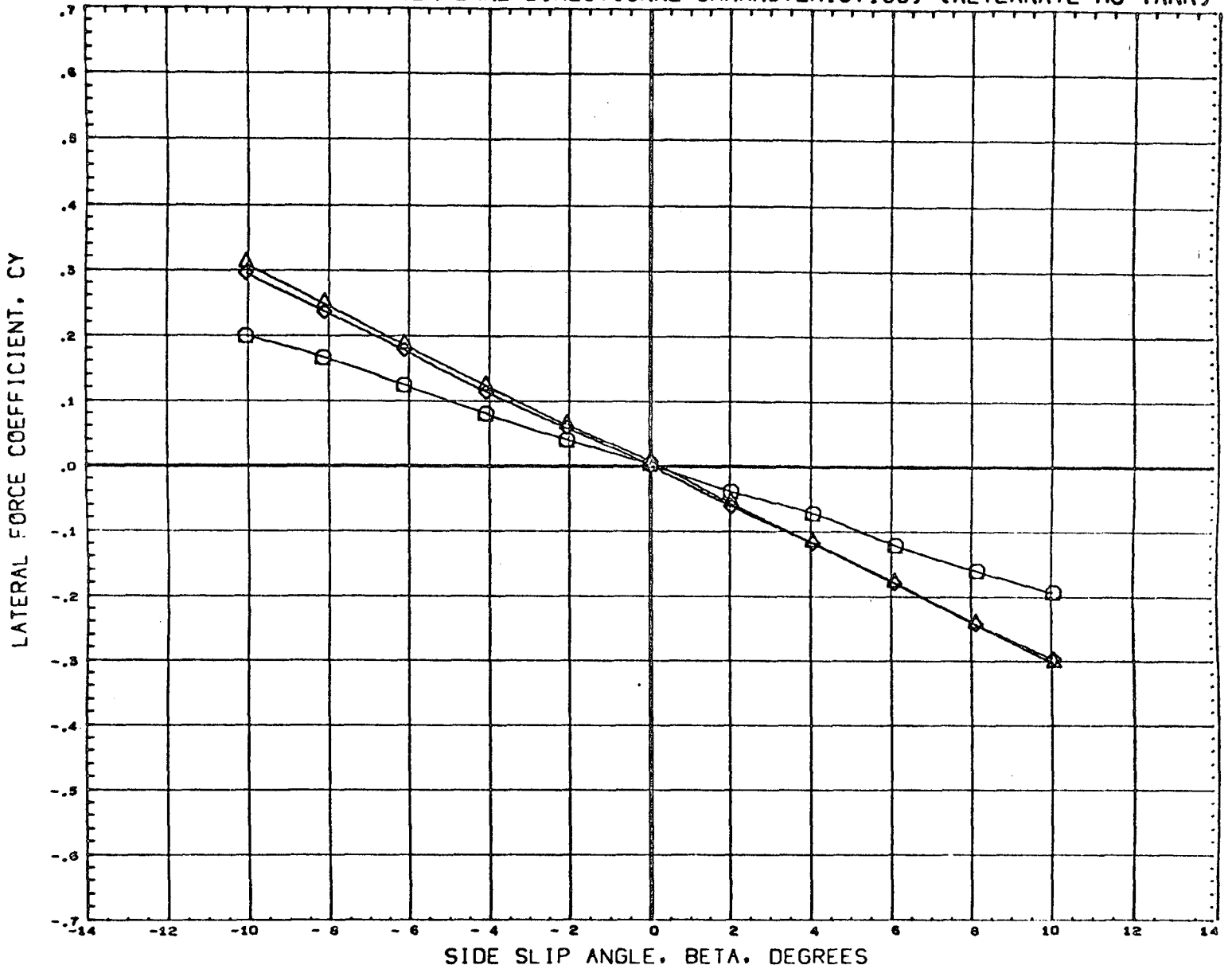
CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE H0 TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	DATA NOT AVAILABLE FOR ALL CONDITIONS		75.000	0.000		SREF 7.8800 SQ. IN
(A71078)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0290 IN.
(A71049)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

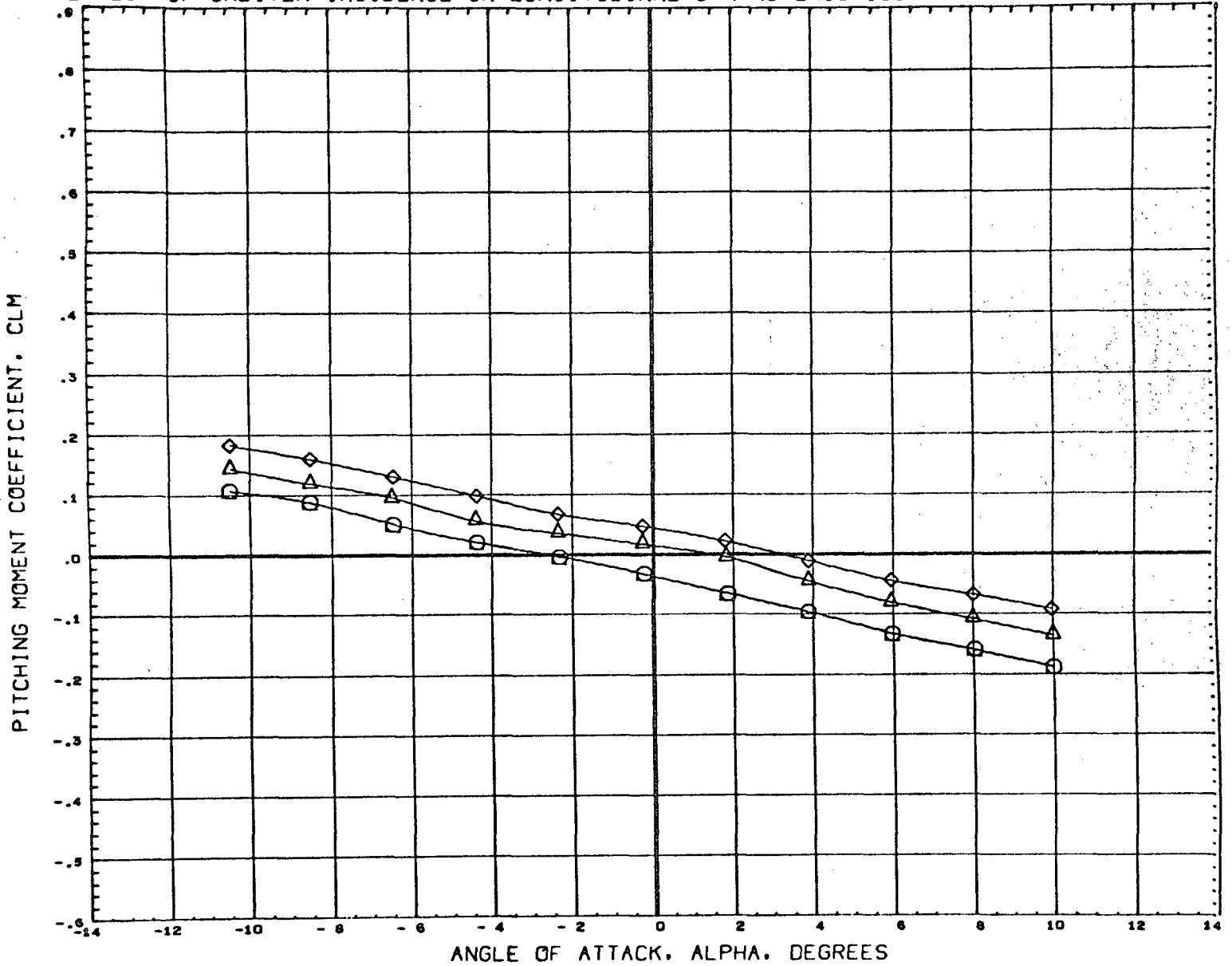
# CONFIGURATION BUILD-UP (LATERAL-DIRECTIONAL CHARACTERISTICS) (ALTERNATE HQ TANK)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T5S1	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71076)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1		75.000	0.000		SREF 7.8800 SQ. IN
(A71078)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

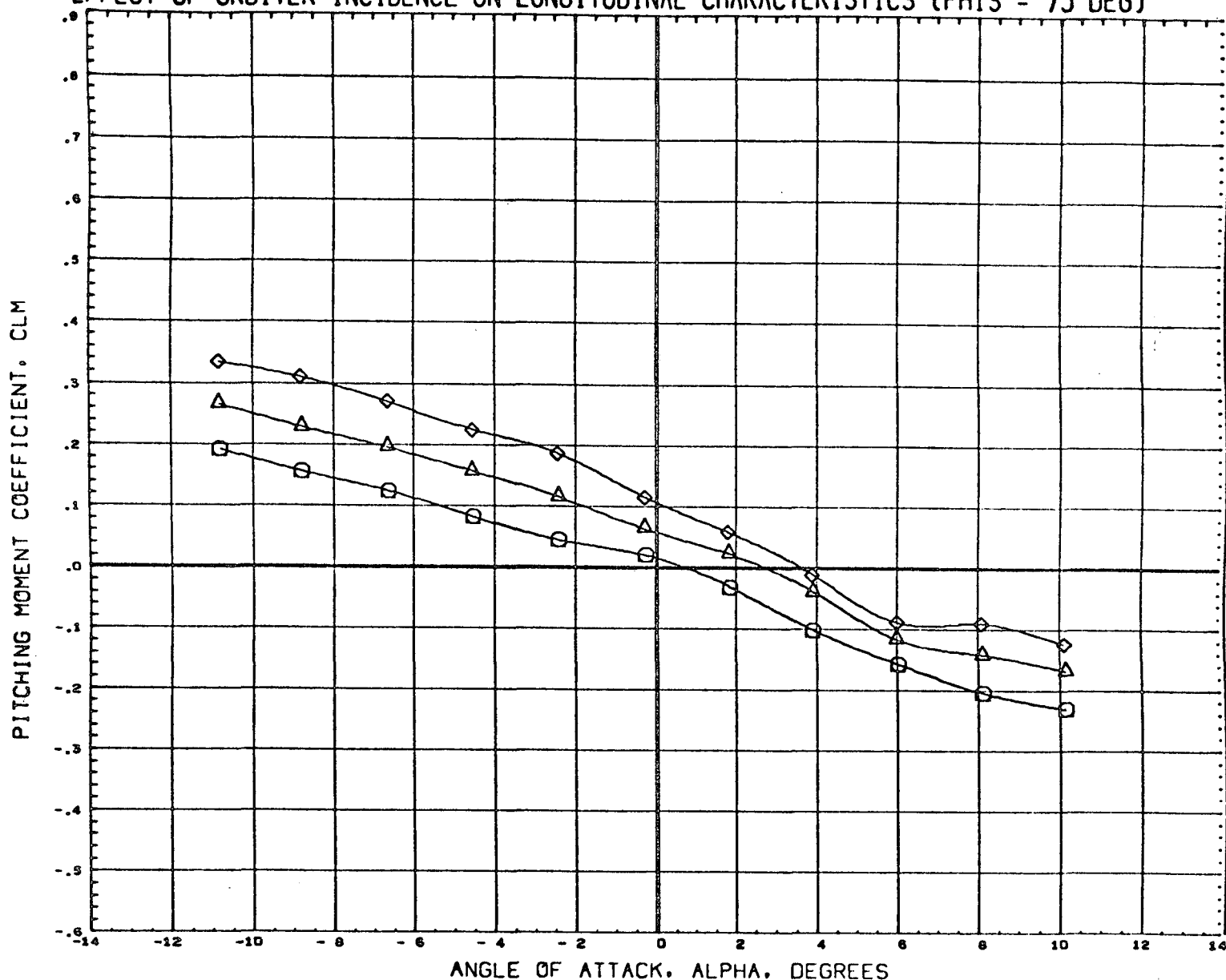
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

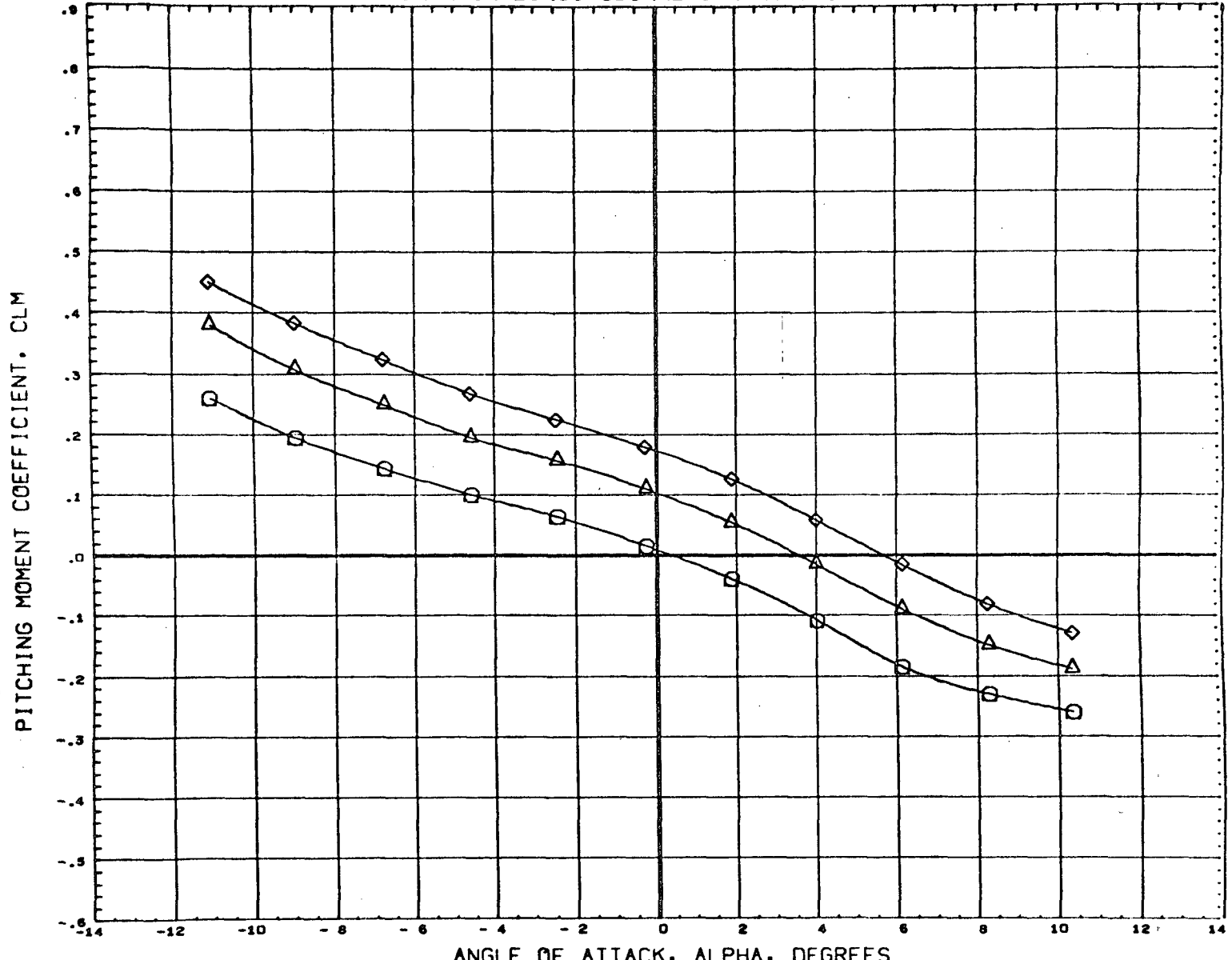
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91

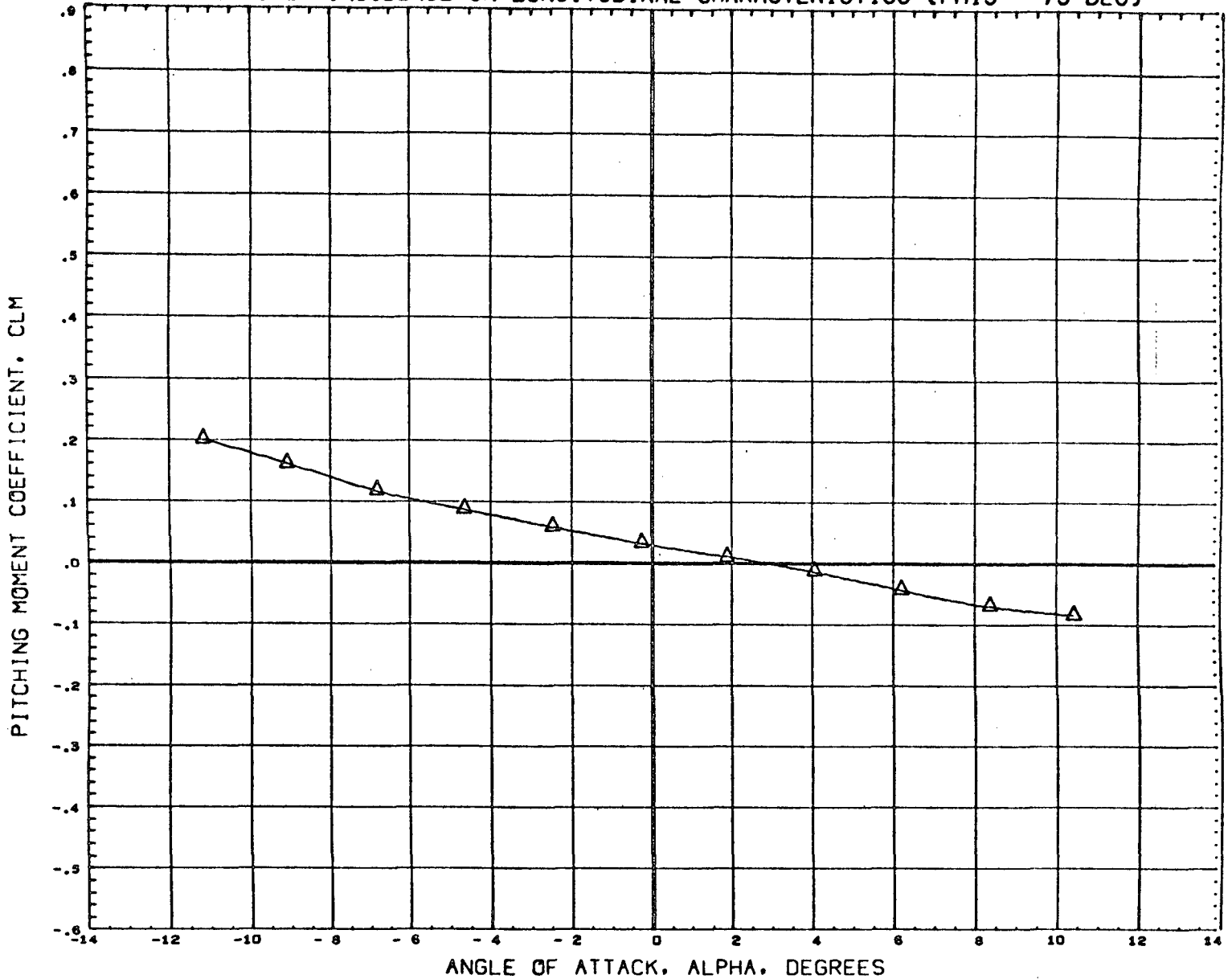
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

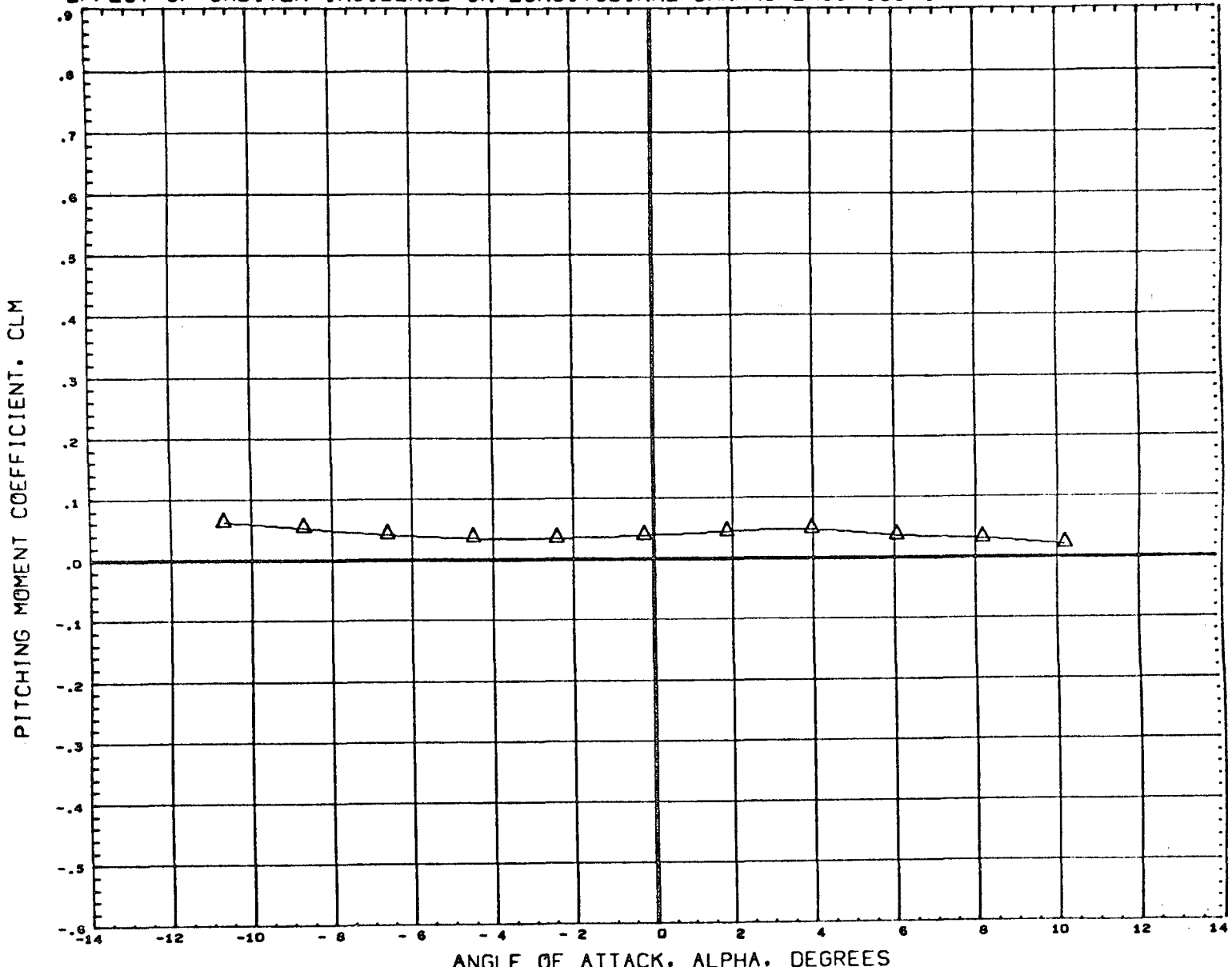
MACH 1.20

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

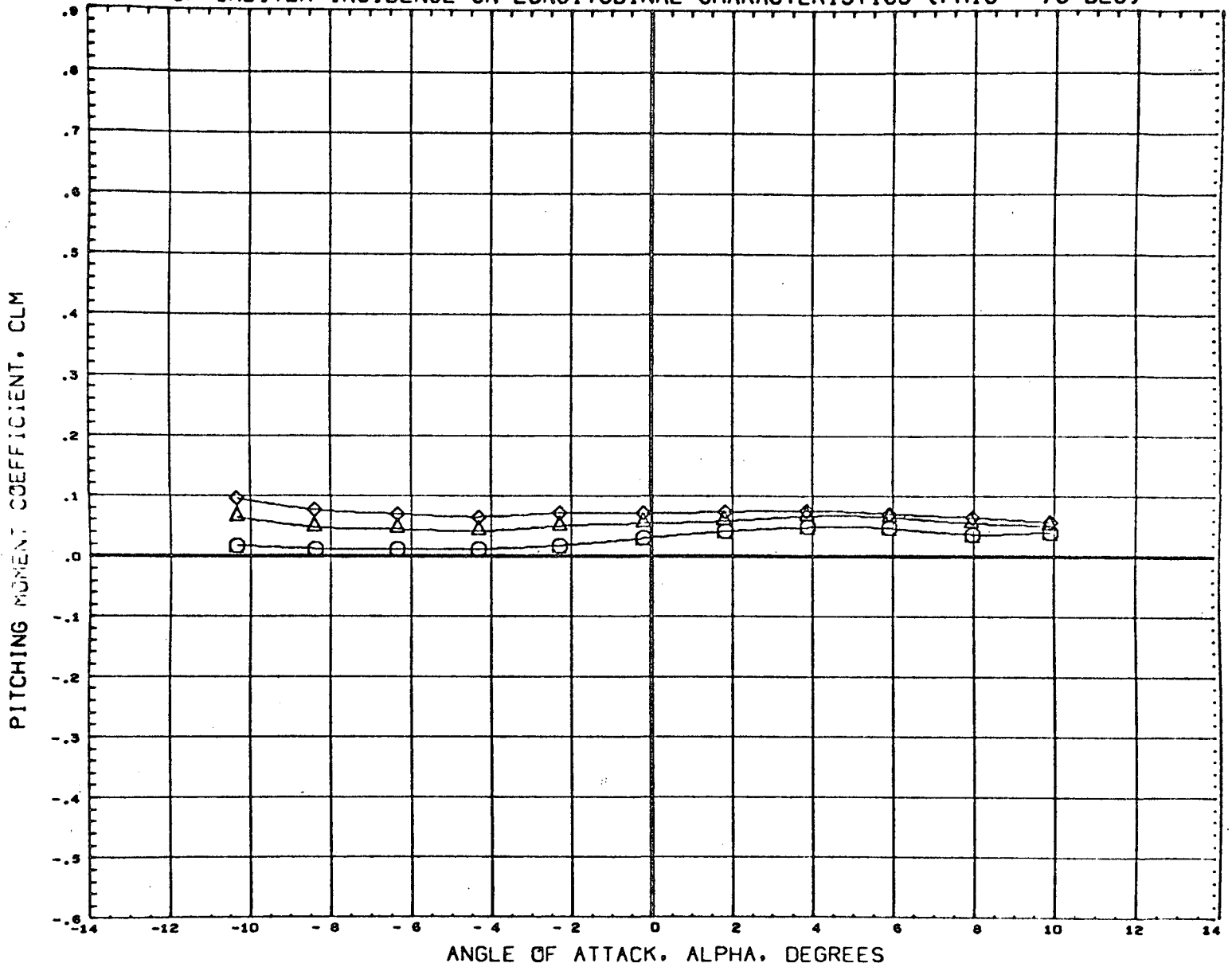
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(071003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

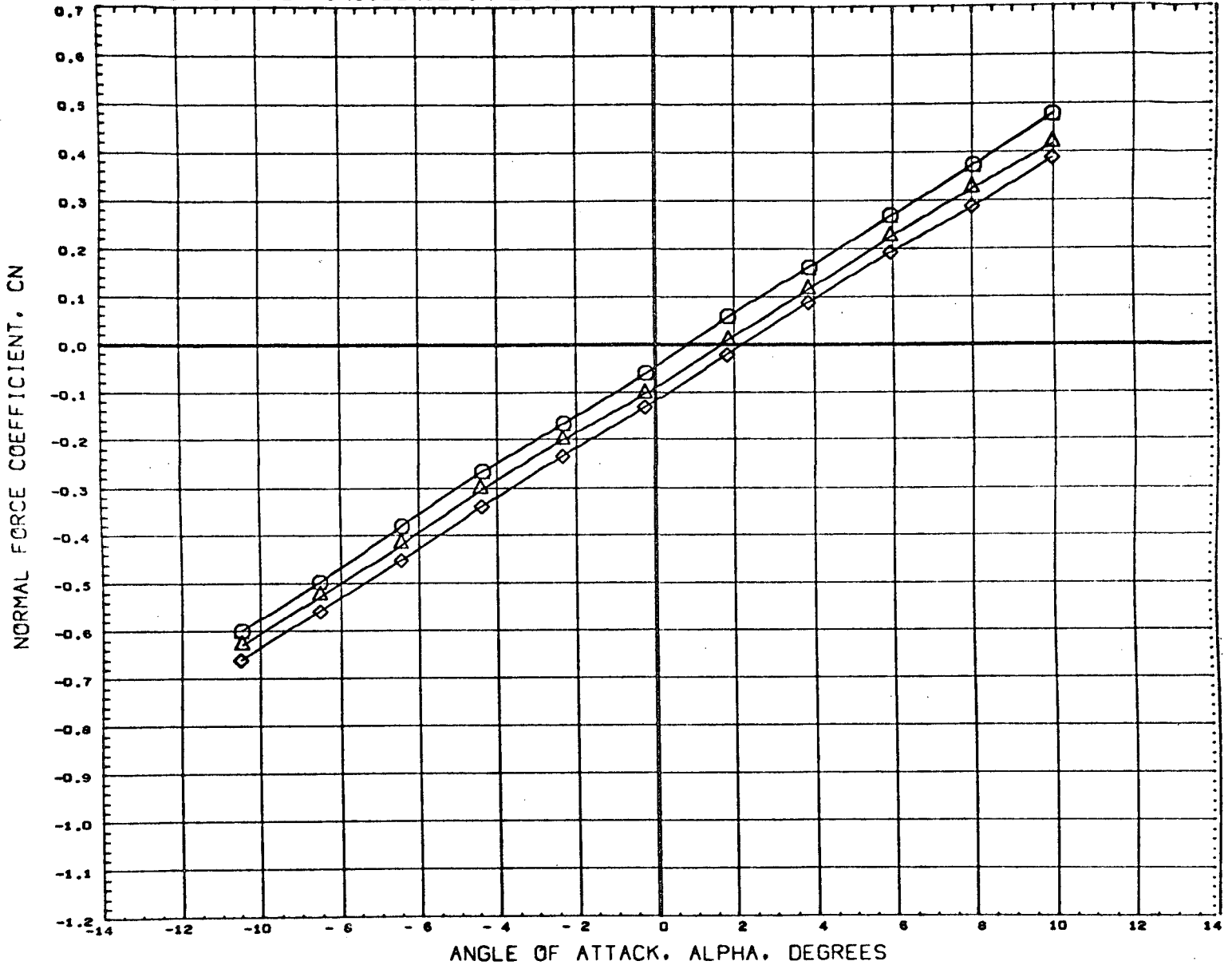
MACH 4.96

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C4



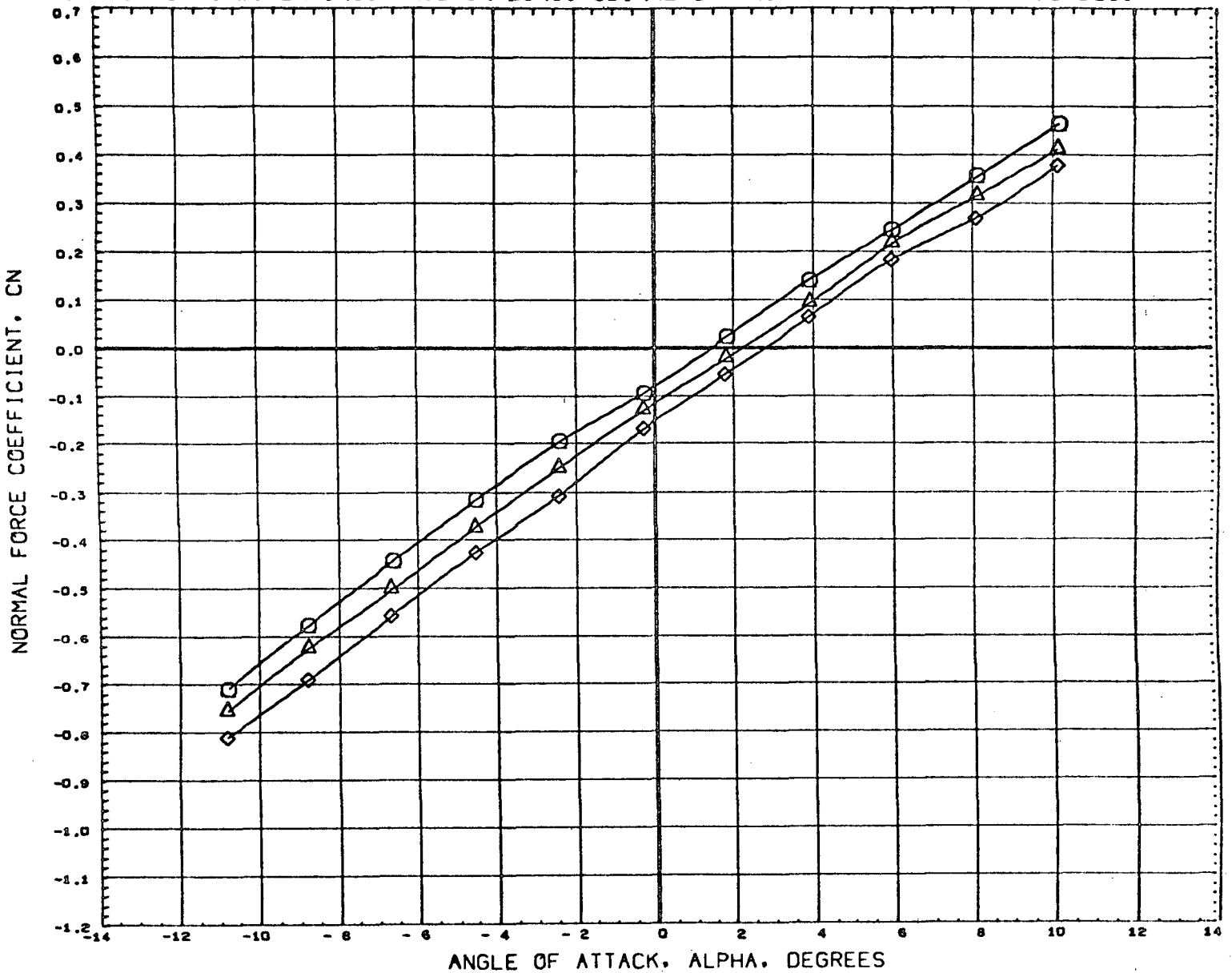
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

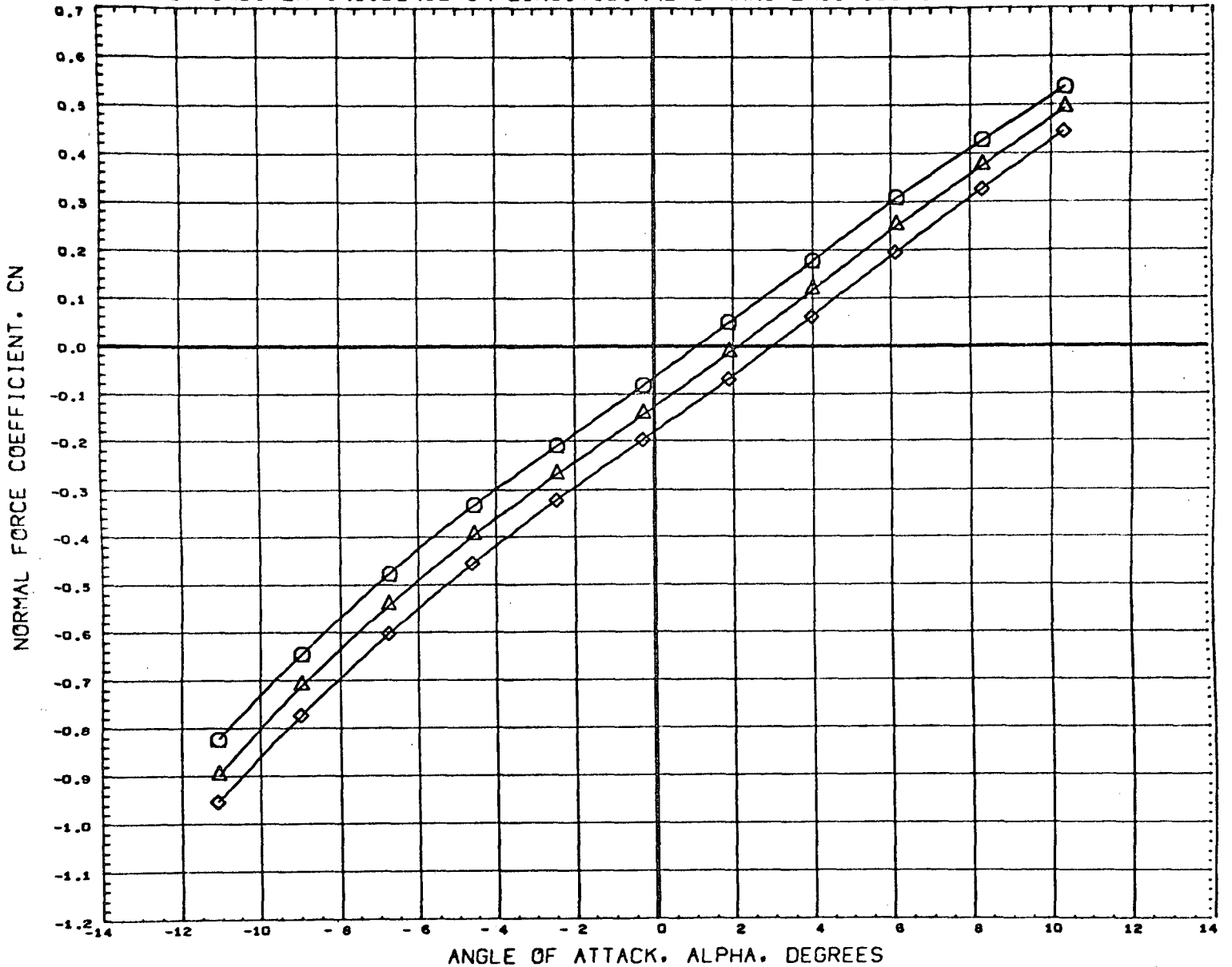
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .91

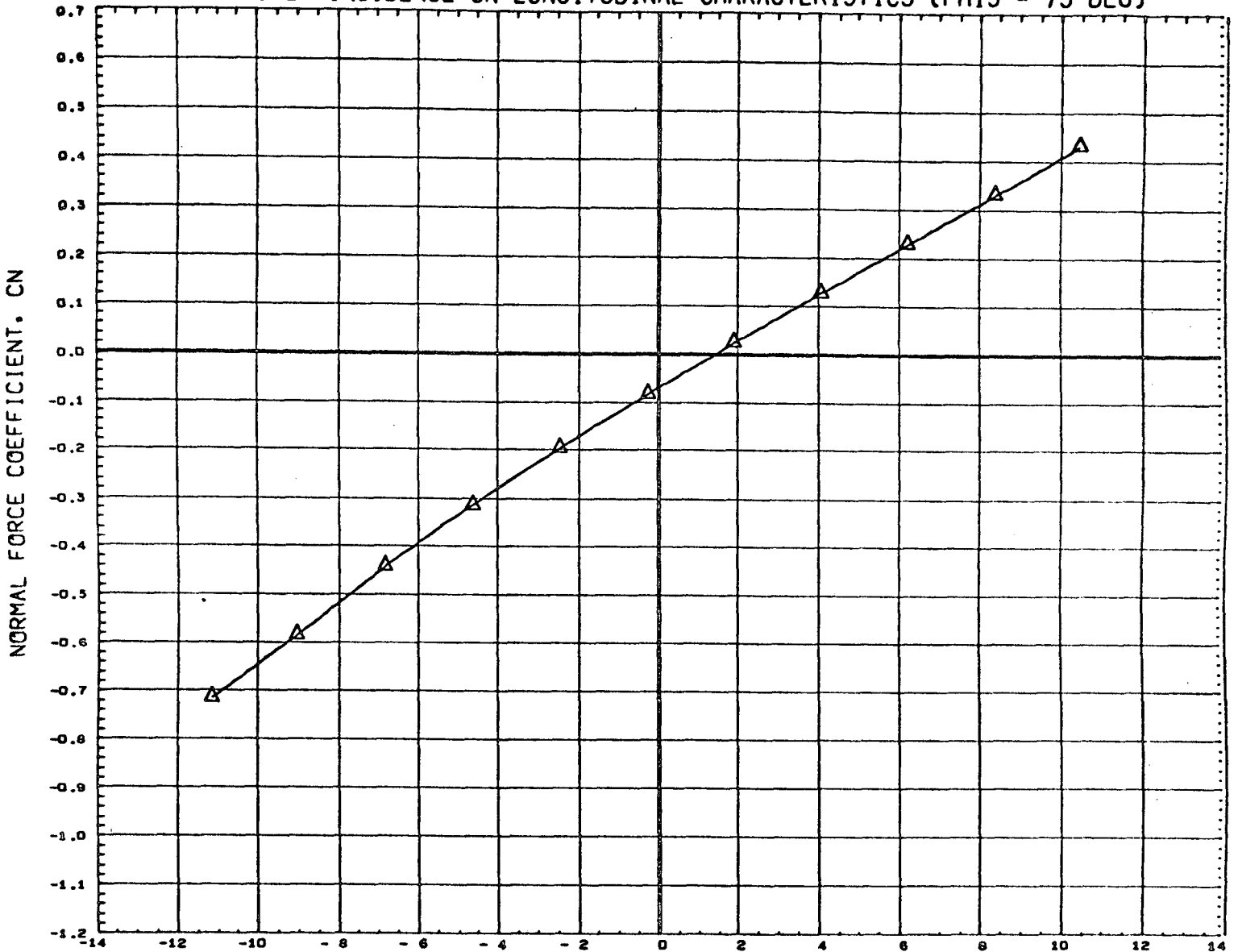
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



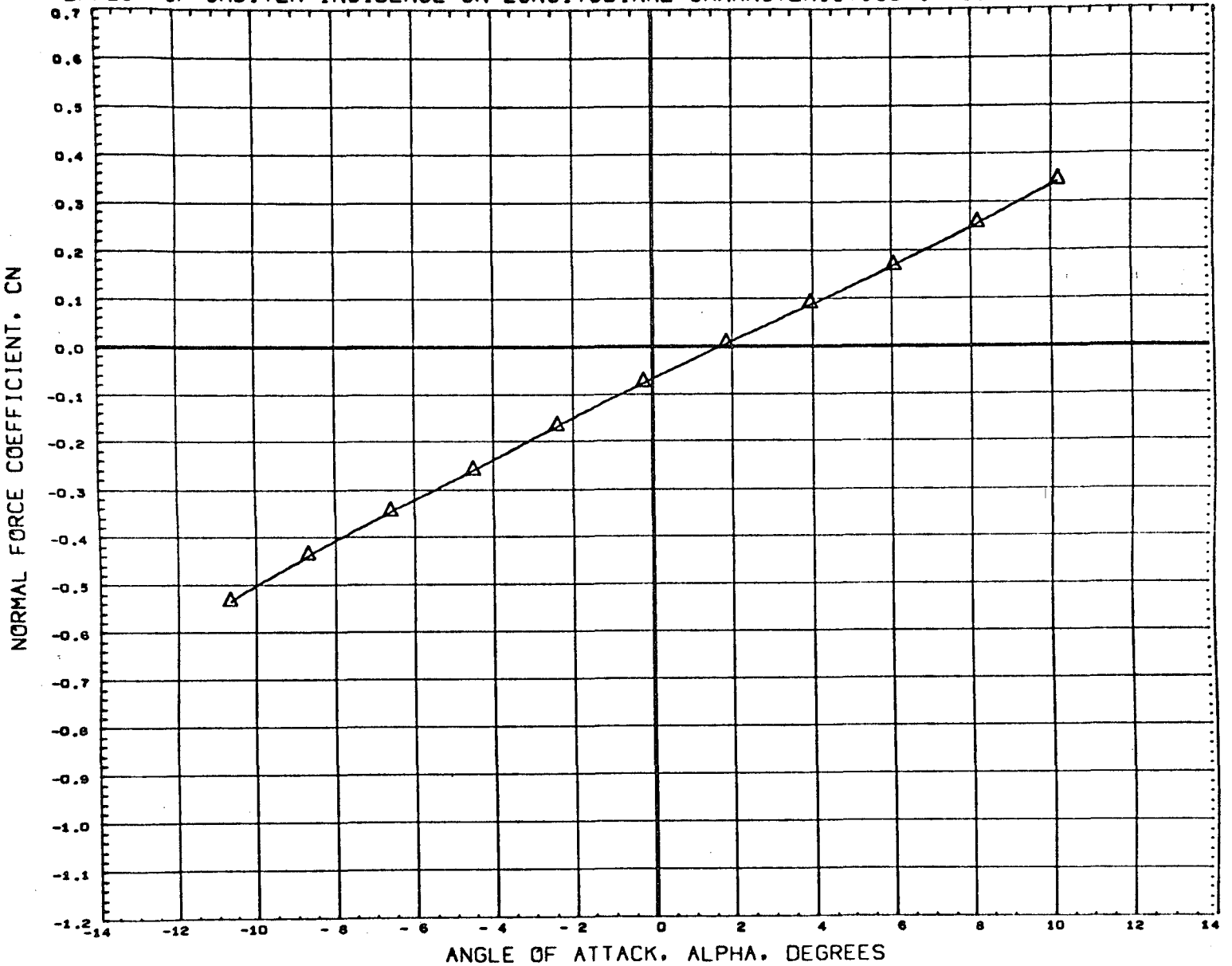
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

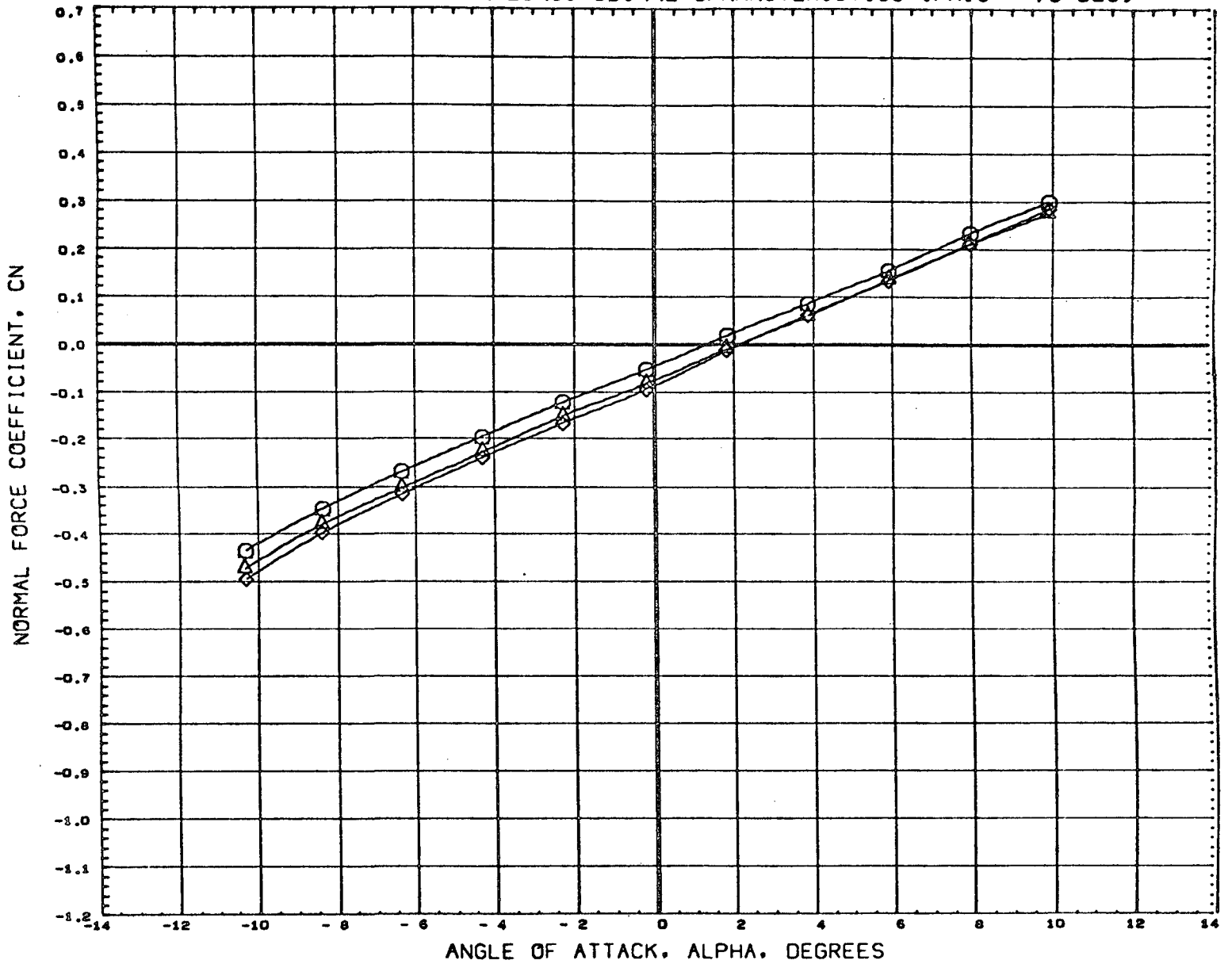


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(E71002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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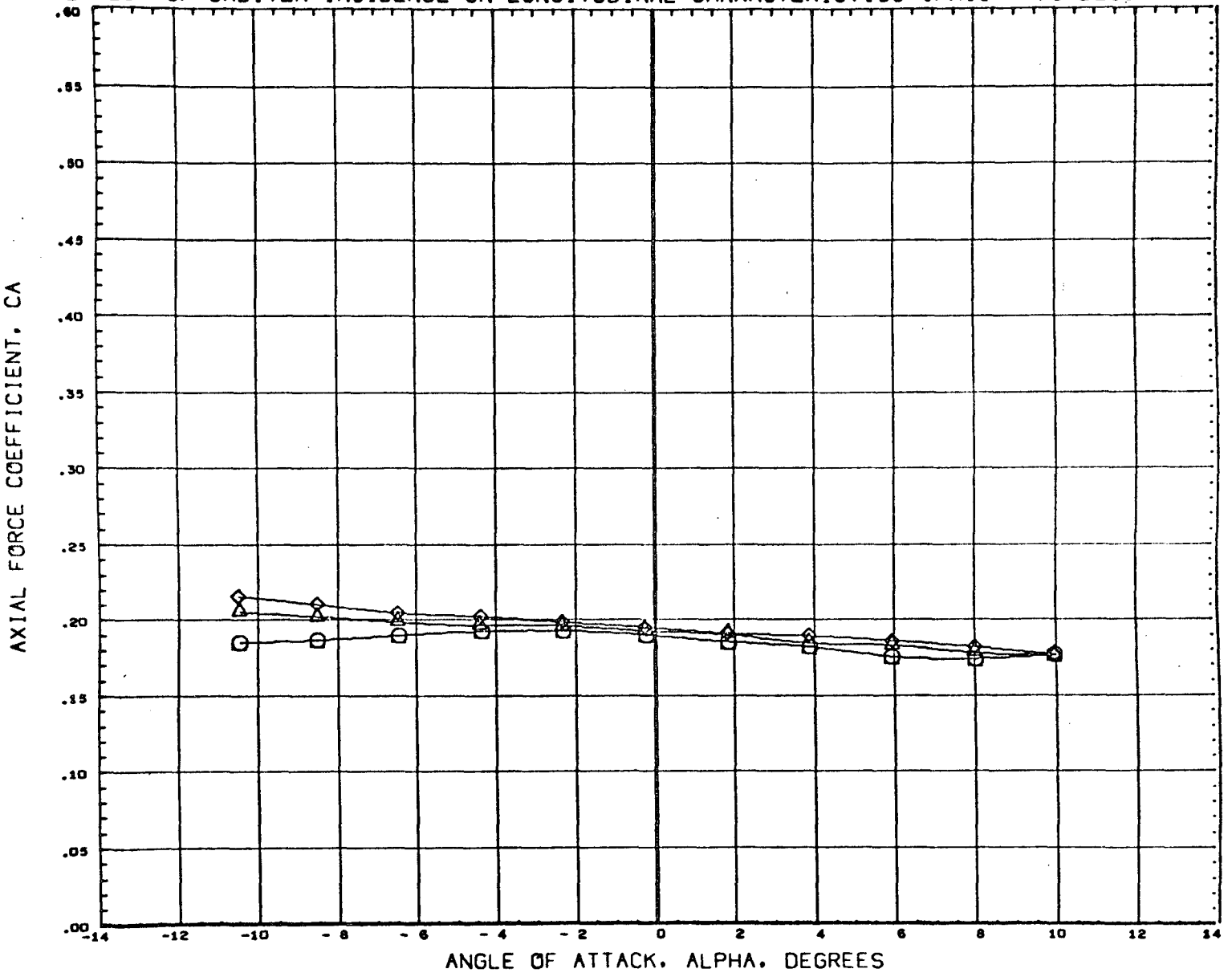
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

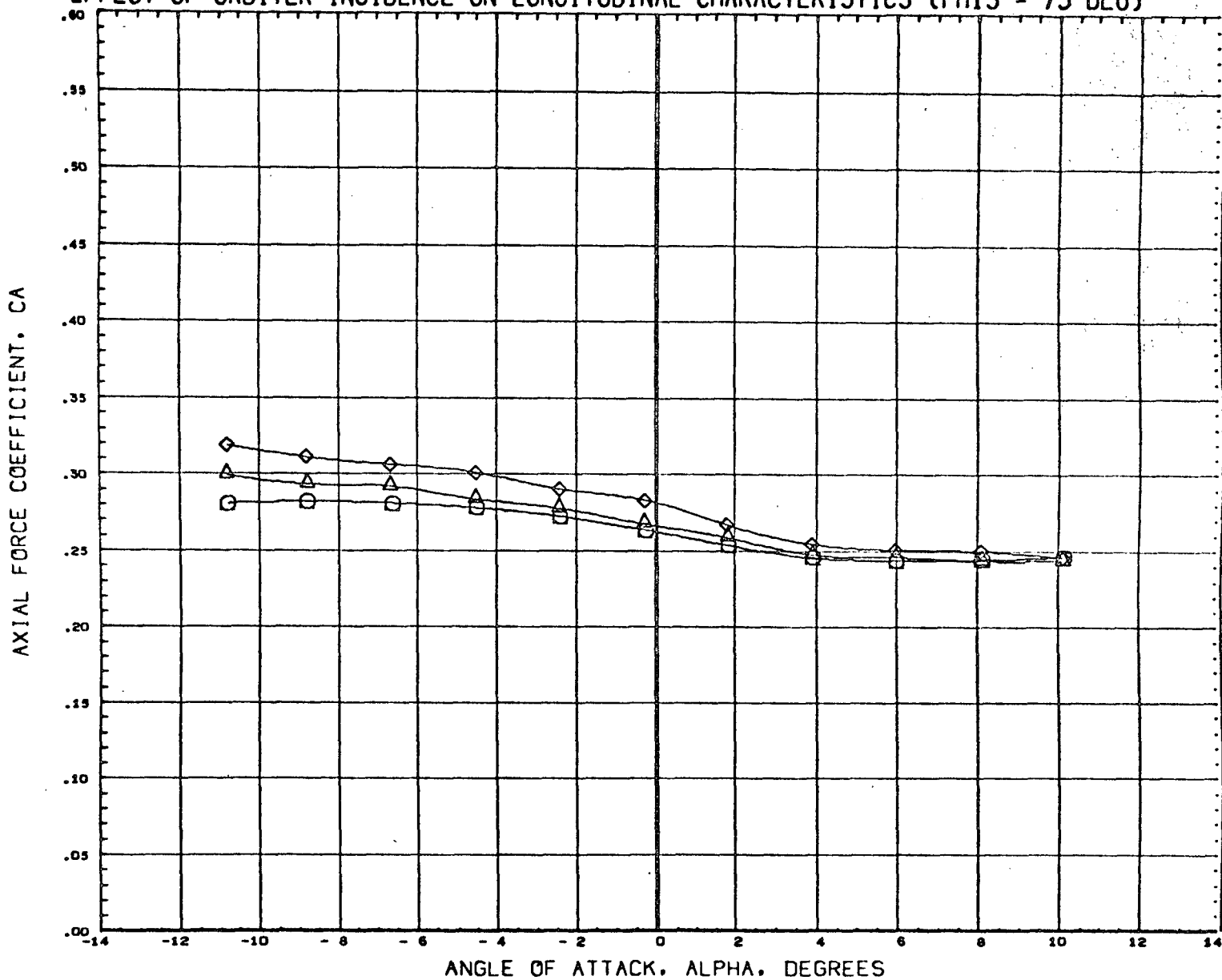
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	SREF 7.8800 Sq. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

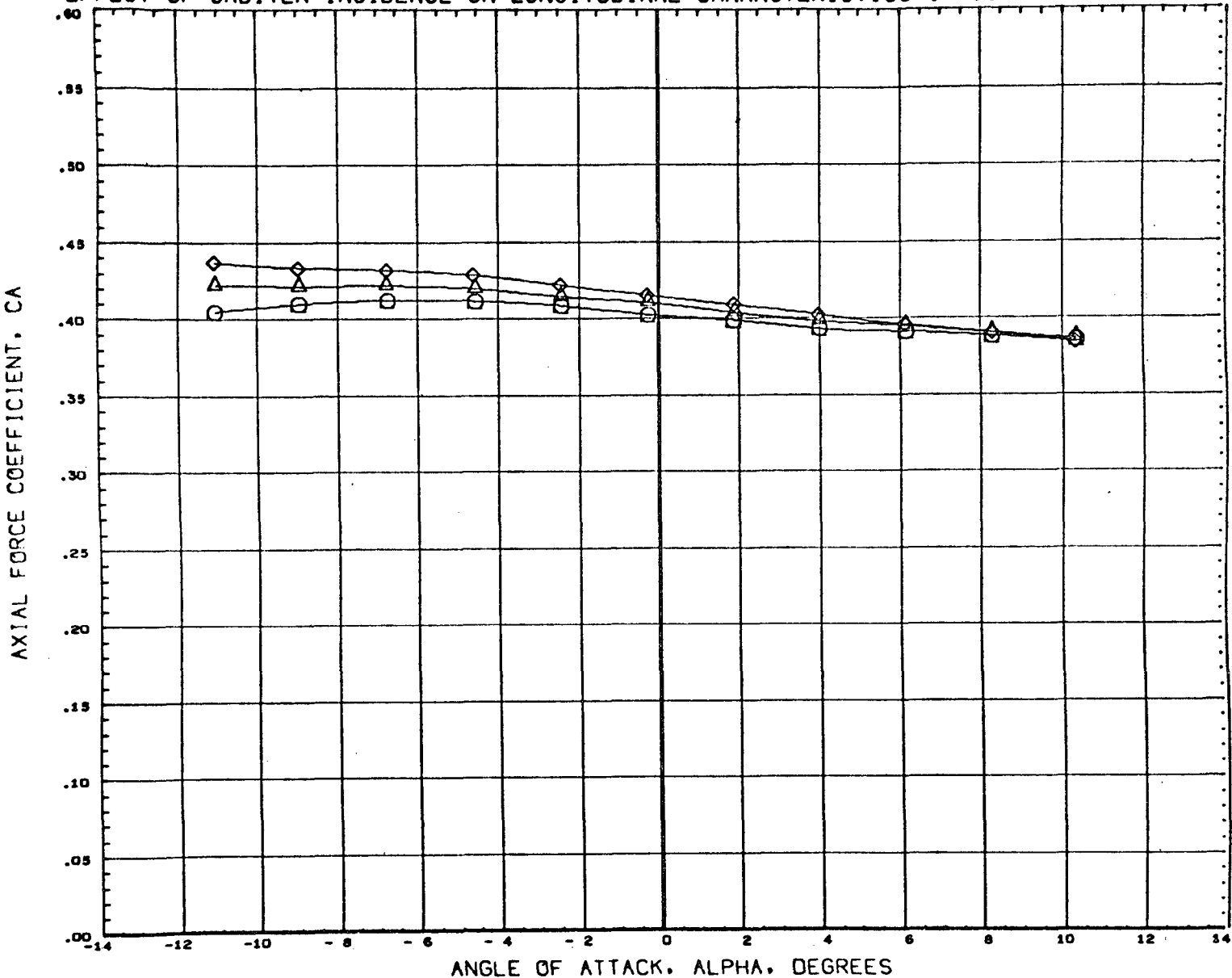


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	EREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .91



# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



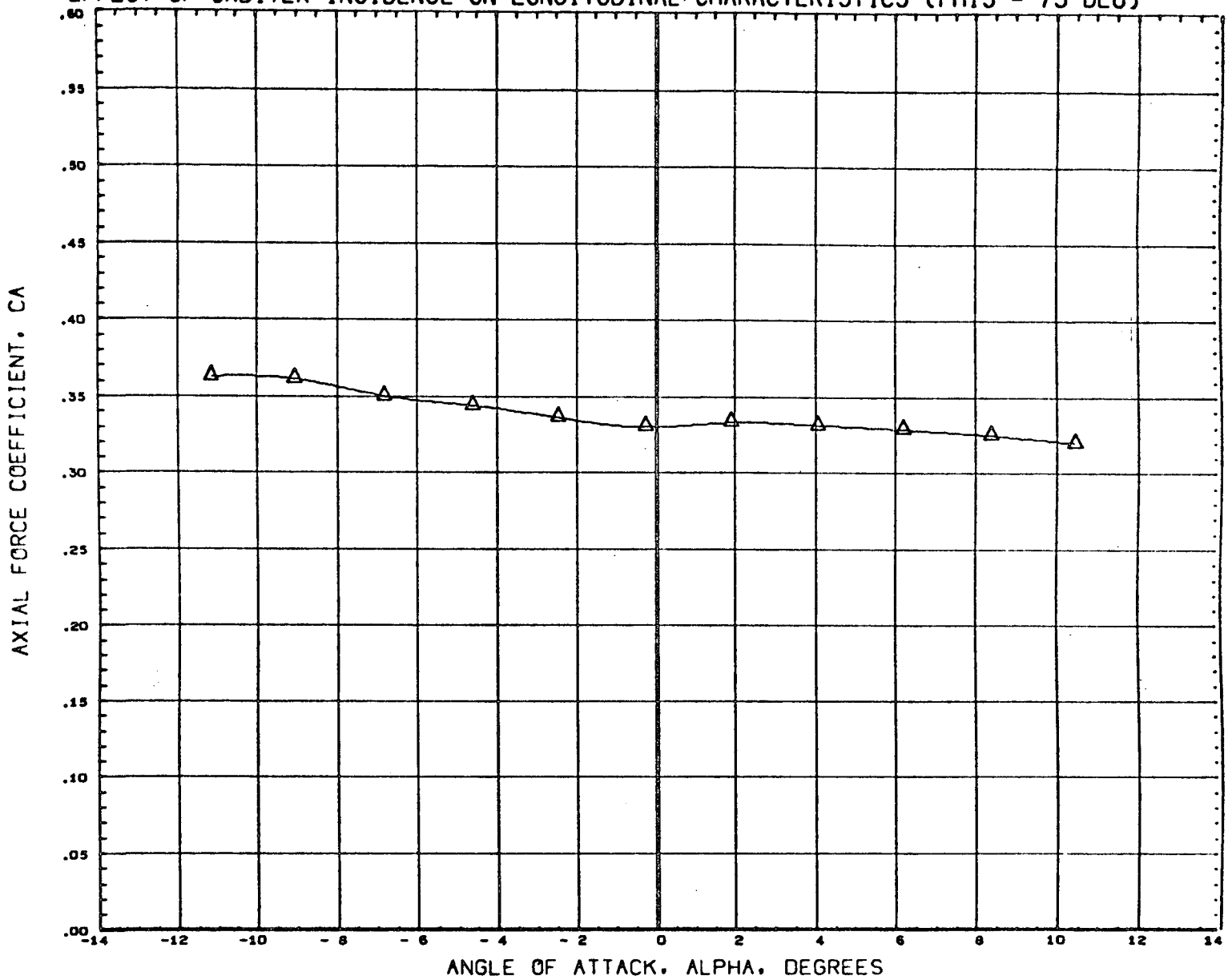
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH

1.20

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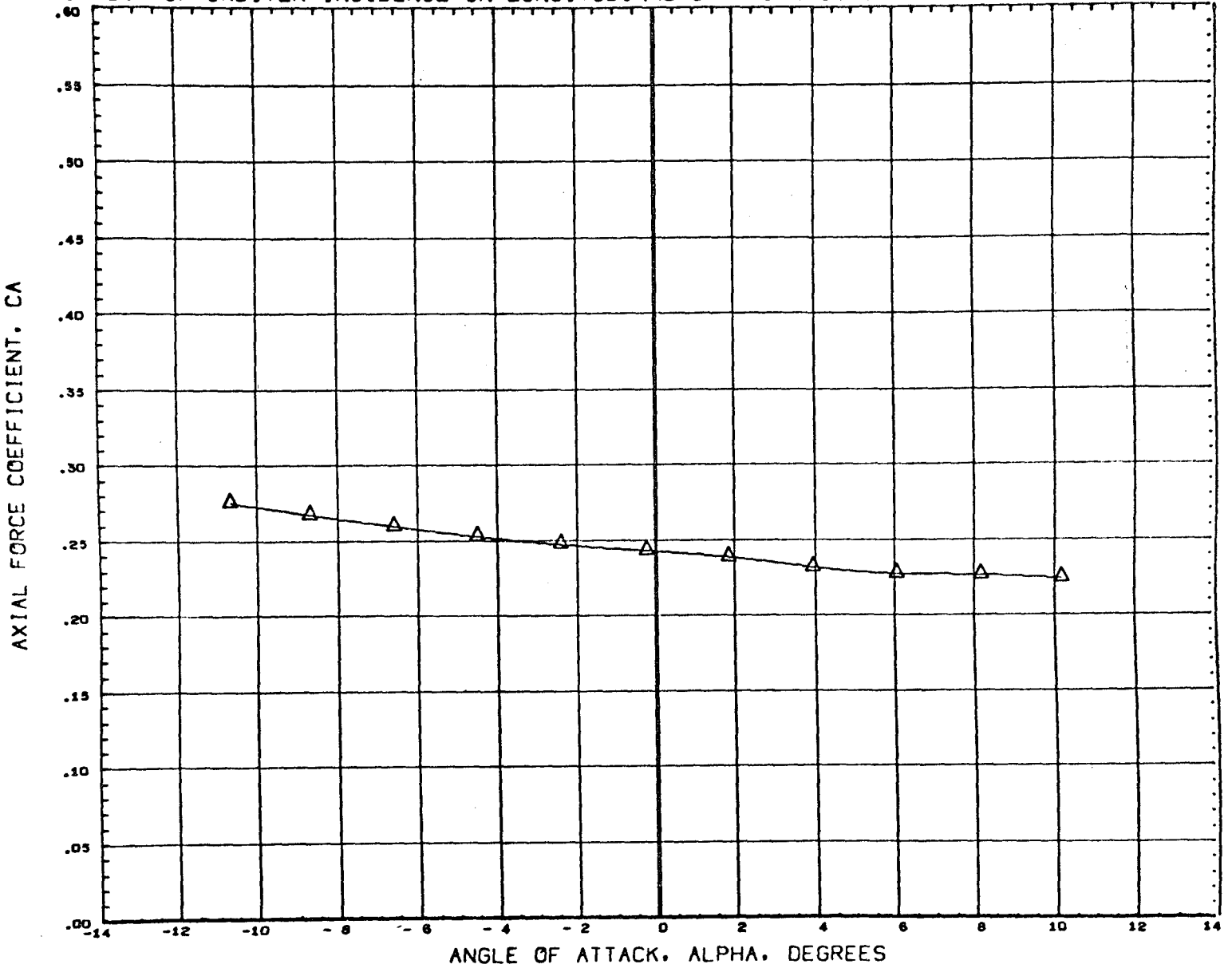
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF 7.8800 90. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

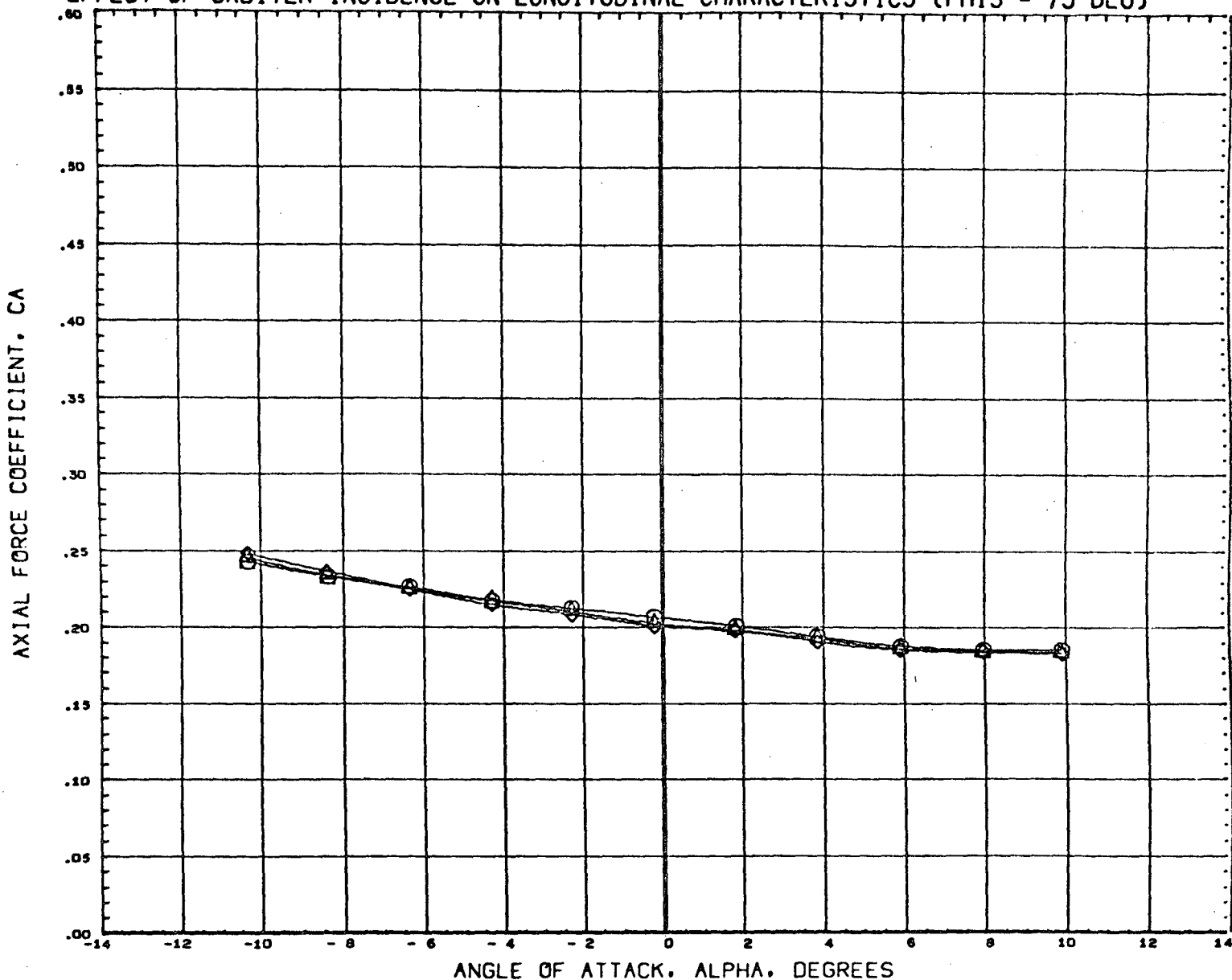


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

RC

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



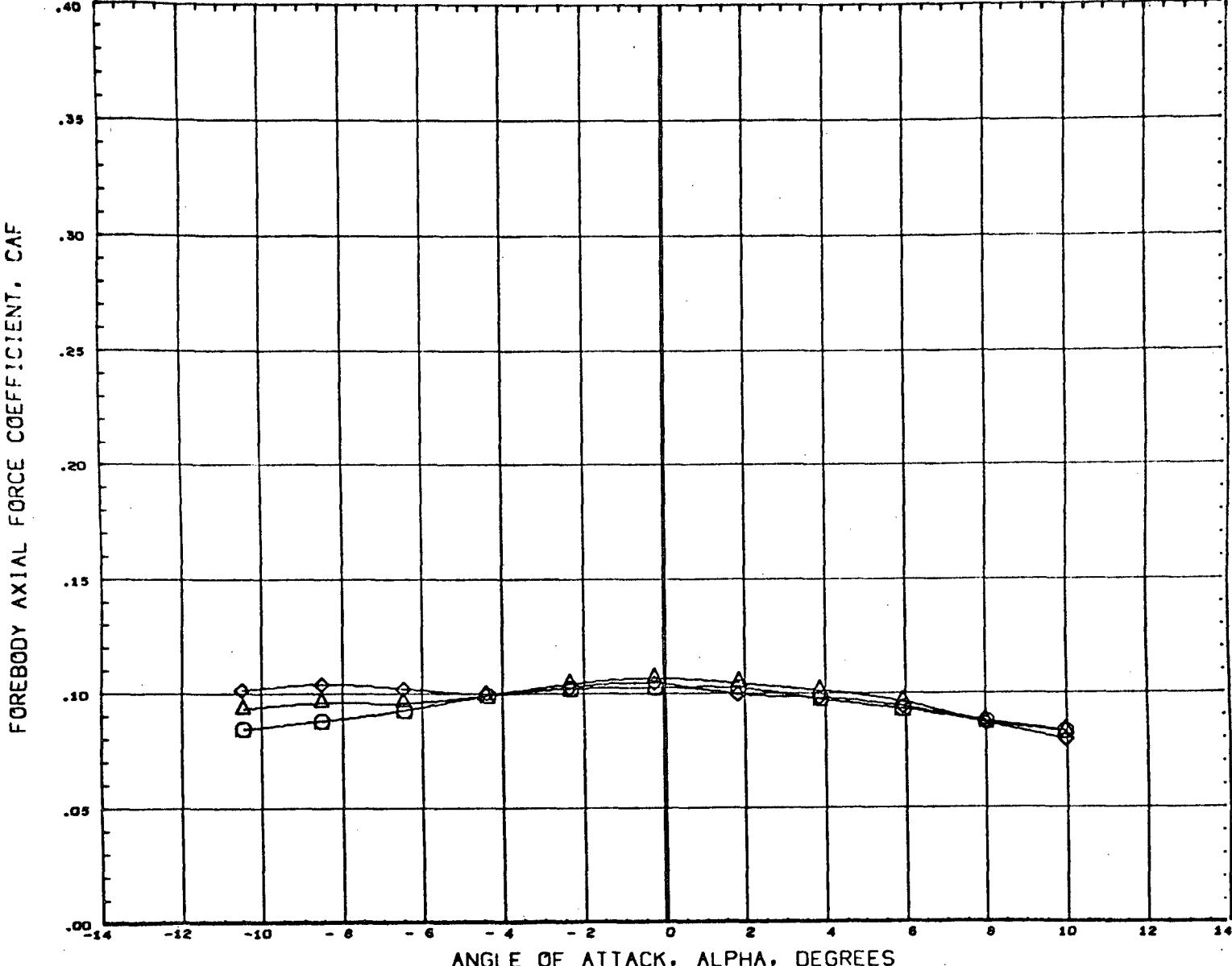
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

4.96

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# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

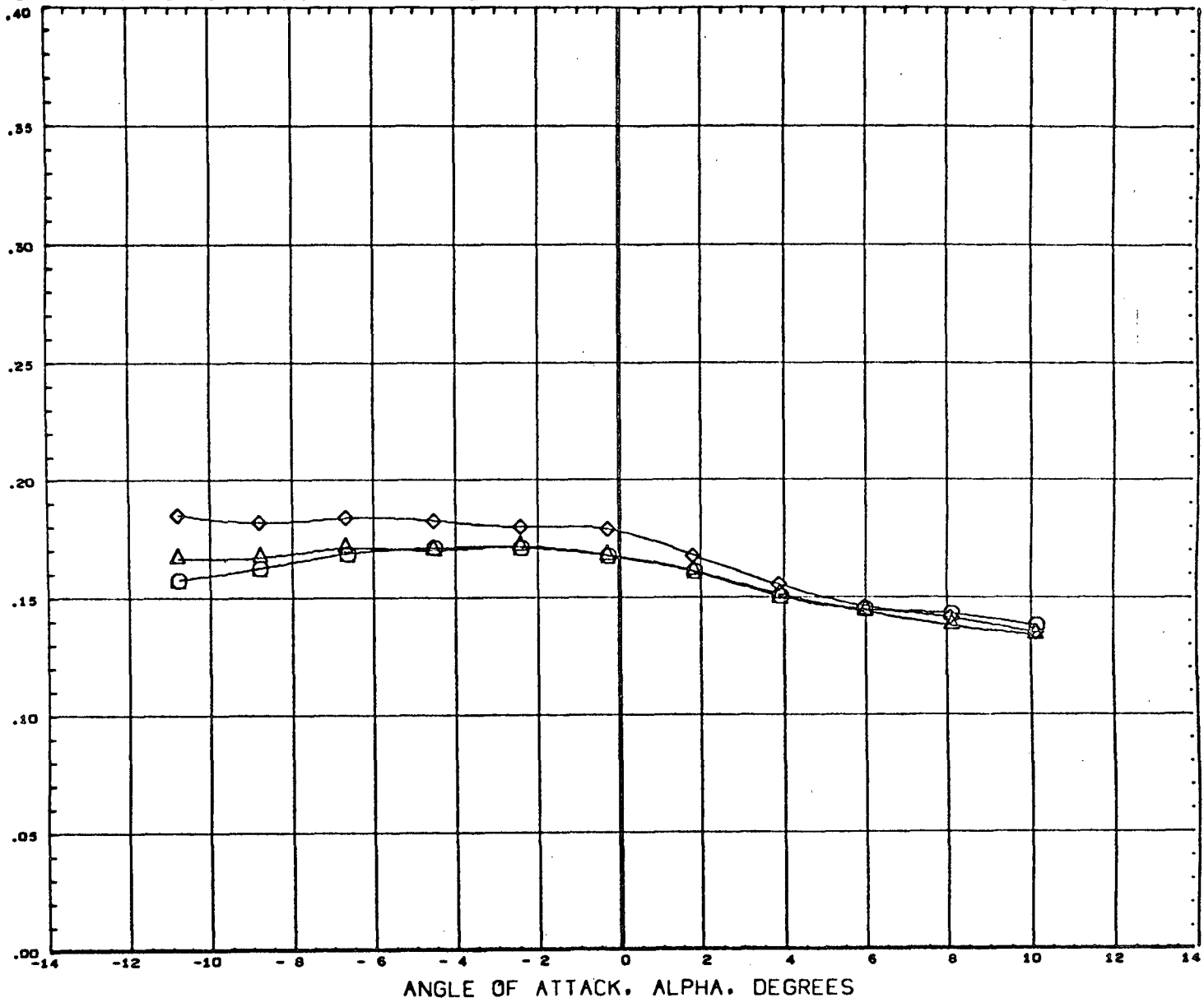


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

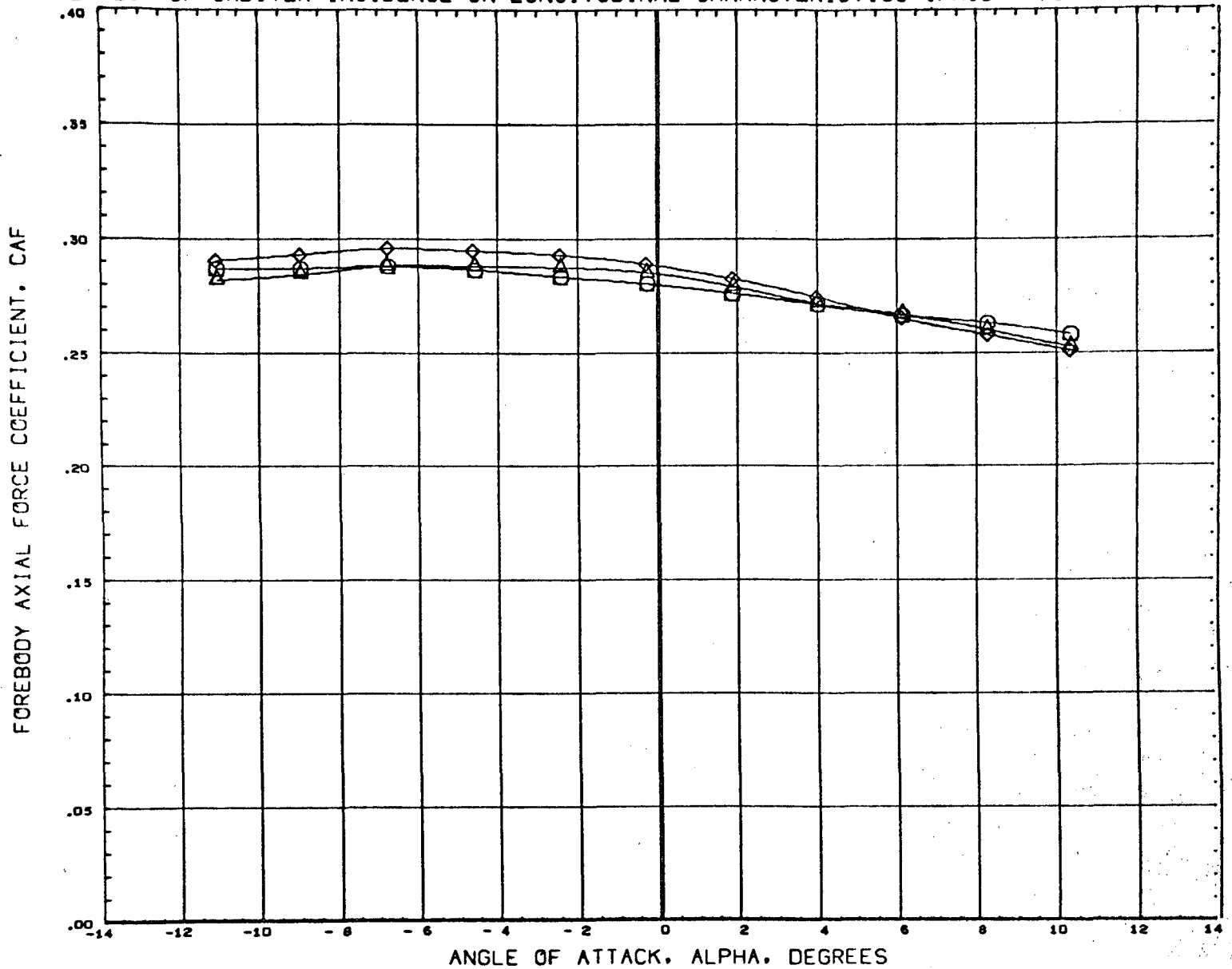
FOREBODY AXIAL FORCE COEFFICIENT, CAF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91

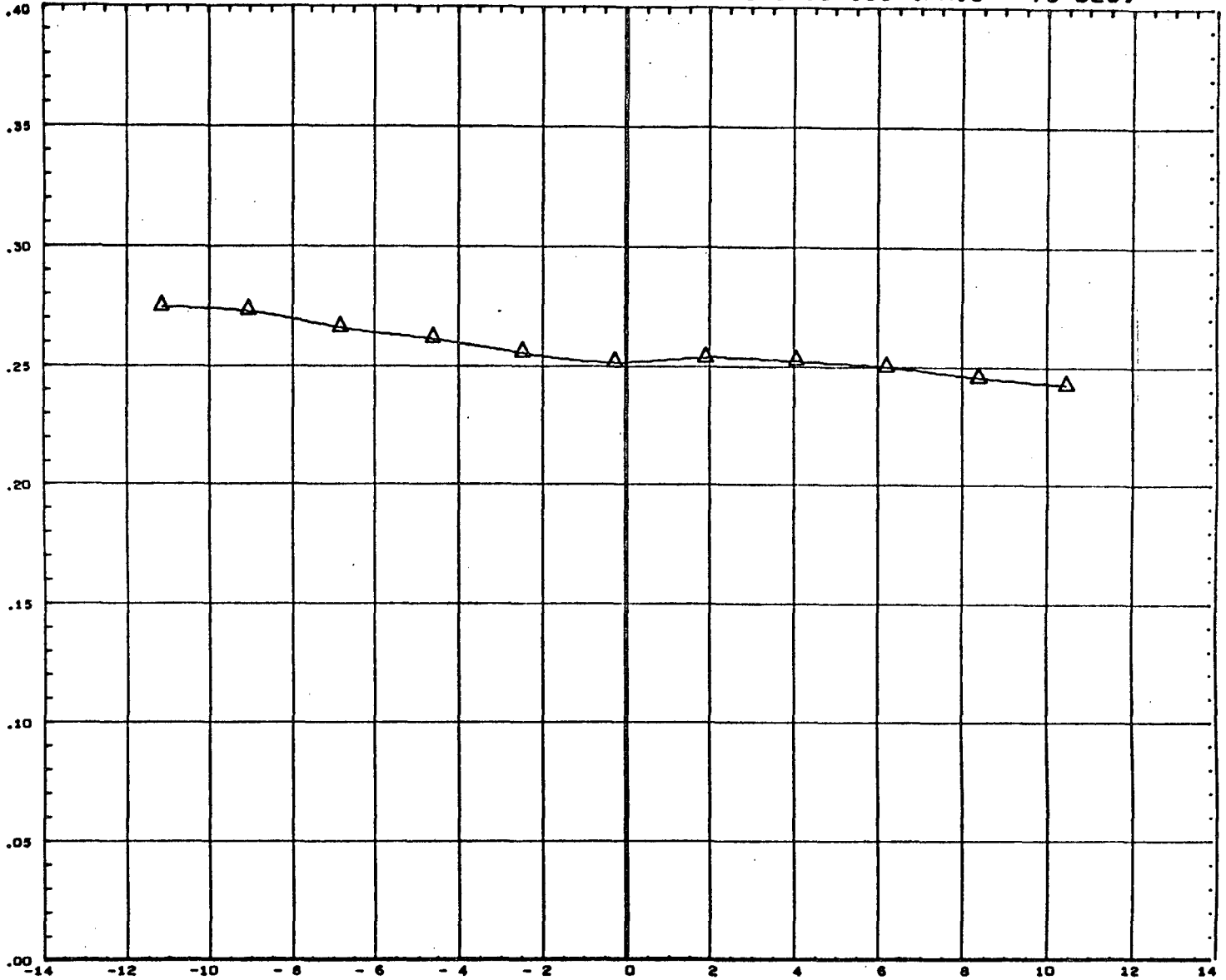
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF



ANGLE OF ATTACK, ALPHA, DEGREES

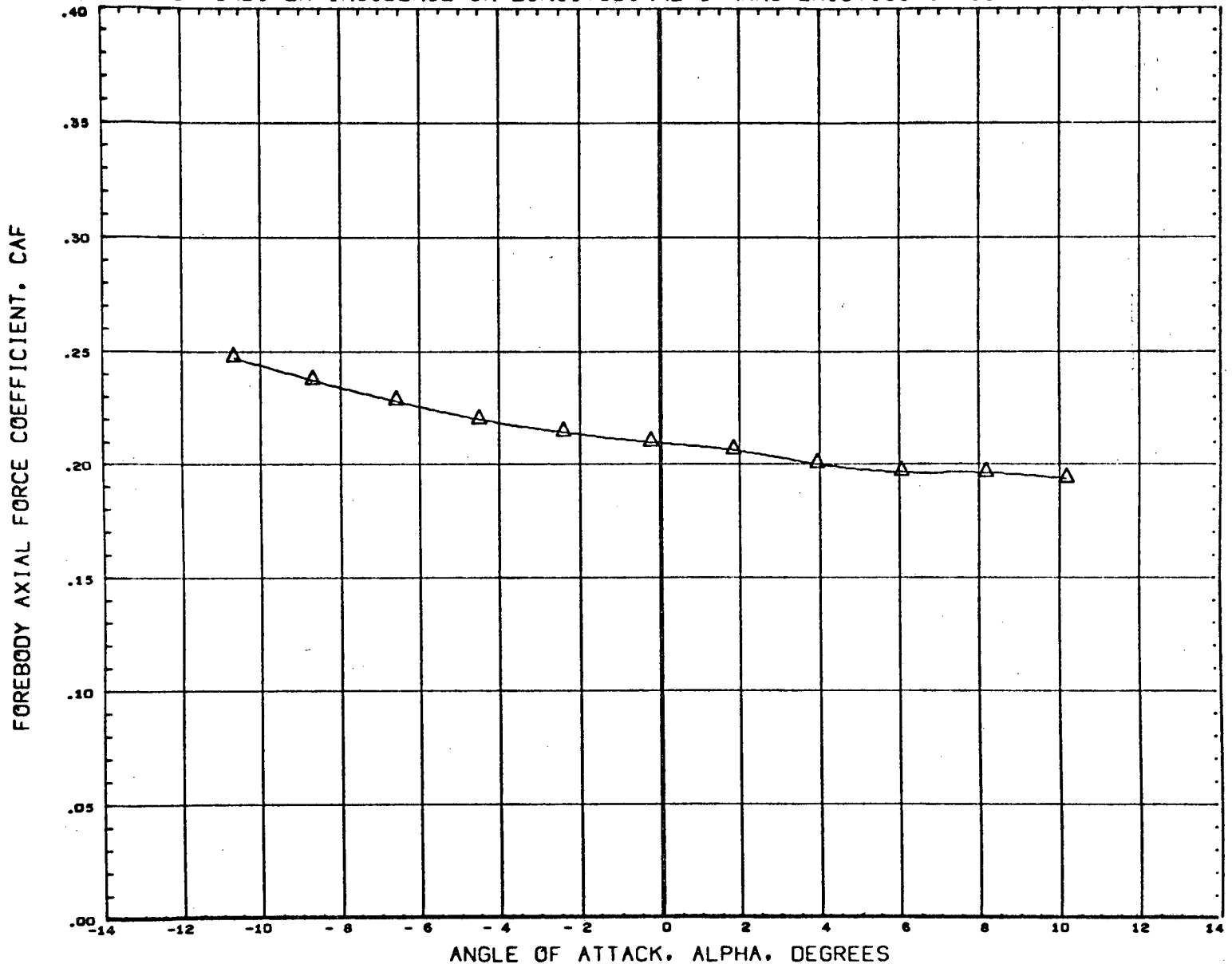
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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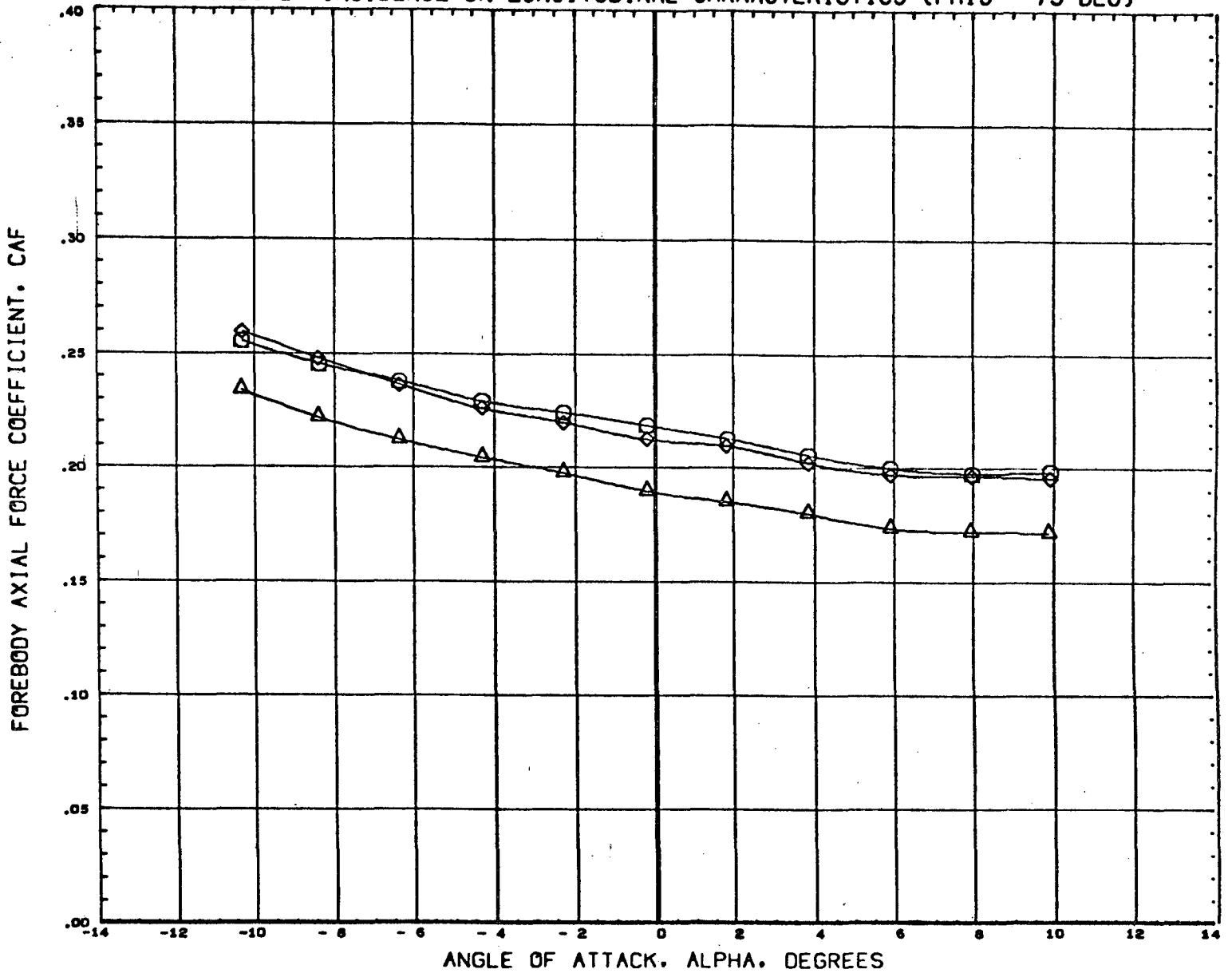
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

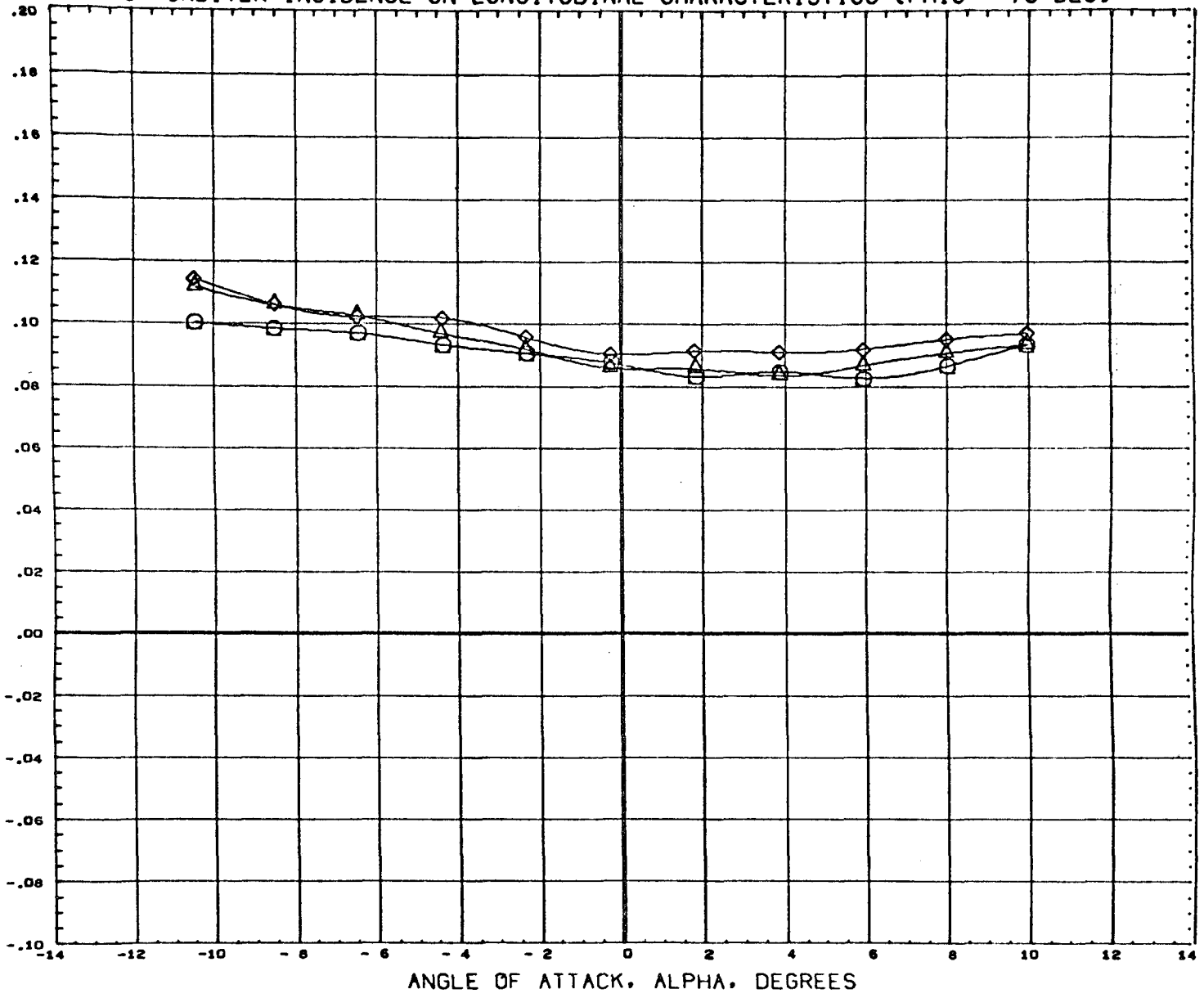


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

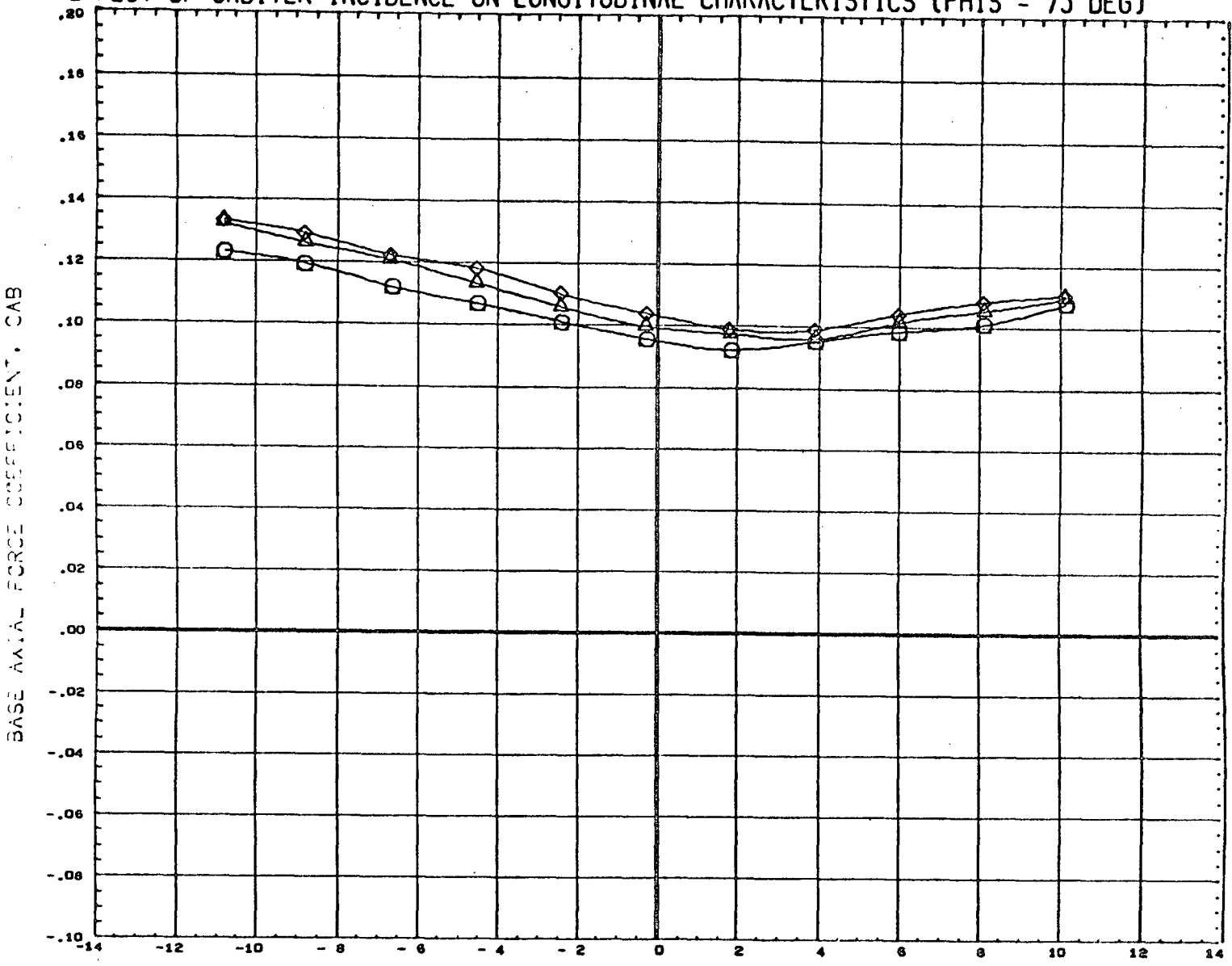
BASE AXIAL FORCE COEFFICIENT, CAB



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIC1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIC1S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIC1S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIC1S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .60

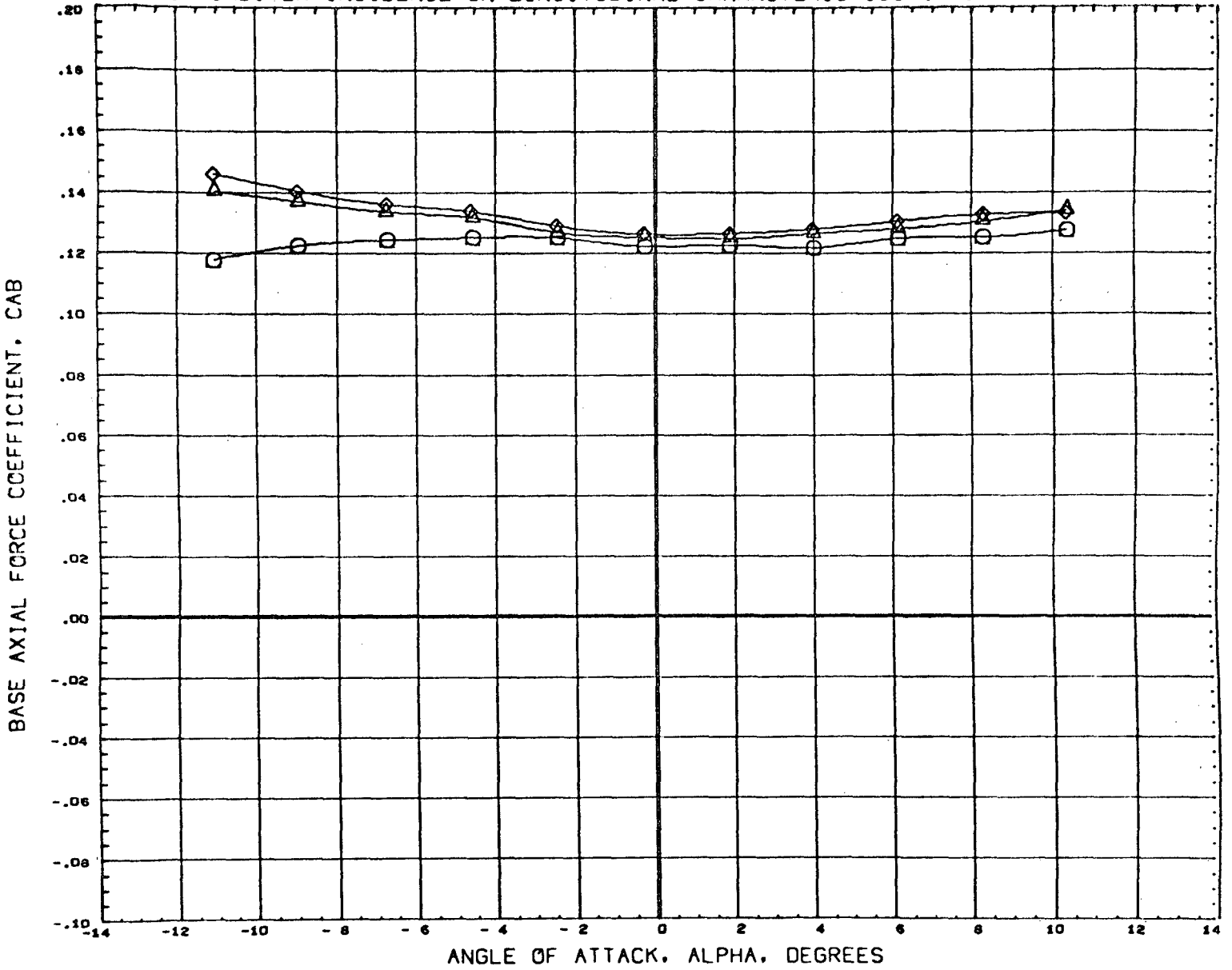
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .91

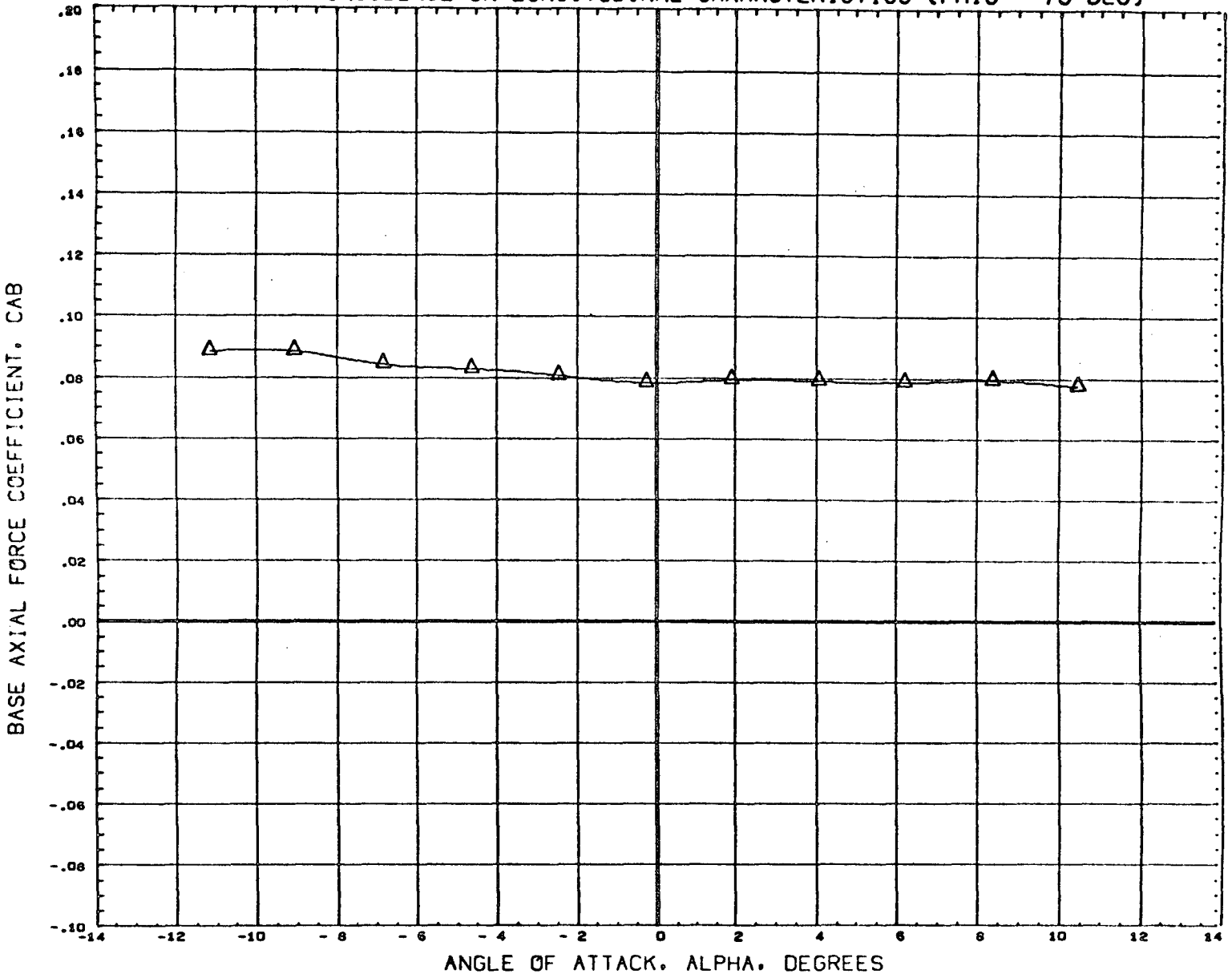
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

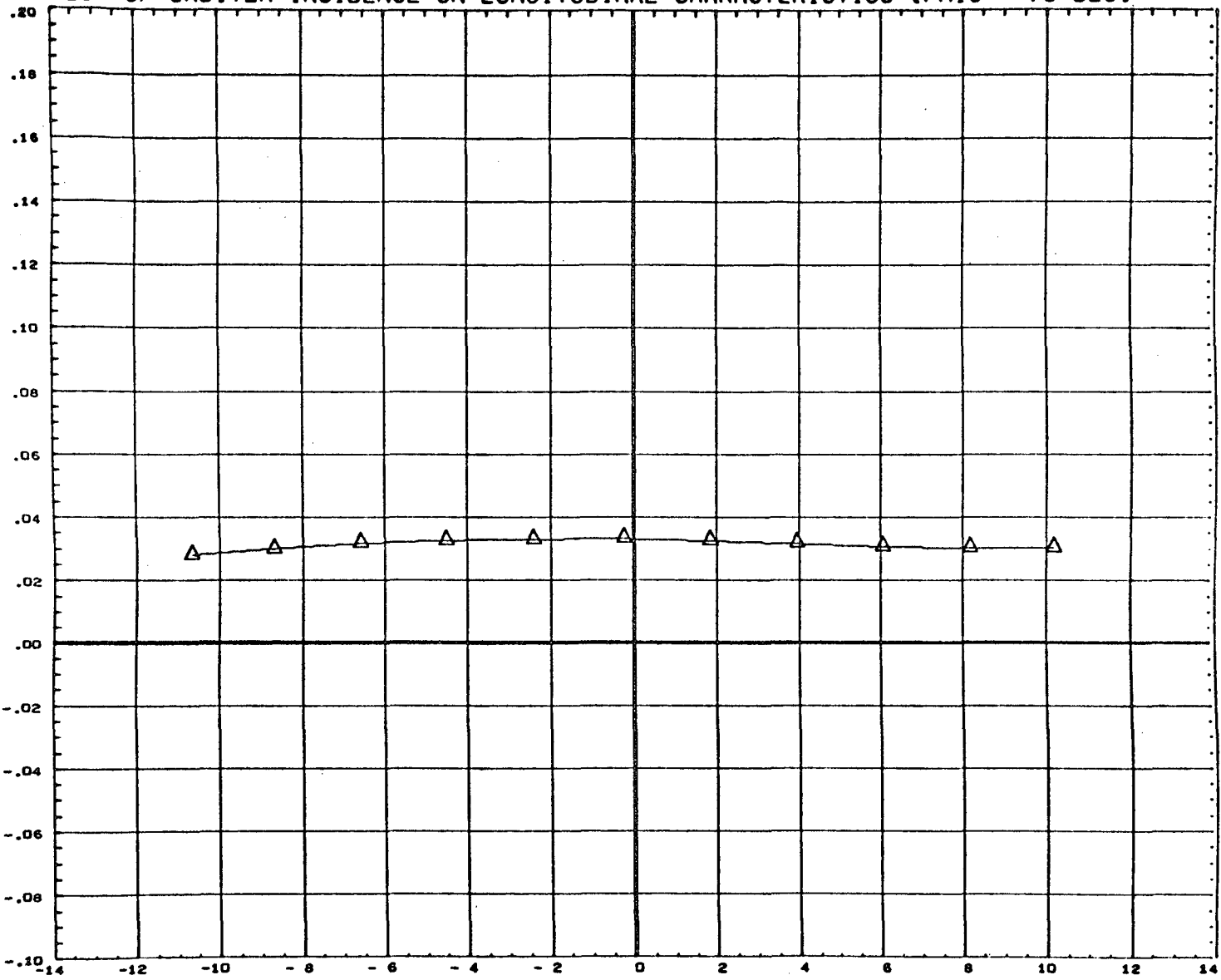


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

BASE AXIAL FORCE COEFFICIENT, CAB



ANGLE OF ATTACK, ALPHA, DEGREES

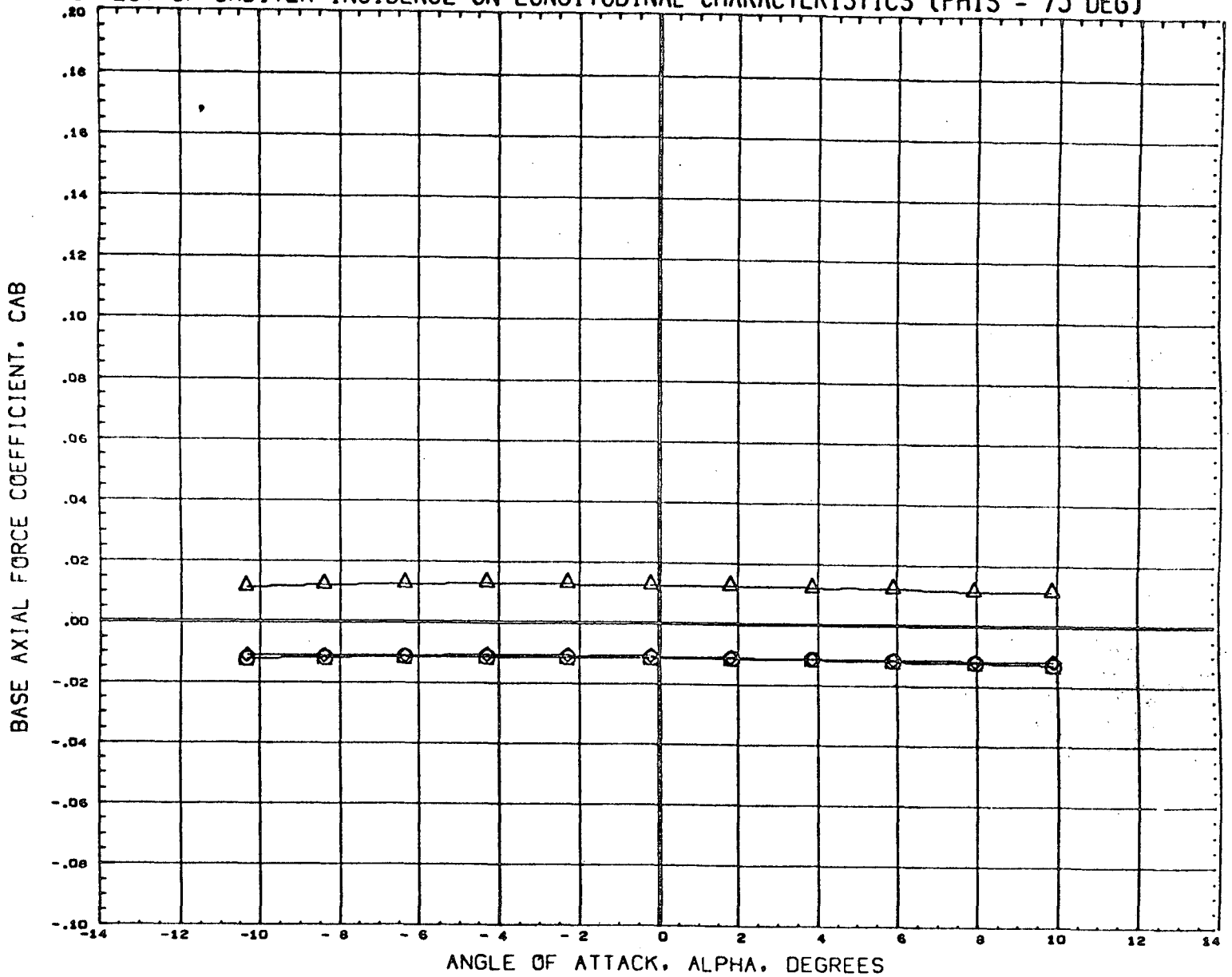
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF	7.8600 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF	2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 3.48

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Du

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

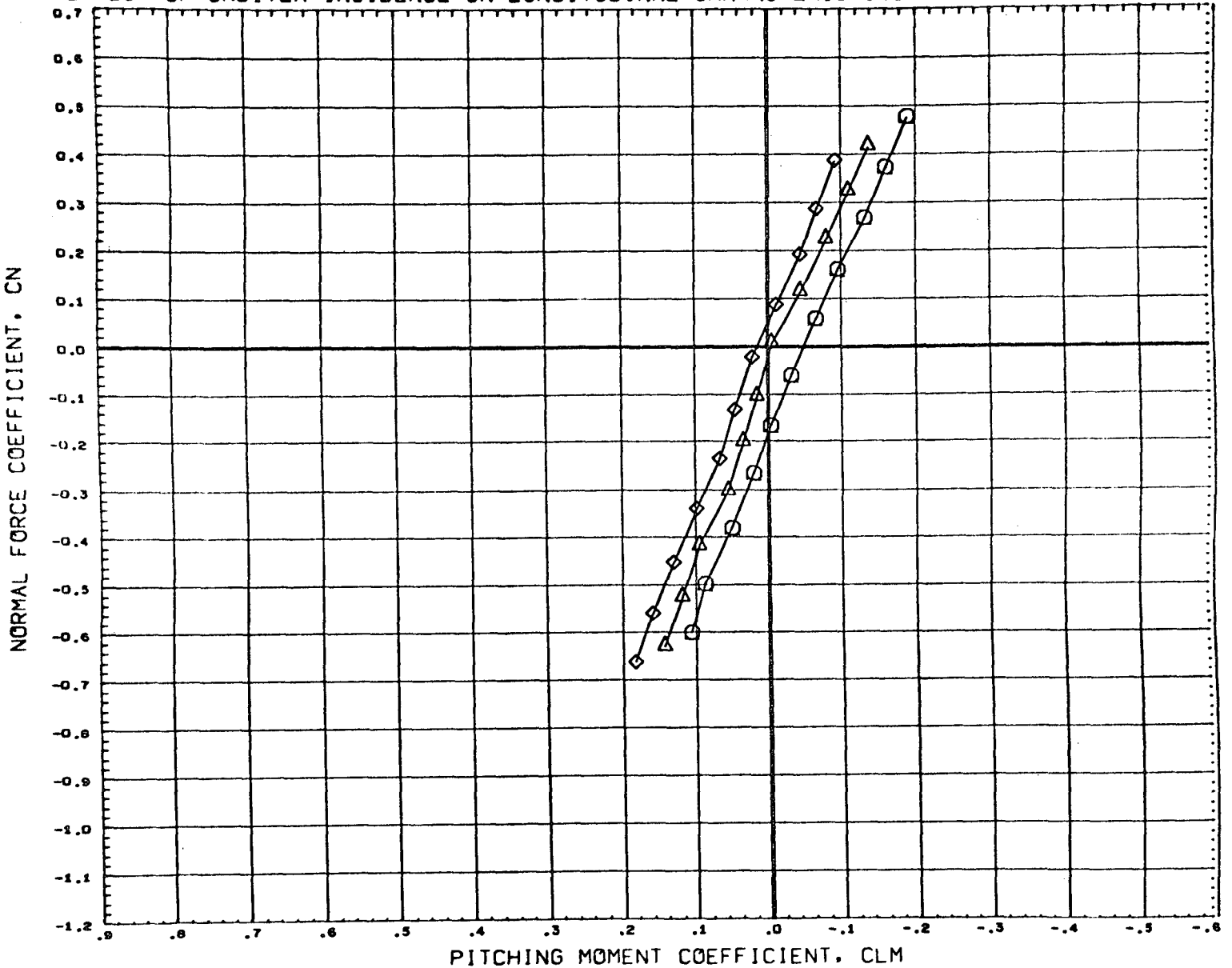


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96



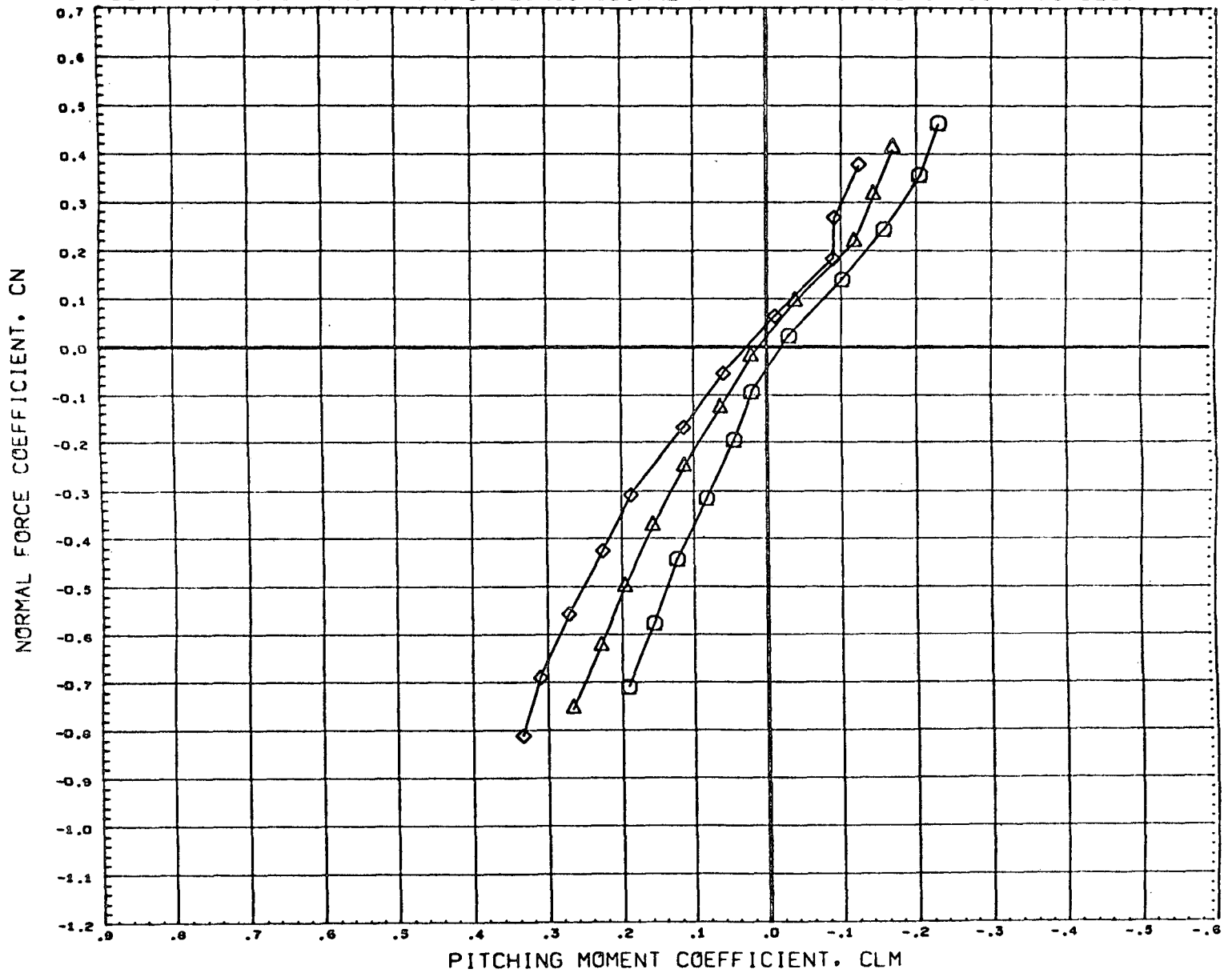
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
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							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

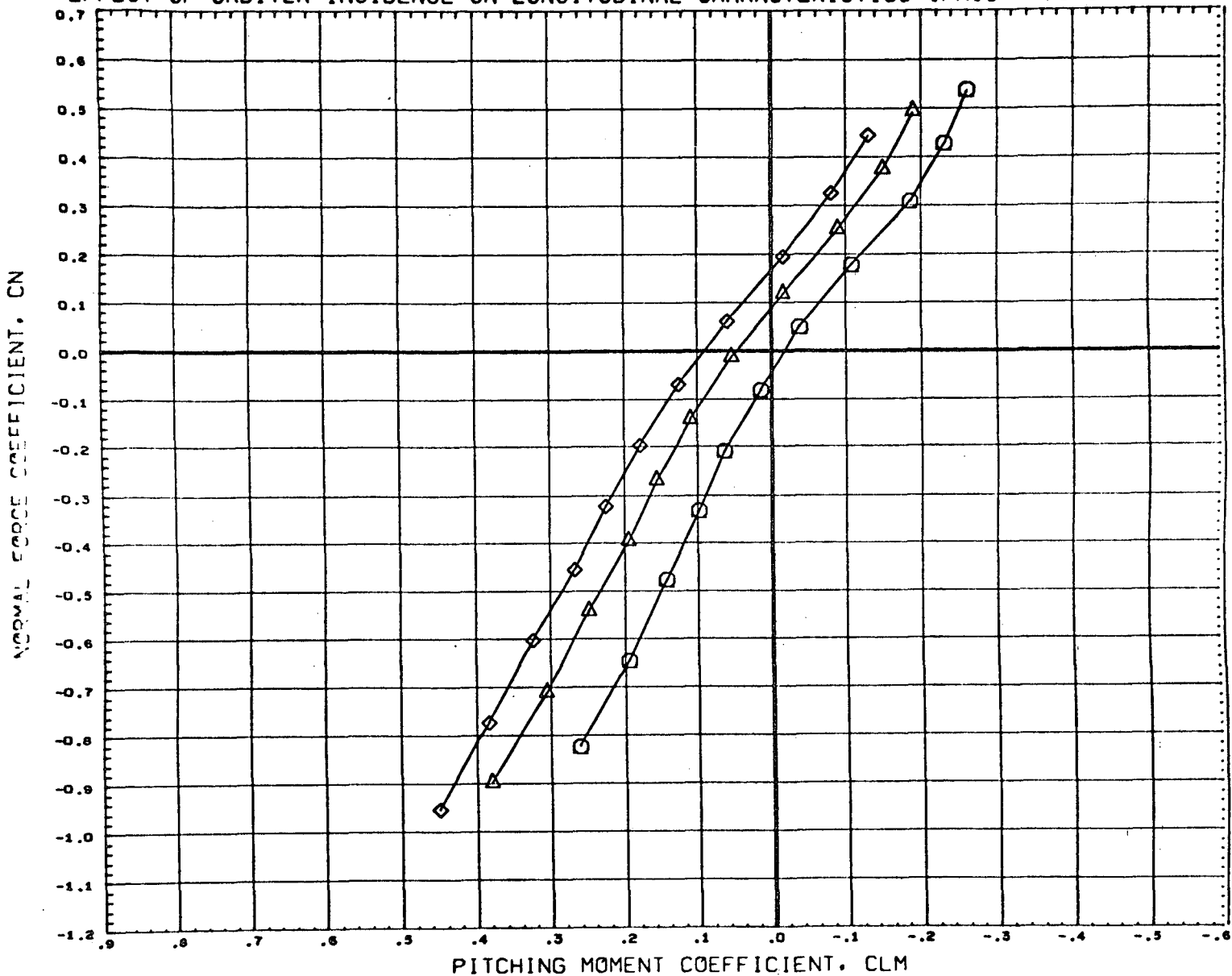
MACH .60

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

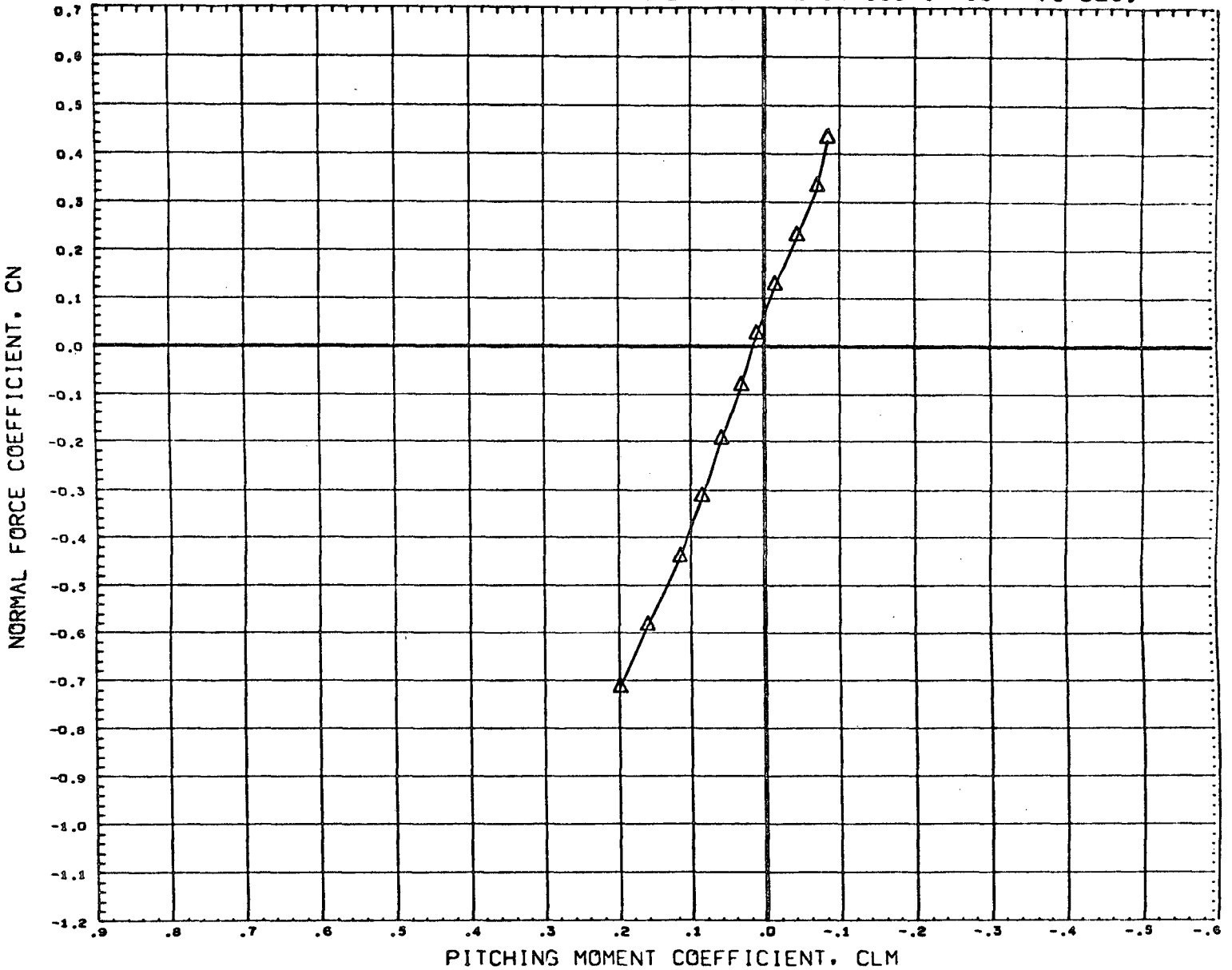
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 80. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

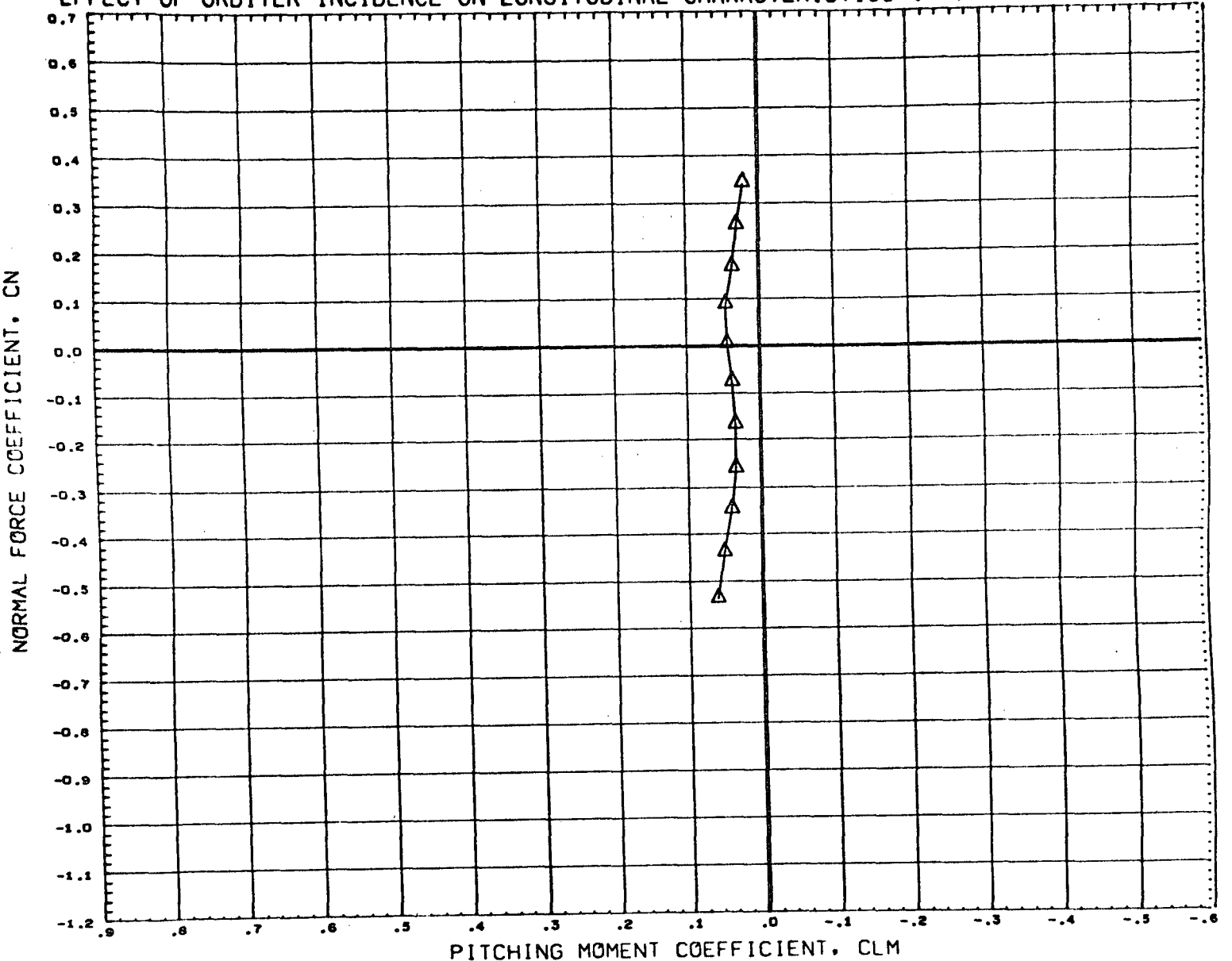
MACH 1.20

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(B71001)	DATA NOT AVAILABLE FOR ALL CONDITIONS
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1
(B71003)	DATA NOT AVAILABLE FOR ALL CONDITIONS

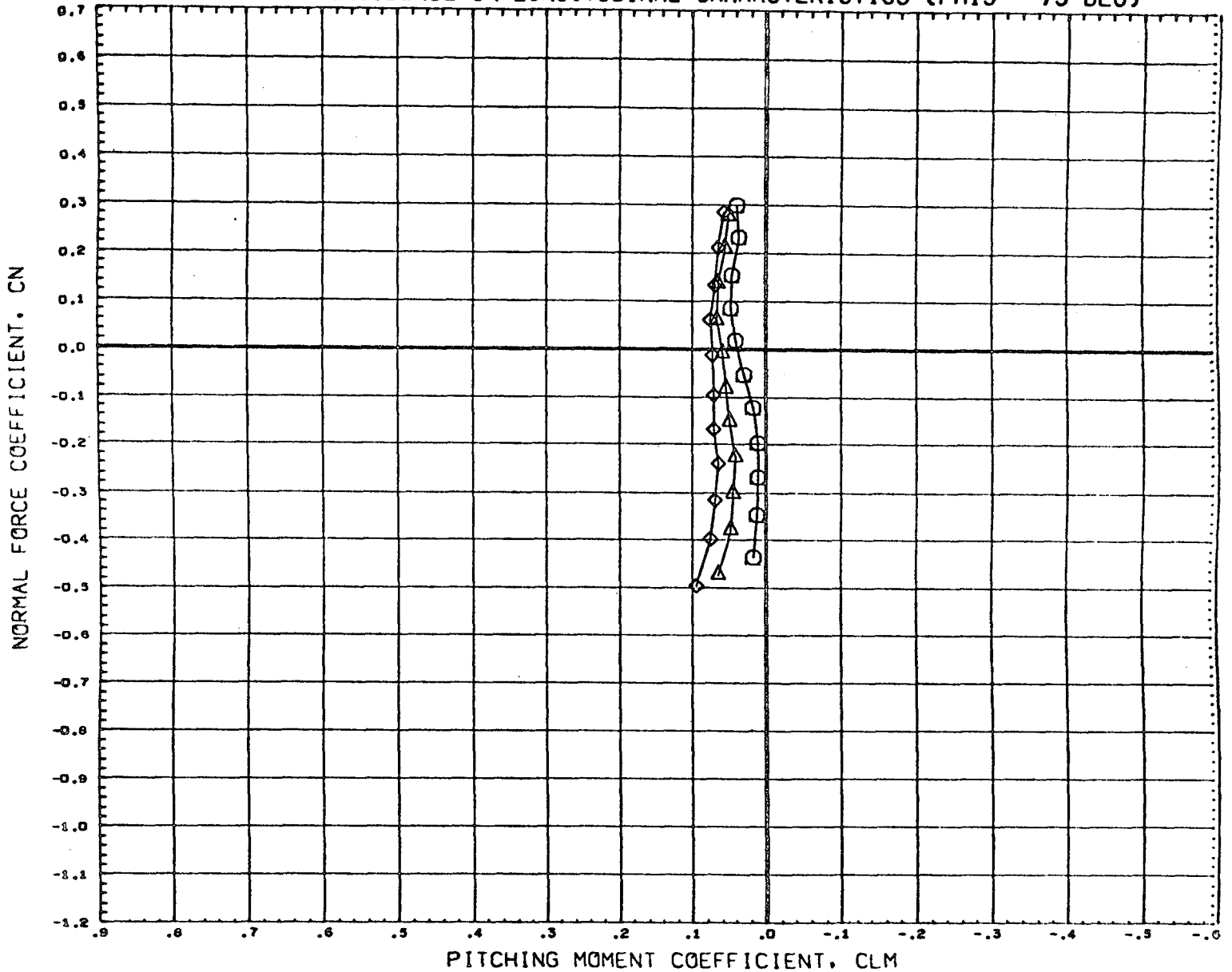
ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
-3.000	75.000	0.000	0.000	BREF 4.4600 IN.
				XMRP 3.3600 IN.
				YMRP 0.0000 IN.
				ZMRP 0.2480 IN.
				SCALE 0.0040 SCALE

MACH

3.48

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# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 75 DEG)

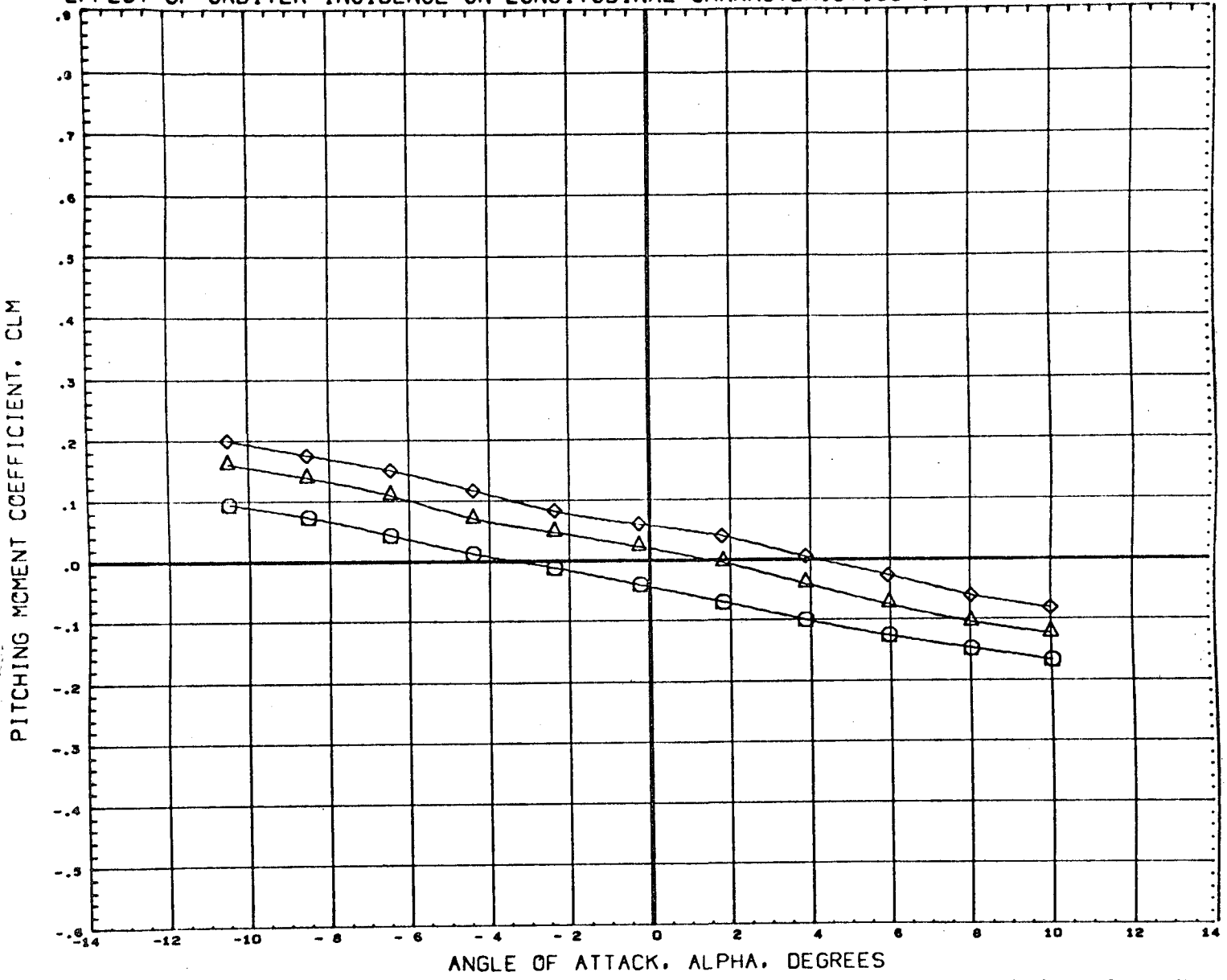


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

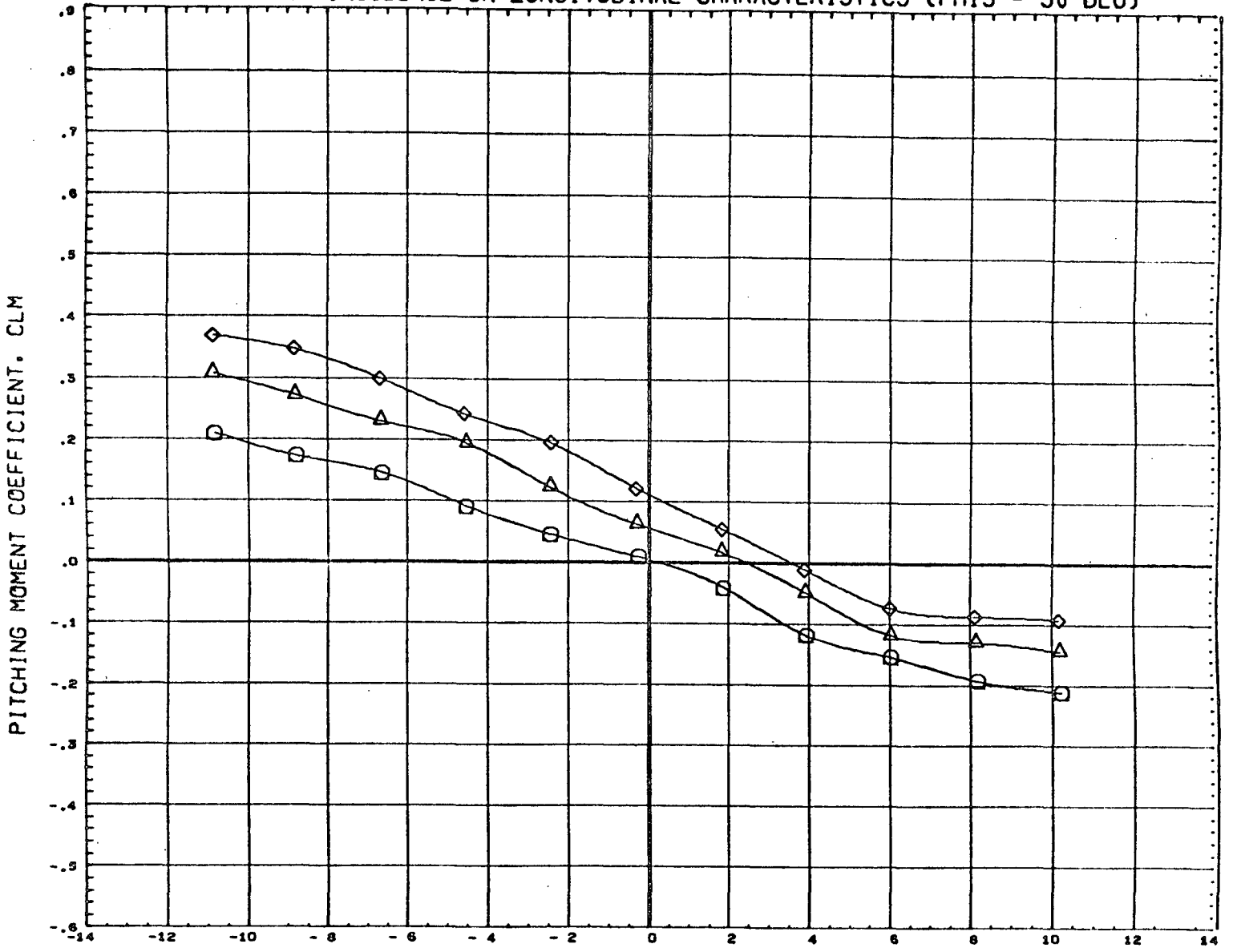
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# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	SREF 7.8600 sq. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)

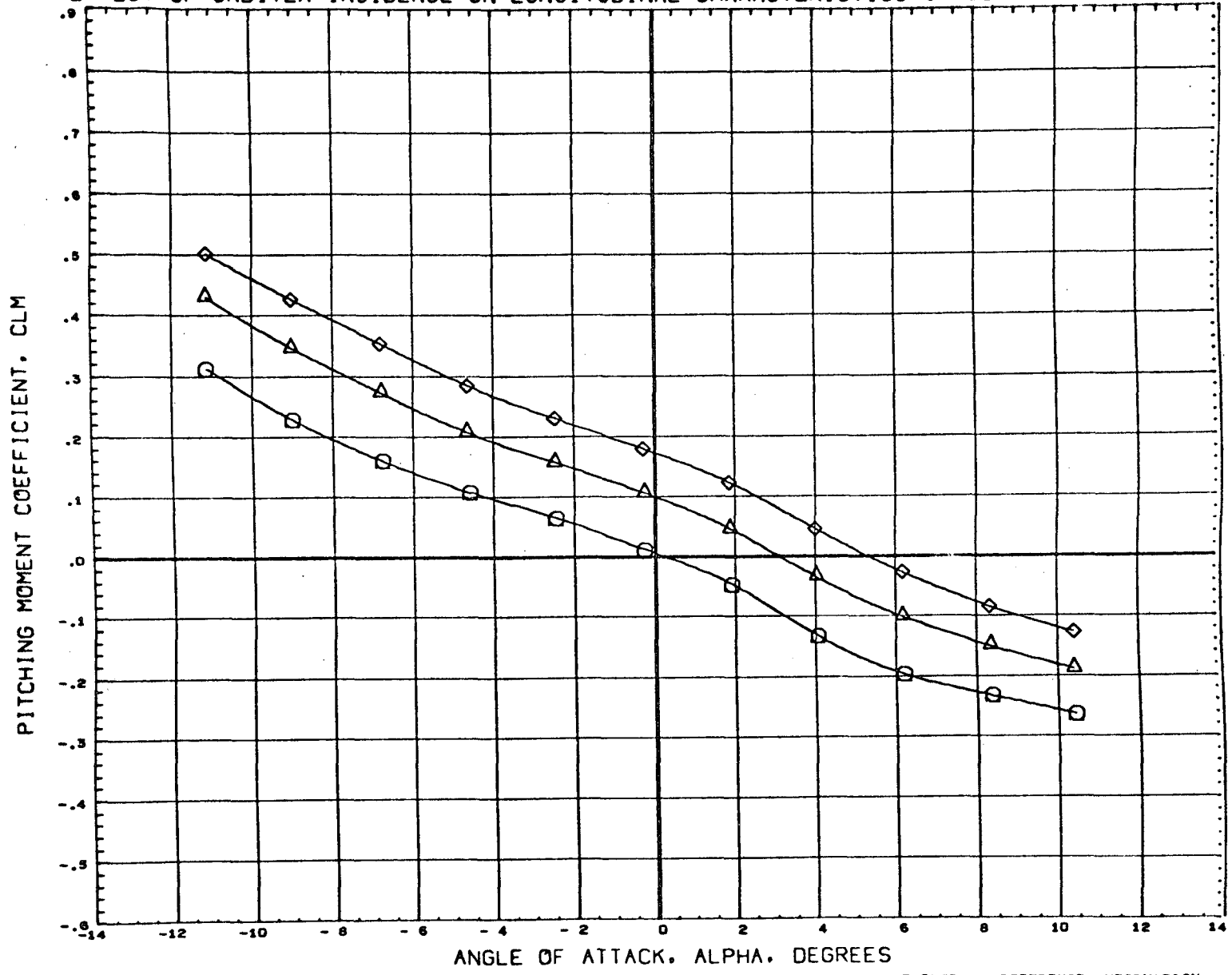


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91



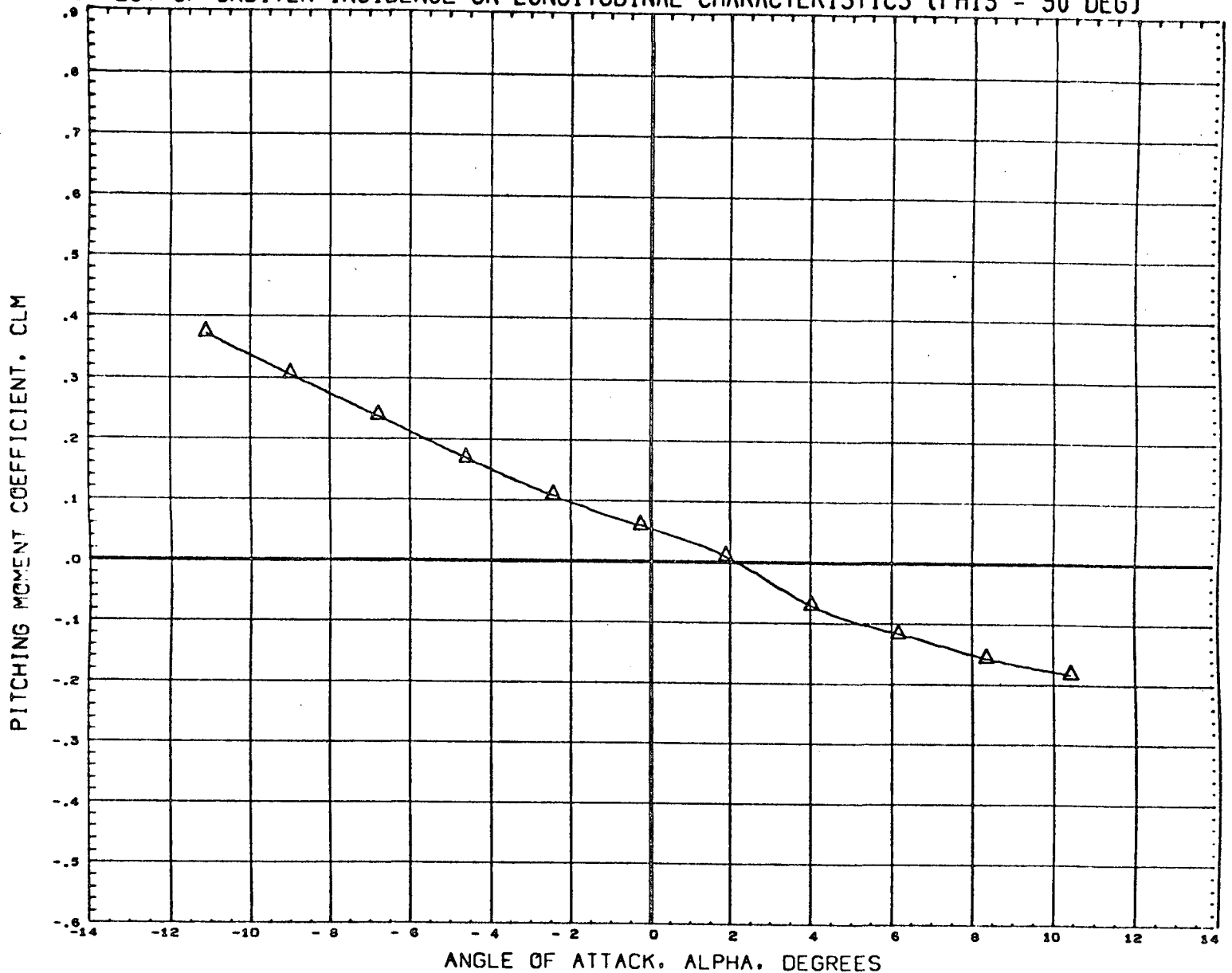
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 90. IN
(B71005) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

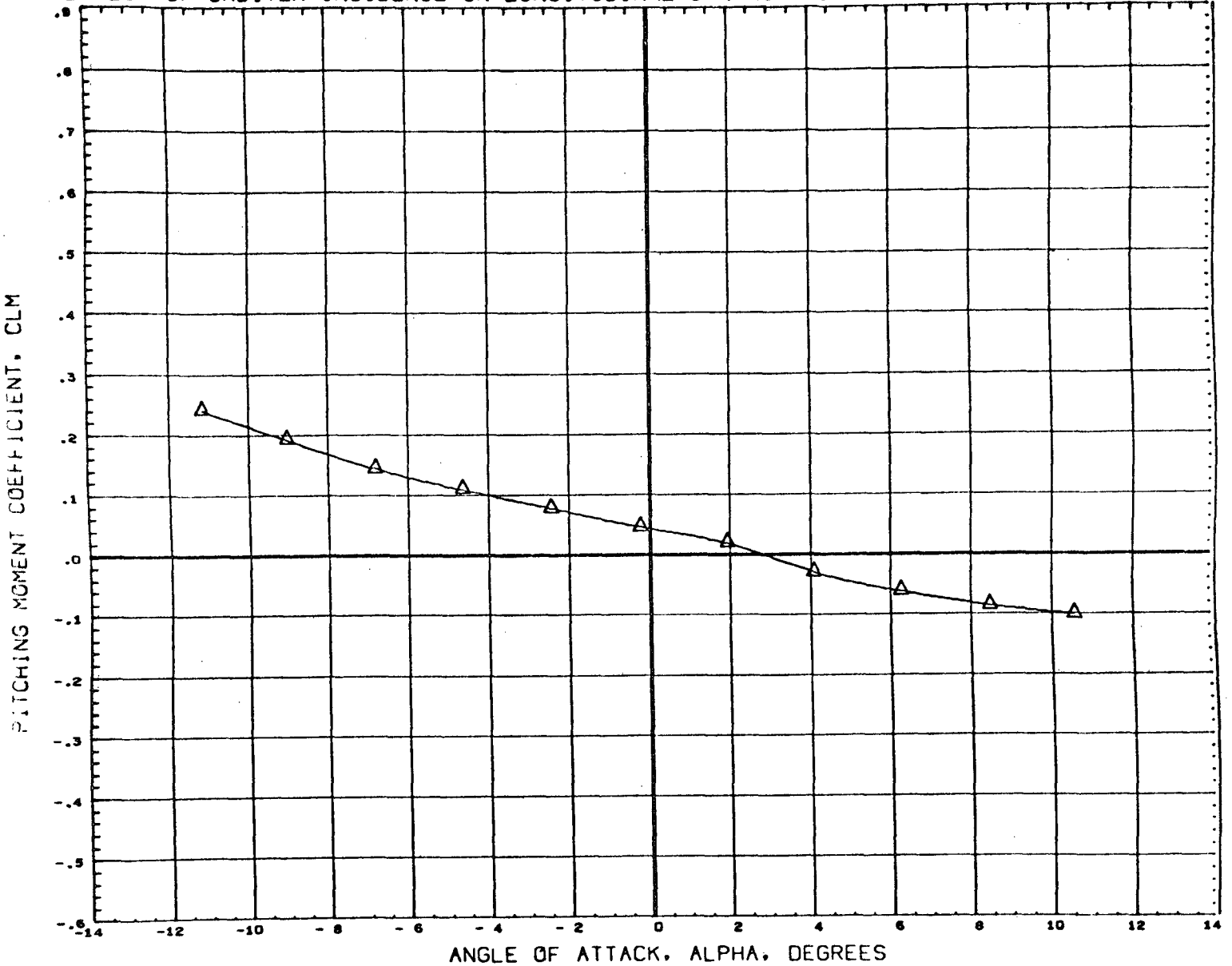
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRF 3.3600 IN.
						YMRF 0.0000 IN.
						ZMRF 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.45

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL    CONFIGURATION DESCRIPTION

(B71004)    ◯    DATA NOT AVAILABLE FOR ALL CONDITIONS

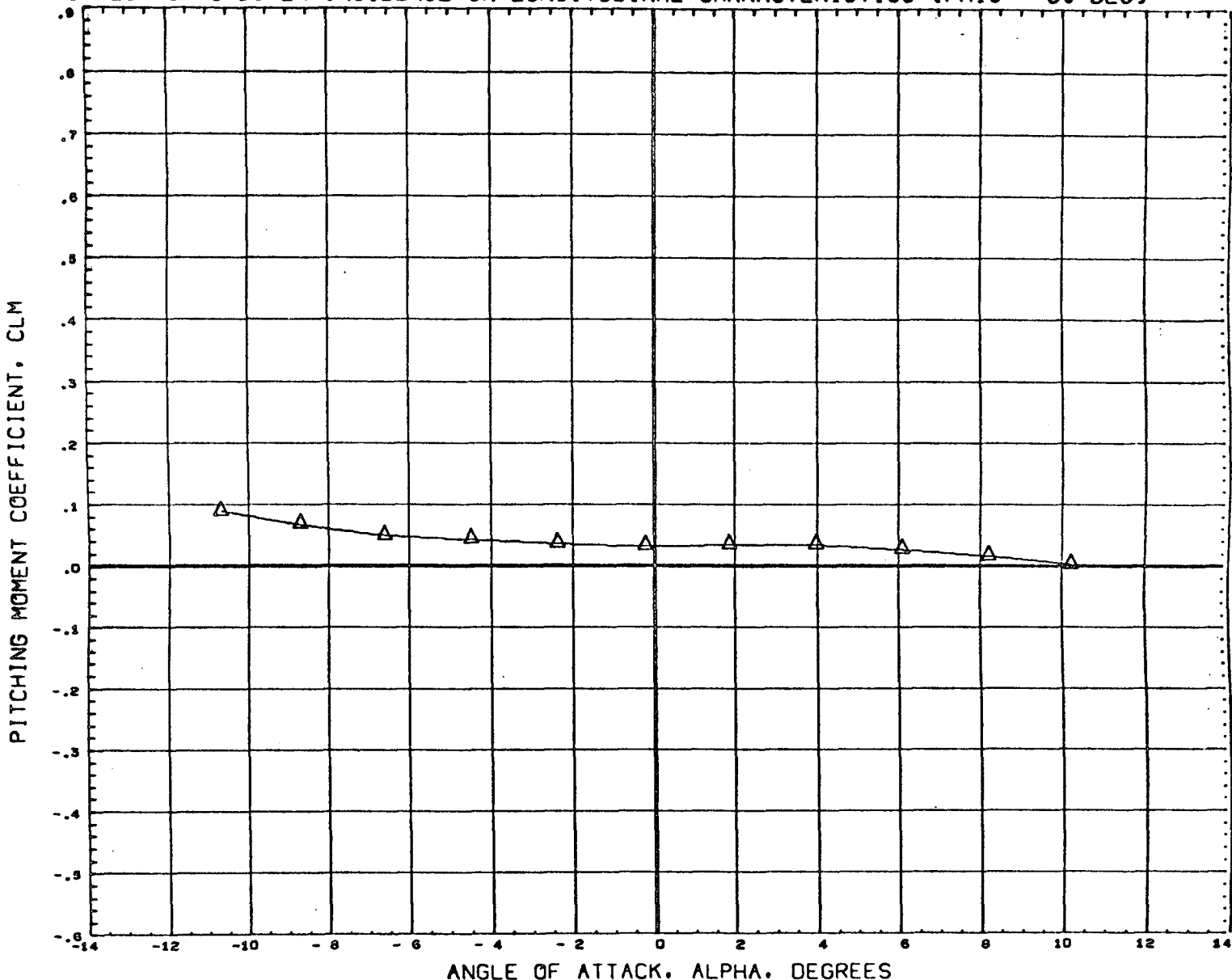
(B71005)    △    MSFC TWT 544 LAUNCH VEHICLE STUDIES    T101S1

(B71006)    ◇    DATA NOT AVAILABLE FOR ALL CONDITIONS

ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
0.000	90.000	0.000	0.000	SREF    7.8800    SQ. IN
-1.500	90.000	0.000	0.000	LREF    2.0280    IN.
-3.000	90.000	0.000	0.000	BREF    4.4600    IN.
				XMRP    3.3600    IN.
				YMRP    0.0000    IN.
				ZMRP    0.2480    IN.
				SCALE    0.0040    SCALE

MACH    1.97

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)

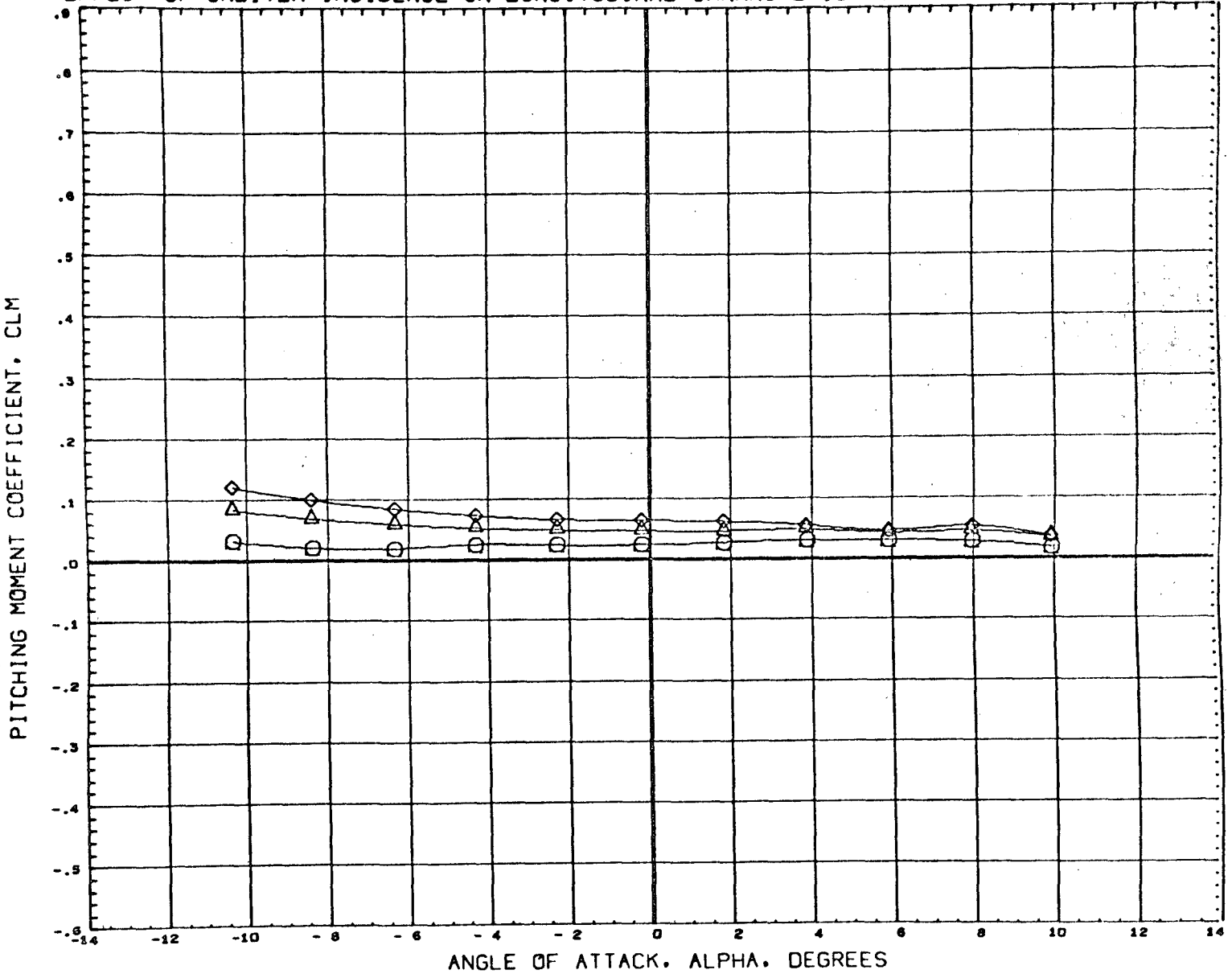


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

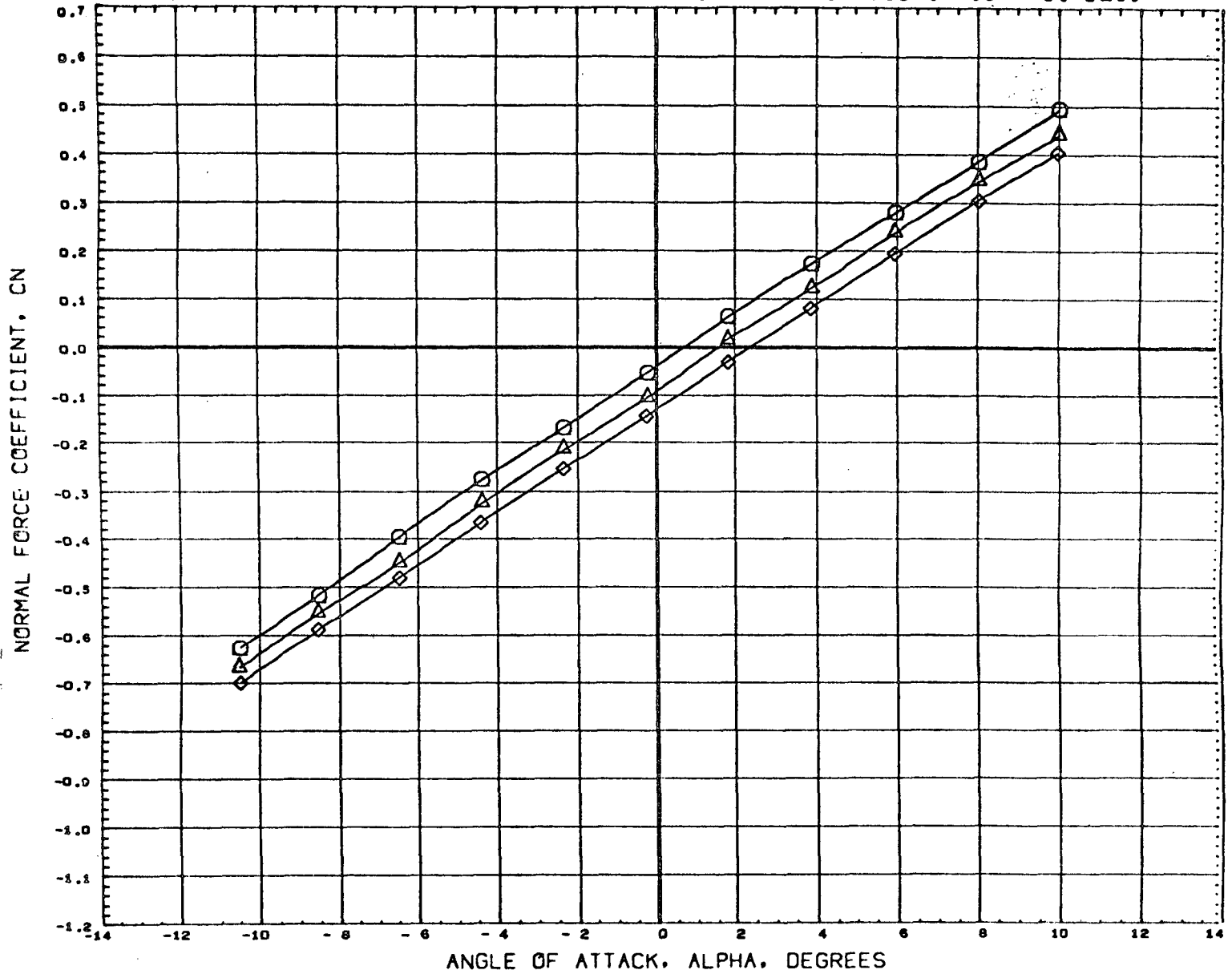
PAGE 168

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

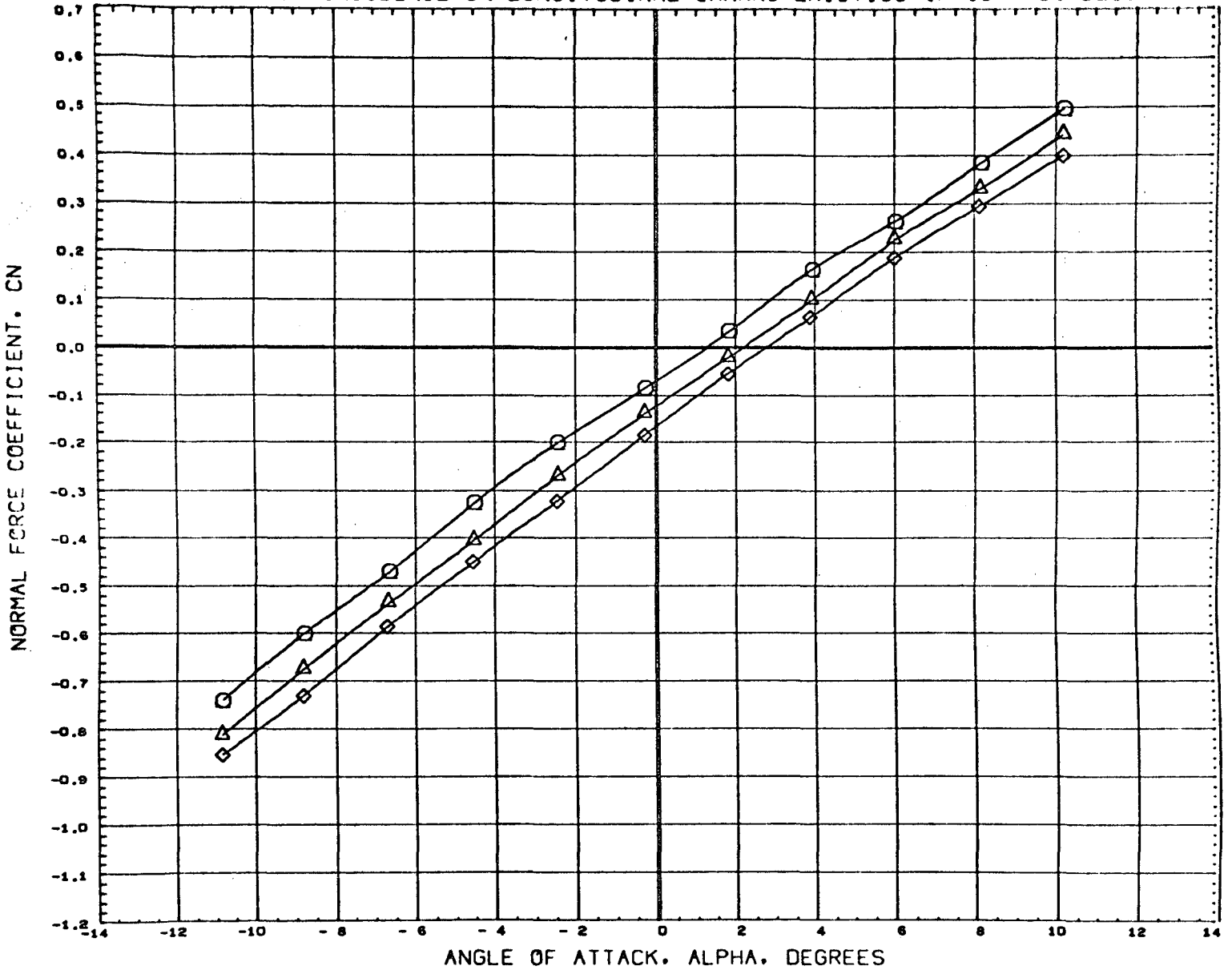
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.300	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .60

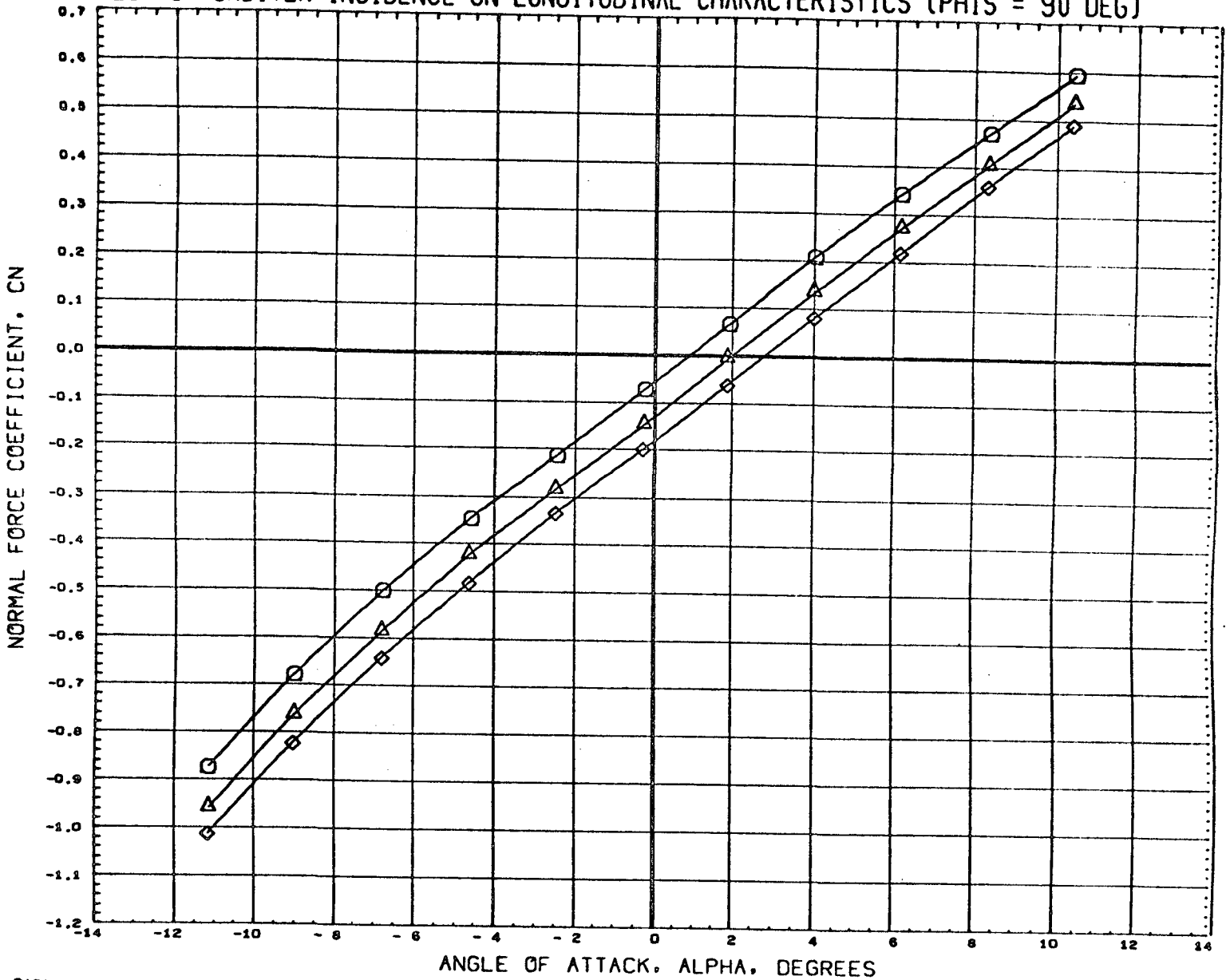
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	90.000	0.000	0.000	LREF 2.0290 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)

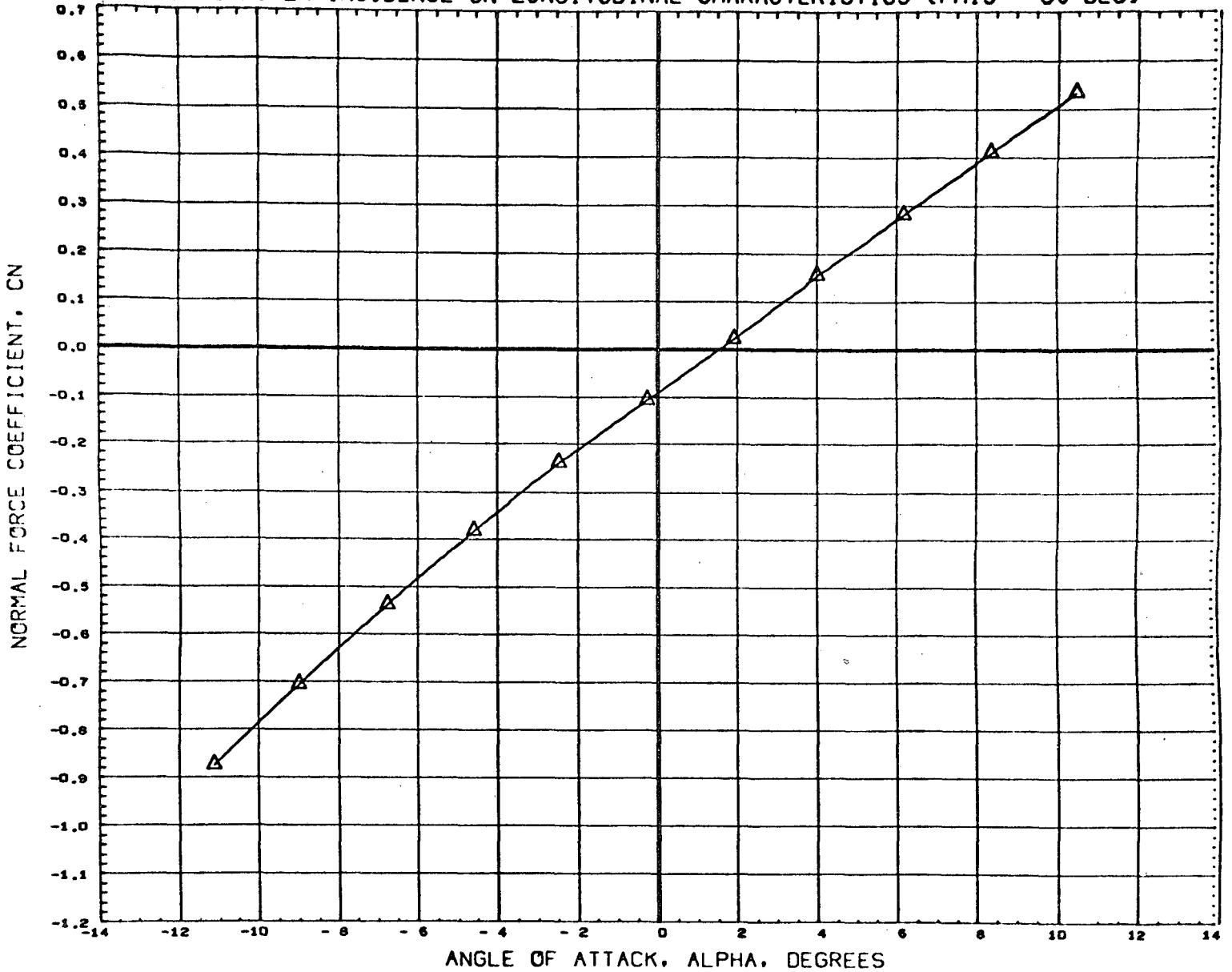


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20



# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



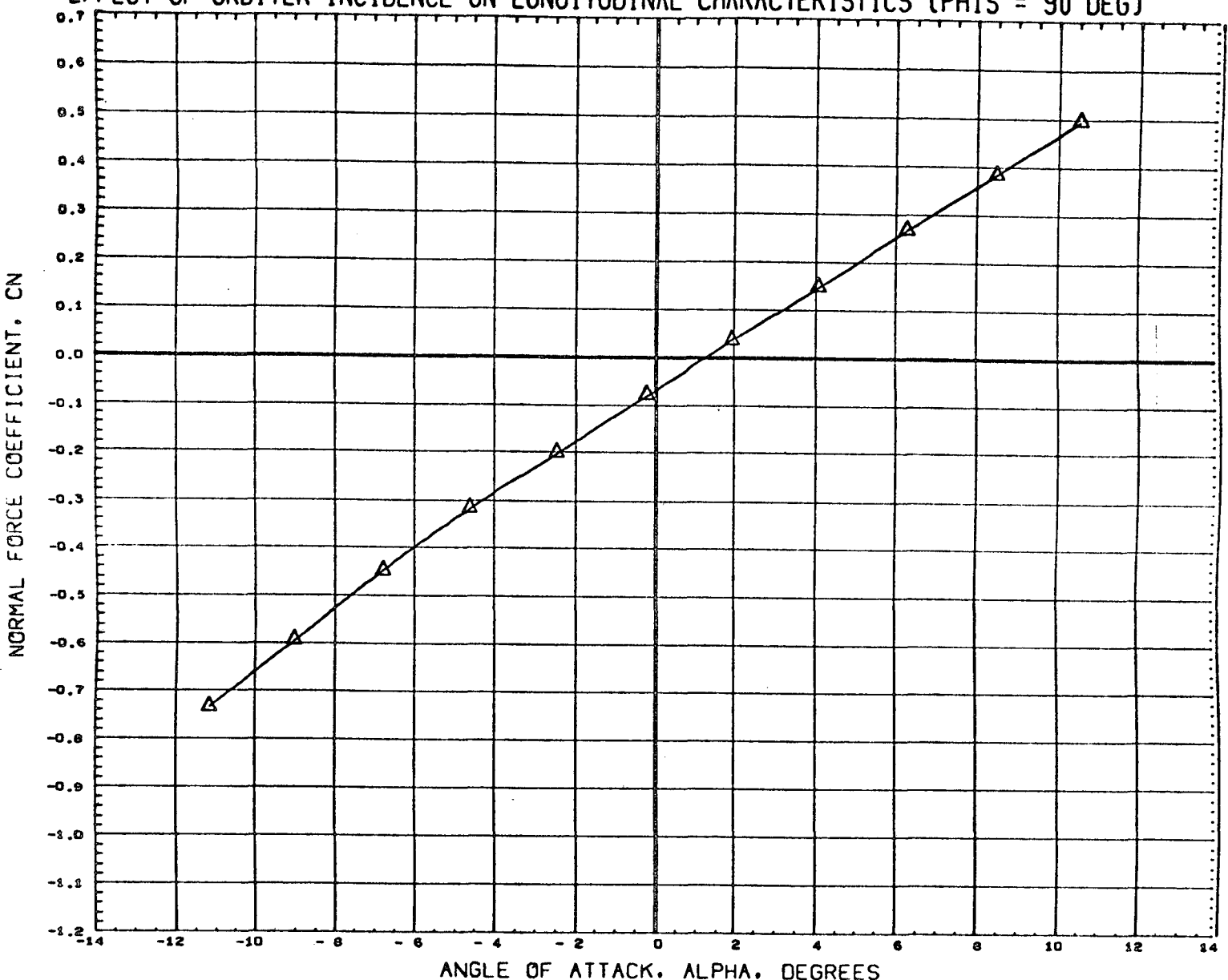
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871004) ○	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(871005) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871006) ◇	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.45

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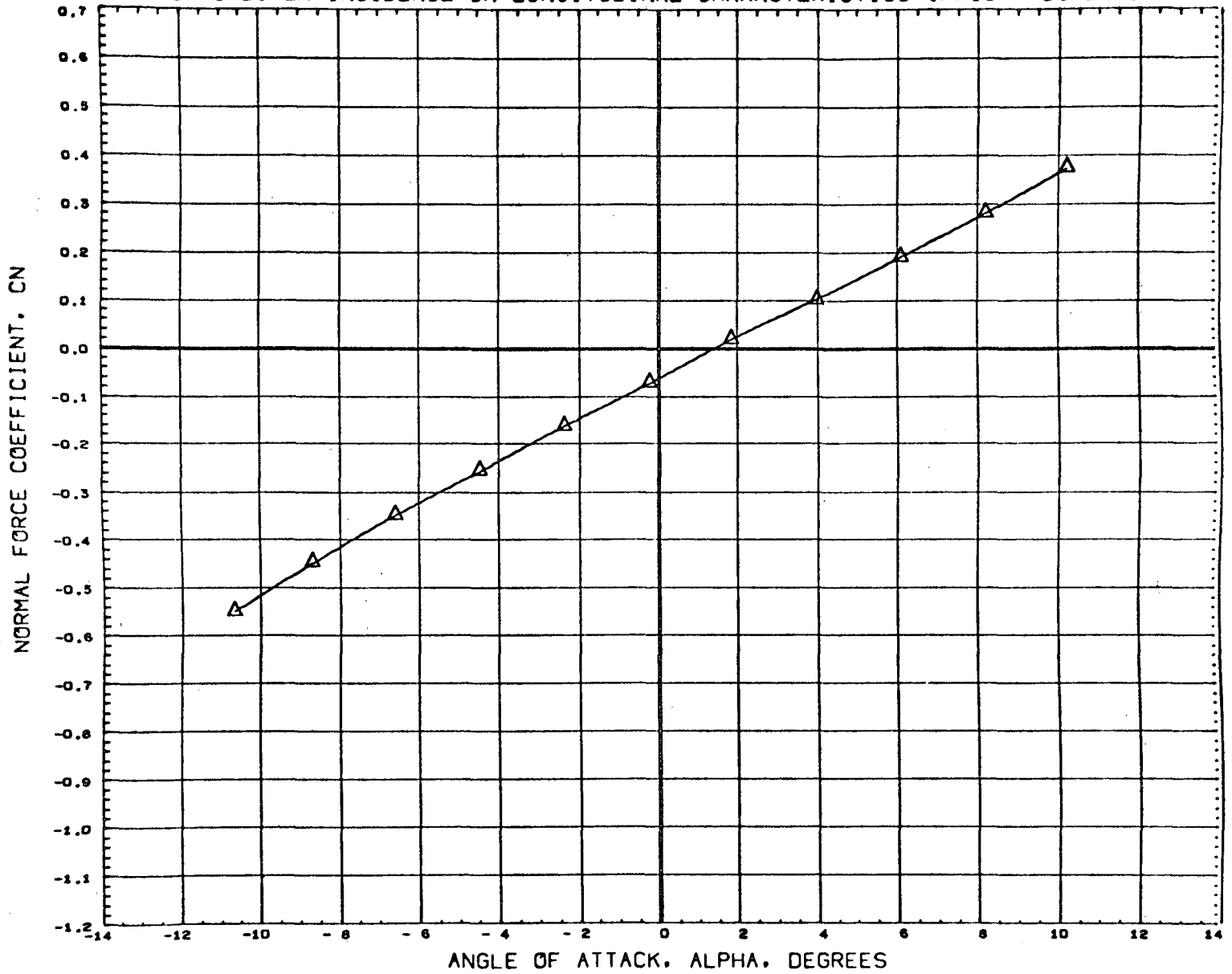
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(071006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

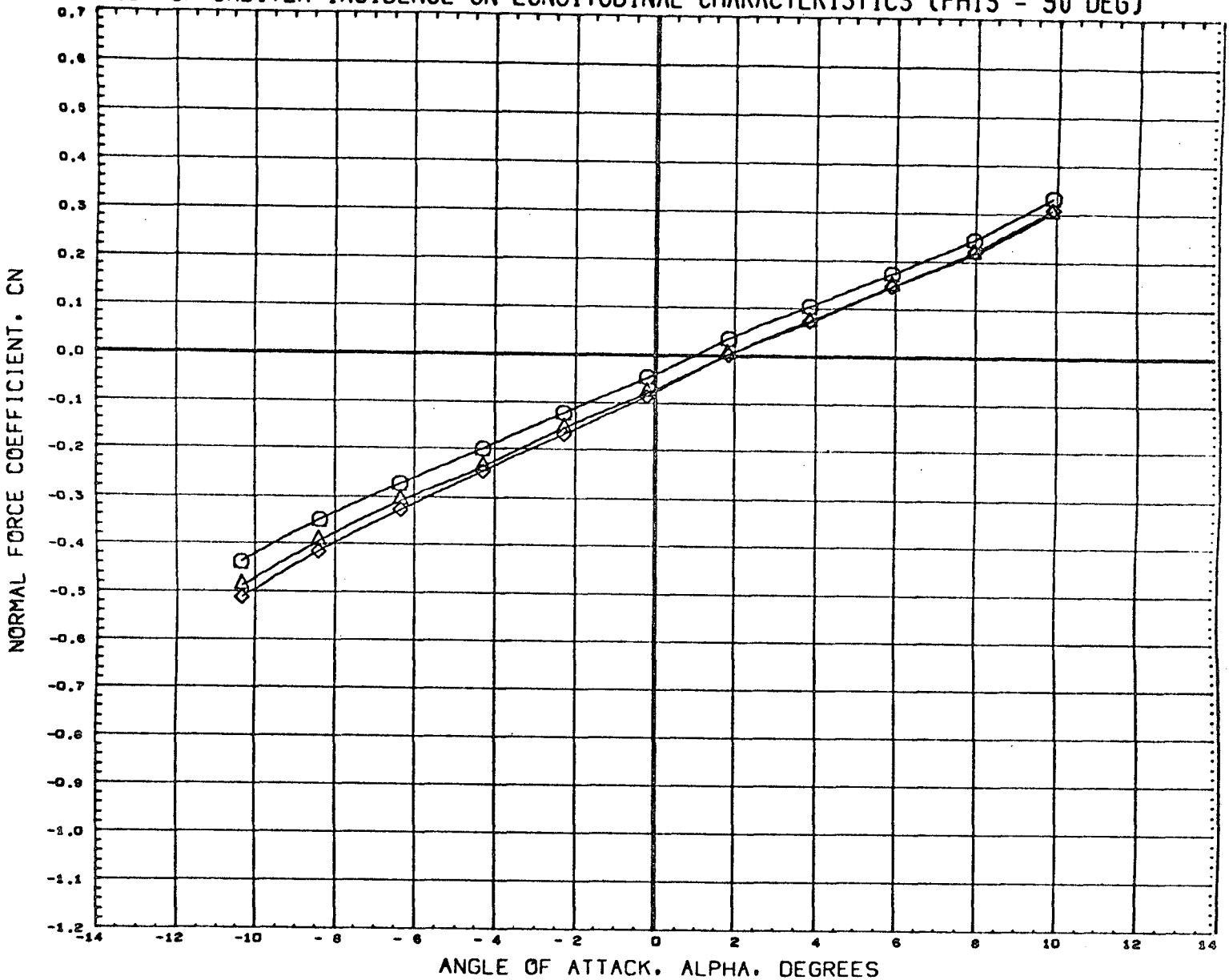
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(871005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

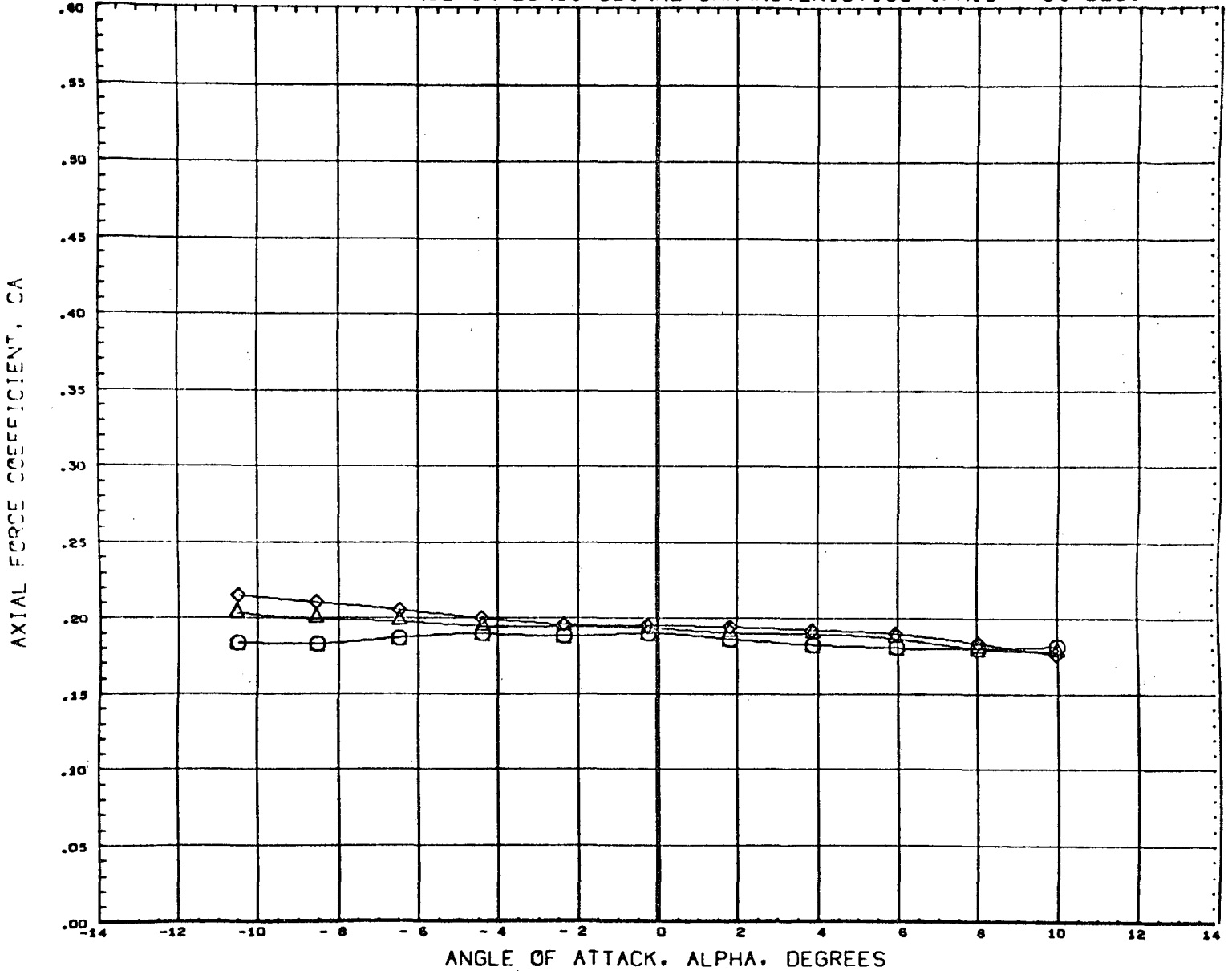
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(871005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)

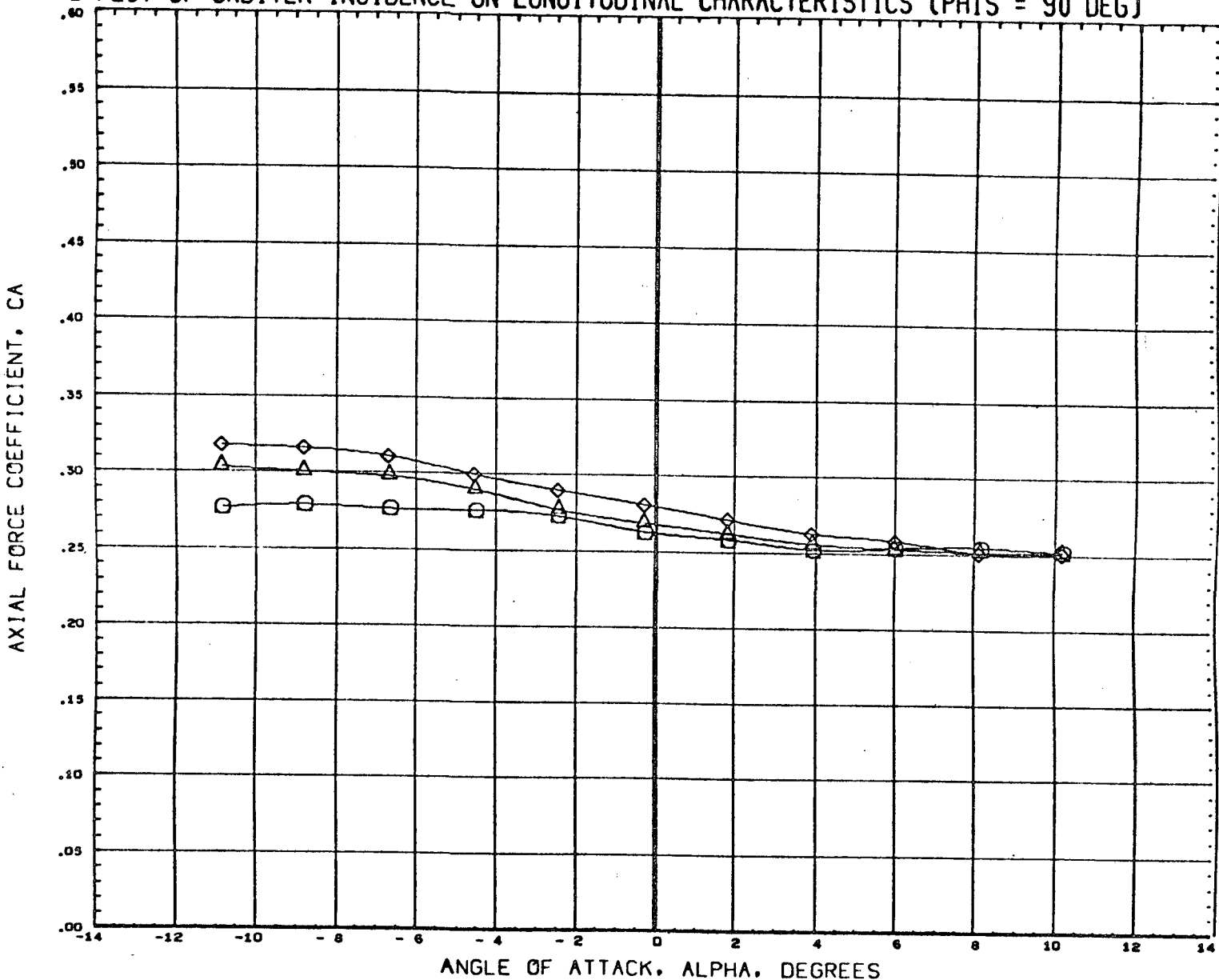


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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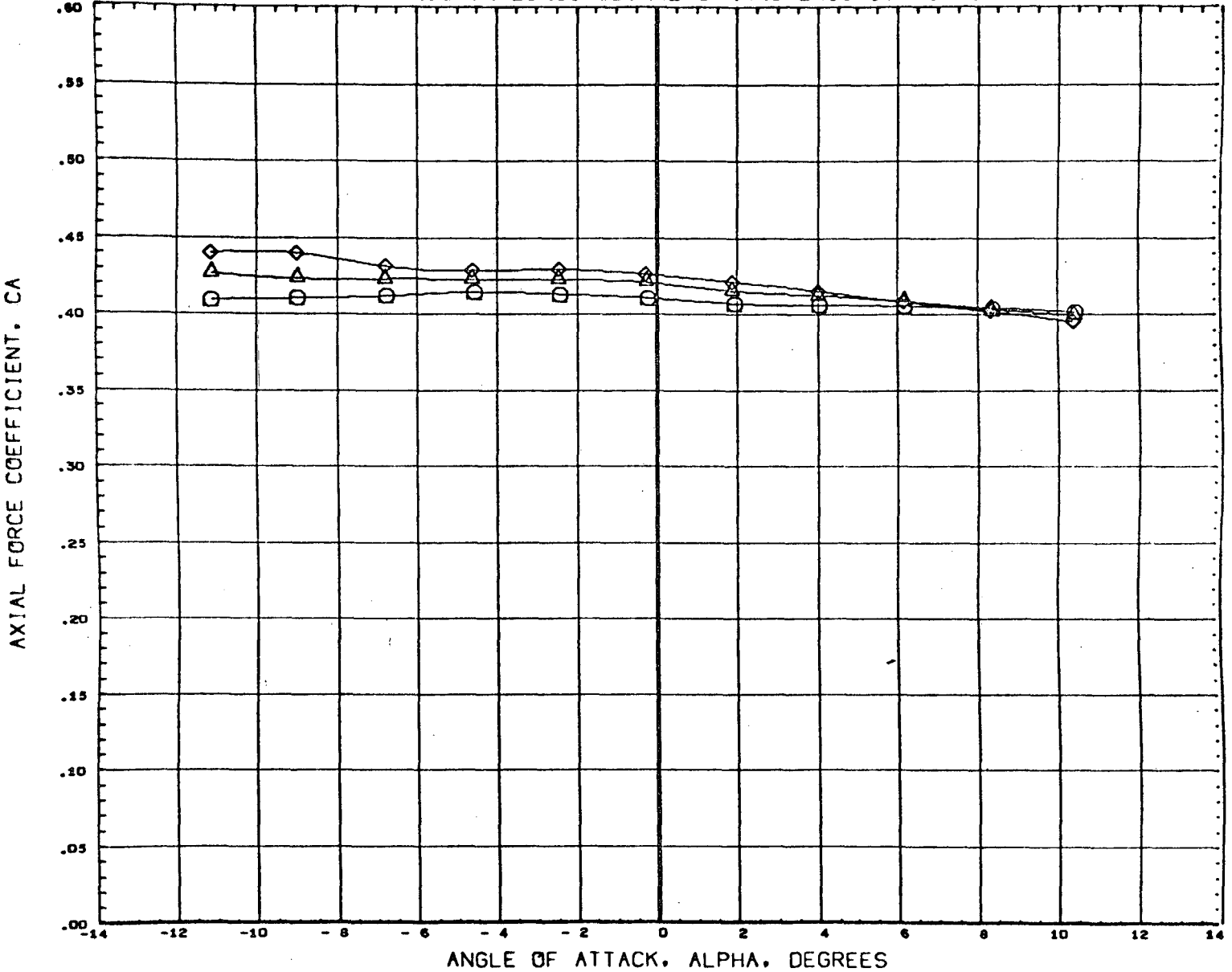
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 80. IN
(871005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



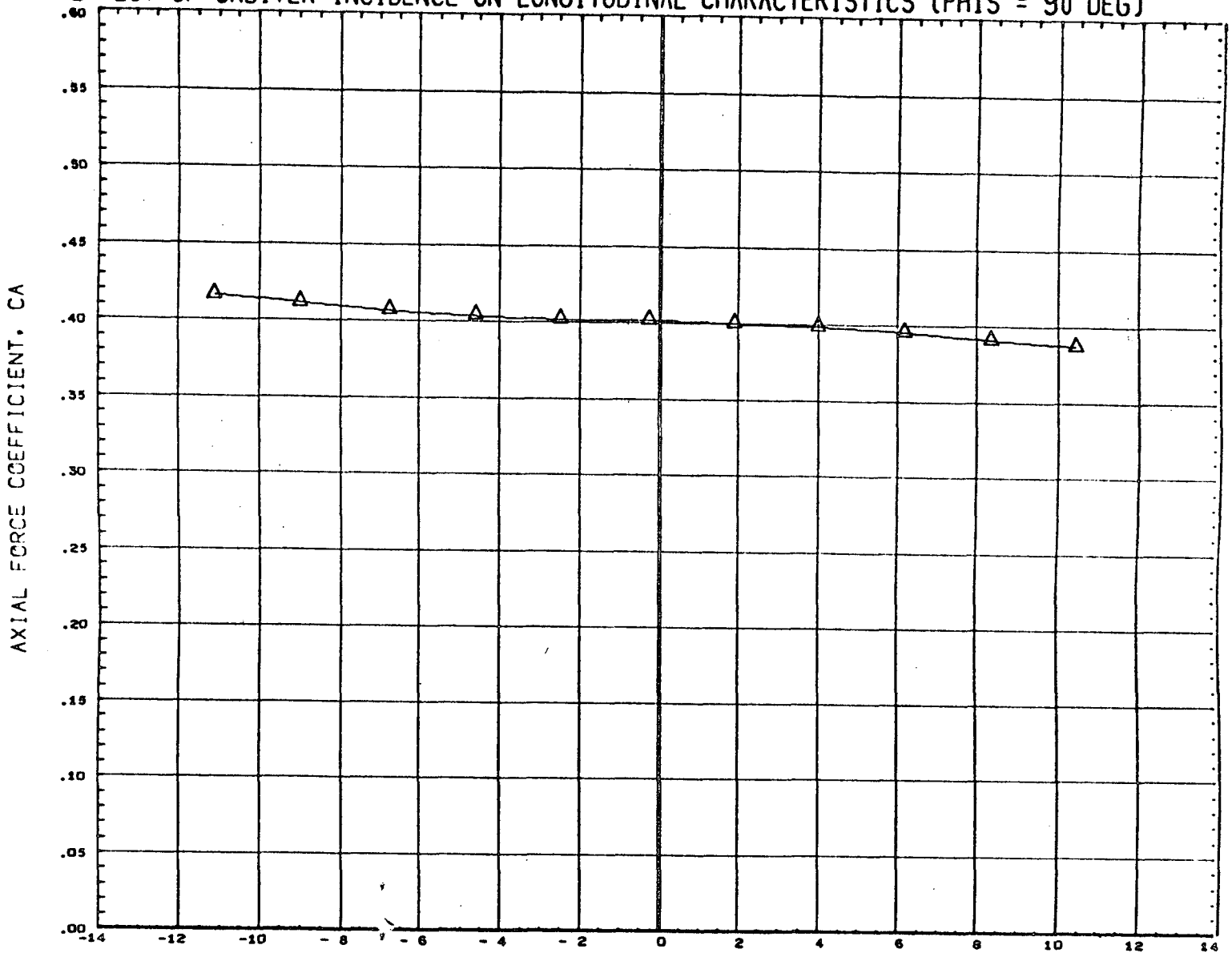
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 90. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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F.

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



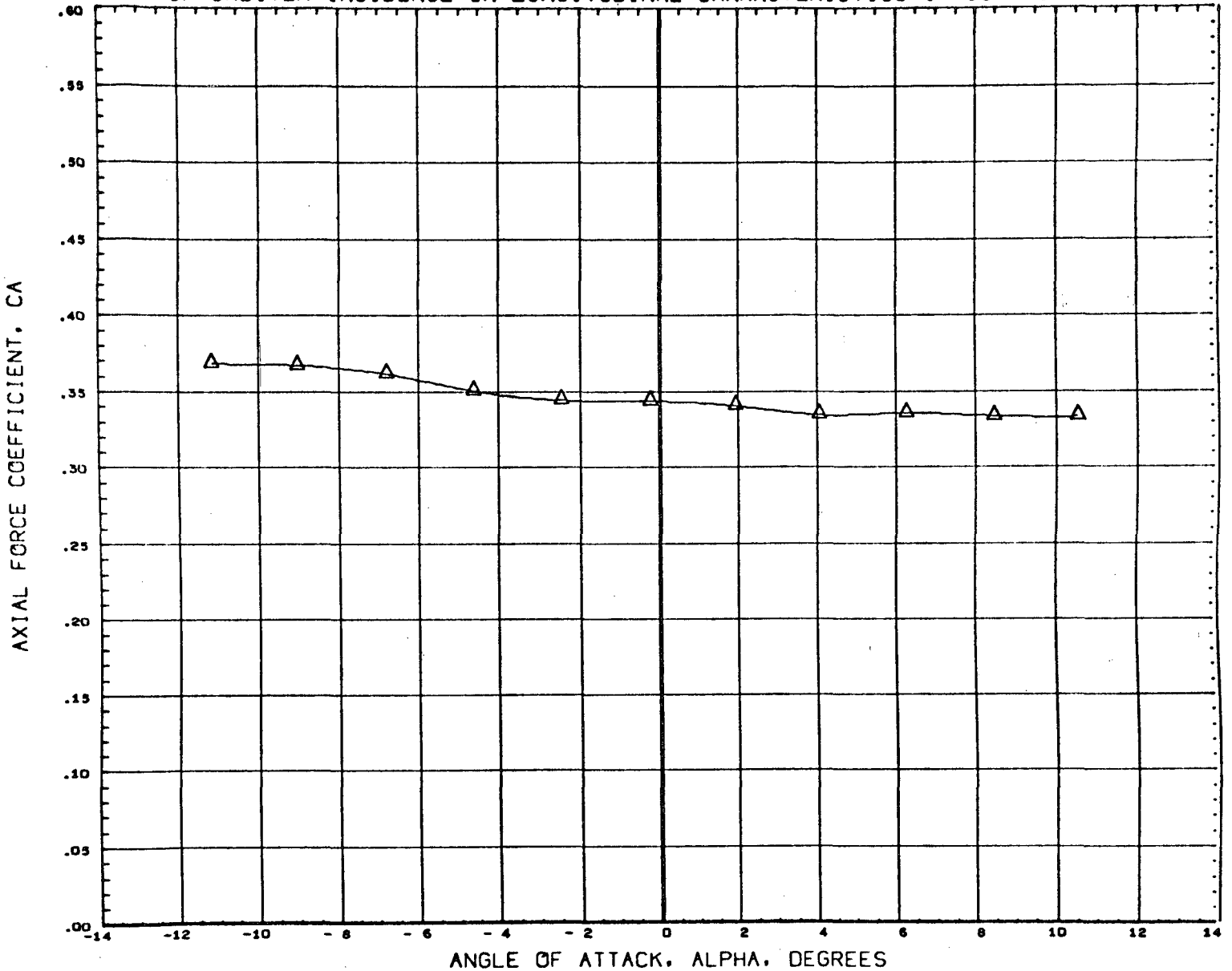
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
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MACH 1.45



# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



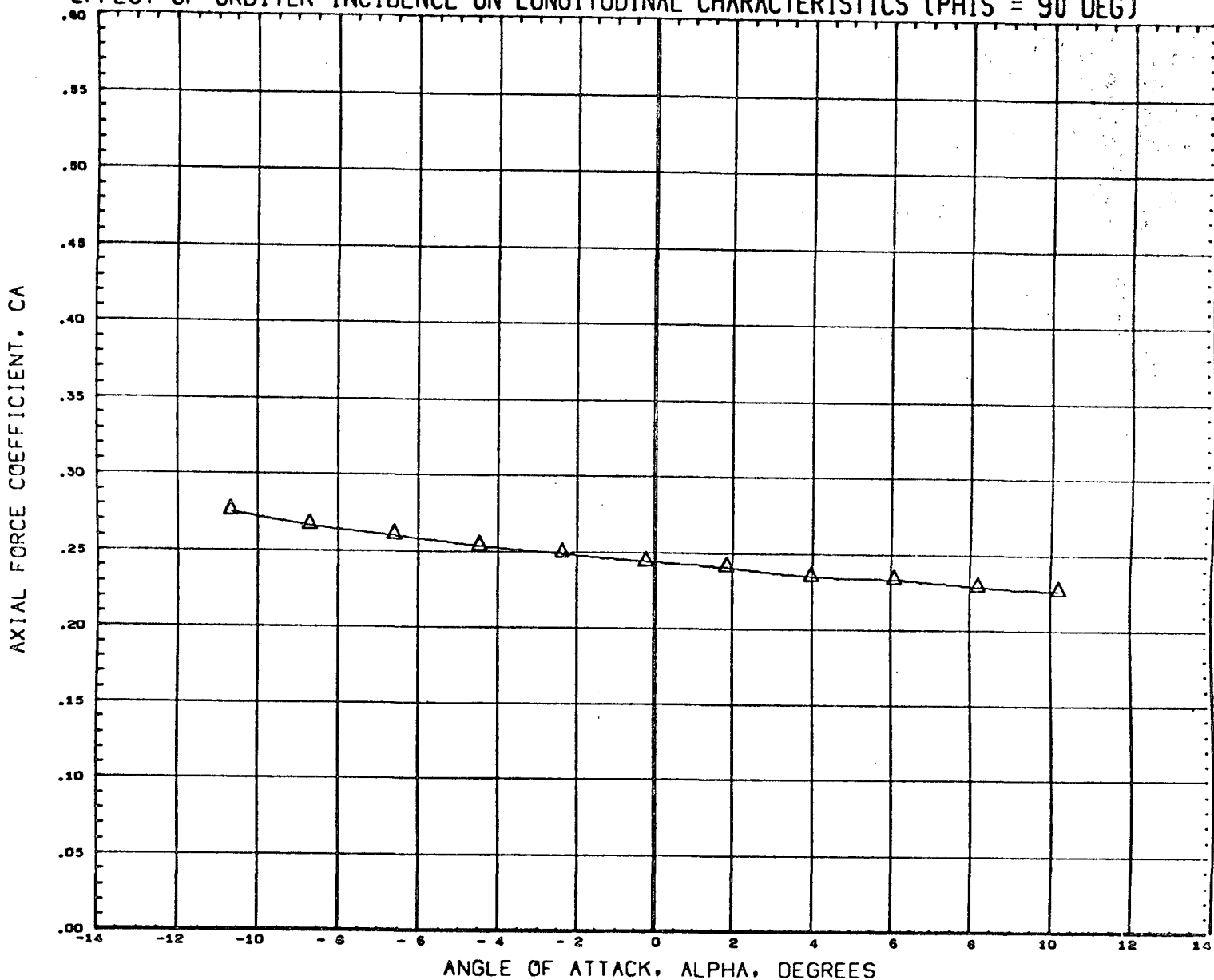
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
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MACH

1.97

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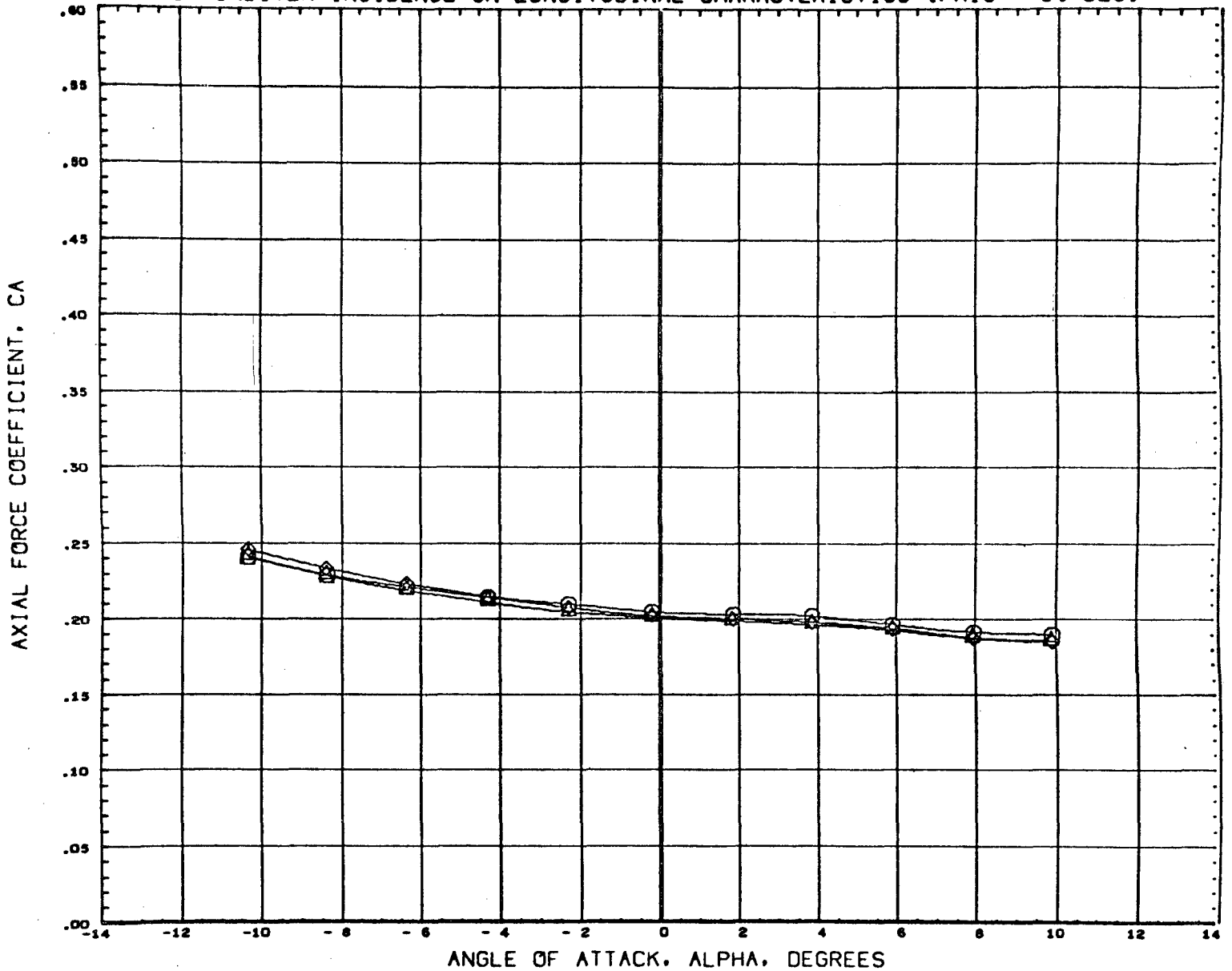
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
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MACH 3.48

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



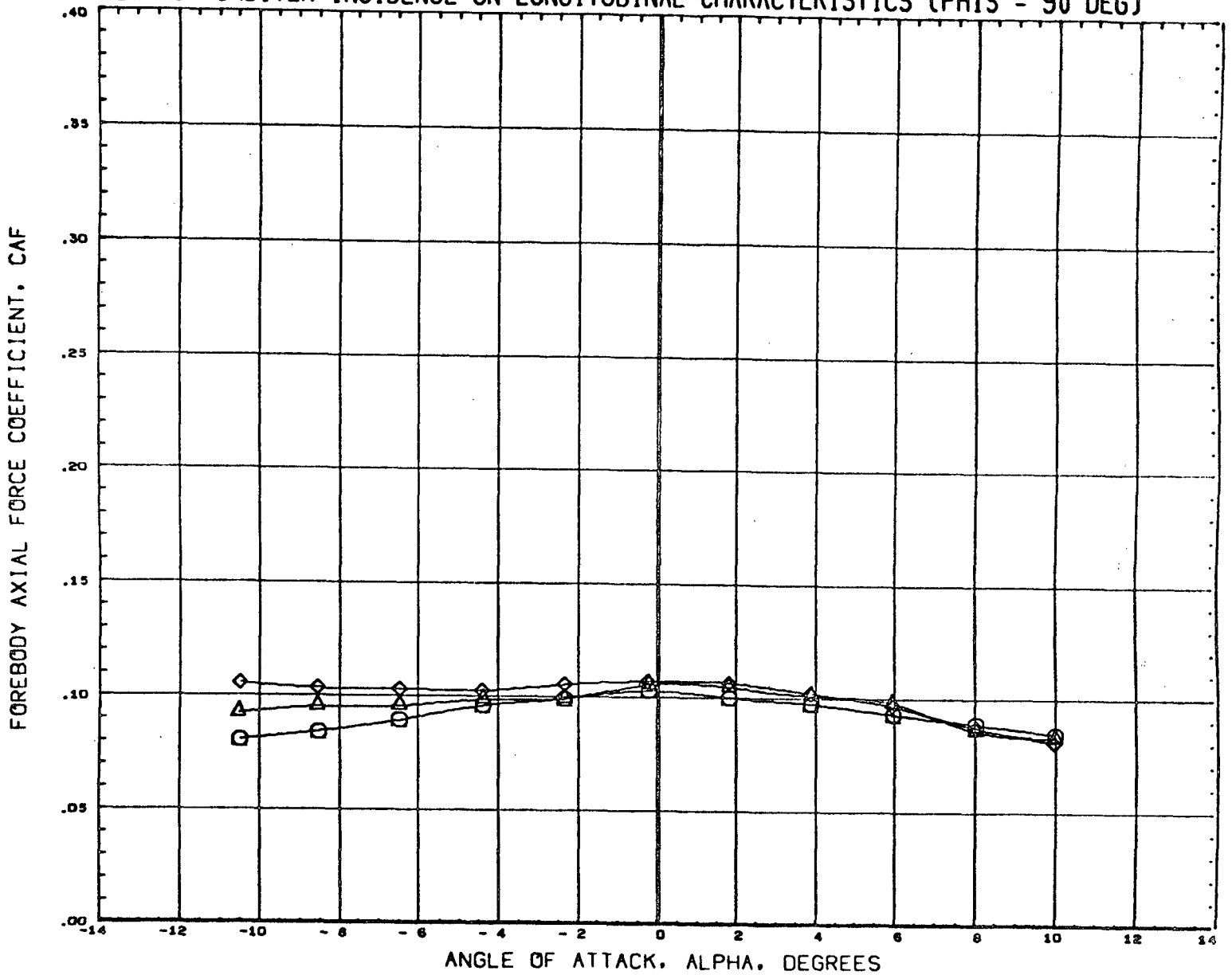
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(871005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH

4.96

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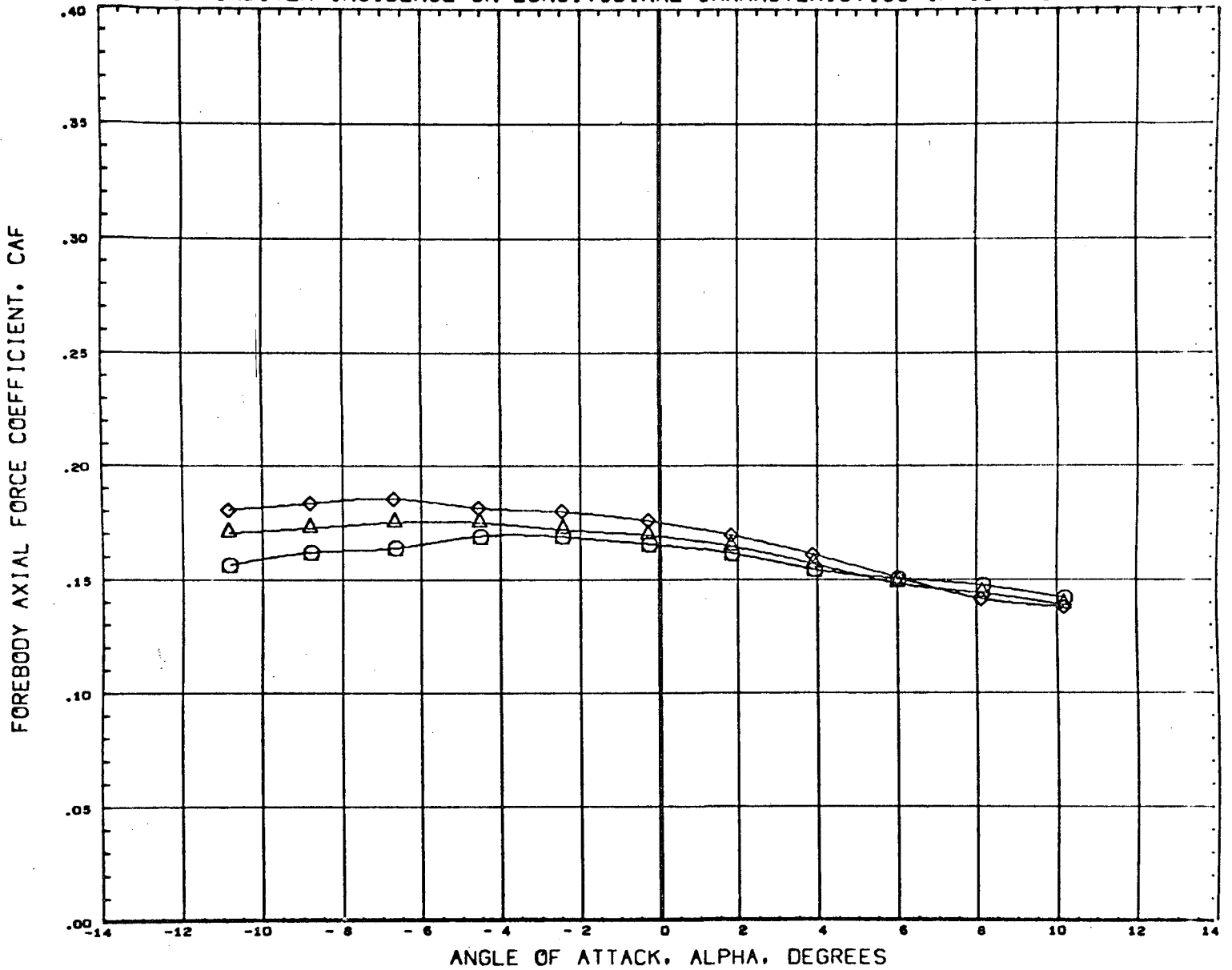
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



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(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	90.000	0.000	0.000	LREF 2.0260 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
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MACH .60

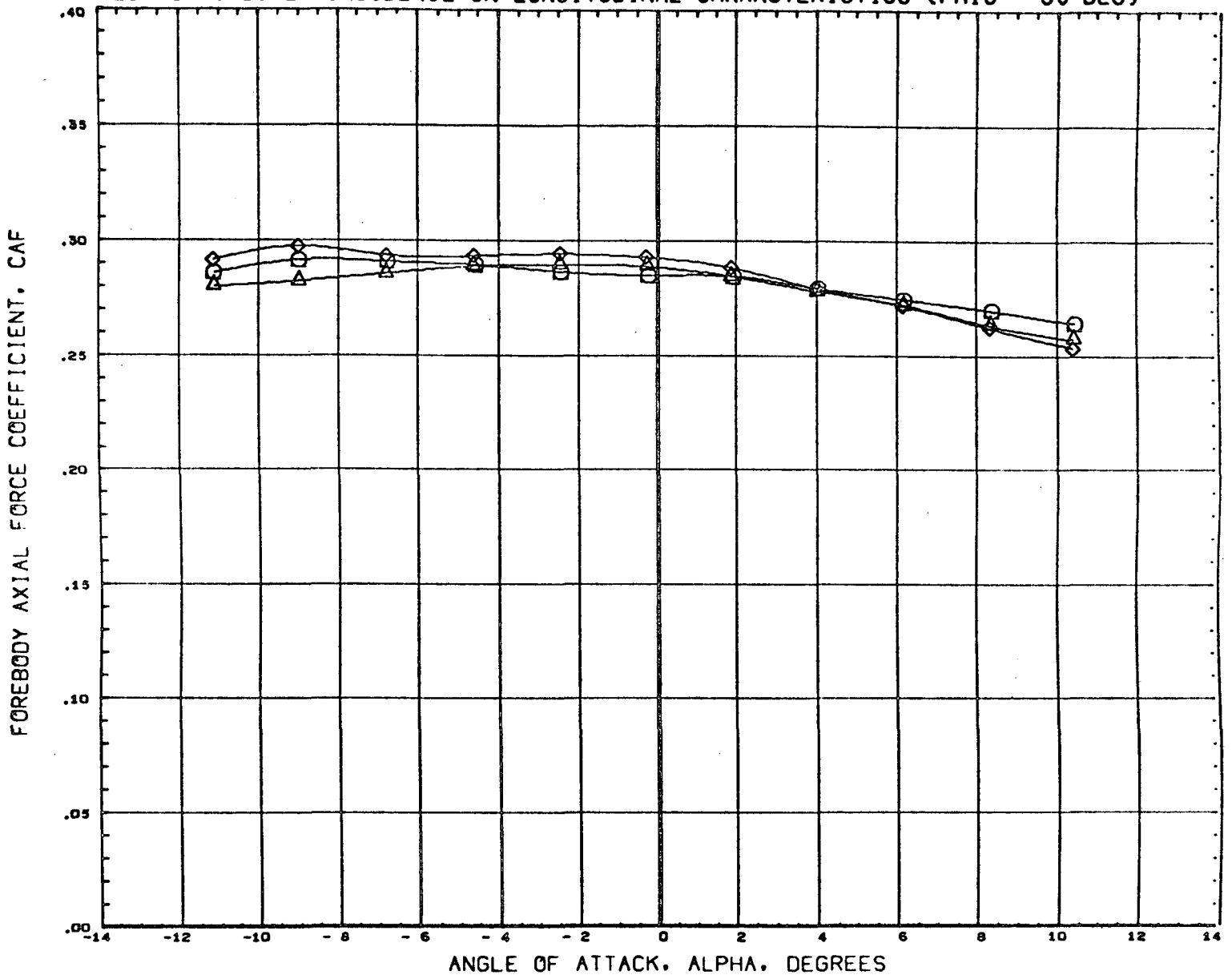
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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							YMRP 0.0000 IN.
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MACH .91

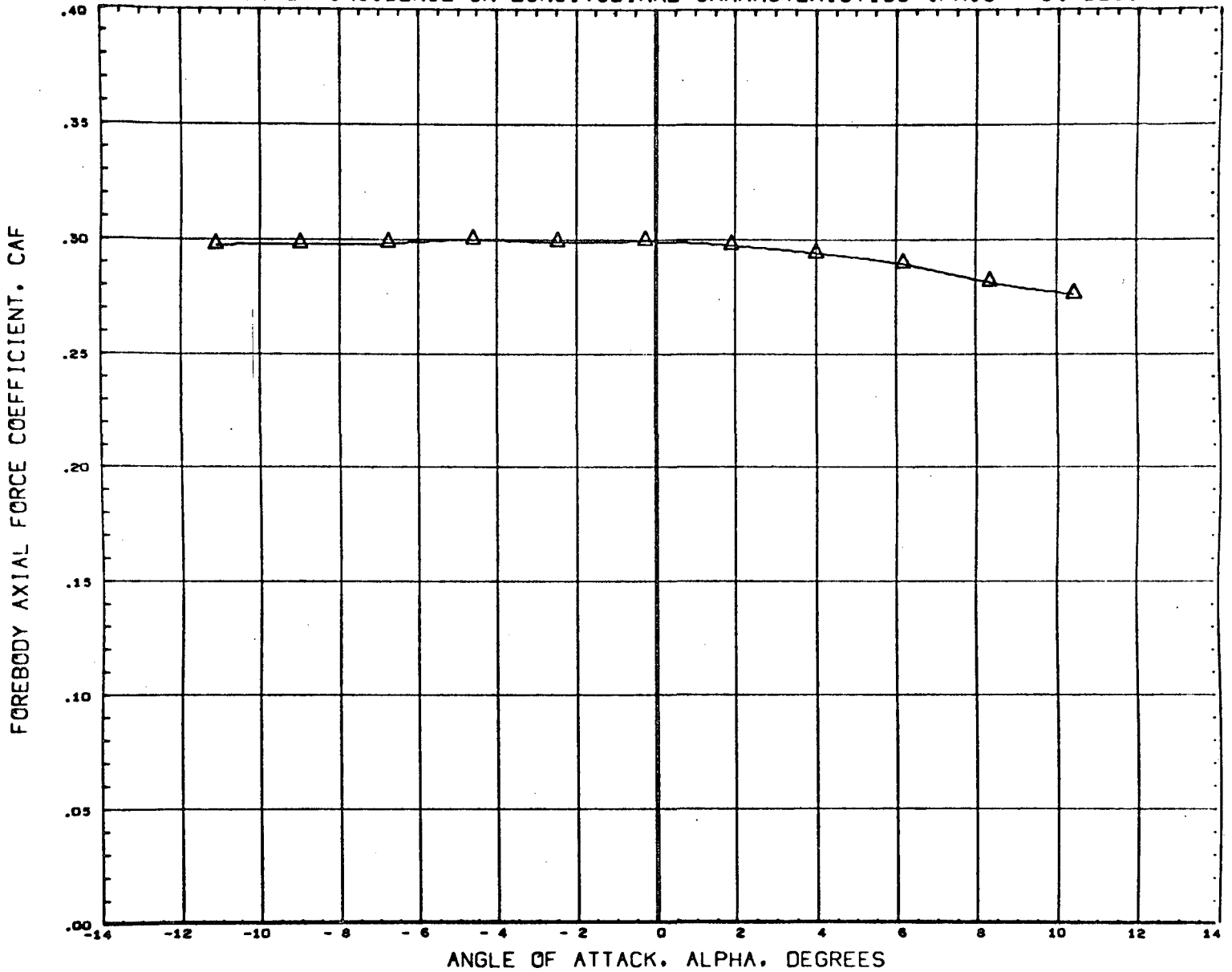
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(871004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8600 SQ. IN
(871005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

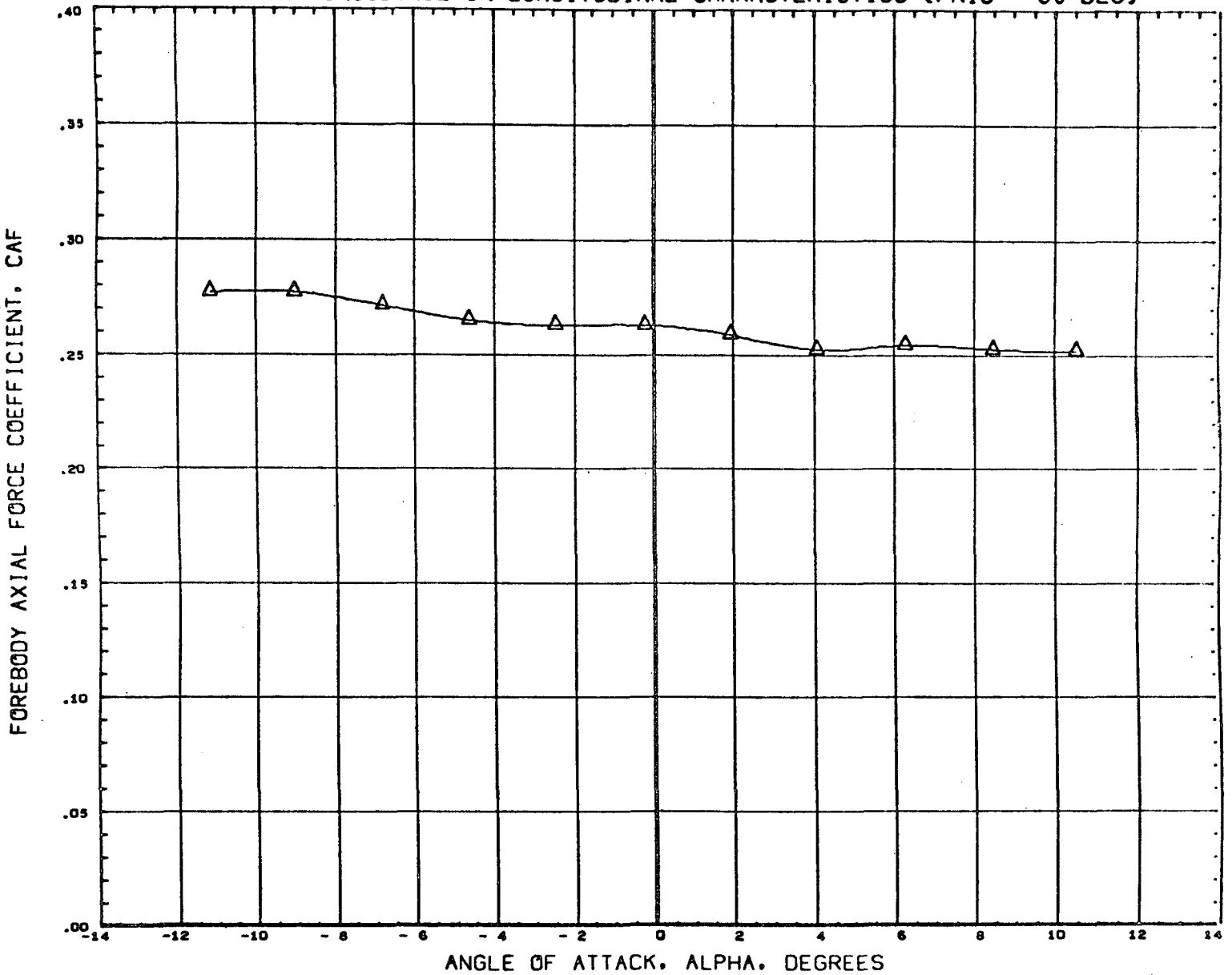
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.45

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)

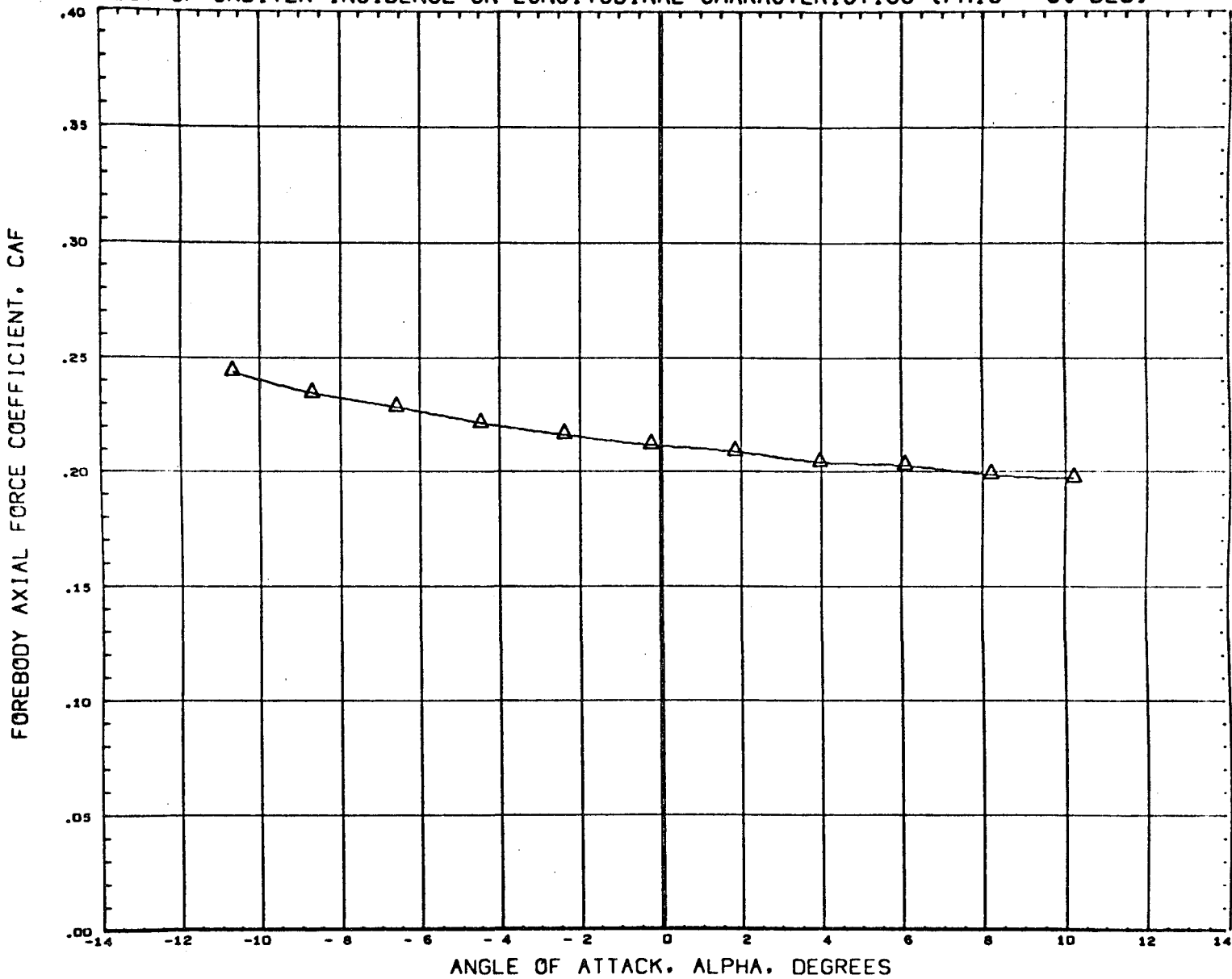


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0260 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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MACH 1.97



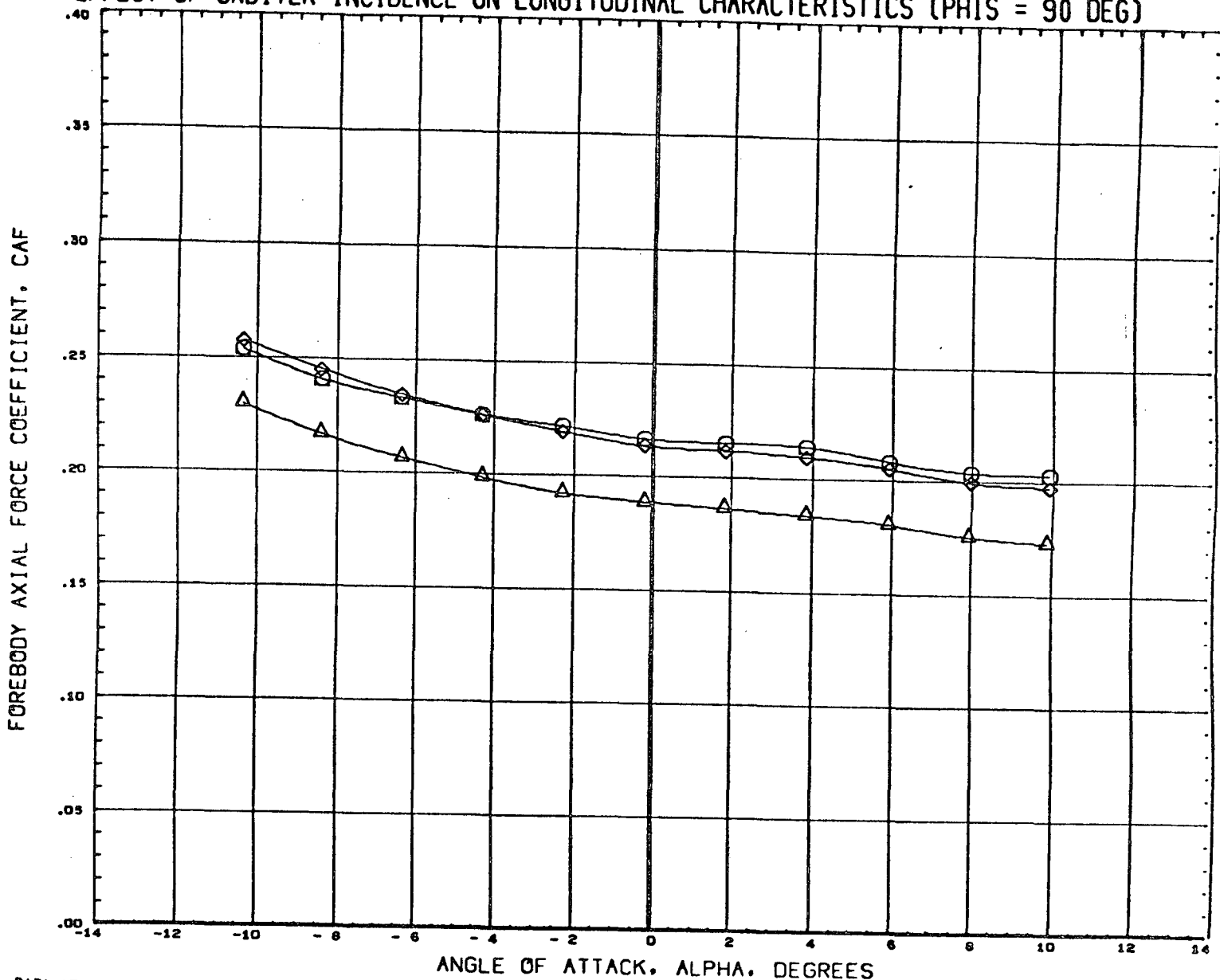
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
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						SCALE 0.0040 SCALE

MACH 3.48

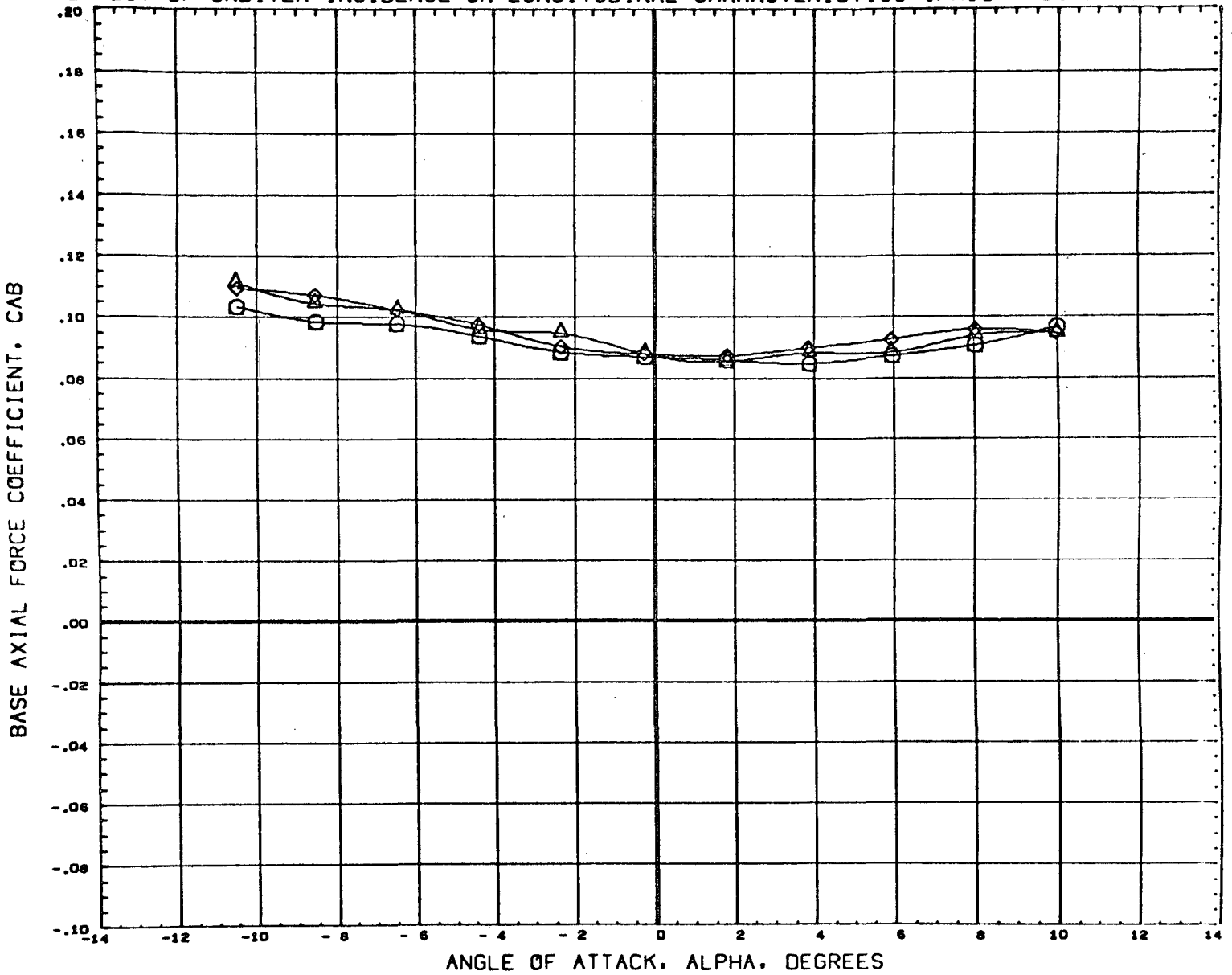
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



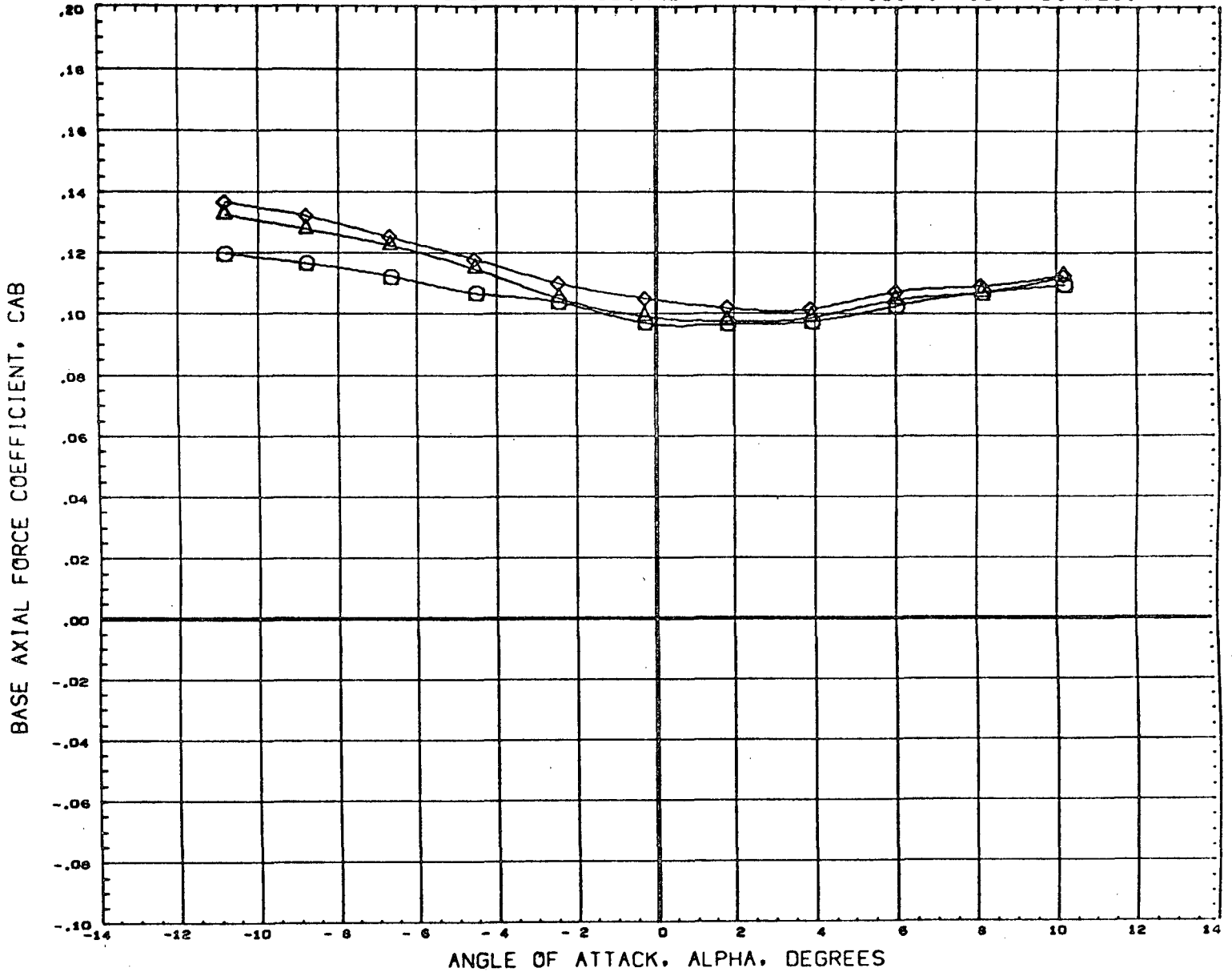
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(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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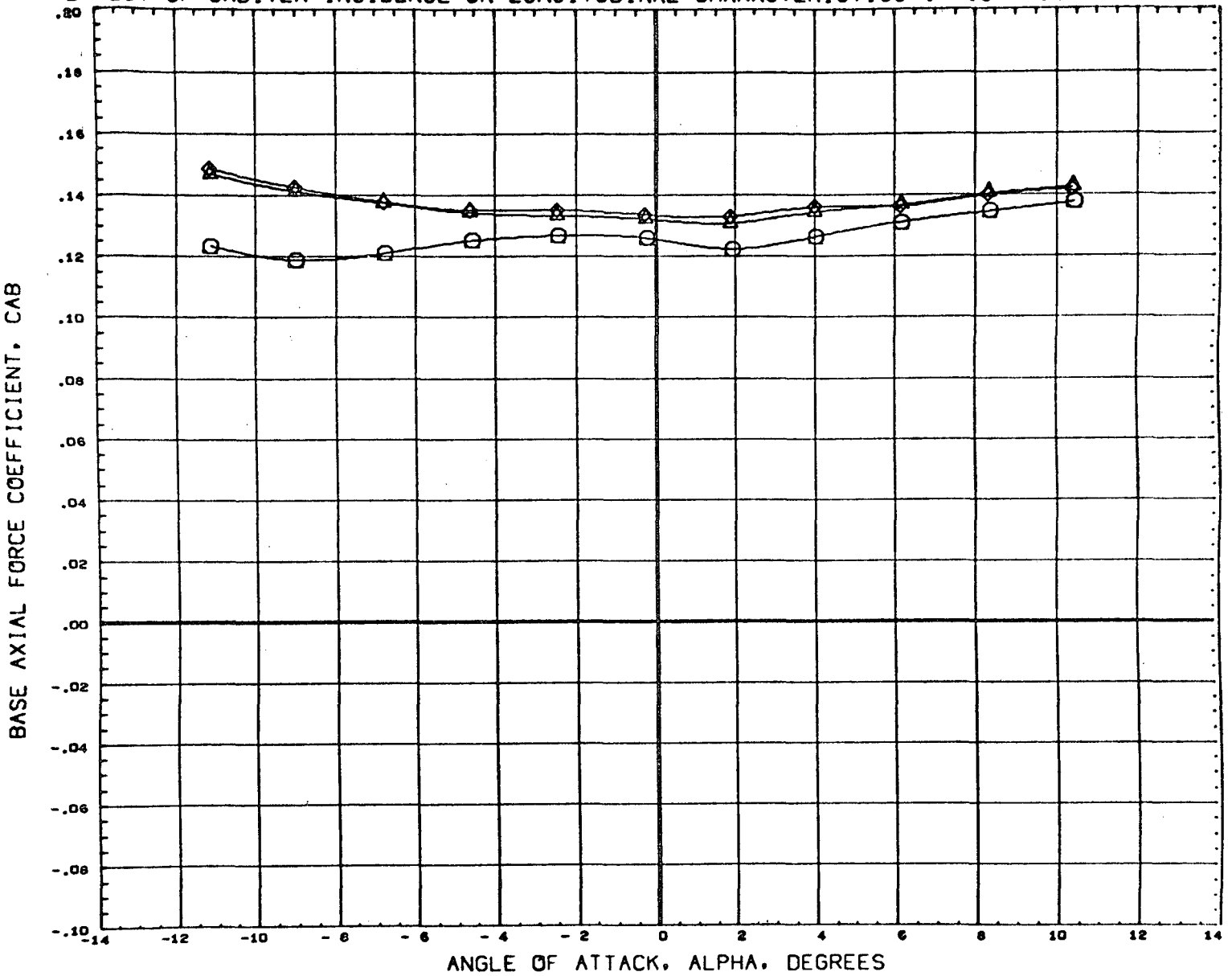
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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MACH .91

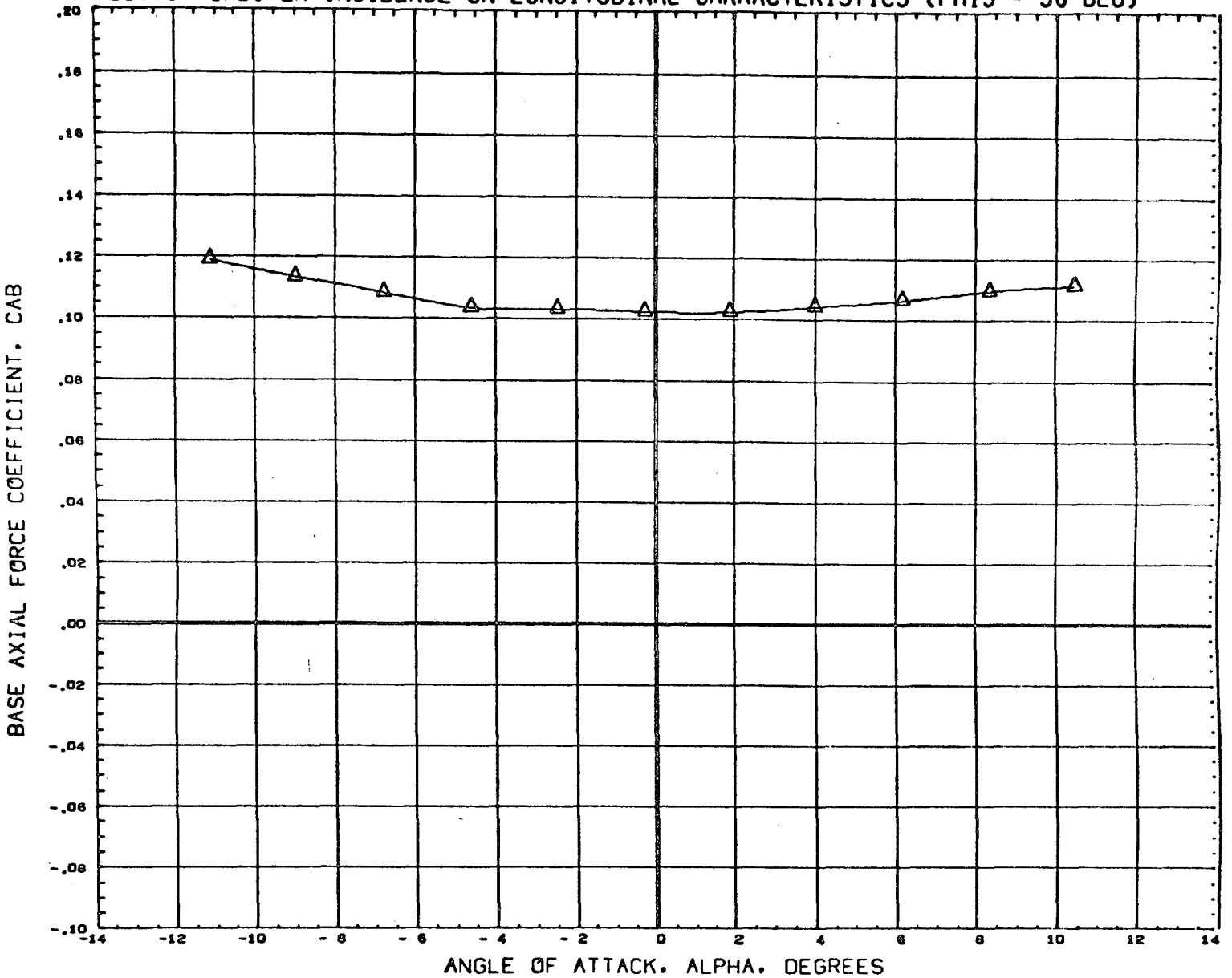
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
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						SCALE 0.0040 SCALE

MACH 1.20

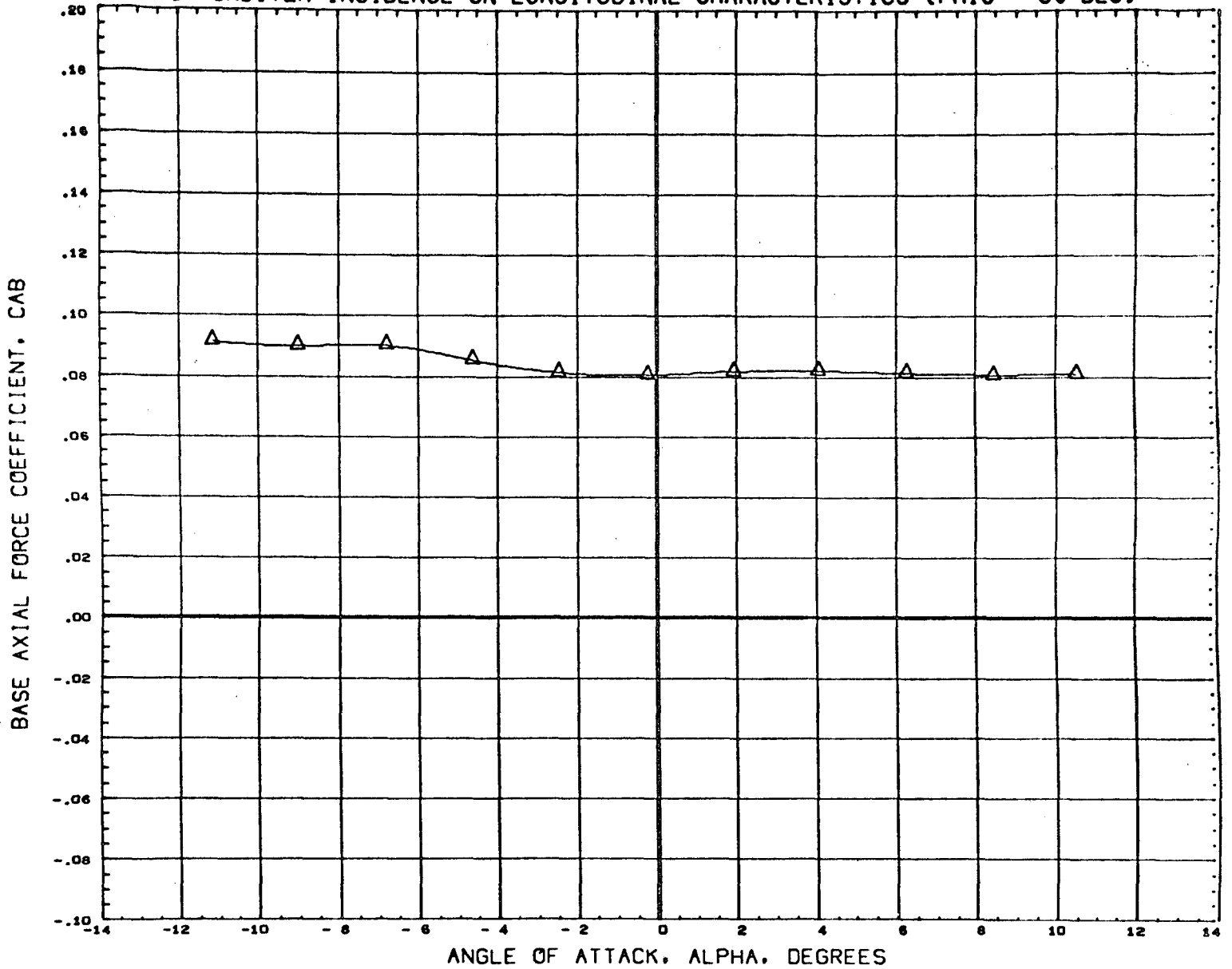
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8600 sq. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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						ZMRP 0.2480 IN.
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MACH 1.45

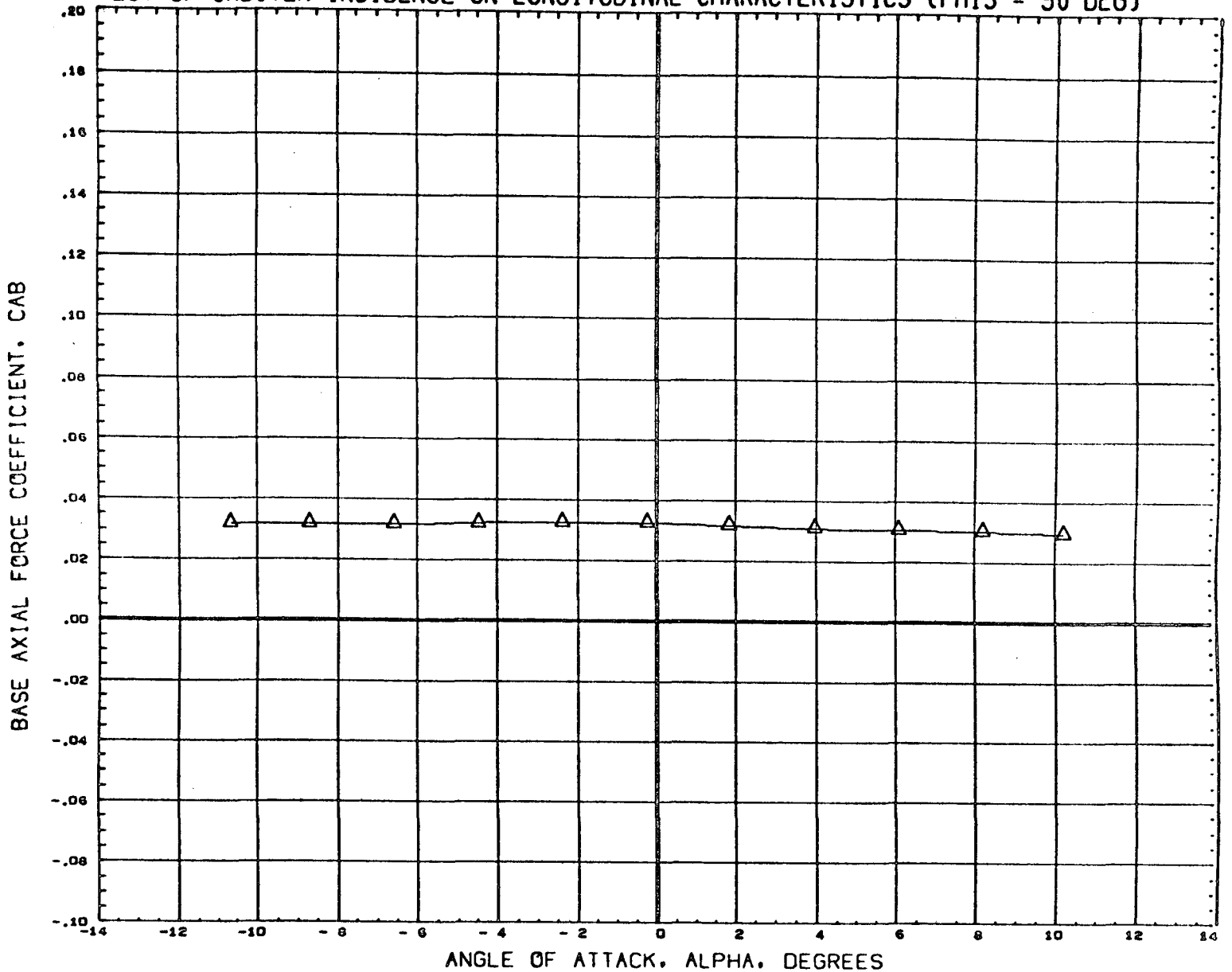
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(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)

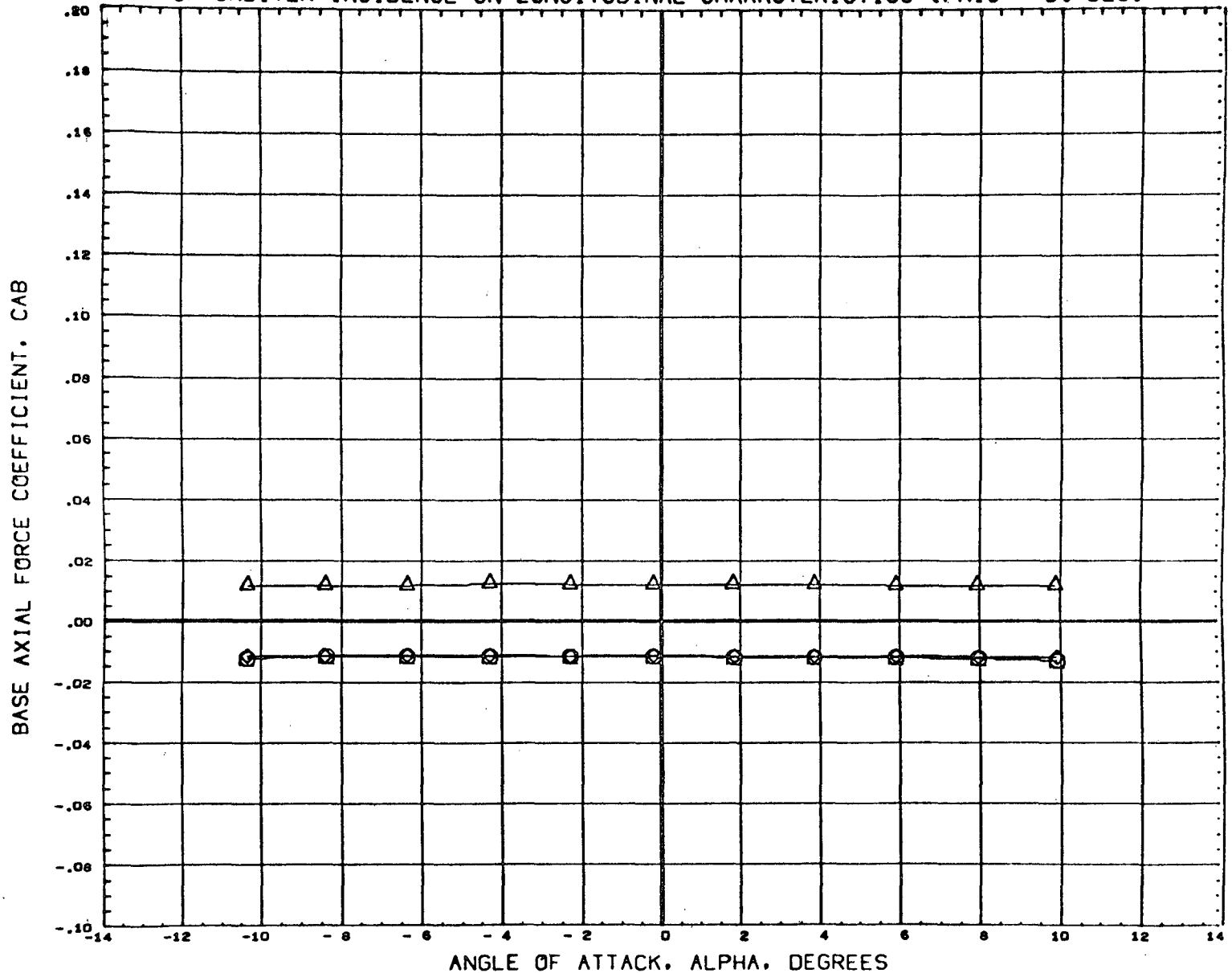


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(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0260 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
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MACH 3.48



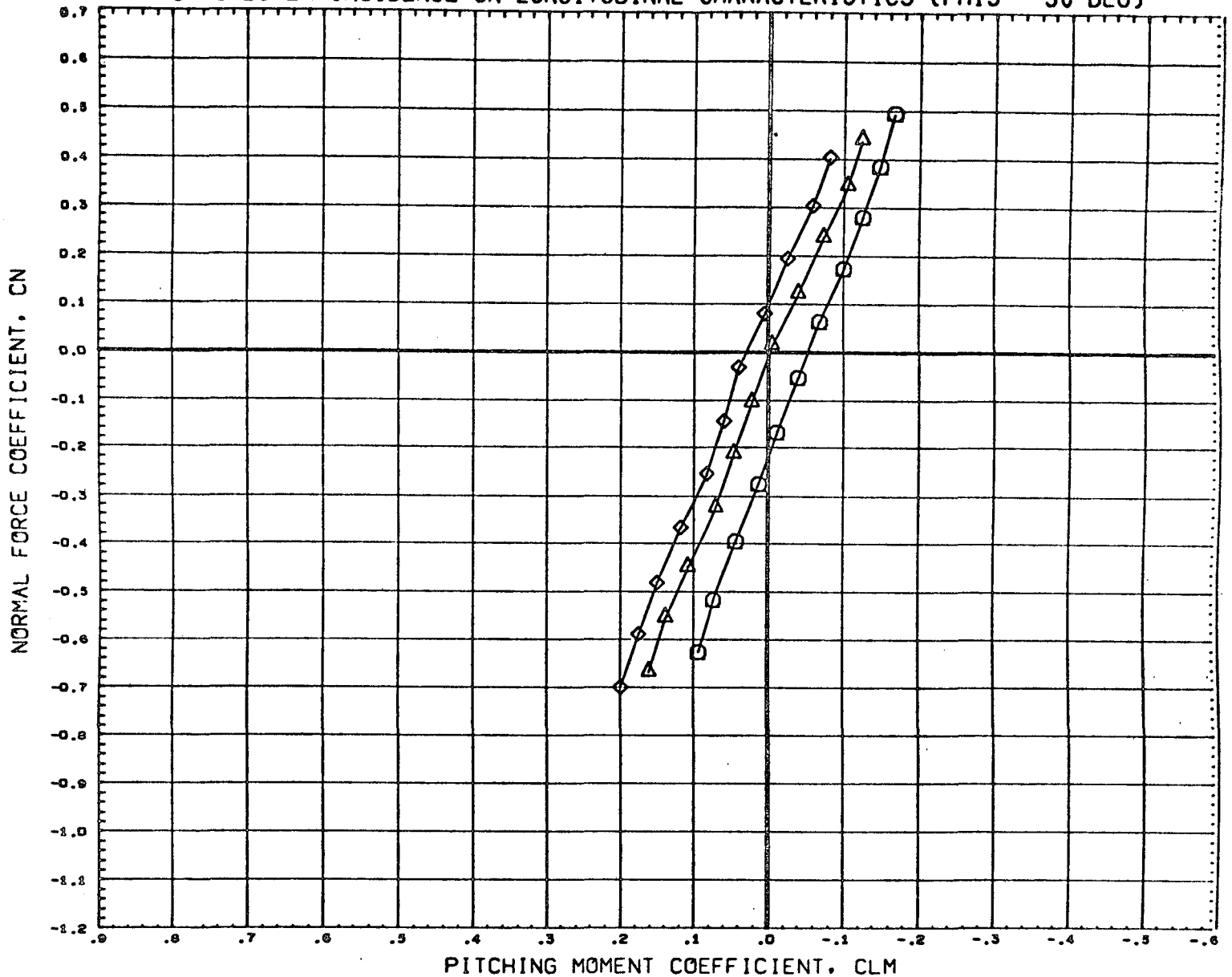
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)

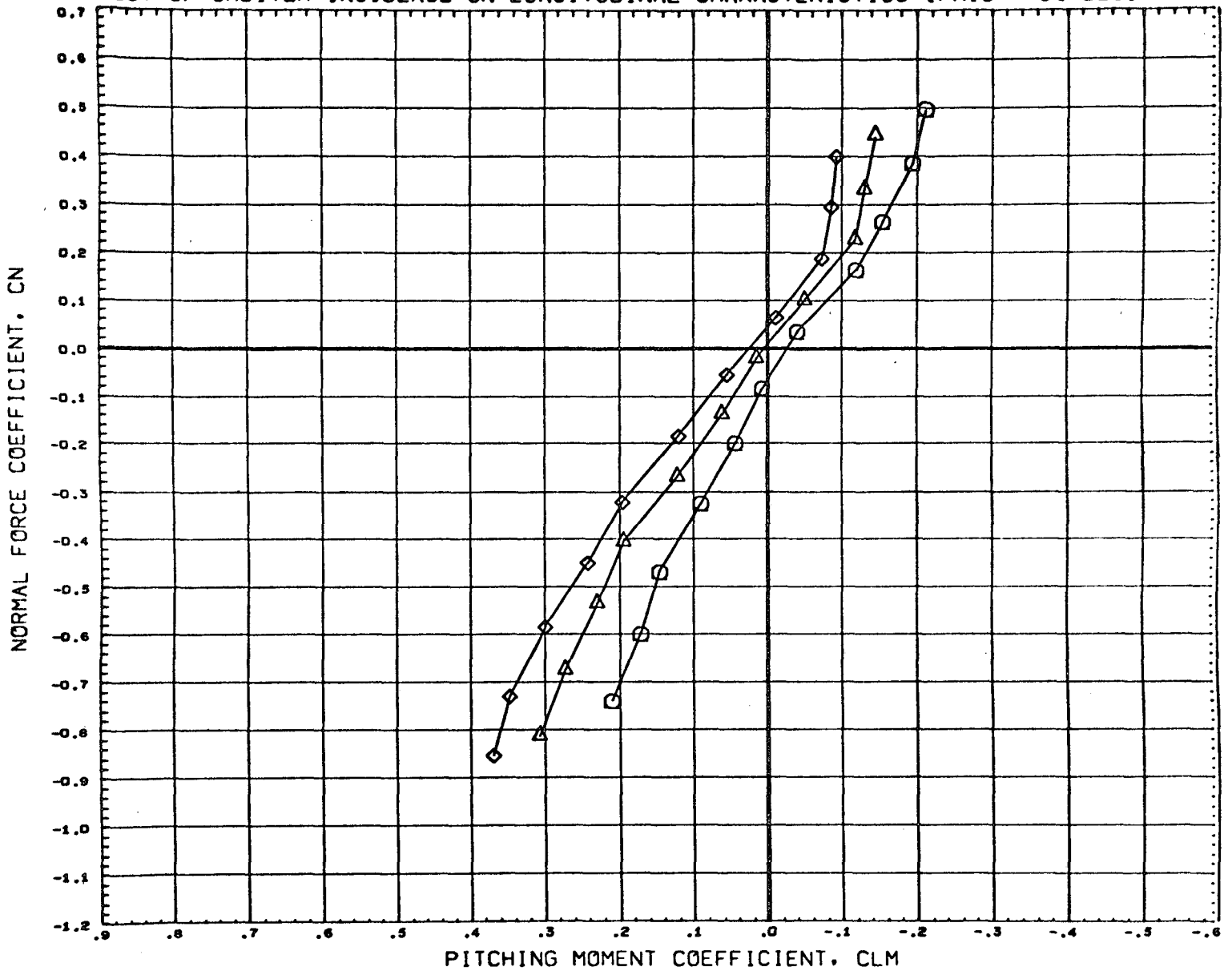


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH

.60

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)

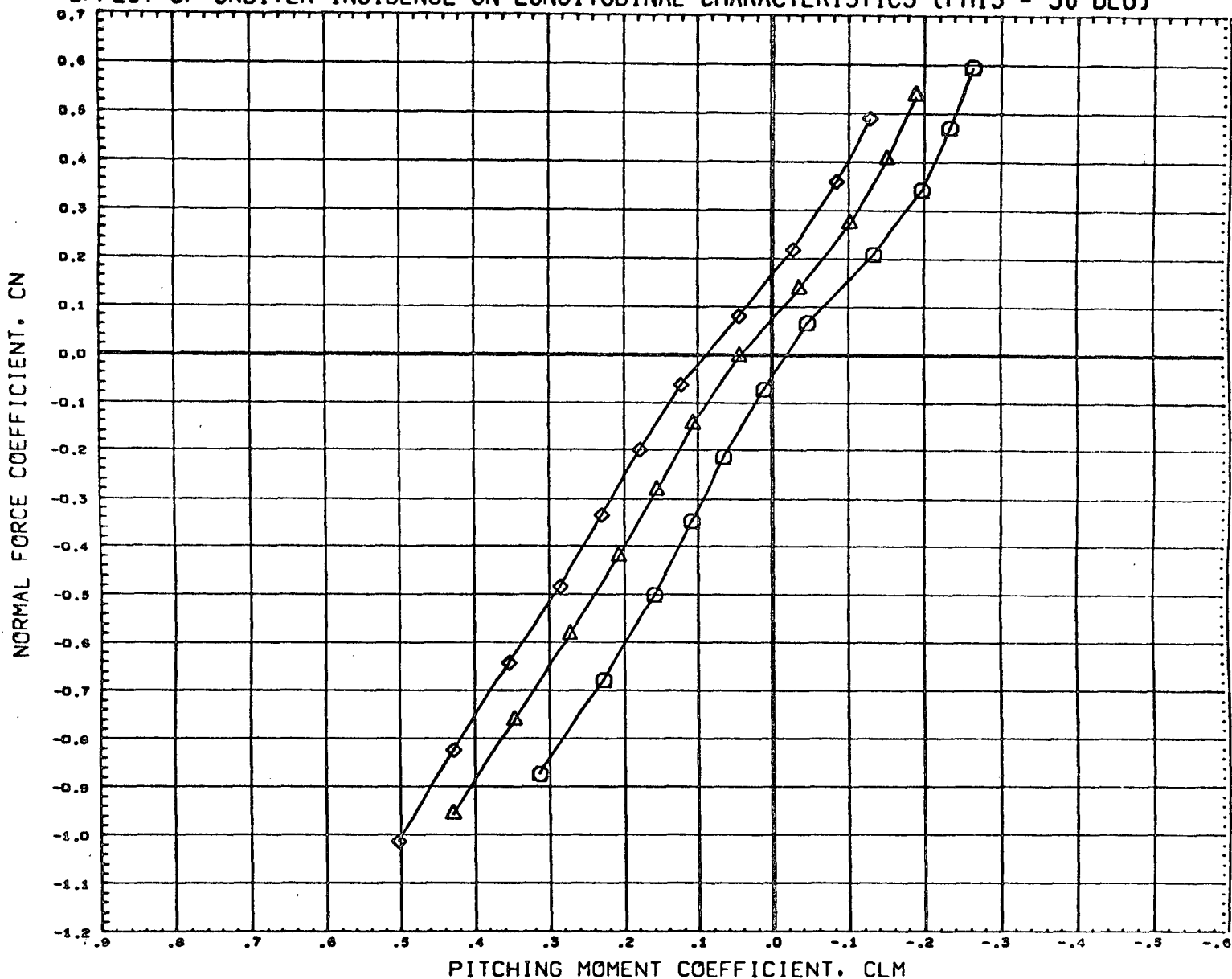


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

.91

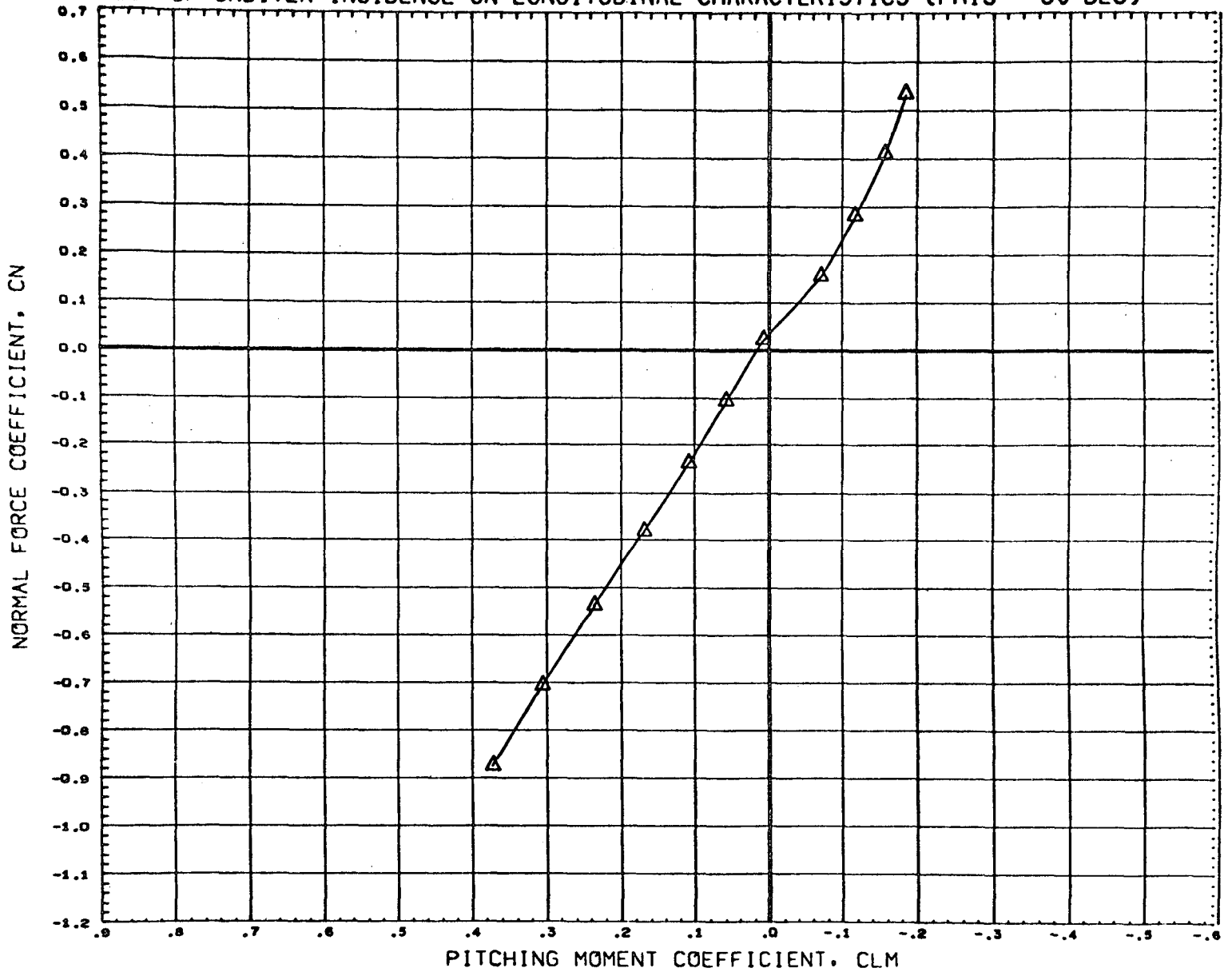
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	SREF 7.8600 SQ. IN
(871005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

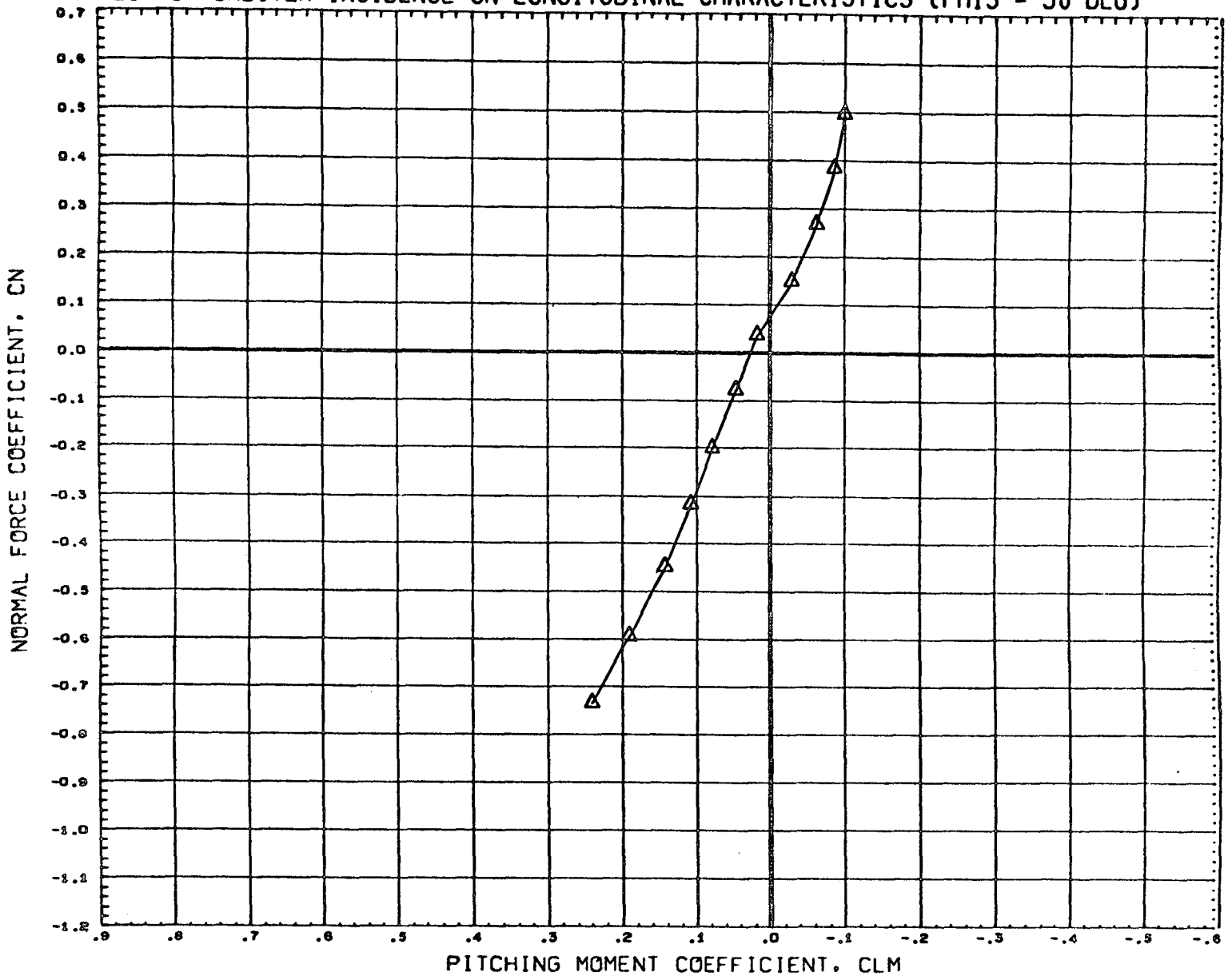
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(871005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XHRP 3.3600 IN.
						YHRP 0.0000 IN.
						ZHRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.45

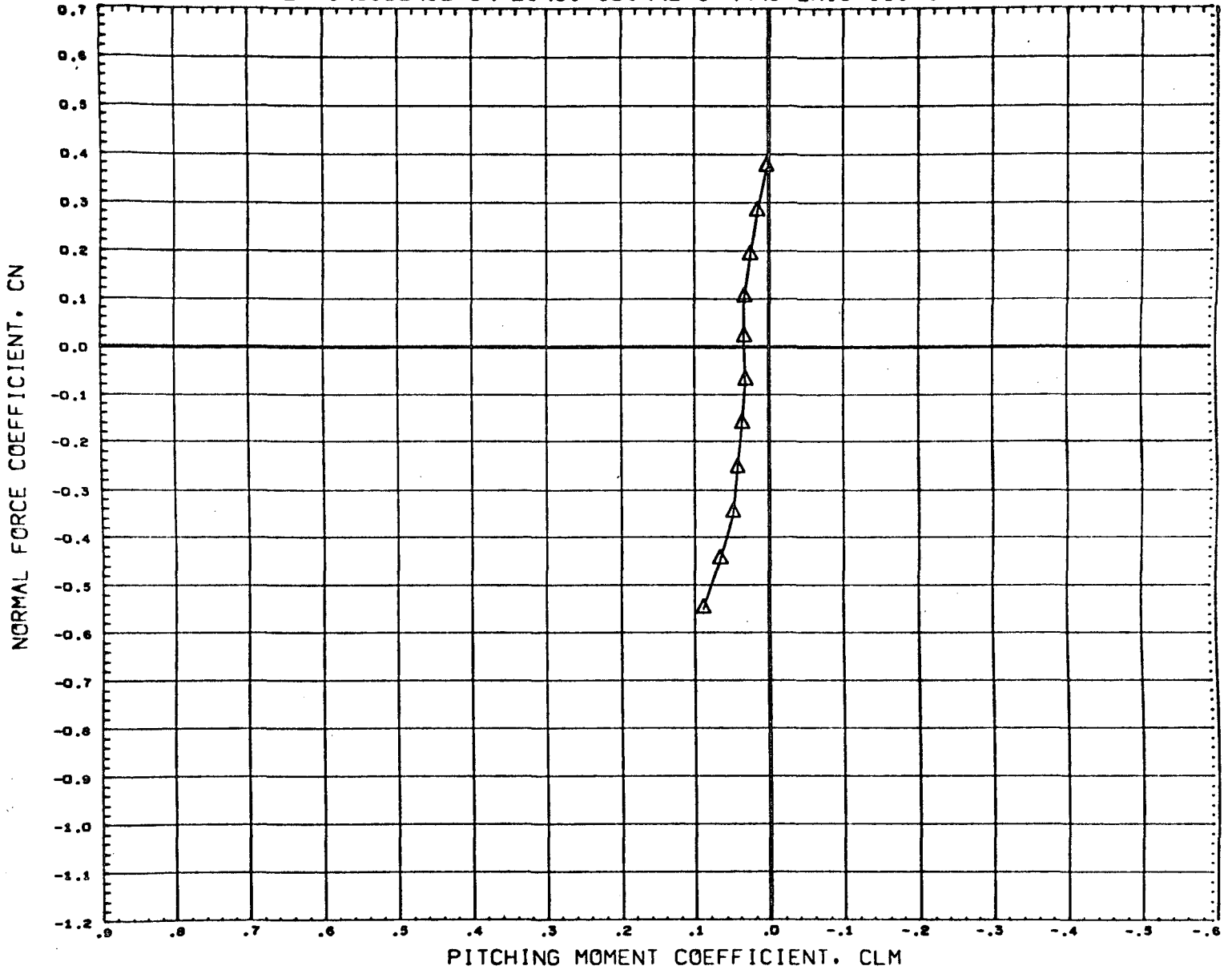
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

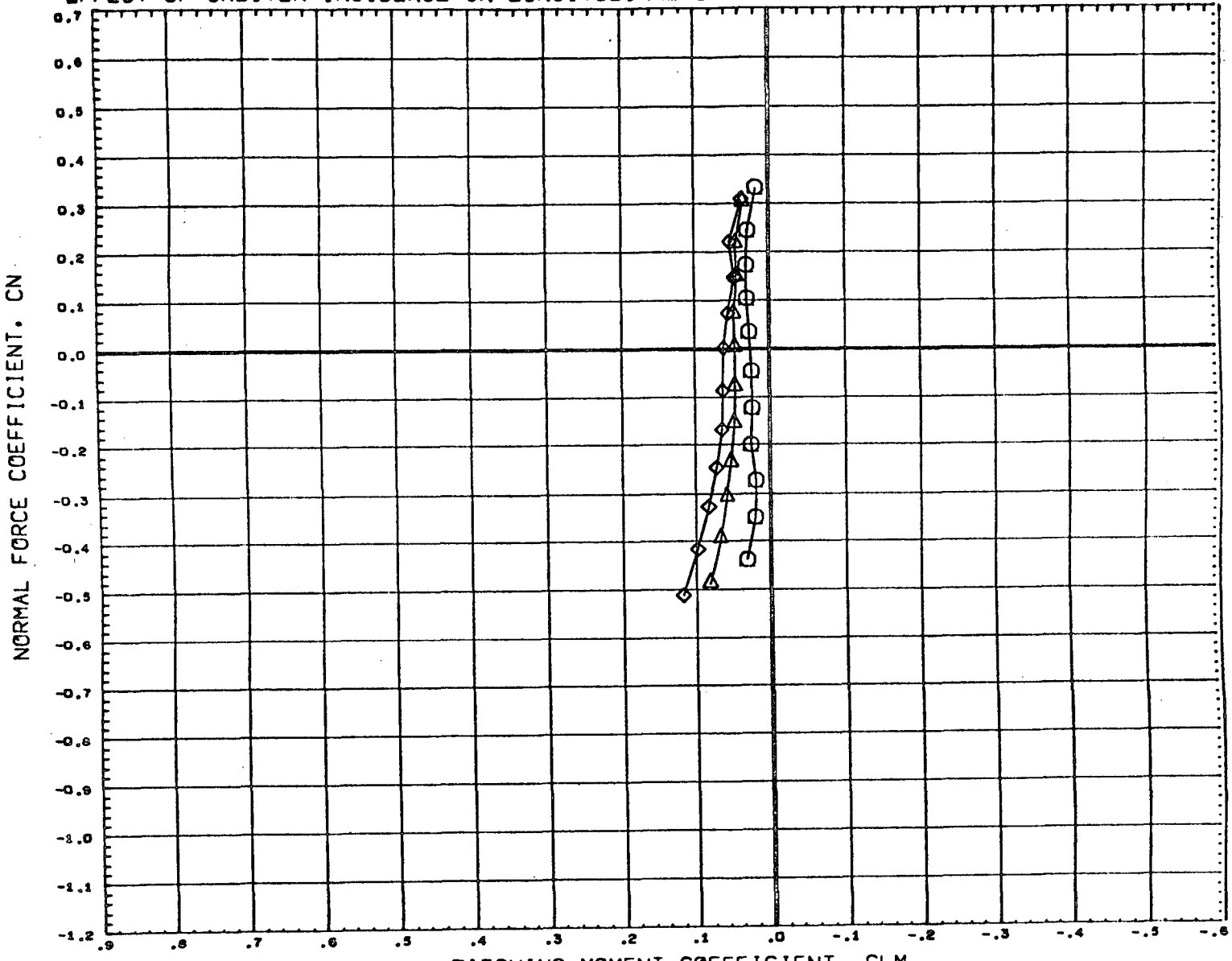
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71006)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 90 DEG)

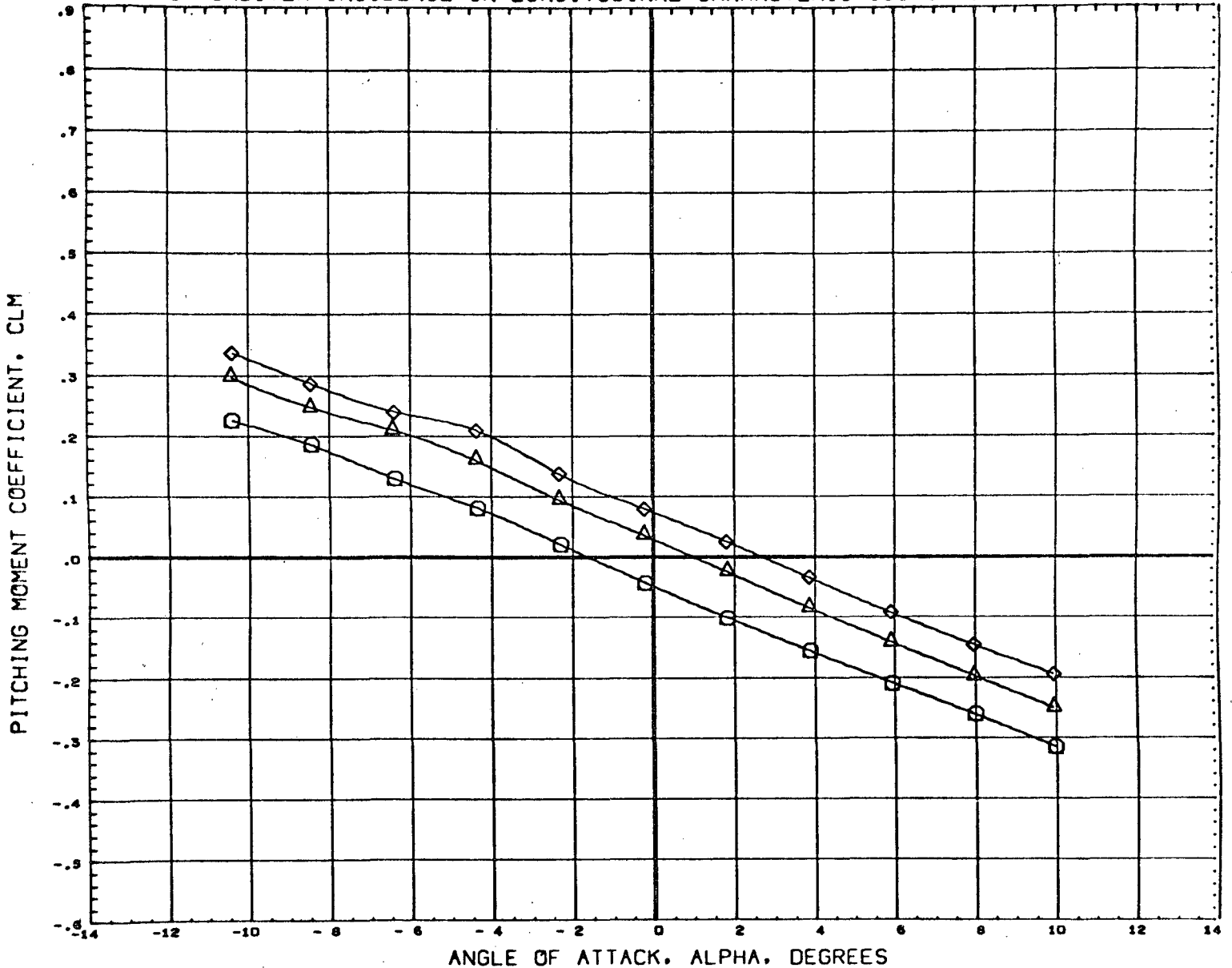


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0260 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96



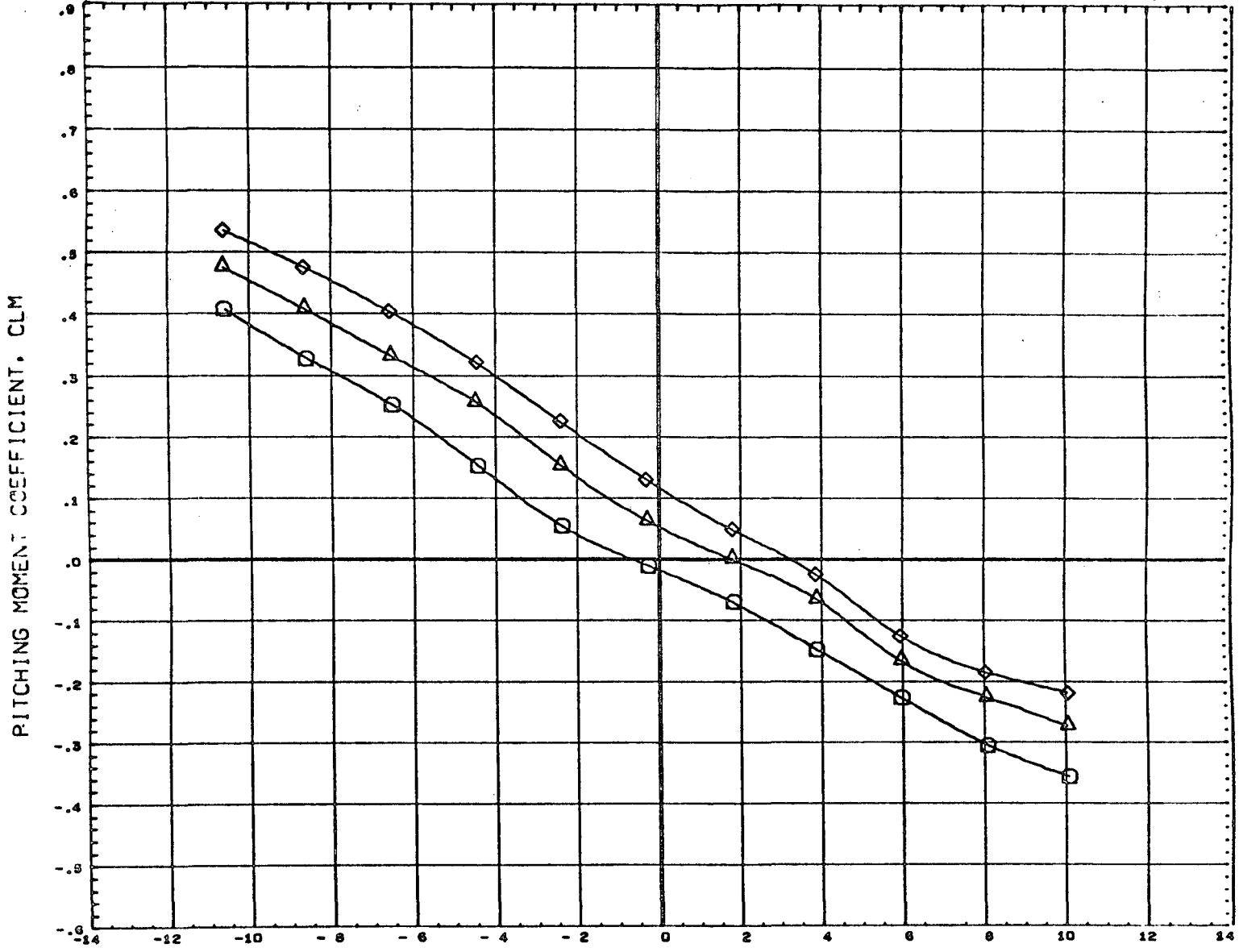
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

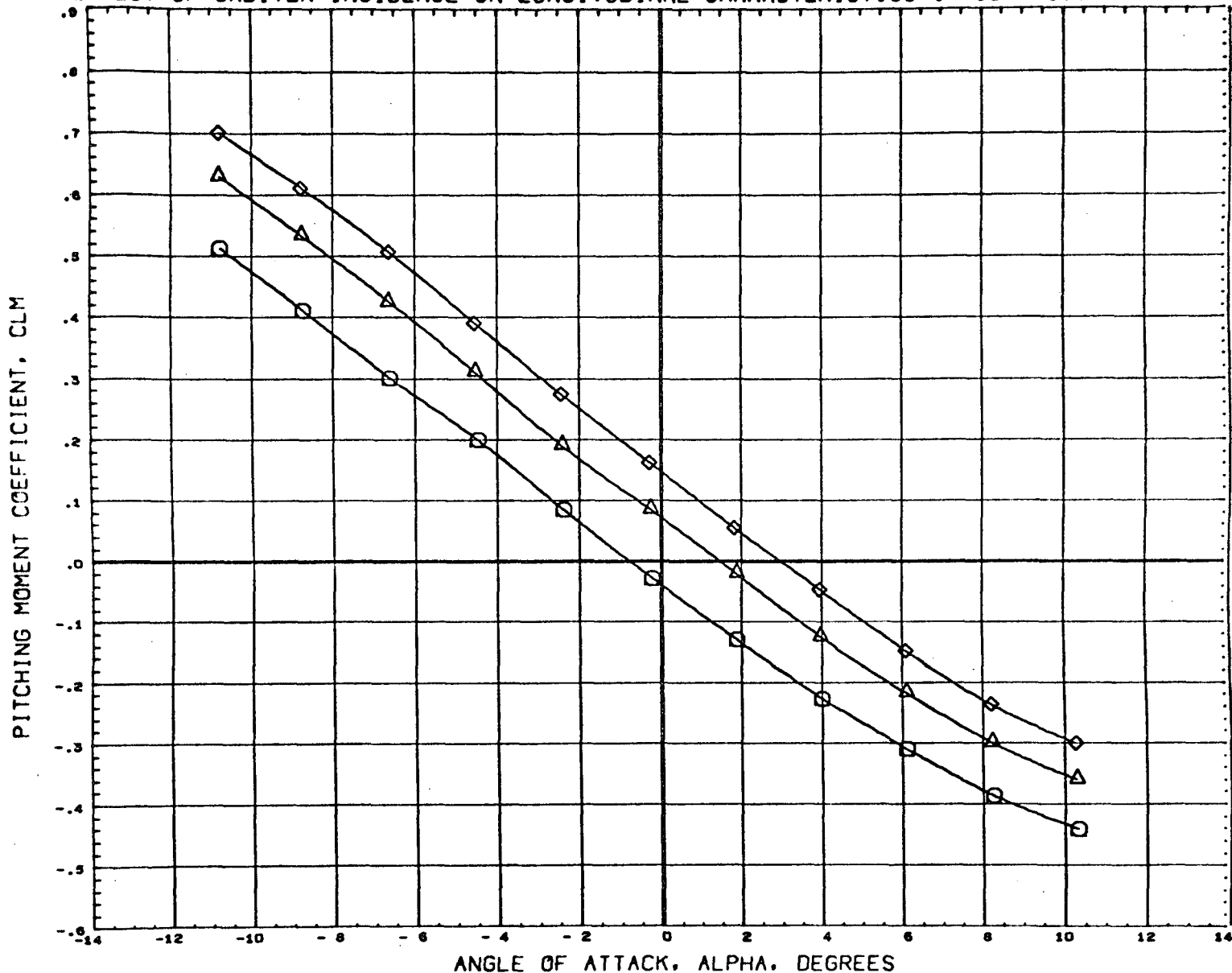
EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 sq. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

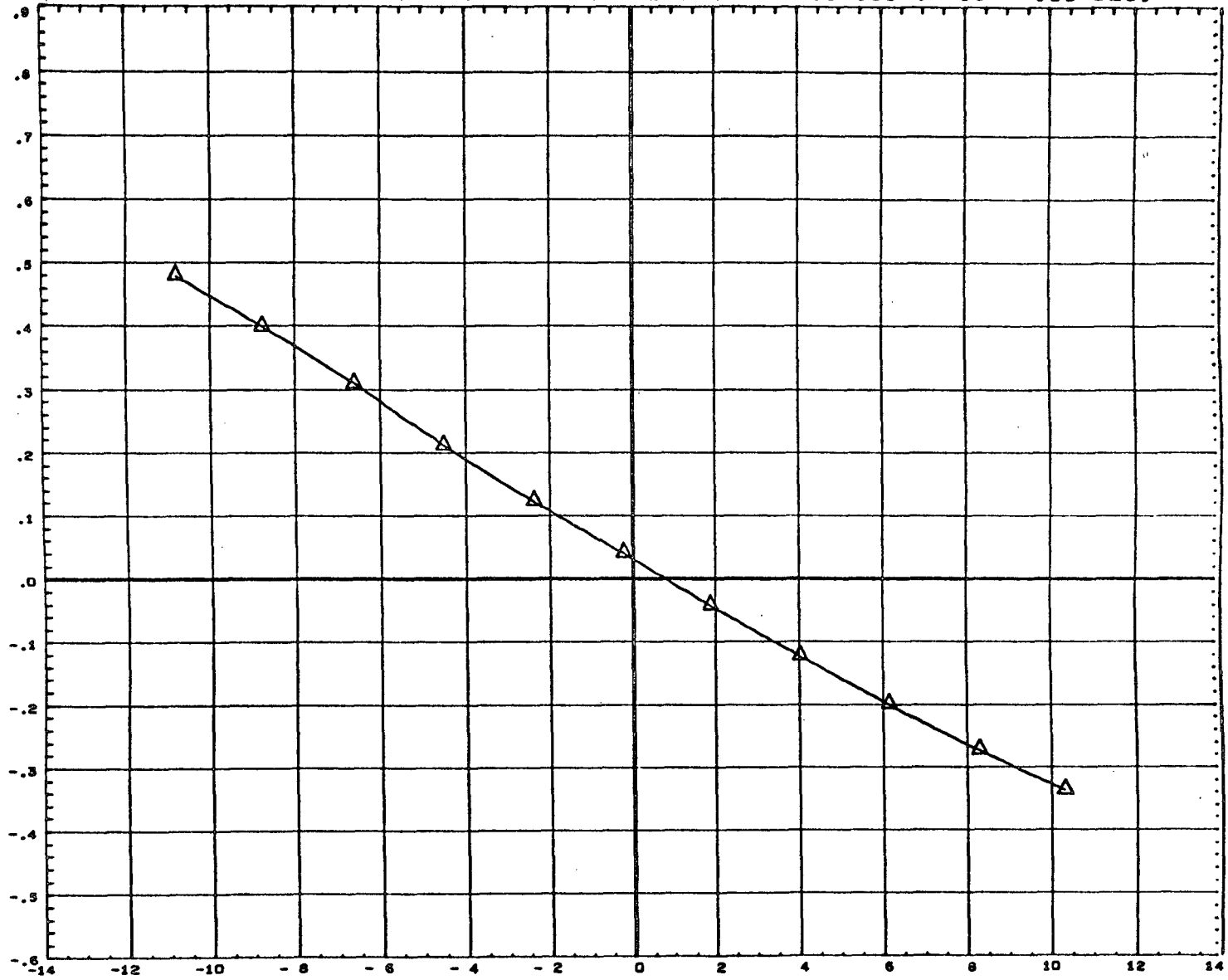


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

PITCHING MOMENT COEFFICIENT, CLM



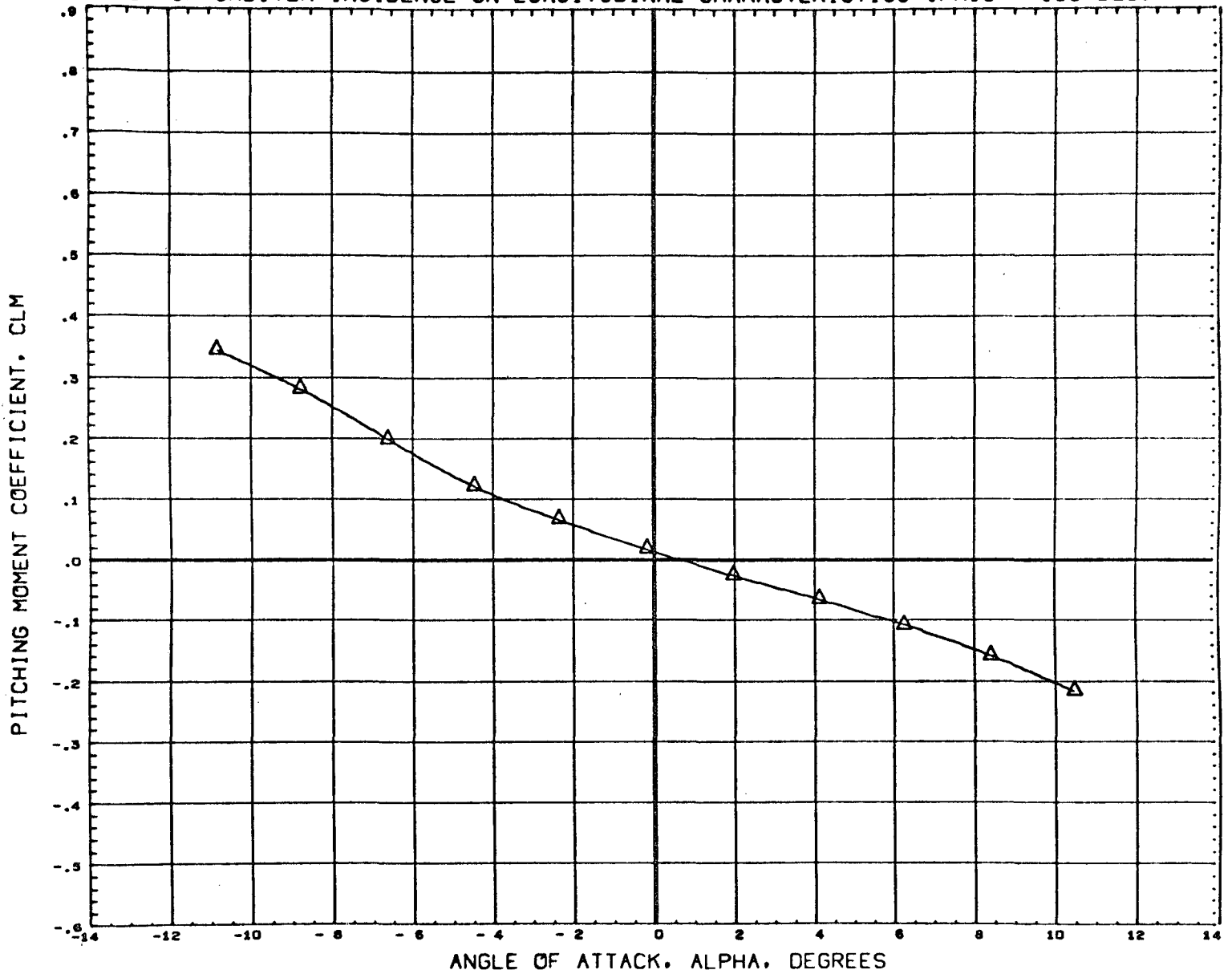
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.46

PAGE 208

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

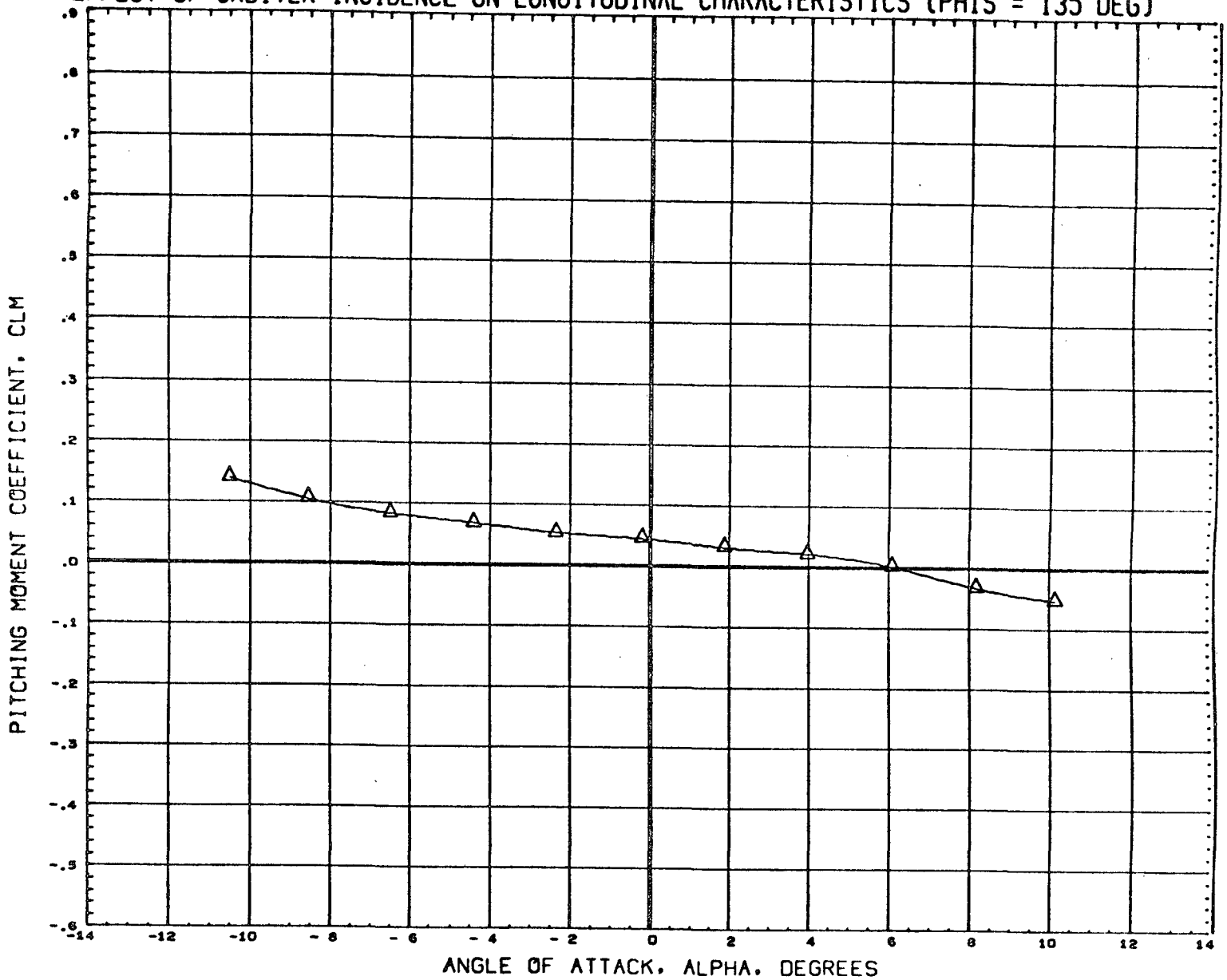


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(871008)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(871009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.97

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL    CONFIGURATION DESCRIPTION

(871007)    ○    DATA NOT AVAILABLE FOR ALL CONDITIONS

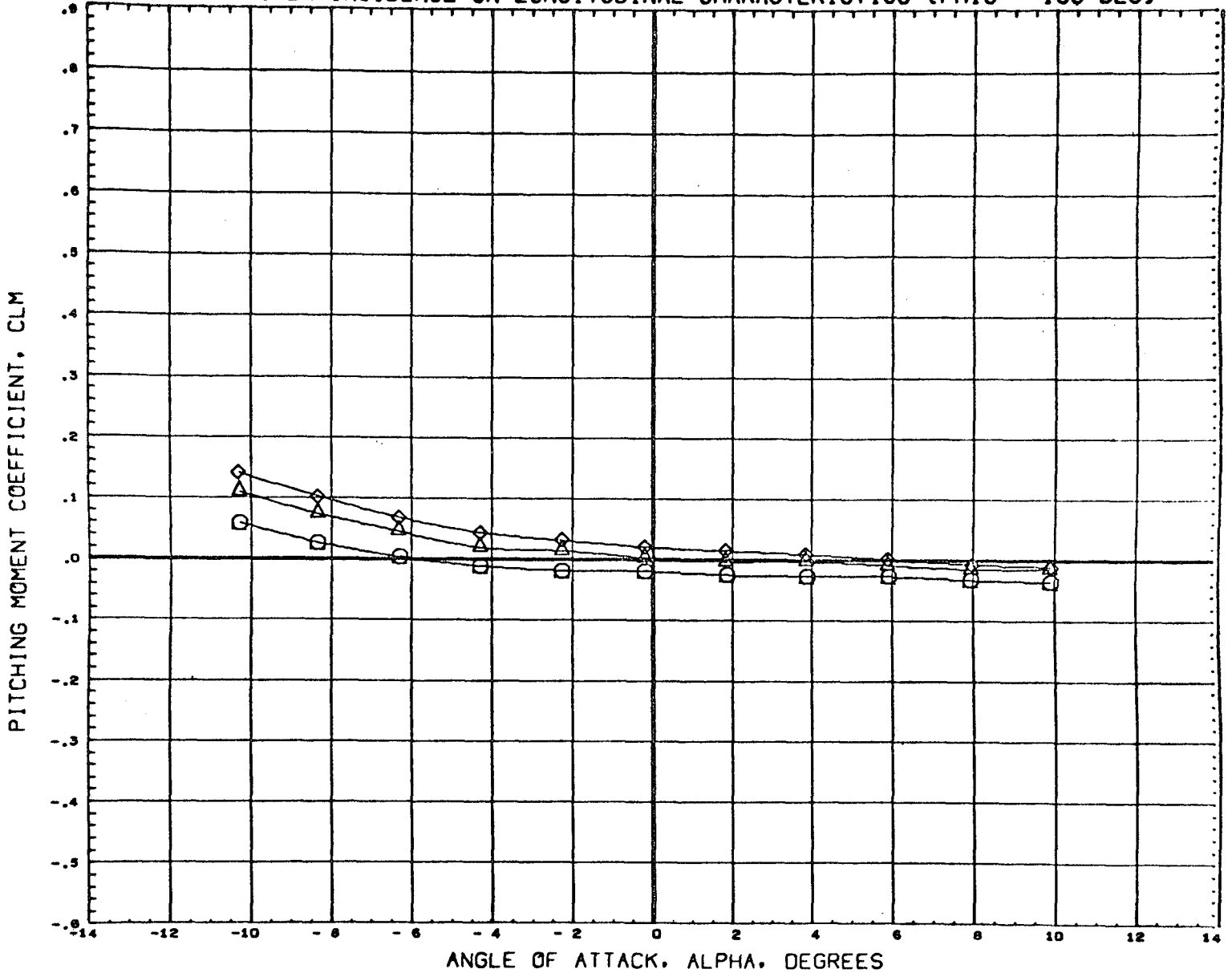
(871008)    △    MSFC TWT 544 LAUNCH VEHICLE STUDIES    T101S1

(871009)    ◇    DATA NOT AVAILABLE FOR ALL CONDITIONS

ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
0.000	135.000	0.000	0.000	SREF	7.8800 SQ. IN
-1.500	135.000	0.000	0.000	LREF	2.0260 IN.
-3.000	135.000	0.000	0.000	BREF	4.4600 IN.
				XMRP	3.3600 IN.
				YMRP	0.0000 IN.
				ZMRP	0.2480 IN.
				SCALE	0.0040 SCALE

MACH            3.48

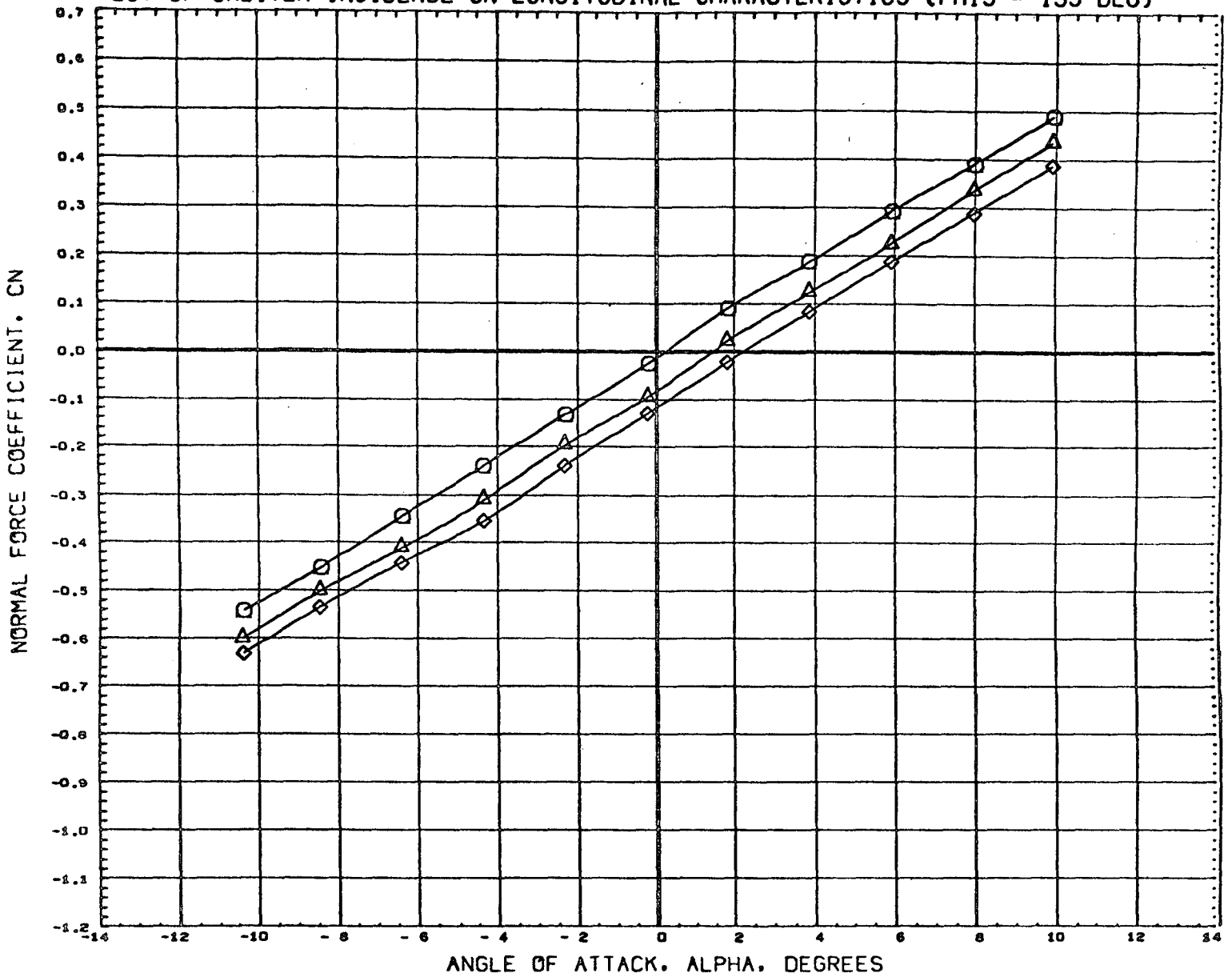
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

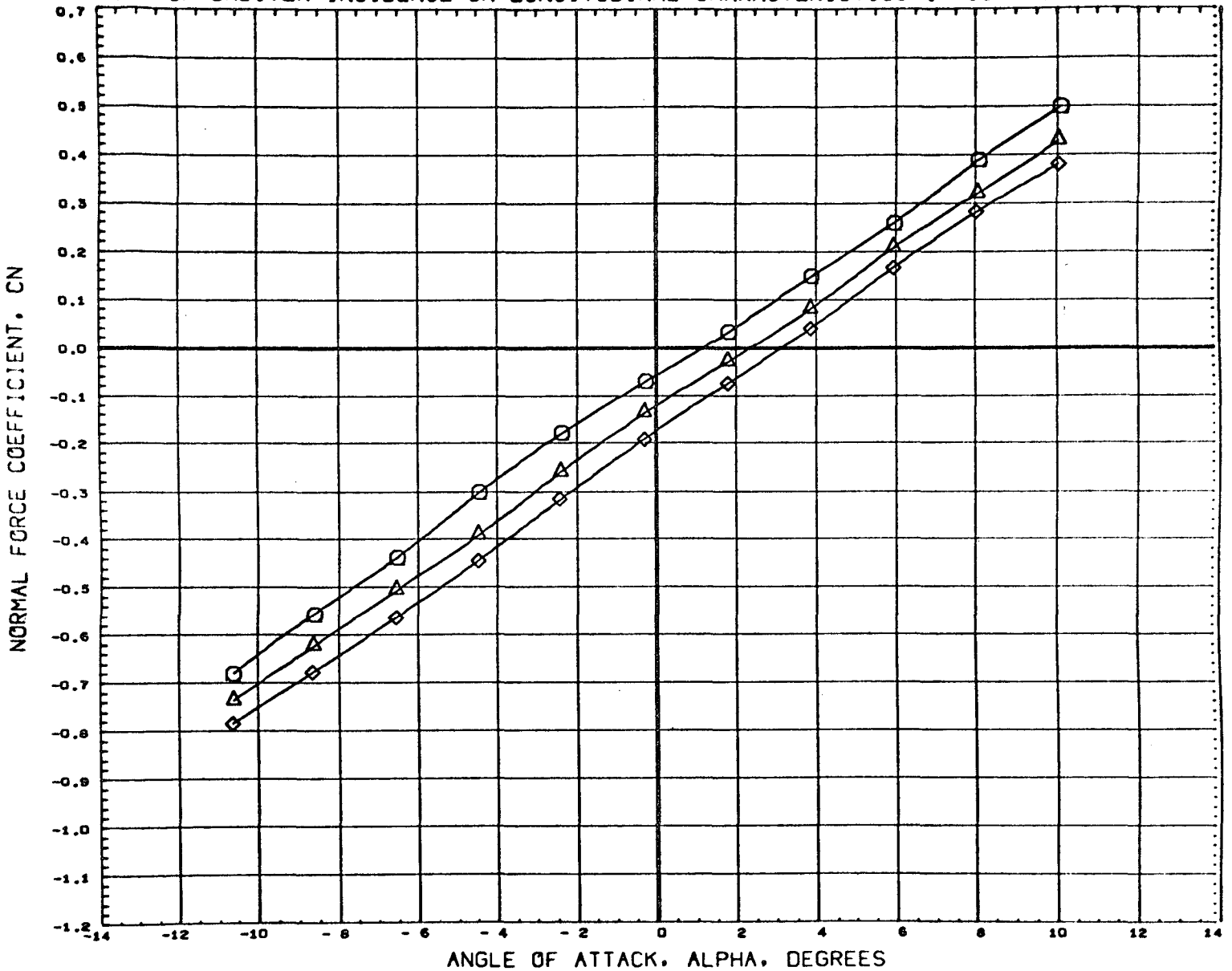


DATA SET SYMBO	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60



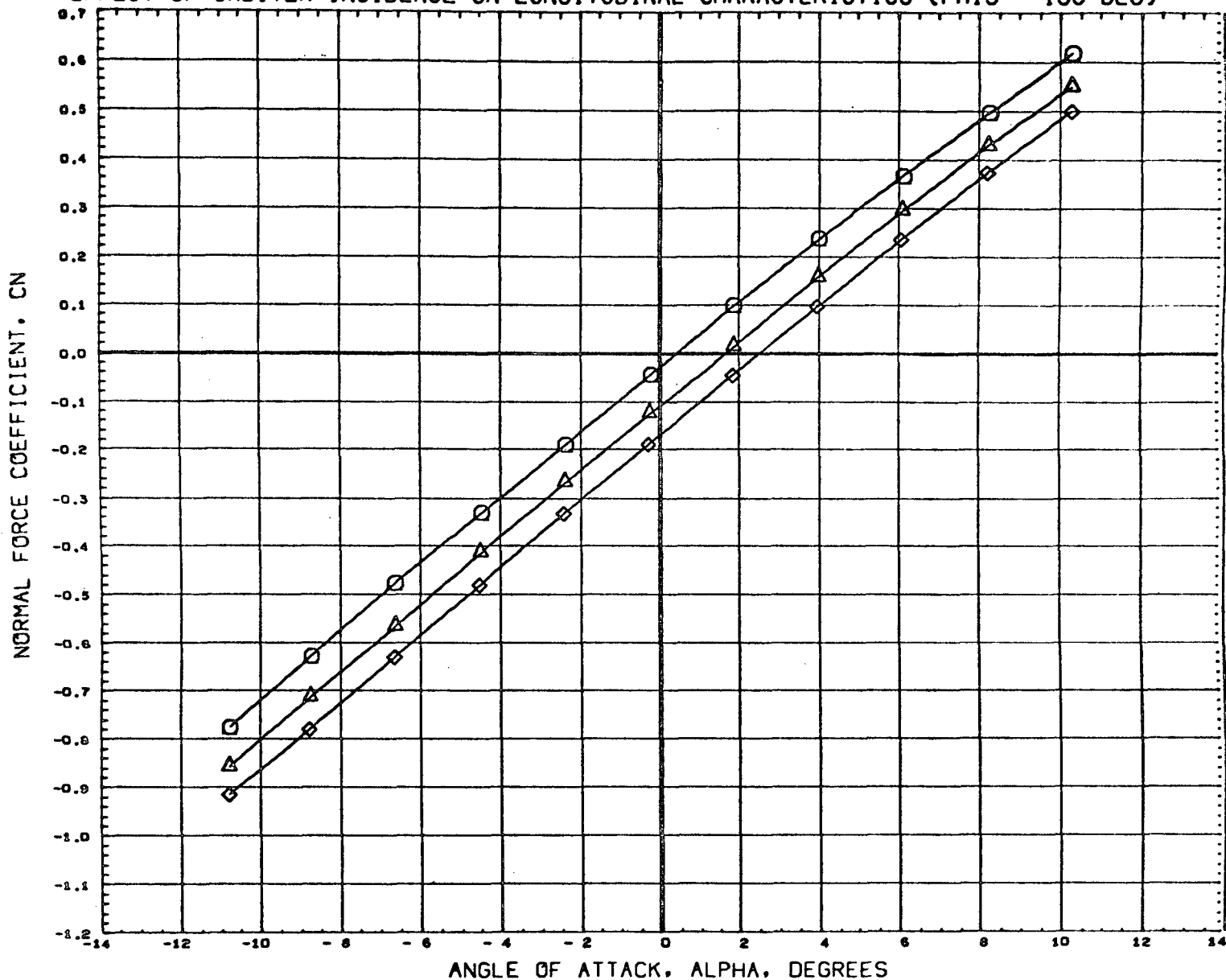
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1O1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	135.000	0.000	0.000	LREF 2.0260 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .90

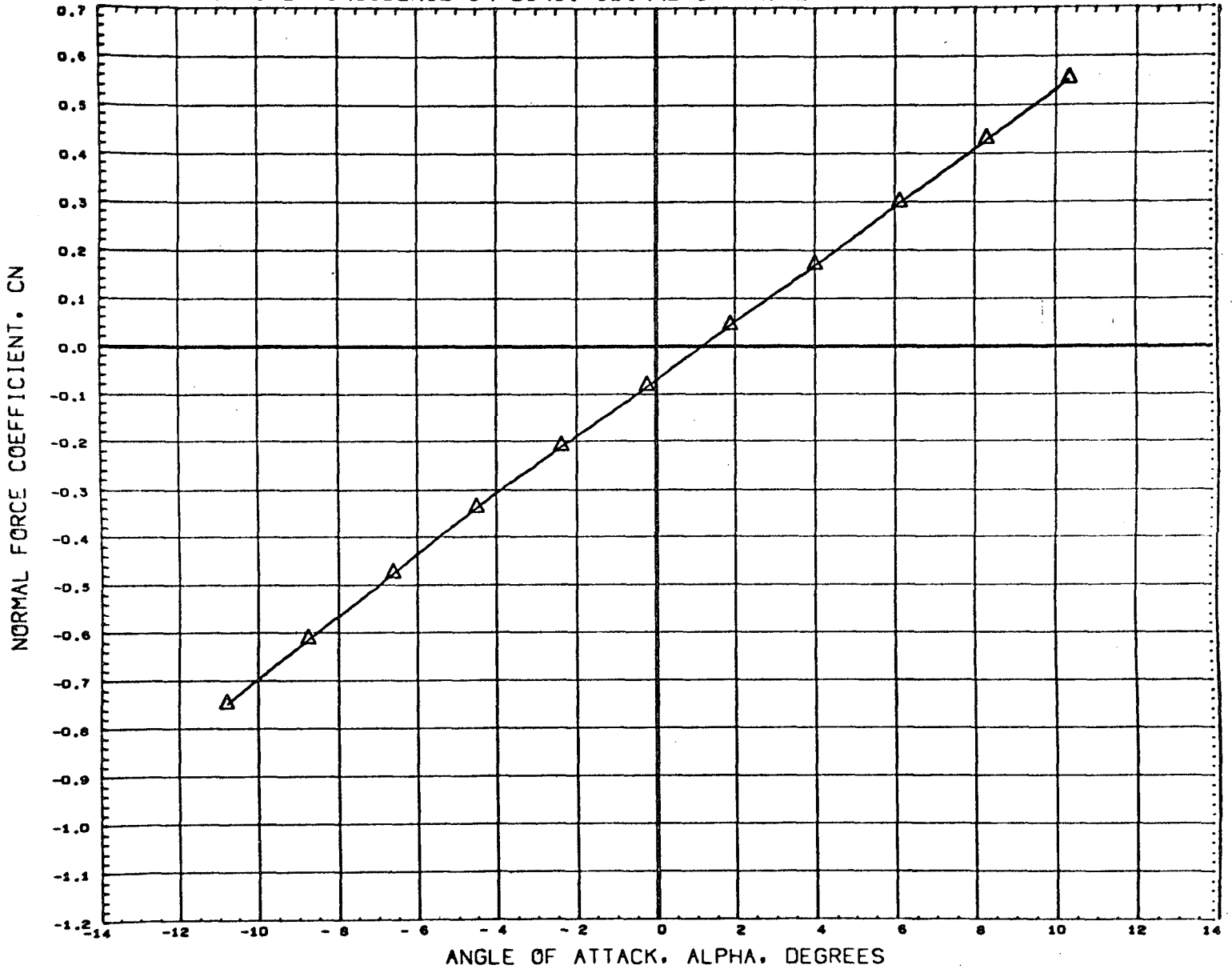
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0,000	135,000	0,000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1,500	135,000	0,000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3,000	135,000	0,000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

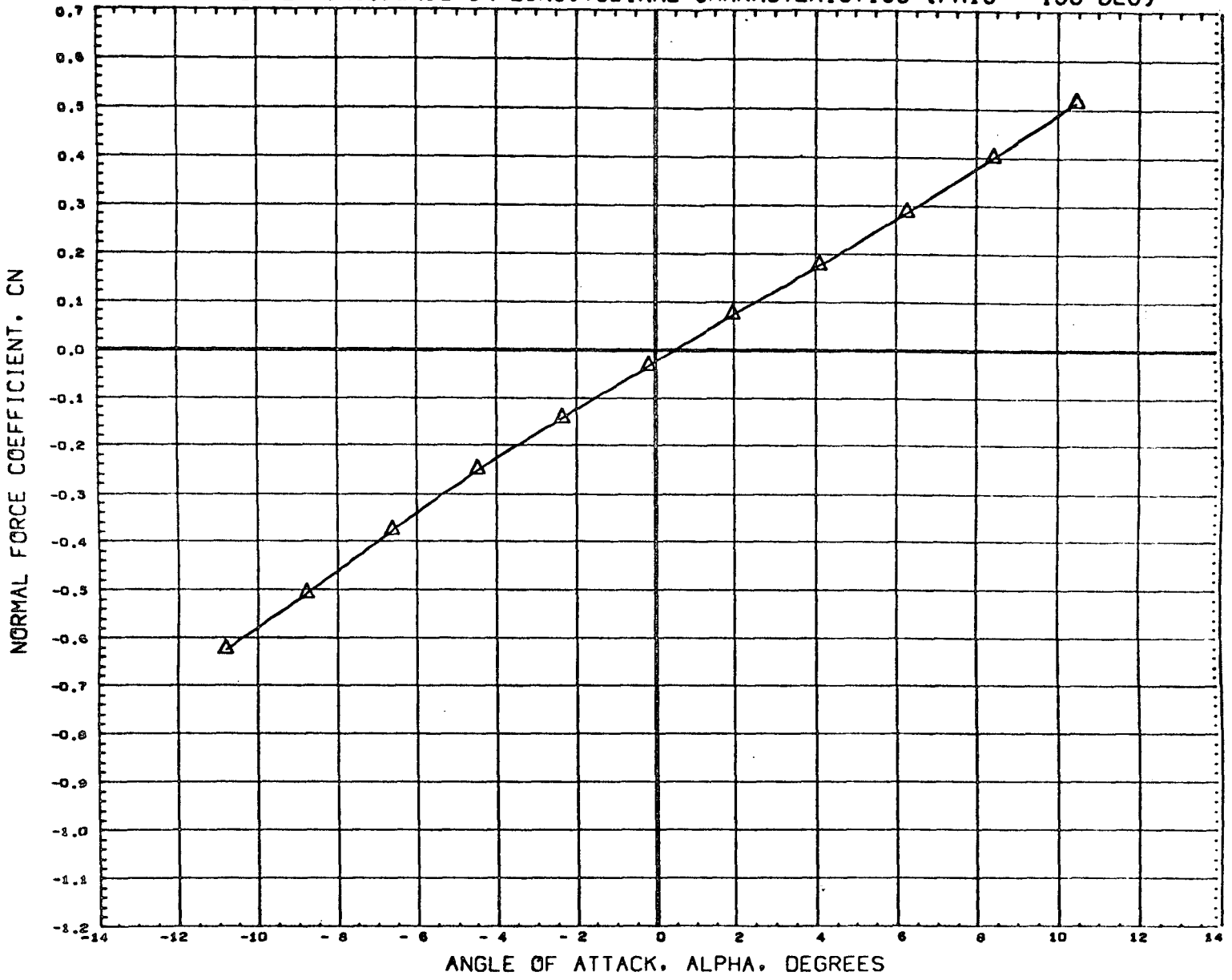


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(871007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF	7.8600 SQ. IN
(871008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF	2.0280 IN.
(871009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.46

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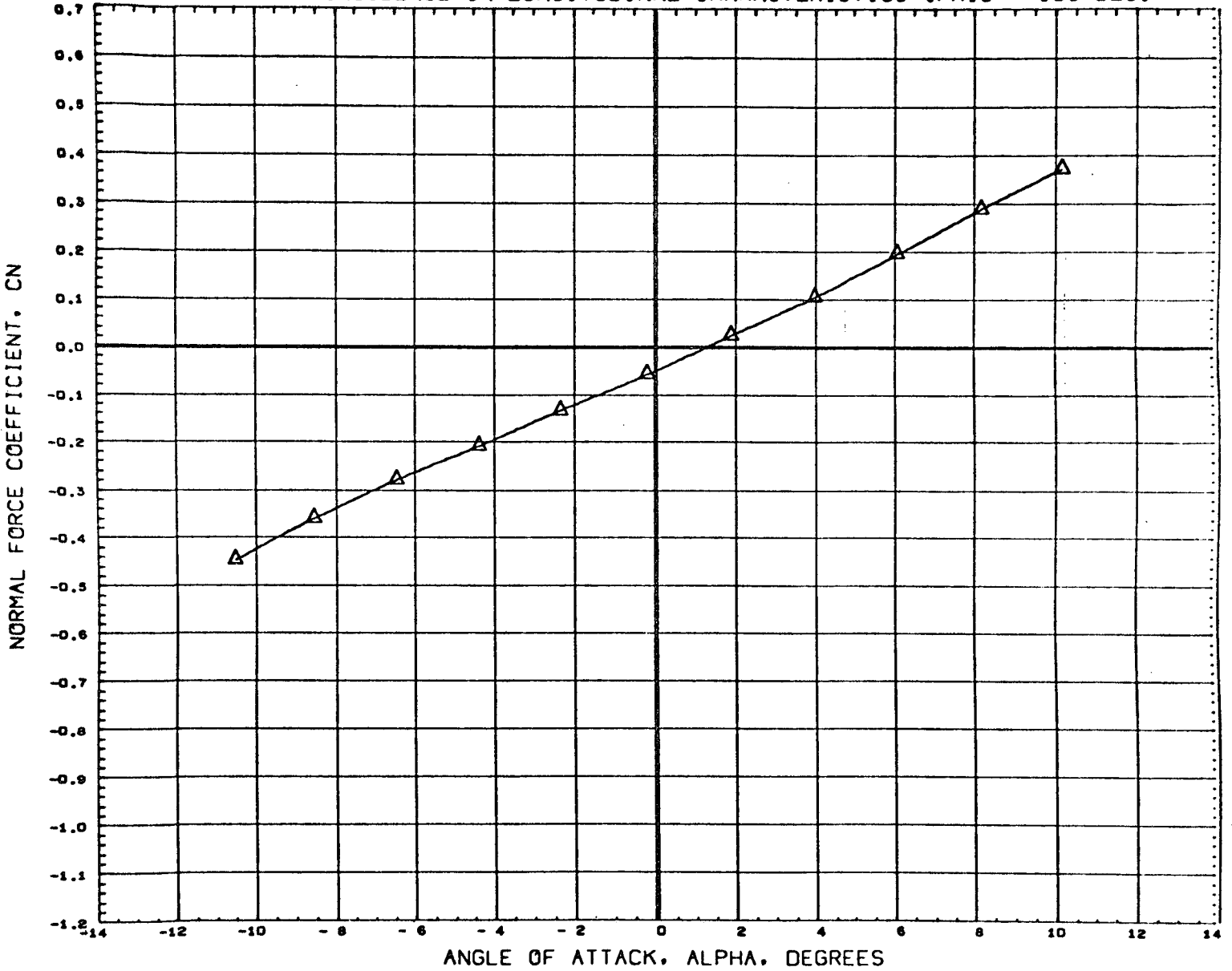
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

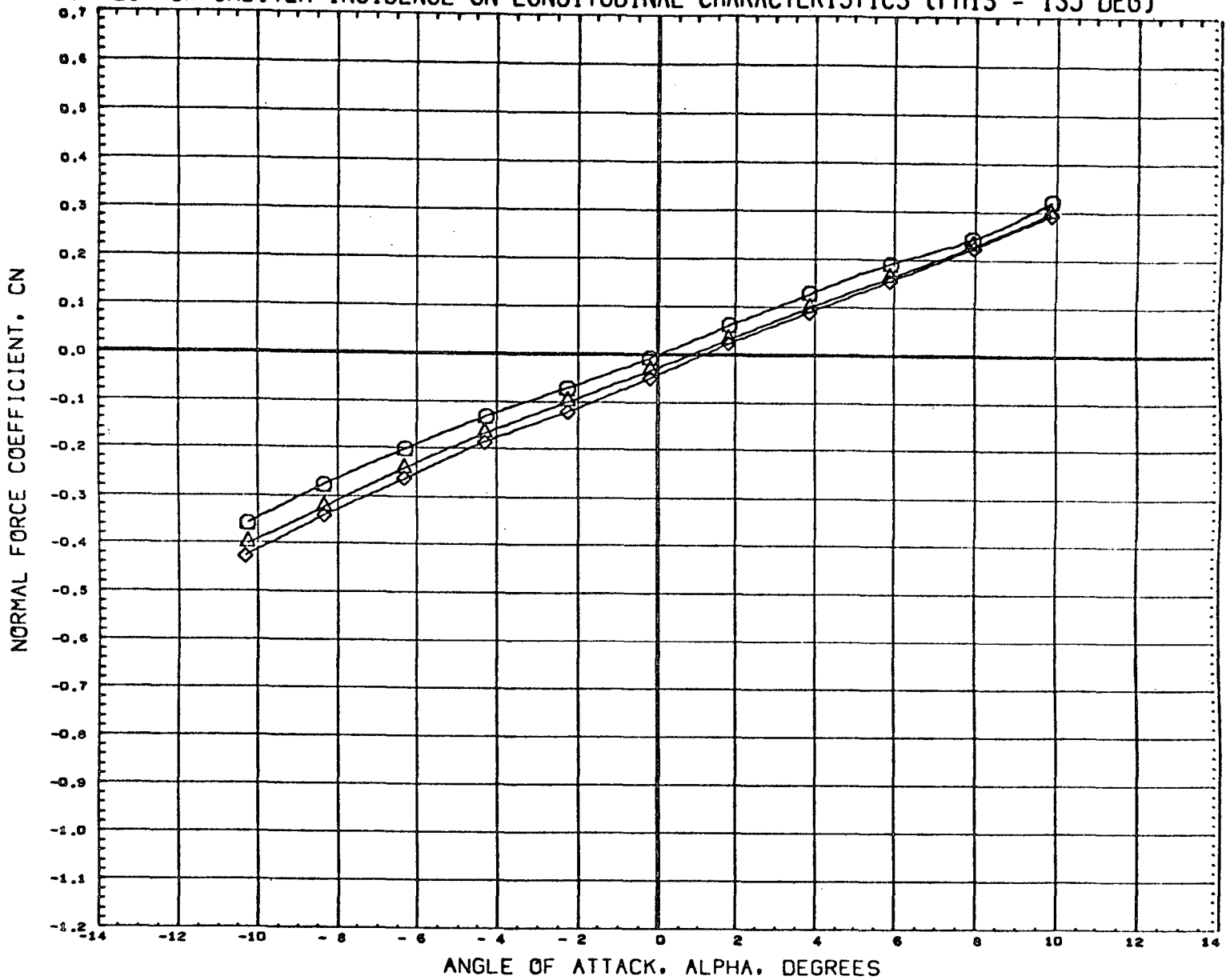


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BRFP 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

PAGE 217

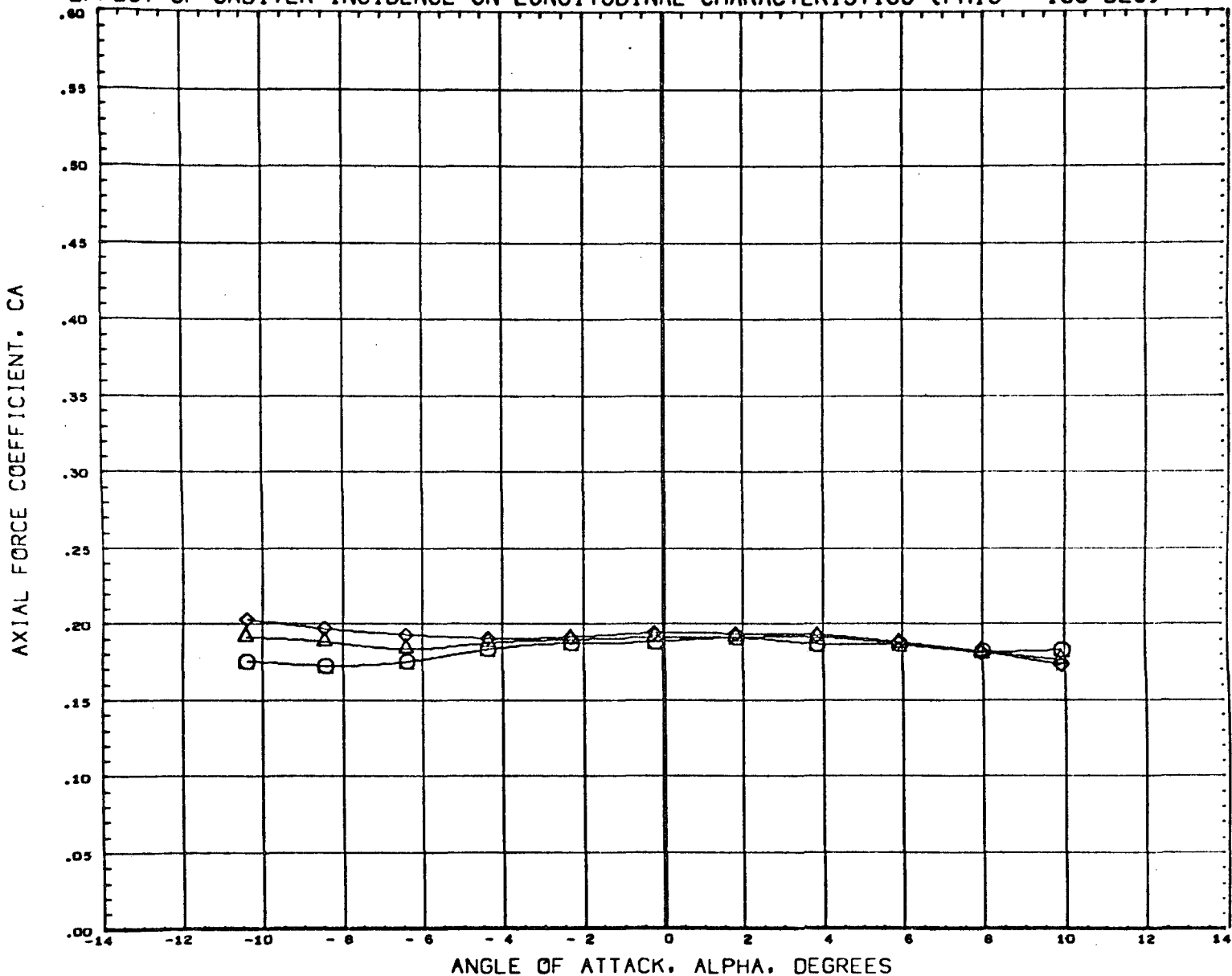
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	135.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

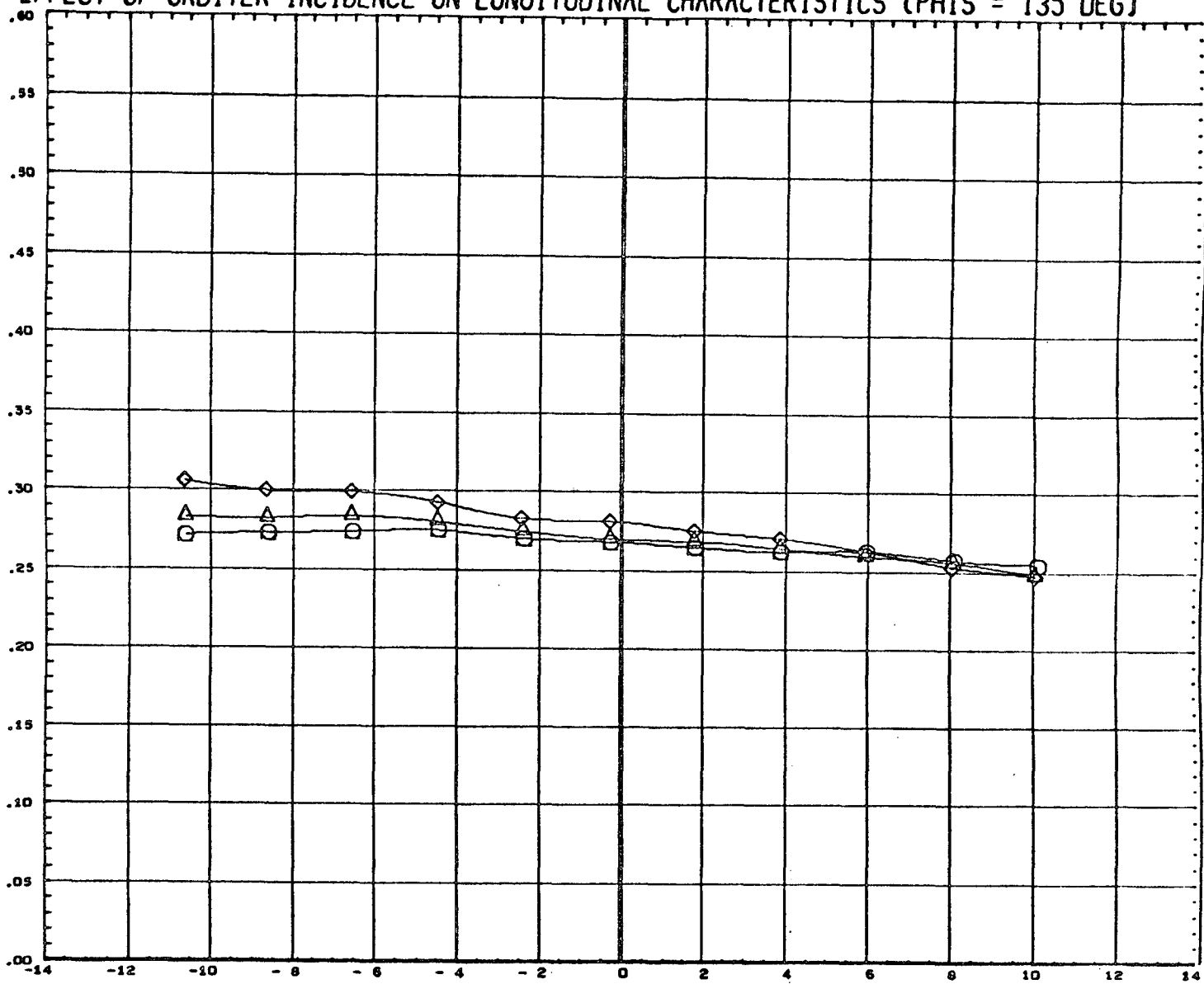


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .60

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

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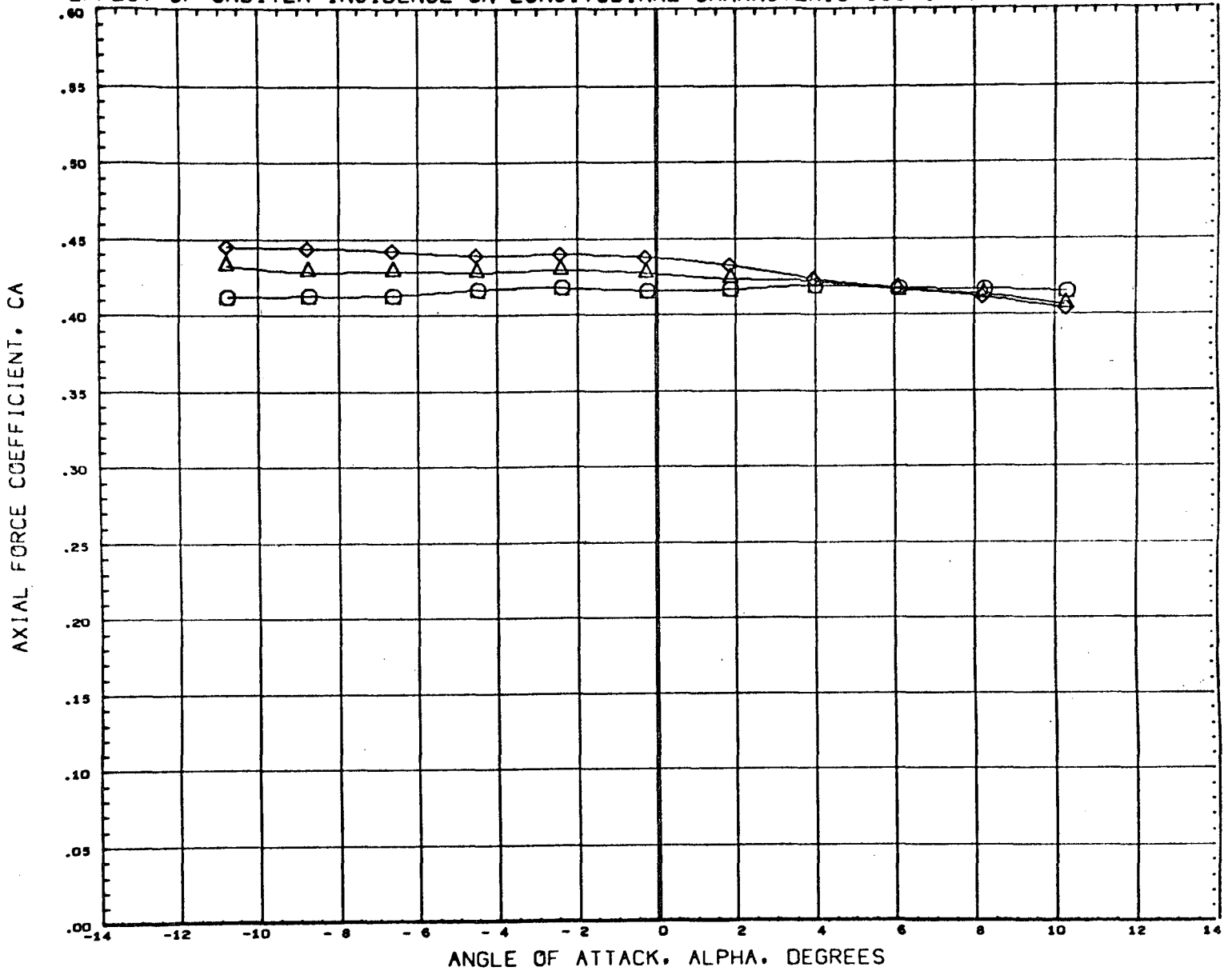
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIO1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90



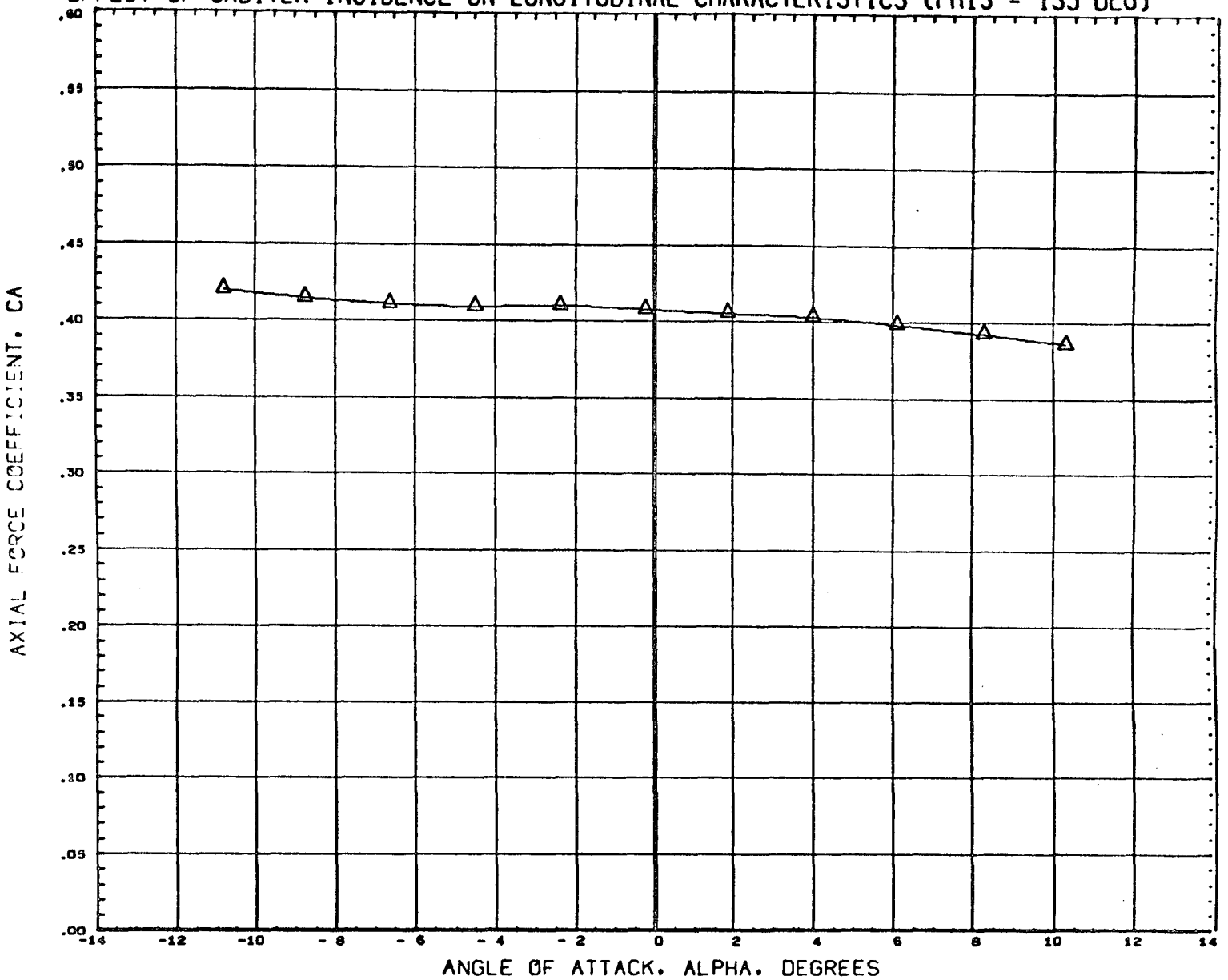
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

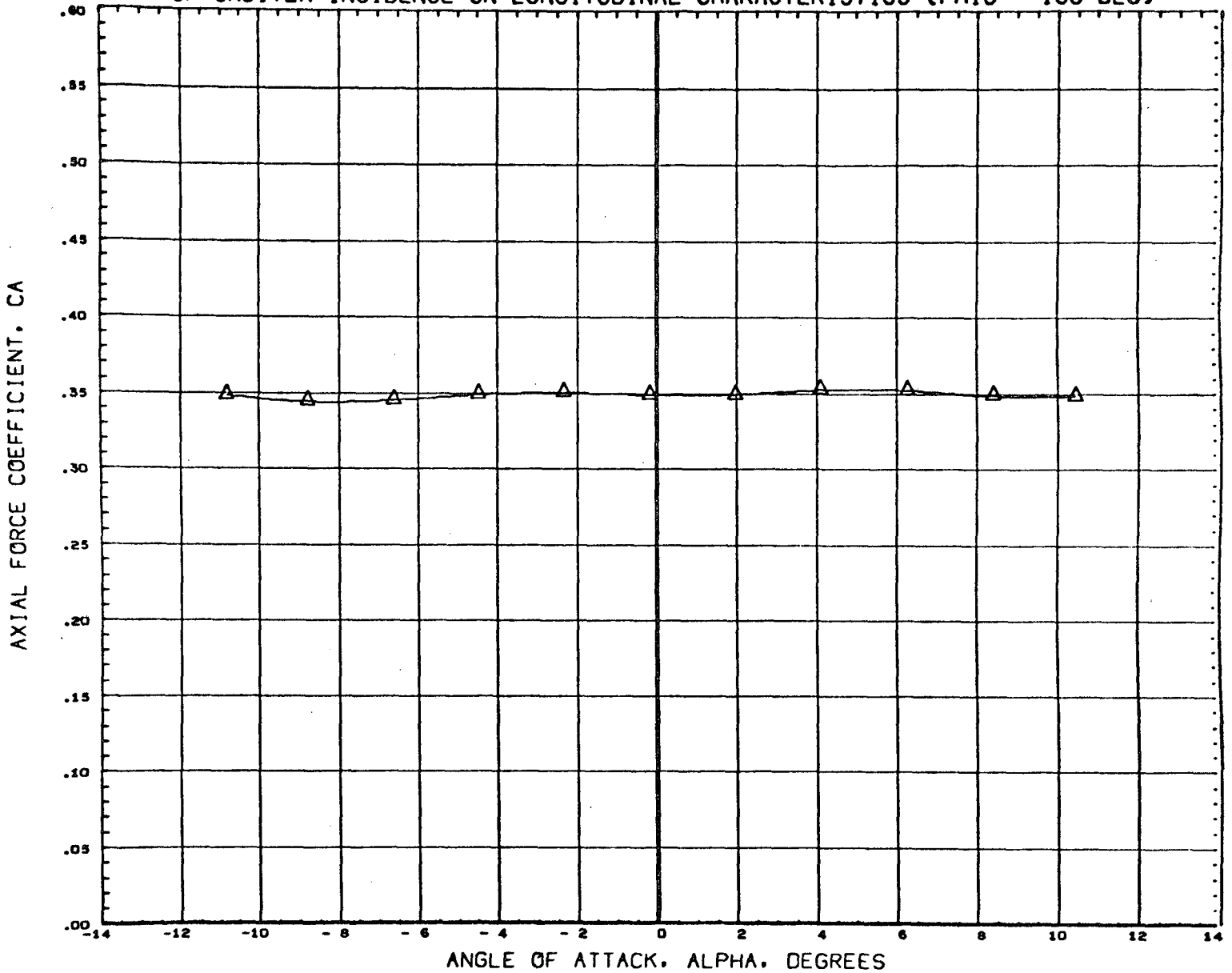
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.46

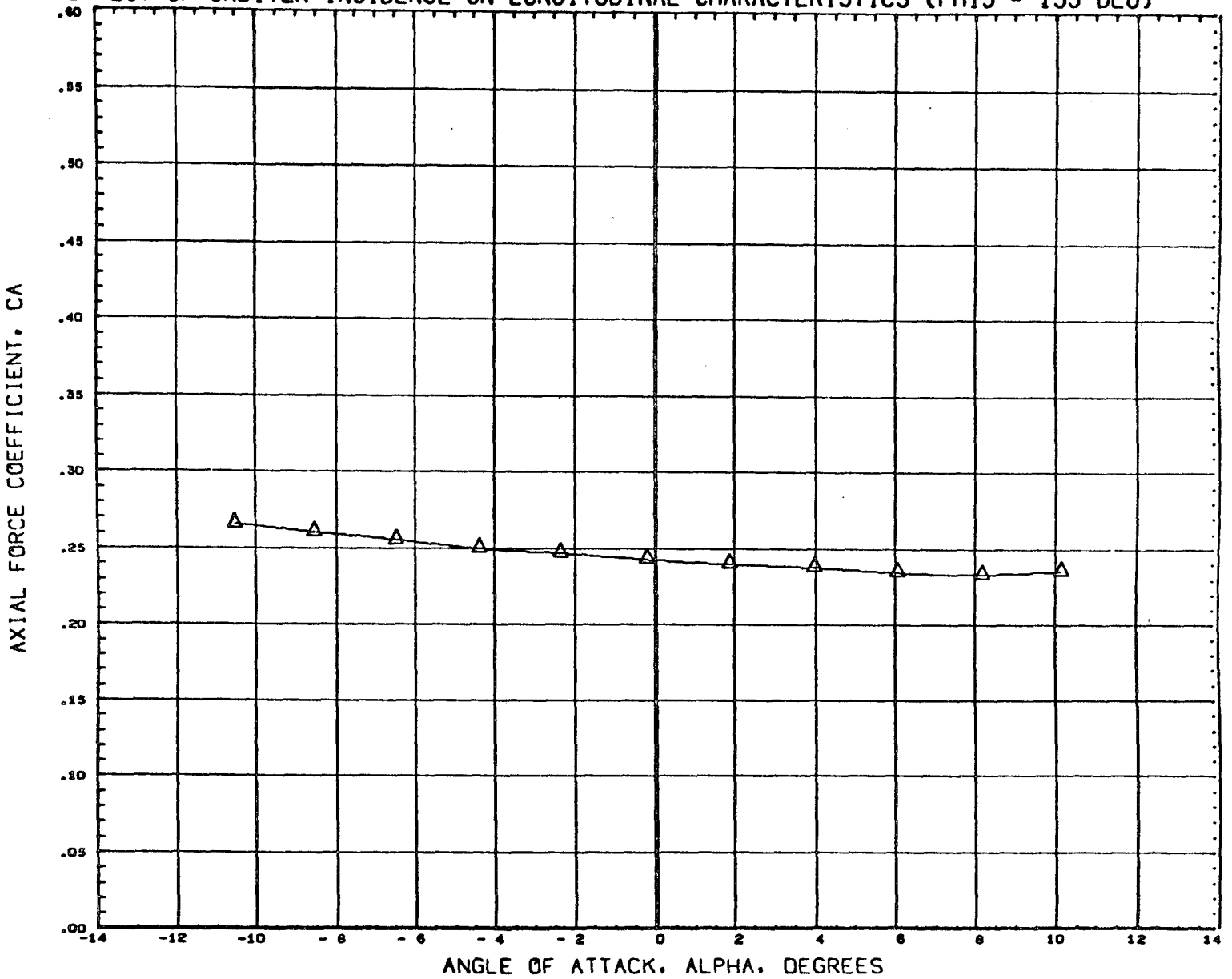
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(871008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(871009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

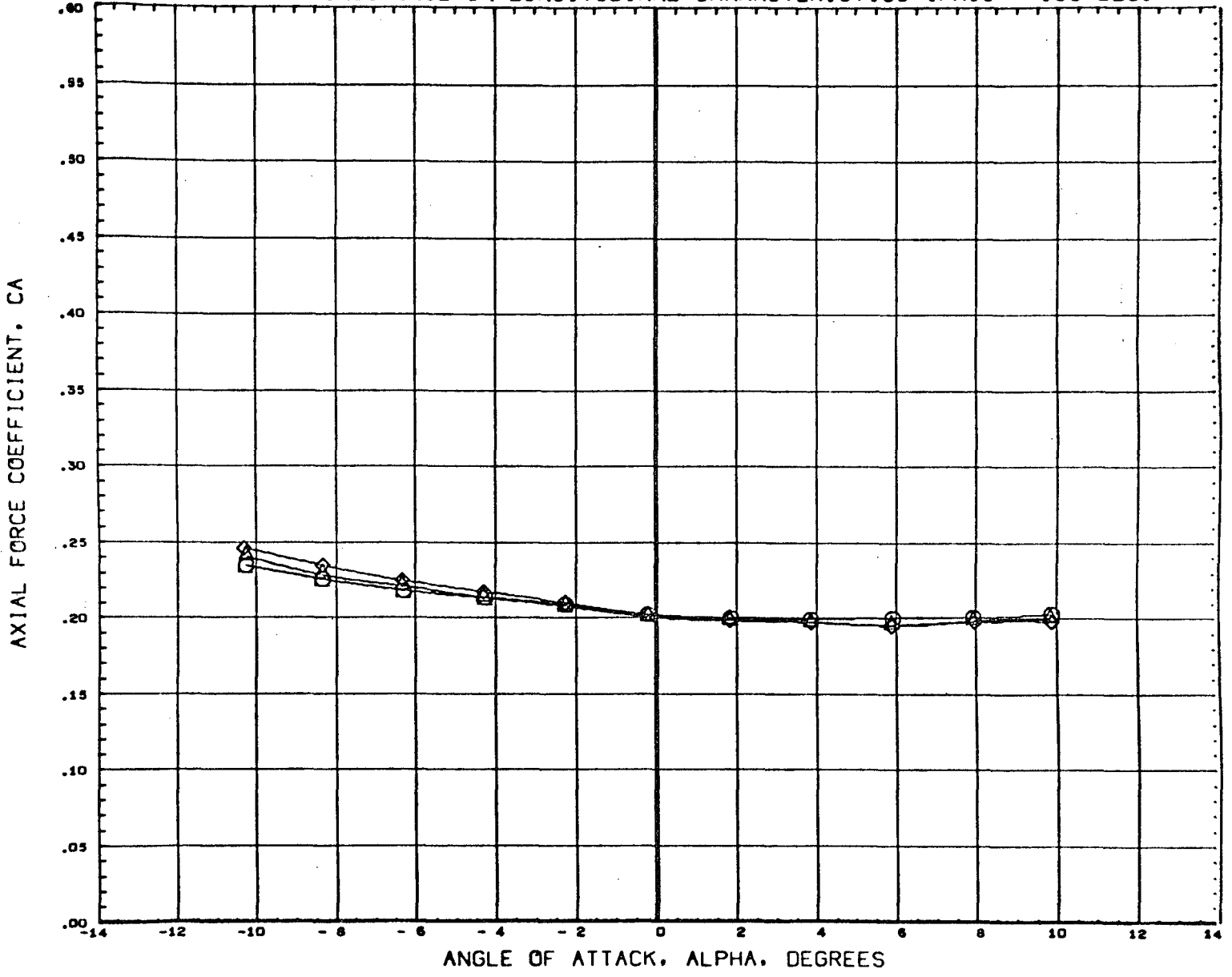


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0260 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

PAGE 224

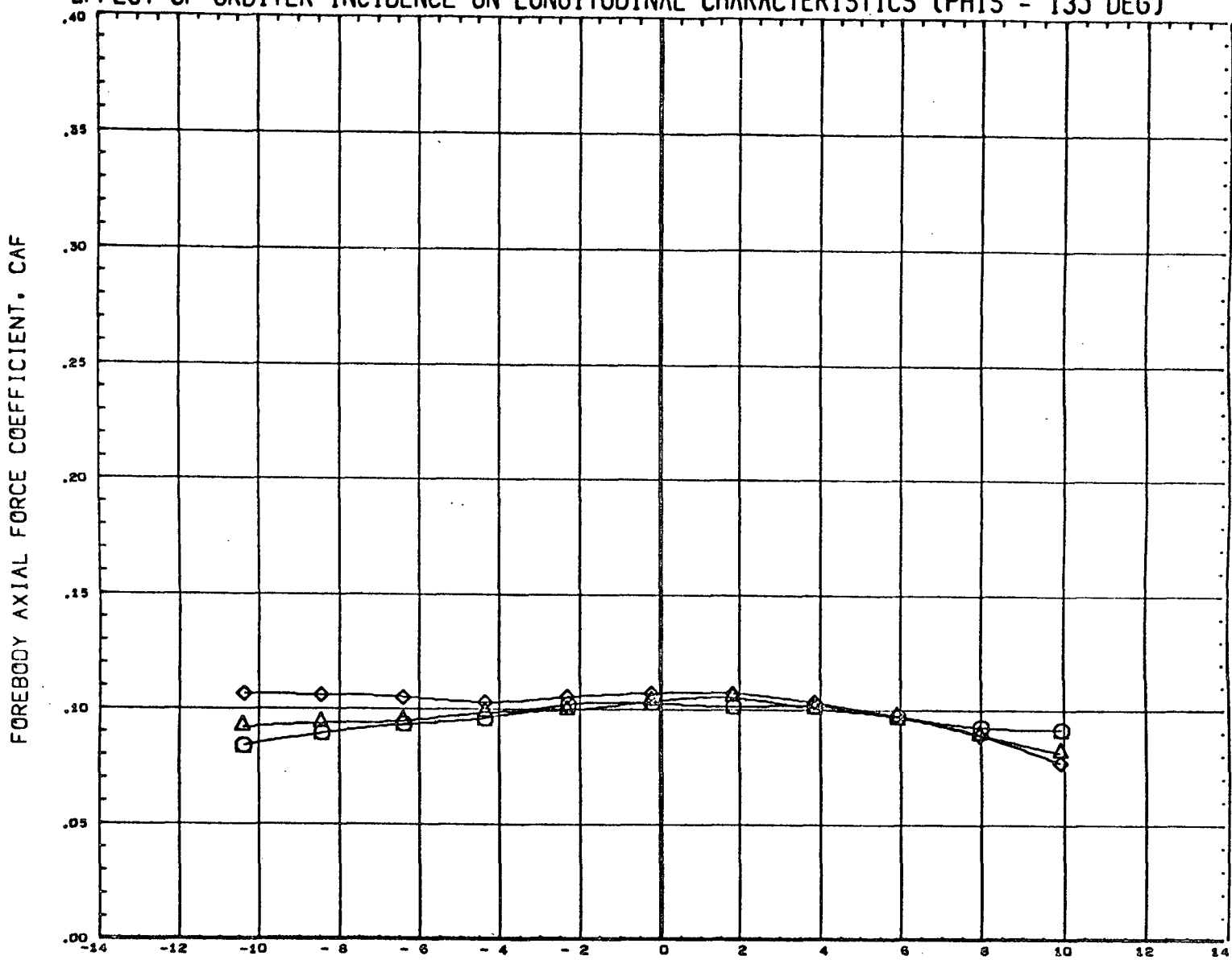
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

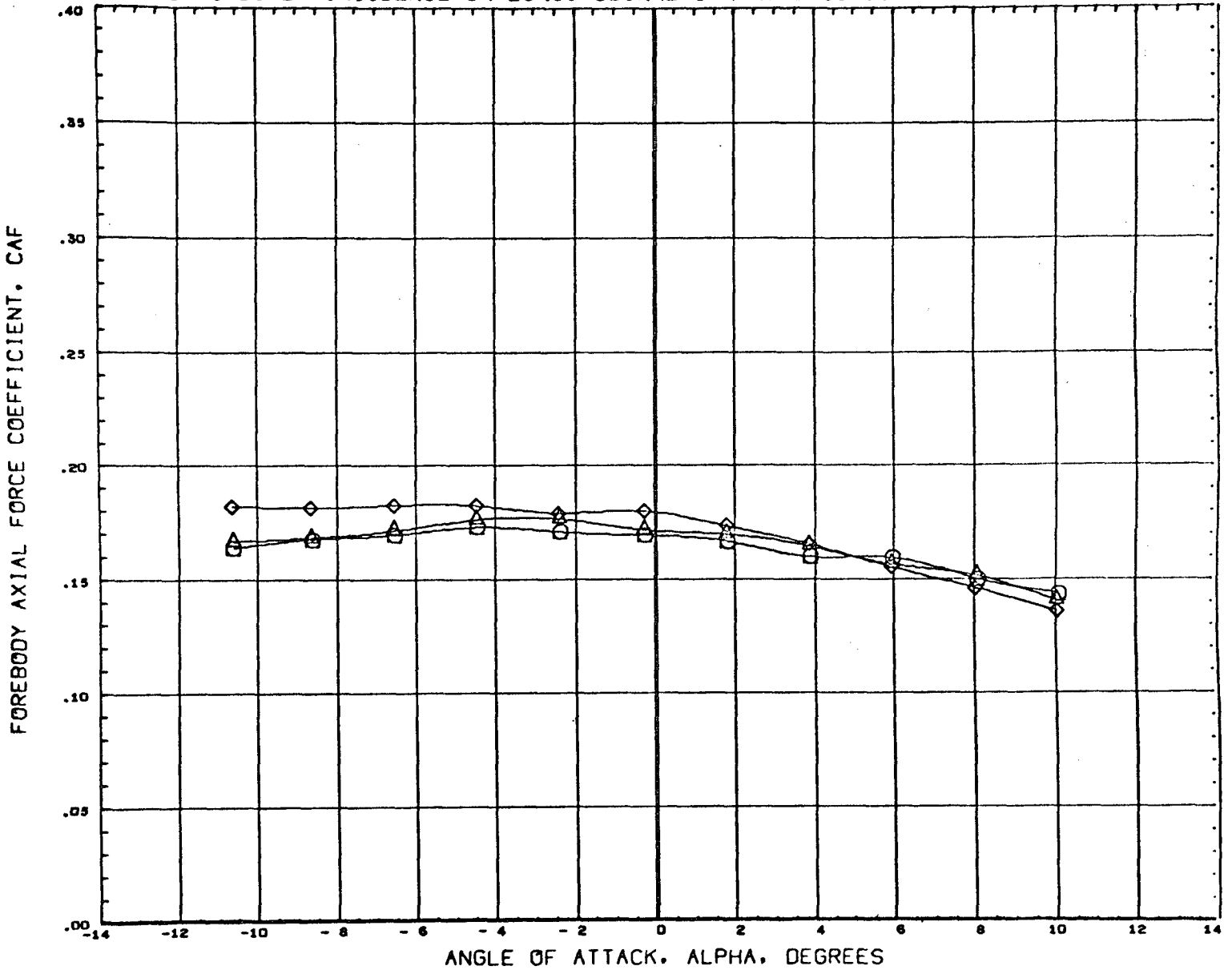
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	0.000	135.000	0.000	0.000	SREF 7.8800 30. IN
(871008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(871009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

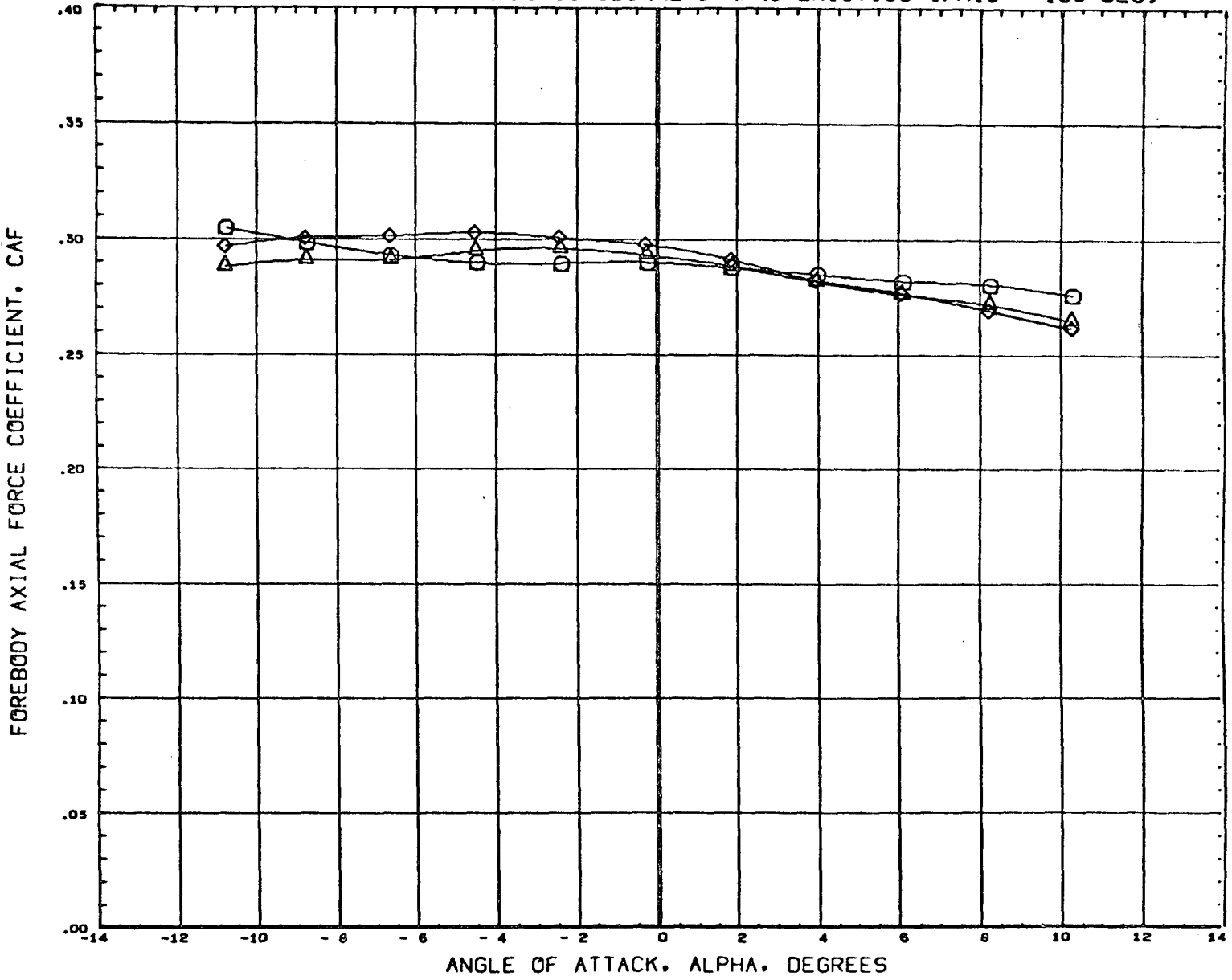
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.300	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

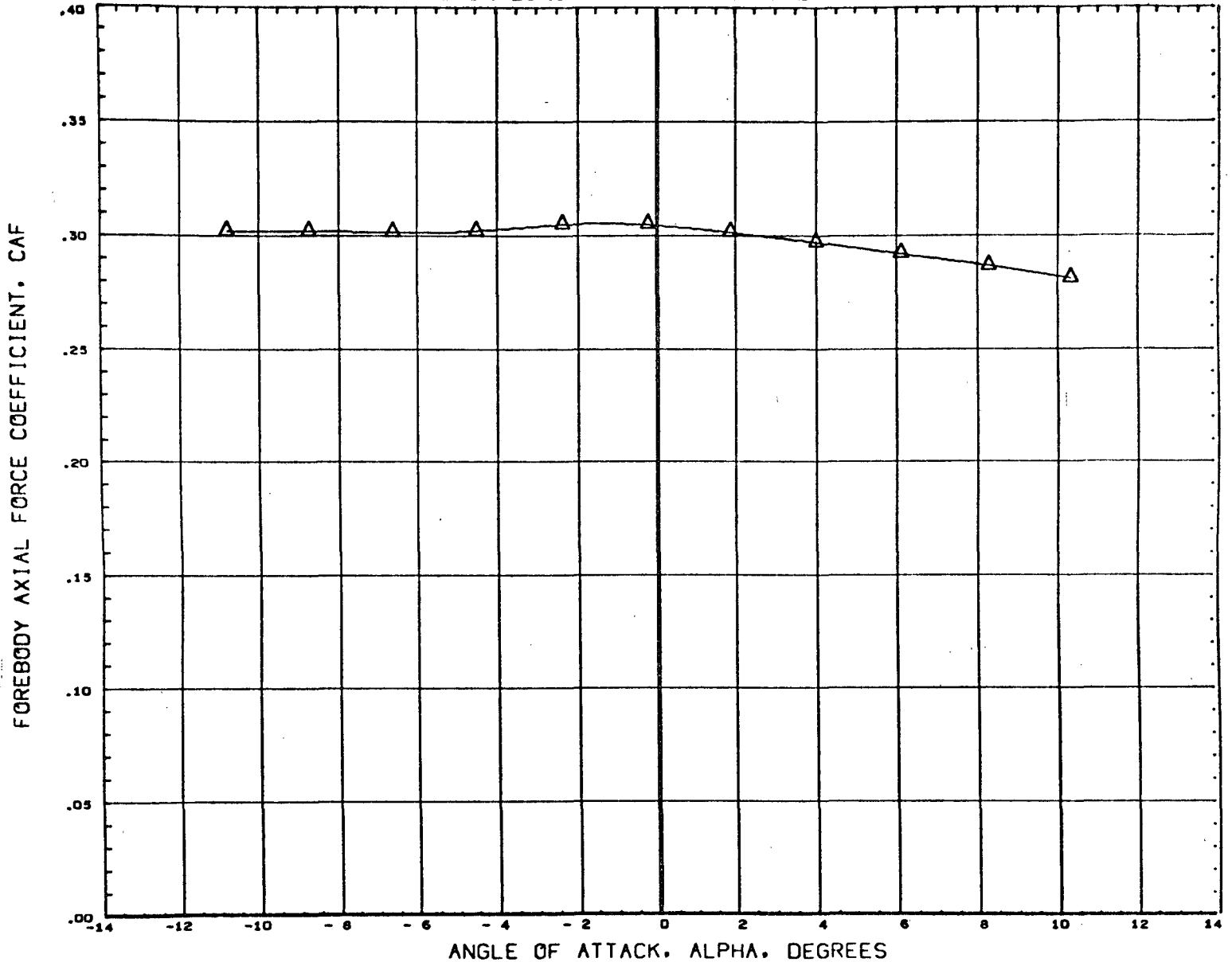


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20



# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

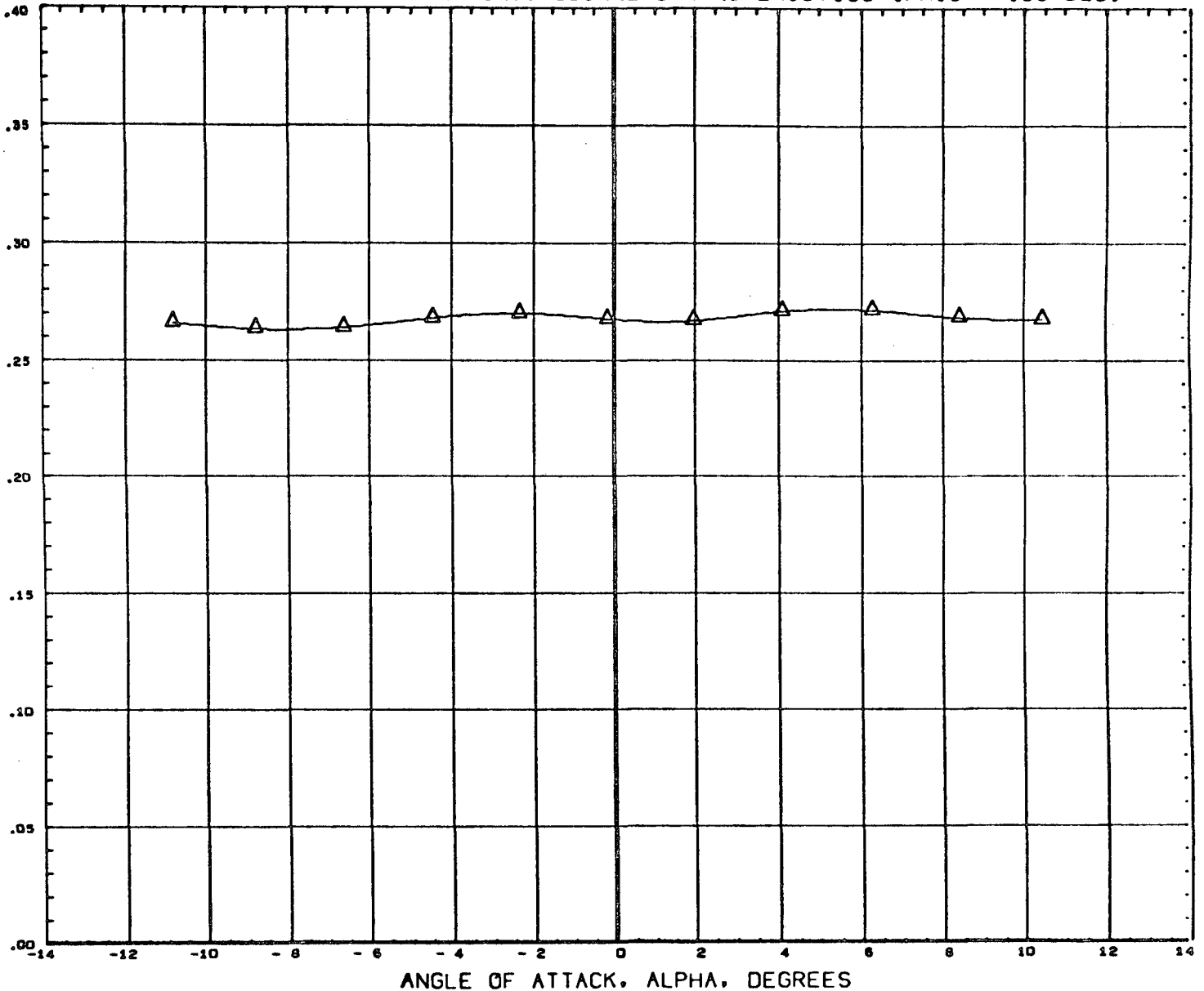


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.46

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF

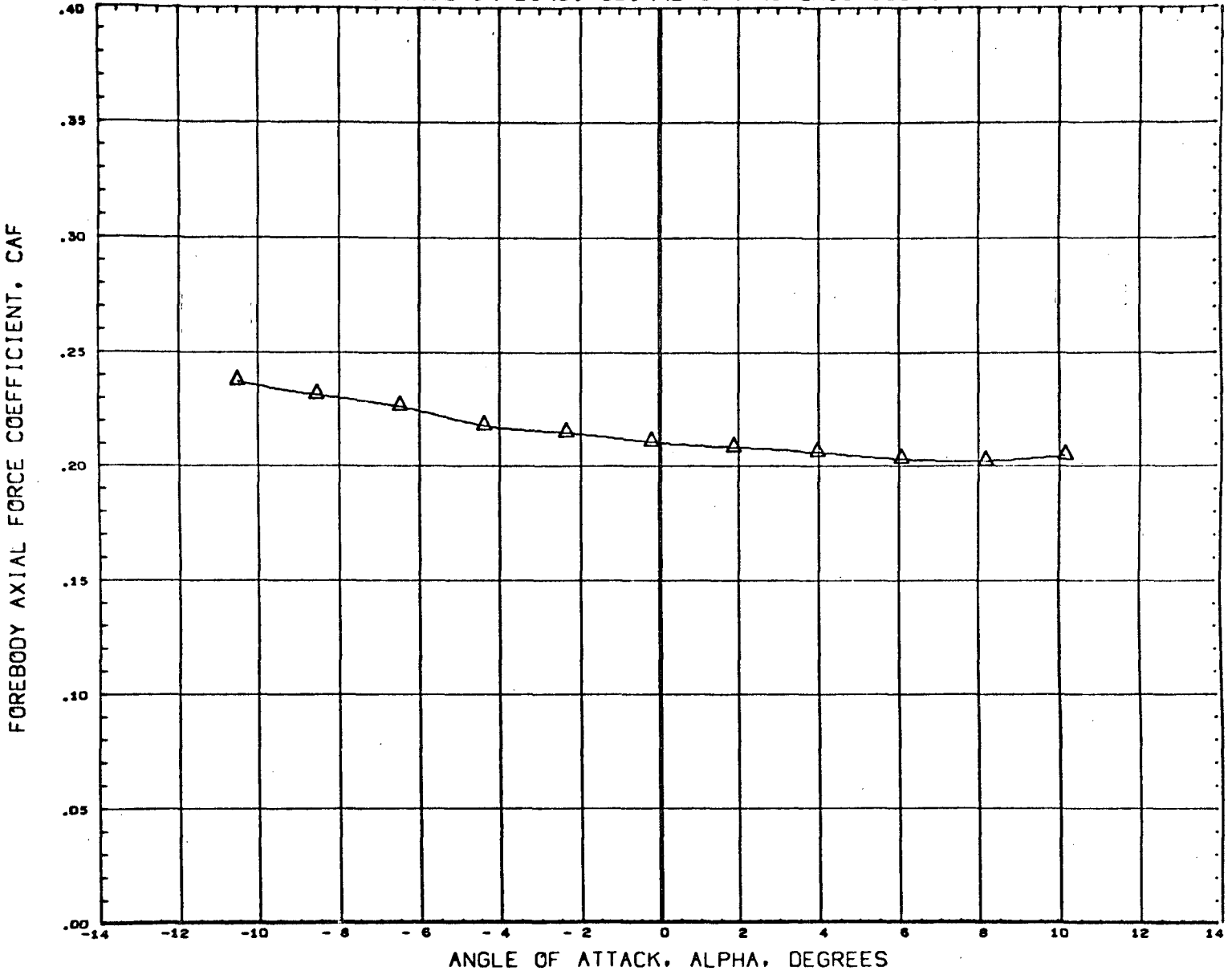


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.97

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

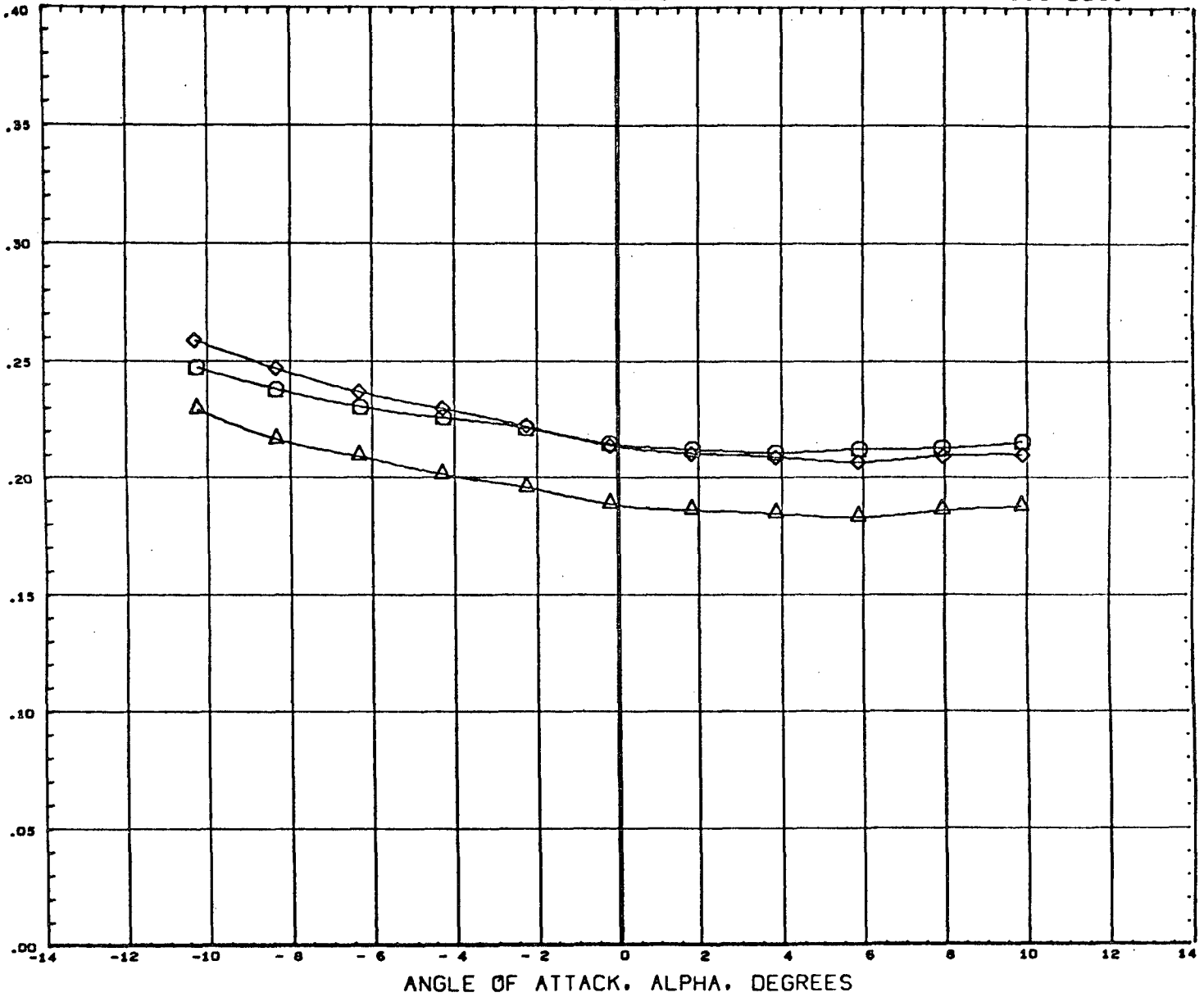


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

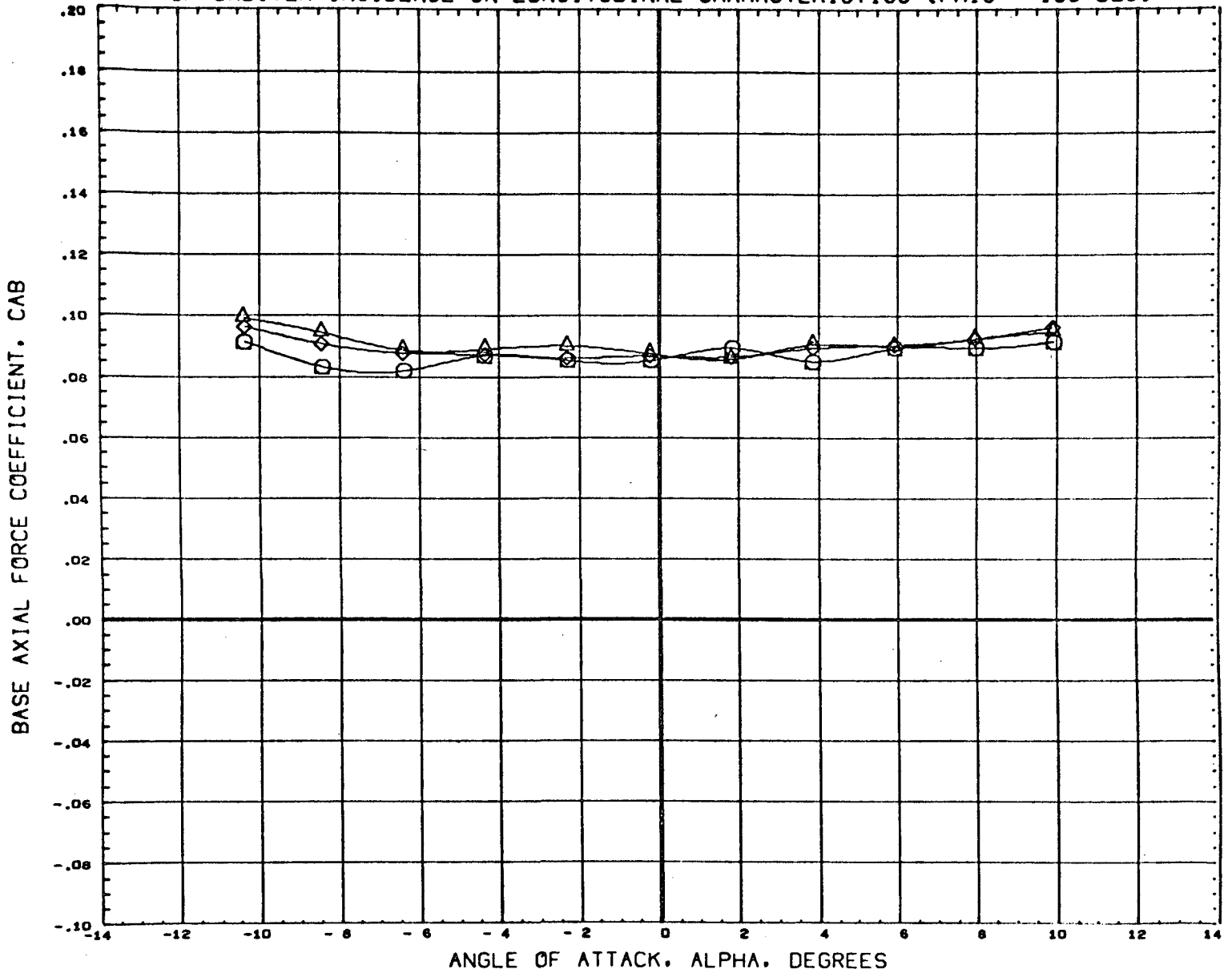
FOREBODY AXIAL FORCE COEFFICIENT, CAF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

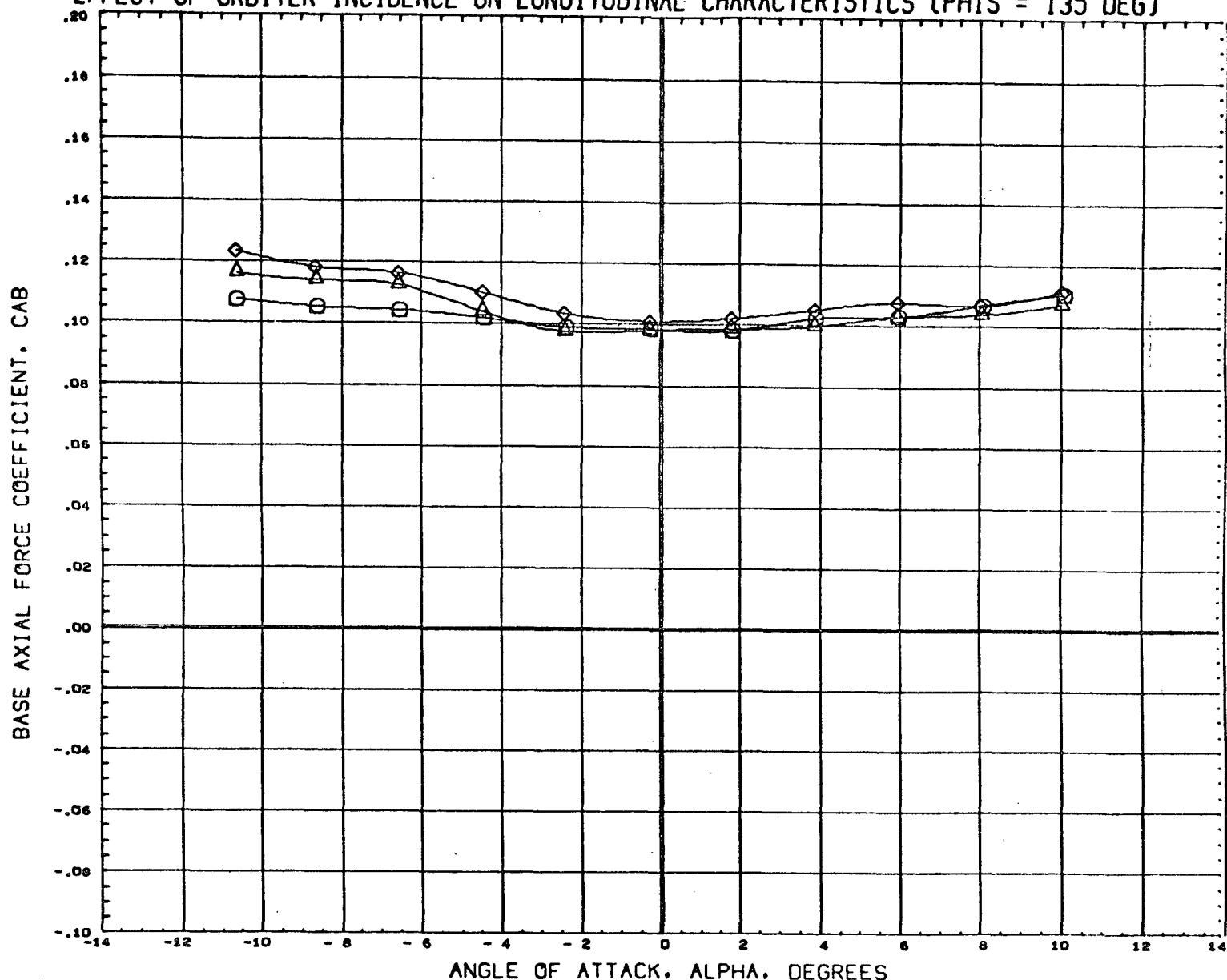
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

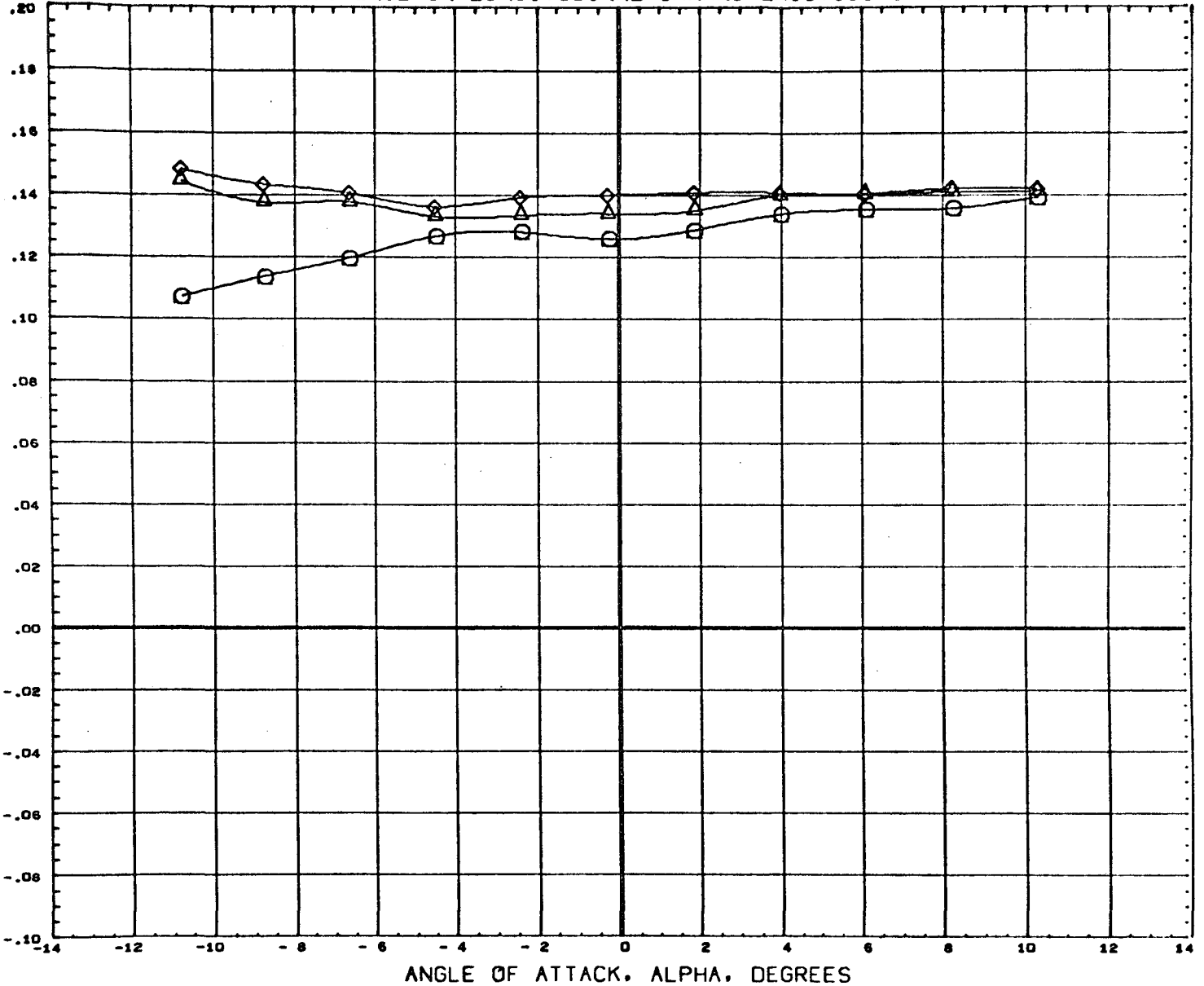


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

BASE AXIAL FORCE COEFFICIENT, CAB



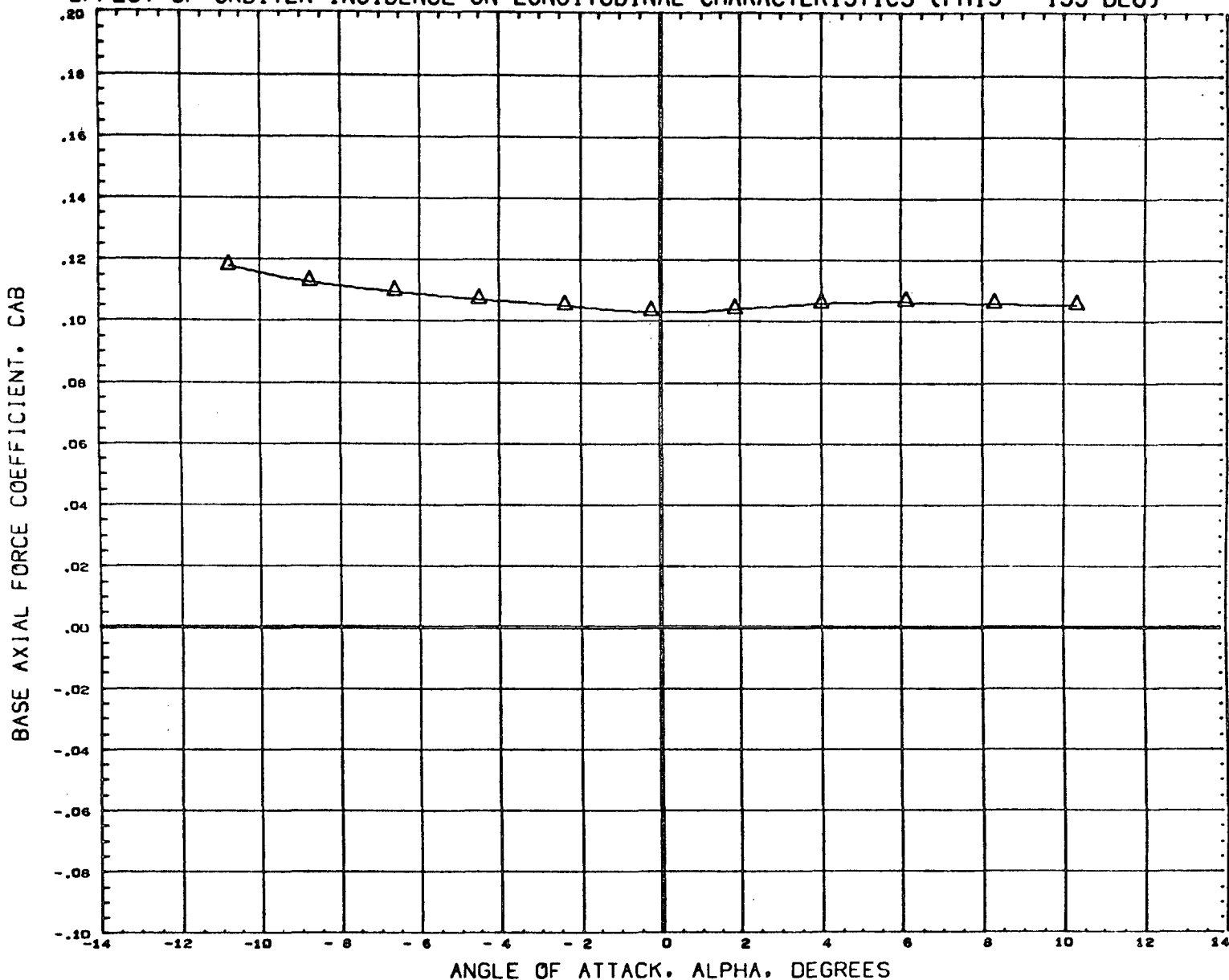
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

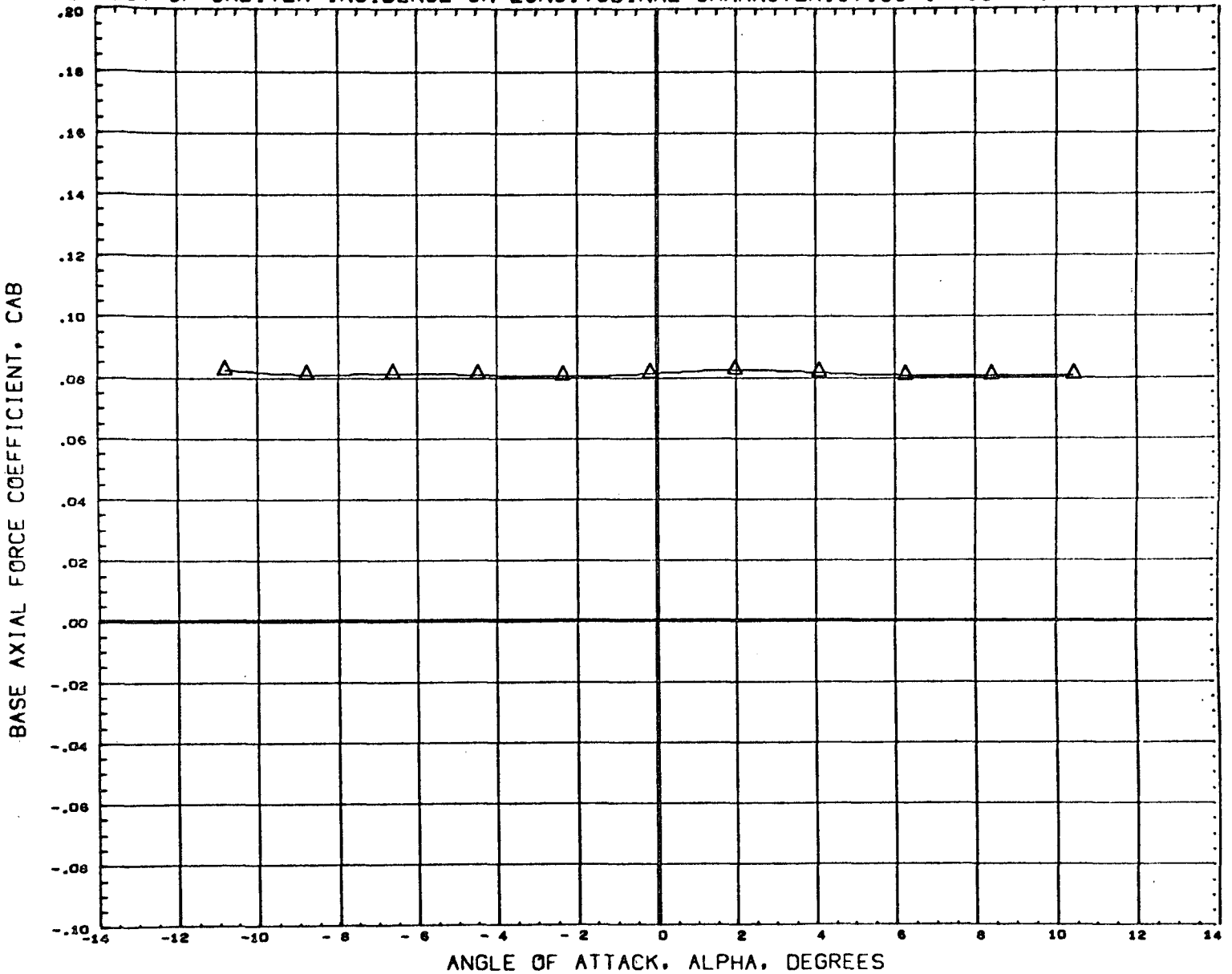


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.46



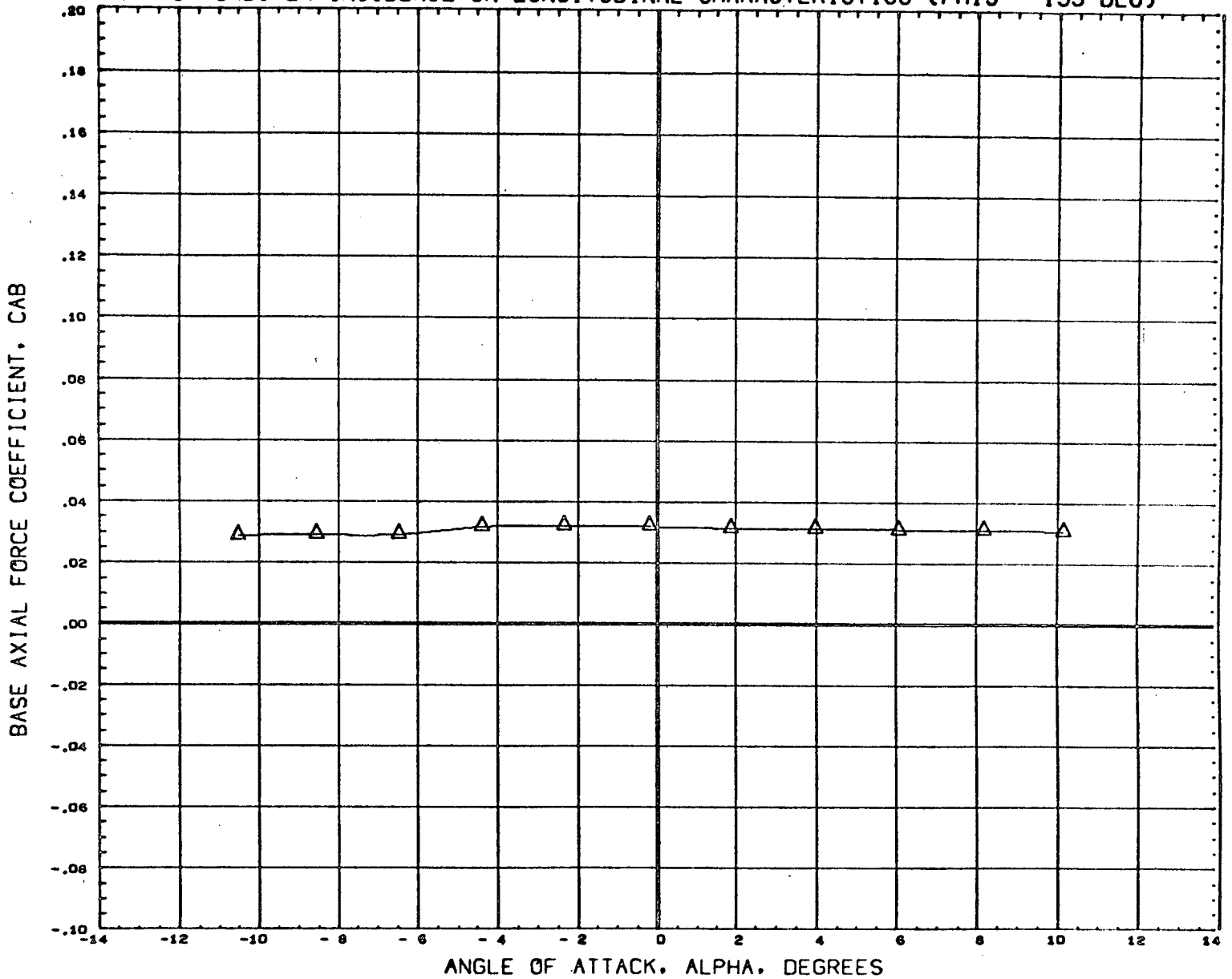
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)

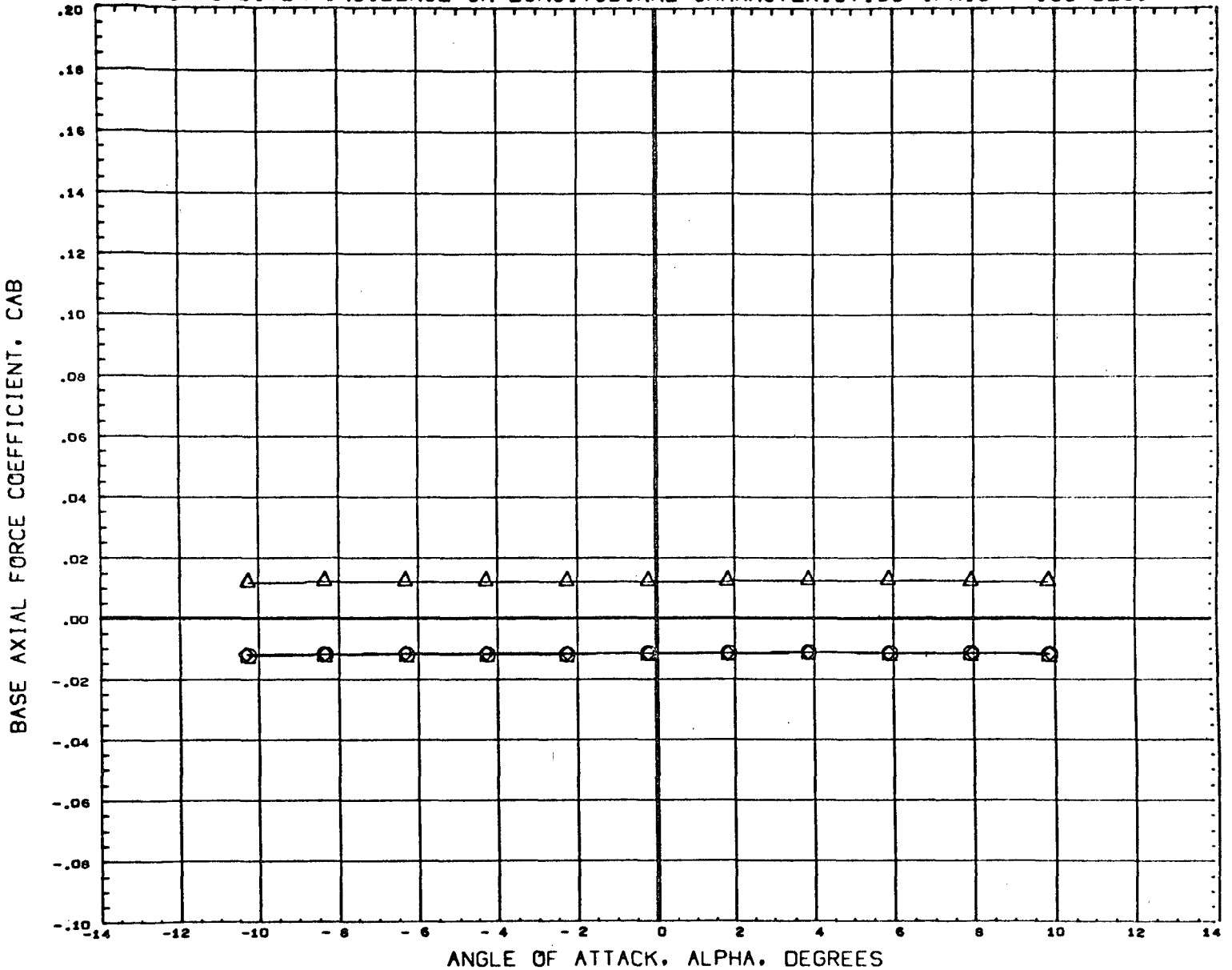


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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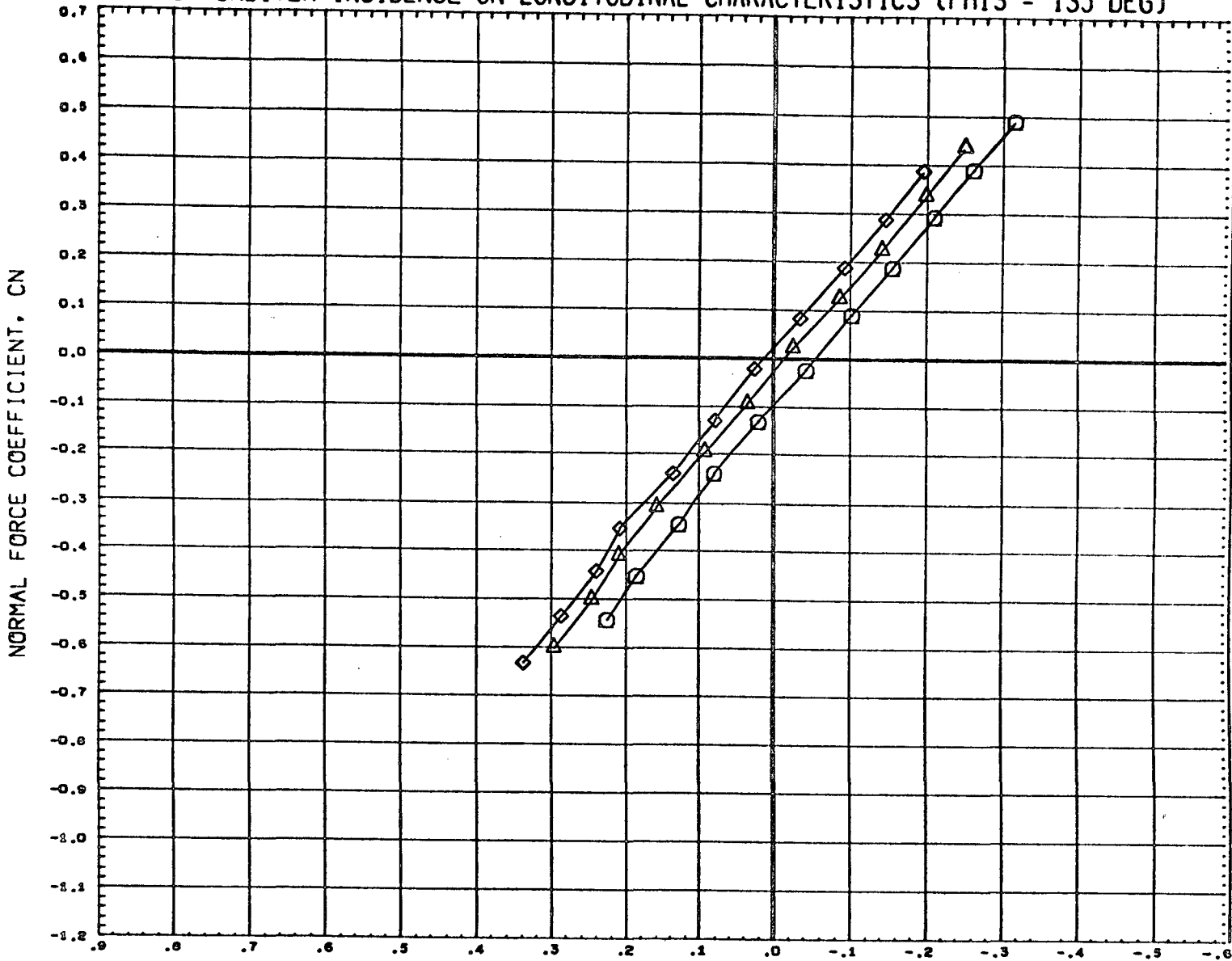
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

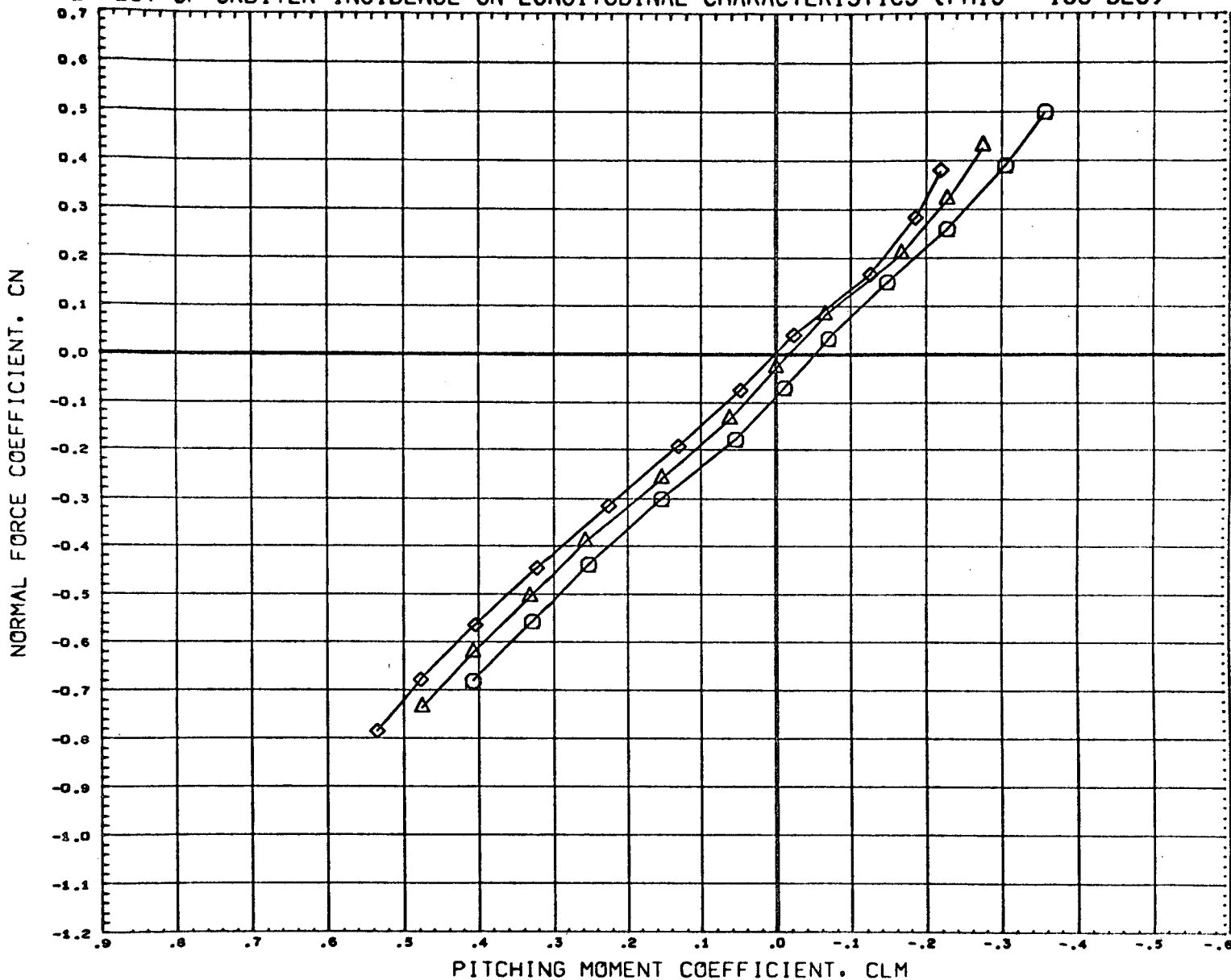
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

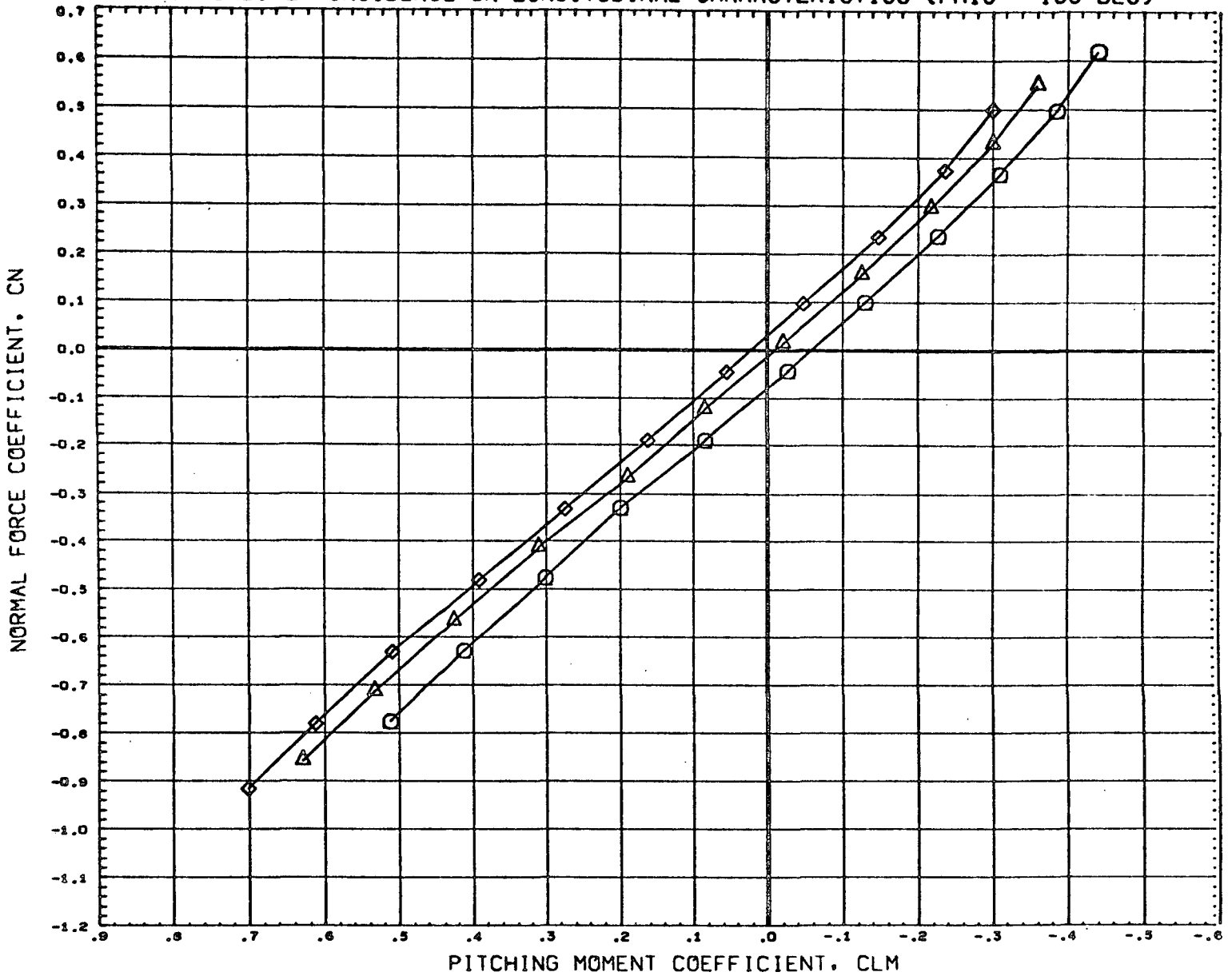
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(871008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(871009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

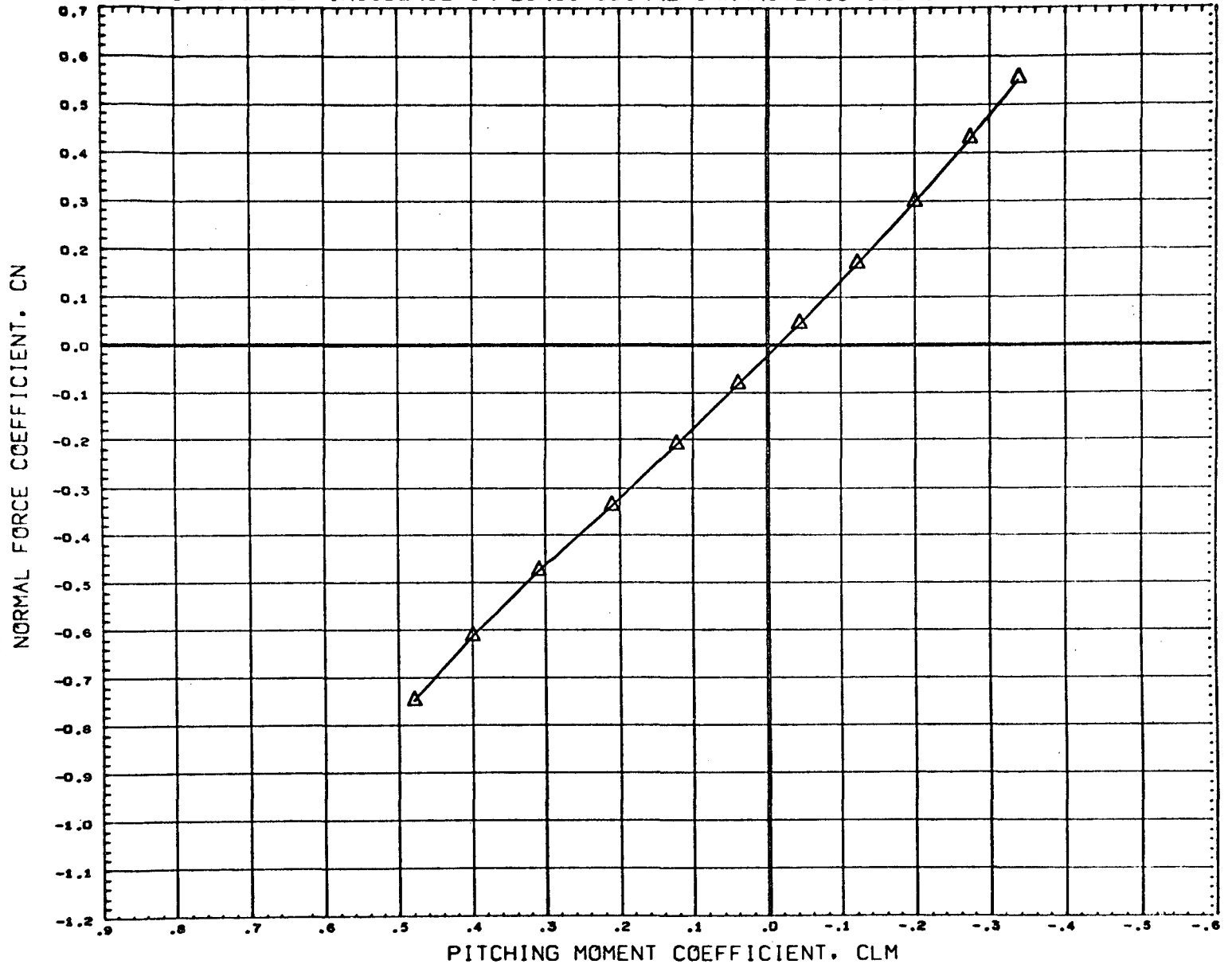
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL    CONFIGURATION DESCRIPTION

(B71007)    ○    DATA NOT AVAILABLE FOR ALL CONDITIONS

(B71008)    △    MSFC TWT 544 LAUNCH VEHICLE STUDIES    T101S1

(B71009)    ◇    DATA NOT AVAILABLE FOR ALL CONDITIONS

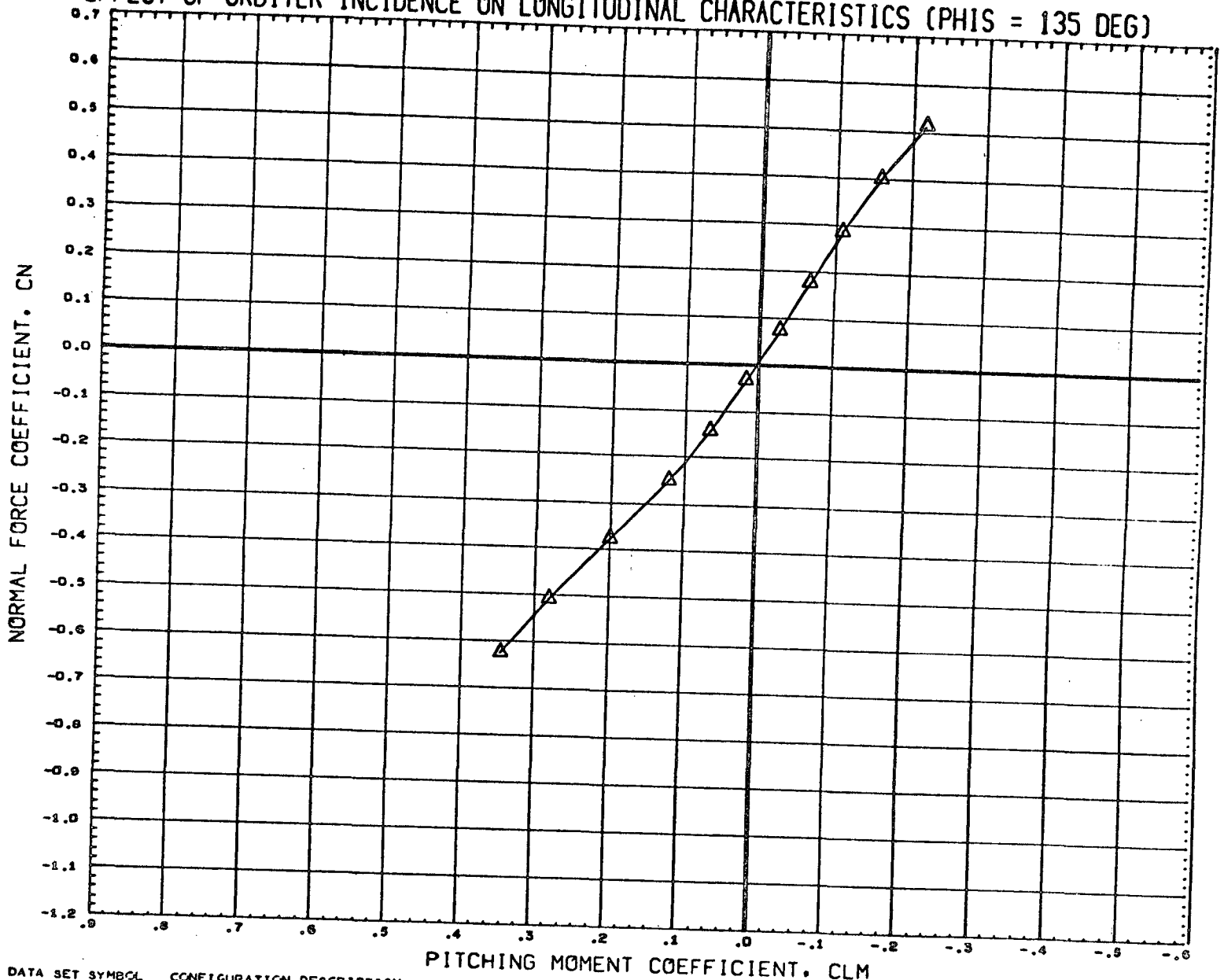
ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
0.000	135.000	0.000	0.000	SREF    7.8800    SQ. IN
-1.500	135.000	0.000	0.000	LREF    2.0280    IN.
-3.000	135.000	0.000	0.000	BREF    4.4600    IN.
				XMRP    3.3600    IN.
				YMRP    0.0000    IN.
				ZMRP    0.2480    IN.
				SCALE    0.0040    SCALE

MACH

1.46

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# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



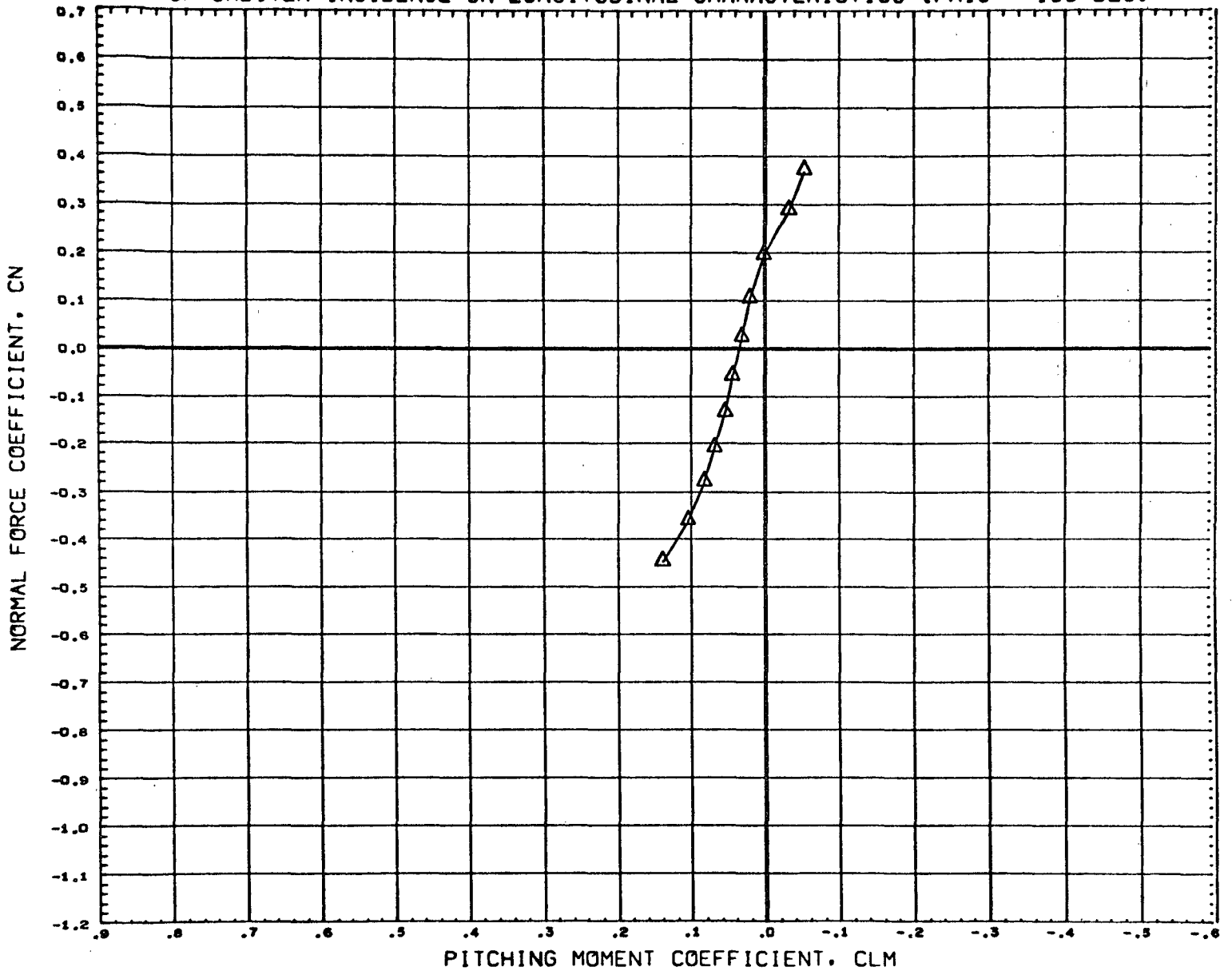
DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (B71007)    ○    DATA NOT AVAILABLE FOR ALL CONDITIONS  
 (B71008)    △    MSFC TWT 544 LAUNCH VEHICLE STUDIES    T101S1  
 (B71009)    ◇    DATA NOT AVAILABLE FOR ALL CONDITIONS

ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
0.000	135.000	0.000	0.000	SREF	7.8800    SQ. IN
-1.500	135.000	0.000	0.000	LREF	2.0280    IN.
-3.000	135.000	0.000	0.000	BREF	4.4600    IN.
				XMRP	3.3600    IN.
				YMRP	0.0000    IN.
				ZMRP	0.2480    IN.
				SCALE	0.0040    SCALE

MACH            1.97



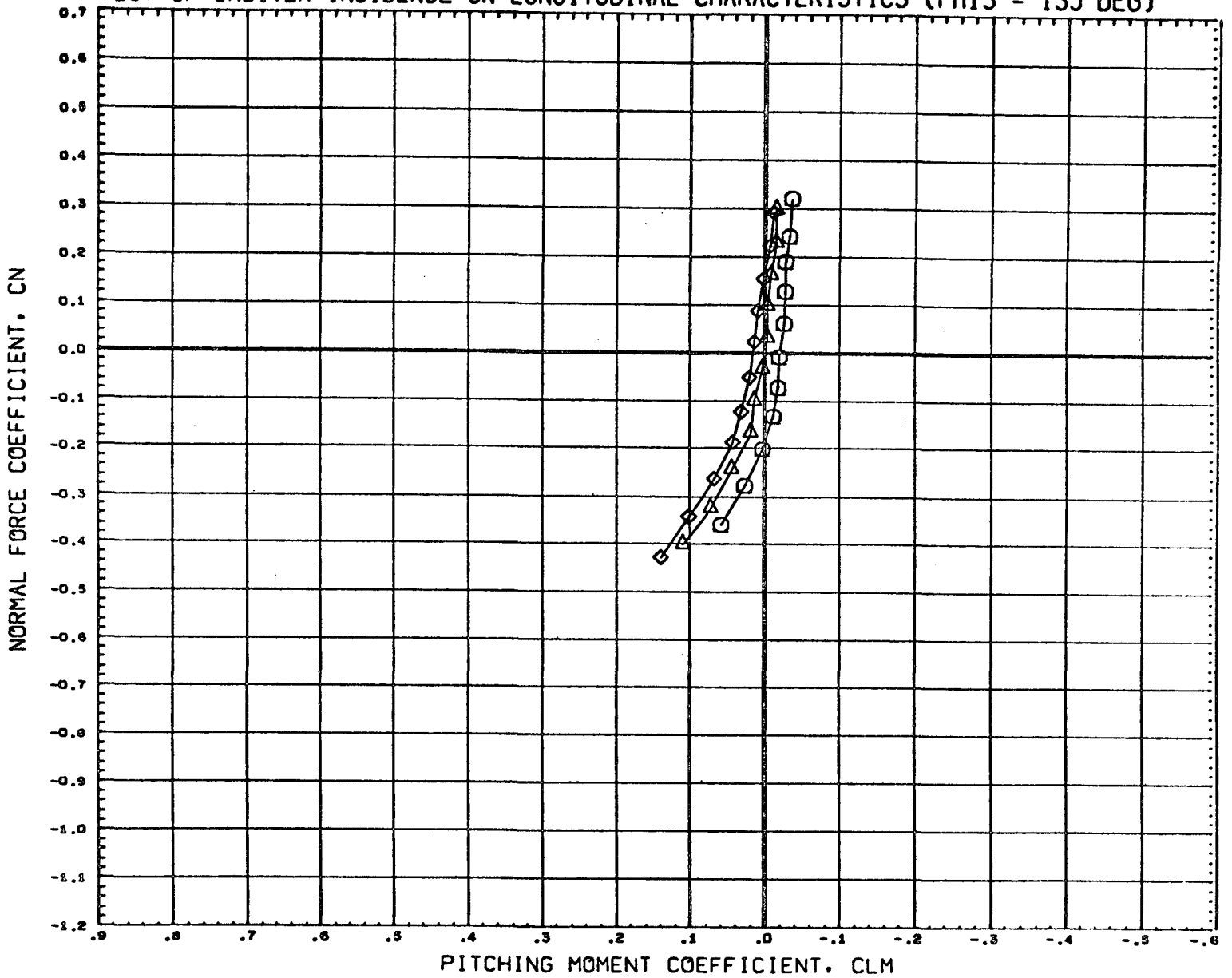
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	DATA NOT AVAILABLE FOR ALL CONDITIONS	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

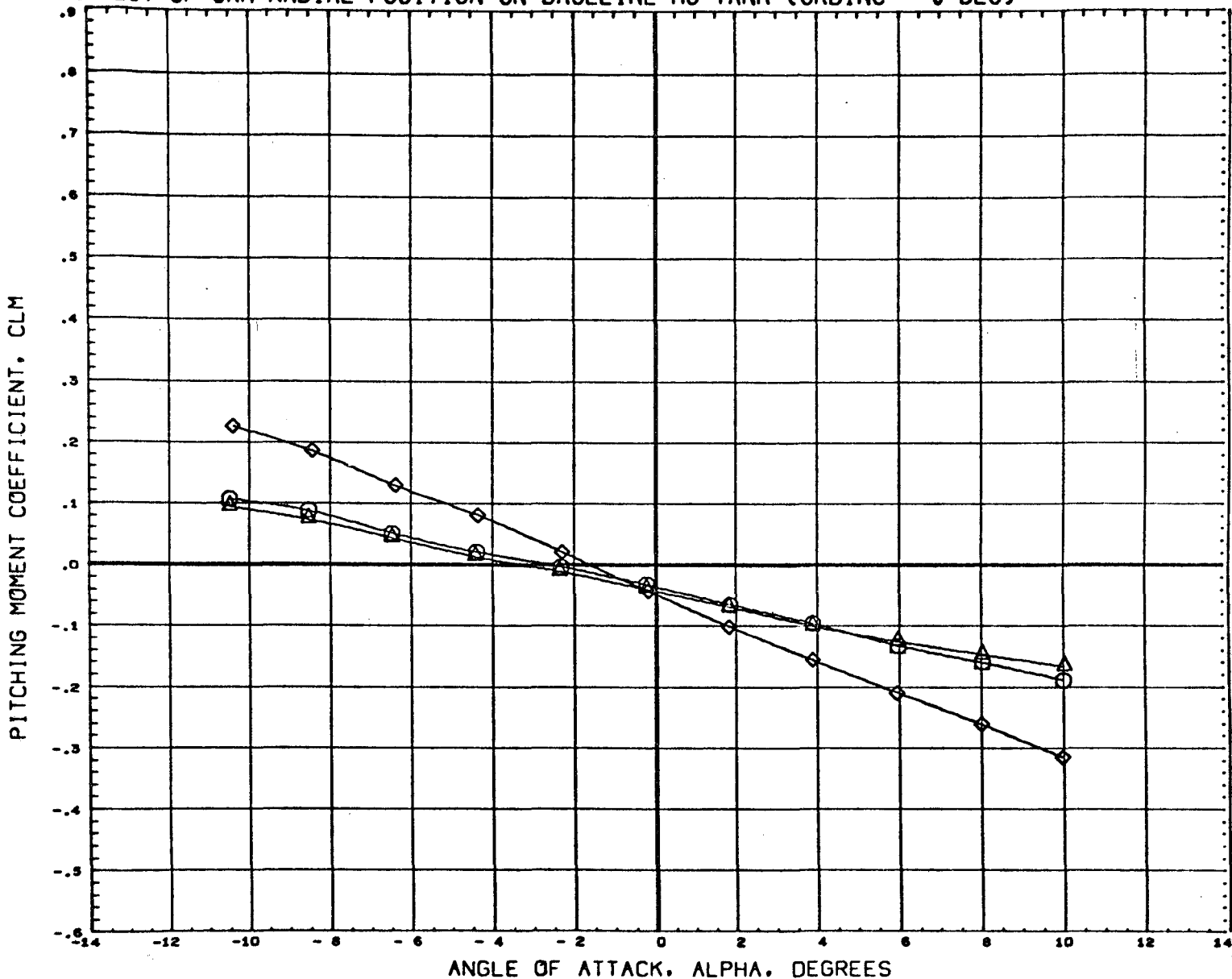
# EFFECT OF ORBITER INCIDENCE ON LONGITUDINAL CHARACTERISTICS (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)

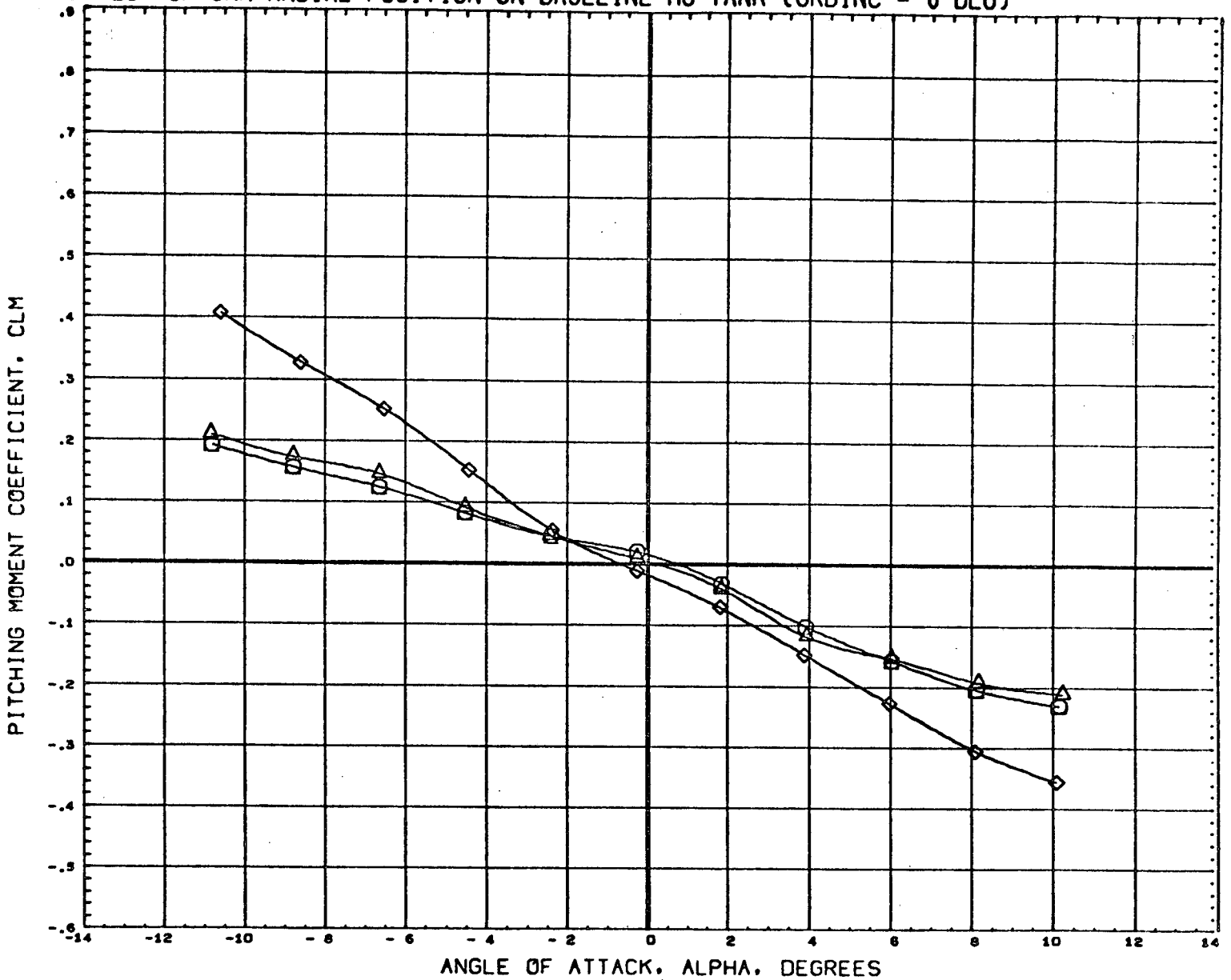


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

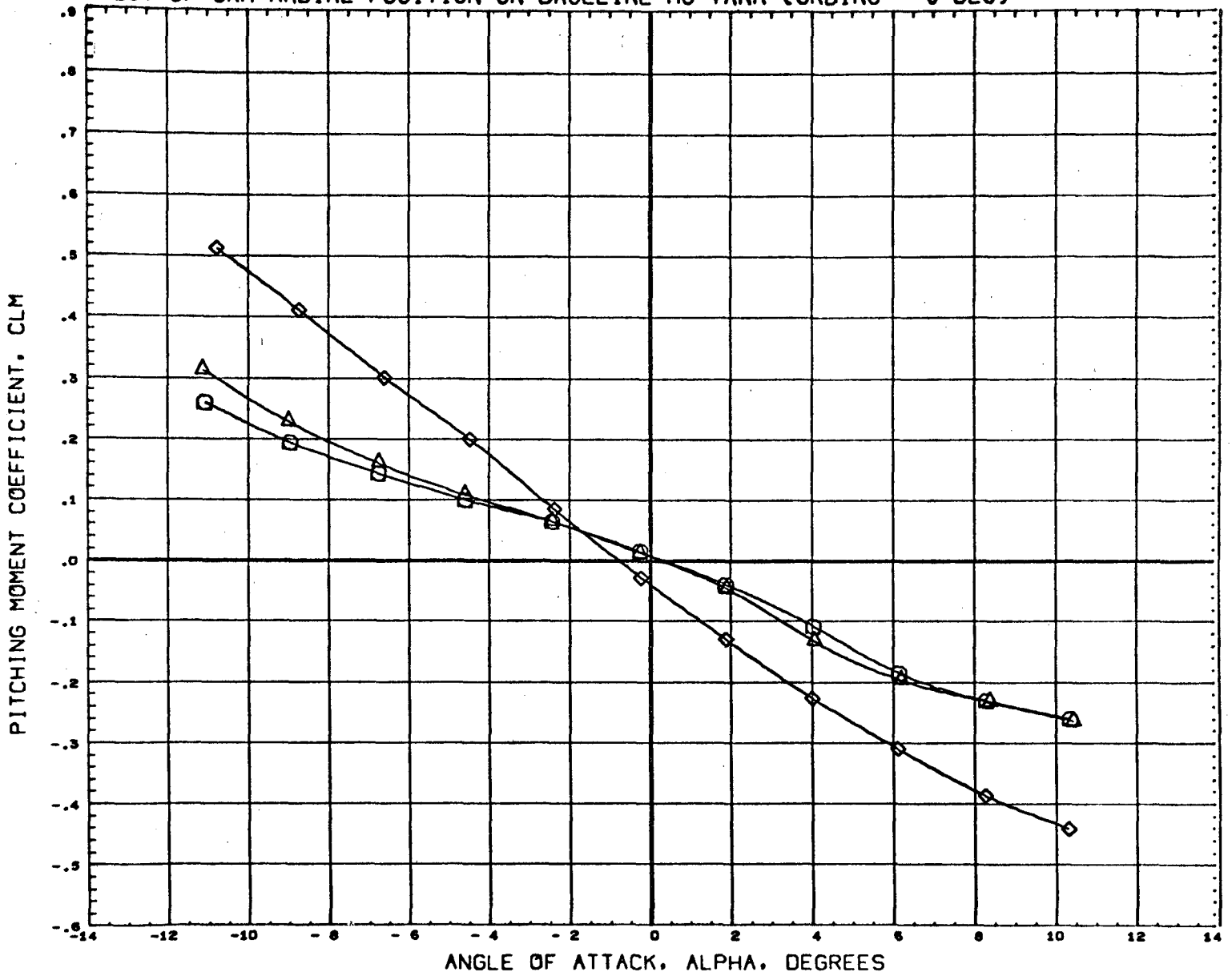
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EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 Sq. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)

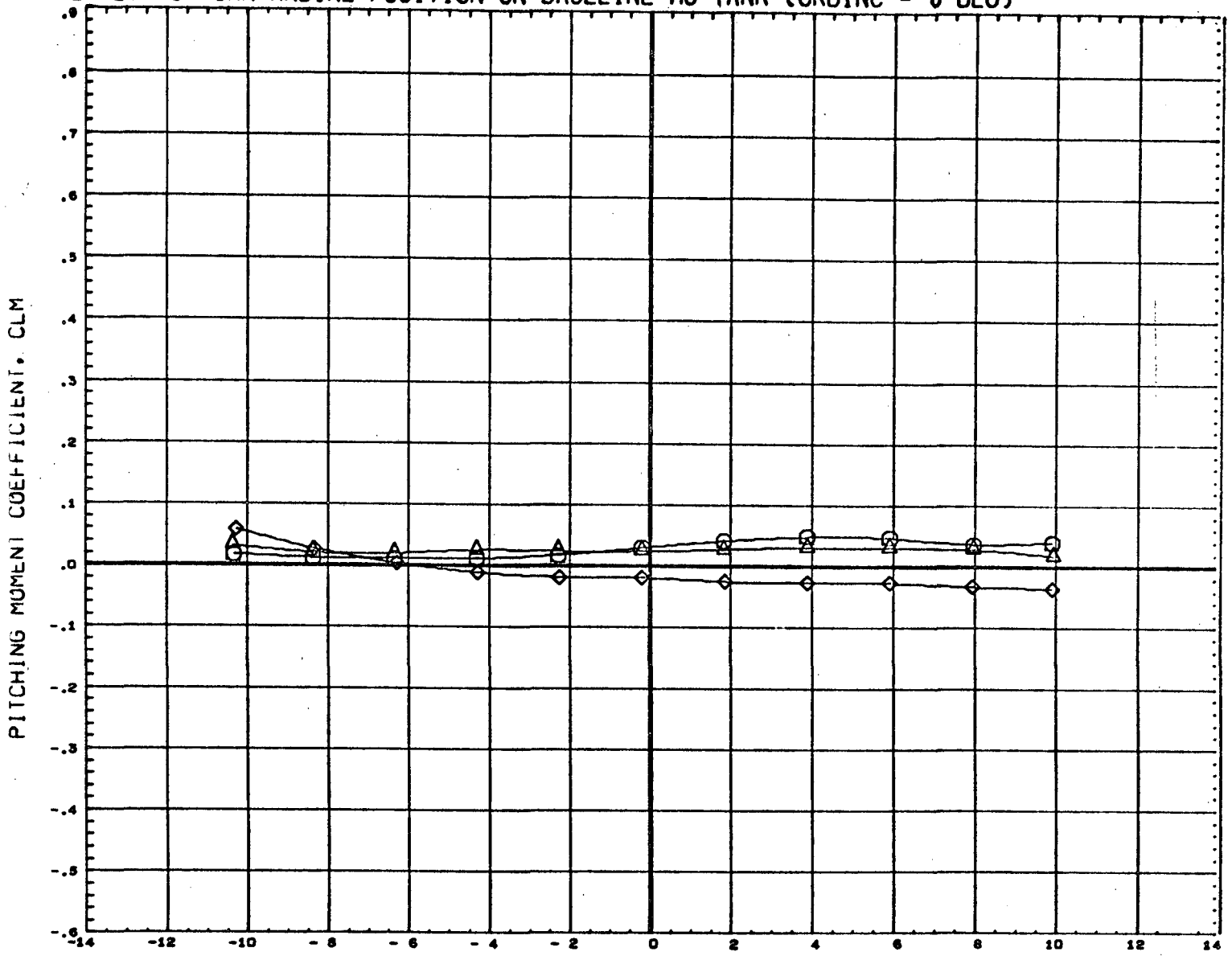


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



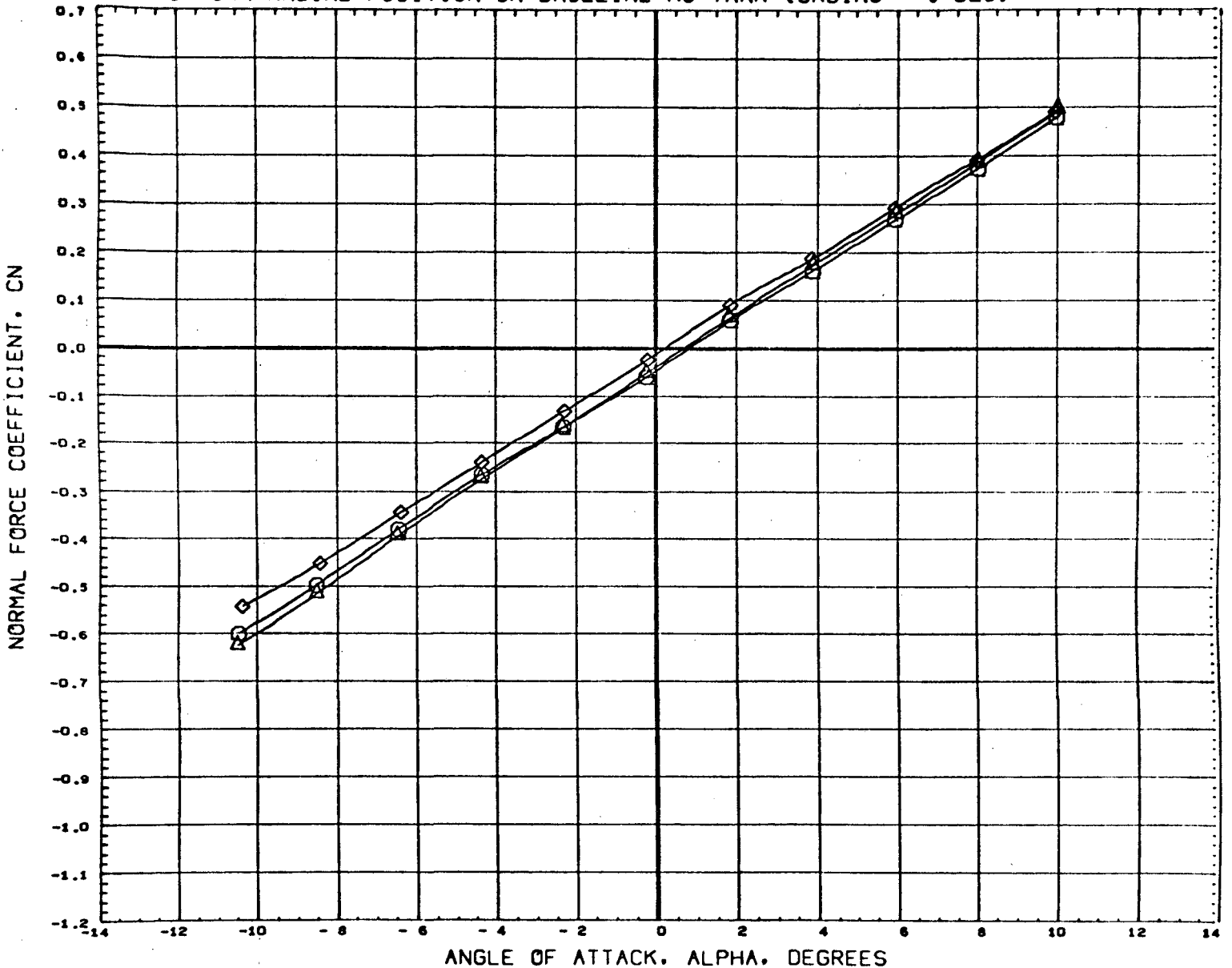
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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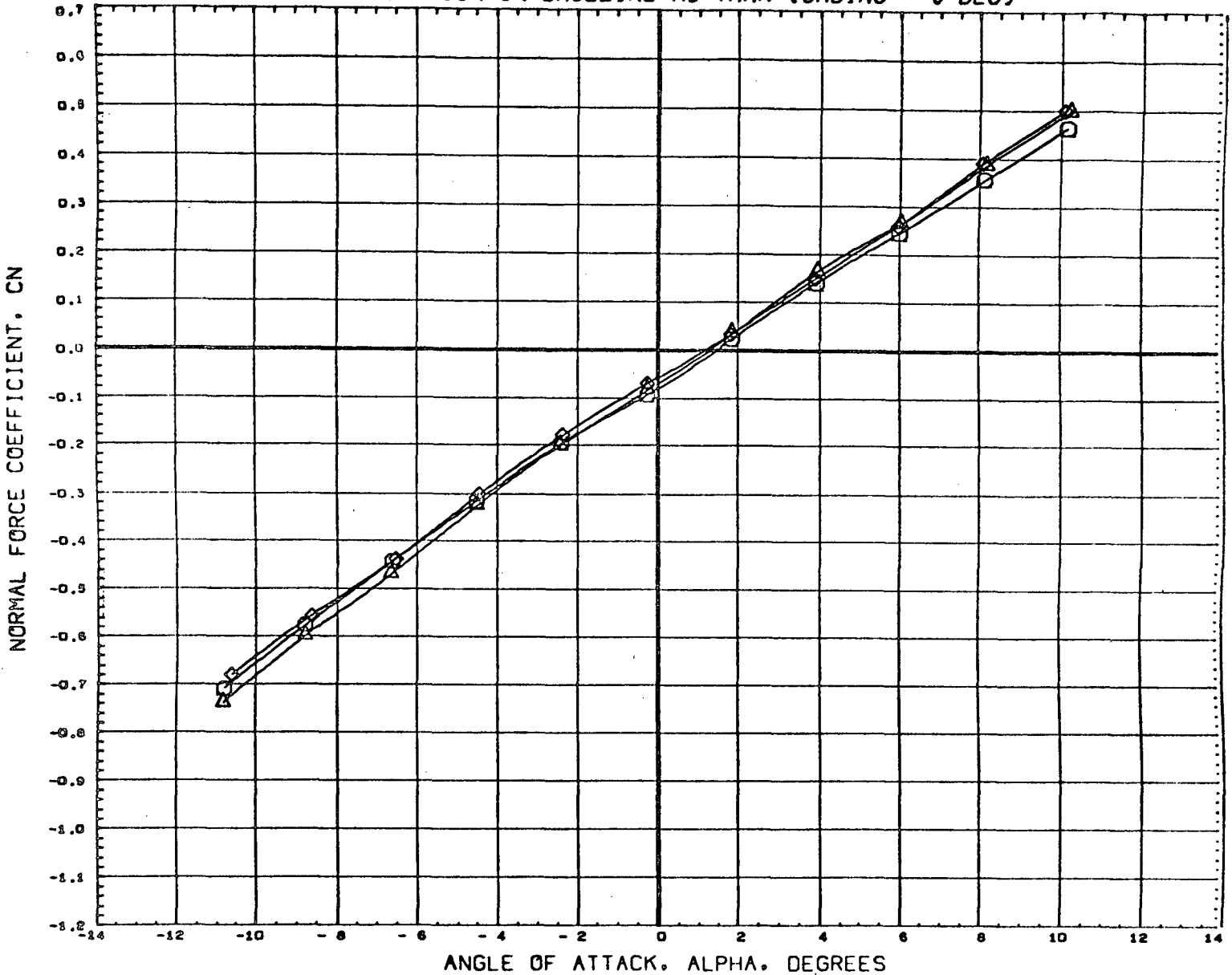
EFFECT OF SRM RADIAL POSITION ON BASELINE HQ TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = 0 DEG)

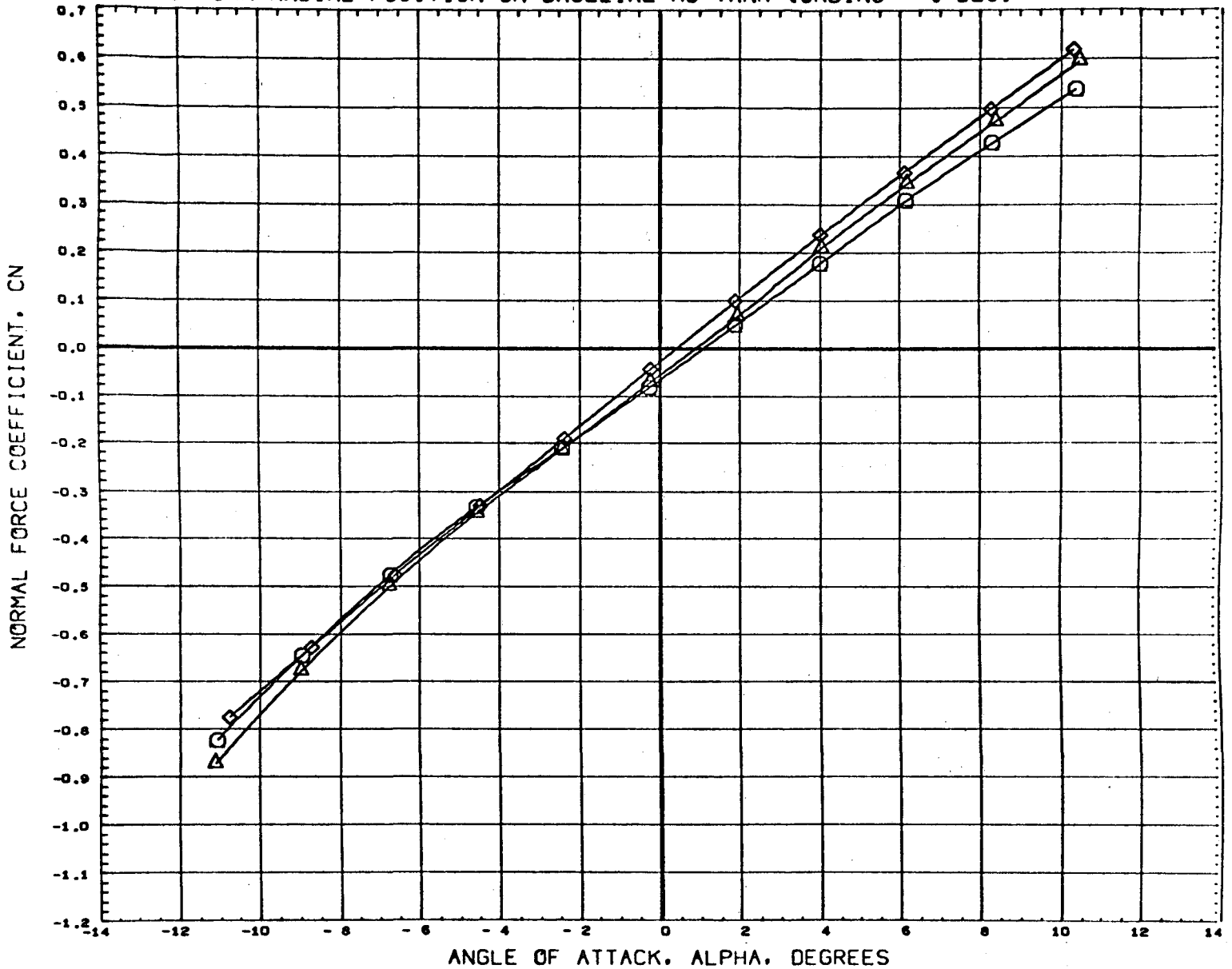


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	LREF 2.0260 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	0.000	BREF 4.4800 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .91



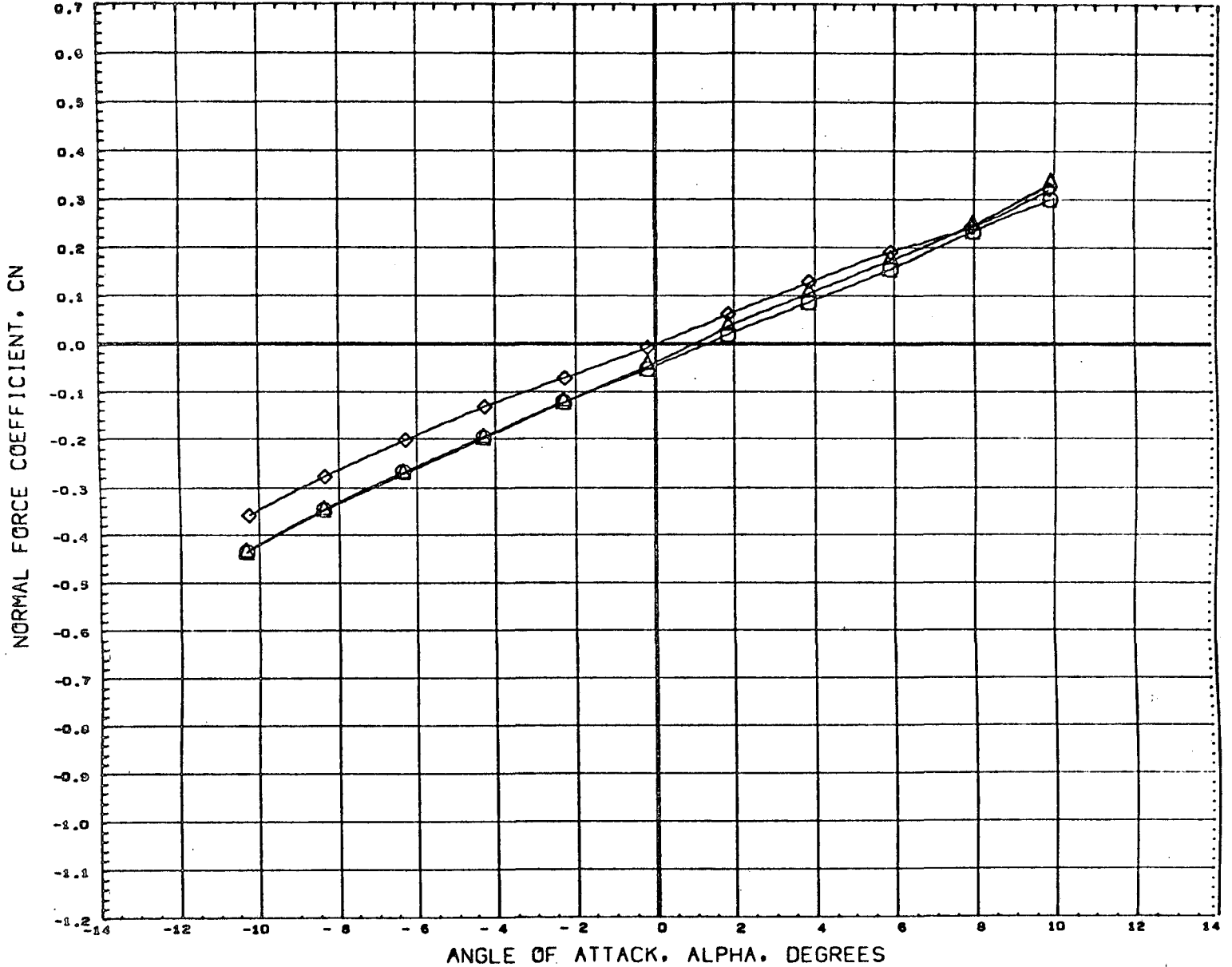
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIO1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	0.000	75.000	0.000	0.000	SREF 7.8800 80. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	0.000	90.000	0.000	0.000	LREF 2.0260 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2460 IN.
							SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)

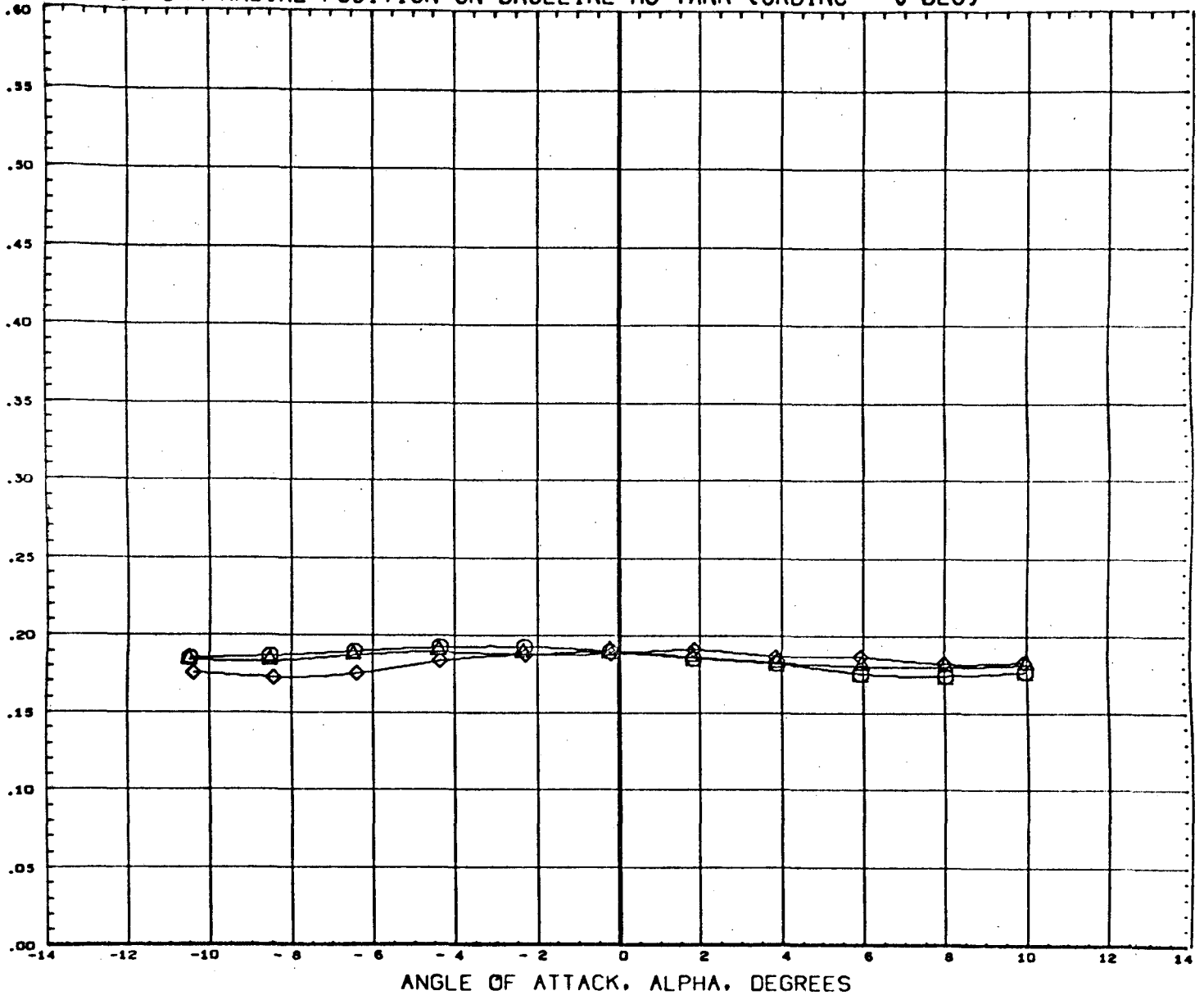


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)

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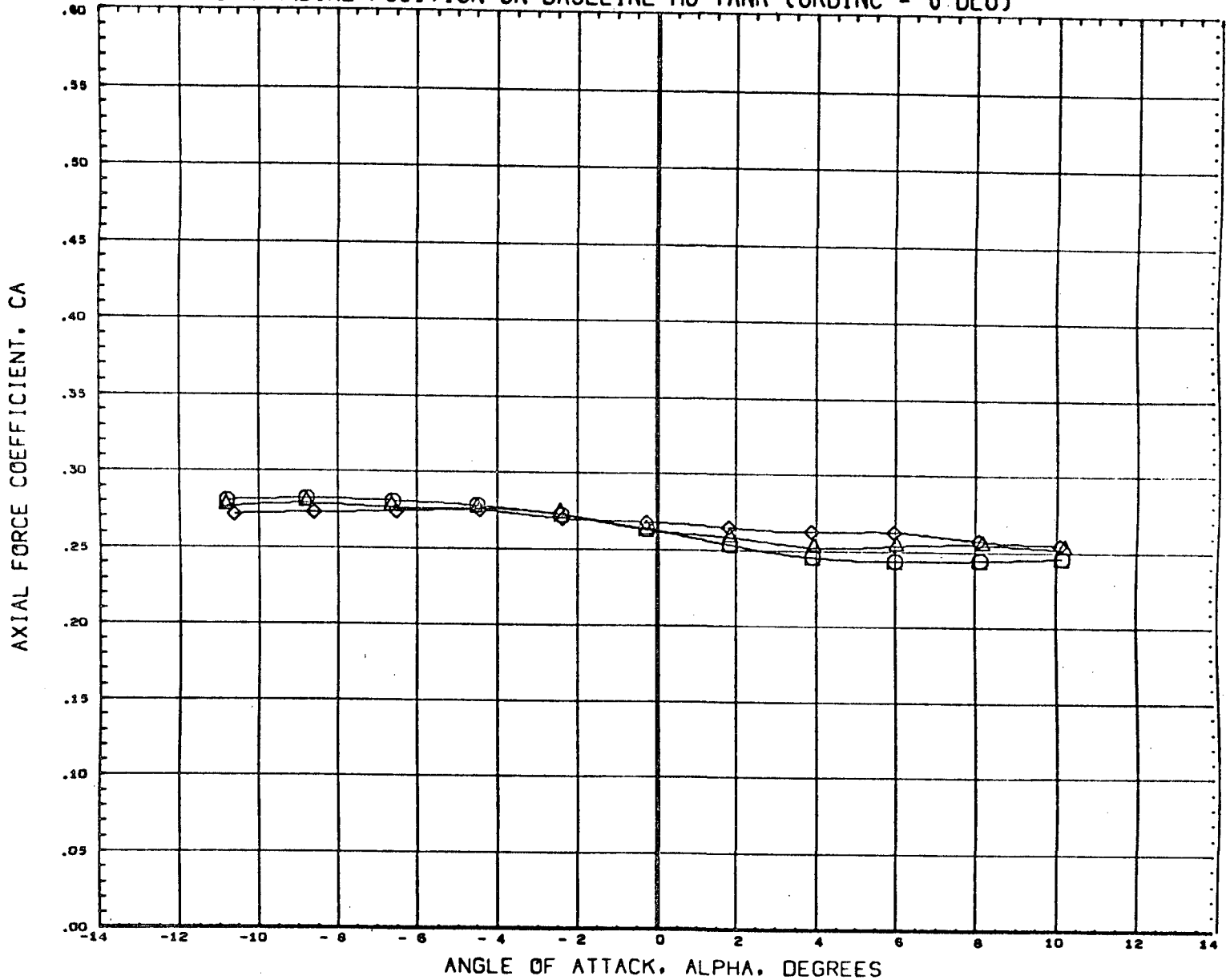


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	Xs	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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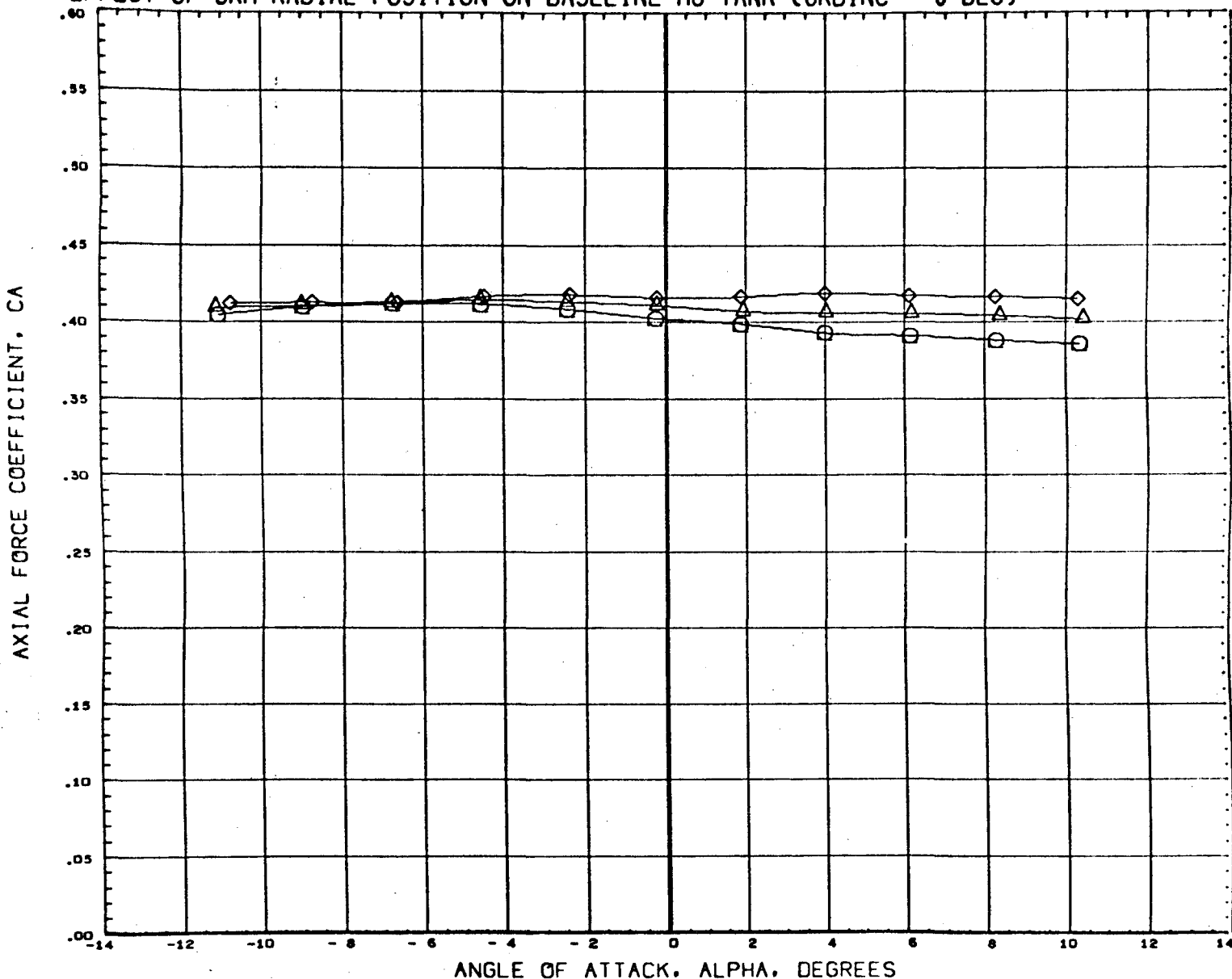
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .91

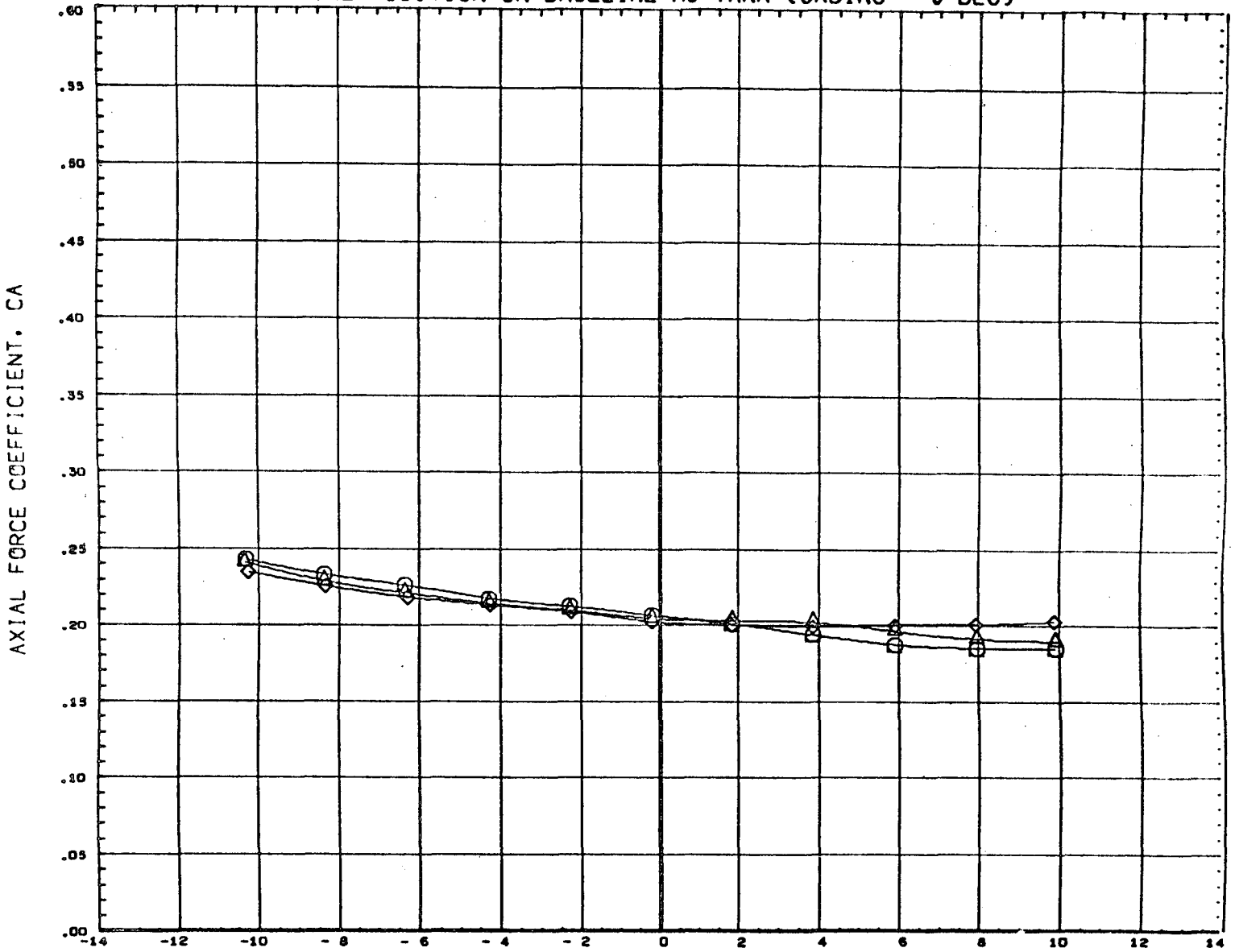
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(871007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

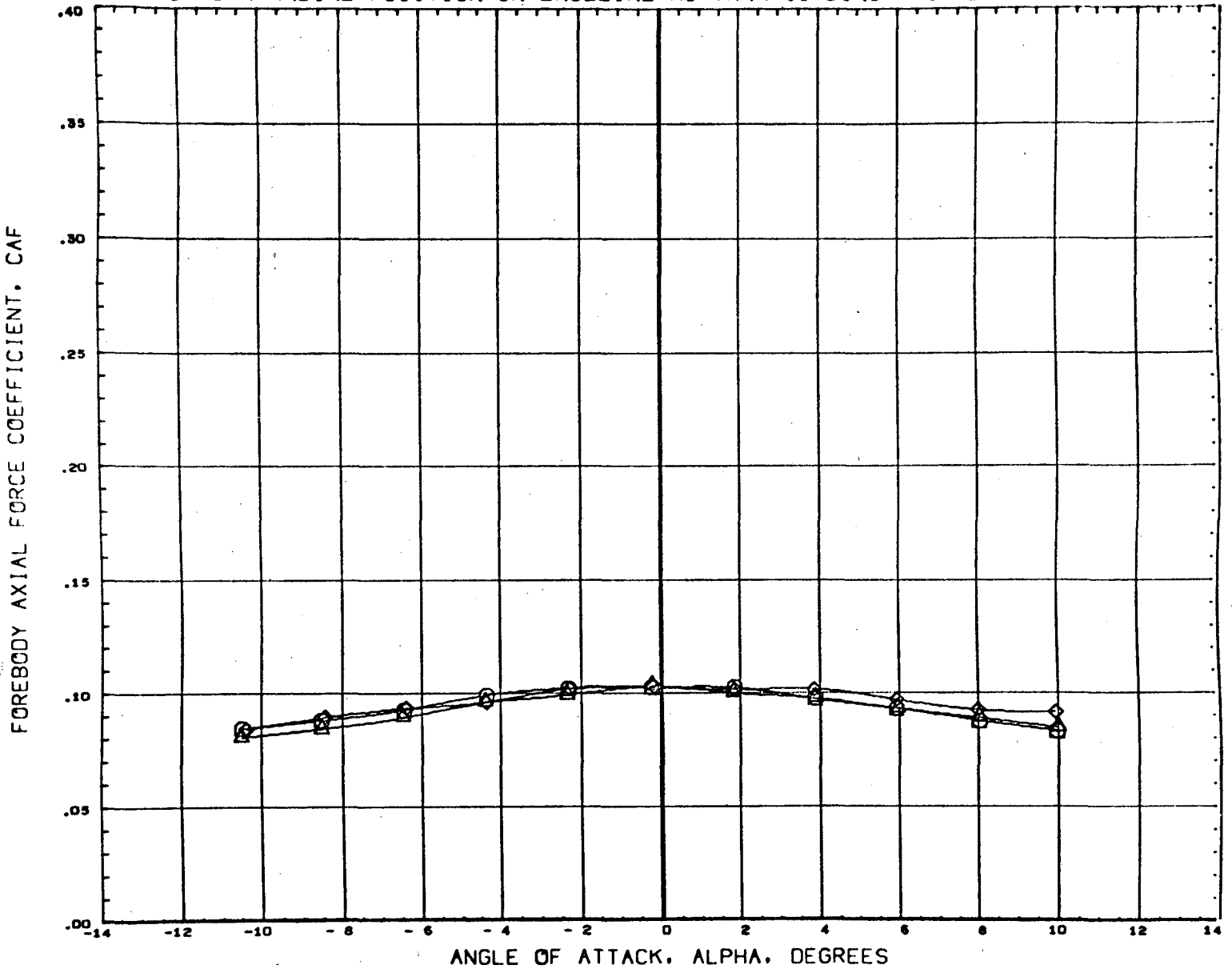
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

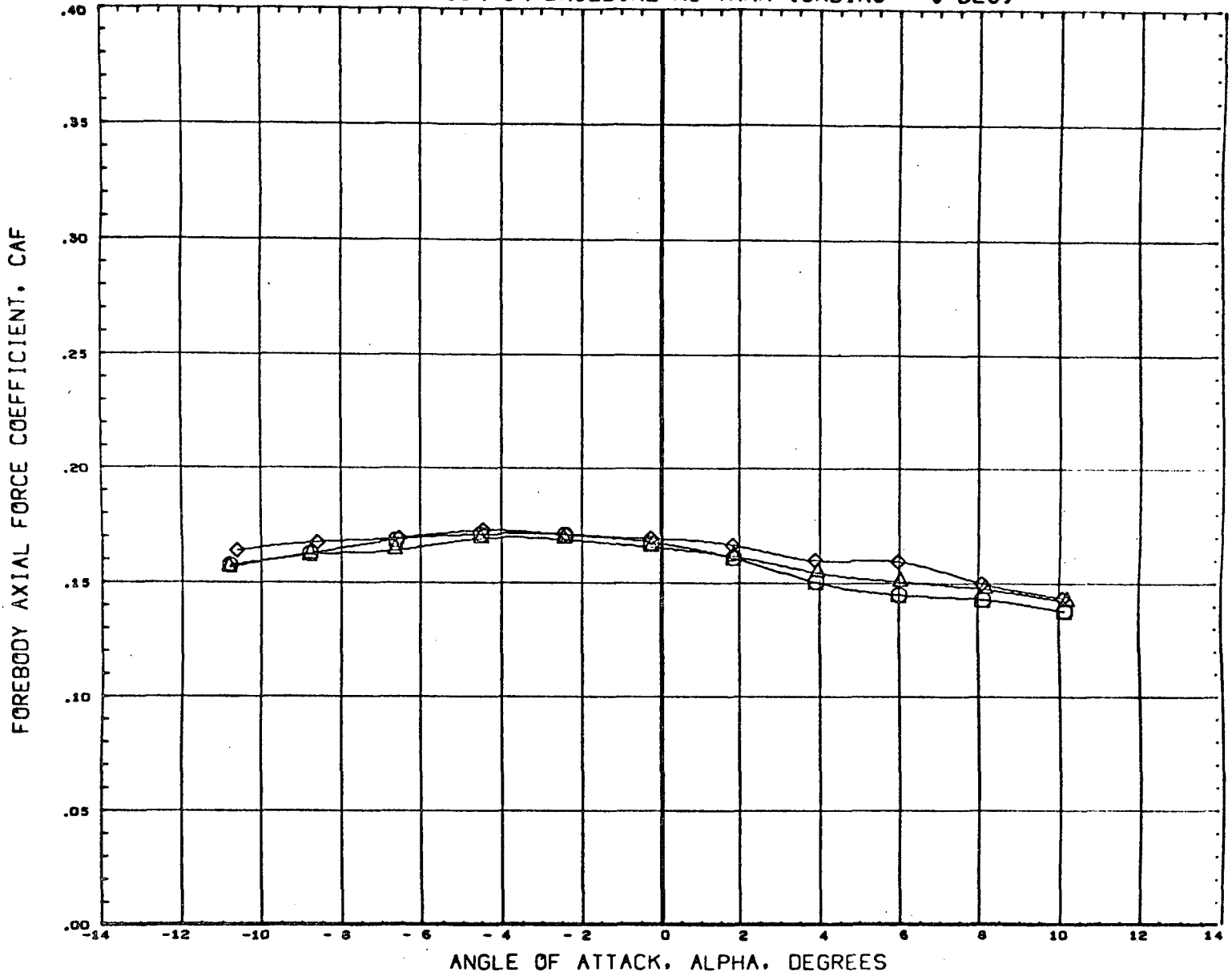
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 sq. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)

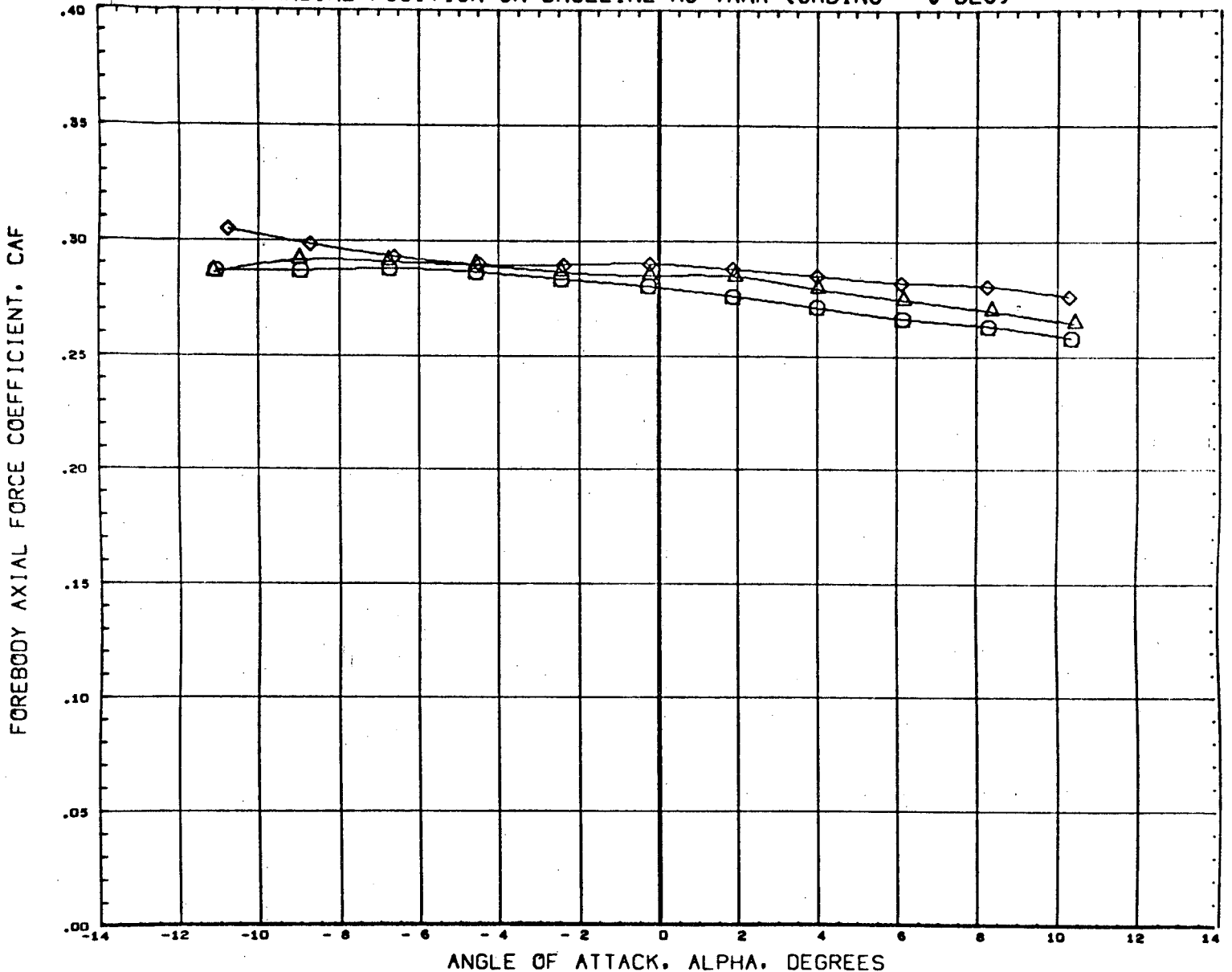


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91



# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)

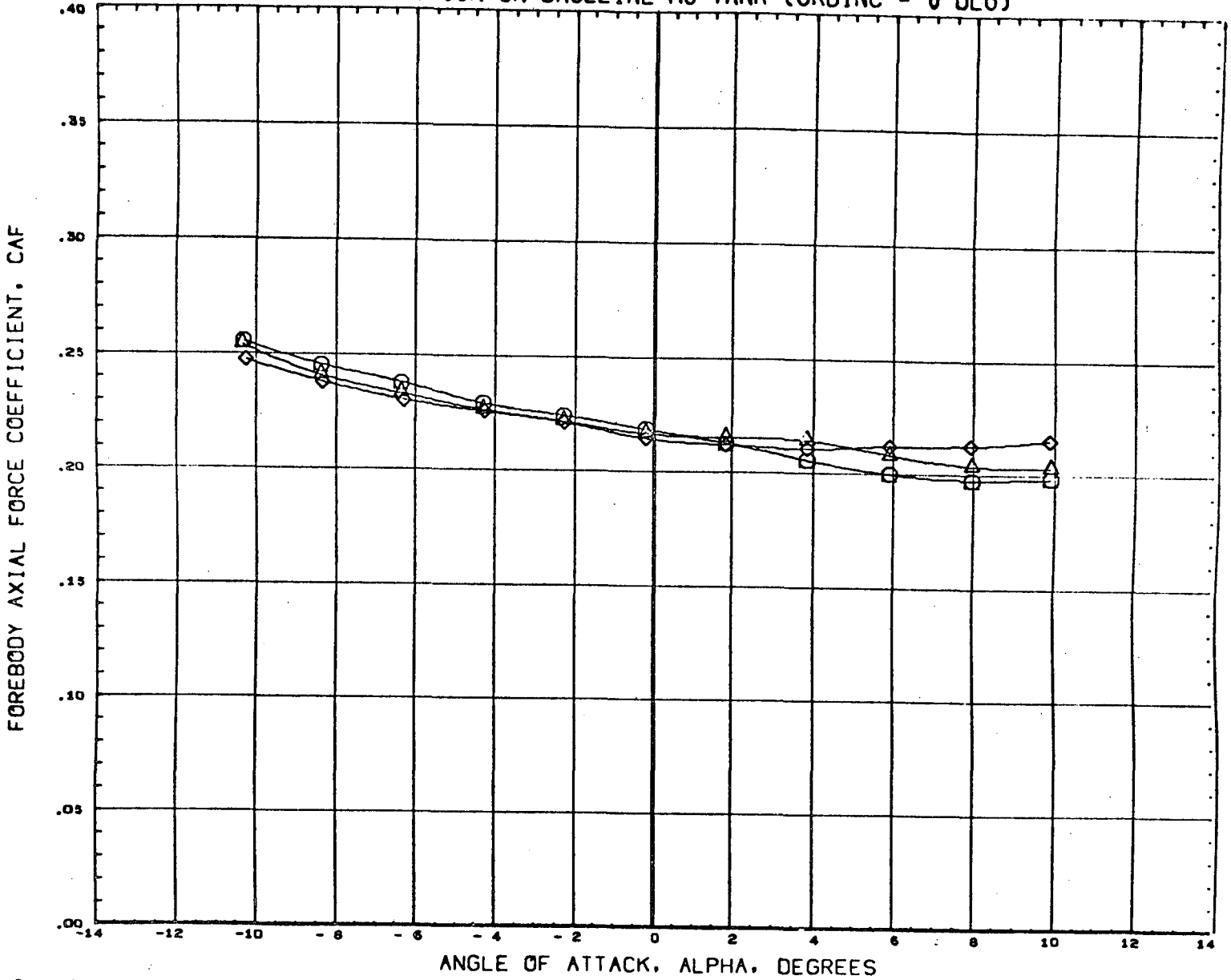


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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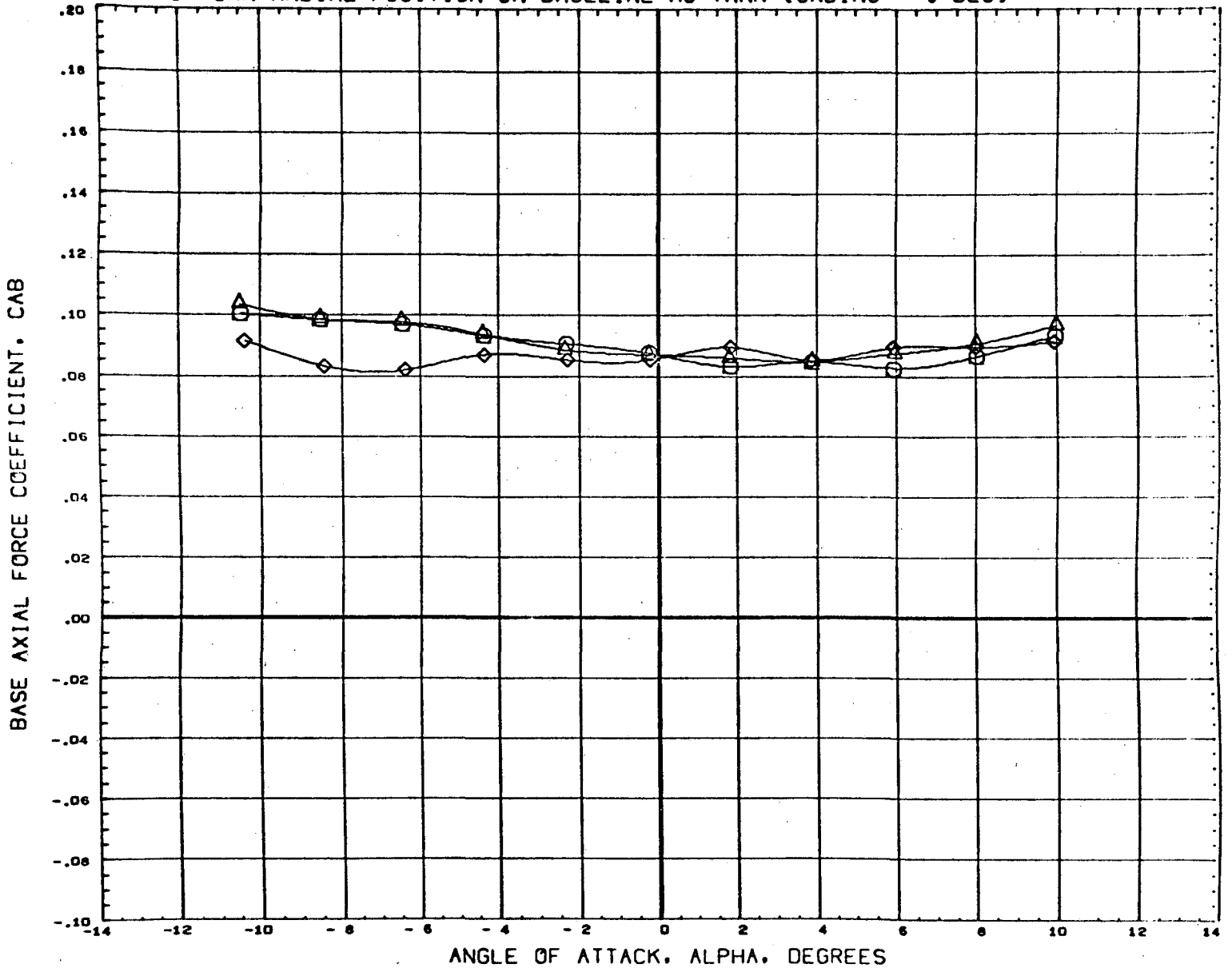
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

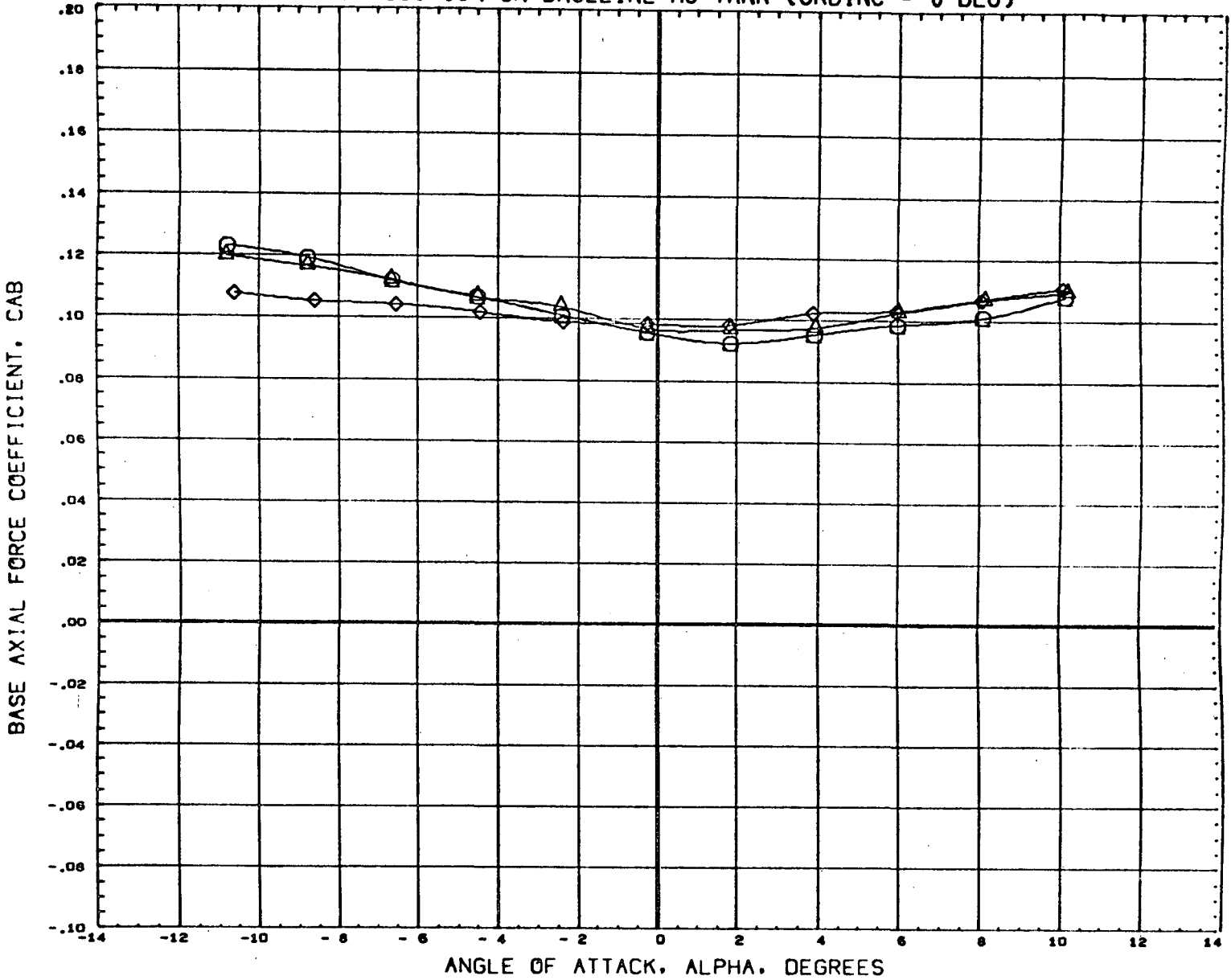
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(871007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

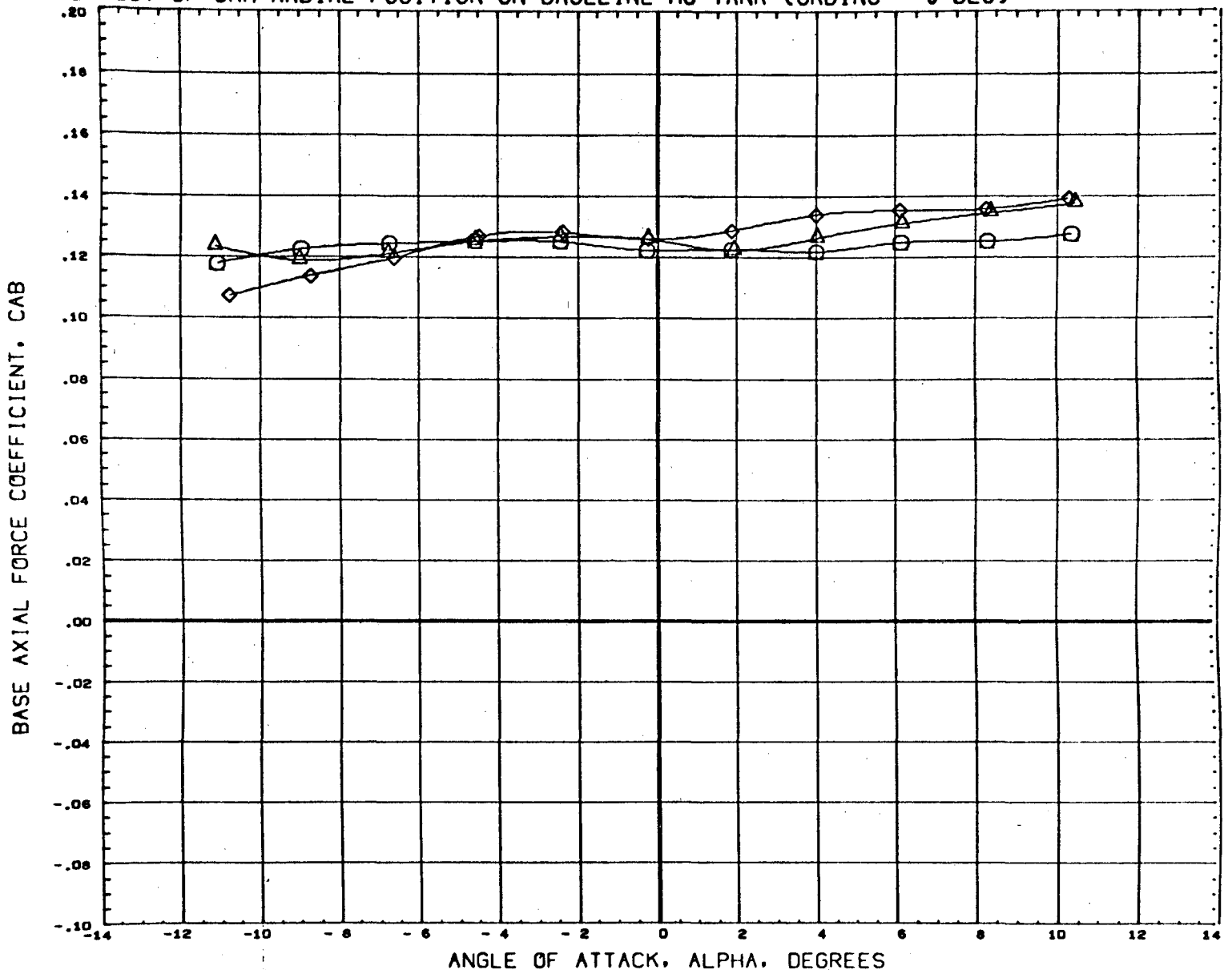
MACH .60

EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

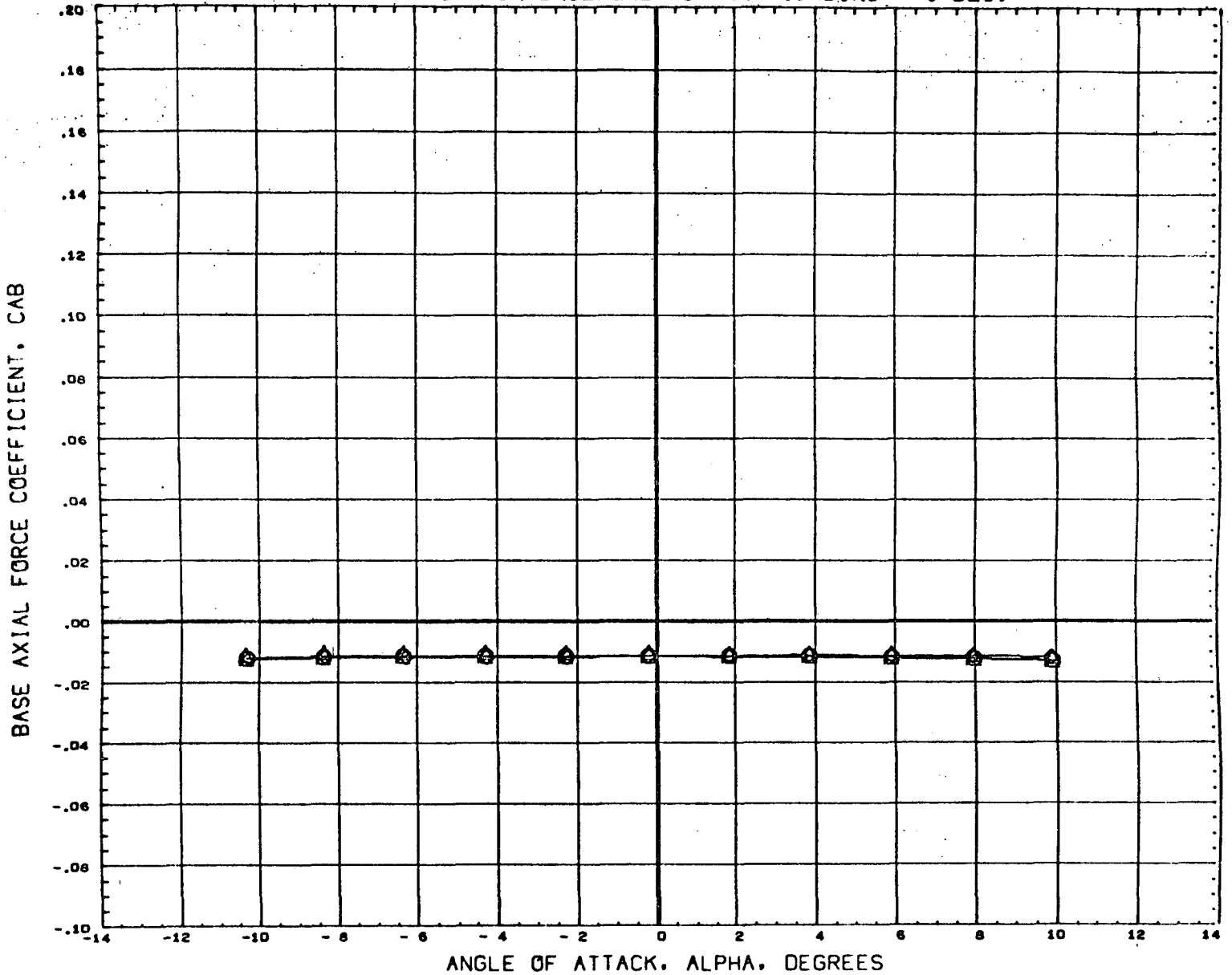
# EFFECT OF SRM RADIAL POSITION ON BASELINE HQ TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

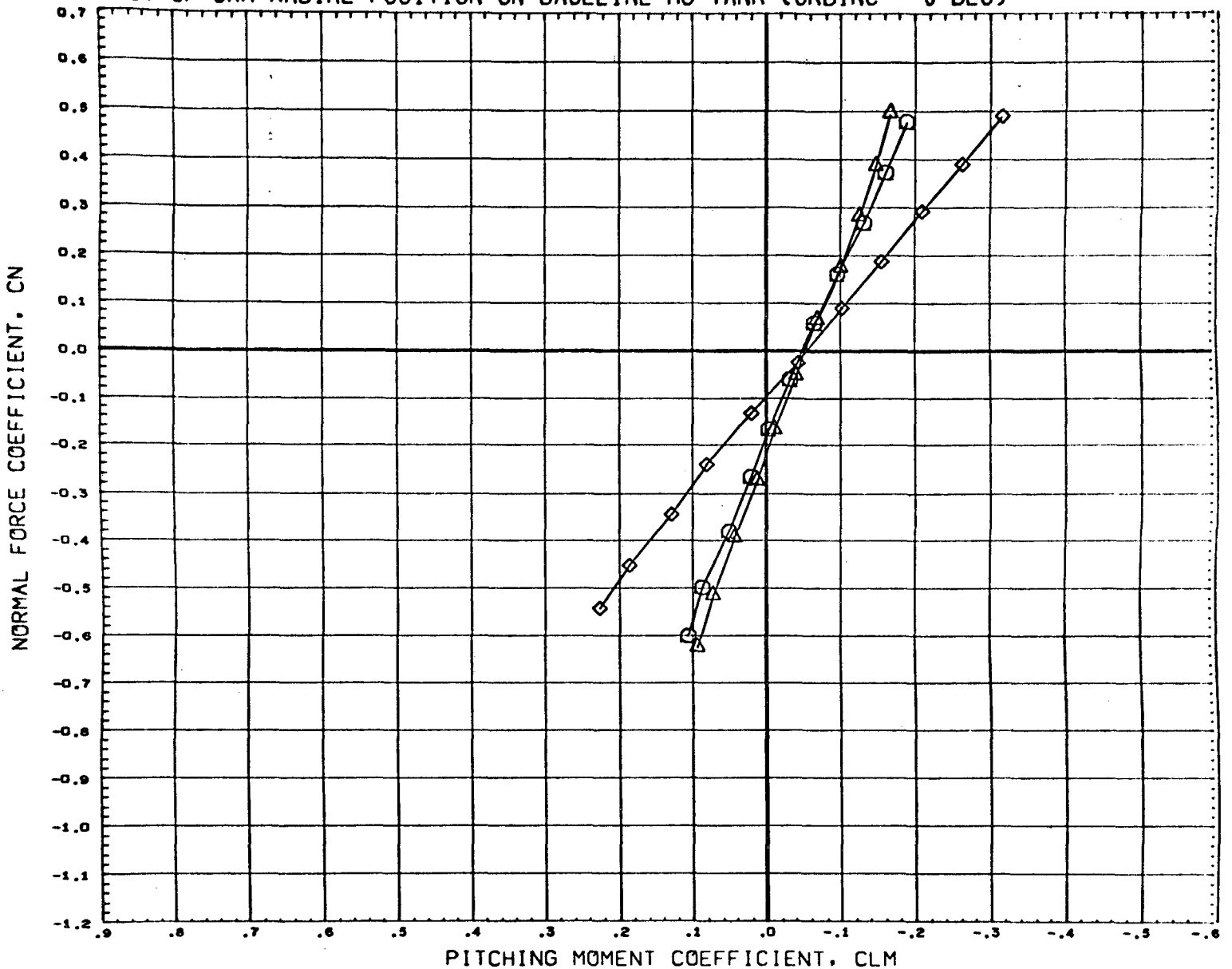
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

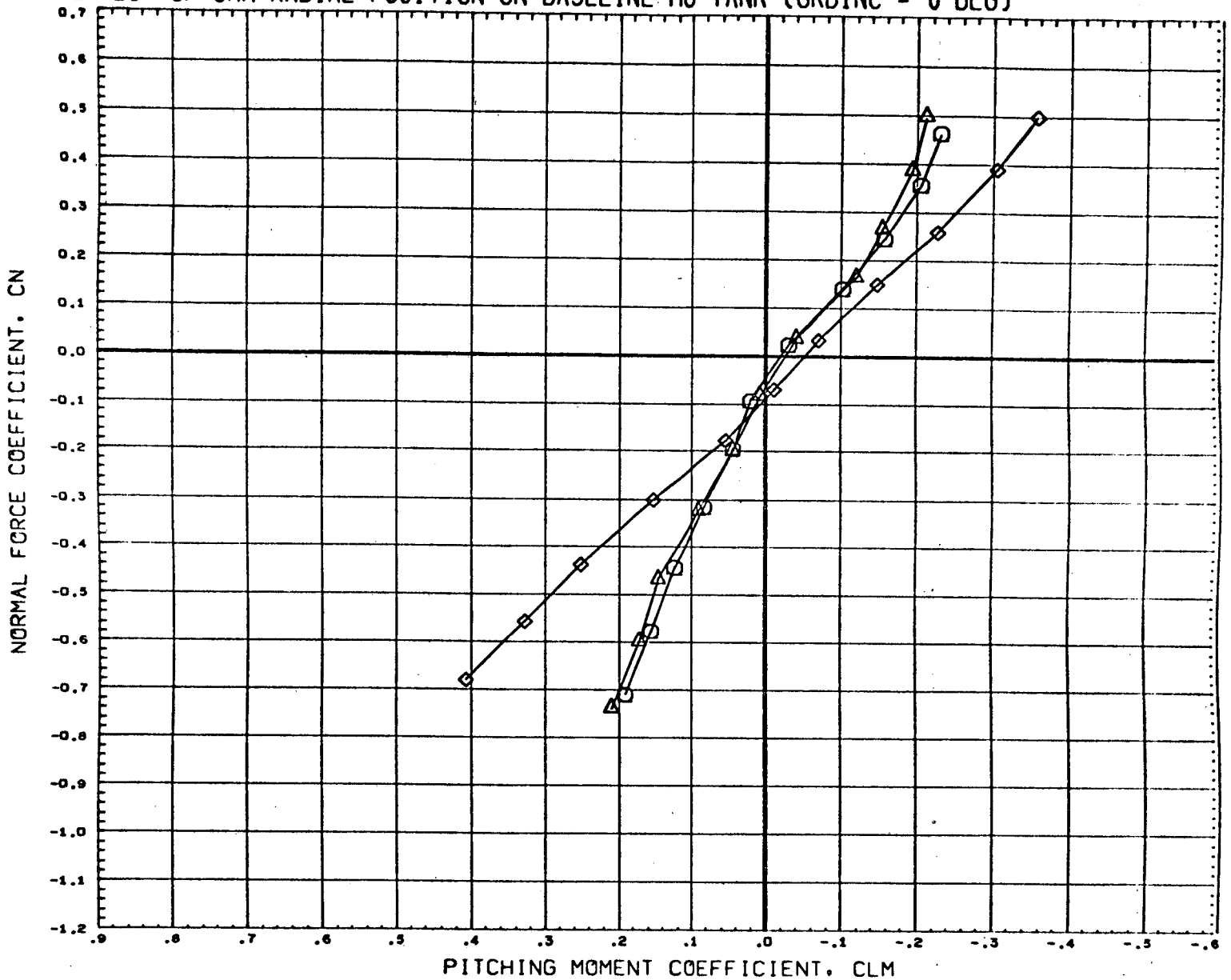
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 sq. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = 0 DEG)

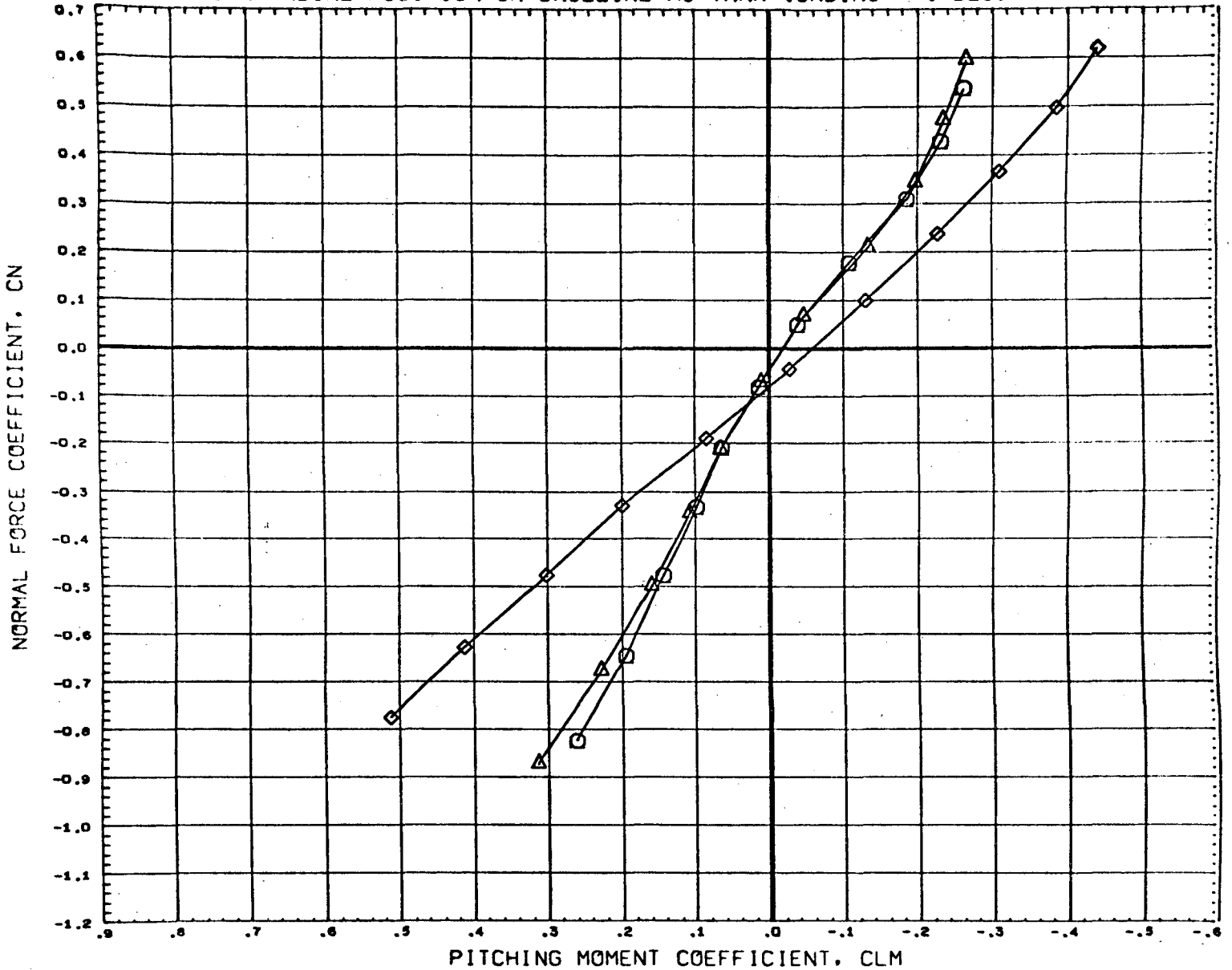


DATA SET SYMBO	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0260 IN.
(871007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2460 IN. SCALE 0.0040 SCALE

MACH .91

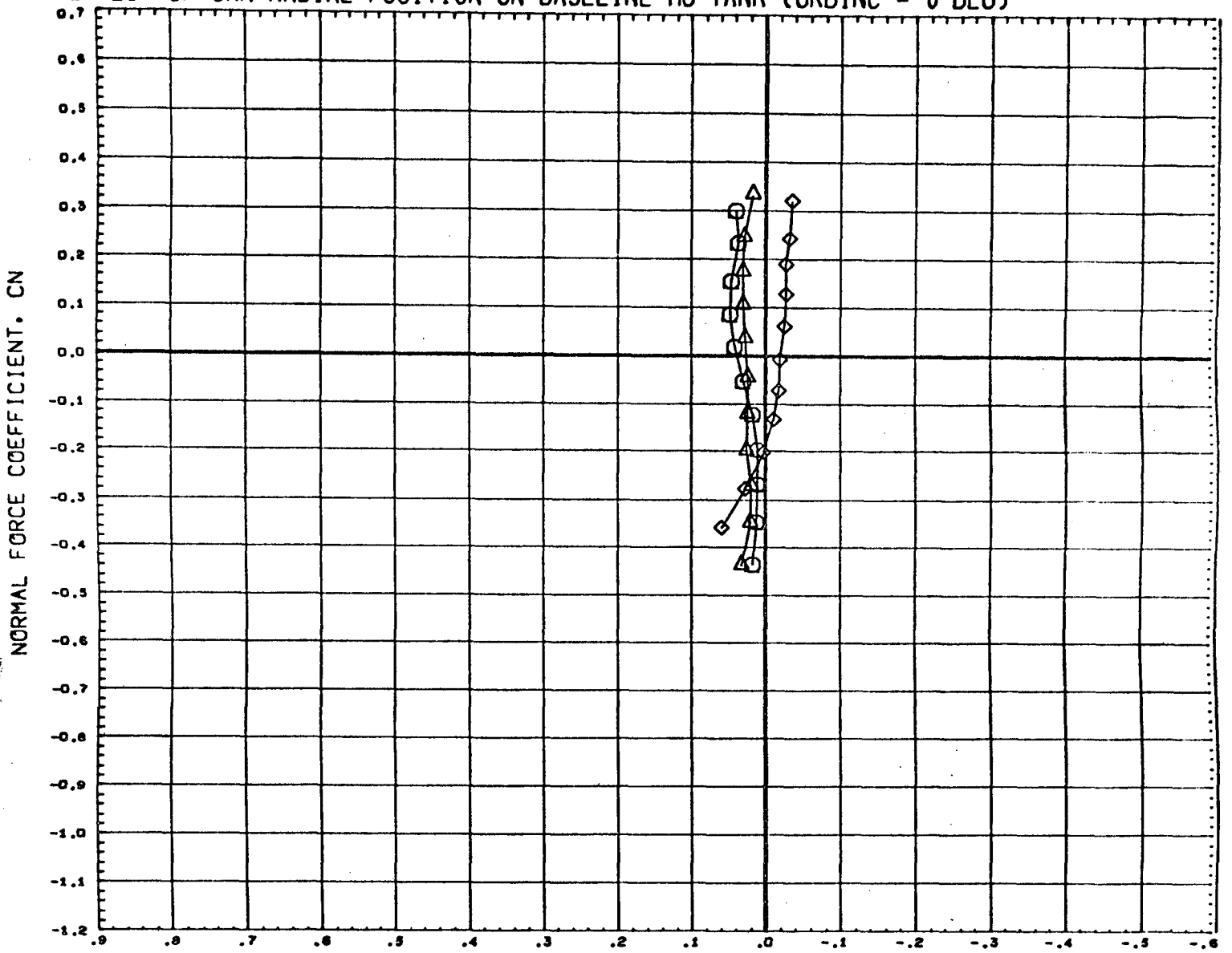


EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = 0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = 0 DEG)



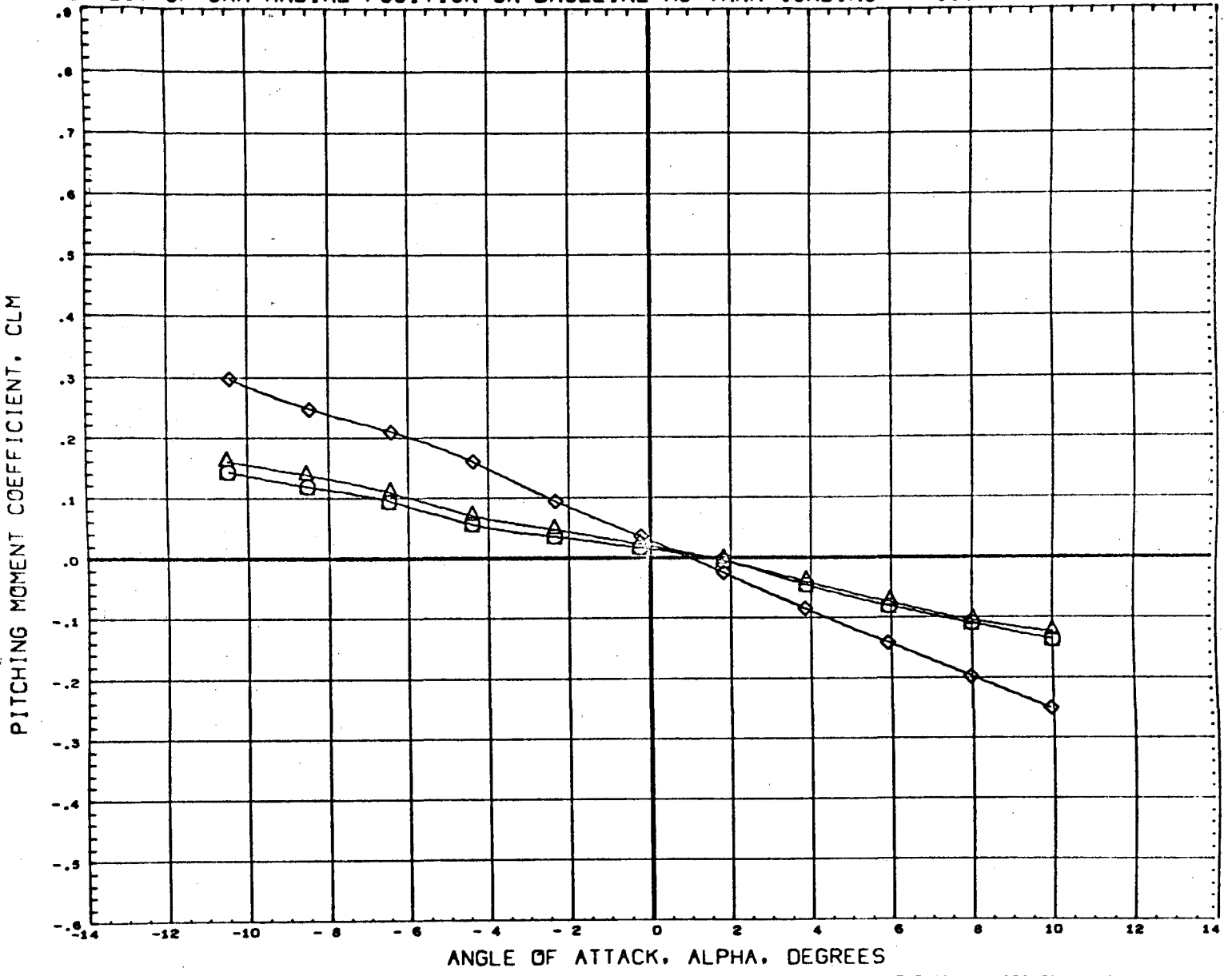
PITCHING MOMENT COEFFICIENT, CLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871004)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	90.000	0.000	0.000	LREF 2.0280 IN.
(871007)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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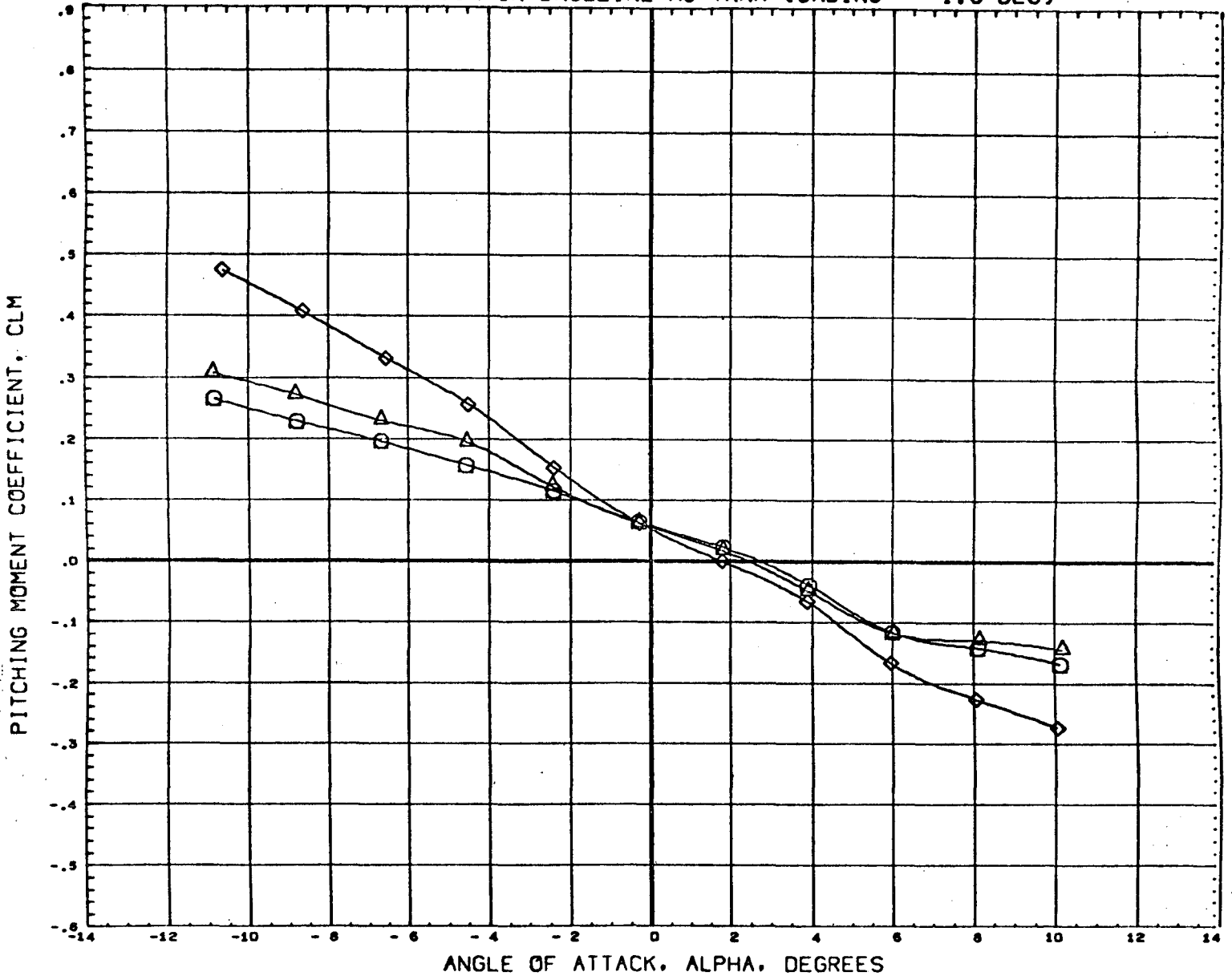
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

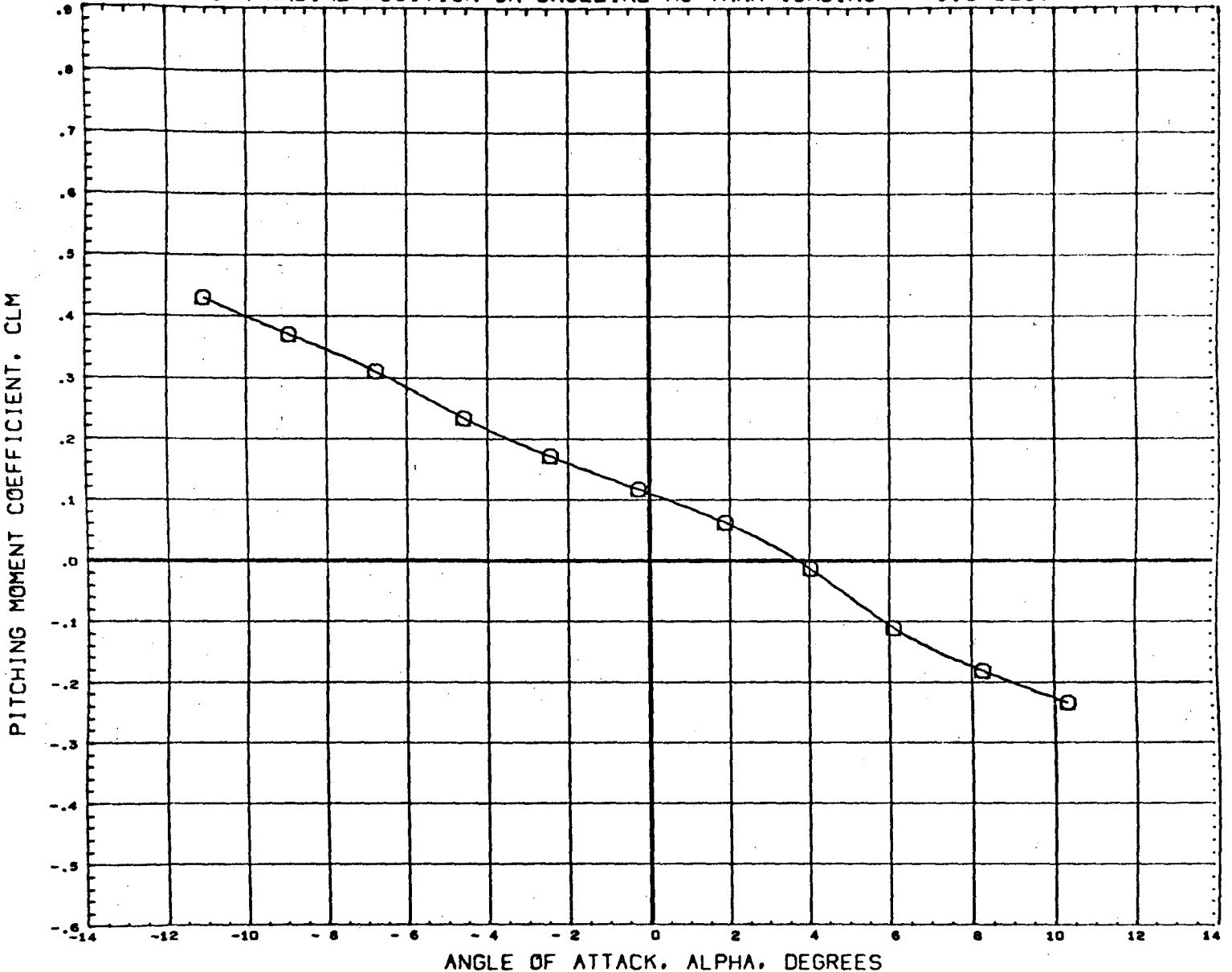


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

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EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

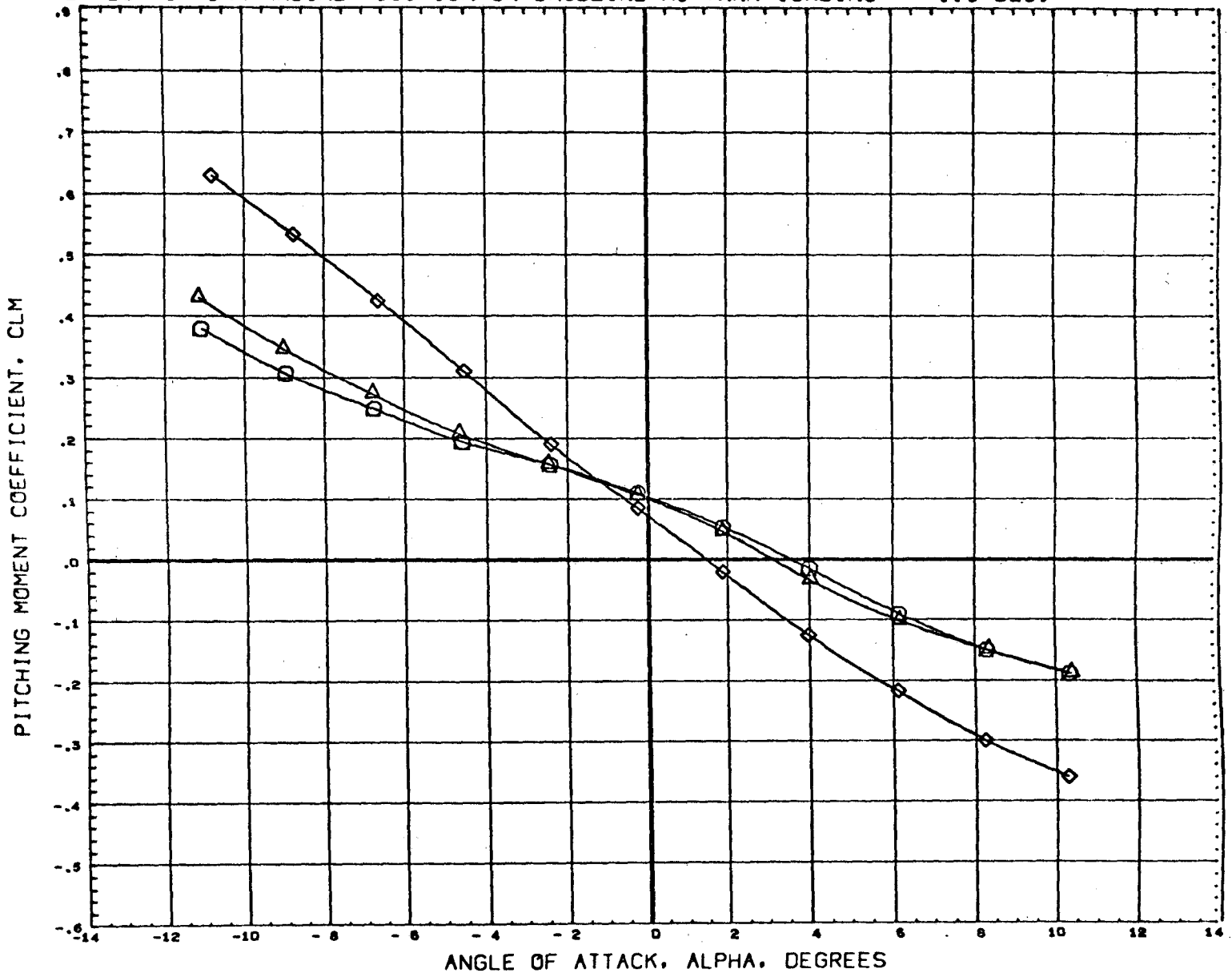


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(871005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

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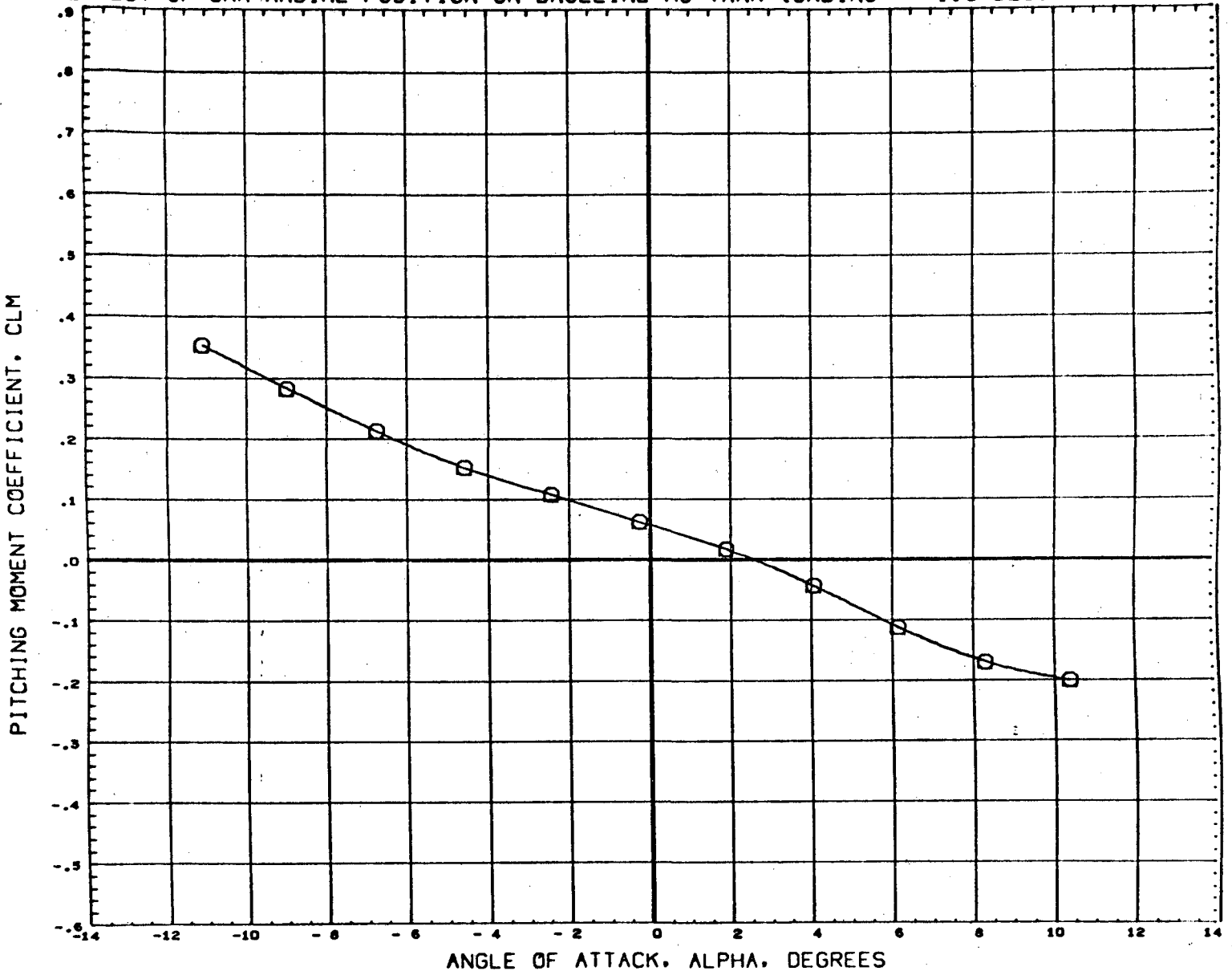
EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

MACH 1.20

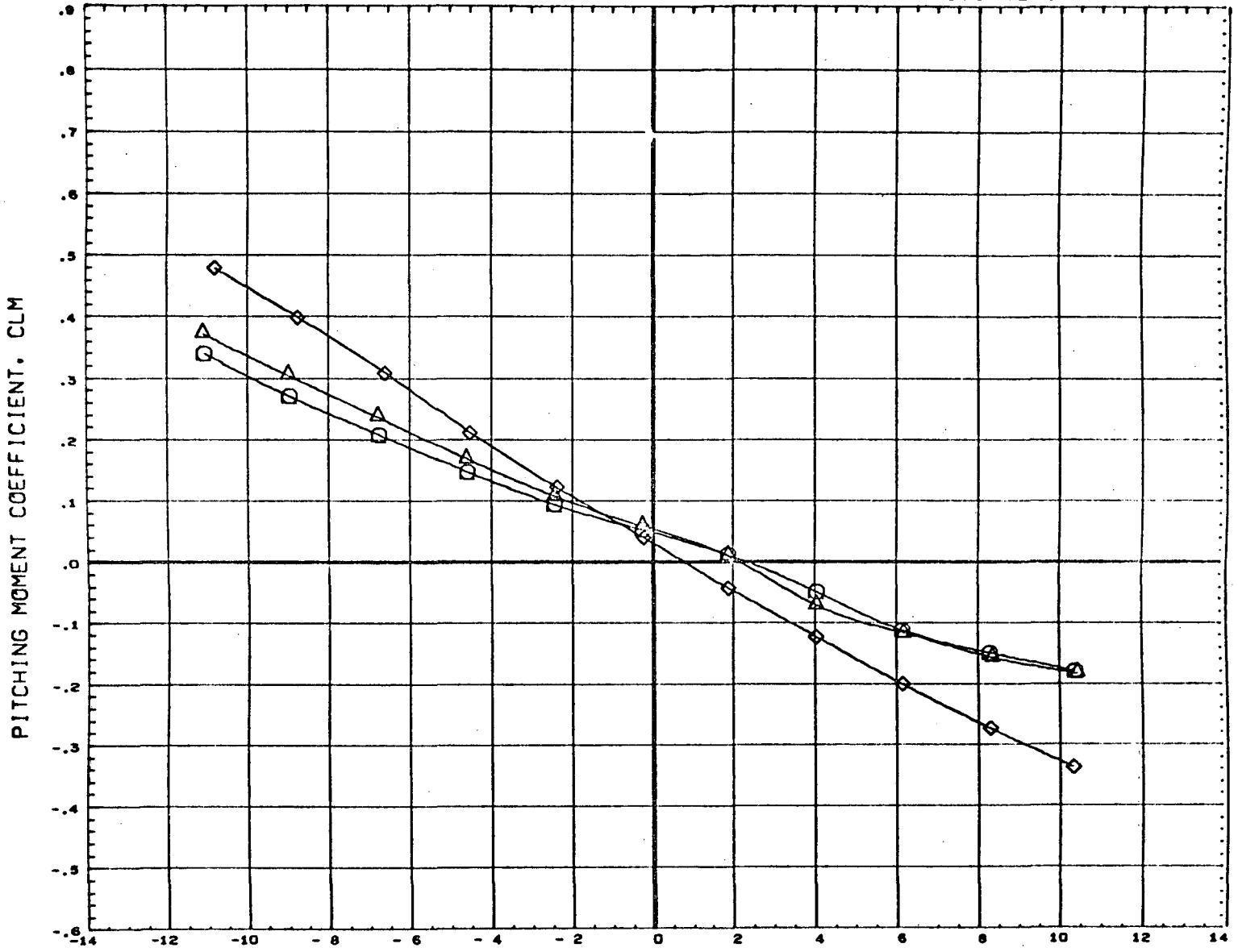
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75,000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90,000	0.000	0.000	LREF 2.0280 IN.
(B71008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135,000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



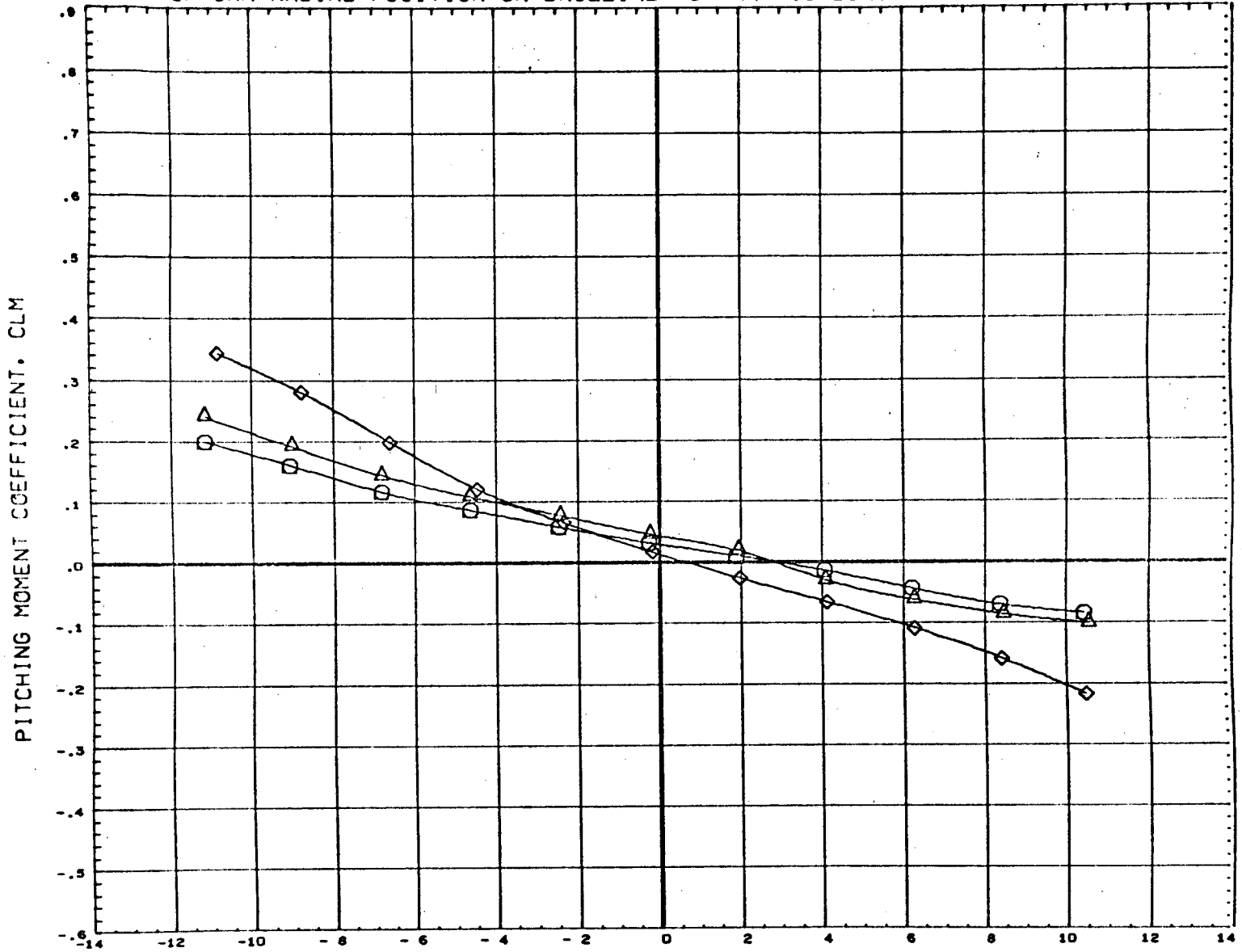
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.45



EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



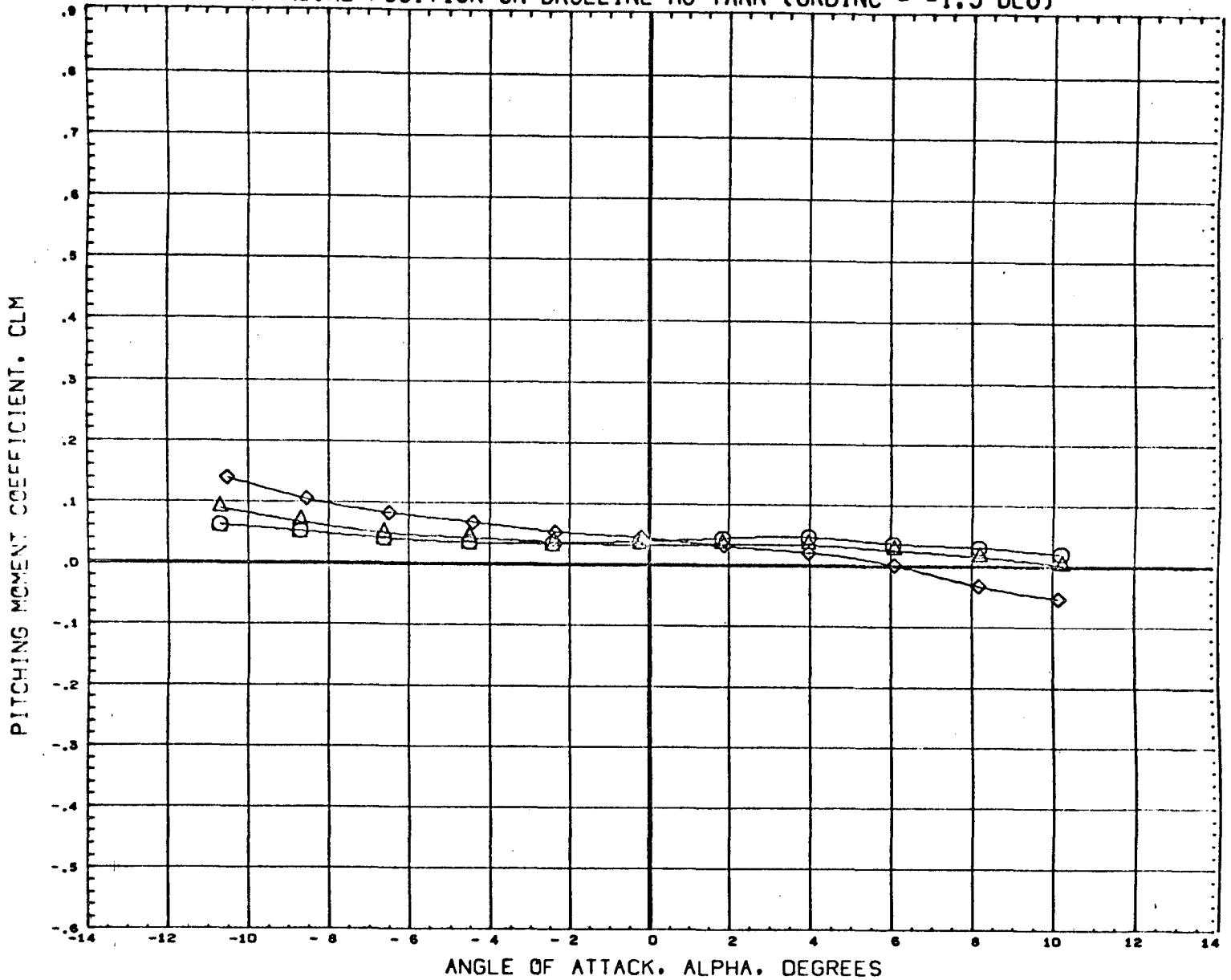
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

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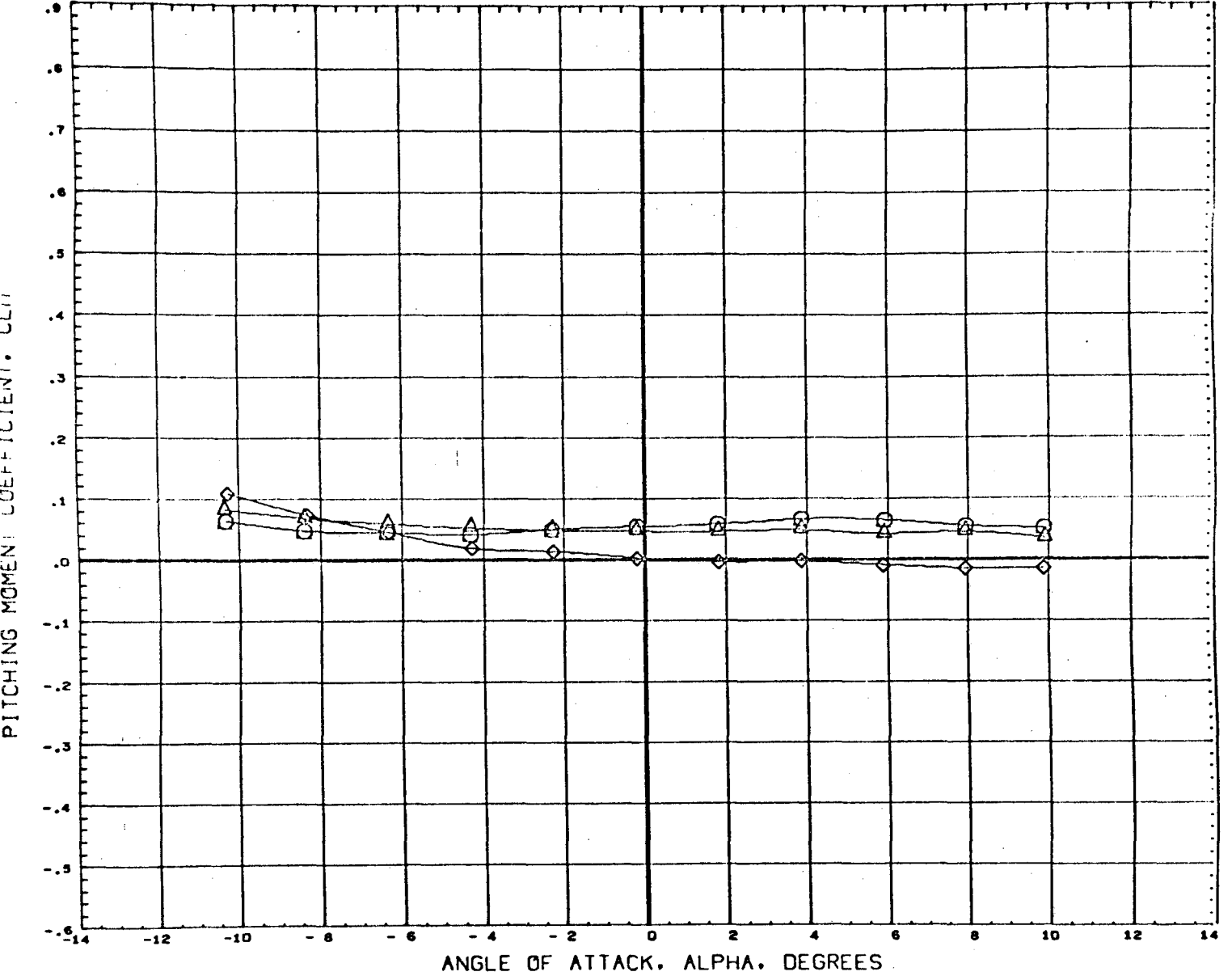
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4800 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

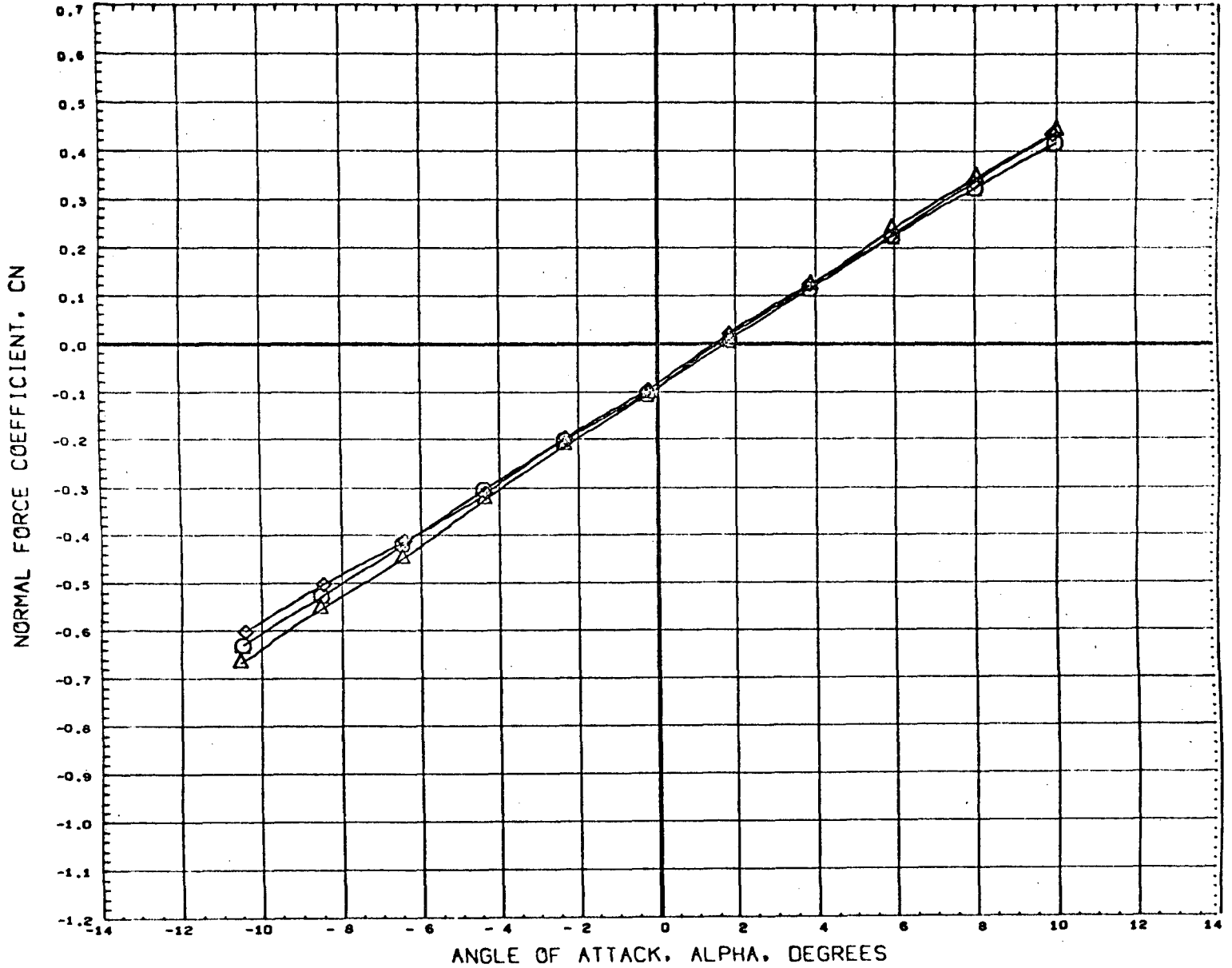
EFFECT OF SRM RADIAL POSITION ON BASELINE HQ TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

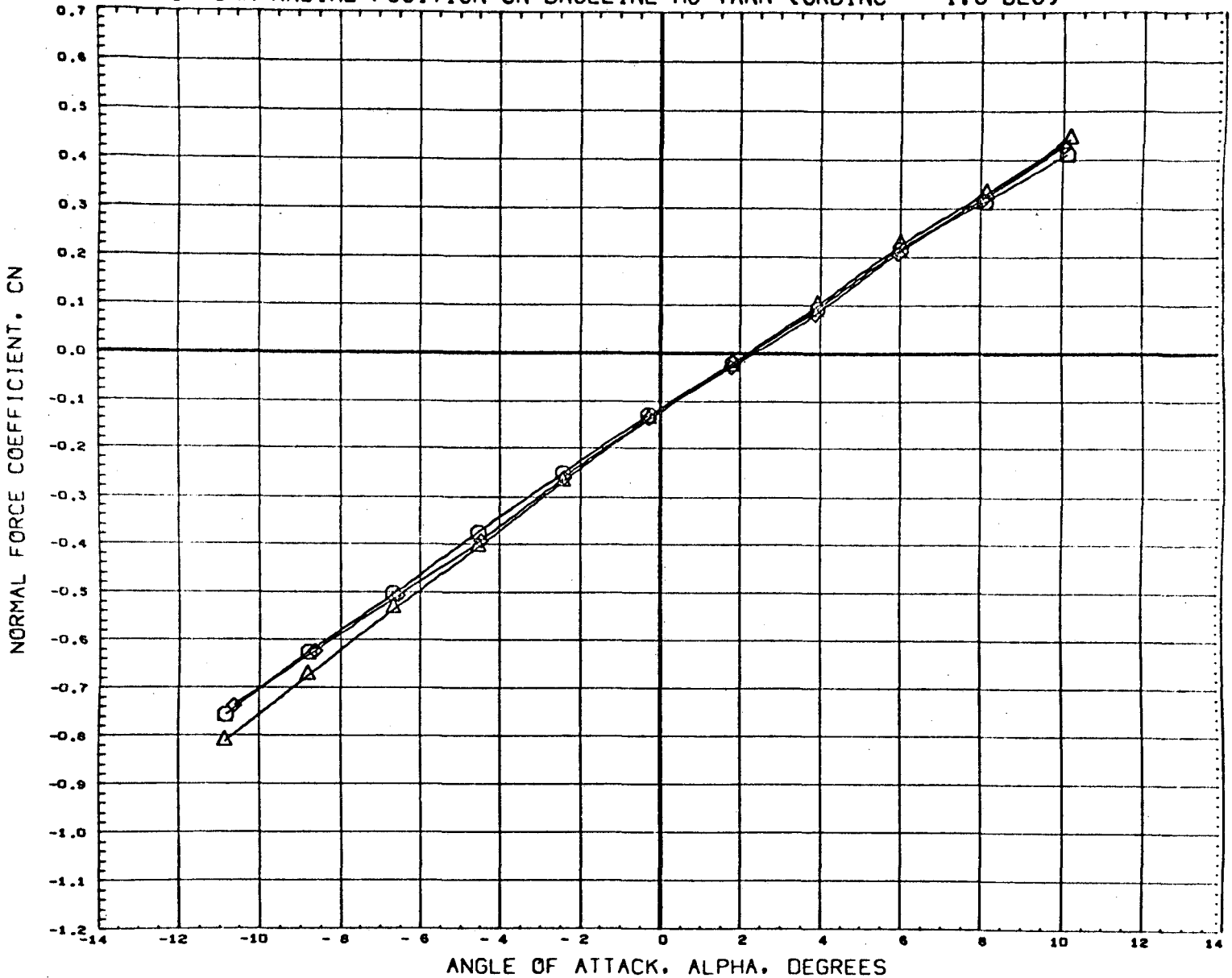
MACH 4.96

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

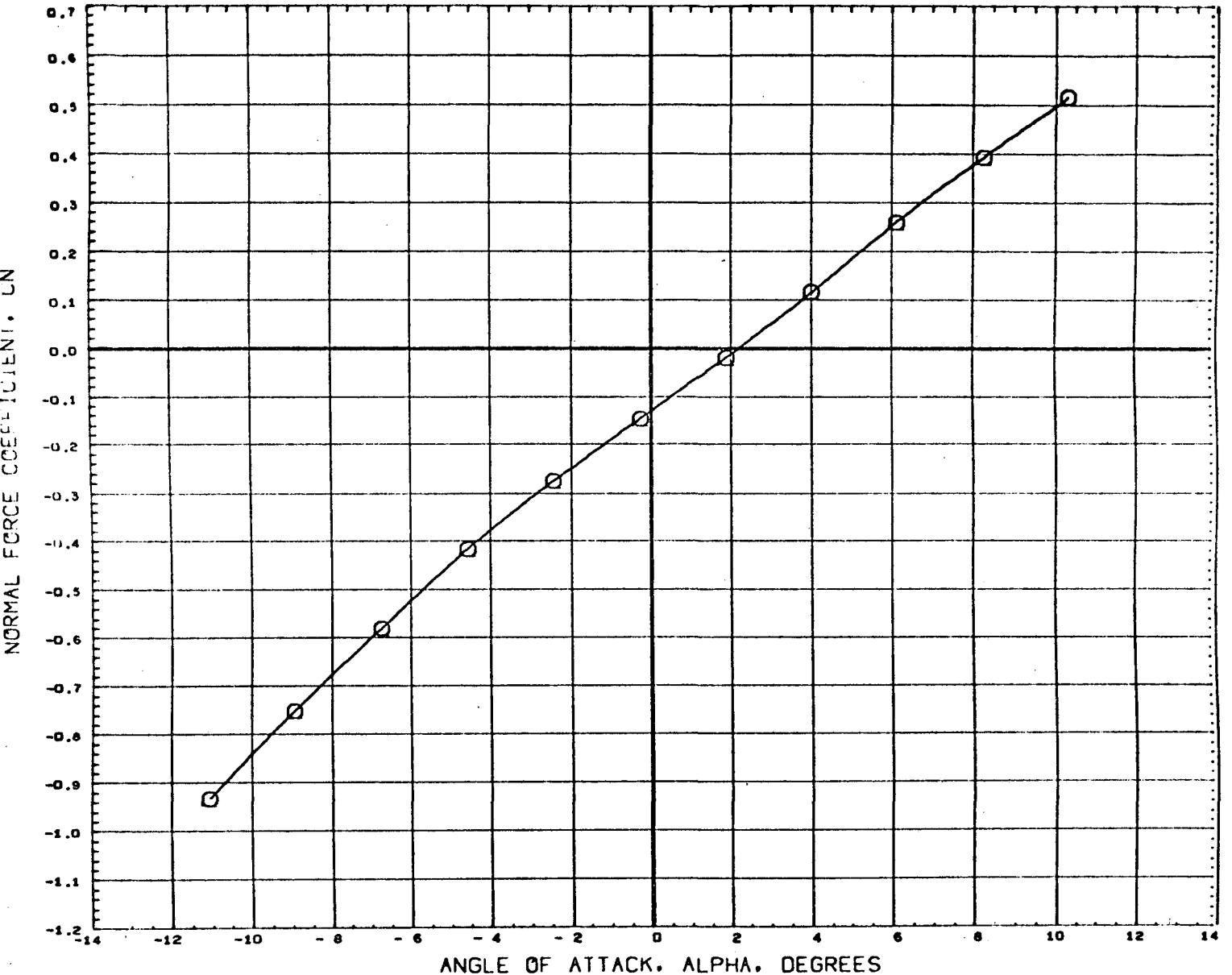
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(671002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(671005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(671008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90

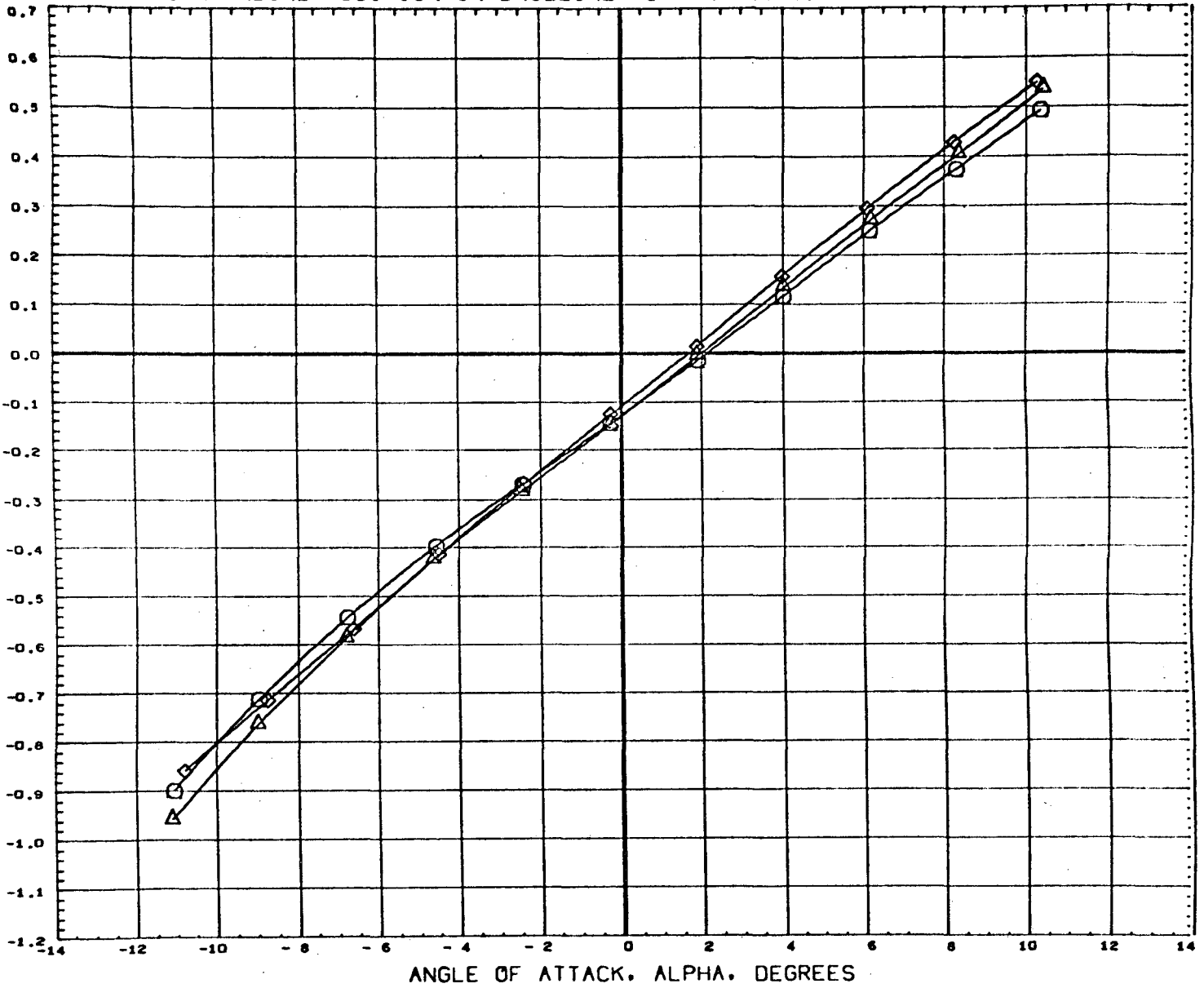
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75,000	0,000	0,000	SREF	7.8800 SQ. IN
(B71005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90,000	0,000	0,000	LREF	2.0280 IN.
(B71008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135,000	0,000	0,000	BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.10

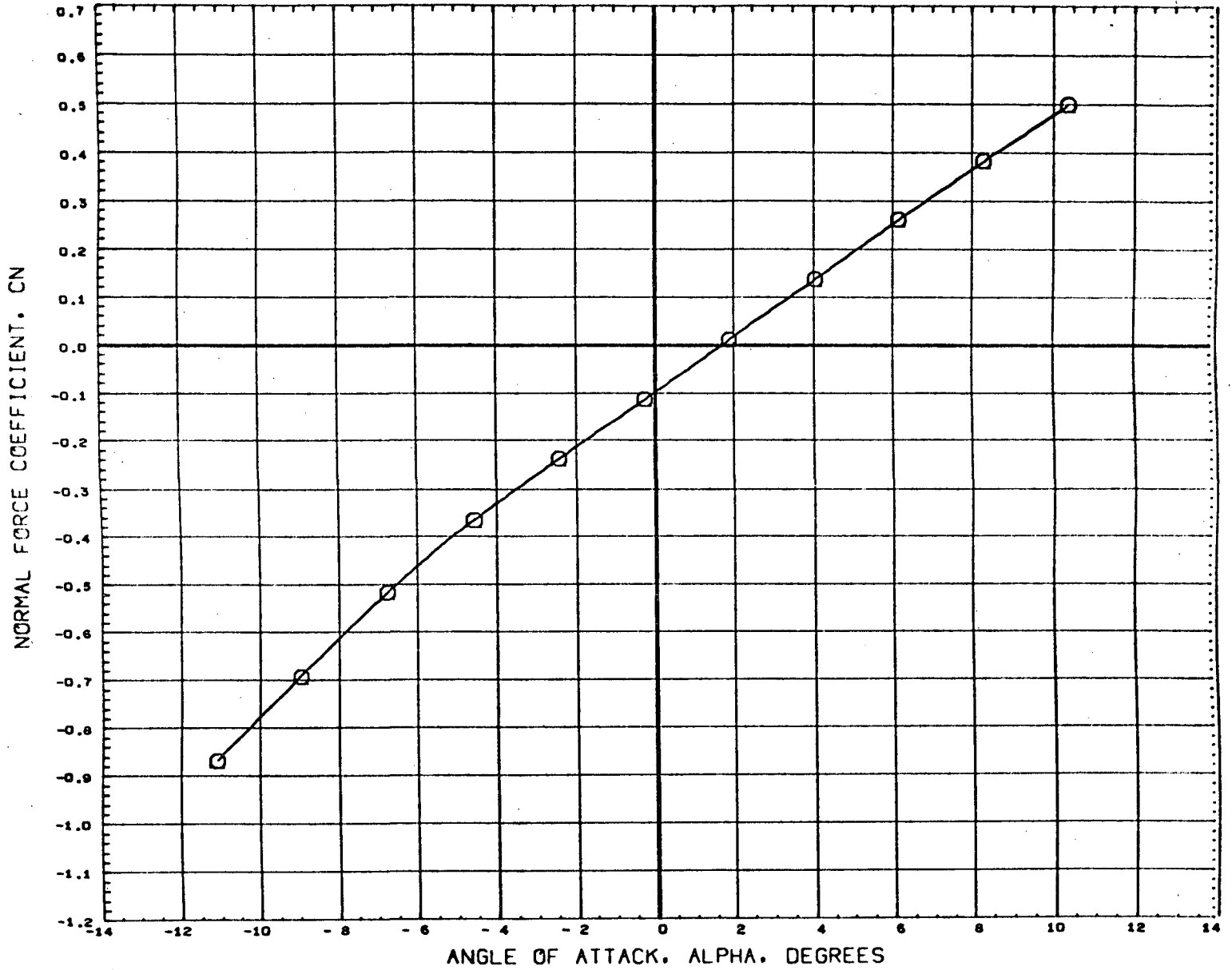
# EFFECT OF SRM RADIAL POSITION ON BASELINE HQ TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

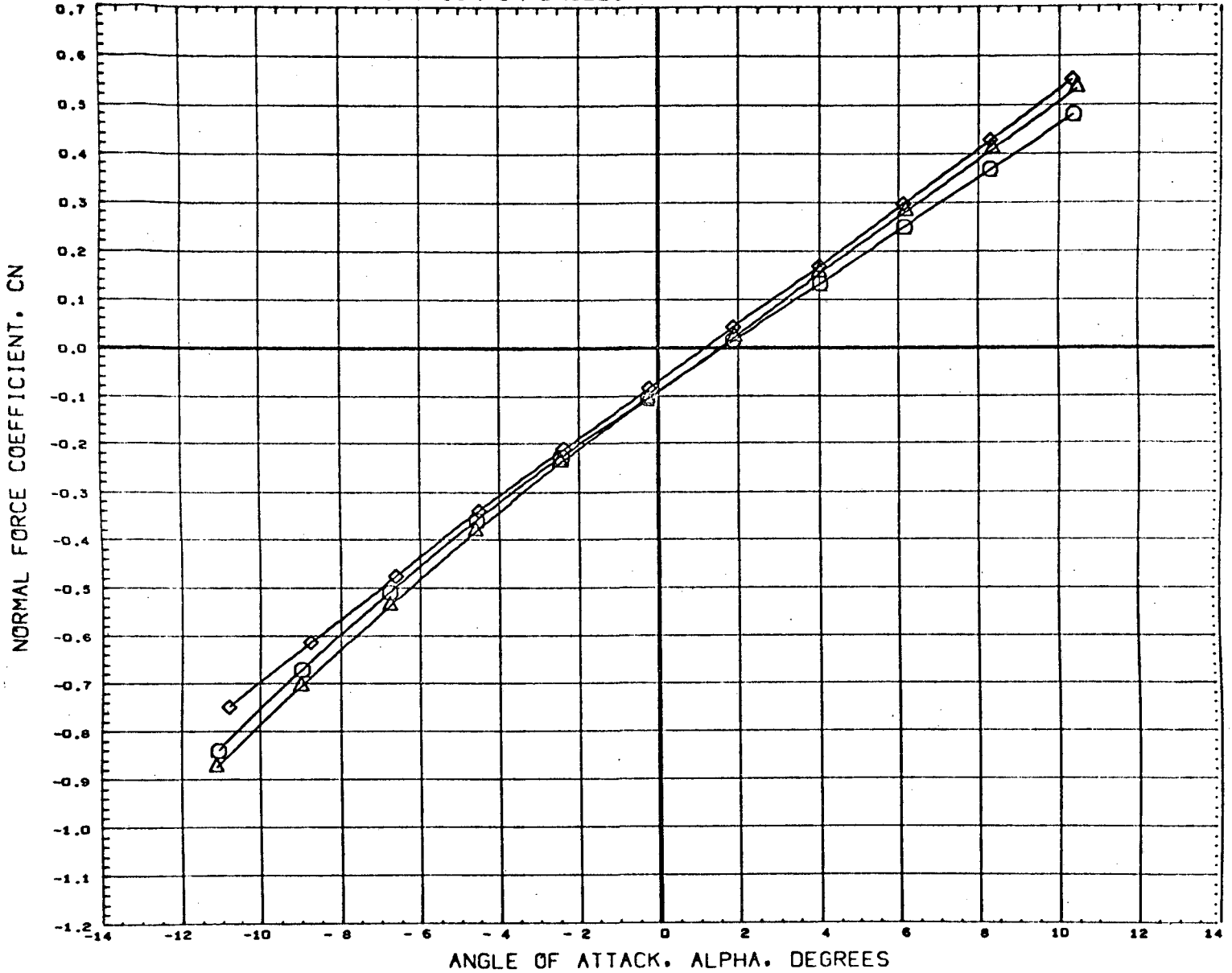


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 50. IN
(871005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.30



EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

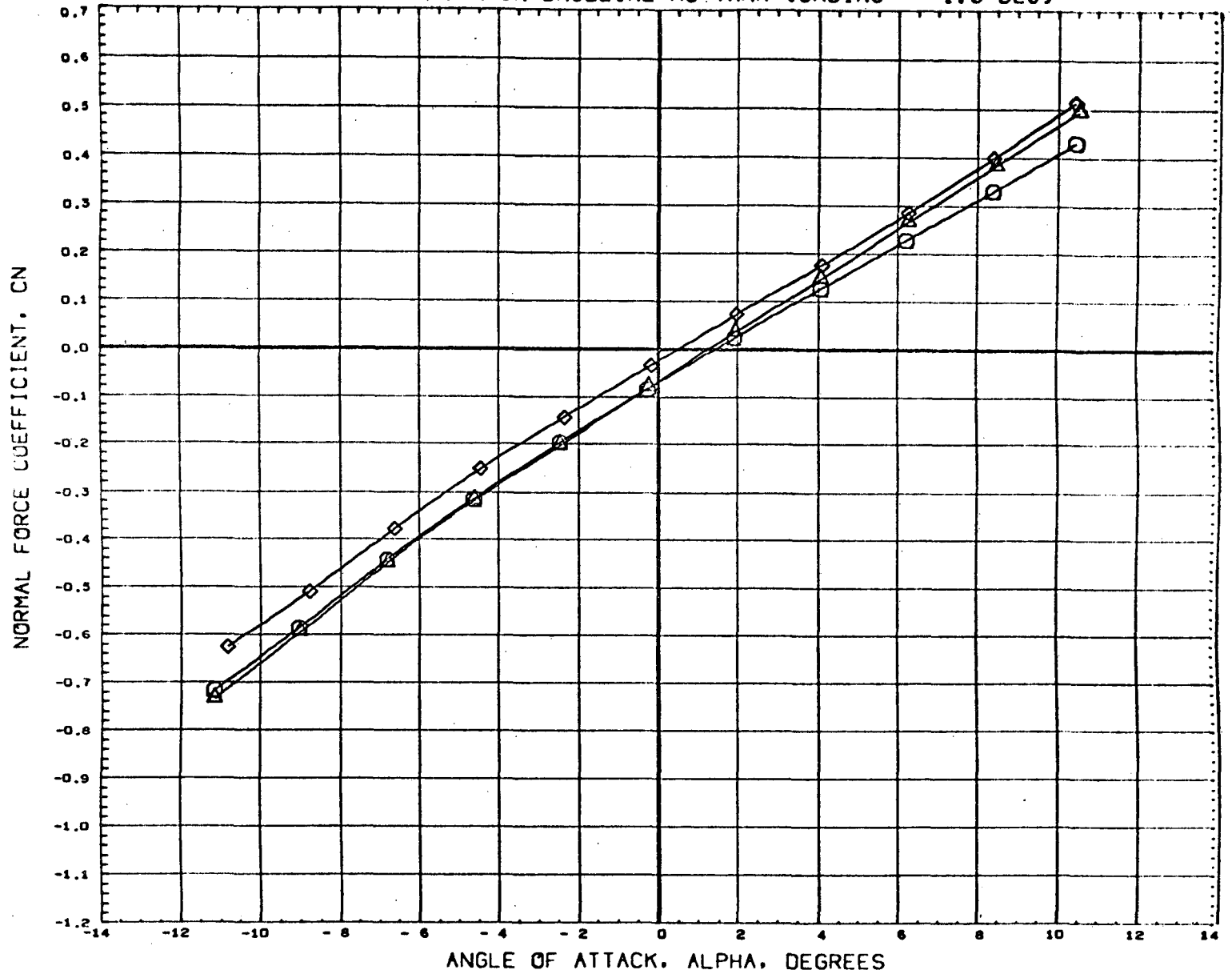


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIO1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.45

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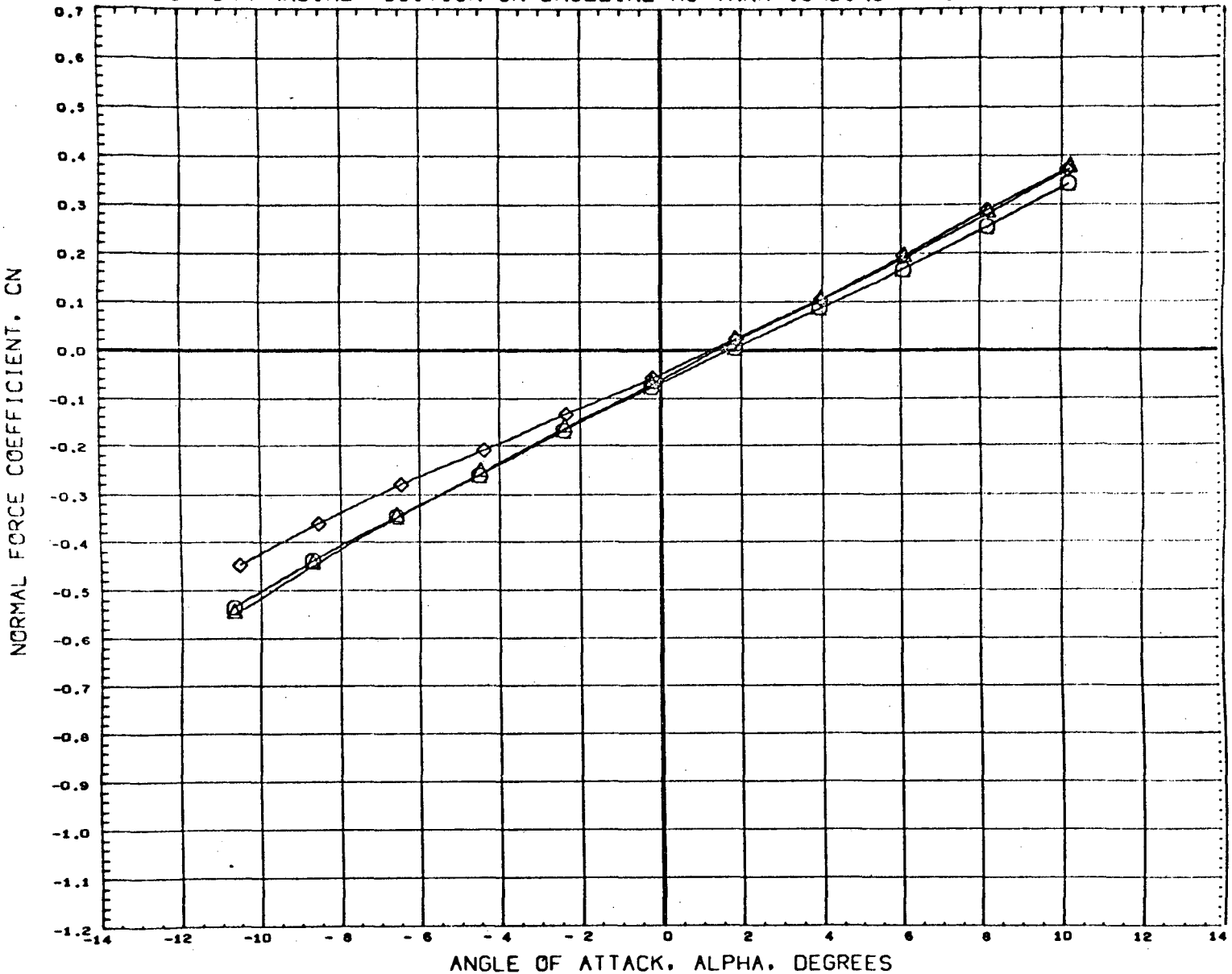
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

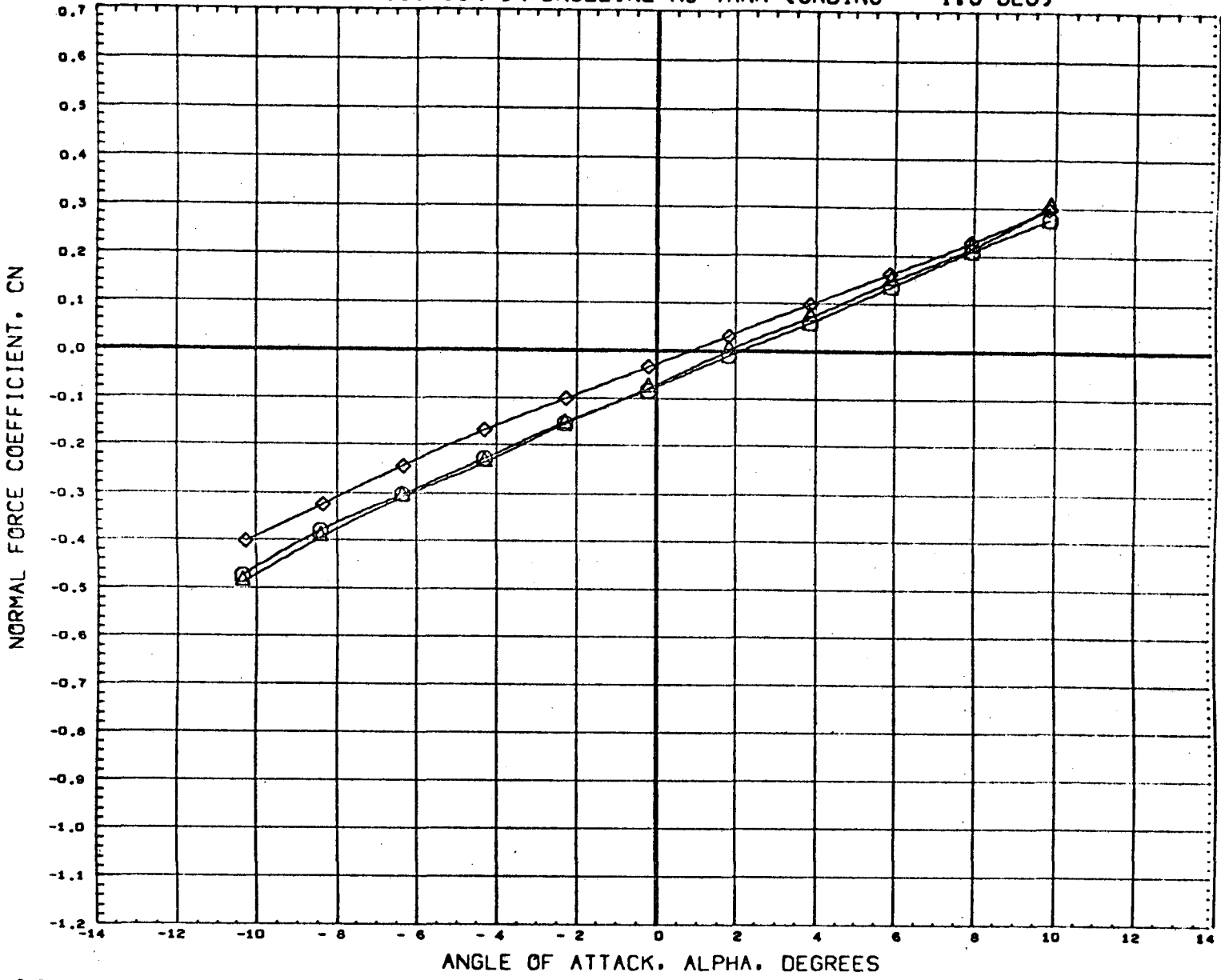
MACH 1.97

EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

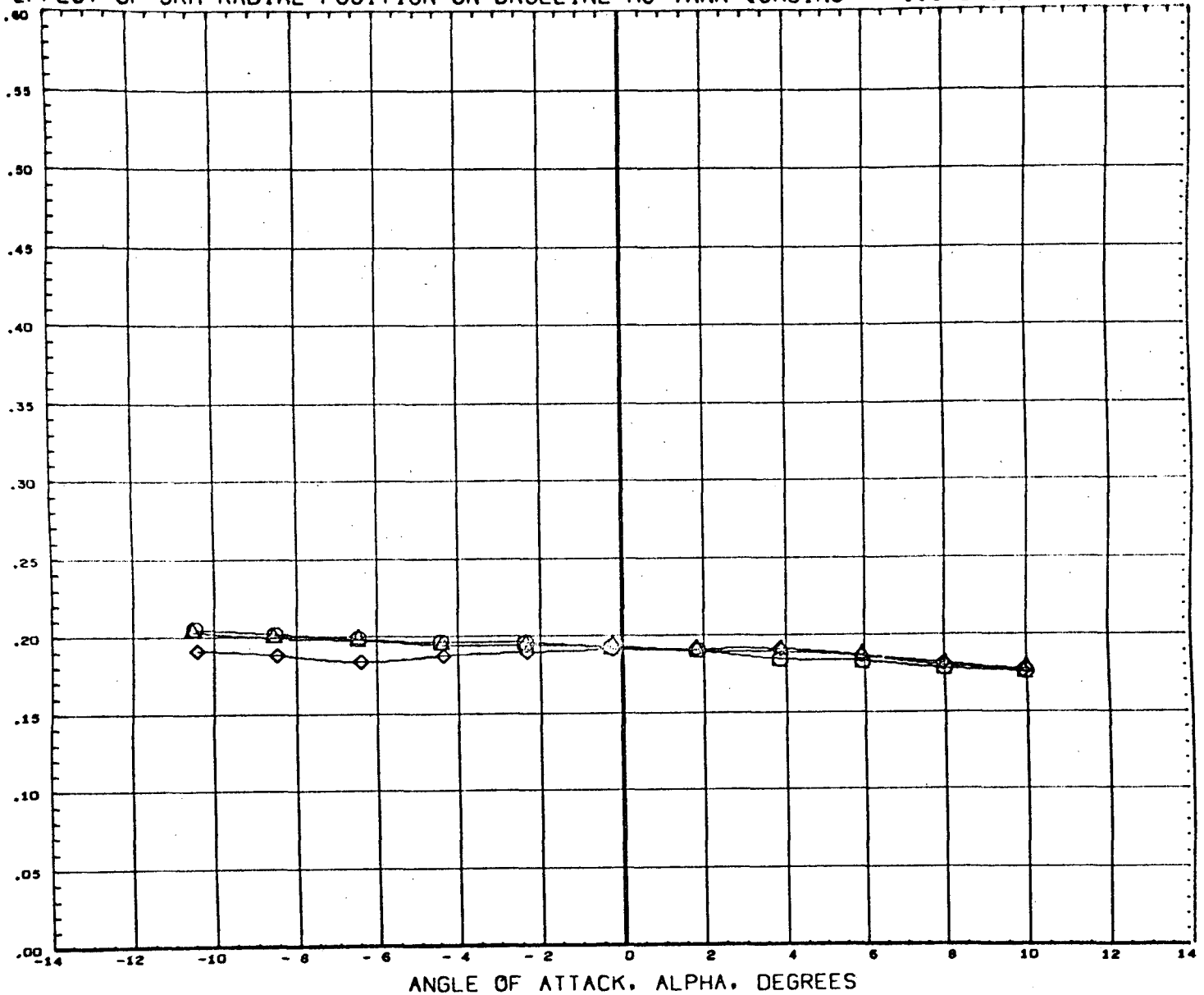


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

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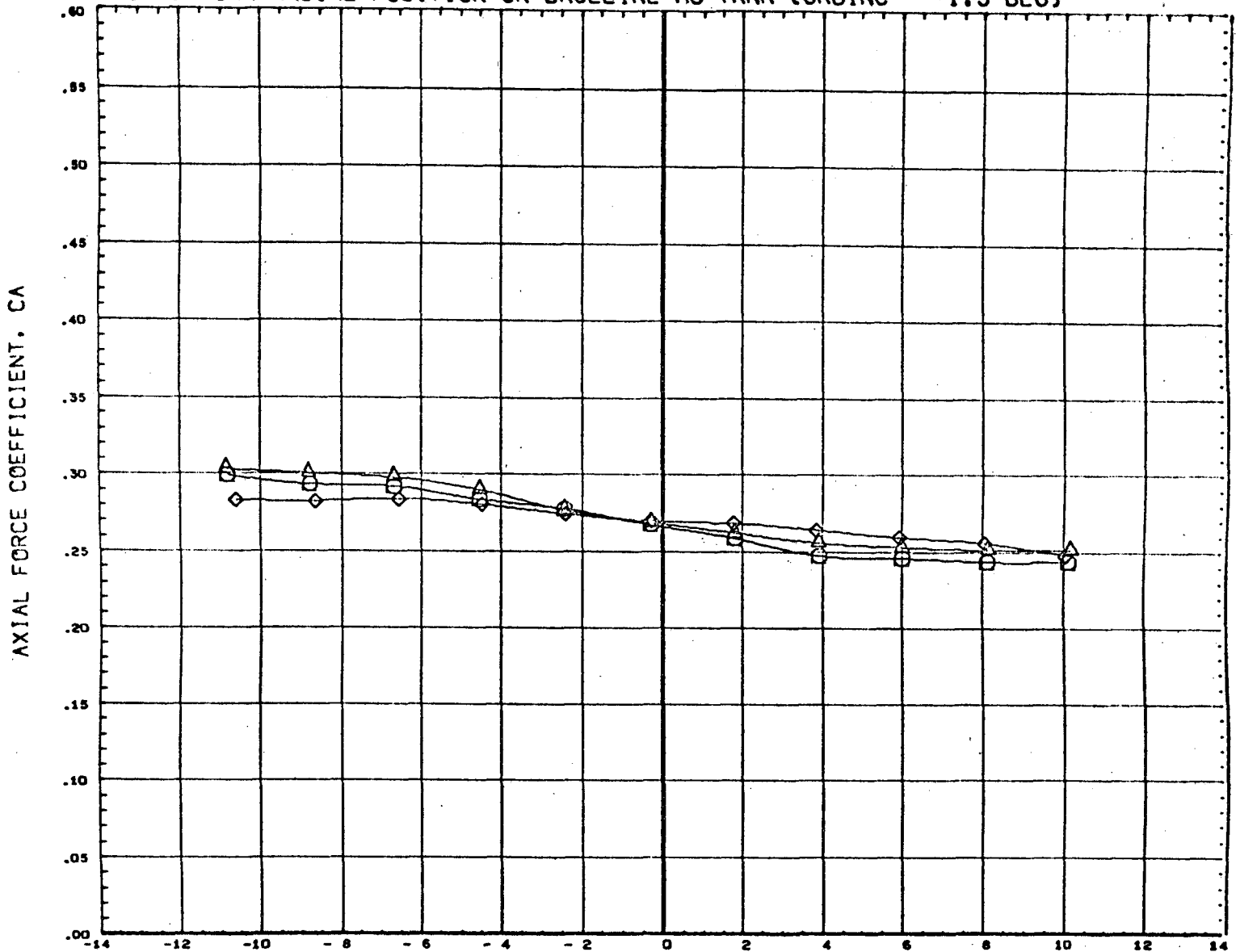


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61

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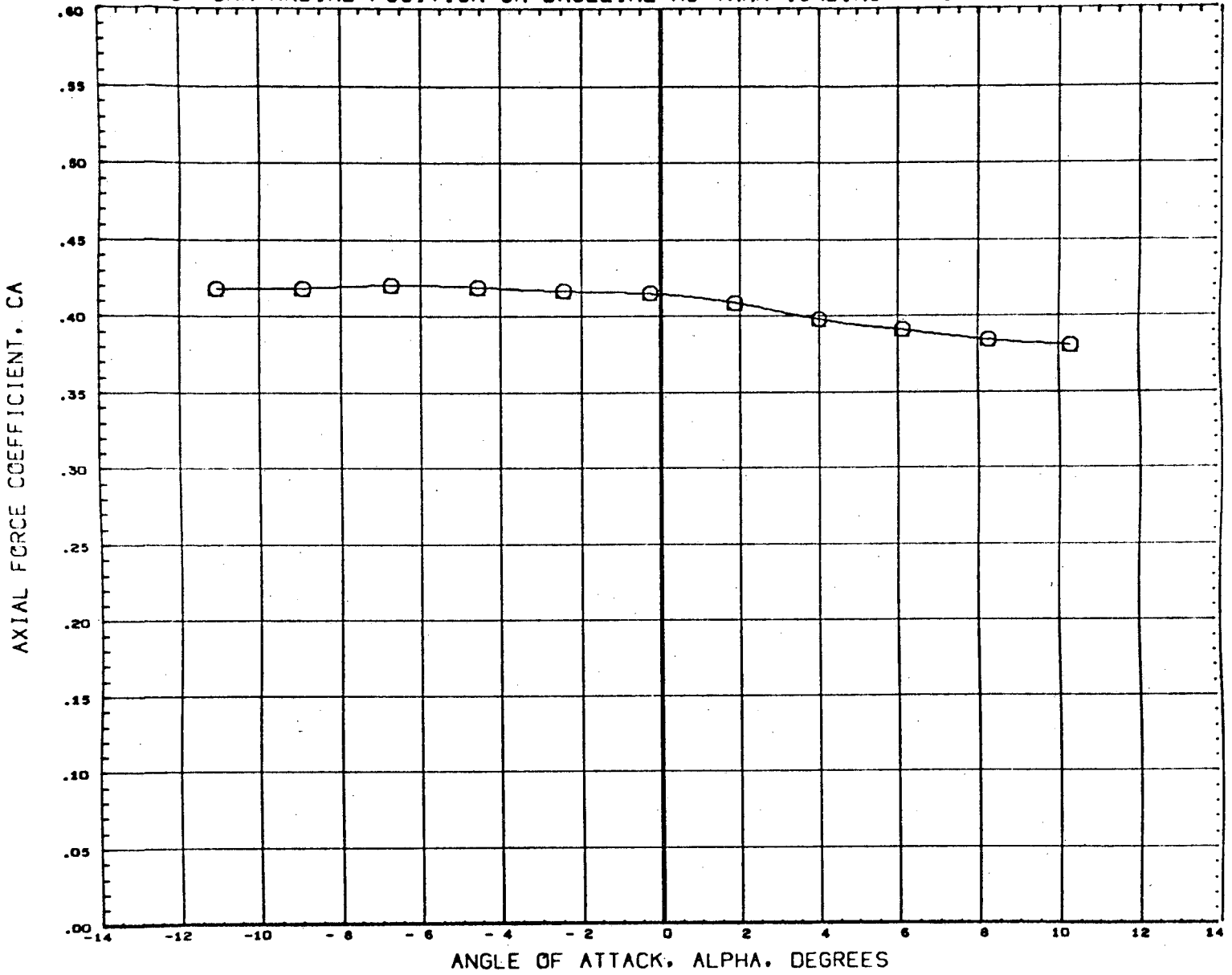
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75,000	0.000	0.000	SREF 7.8900 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90,000	0.000	0.000	LREF 2.0280 IN.
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135,000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90

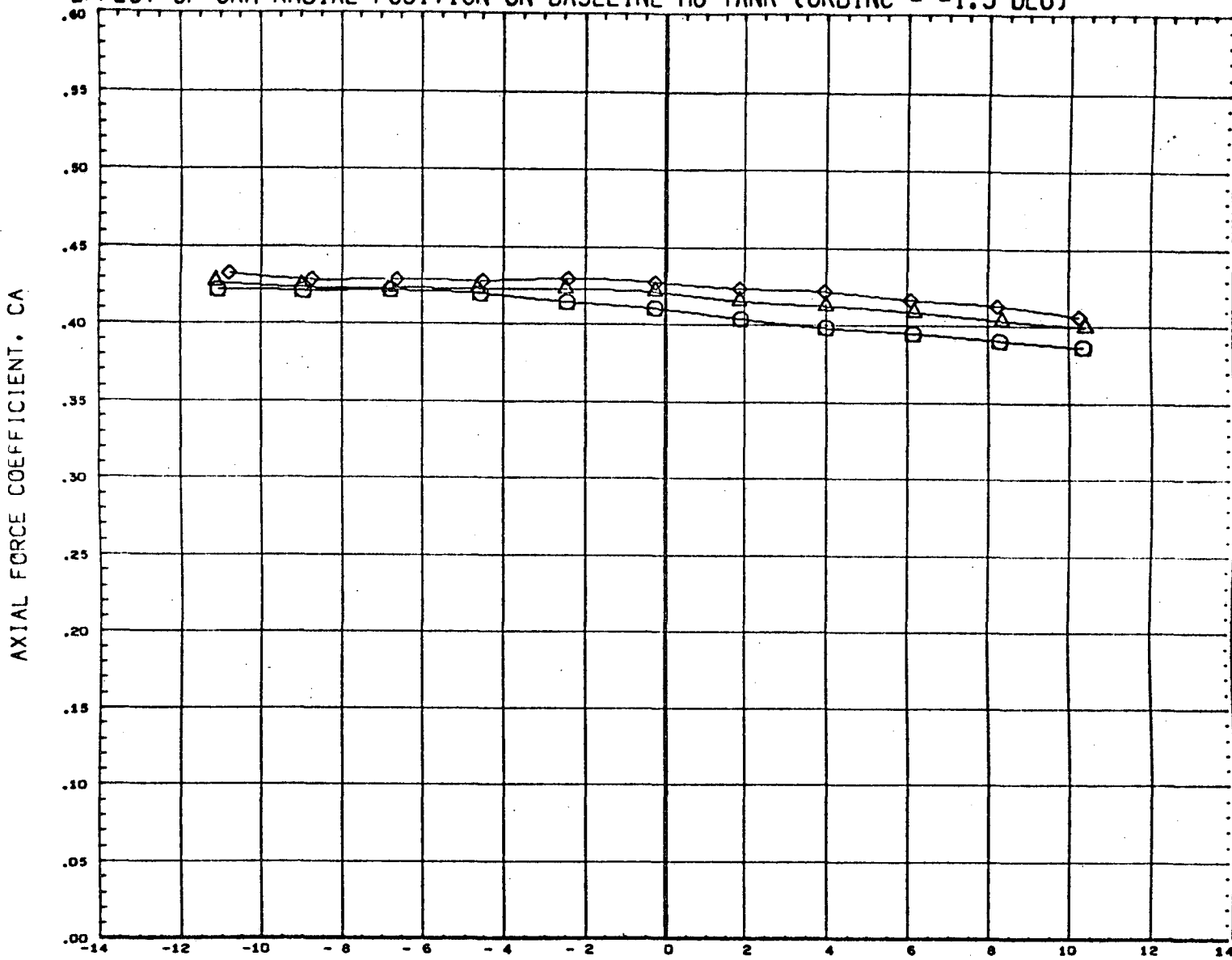
EFFECT OF SRM RADIAL POSITION ON BASELINE HQ TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.10

# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

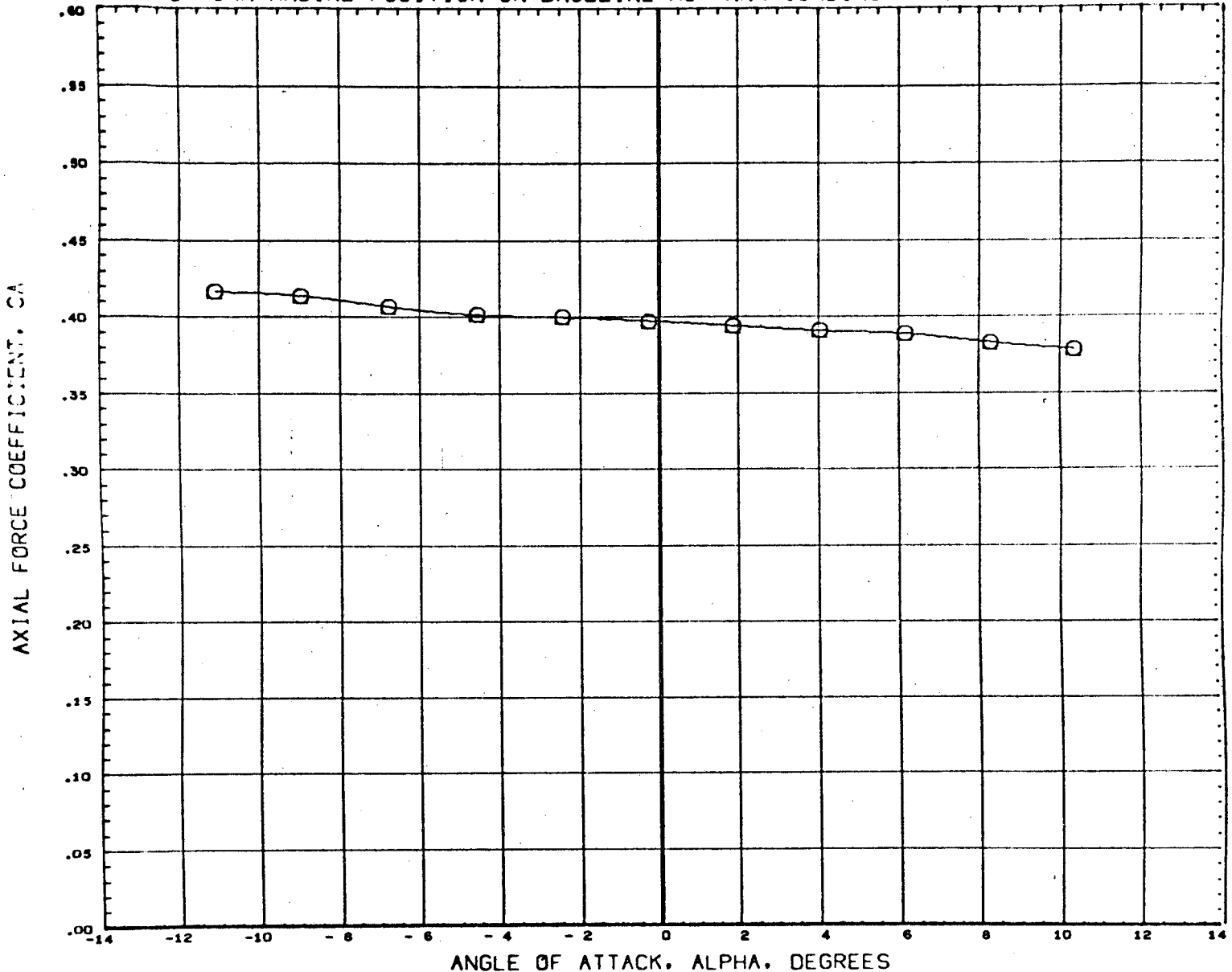


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 80. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20



EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

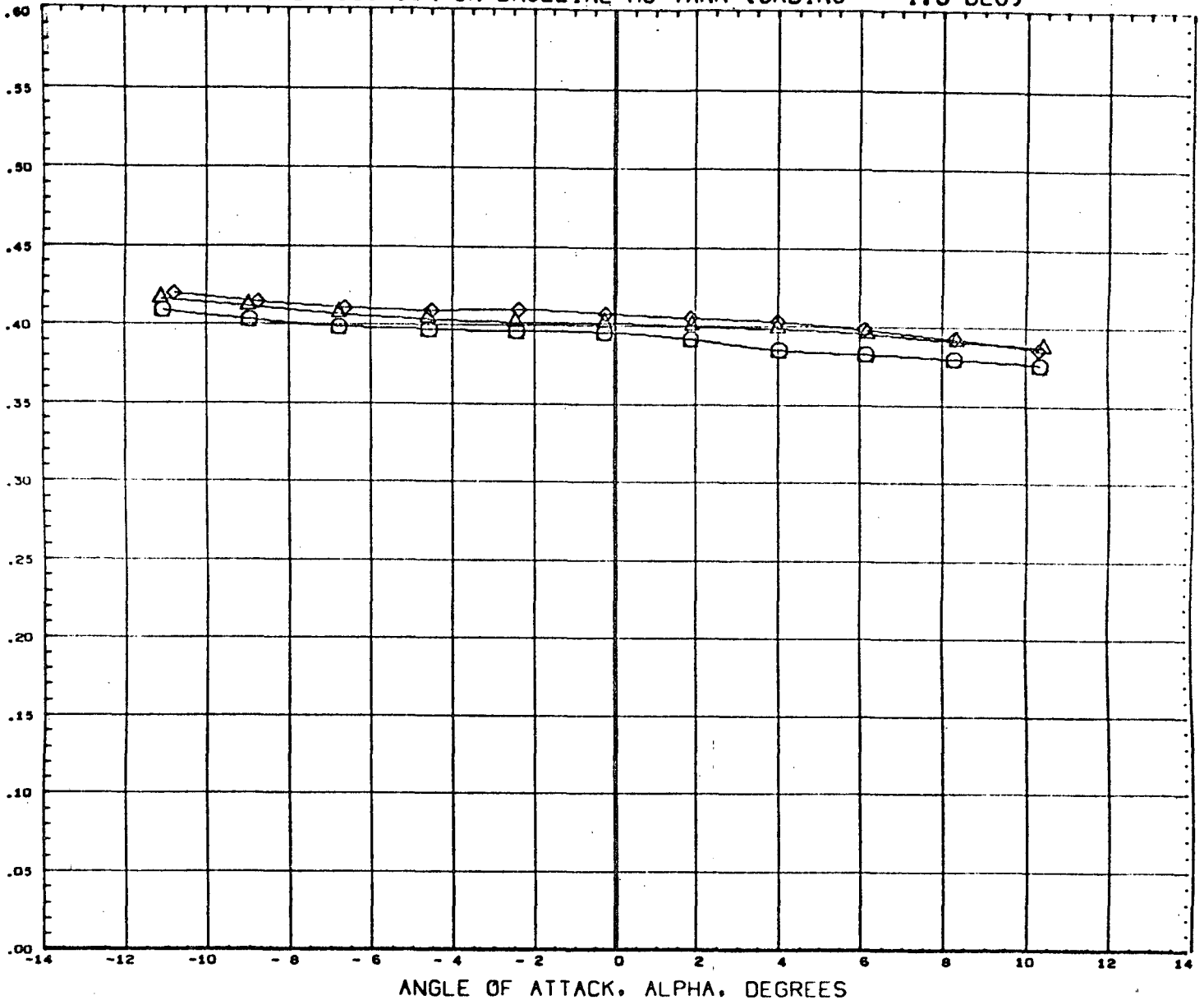


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

AXIAL FORCE COEFFICIENT, CA

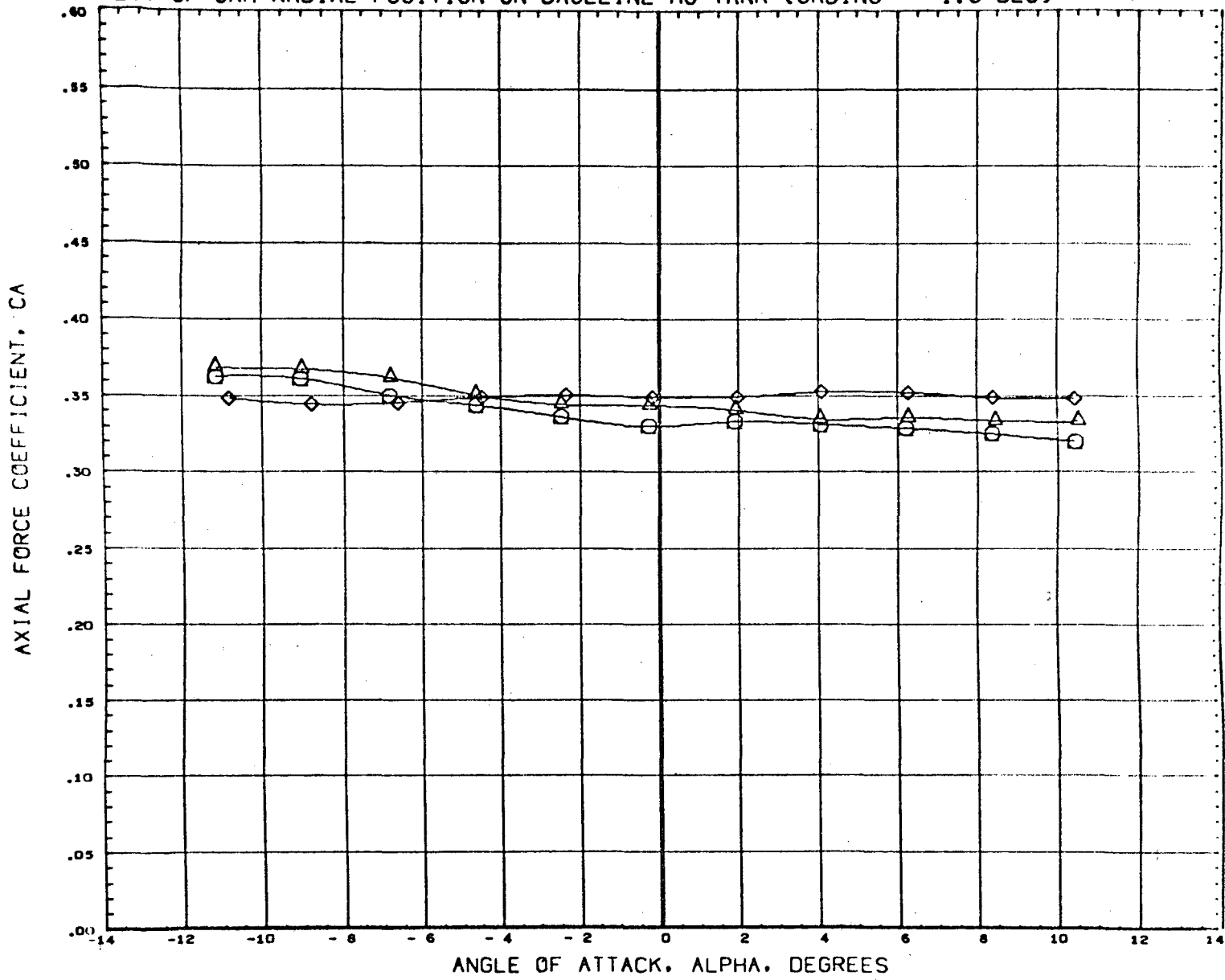


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.45

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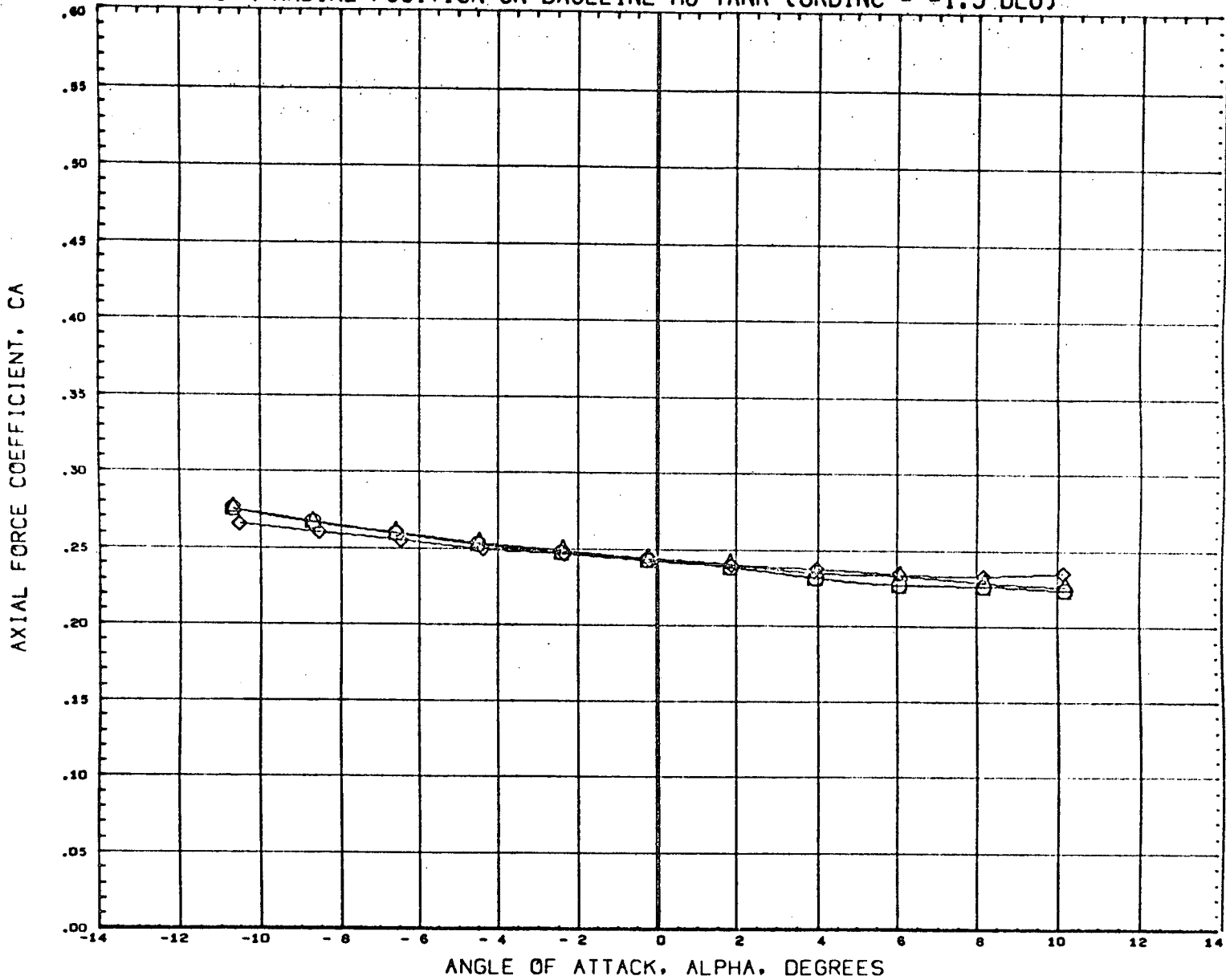
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

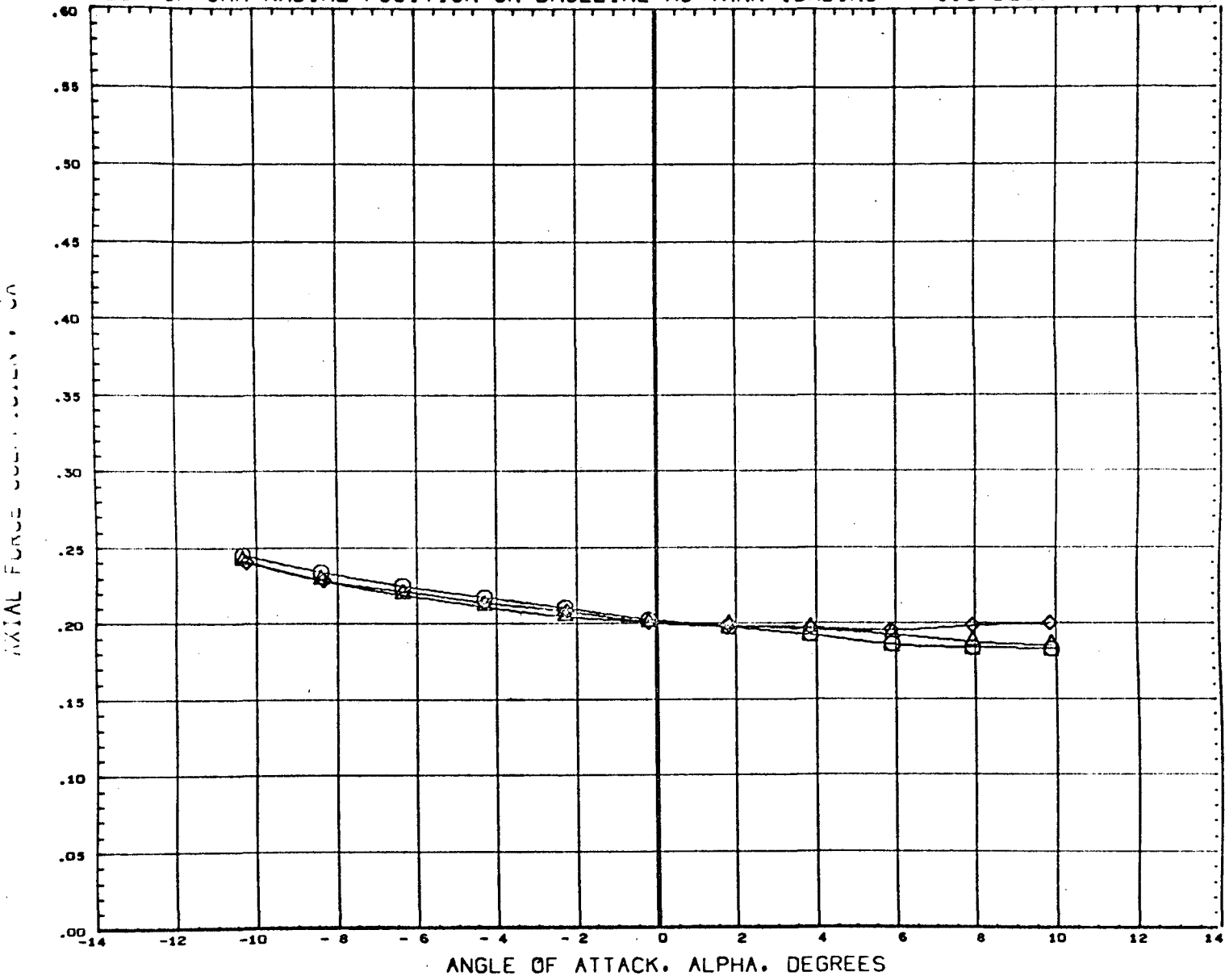
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



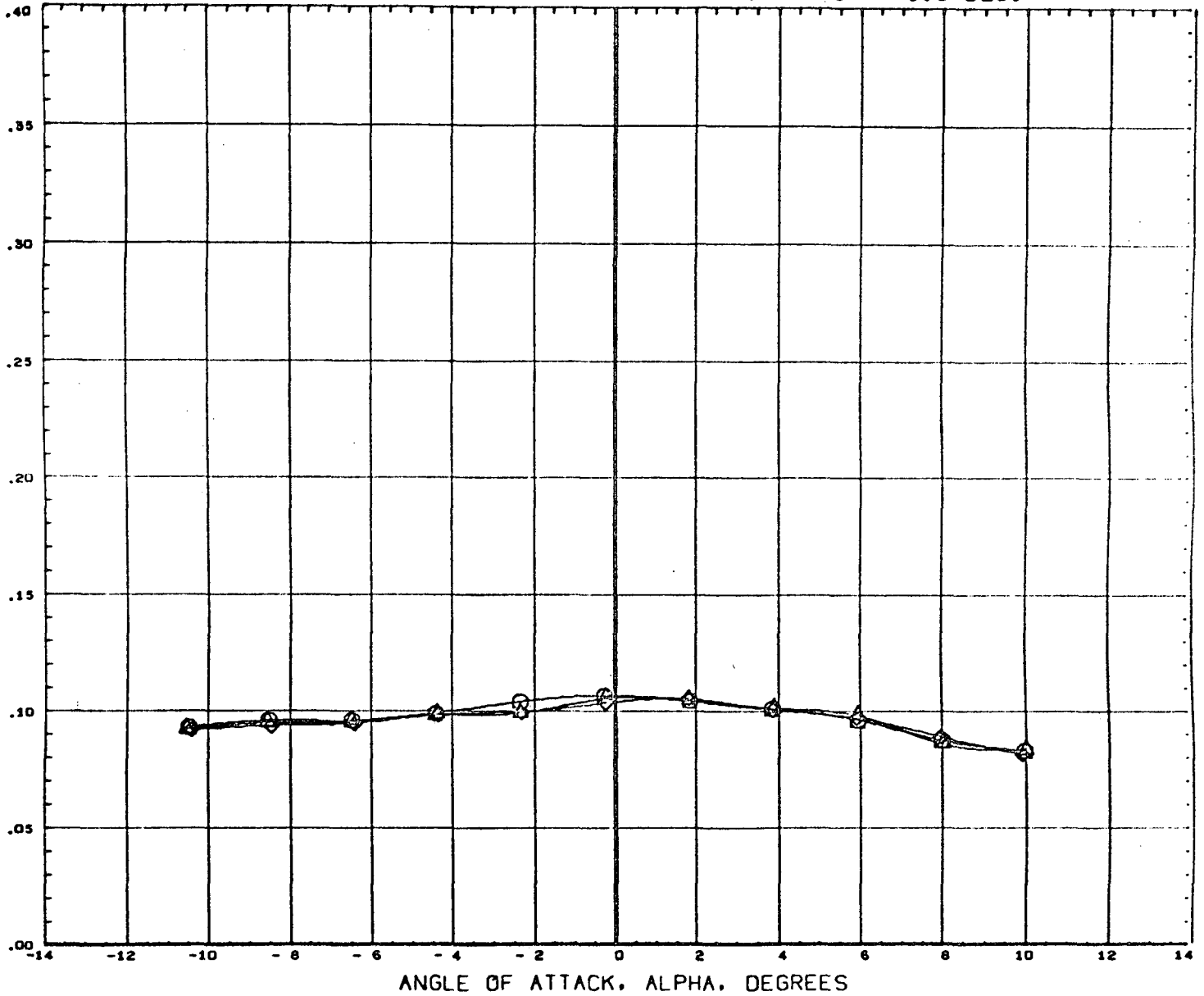
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



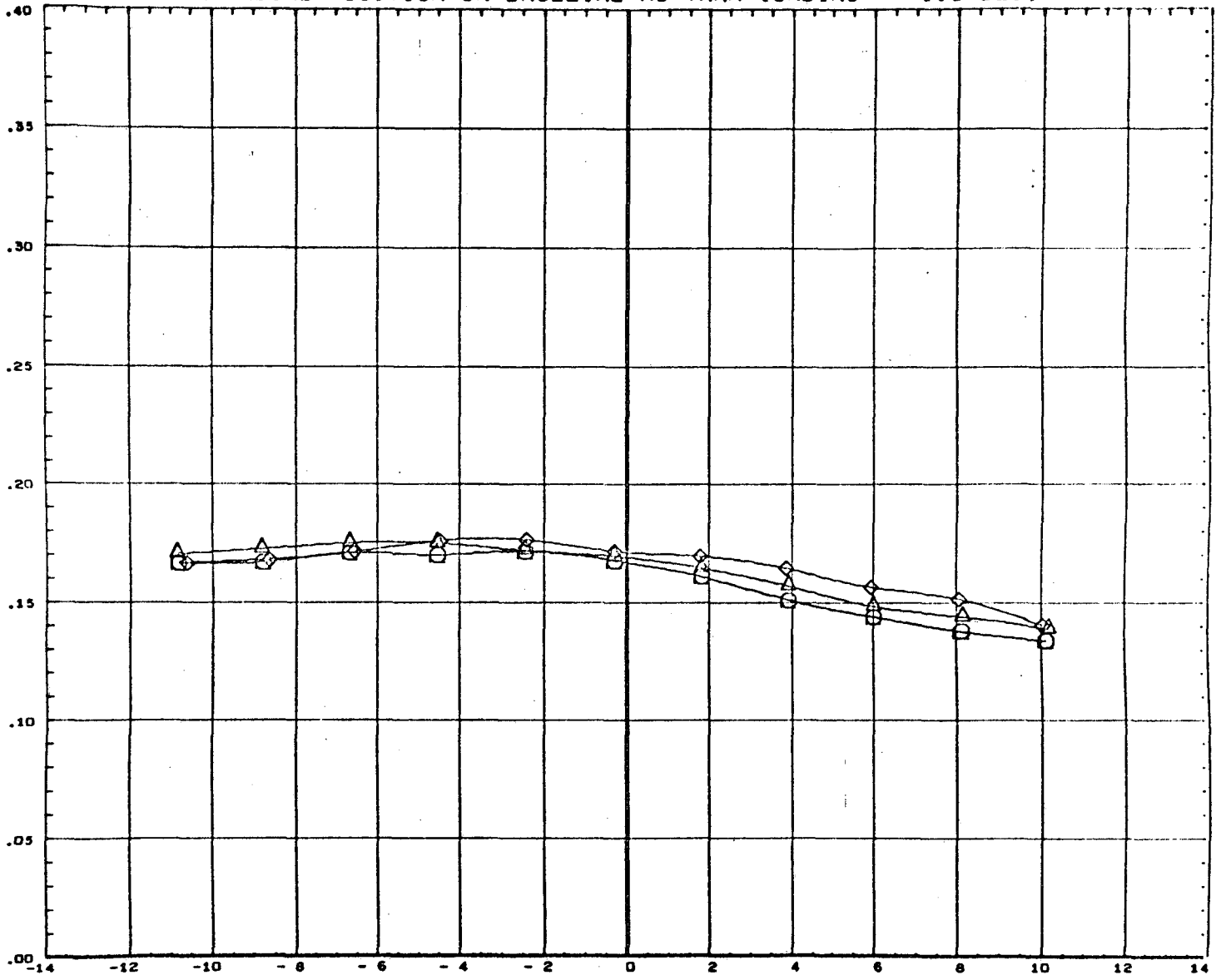
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

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# EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF

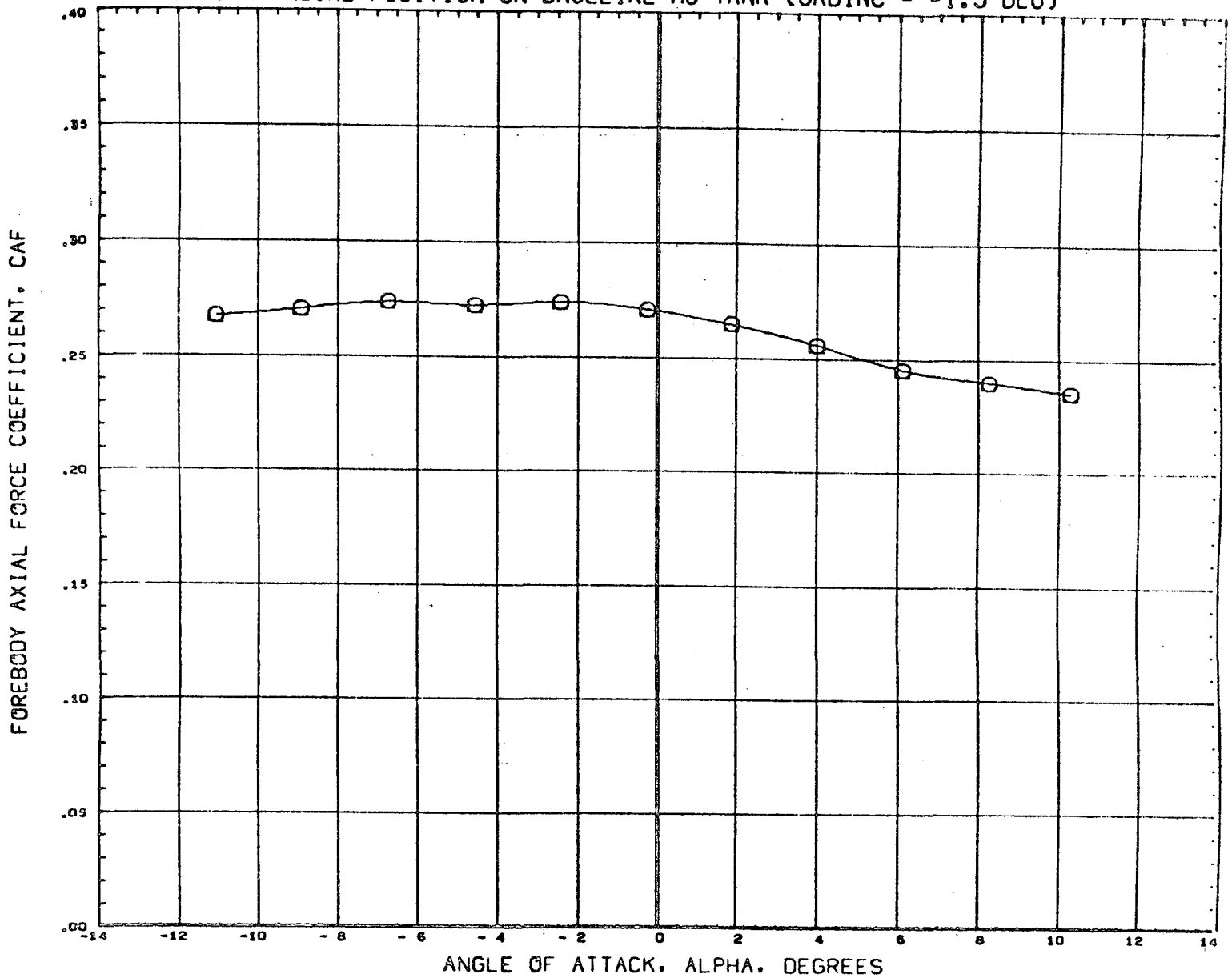


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



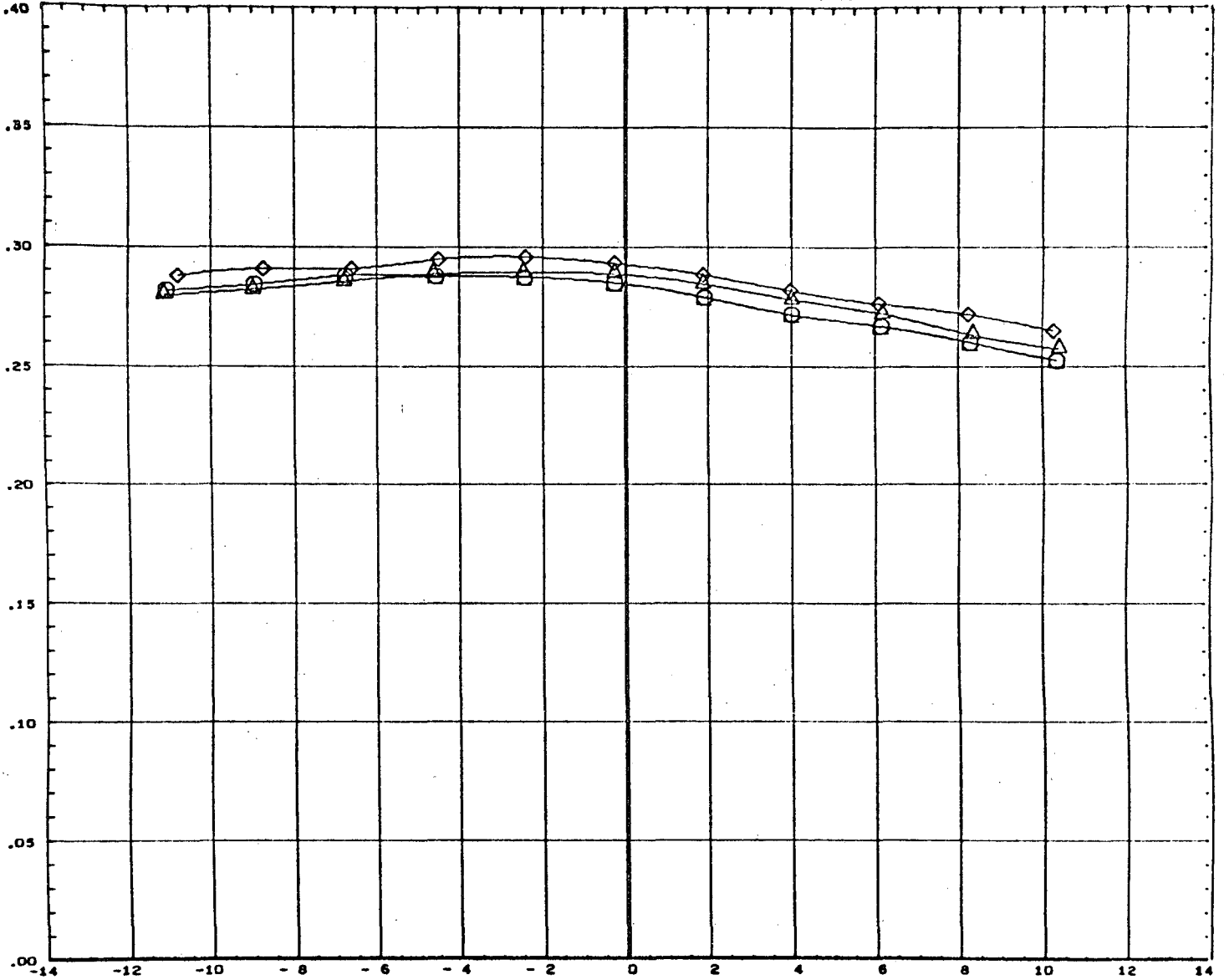
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES Y101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10



EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF



ANGLE OF ATTACK, ALPHA, DEGREES

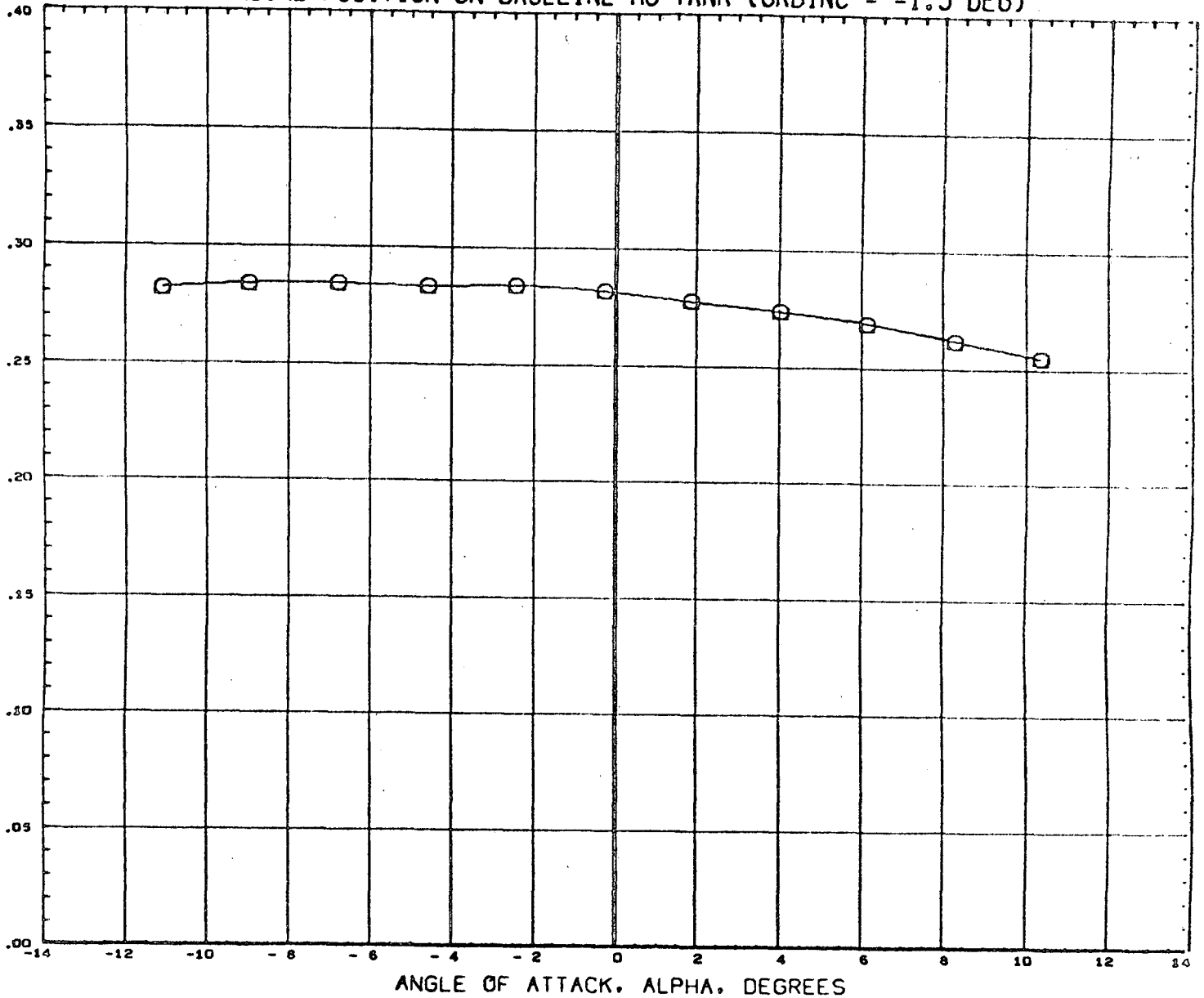
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF

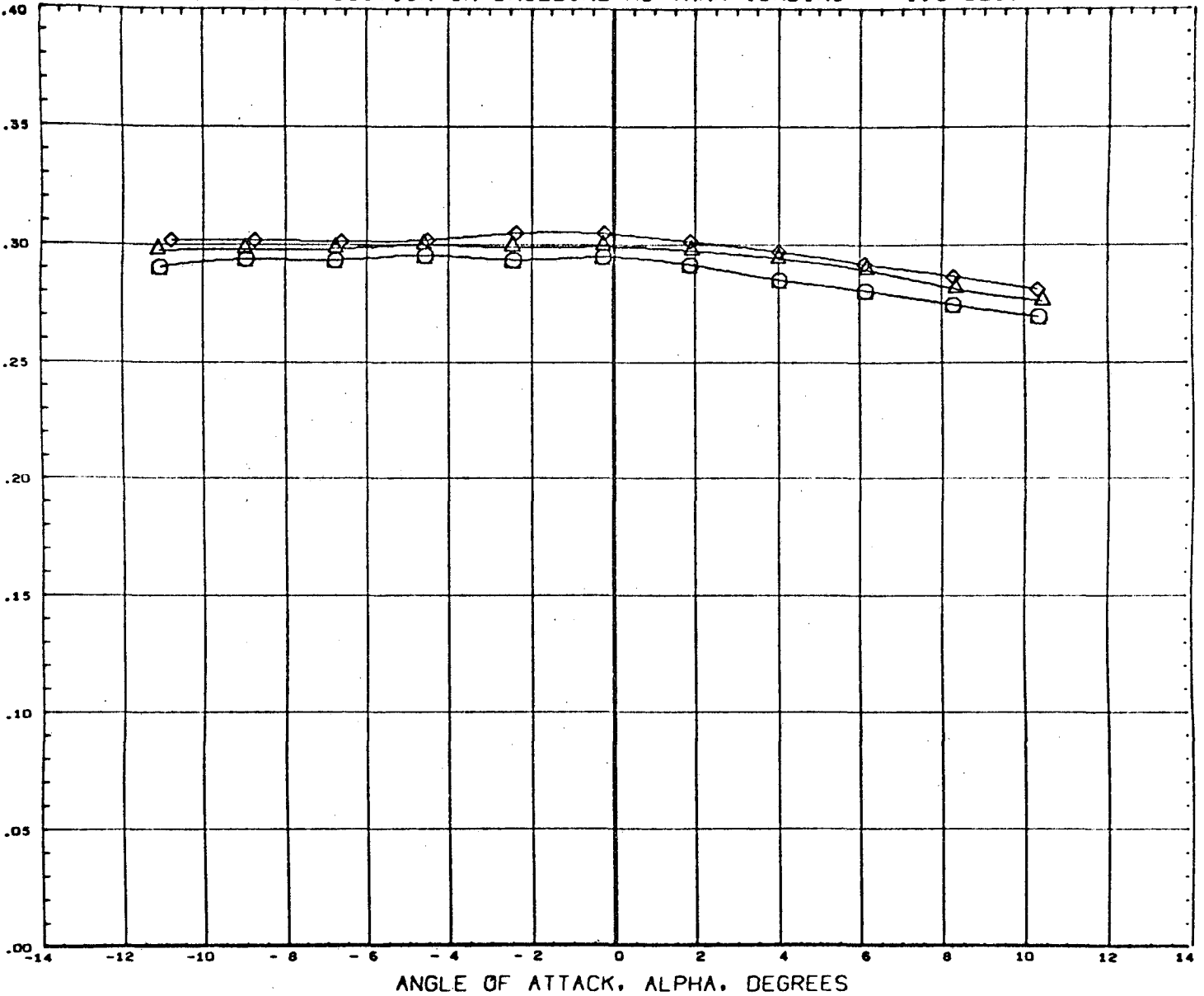


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF

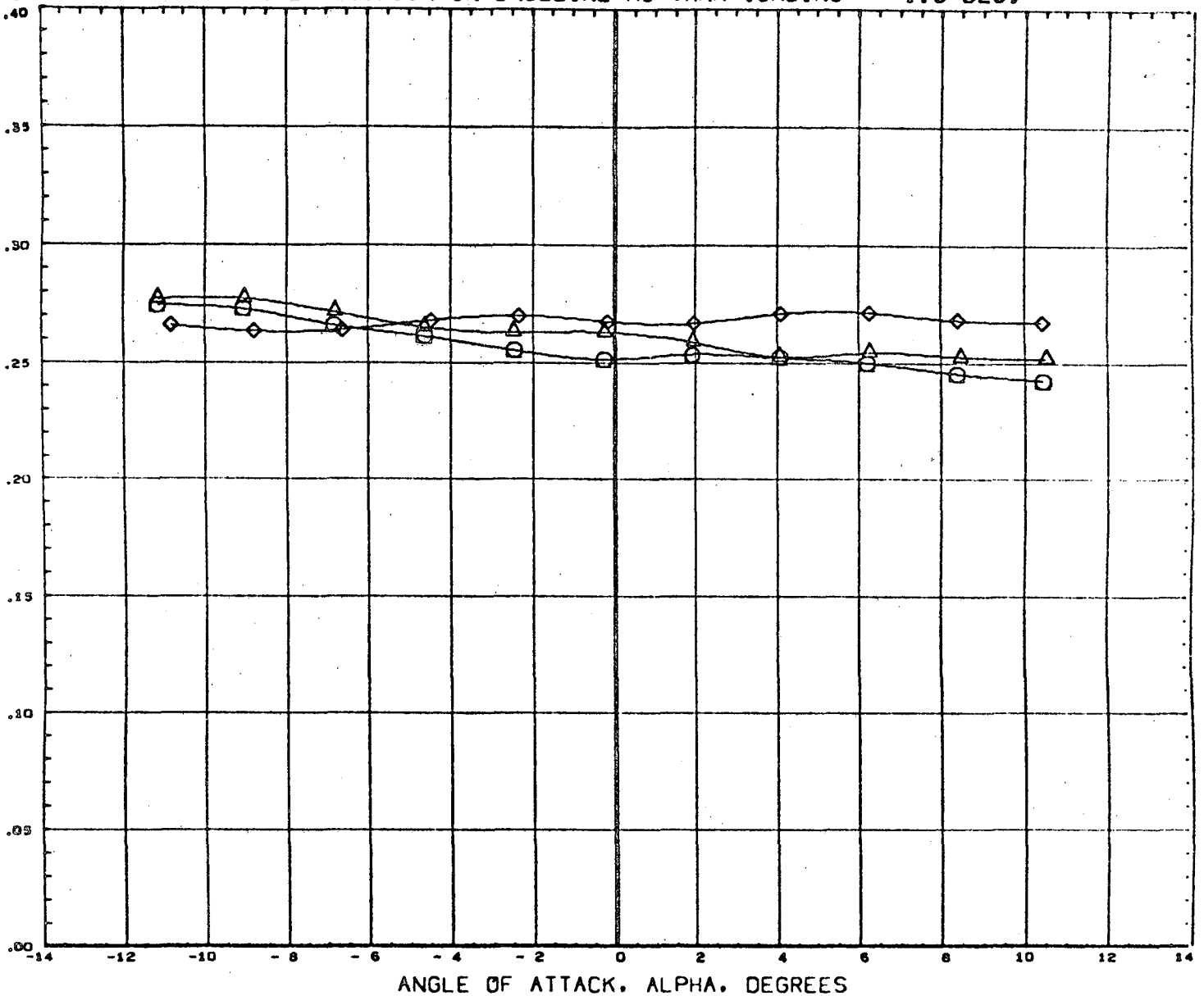


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071005) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(071008) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.45

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF



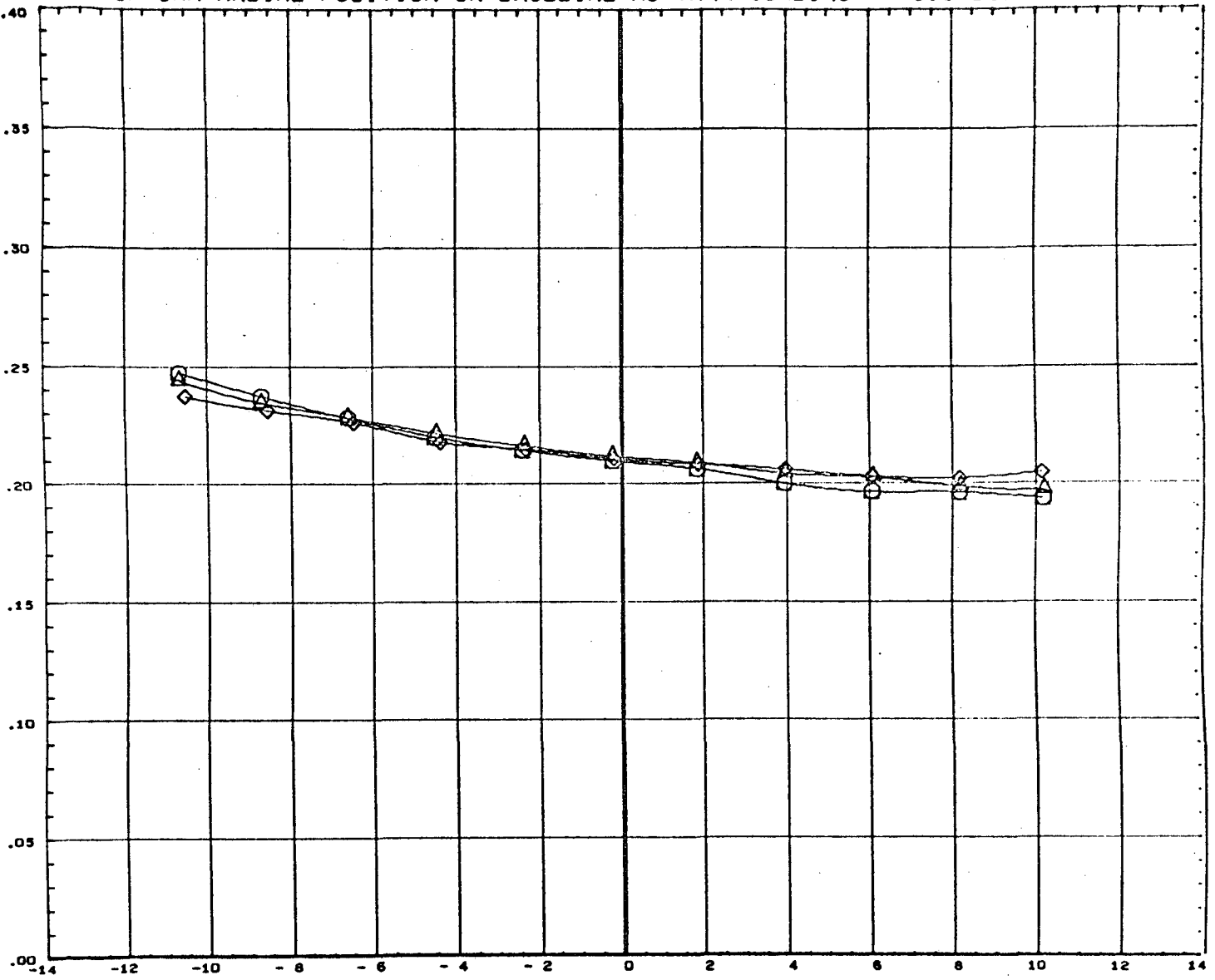
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(071008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 IN. SCALE

MACH 1.97

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EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF



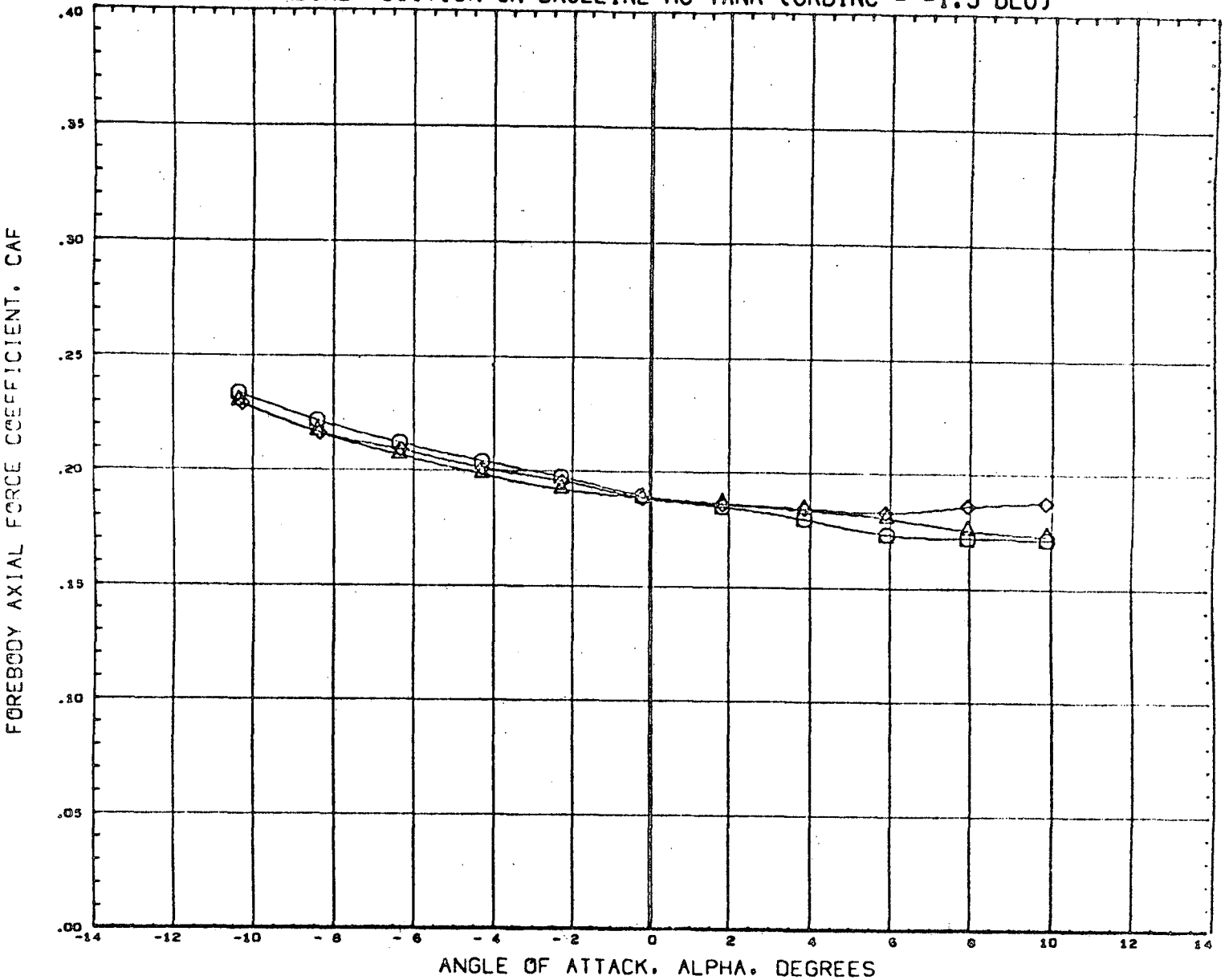
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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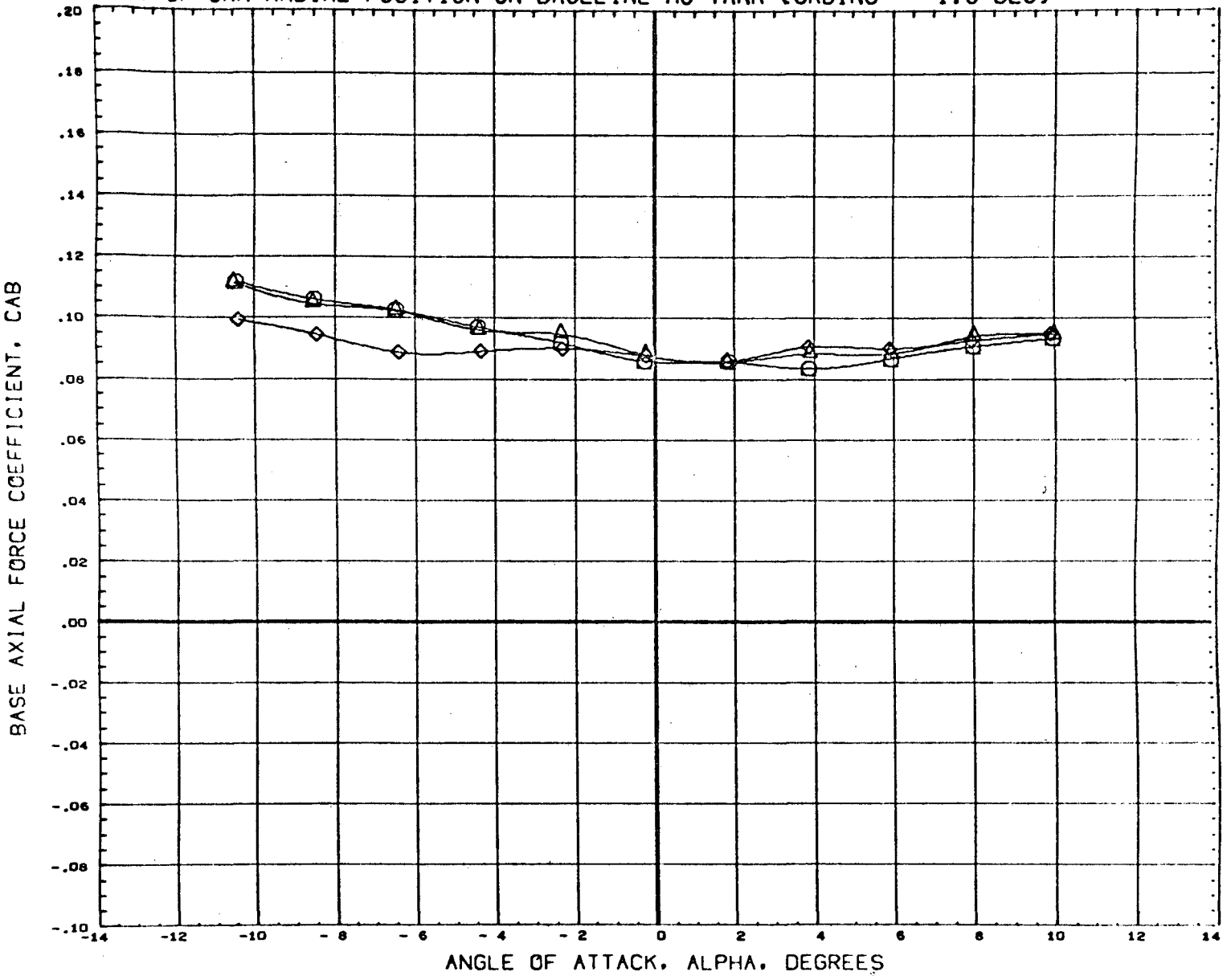
# EFFECT OF SRM RADIAL POSITION ON BASELINE HQ TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

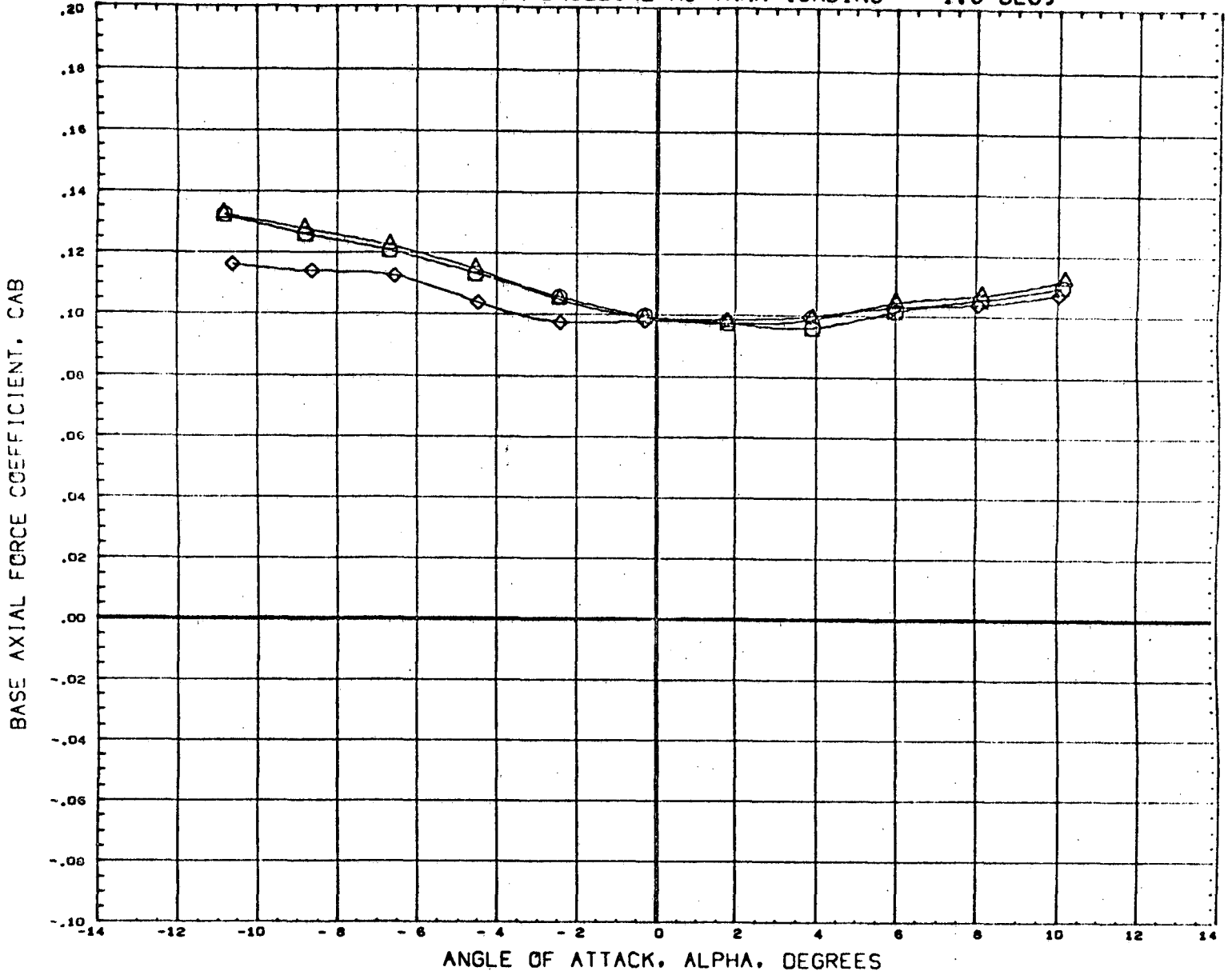
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

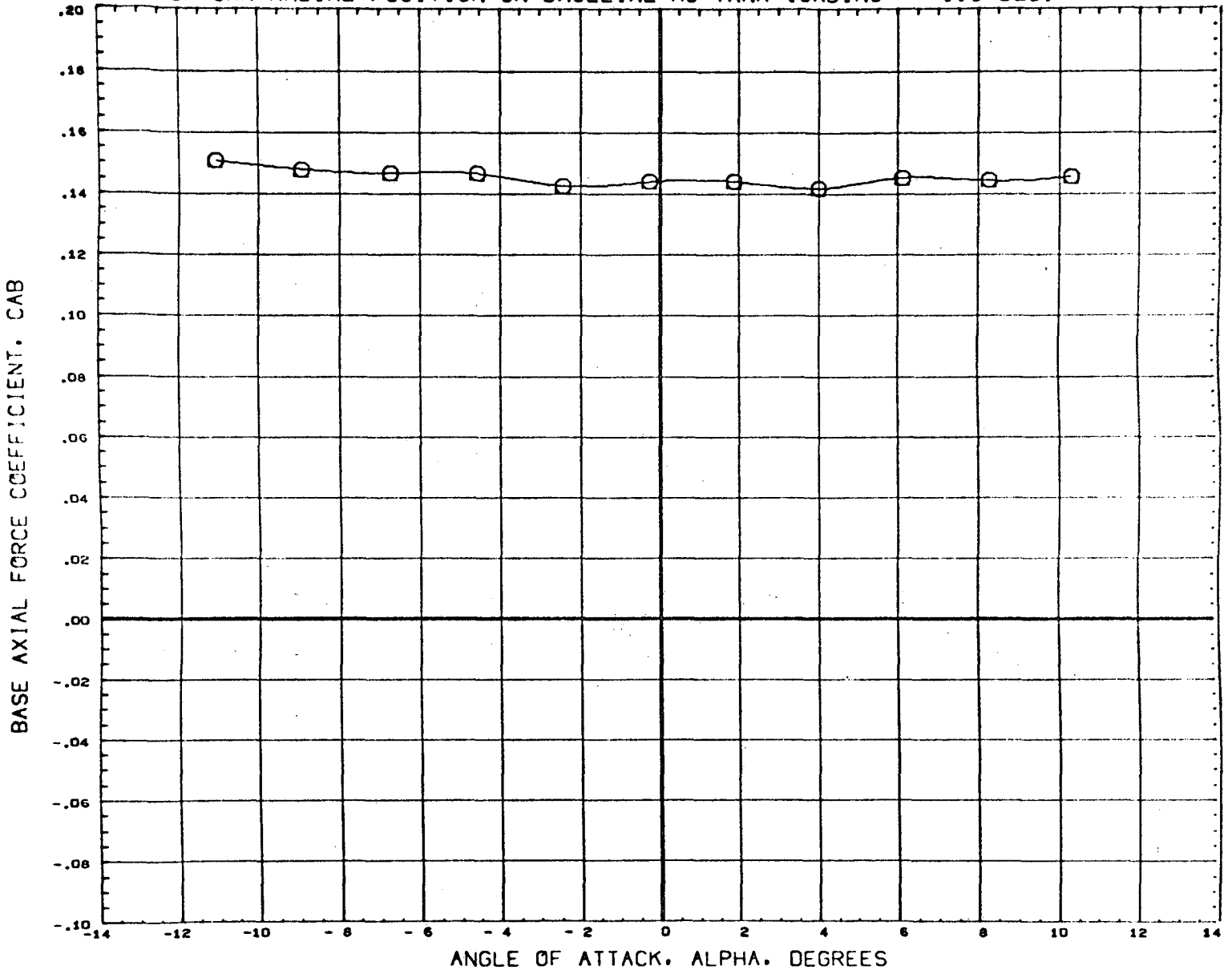


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



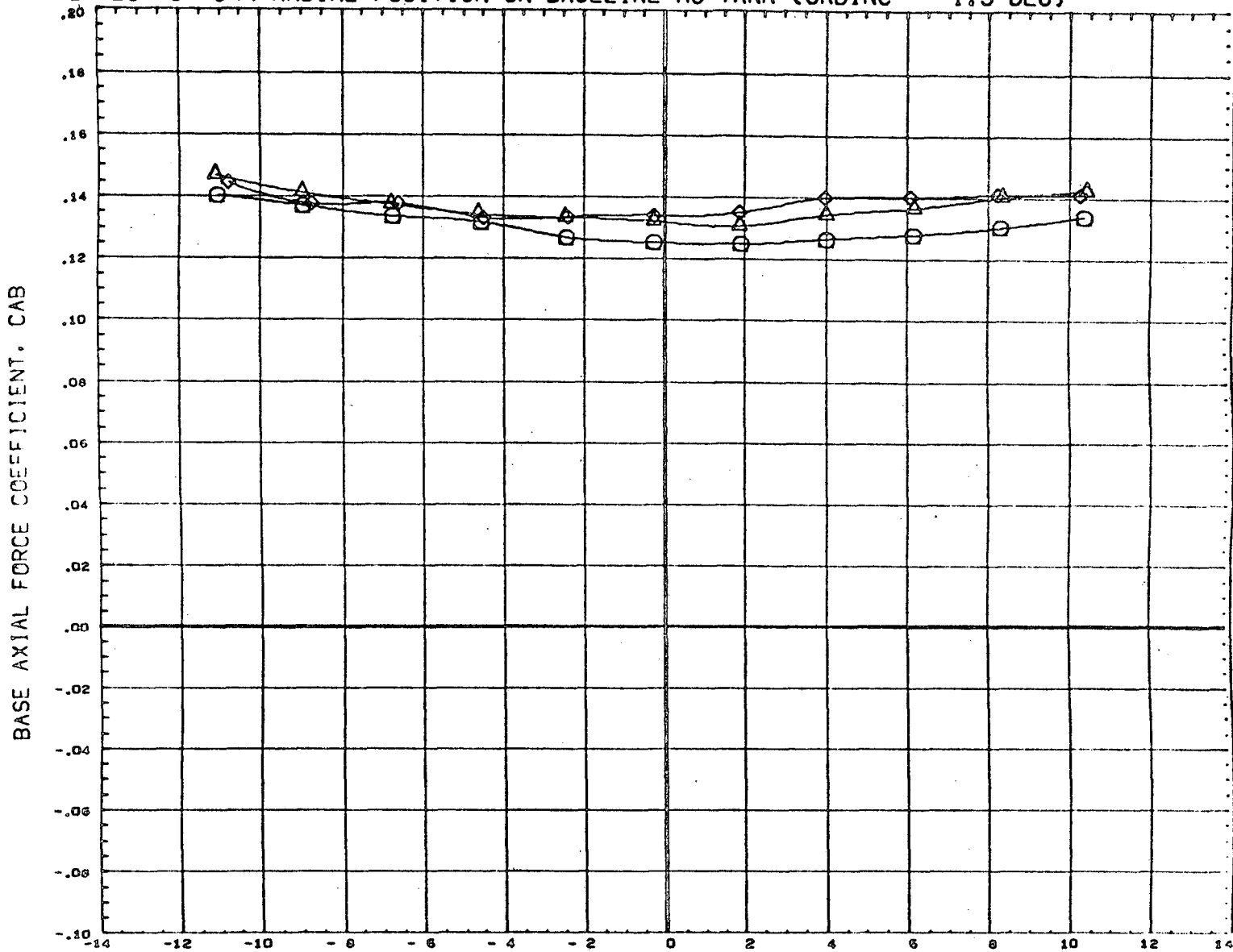
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

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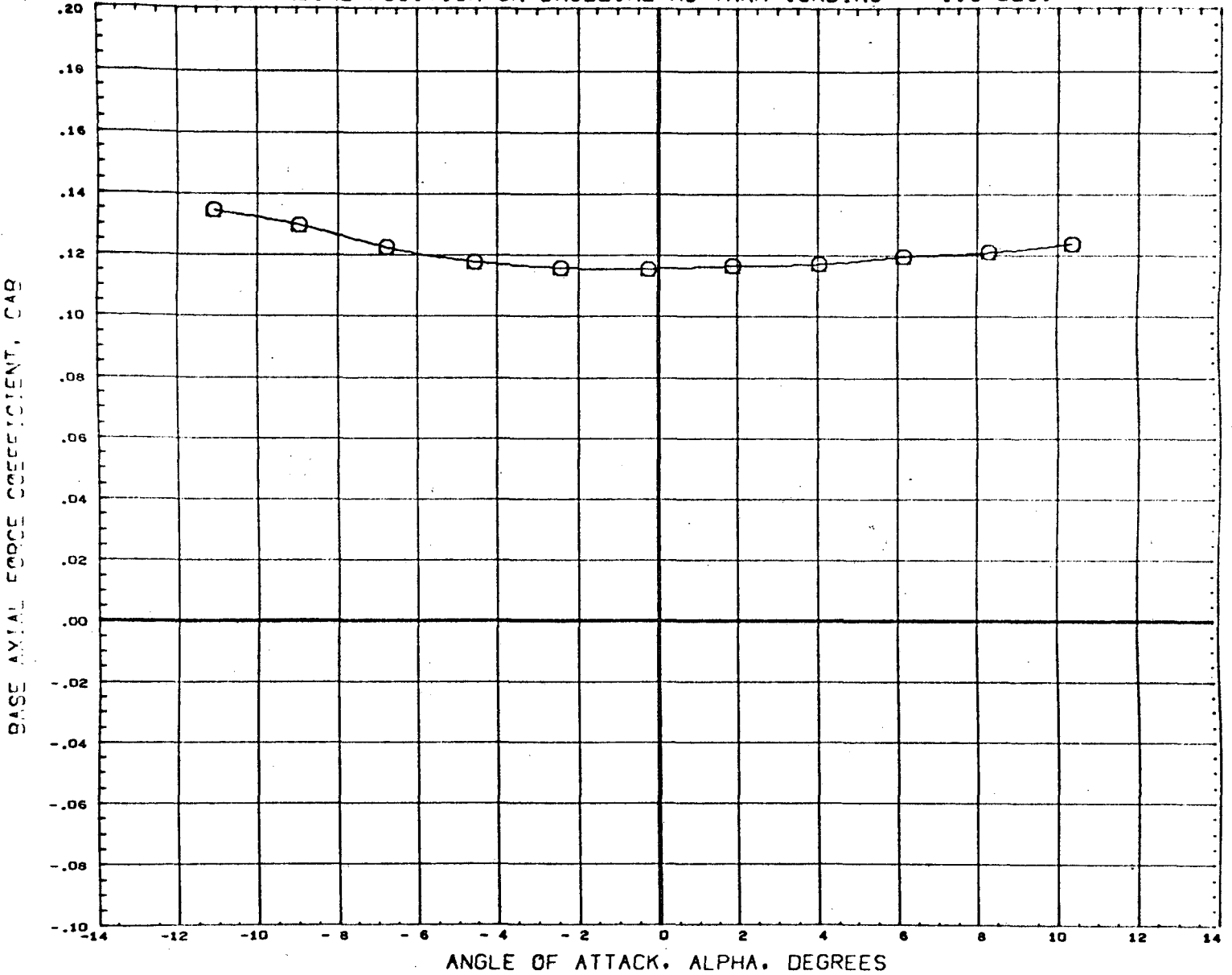
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

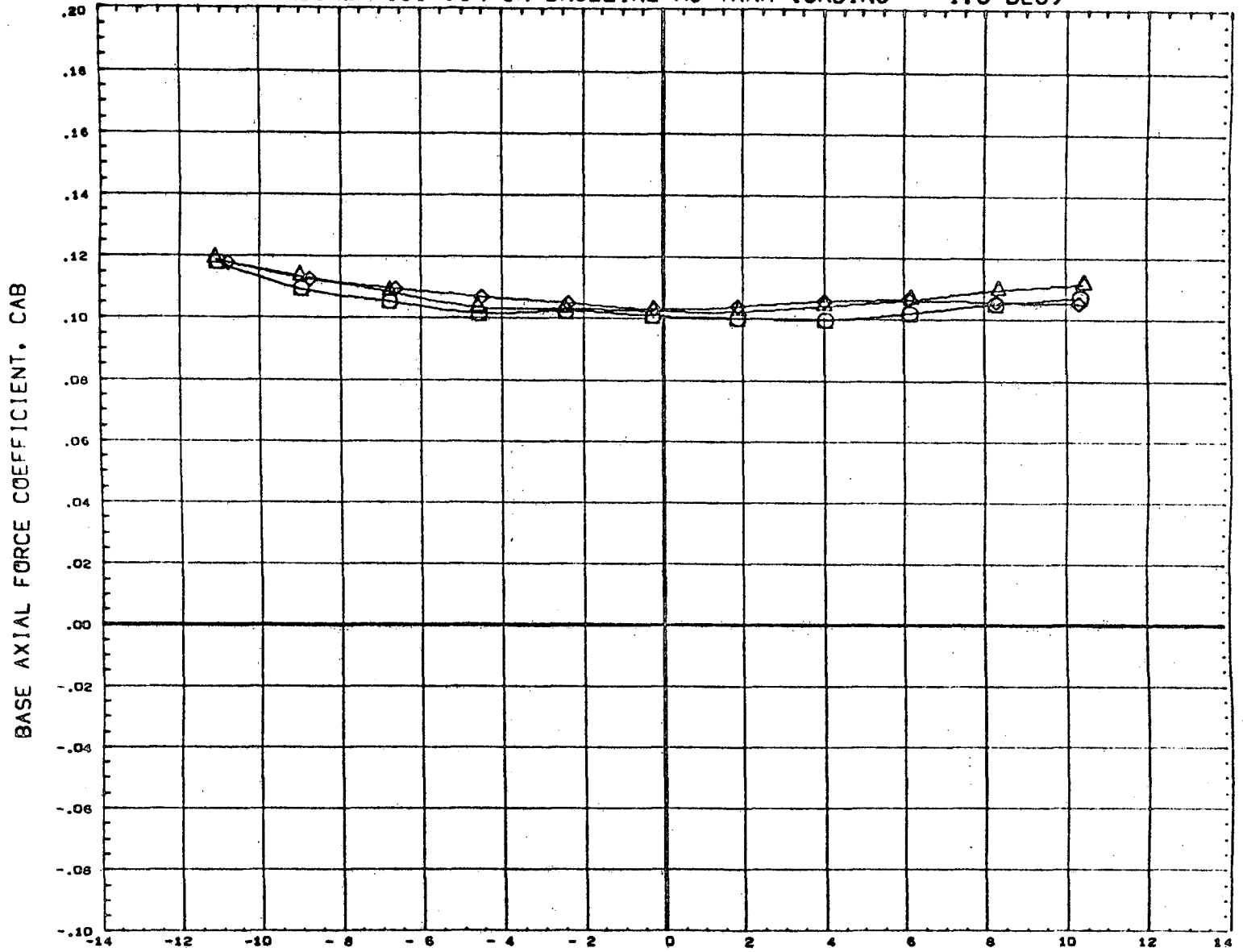
EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(071008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.30

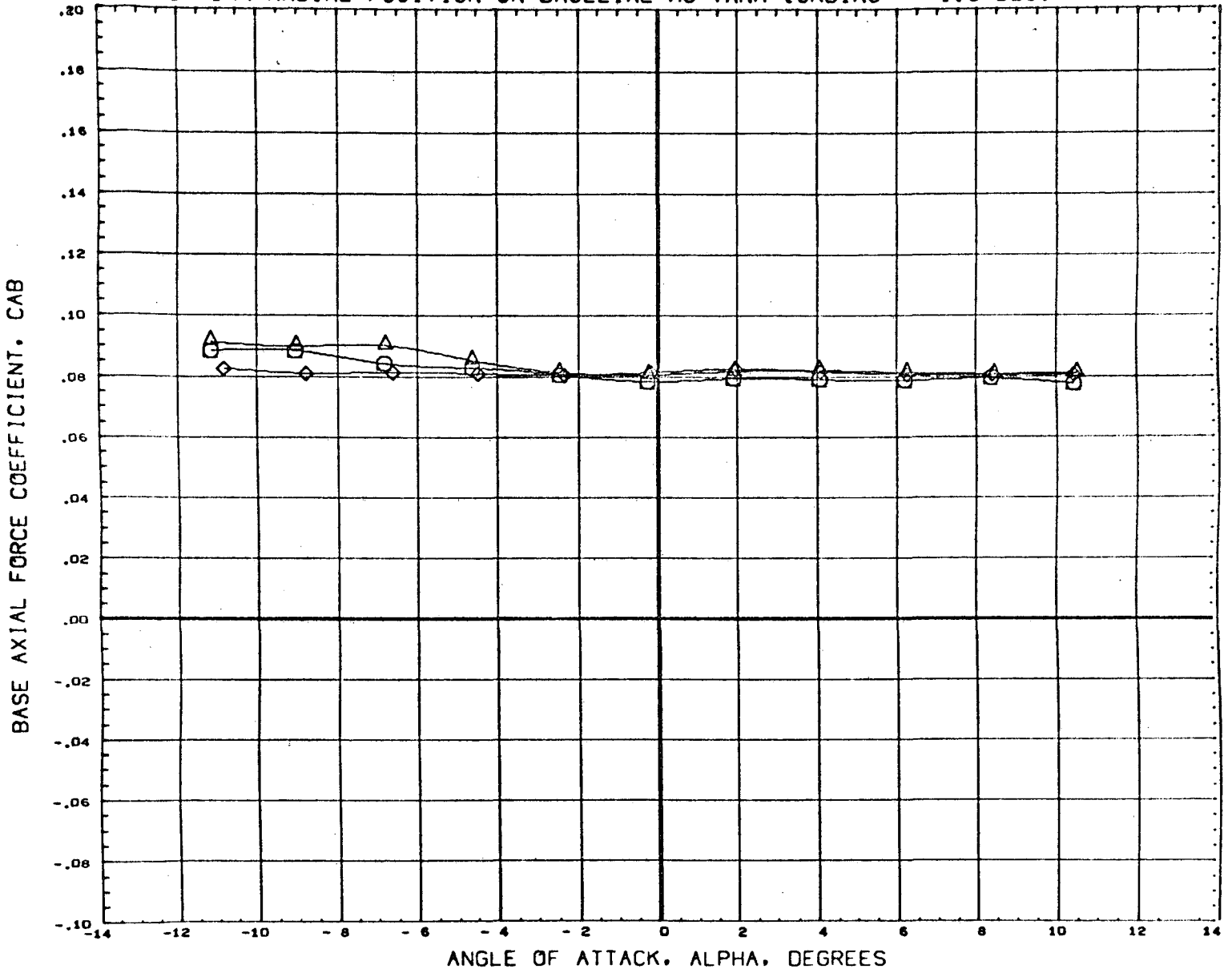
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.45

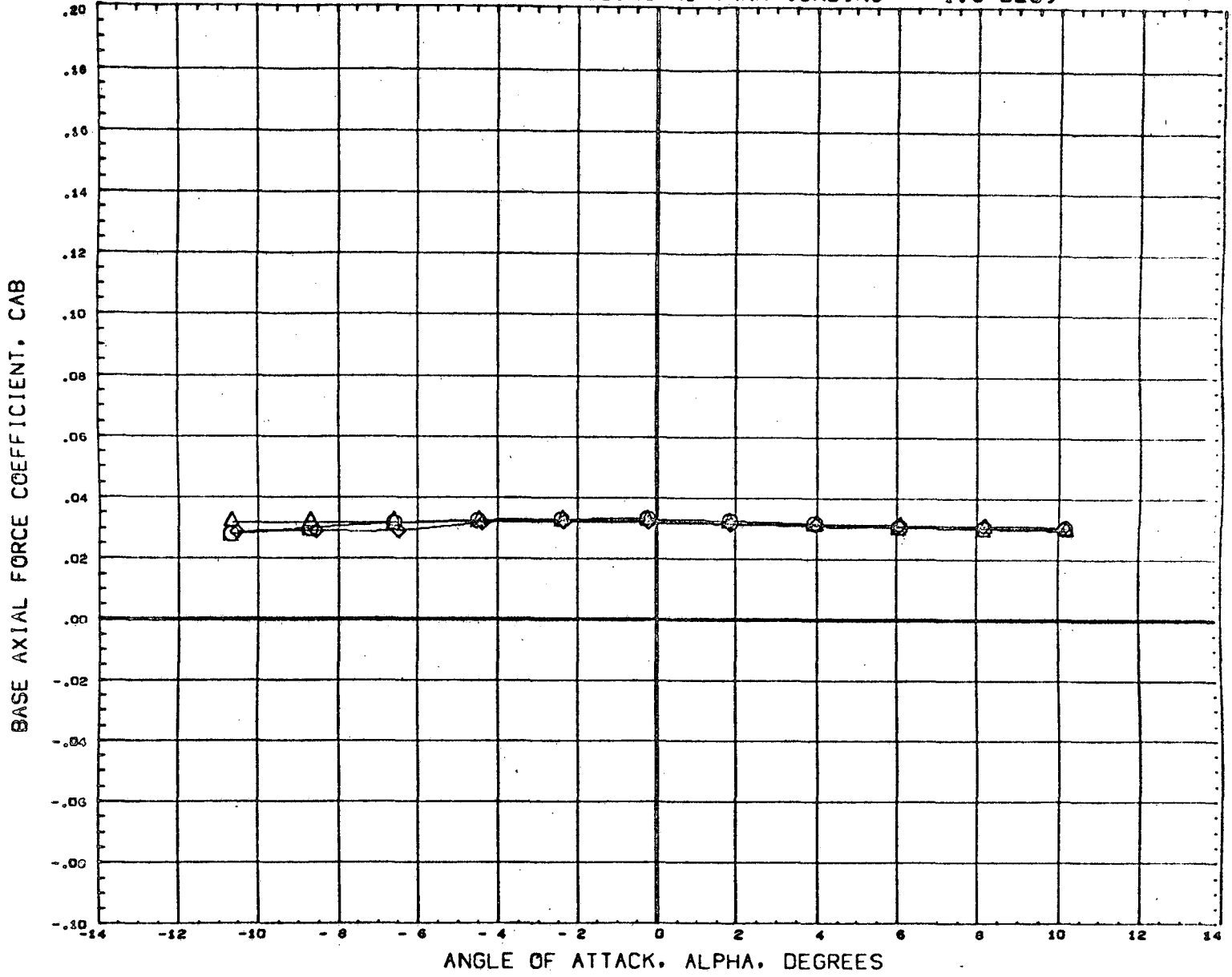
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

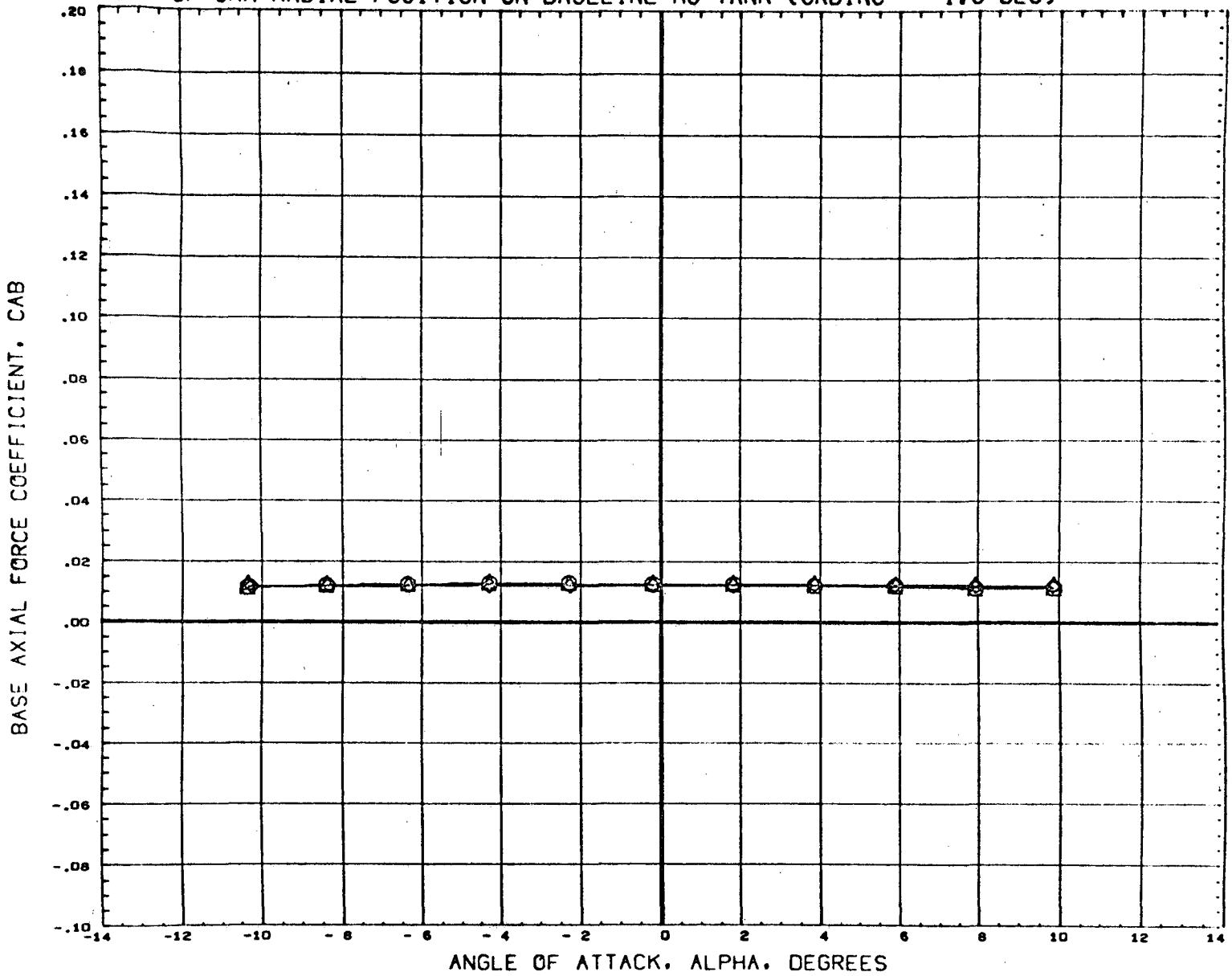
EFFECT OF SRM RADIAL POSITION ON BASELINE NO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

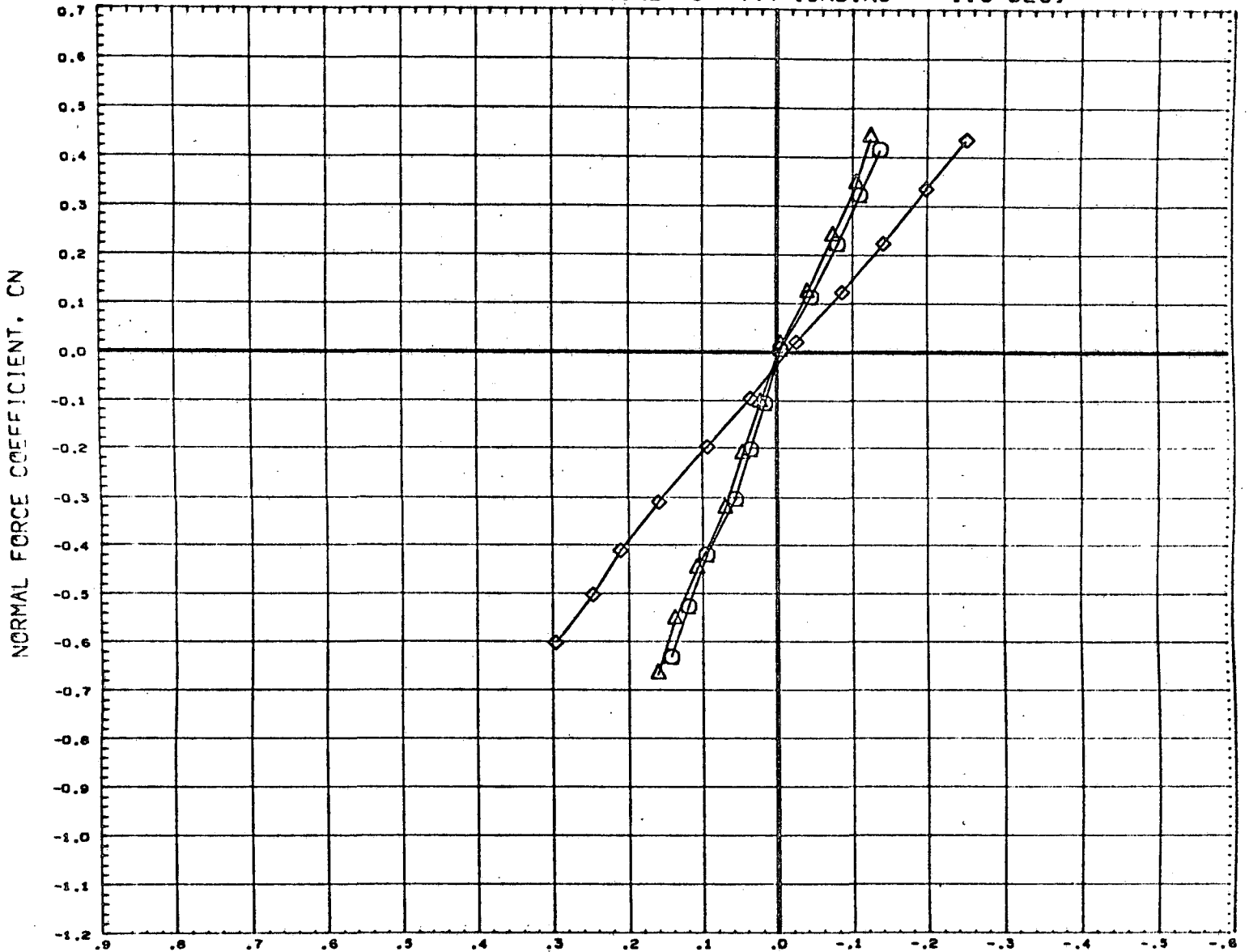


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(071008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

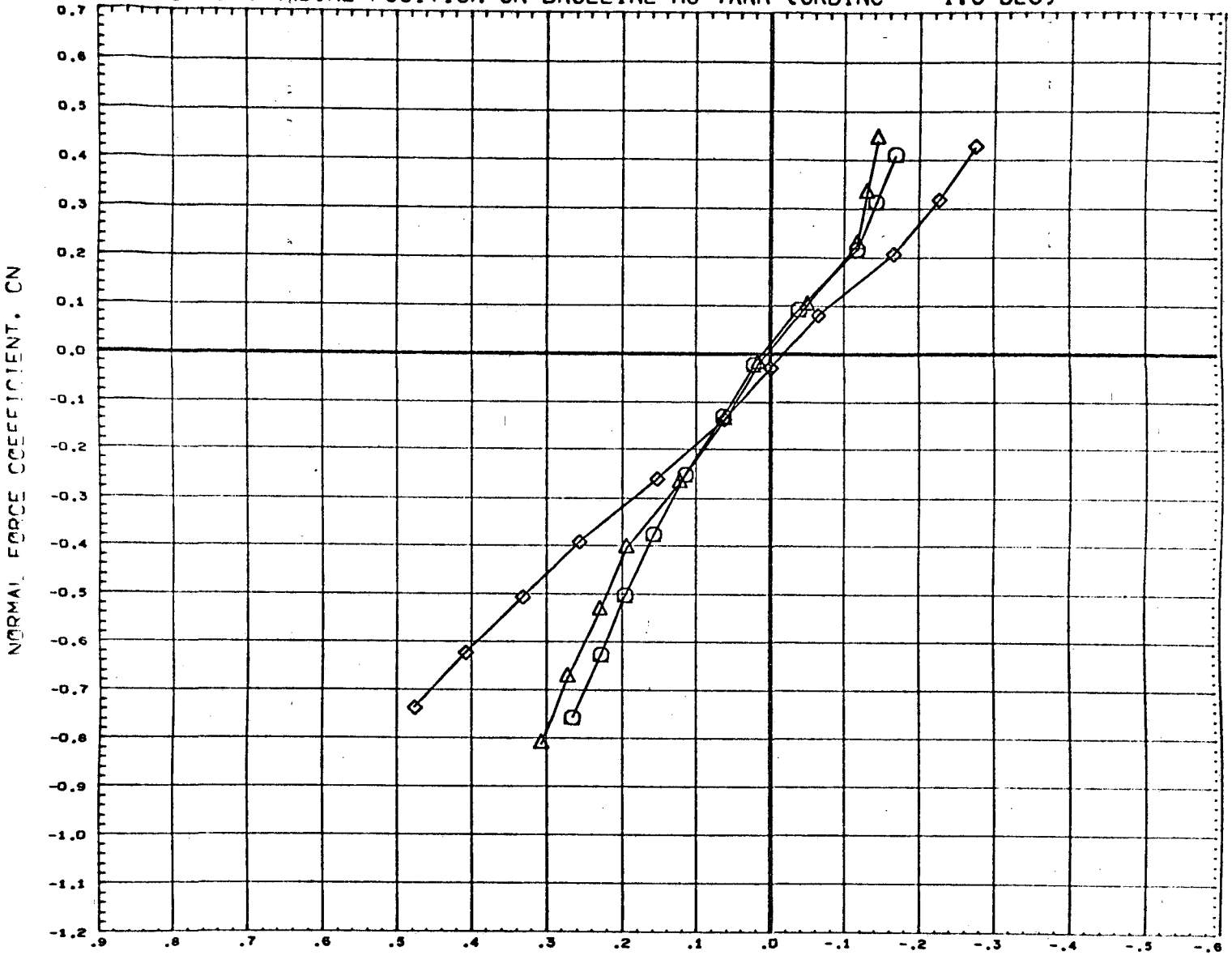


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(871008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61



EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

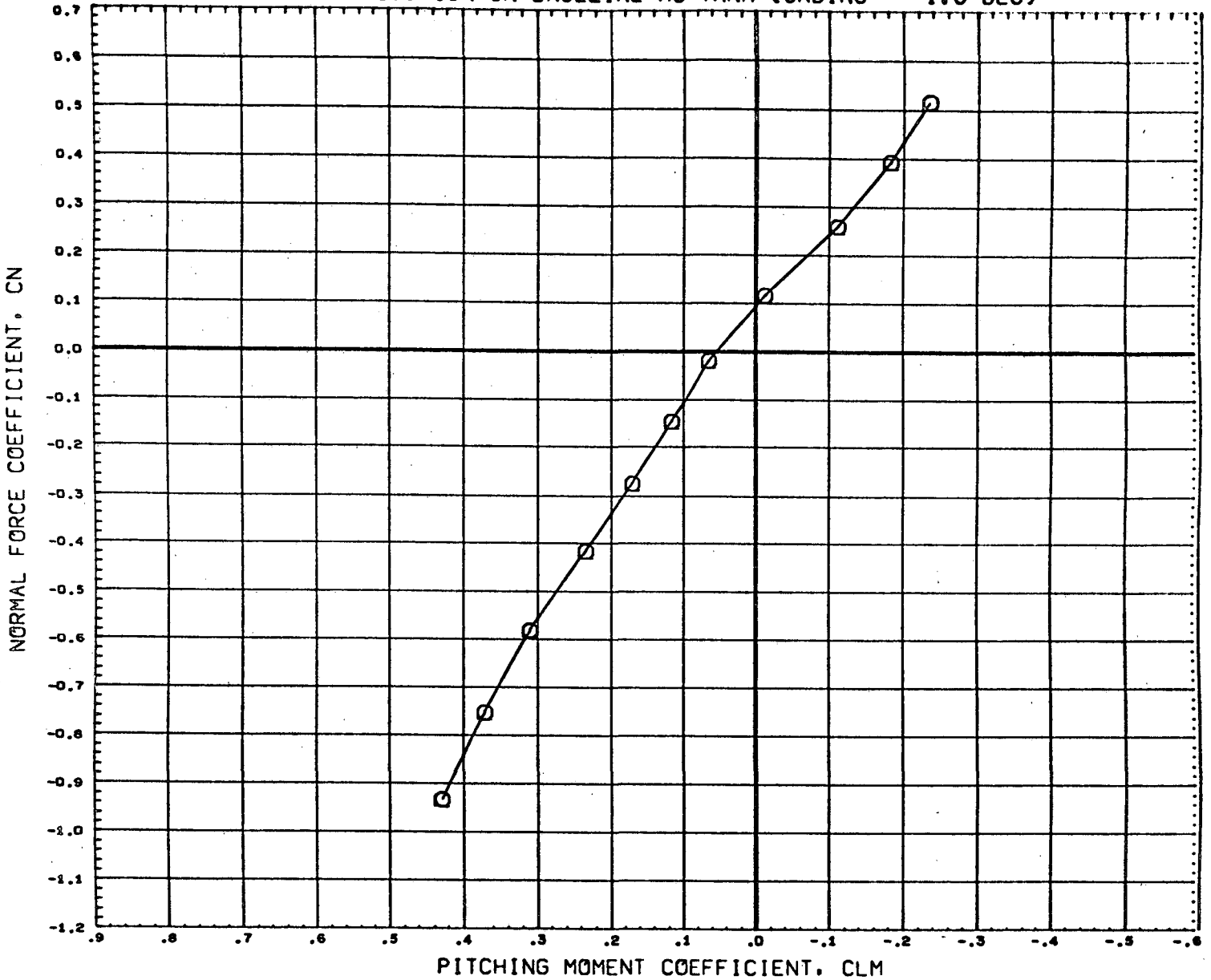


PITCHING MOMENT COEFFICIENT, CLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75,000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90,000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135,000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

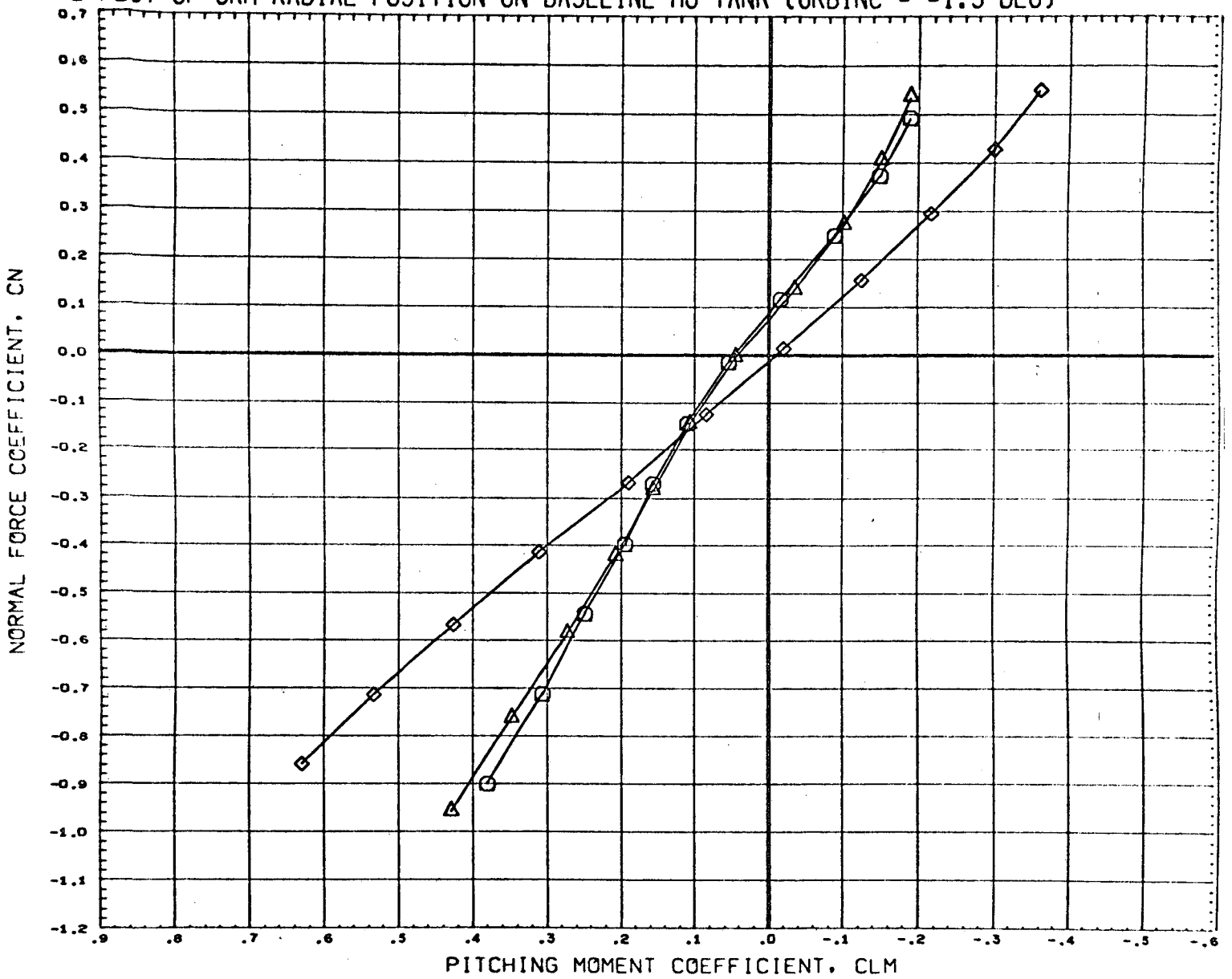
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

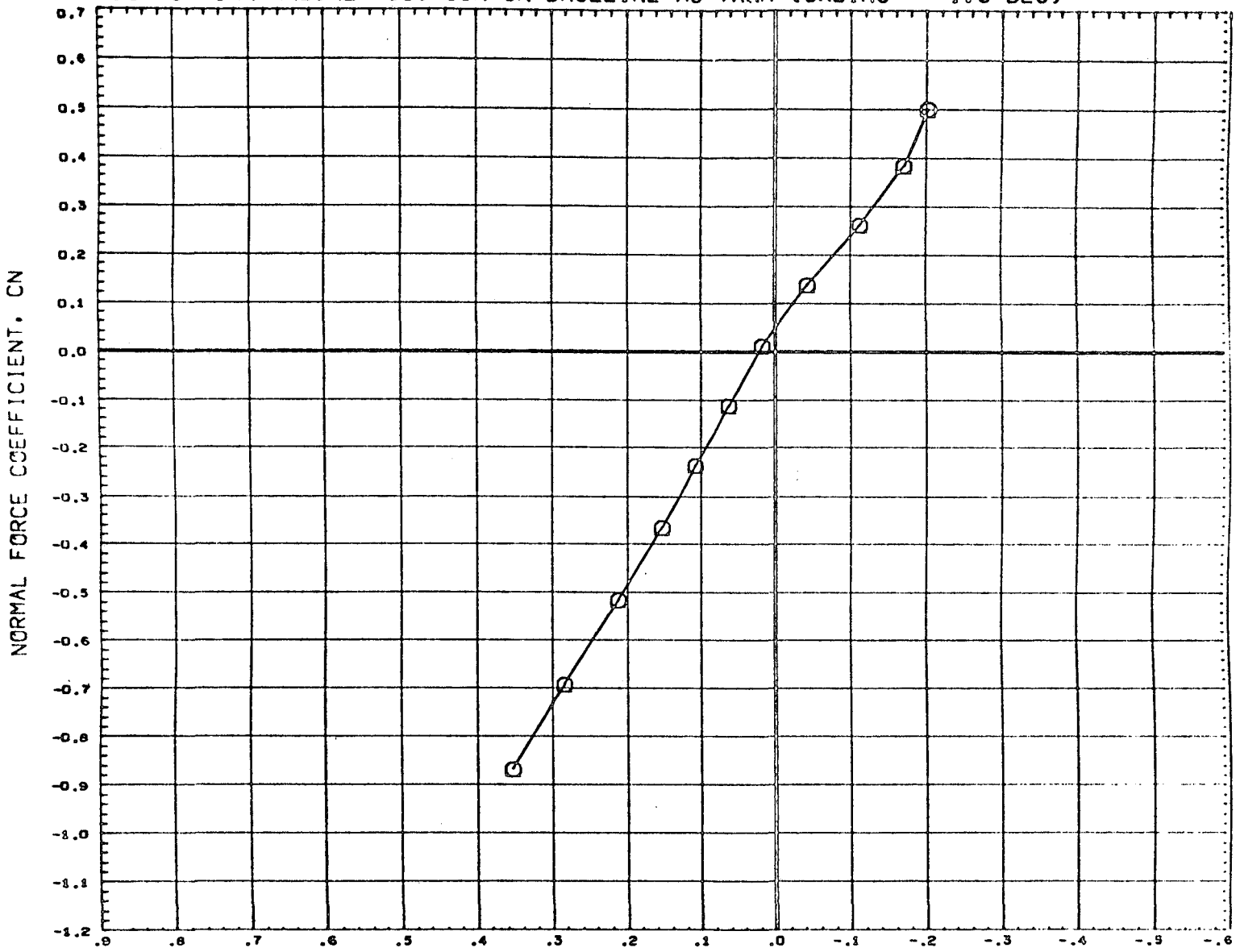
# EFFECT OF SRM RADIAL POSITION ON BASELINE H<sub>0</sub> TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

EFFECT OF SRM RADIAL POSITION ON BASELINE H<sub>0</sub> TANK (ORBINC = -1.5 DEG)



PITCHING MOMENT COEFFICIENT, CLM

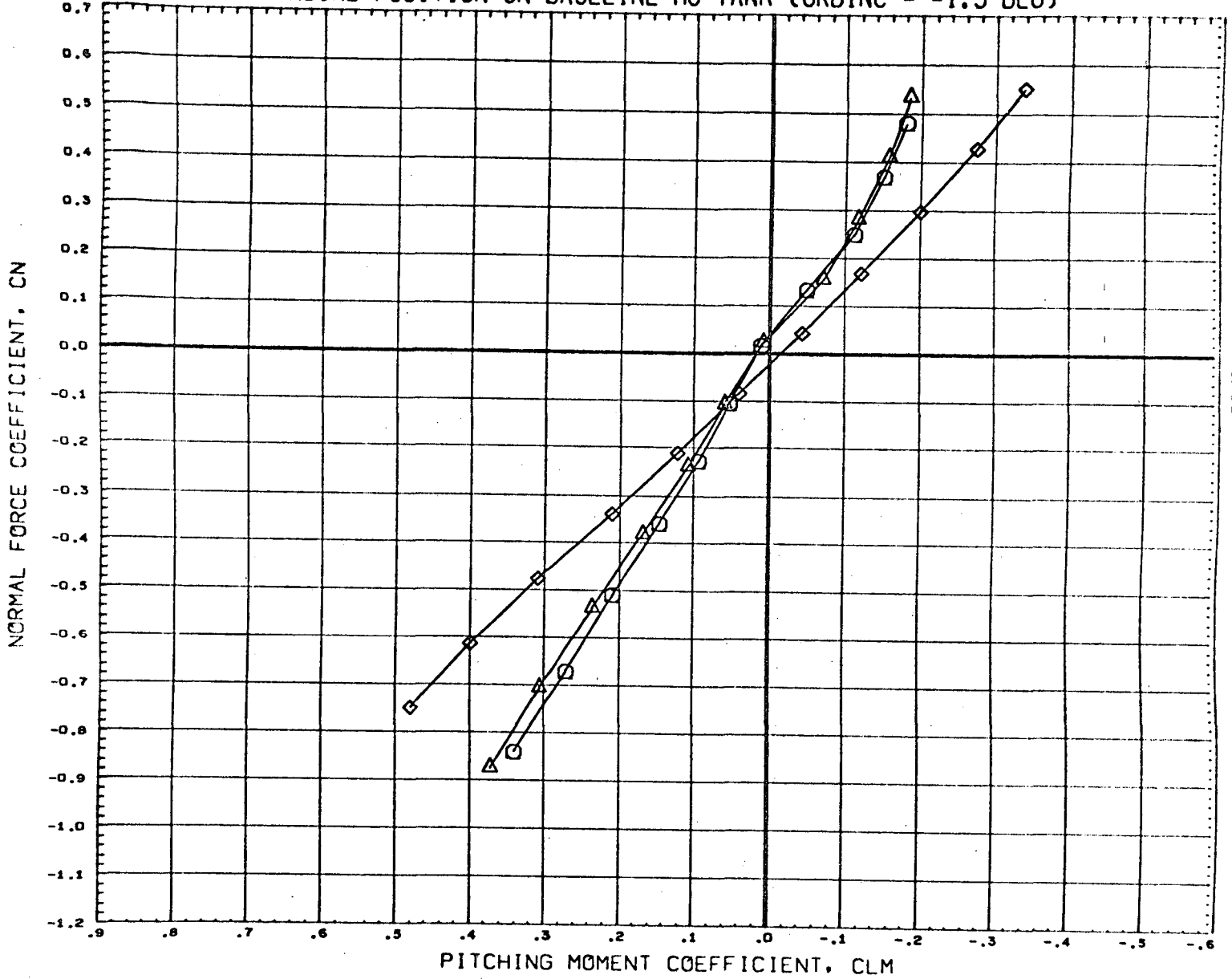
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.30

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RC

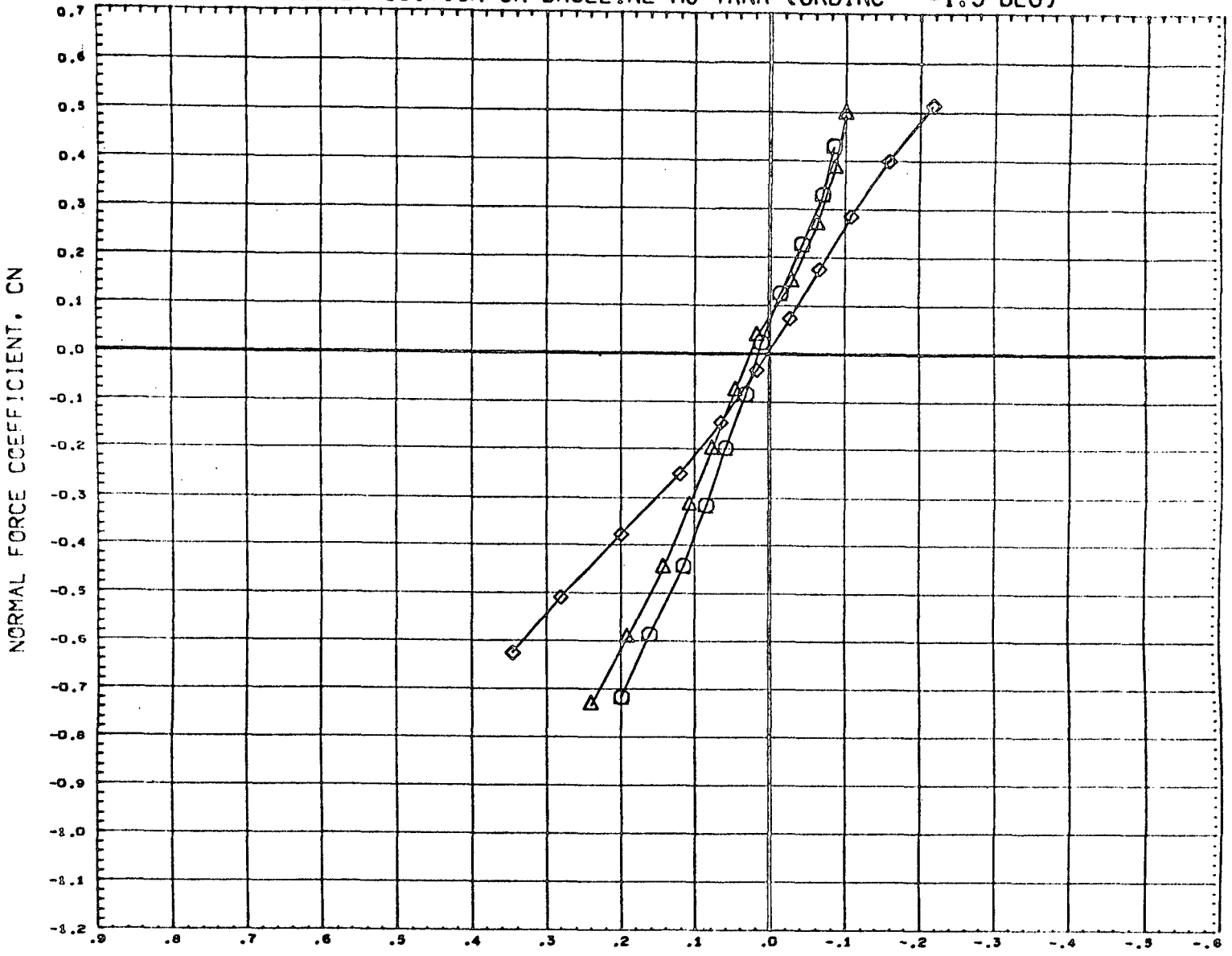
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.45

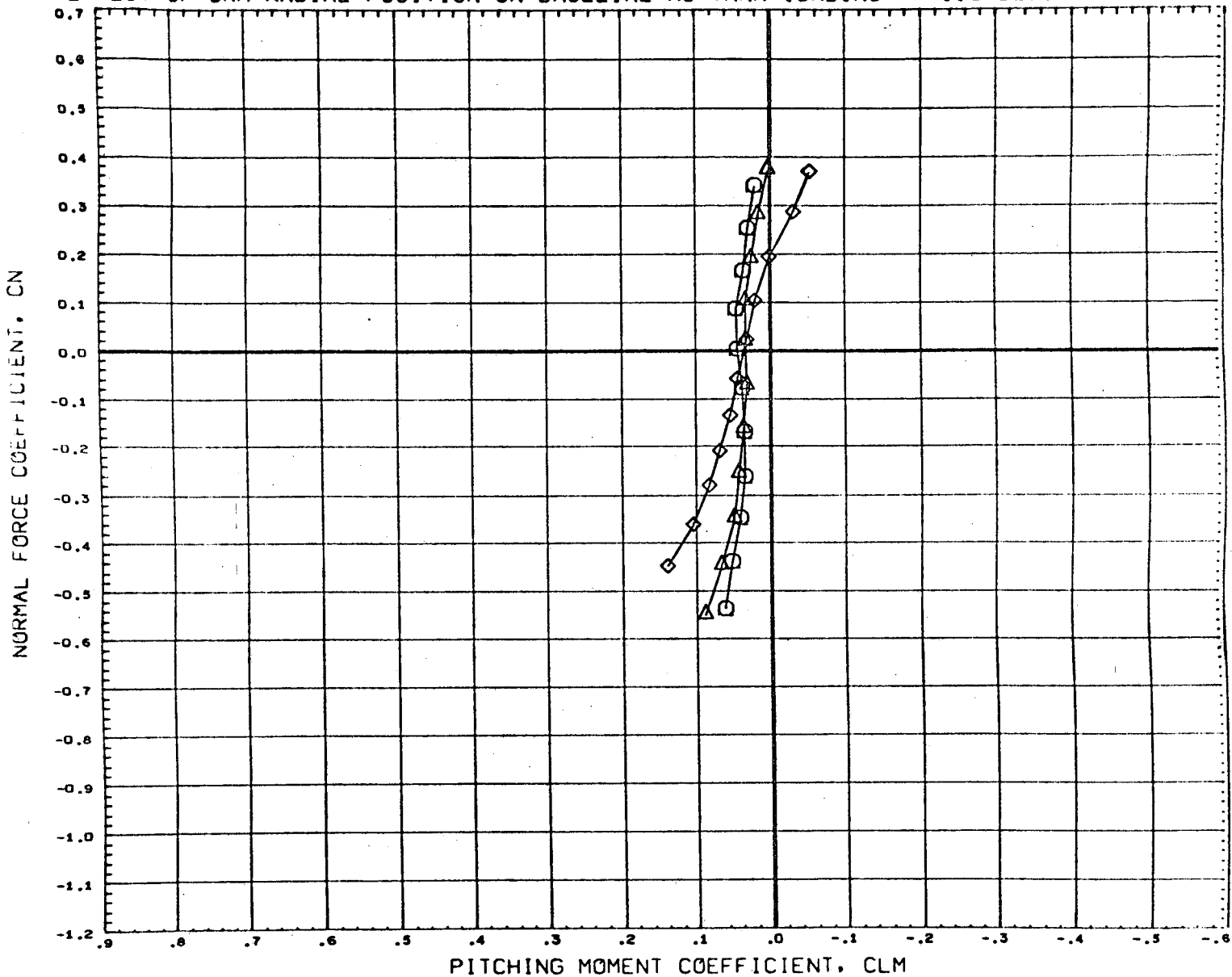
EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)



PITCHING MOMENT COEFFICIENT, CLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(071008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

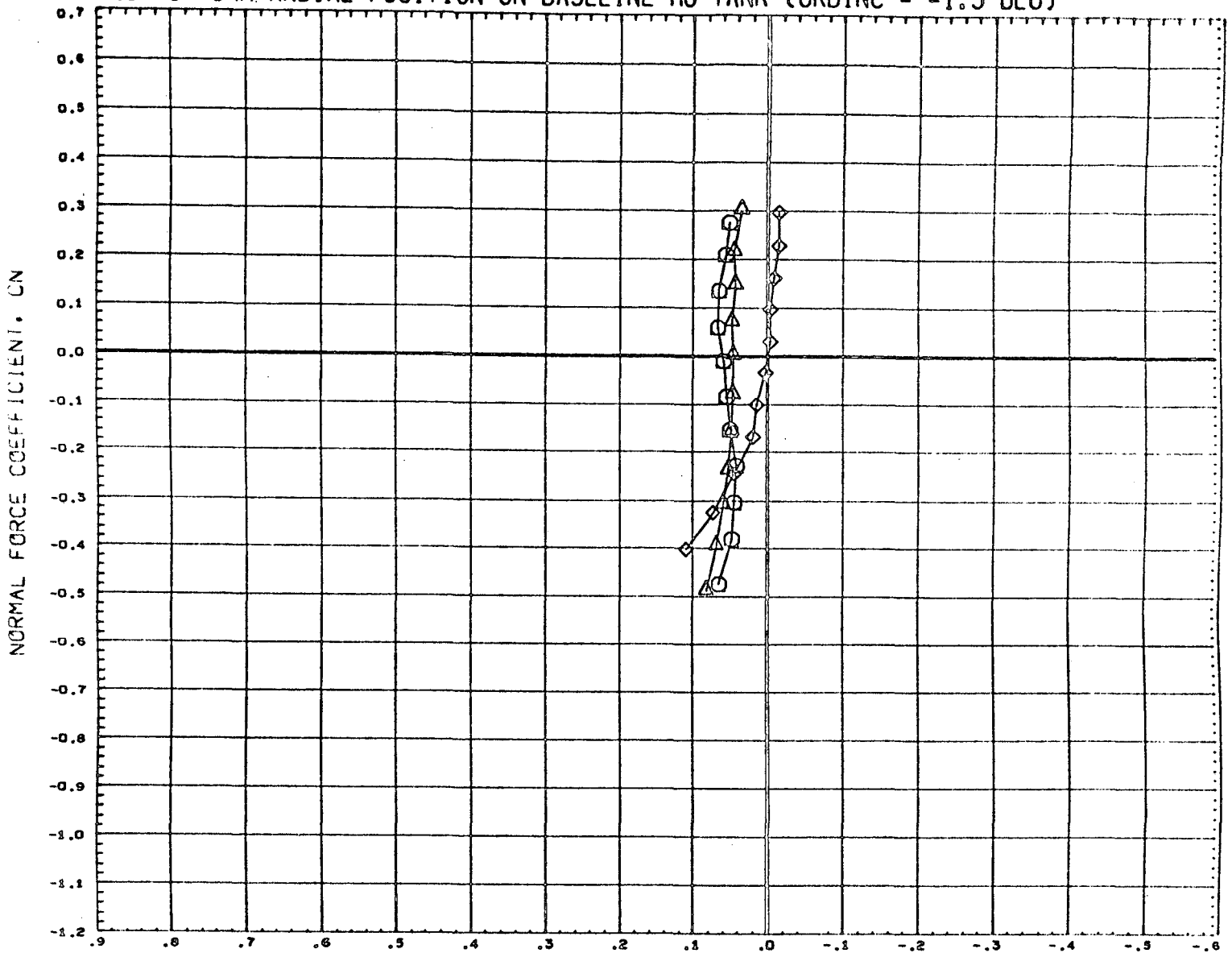
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SO. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



PITCHING MOMENT COEFFICIENT, CLM

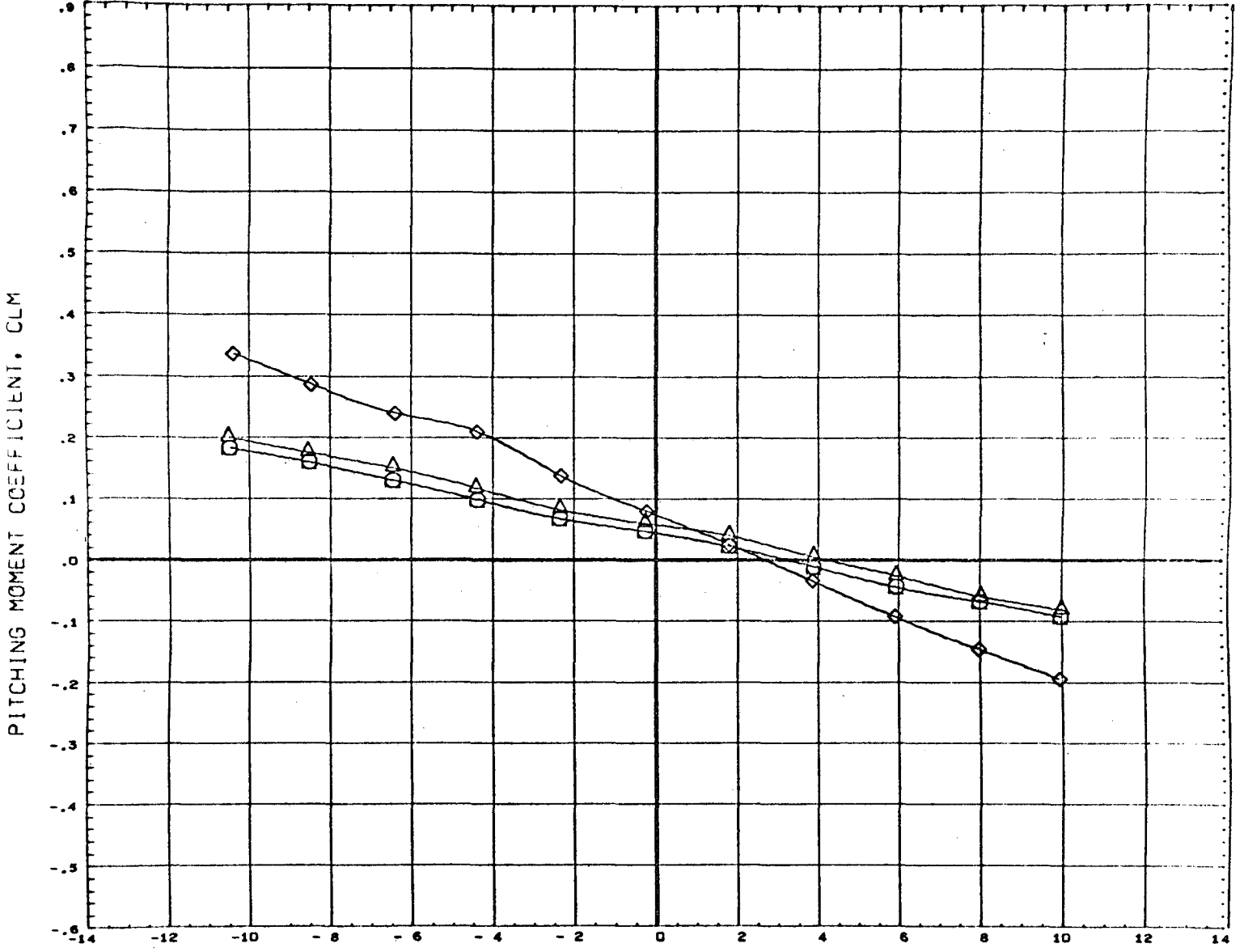
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(071008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



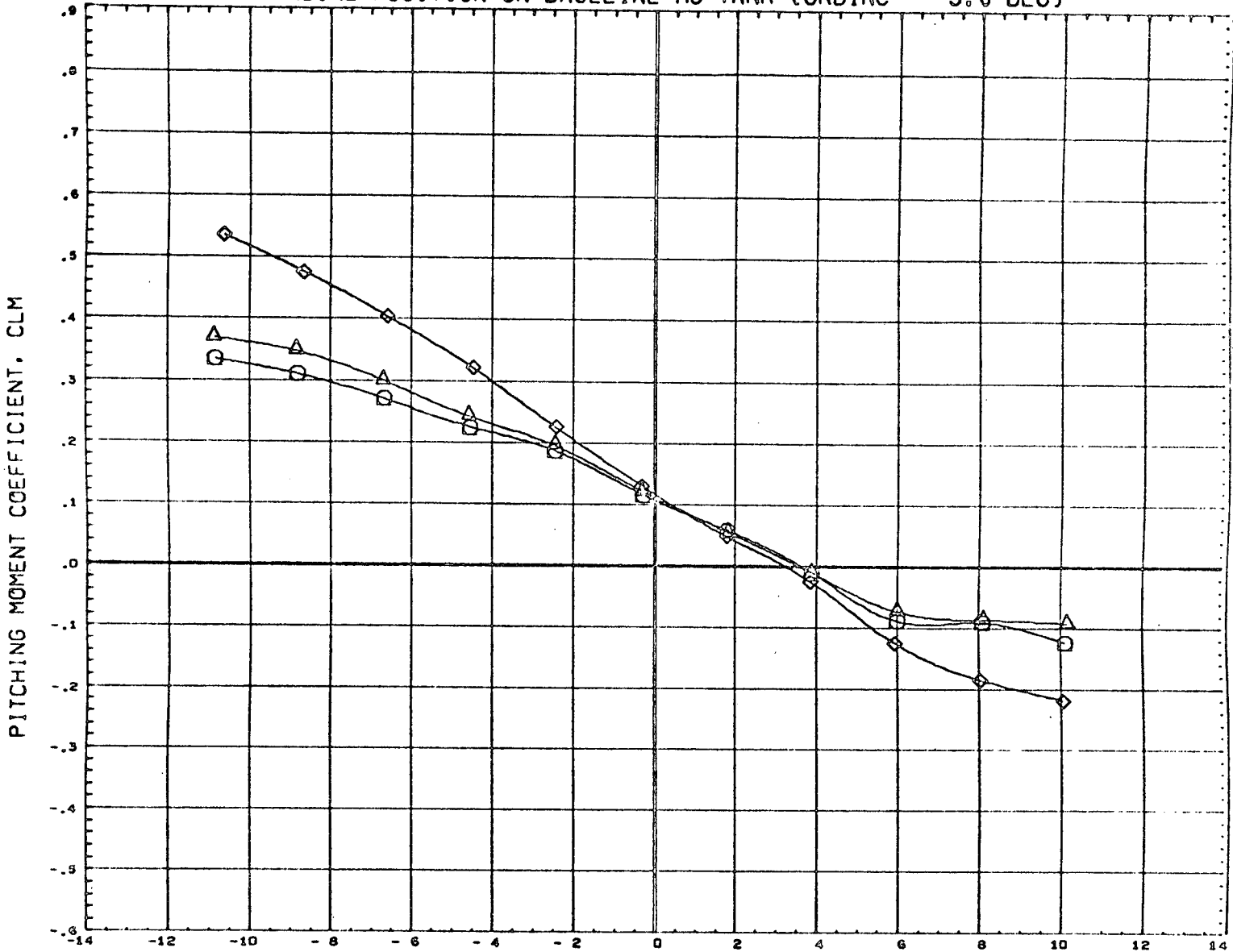
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

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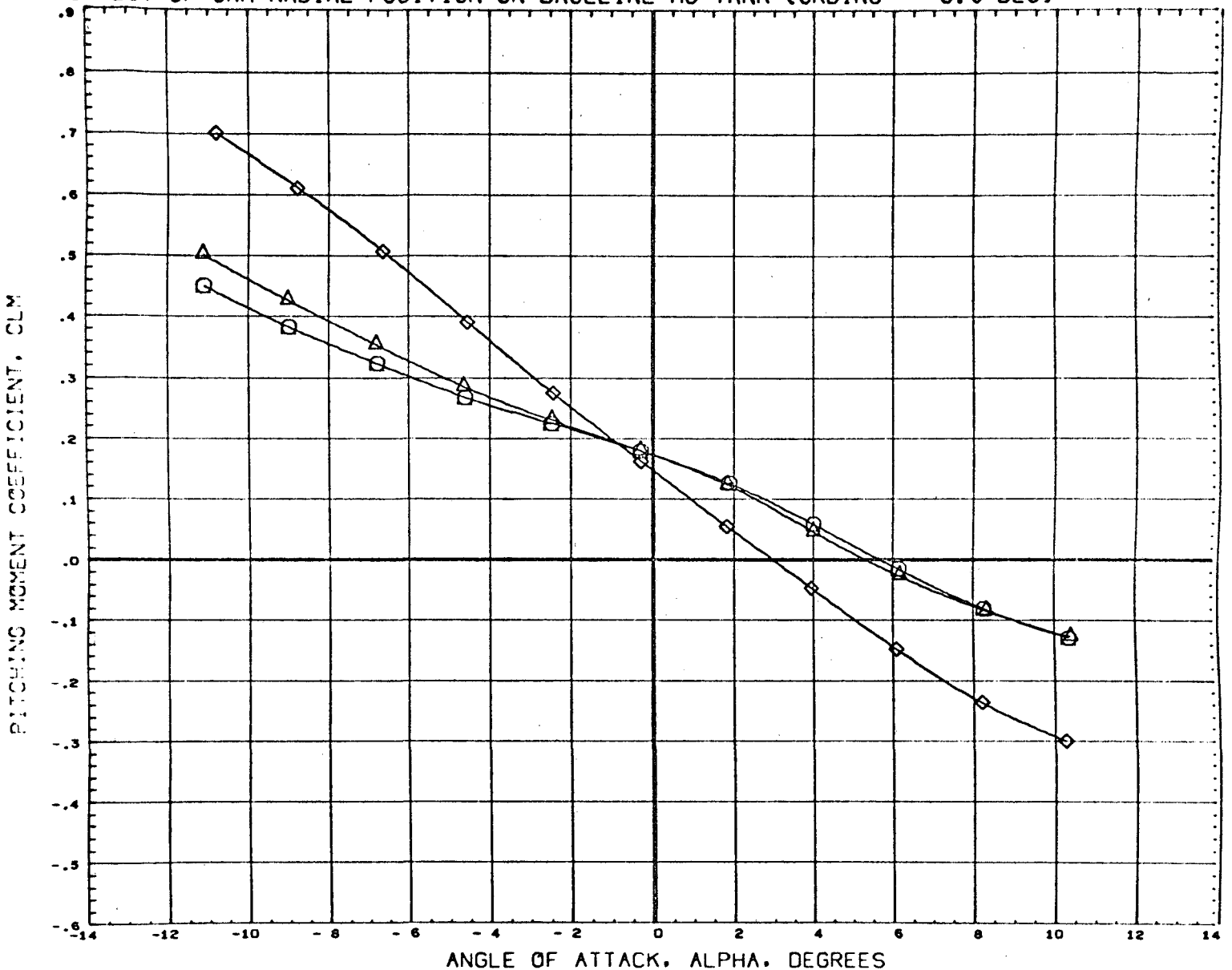
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91

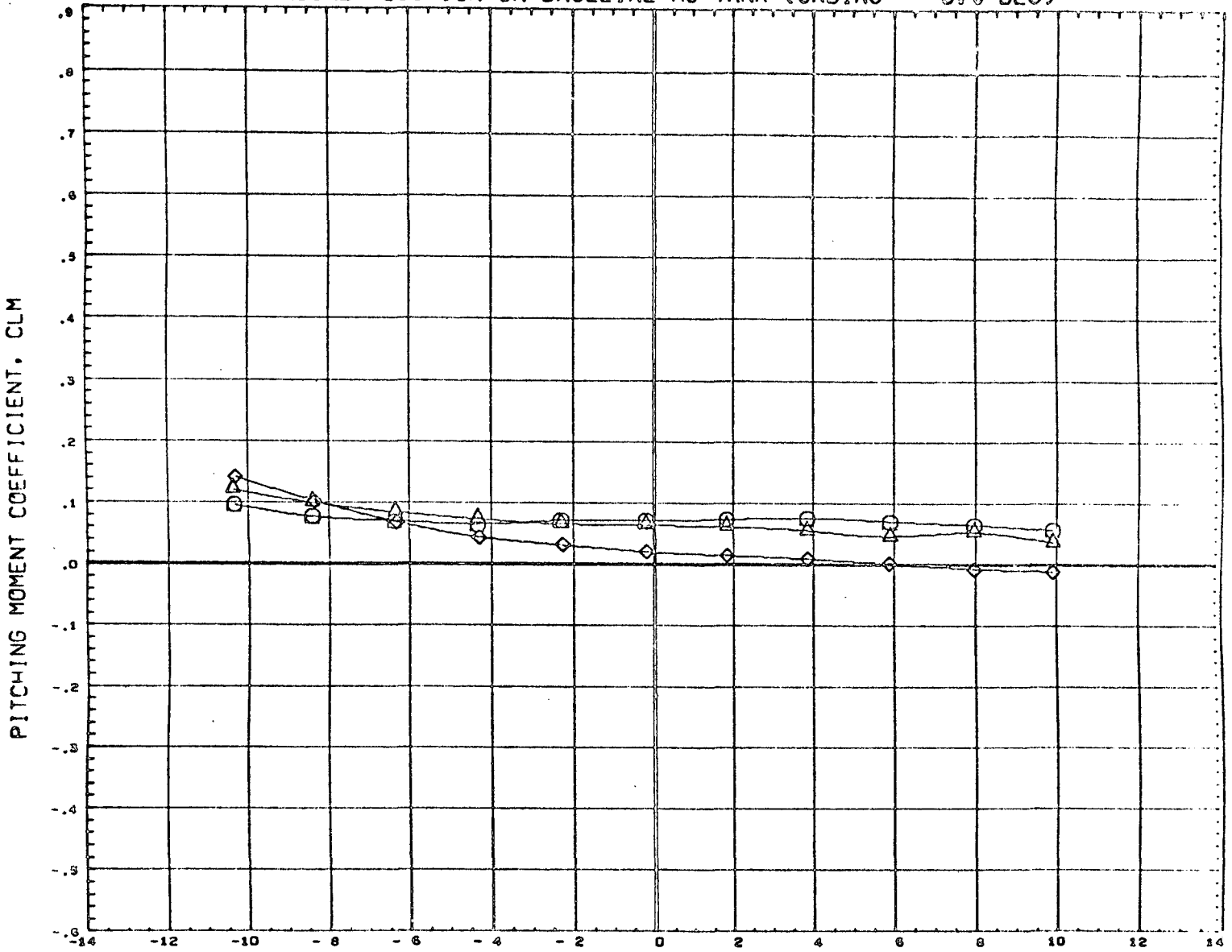
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

EFFECT OF SRM RADIAL POSITION ON BASELINE NO TANK (ORBINC = -3.0 DEG)

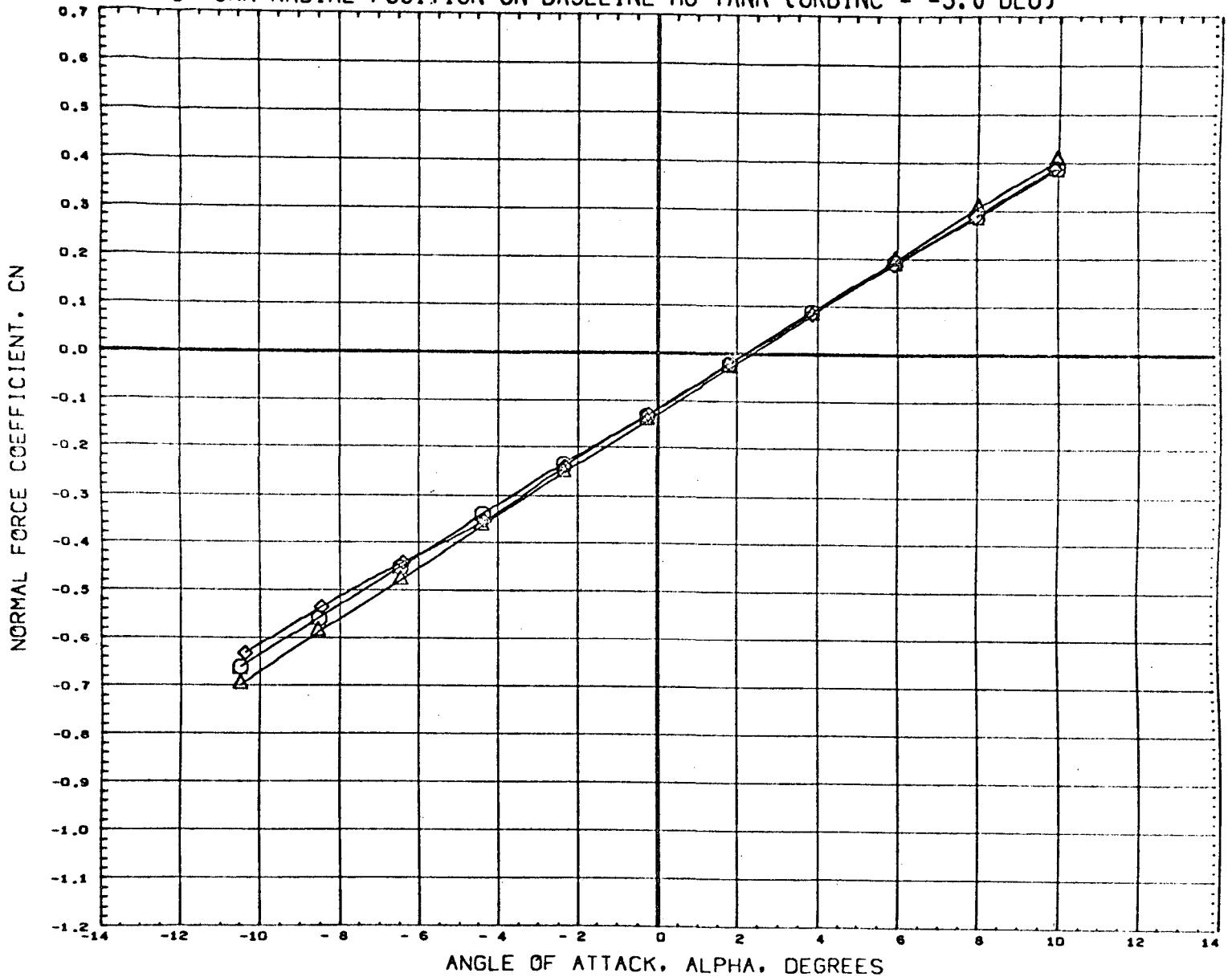


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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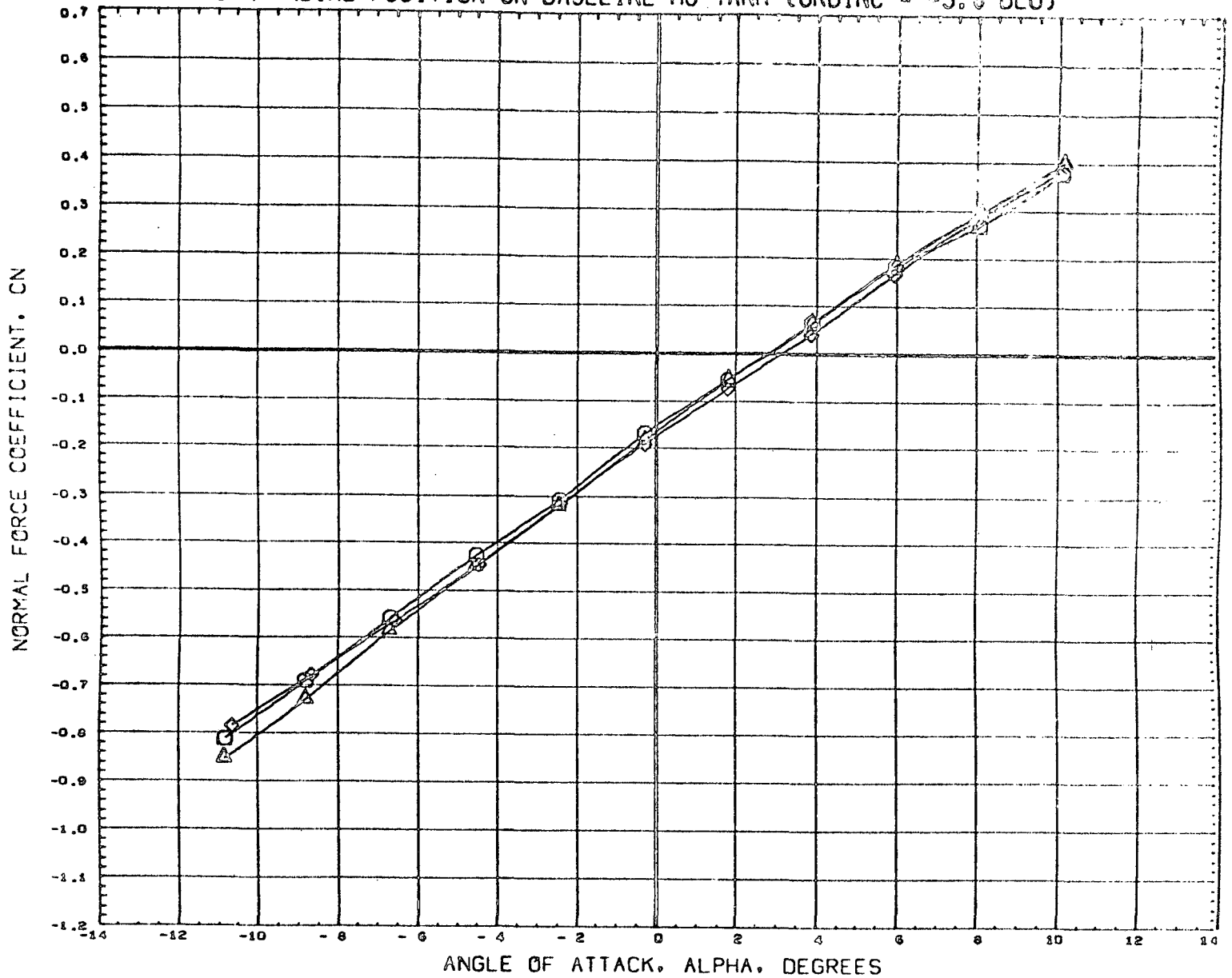
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	135.000	0.000	0.000	BREF 4.4800 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

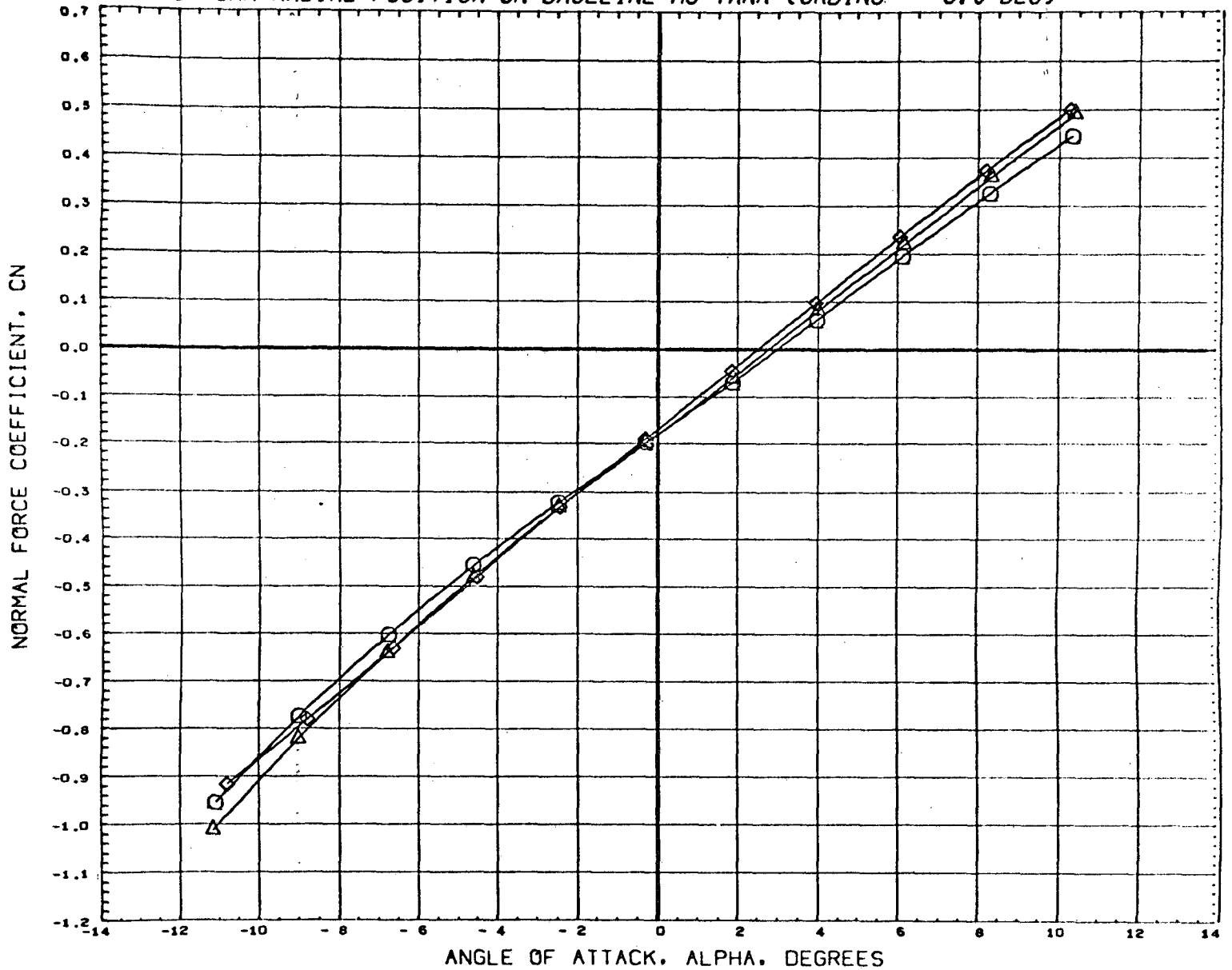
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91

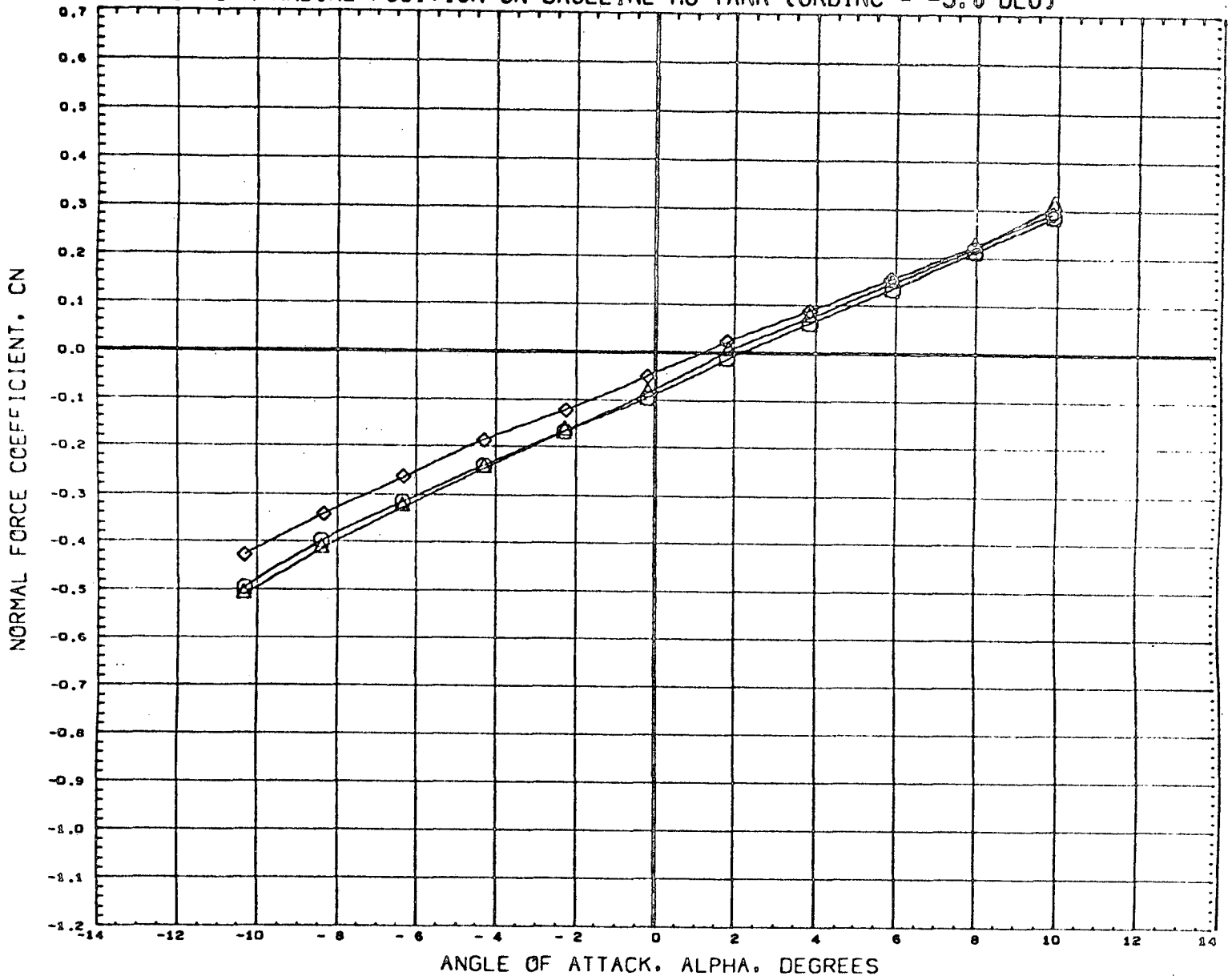
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



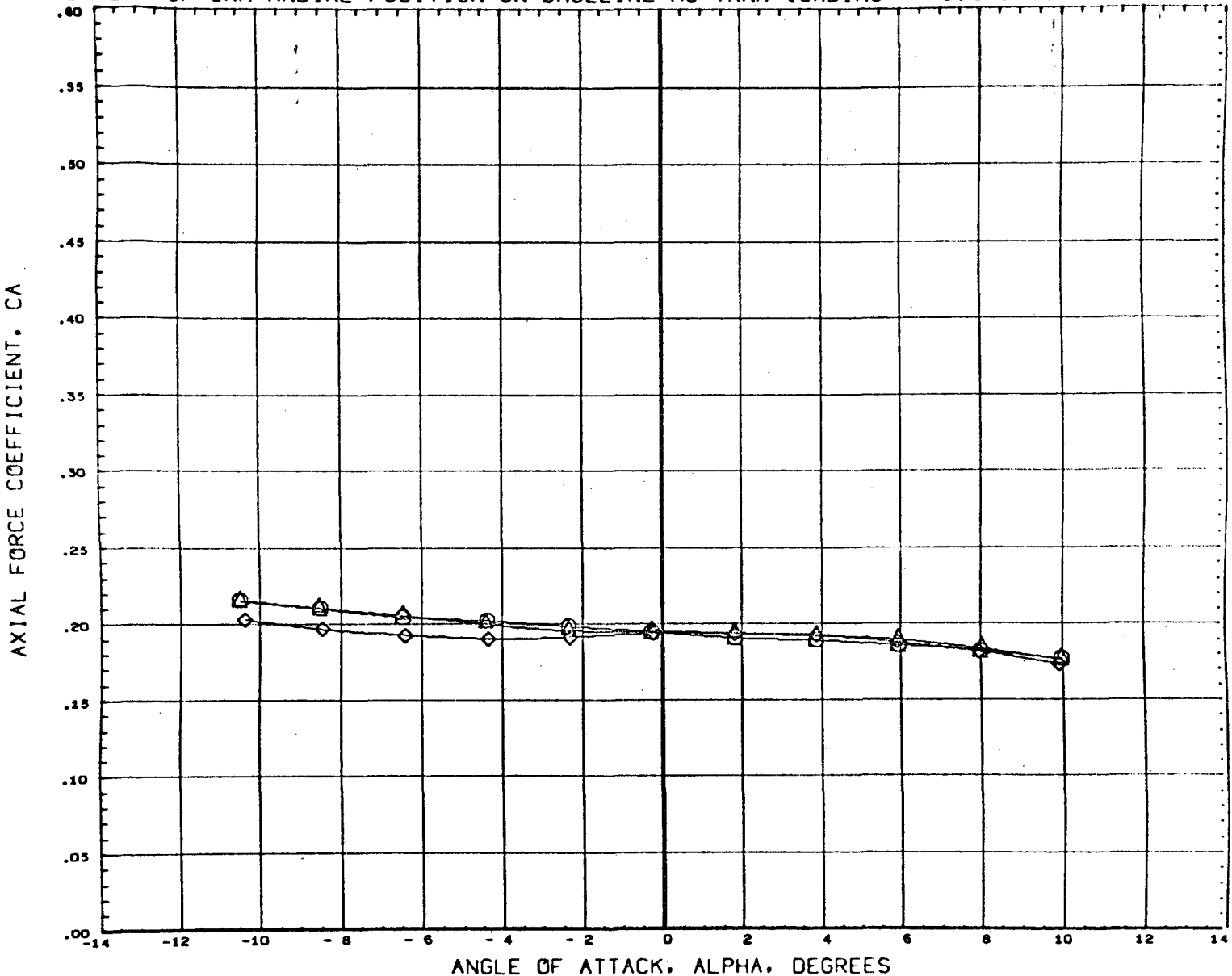
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(171003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 30. IN
(171006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(171009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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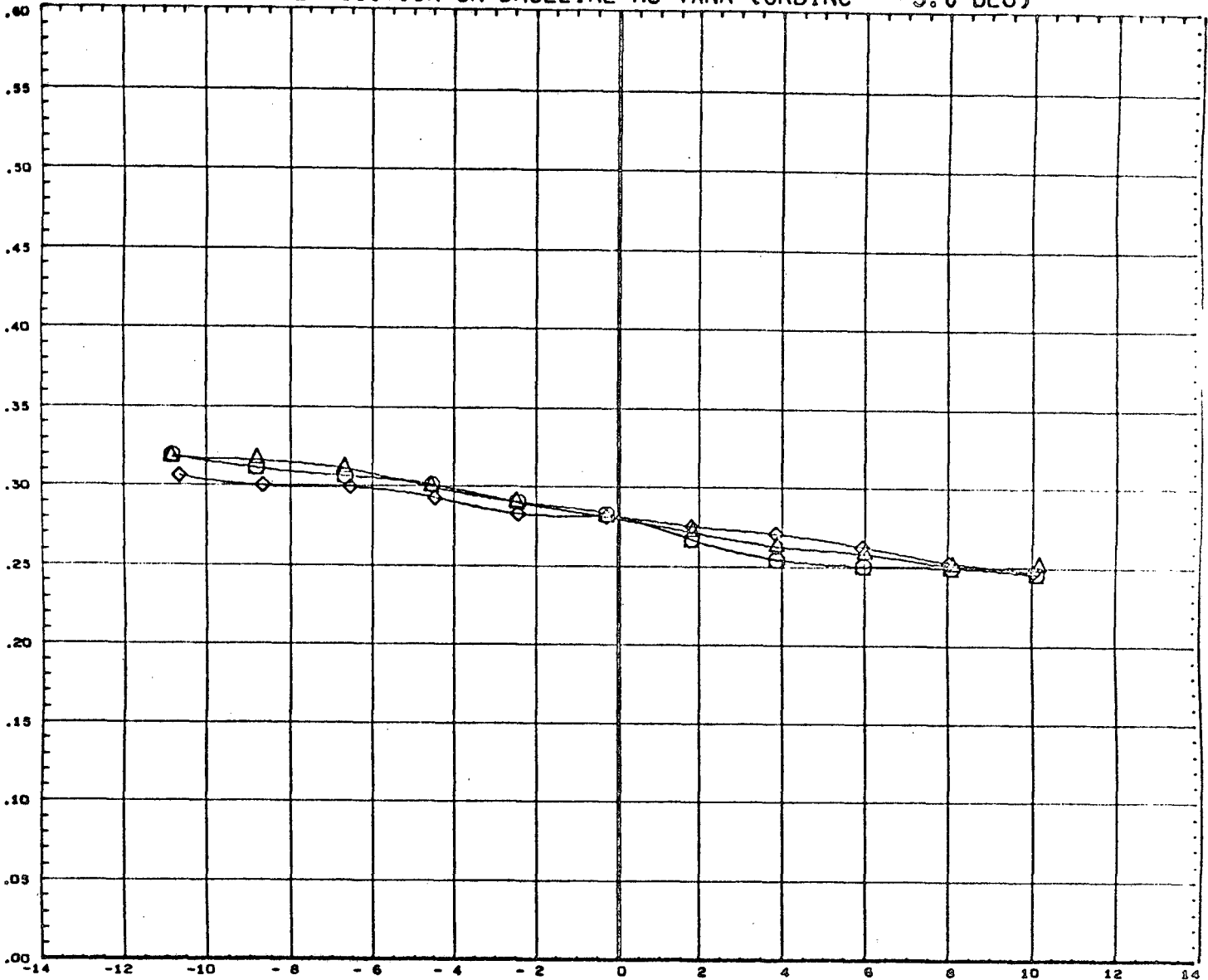
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)

AXIAL FORCE COEFFICIENT, CA



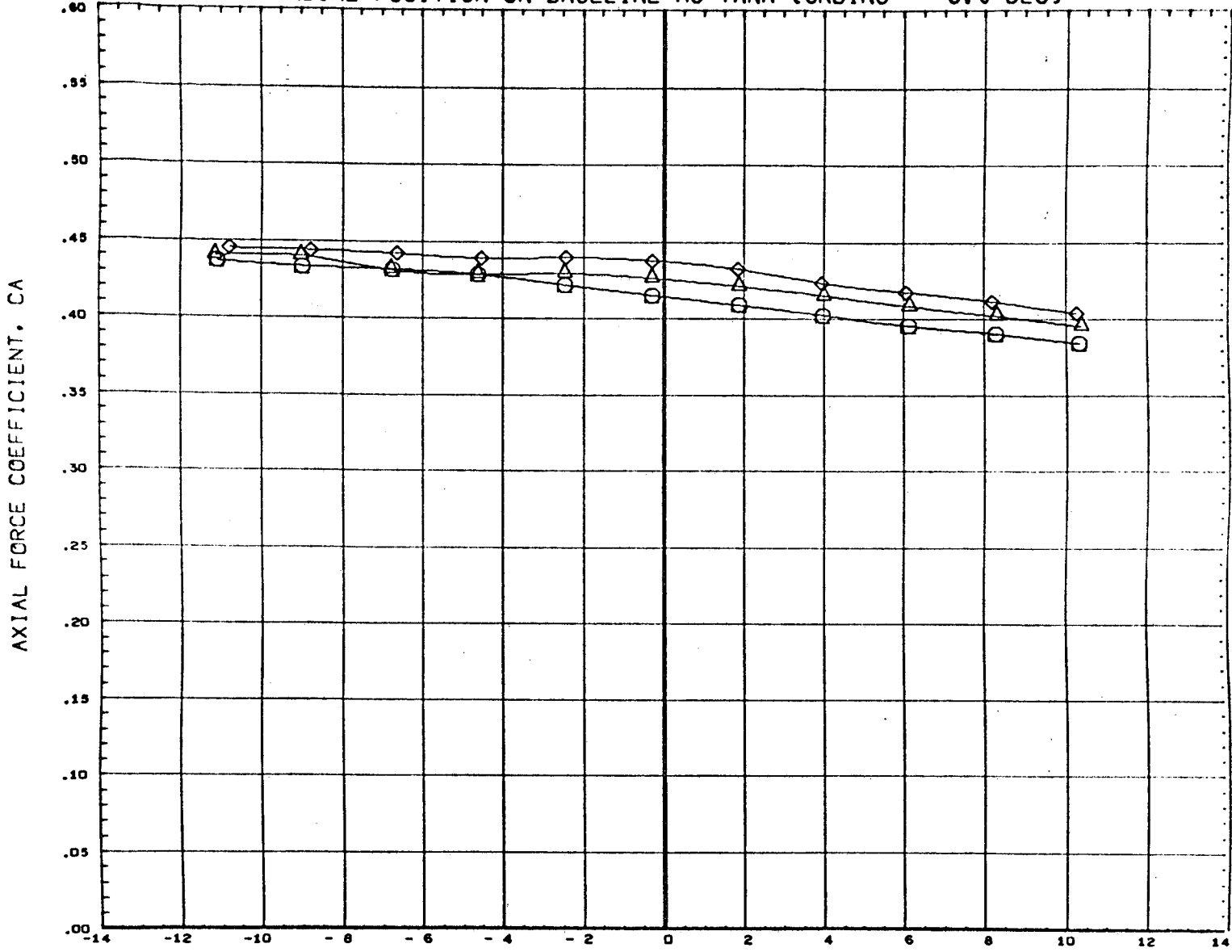
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 90. IN
(071006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(071009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .91

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# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)

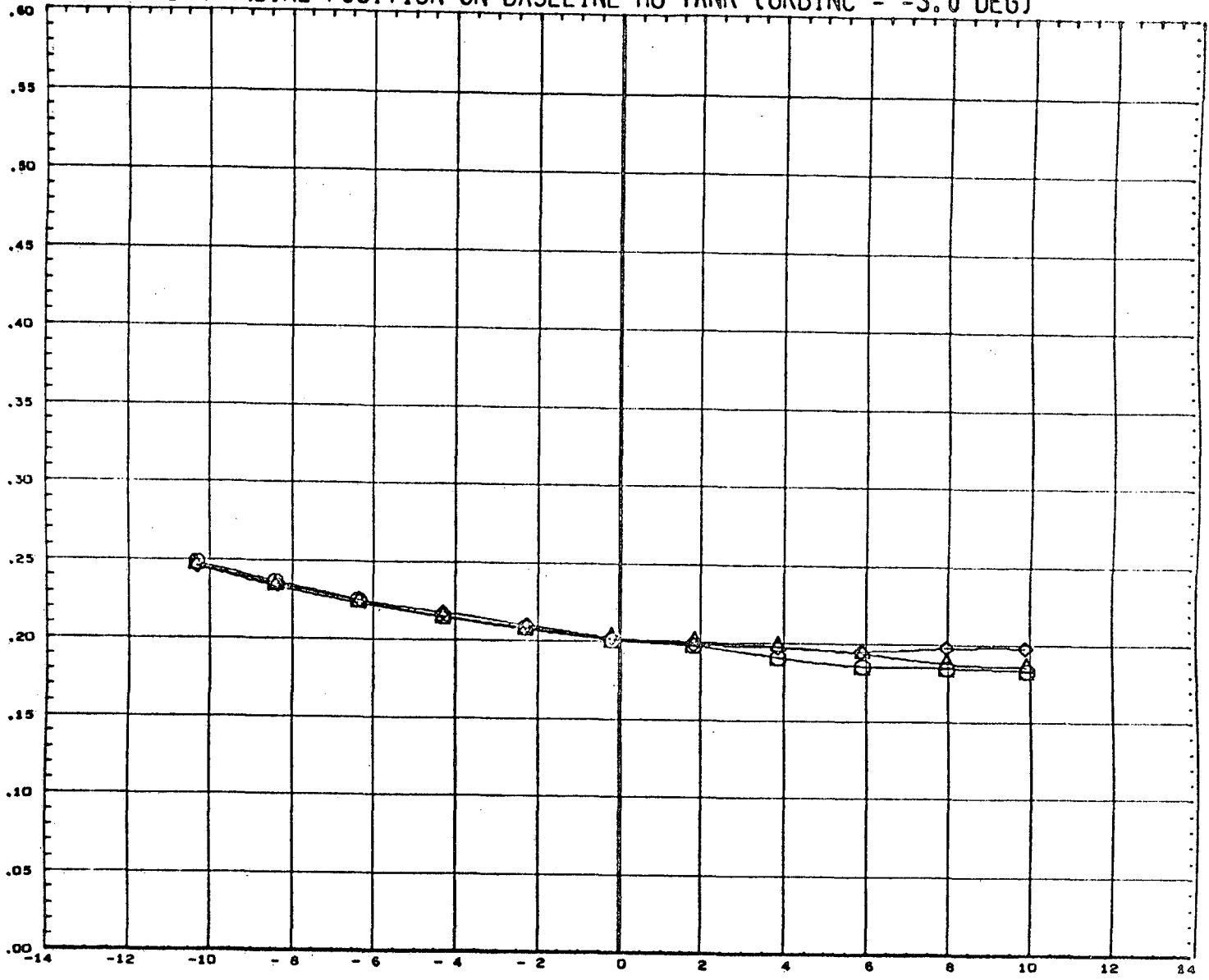


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)

AXIAL FORCE COEFFICIENT, CA



ANGLE OF ATTACK, ALPHA, DEGREES

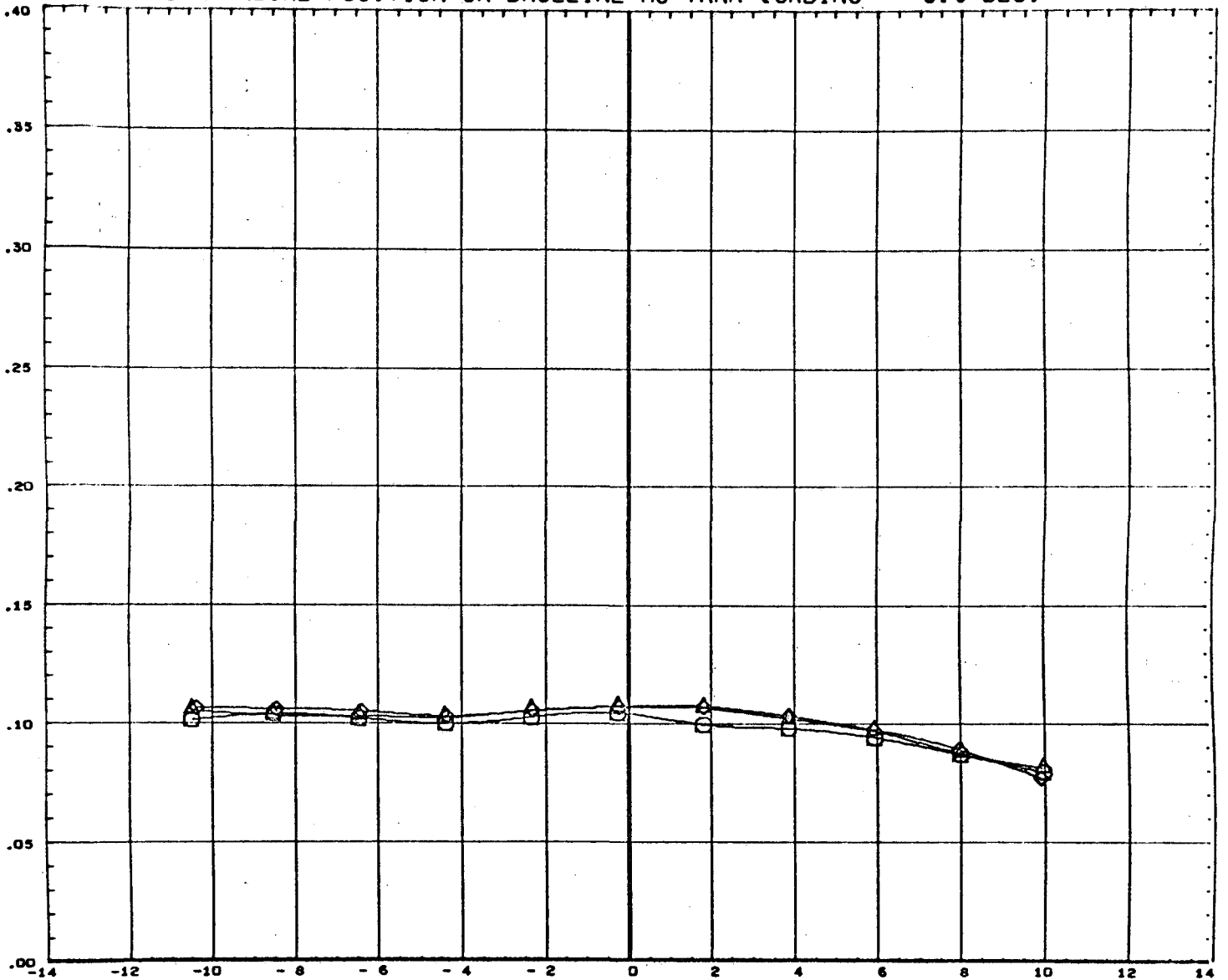
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF



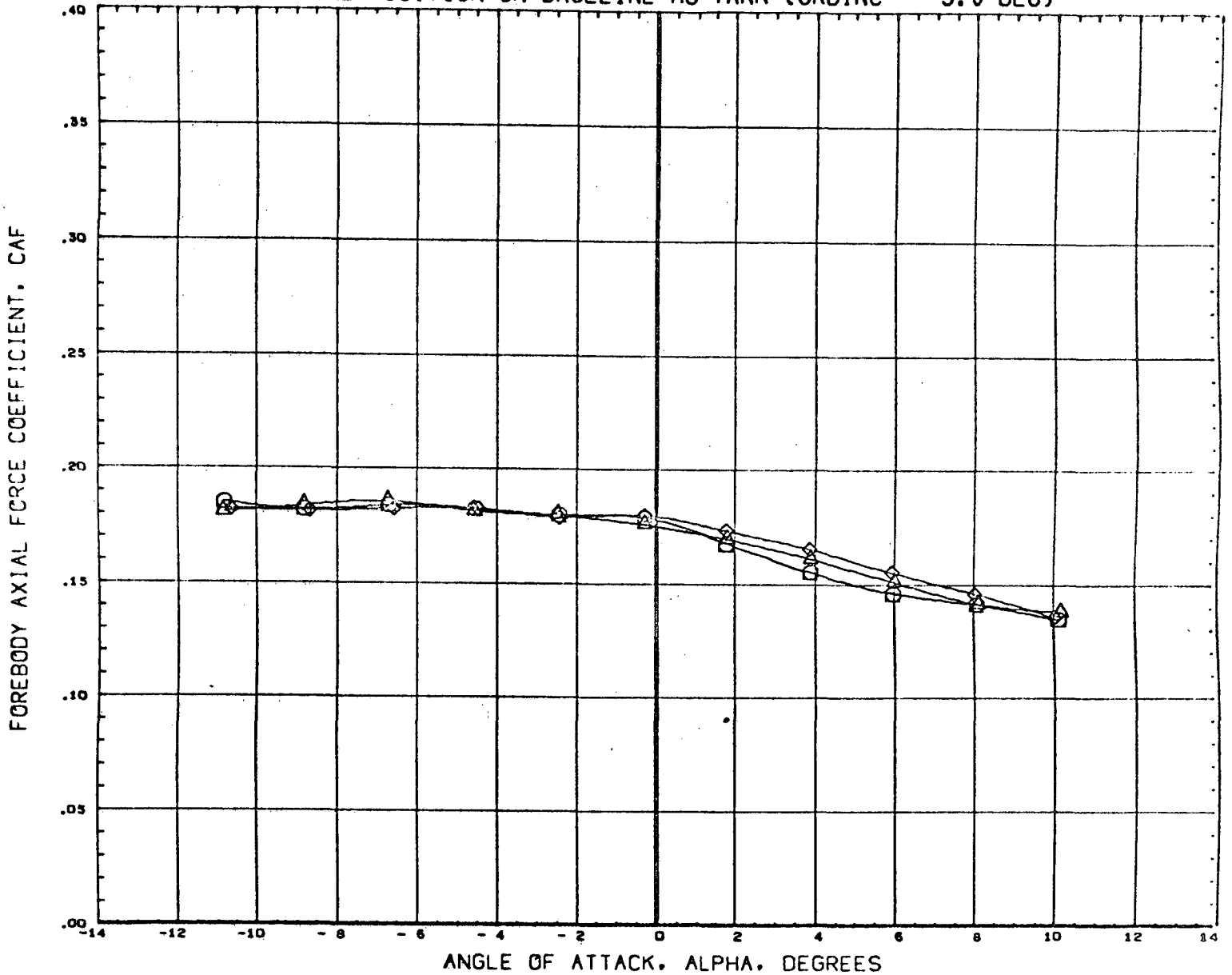
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

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EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)

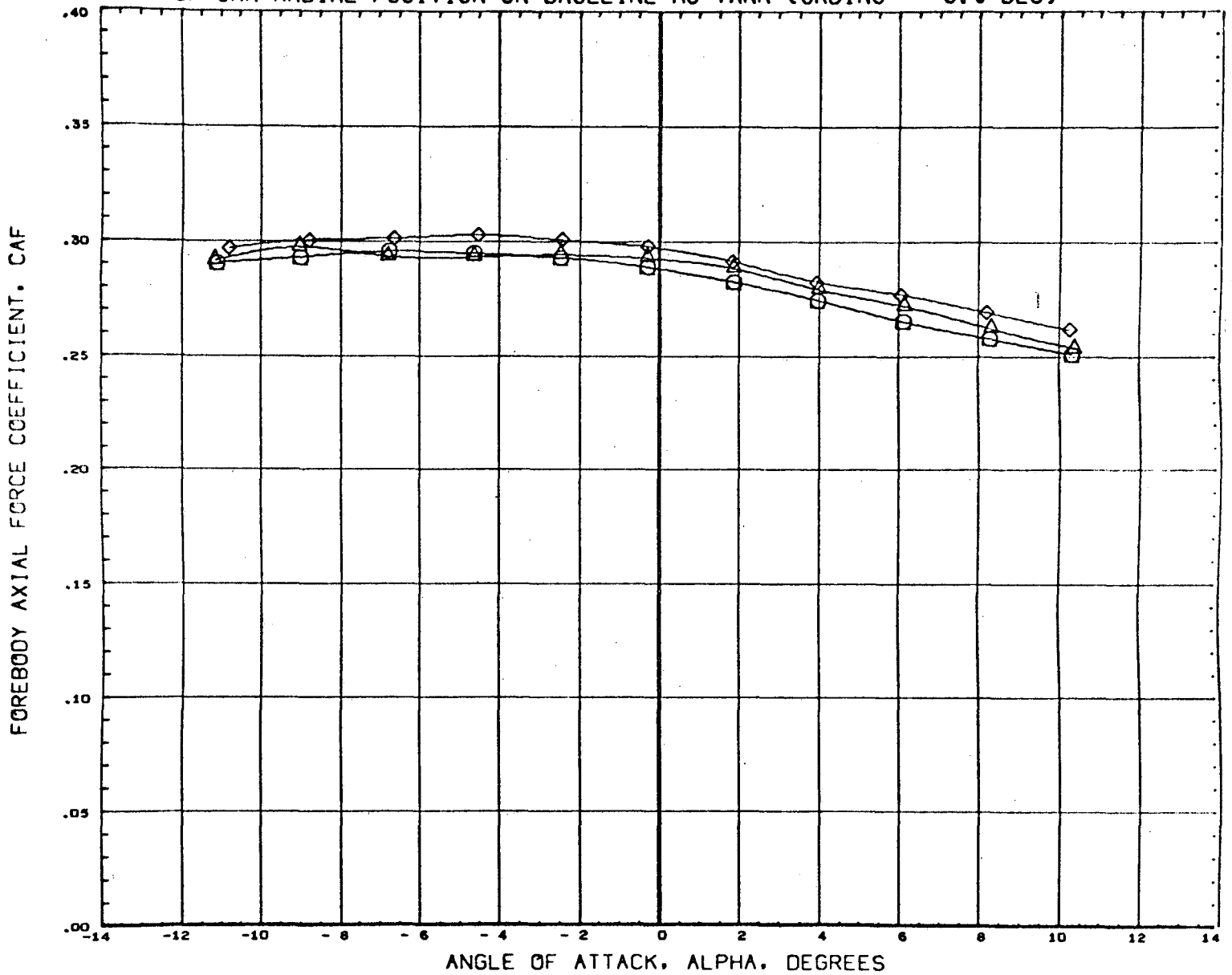


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	LREF 2.0260 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH

.91

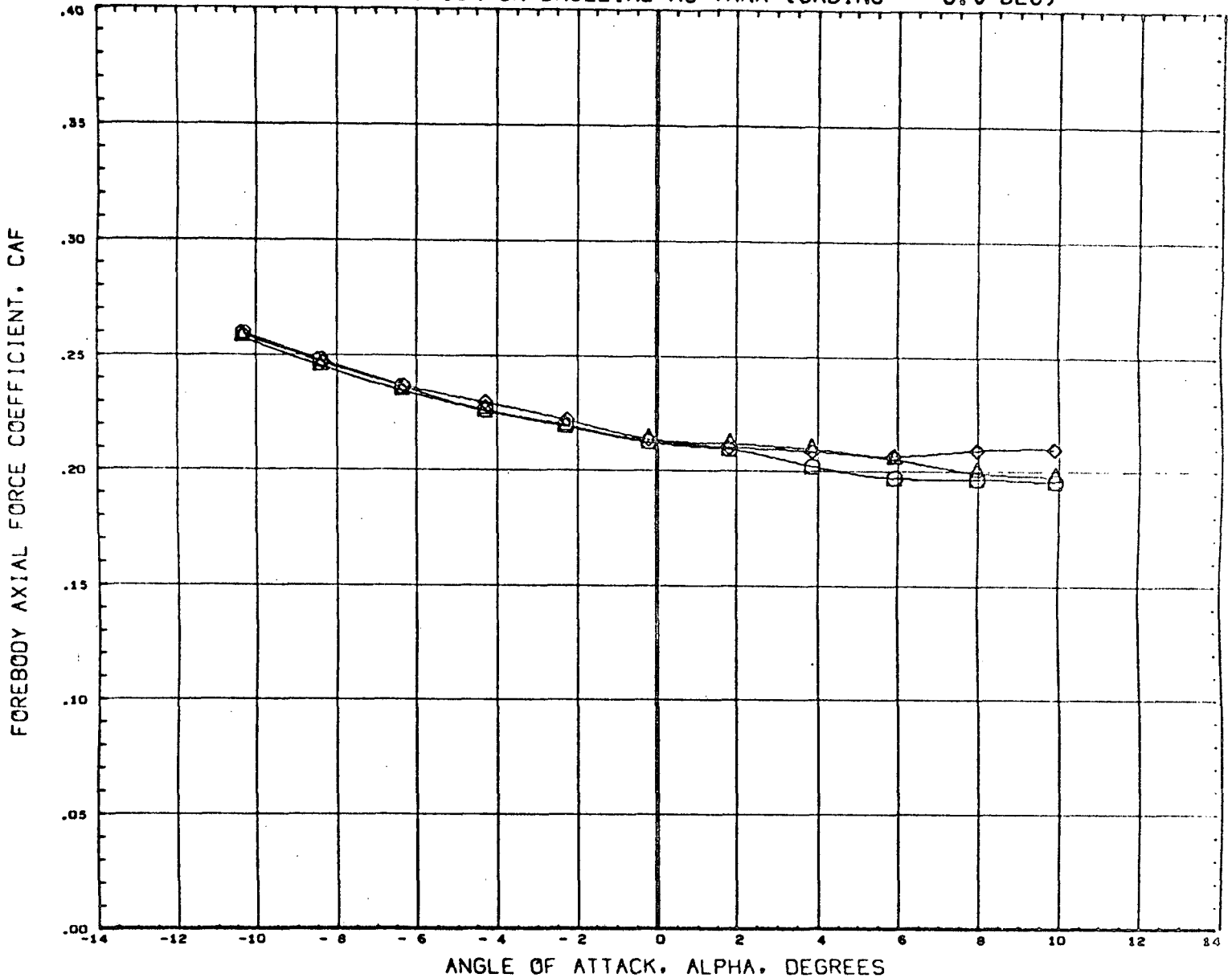
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



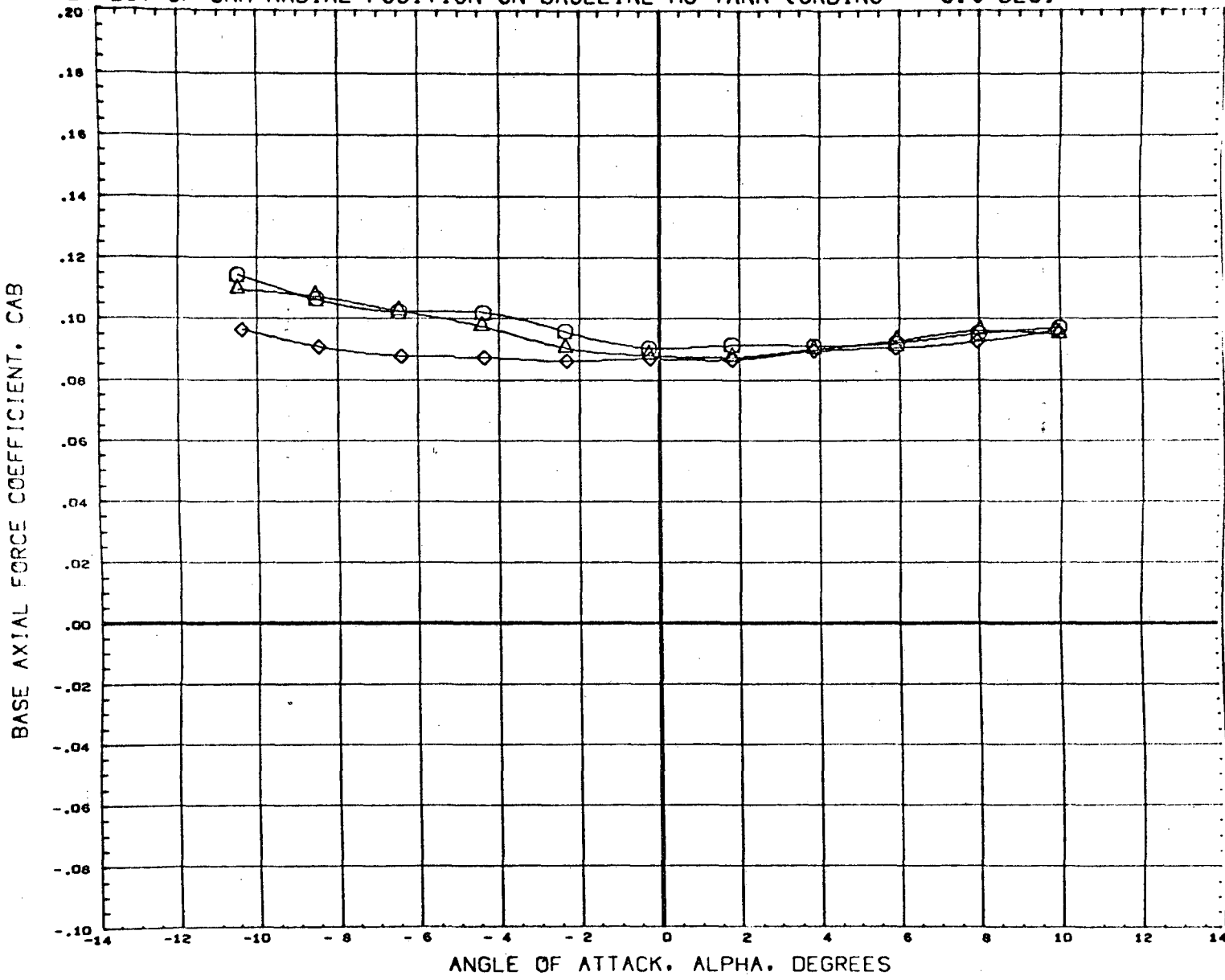
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 90. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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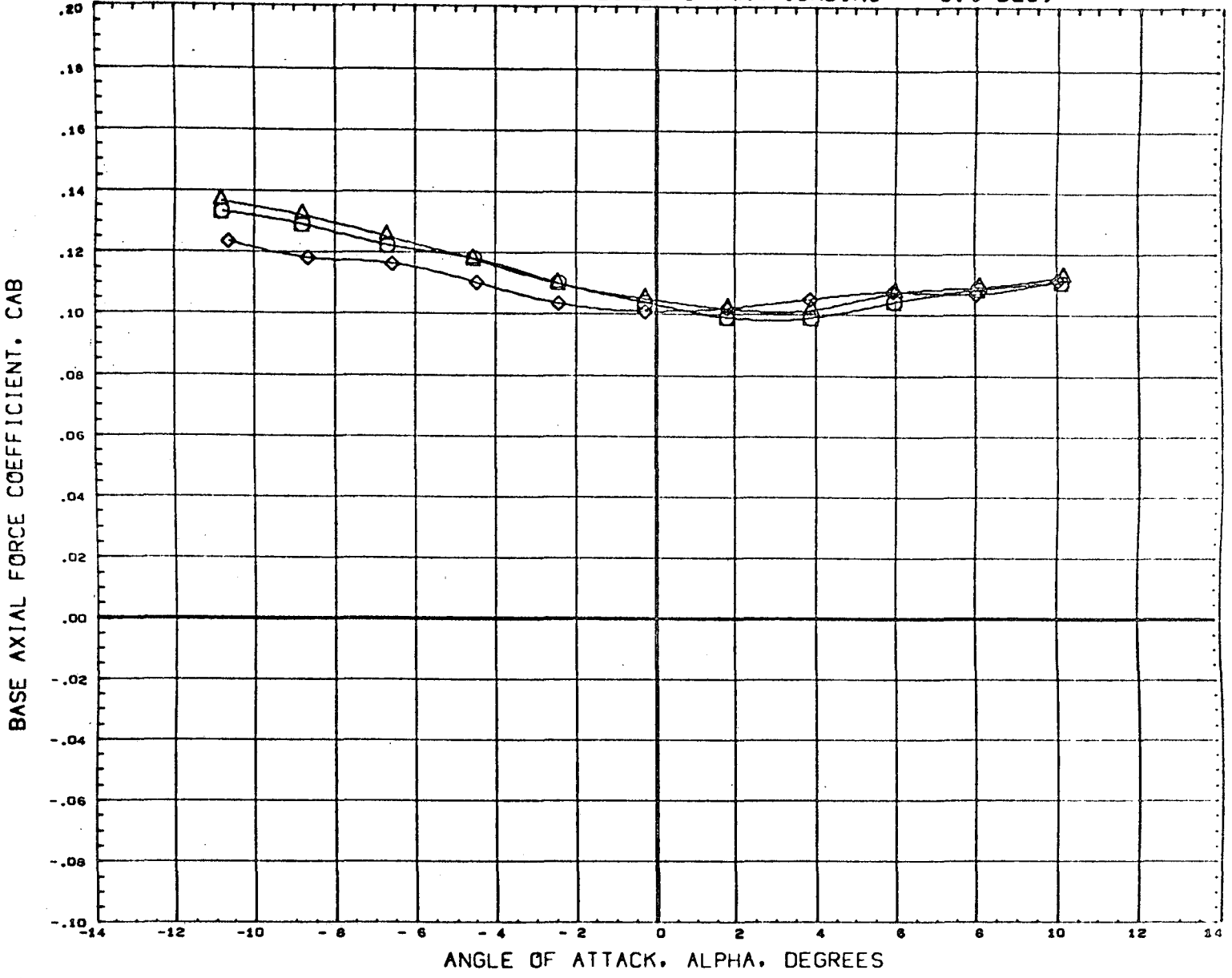
# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

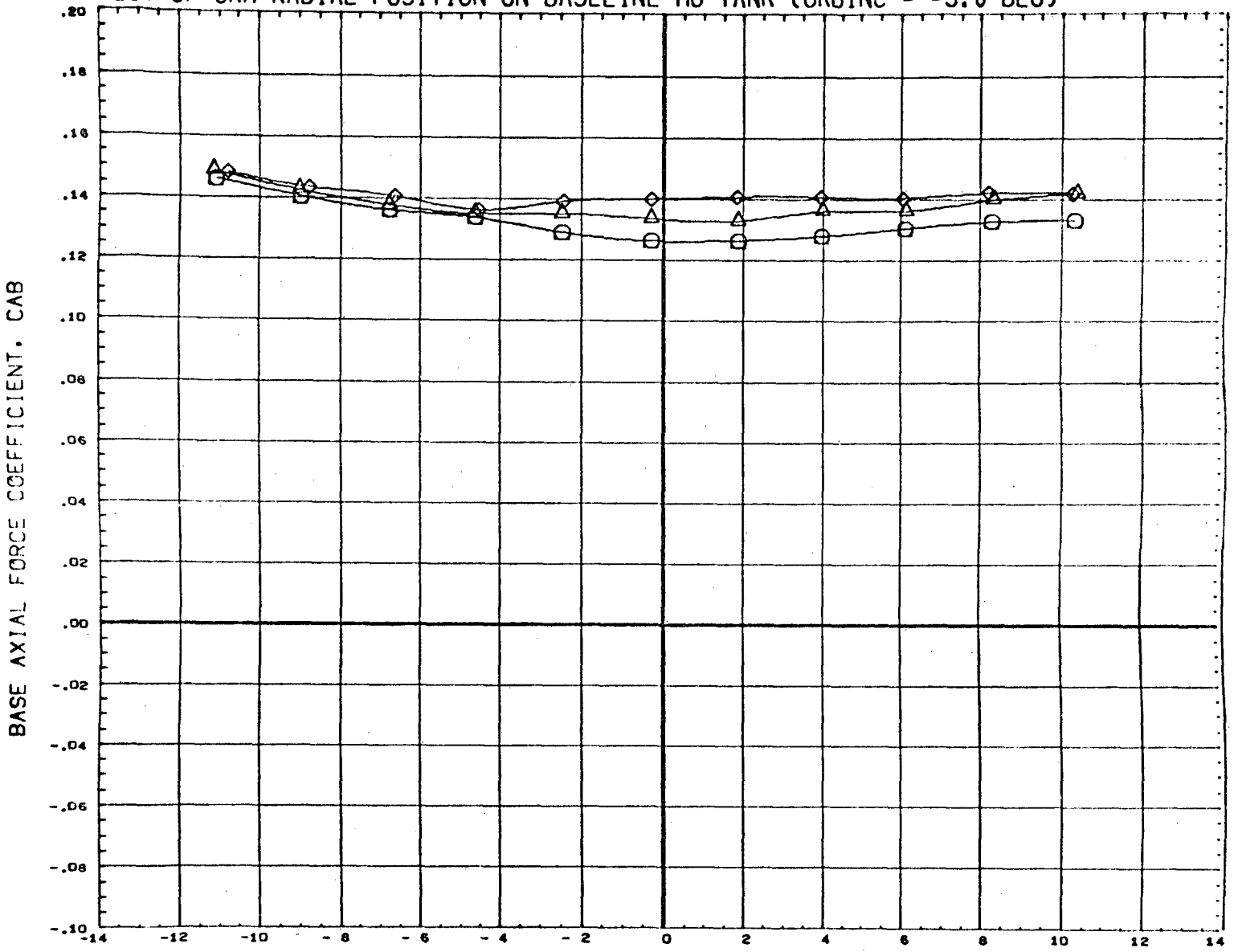
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .91

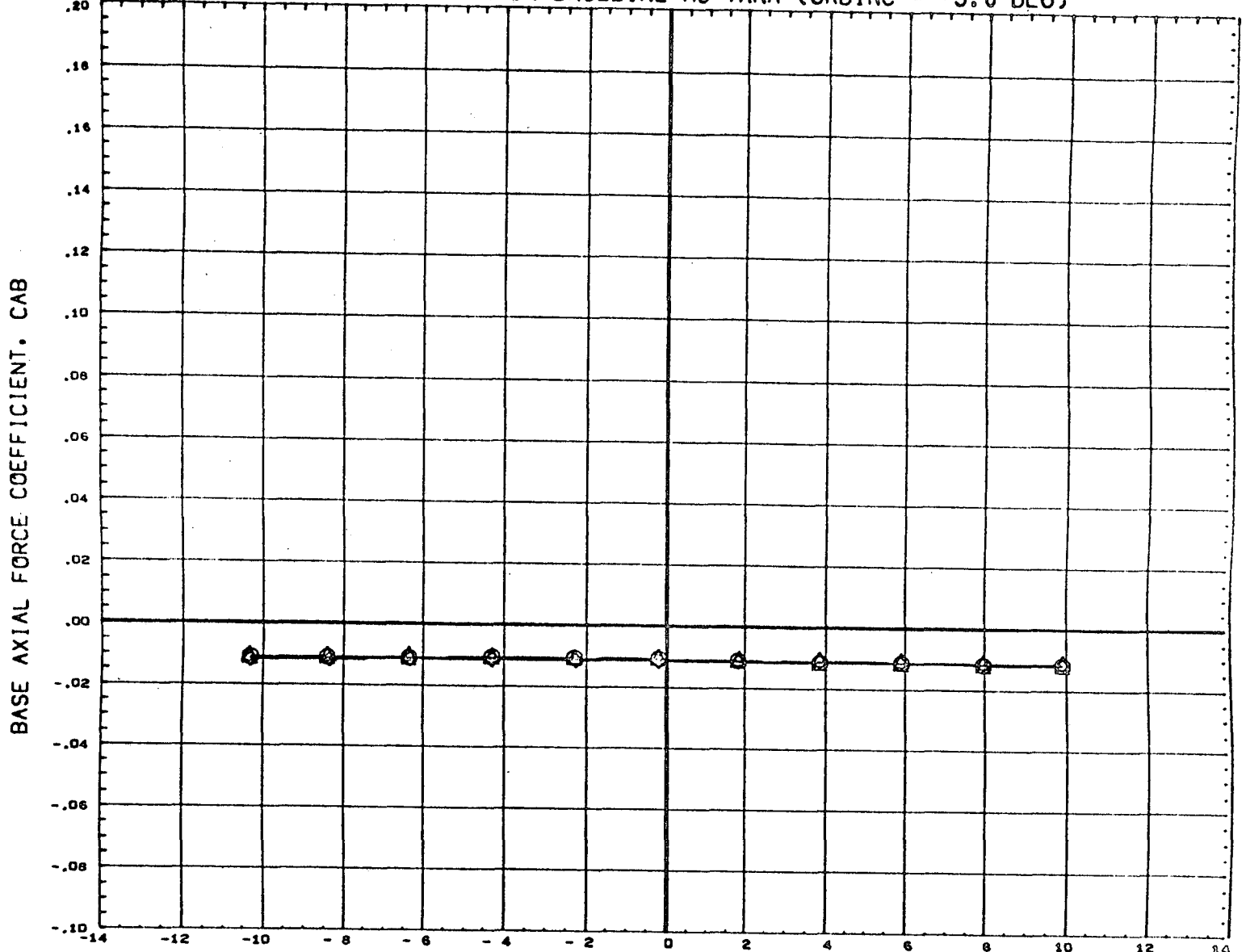
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

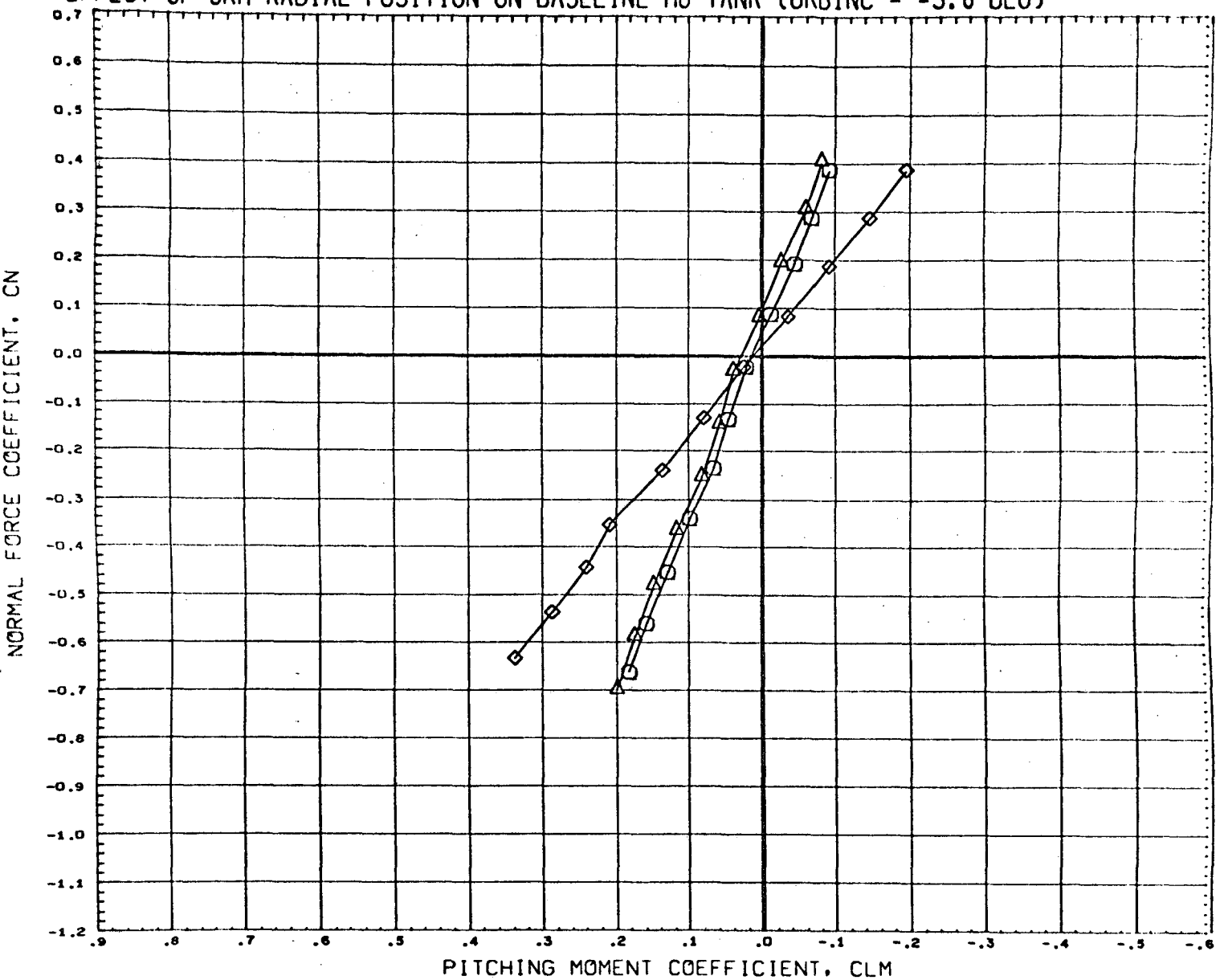
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

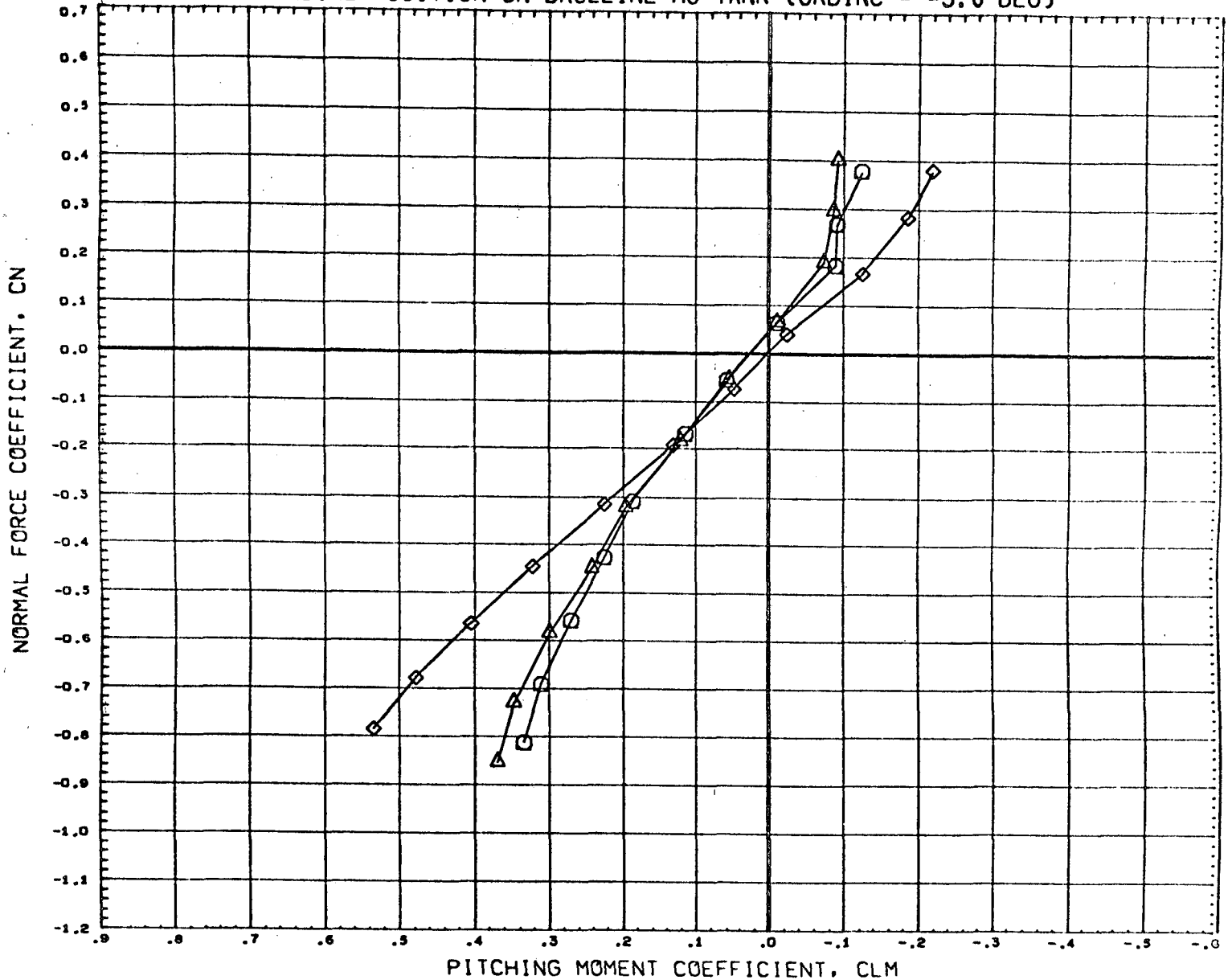
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

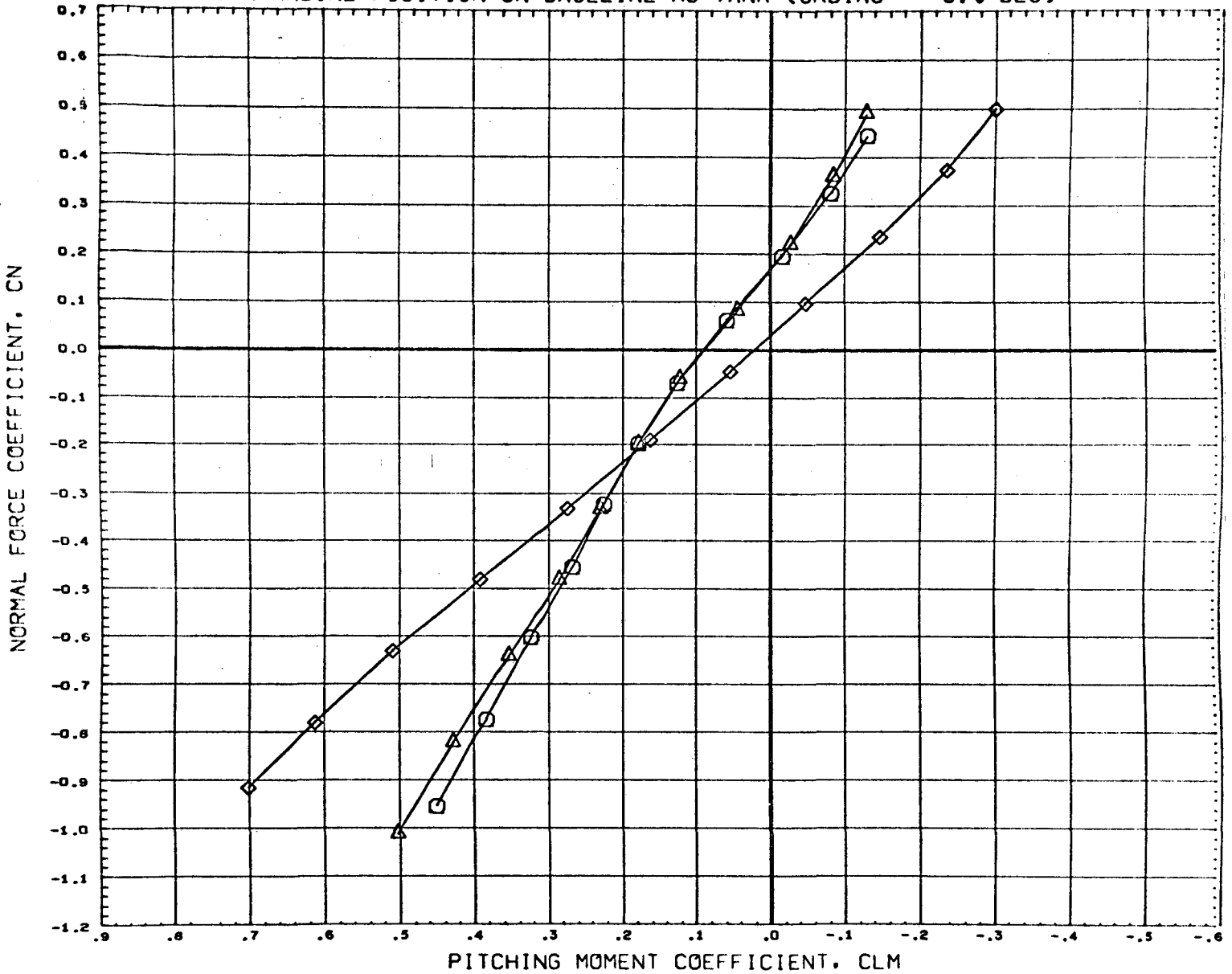
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .91

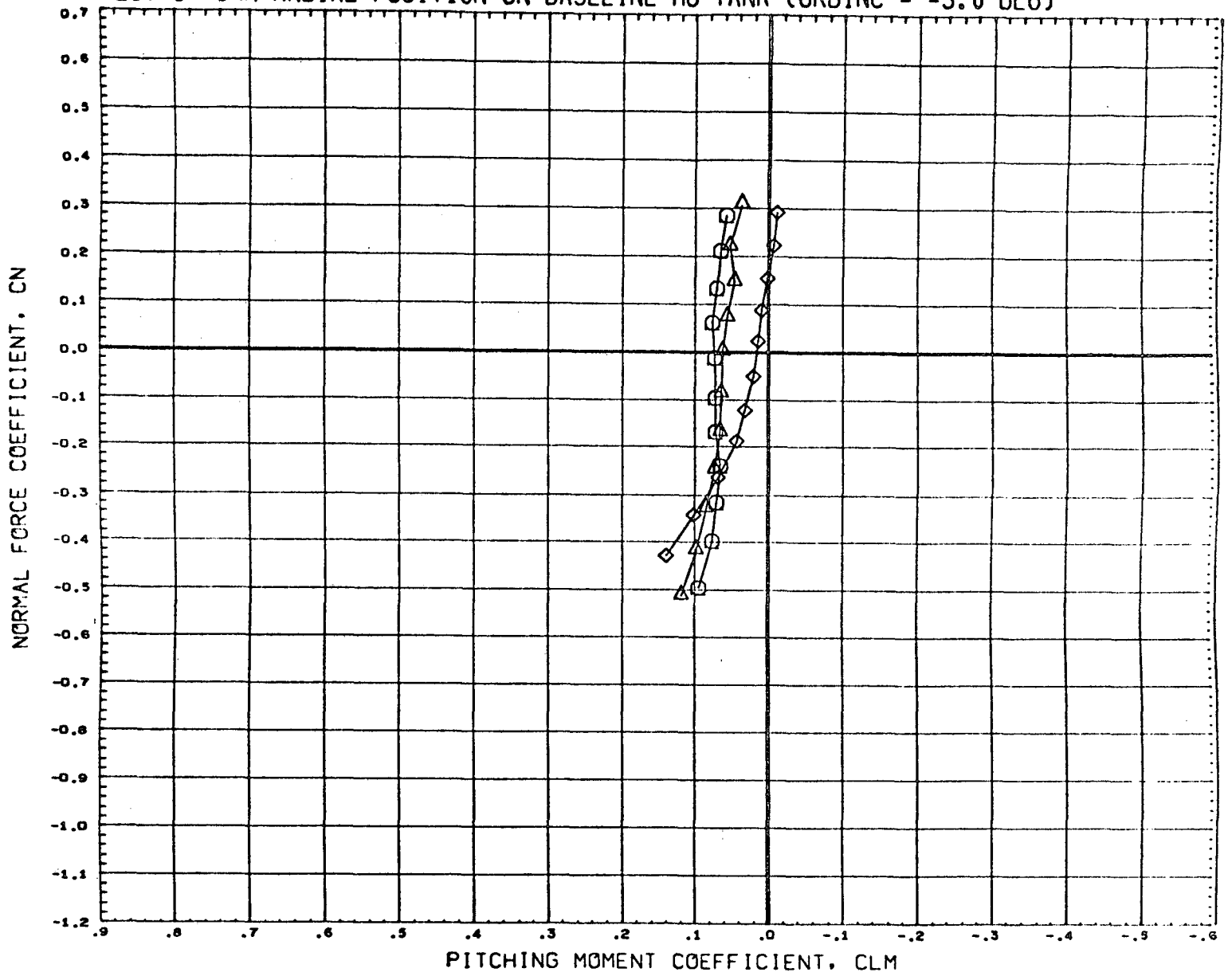
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0280 IN.
(B71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -3.0 DEG)



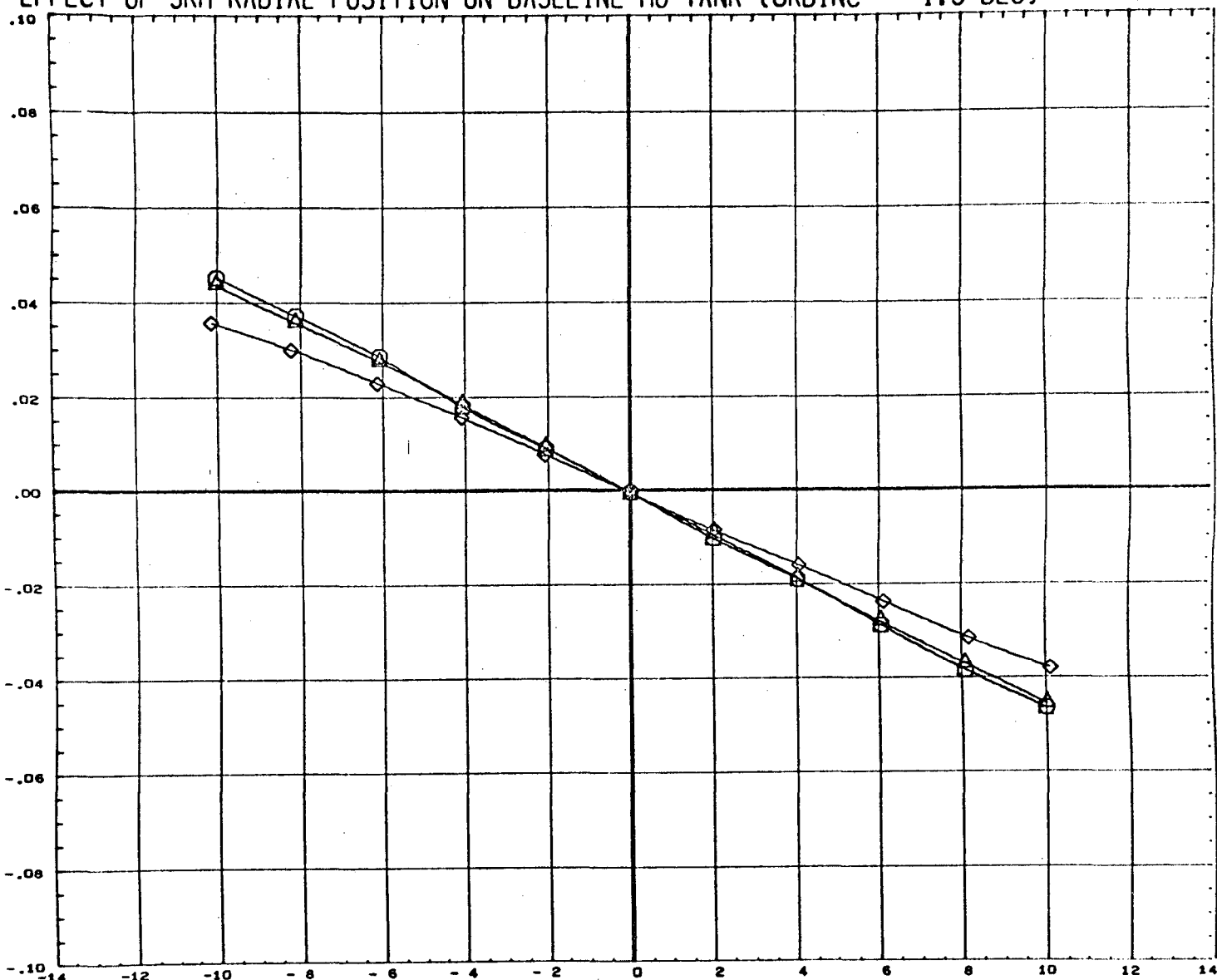
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071006)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	90.000	0.000	0.000	LREF 2.0260 IN.
(071009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96



EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)

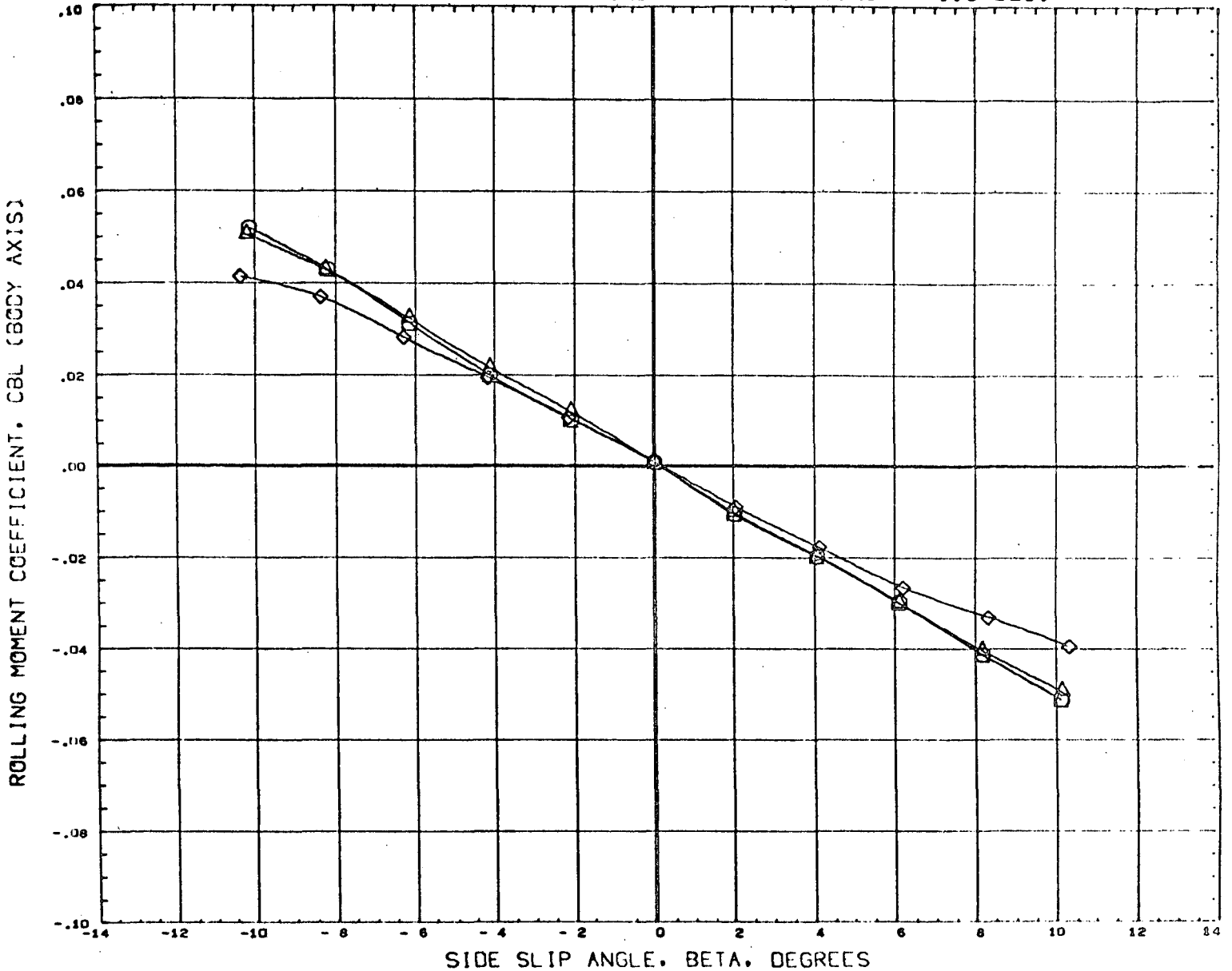
ROLLING MOMENT COEFFICIENT, CBL (BODY AXIS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

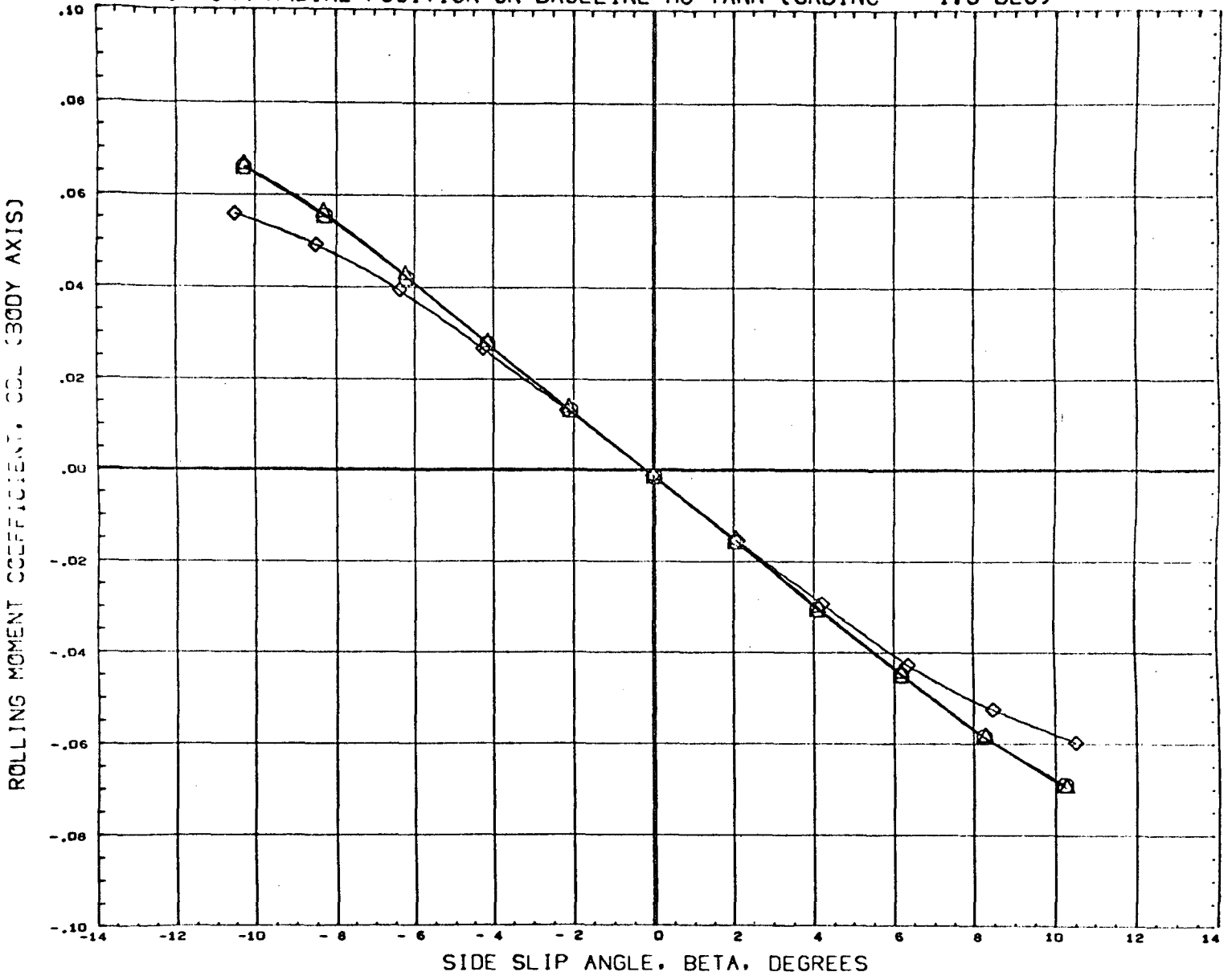
EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SO. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .90

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



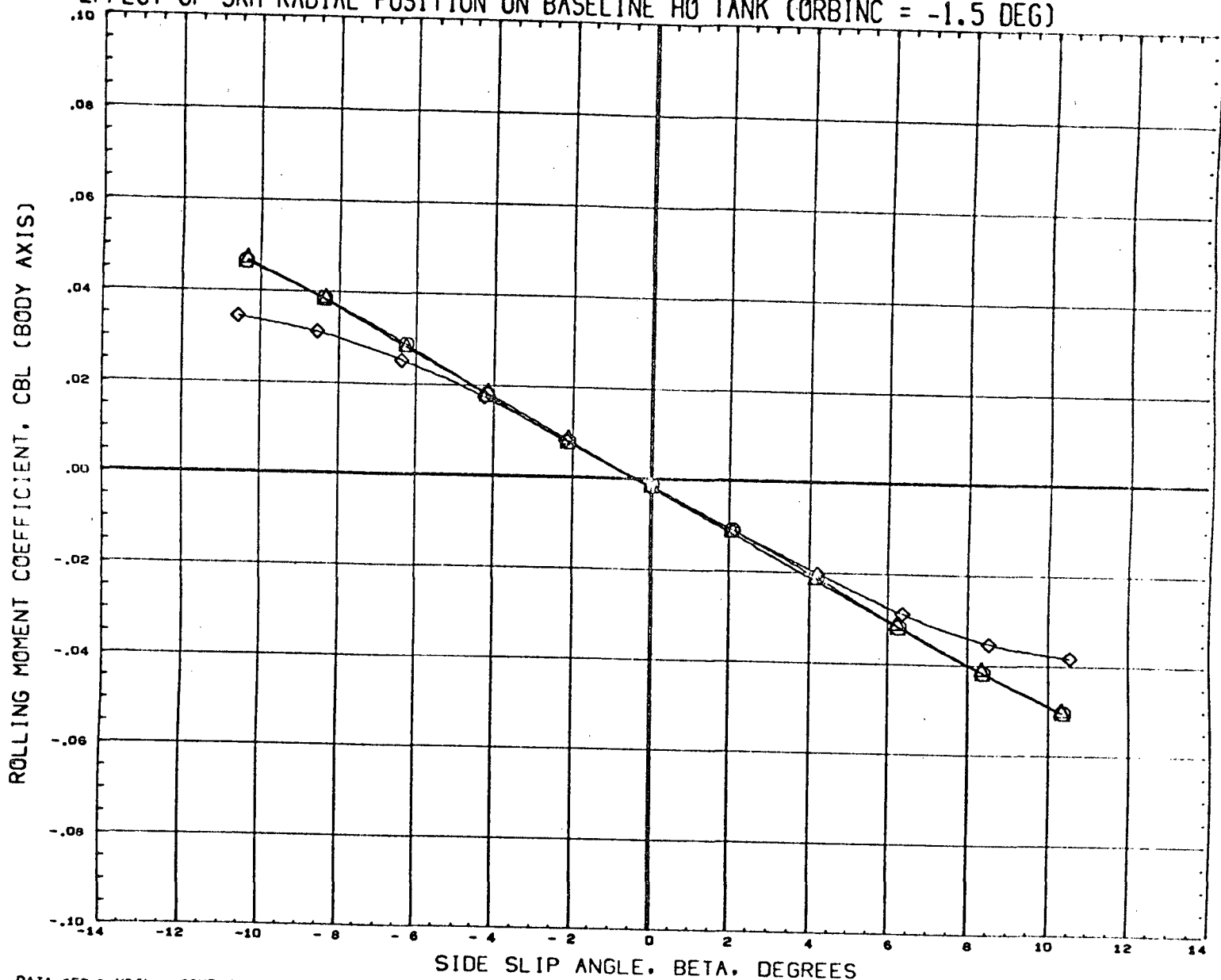
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0200 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.20

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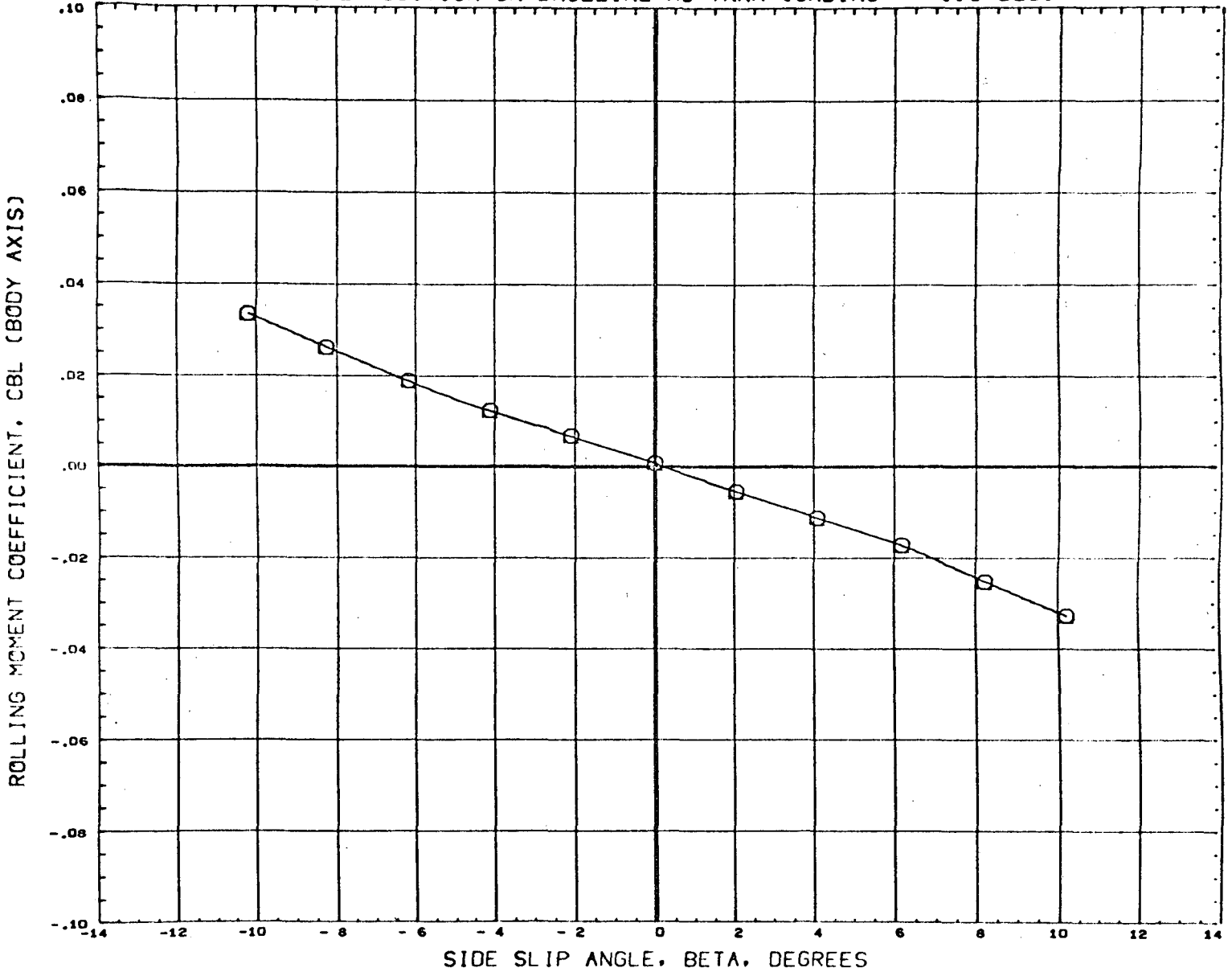
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

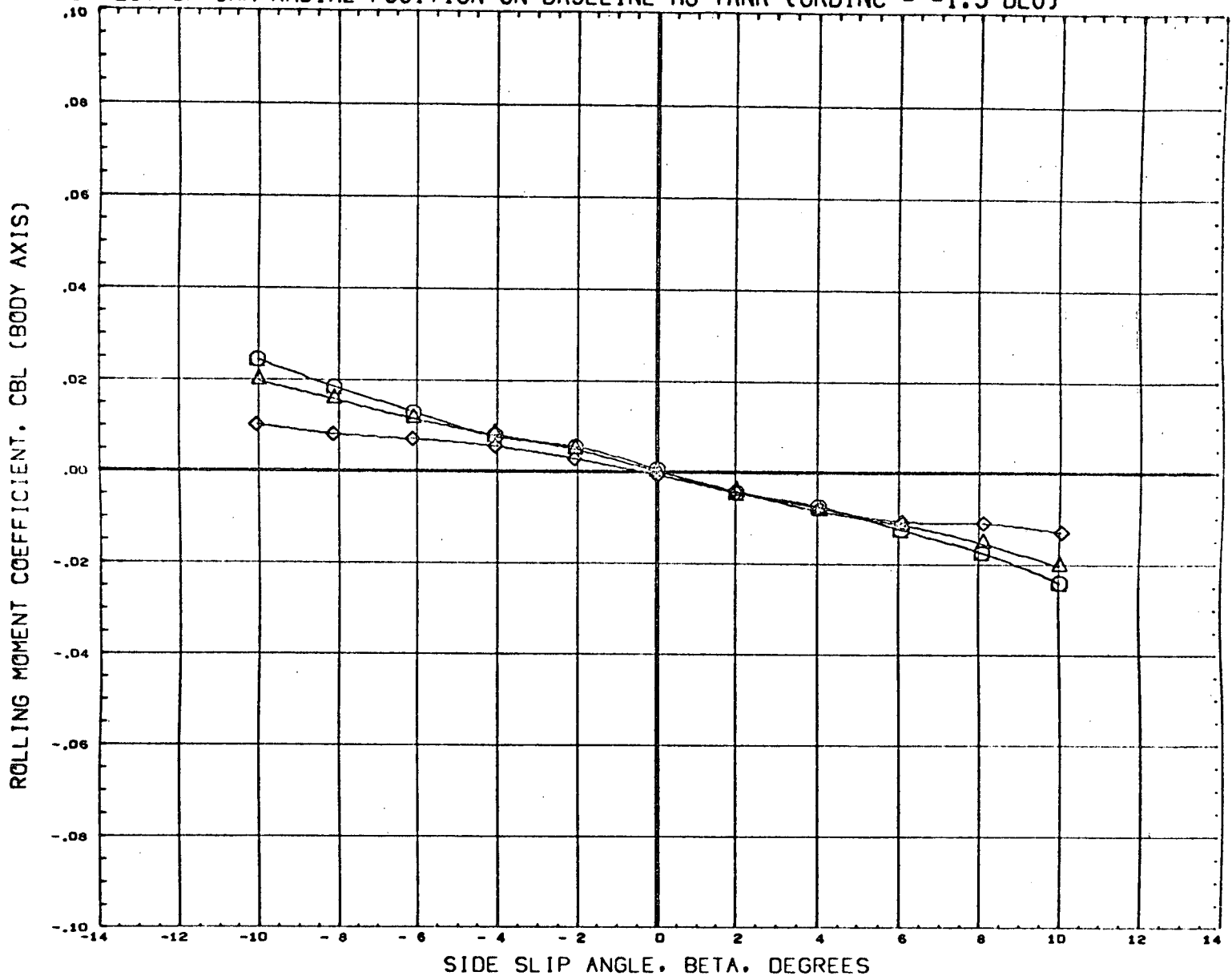
EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

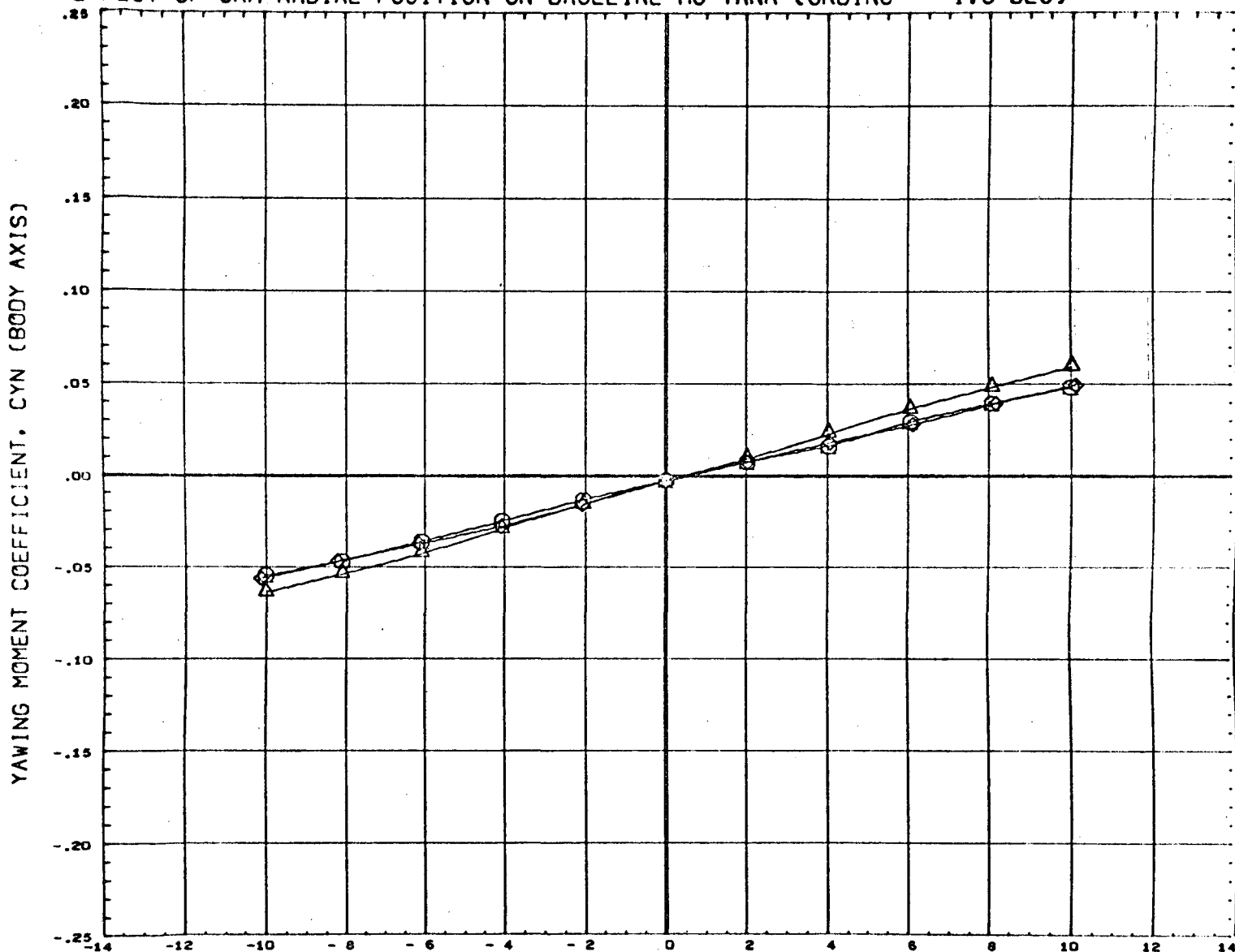
MACH 3.48

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75,000	0.000	0.000	SREF 7.8800 90. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90,000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135,000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

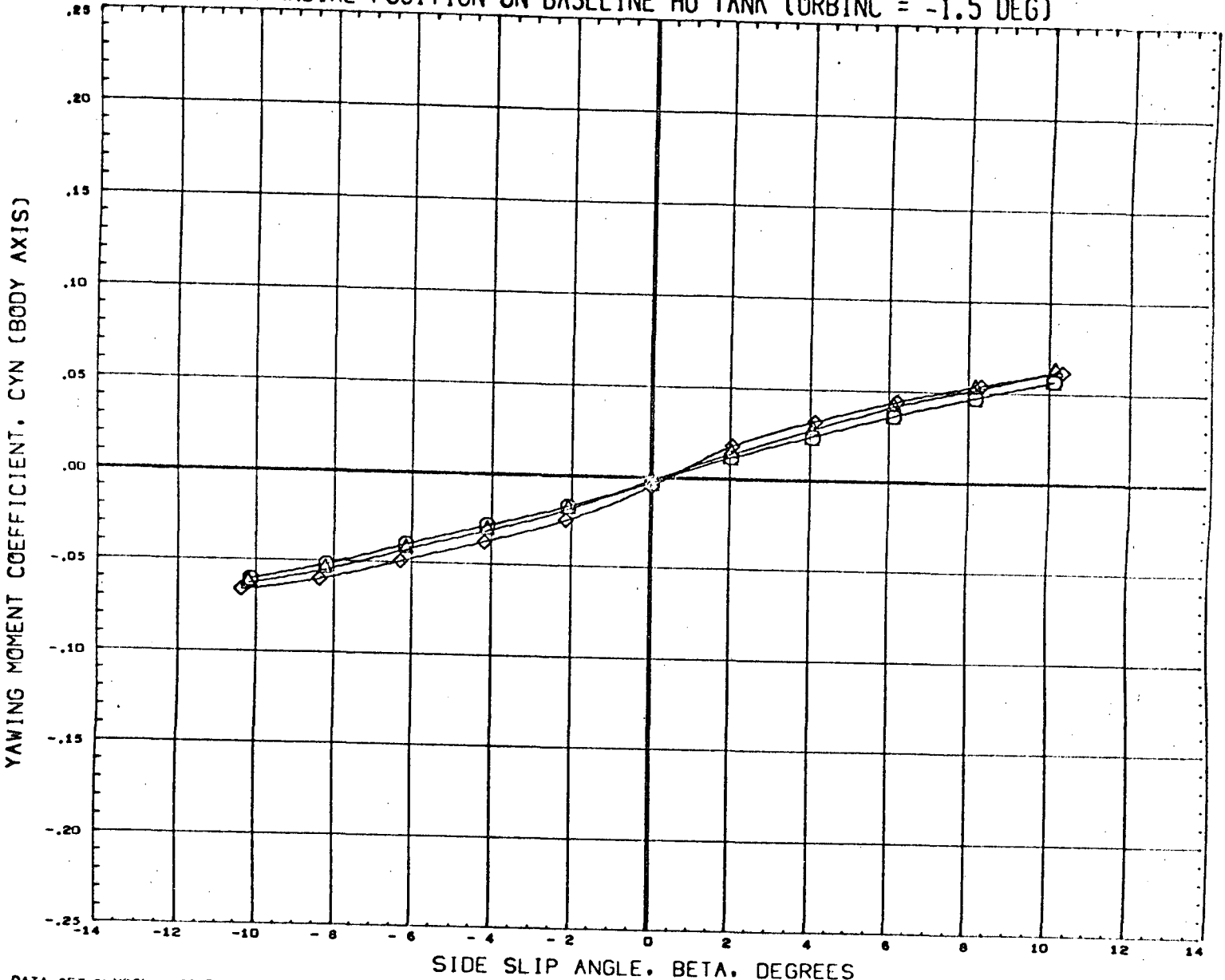
# EFFECT OF SRM RADIAL POSITION ON BASELINE HQ TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



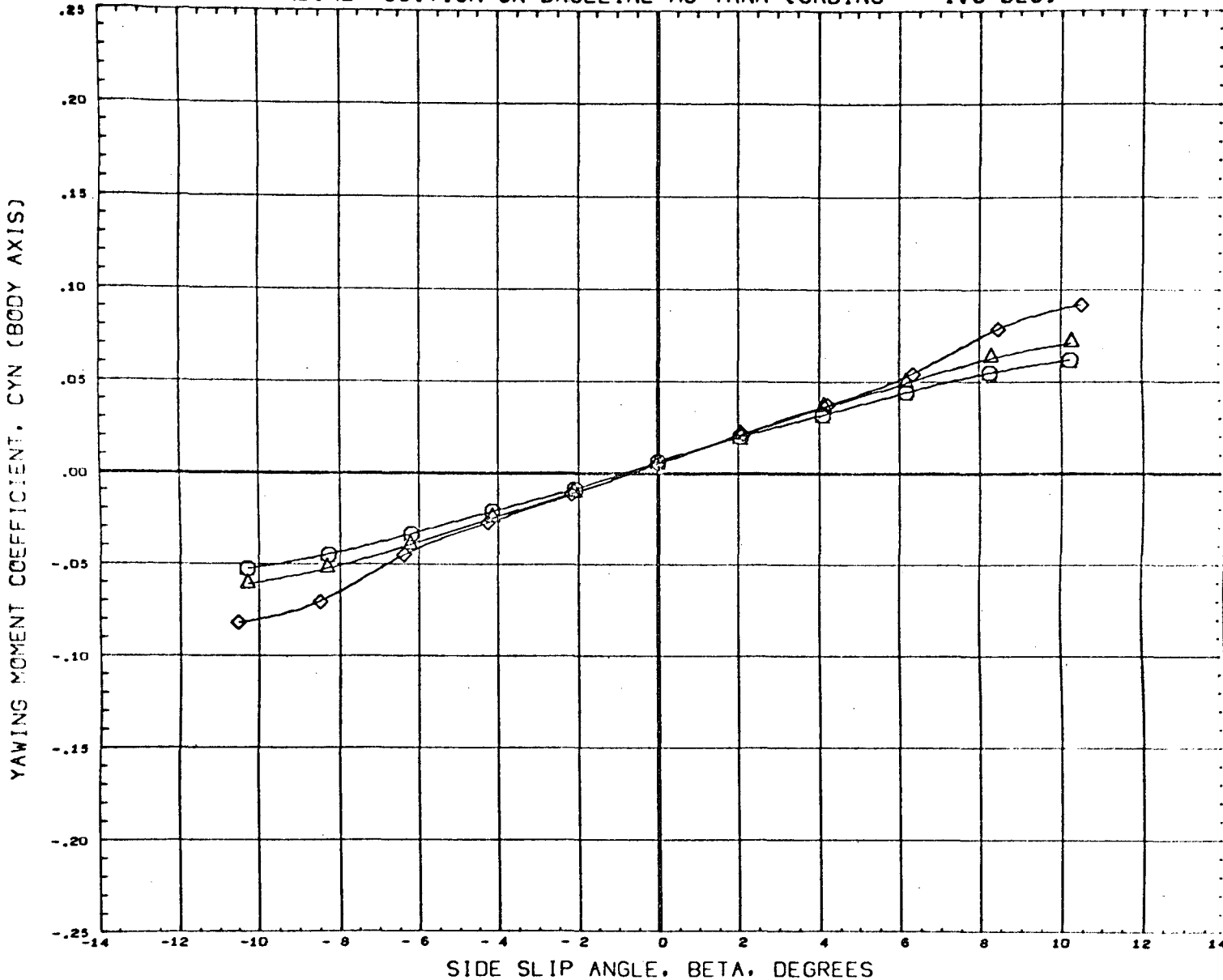
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	X3	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90

JR



EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)

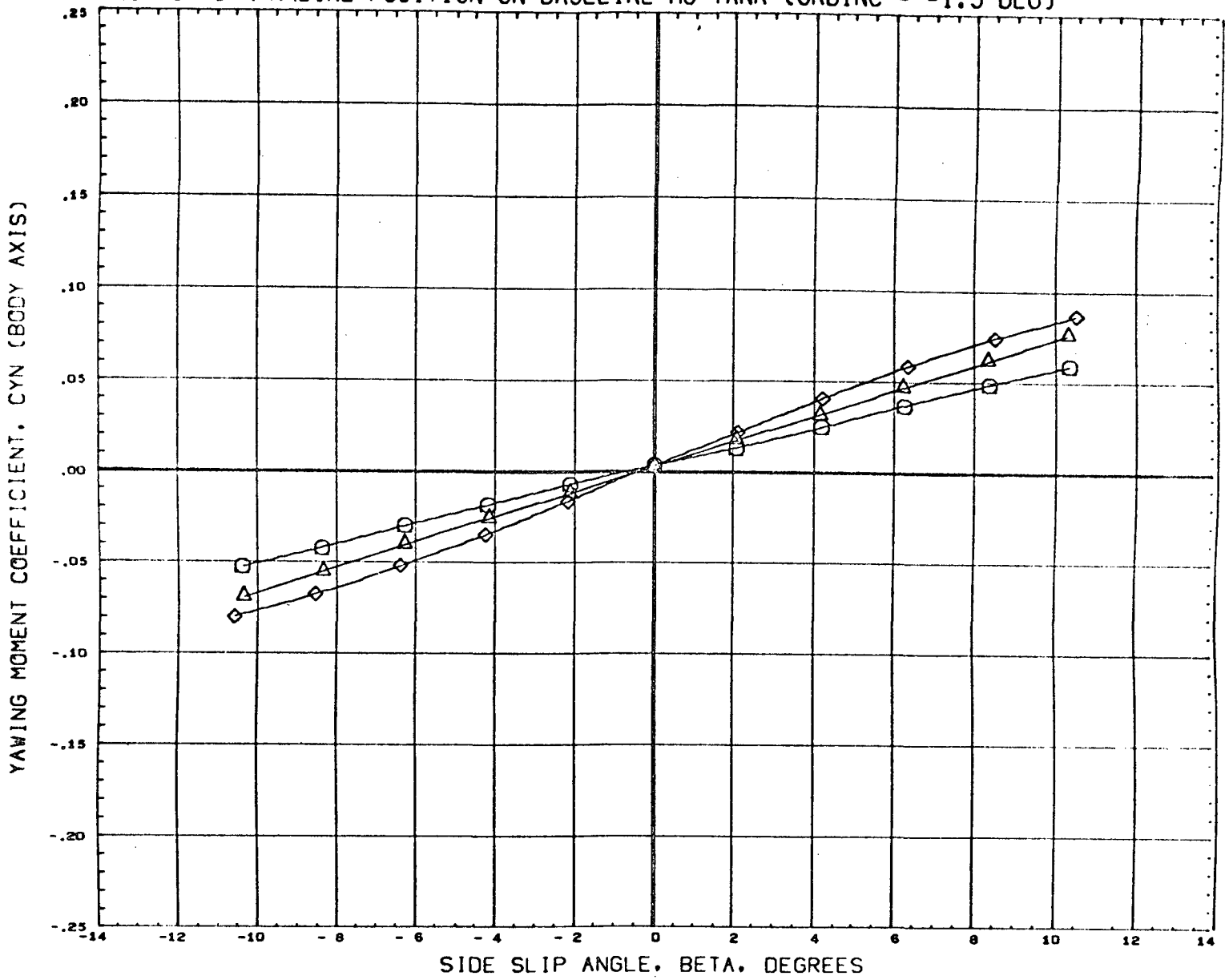


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

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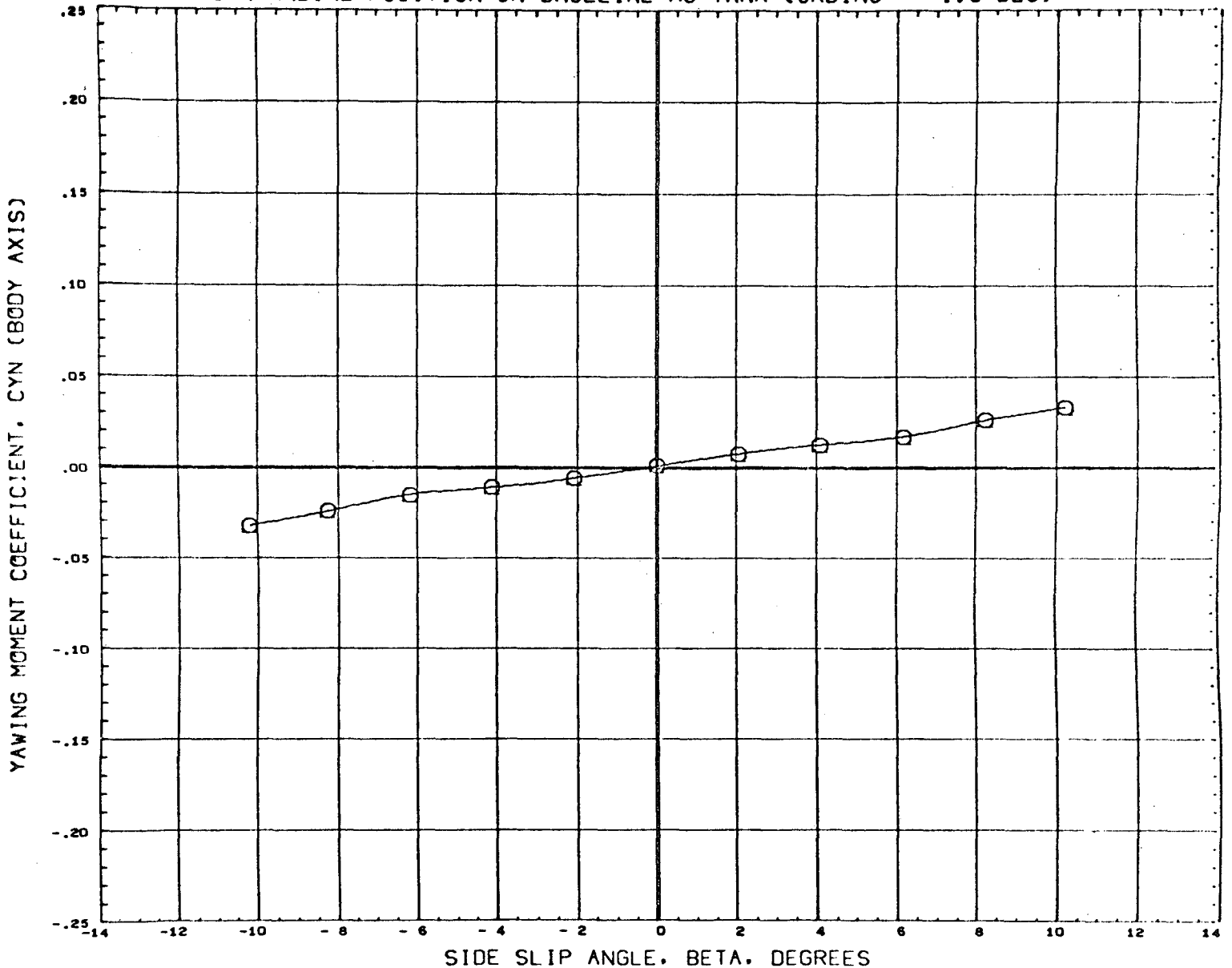
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 90. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



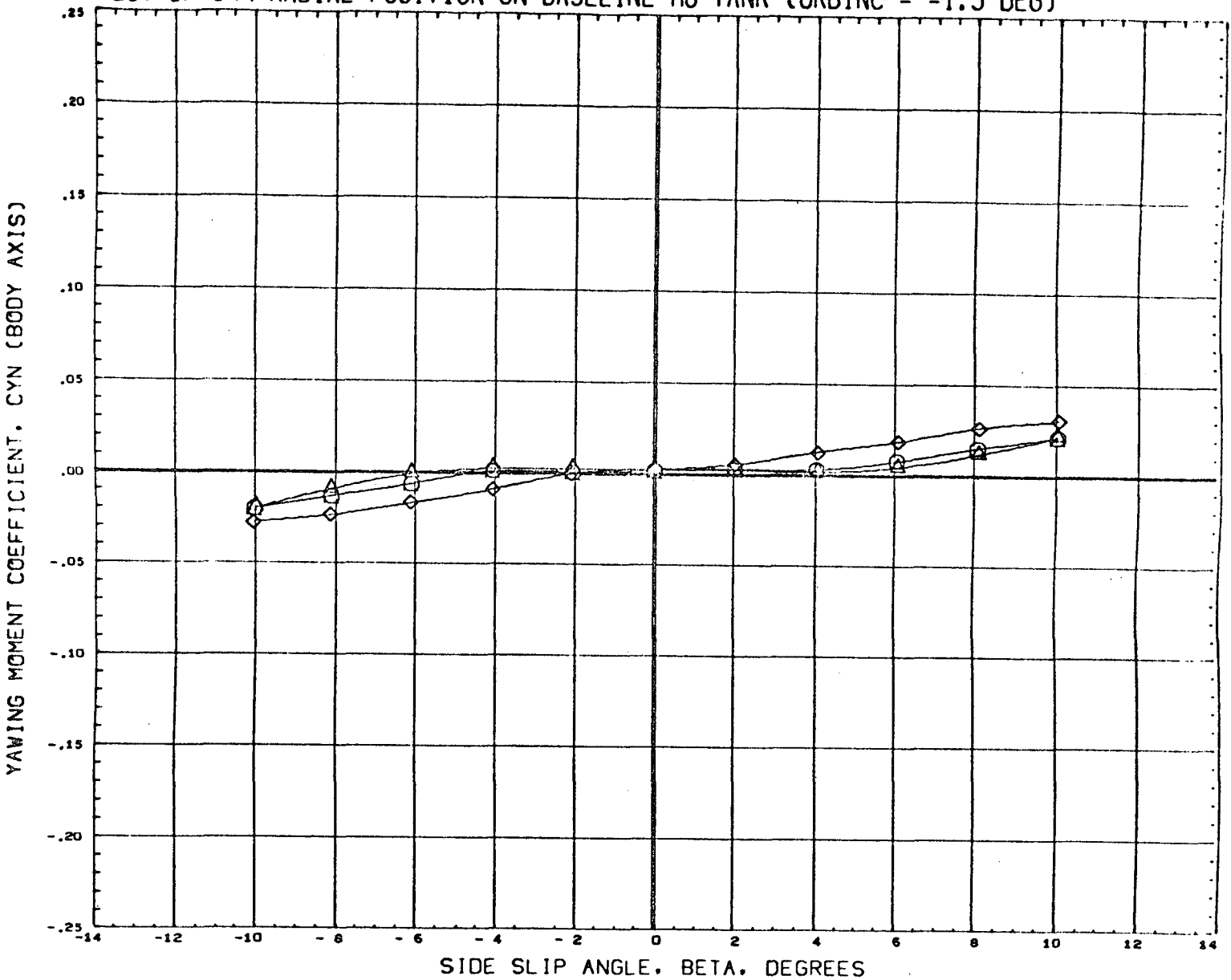
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 90. IN
(A71011)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH

3.48

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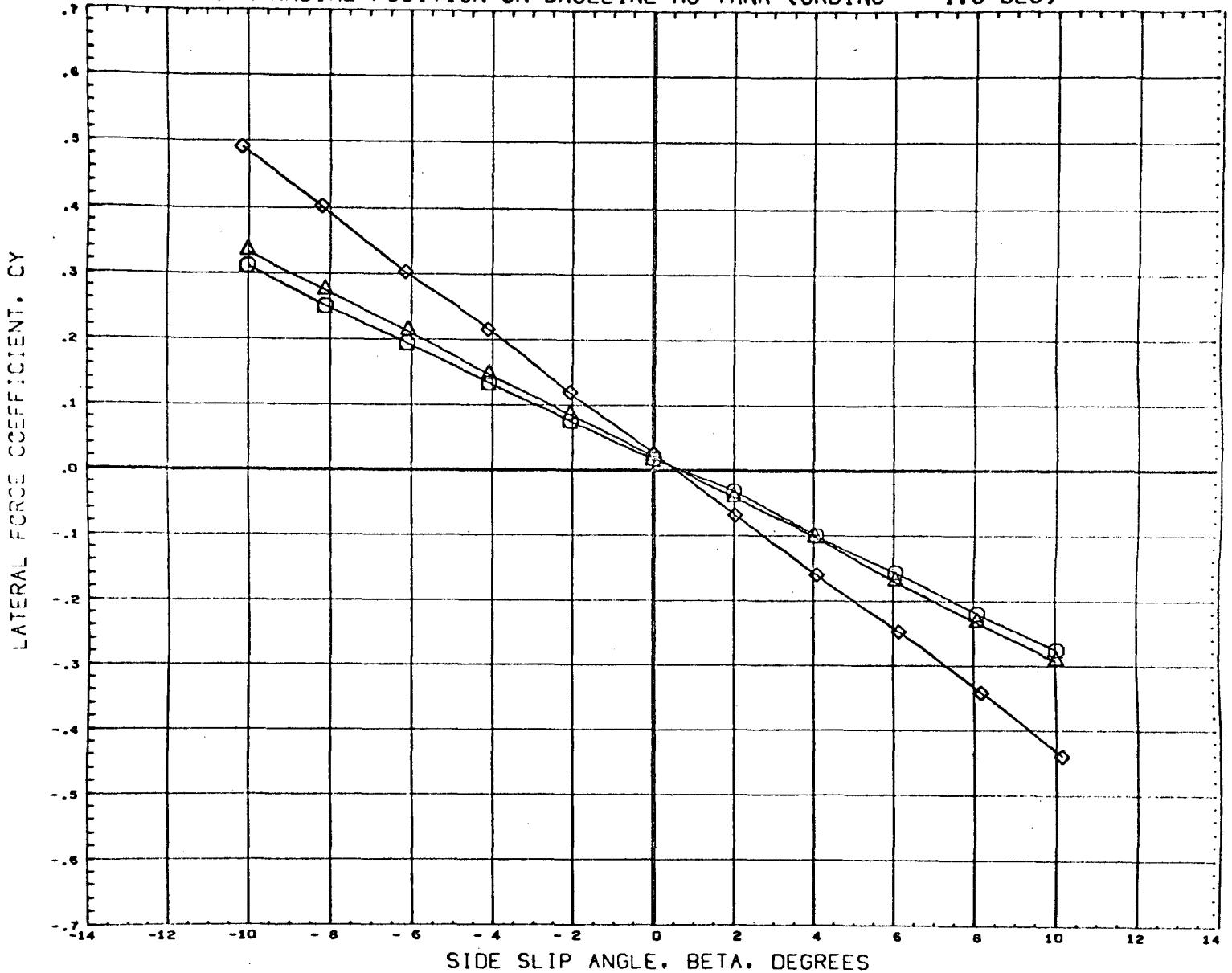
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

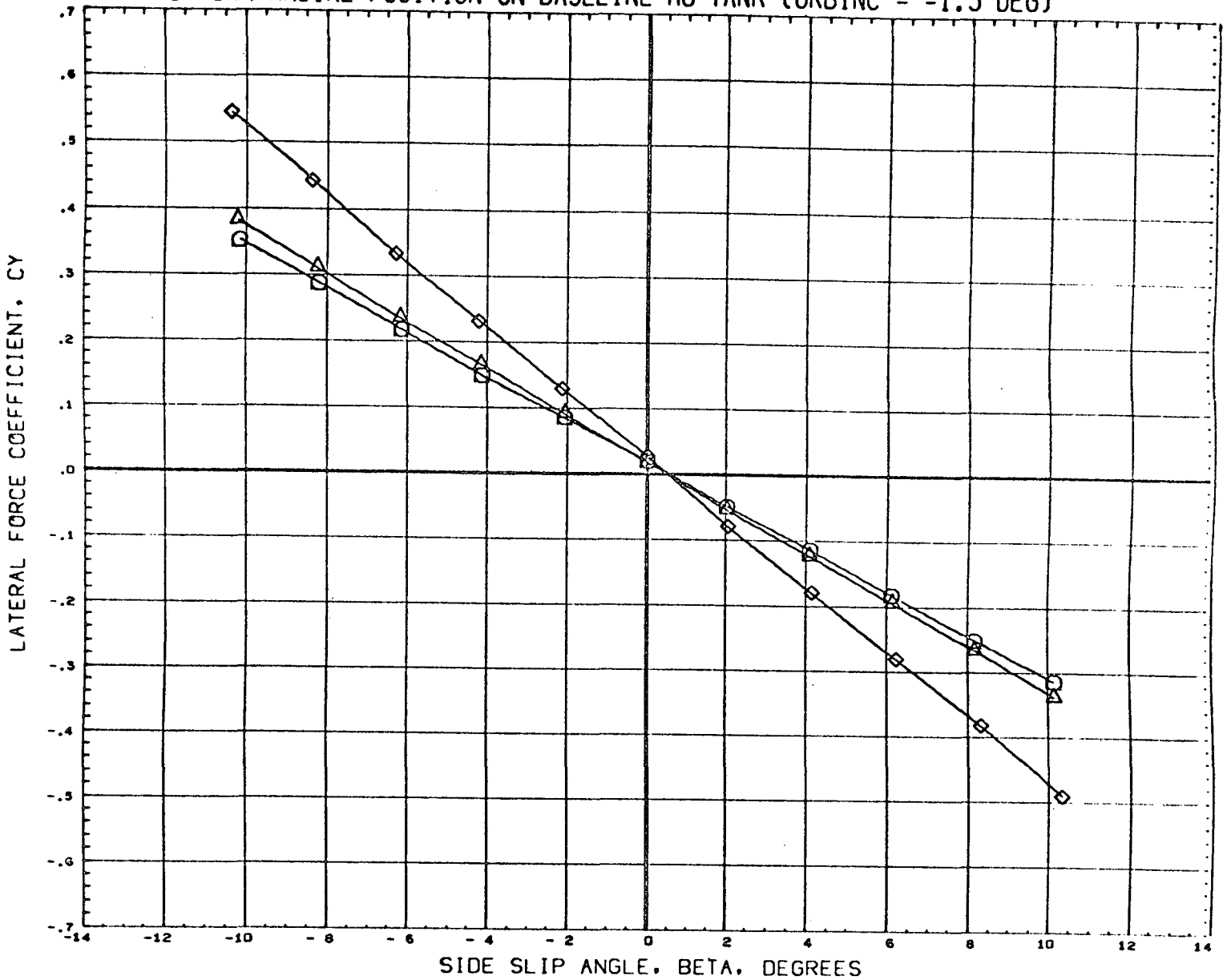
EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

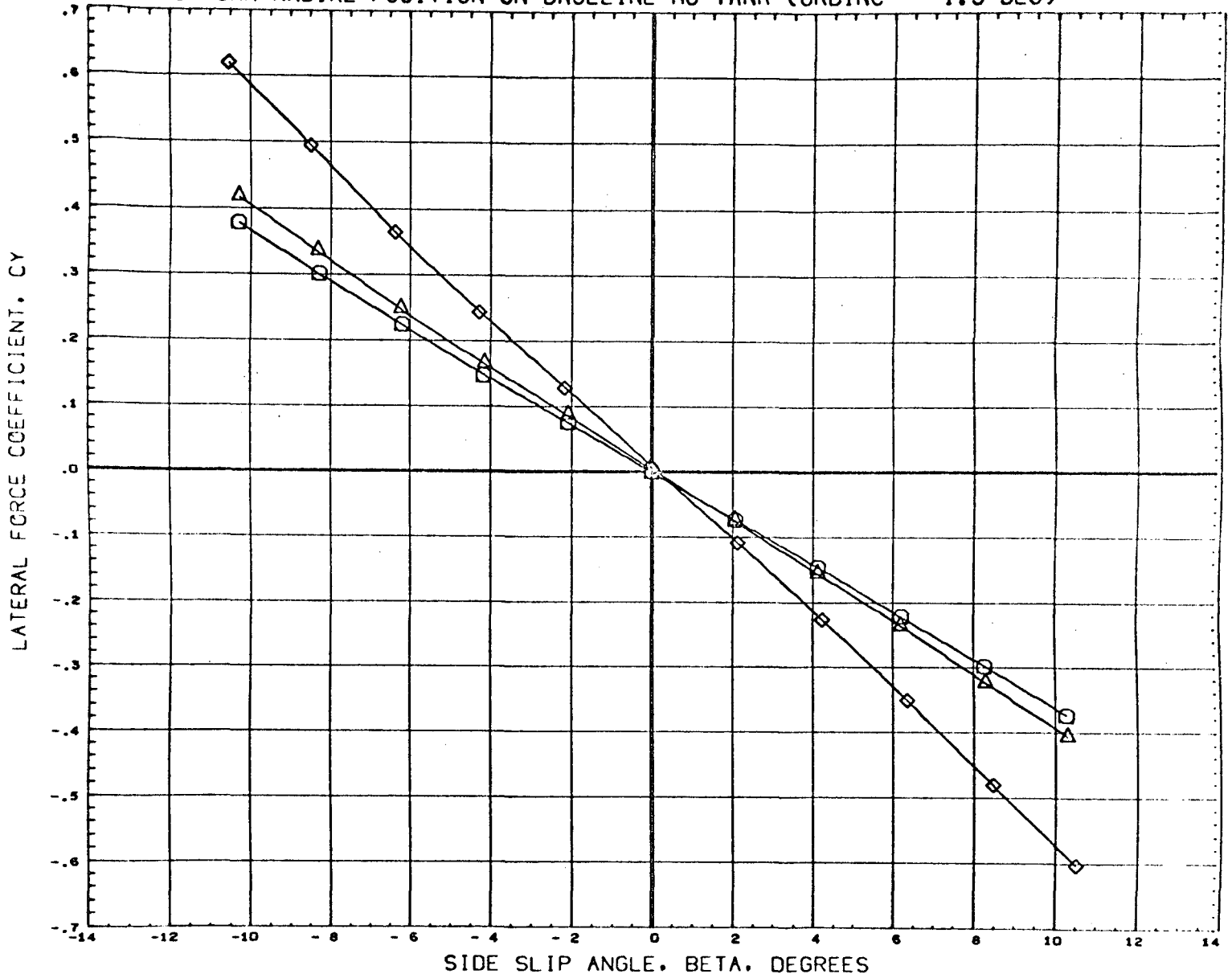
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

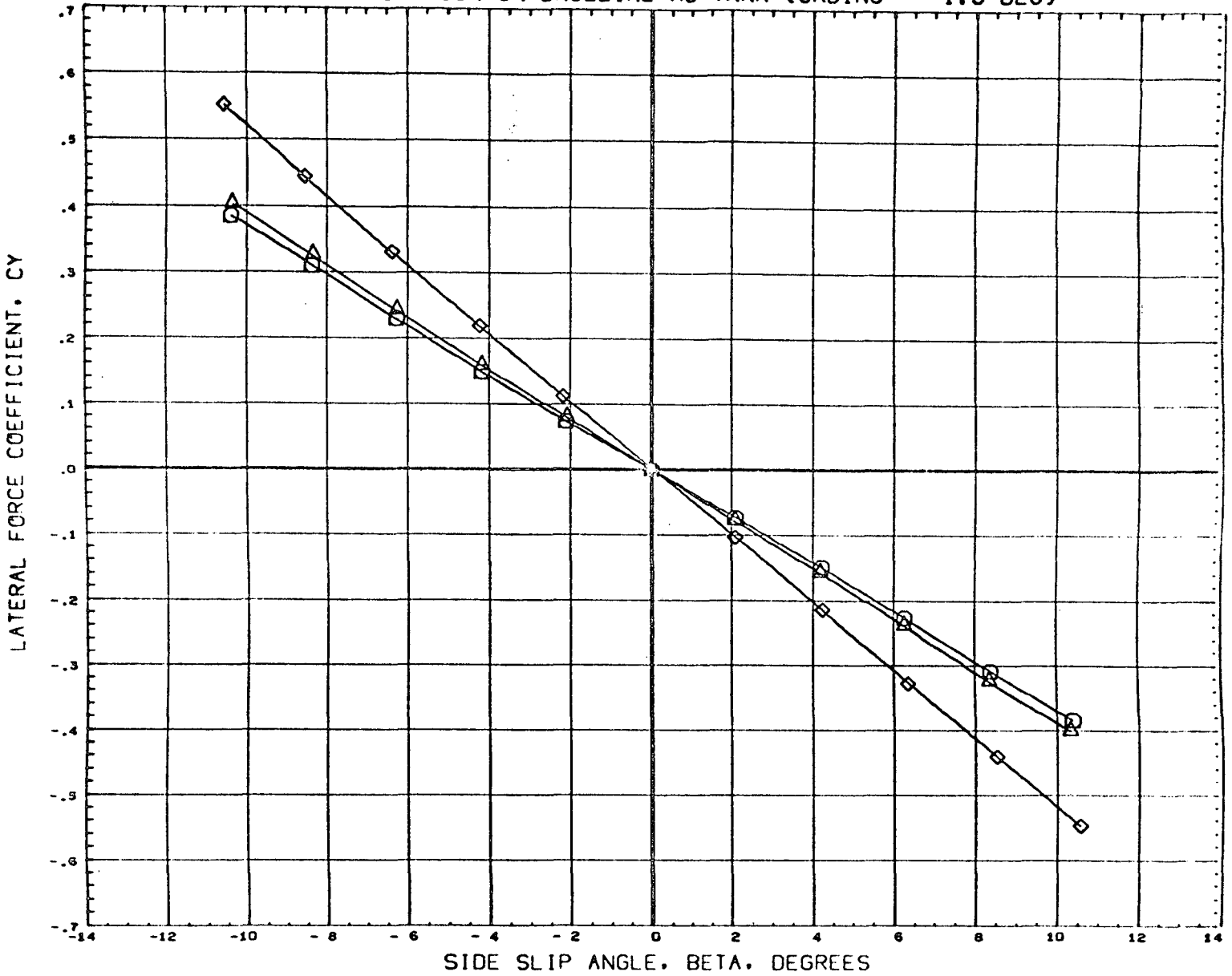
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

EFFECT OF SRM RADIAL POSITION ON BASELINE H<sub>0</sub> TANK (ORBINC = -1.5 DEG)

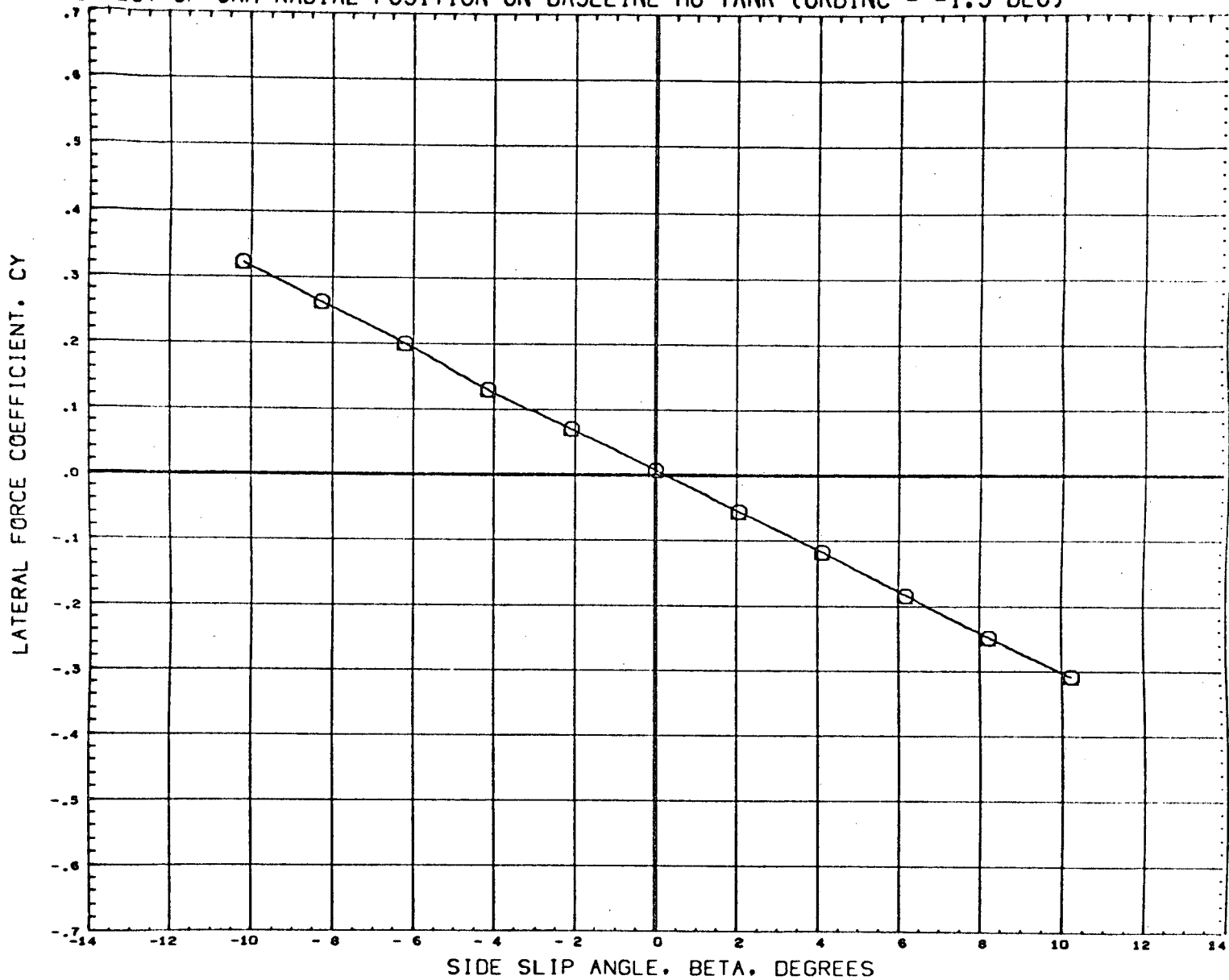


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.96



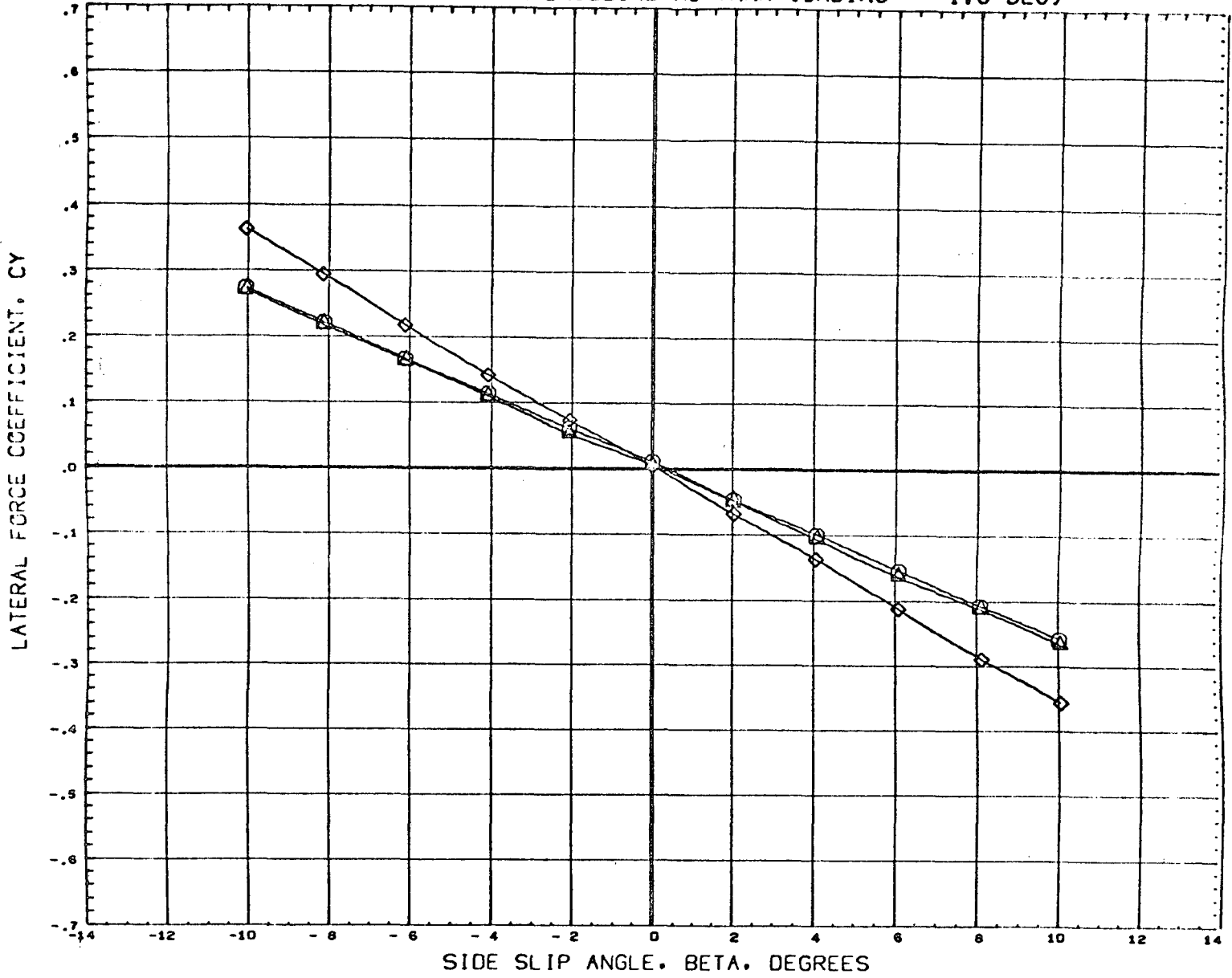
EFFECT OF SRM RADIAL POSITION ON BASELINE H0 TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

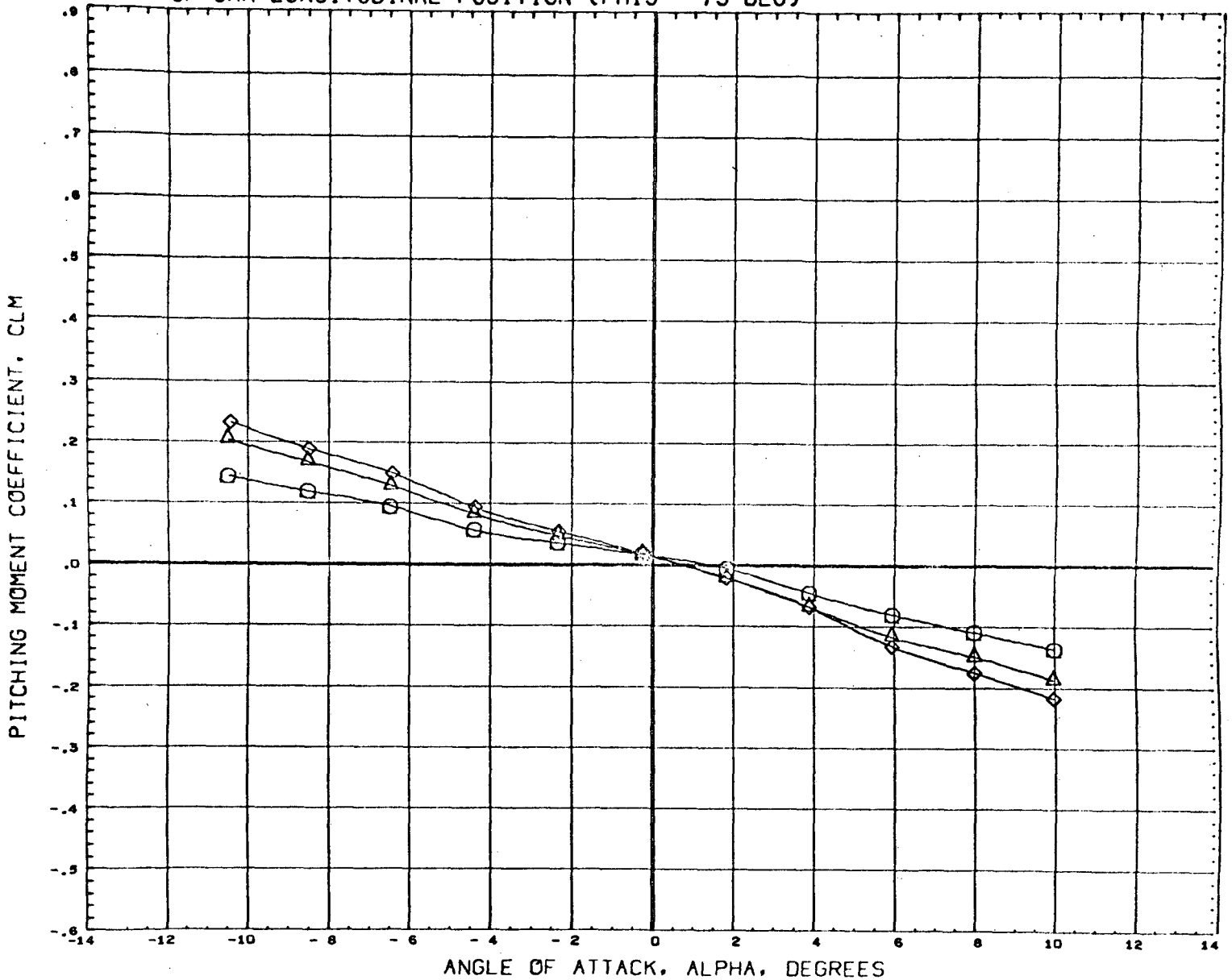
EFFECT OF SRM RADIAL POSITION ON BASELINE HO TANK (ORBINC = -1.5 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

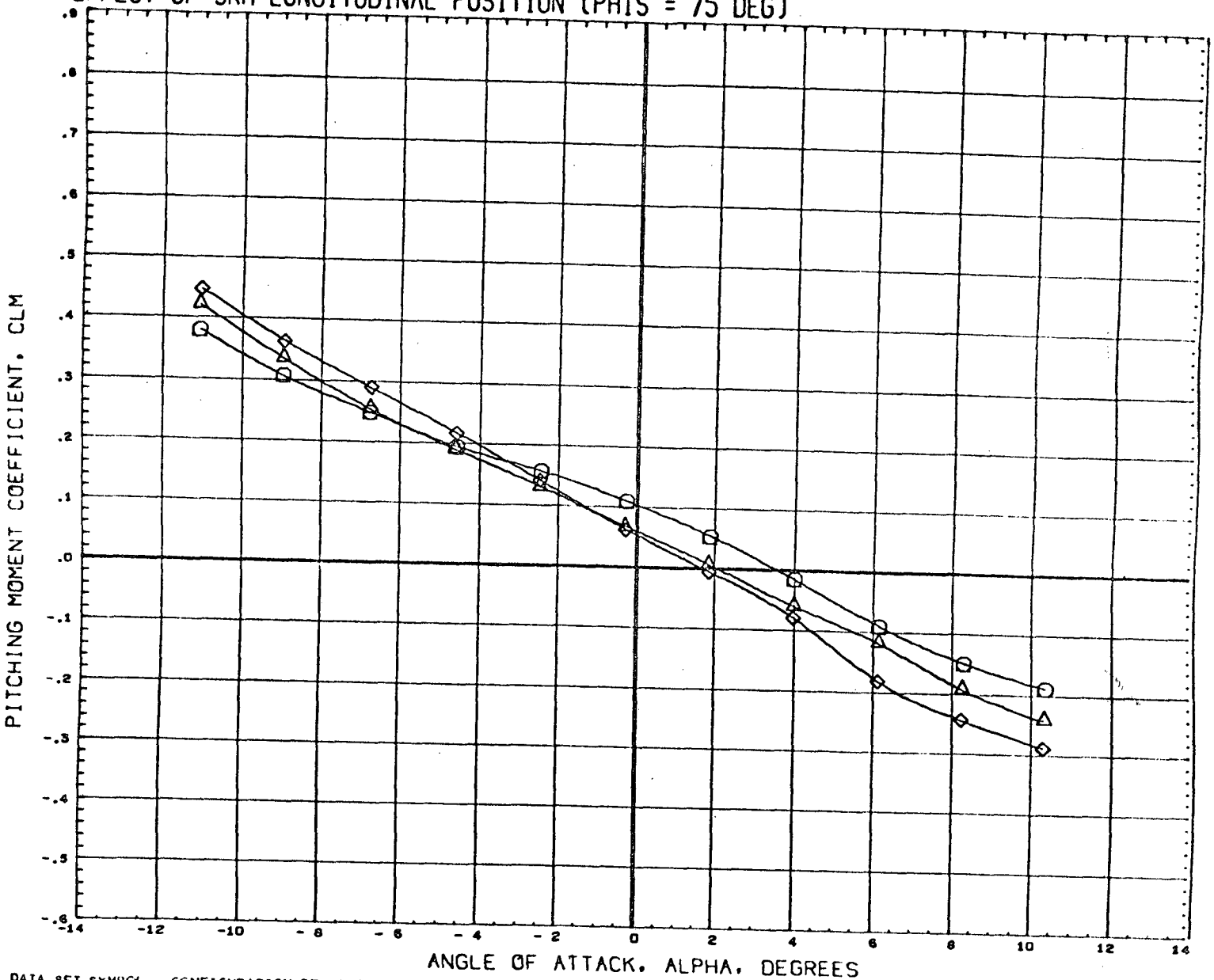
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

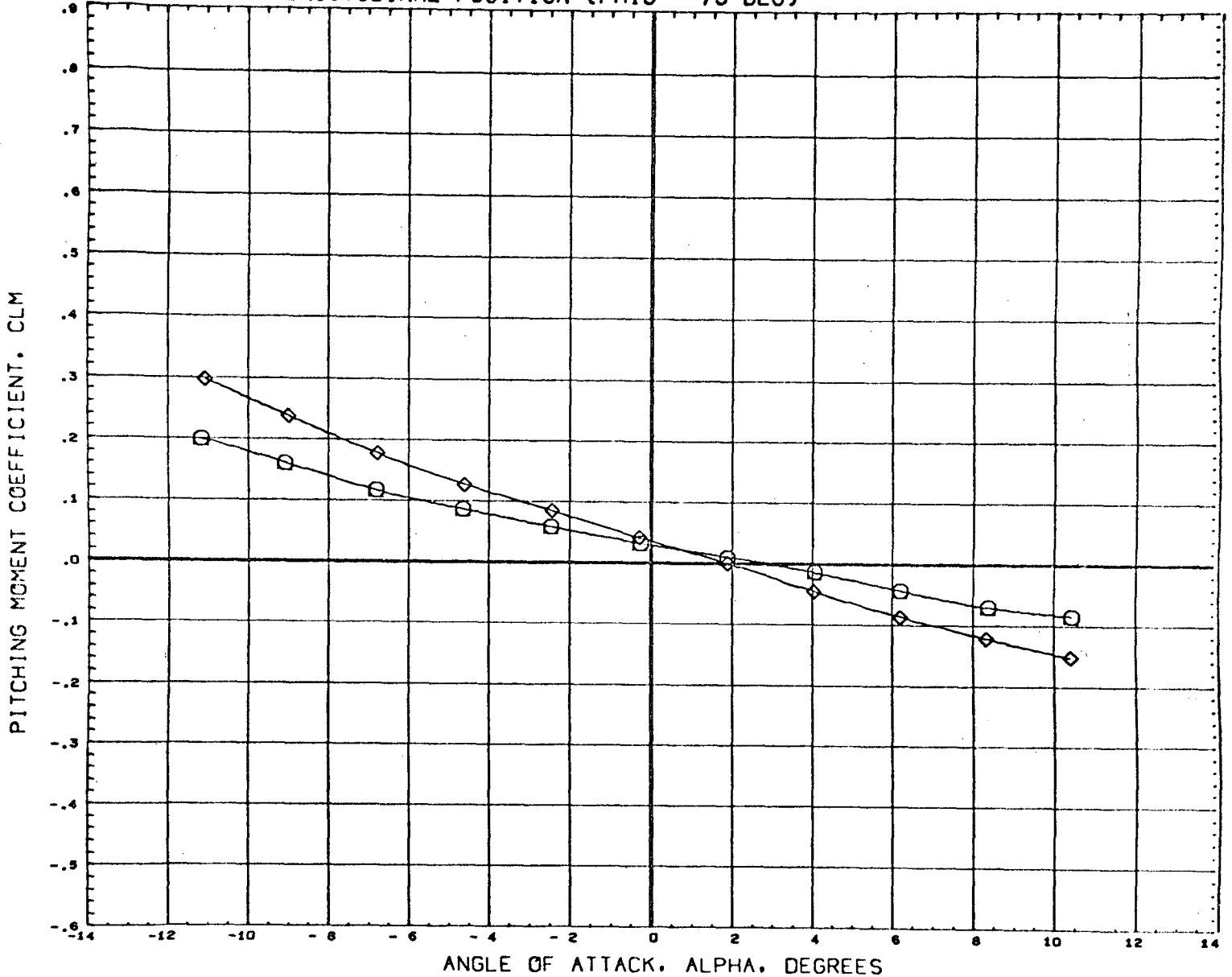


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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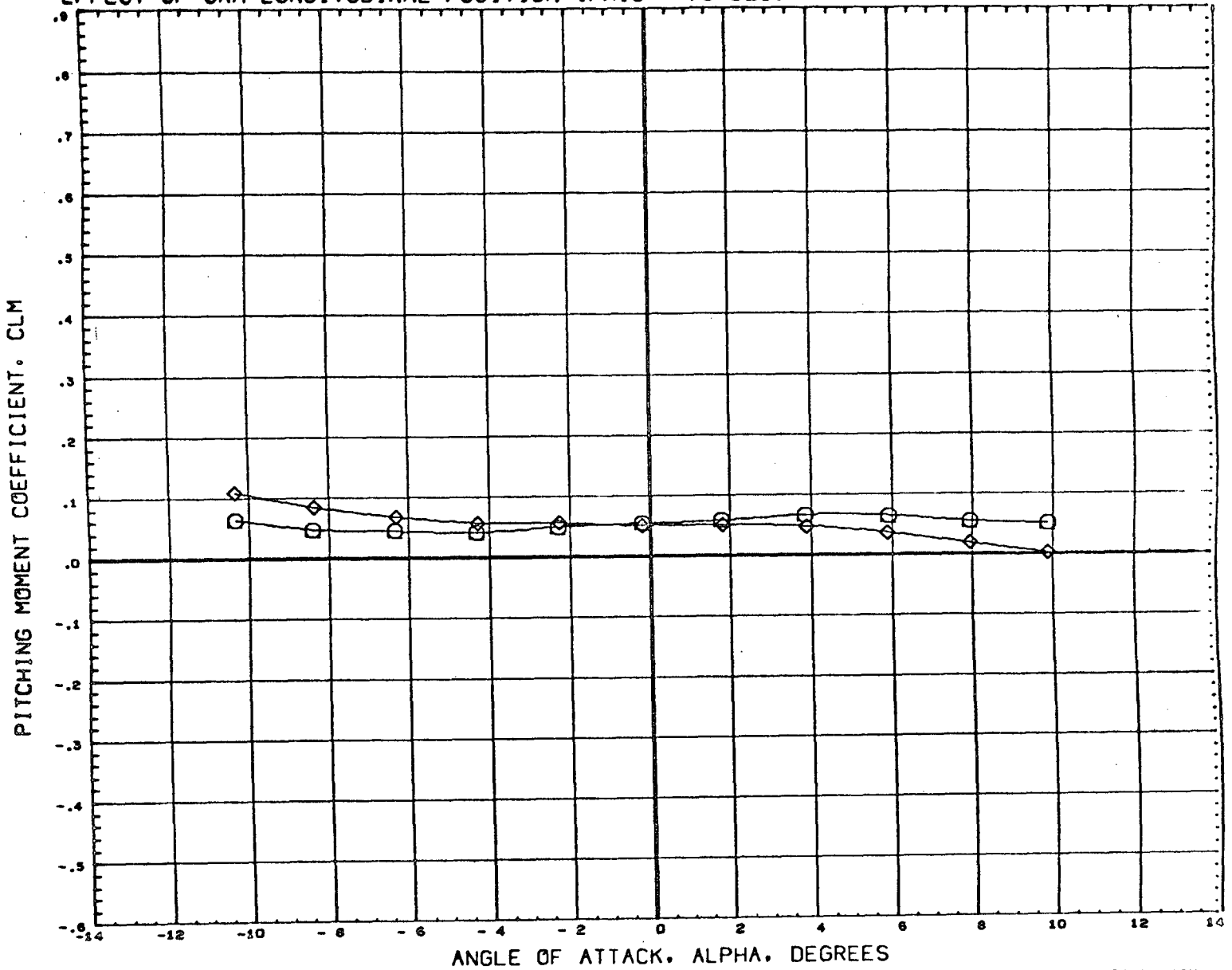
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71063)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

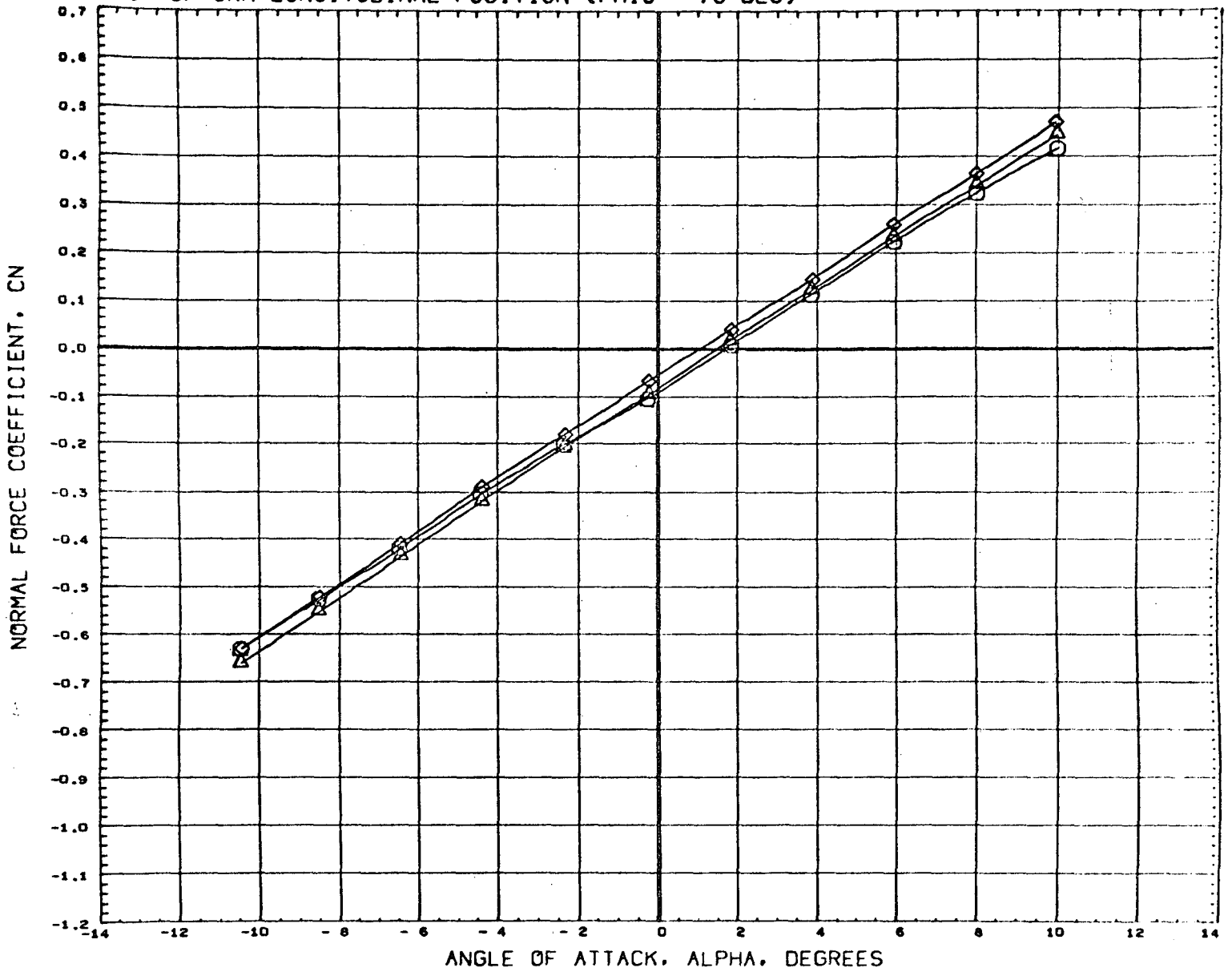
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

MACH 4.96

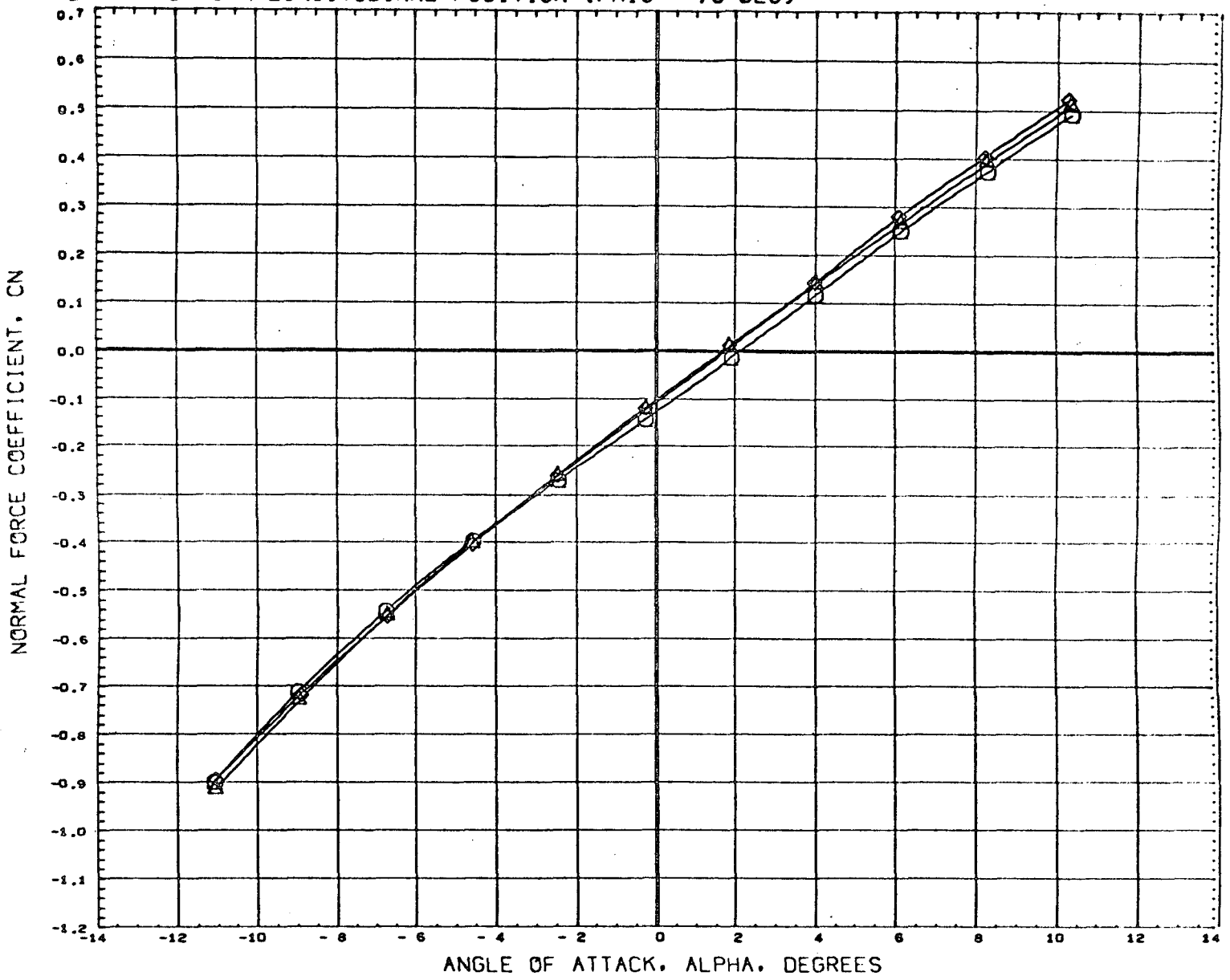
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71093)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

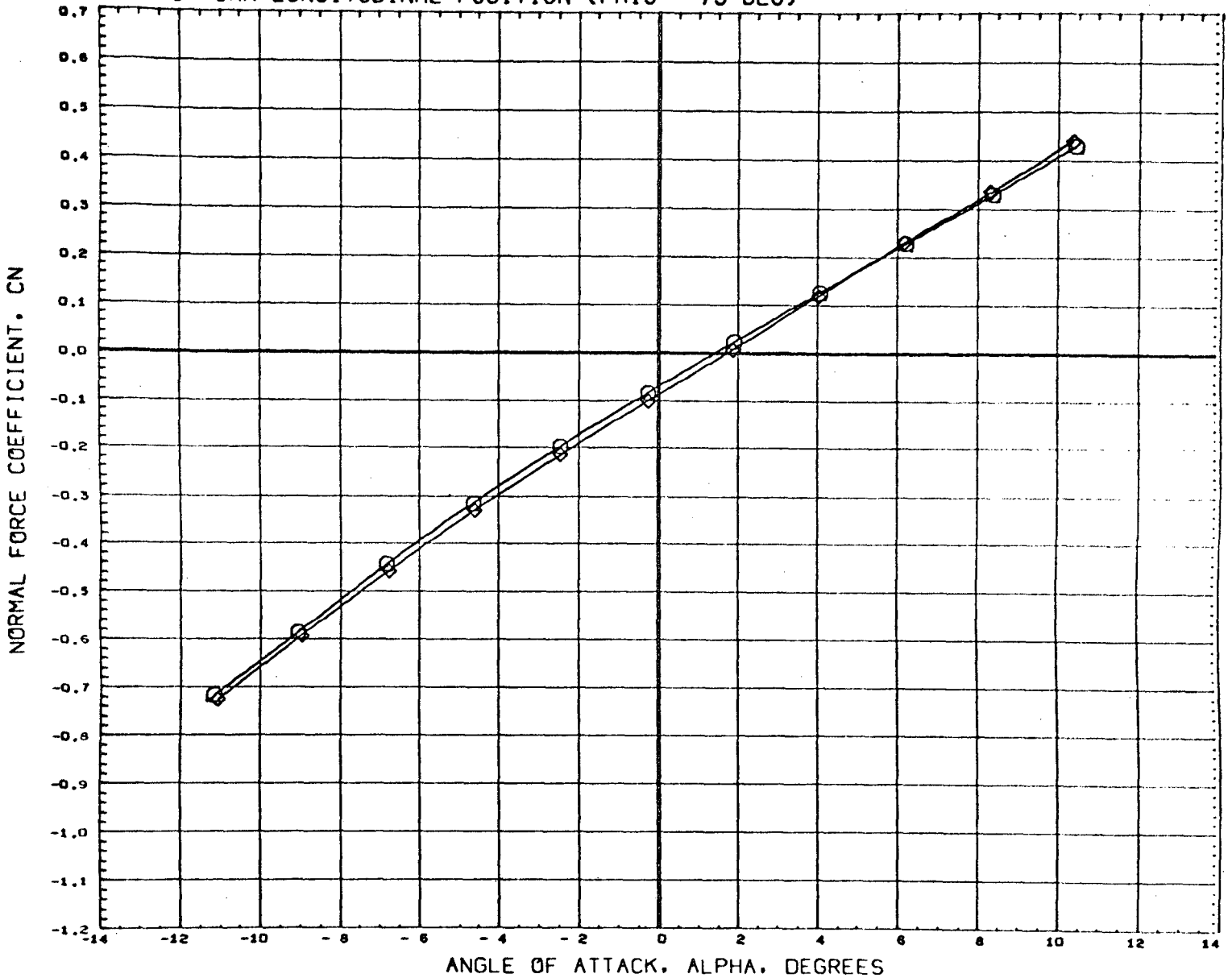


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 80. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20



# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

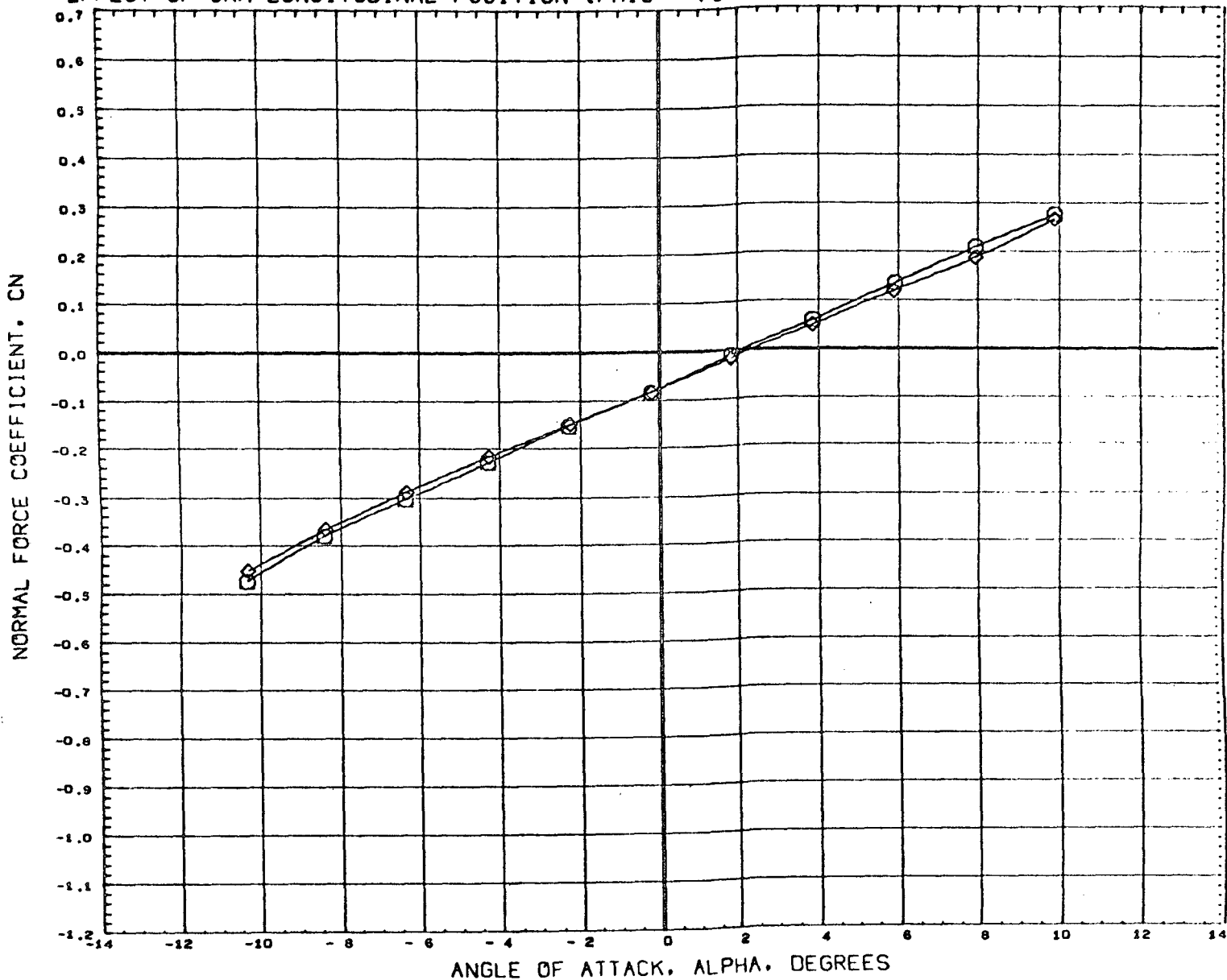


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 IN.
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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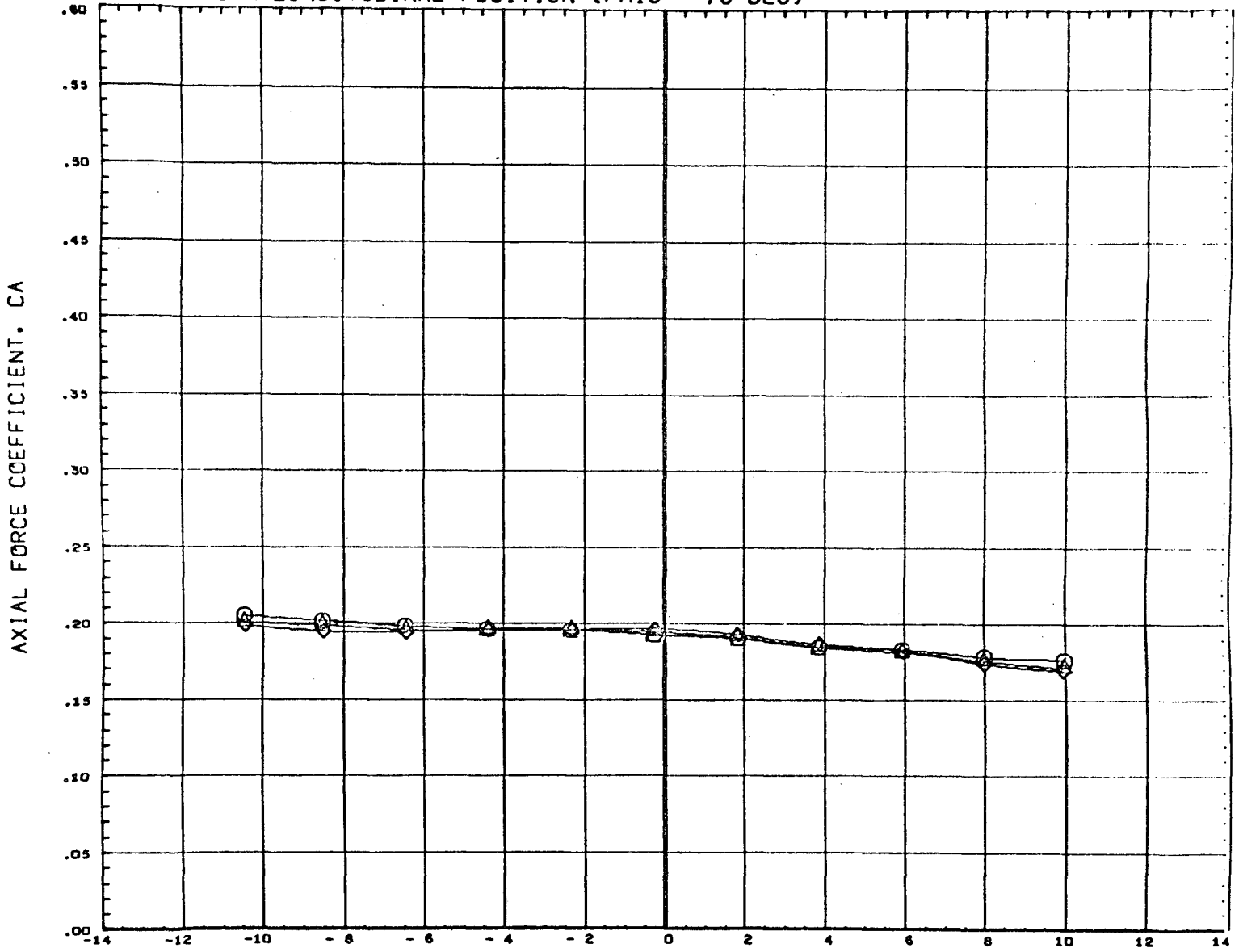
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71093)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.883	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



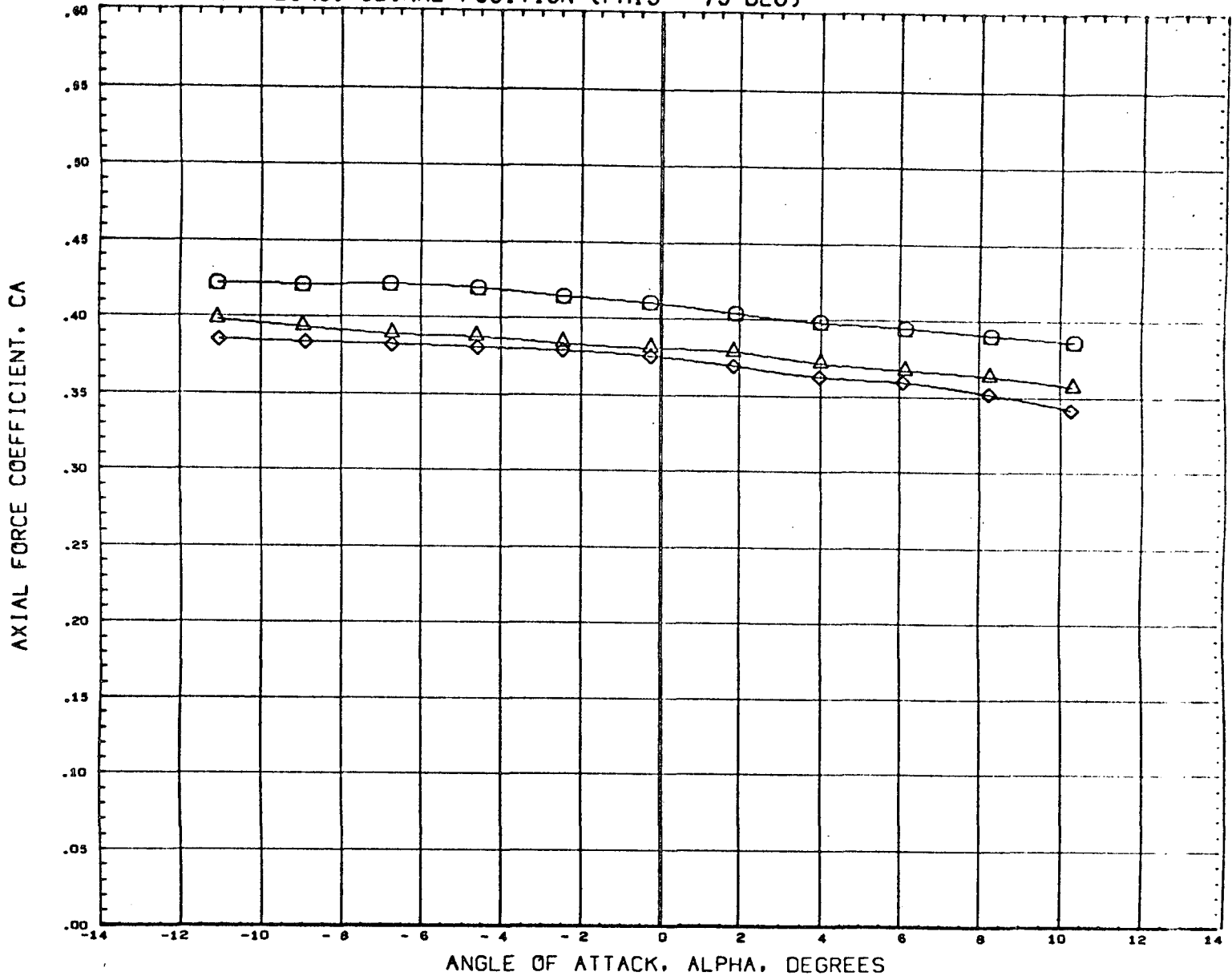
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61

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# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

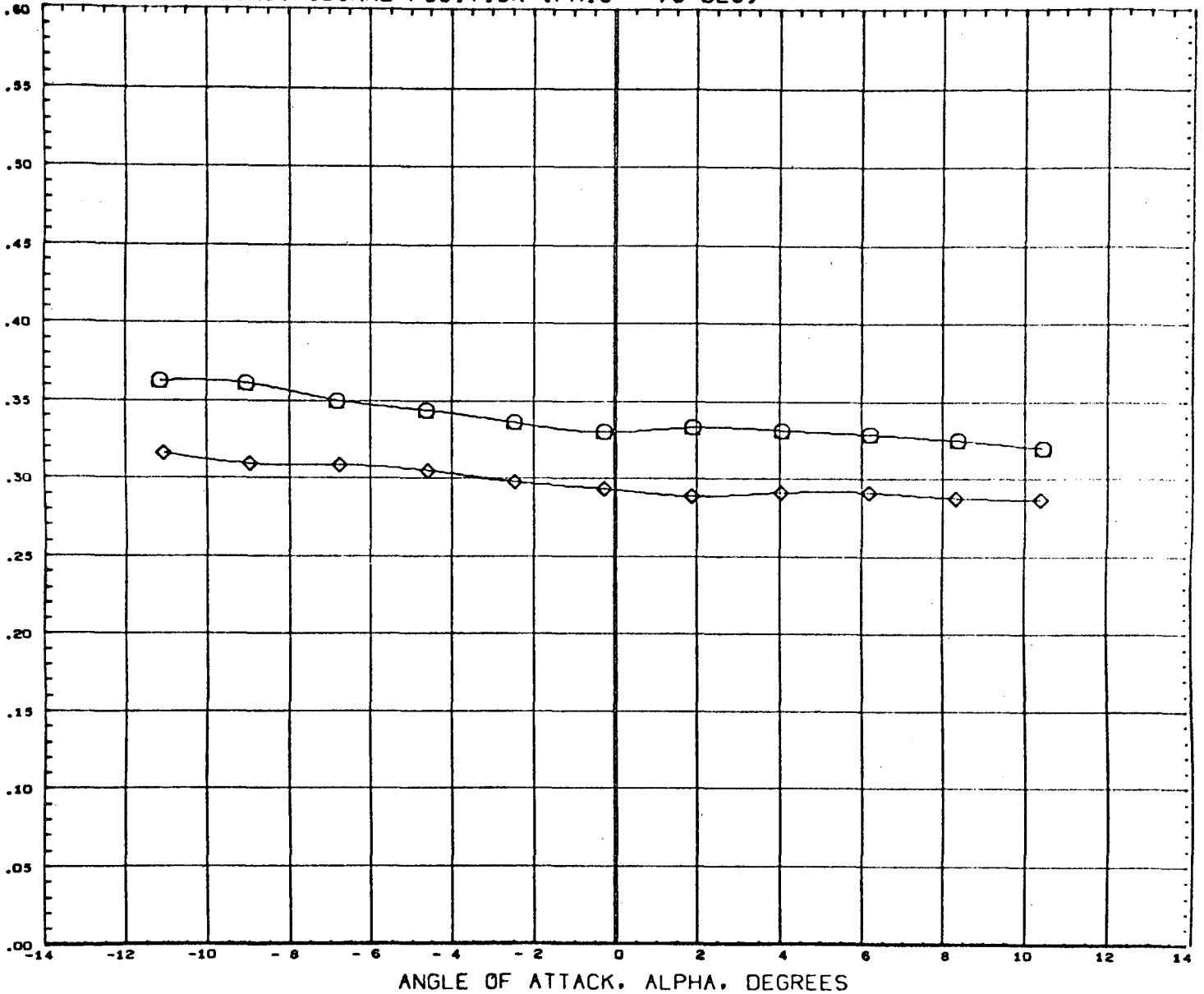


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 IN.
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

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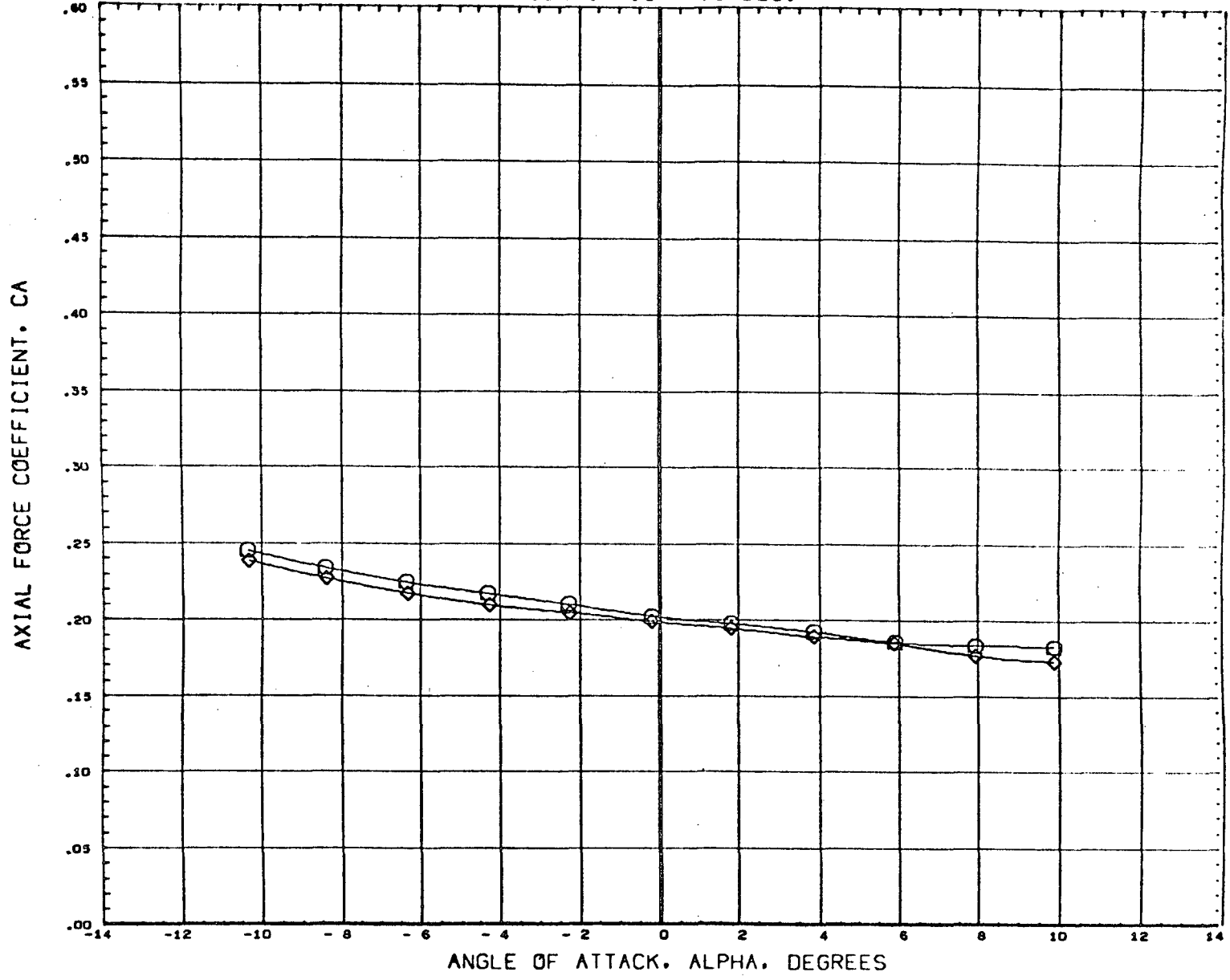


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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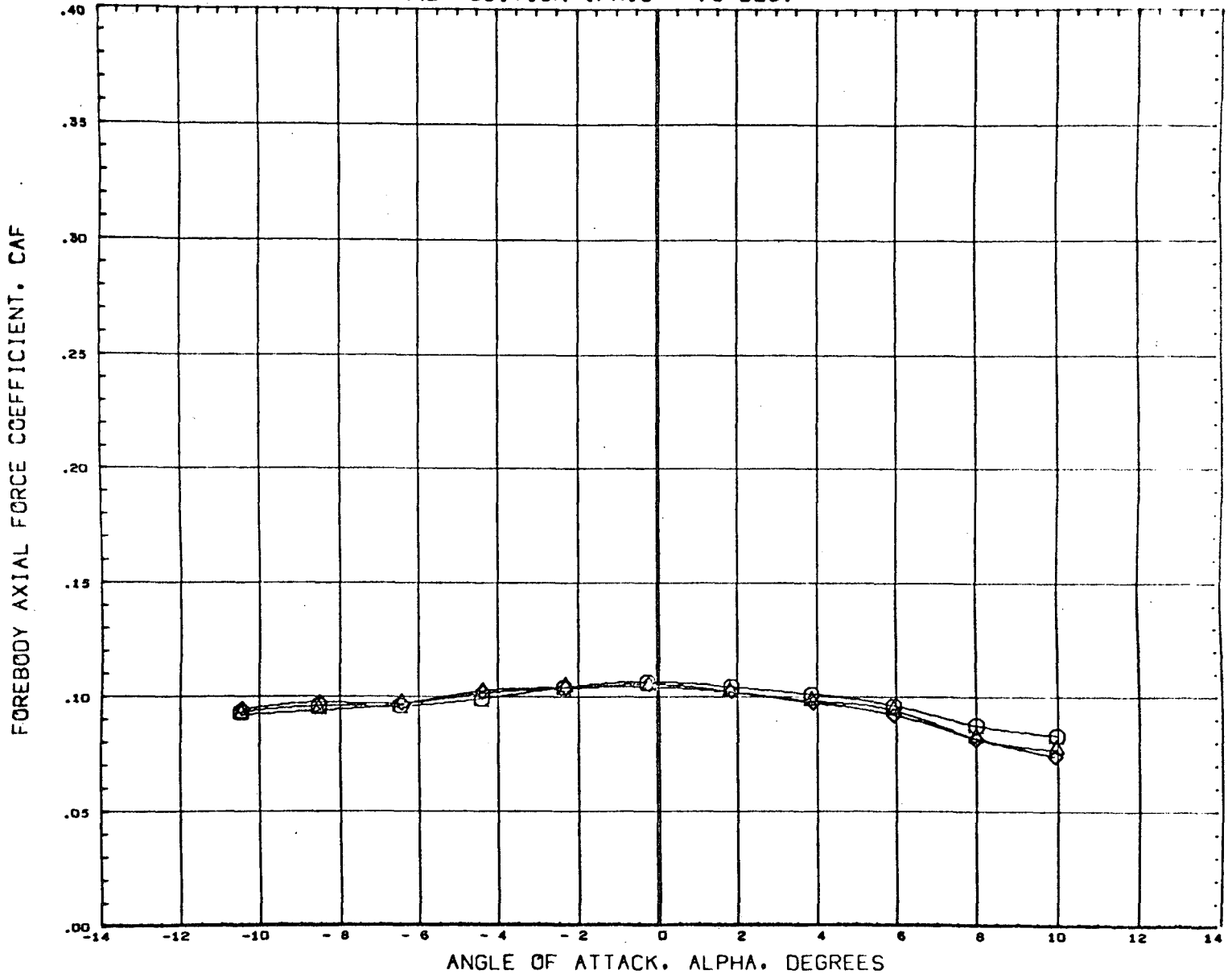
EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

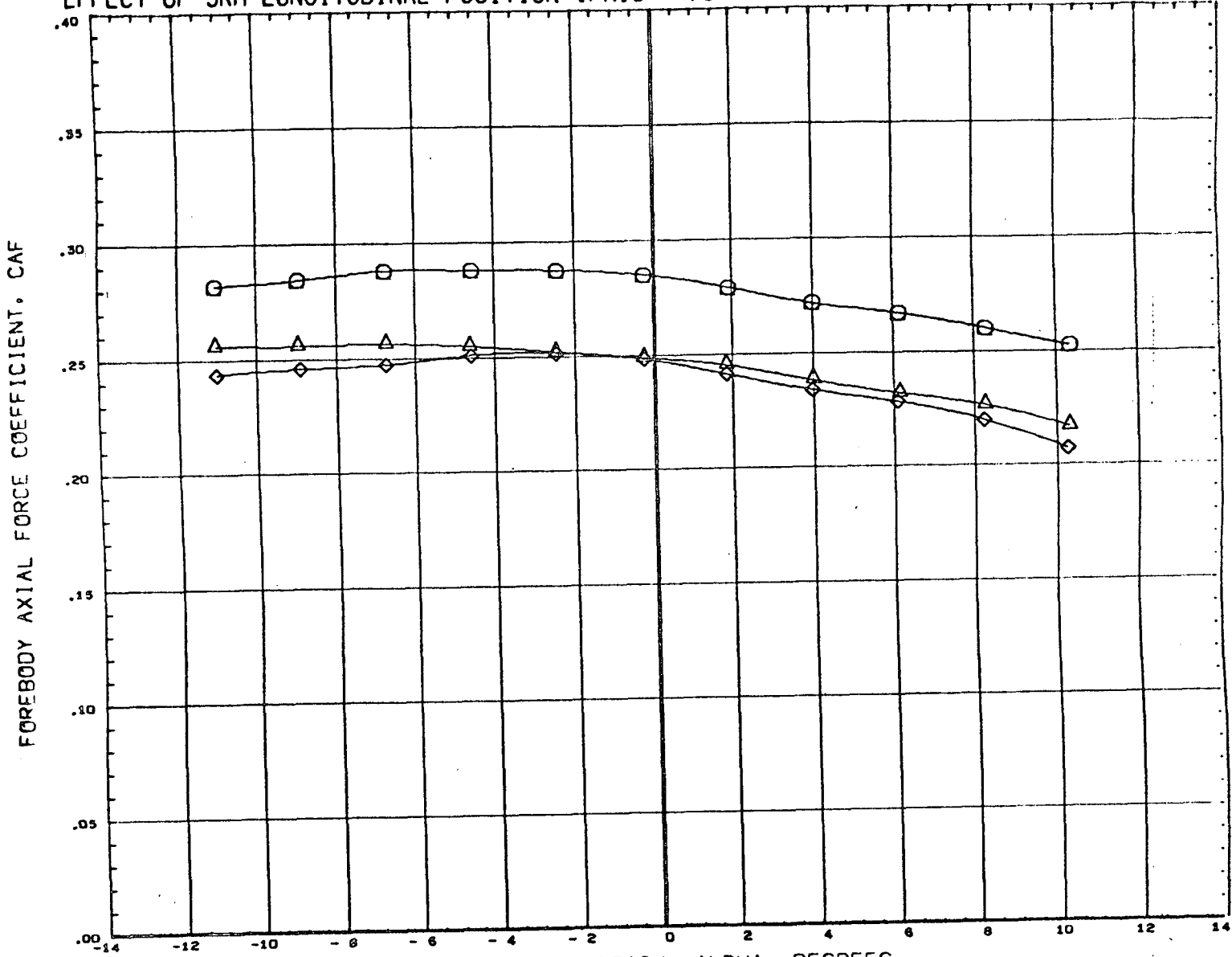


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71093)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.865	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

RF

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

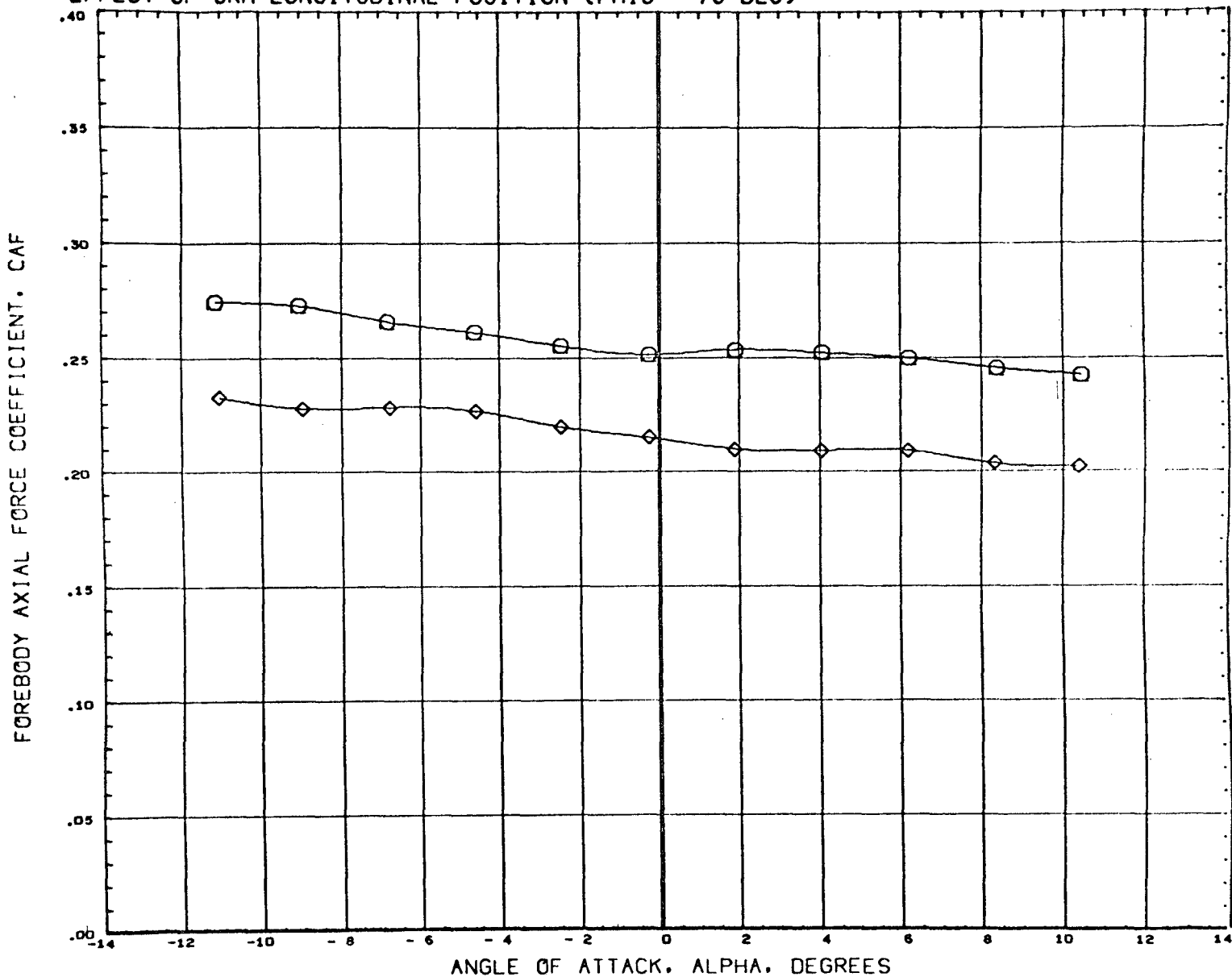


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIO1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20



# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

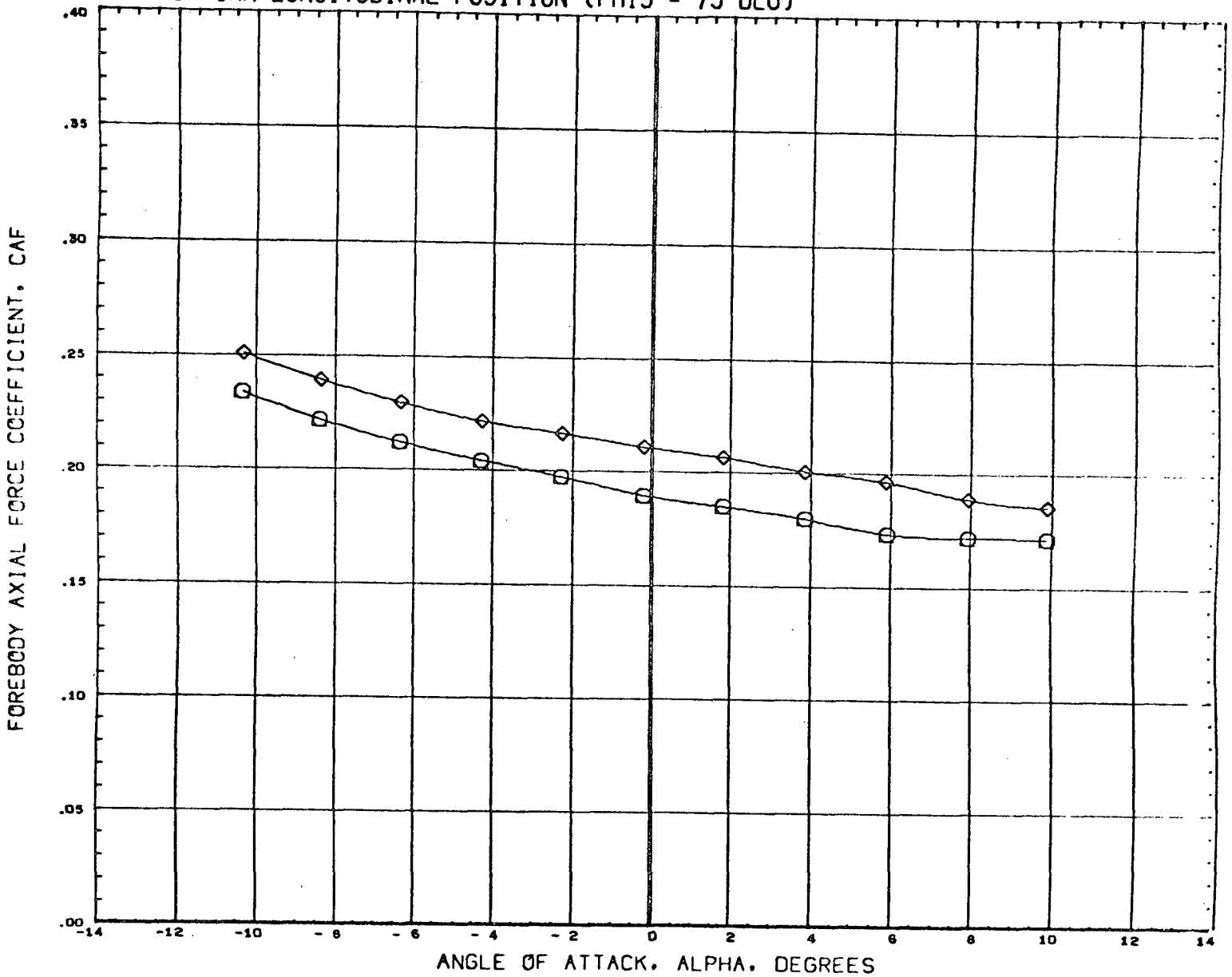


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.97

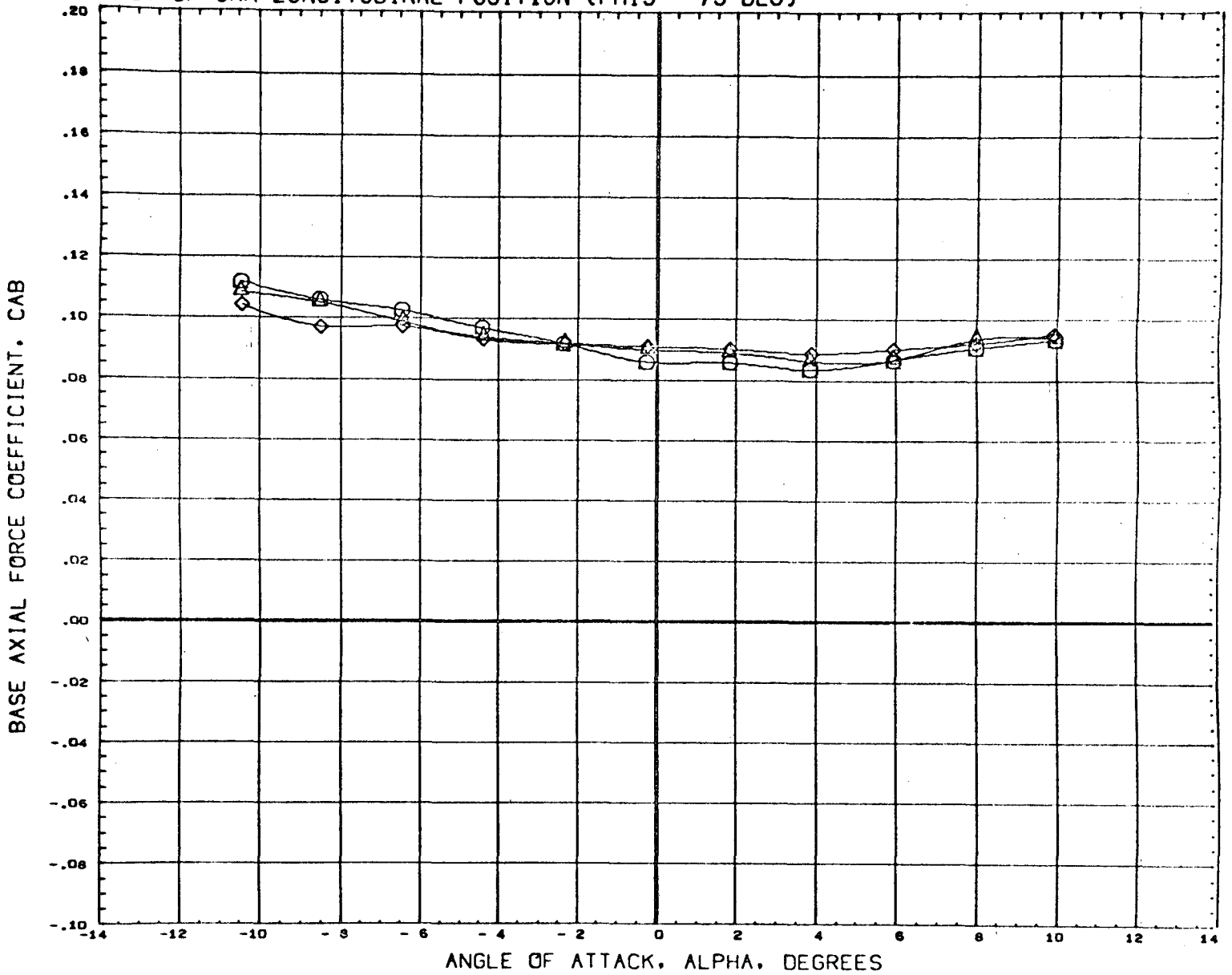
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

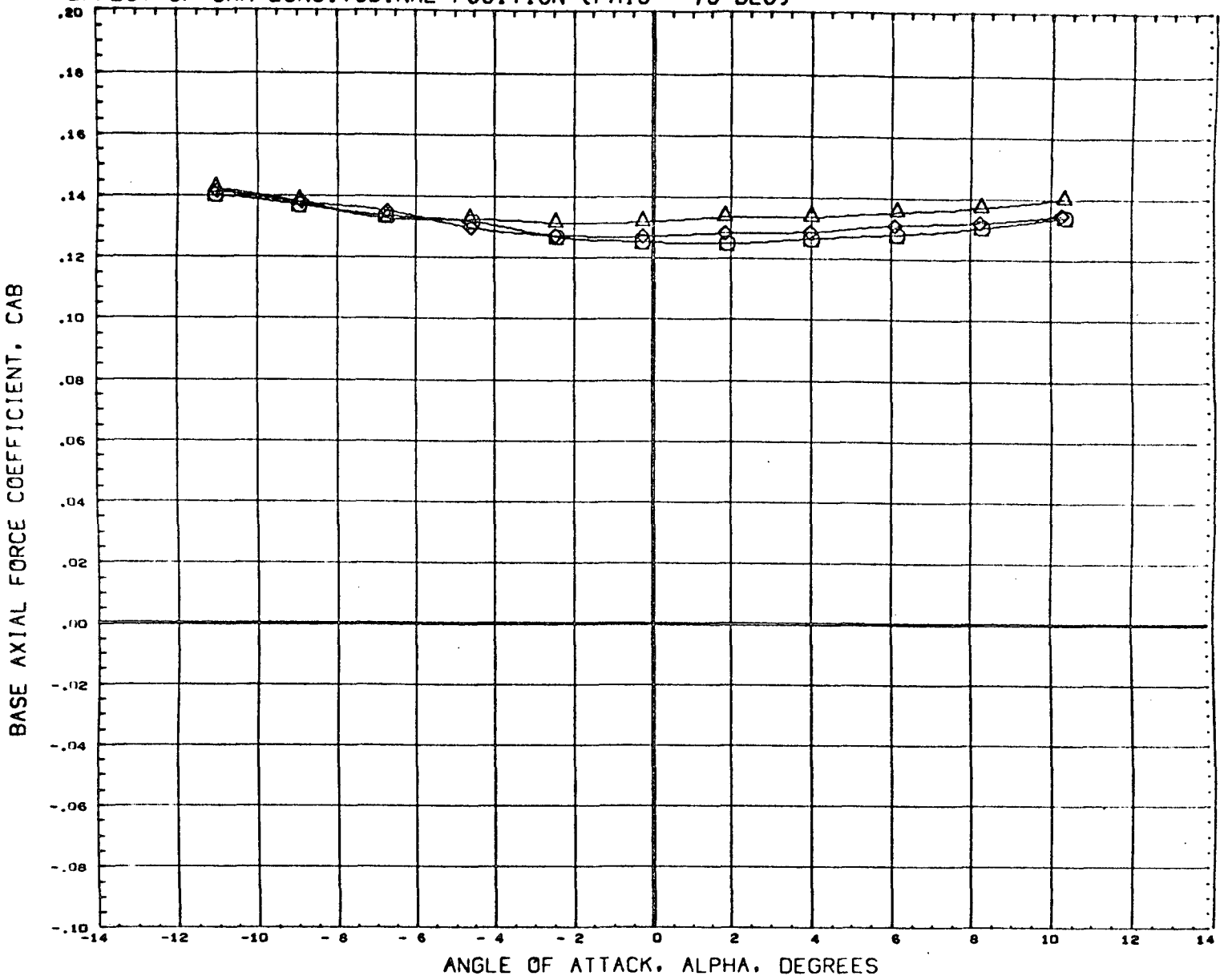
EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B710B3)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

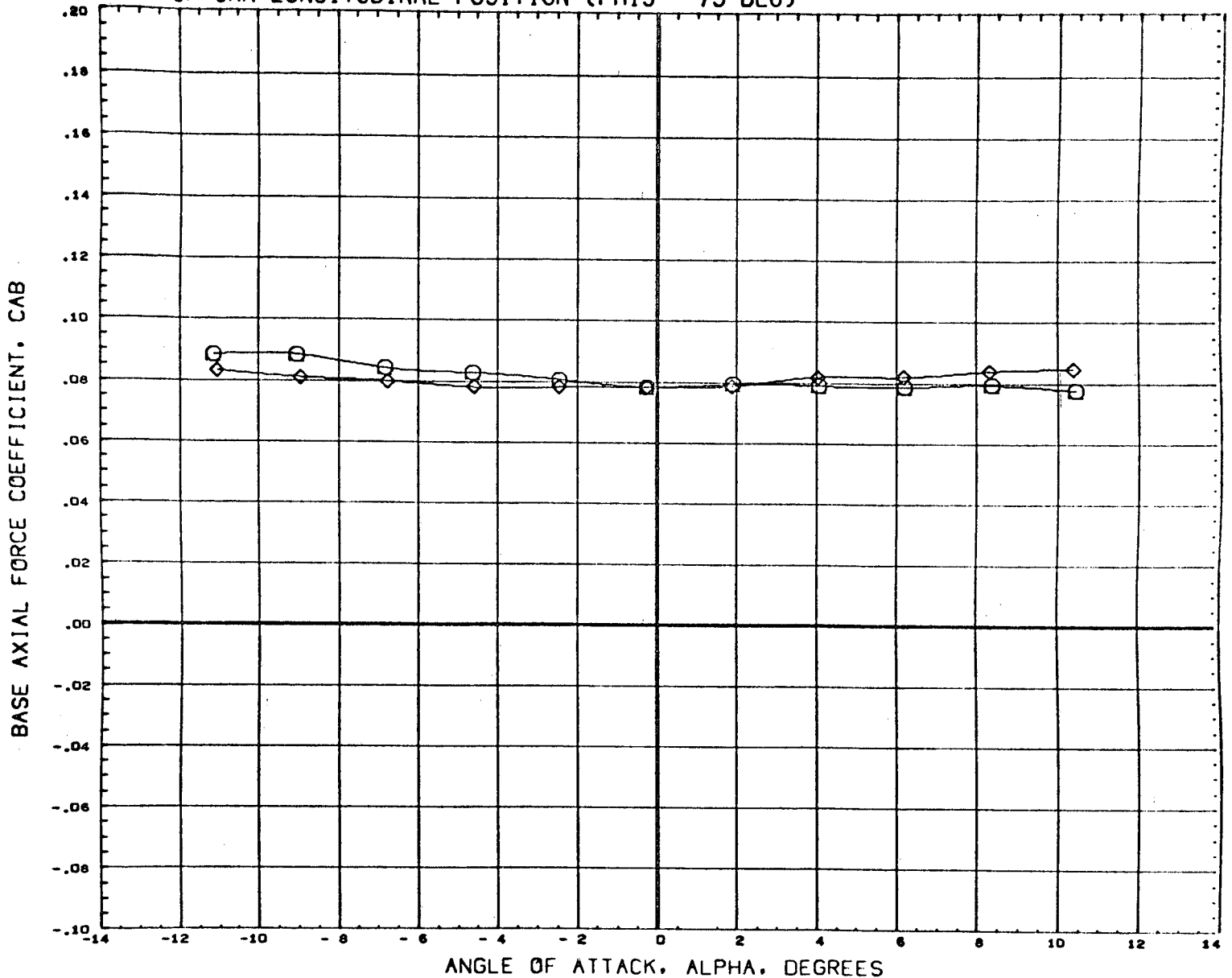
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

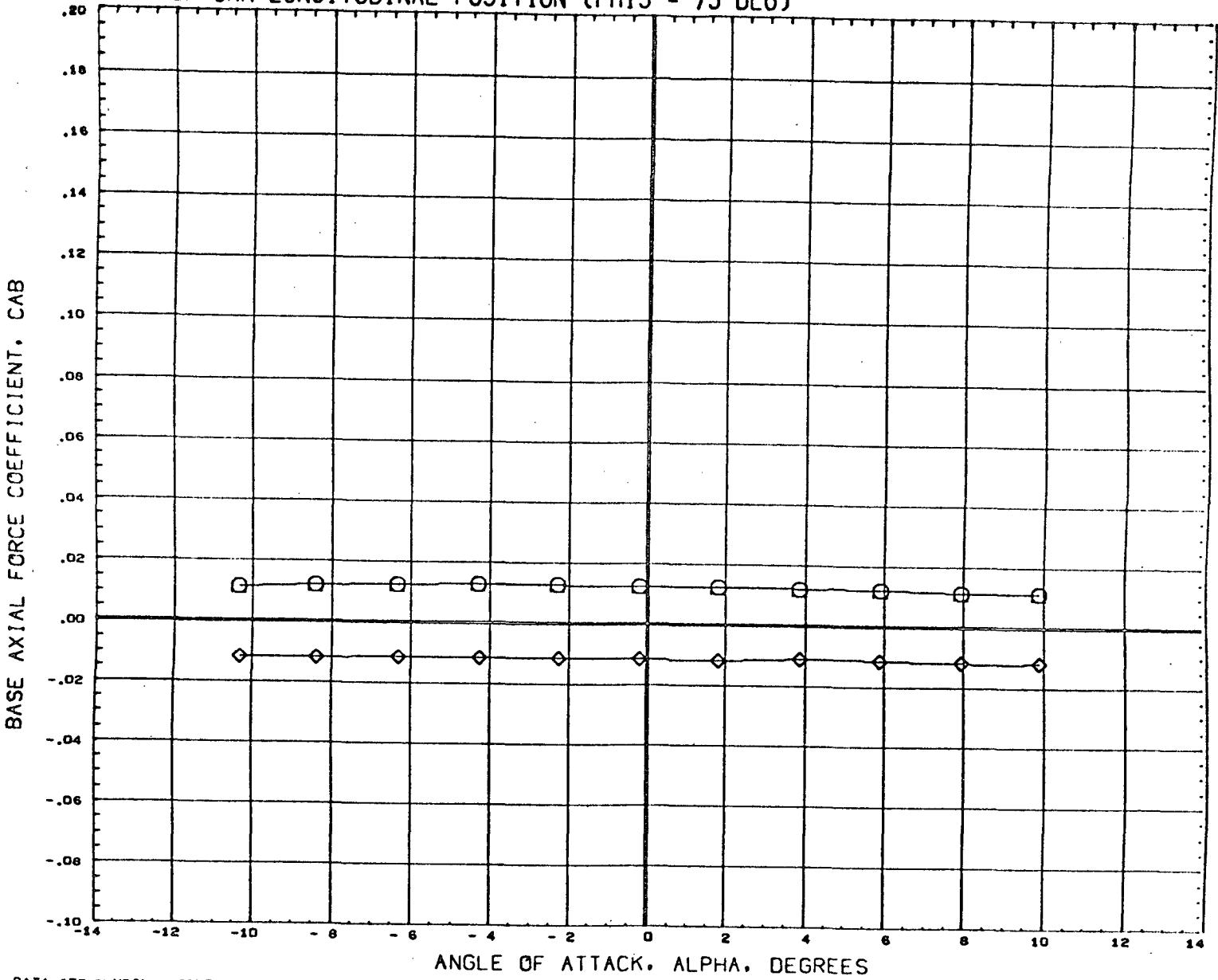
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

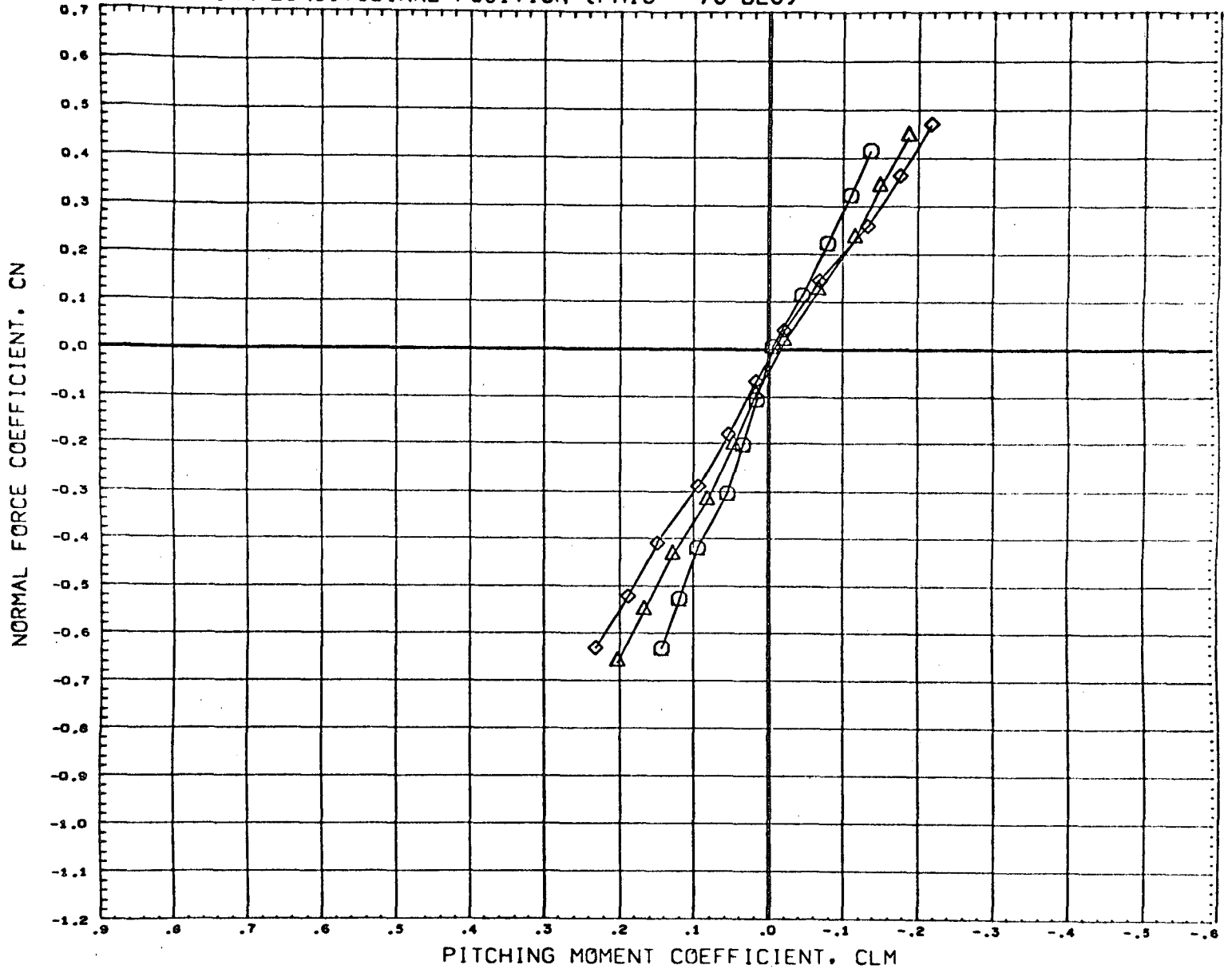
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN.
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0260 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

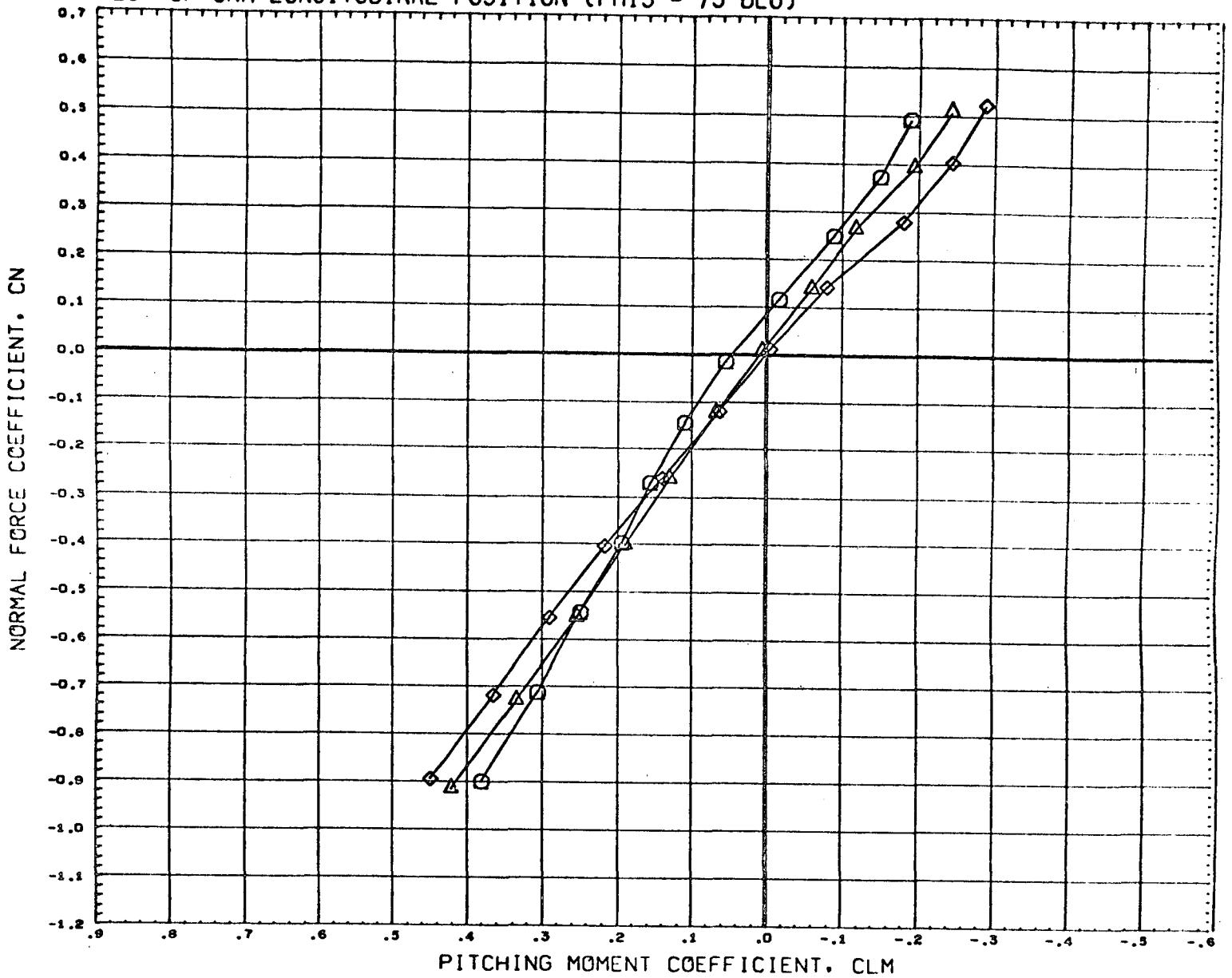


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

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# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

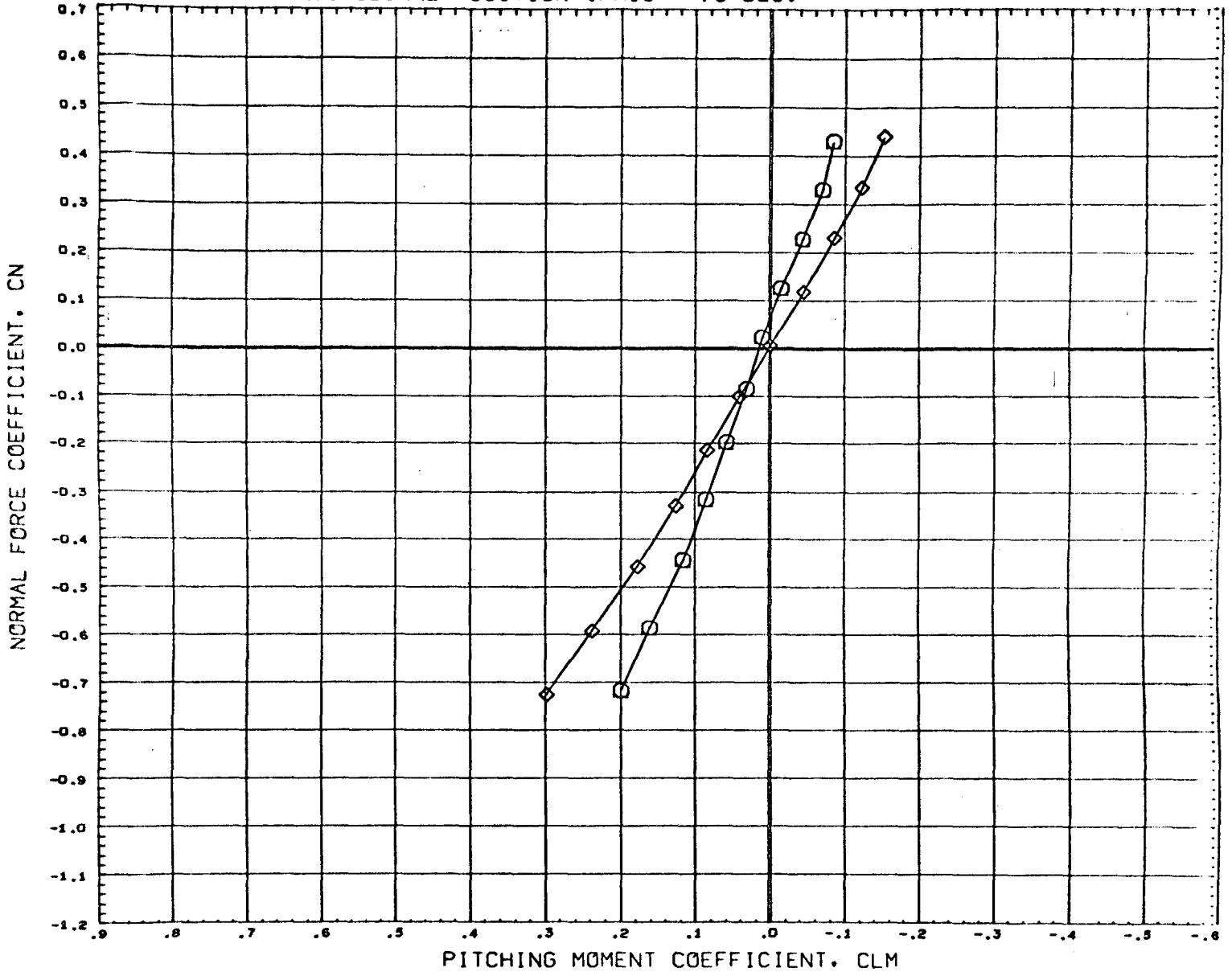


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



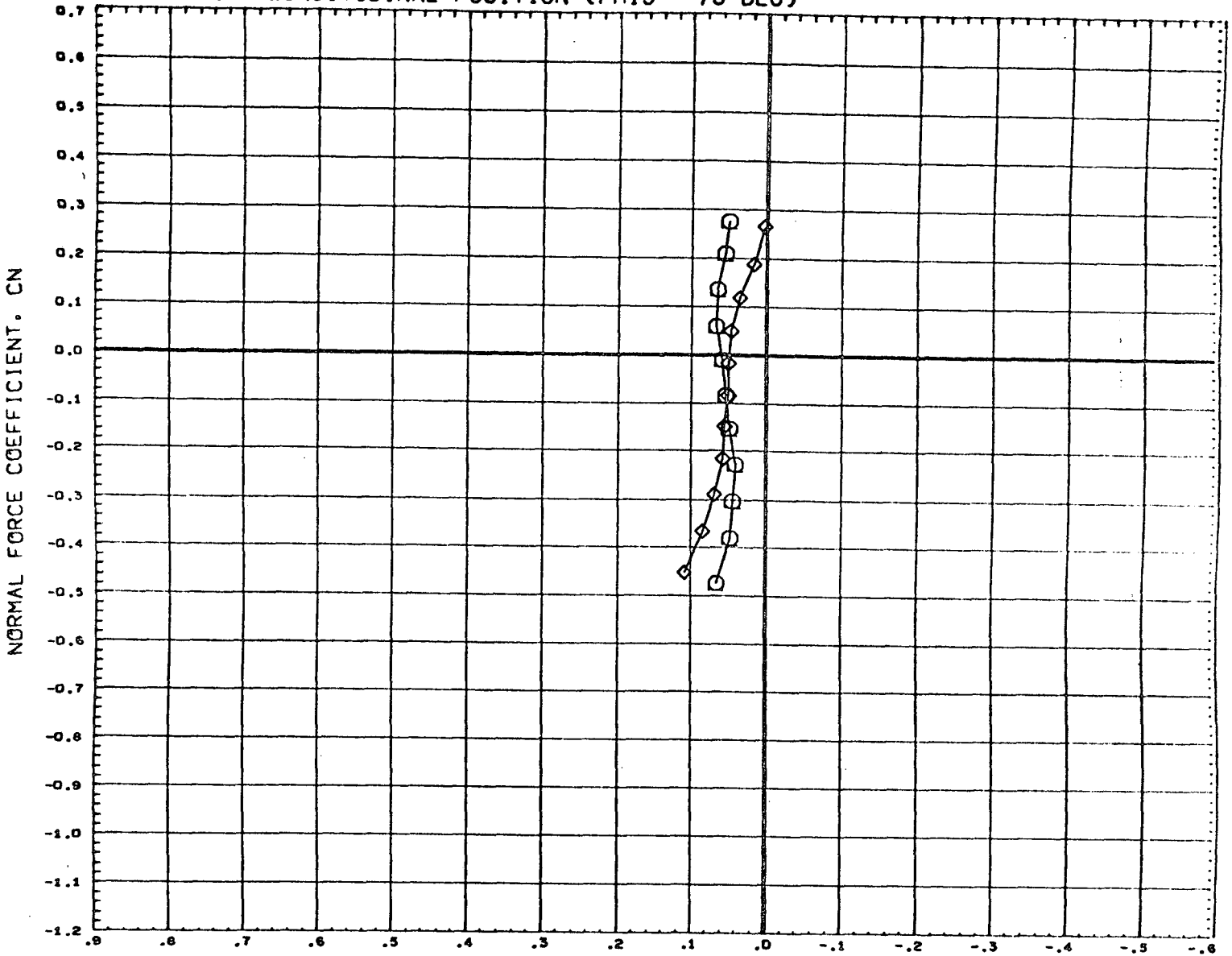
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0260 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

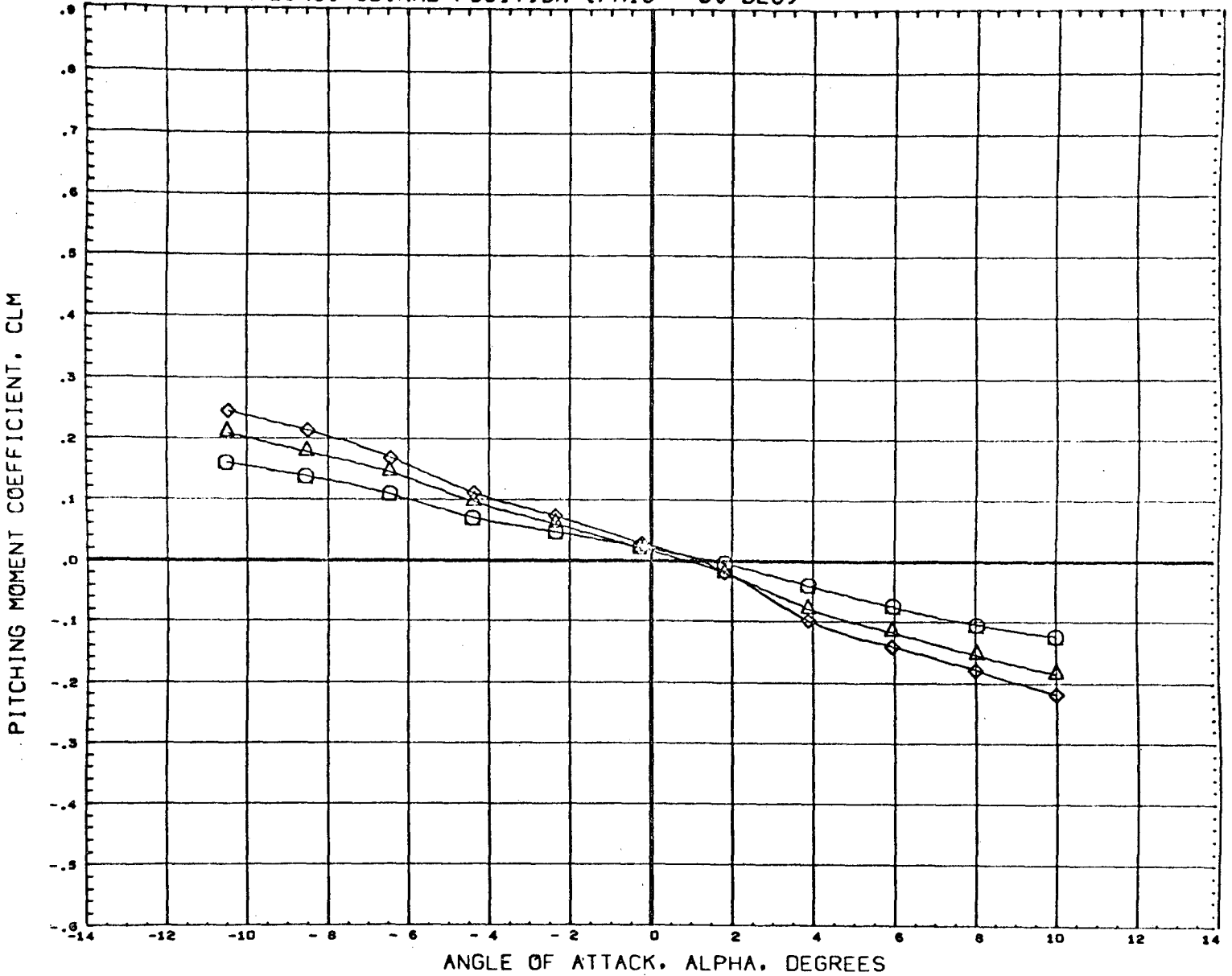
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(B71083)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



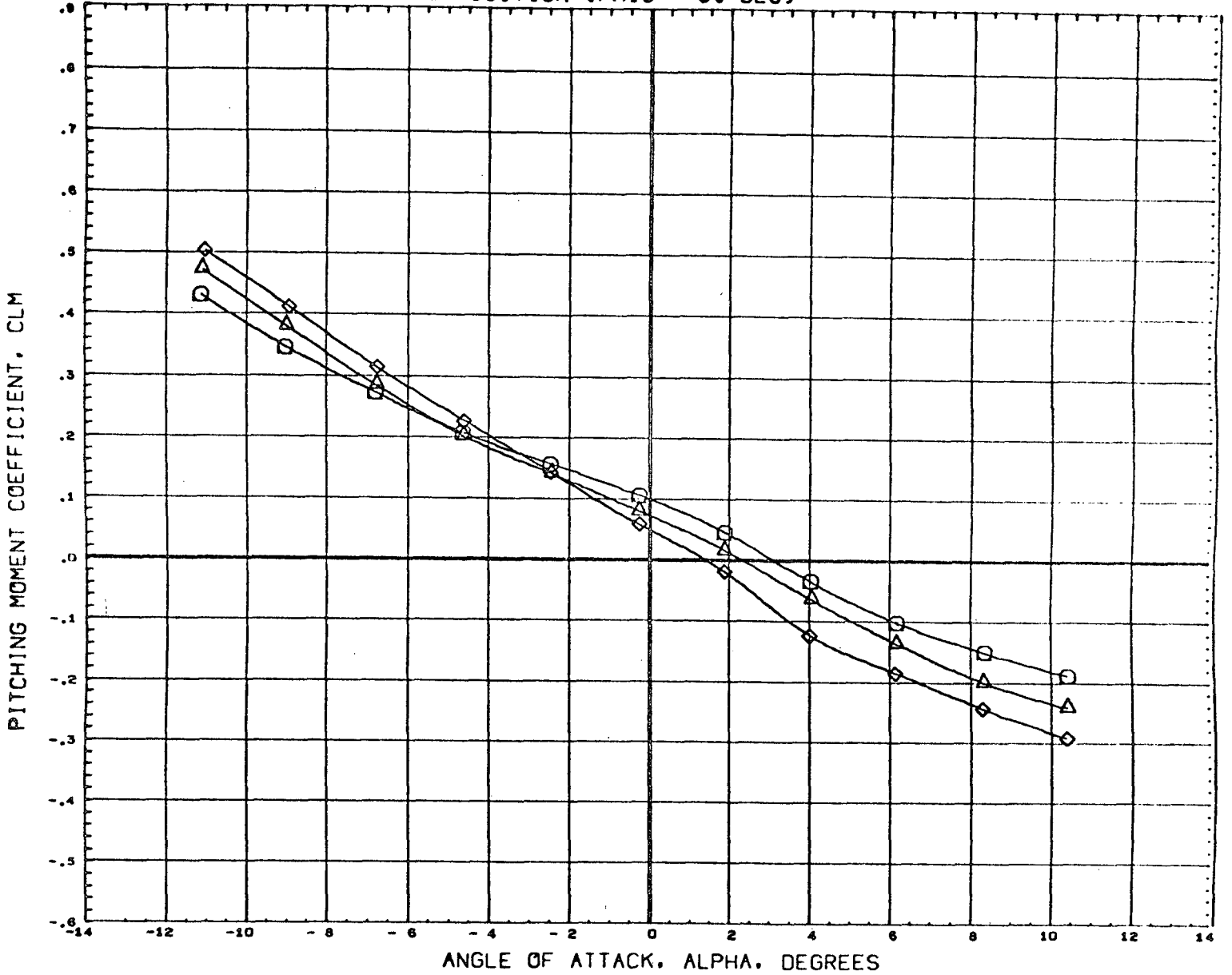
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.885	0.000	BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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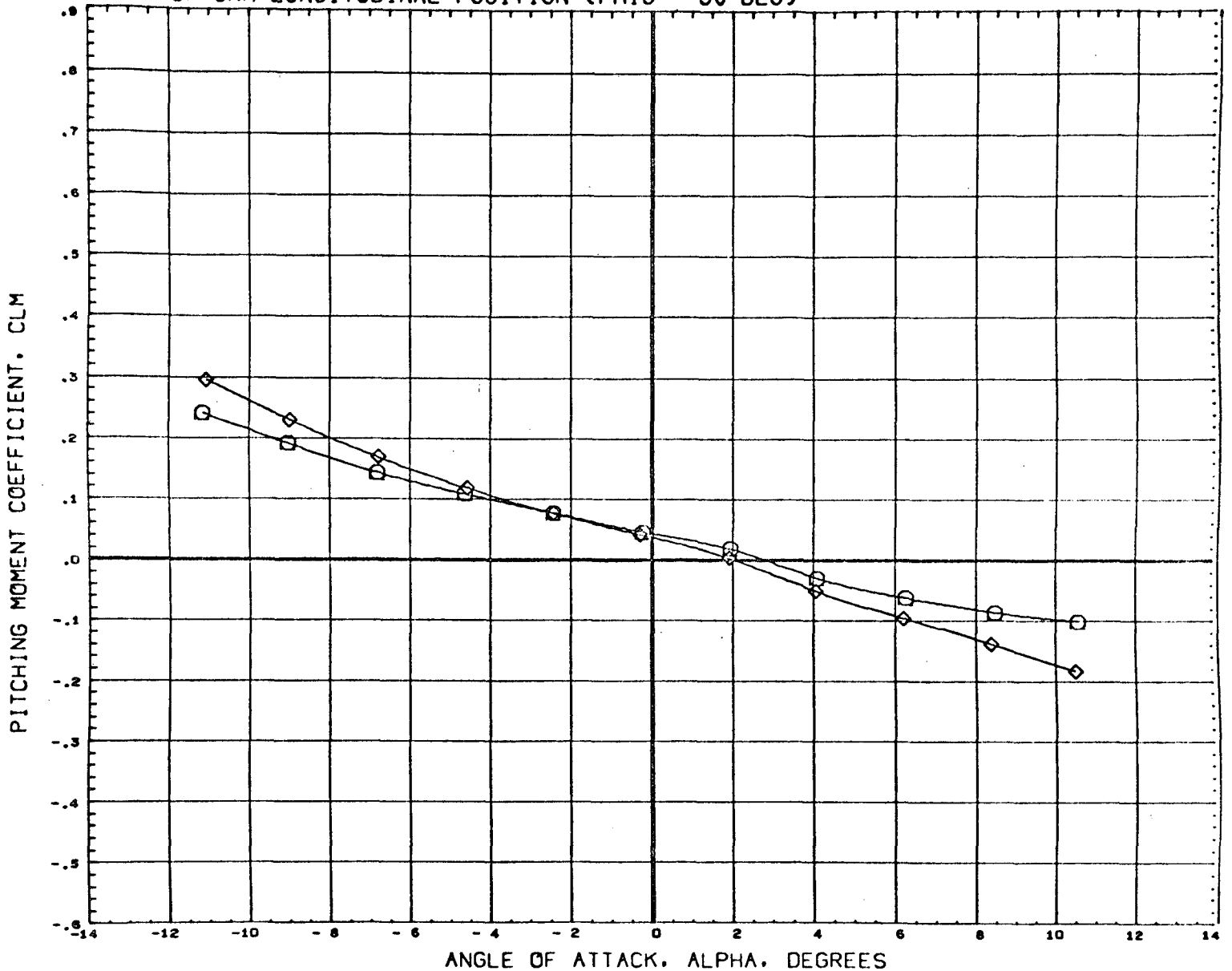
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0260 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19

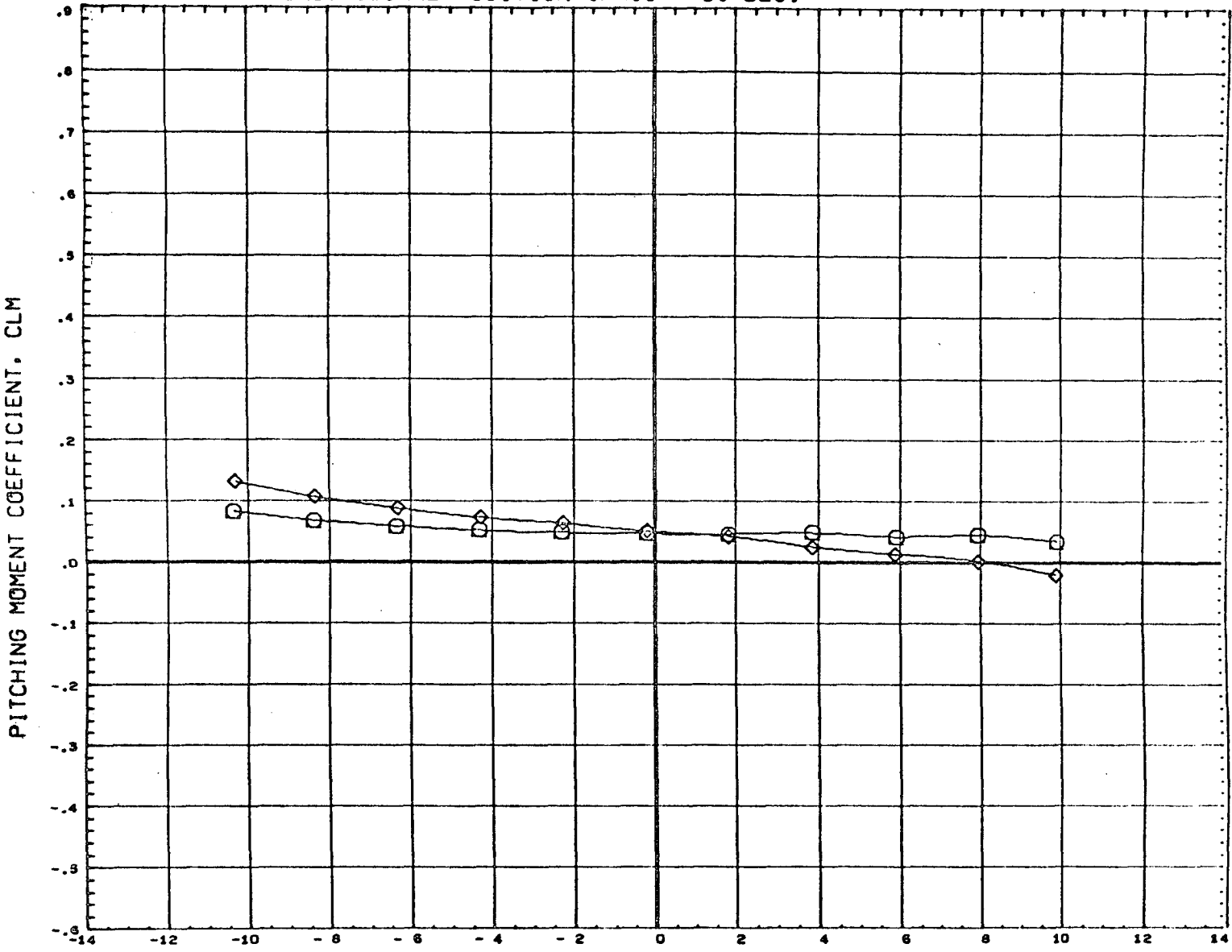
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

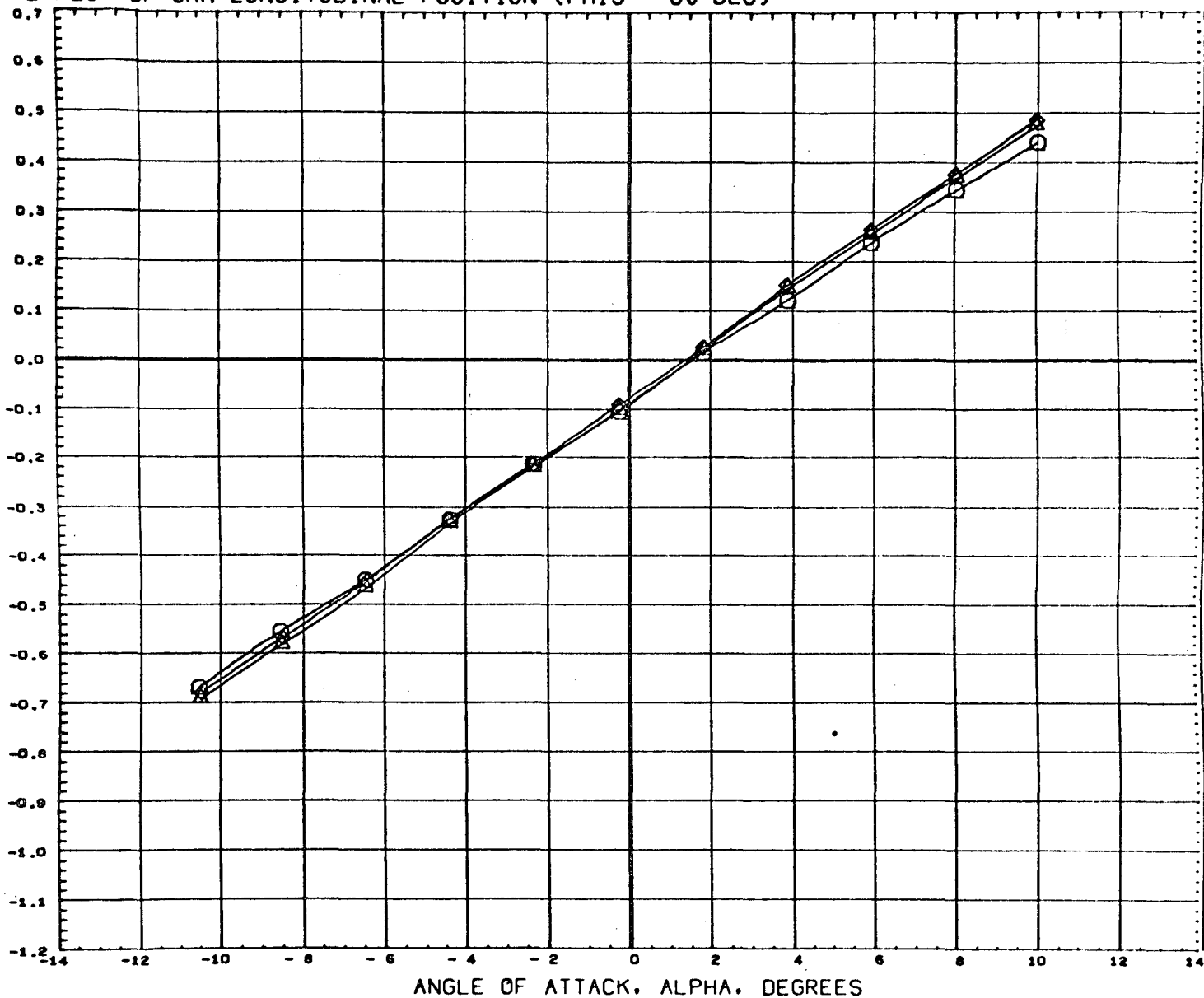
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

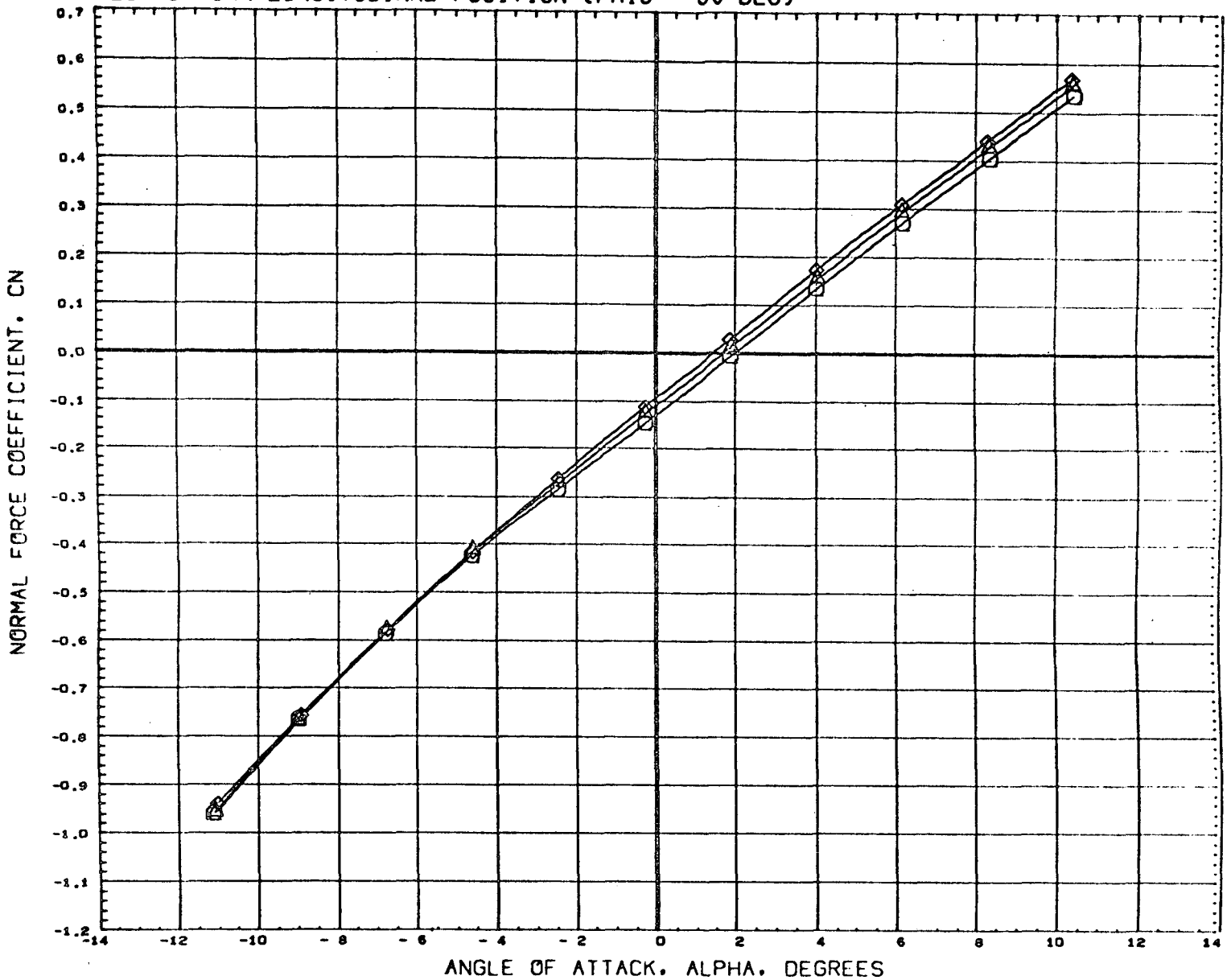


DATA SET SYMBO	CONFIGURATION DESCRIPTION	ORBN	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	SREF 7.8800 SQ. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.624	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.885	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

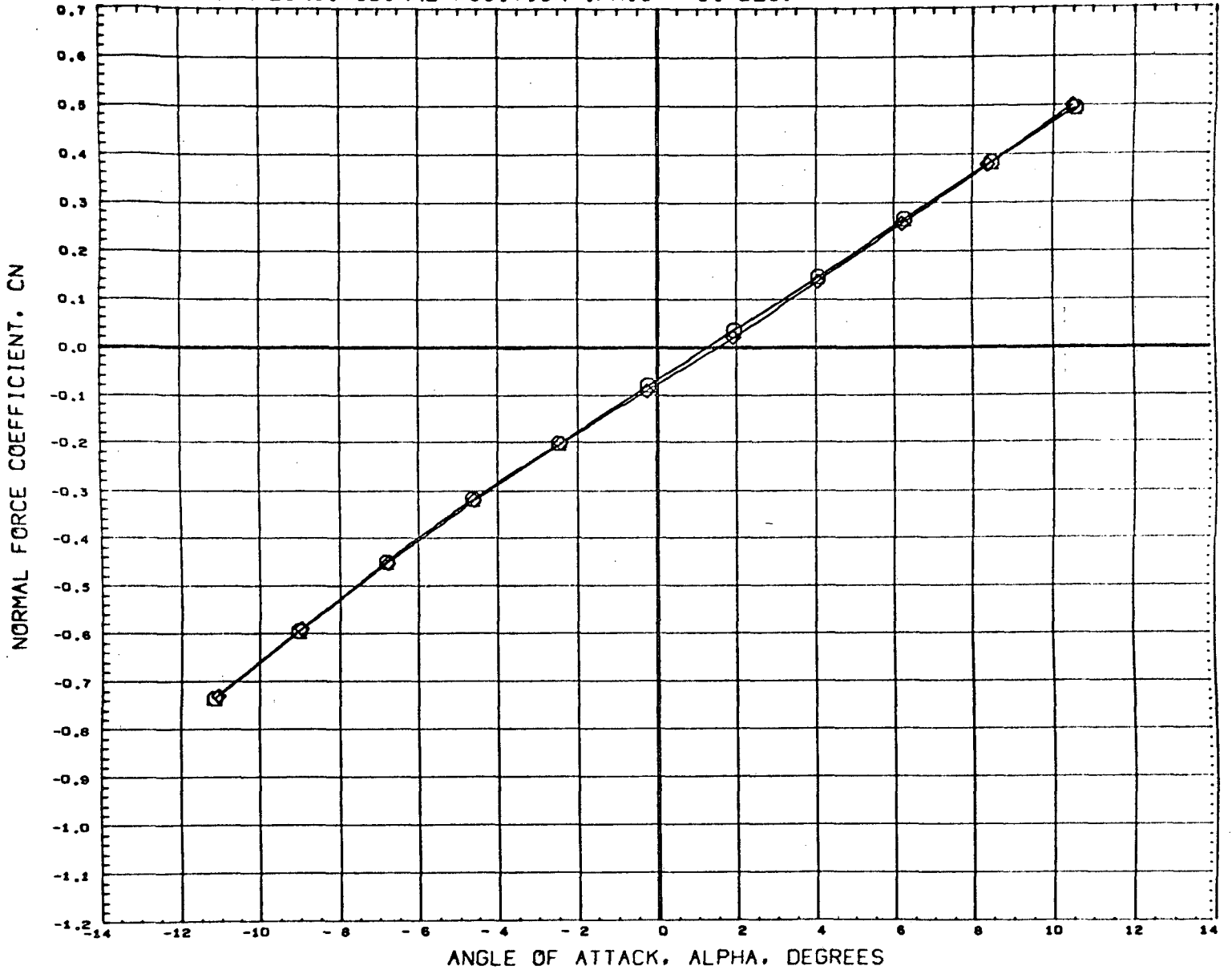


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19



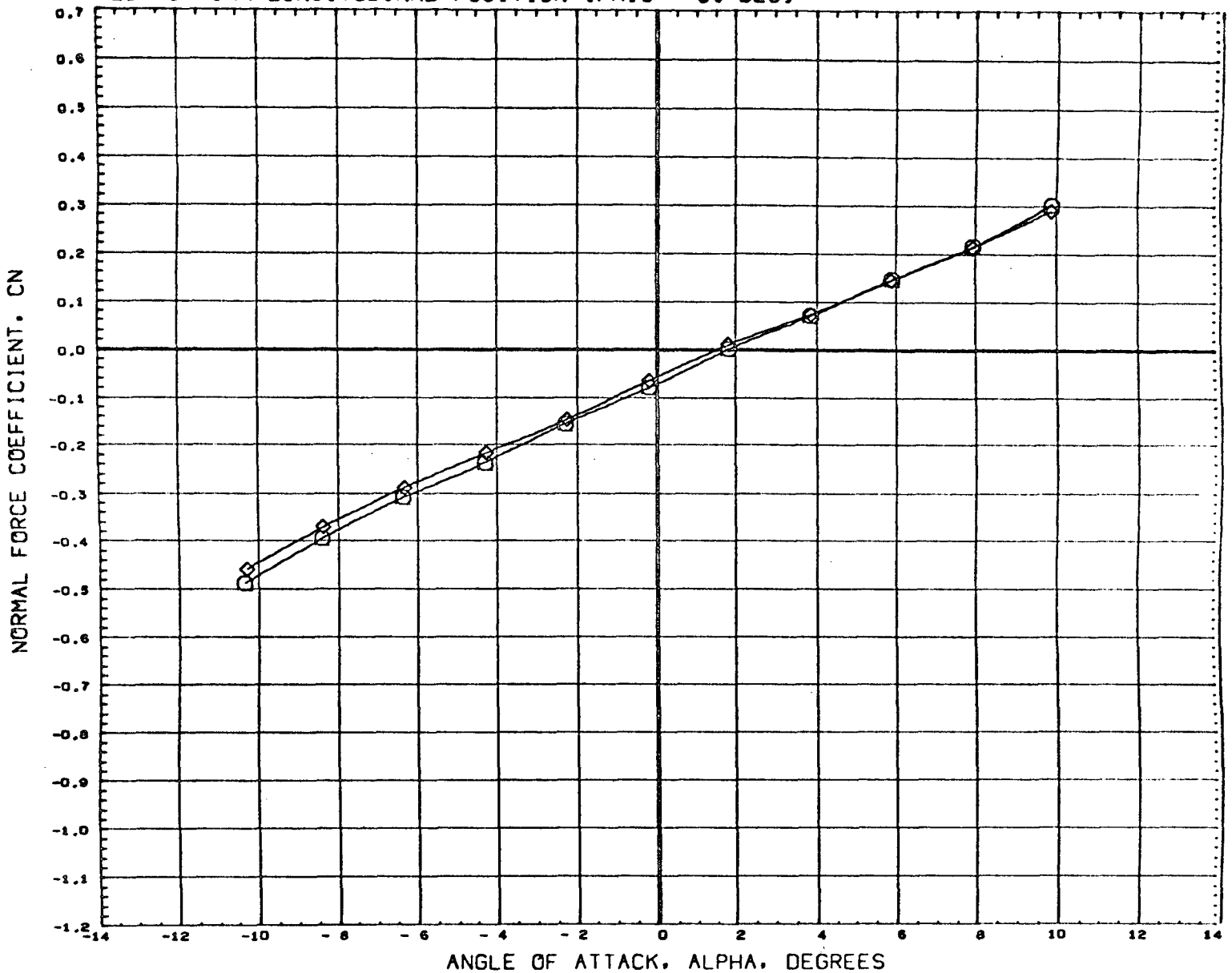
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.97

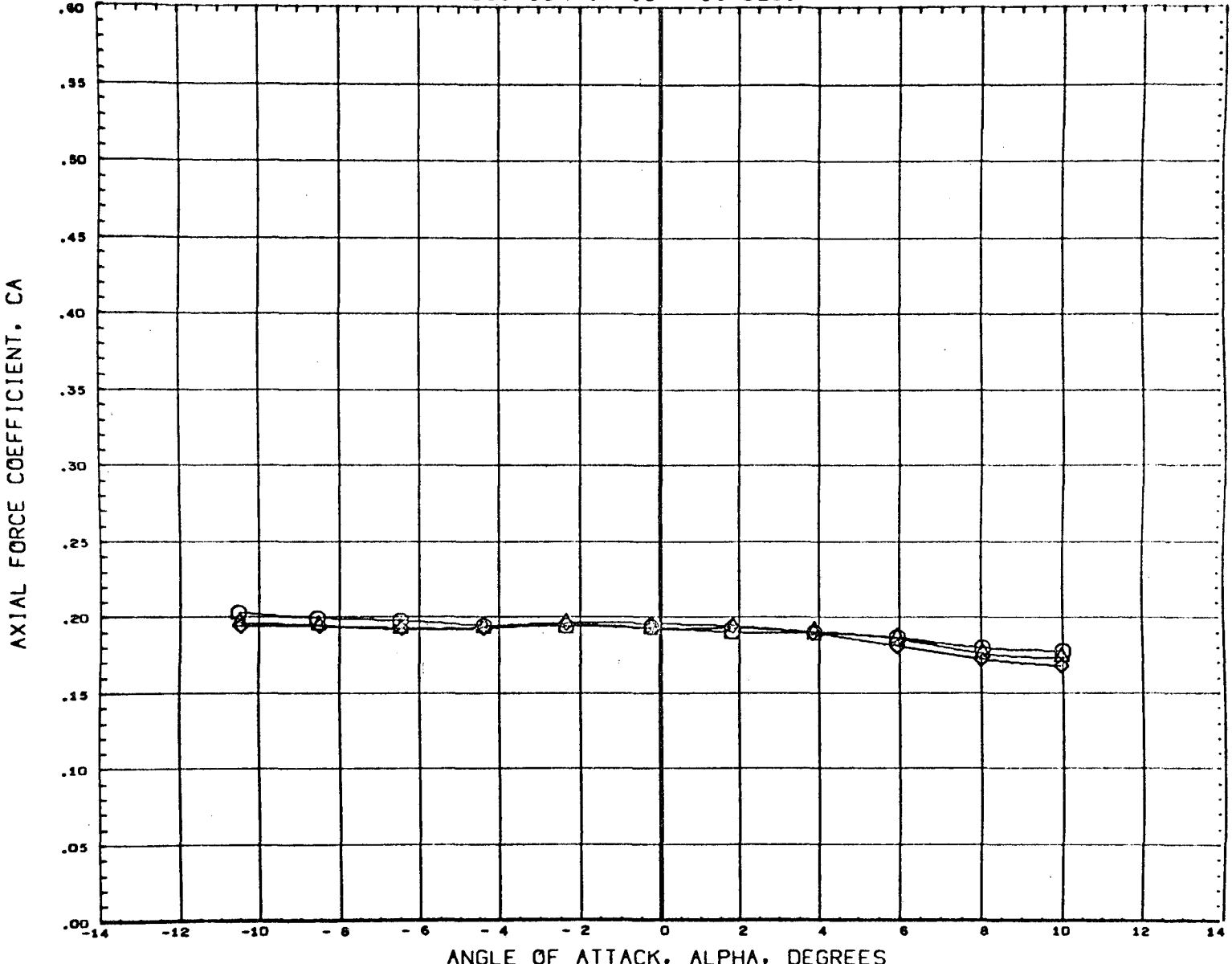
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

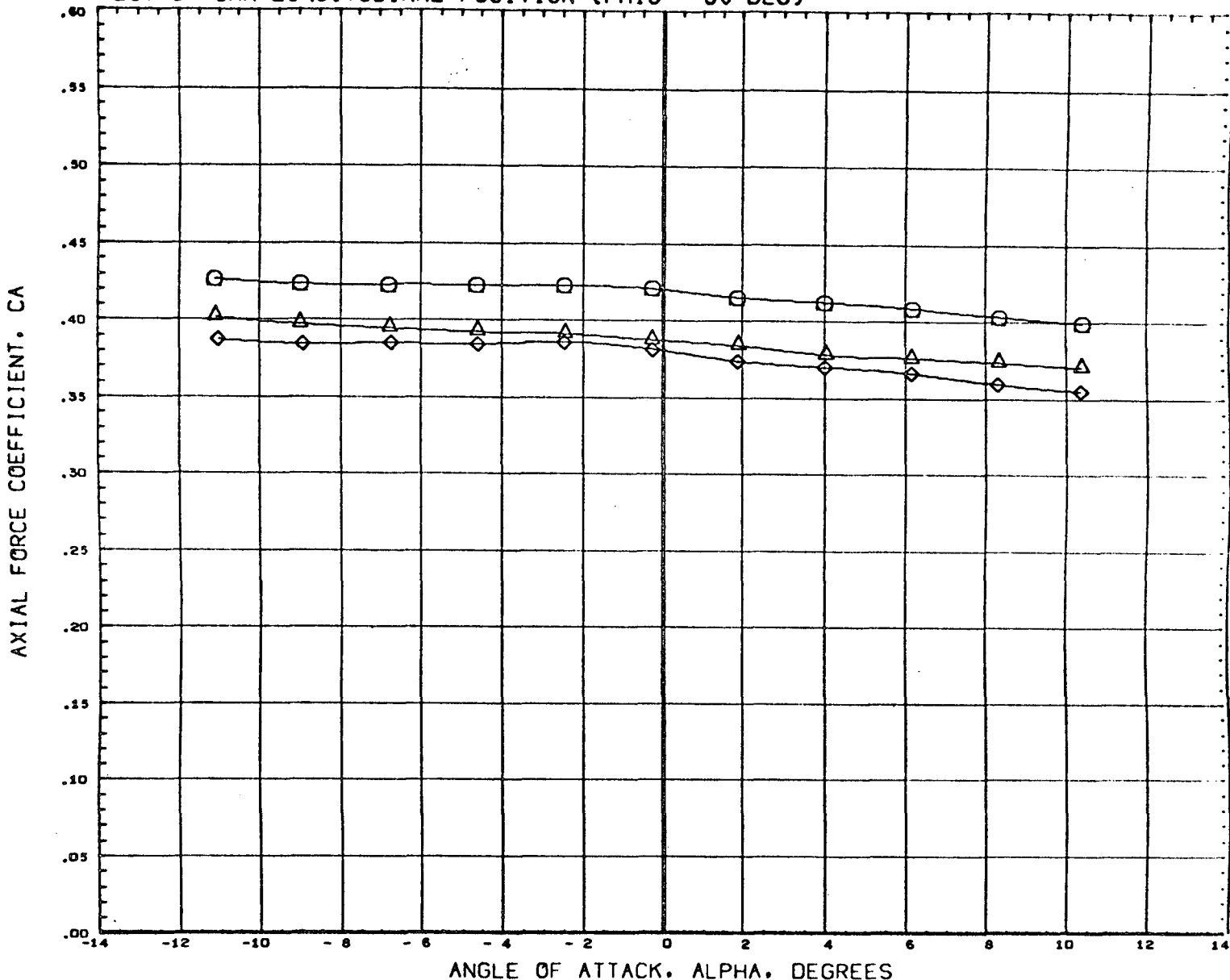
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

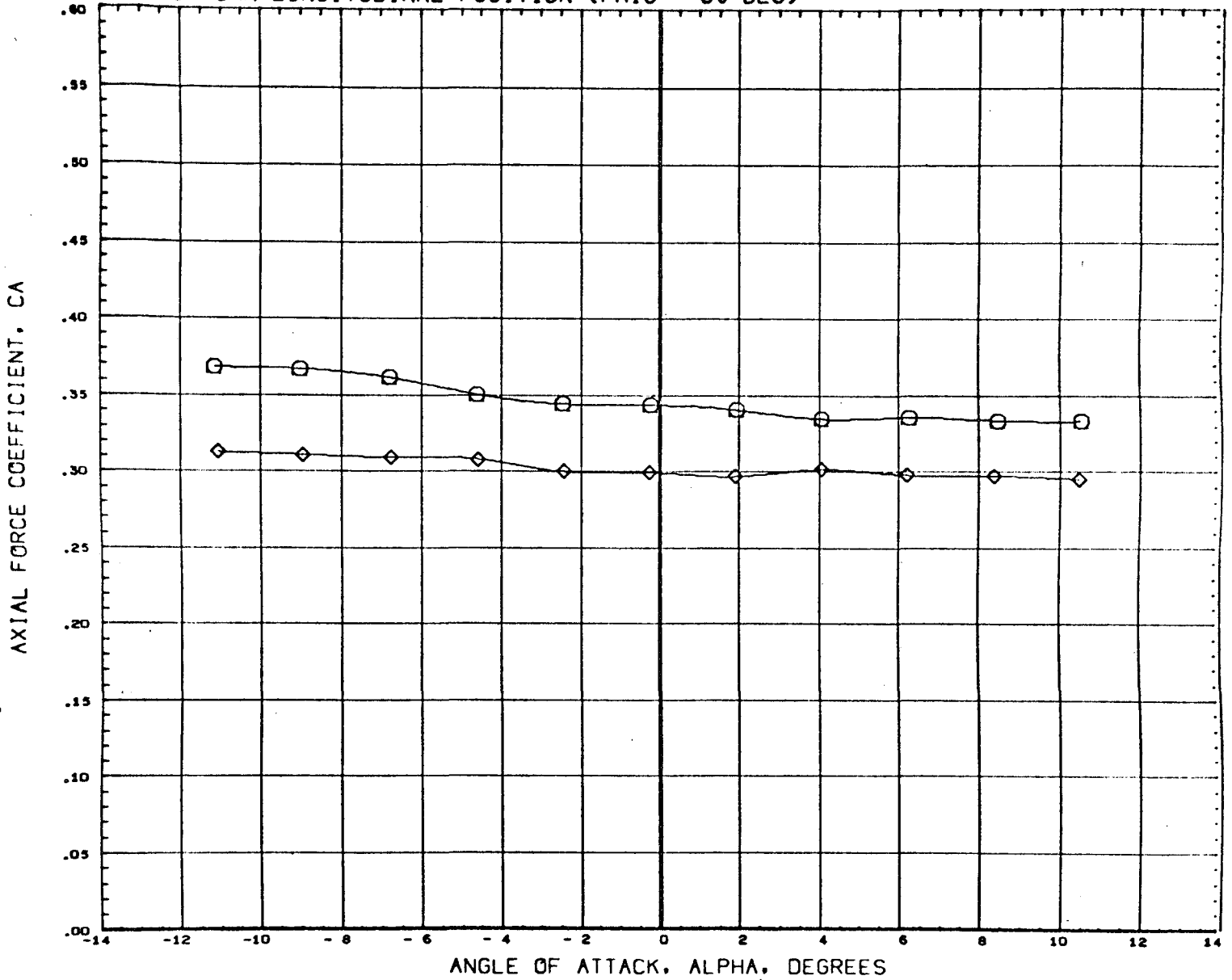
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.19

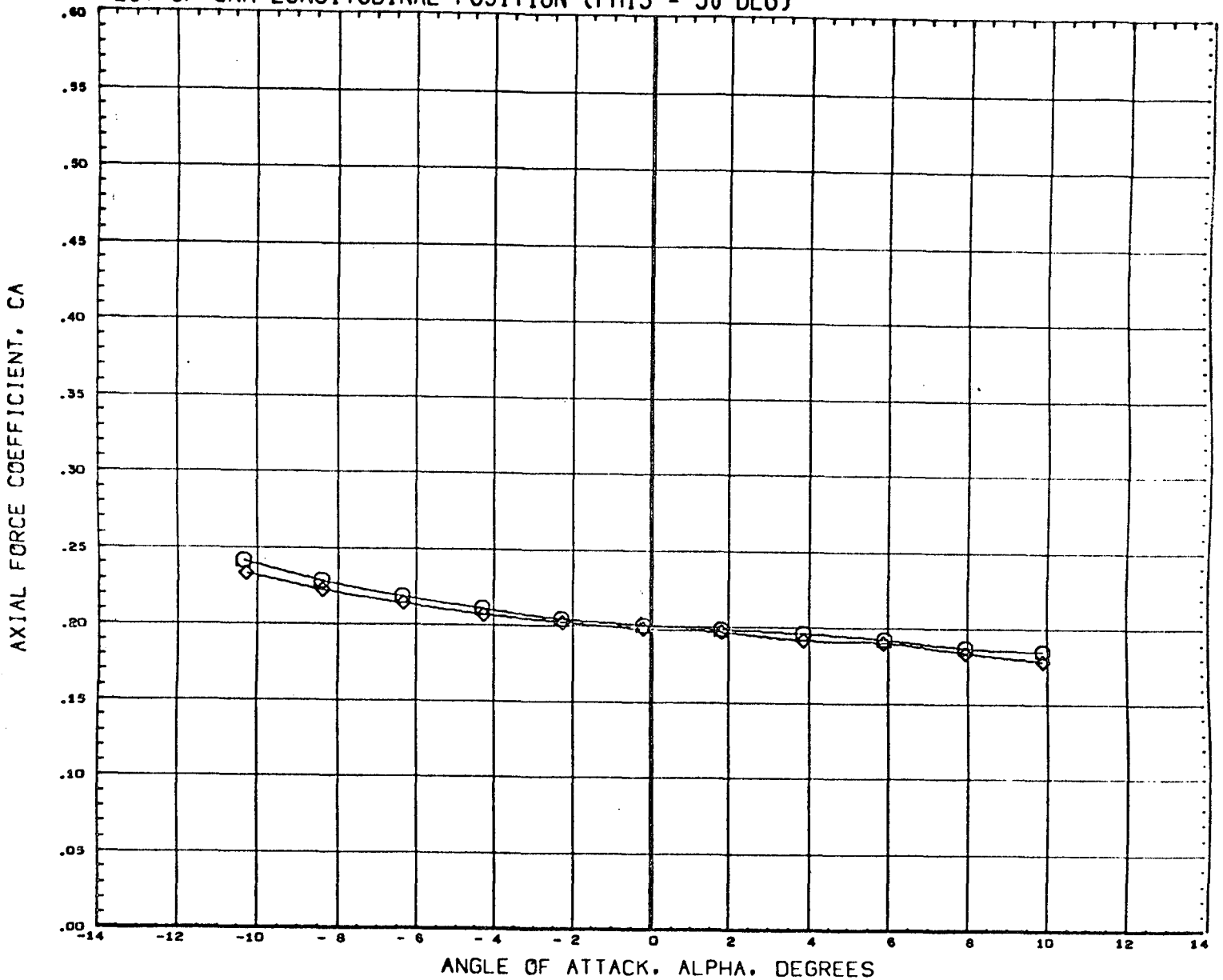
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

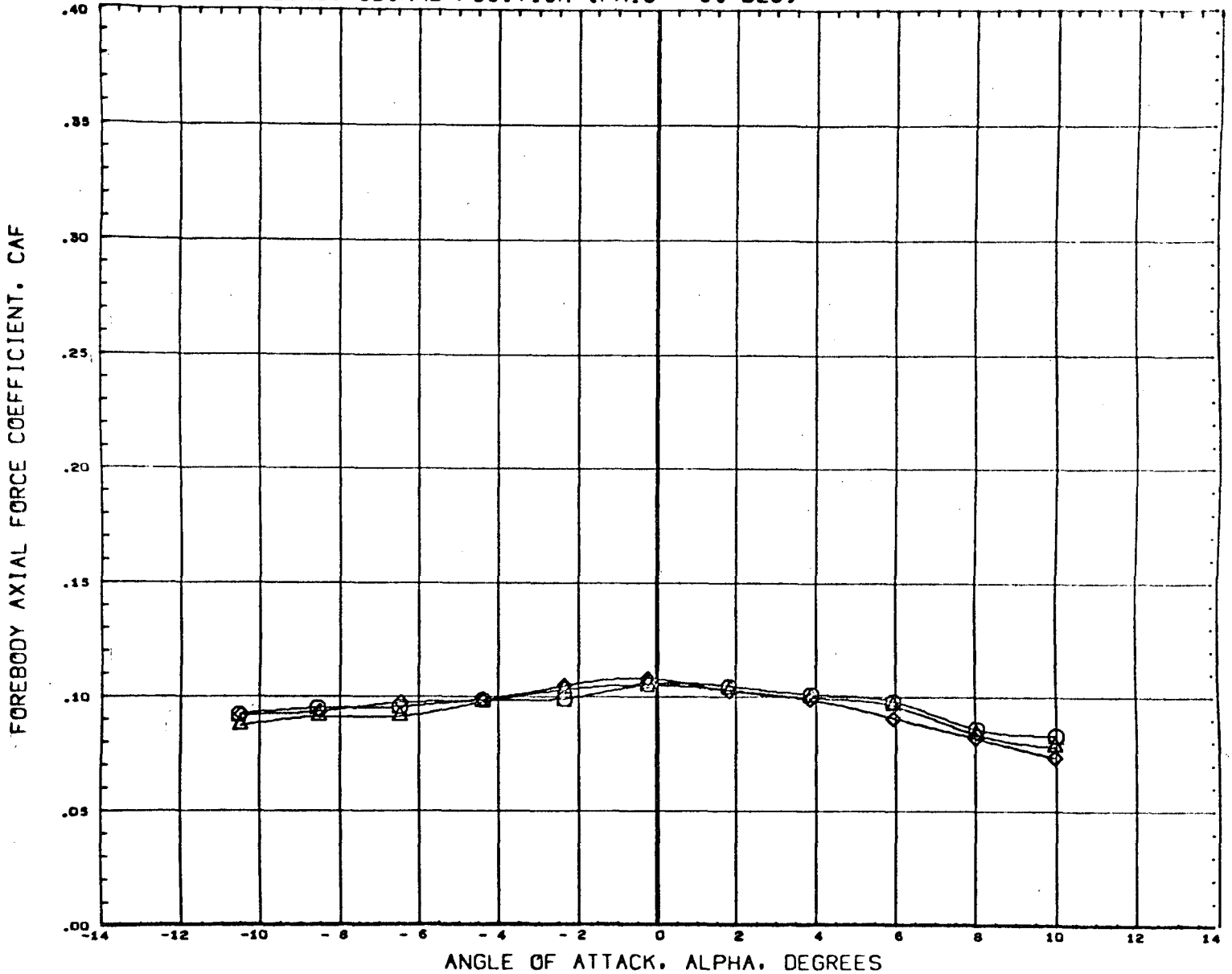
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(D71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



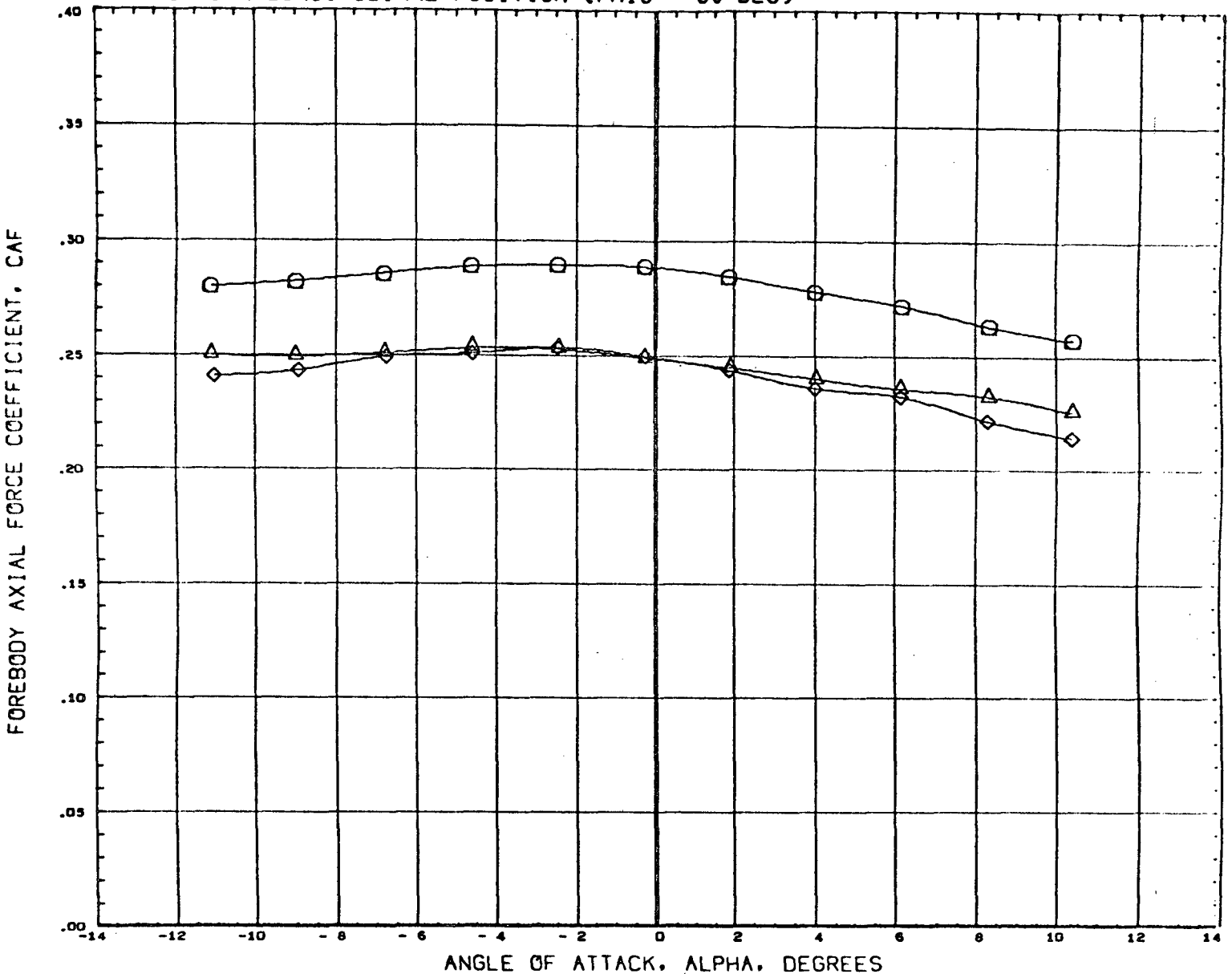
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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EP

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

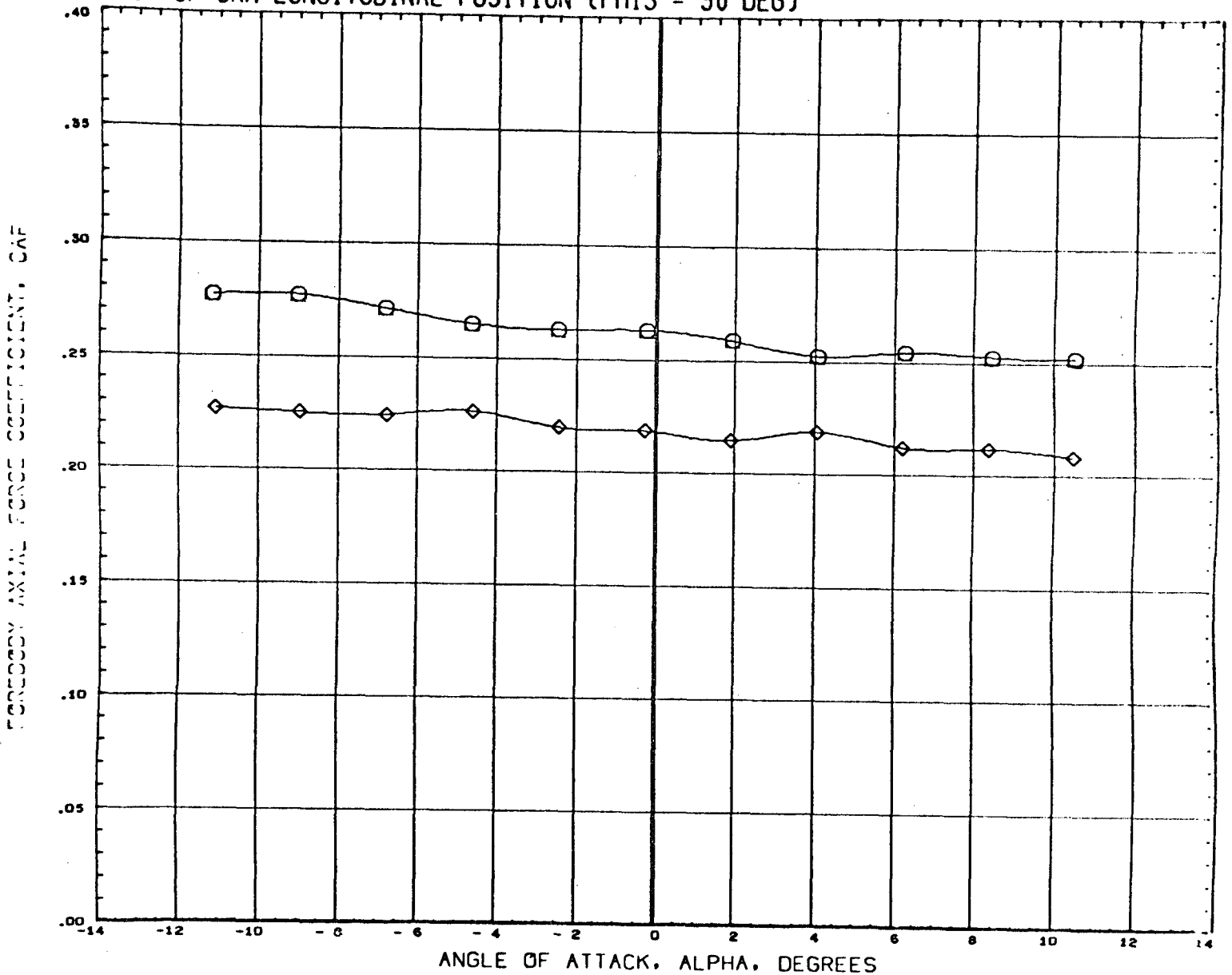


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(071015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(071085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

MACH 1.19



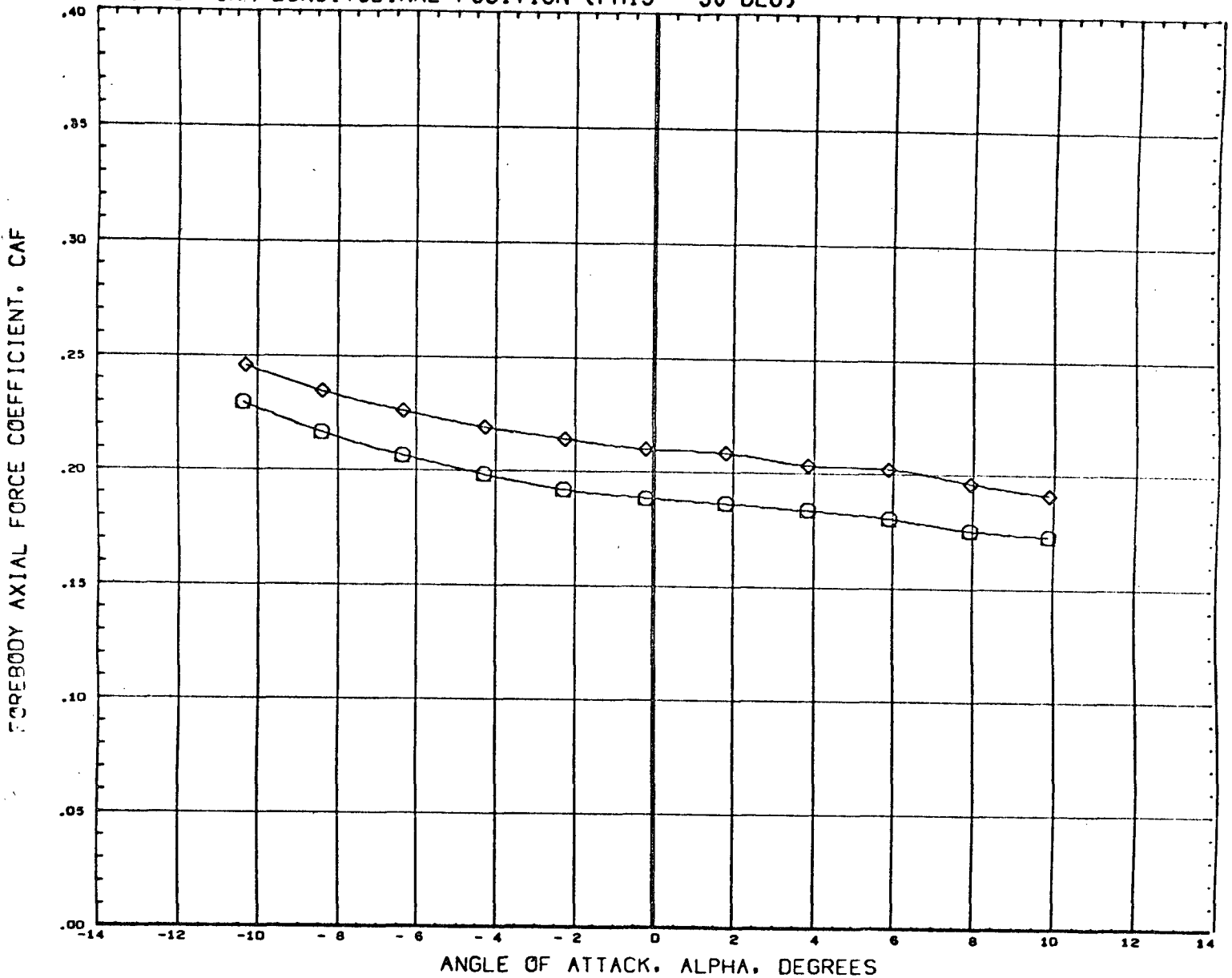
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.685	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

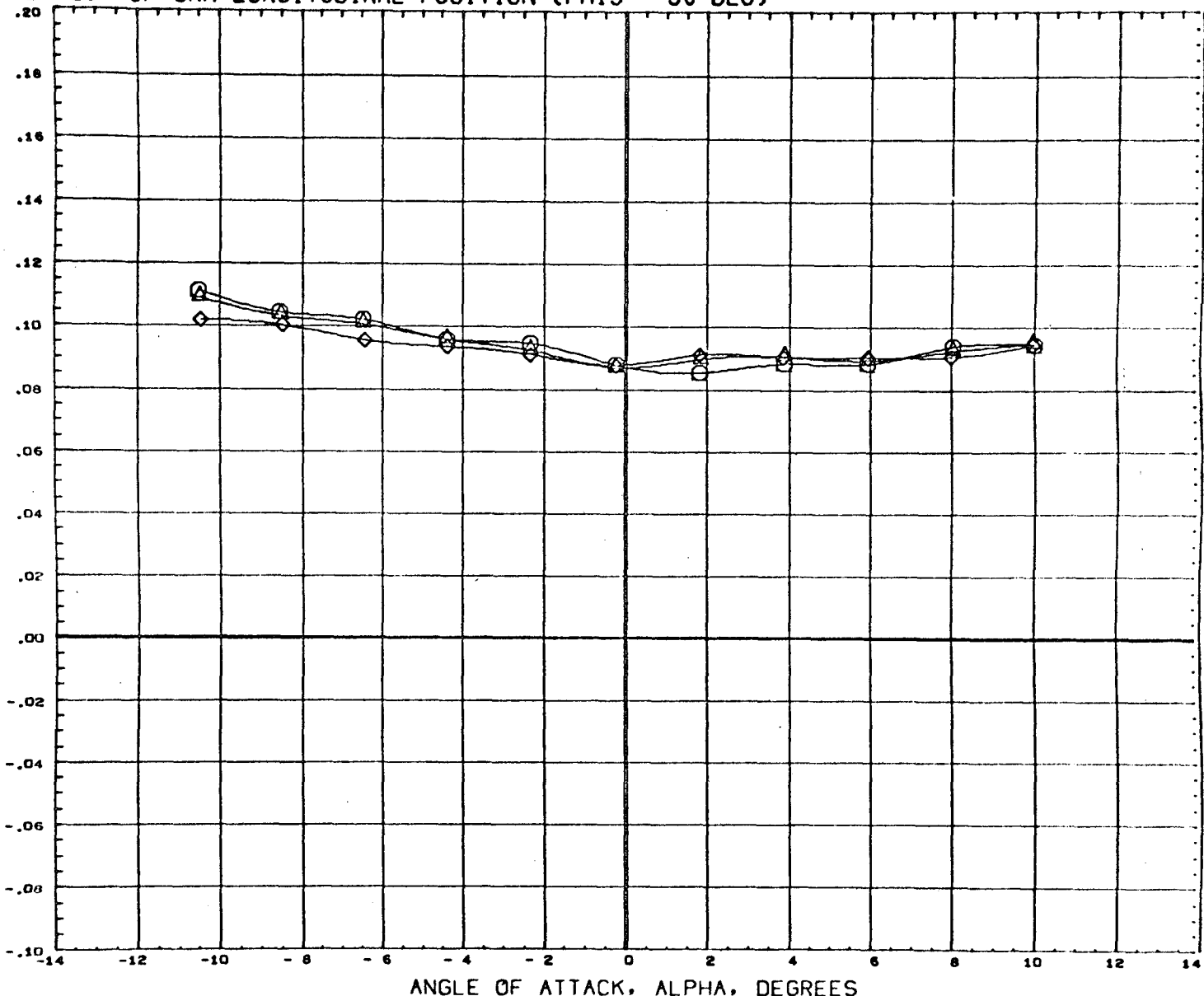


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2460 IN. SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

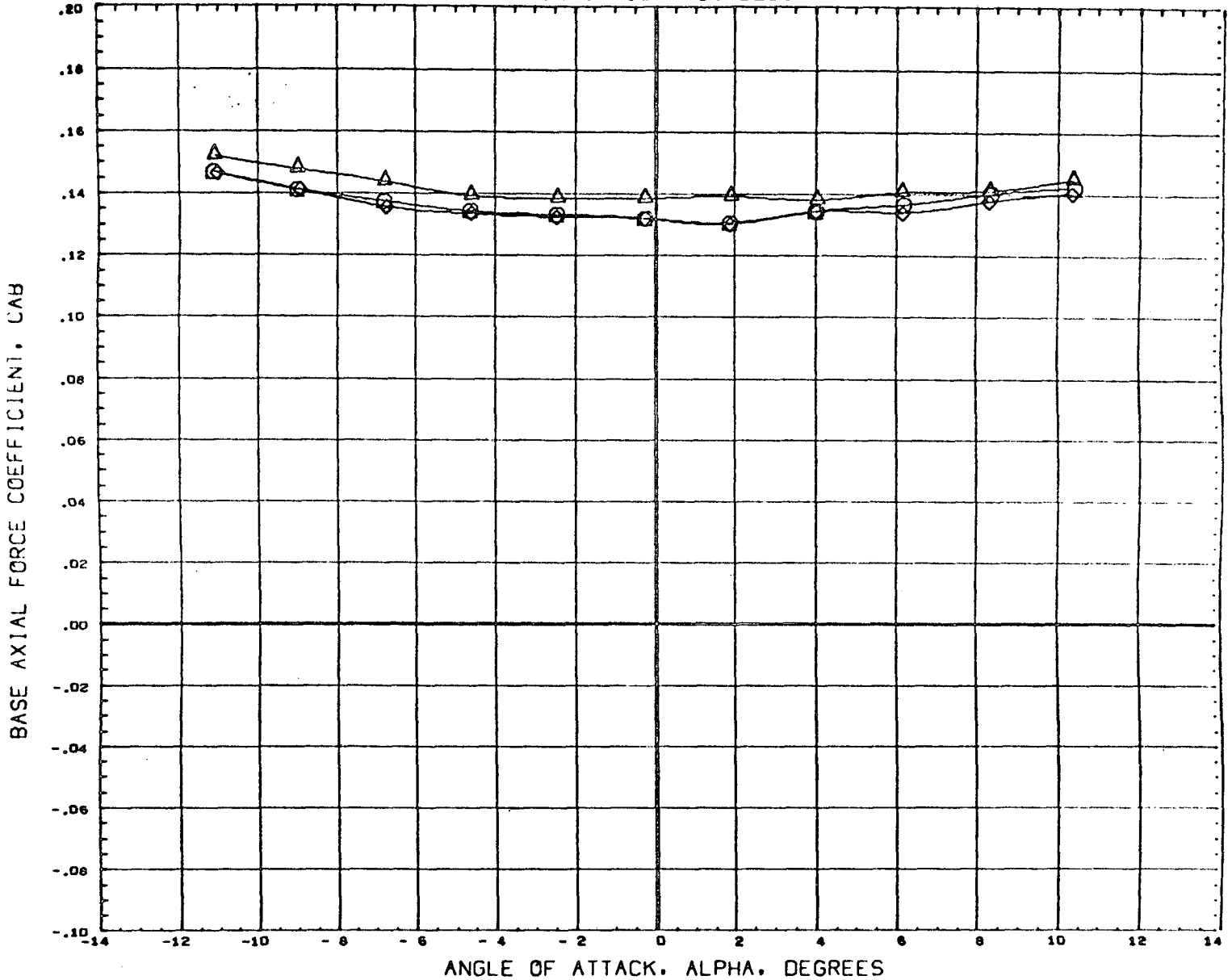
BASE AXIAL FORCE COEFFICIENT, CAB



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 90. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.5600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

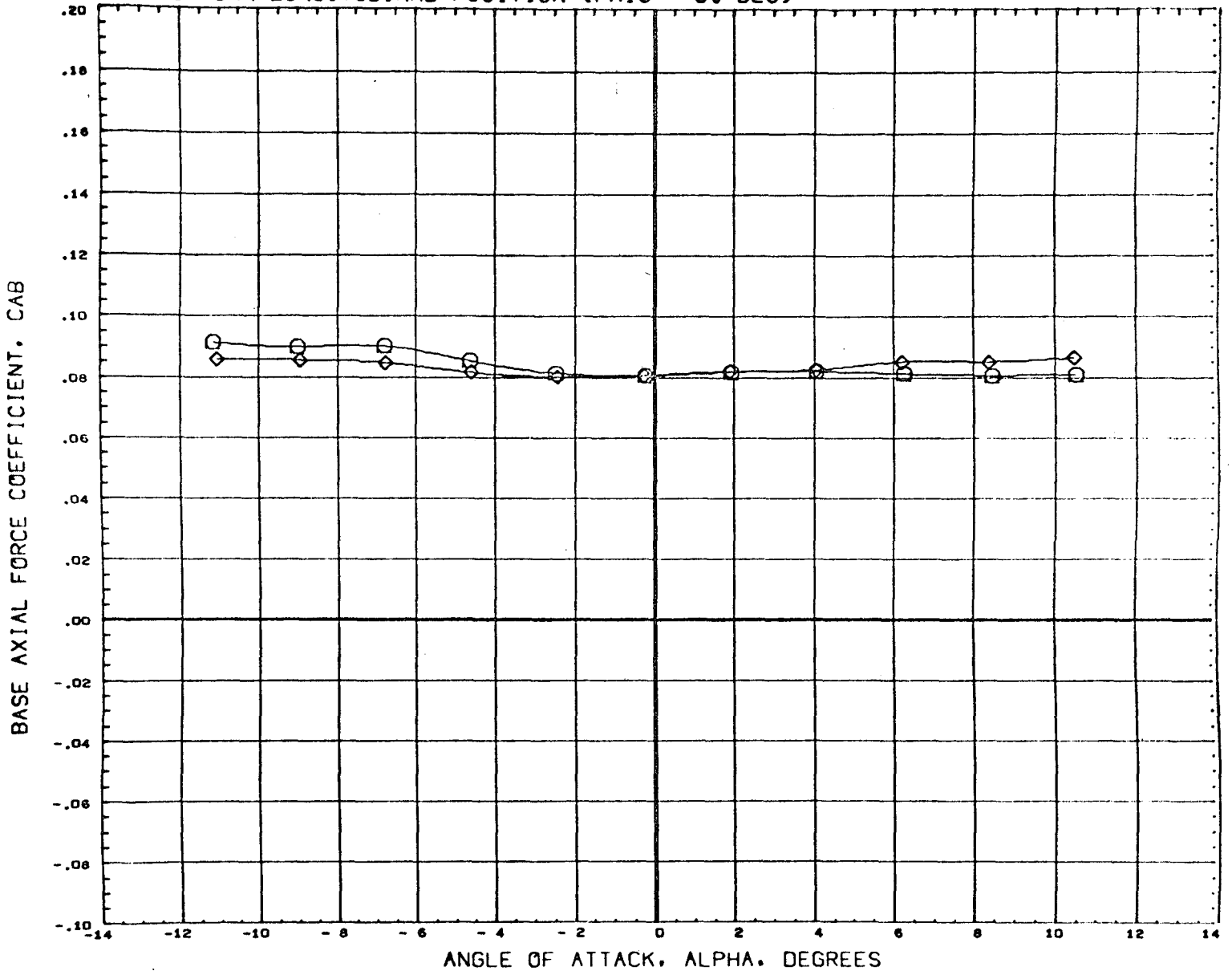
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	SREF 7.8800 SQ. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.624	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.885	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

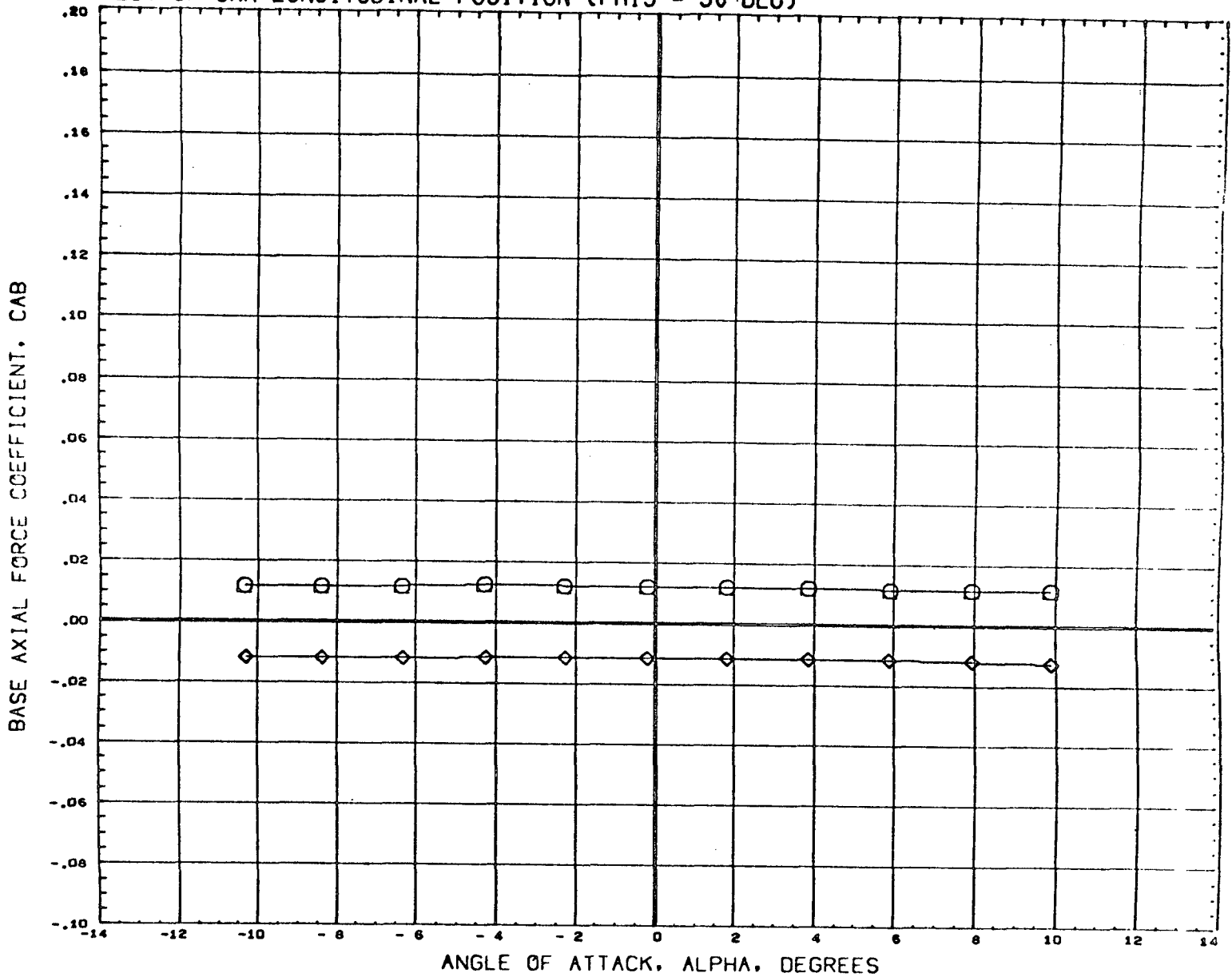


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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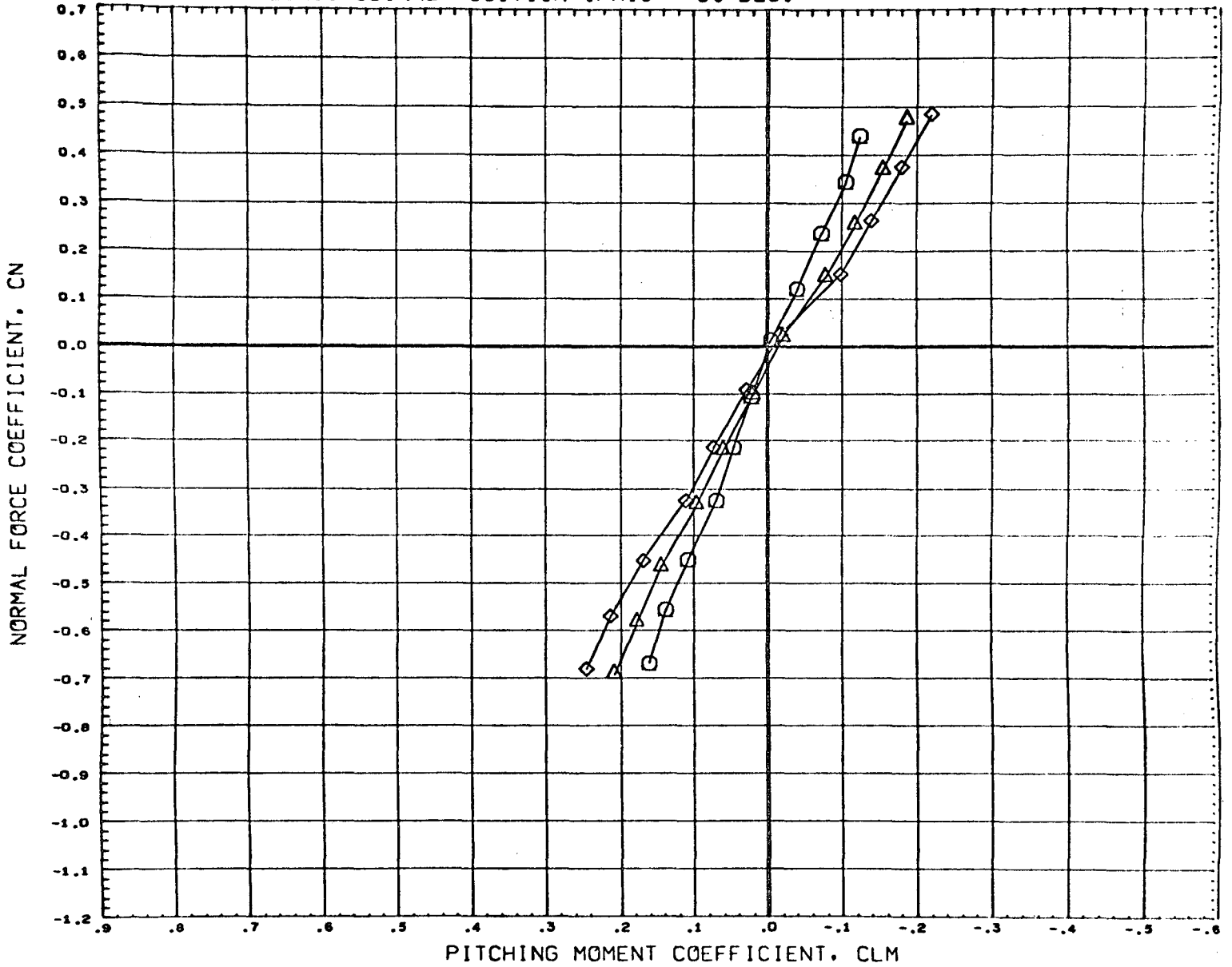
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

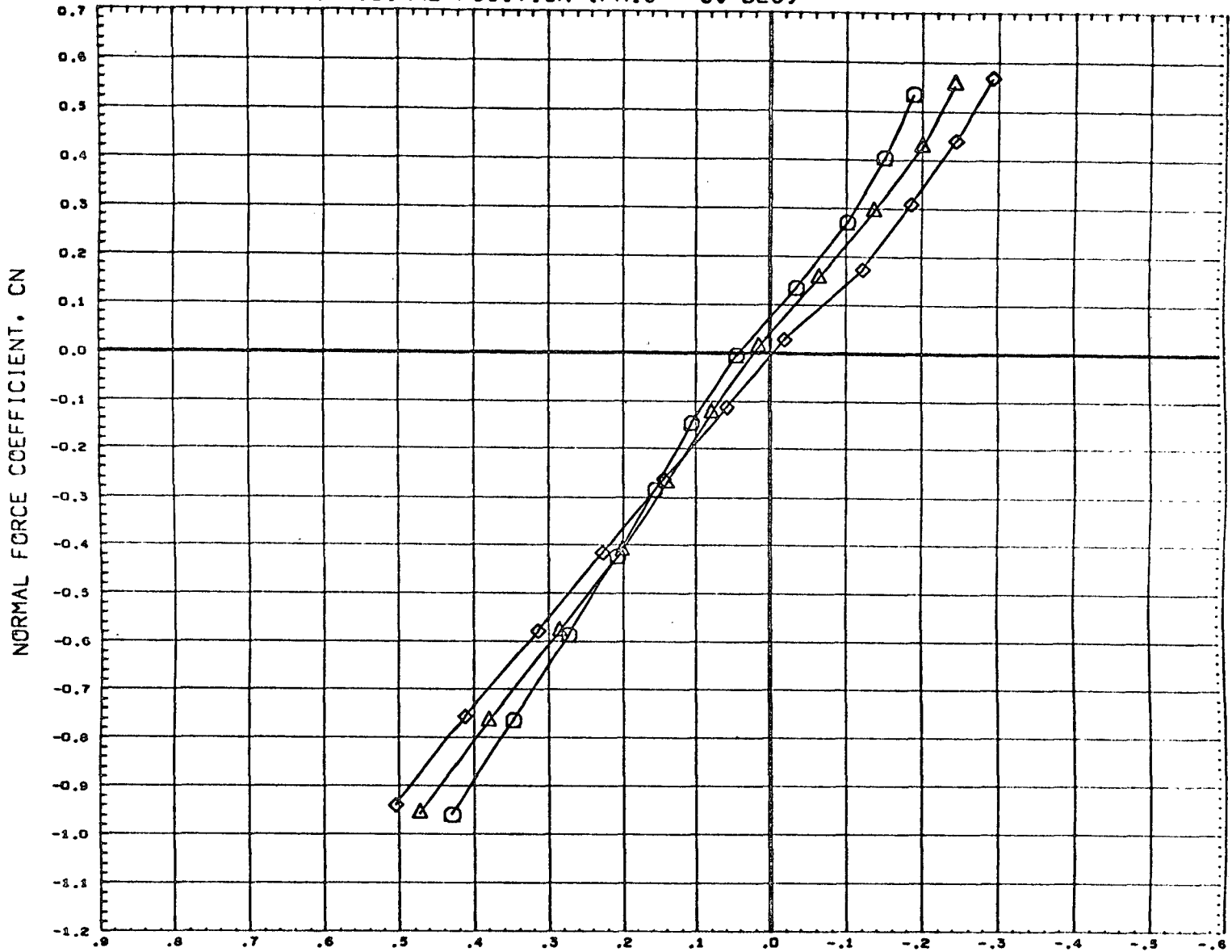
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

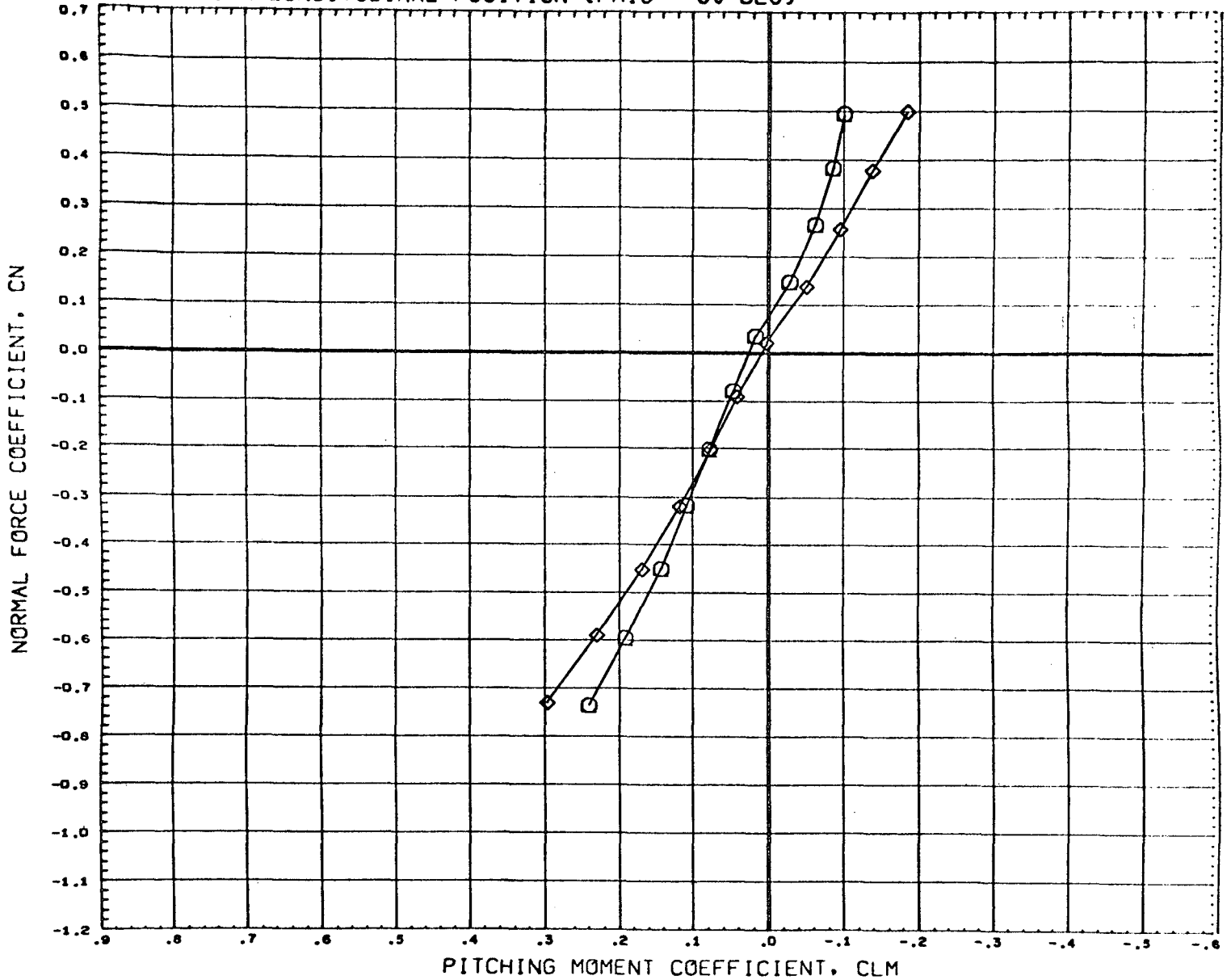


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19



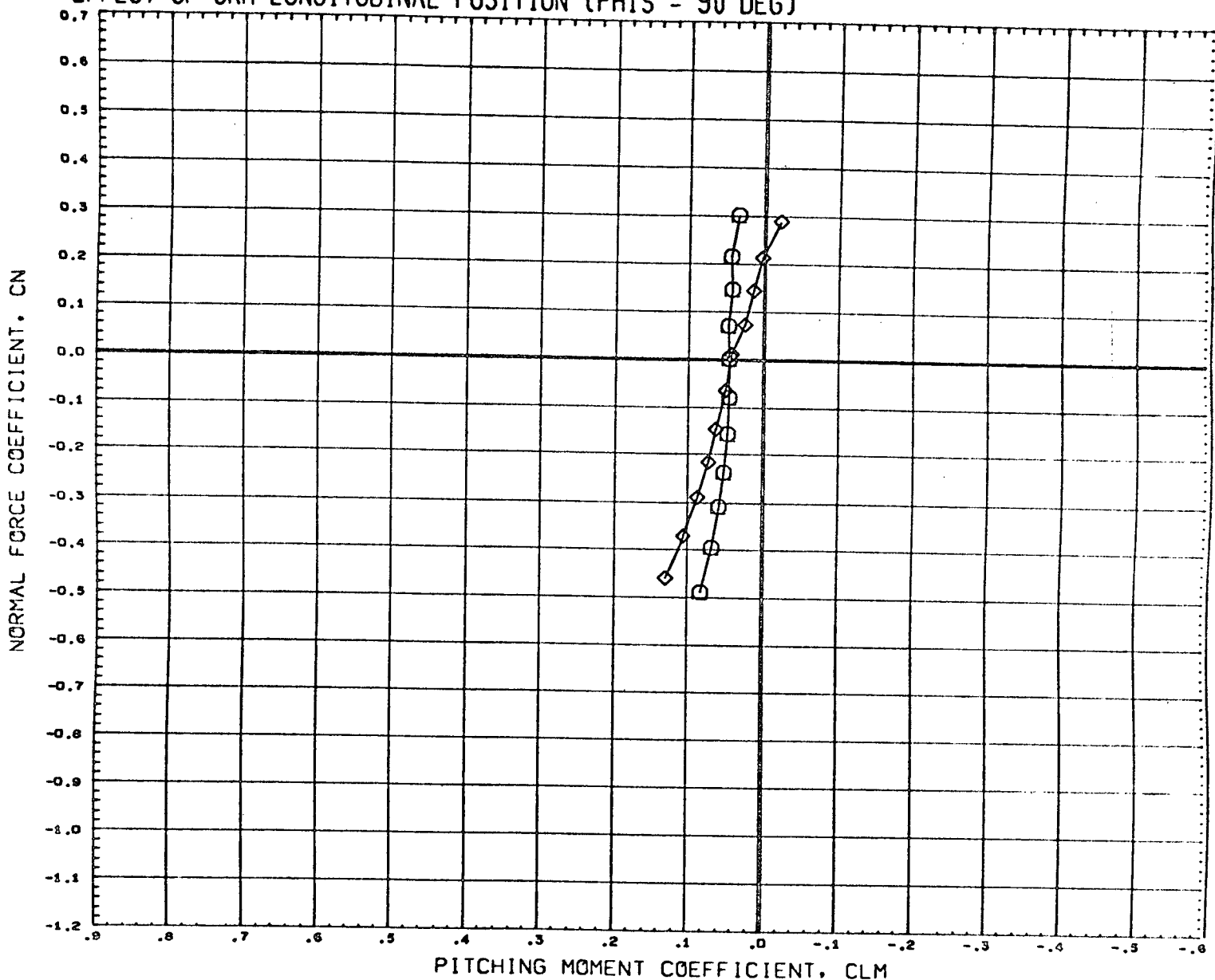
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 30. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2460 IN. SCALE 0.0040 SCALE

MACH 1.97

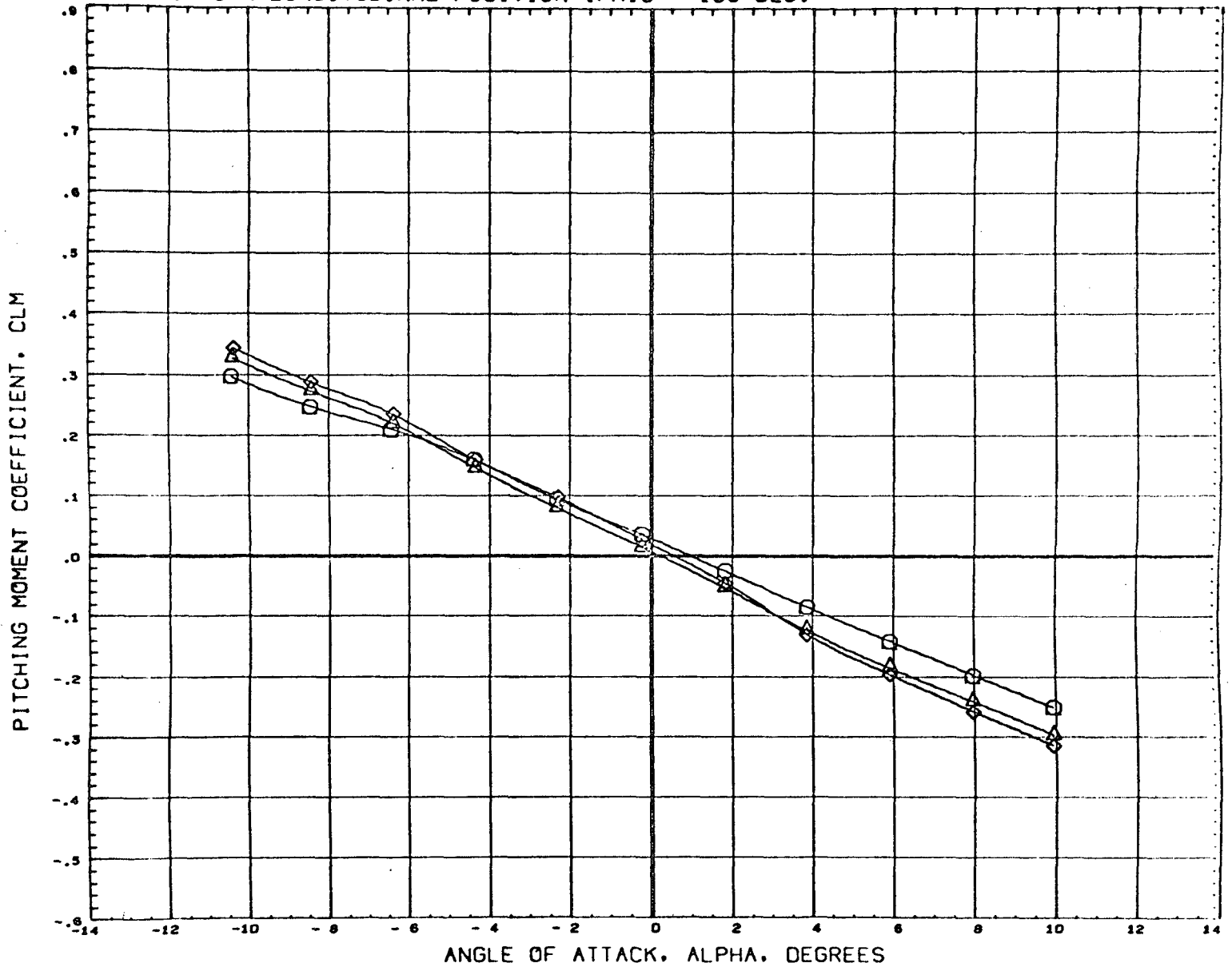
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71015)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(B71085)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.865	0.000	BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



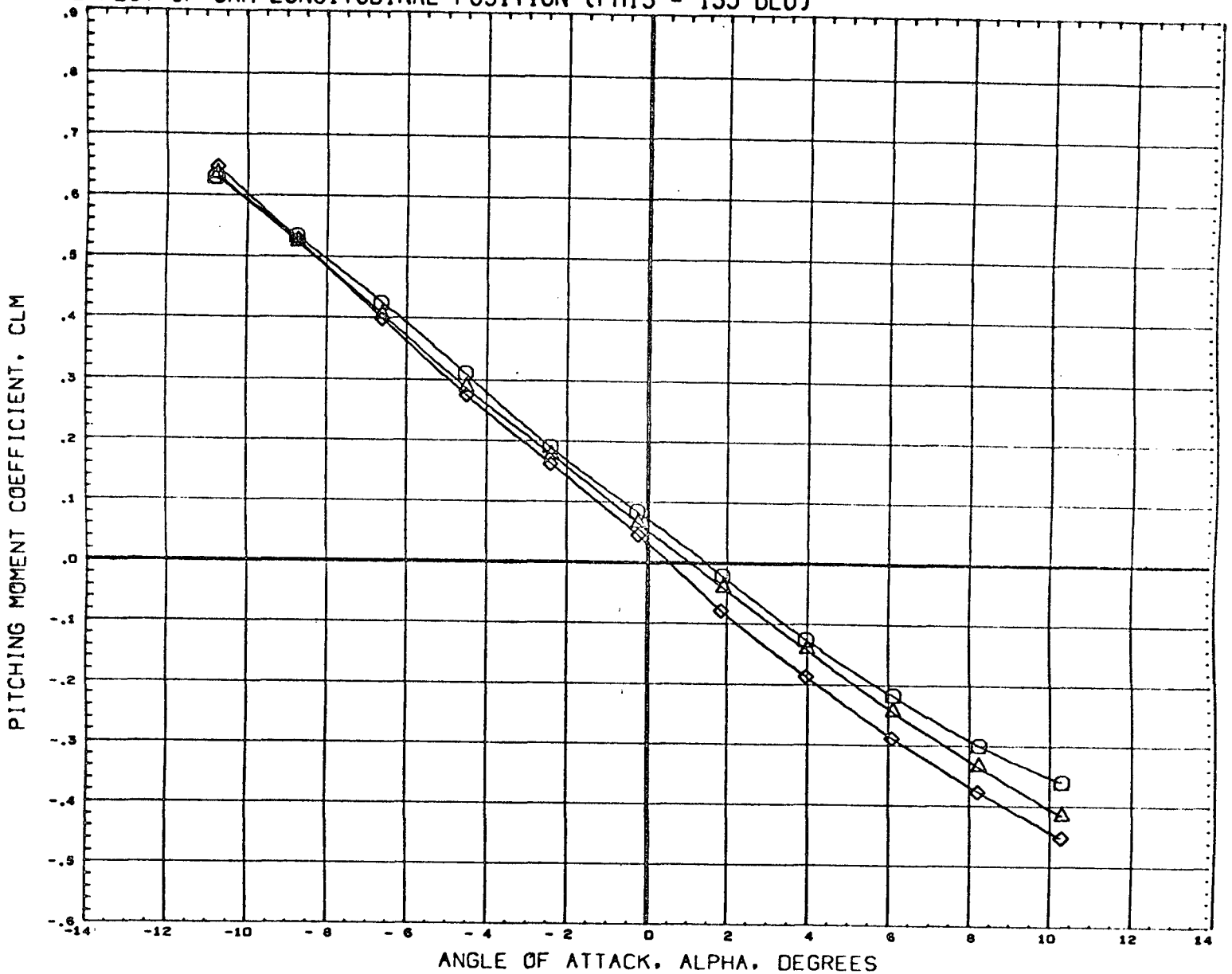
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

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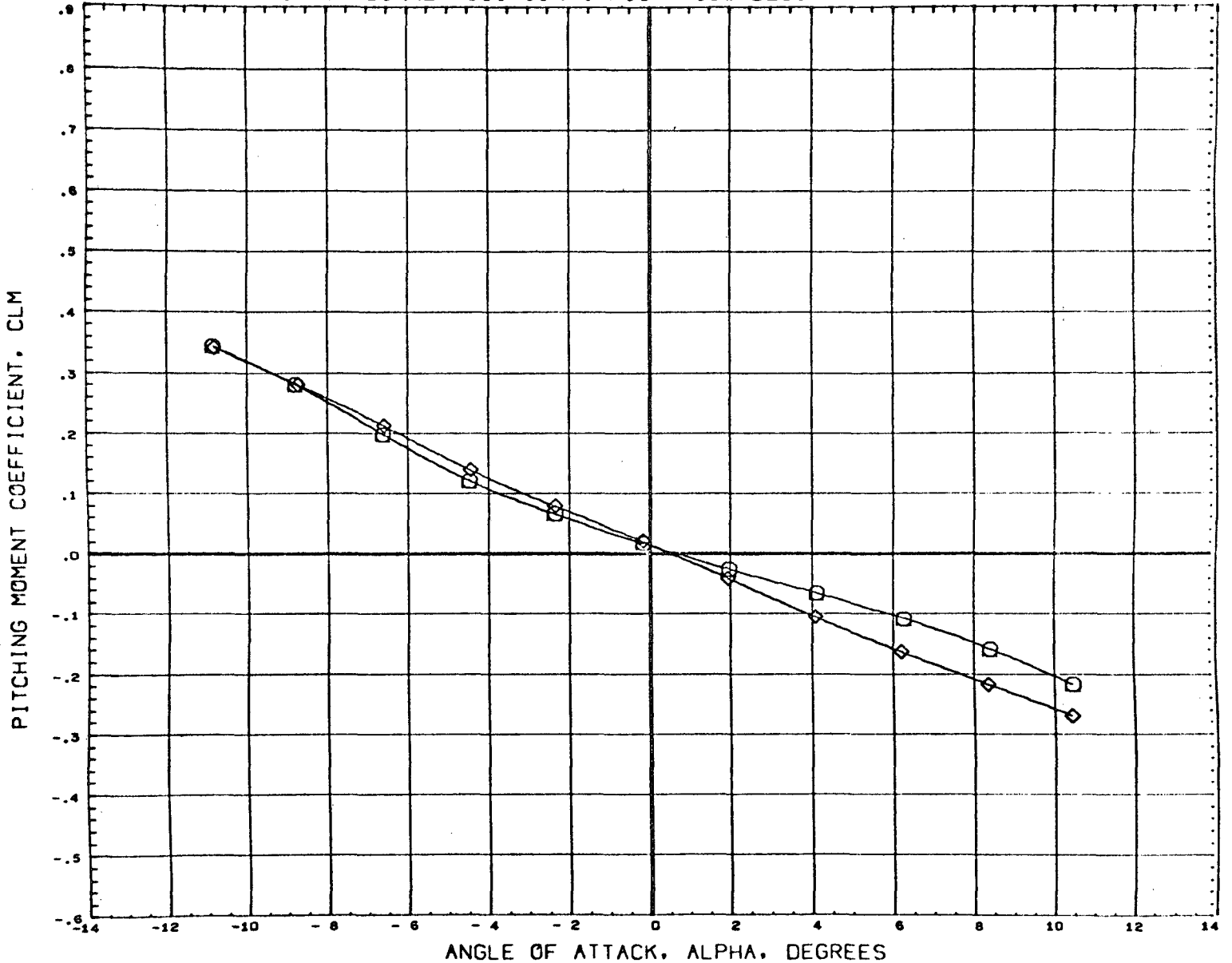
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	SREF 7.8800 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.624	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.893	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

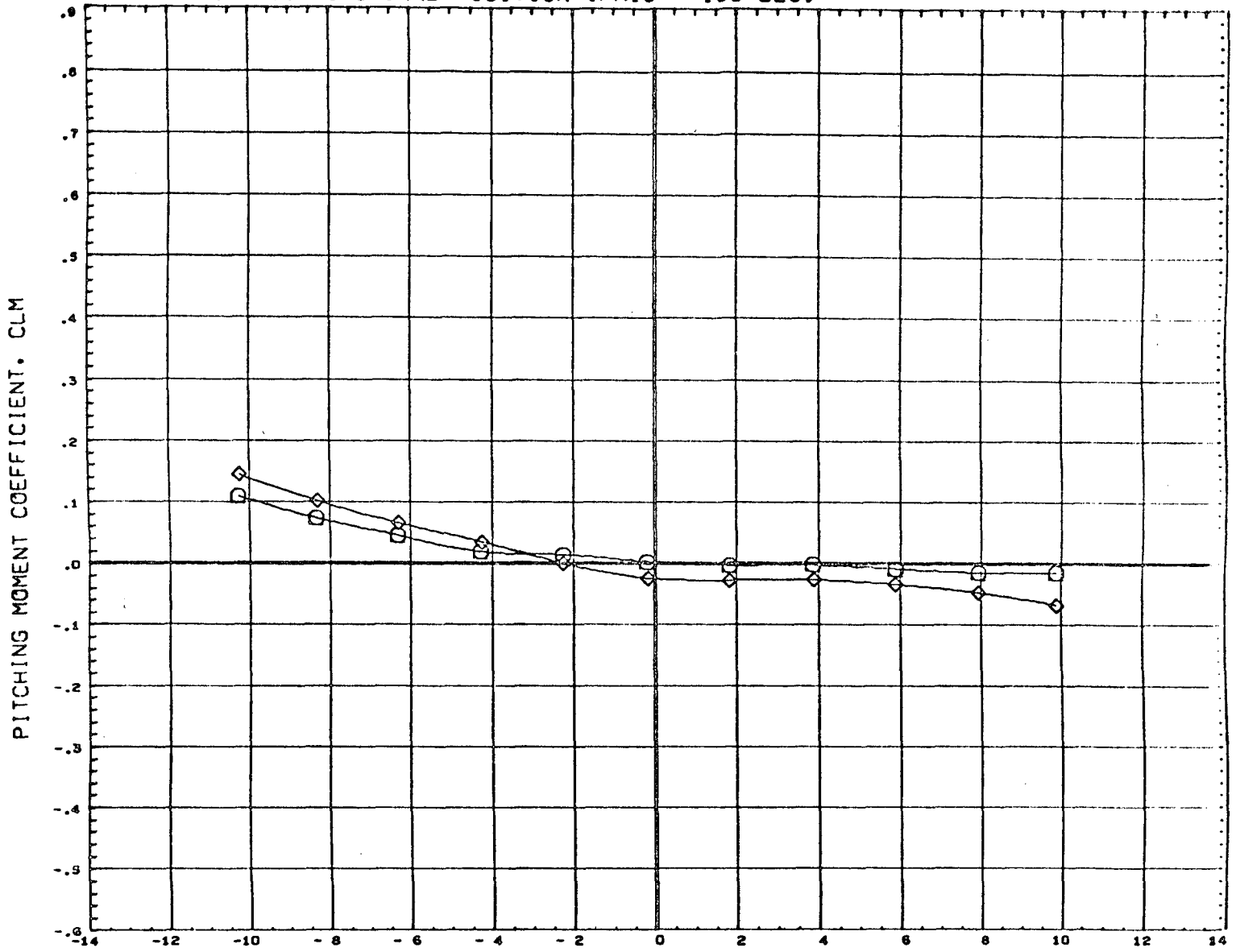


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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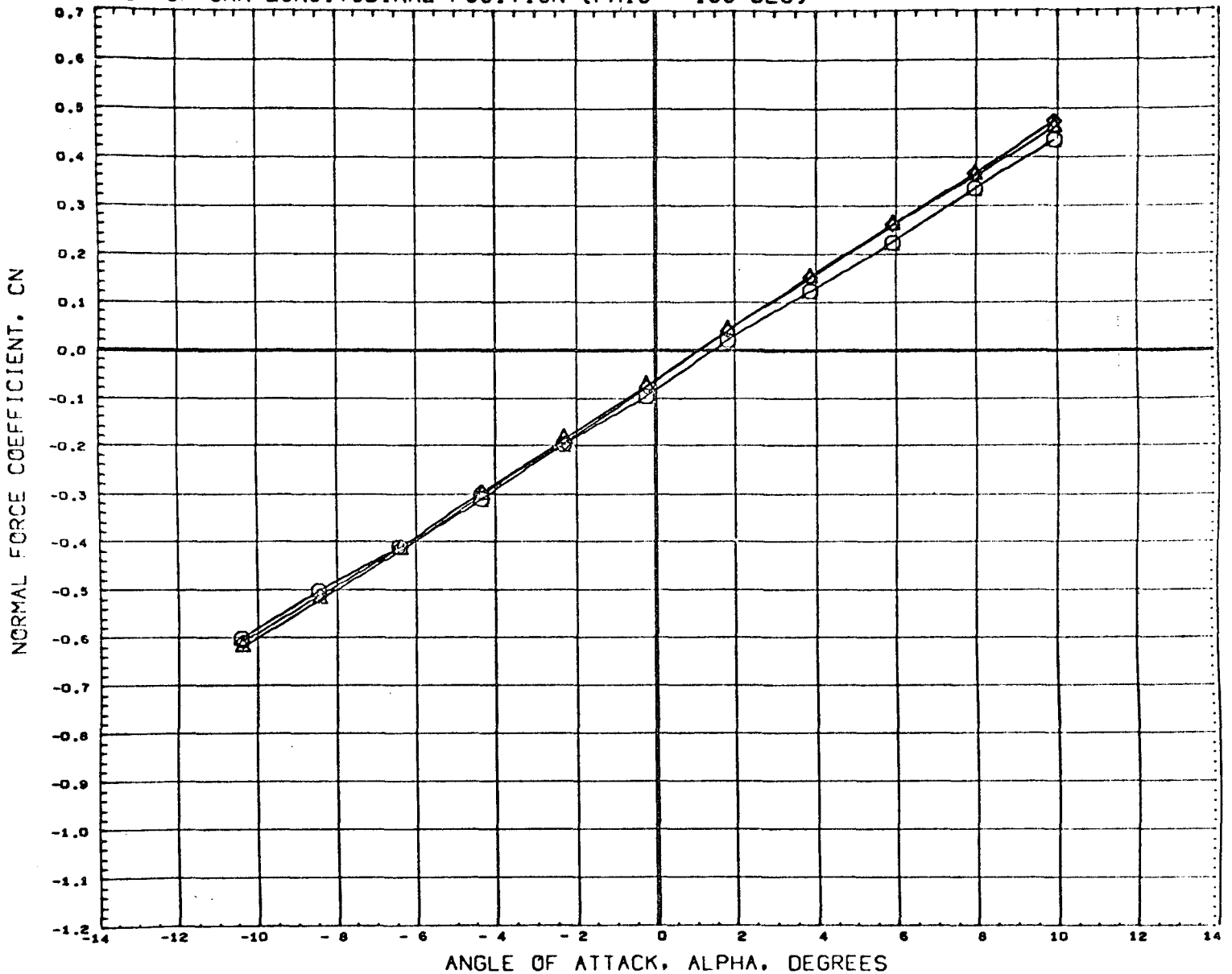
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBNIC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

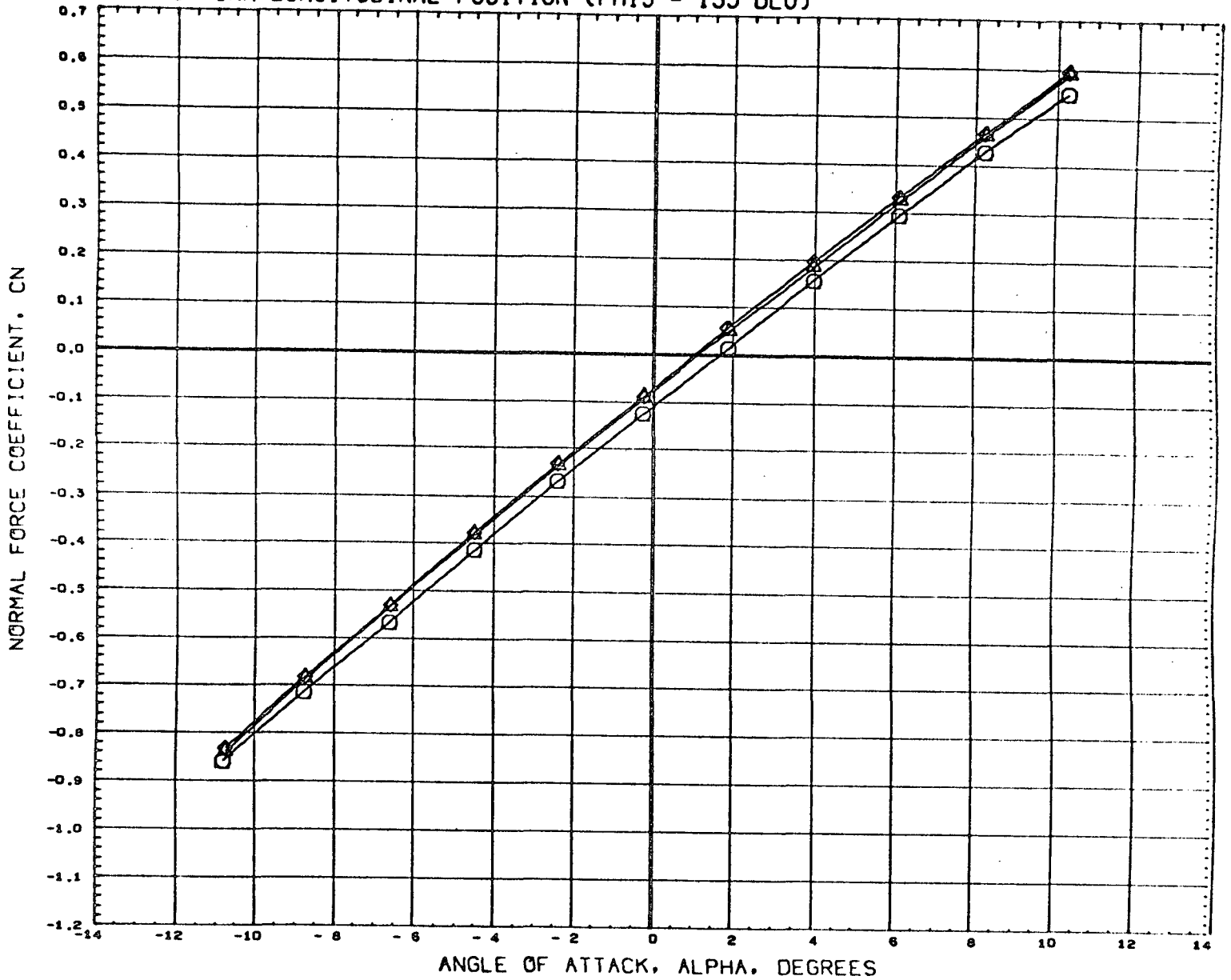
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1O1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	135.000	0.000	0.000	SREF 7.8900 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

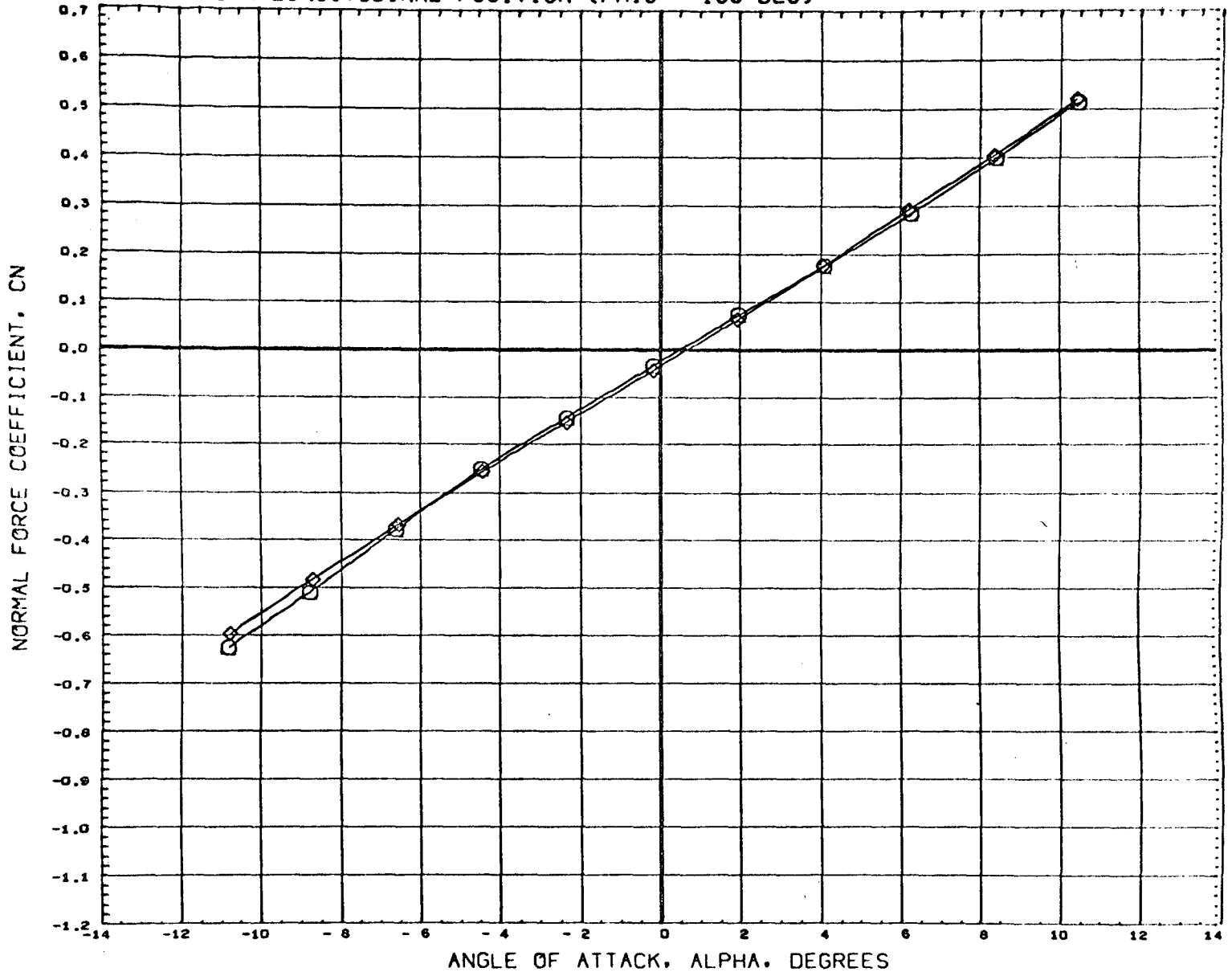


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71097)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

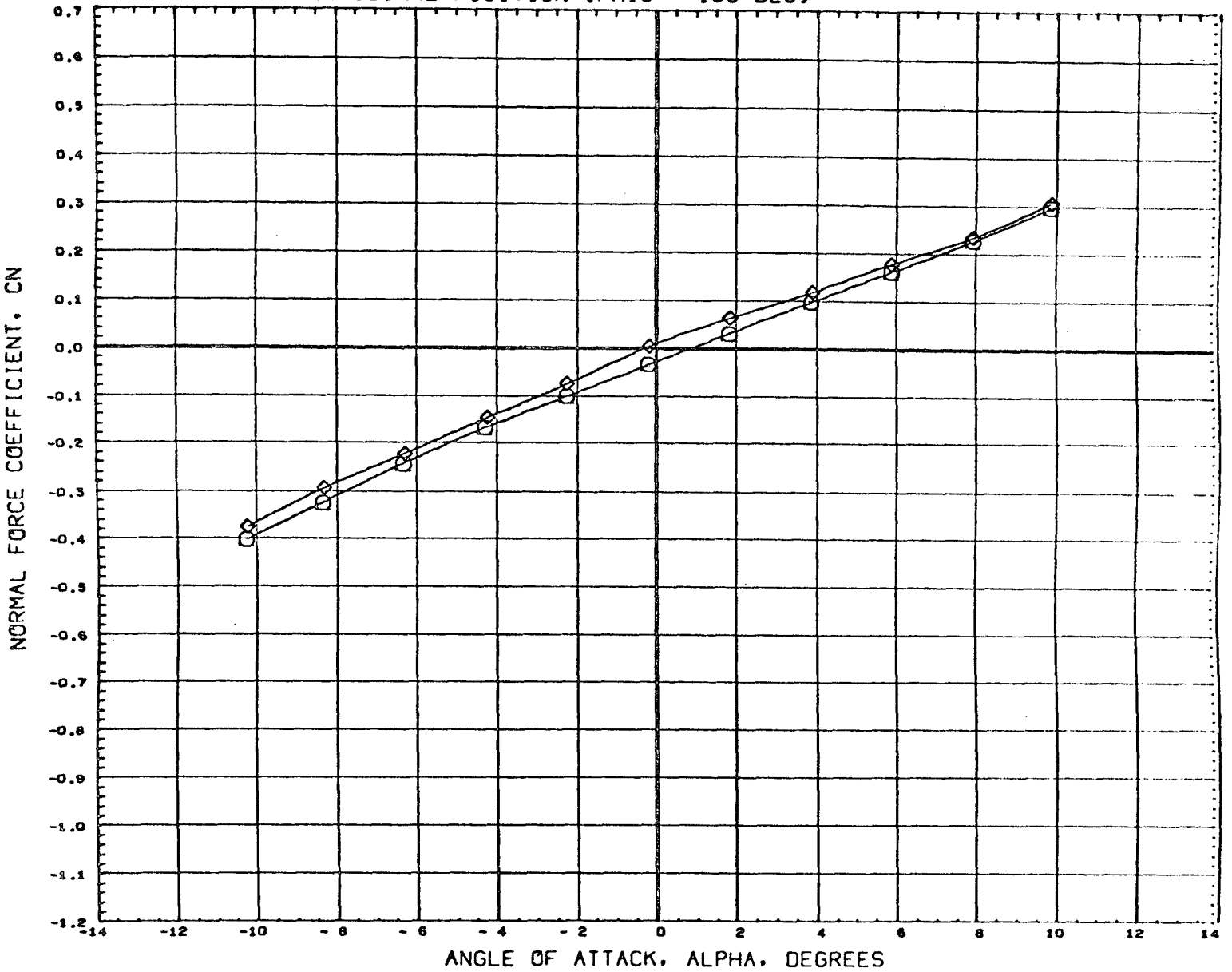


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS		-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.97

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# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

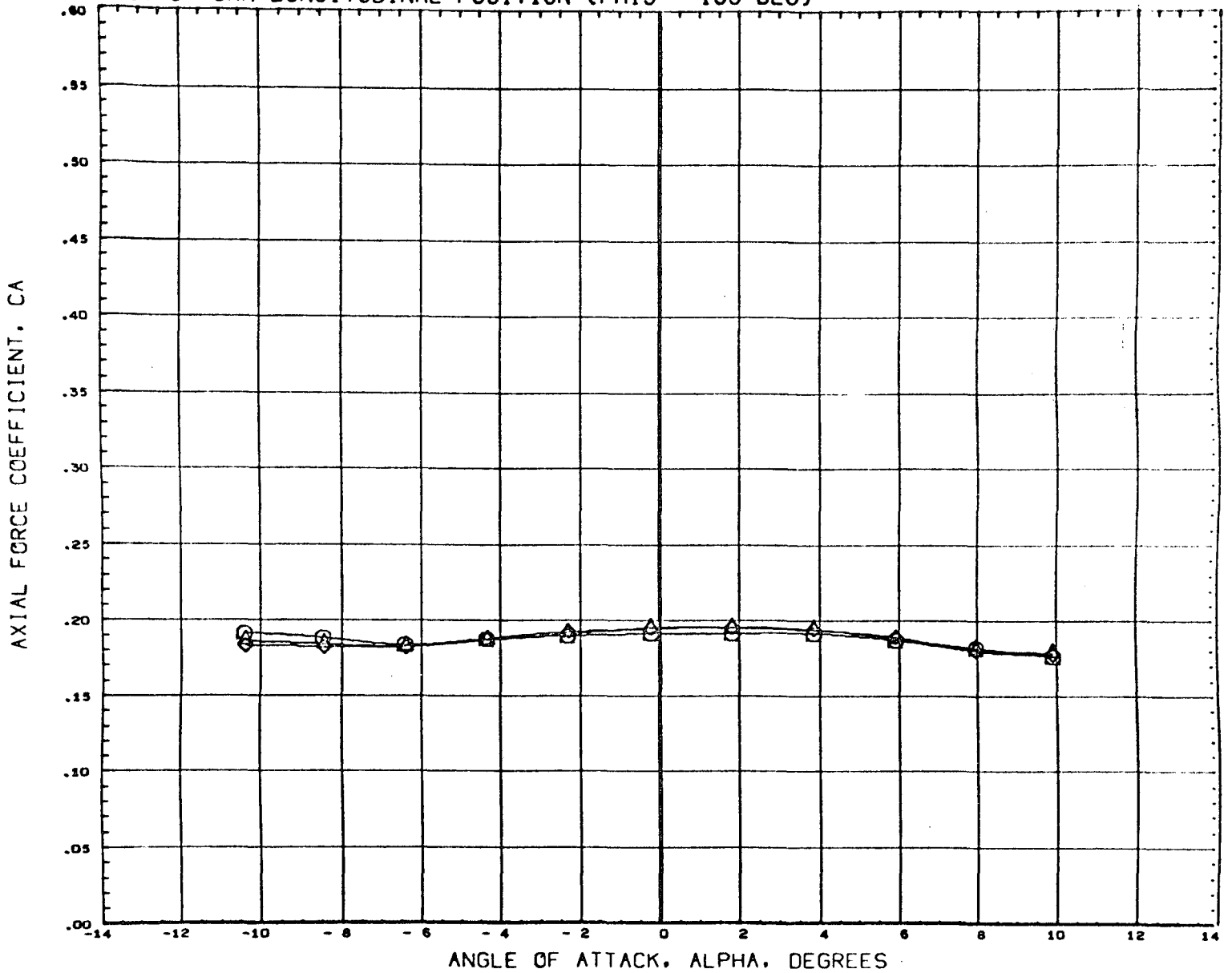


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

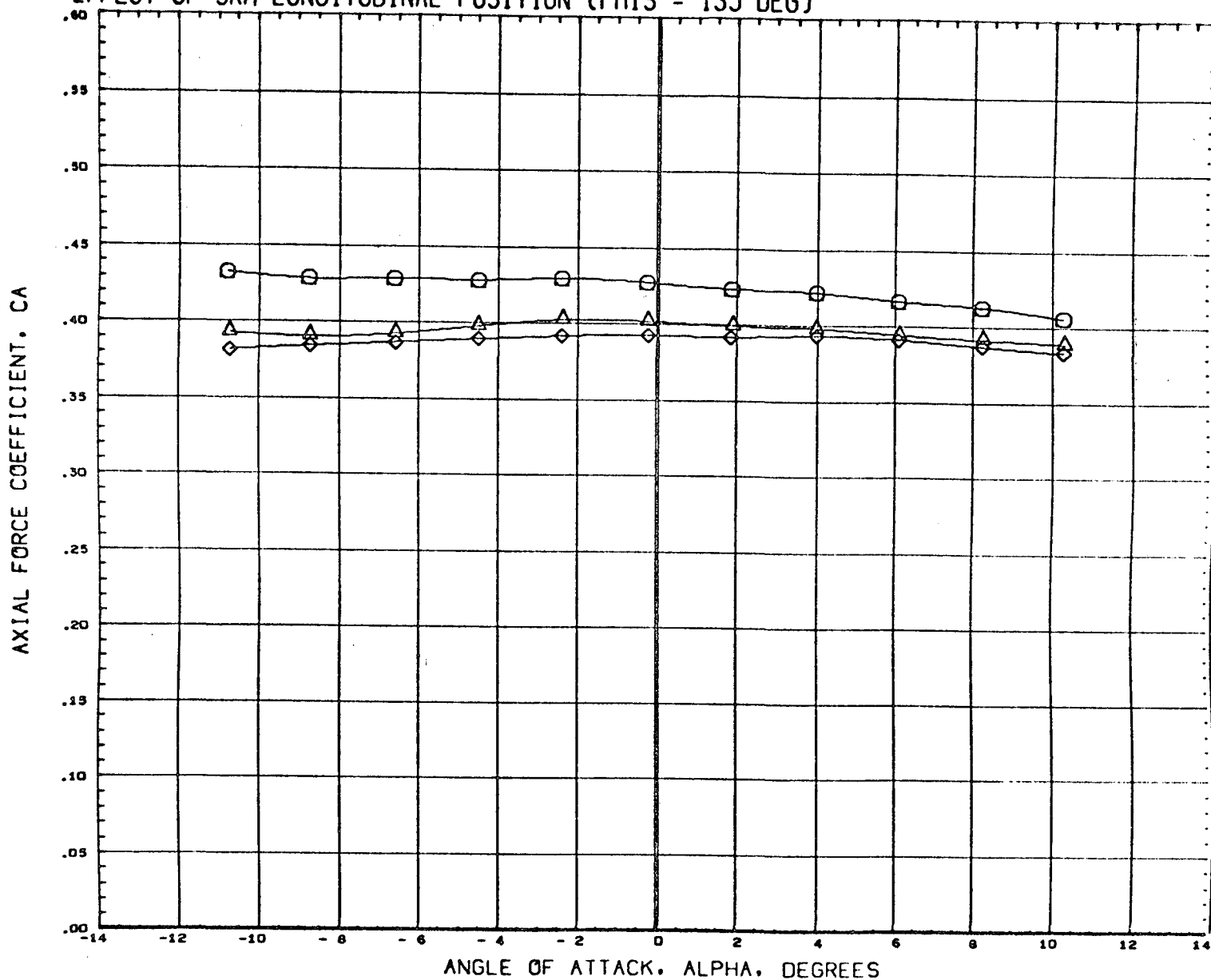


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

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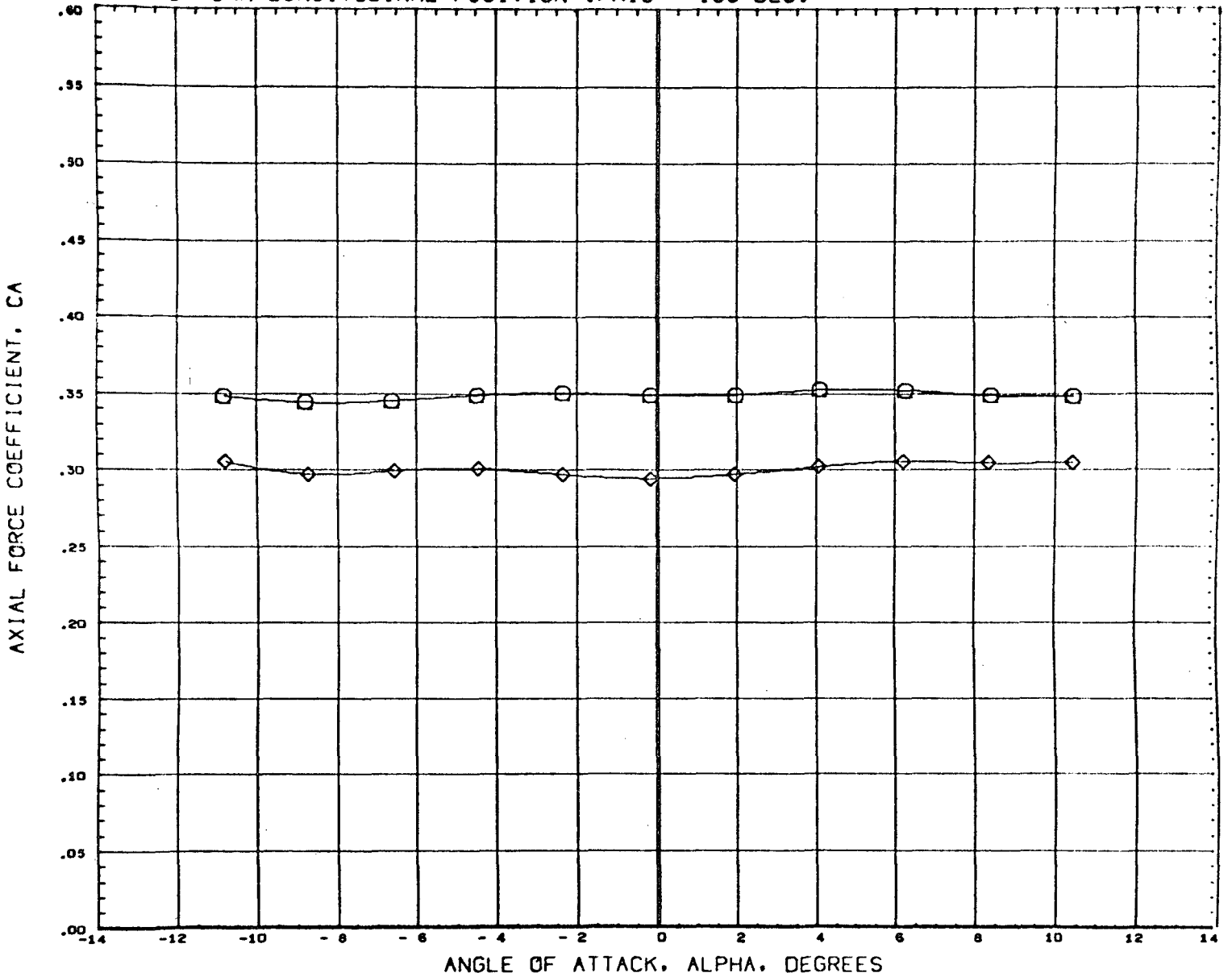
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

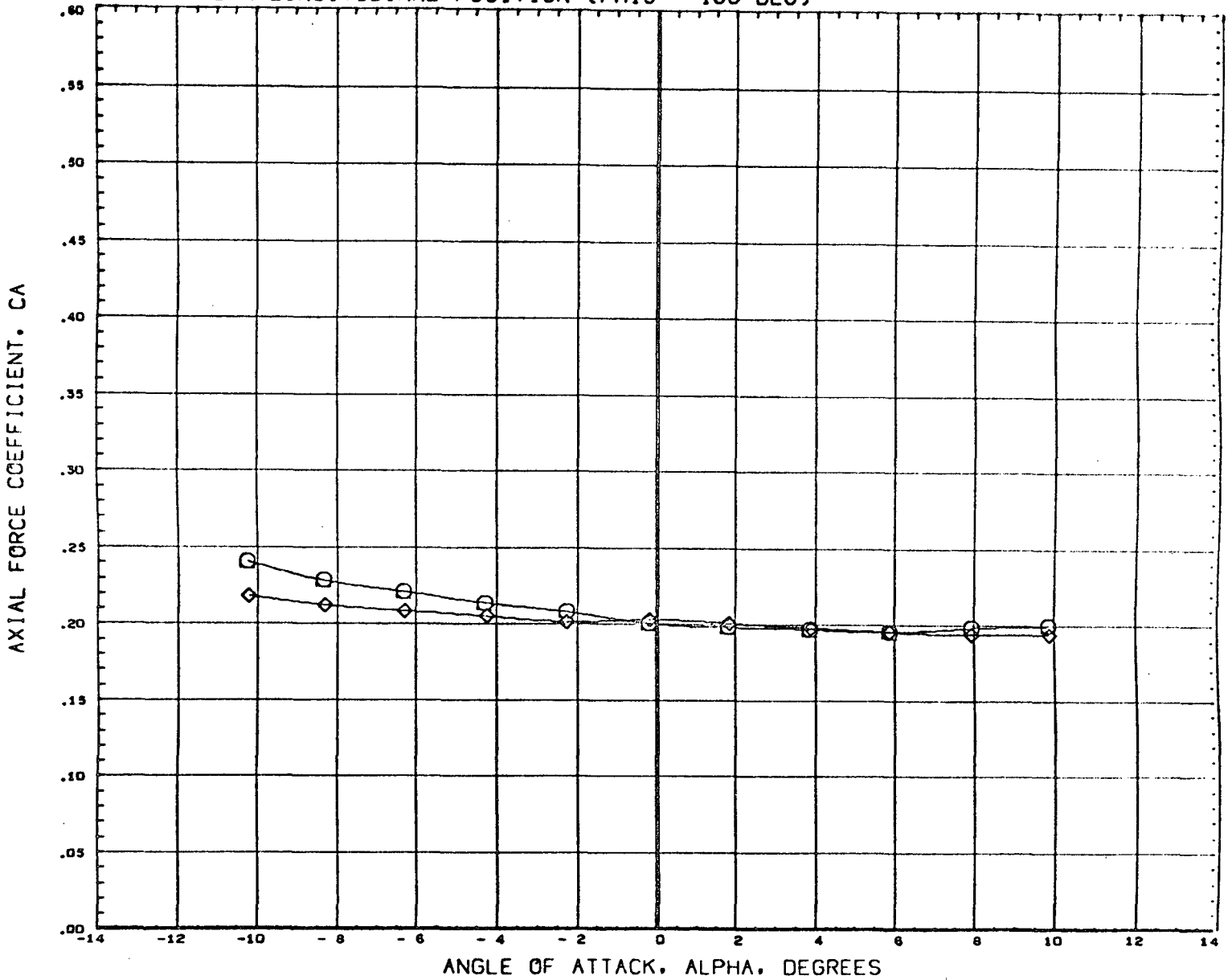


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SO. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

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EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

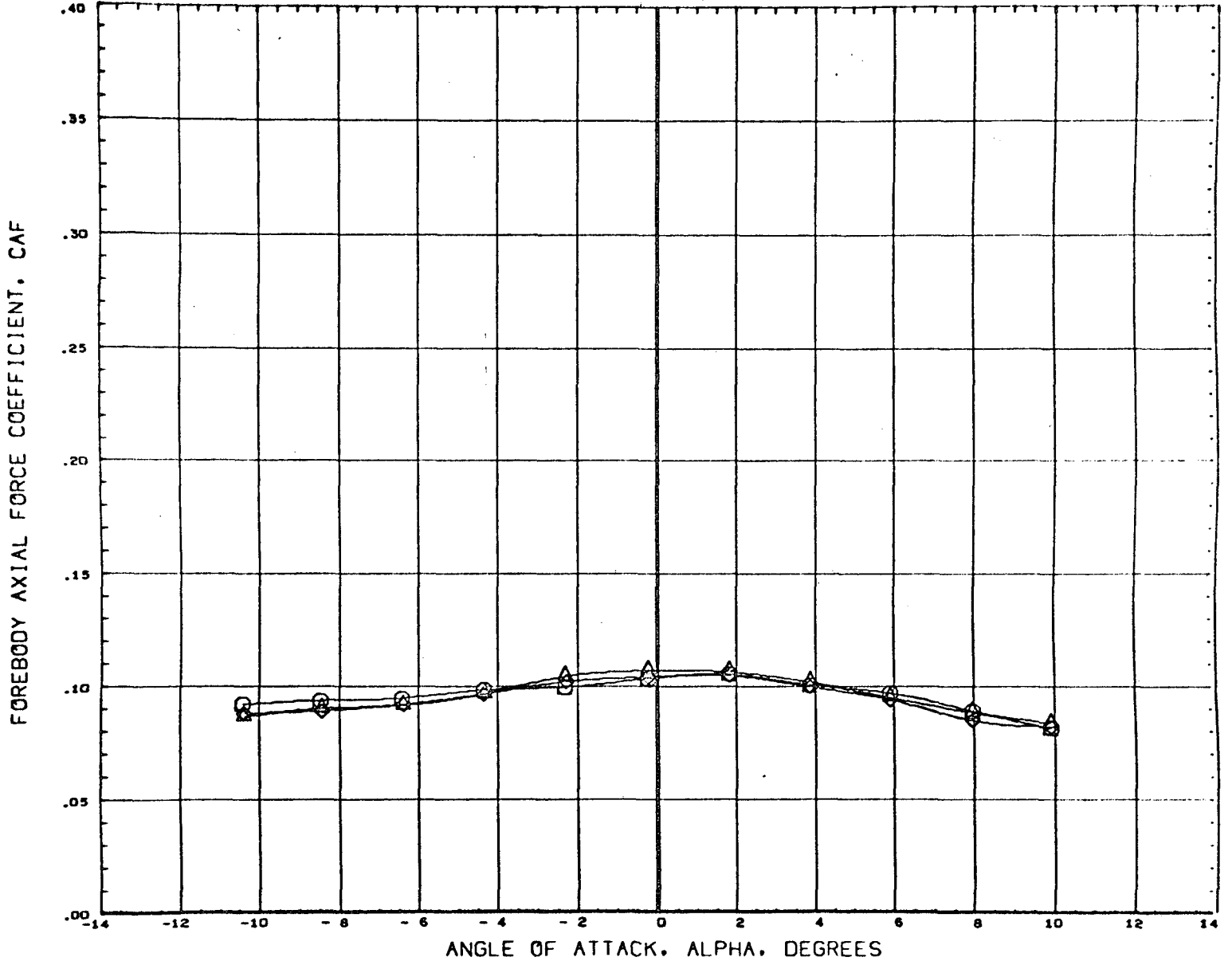


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

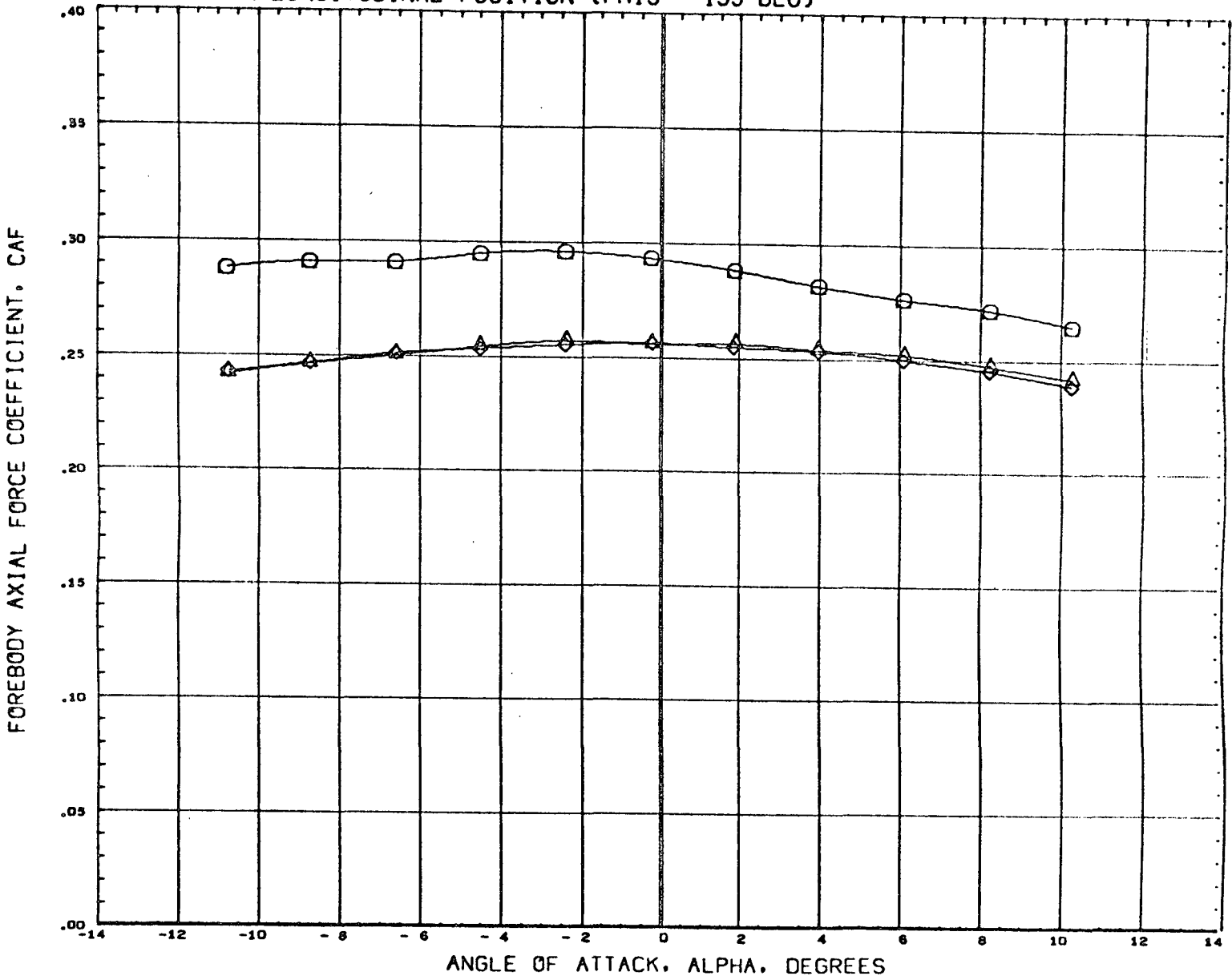


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1O1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71037)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

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# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

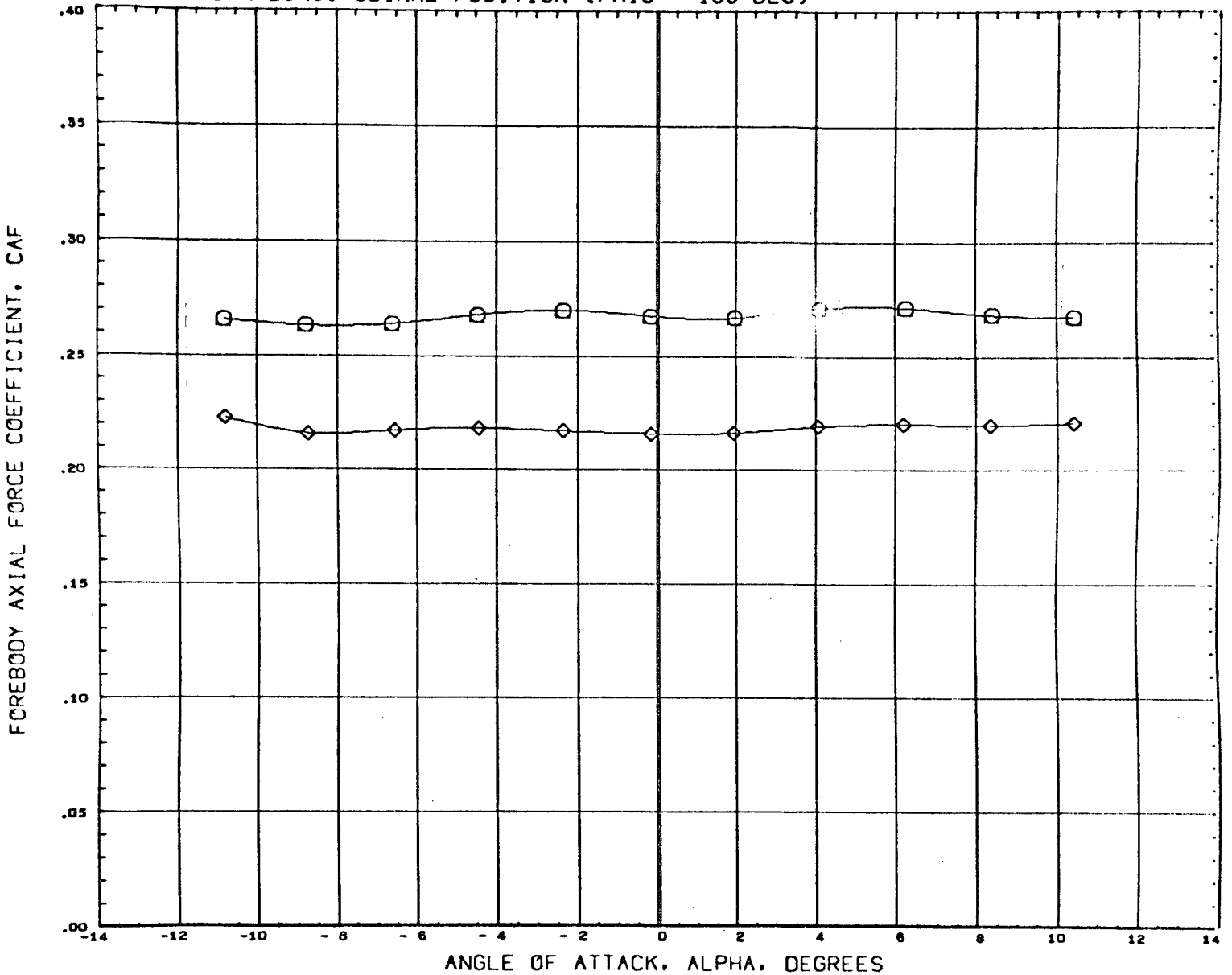


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITAL POSITION	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	SREF 7.8800 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.624	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.885	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



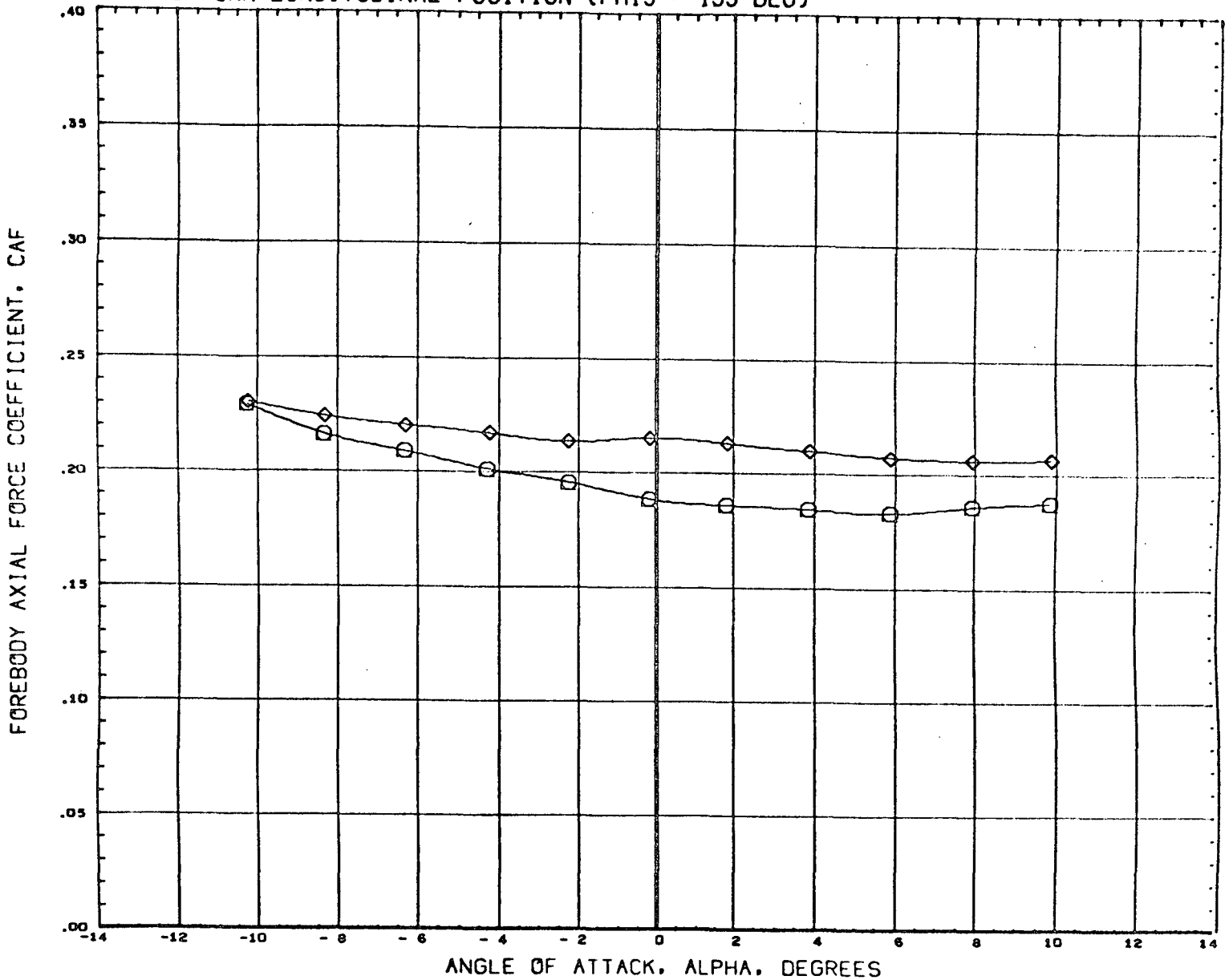
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

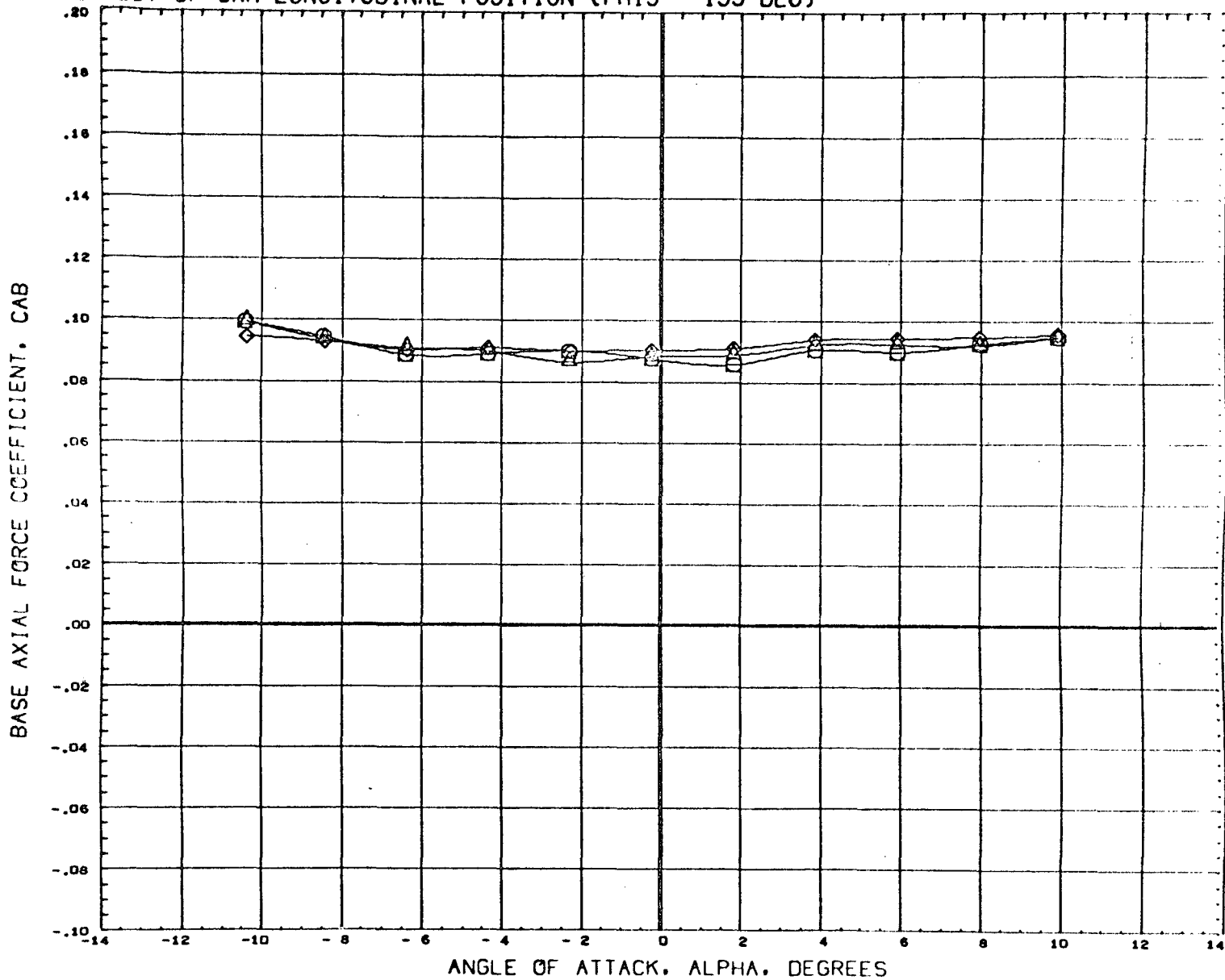
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



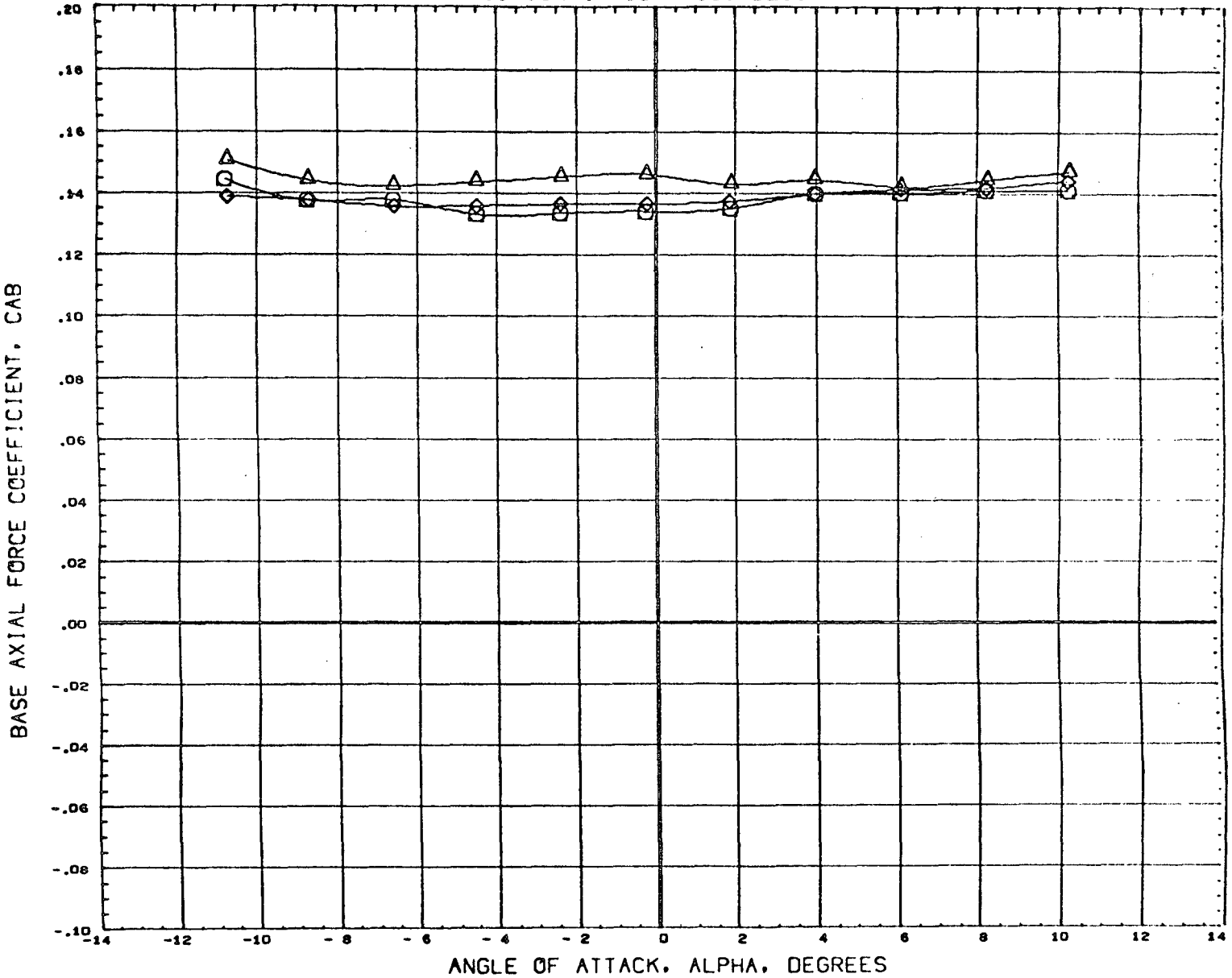
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

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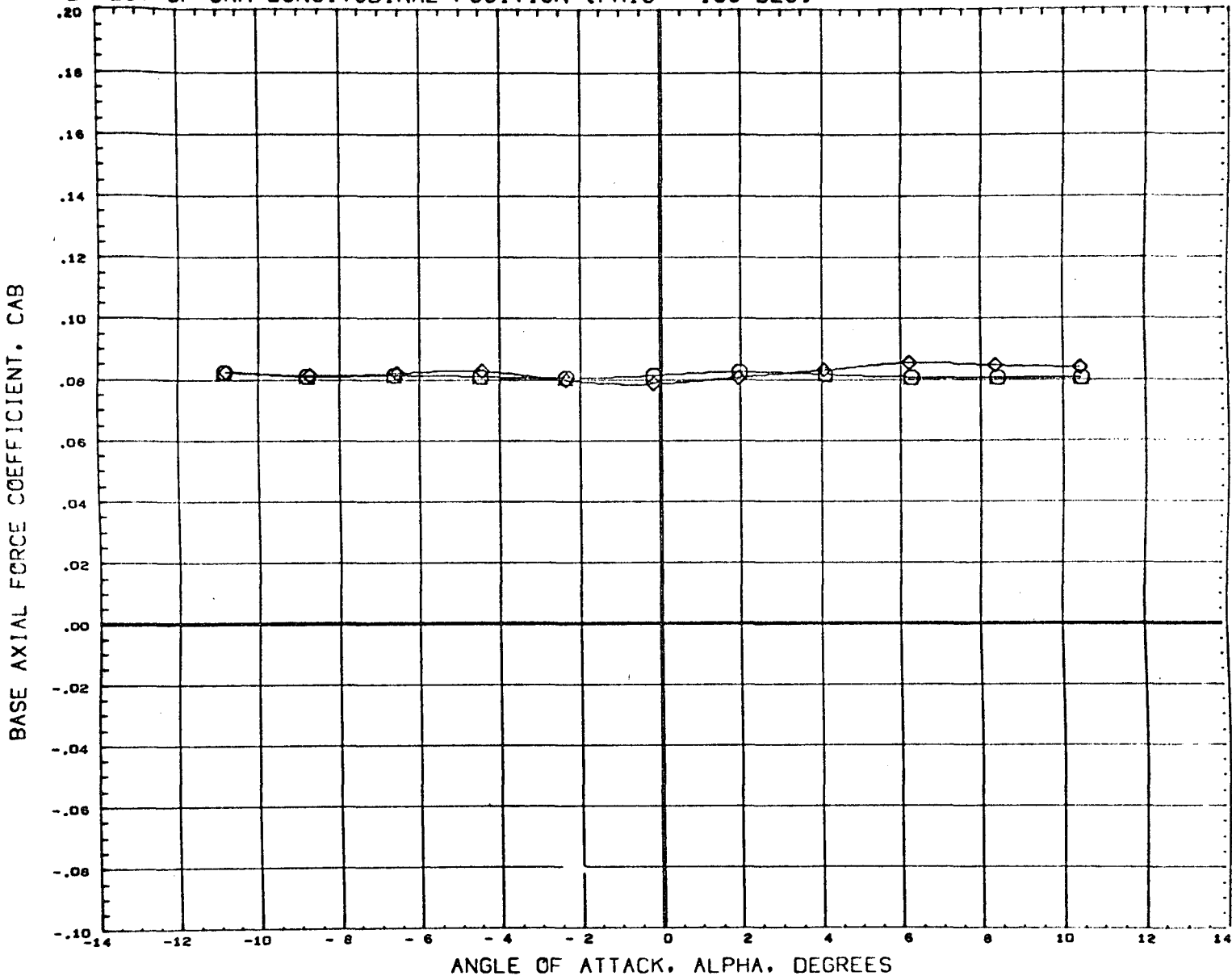
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

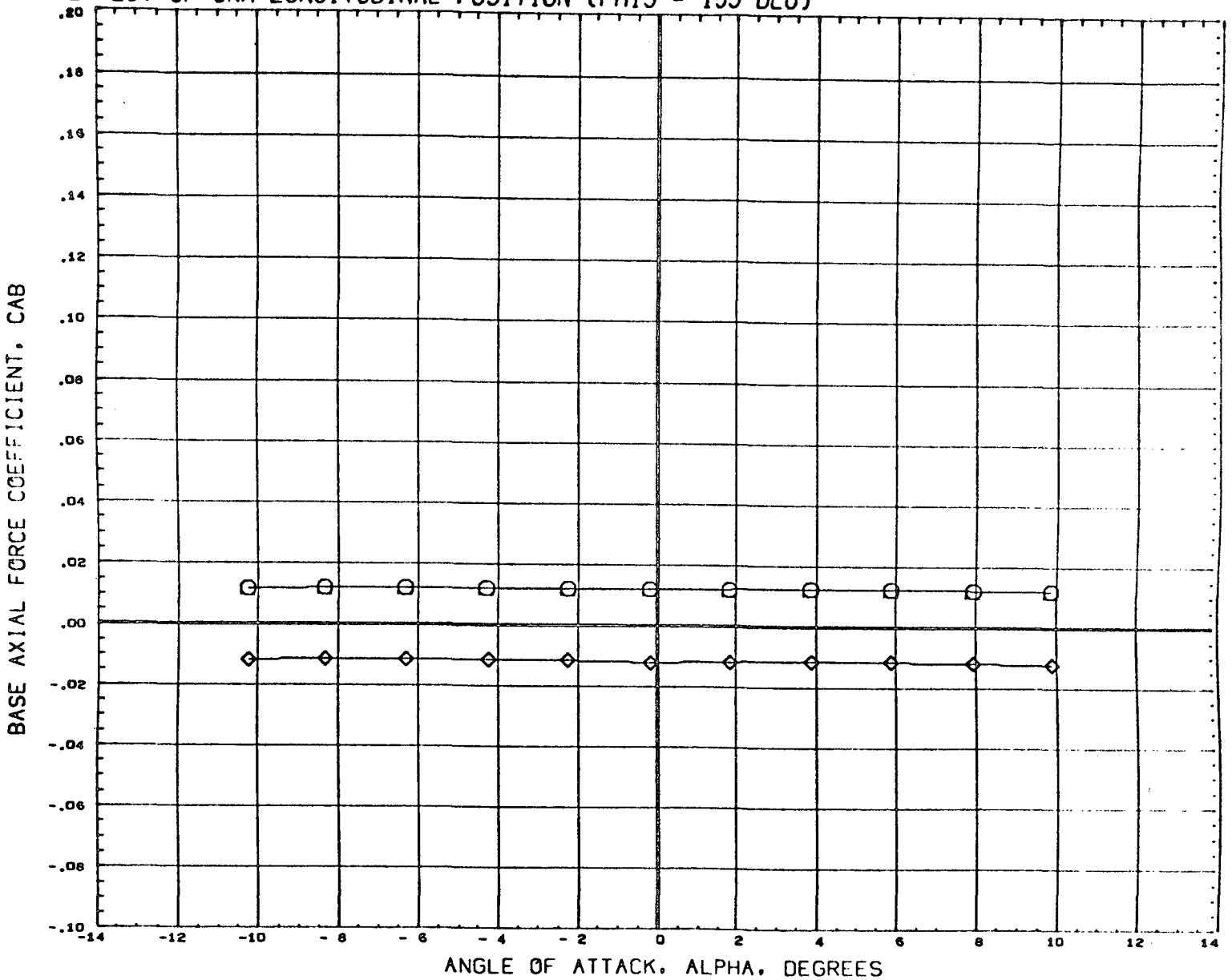
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

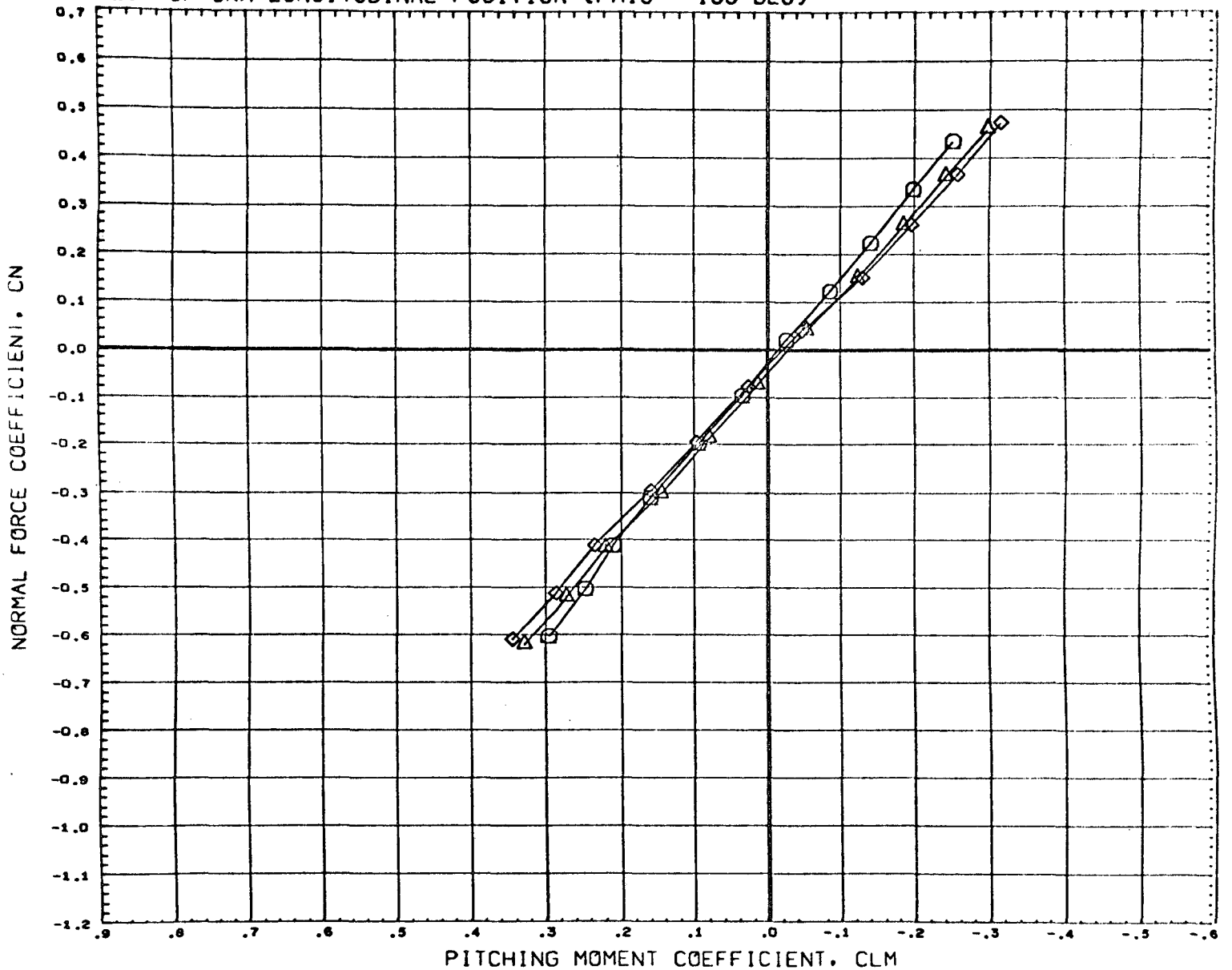
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

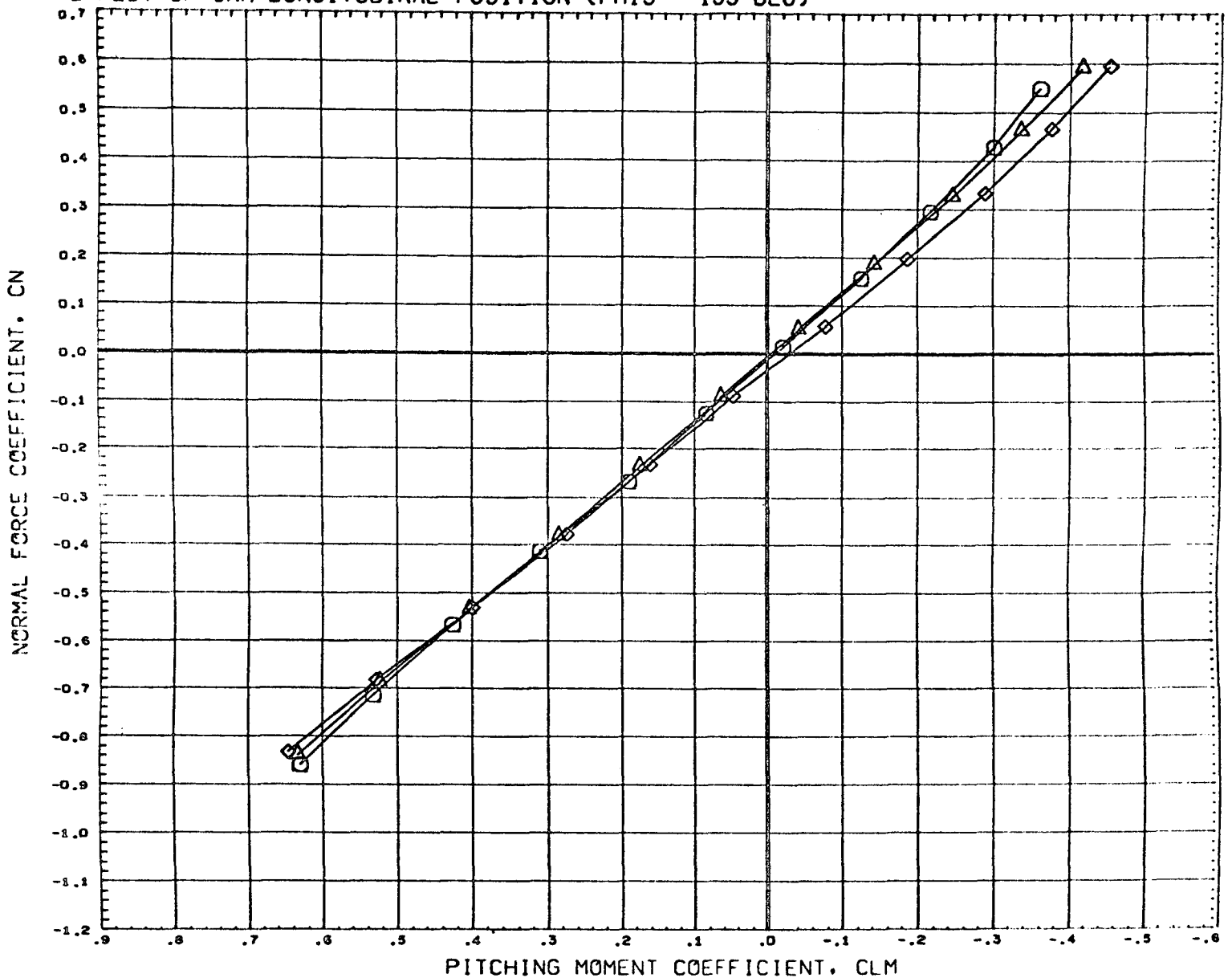


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

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# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

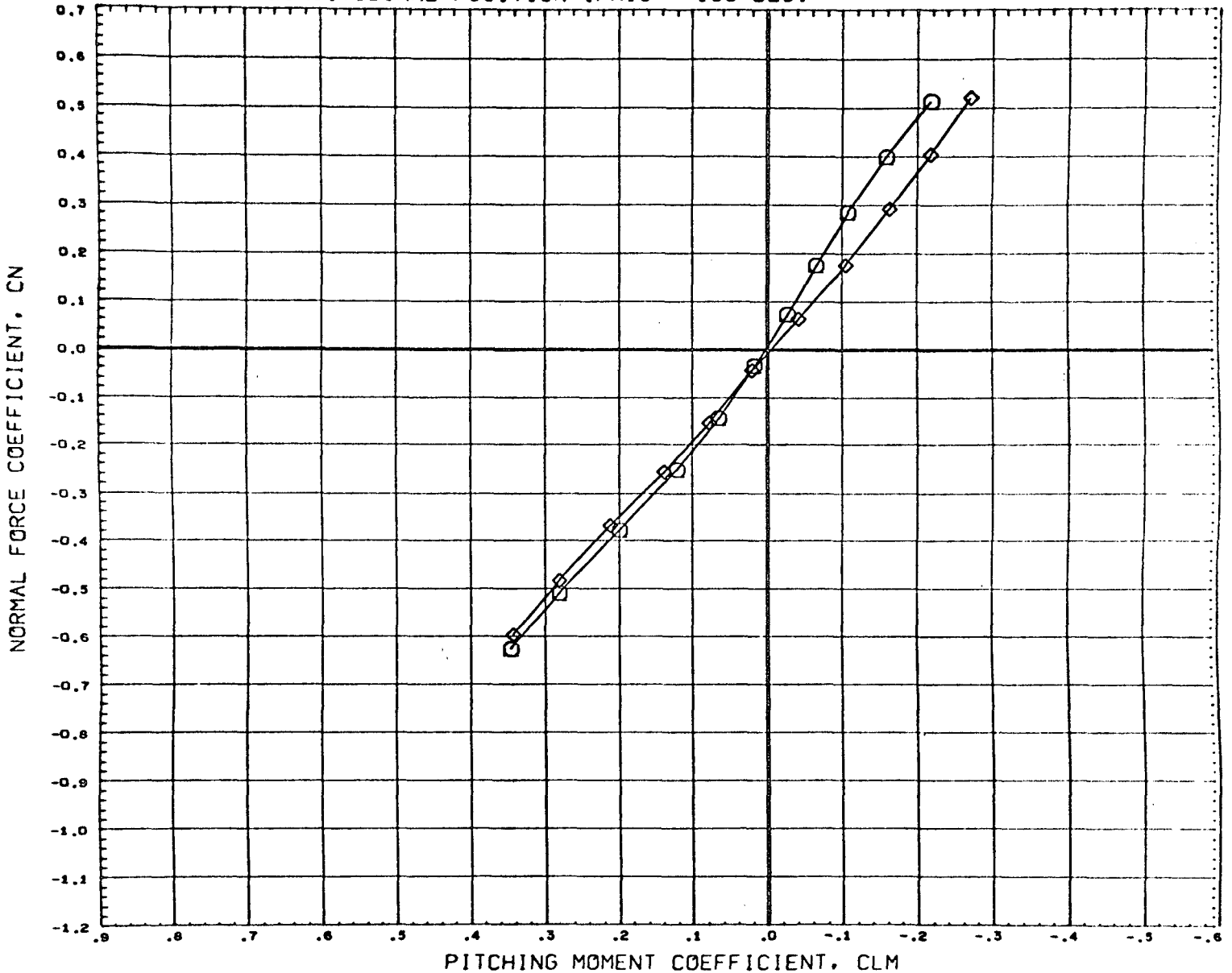


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SO. IN
(B71017)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2460 IN.
							SCALE 0.0040 SCALE

MACH 1.20



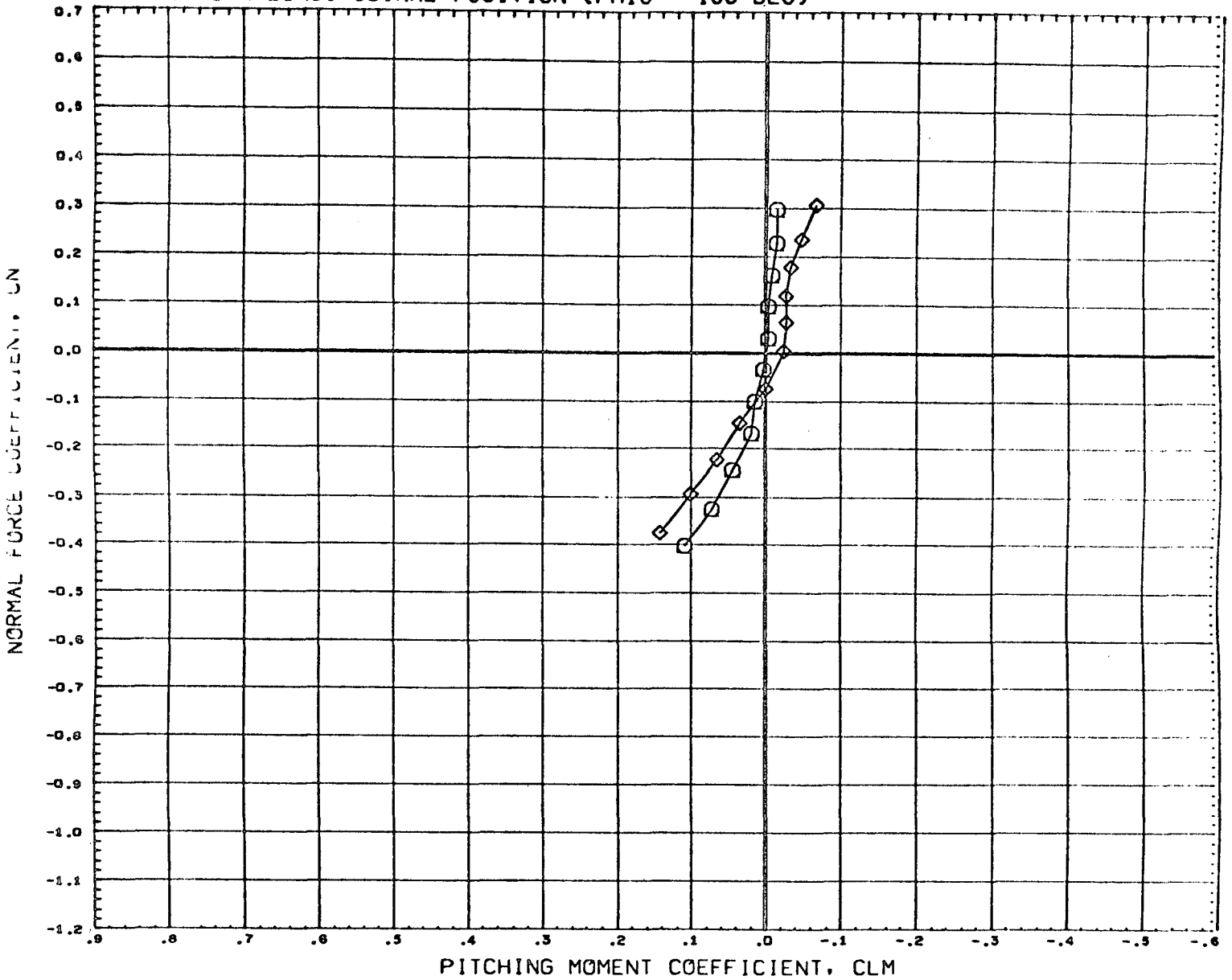
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



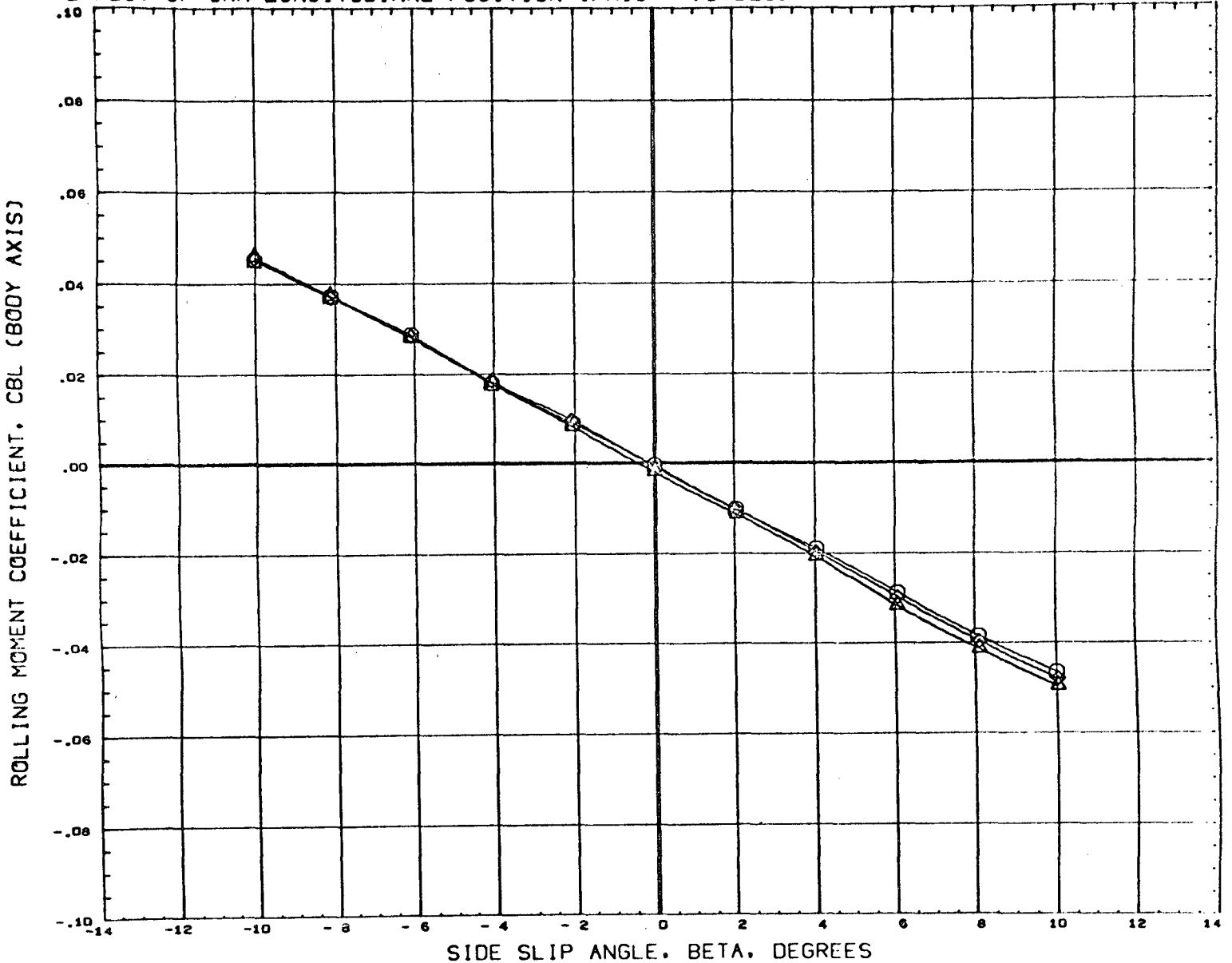
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71017)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(B71087)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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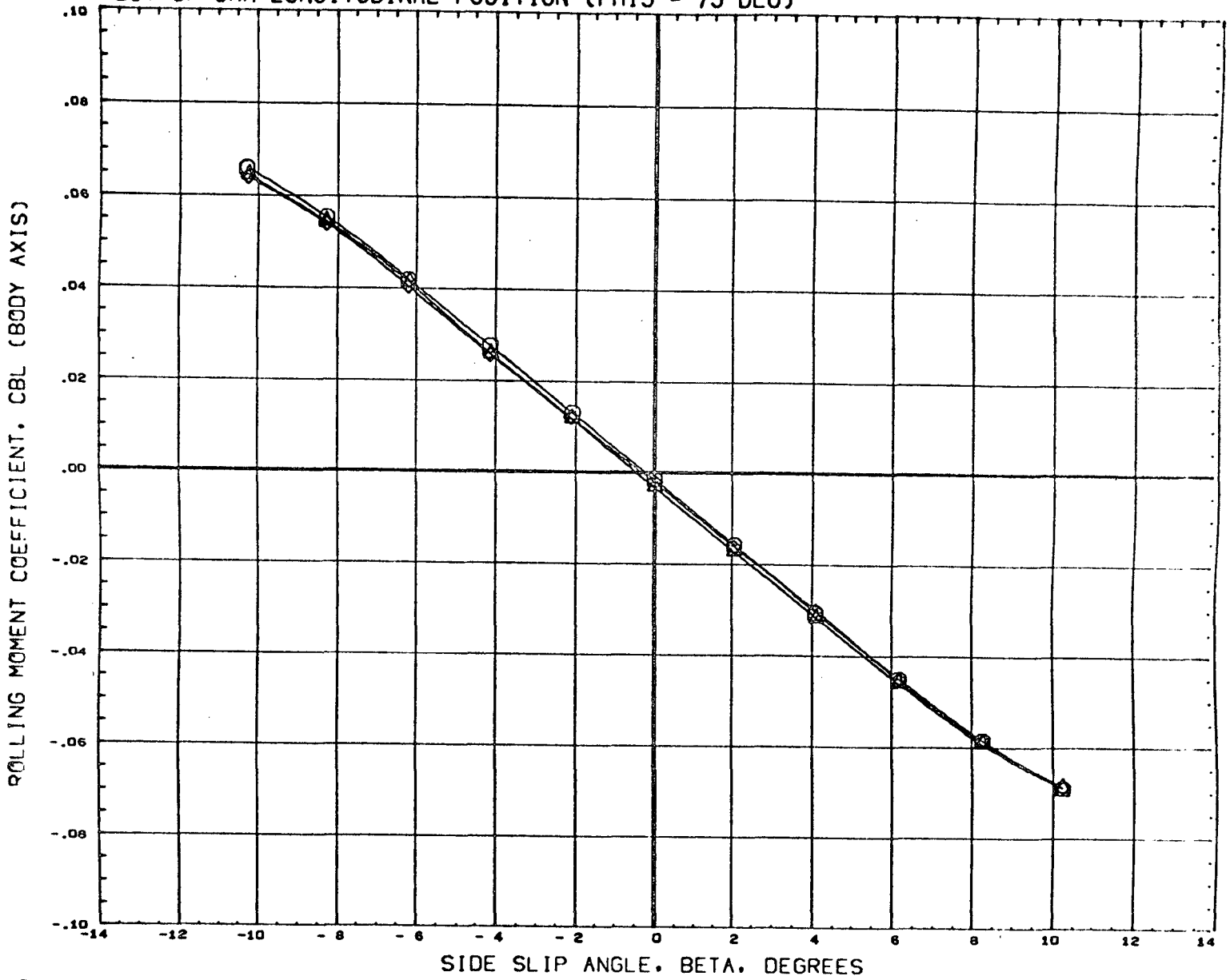
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0260 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

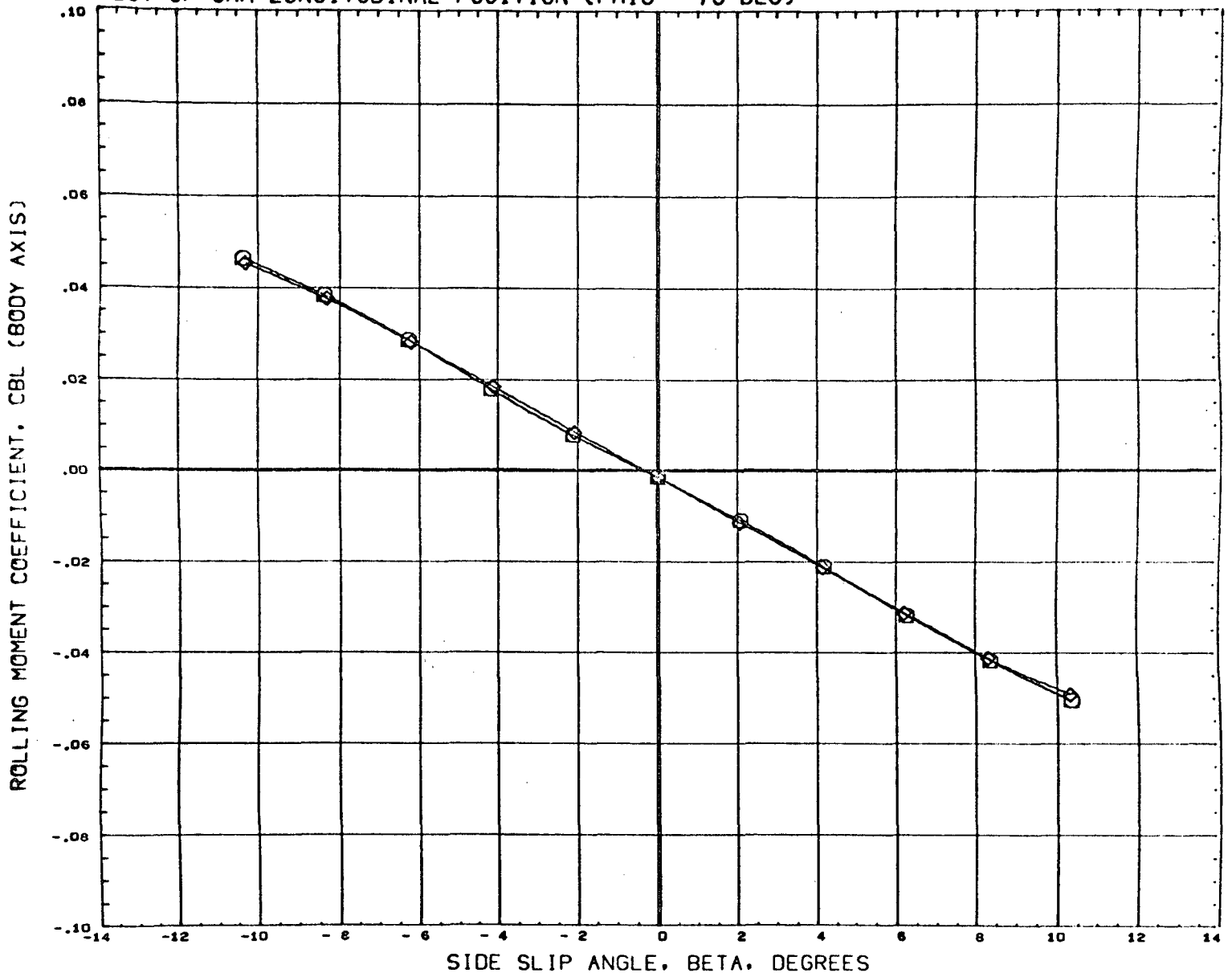
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

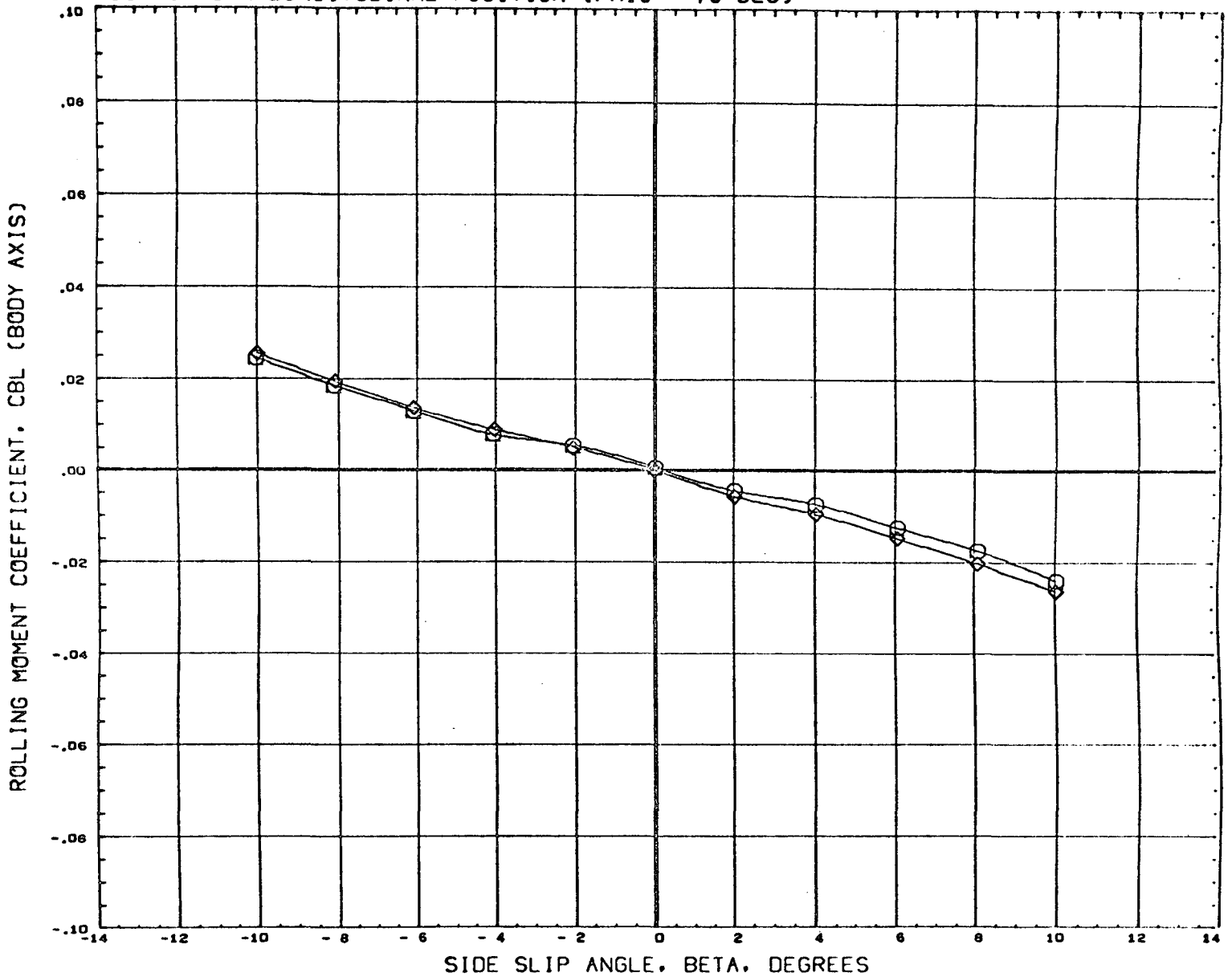
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

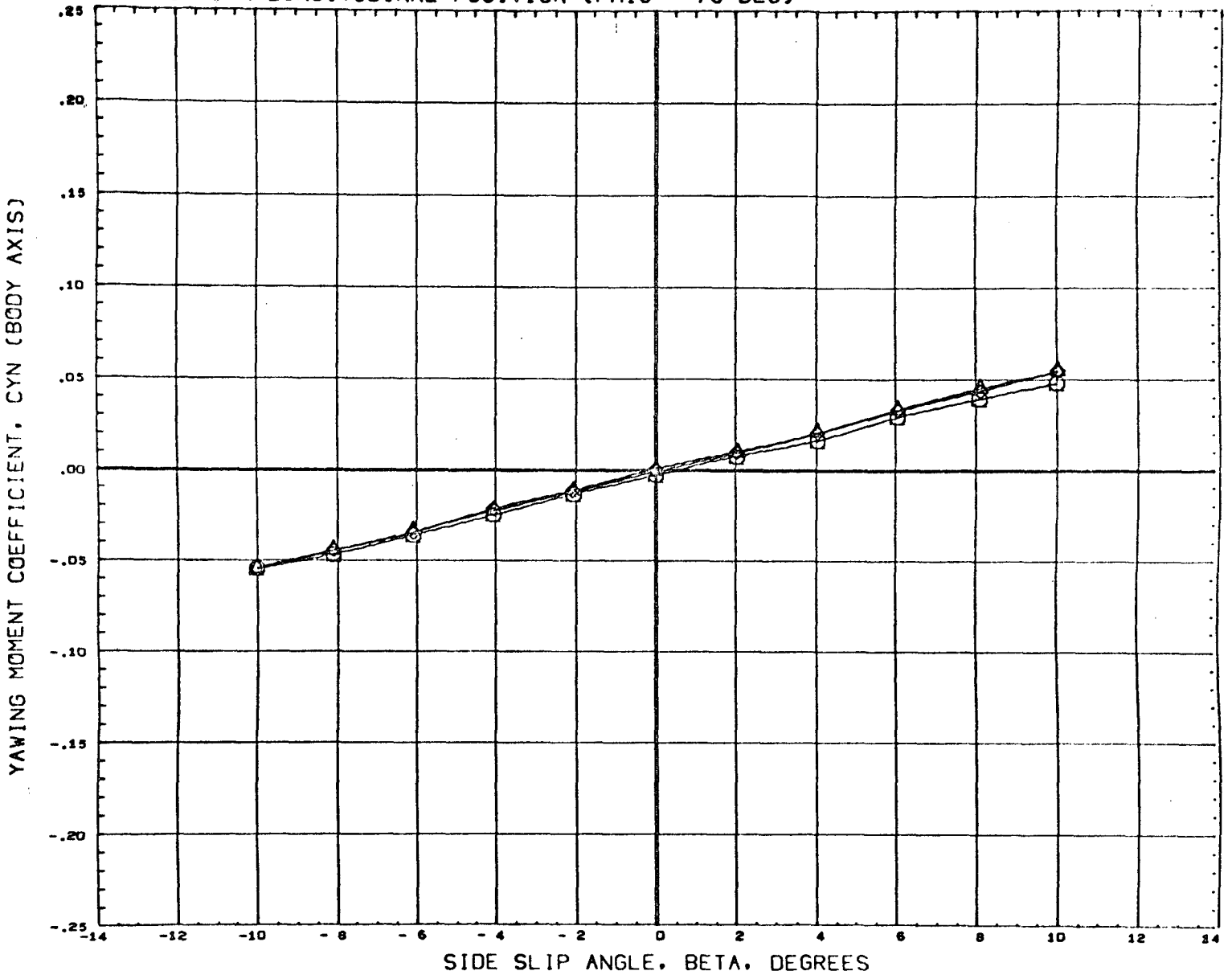
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

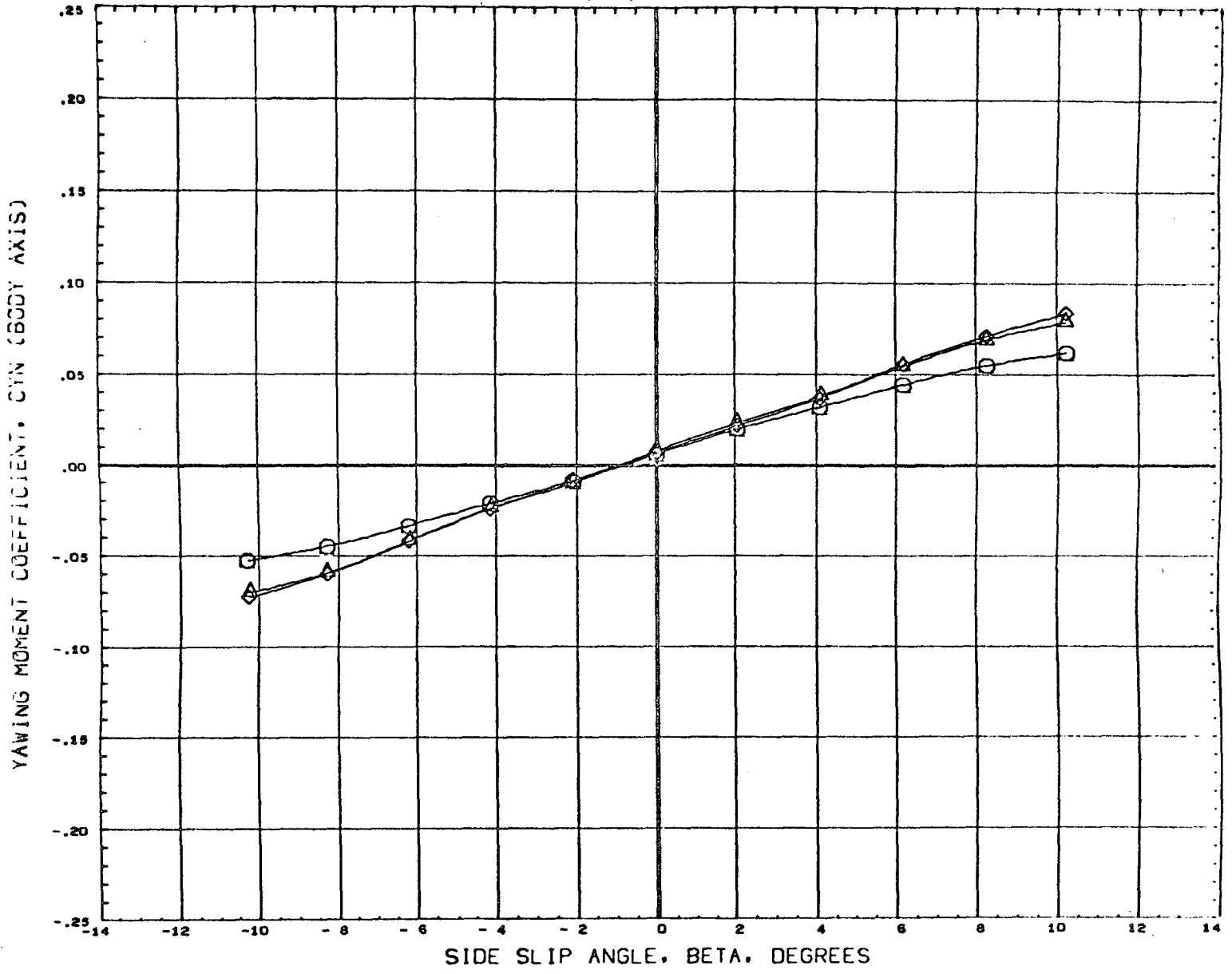
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(A71014)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

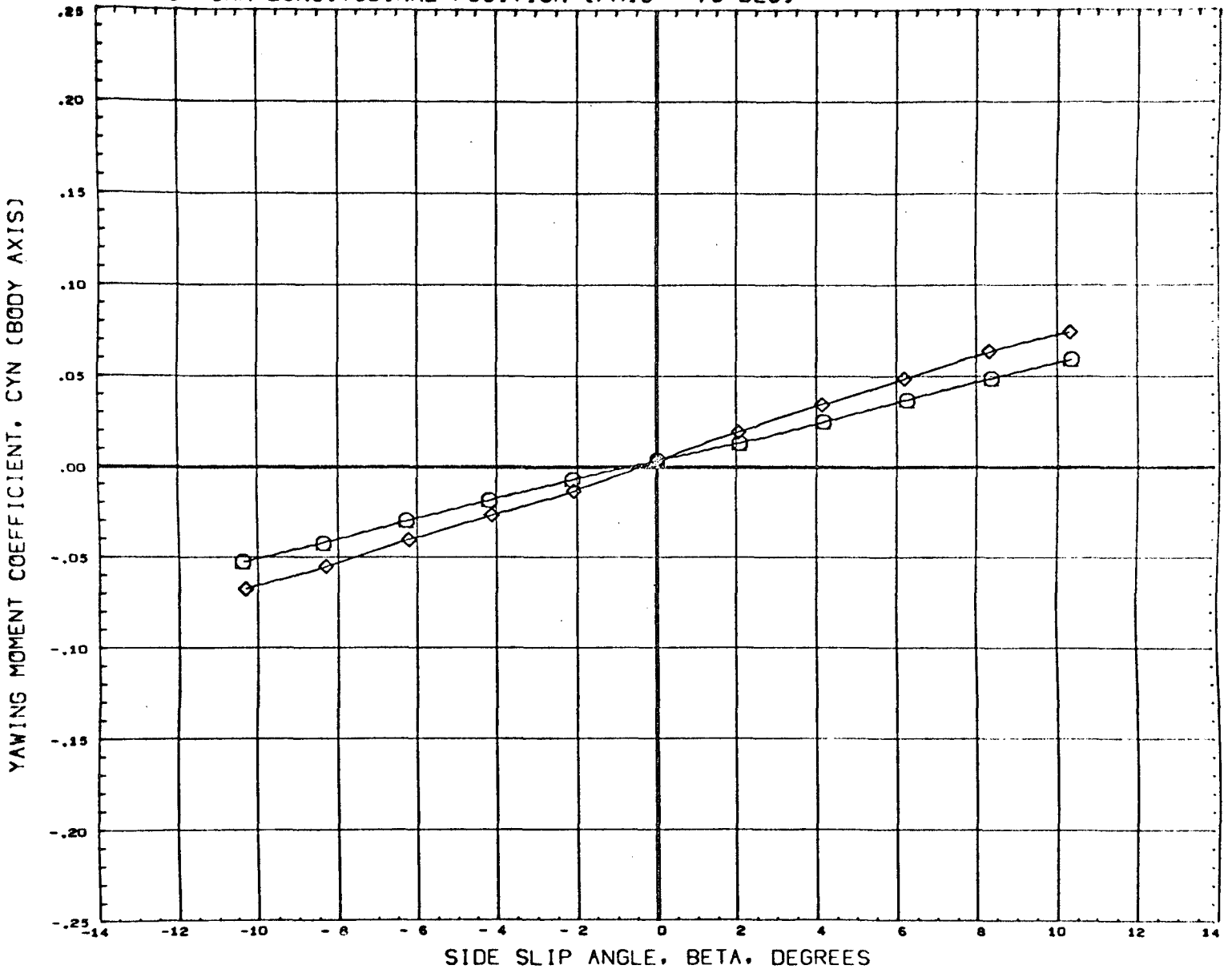


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	SREF 7.8800 SQ. IN
(A71014)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.624	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.885	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



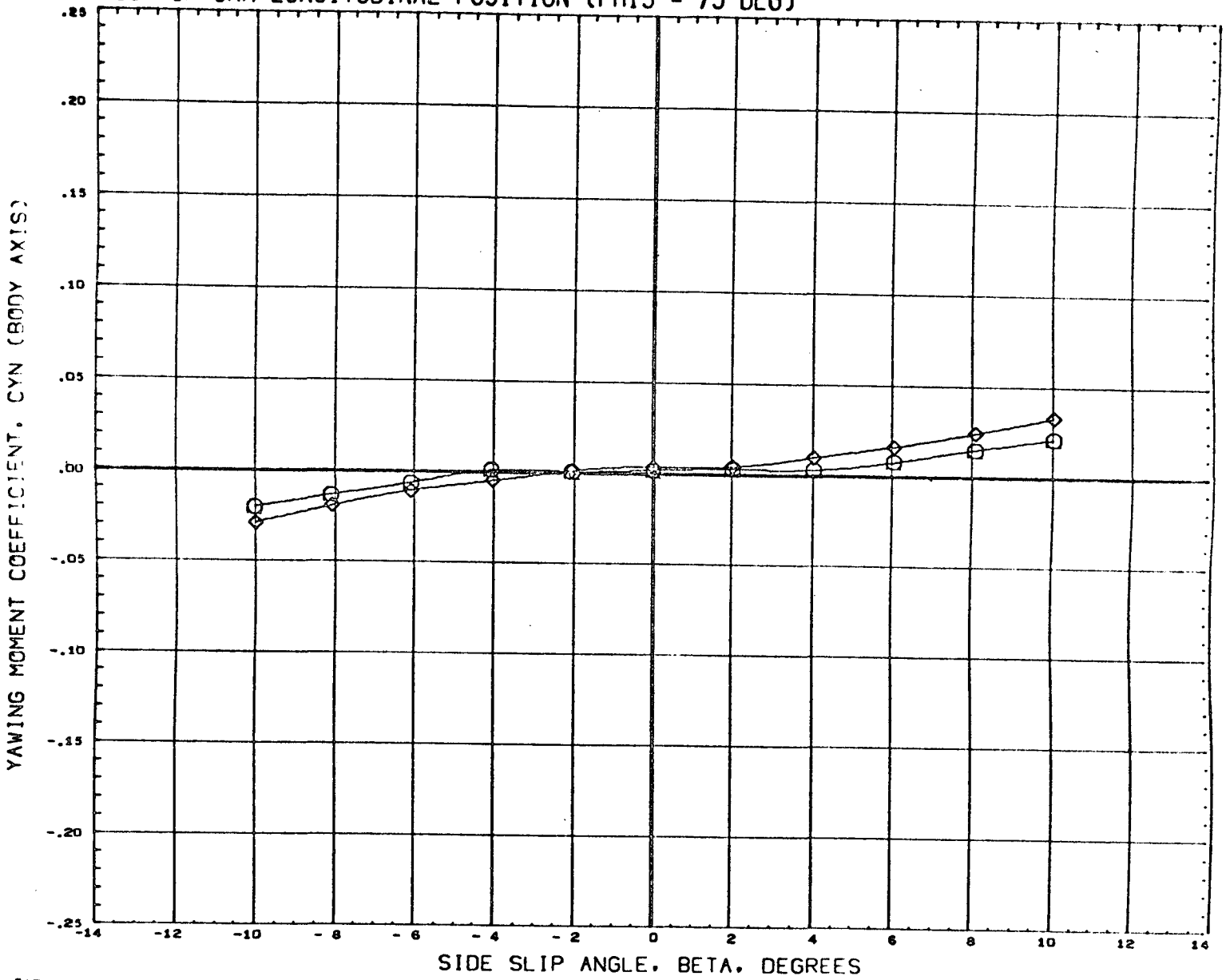
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.96

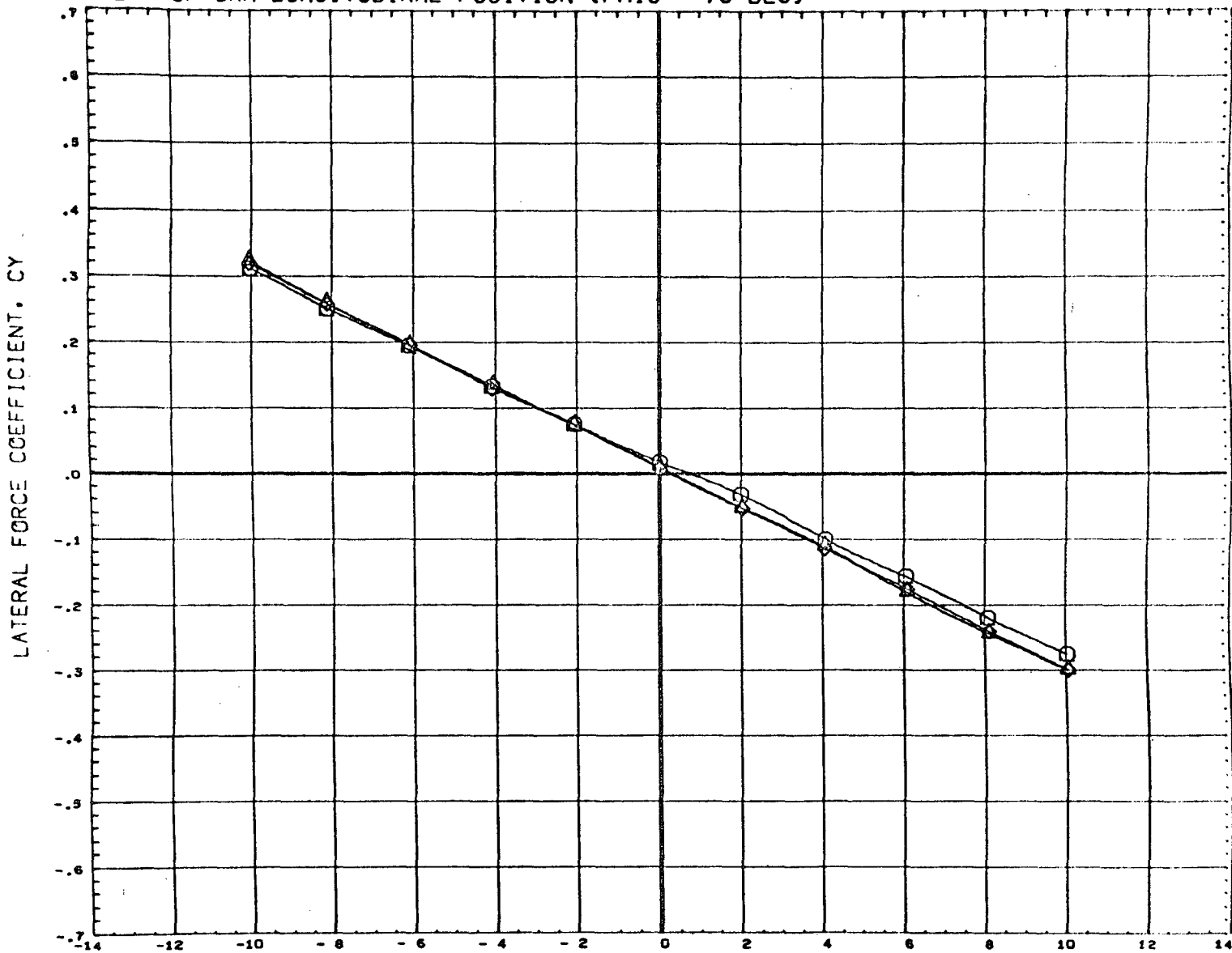
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71094)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

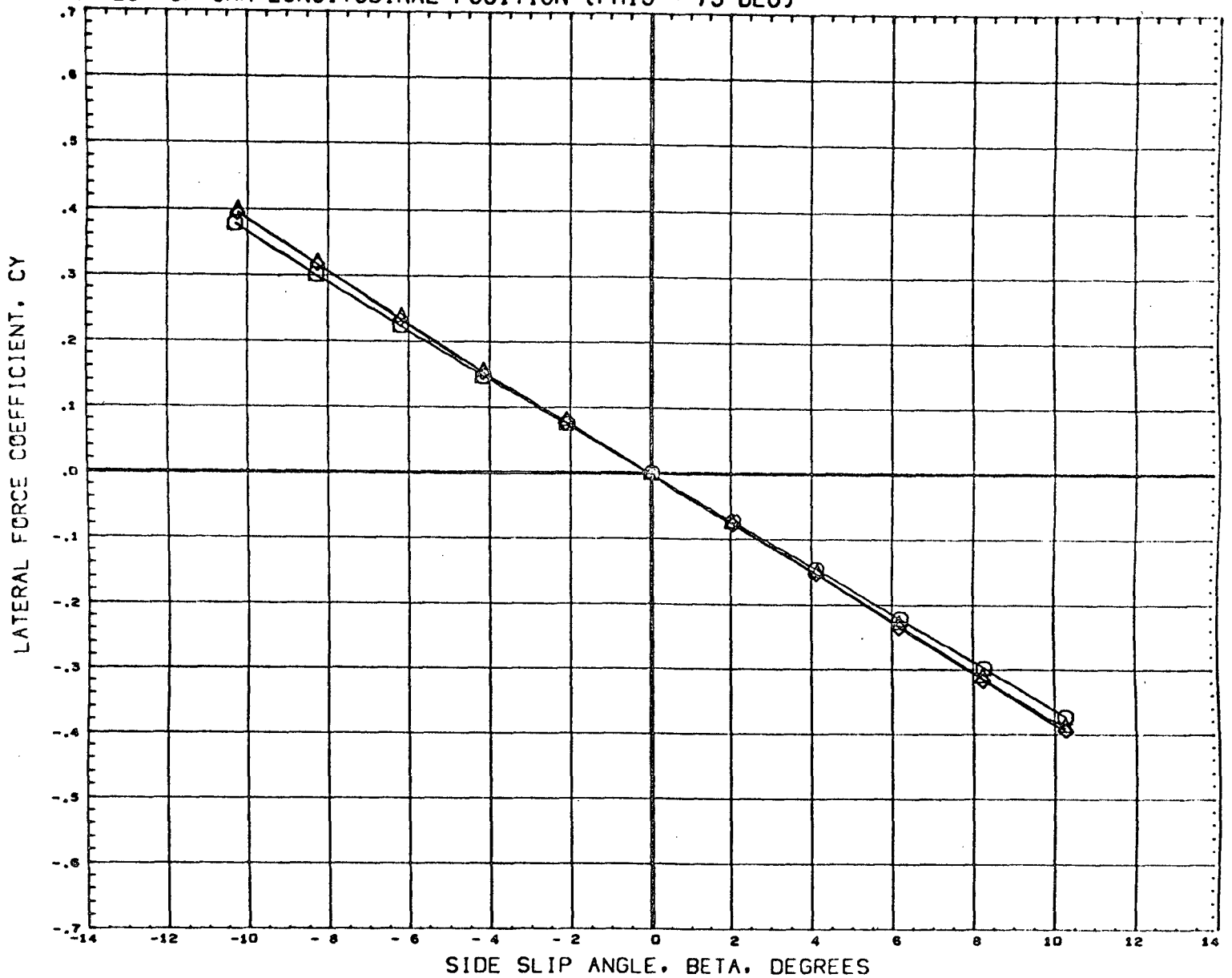
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

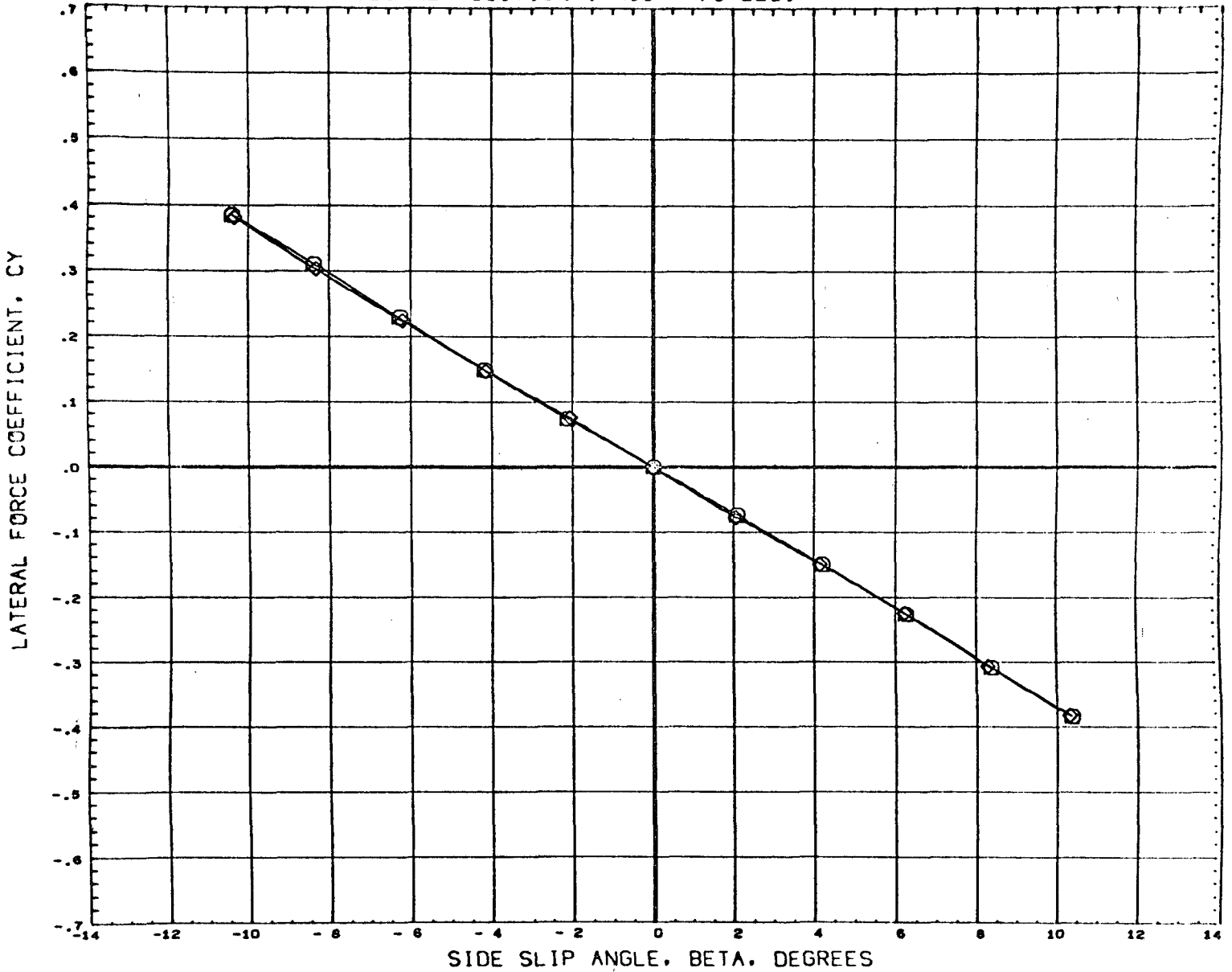
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(A71014)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

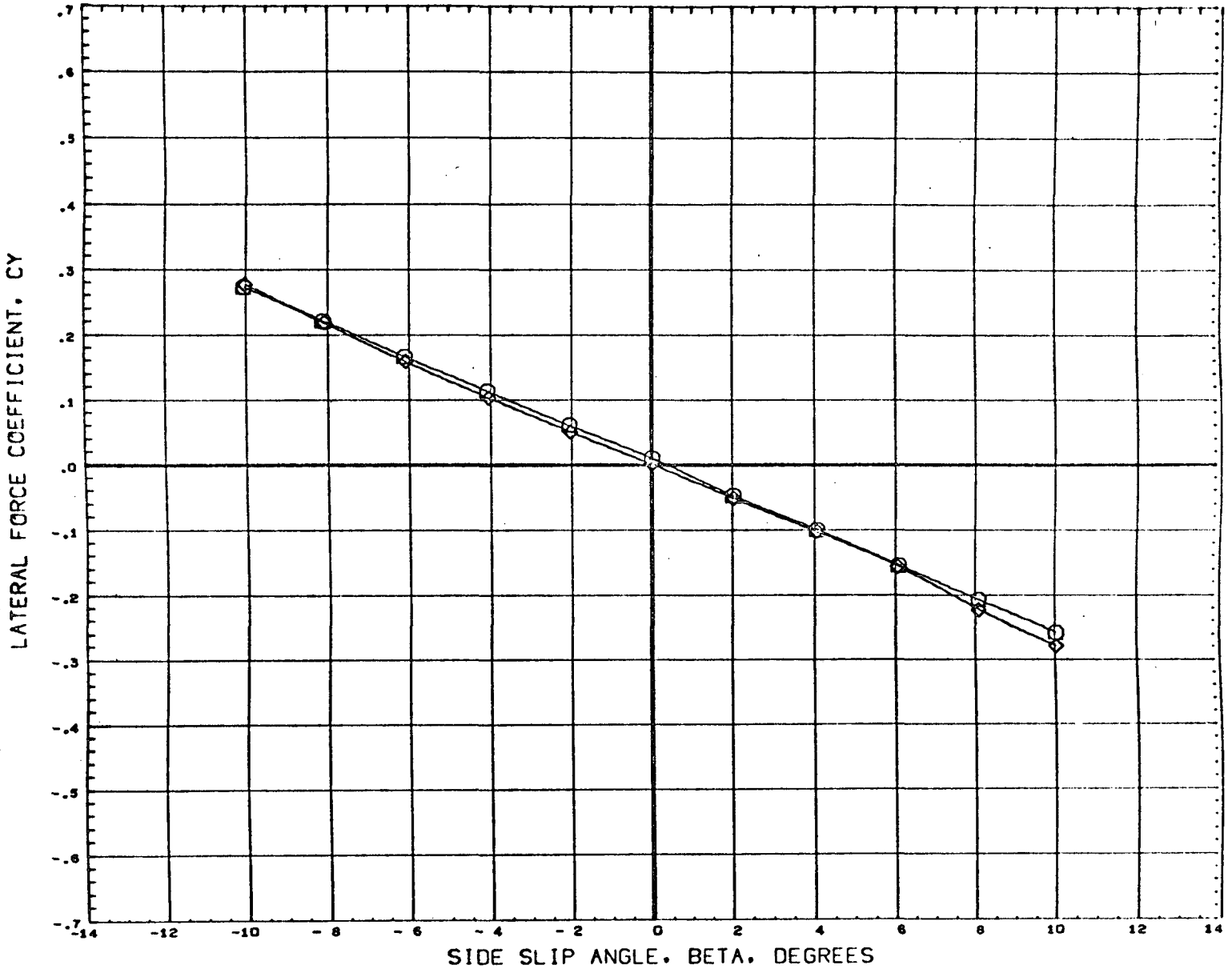
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 75 DEG)

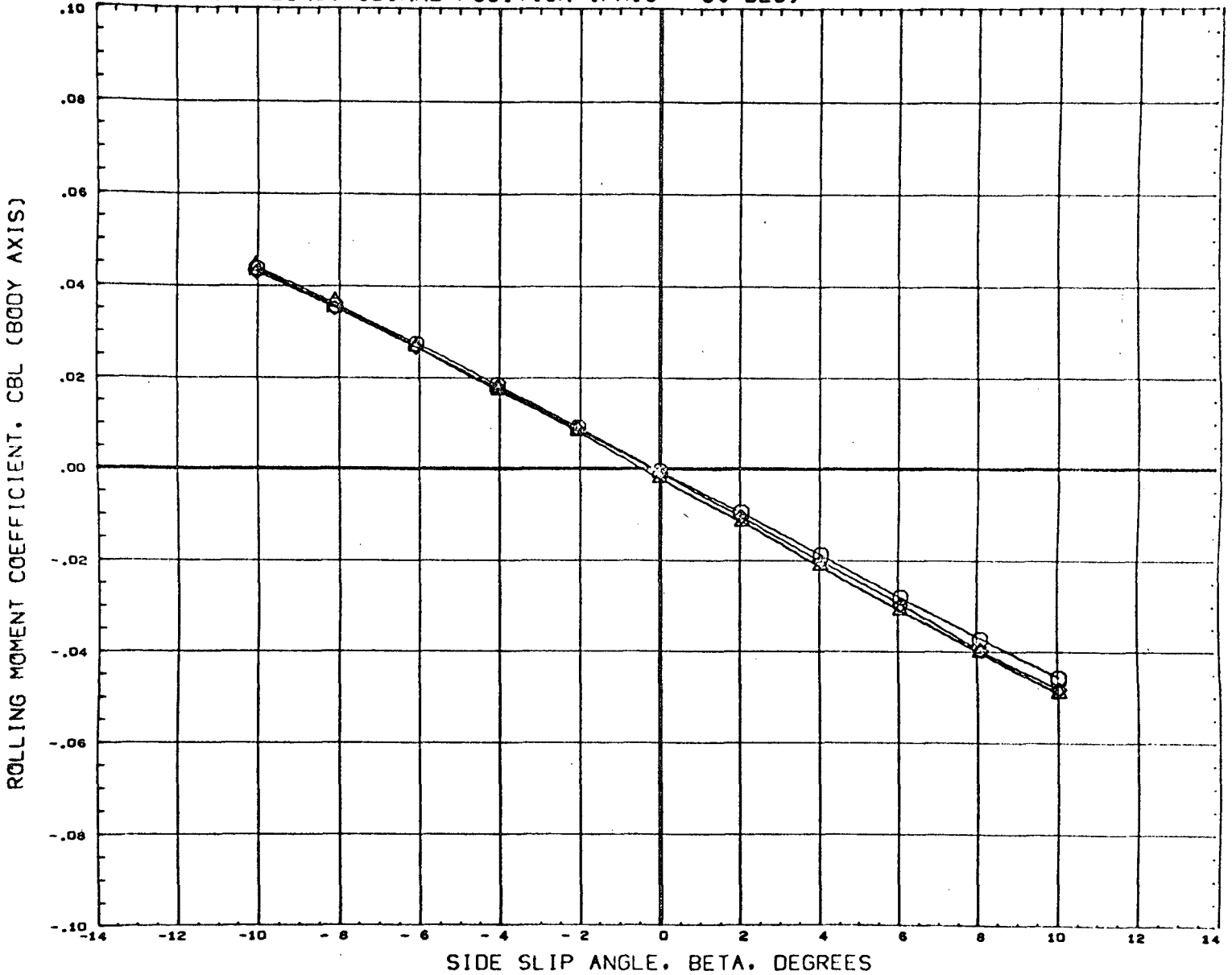


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.685	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

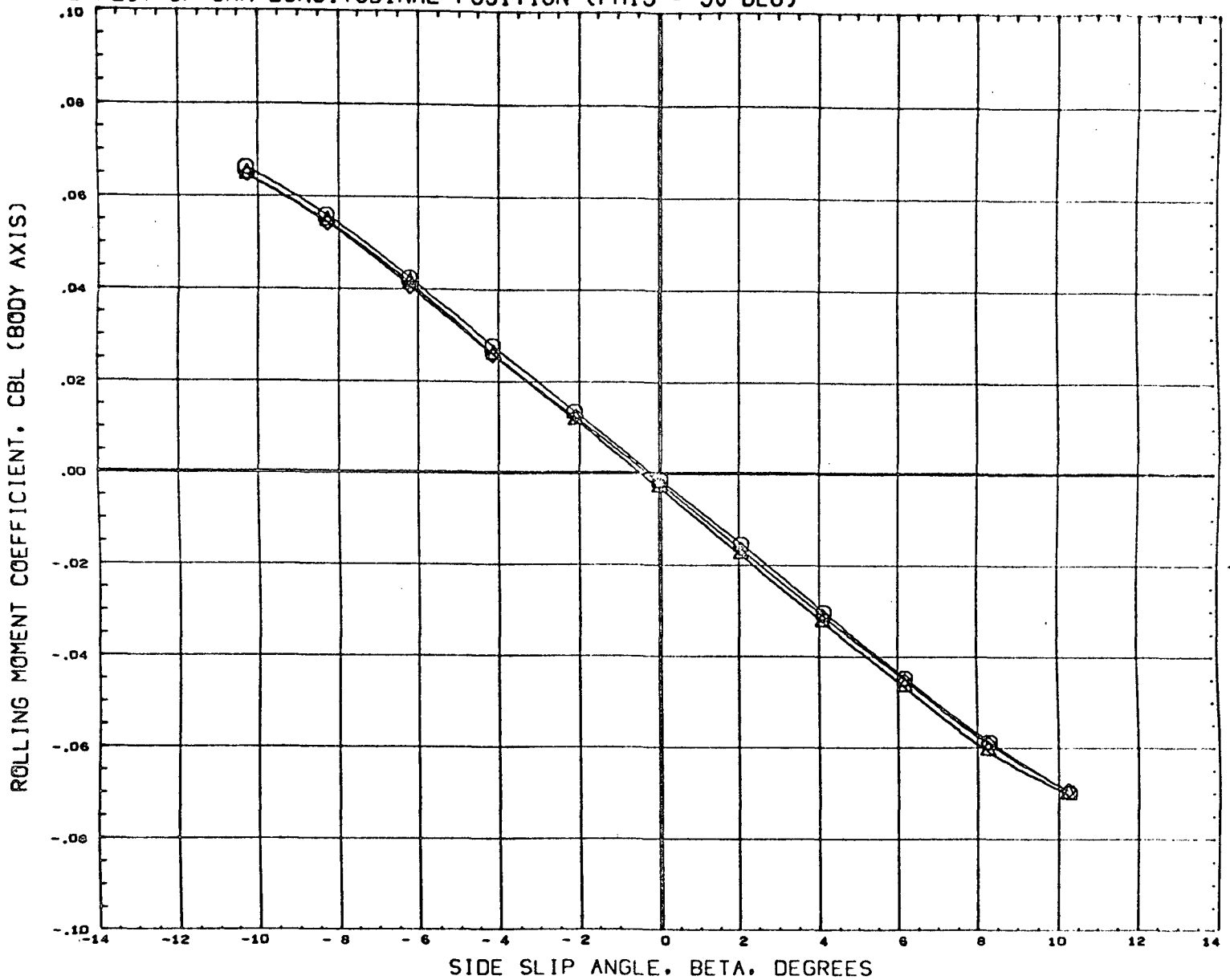
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# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

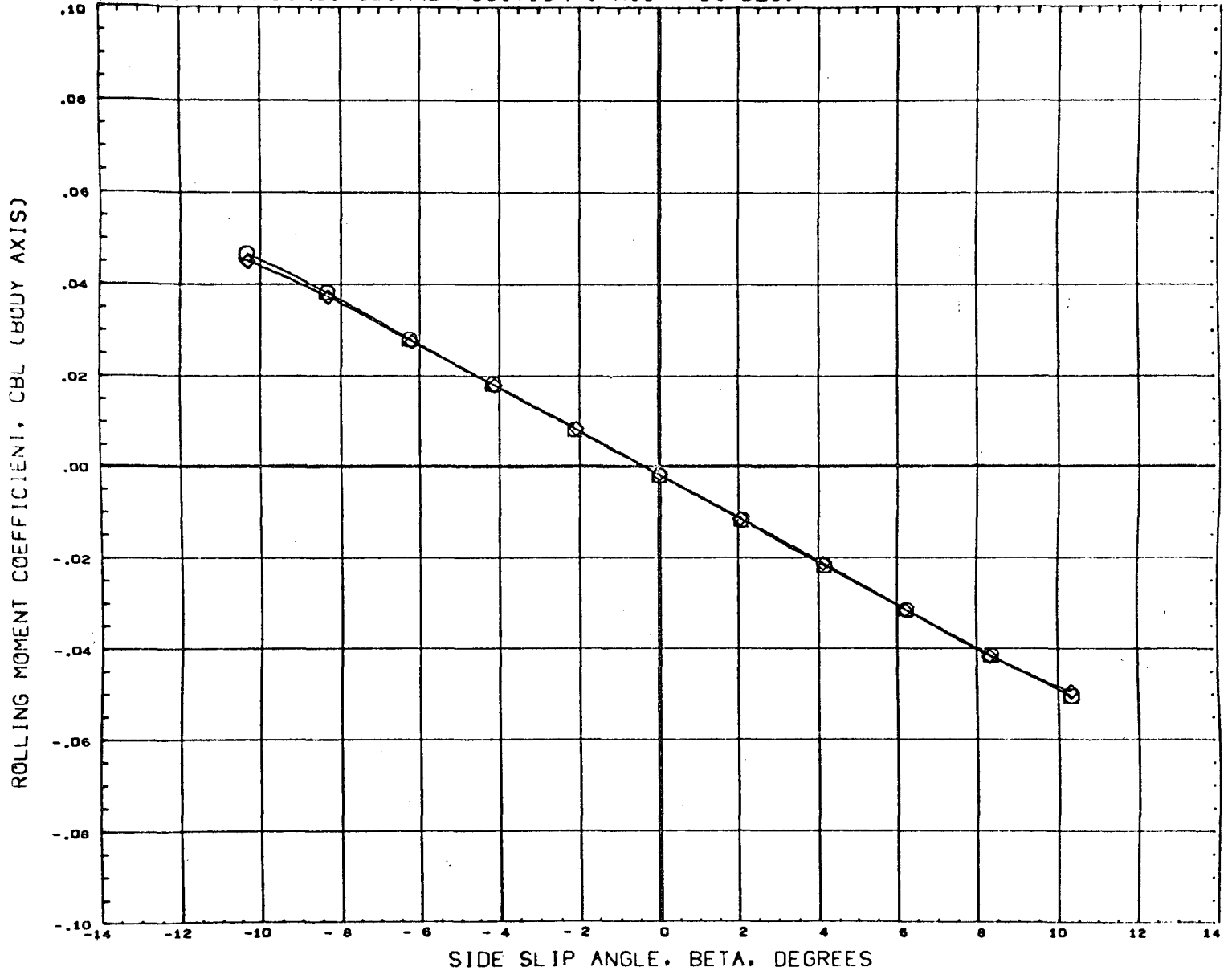


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIN	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



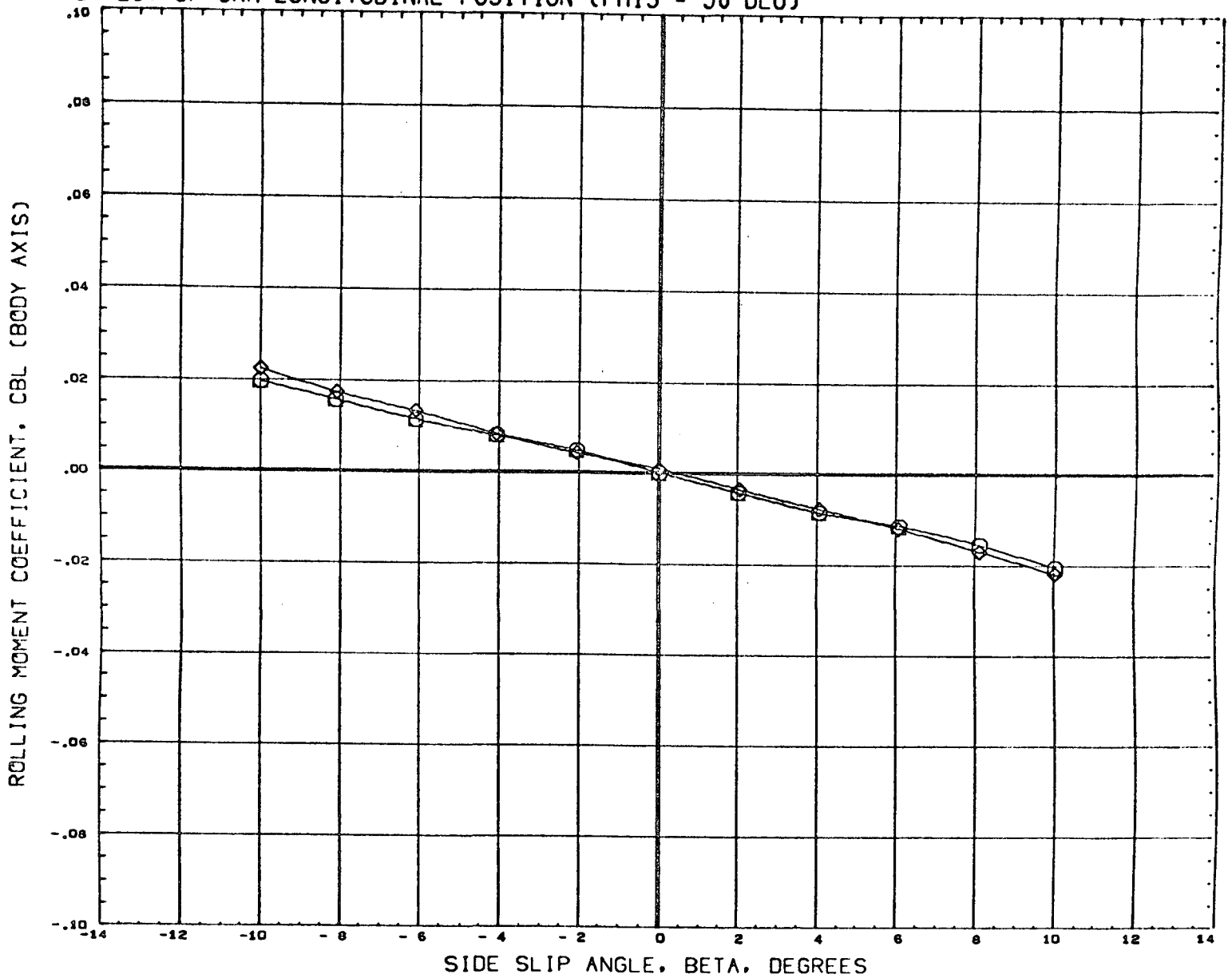
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	DATA NOT AVAILABLE FOR ALL CONDITIONS		-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.96

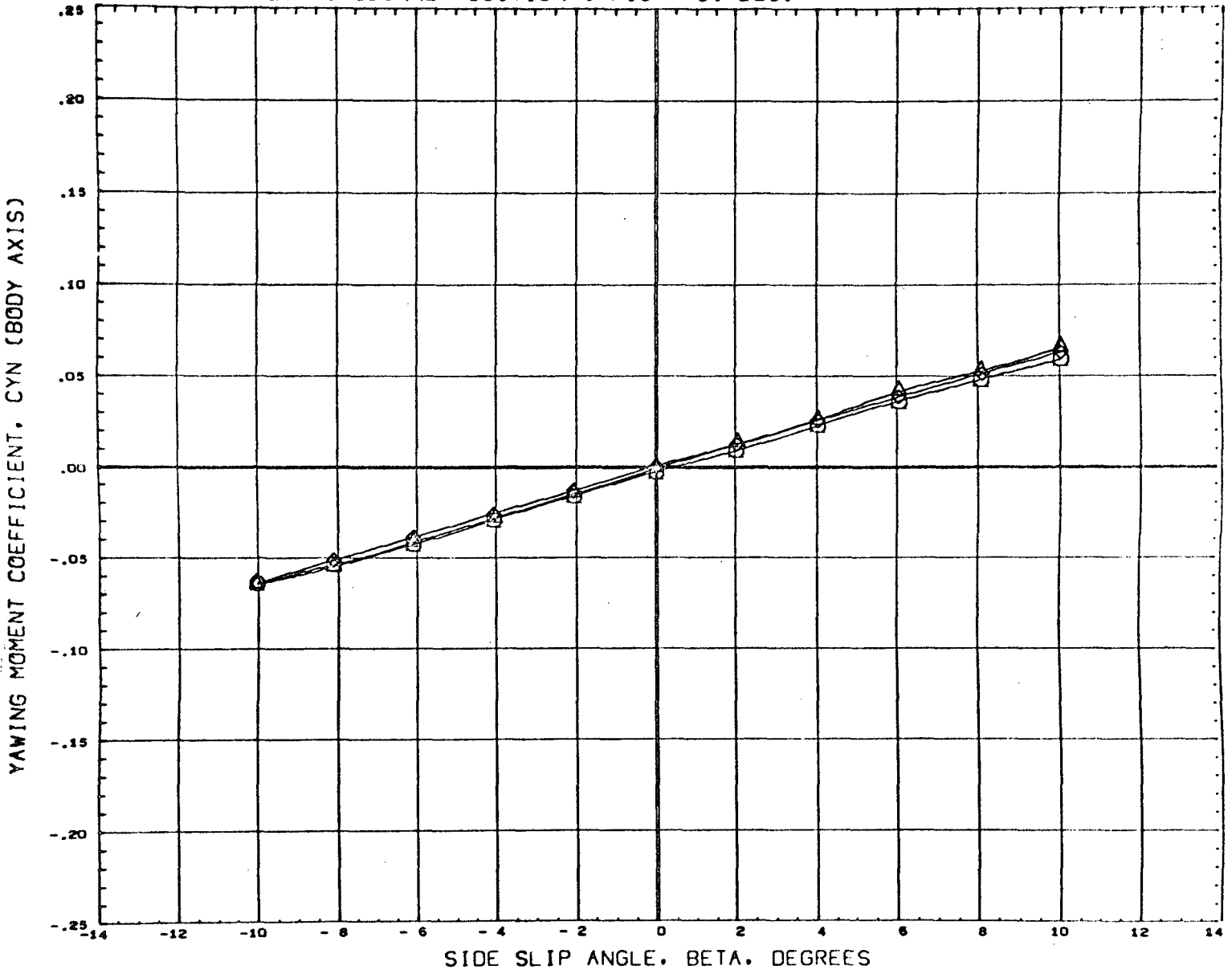
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIN	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

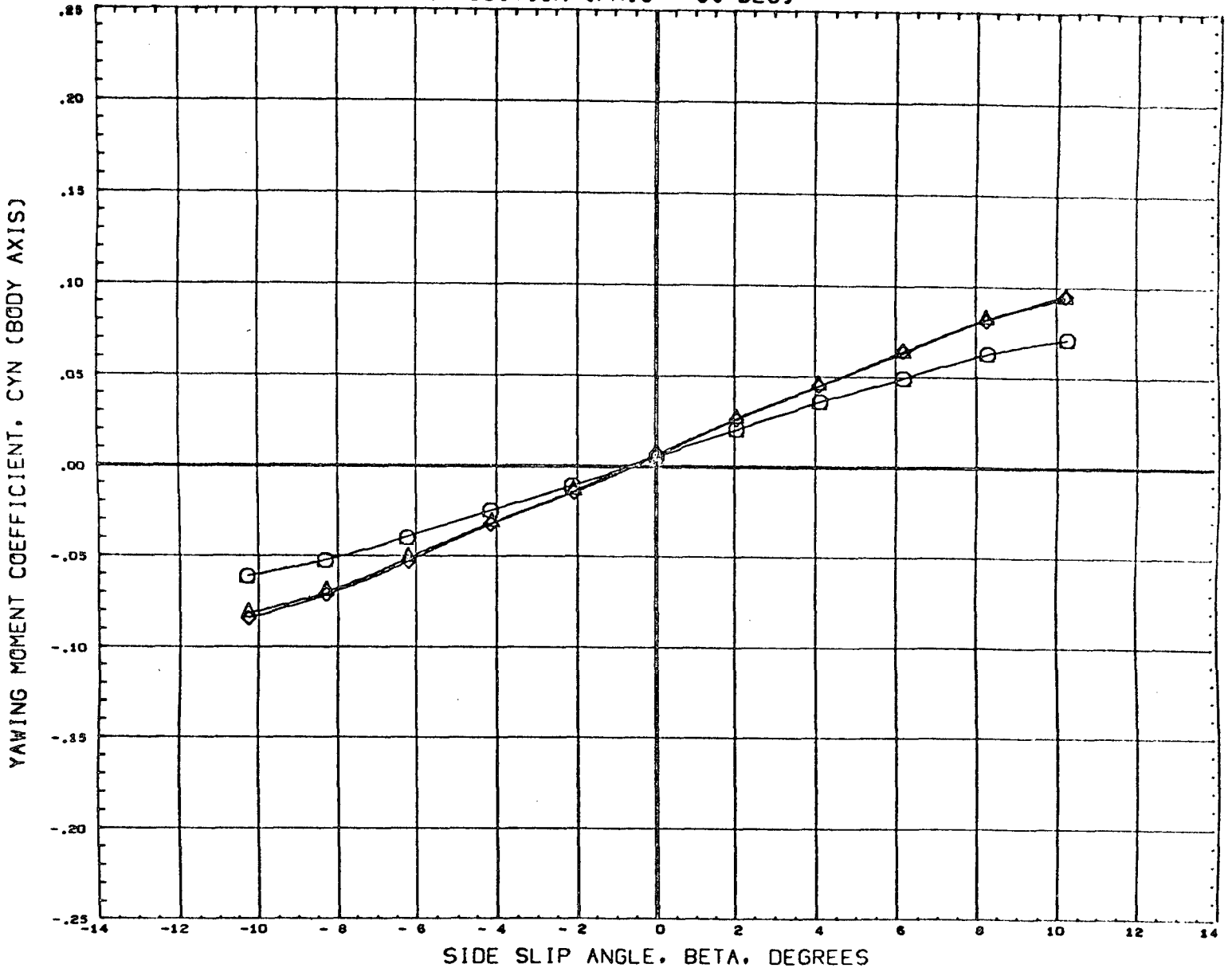
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

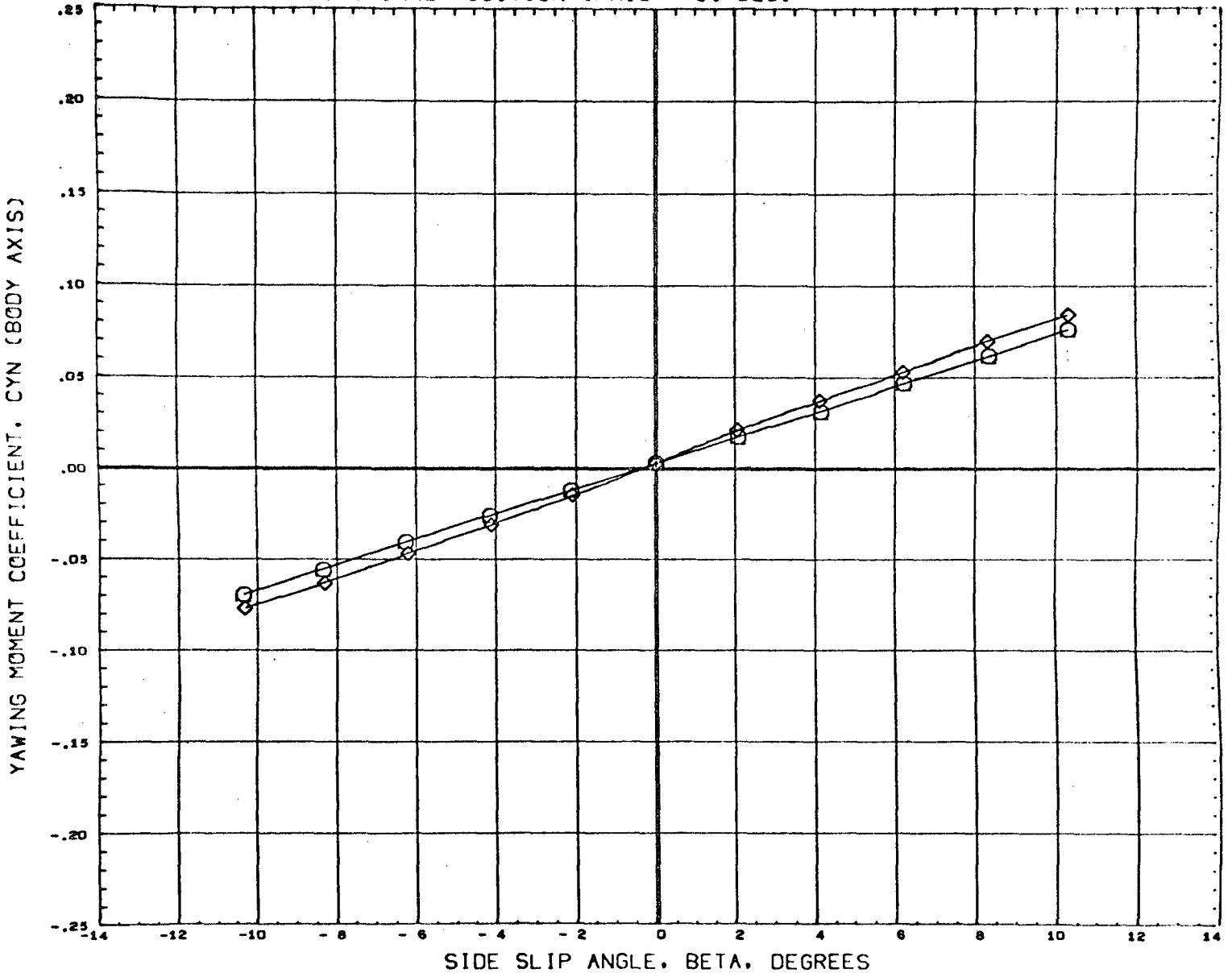
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

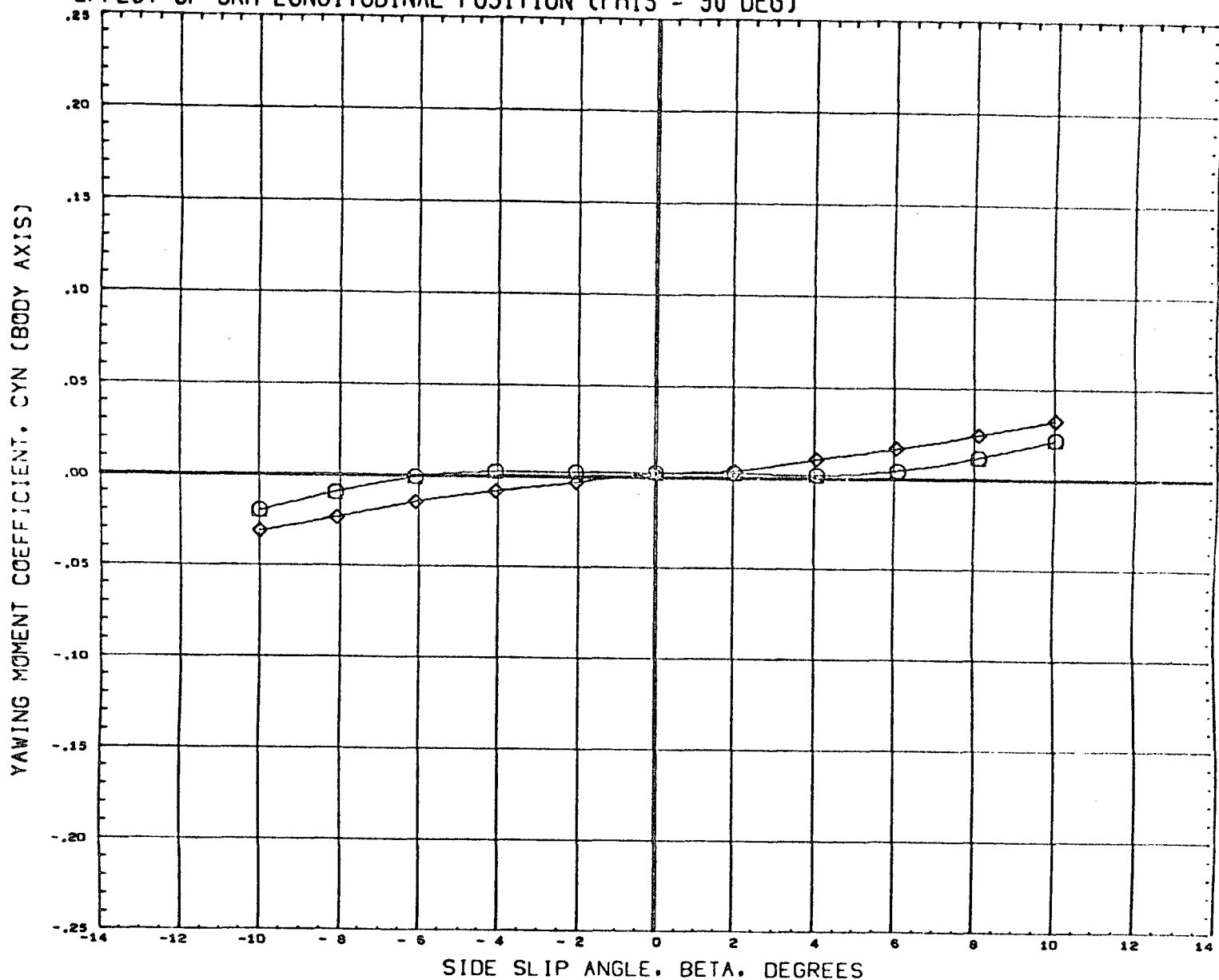


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.96

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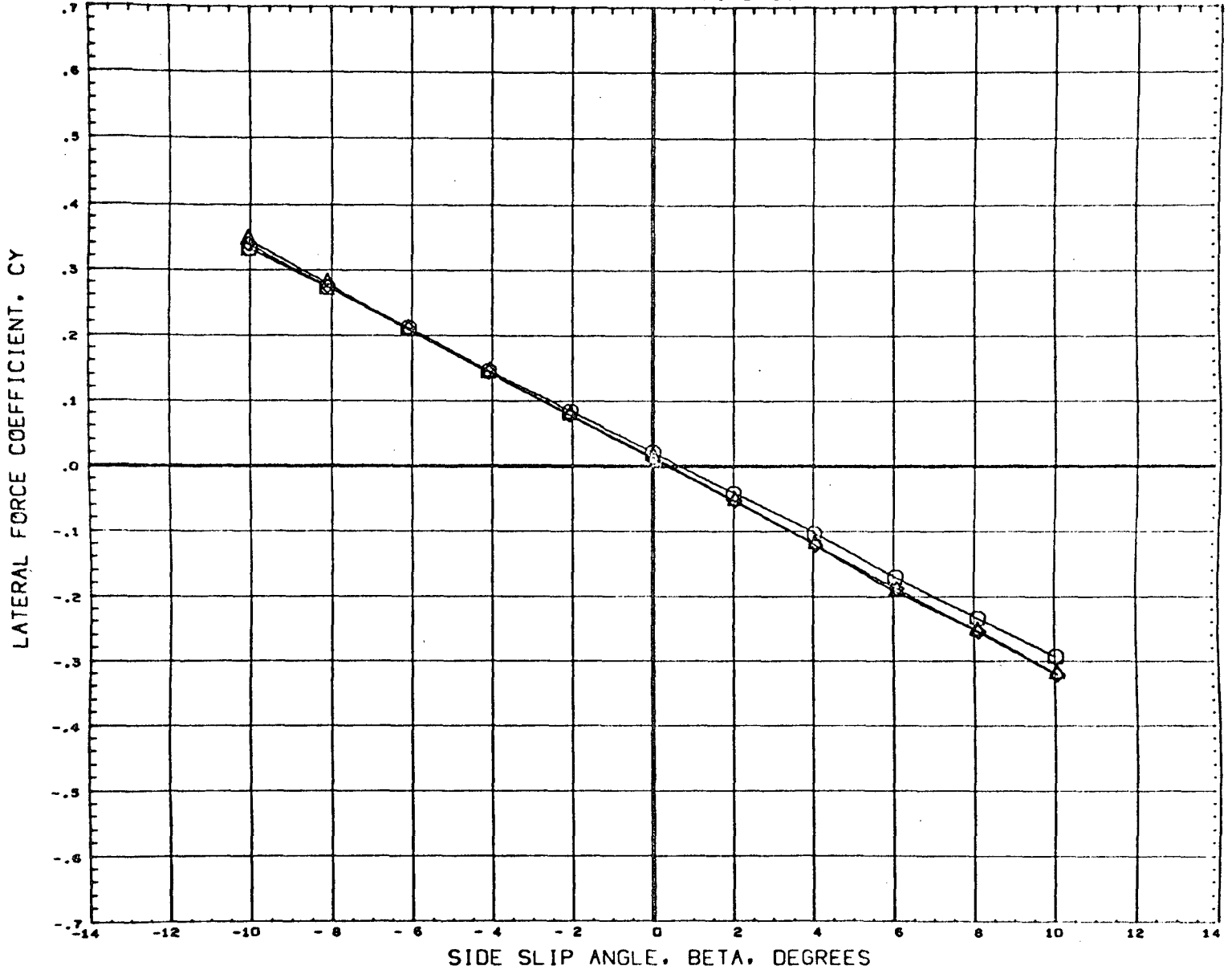
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XM RP 3.3600 IN.
						YM RP 0.0000 IN.
						ZM RP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

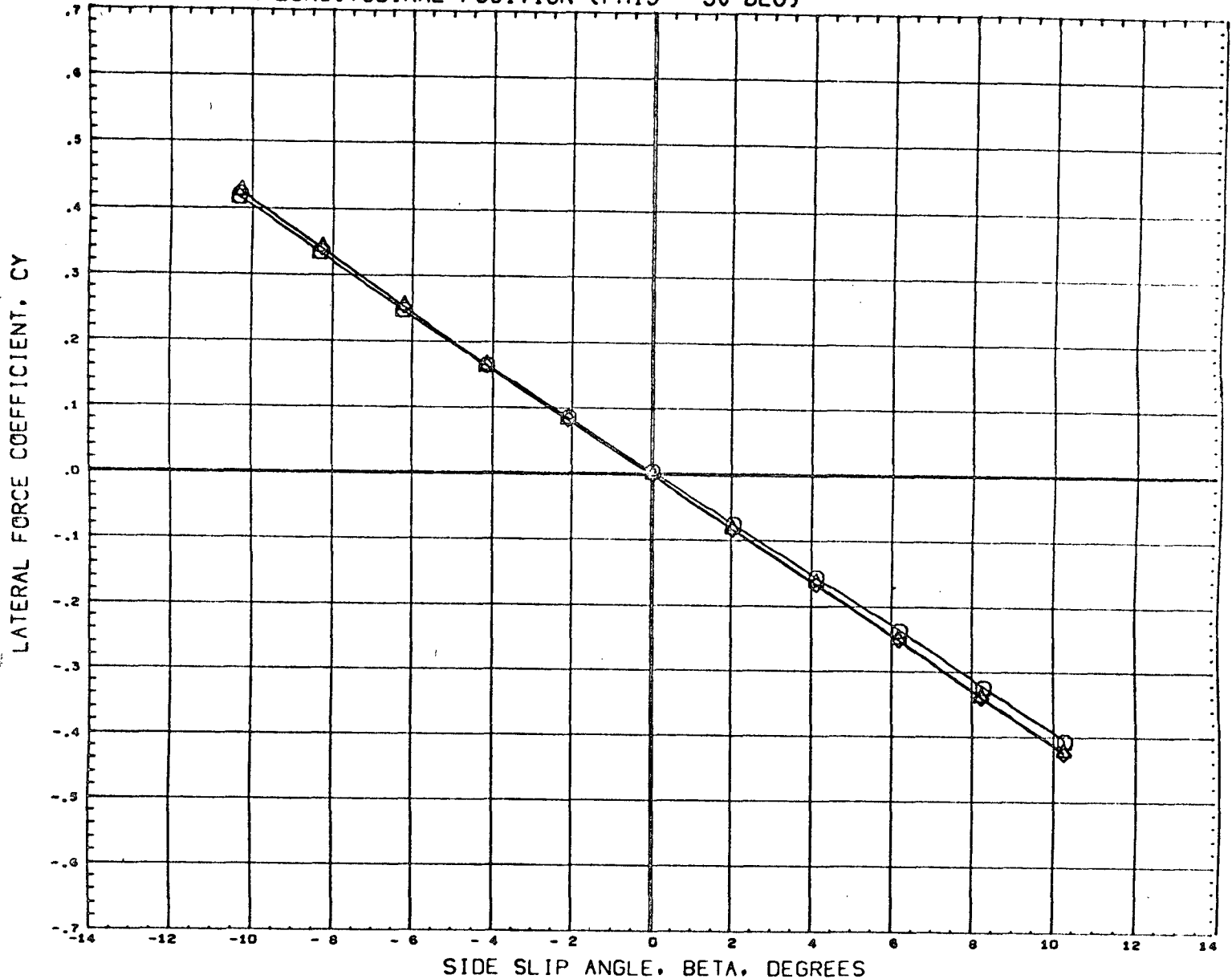


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

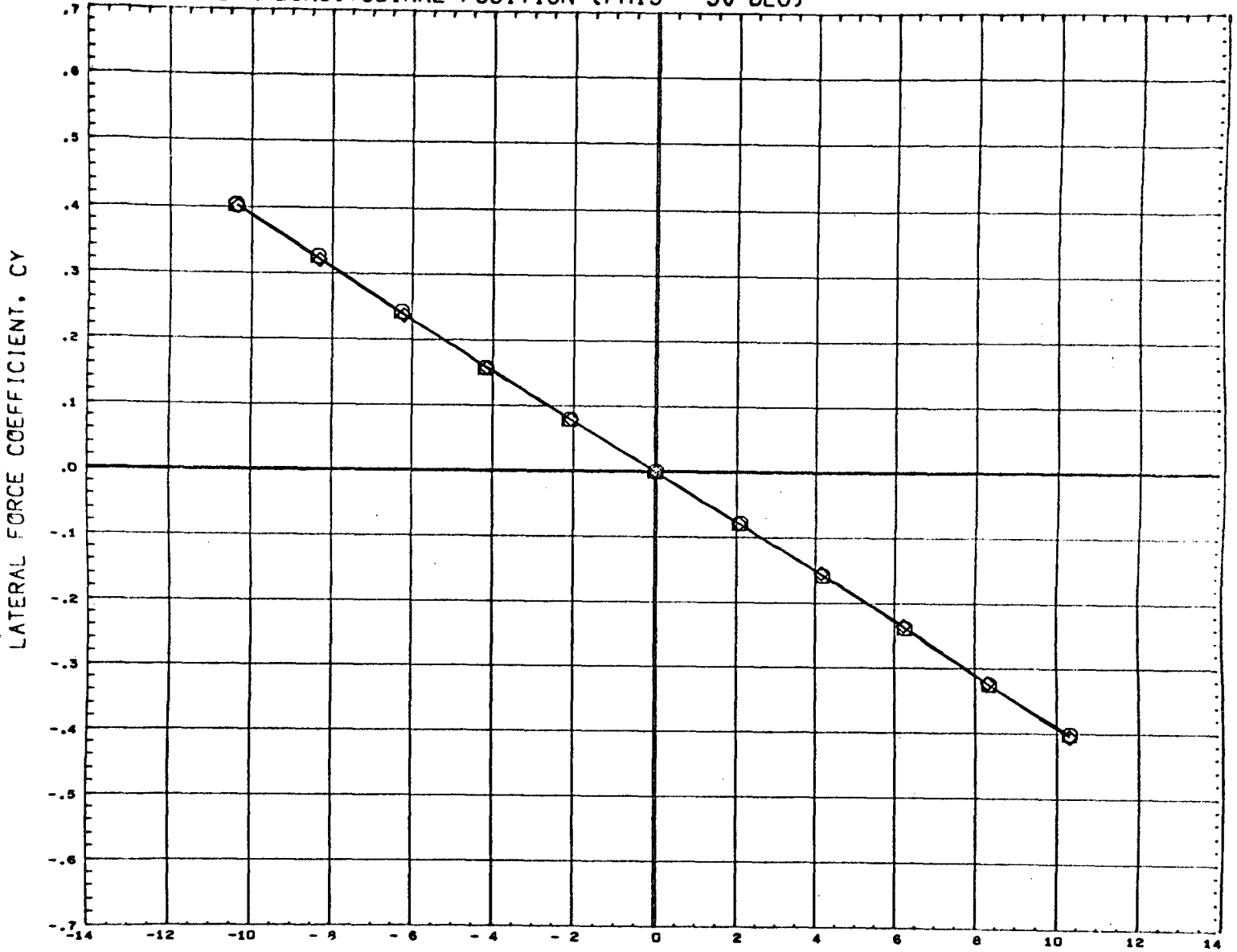


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.685	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)

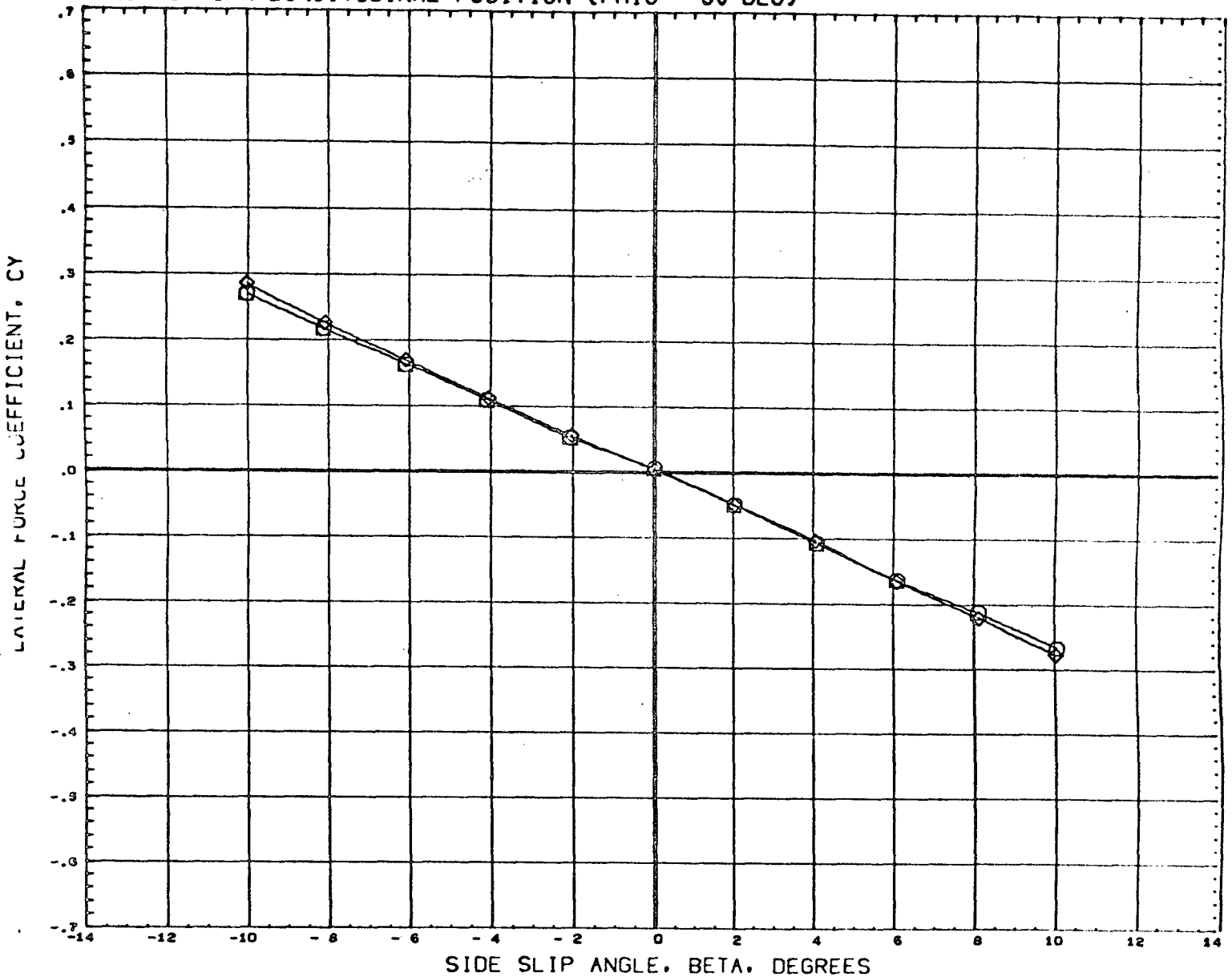


SIDE SLIP ANGLE, BETA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 90 DEG)



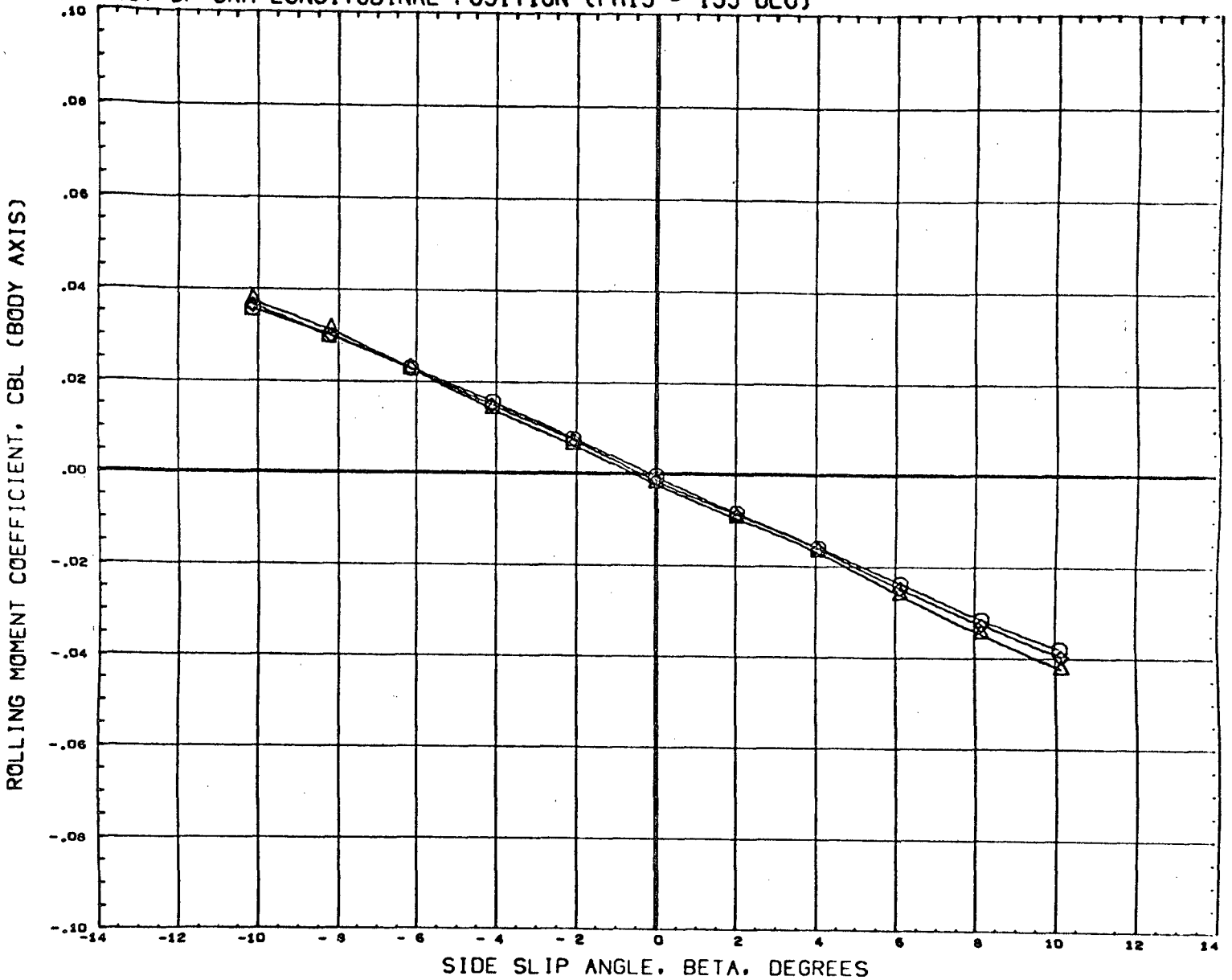
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	90.000	0.624	0.000	LREF 2.0280 IN.
(A71086)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.865	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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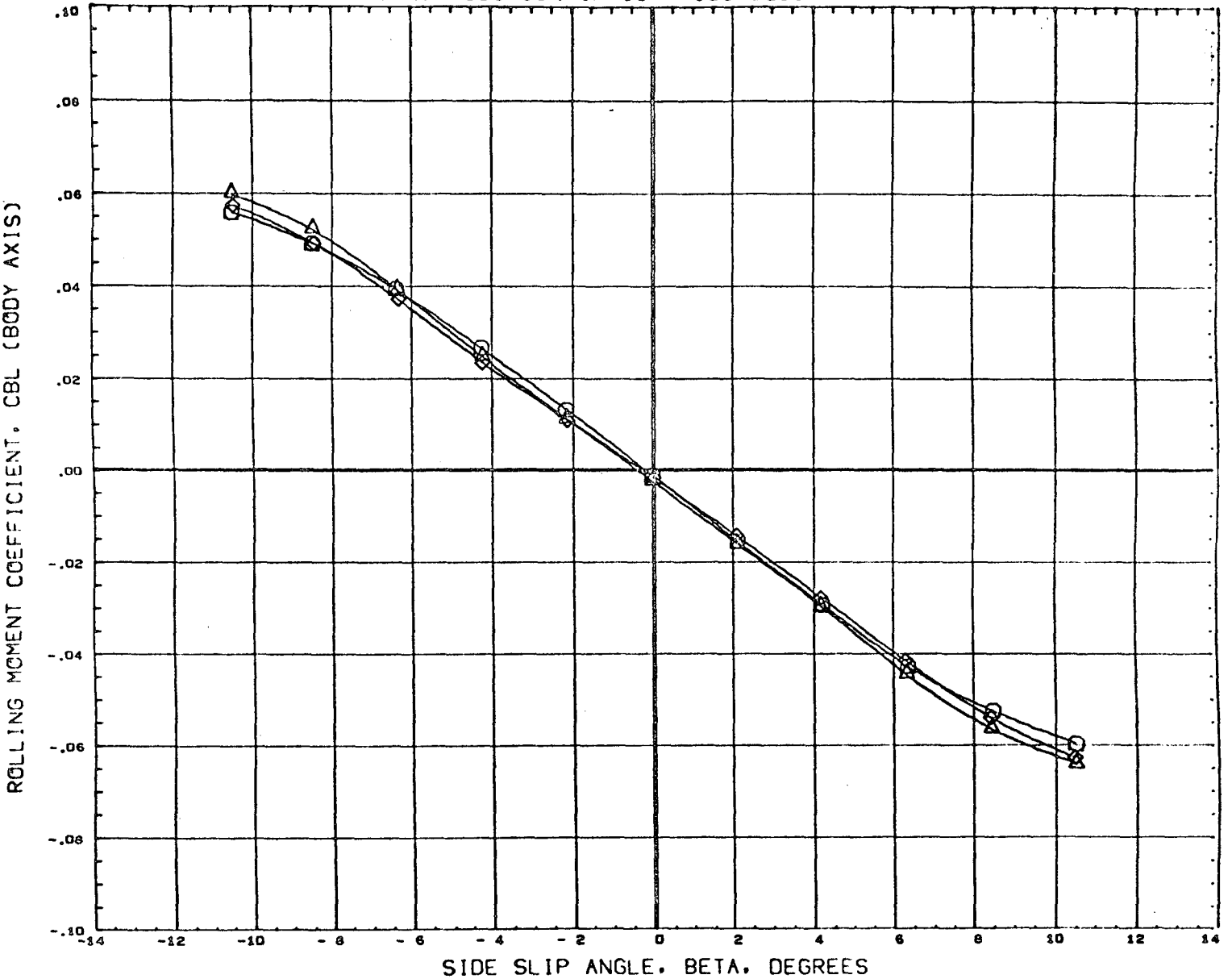
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71018)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

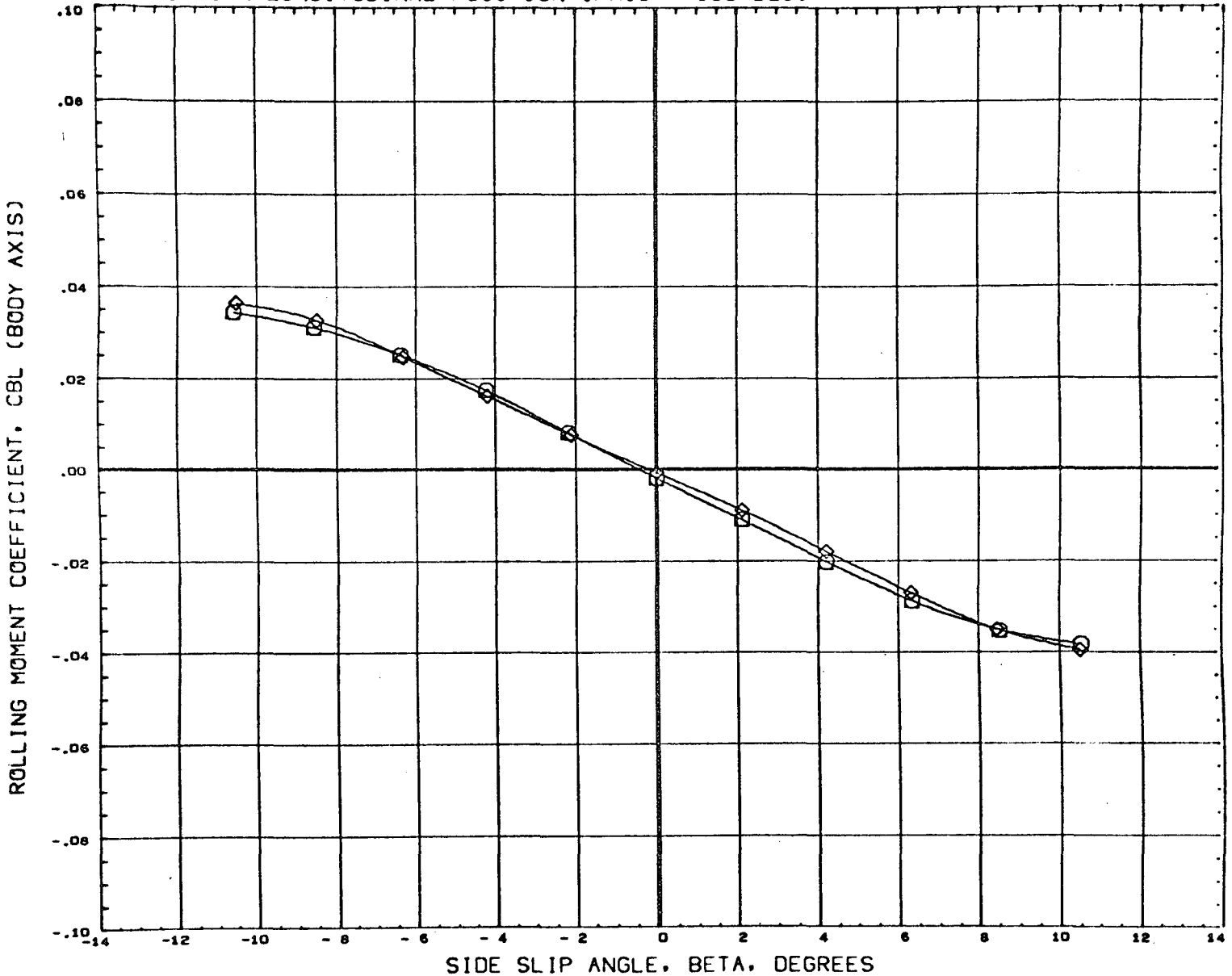


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71018)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

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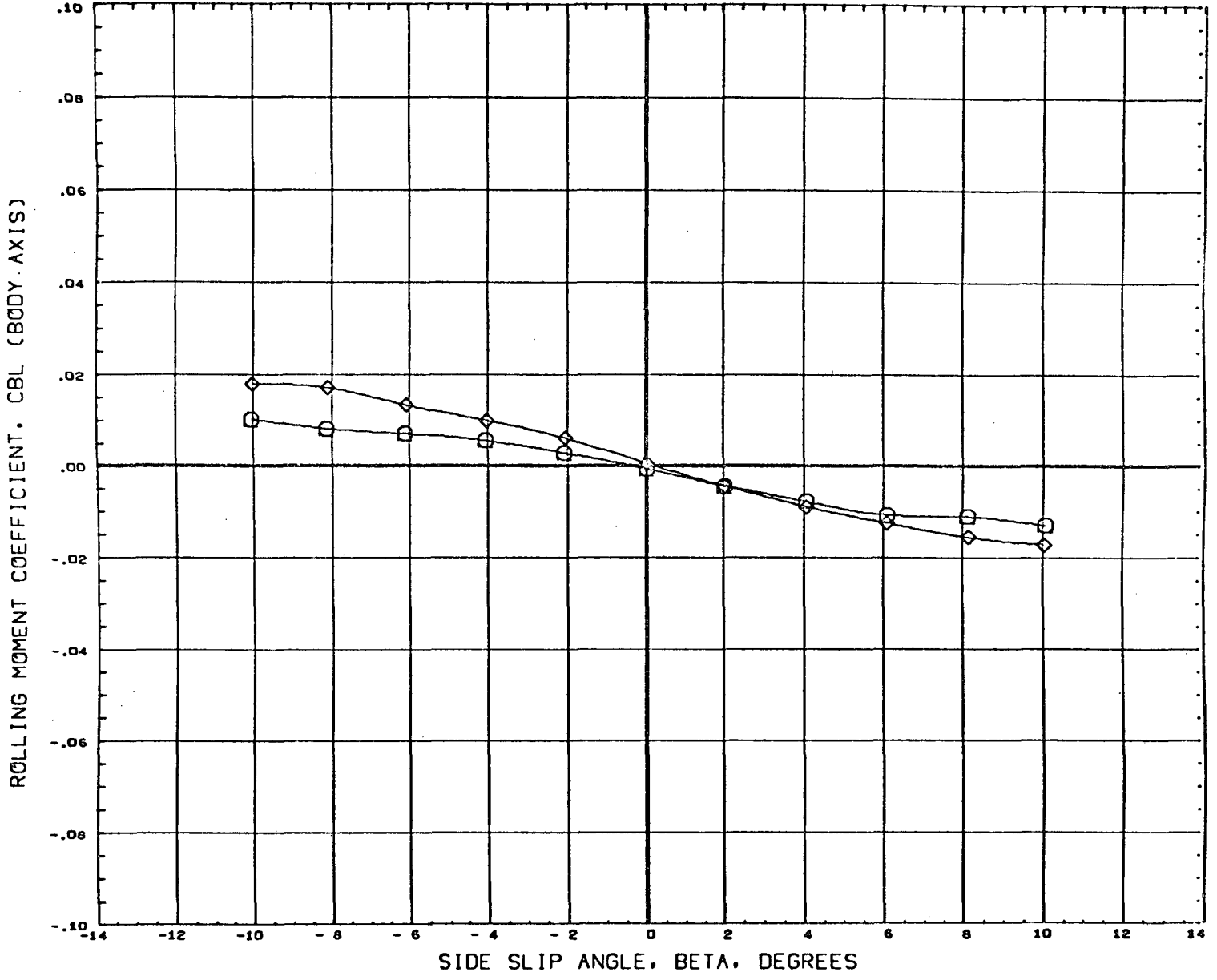
EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71018)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.96

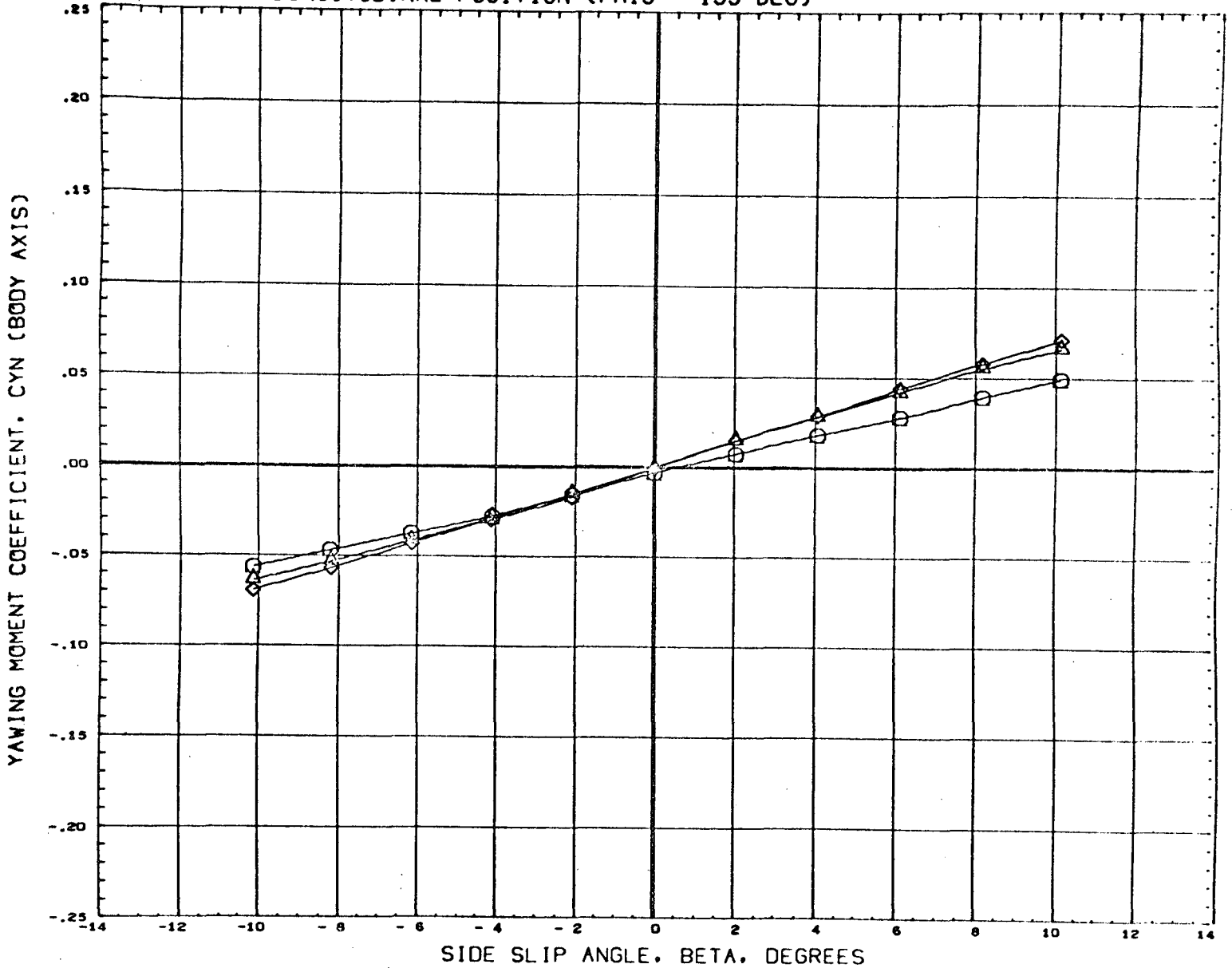
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71018)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

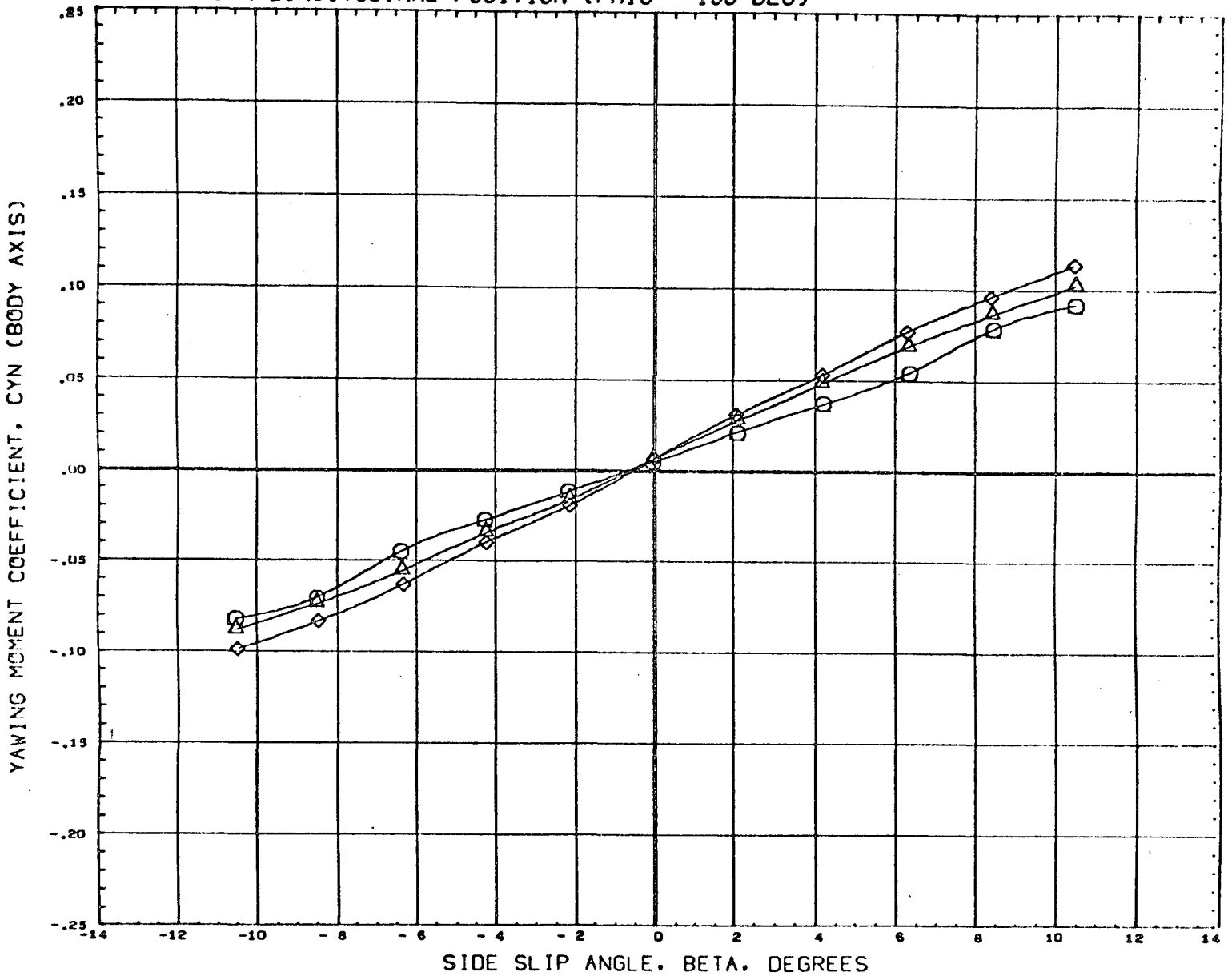
# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71018)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71038)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

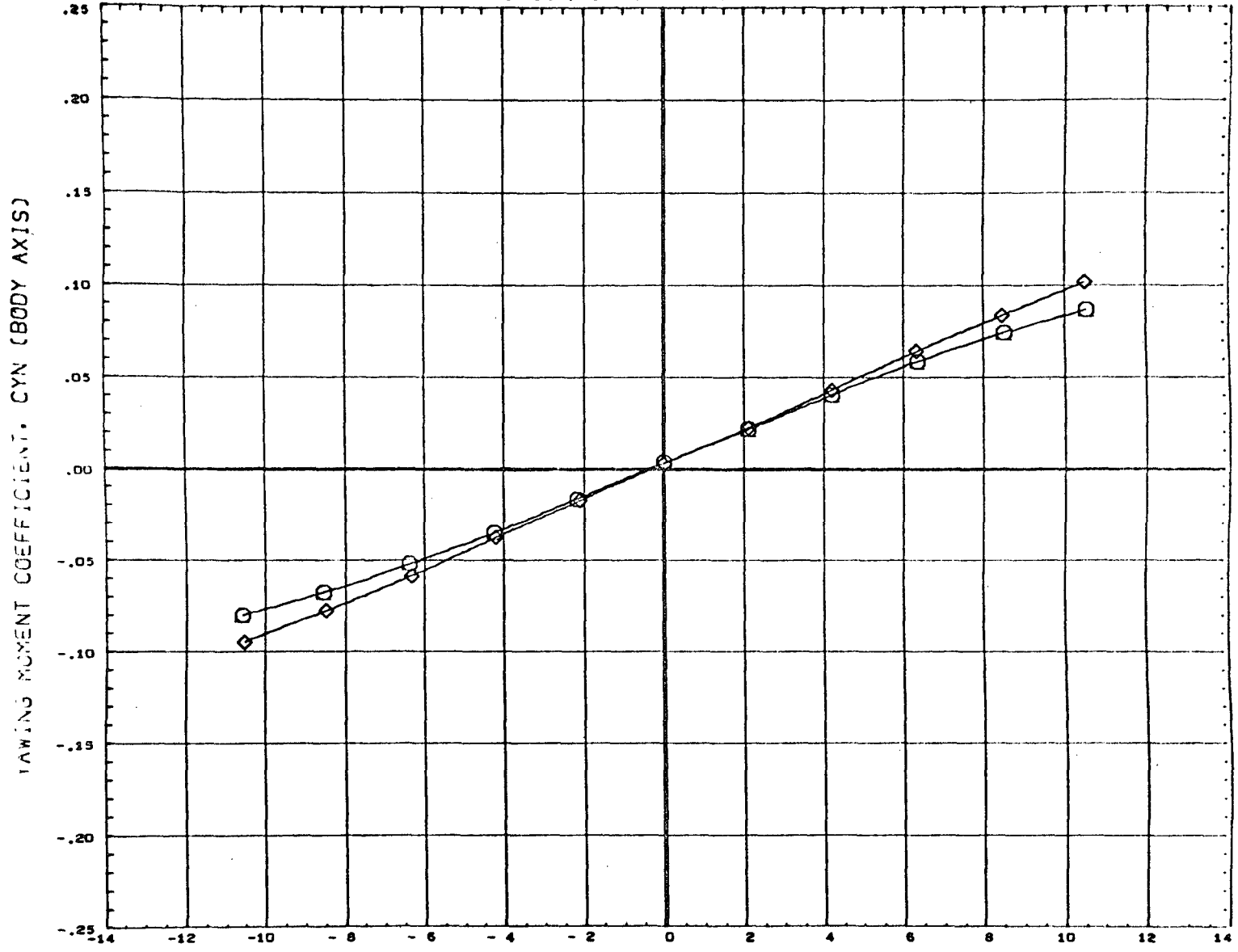


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71018)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20



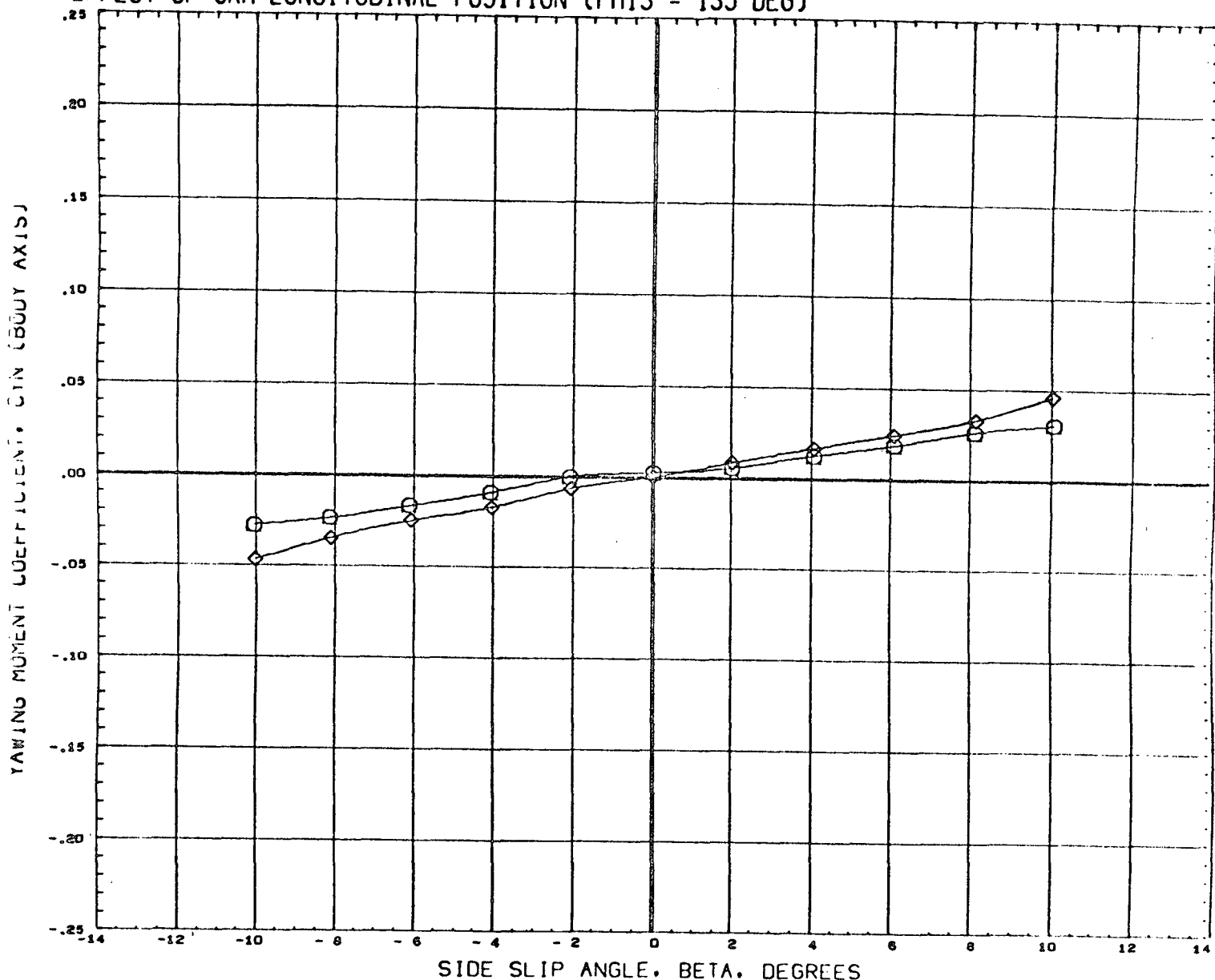
EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71016)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

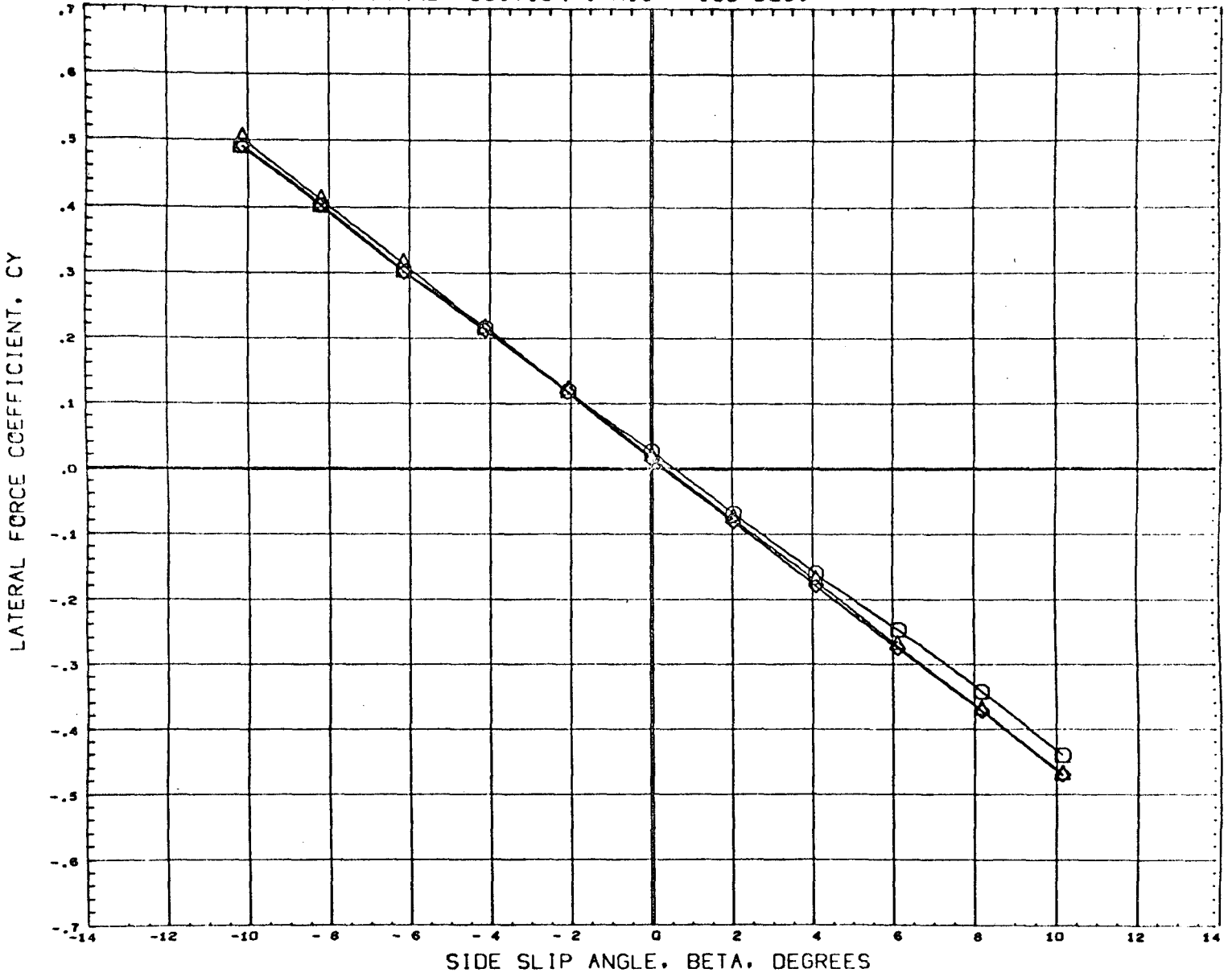


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.6800 SQ. IN.
(A71018)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

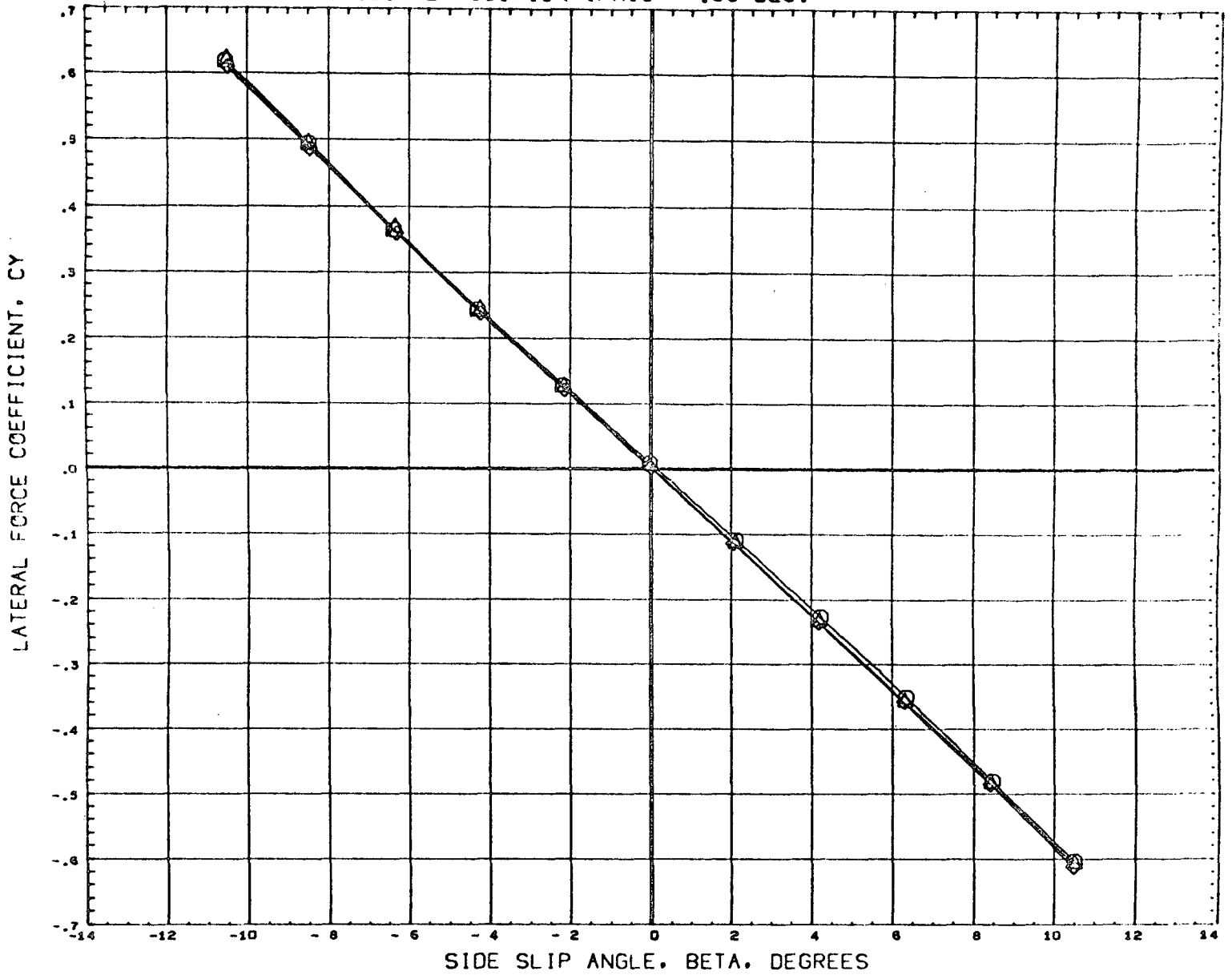


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C/1012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8600 SQ. IN
(A/1018)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A/1088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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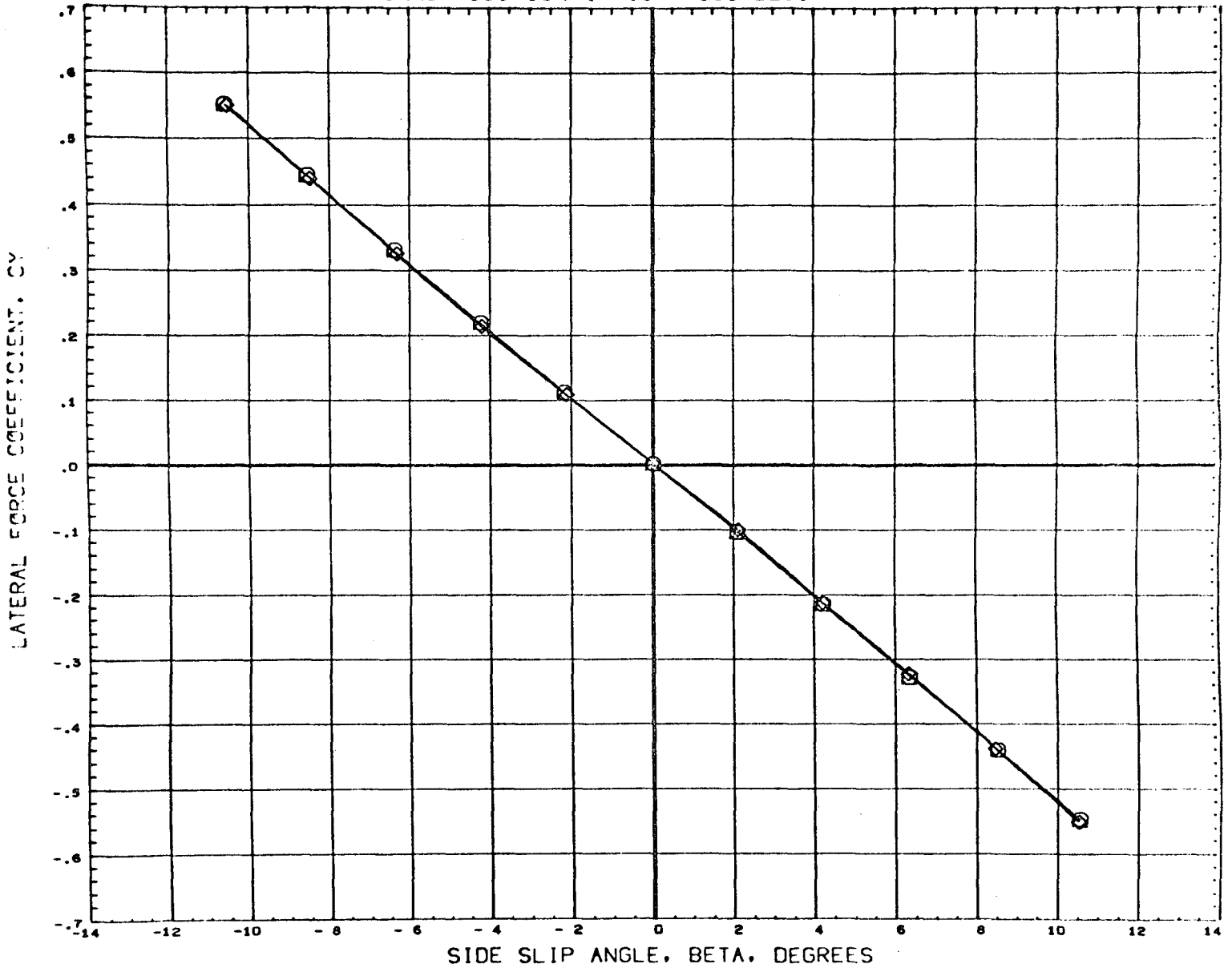
EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	SREF 7.8800 90. IN
(A7101A)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.624	LREF 2.0280 IN.
(A7109A)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.885	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

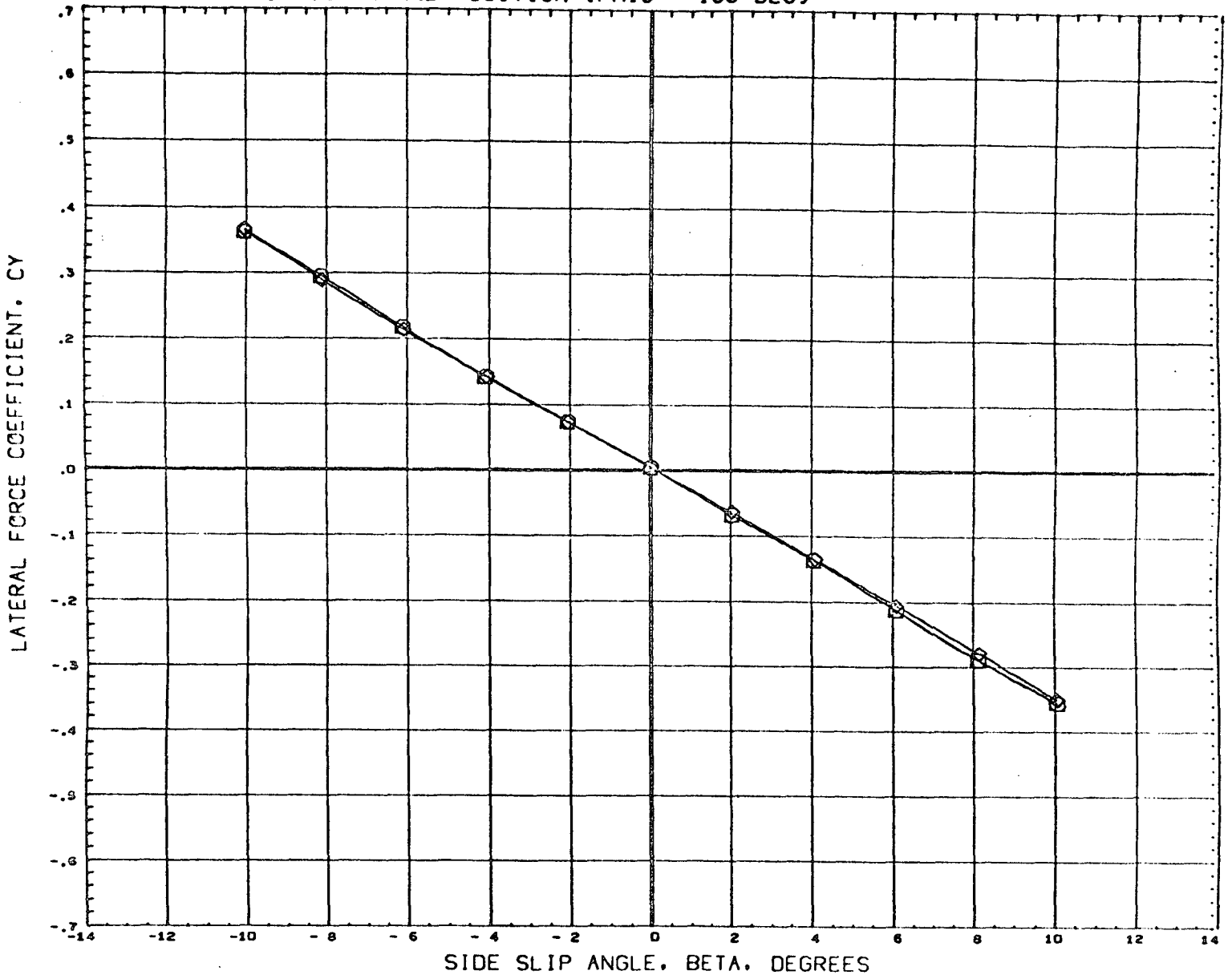
EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71018)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

# EFFECT OF SRM LONGITUDINAL POSITION (PHIS = 135 DEG)

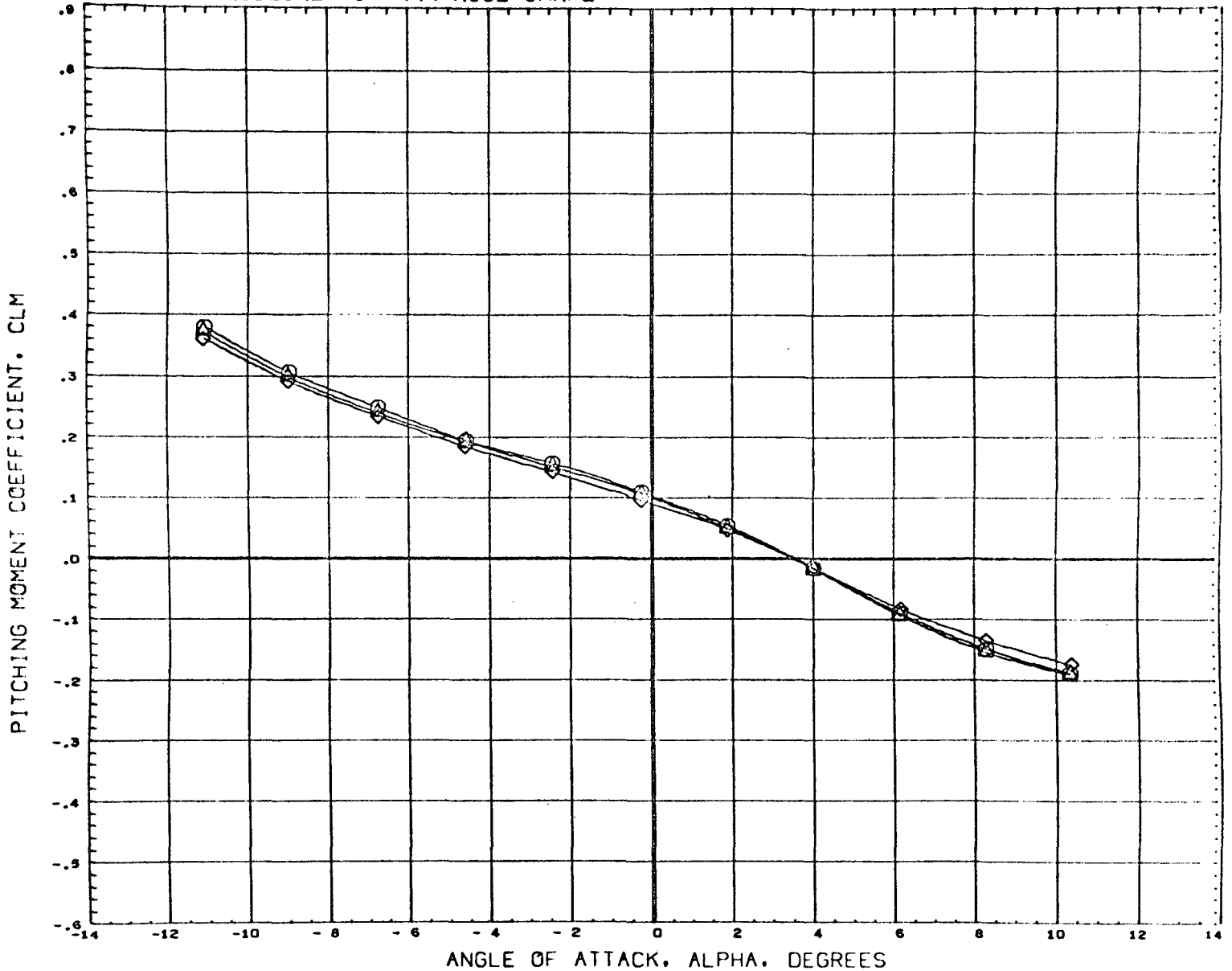


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71010)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	135.000	0.624	0.000	LREF 2.0280 IN.
(A71088)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.885	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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# EFFECT OF BASELINE H<sub>0</sub> TANK NOSE SHAPE

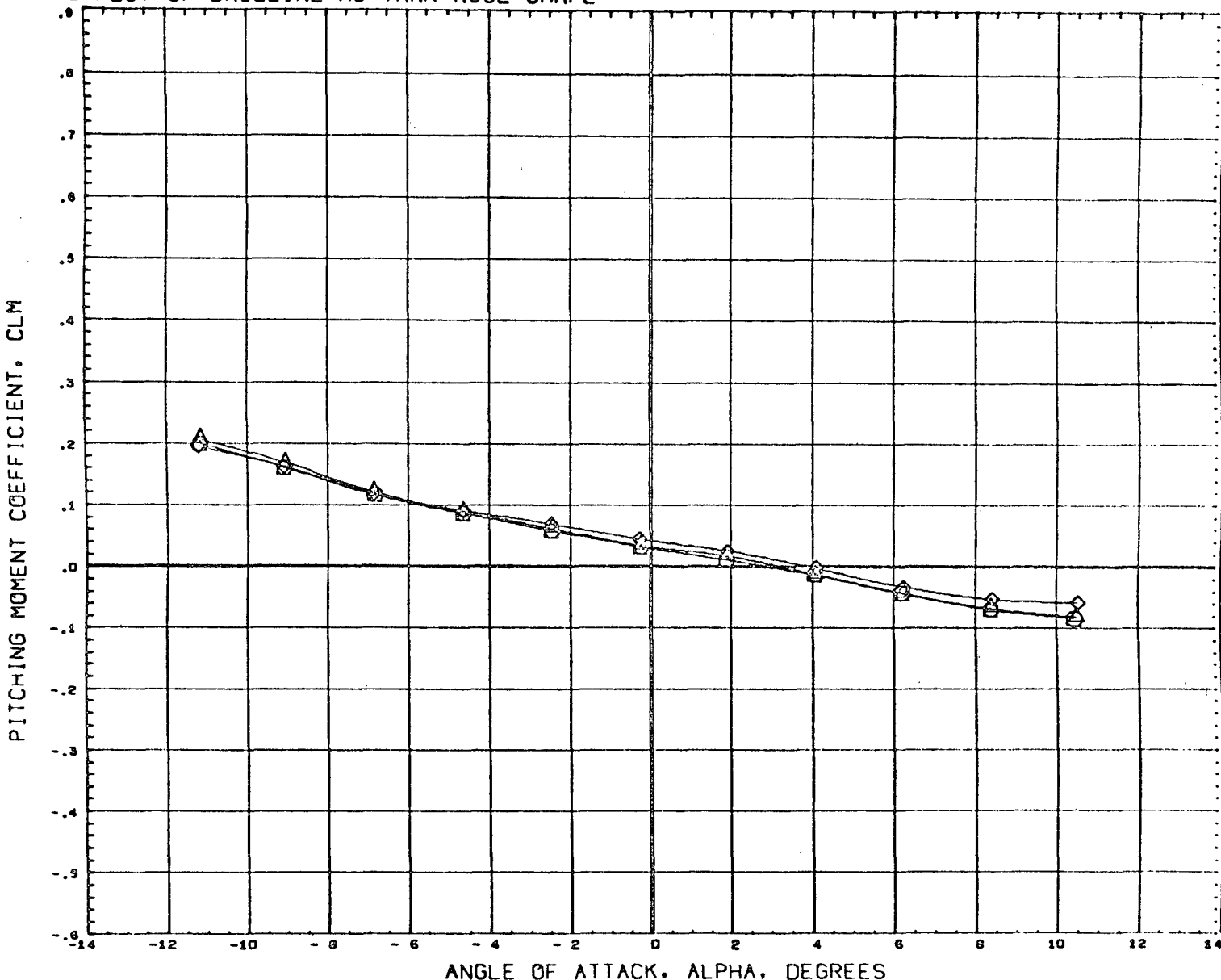


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(071035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF BASELINE NOSE SHAPE

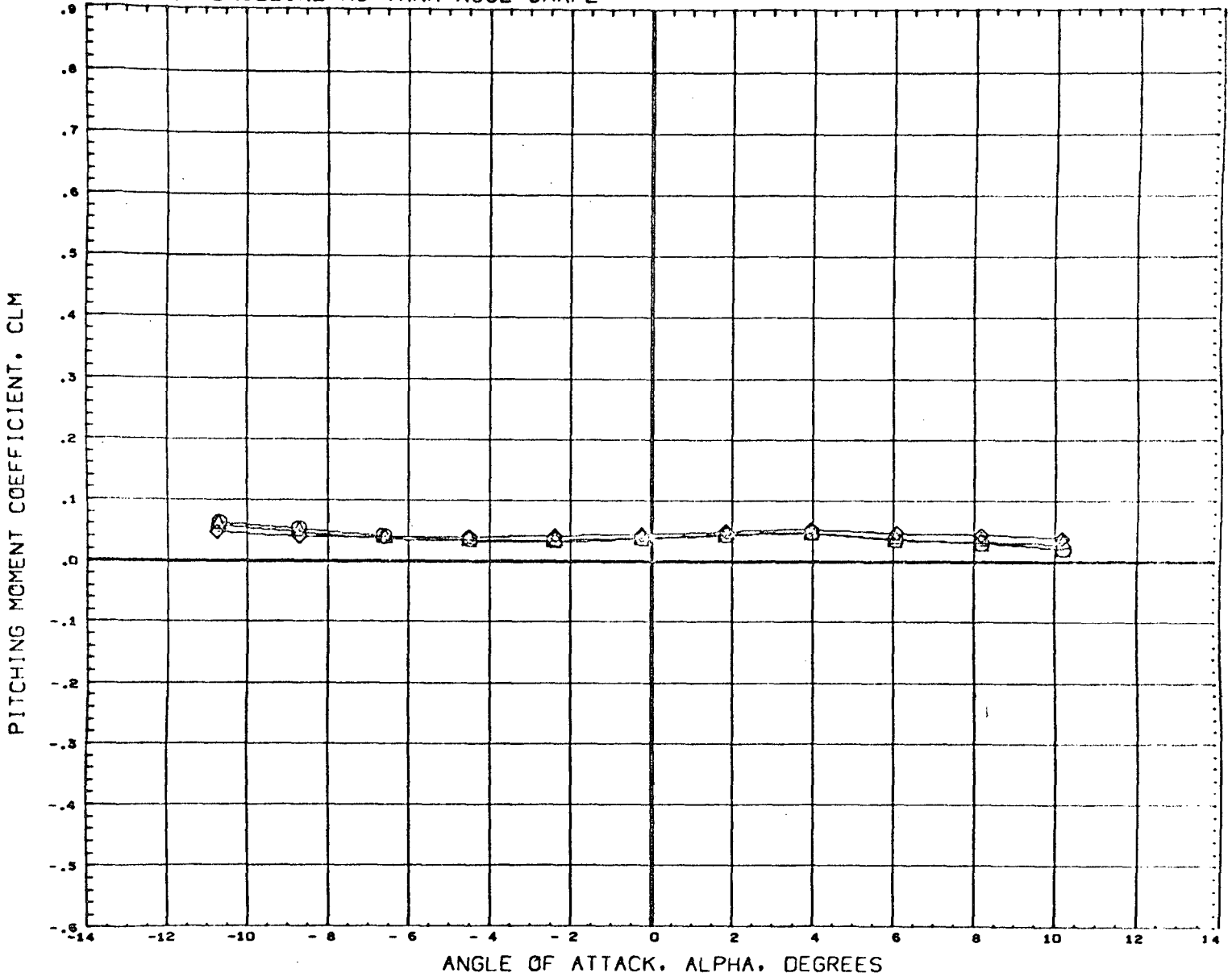


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97



# EFFECT OF BASELINE H0 TANK NOSE SHAPE

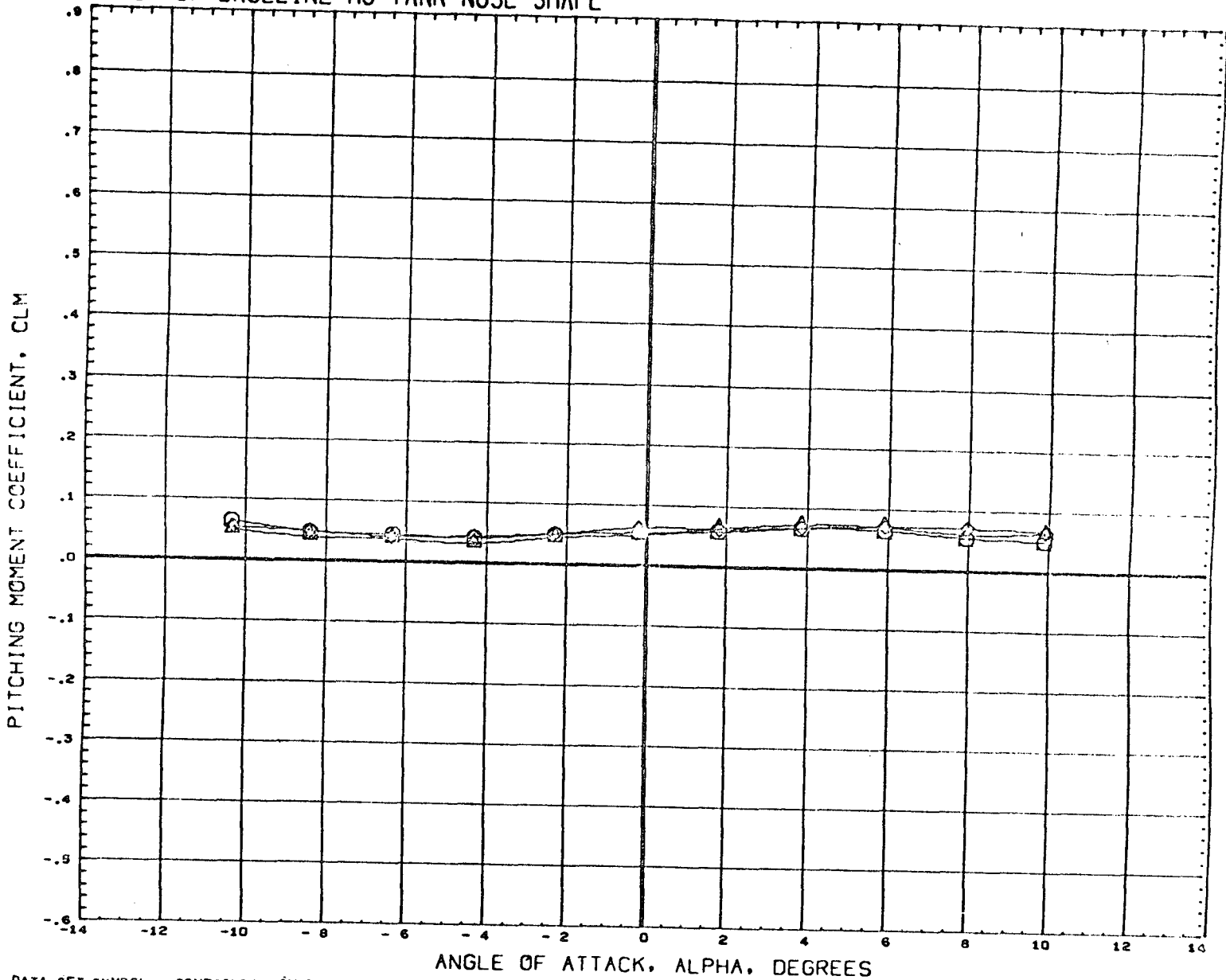


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(071035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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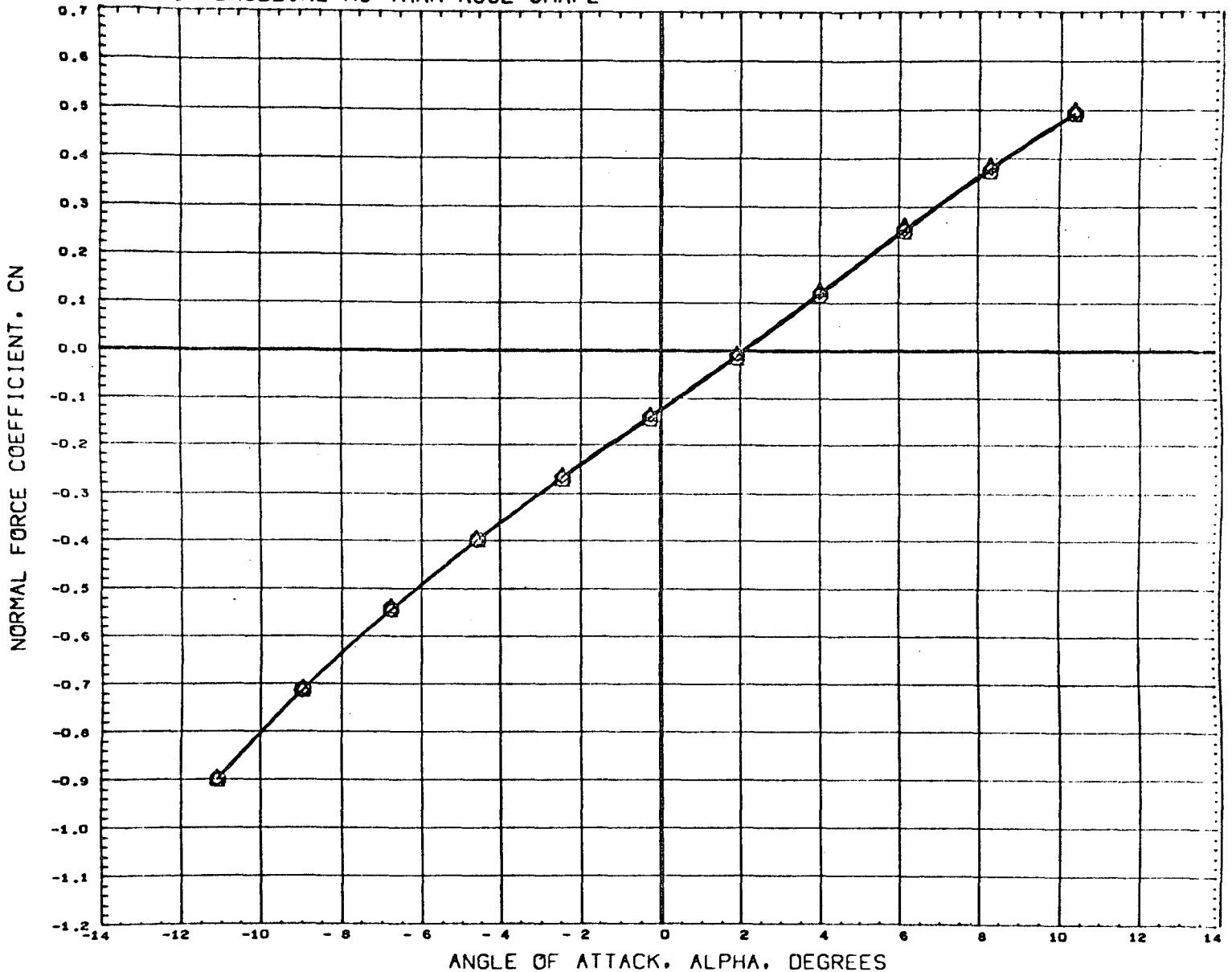
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(871035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

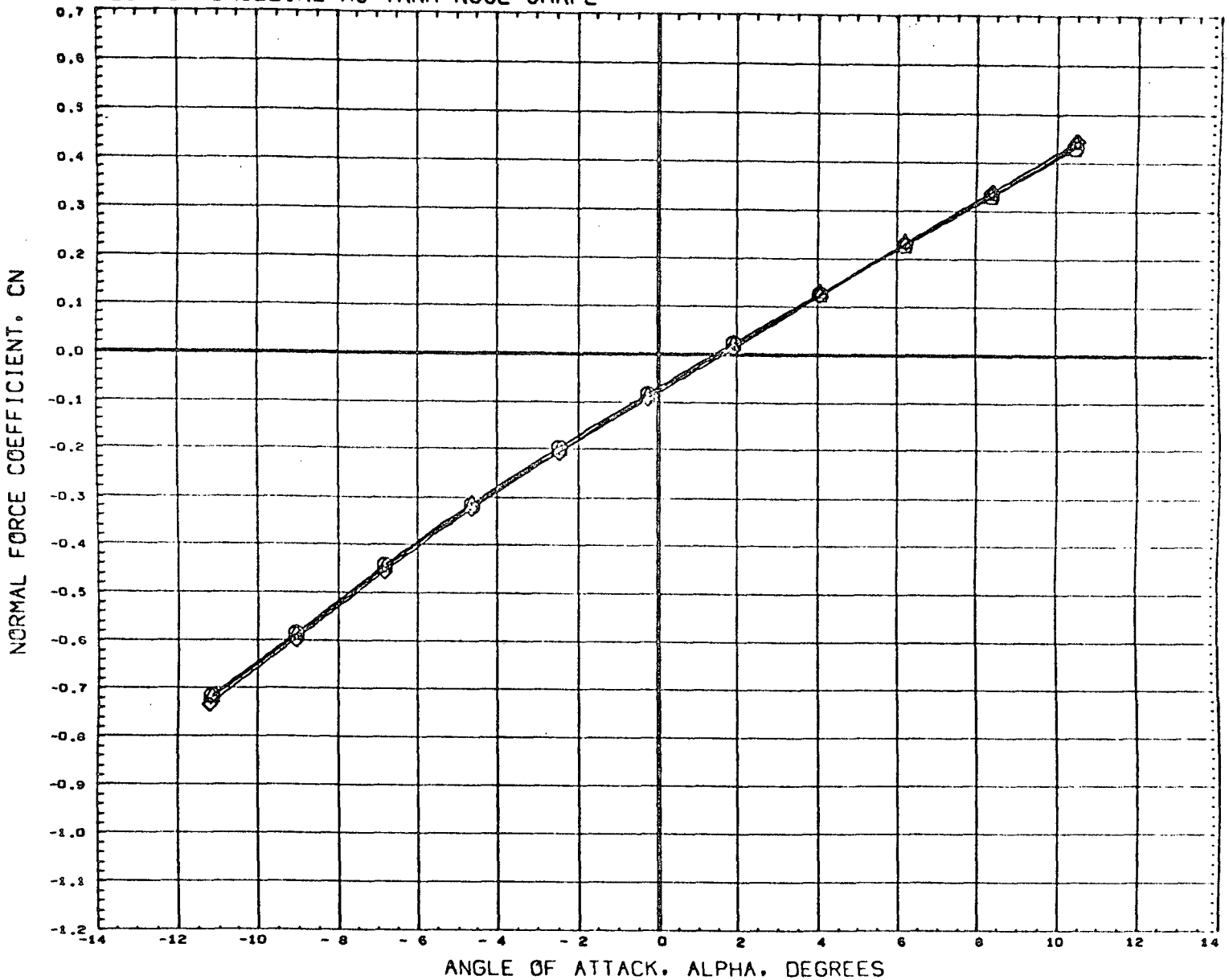
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

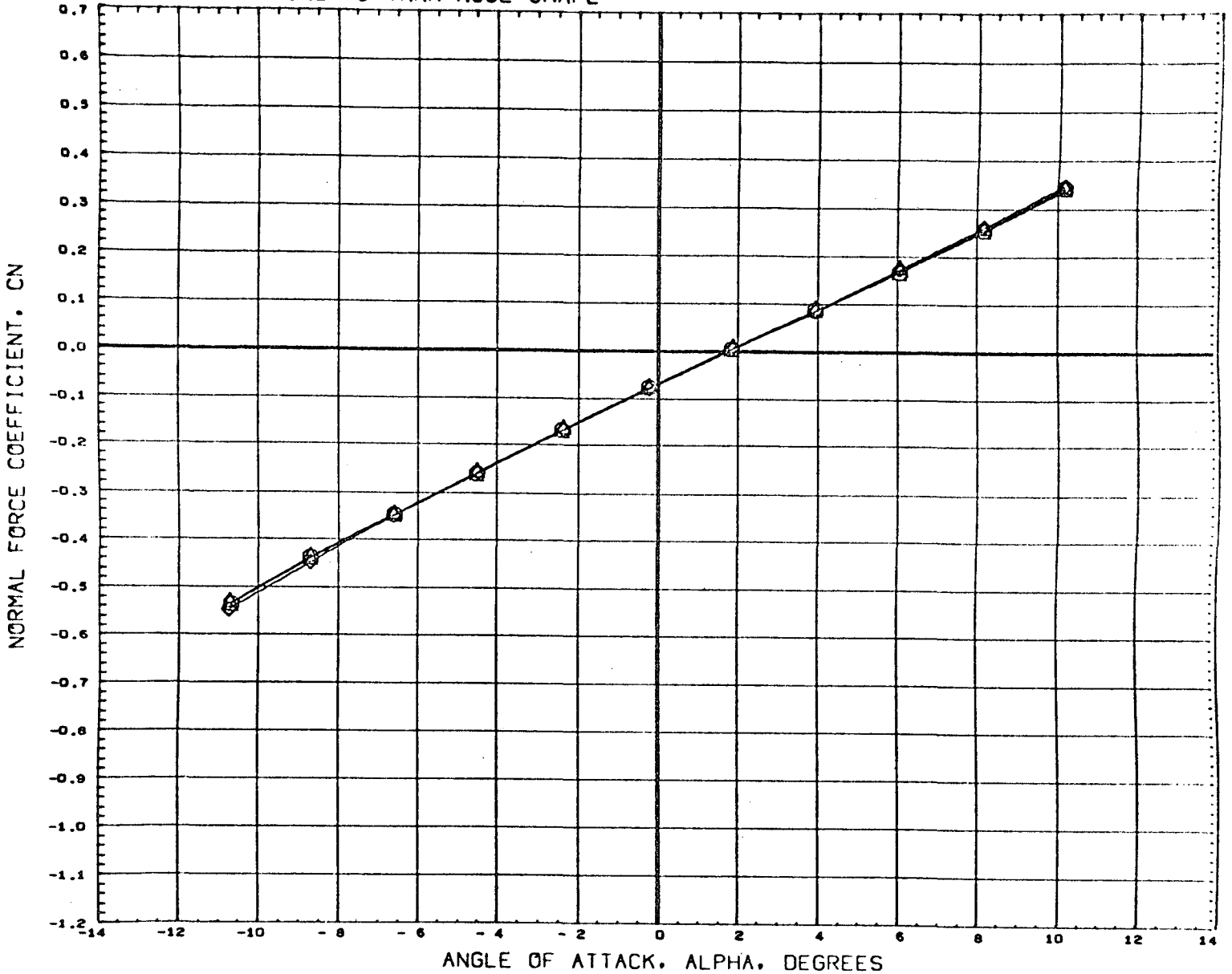
# EFFECT OF BASELINE NO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(D71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

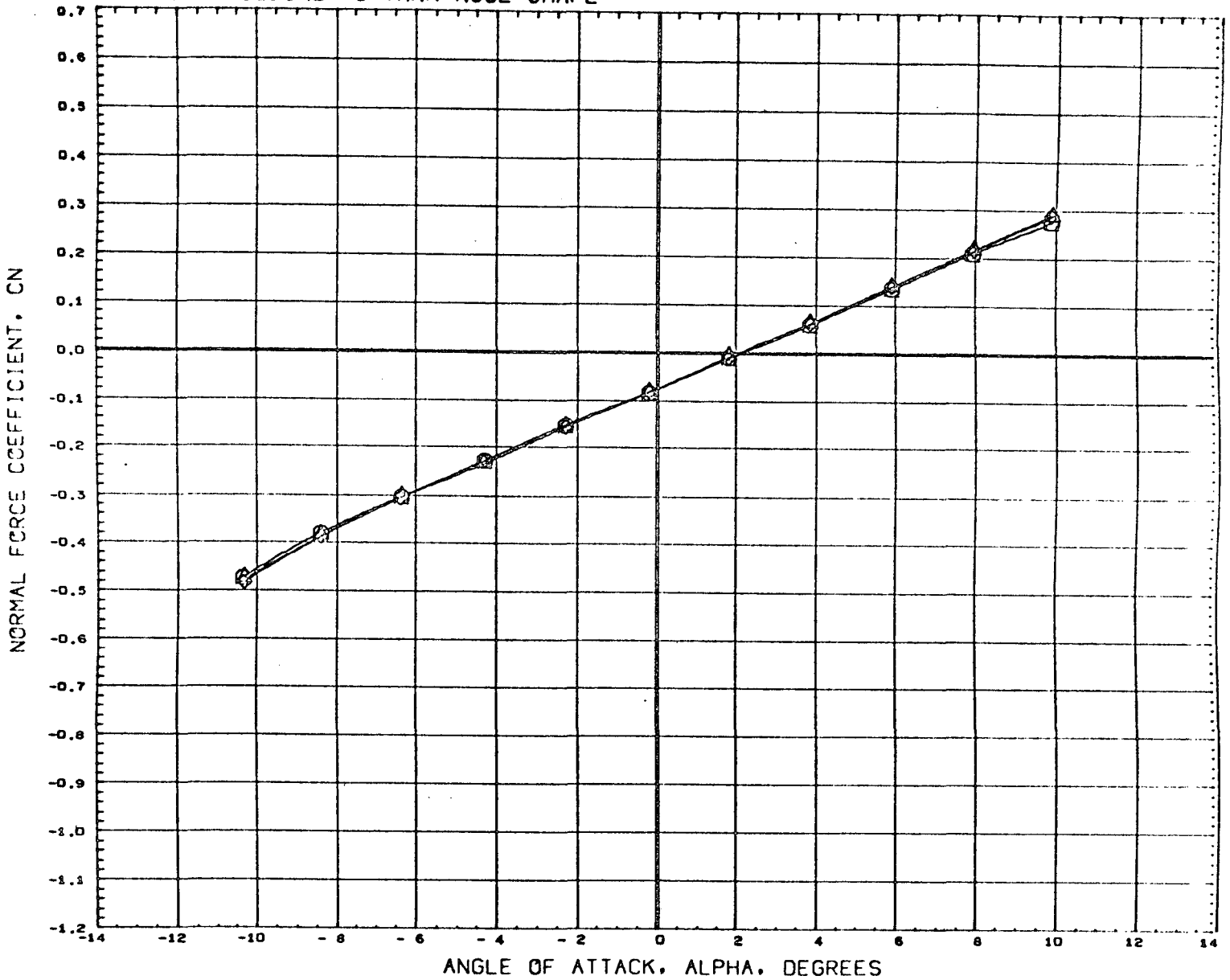
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(071035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

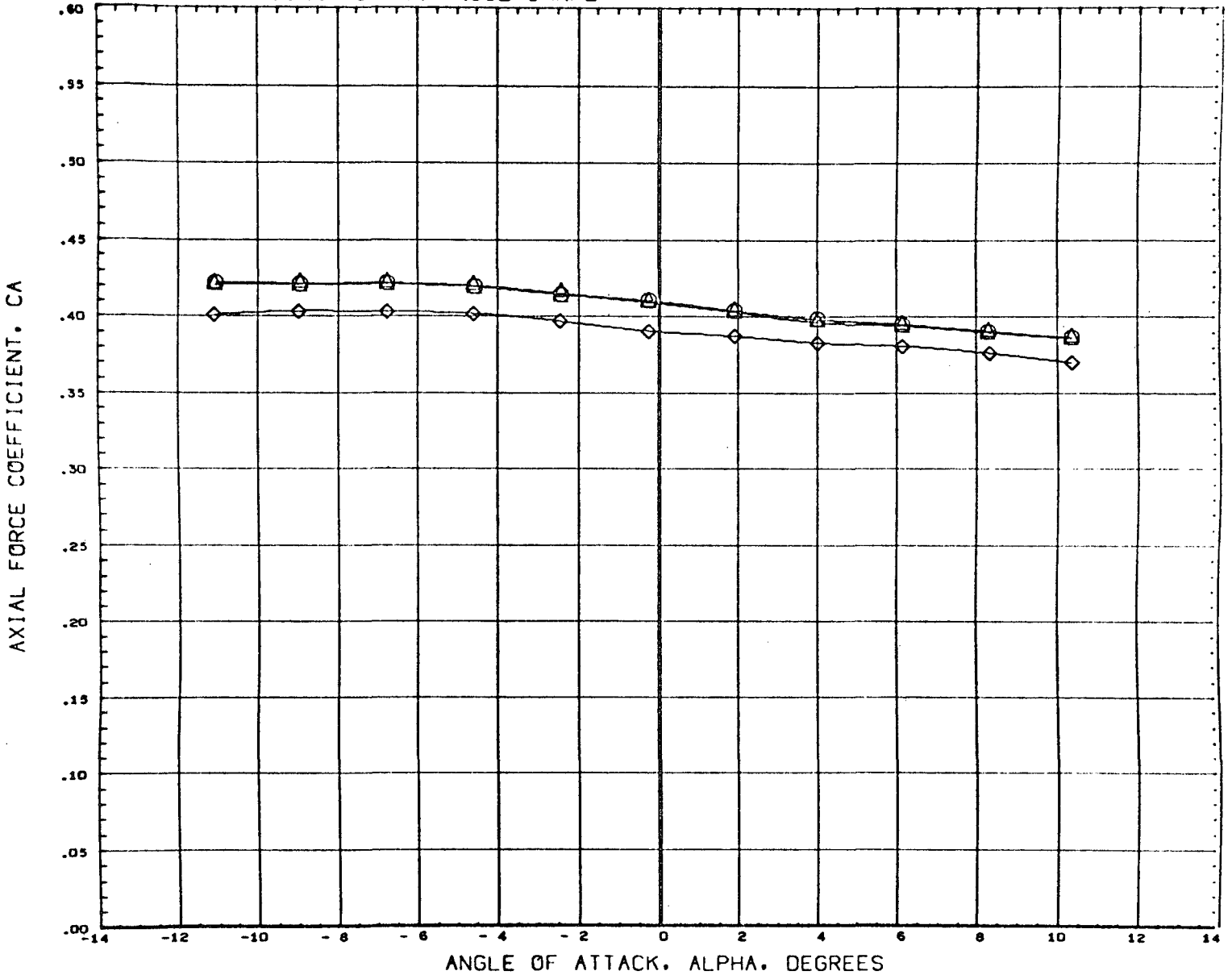
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF BASELINE H<sub>0</sub> TANK NOSE SHAPE

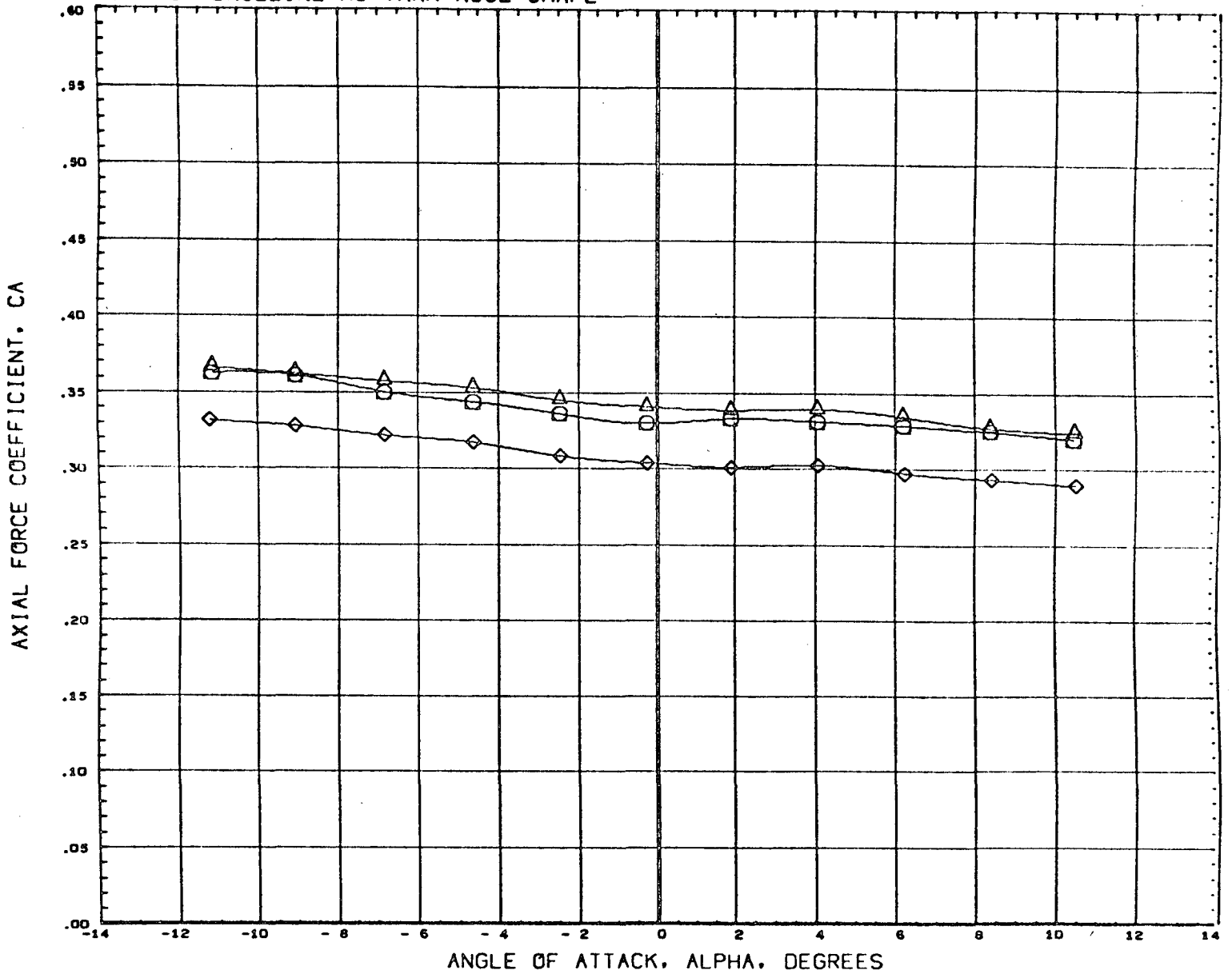


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF BASELINE H0 TANK NOSE SHAPE

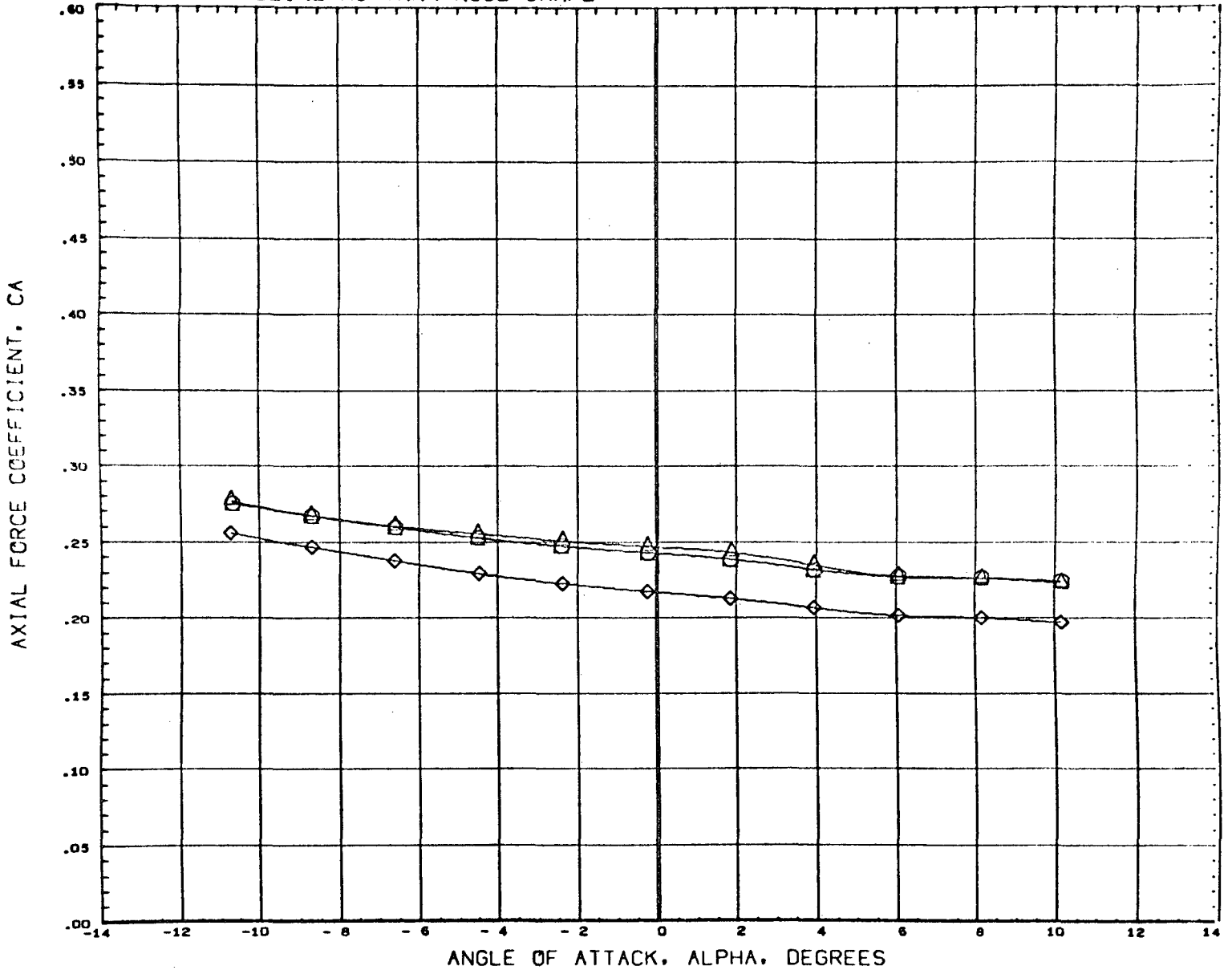


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(871035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97



# EFFECT OF BASELINE H0 TANK NOSE SHAPE

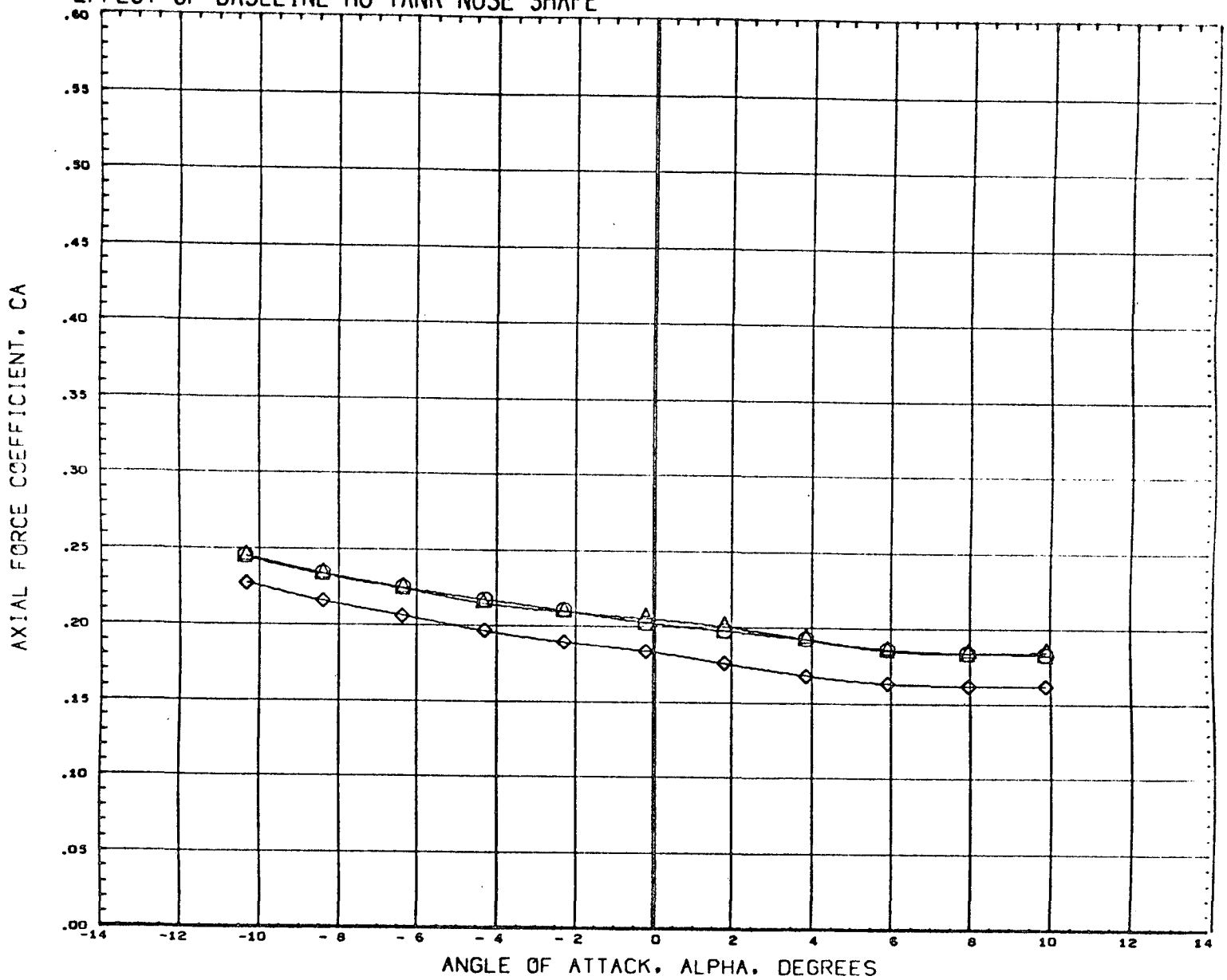


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(071035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

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# EFFECT OF BASELINE HO TANK NOSE SHAPE

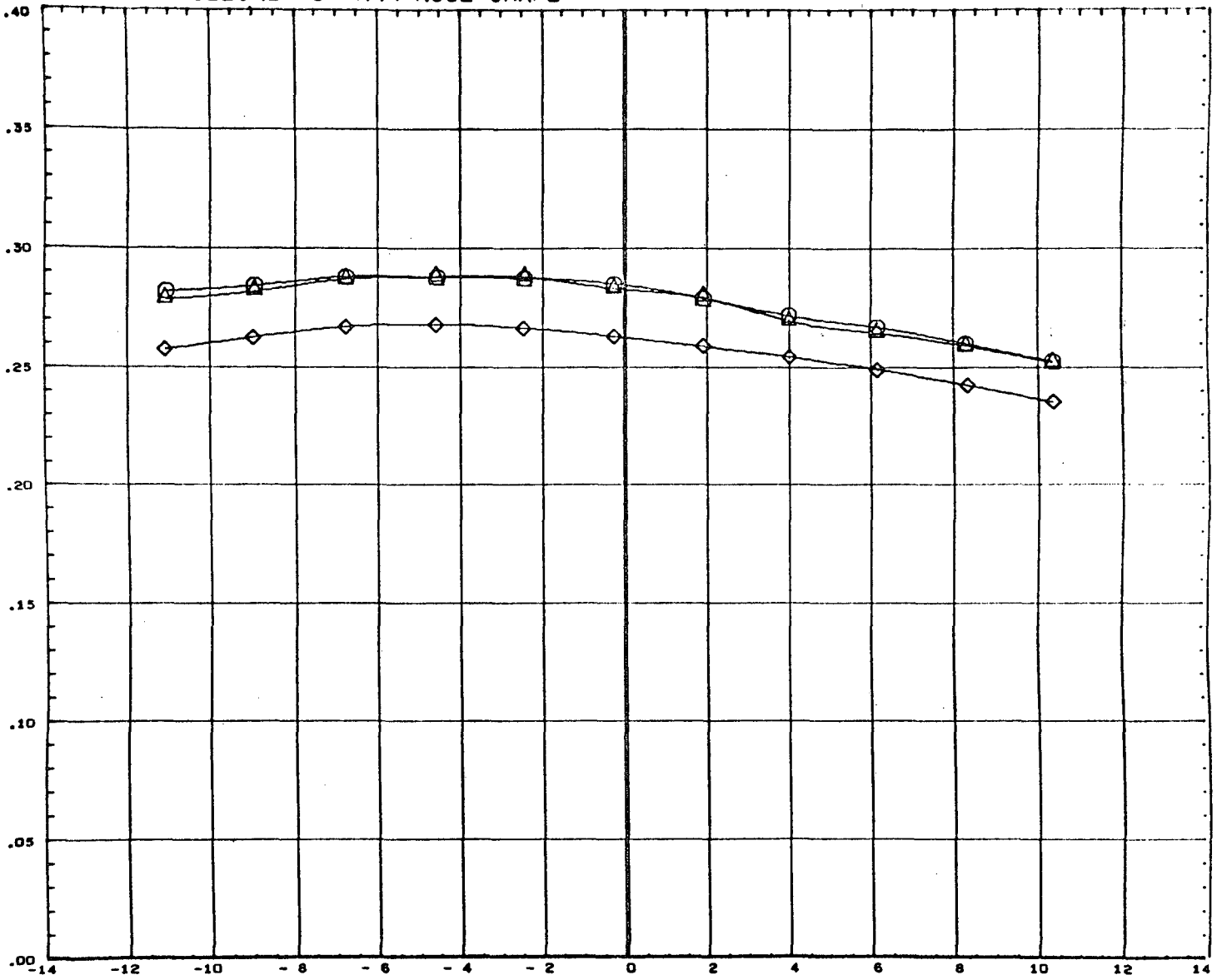


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(D71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF BASELINE NO TANK NOSE SHAPE

FOREBODY AXIAL FORCE COEFFICIENT, CAF

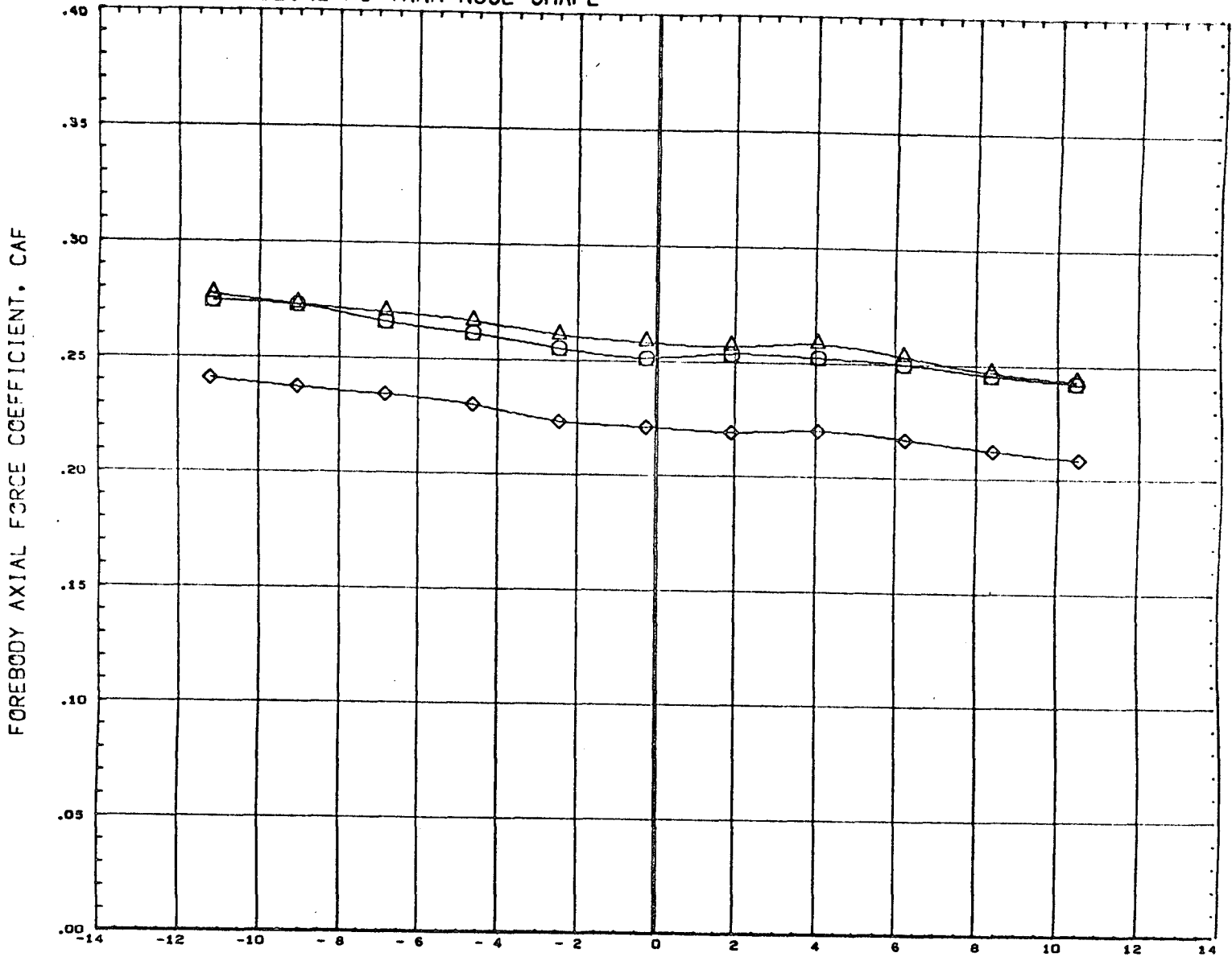


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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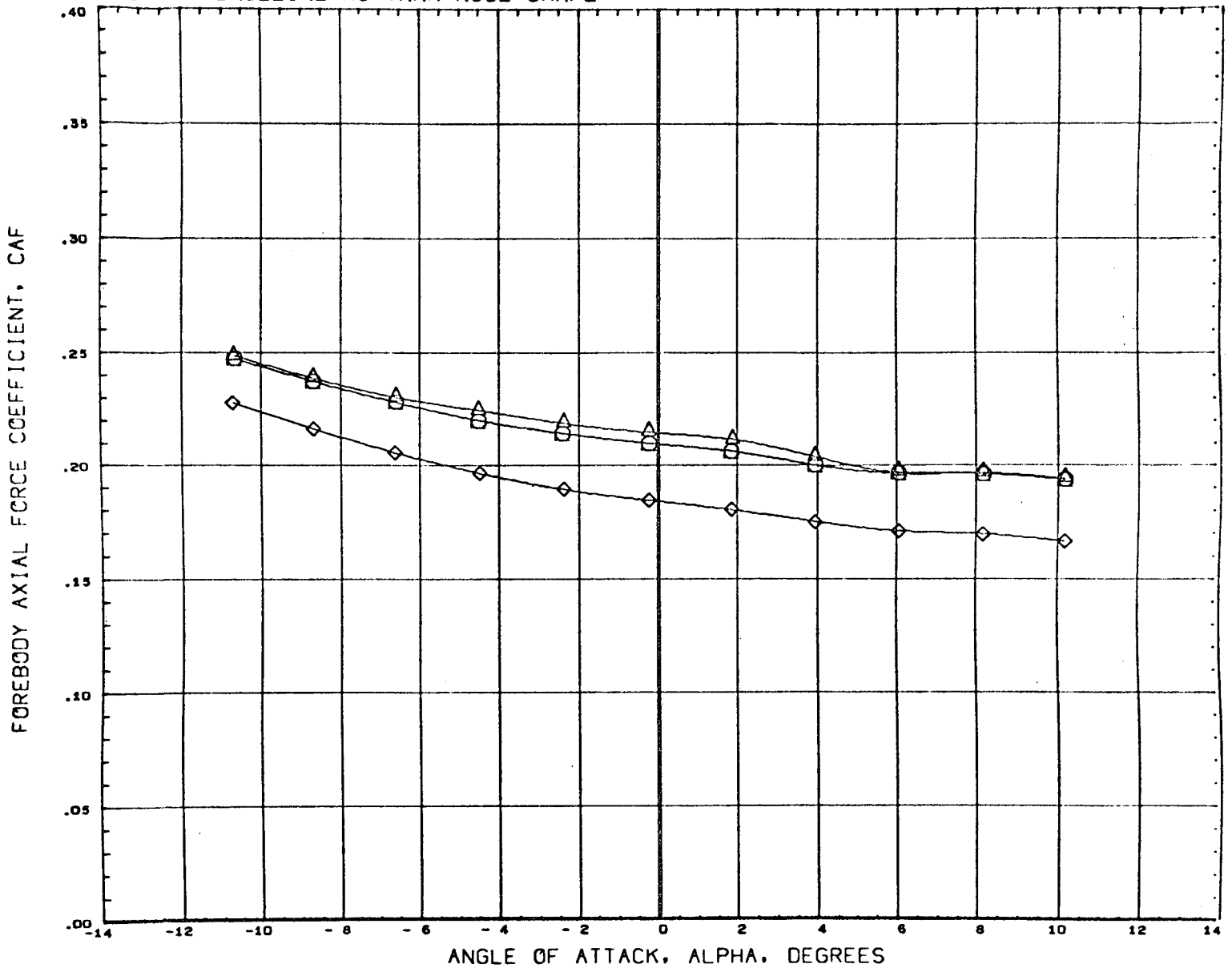
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(071035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

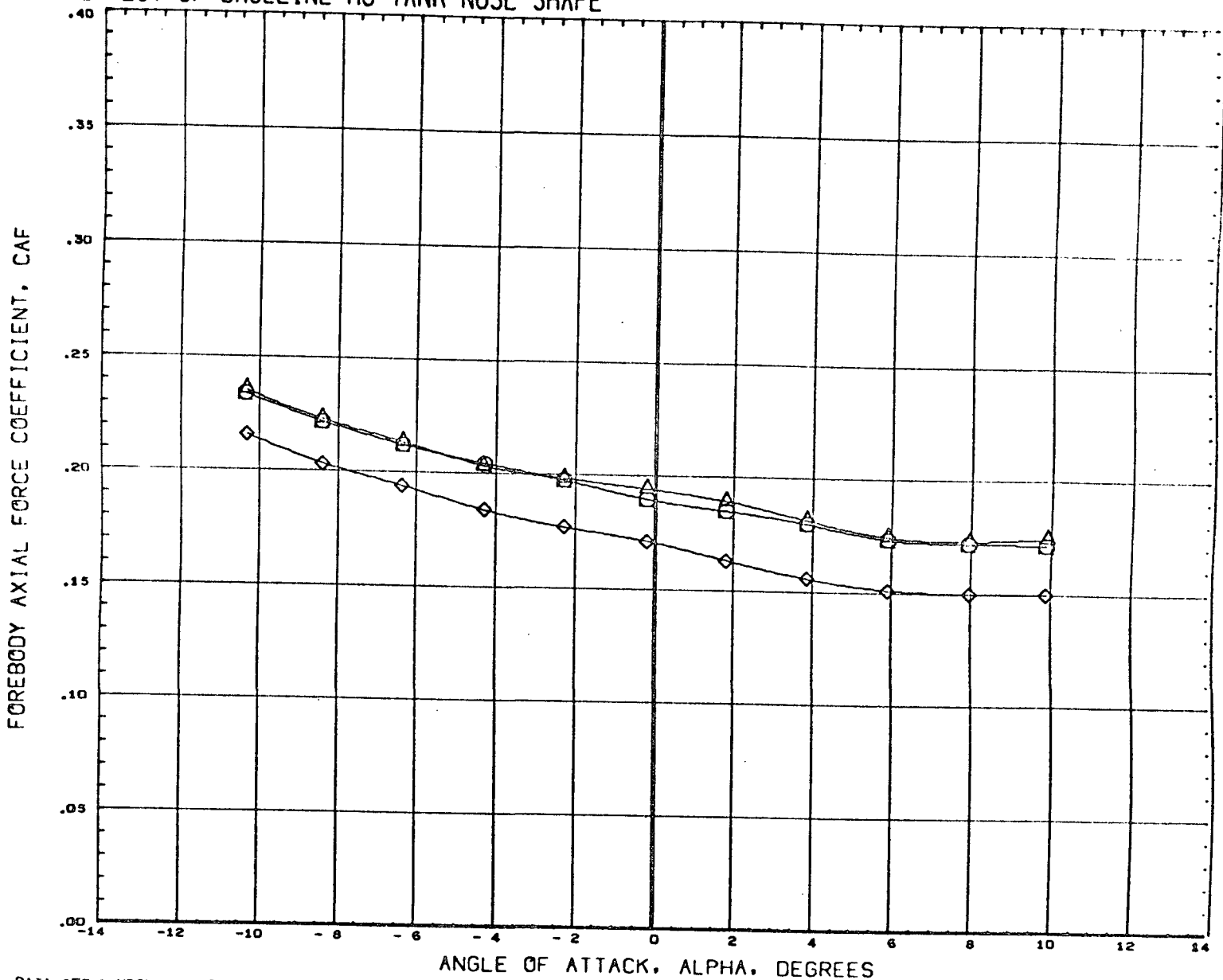
# EFFECT OF BASELINE H<sub>0</sub> TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0250 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

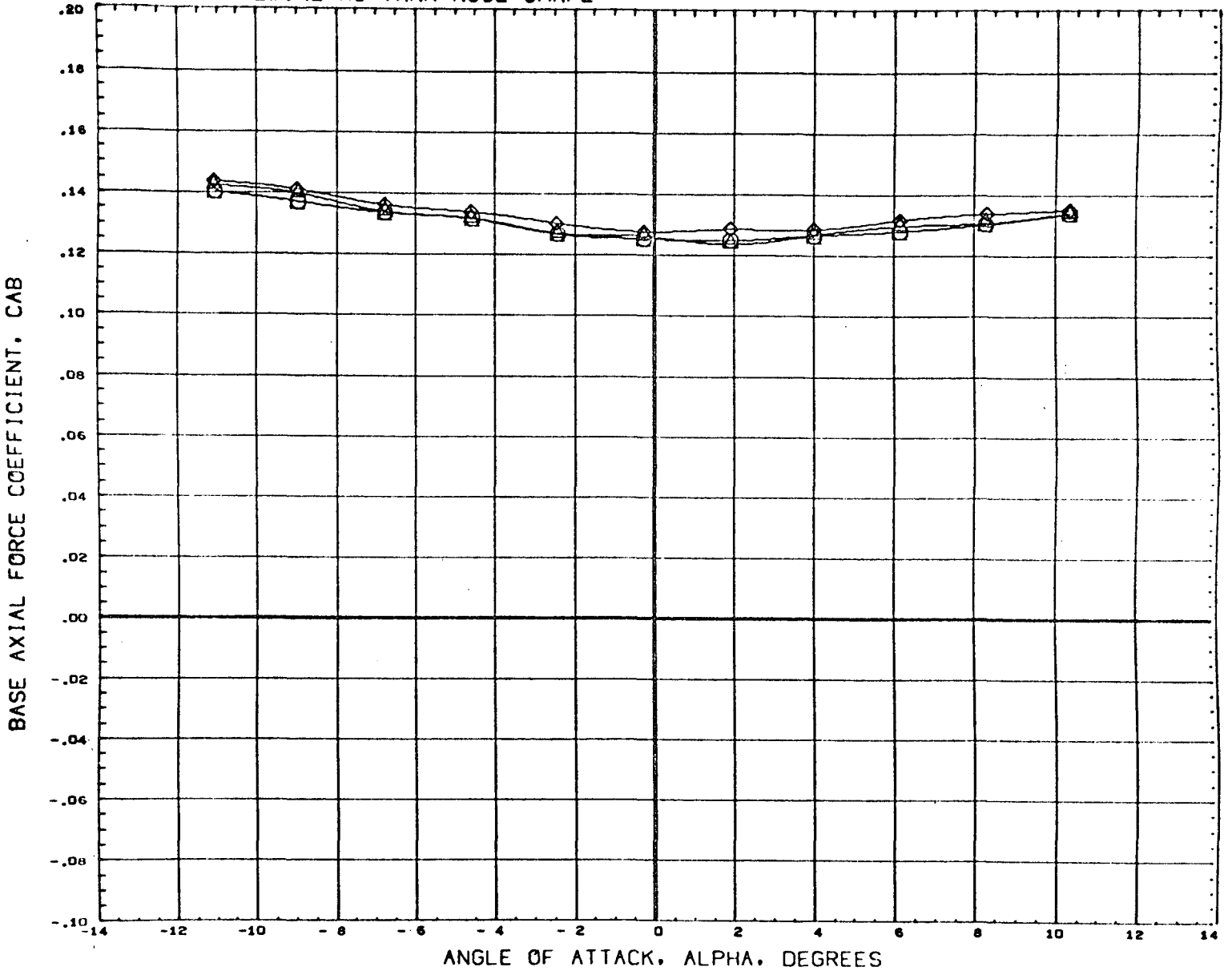
# EFFECT OF BASELINE H<sub>0</sub> TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(D71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF BASELINE NOSE SHAPE

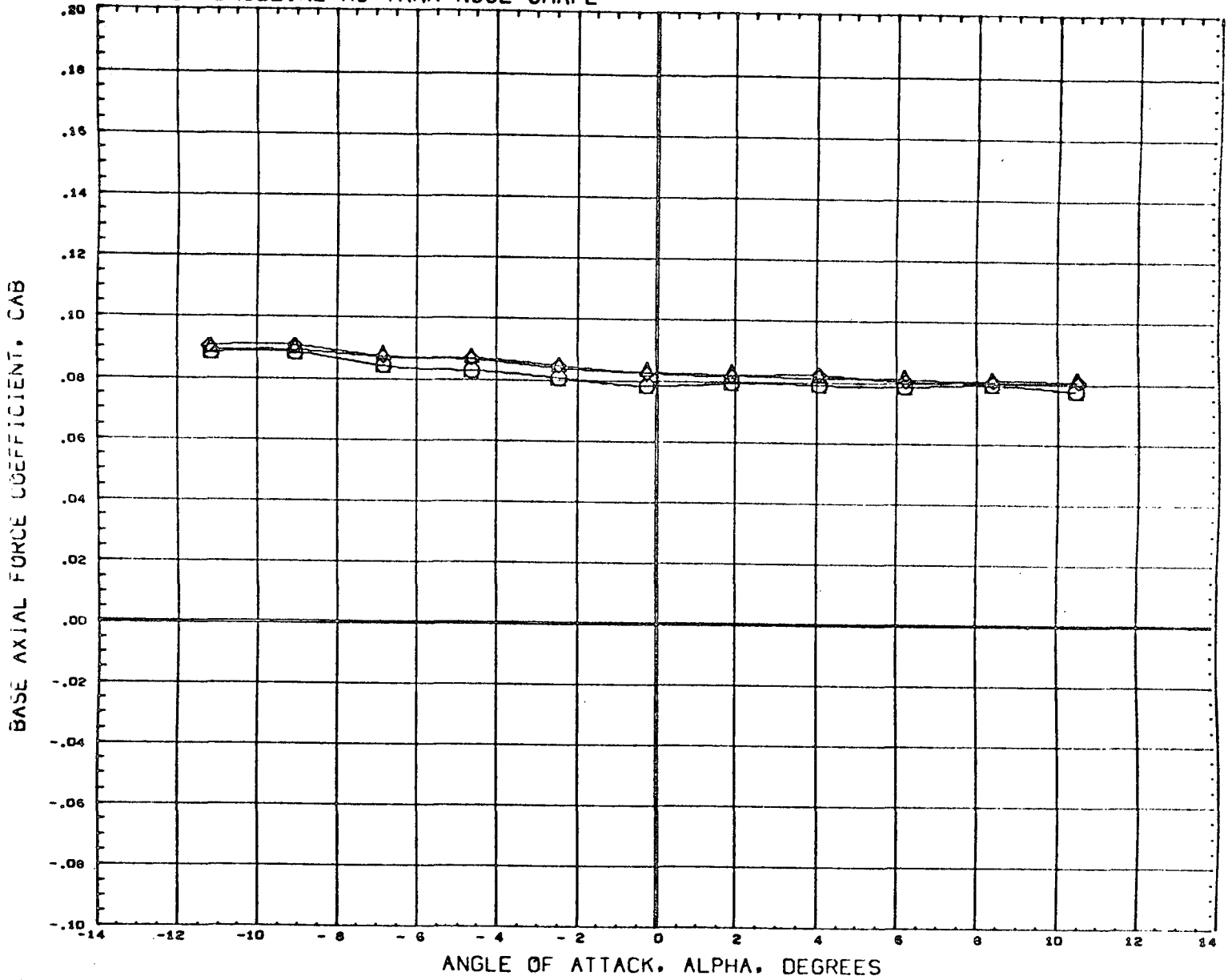


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871033)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(871035)	◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF BASELINE HO TANK NOSE SHAPE

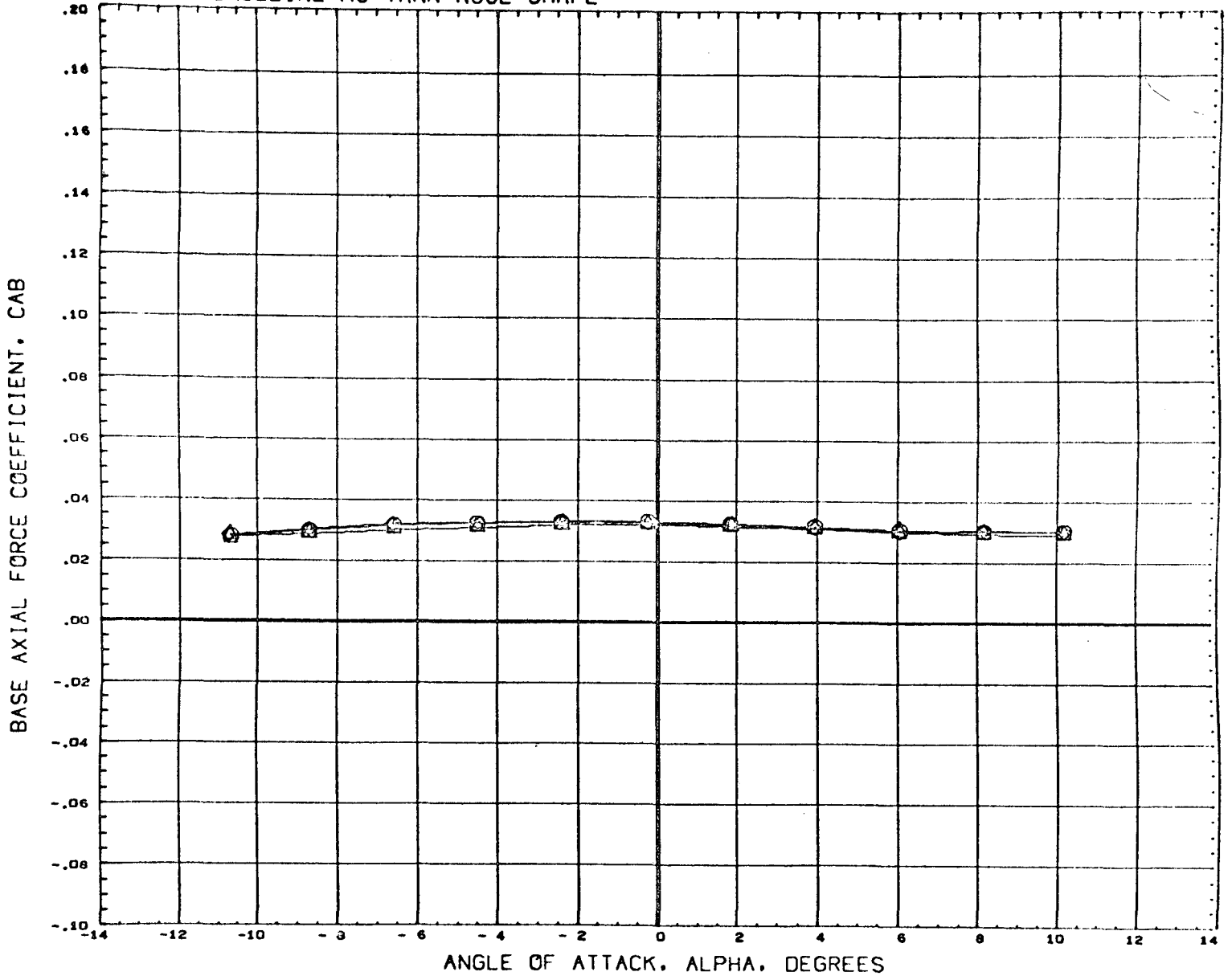


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071033)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(071035)	◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.97



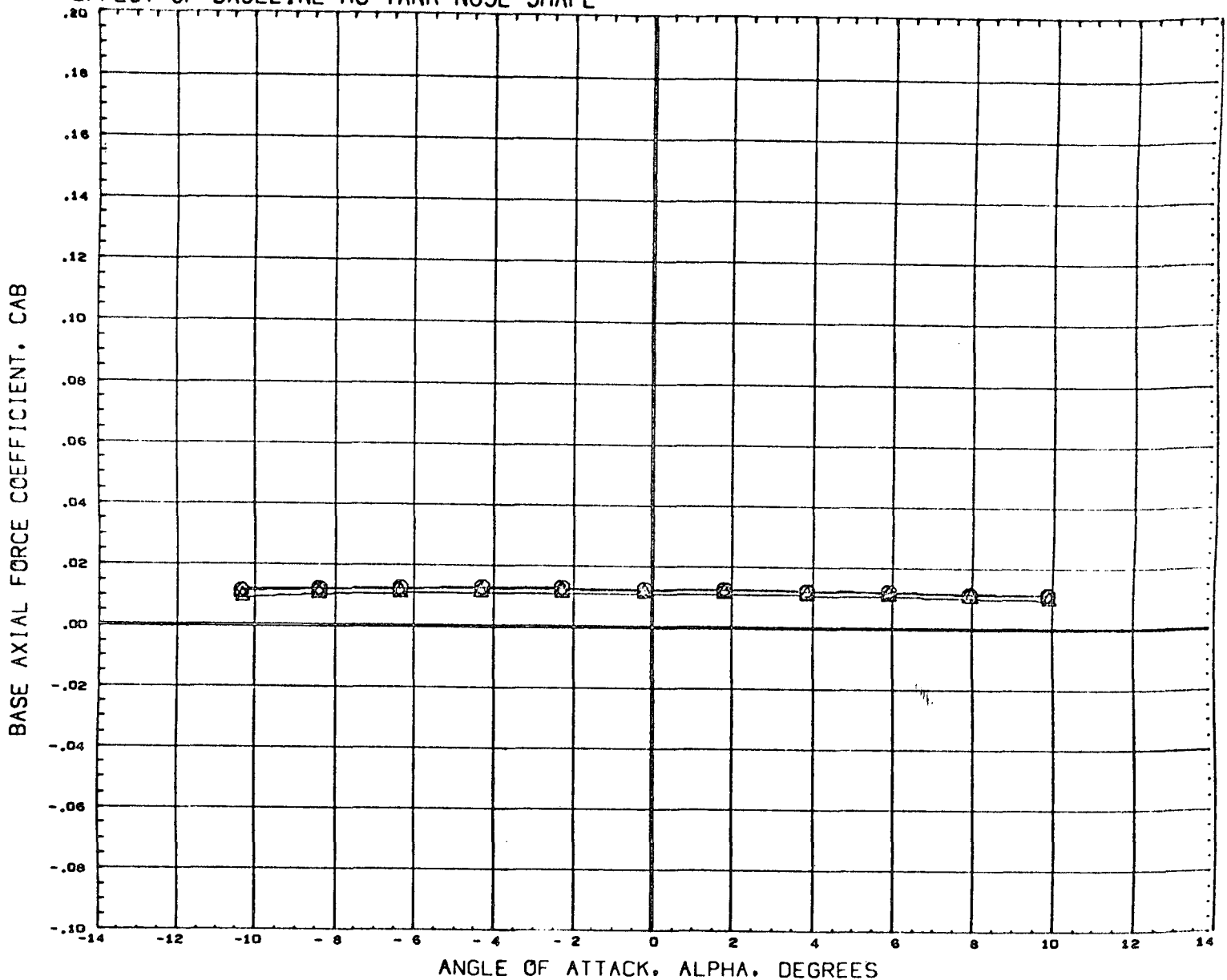
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

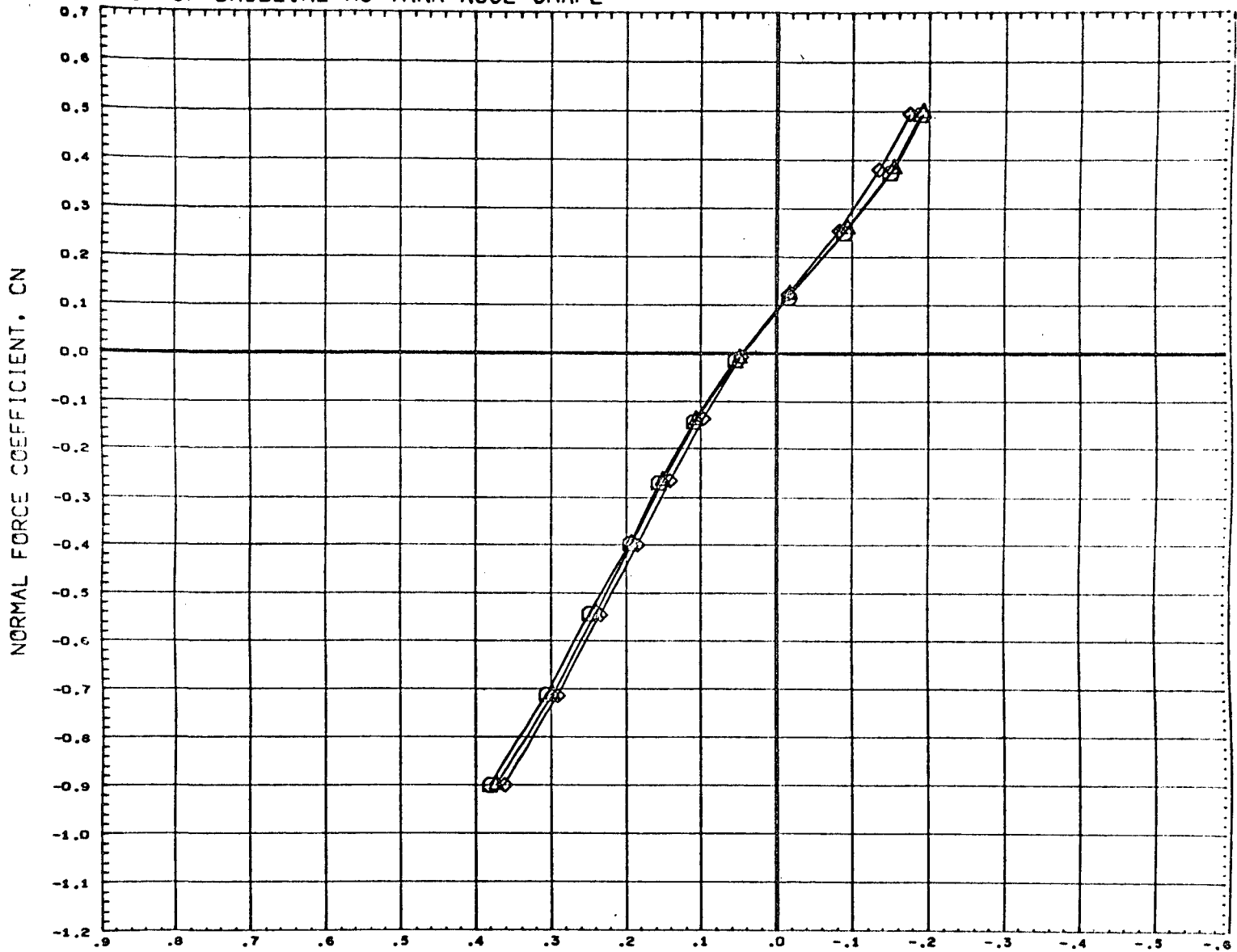
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

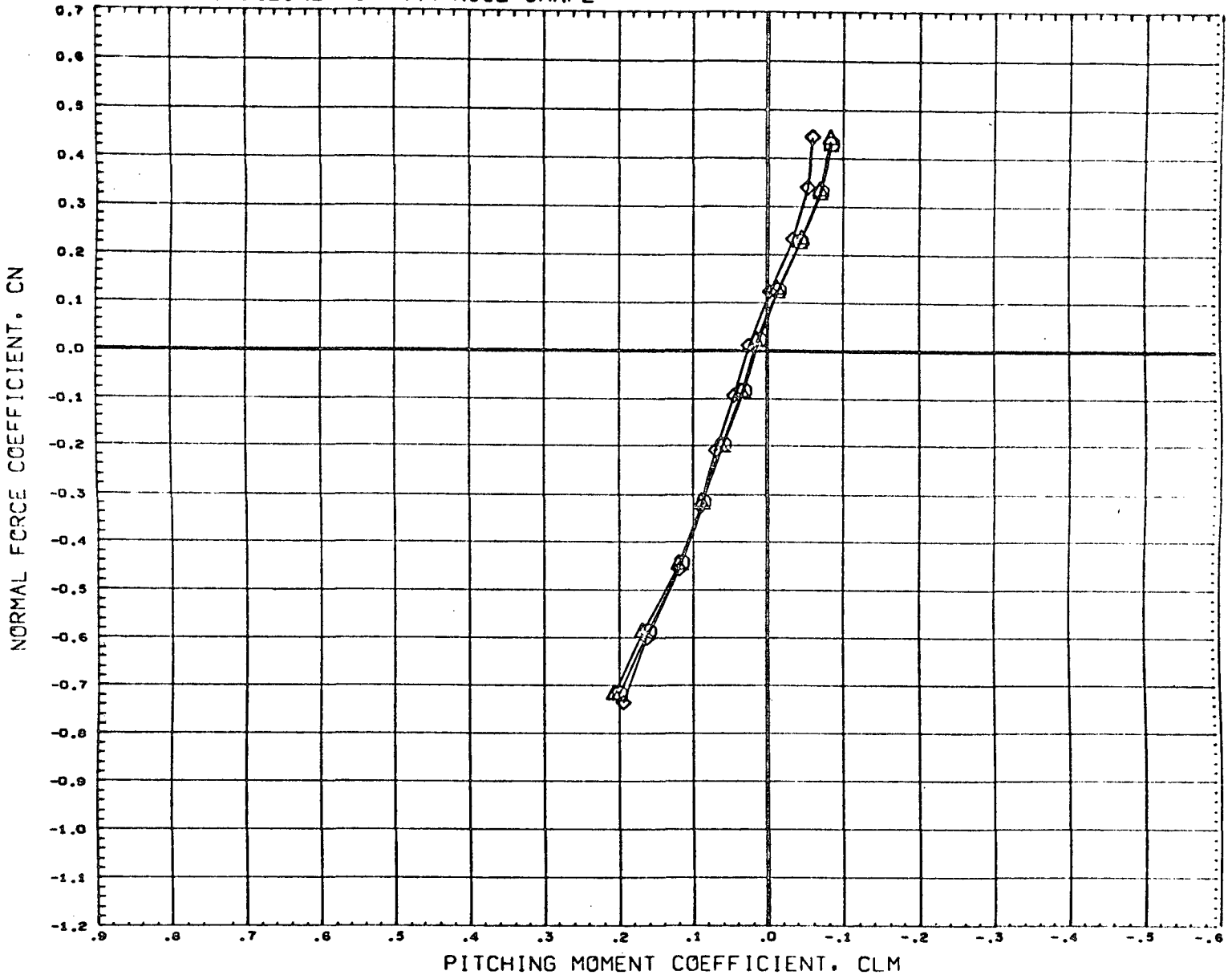
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	T201S1	T301S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1			-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES		T201S1		-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES			T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

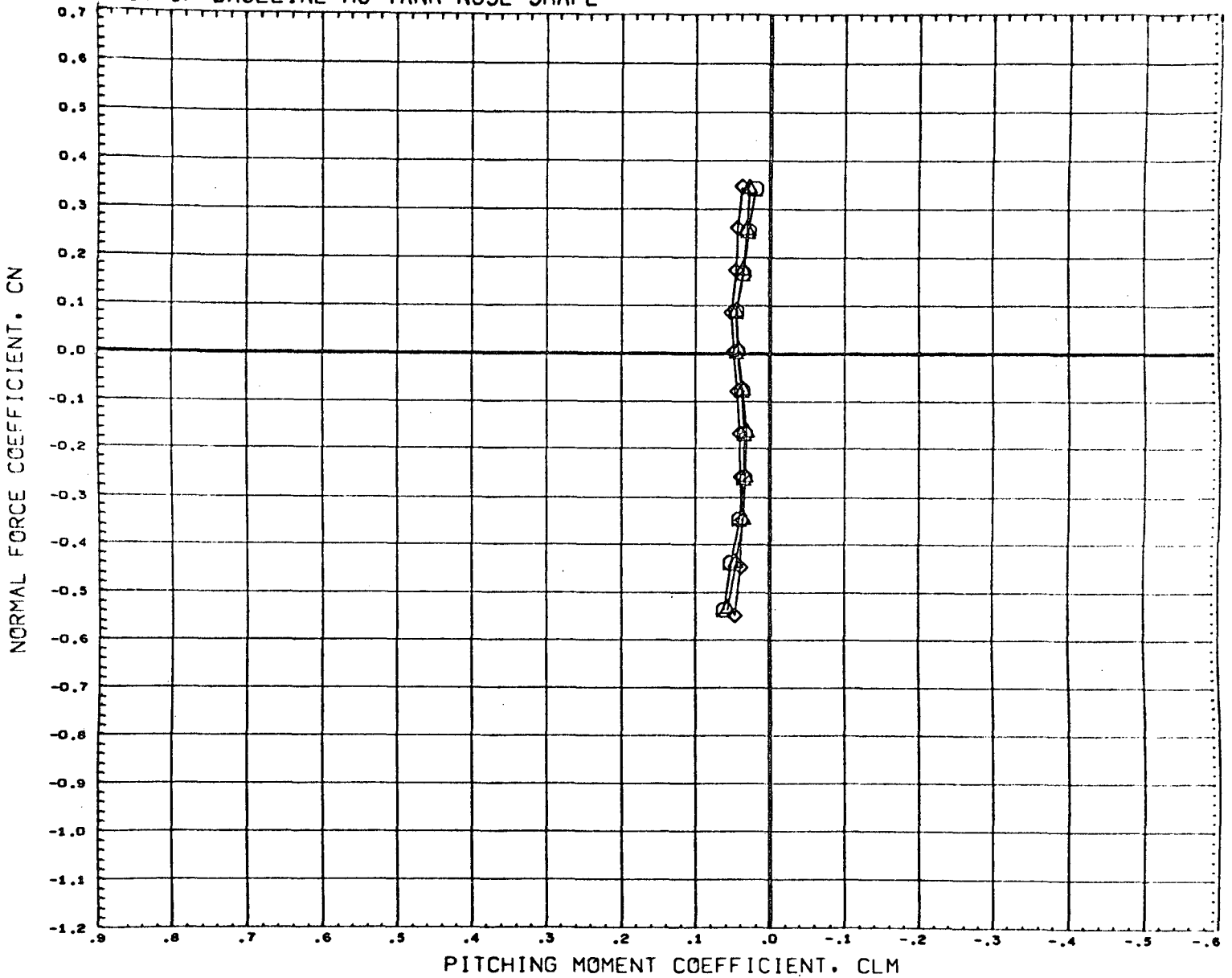
# EFFECT OF BASELINE H0 TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF BASELINE HO TANK NOSE SHAPE



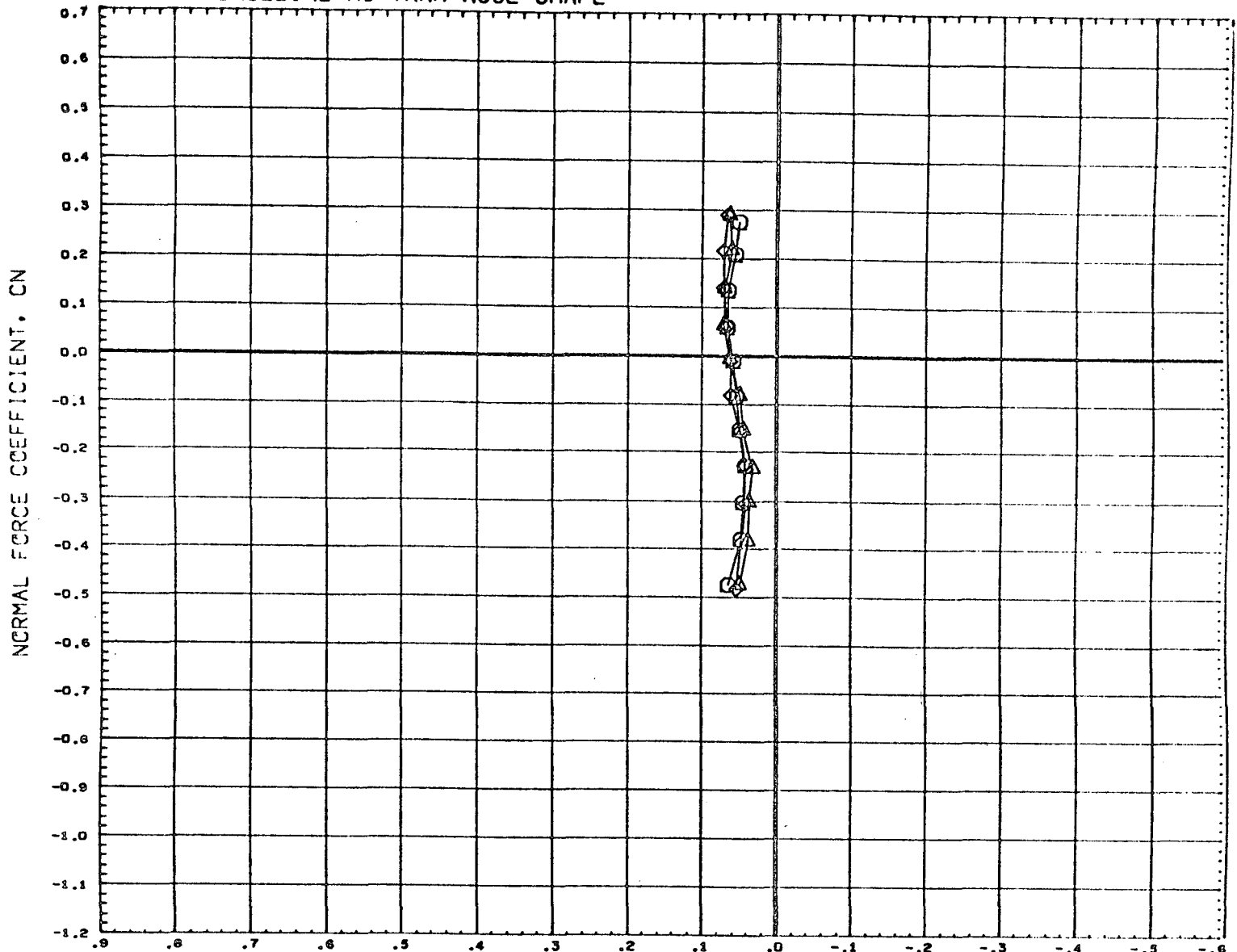
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(871035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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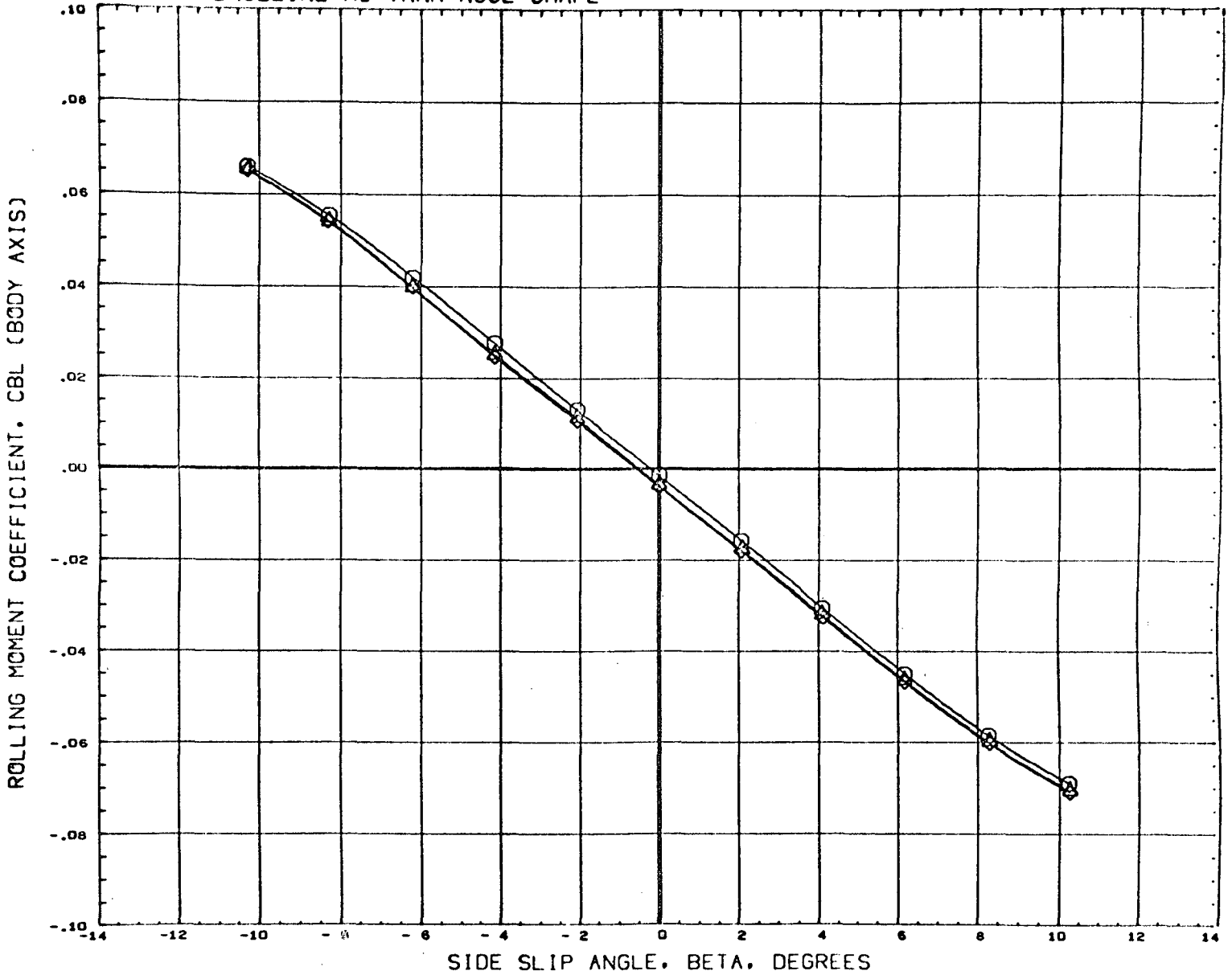
# EFFECT OF BASELINE NO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF BASELINE HO TANK NOSE SHAPE

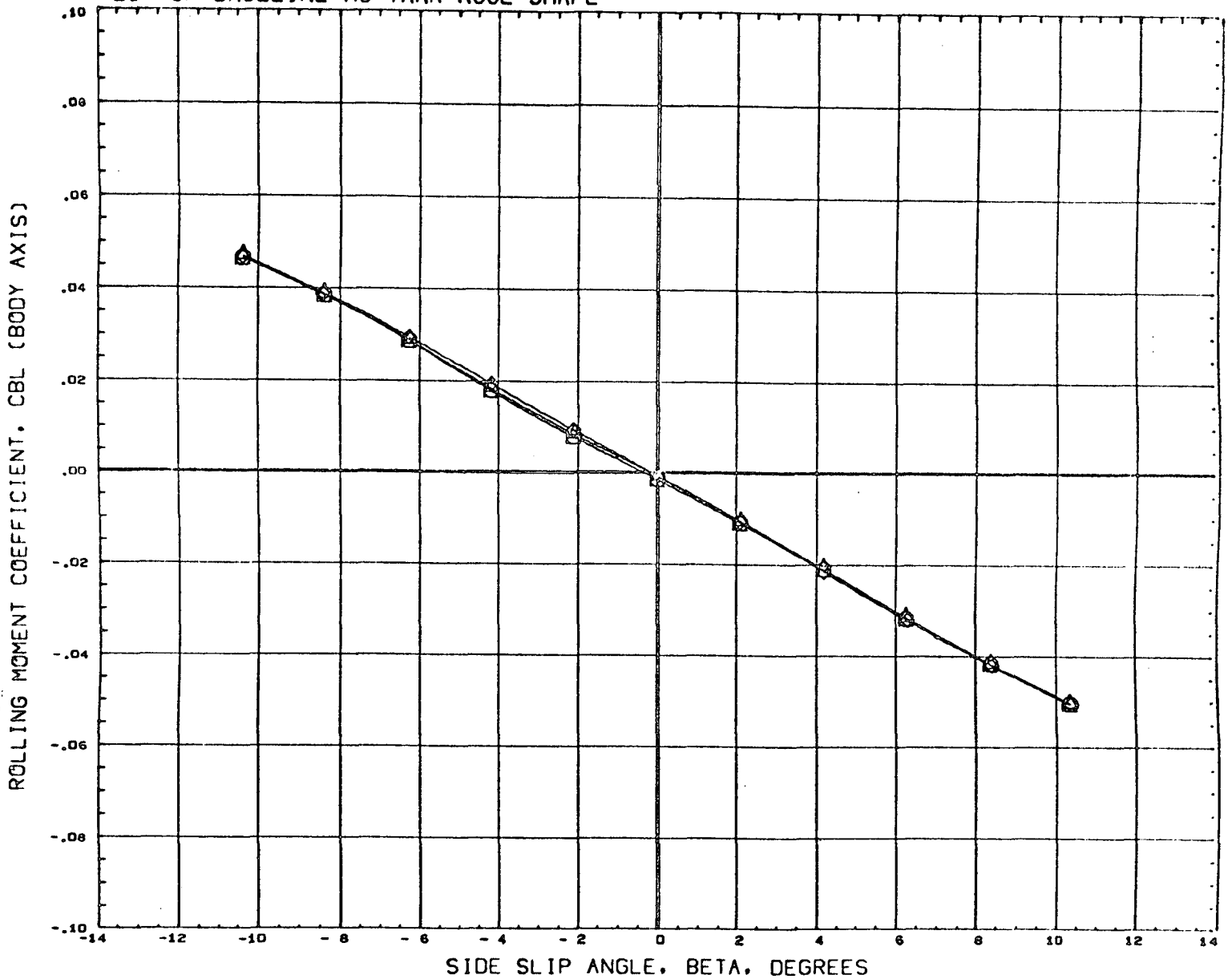


DATA SET SYMBOl	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF BASELINE HO TANK NOSE SHAPE



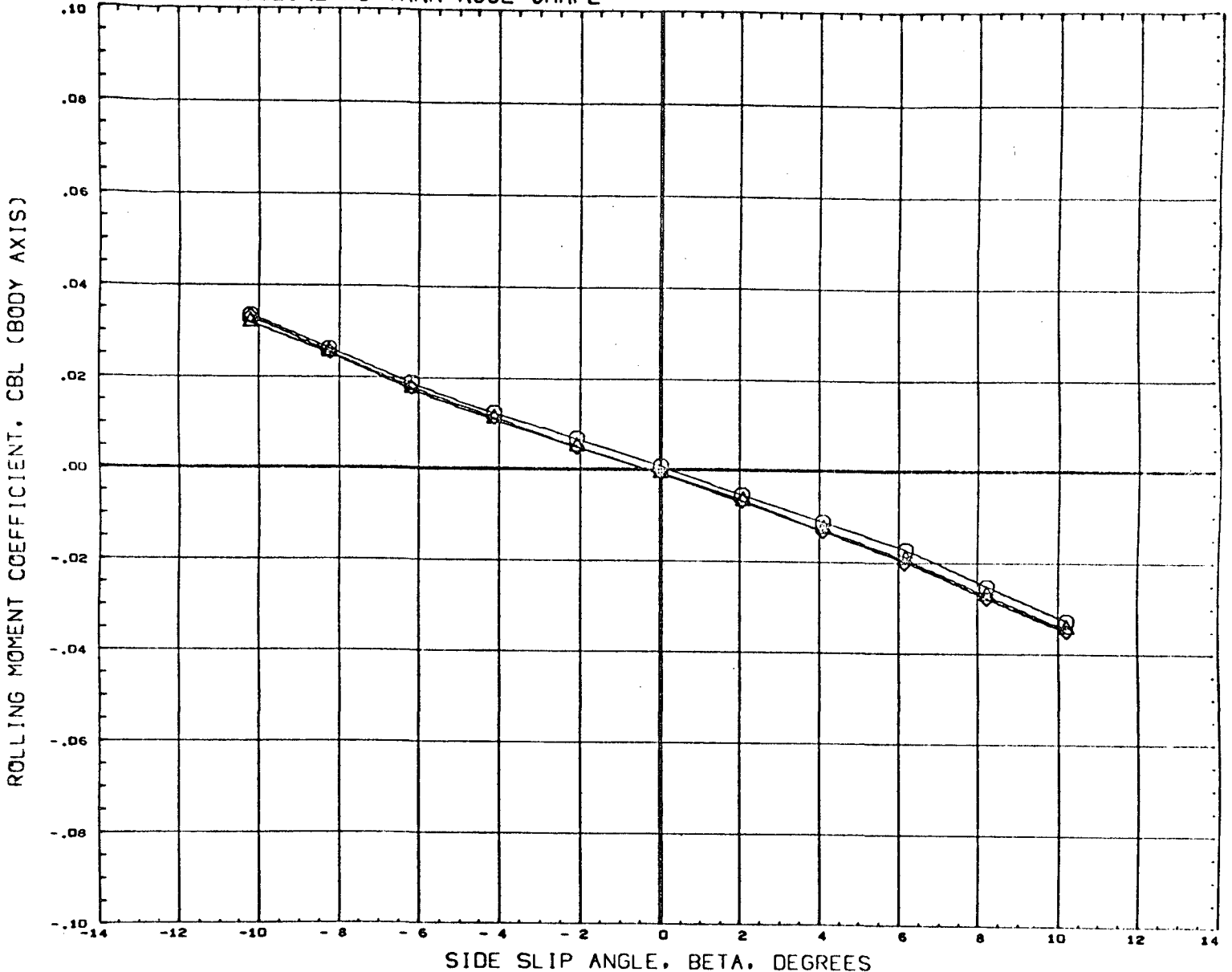
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

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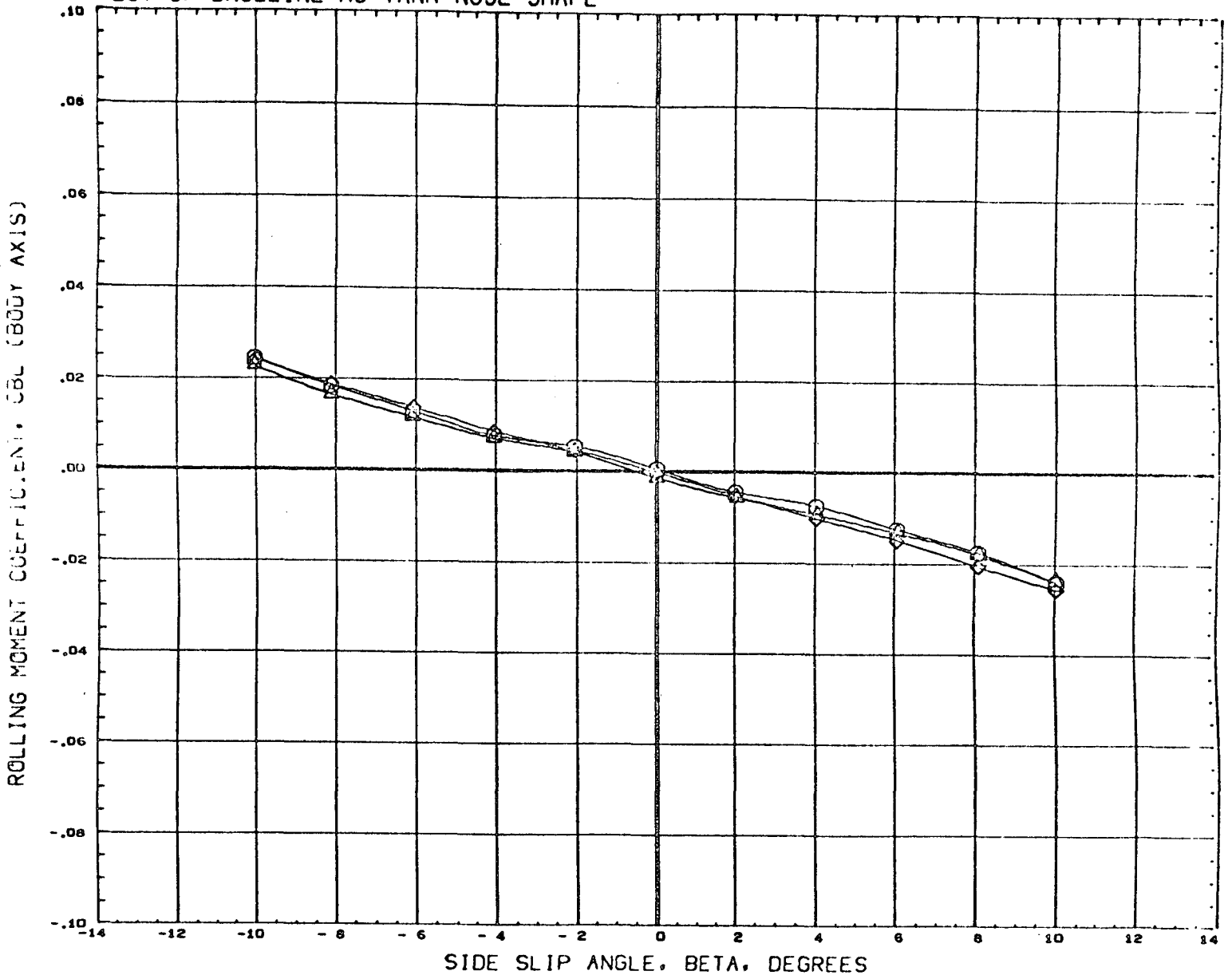
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0200 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRF 3.3600 IN.
						YMRF 0.0000 IN.
						ZMRF 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

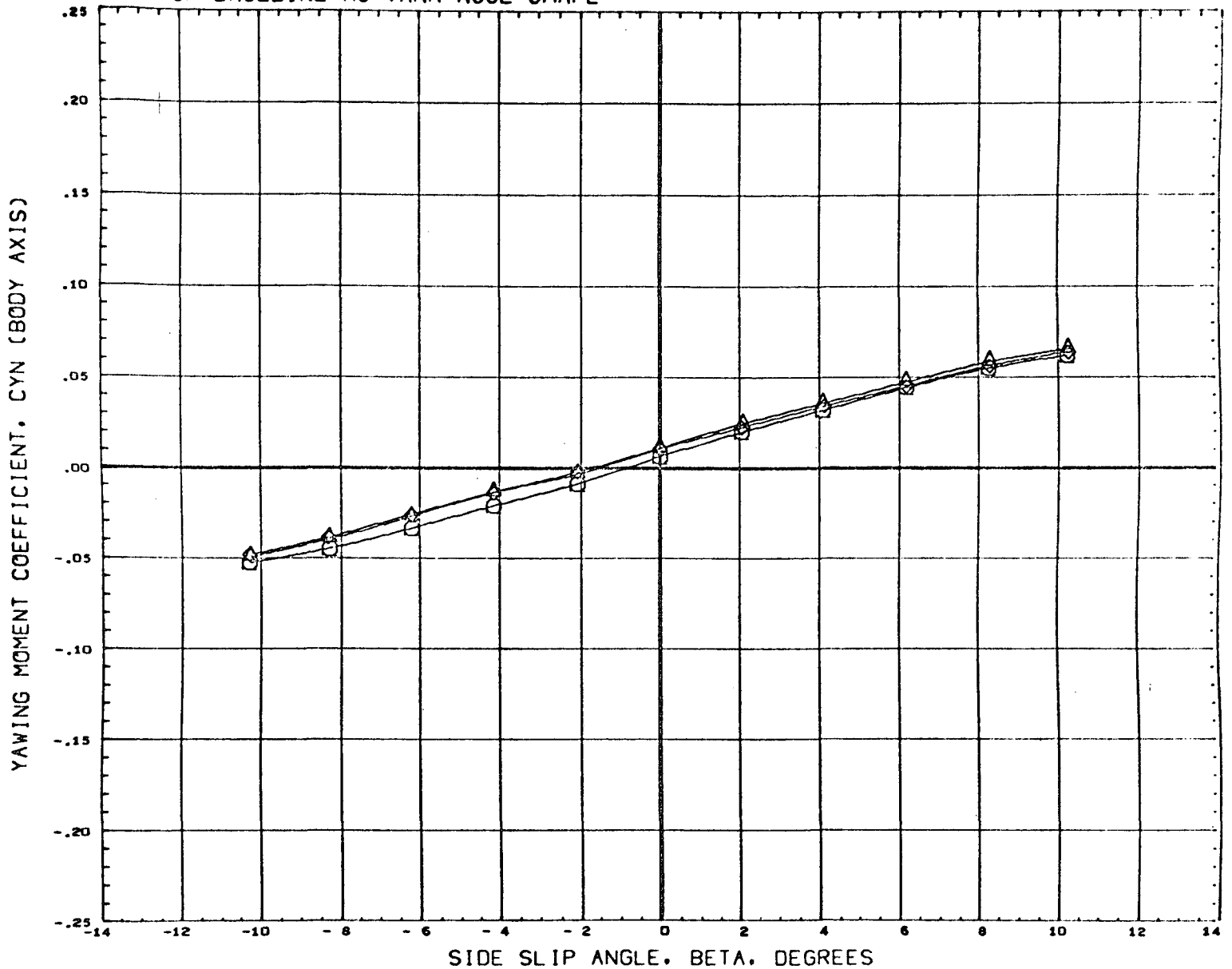
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF BASELINE NO TANK NOSE SHAPE



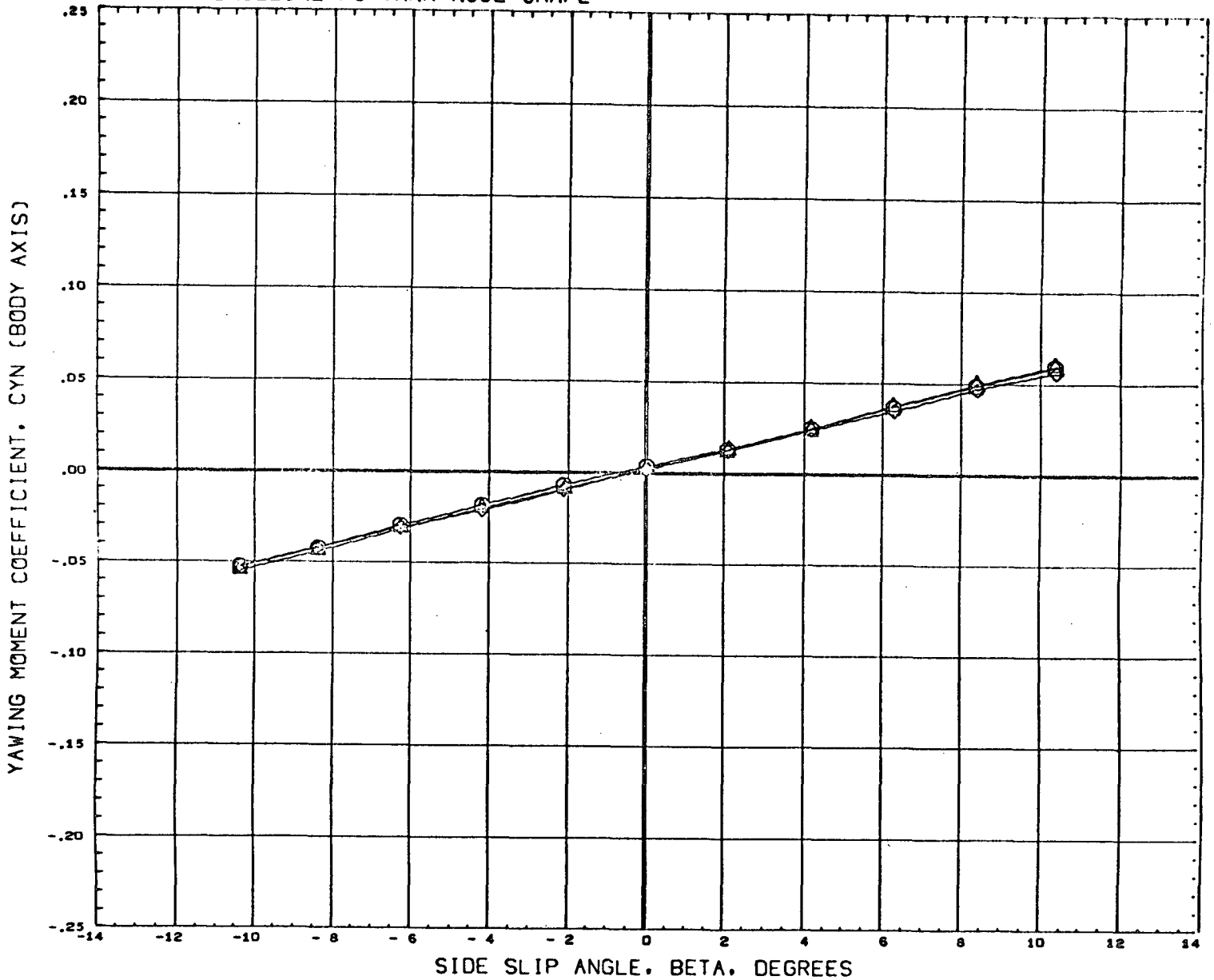
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.20

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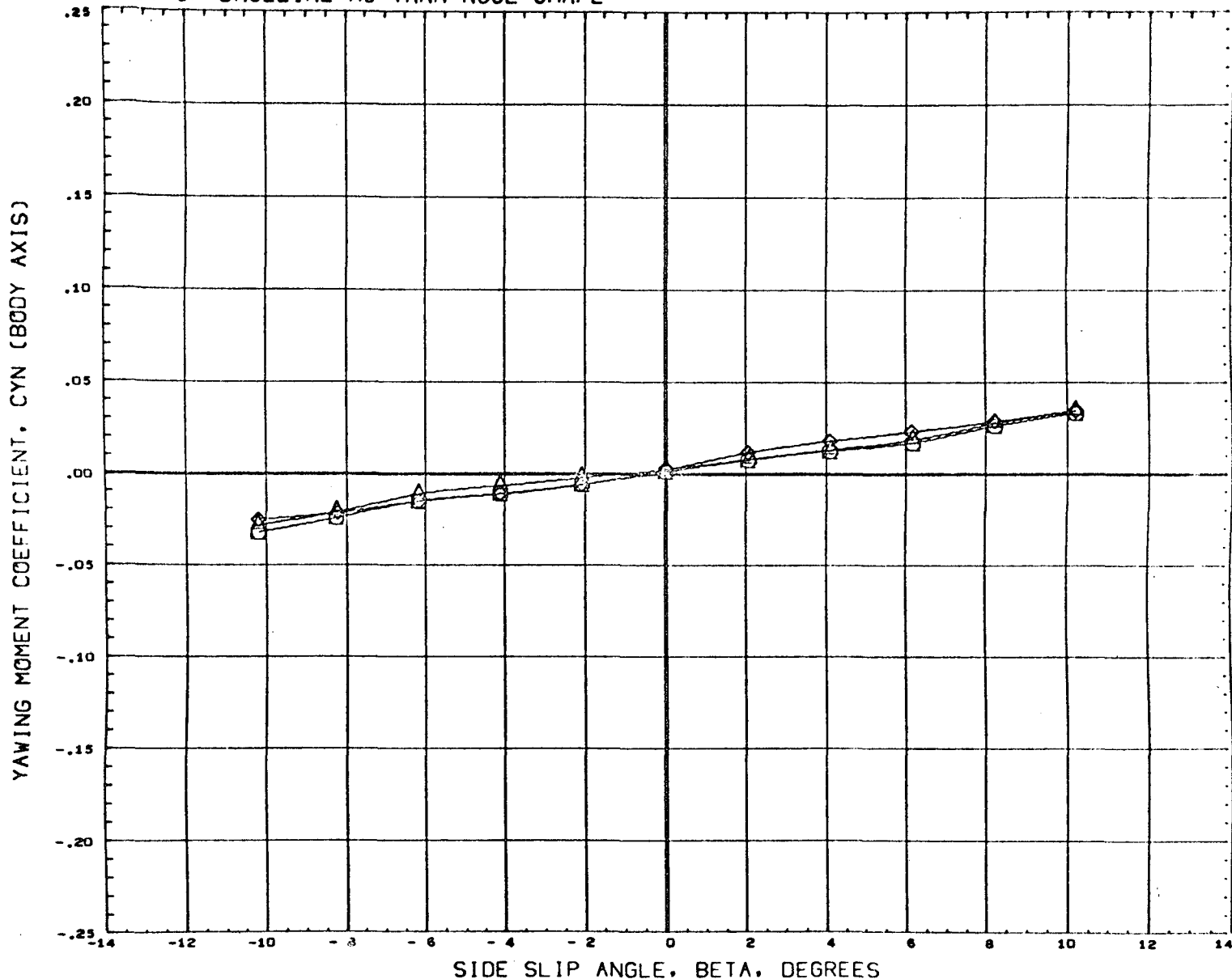
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

# EFFECT OF BASELINE NO TANK NOSE SHAPE

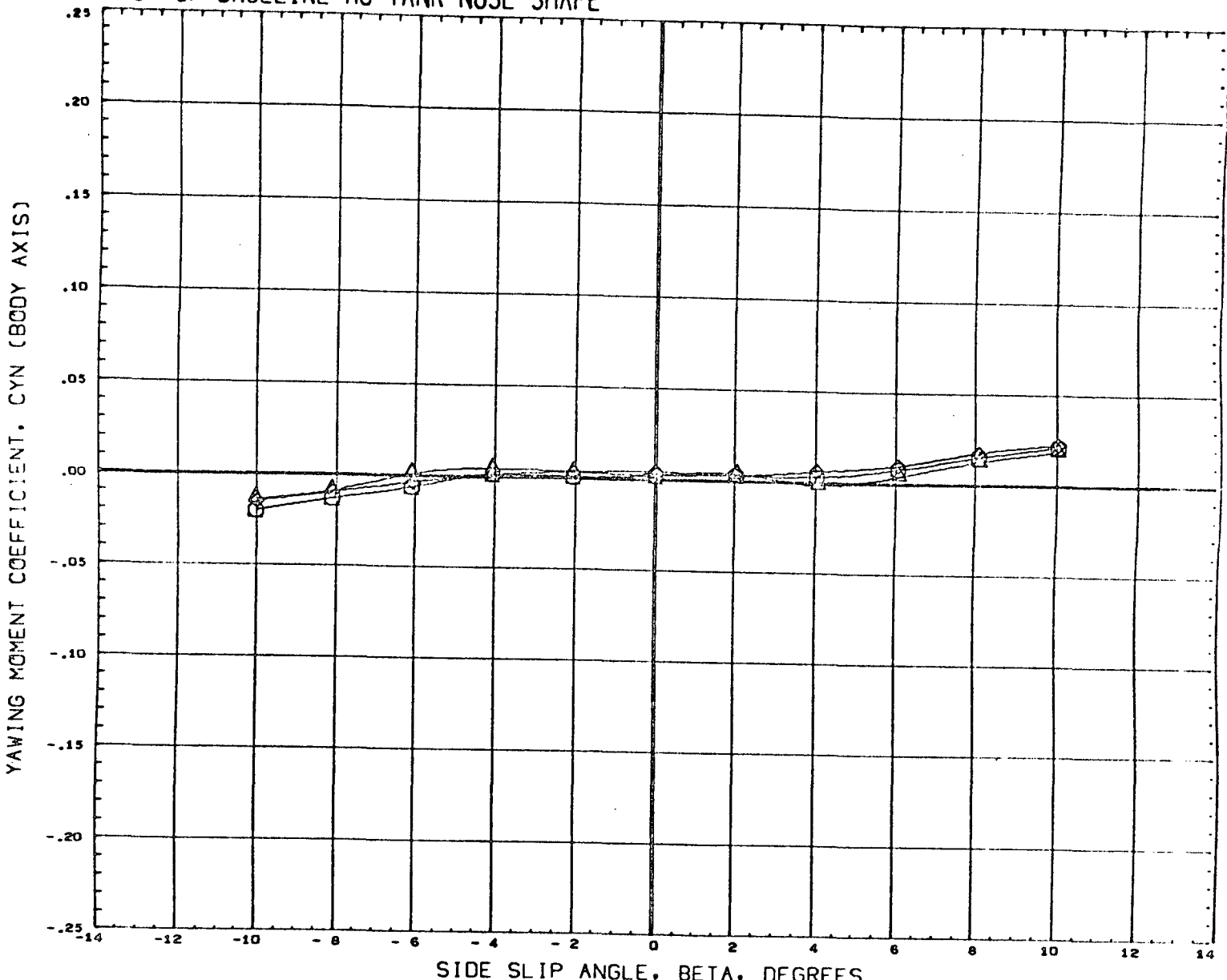


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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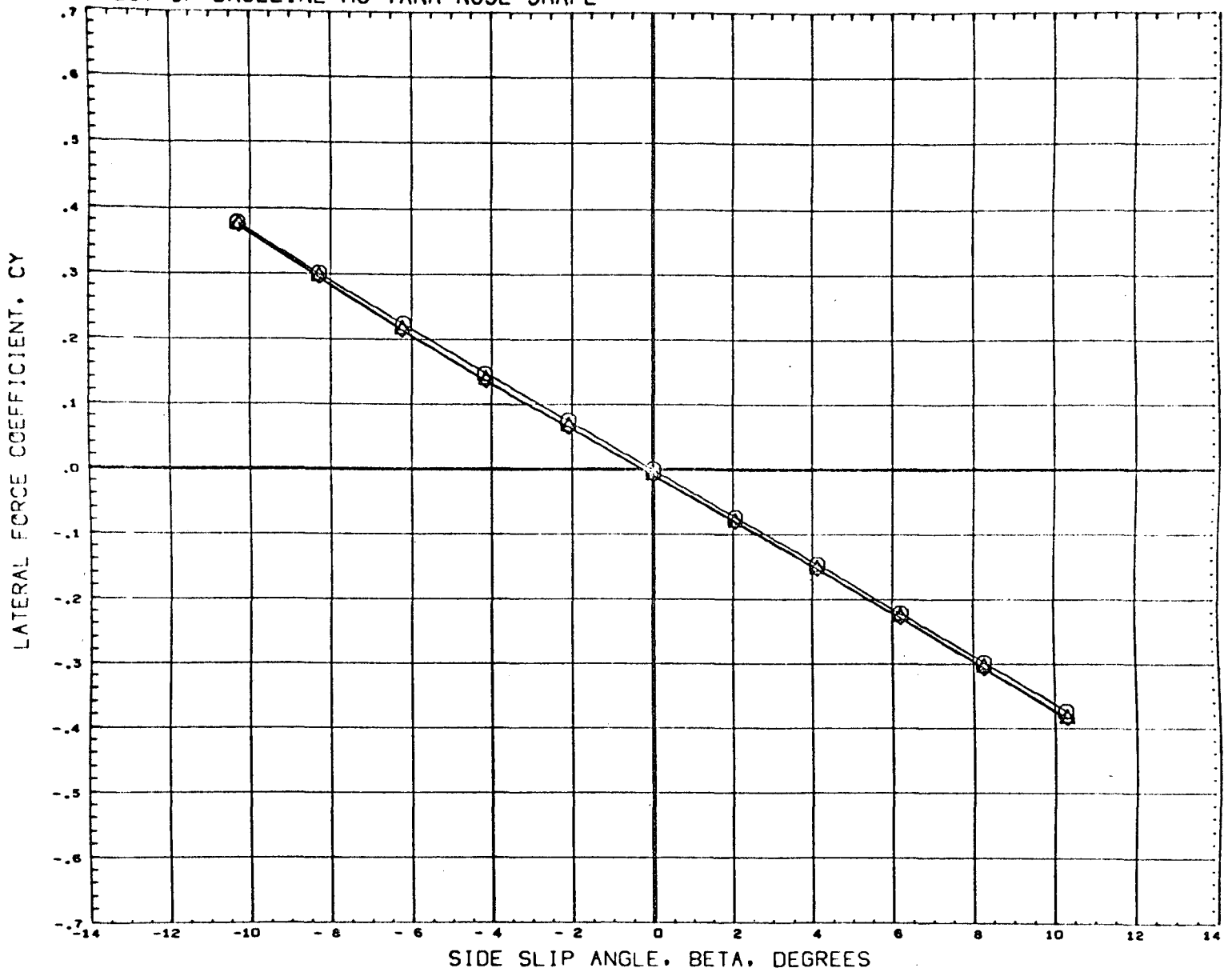
# EFFECT OF BASELINE HO TANK NOSE SHAPE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF BASELINE HO TANK NOSE SHAPE

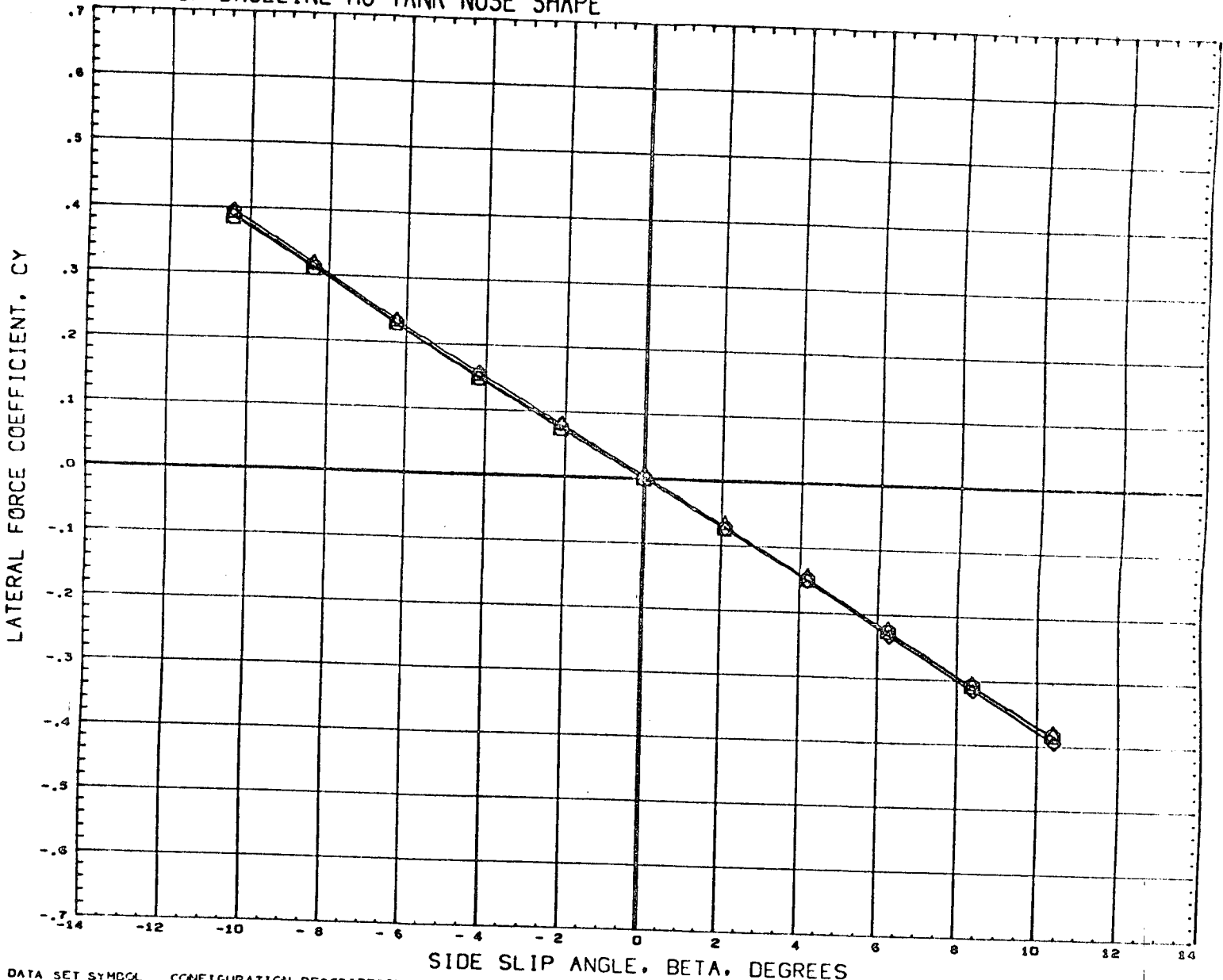


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF BASELINE HO TANK NOSE SHAPE

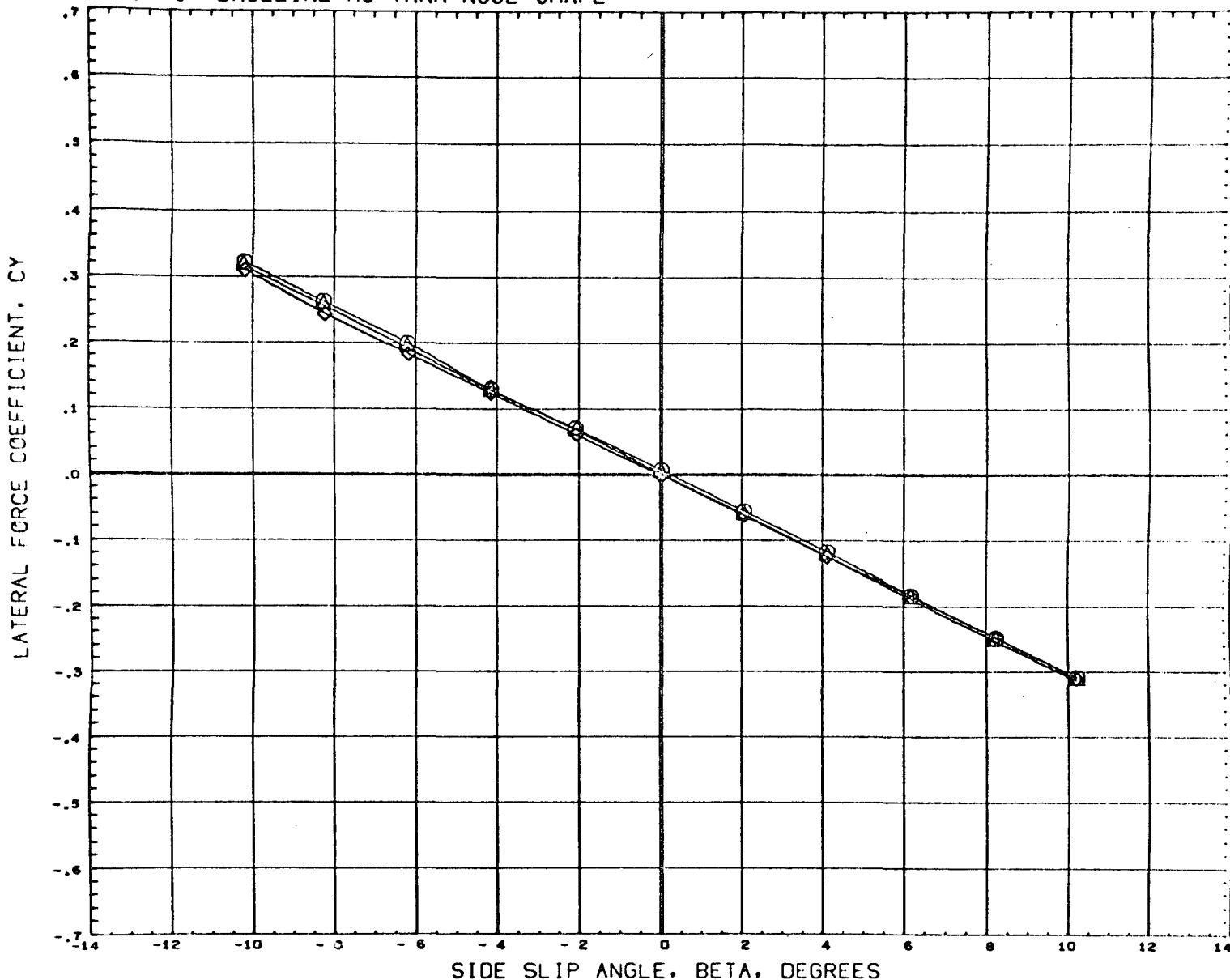


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	T201S1	T301S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES				-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES				-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES				-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
									XMRP 3.3600 IN.
									YMRP 0.0000 IN.
									ZMRP 0.2480 IN.
									SCALE 0.0040 SCALE

MACH 1.96



# EFFECT OF BASELINE H0 TANK NOSE SHAPE



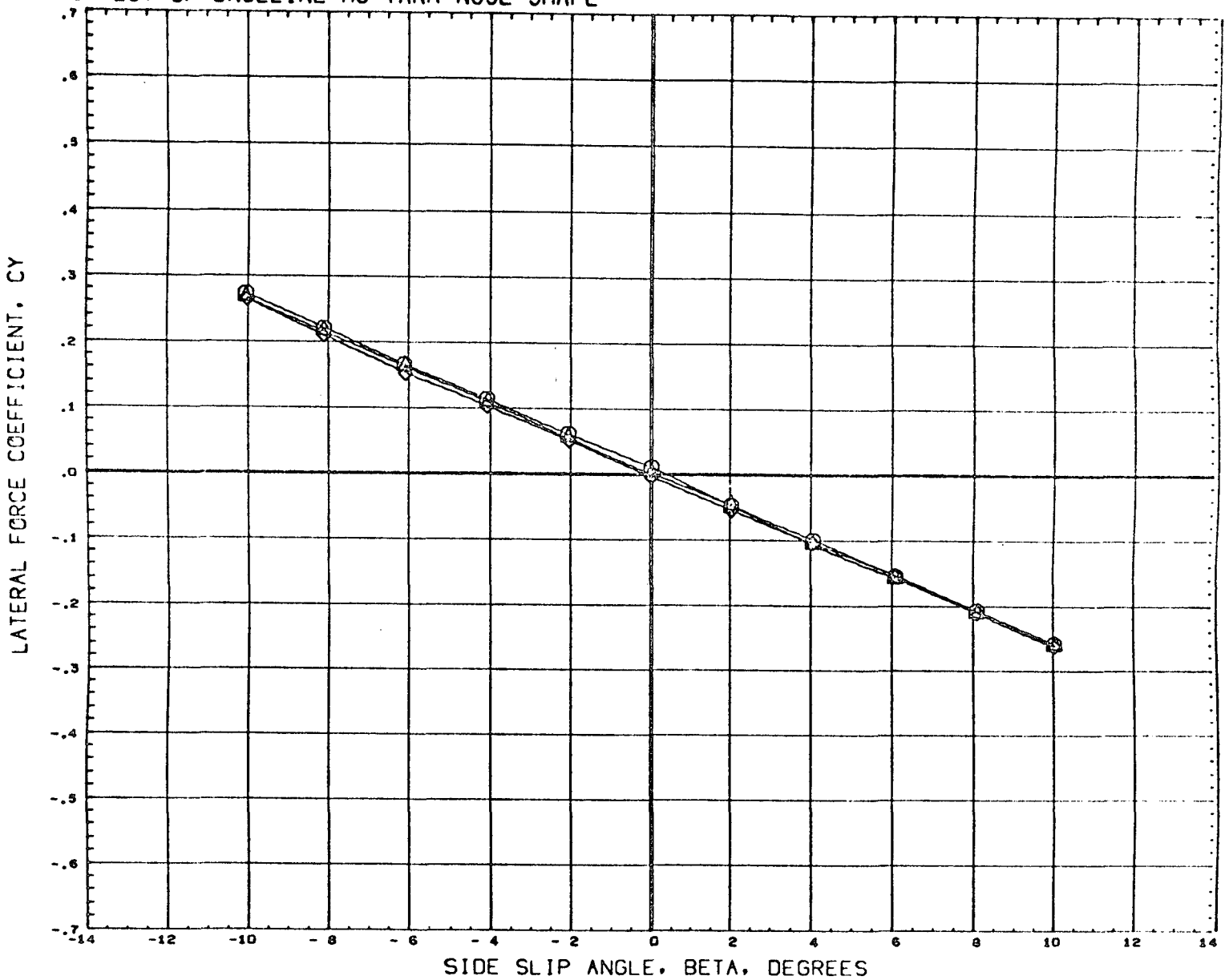
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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# EFFECT OF BASELINE H0 TANK NOSE SHAPE

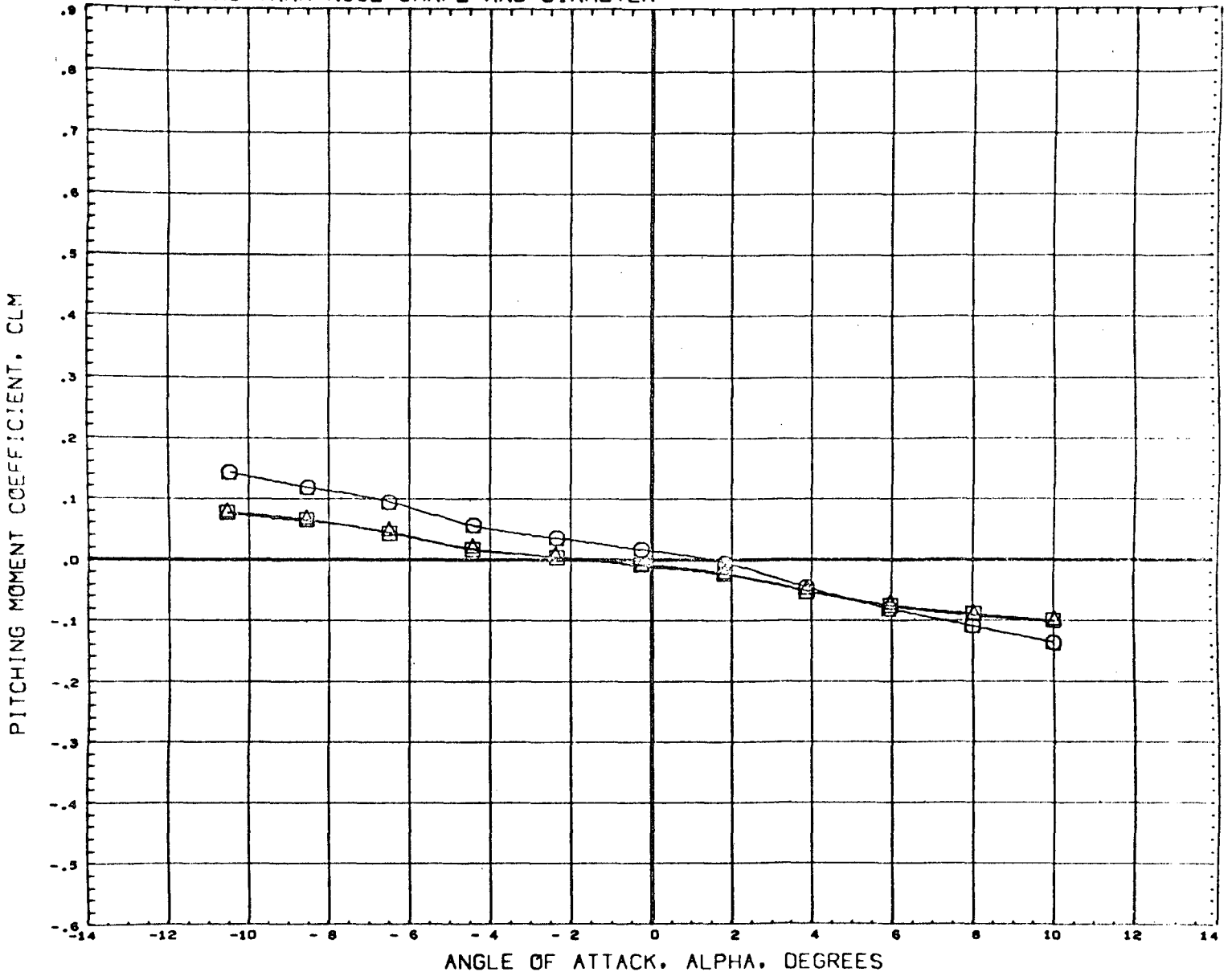


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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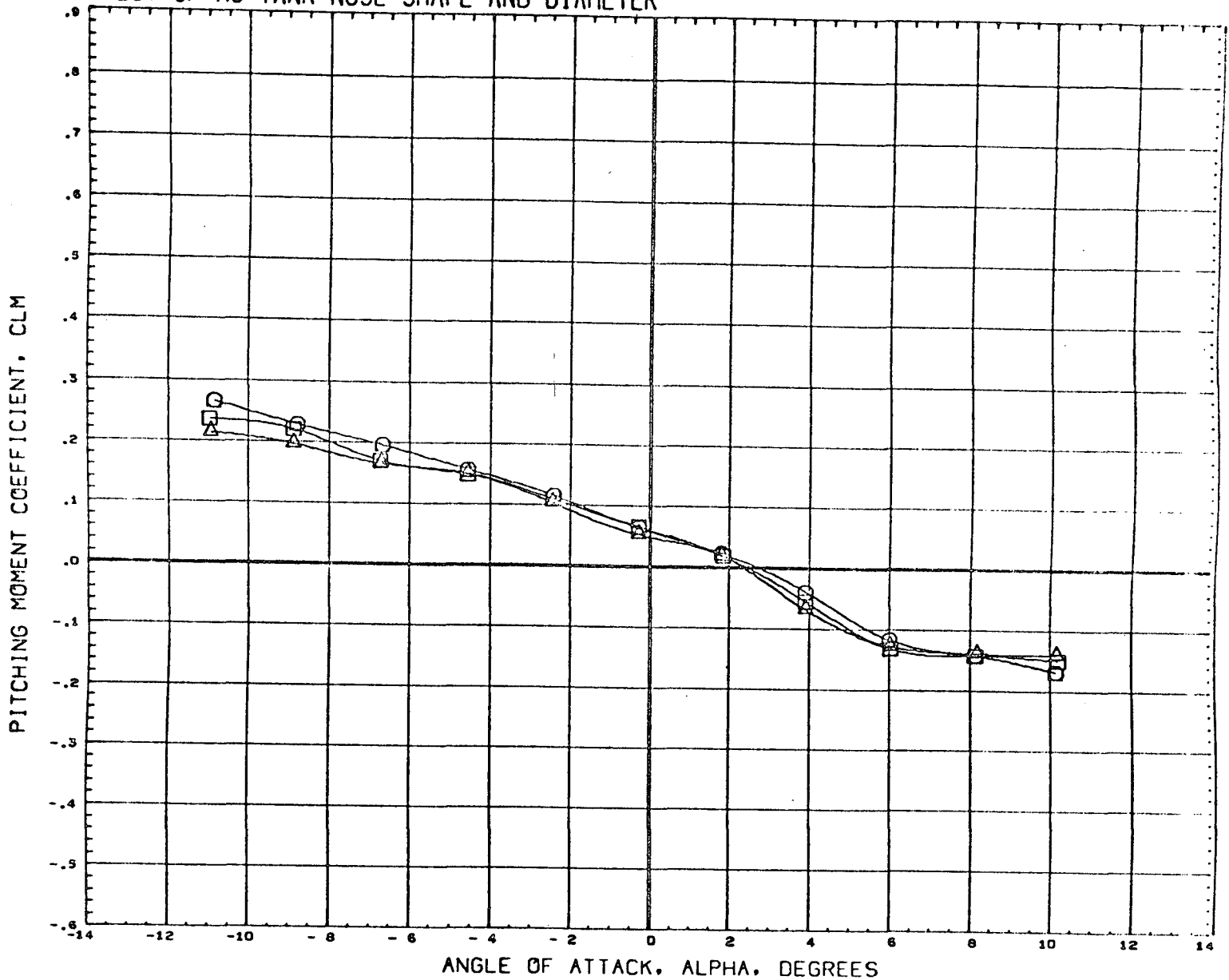
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75,000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75,000	0.000	0.000	LREF 2.0280 IN.
(B71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75,000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75,000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

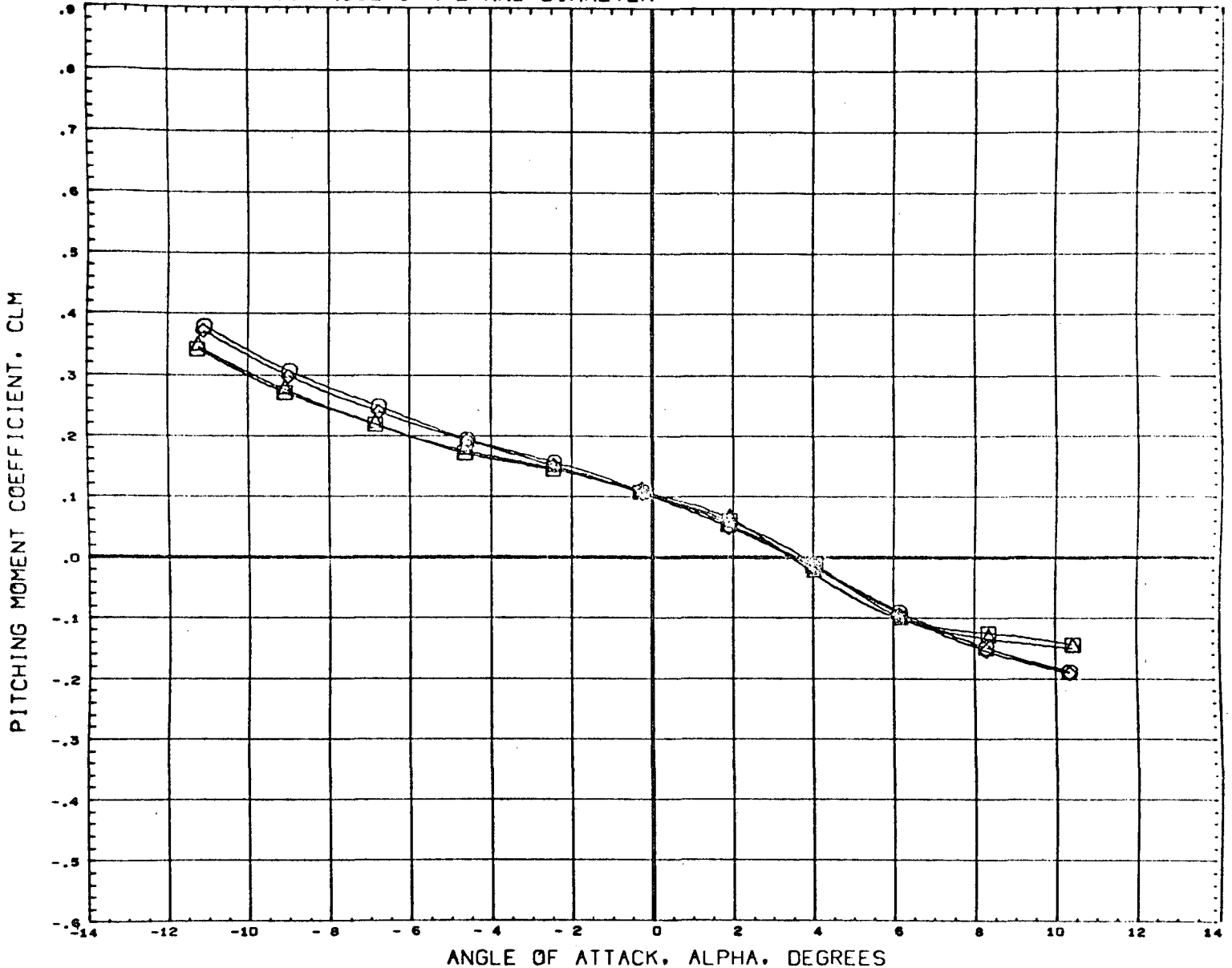
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

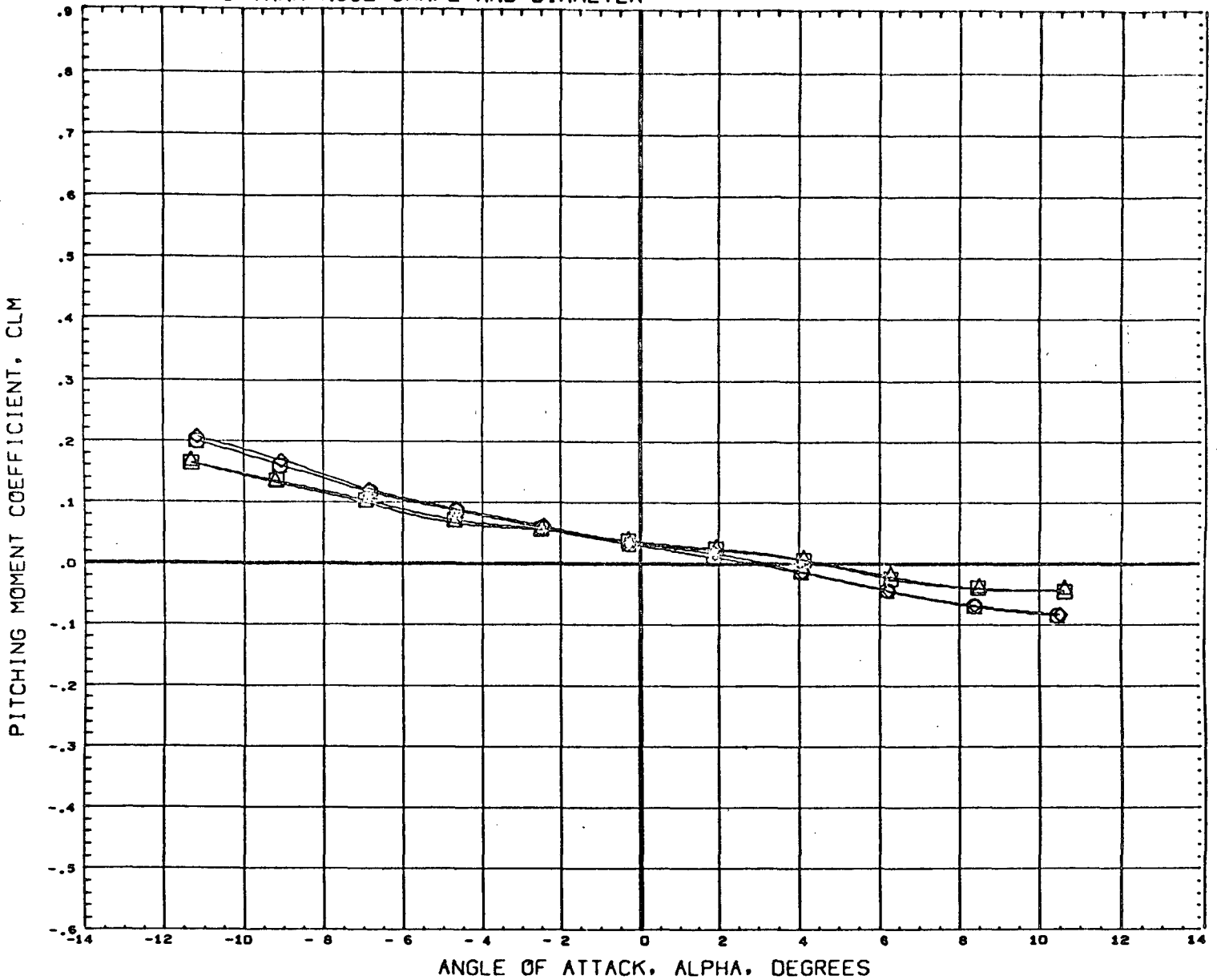
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

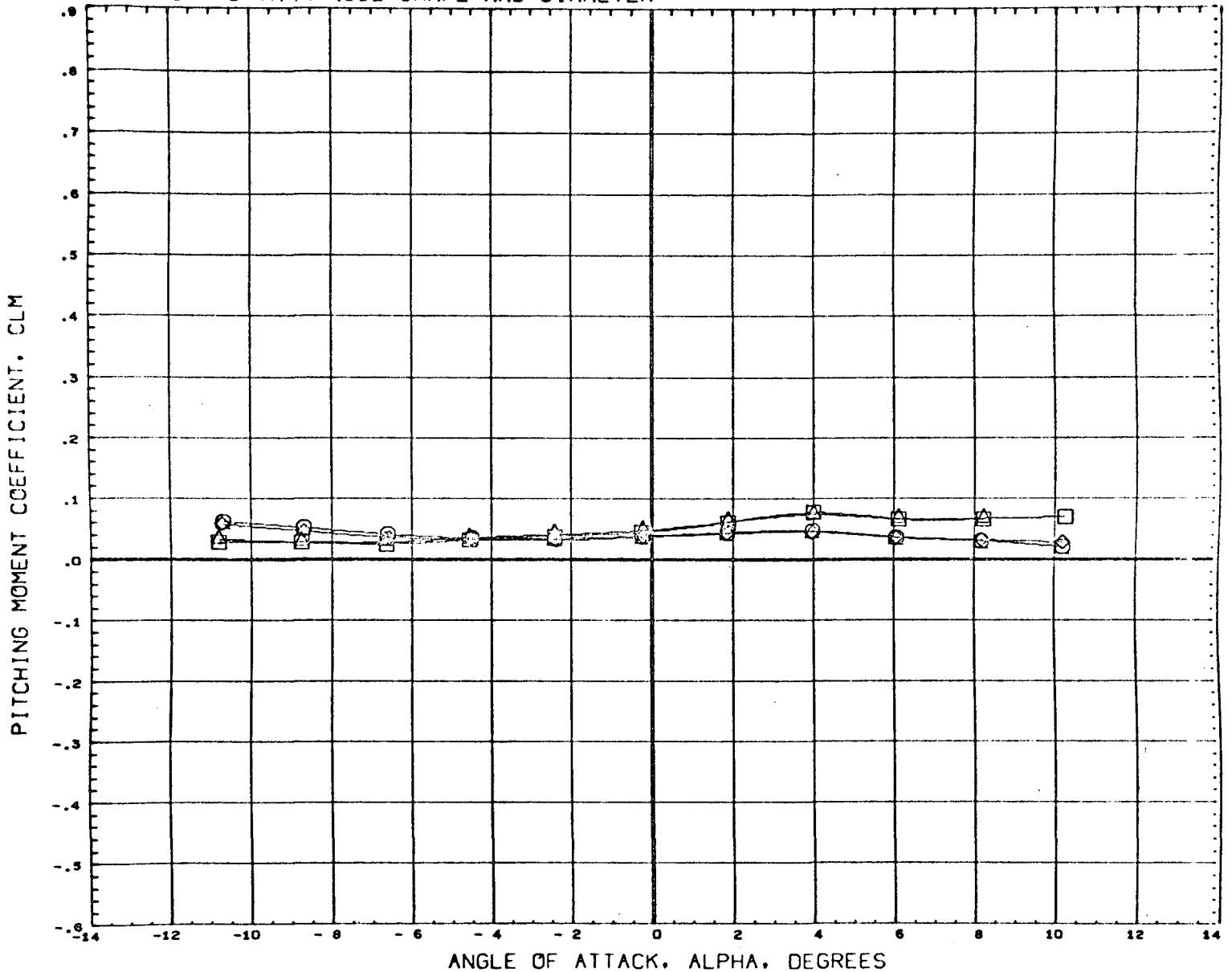
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

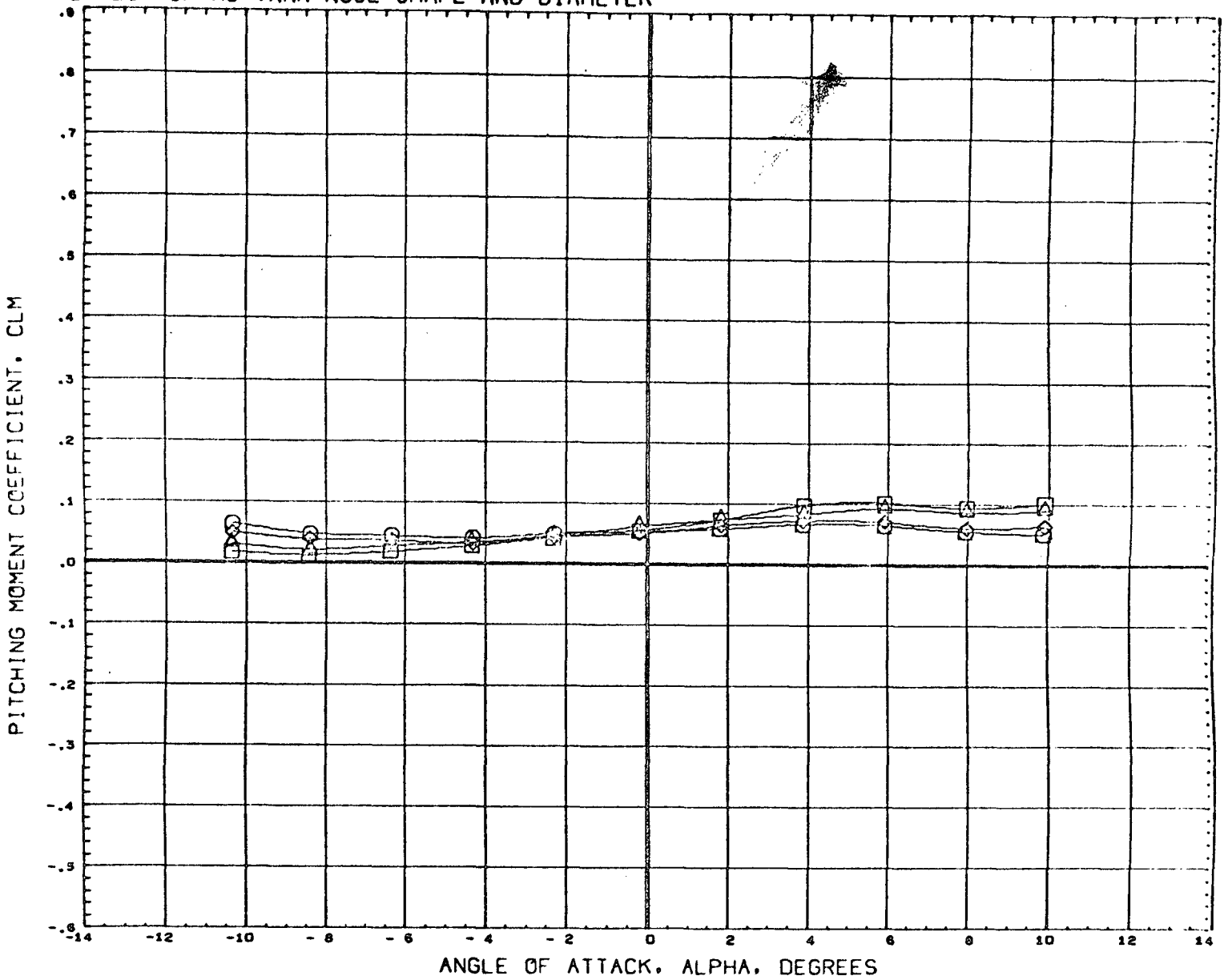
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF H<sub>0</sub> TANK NOSE SHAPE AND DIAMETER

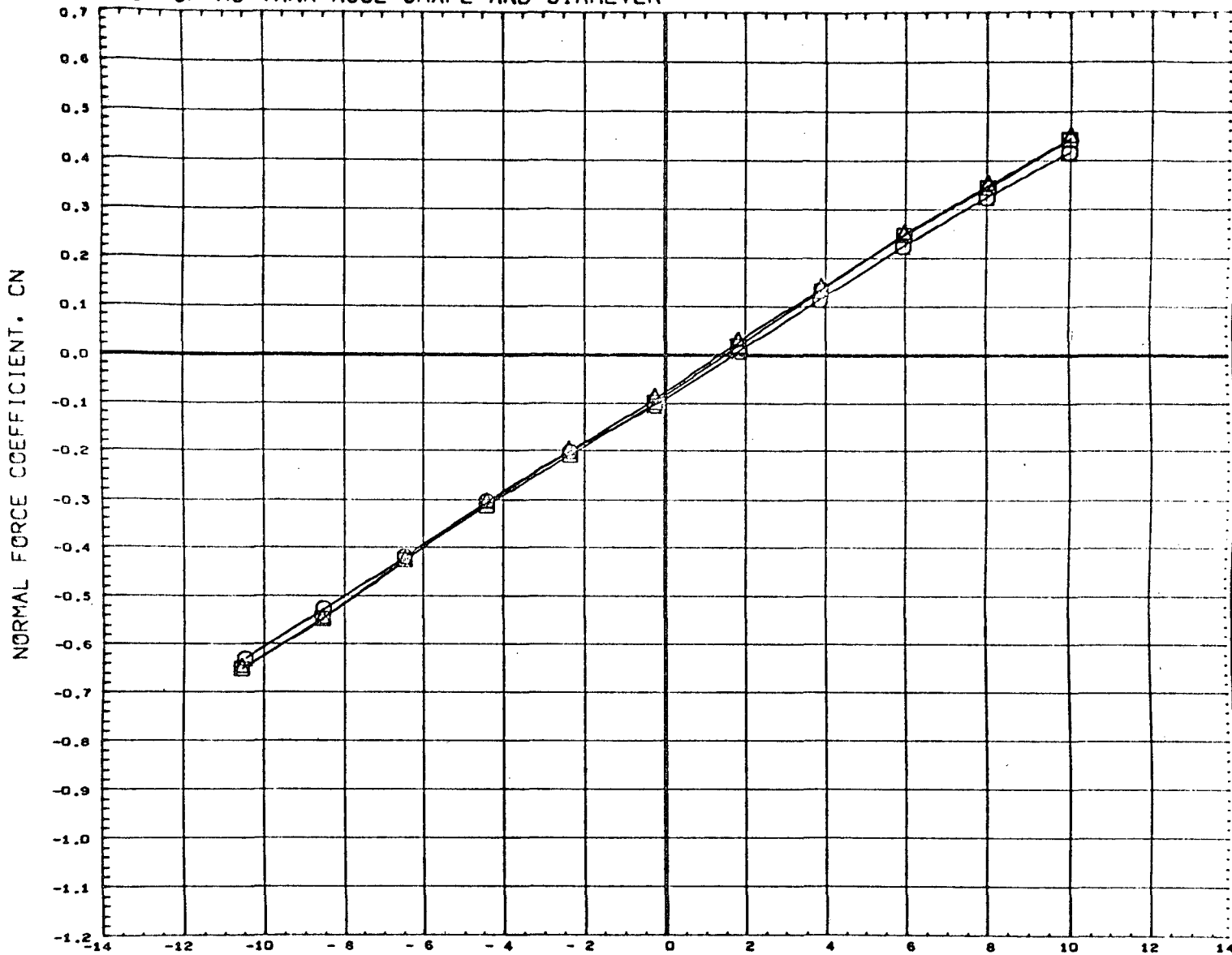


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96



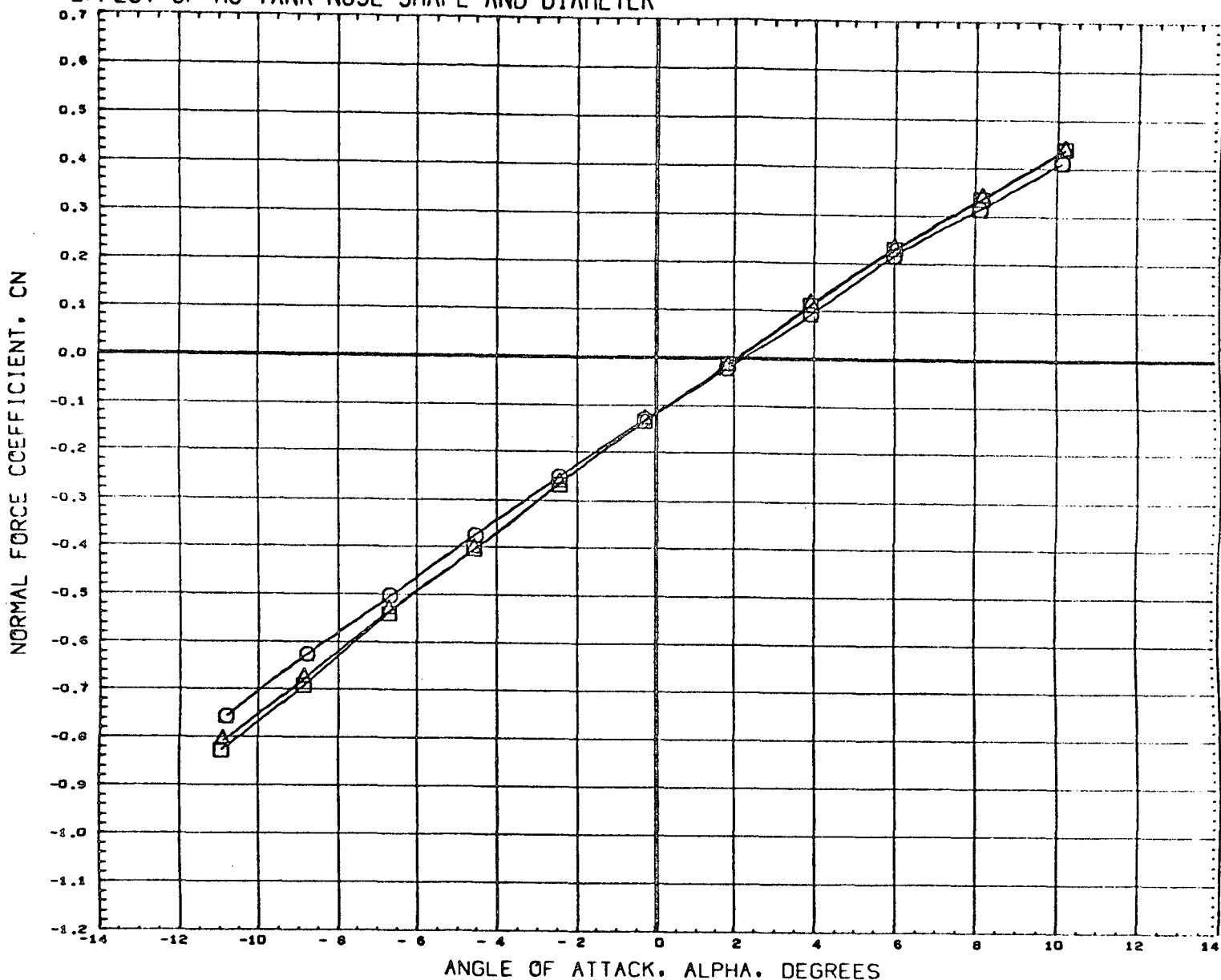
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(D71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(D71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

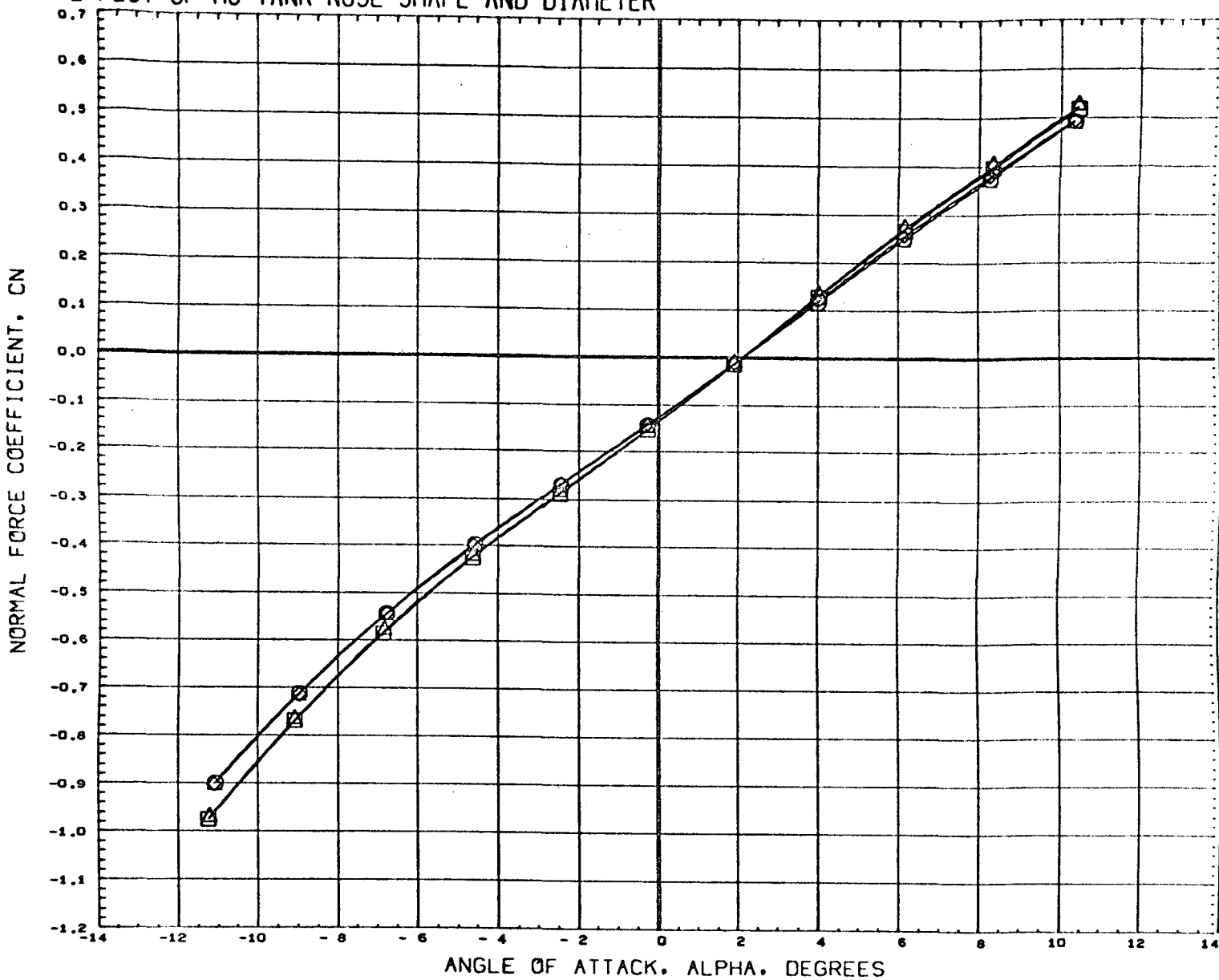
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SO. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

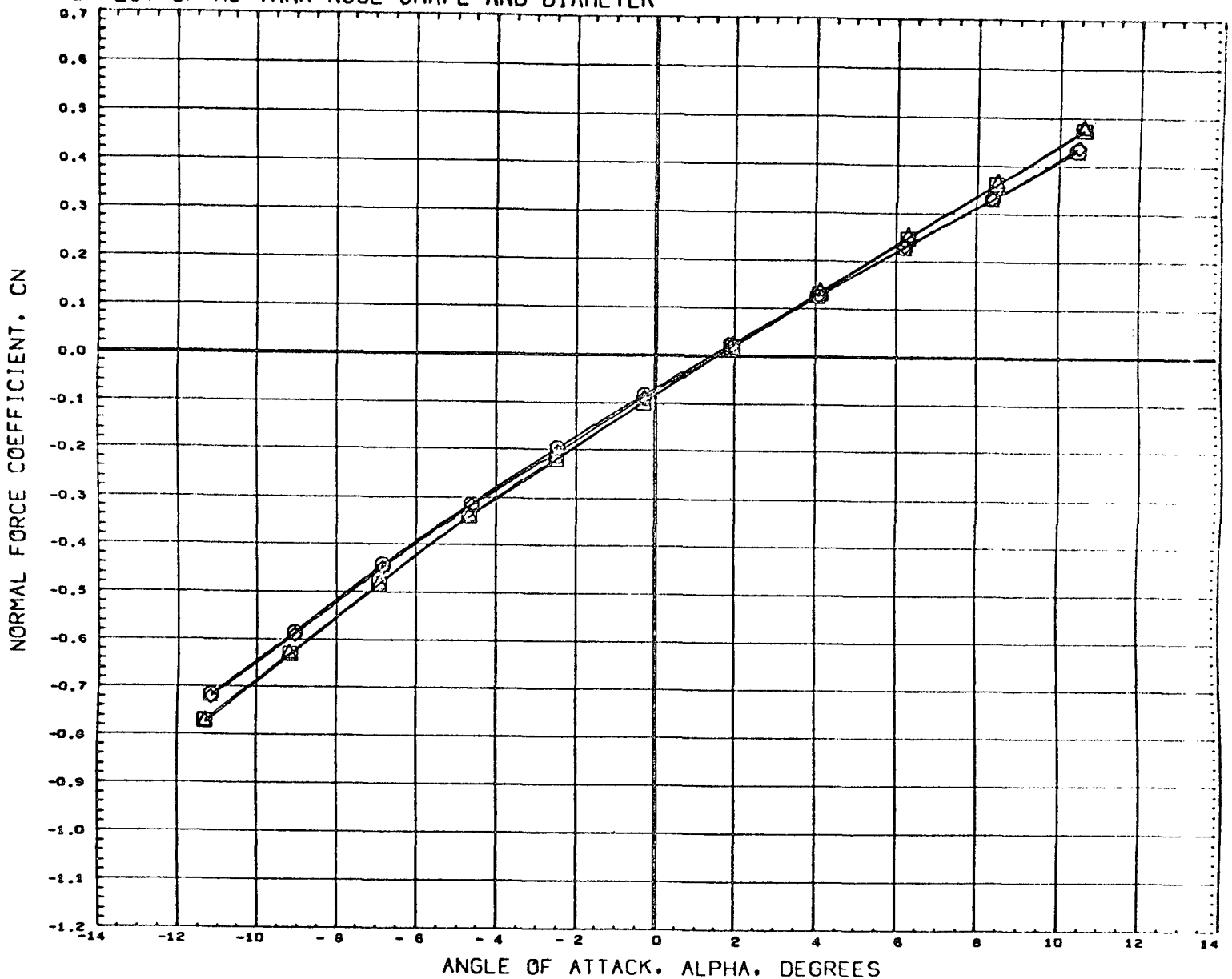
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

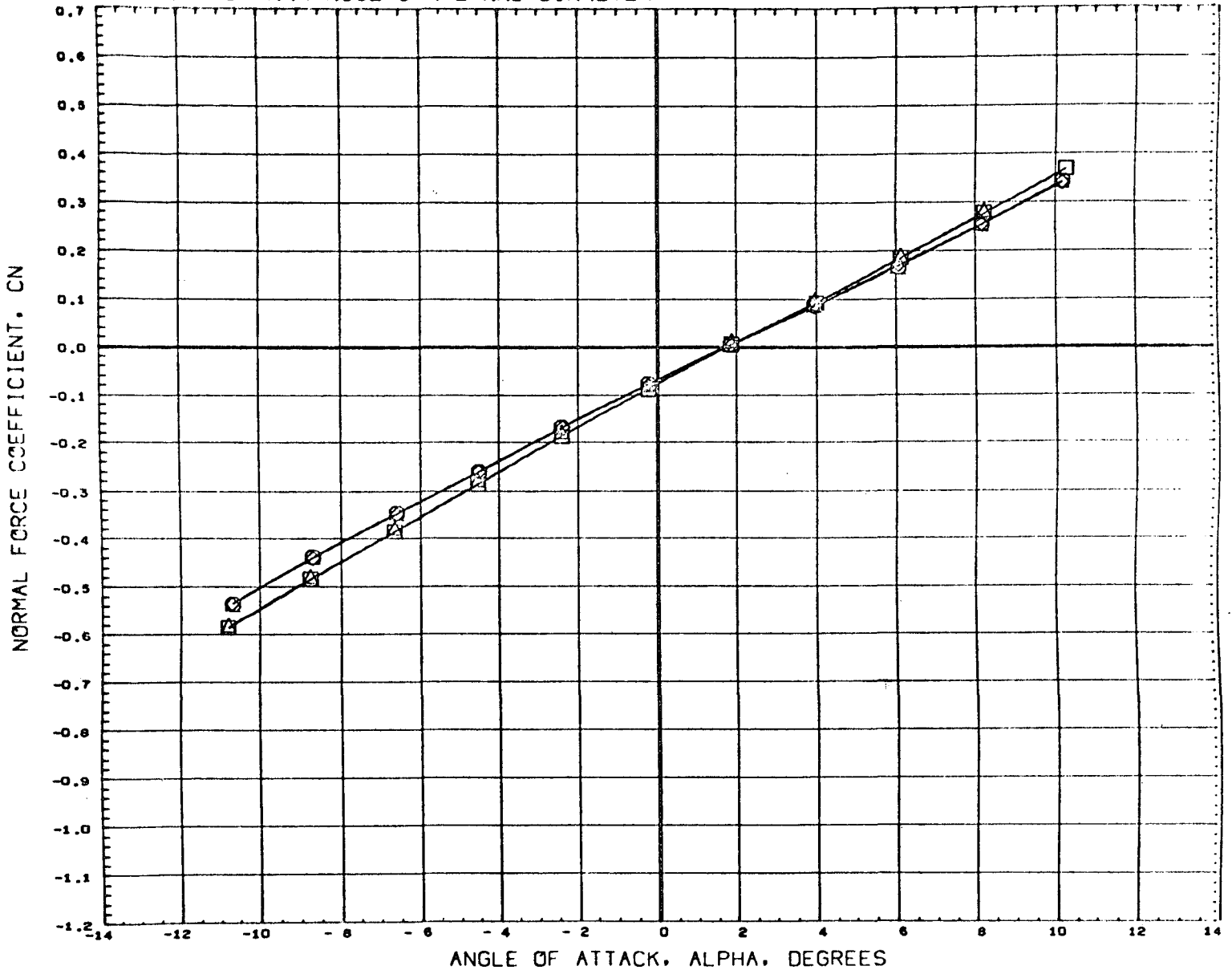
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

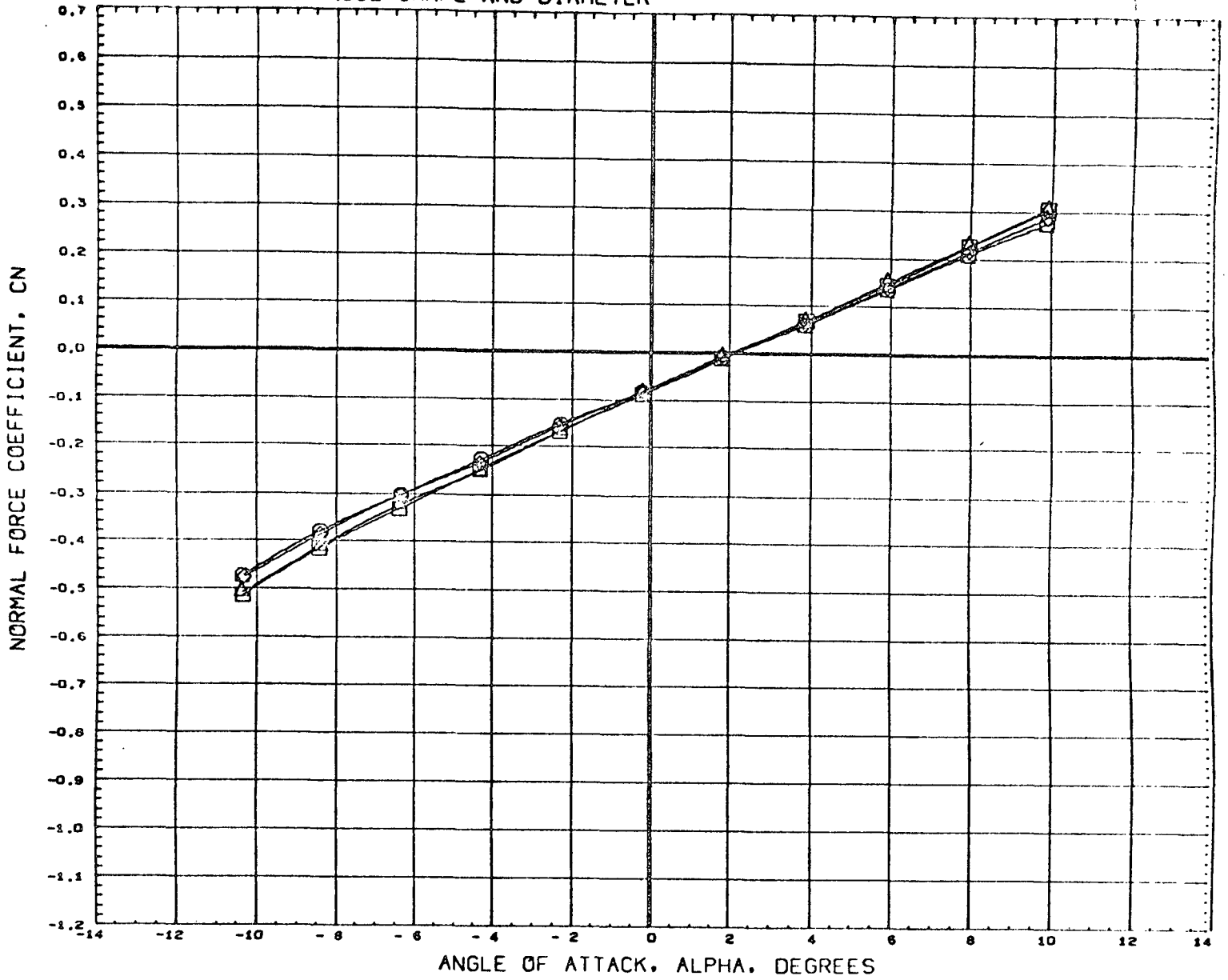
MACH

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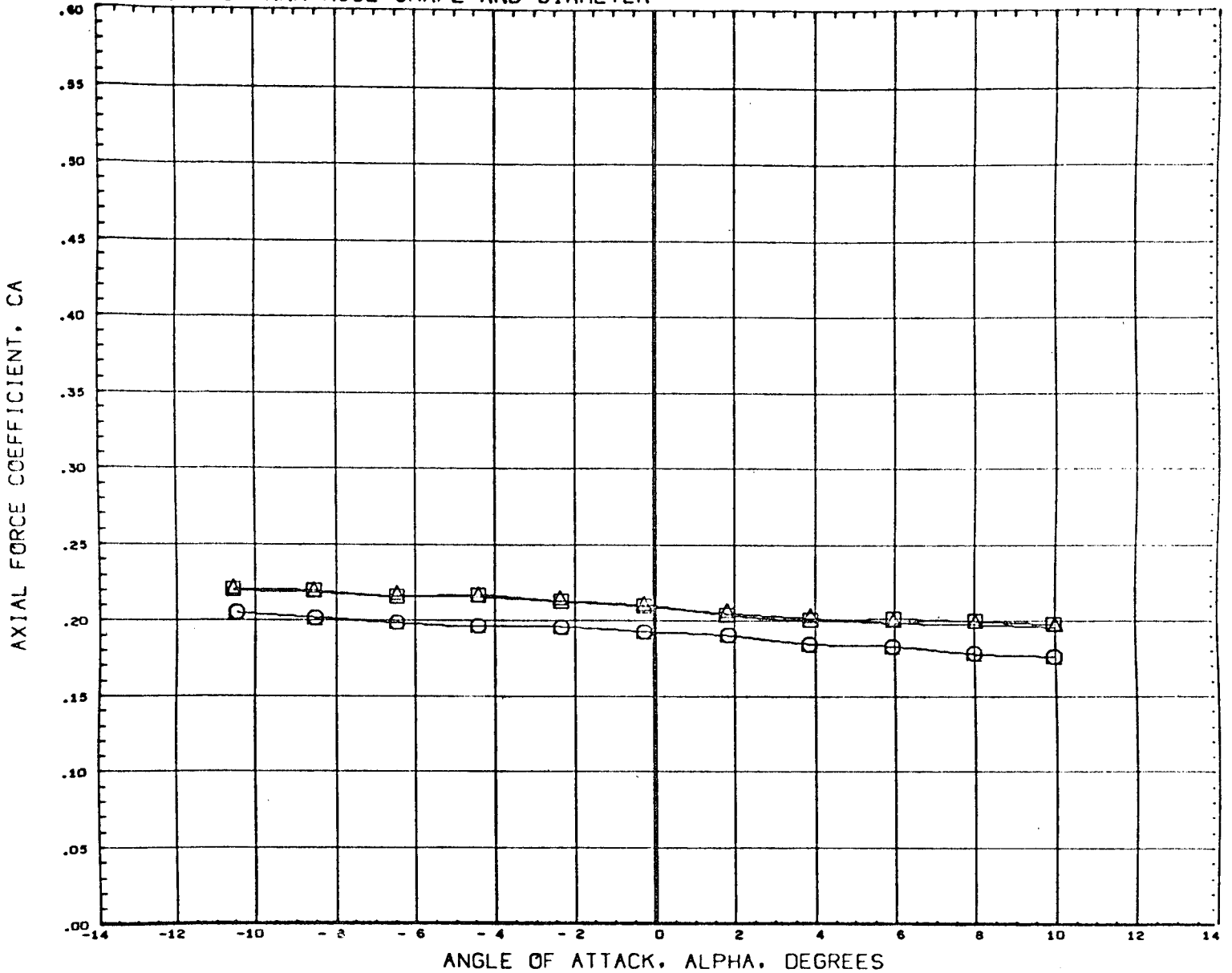
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

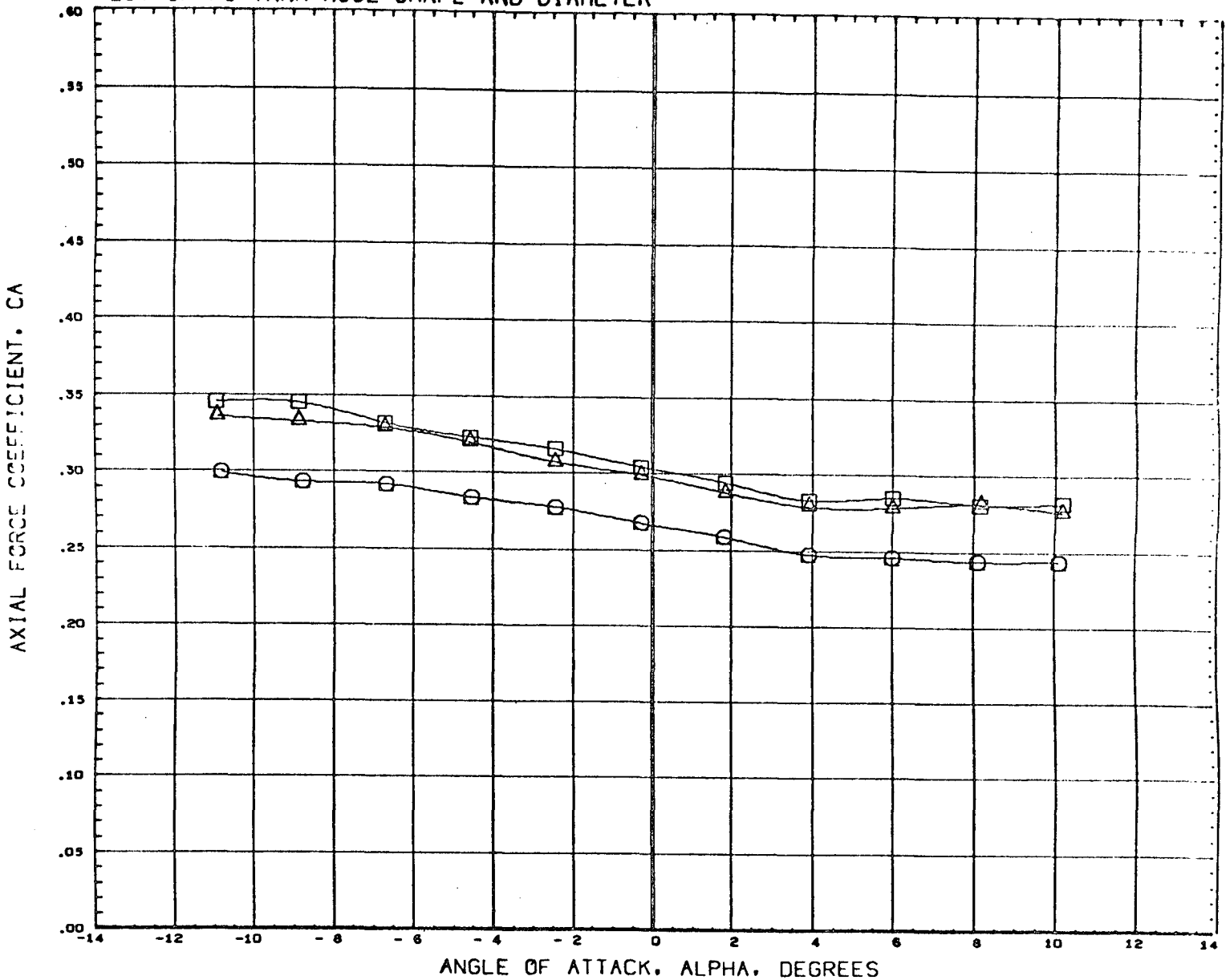
MACH 4.96

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER

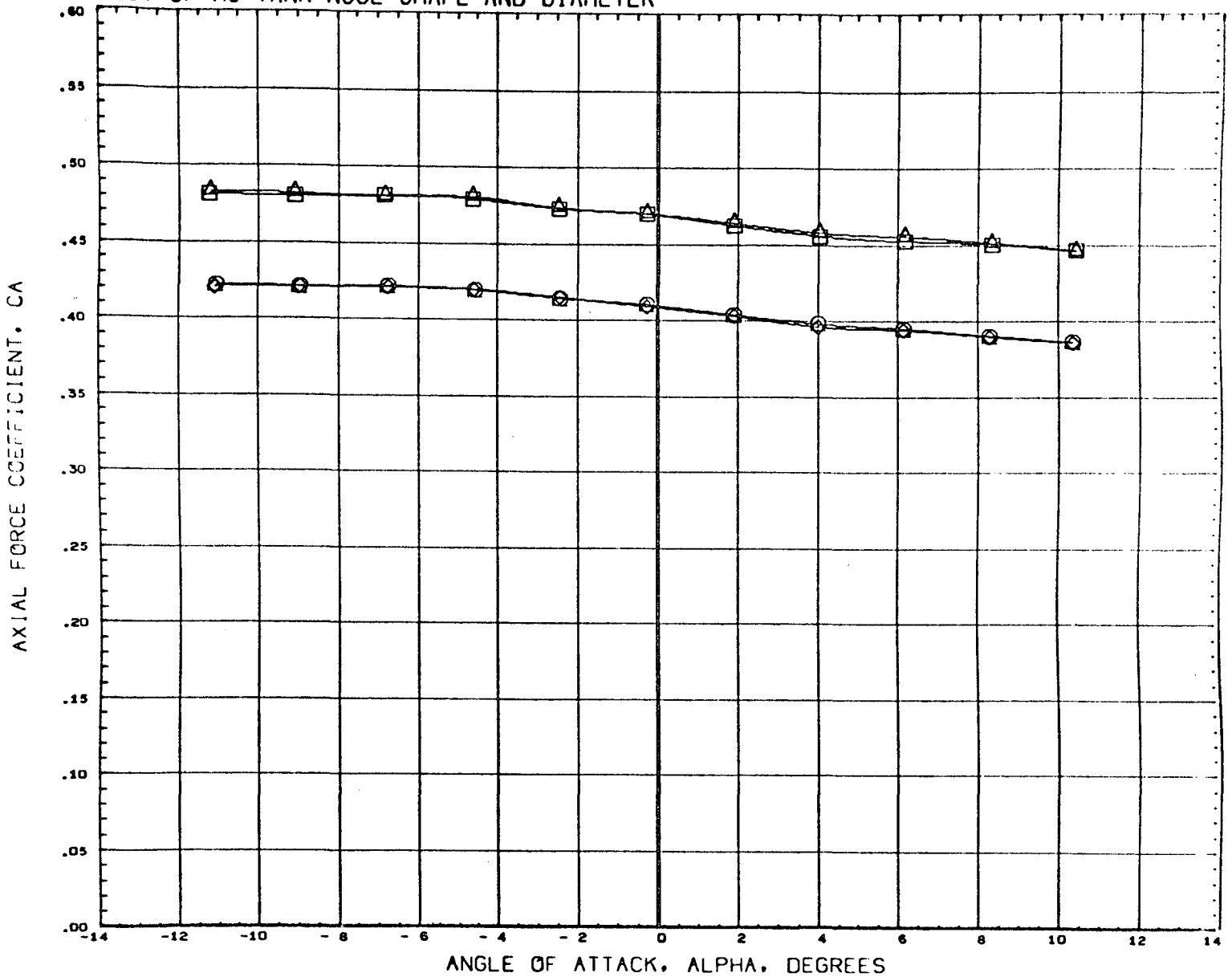


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90



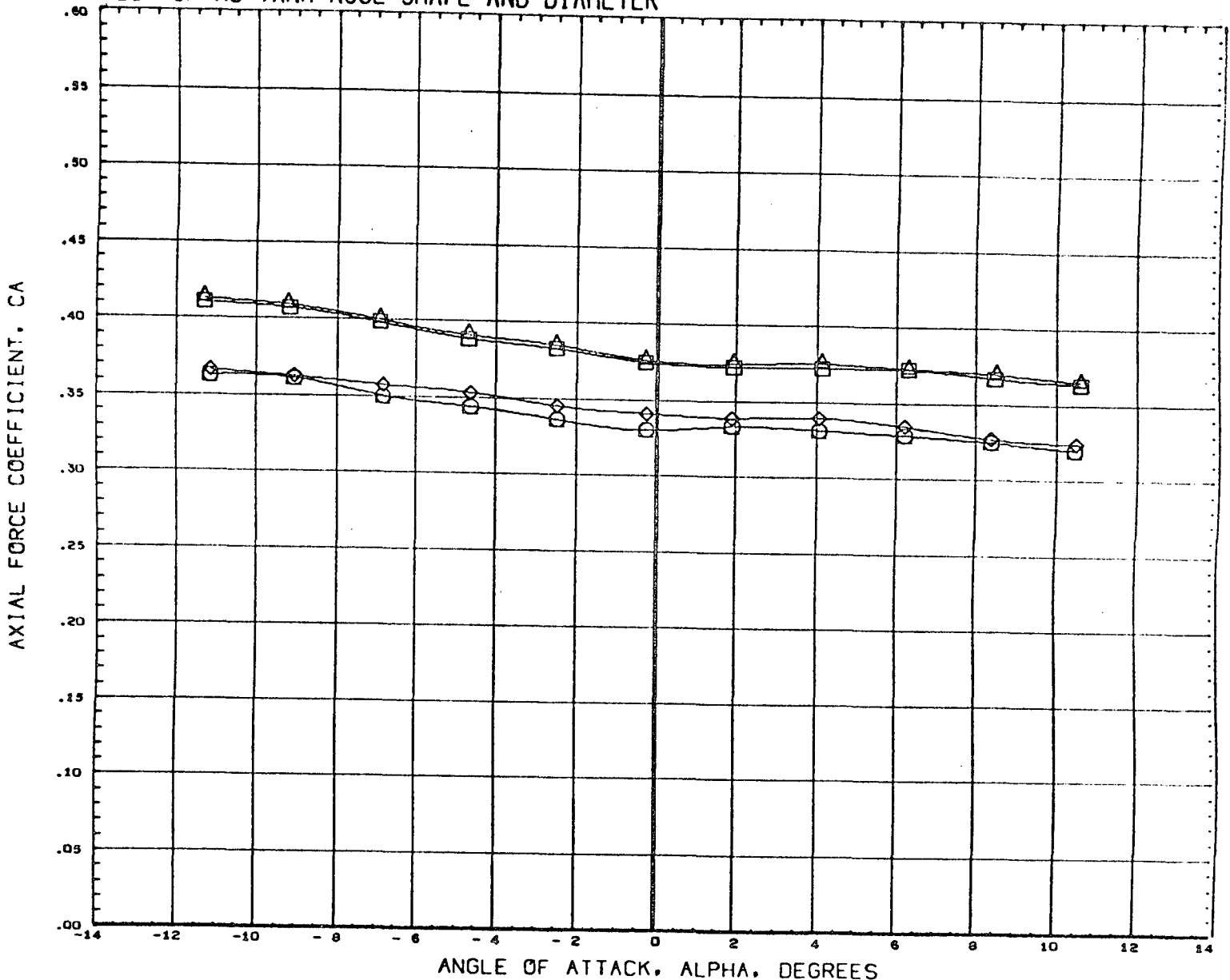
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

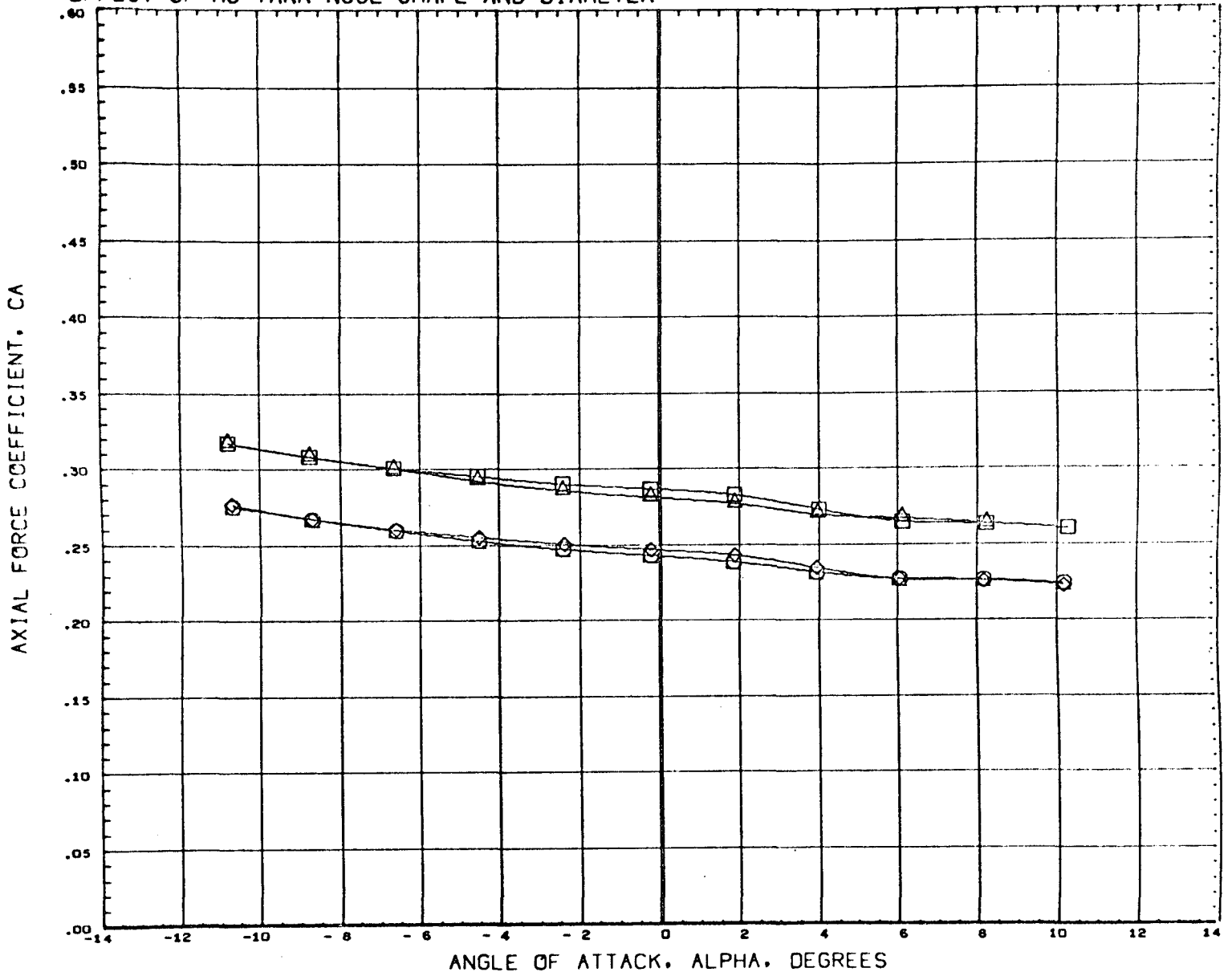
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	YMRP 3.3600 IN. ZMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



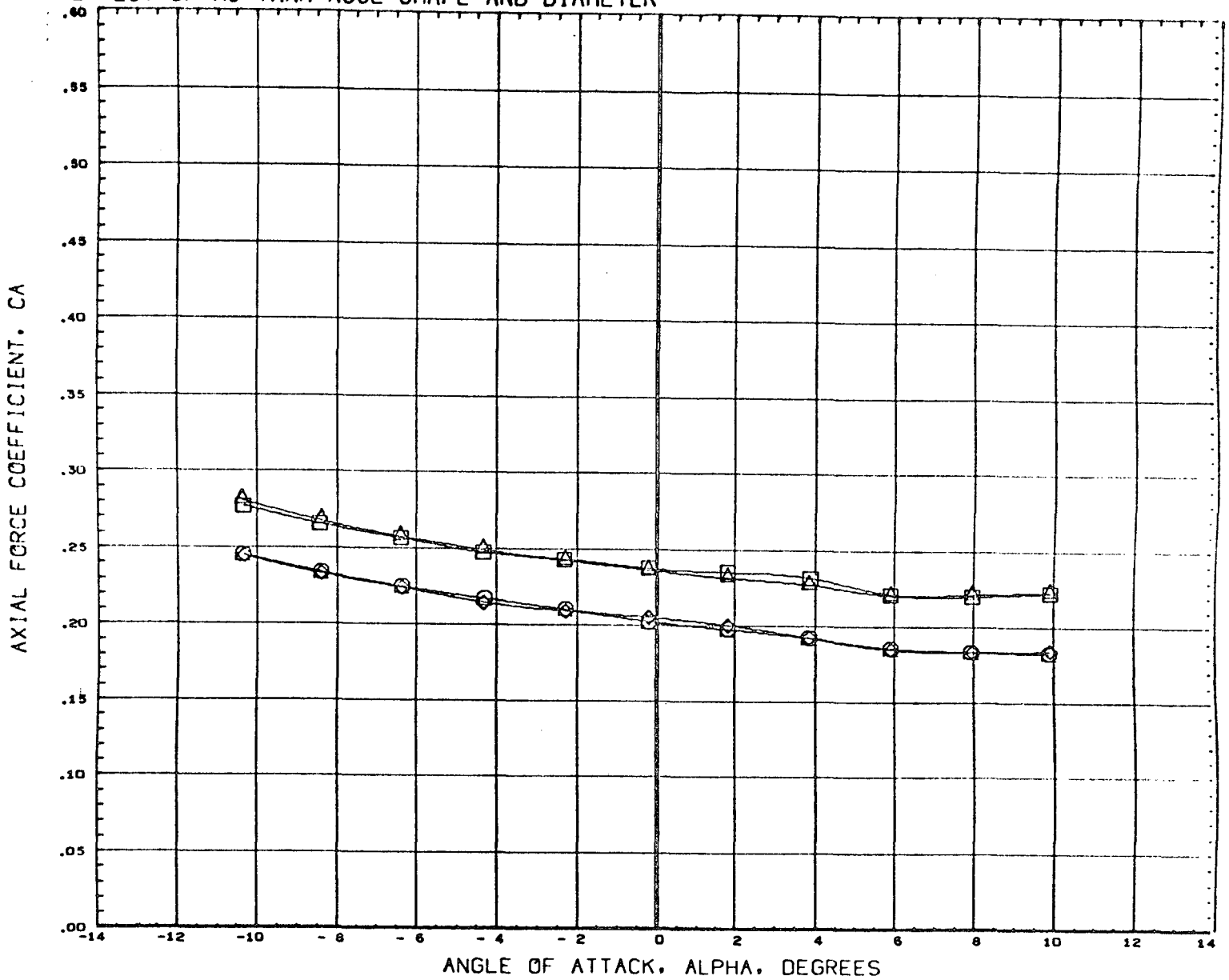
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

3.48

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# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER

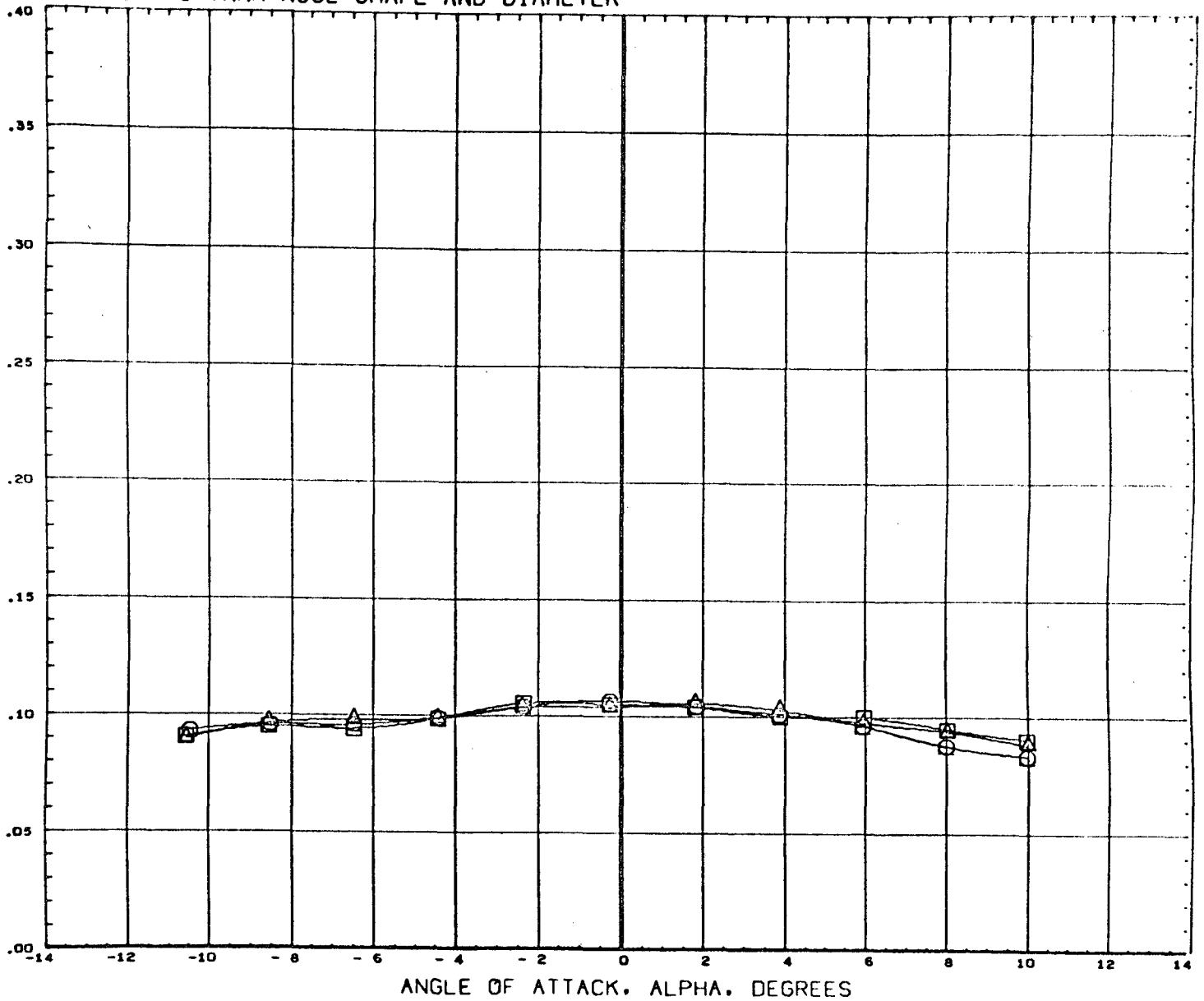


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
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(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER

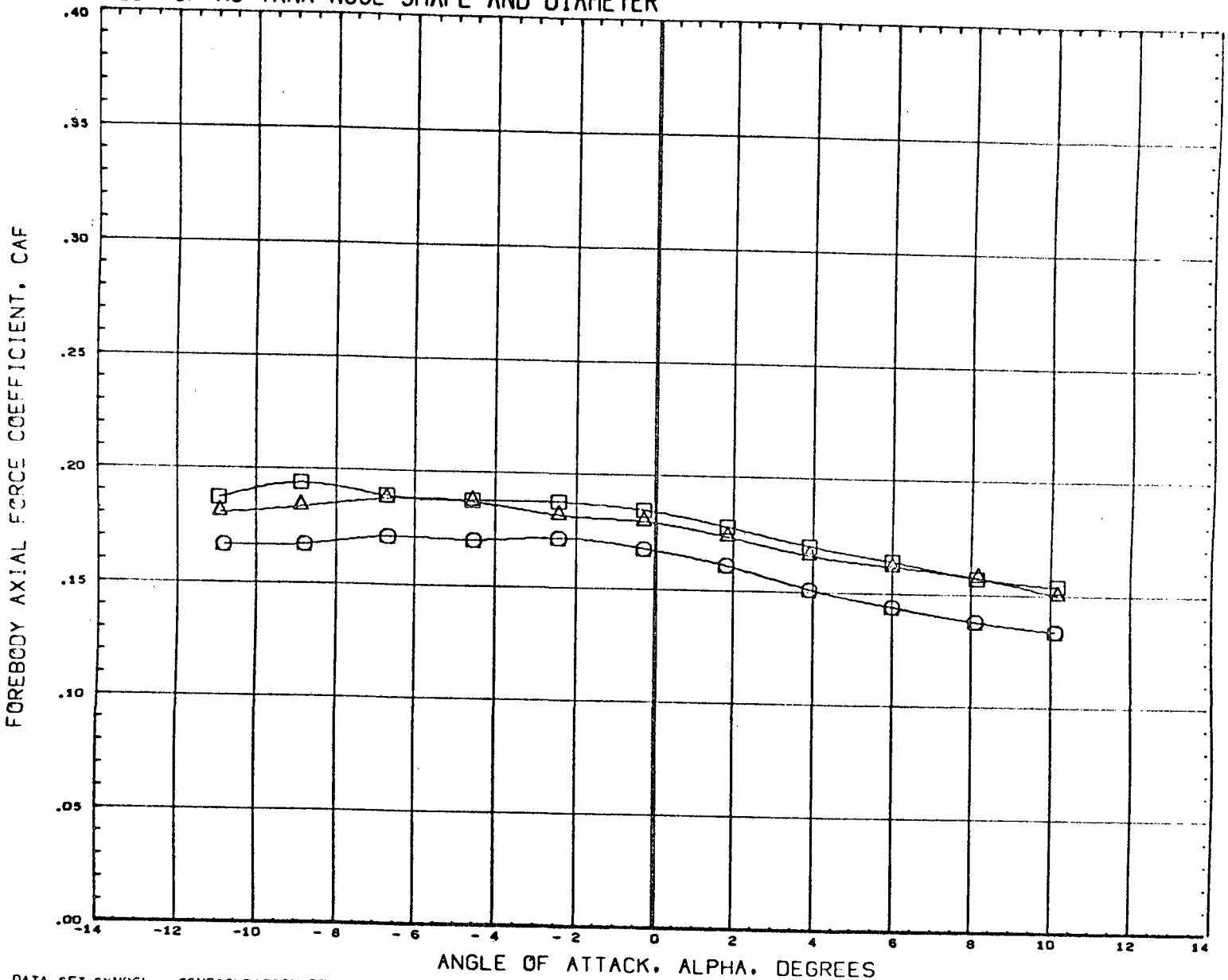
FOREBODY AXIAL FORCE COEFFICIENT, CAF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	YMRP 3.3600 IN. ZMRP 0.0000 IN. SCALE 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

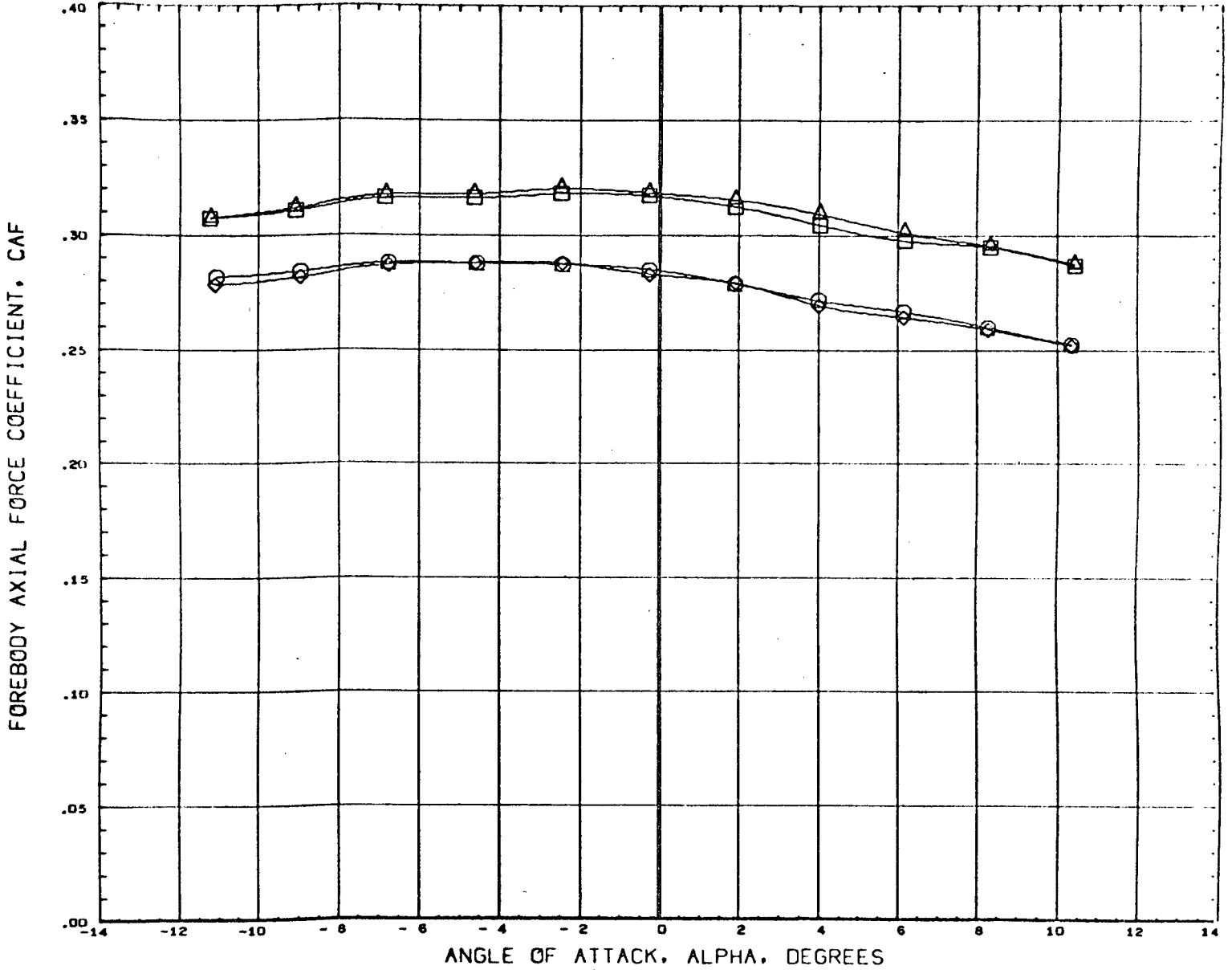
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS		-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

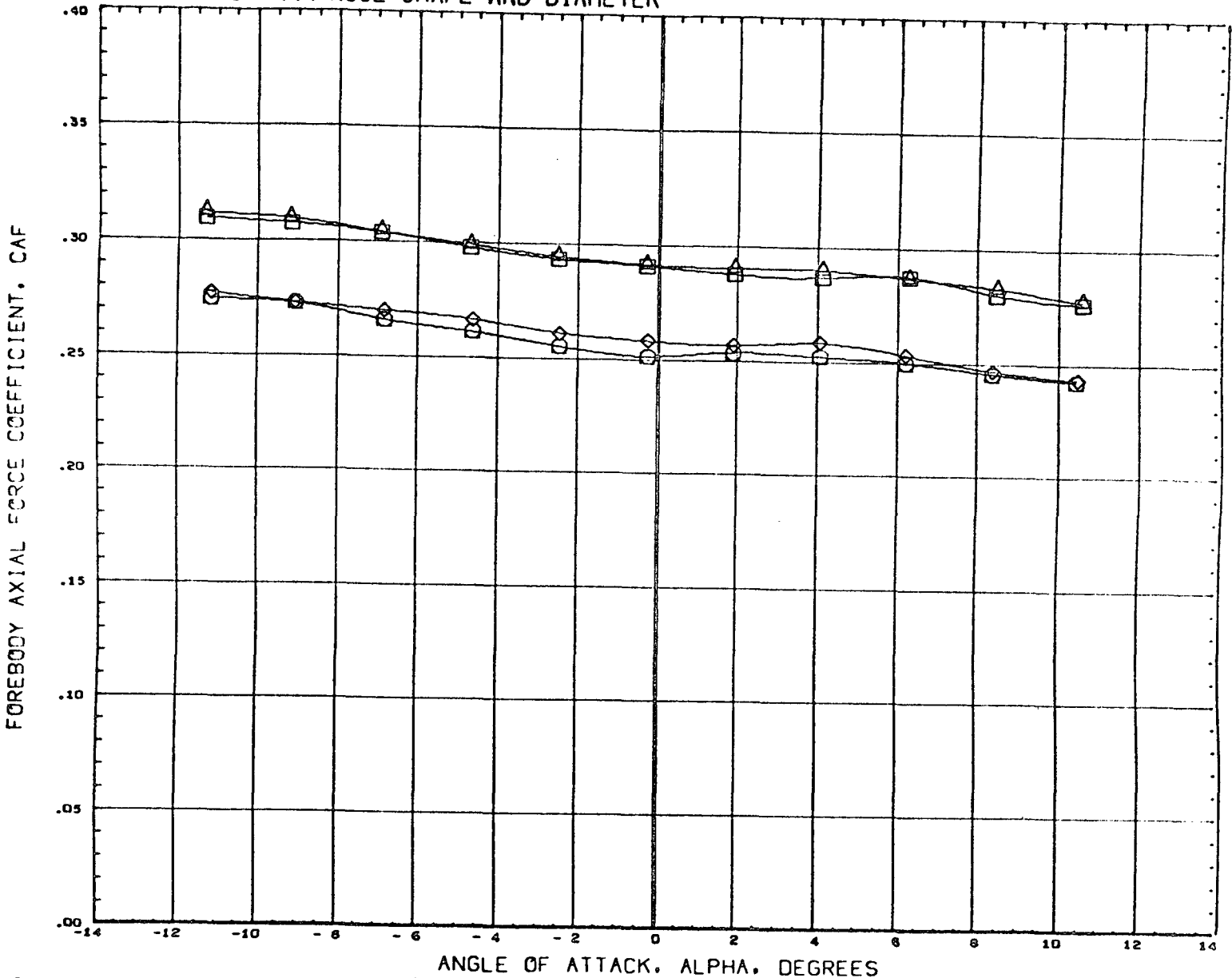
MACH .90

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71047)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71033)	◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71049)	□	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER

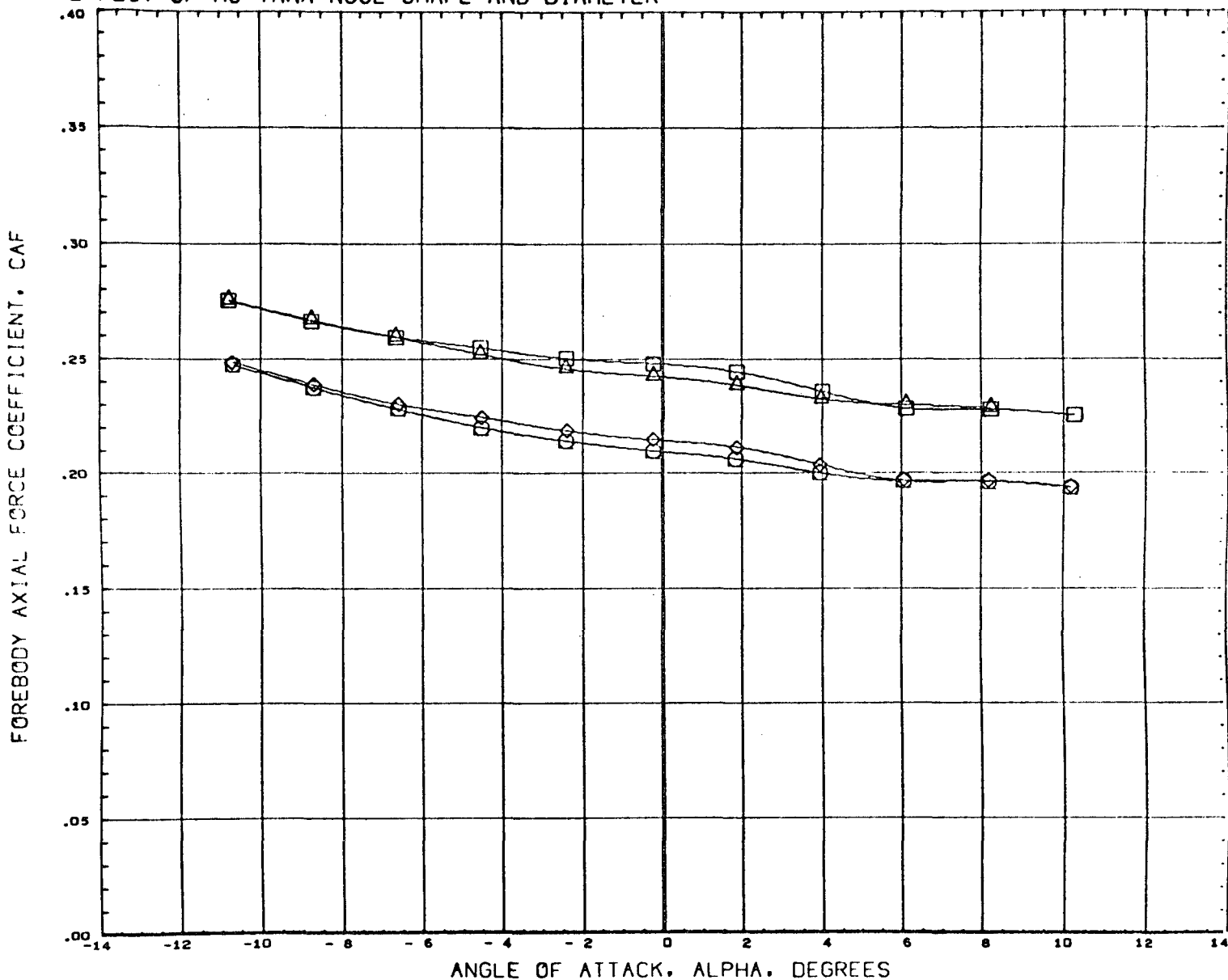


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97



# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



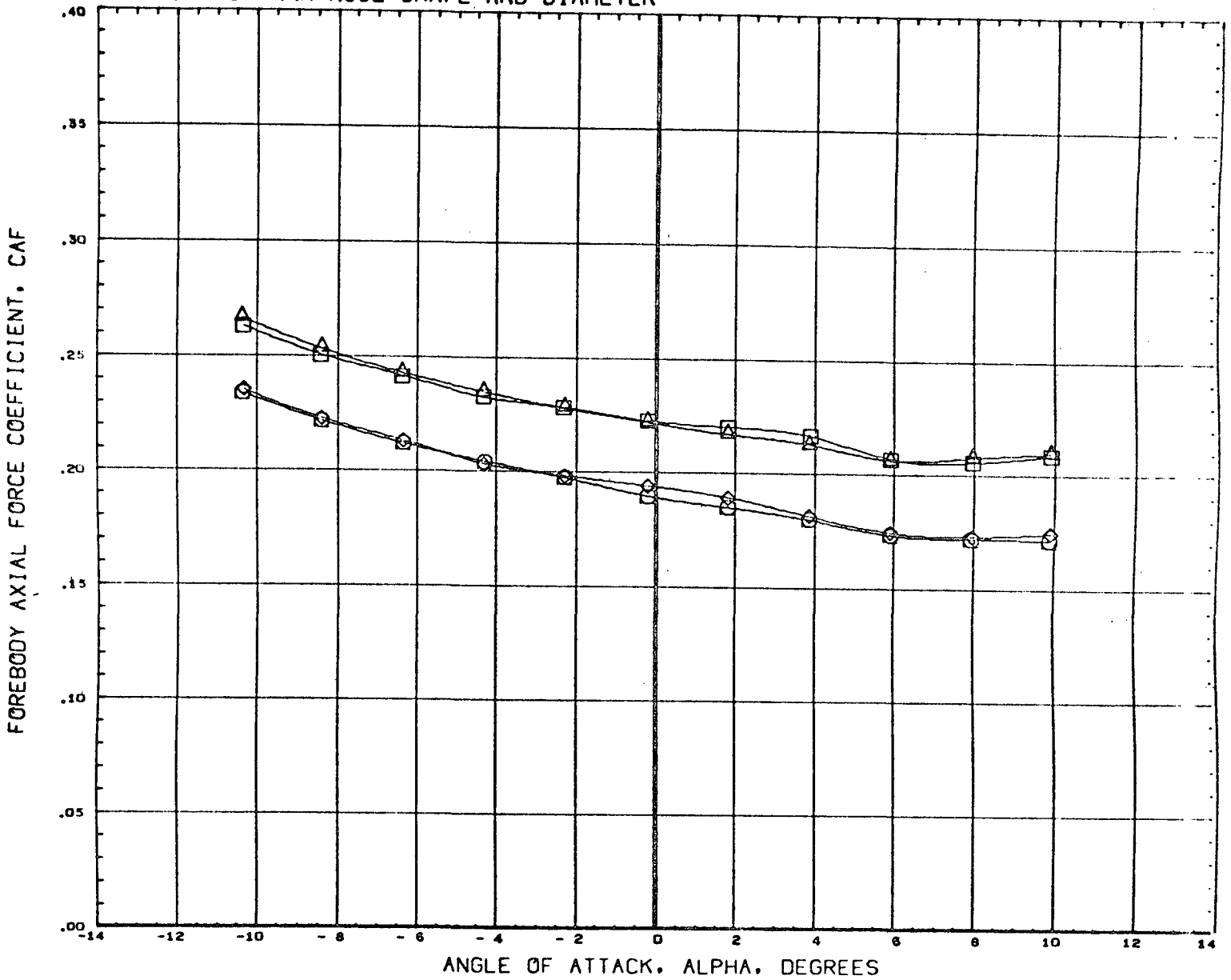
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

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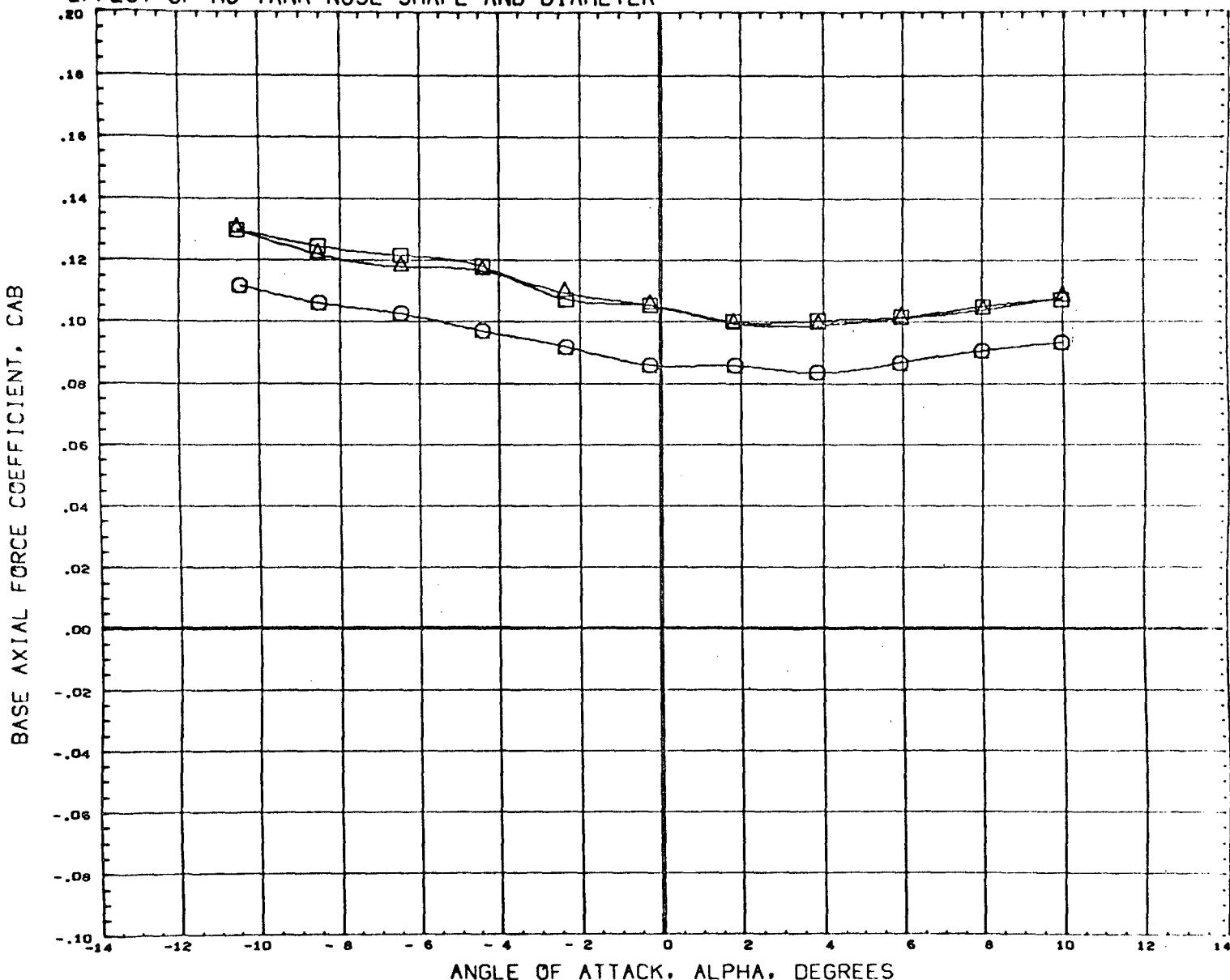
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

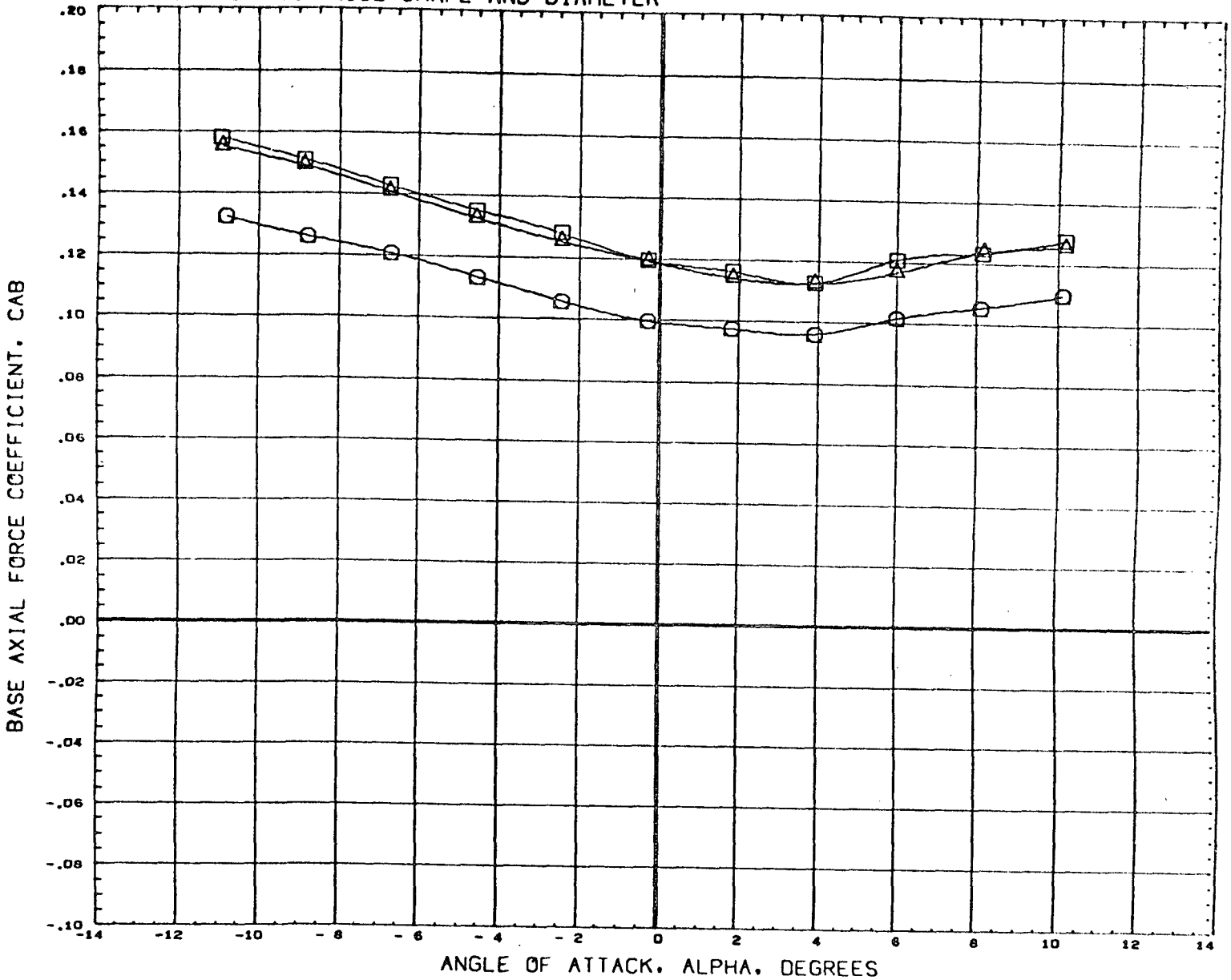
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

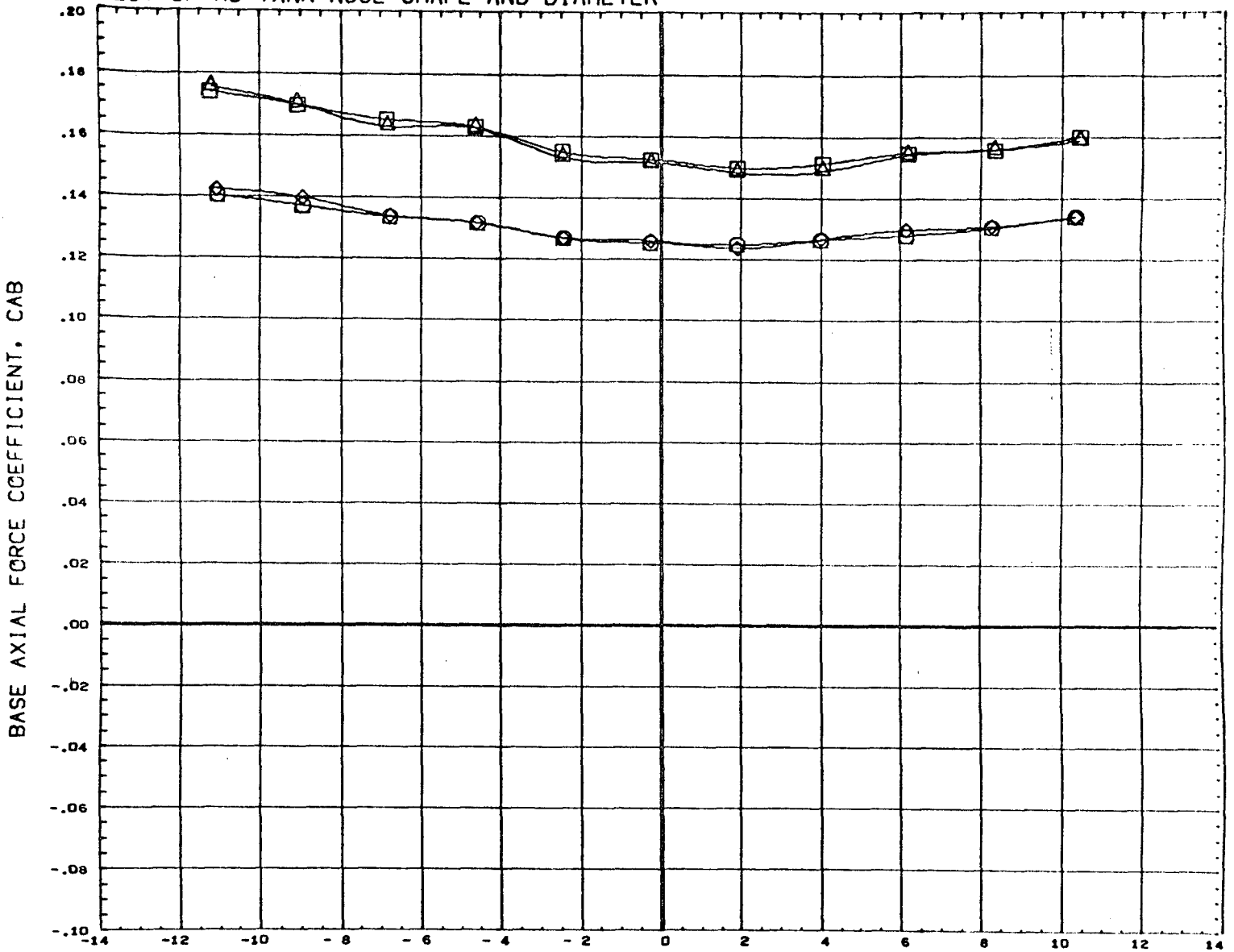
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITAL	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



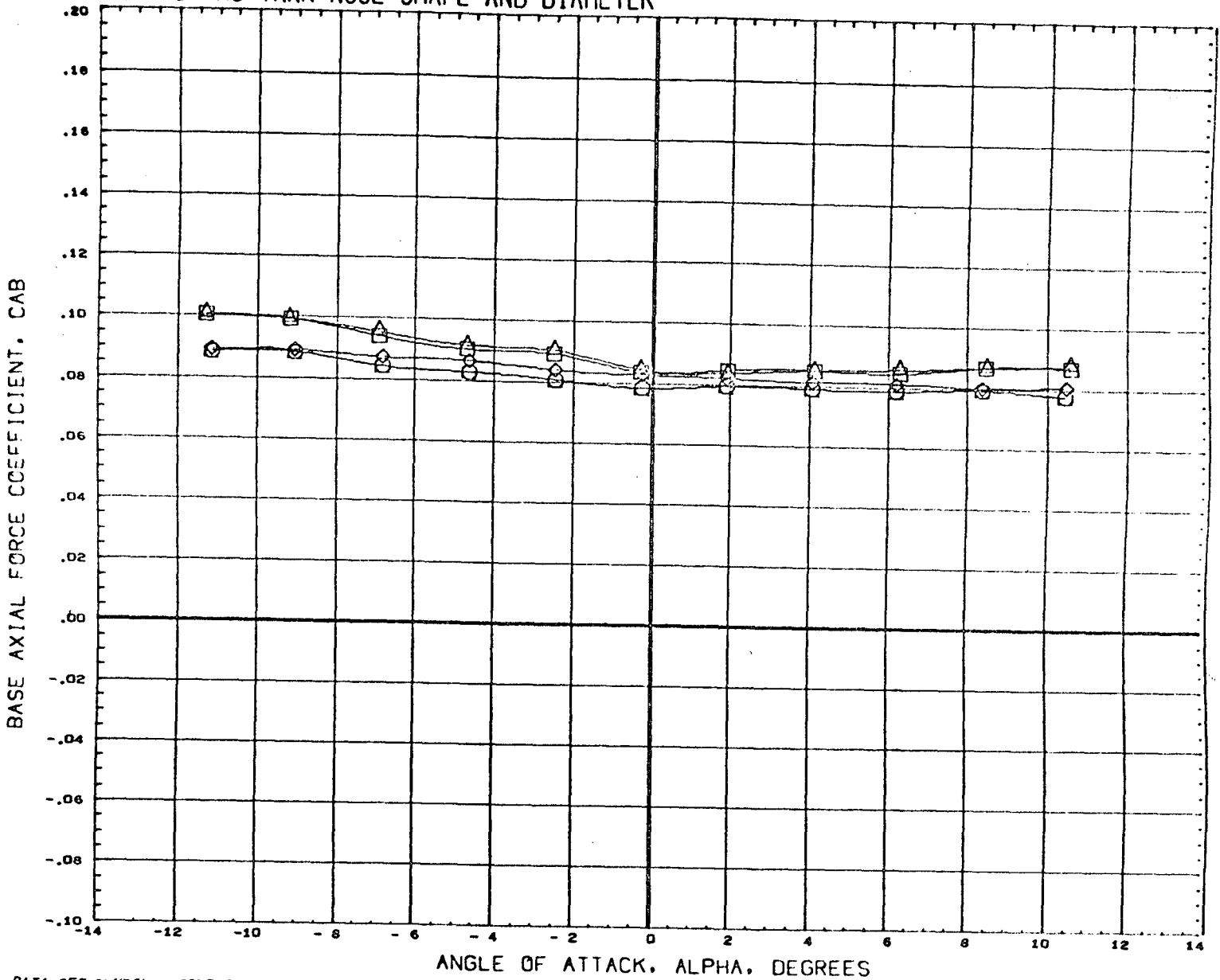
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	YMRP 3.3600 IN.
						ZMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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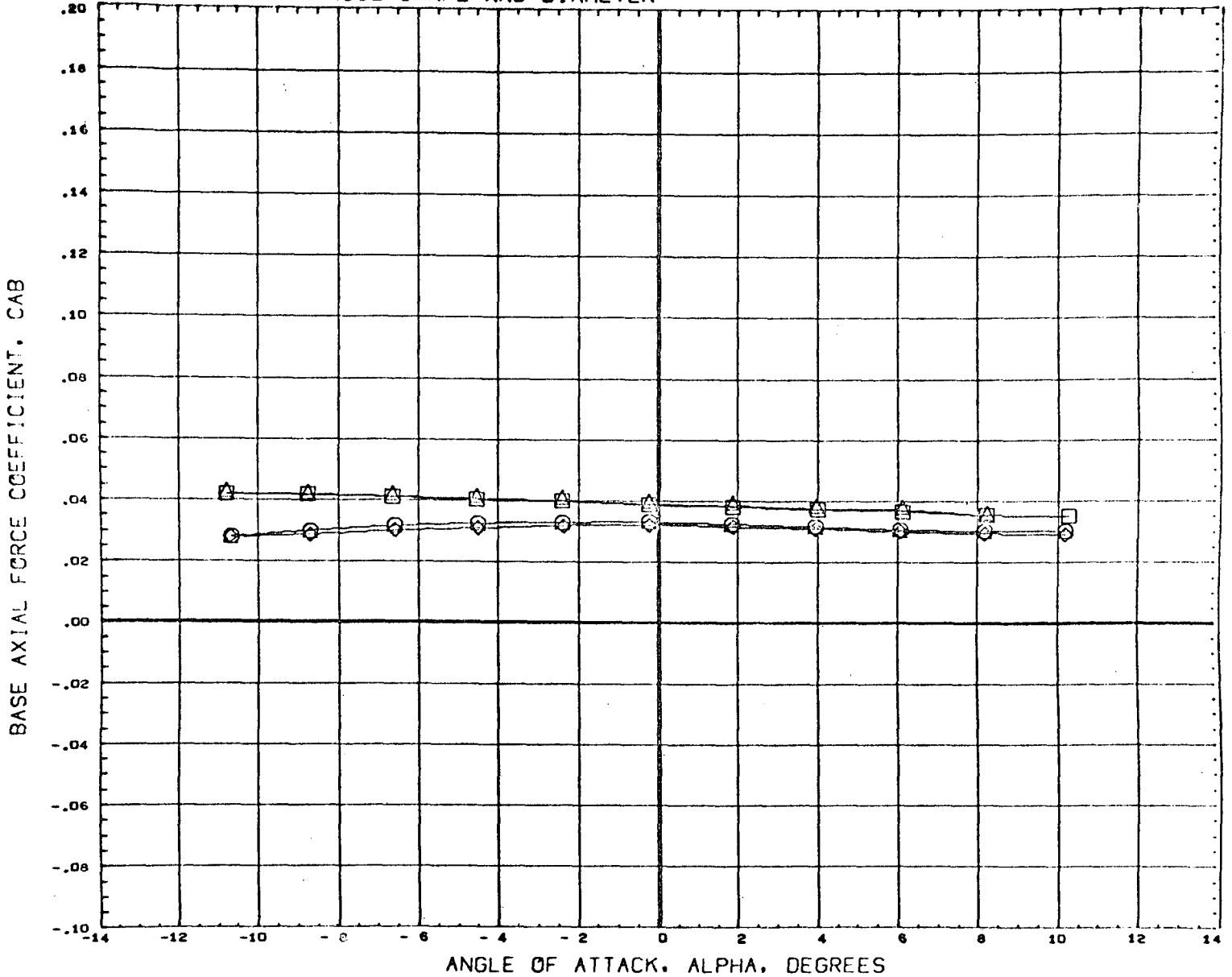
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 32. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF H<sub>0</sub> TANK NOSE SHAPE AND DIAMETER

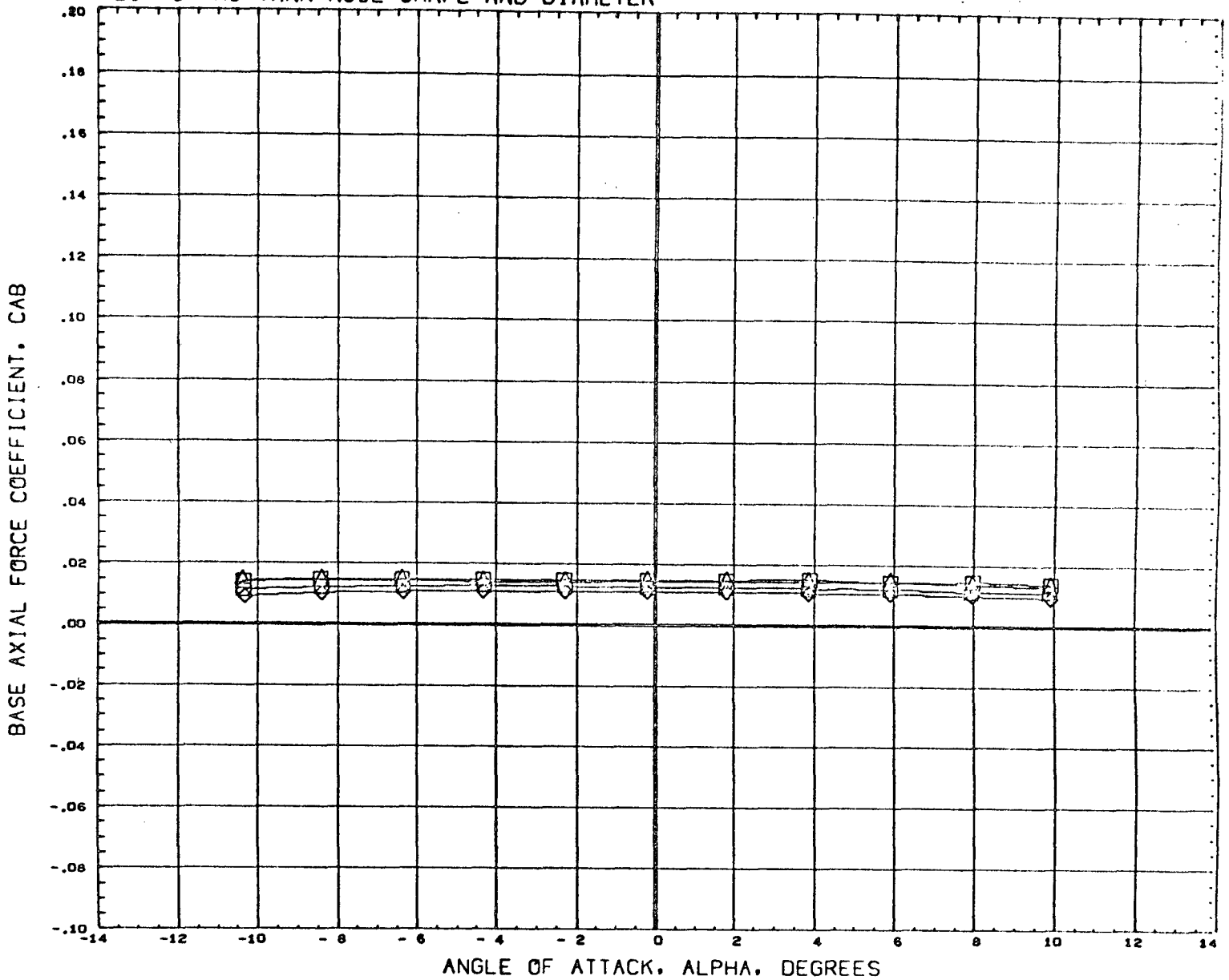


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

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# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



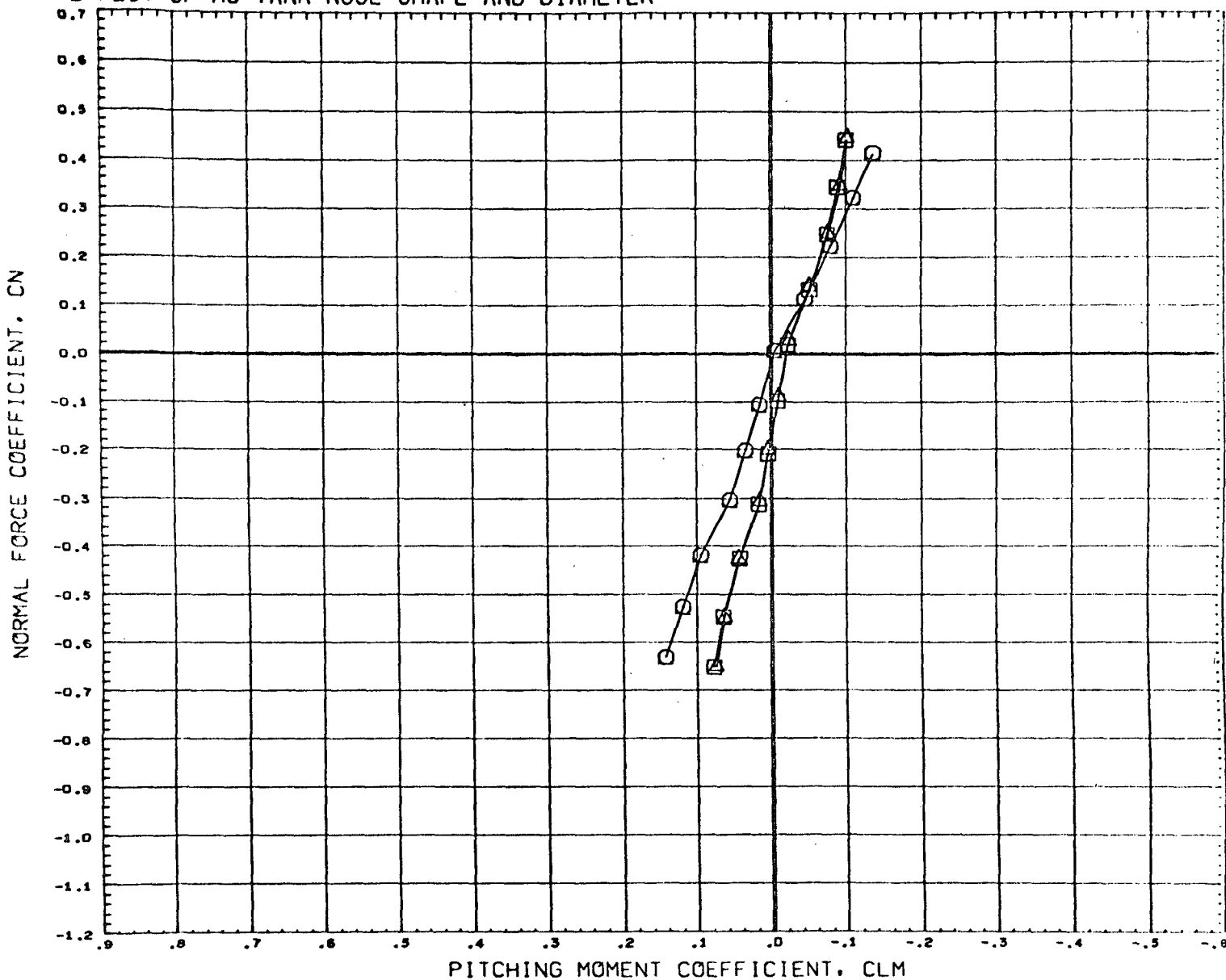
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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# EFFECT OF H<sub>0</sub> TANK NOSE SHAPE AND DIAMETER

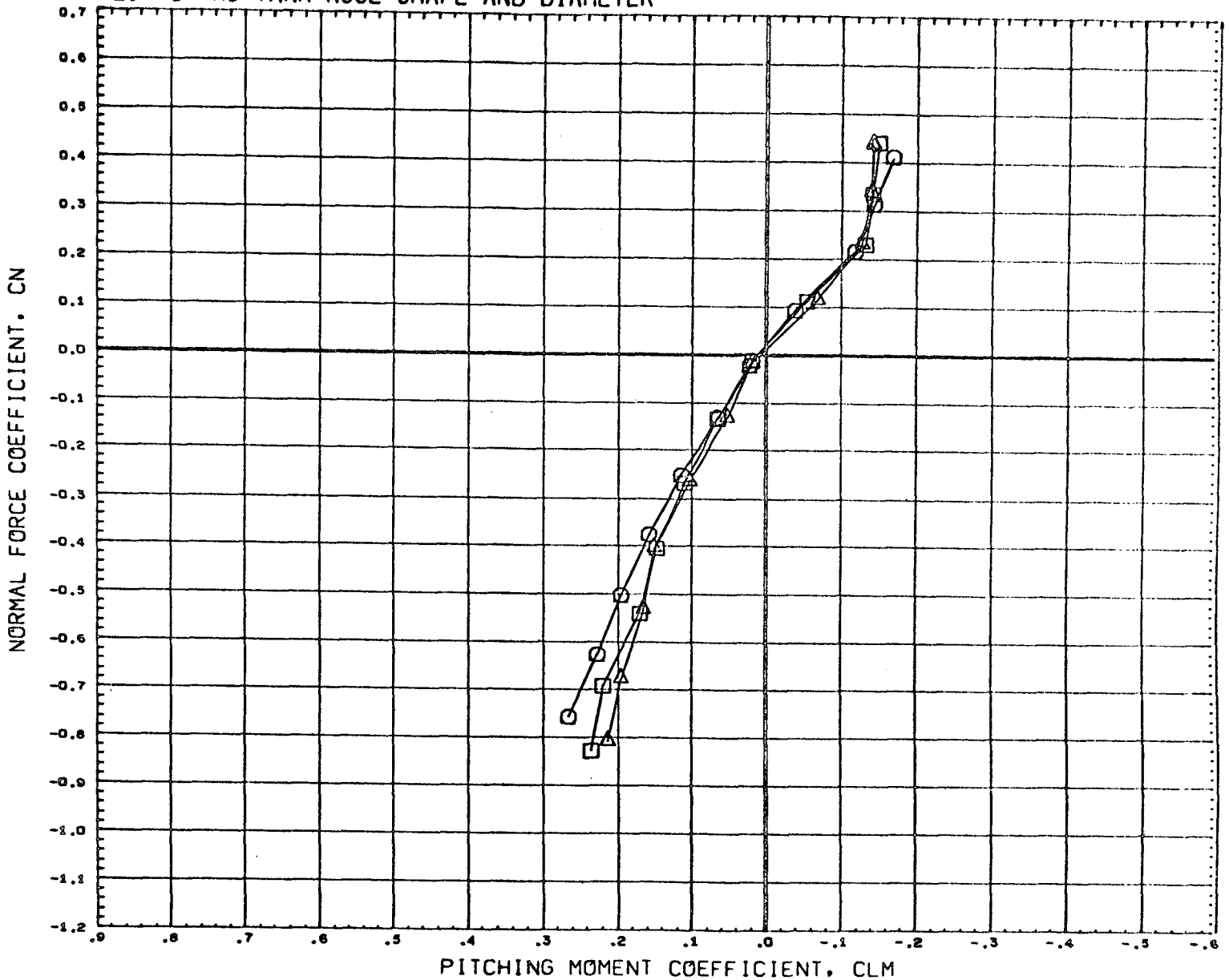


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

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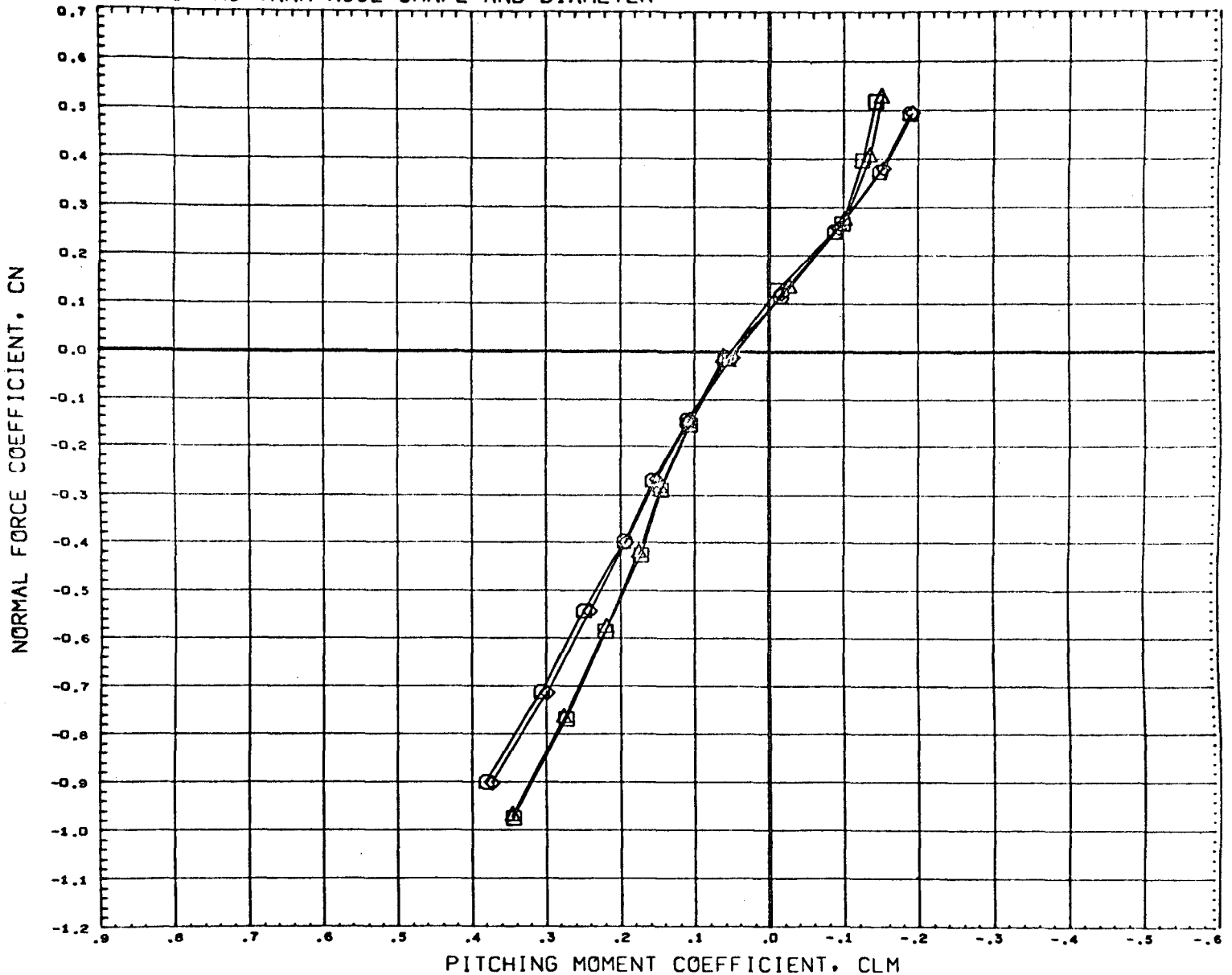
# EFFECT OF H<sub>0</sub> TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



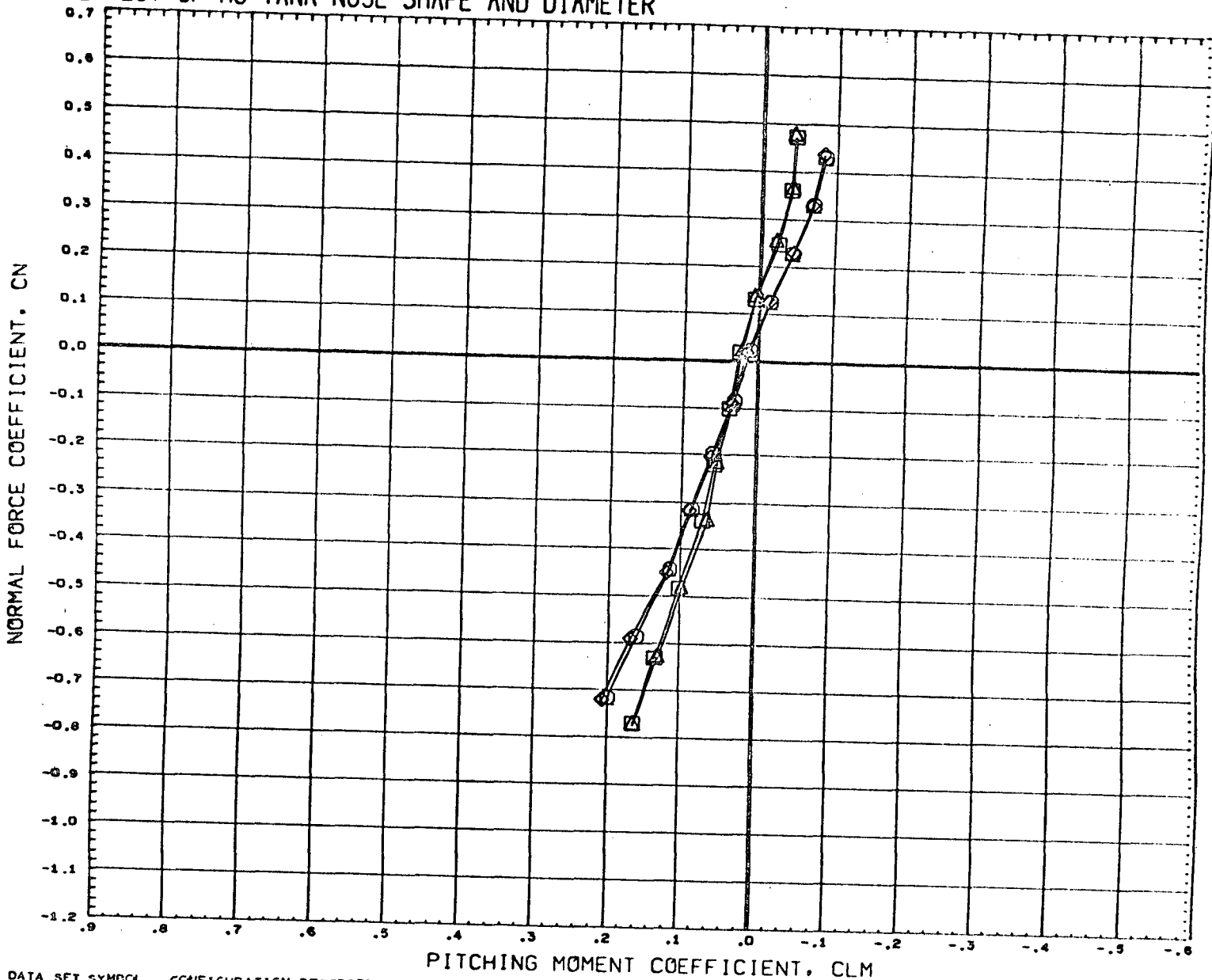
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.20

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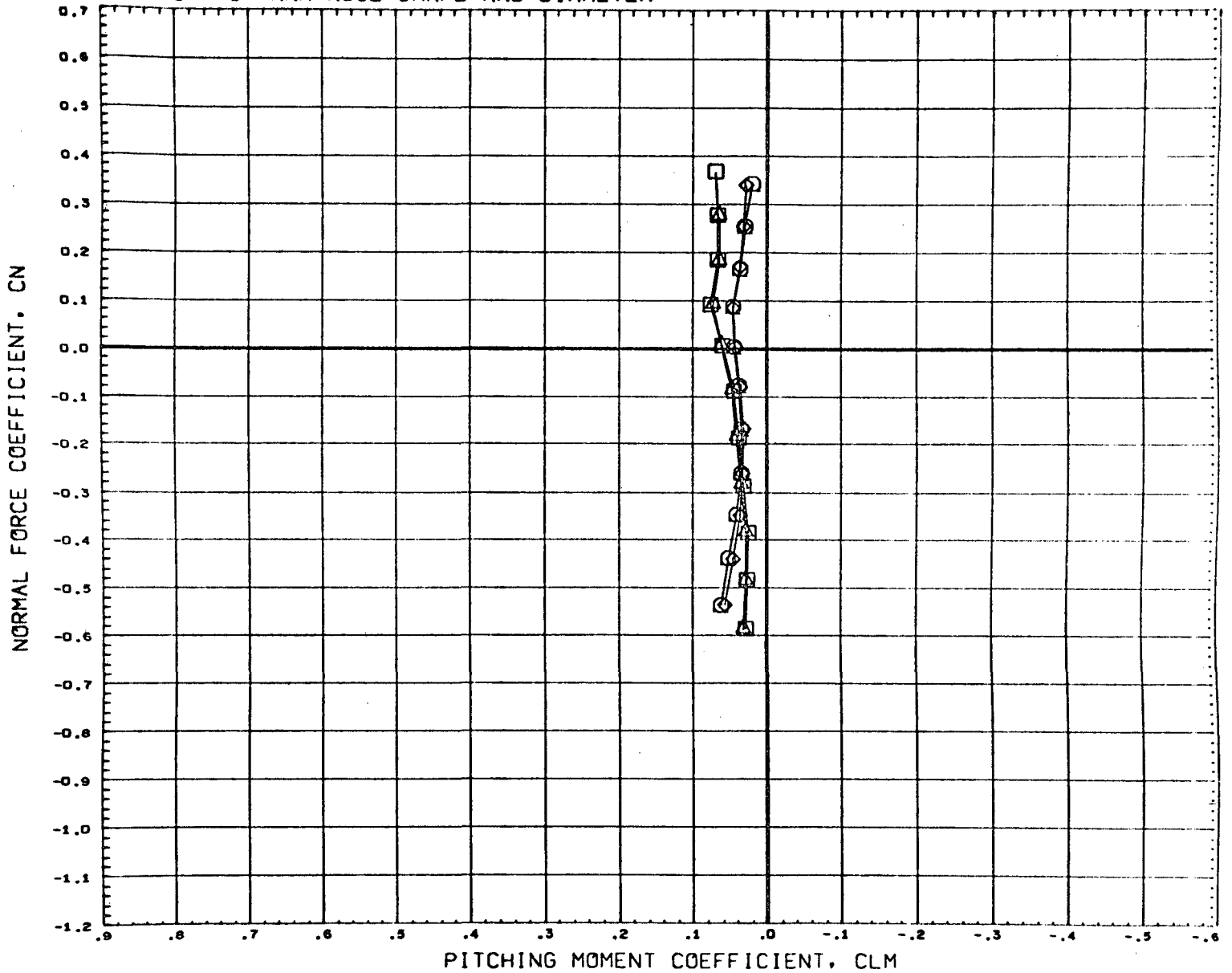
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(D71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XM RP 3.3600 IN.
						YM RP 0.0000 IN.
						ZM RP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF H<sub>0</sub> TANK NOSE SHAPE AND DIAMETER



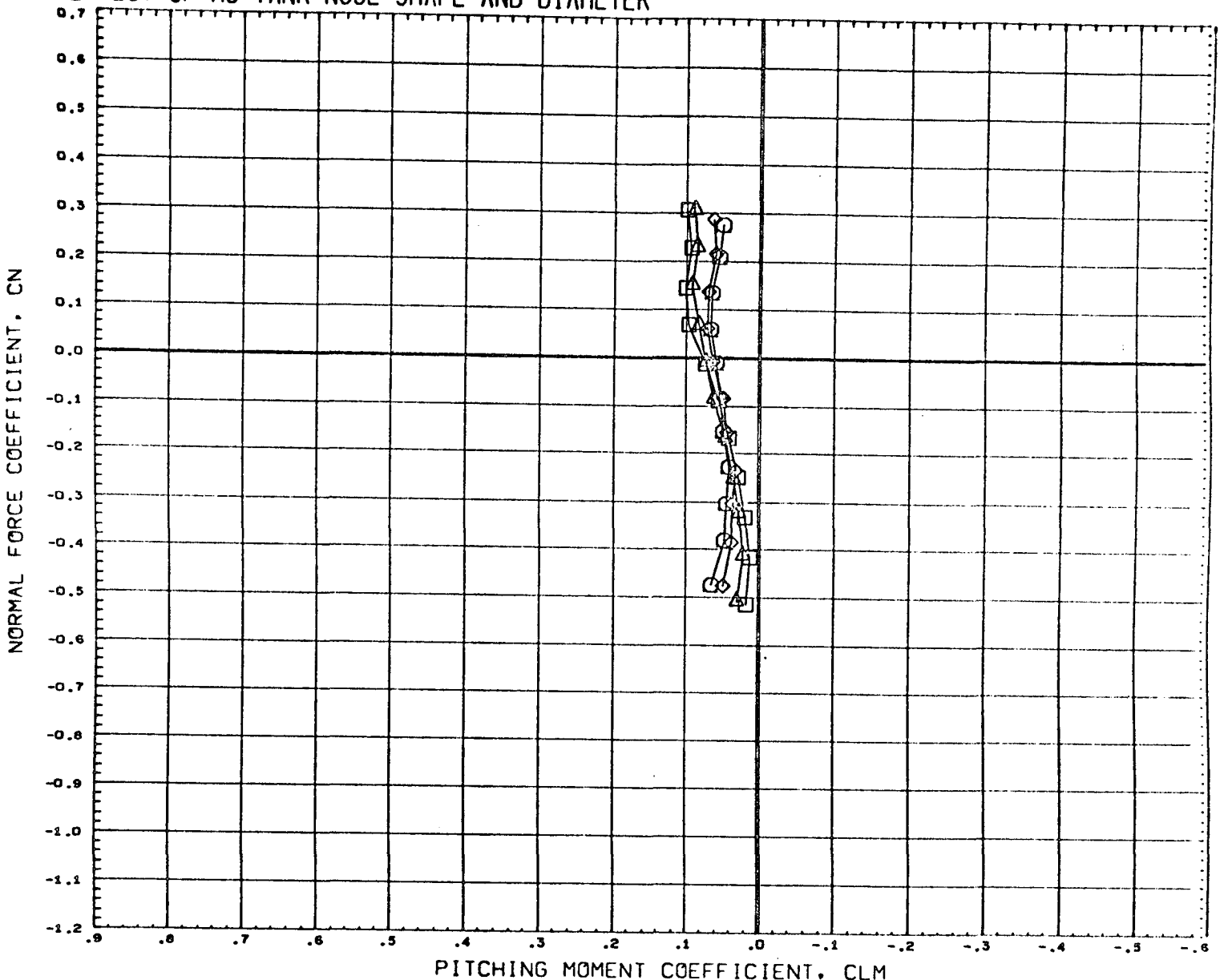
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

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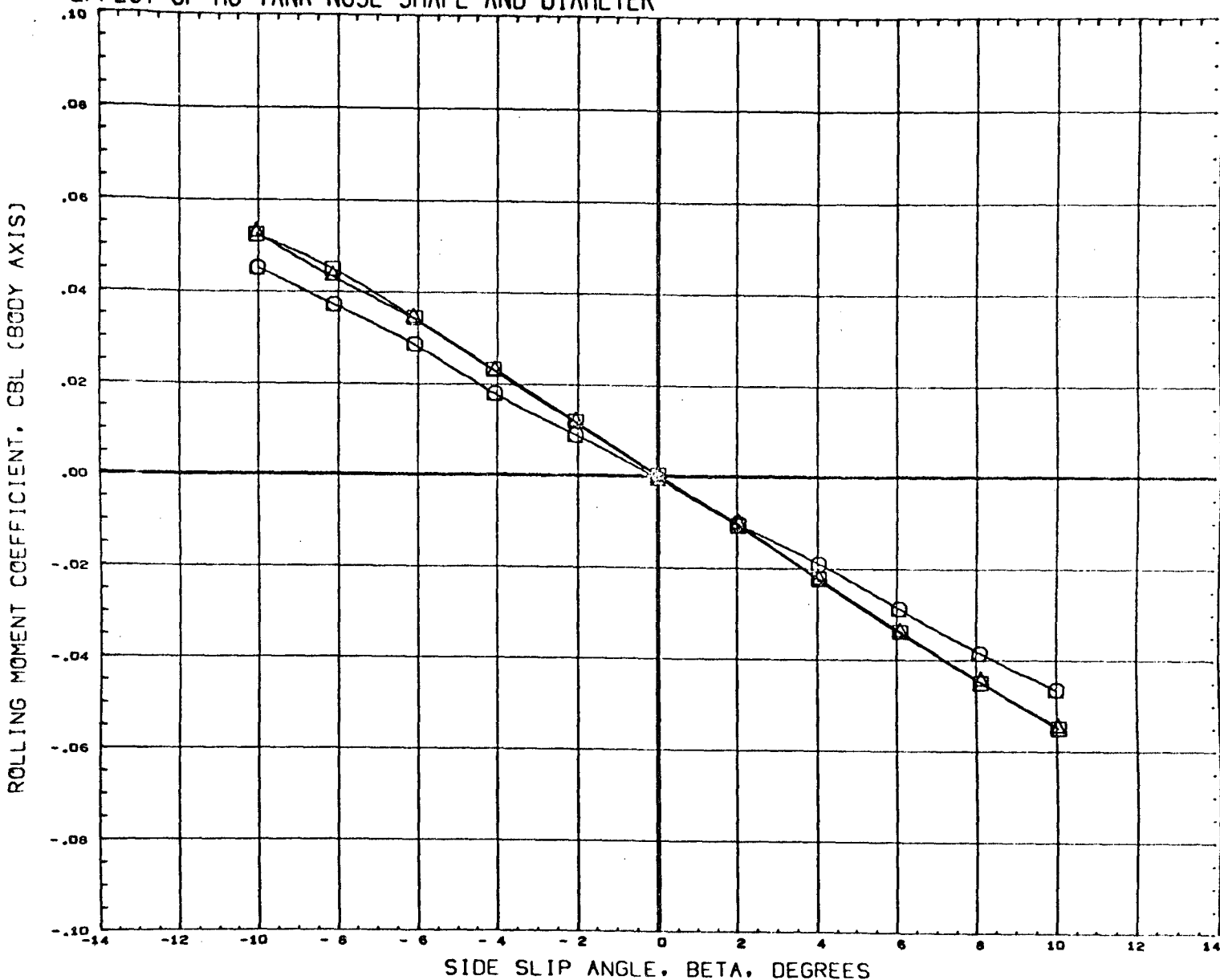
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71047)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71033)	◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71049)	□	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

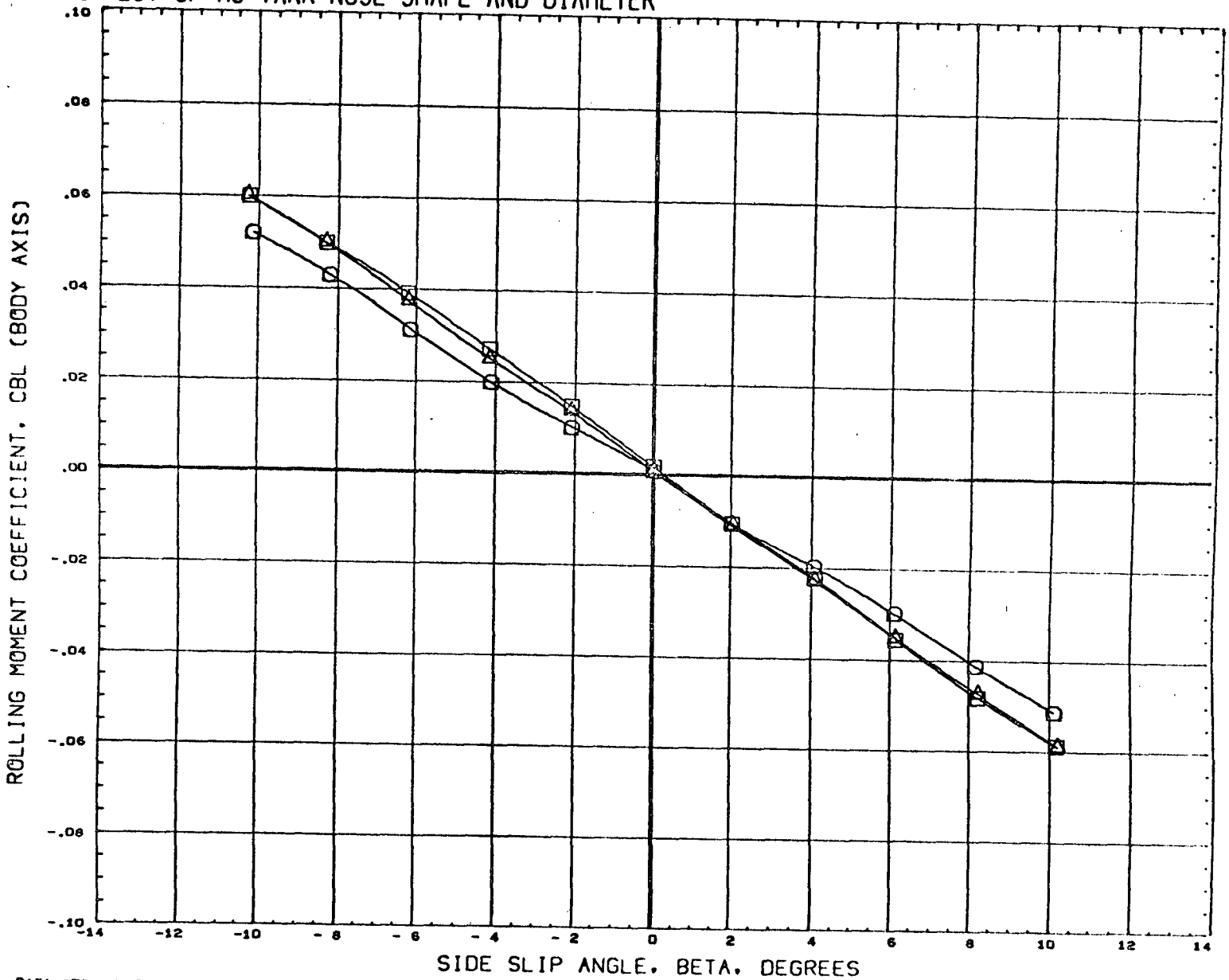
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER

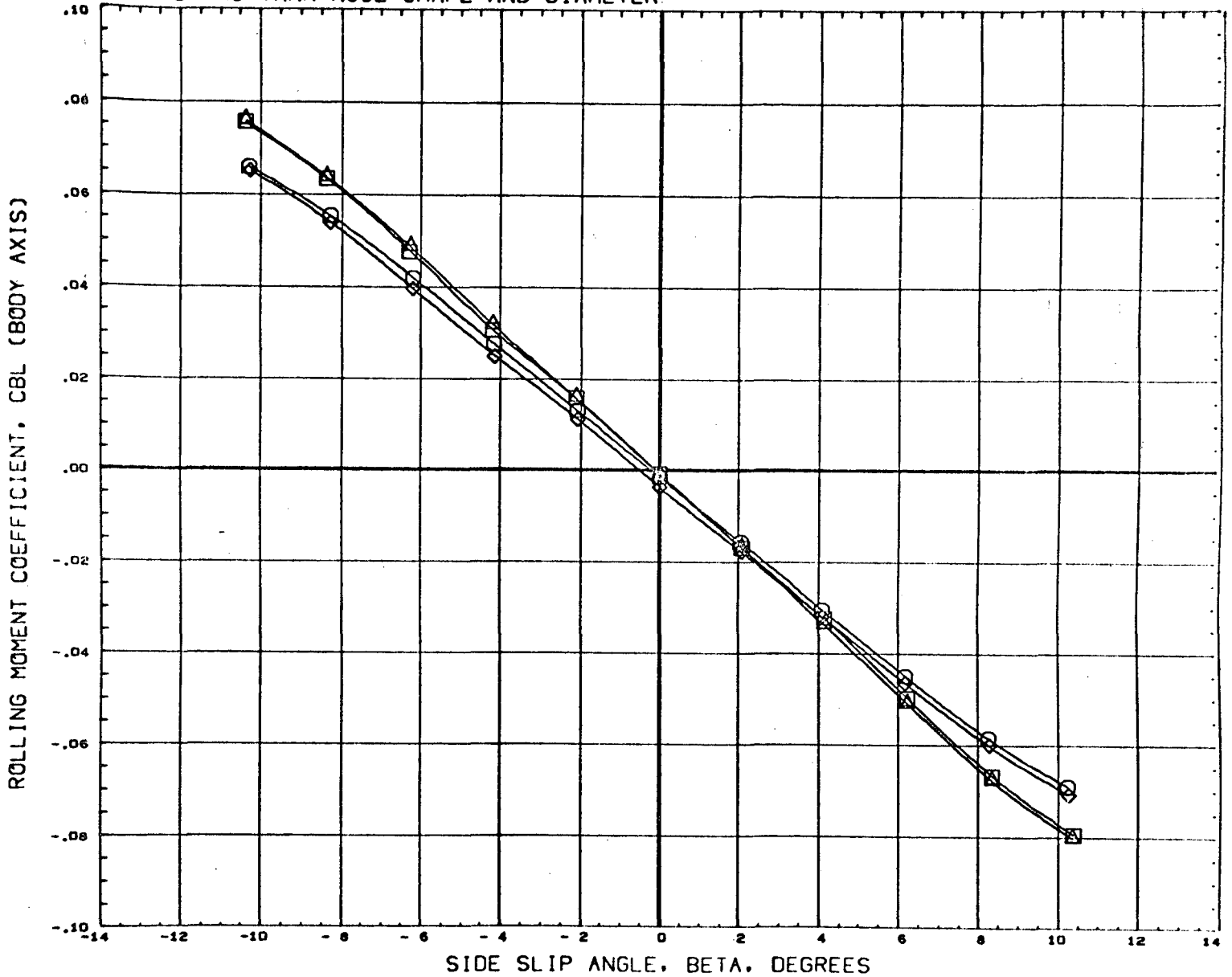


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



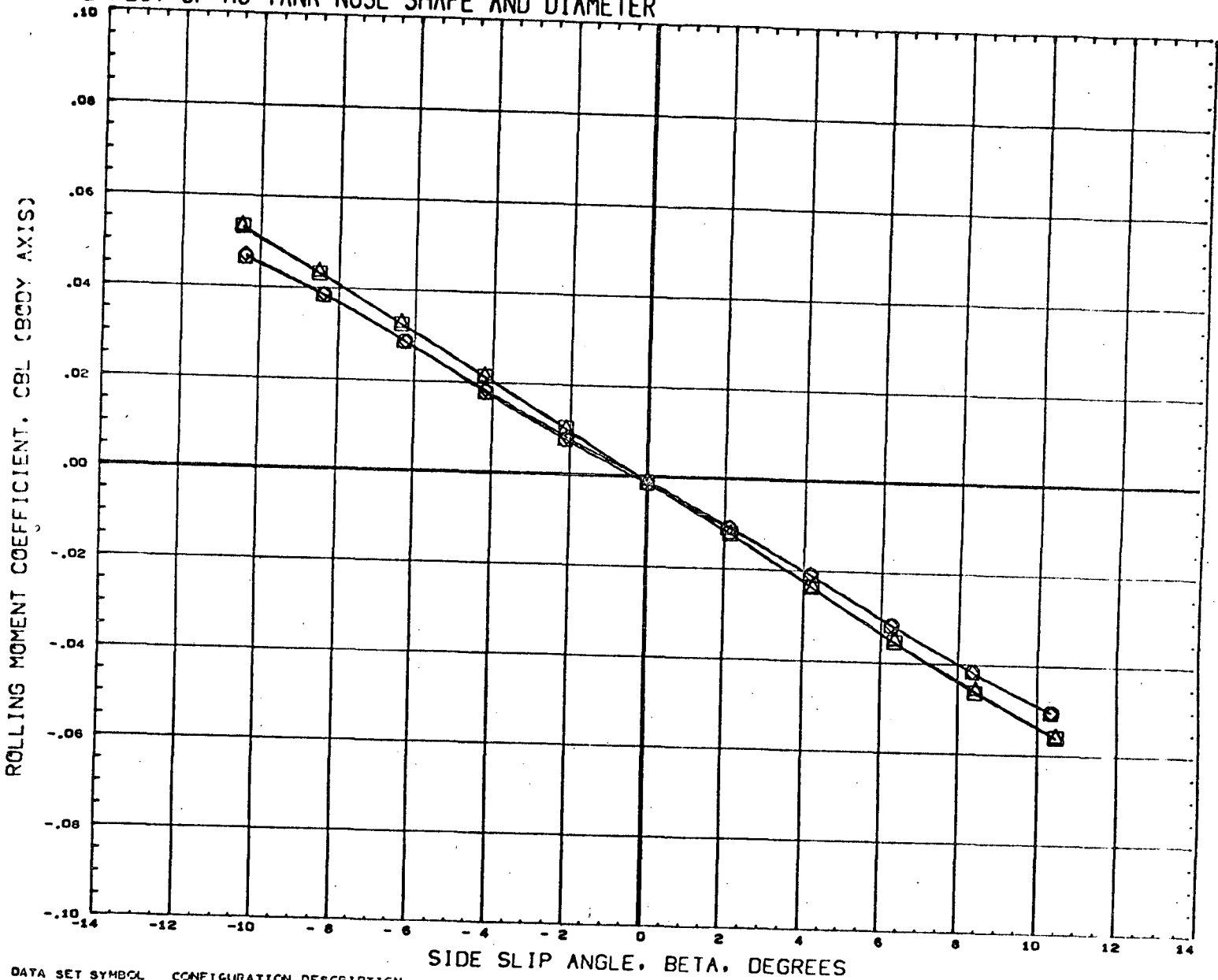
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

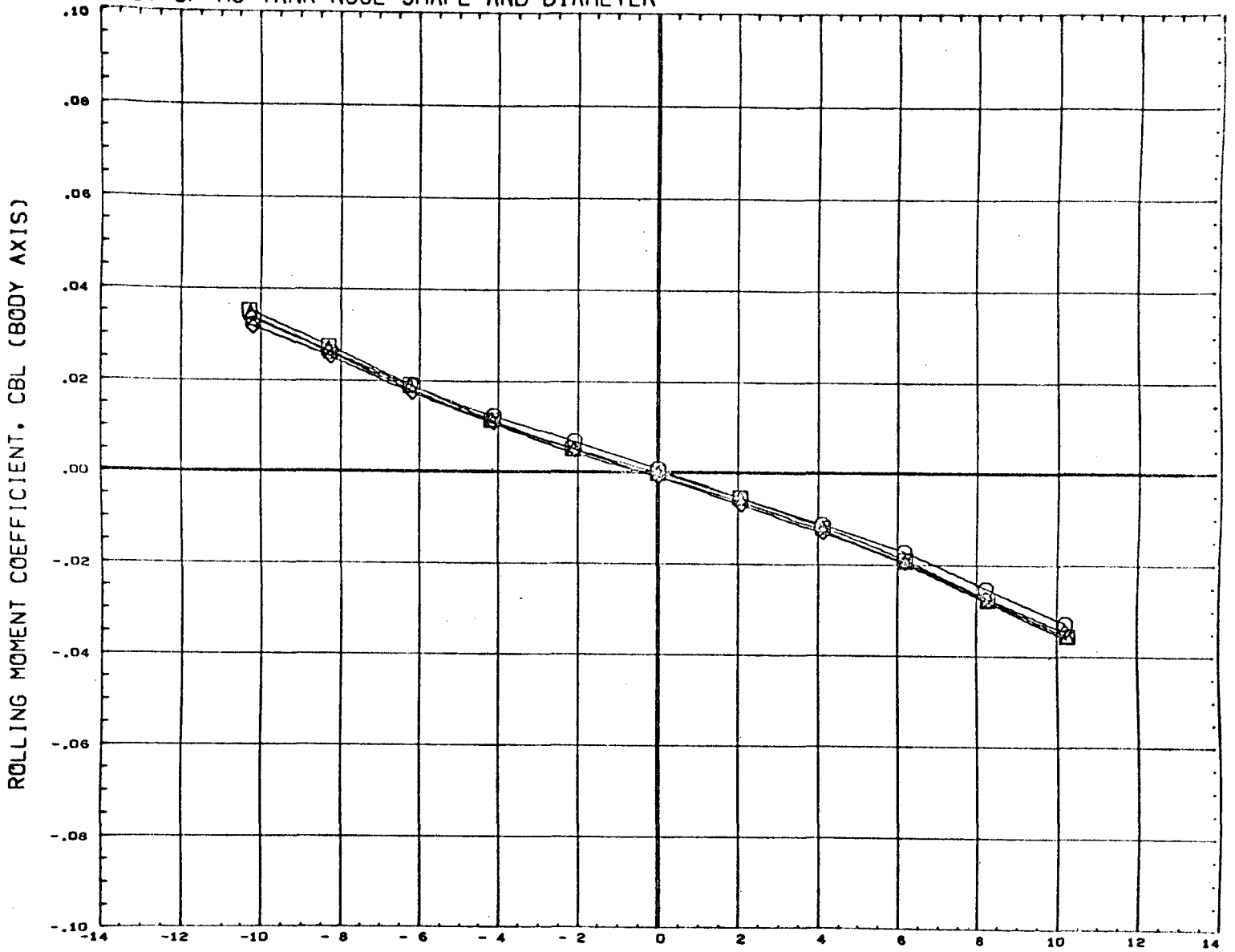
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER

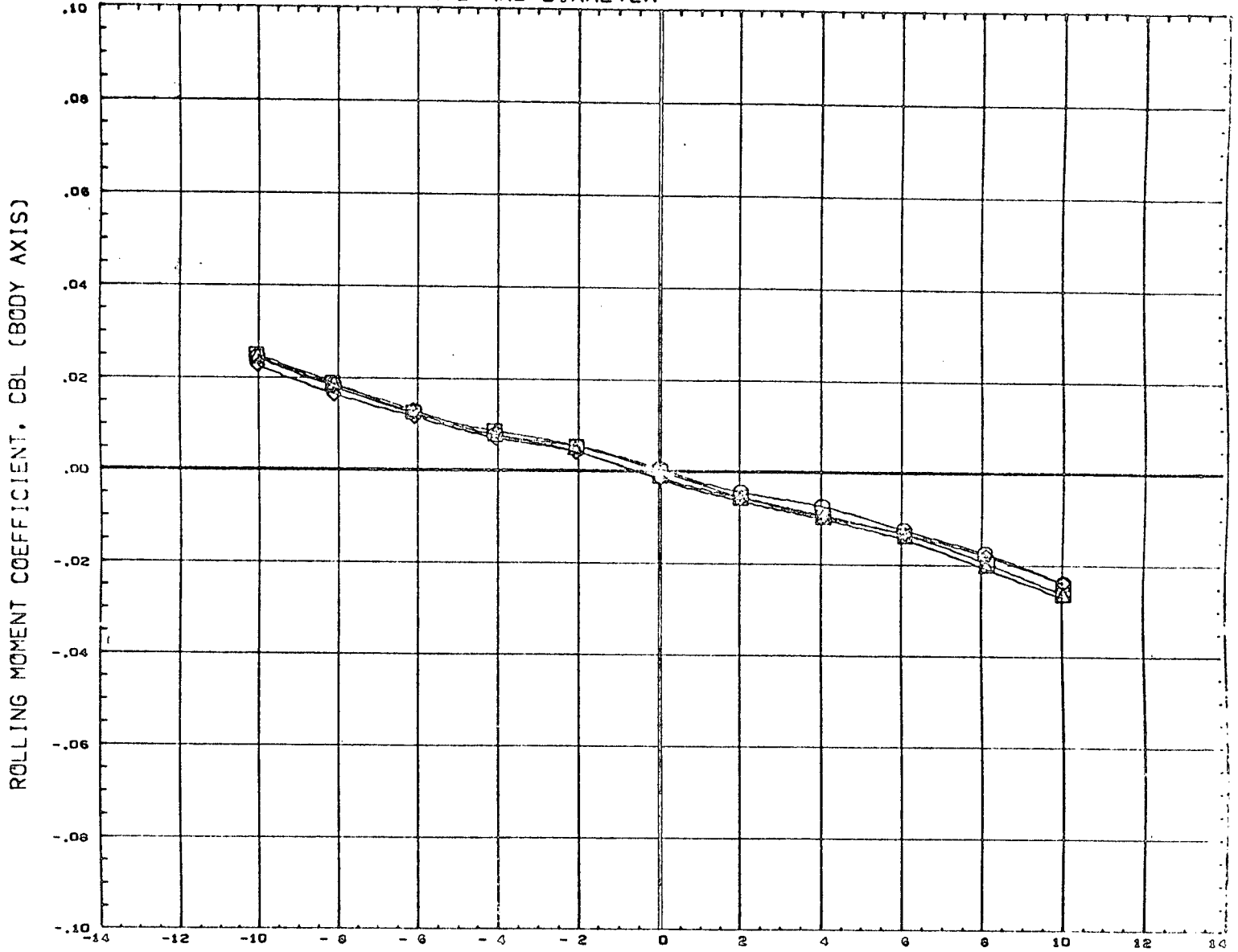


SIDE SLIP ANGLE, BETA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORDINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 30. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

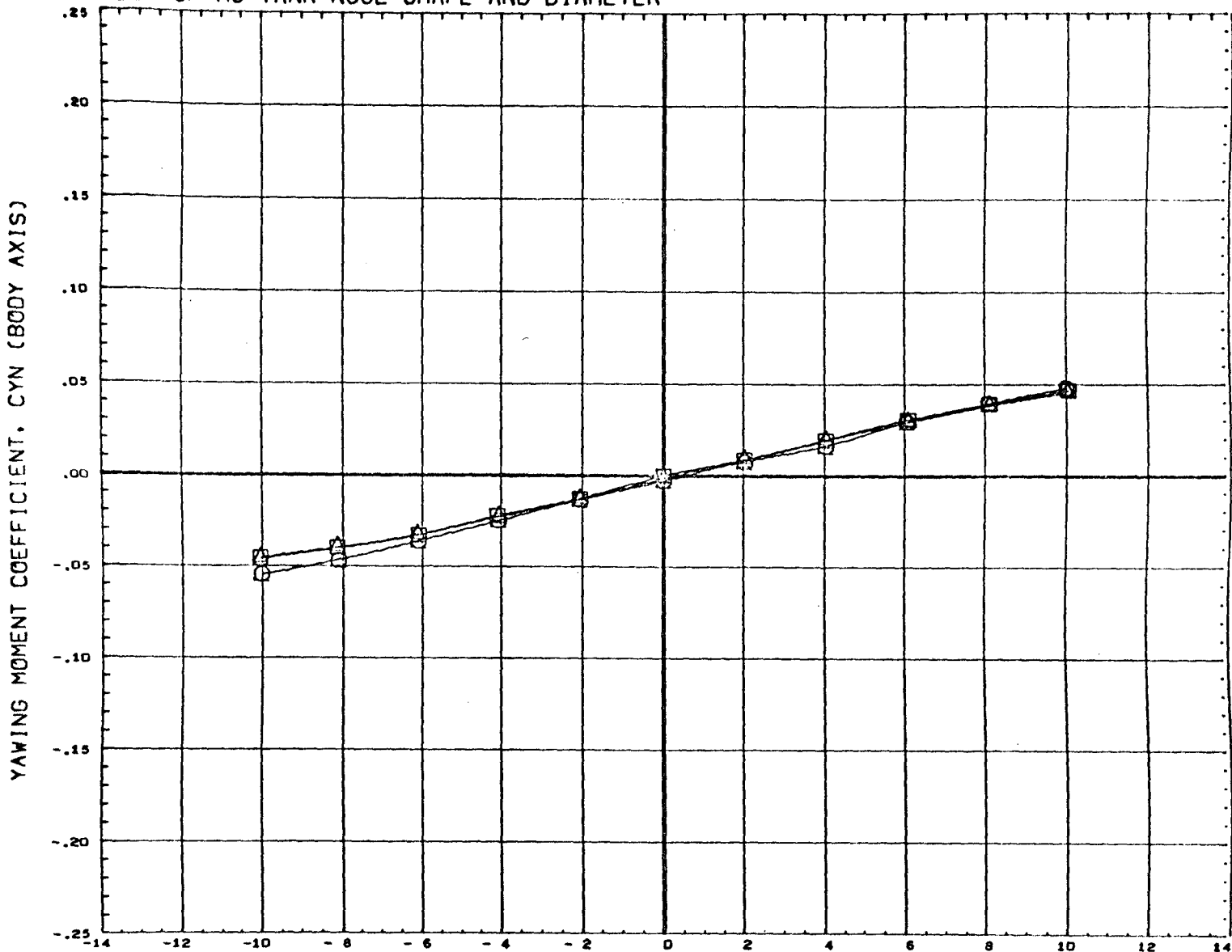
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 30. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER

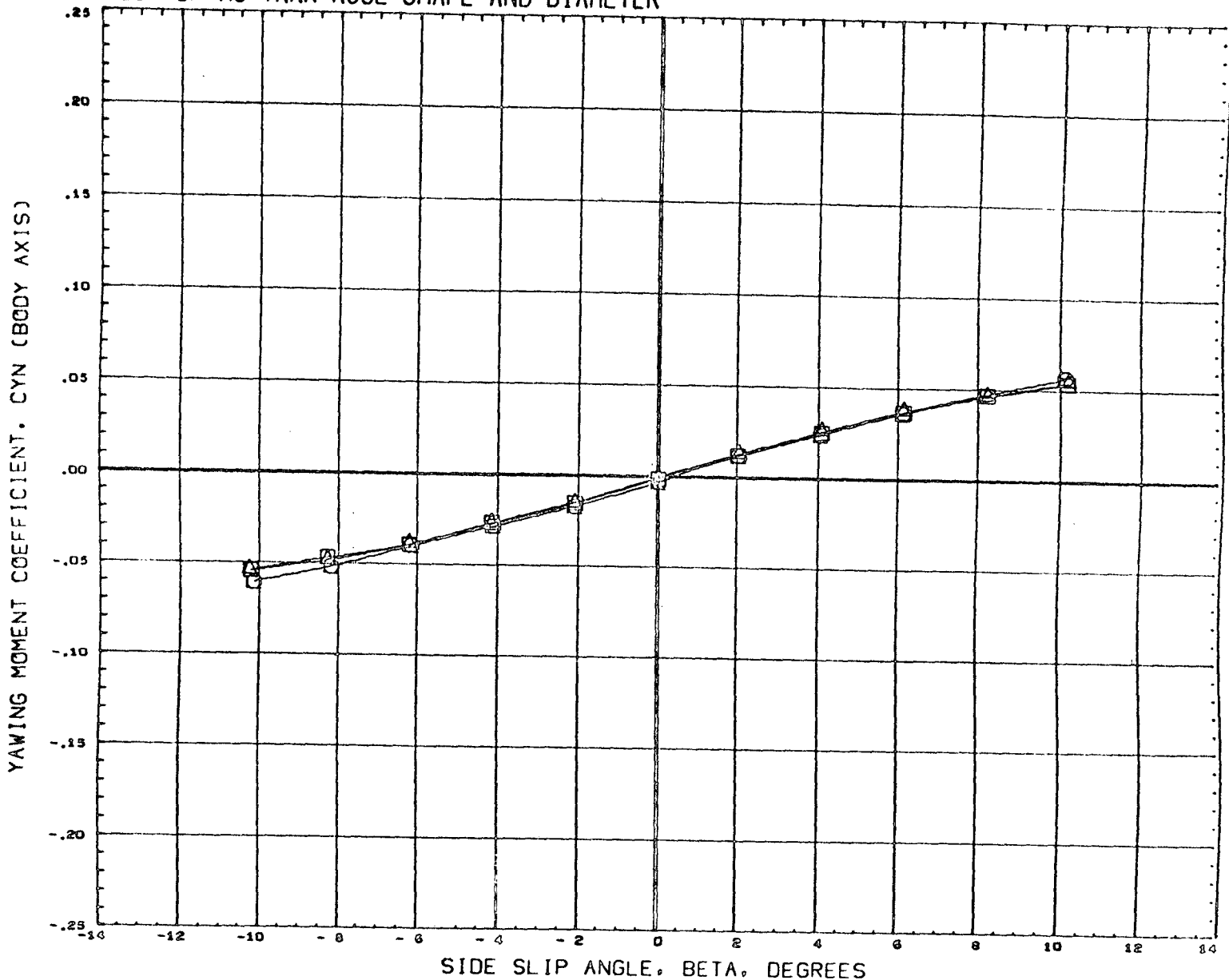


SIDE SLIP ANGLE, BETA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

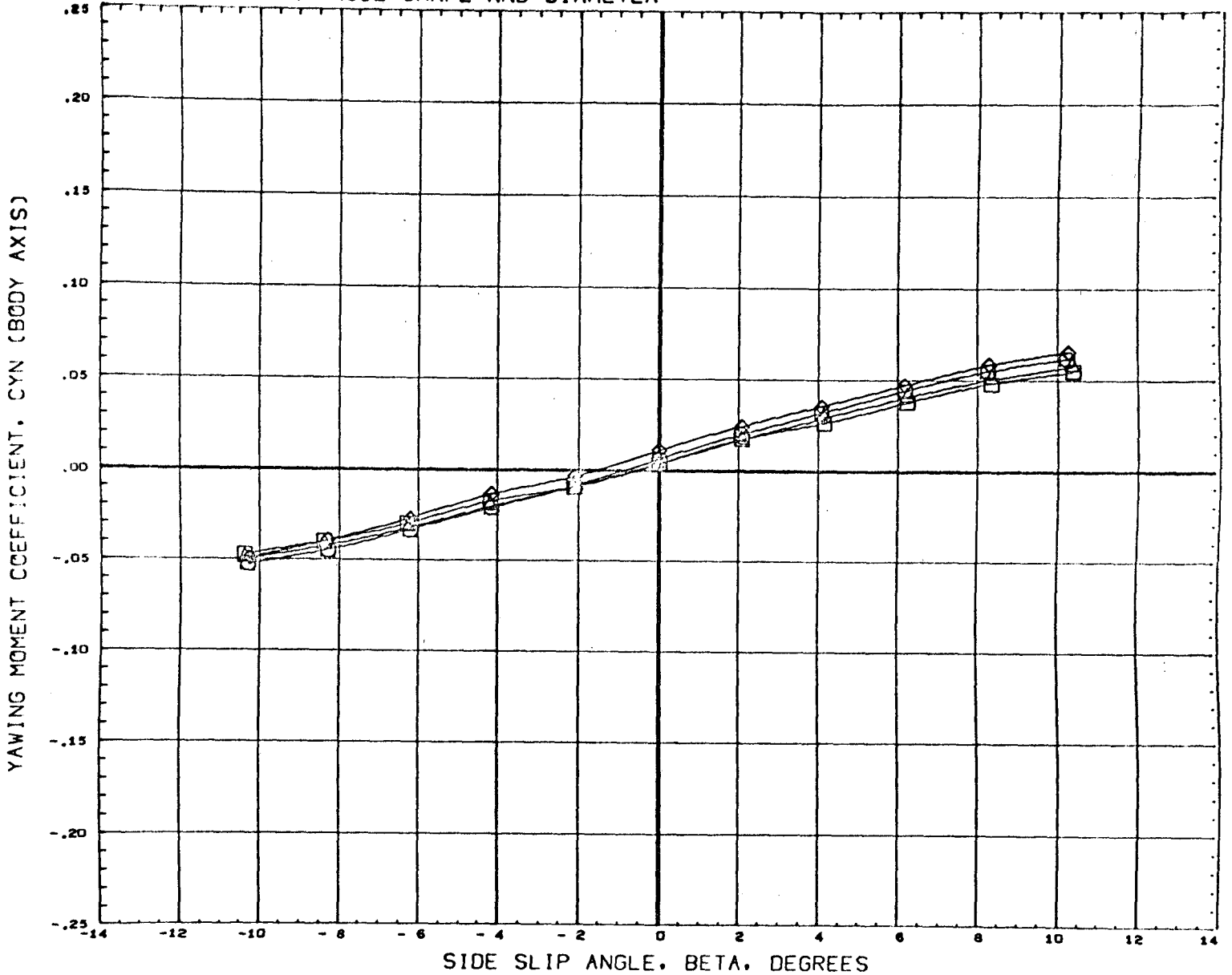
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORGINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

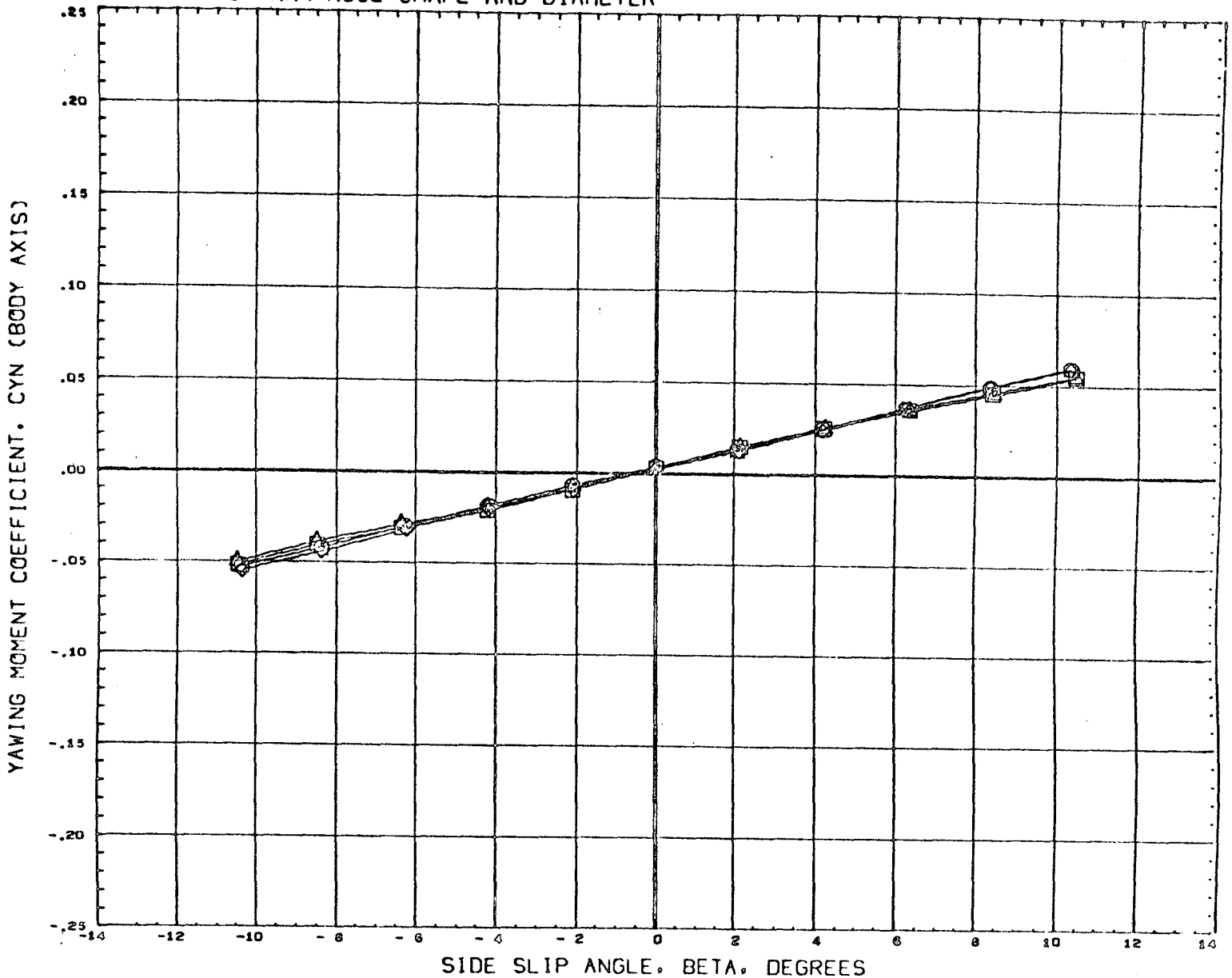
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

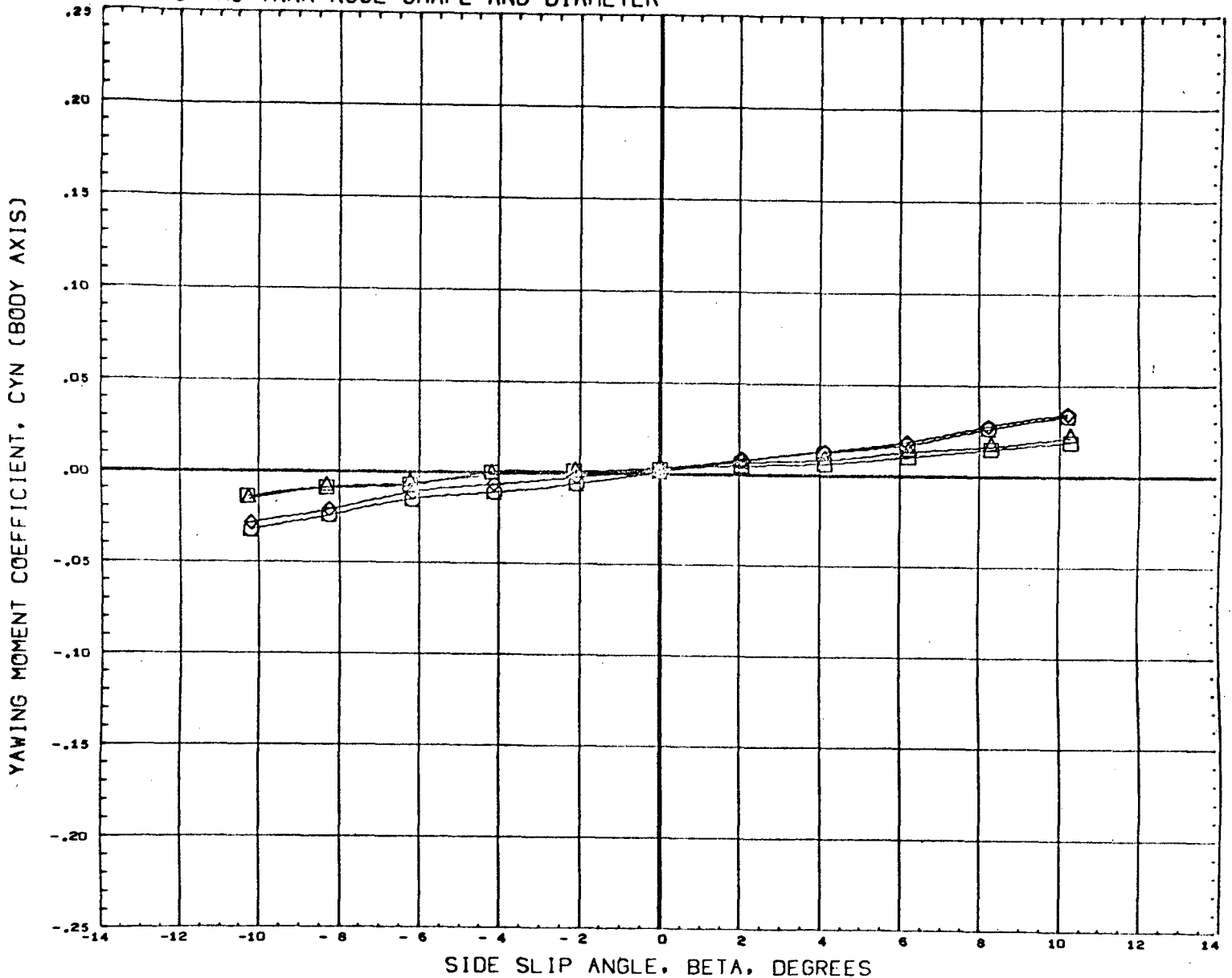
MACH 1.96

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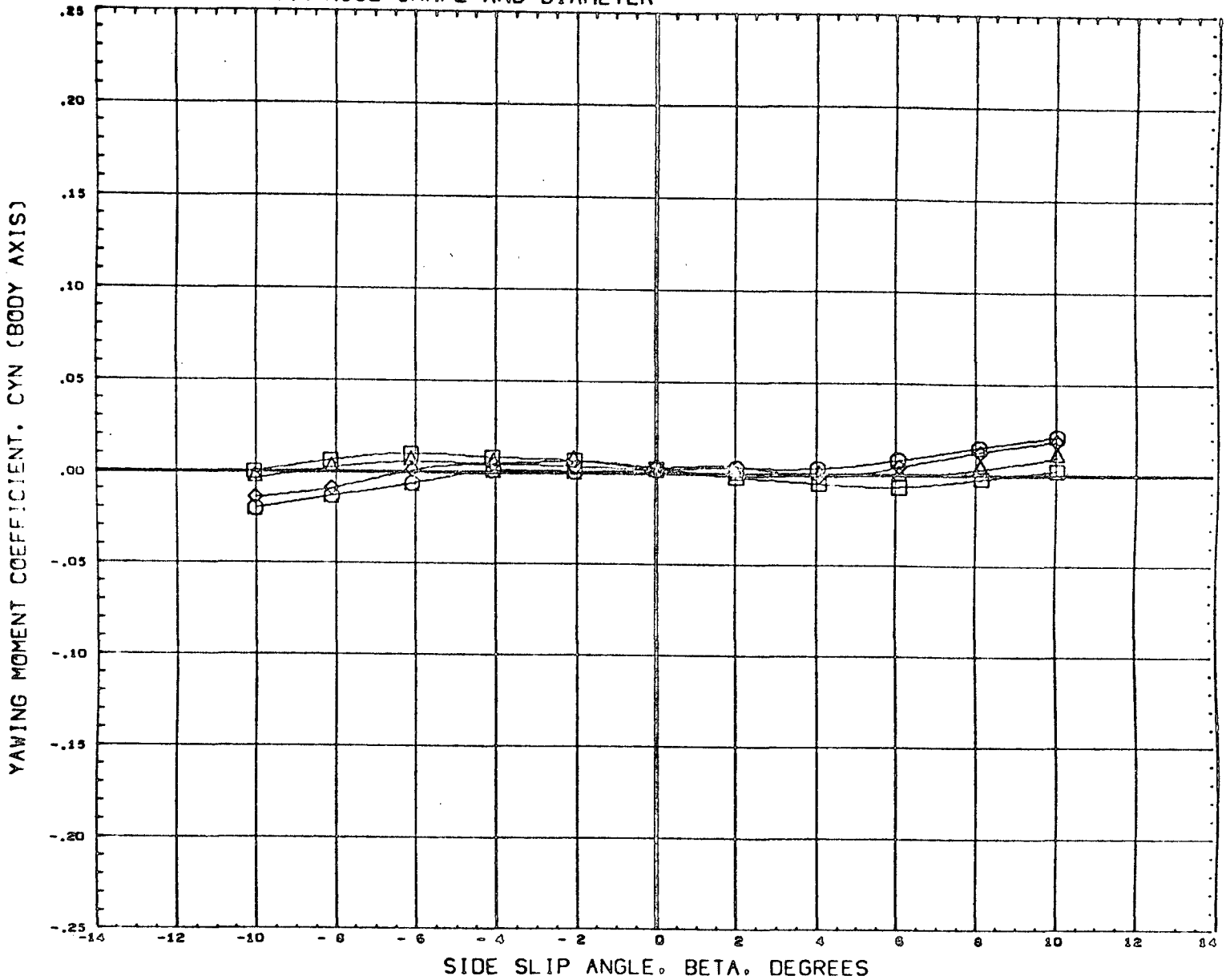
# EFFECT OF H<sub>0</sub> TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF H0 TANK NOSE SHAPE AND DIAMETER

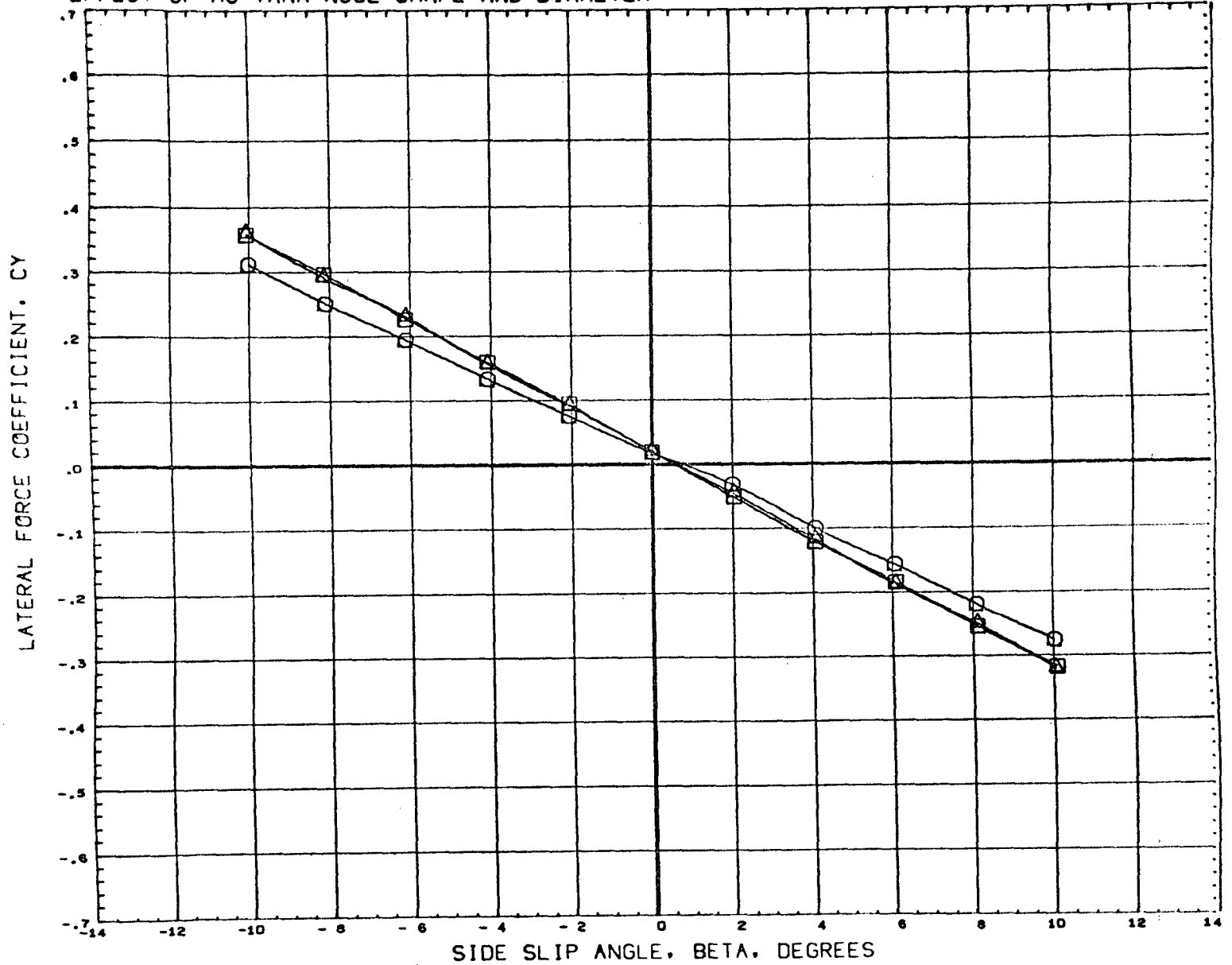


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SO. IN
(A71040)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4800 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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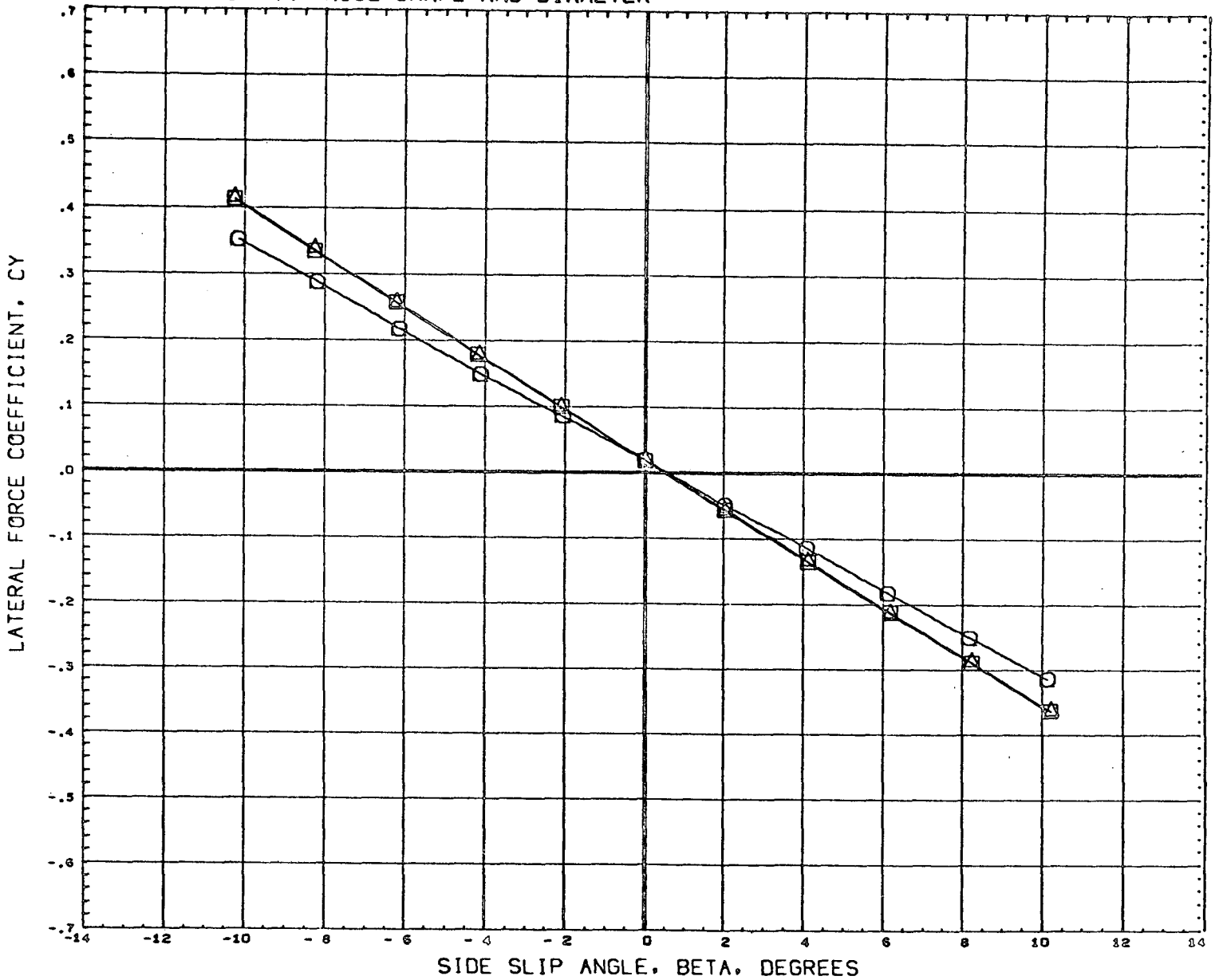
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	T501S1	T601S1	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1			-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES		T501S1		-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	DATA NOT AVAILABLE FOR ALL CONDITIONS				-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71030)	MSFC TWT 544 LAUNCH VEHICLE STUDIES			T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
									YMRP 0.0000 IN.
									ZMRP 0.2480 IN.
									SCALE 0.0040 SCALE

MACH .60

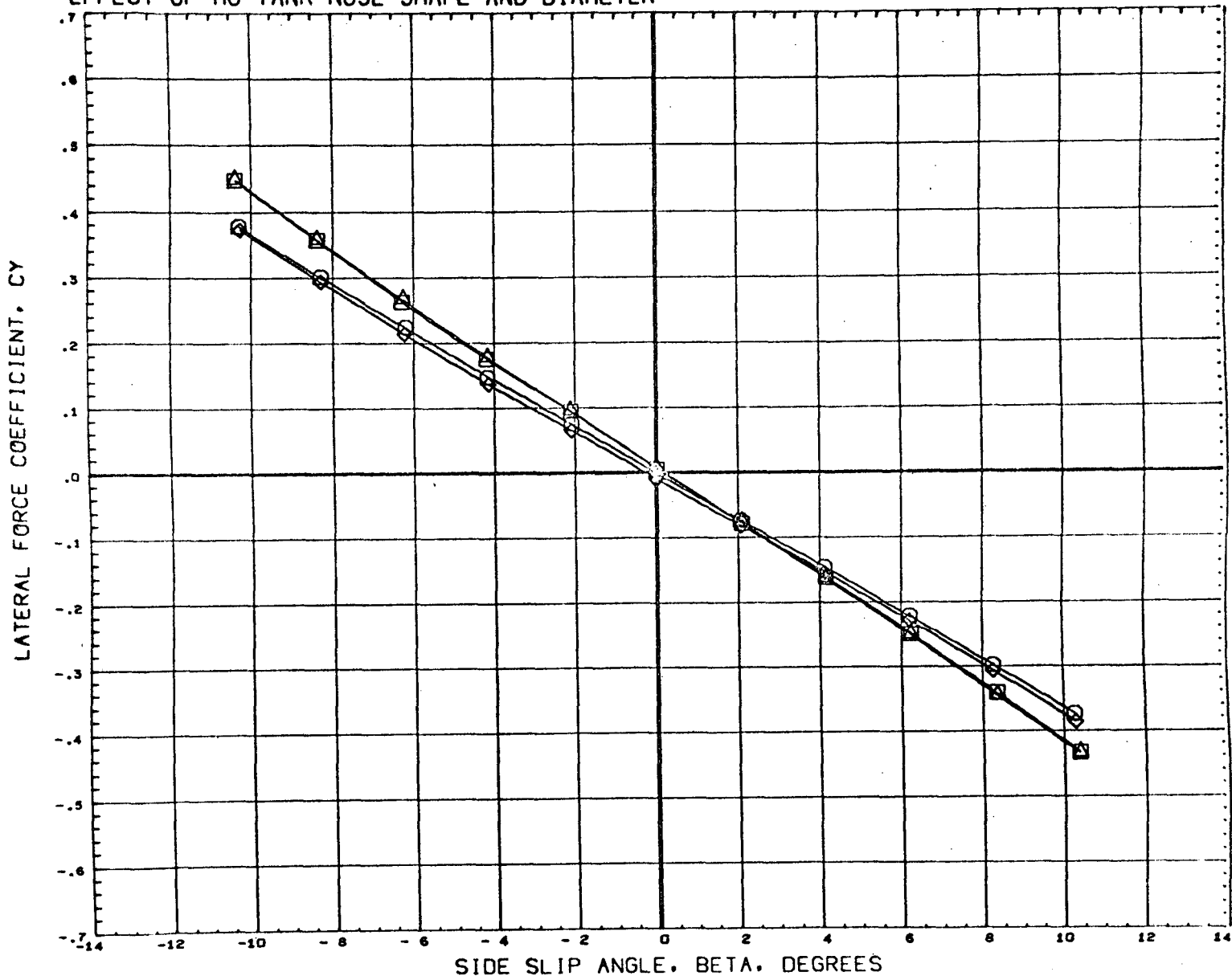
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T901S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

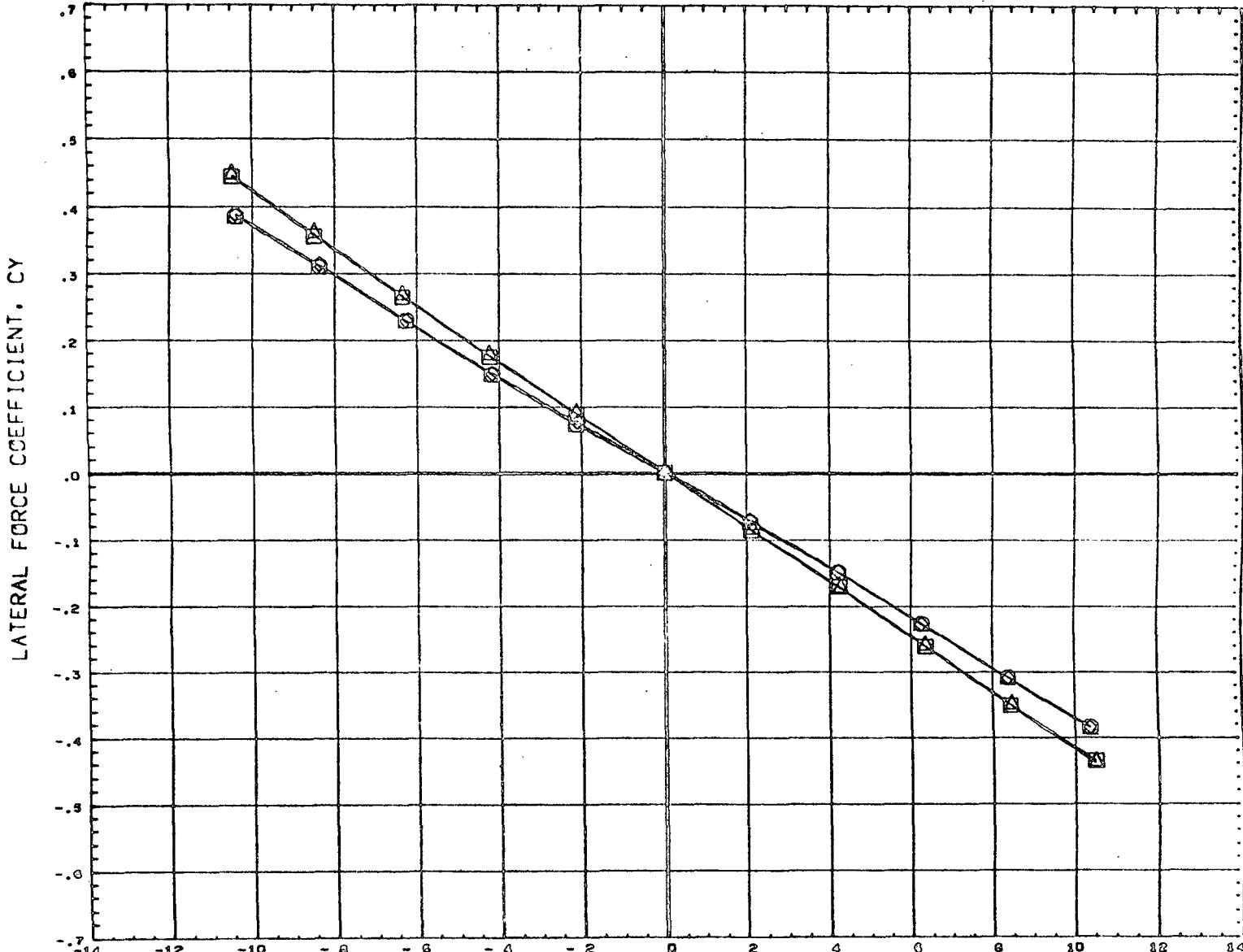
# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

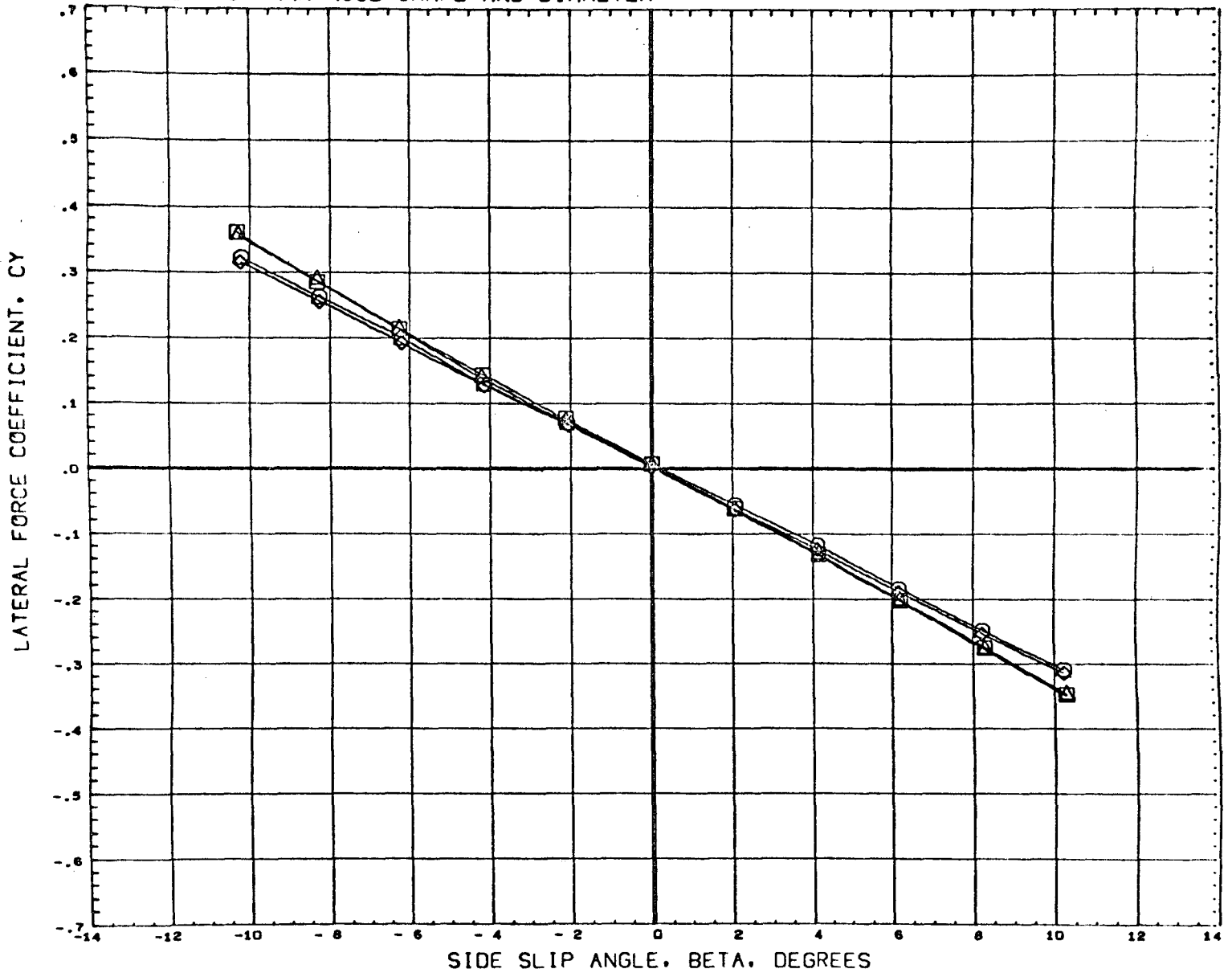
# EFFECT OF HQ TANK NOSE SHAPE AND DIAMETER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER

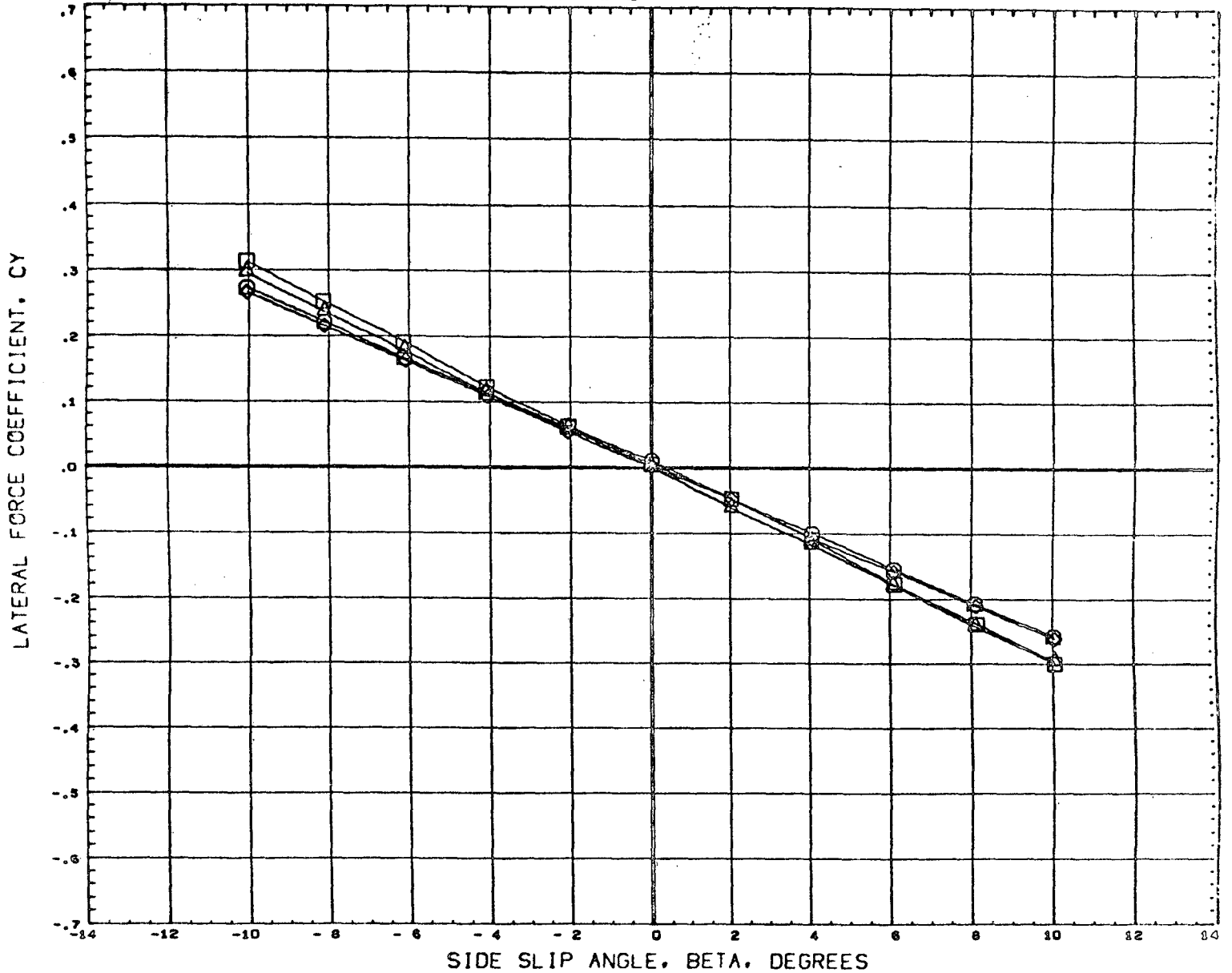


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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# EFFECT OF HO TANK NOSE SHAPE AND DIAMETER

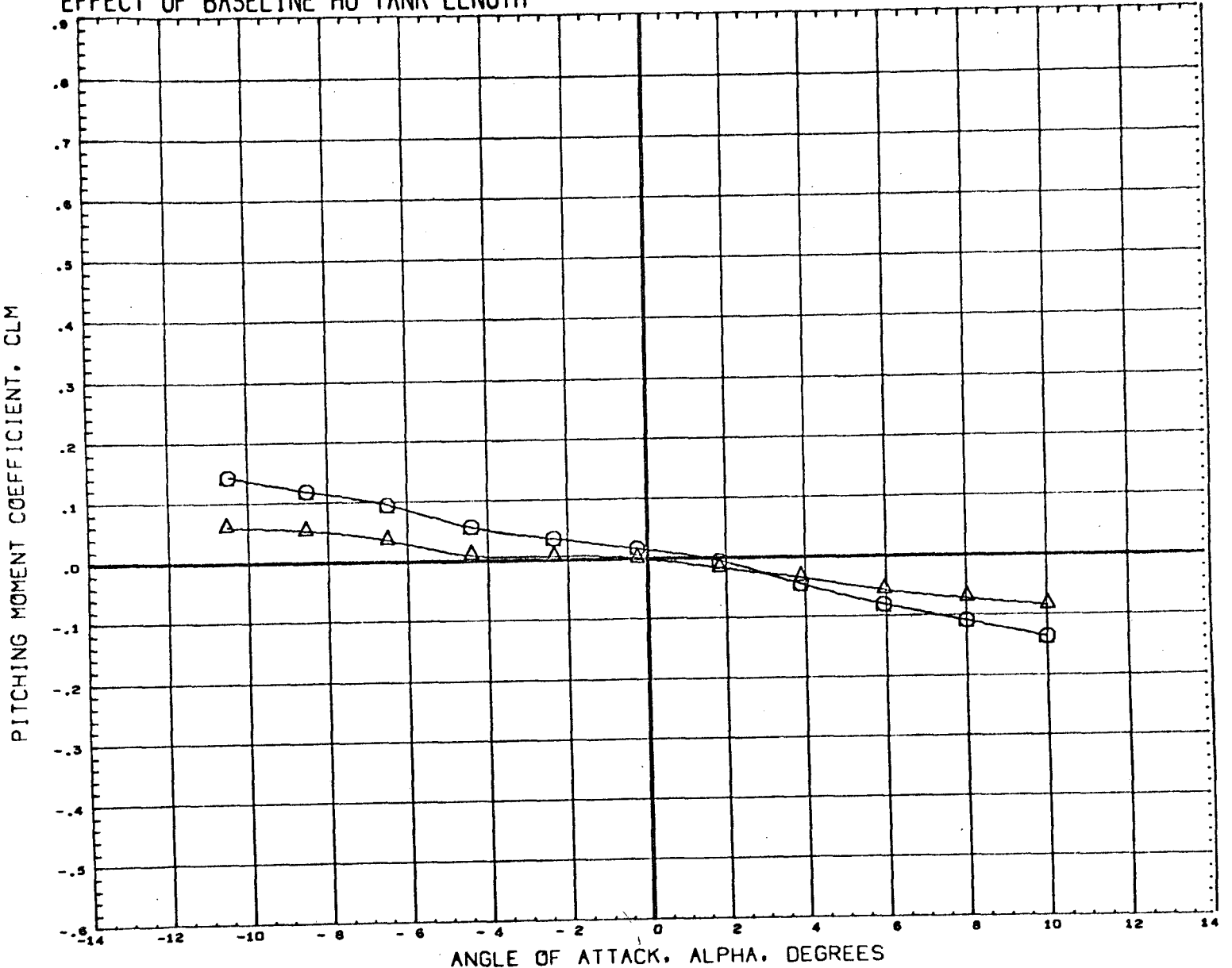


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71050)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T601S1	-1.500	75.000	0.000	0.000	XMRP 5.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96



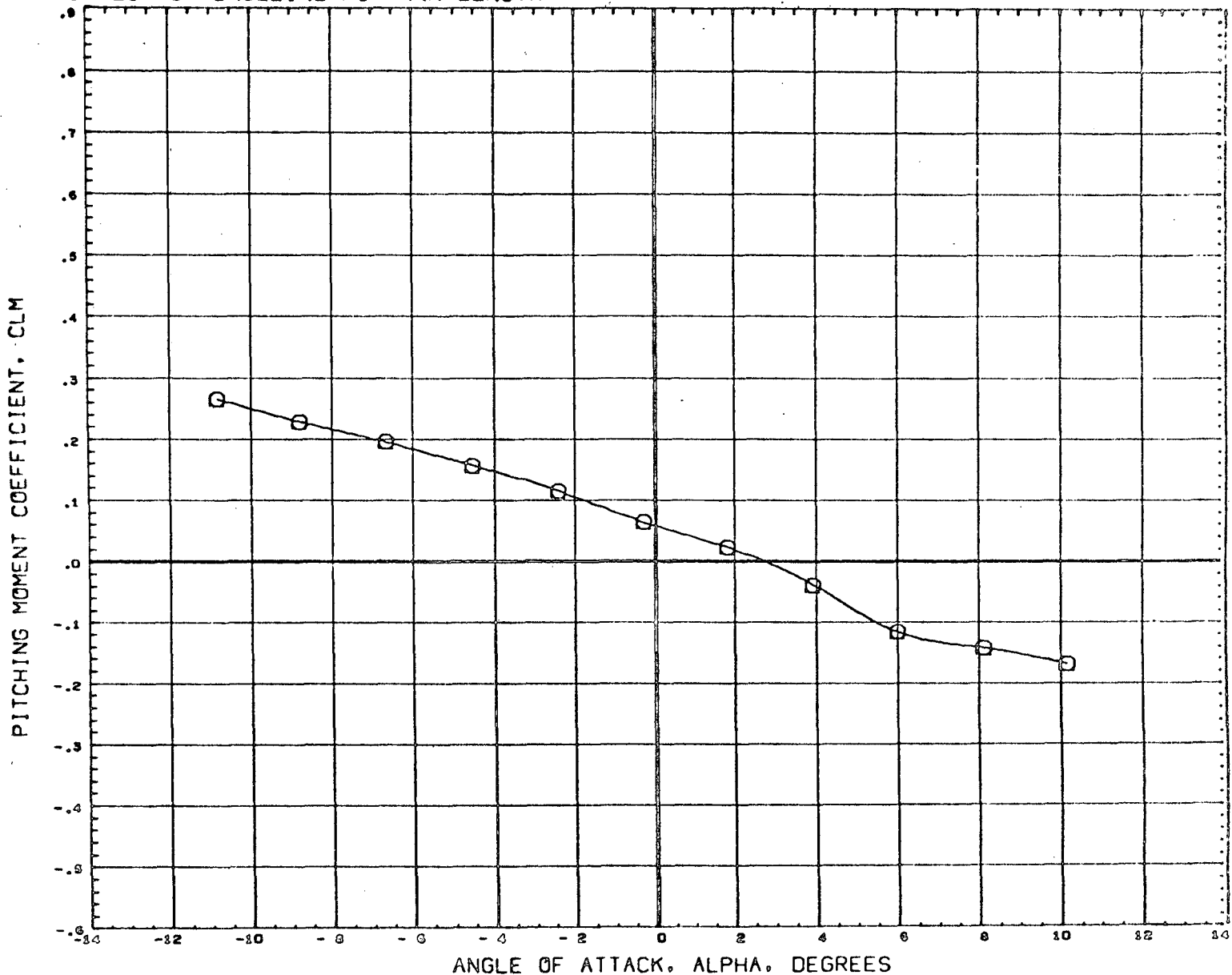
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

# EFFECT OF BASELINE H0 TANK LENGTH

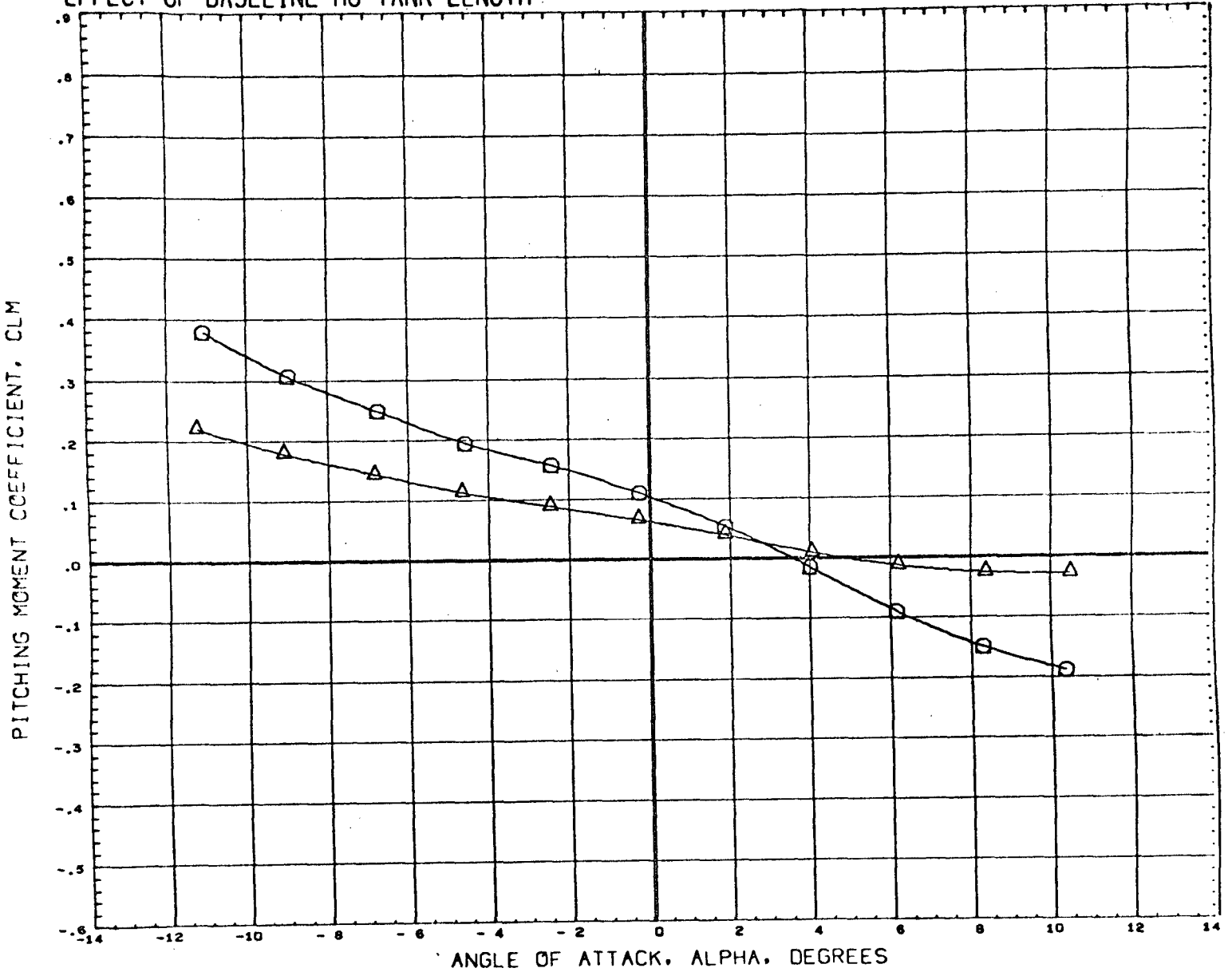


DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (E71002)    Ⓚ    MSFC TWT 544 LAUNCH VEHICLE STUDIES    T101S1  
 (B71041)    Ⓚ    DATA NOT AVAILABLE FOR ALL CONDITIONS

ORBINC    PHIS    XS    ELEVTR  
 -1.500    75.000    0.000    0.000  
 -1.500    75.000    0.000    0.000

REFERENCE INFORMATION  
 SREF    7.8600    SQ. IN  
 LREF    2.0280    IN.  
 BREF    4.4600    IN.  
 XMRP    3.3600    IN.  
 YMRP    0.0000    IN.  
 ZMRP    0.2480    IN.  
 SCALE    0.0040    SCALE

# EFFECT OF BASELINE H0 TANK LENGTH

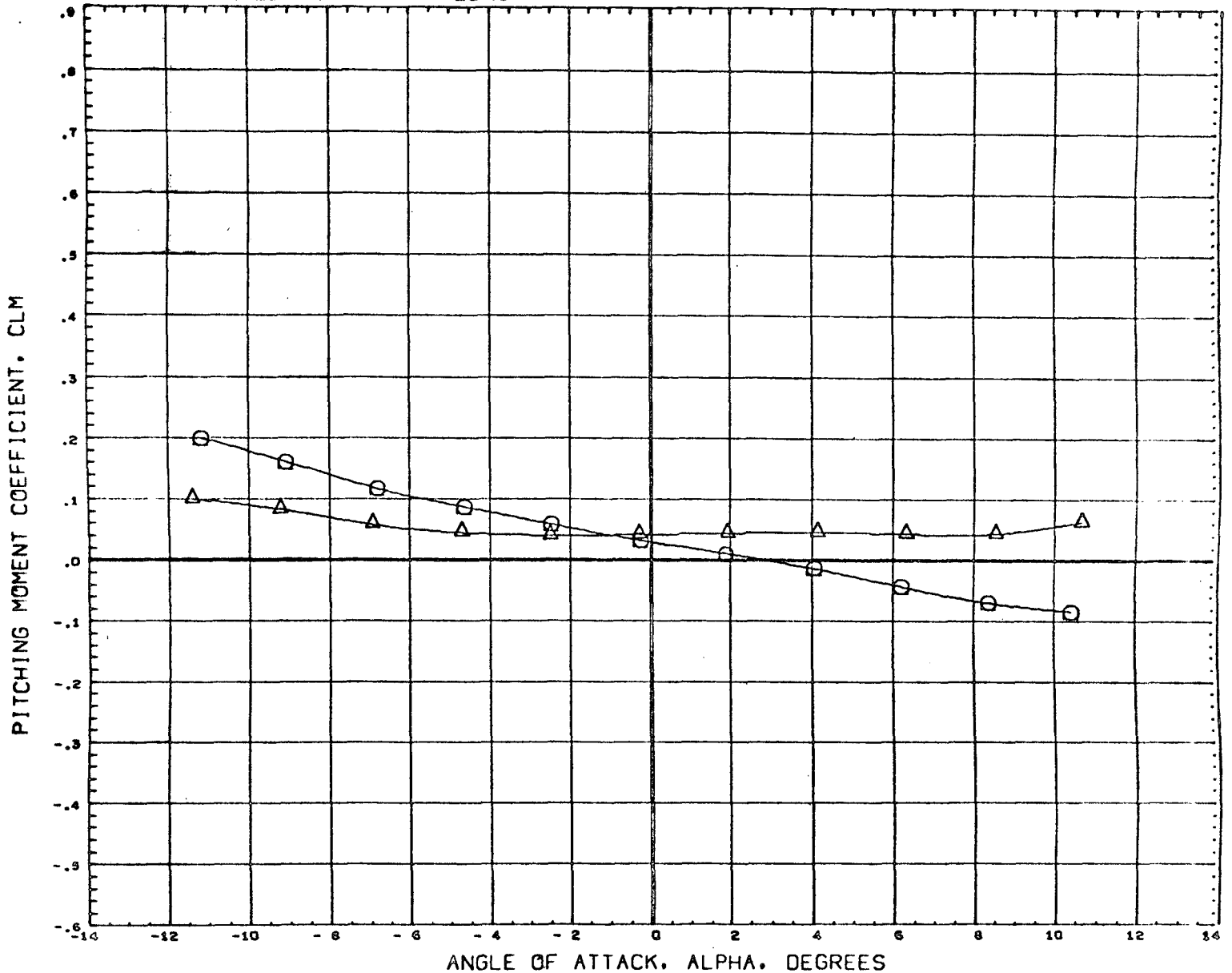


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.20

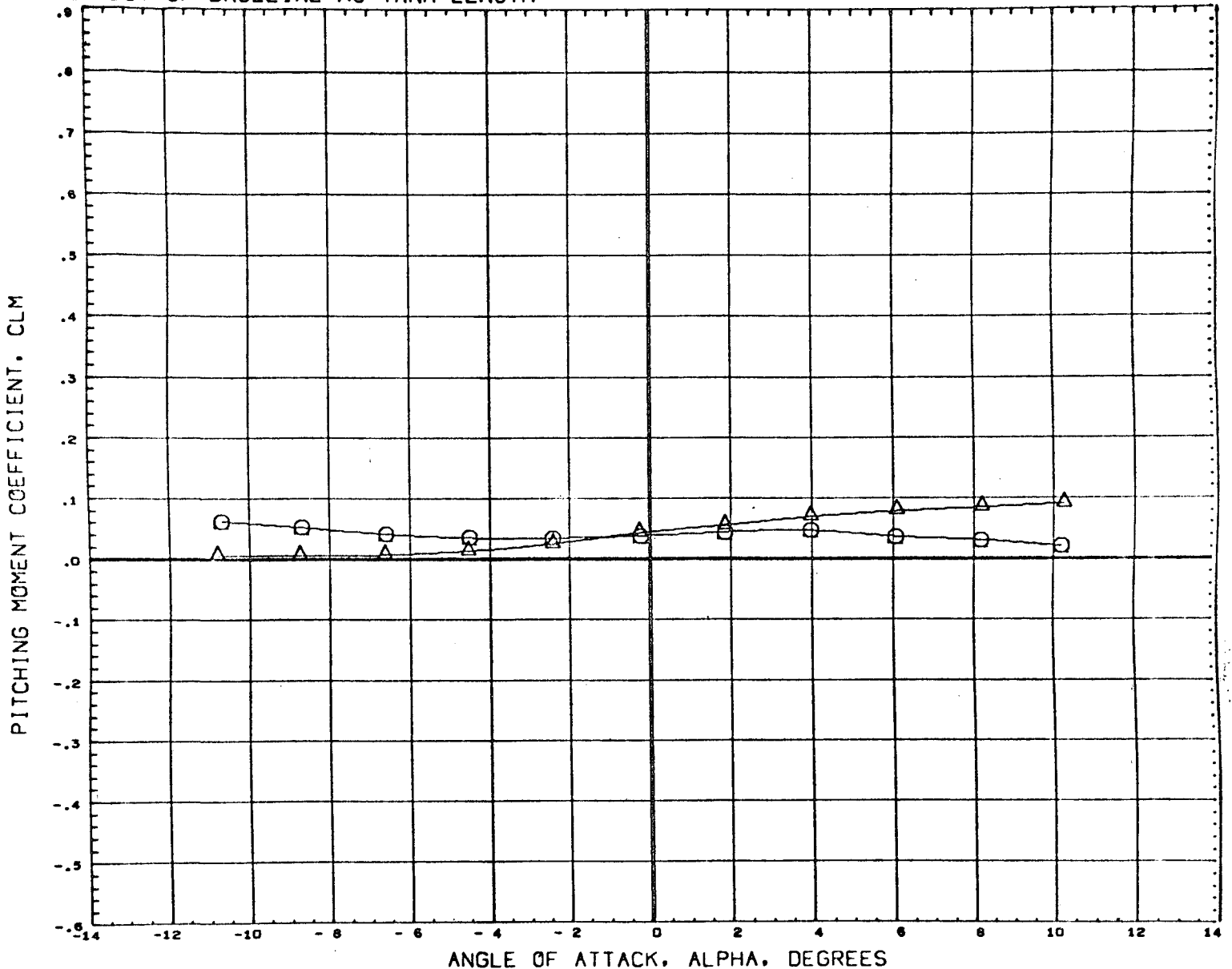
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

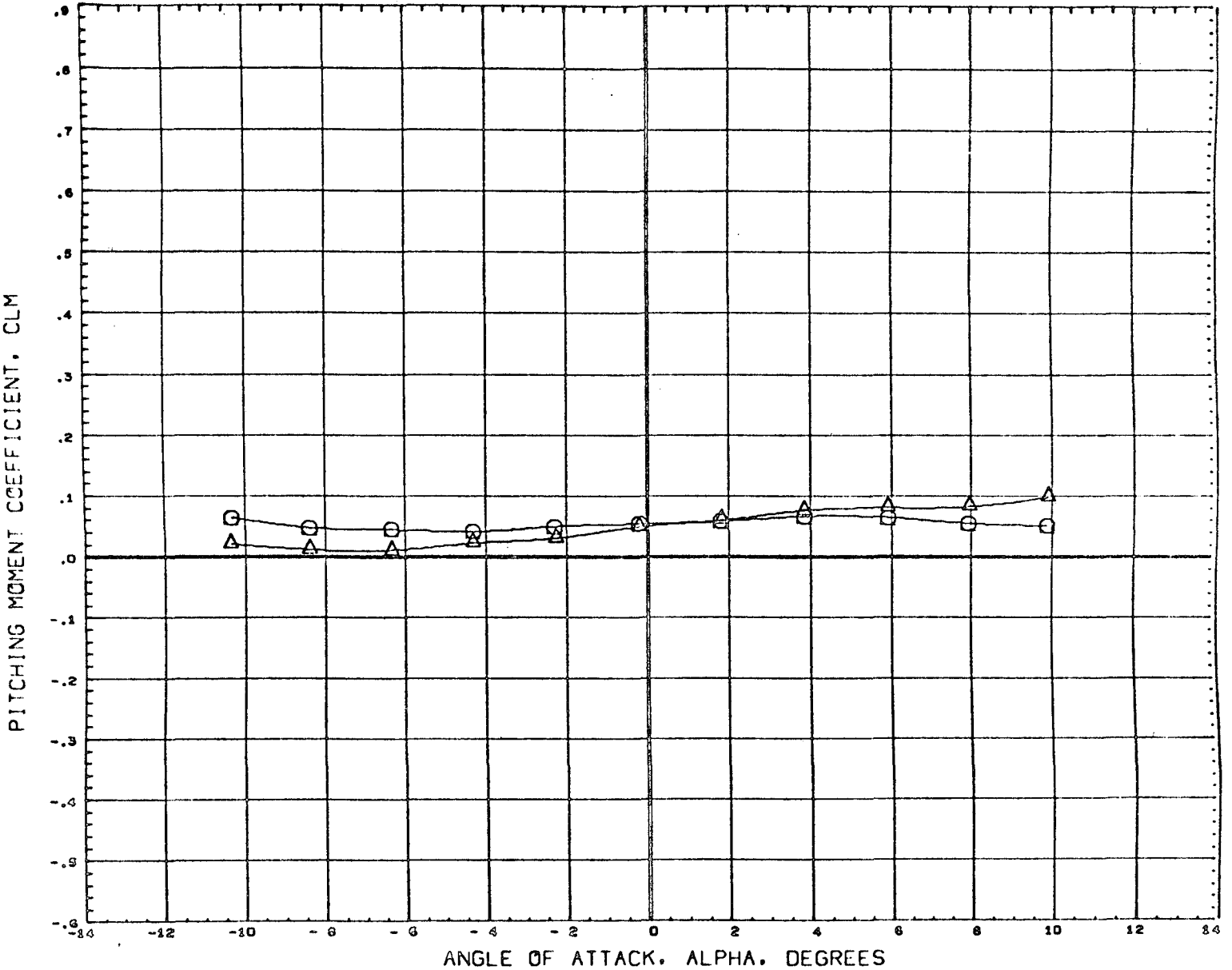
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	T401S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(E71002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES	T101S1		-1.500	75.000	0.000	0.000	SREF	7.8800 SQ. IN
(B71041)	MSFC TWT 344 LAUNCH VEHICLE STUDIES		T401S1	-1.500	75.000	0.000	0.000	LREF	2.0240 IN.
								BREF	4.4600 IN.
								XMRP	3.3600 IN.
								YMRP	0.0000 IN.
								ZMRP	0.2480 IN.
								SCALE	0.0040 SCALE

MACH 3.48

# EFFECT OF BASELINE H0 TANK LENGTH

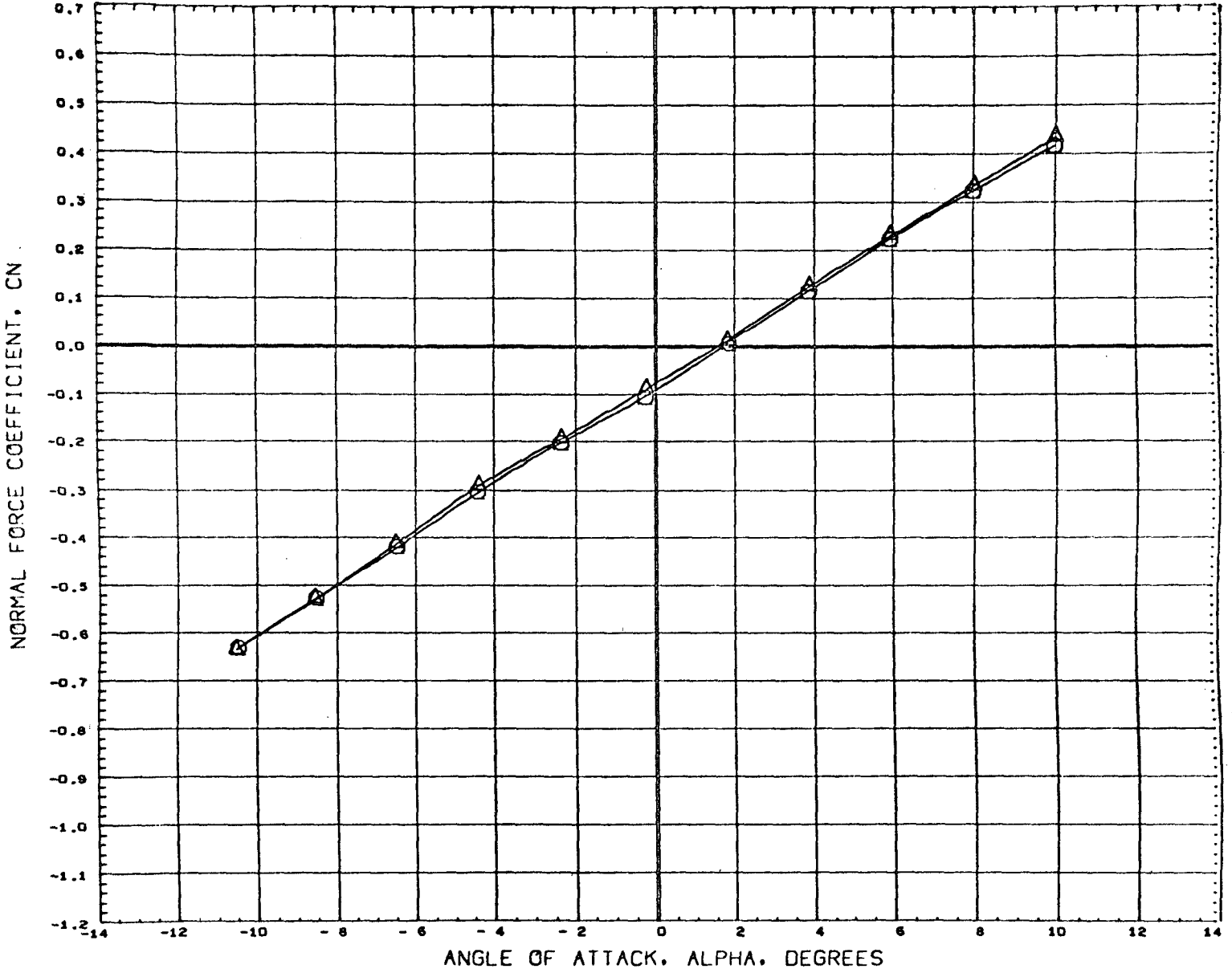


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN. LREF 2.0280 IN.
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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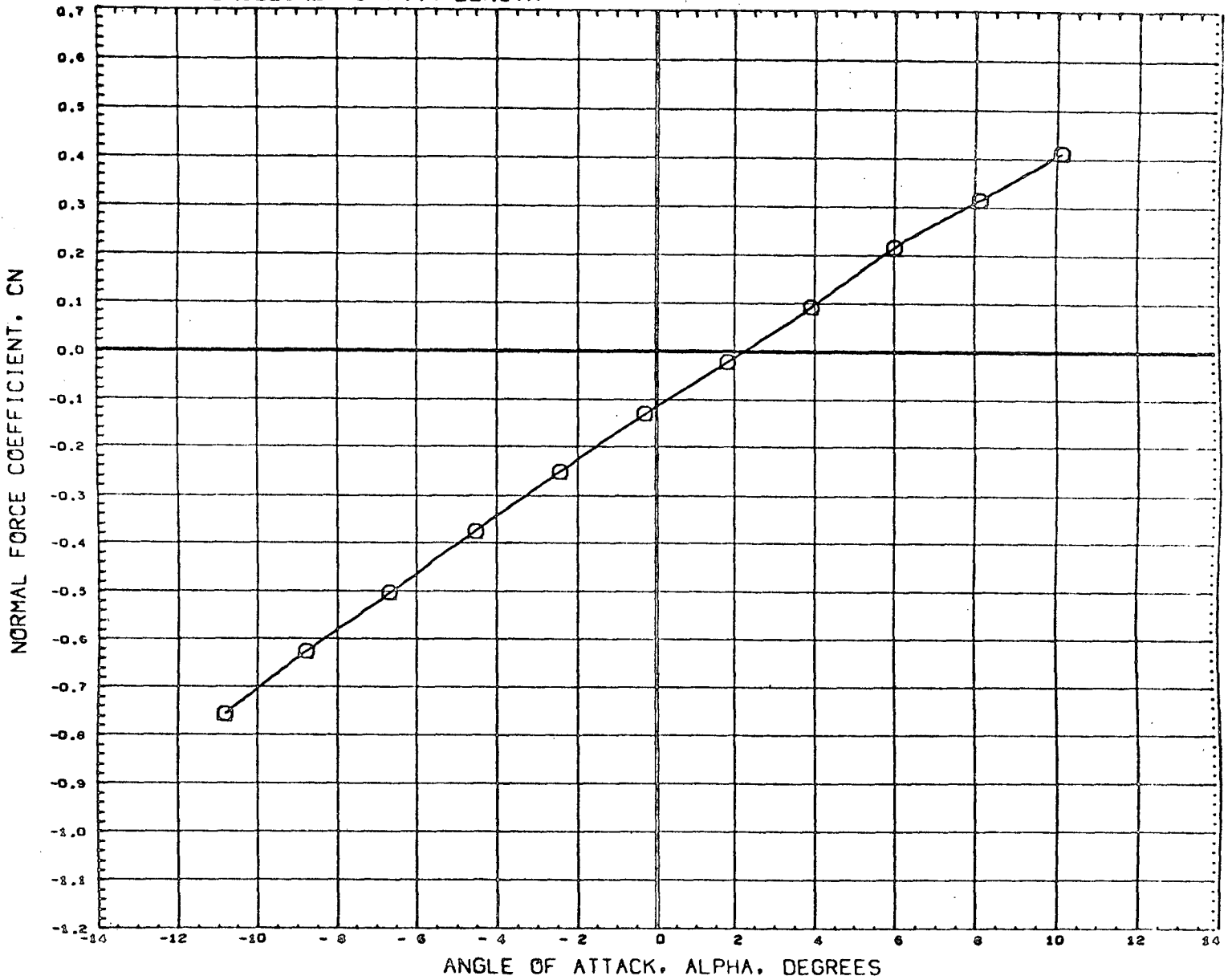
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

# EFFECT OF BASELINE HO TANK LENGTH

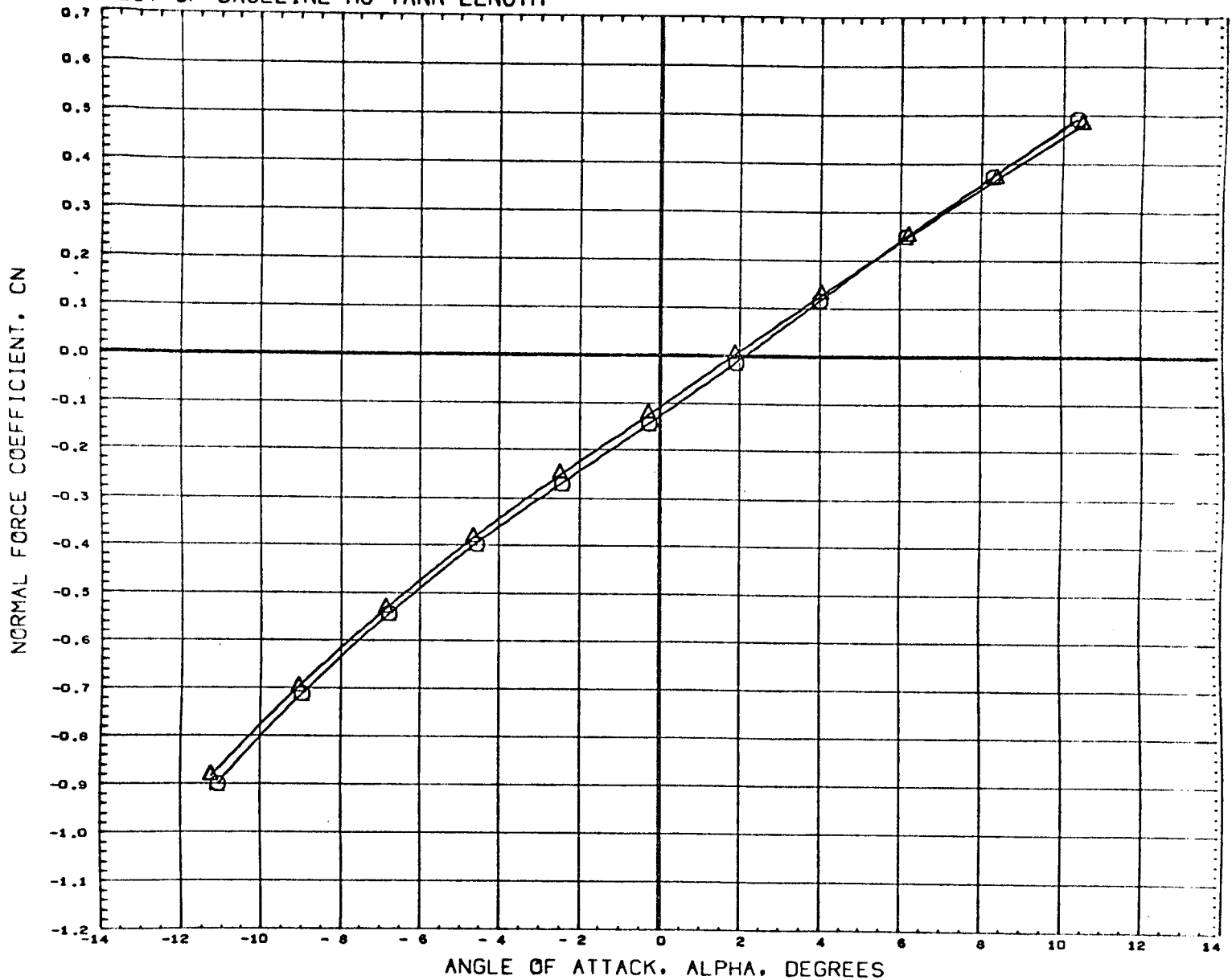


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



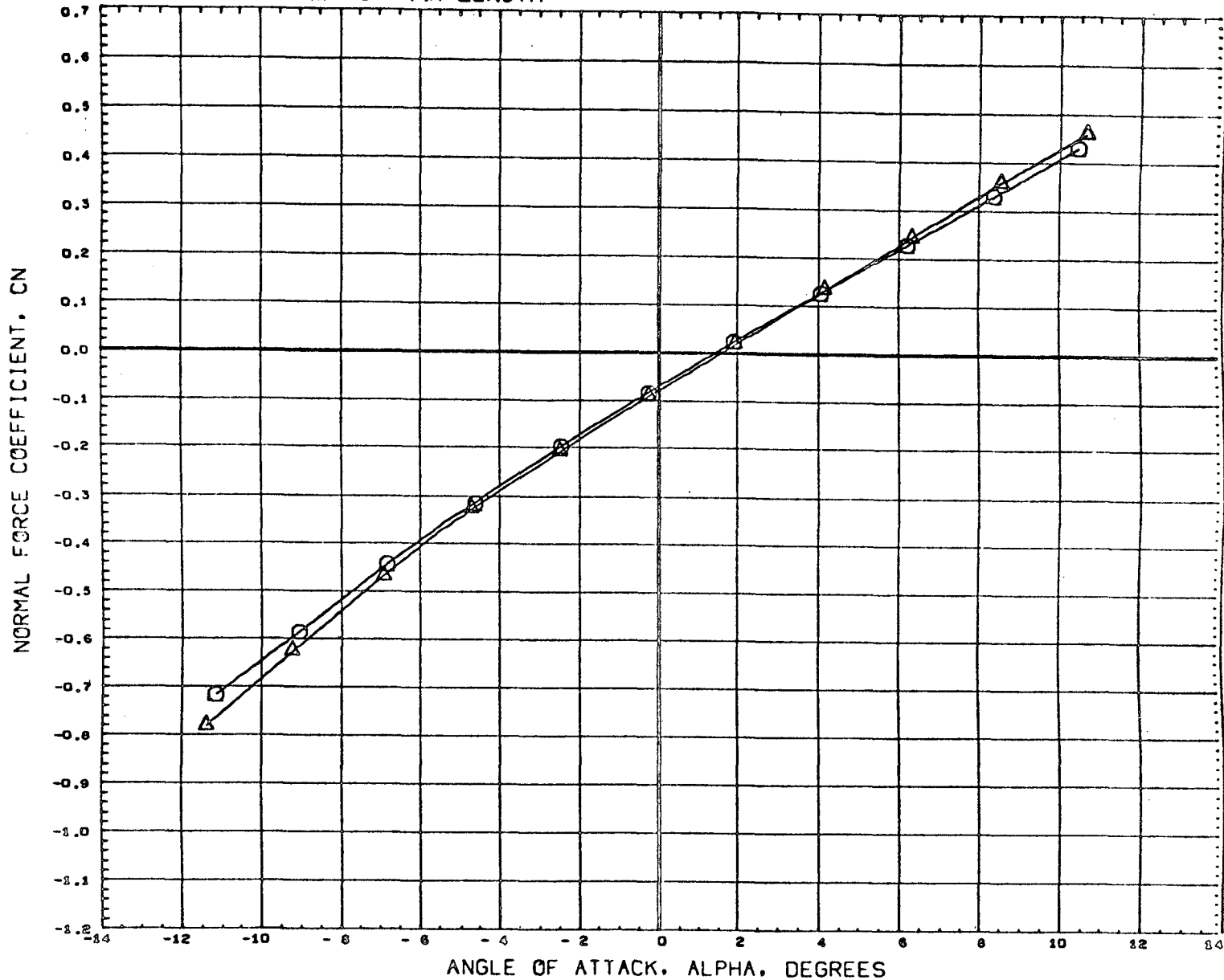
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

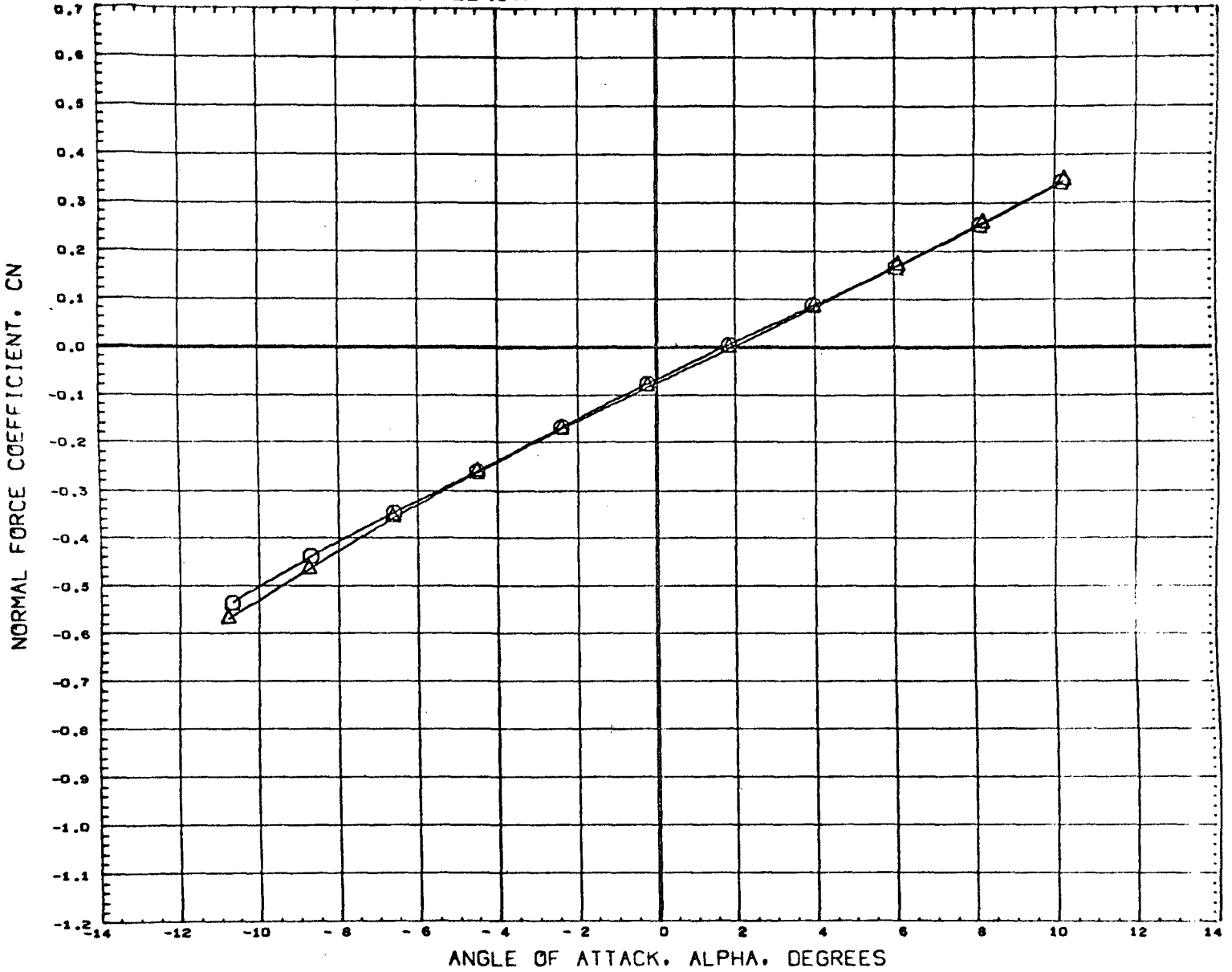
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

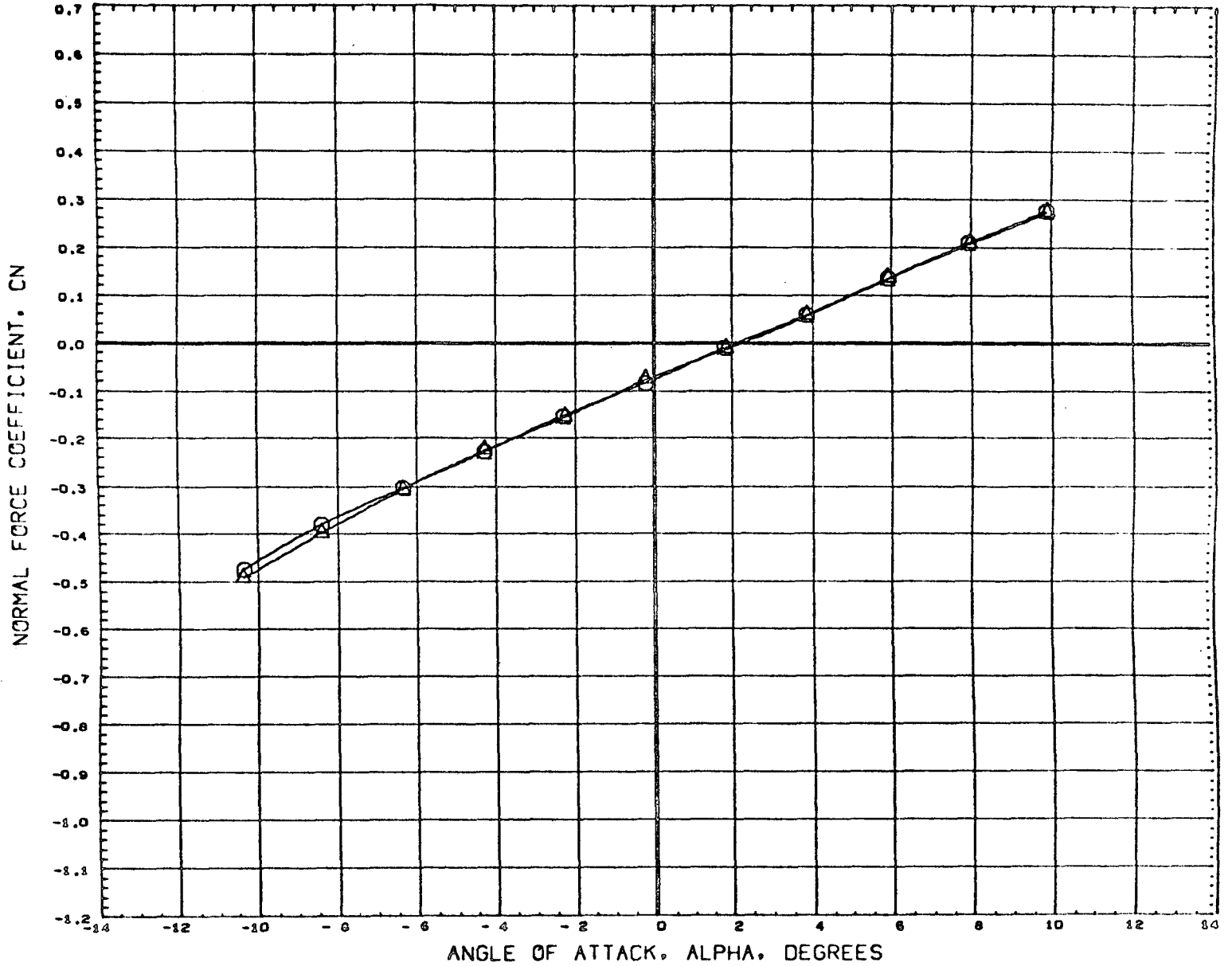
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

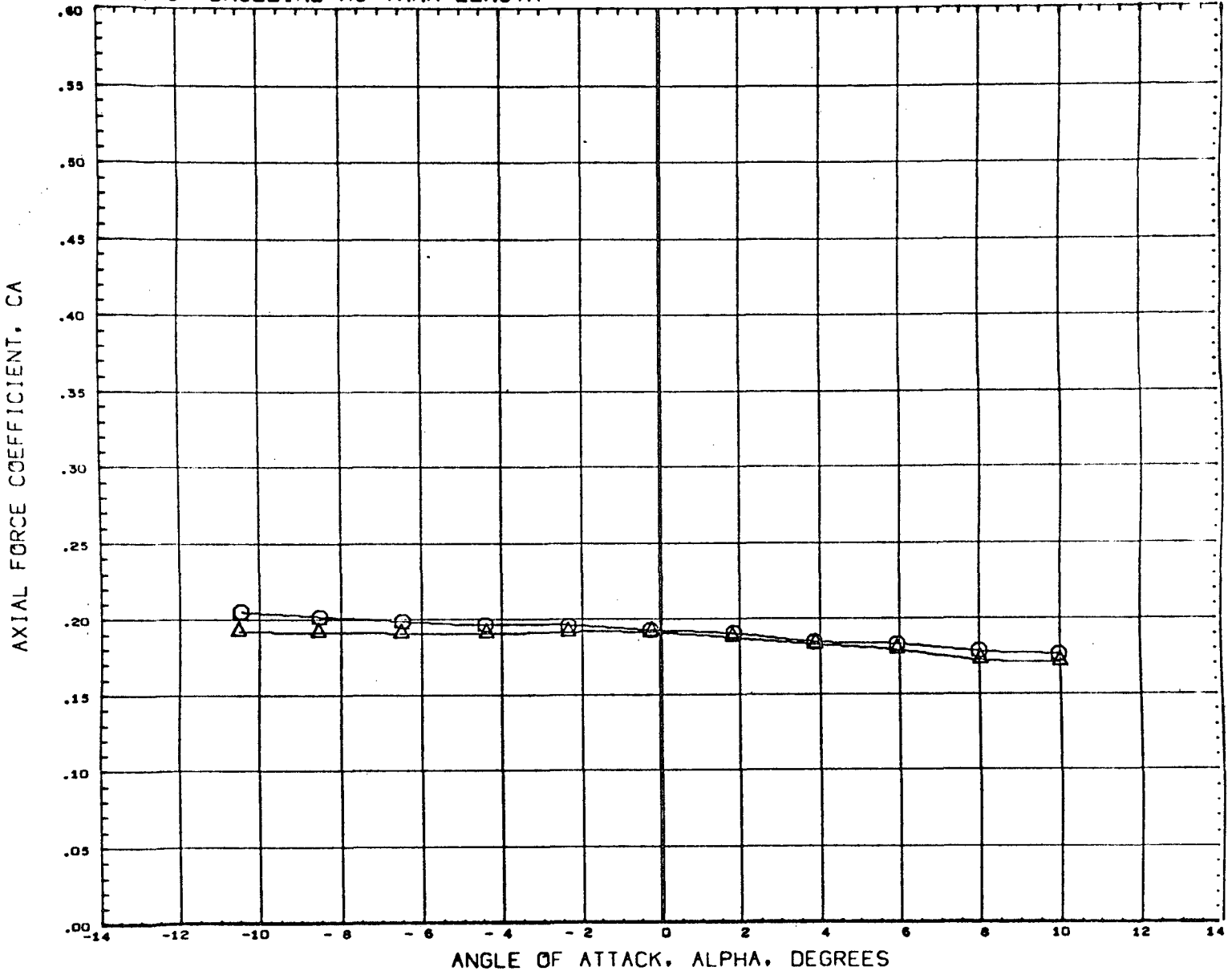
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 90. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0250 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

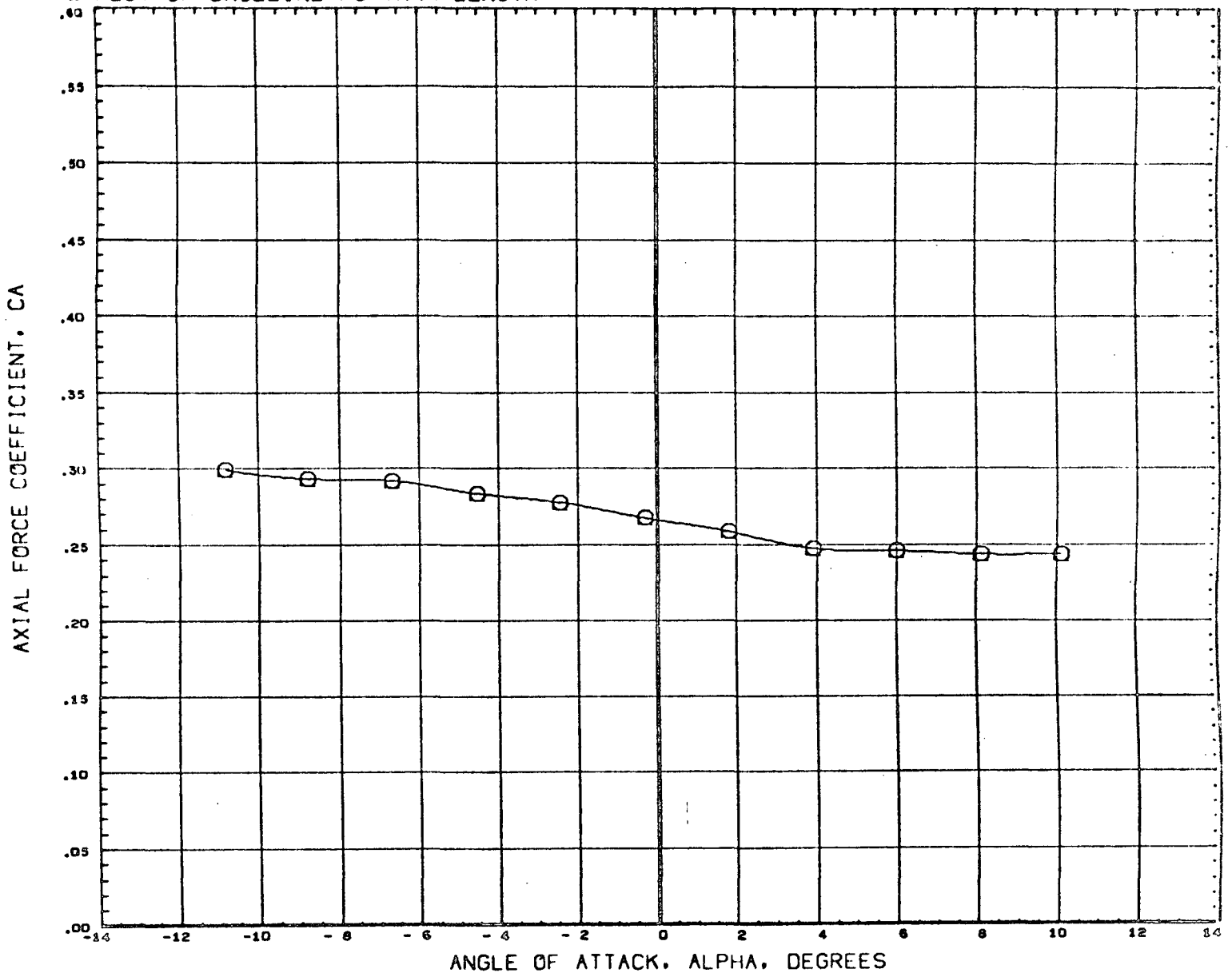
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E/1002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B/1041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

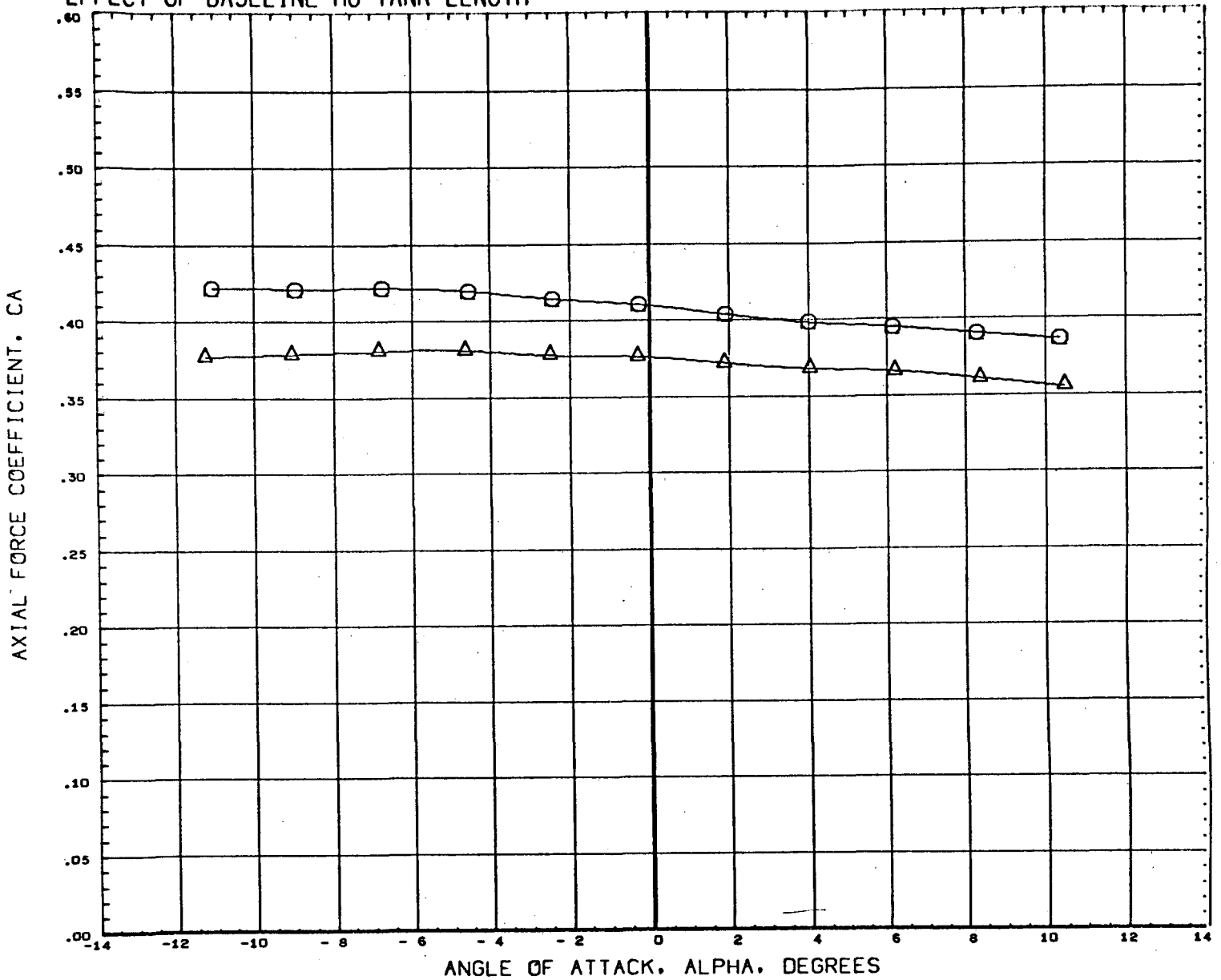
# EFFECT OF BASELINE NO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71041)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

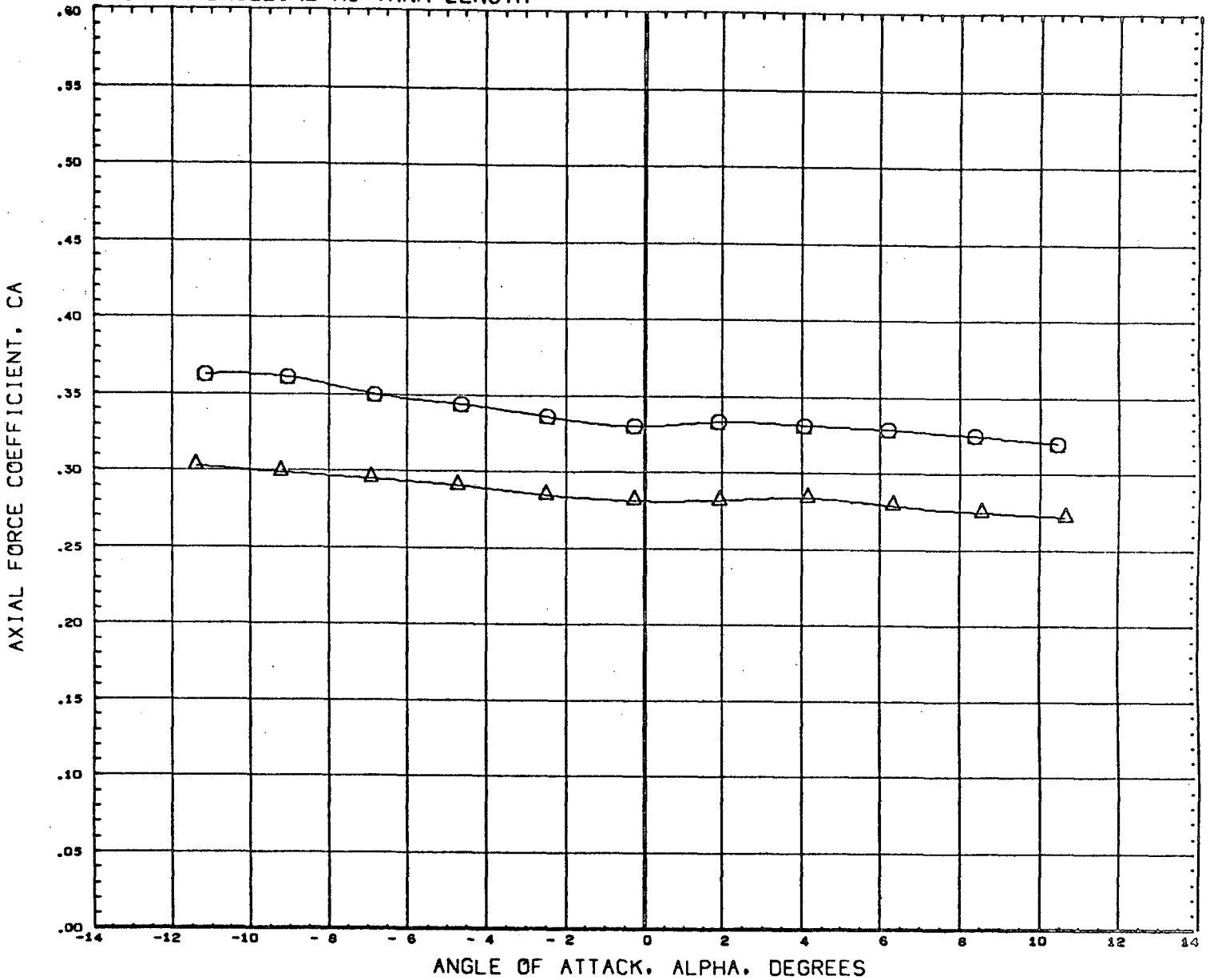
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

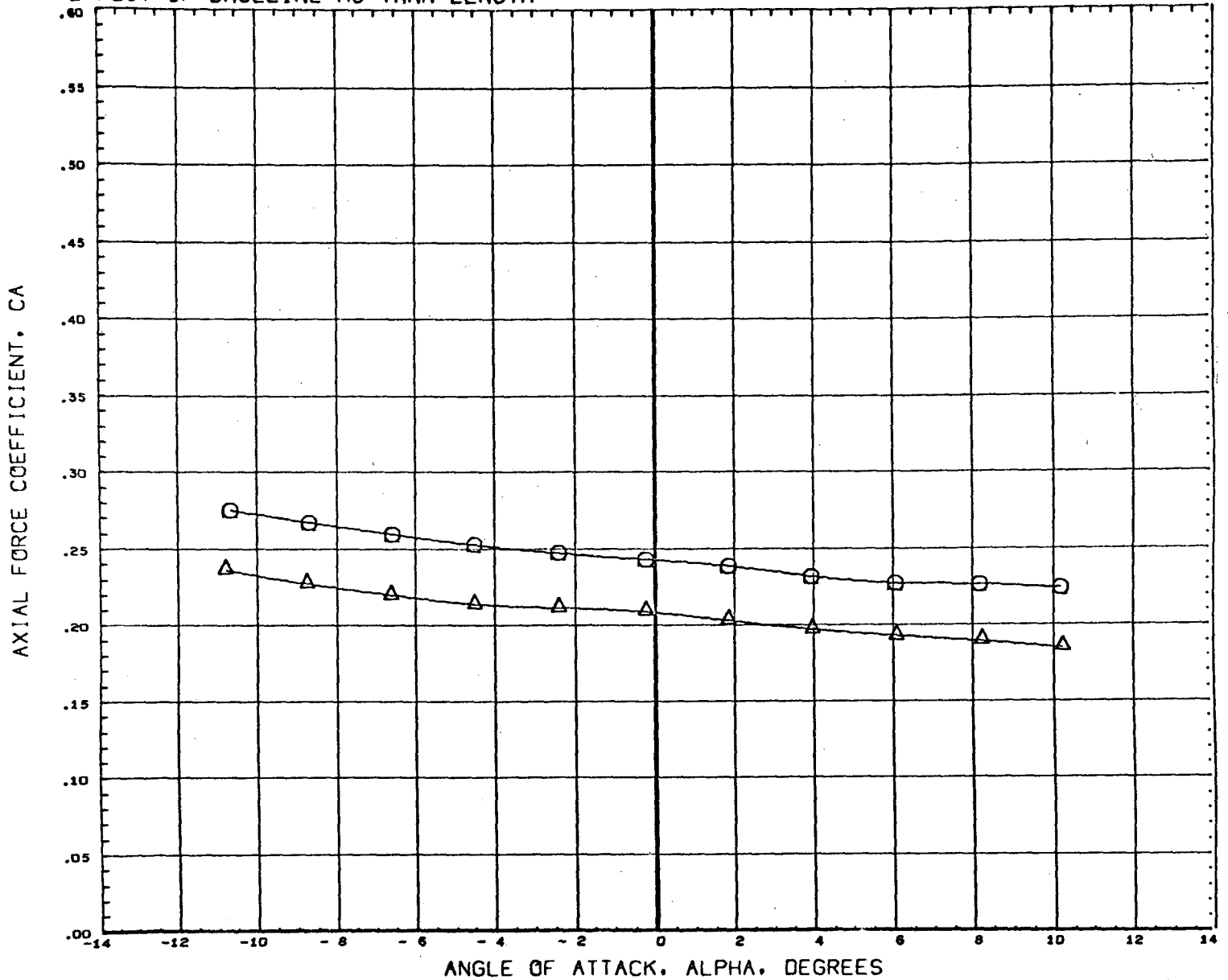
MACH 1.97

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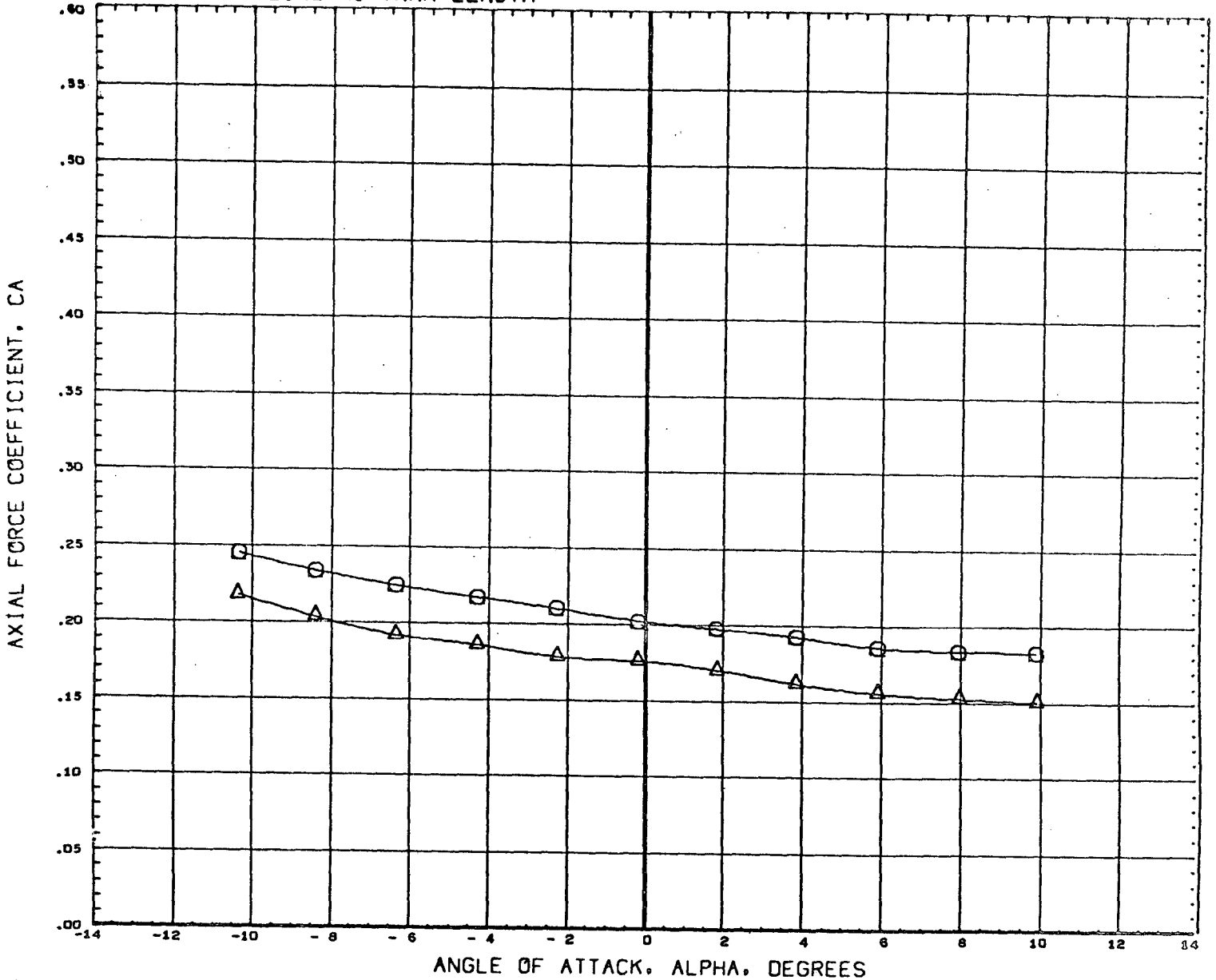
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	T401S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1		-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES		T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
								BREF 4.4600 IN.
								XMRP 3.3600 IN.
								YMRP 0.0000 IN.
								ZMRP 0.2480 IN.
								SCALE 0.0040 SCALE

MACH 3.48

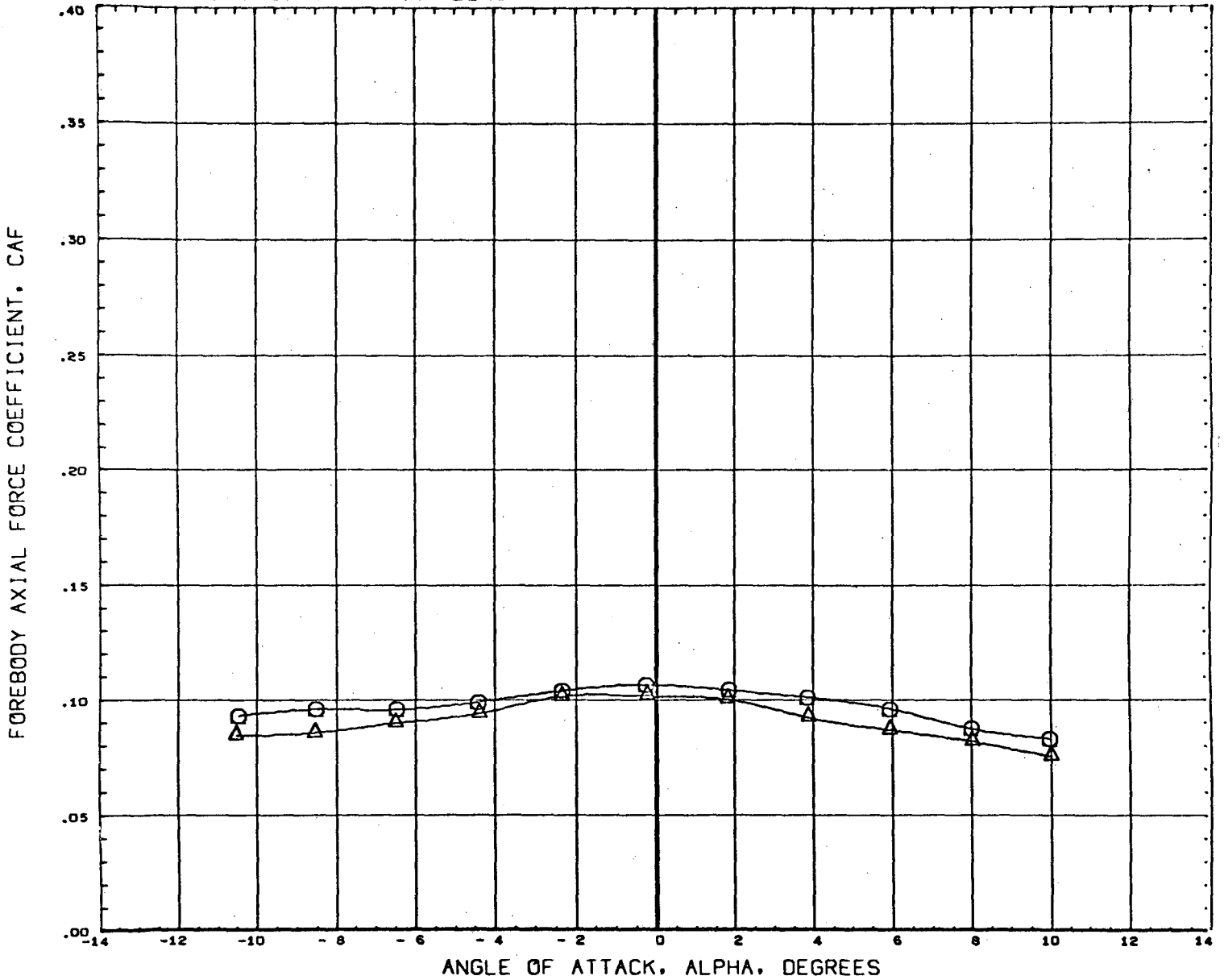
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

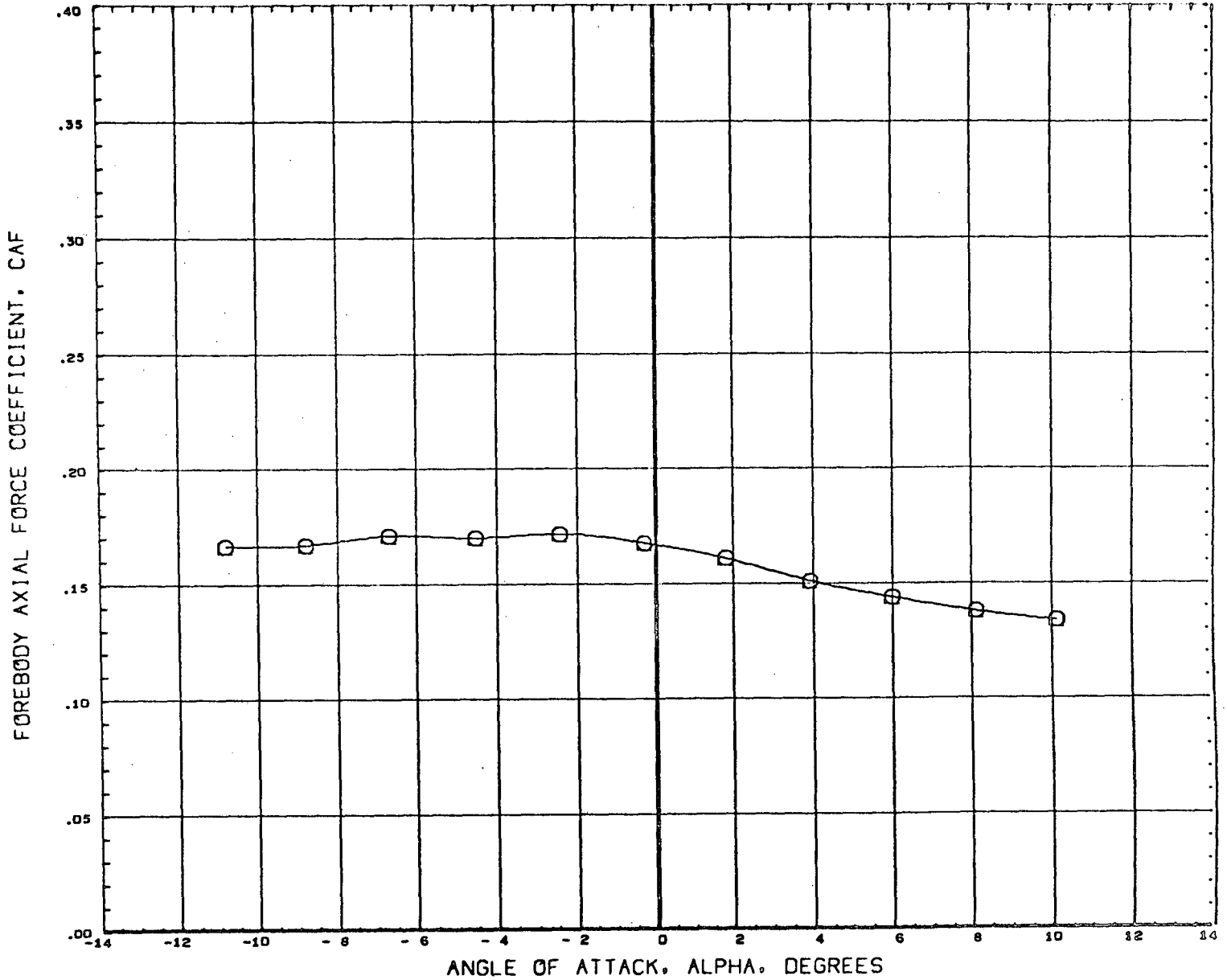
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

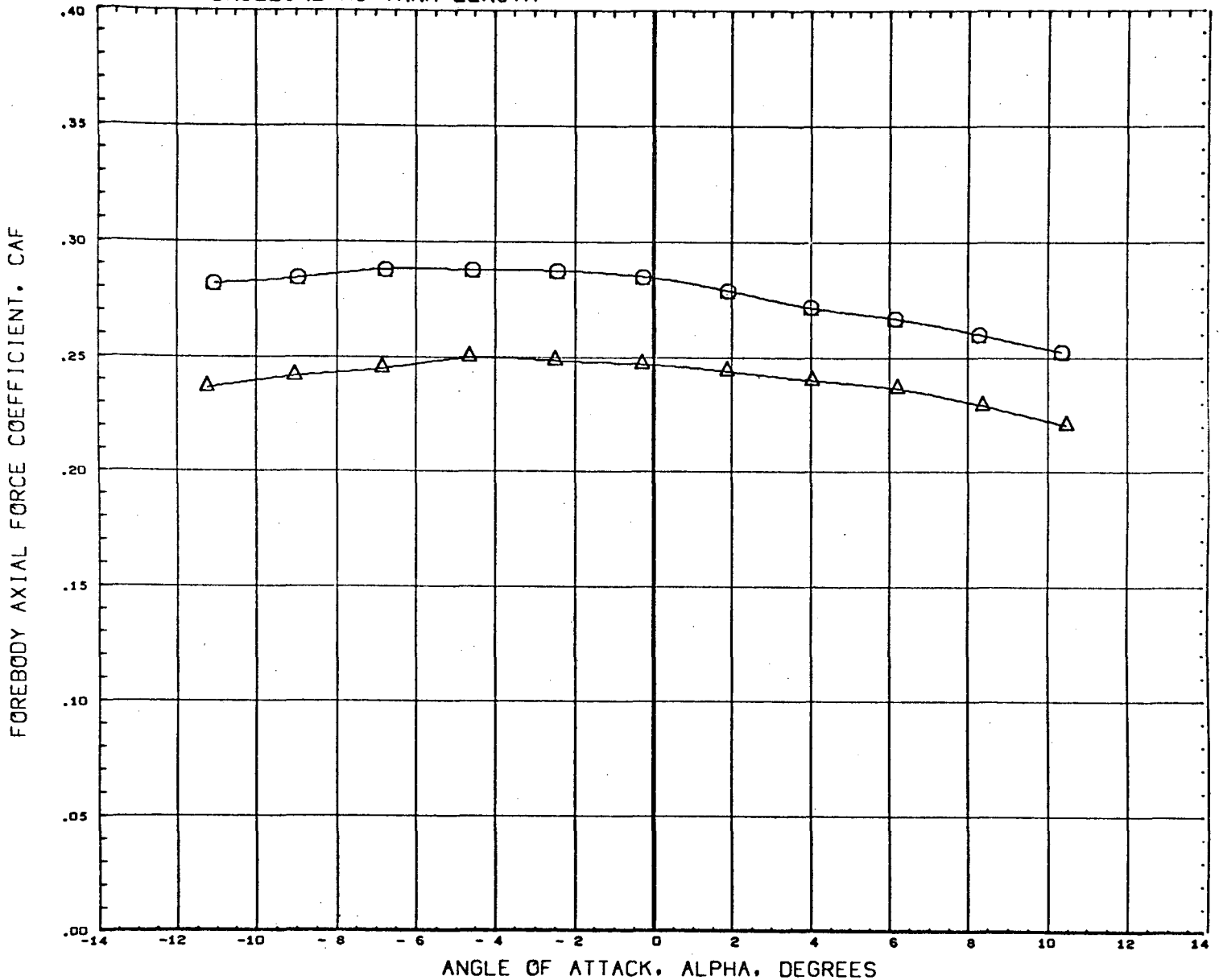
# EFFECT OF BASELINE HØ TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

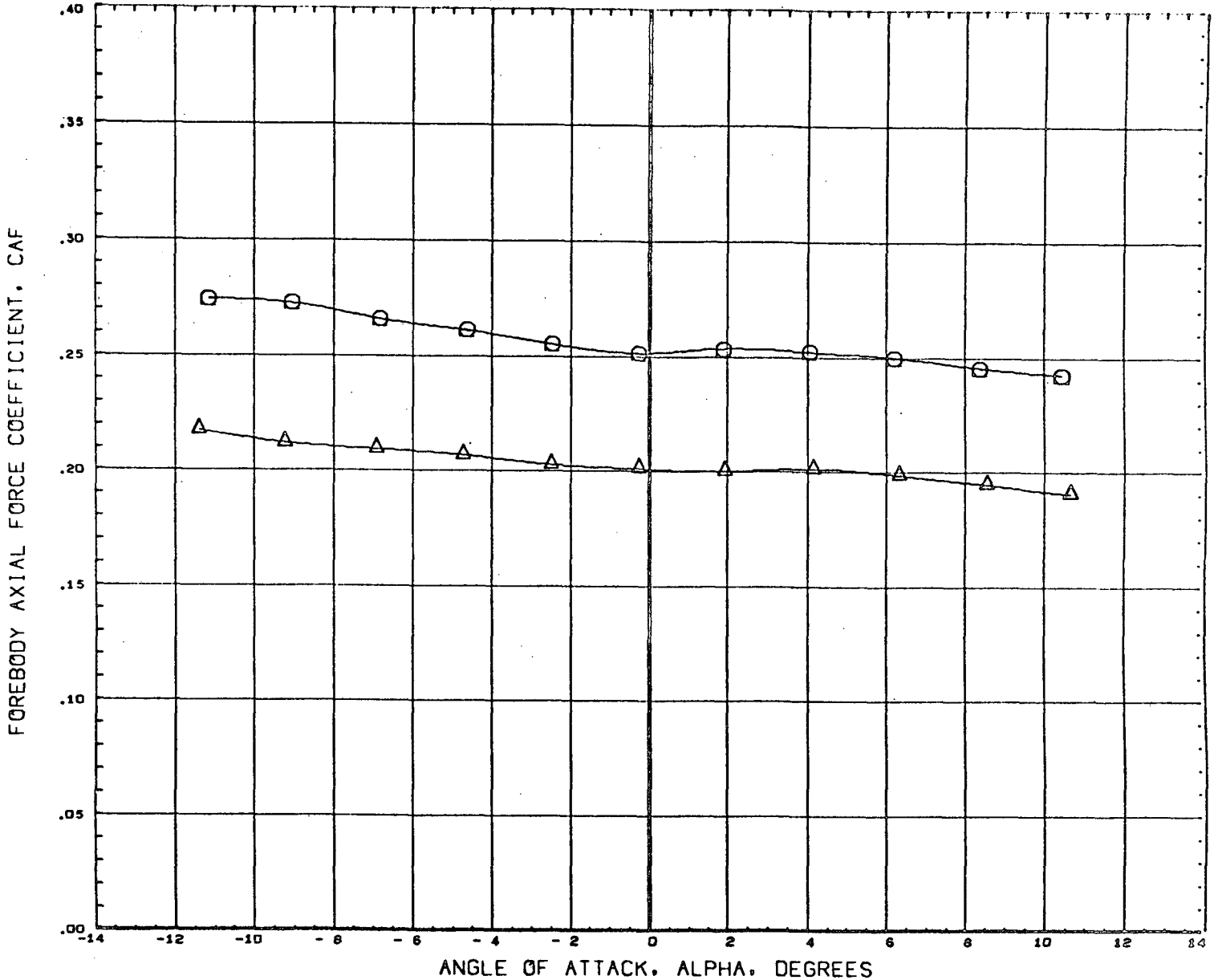
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

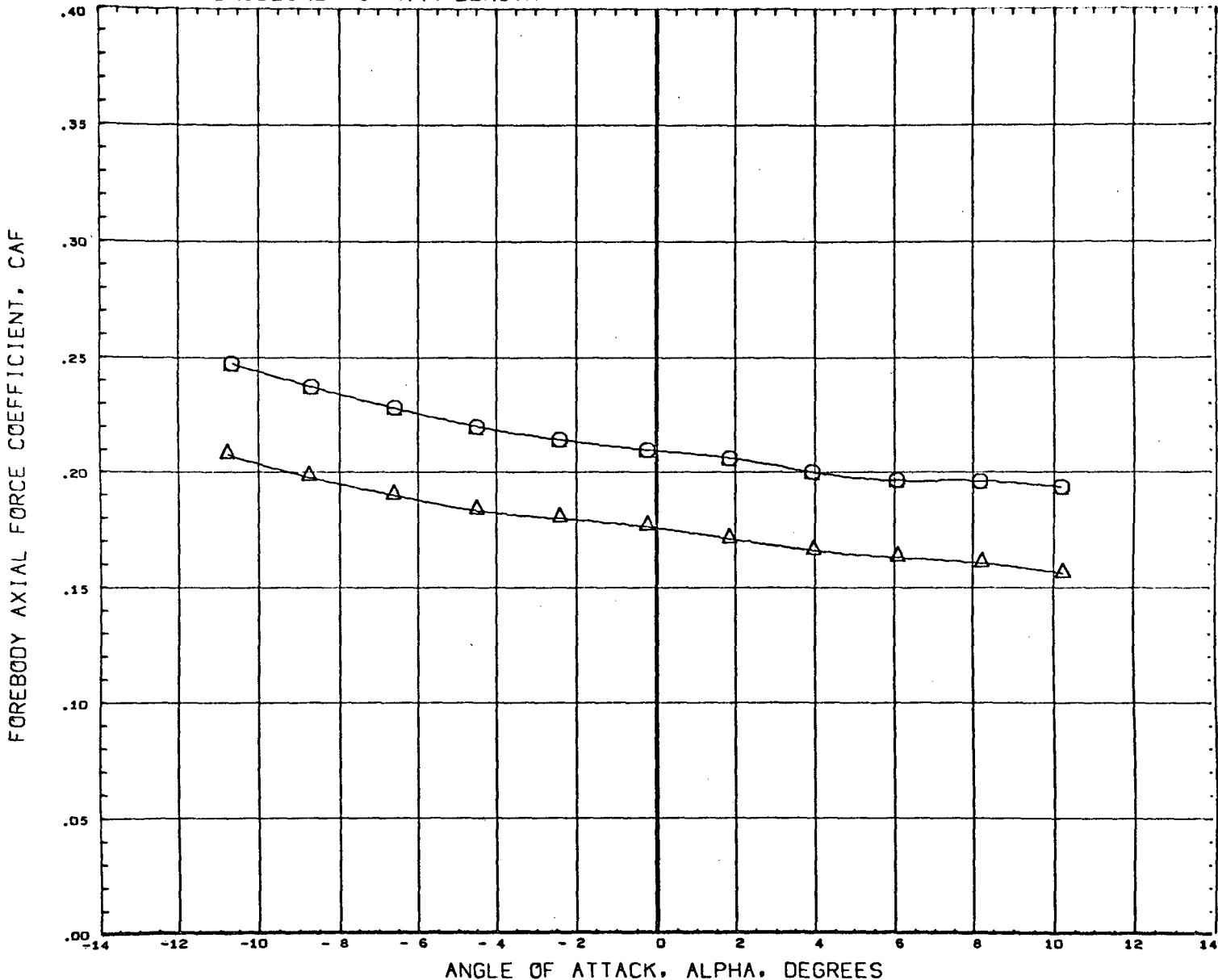
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

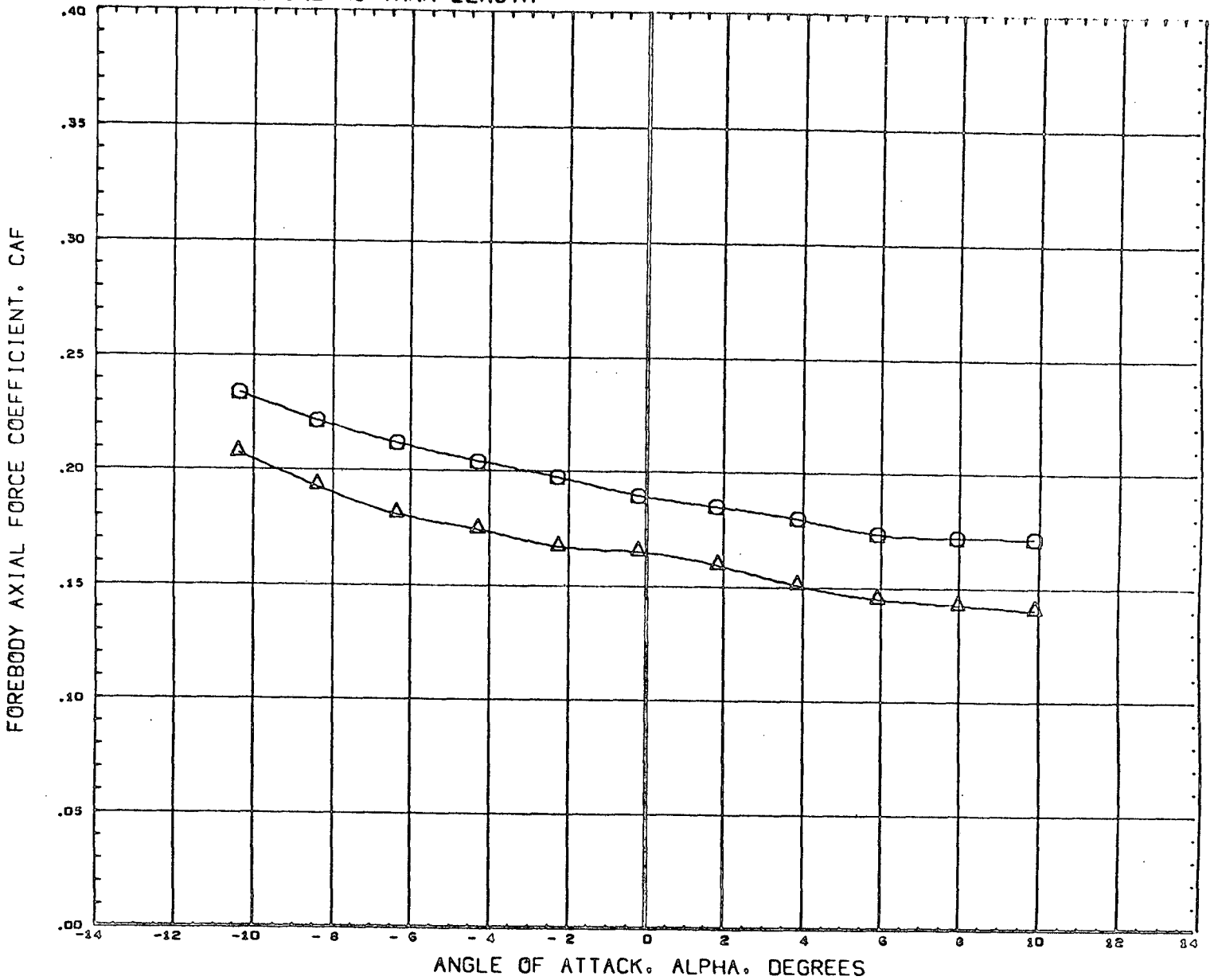
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH

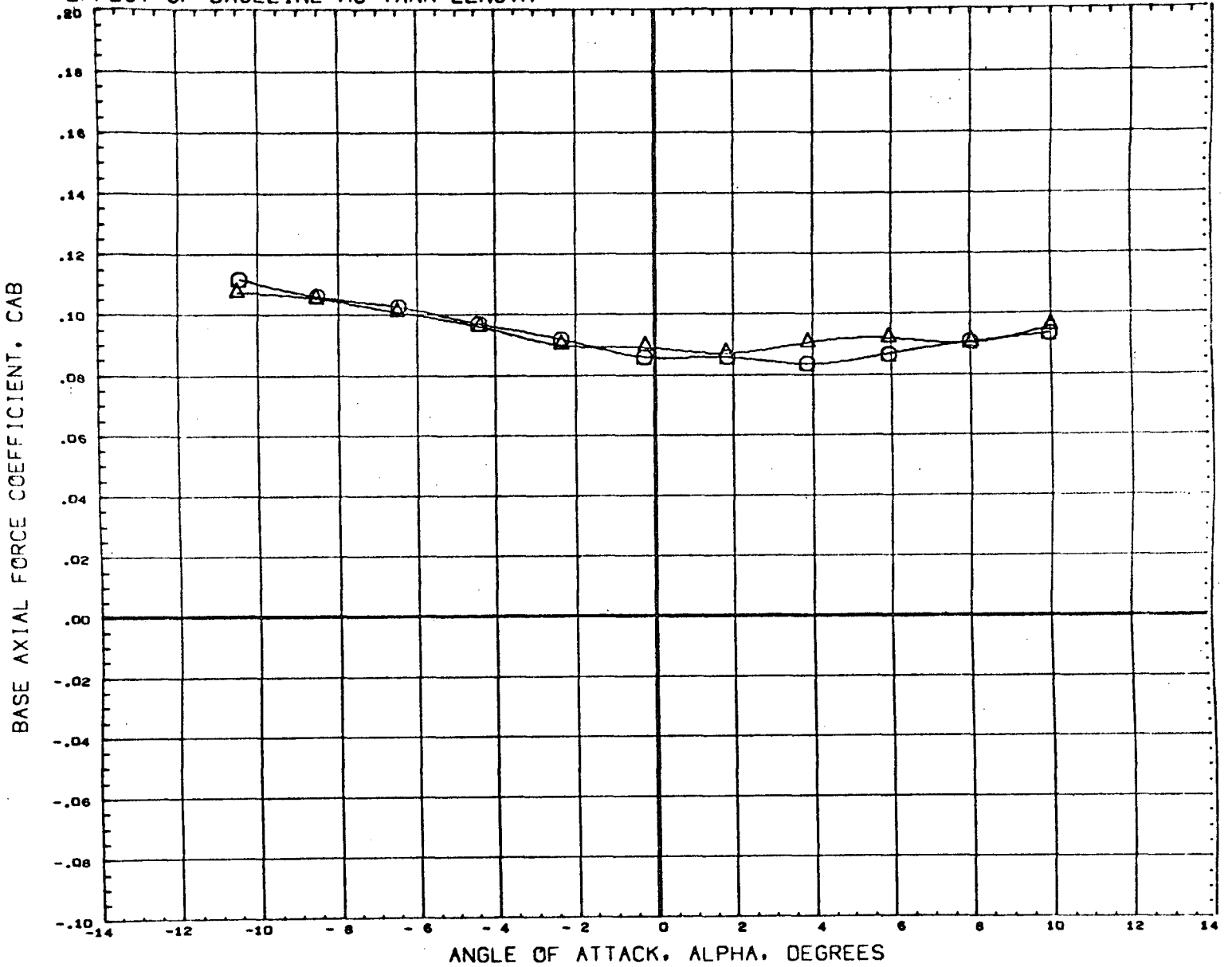


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96



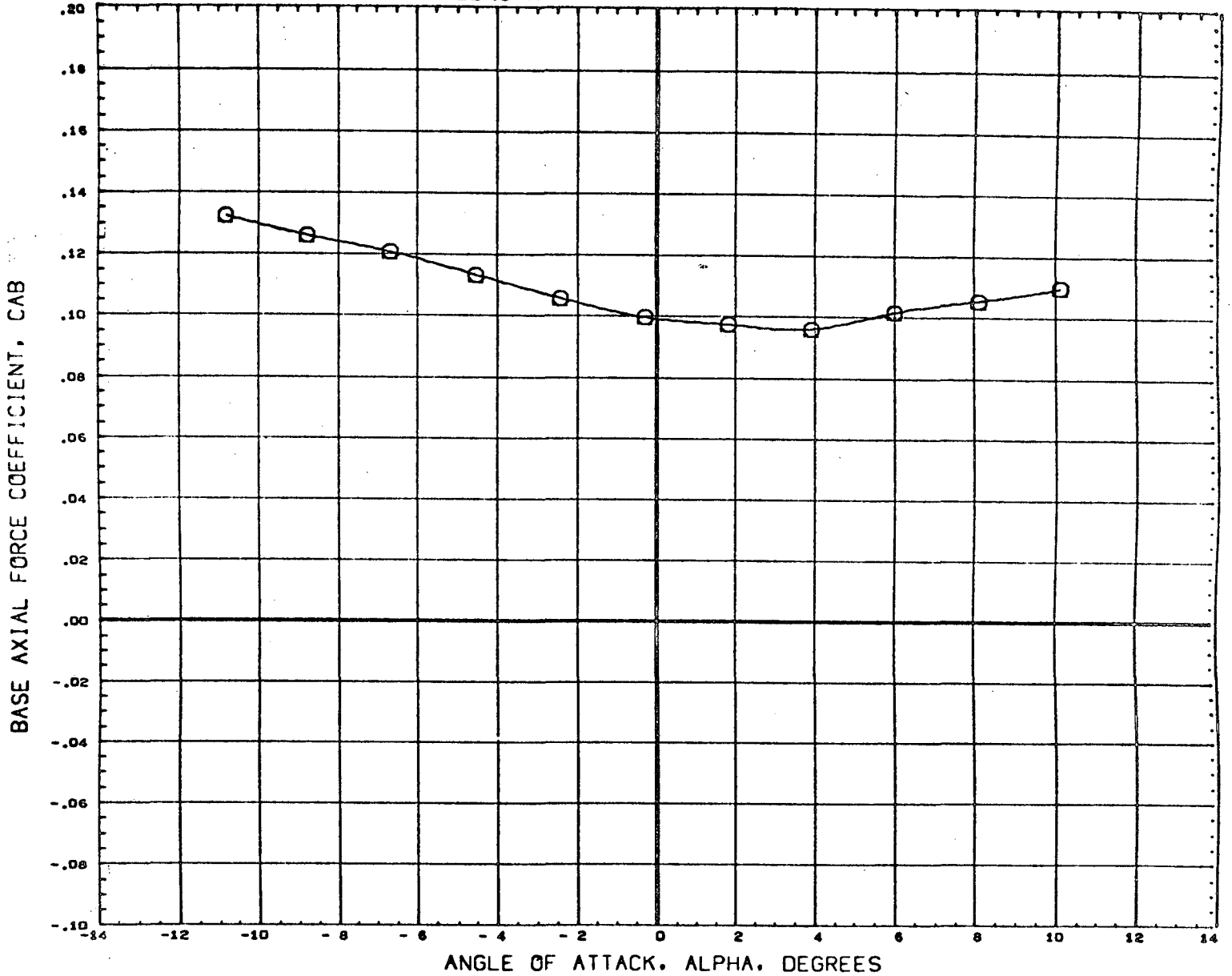
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

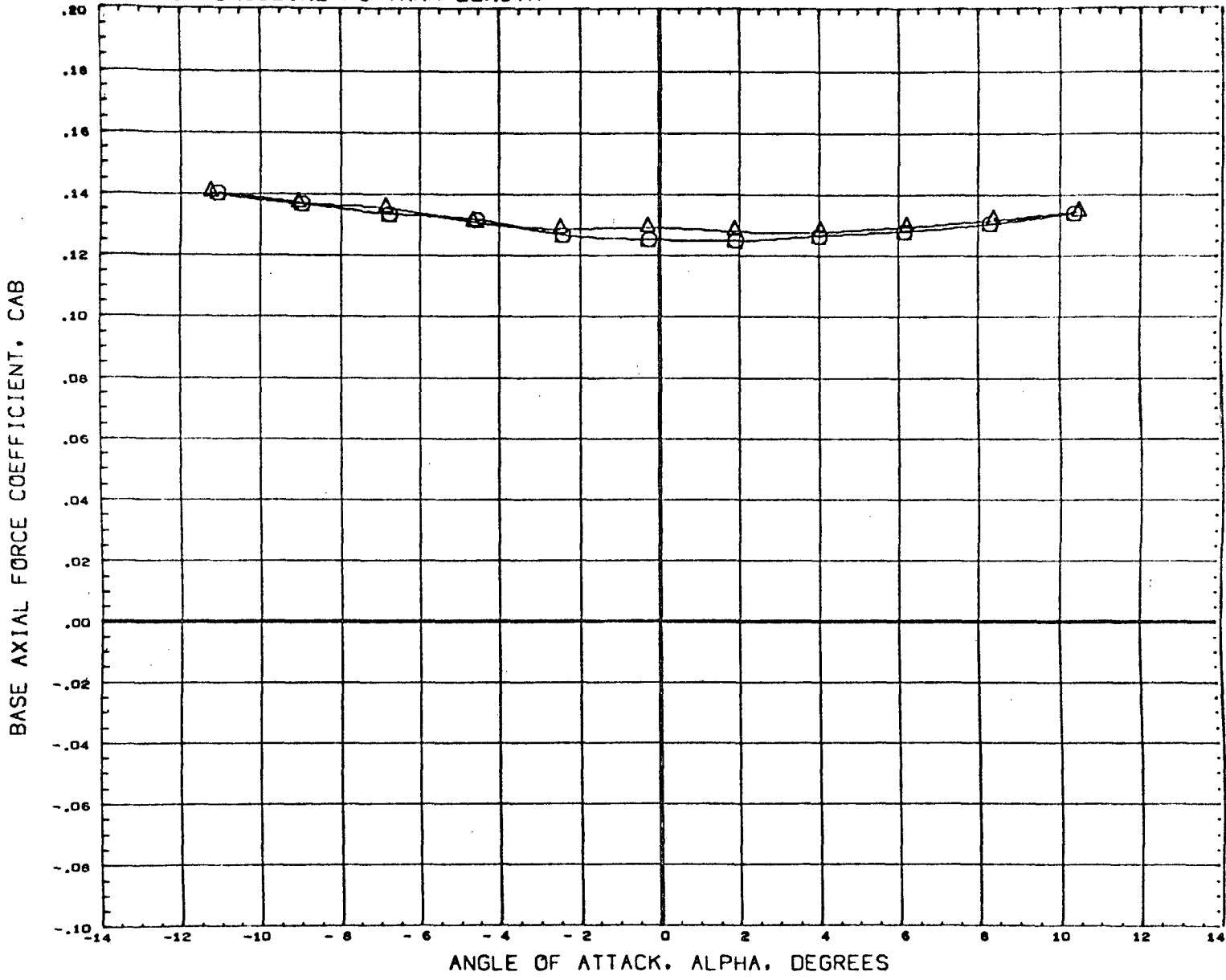
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

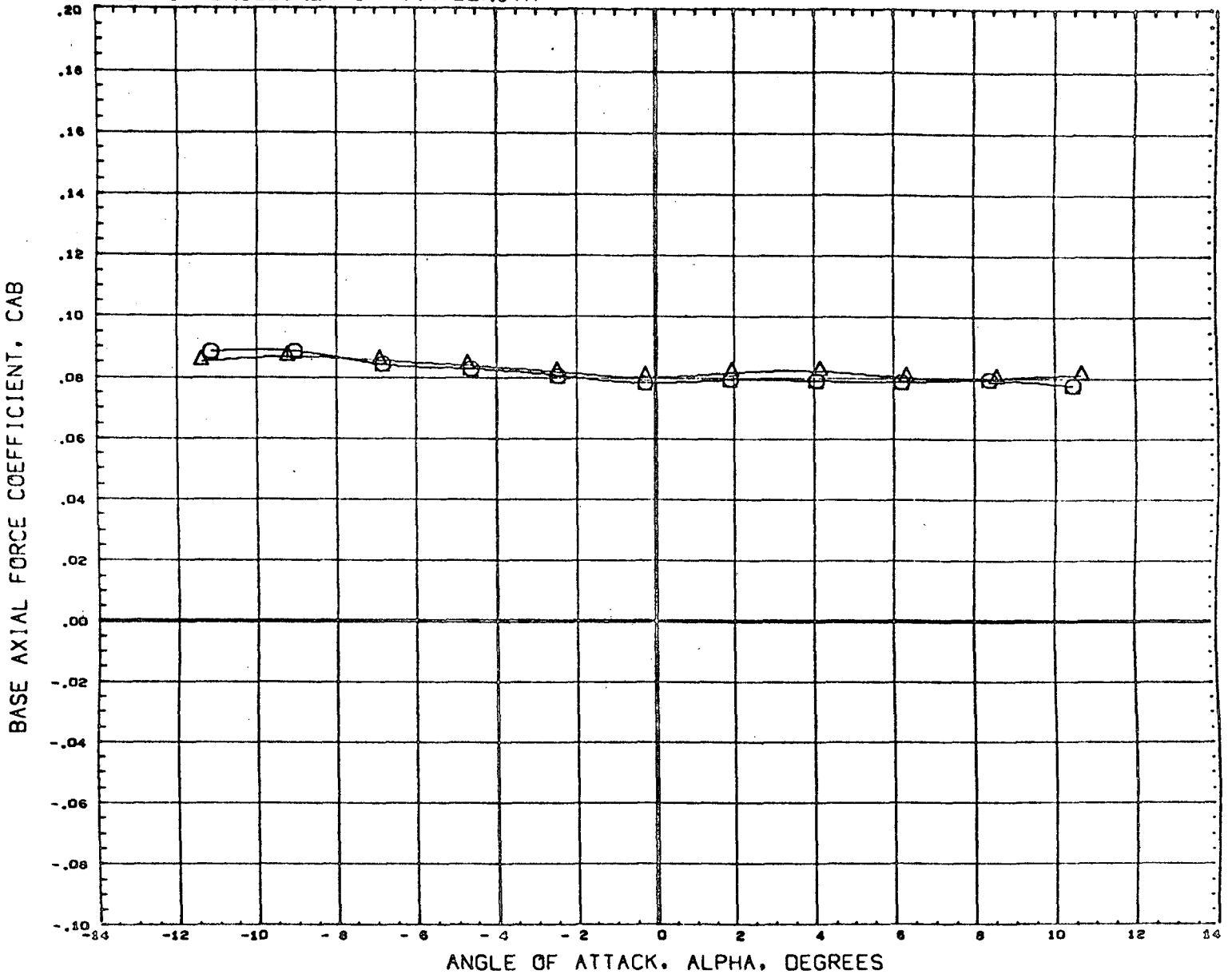
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



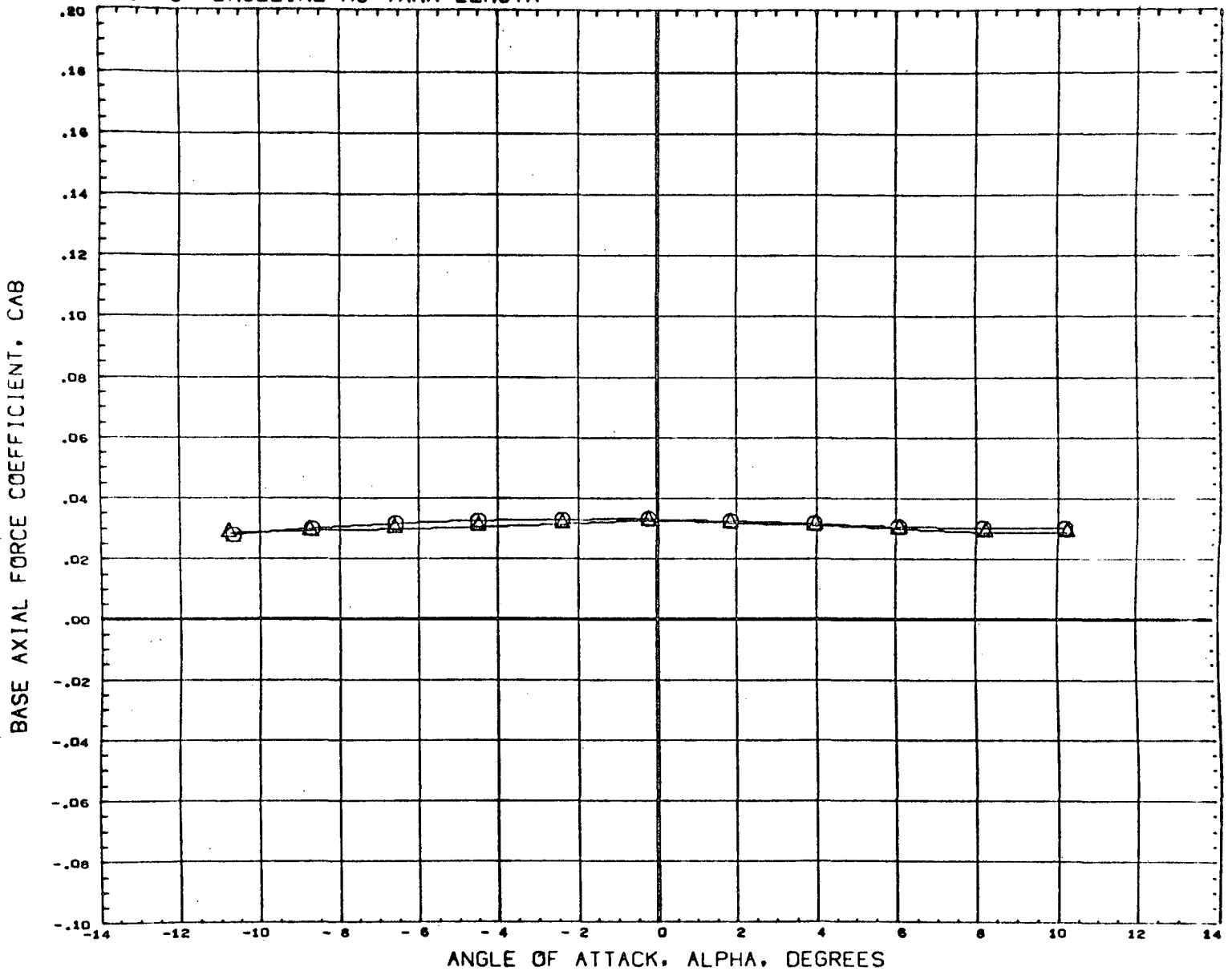
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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*In*

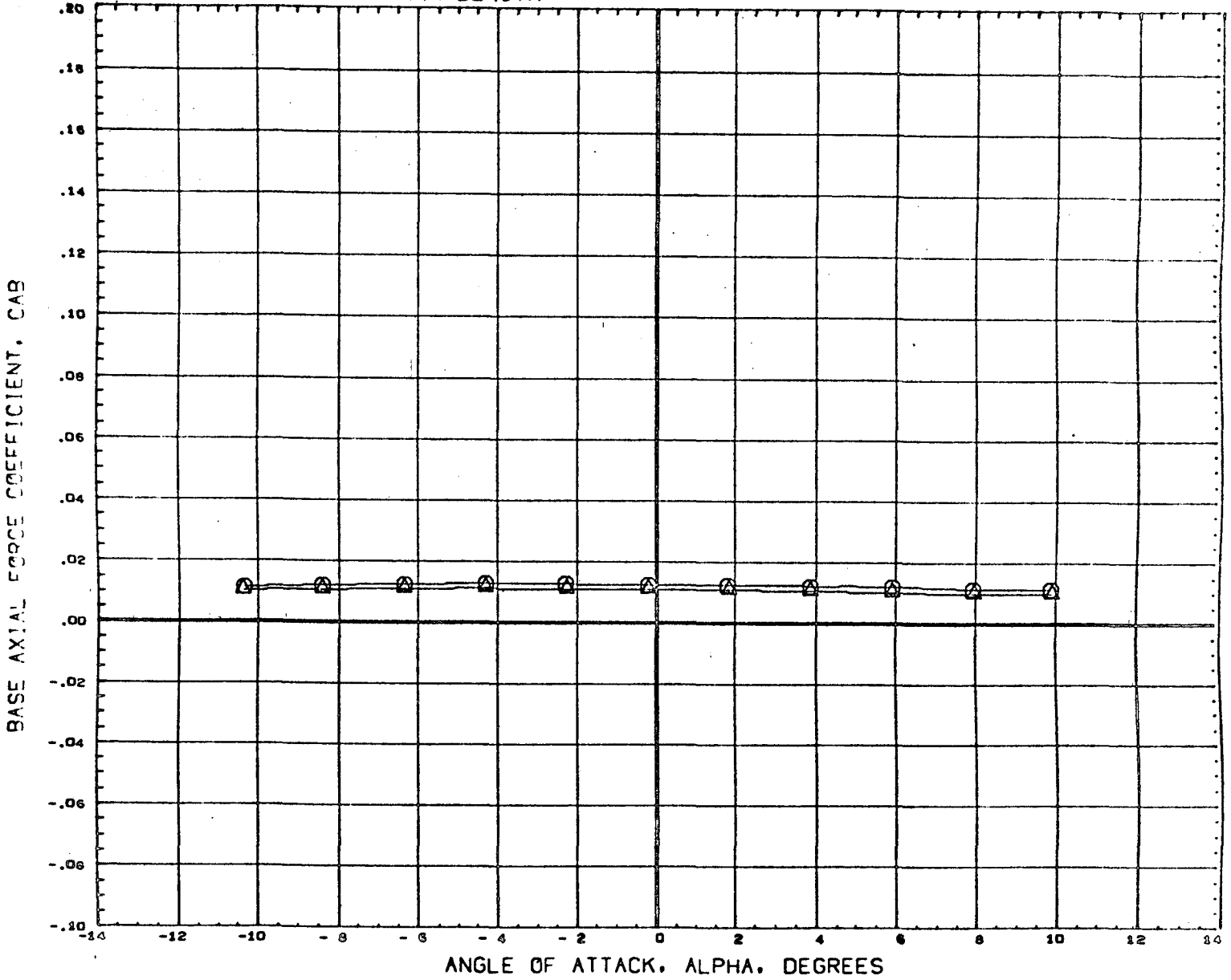
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRF 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

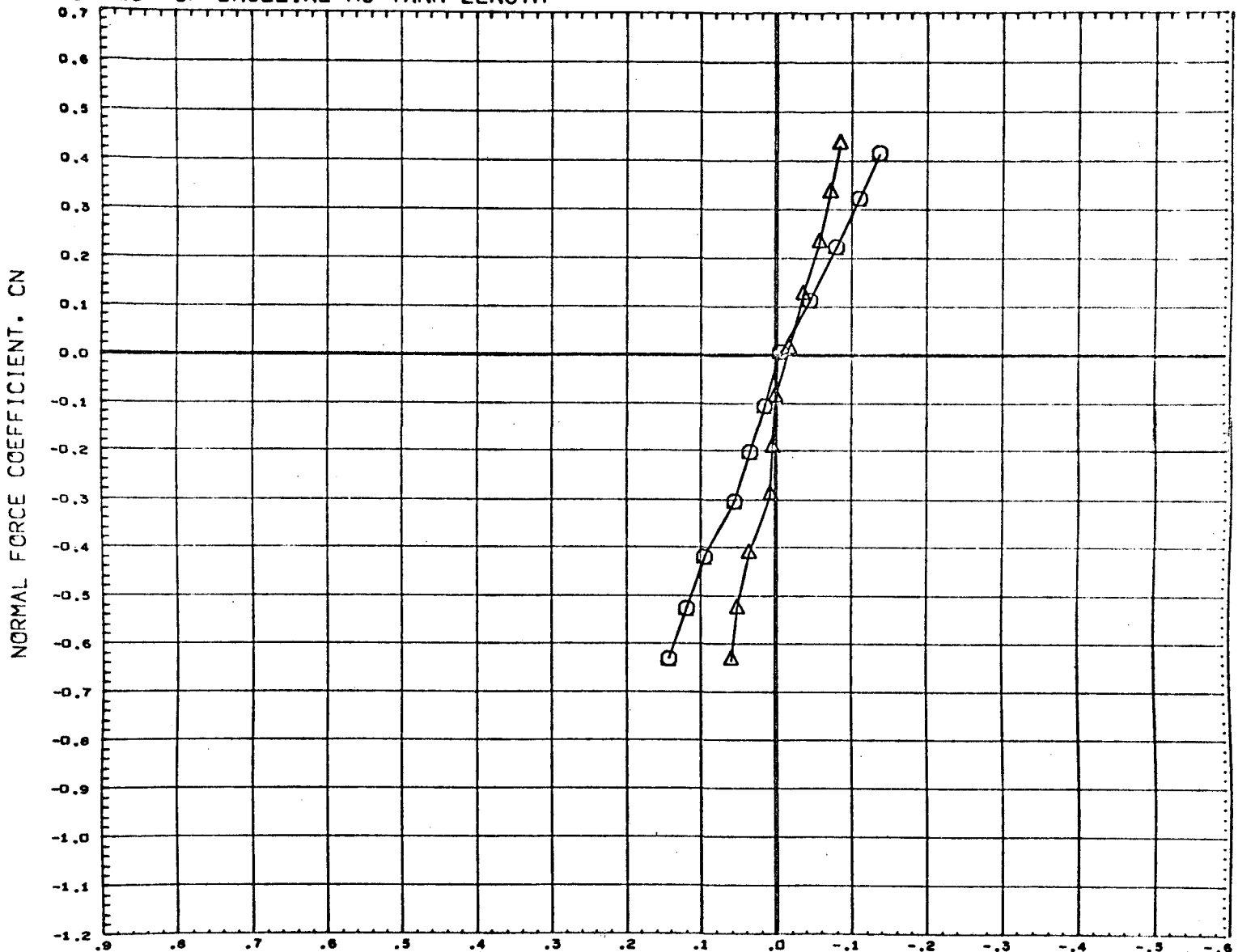
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH

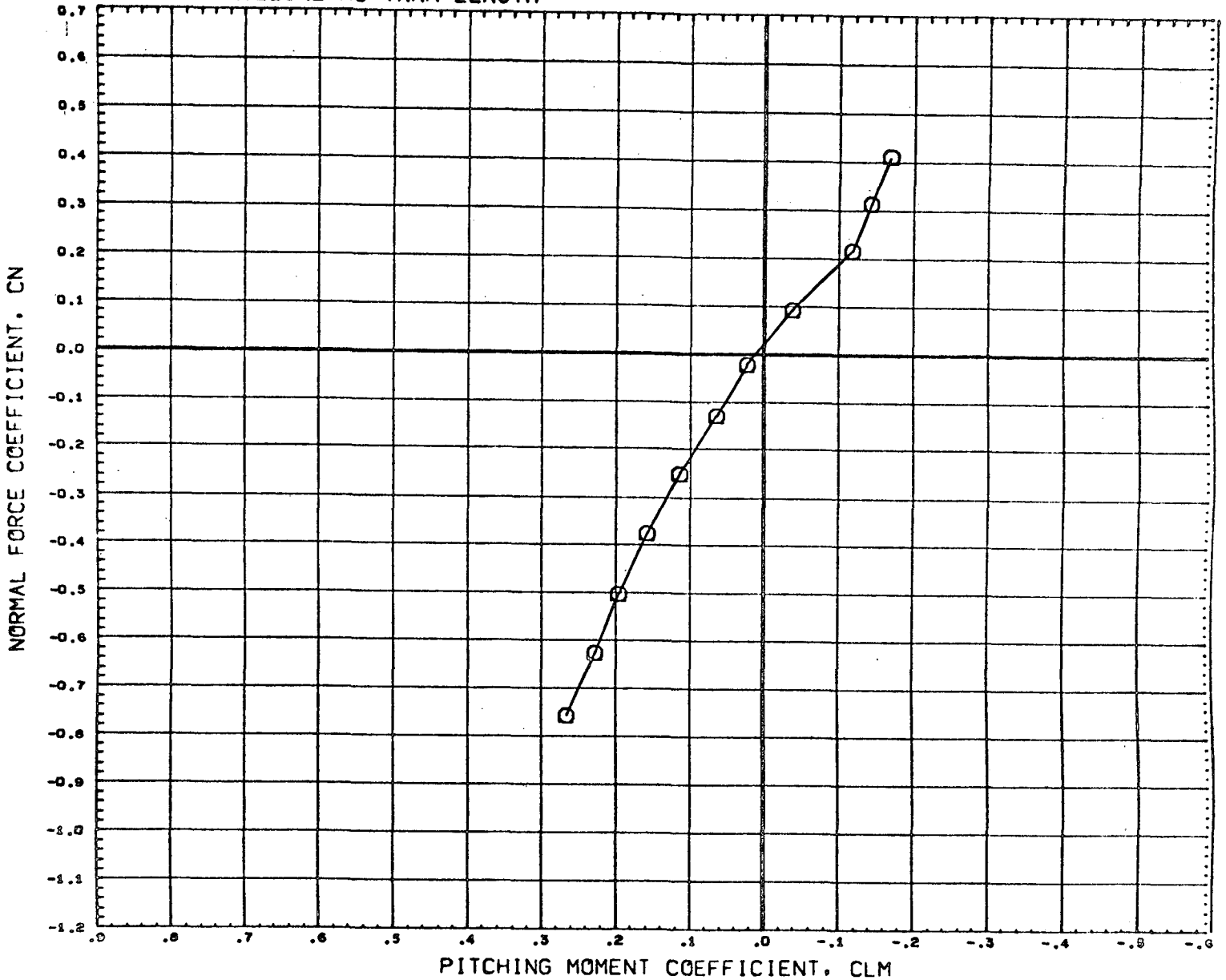


## PITCHING MOMENT COEFFICIENT, CLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

# EFFECT OF BASELINE H0 TANK LENGTH

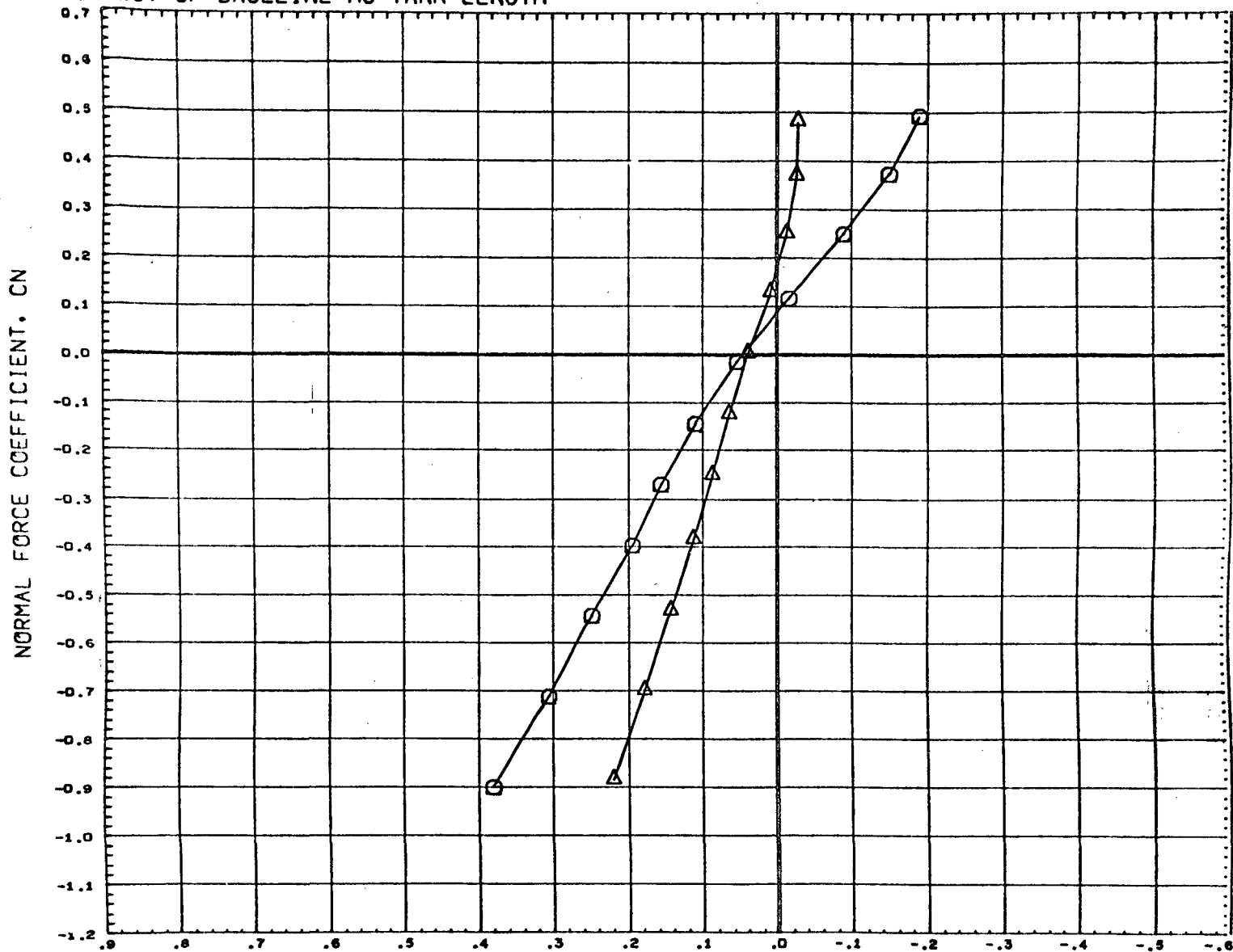


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 90. IN
(B71041)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



# EFFECT OF BASELINE H0 TANK LENGTH



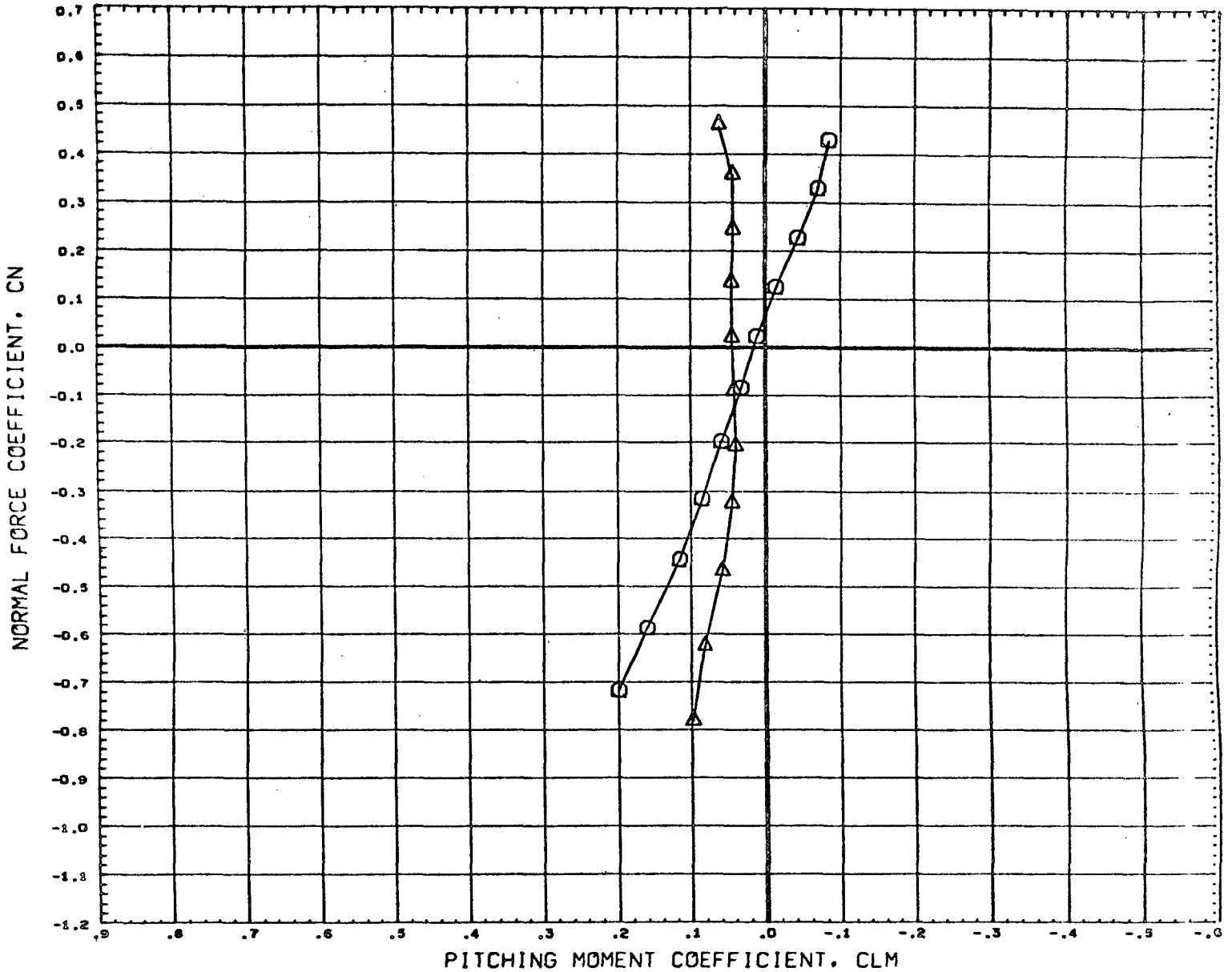
PITCHING MOMENT COEFFICIENT, CLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORIGIN	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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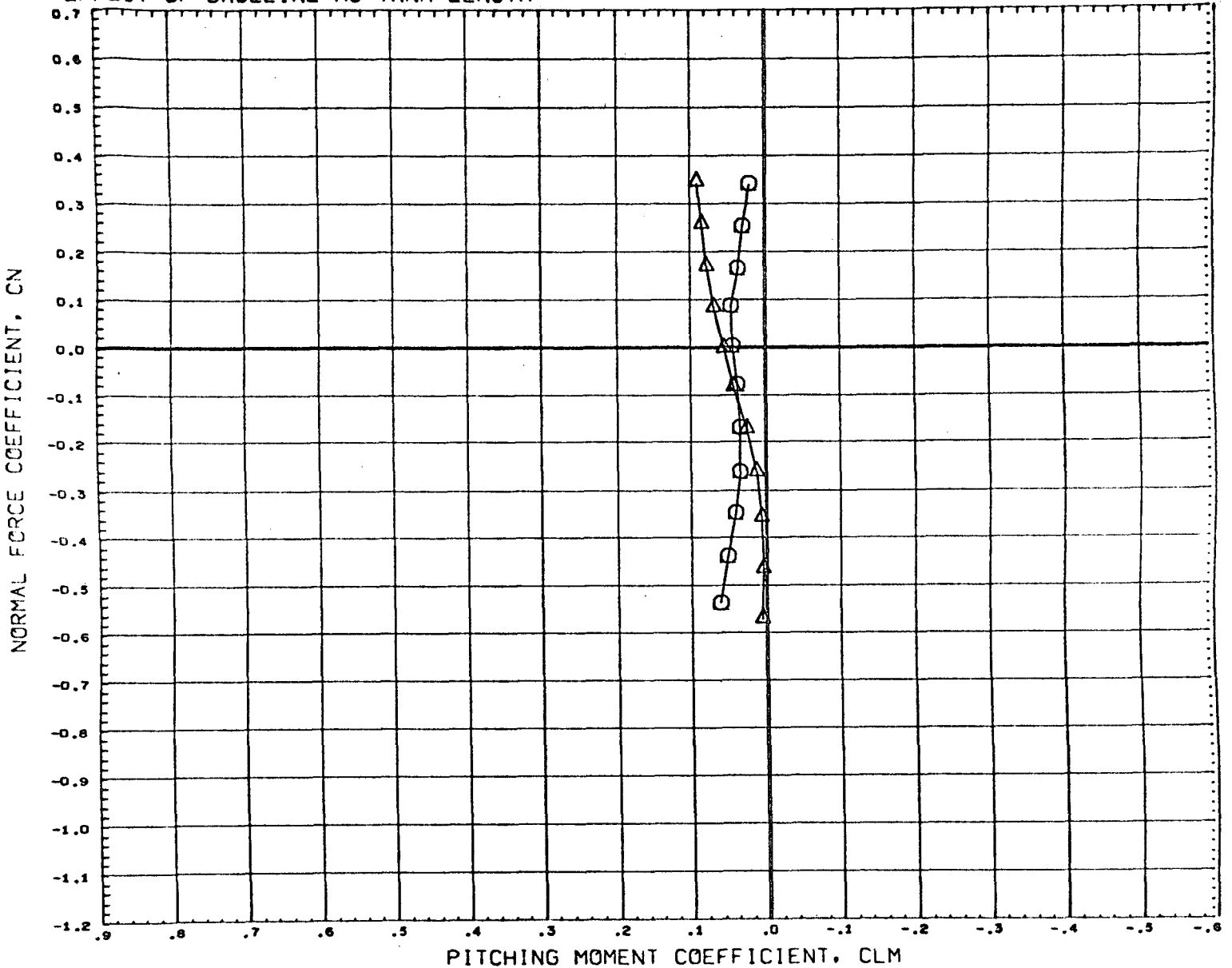
# EFFECT OF BASELINE NO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

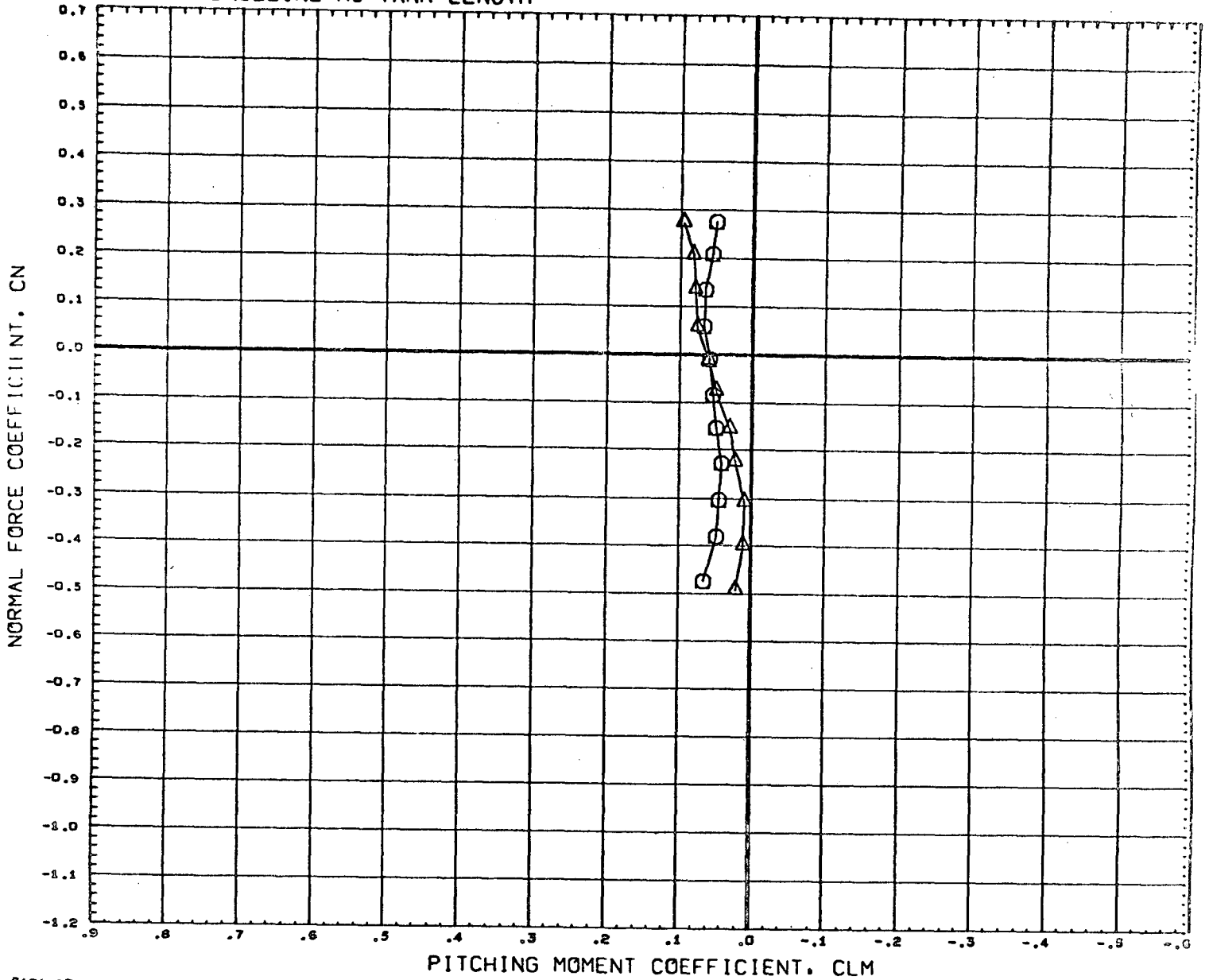
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

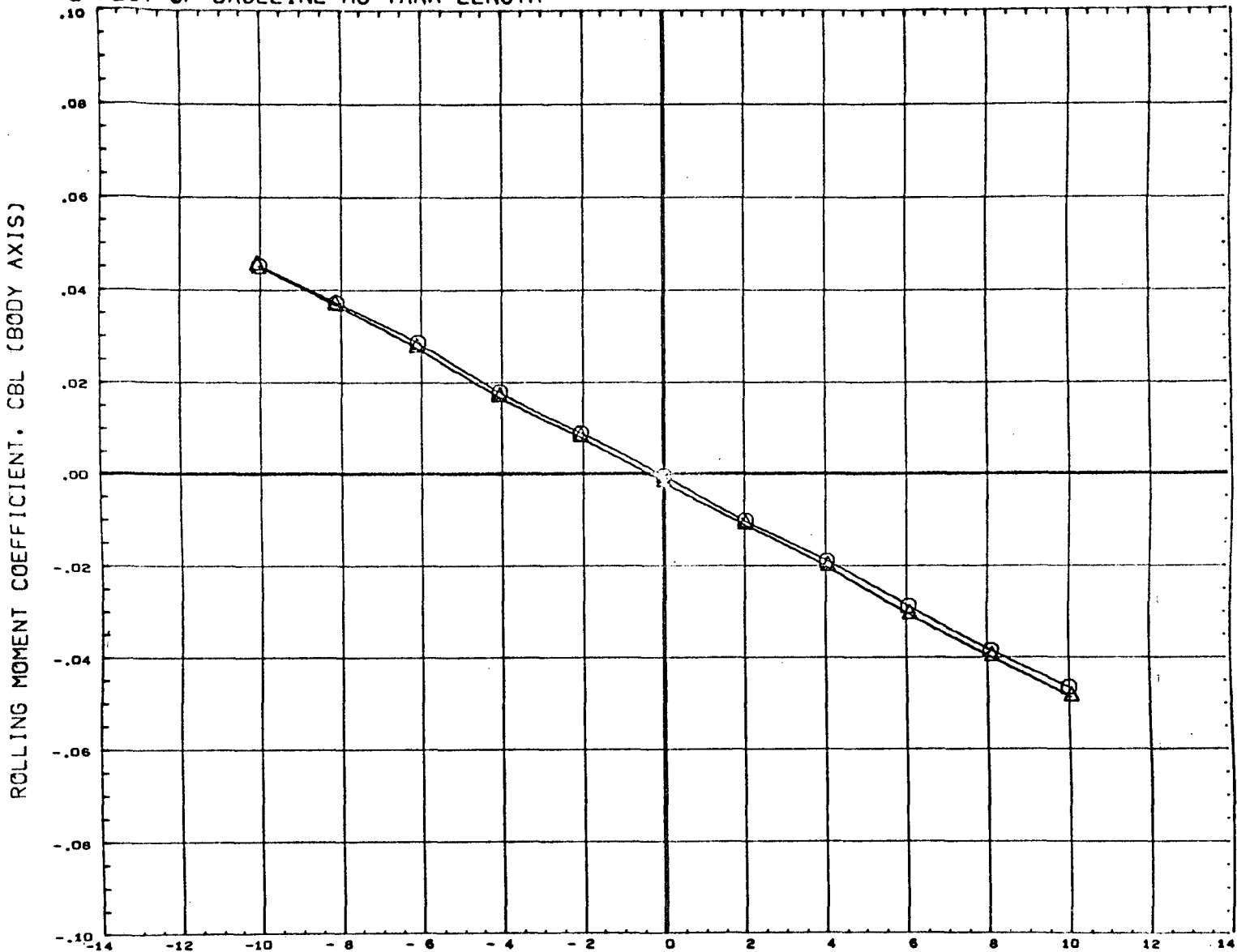
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						YMRP 3.3600 IN.
						ZMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

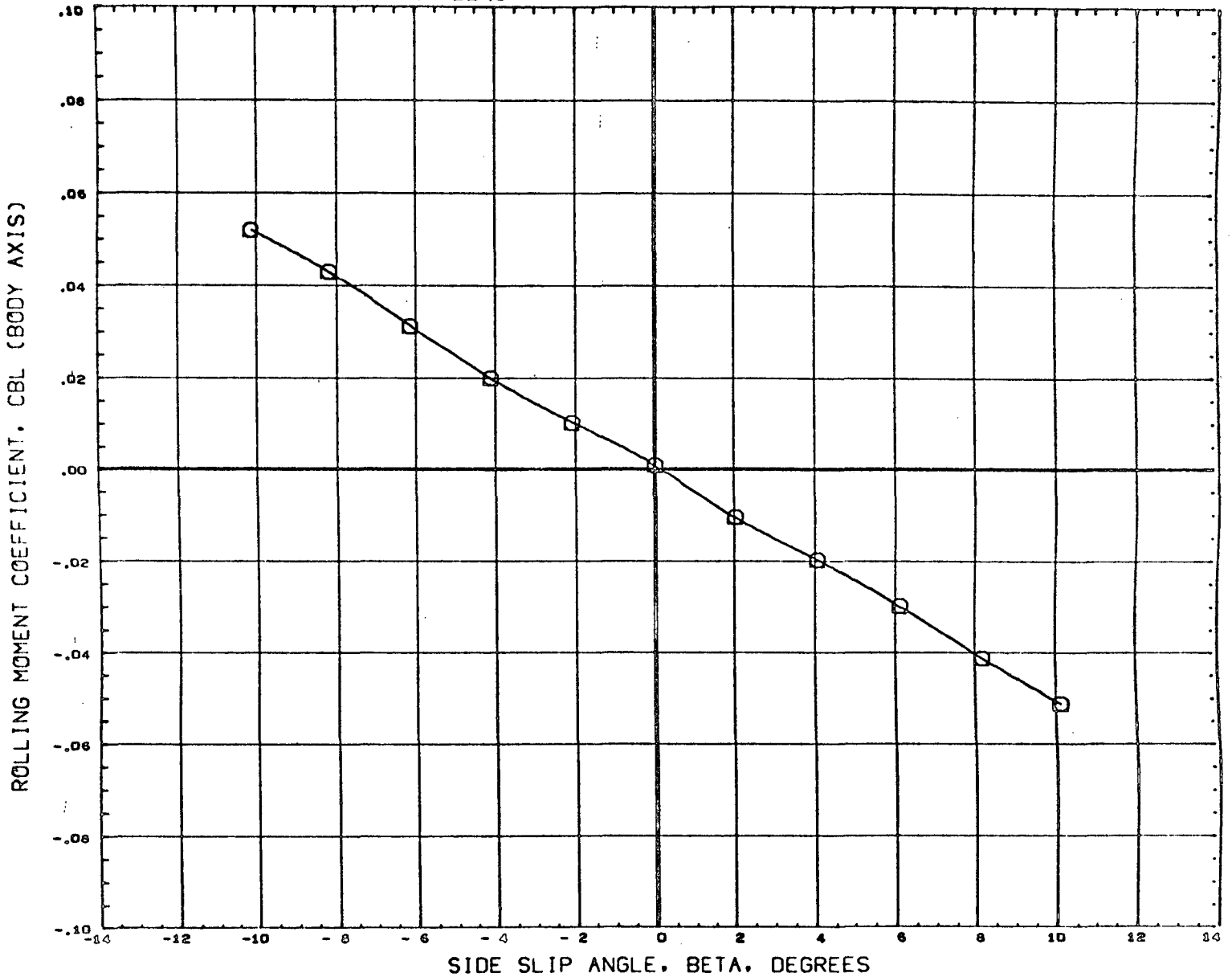
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF BASELINE H0 TANK LENGTH

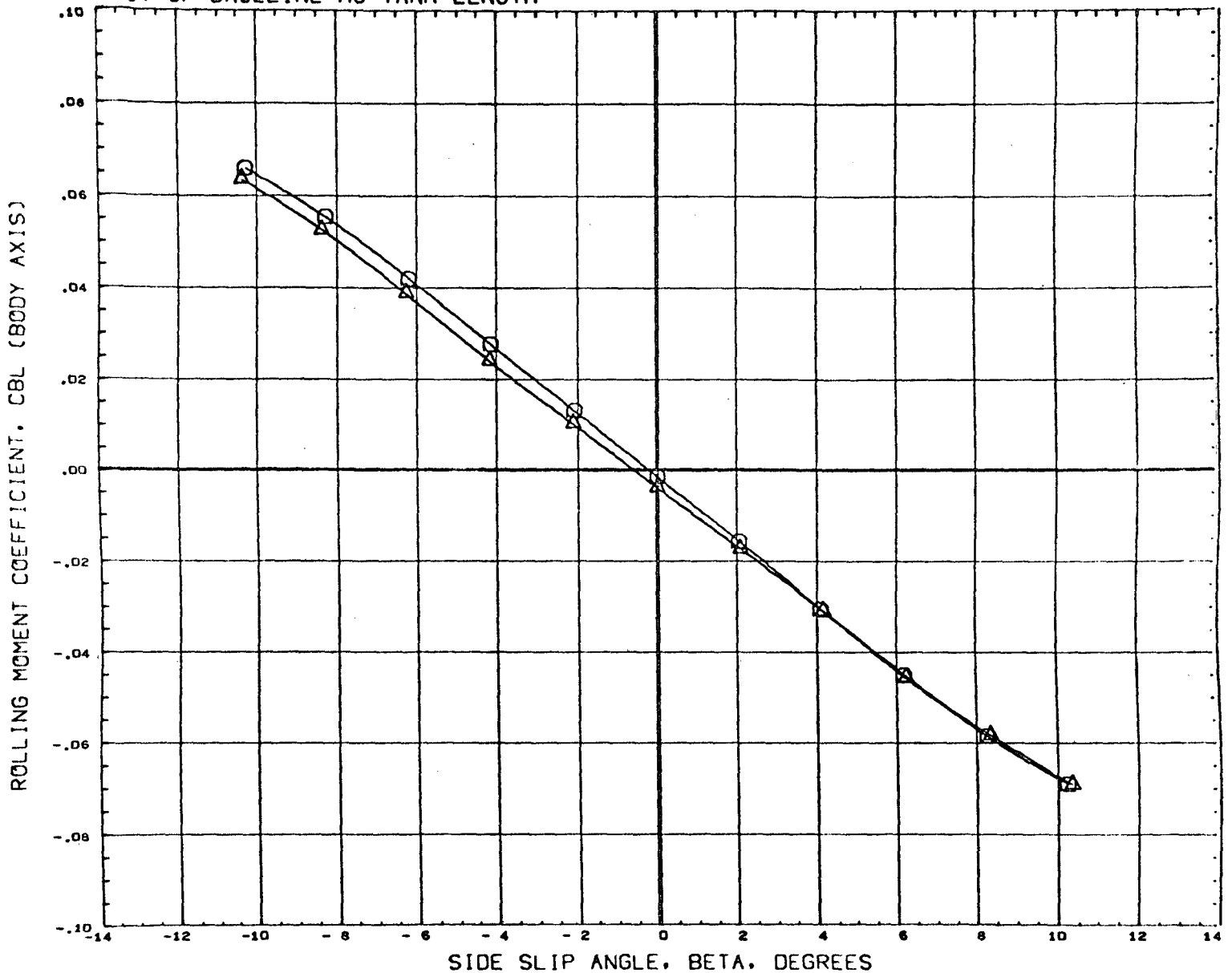


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

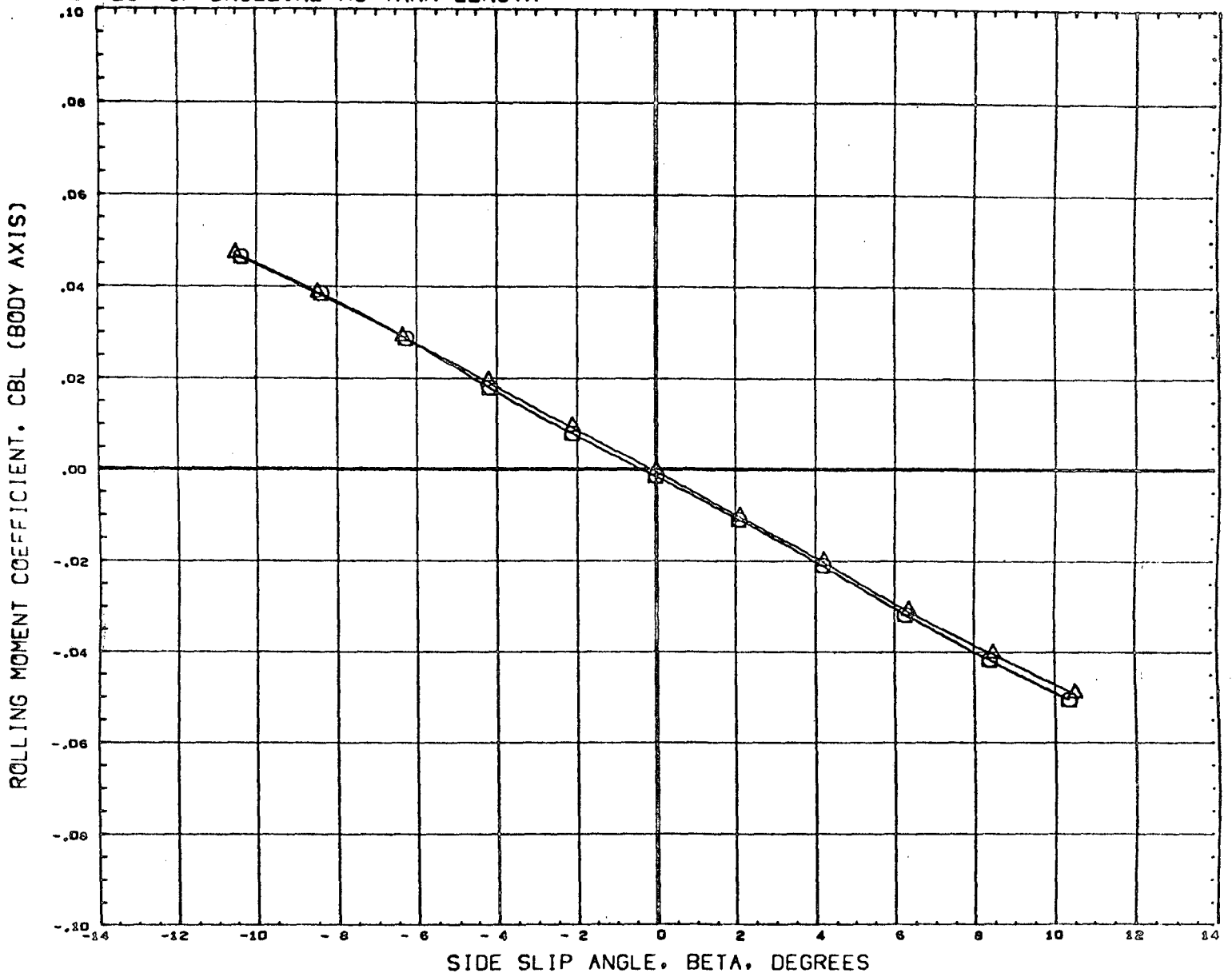
.90

# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRF 3.3600 IN.
						YMRF 0.0000 IN.
						ZMRF 0.2480 IN.
						SCALE 0.0040 SCALE

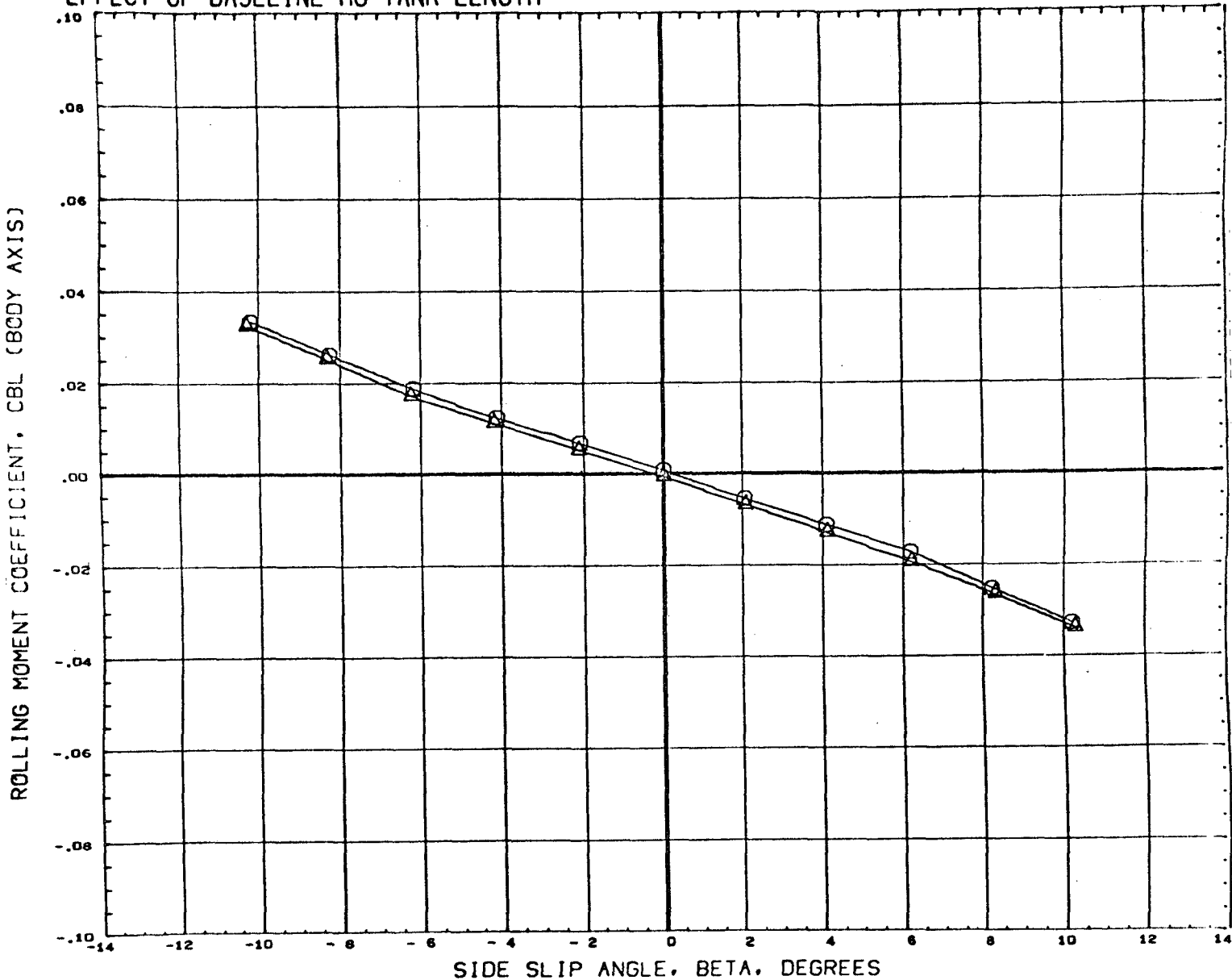
MACH 1.96

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# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH

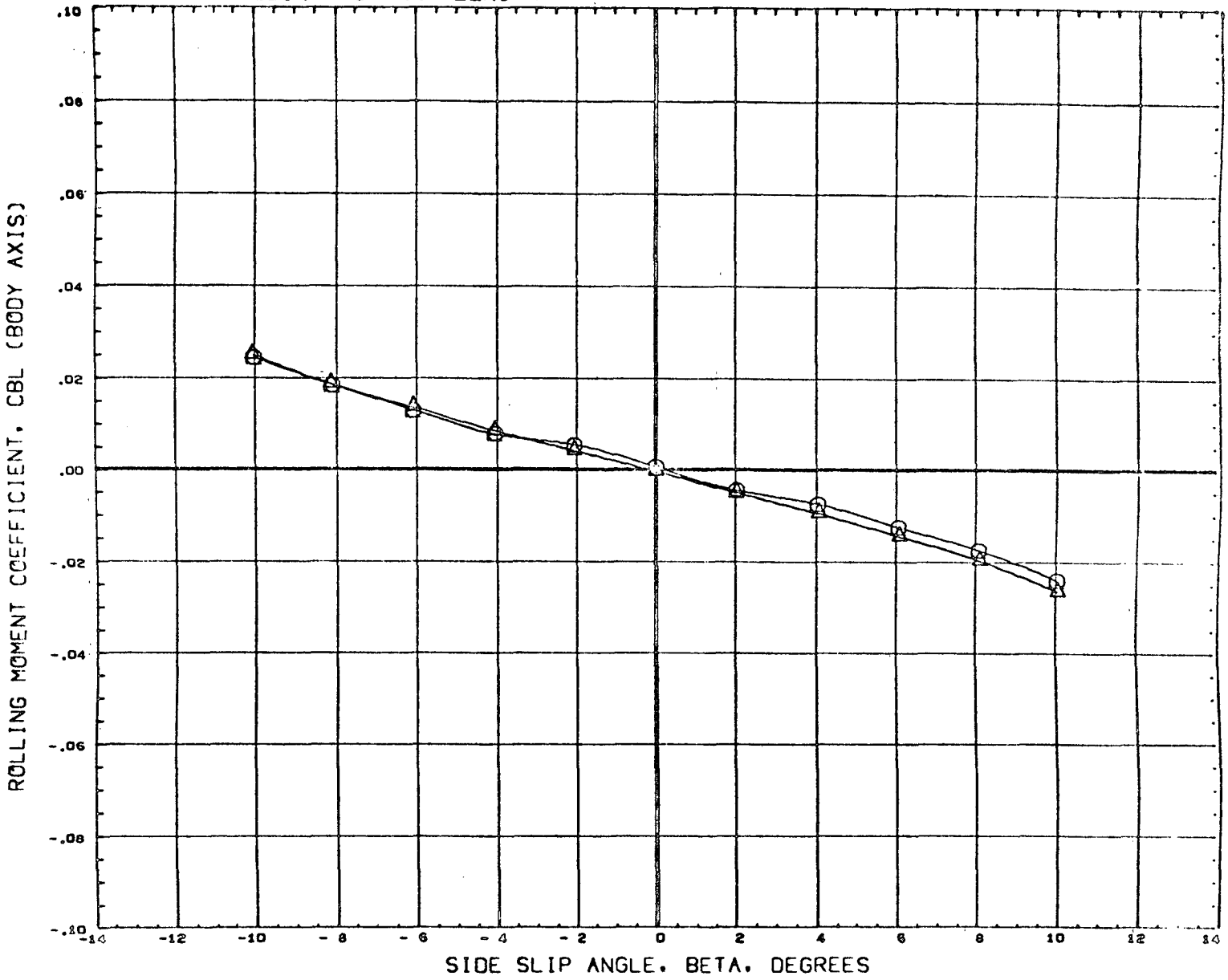


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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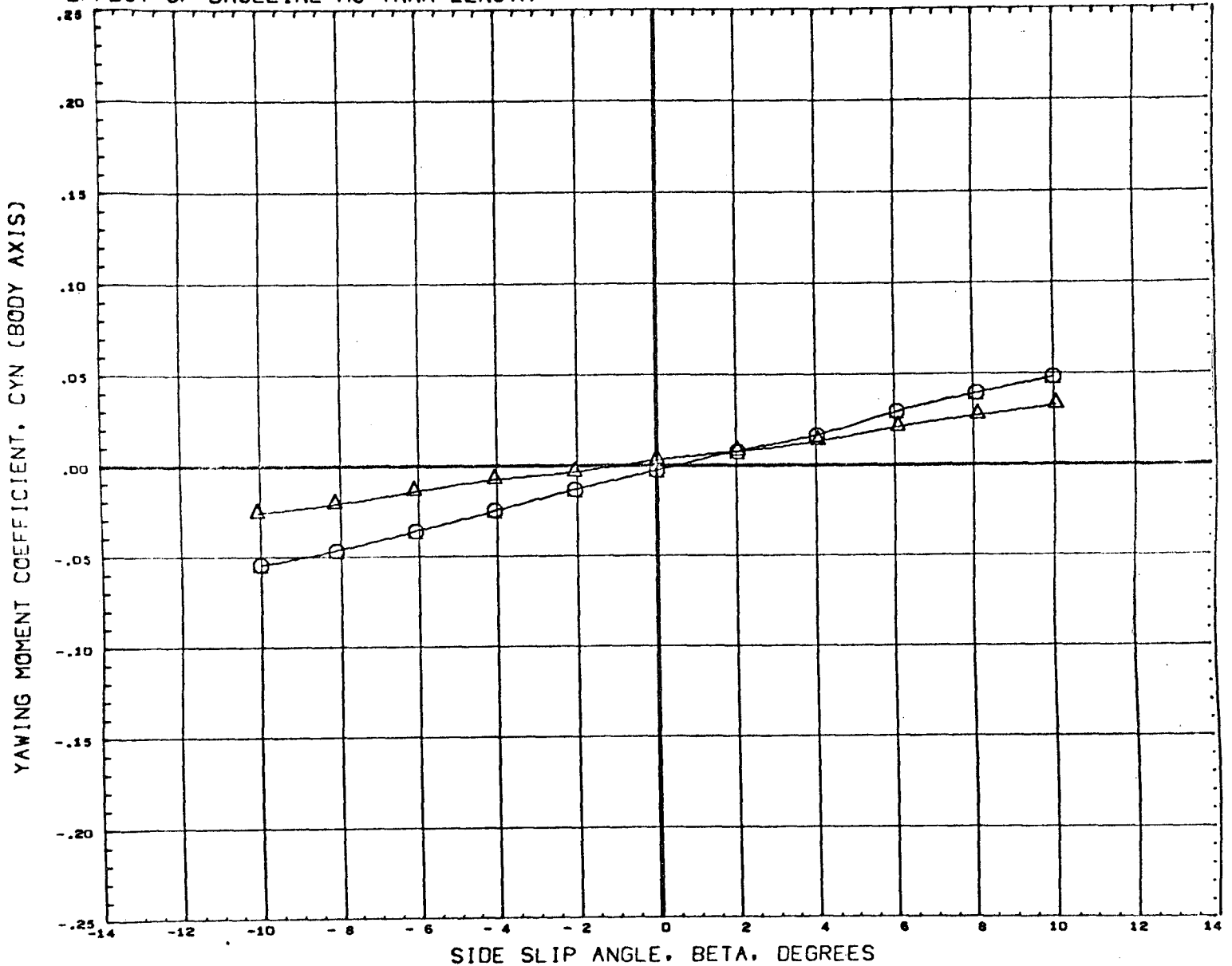
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

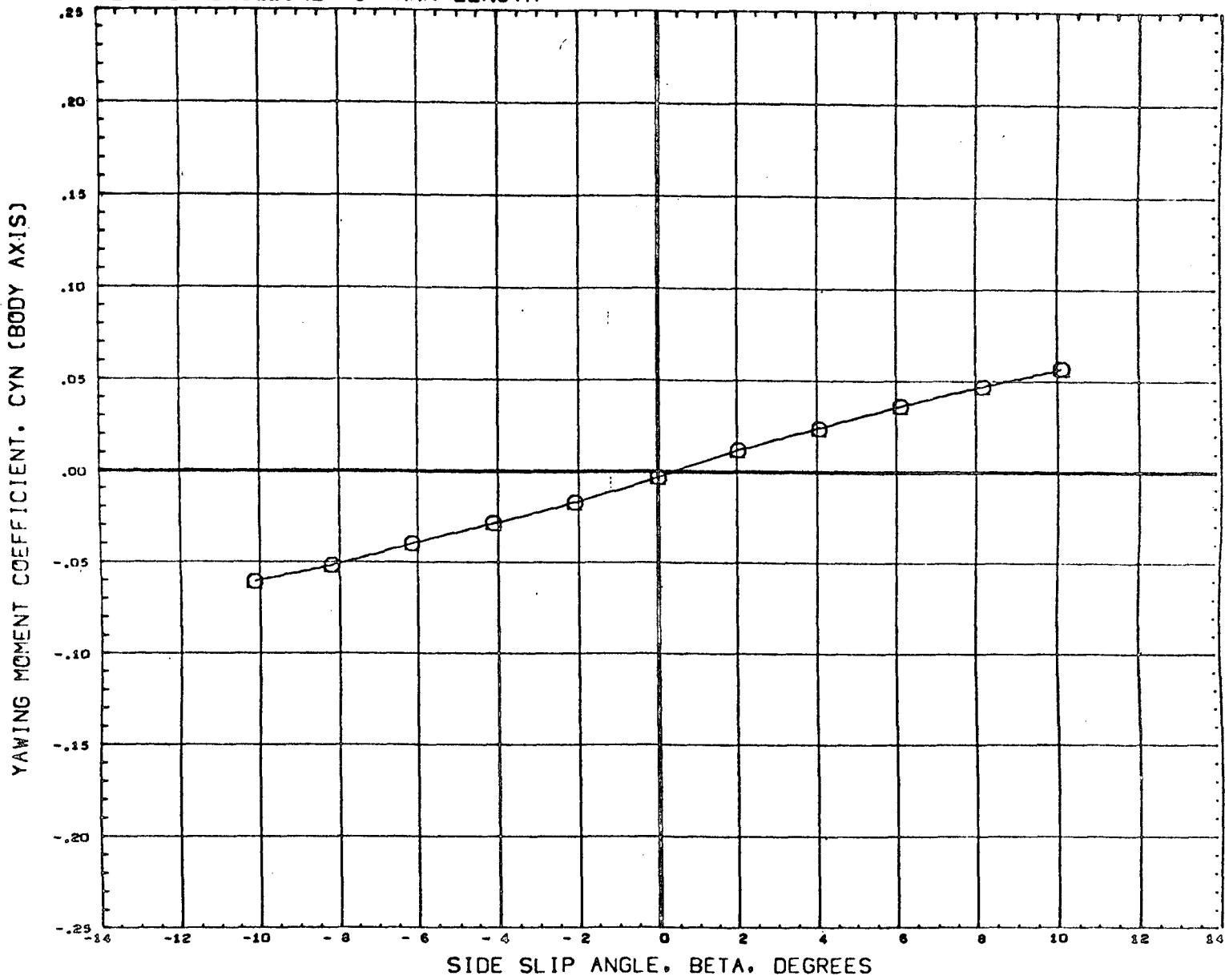
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

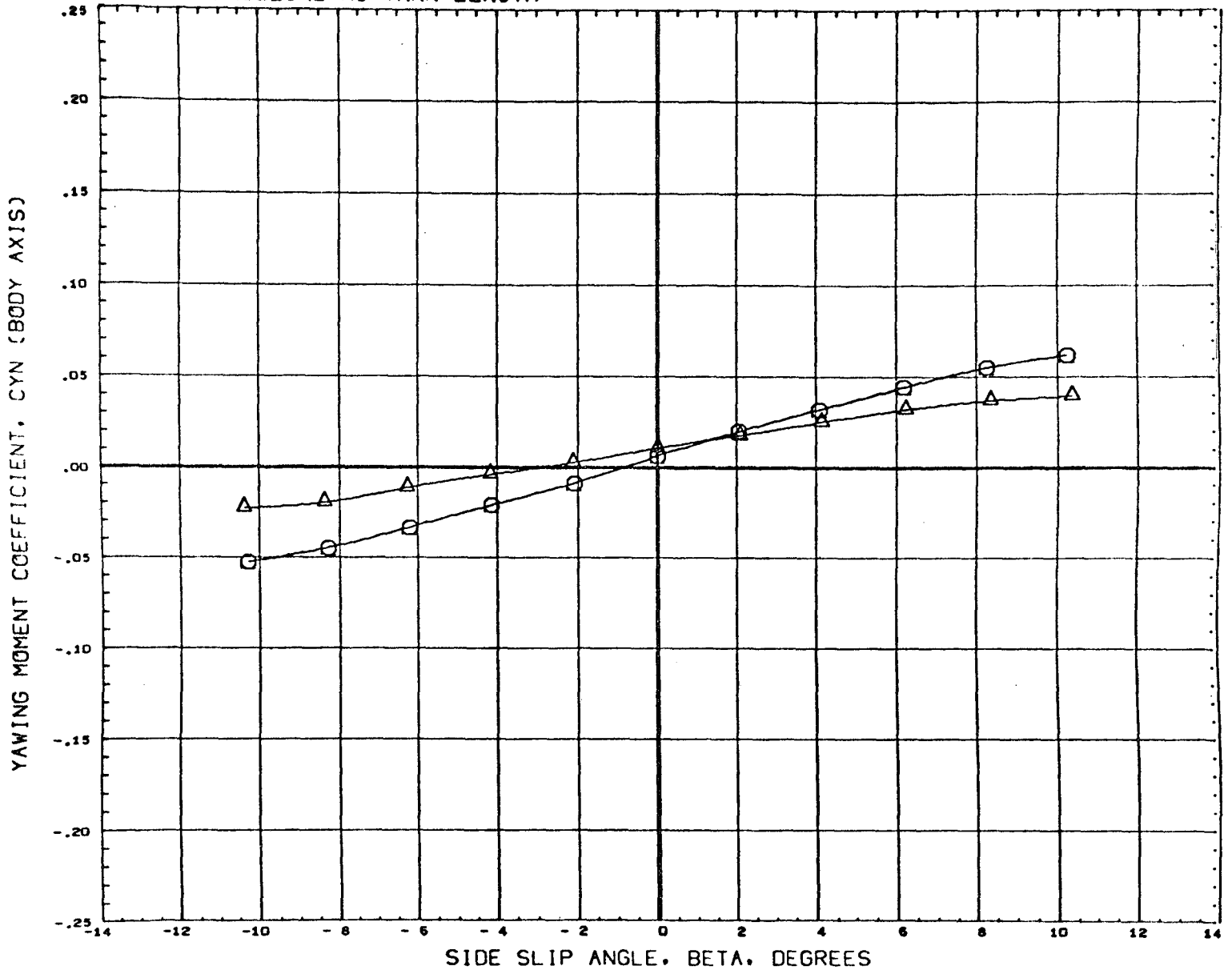
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

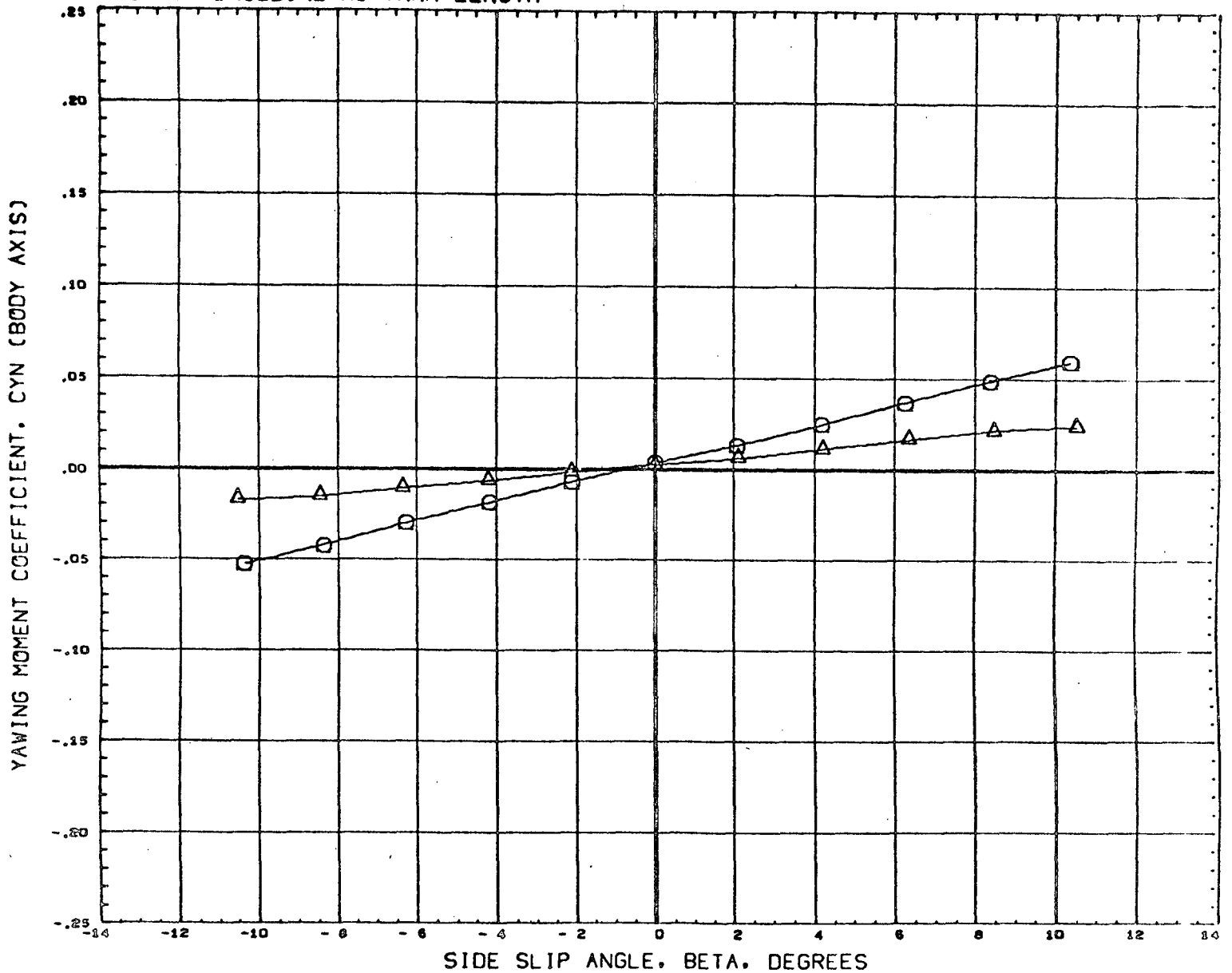
# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF BASELINE HO TANK LENGTH

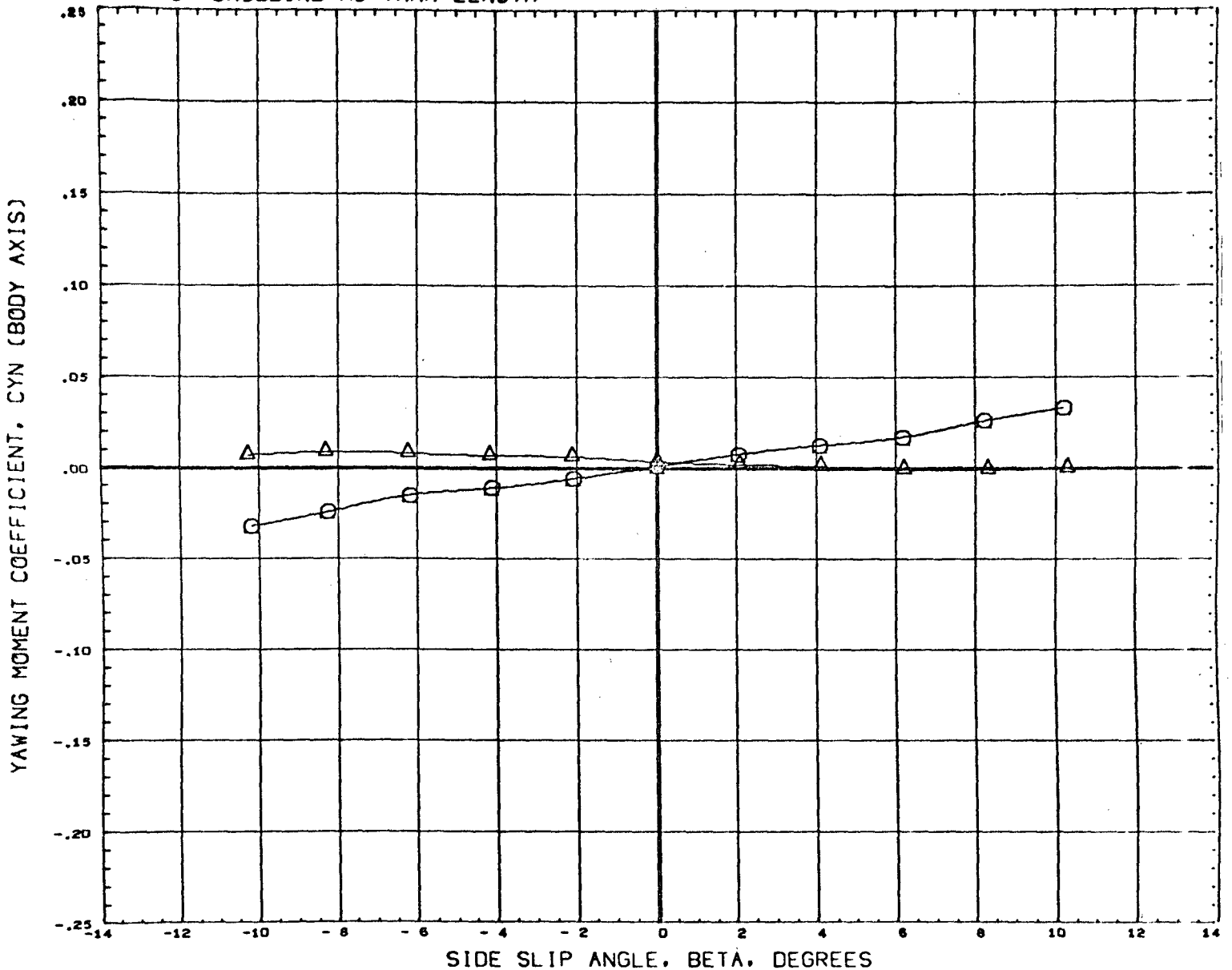


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

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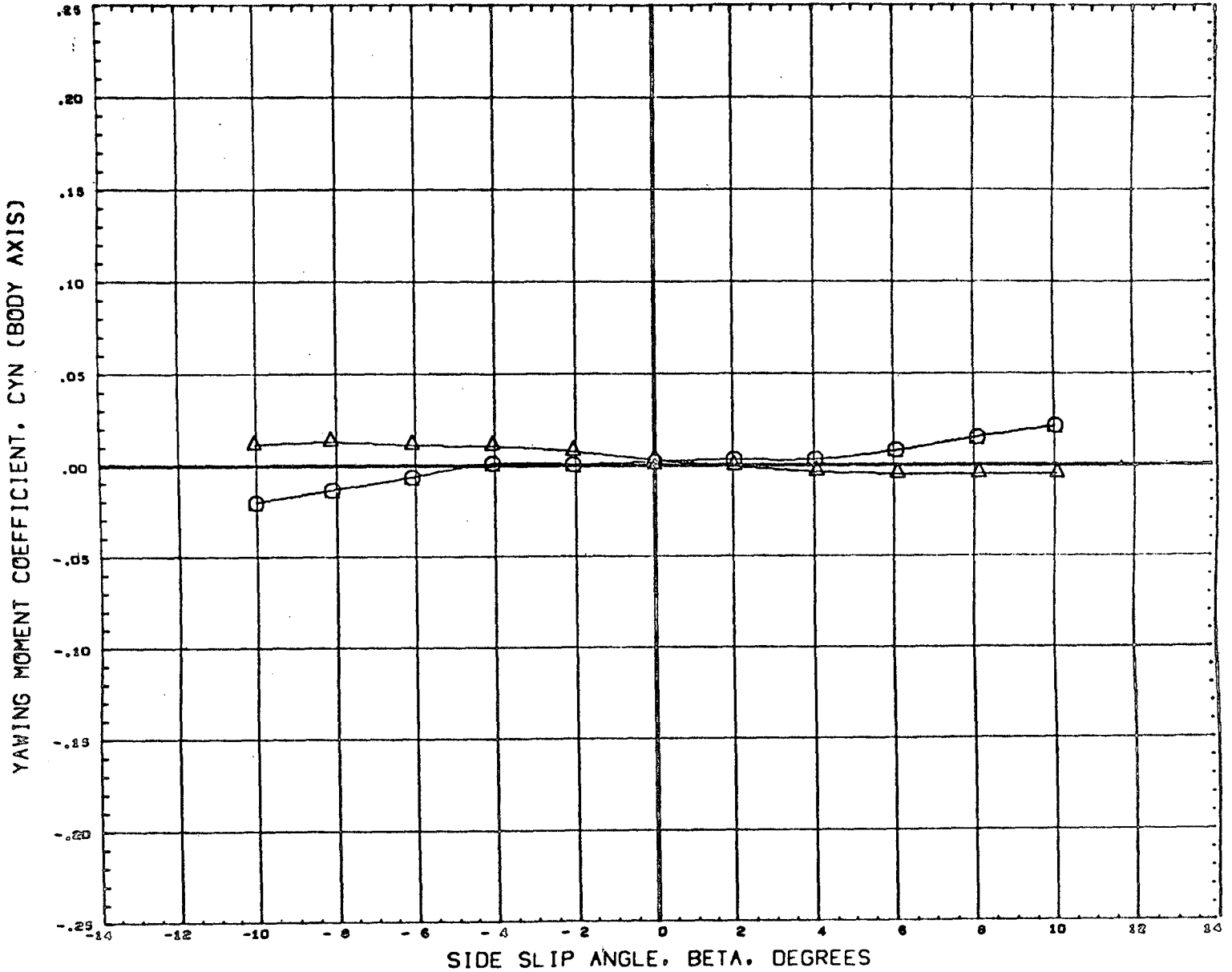
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF BASELINE H<sub>0</sub> TANK LENGTH



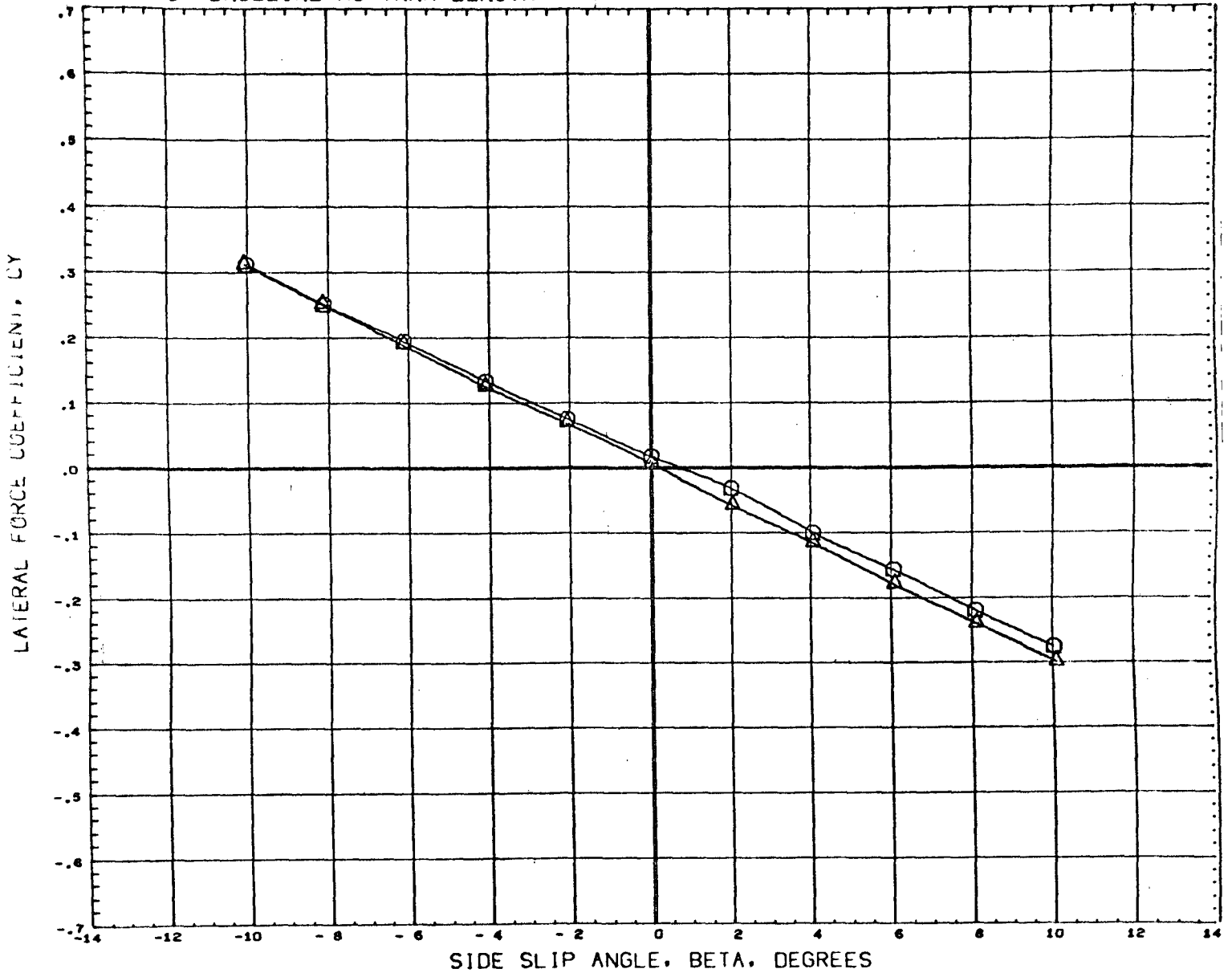
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

4.96



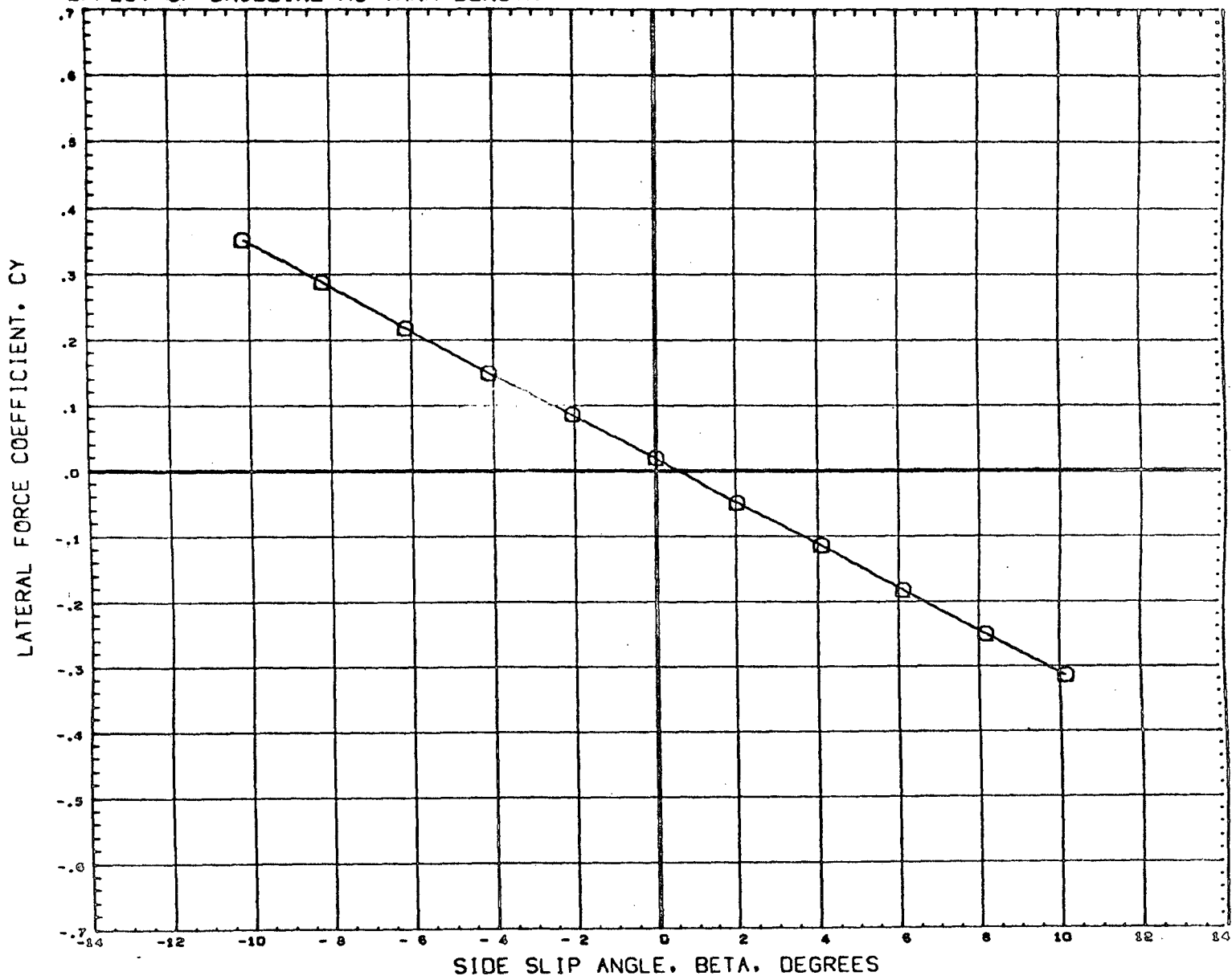
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

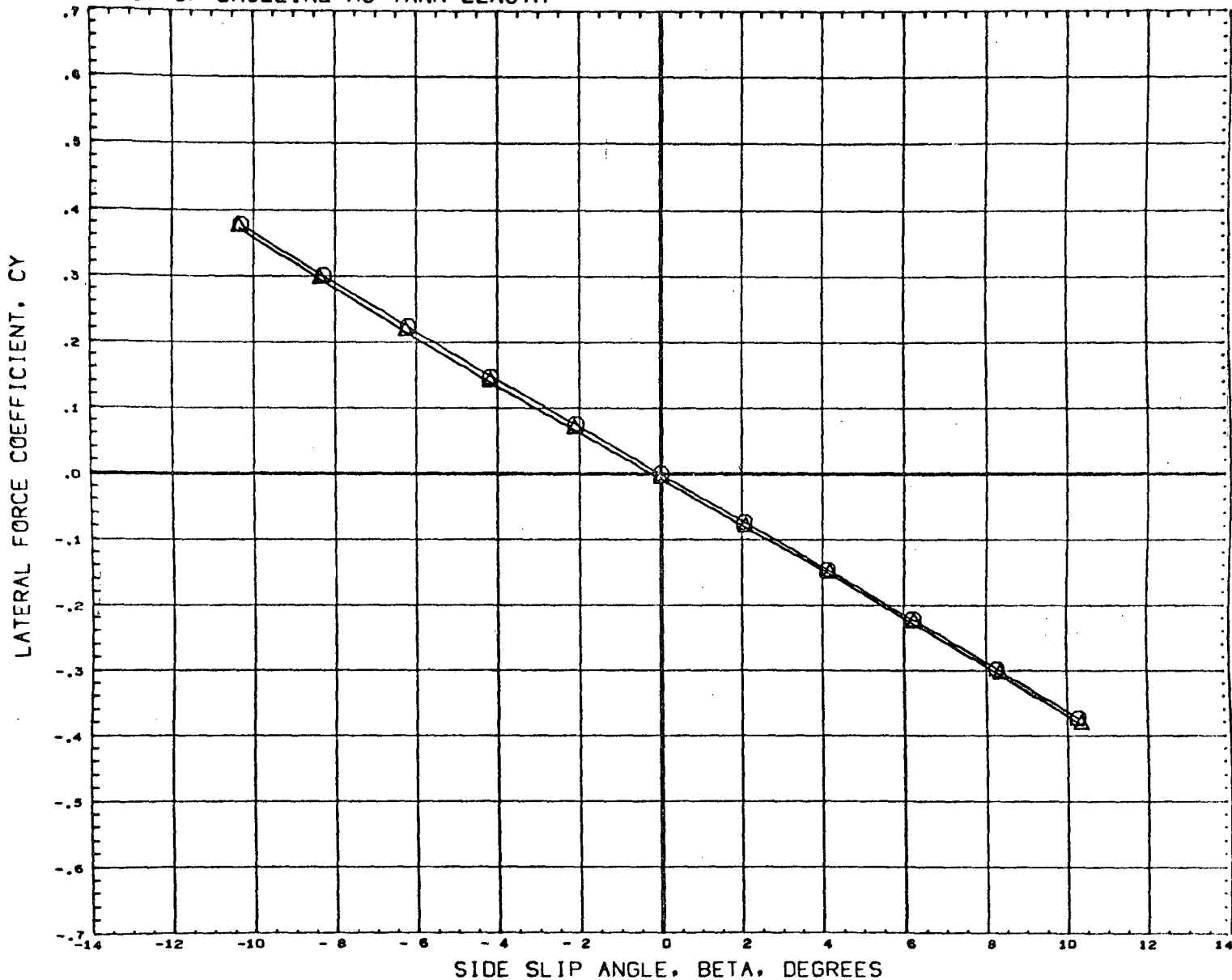
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 80. IN
(A71042)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF BASELINE H0 TANK LENGTH



SIDE SLIP ANGLE, BETA, DEGREES

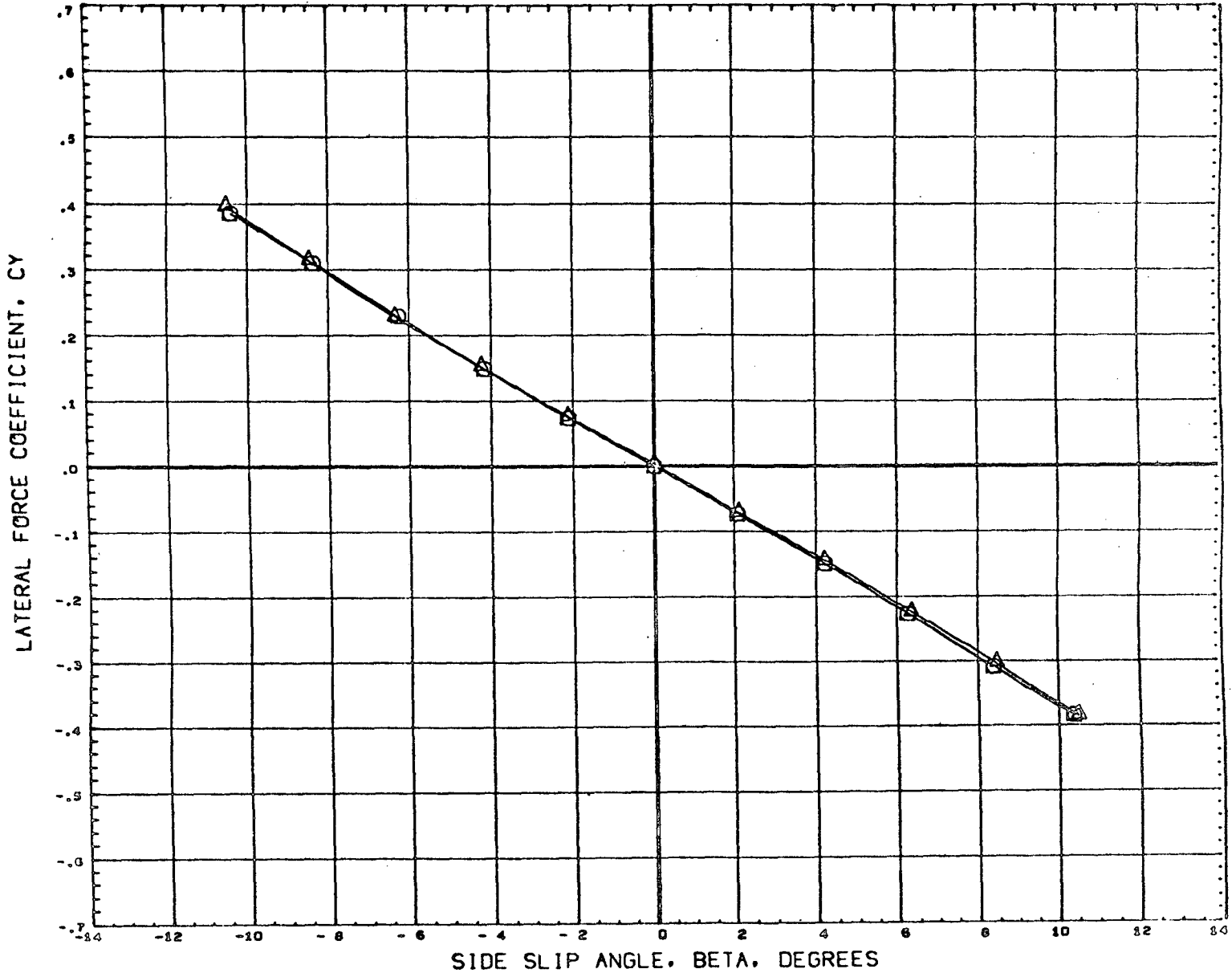
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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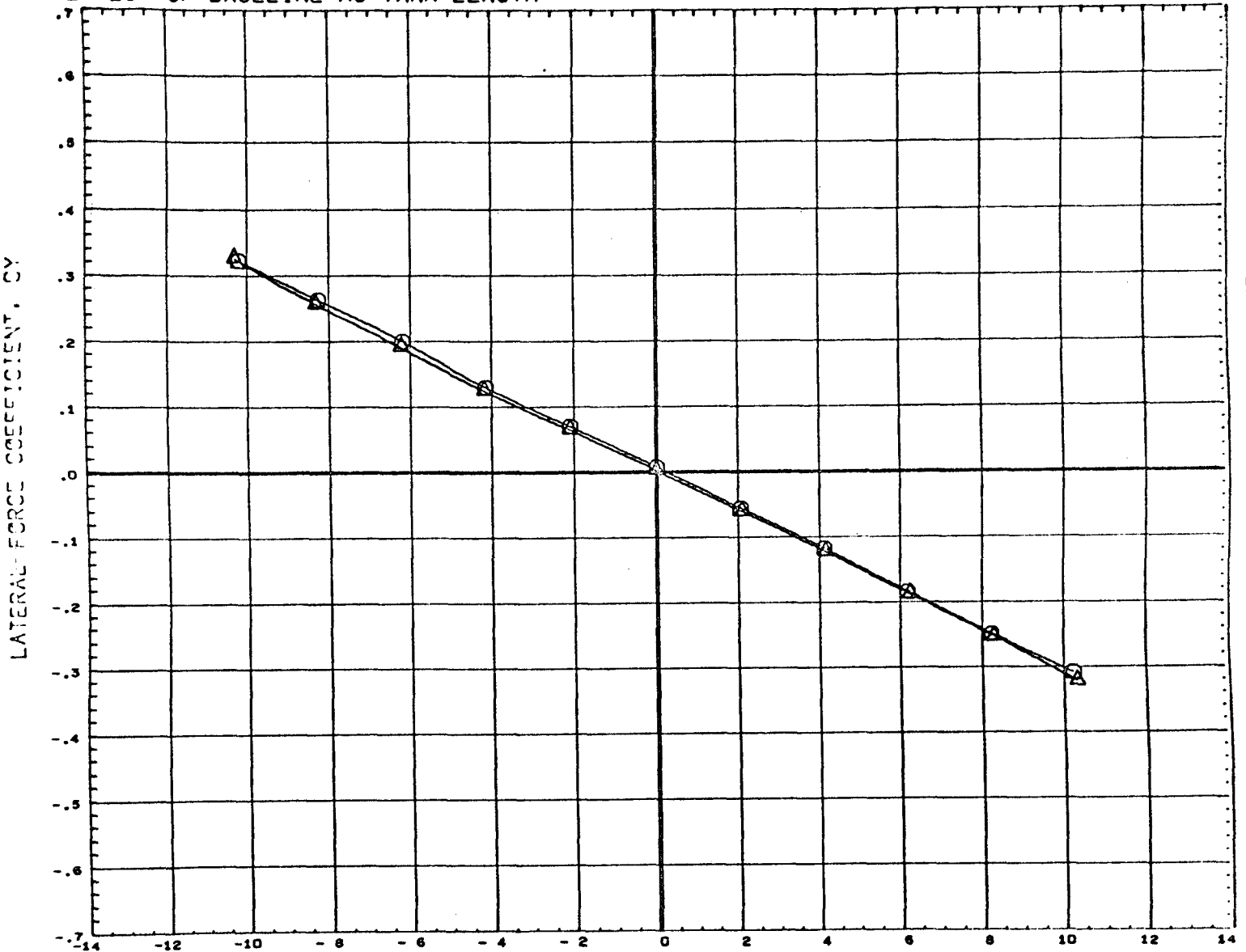
# EFFECT OF BASELINE H0 TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8000 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRF 3.3600 IN.
						YMRF 0.0000 IN.
						ZMRF 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

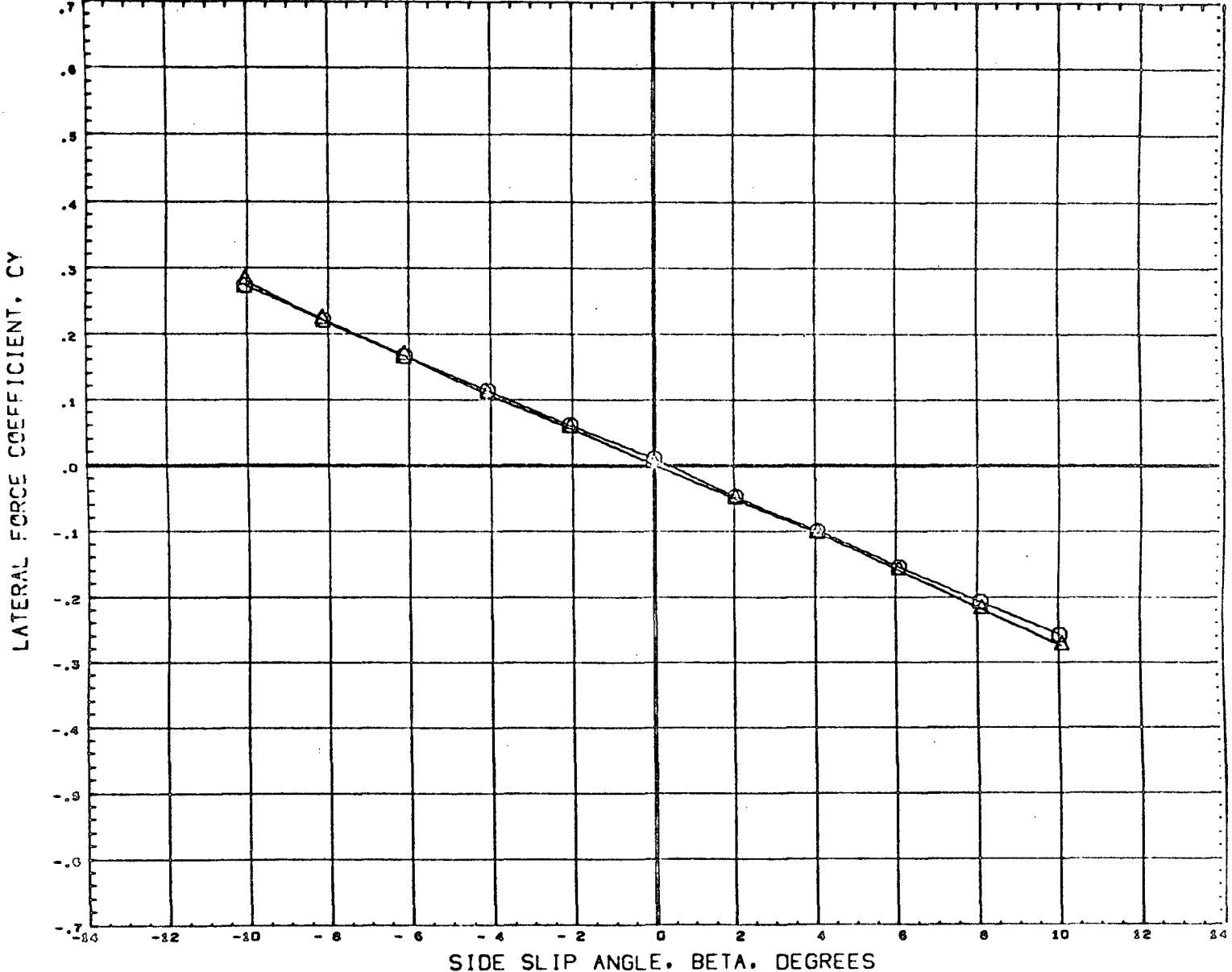
# EFFECT OF BASELINE HO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 3.48

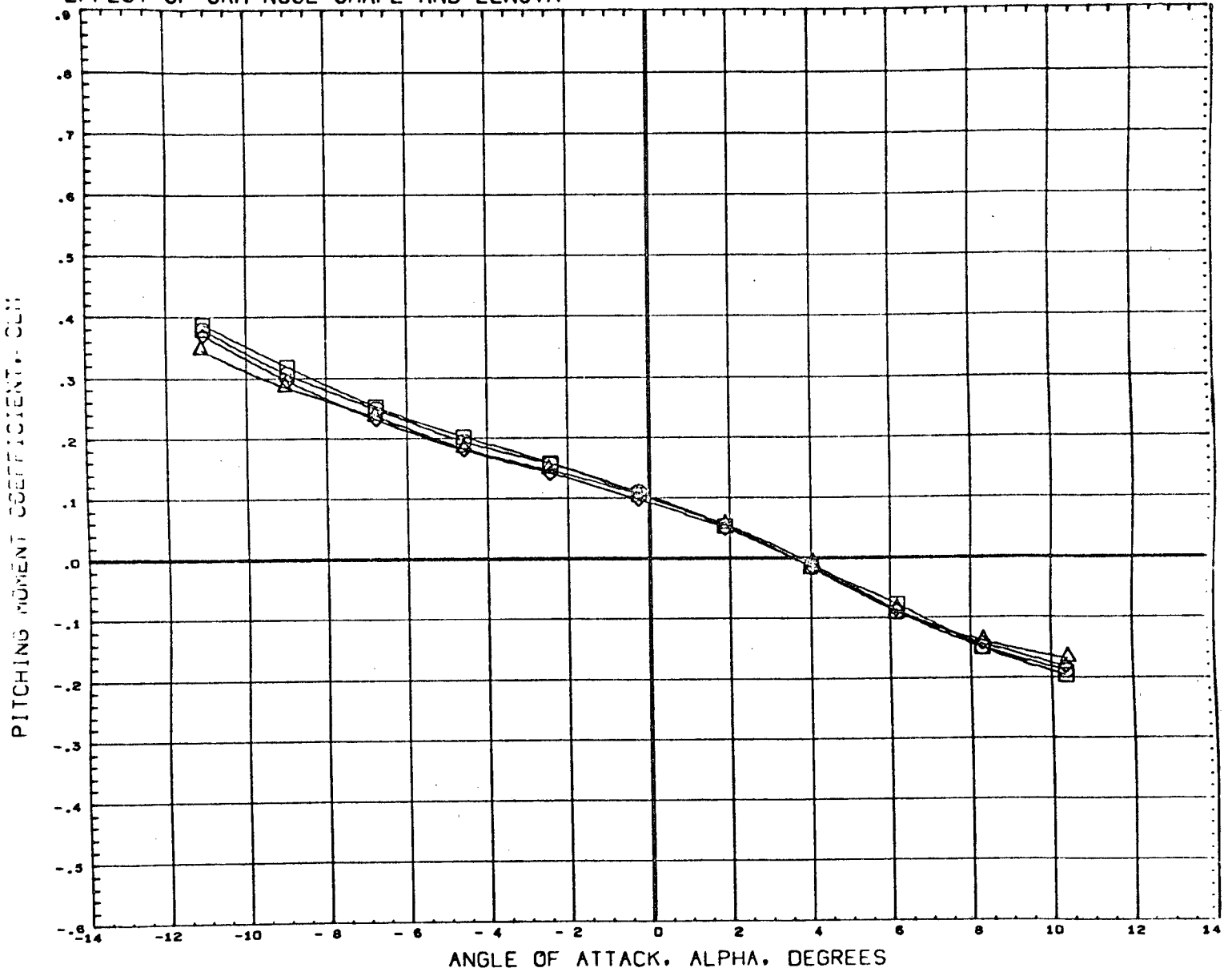
# EFFECT OF BASELINE NO TANK LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

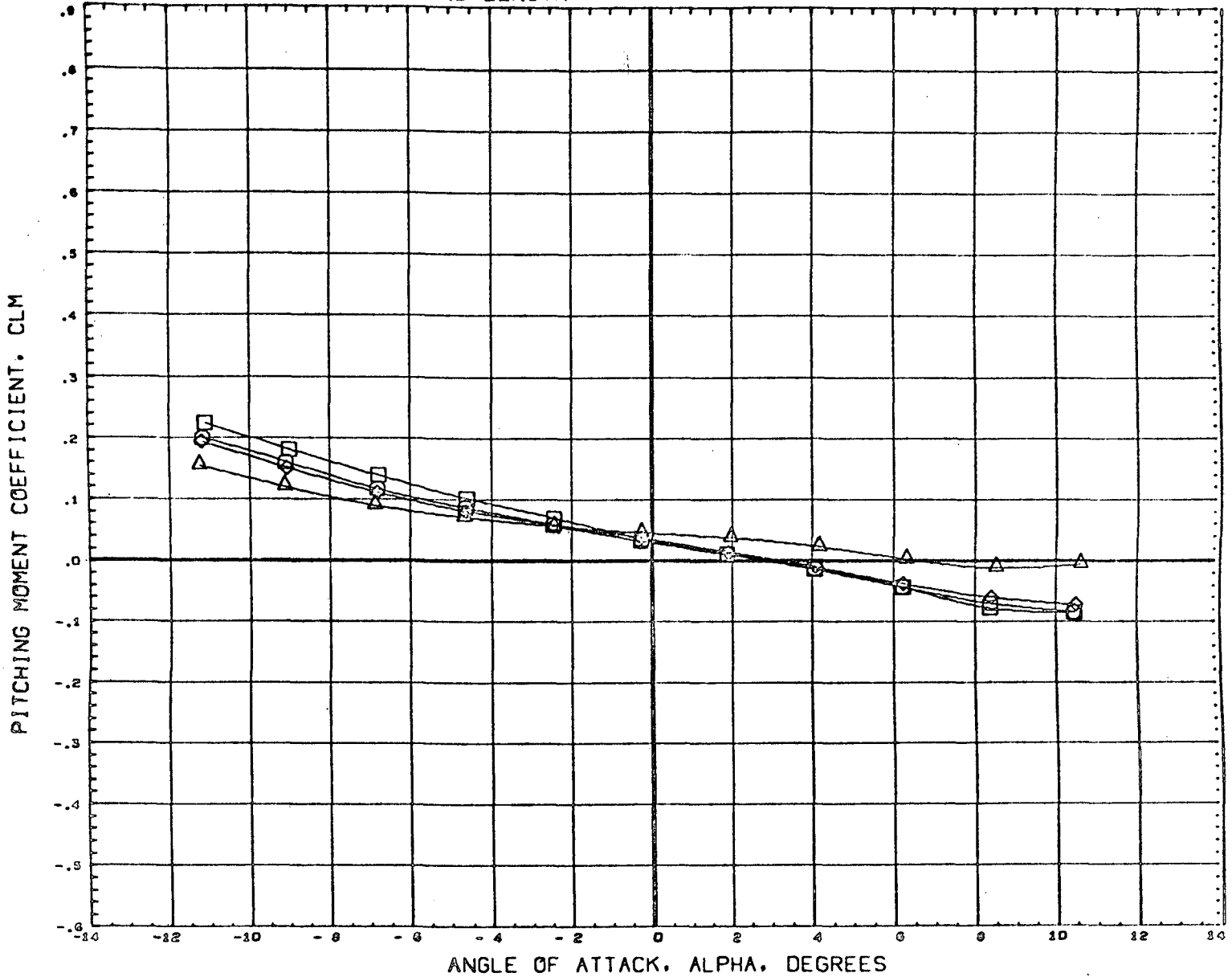
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM NOSE SHAPE AND LENGTH

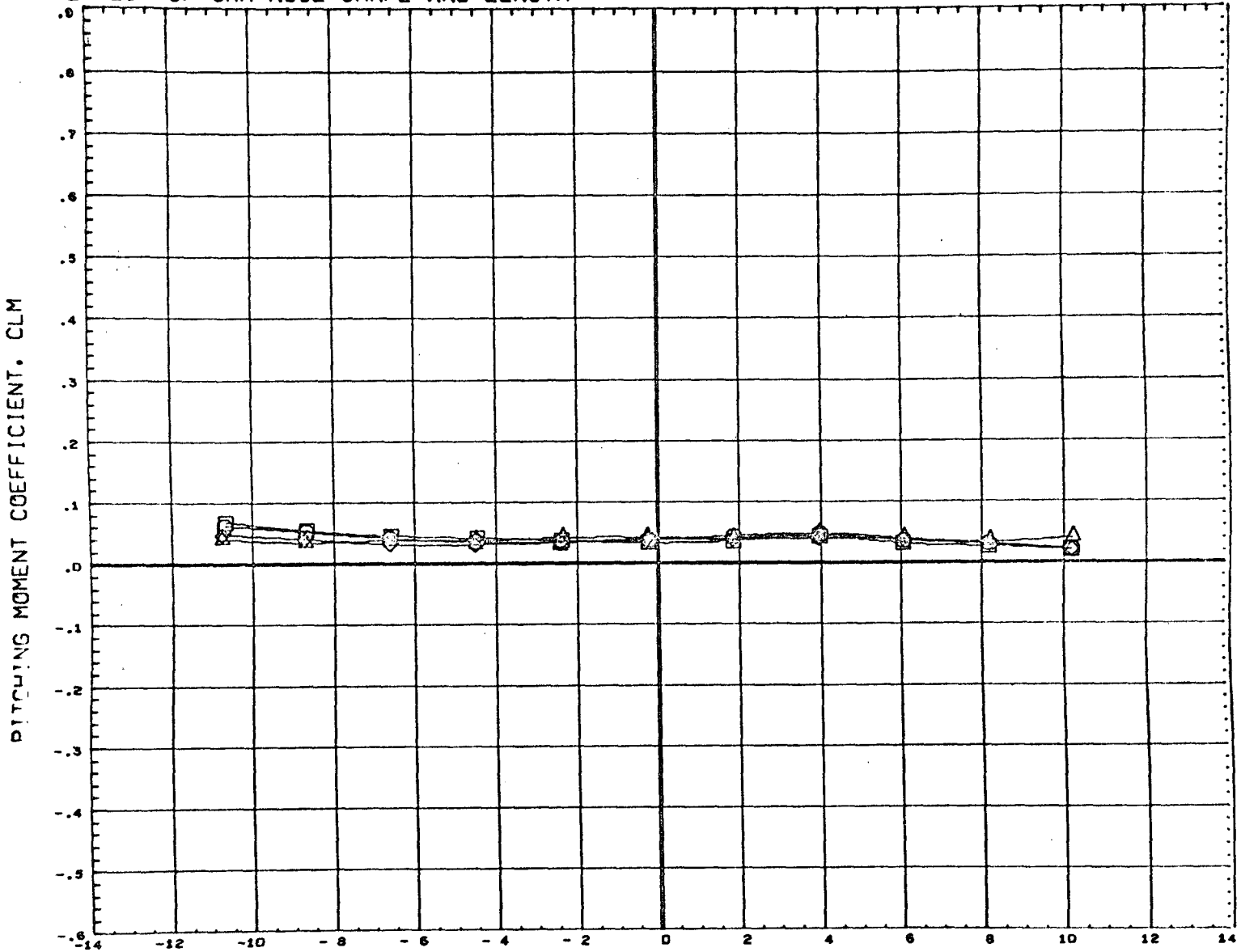


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97



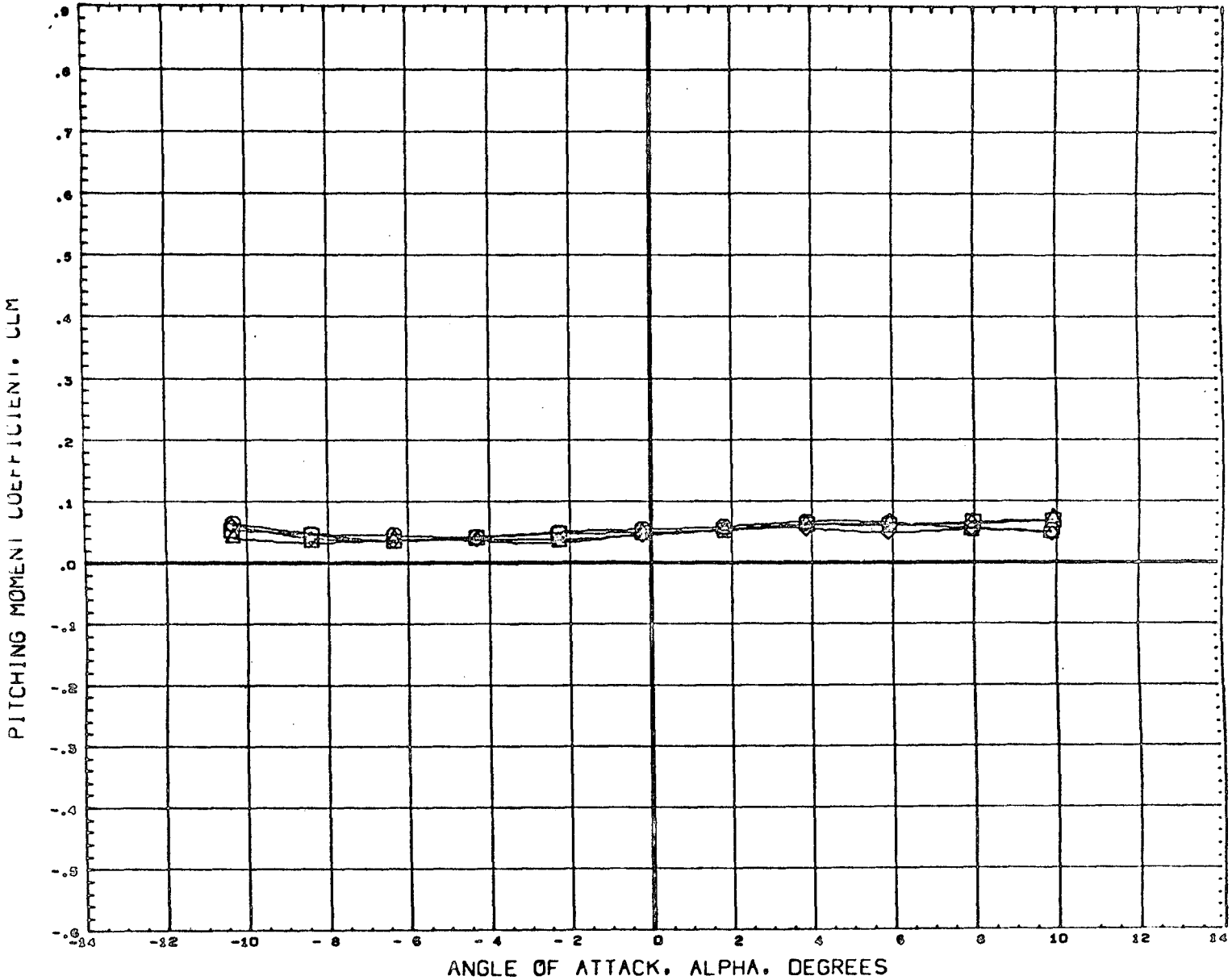
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 50. IN
(071027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(871021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(871023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

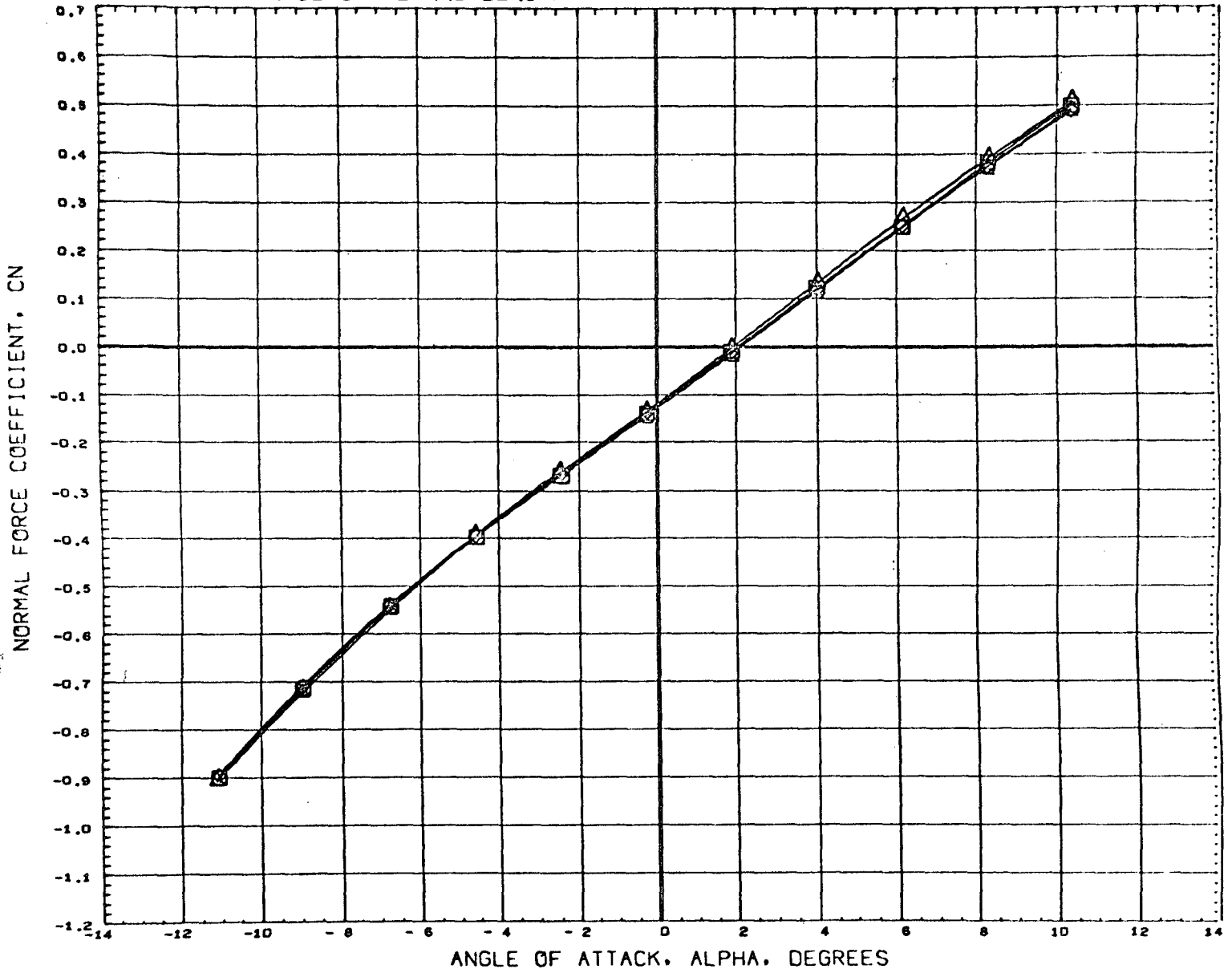
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

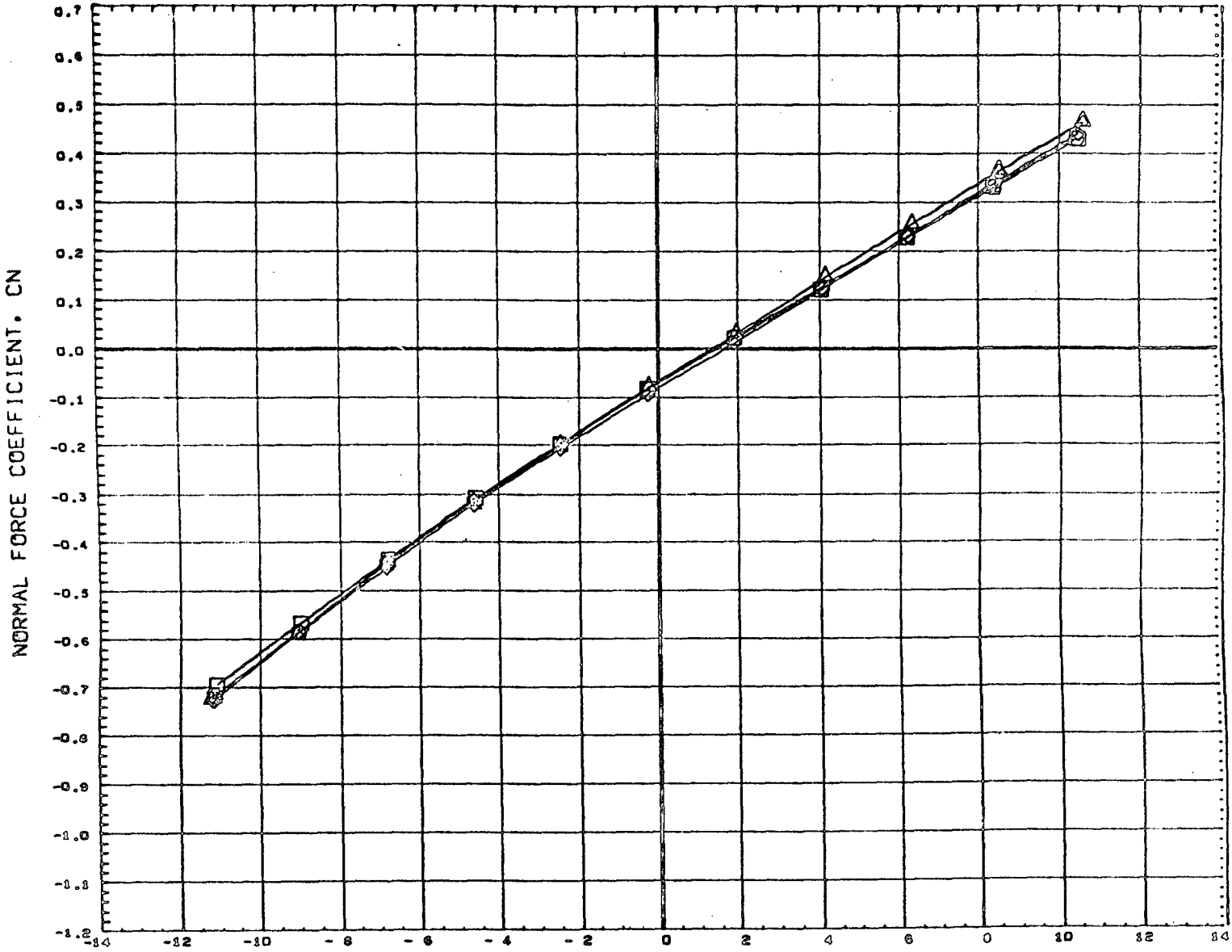
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S4	-1.500	75.000	0.000	0.000	YMRP 3.3600 IN.
						ZMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

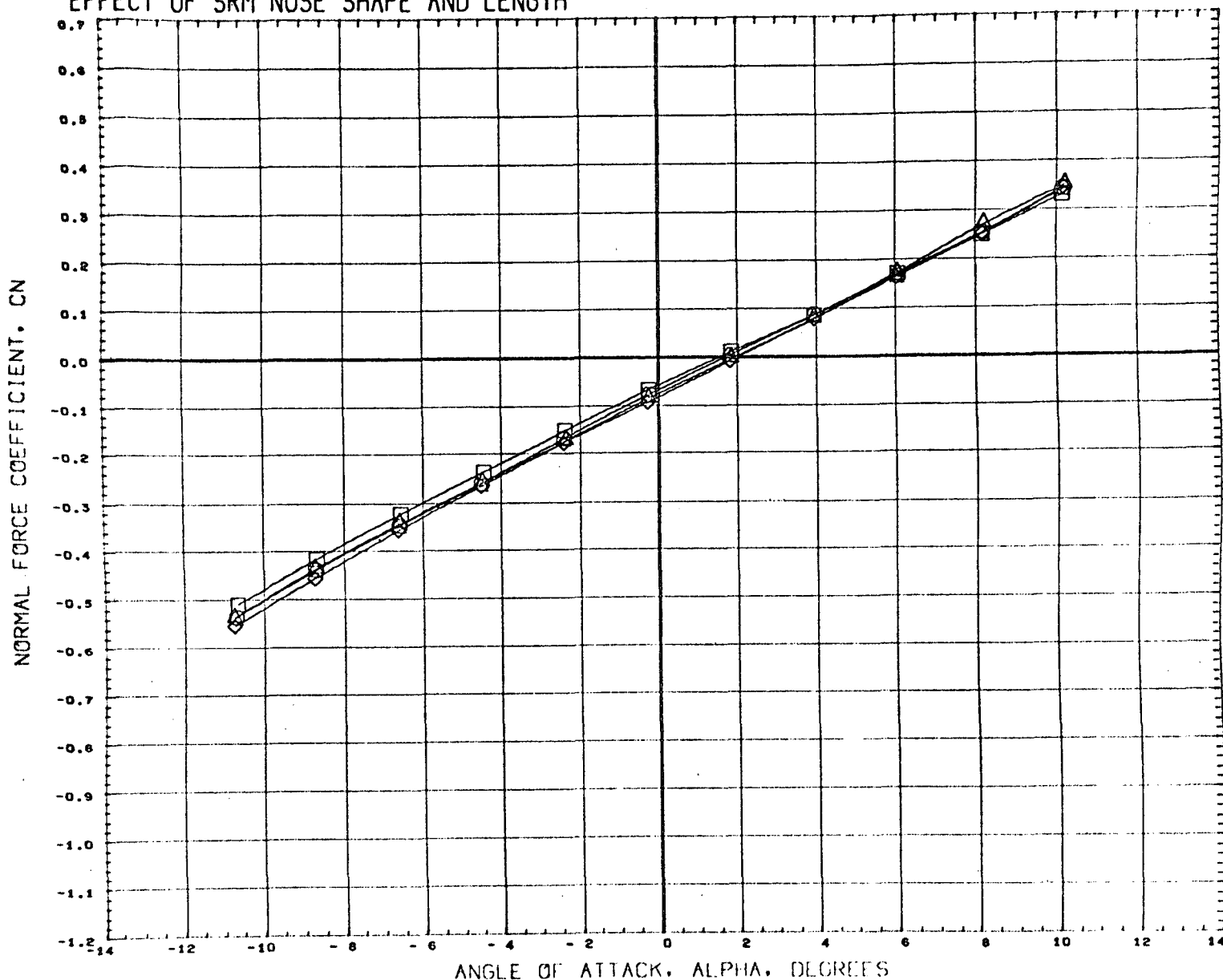
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S3	-1.500	75.000	0.000	0.000	BREF 4.4800 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

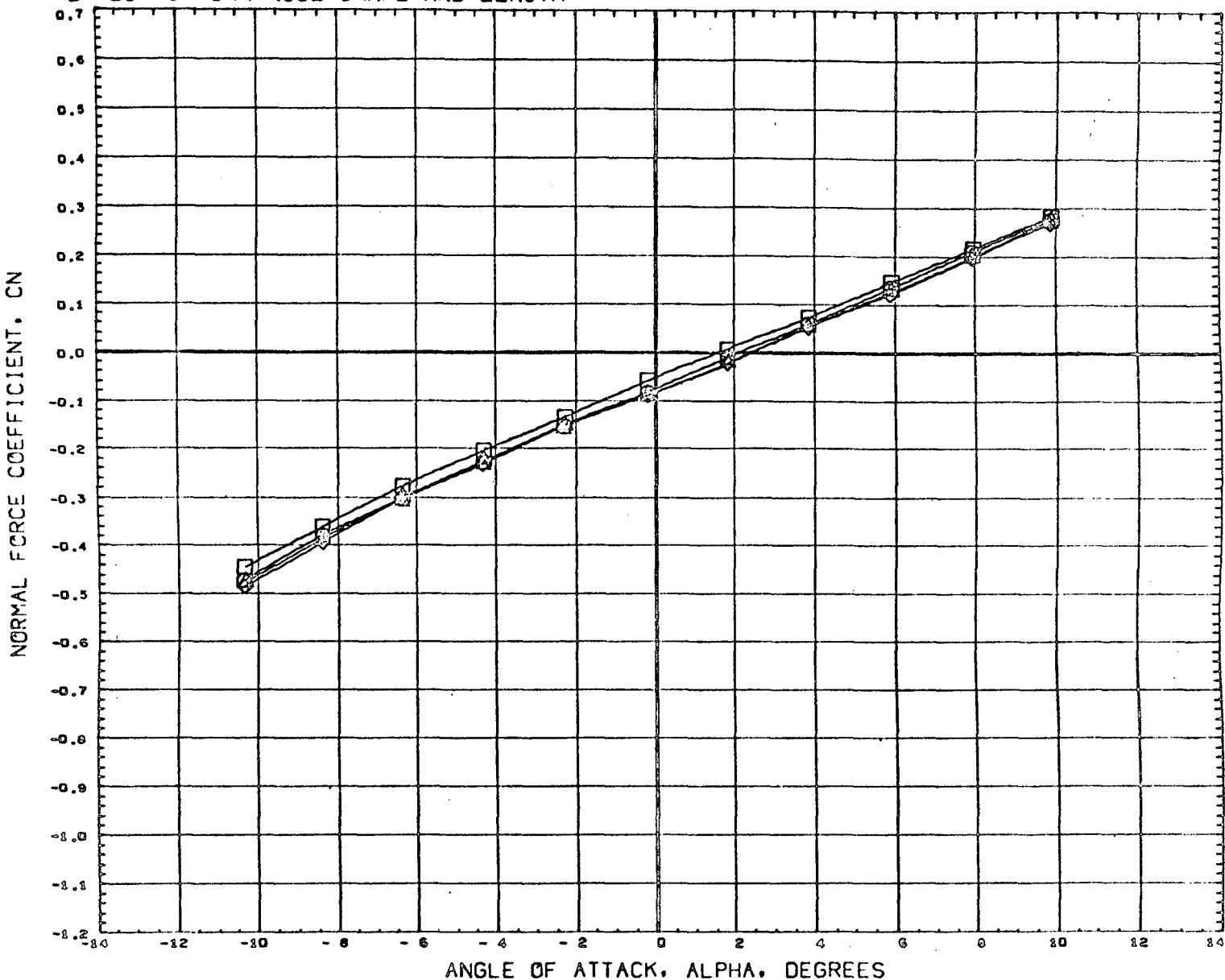
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T10151	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T10152	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T10153	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T10154	-1.500	75.000	0.000	0.000	XHRP 3.3600 IN.
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						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF SRM NOSE SHAPE AND LENGTH

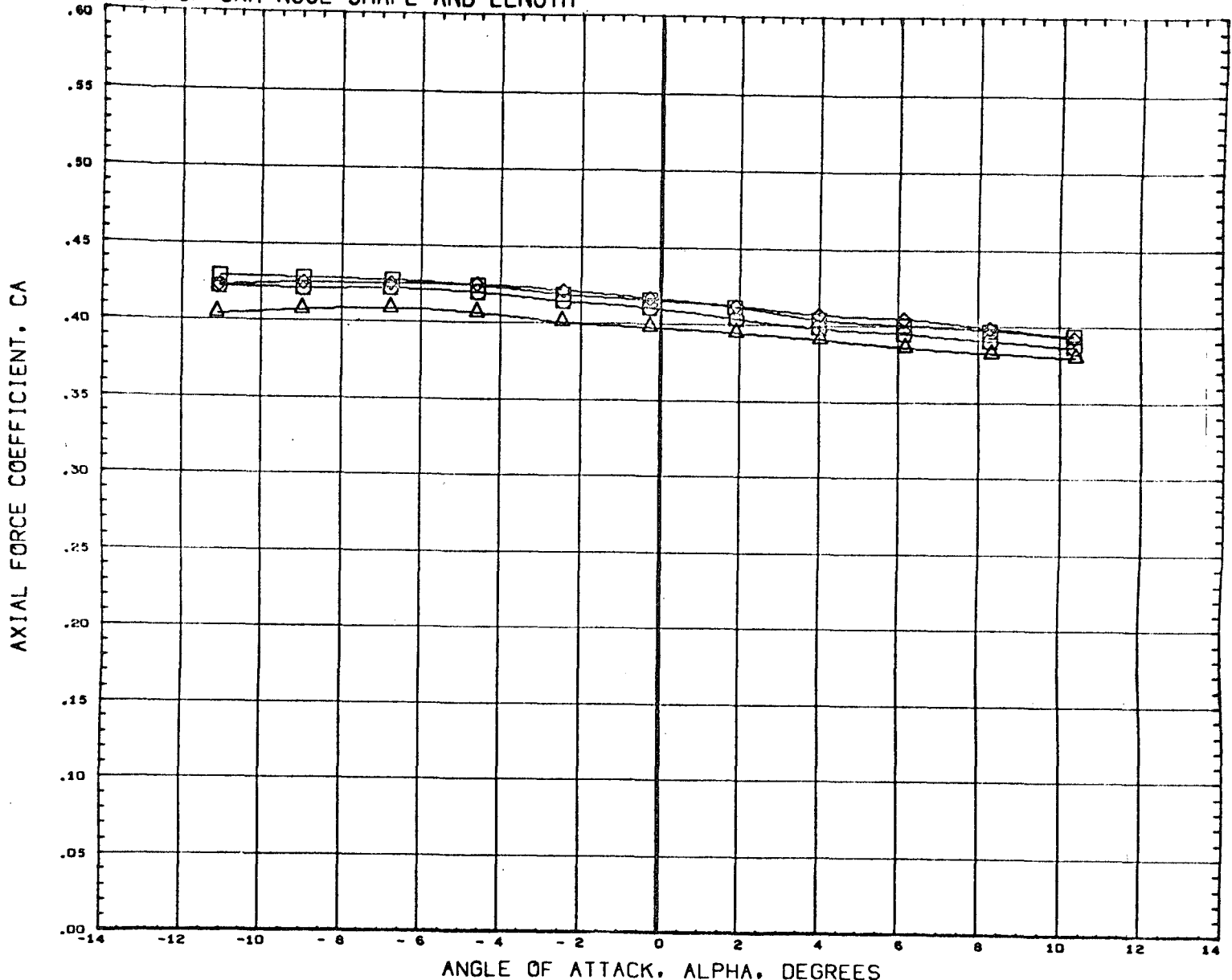


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(D71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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# EFFECT OF SRM NOSE SHAPE AND LENGTH

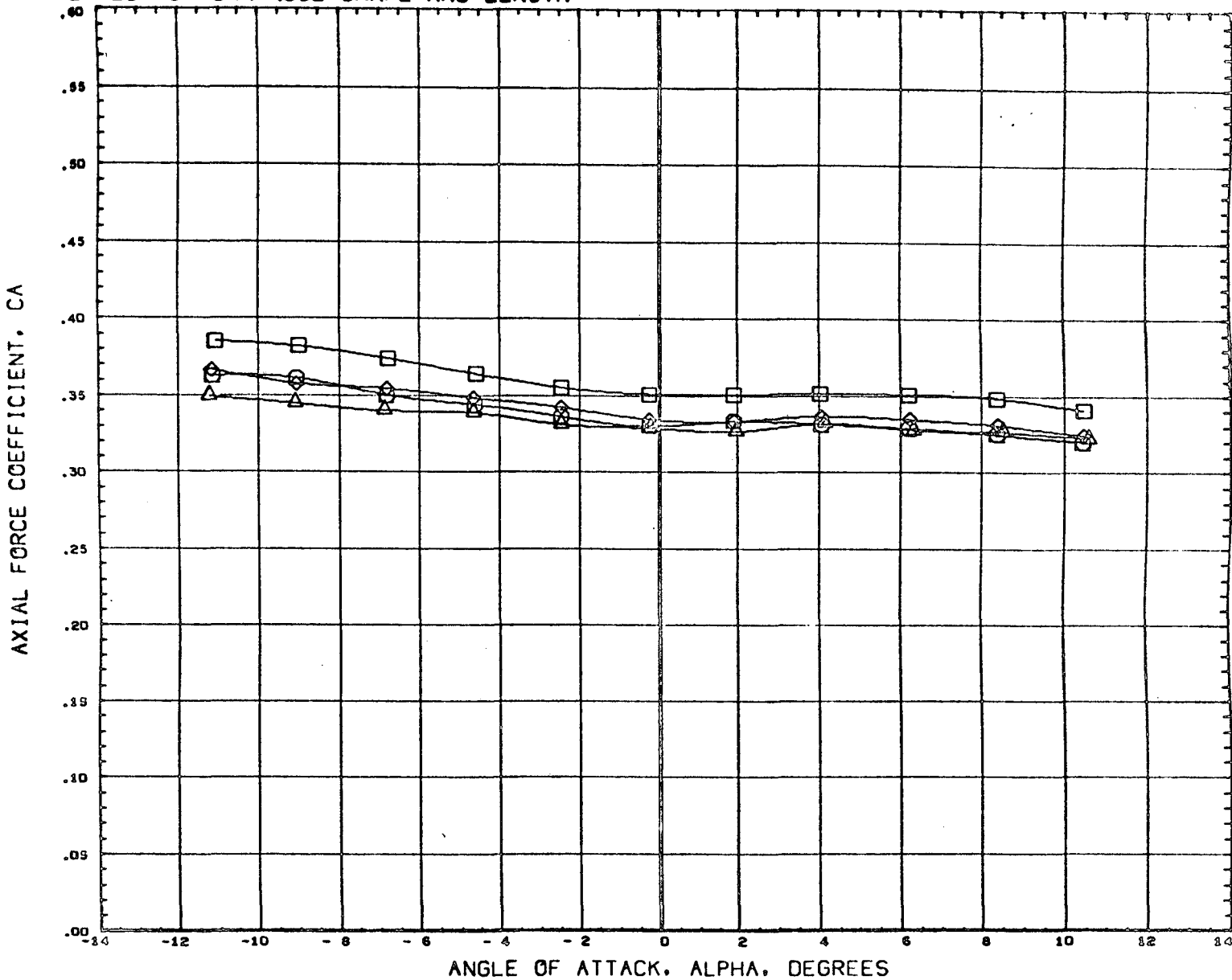


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

DR

# EFFECT OF SRM NOSE SHAPE AND LENGTH



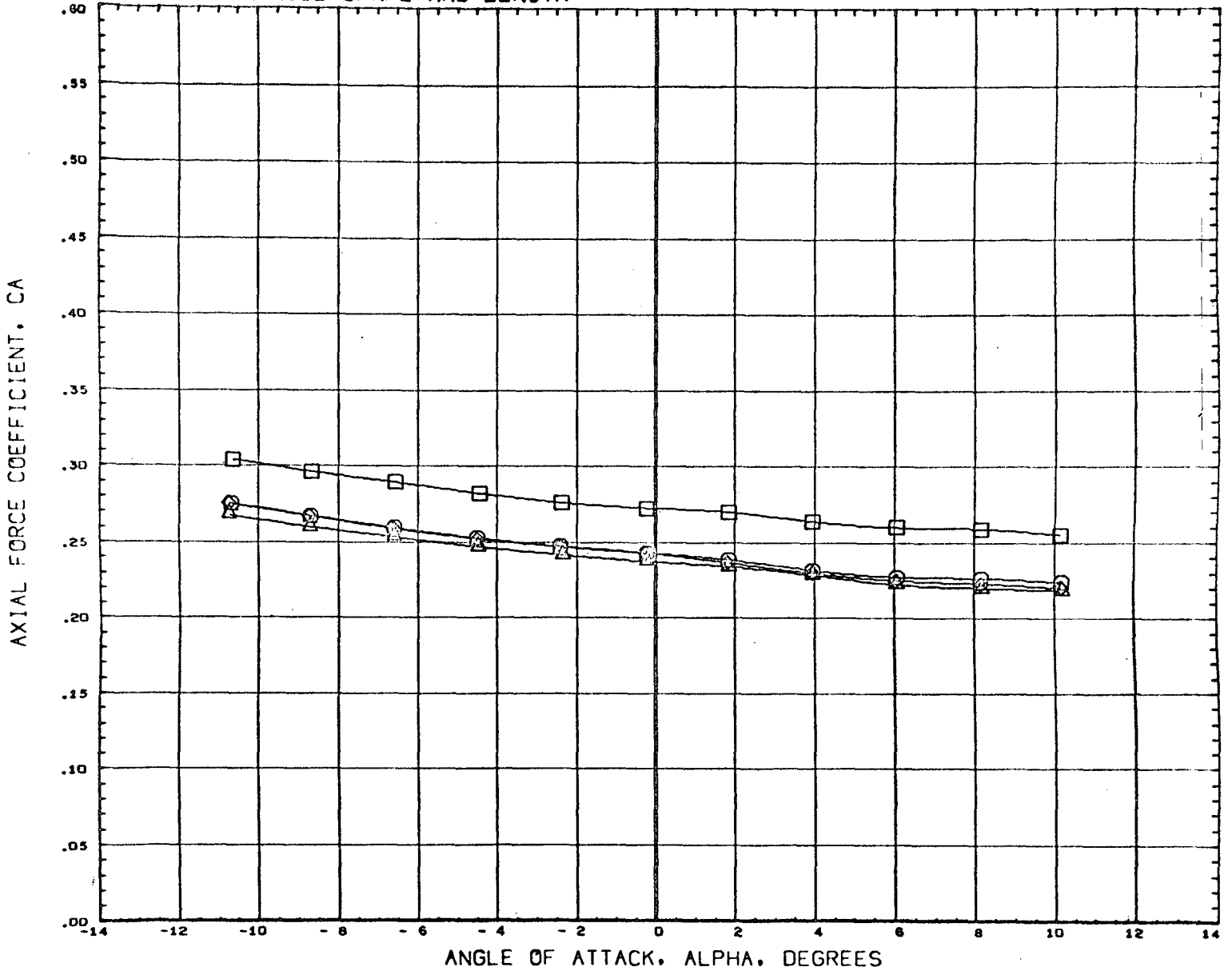
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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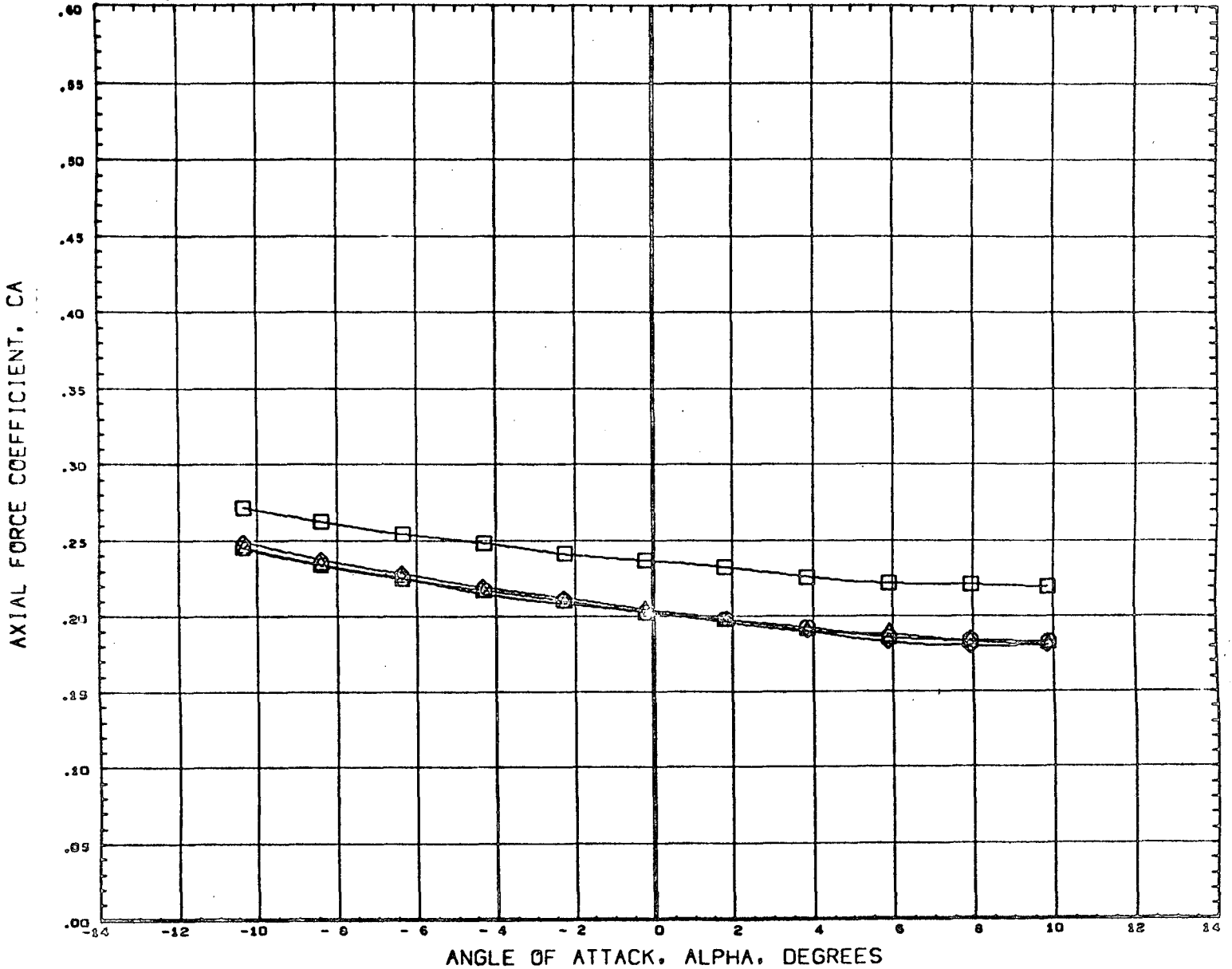
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITAL	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(D71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(D71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF SRM NOSE SHAPE AND LENGTH



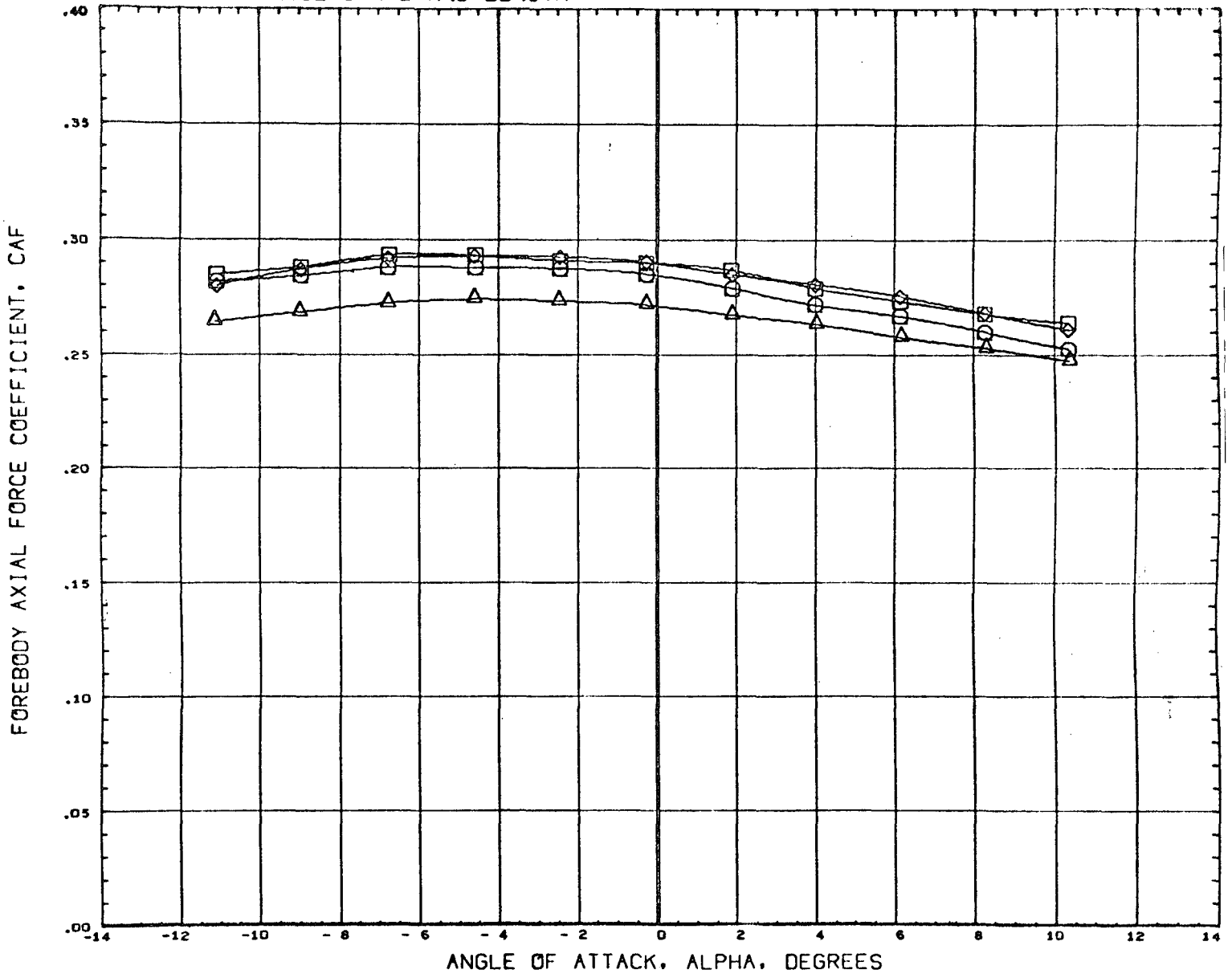
DATA SET SYMBO	CONFIGURATION DESCRIPTION	TIOIS	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH

4.96

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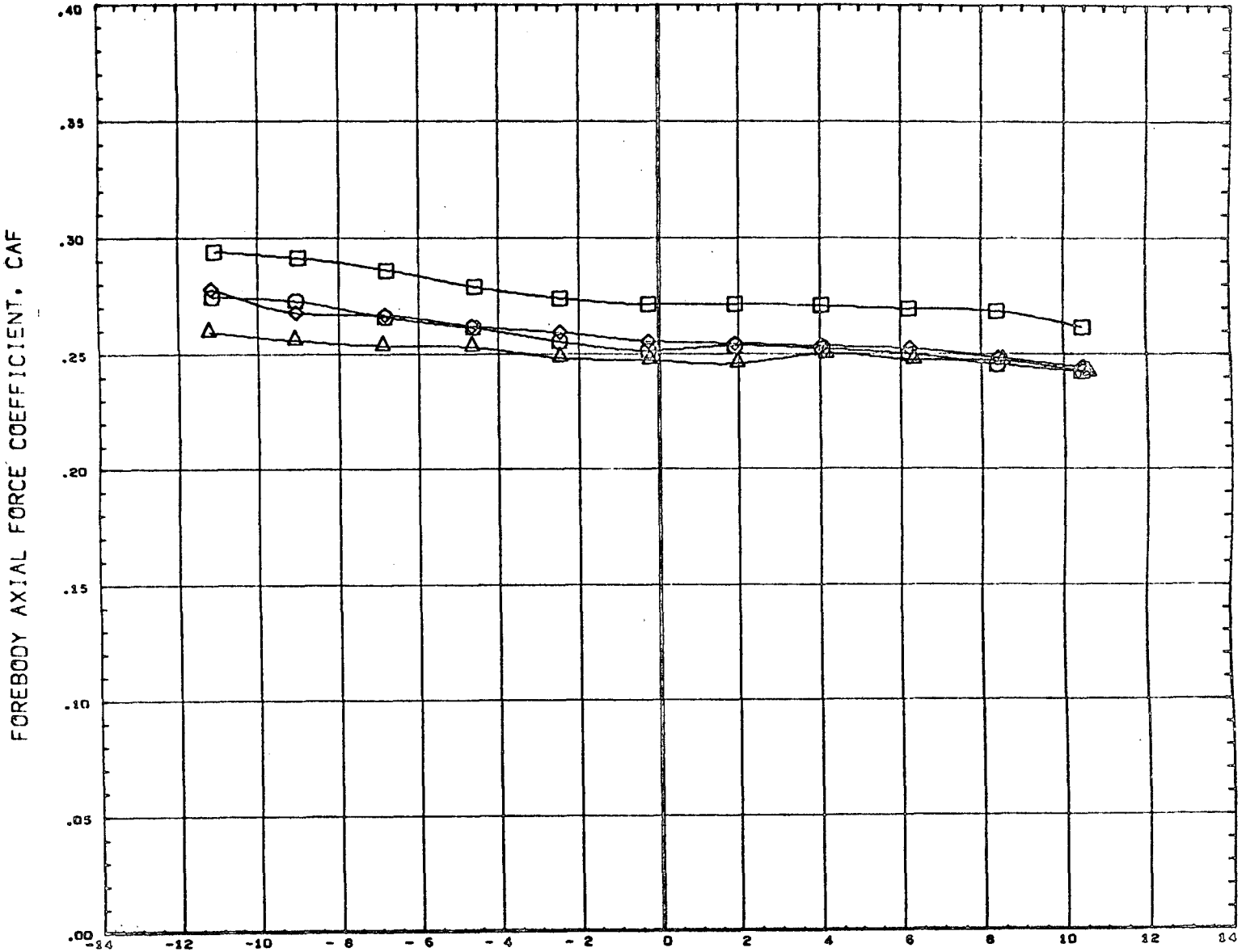
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 Sq. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(E71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM NOSE SHAPE AND LENGTH



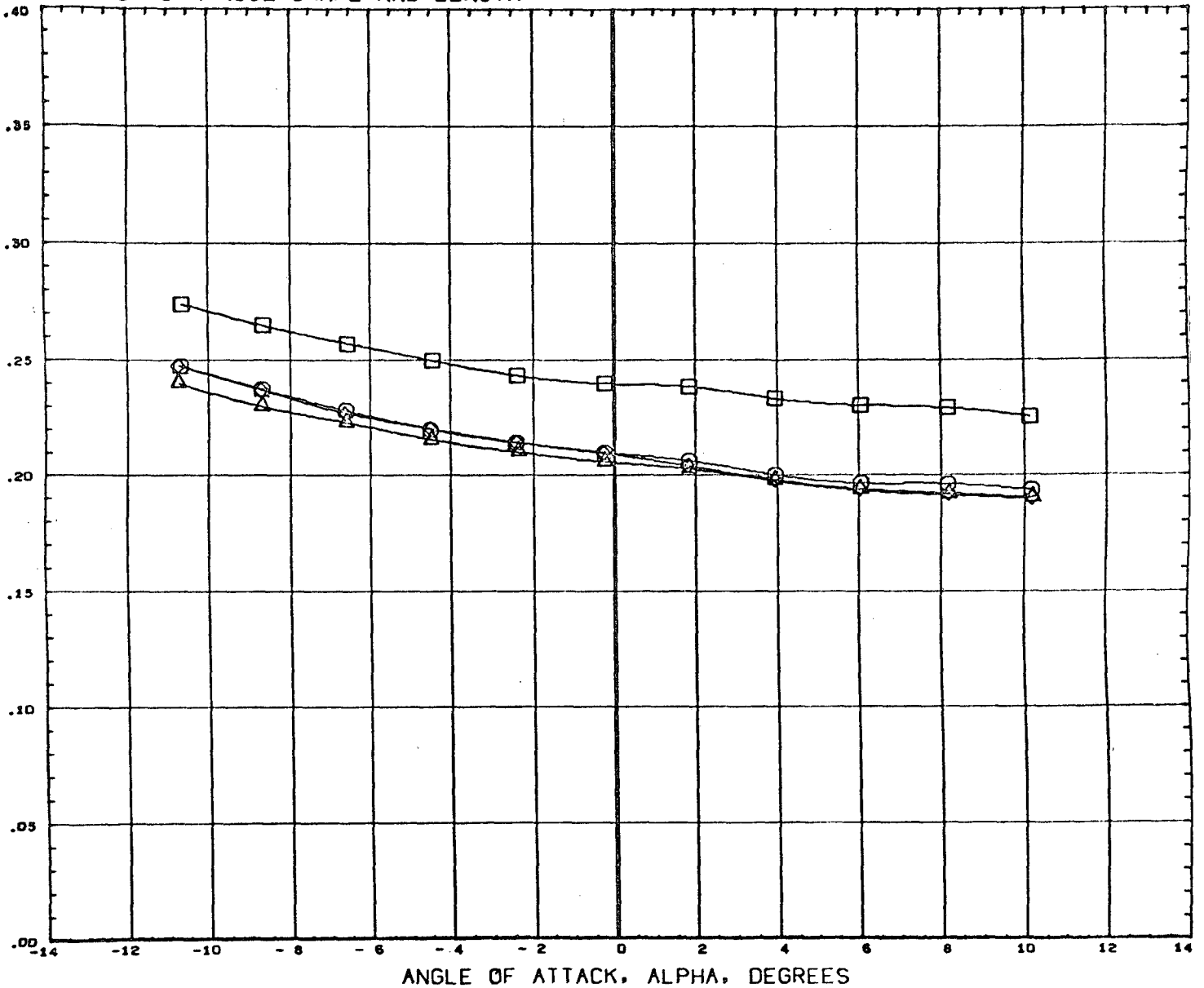
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIOIS1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIOIS1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIOIS2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIOIS3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIOIS4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF SRM NOSE SHAPE AND LENGTH

FOREBODY AXIAL FORCE COEFFICIENT, CAF

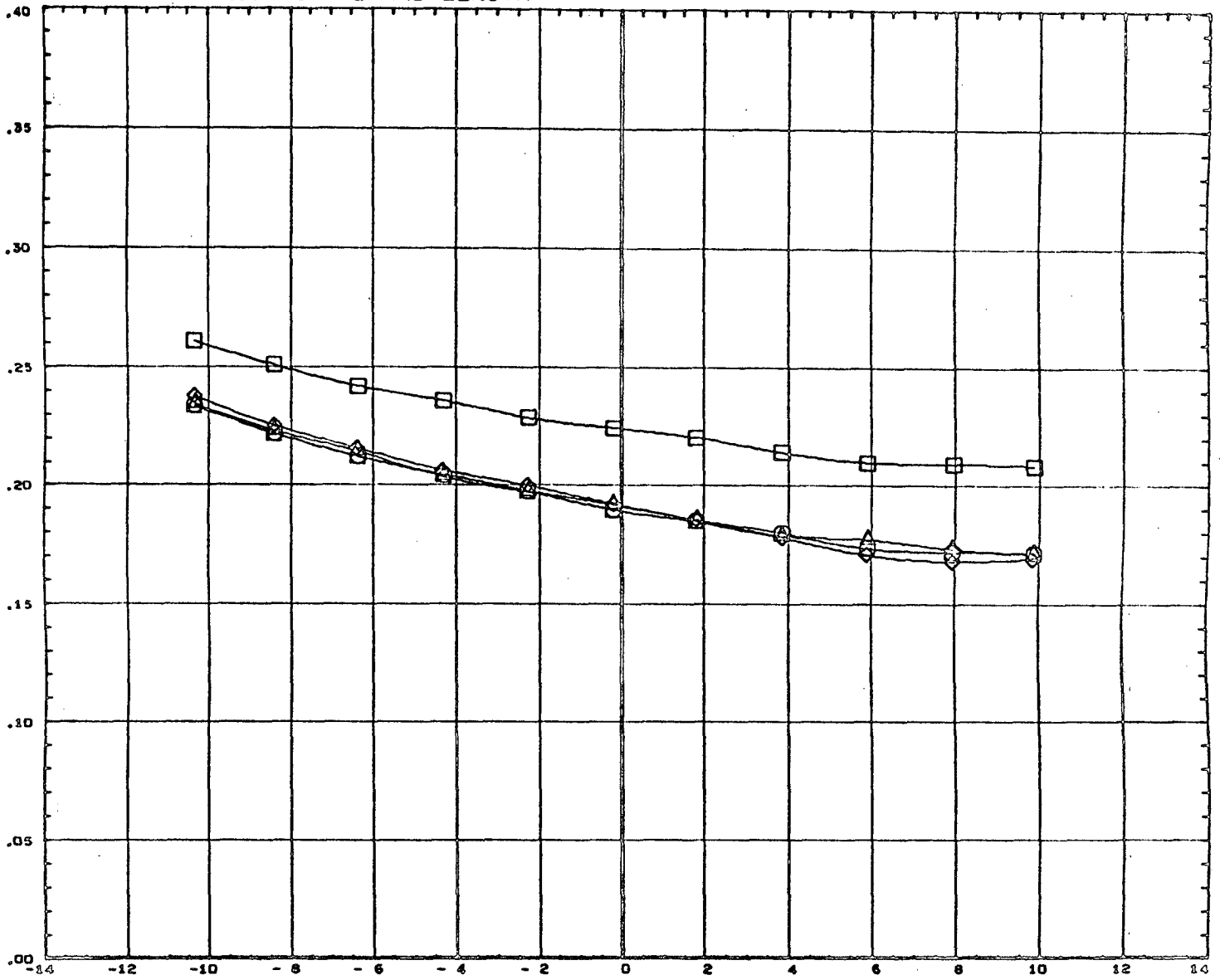


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 80. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF SRM NOSE SHAPE AND LENGTH

FOREBODY AXIAL FORCE COEFFICIENT, CAF



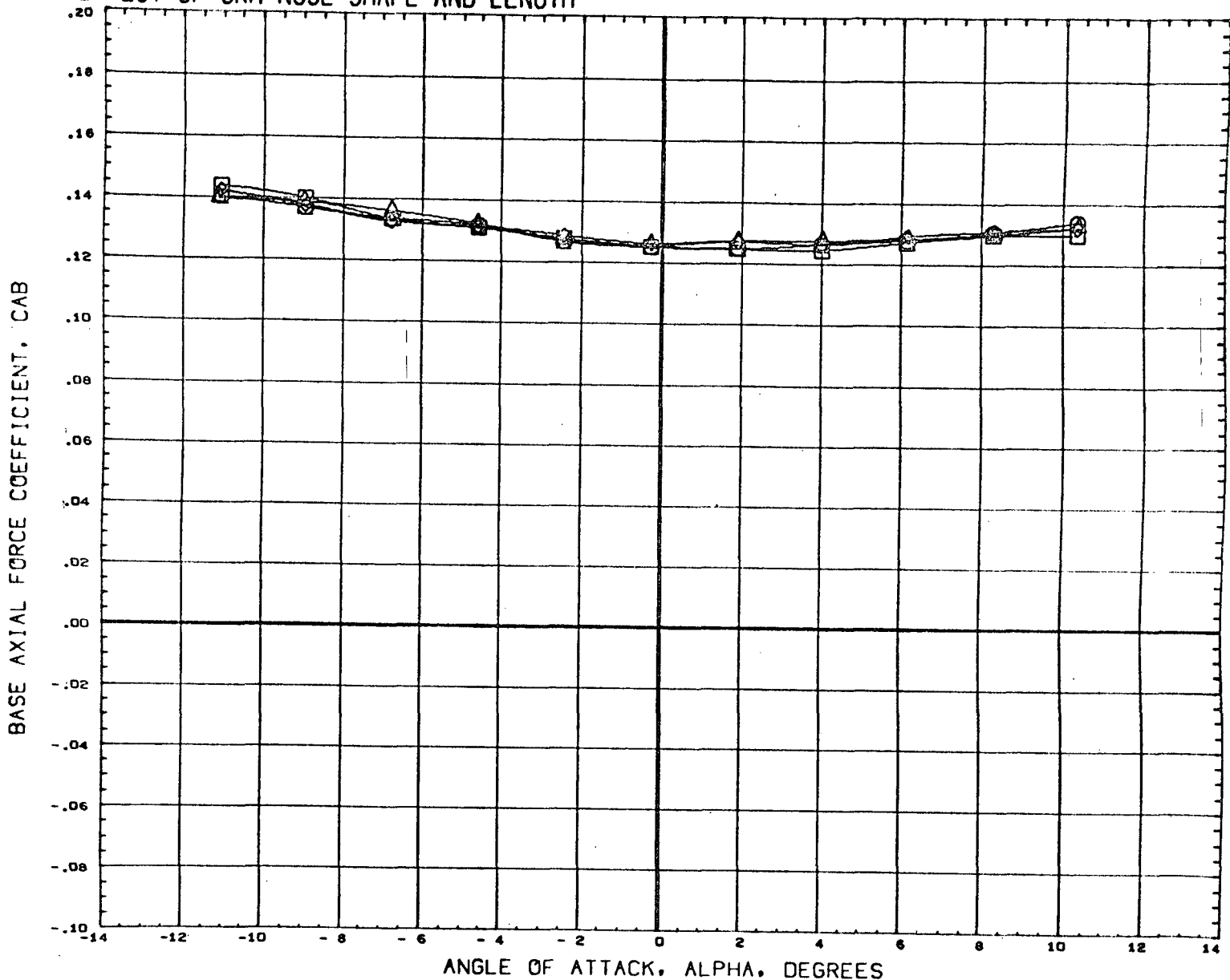
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(D71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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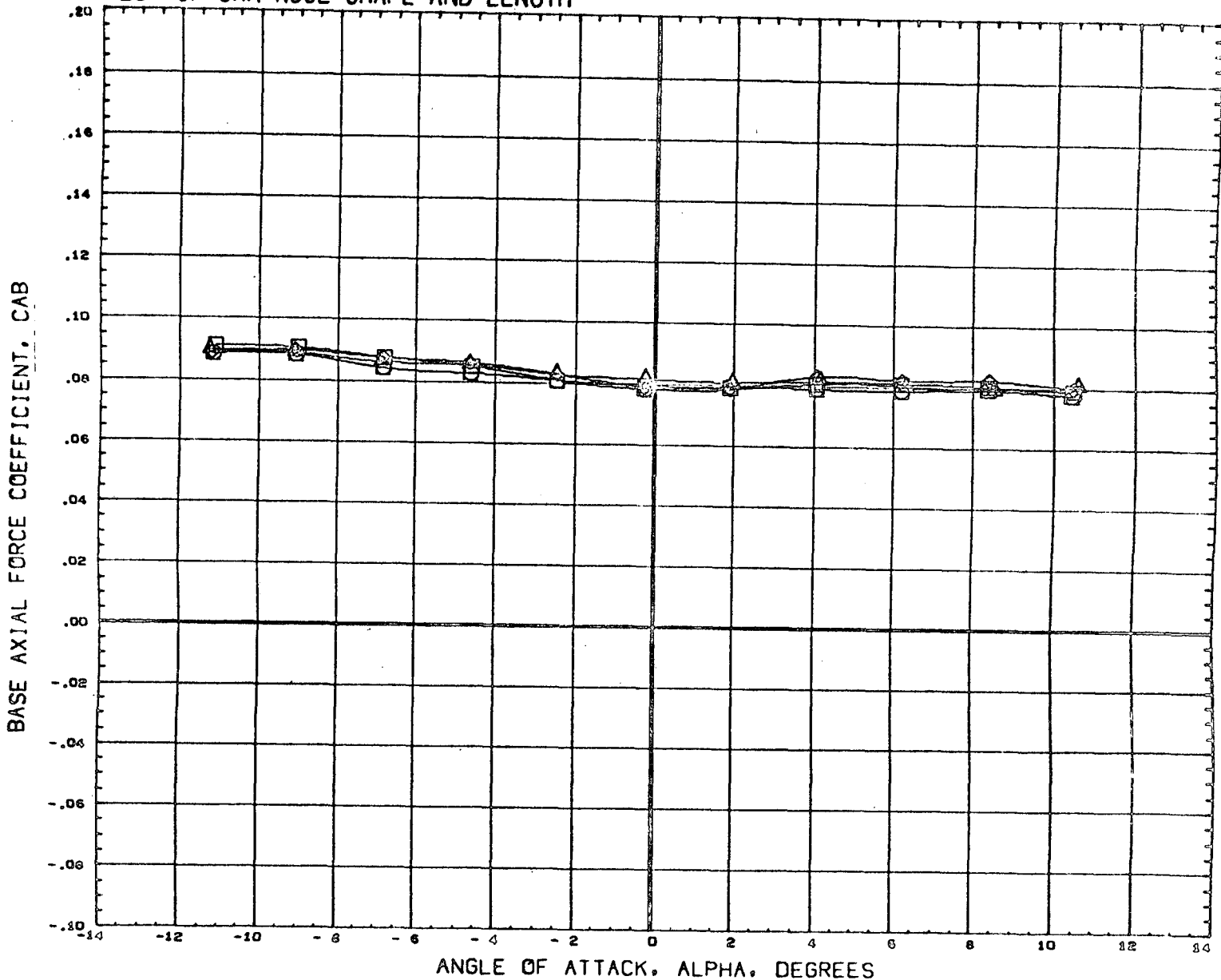
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBO	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM NOSE SHAPE AND LENGTH

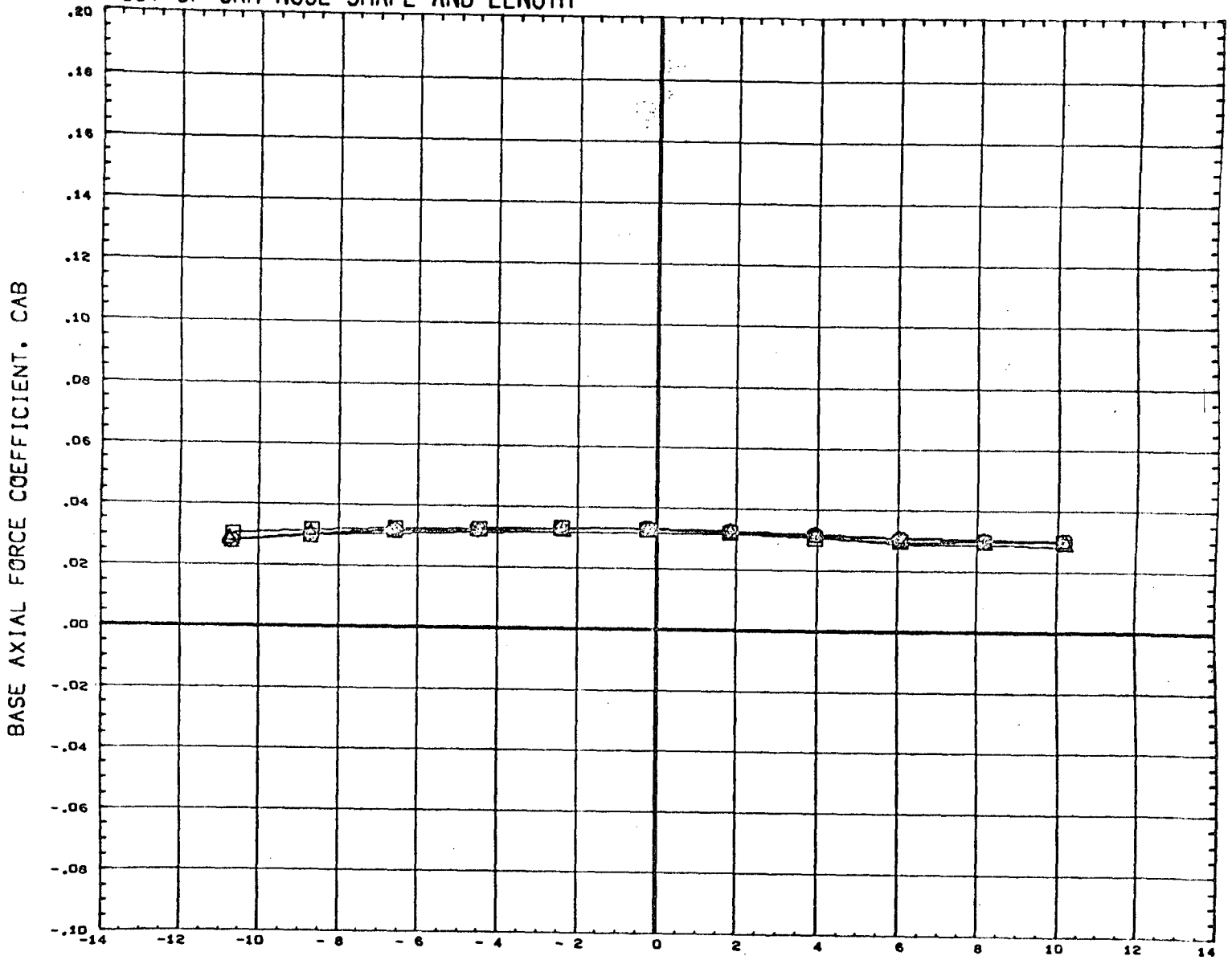


DATA SET SYMBO	CONFIGURATION DESCRIPTION	ORDINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(071027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(071021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(071023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97



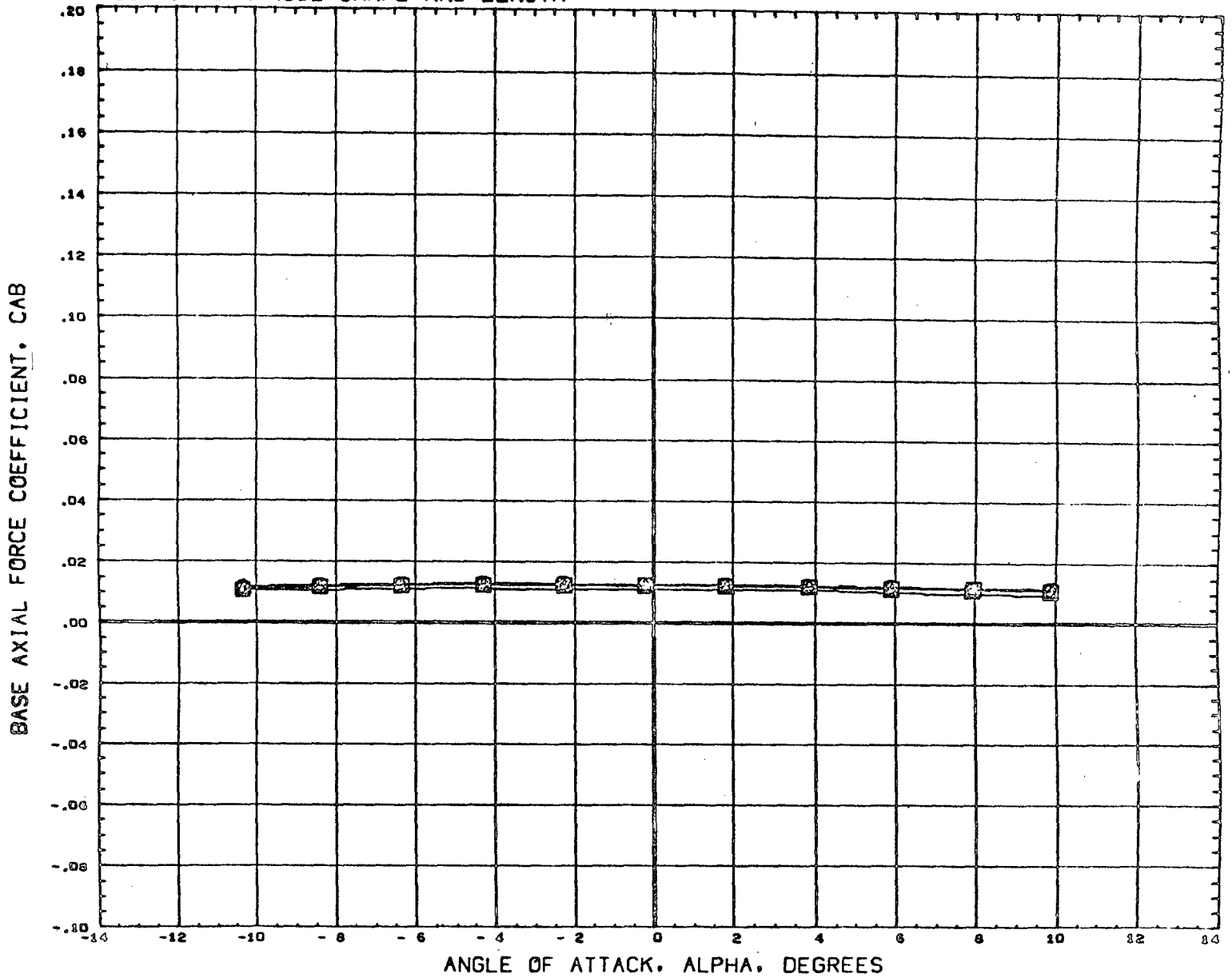
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

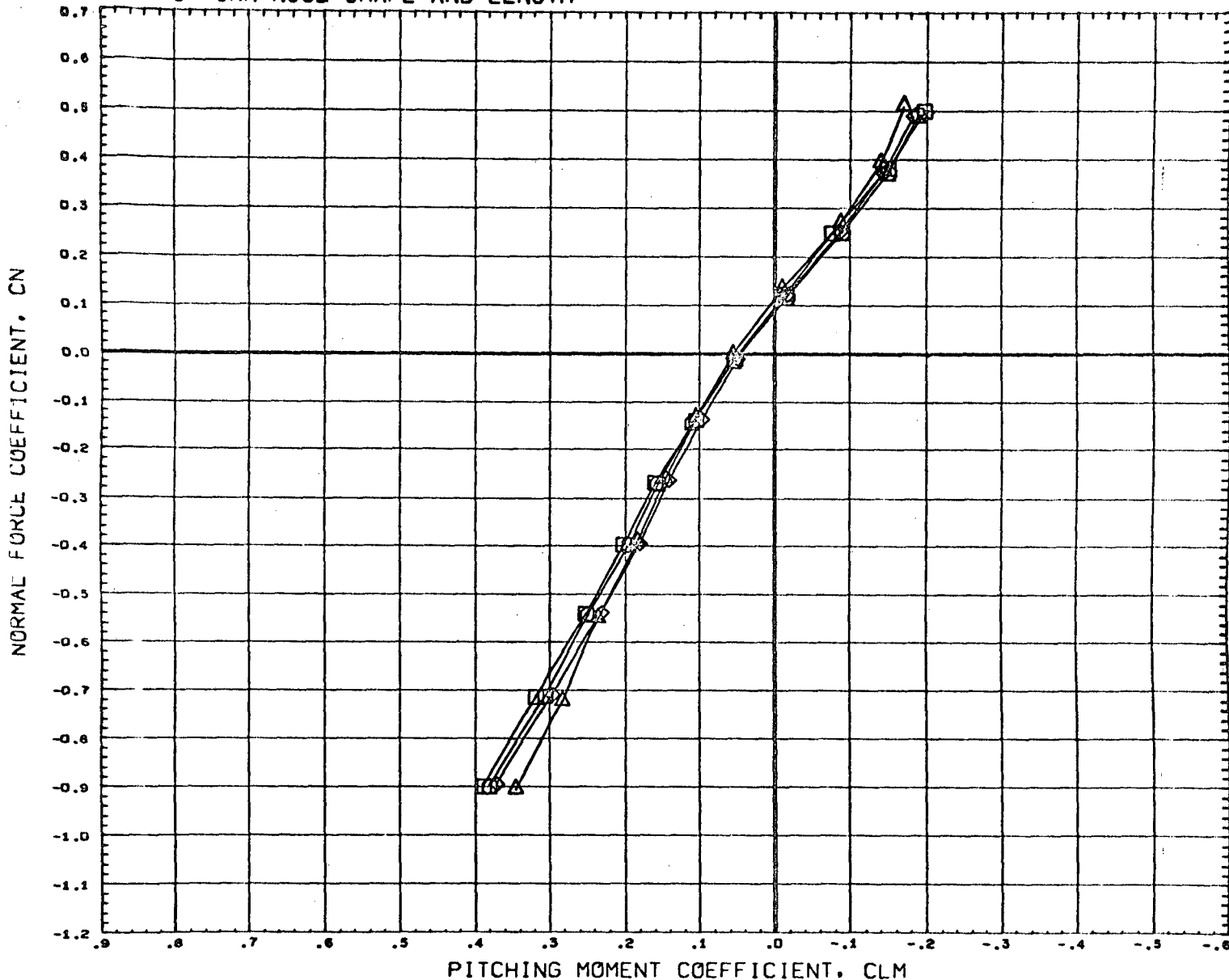
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2400 IN. SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM NOSE SHAPE AND LENGTH



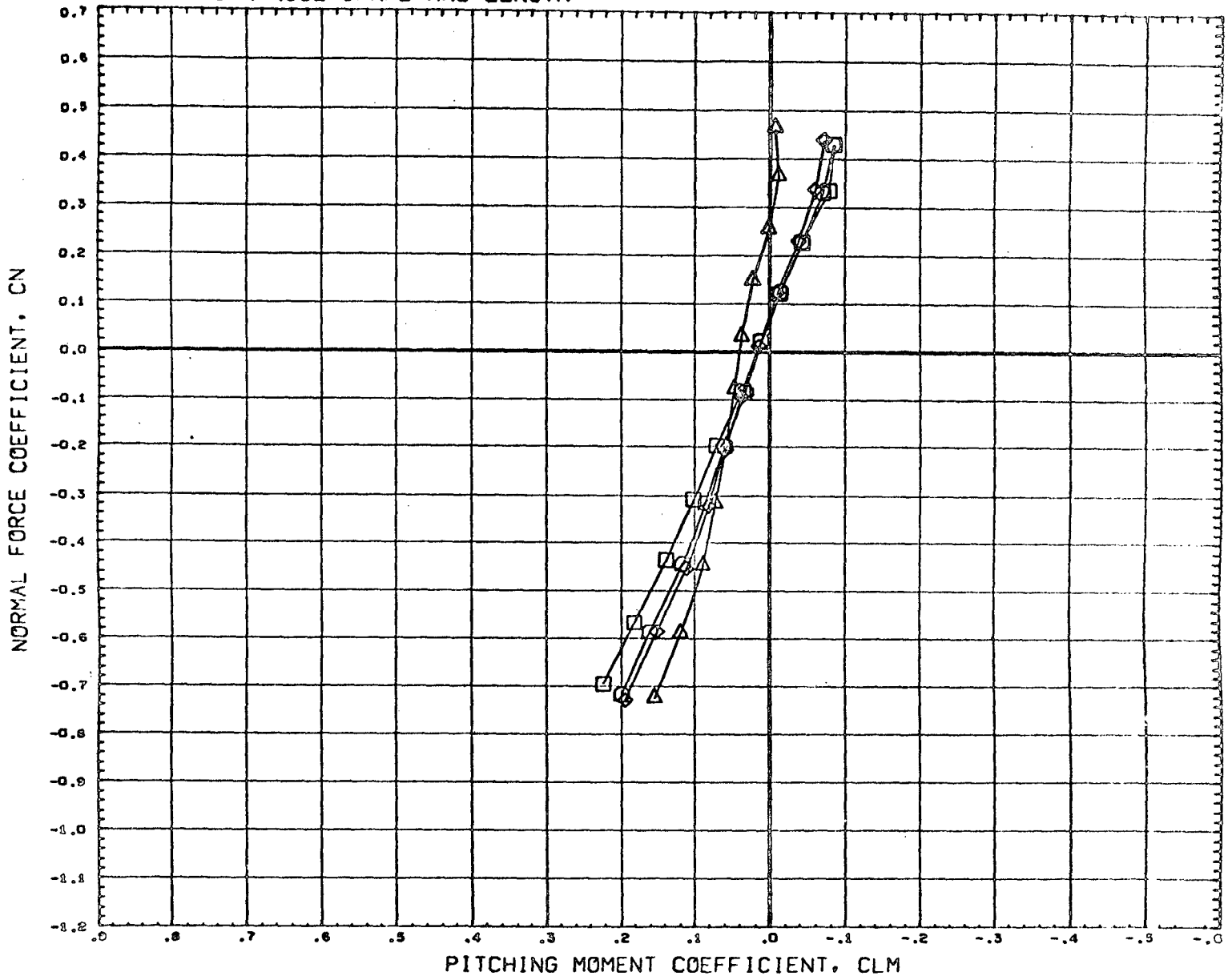
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2460 IN. SCALE 0.0040 SCALE

MACH 1.20

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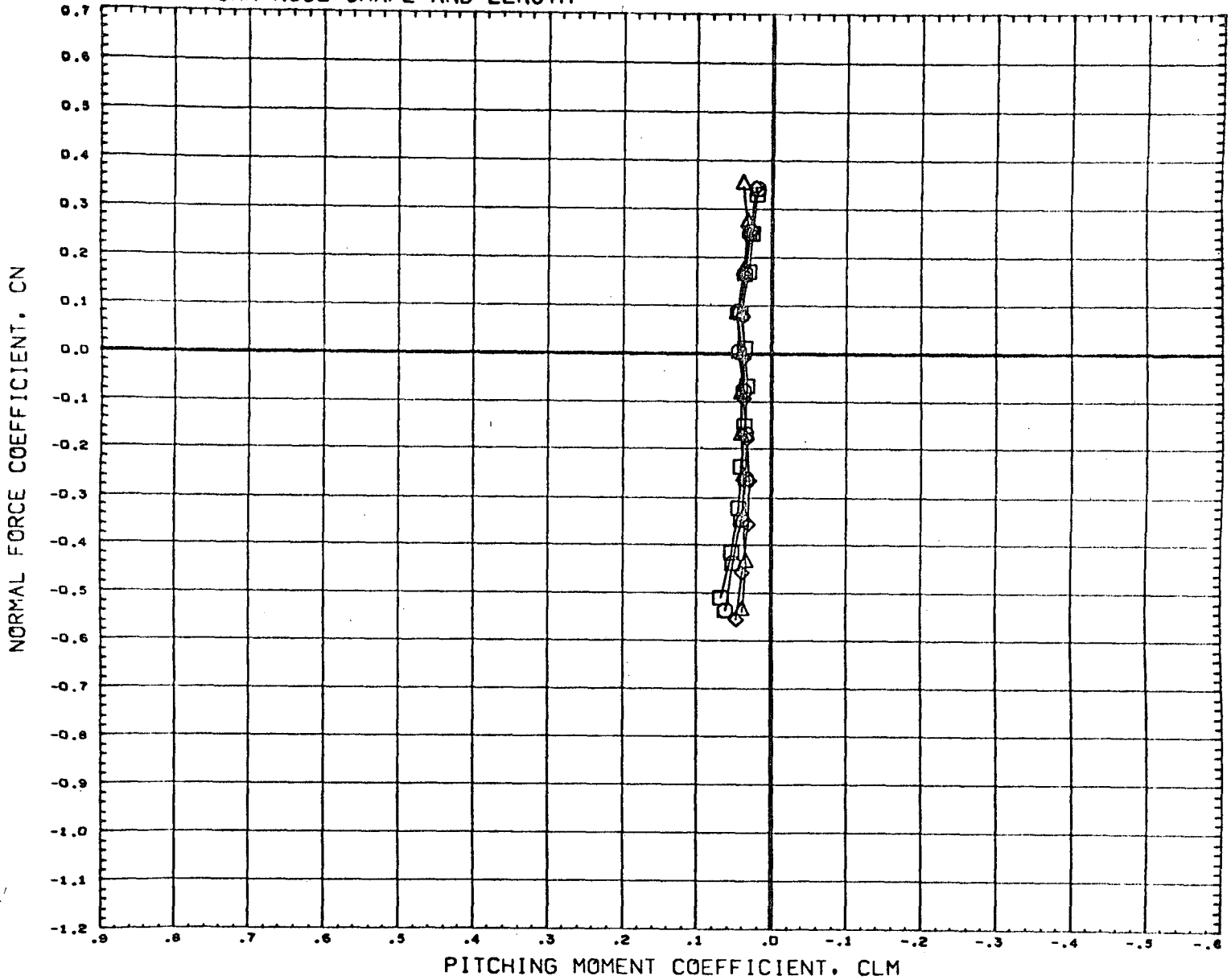
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

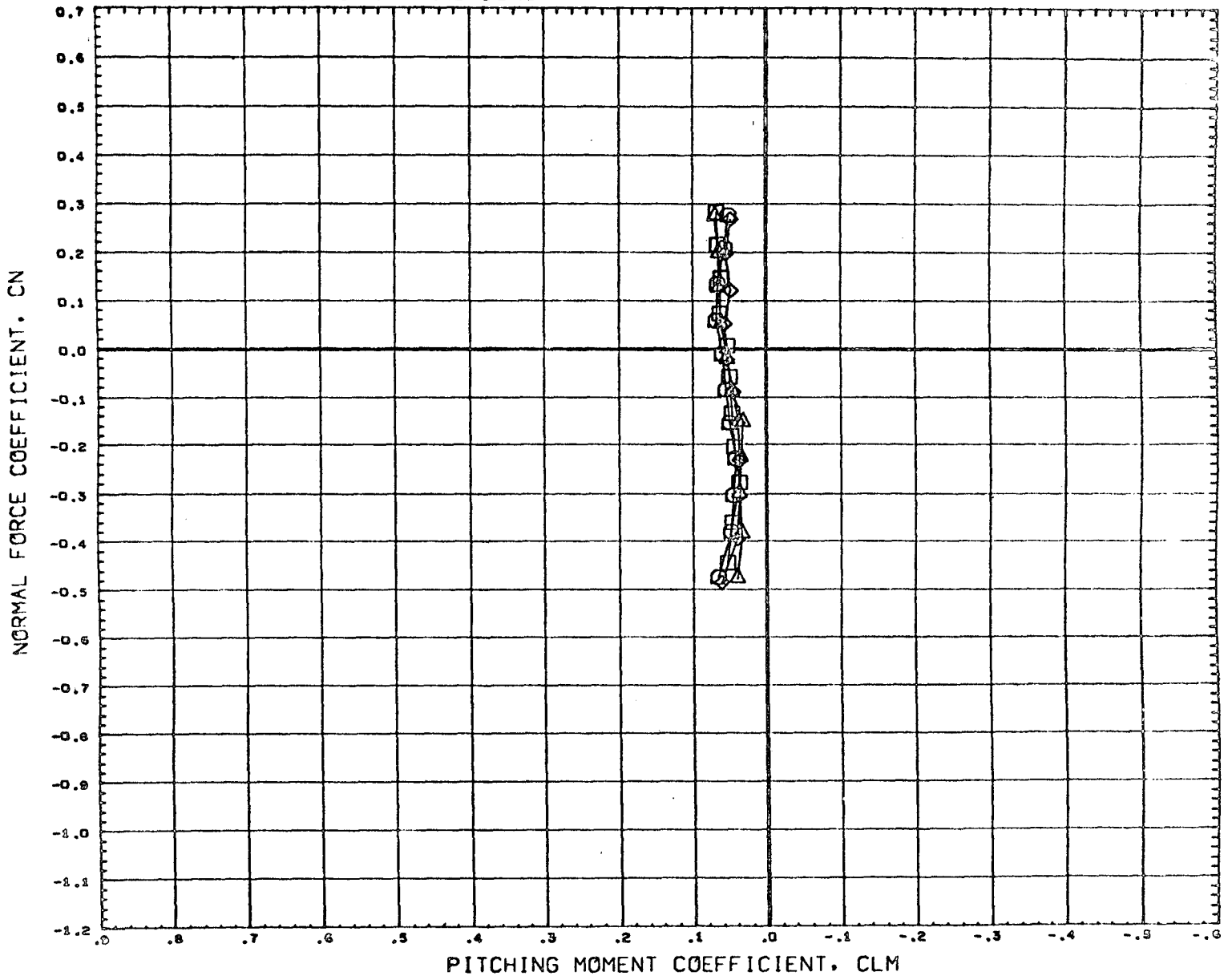
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

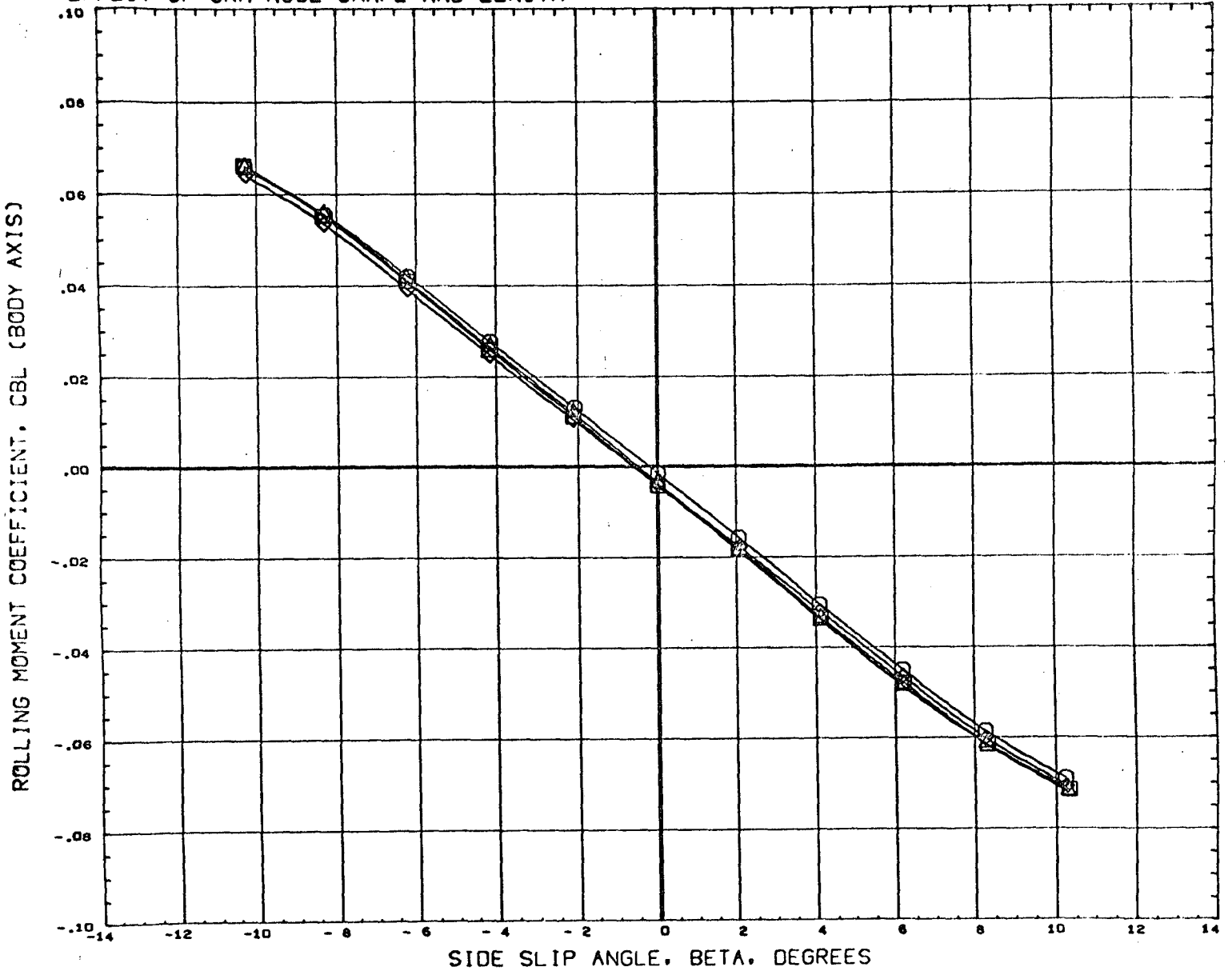
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	T101S2	T101S3	T101S4	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(D71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES					-1.500	75.000	0.000	0.000	SREF	7.8800 SQ. IN
(C71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES					-1.500	75.000	0.000	0.000	LREF	2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES					-1.500	75.000	0.000	0.000	BREF	4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES					-1.500	75.000	0.000	0.000	XMRP	3.3600 IN.
										YMRP	0.0000 IN.
										ZMRP	0.2480 IN.
										SCALE	0.0040 SCALE

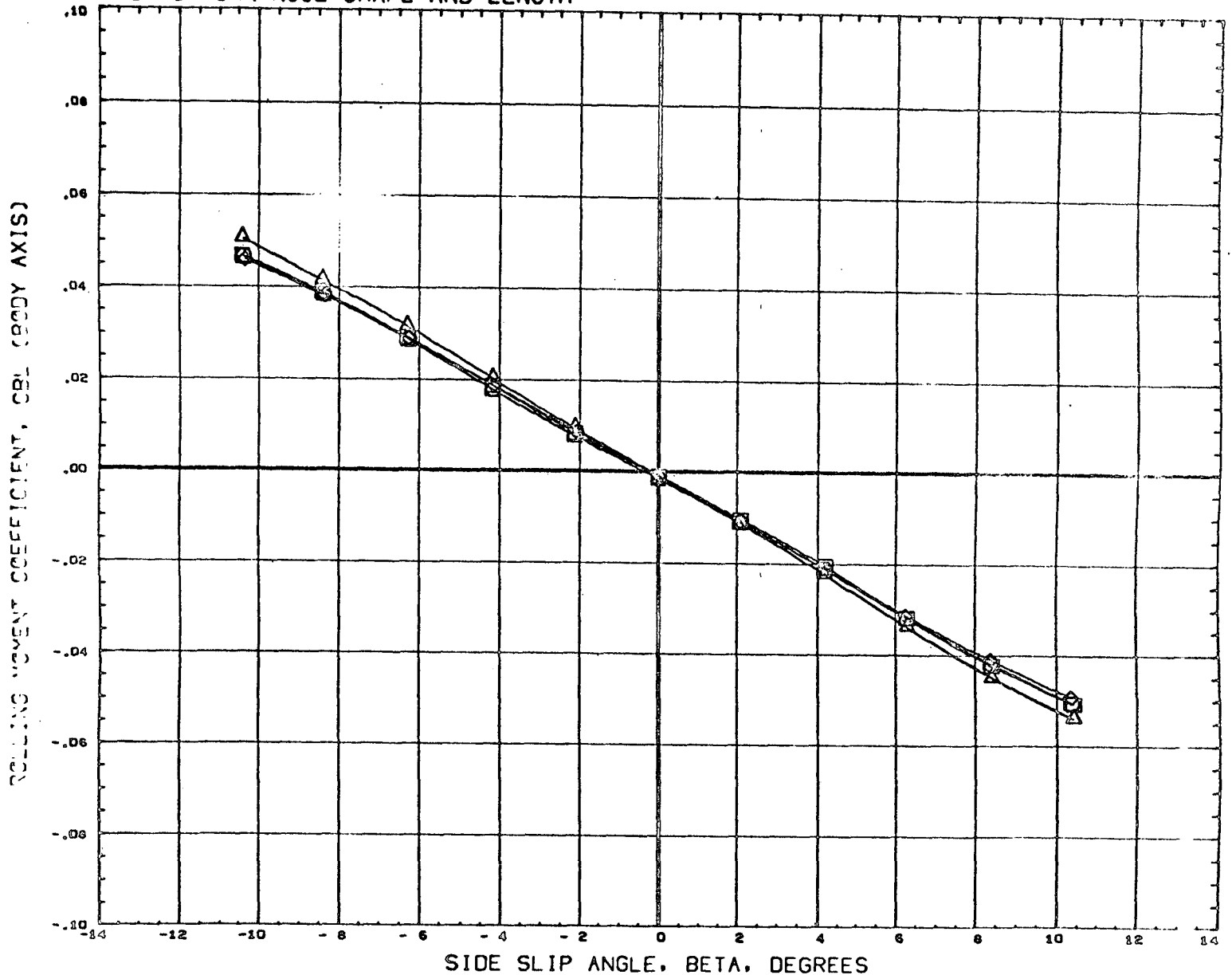
MACH 4.96

# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF SRM NOSE SHAPE AND LENGTH



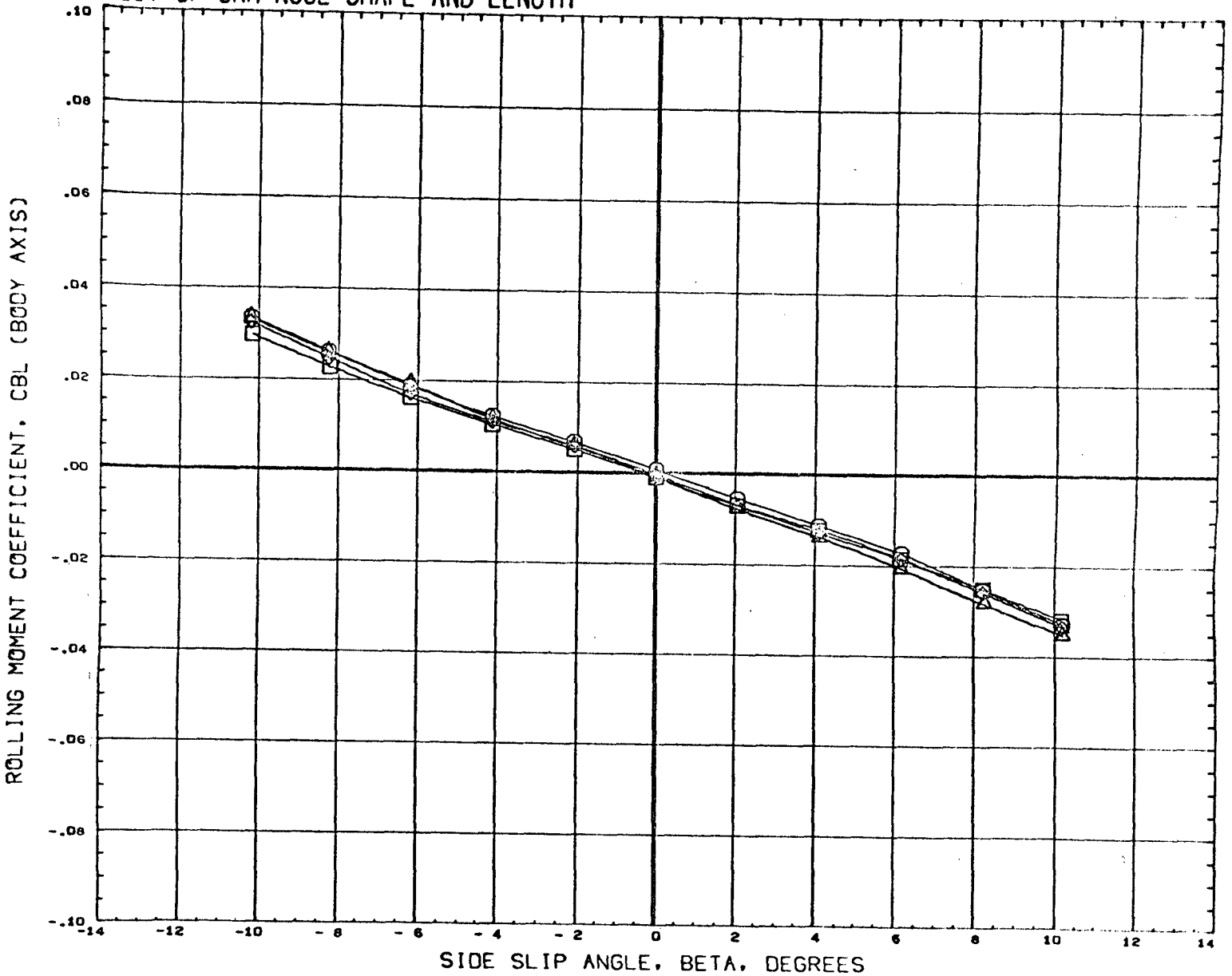
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T10151	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T10152	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T10153	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T10154	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

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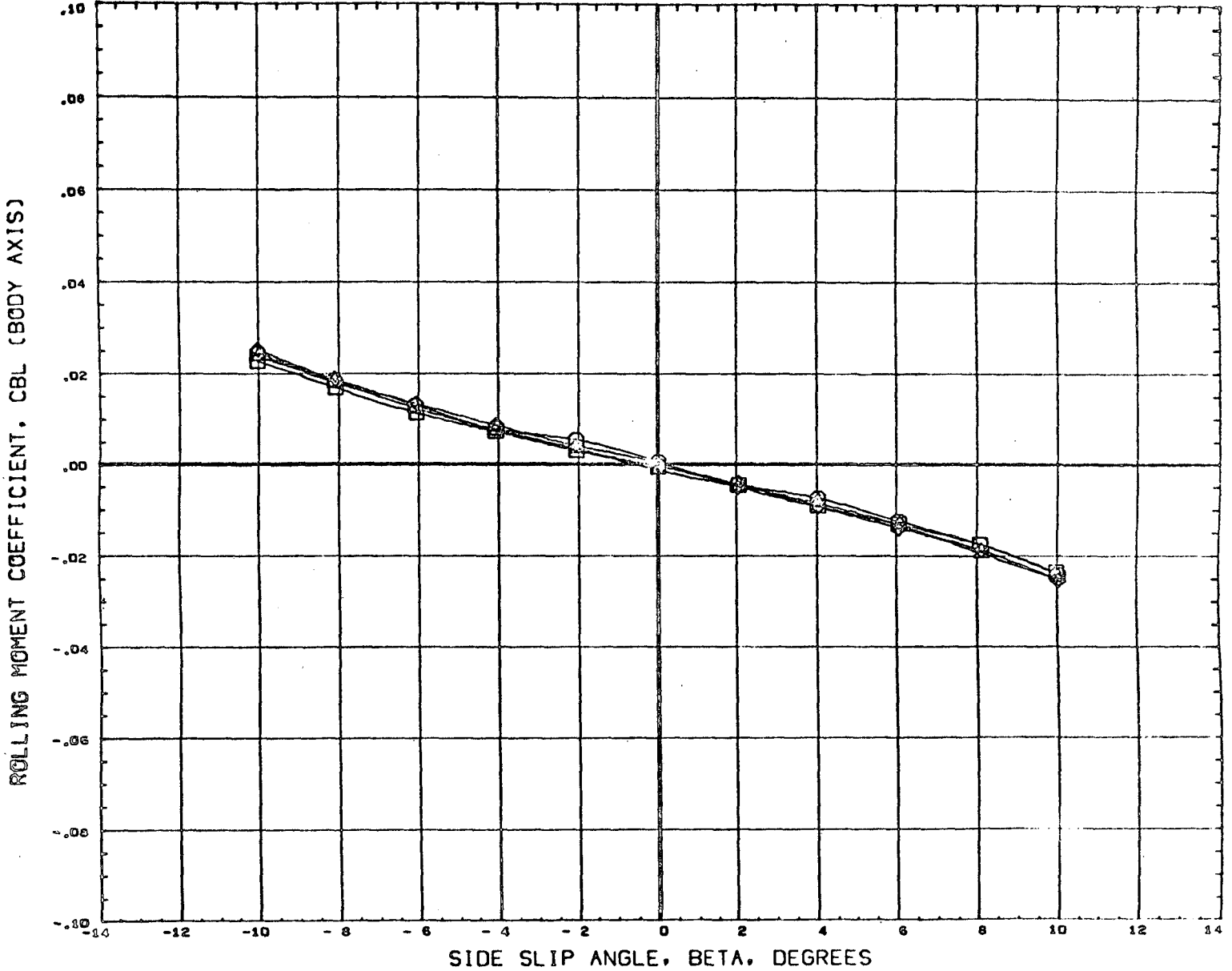
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S4	-1.500	75.000	0.000	0.000	YMRP 3.3600 IN.
						ZMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

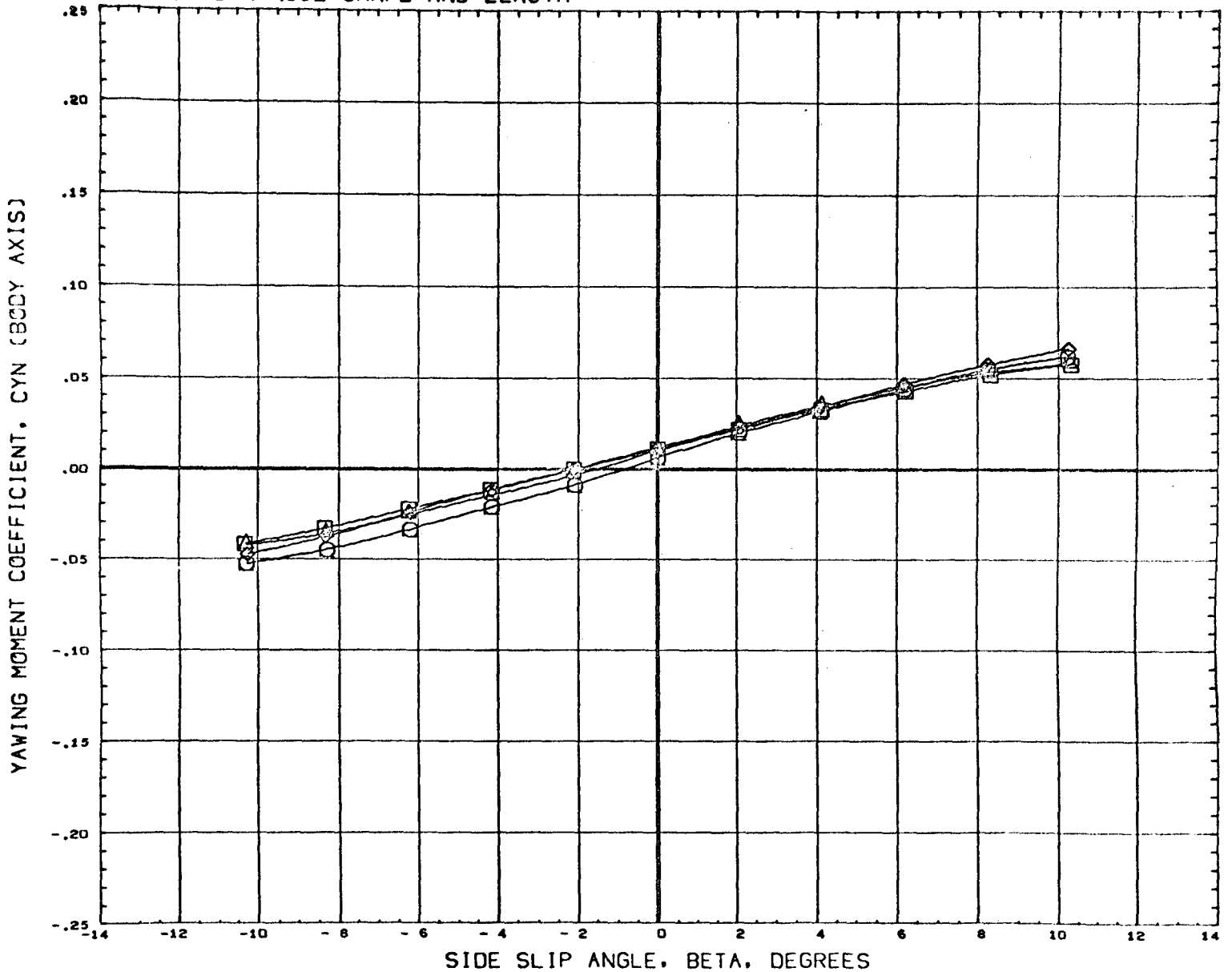
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM NOSE SHAPE AND LENGTH

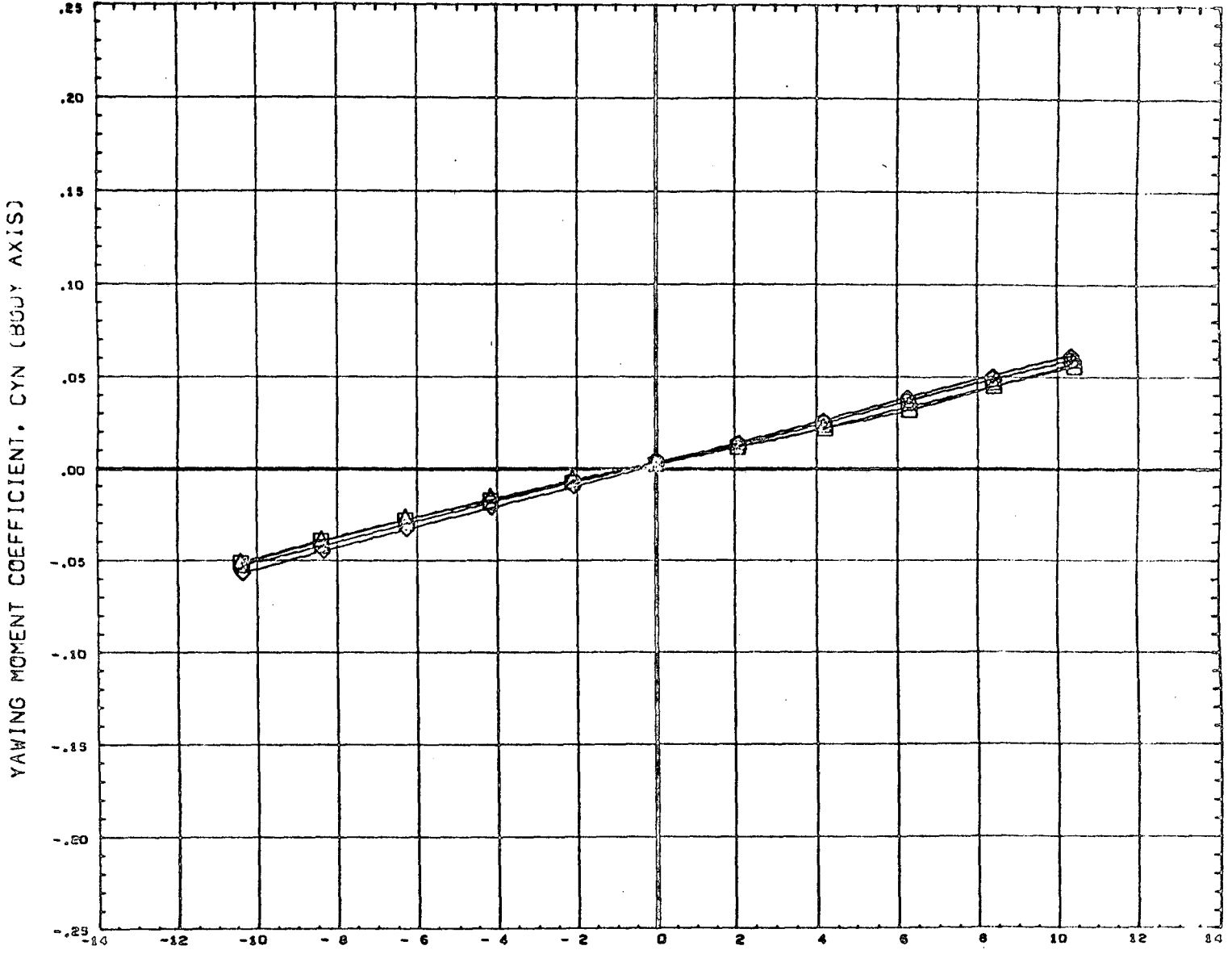


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF SRM NOSE SHAPE AND LENGTH



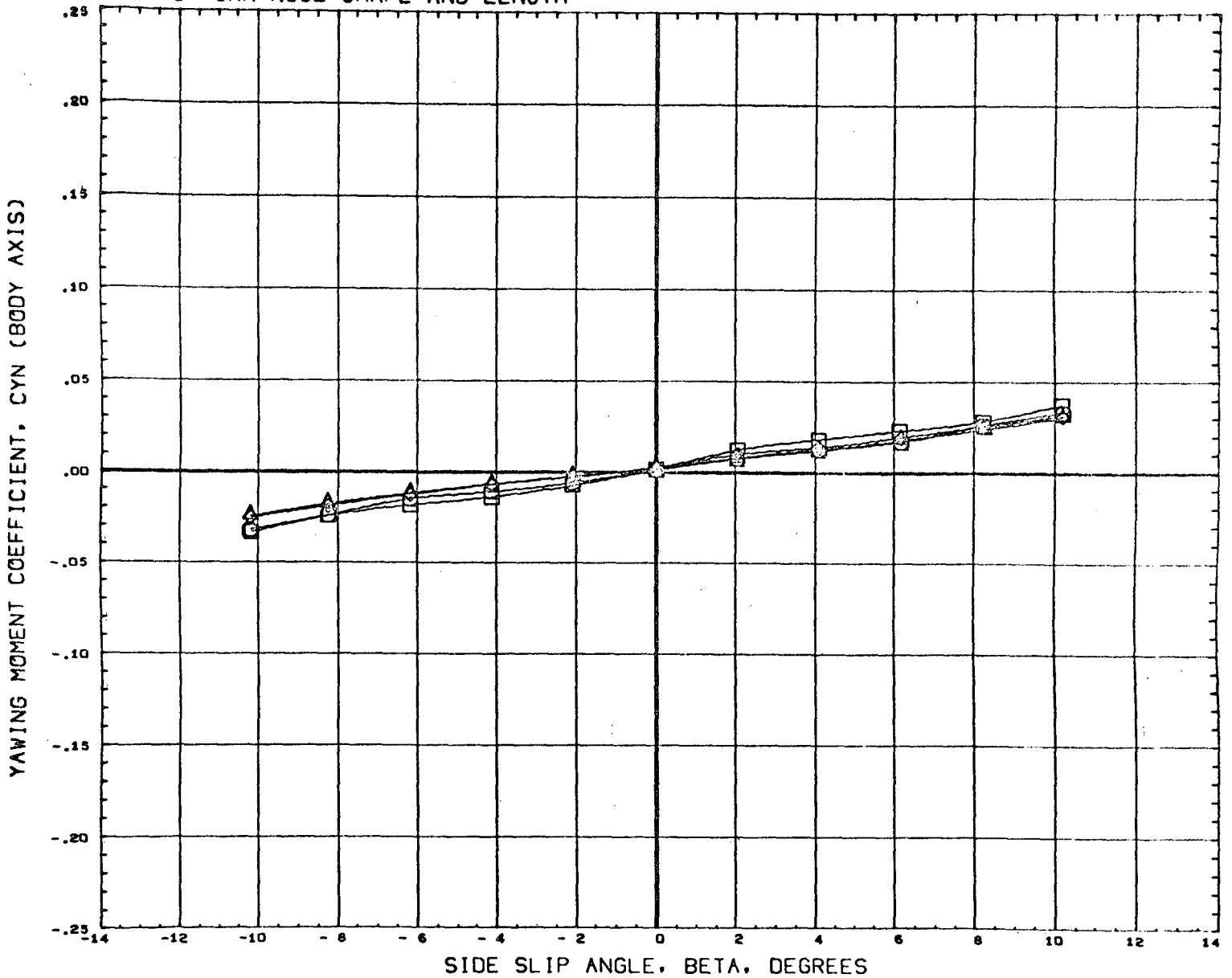
SIDE SLIP ANGLE, BETA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.0800 SQ. IN
(B71020)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.96

# EFFECT OF SRM NOSE SHAPE AND LENGTH

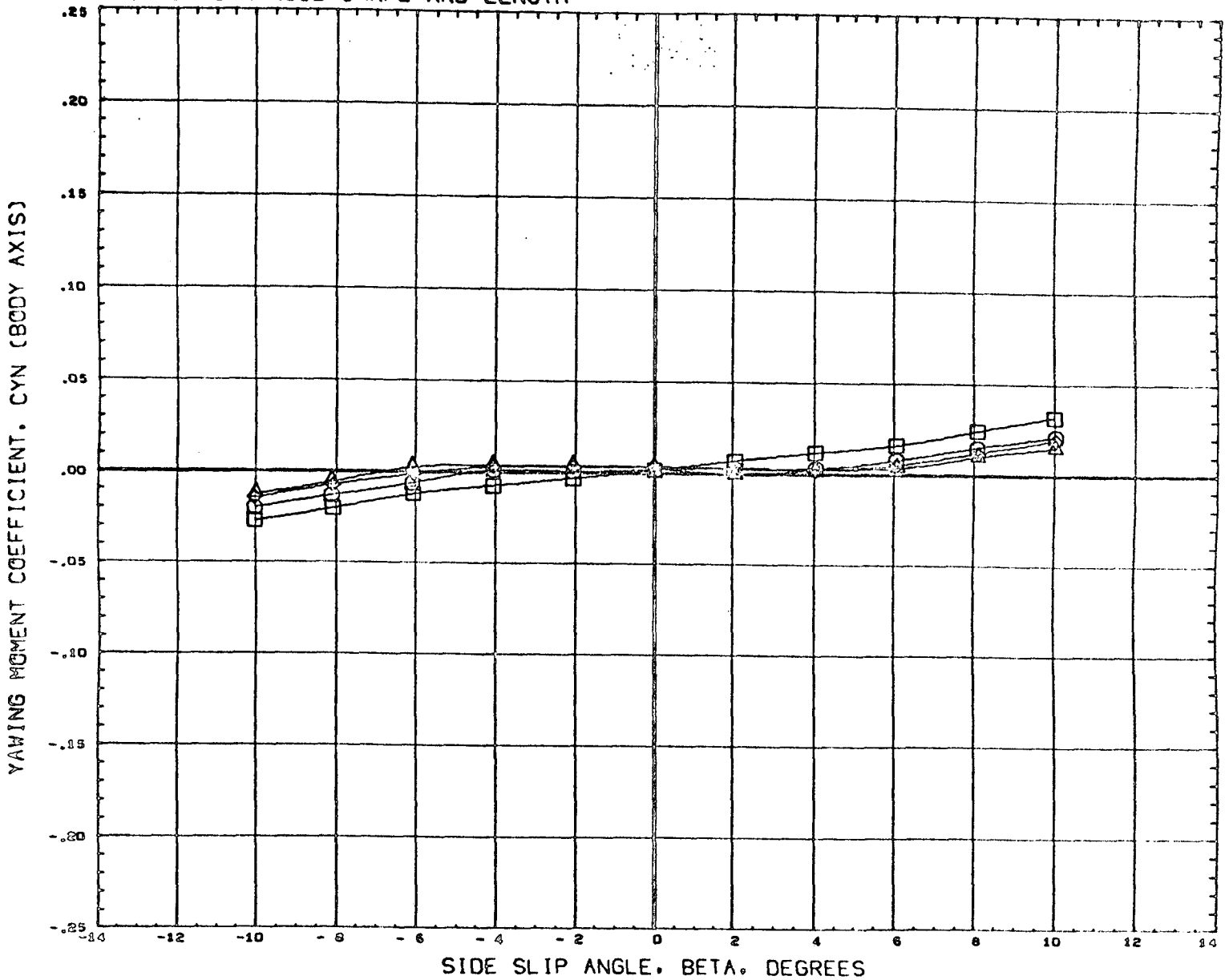


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBN	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 50. IN
(B71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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# EFFECT OF SRM NOSE SHAPE AND LENGTH

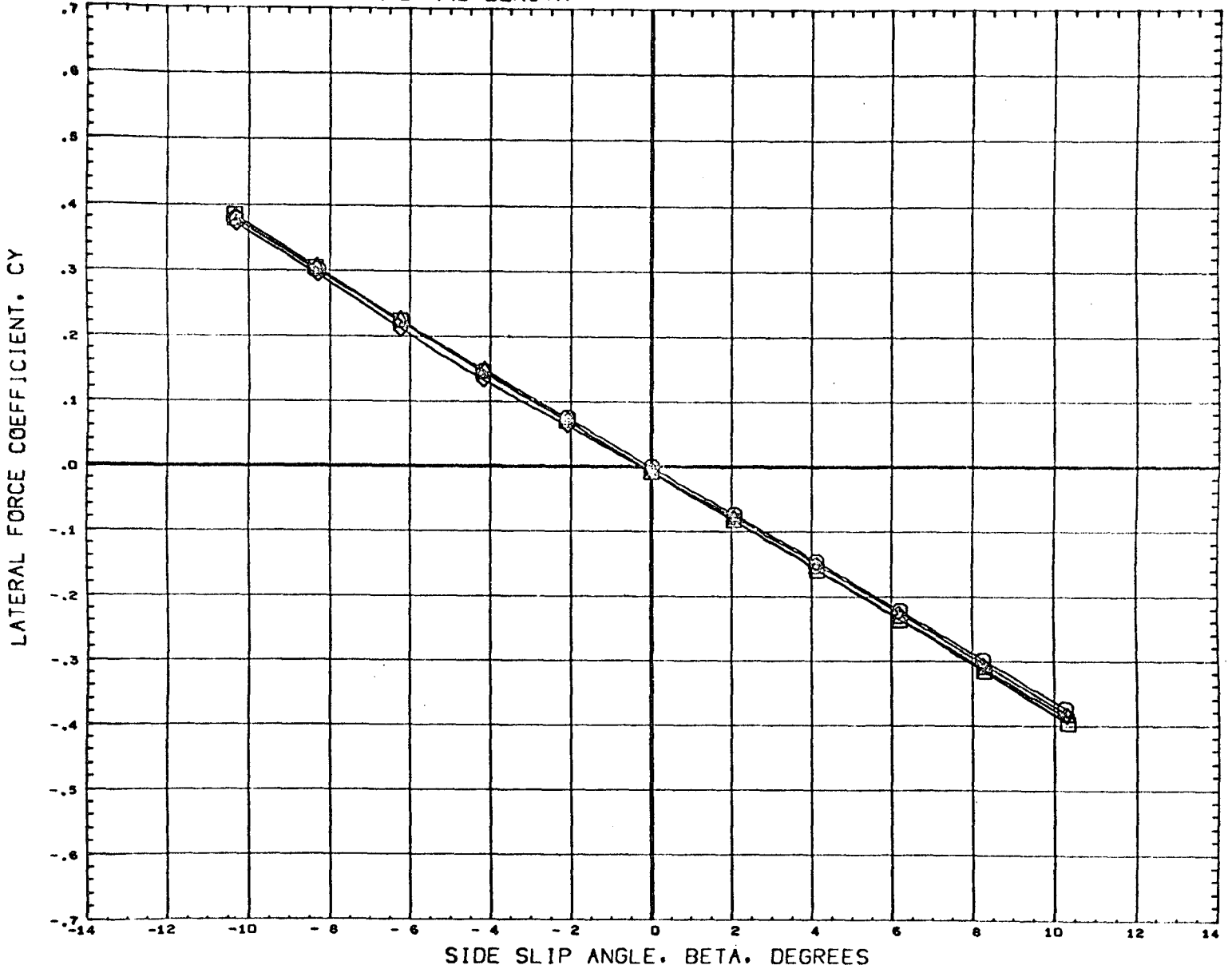


DATA SET SYMBO	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(D71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SO. IN
(B71020)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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# EFFECT OF SRM NOSE SHAPE AND LENGTH



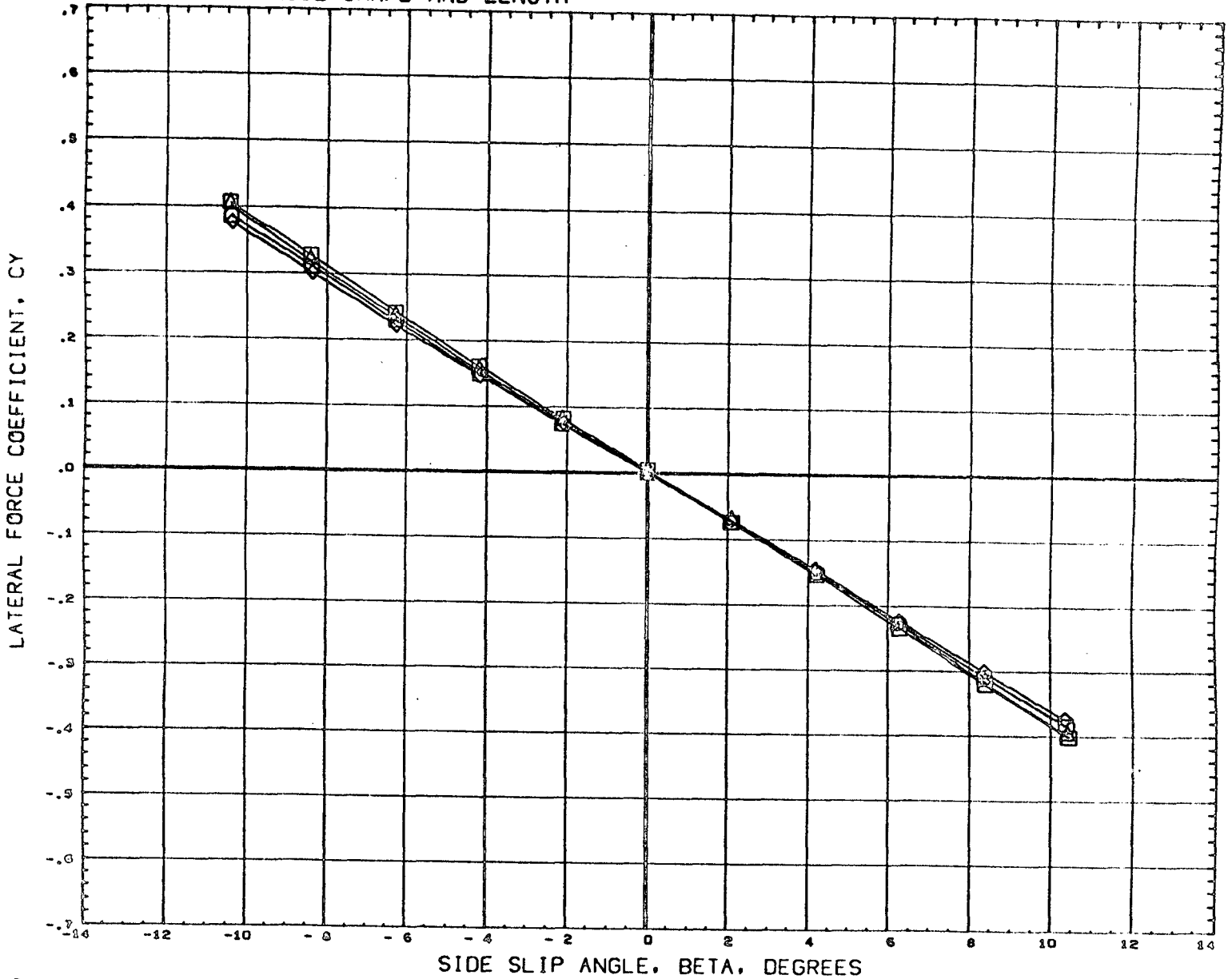
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF SRM NOSE SHAPE AND LENGTH

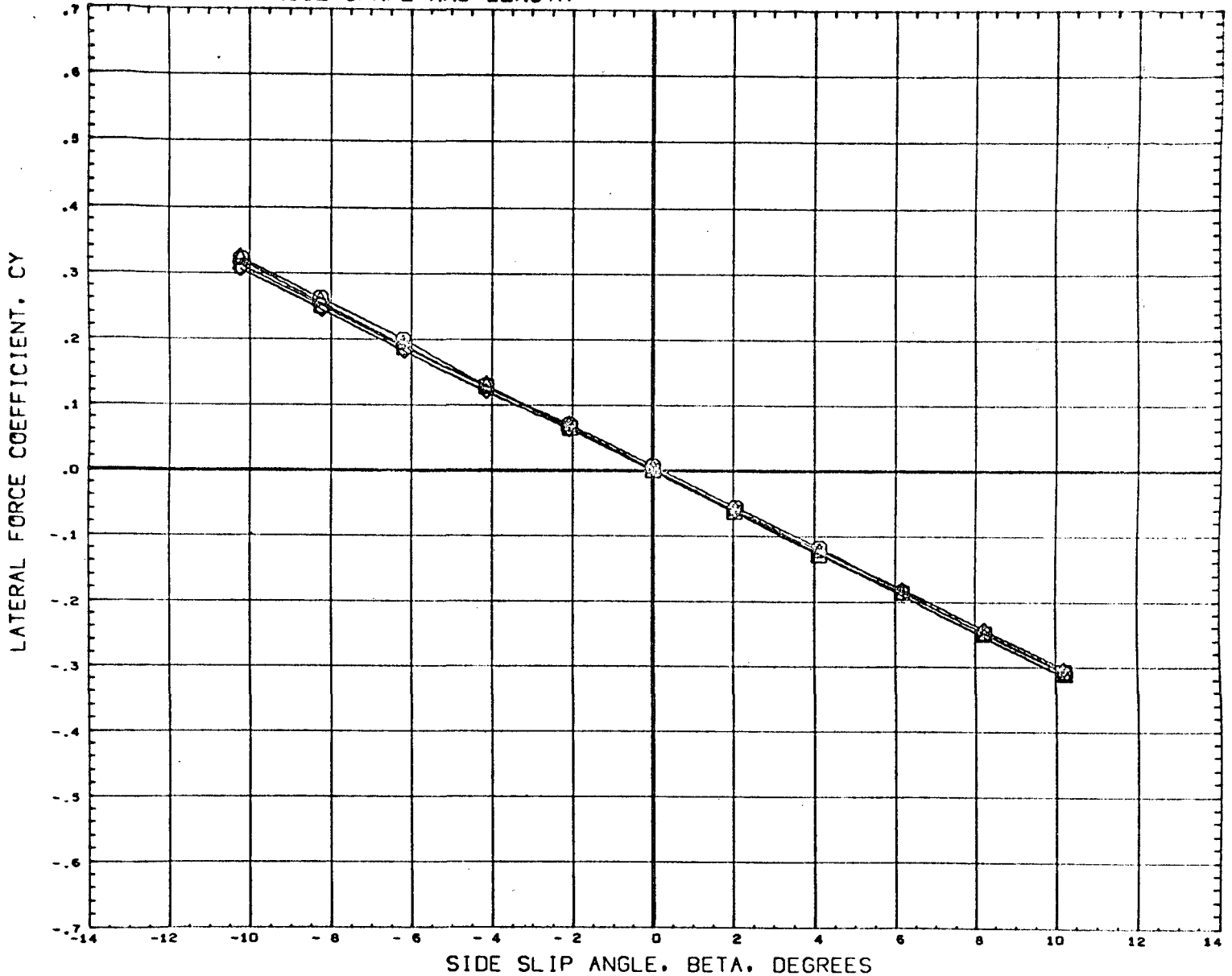


DATA KEY SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71020)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96



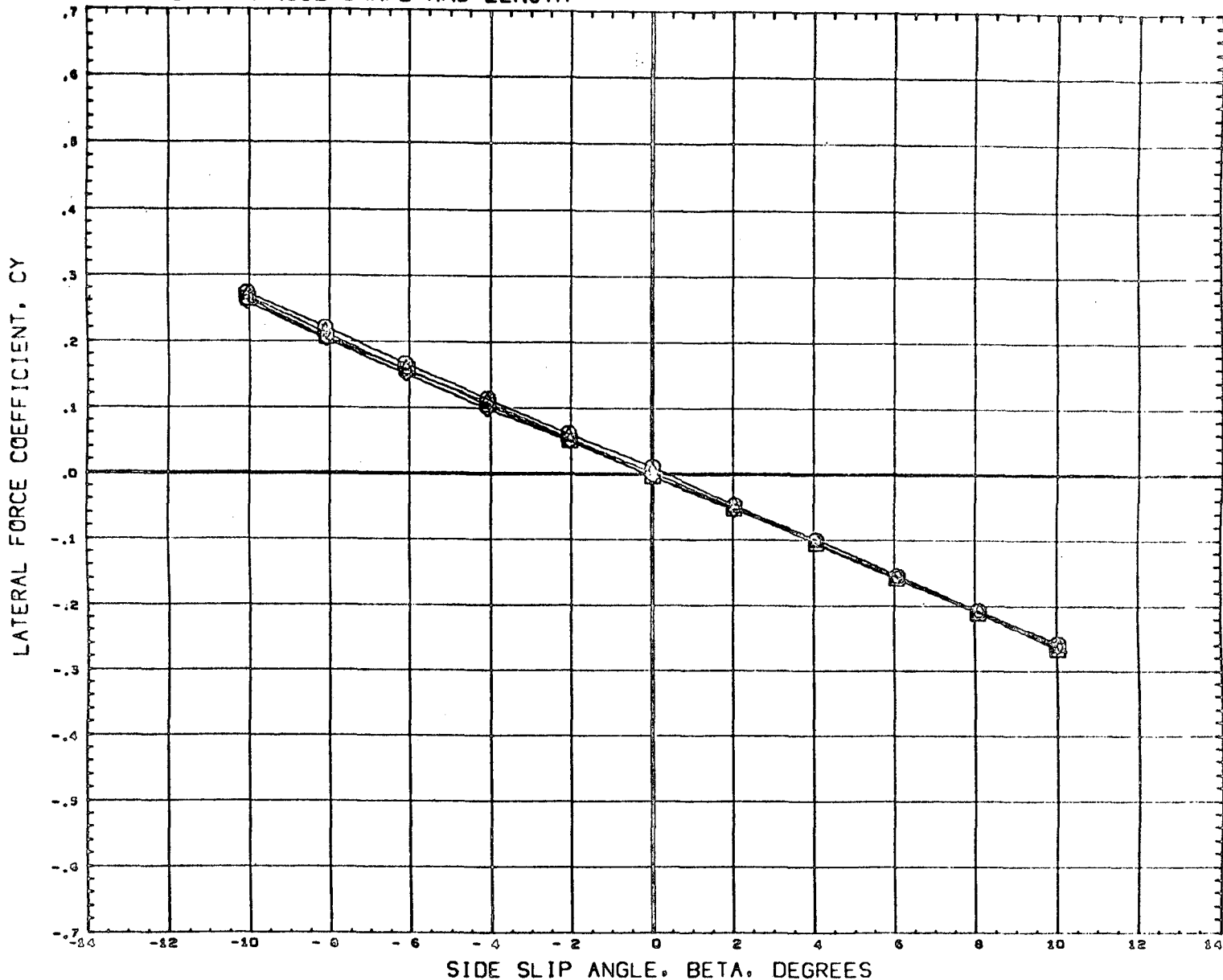
# EFFECT OF SRM NOSE SHAPE AND LENGTH



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF SRM NOSE SHAPE AND LENGTH

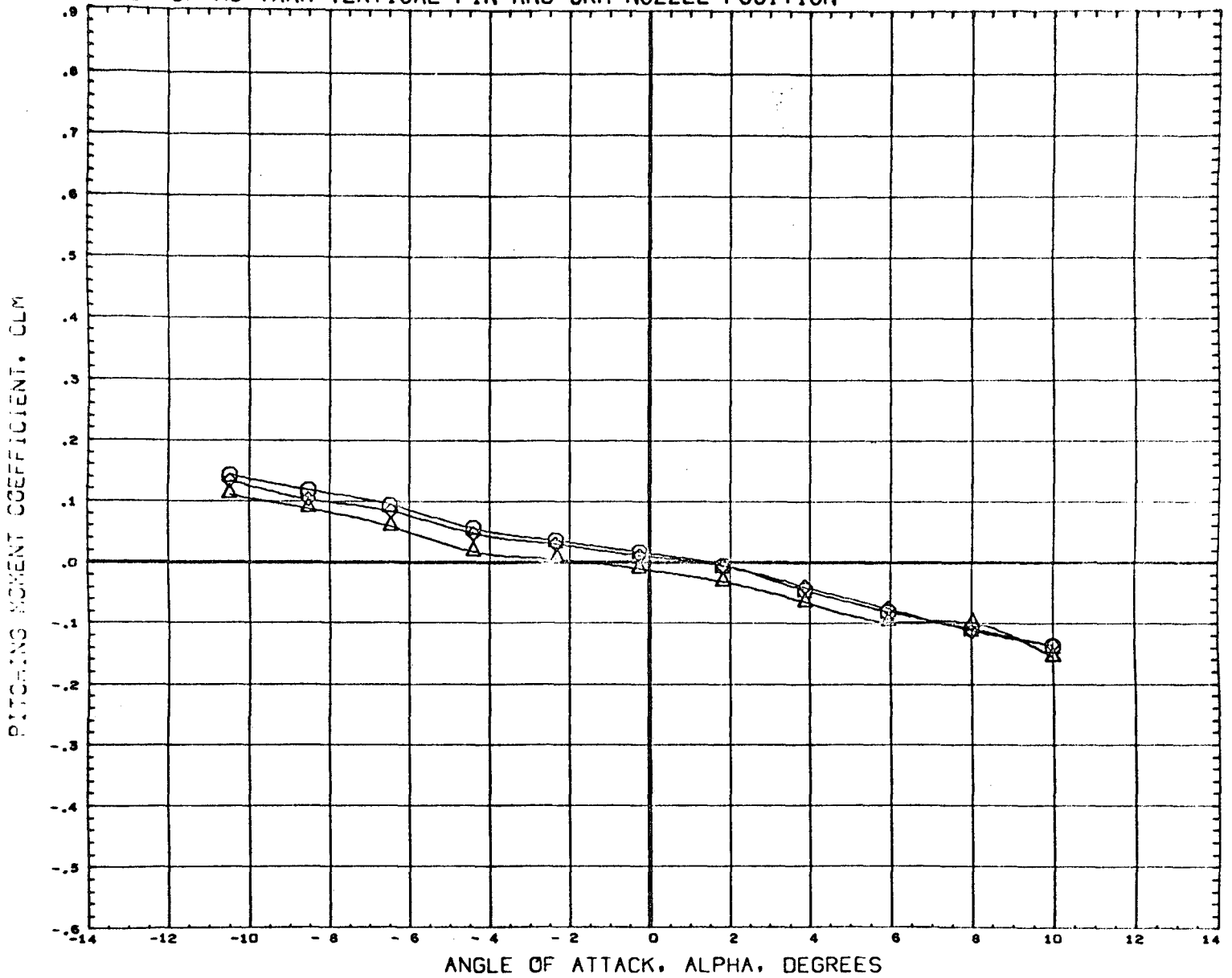


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	-1.500	75.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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# EFFECT OF H<sub>0</sub> TANK VERTICAL FIN AND SRM NOZZLE POSITION

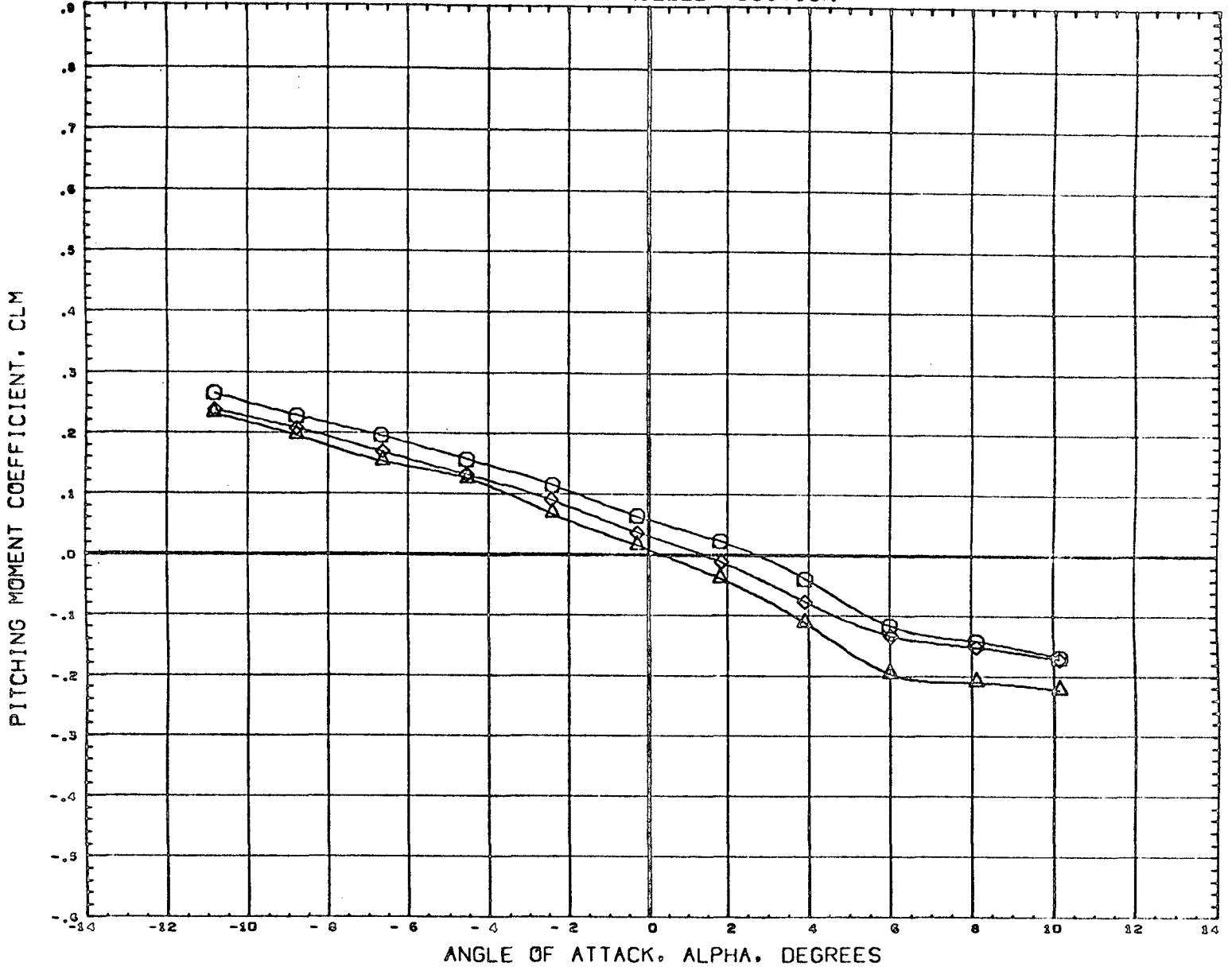


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

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# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

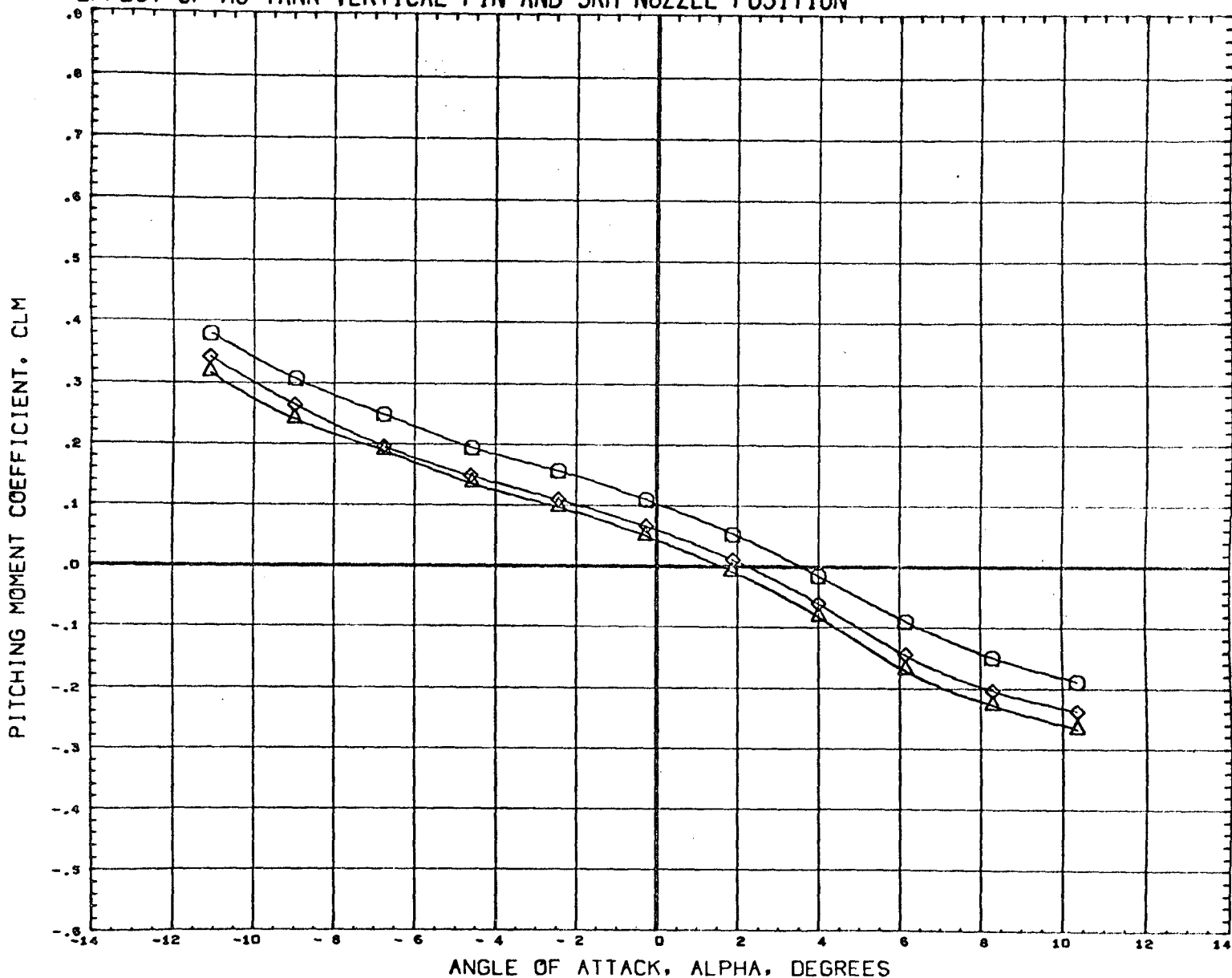


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

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# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

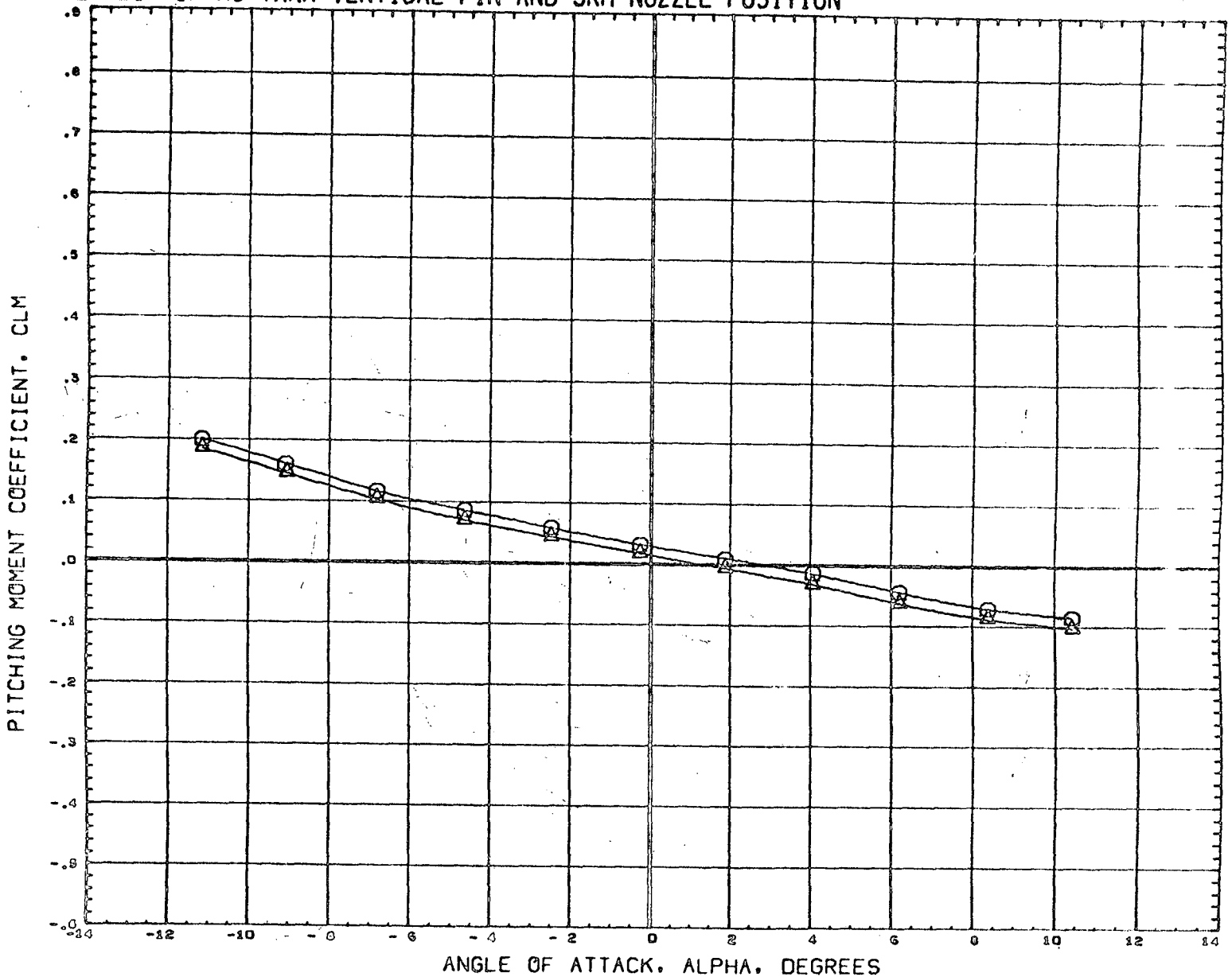


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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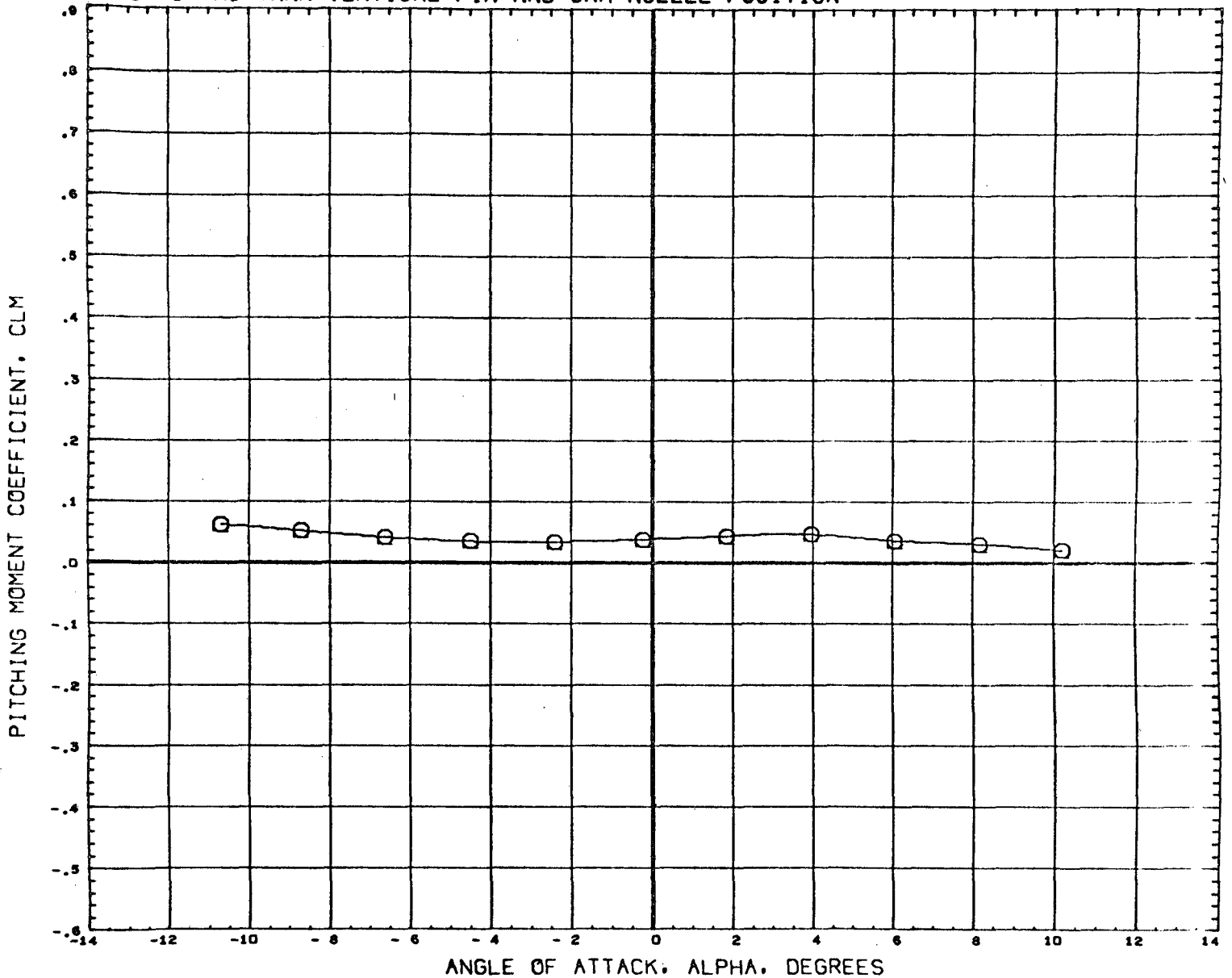
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71043)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

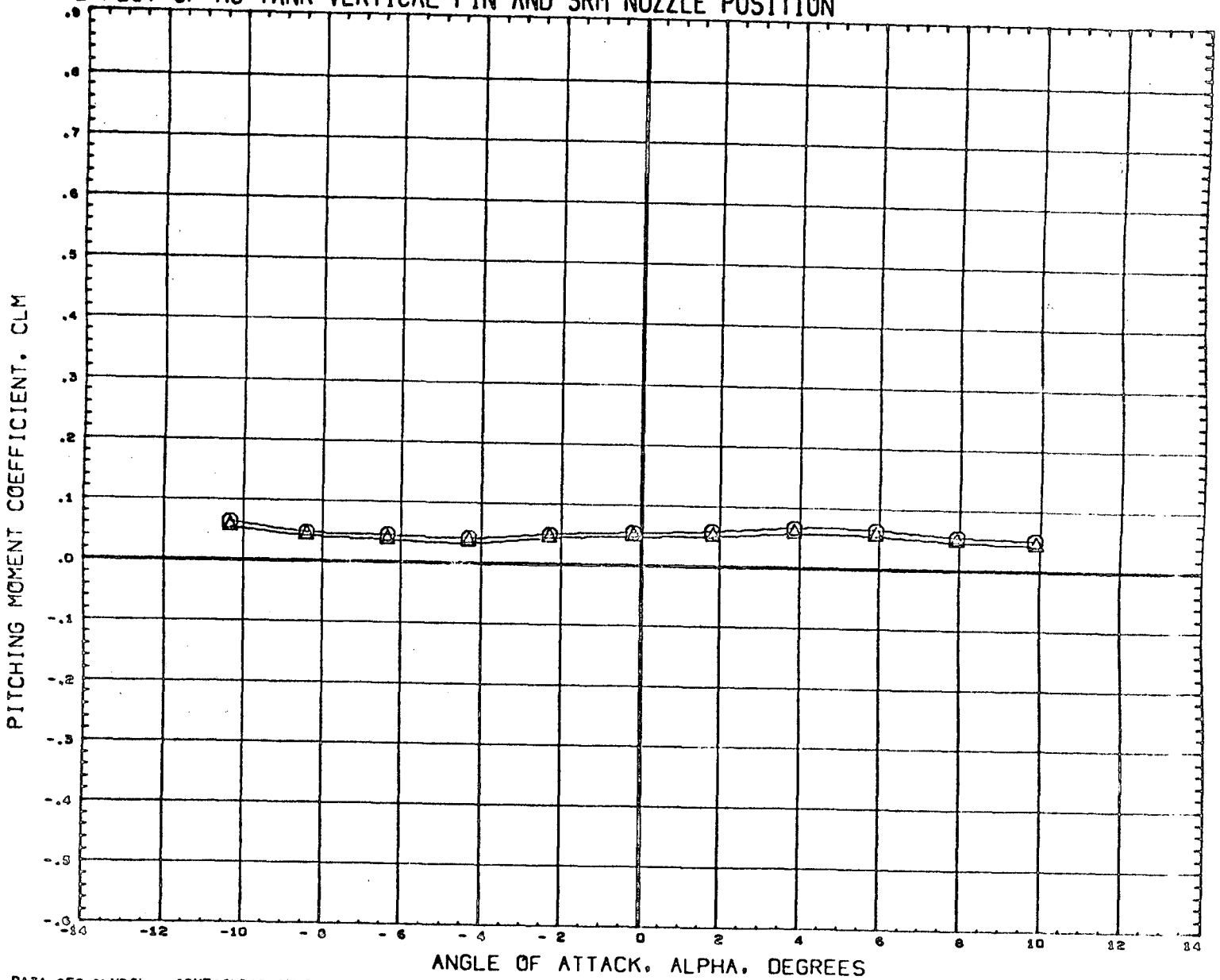
# EFFECT OF H0 TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101s1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

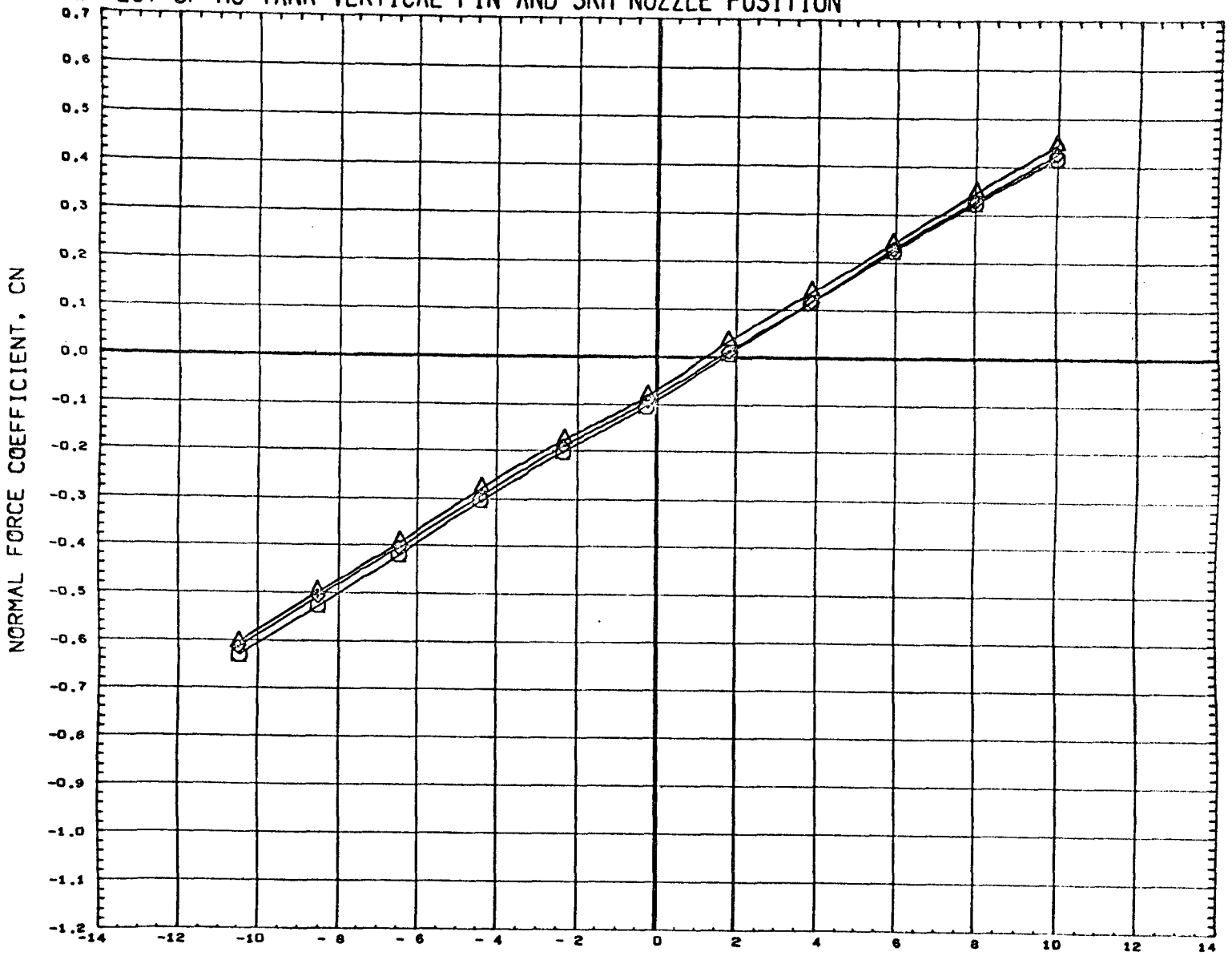


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

MACH 4.96



# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

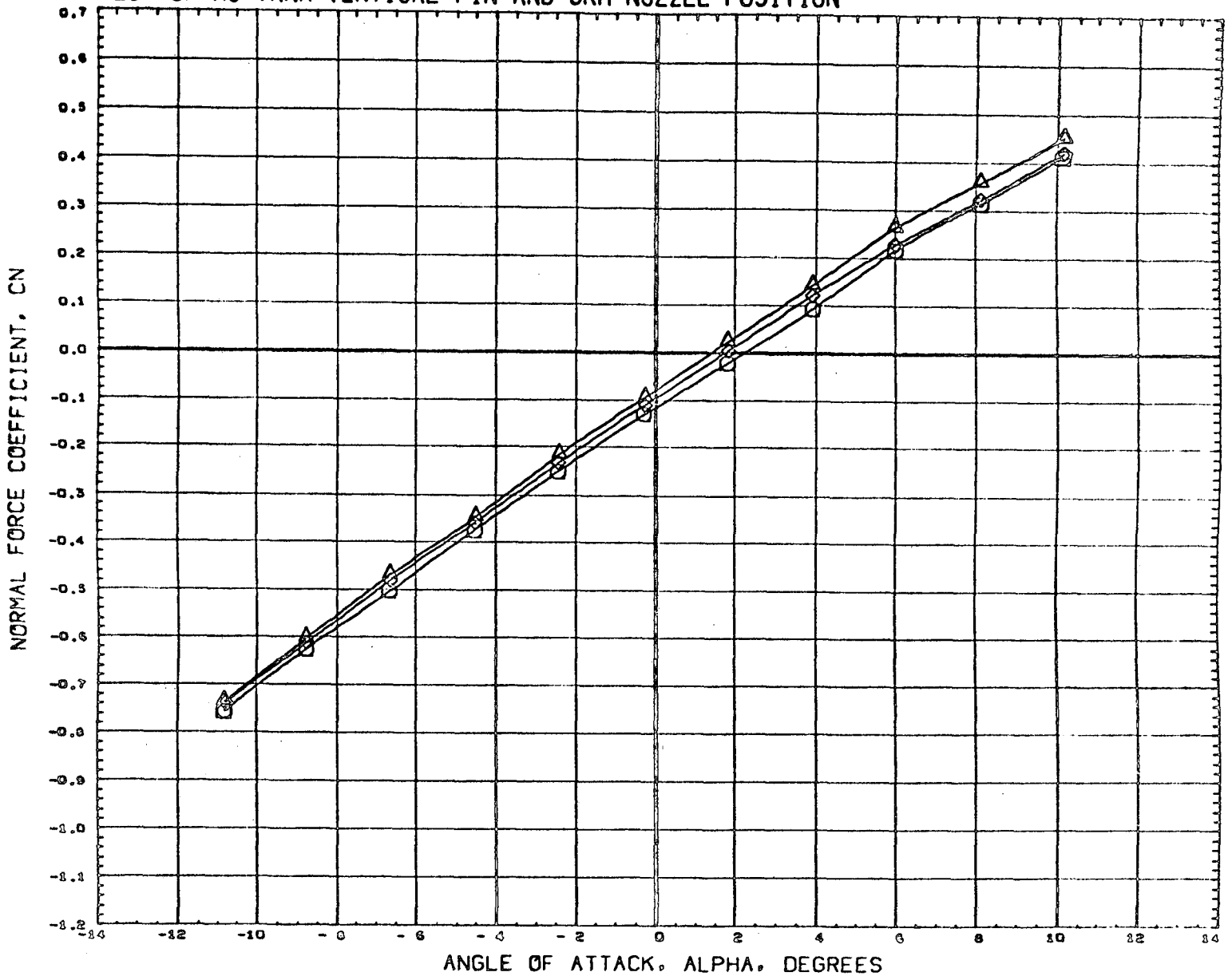


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75,000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1F	-1.500	75,000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1F	-1.500	75,000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

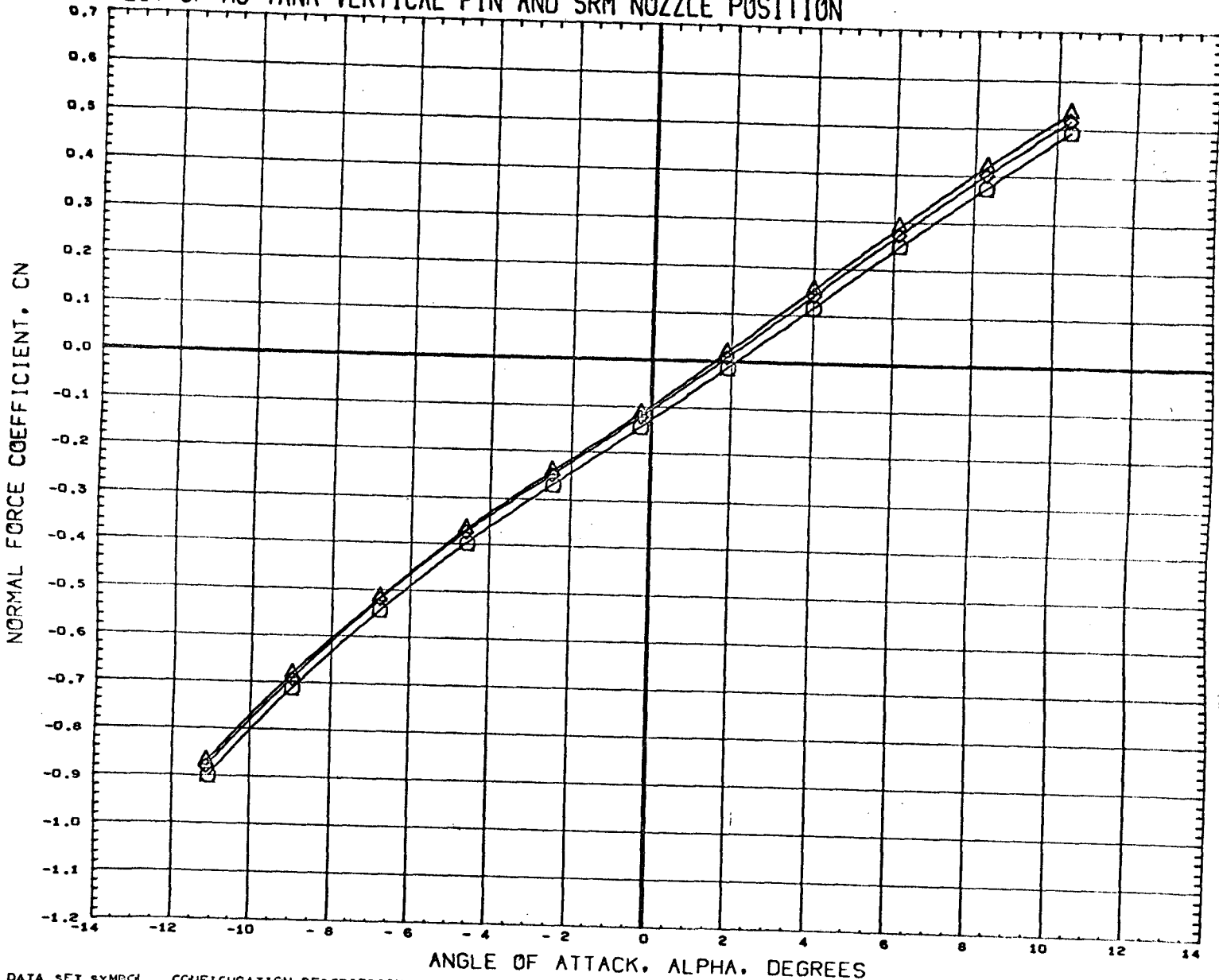


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B73049)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

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# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

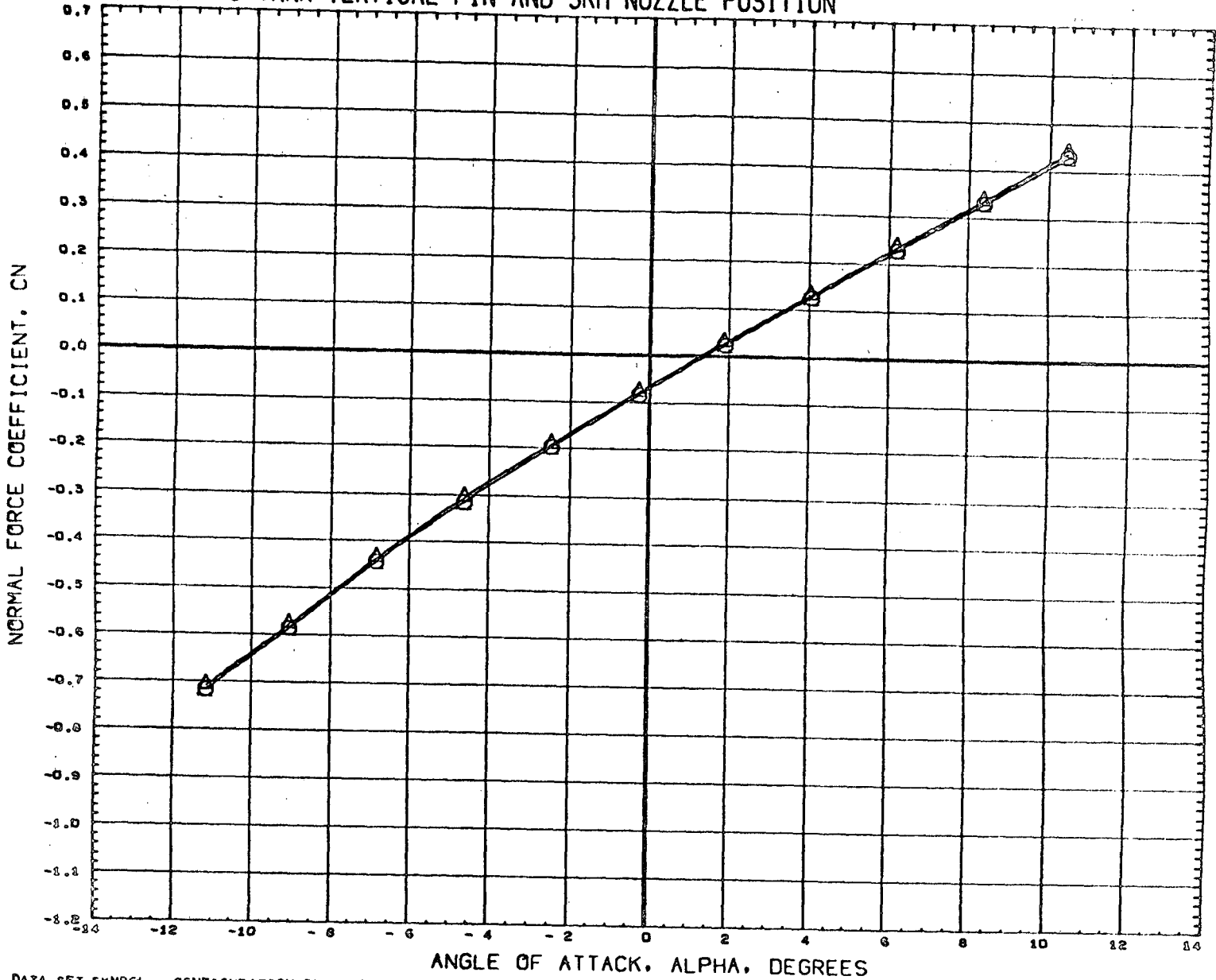


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

C13

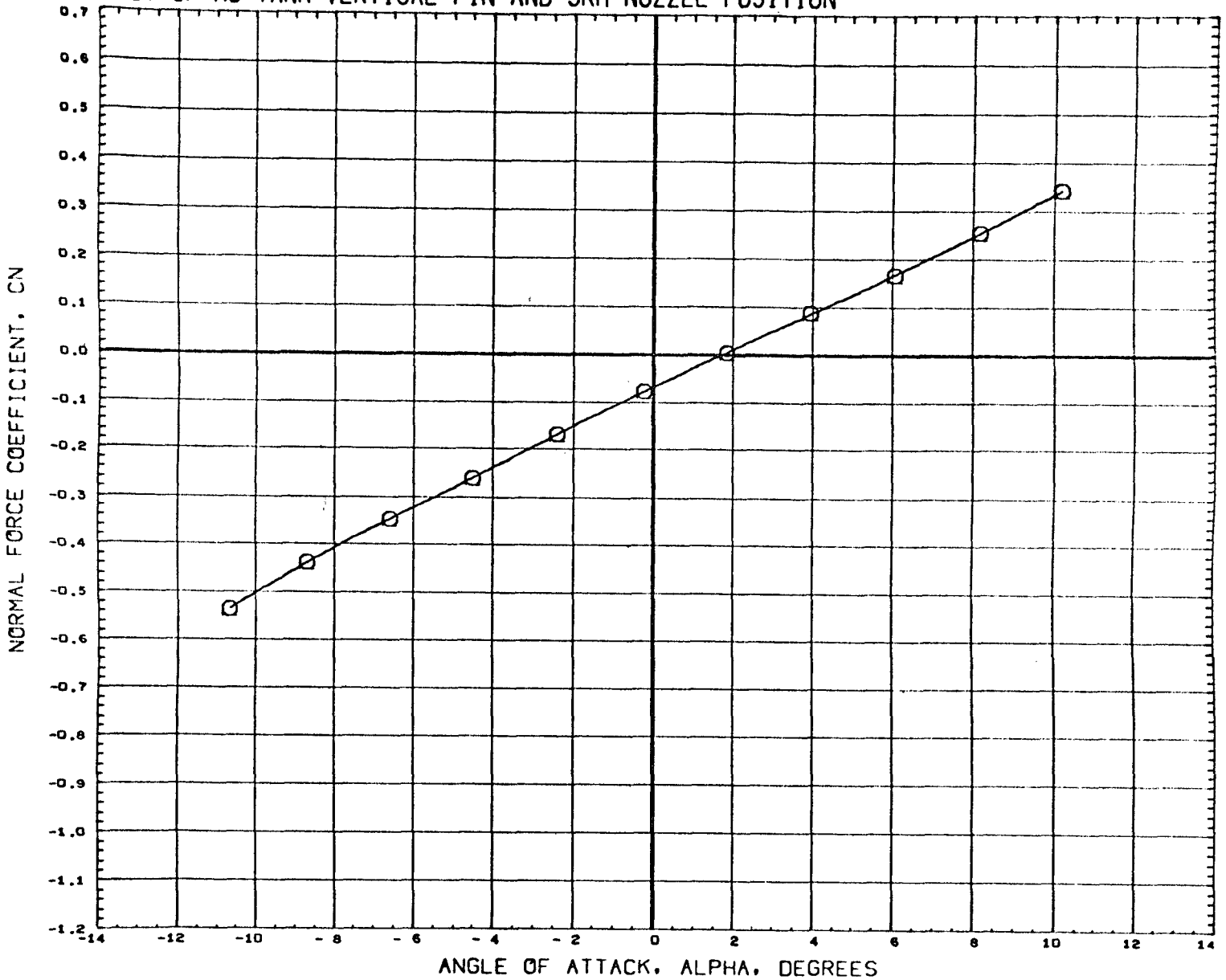
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(271002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(271043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(271045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

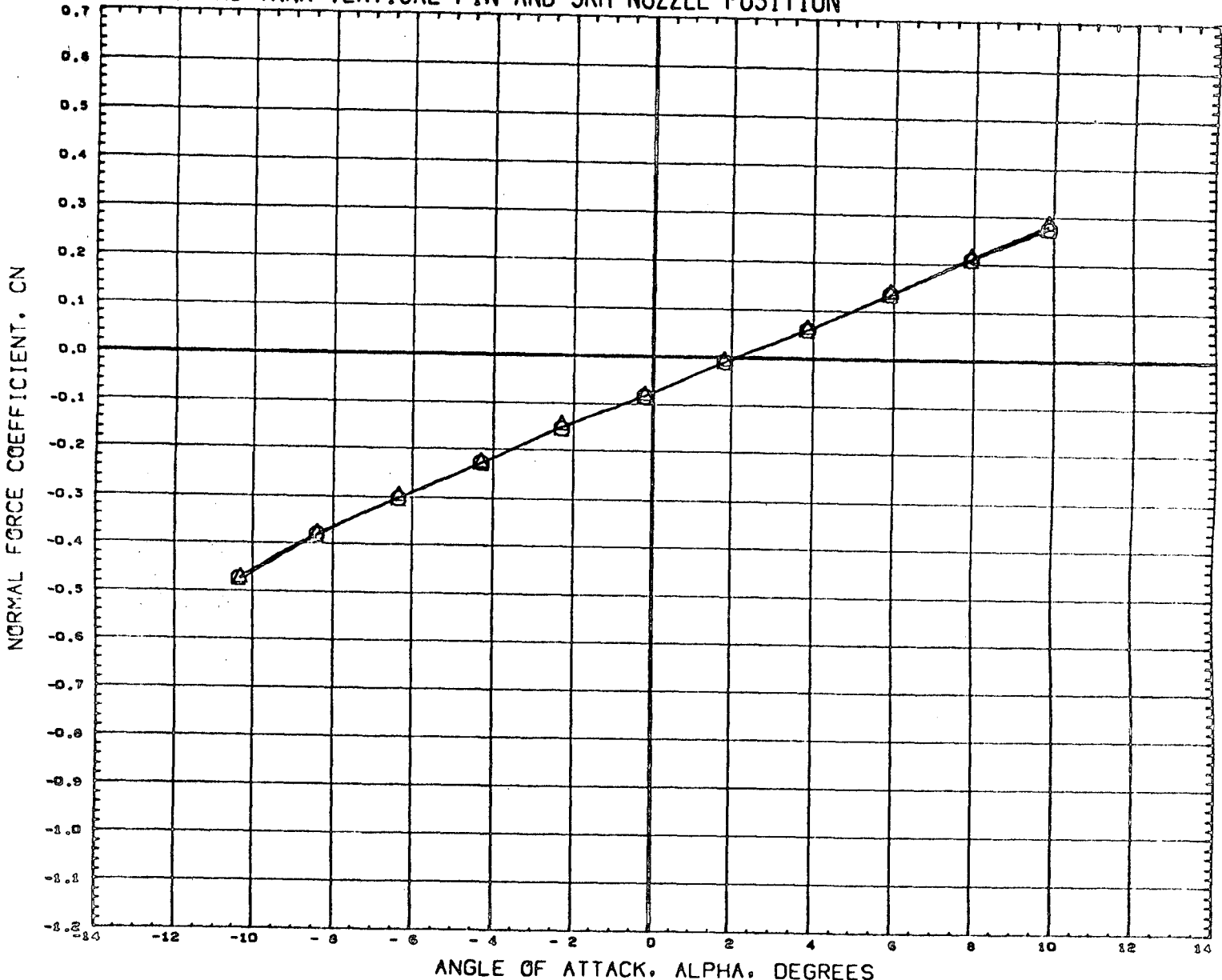
# EFFECT OF H<sub>0</sub> TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

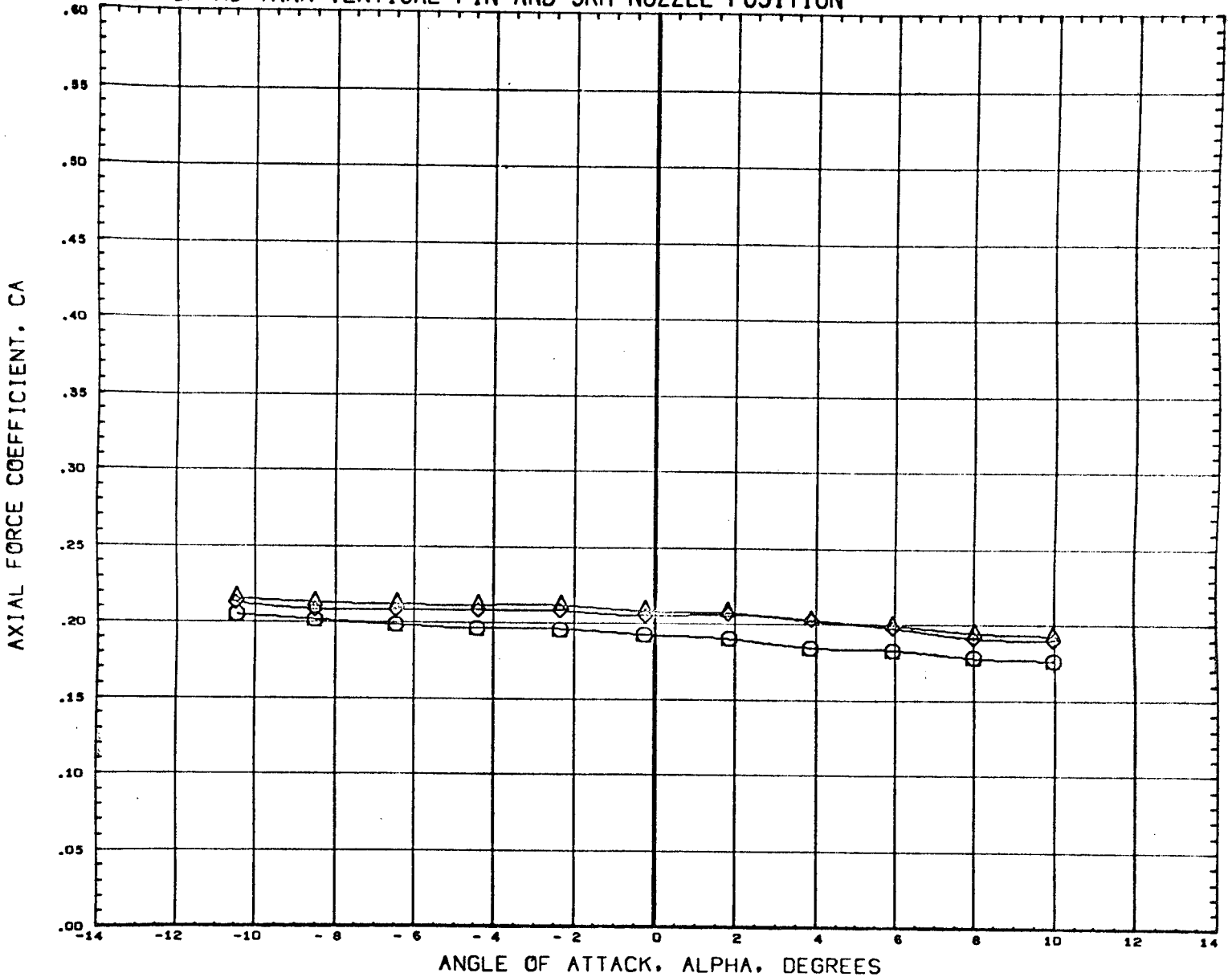
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBNIC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71049)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

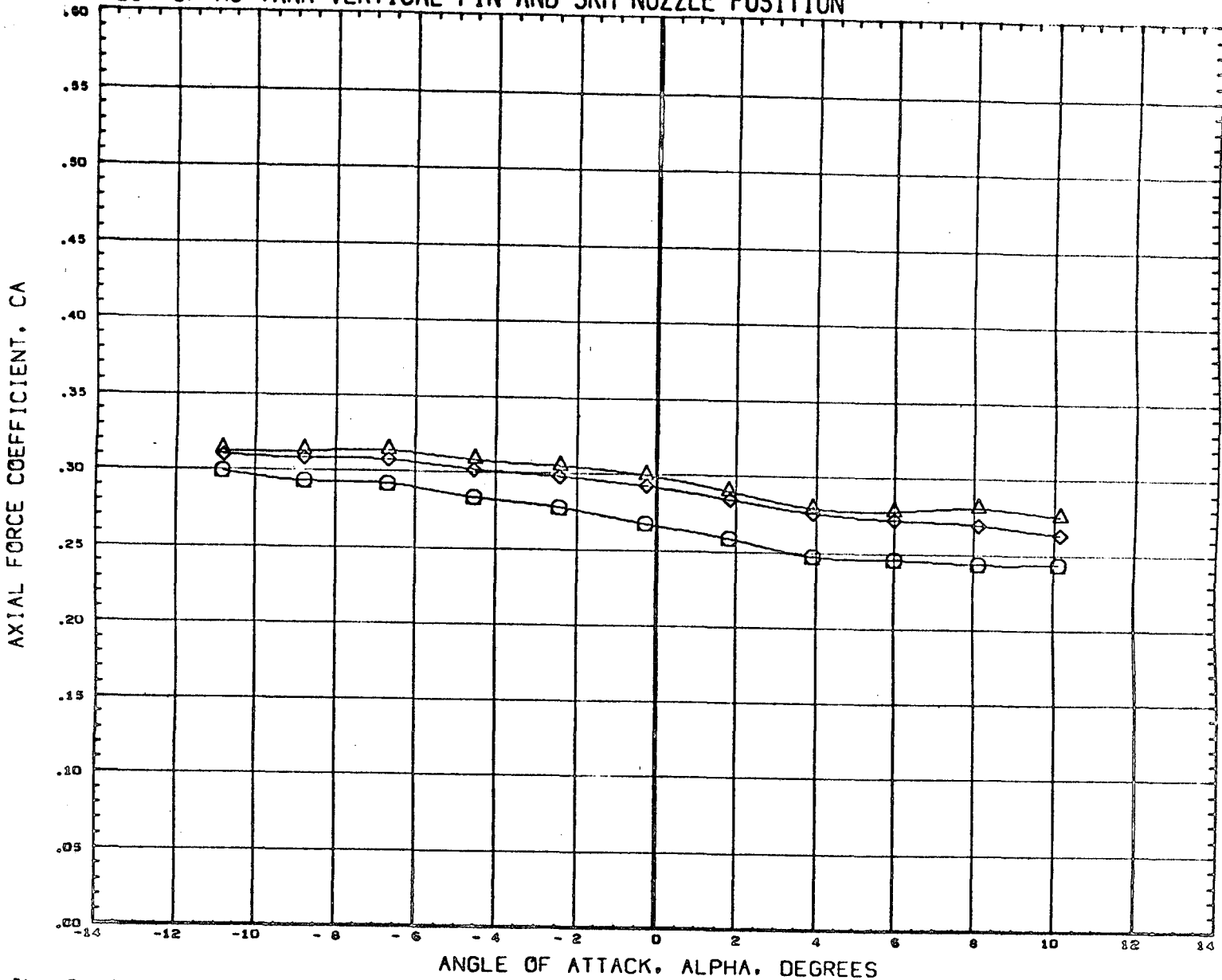
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

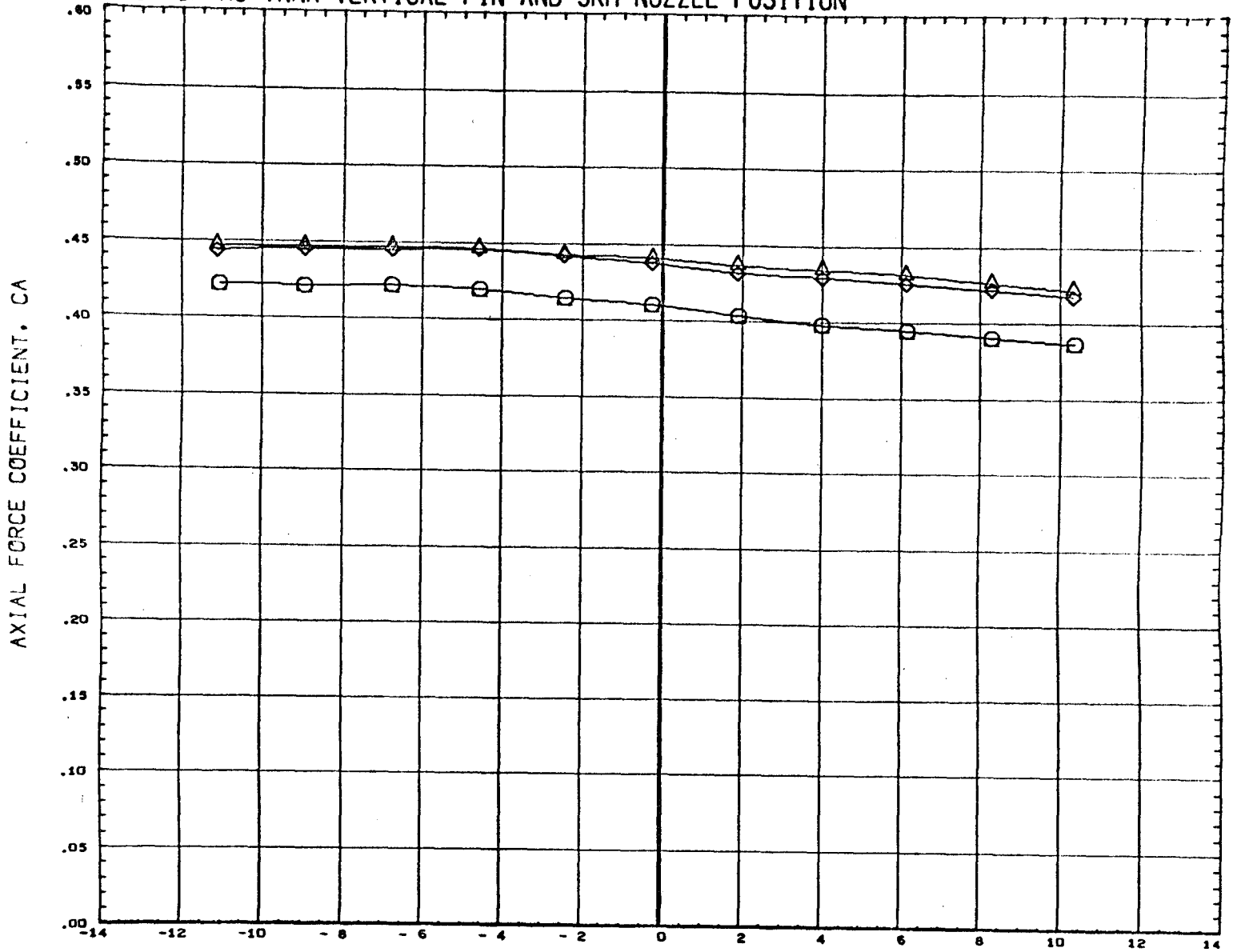


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 30. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

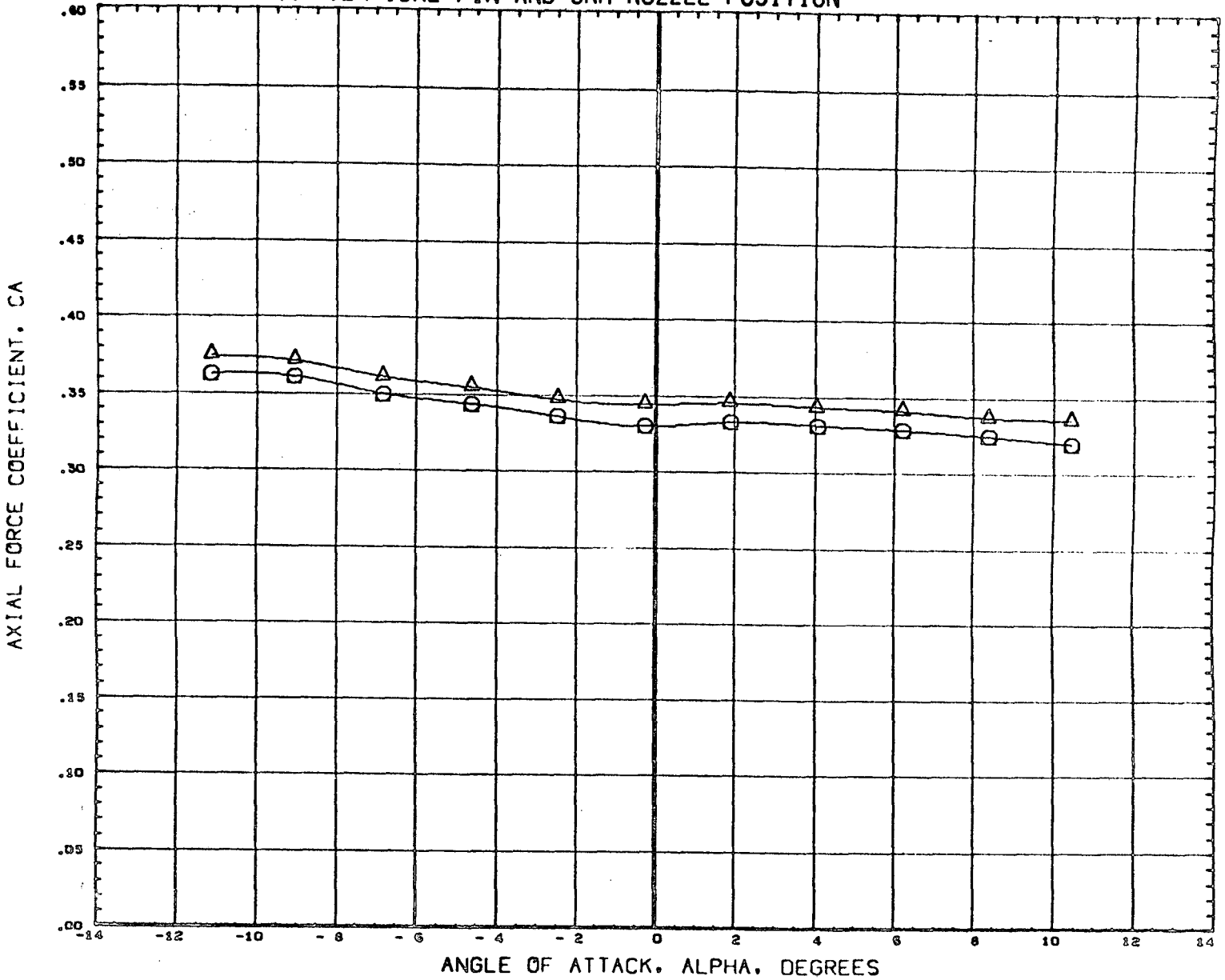


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

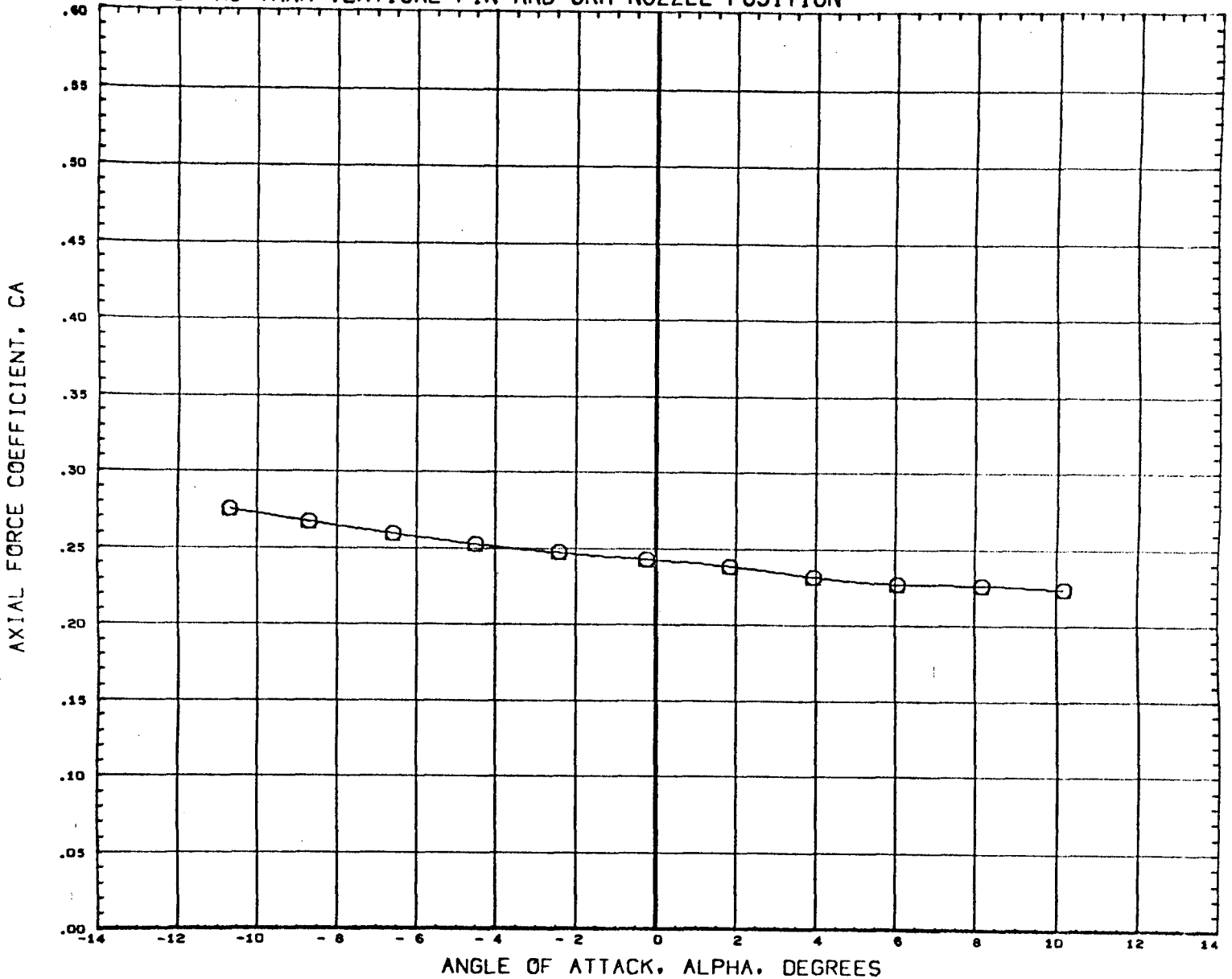
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71043)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

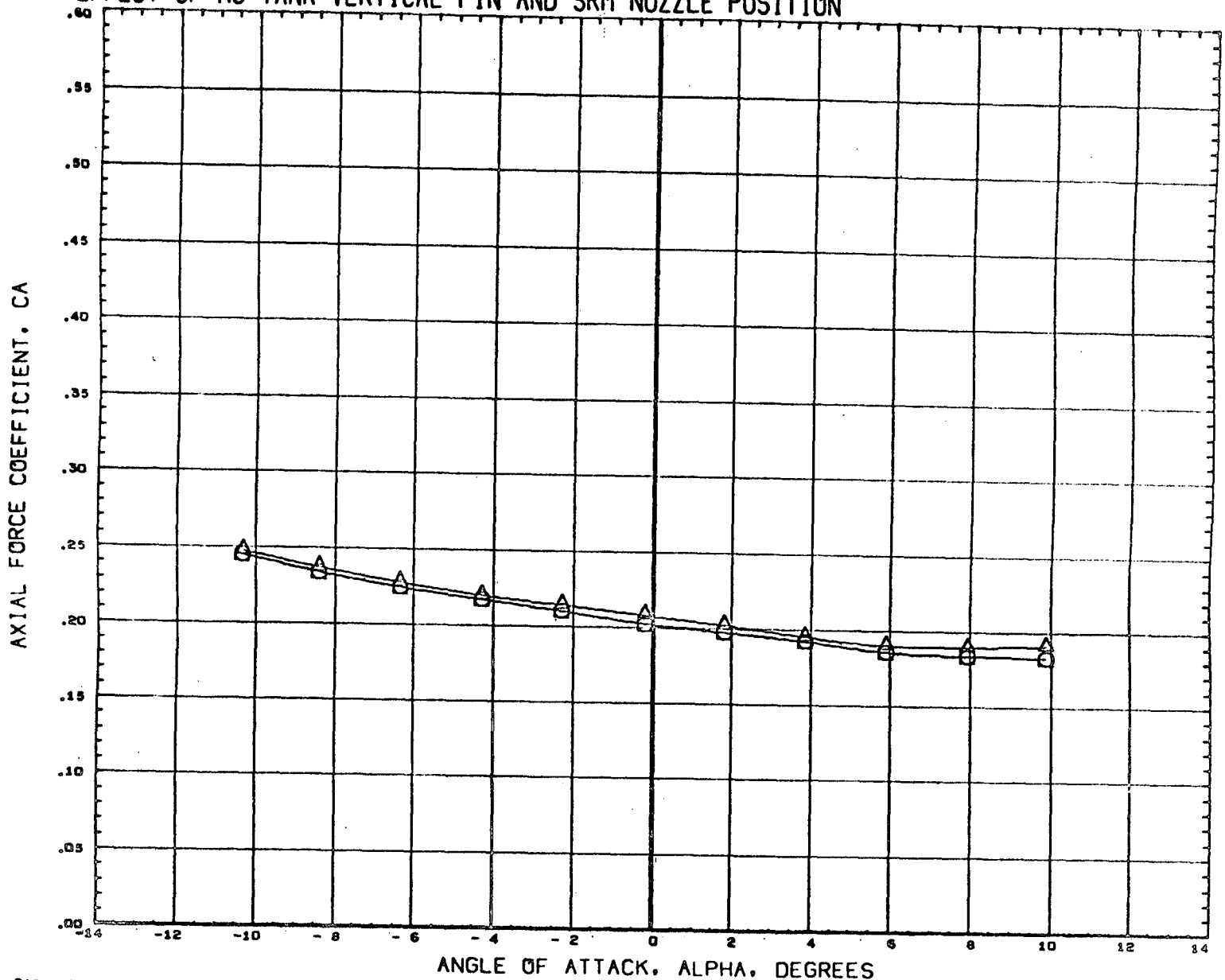
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8900 SQ. IN.
(B71043)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

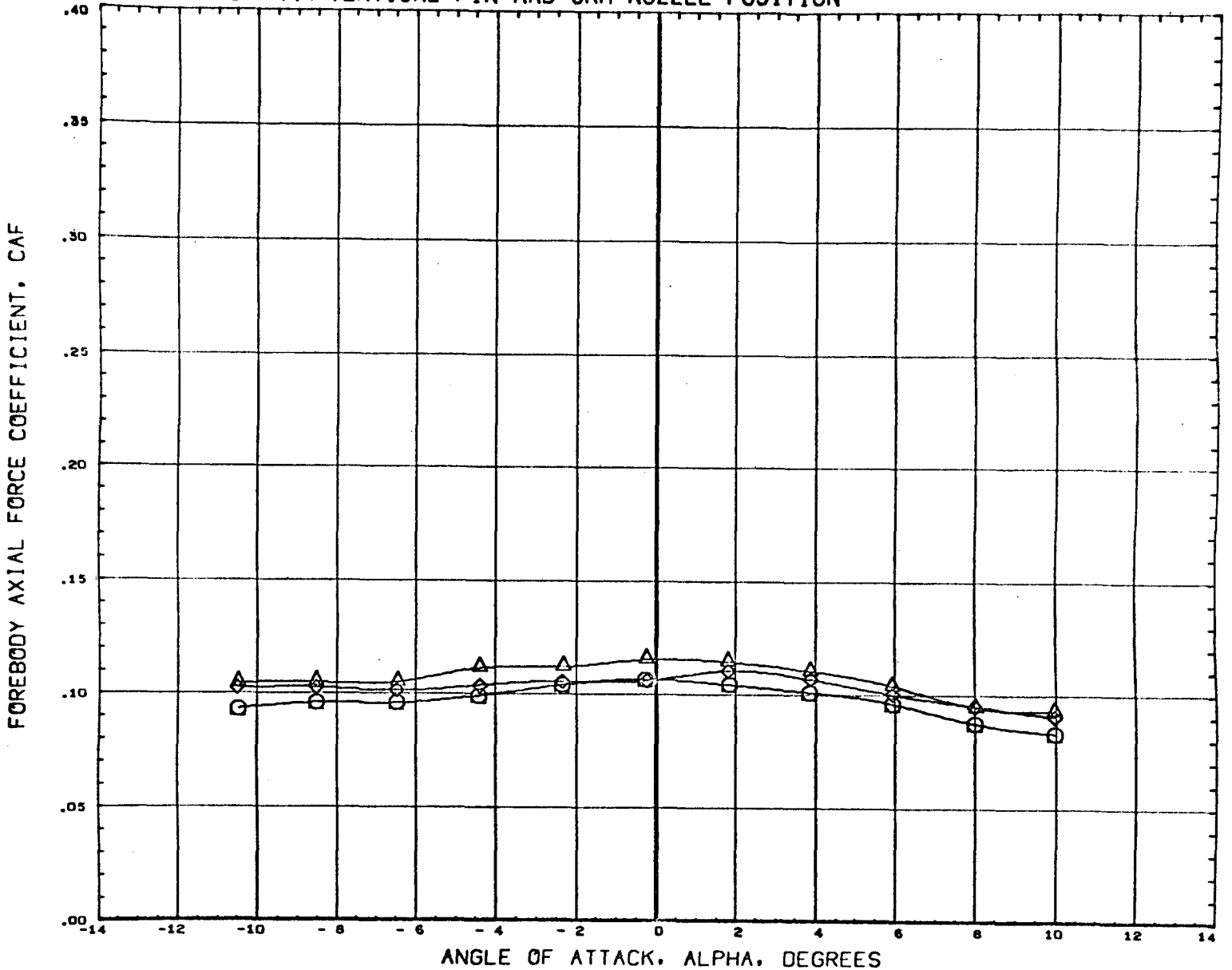
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS		-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

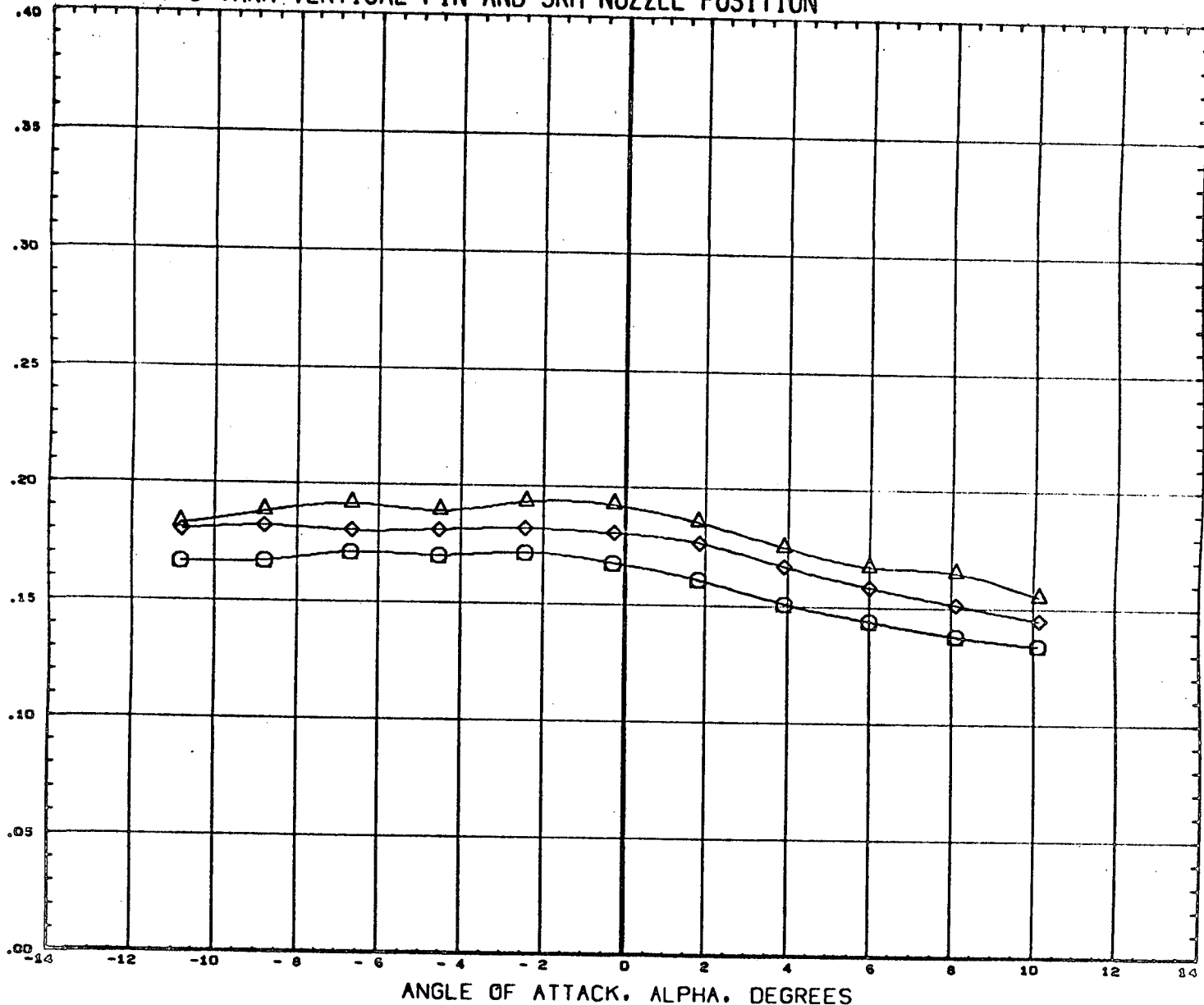


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

FOREBODY AXIAL FORCE COEFFICIENT, CAF

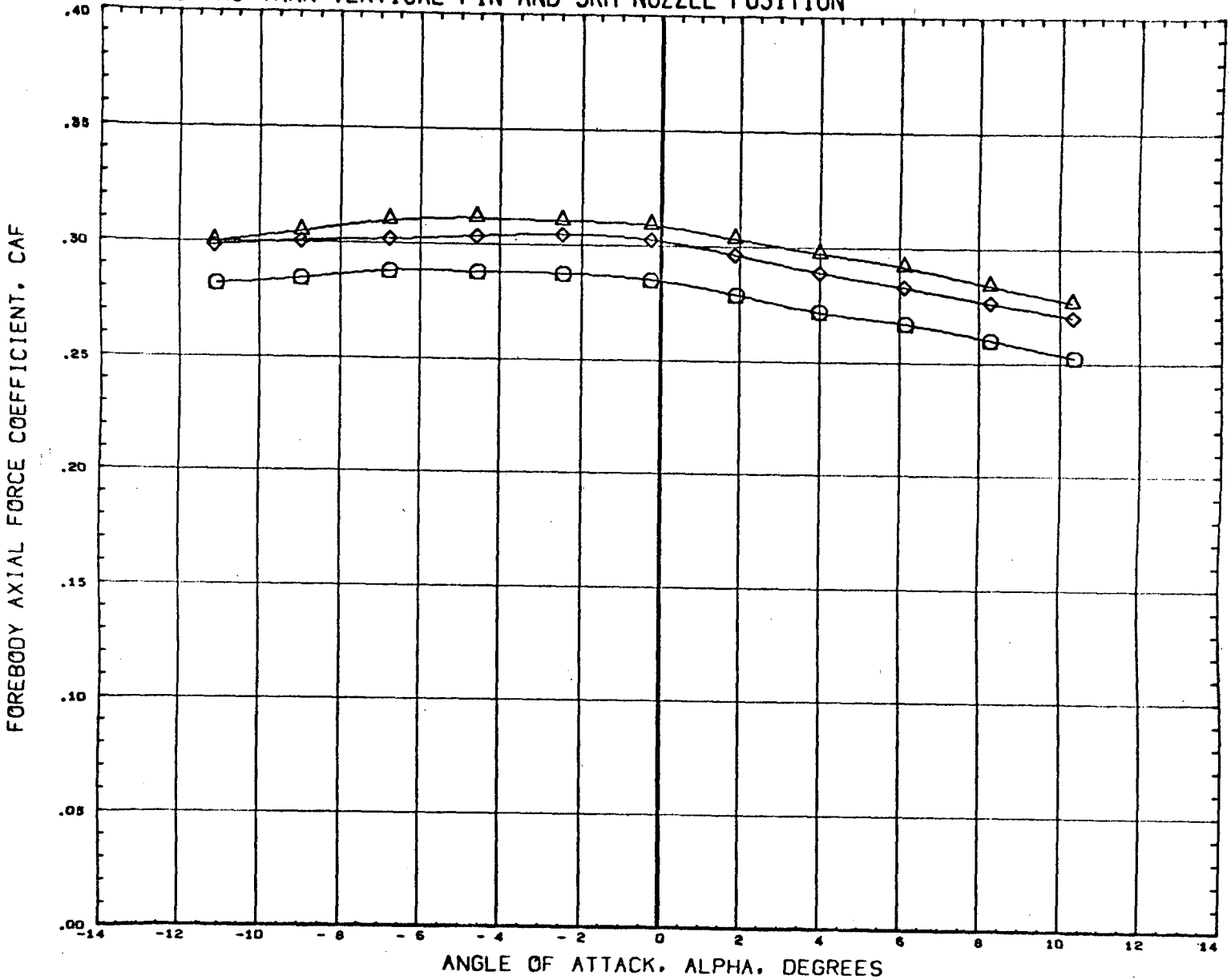


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

PC

# EFFECT OF H<sub>2</sub> TANK VERTICAL FIN AND SRM NOZZLE POSITION

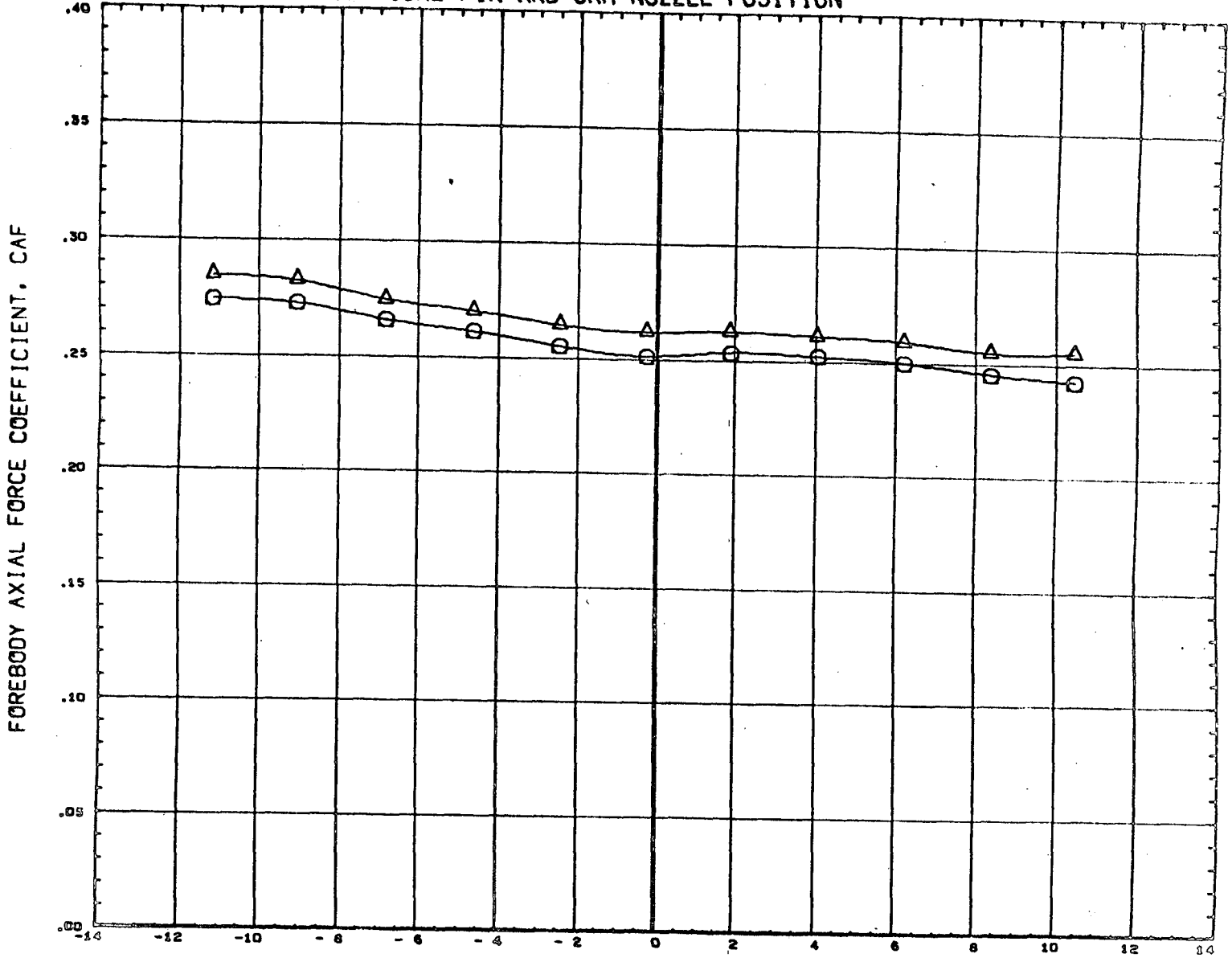


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

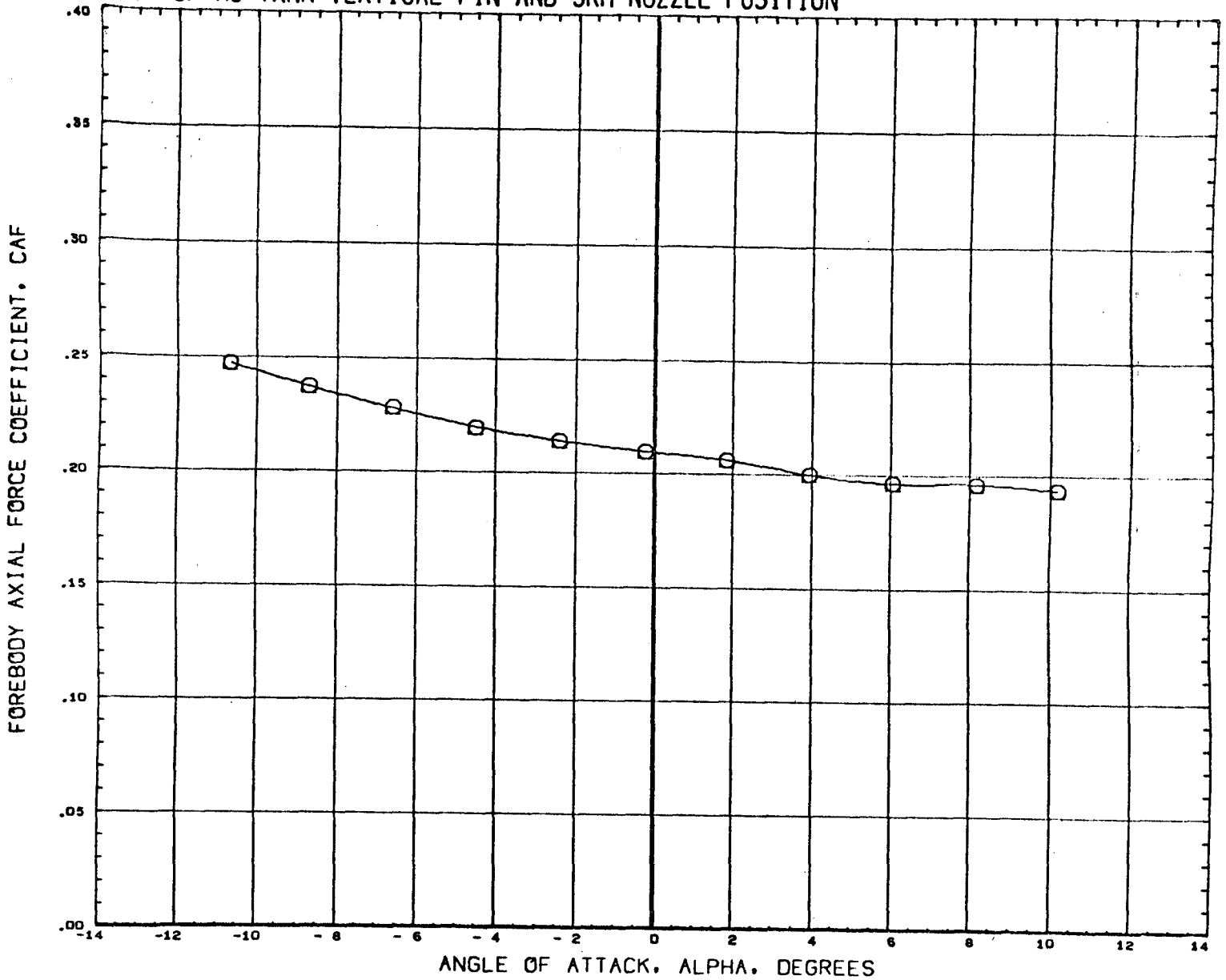


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97



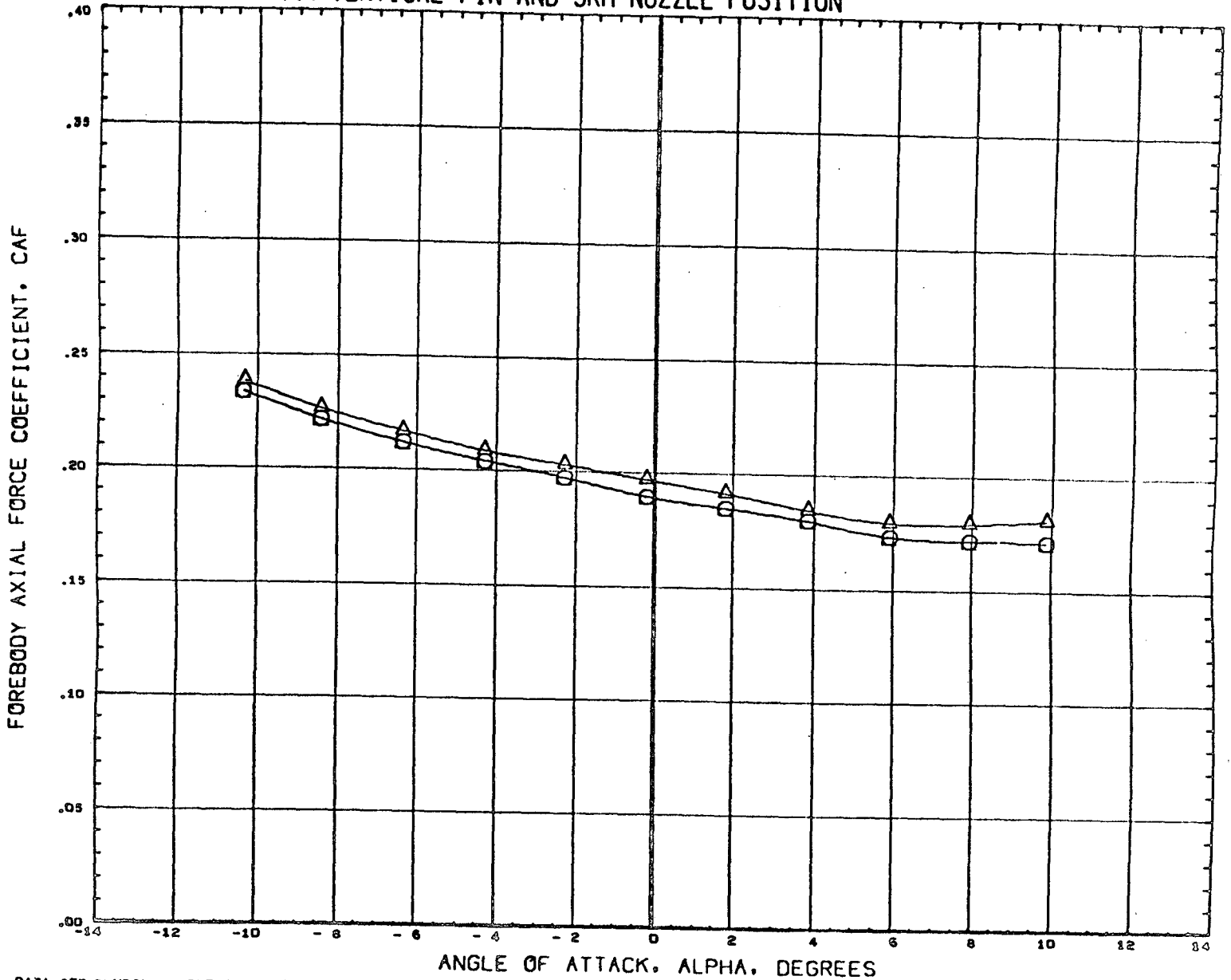
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 Sq. IN
(B71043)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

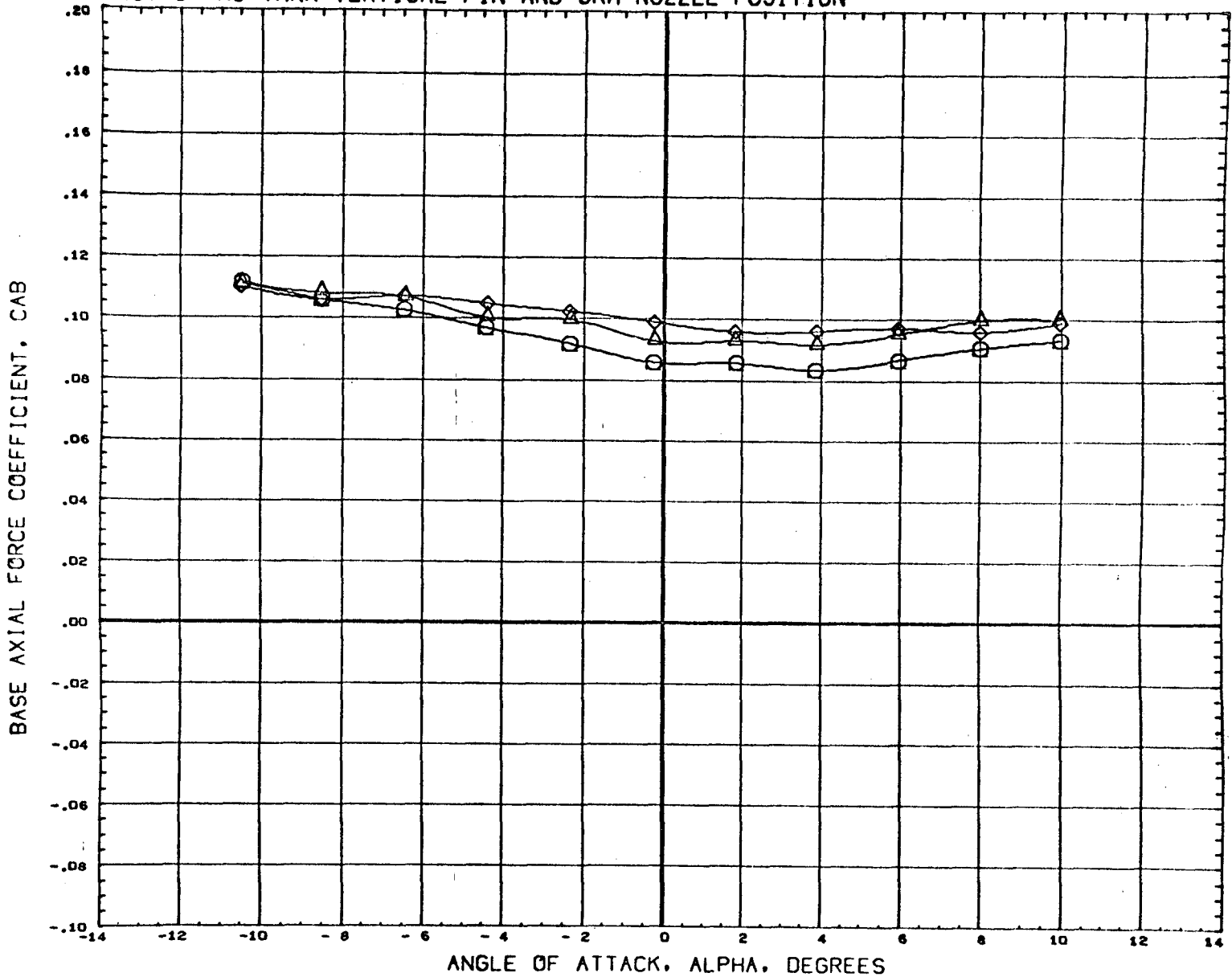
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS		-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

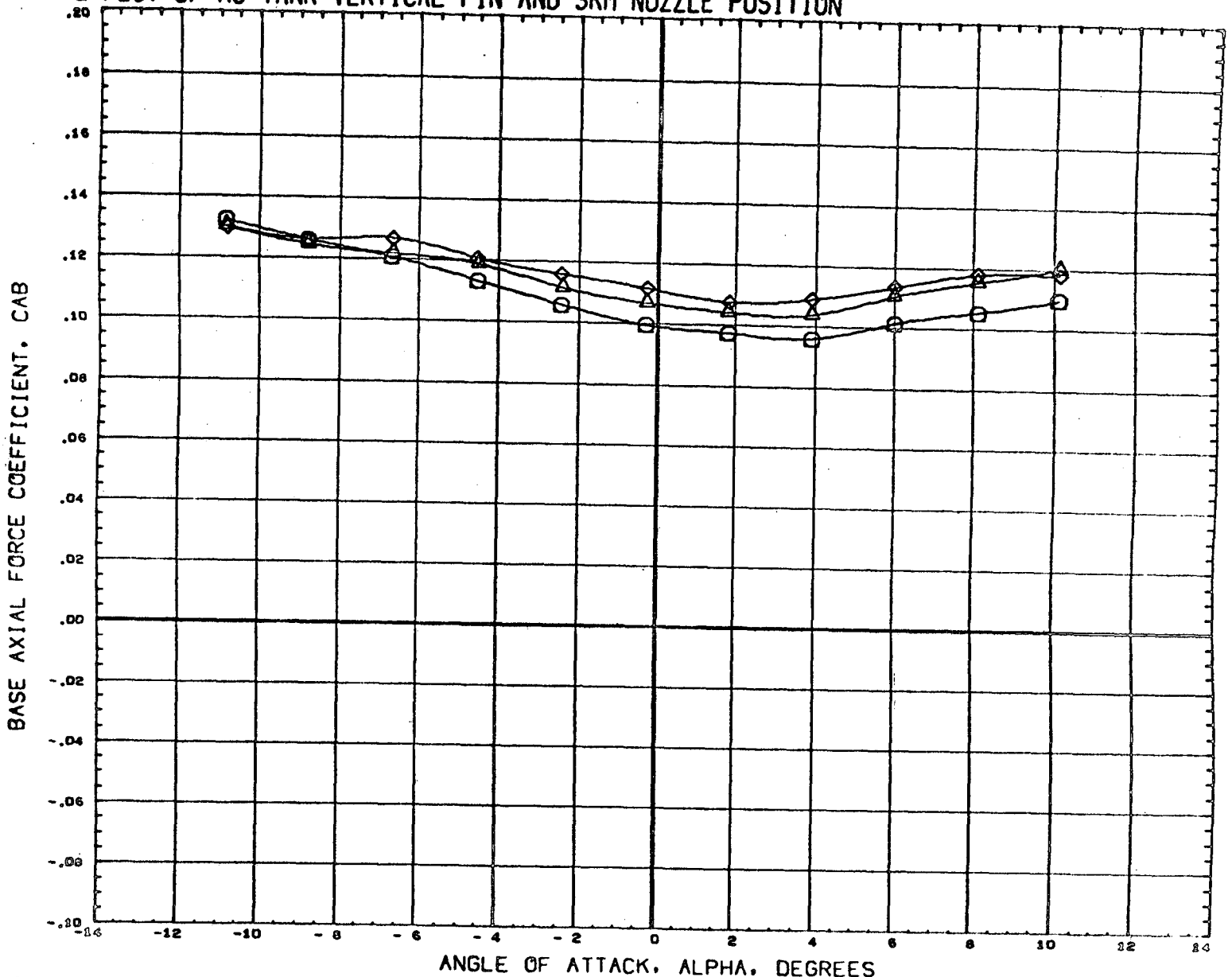
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

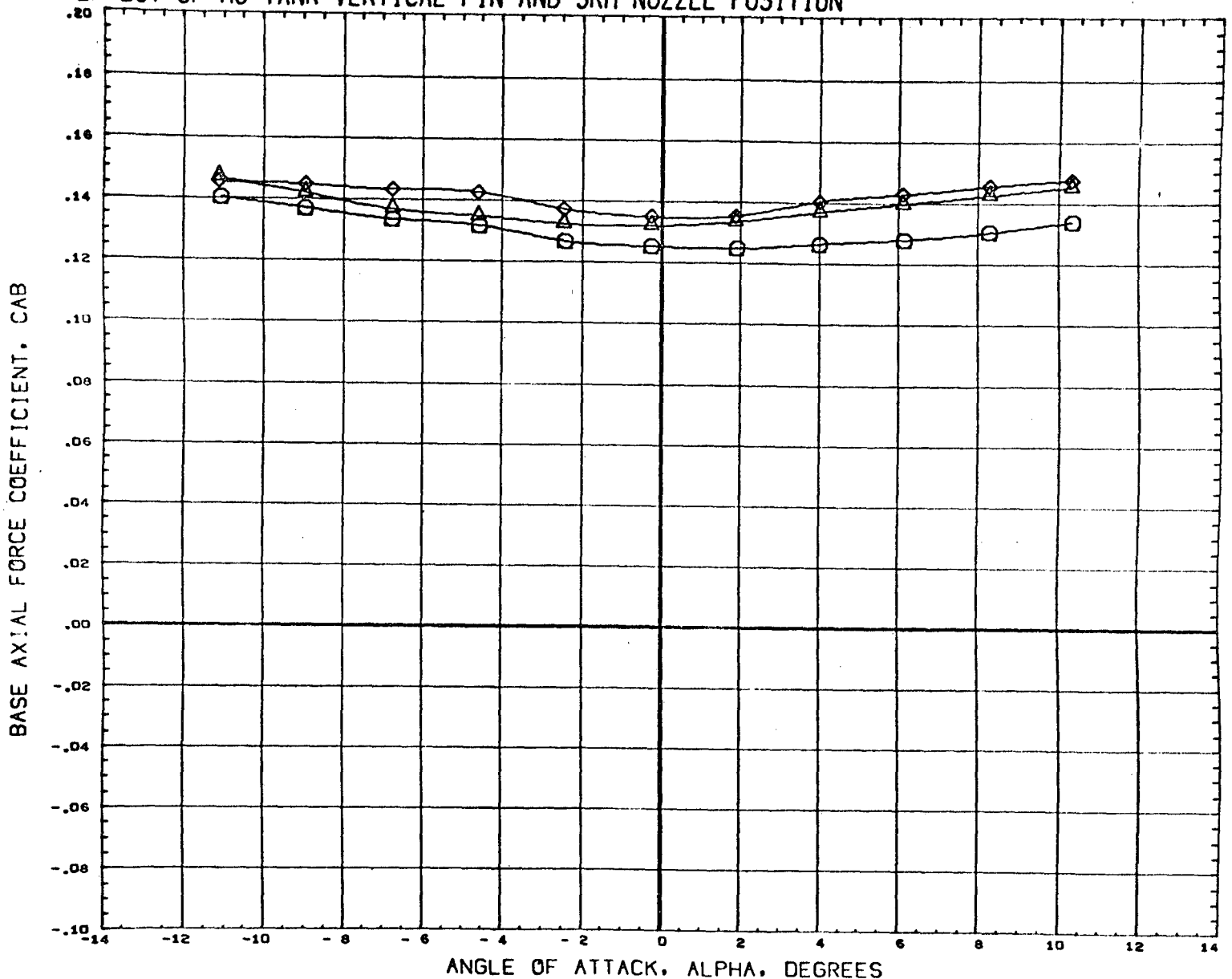
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.6600 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

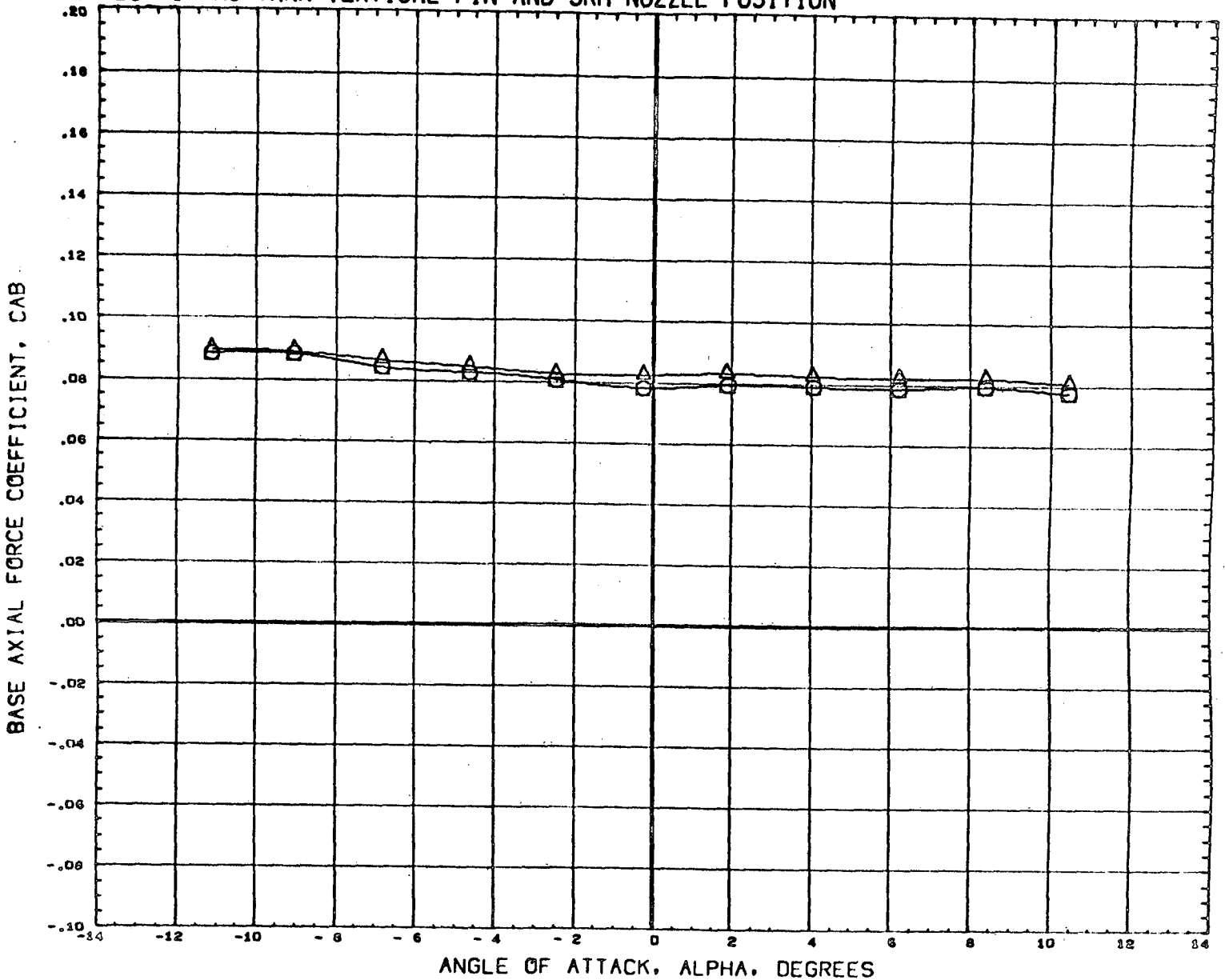
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

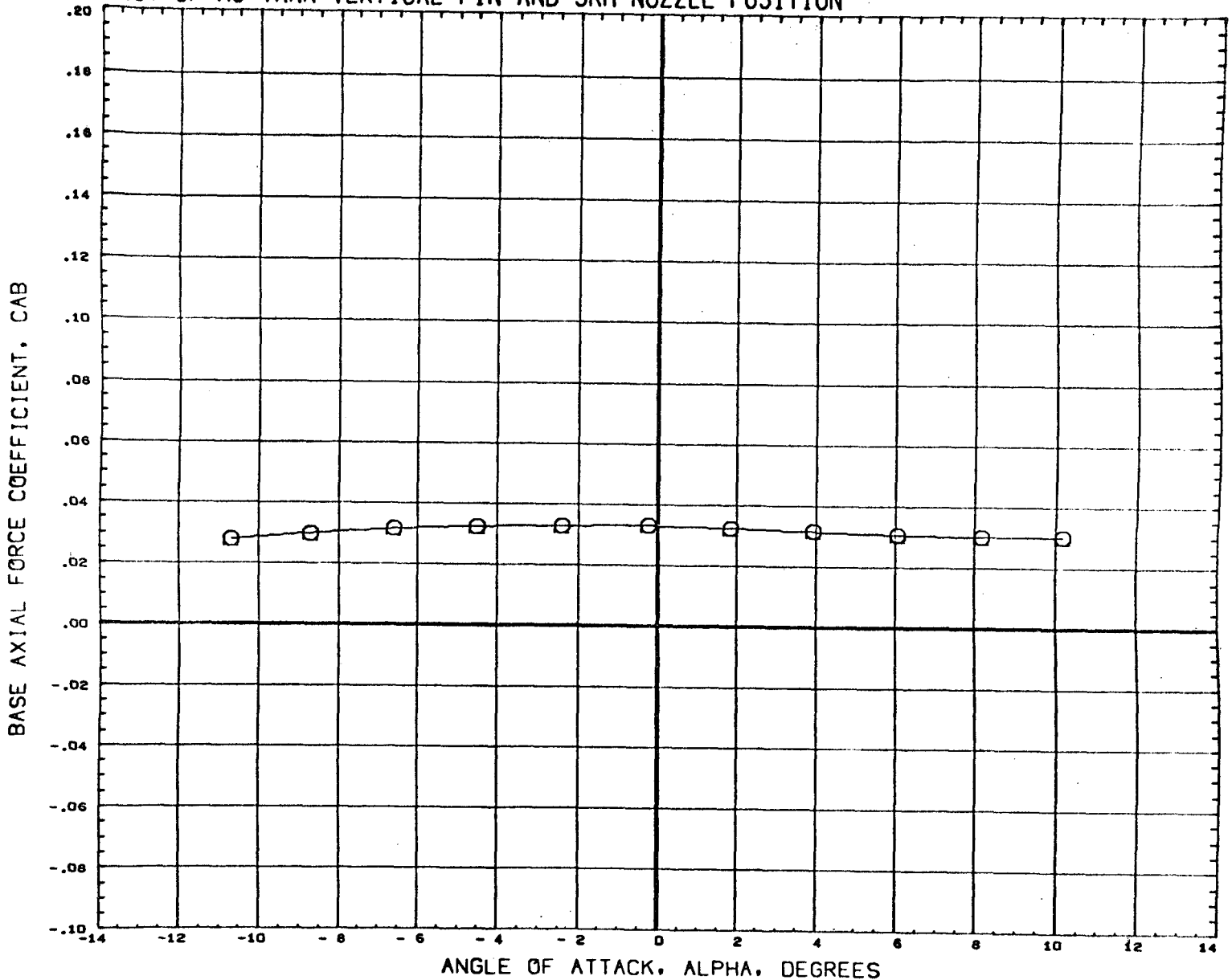
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

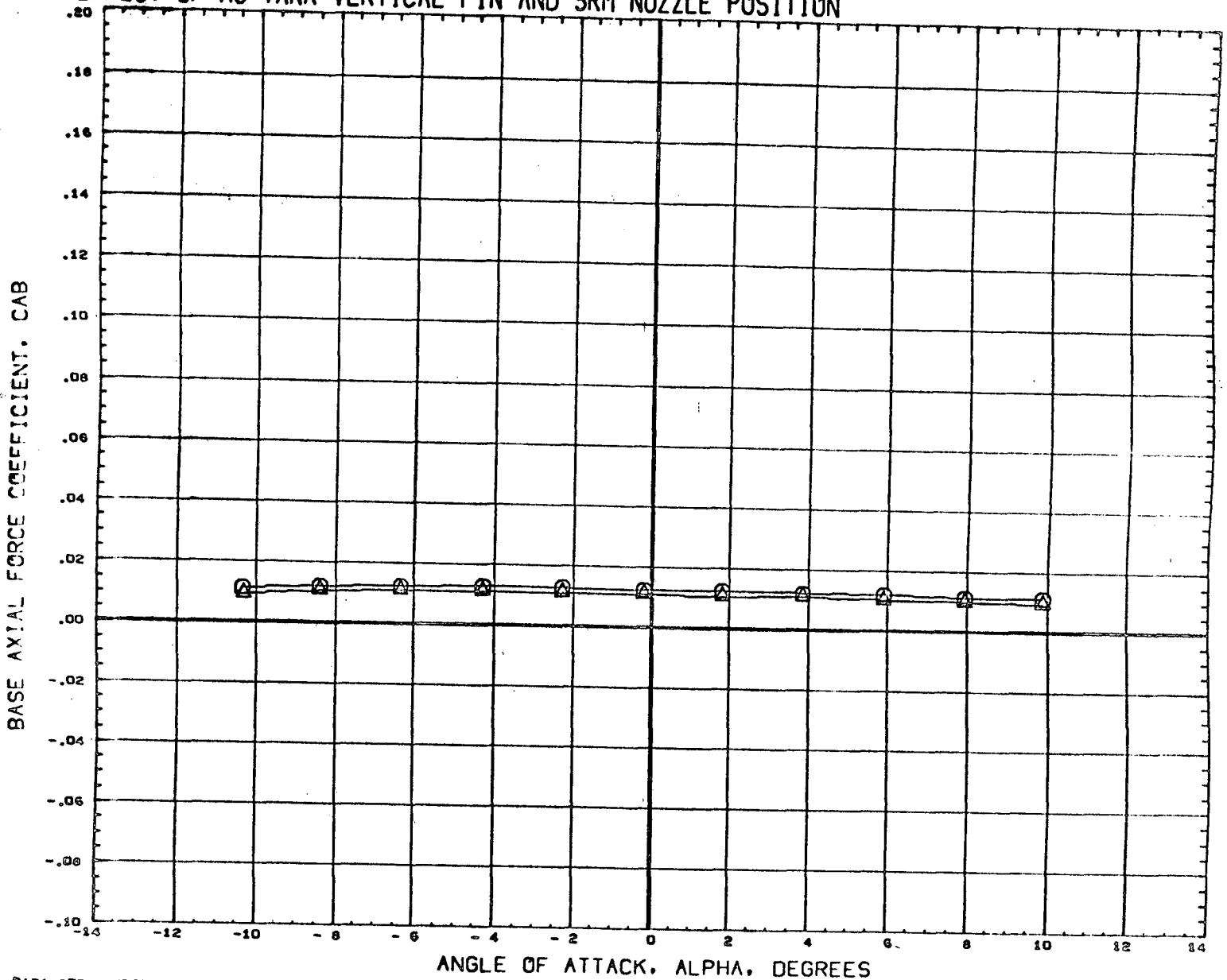
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

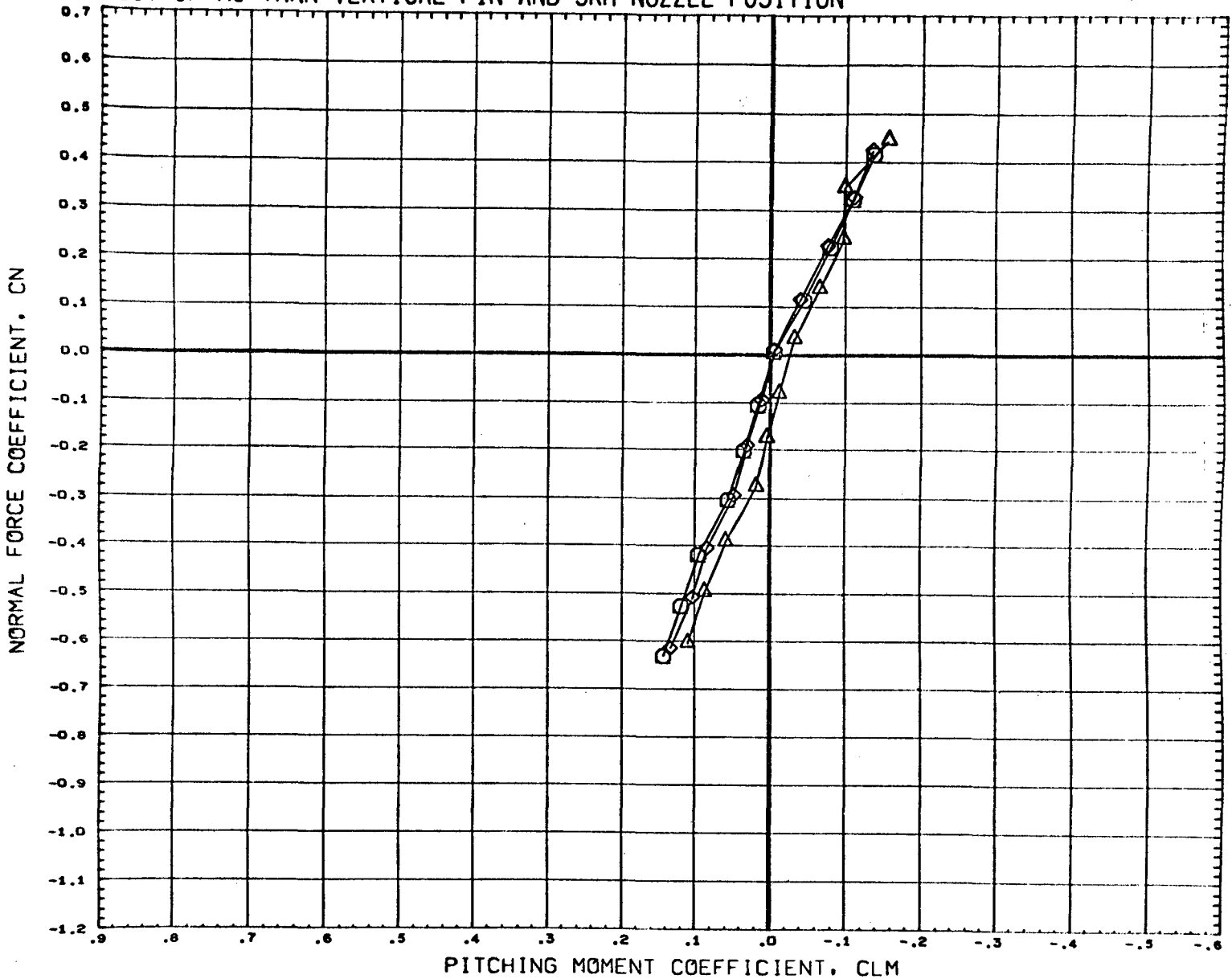


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96



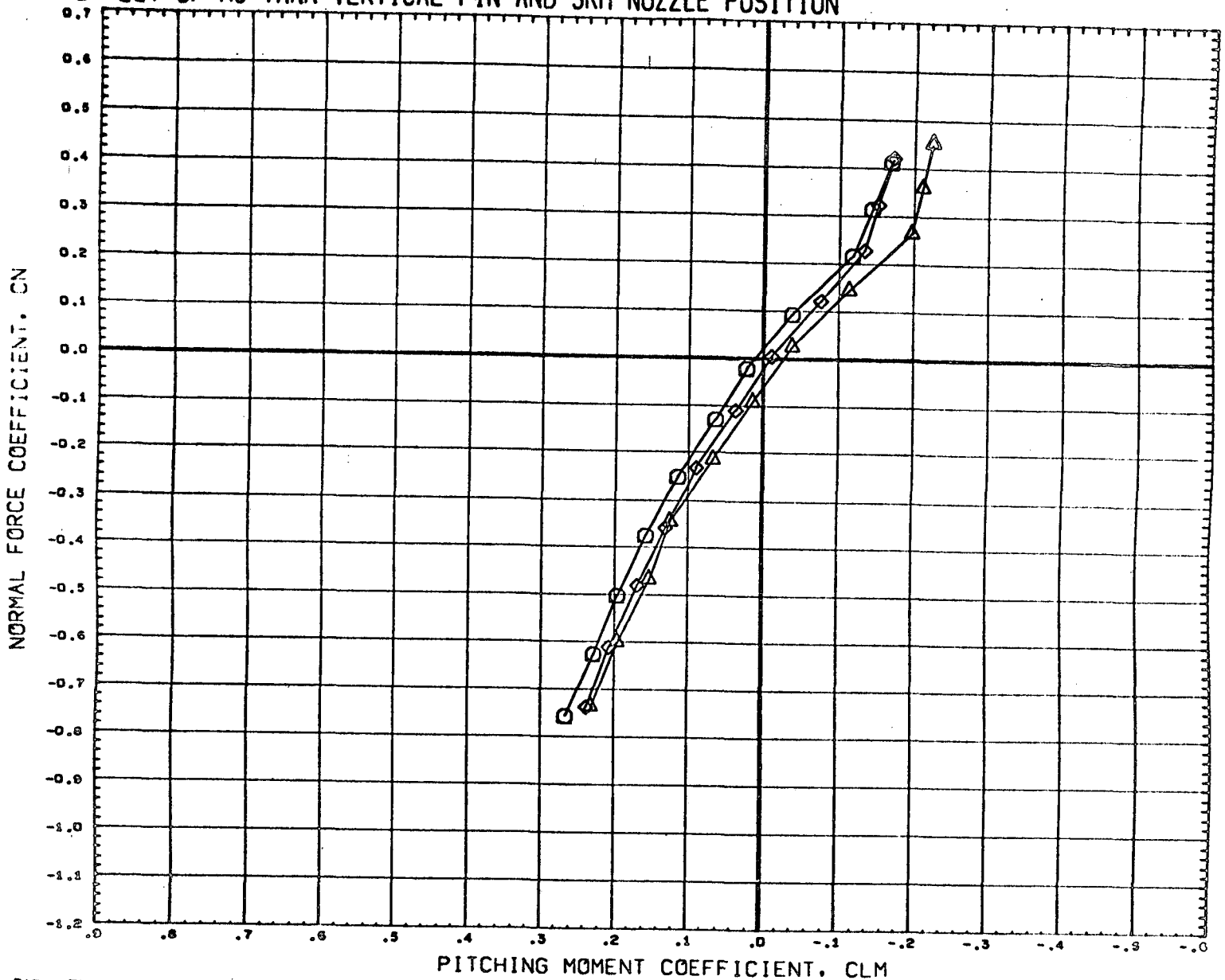
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

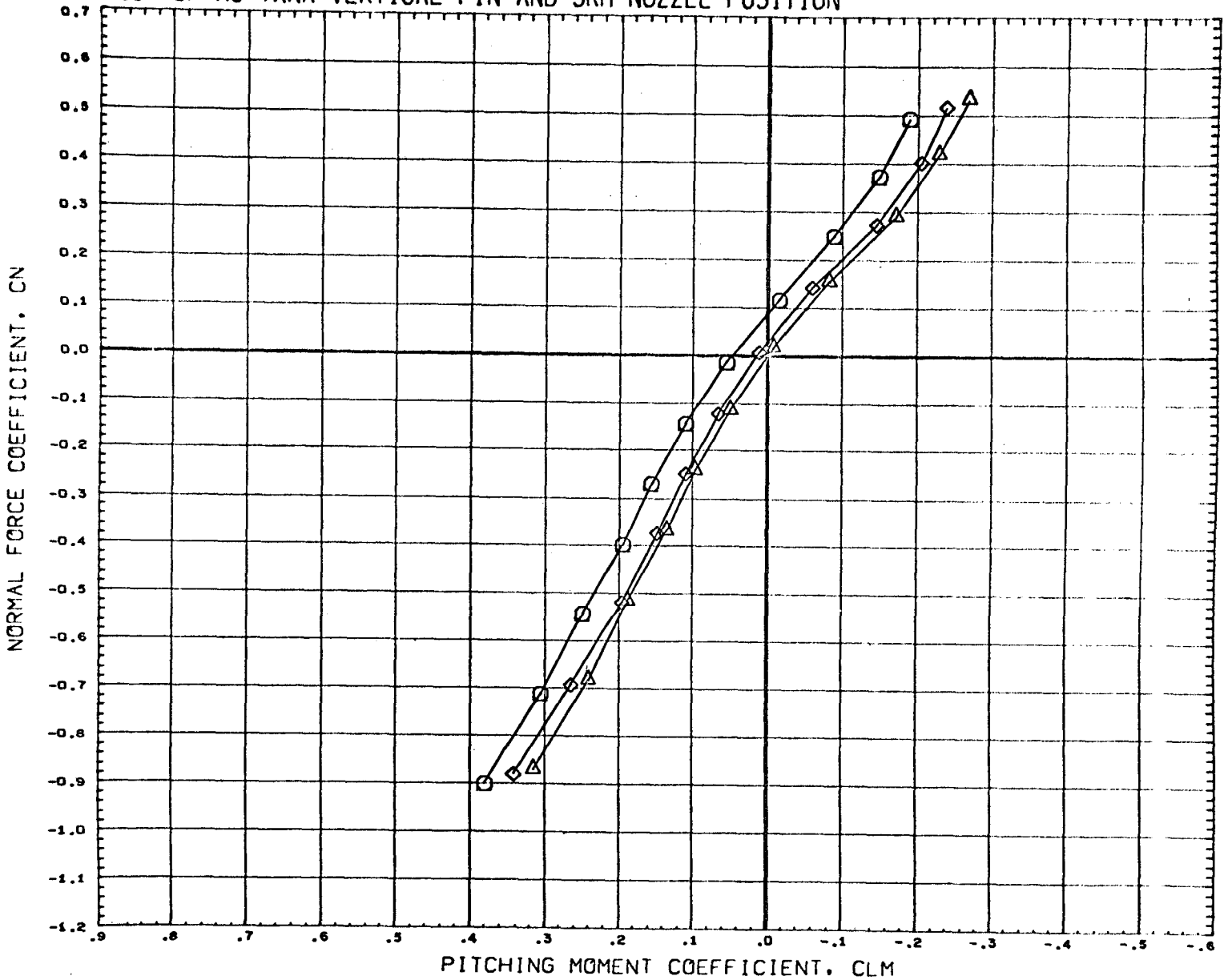
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(871045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

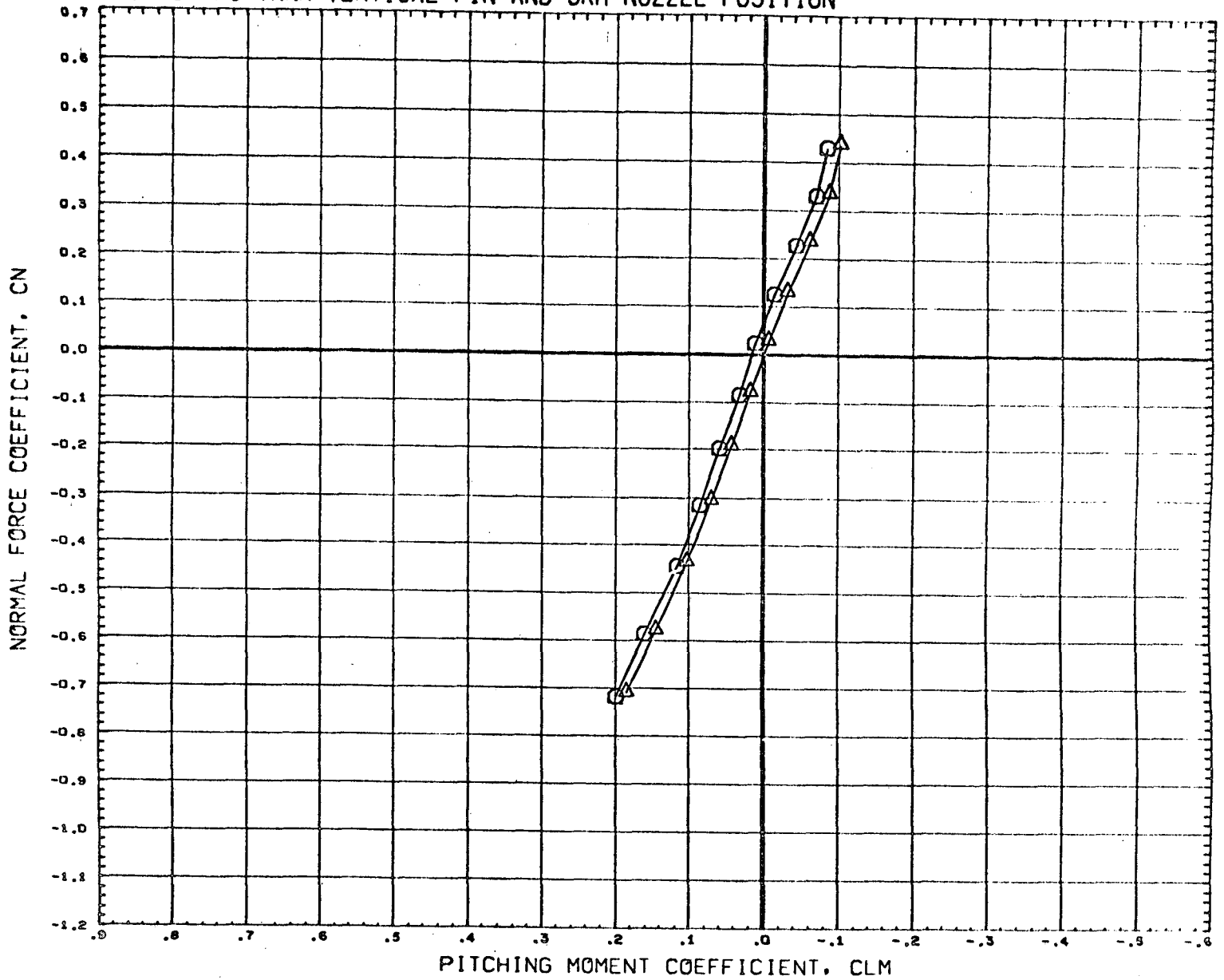
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

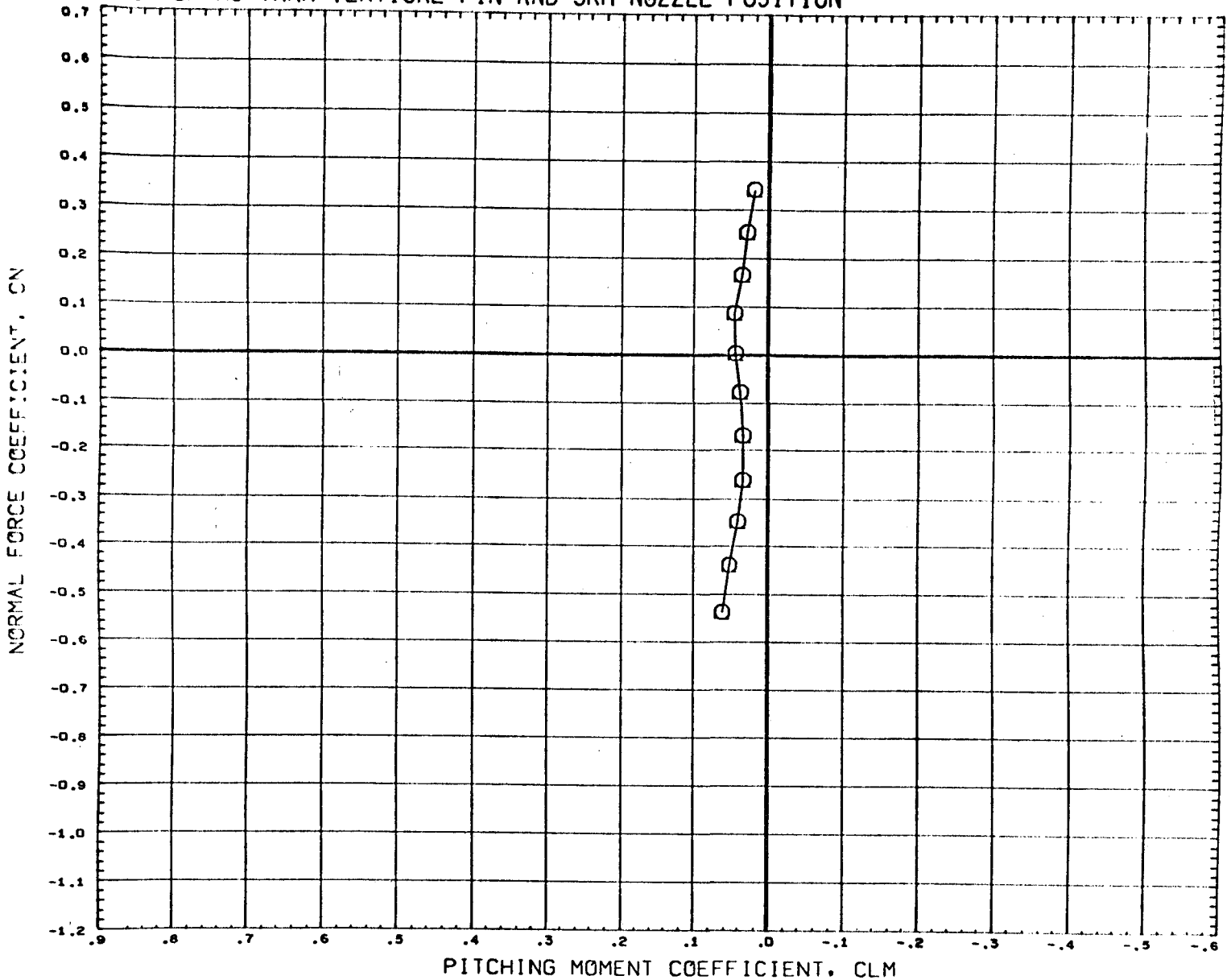
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

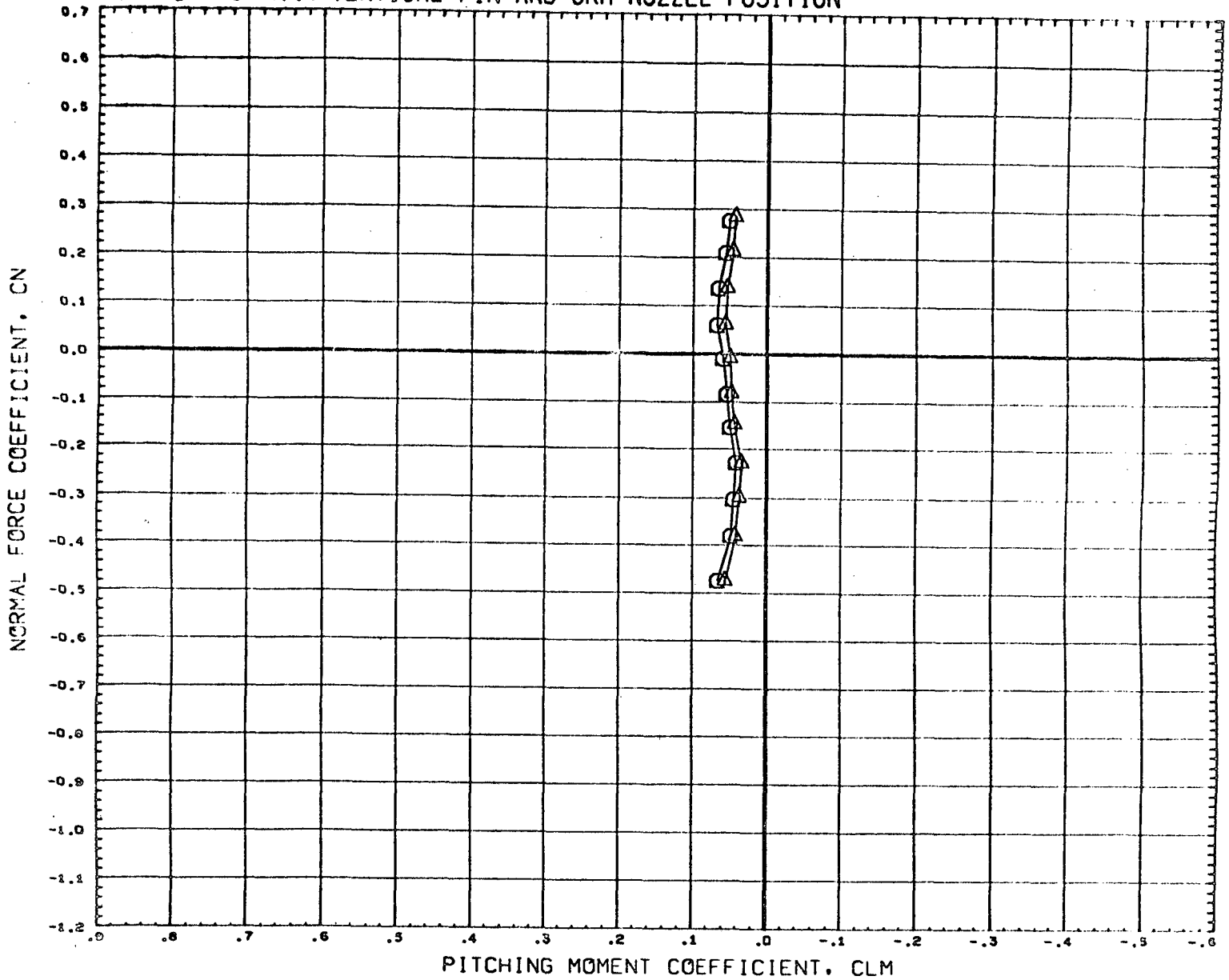
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	DATA NOT AVAILABLE FOR ALL CONDITIONS		-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS		-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 3.48

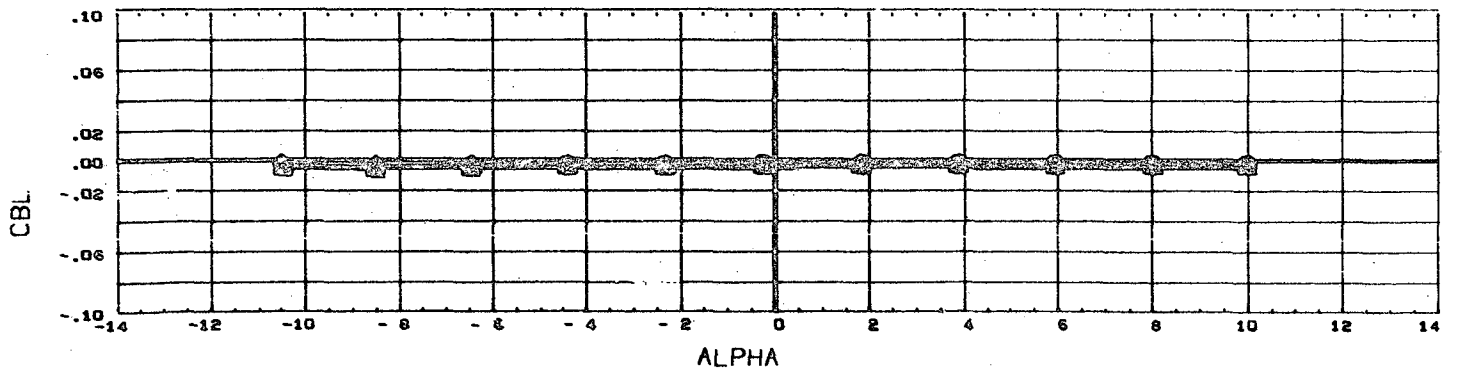
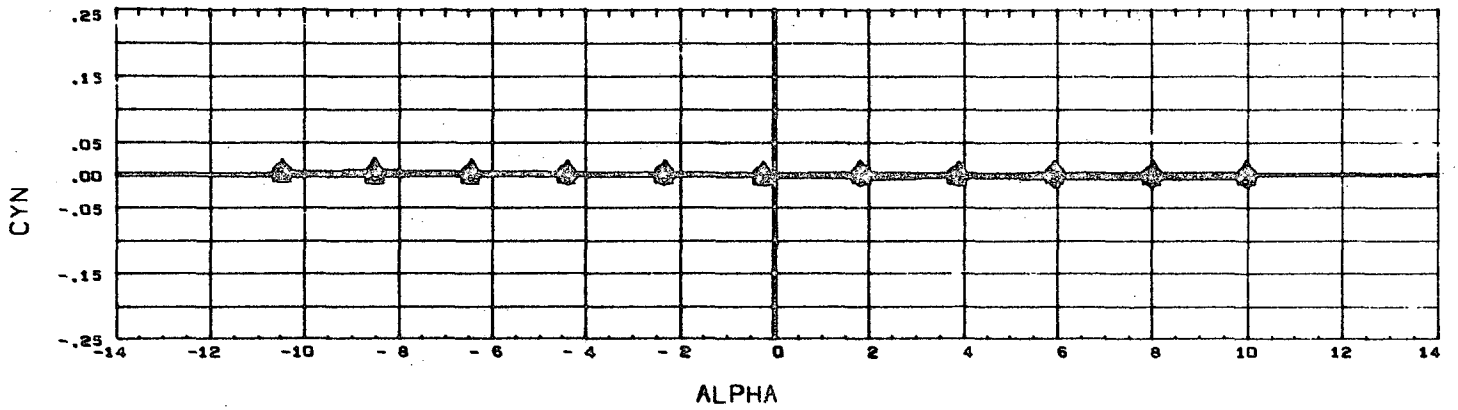
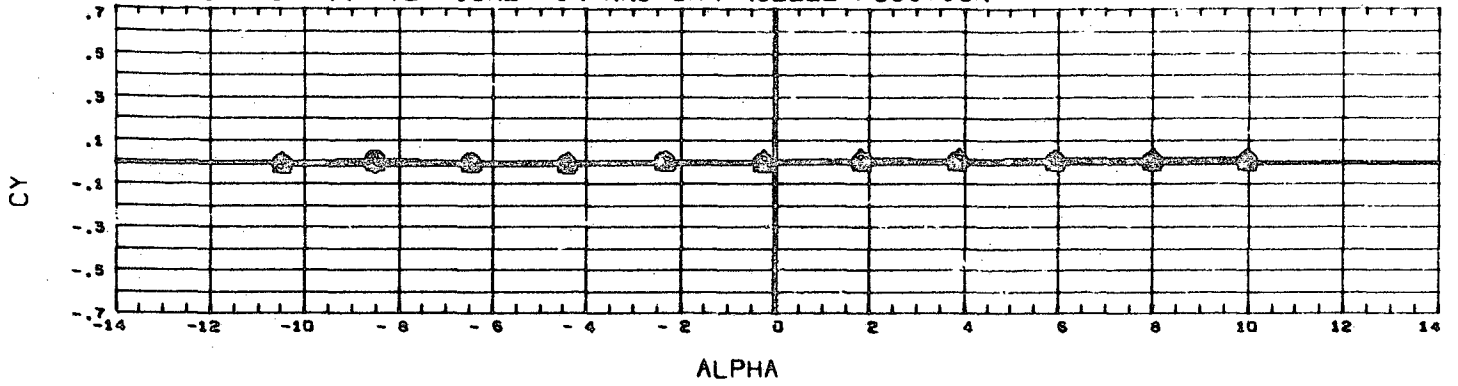
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71049)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

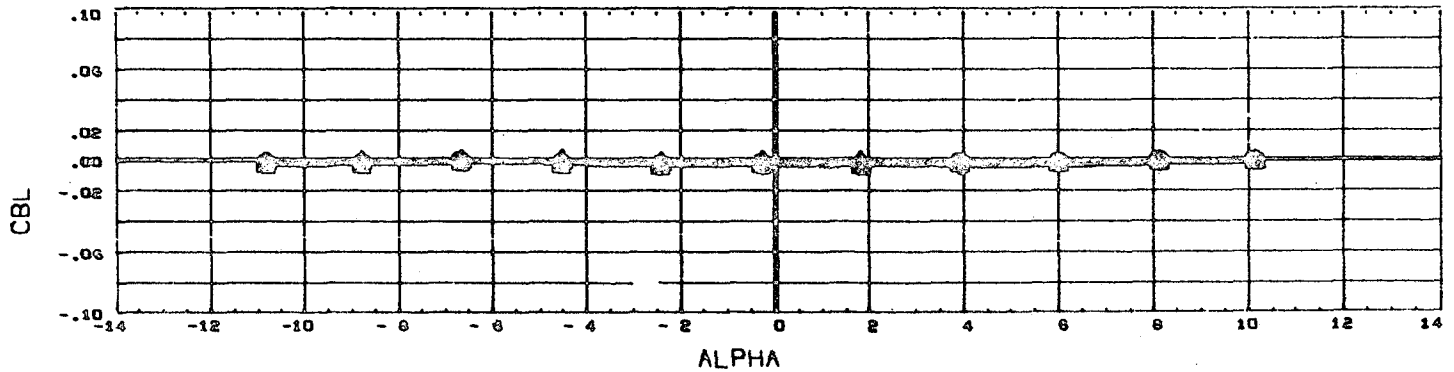
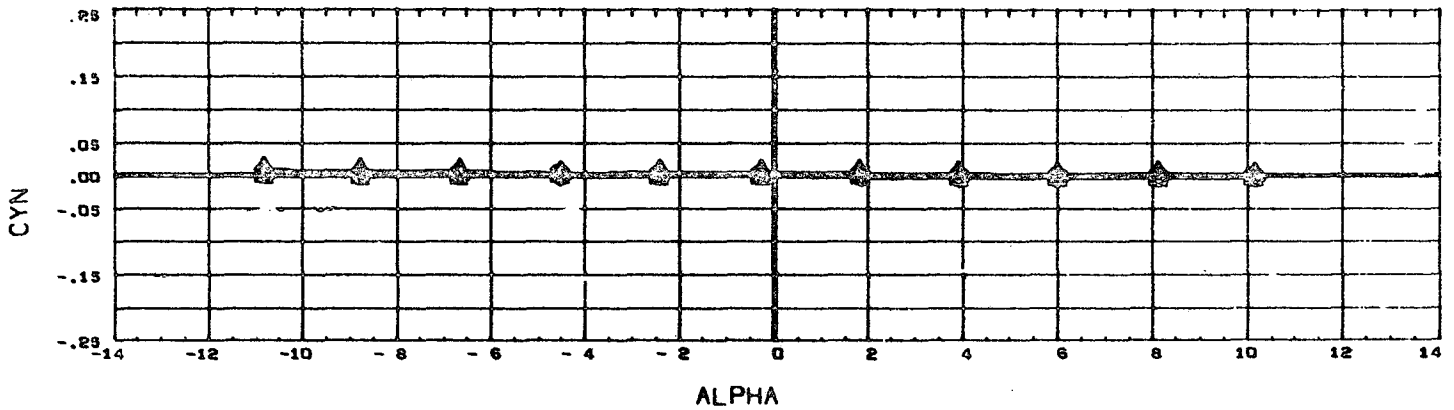
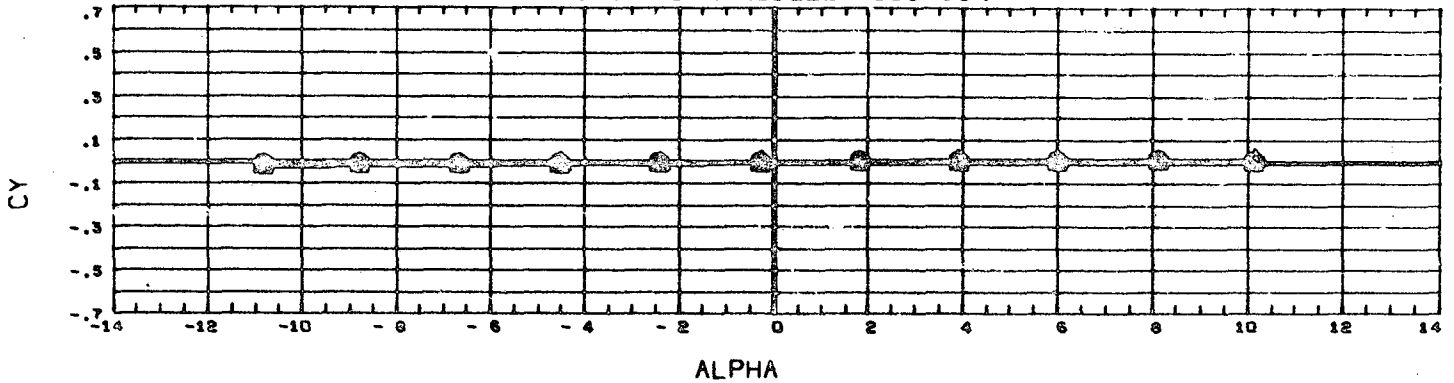
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61

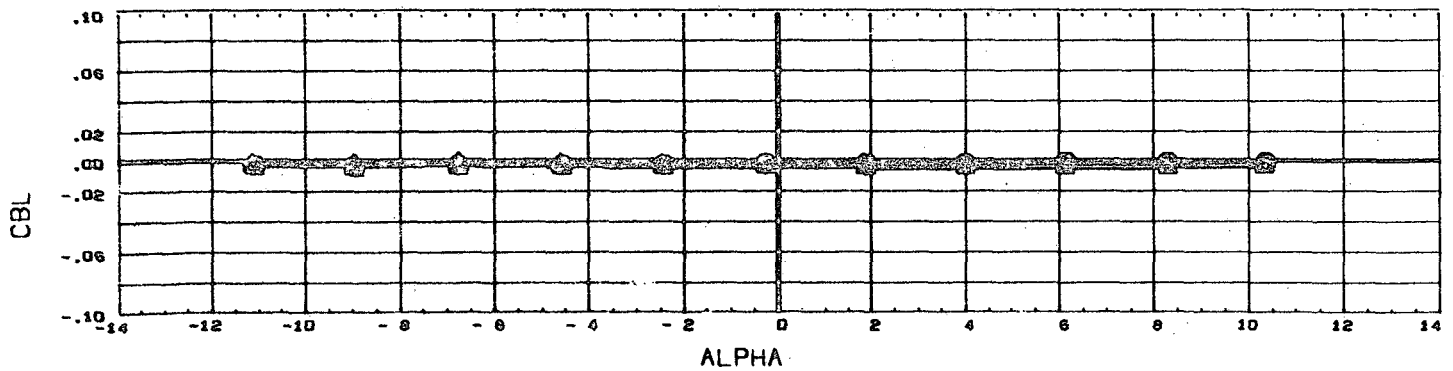
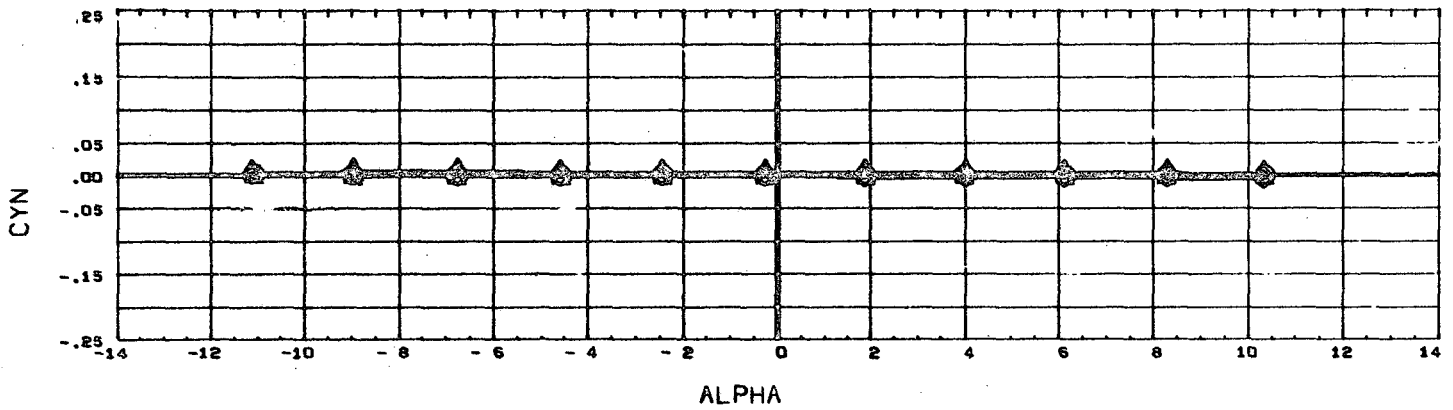
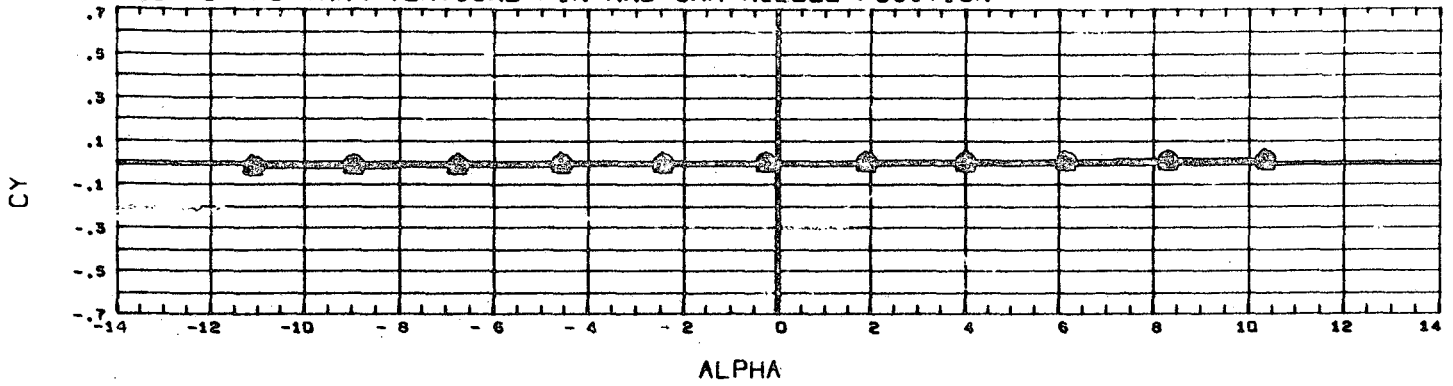
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE



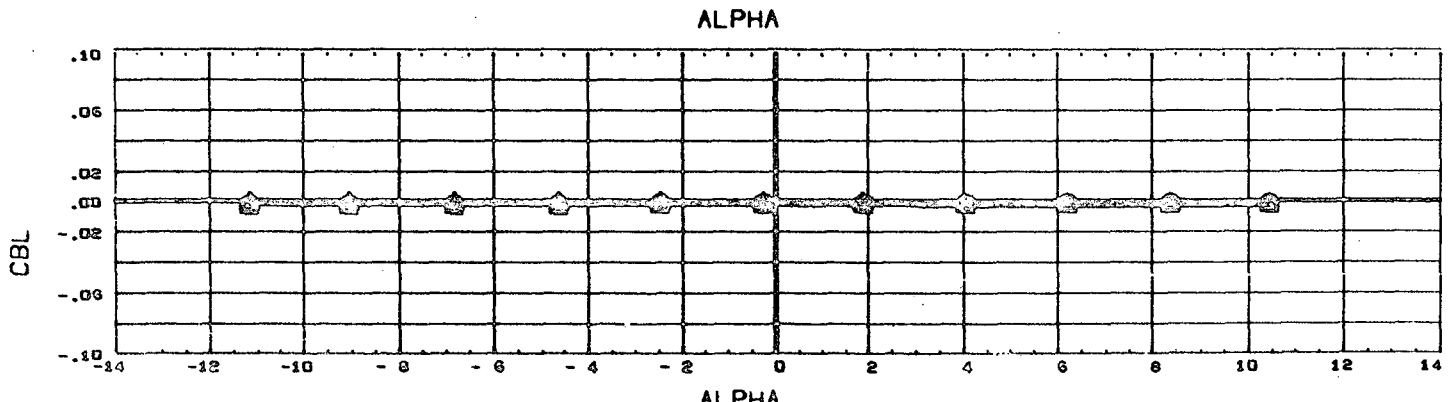
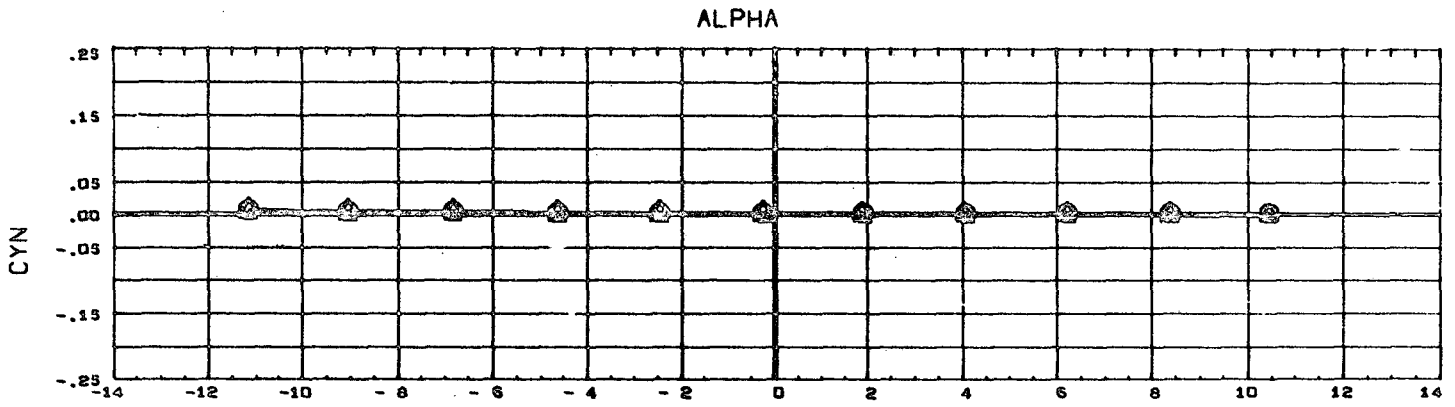
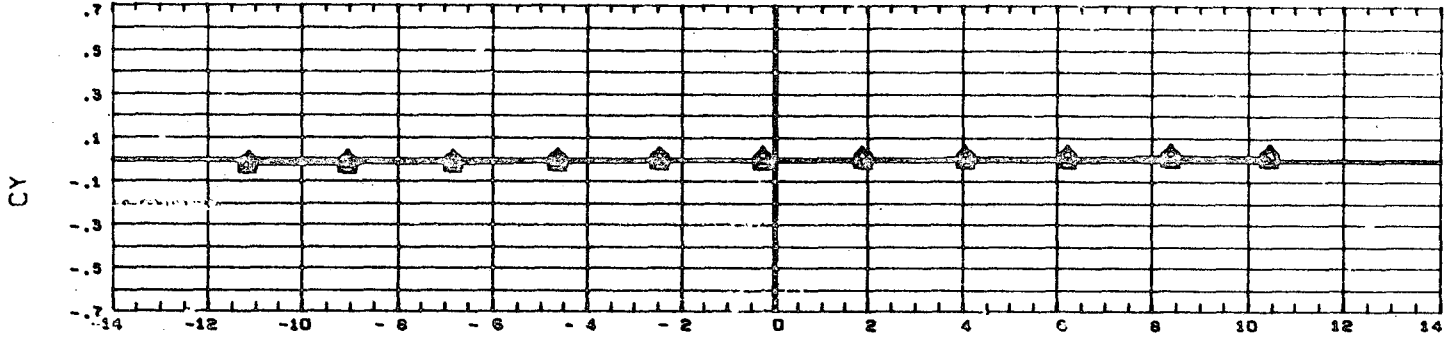
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIO1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

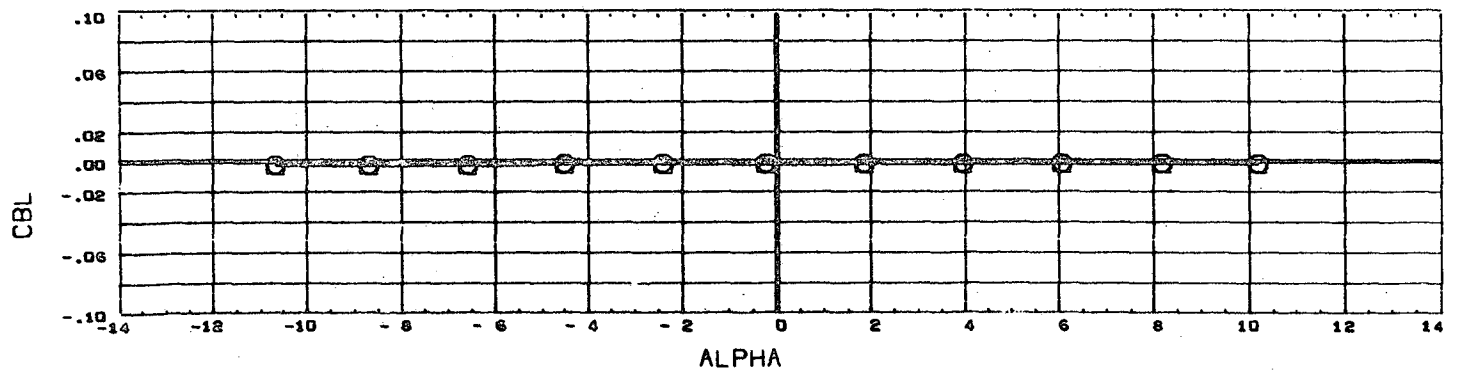
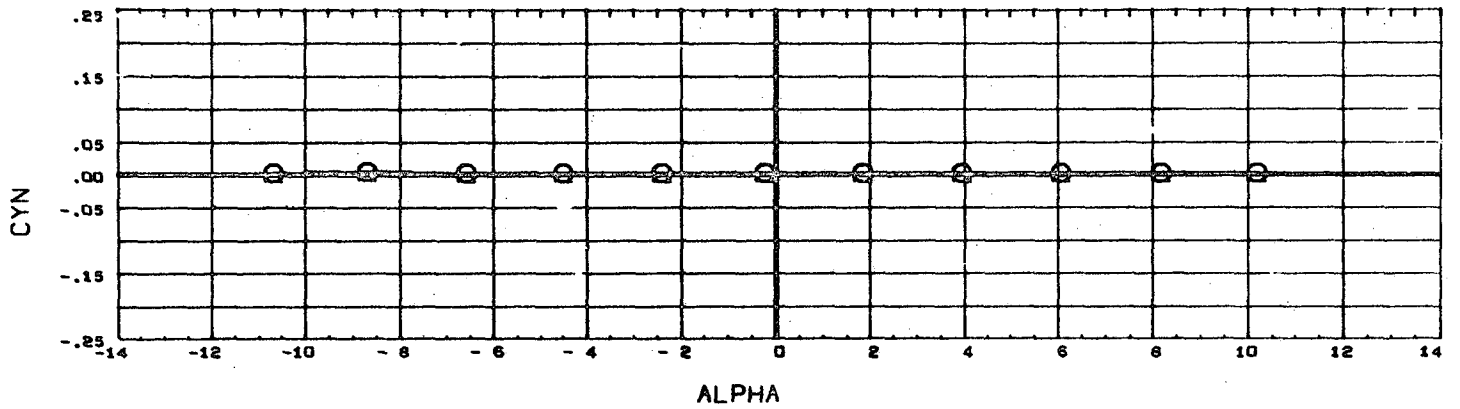
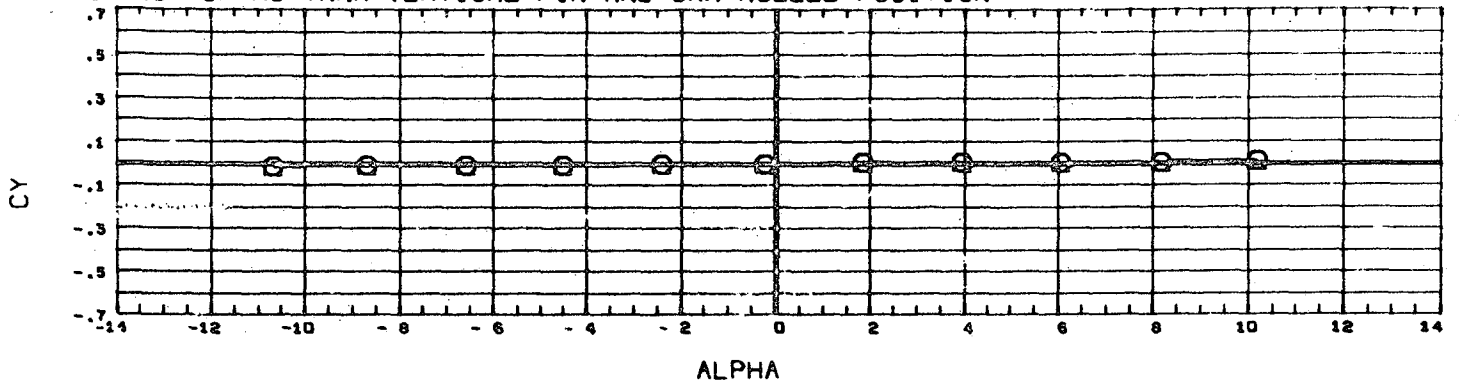
MACH 1.20

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



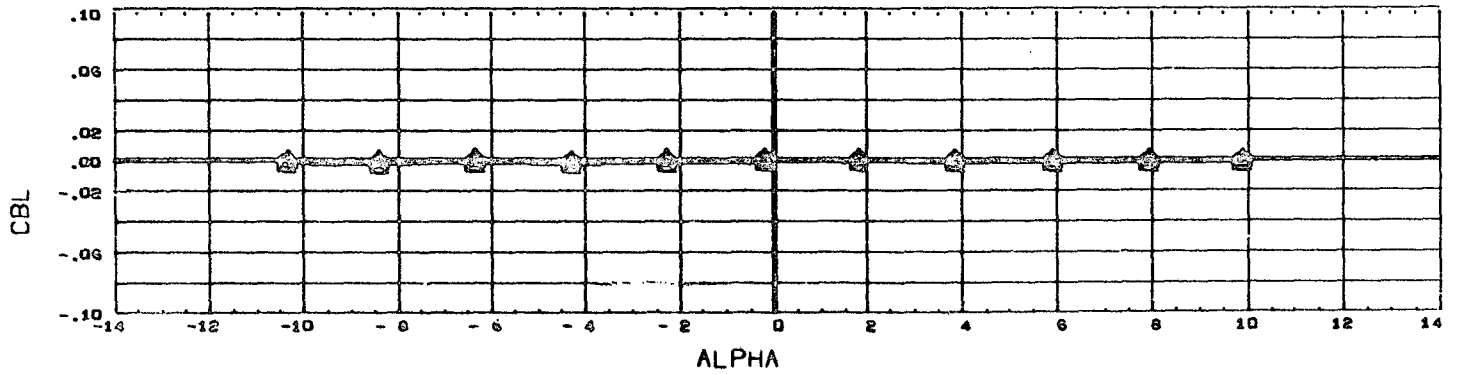
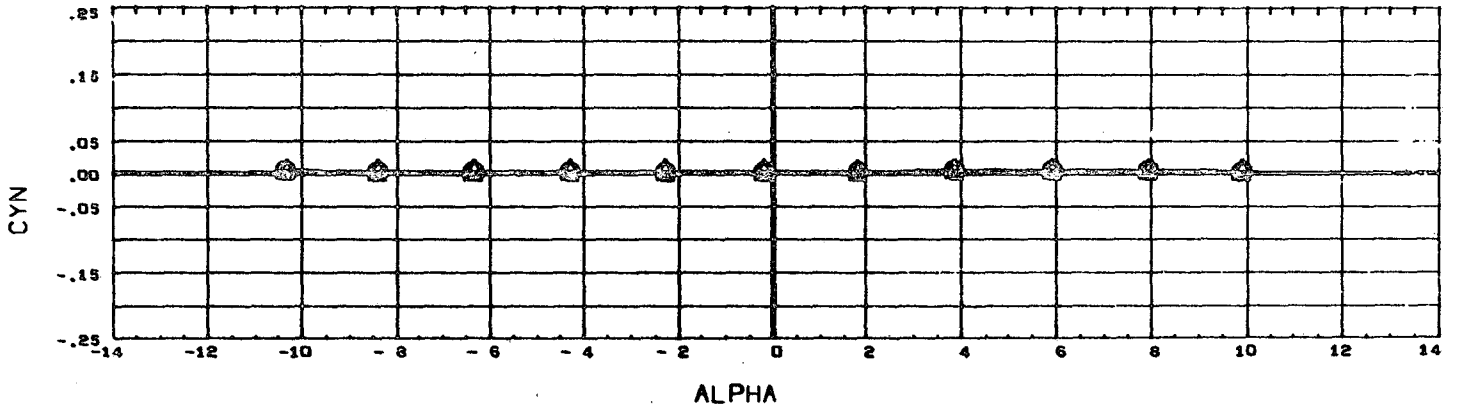
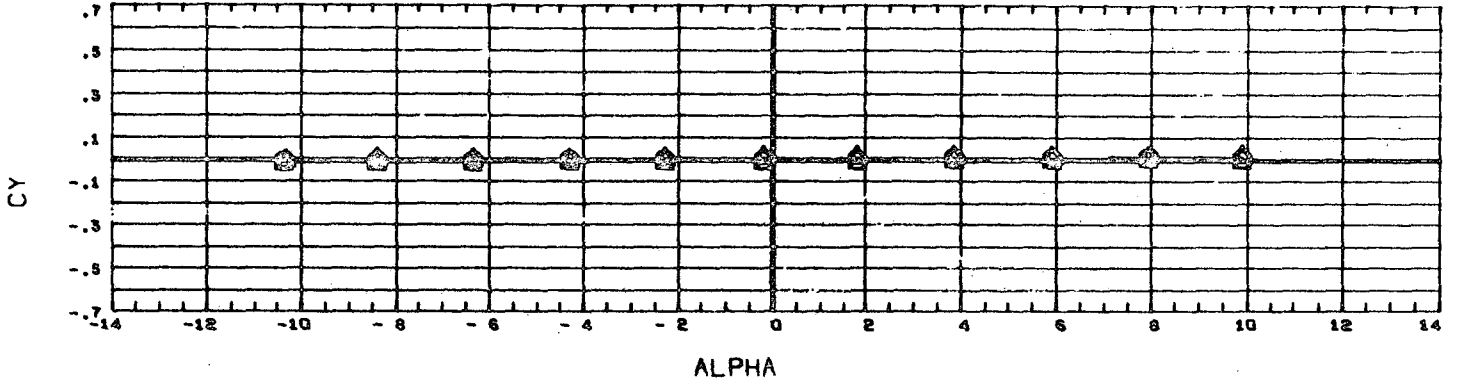
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(E71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



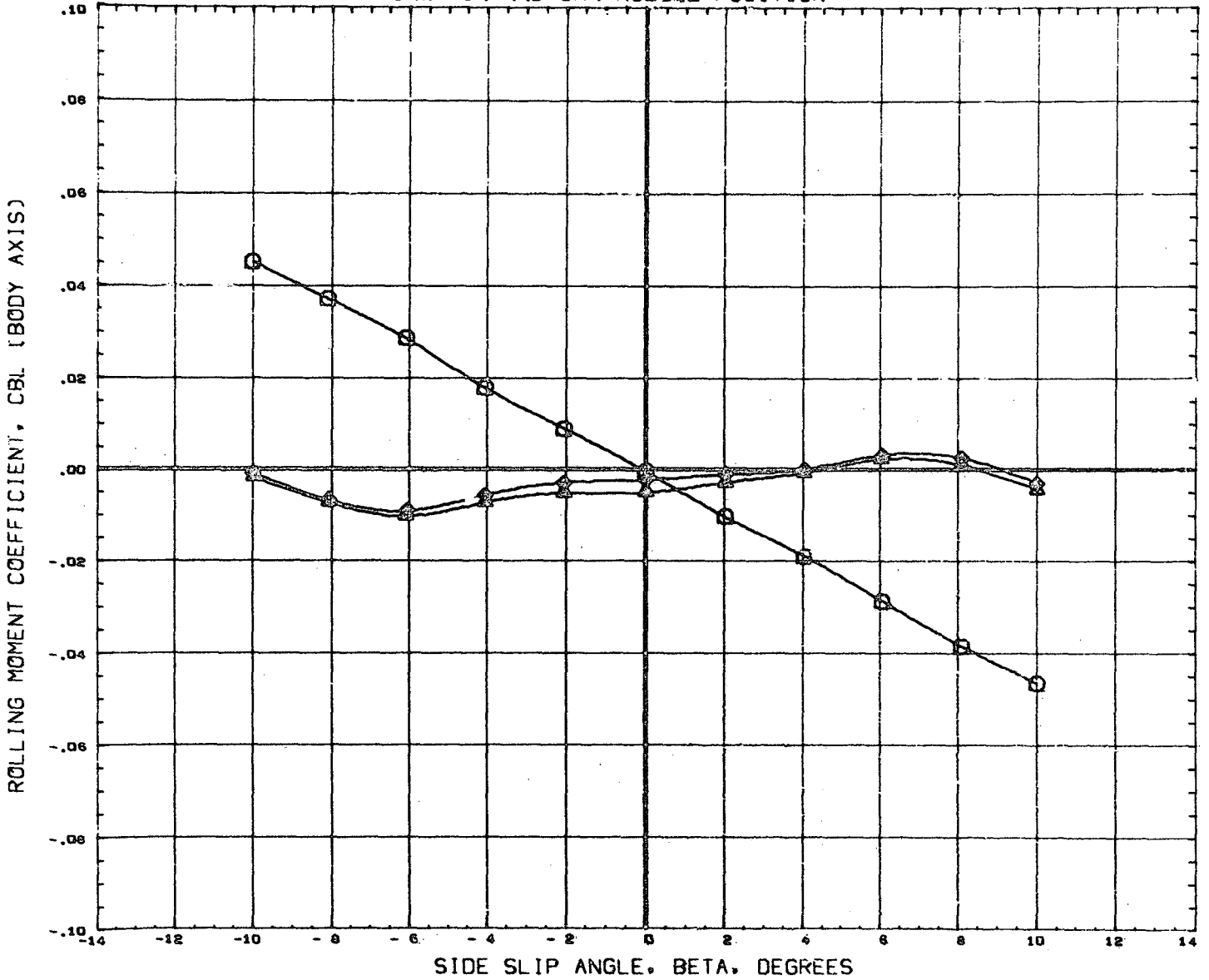
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TW7 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORISNC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(E71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(B71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

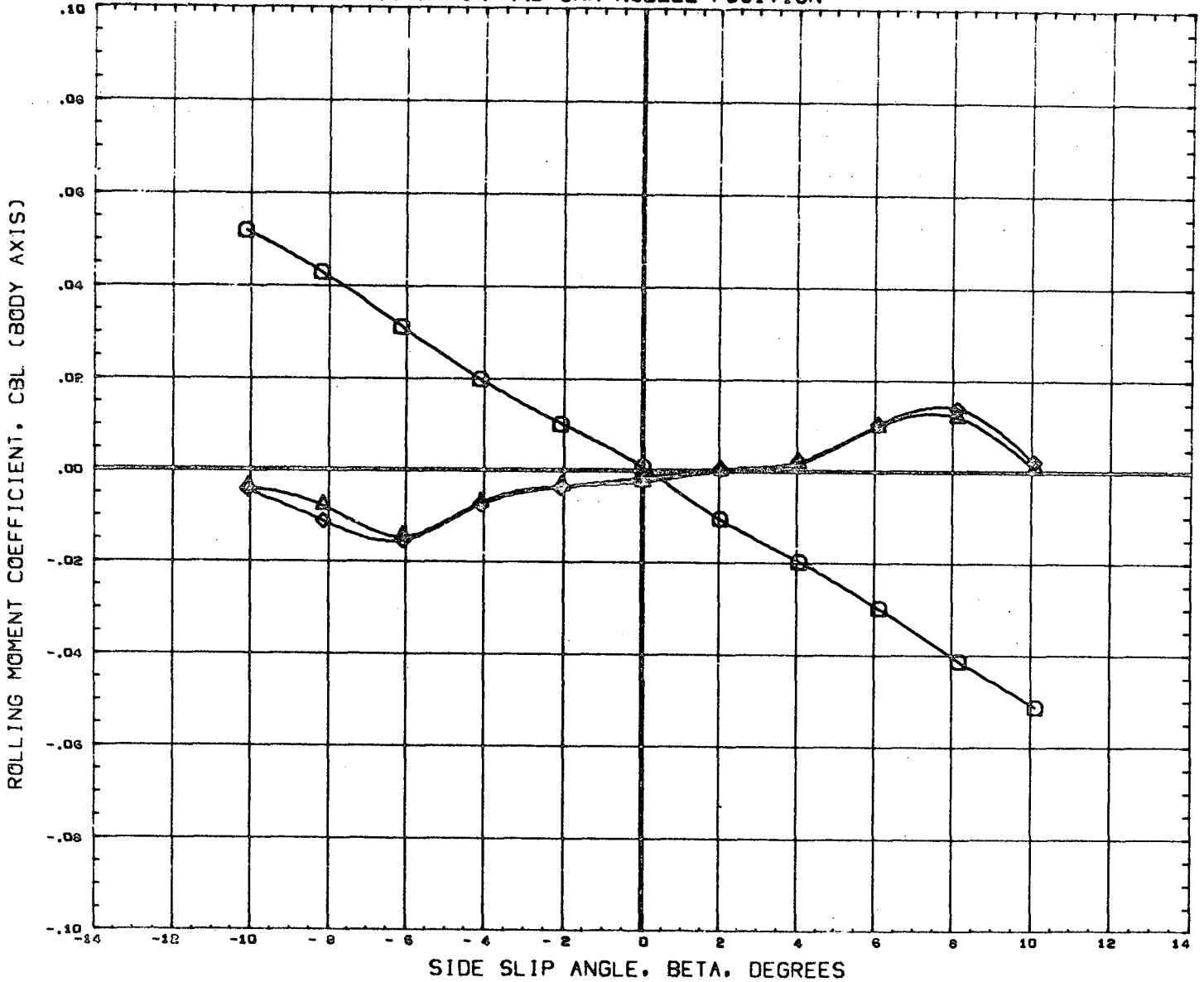


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.300	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

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# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

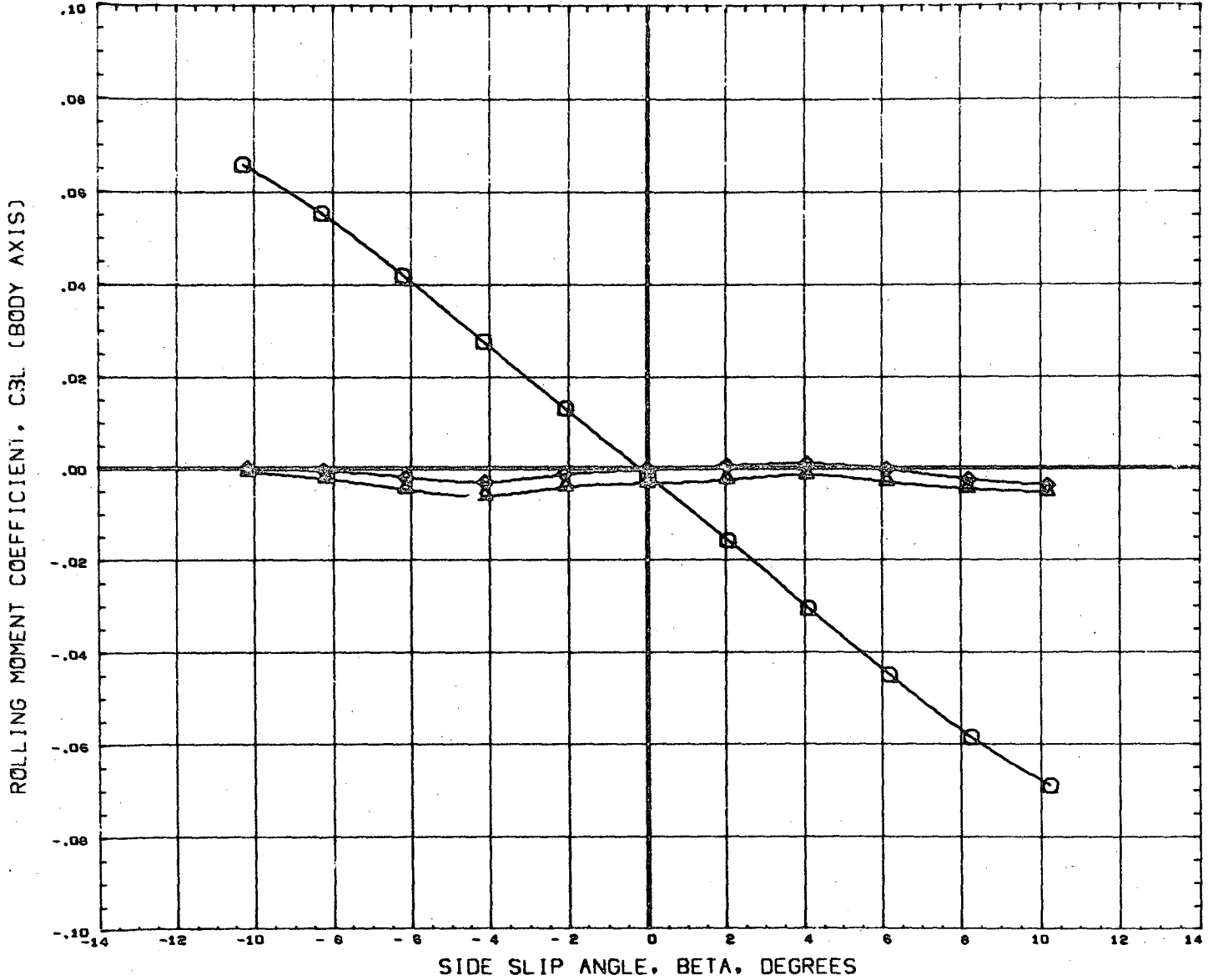


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

ER

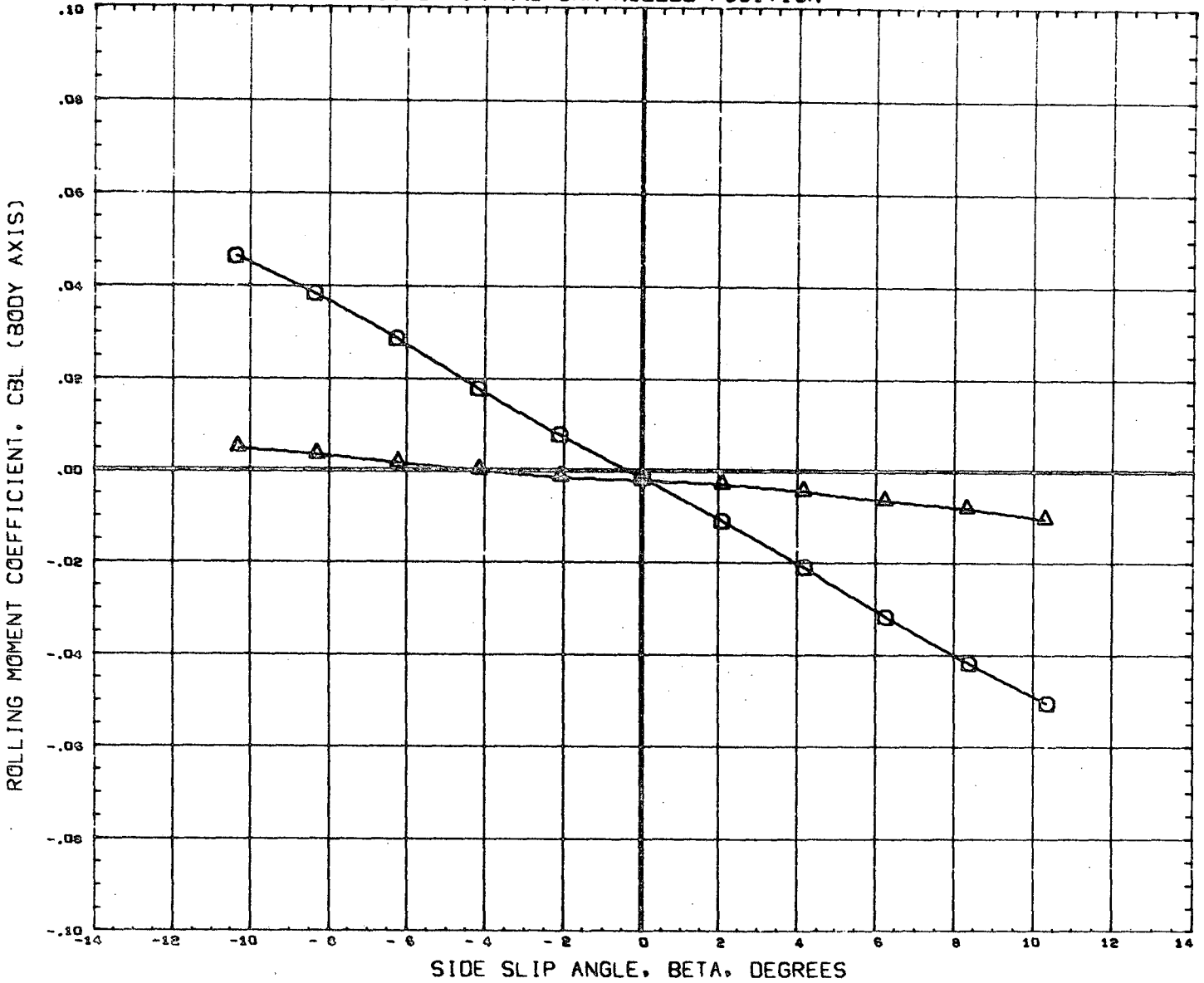
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.300	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

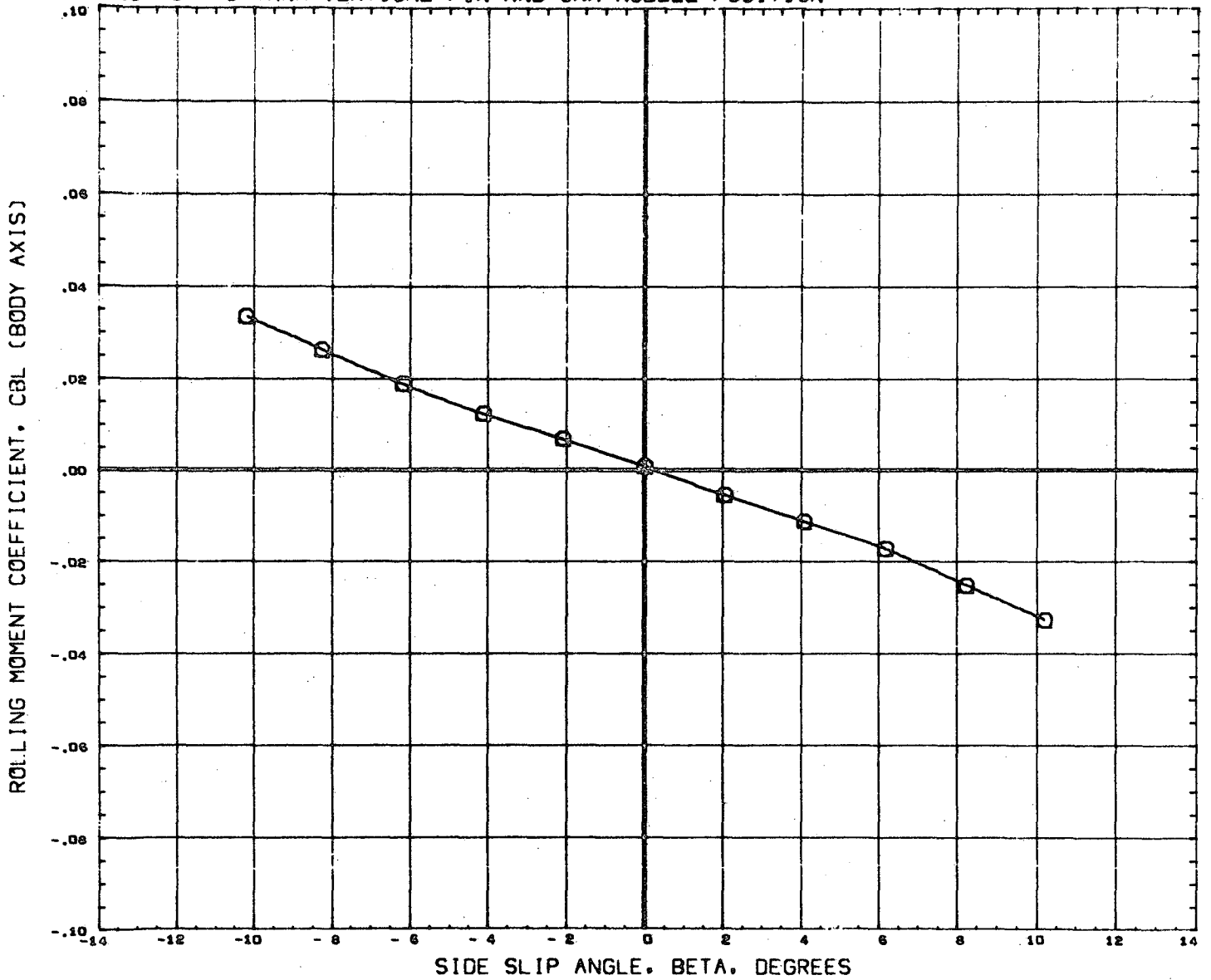
MACH

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# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

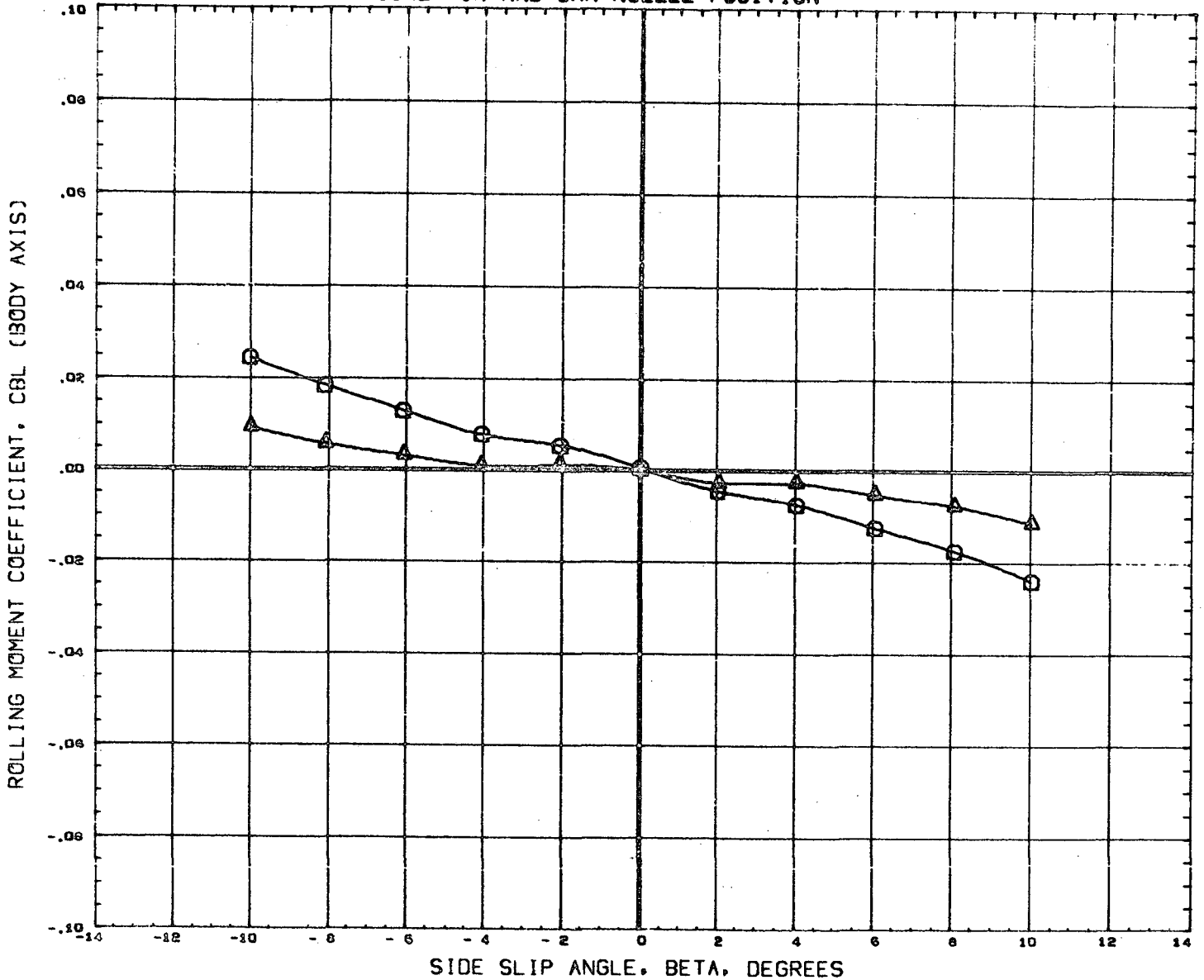


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORGINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

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# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



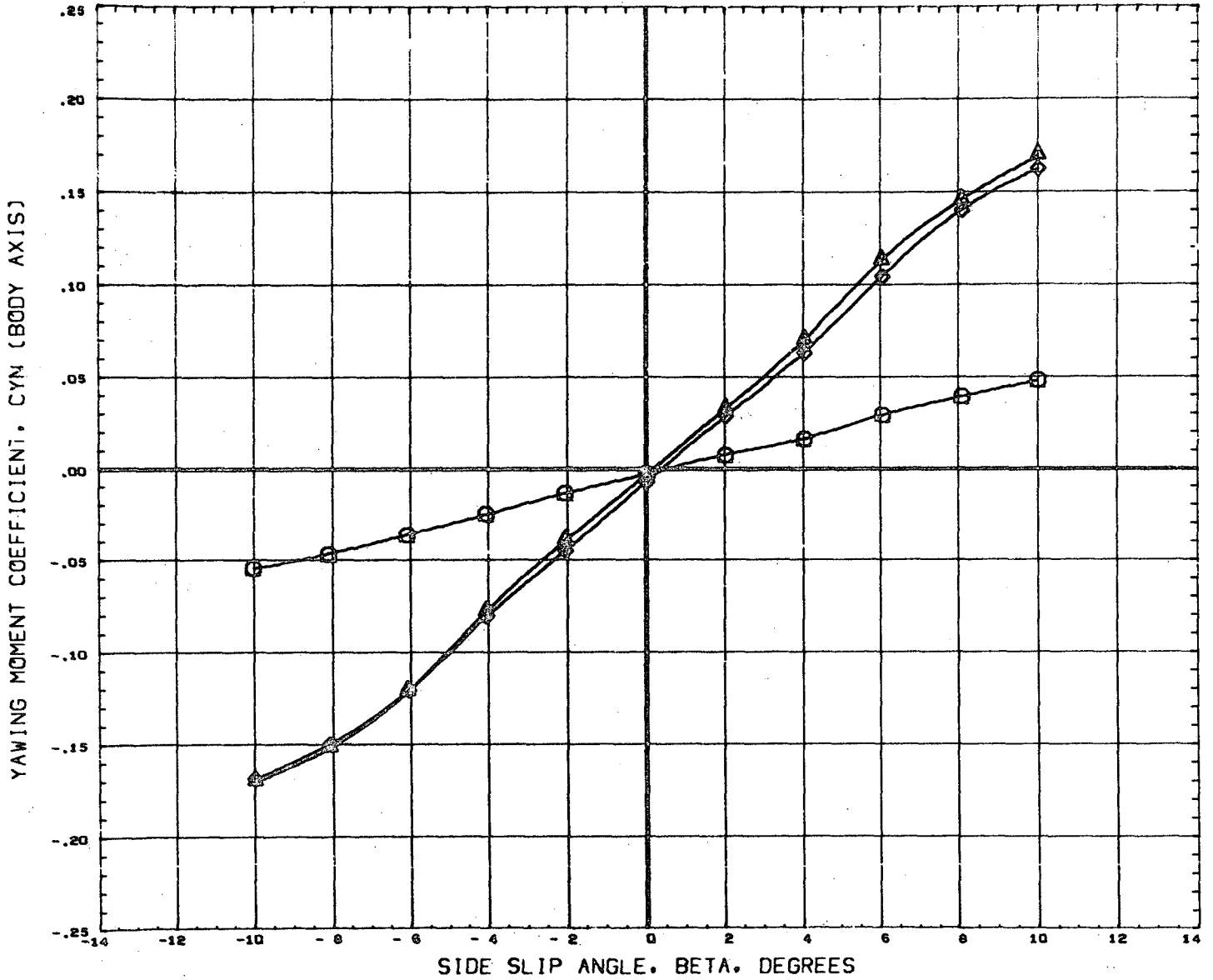
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS		-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRF 3.3600 IN.
							YMRF 0.0000 IN.
							ZMRF 0.2480 IN.
							SCALE 0.0040 SCALE

MACH

4.96

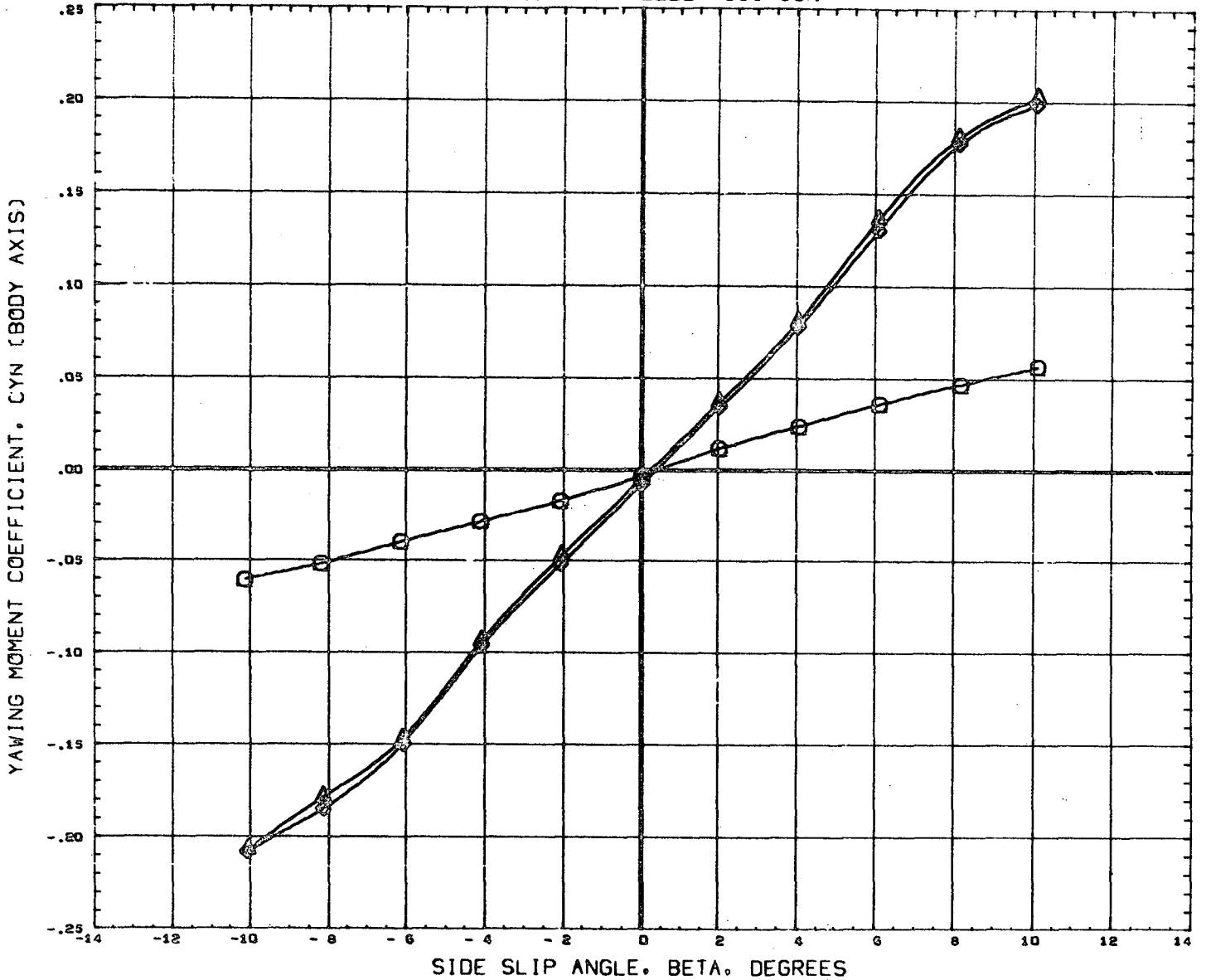
PAGE 702

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

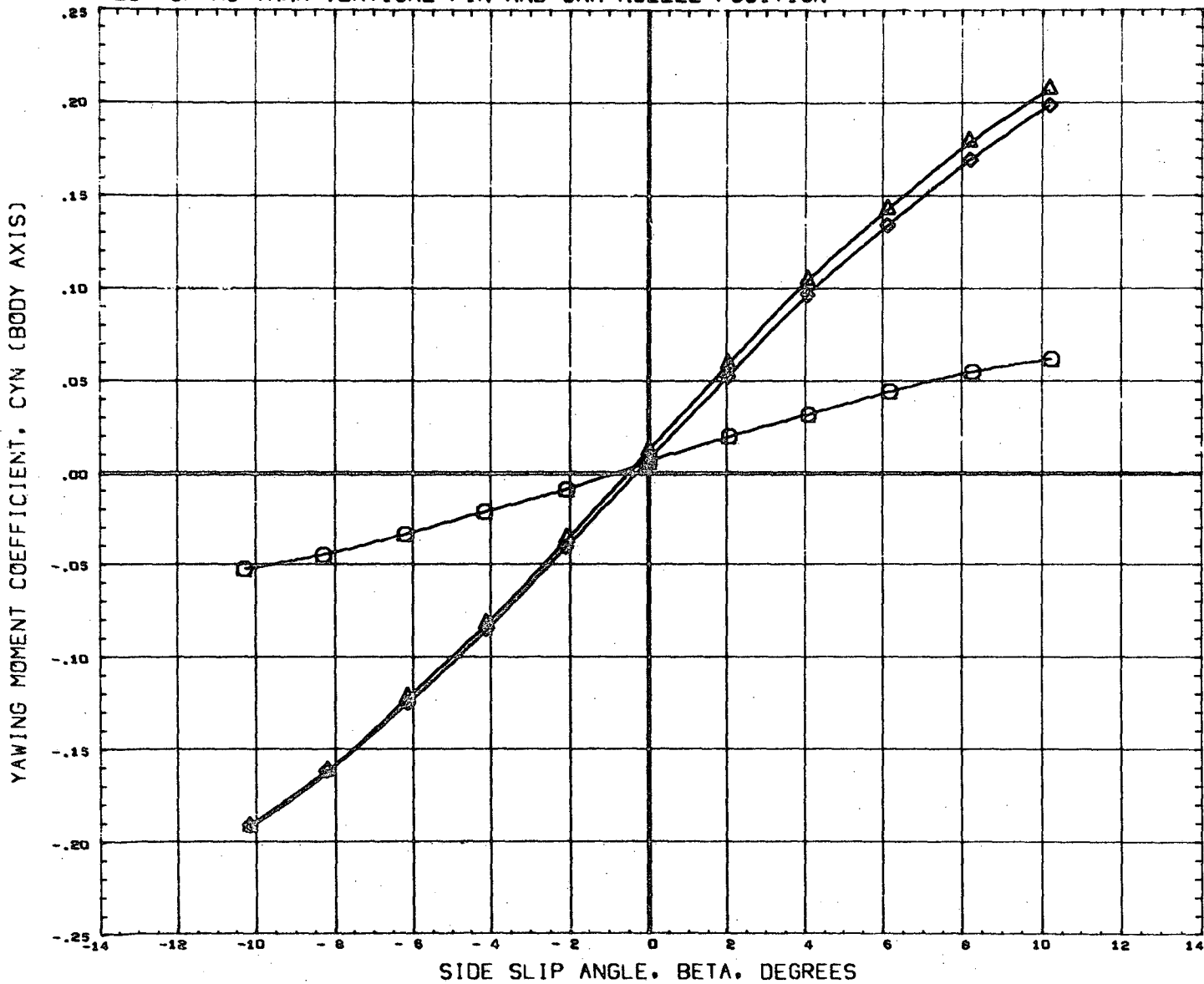
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90

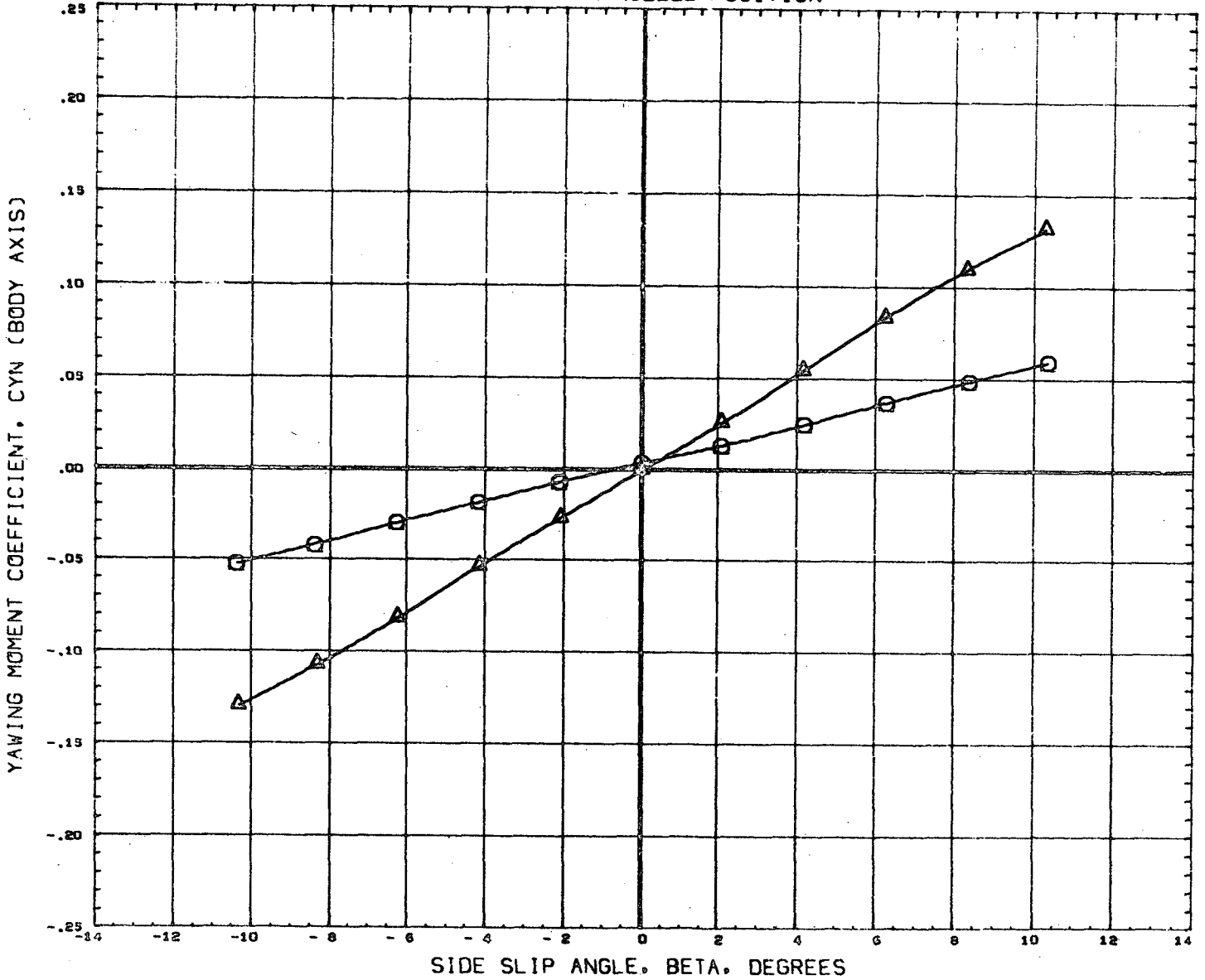
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

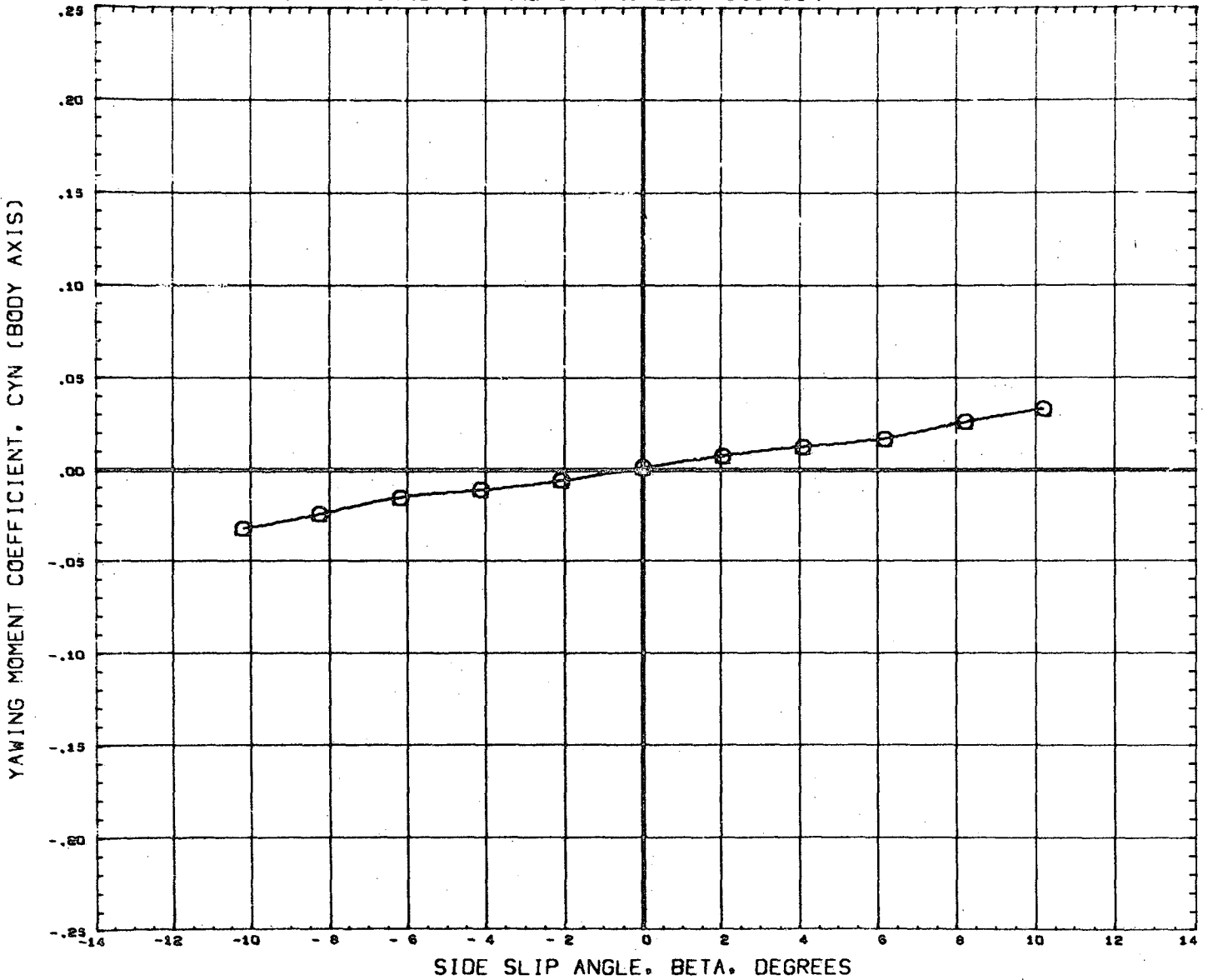
MACH 1.20

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.300	0.000	LREF 2.0260 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

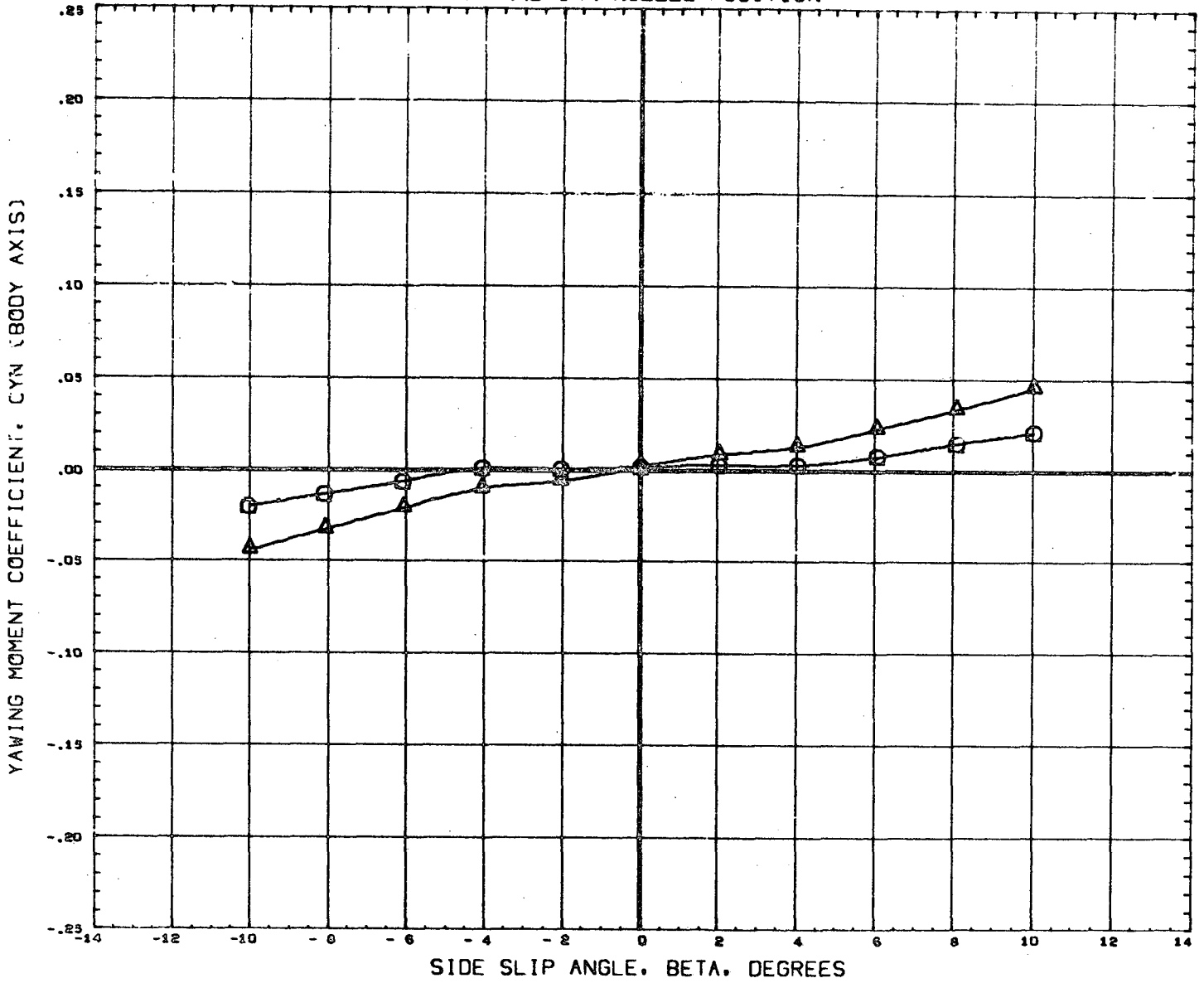


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0260 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 3.48

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# EFFECT OF H<sub>0</sub> TANK VERTICAL FIN AND SRM NOZZLE POSITION

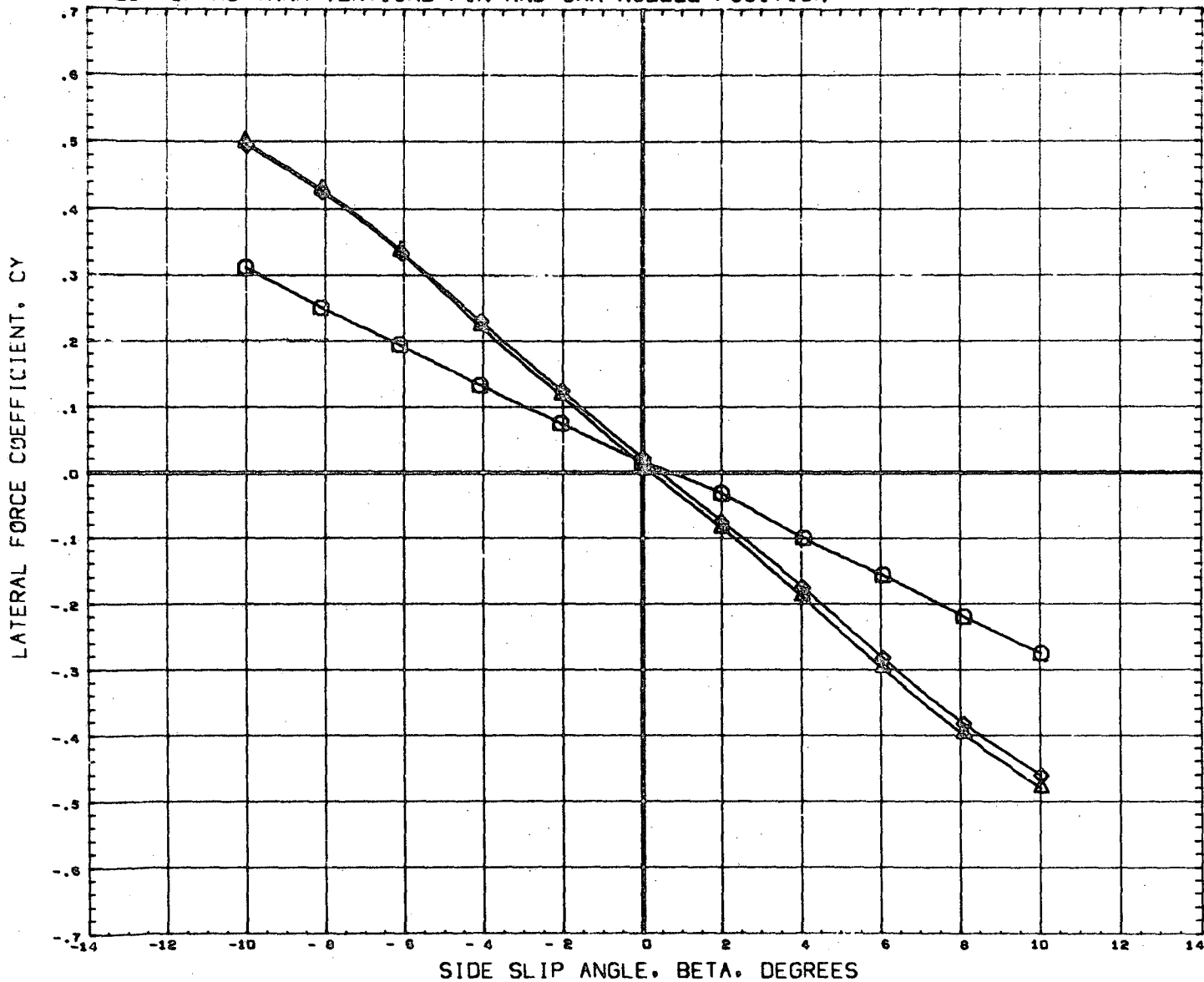


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96



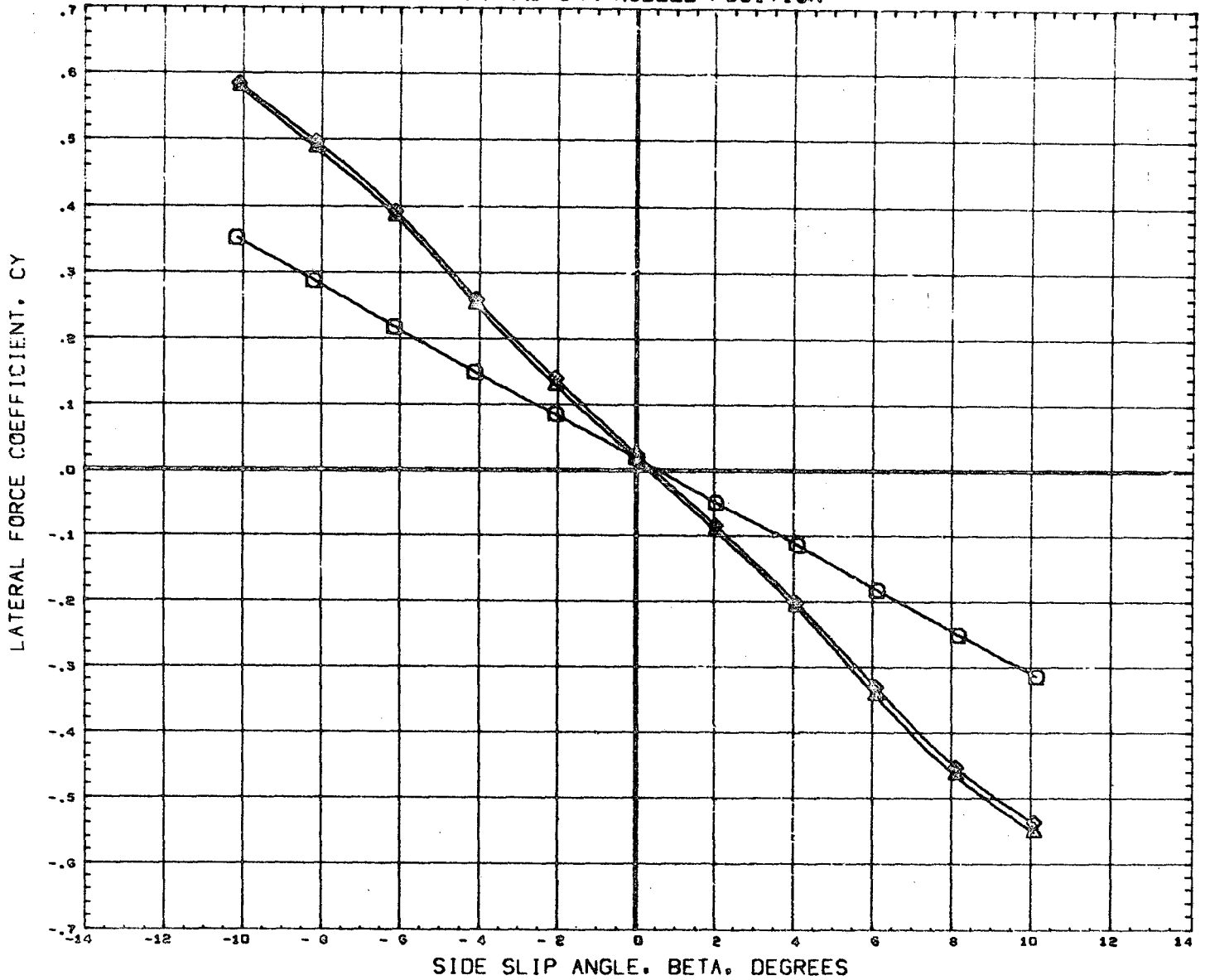
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

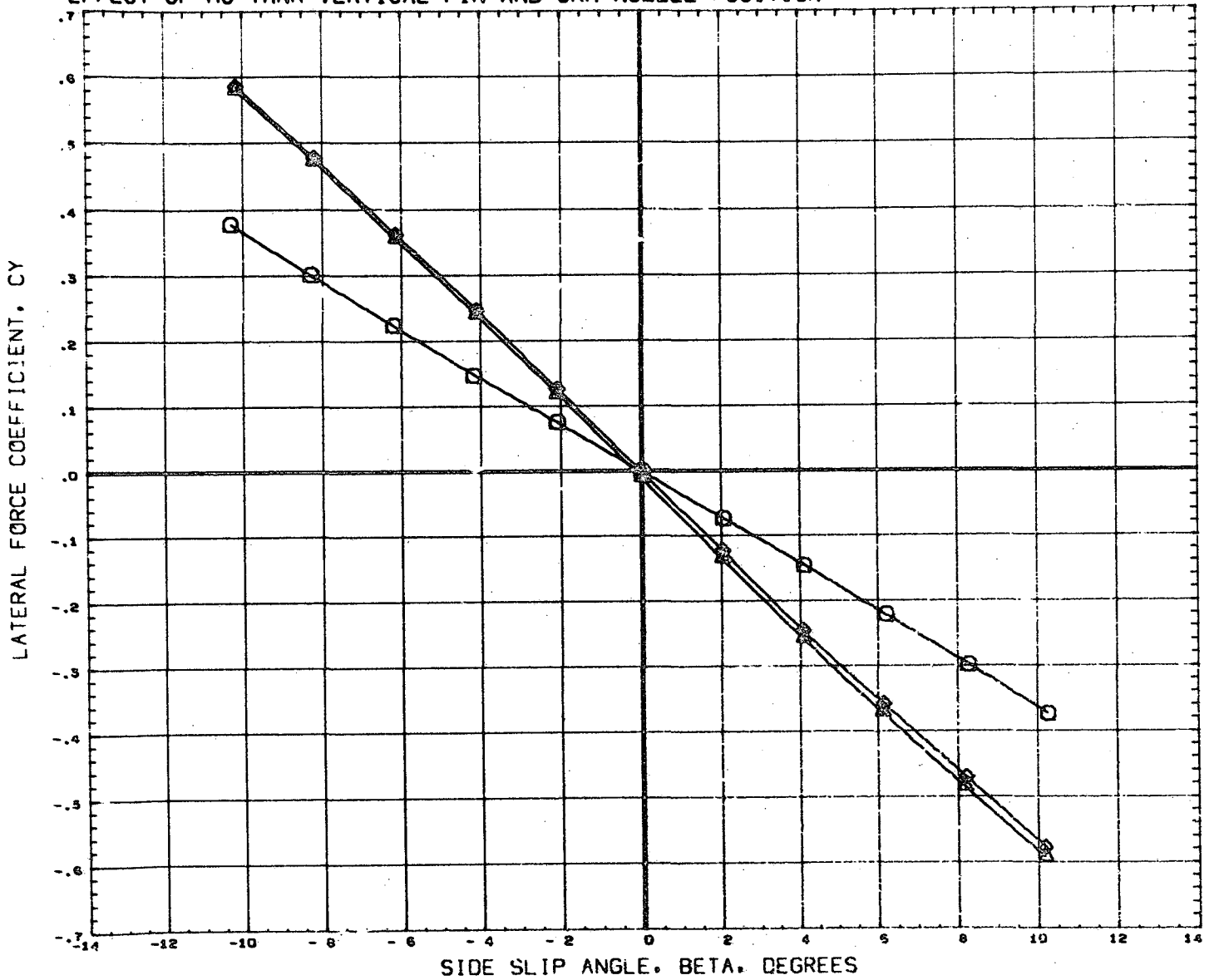


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITAL	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.900	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

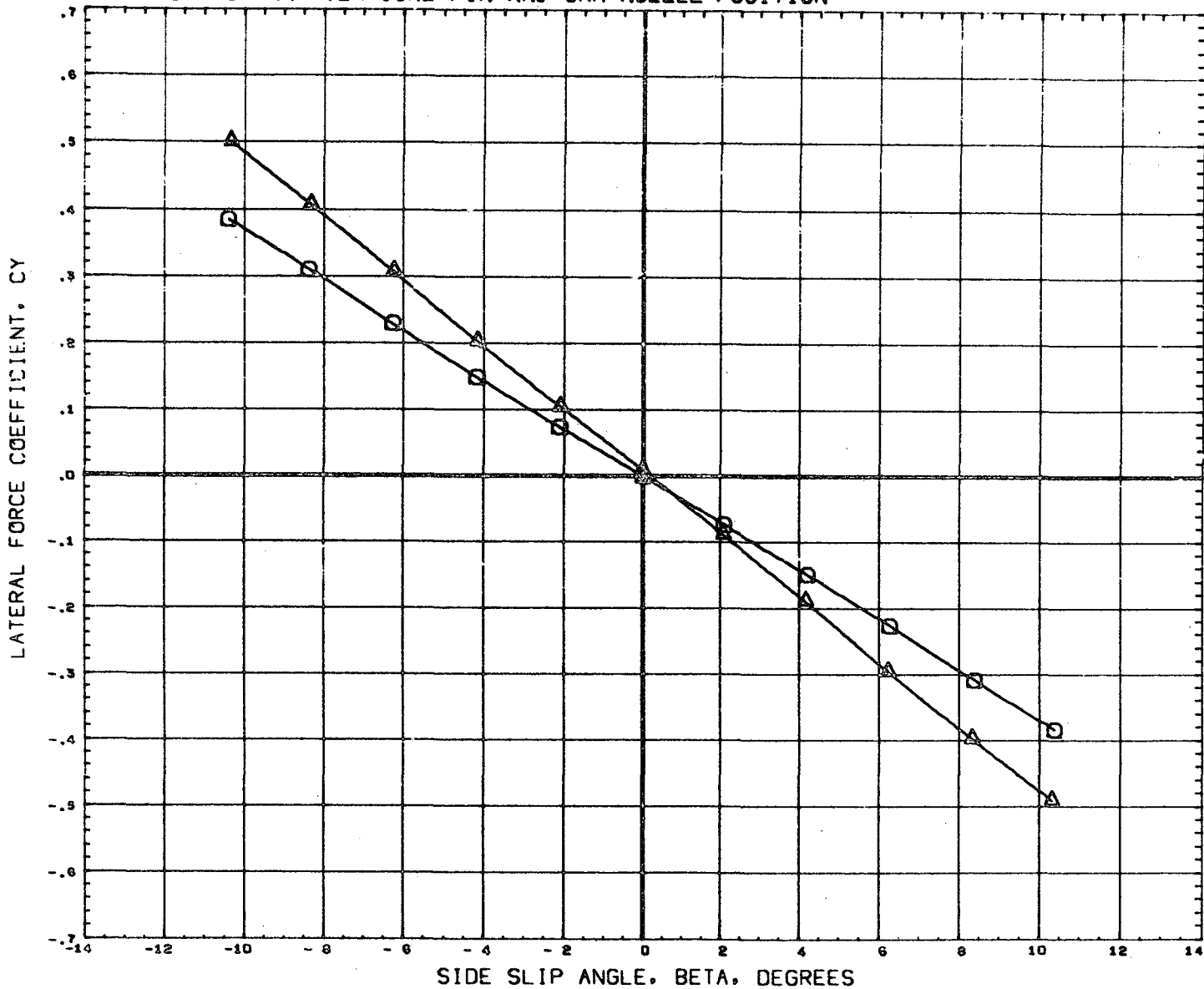
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# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBN	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75,000	0.000	0.000	SREF 7.6800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75,000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75,000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

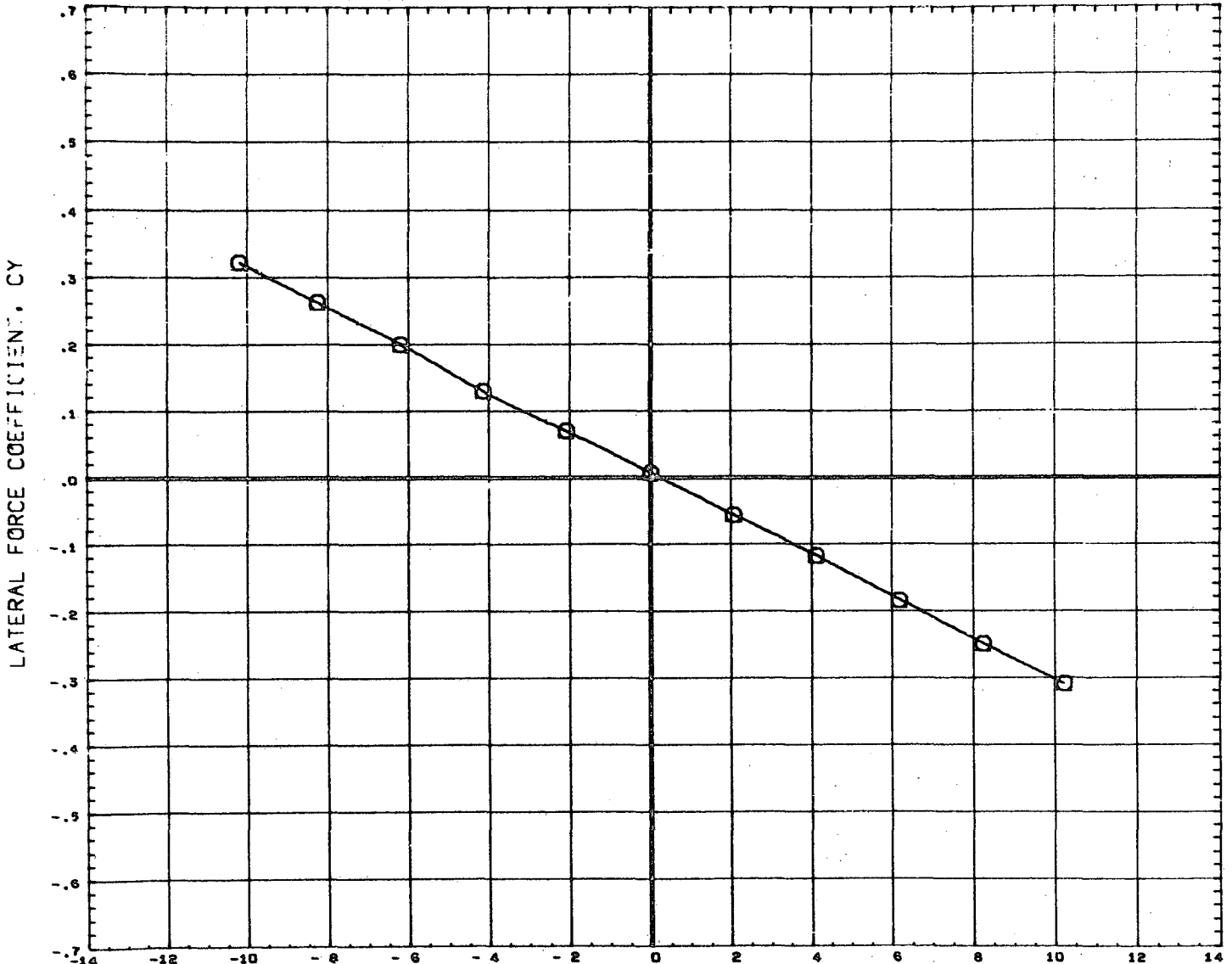


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71045)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

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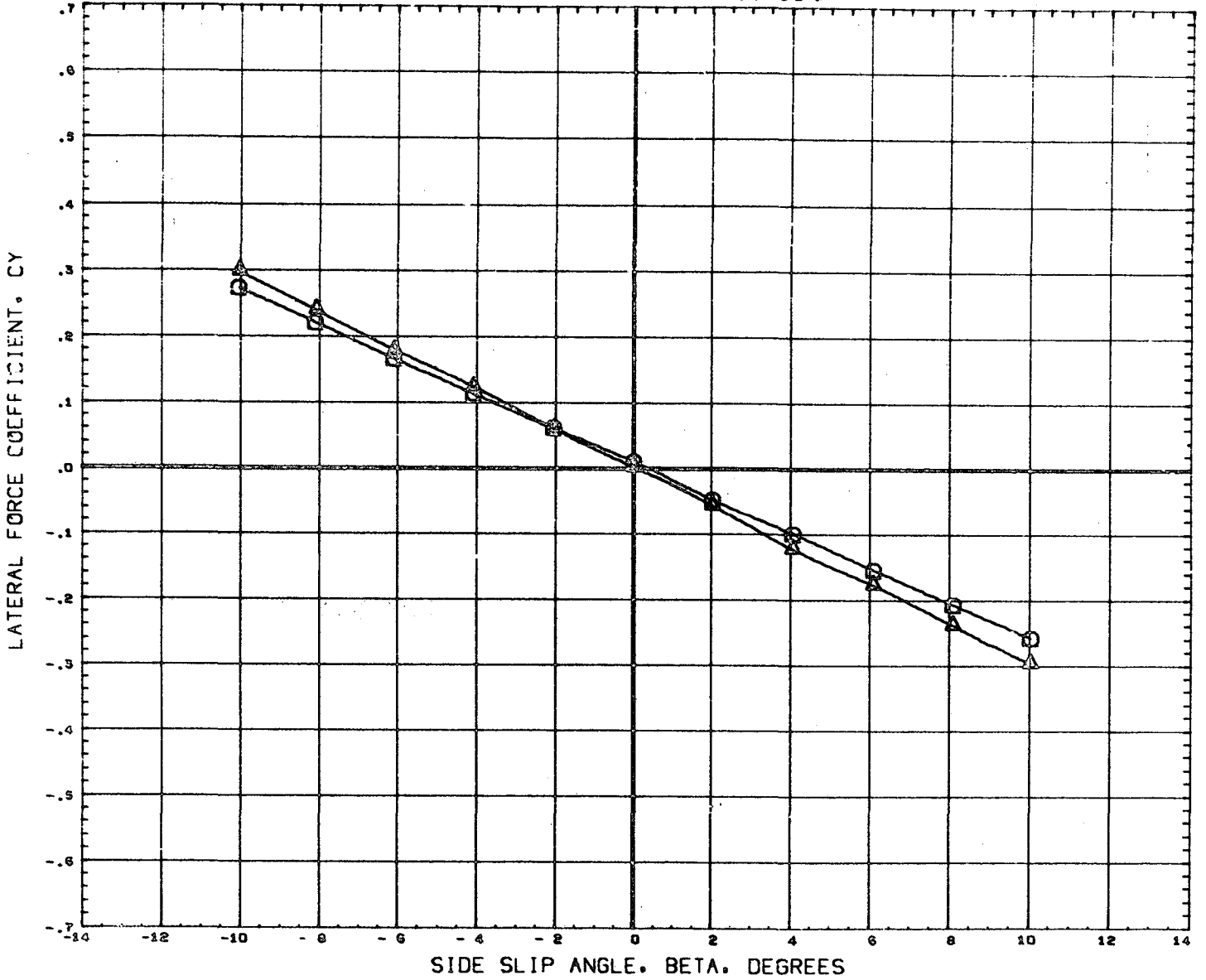
# EFFECT OF H<sub>0</sub> TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

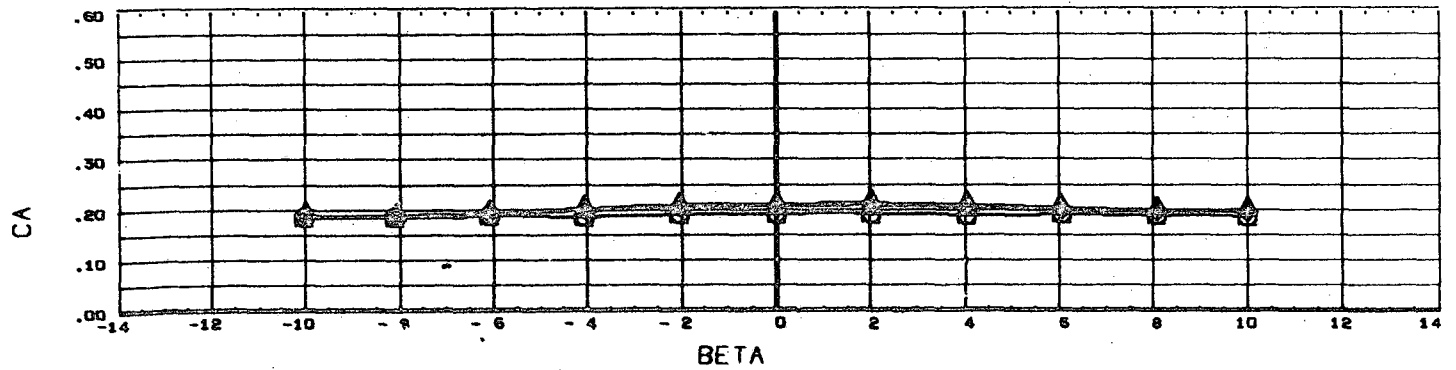
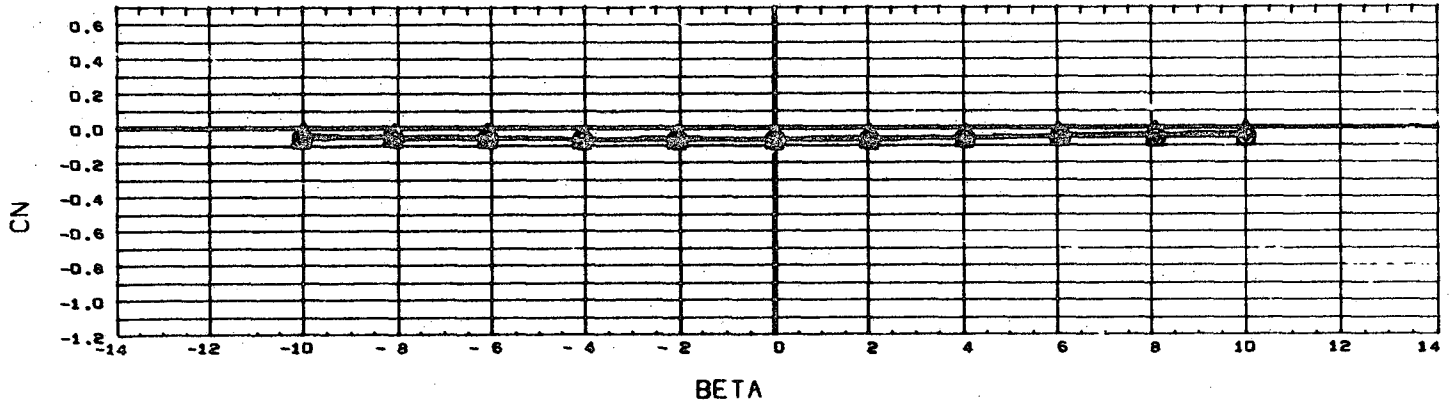
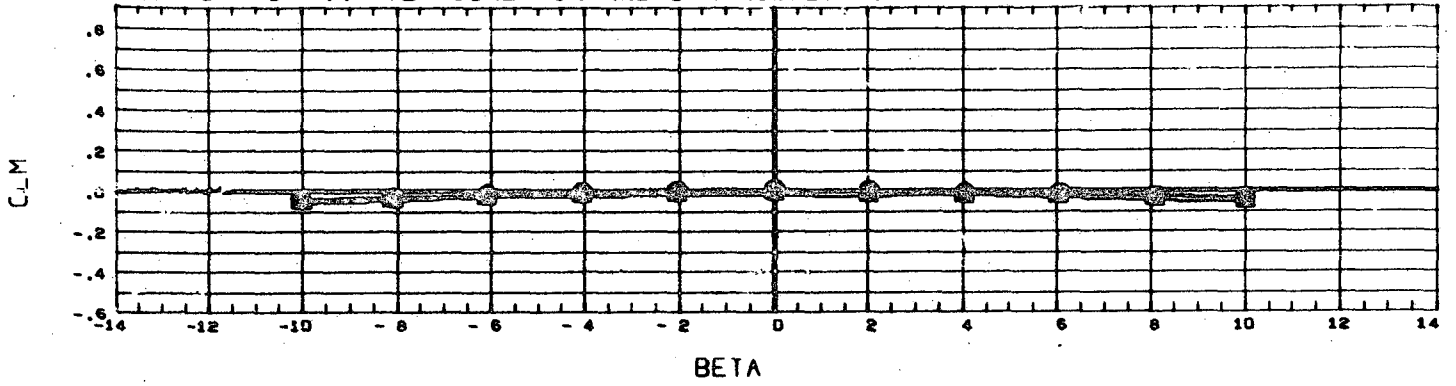


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 344 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

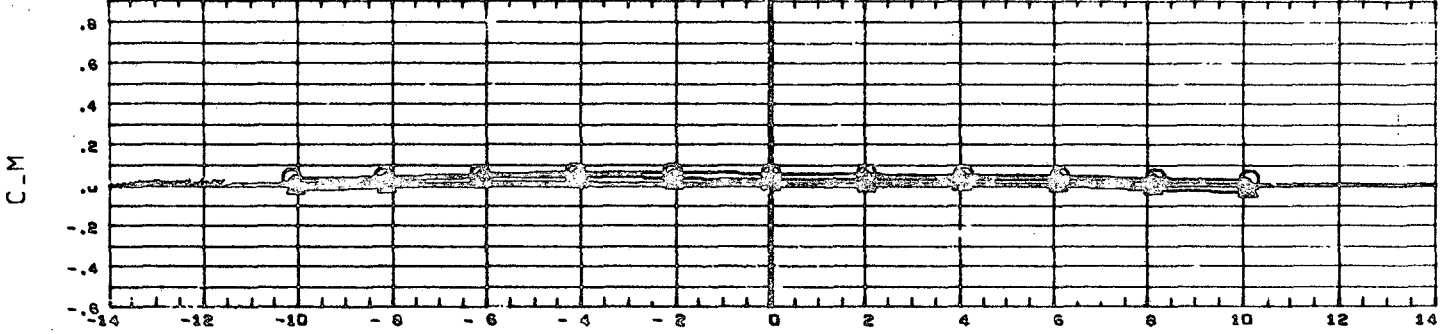
PAGE 714

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION

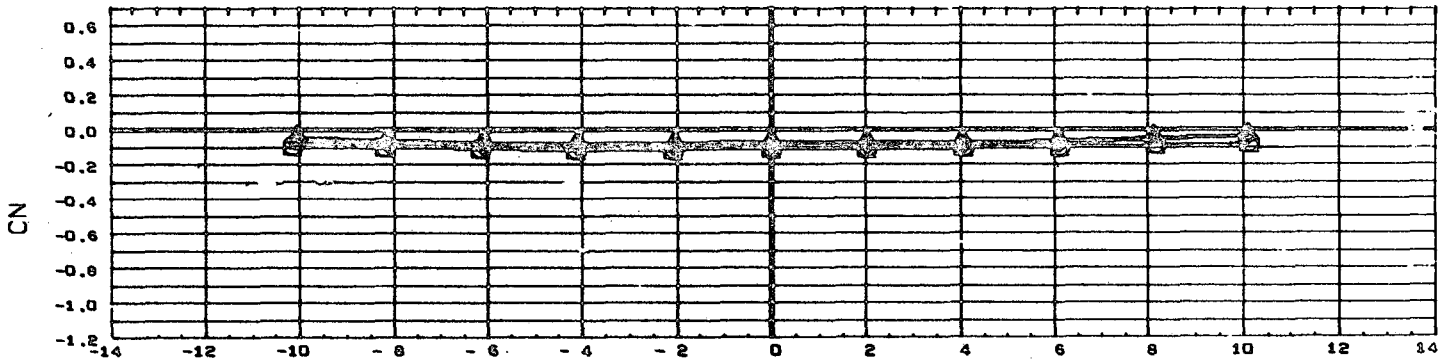


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

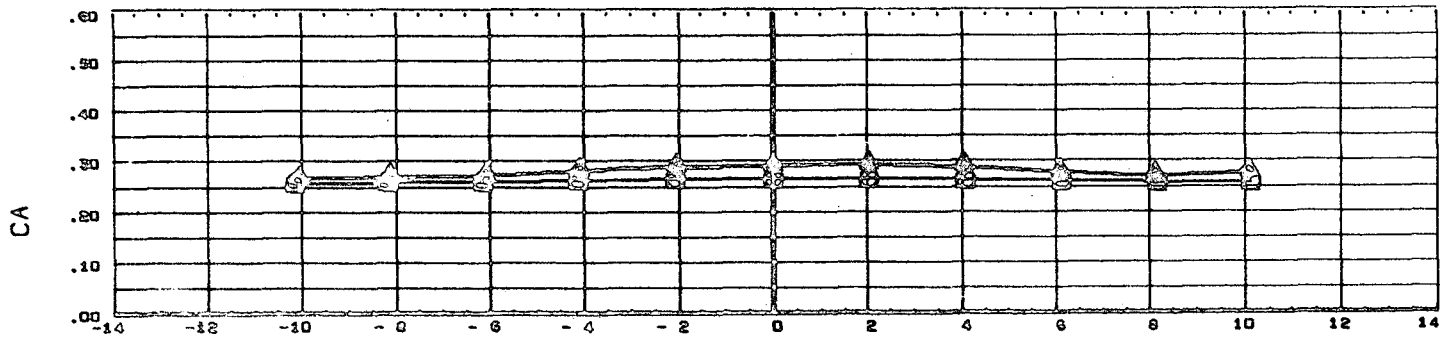
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



BETA



BETA

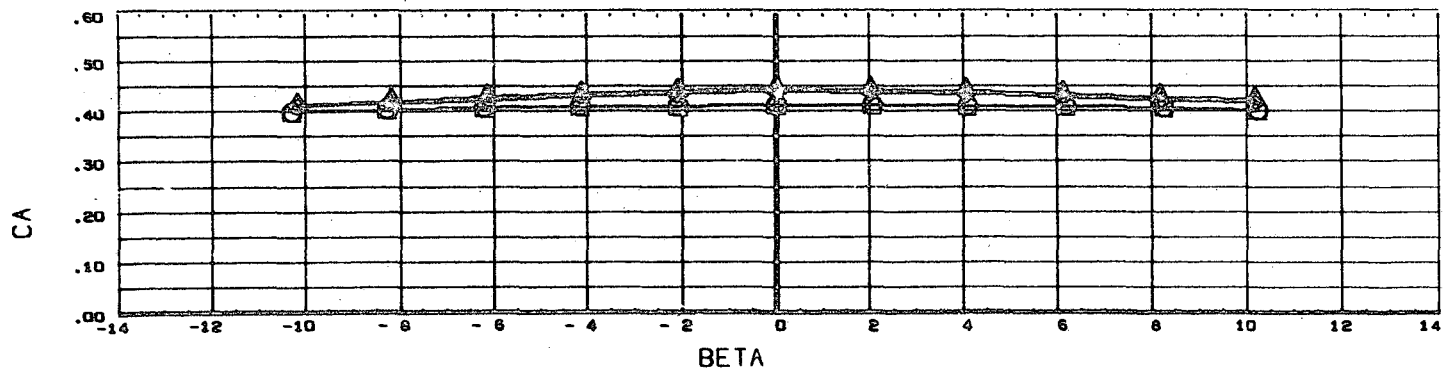
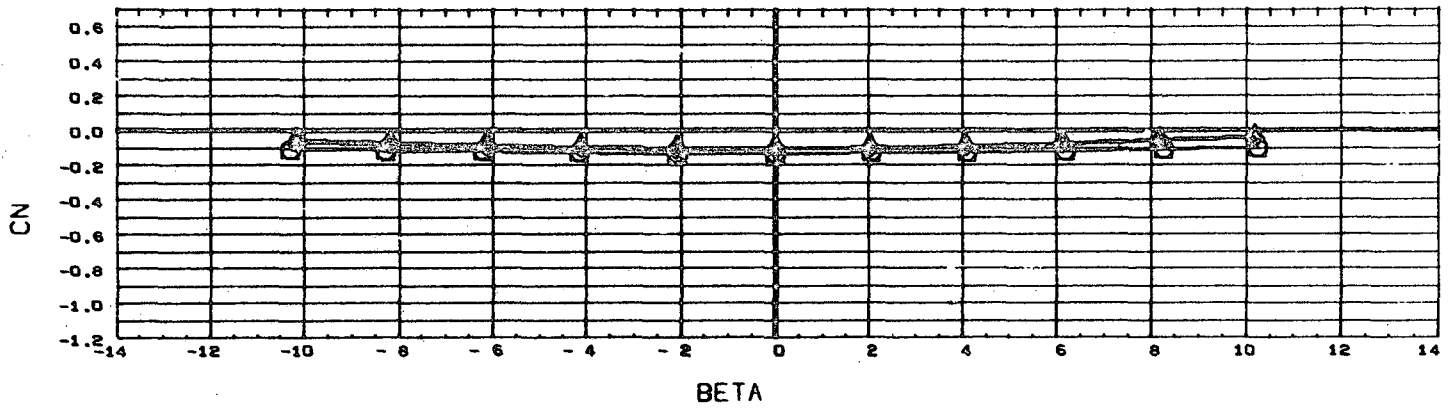
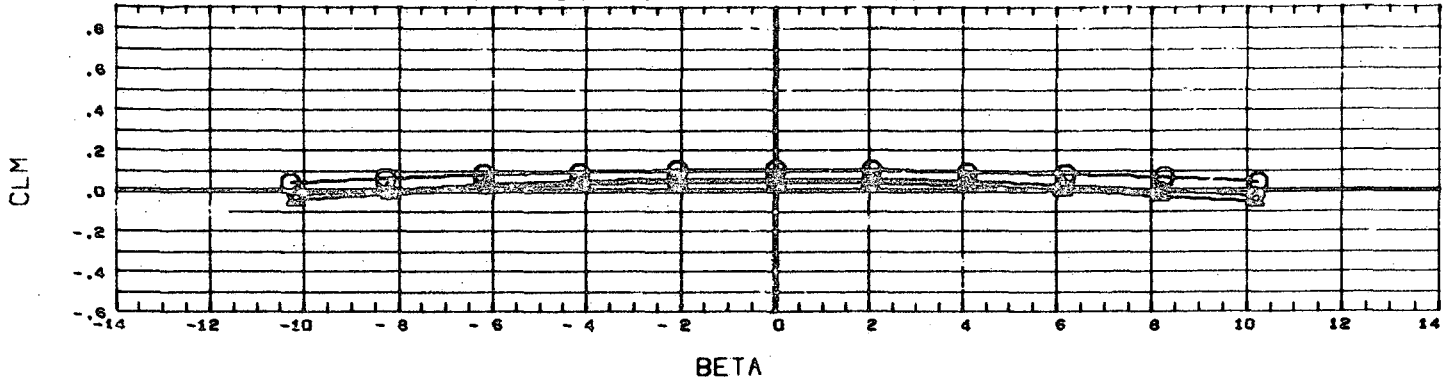


BETA

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE



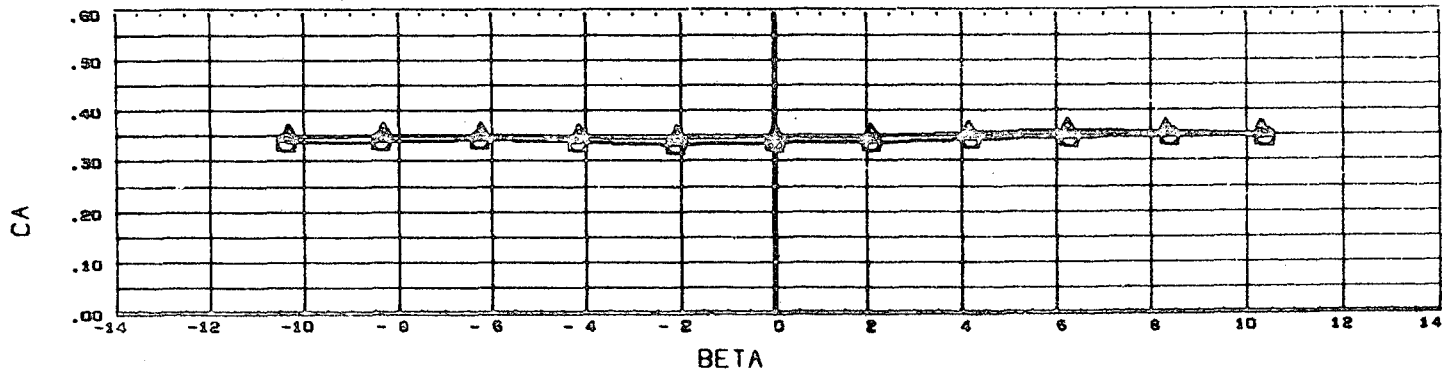
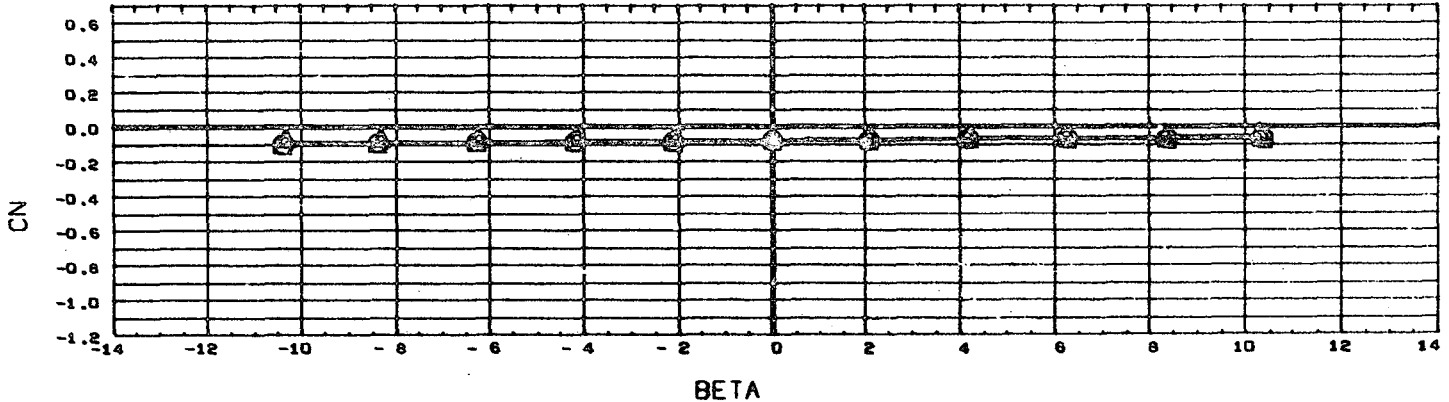
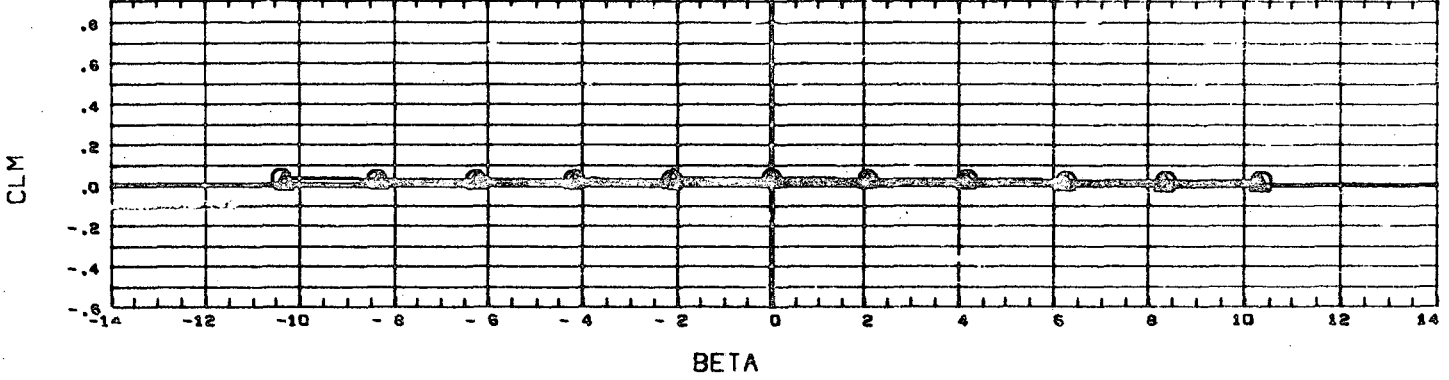
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIO1S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIO1S1F	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

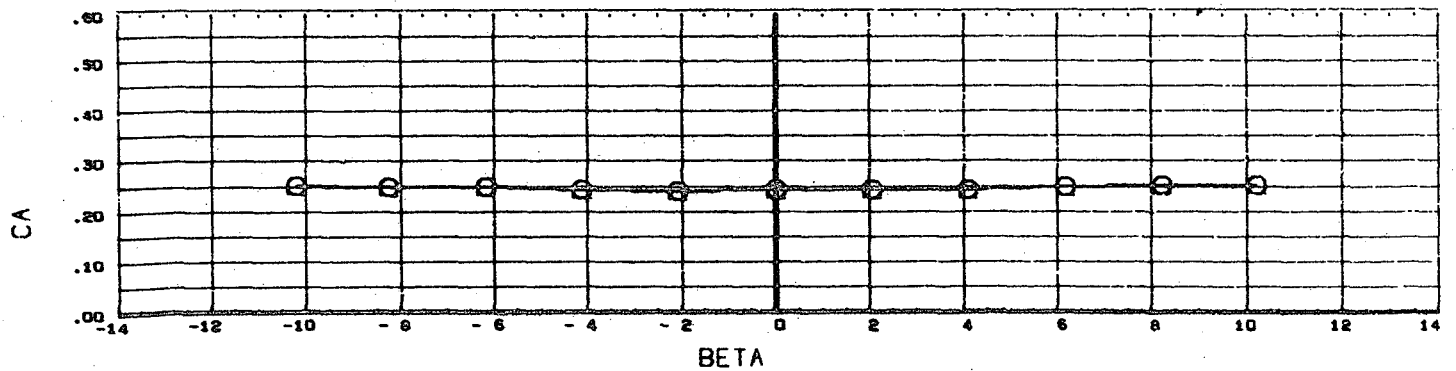
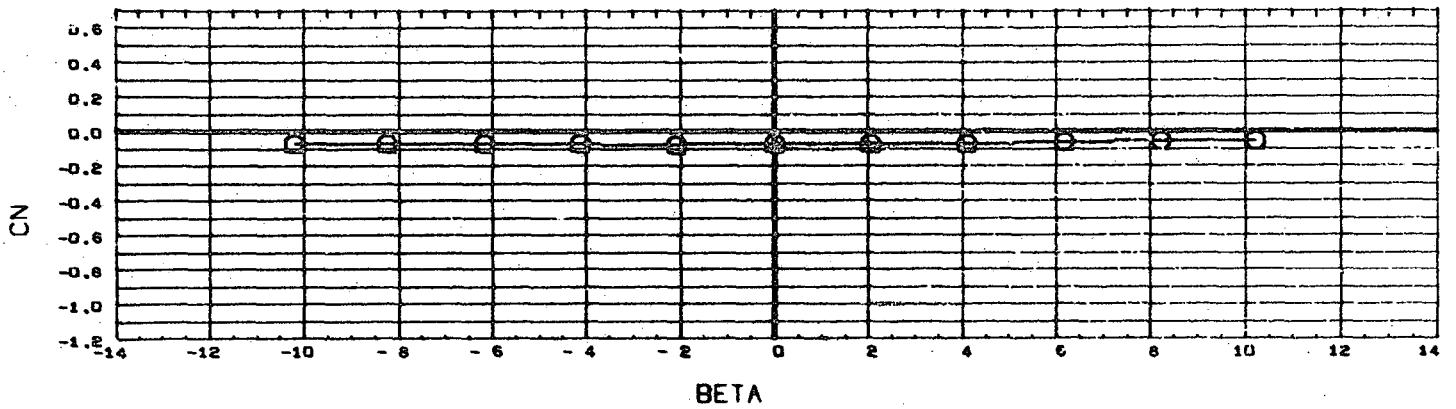
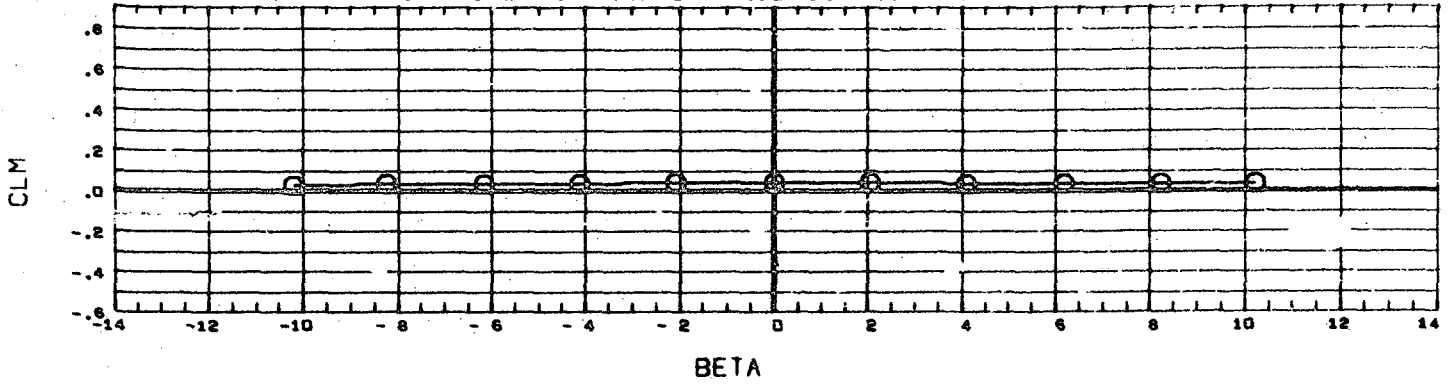
MACH 1.20

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	OR&INC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

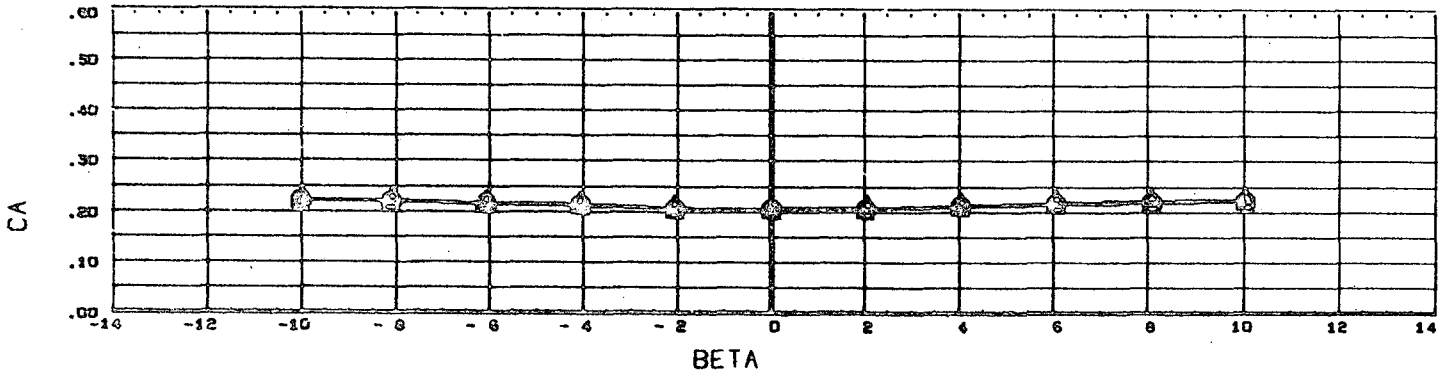
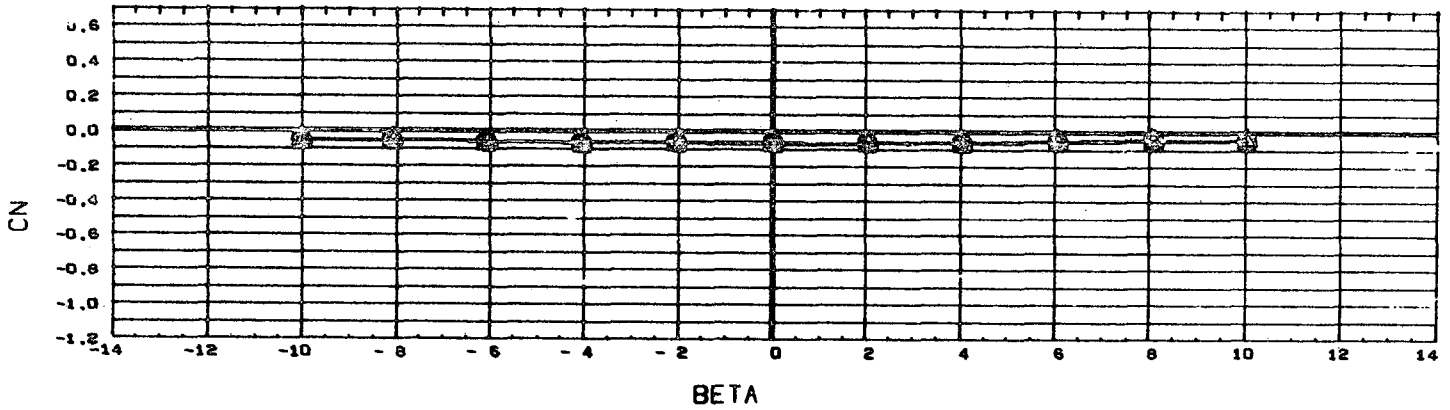
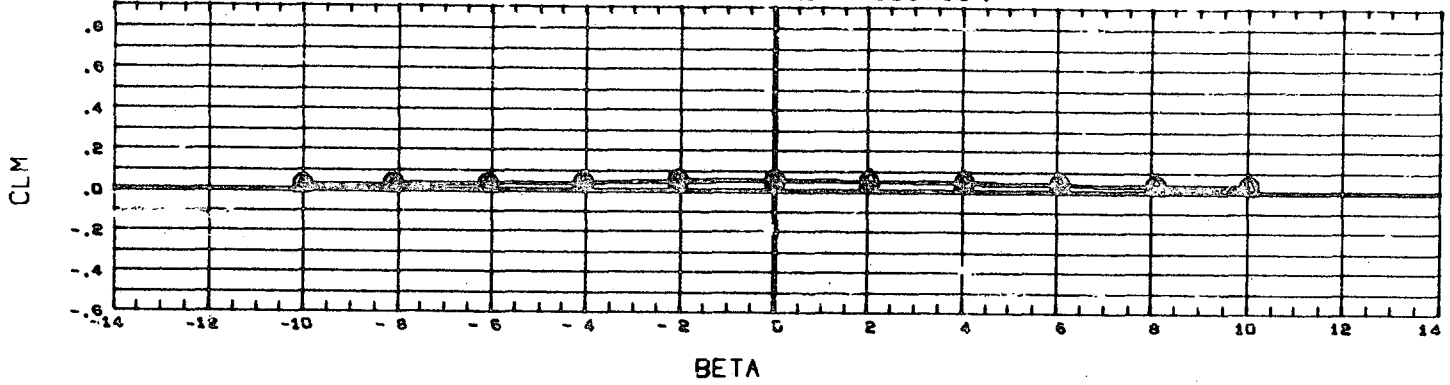
# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITAL	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS	-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

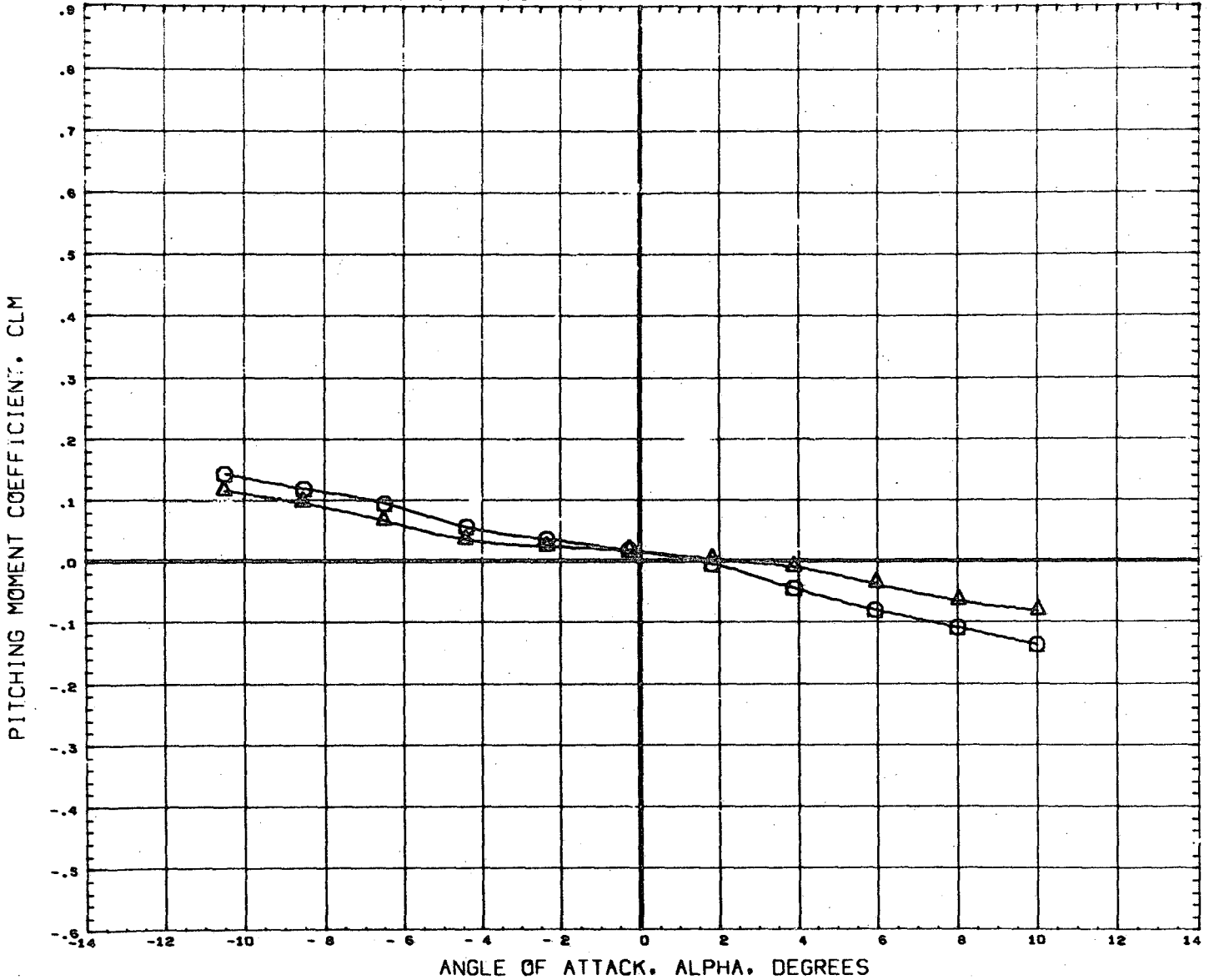
MACH 3.48

# EFFECT OF HO TANK VERTICAL FIN AND SRM NOZZLE POSITION



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(A71046)	DATA NOT AVAILABLE FOR ALL CONDITIONS		-1.500	75.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

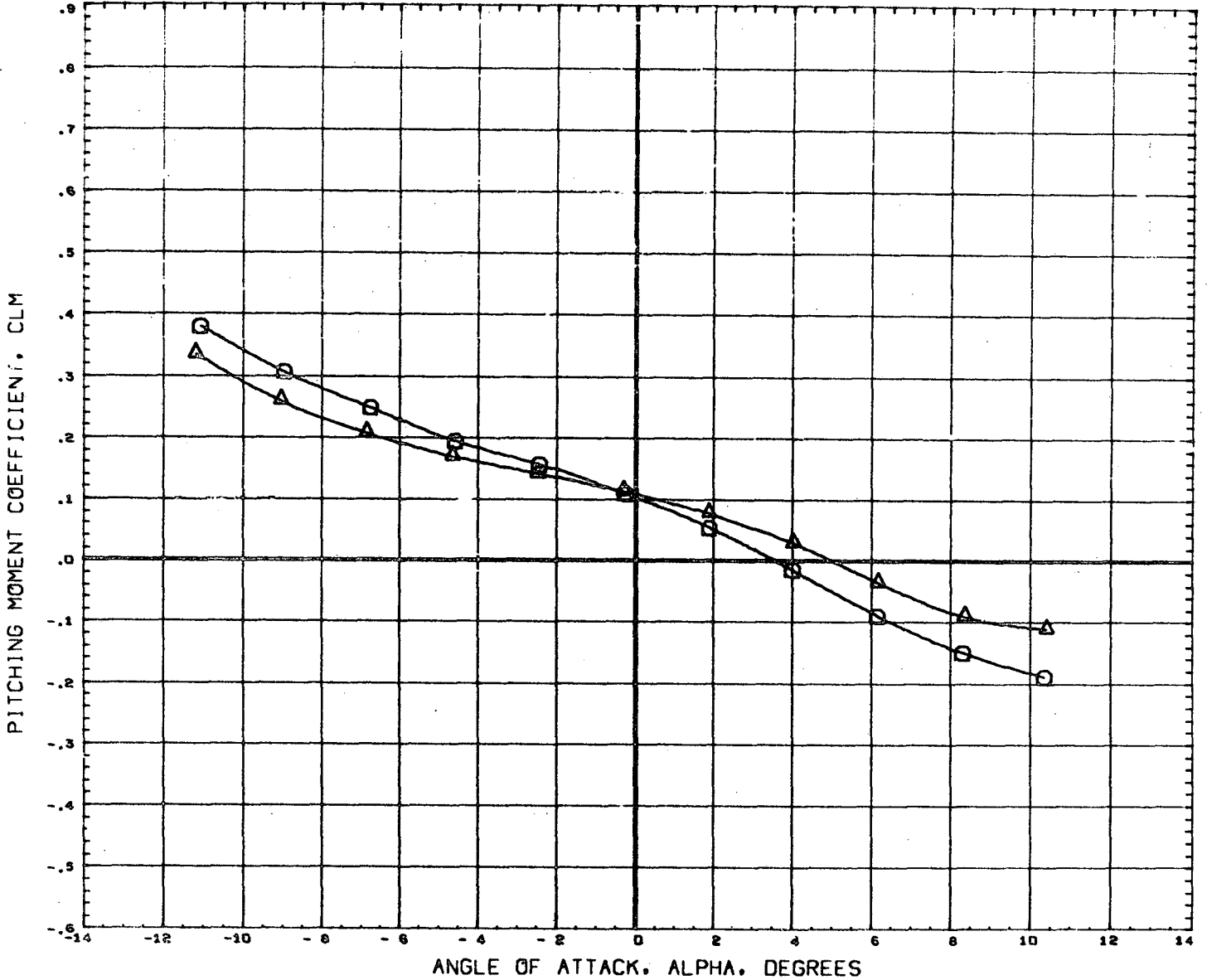
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIOIS1	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIOIS1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIOIS5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



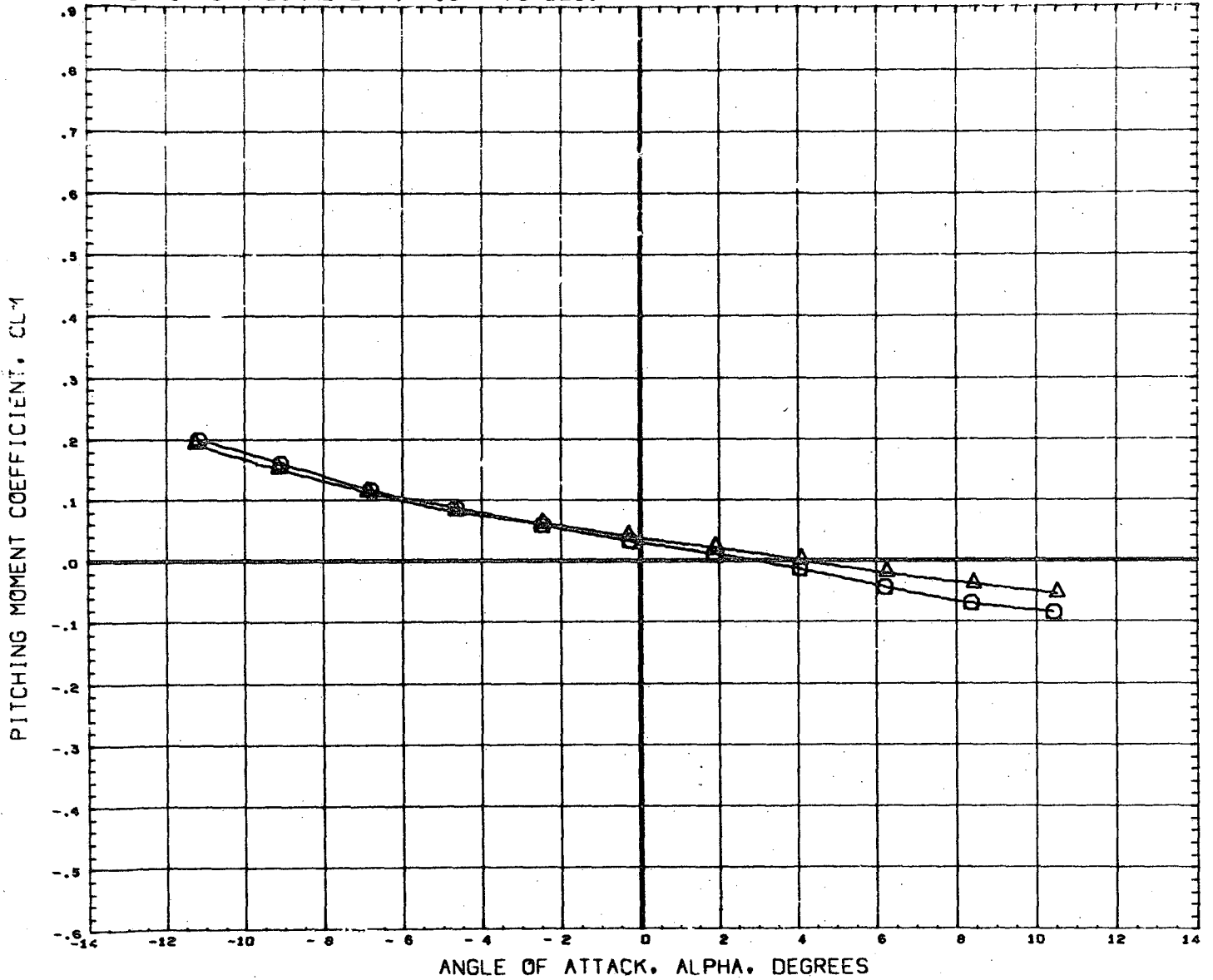
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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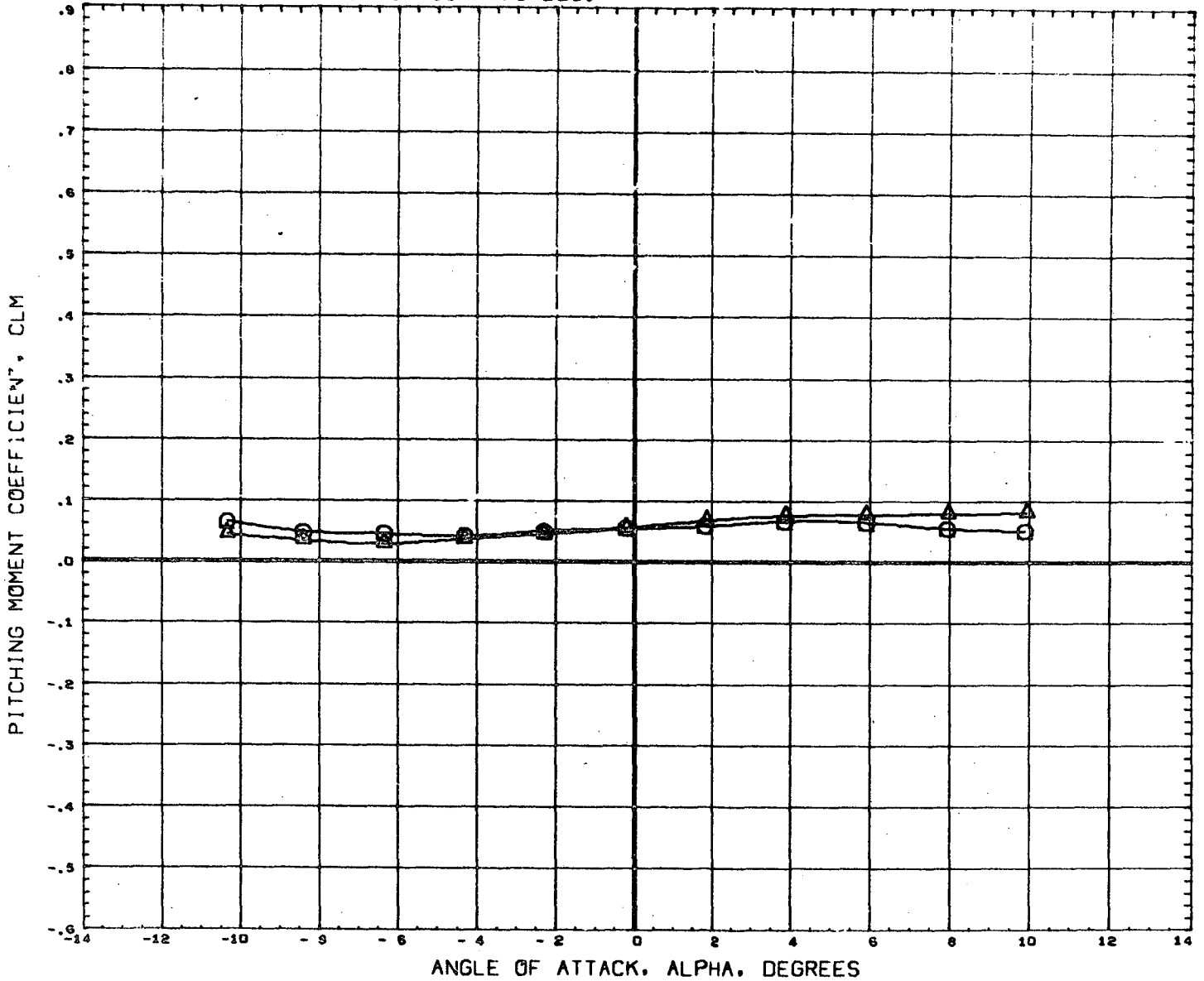
C14

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8900 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



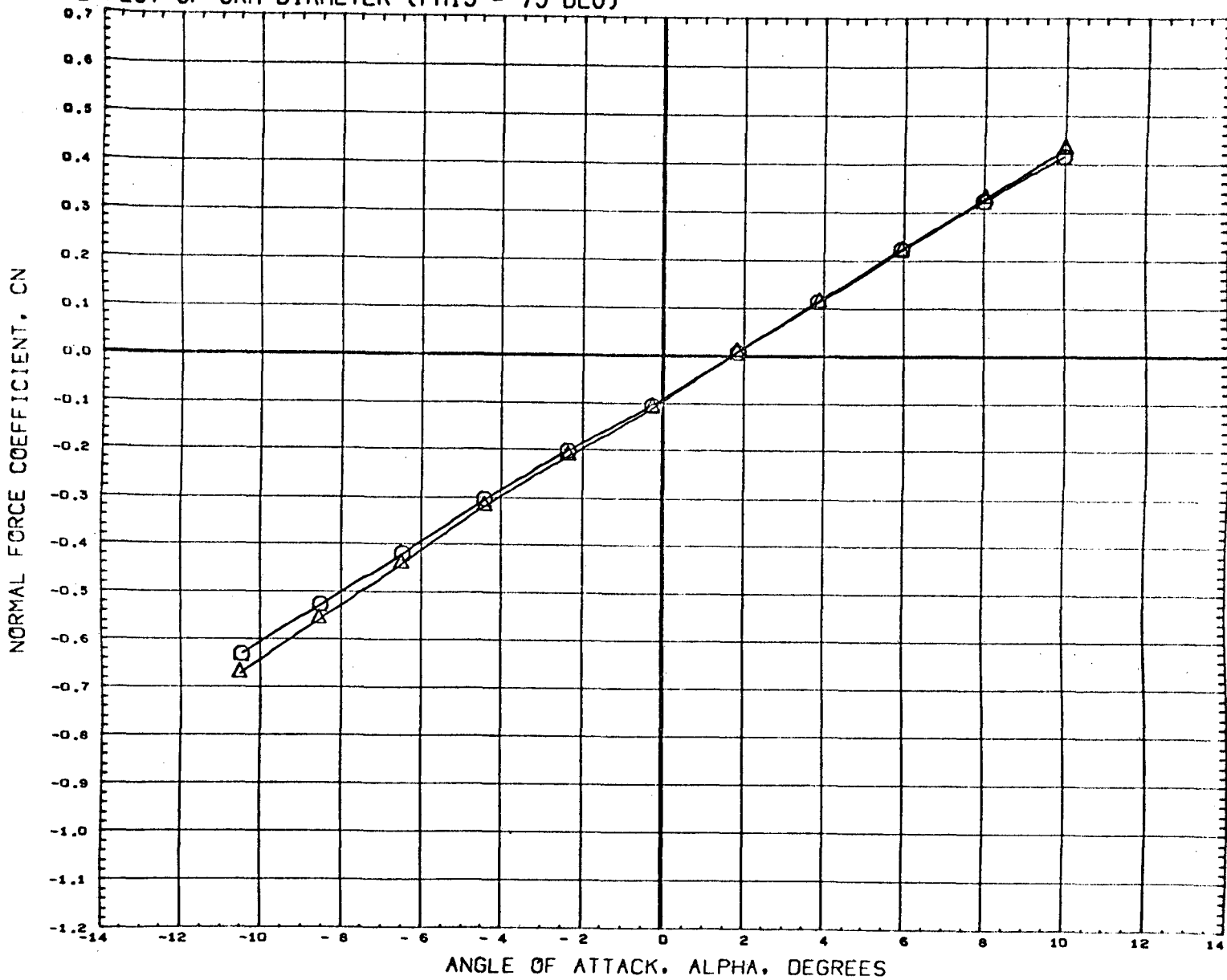
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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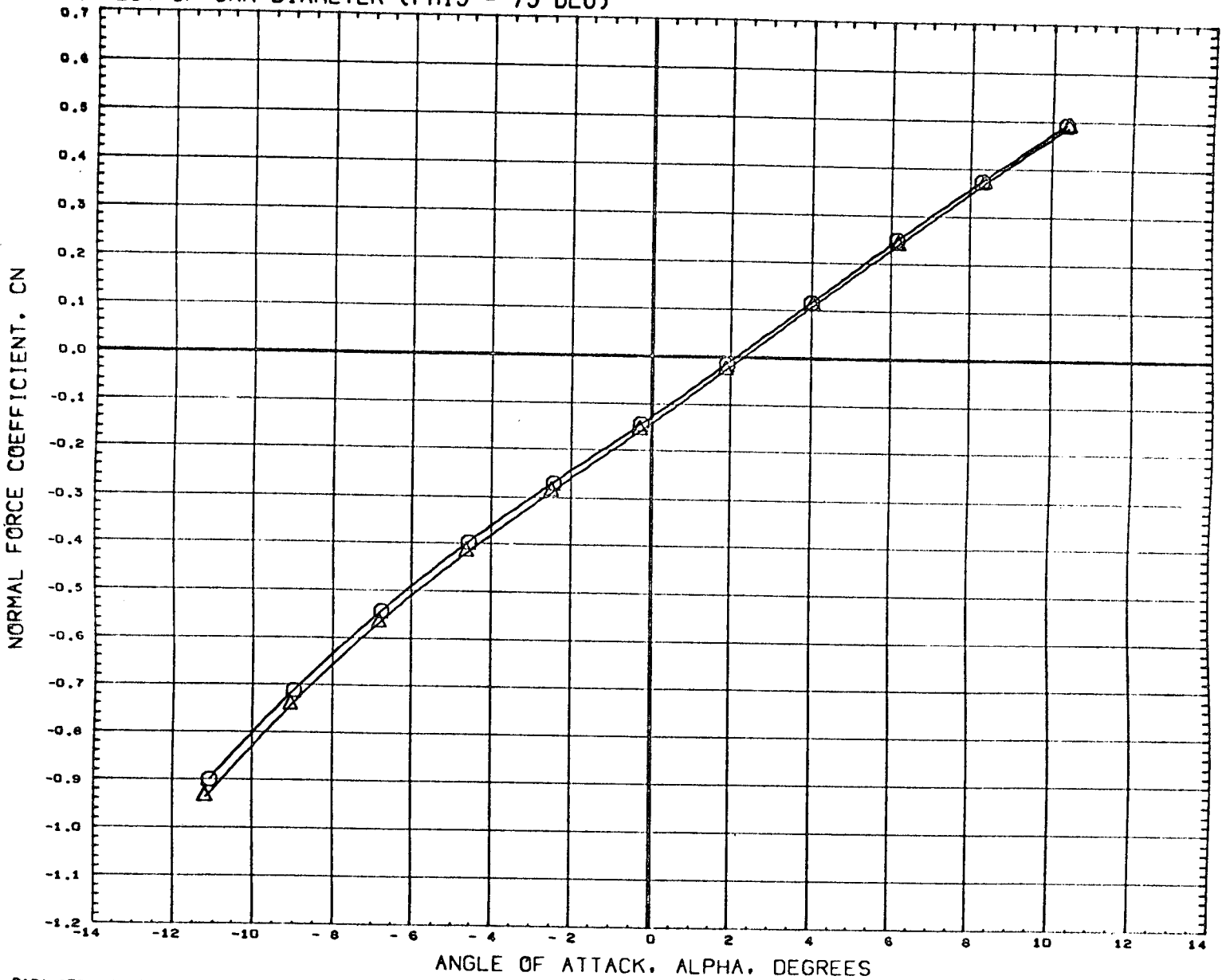
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	T101S5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1		-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES		T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
								BREF 4.4600 IN.
								XMRP 3.3600 IN.
								YMRP 0.0000 IN.
								ZMRP 0.2480 IN.
								SCALE 0.0040 SCALE

MACH .61

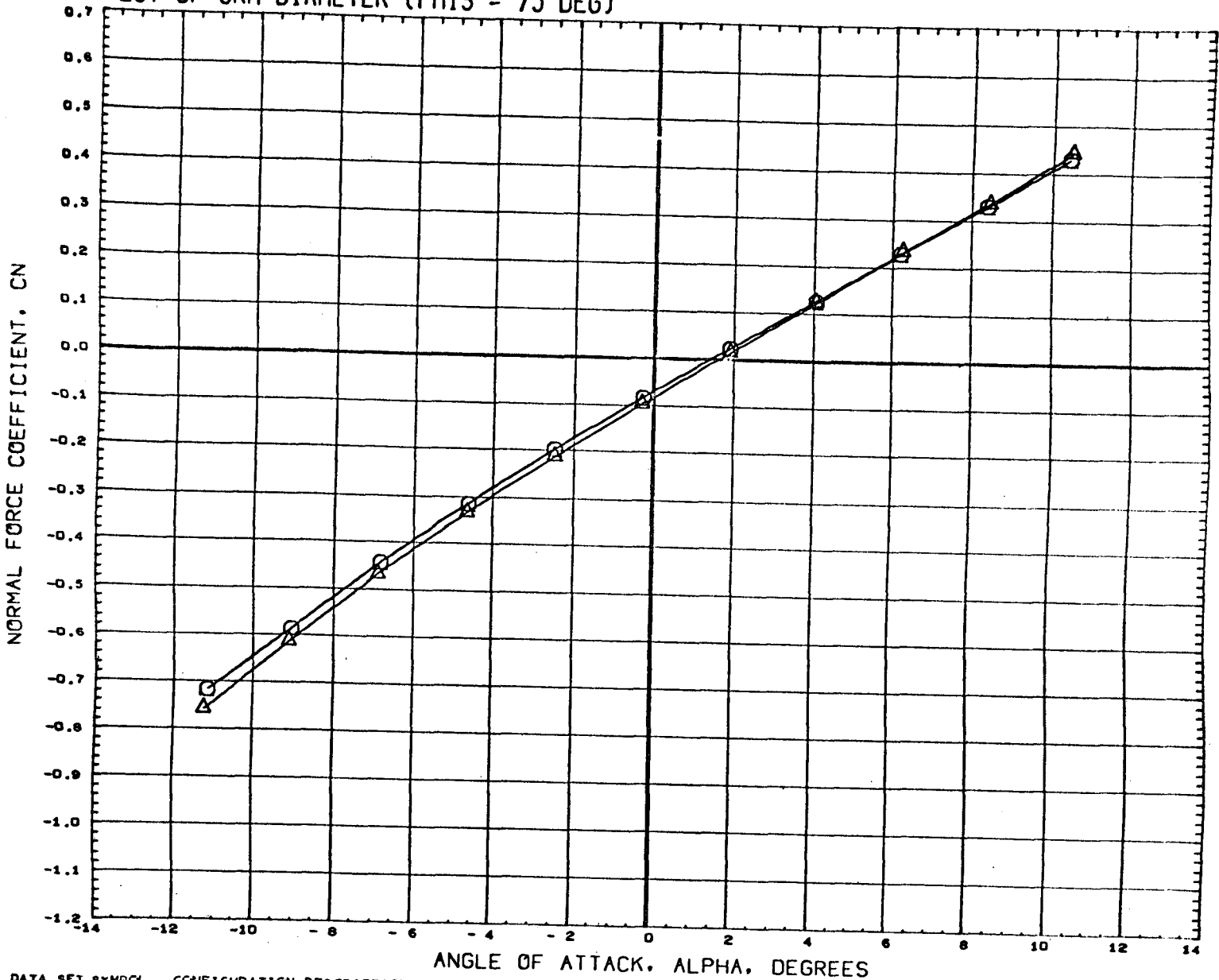
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

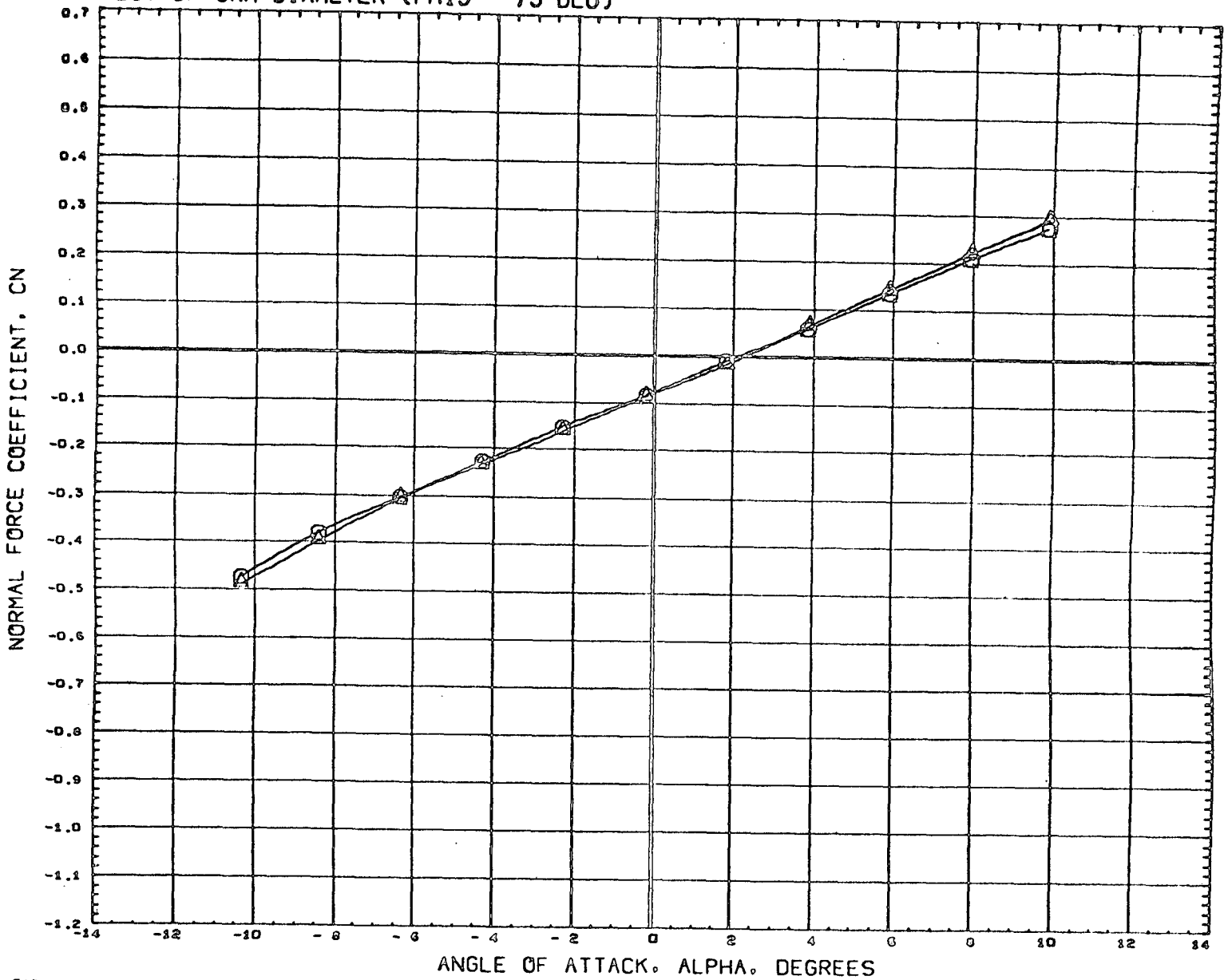
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

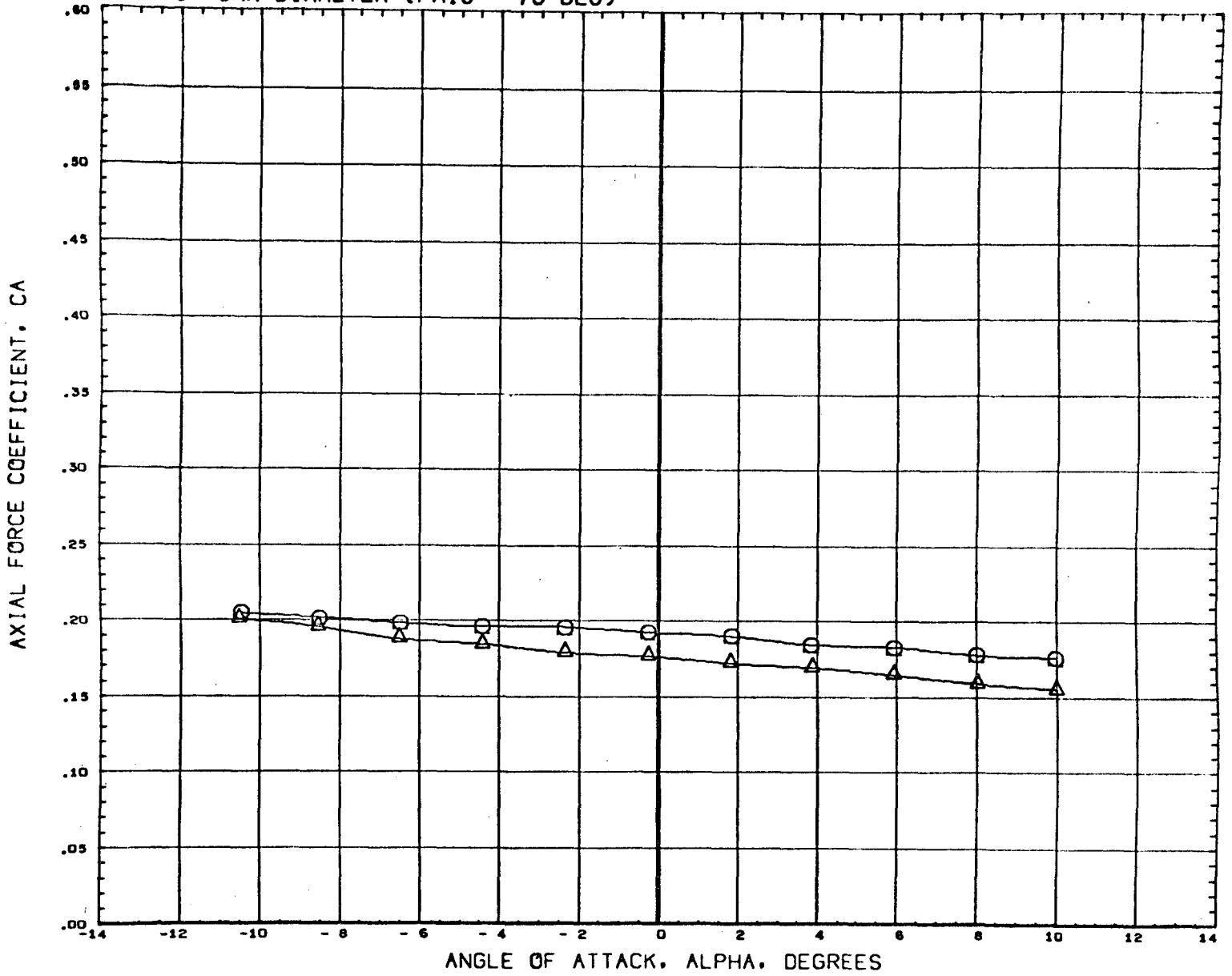
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN
(C71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

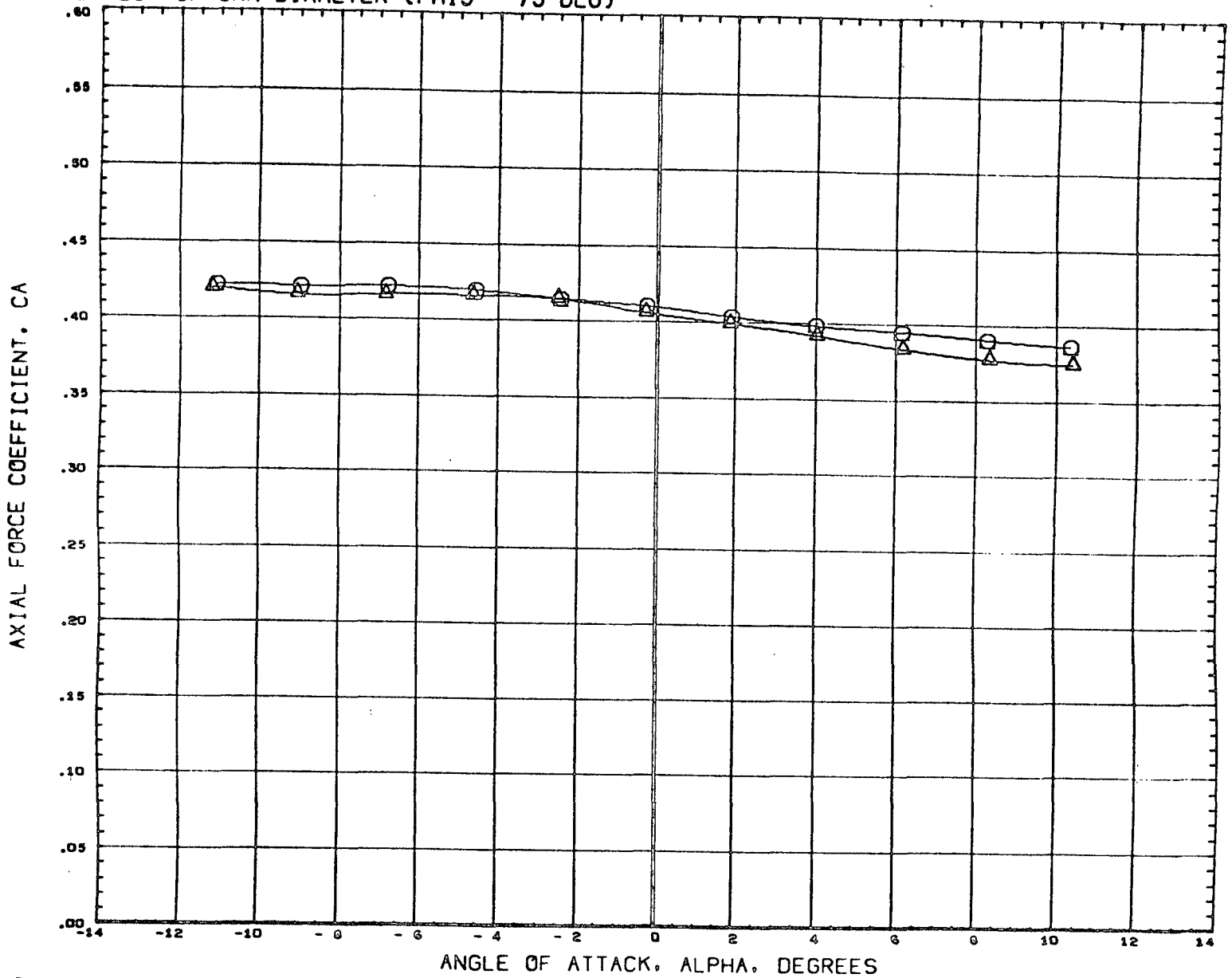
MACH 4.96

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBO	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

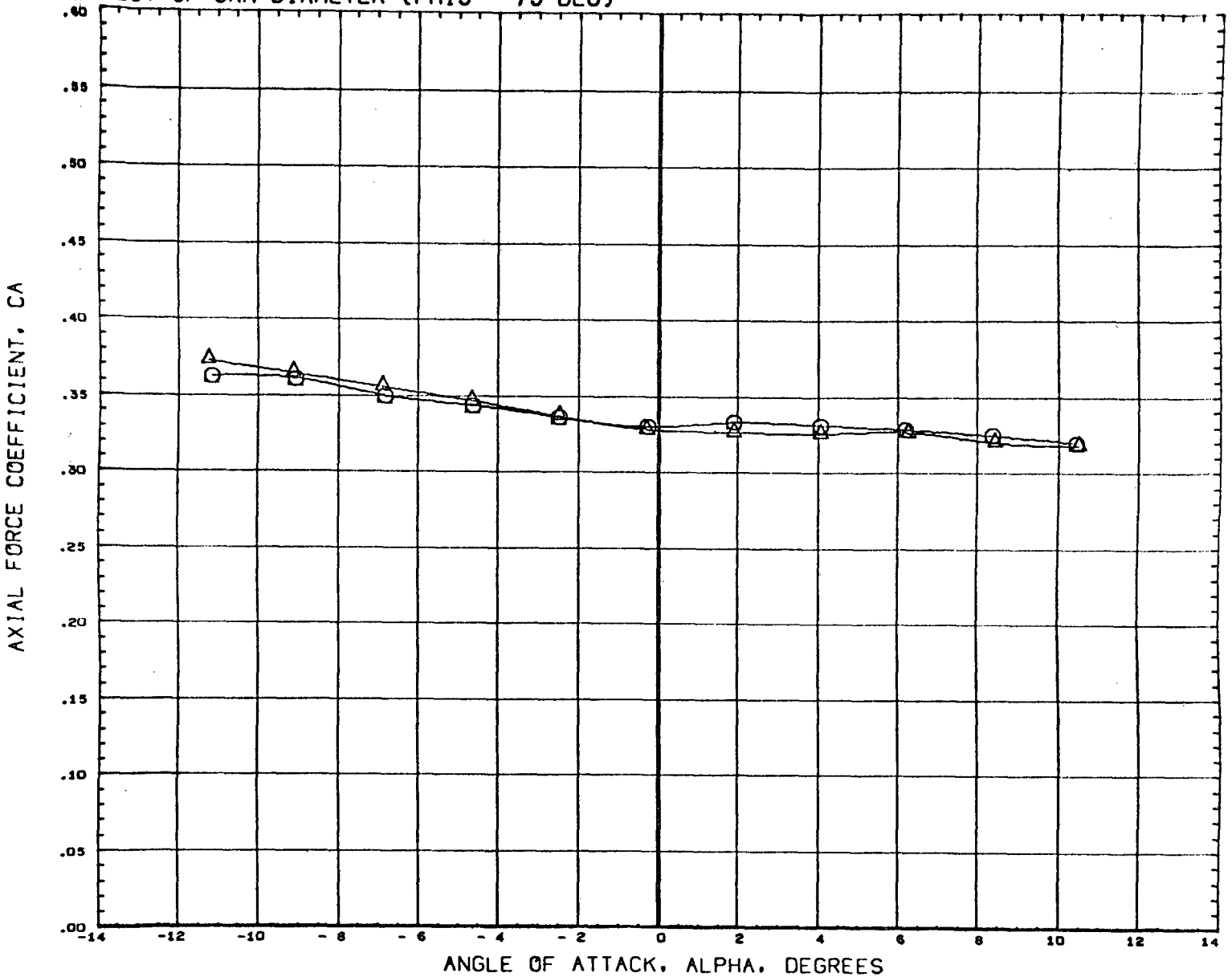
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

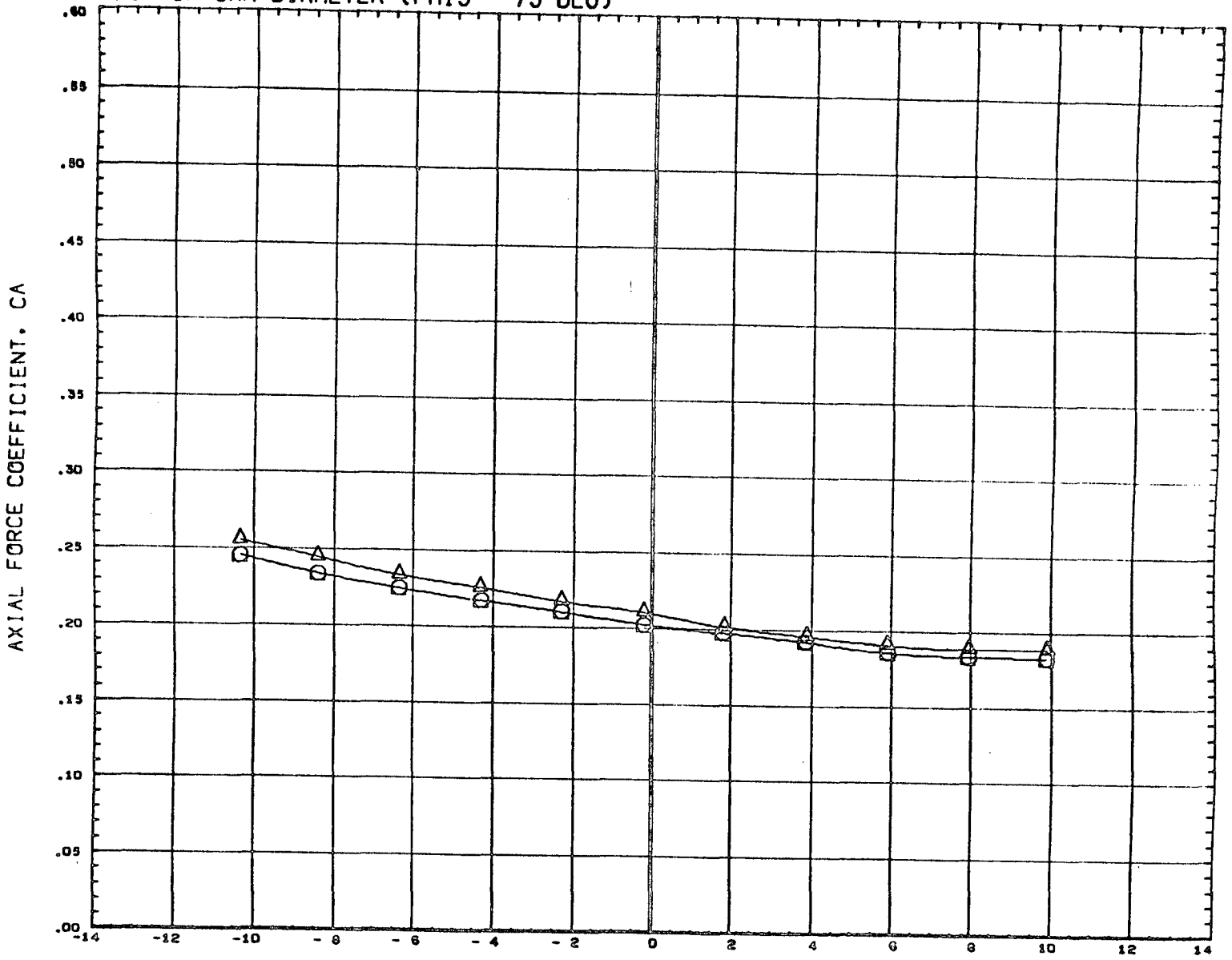
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

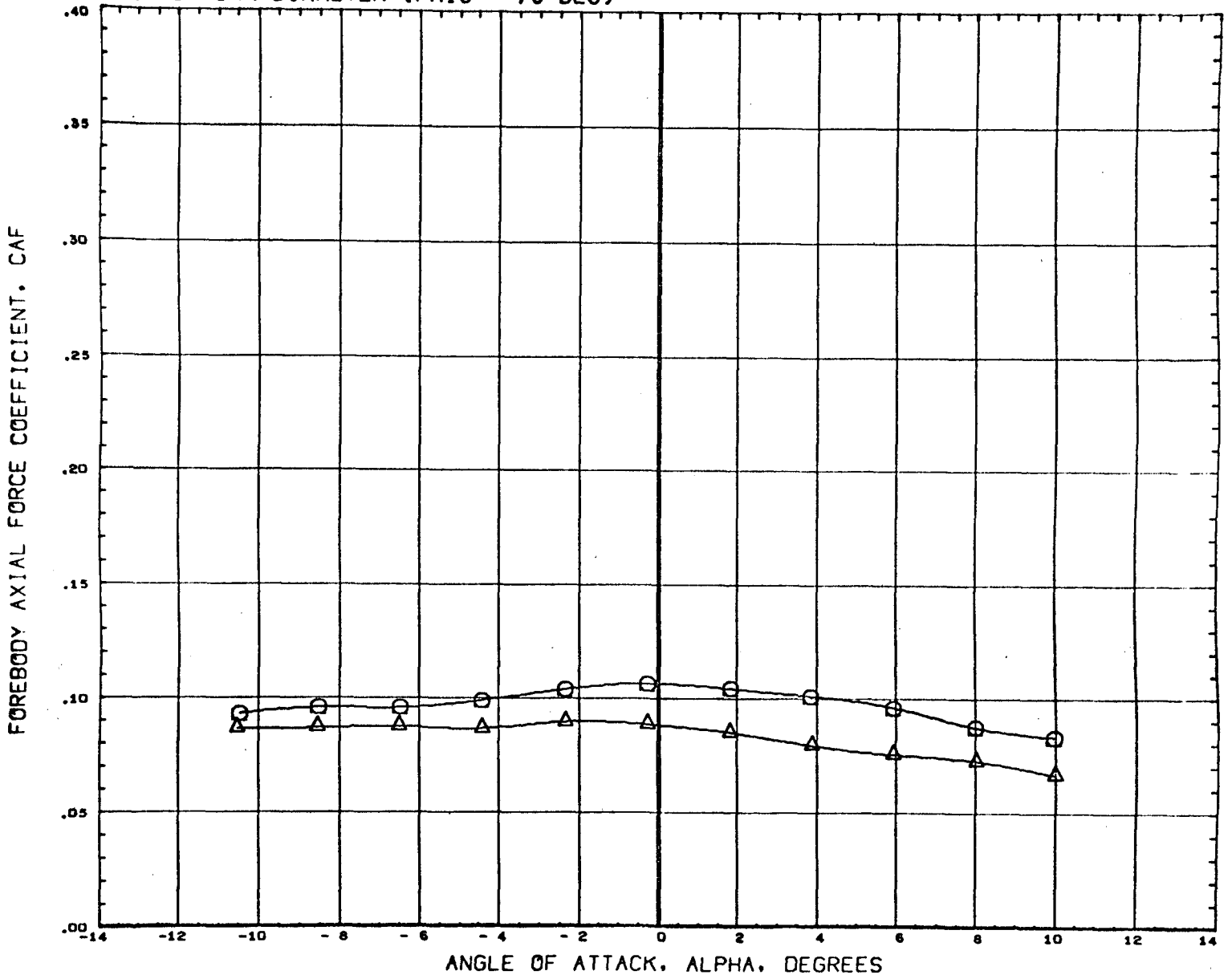
MACH 4.96

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# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



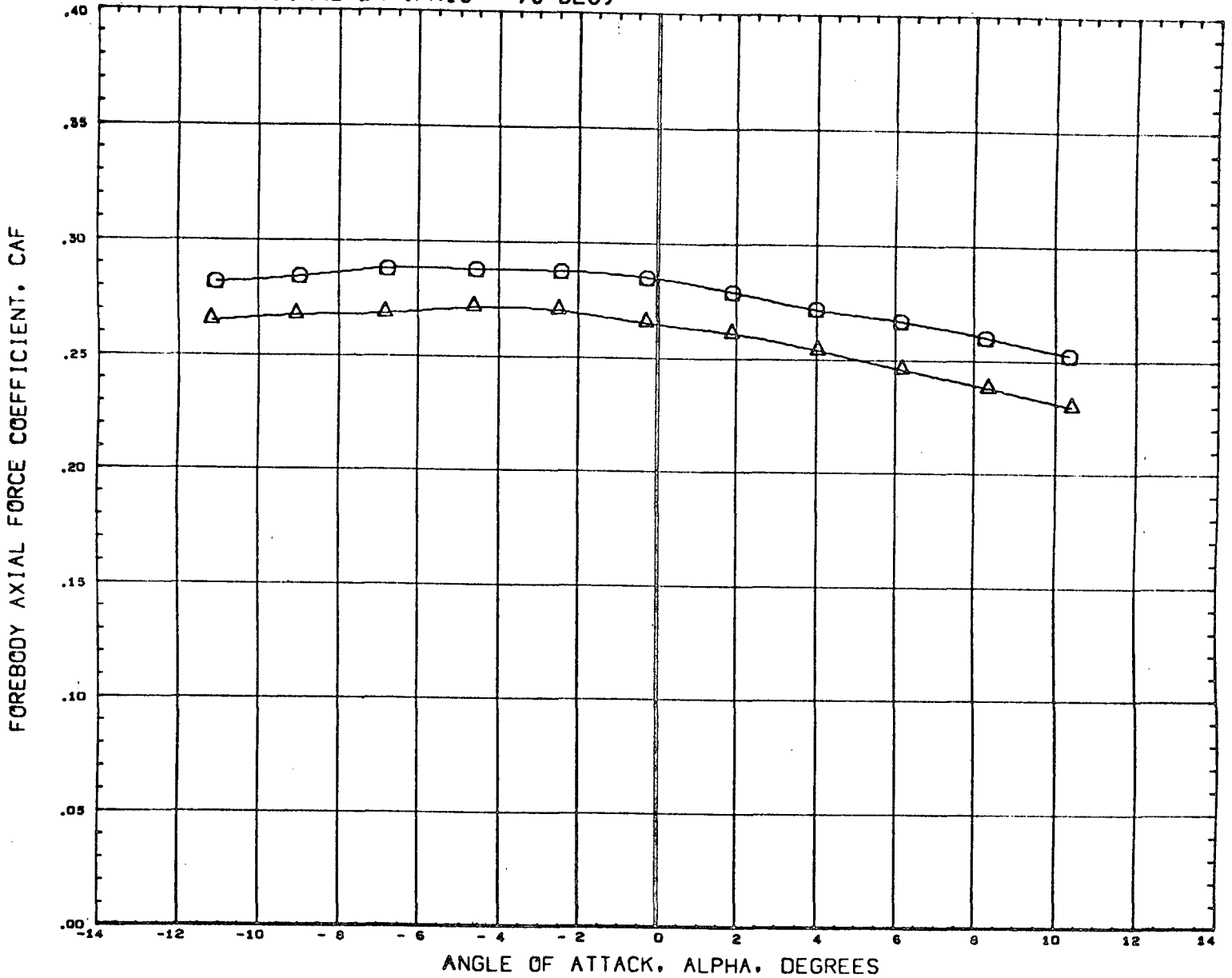
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

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RC

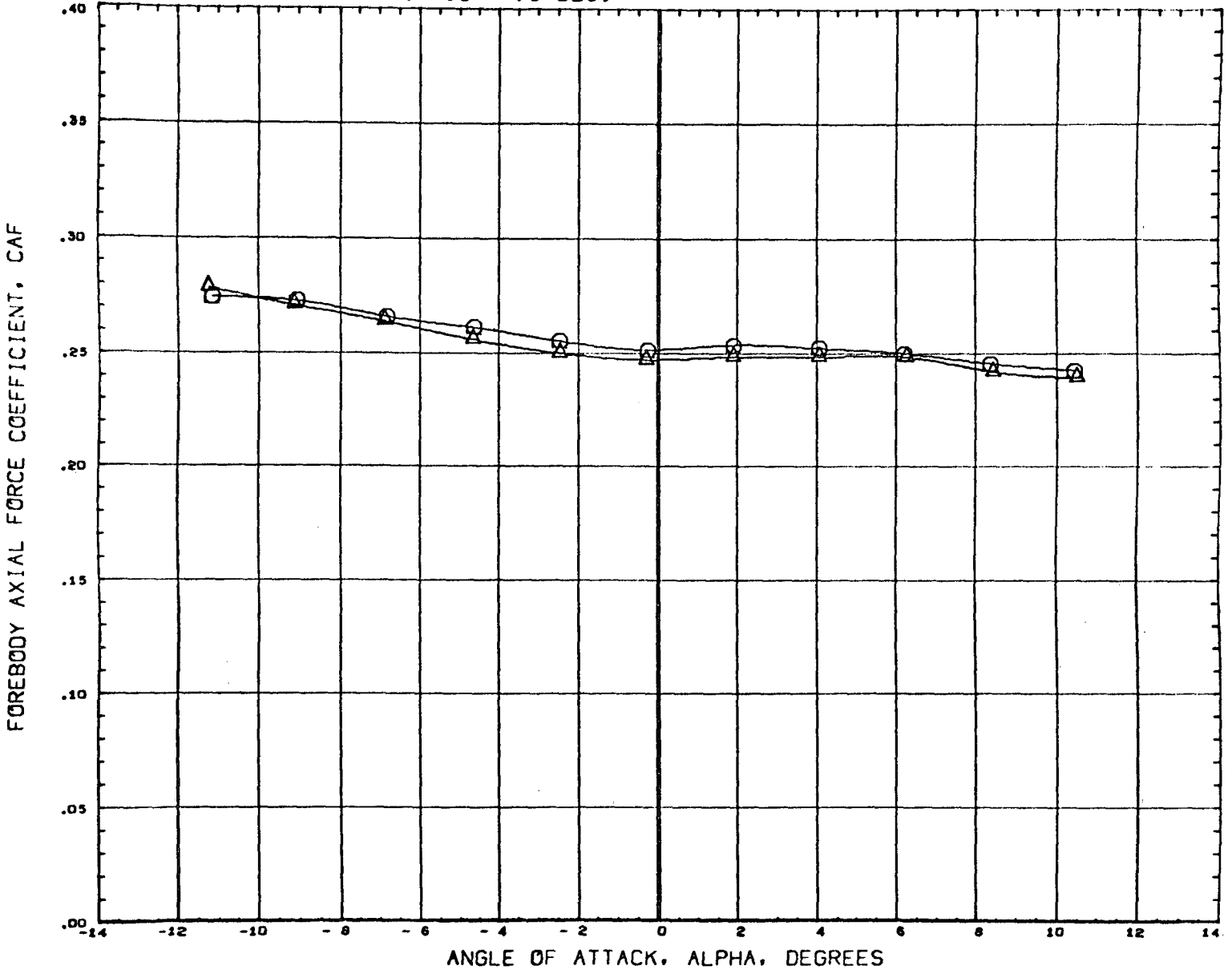
EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XM RP 3.3600 IN.
						YM RP 0.0000 IN.
						ZM RP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

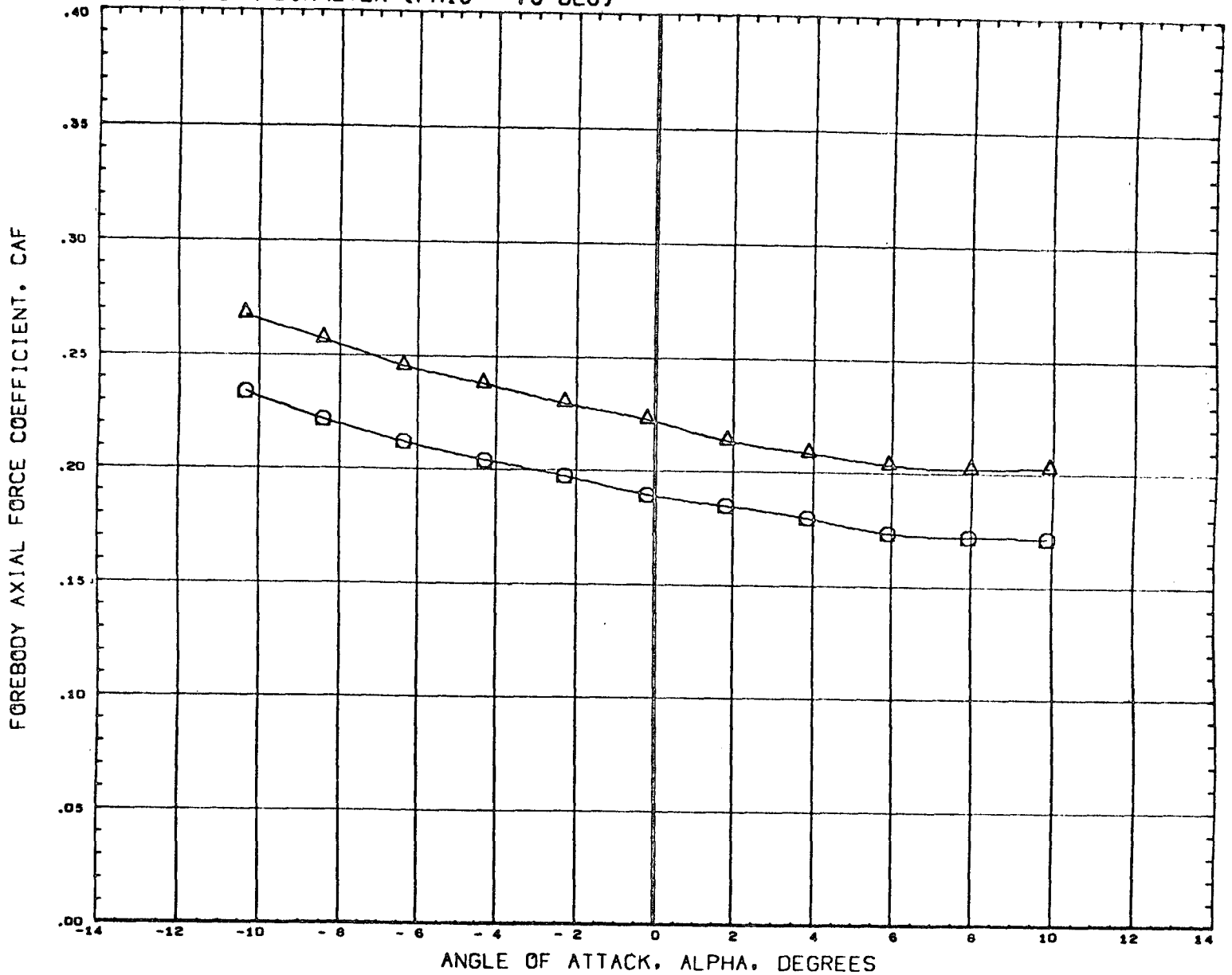
EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

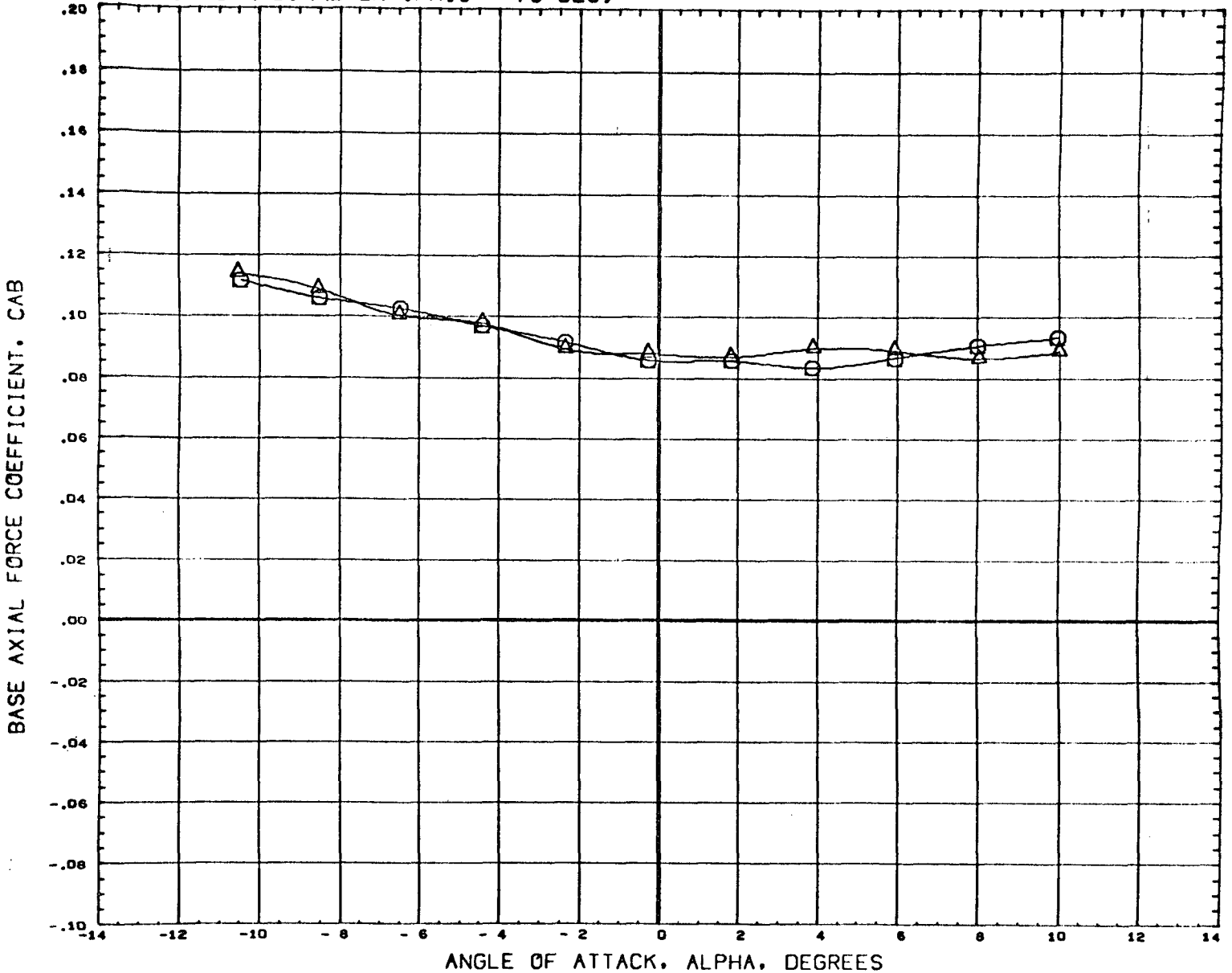
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)

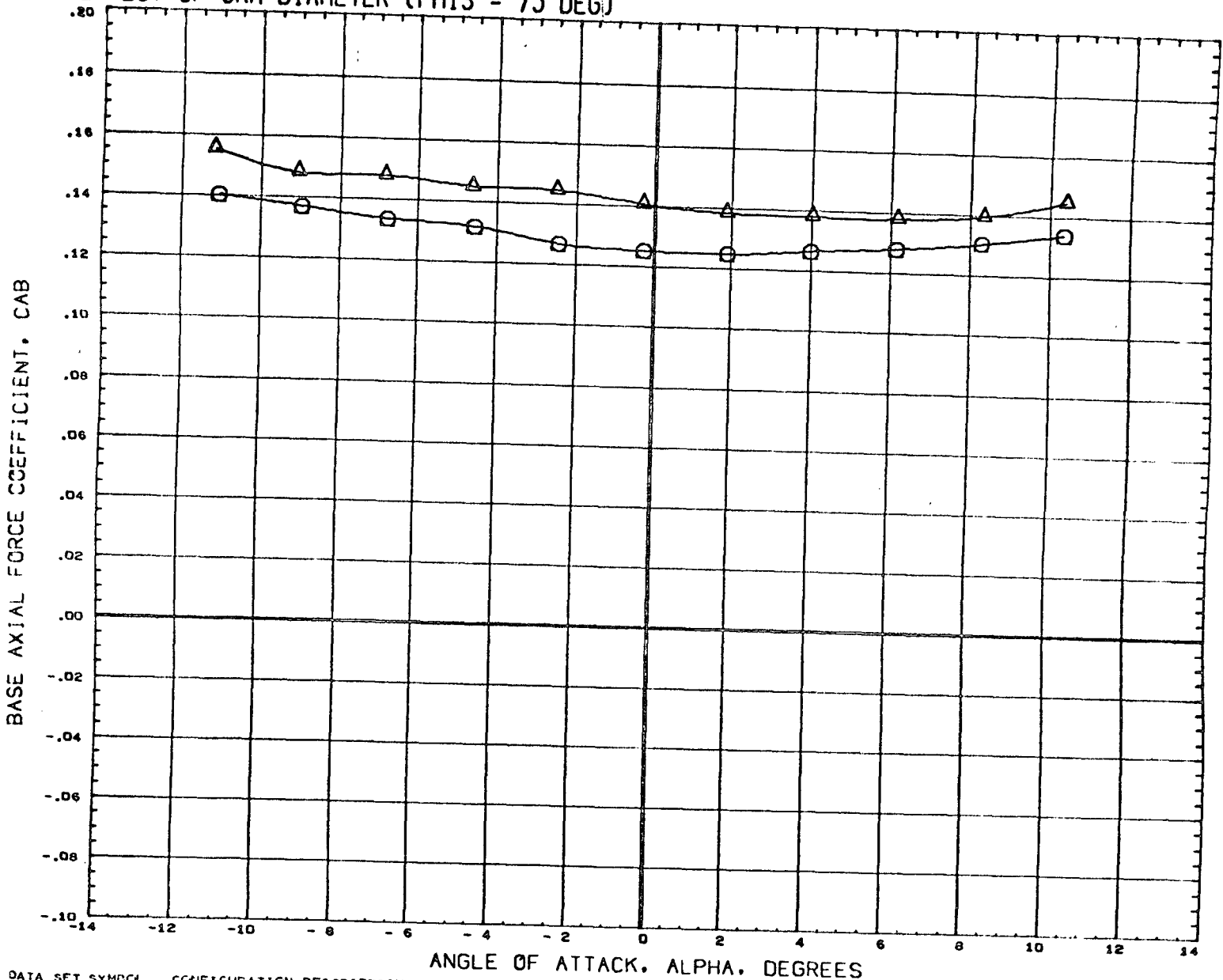


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SO. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61

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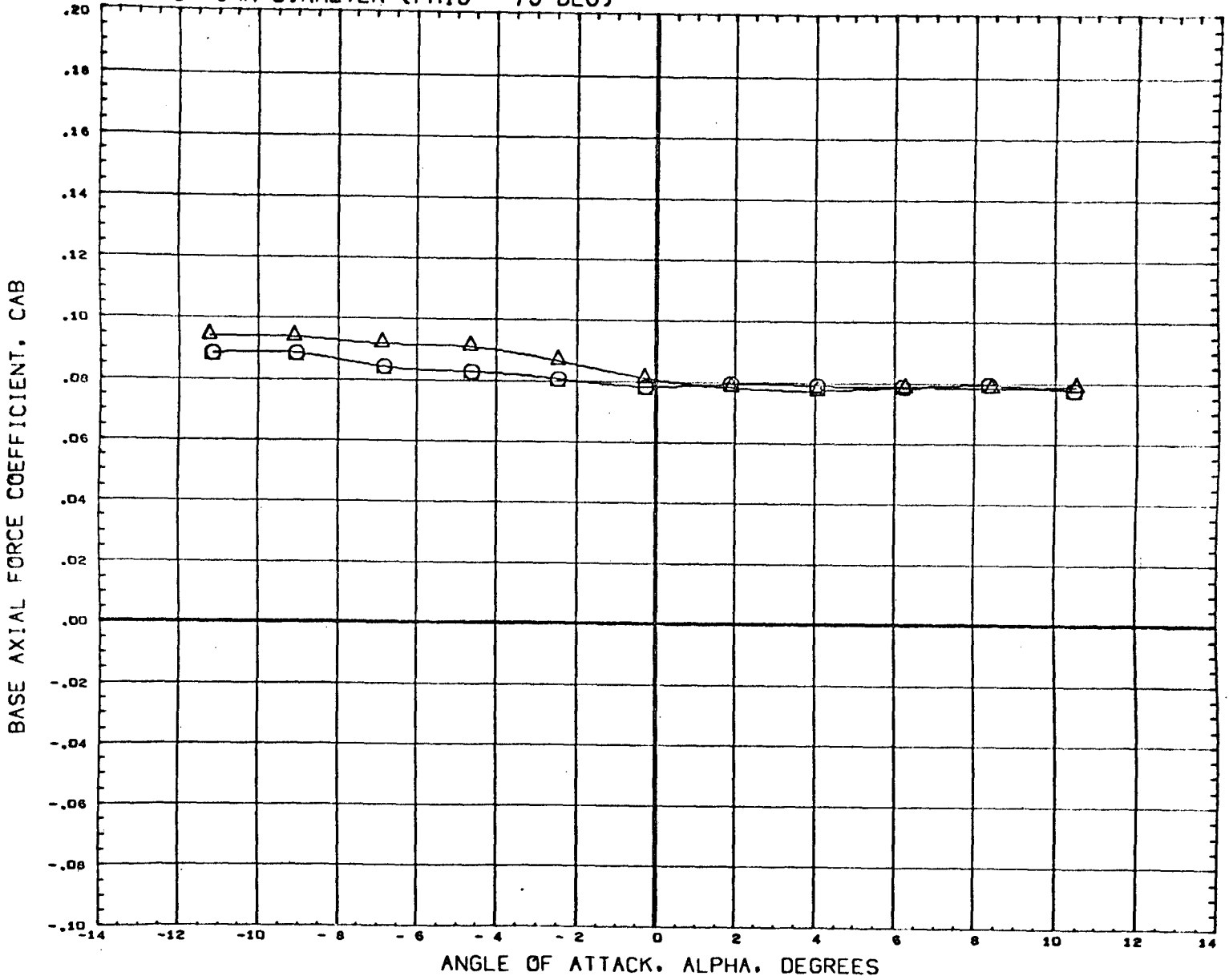
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBCL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

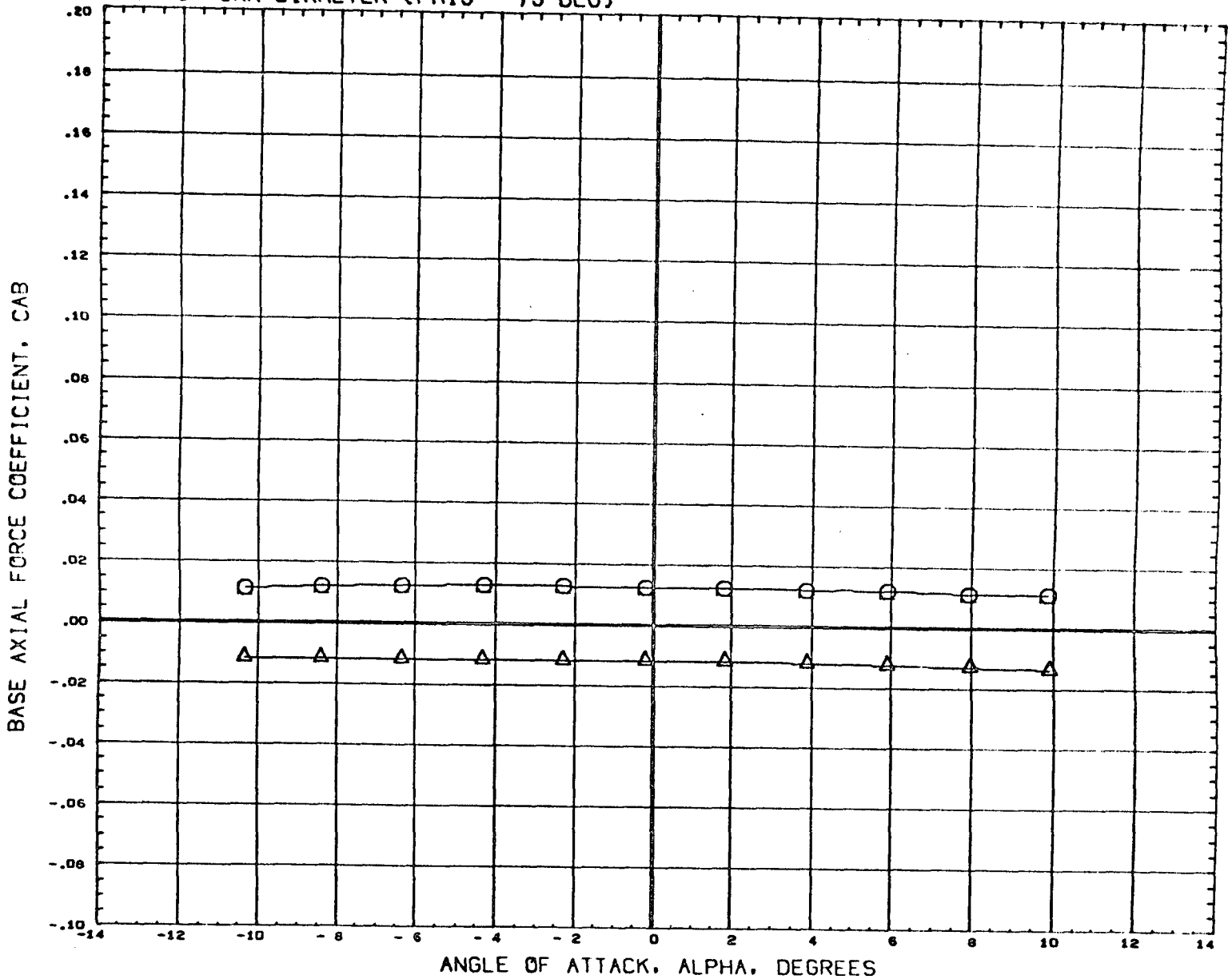
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)

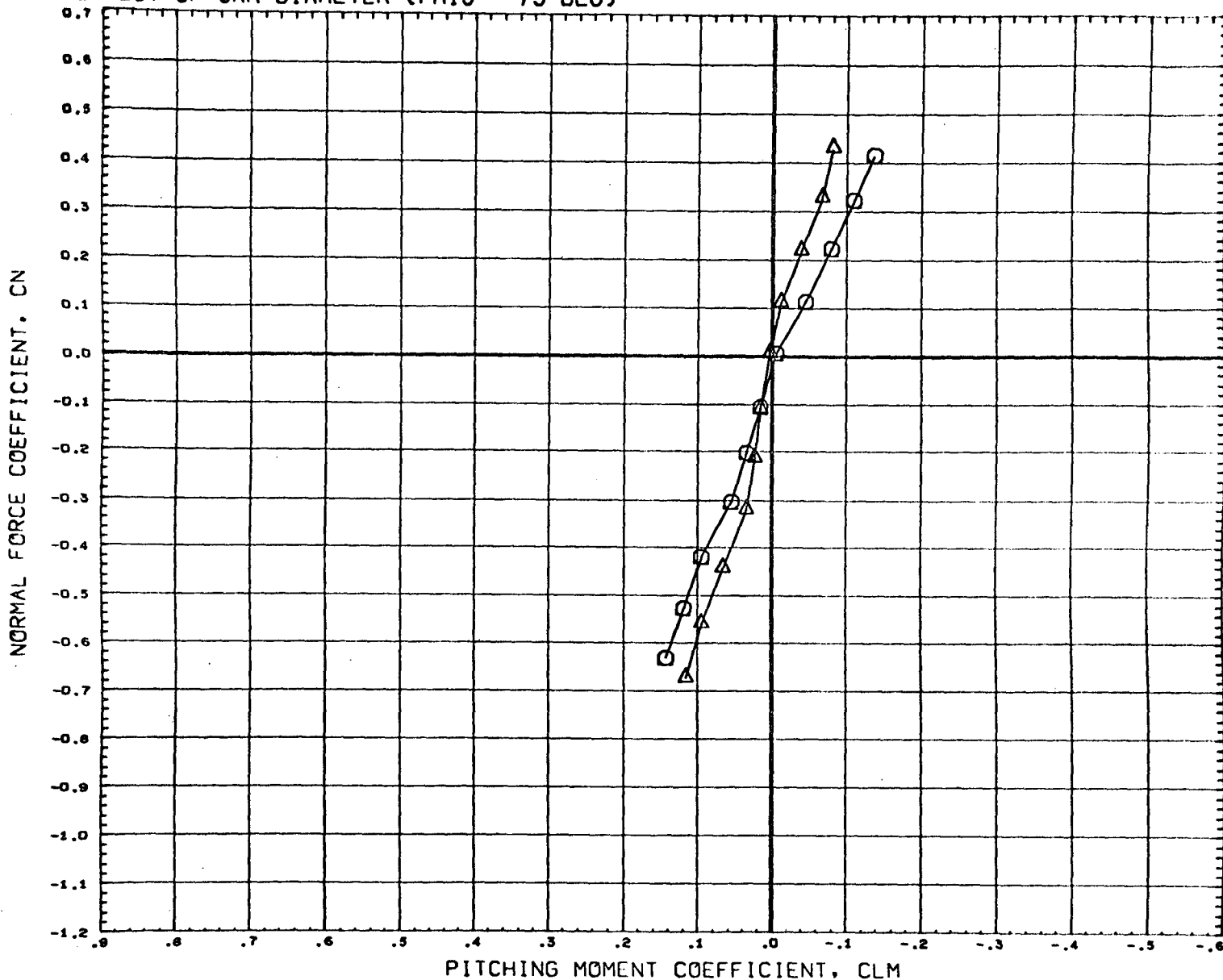


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	75.000	0.000	0.000
						SREF 7.8800 SQ. IN
						LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96



# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



PITCHING MOMENT COEFFICIENT, CLM

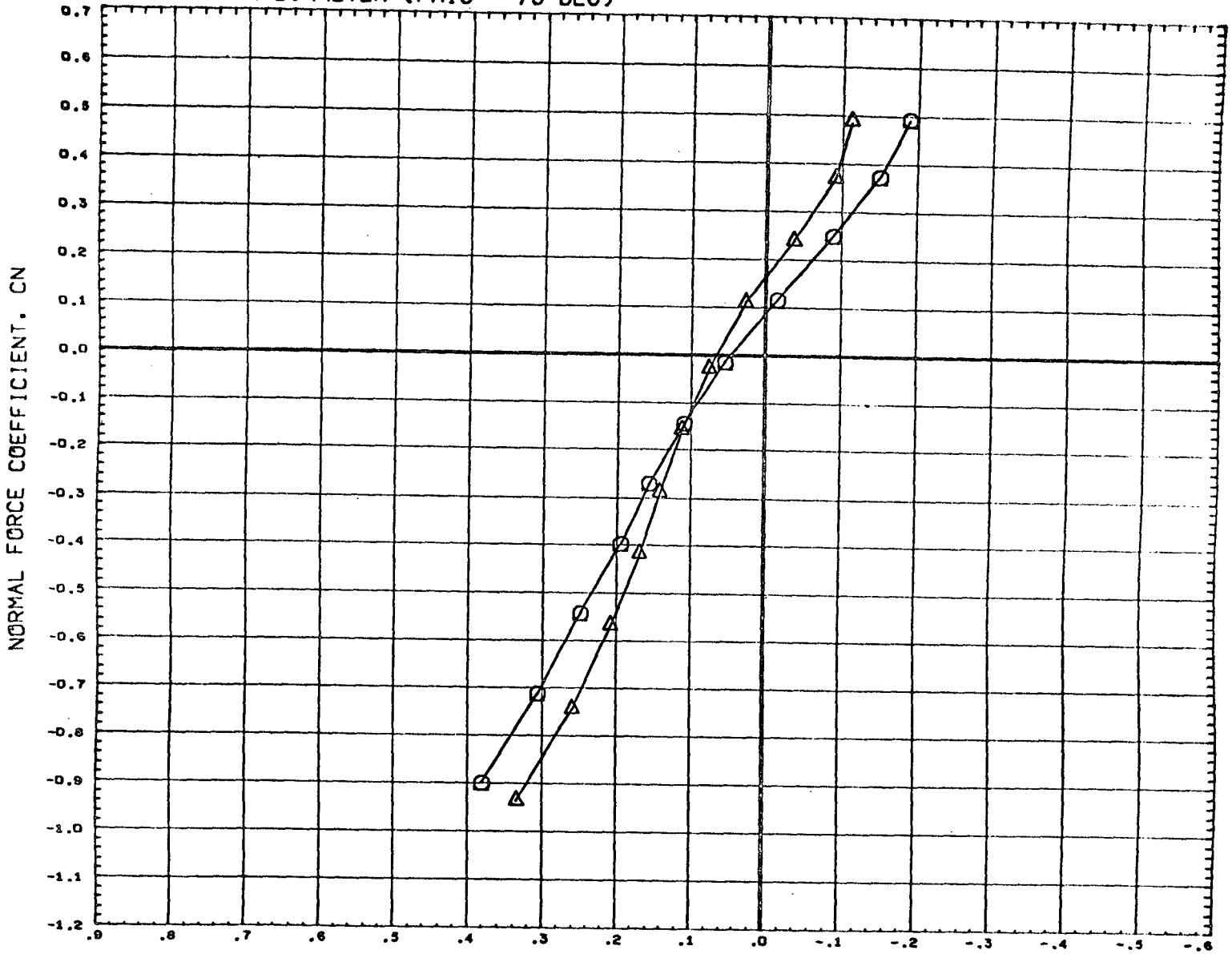
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIN	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

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# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



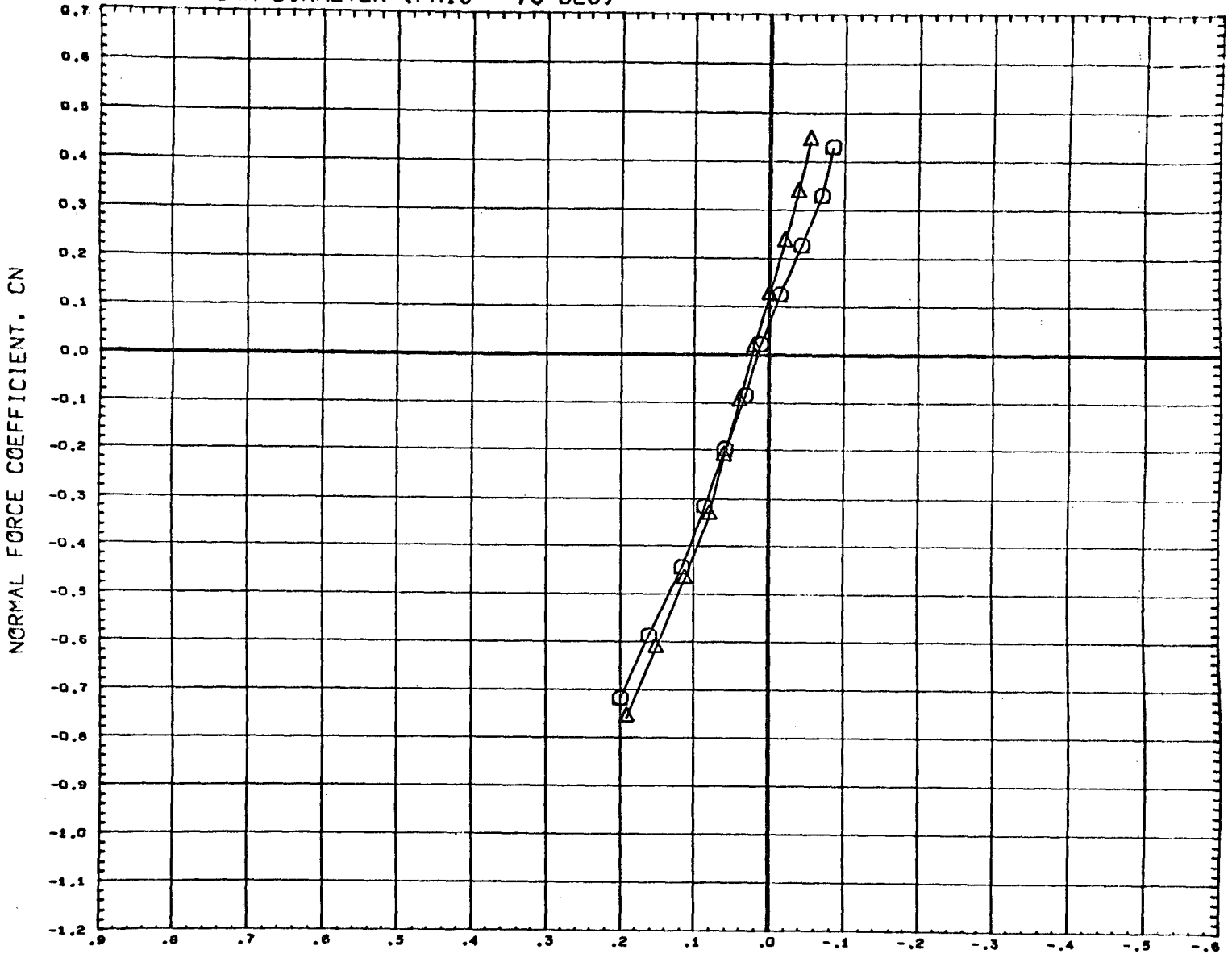
PITCHING MOMENT COEFFICIENT, CLM

DATA SET SYMBO	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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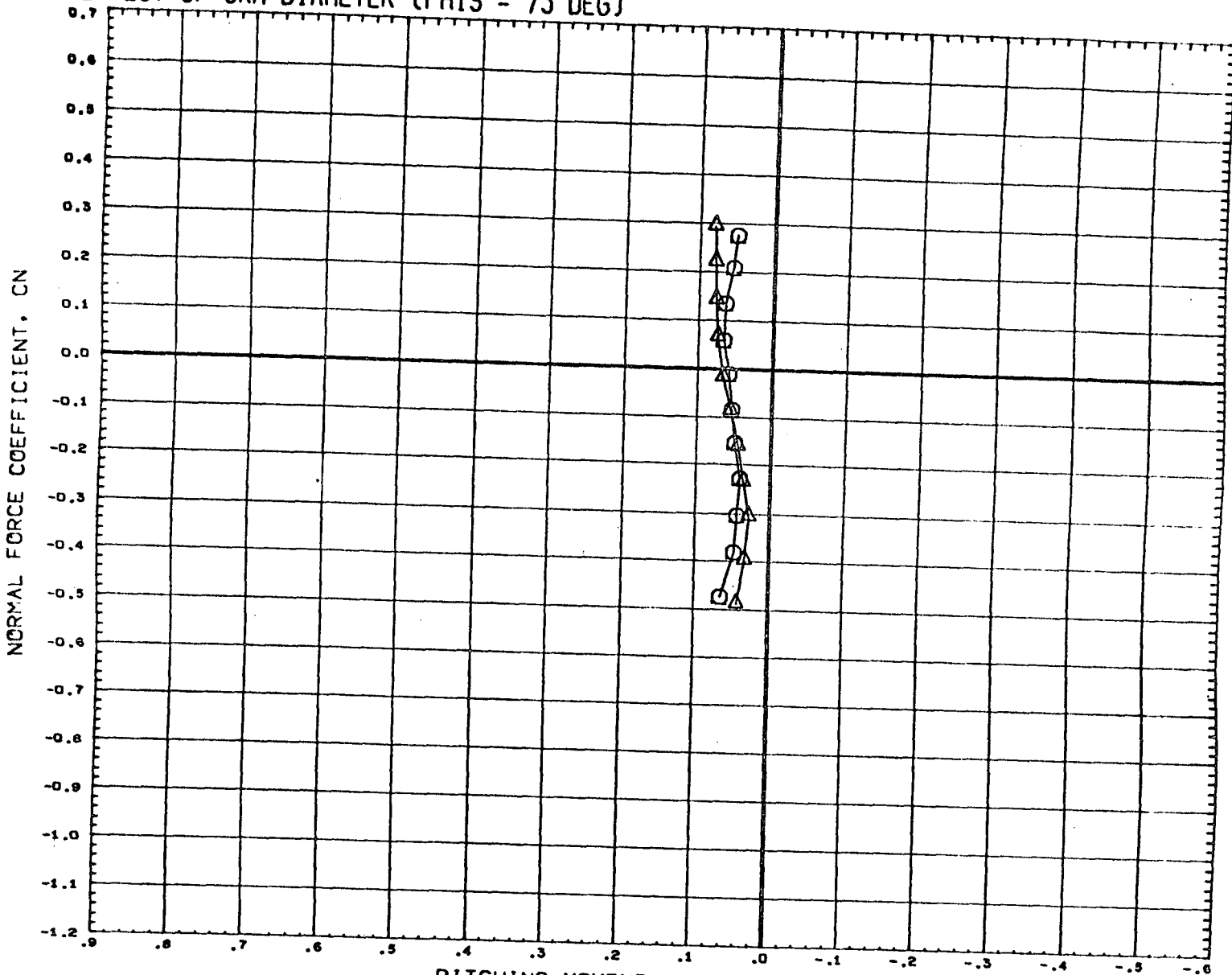
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	75.000	0.000	0.000
						SREF 7.8800 SQ. IN
						LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
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						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)

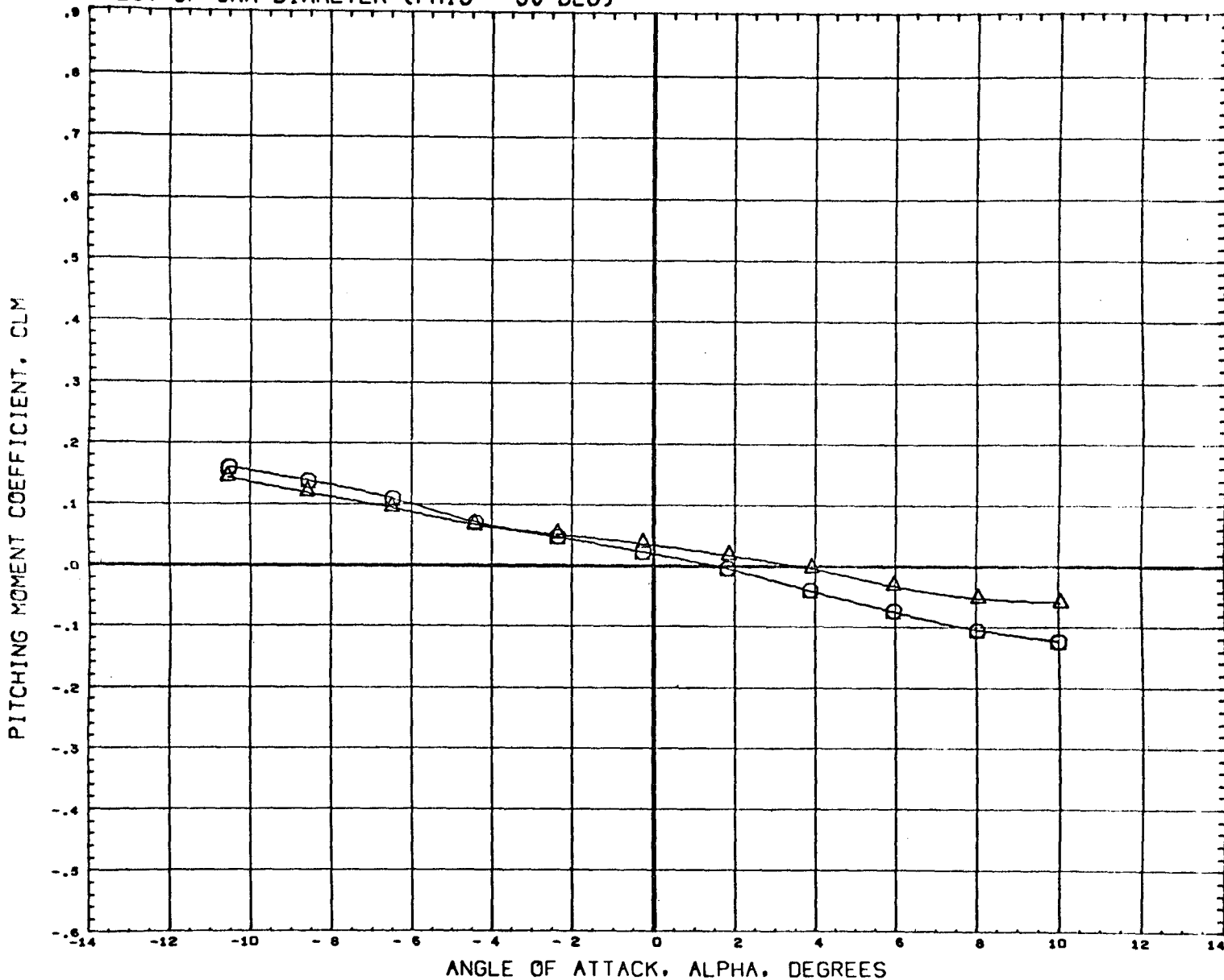


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	SREF 7.8800 SQ. IN
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	75.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
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						SCALE 0.0040 SCALE

MACH 4.96



# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



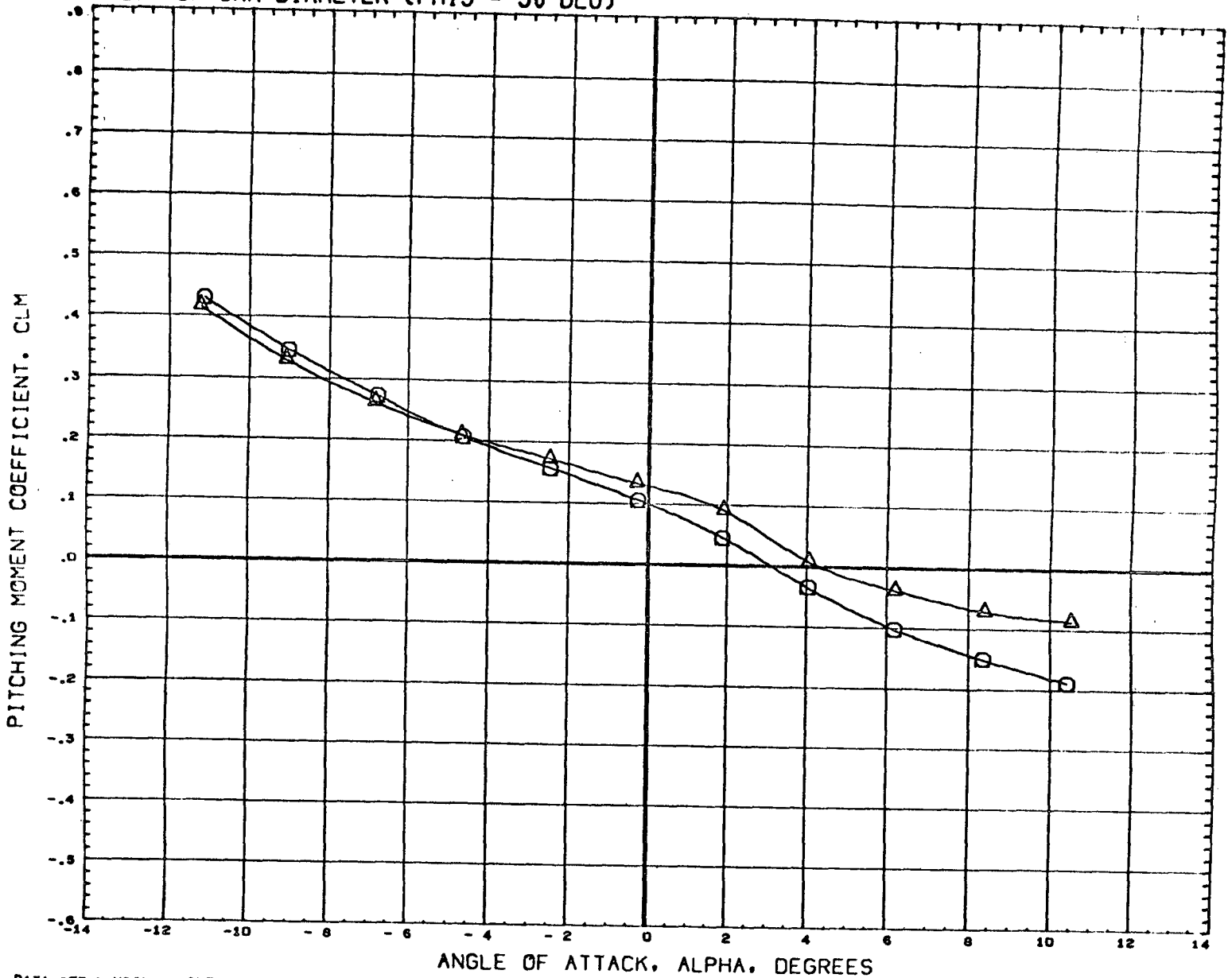
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
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						SCALE 0.0040 SCALE

MACH .60

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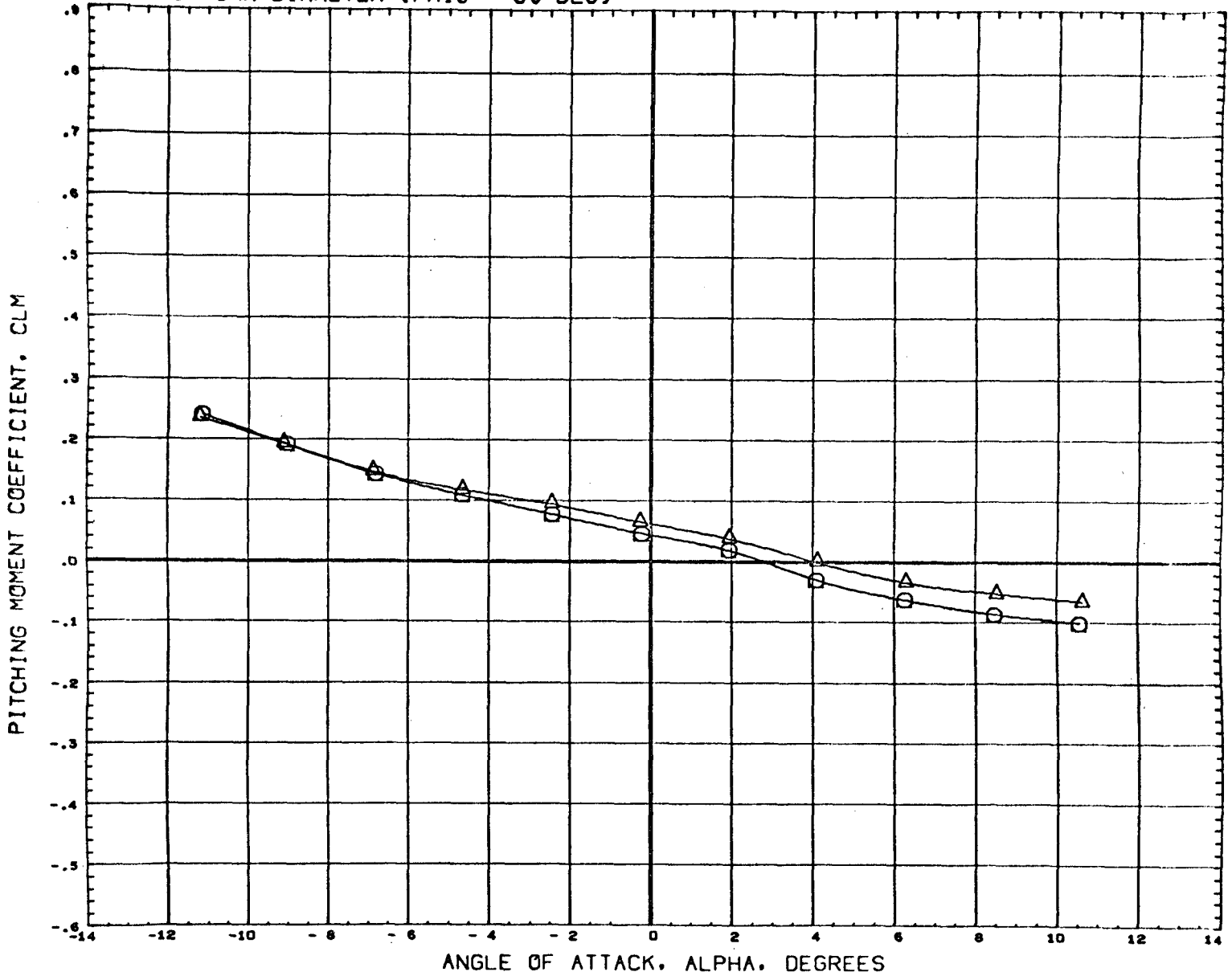
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19

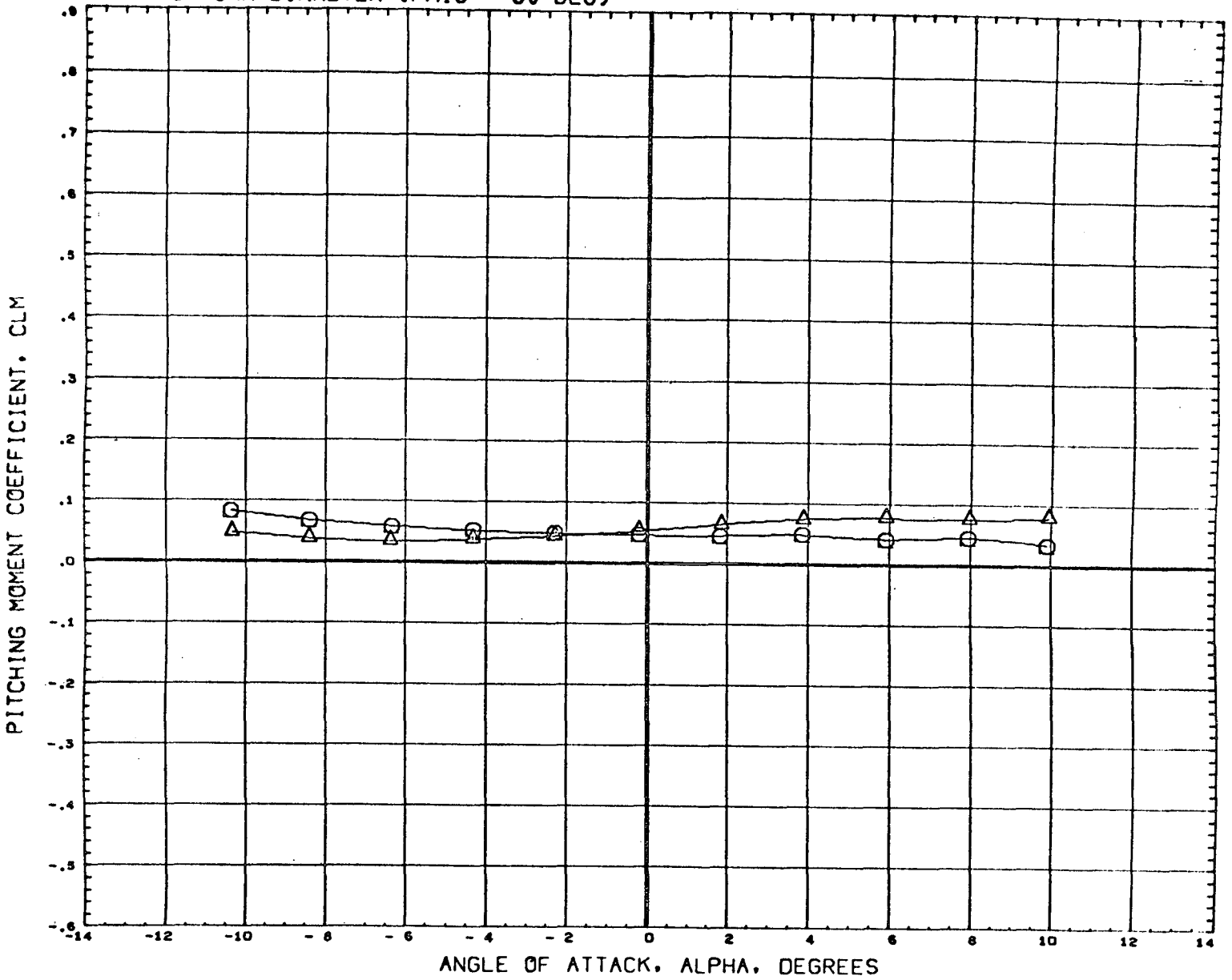
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



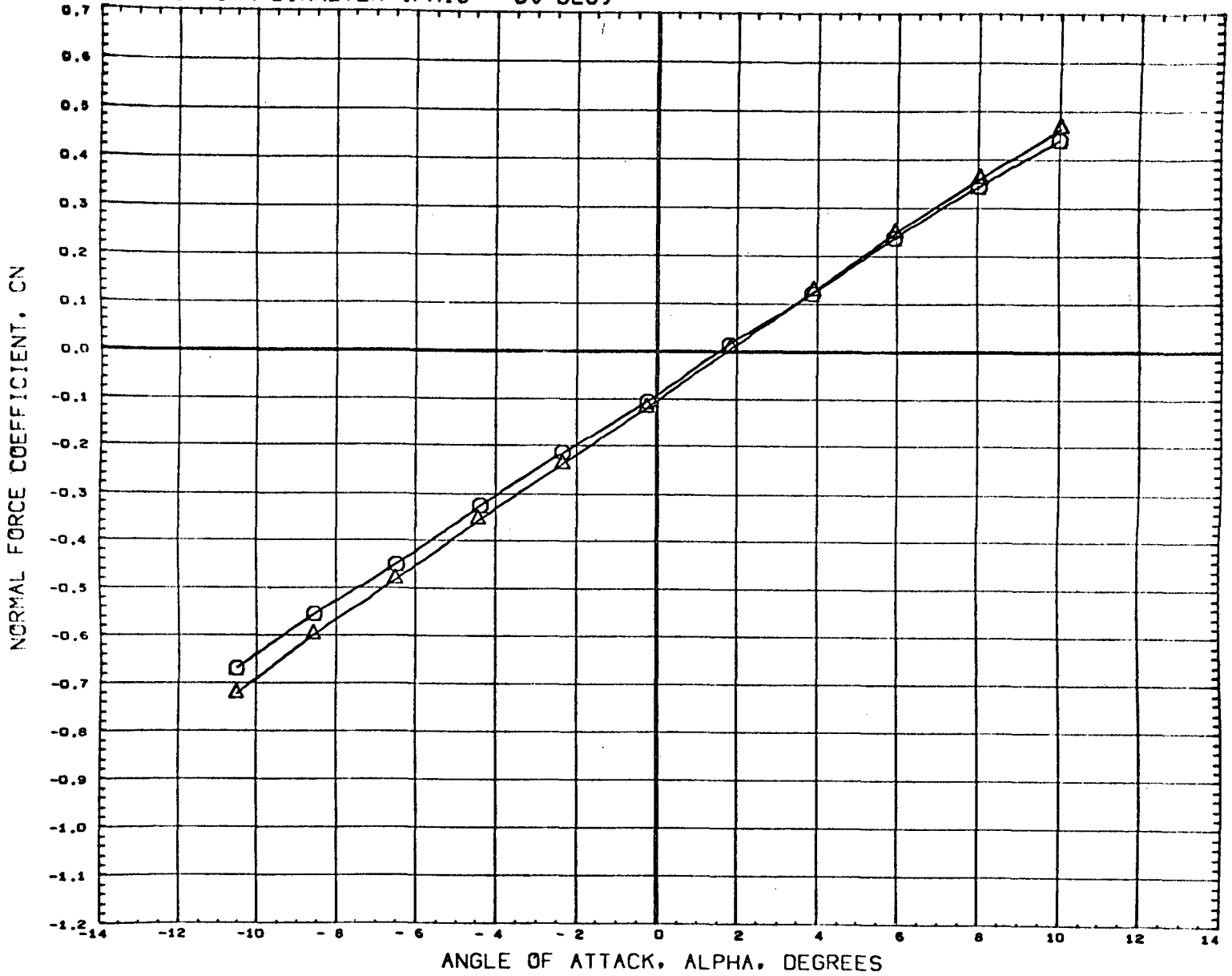
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(C71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

4.96



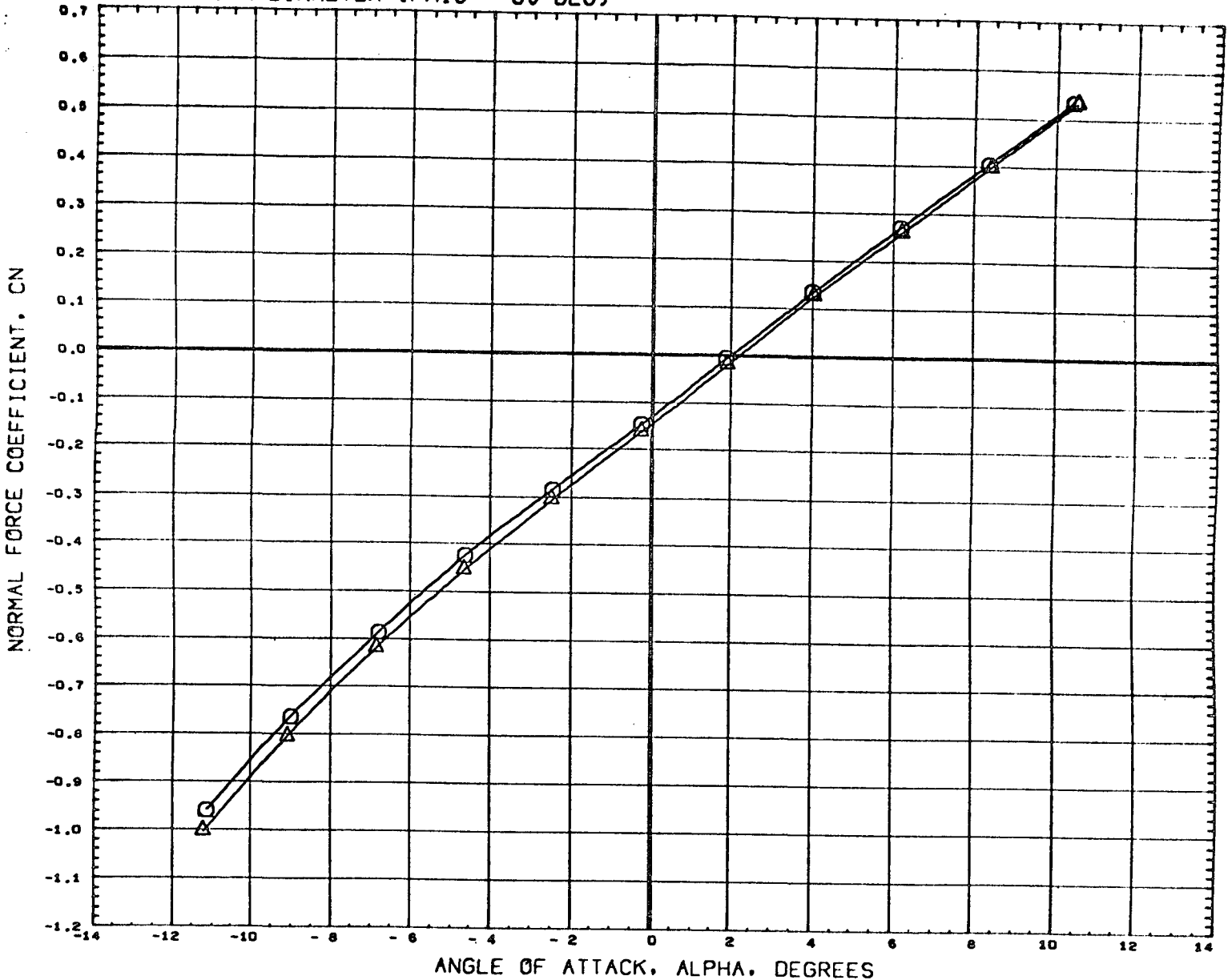
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
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MACH .60

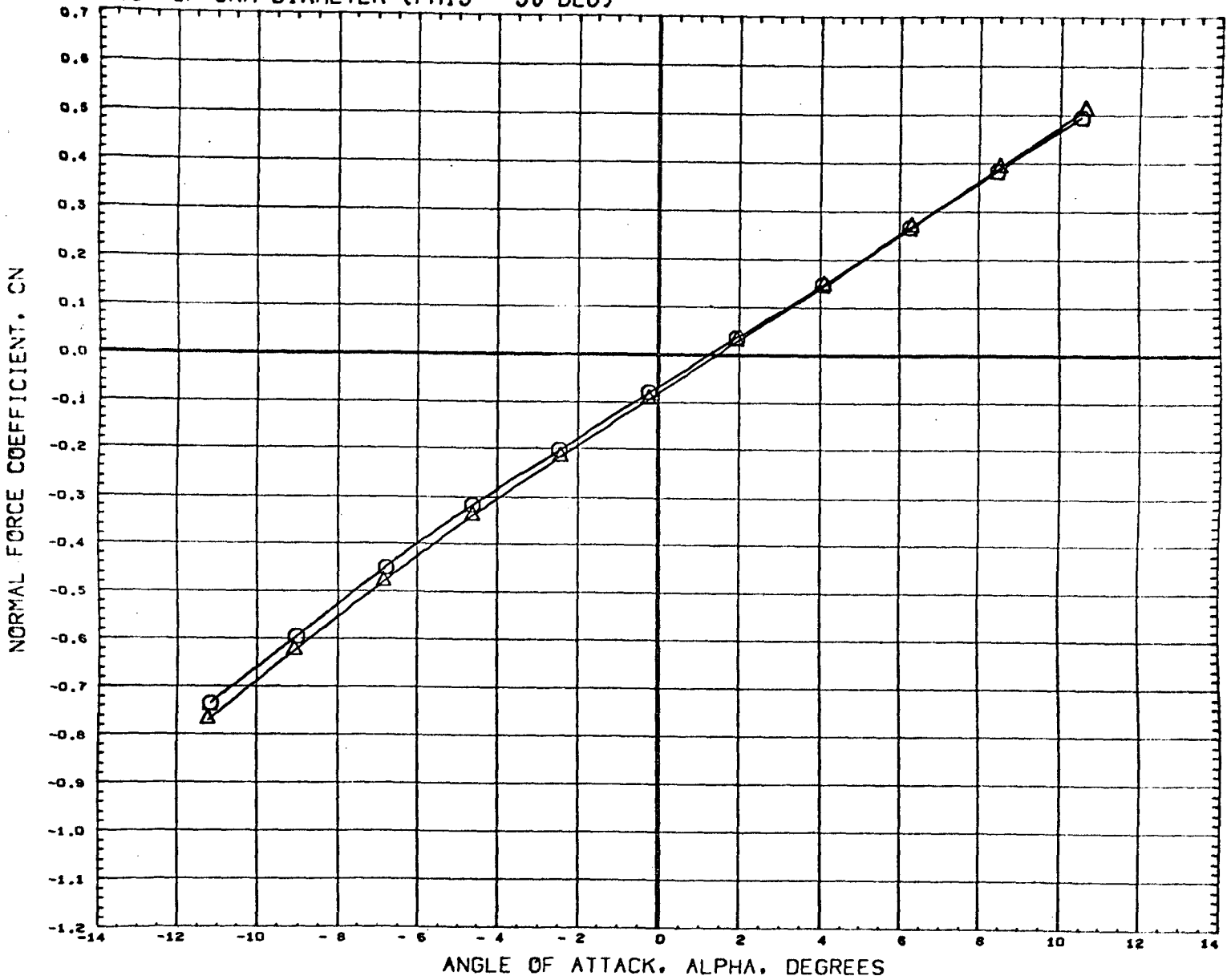
EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4800 IN.
						XMRP 3.3600 IN.
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						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19

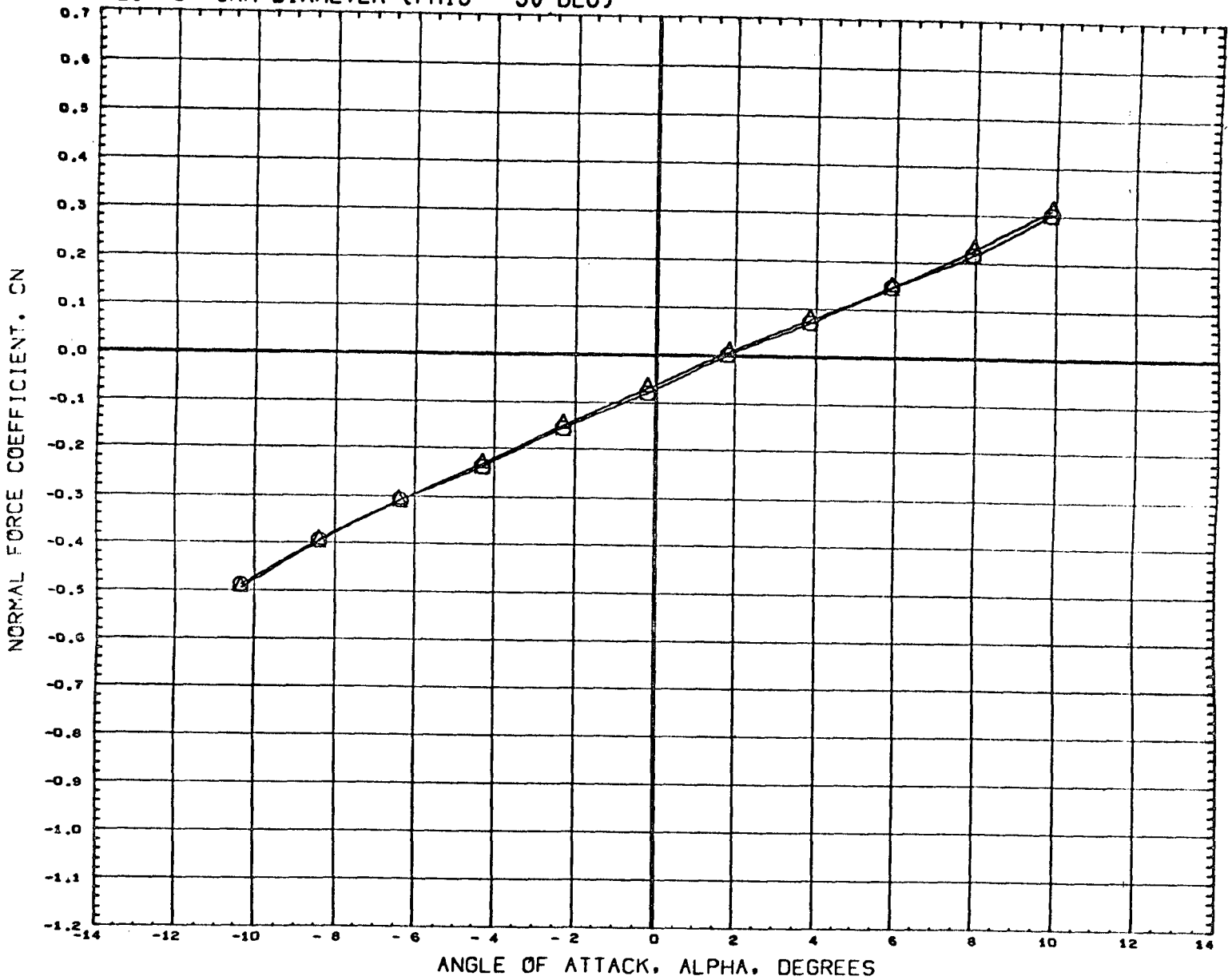
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8600 SQ. IN.
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

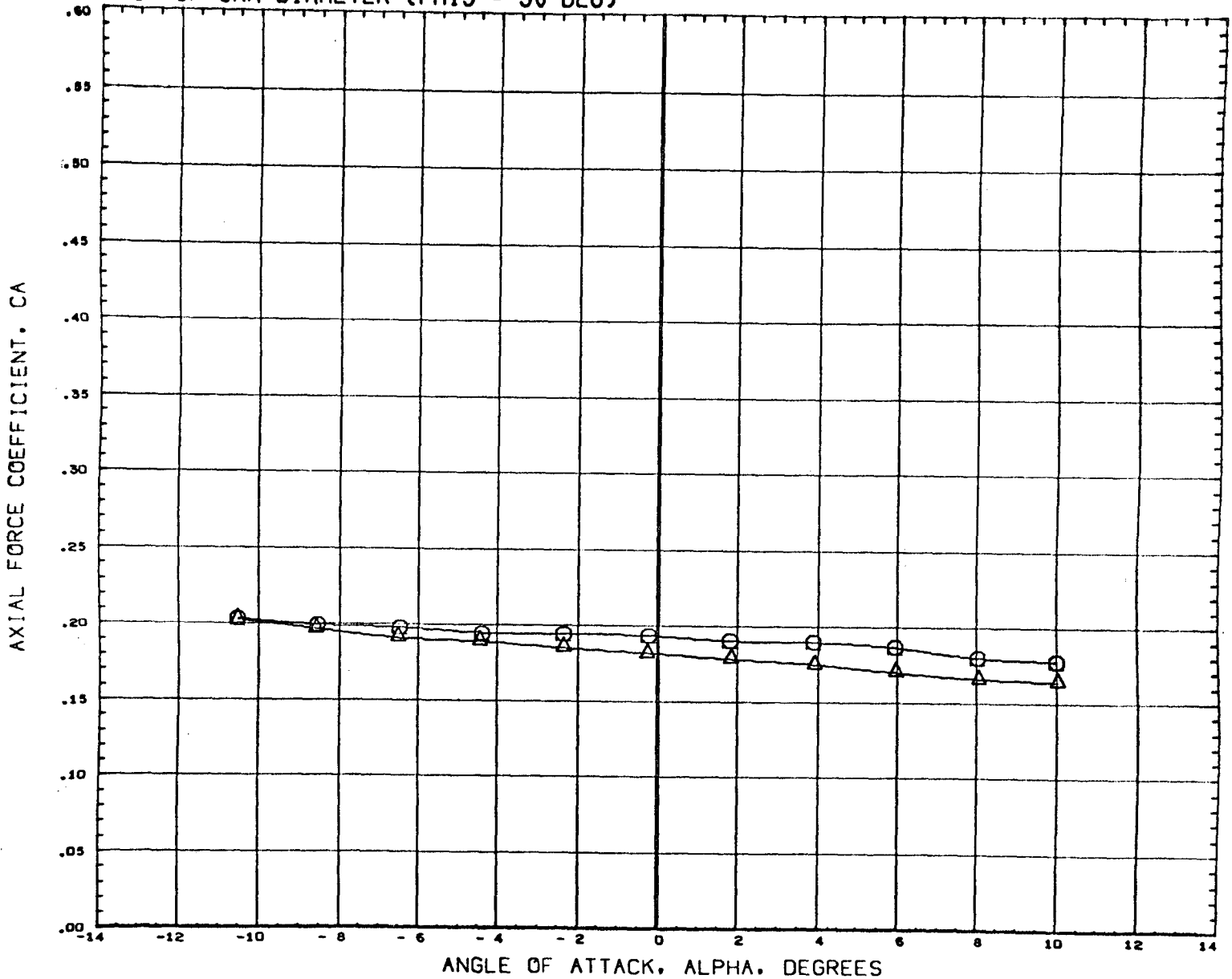
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

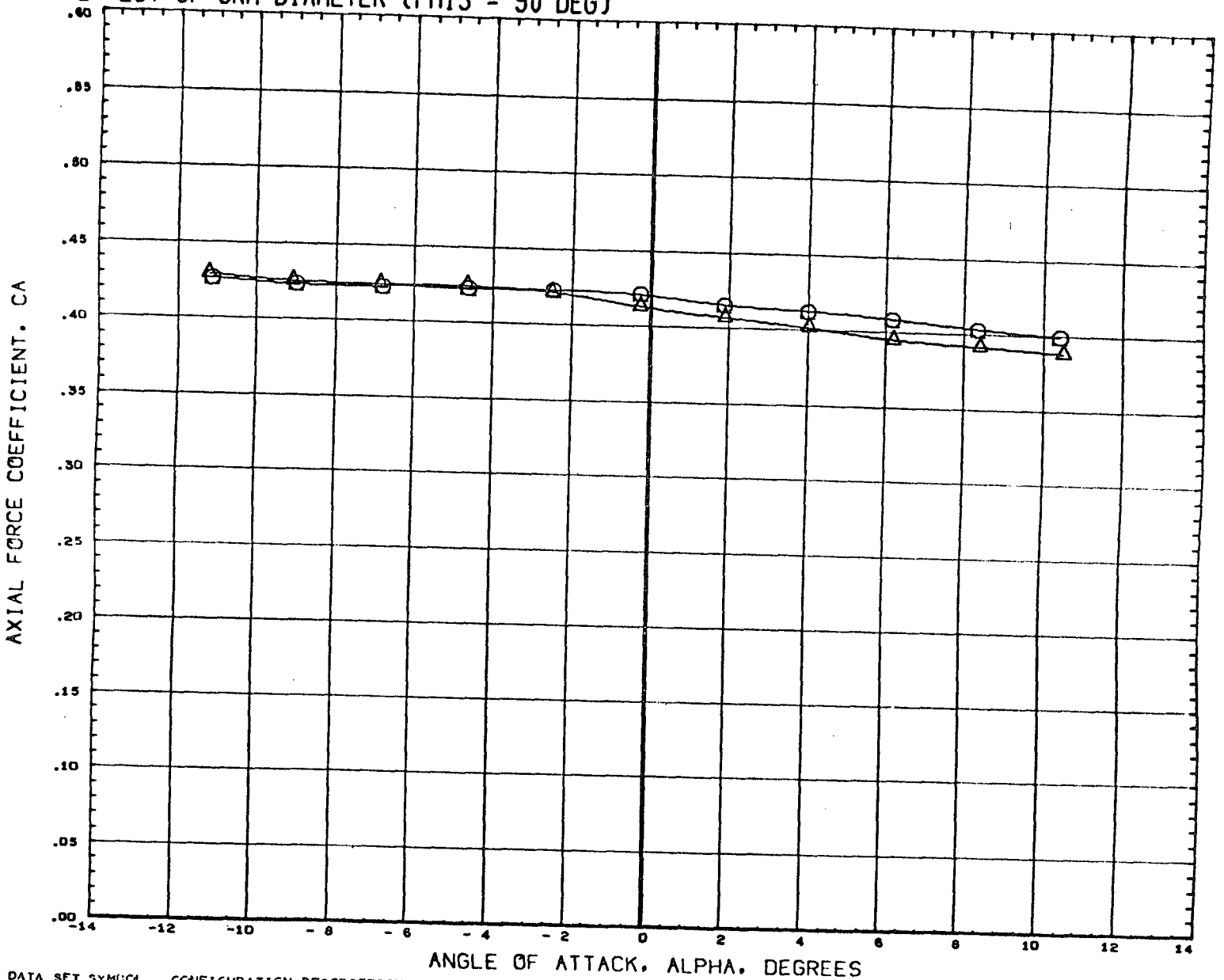
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
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						SCALE 0.0040 SCALE

MACH .60

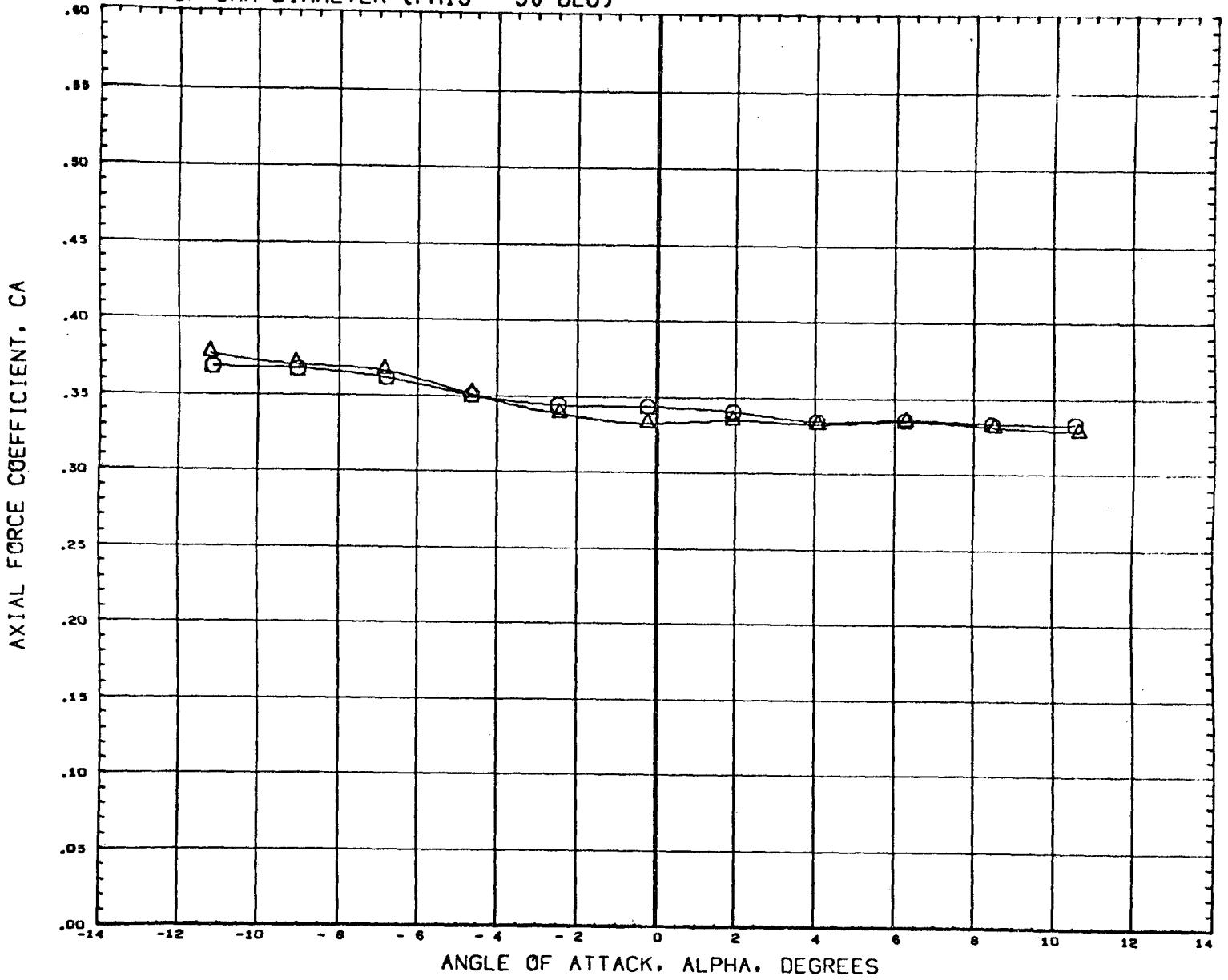
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
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MACH 1.19

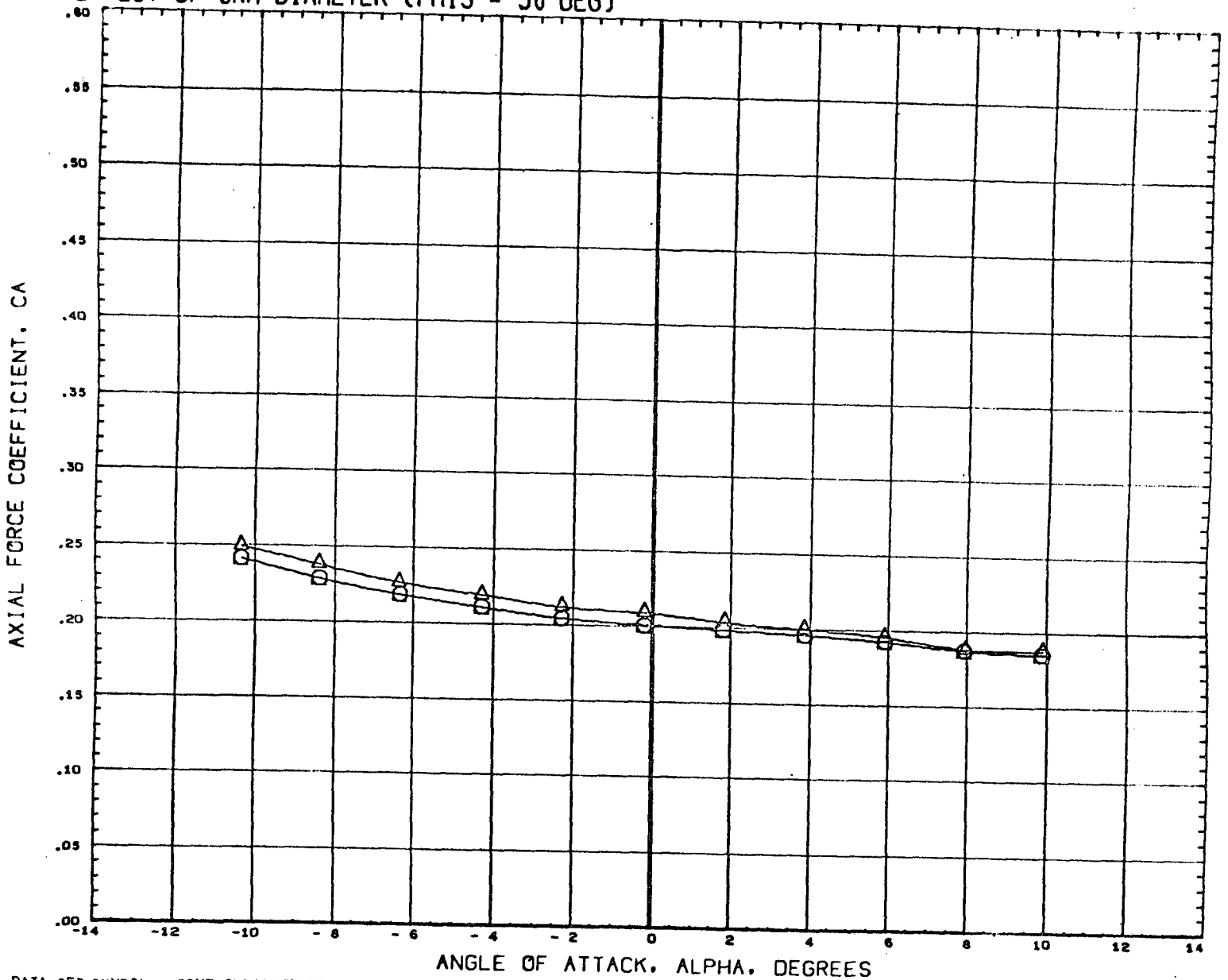
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

EFFECT OF SRM DIAMETER (PHIS = 90 DEG)

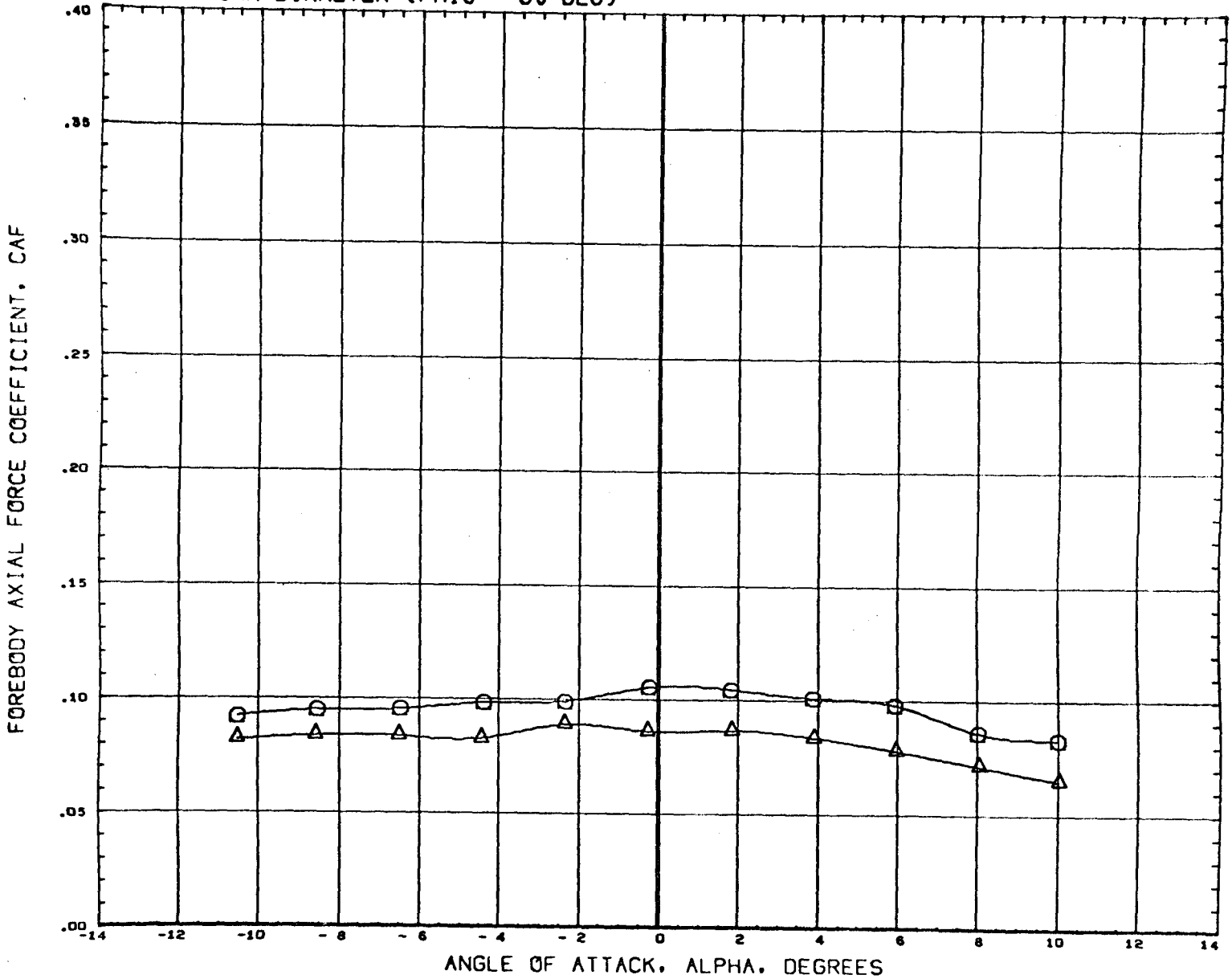


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96



# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)

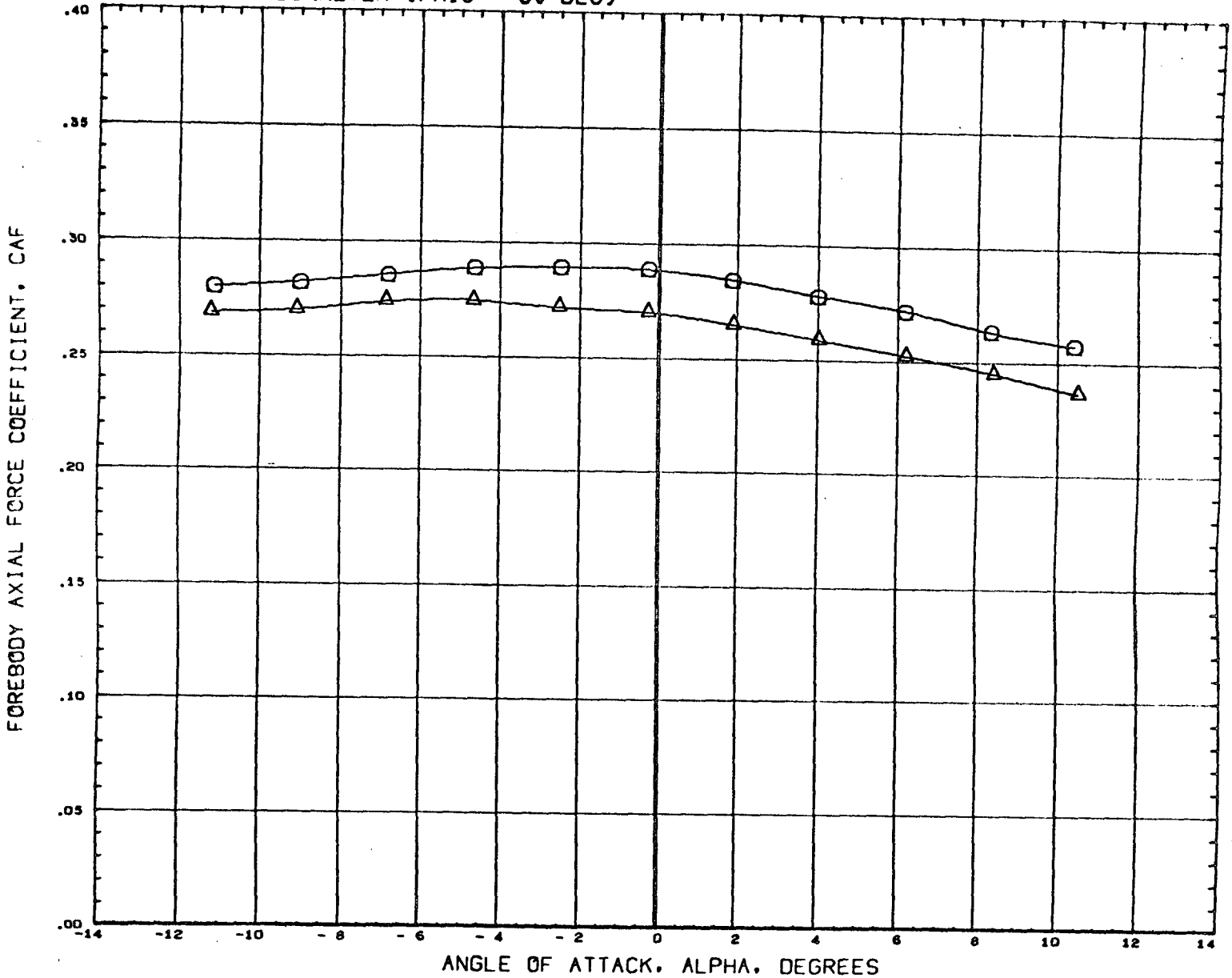


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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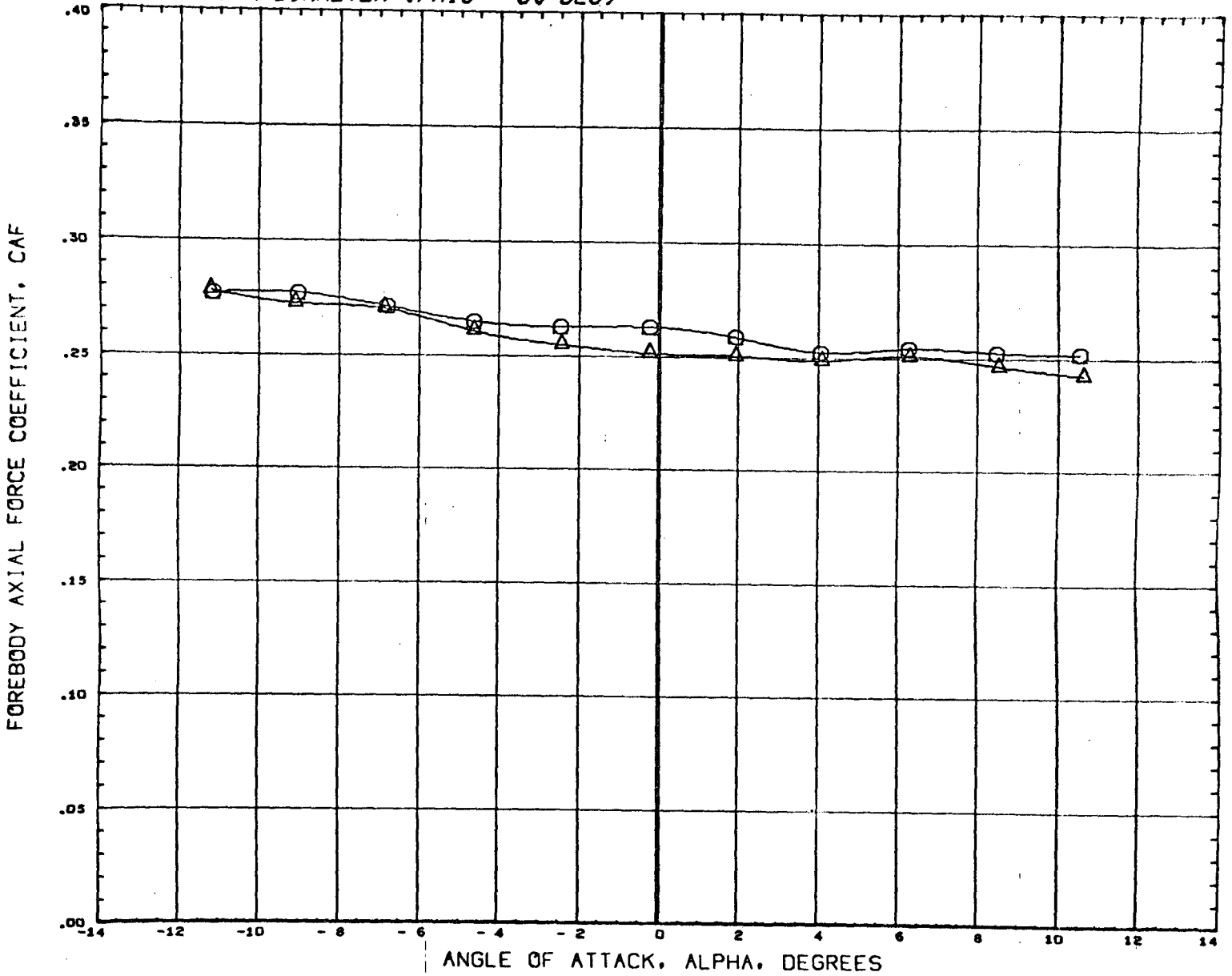
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
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MACH 1.19

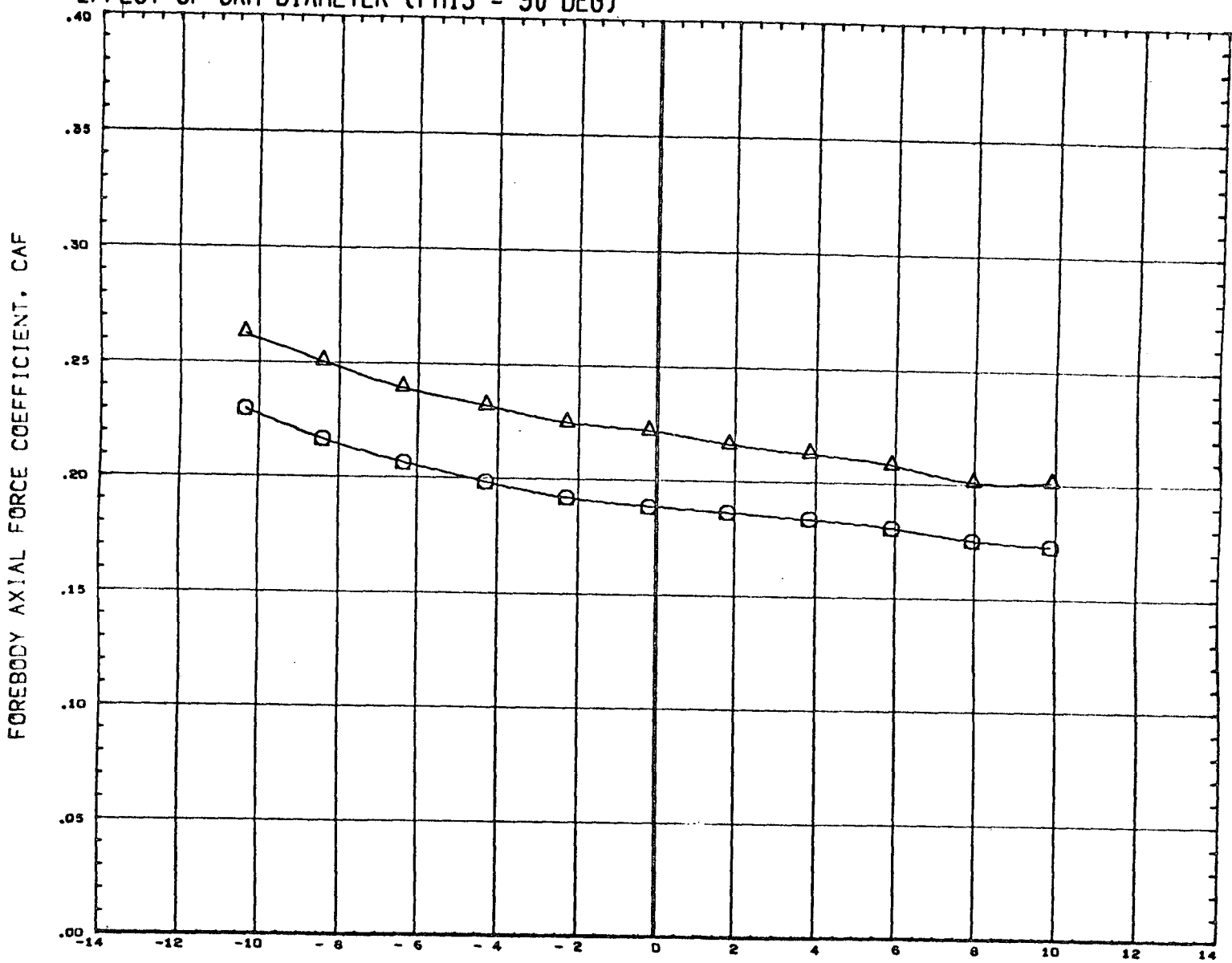
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBO	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
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						SCALE 0.0040 SCALE

MACH 1.97

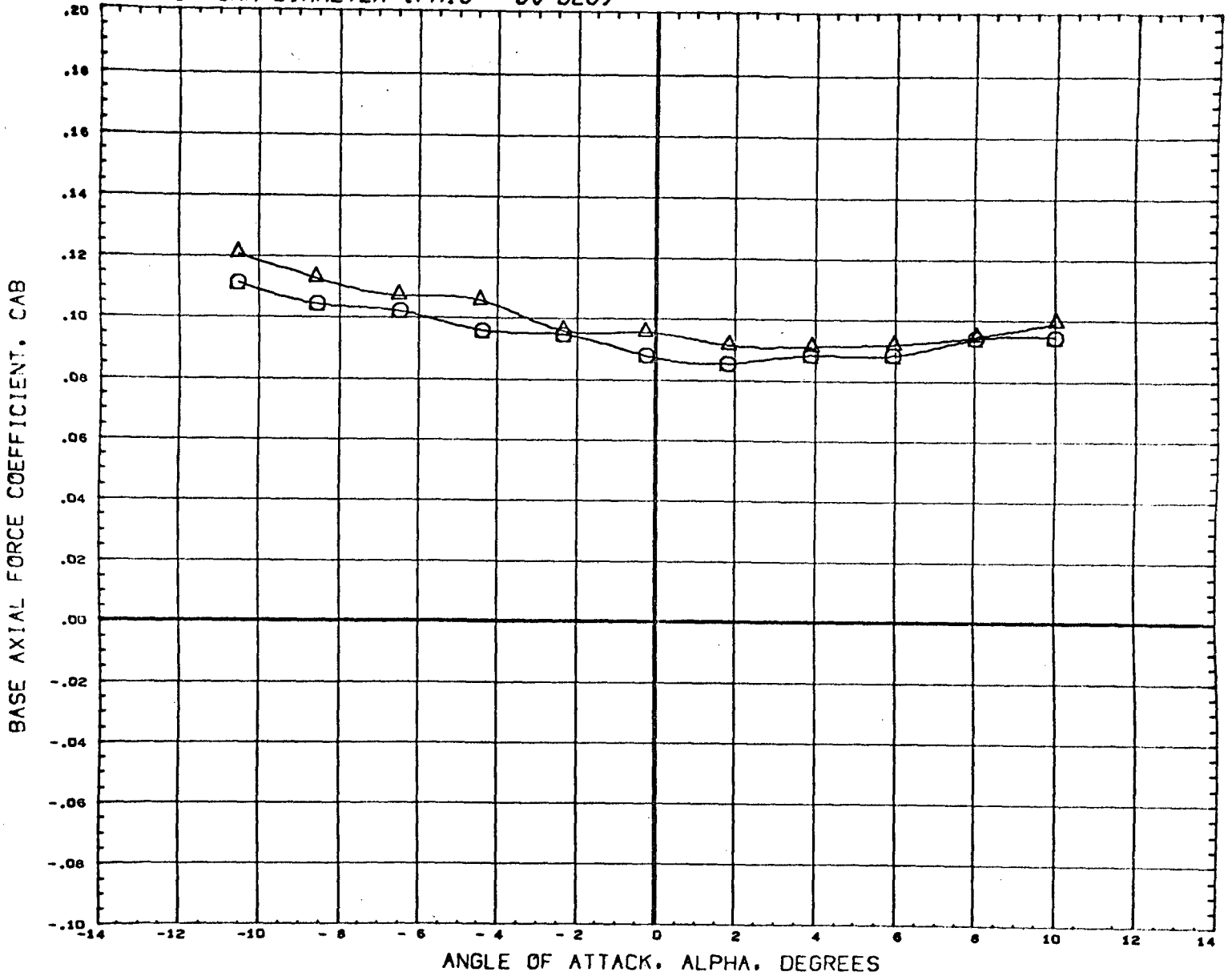
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	90.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

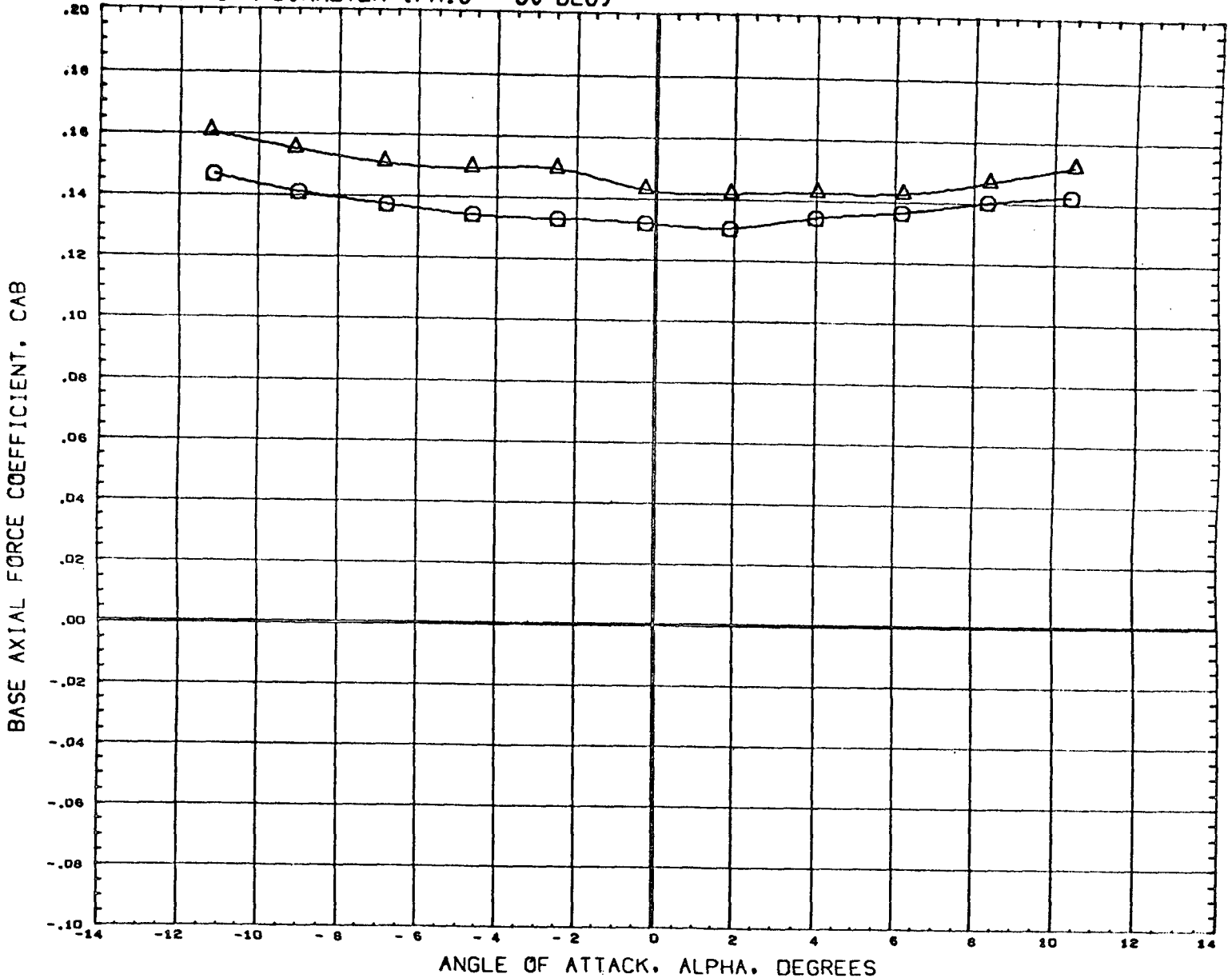
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
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						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

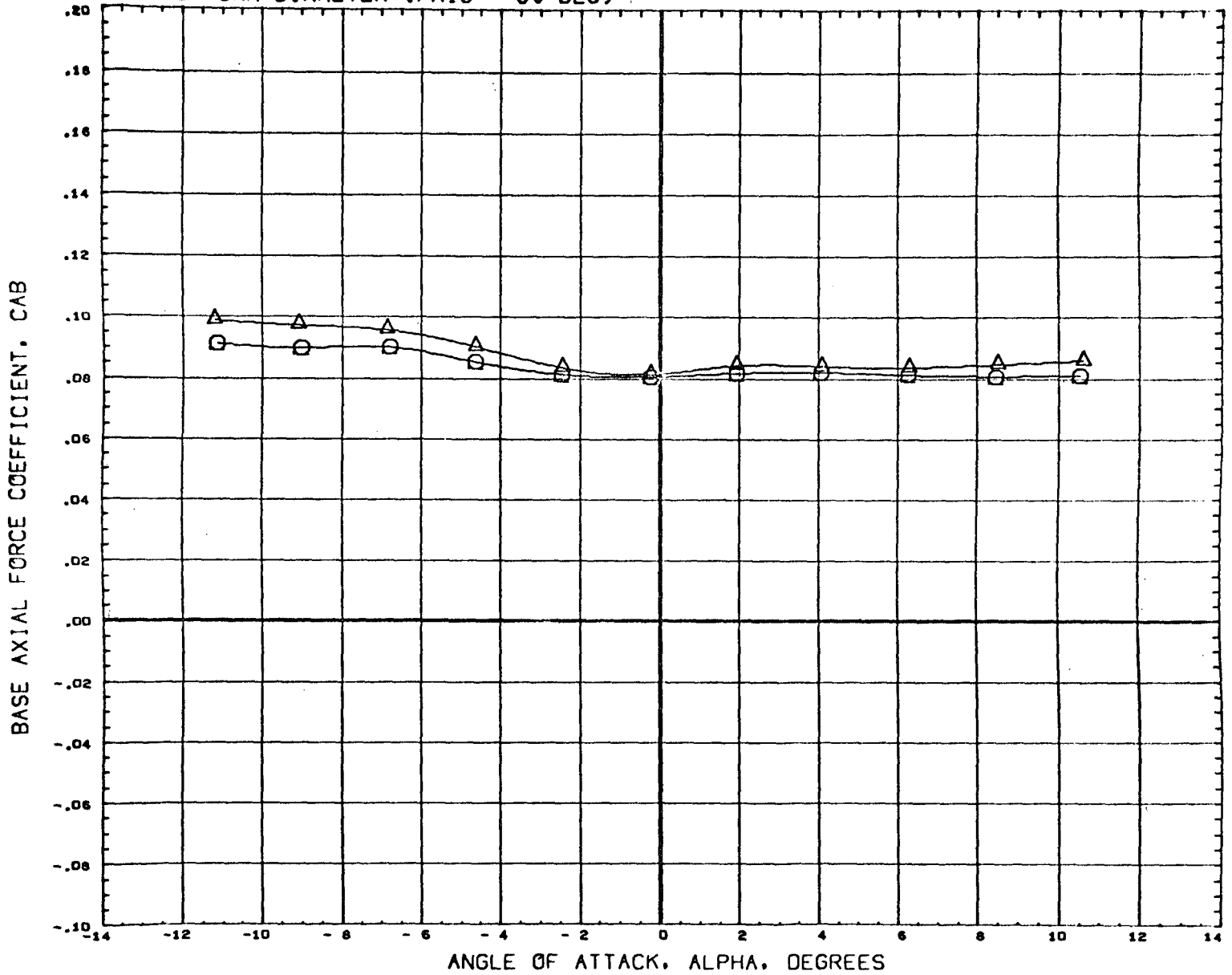
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.19

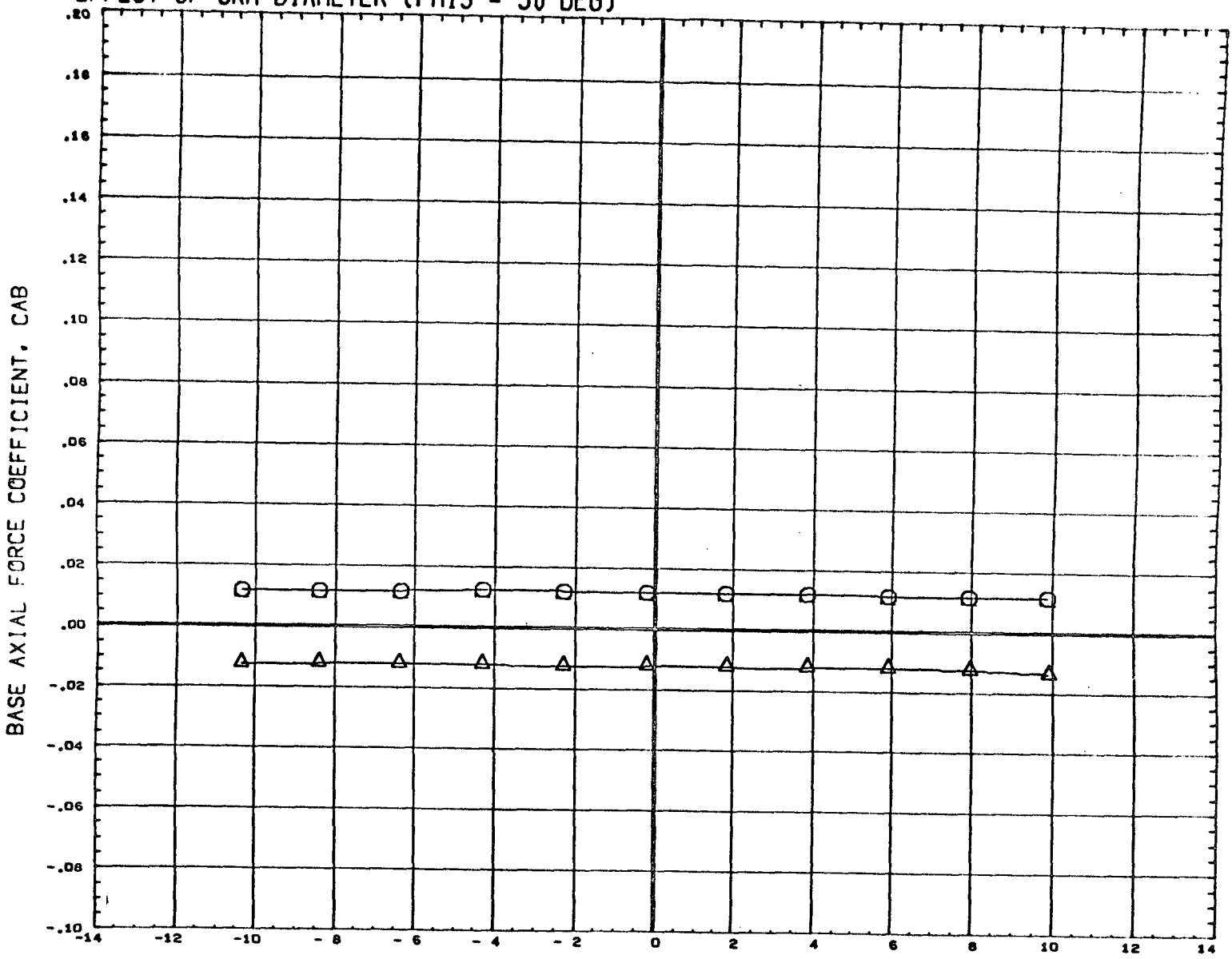
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	90.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)

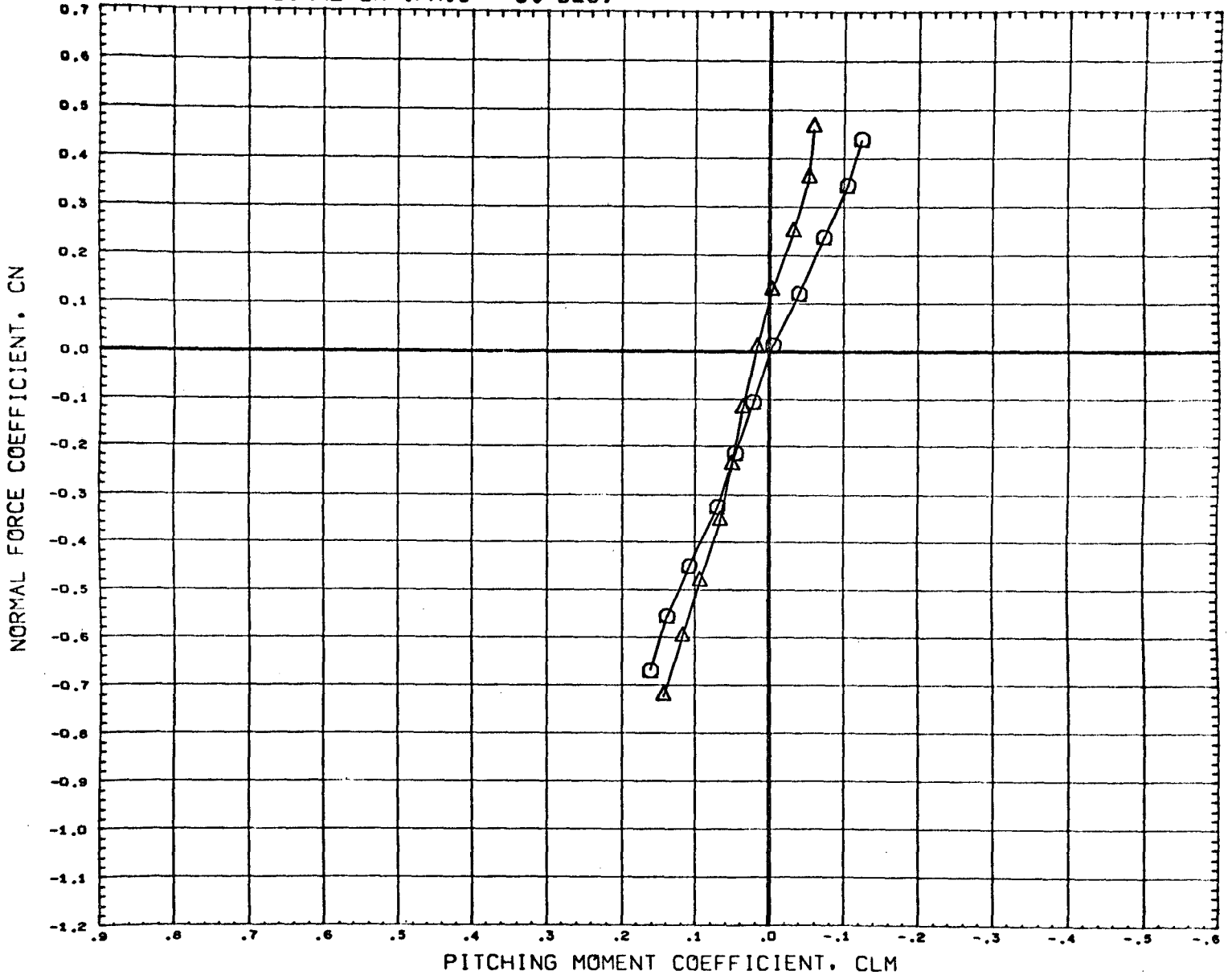


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 80. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96



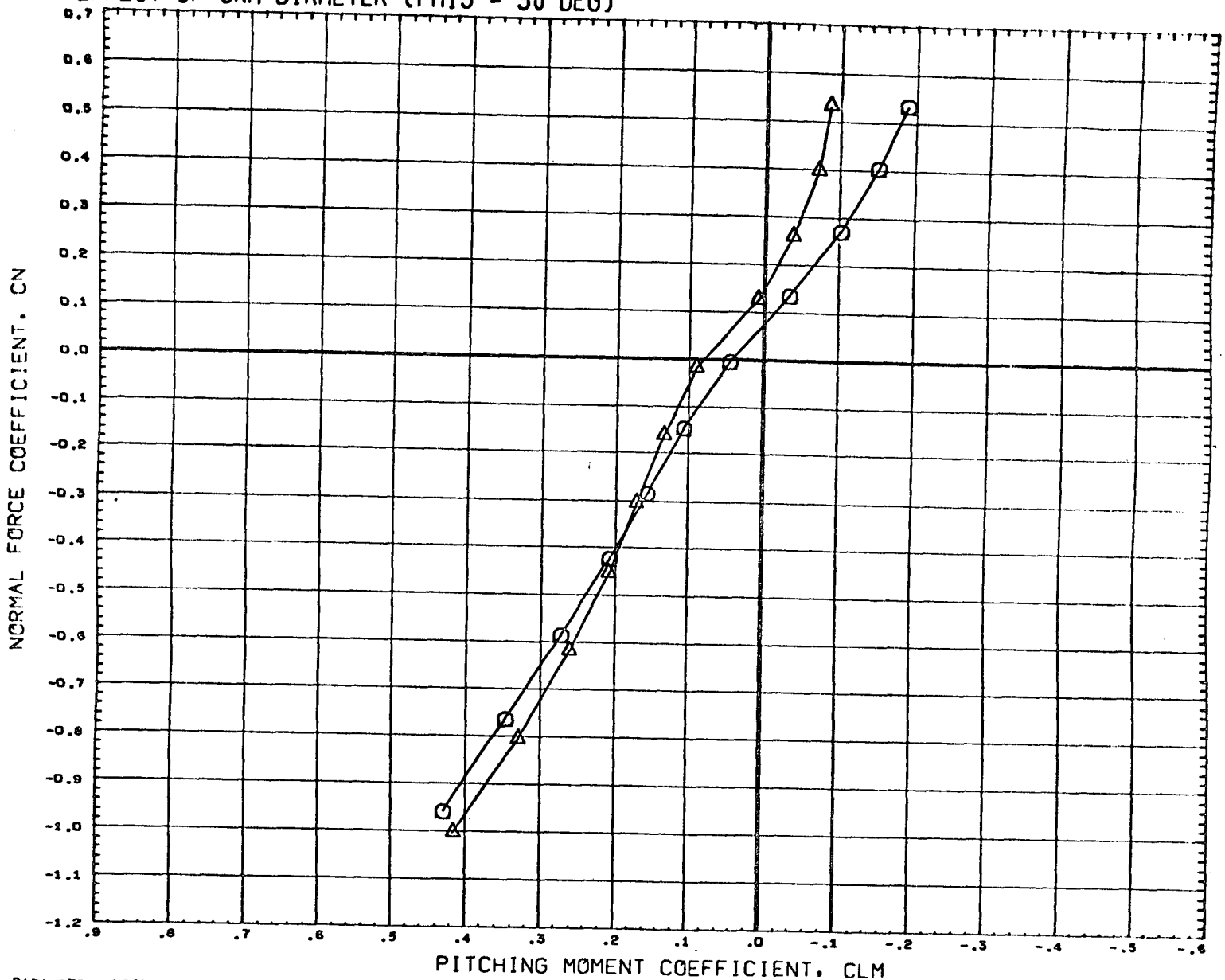
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 80. IN
(D71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

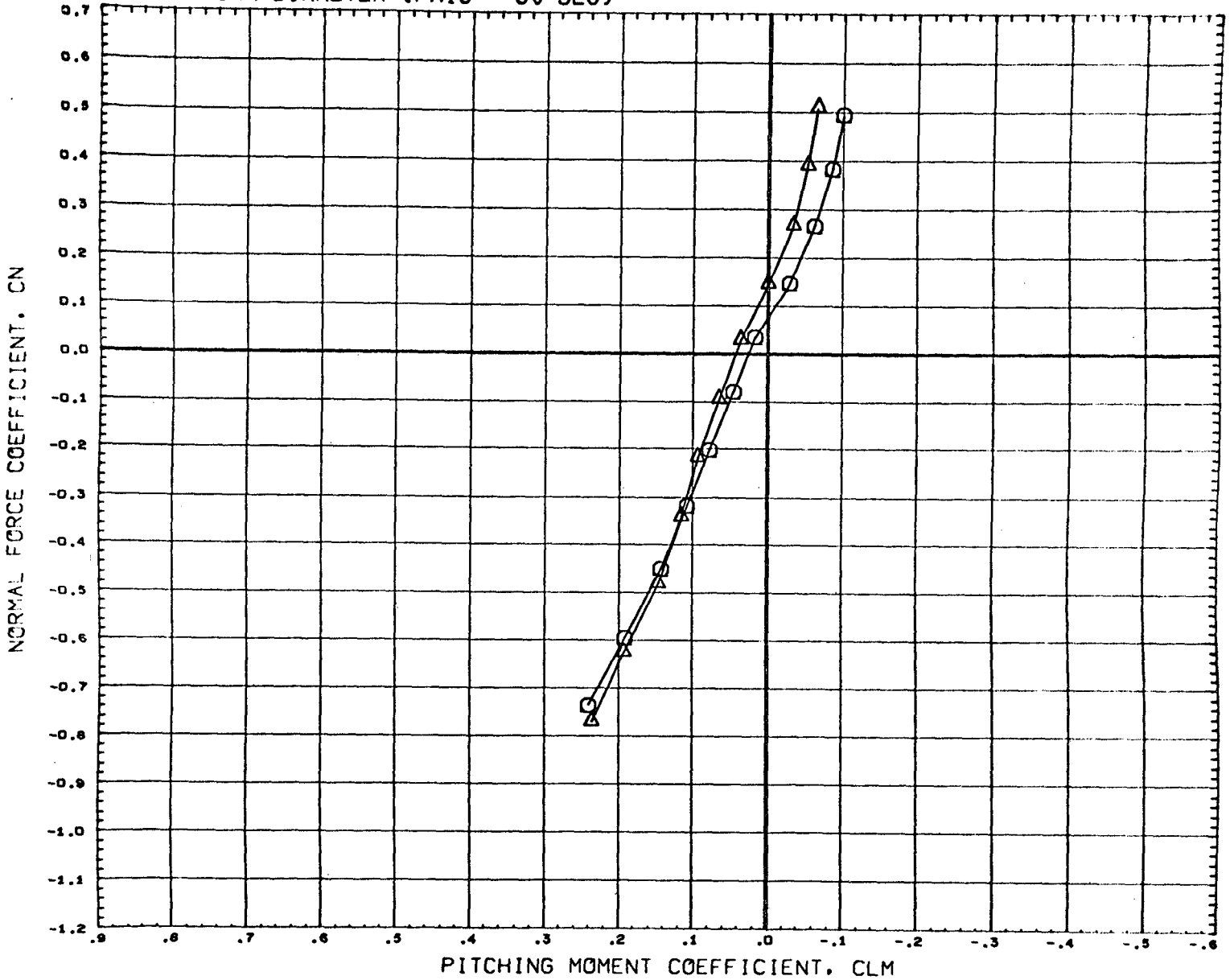
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19

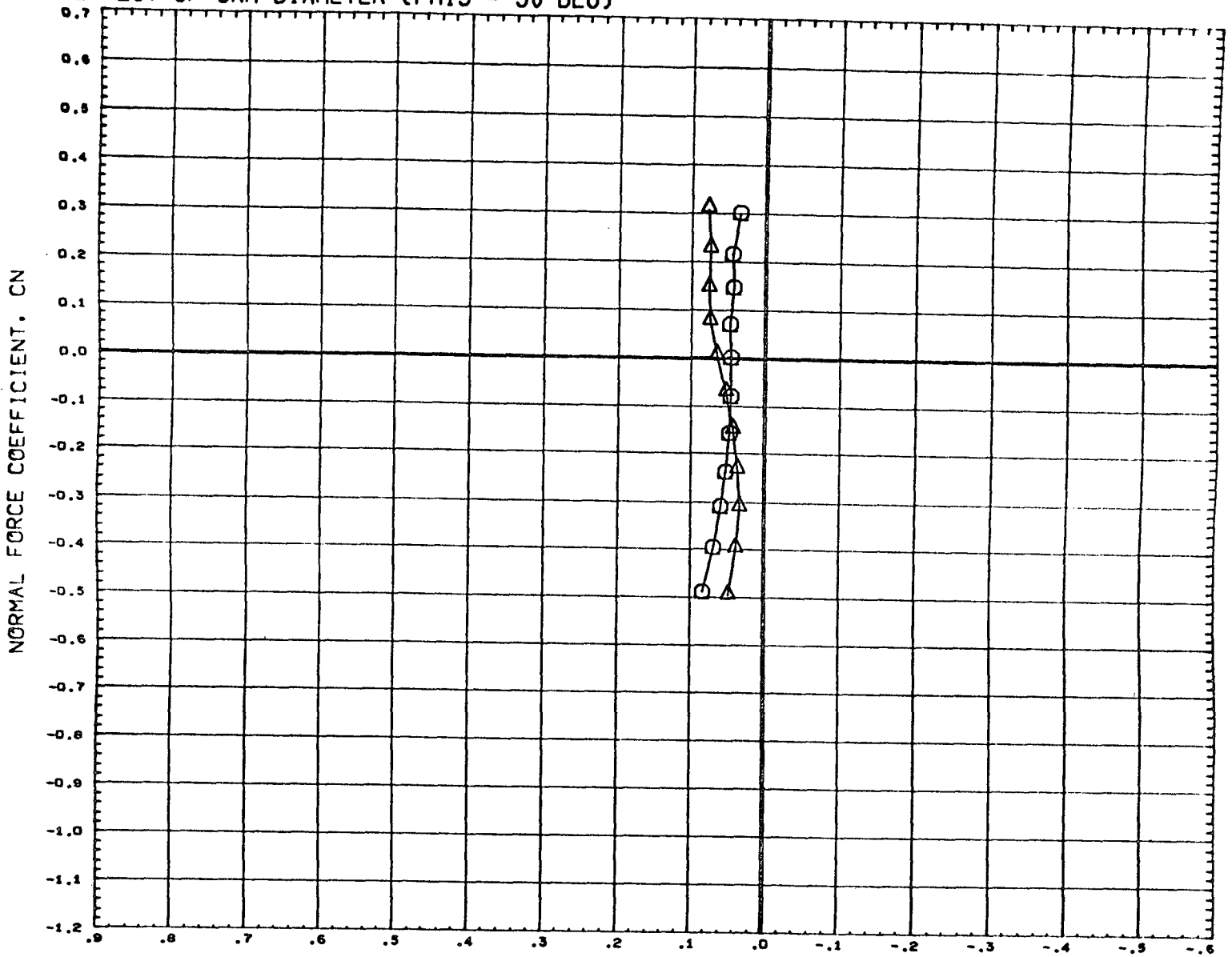
# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF SRM DIAMETER (PHIS = 90 DEG)

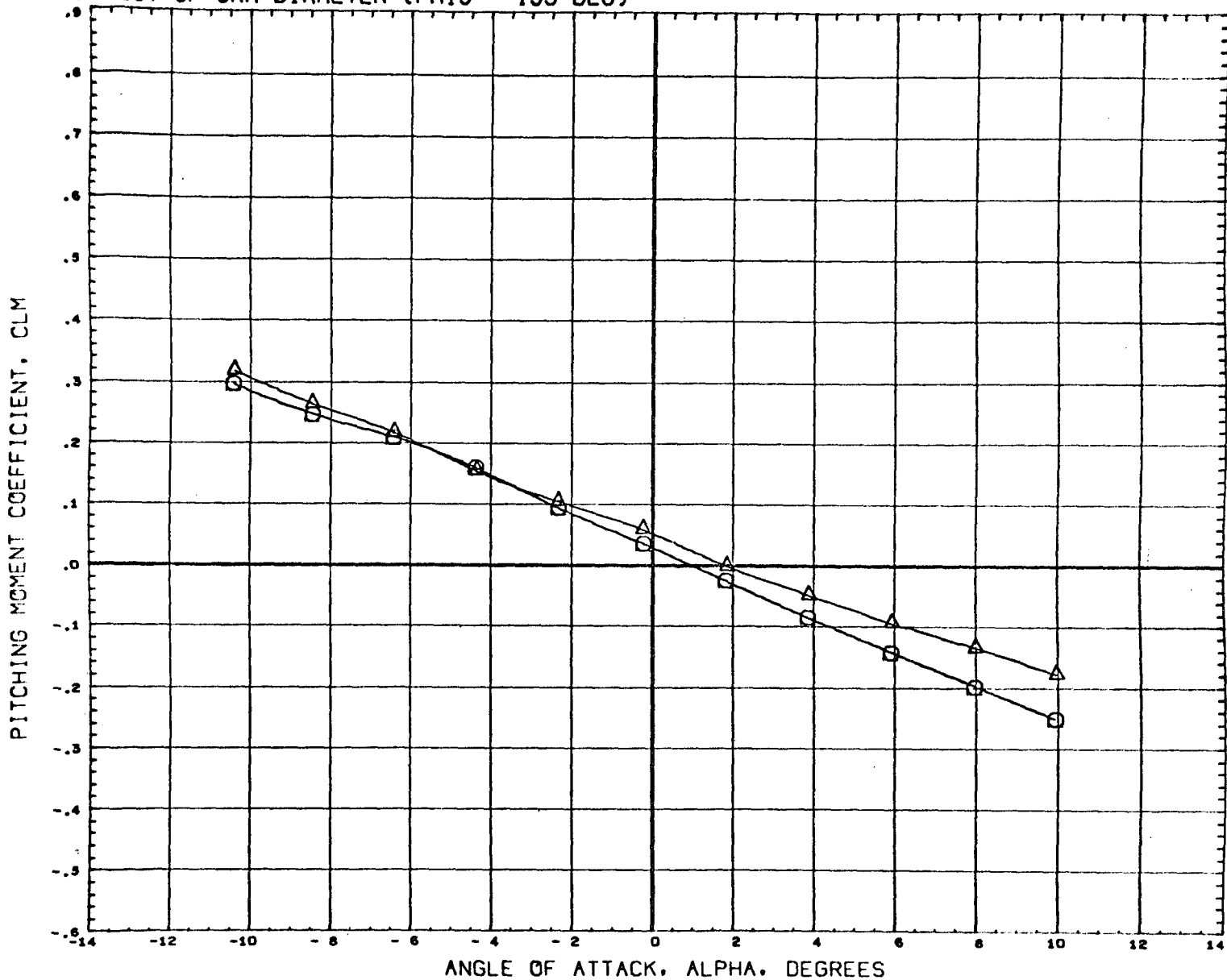


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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	90.000	0.000	0.000	SREF 7.8800 90. IN
(B71053)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



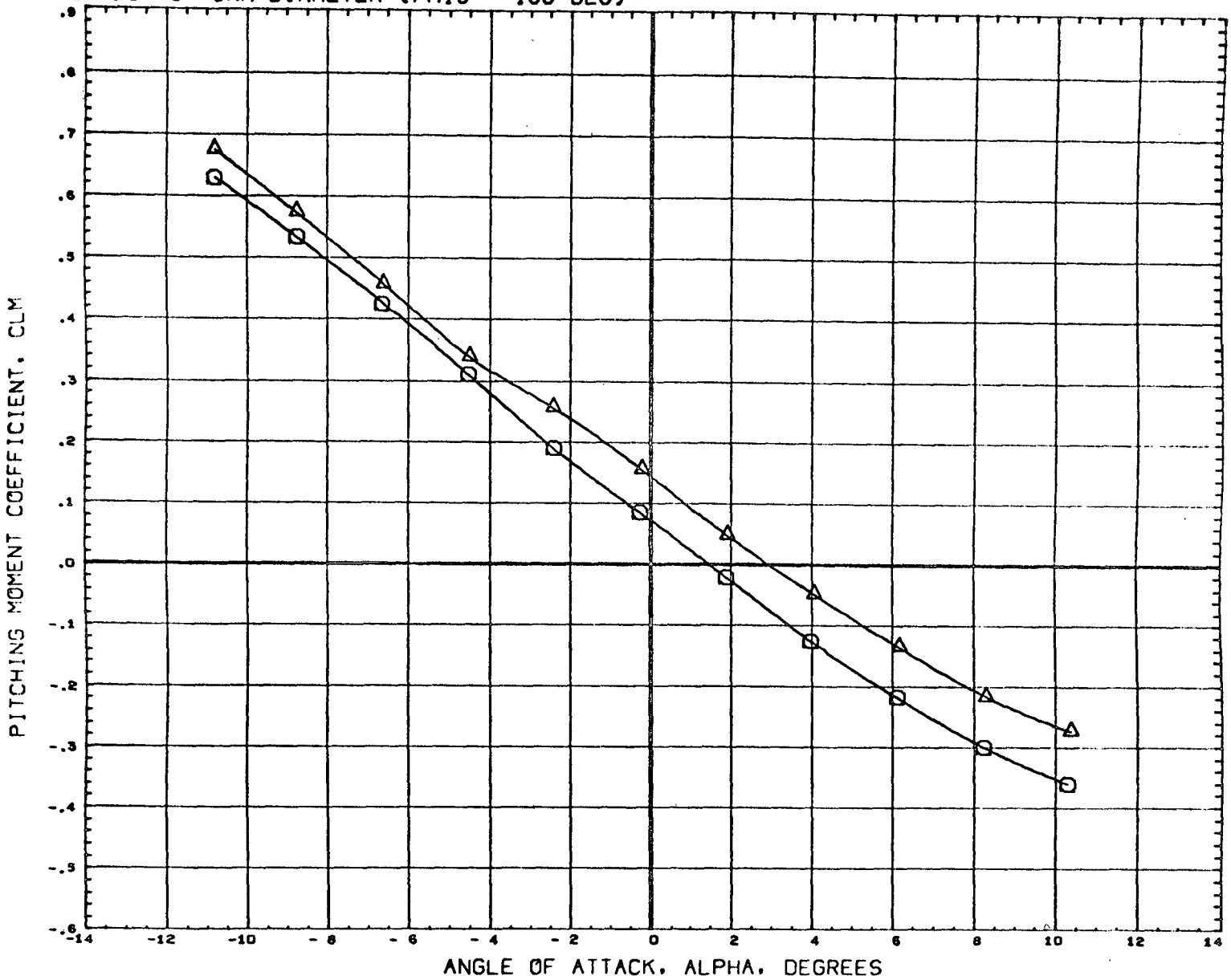
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORIGIN	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

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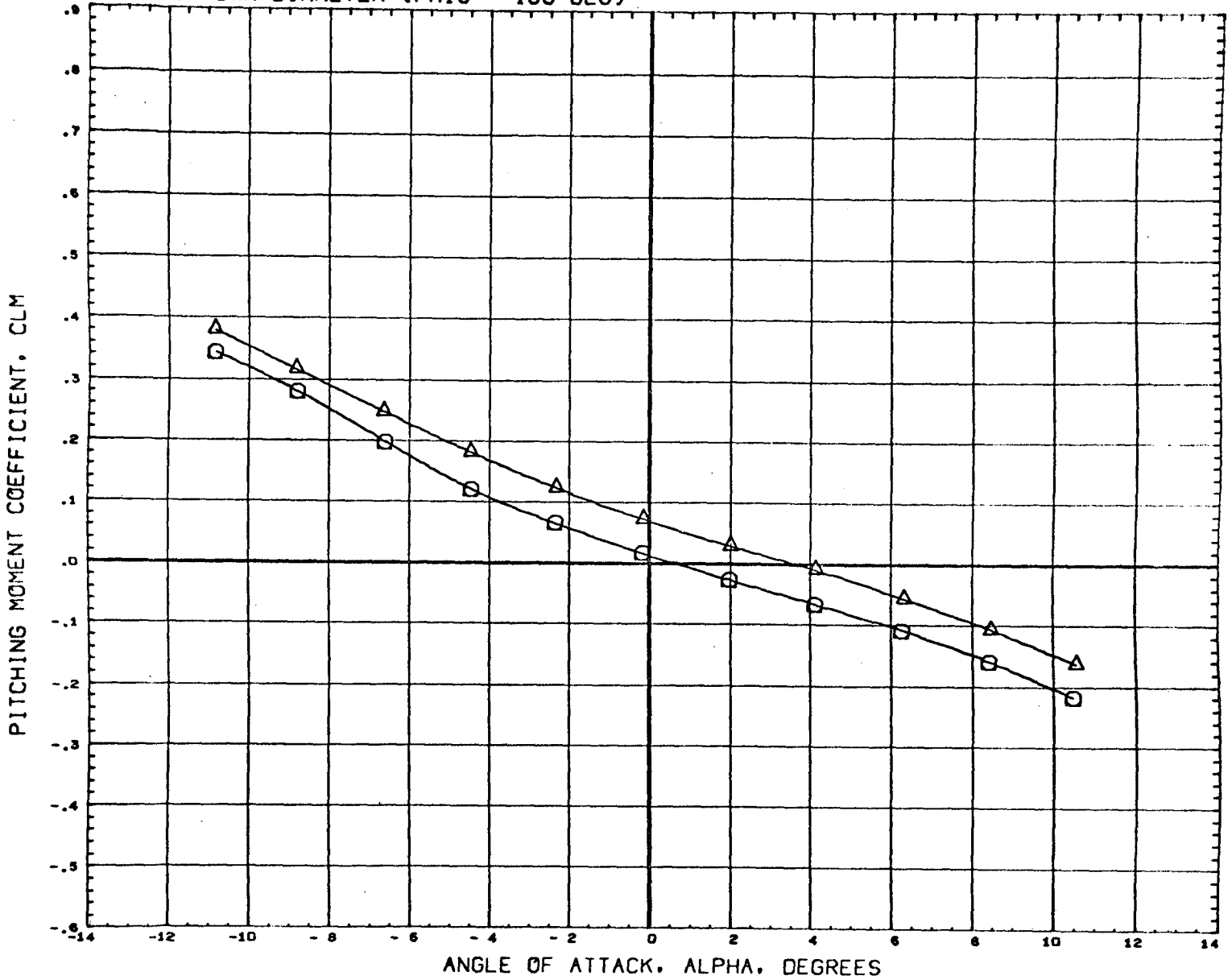
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 Sq. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)

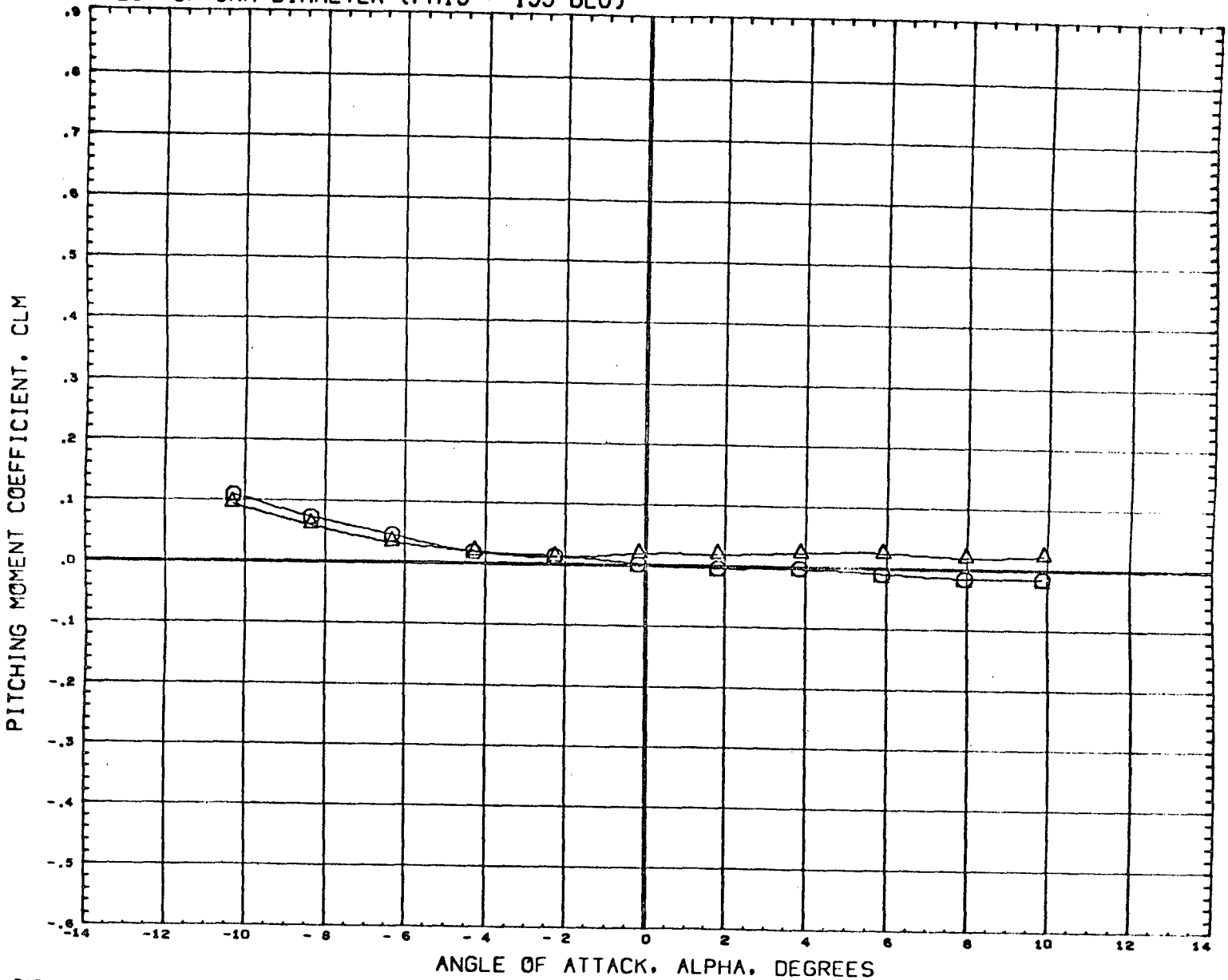


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 IN.

MACH 1.97

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EFFECT OF SRM DIAMETER (PHIS = 135 DEG)

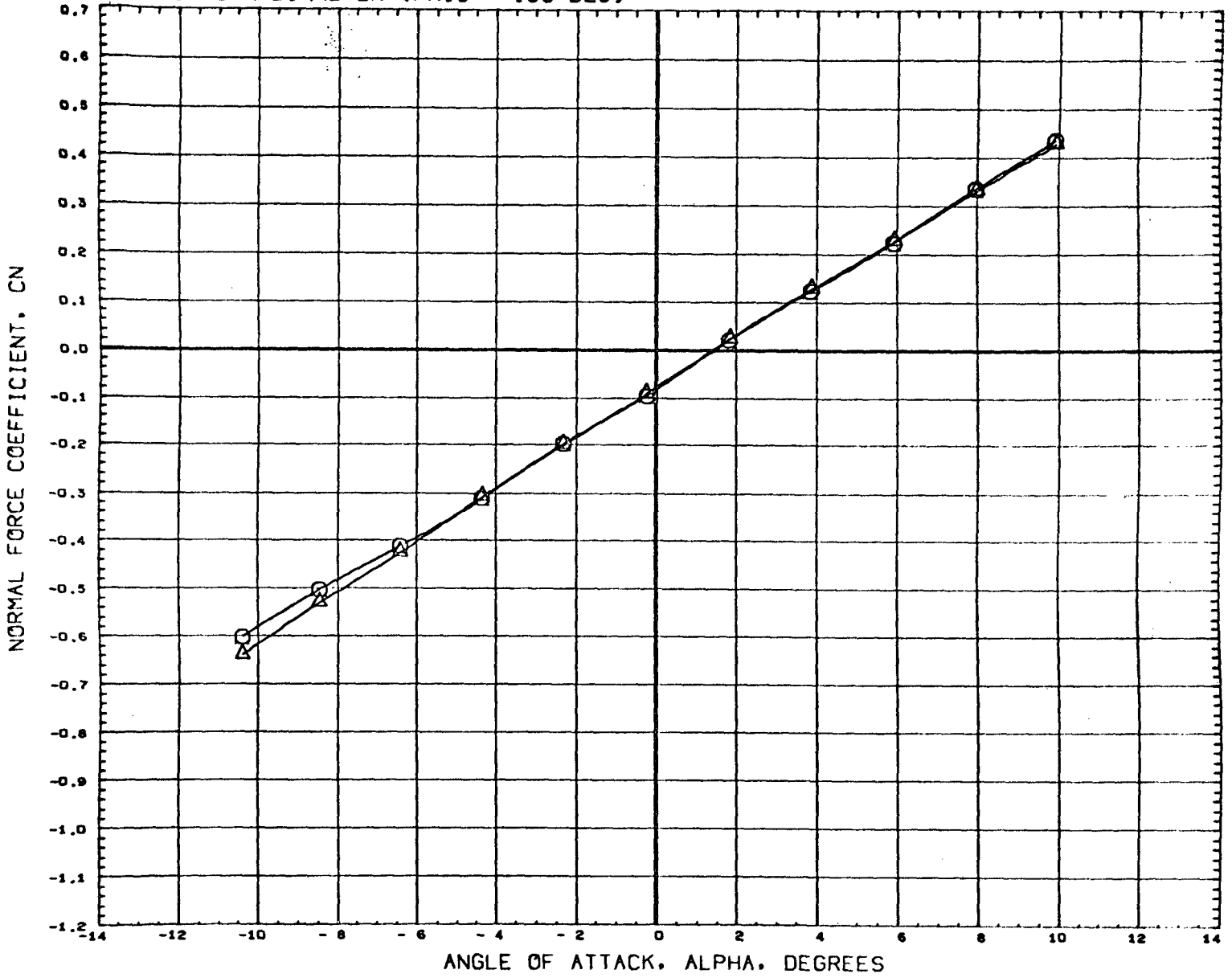


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4800 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96



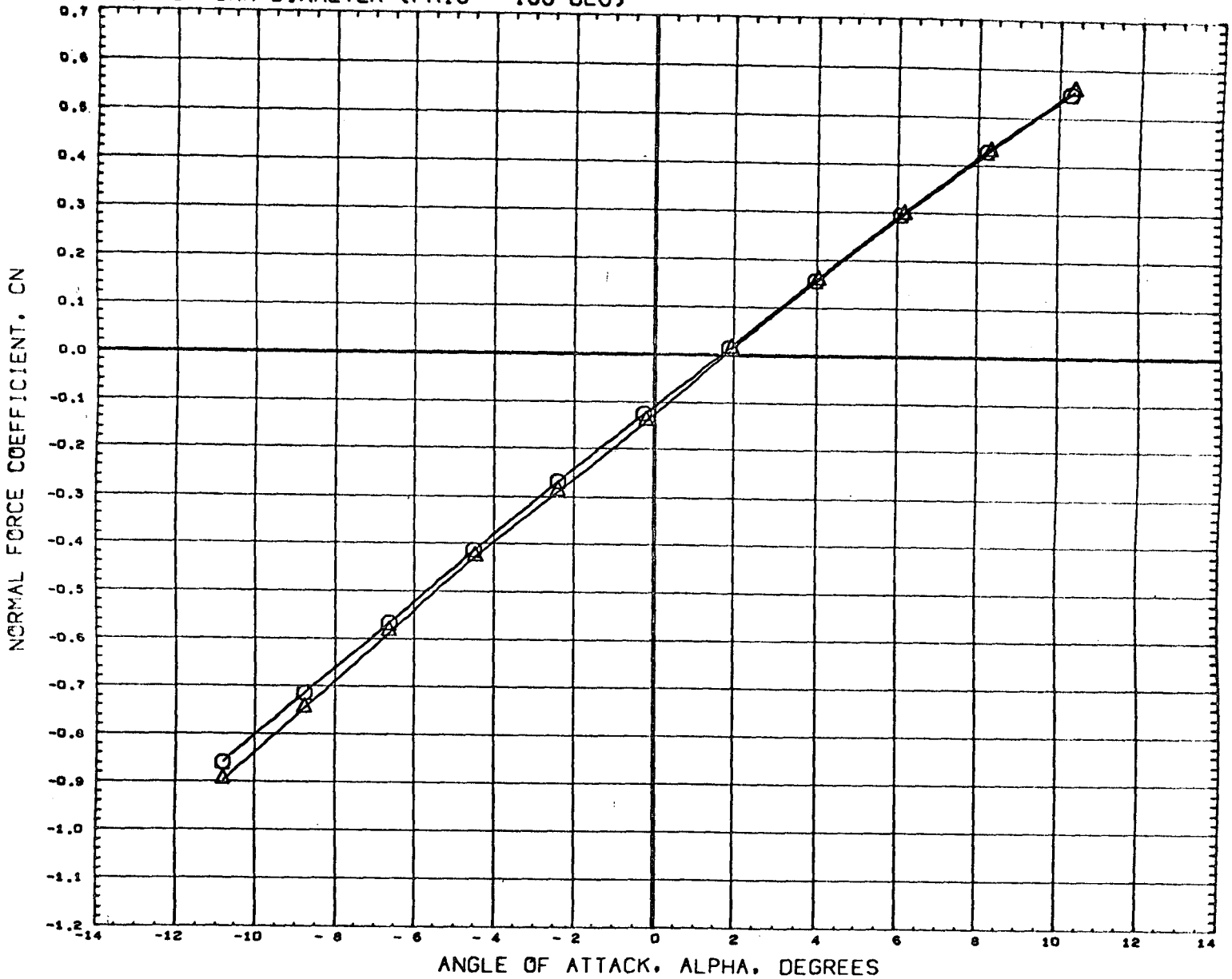
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61

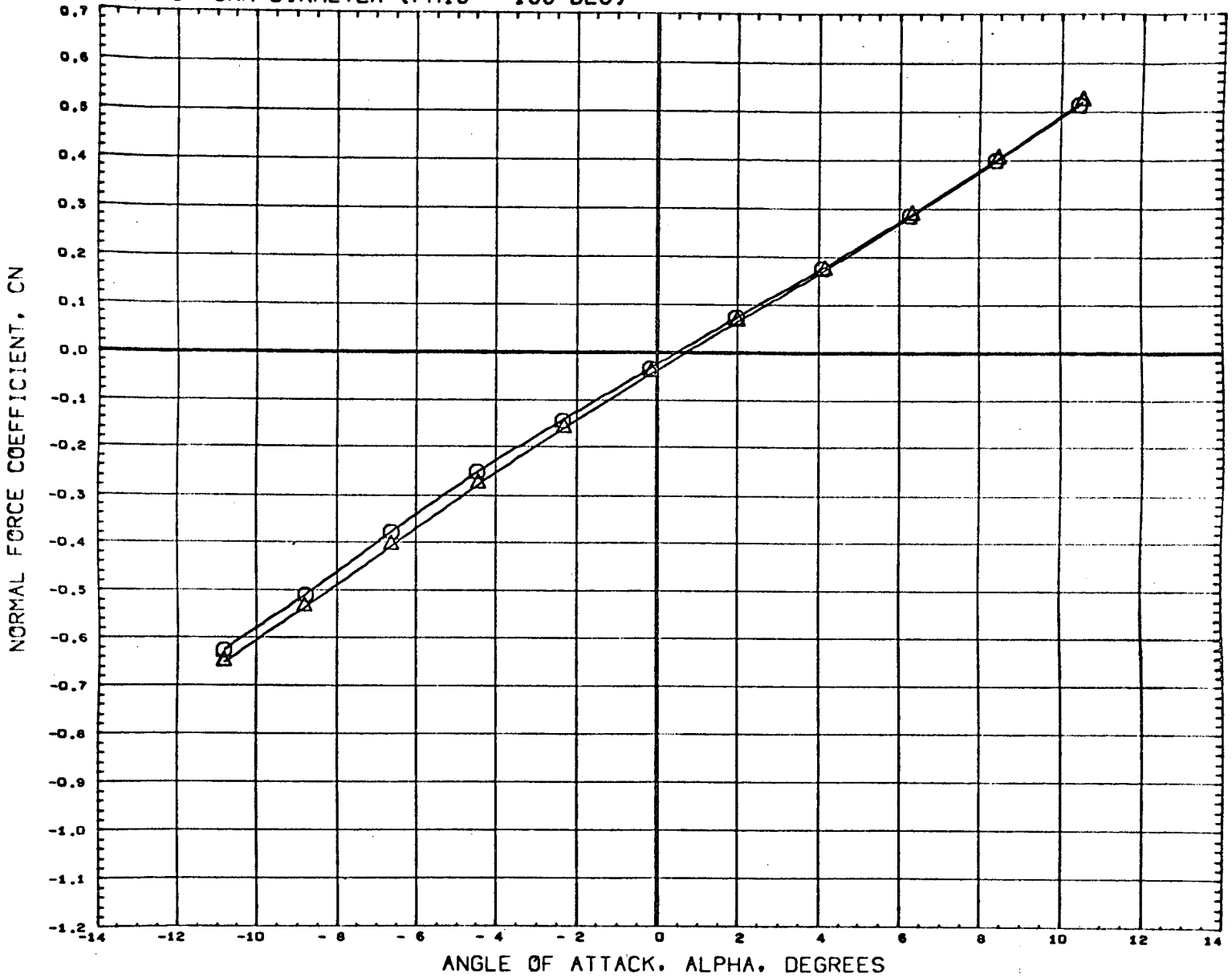
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRF 3.3600 IN.
						YMRF 0.0000 IN.
						ZMRF 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

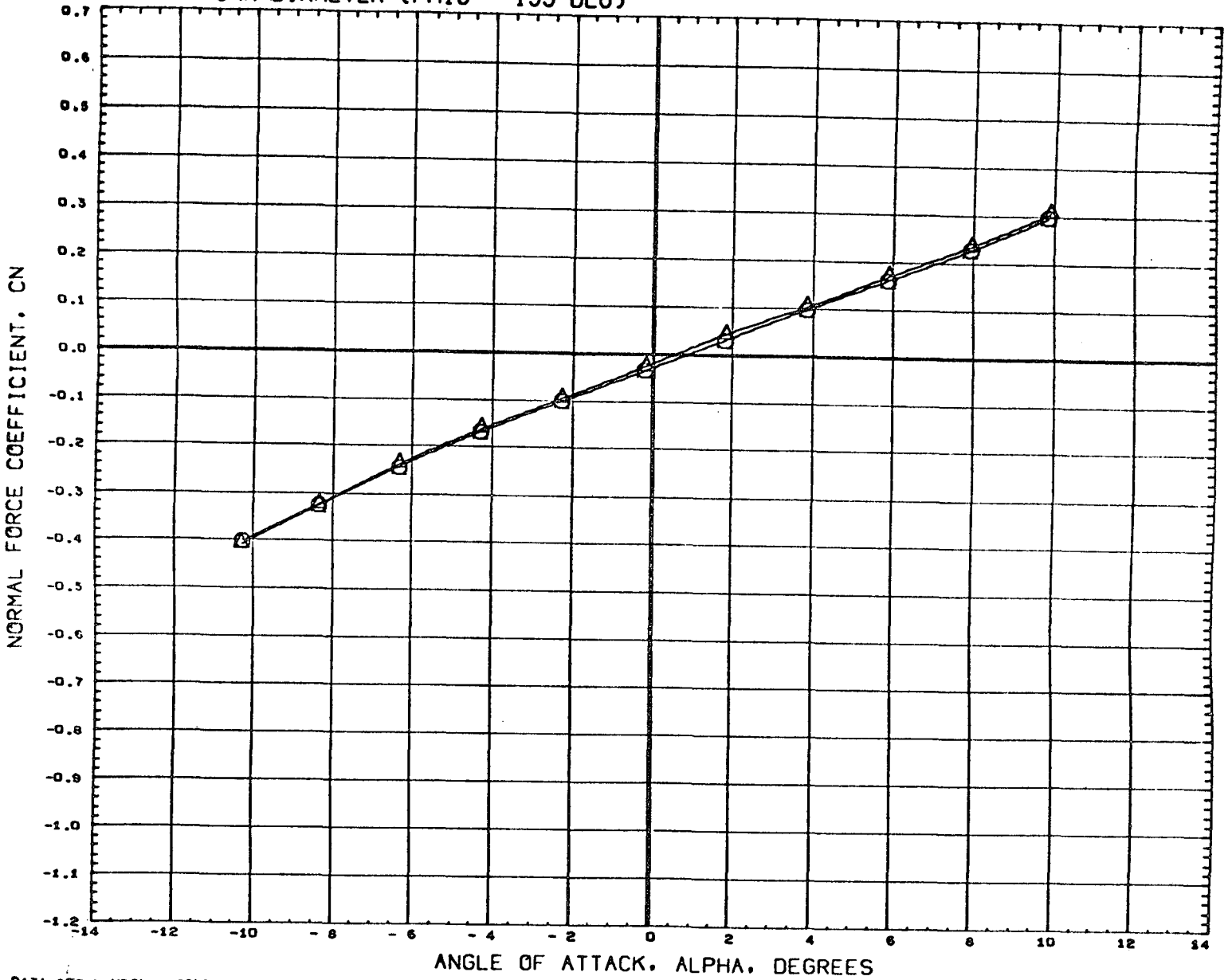
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.97

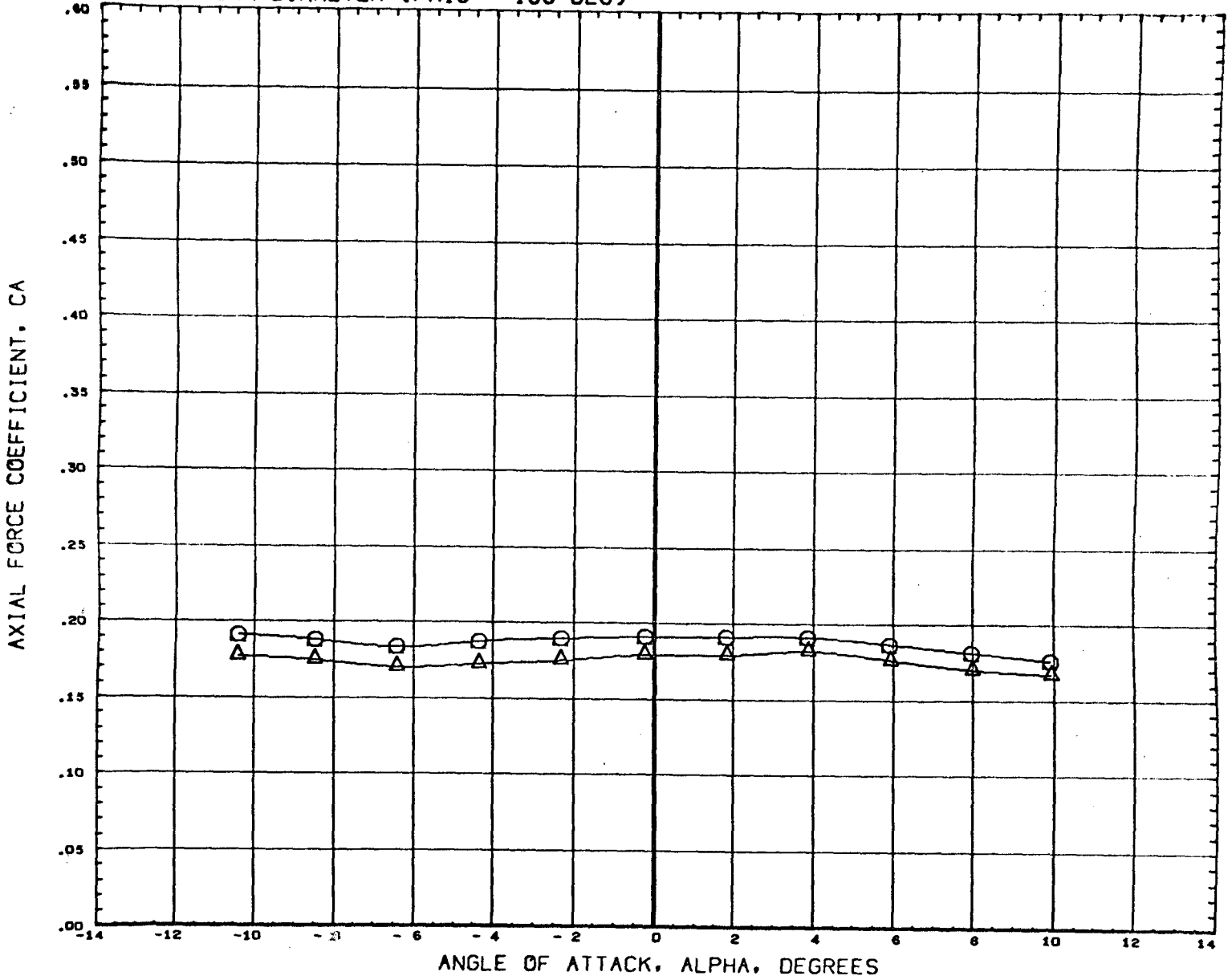
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBO	CONFIGURATION DESCRIPTION	CRBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

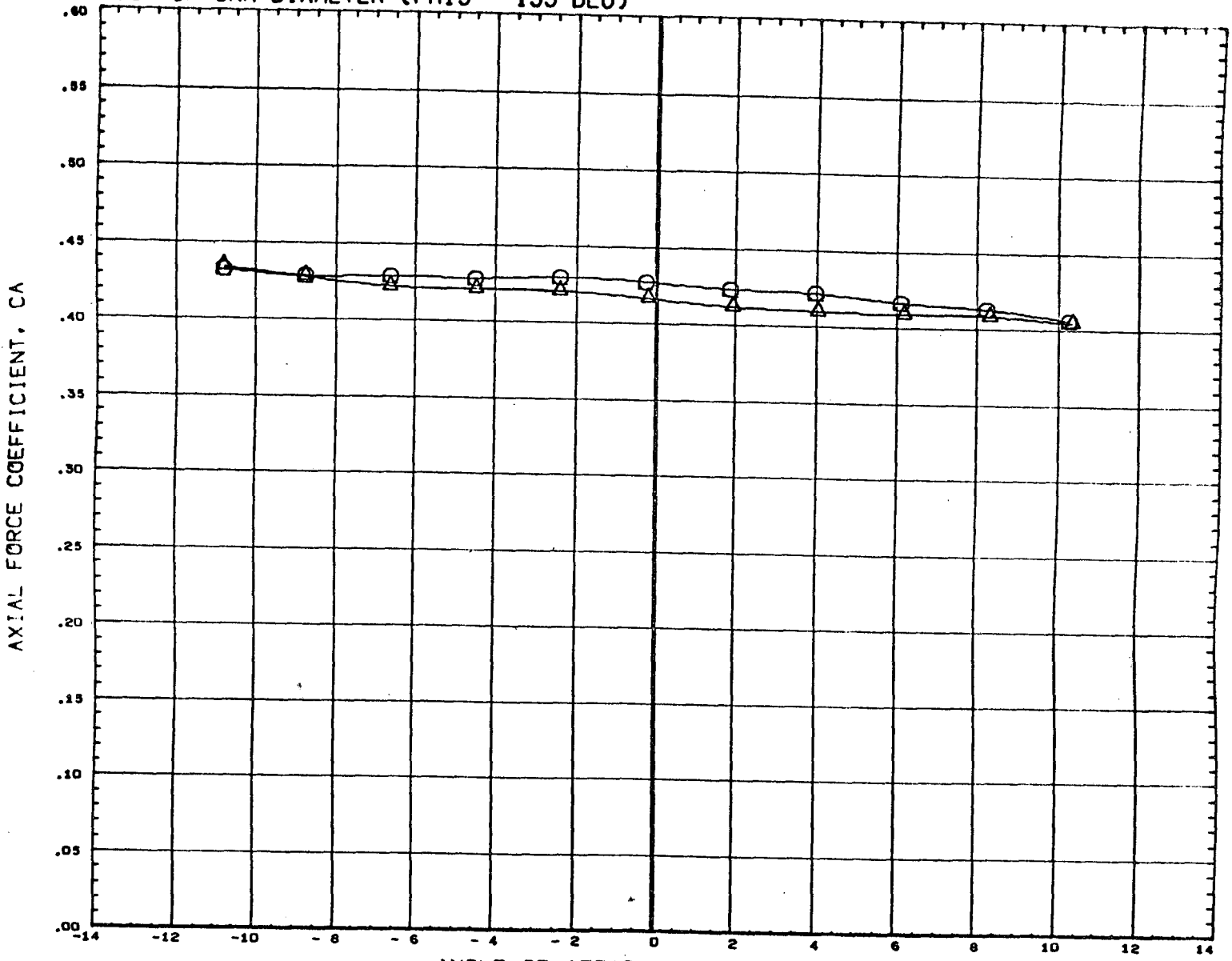
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

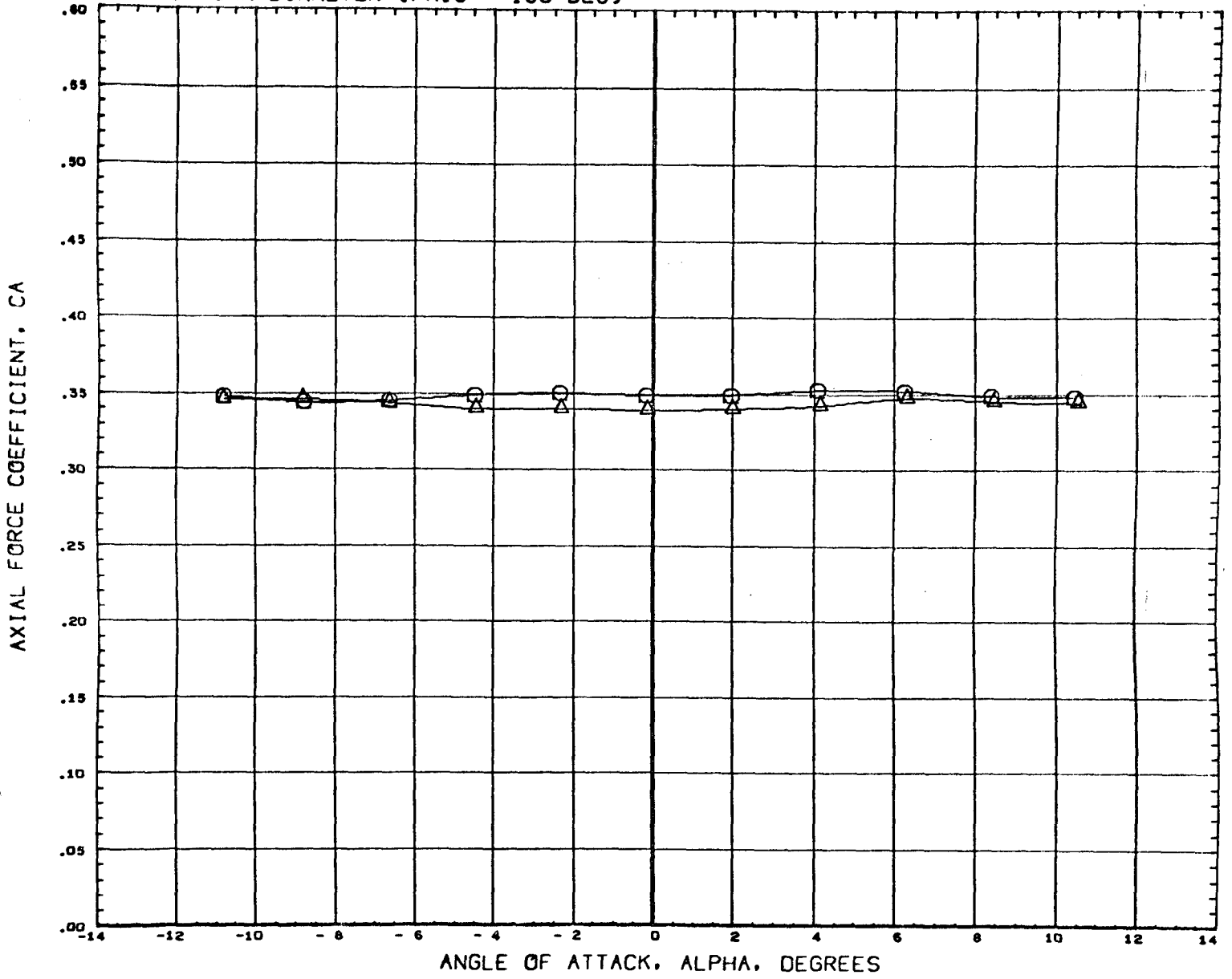
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)

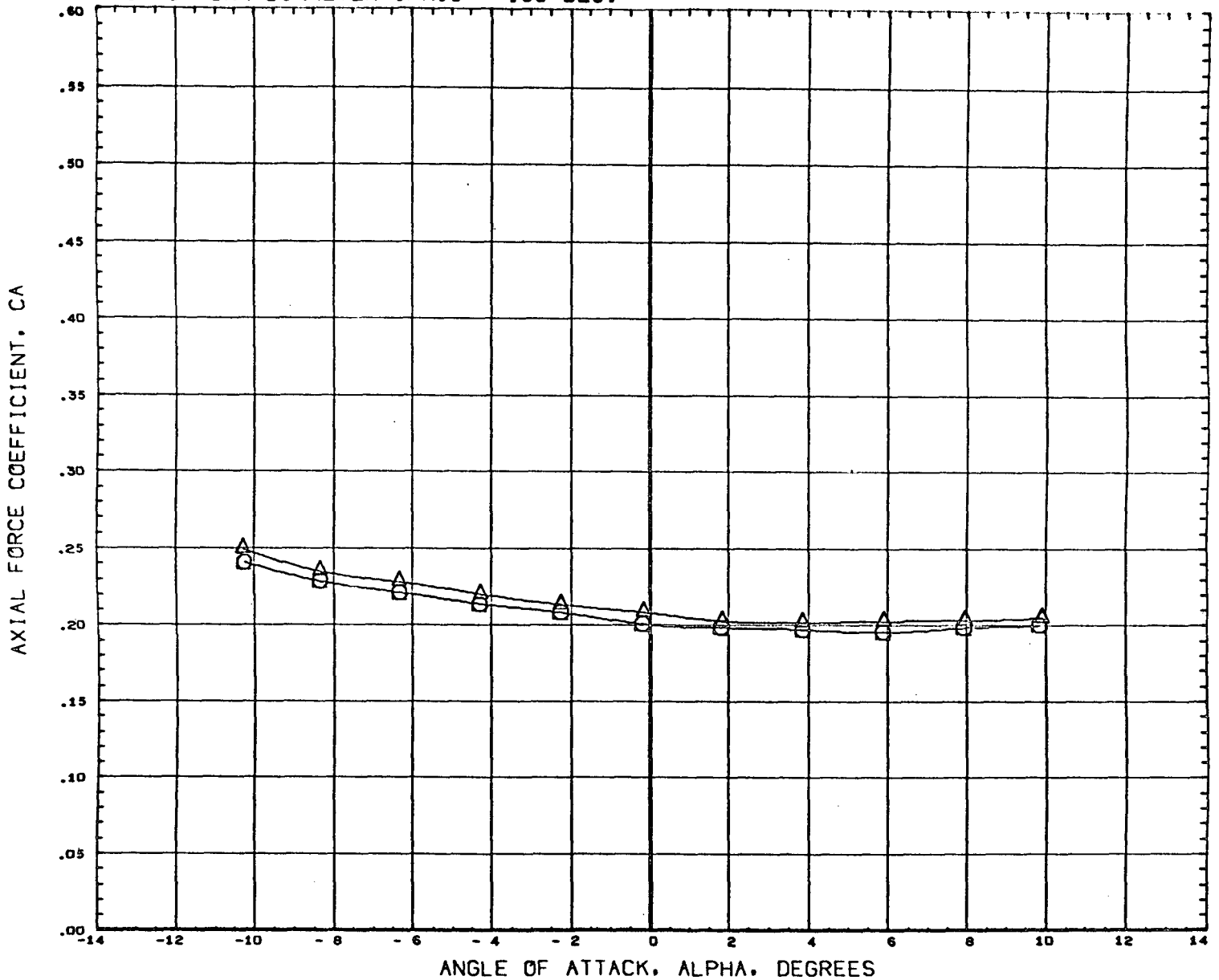


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	135.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

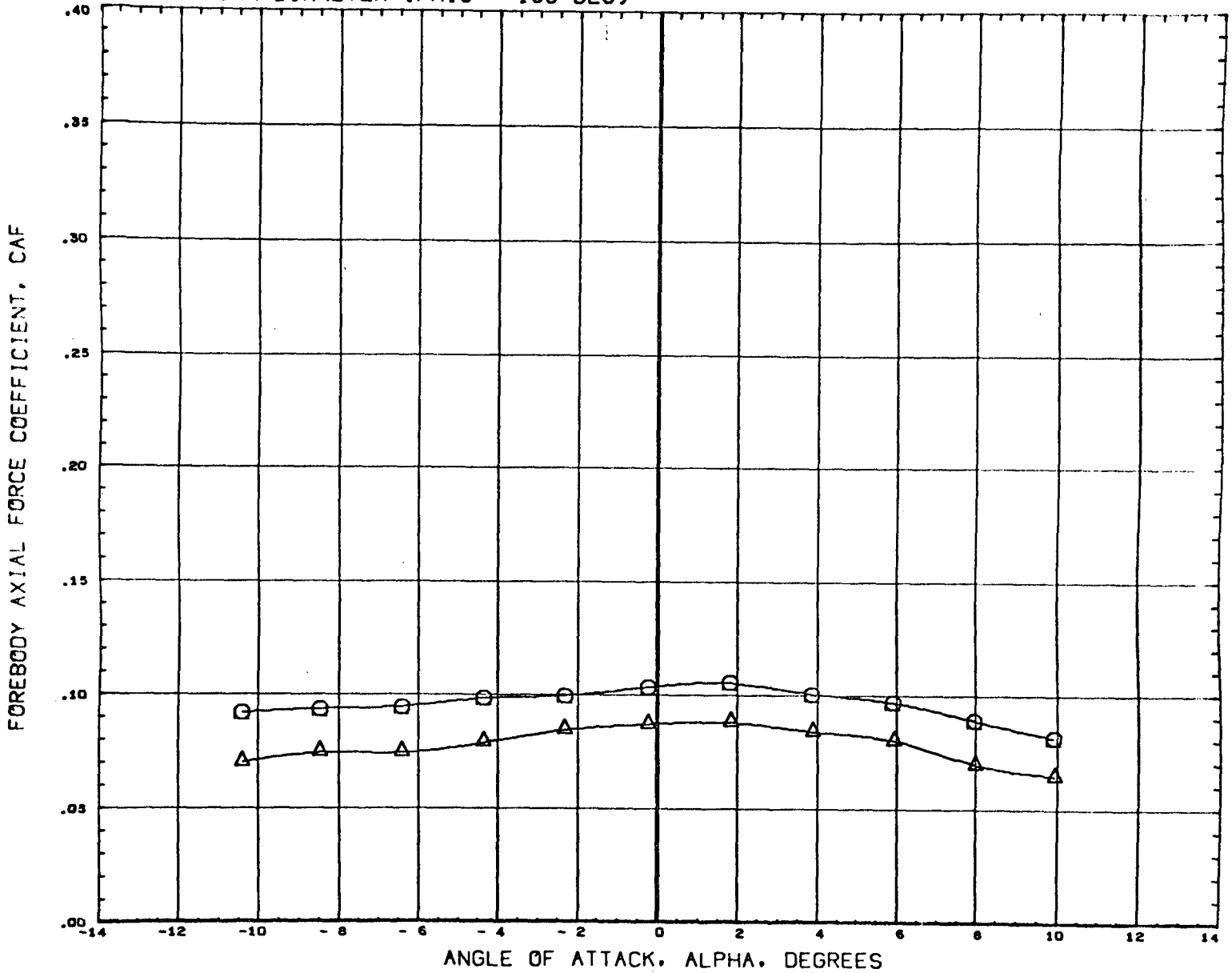
MACH 4.96

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# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)

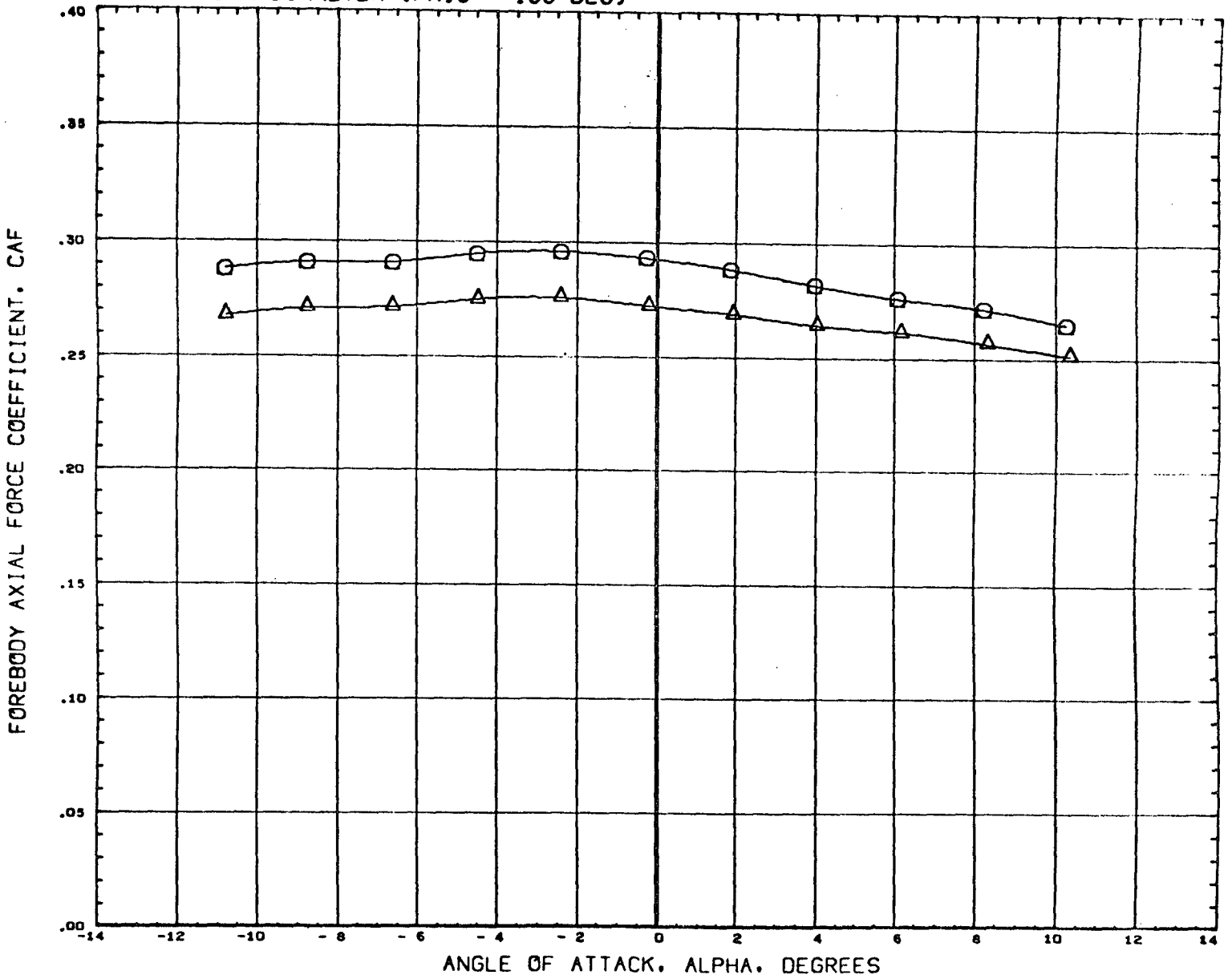


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61

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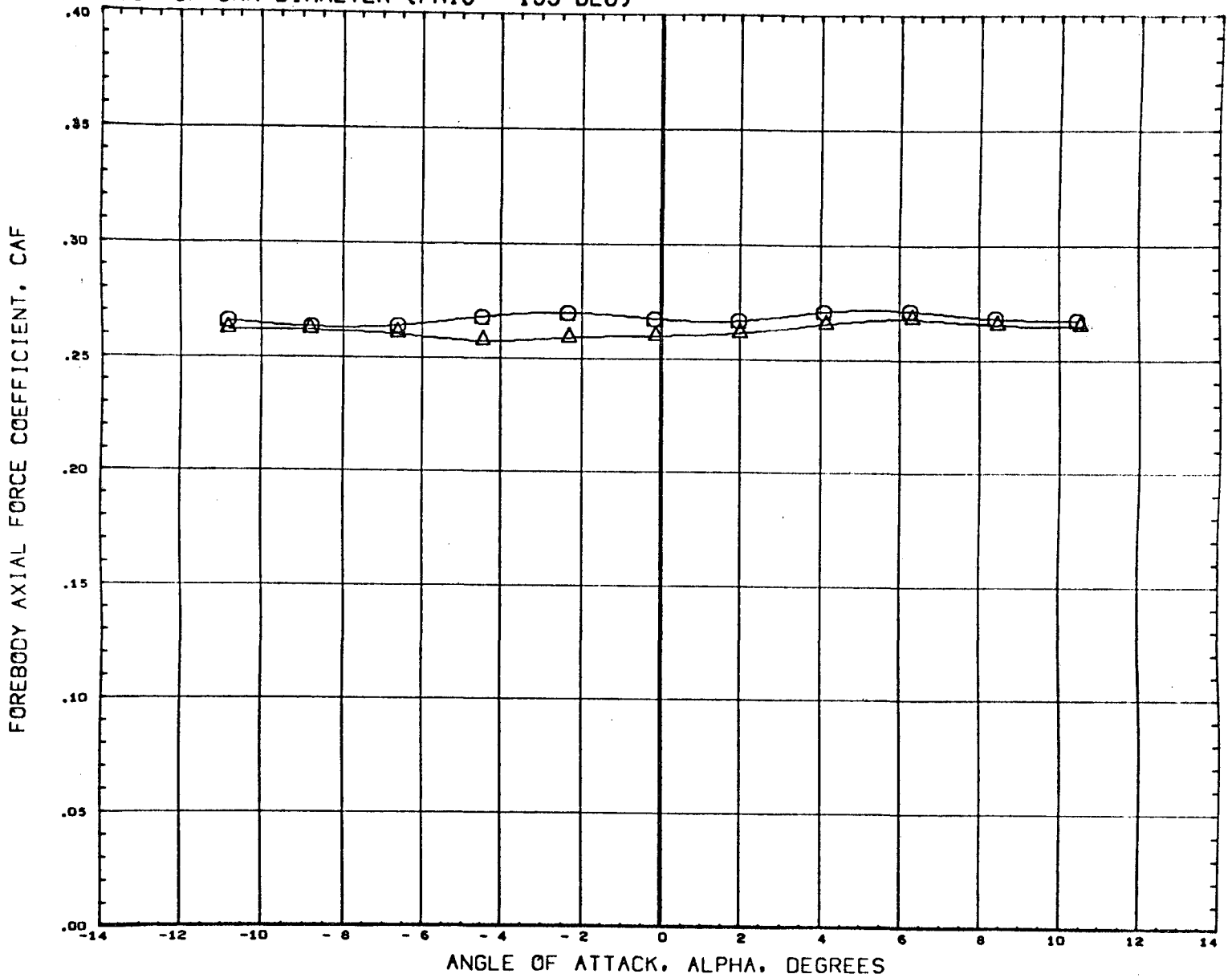
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

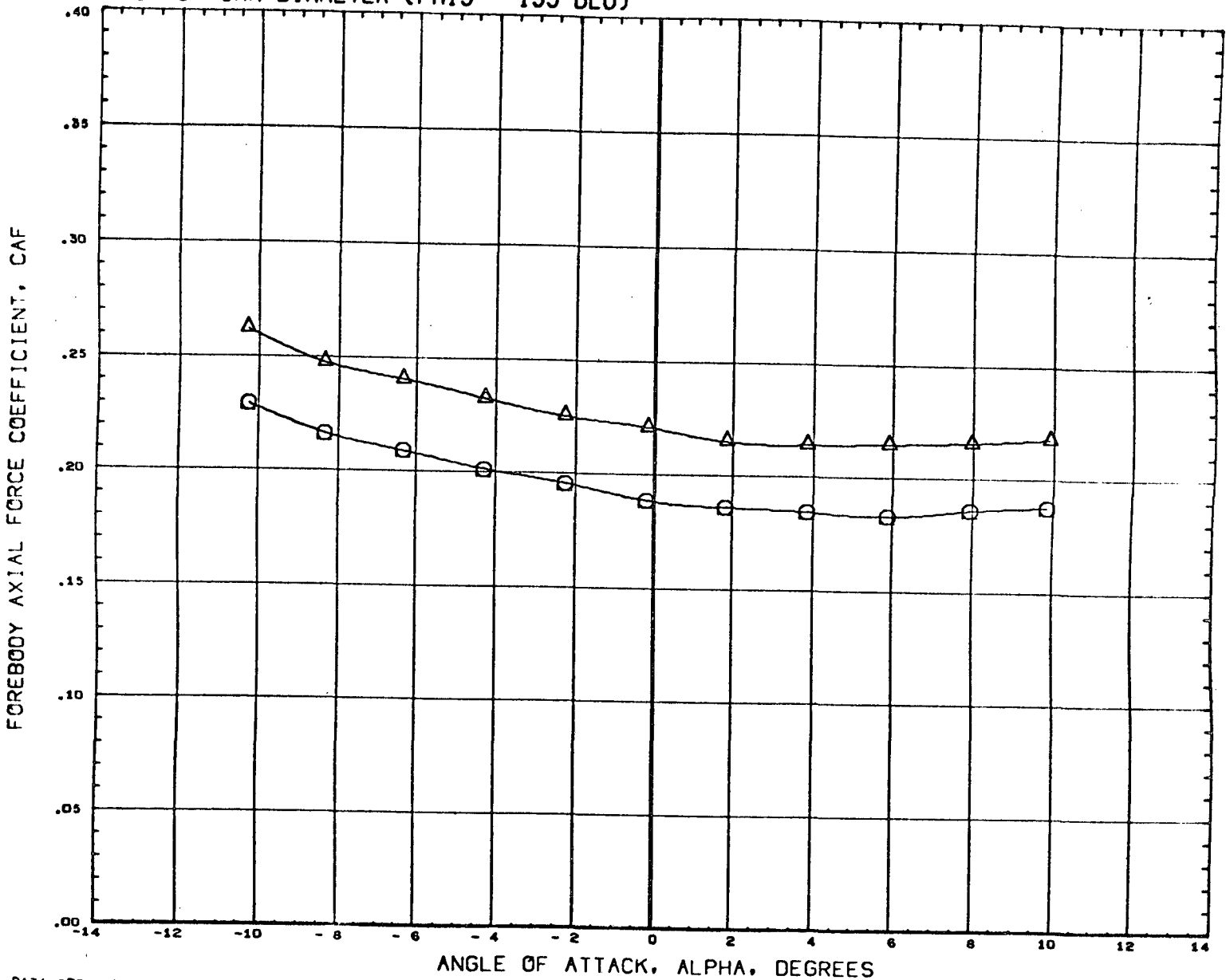
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

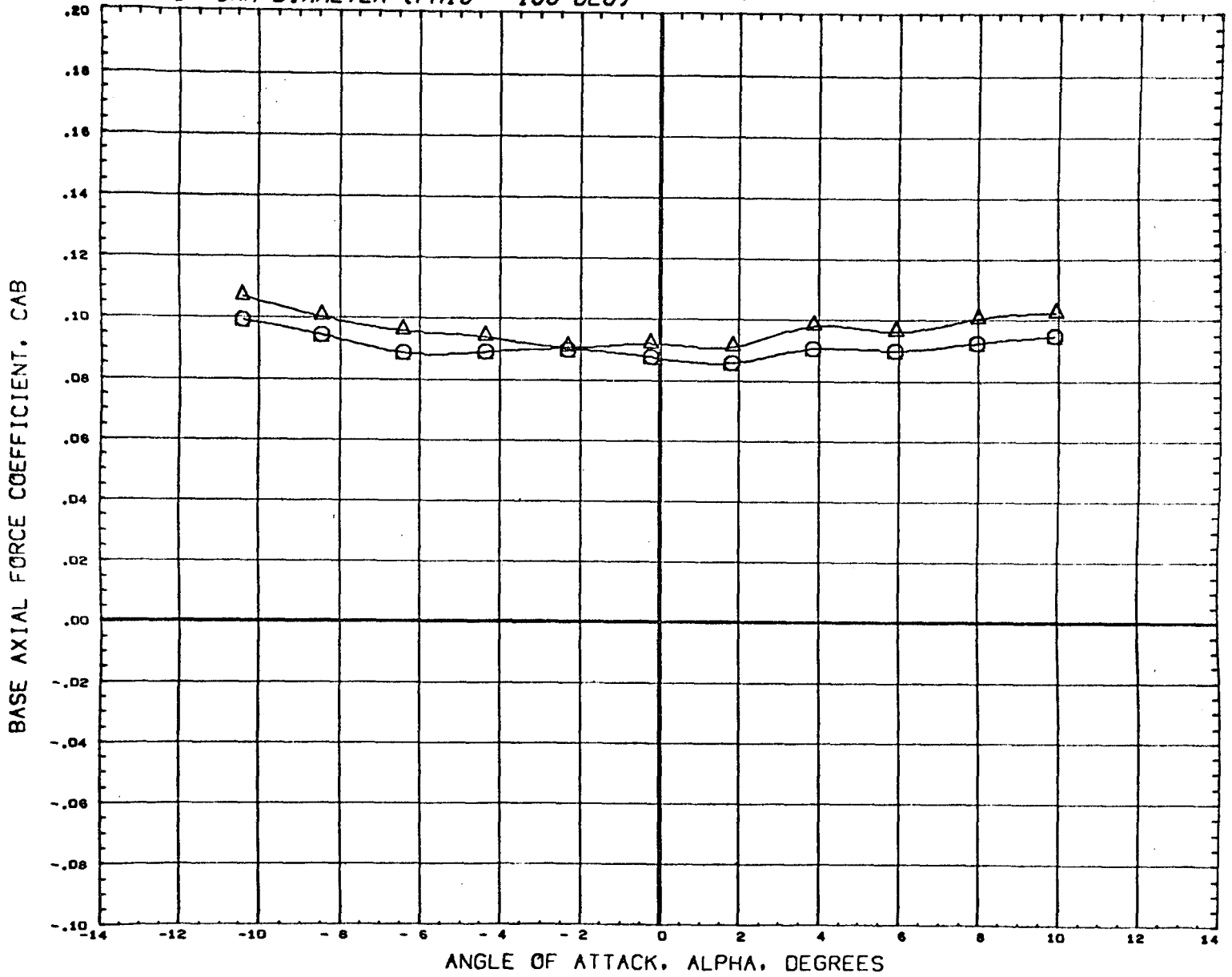
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

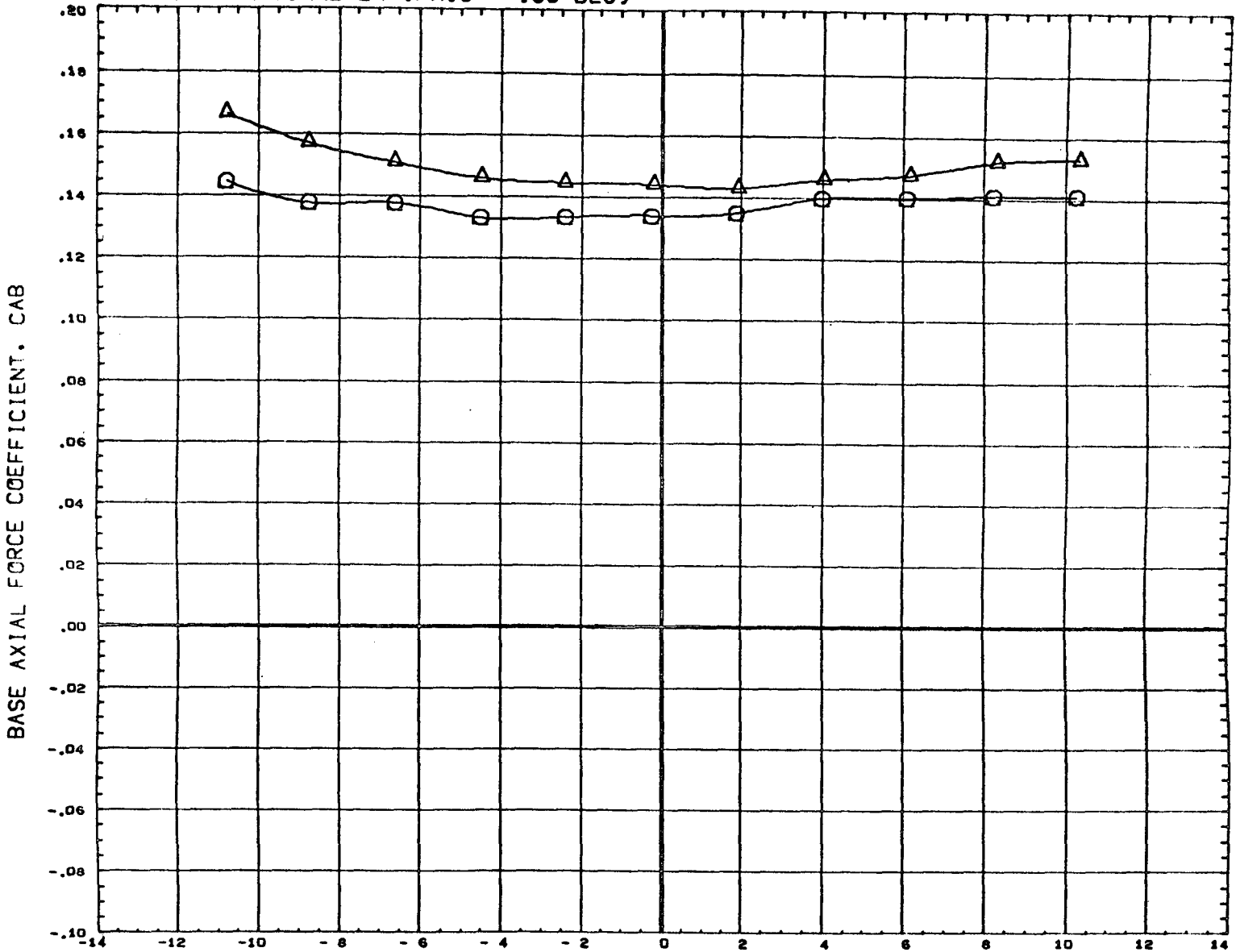
MACH 4.96

# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



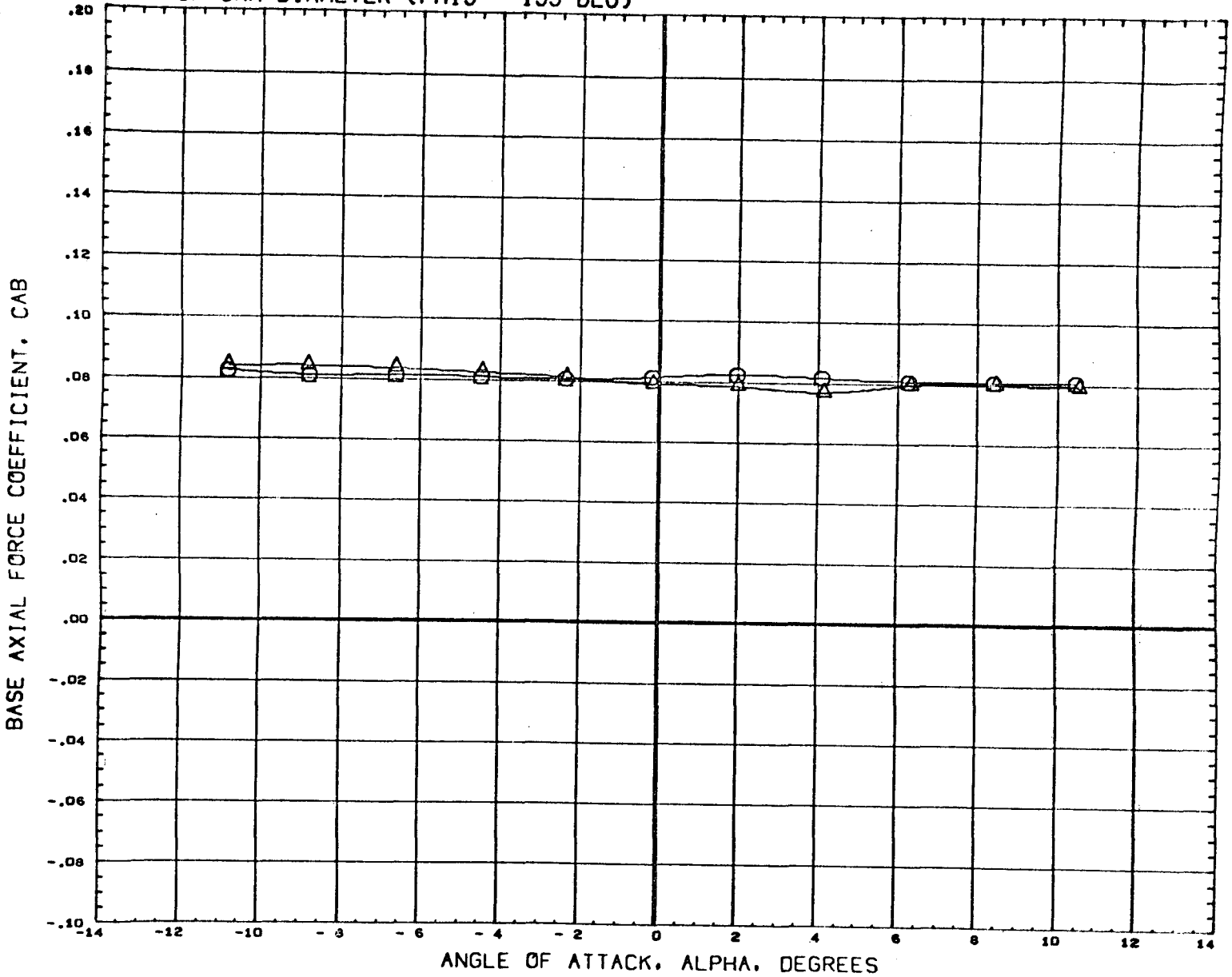
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	T101S5	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1		-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES		T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
								BREF 4.4600 IN.
								XMRP 3.3600 IN.
								YMRP 0.0000 IN.
								ZMRP 0.2480 IN.
								SCALE 0.0040 SCALE

MACH 1.20

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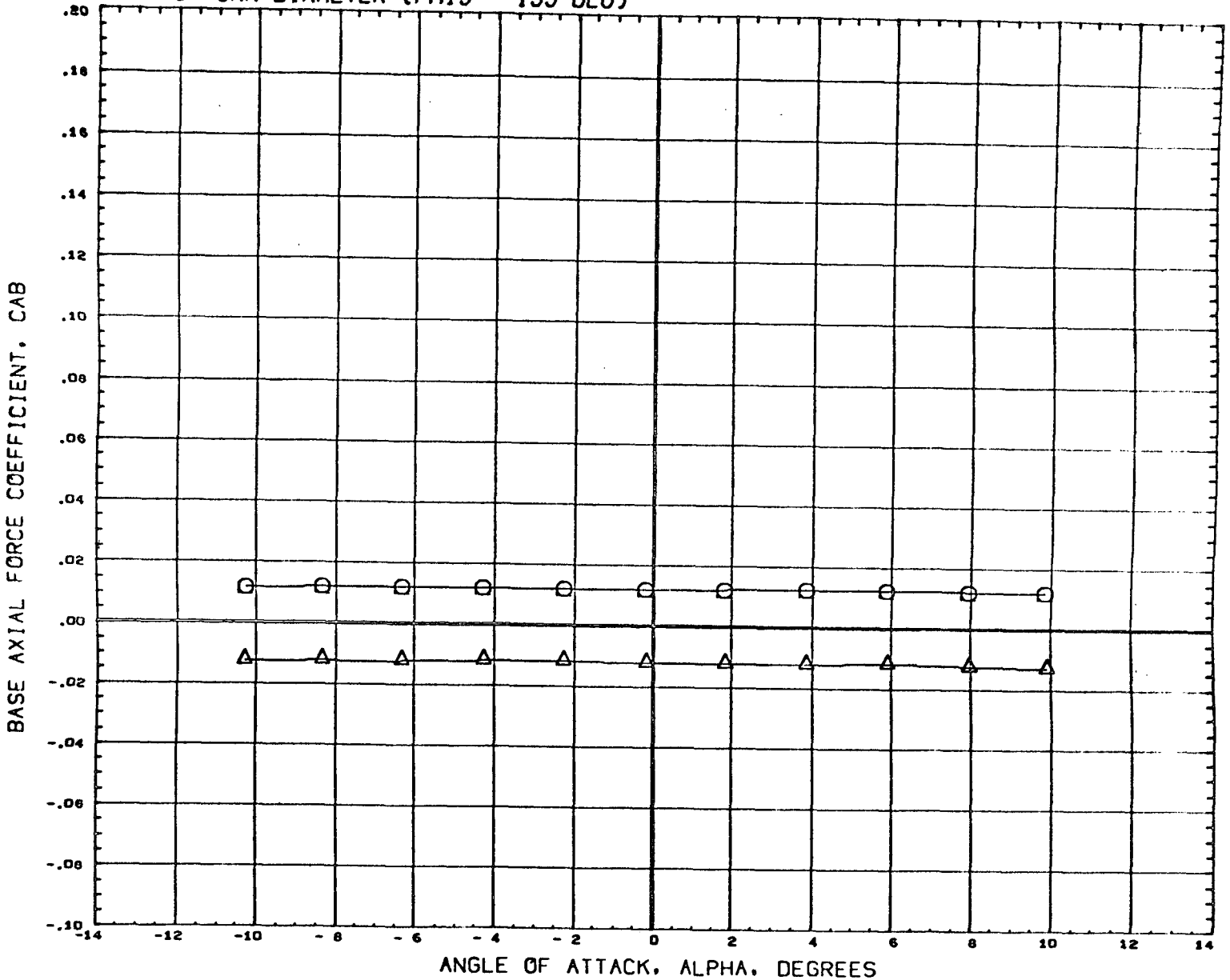
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION	
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000	LREF 2.0260 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)

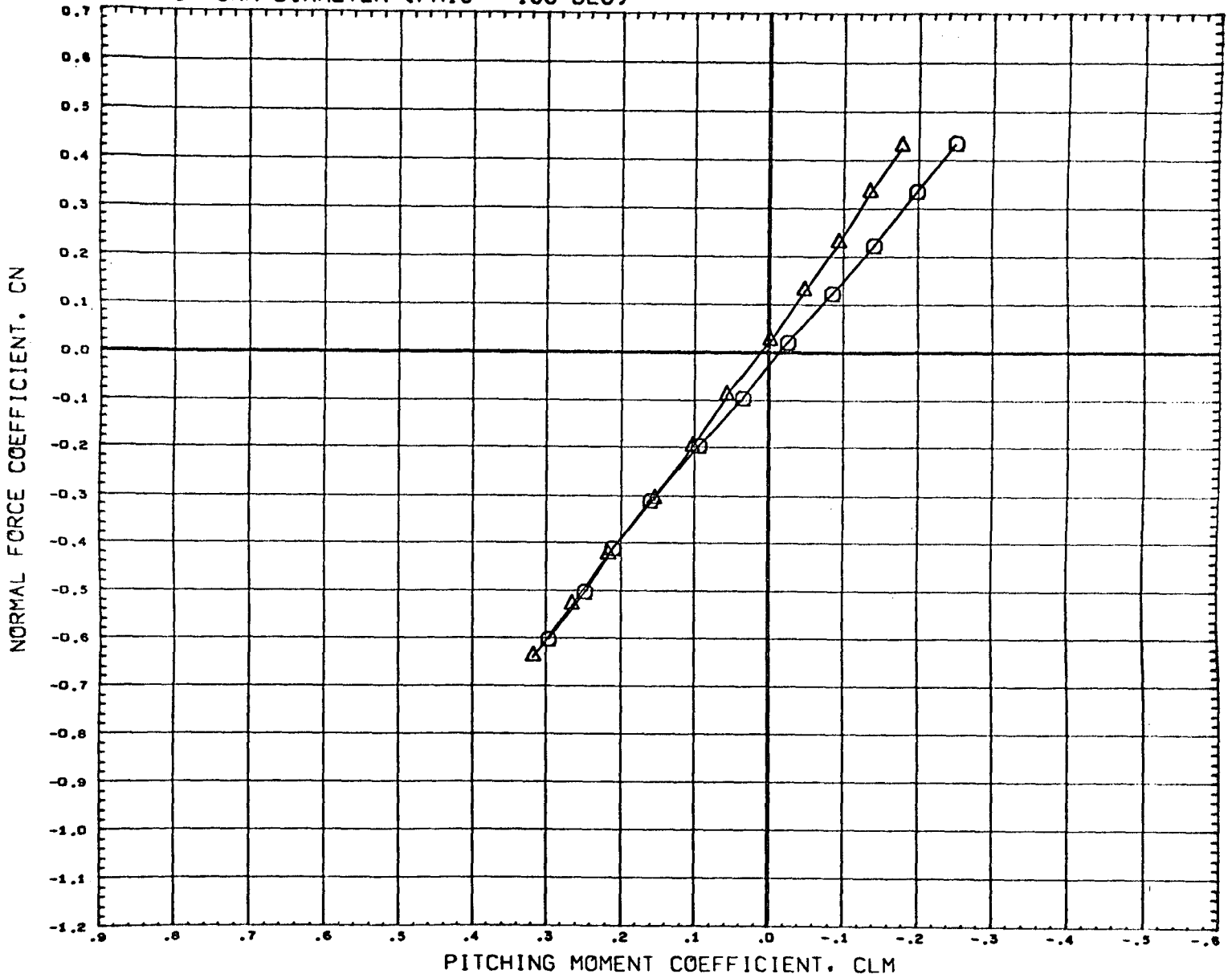


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C7100A)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96



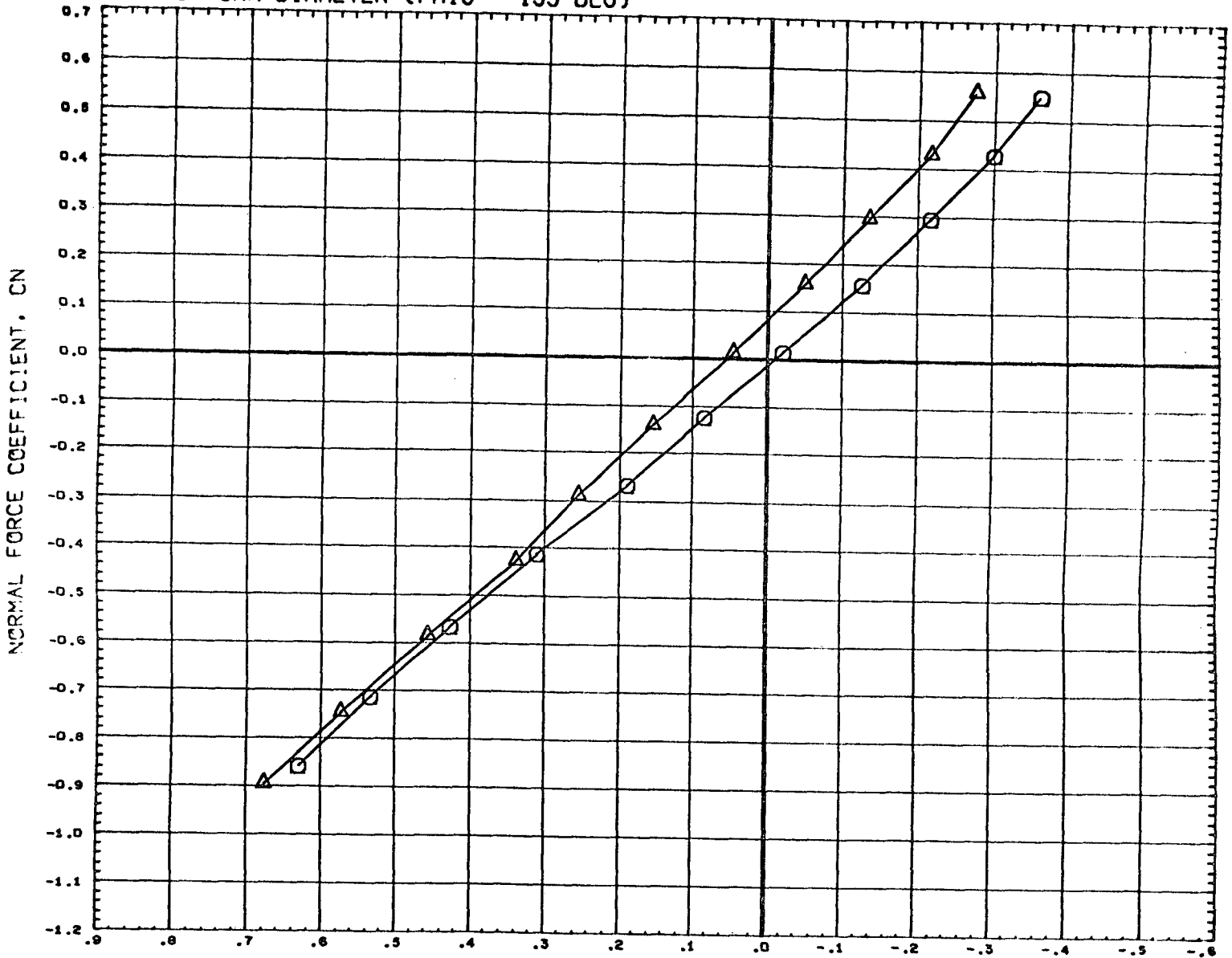
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	0.000
						SREF 7.8800 SQ. IN
						LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRF 3.3600 IN.
						YMRF 0.0000 IN.
						ZMRF 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

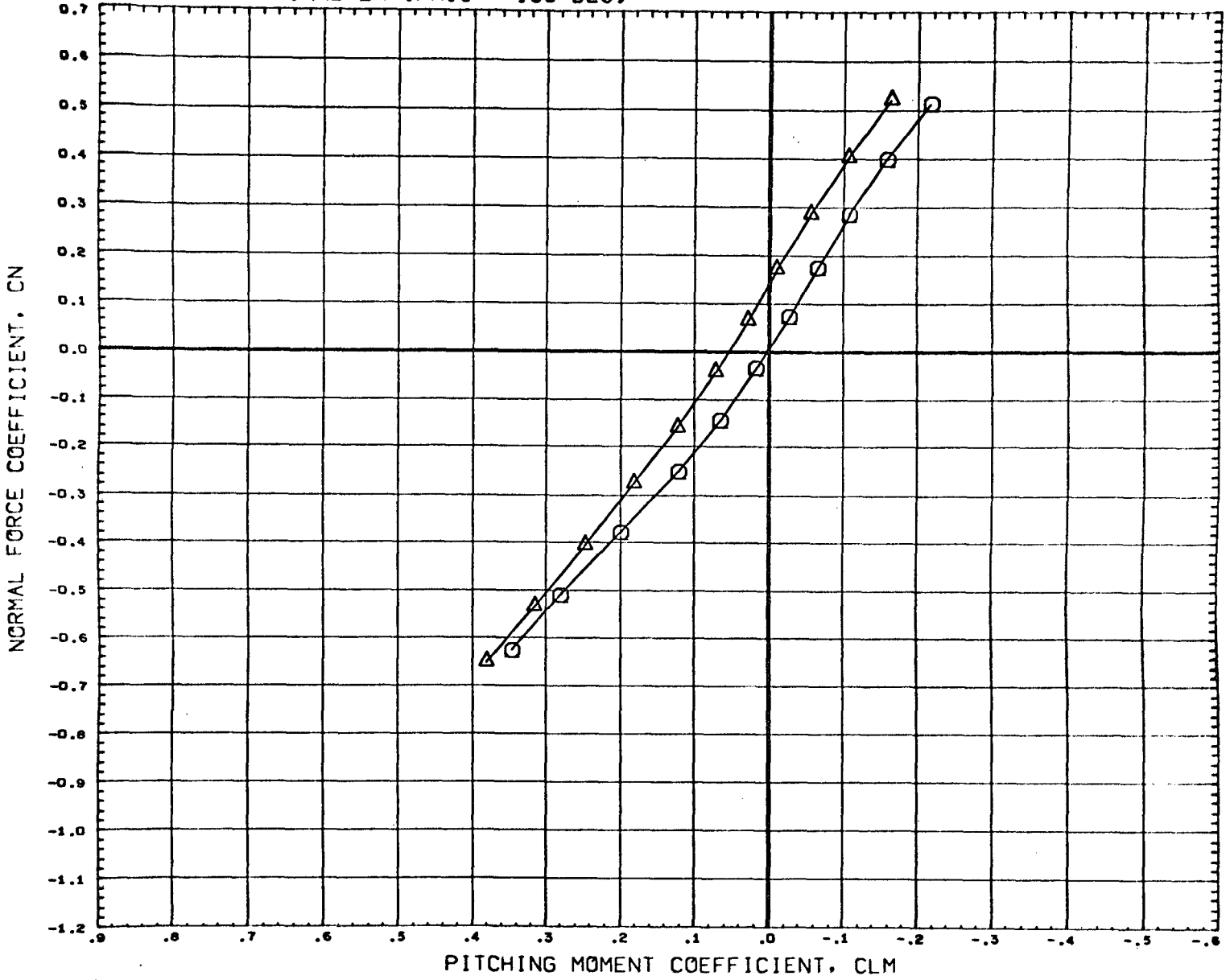
# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)

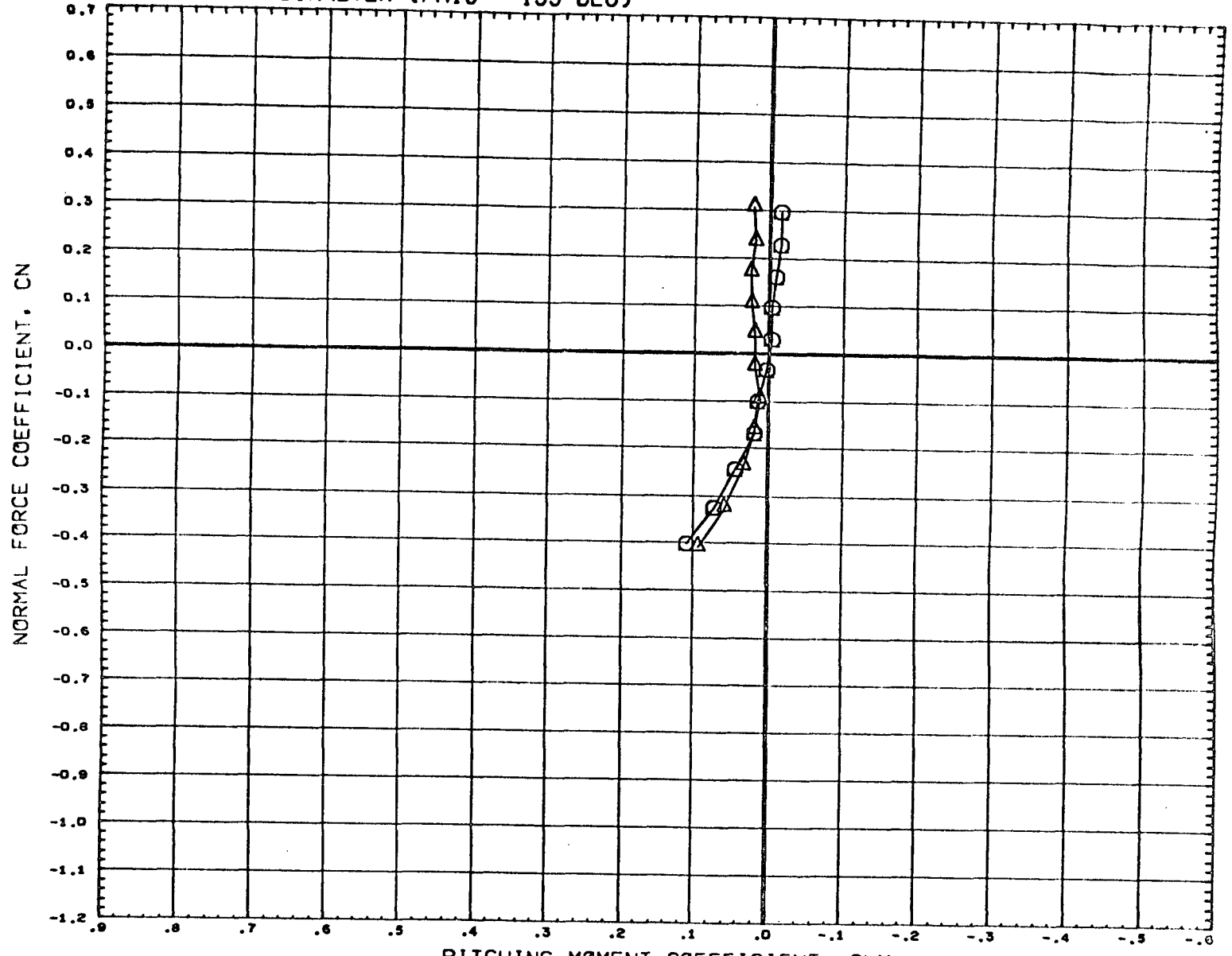


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71008)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	7.8800 SQ. IN
(B71054)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	135.000	0.000	2.0280 IN.
							4.4600 IN.
							3.3600 IN.
							0.0000 IN.
							0.2480 IN.
							0.0040 SCALE

MACH 1.97

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# EFFECT OF SRM DIAMETER (PHIS = 135 DEG)

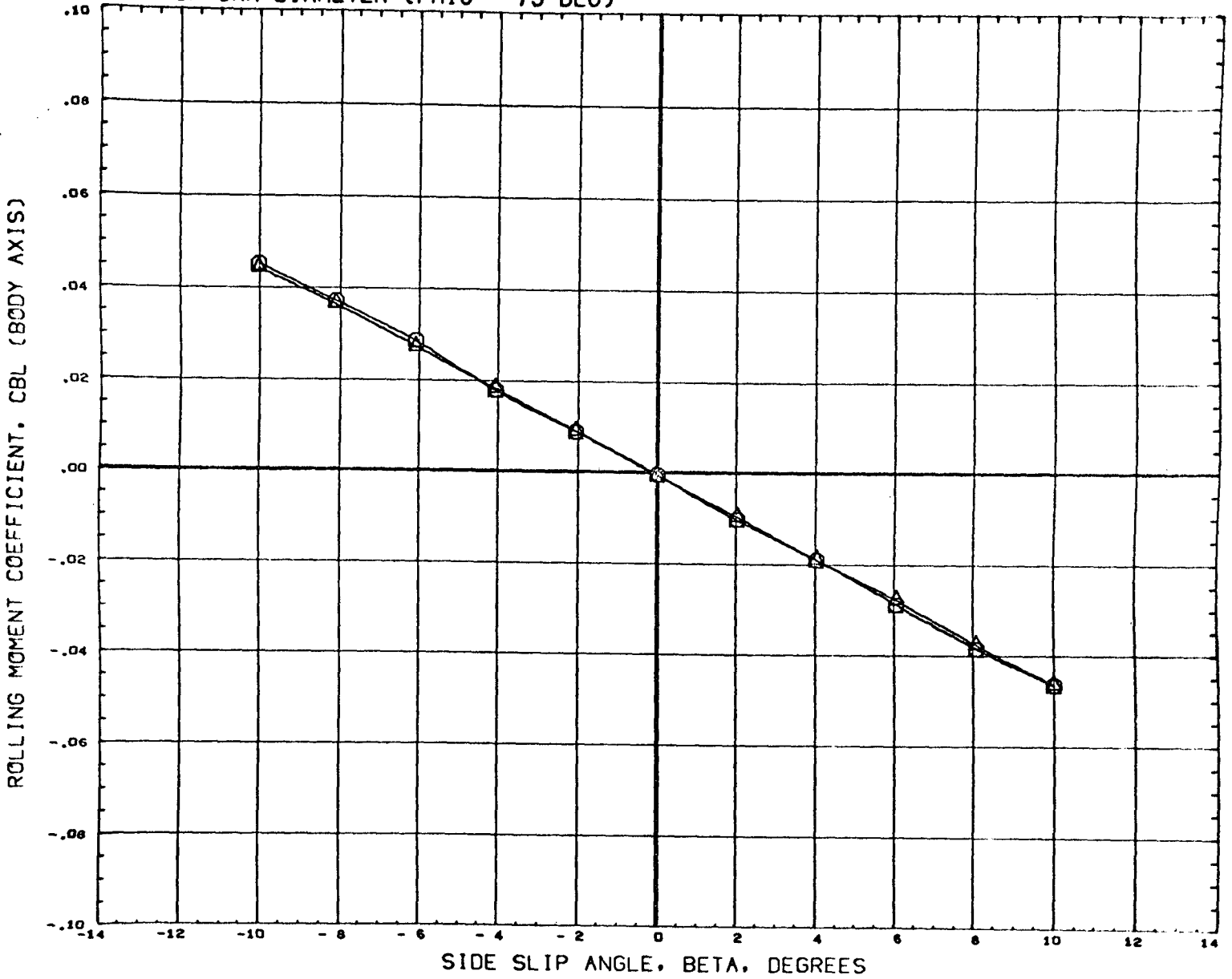


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	135.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	135.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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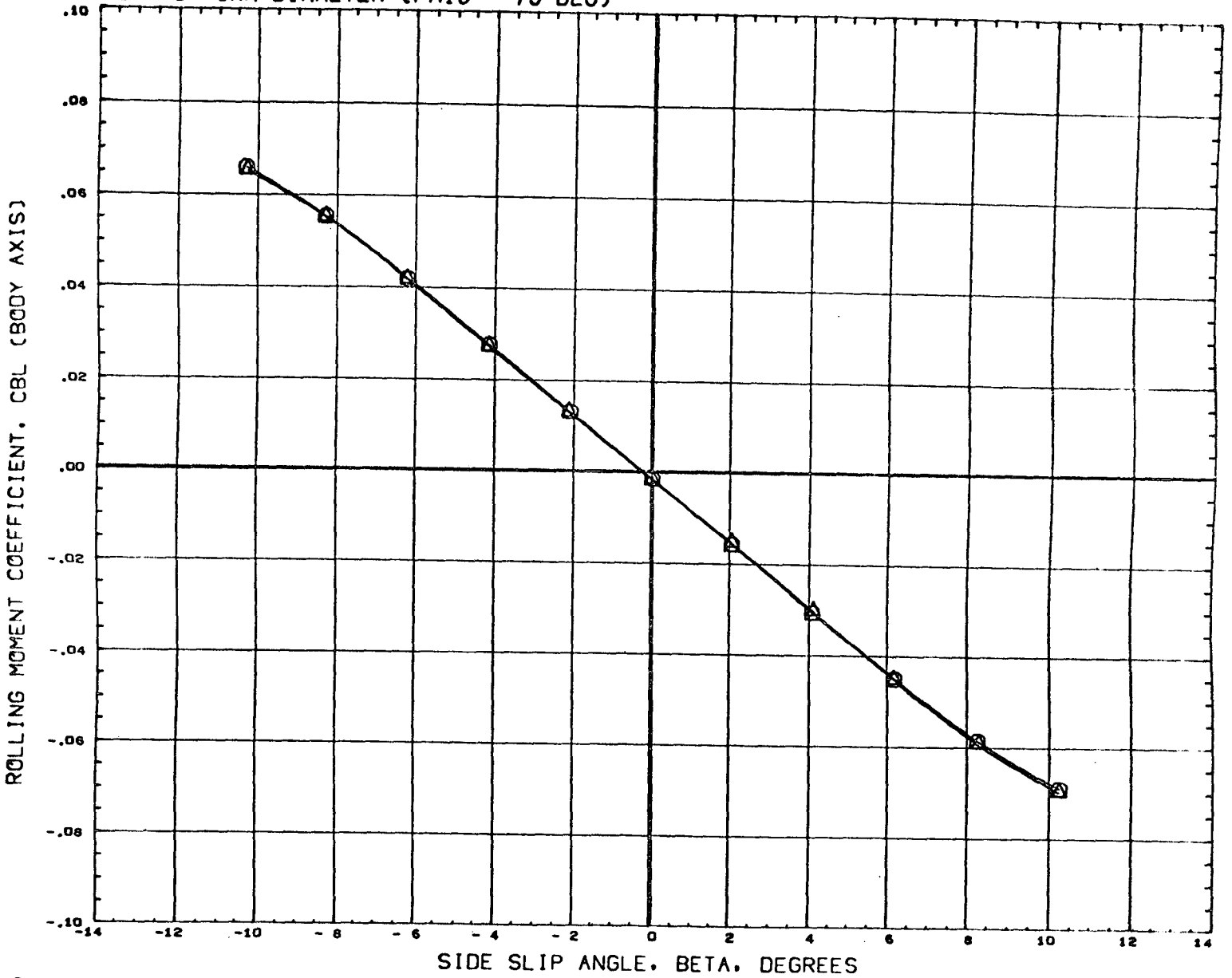
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

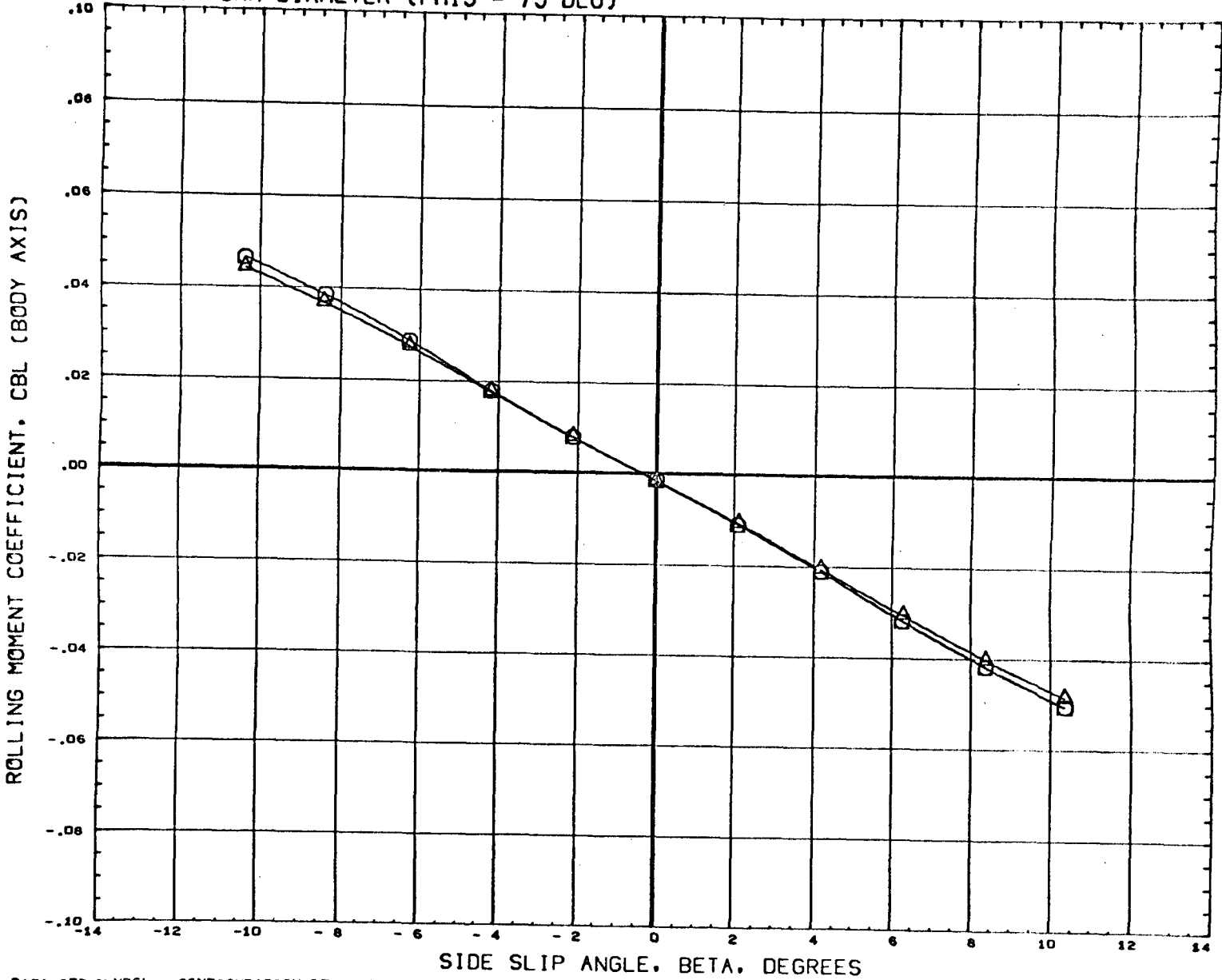
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8600 SQ. IN.
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

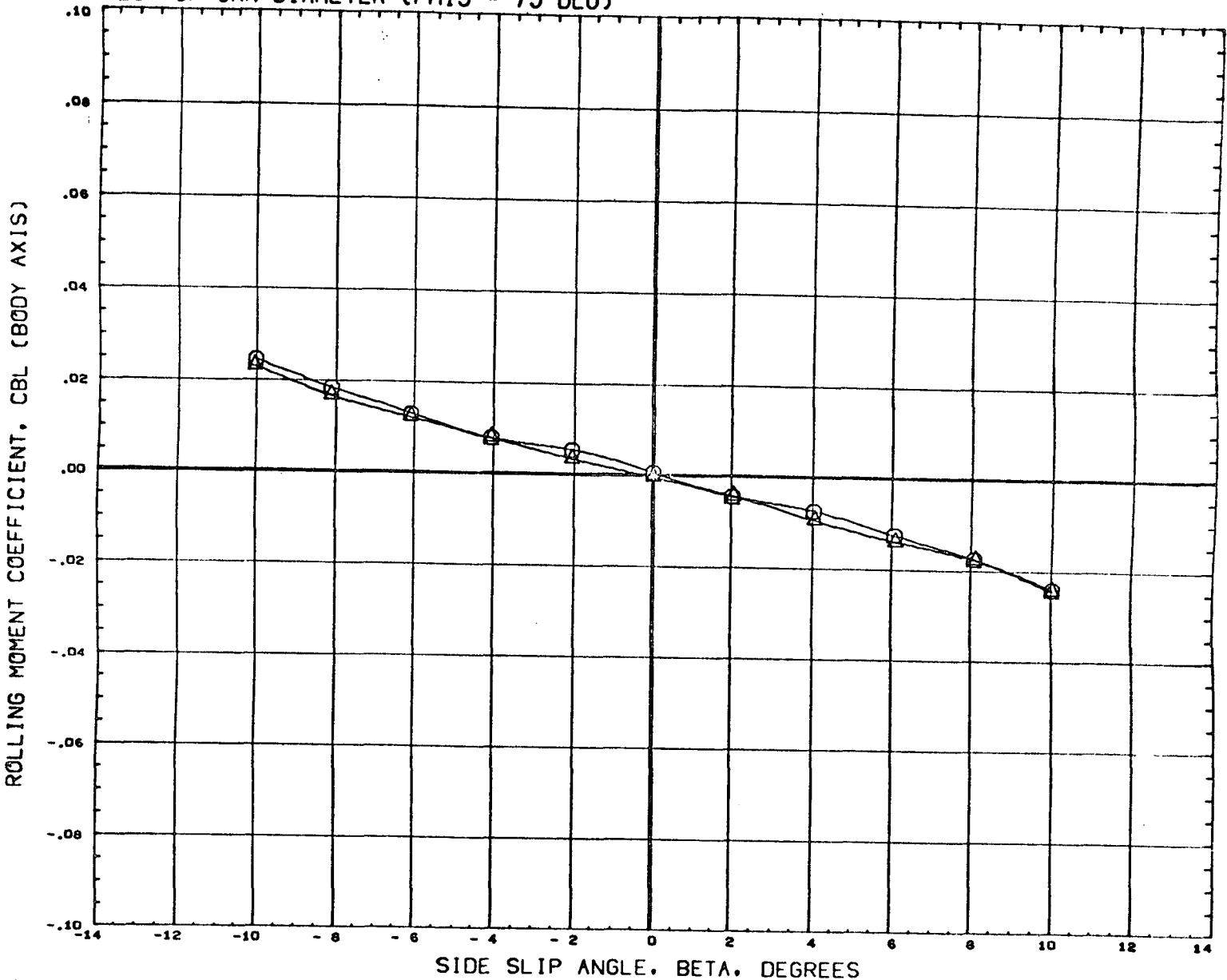
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBIT	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	7.8800 SQ. IN
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	75.000	0.000	2.0280 IN.
						4.4600 IN.
						3.3600 IN.
						0.0000 IN.
						0.2480 IN.
						0.0040 SCALE

MACH 1.96

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)

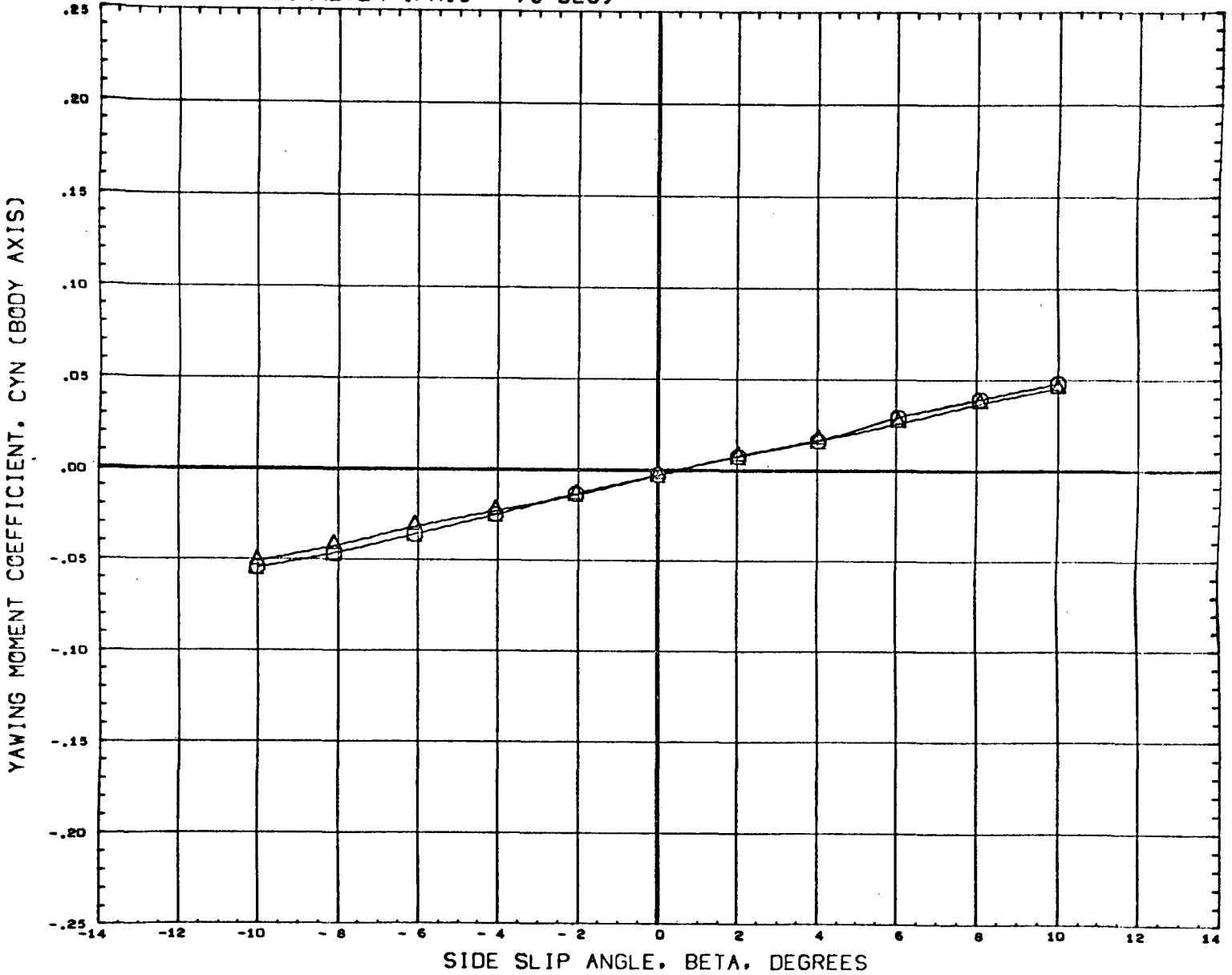


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96



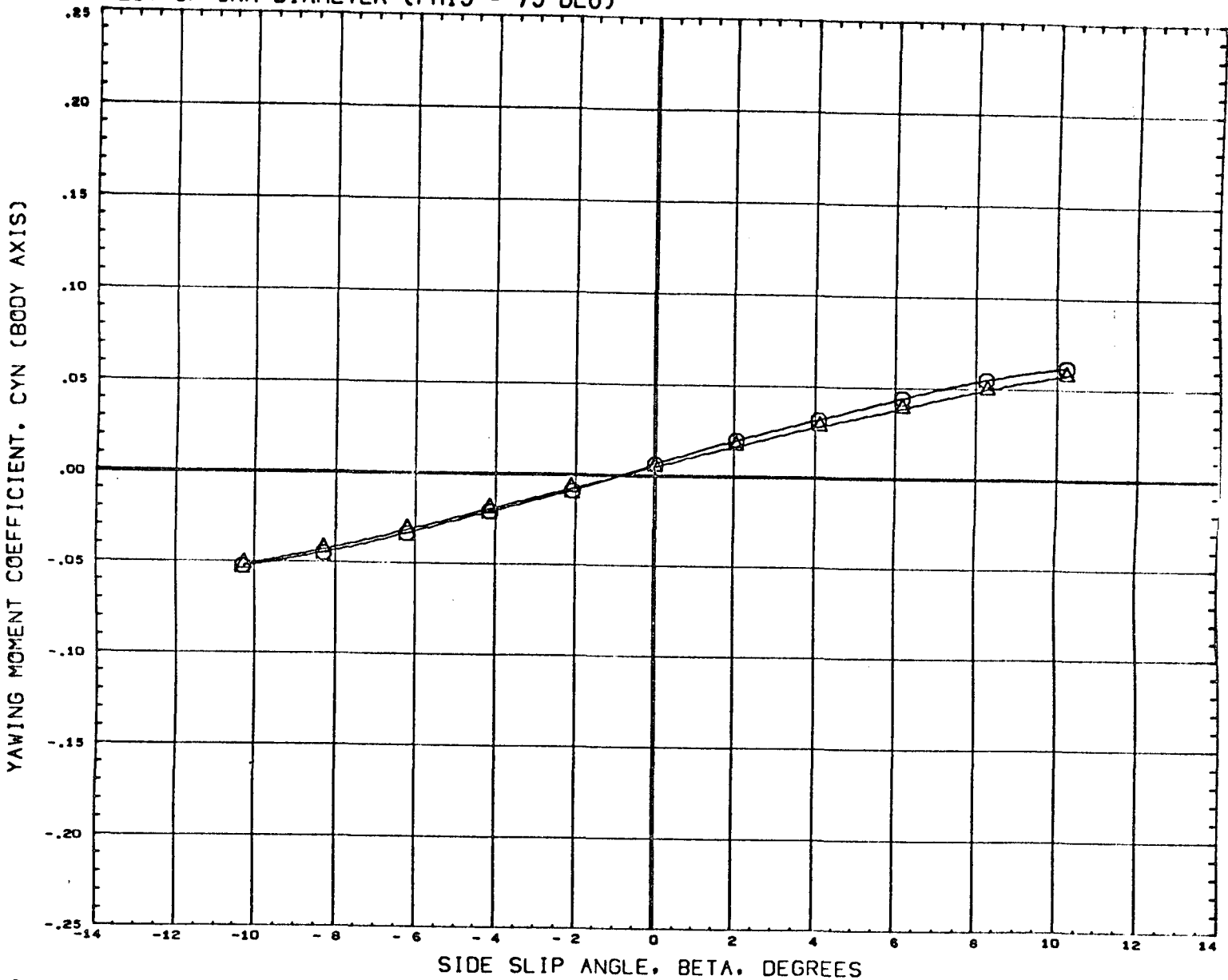
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1,500	75,000	0,000	0,000	SREF 7.8800 SQ. IN
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1,500	75,000	0,000	0,000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

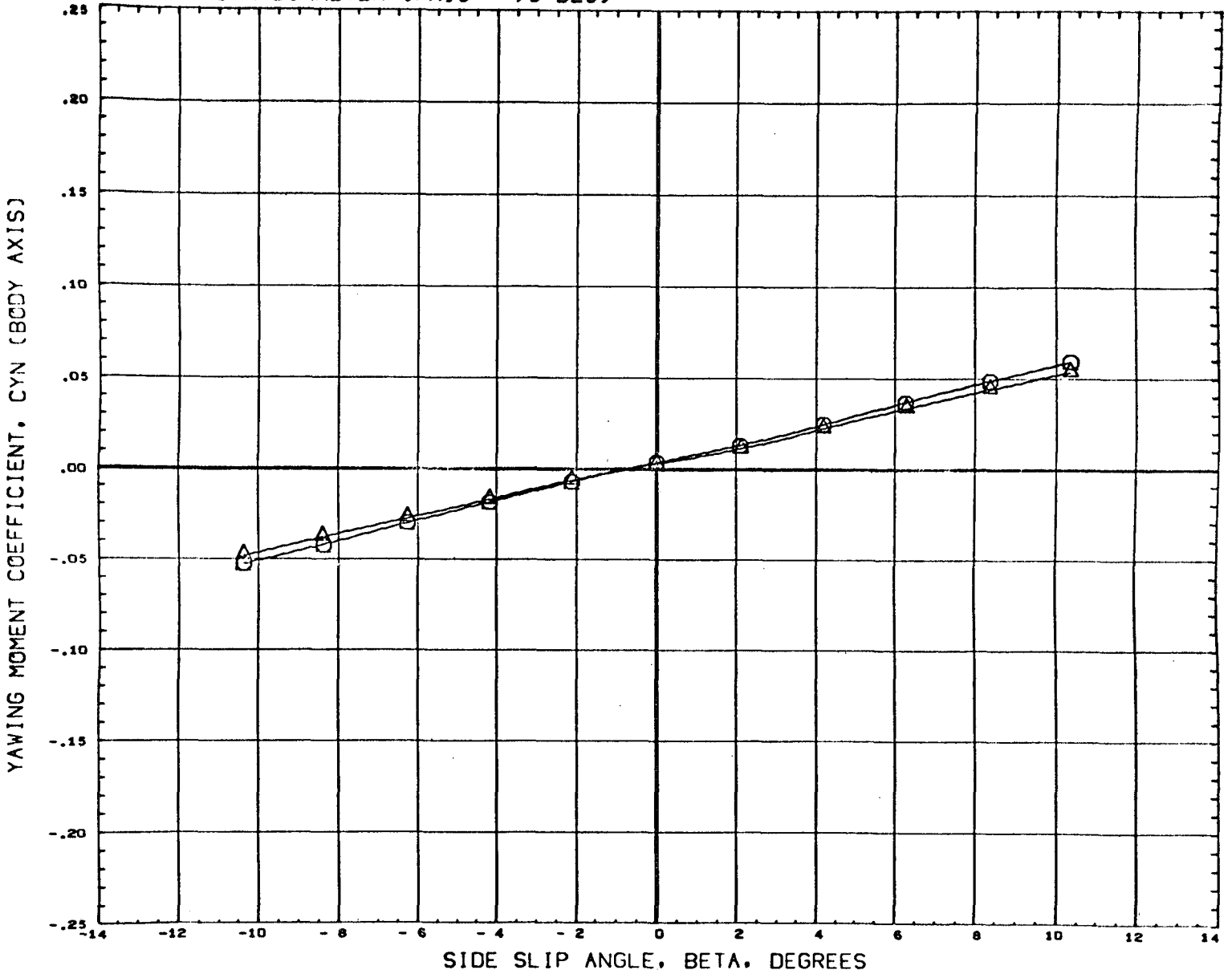
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.6800 SQ. IN
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



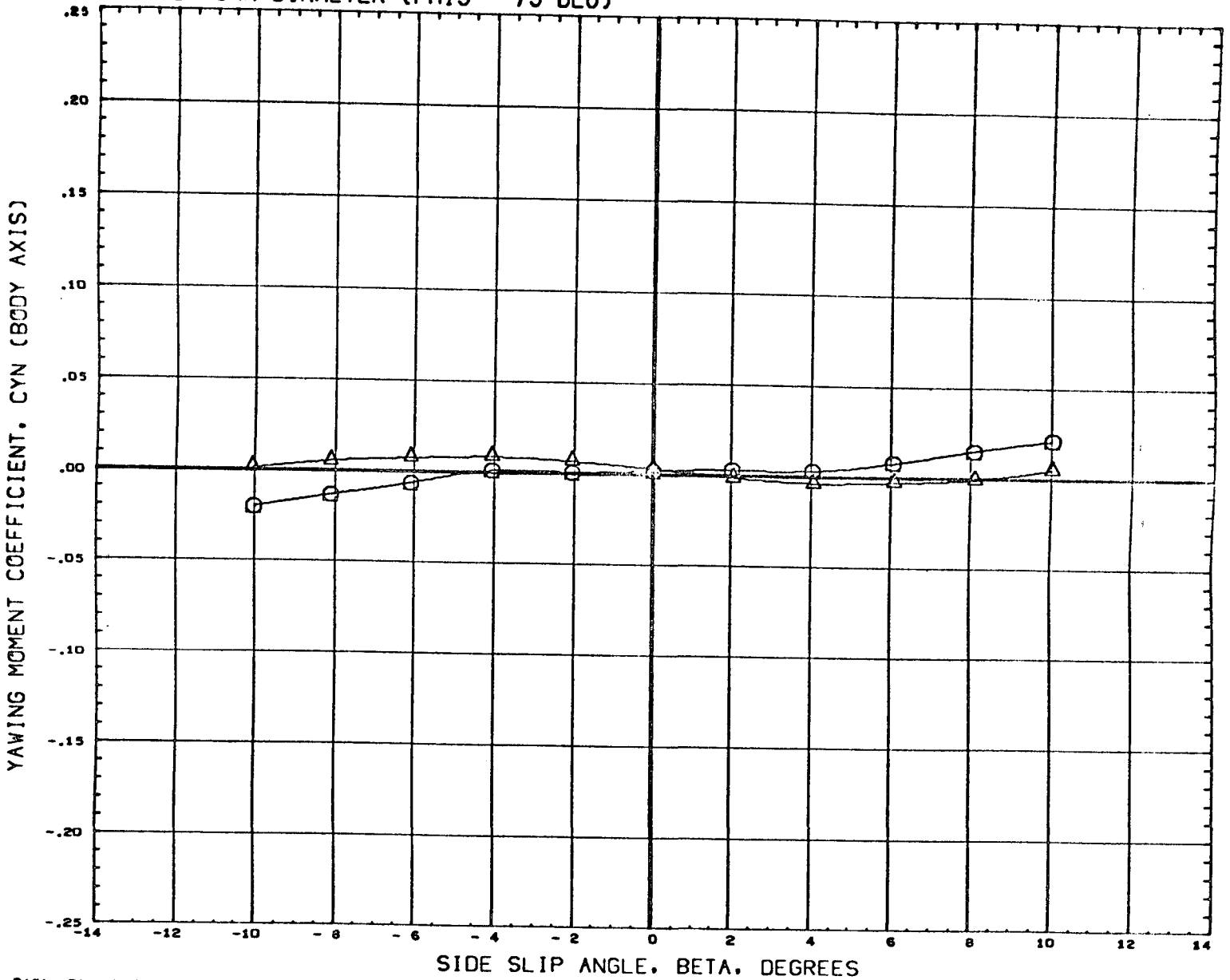
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.96

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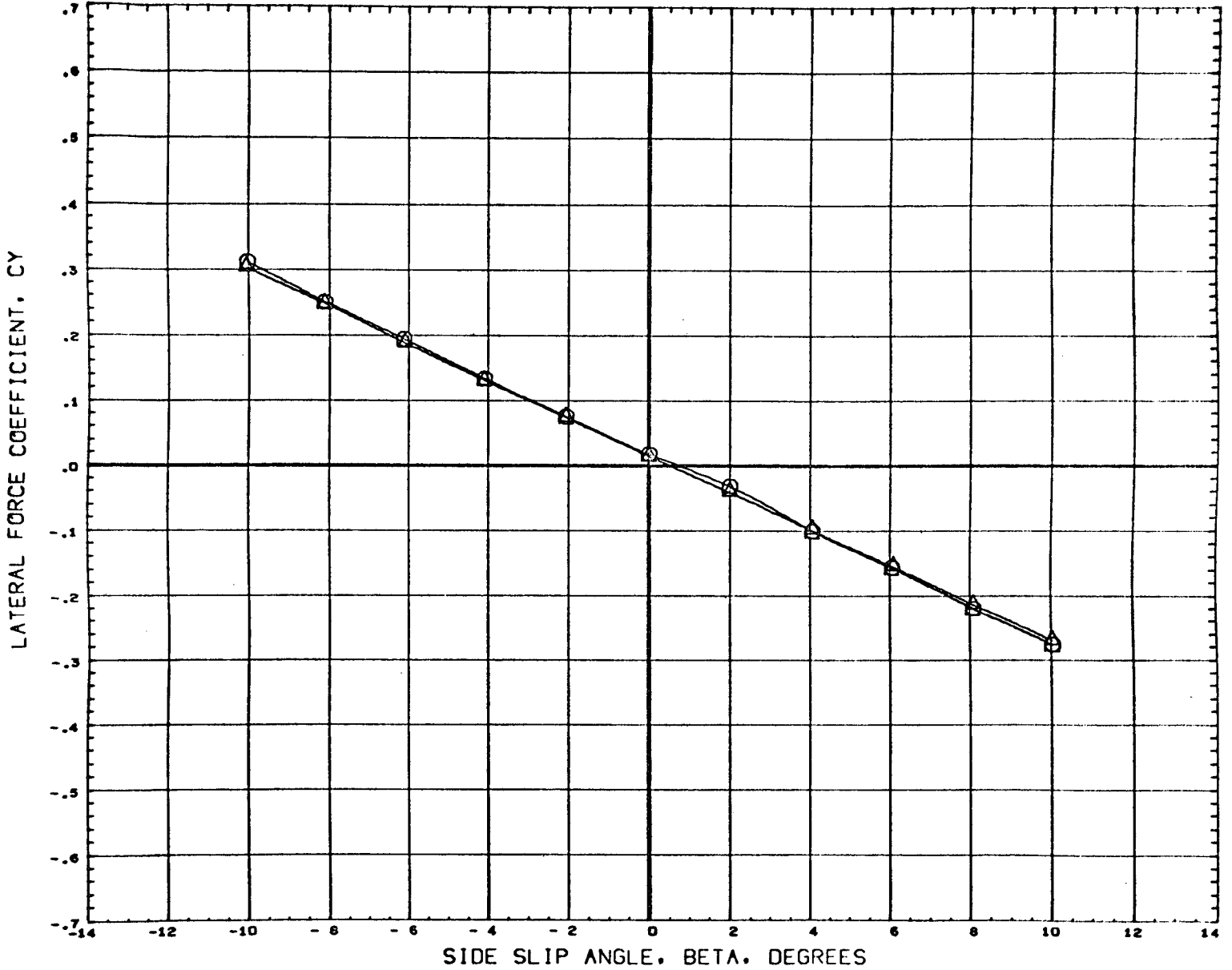
# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)

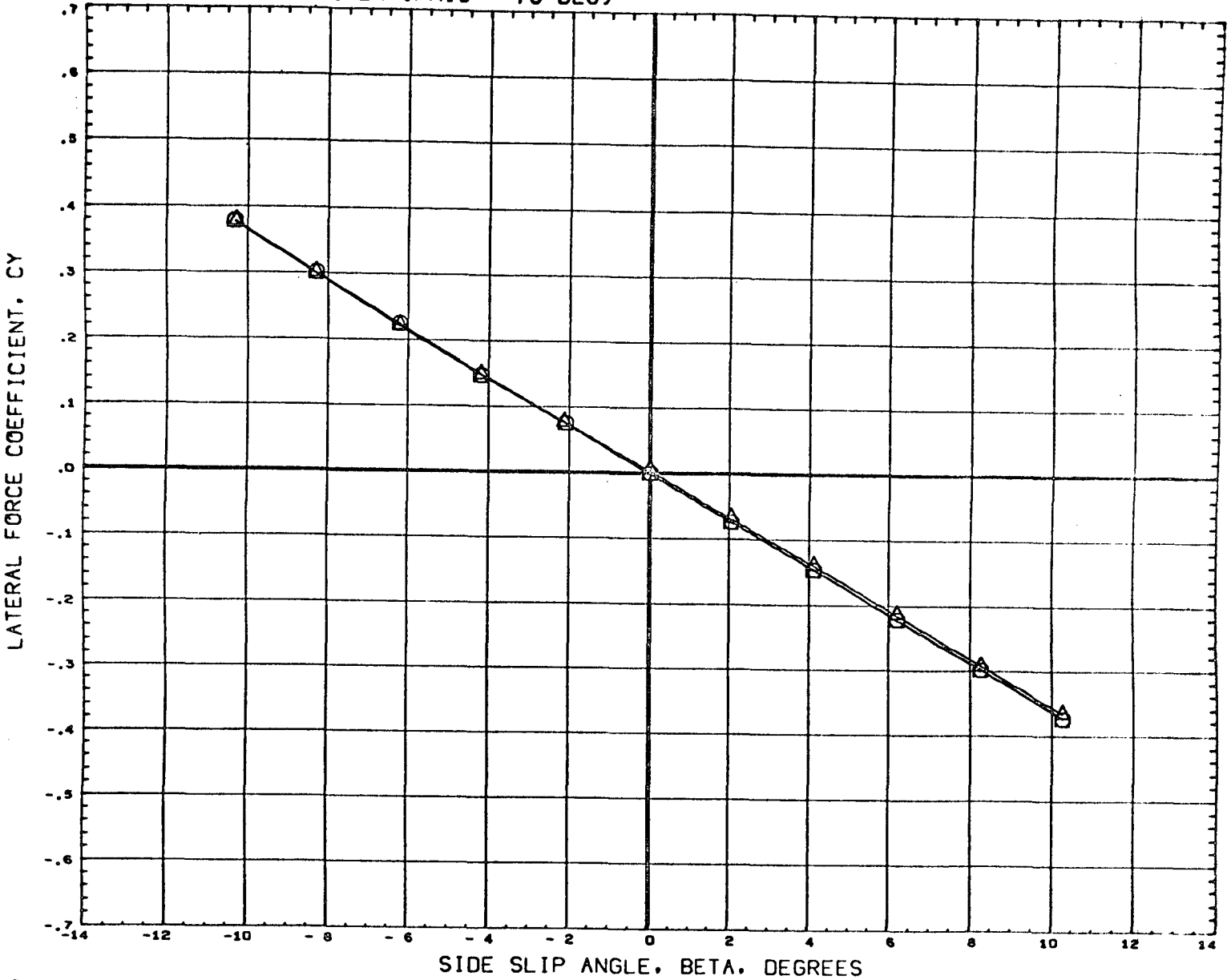


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	75.000	0.000	0.000
						SREF 7.8800 SQ. IN
						LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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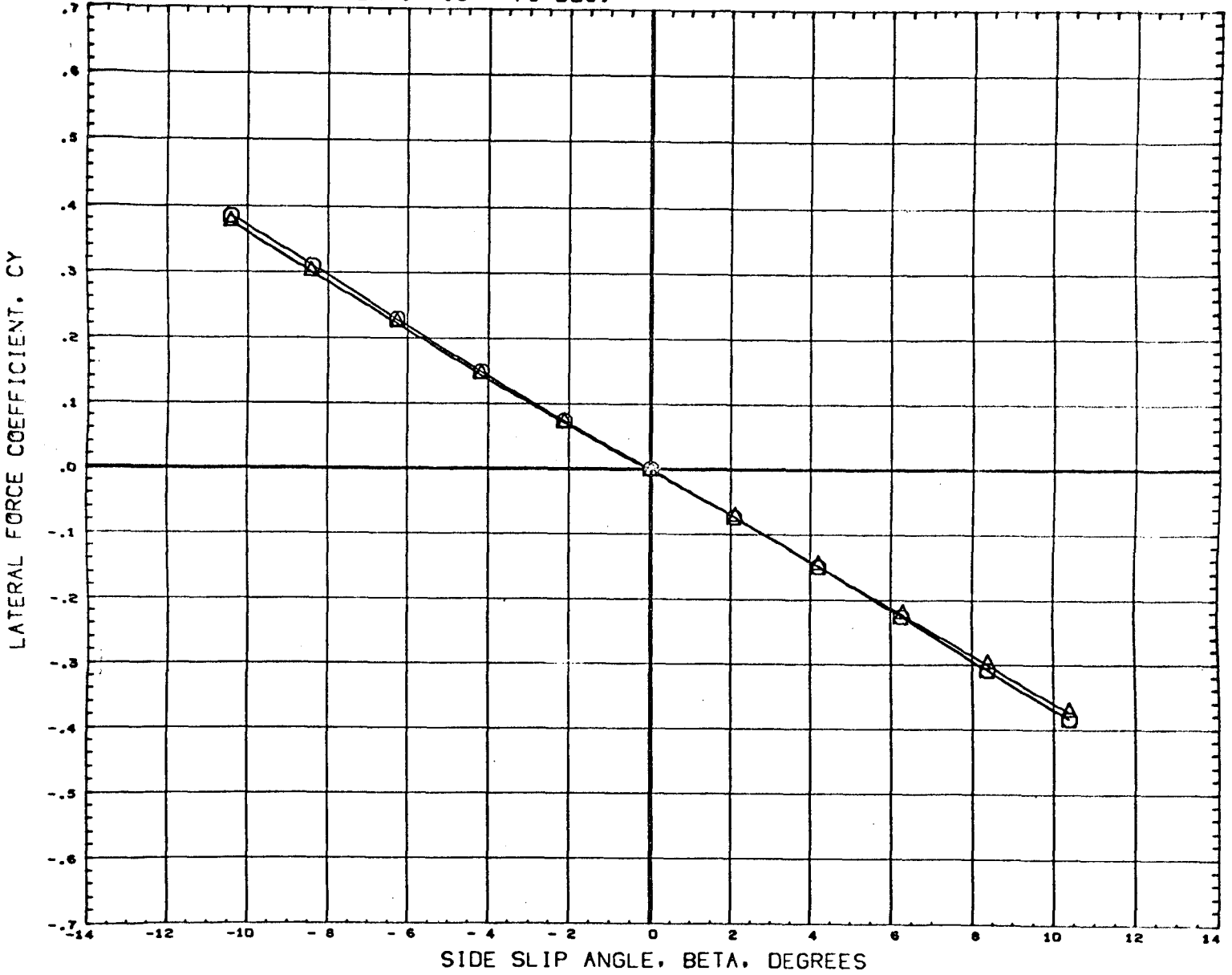
EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S5	-1.500	75.000	0.000	0.000
						SREF 7.8800 SO. IN
						LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



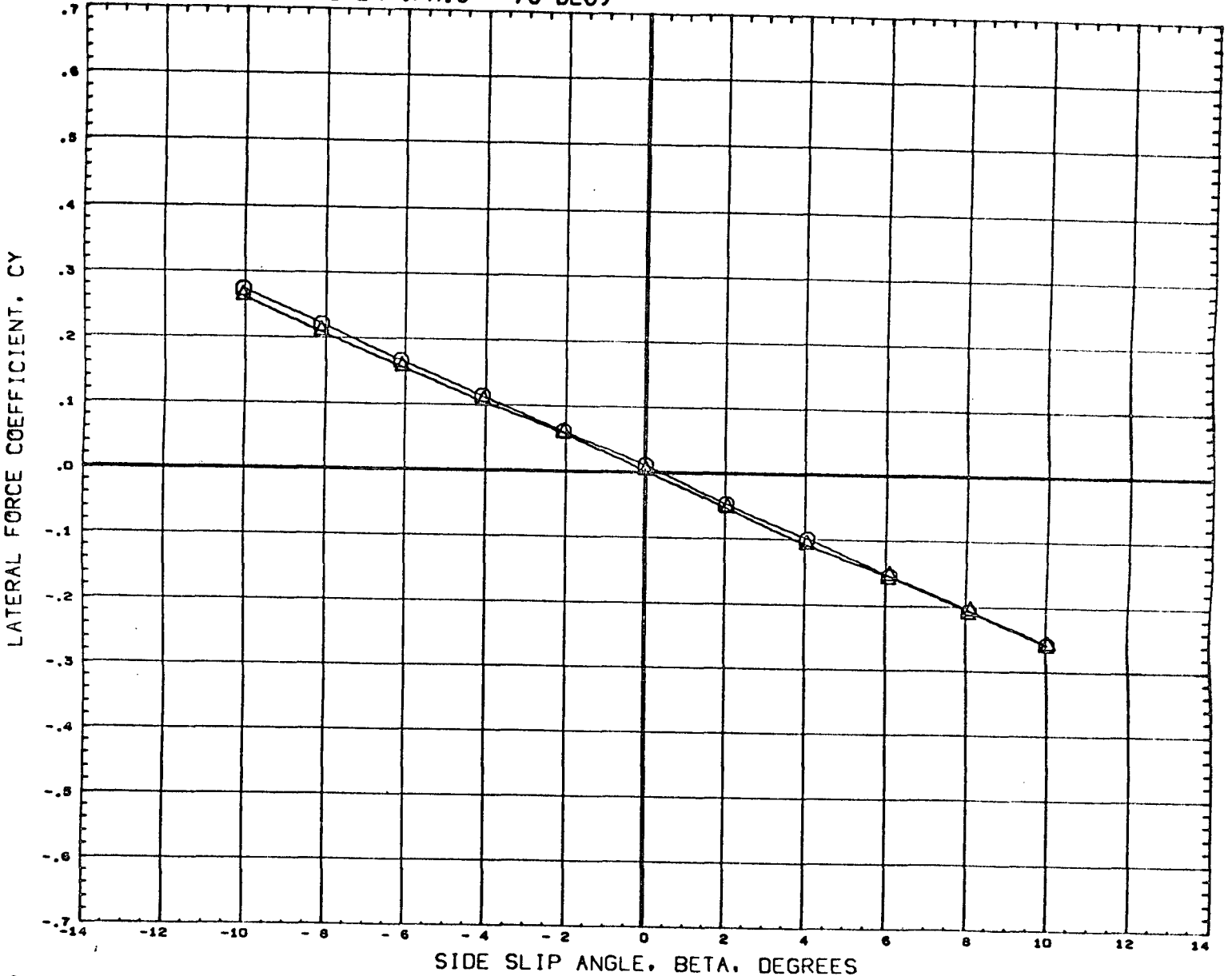
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

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# EFFECT OF SRM DIAMETER (PHIS = 75 DEG)



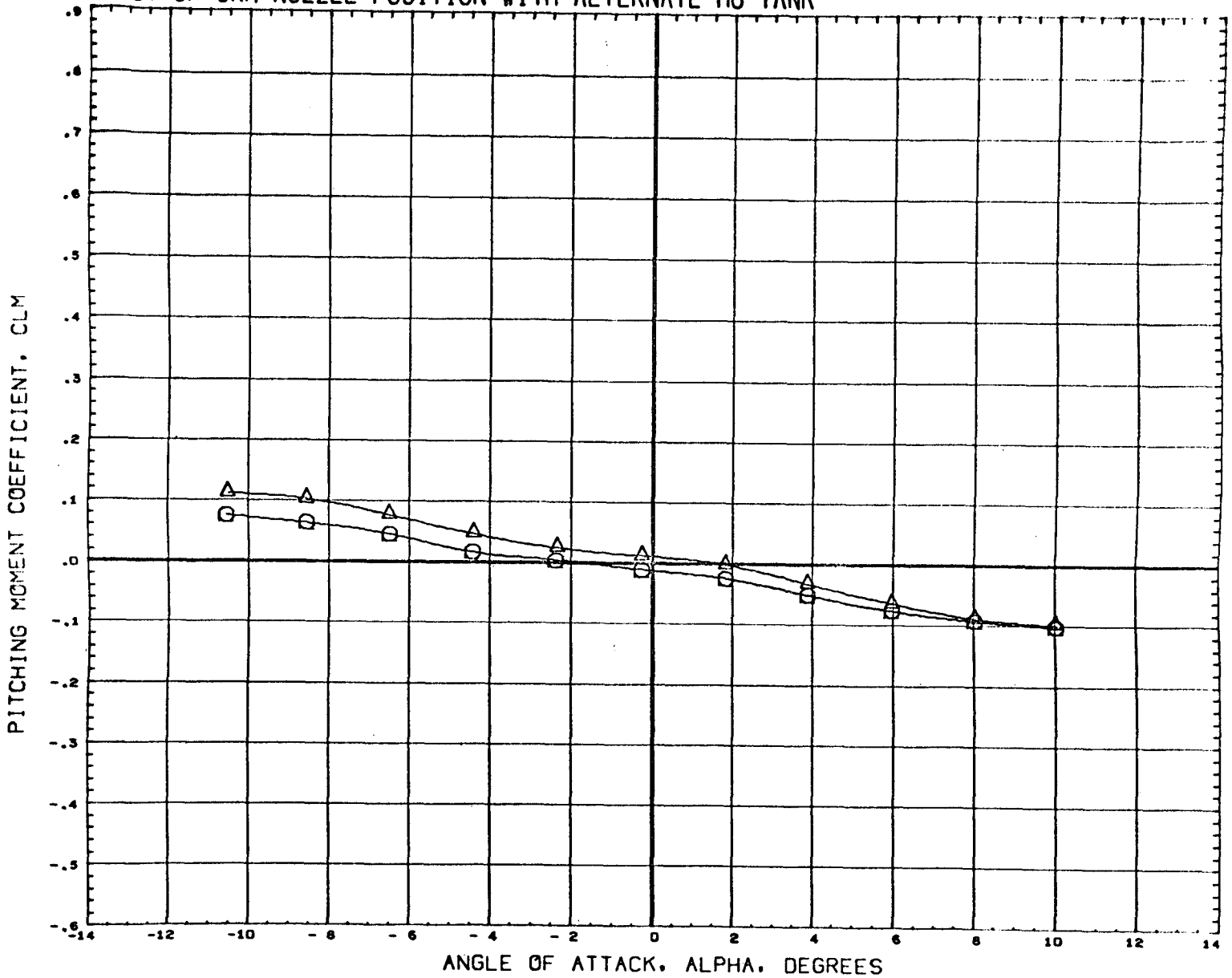
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

D



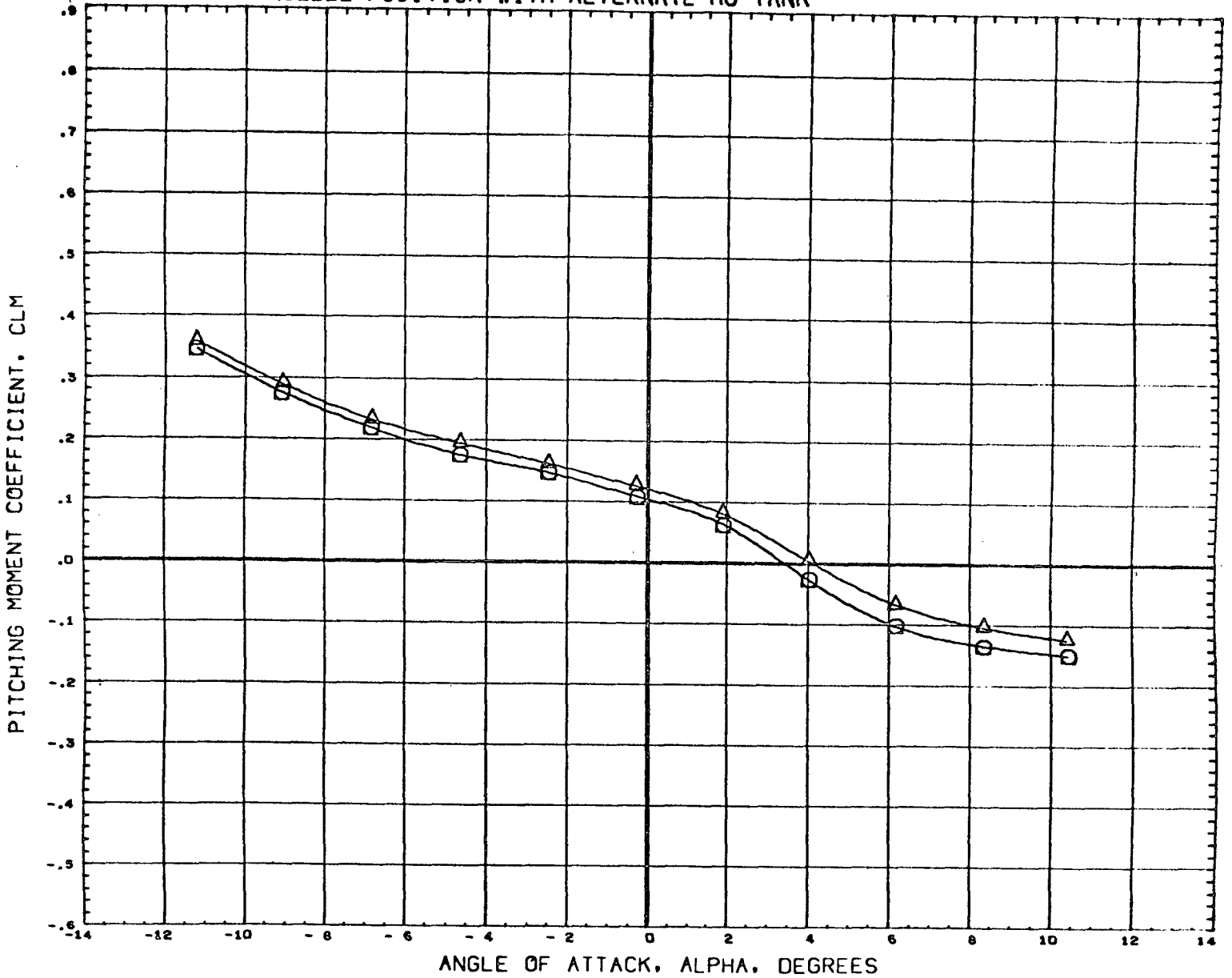
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE H0 TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

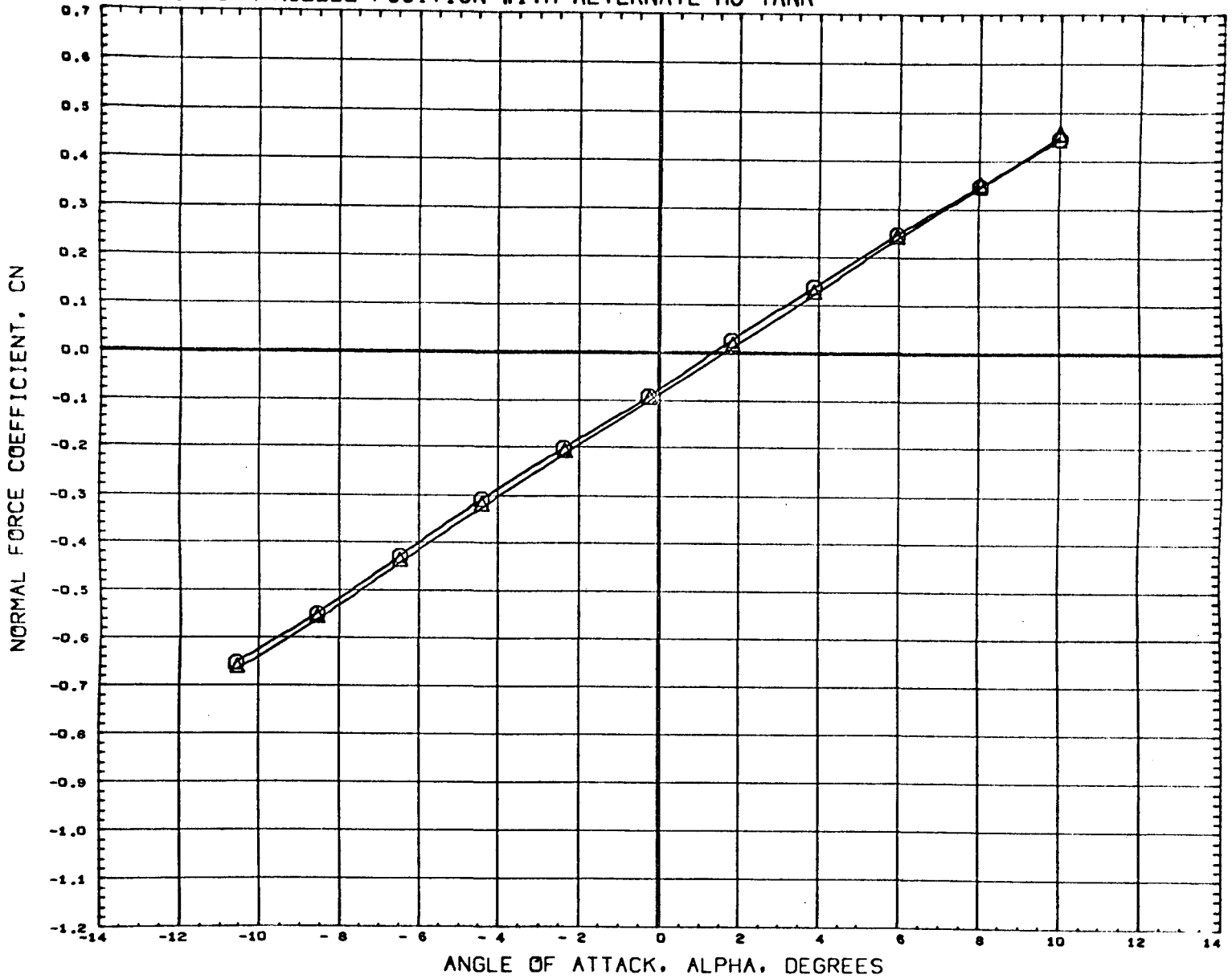
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 39. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

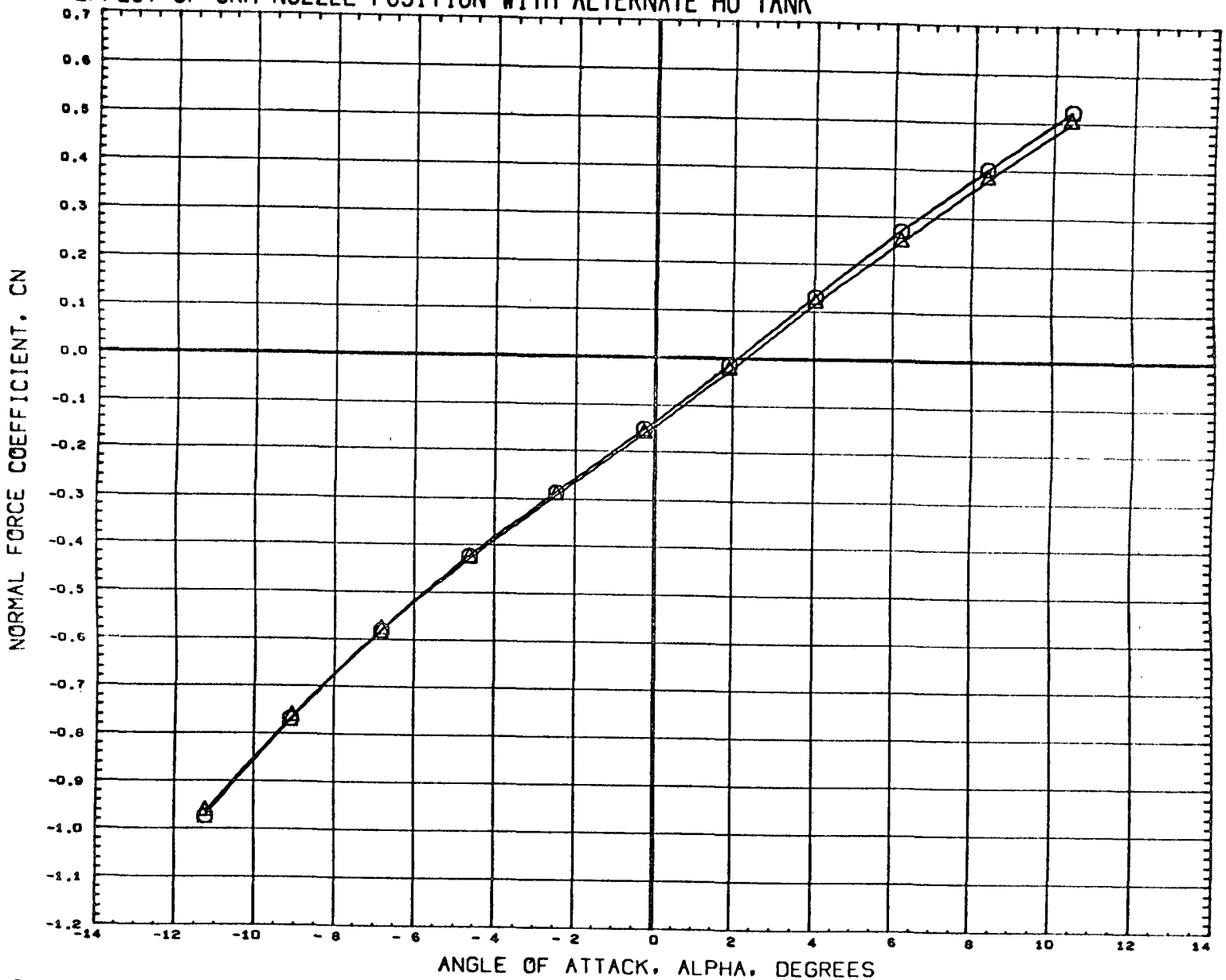
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75,000	0,000	0,000	0,000	SREF 7.8800 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75,000	30,000	0,000	0,000	LREF 2,0280 IN.
						BREF 4,4600 IN.
						XMRP 3,3600 IN.
						YMRP 0,0000 IN.
						ZMRP 0,2480 IN.
						SCALE 0,0040 SCALE

MACH .60

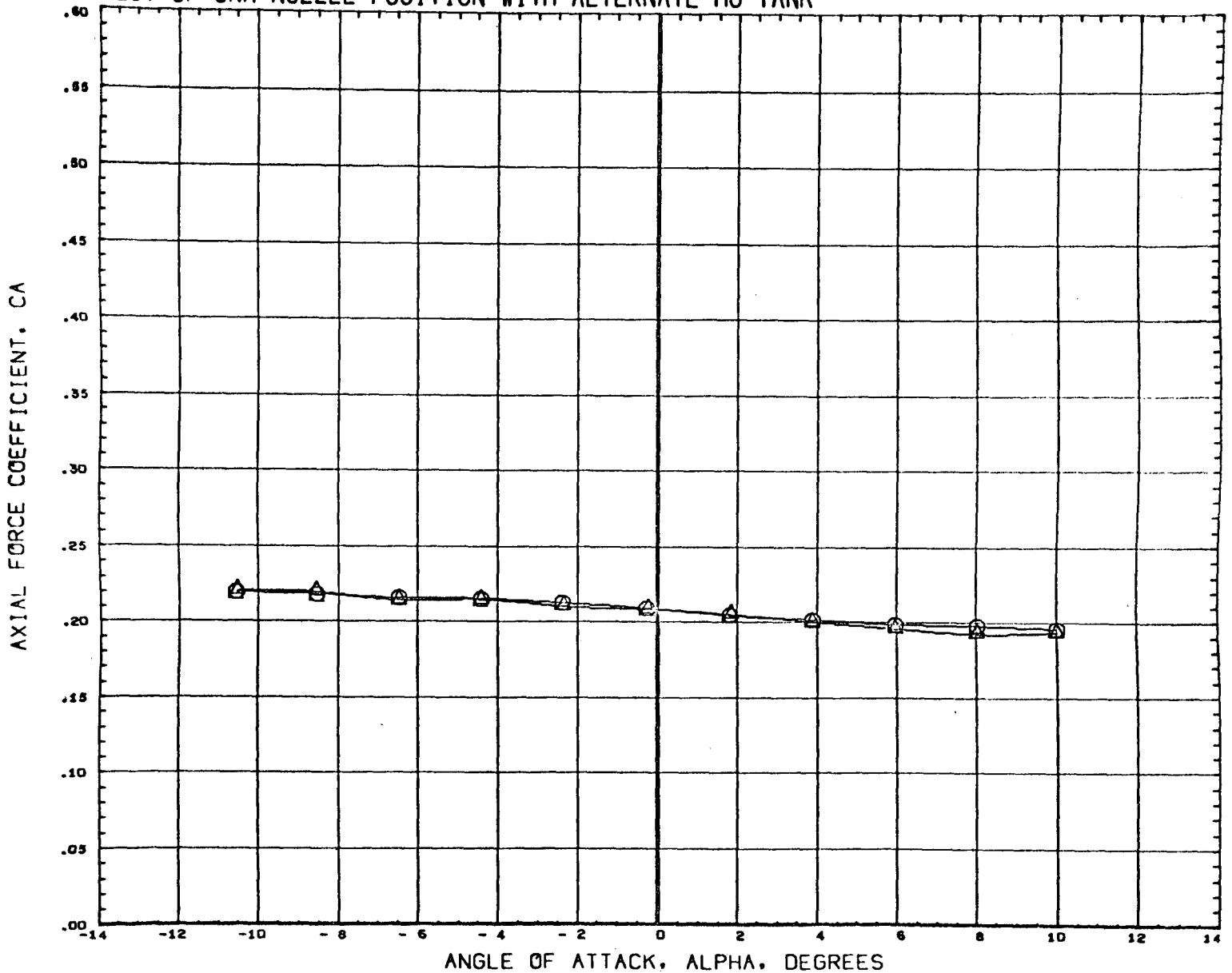
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

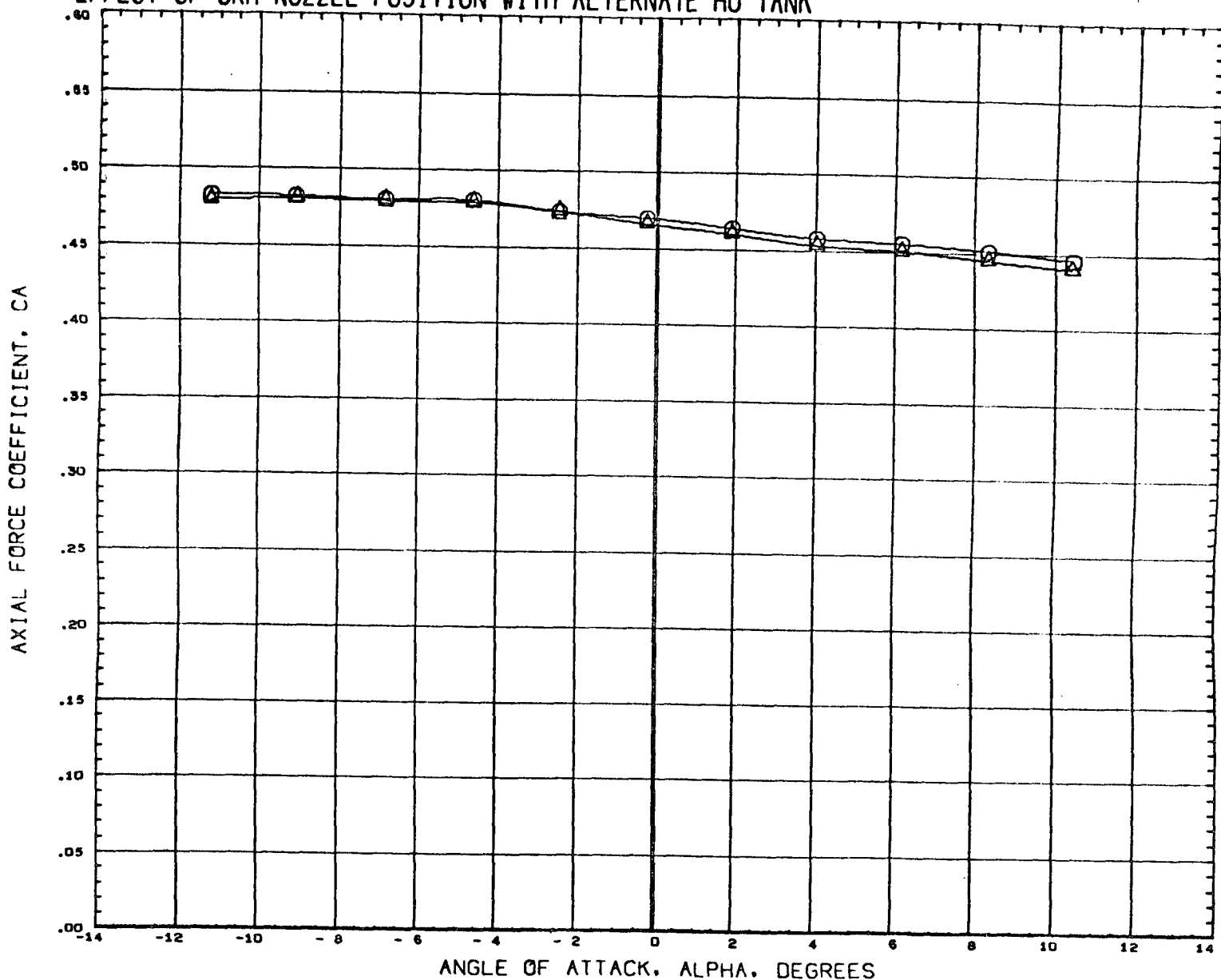
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE H0 TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAM2	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

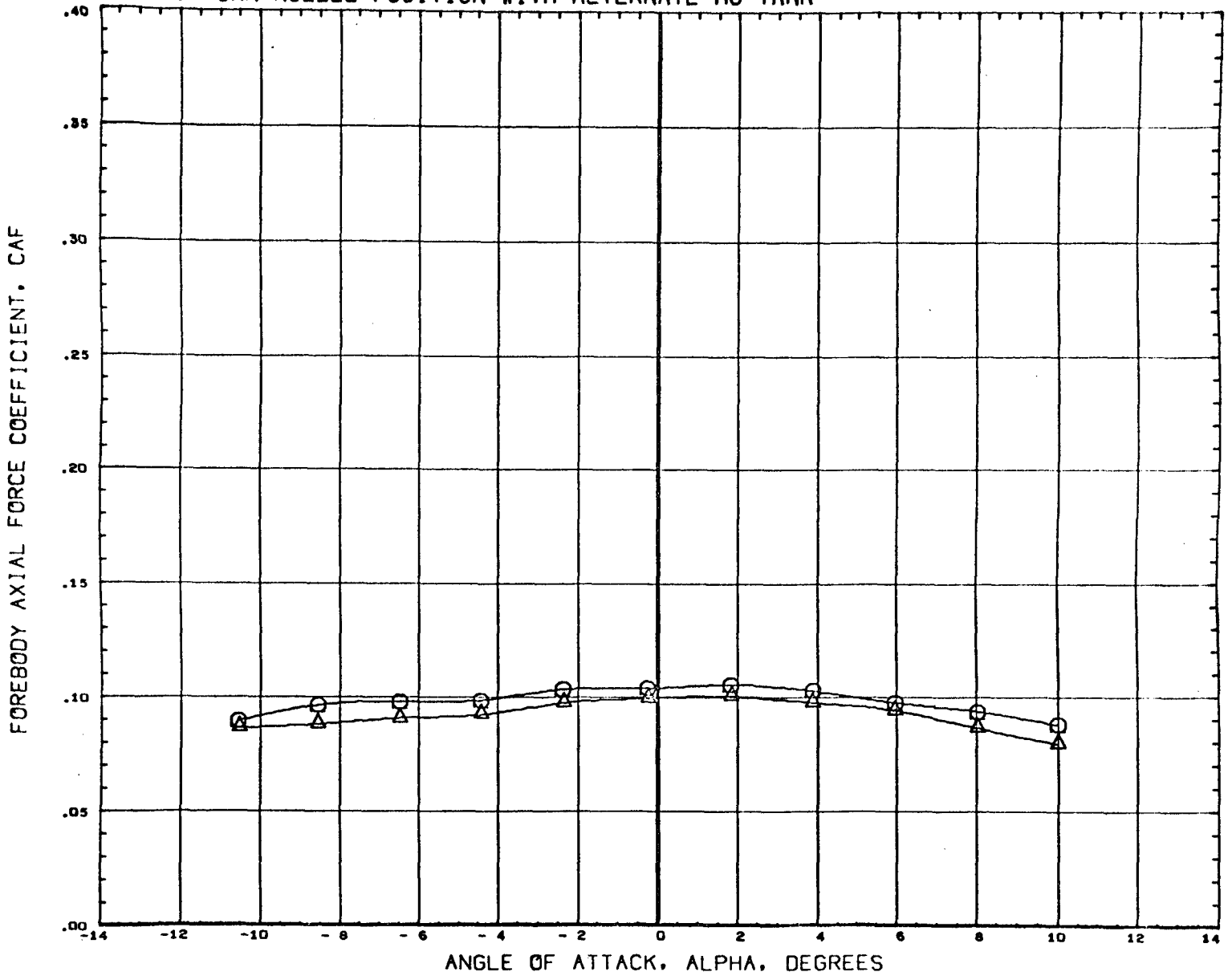
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75,000	0,000	0,000	0,000	SREF	7.8800 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75,000	30,000	0,000	0,000	LREF	2.0280 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.20

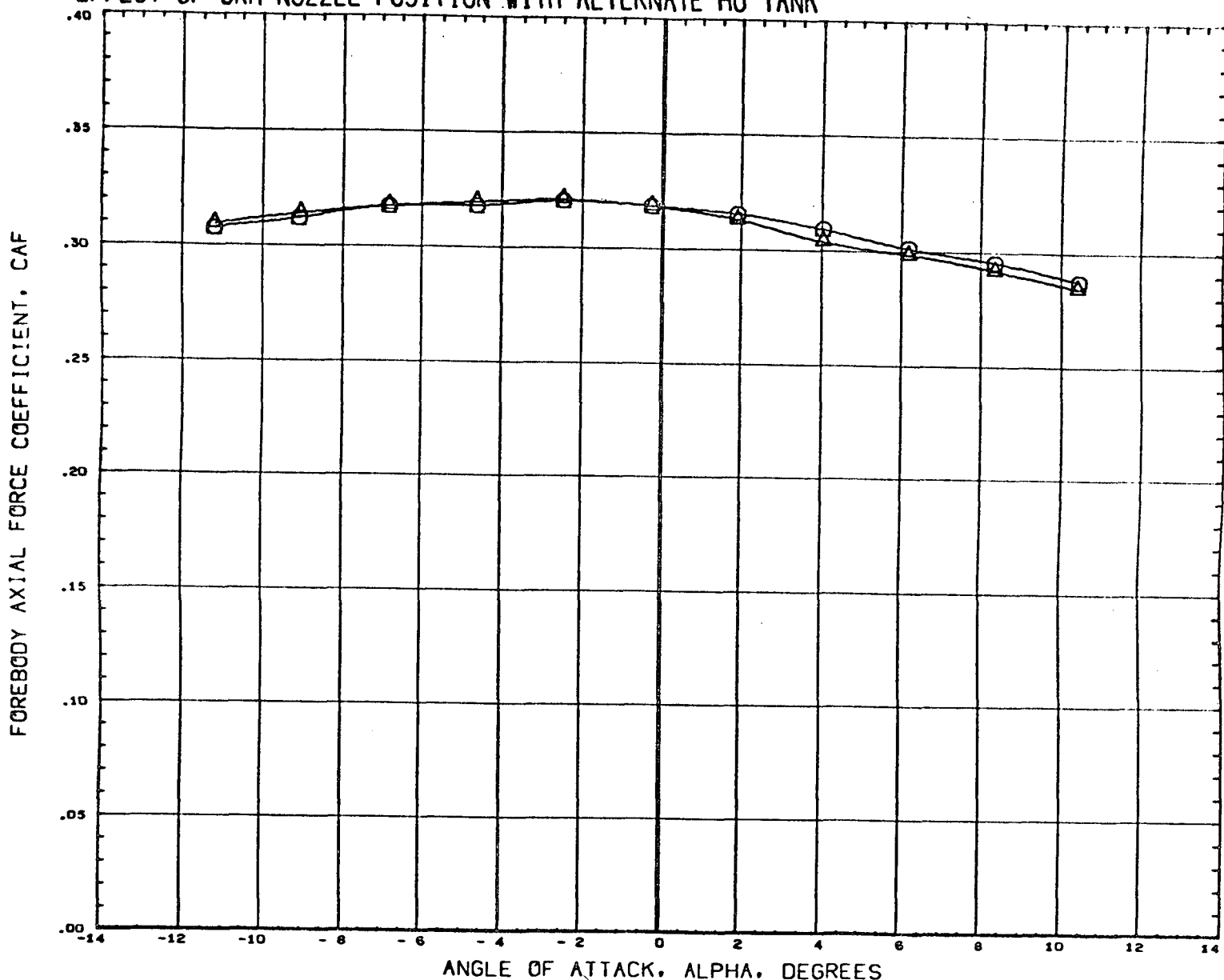
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK

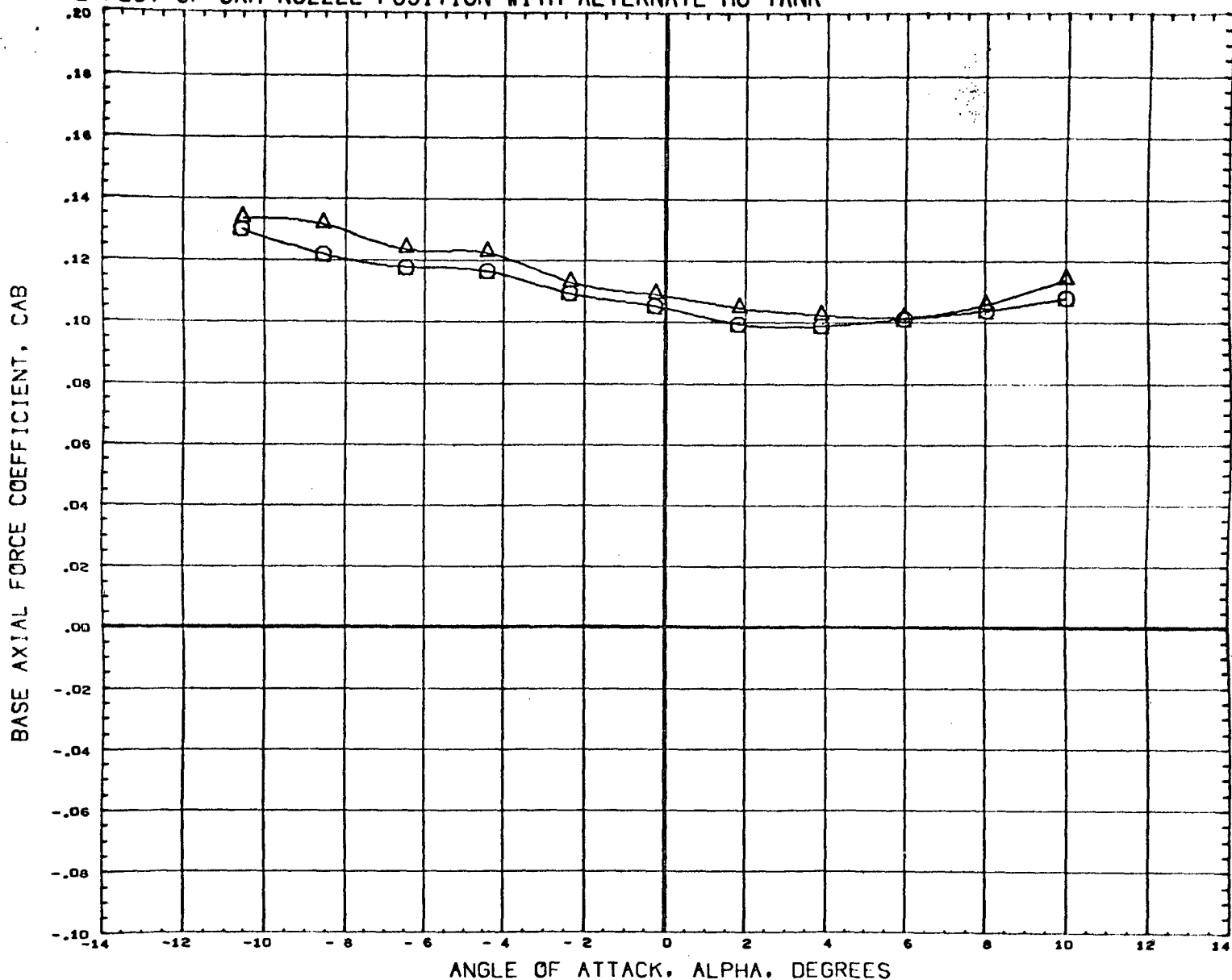


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



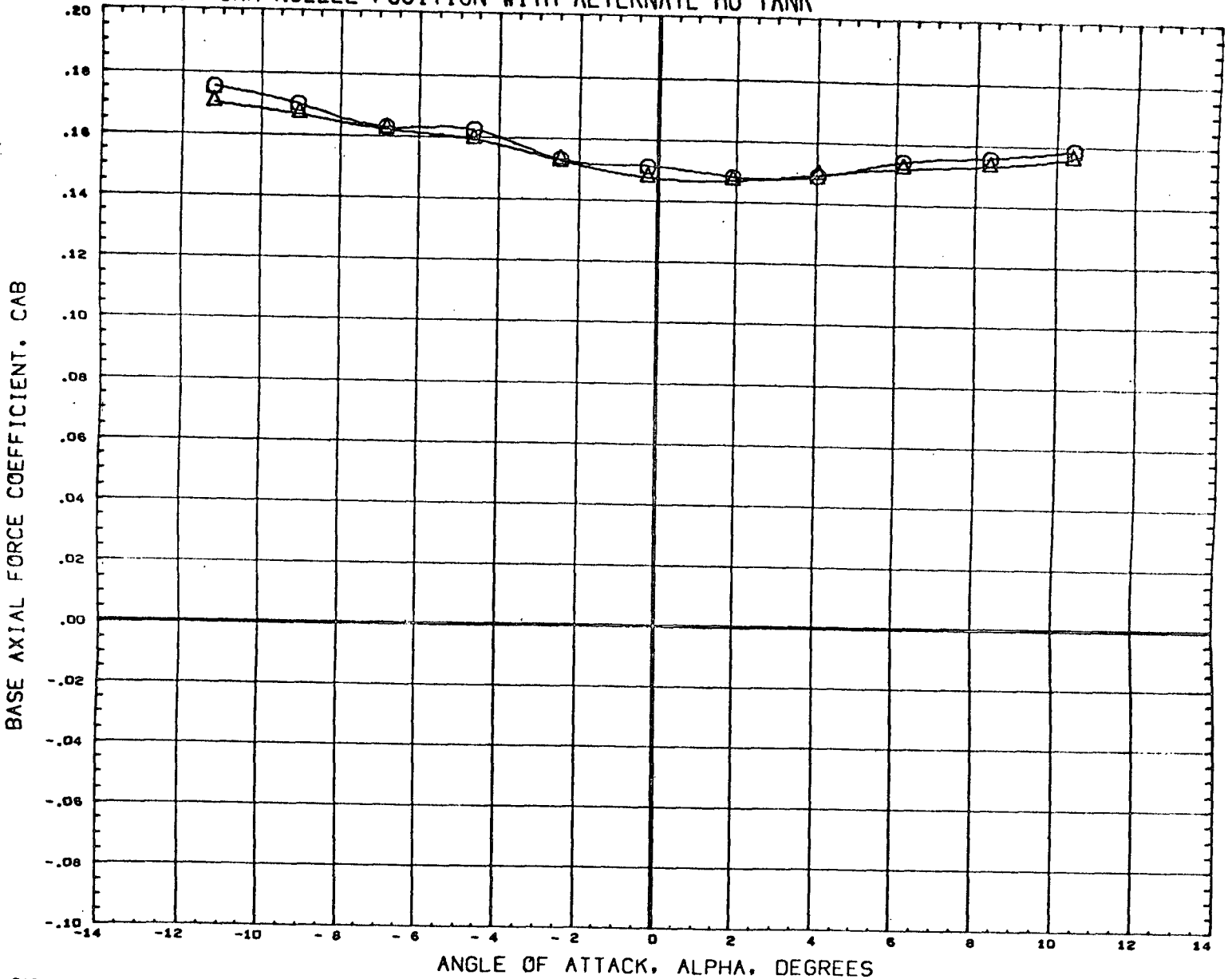
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF	7.8800 89. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF	2.0260 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH .60

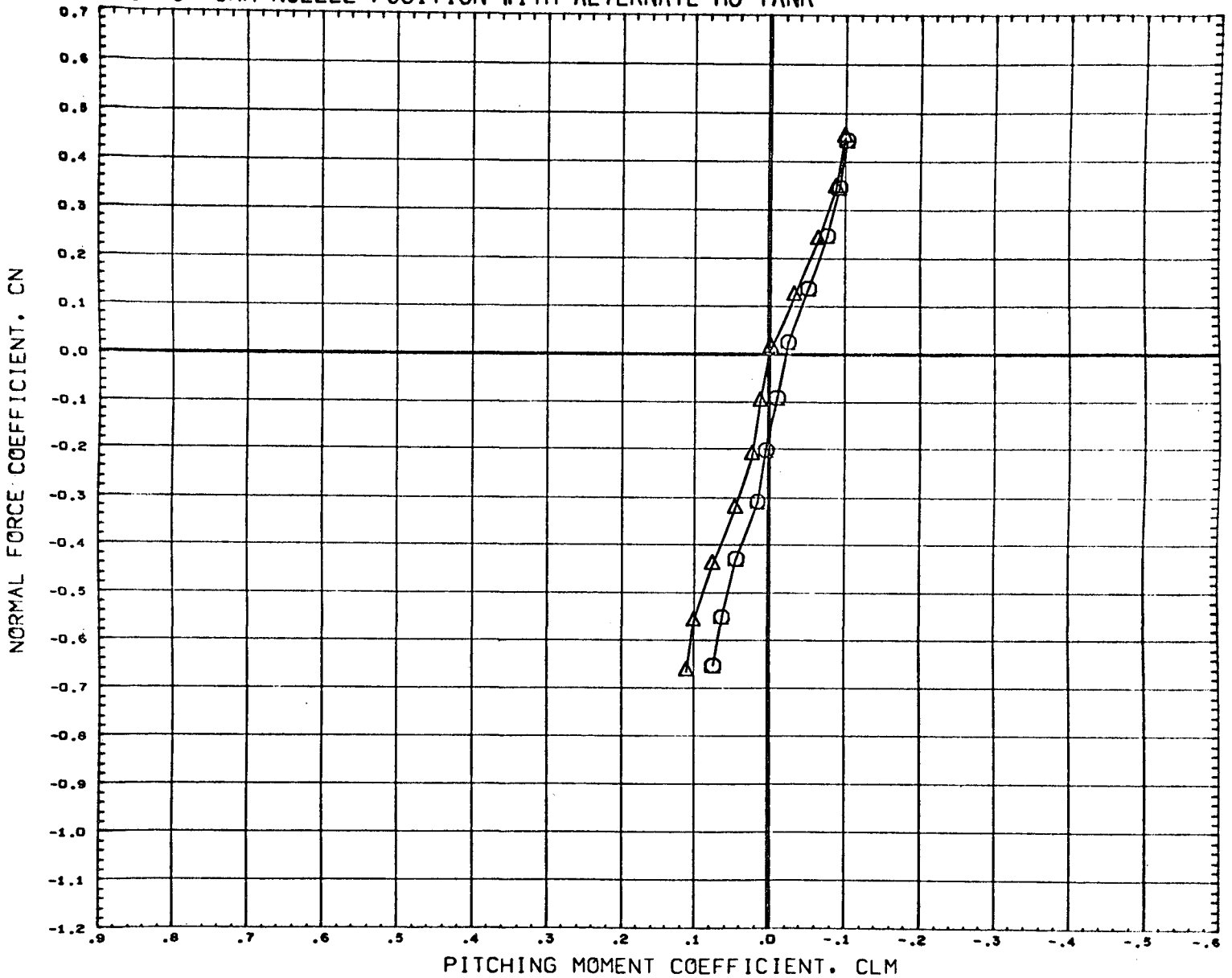
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE H0 TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PH15	GAM2	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75,000	0,000	0,000	0,000	SREF 7.8800 50. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75,000	30,000	0,000	0,000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE H0 TANK



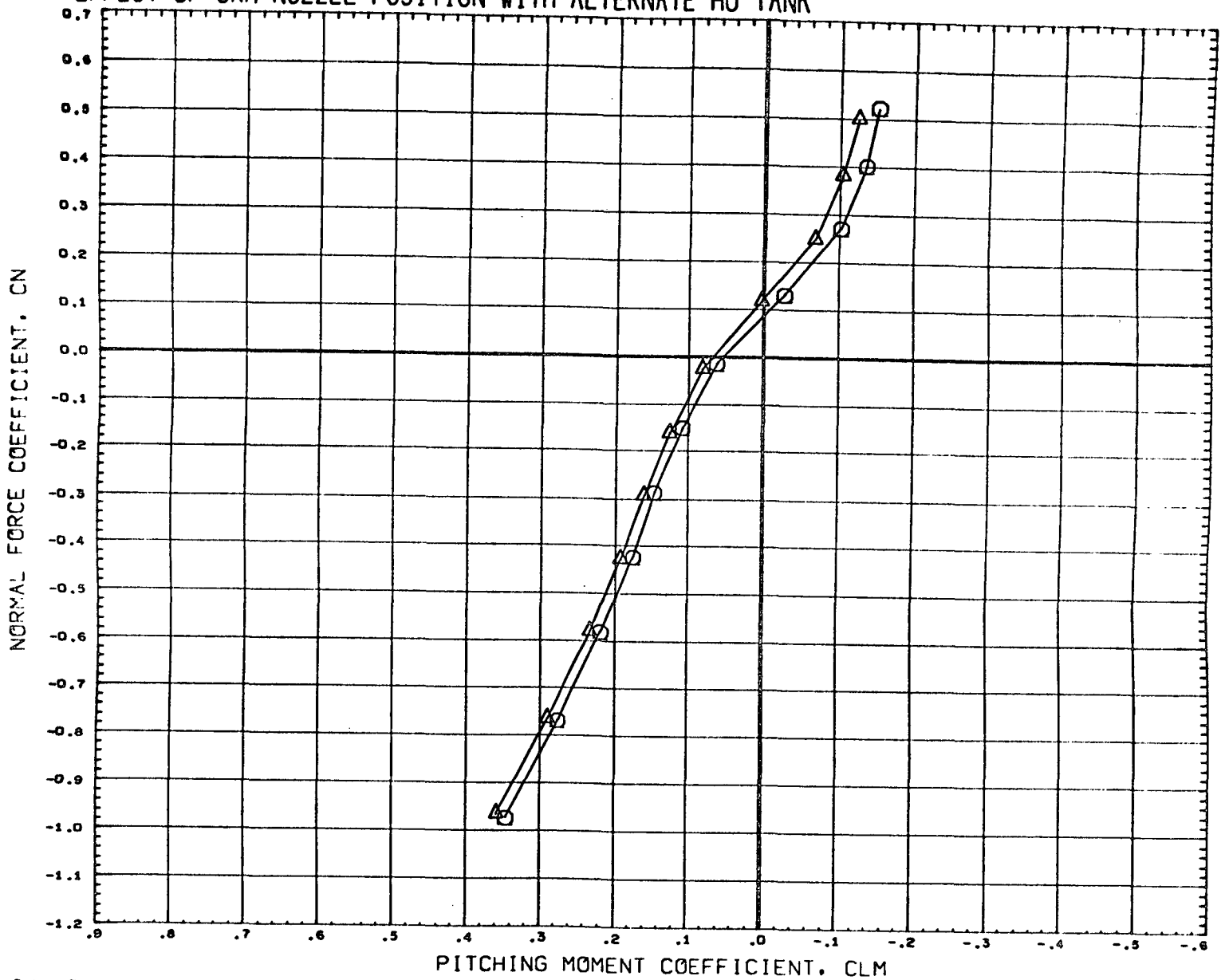
DATA SET SYMBO	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRF 3.3600 IN.
						YMRF 0.0000 IN.
						ZMRF 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

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# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE H0 TANK

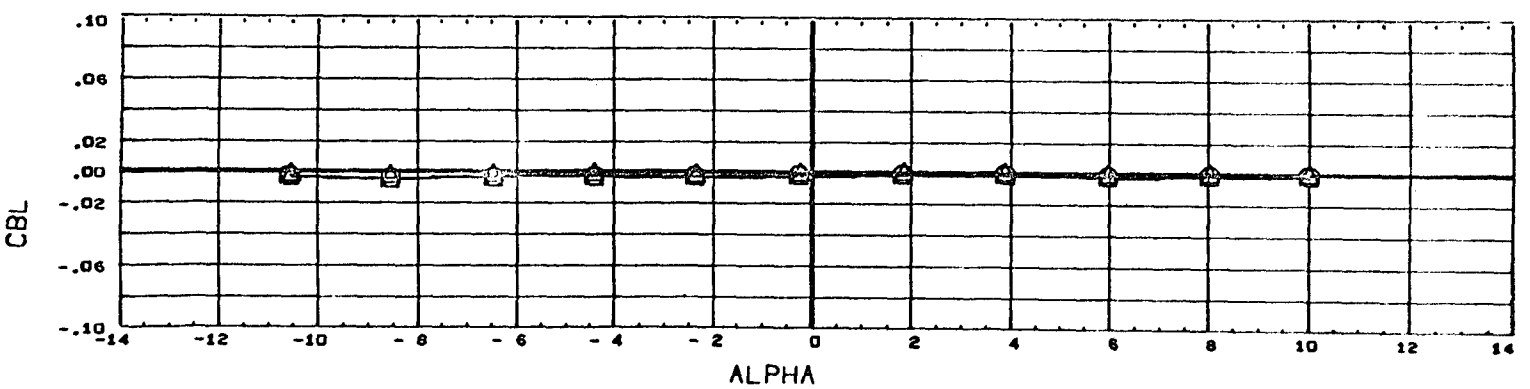
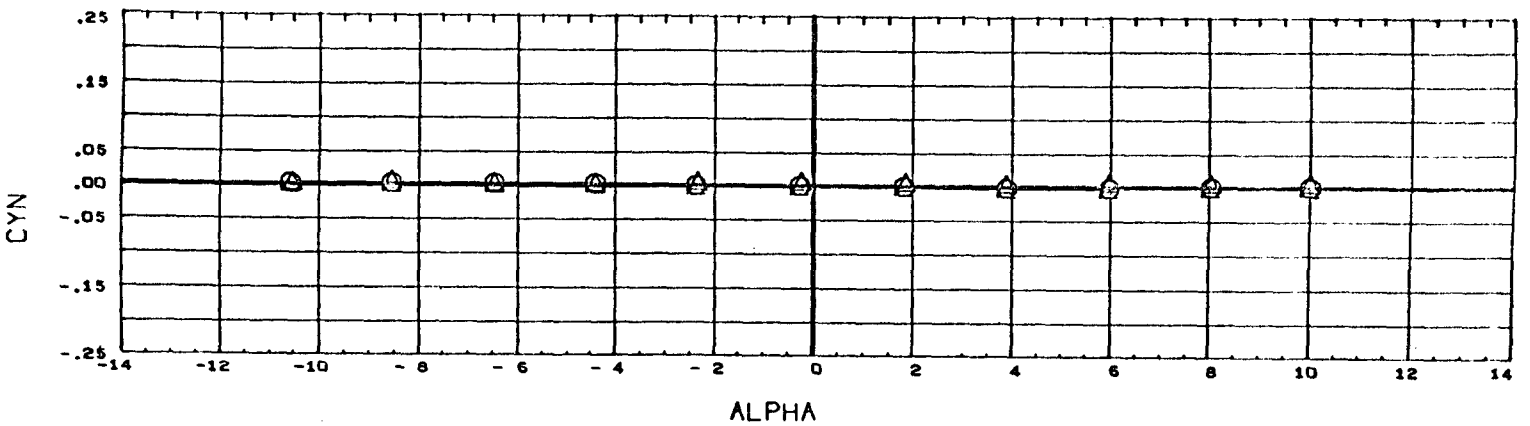
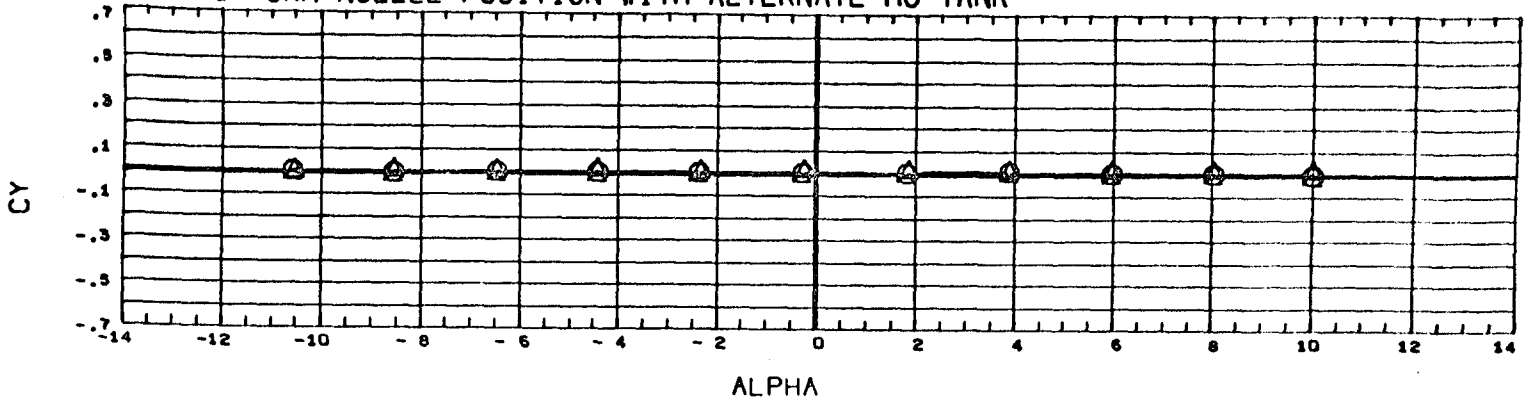


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF	2.0280 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.20

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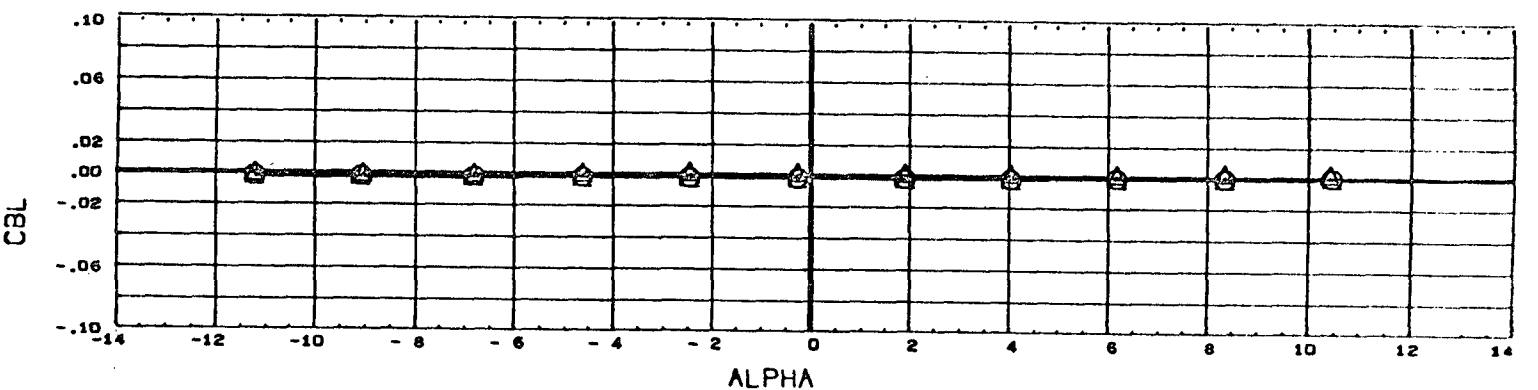
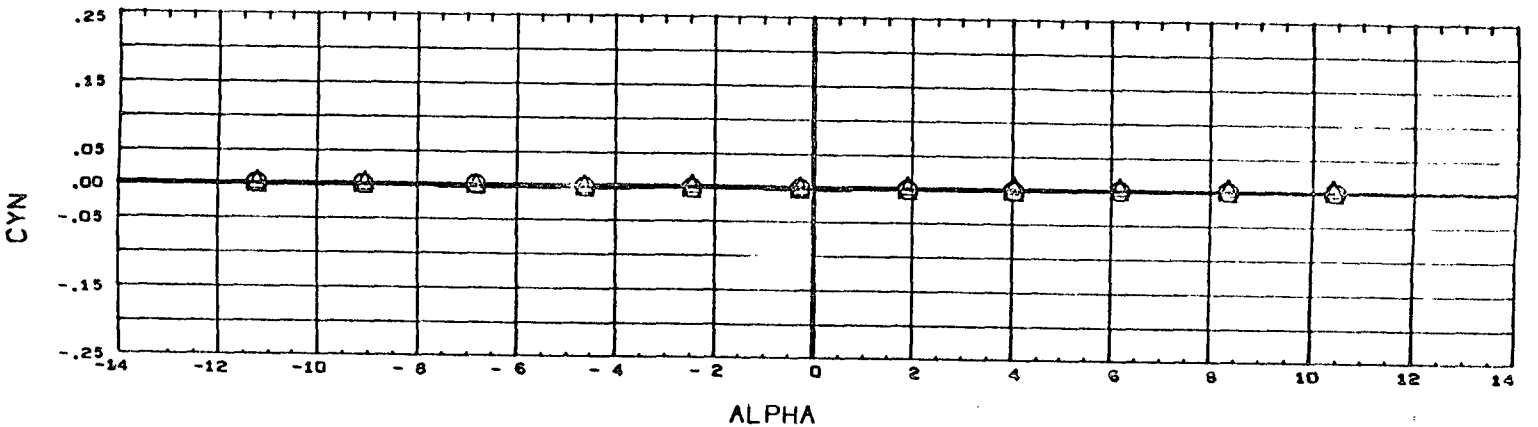
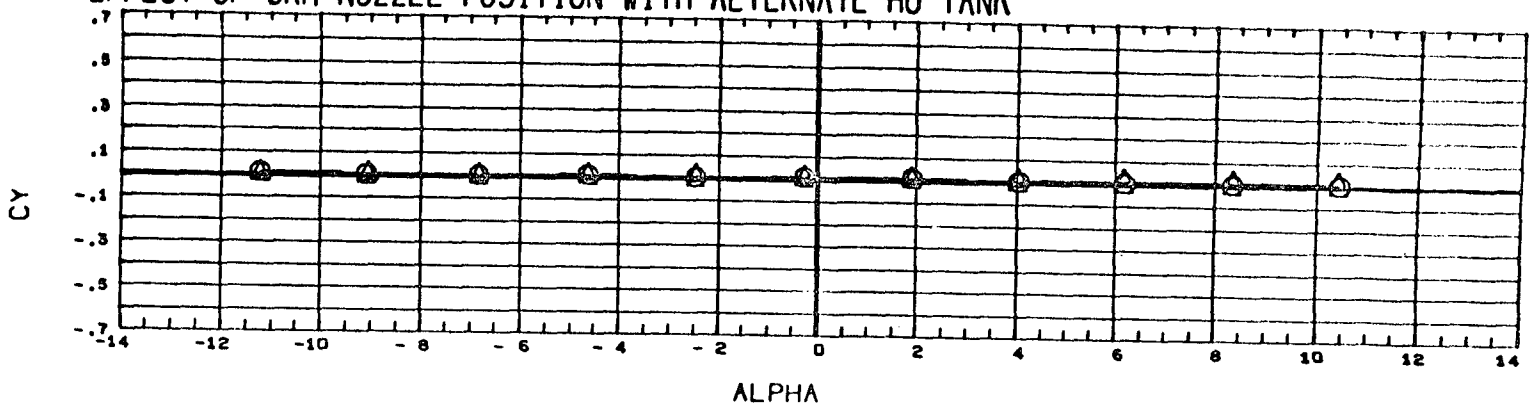
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71081)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

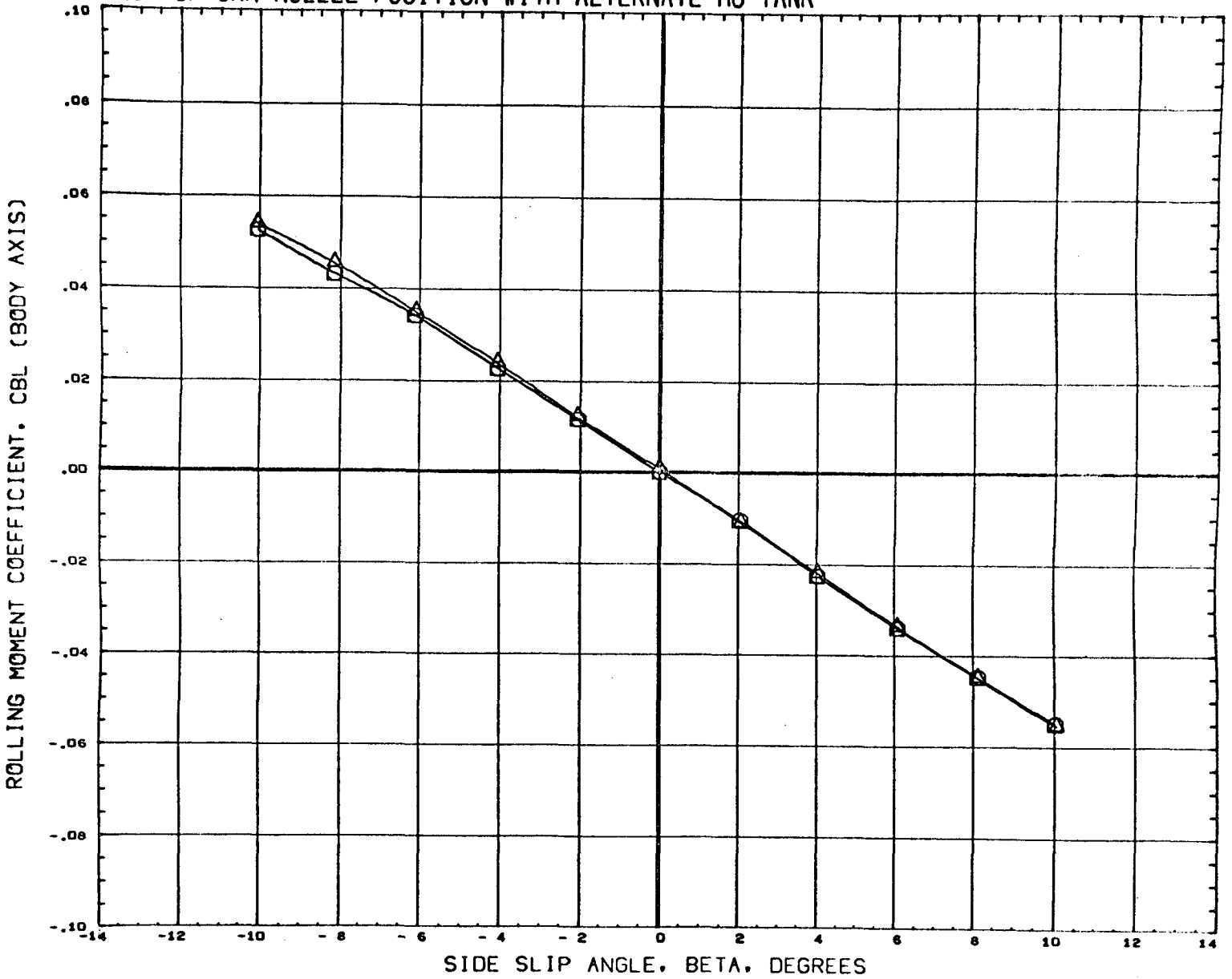
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HQ TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

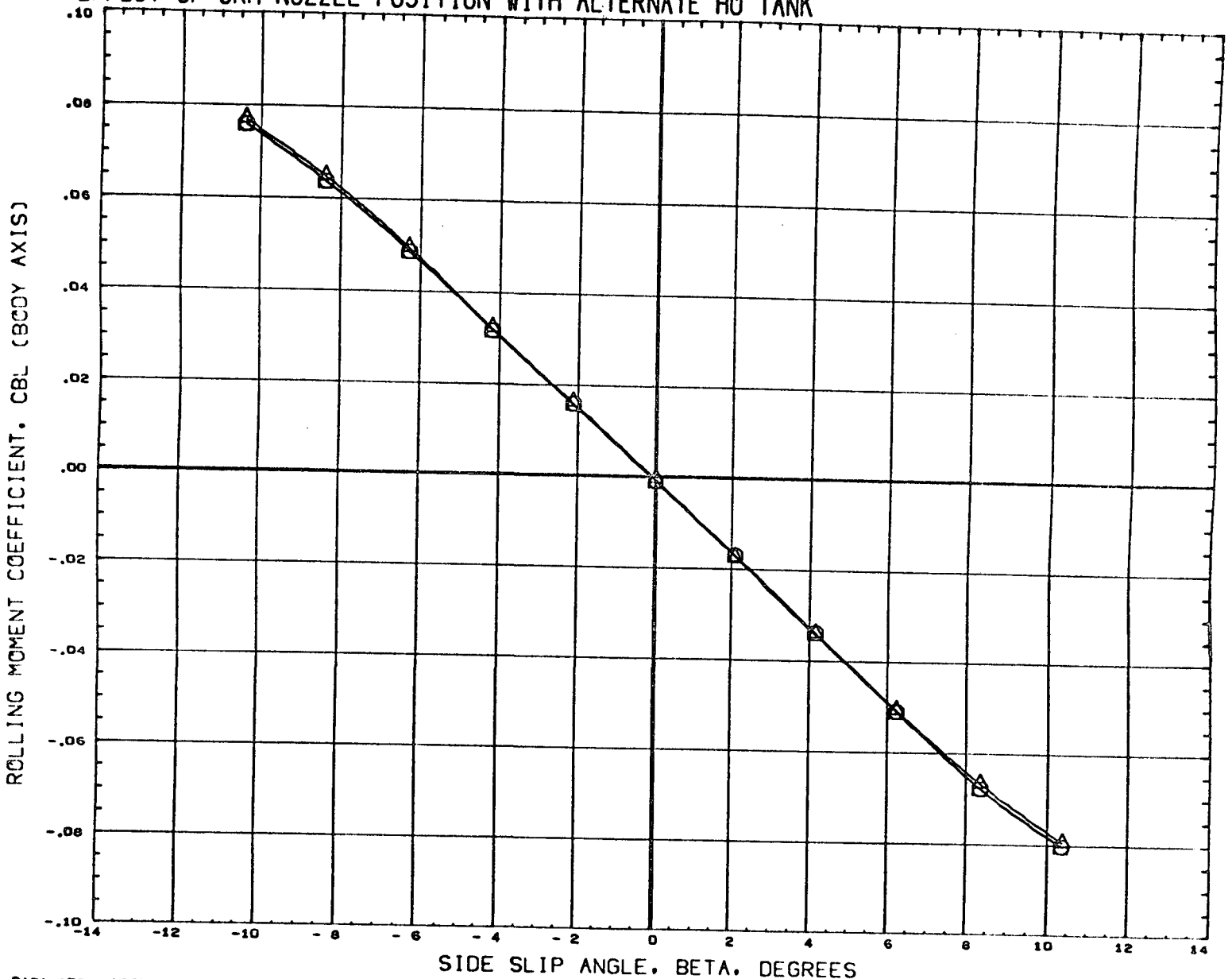
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE H0 TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71082)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK

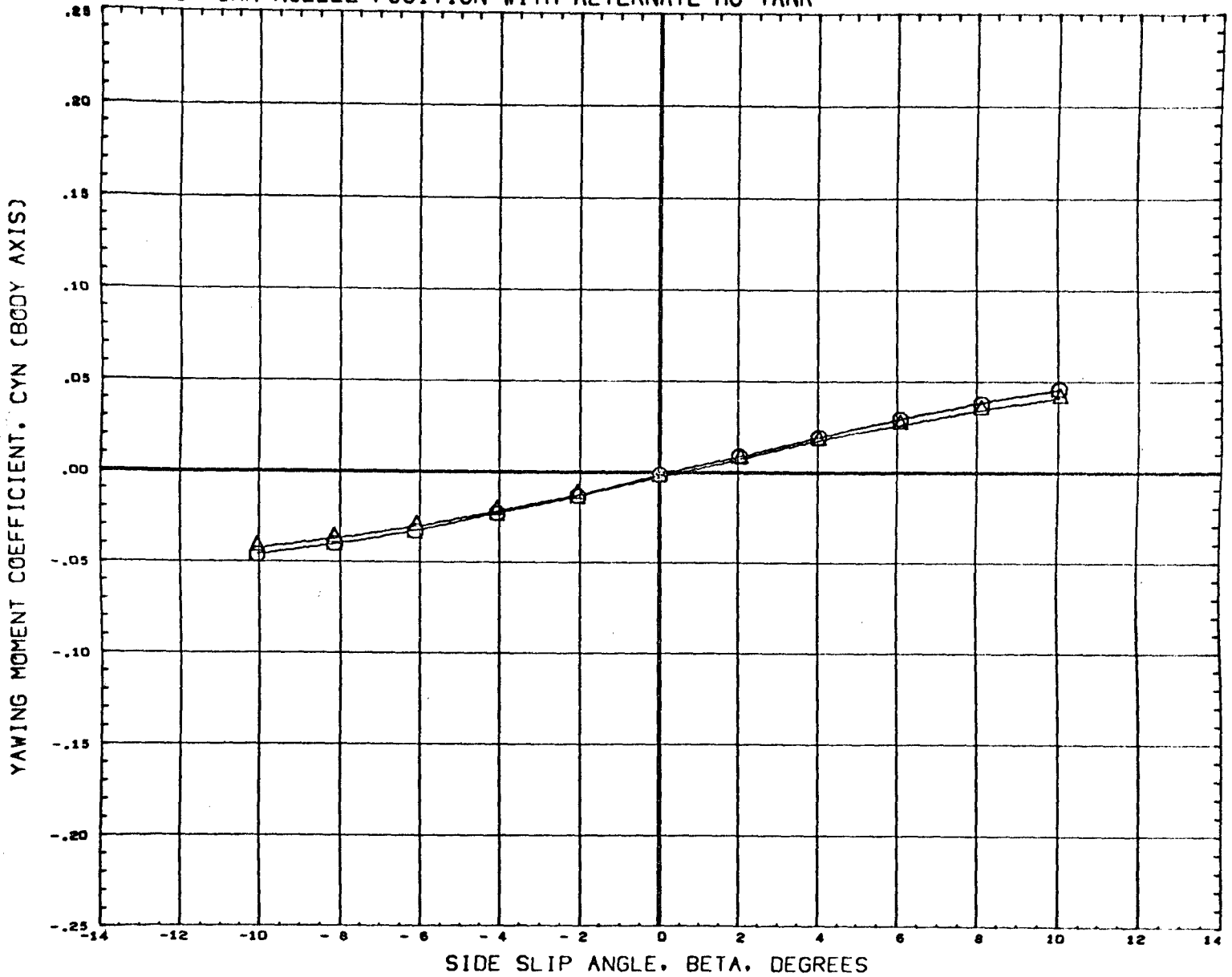


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71092)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



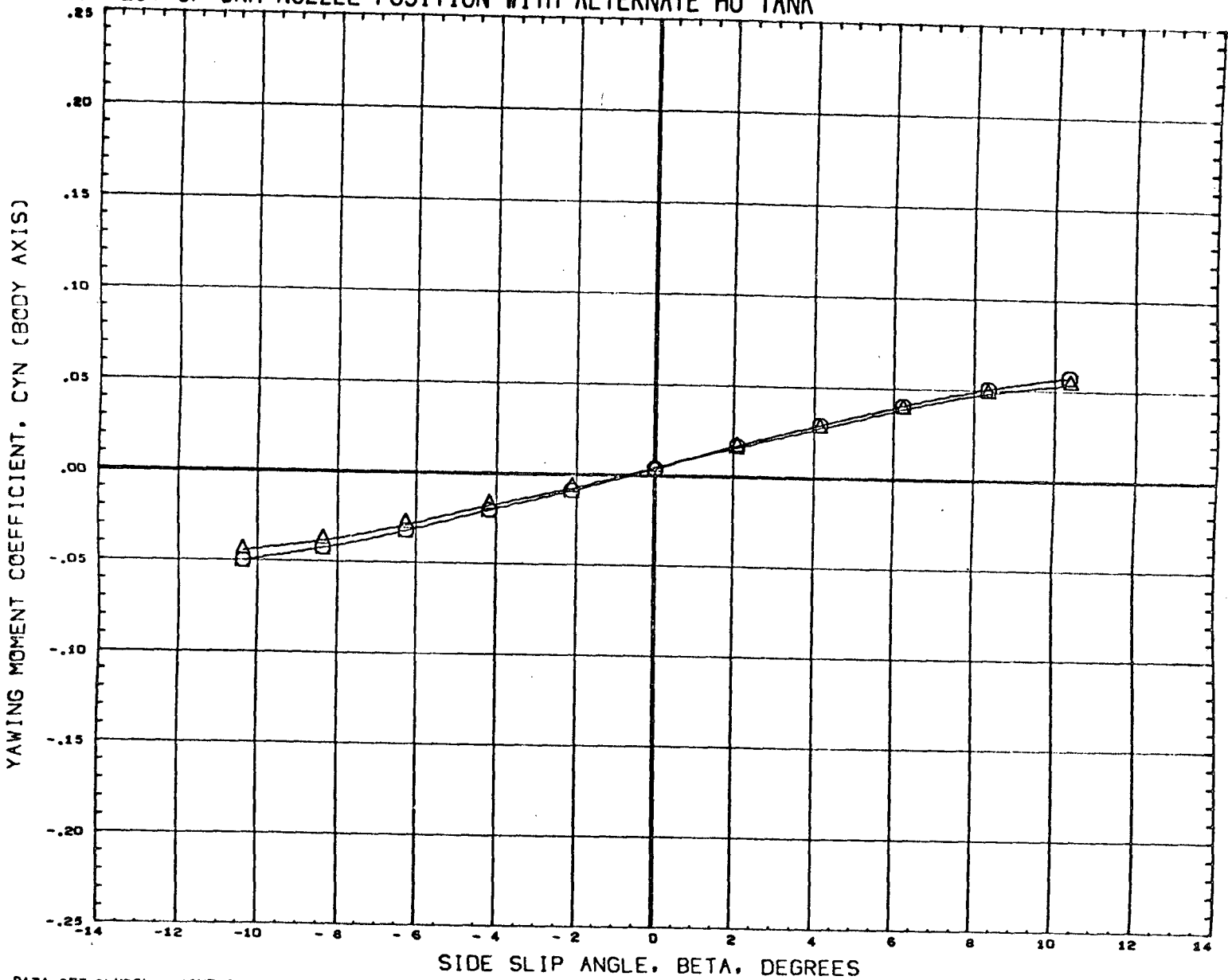
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN.
(A71082)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

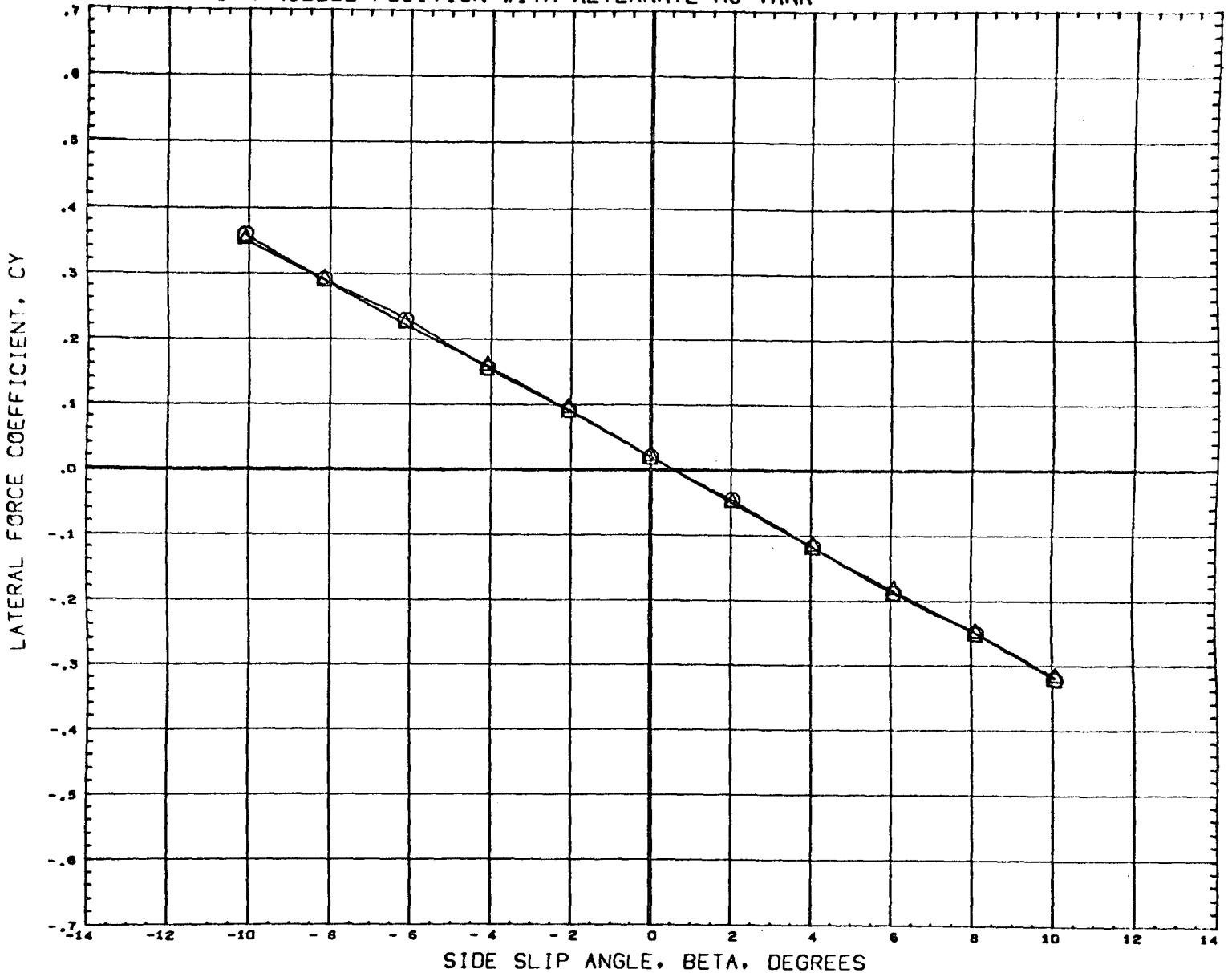
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE H0 TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

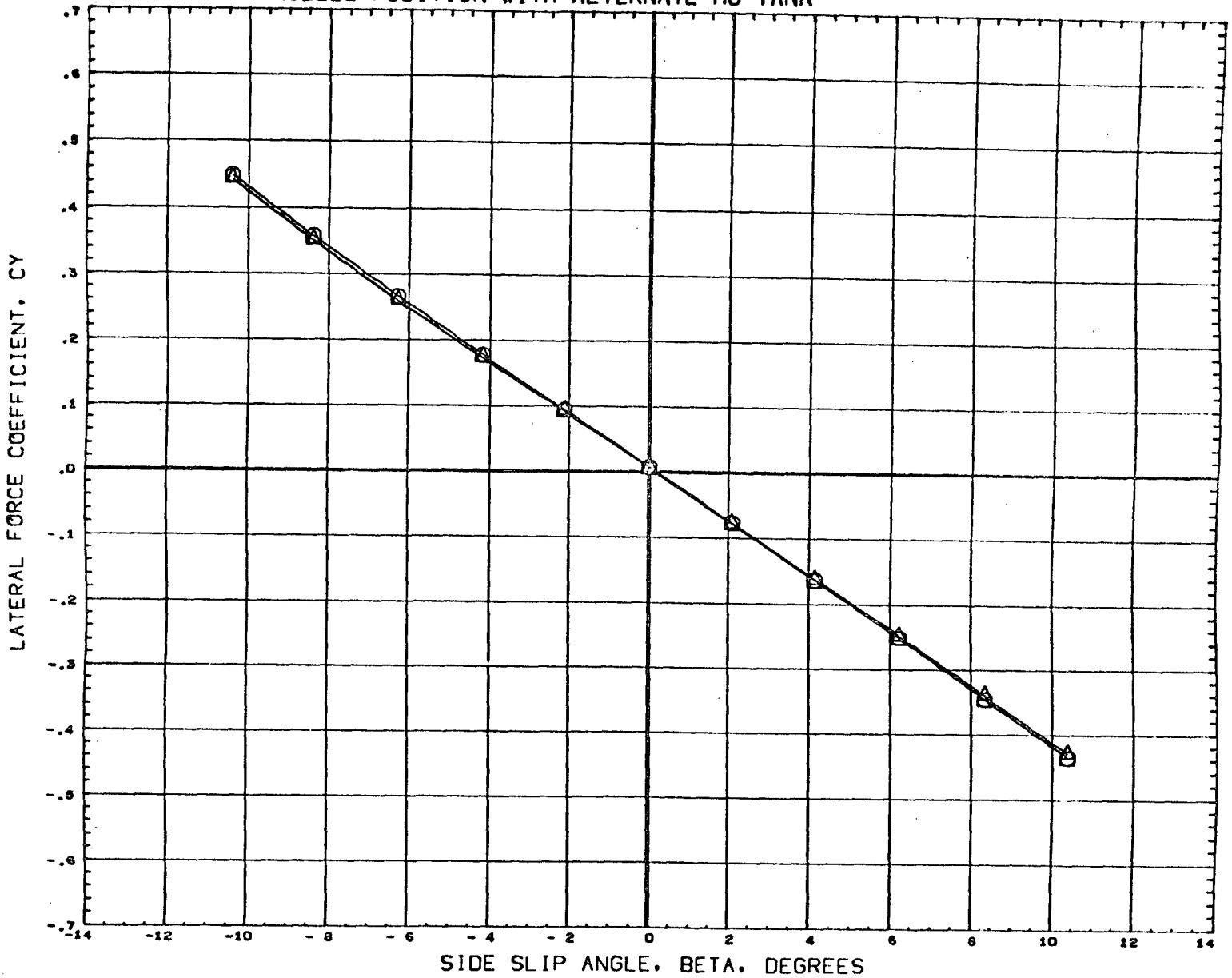
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501S1	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71082)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501S1	75.000	30.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

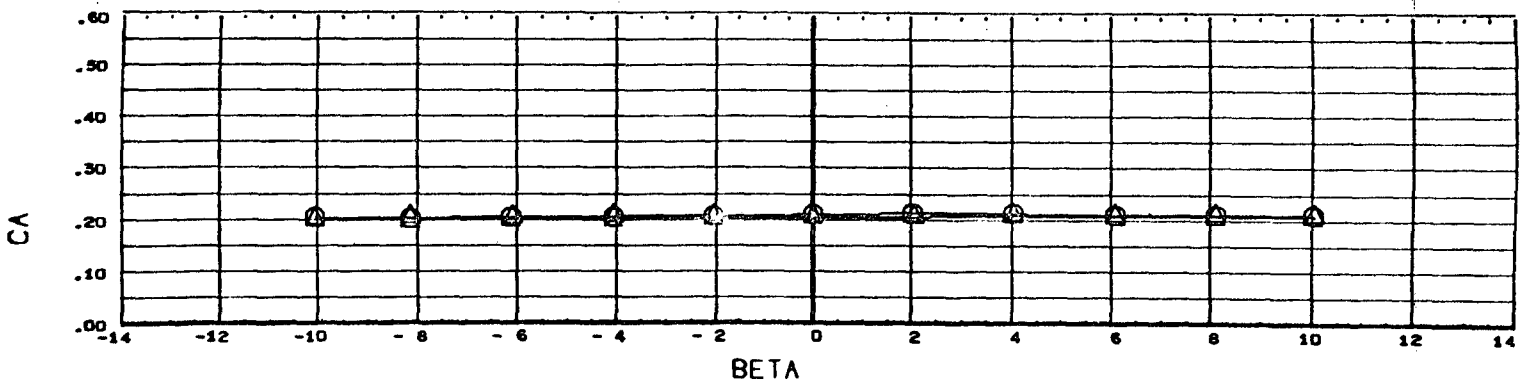
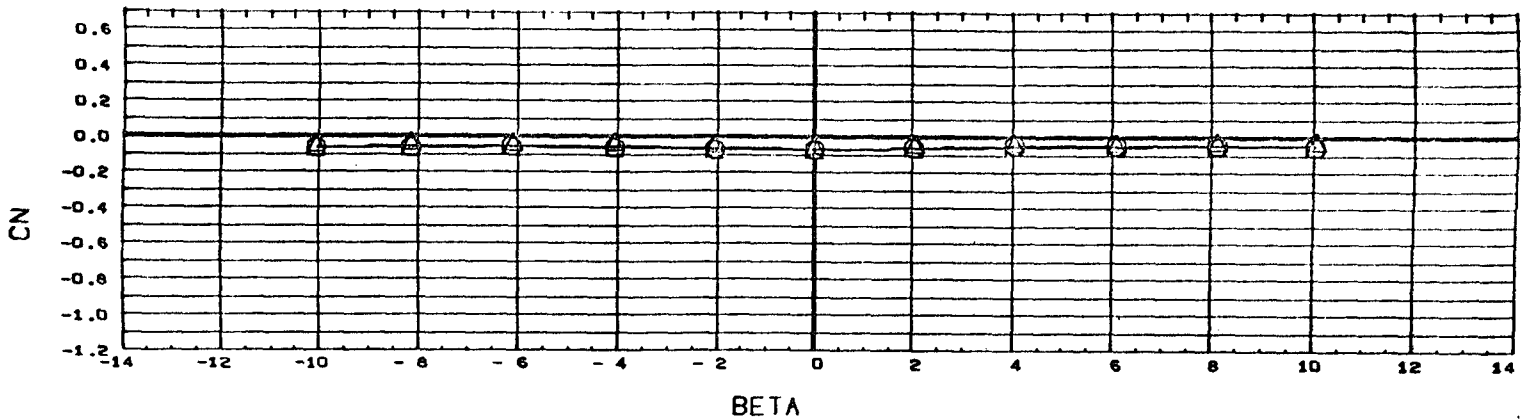
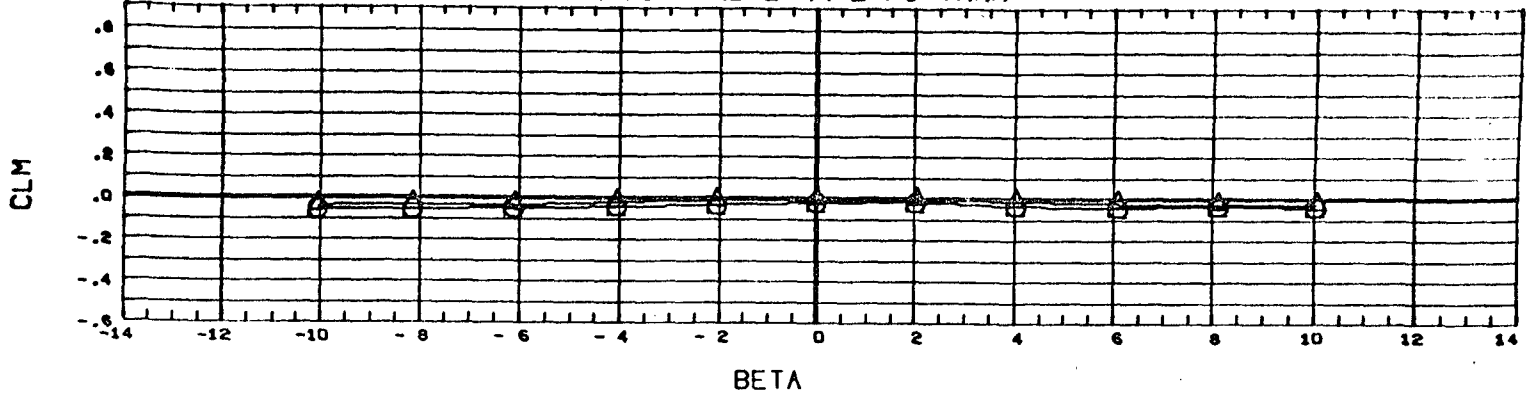
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(D71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(A71082)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF	2.0280 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.20

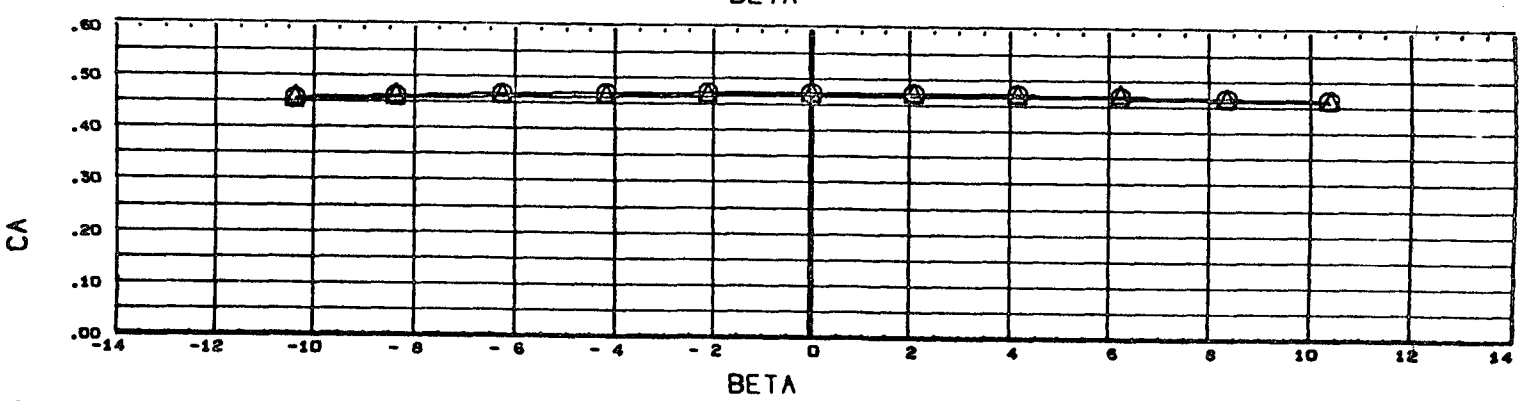
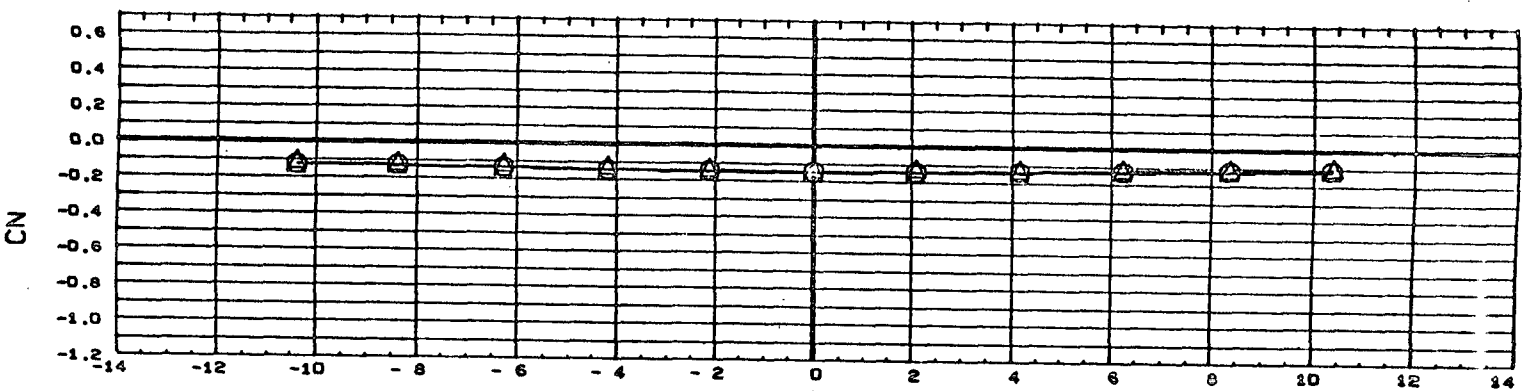
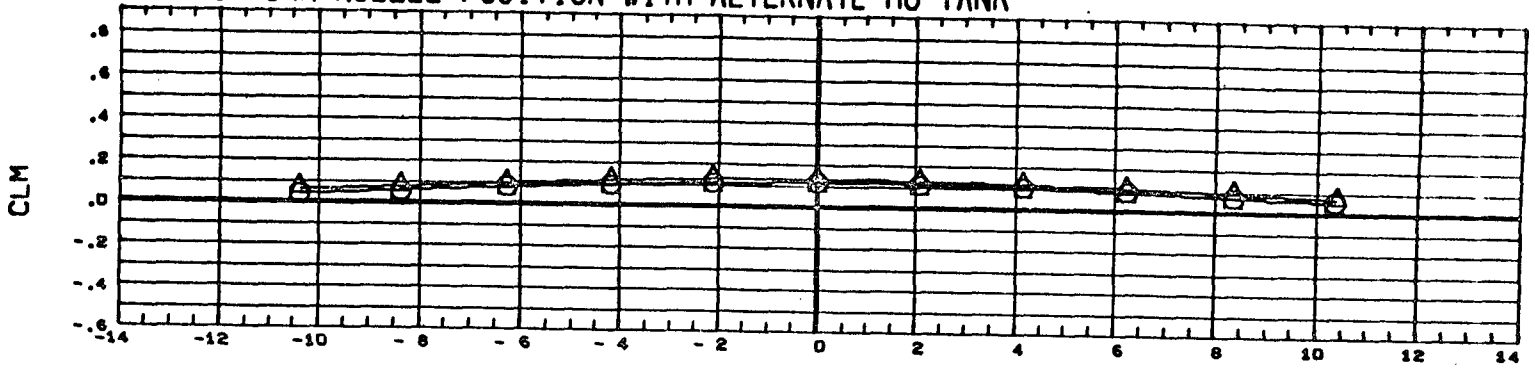
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71082)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

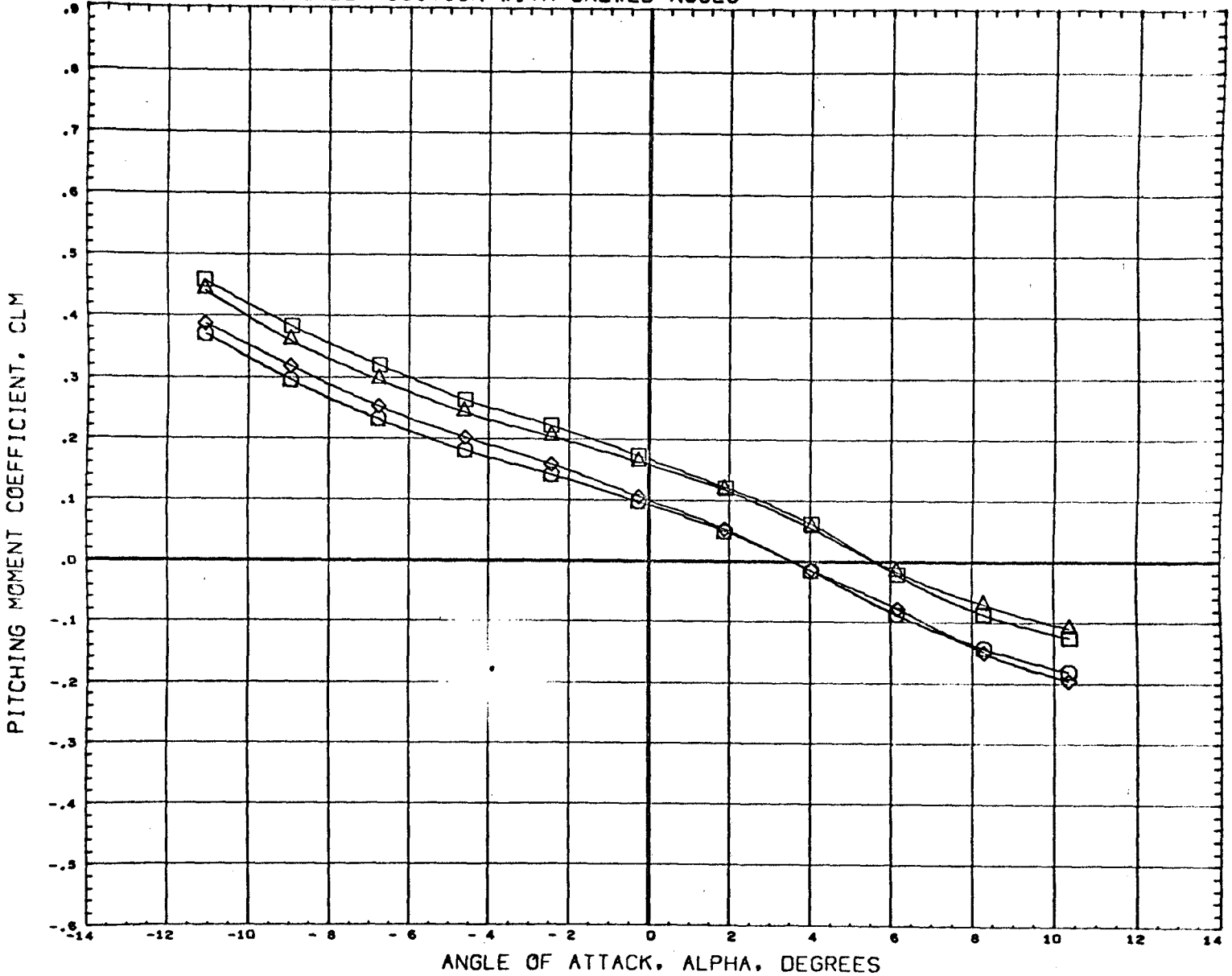
# EFFECT OF SRM NOZZLE POSITION WITH ALTERNATE HO TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71048)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71082)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T501S1	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES

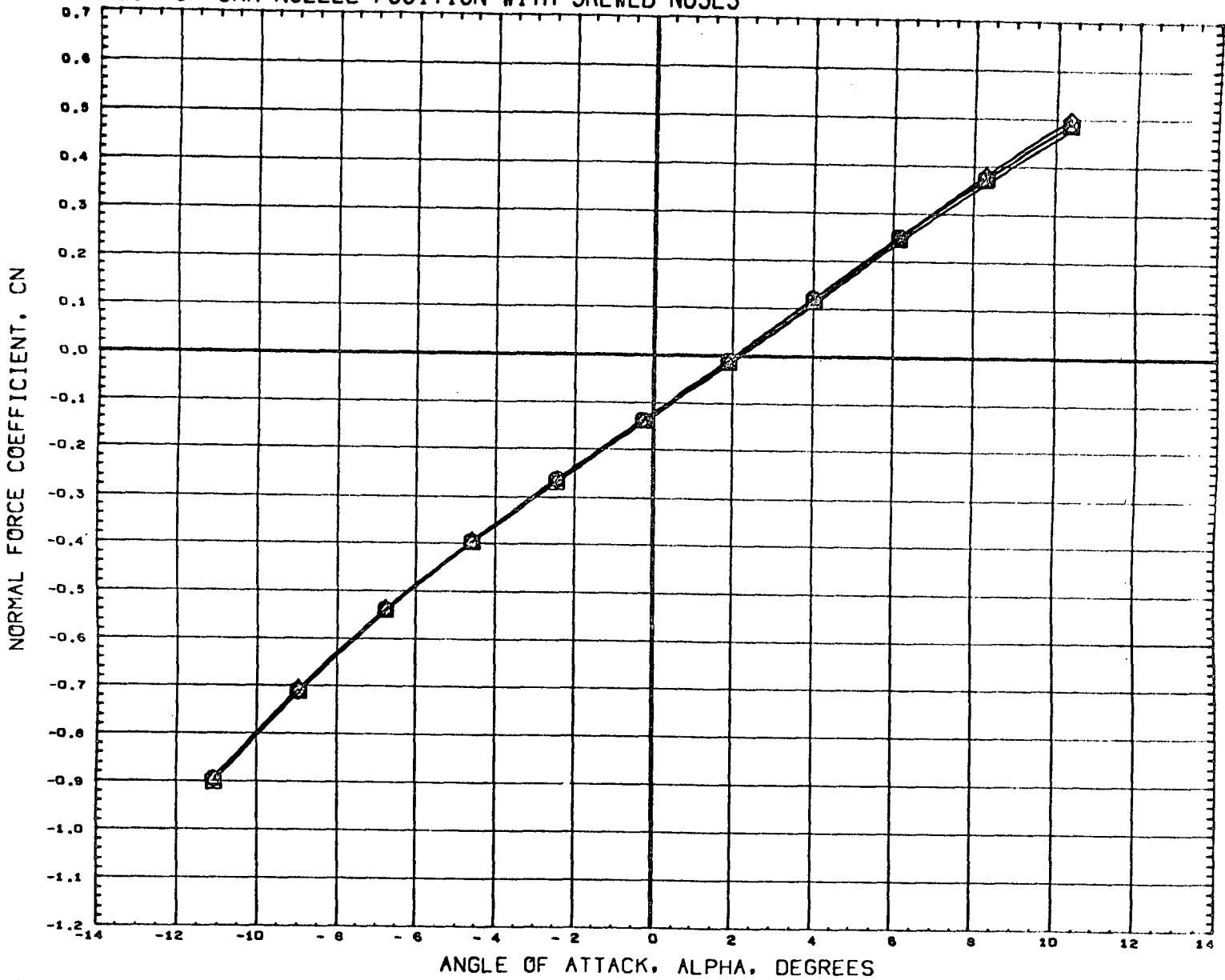


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71019)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
(C71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	0.000	0.000	0.000	BREF 4.4800 IN.
(B71025)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	30.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES



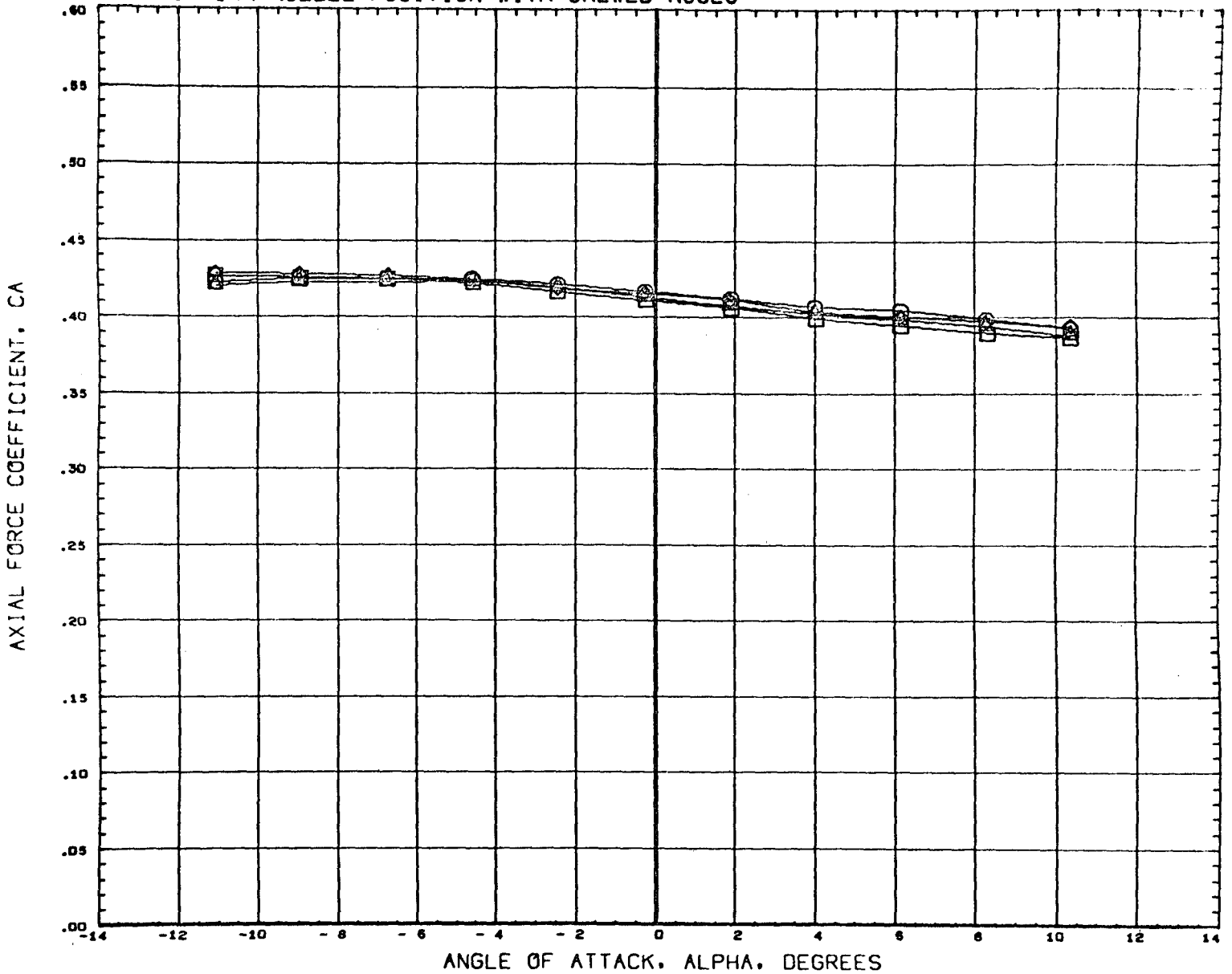
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAM2	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71019)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
(C71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(B71025)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	30.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

F



# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES

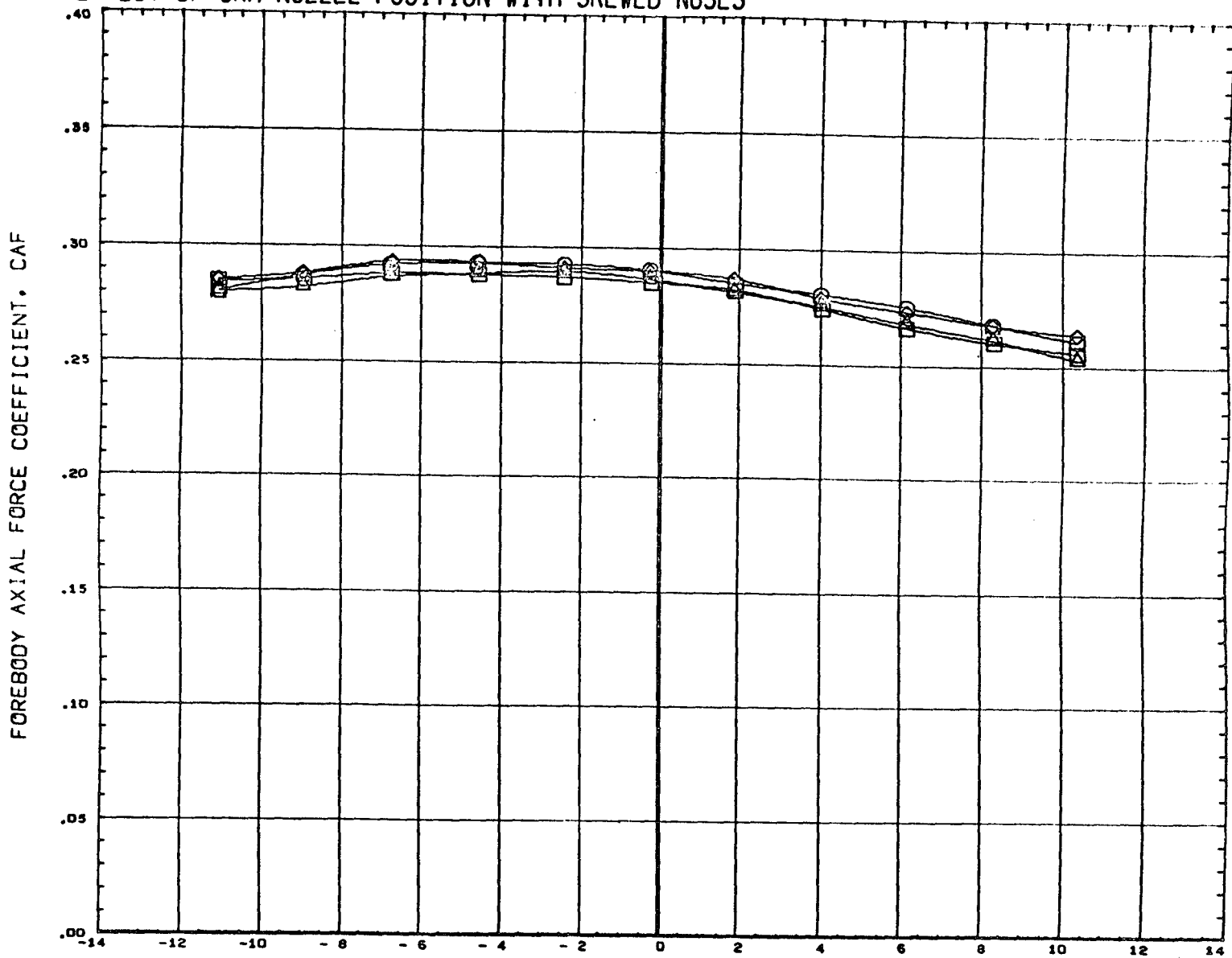


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71019)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
(C71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(B71025)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	30.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES

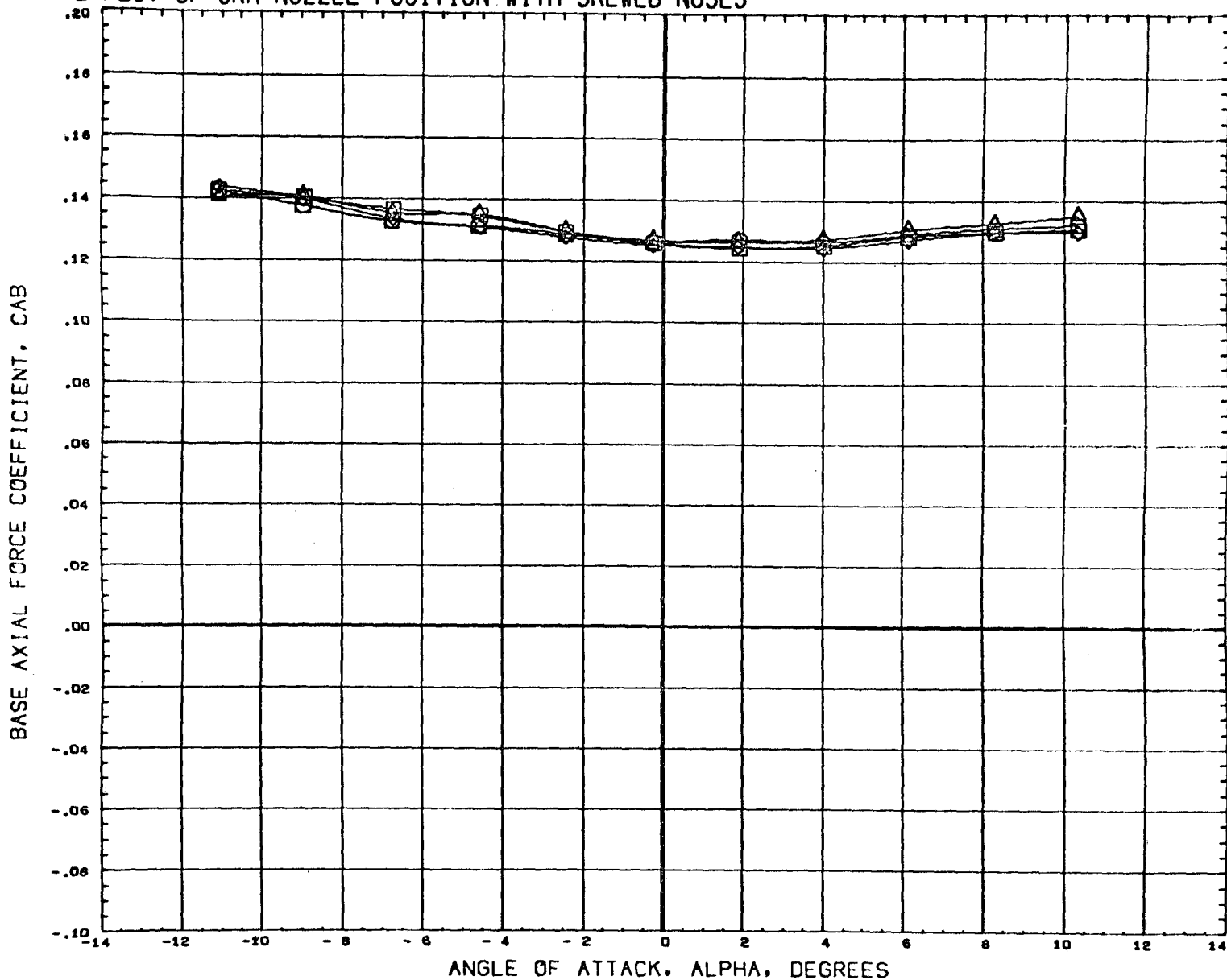


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75,000	0,000	0,000	0,000	SREF 7.8800 SQ. IN
(B71019)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75,000	30,000	0,000	0,000	LREF 2.0280 IN.
(C71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75,000	0,000	0,000	0,000	BREF 4.4600 IN.
(B71025)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75,000	30,000	0,000	0,000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

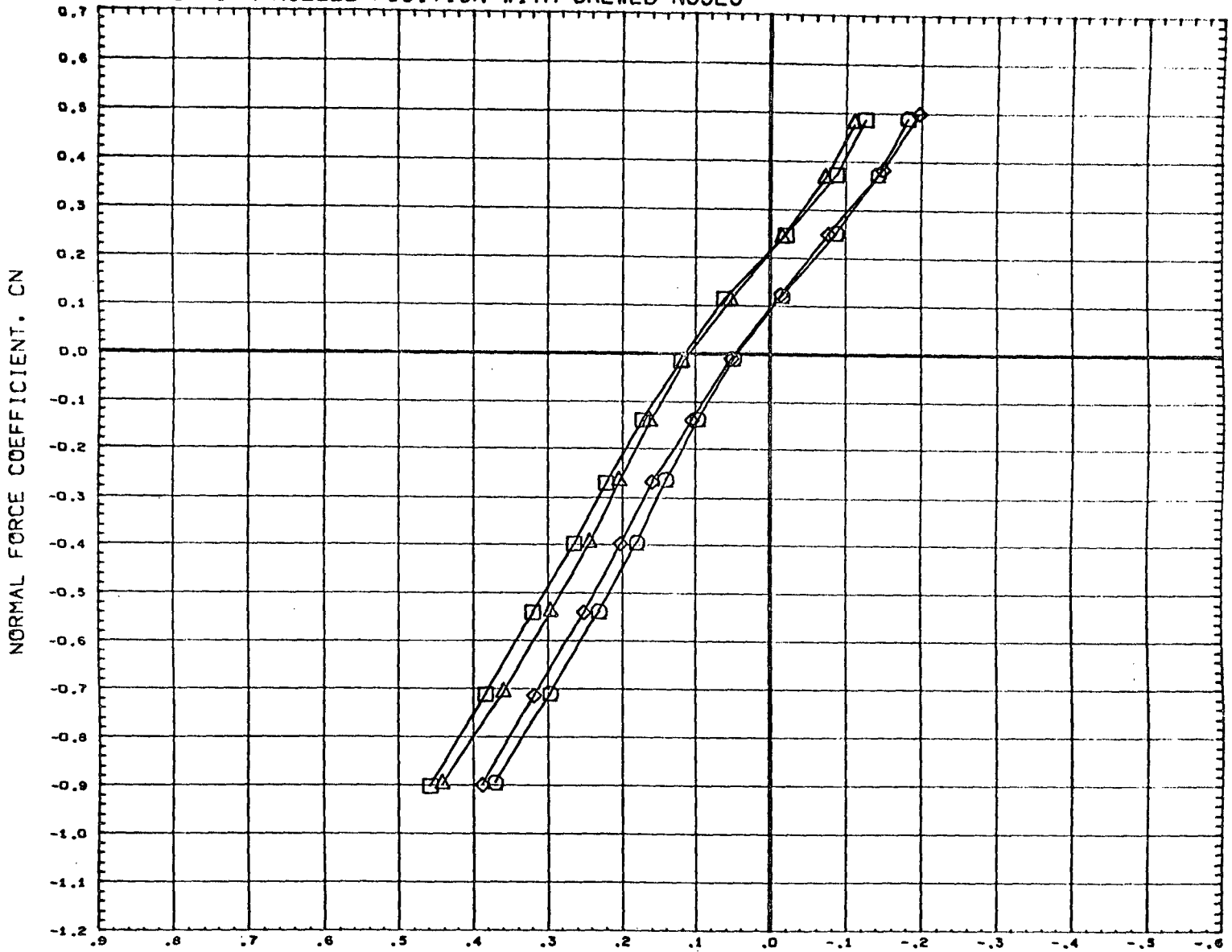
# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	T101S3	T101S4	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(C71021)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S3		75,000	0,000	0,000	0,000	SREF	7,8800 SQ. IN
(B71019)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S3		75,000	30,000	0,000	0,000	LREF	2,0280 IN.
(C71023)	◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S4		75,000	0,000	0,000	0,000	BREF	4,4600 IN.
(B71025)	□	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S4		75,000	30,000	0,000	0,000	XMRP	3,3600 IN.
									YMRP	0,0000 IN.
									ZMRP	0,2480 IN.
									SCALE	0,0040 SCALE

MACH 1.20

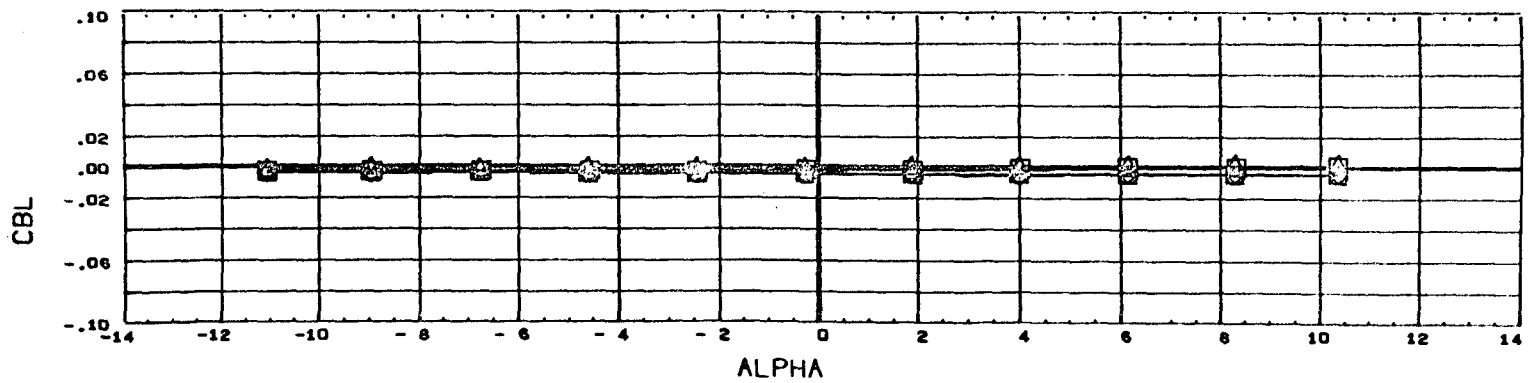
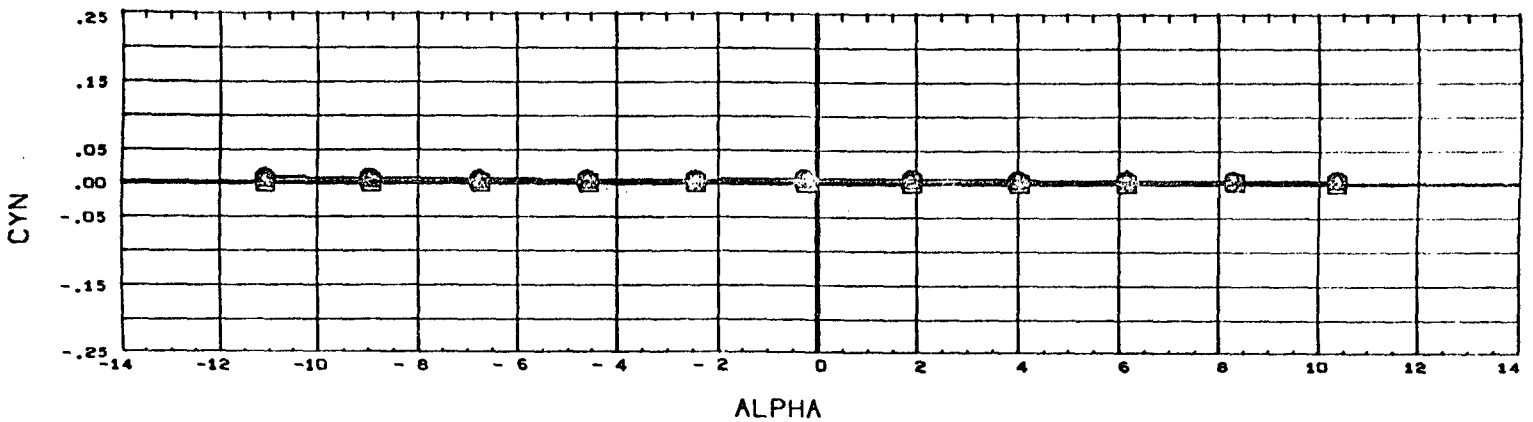
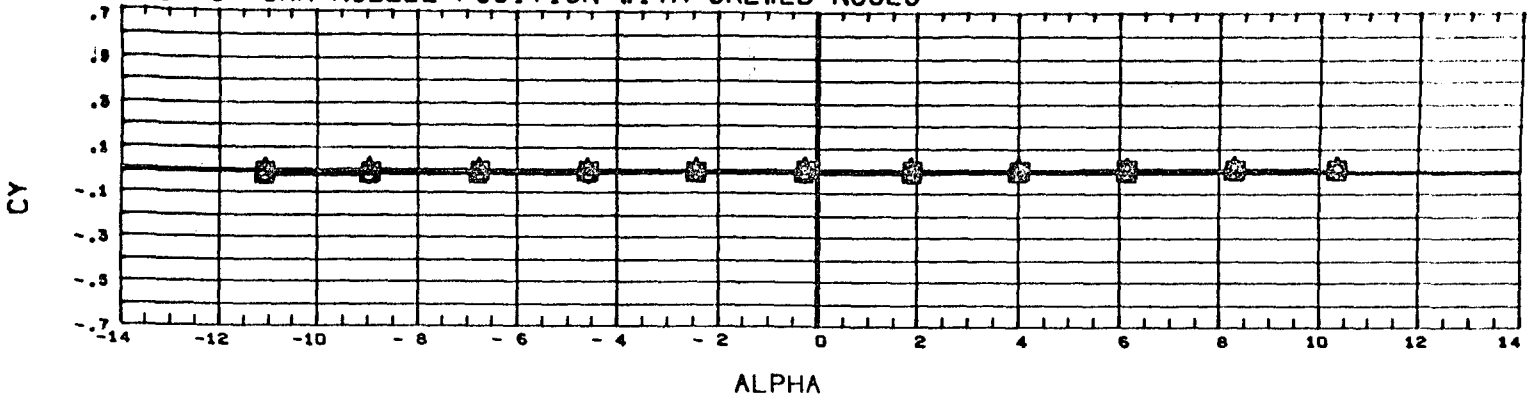
# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71019)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
(C71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	0.000	0.000	0.000	OREF 4.4600 IN.
(B71025)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	30.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES

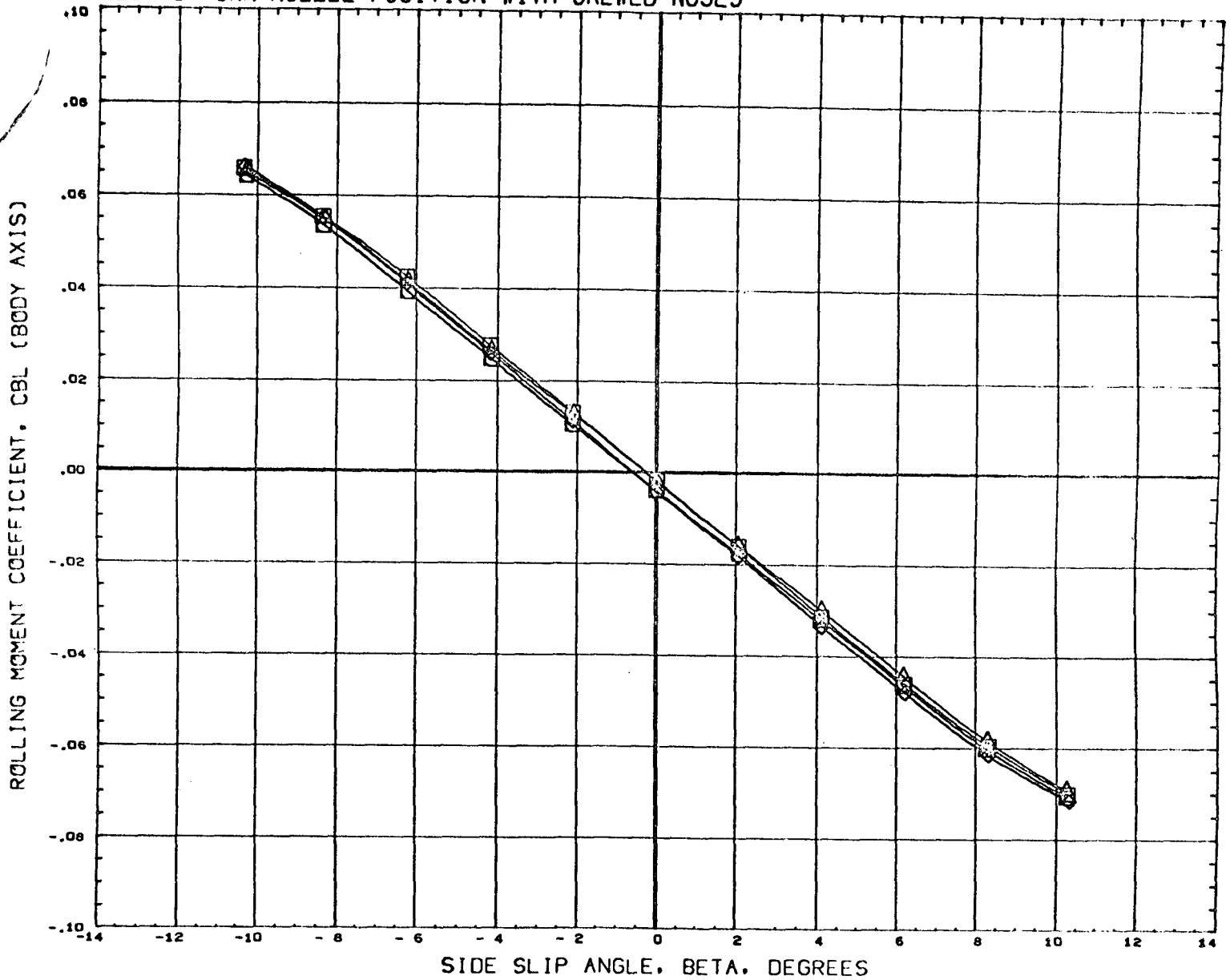


DATA SET SYMBOL	CONFIGURATION DESCRIPTION		PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S3	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71019)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S3	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
(C71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S4	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(B71025)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S4	75.000	30.000	0.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

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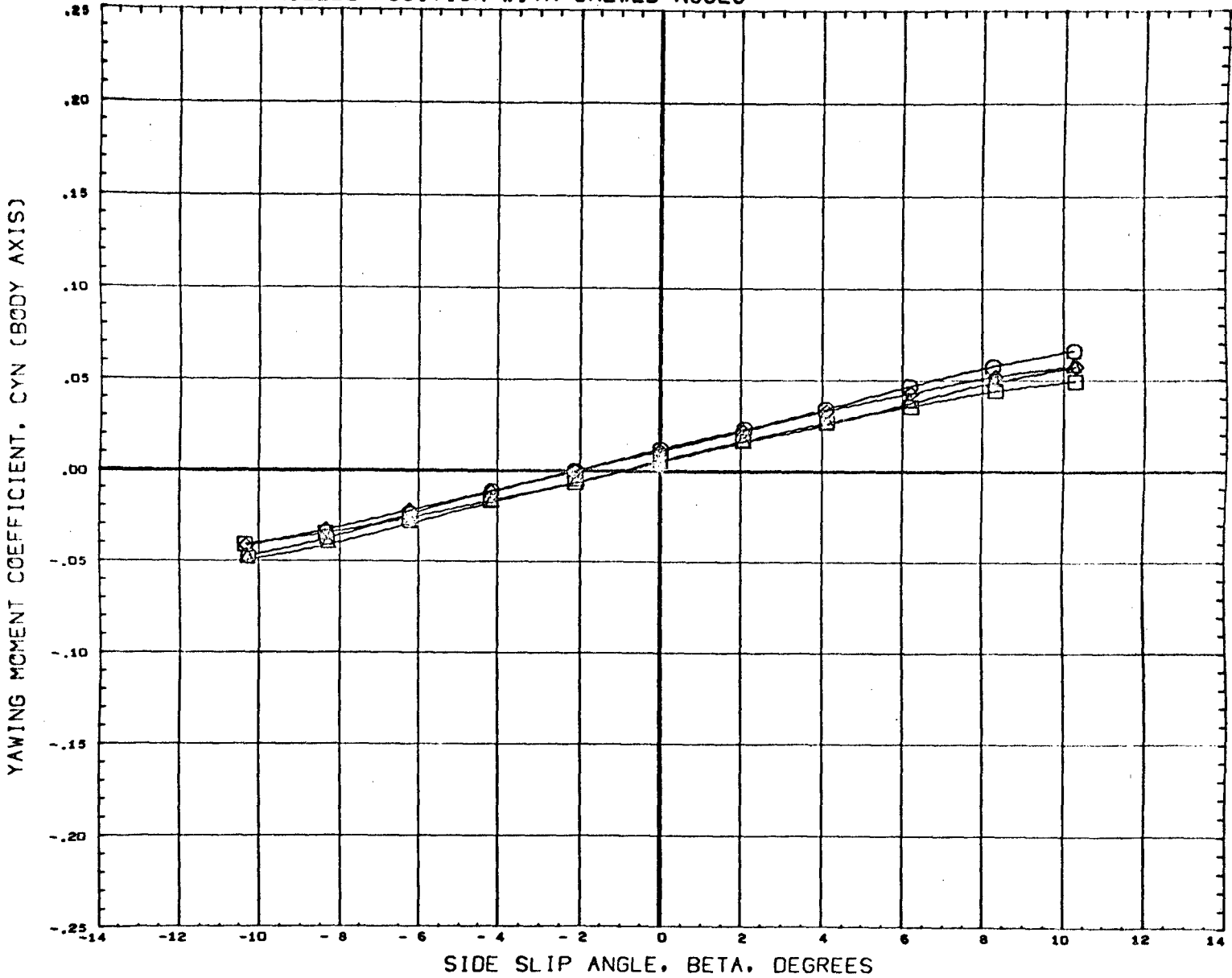
# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71020)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
(B71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(A71026)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	30.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

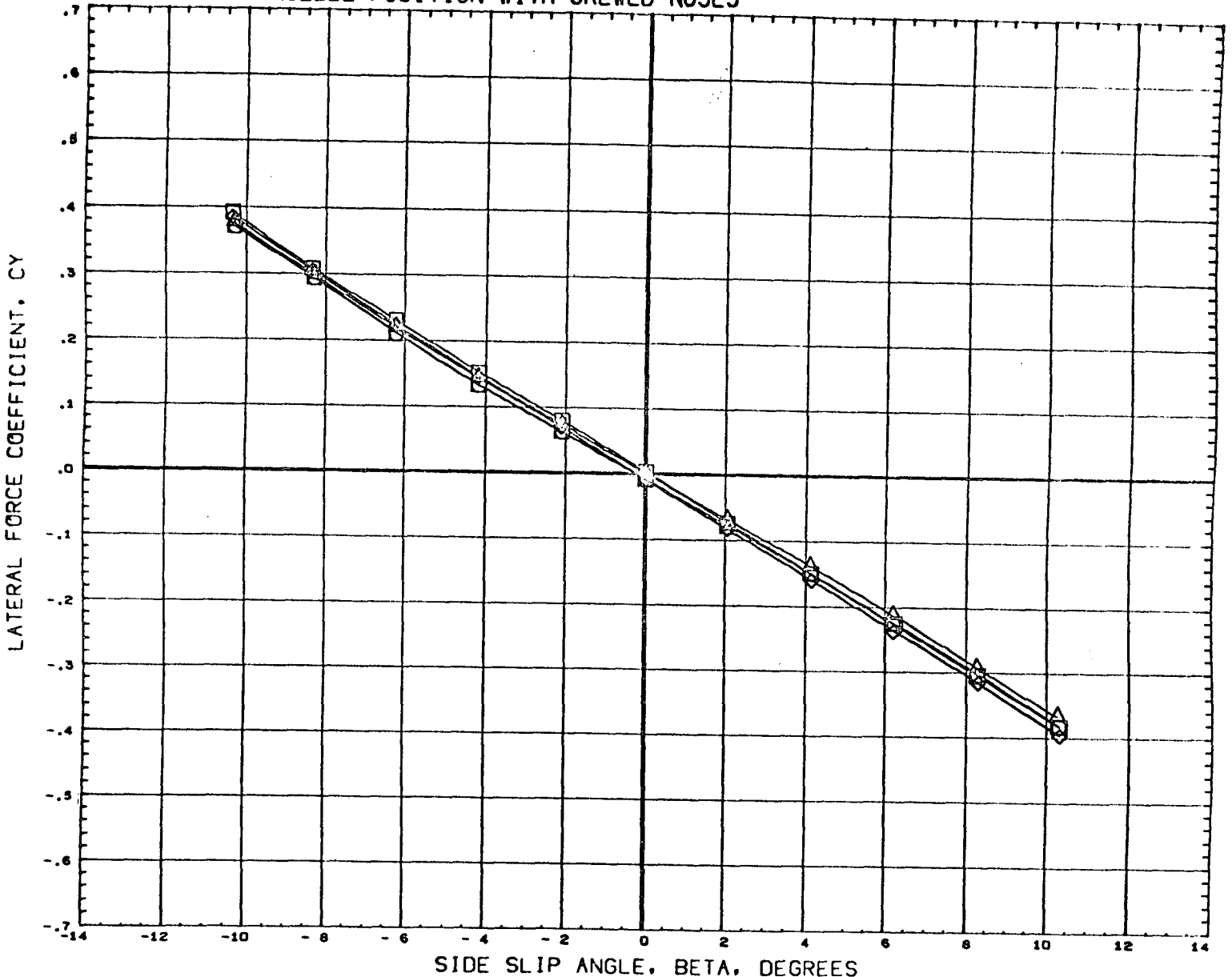
# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES



DATA SET SYMBO	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71020)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
(B71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(A71026)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	30.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES

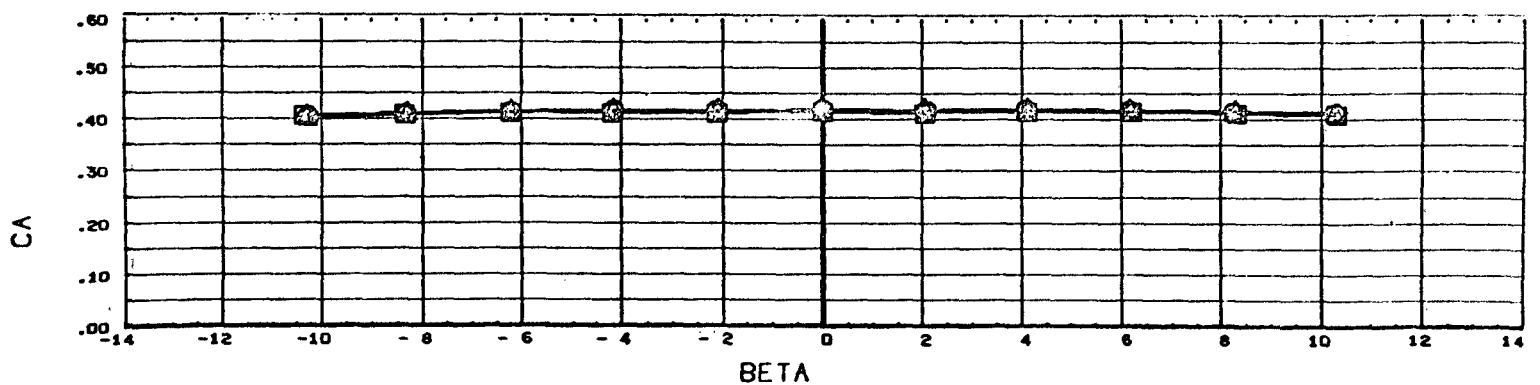
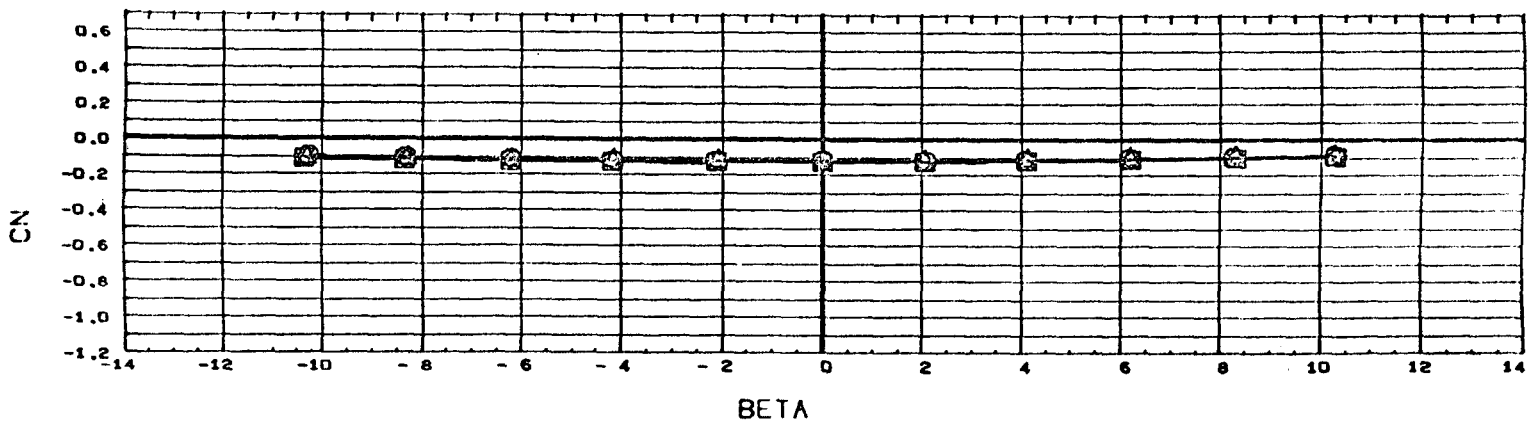
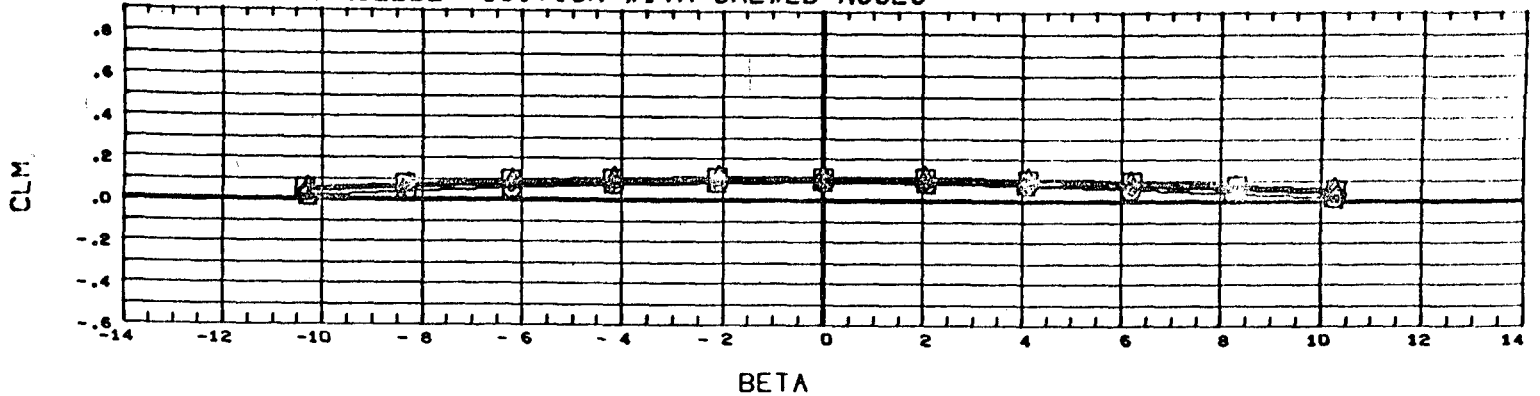


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71020)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
(B71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(A71026)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	30.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



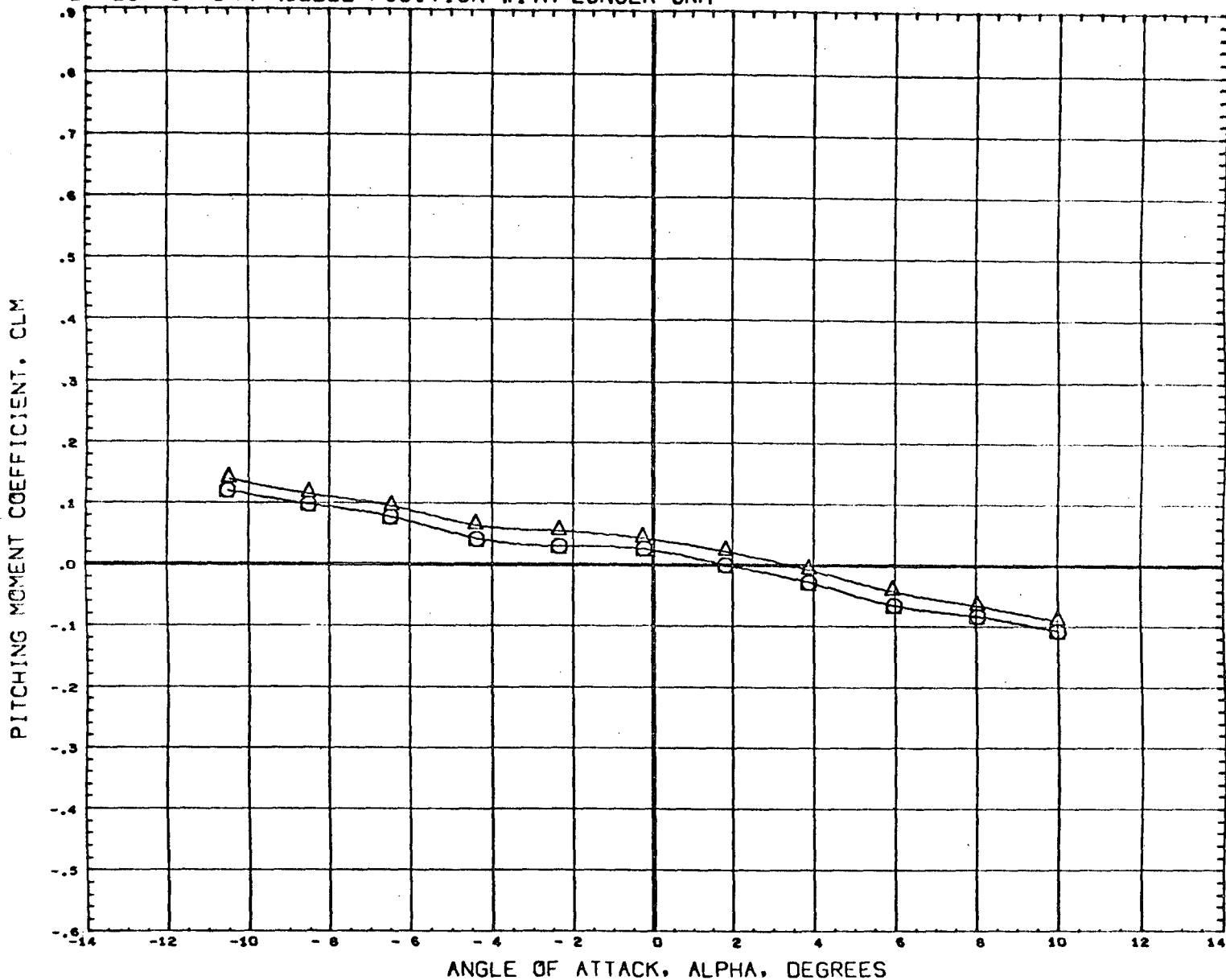
# EFFECT OF SRM NOZZLE POSITION WITH SKEWED NOSES



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S3	T101S4	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S3		75,000	0,000	0,000	0,000	SREF 7.8800 SQ. IN
(A71020)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S3		75,000	30,000	0,000	0,000	LREF 2.0280 IN.
(B71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S4		75,000	0,000	0,000	0,000	BREF 4.4600 IN.
(A71026)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S4		75,000	30,000	0,000	0,000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.20

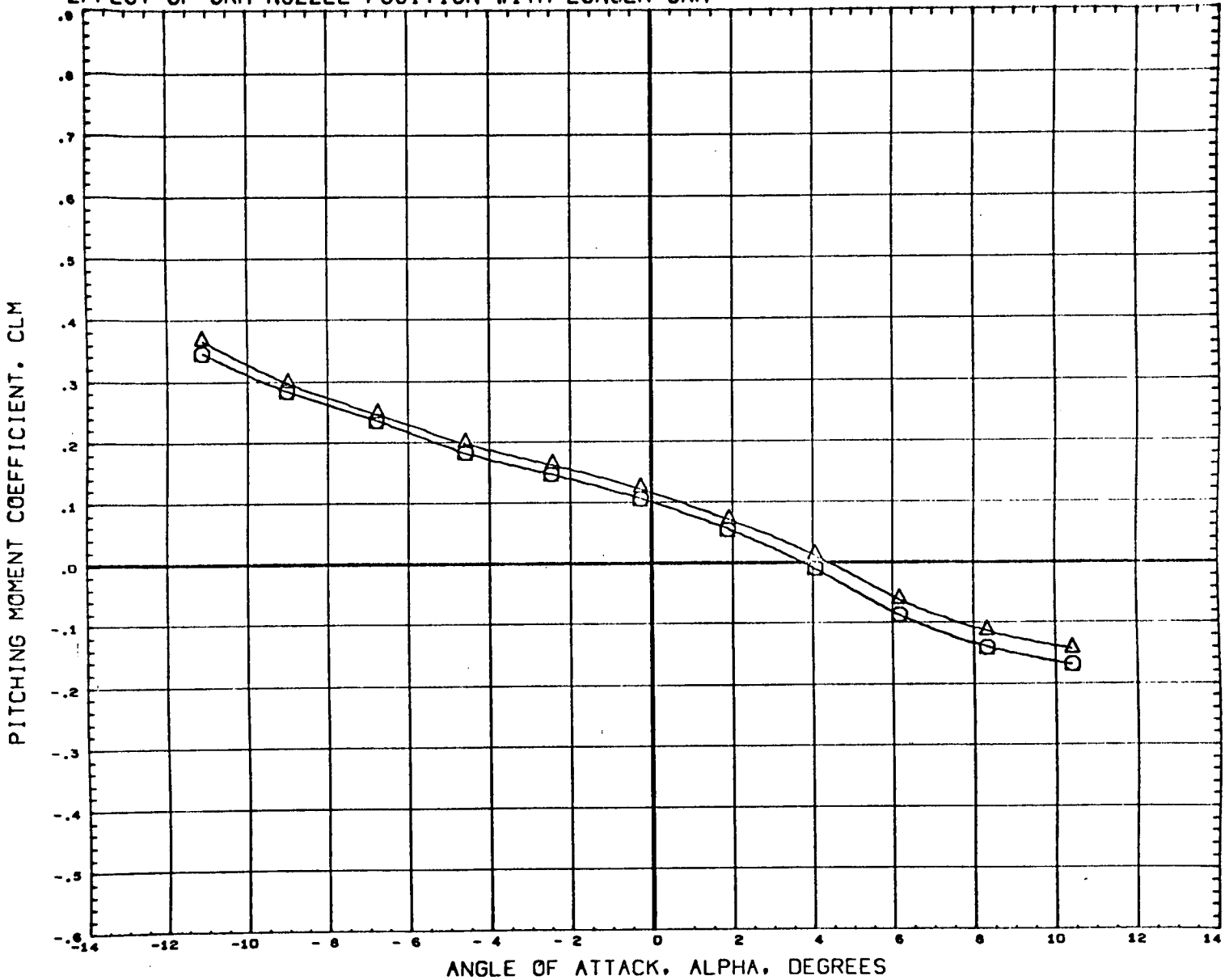
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(D71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	0,000	0,000	0,000	SREF	7,8800 SQ. IN
(B71029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	30,000	0,000	0,000	LREF	2,0280 IN.
						BREF	4,4600 IN.
						XMRP	3,3600 IN.
						YMRP	0,0000 IN.
						ZMRP	0,2480 IN.
						SCALE	0,0040 SCALE

MACH .60

# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



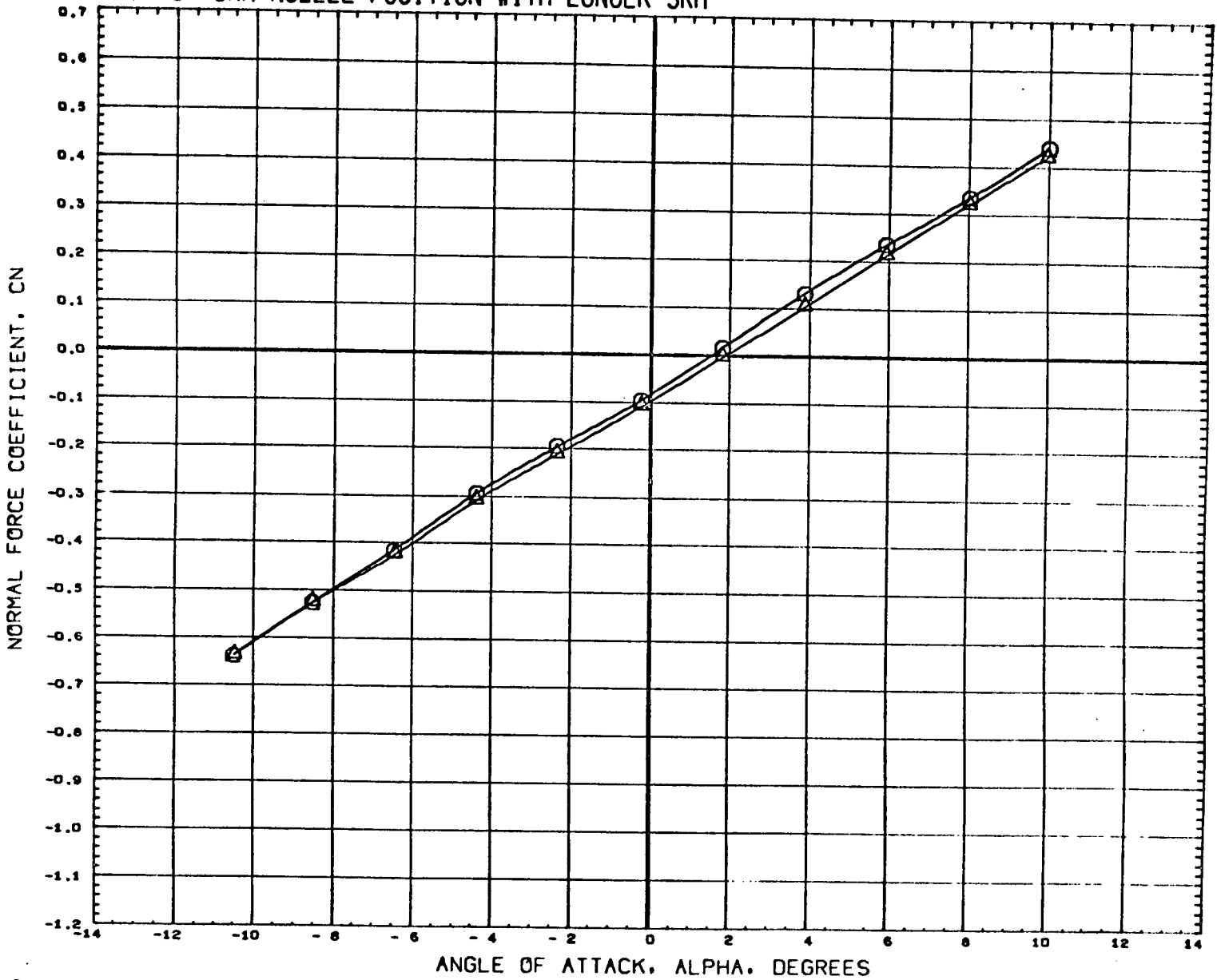
DATA SET SYMBO	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.20

*Signature*

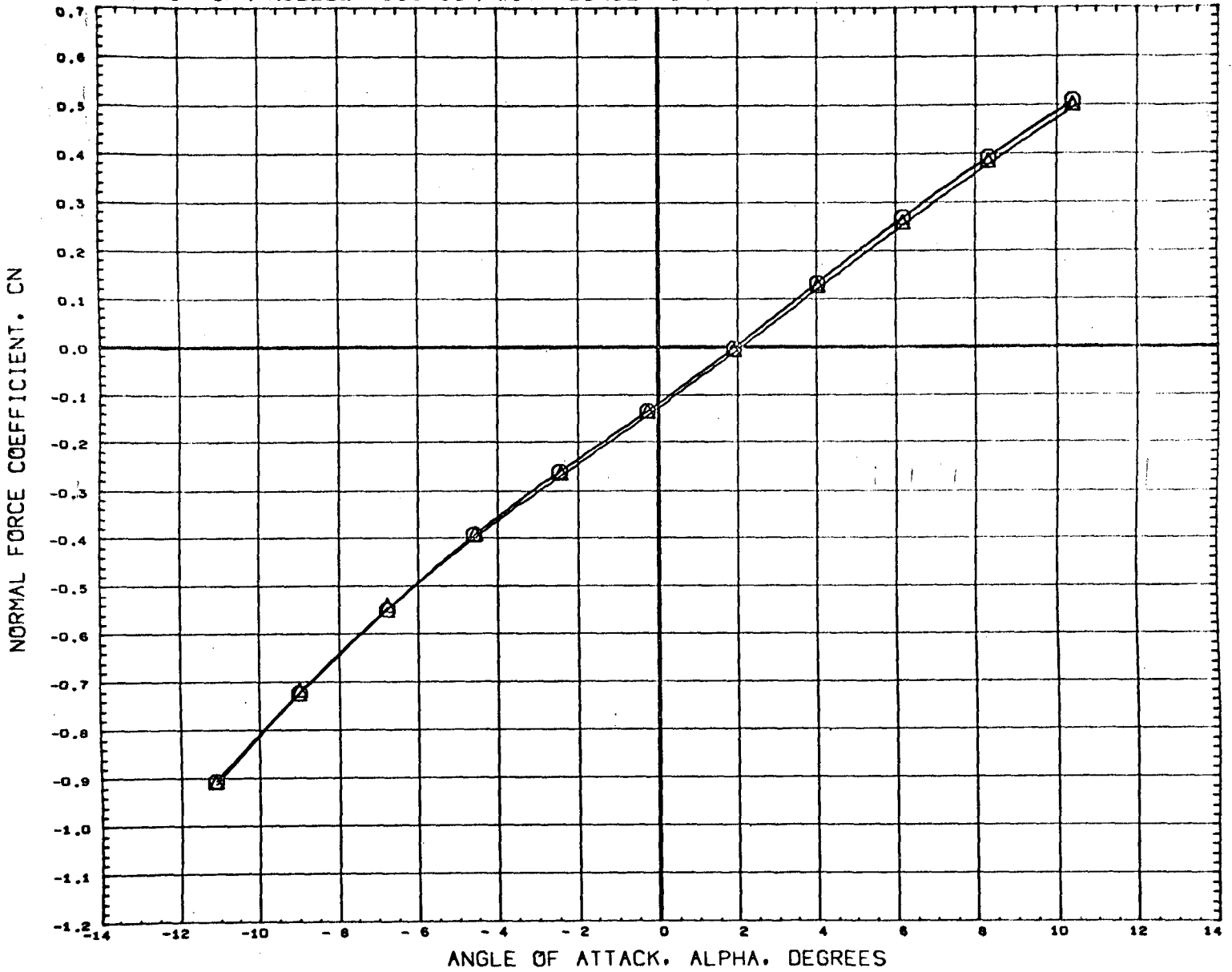
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	30.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

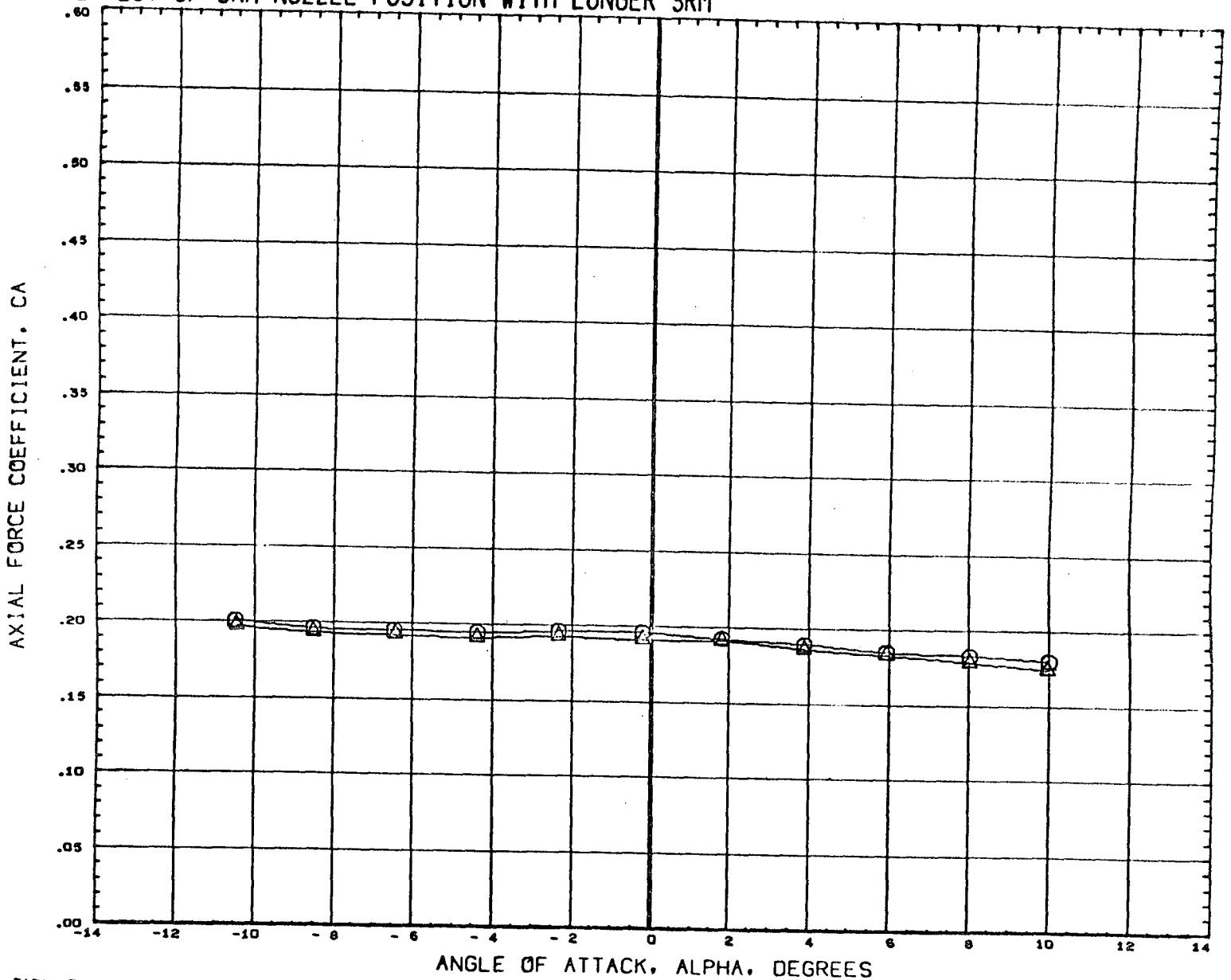
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S2	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S2	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

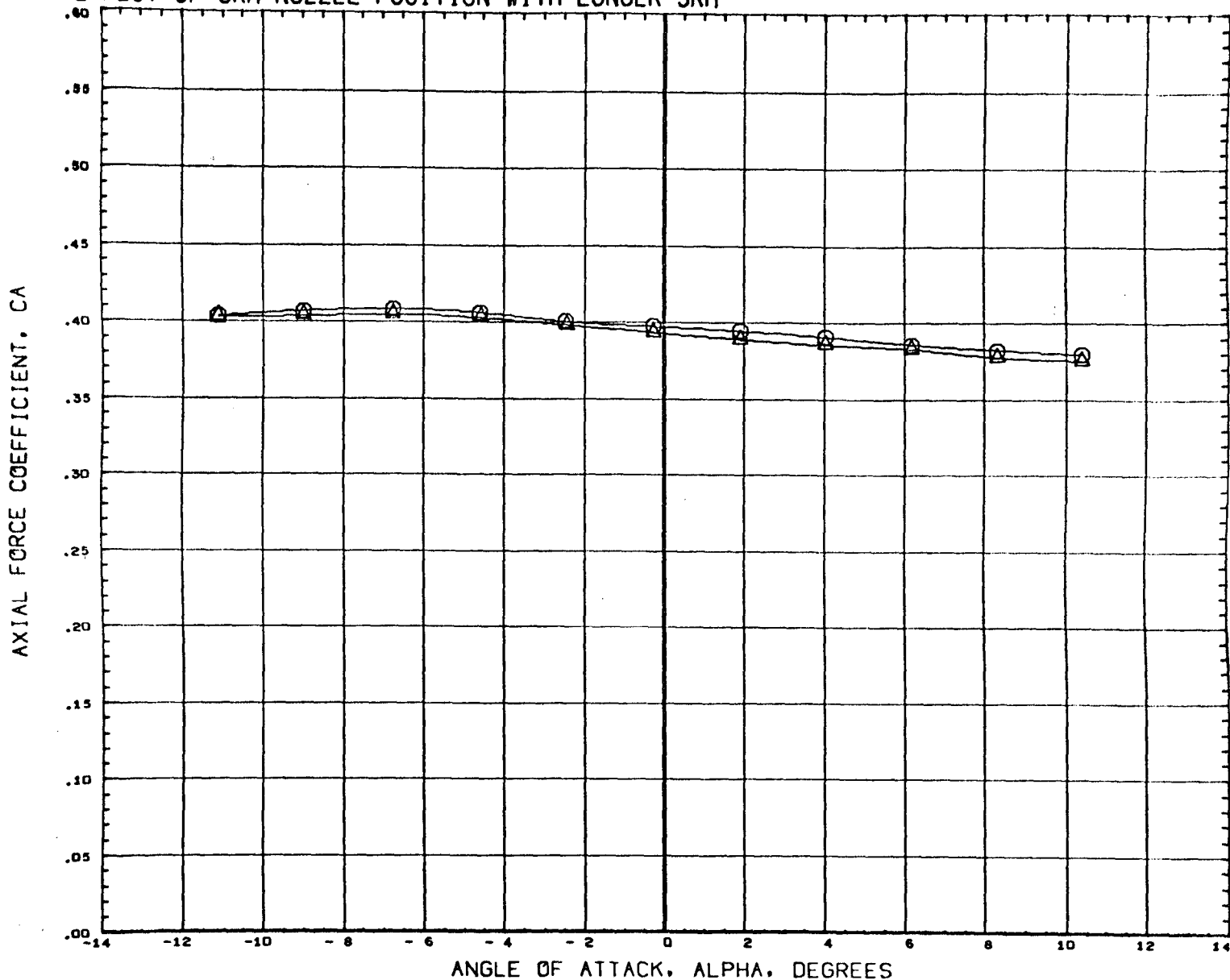
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



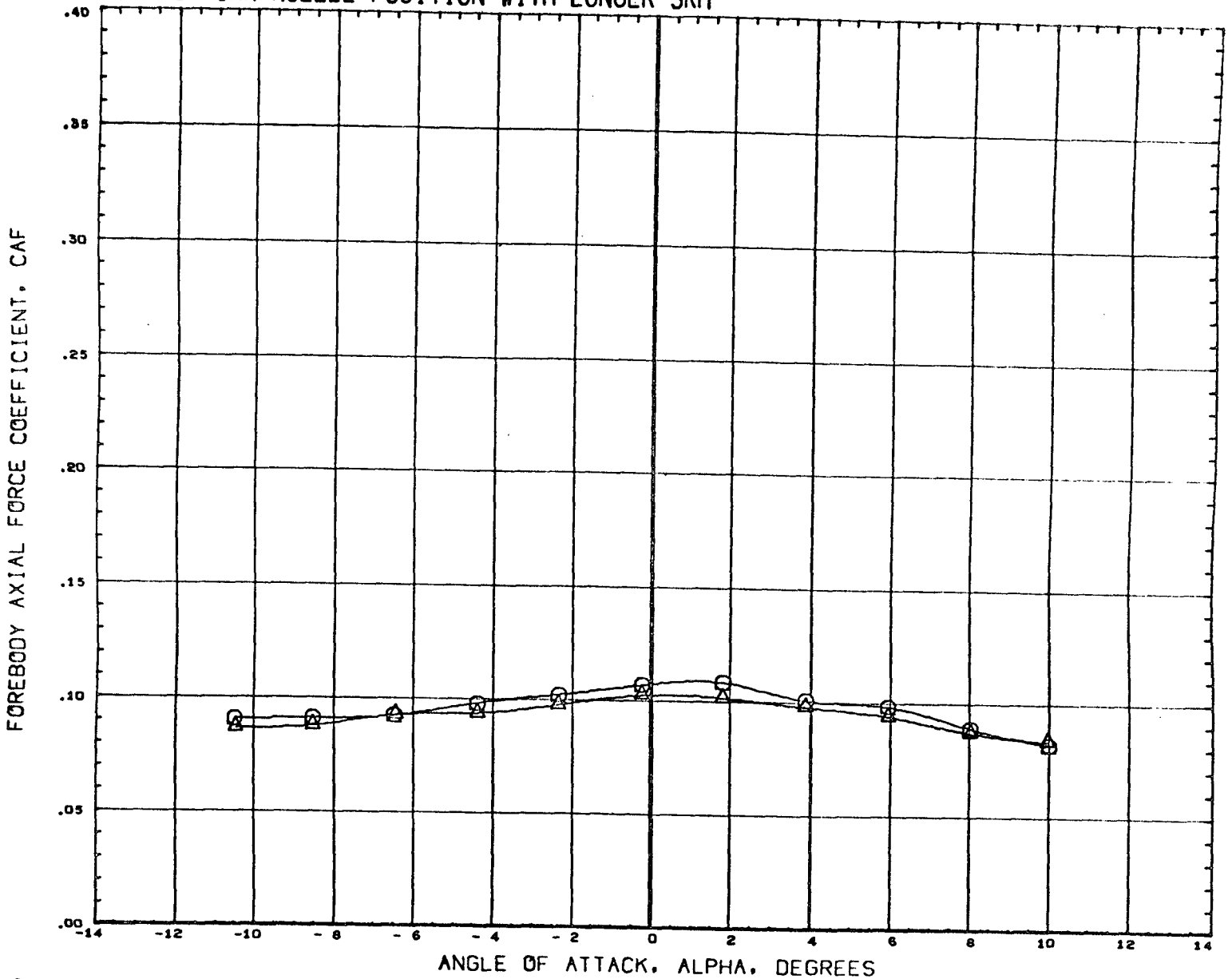
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM

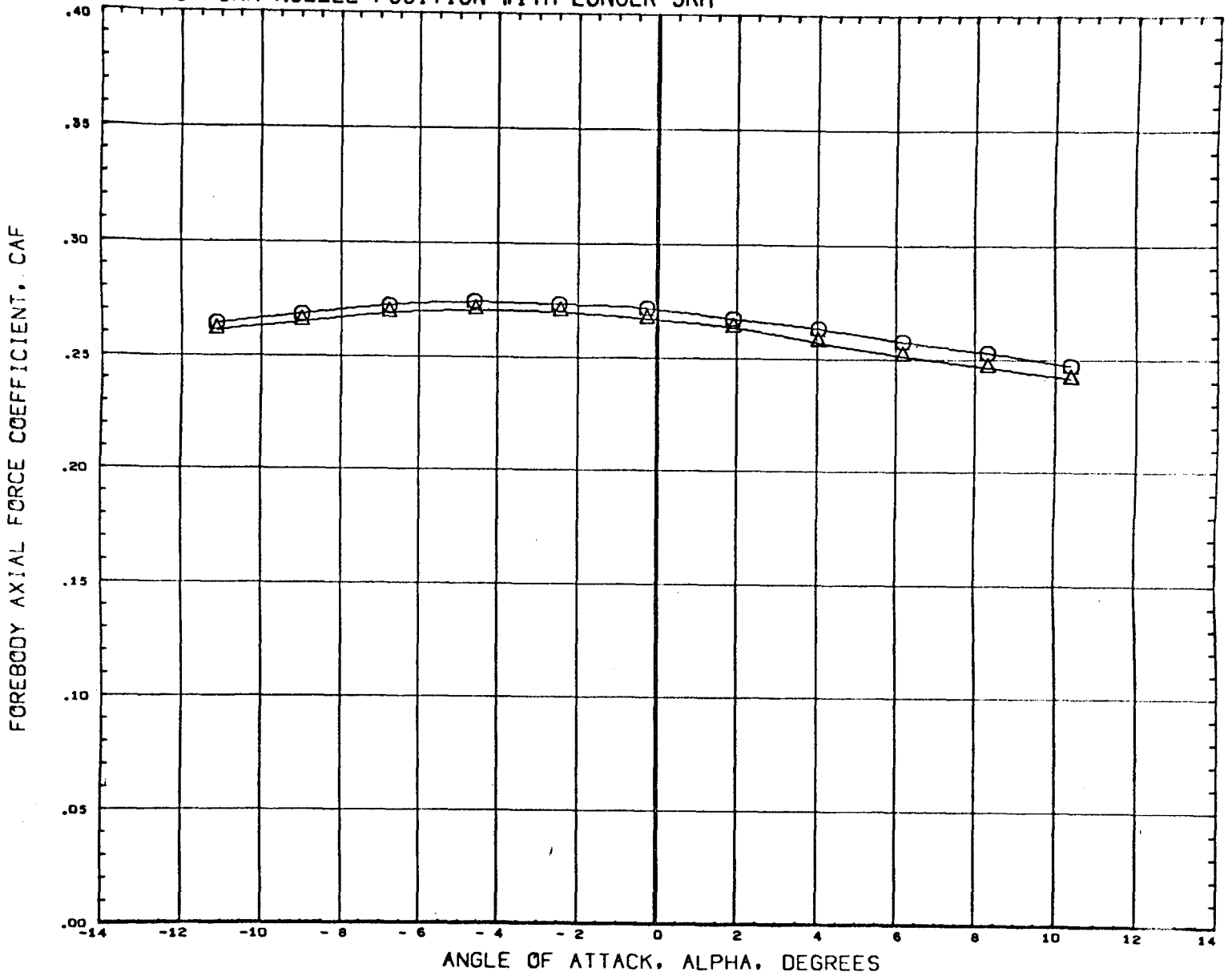


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(071027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(071029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF	2.0280 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH .60



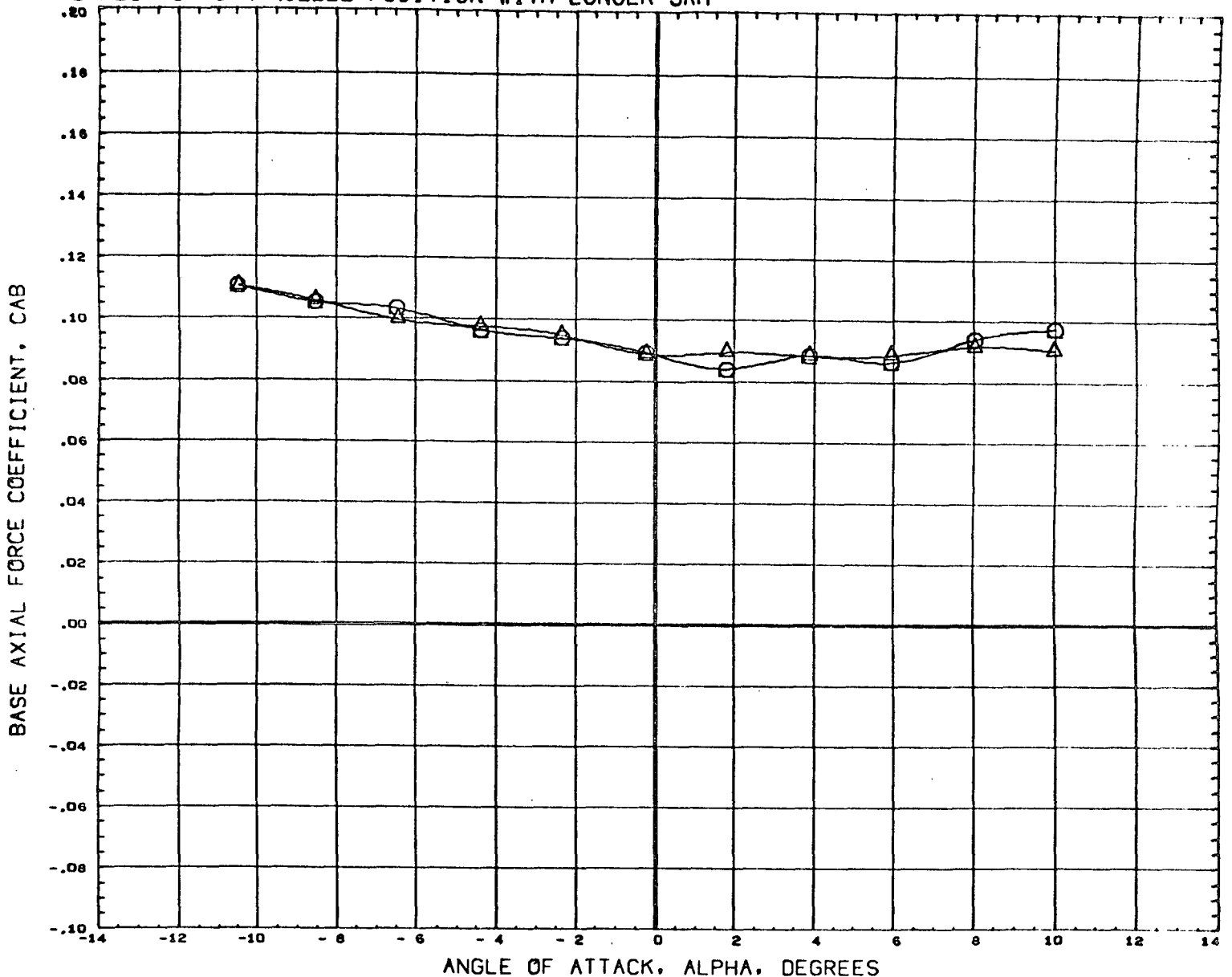
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(D71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(B71029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF	2.0280 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2400 IN.
						SCALE	0.0040 SCALE

MACH 1.20

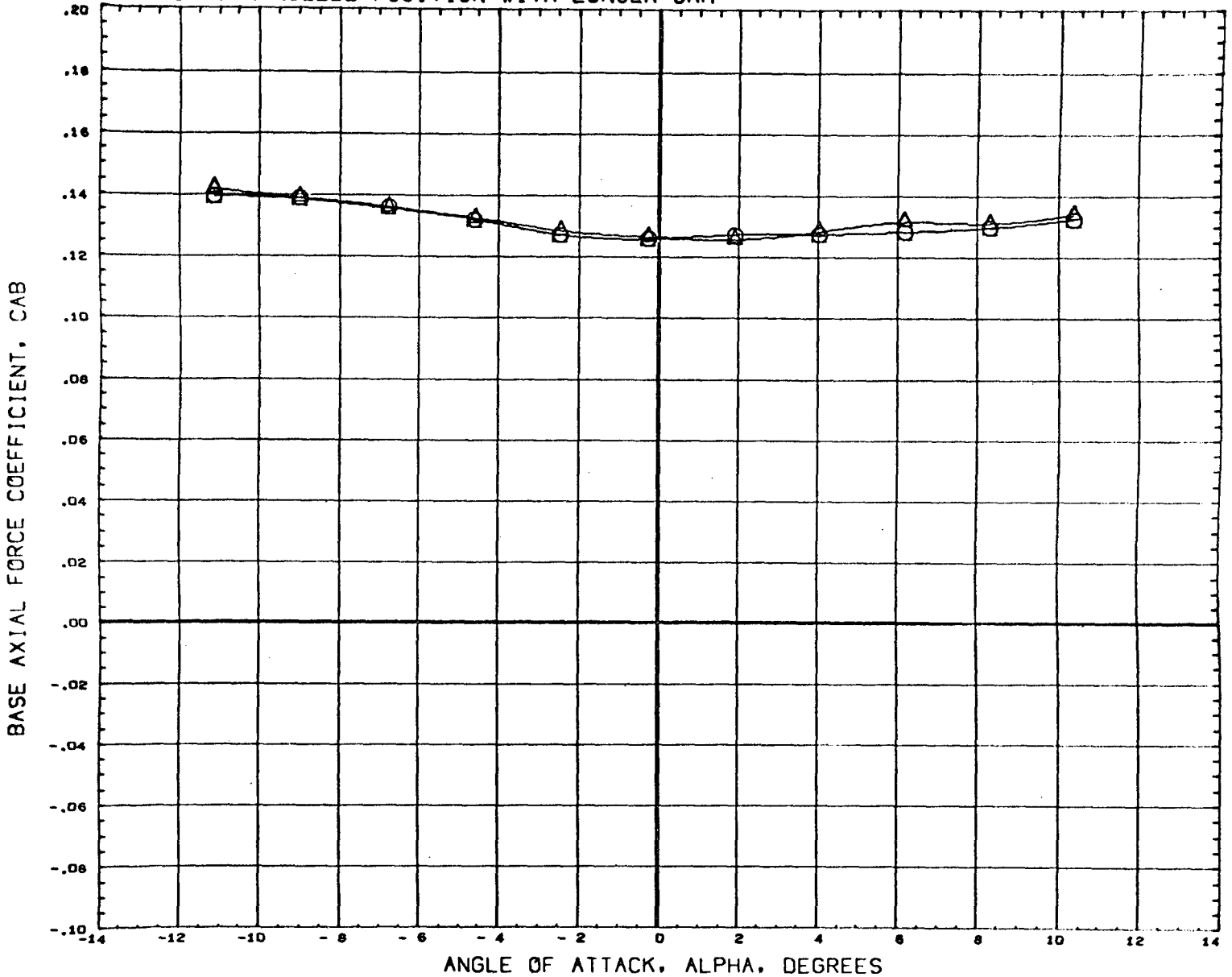
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(071027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(071029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF	2.0280 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH .60

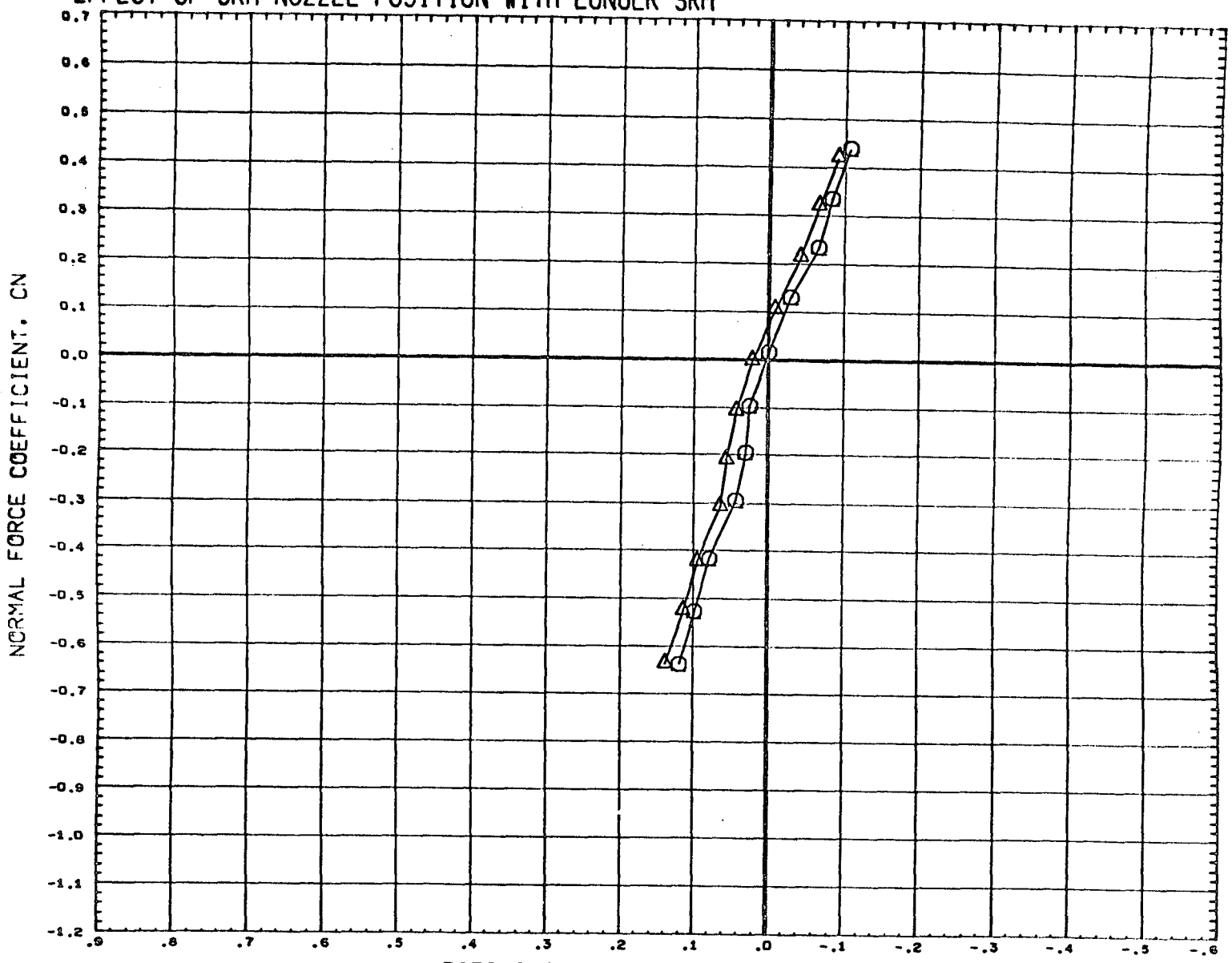
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(071027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(071029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF	2.0260 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.20

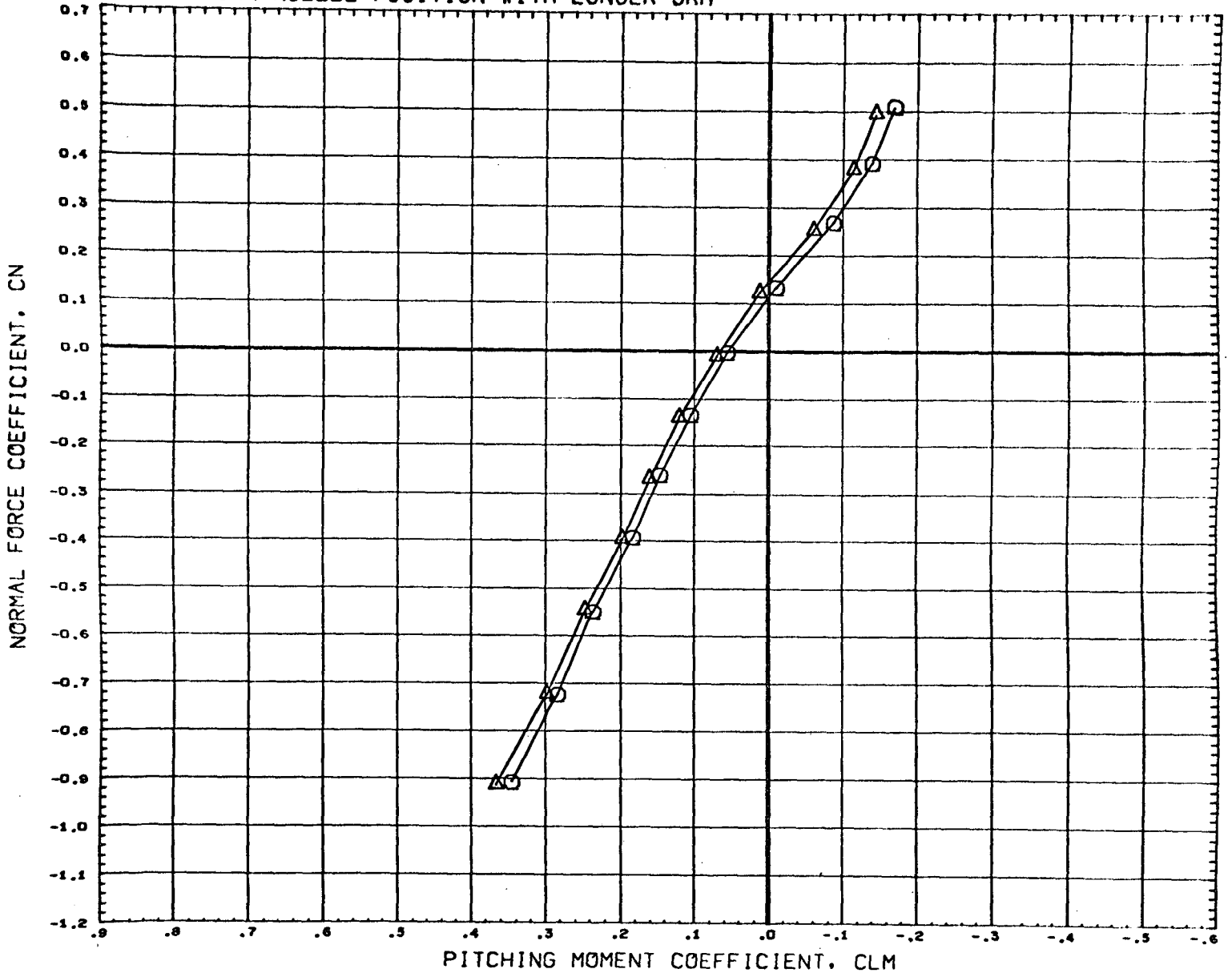
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(D71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	0,000	0,000	0,000	SREF	7,8800 SQ. IN
(B71029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	30,000	0,000	0,000	LREF	2,0280 IN.
						BREF	4,4600 IN.
						XMRP	3,3600 IN.
						YMRP	0,0000 IN.
						ZMRP	0,2480 IN.
						SCALE	0,0040 SCALE

MACH .60

# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM

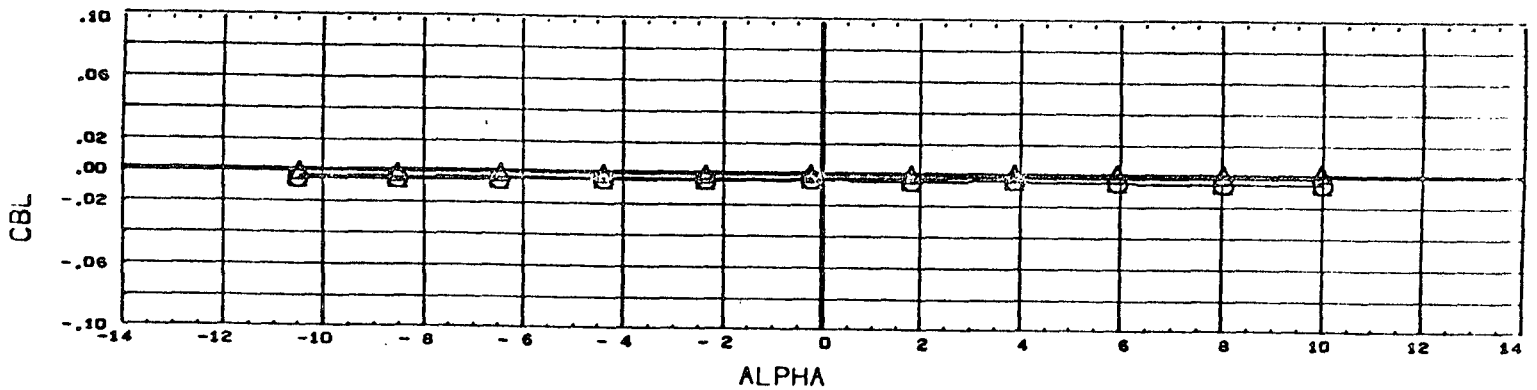
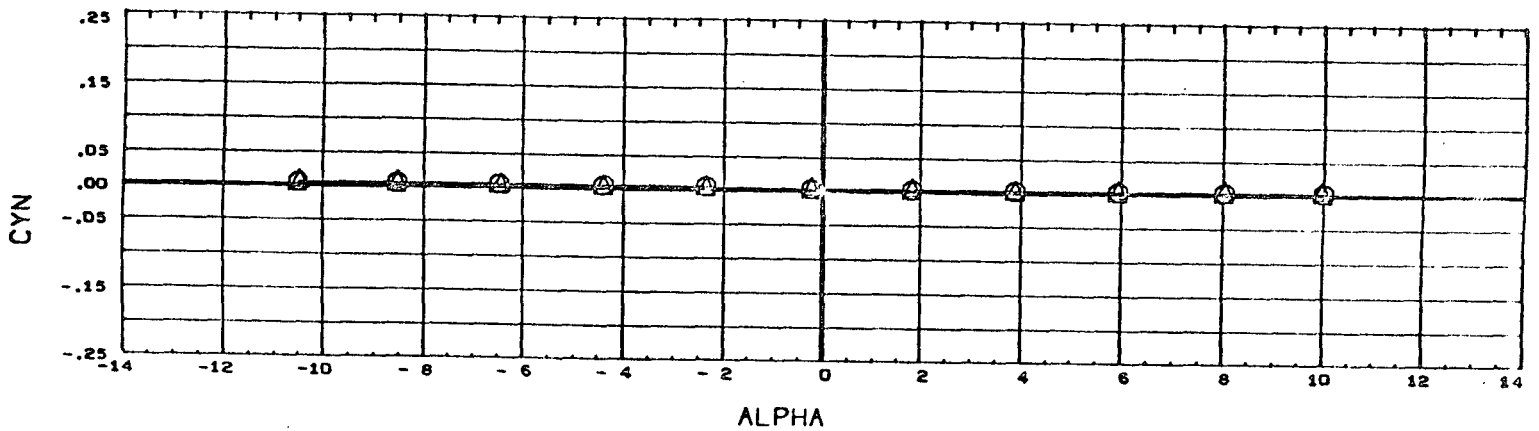
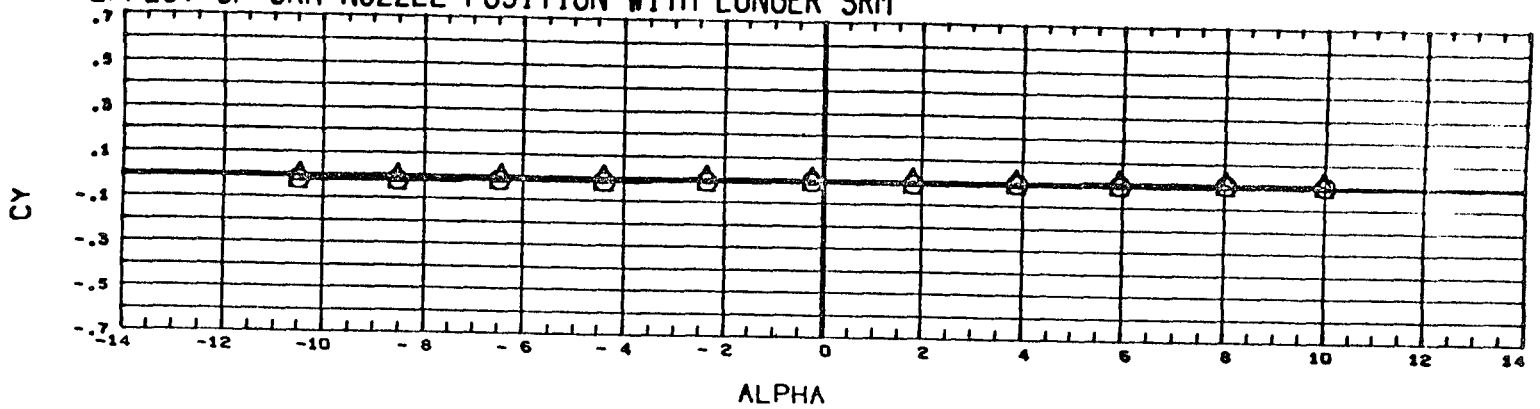


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.20

# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



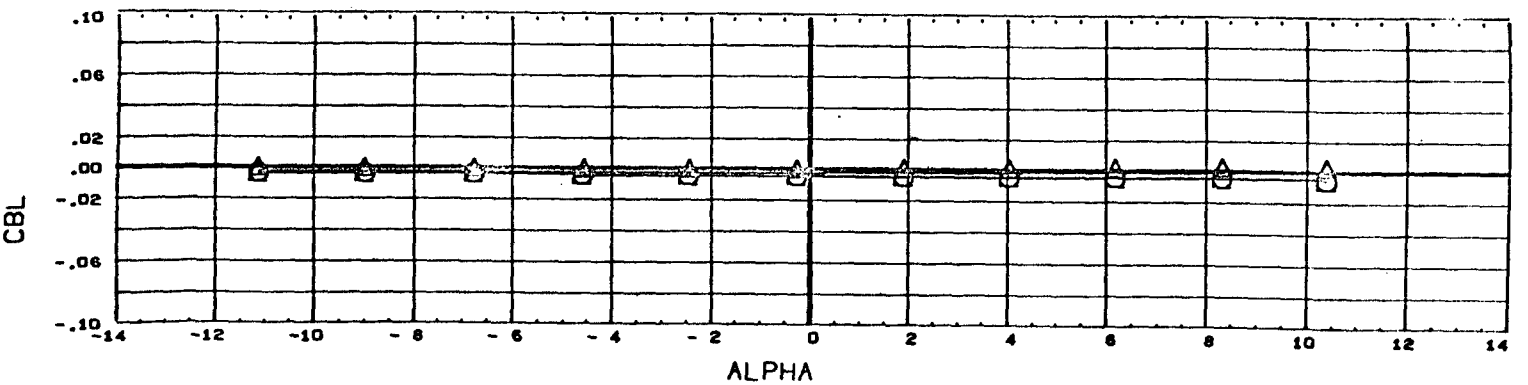
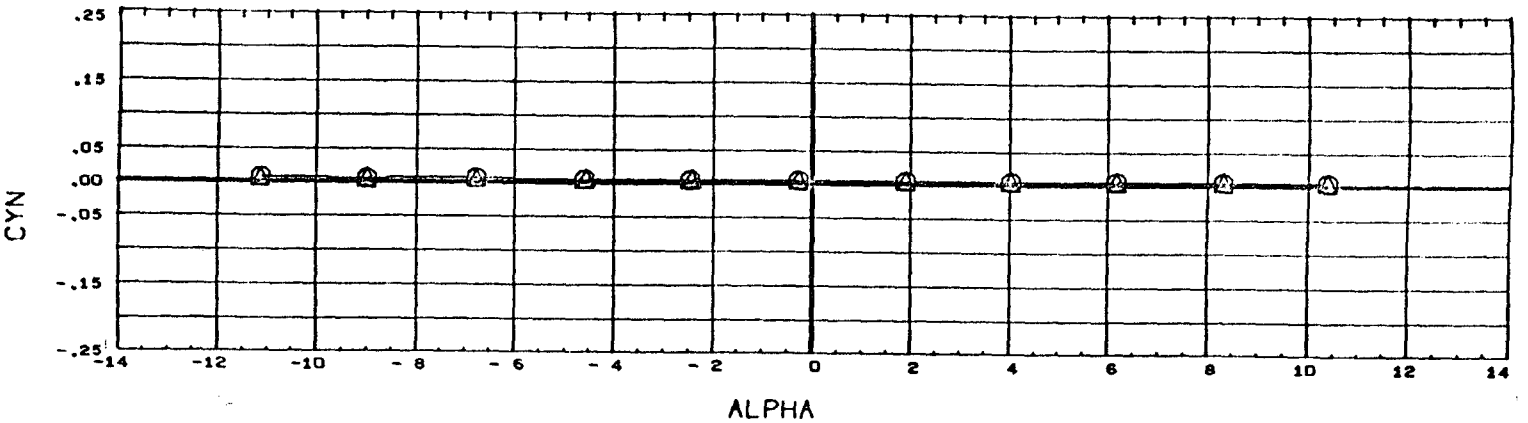
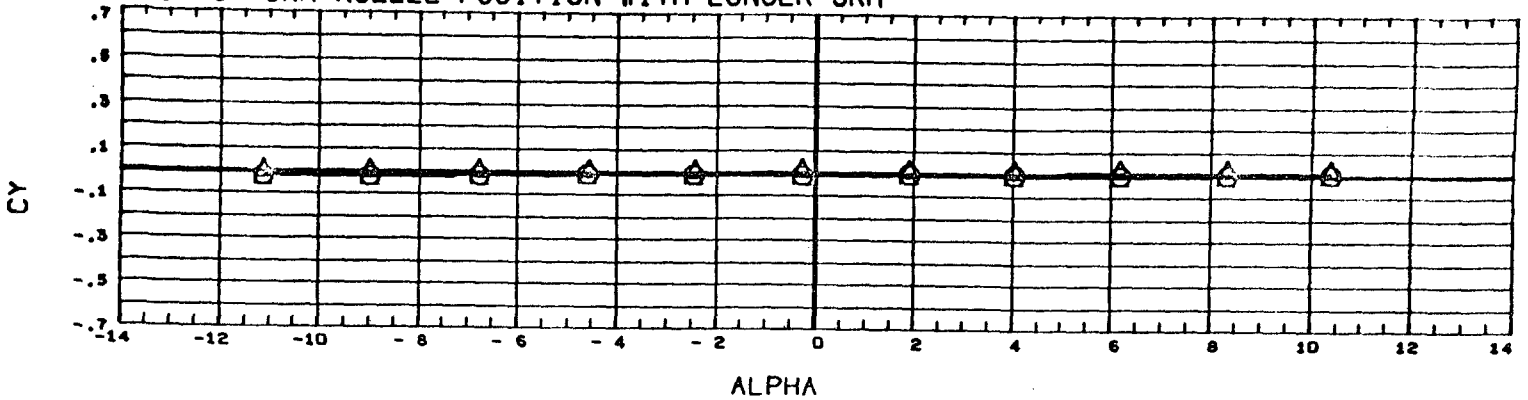
DATA SET SYMBOL	CONFIGURATION DESCRIPTION		PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S2	75.000	0.000	0.000	0.000	SREF 7.8800 90. IN
(071029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S2	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .60

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RF

# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM

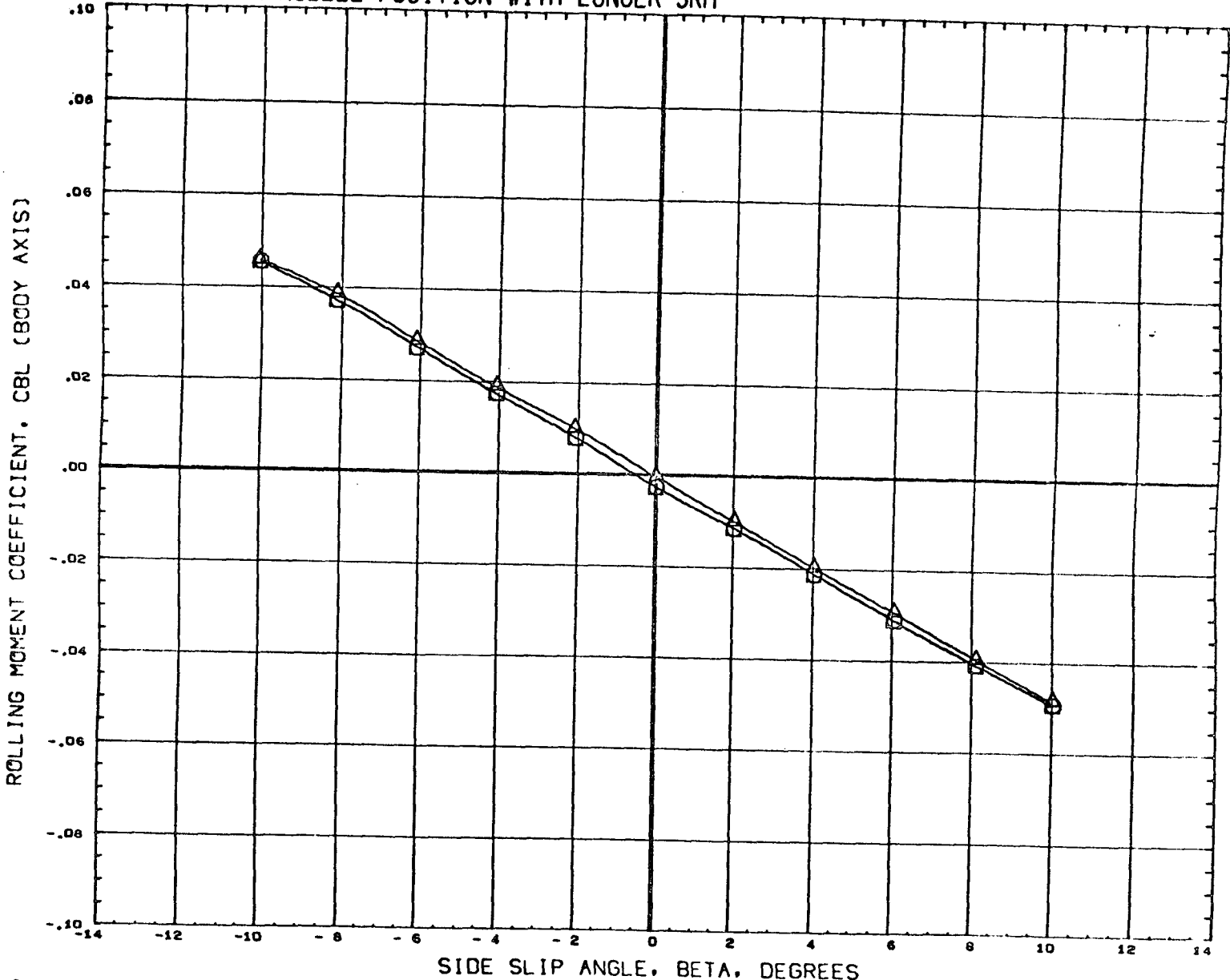


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71029)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

RC

# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM

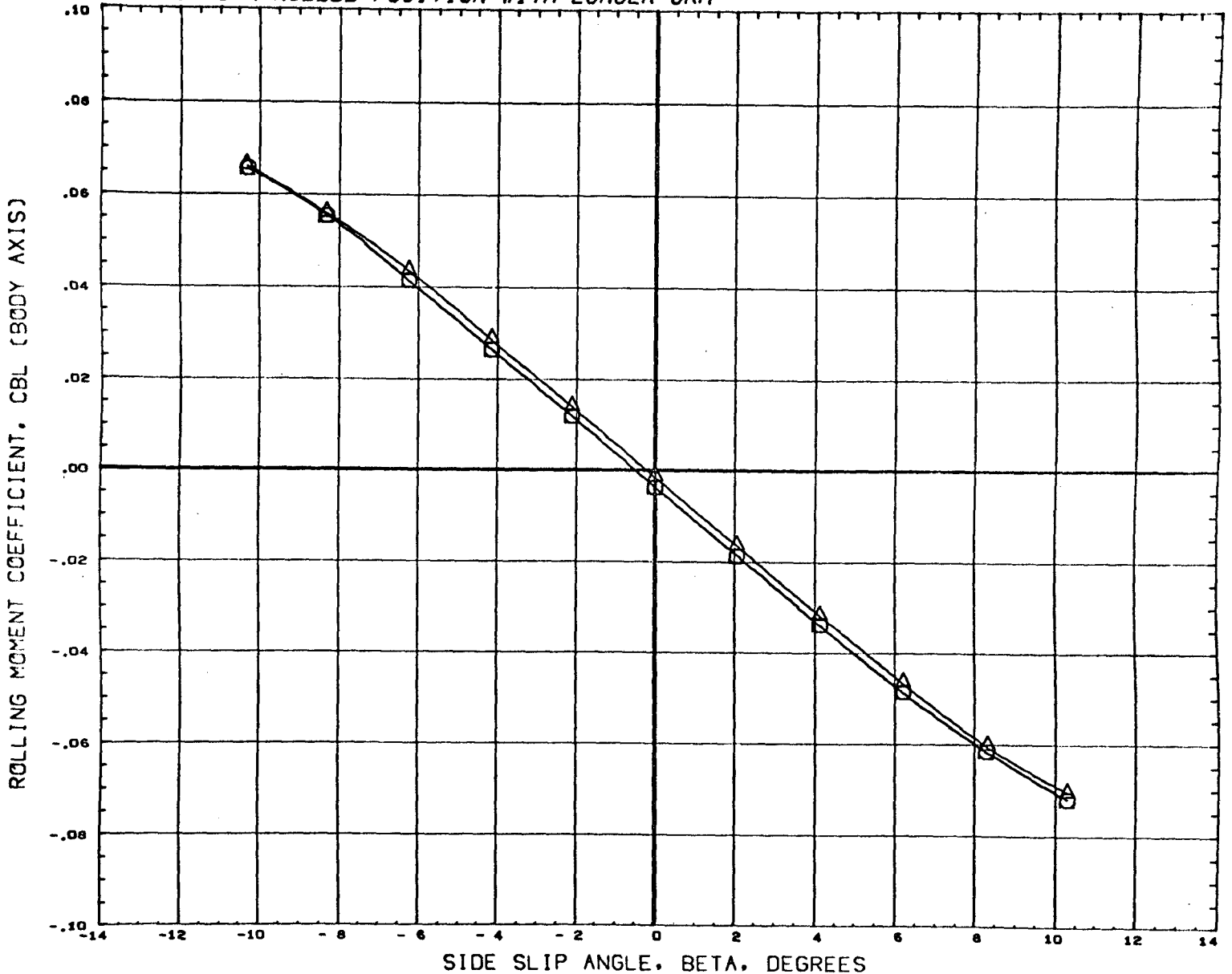


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71030)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF 2.0240 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60



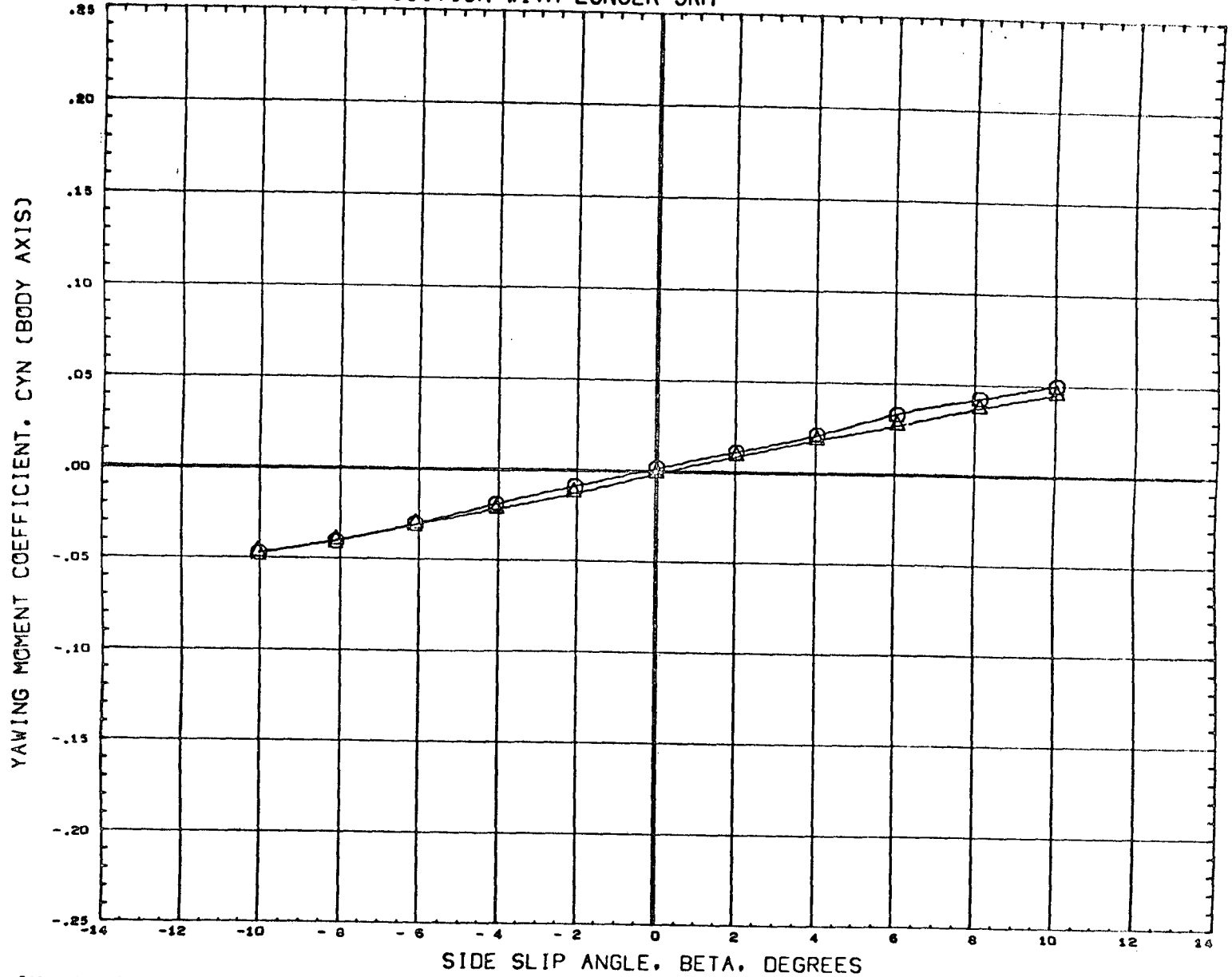
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION		PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S2	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A7103D)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S2	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
							BREF 4.4600 IN.
							YMRP 3.3600 IN.
							ZMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

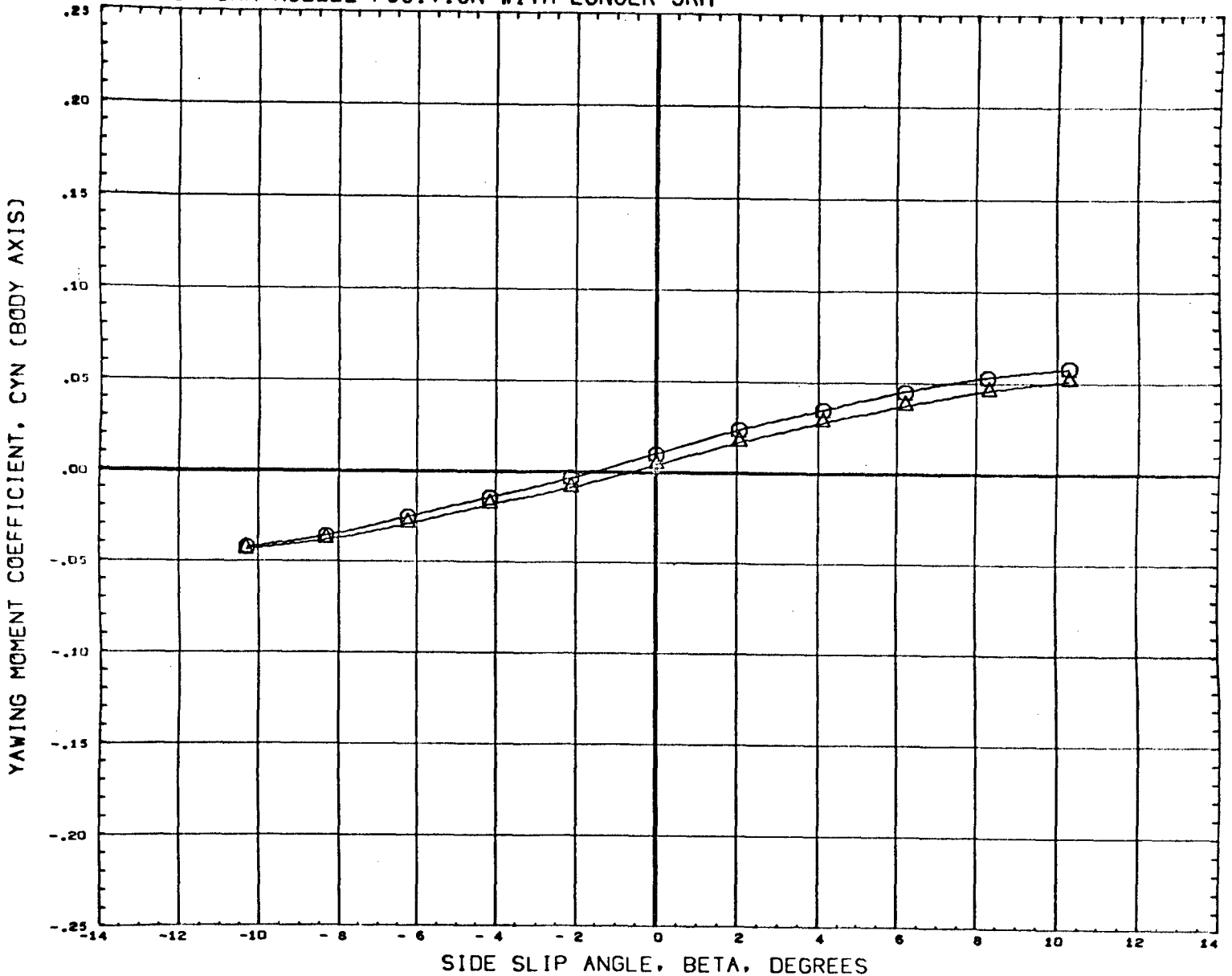
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71030)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

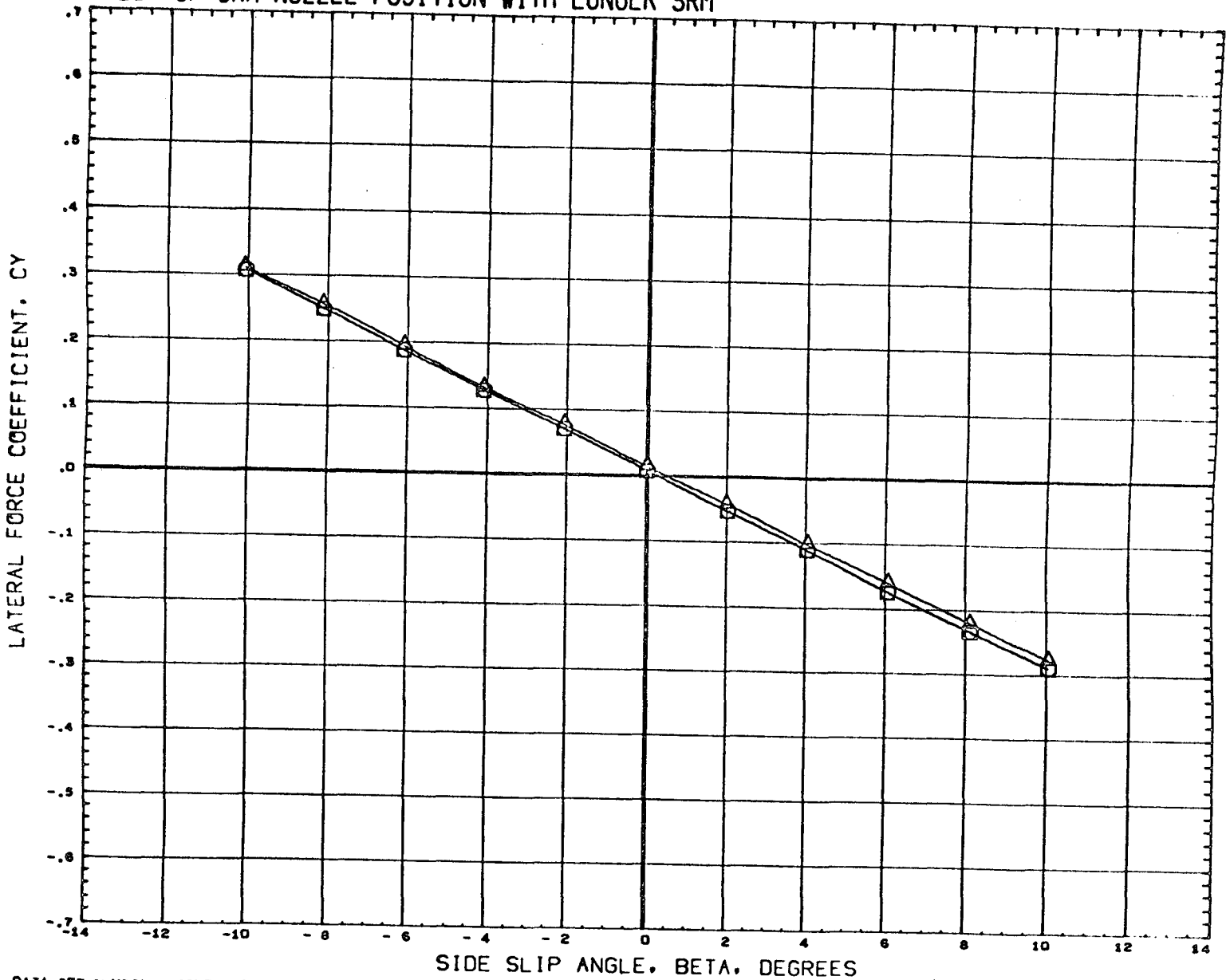
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71030)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	30,000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

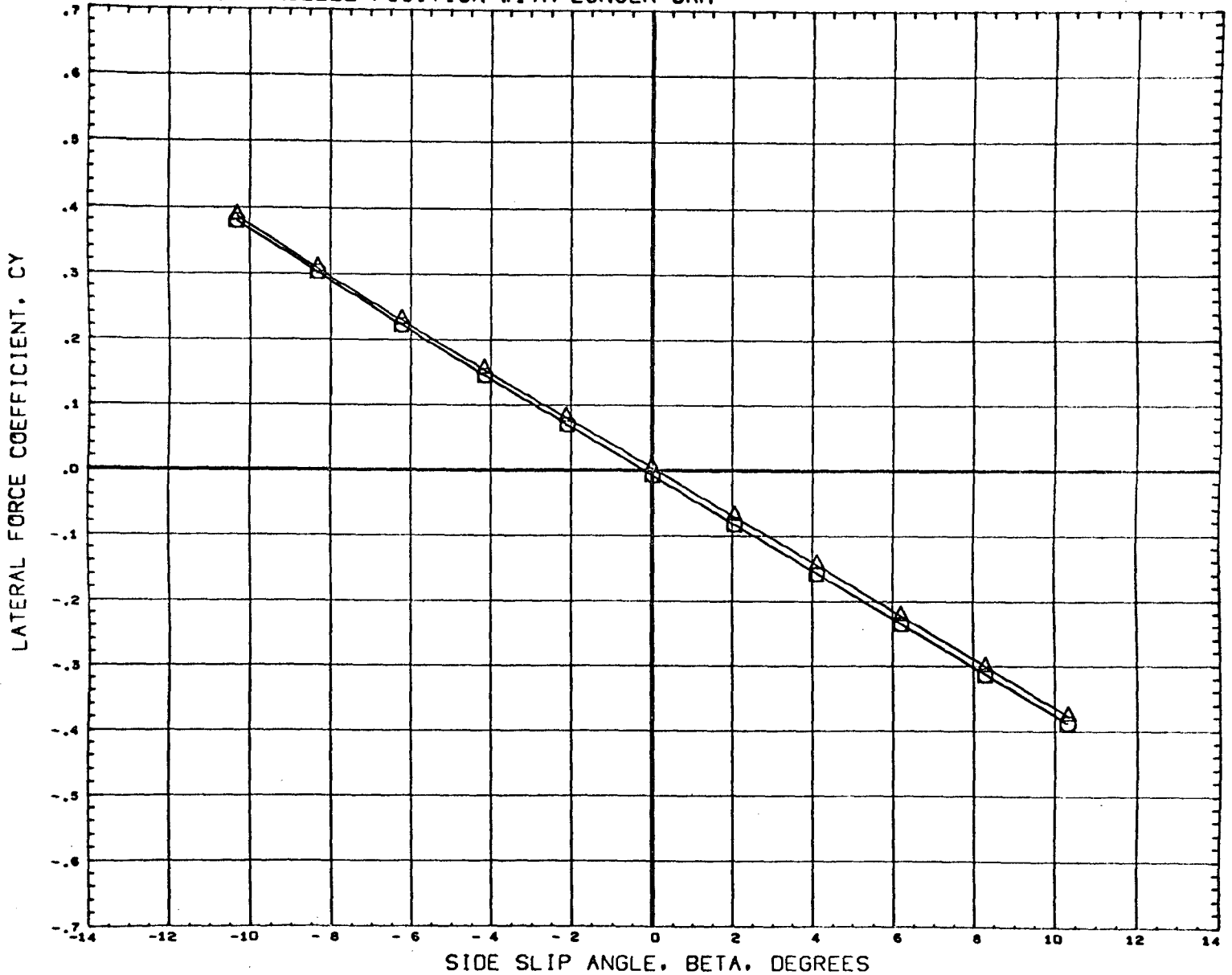
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71030)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	30.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

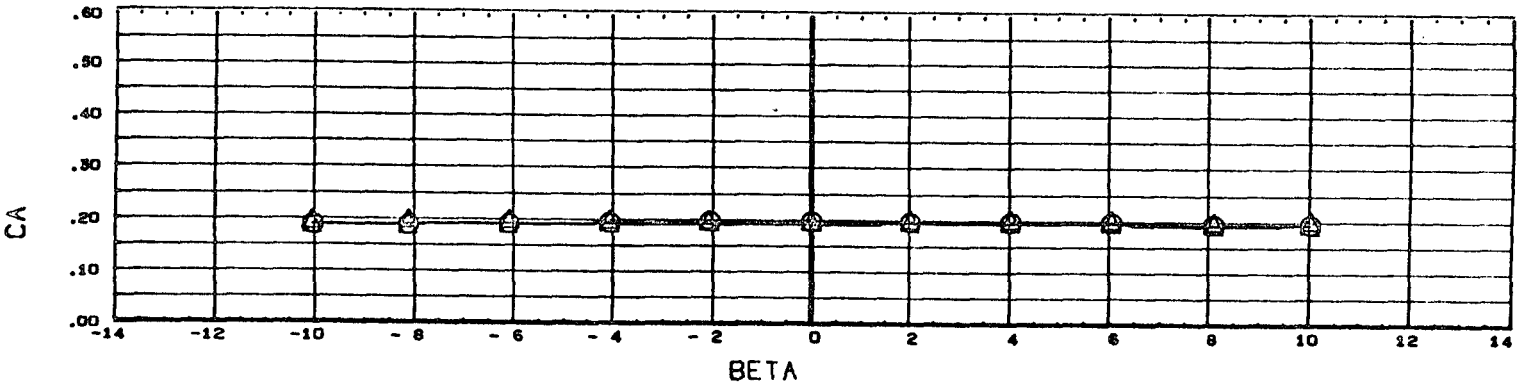
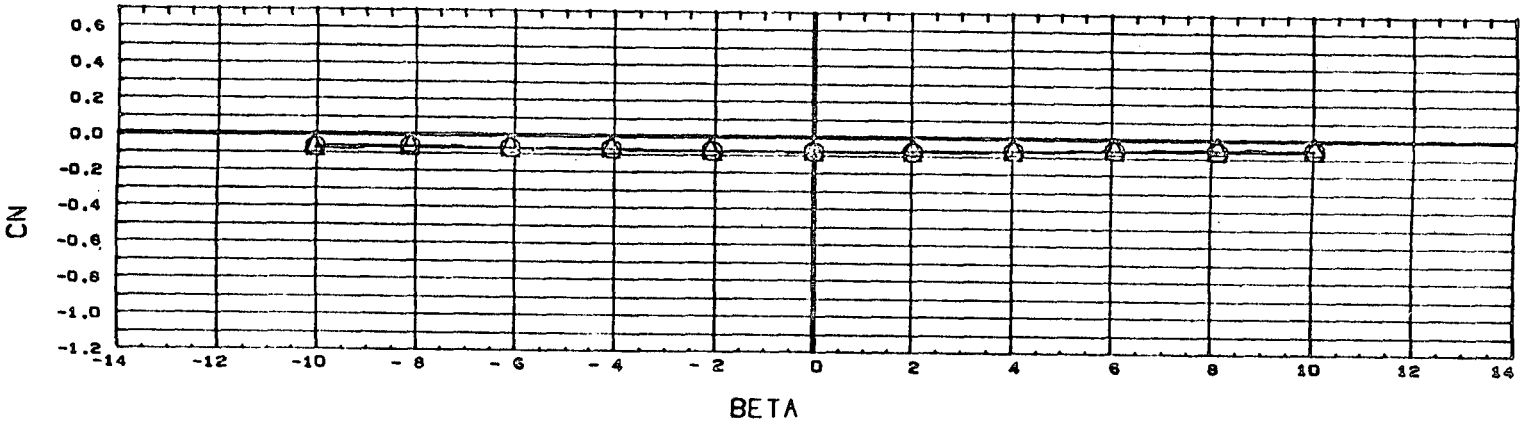
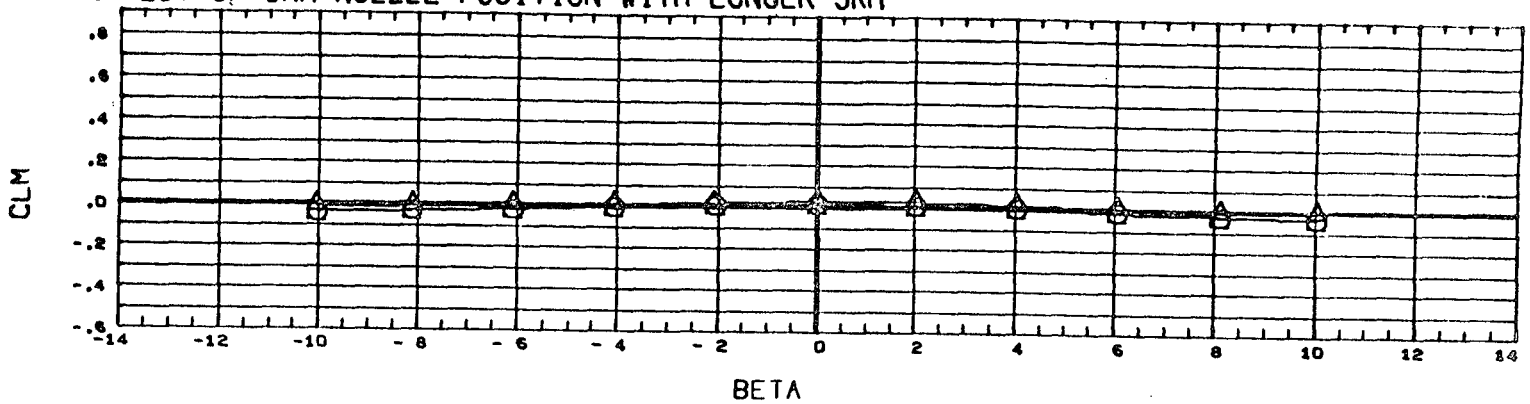
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71030)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	30.000	0.000	0.000	LREF 2.0260 IN.
						BREF 4.4600 IN.
						XM RP 3.3600 IN.
						YM RP 0.0000 IN.
						ZM RP 0.2460 IN.
						SCALE 0.0040 SCALE

MACH 1.20

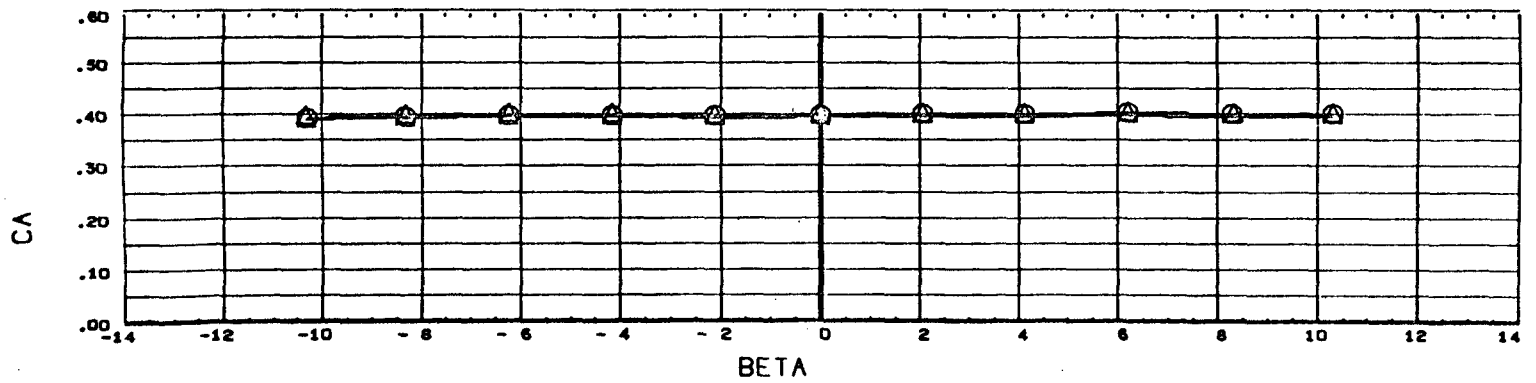
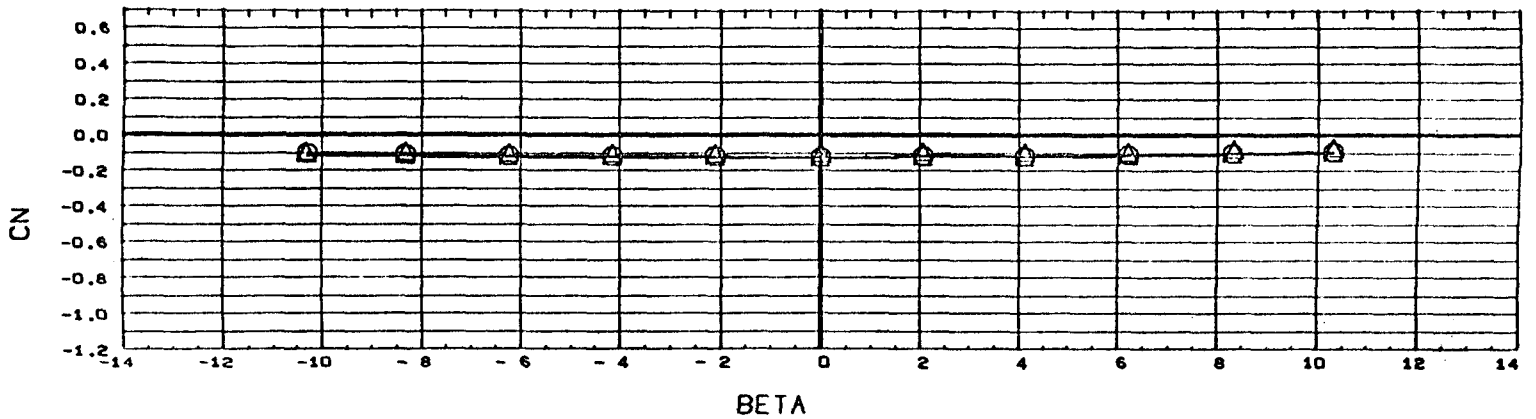
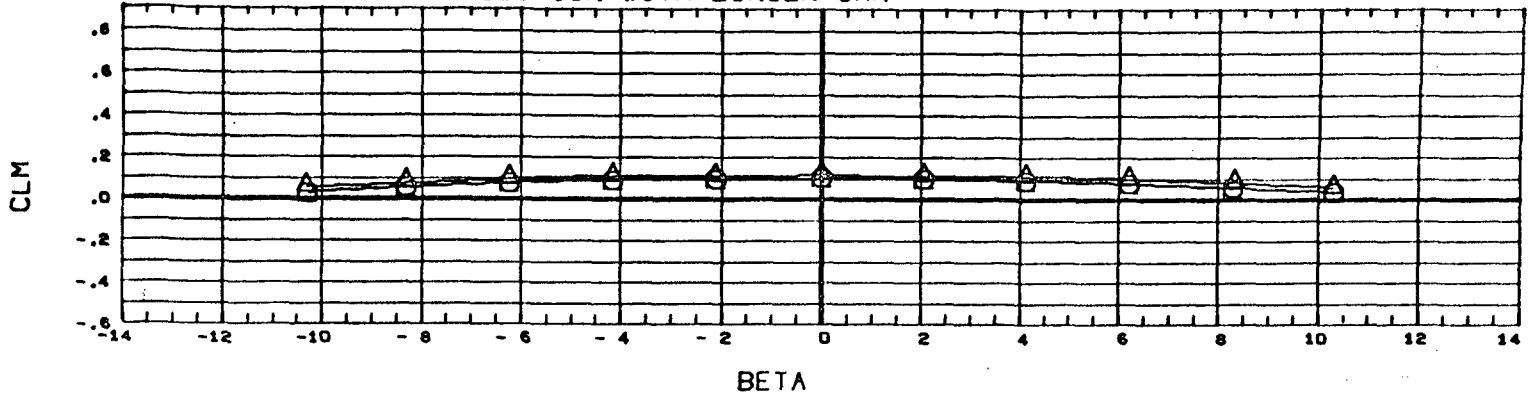
# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	0,000	0,000	0,000	SREF 7.8800 SQ. IN.
(A71030)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	30,000	0,000	0,000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF SRM NOZZLE POSITION WITH LONGER SRM

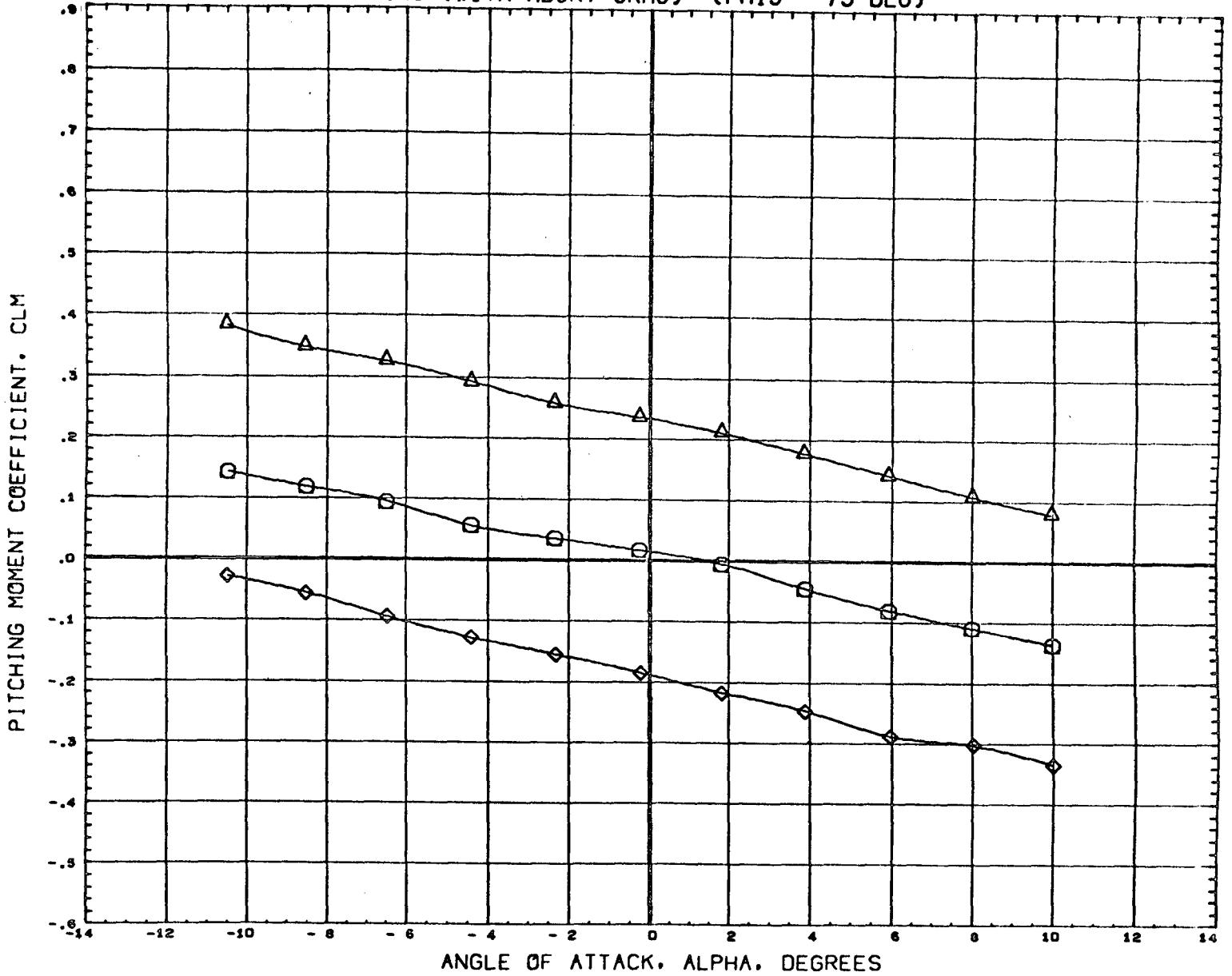


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(C71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	0,000	0,000	0,000	SREF	7.8800 SQ. IN
(A71030)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75,000	30,000	0,000	0,000	LREF	2.0280 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.20

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# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)

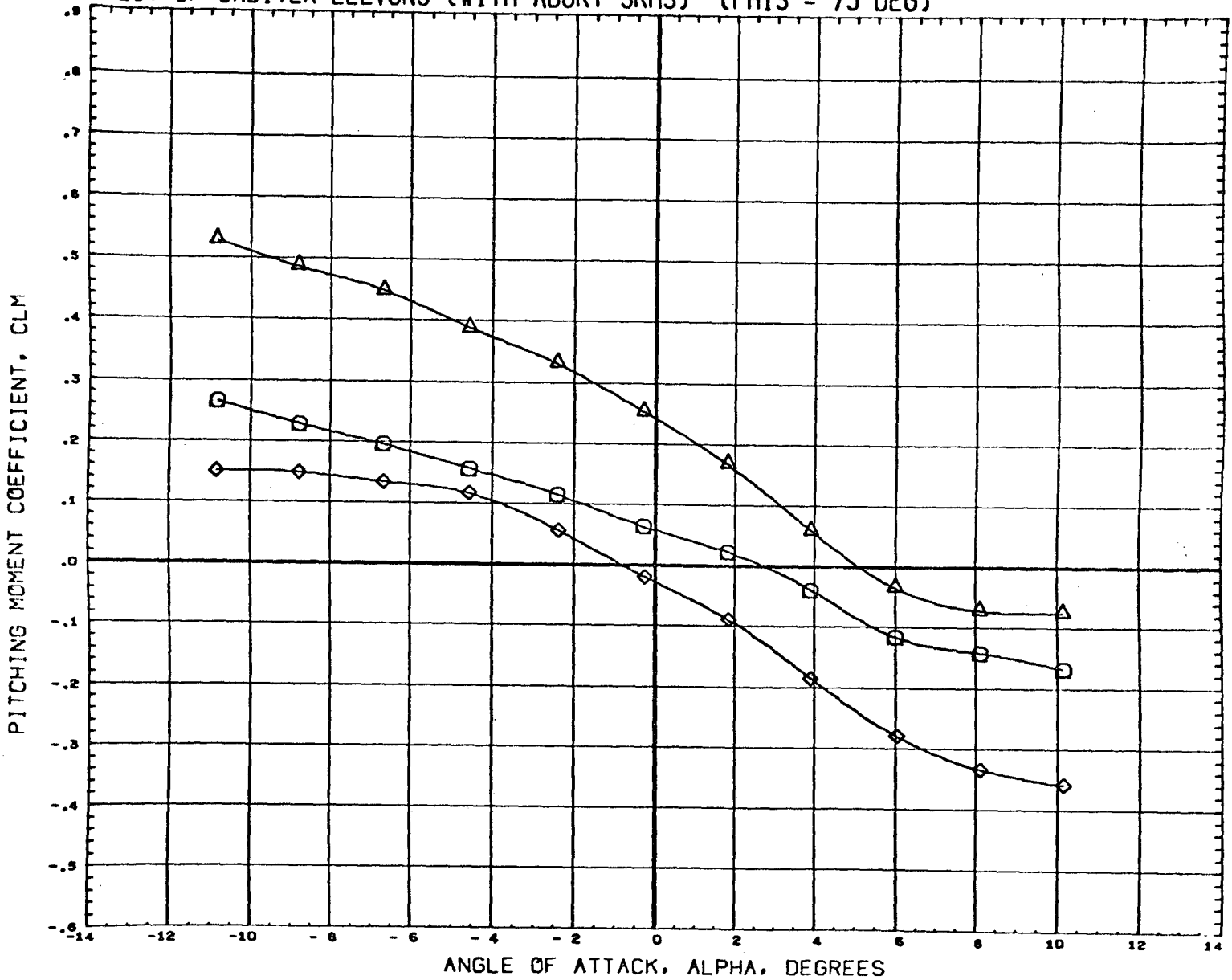


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61



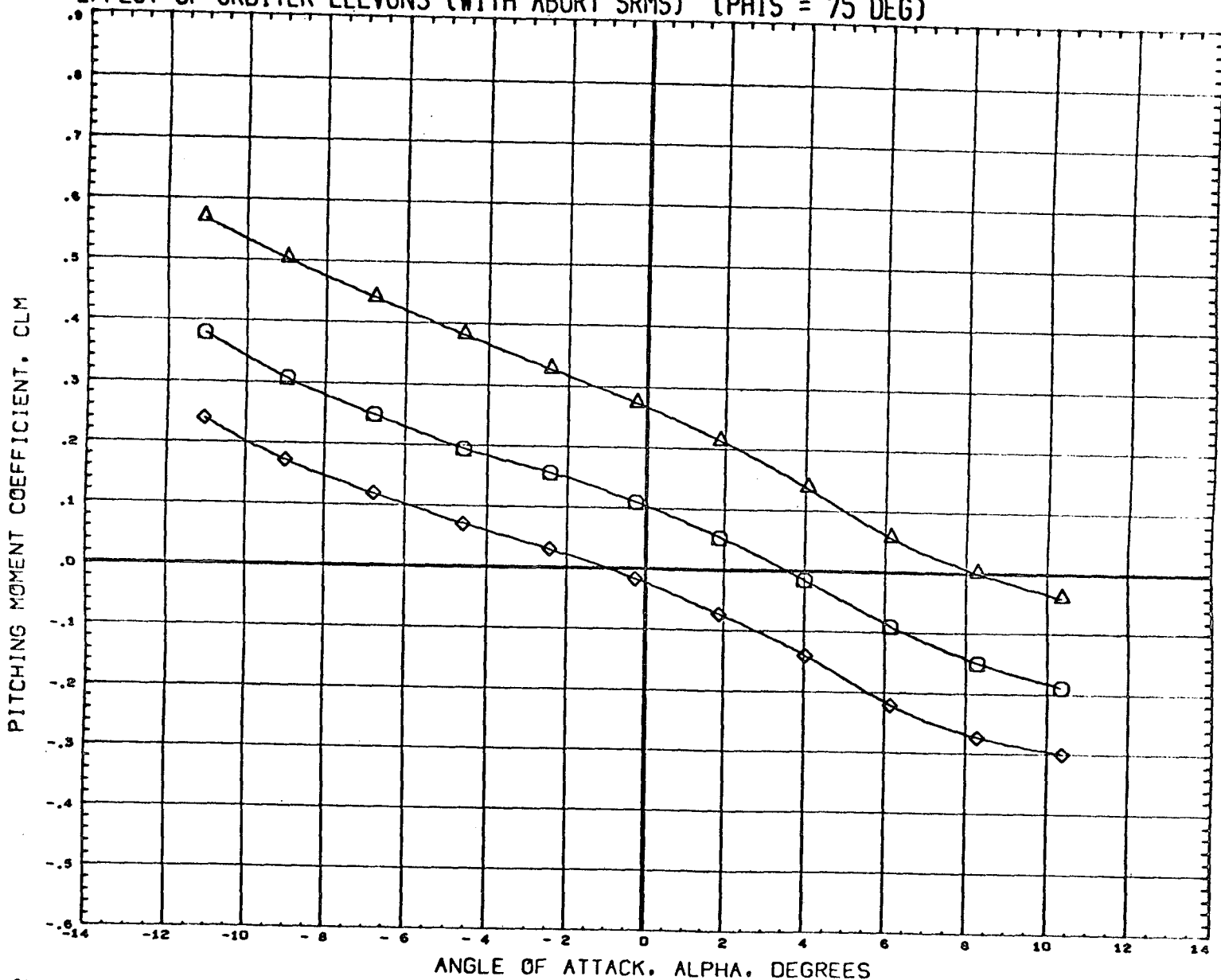
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)

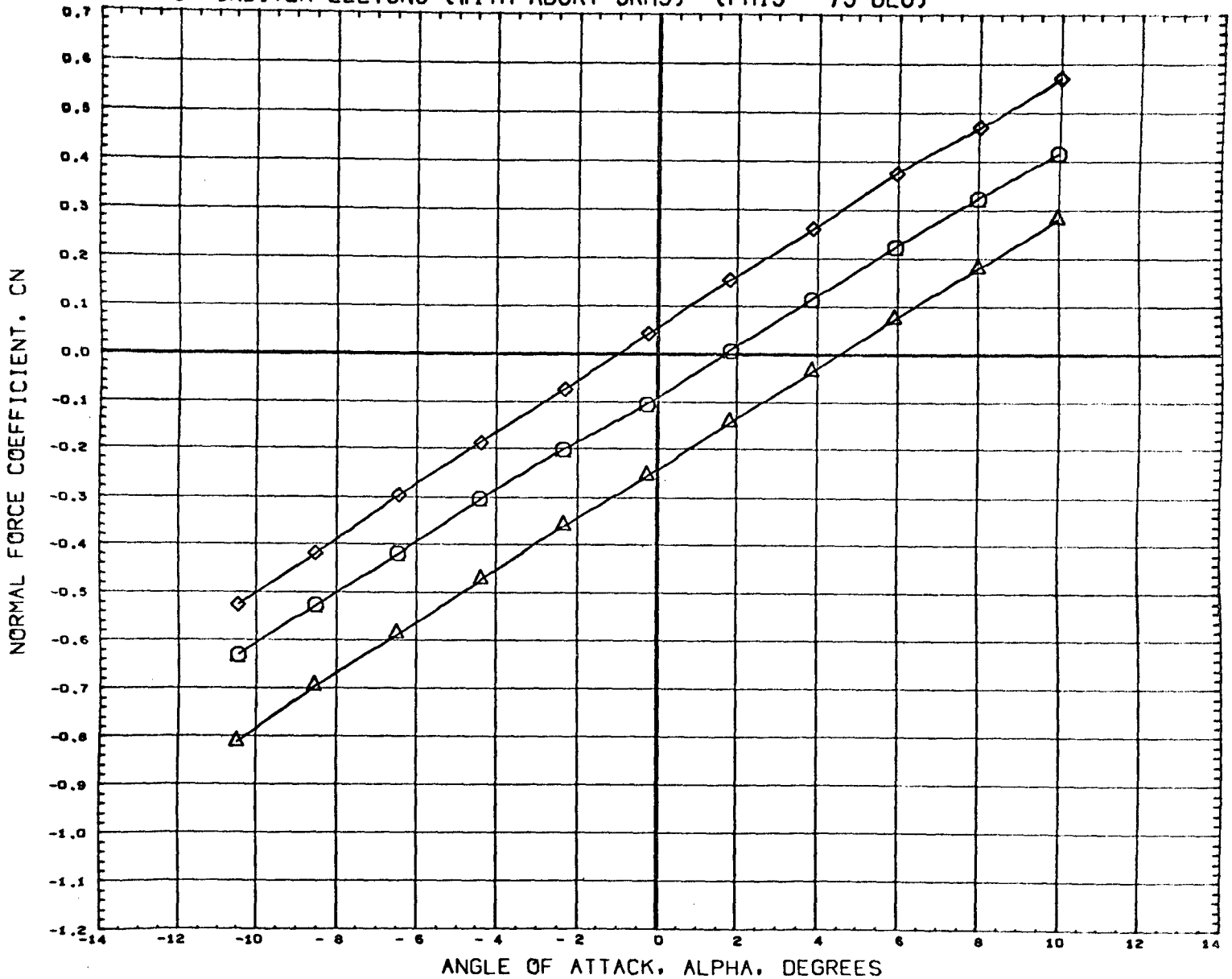


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(P71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



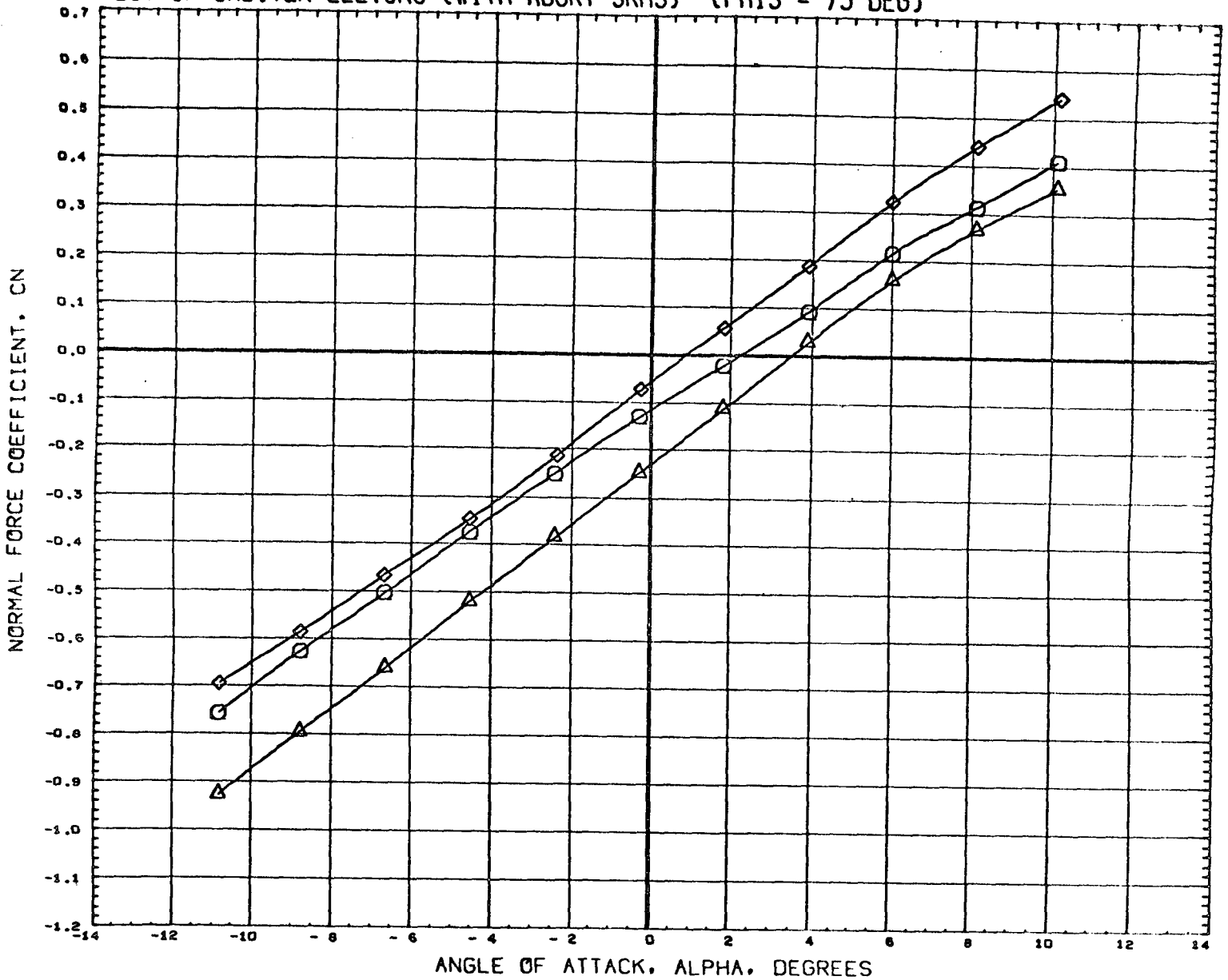
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

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D

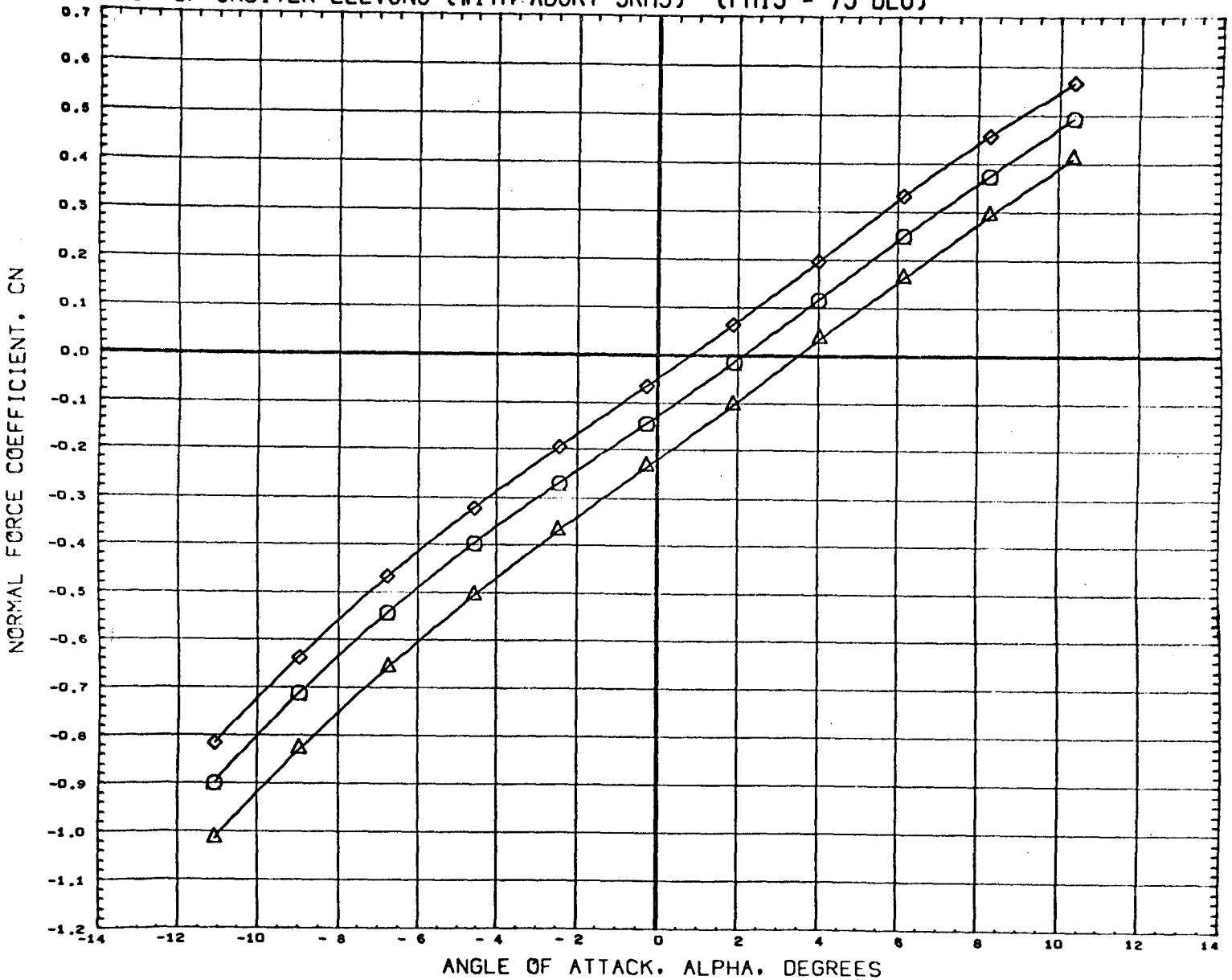
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(P71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	-10.000	0.000	LREF 2.0260 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

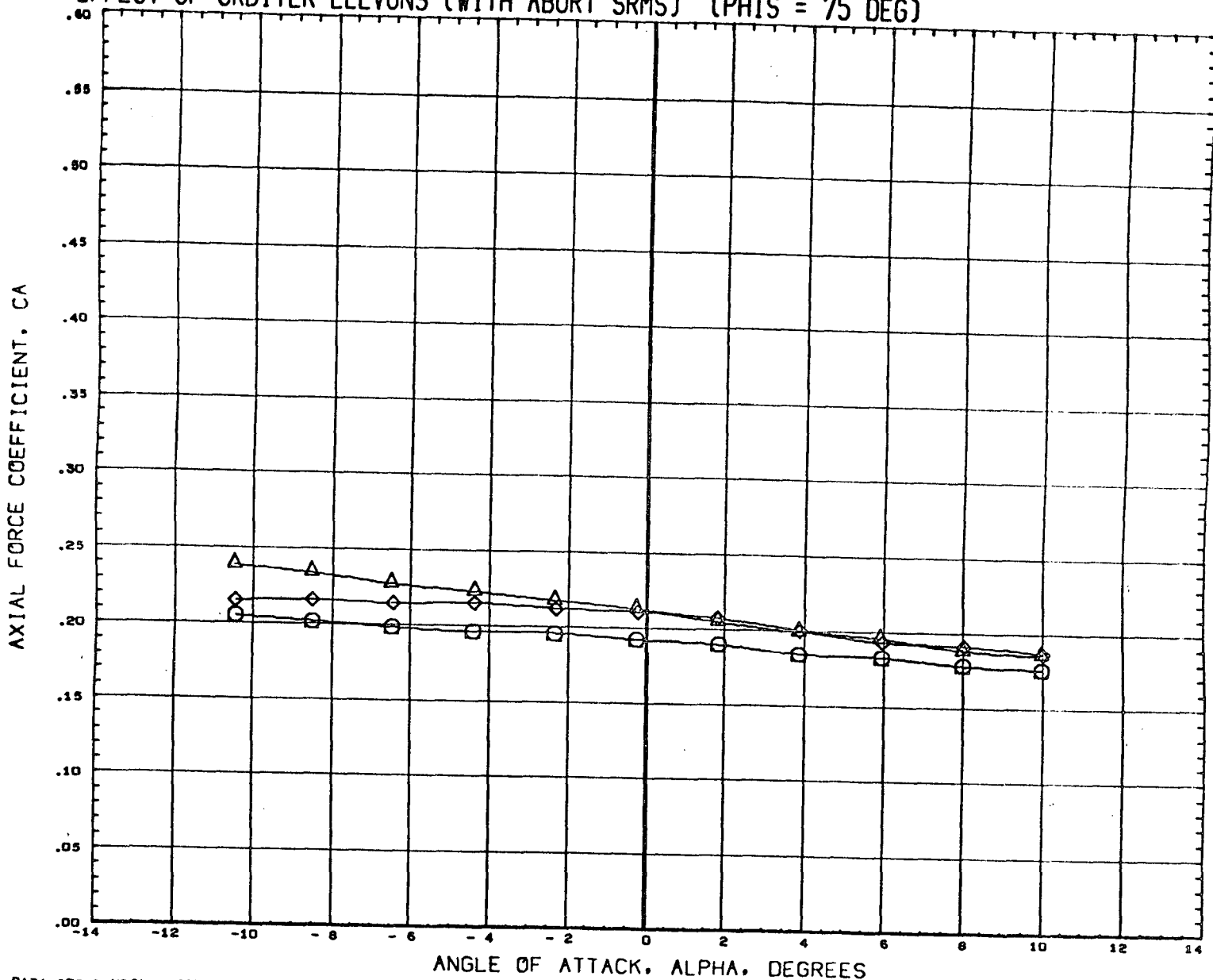
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71054)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

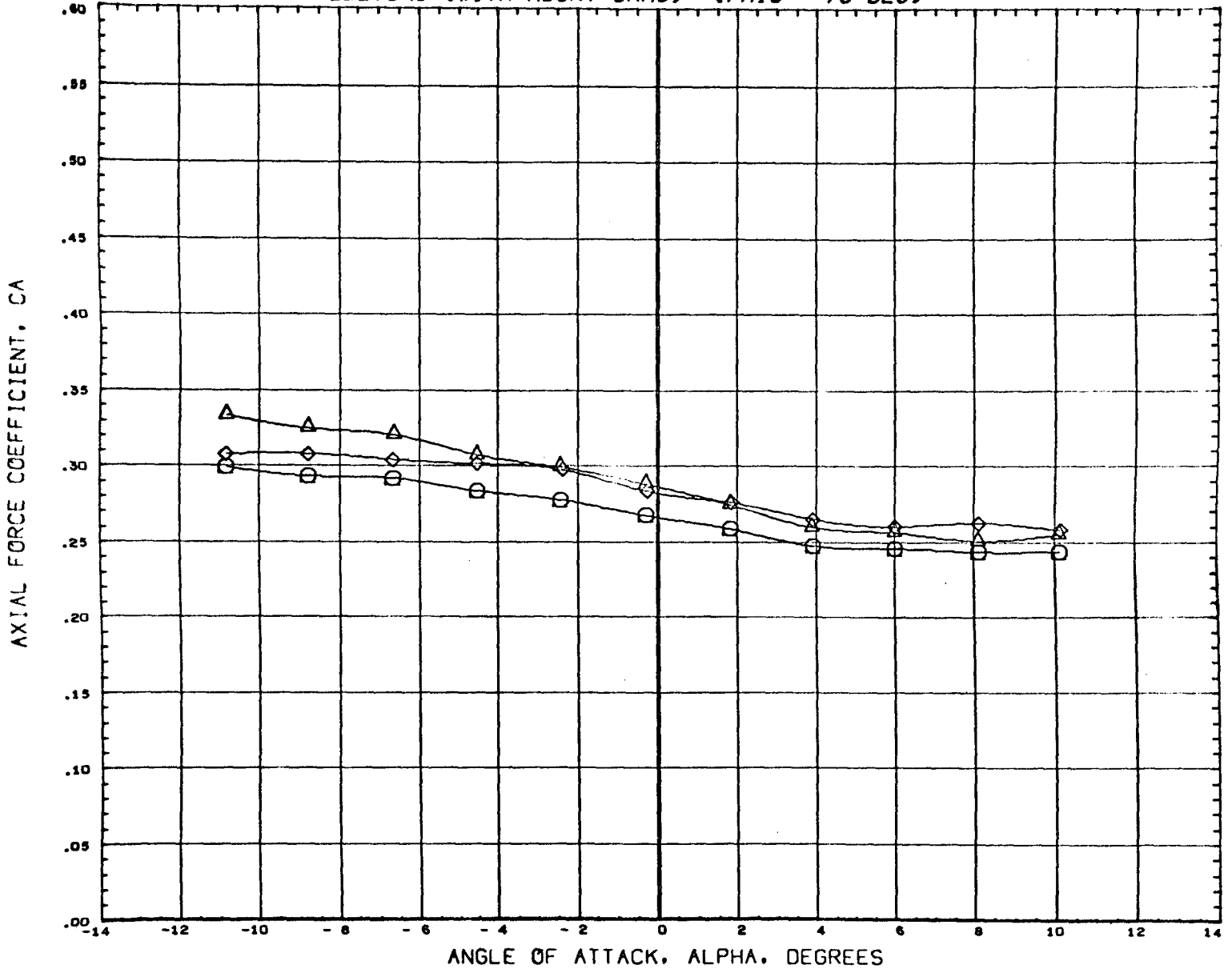
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBO	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(P71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

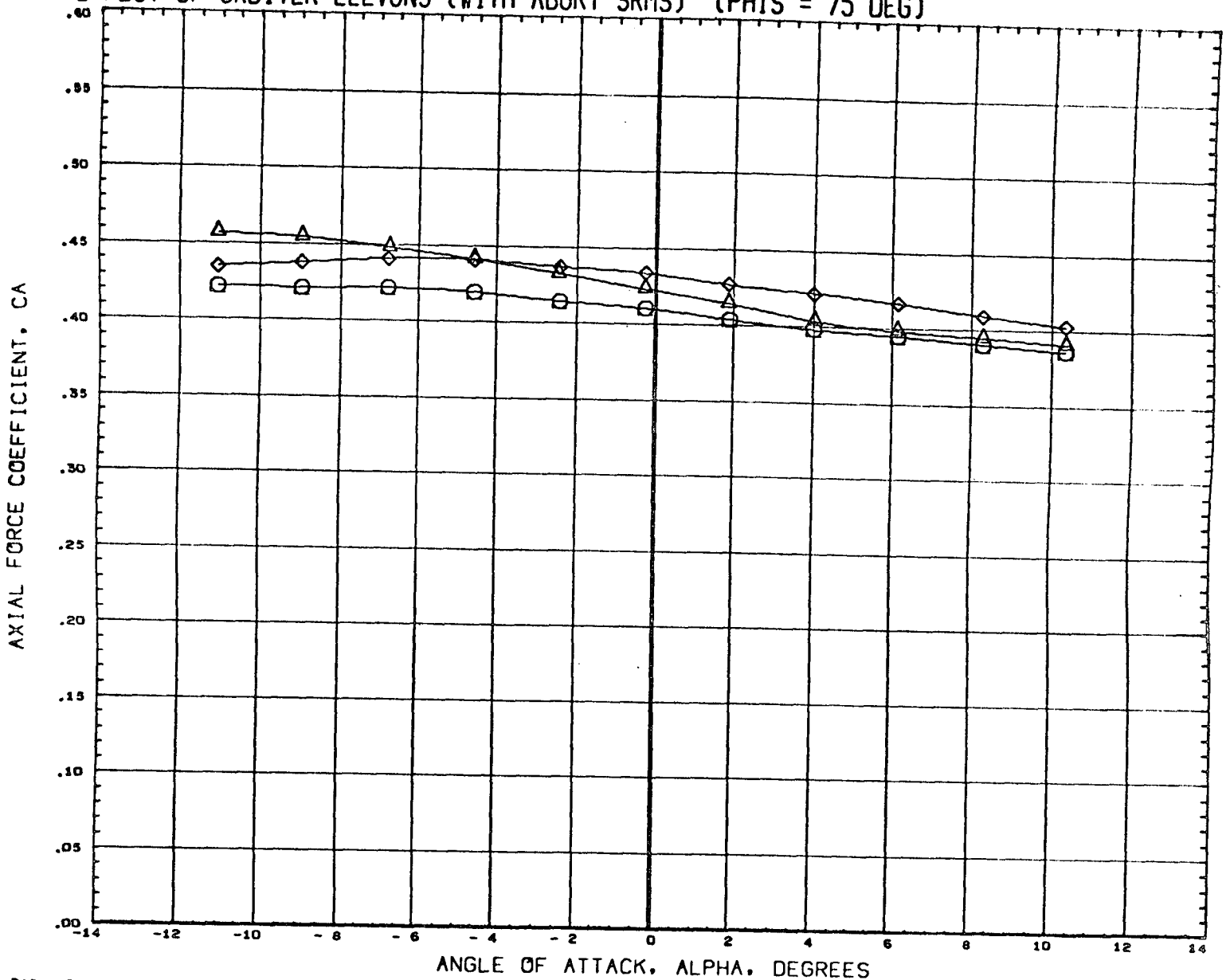
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(871055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(871057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)

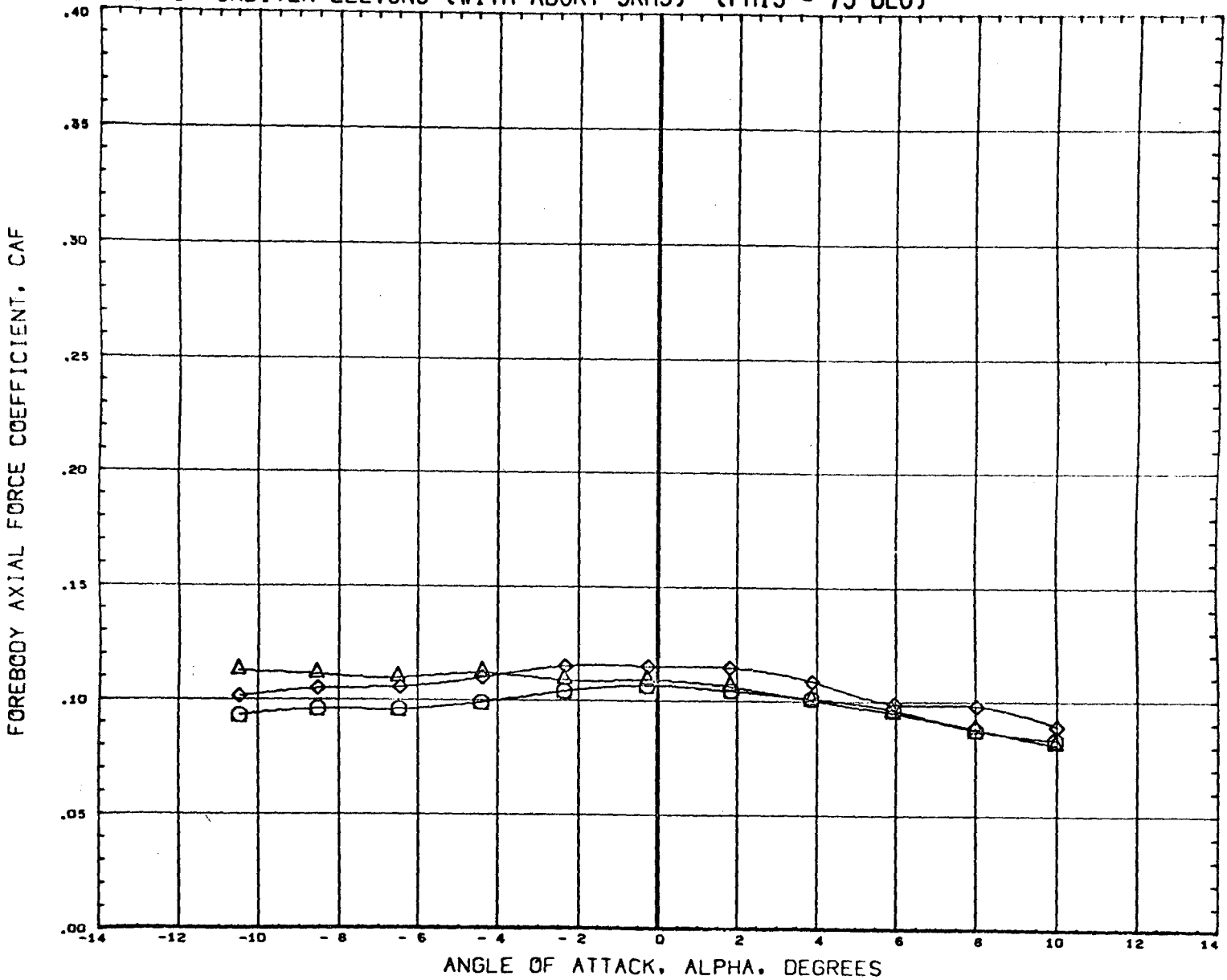


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						YMRP 3.3600 IN.
						ZMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



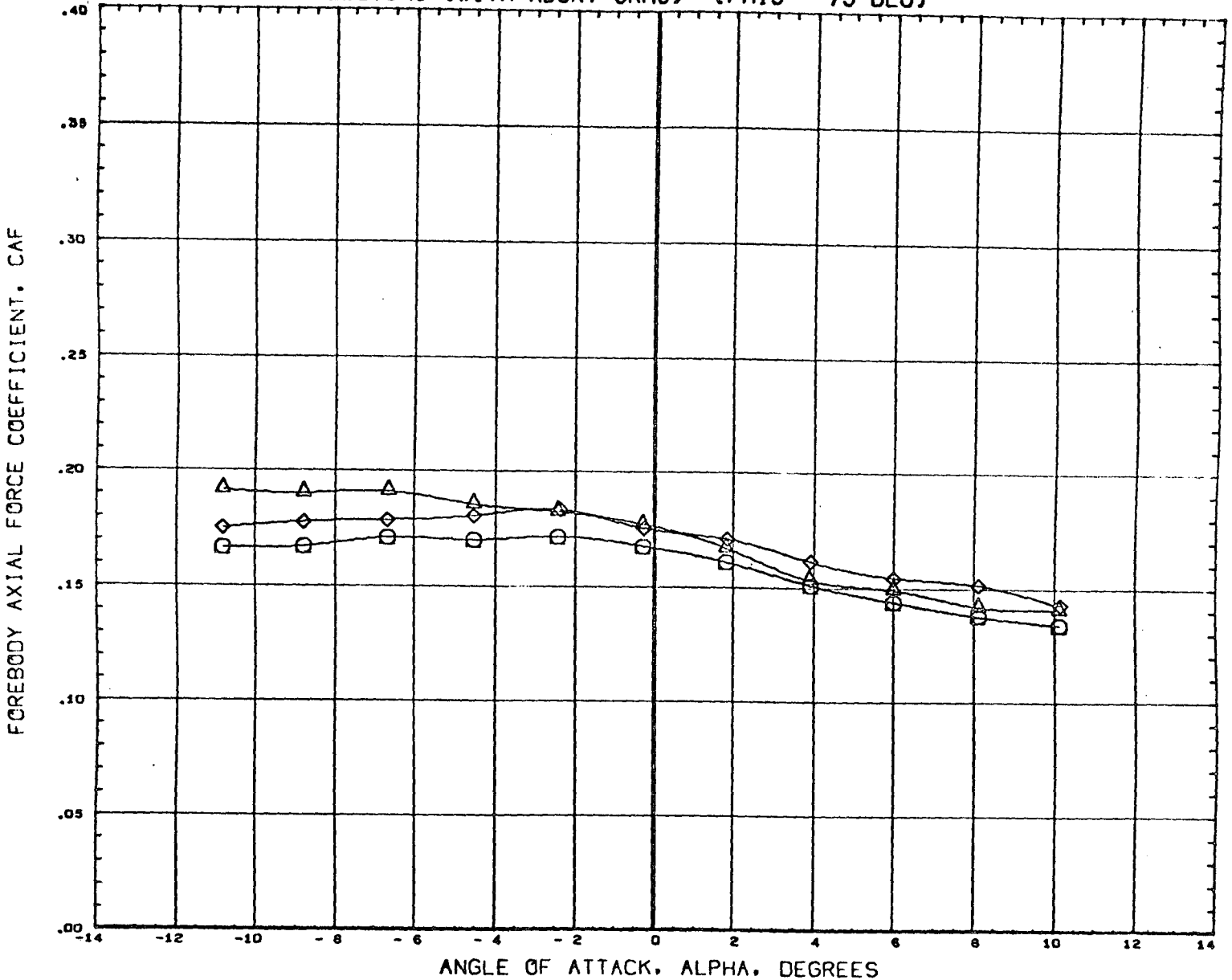
EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71037)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

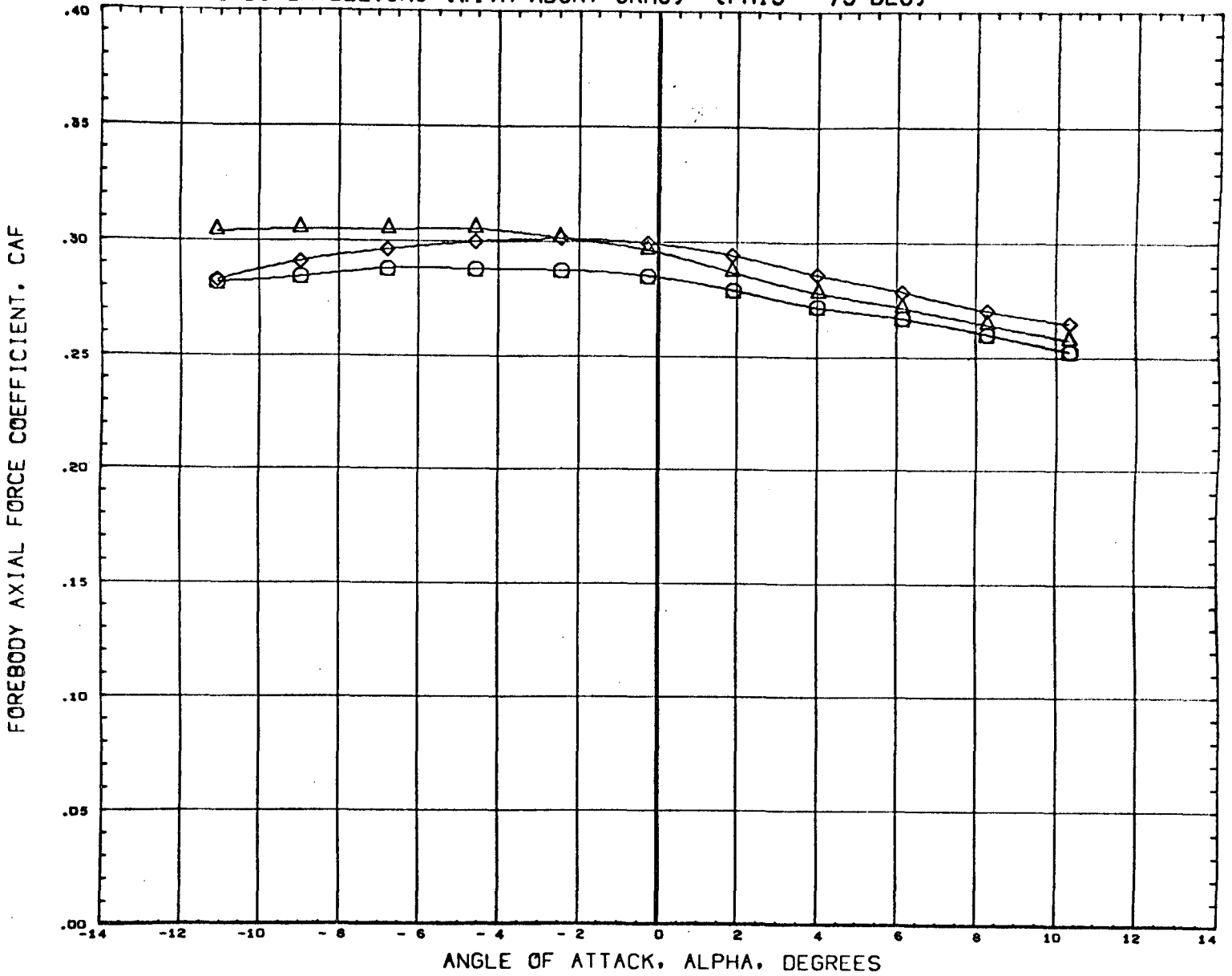
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	0,000	0,000	SREF 7,8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	-10,000	0,000	LREF 2,0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	10,000	0,000	BREF 4,4600 IN.
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MACH .90

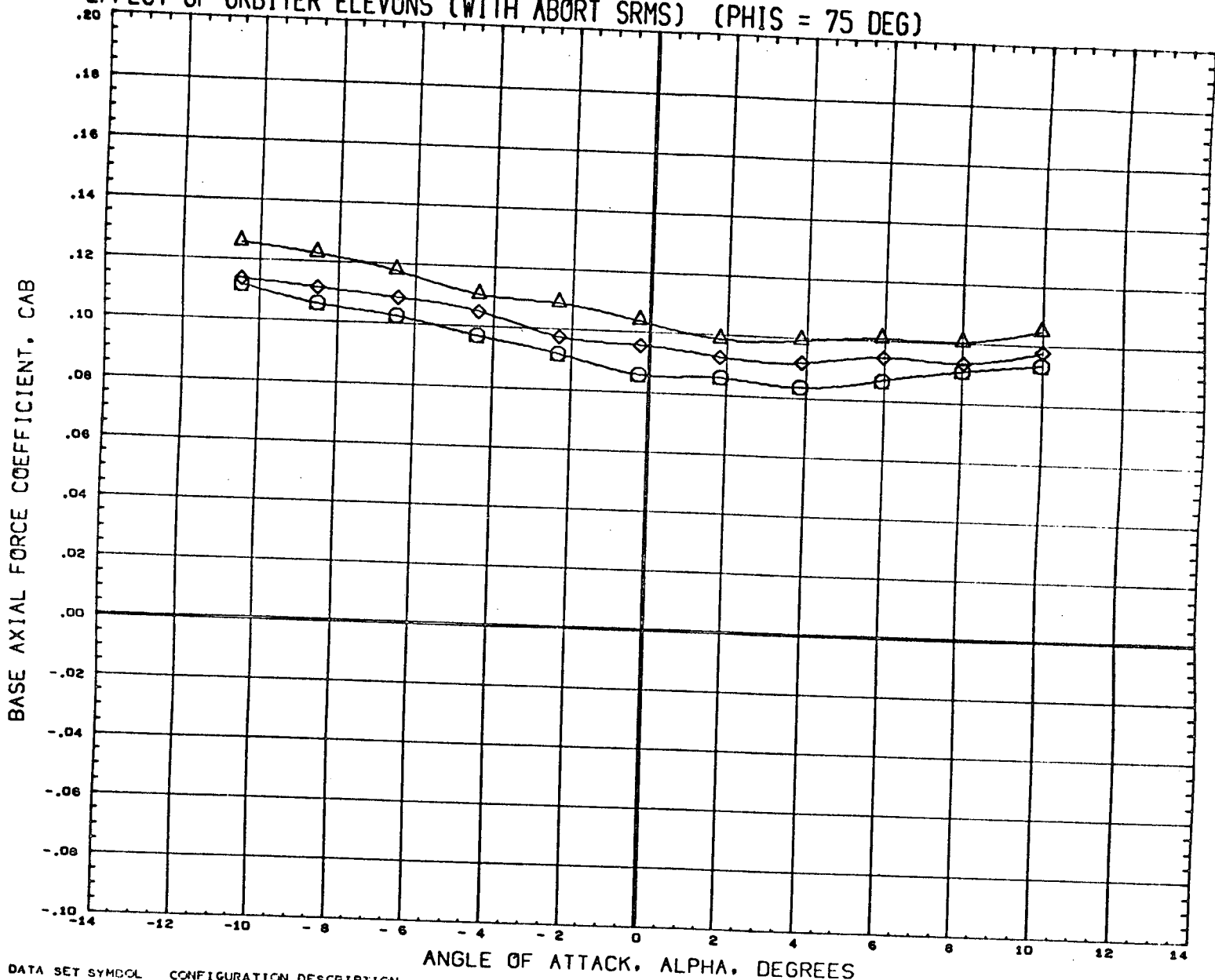
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAM2	ELEVTR	RUDDER	REFERENCE INFORMATION
(P71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

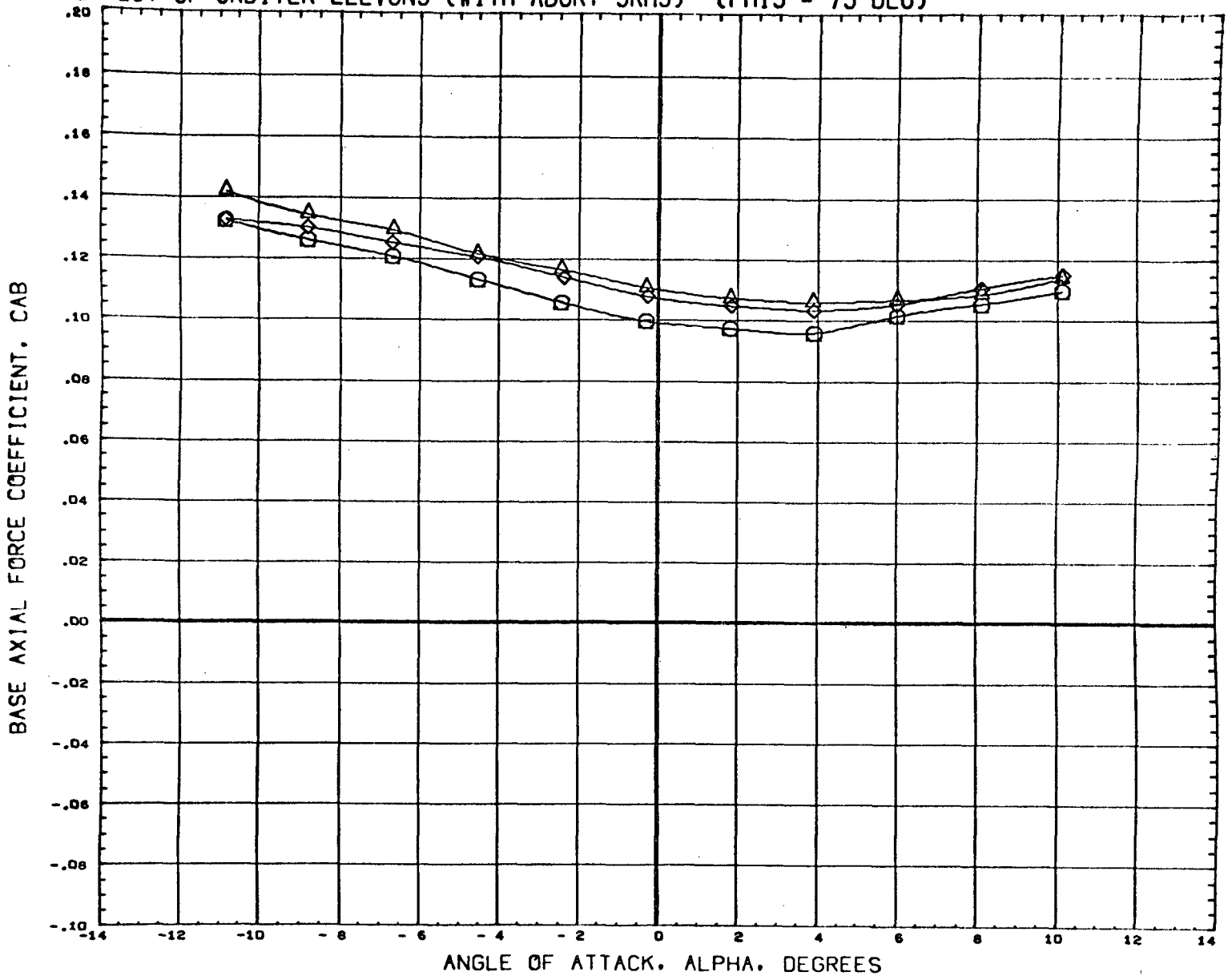
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	75.000	0.000	-10.000	0.000	LREF	2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	75.000	0.000	10.000	0.000	BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH .61

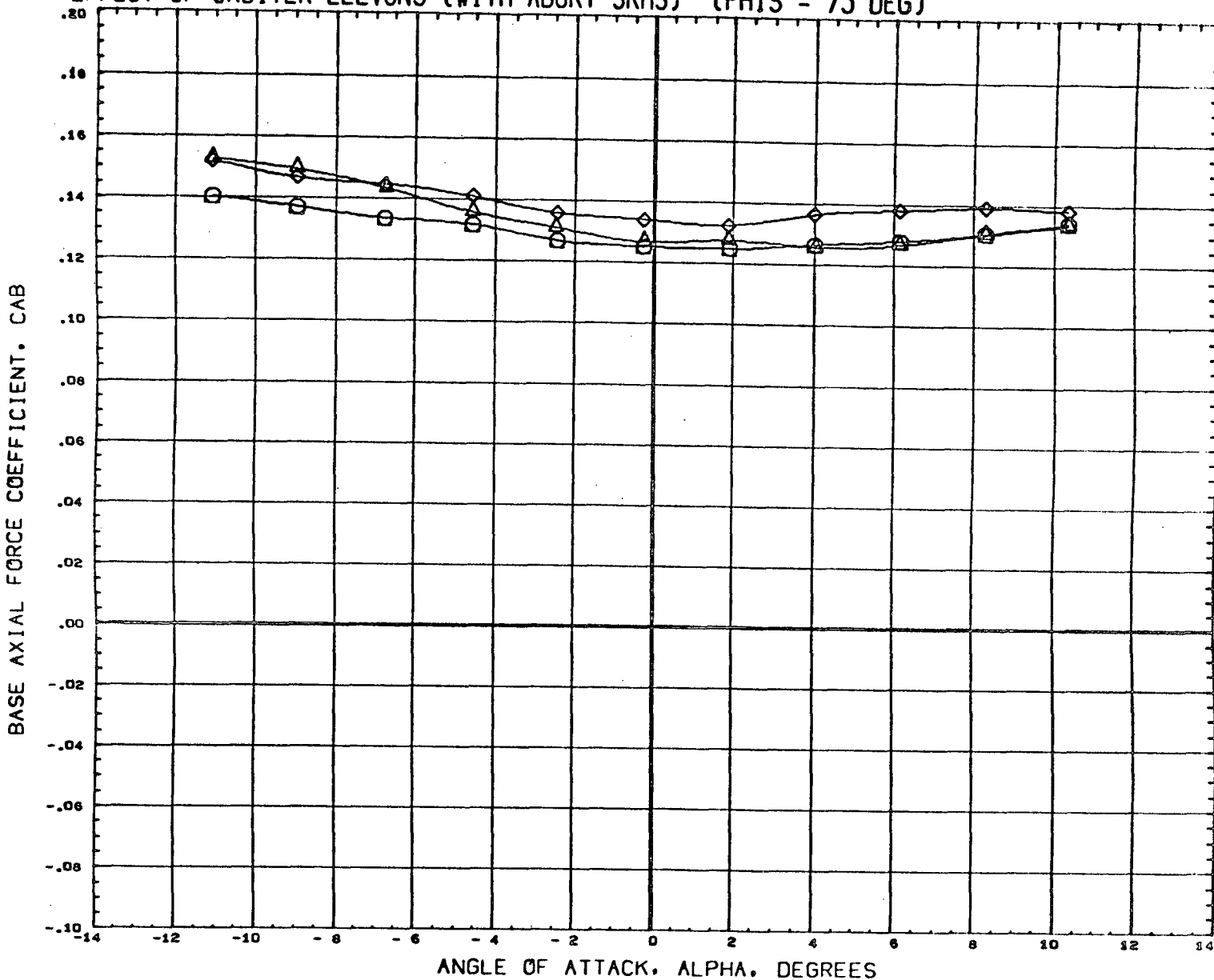
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)

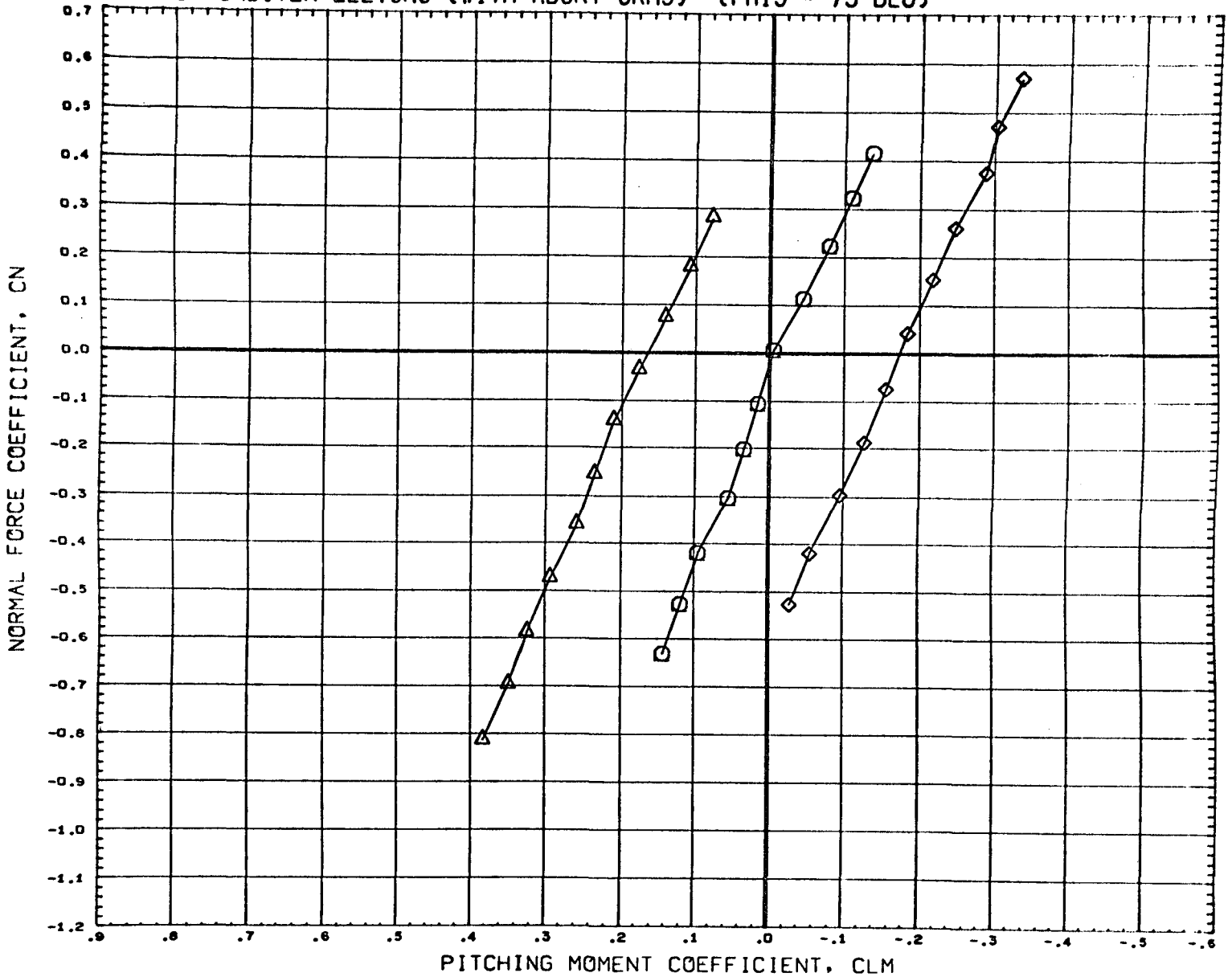


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)

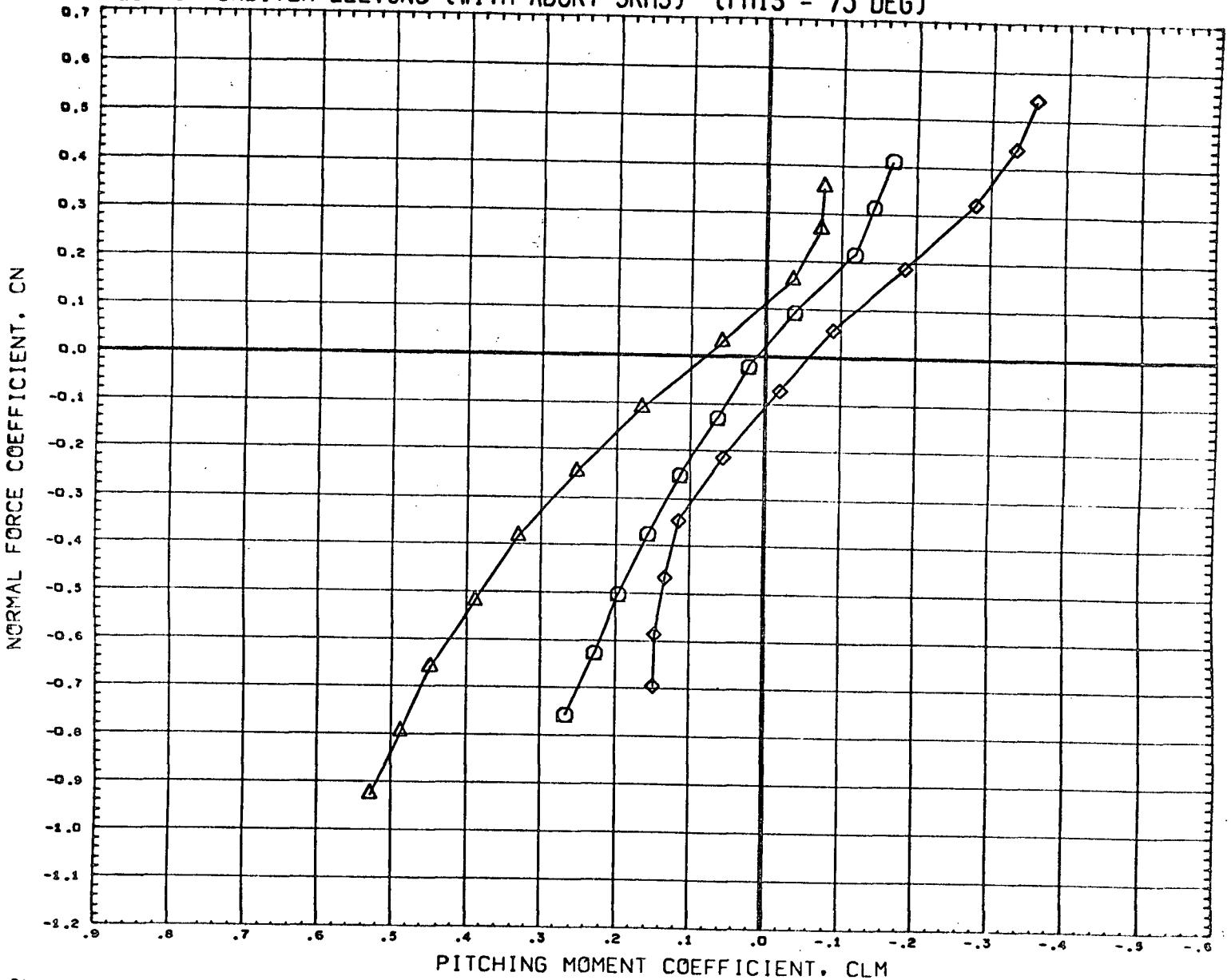


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

C

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)

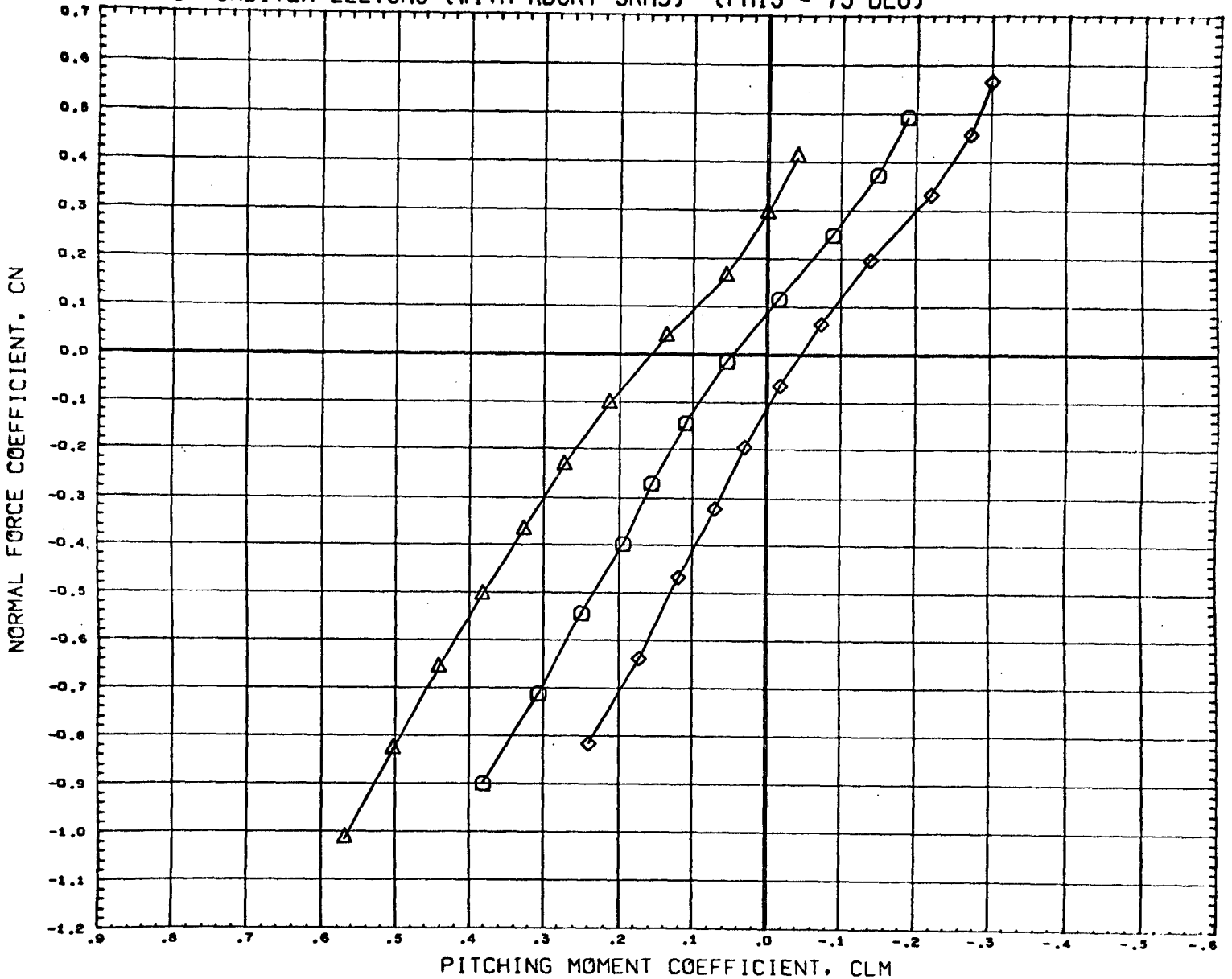


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90



# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)

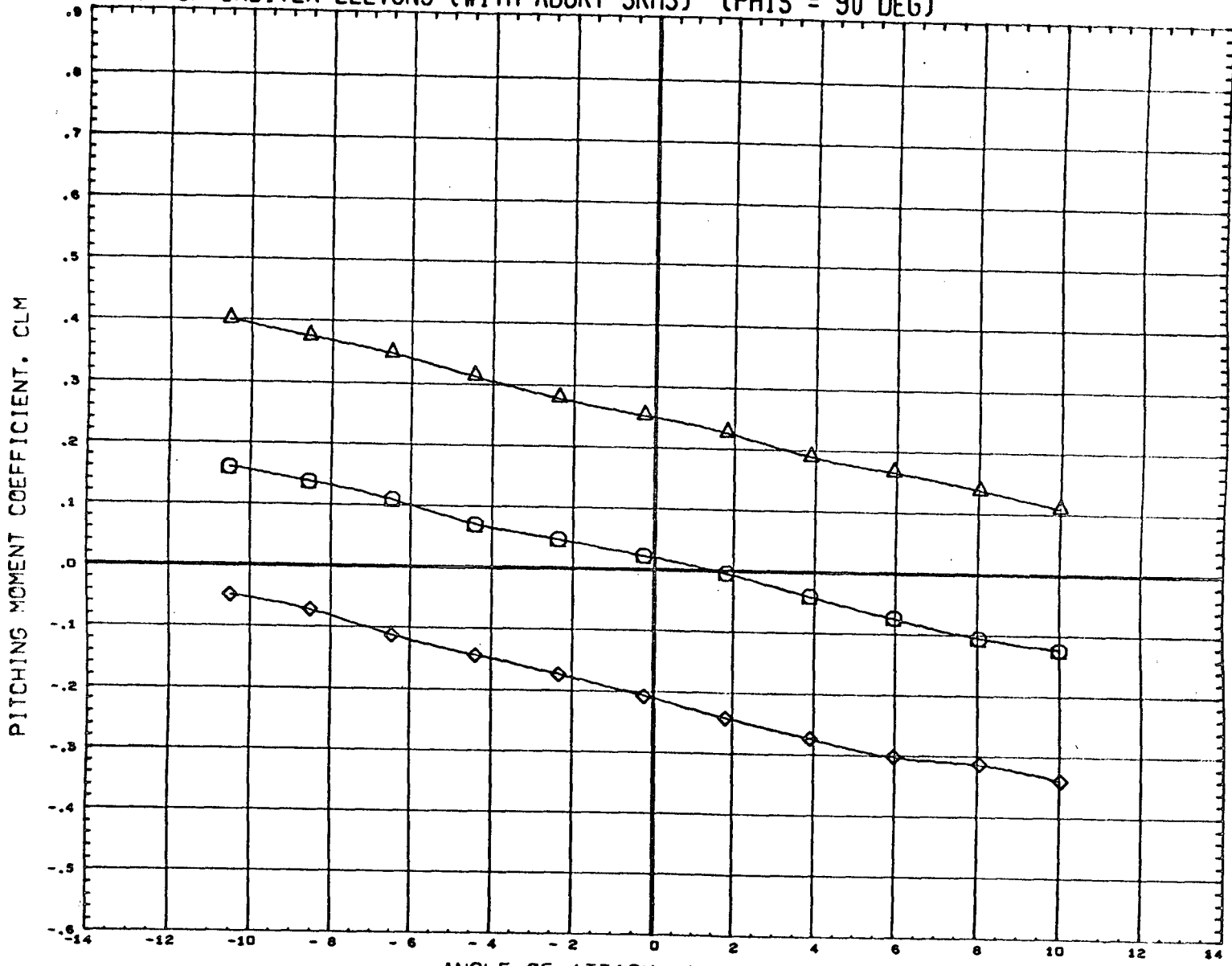


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(F71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71055)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71057)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.20

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)

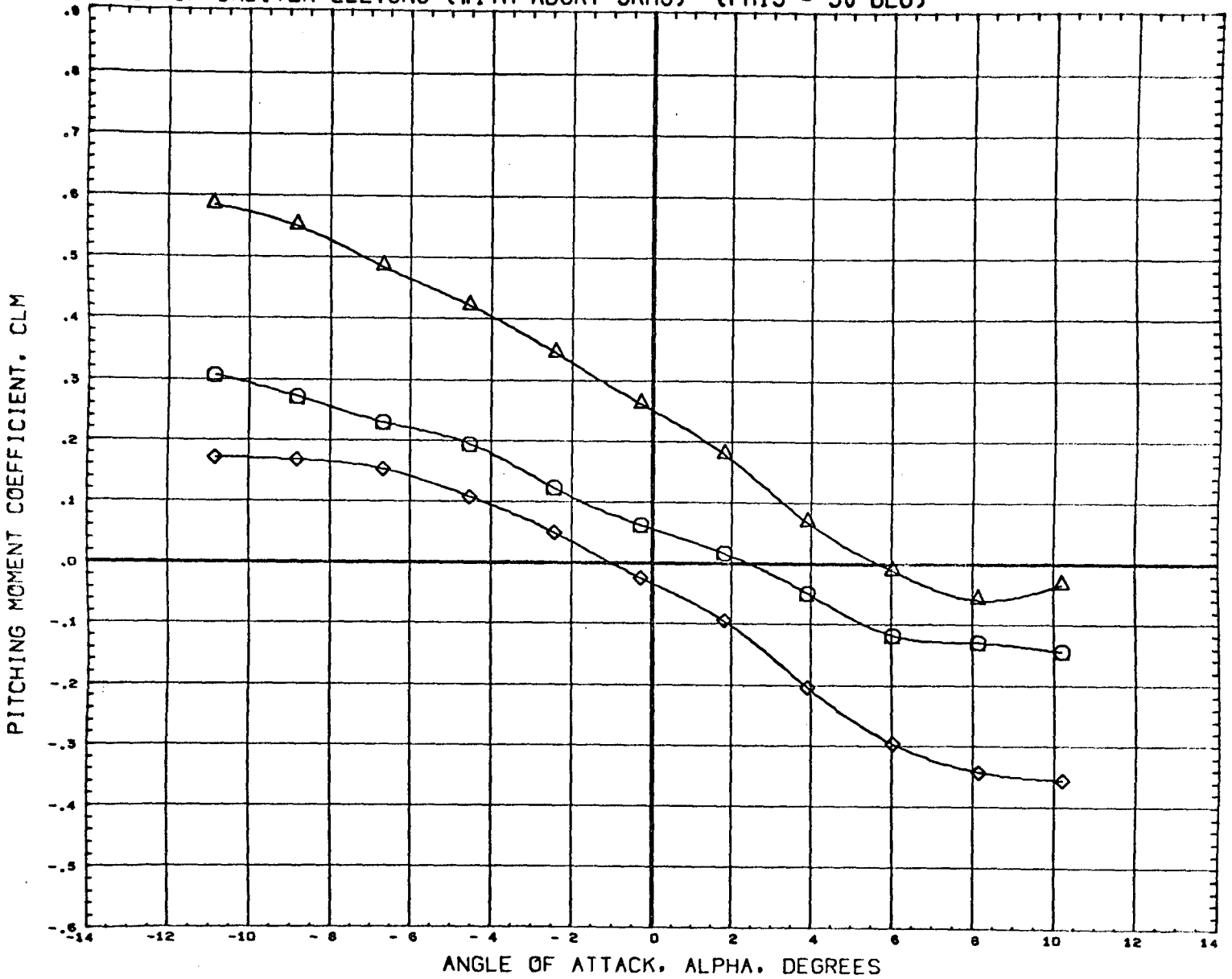


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(D71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

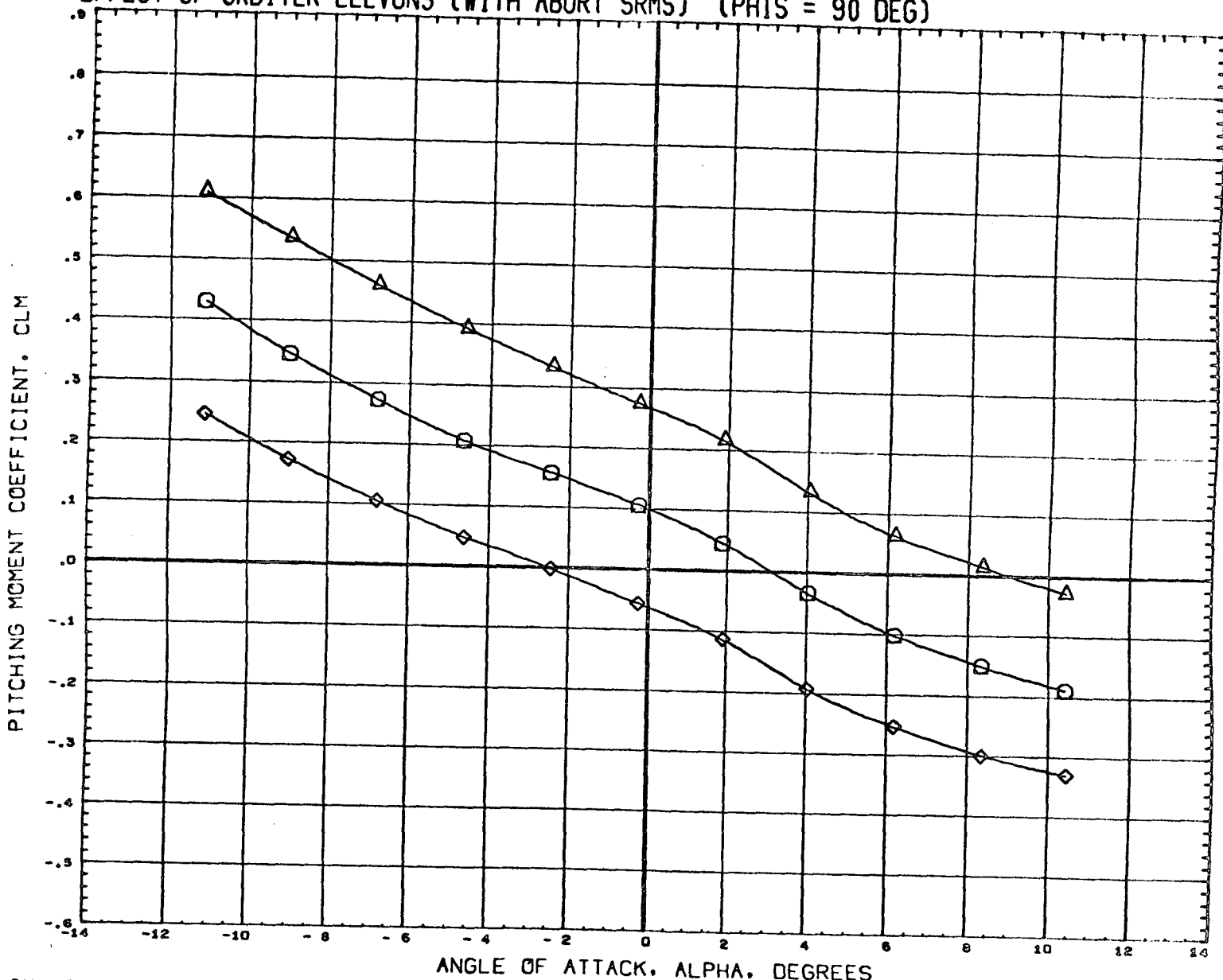
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(871060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(871059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .90

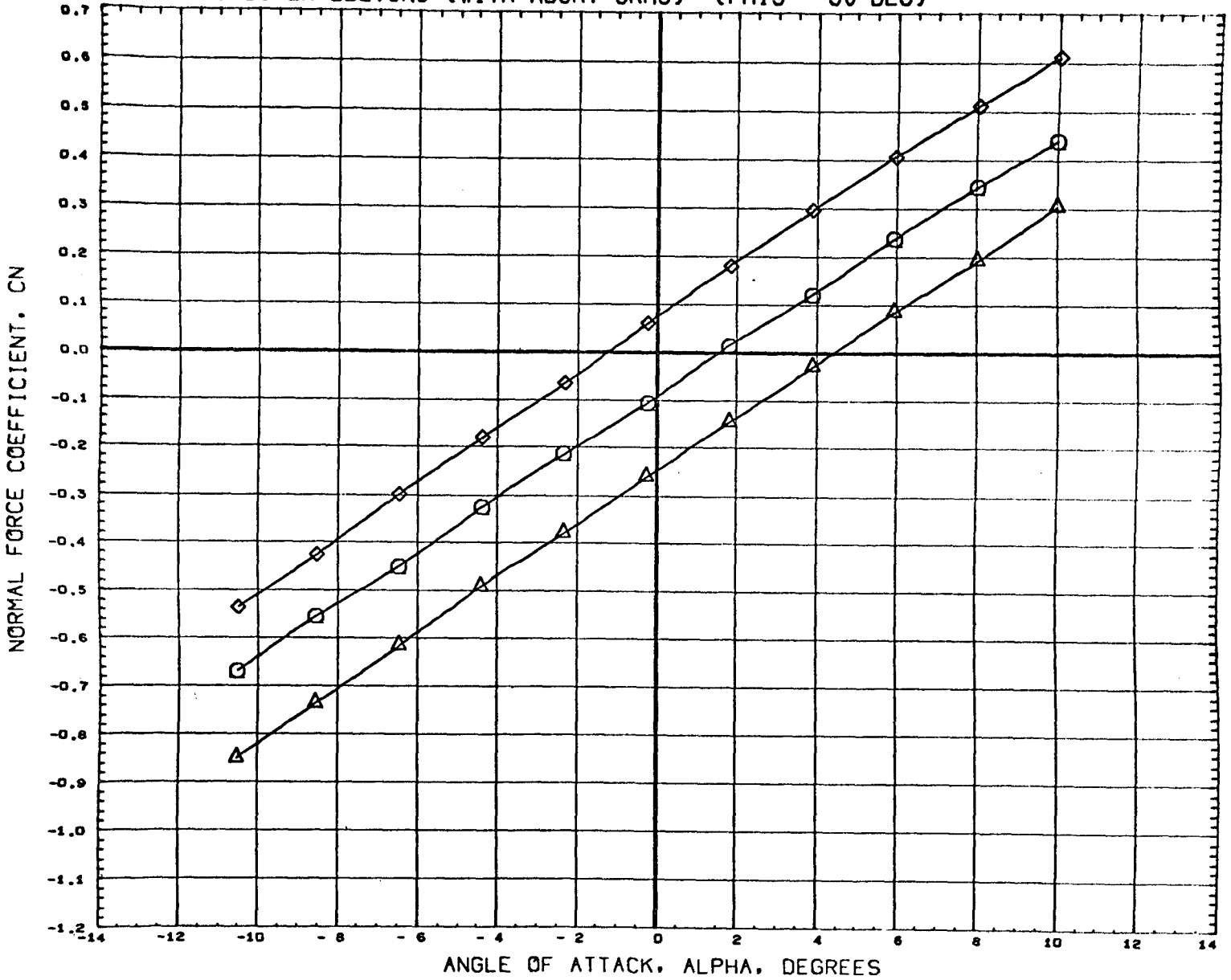
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.19

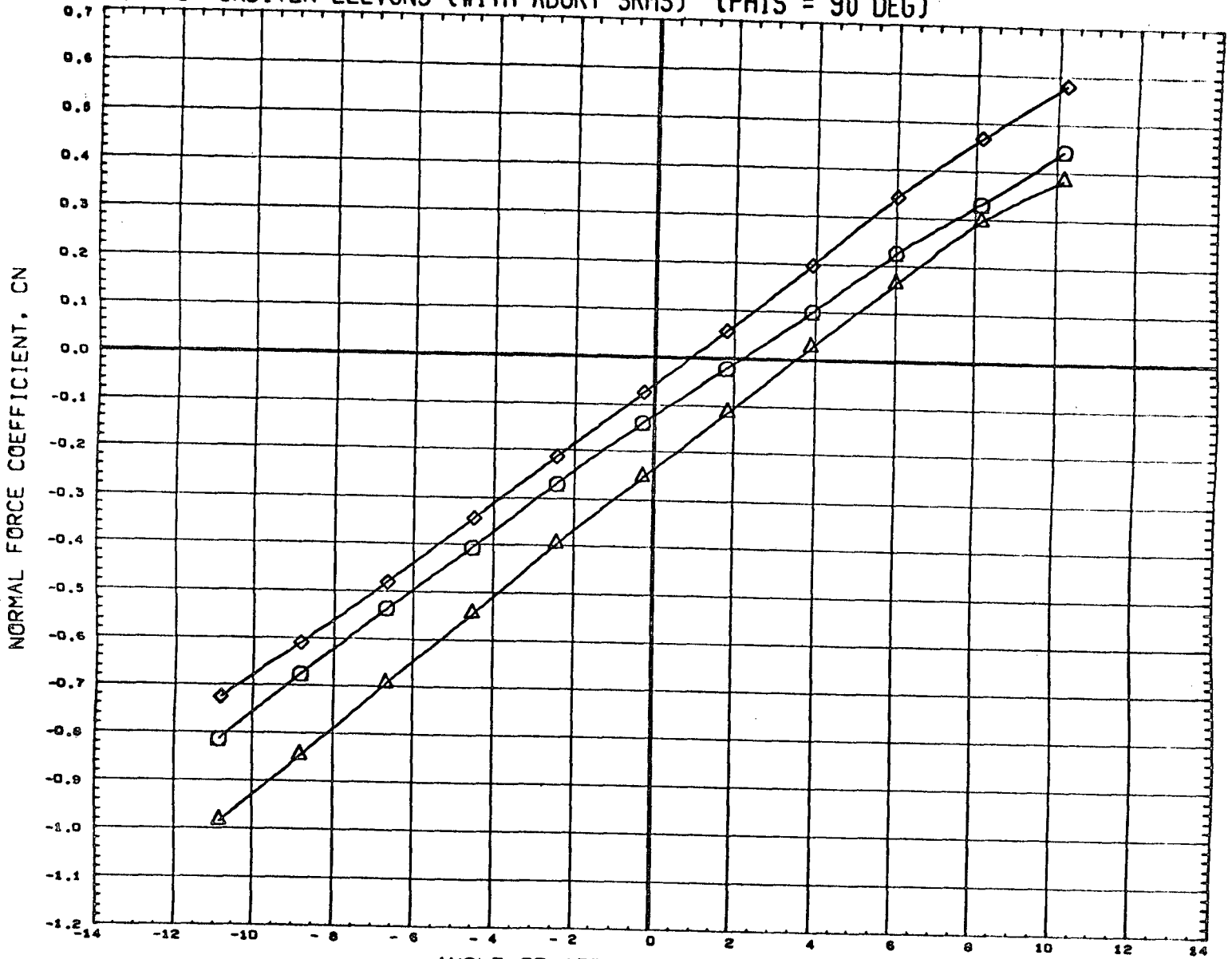
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)

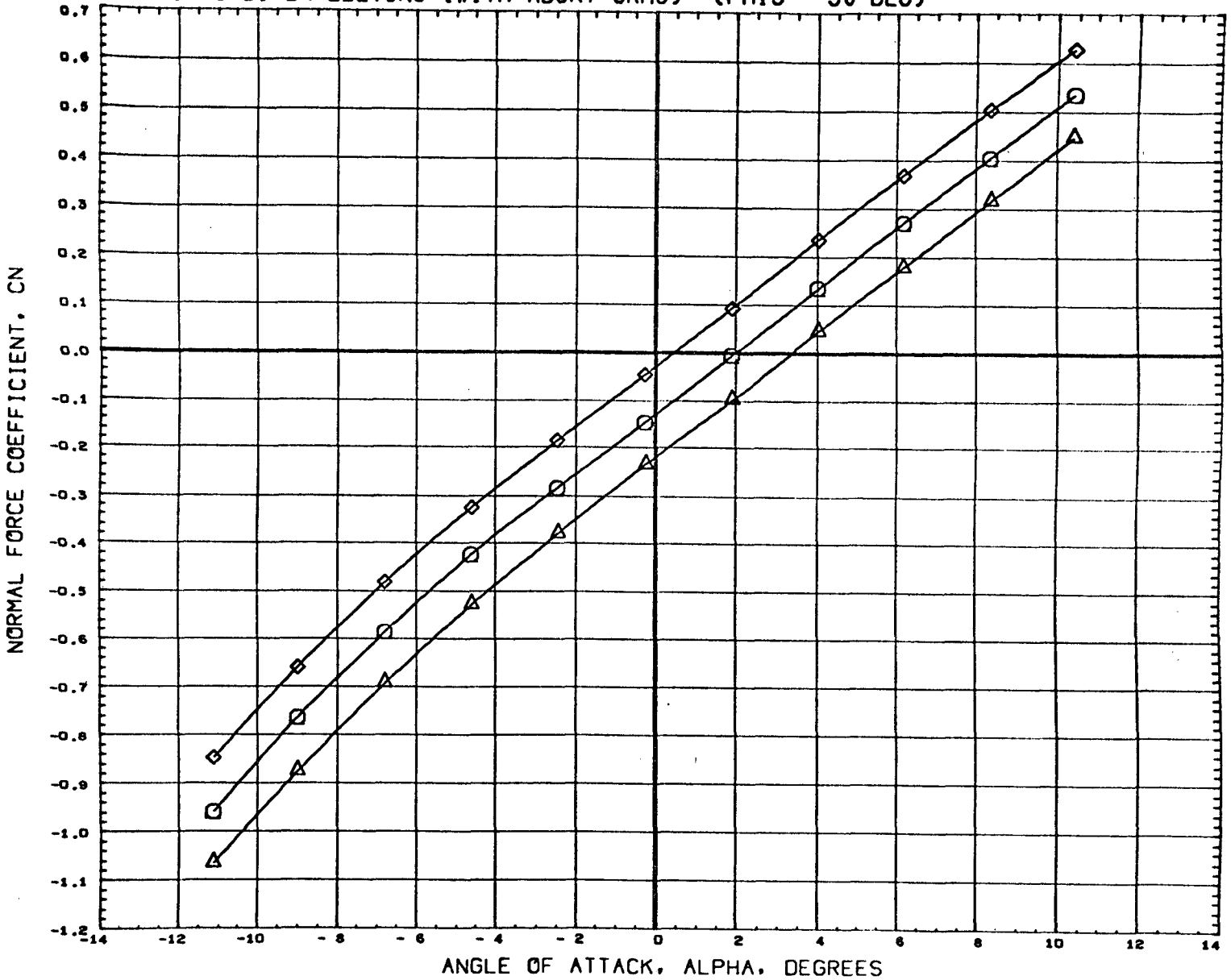


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90

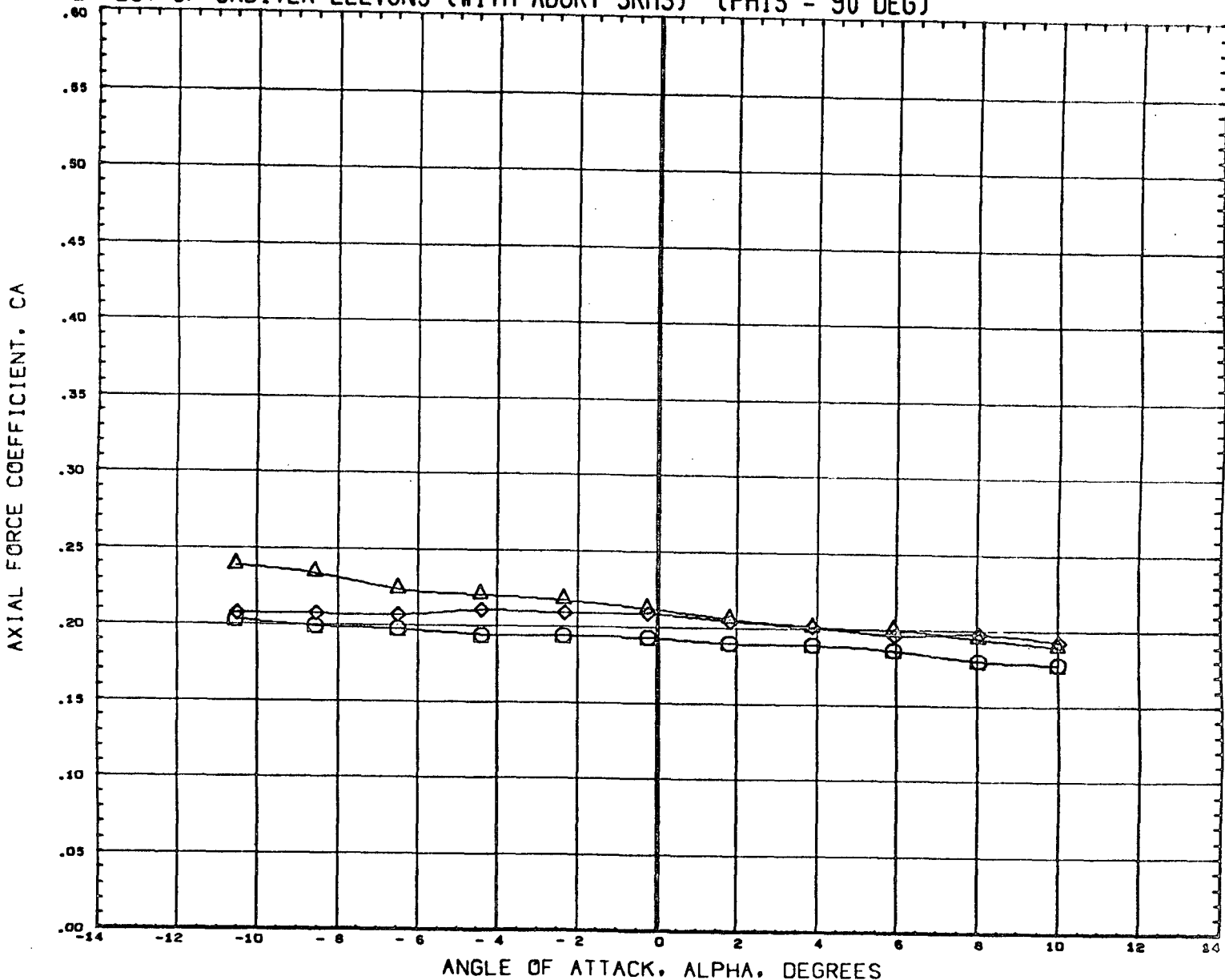
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71099)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)

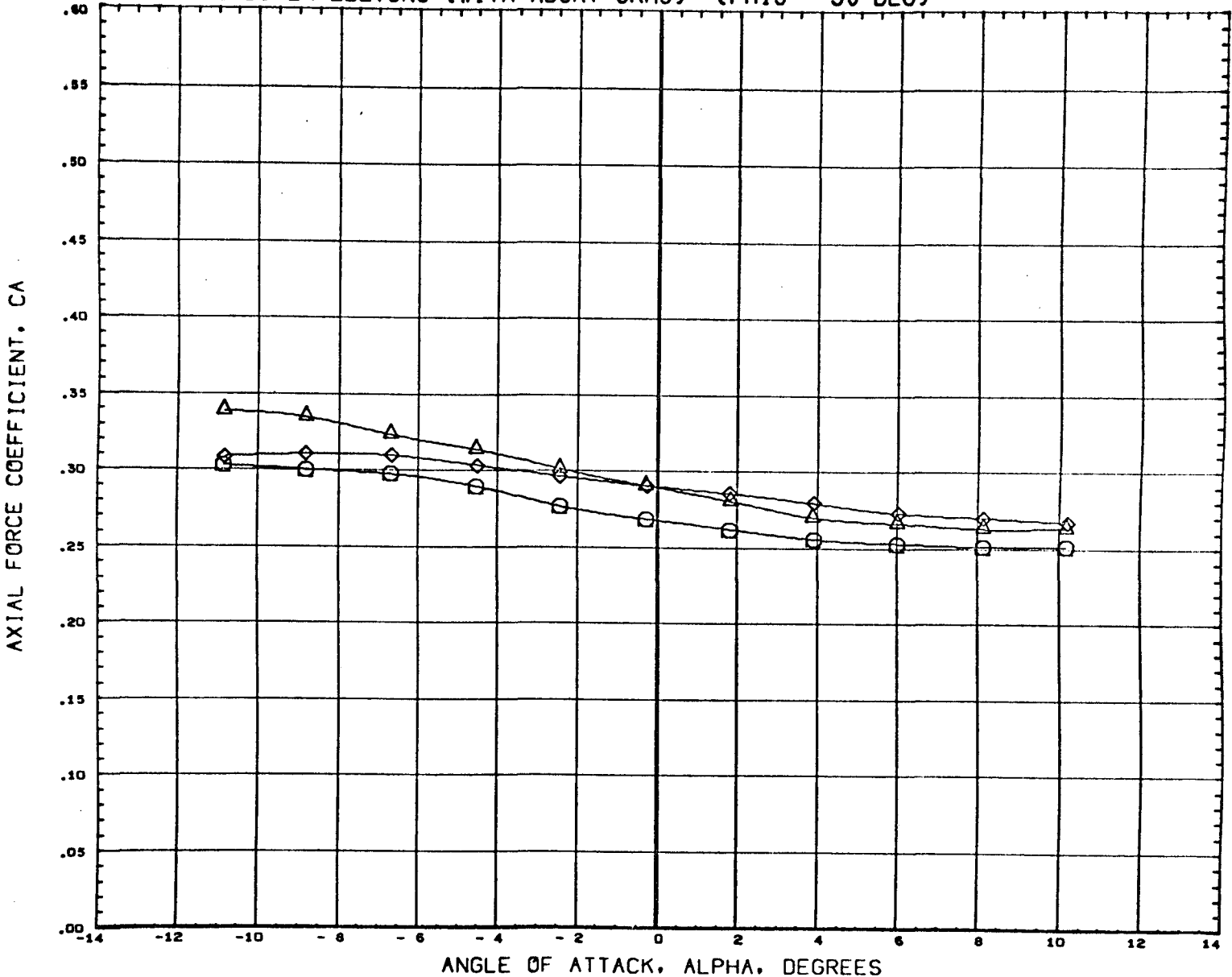


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90,000	0,000	0,000	0,000	SREF	7,8800 SQ. IN
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90,000	0,000	-10,000	0,000	LREF	2,0280 IN.
(B71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90,000	0,000	10,000	0,000	BREF	4,4600 IN.
						XMRP	3,3600 IN.
						YMRP	0,0000 IN.
						ZMRP	0,2480 IN.
						SCALE	0,0040 SCALE

MACH .60



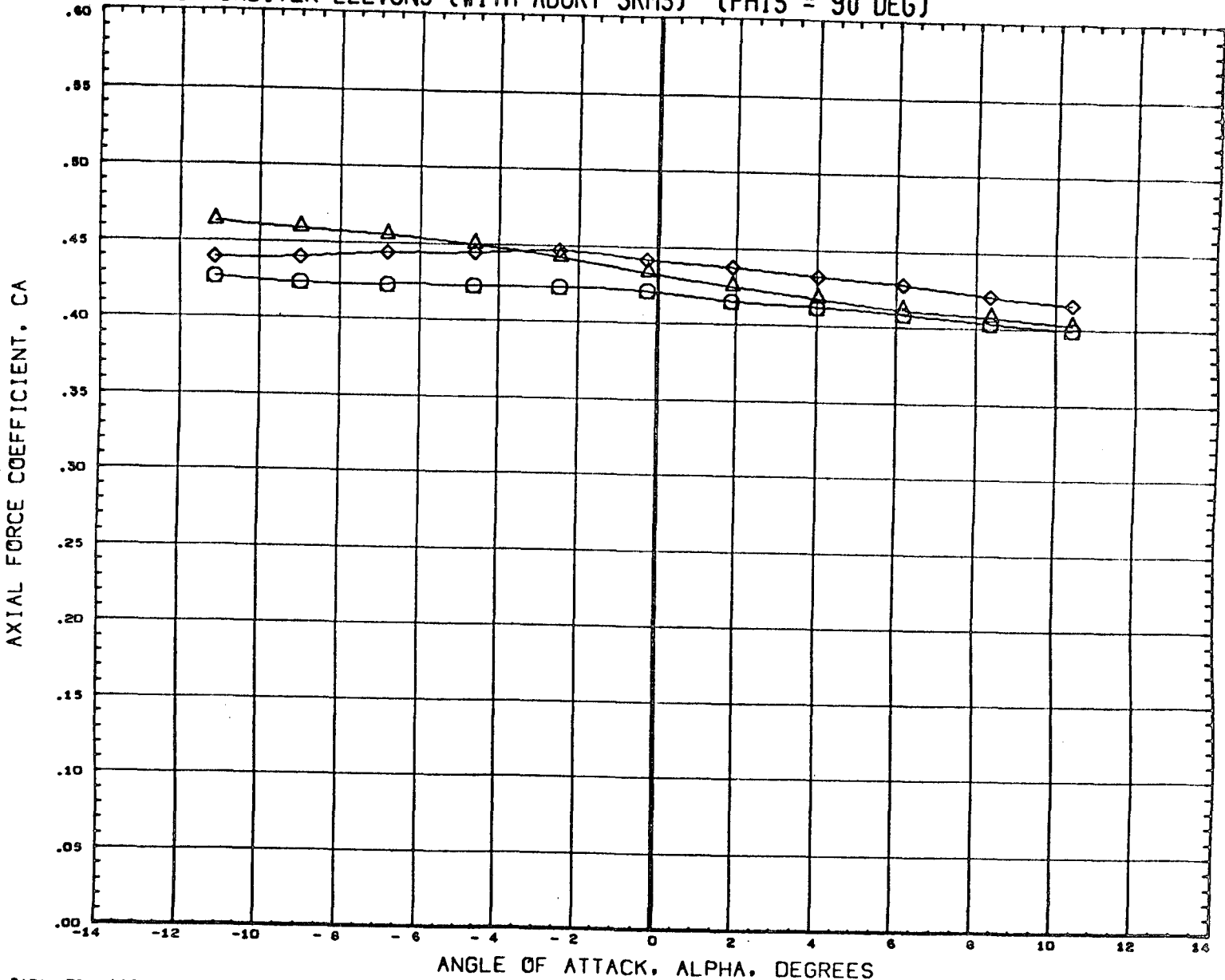
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(871060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(871099)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)

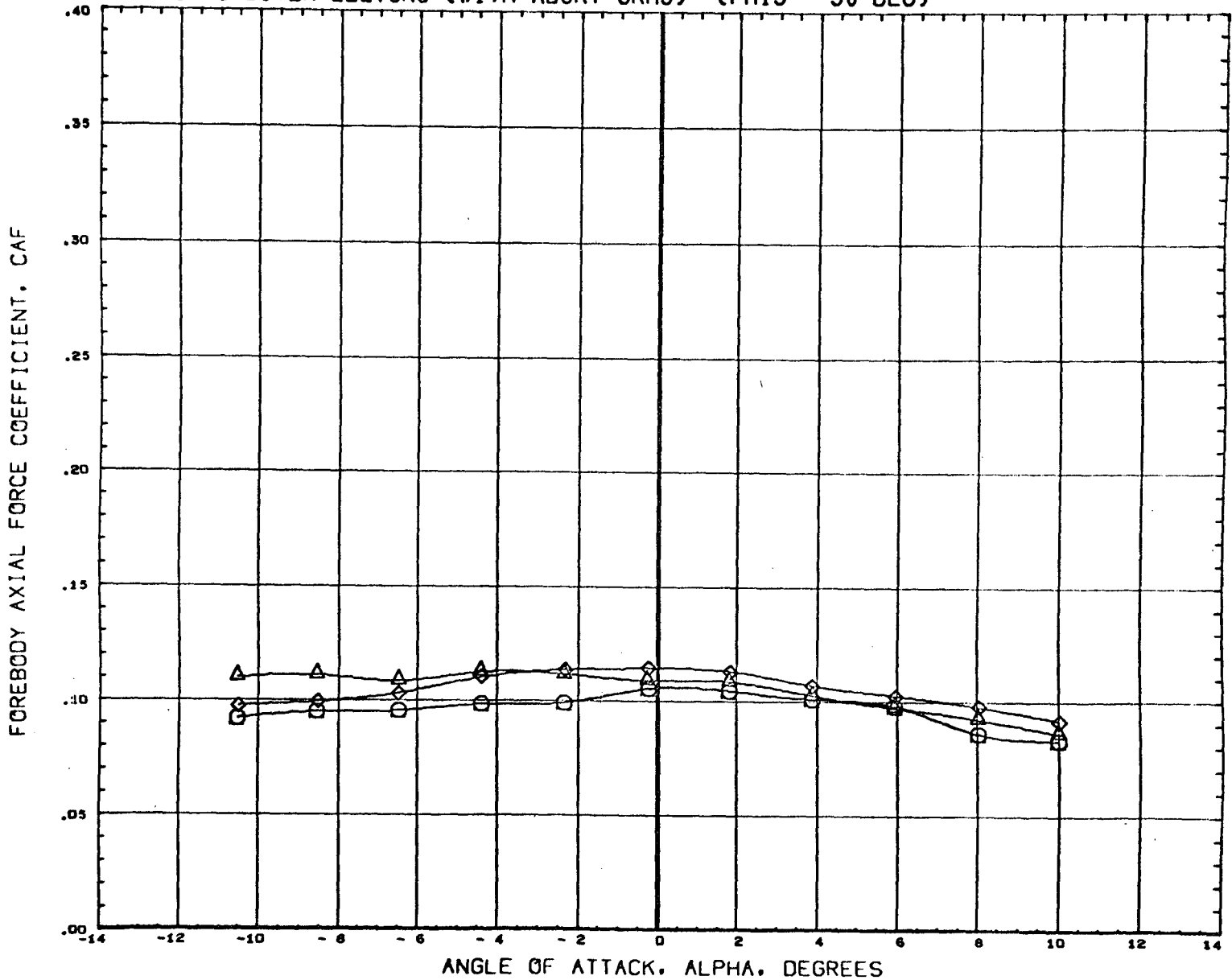


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.19

FR

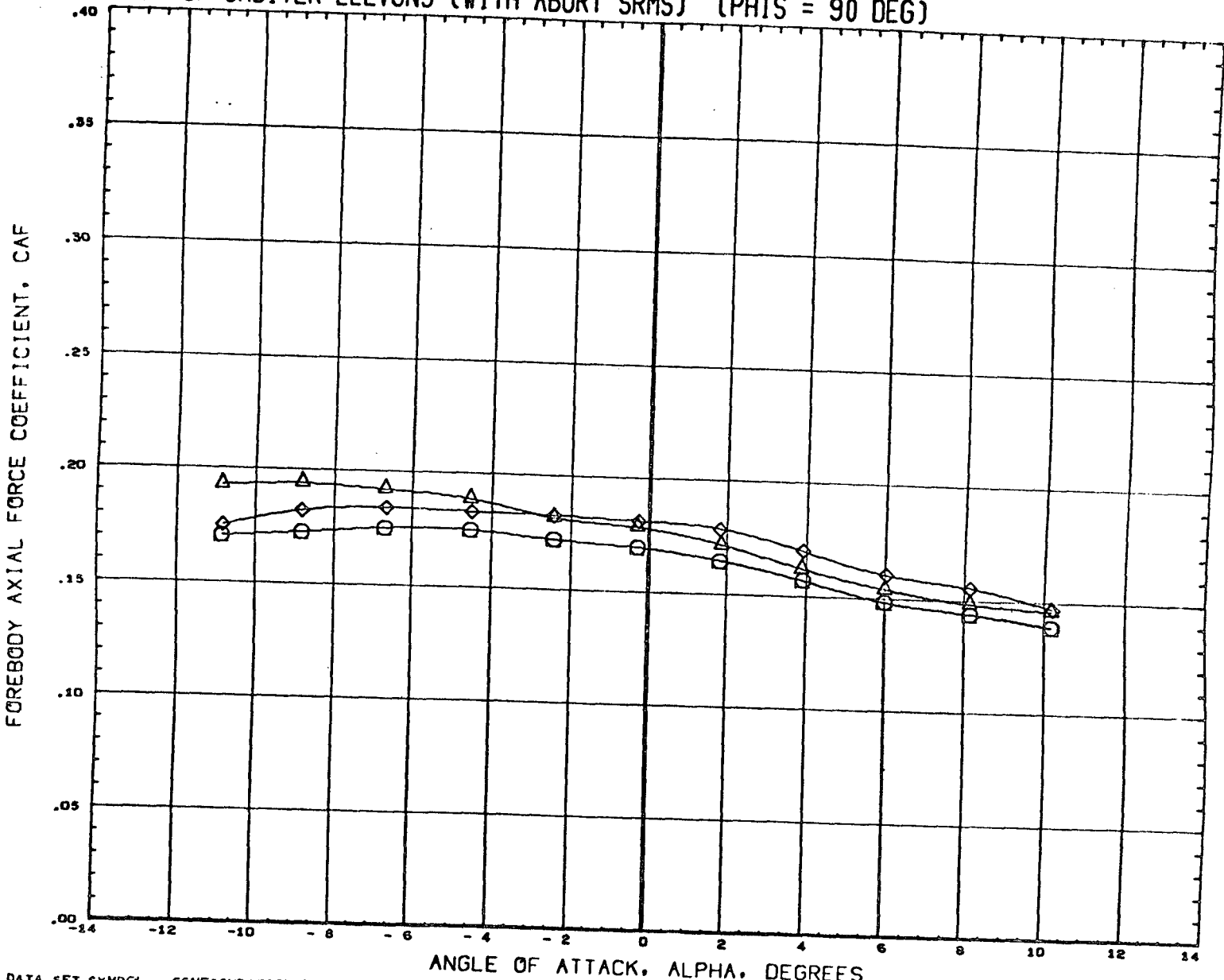
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90,000	0,000	0,000	0,000	SREF 7.8800 SQ. IN
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90,000	0,000	-10,000	0,000	LREF 2.0280 IN.
(B71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90,000	0,000	10,000	0,000	BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

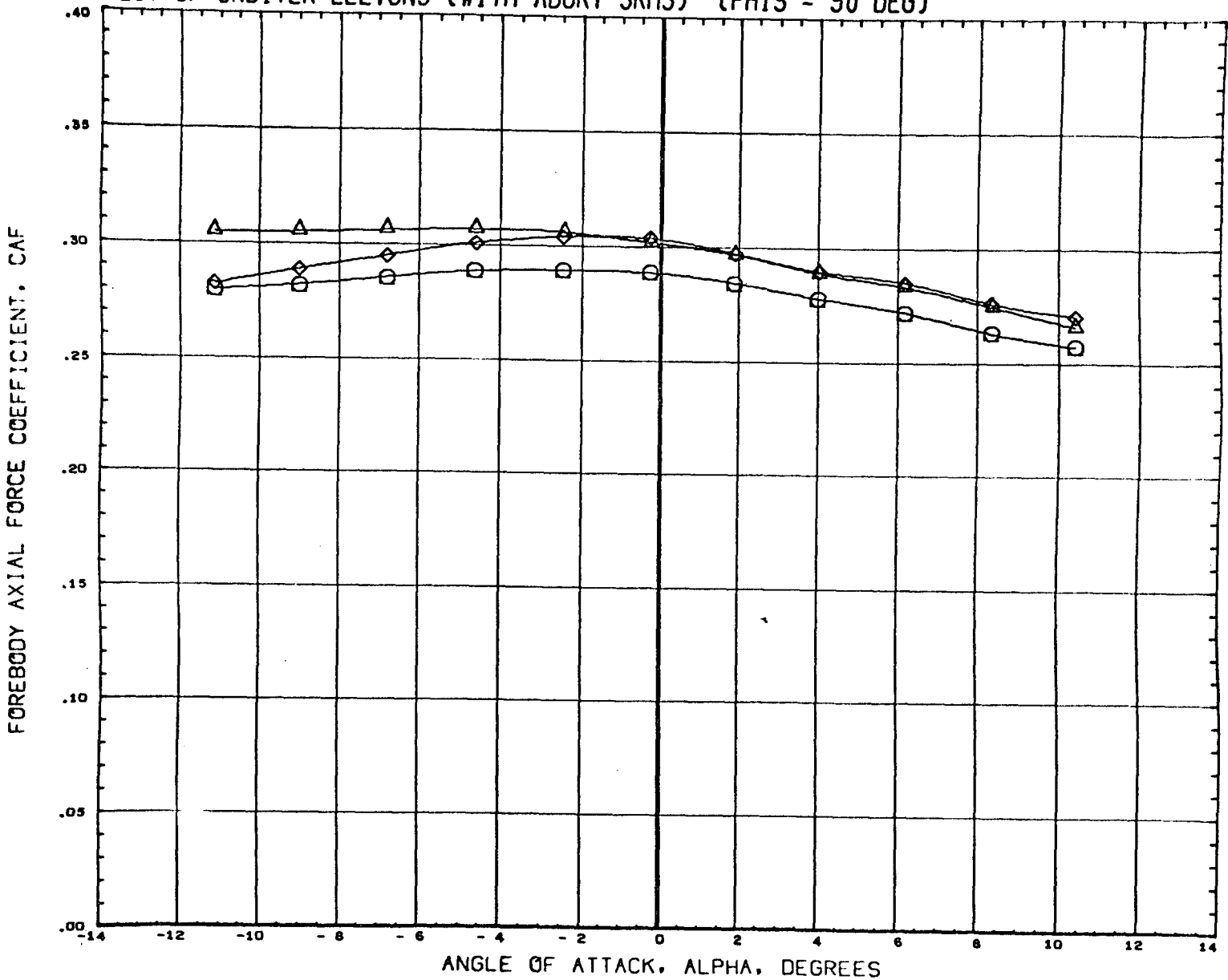
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

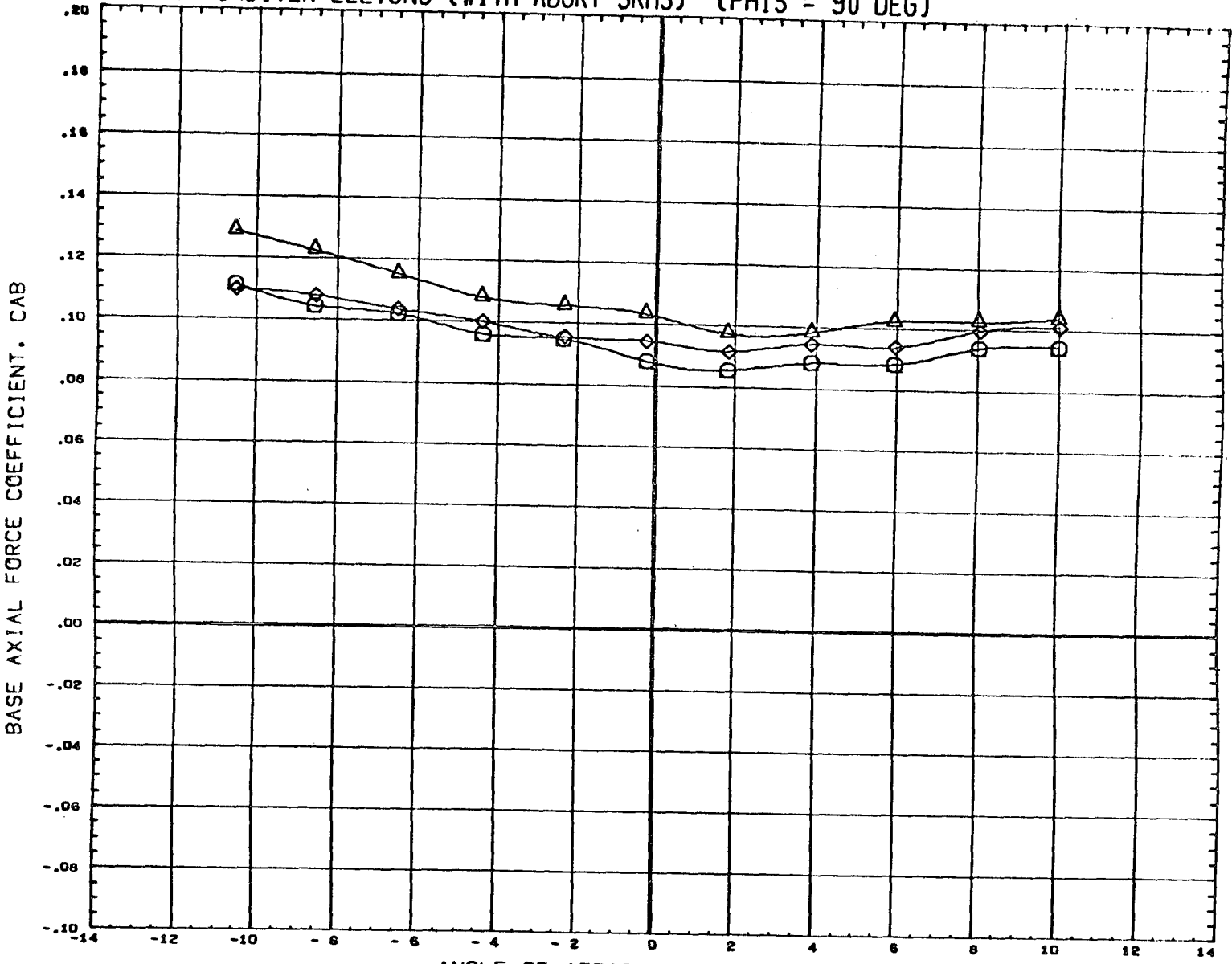
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19

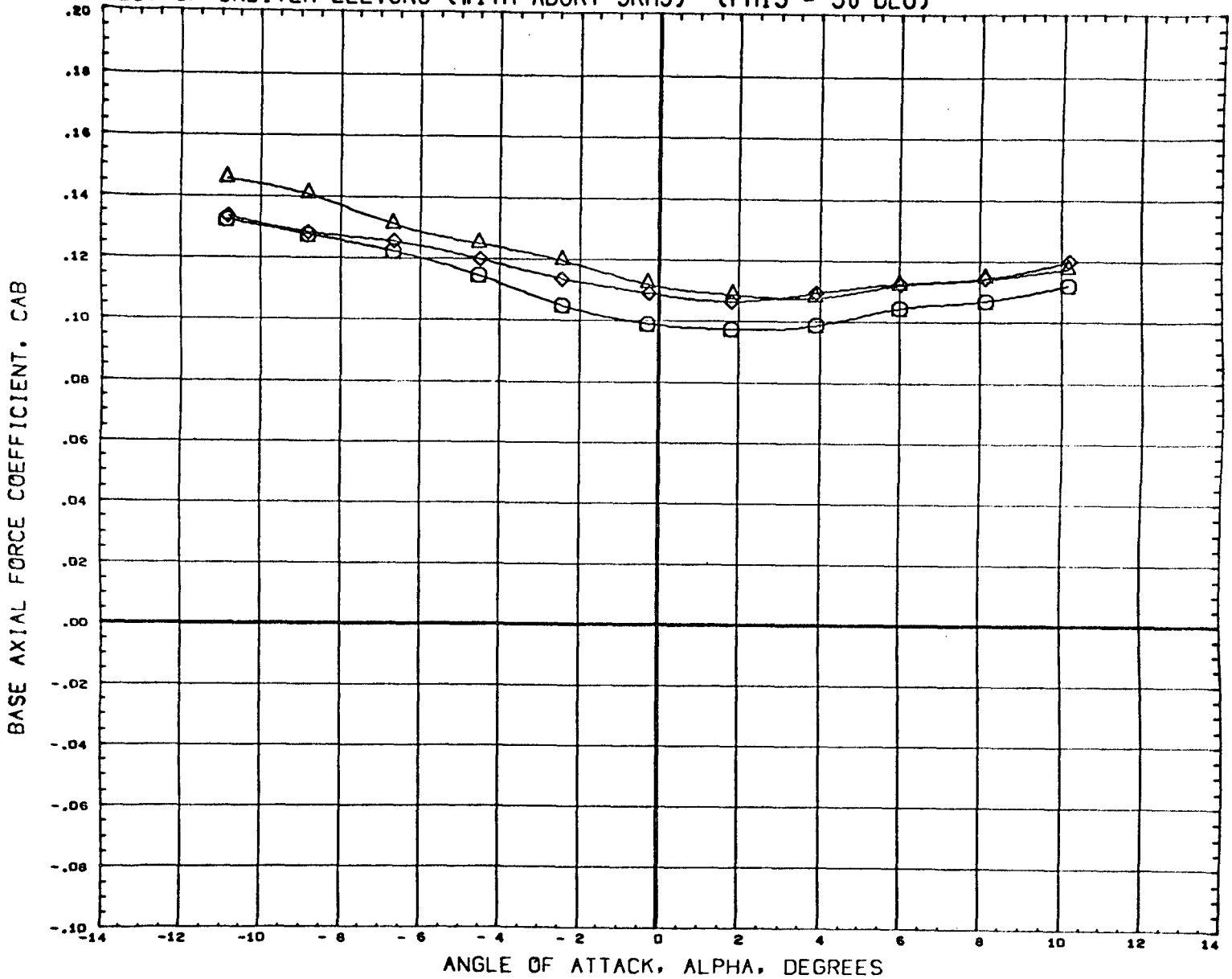
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	90.000	0.000	0.000	0.000	SREF 7.8000 SQ. IN
(071060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

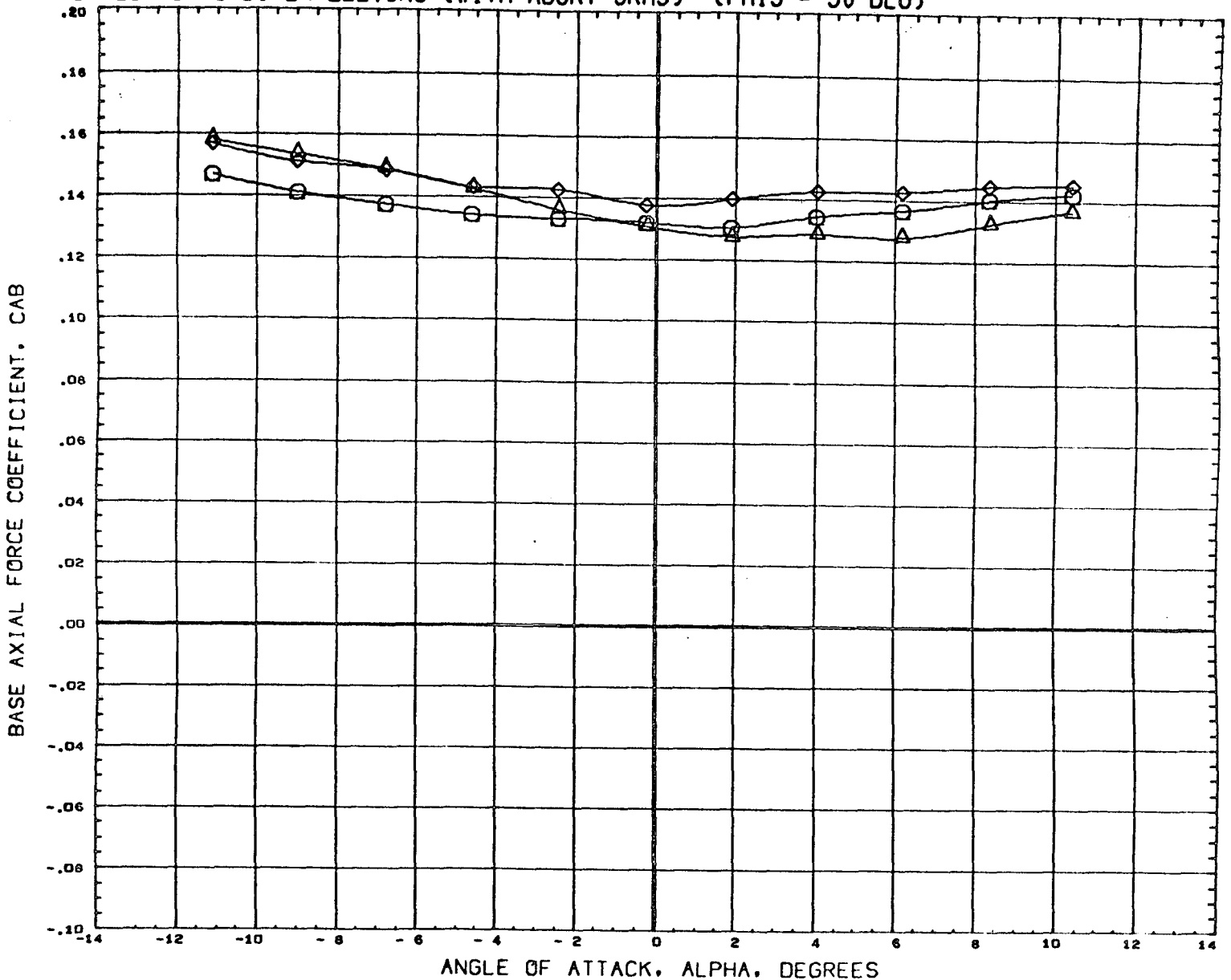
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(871060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(871059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)

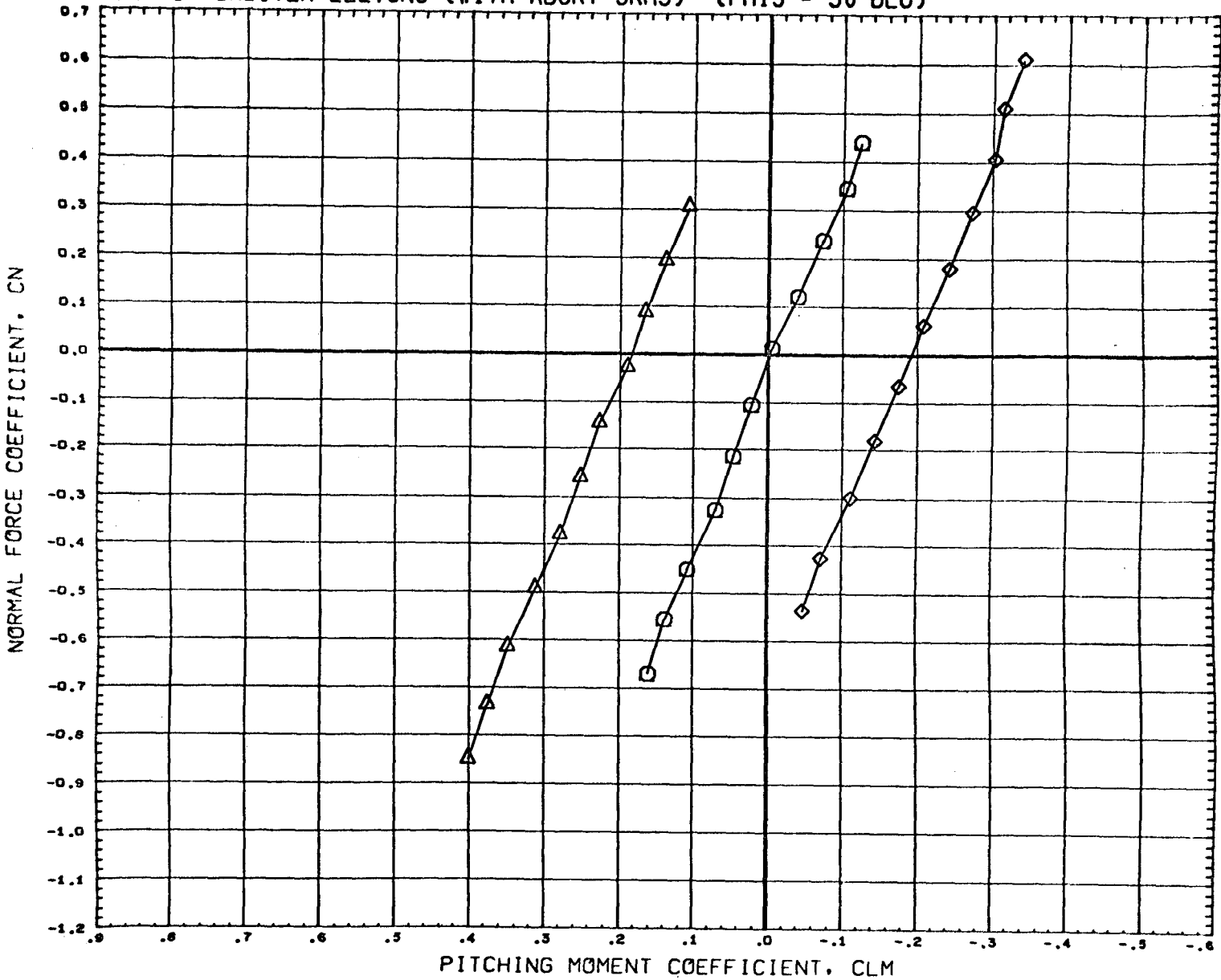


DATA SET SYMBO	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	-10.000	0.000	LREF 2.0260 IN.
(D71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19



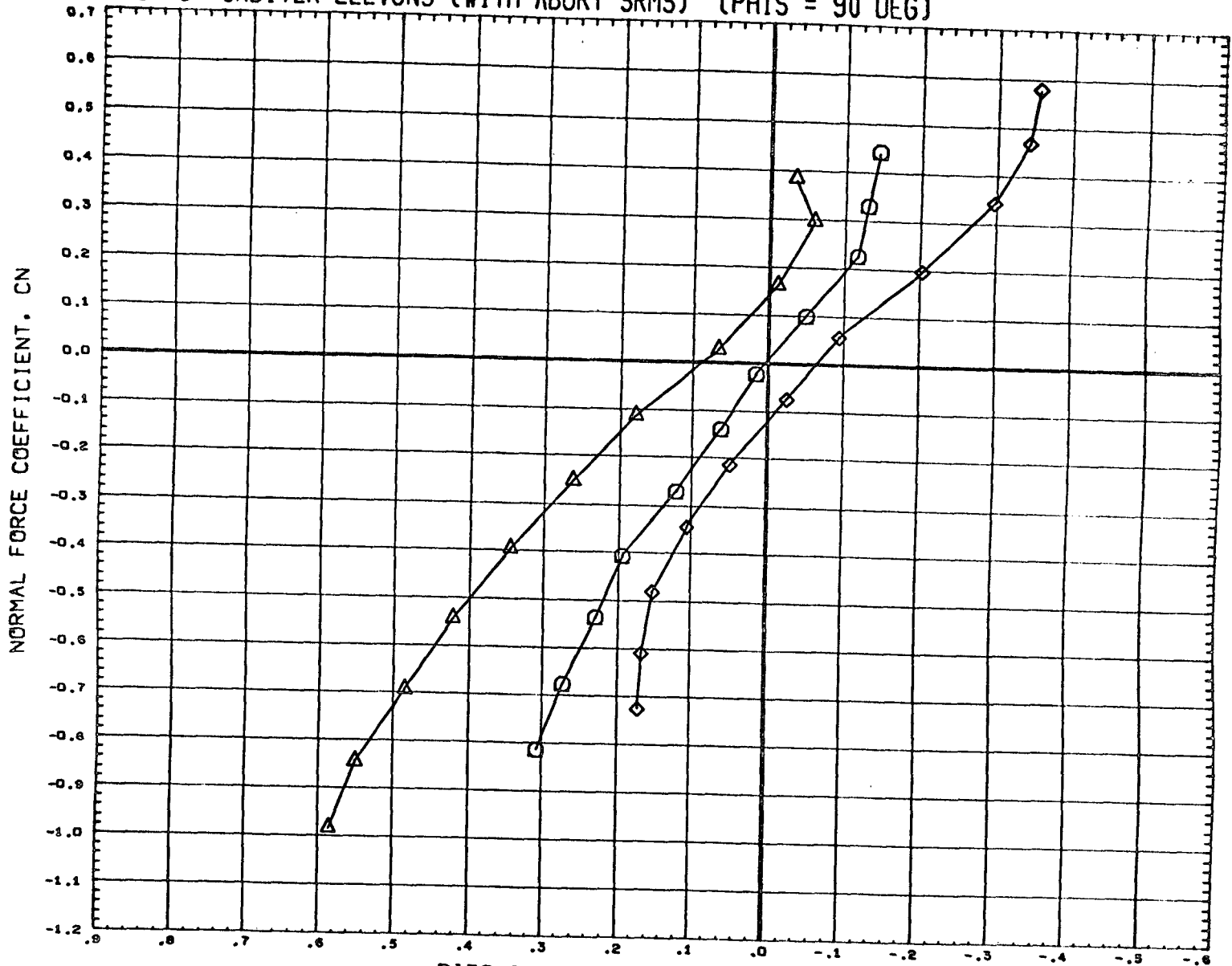
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90,000	0,000	0,000	0,000	SREF 7,8800 90. IN
(071060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90,000	0,000	-10,000	0,000	LREF 2,0280 IN.
(071099)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90,000	0,000	10,000	0,000	BREF 4,4600 IN. XMRP 3,3600 IN. YMRP 0,0000 IN. ZMRP 0,2480 IN. SCALE 0,0040 SCALE

MACH .60

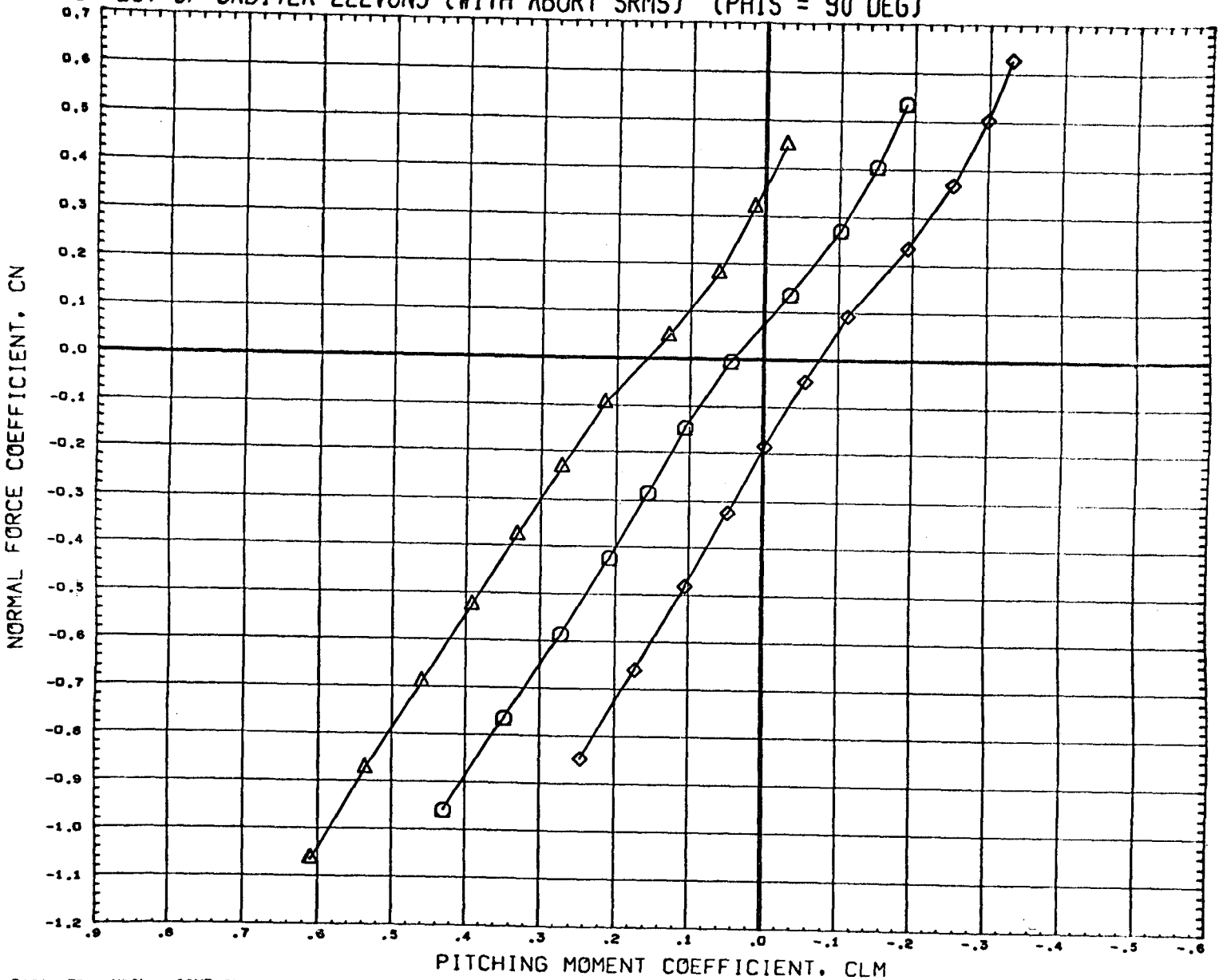
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	0.000	0.000	SREF 7.8800 30. IN
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90

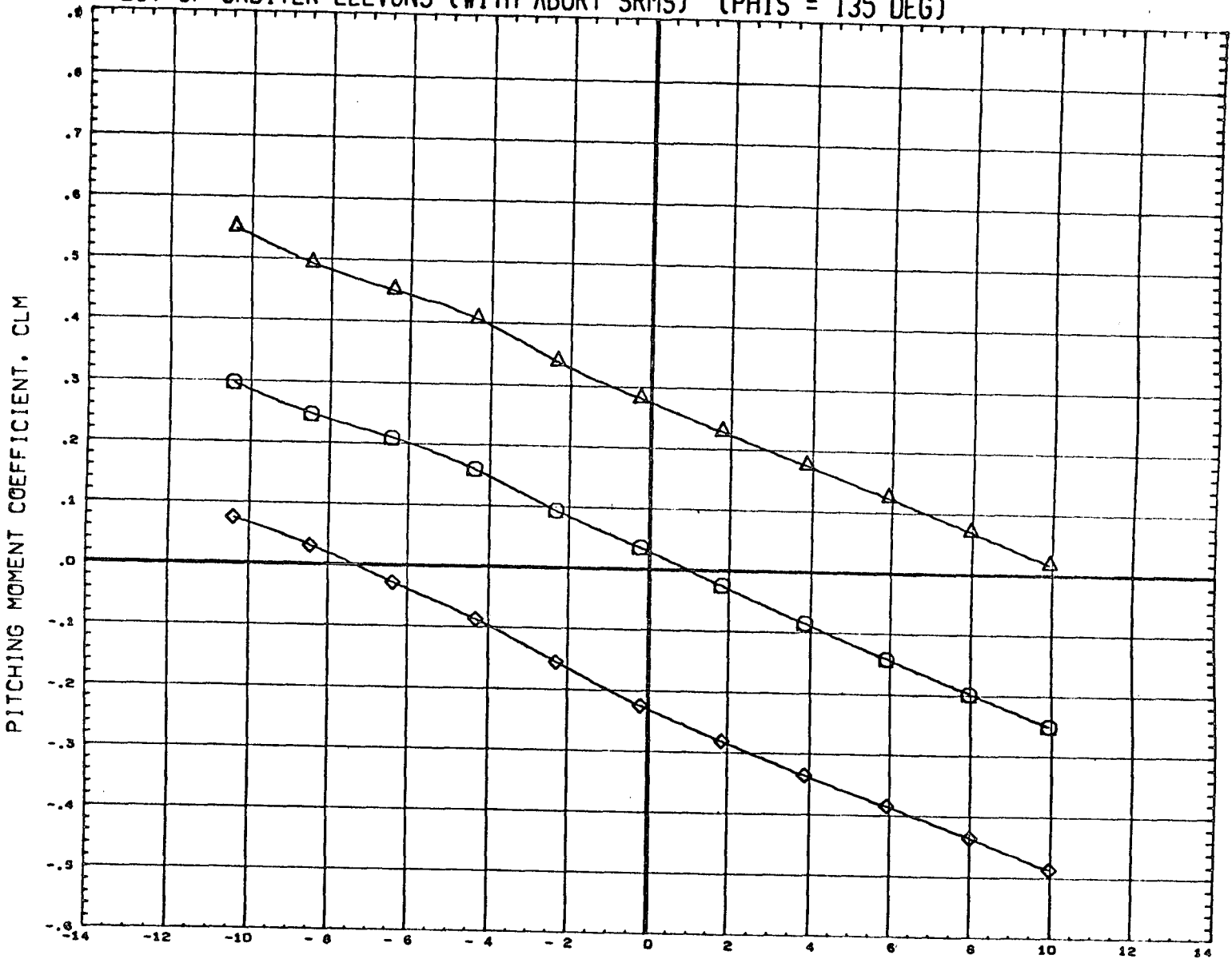
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 90 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71059)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	90.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.19

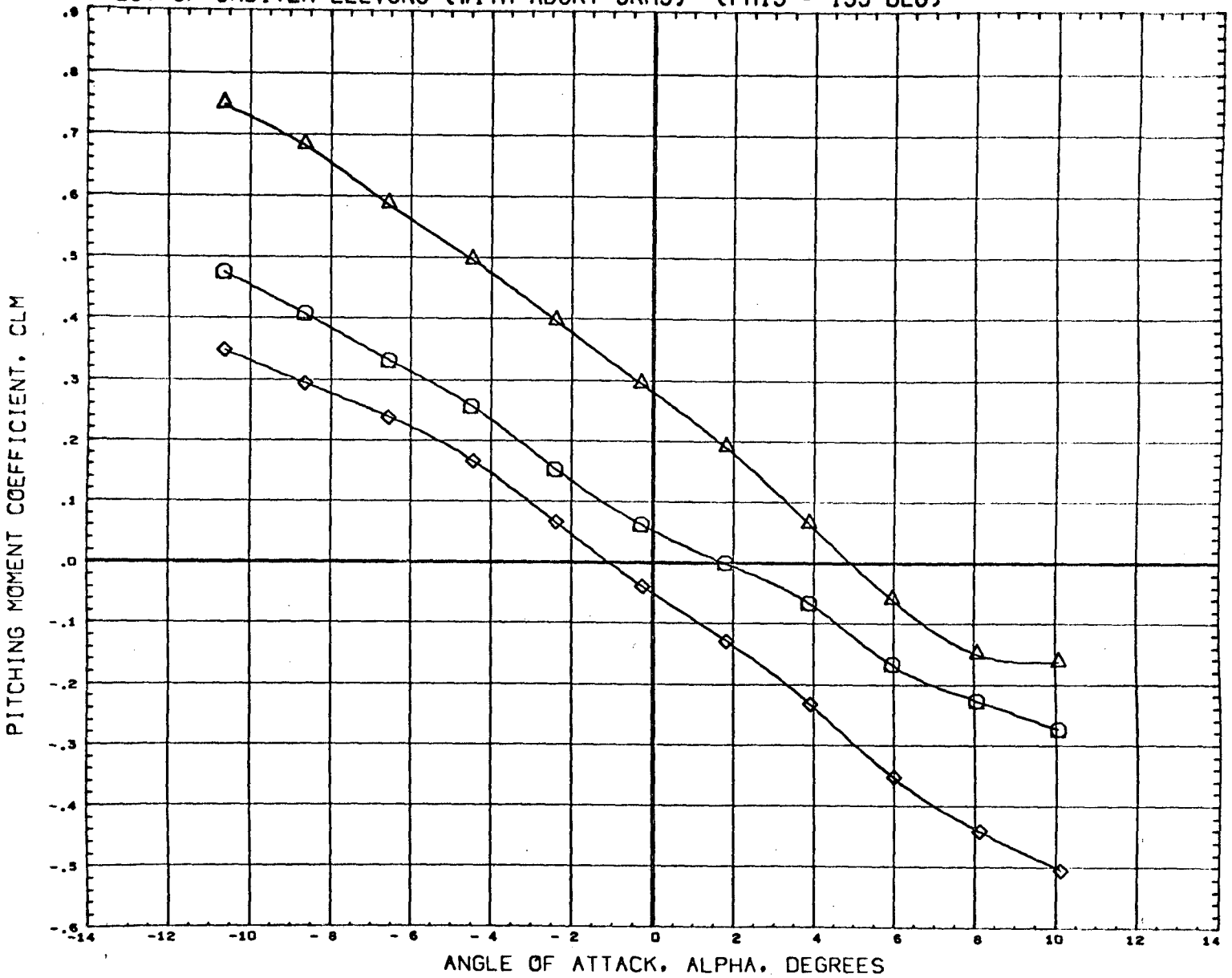
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

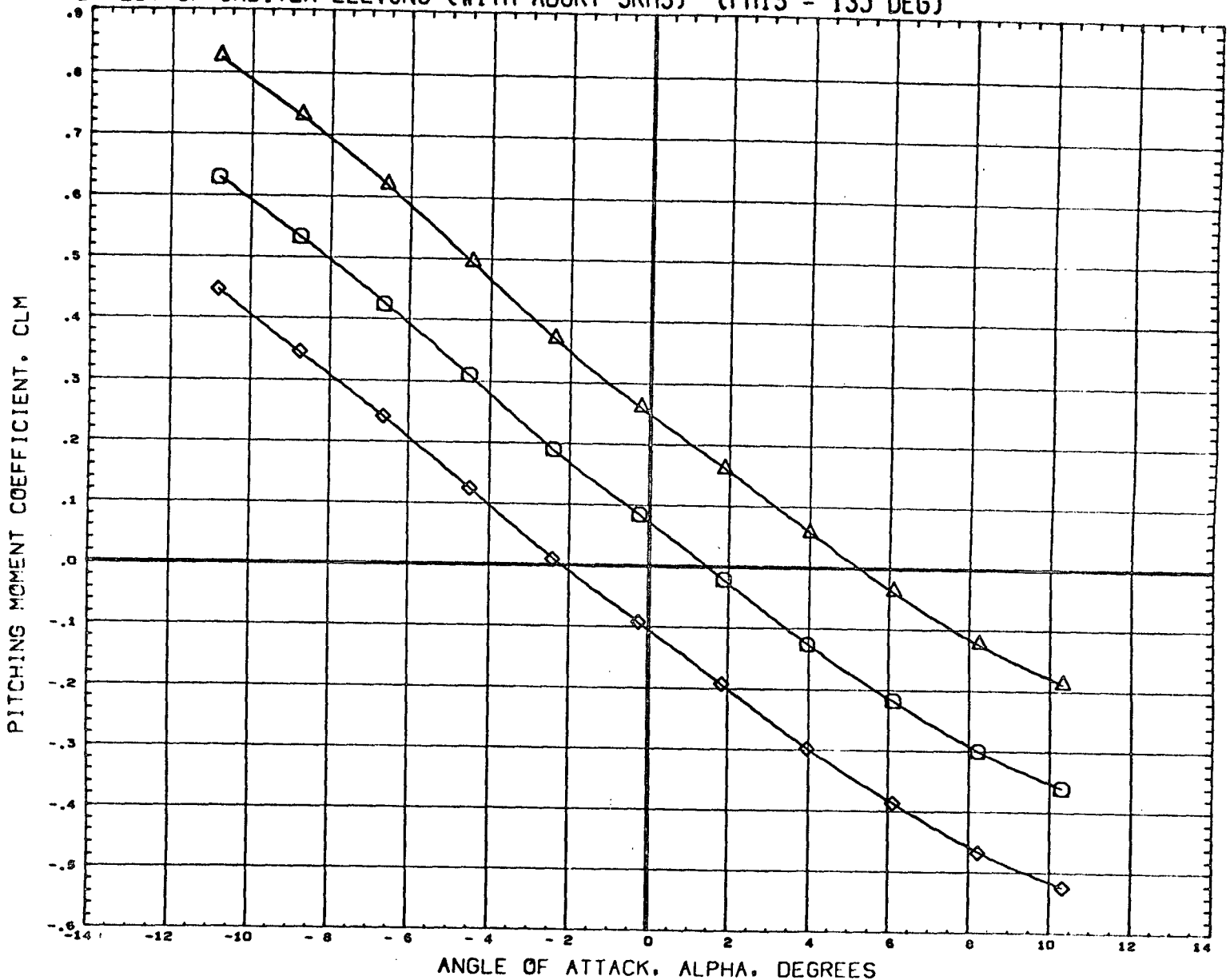
EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(871061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(871062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)

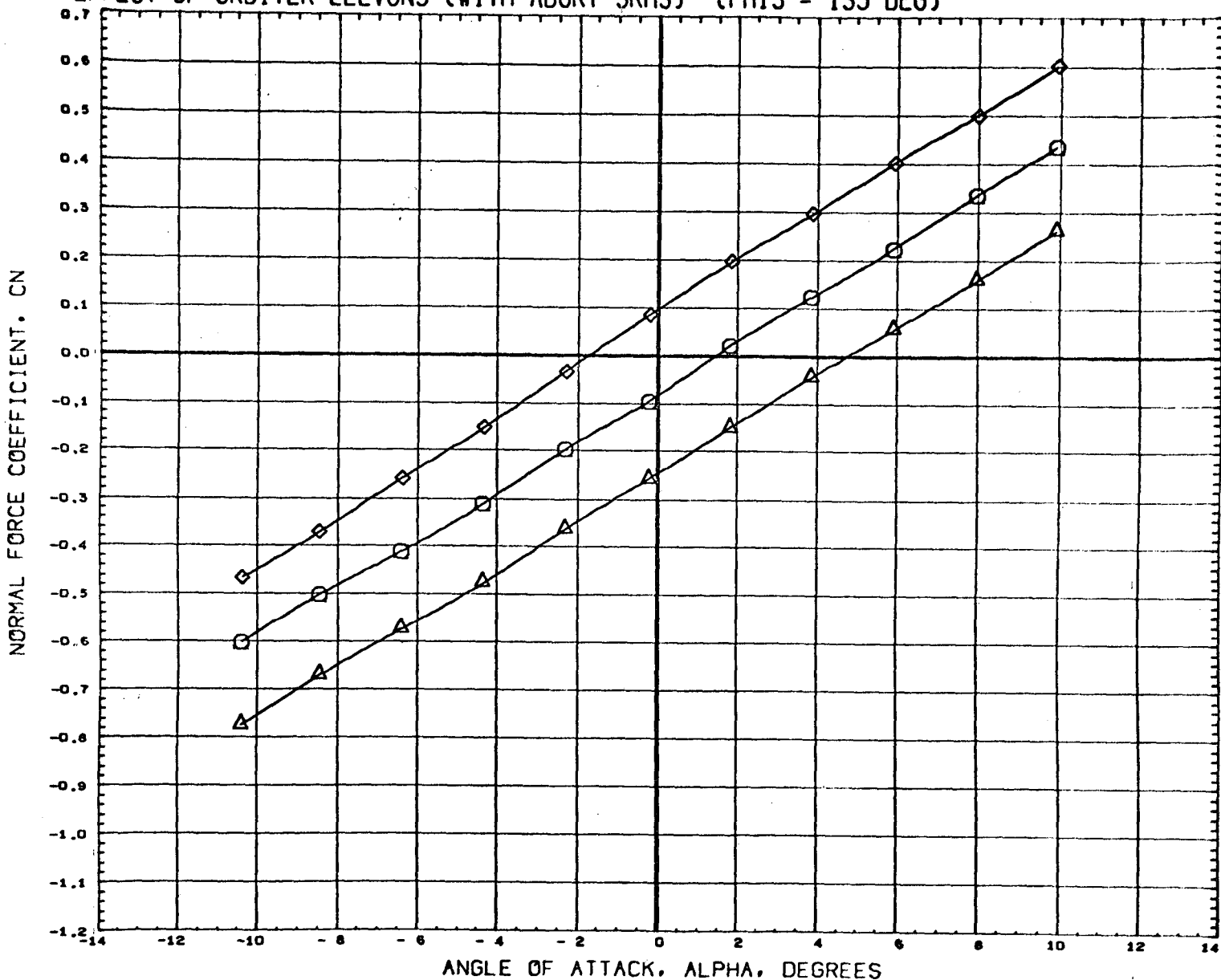


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

*Handwritten mark*

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



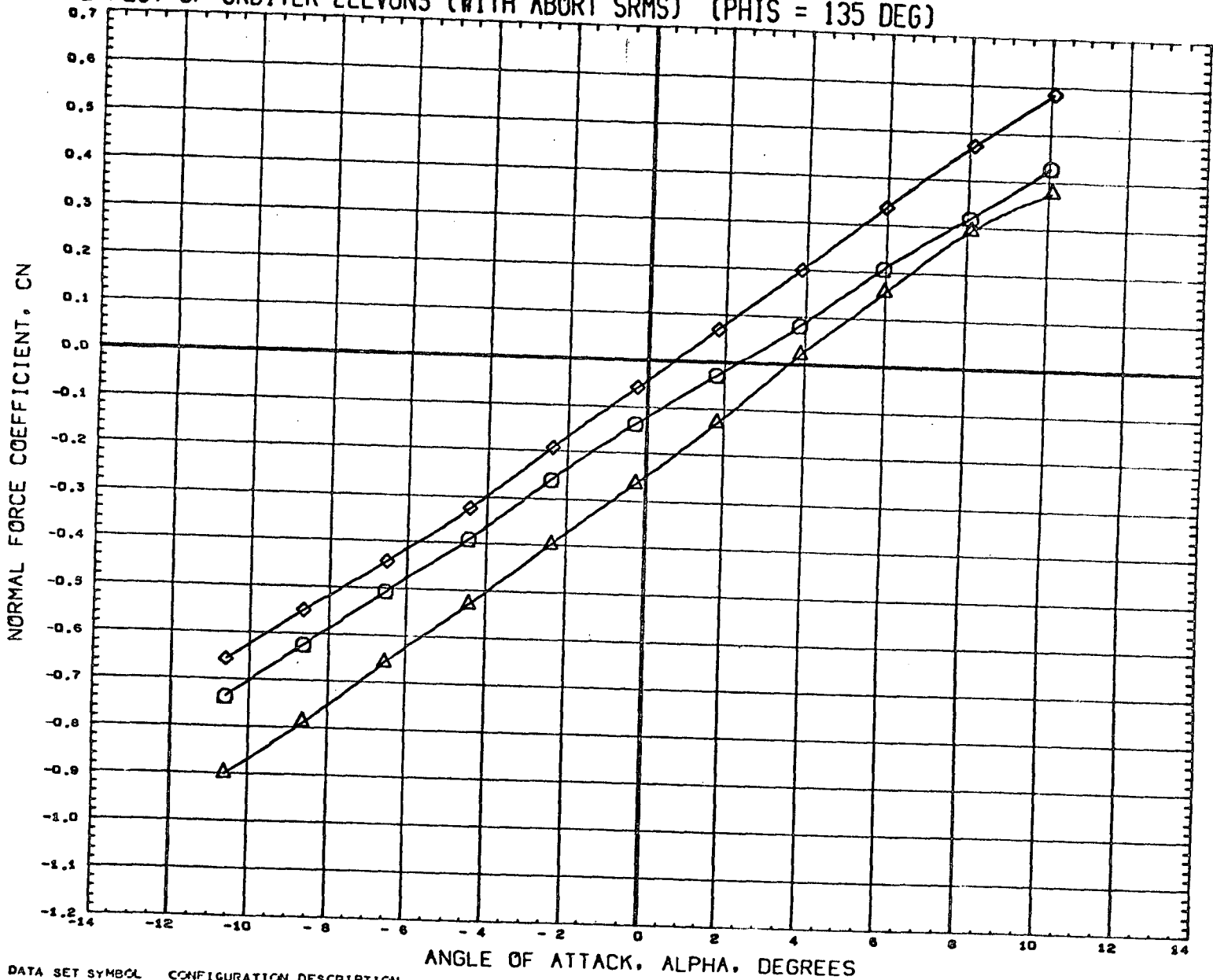
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(D71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

PAGE 899

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# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)

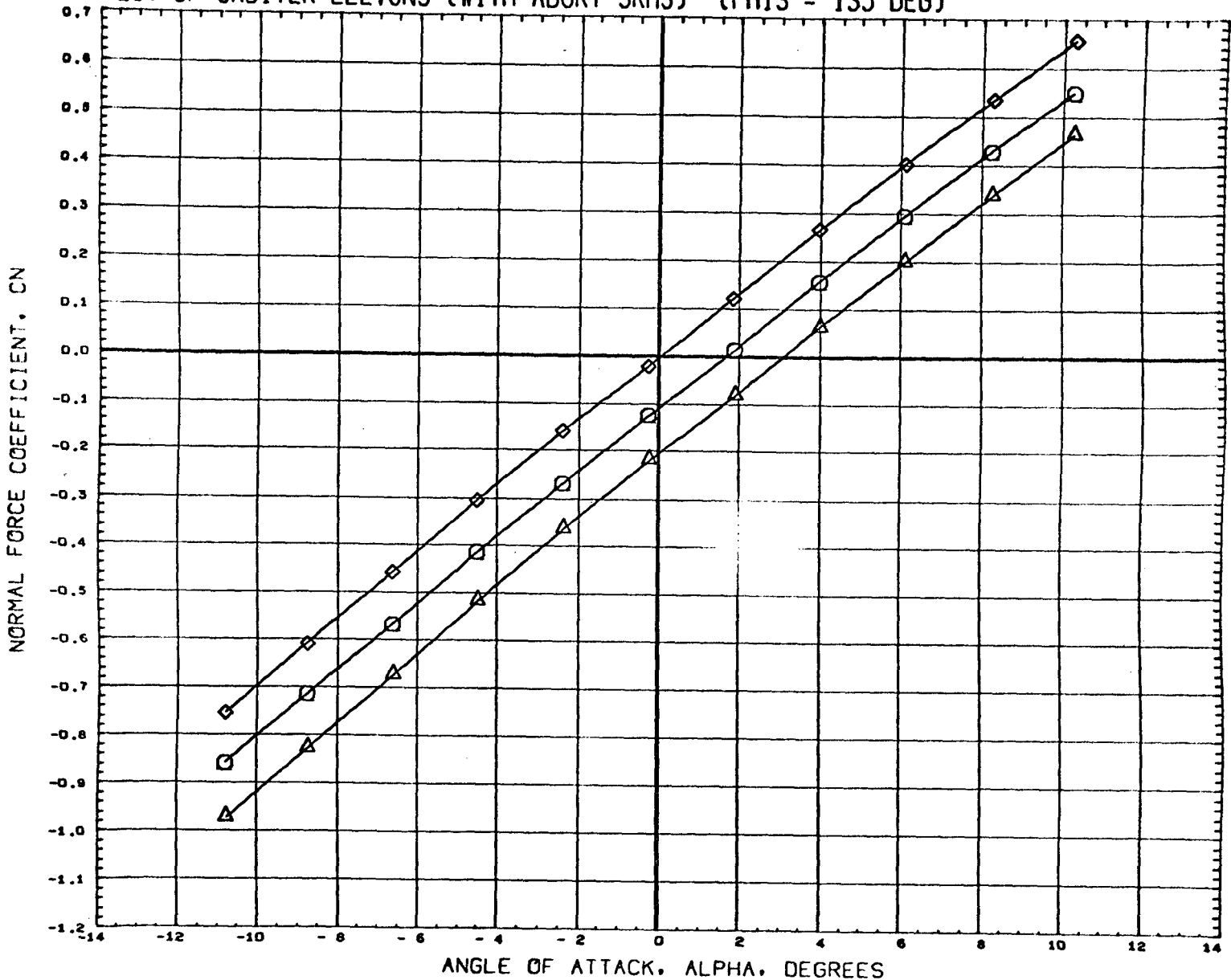


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAM2	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135,000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135,000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135,000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



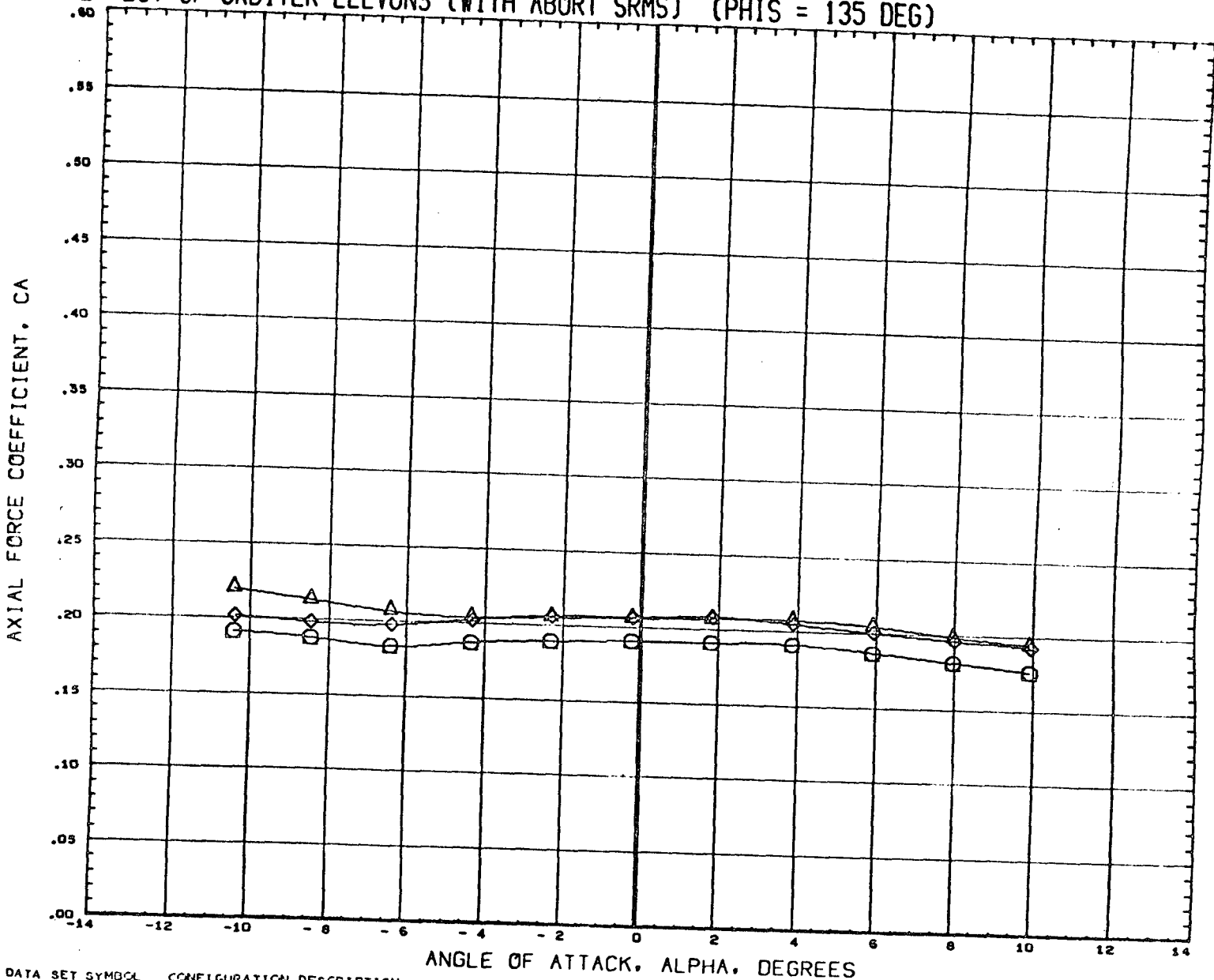
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

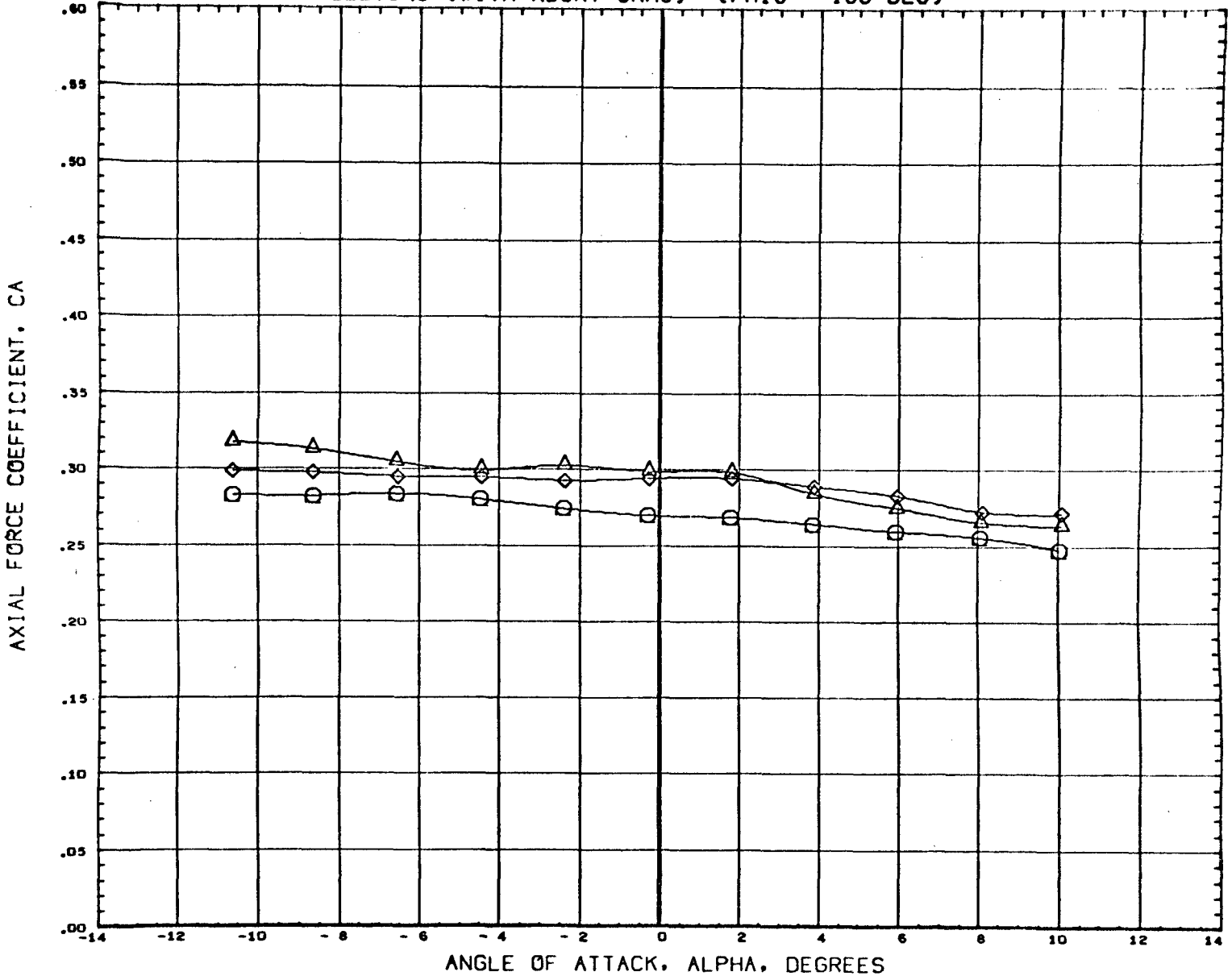
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

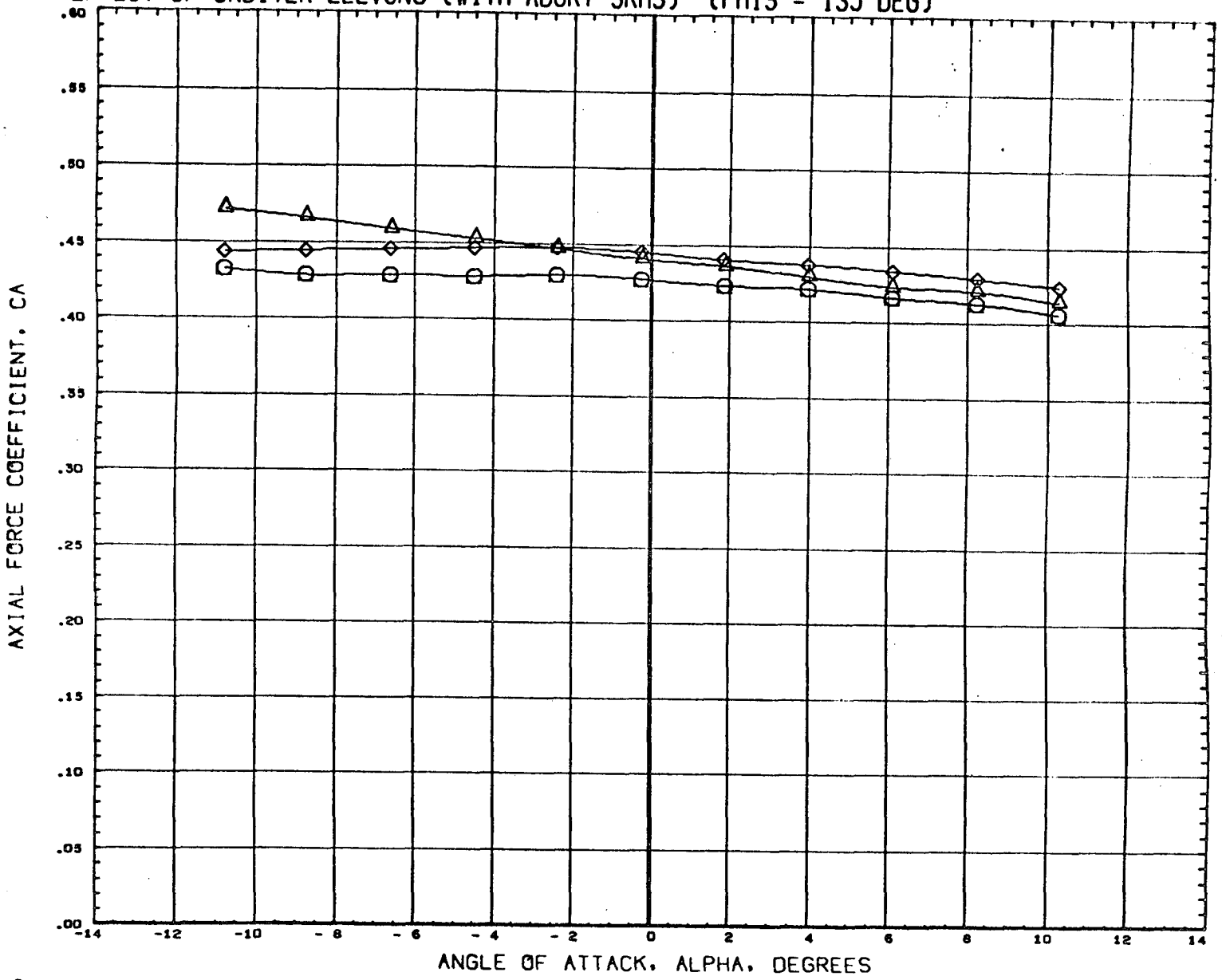
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

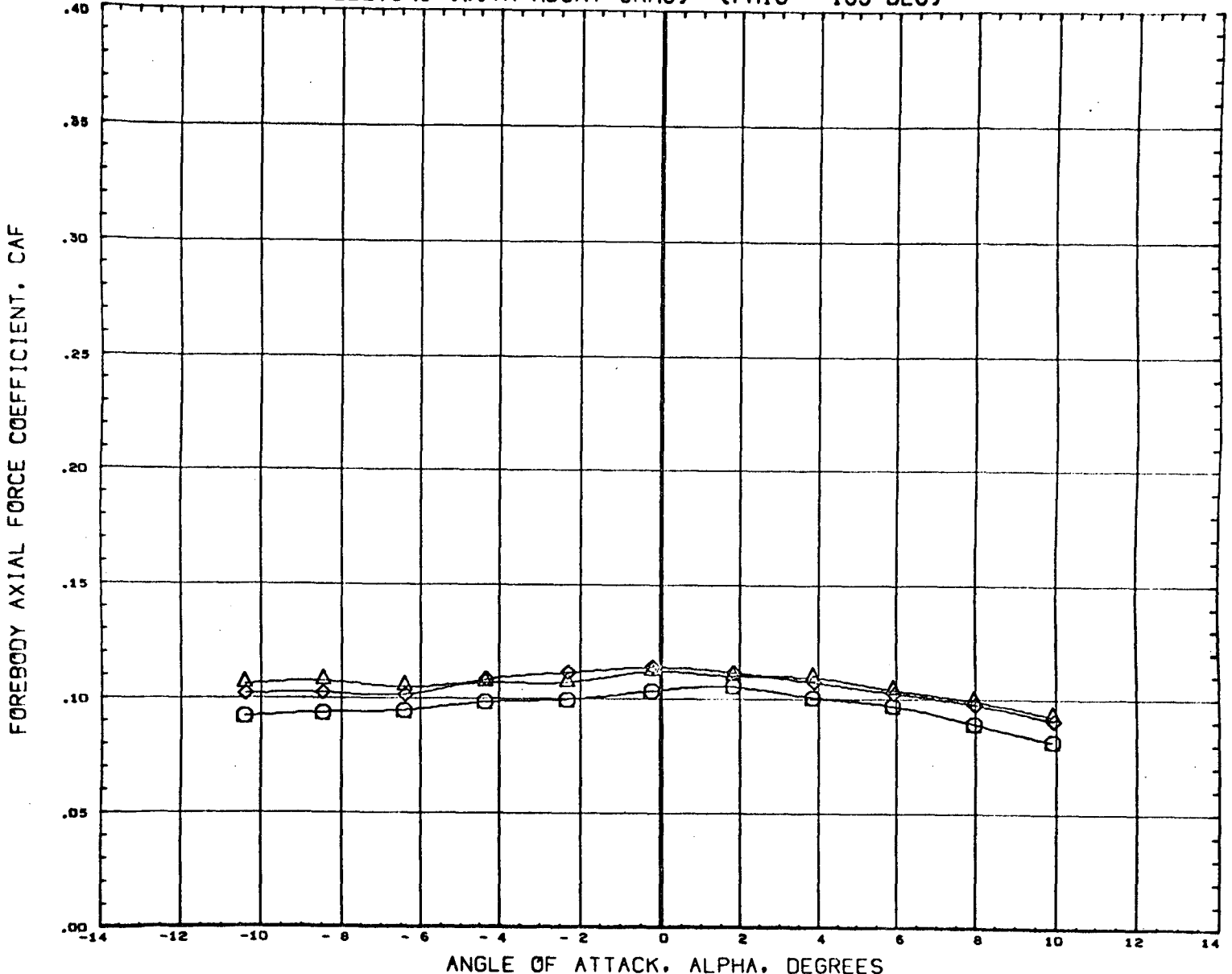
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

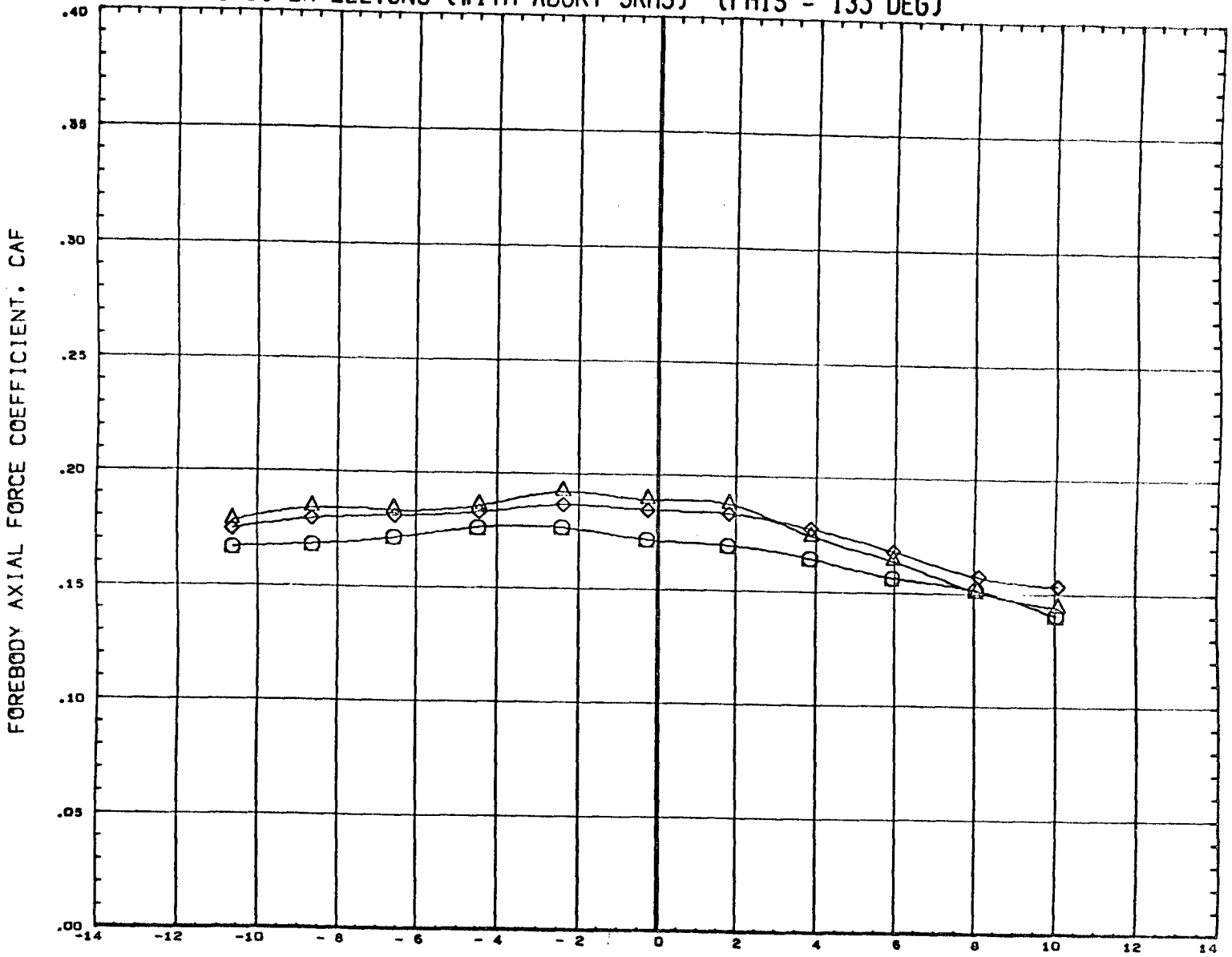
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAM2	ELEVTR	RUDDER	REFERENCE INFORMATION
(071008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(871061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(871062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .61

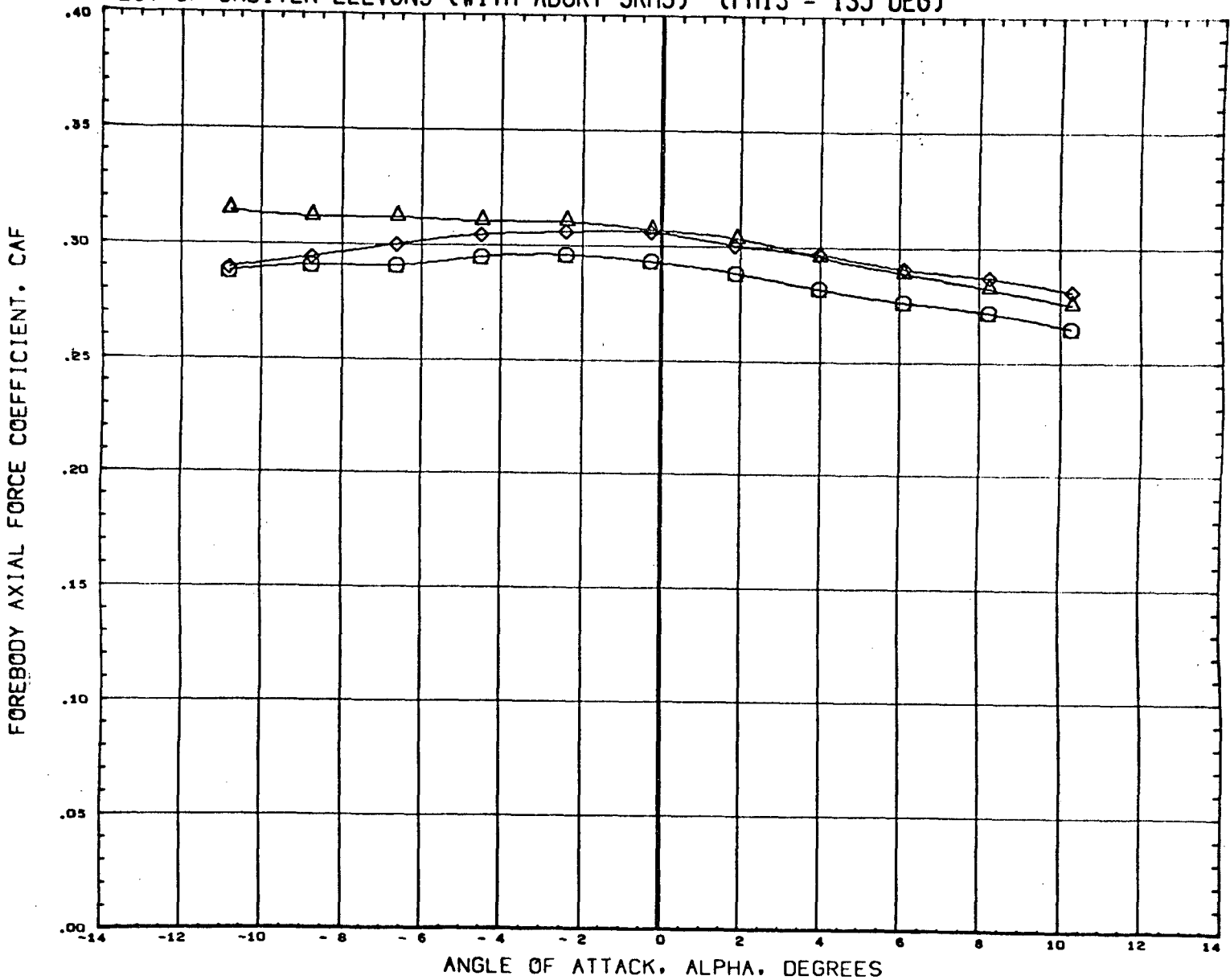
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .90

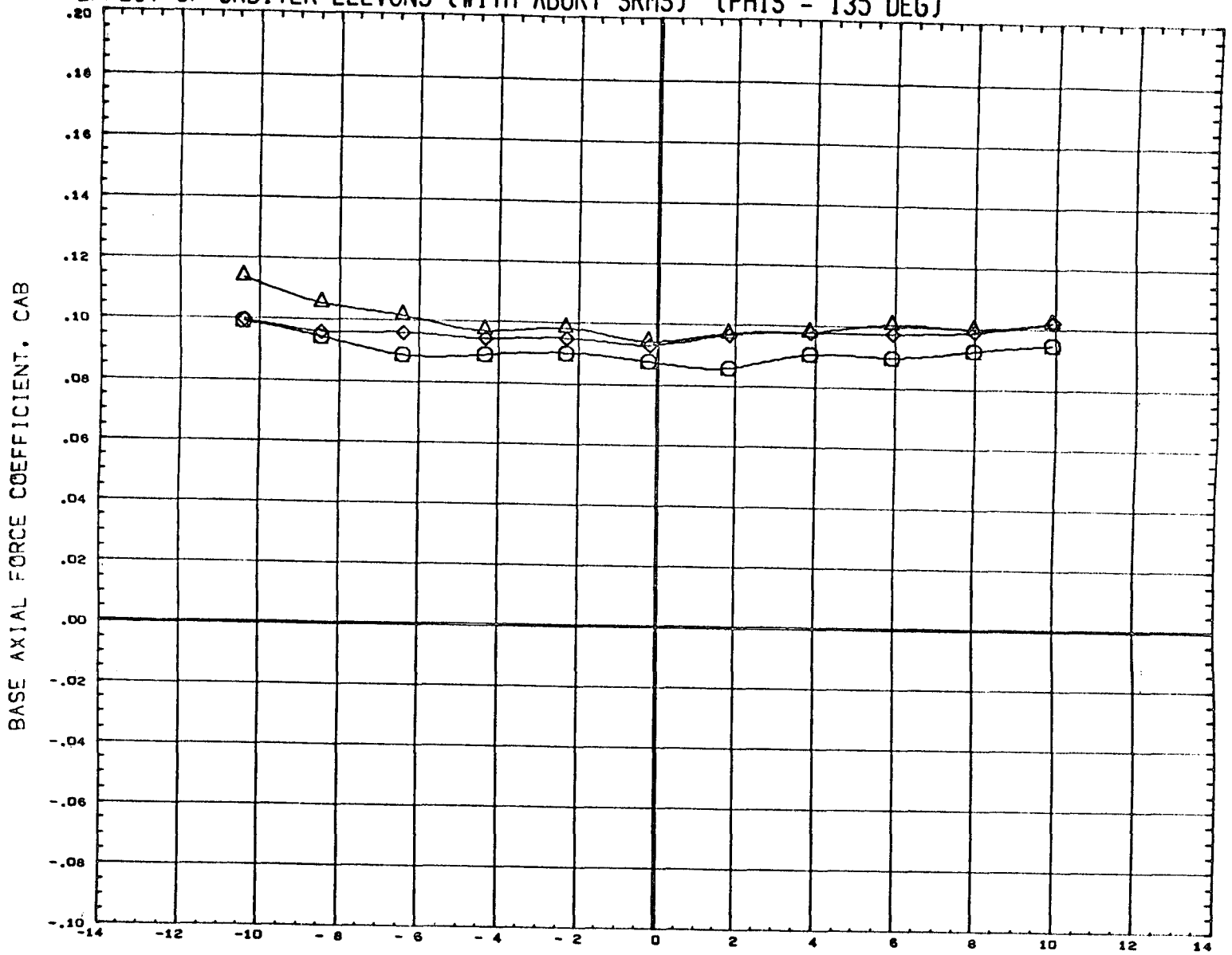
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



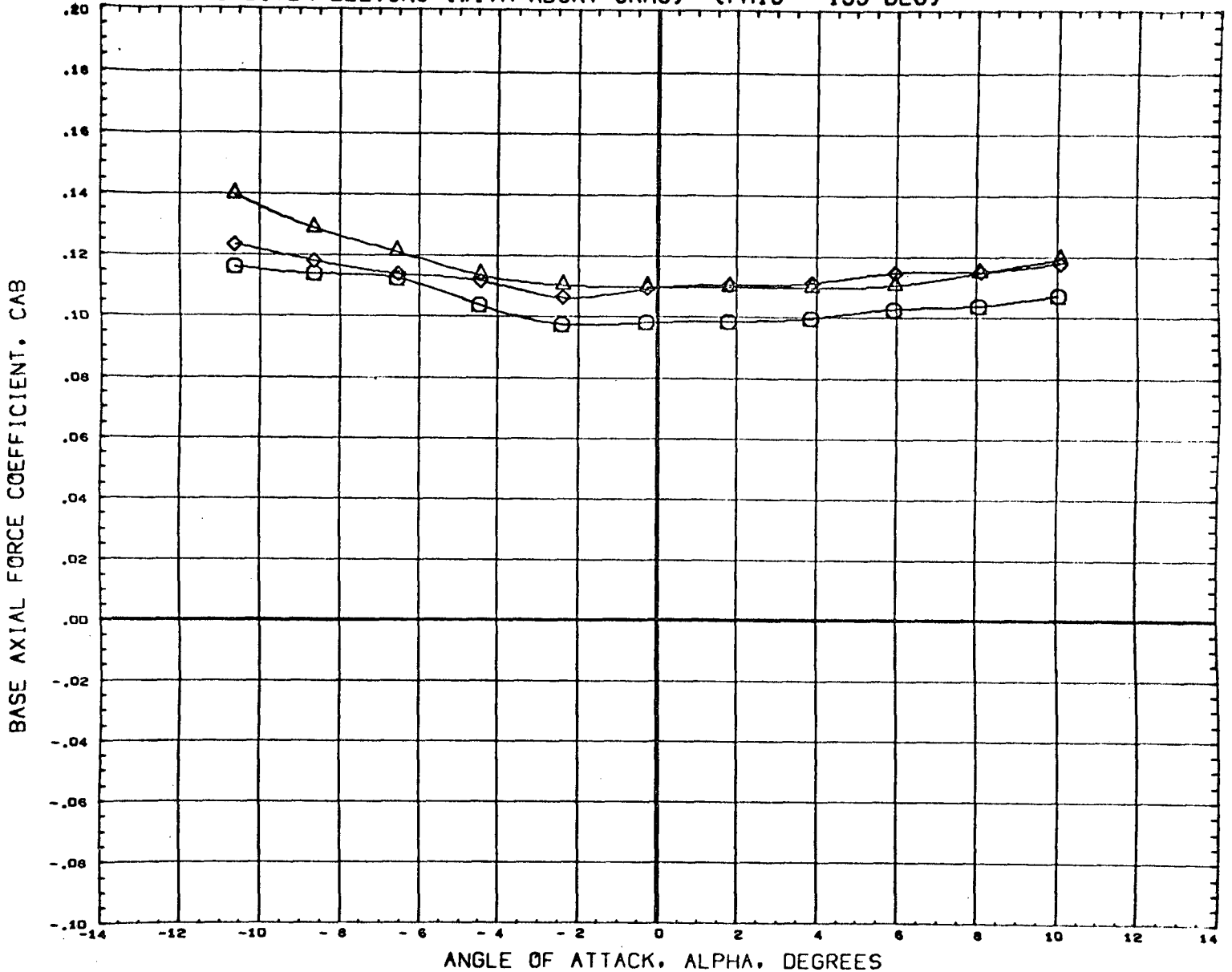
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(D71000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61



# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



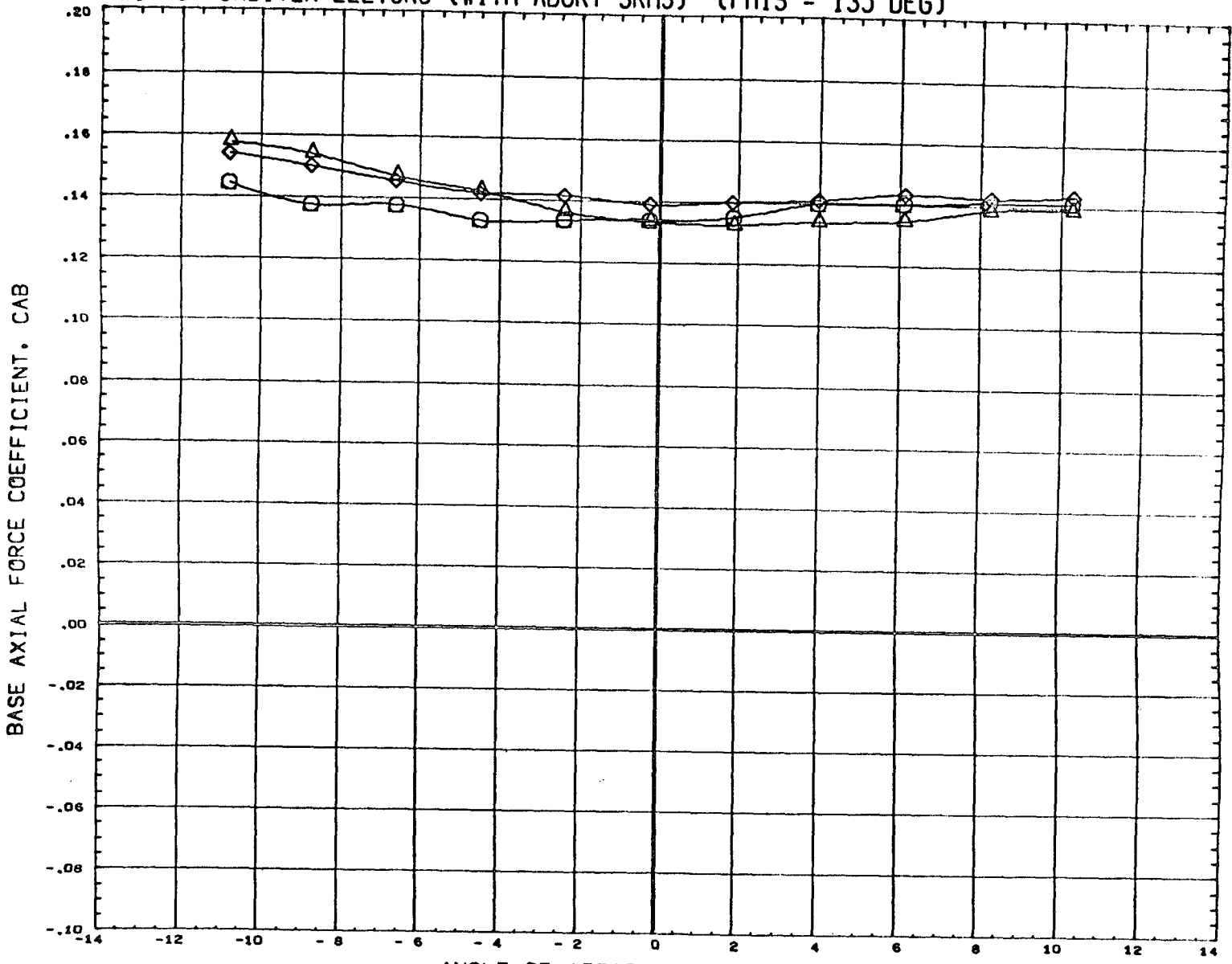
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

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*PA*

EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)

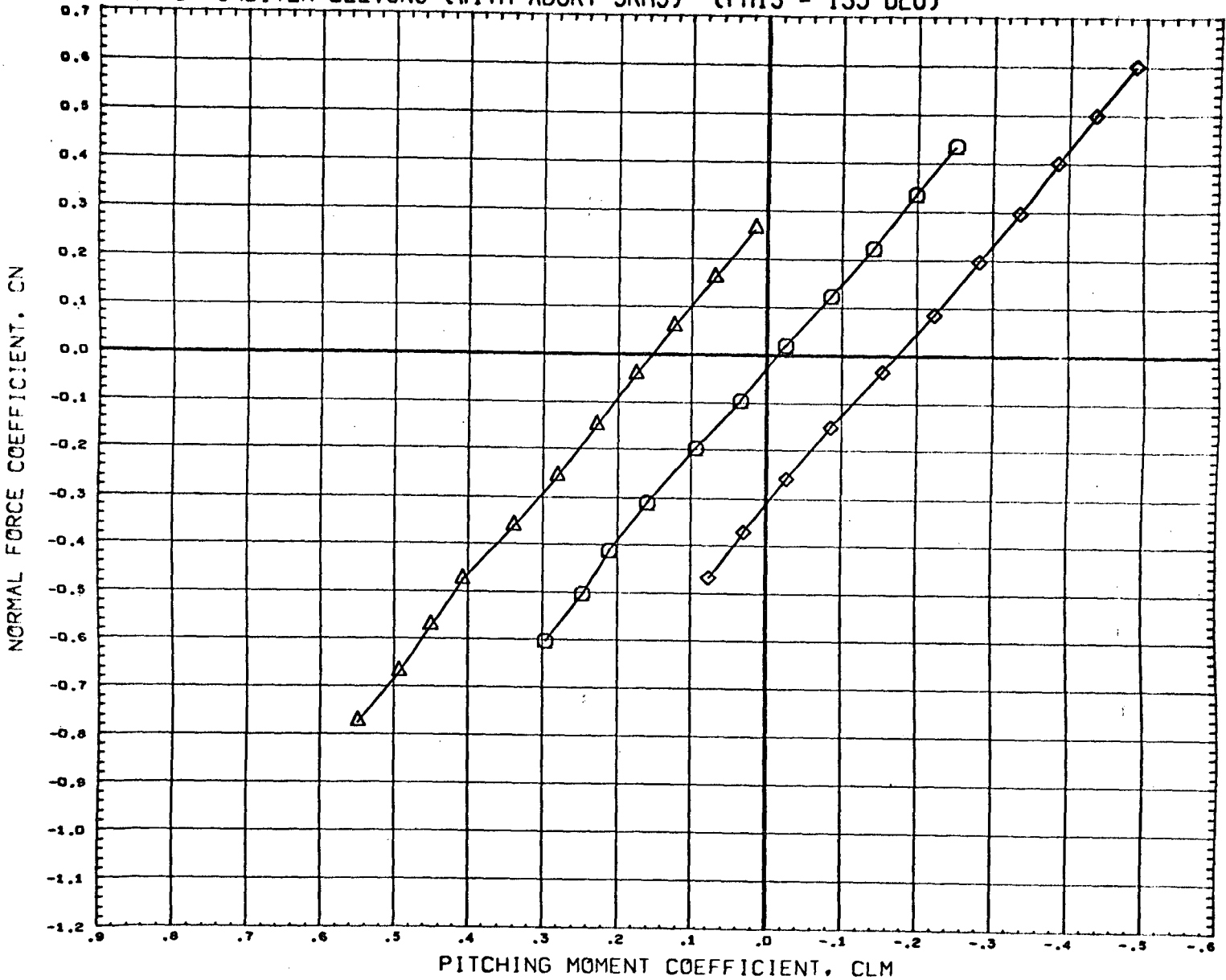


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

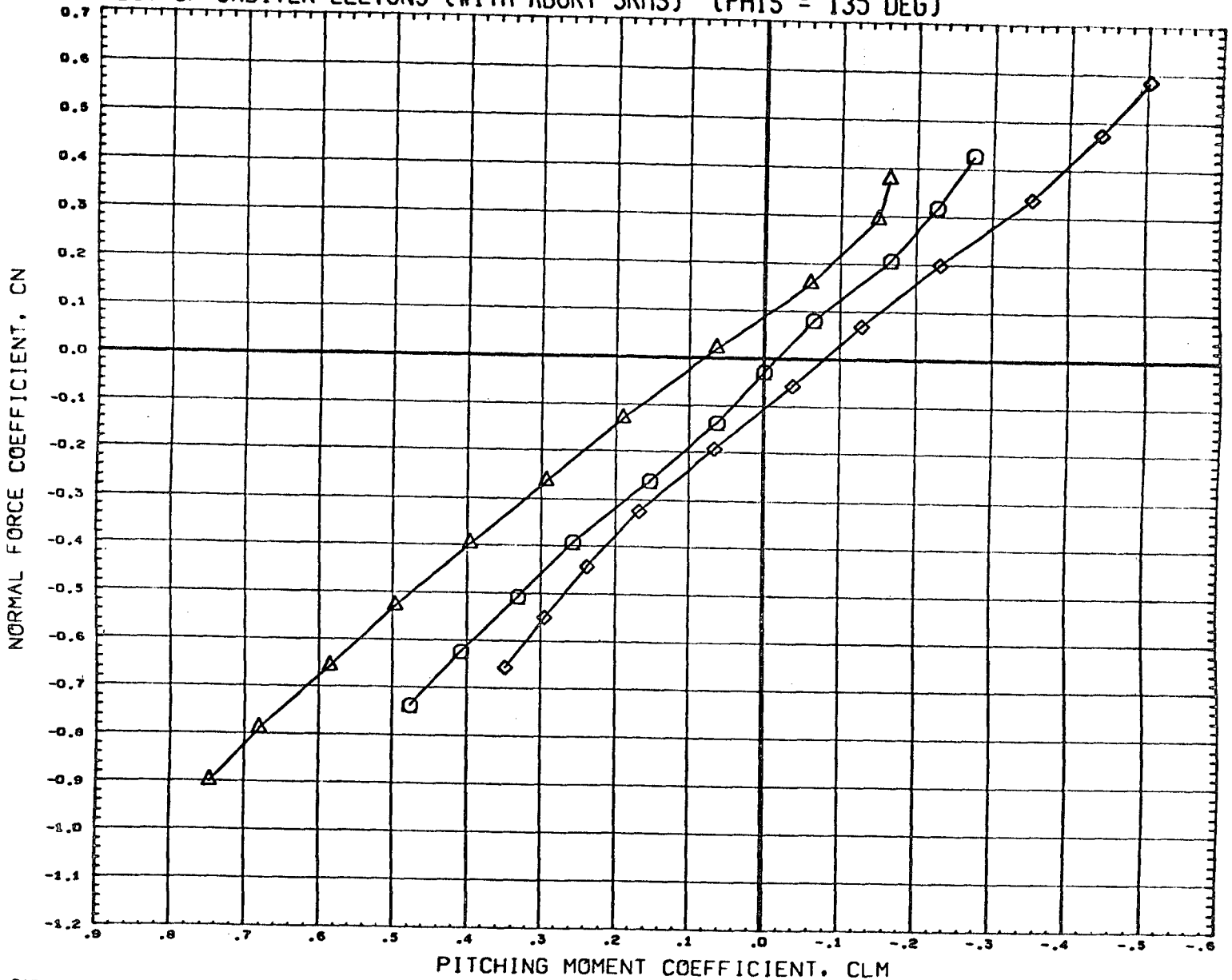
26

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(071061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

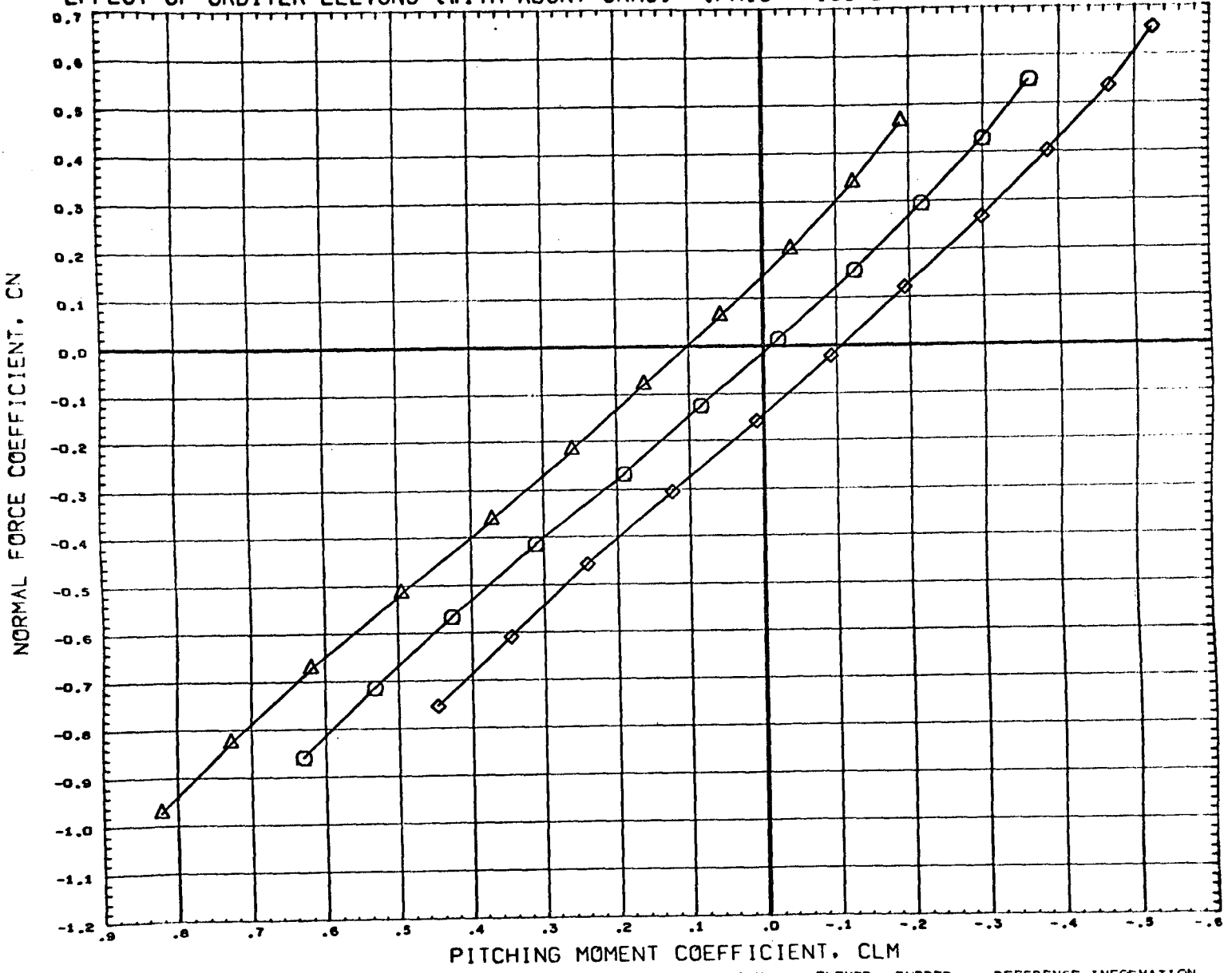
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071009)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

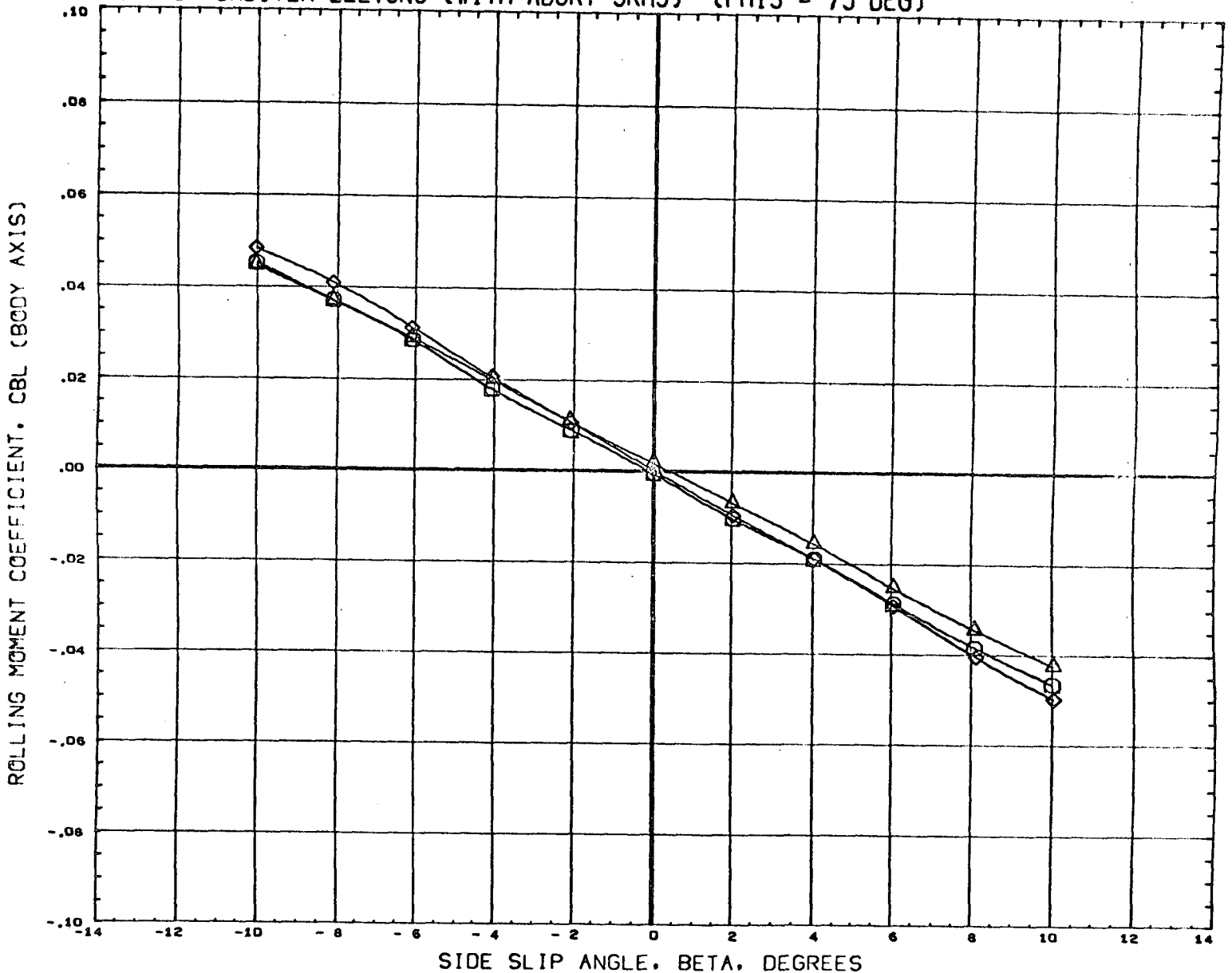
EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 135 DEG)



DATA SET SYMBO	CONFIGURATION DESCRIPTION	T101S1	PHIS	CAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	135.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(D71061)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	135.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(D71062)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	135.000	0.000	10.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

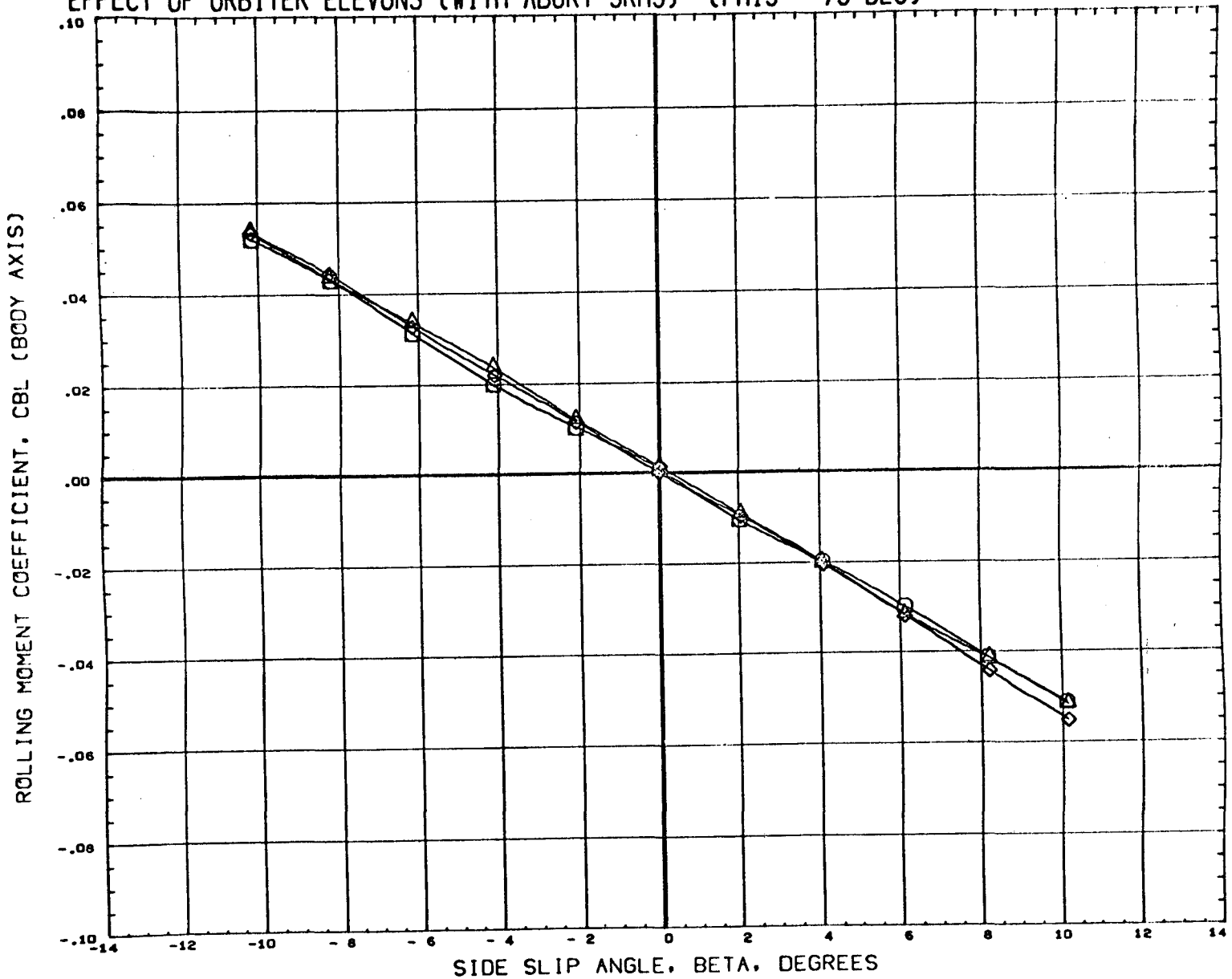
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71056)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(C71058)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

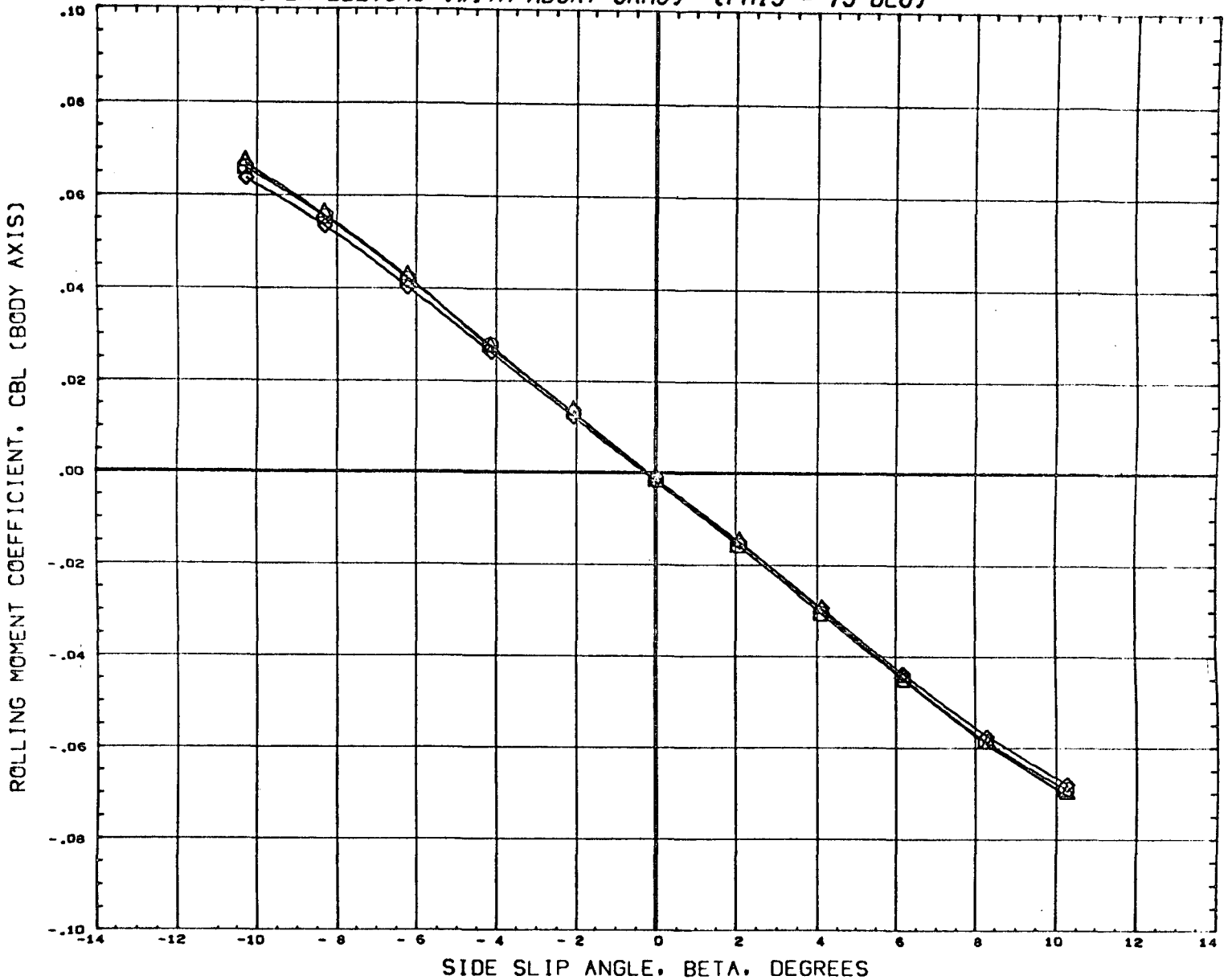
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71056)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(C71058)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .90

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



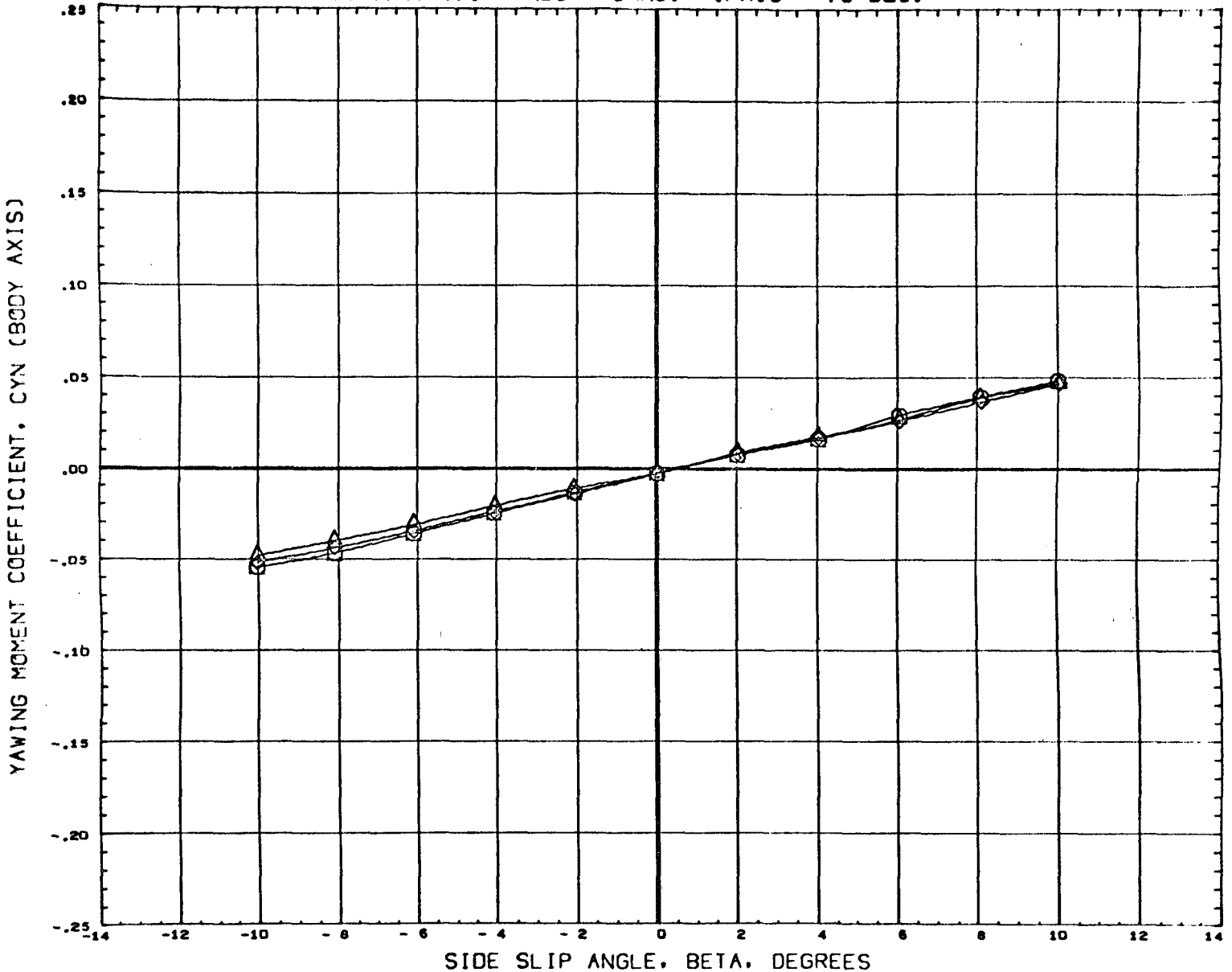
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71056)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(C71058)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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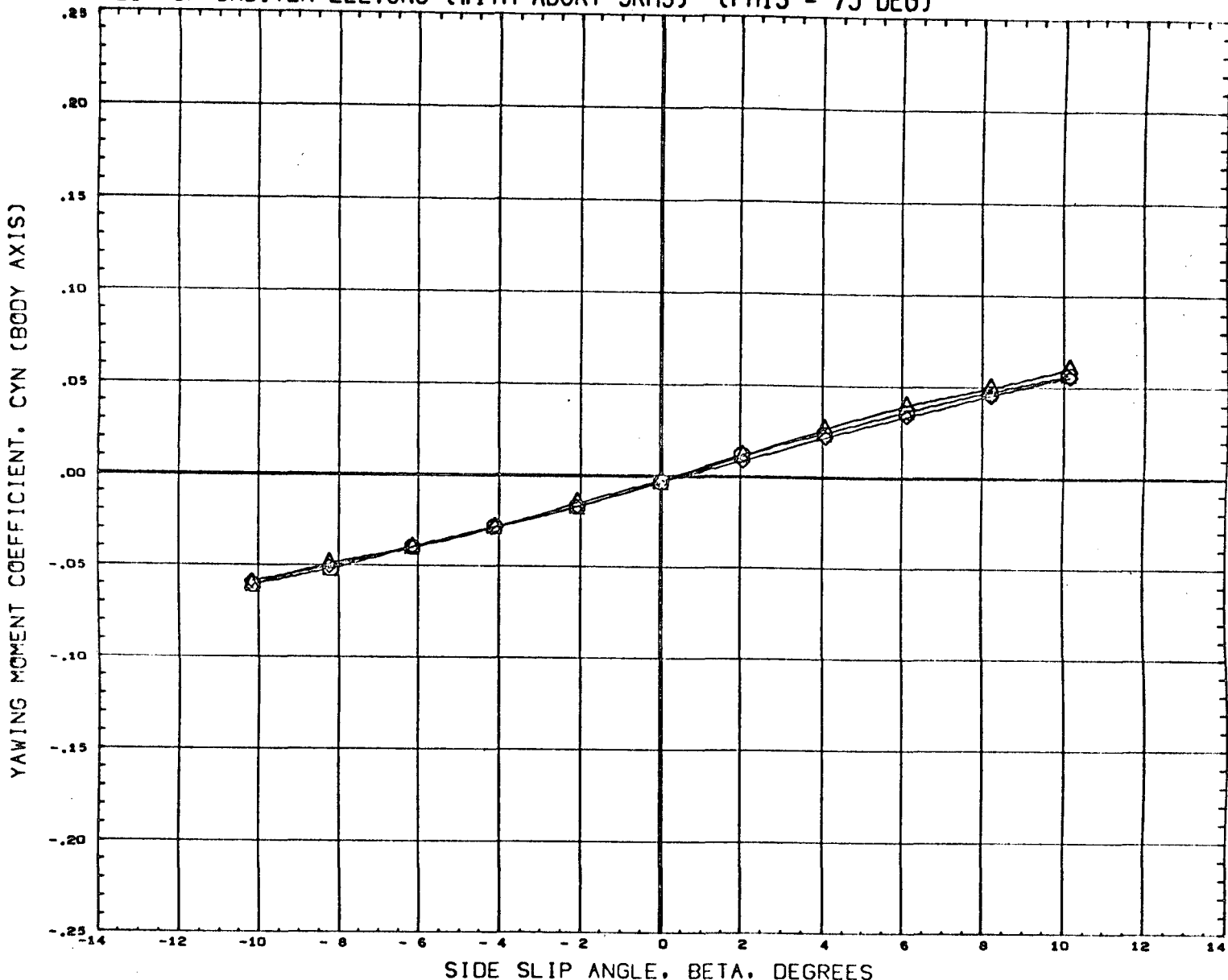
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8900 SQ. IN
(C71056)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(C71058)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

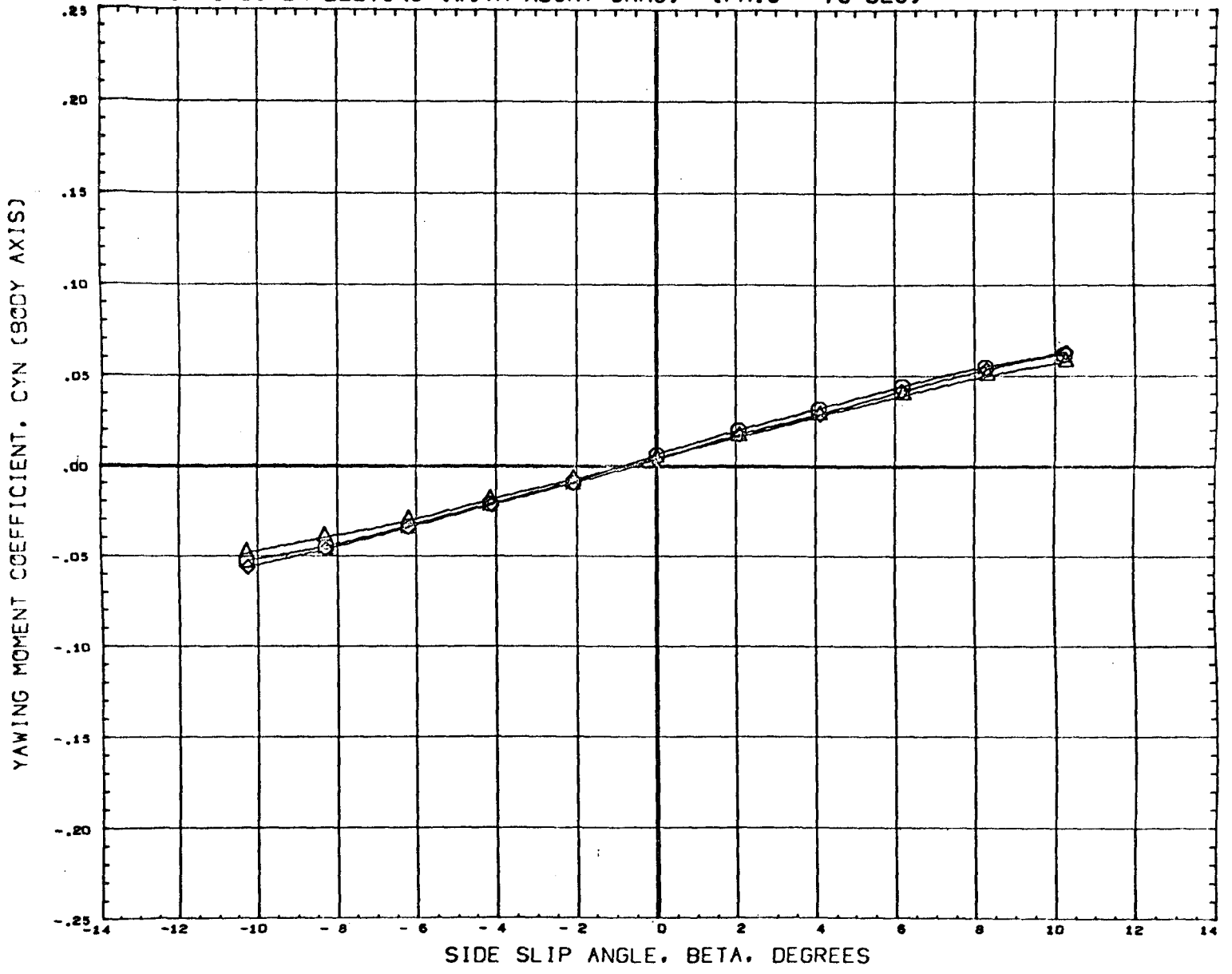
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71056)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(C71058)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

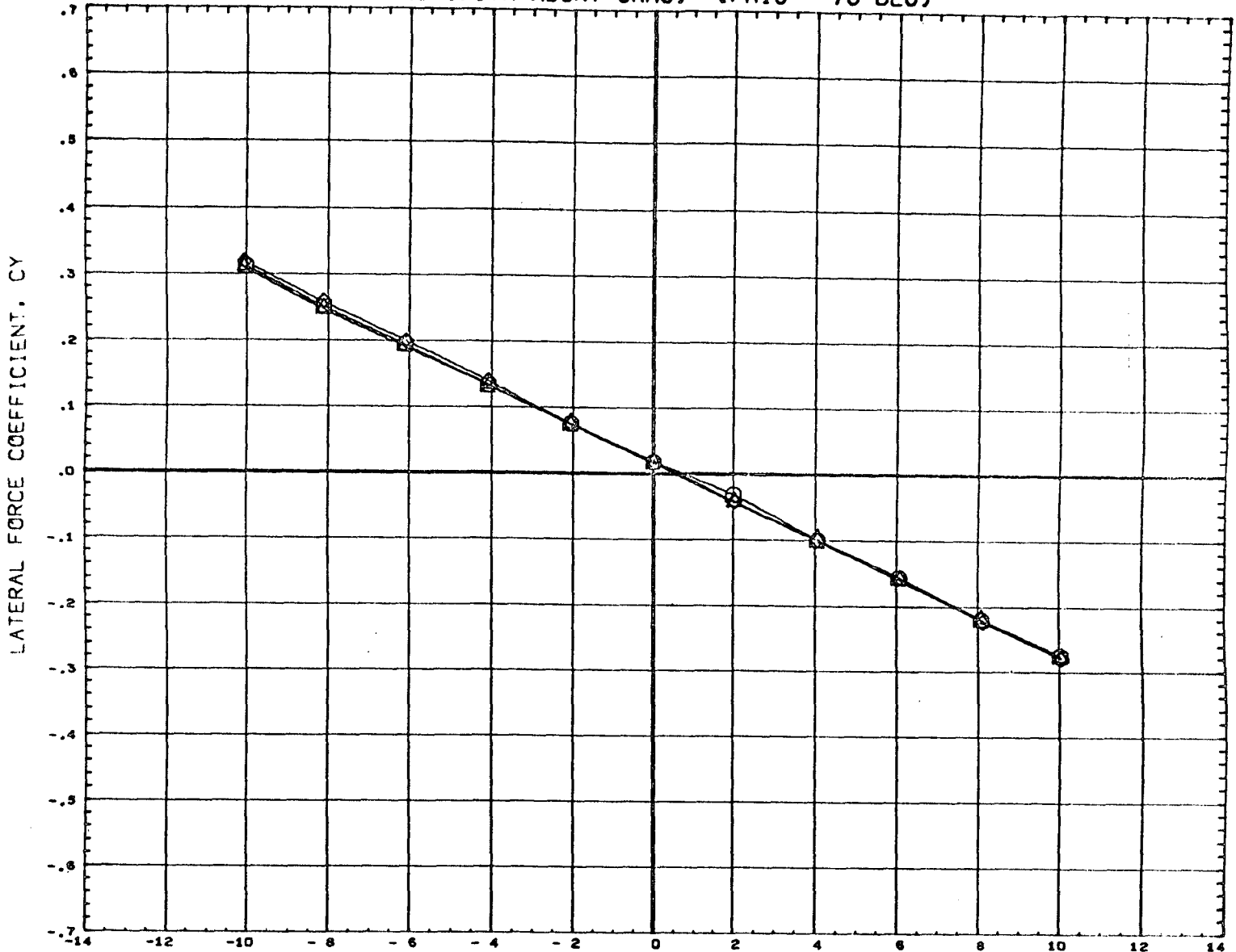
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71056)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(C71058)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

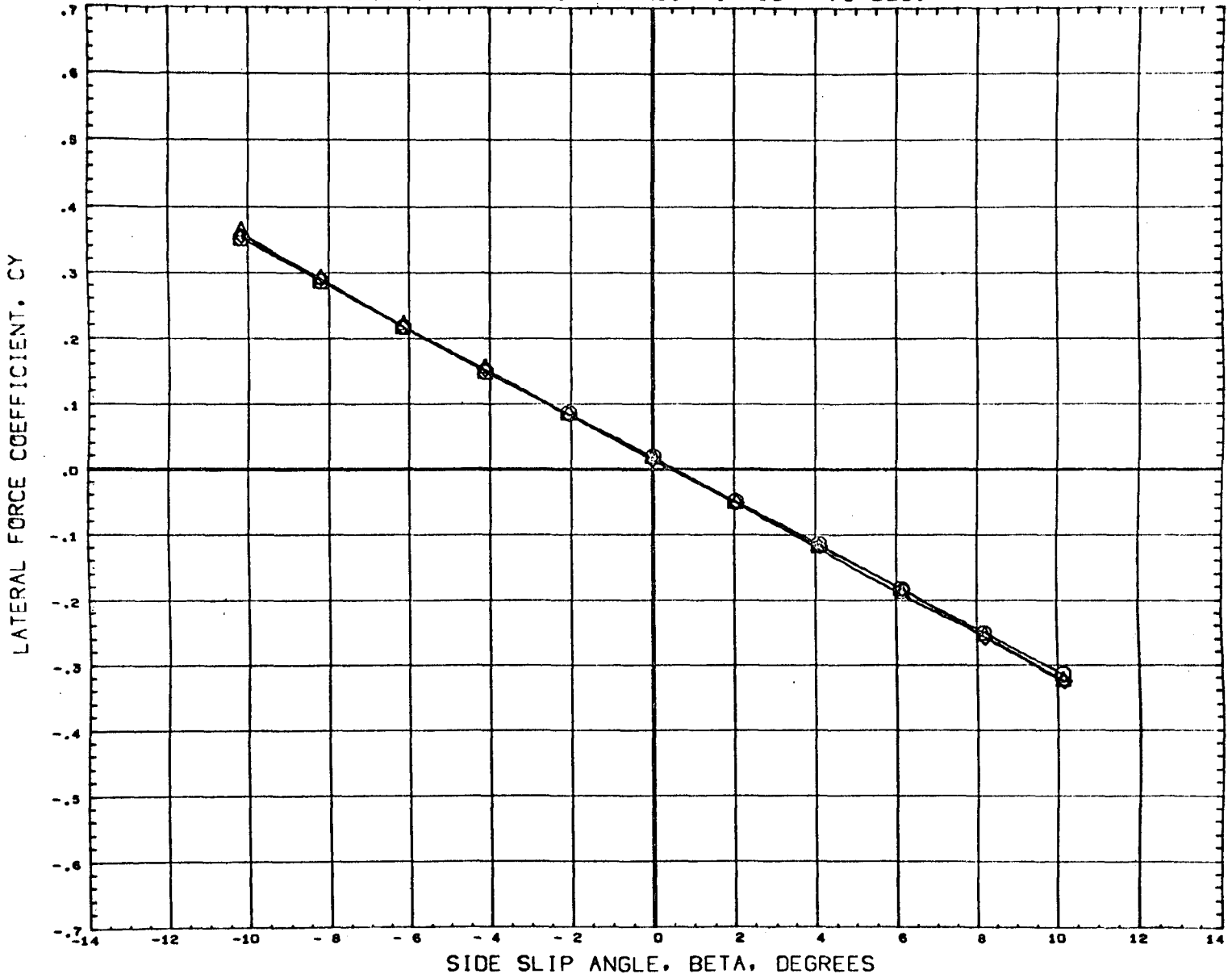
# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71056)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	-10.000	LREF 2.0280 IN.
(C71058)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	10.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



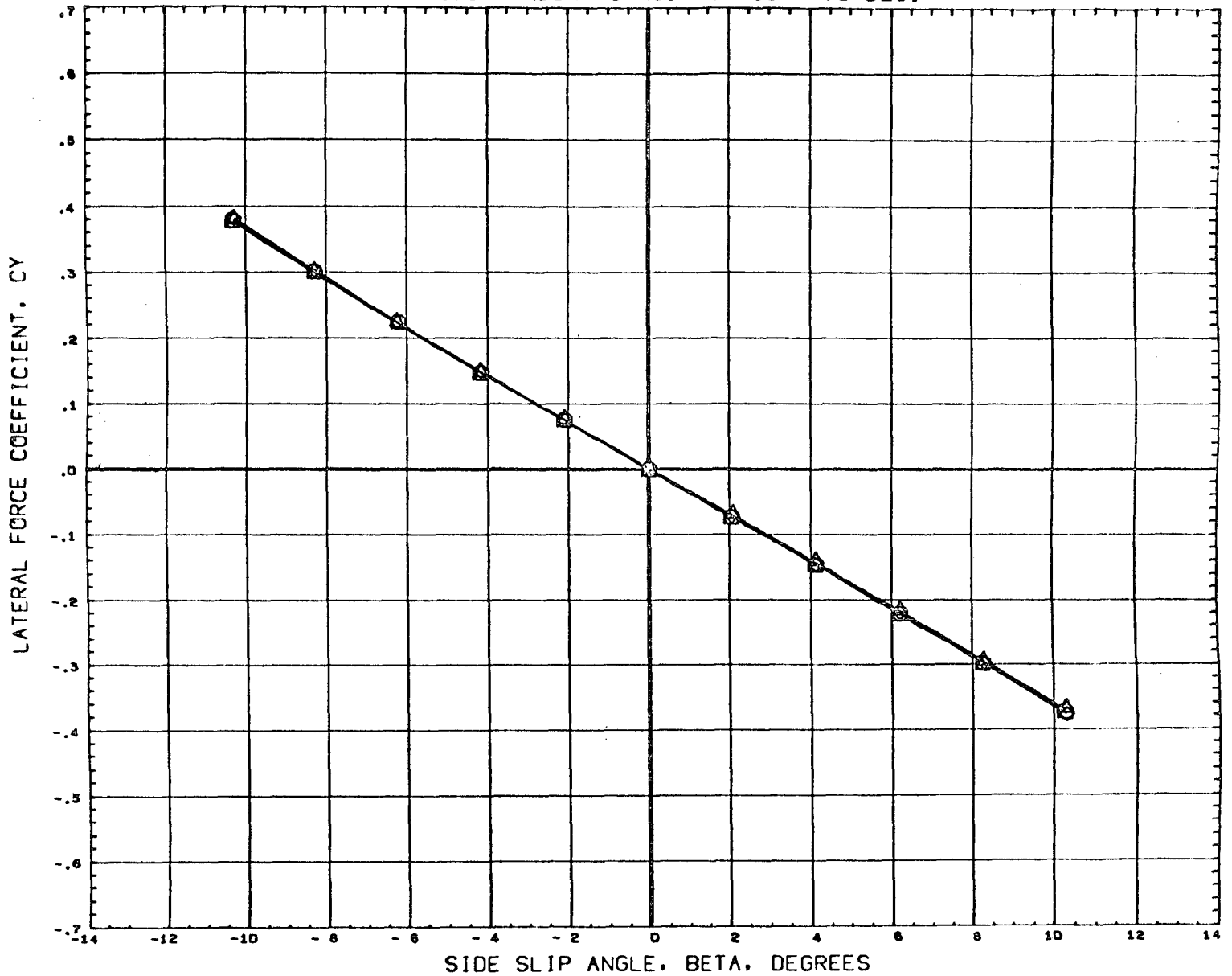
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(C71056)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(C71058)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	10.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

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07

# EFFECT OF ORBITER ELEVONS (WITH ABORT SRMS) (PHIS = 75 DEG)



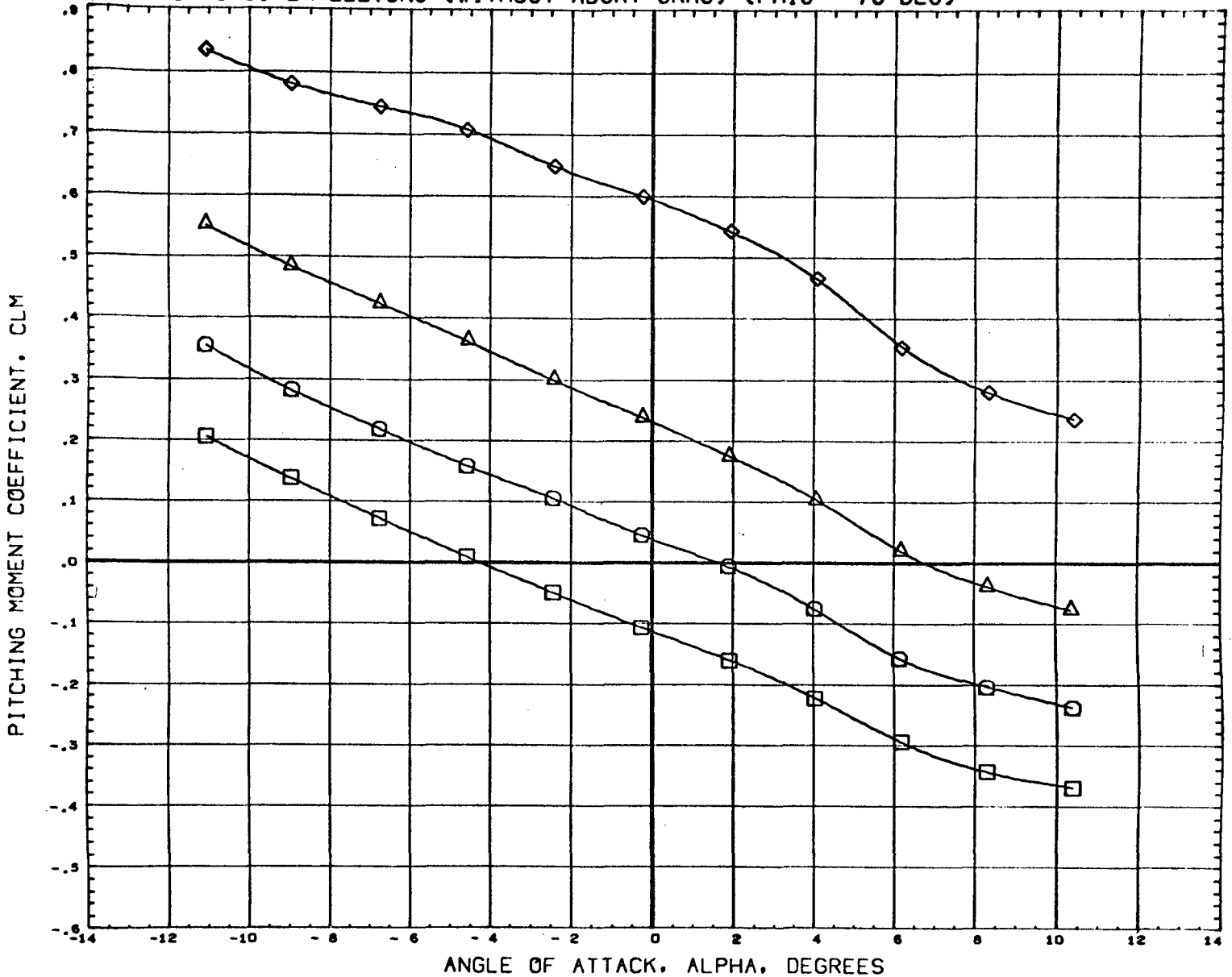
DATA SET SYMBOL	CONFIGURATION DESCRIPTION		PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(D71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(C71056)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	-10.000	0.000	LREF	2.0280 IN.
(C71058)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	10.000	0.000	BREF	4.4600 IN.
							XMRP	3.3600 IN.
							YMRP	0.0000 IN.
							ZMRP	0.2480 IN.
							SCALE	0.0040 SCALE

MACH 1.20

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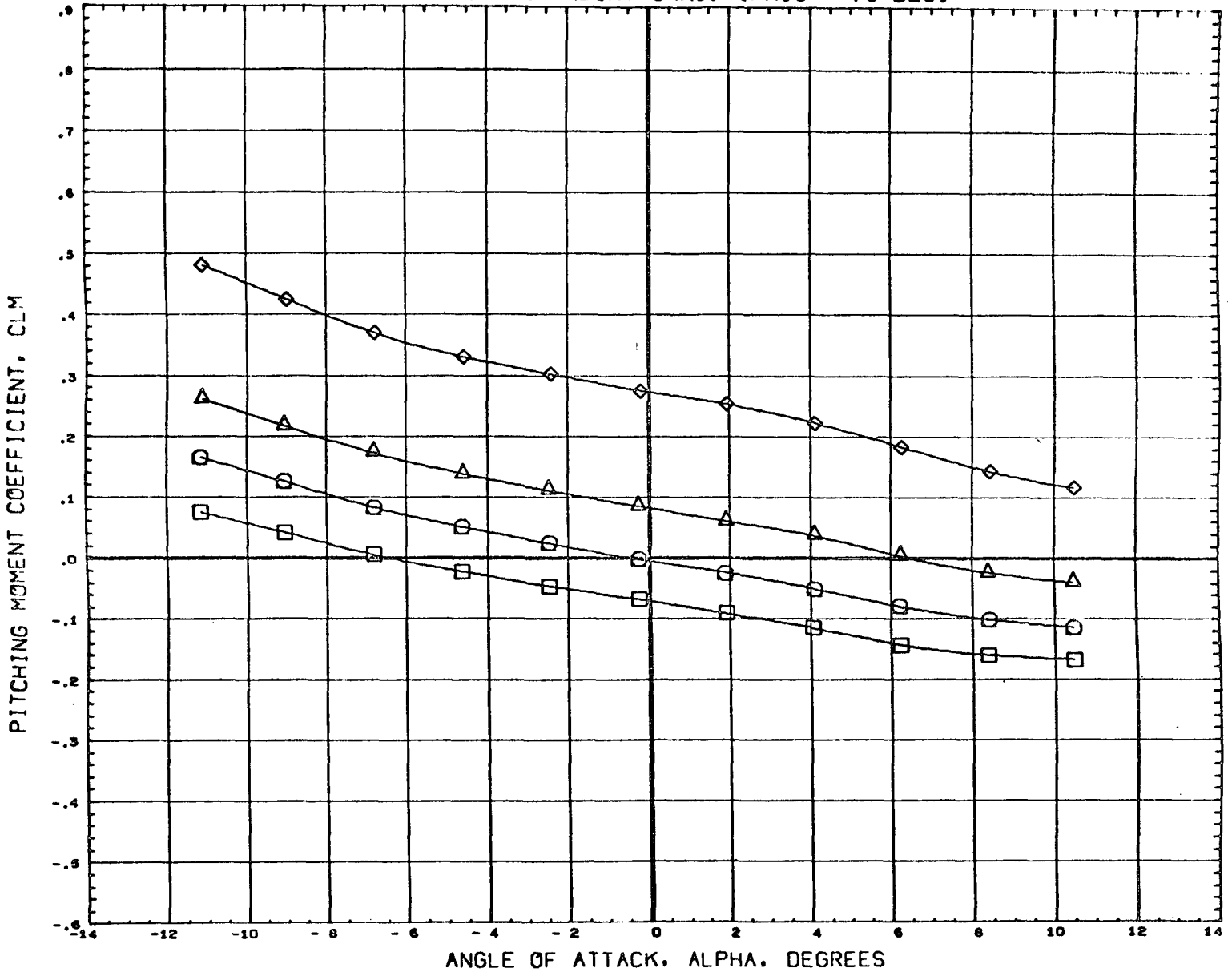
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# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T102S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

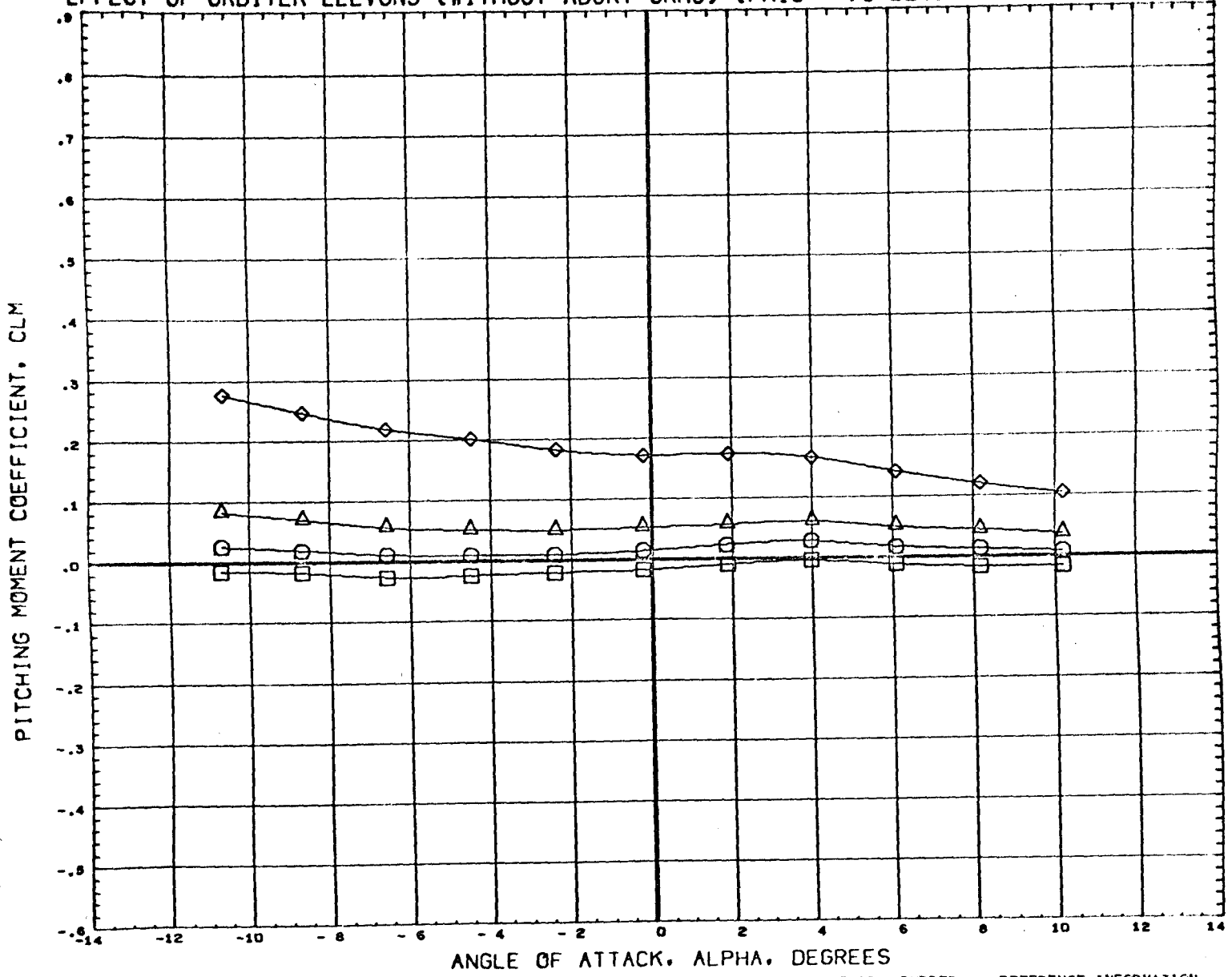
MACH

1.97

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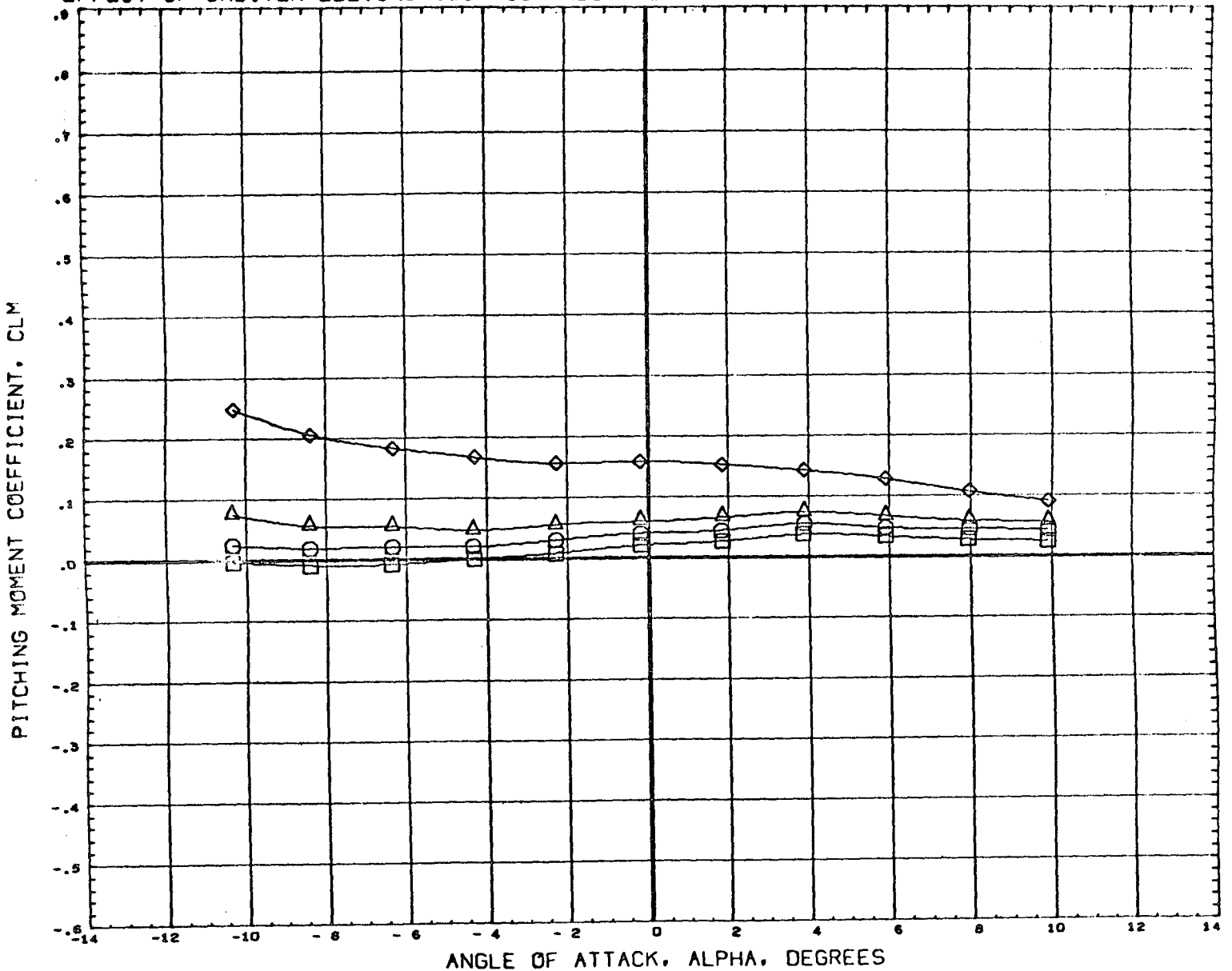
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAM2	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

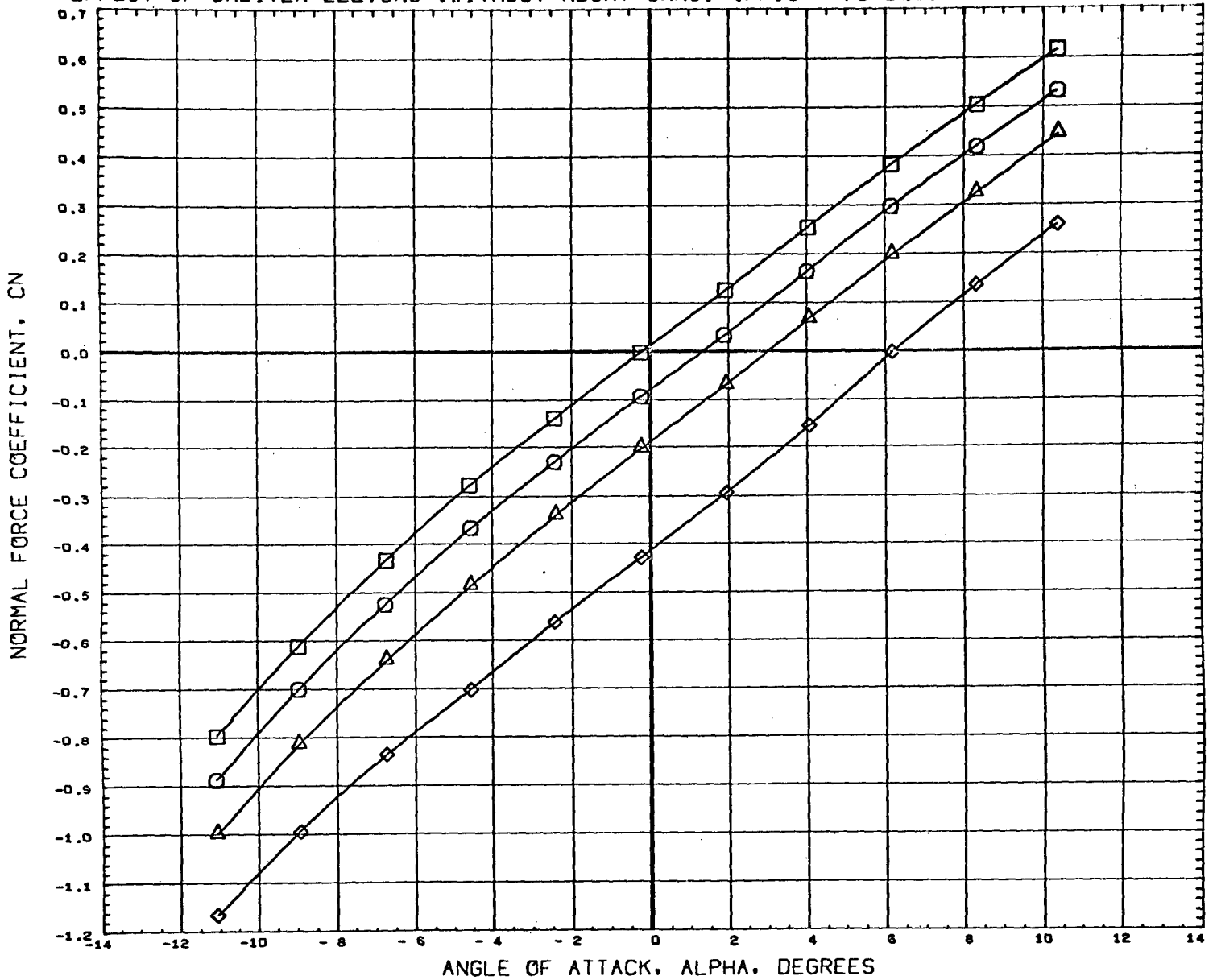
MACH 3.48

# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



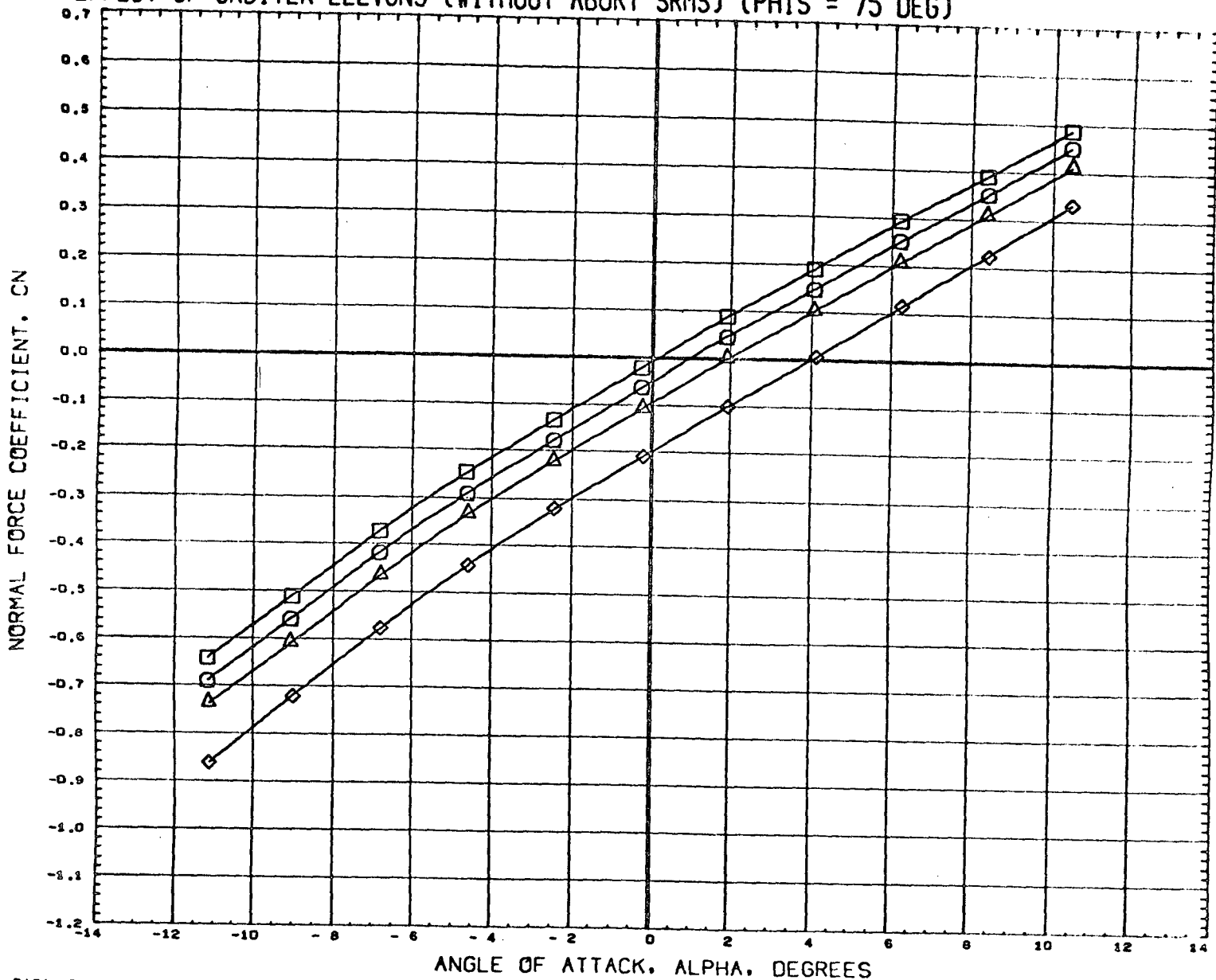
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

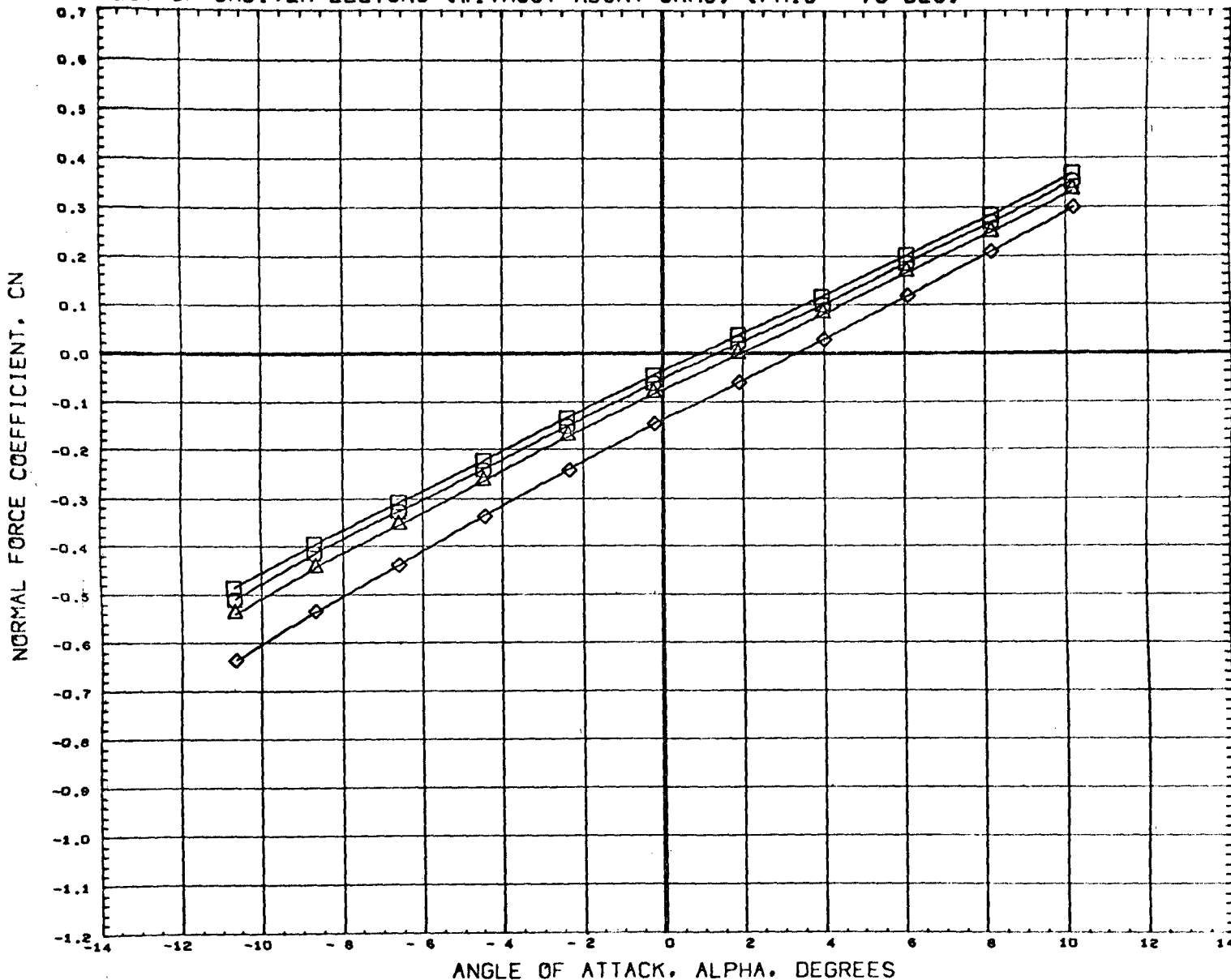
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(071063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



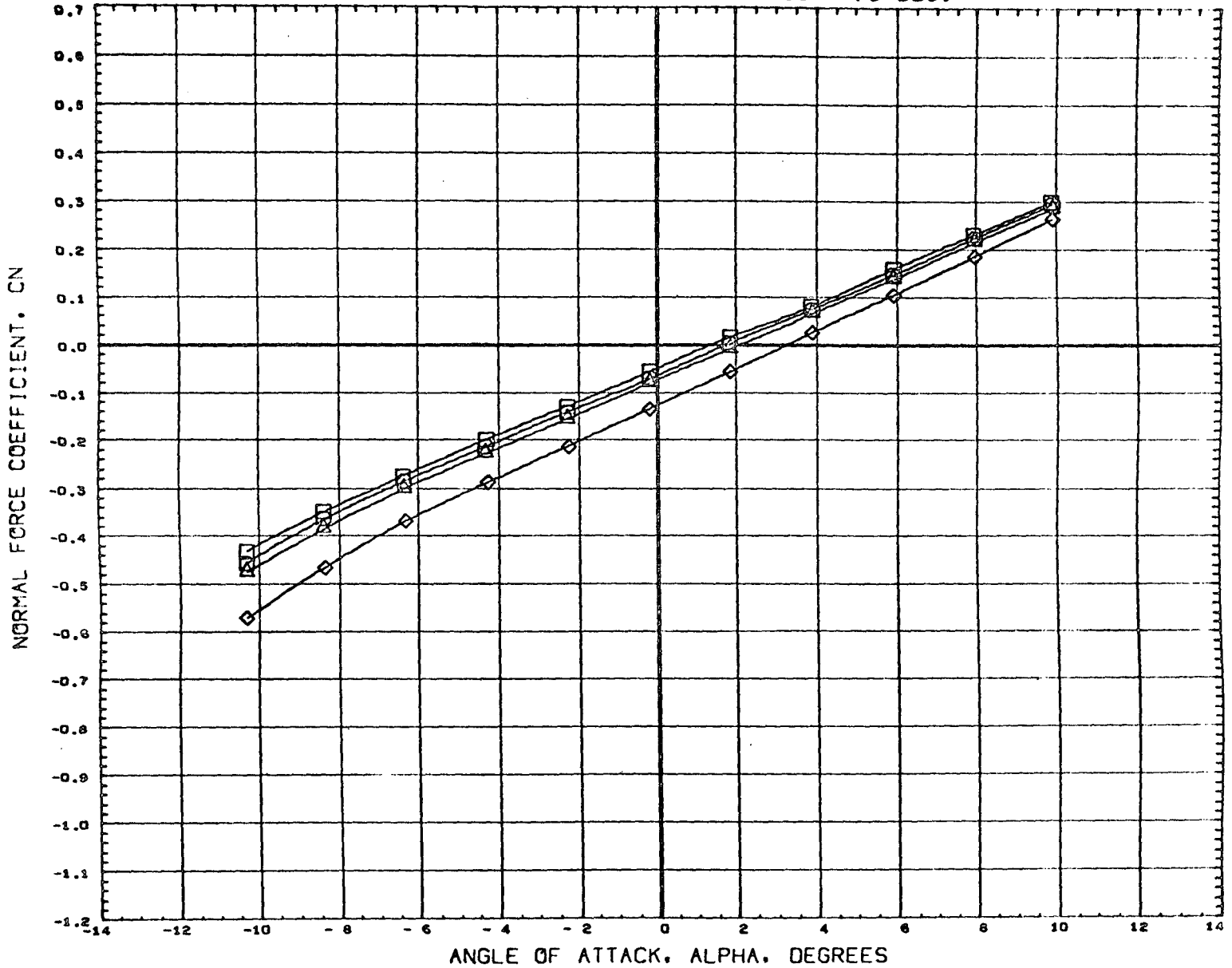
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(871079) ○	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(871064) △	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(871065) ◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(871063) □	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

3.48

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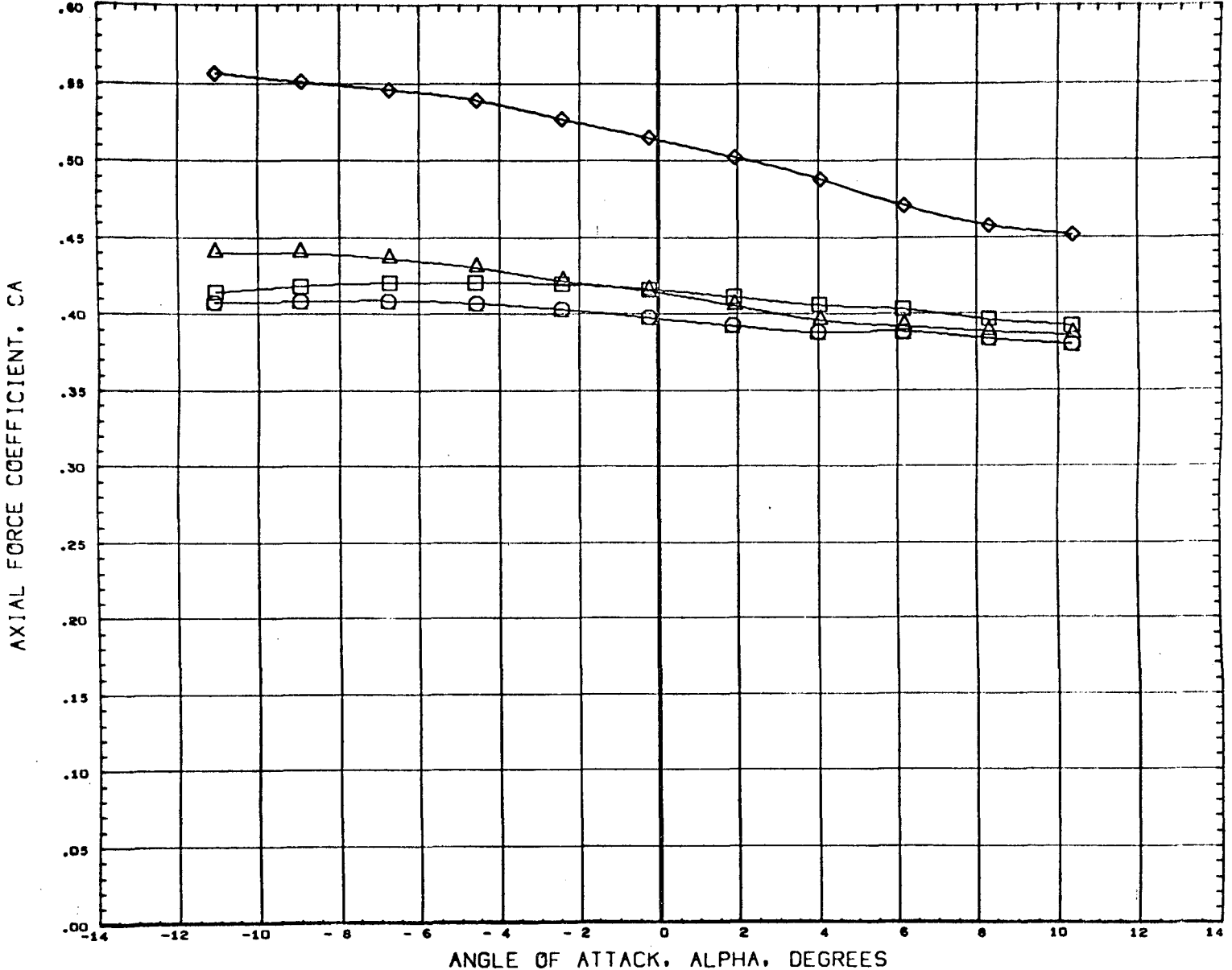
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(D71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



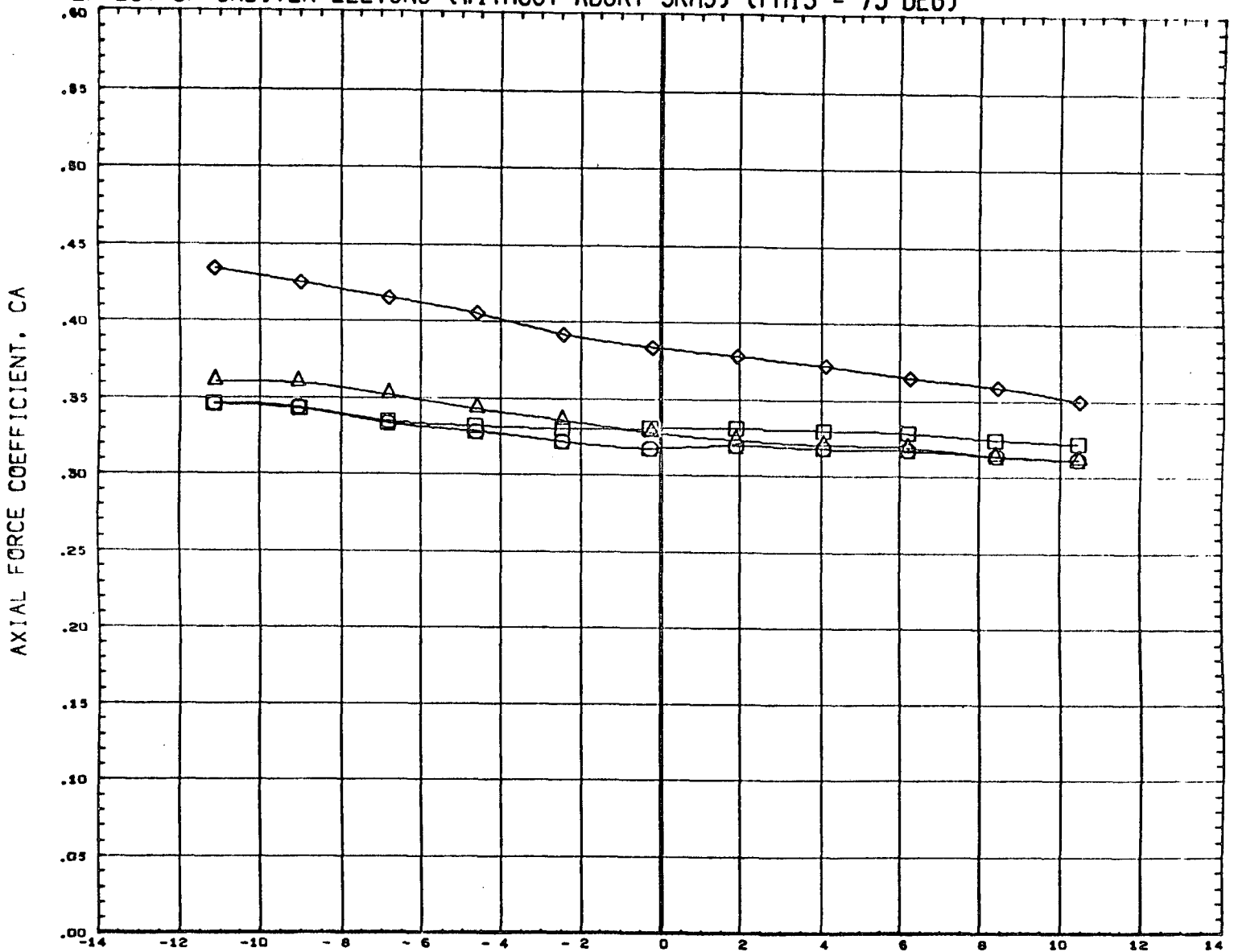
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8600 50. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

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# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



ANGLE OF ATTACK, ALPHA, DEGREES

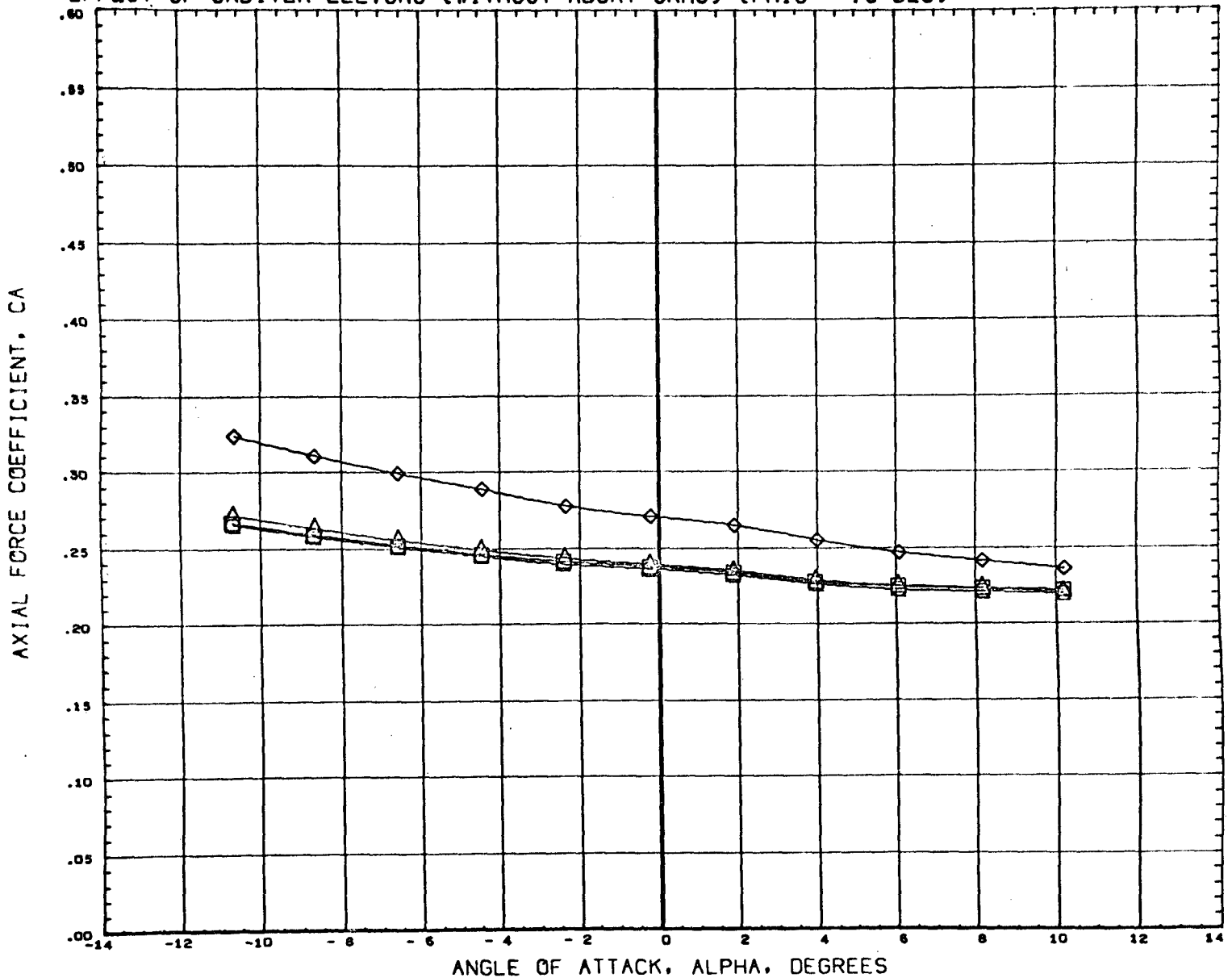
DATA SET SYMBO	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0260 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

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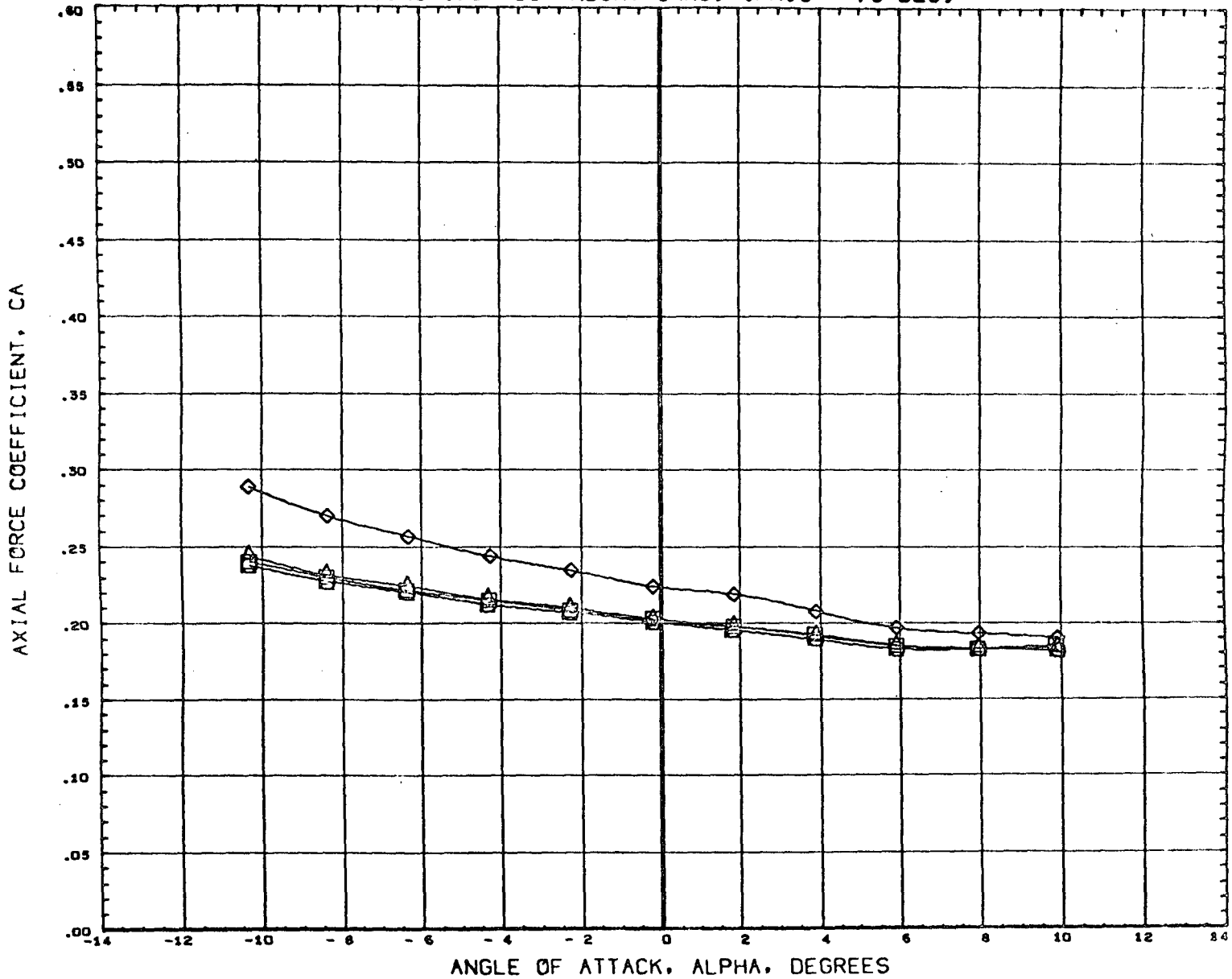
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



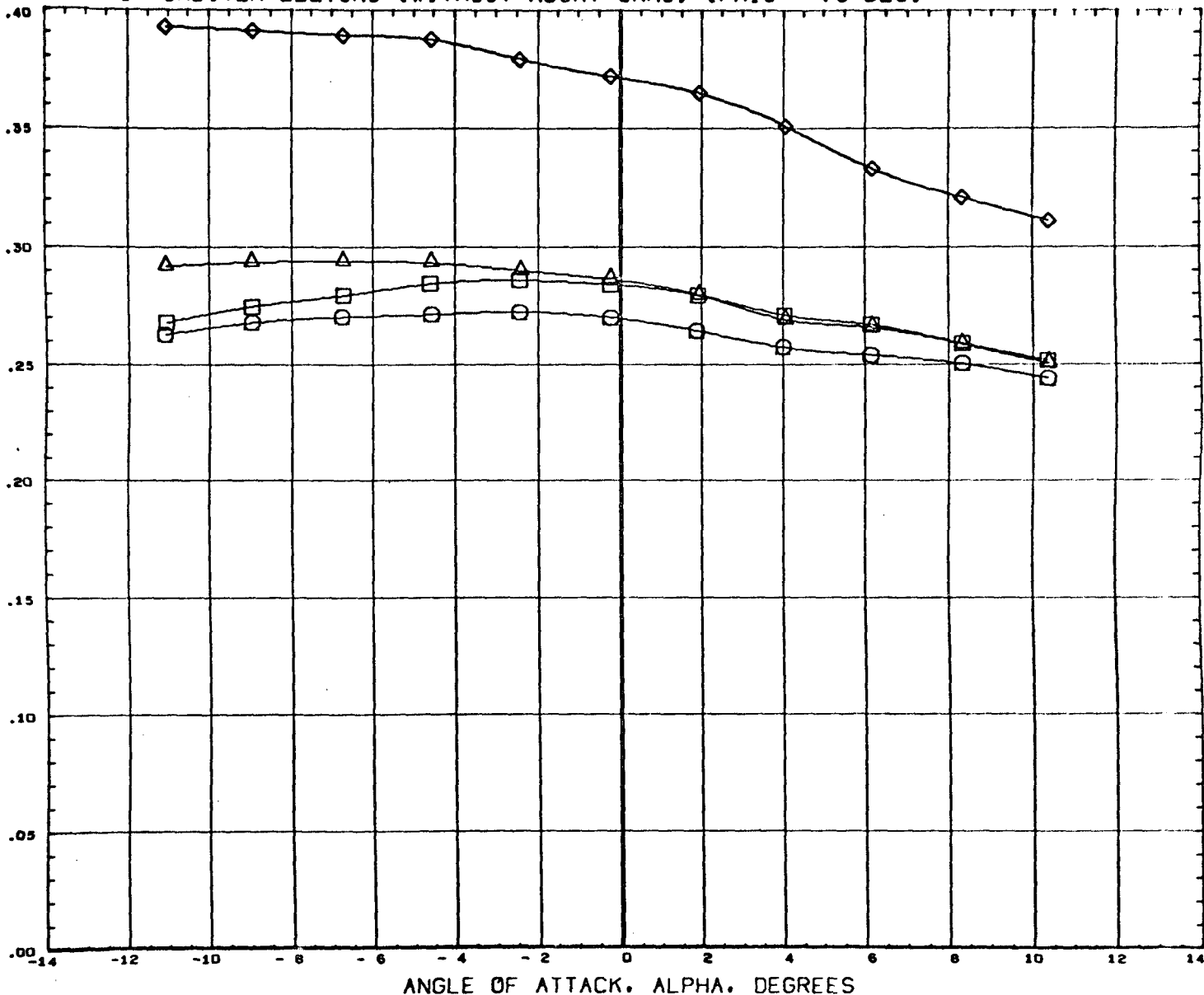
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

57

# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)

FOREBODY AXIAL FORCE COEFFICIENT, CAF



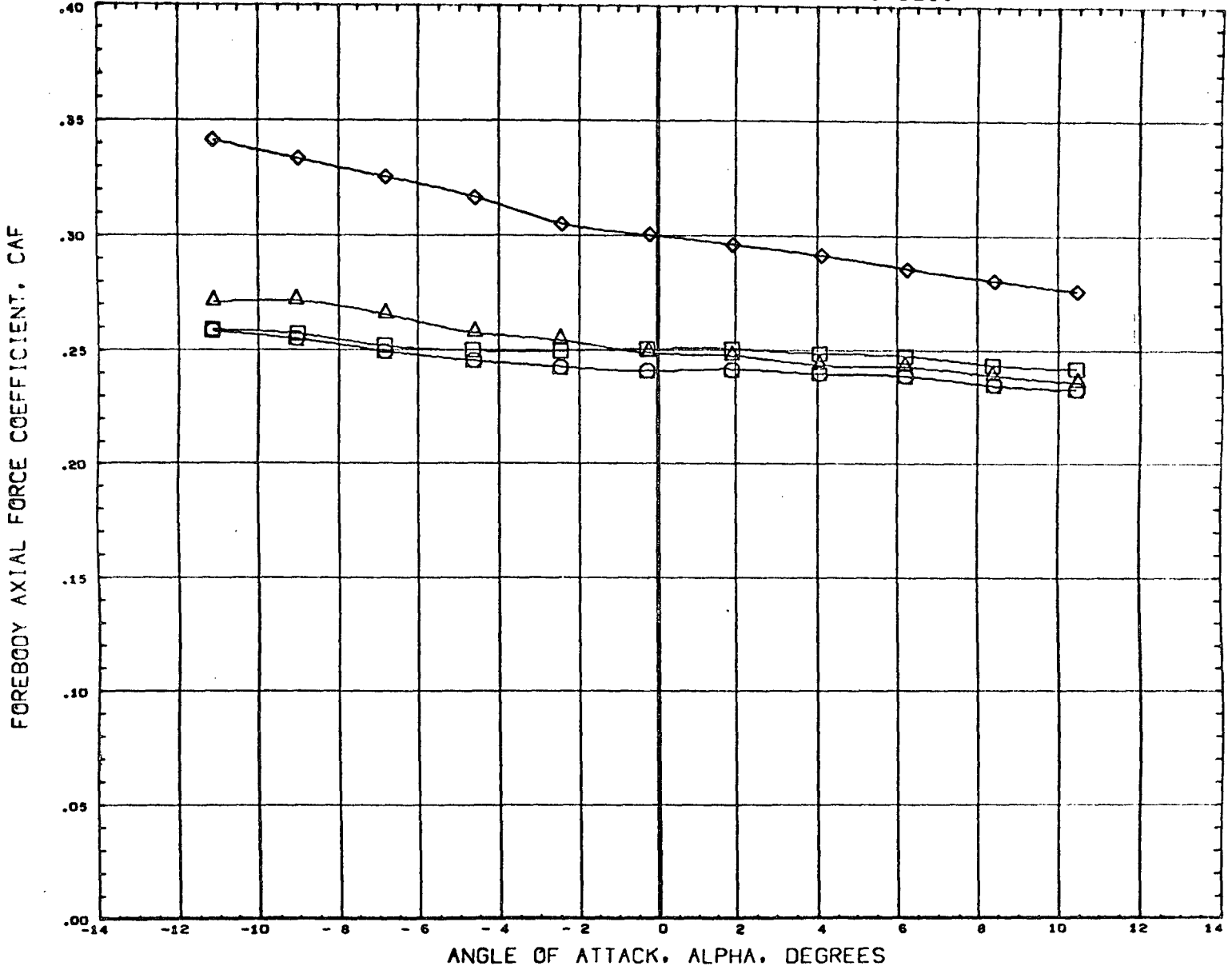
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.20

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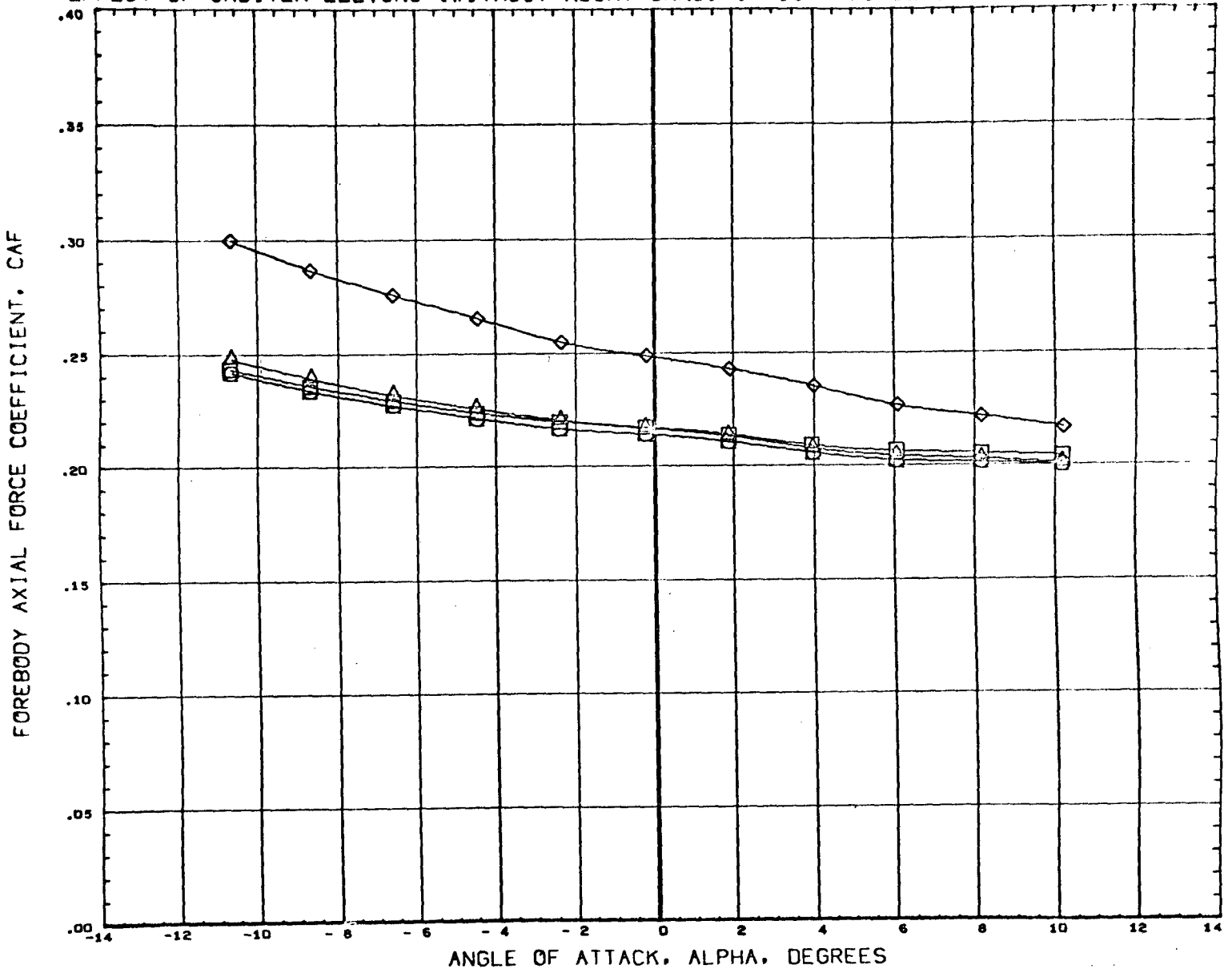
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



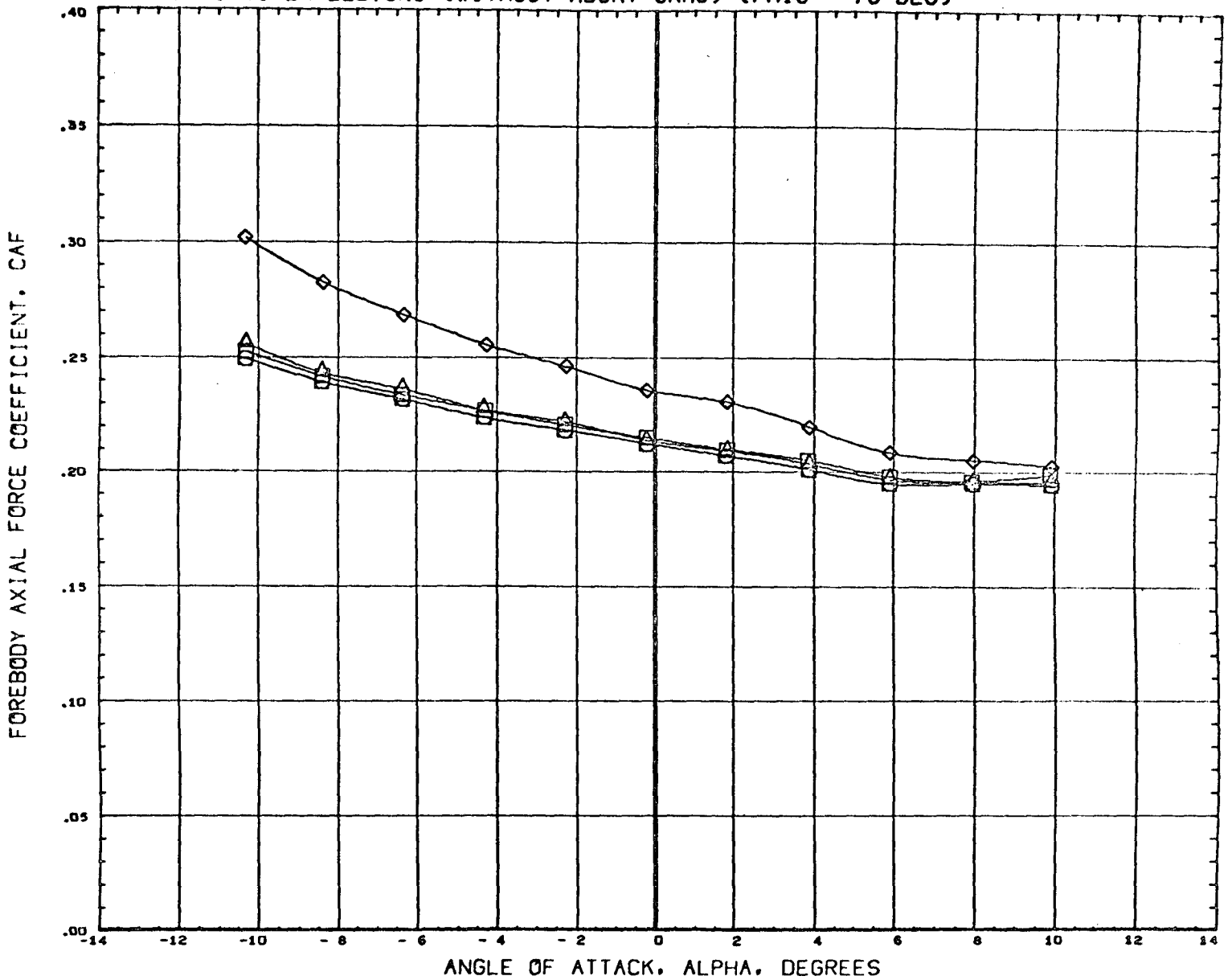
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH

3.48

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EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)

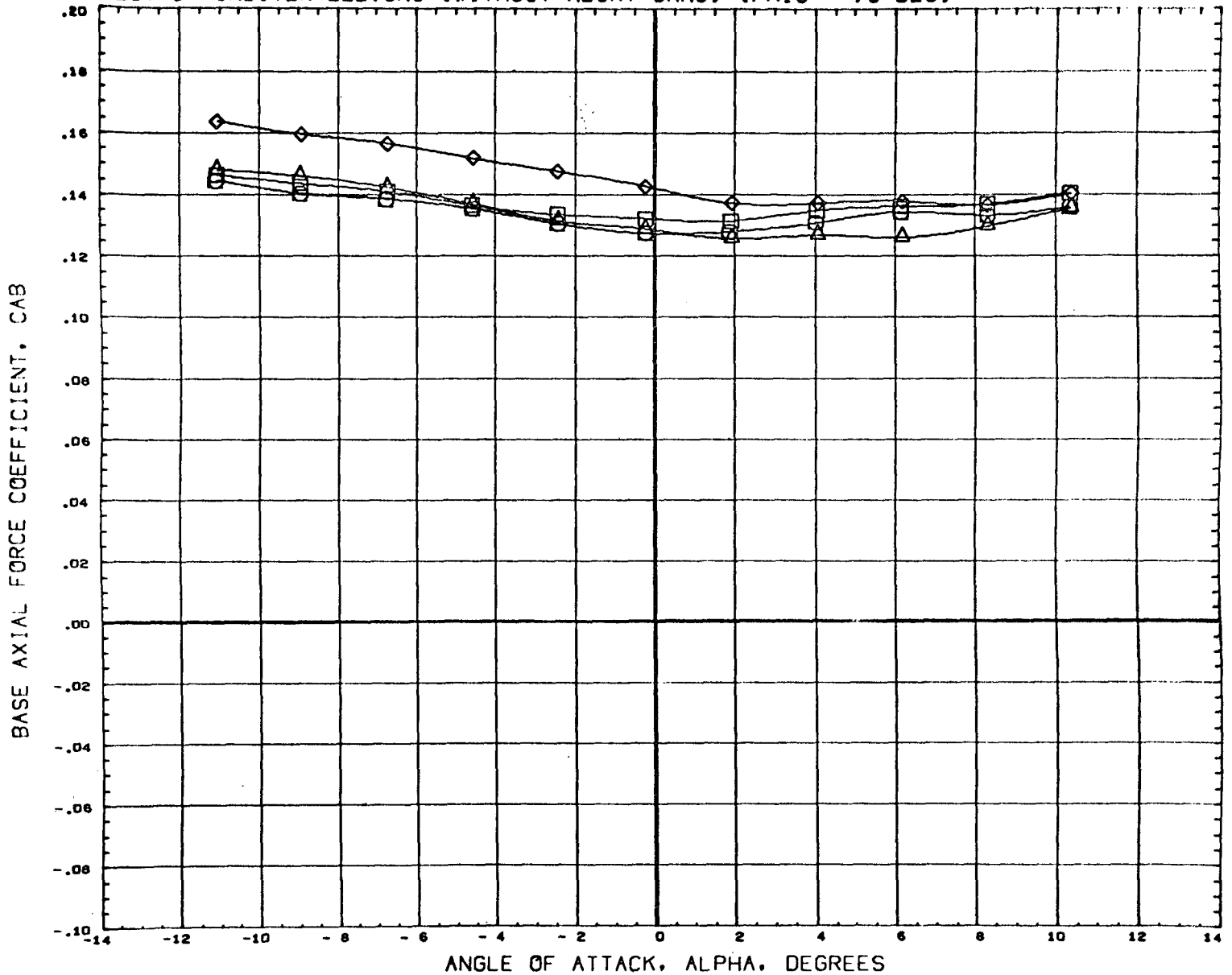


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

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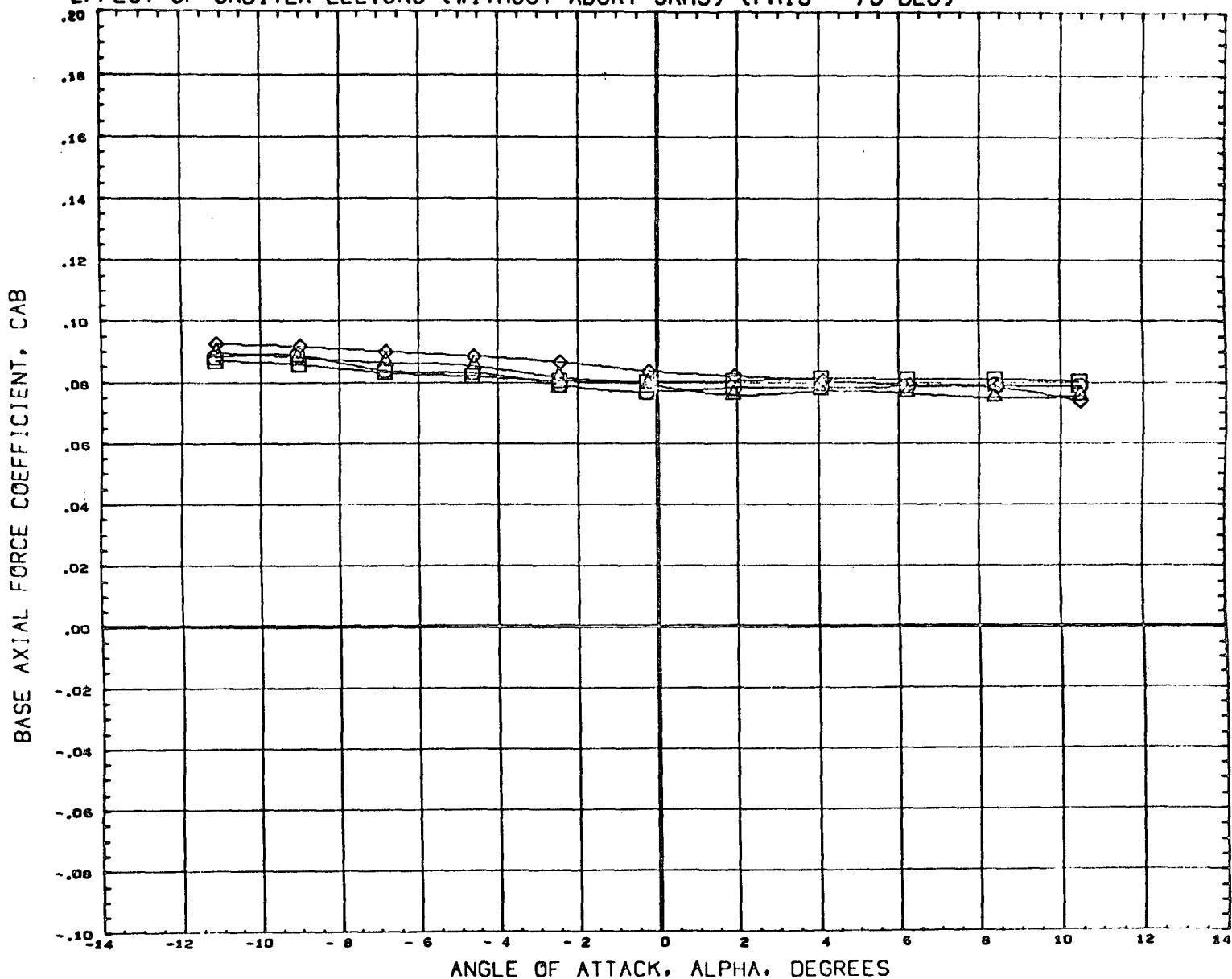
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)

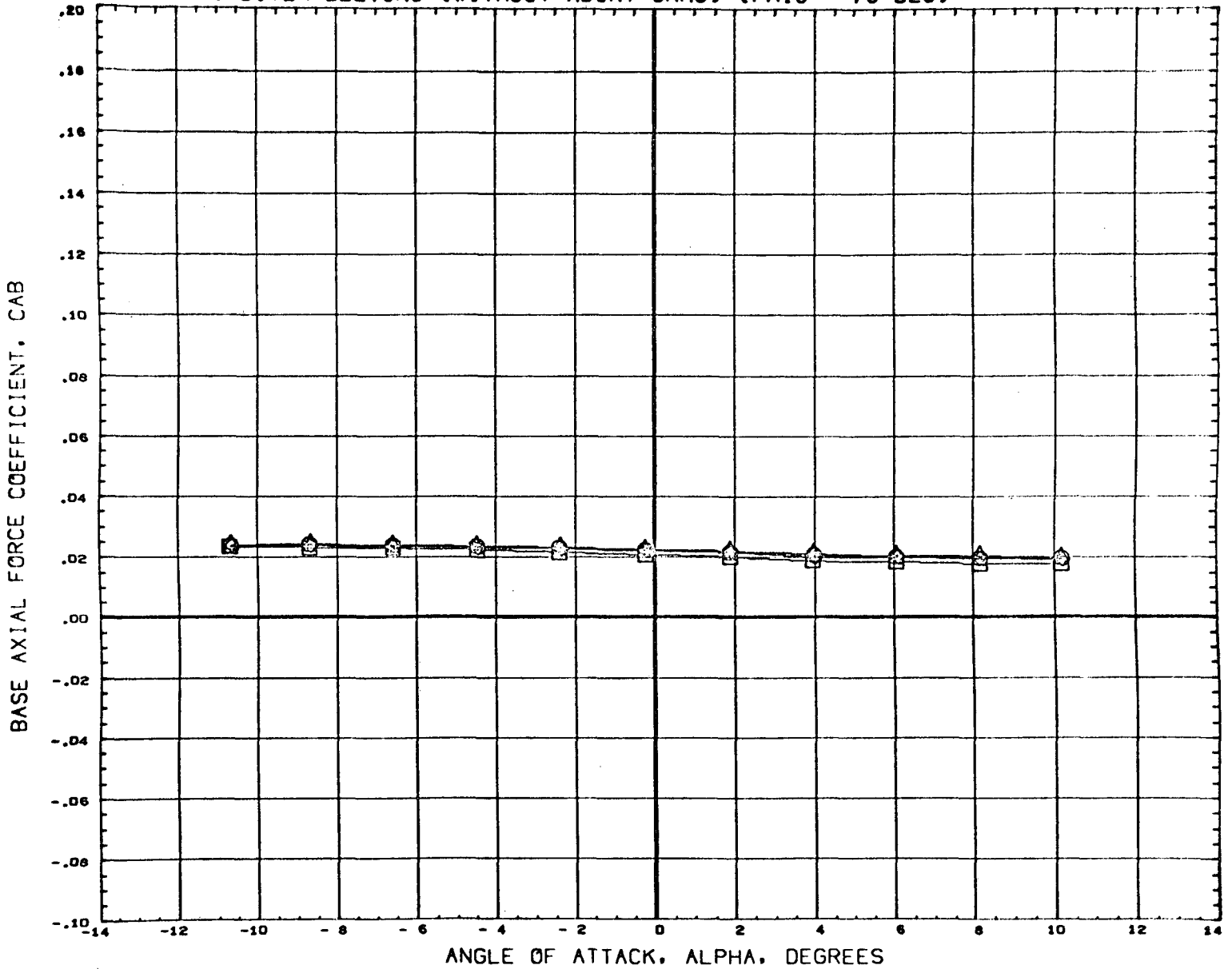


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97



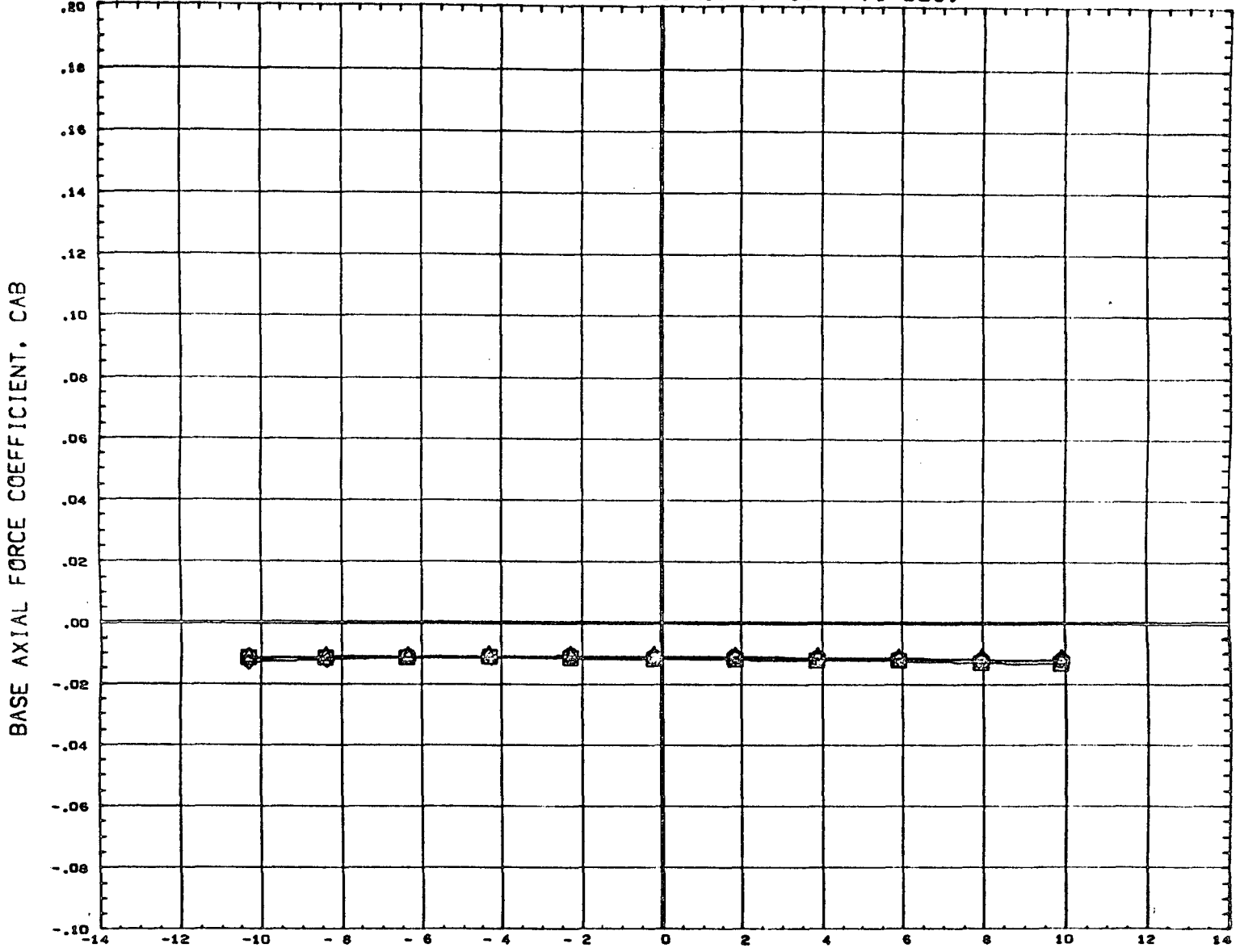
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T102S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 3.48

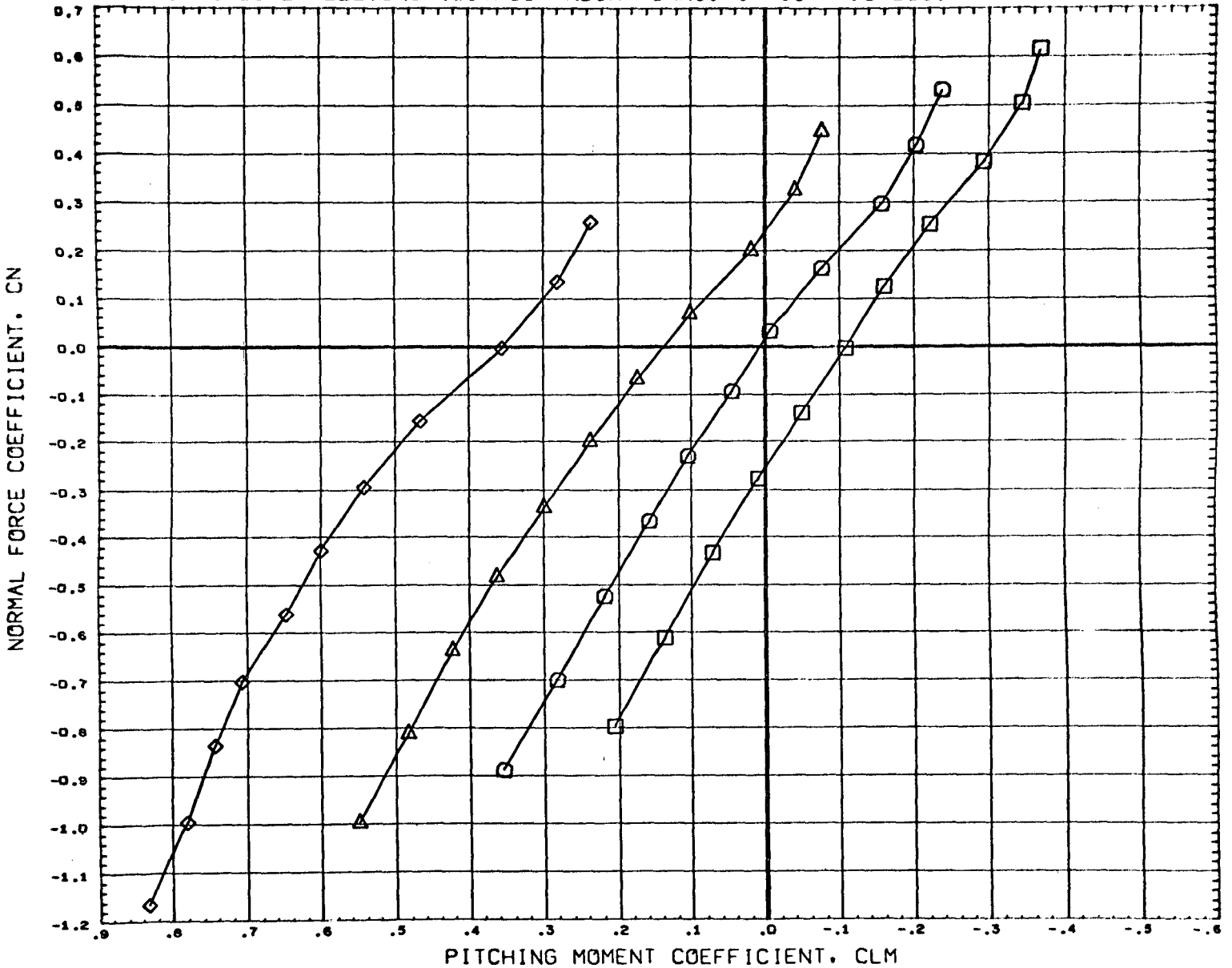
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1C2S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1C2S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1C2S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(071063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1C2S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

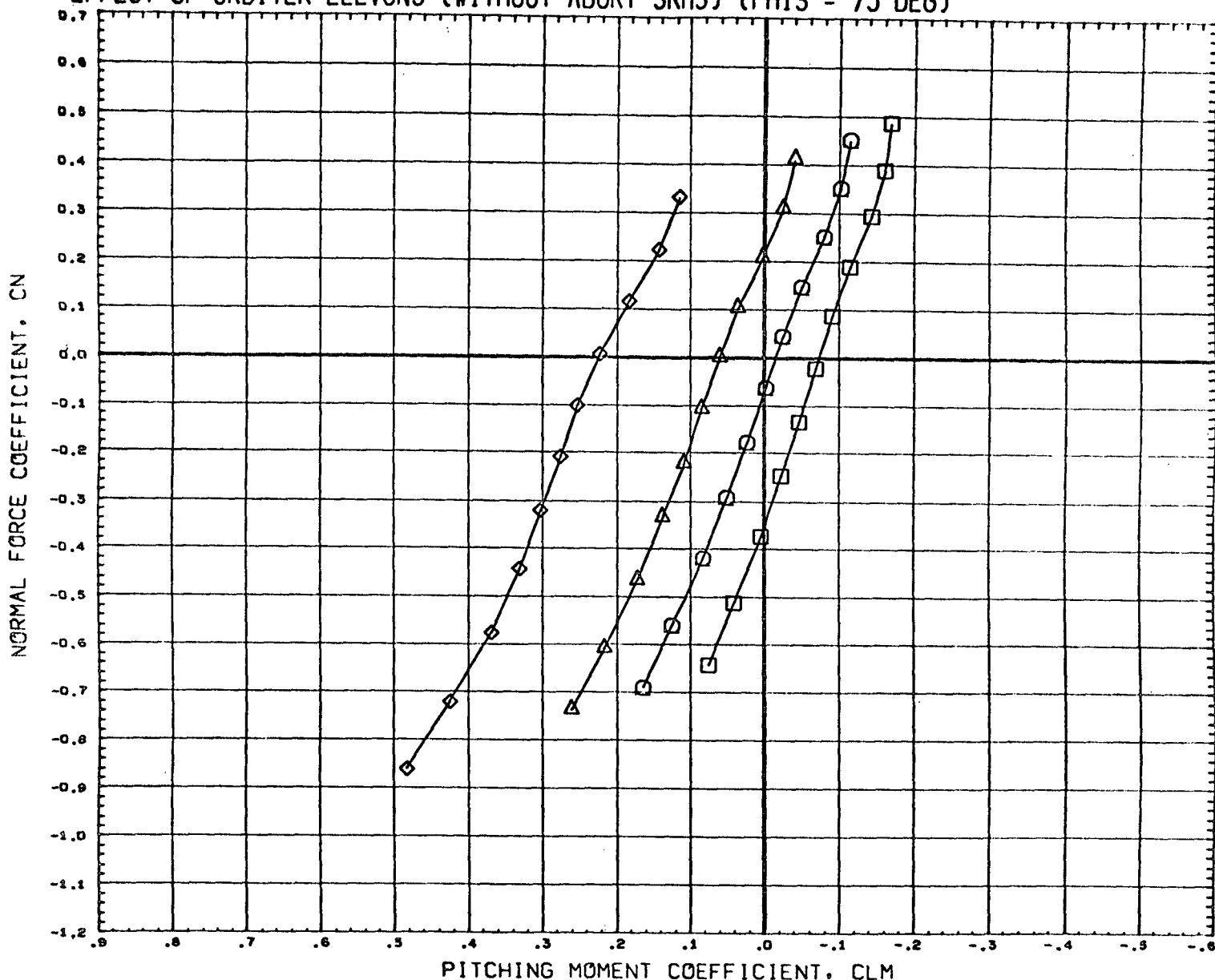
MACH 4.96

# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

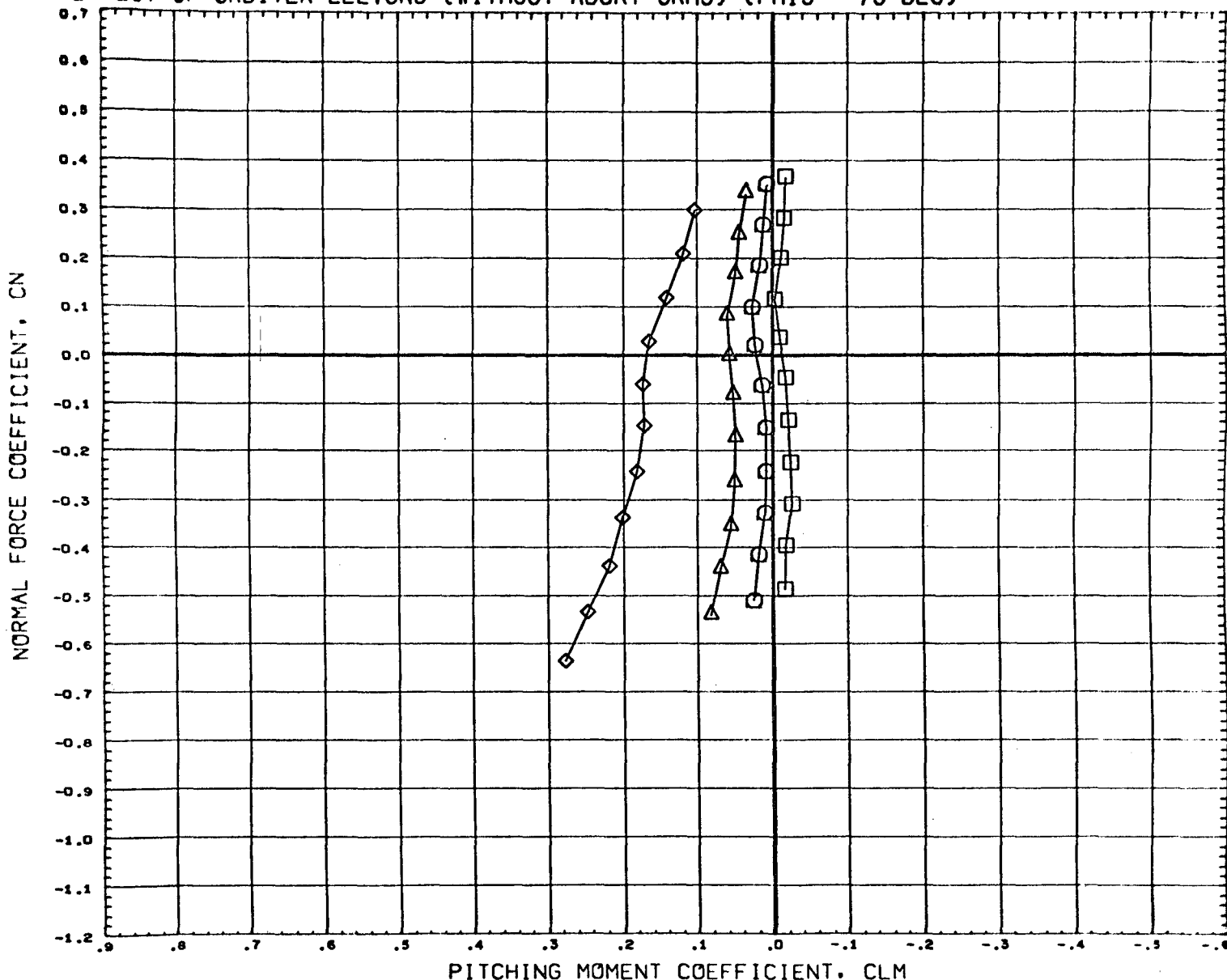
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAM2	ELEVTR	RUDDER	REFERENCE INFORMATION
(071079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 Sq. IN
(071064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(071065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(071063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

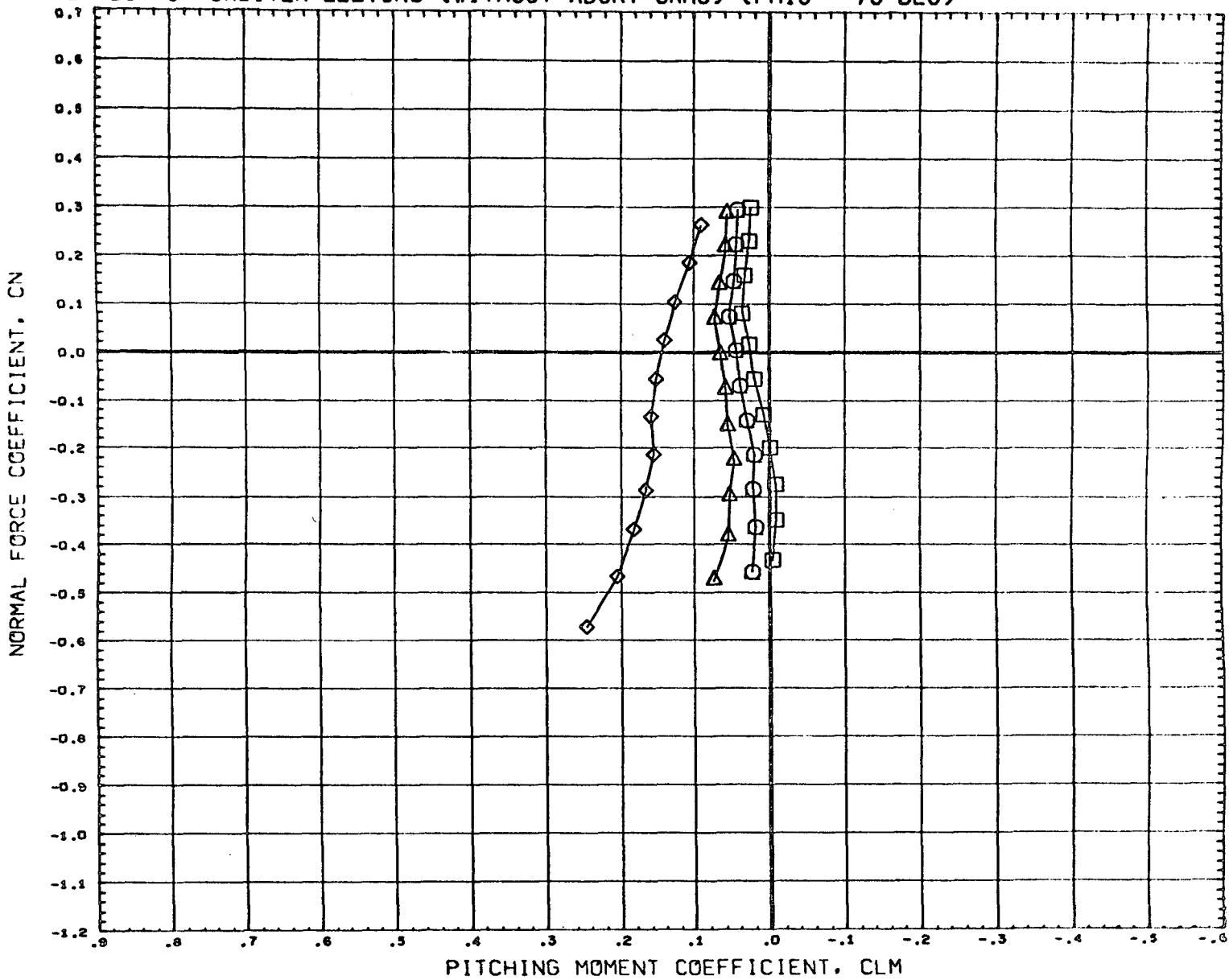
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 3.48

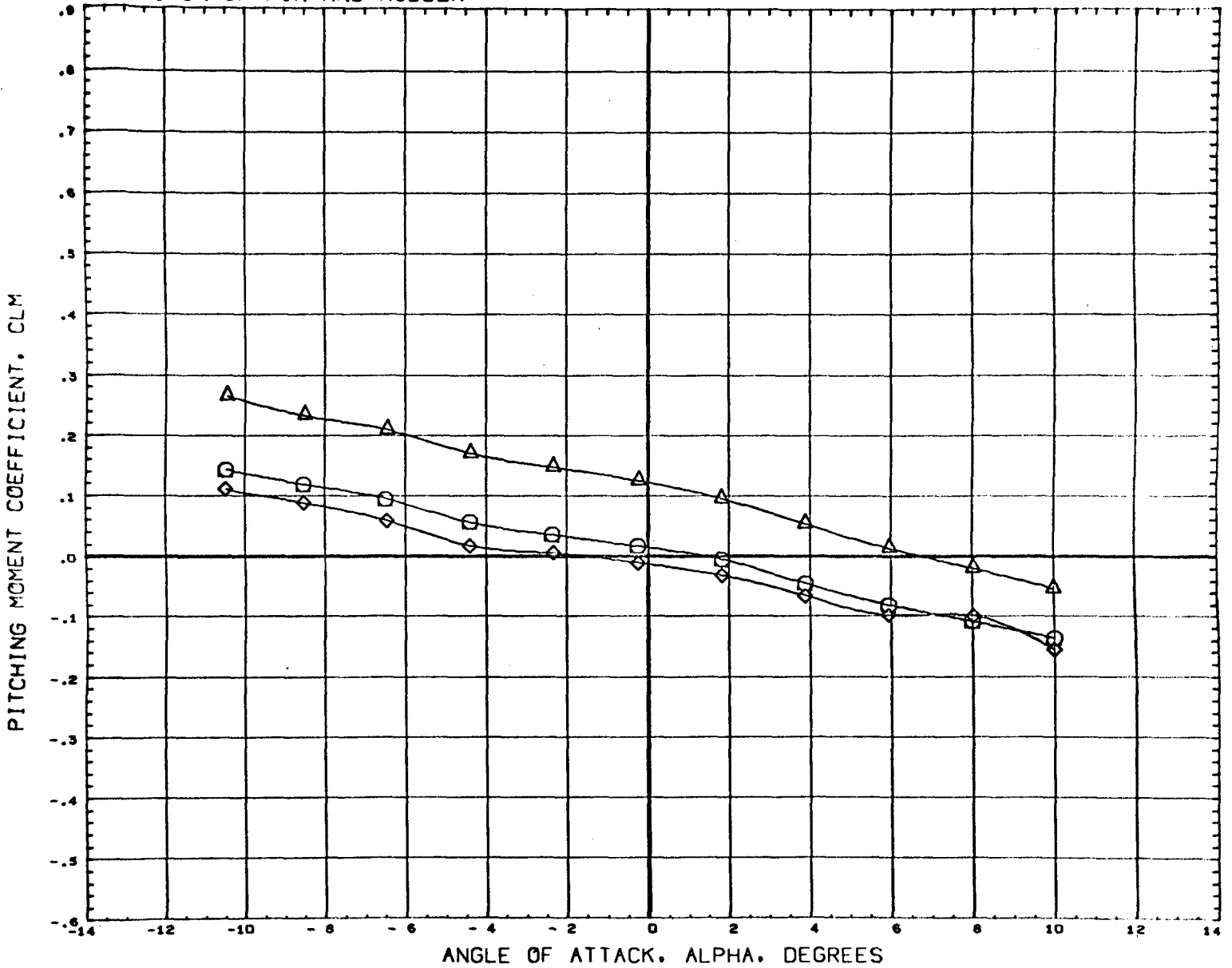
# EFFECT OF ORBITER ELEVONS (WITHOUT ABORT SRMS) (PHIS = 75 DEG)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71079)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71064)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-10.000	0.000	LREF 2.0280 IN.
(B71065)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	-30.000	0.000	BREF 4.4600 IN.
(C71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T102S1	75.000	0.000	10.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

# COMPARISON OF FIN AND RUDDER



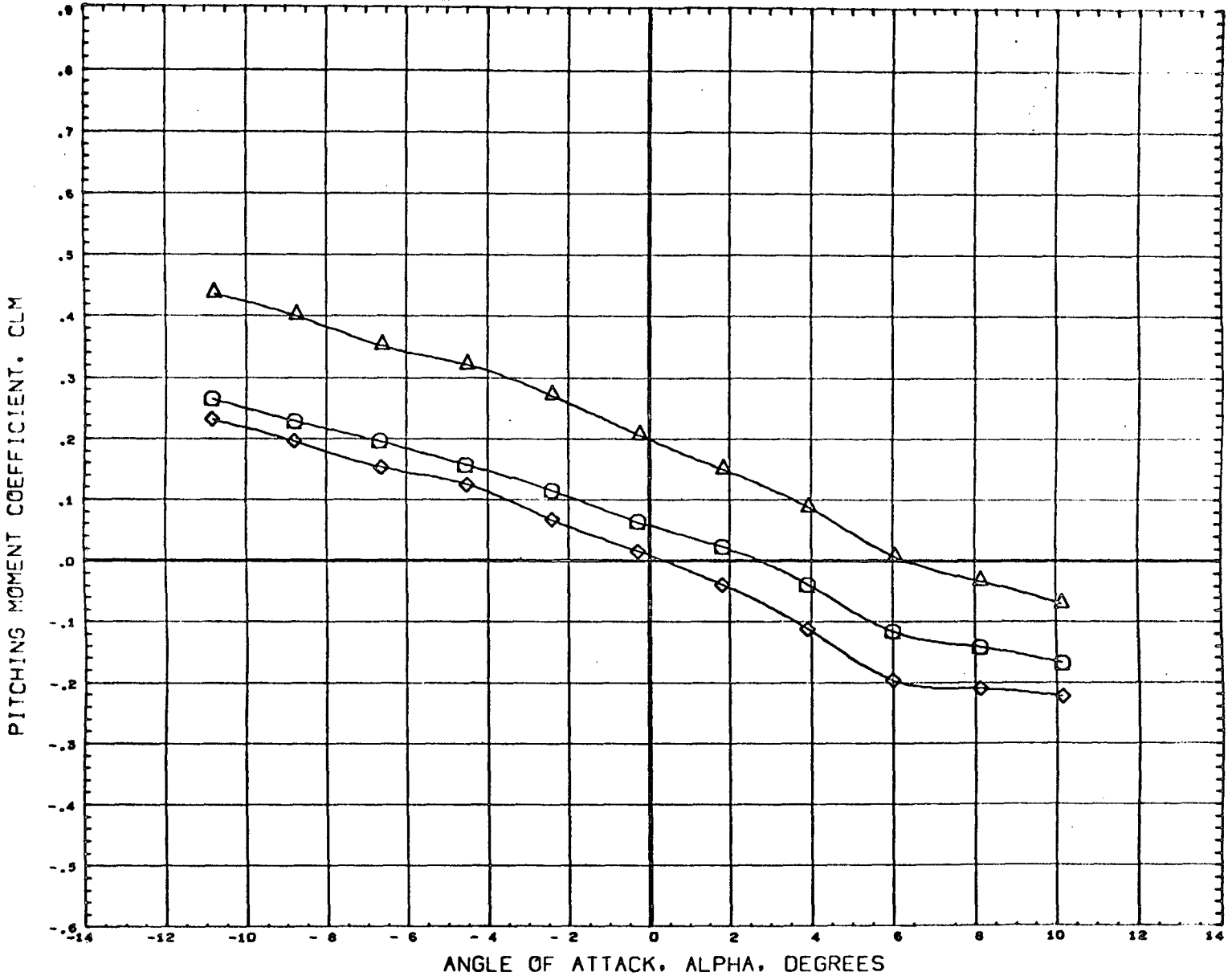
DATA SET SYMBO	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH

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# COMPARISON OF FIN AND RUDDER

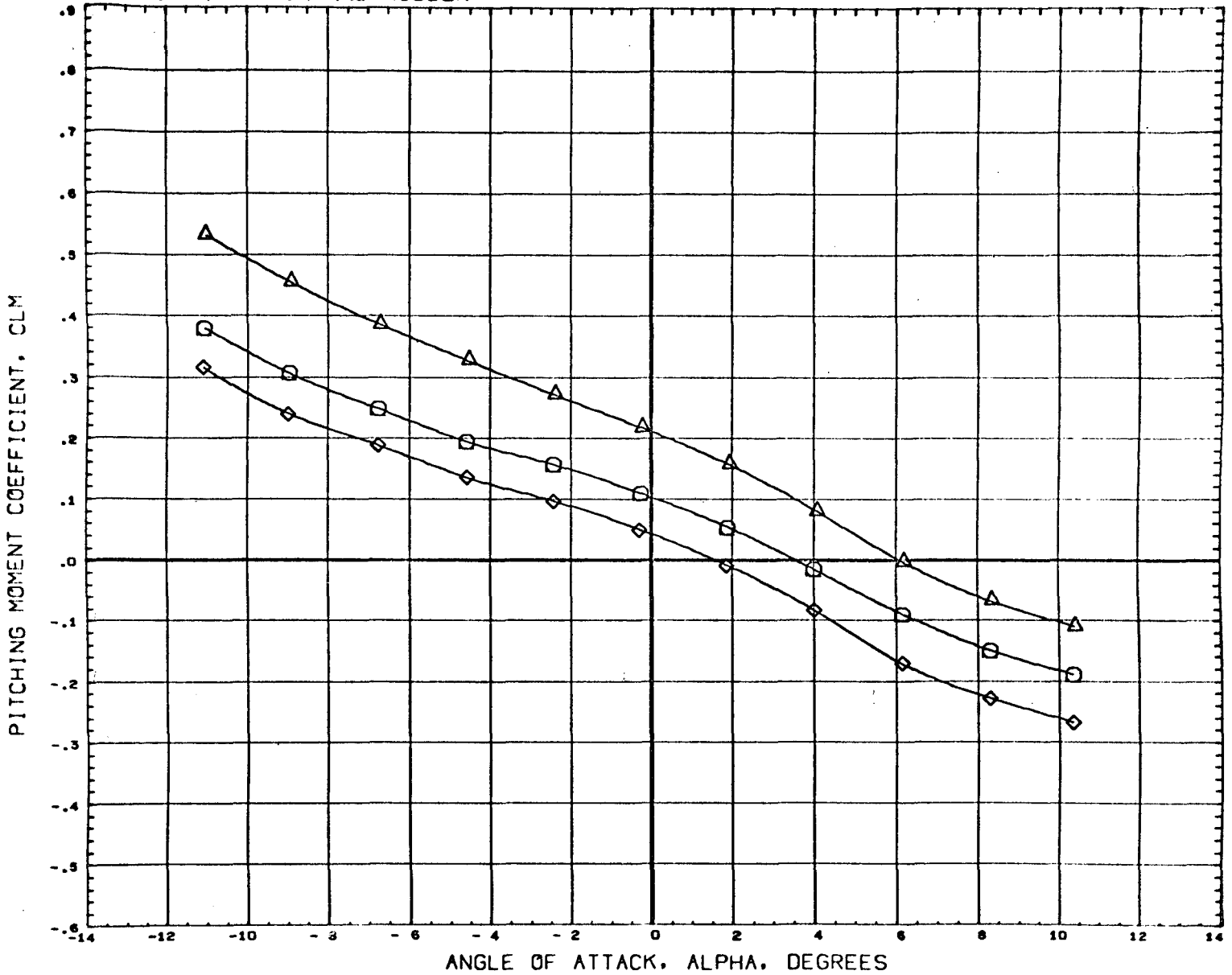


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN.
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0260 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



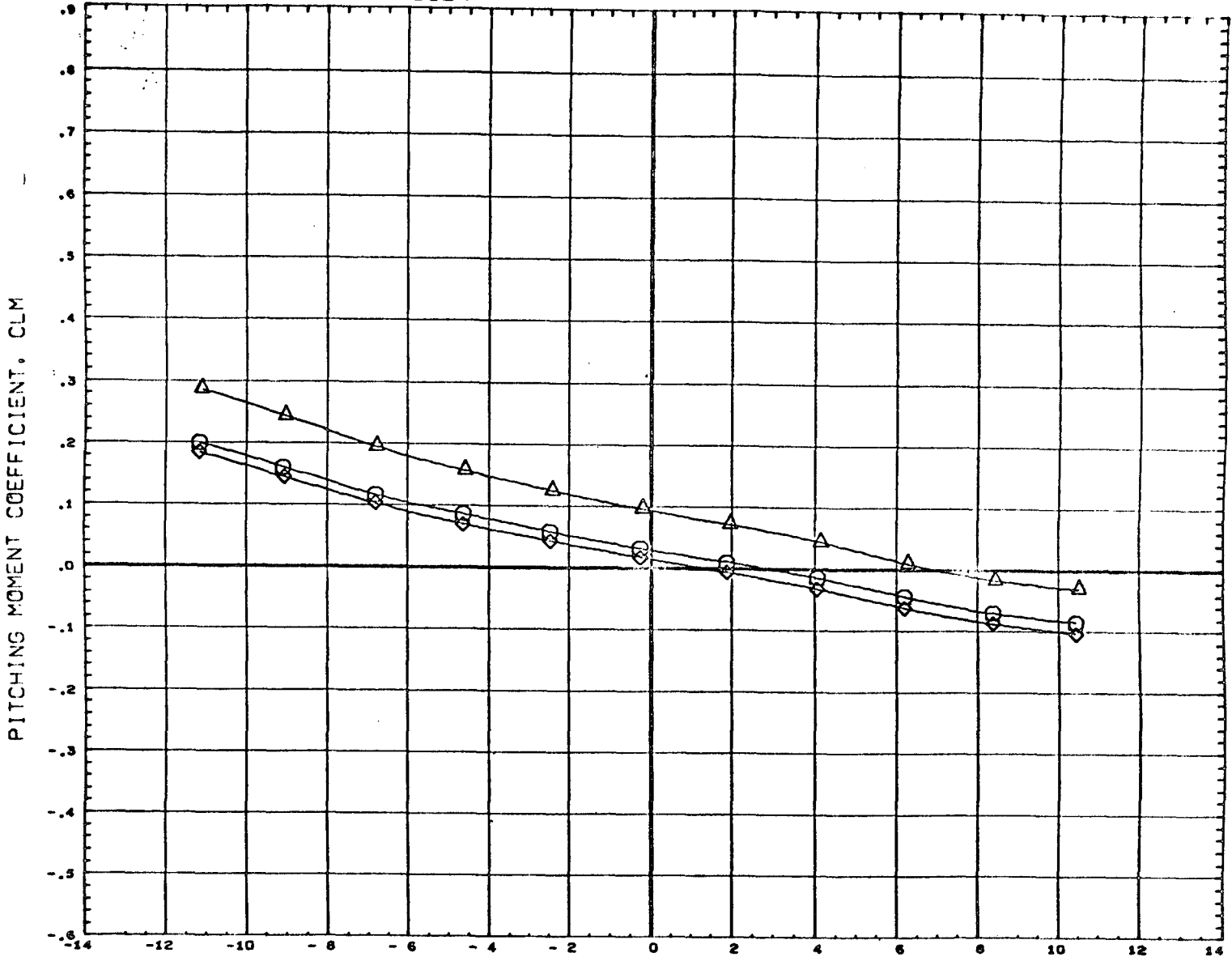
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

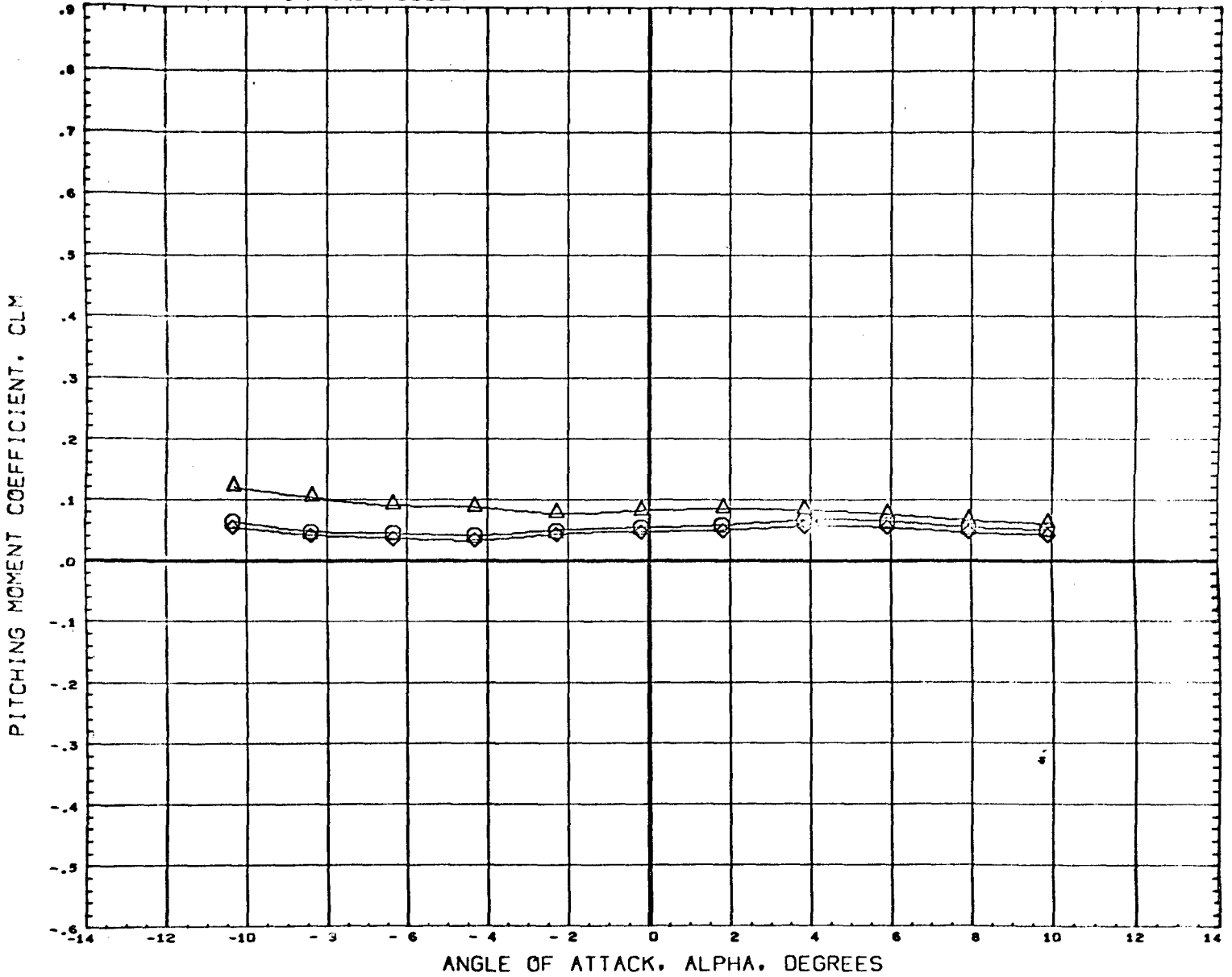
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF	2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.97

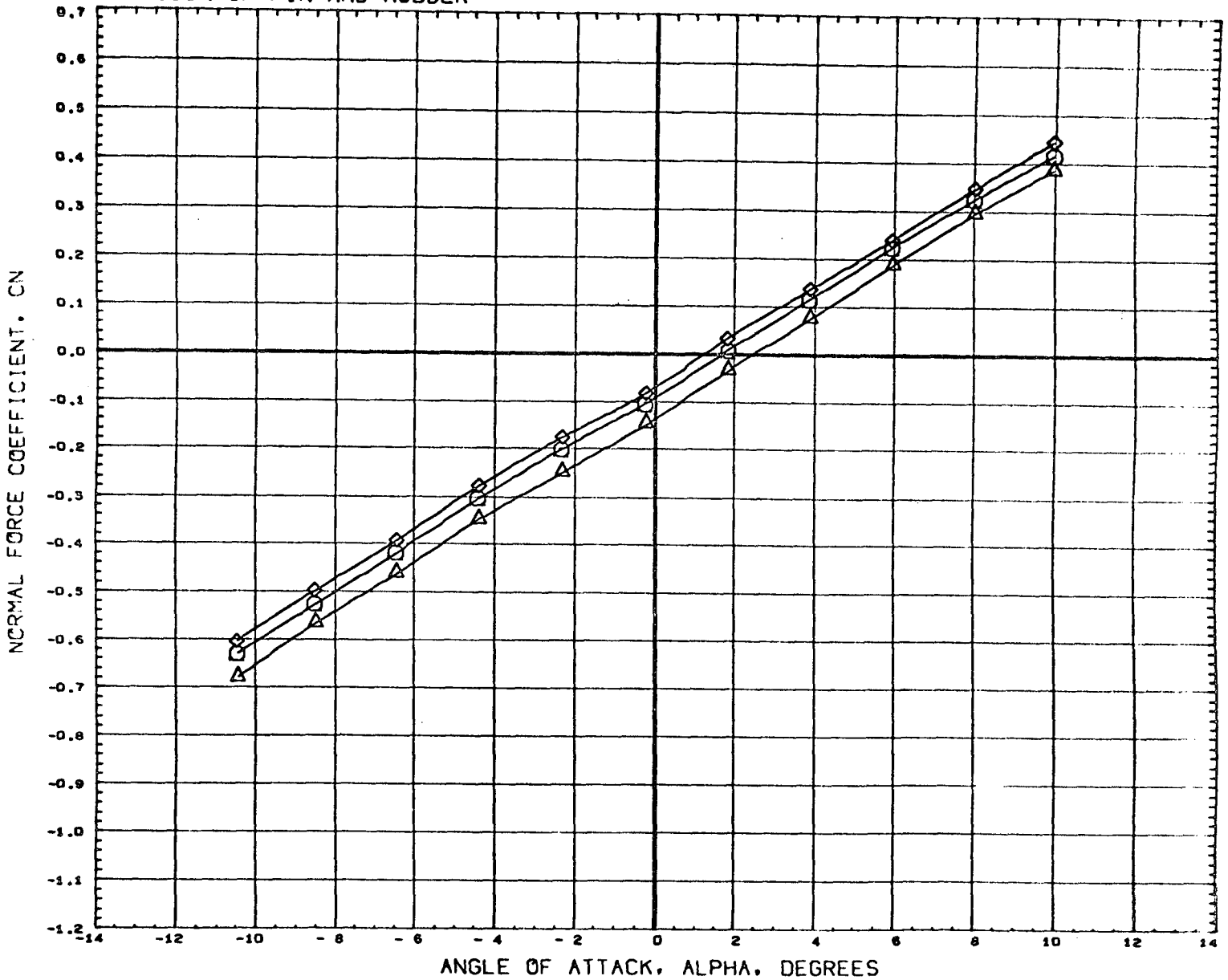
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1O1S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	75,000	0,000	0,000	0,000	SREF 7,8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	75,000	0,000	0,000	30,000	LREF 2,0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1F	75,000	0,000	0,000	0,000	BREF 4,4600 IN.
							XMRP 3,3600 IN.
							YMRP 0,0000 IN.
							ZMRP 0,2480 IN.
							SCALE 0,0040 SCALE

MACH 4.96

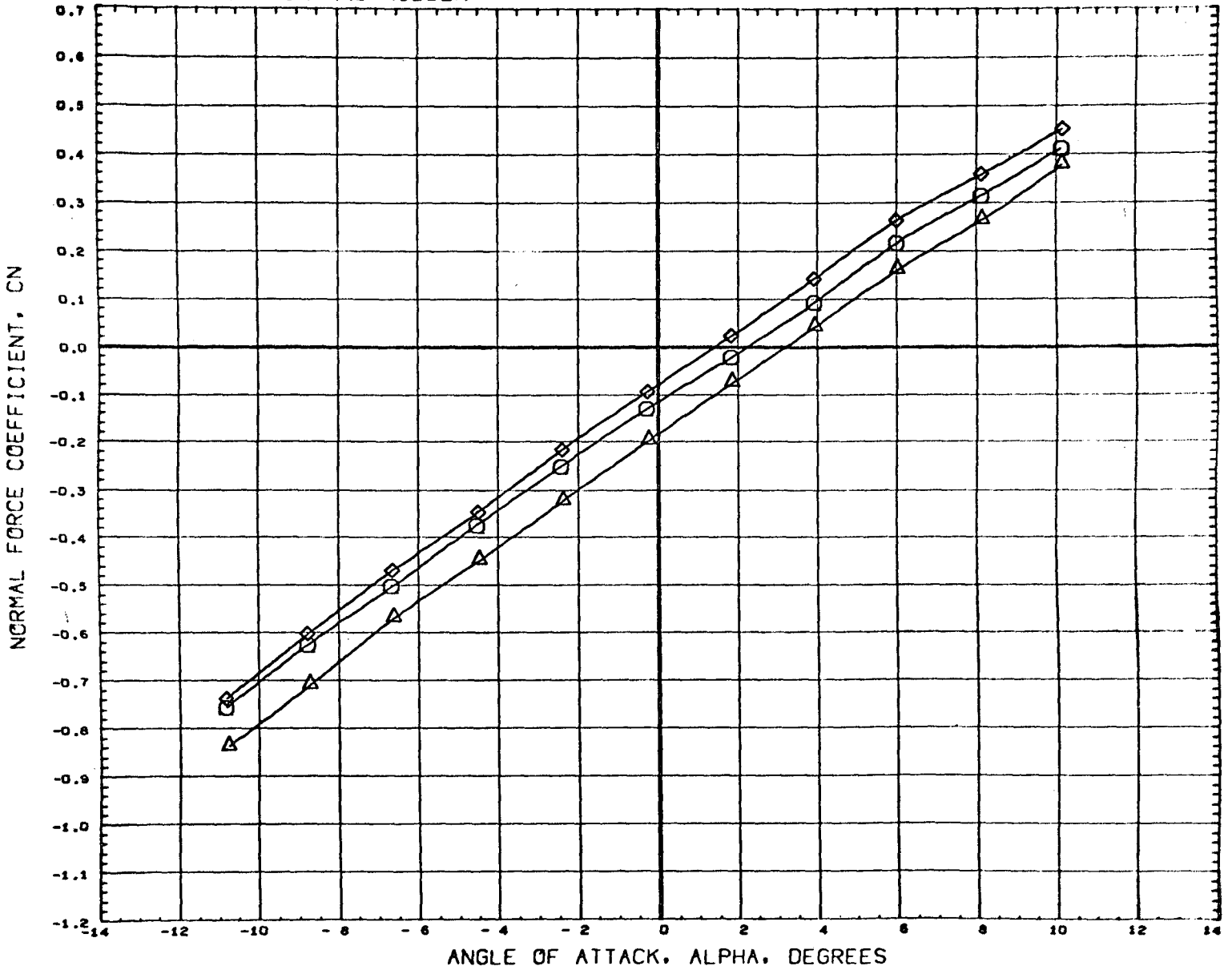
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(671002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75,000	0,000	0,000	0,000	SREF 7.8800 SQ. IN
(871066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75,000	0,000	0,000	30,000	LREF 2.0260 IN.
(871043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75,000	0,000	0,000	0,000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61

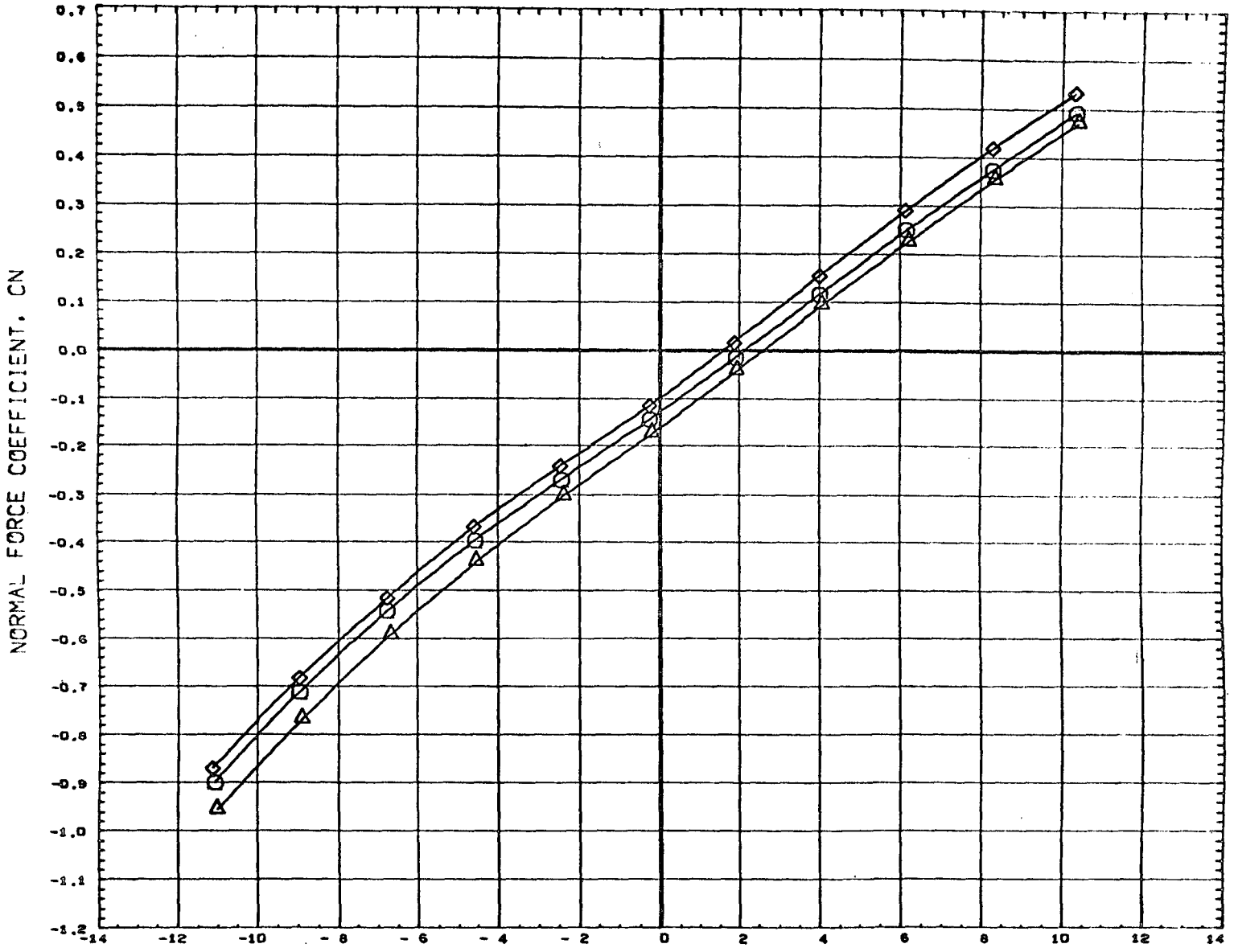
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75,000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

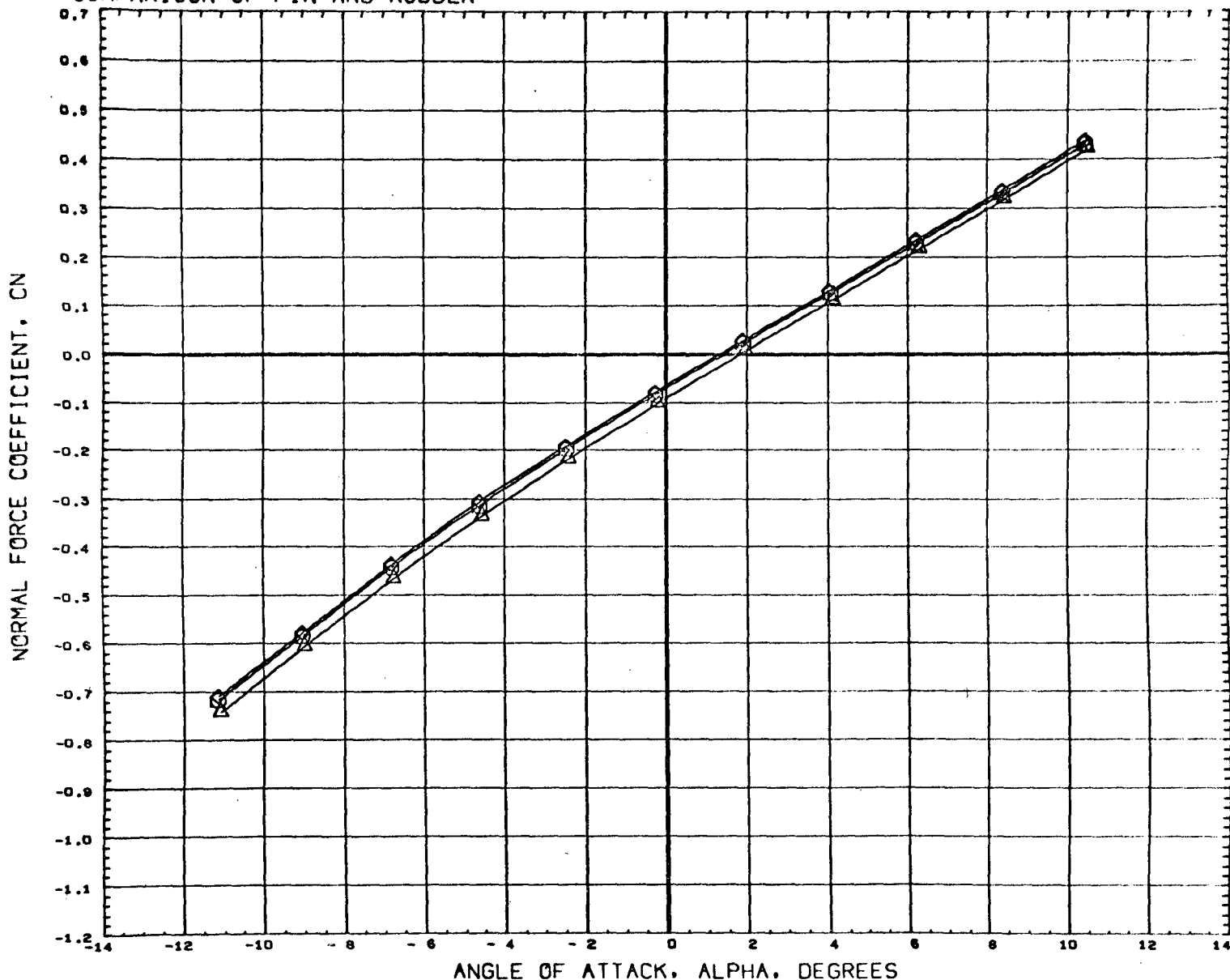
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# COMPARISON OF FIN AND RUDDER



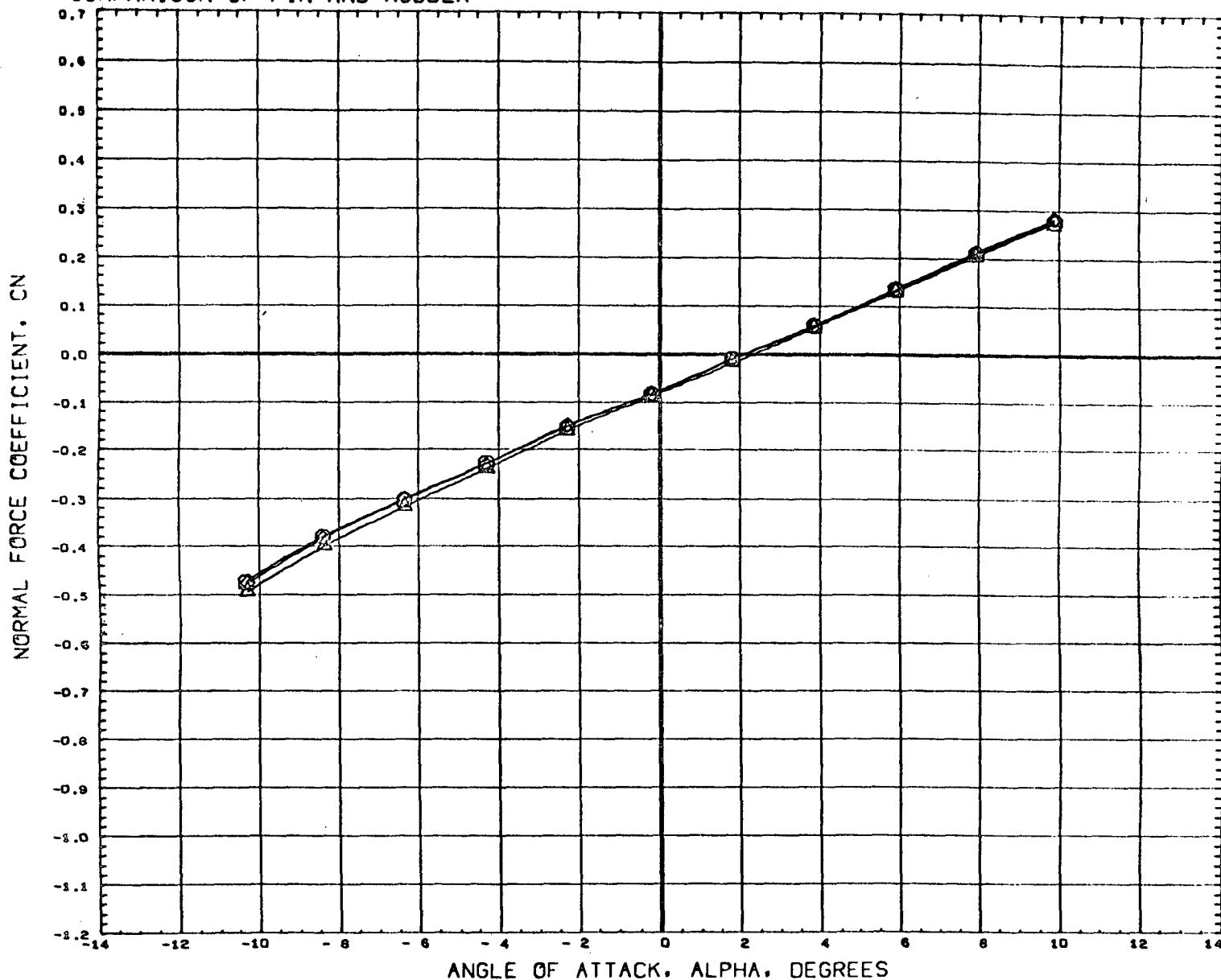
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	75.000	0.000	0.000	0.000	SREF 7.8800 SO. IN
(D71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH

1.97

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# COMPARISON OF FIN AND RUDDER



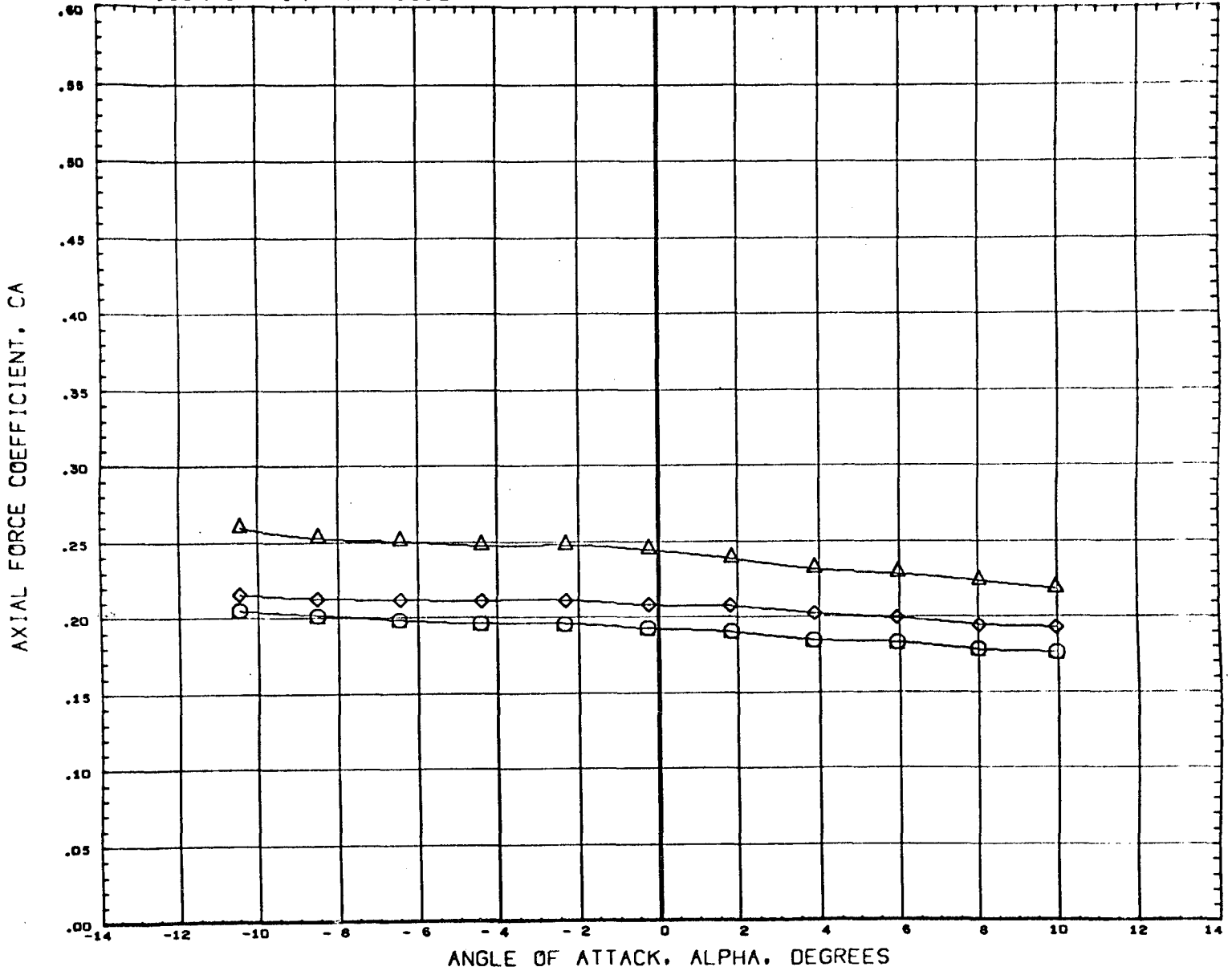
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	0,000	0,000	SREF 7,8600 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	0,000	30,000	LREF 2,0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75,000	0,000	0,000	0,000	BREF 4,4600 IN.
						XMRP 3,3600 IN.
						YMRP 0,0000 IN.
						ZMRP 0,2480 IN.
						SCALE 0,0040 SCALE

MACH 4.96

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# COMPARISON OF FIN AND RUDDER

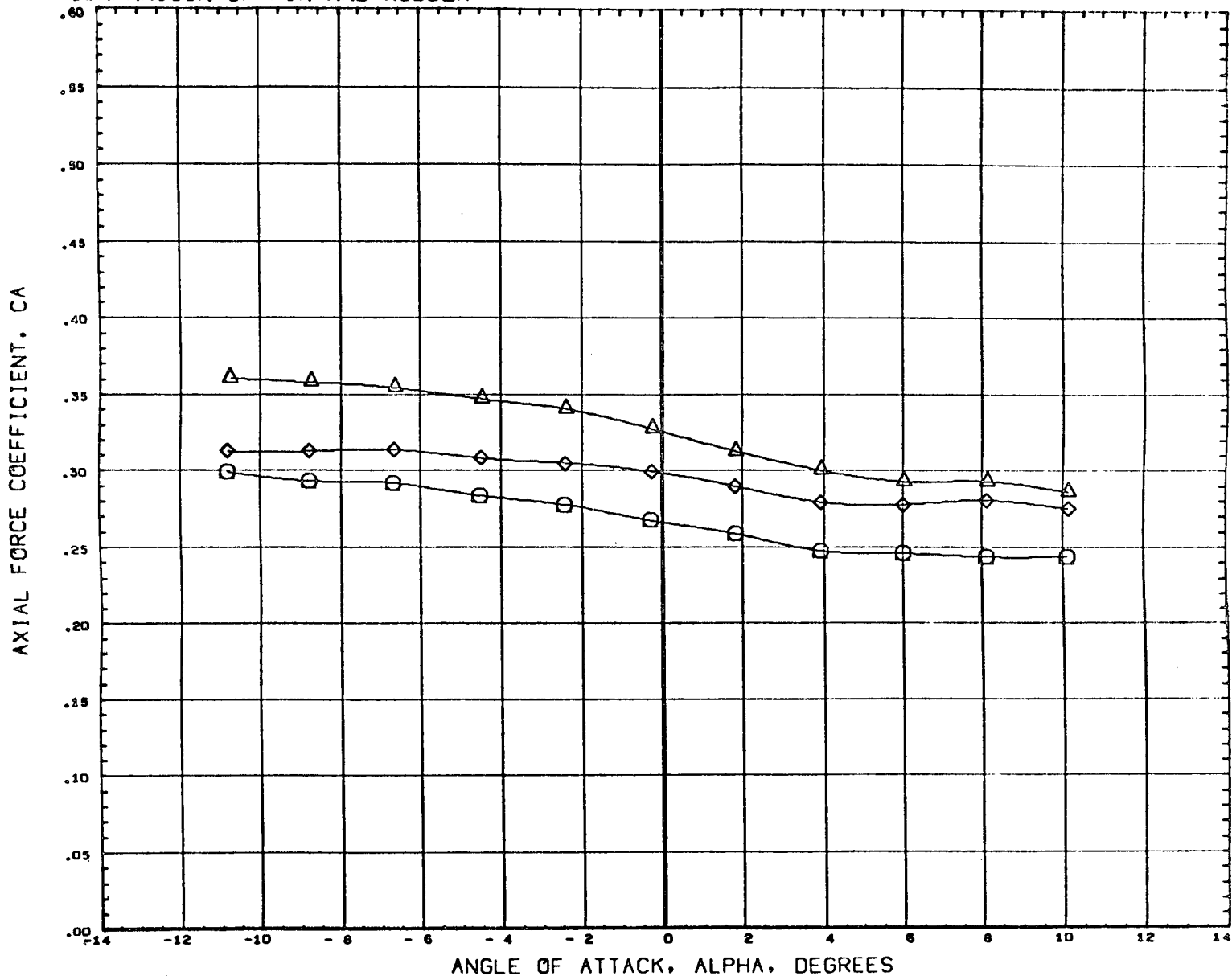


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1O1S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH .61



# COMPARISON OF FIN AND RUDDER



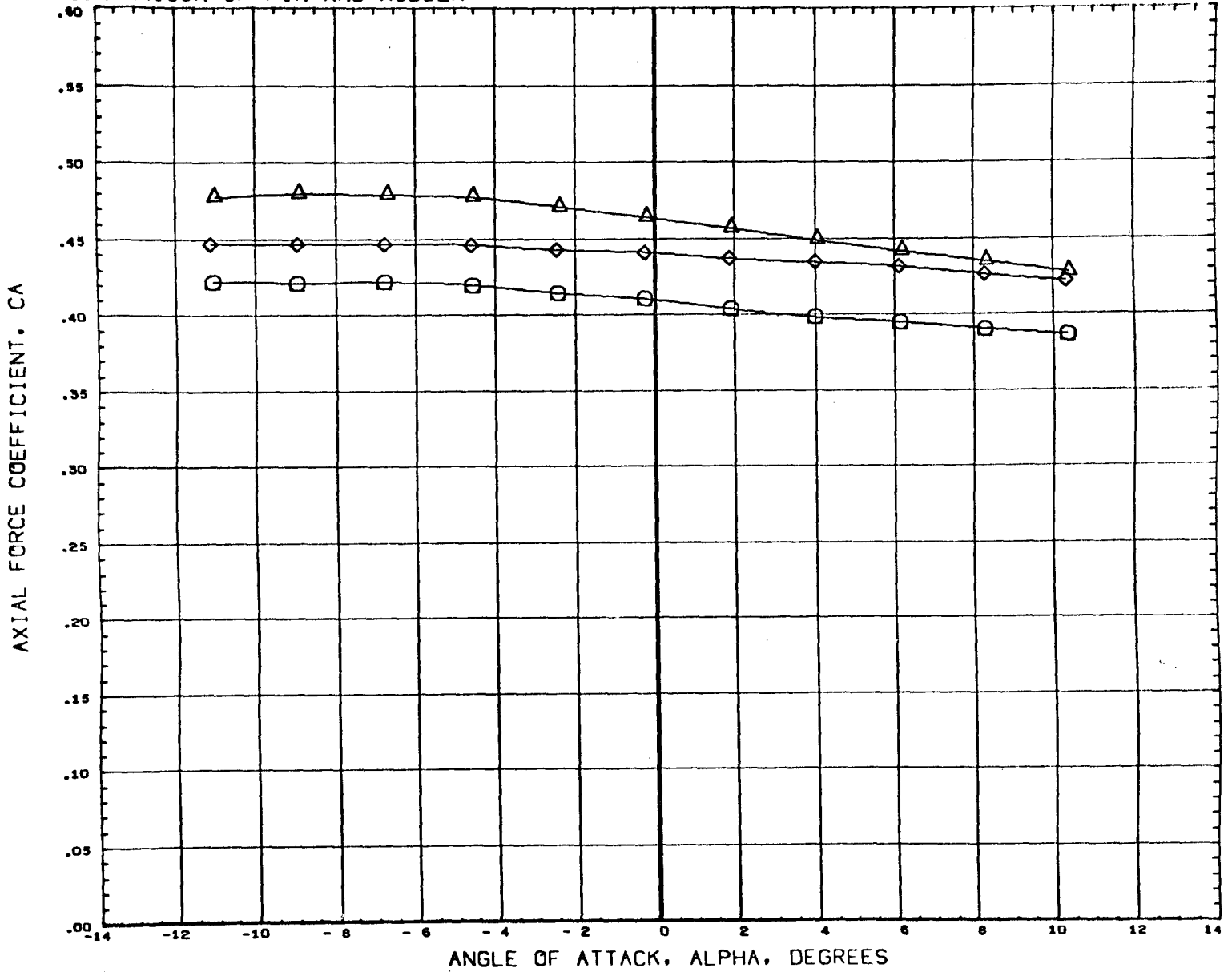
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 Sq. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

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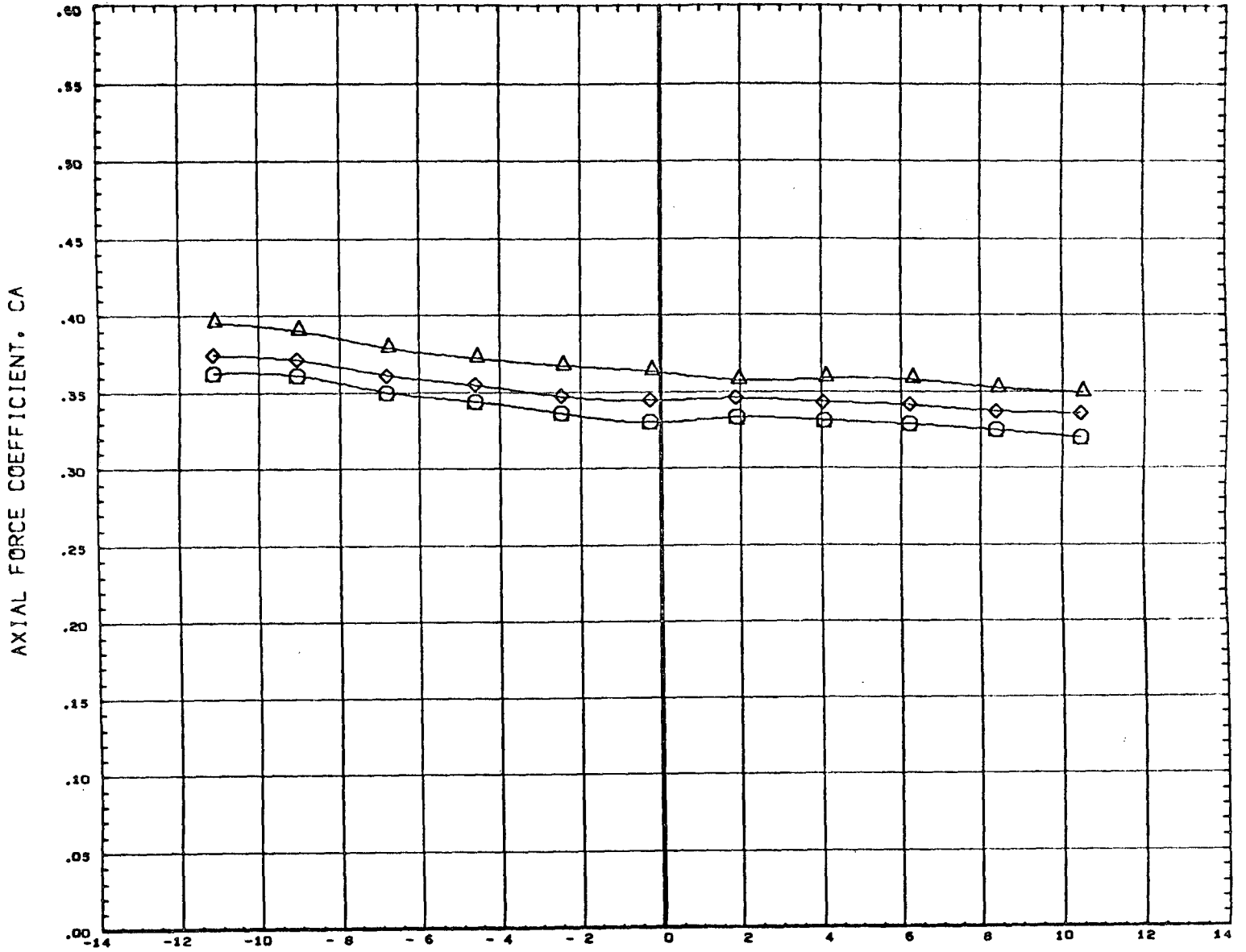
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(671002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(871066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(871043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

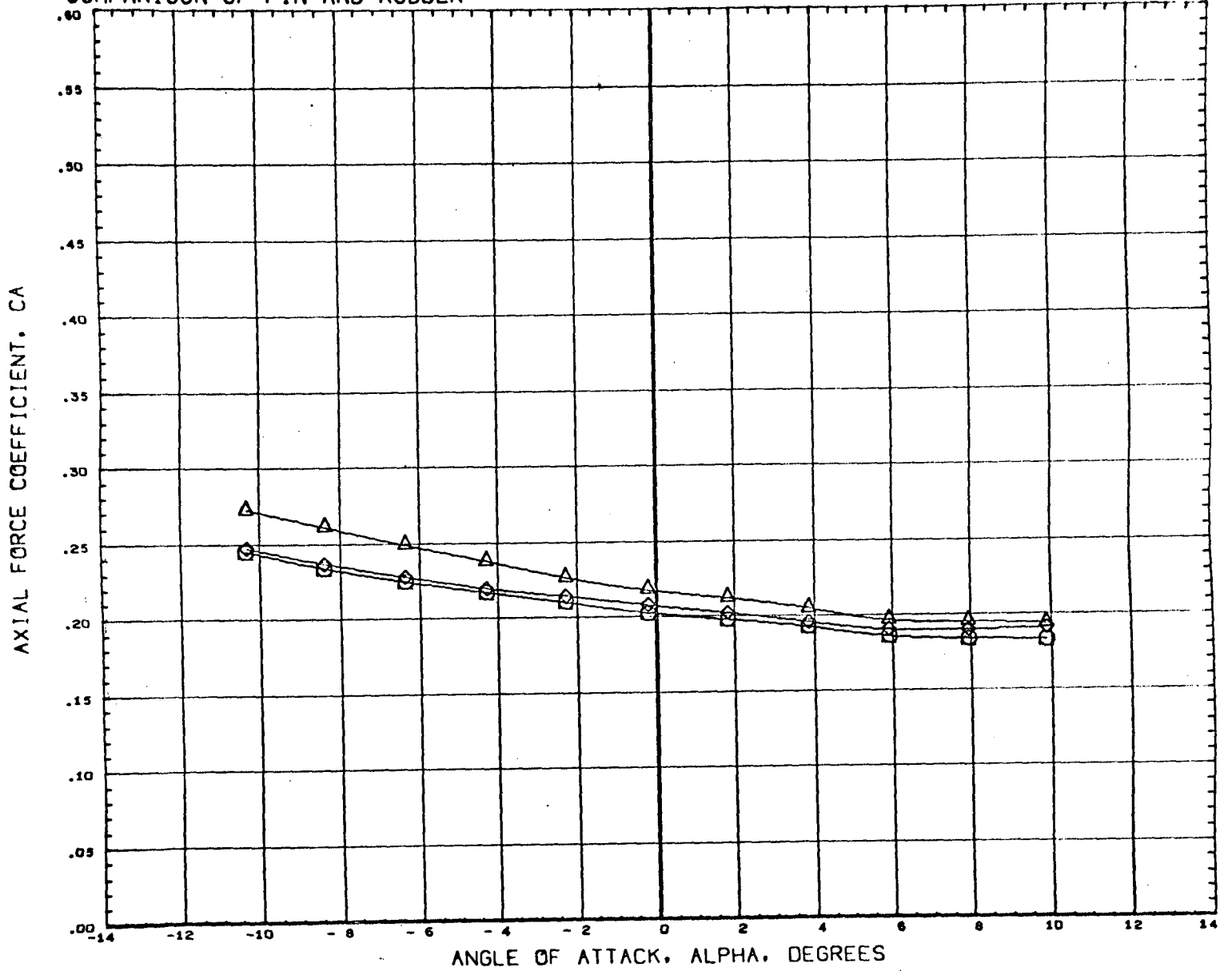
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	CAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(C71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	0,000	0,000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	0,000	30,000	LREF 2.0260 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75,000	0,000	0,000	0,000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.97

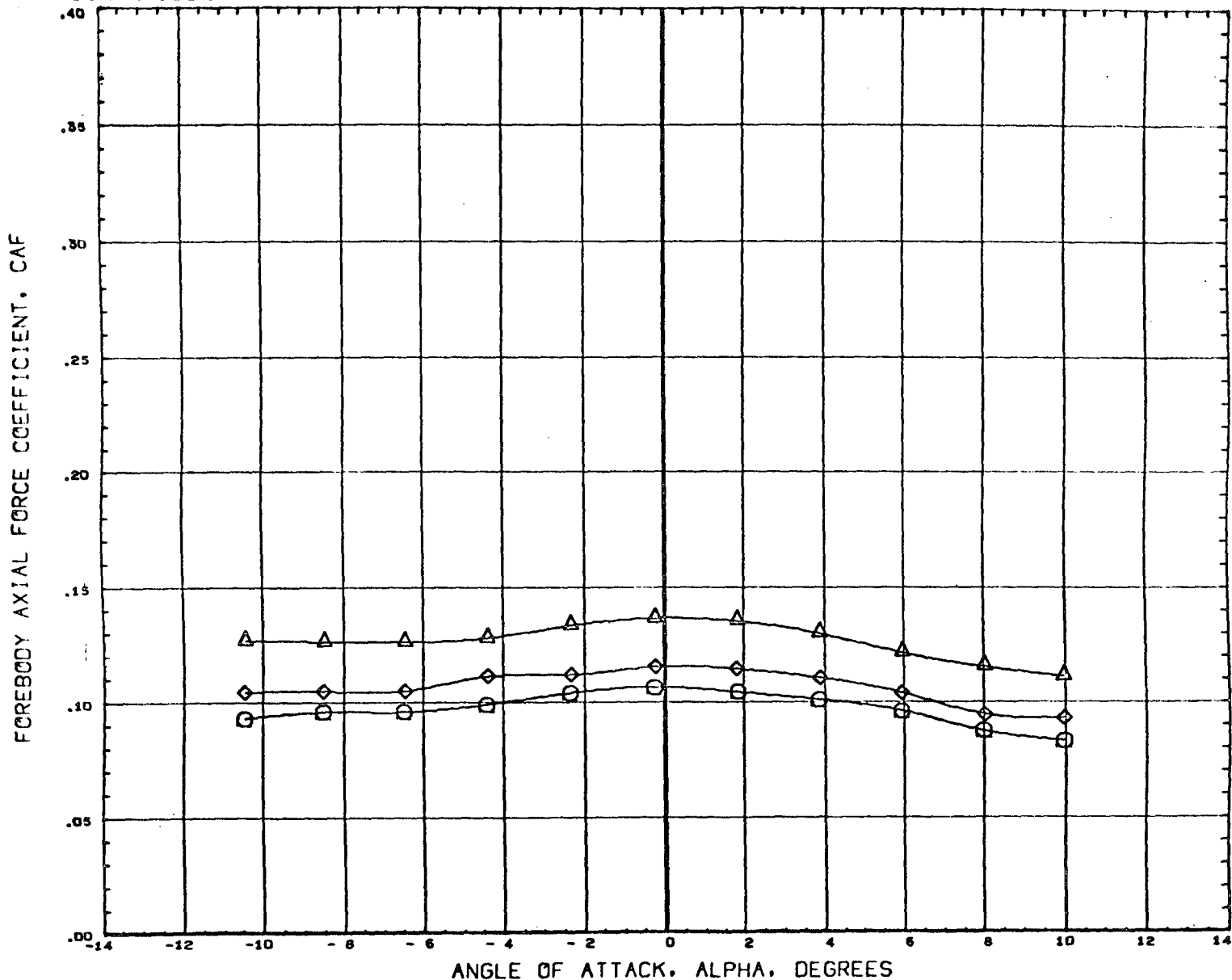
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

# COMPARISON OF FIN AND RUDDER

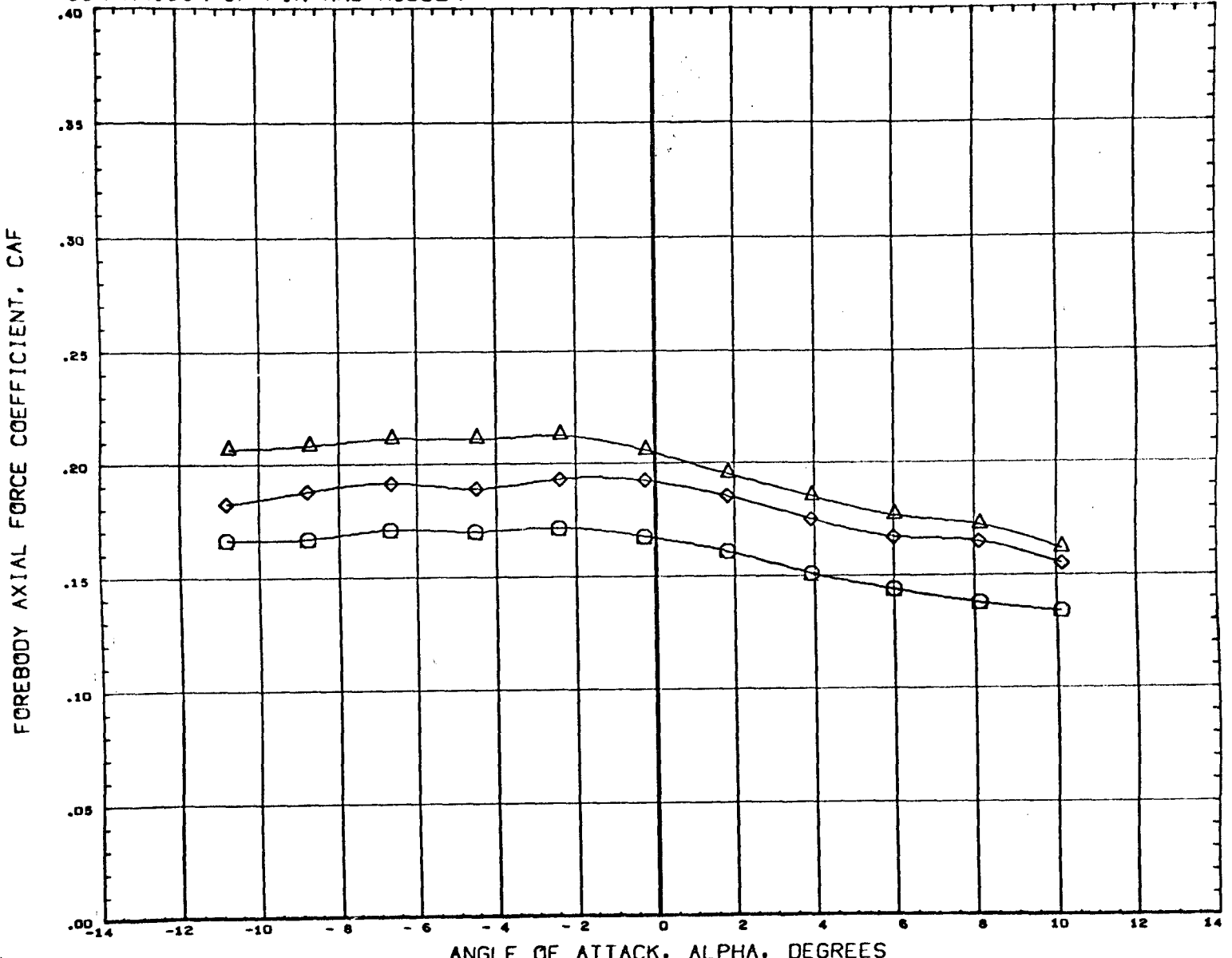


DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH

.61

# COMPARISON OF FIN AND RUDDER

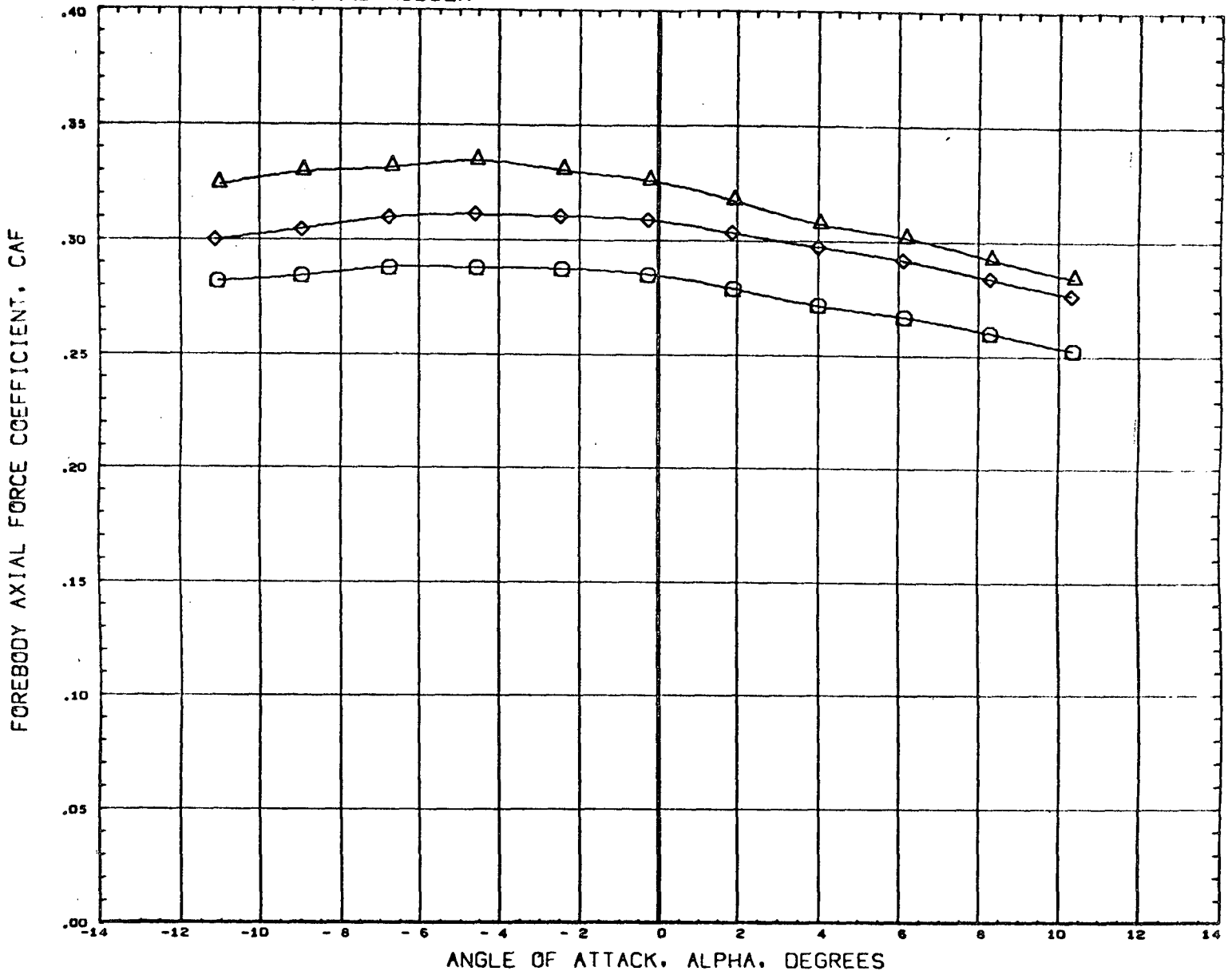


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90

# COMPARISON OF FIN AND RUDDER

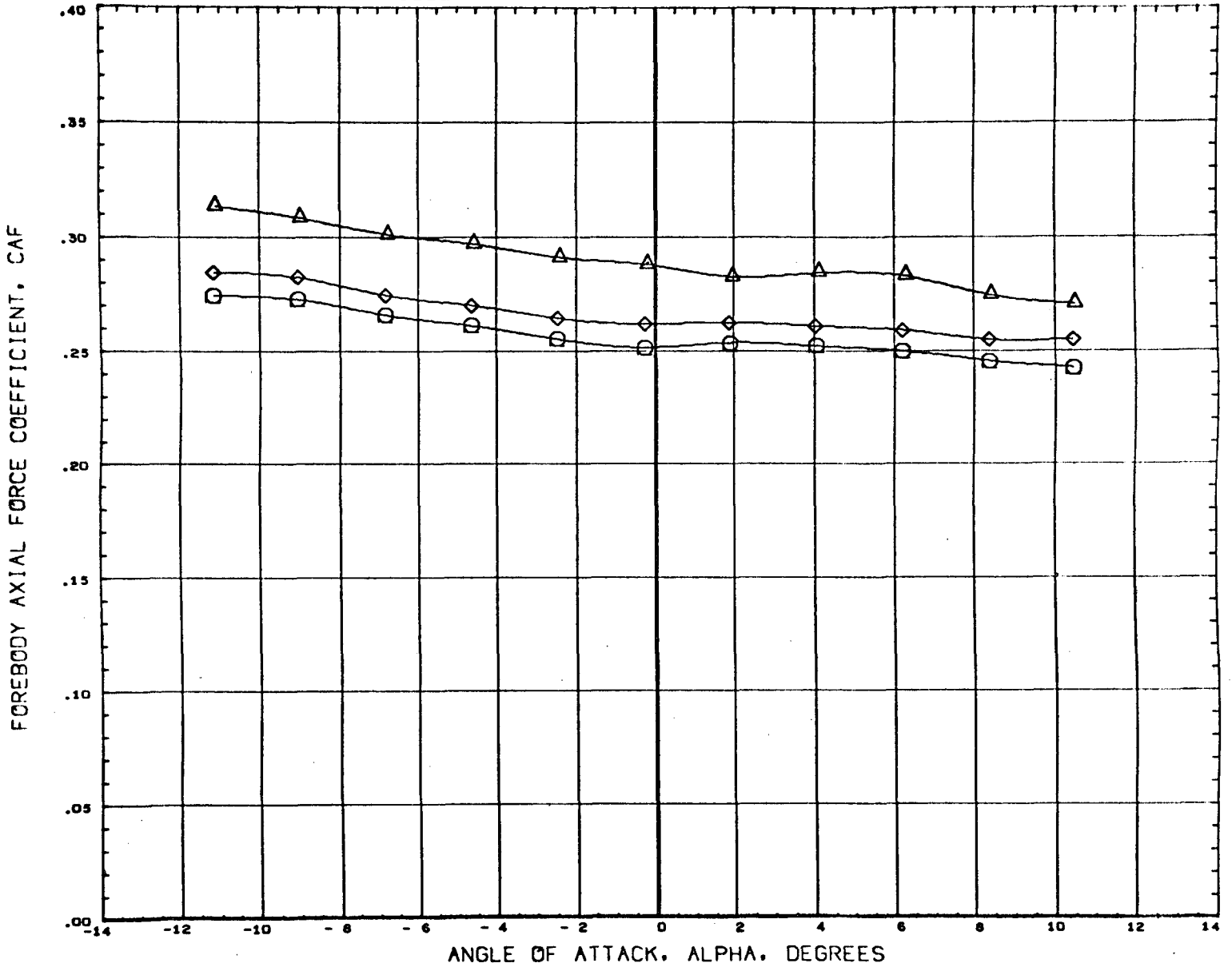


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 sq. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20



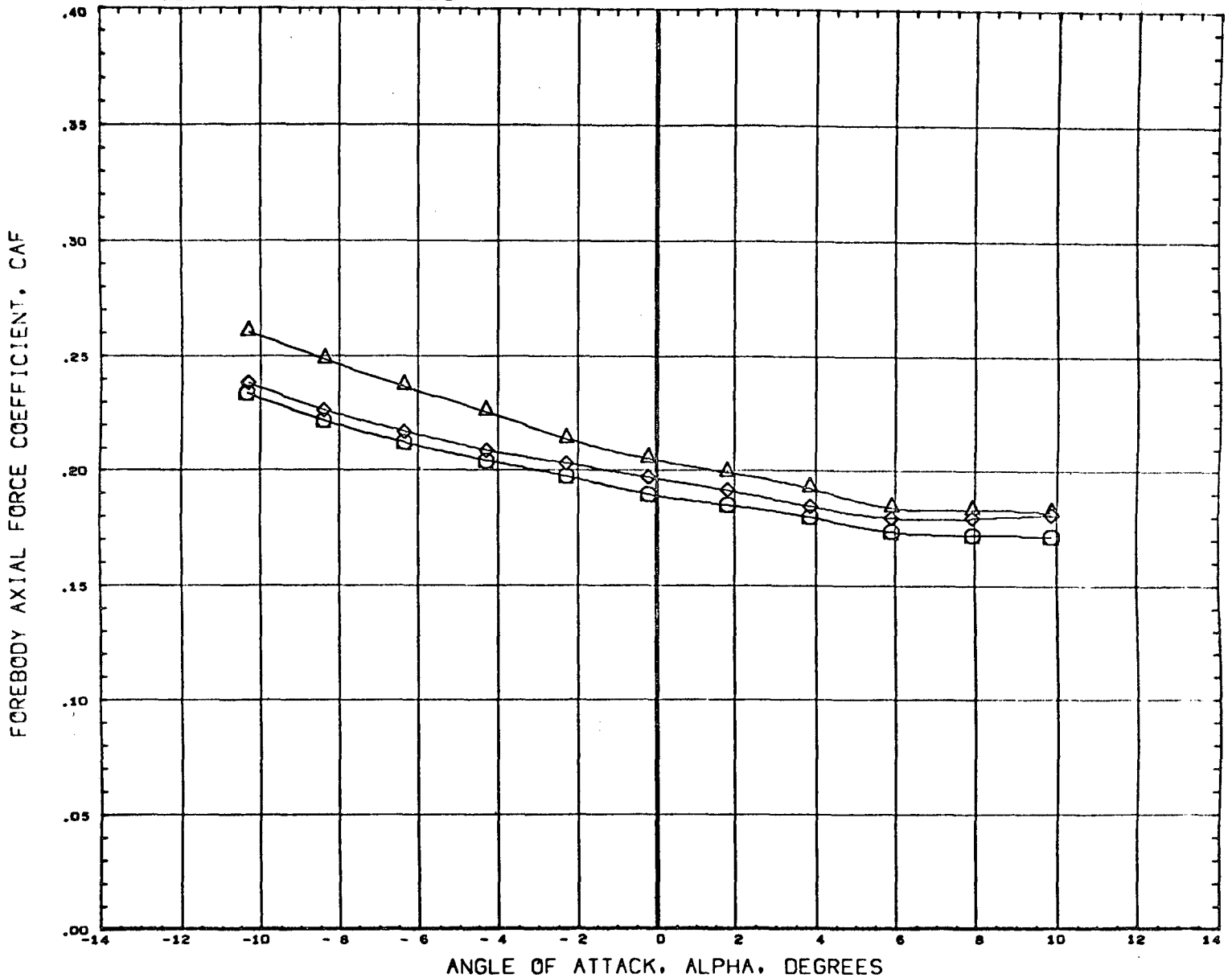
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION		PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF	7.8600 SQ. IN
(G71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF	2.0280 IN.
(G71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF	4.4600 IN.
							XMRP	3.3600 IN.
							YMRP	0.0000 IN.
							ZMRP	0.2480 IN.
							SCALE	0.0040 SCALE

MACH 1.97

# COMPARISON OF FIN AND RUDDER



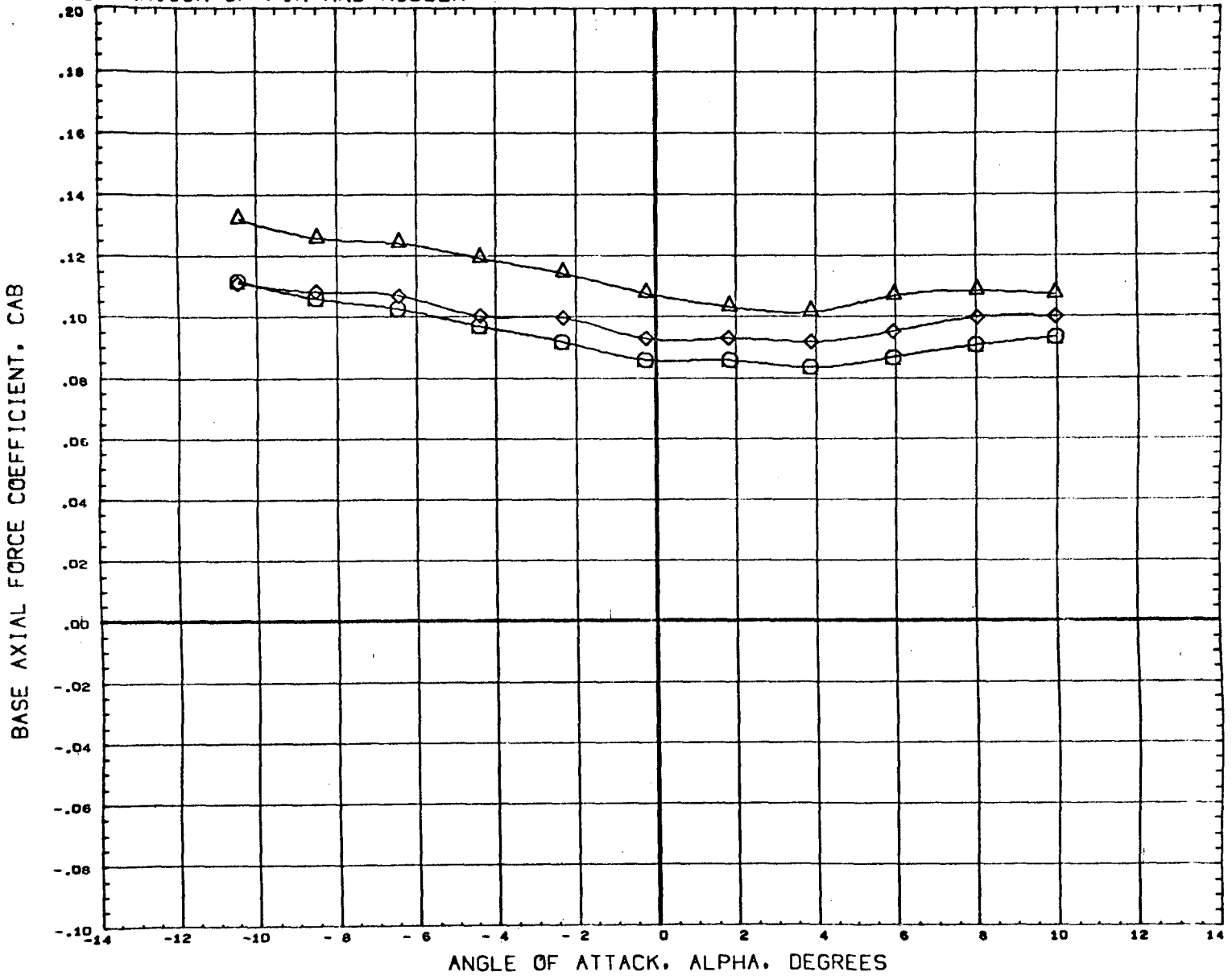
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(071043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH

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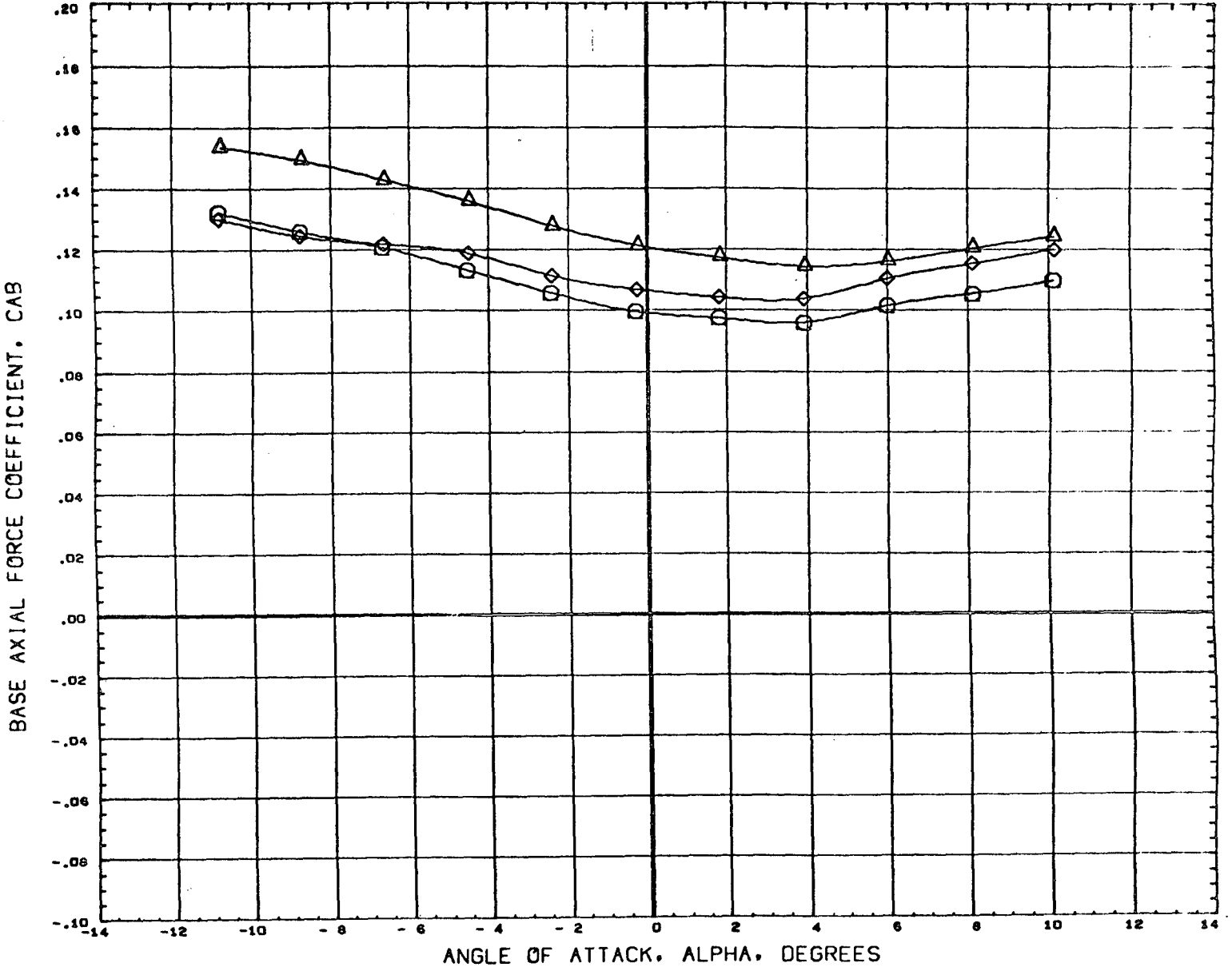
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION		PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRF 3.3600 IN. YMRF 0.0000 IN. ZMRF 0.2480 IN. SCALE 0.0040 SCALE

MACH .61

# COMPARISON OF FIN AND RUDDER

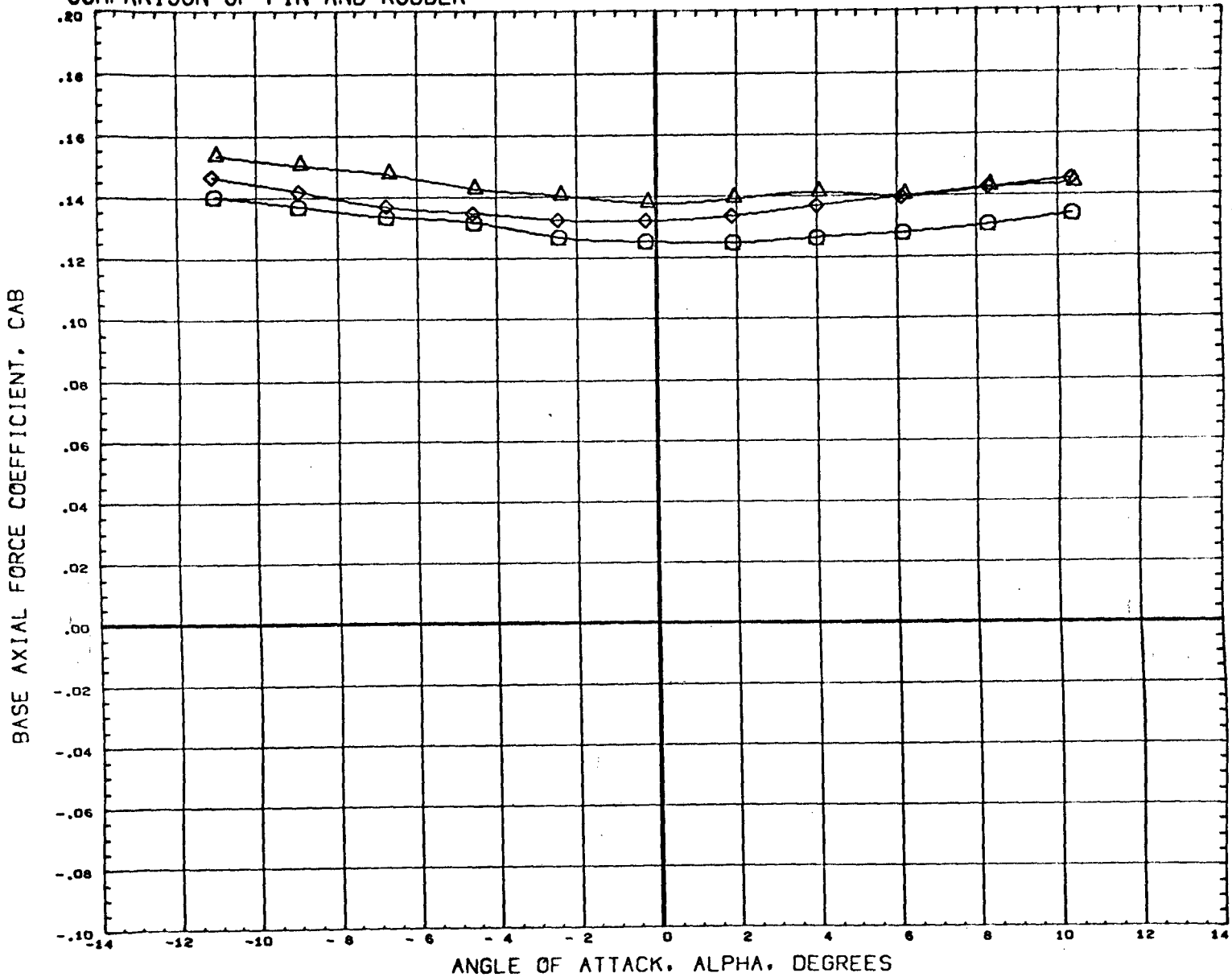


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

*Handwritten mark*

# COMPARISON OF FIN AND RUDDER

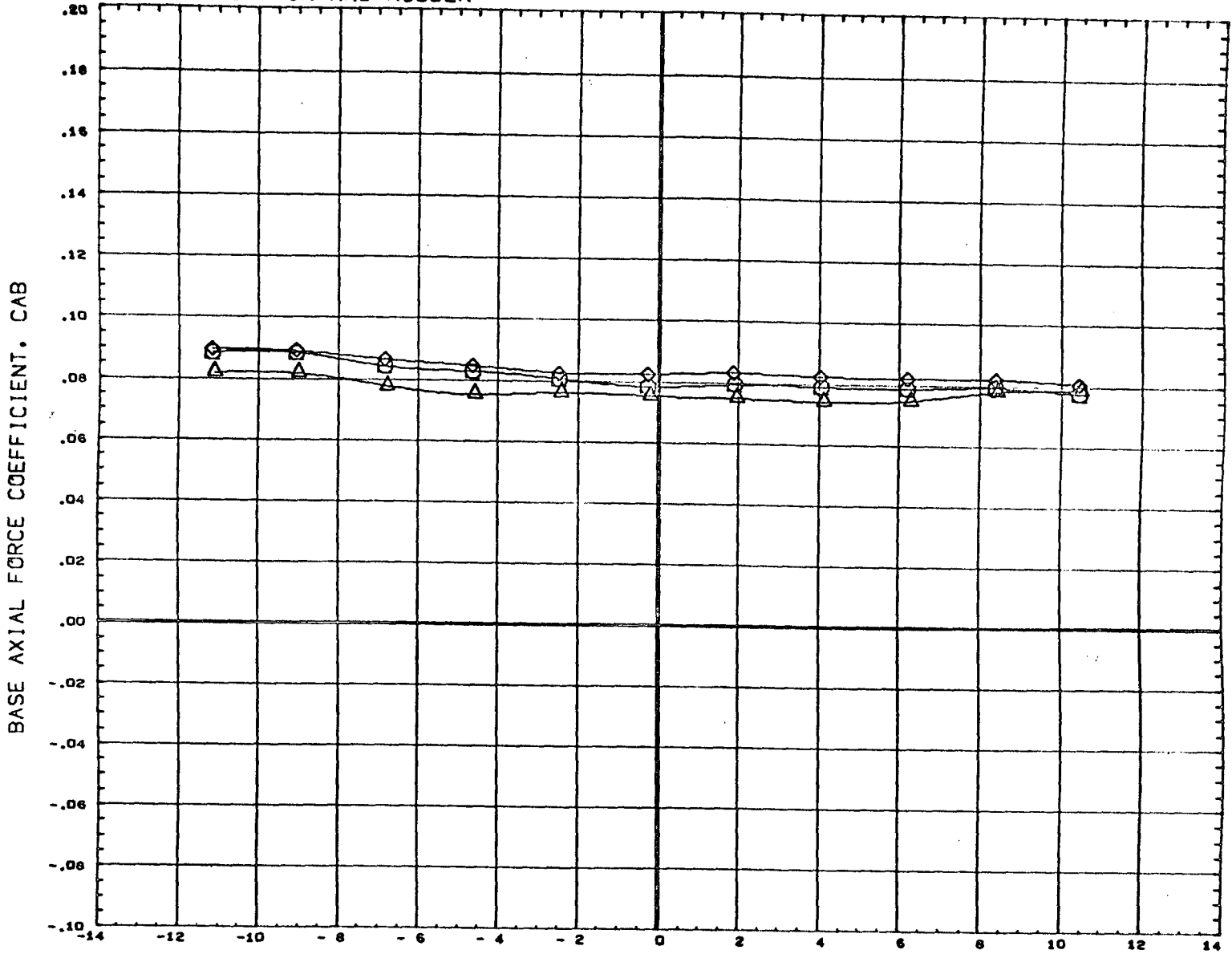


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

G

# COMPARISON OF FIN AND RUDDER



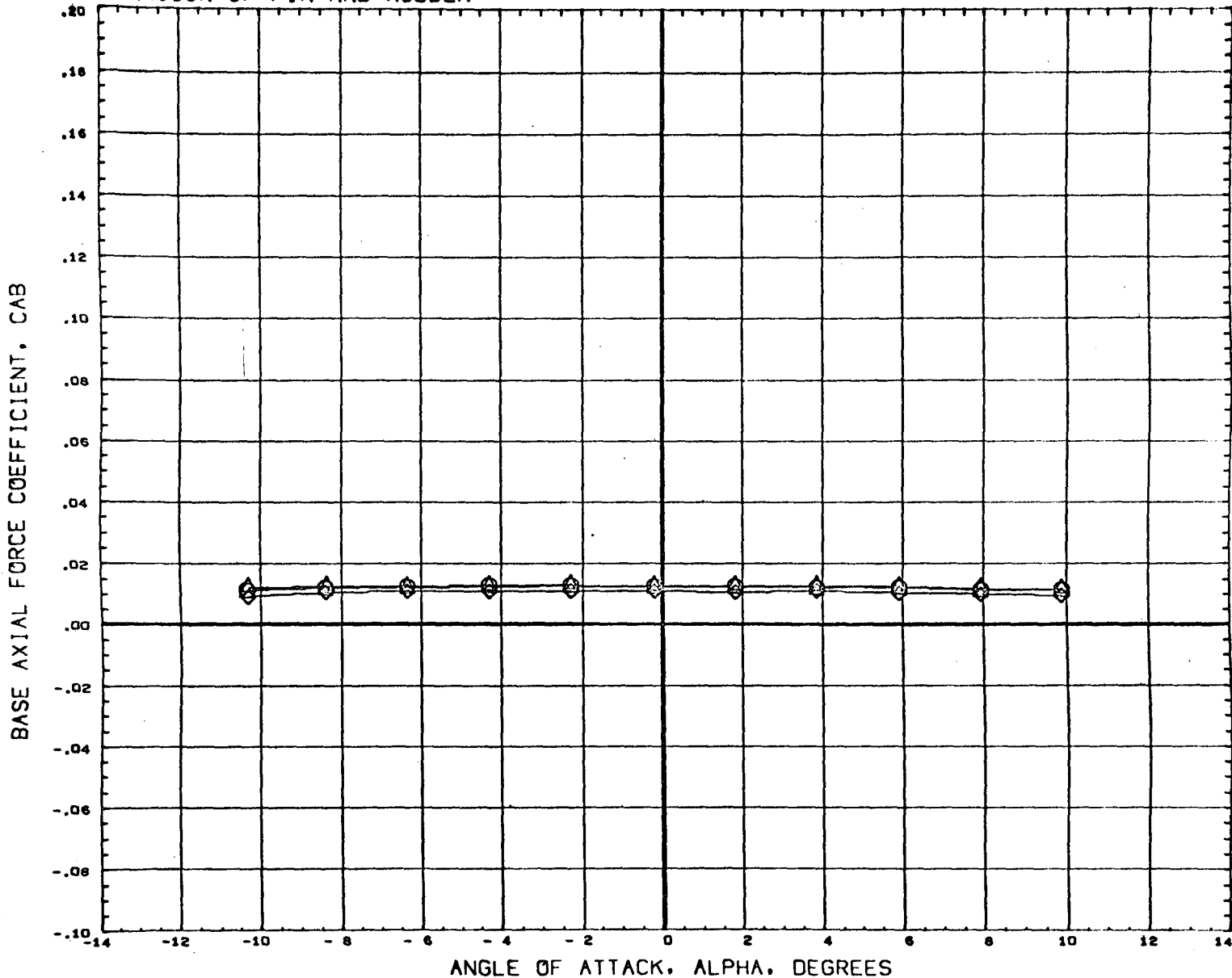
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	CAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3800 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 1.97

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# COMPARISON OF FIN AND RUDDER



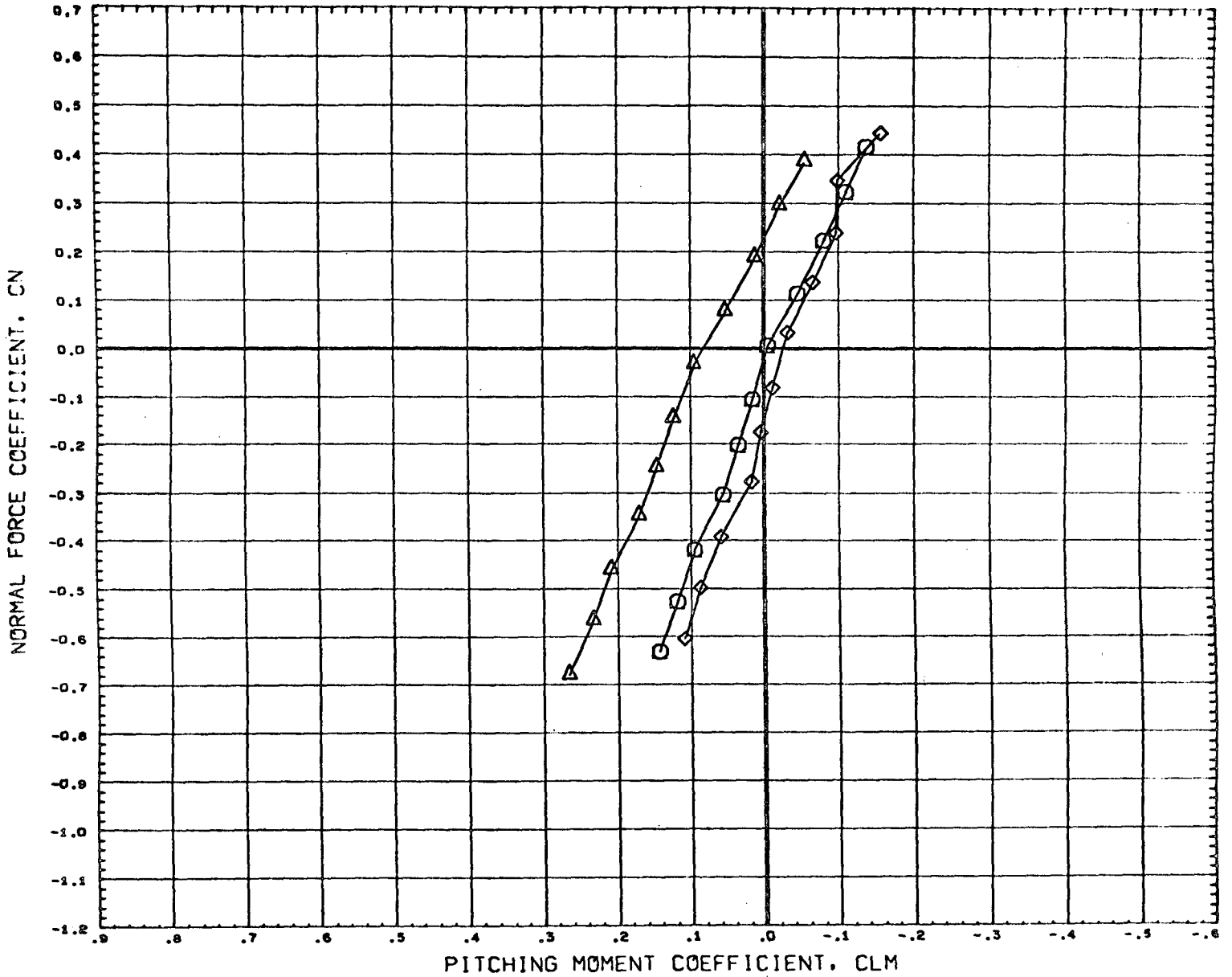
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

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# COMPARISON OF FIN AND RUDDER

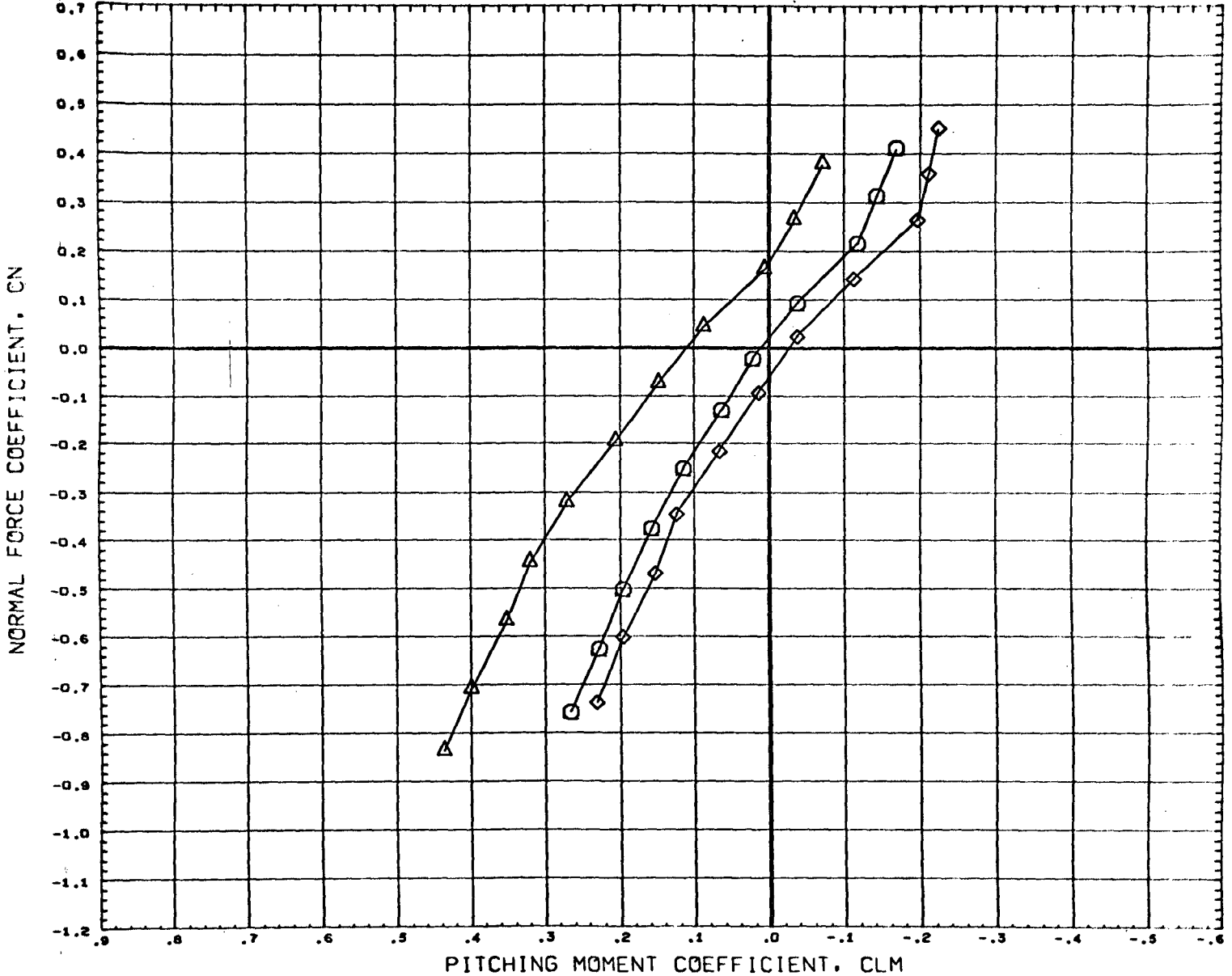


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF	2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH .61

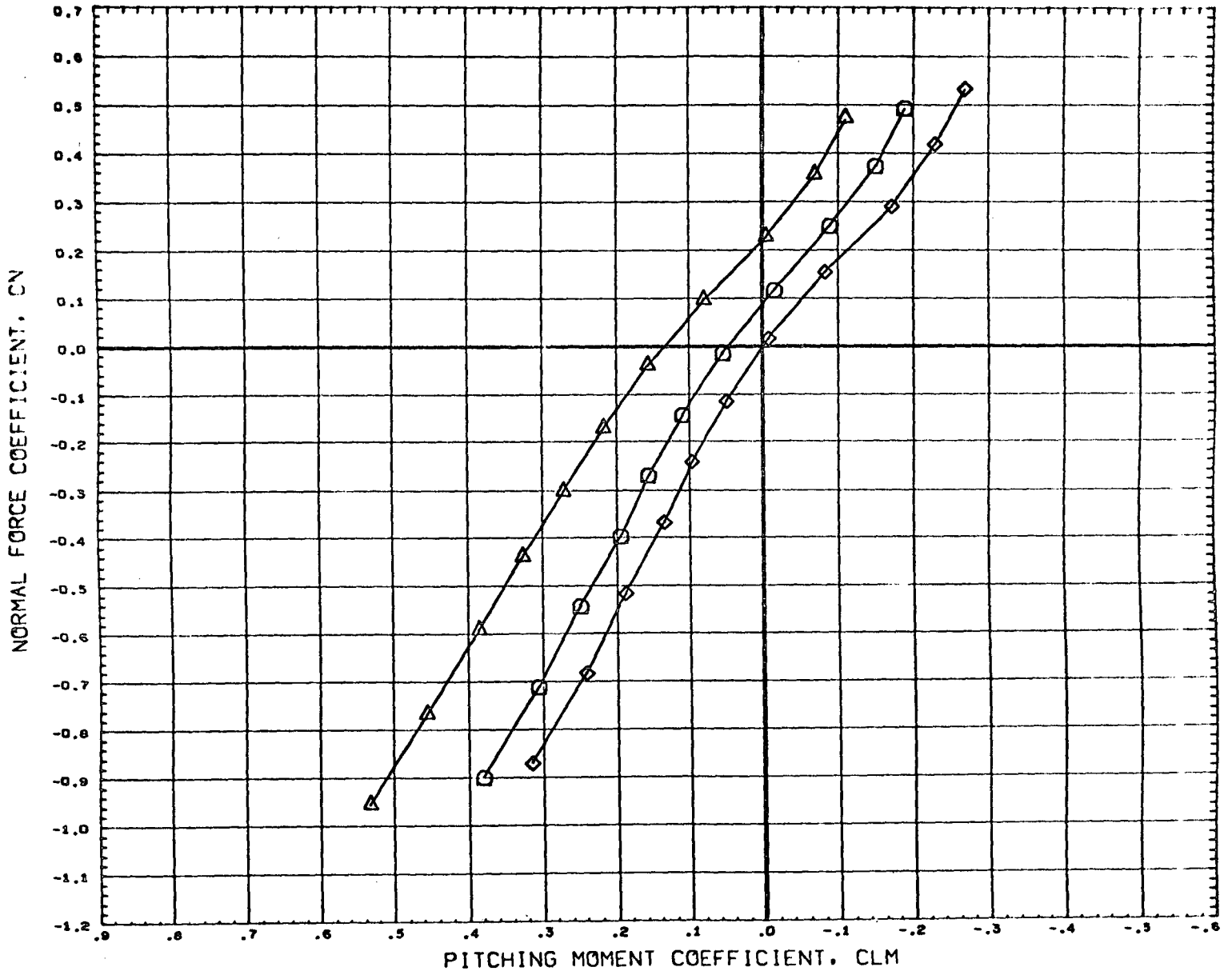


# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(071002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(071066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(071043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

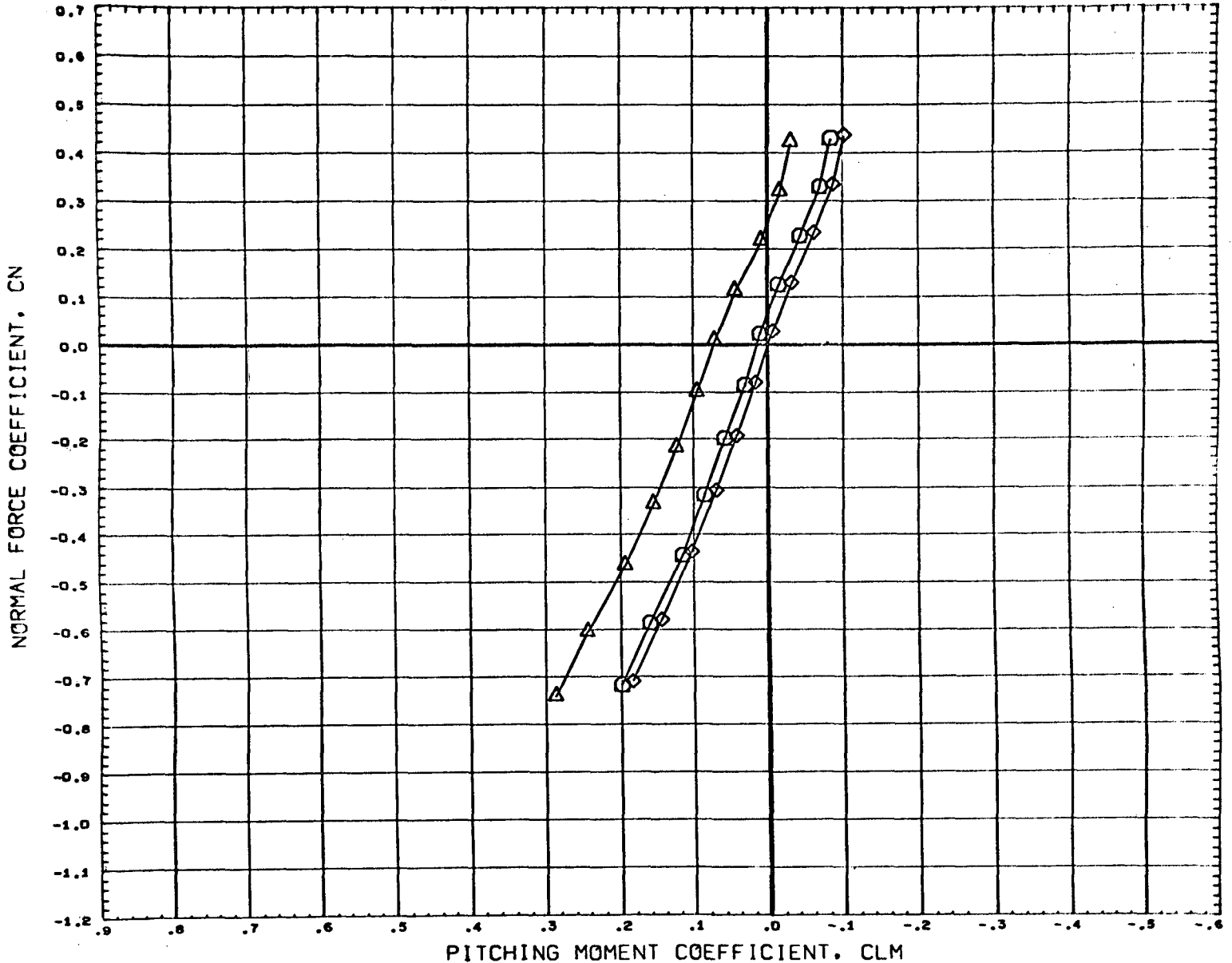
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 1.20

# COMPARISON OF FIN AND RUDDER



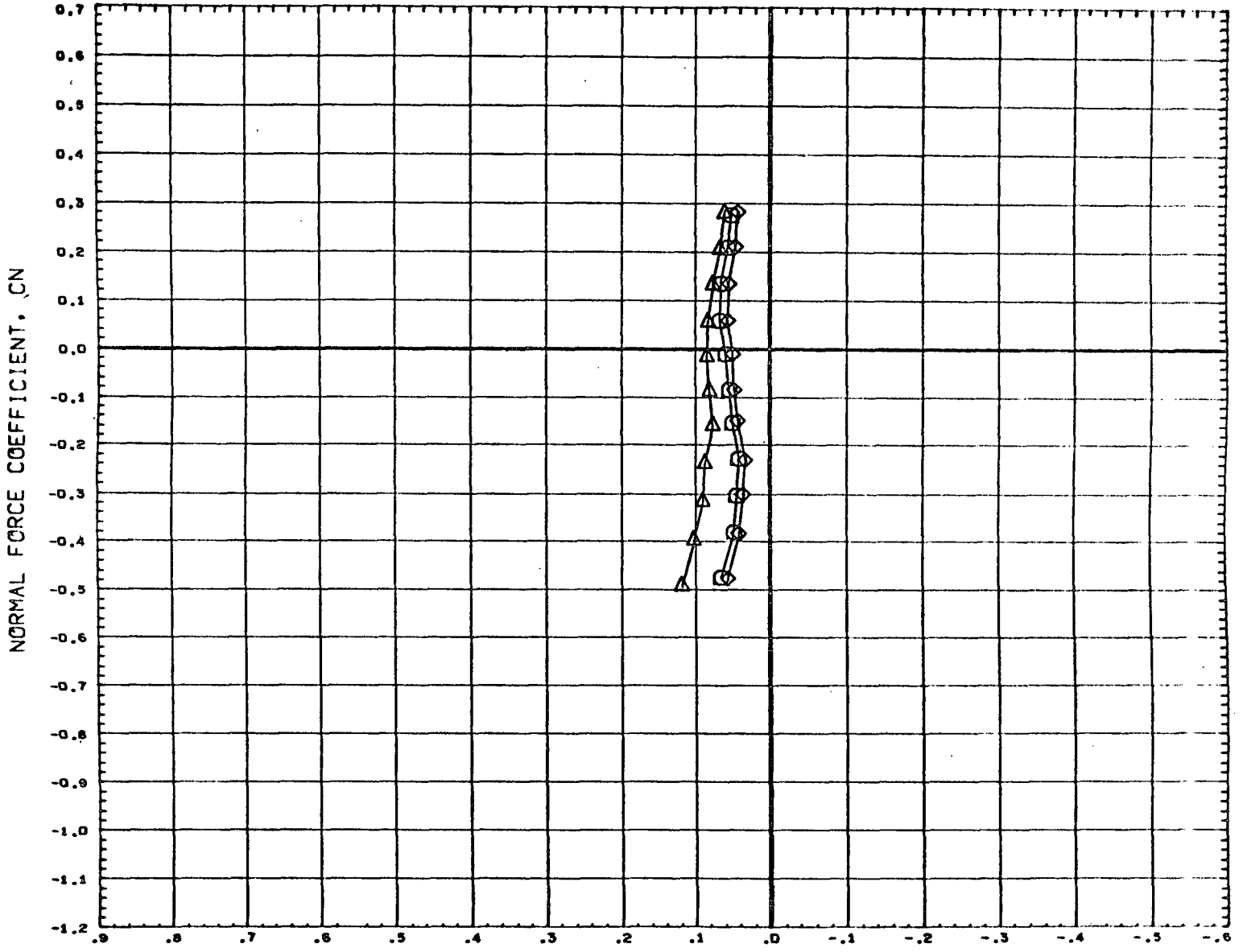
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 30. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH

1.97

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# COMPARISON OF FIN AND RUDDER



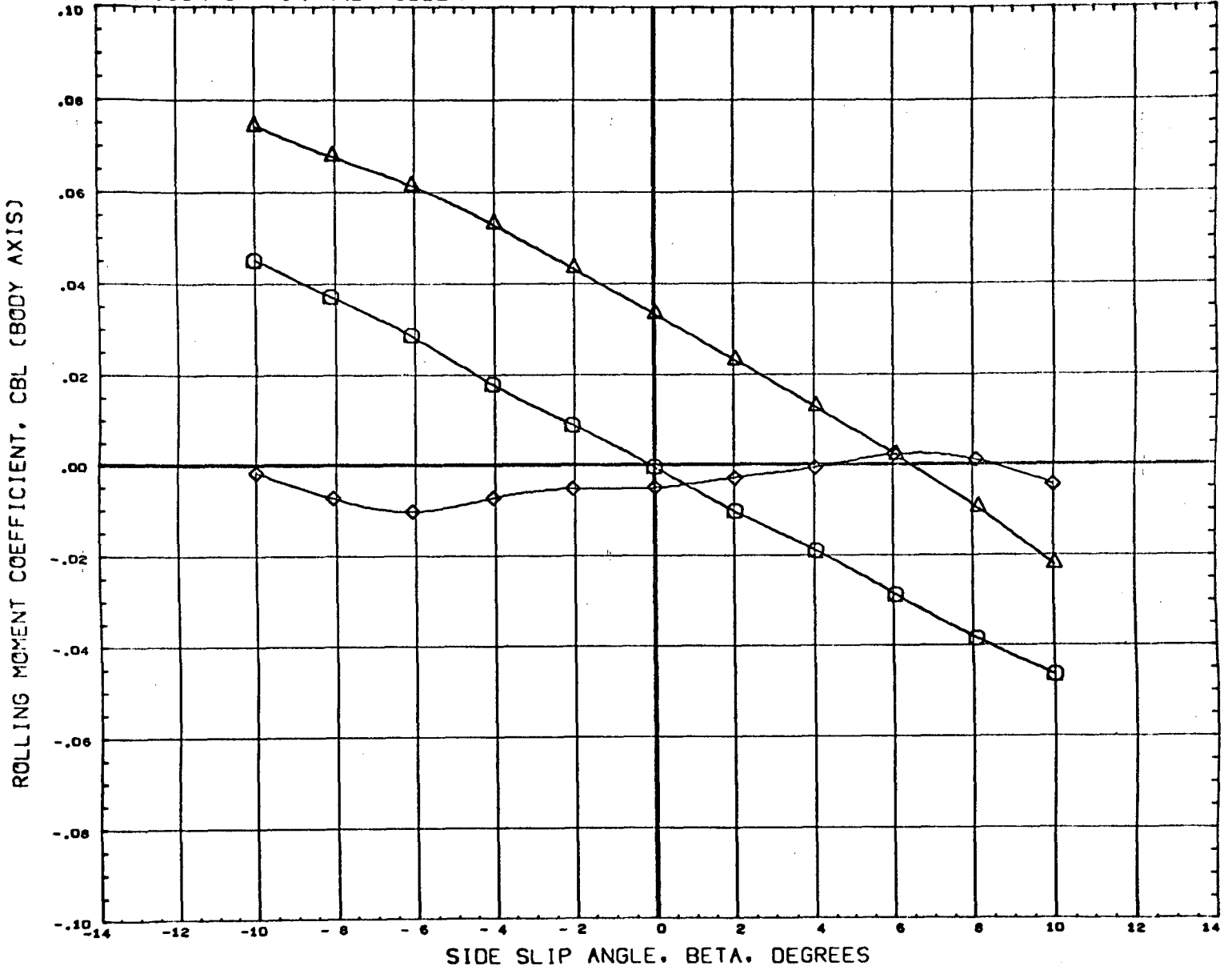
PITCHING MOMENT COEFFICIENT, CLM

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(G71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 sq. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(B71043)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH 4.96

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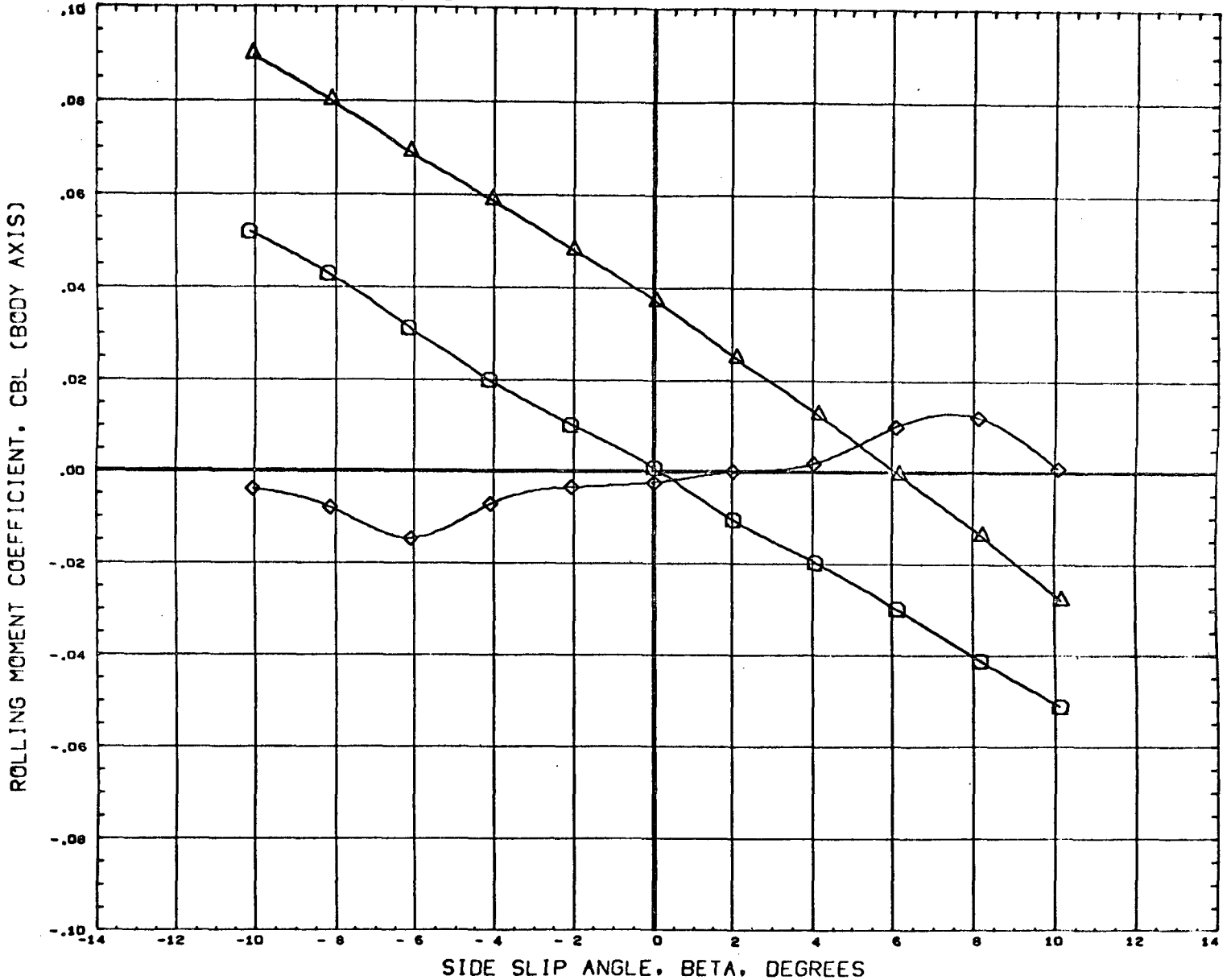
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 sq. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

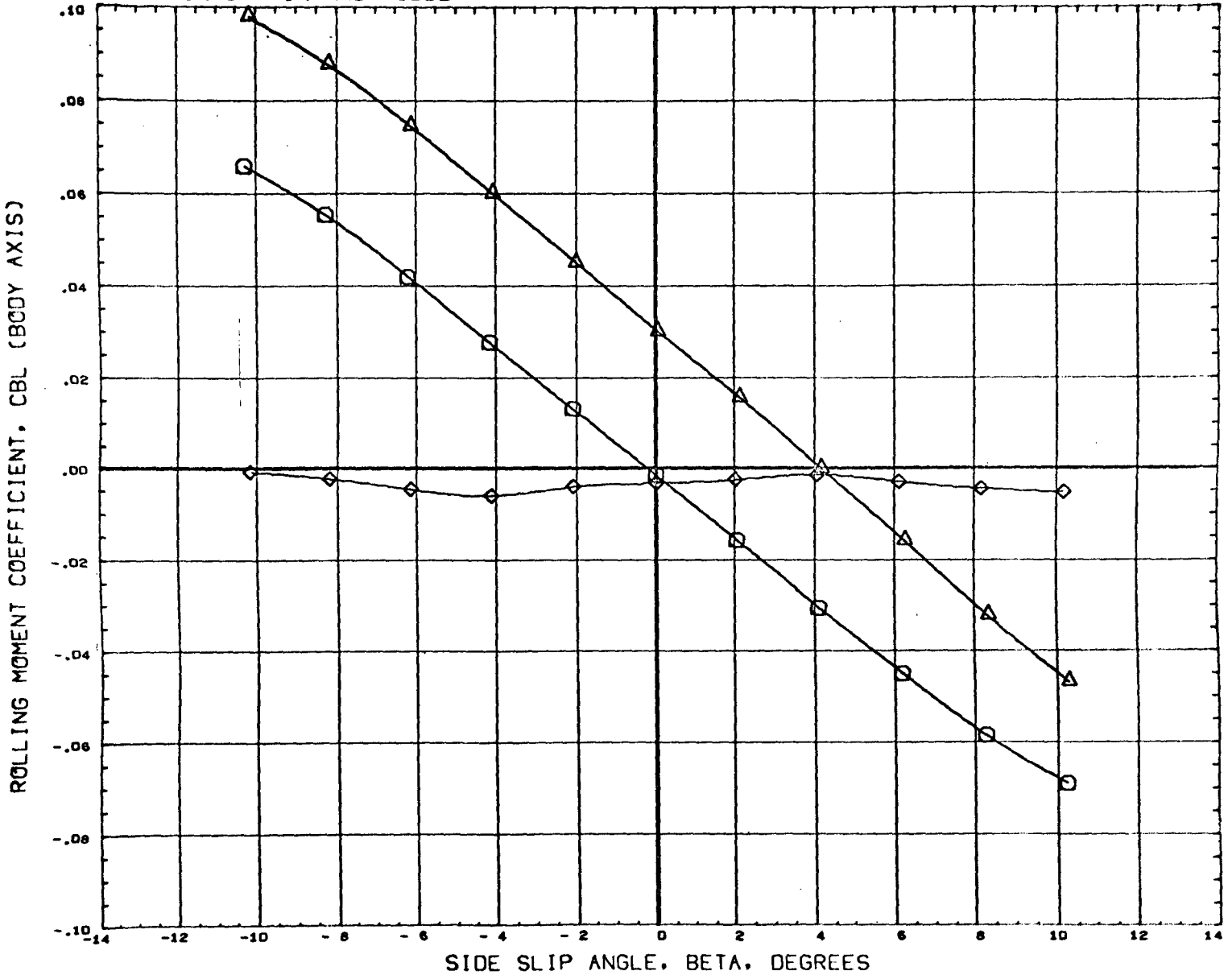
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90

# COMPARISON OF FIN AND RUDDER

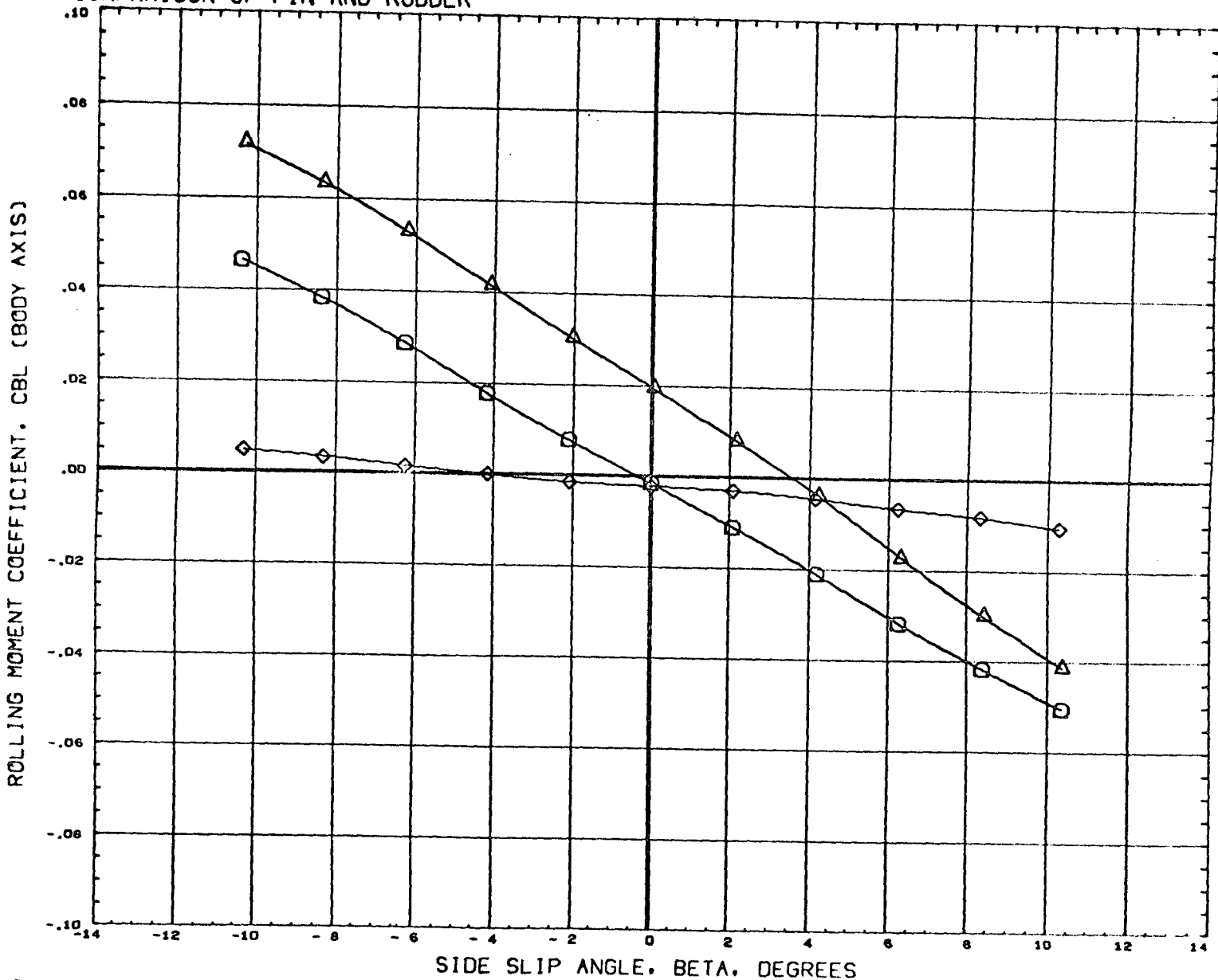


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN.
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

MACH

1.20

# COMPARISON OF FIN AND RUDDER



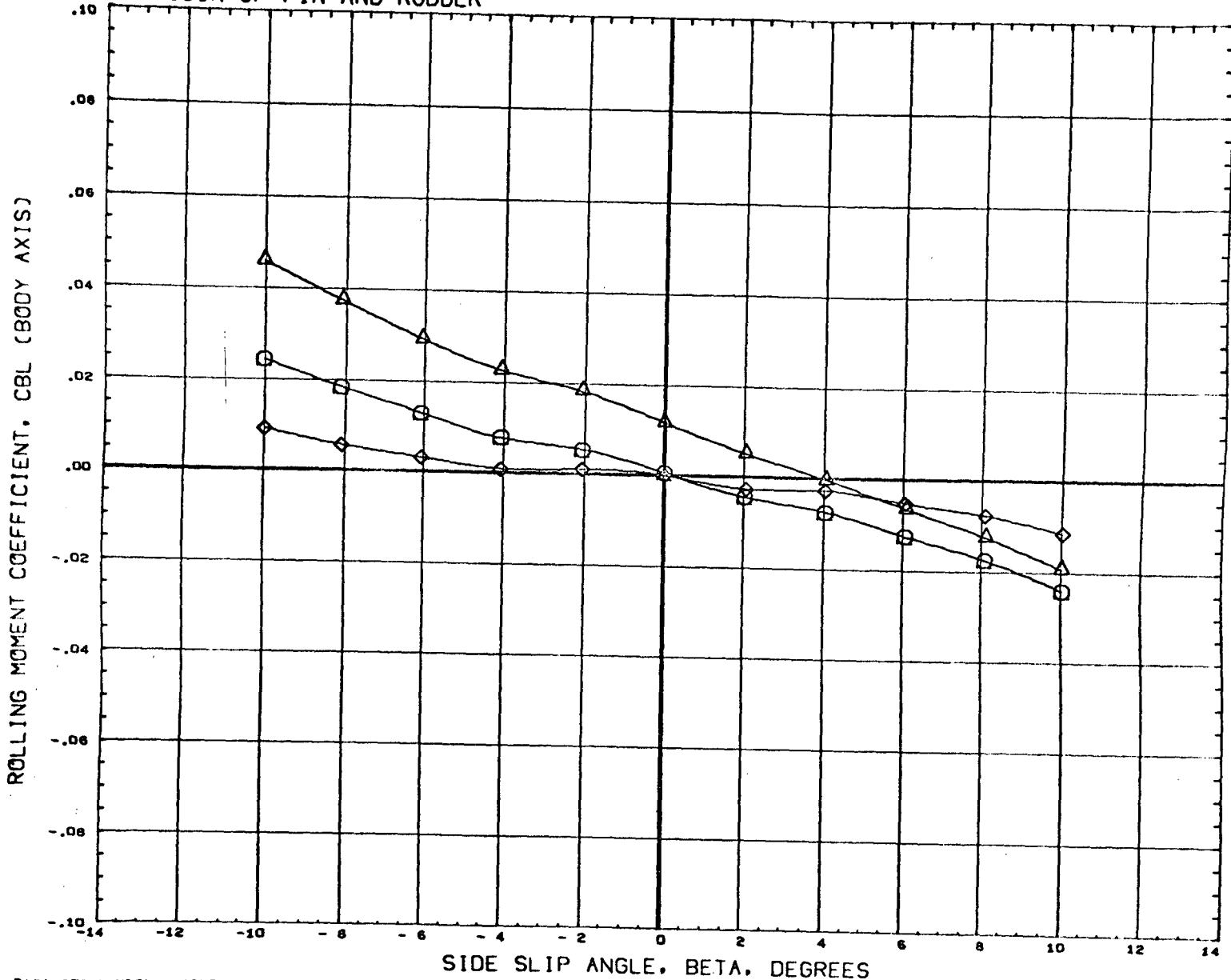
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0.000	0.000	0.000	SREF 7.8800 SQ. IN.
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0.000	0.000	30,000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75,000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

LD



# COMPARISON OF FIN AND RUDDER

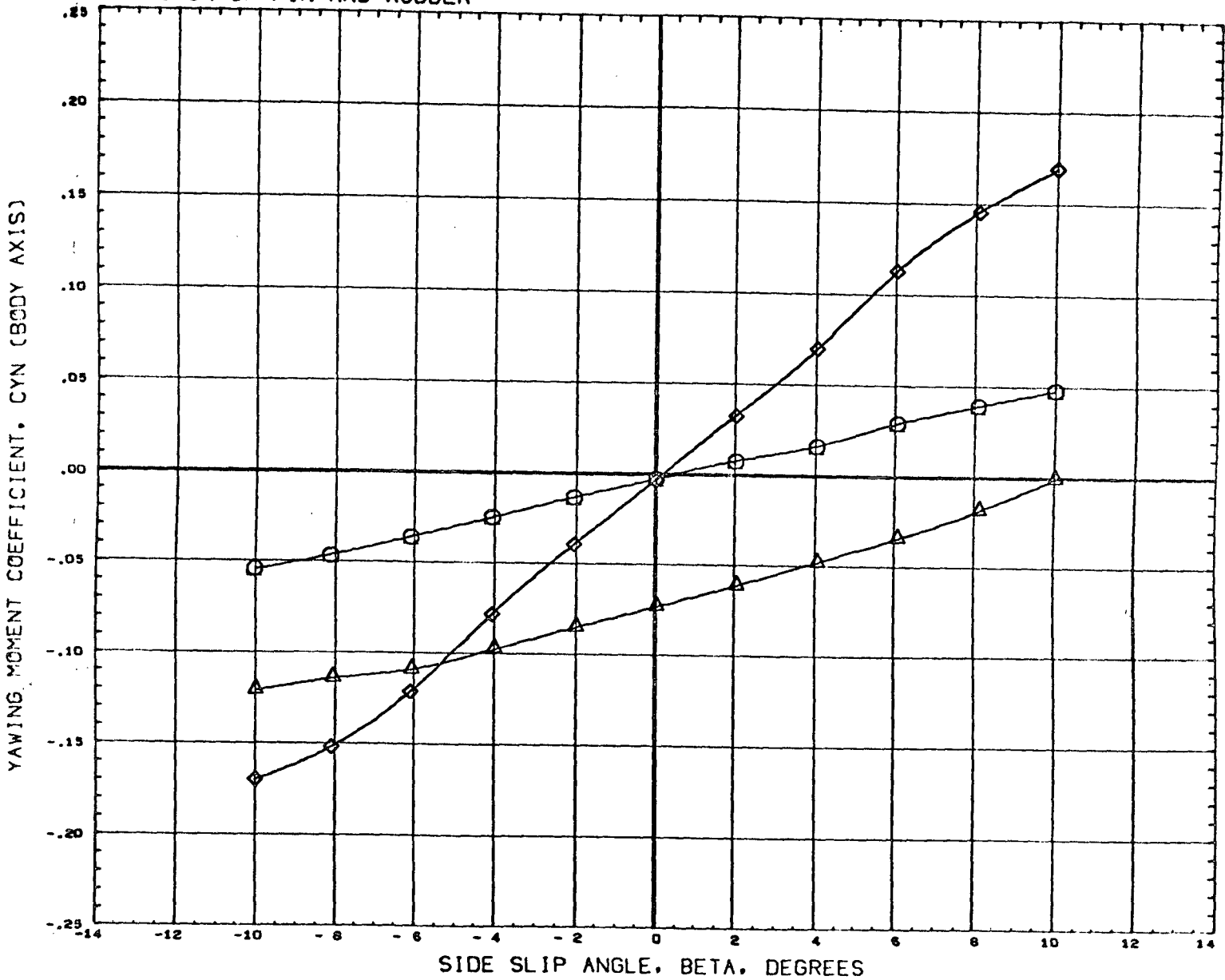


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN.
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH 4.96

D

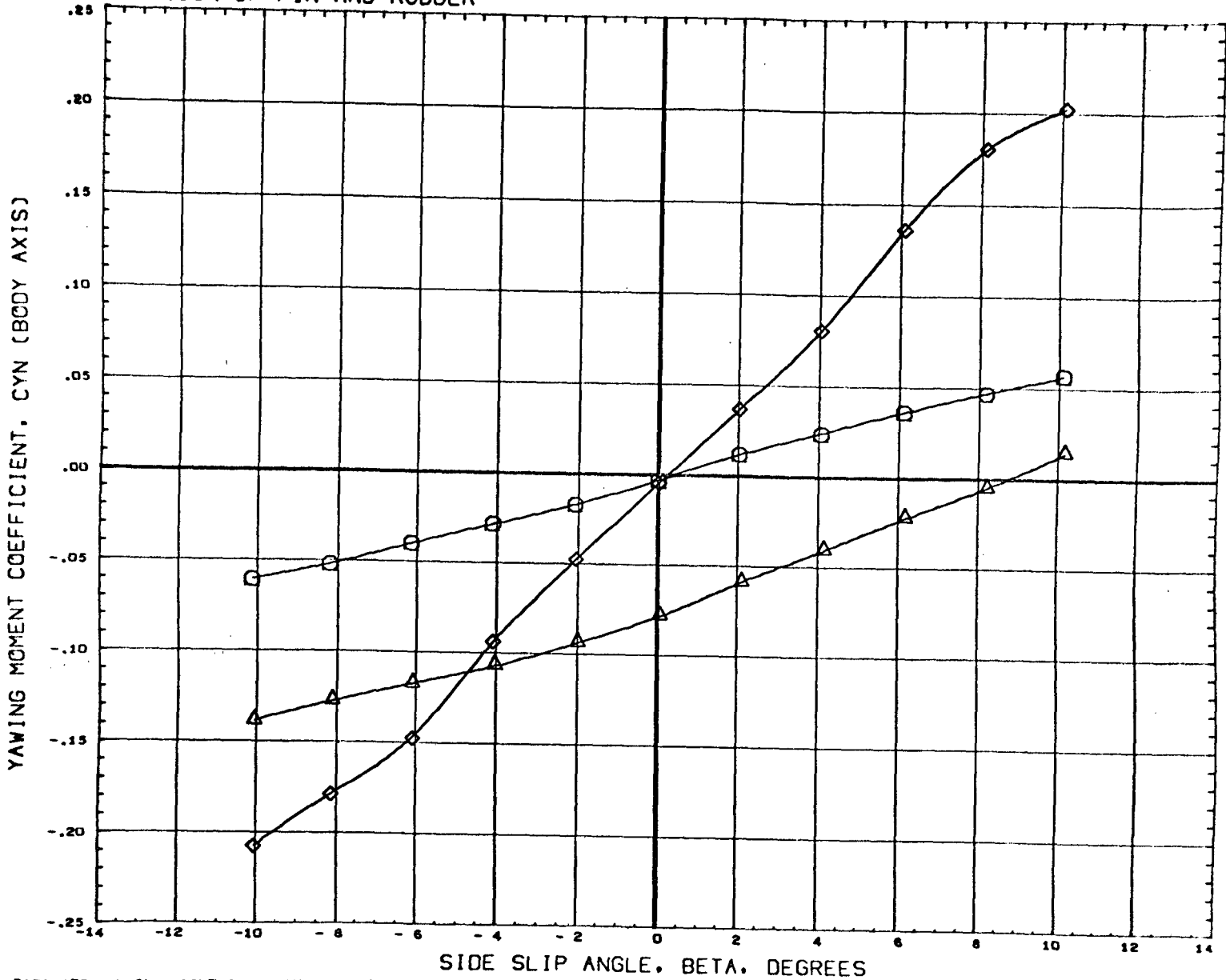
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN.
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .60

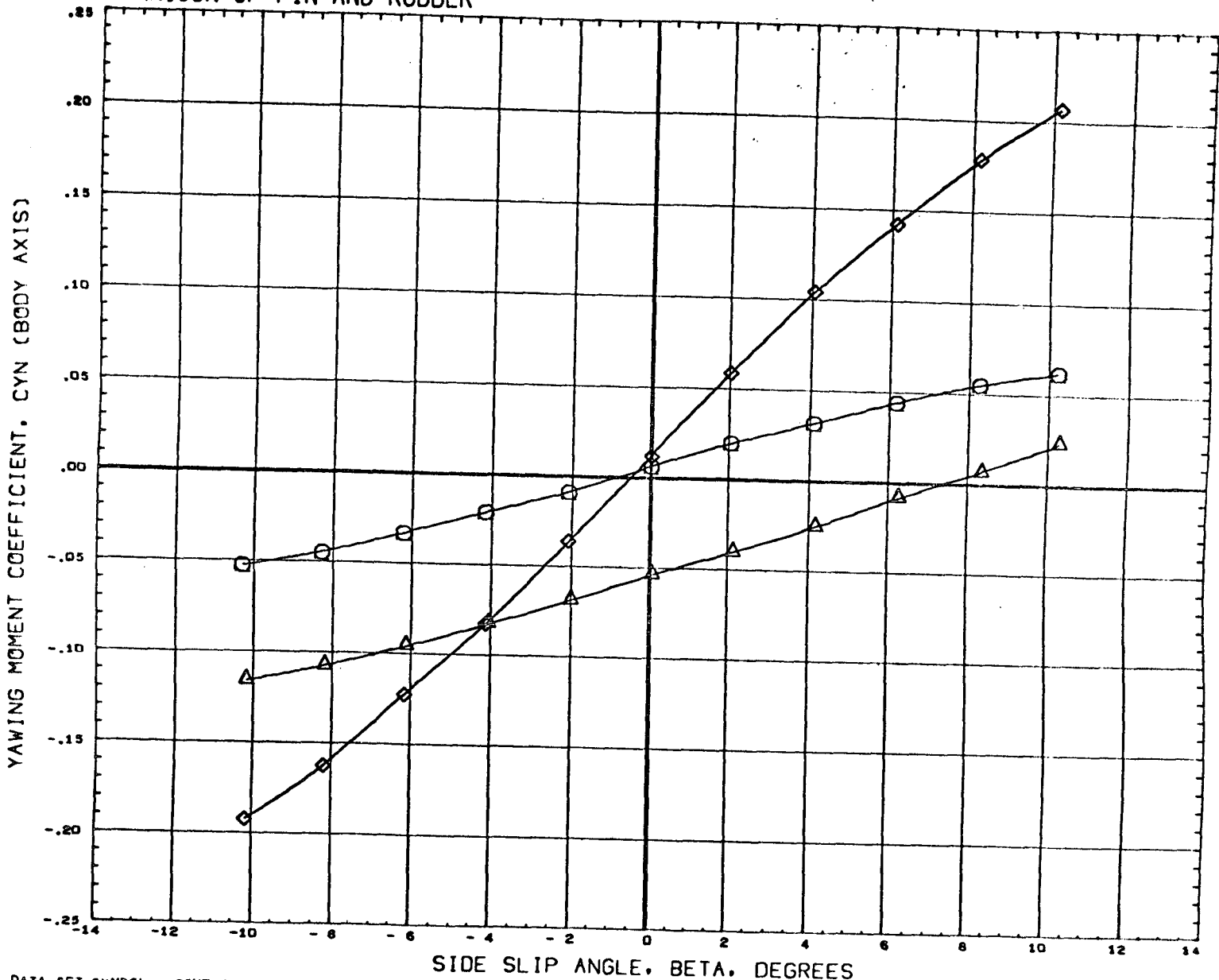
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

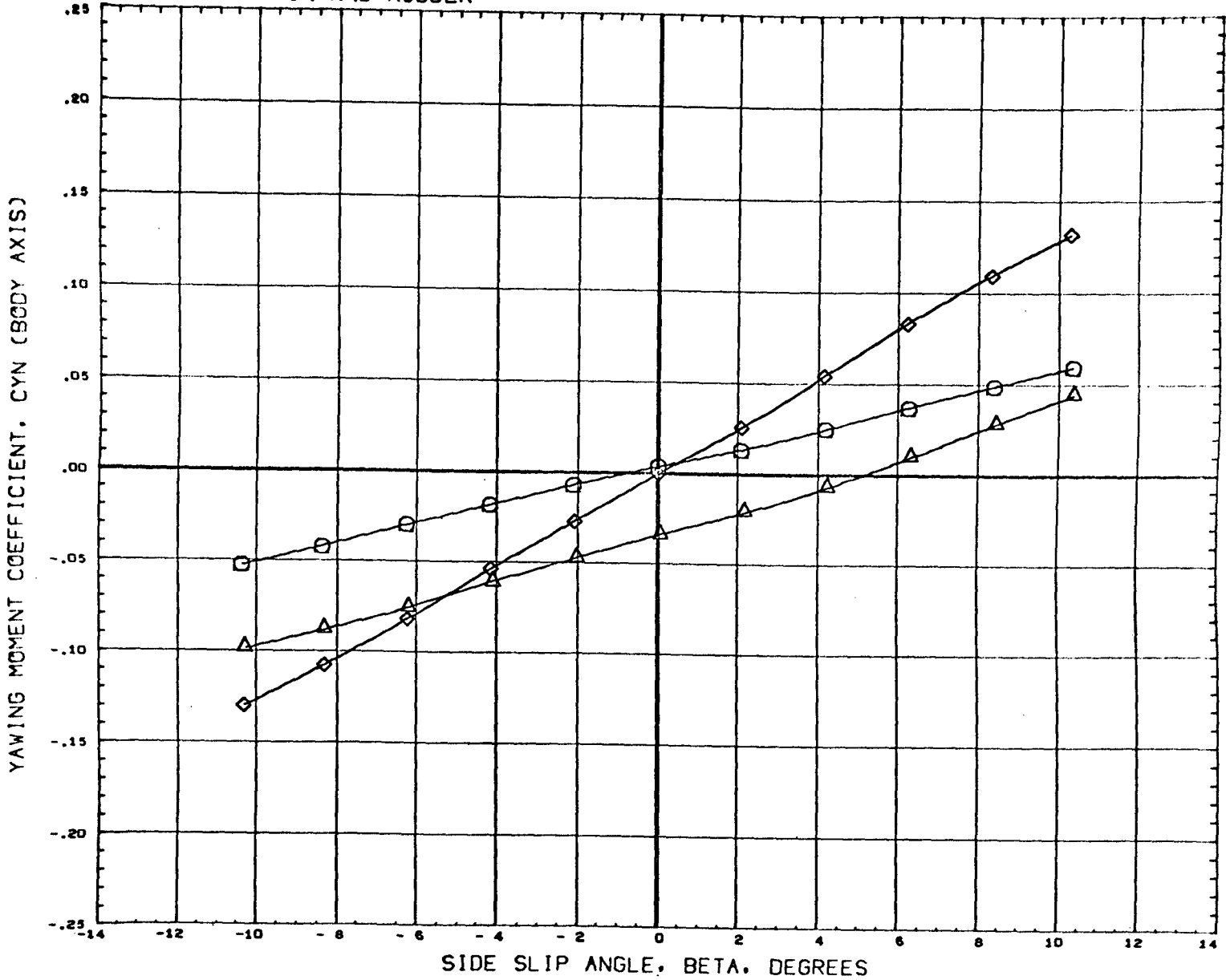
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.6800 SQ. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

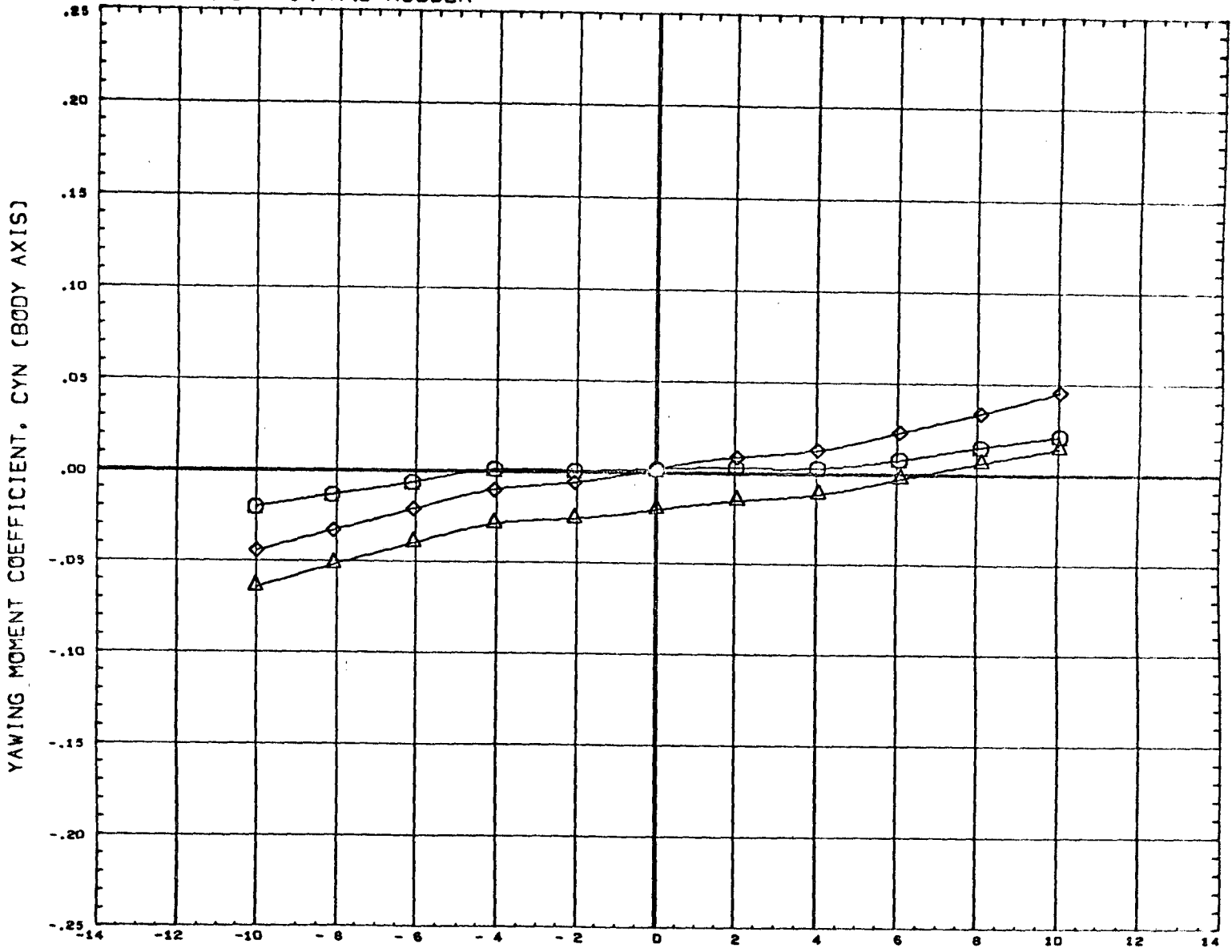
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.96

# COMPARISON OF FIN AND RUDDER

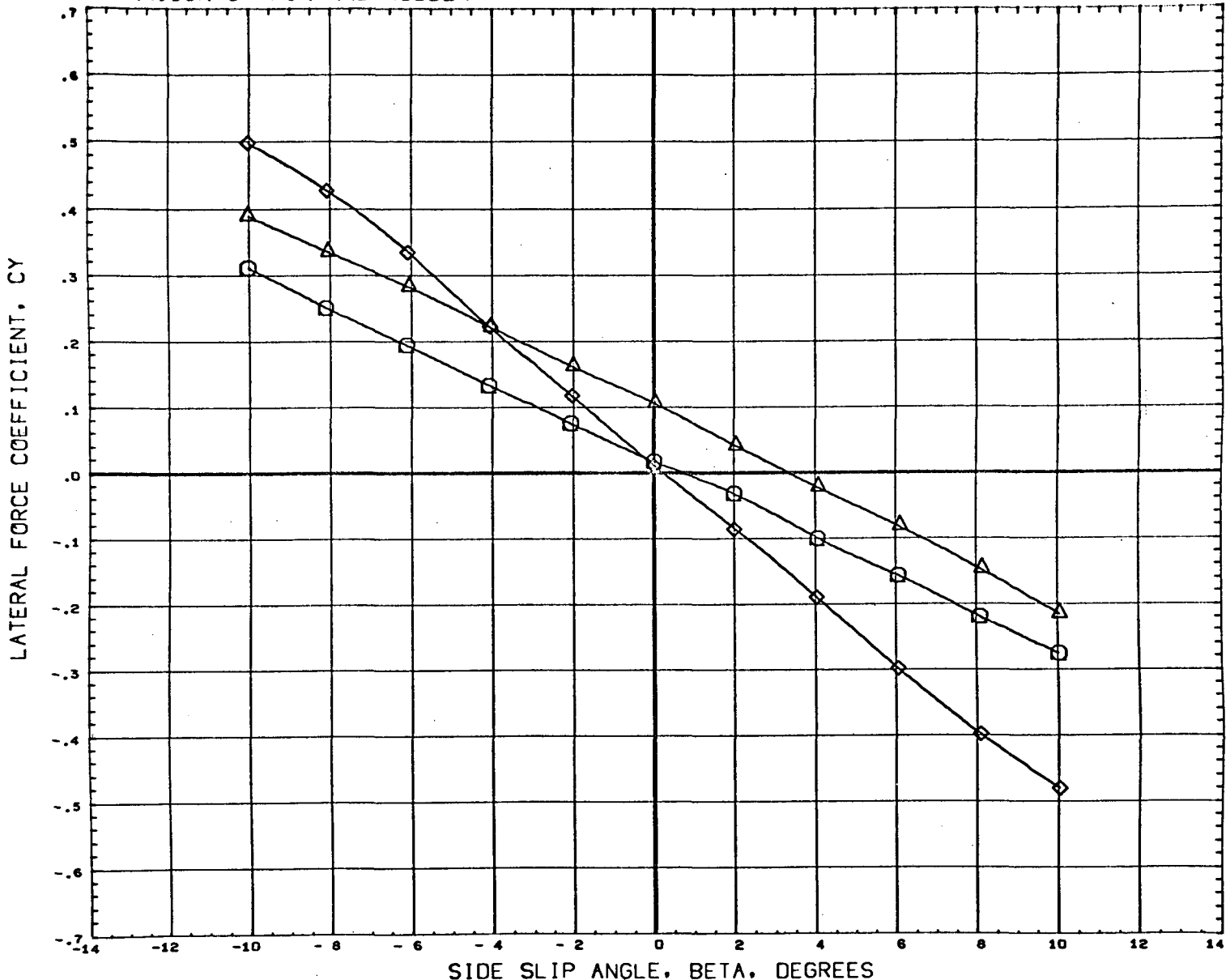


SIDE SLIP ANGLE, BETA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 4.96

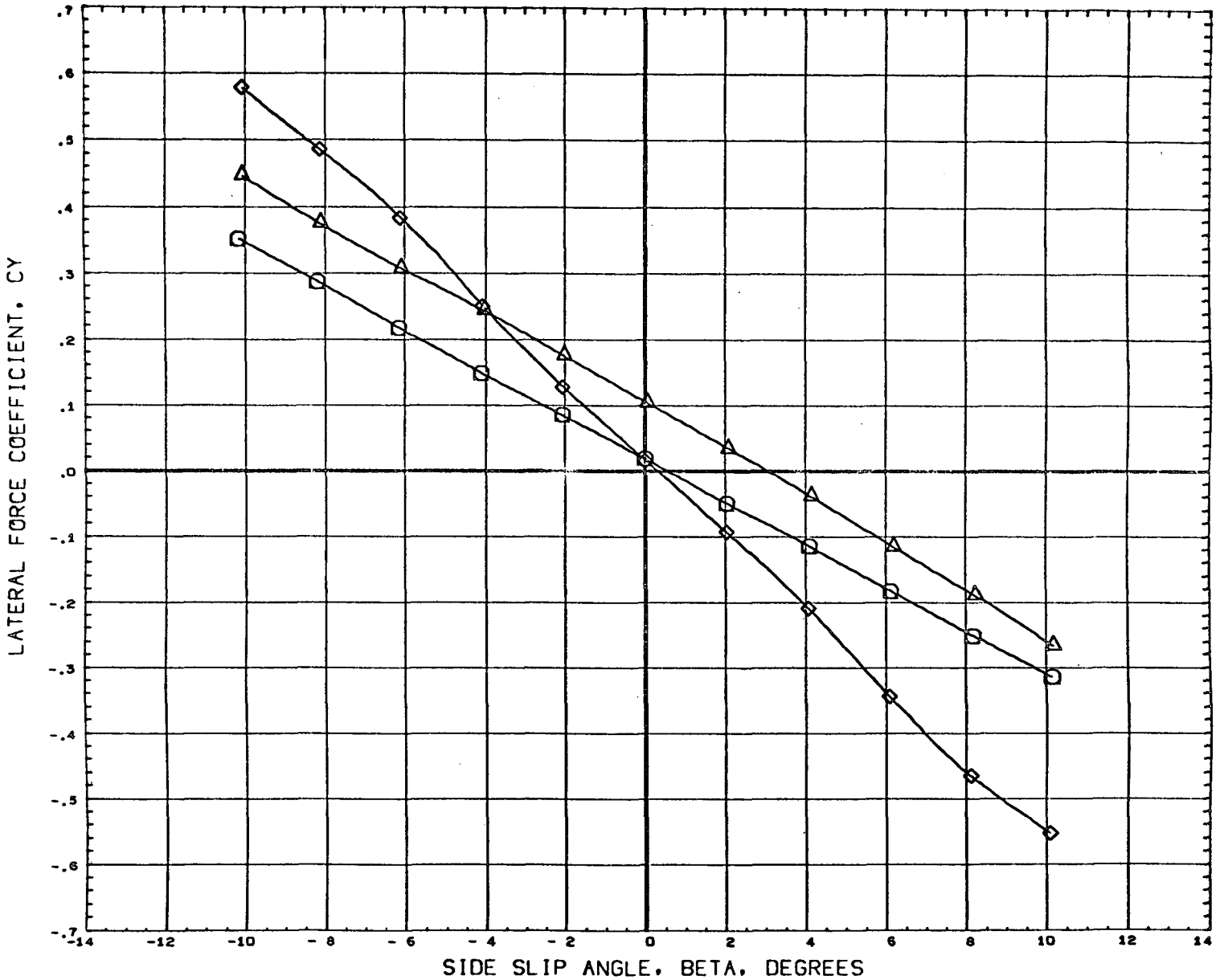
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .60

# COMPARISON OF FIN AND RUDDER

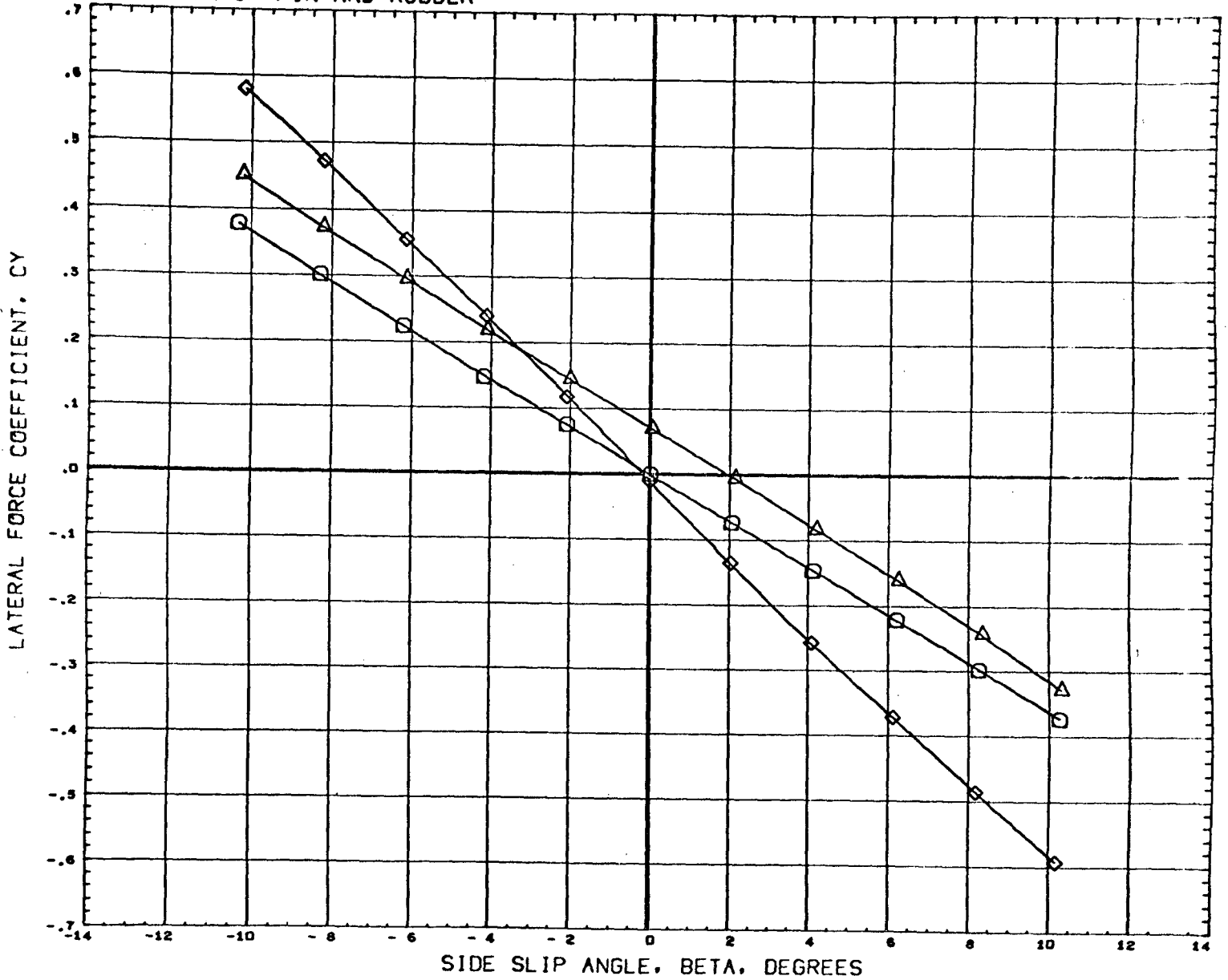


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

MACH .90



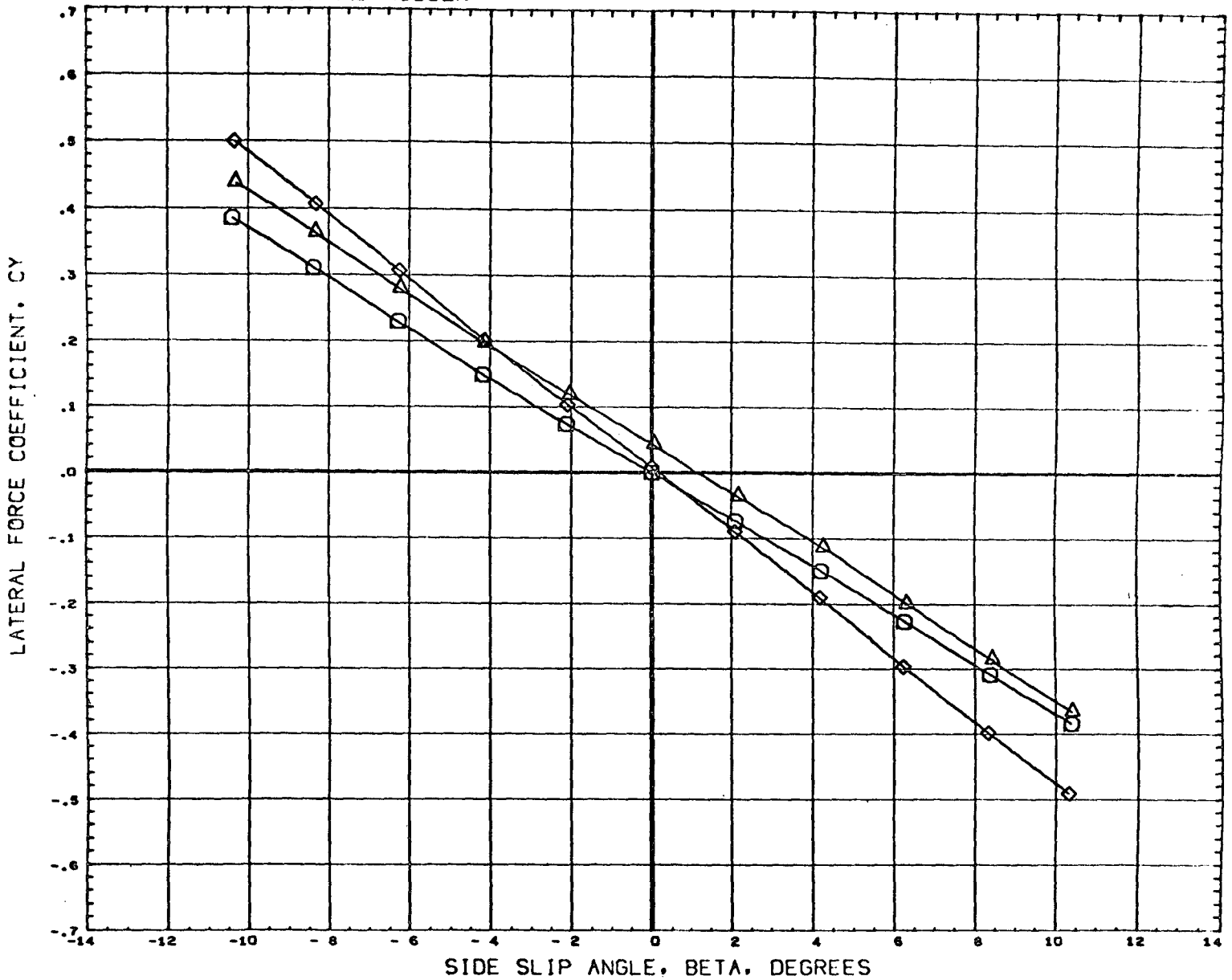
# COMPARISON OF FIN AND RUDDER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

# COMPARISON OF FIN AND RUDDER



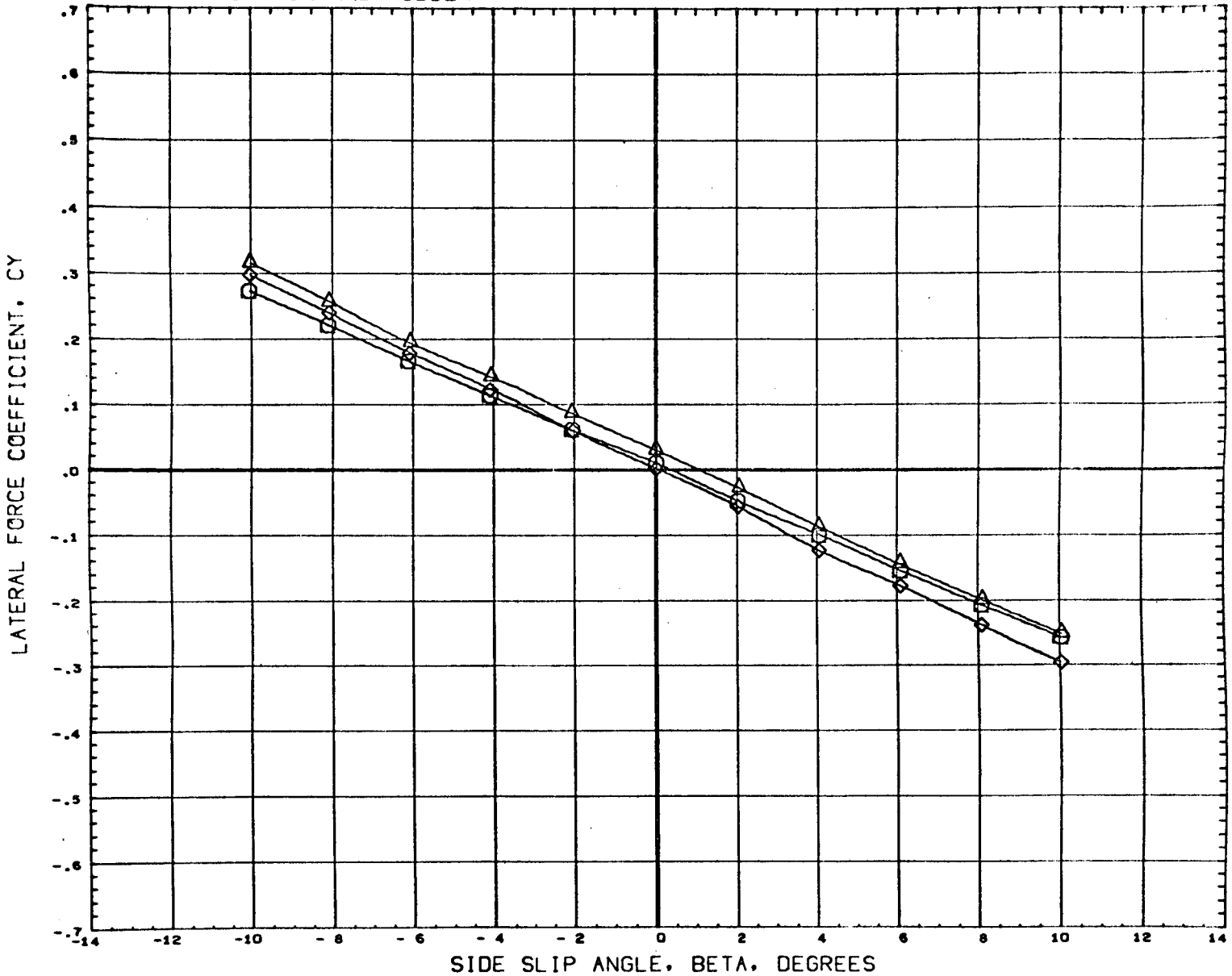
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 344 LAUNCH VEHICLE STUDIES TI01S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71067)	MSFC TWT 344 LAUNCH VEHICLE STUDIES TI01S1	75.000	0.000	0.000	30.000	LREF 2.0280 IN.
(A71044)	MSFC TWT 344 LAUNCH VEHICLE STUDIES TI01S1F	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

1.96

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# COMPARISON OF FIN AND RUDDER



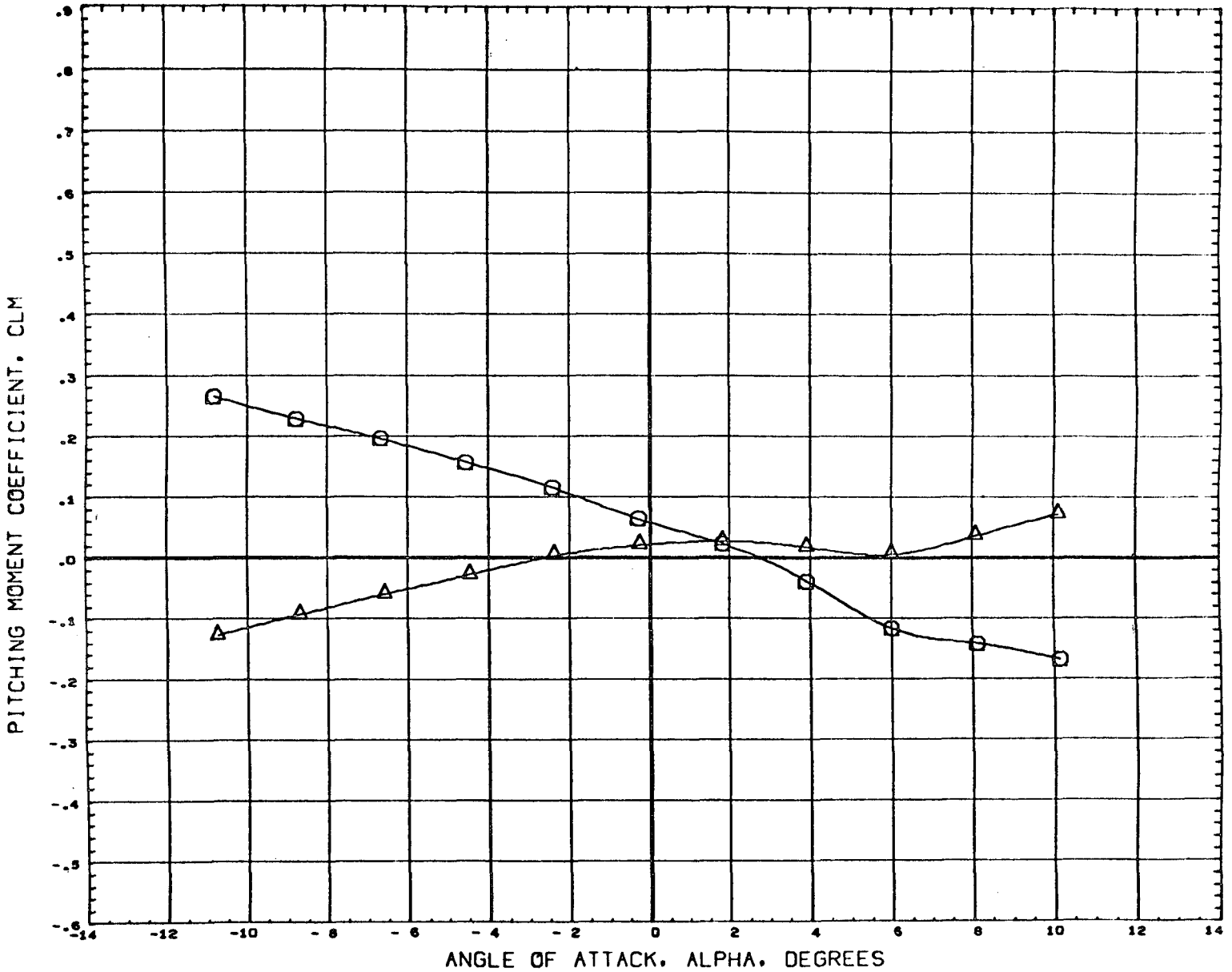
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(E71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75,000	0,000	0,000	0,000	SREF 7,8800 SQ. IN
(A71067)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75,000	0,000	0,000	30,000	LREF 2,0280 IN.
(A71044)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1F	75,000	0,000	0,000	0,000	BREF 4,4600 IN.
							XMRP 3,3600 IN.
							YMRP 0,0000 IN.
							ZMRP 0,2480 IN.
							SCALE 0,0040 SCALE

MACH

4.96

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# EFFECT OF ORBITER WING OFF

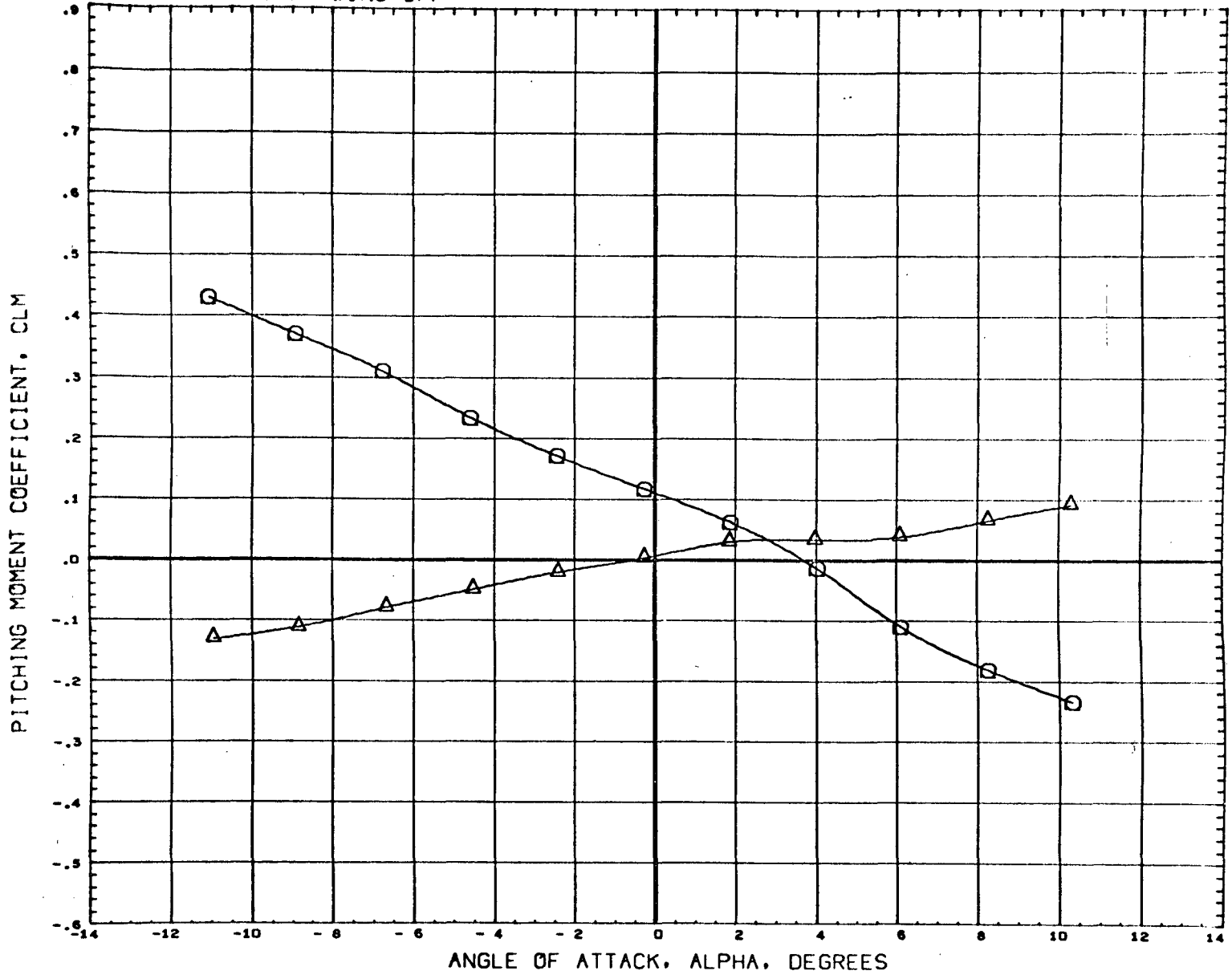


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	CANZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	0,000	0,000	SREF 7.8800 Sq. IN.
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75,000	0,000	0,000	0,000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



# EFFECT OF ORBITER WING OFF



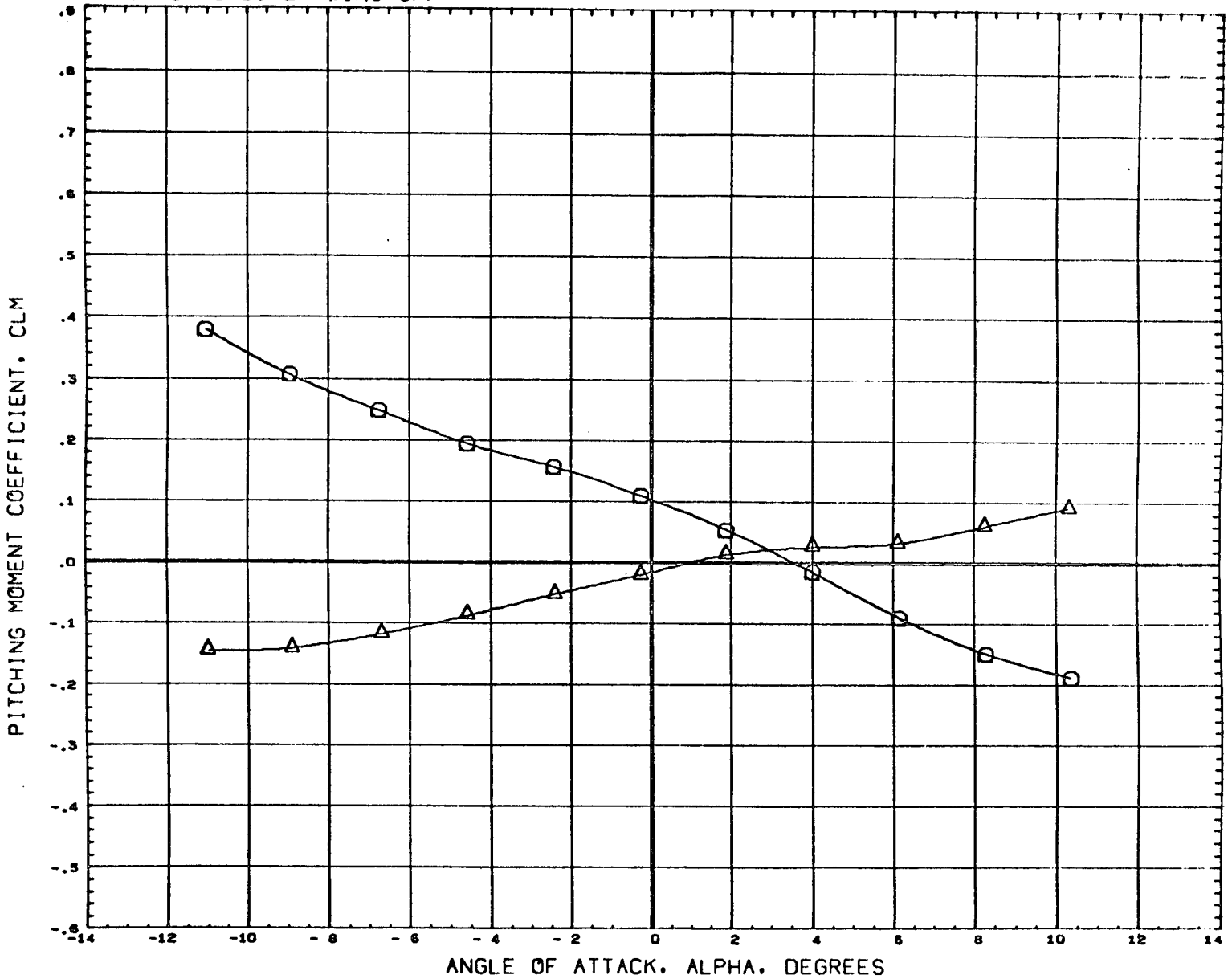
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(B71063)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF	2.0280 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.10

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3

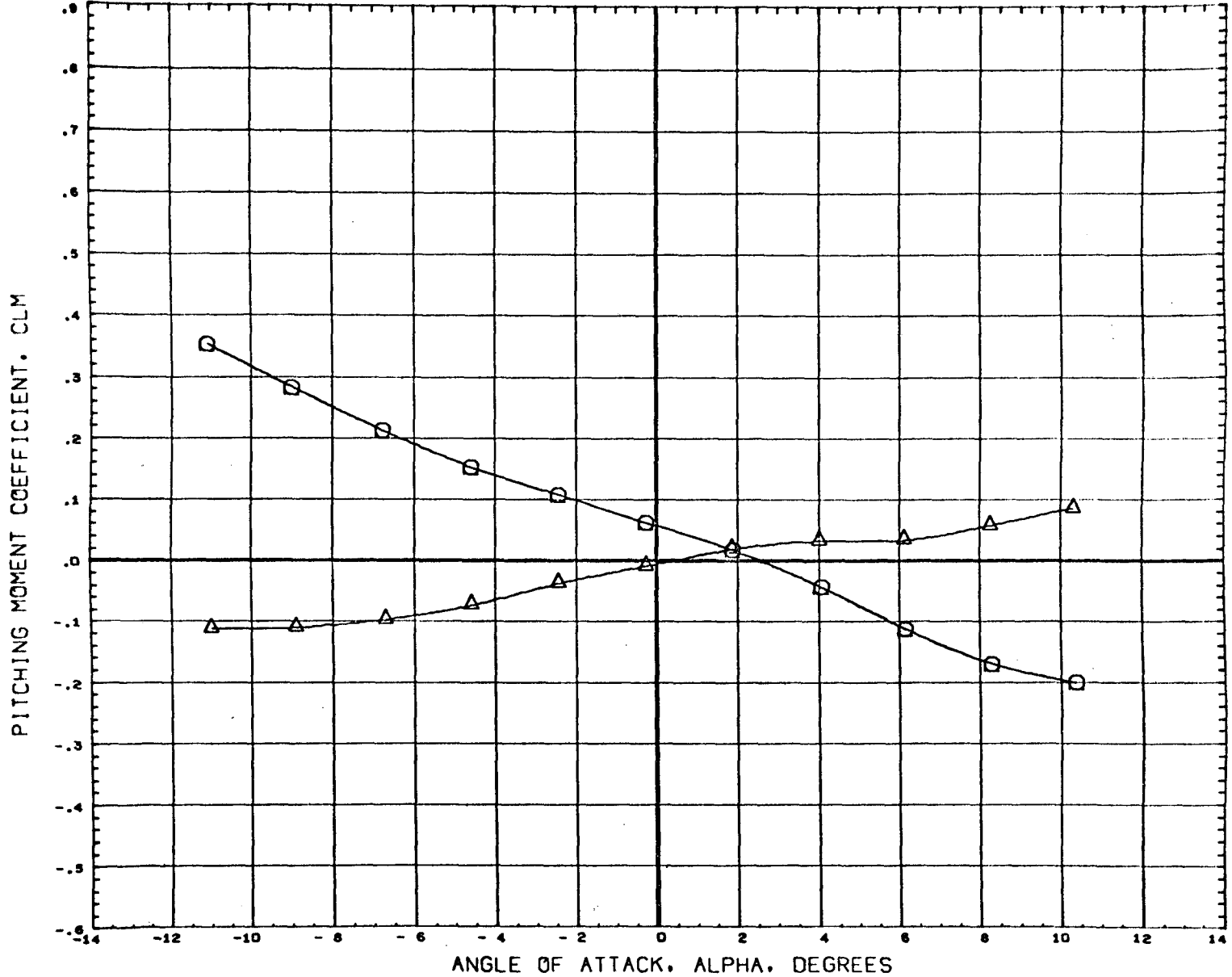
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF	2.0280 IN.
						BREF	4.4600 IN.
						XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

MACH 1.20

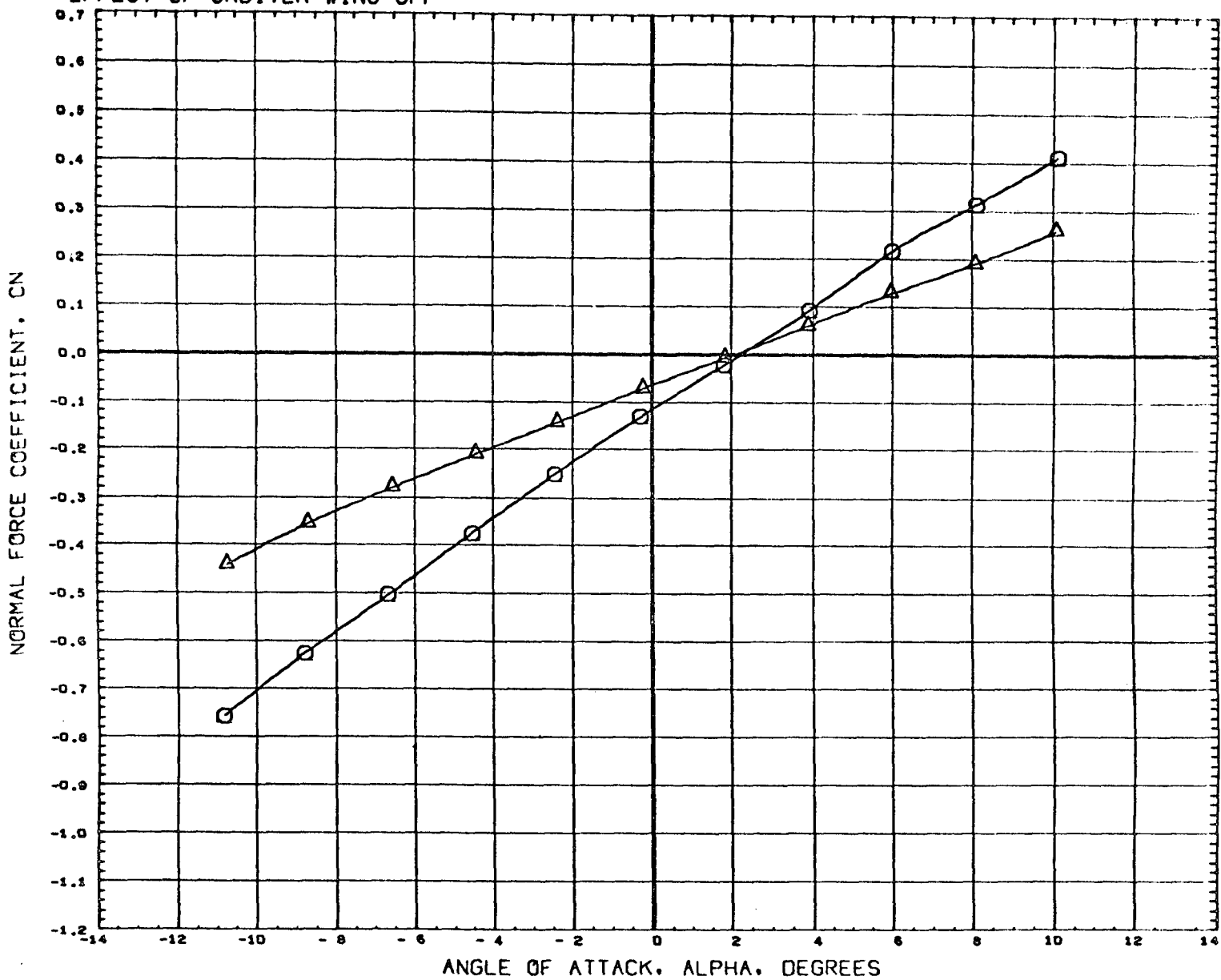
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION		PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T103S1	75.000	0.000	0.000	0.000	LREF	2.0280 IN.
							BREF	4.4600 IN.
							XMRP	3.3600 IN.
							YMRP	0.0000 IN.
							ZMRP	0.2480 IN.
							SCALE	0.0040 SCALE

MACH 1.30

# EFFECT OF ORBITER WING OFF

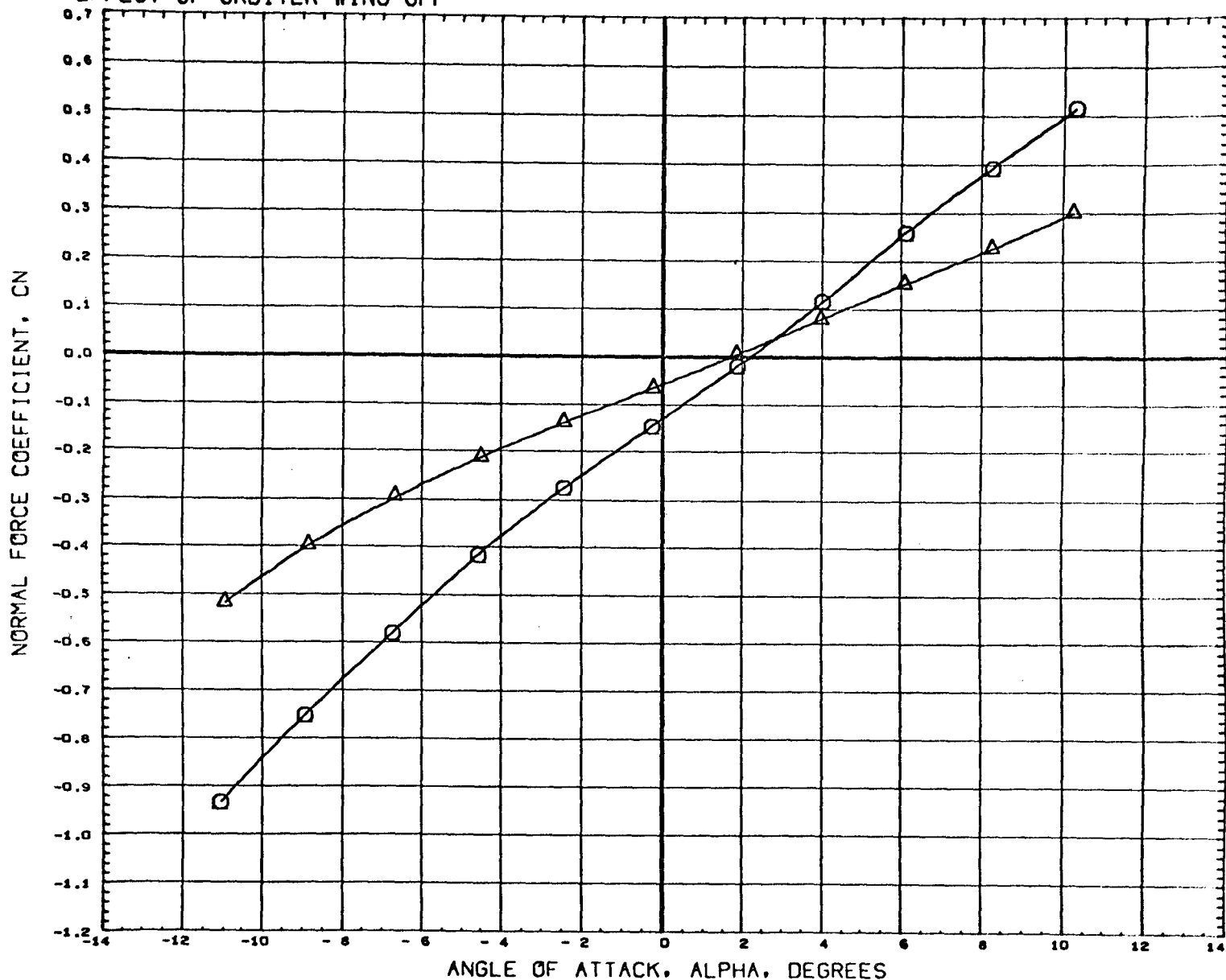


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3800 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90



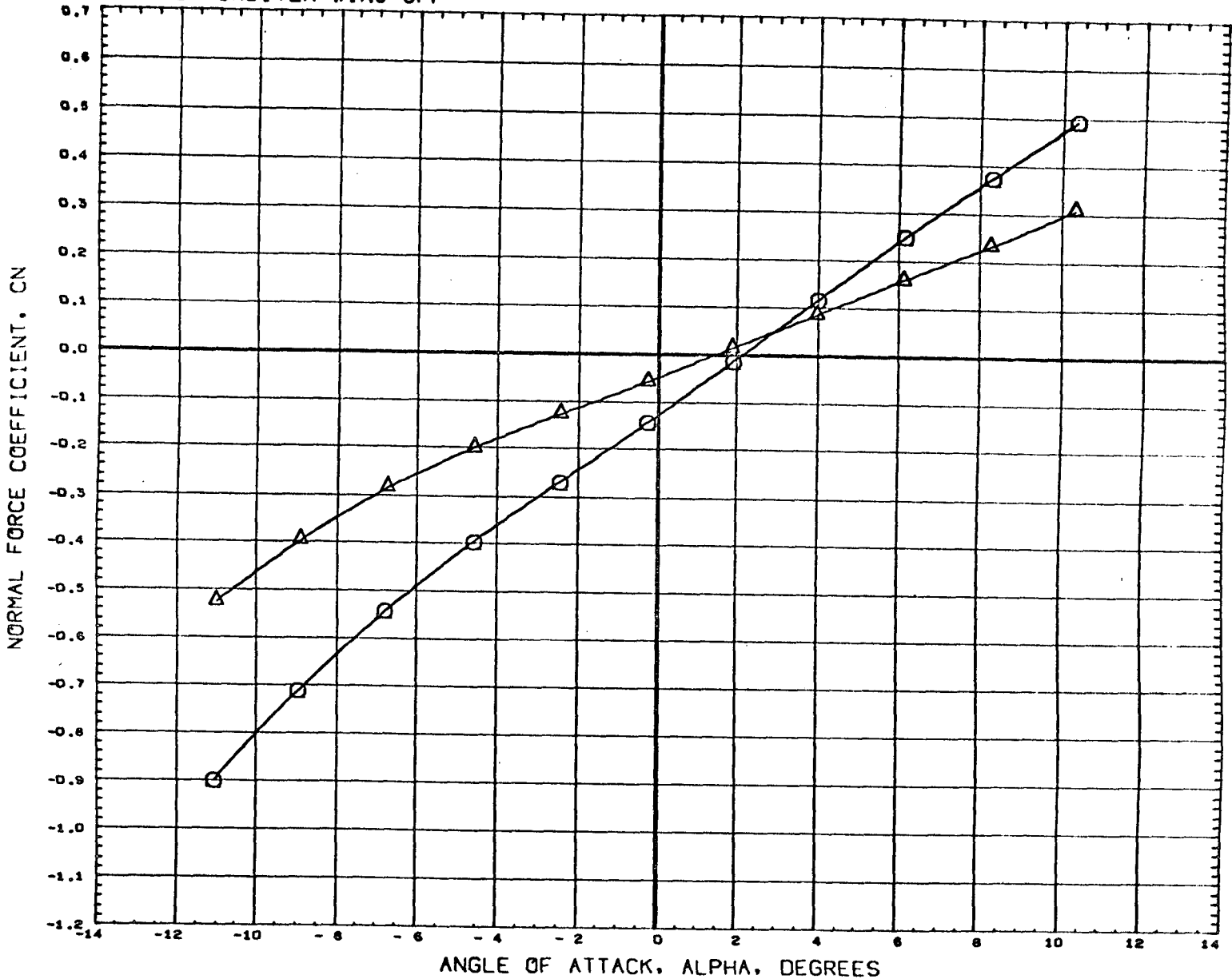
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8900 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

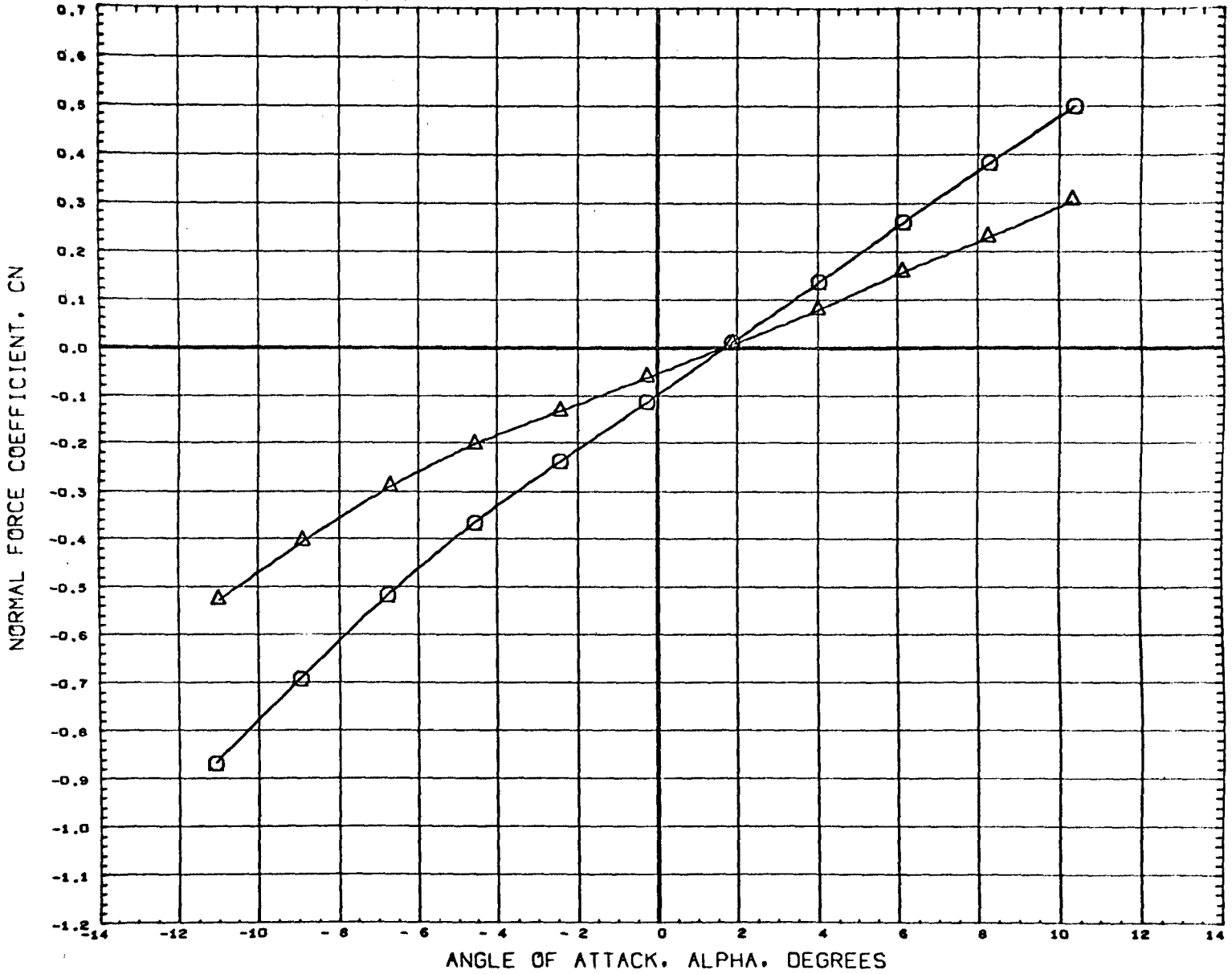
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

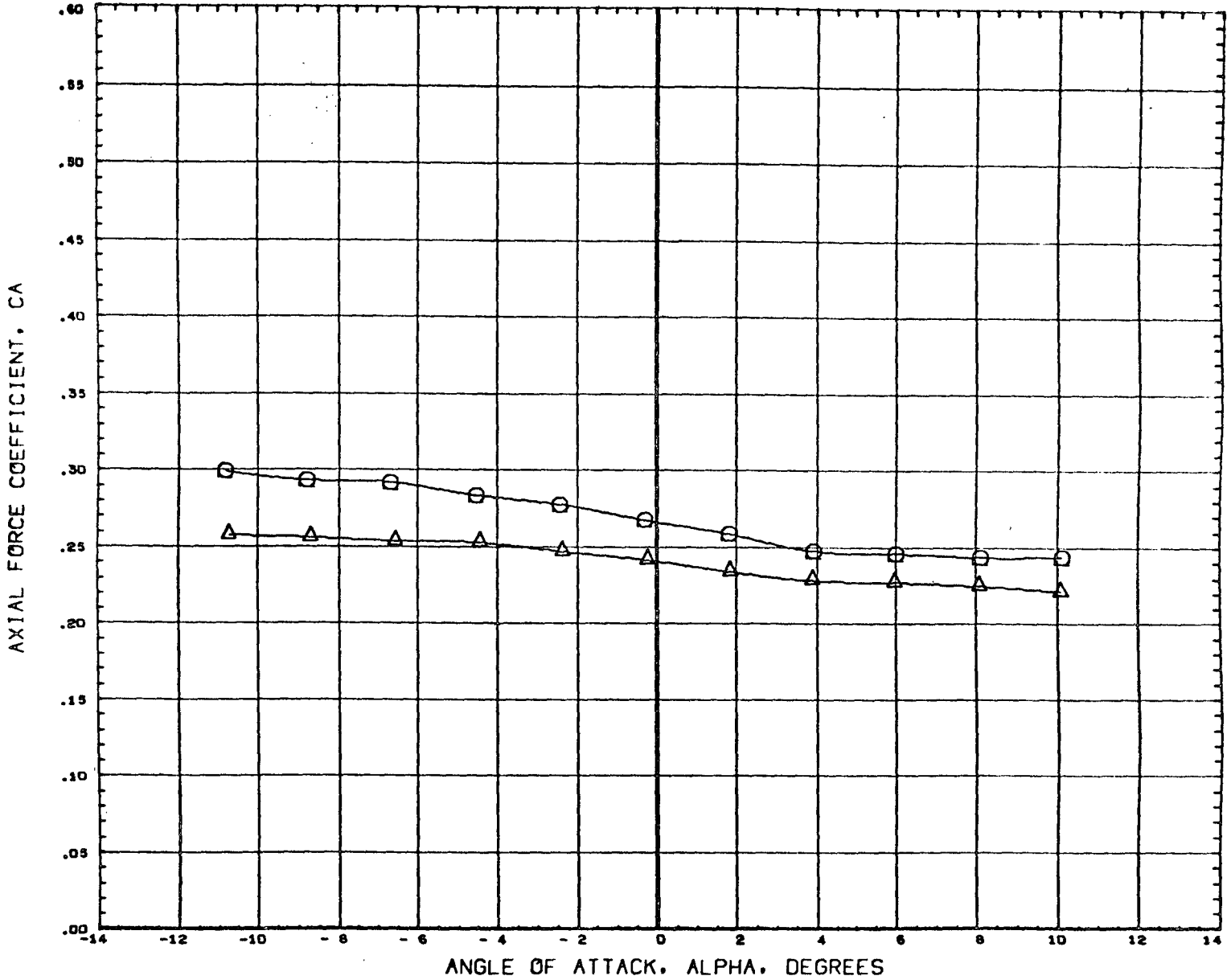
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

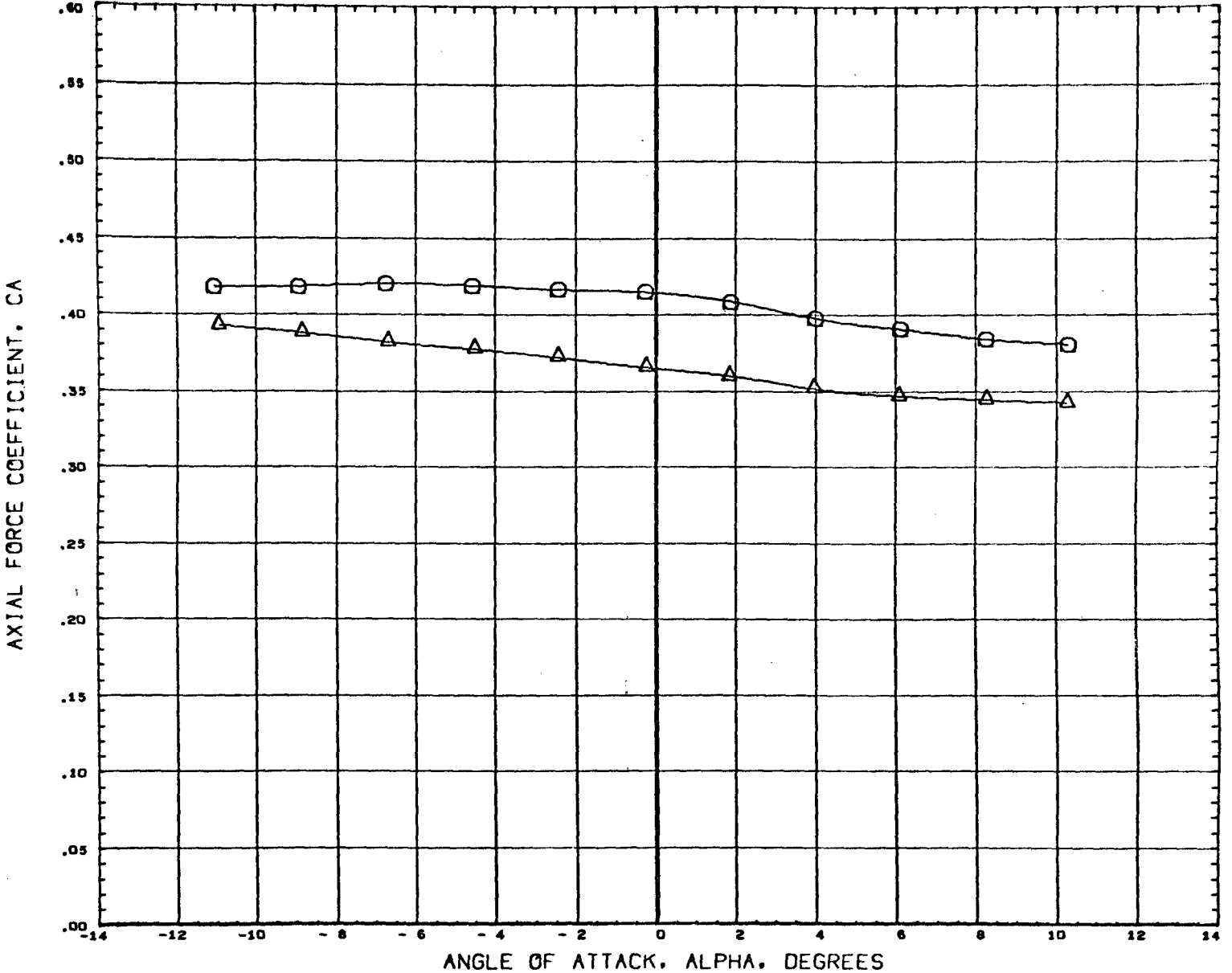
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

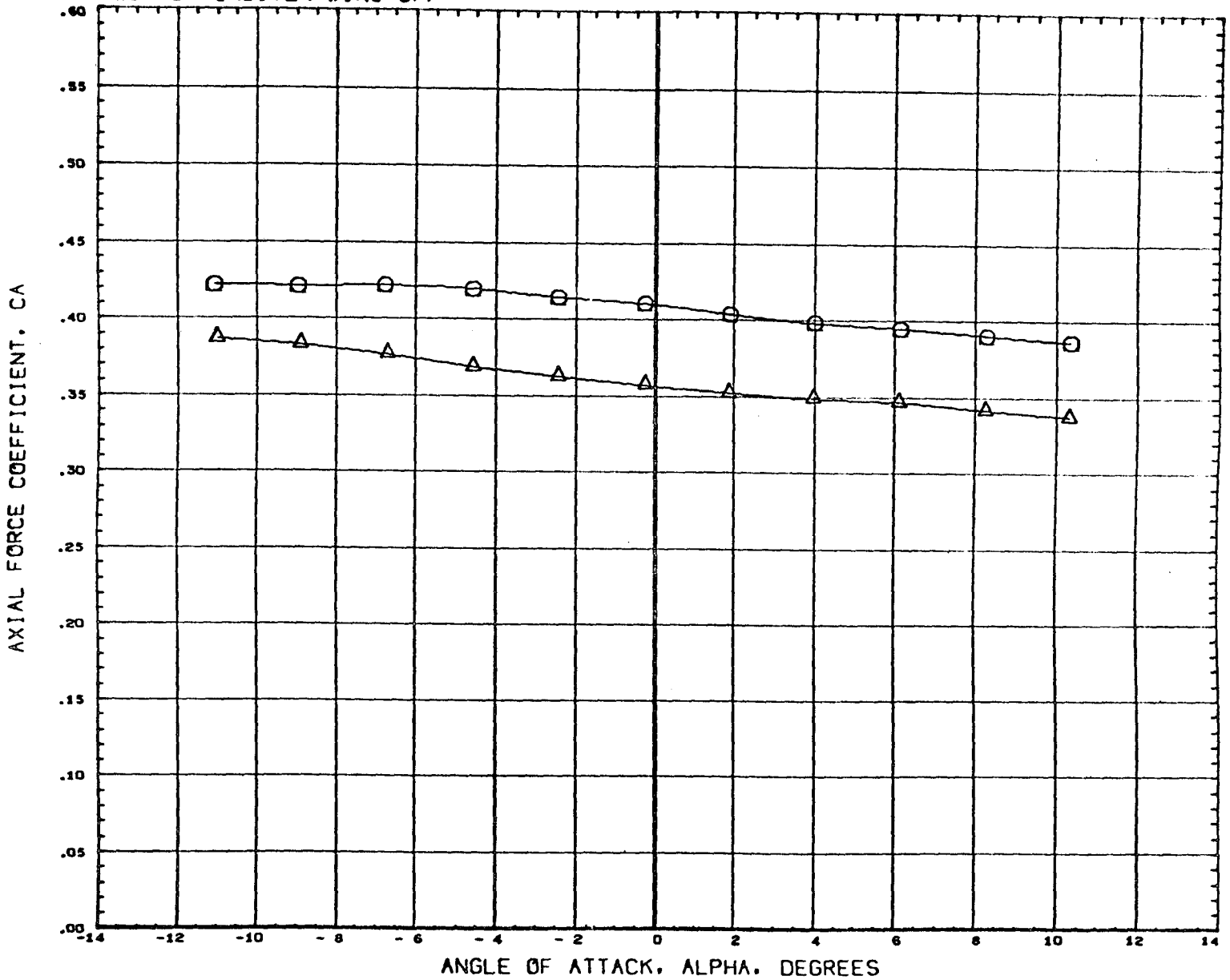
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
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						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

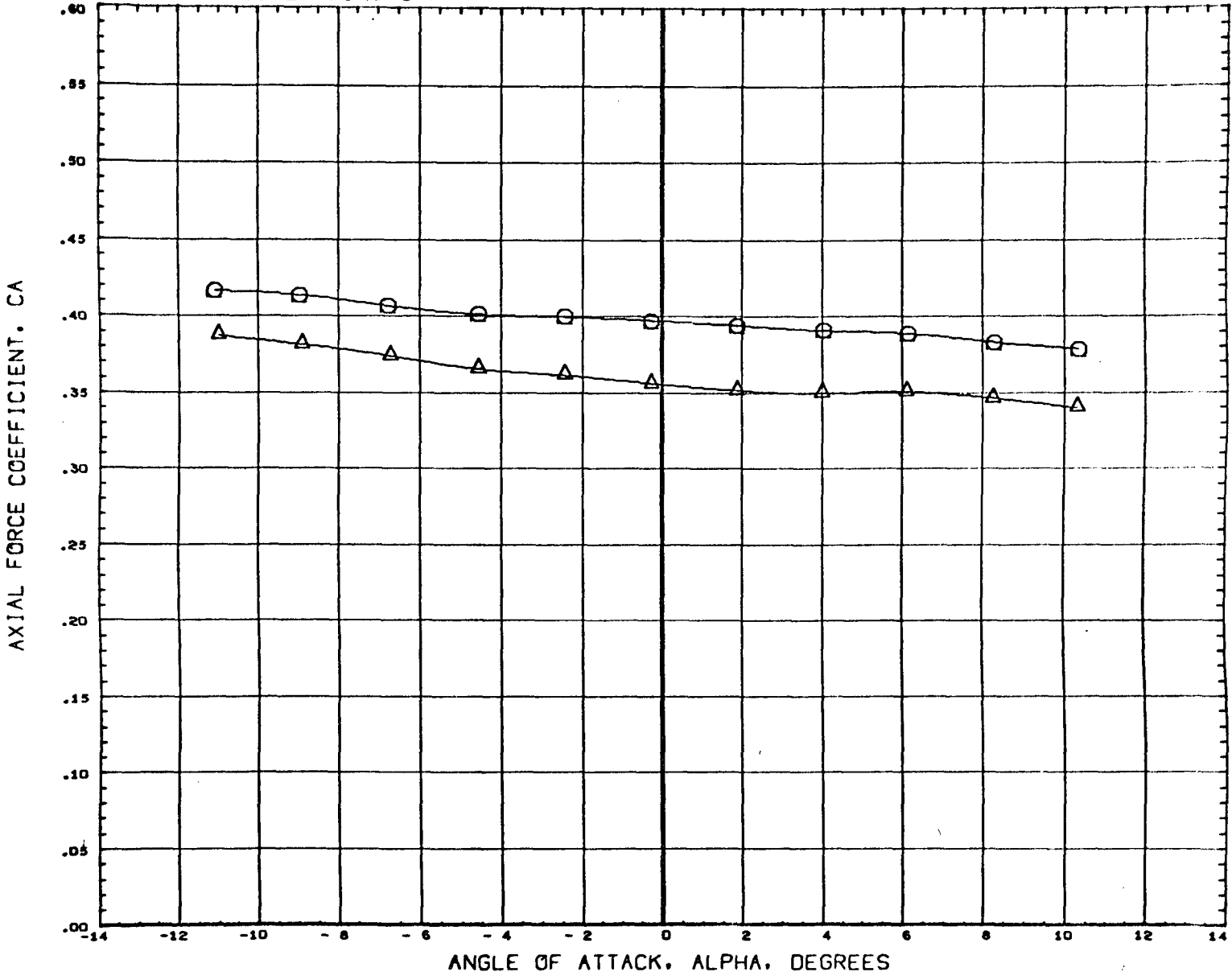
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

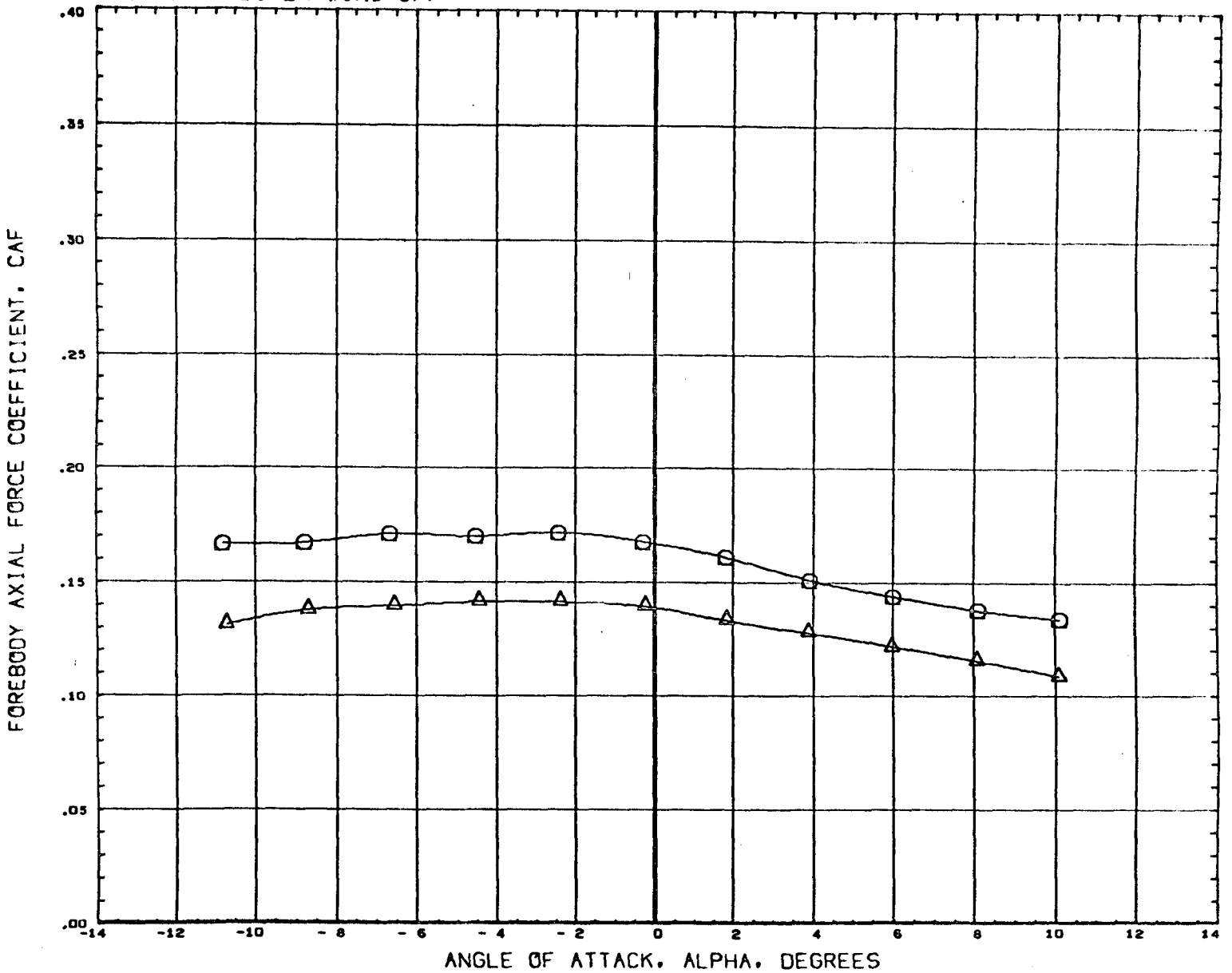
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

# EFFECT OF ORBITER WING OFF



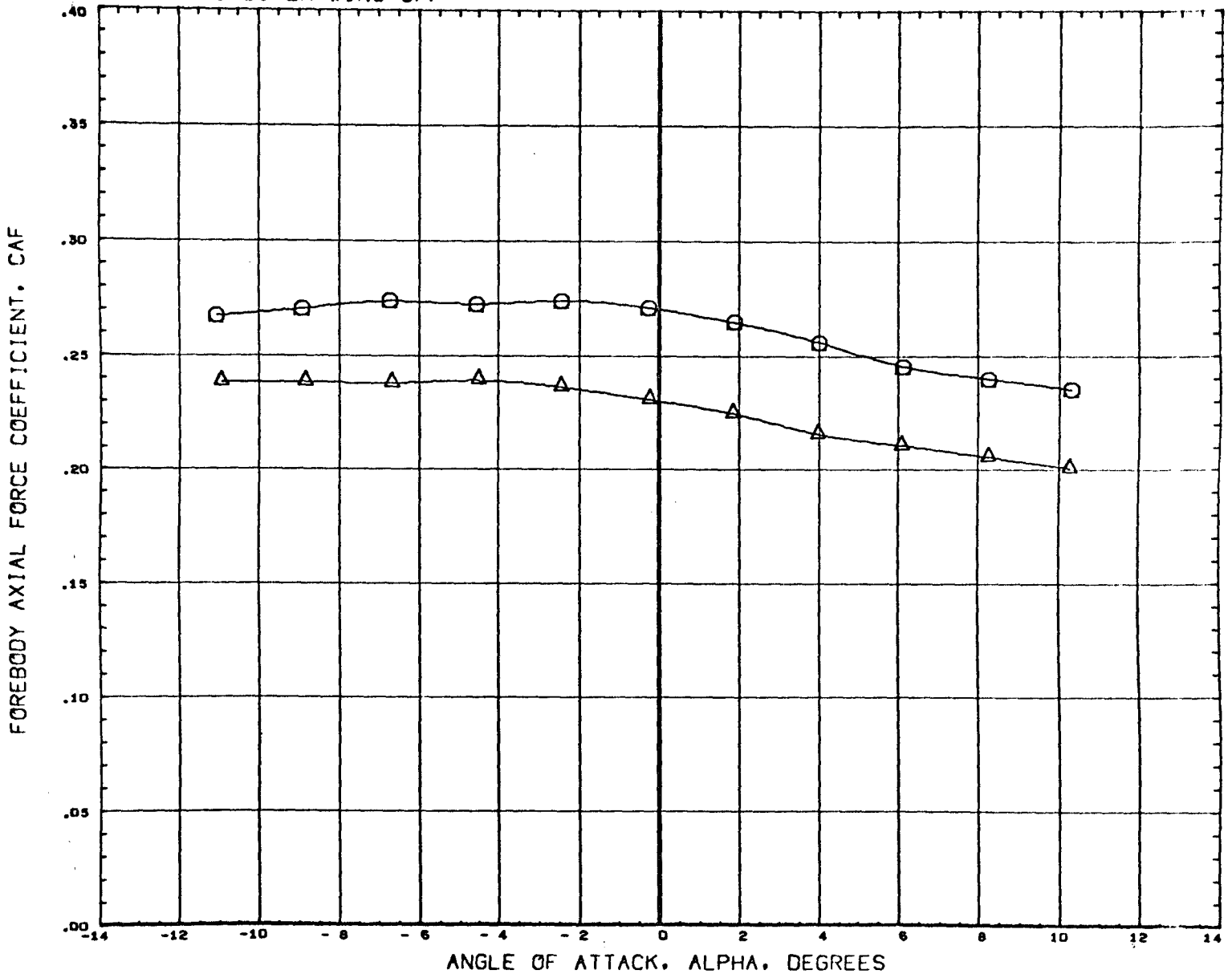
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
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(B71060)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
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MACH .90

*NR*



# EFFECT OF ORBITER WING OFF

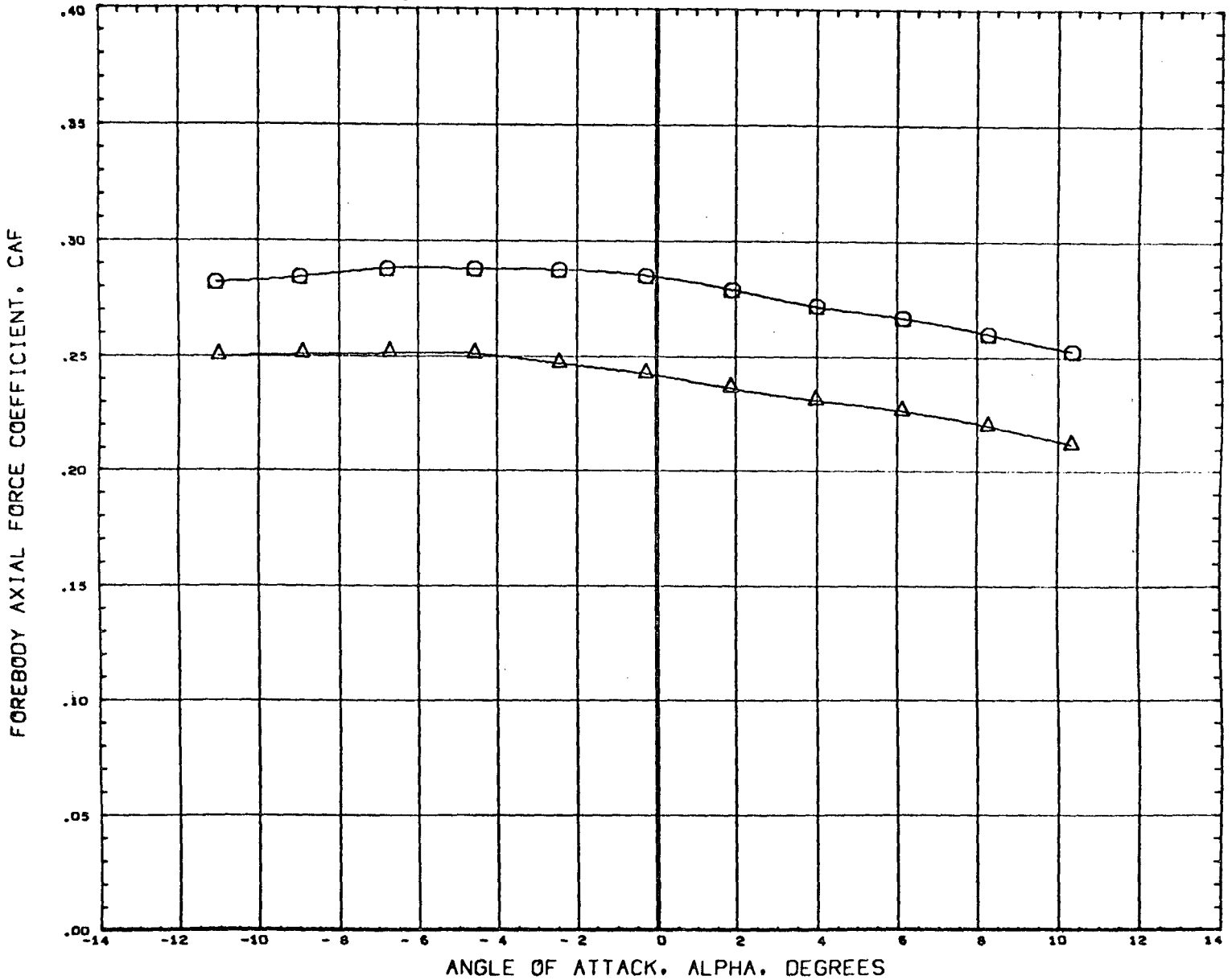


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8600 SQ. IN.
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
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MACH 1.10

4

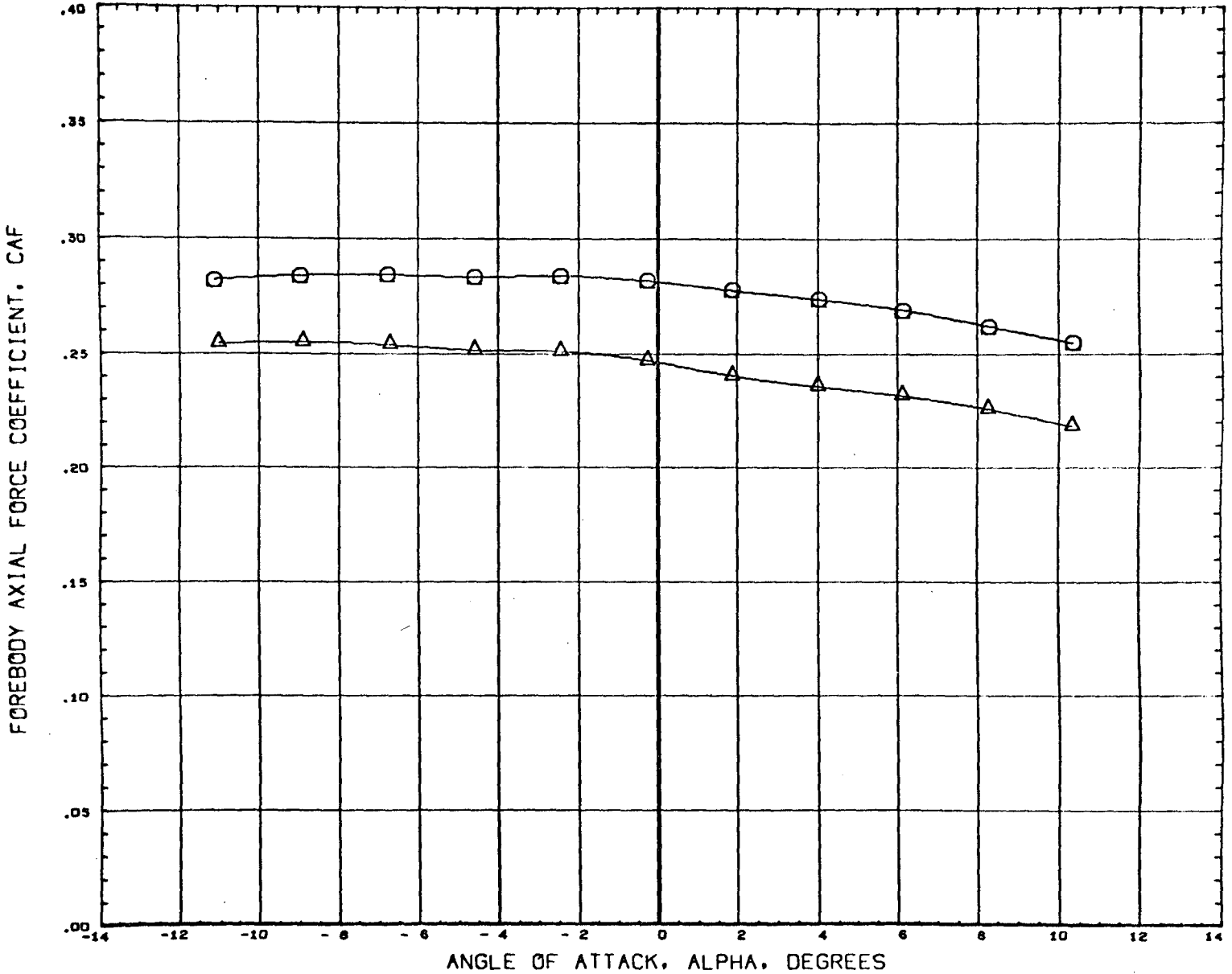
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

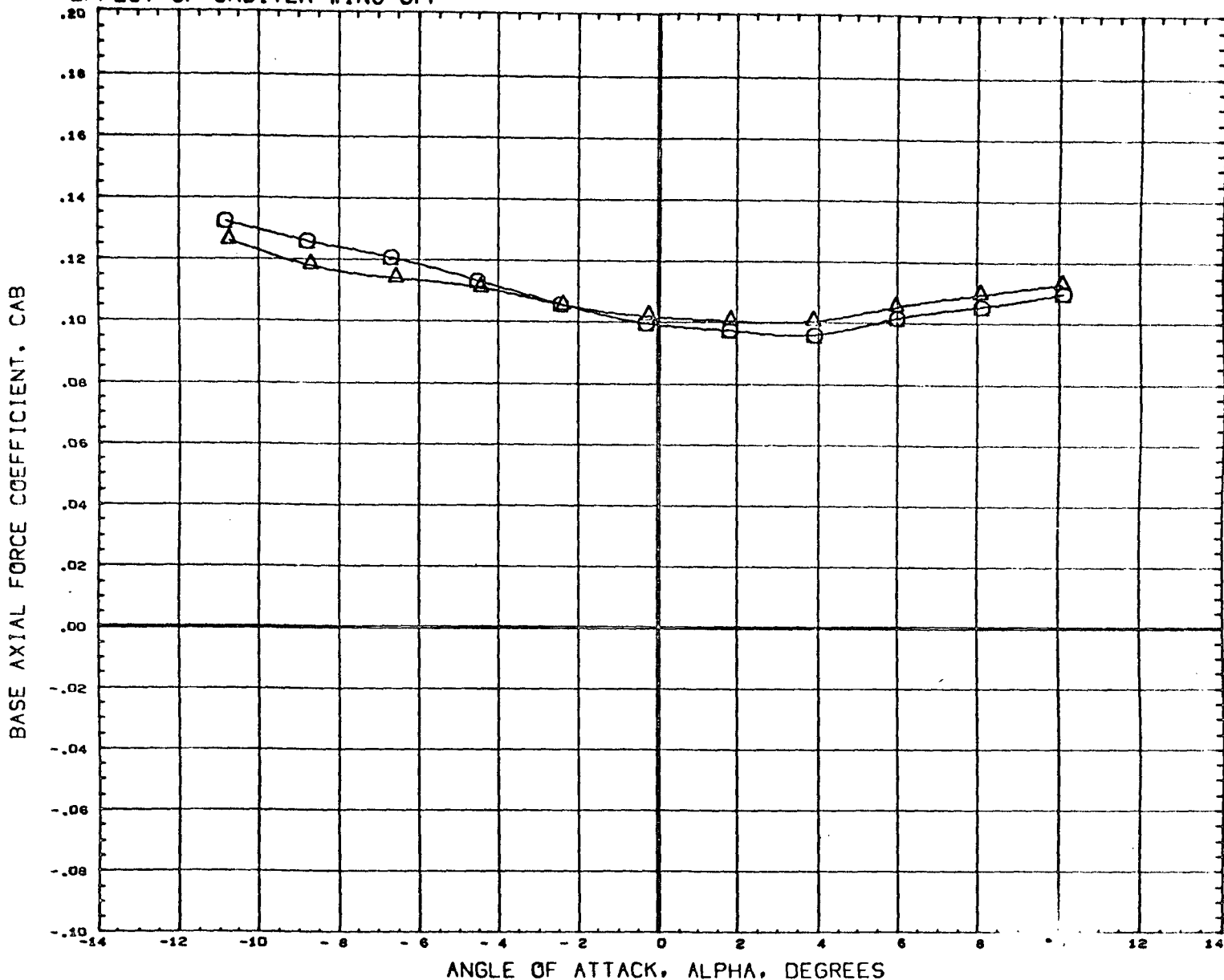
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
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						SCALE 0.0040 SCALE

MACH 1.30

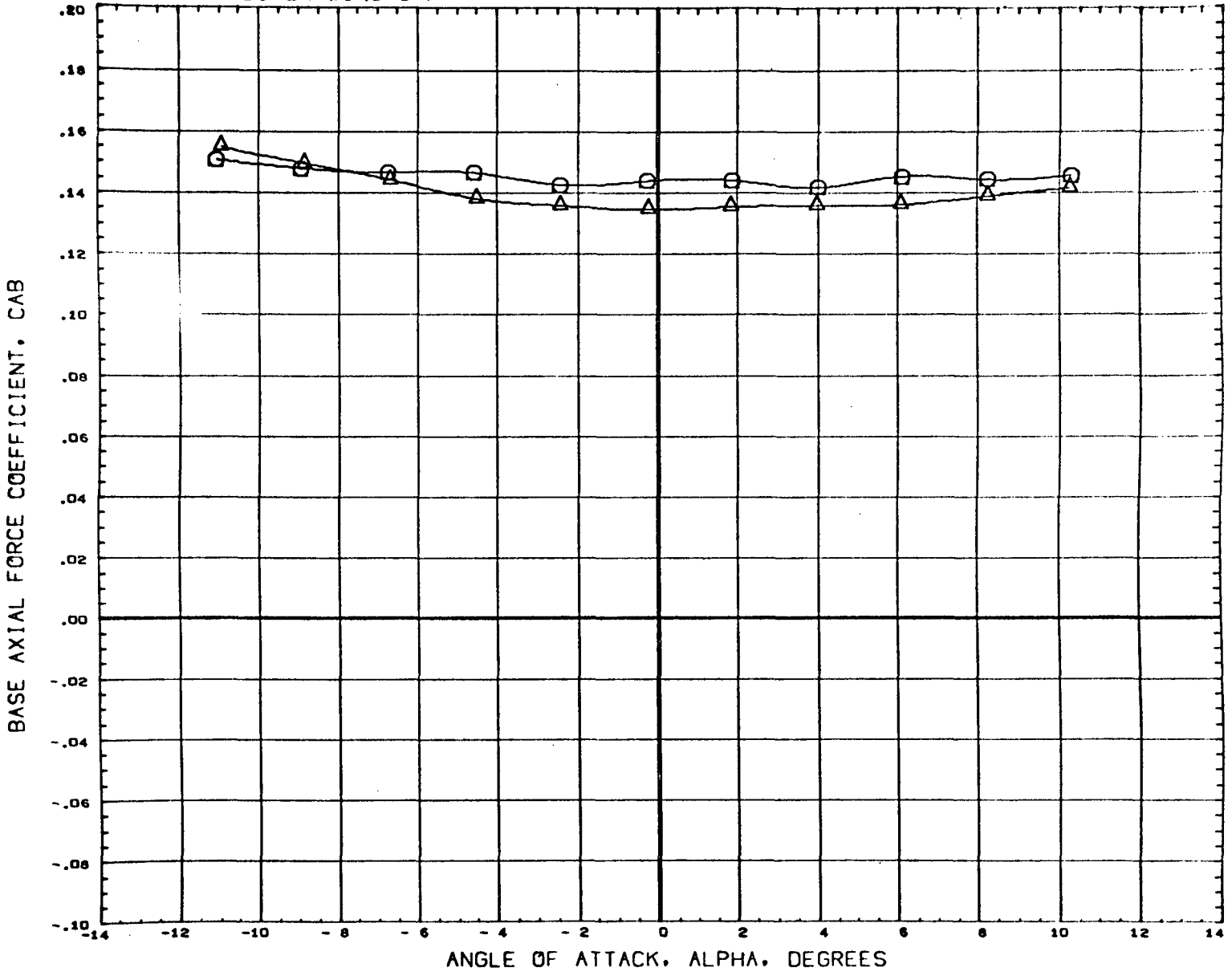
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .90

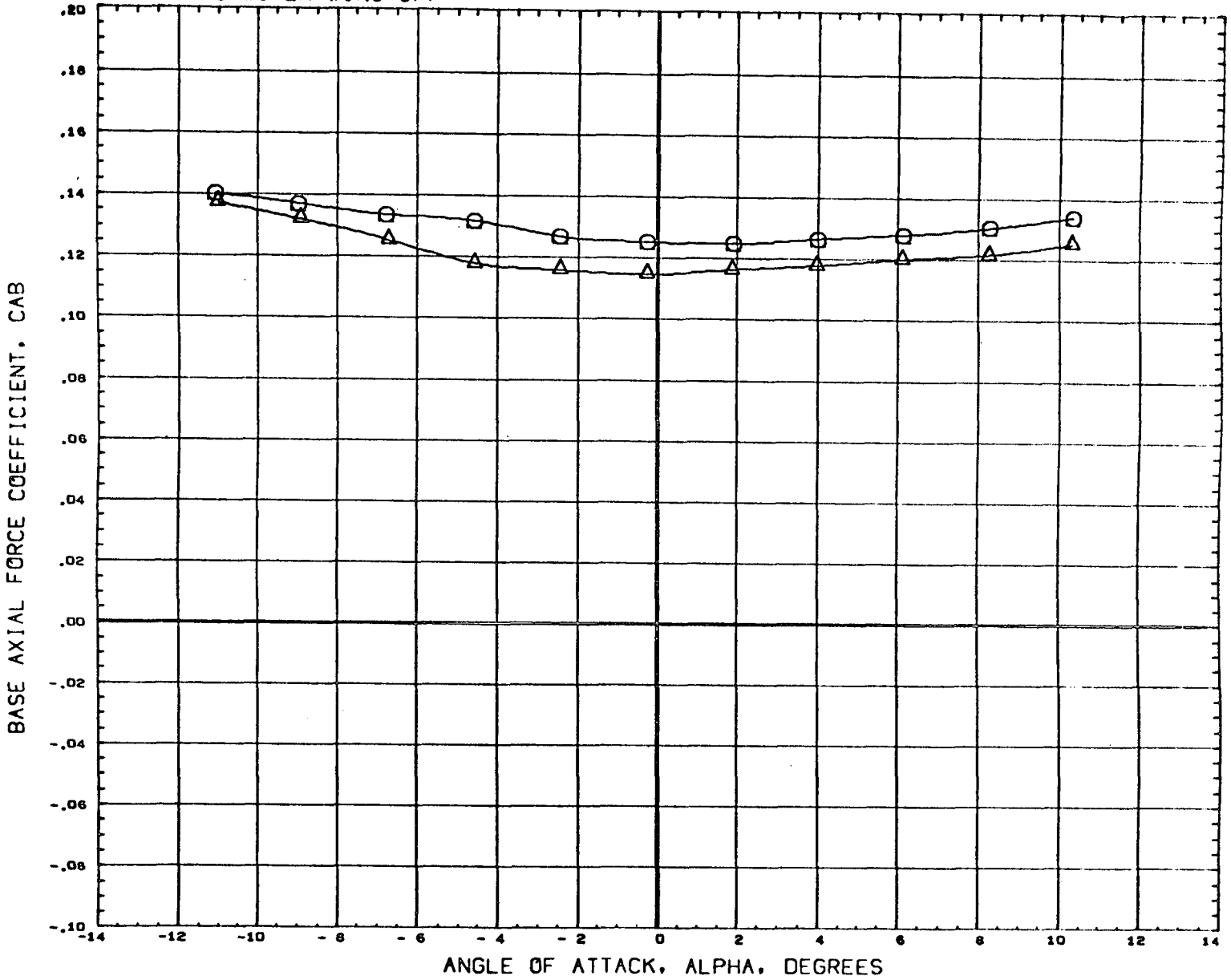
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

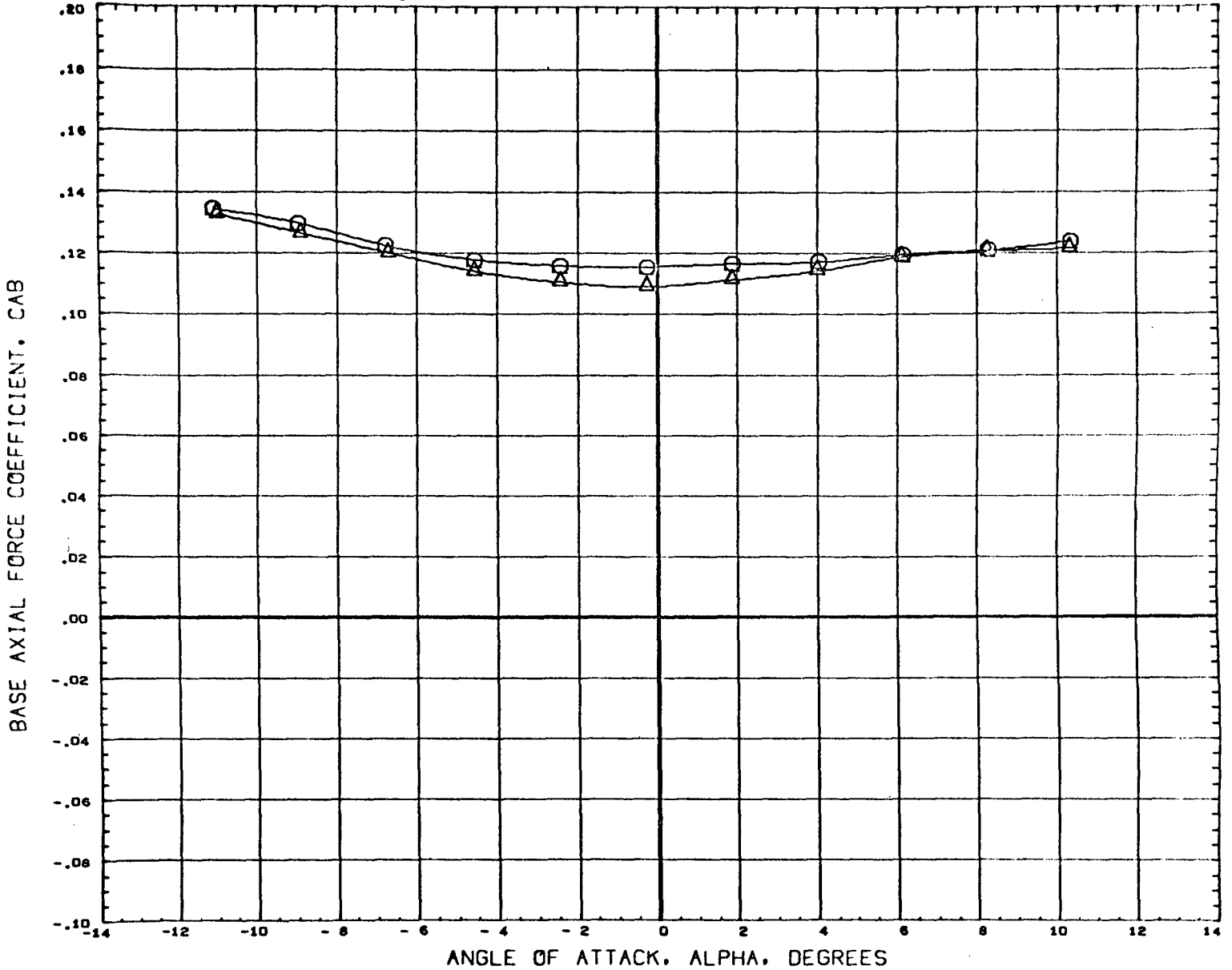
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	0,000	0,000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75,000	0,000	0,000	0,000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0,0040 SCALE

MACH 1.20

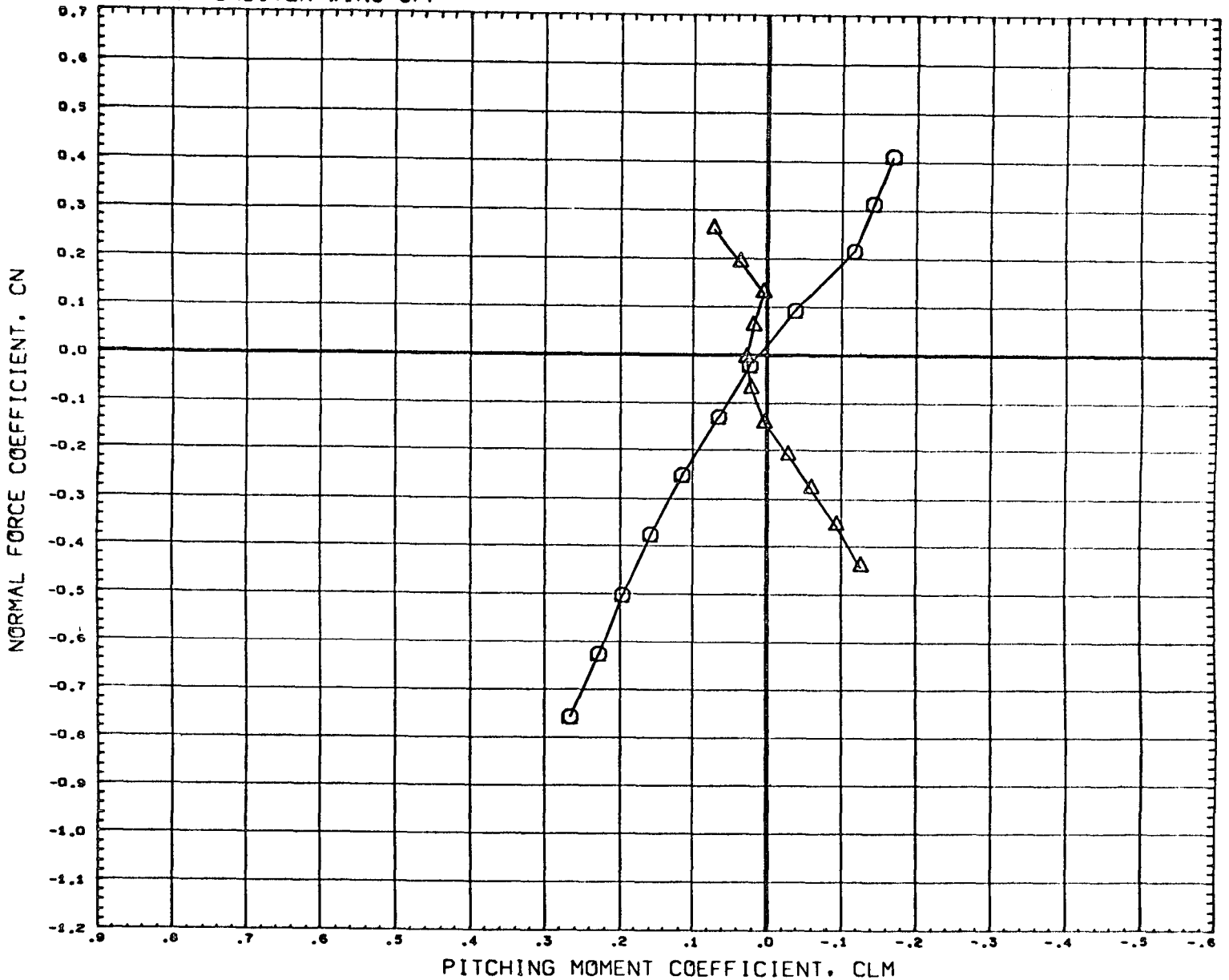
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75,000	0,000	0,000	0,000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75,000	0,000	0,000	0,000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

# EFFECT OF ORBITER WING OFF

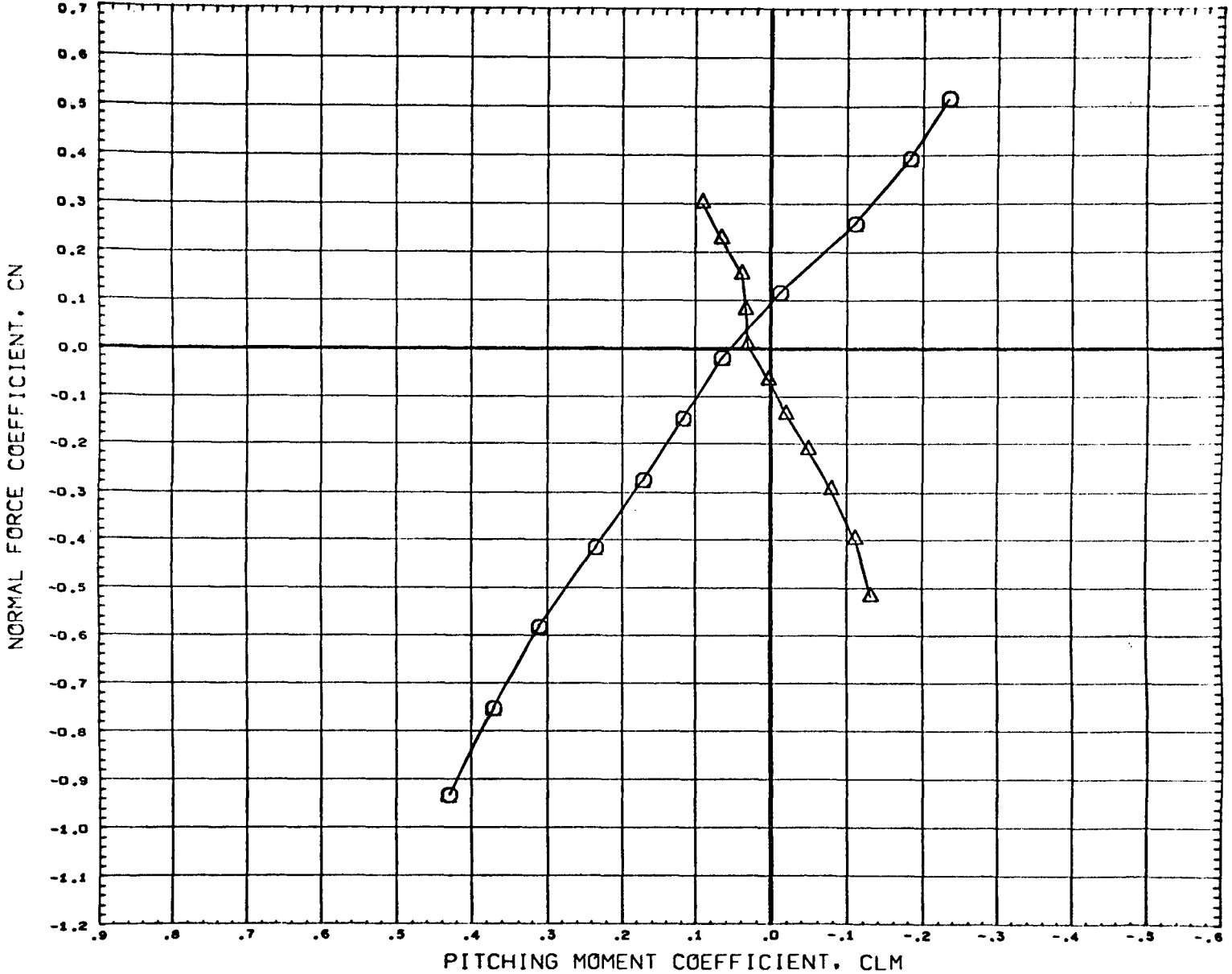


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(E71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
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						SCALE 0.0040 SCALE

MACH .90



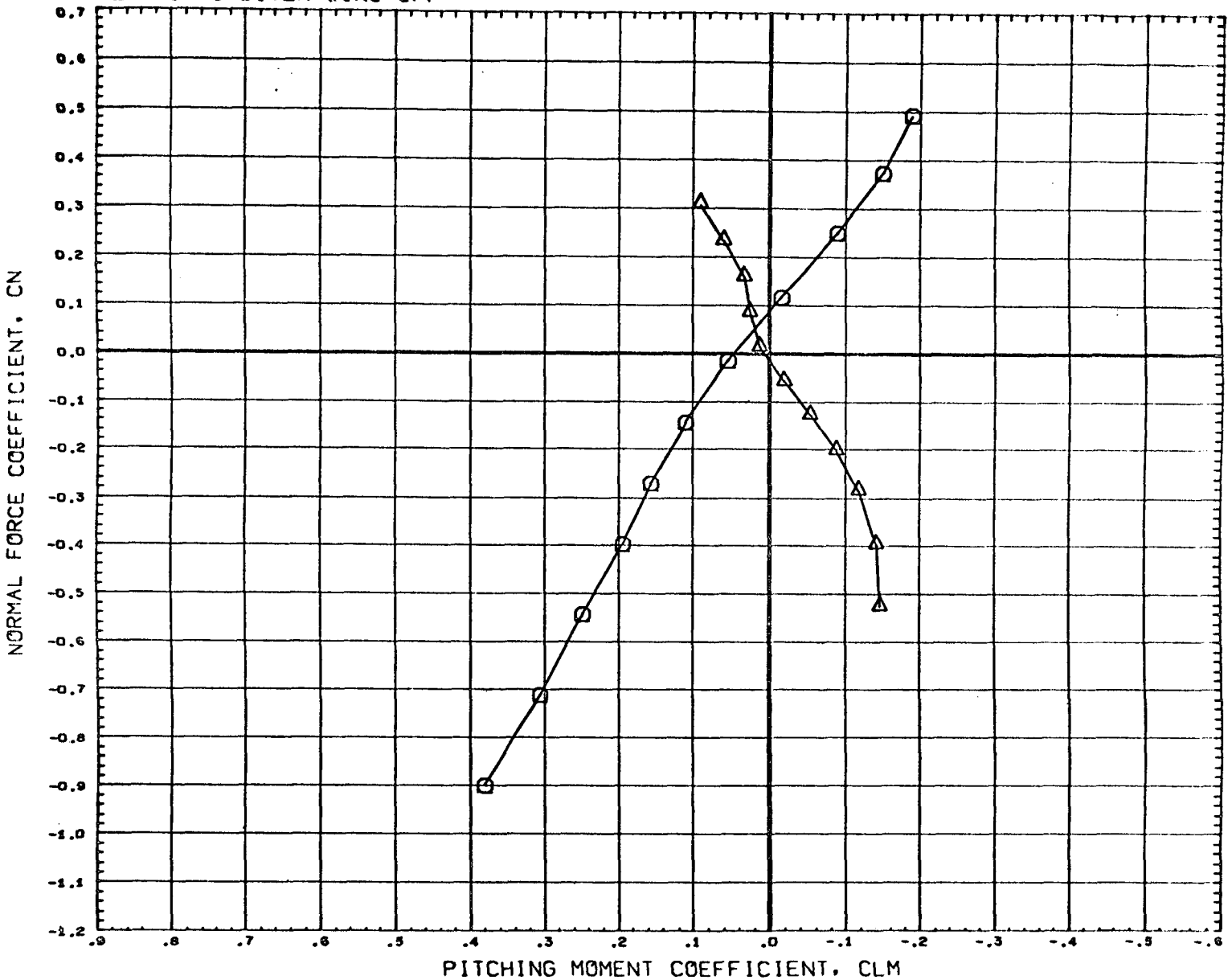
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71068)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.10

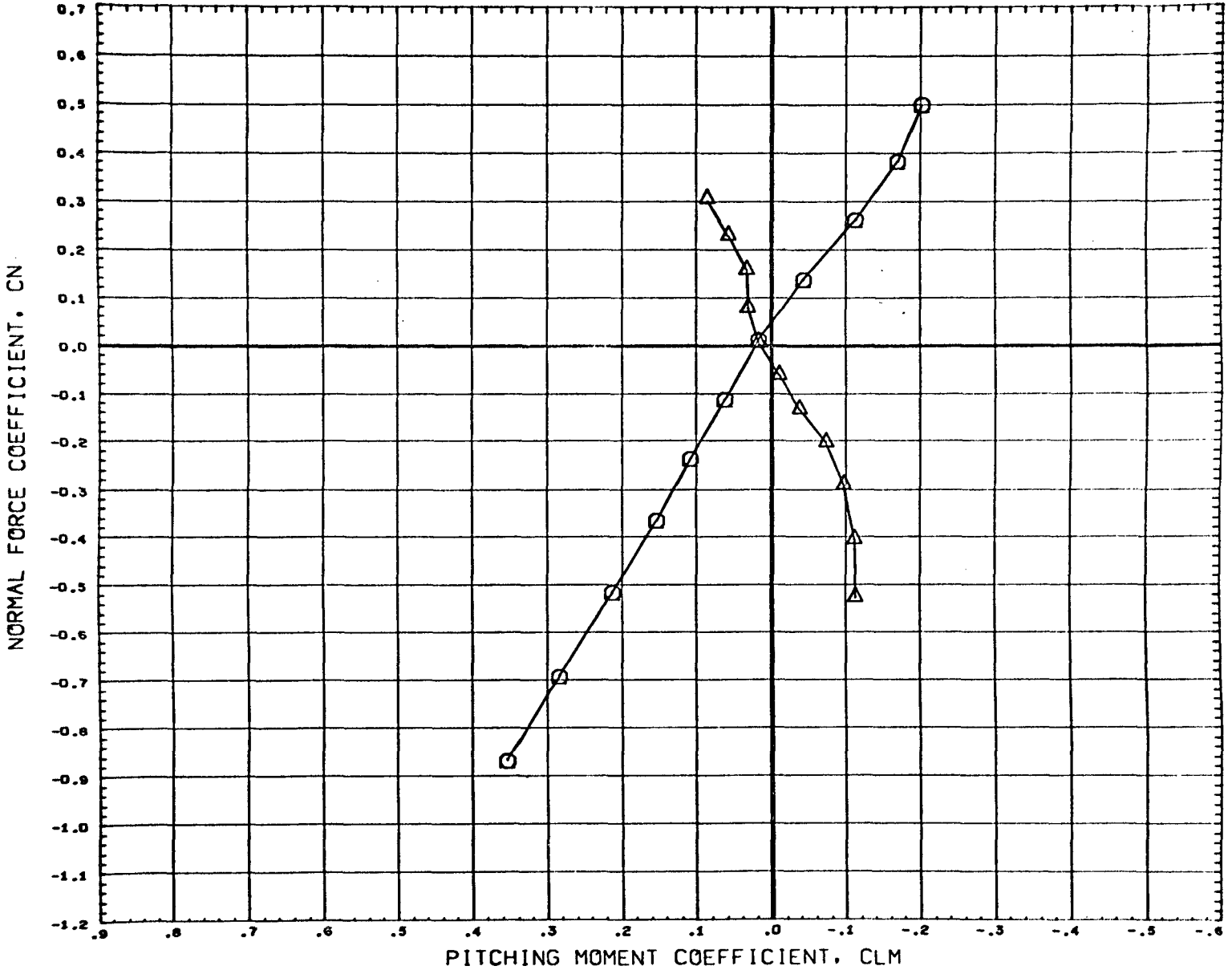
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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.6800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

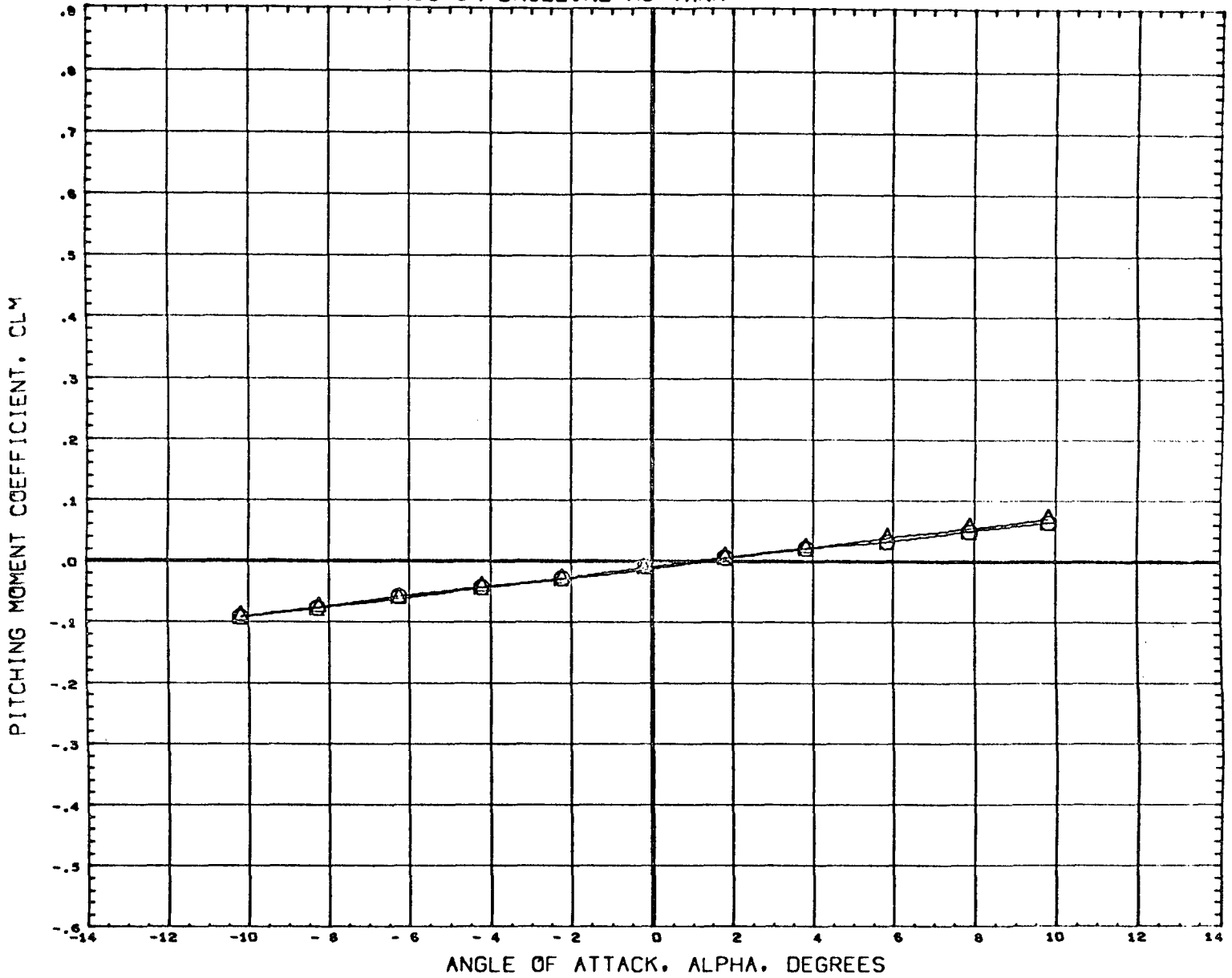
# EFFECT OF ORBITER WING OFF



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(H71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71066)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T103S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRF 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.30

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1				
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T7				

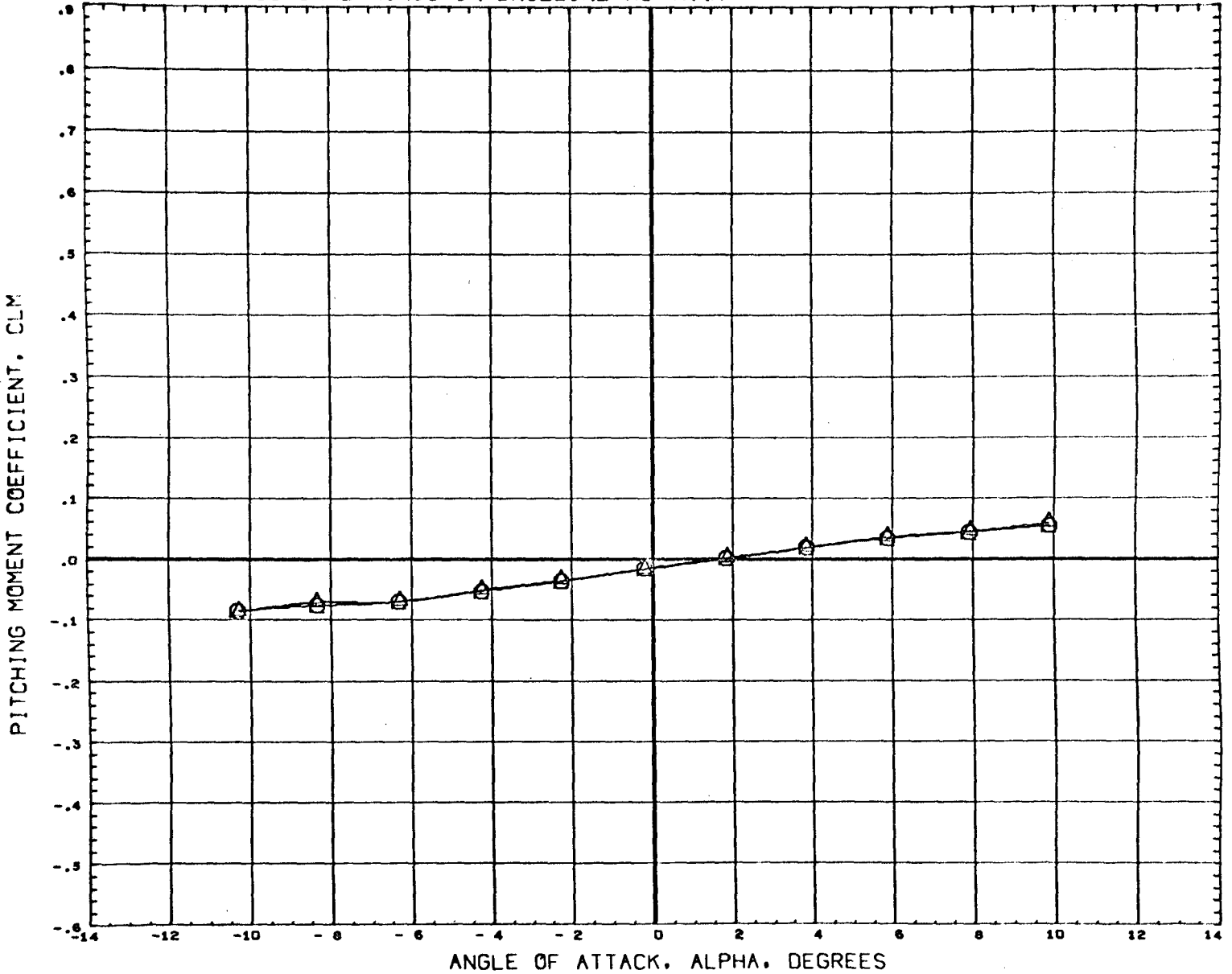
REFERENCE INFORMATION		
SREF	7.8800	SQ. IN
LREF	2.0280	IN.
BREF	4.4600	IN.
XMRP	3.3600	IN.
YMRP	0.0000	IN.
ZMRP	0.2480	IN.
SCALE	0.0040	SCALE

MACH .60

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*C-19*

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



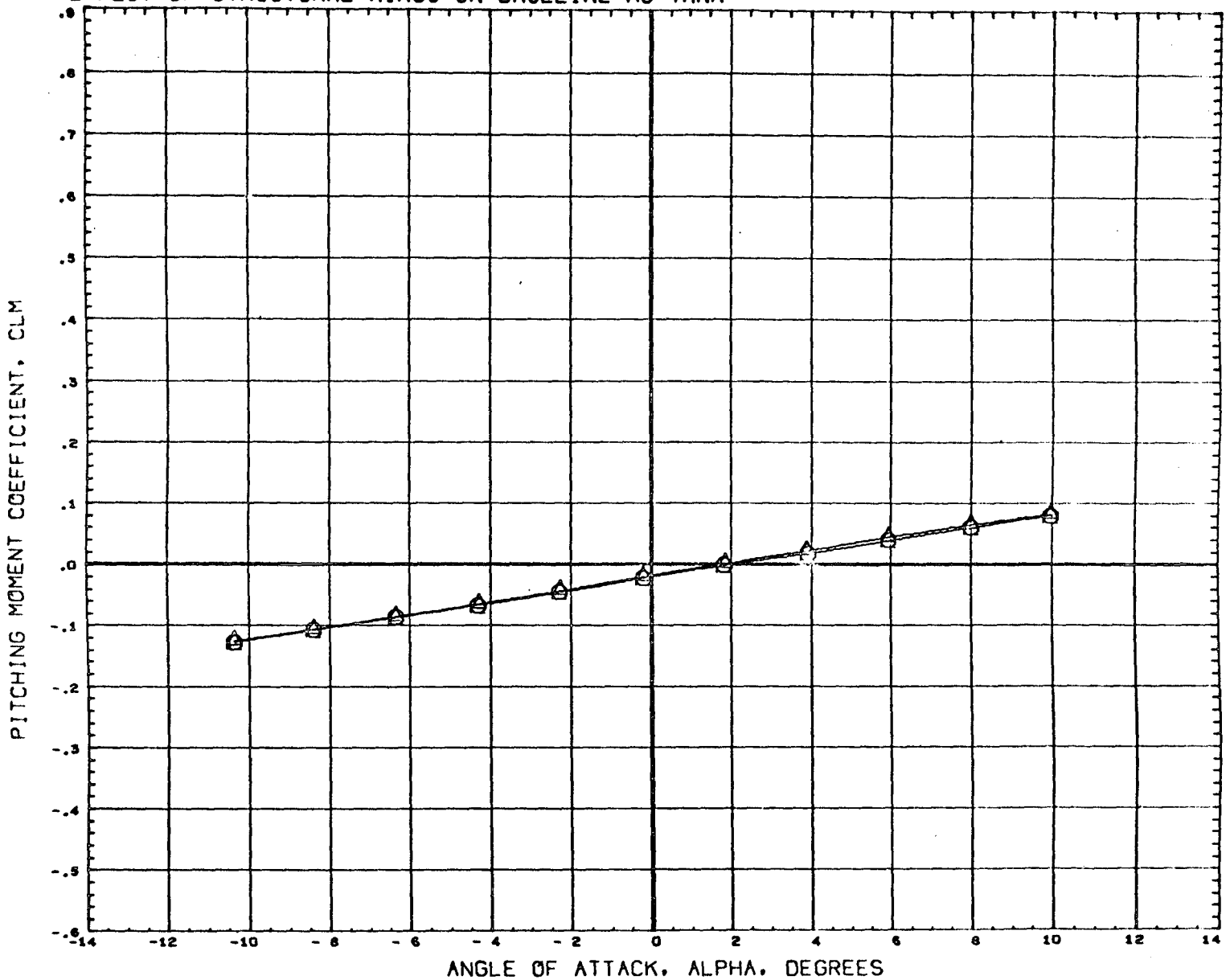
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1			
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7			

REFERENCE INFORMATION		
SREF	7.8800	SQ. IN.
LREF	2.0280	IN.
BREF	4.4600	IN.
XMRP	3.3600	IN.
YMRP	0.0000	IN.
ZMRP	0.2480	IN.
SCALE	0.0040	SCALE

MACH .91

C19

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORBINC    PHIS    XS    ELEVTR

(C71080)       MSFC TWT 544 LAUNCH VEHICLE STUDIES    T1

(E71069)       MSFC TWT 544 LAUNCH VEHICLE STUDIES    T7

REFERENCE INFORMATION

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BREF    4.4600    IN.

XMRP    3.3600    IN.

YMRP    0.0000    IN.

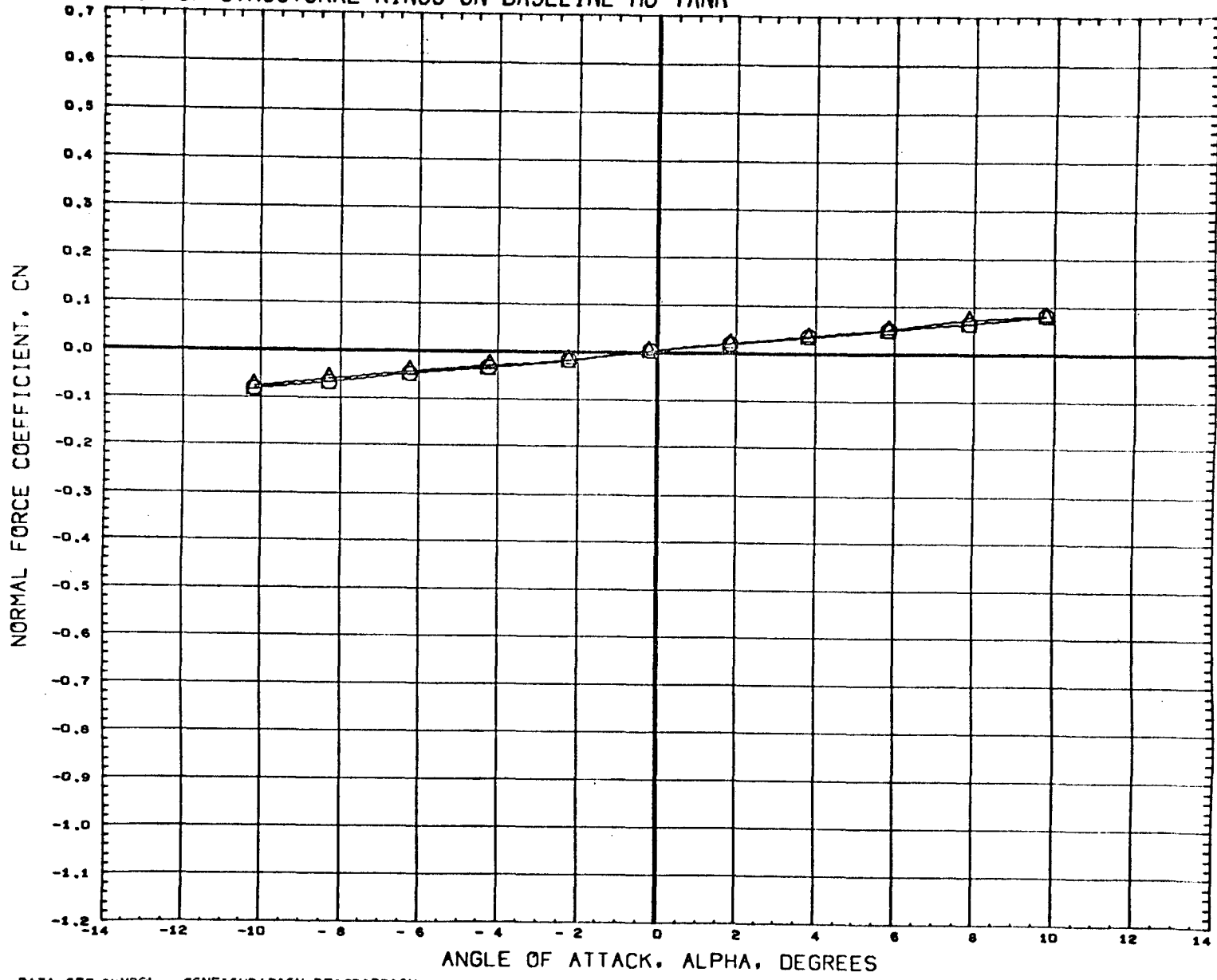
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SCALE    0.0040    SCALE

MACH    1.20

PAGE 1018

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



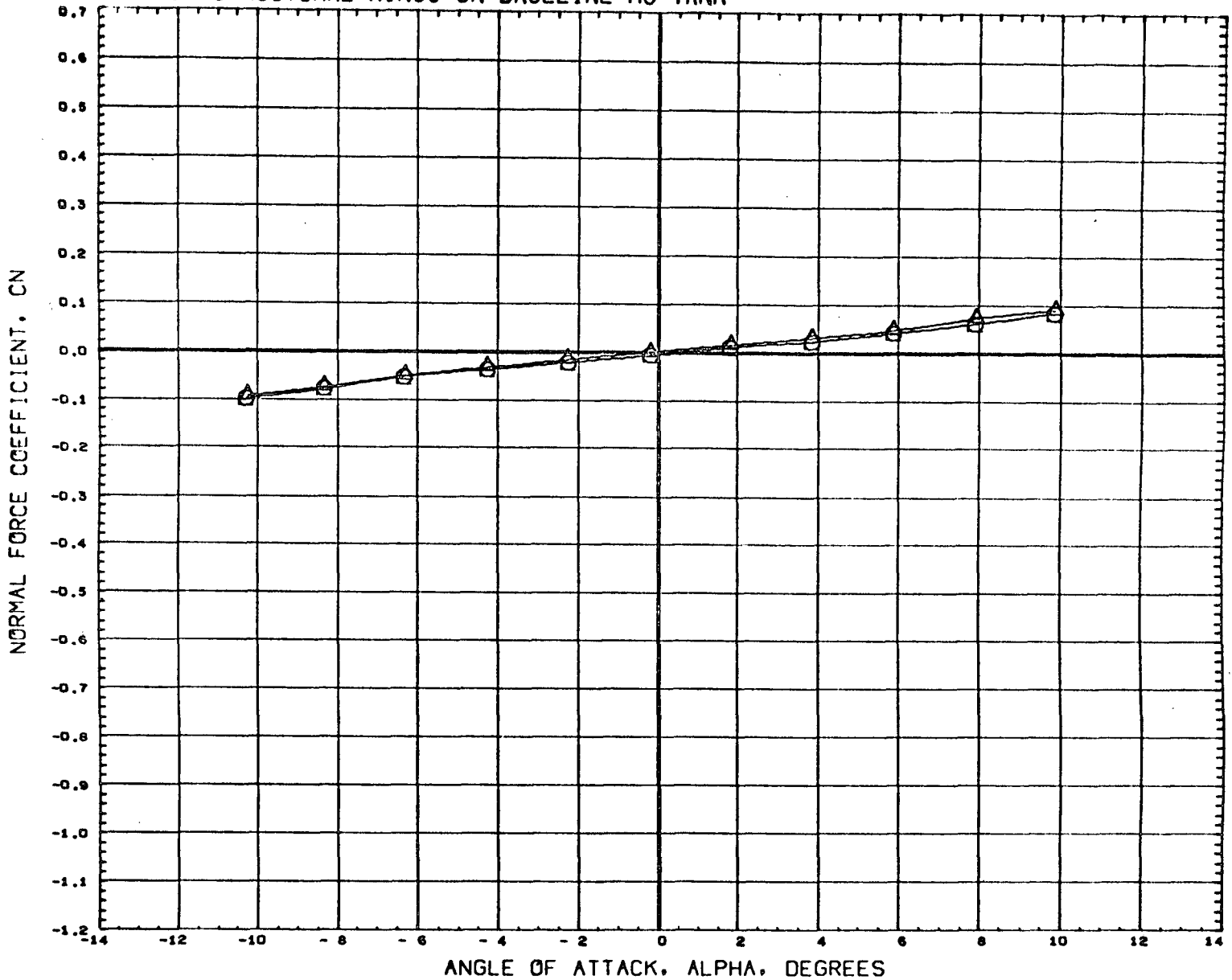
DATA SET SYMBOL    CONFIGURATION DESCRIPTION  
 (C71080)     $\square$     MSFC TWT 544 LAUNCH VEHICLE STUDIES    T1  
 (B71069)     $\triangle$     MSFC TWT 544 LAUNCH VEHICLE STUDIES    T7

ORBINC    PHIS    XS    ELEVTR

REFERENCE INFORMATION  
 SREF    7.8600    SQ. IN  
 LREF    2.0280    IN.  
 BREF    4.4600    IN.  
 XMRP    3.3600    IN.  
 YMRP    0.0000    IN.  
 ZMRP    0.2480    IN.  
 SCALE    0.0040    SCALE

MACH    .60

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK

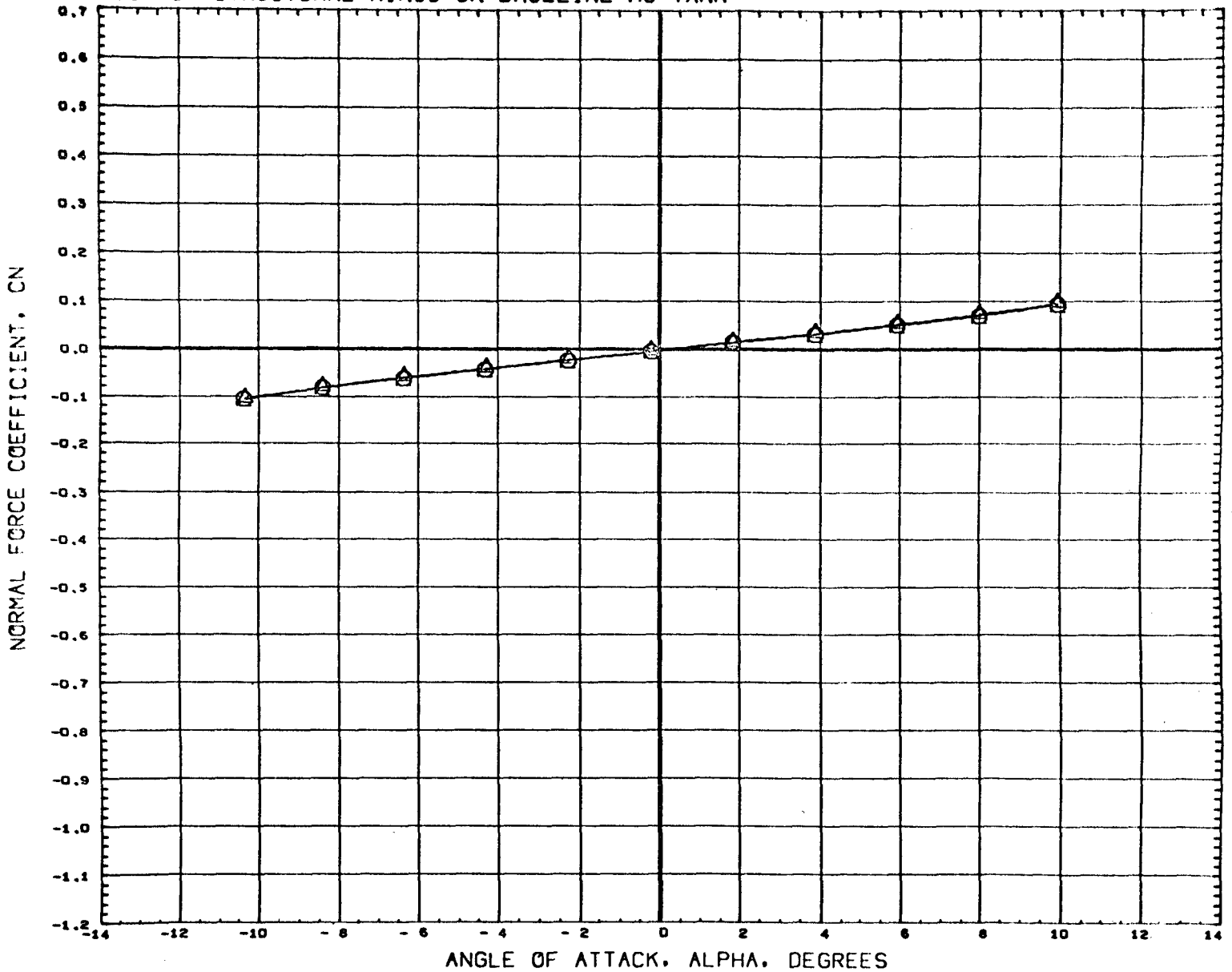


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1				SREF 7.8800 SQ. IN
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7				LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91



# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORBINC    PHIS    XS    ELEVTR

(C71080)     $\square$     MSFC TWT 544 LAUNCH VEHICLE STUDIES    T1

(B71069)     $\triangle$     MSFC TWT 544 LAUNCH VEHICLE STUDIES    T7

REFERENCE INFORMATION

SREF    7.8800    SQ. IN

LREF    2.0280    IN.

BREF    4.4600    IN.

XMRP    3.3600    IN.

YMRP    0.0000    IN.

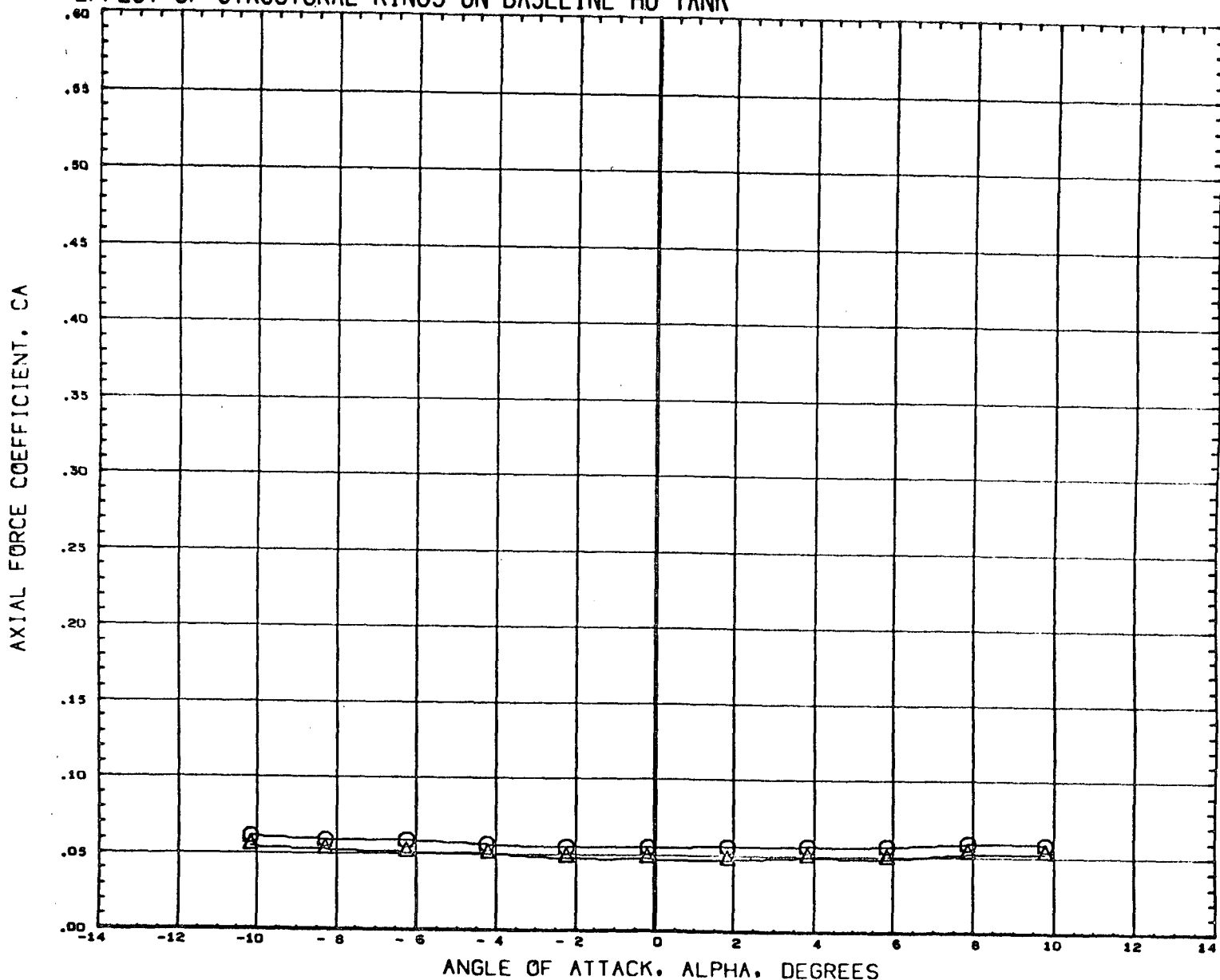
ZMRP    0.2480    IN.

SCALE    0.0040    SCALE

MACH    1.20

PAGE 1021

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORBINC    PHIS    XS    ELEVTR

(C71080)       MSFC TWT 544 LAUNCH VEHICLE STUDIES    T1

(B71069)       MSFC TWT 544 LAUNCH VEHICLE STUDIES    T7

REFERENCE INFORMATION

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LREF    2.0200    IN.

BREF    4.4600    IN.

XMRP    3.3600    IN.

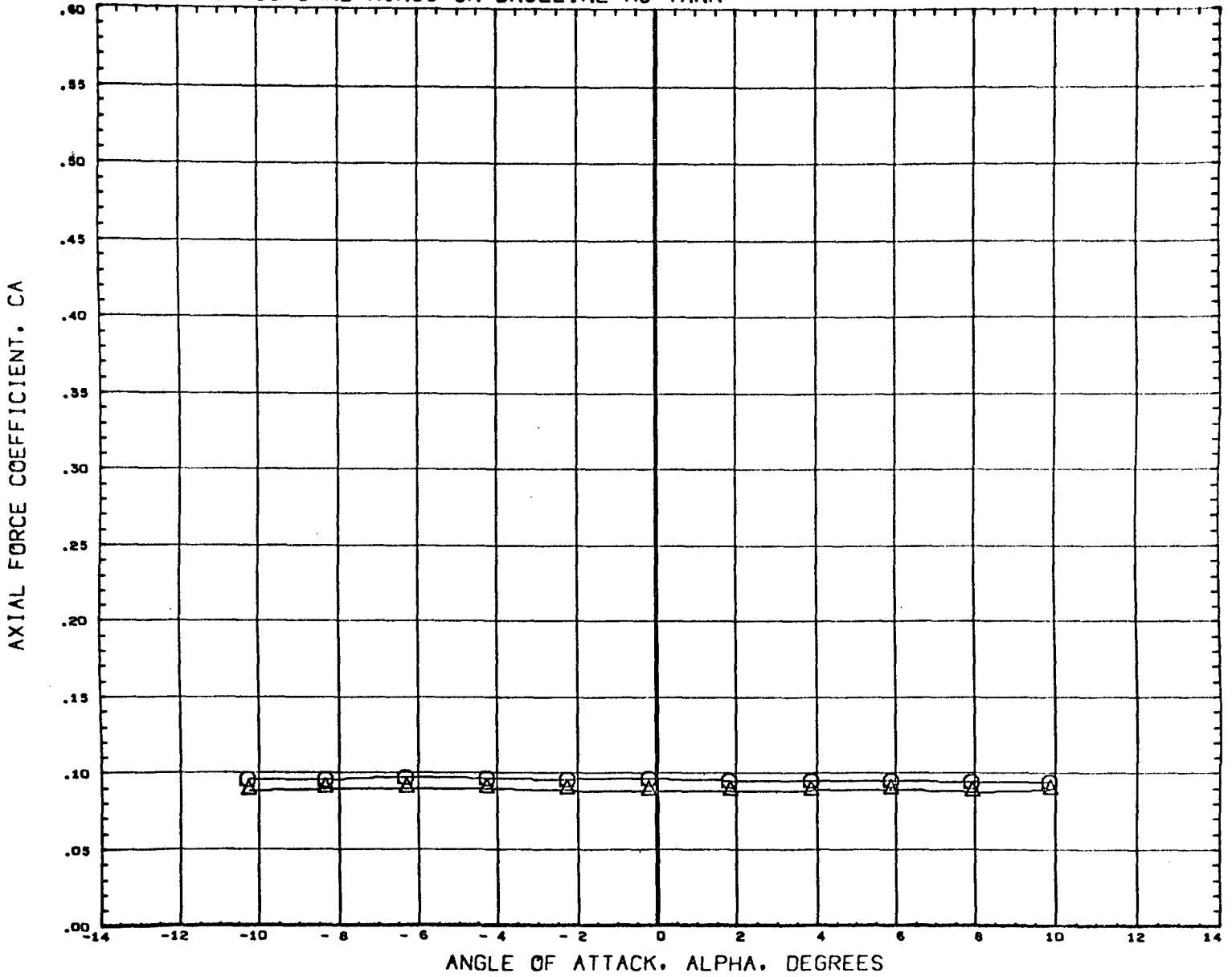
YMRP    0.0000    IN.

ZMRP    0.2480    IN.

SCALE    0.0040    SCALE

MACH    .60

# EFFECT OF STRUCTURAL RINGS ON BASELINE HO TANK



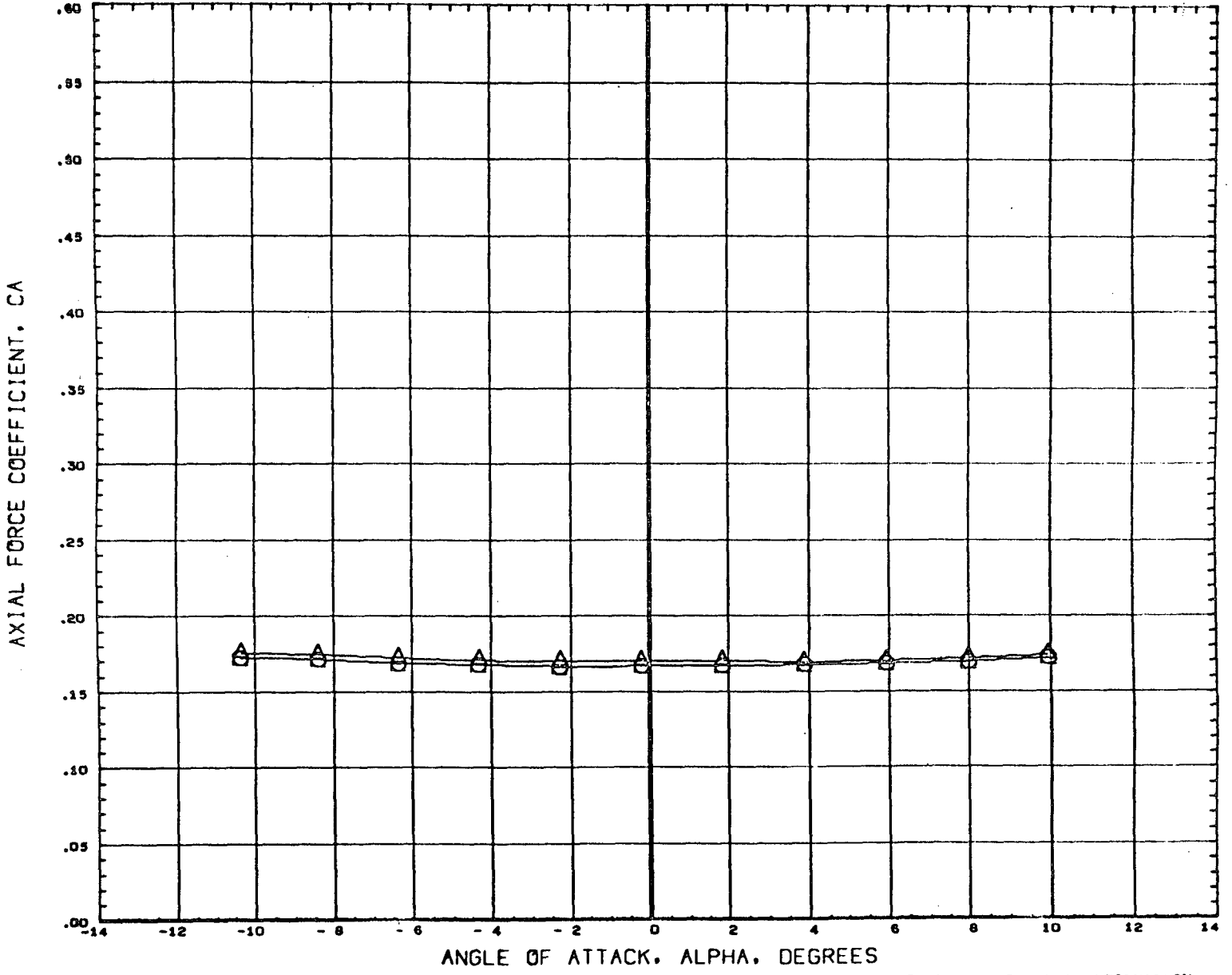
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1				SREF 7.8800 SQ. IN
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7				LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH

.91

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# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK

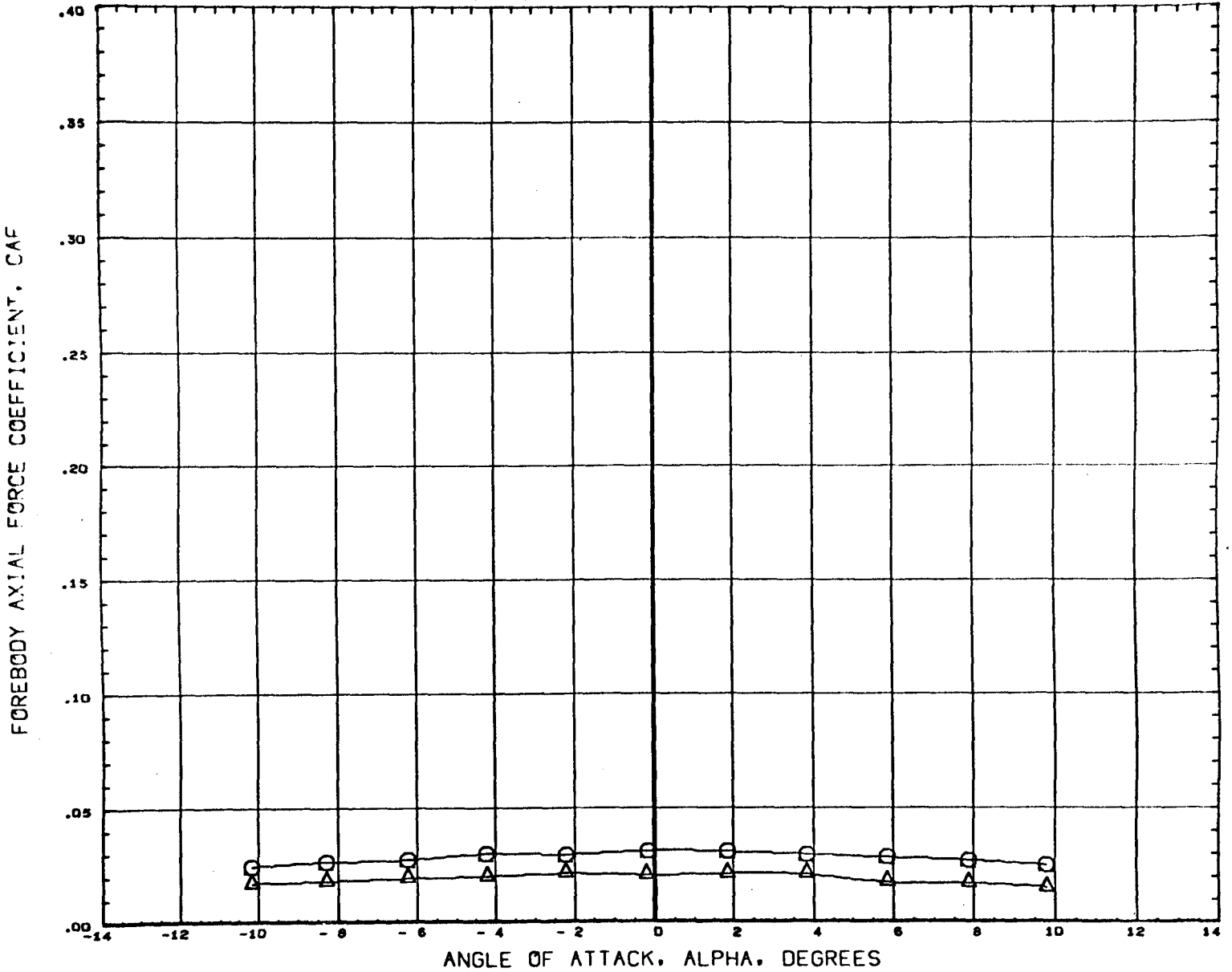


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR
(C71000)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1			
(D71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7			

REFERENCE INFORMATION		
SREF	7.8800	SQ. IN
LREF	2.0260	IN.
BREF	4.4600	IN.
XMRP	3.3600	IN.
YMRP	0.0000	IN.
ZMRP	0.2480	IN.
SCALE	0.0040	SCALE

MACH 1.20

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK

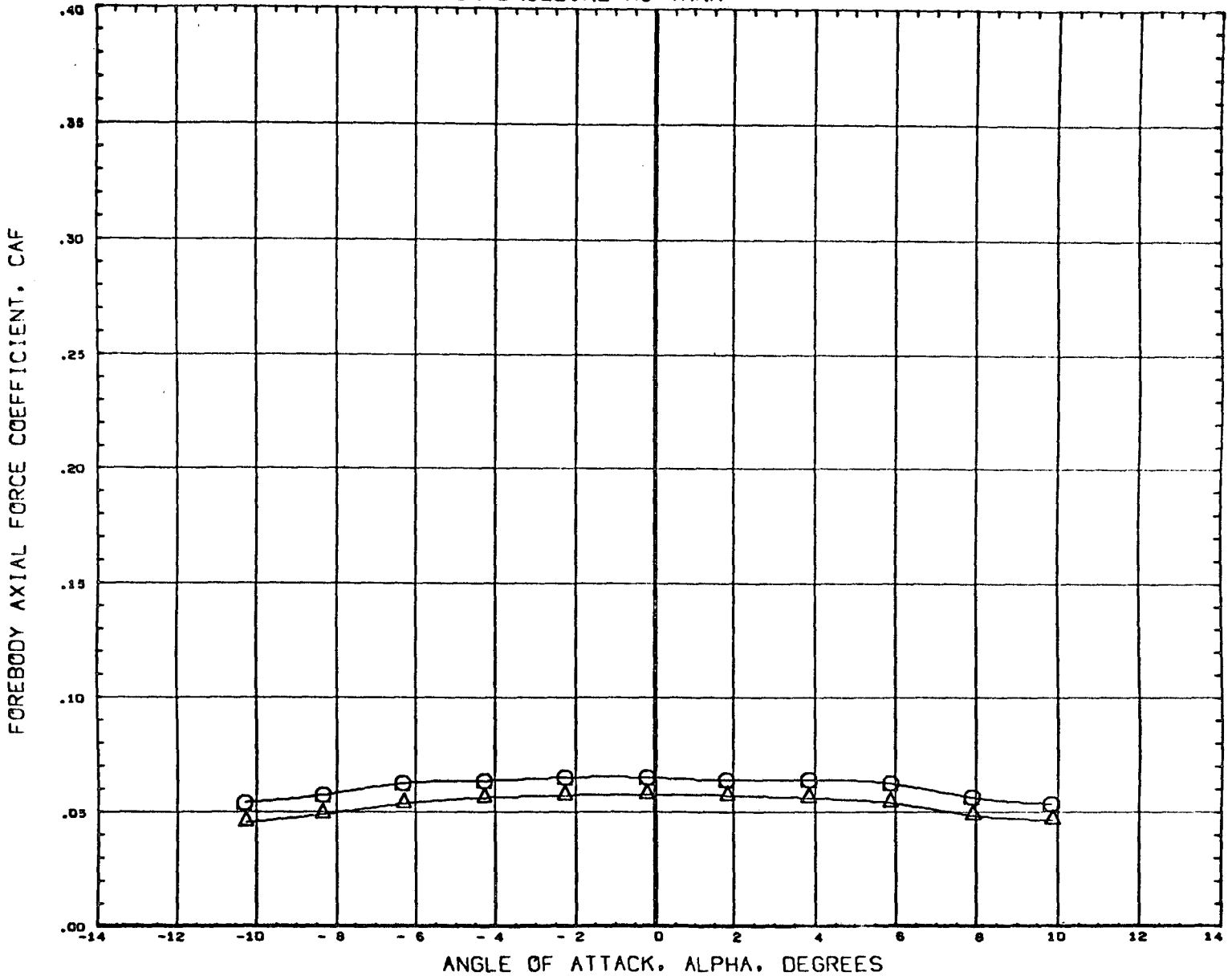


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1			
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7			

REFERENCE INFORMATION		
SREF	7.8800	sq. IN
LREF	2.0260	IN.
BREF	4.4600	IN.
XMRP	3.3600	IN.
YMRP	0.0000	IN.
ZMRP	0.2480	IN.
SCALE	0.0040	SCALE

MACH .60

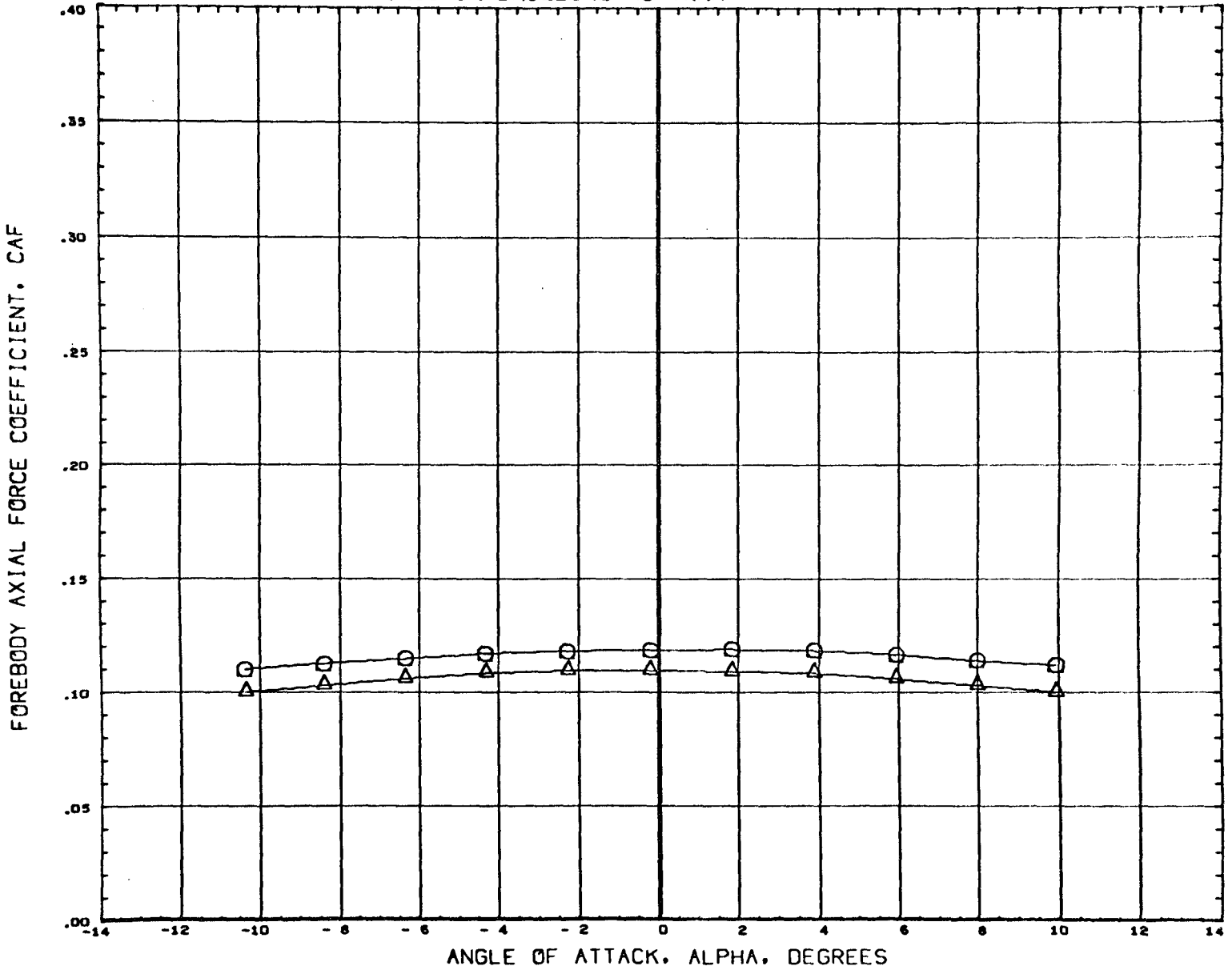
# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1				SREF 7.8800 SQ. IN
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7				LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH .91

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1				SREF 7.8800 SQ. IN
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7				LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2460 IN.
						SCALE 0.0040 SCALE

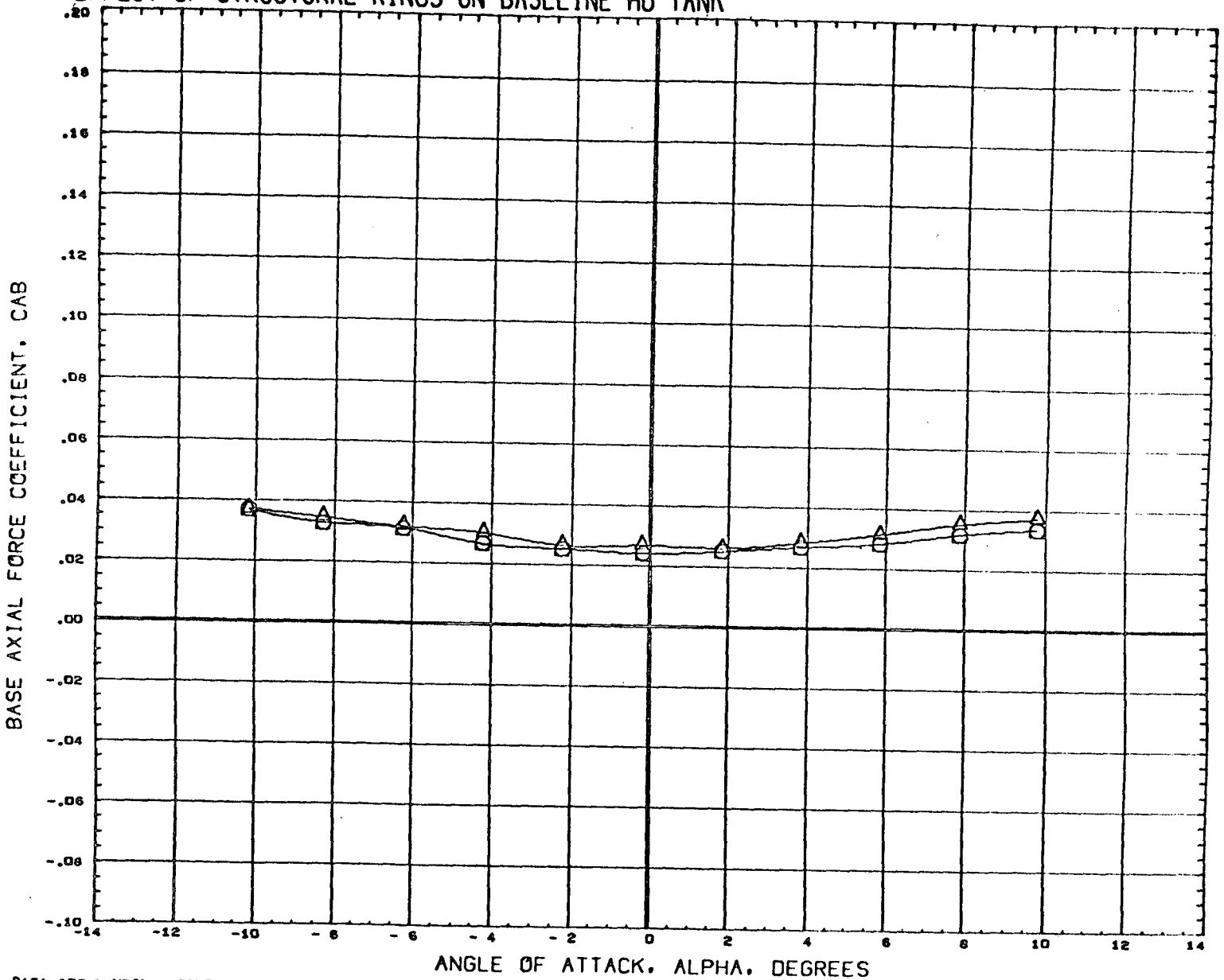
MACH

1.20

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*RC*

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



DATA SET SYMBOL    CONFIGURATION DESCRIPTION    T1    T7  
 (C71080)       MSFC TWT 544 LAUNCH VEHICLE STUDIES    T1  
 (B71069)       MSFC TWT 544 LAUNCH VEHICLE STUDIES    T7

ORBINC    PHIS    XS    ELEVTR

REFERENCE INFORMATION  
 SREF    7.8800    SQ. IN  
 LREF    2.0280    IN.  
 BREF    4.4600    IN.  
 XMRP    3.3600    IN.  
 YMRP    0.0000    IN.  
 ZMRP    0.2480    IN.  
 SCALE    0.0040    SCALE

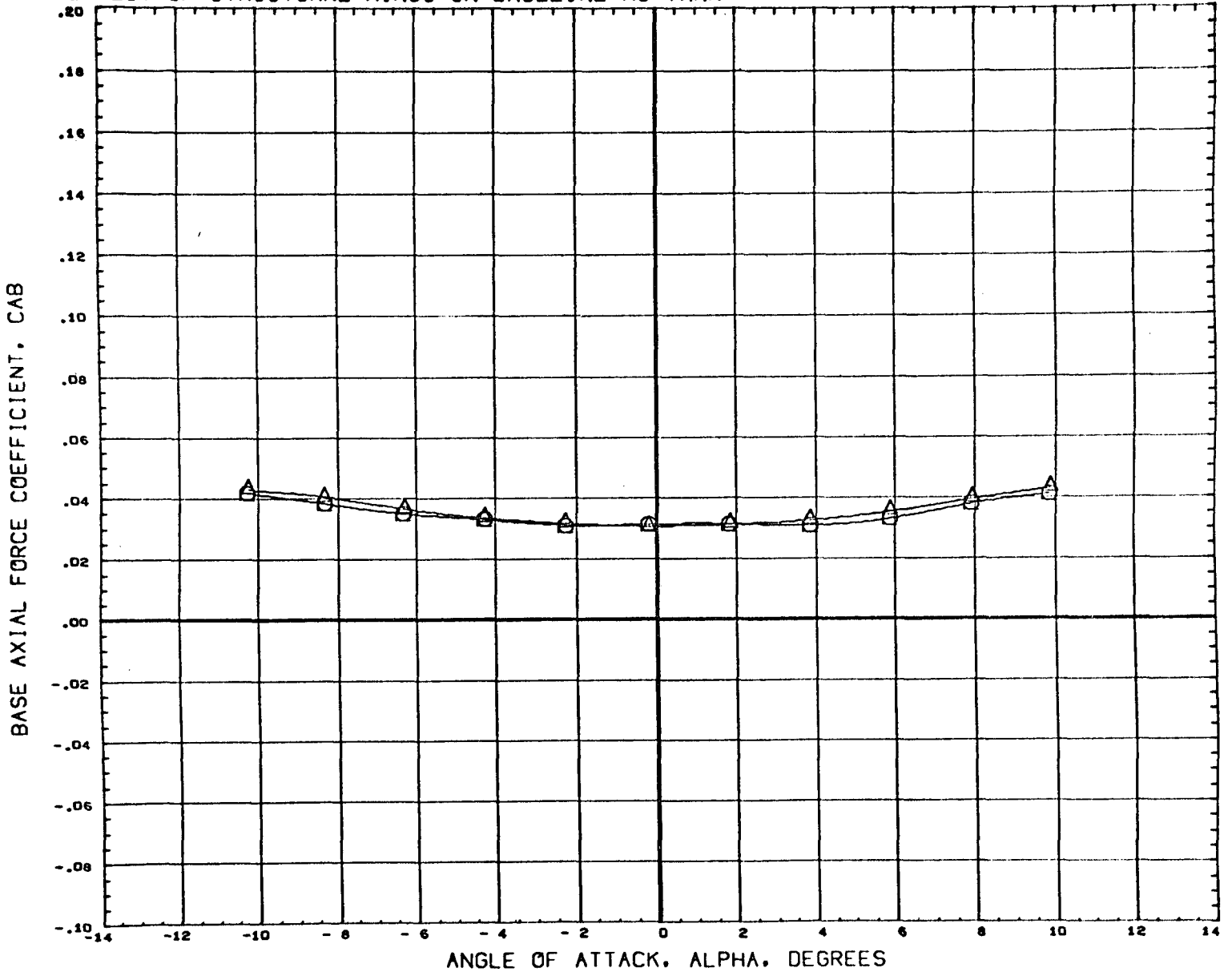
MACH    .60

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C



# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK

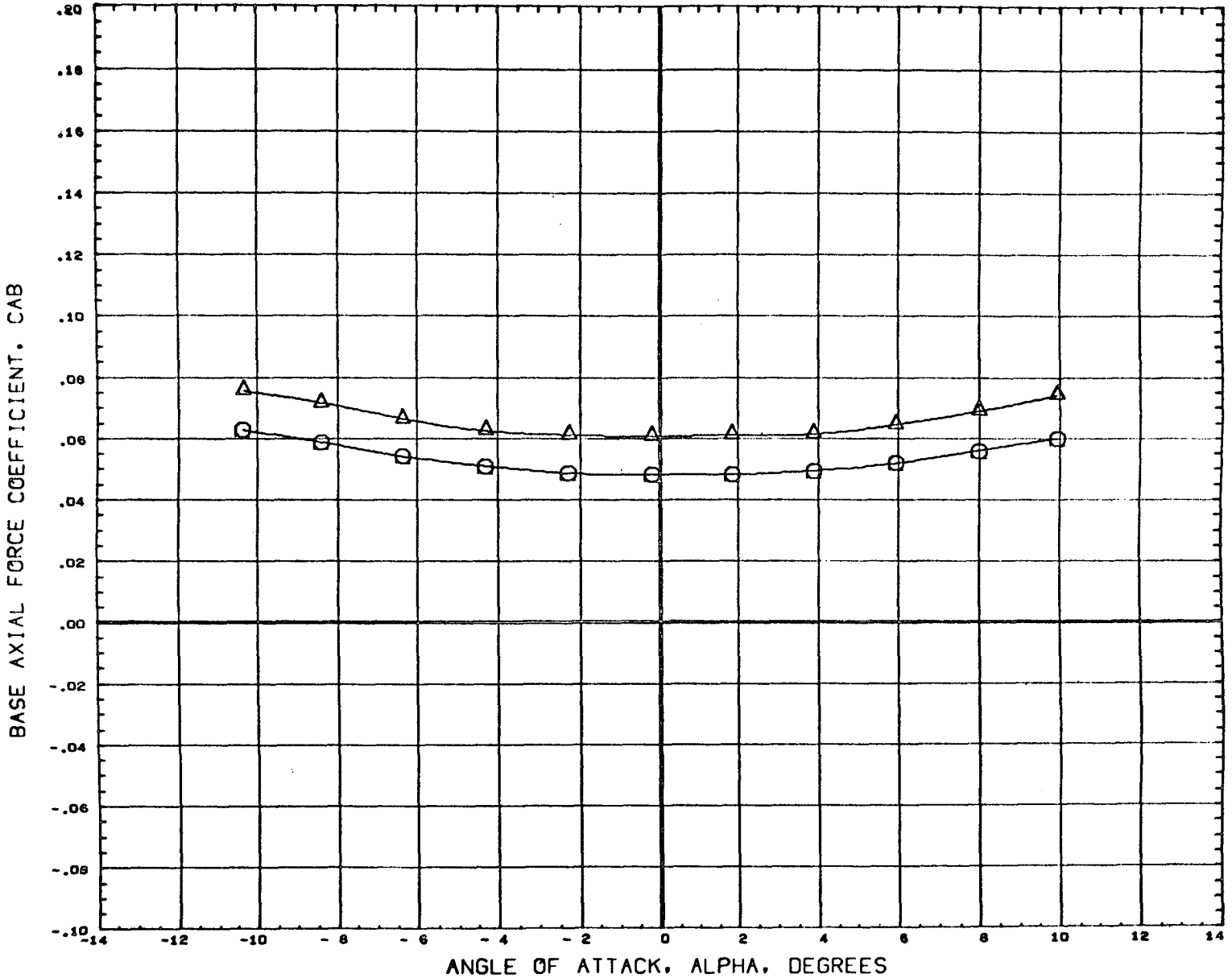


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1			
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7			

REFERENCE INFORMATION	
SREF	7.8600 SQ. IN
LREF	2.0280 IN.
BREF	4.4600 IN.
XMRP	3.3600 IN.
YMRP	0.0000 IN.
ZMRP	0.2480 IN.
SCALE	0.0040 SCALE

MACH .91

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



DATA SET SYMBOL    CONFIGURATION DESCRIPTION    ORBINC    PHIS    XS    ELEVTR

(C71080)     $\bigcirc$     MSFC TWT 544 LAUNCH VEHICLE STUDIES    T1

(B71069)     $\triangle$     MSFC TWT 544 LAUNCH VEHICLE STUDIES    T7

REFERENCE INFORMATION

SREF    7.8600    SQ. IN

LREF    2.0280    IN.

BREF    4.4600    IN.

XMRP    3.3600    IN.

YMRP    0.0000    IN.

ZMRP    0.2480    IN.

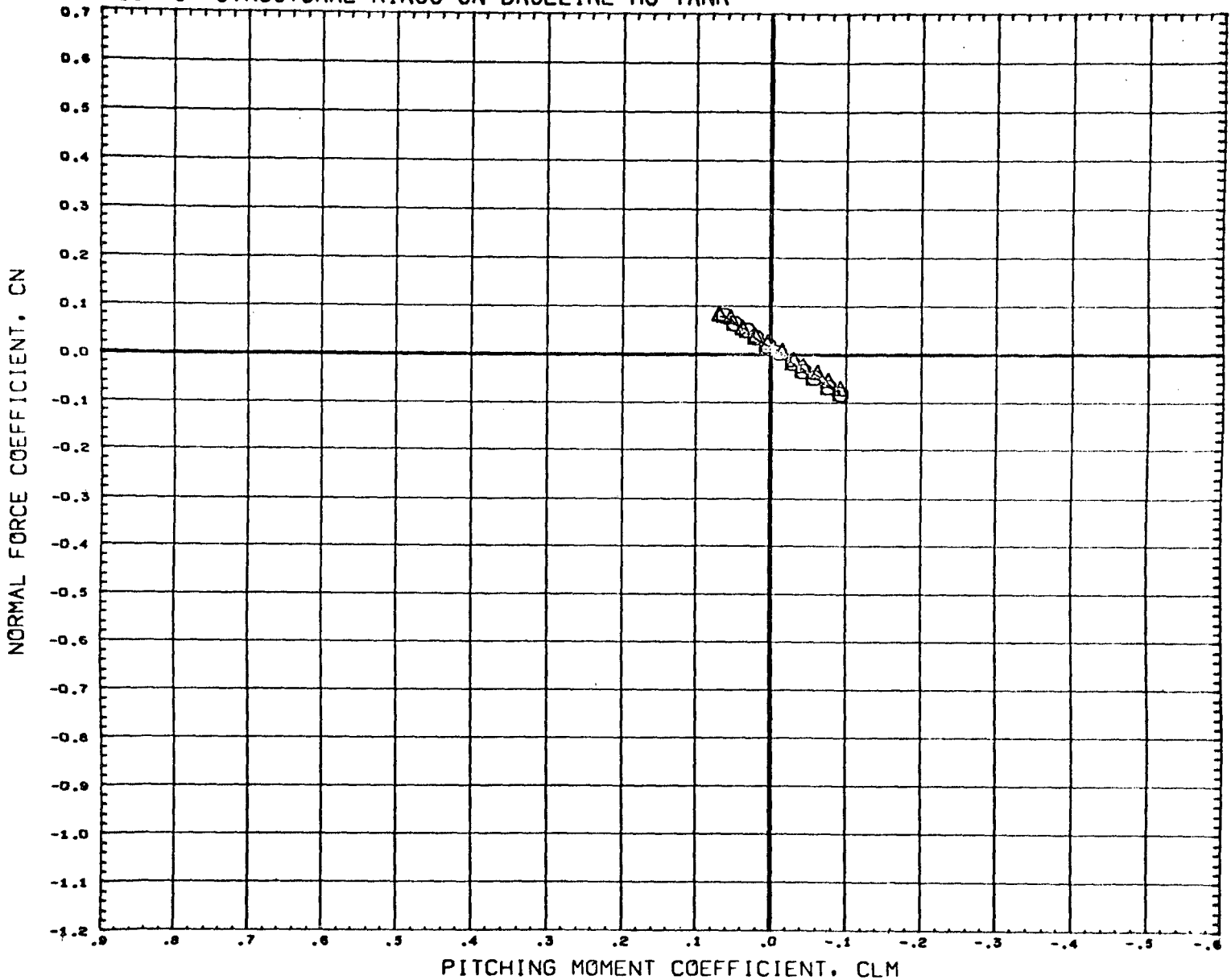
SCALE    0.0040    SCALE

MACH

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# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK



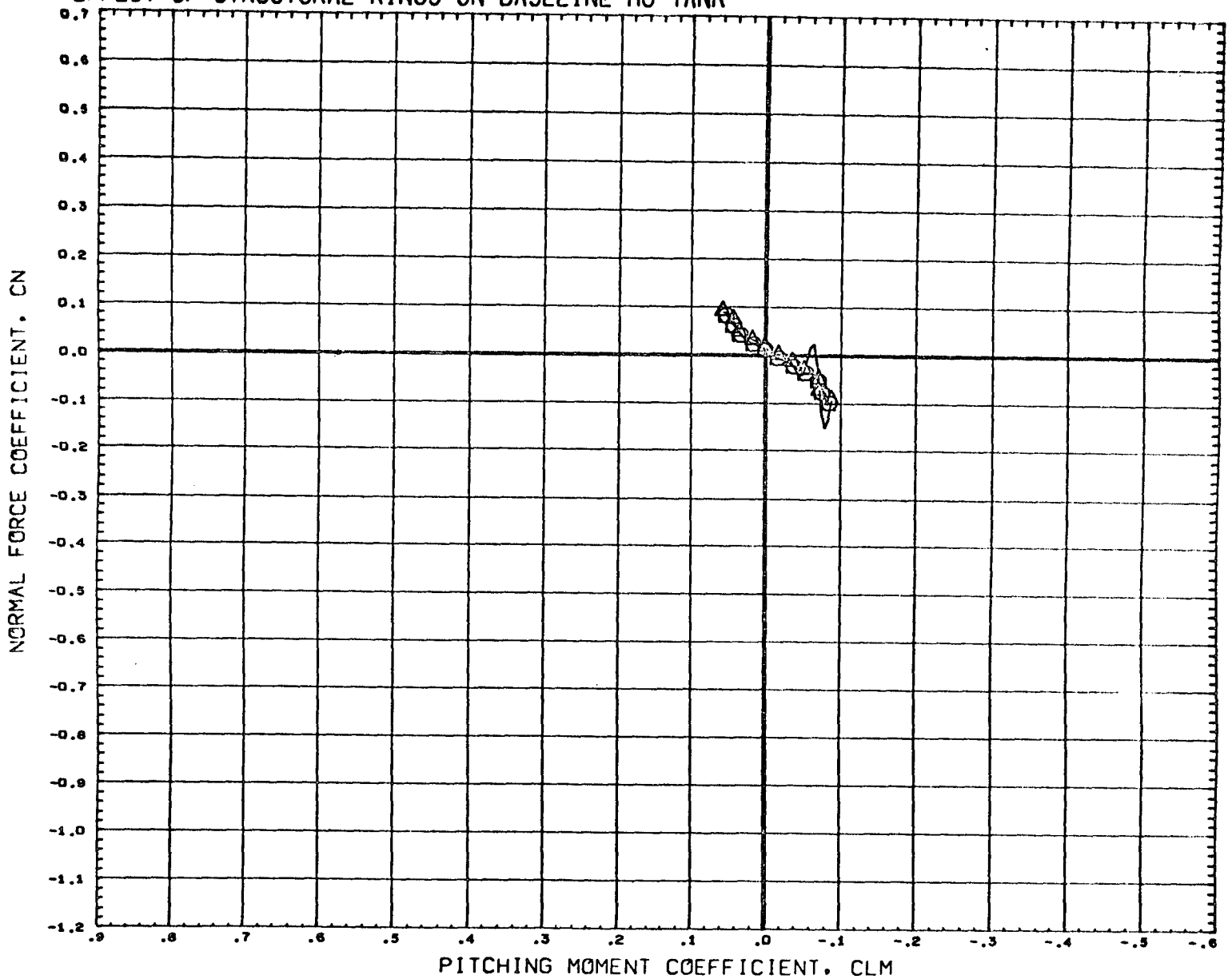
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES					T1
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES					T7

SREF	7.8800	SQ. IN
LREF	2.0280	IN.
BREF	4.4600	IN.
XMRP	3.3600	IN.
YMRP	0.0000	IN.
ZMRP	0.2480	IN.
SCALE	0.0040	SCALE

MACH .60

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# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK

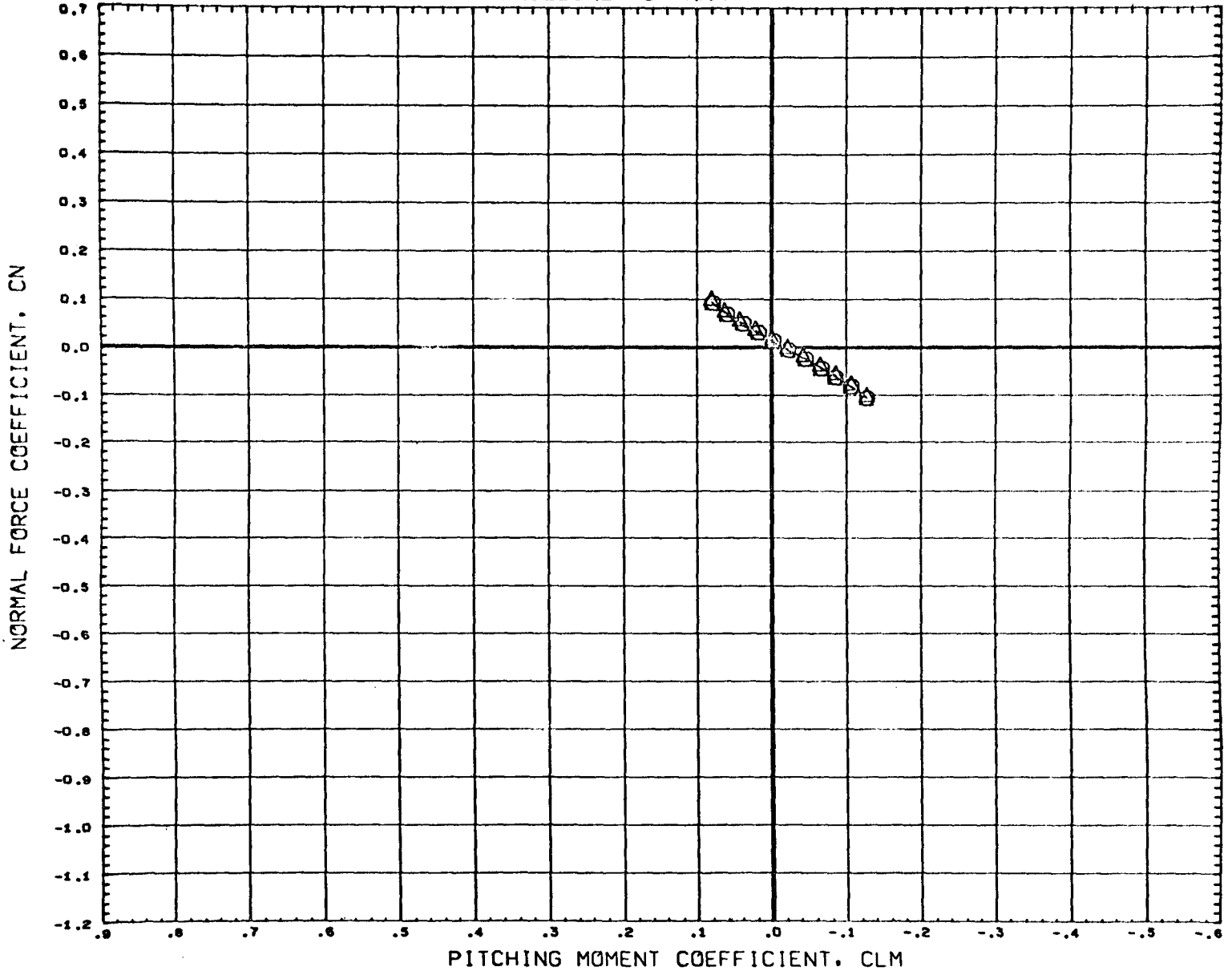


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1				SREF 7.8800 SQ. IN
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7				LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

SREF 7.8800 SQ. IN  
 LREF 2.0280 IN.  
 BREF 4.4600 IN.  
 XMRP 3.3600 IN.  
 YMRP 0.0000 IN.  
 ZMRP 0.2480 IN.  
 SCALE 0.0040 SCALE

MACH .91

# EFFECT OF STRUCTURAL RINGS ON BASELINE H0 TANK

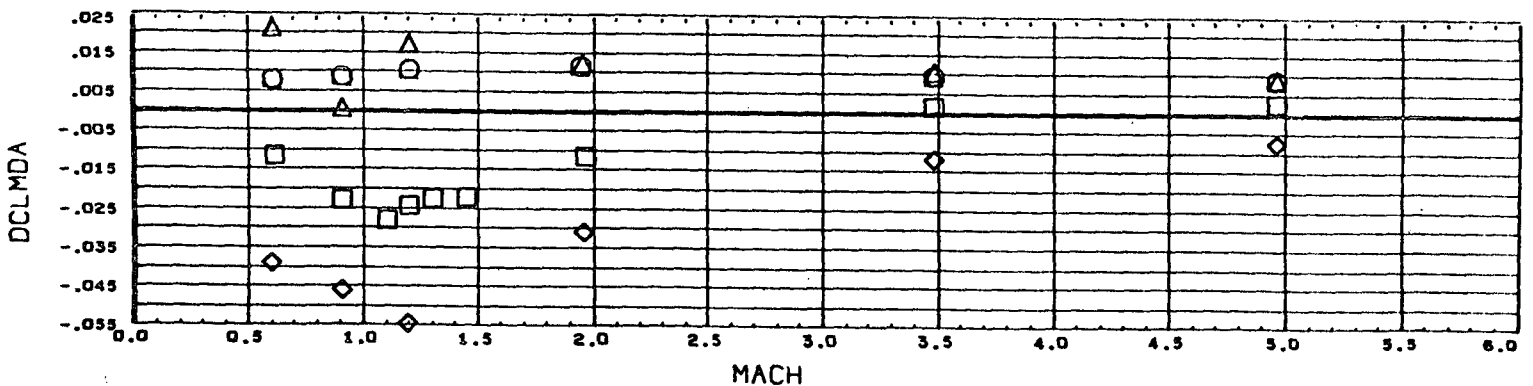
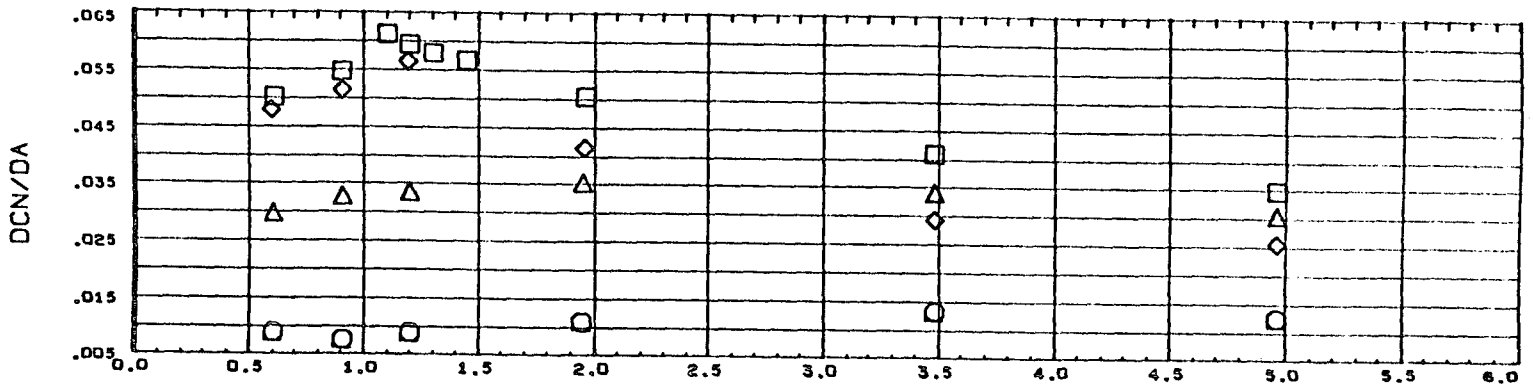
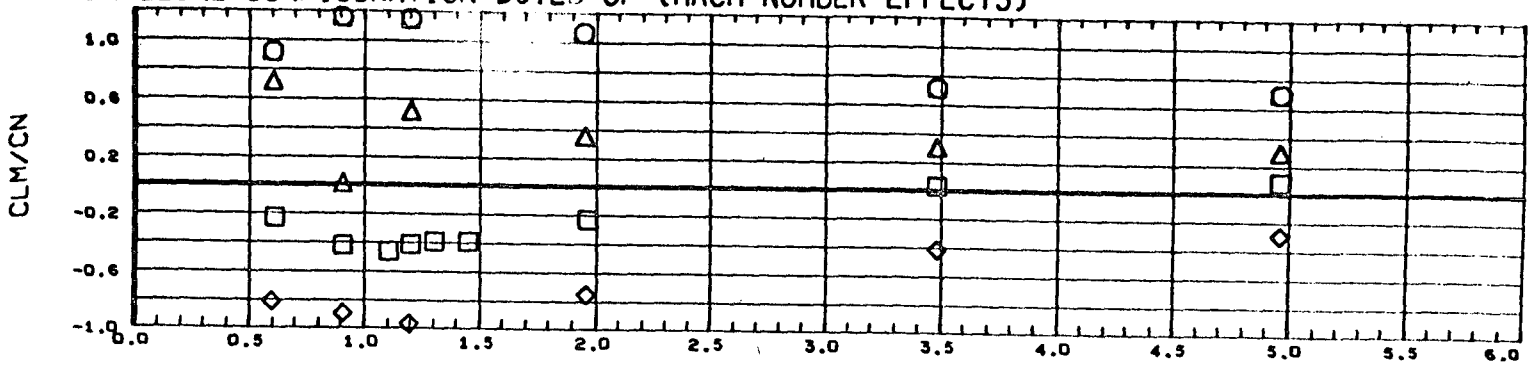


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(C71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1				SREF 7.8800 SQ. IN
(B71069)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T7				LREF 2.0280 IN.
						BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

MACH 1.20

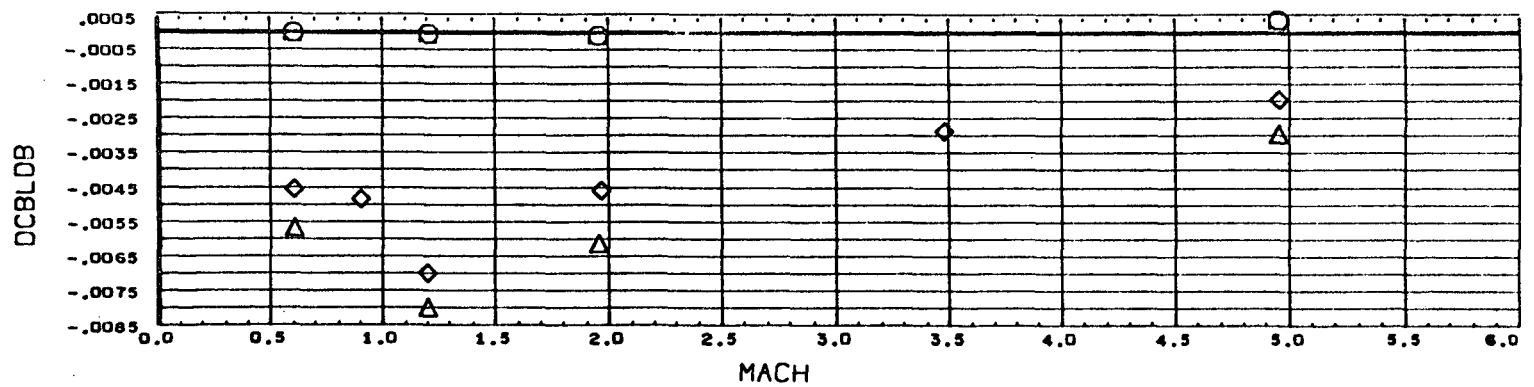
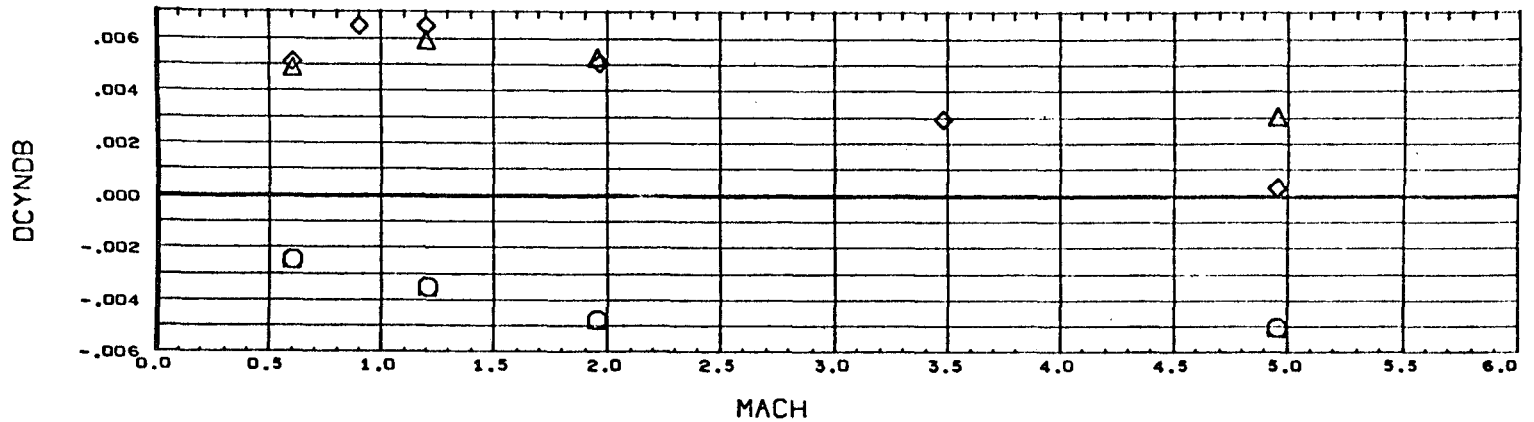
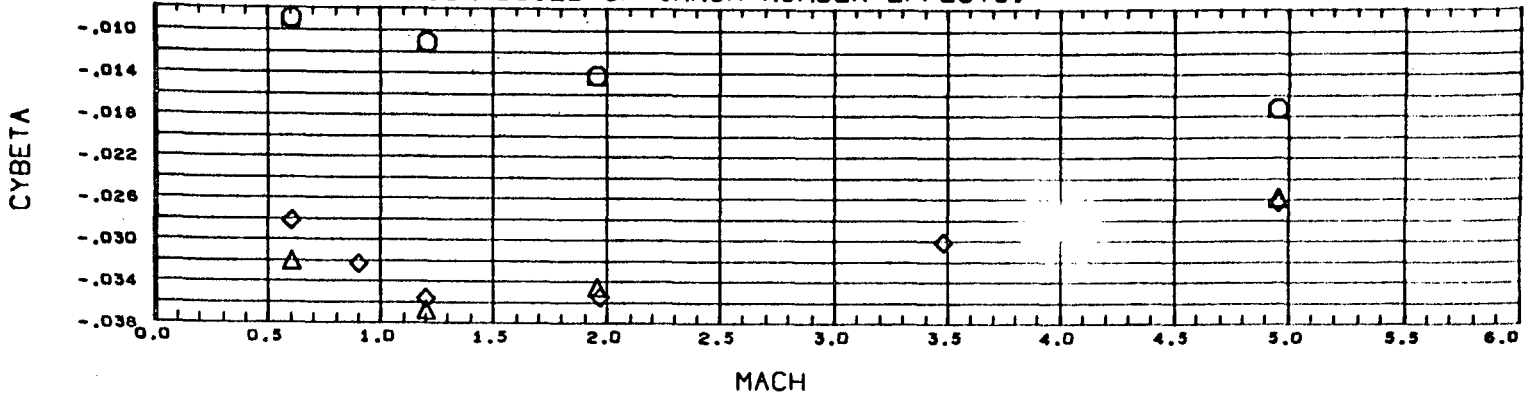
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# BASELINE CONFIGURATION BUILD-UP (MACH NUMBER EFFECTS)



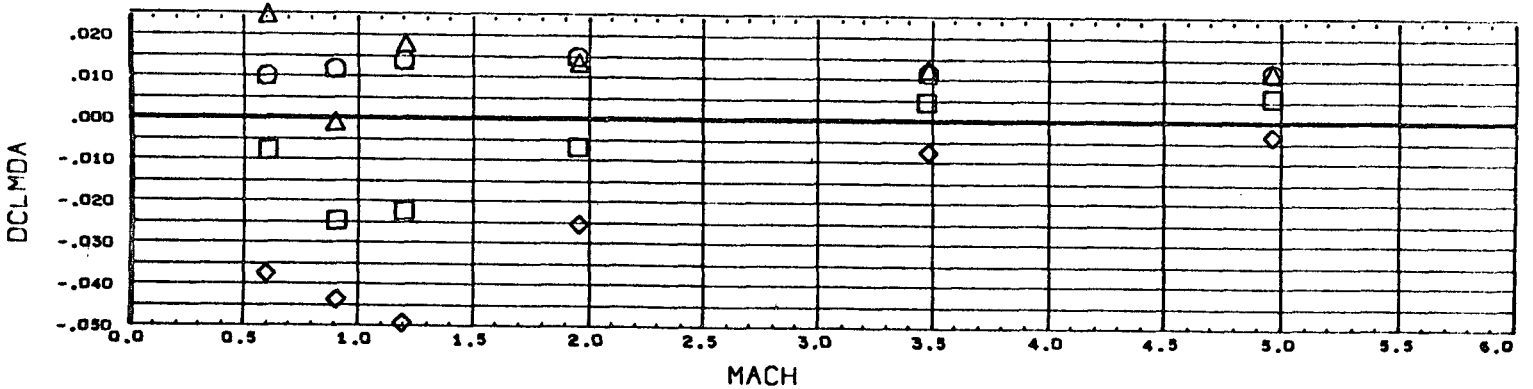
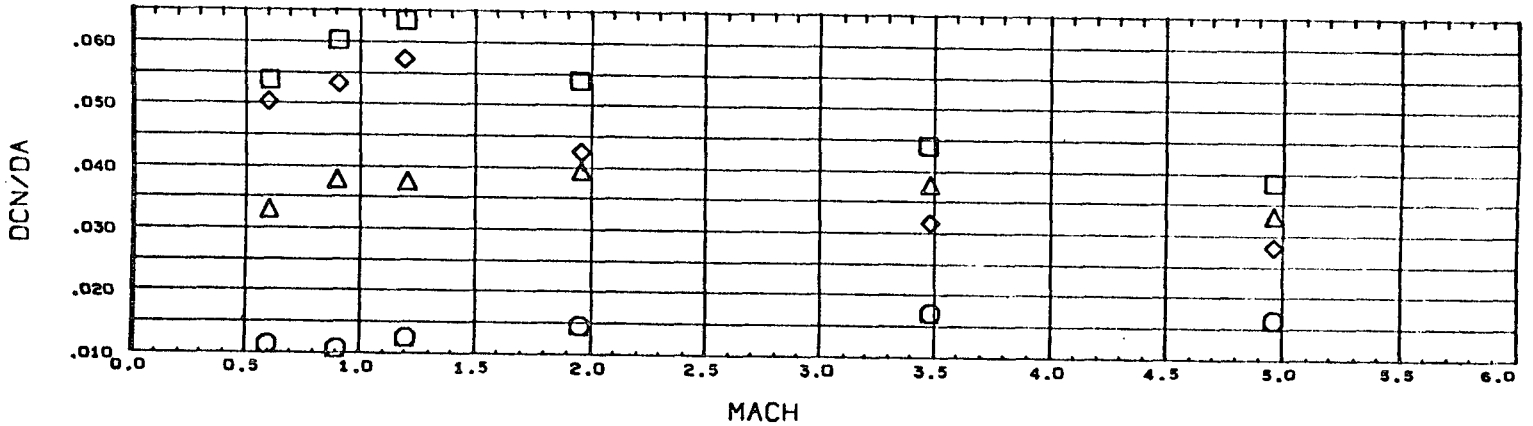
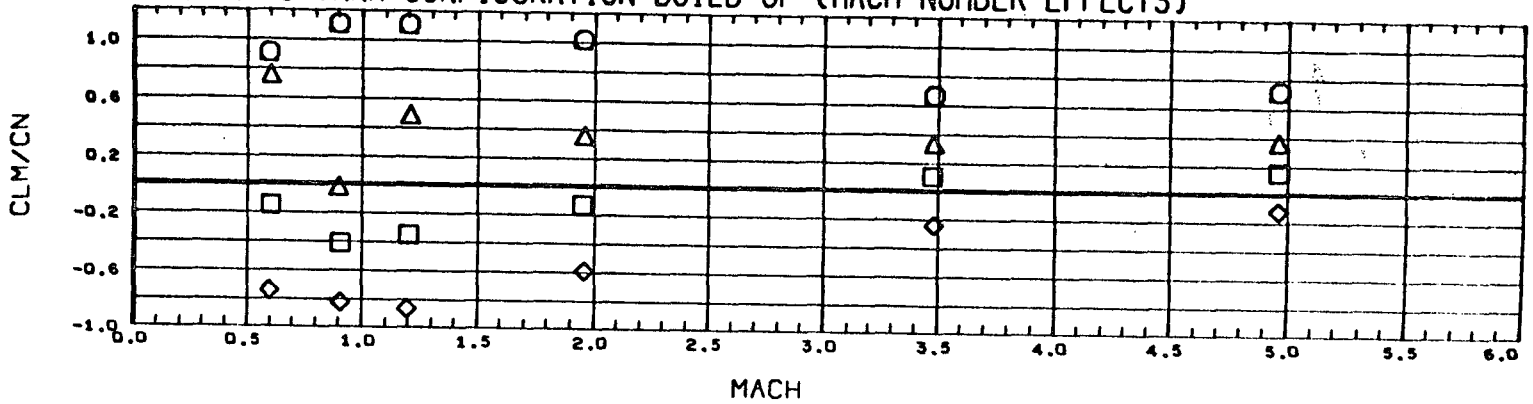
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(B71080)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1					SREF	7.8800 SQ. IN
(B71070)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1S1	75.000	0.000			LREF	2.0260 IN.
(B71072)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1			0.000	0.000	BREF	4.4600 IN.
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T1O1S1	75.000	0.000	0.000	0.000	XMRP	3.3600 IN.
							YMRP	0.0000 IN.
							ZMRP	0.2480 IN.
							SCALE	0.0040 SCALE

# BASELINE CONFIGURATION BUILD-UP (MACH NUMBER EFFECTS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(A71071)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1S1	75.000	0.000			SREF 7.8800 SQ. IN
(A71073)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1			0.000	0.000	LREF 2.0280 IN.
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T1O1S1	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

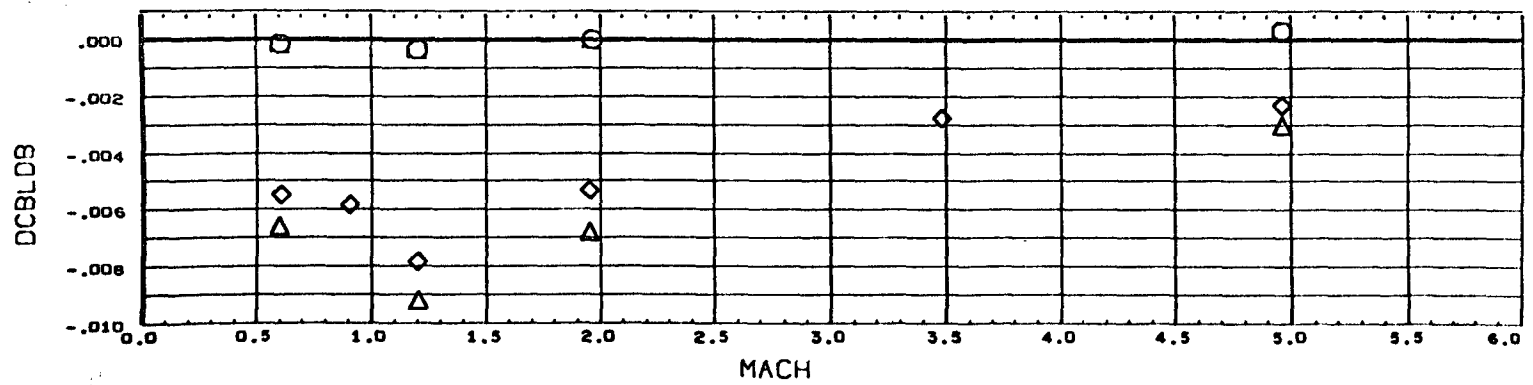
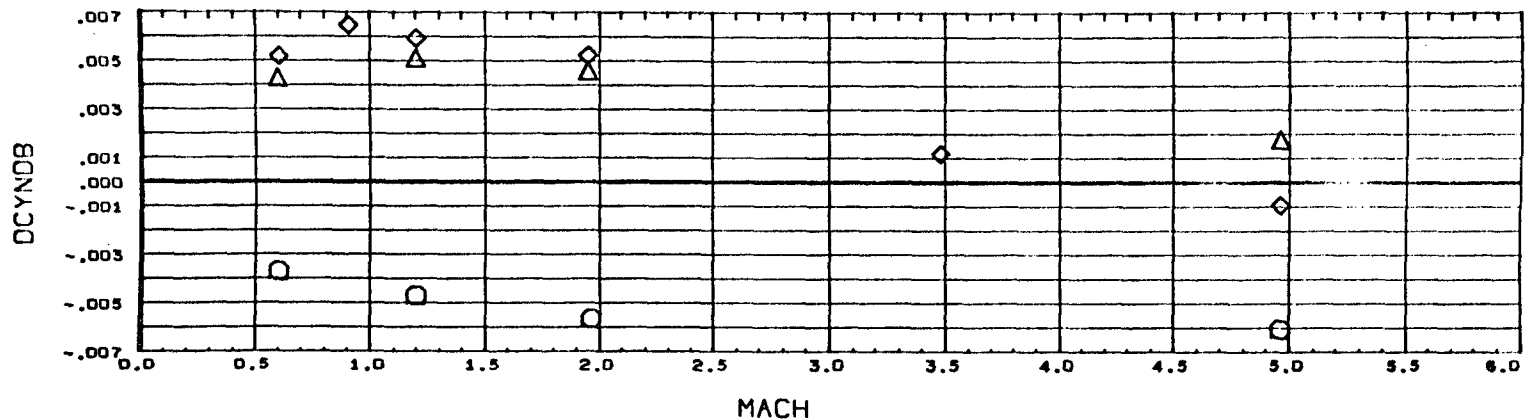
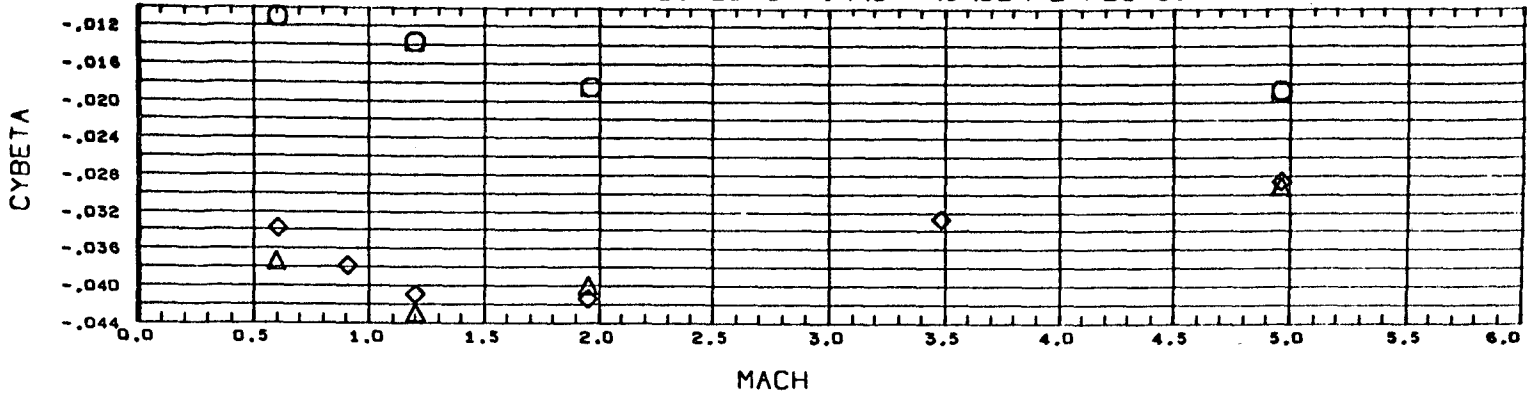
# ALTERNATE HO TANK CONFIGURATION BUILD-UP (MACH NUMBER EFFECTS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(B71074)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5					SREF	7.8800 SQ. IN
(B71075)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5S1	75.000	0.000			LREF	2.0280 IN.
(B71077)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1			0.000	0.000	BREF	4.4600 IN.
(B71047)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T5O1S1	75.000	0.000	0.000	0.000	XMRP	3.3600 IN.
						YMRP	0.0000 IN.
						ZMRP	0.2480 IN.
						SCALE	0.0040 SCALE

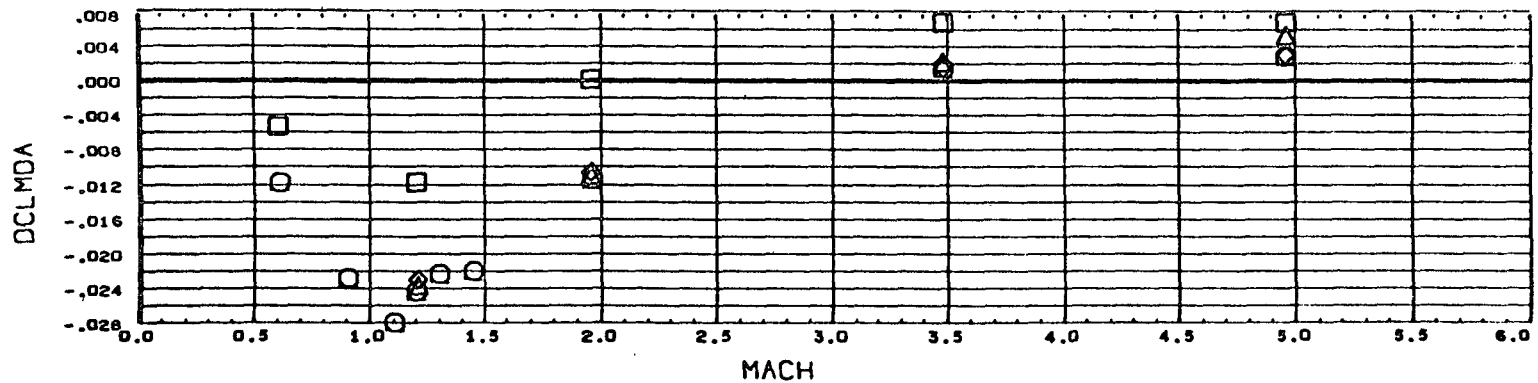
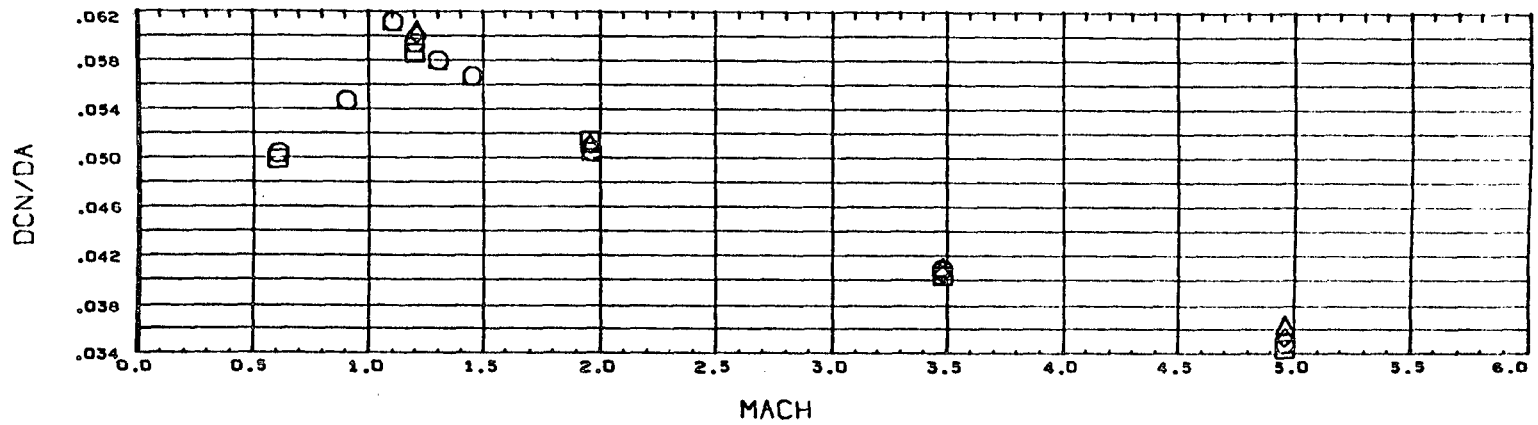
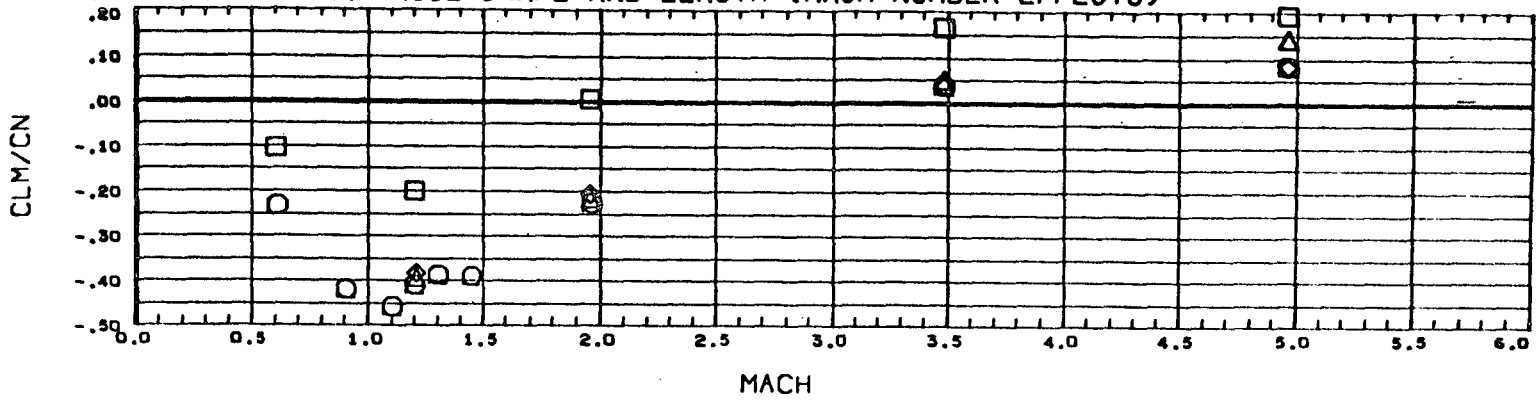


# ALTERNATE HO TANK CONFIGURATION BUILD-UP (MACH NUMBER EFFECTS)



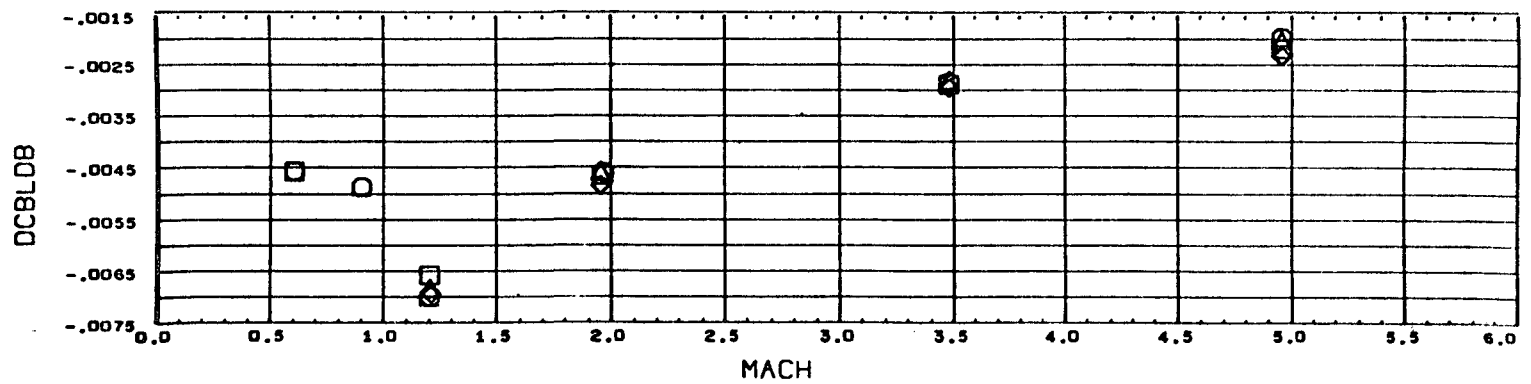
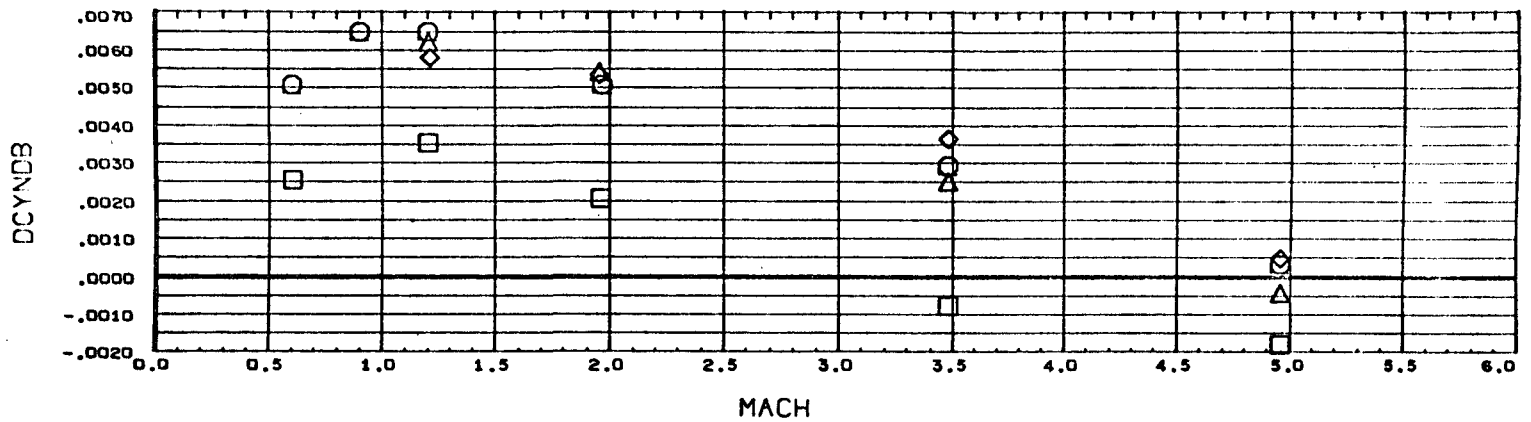
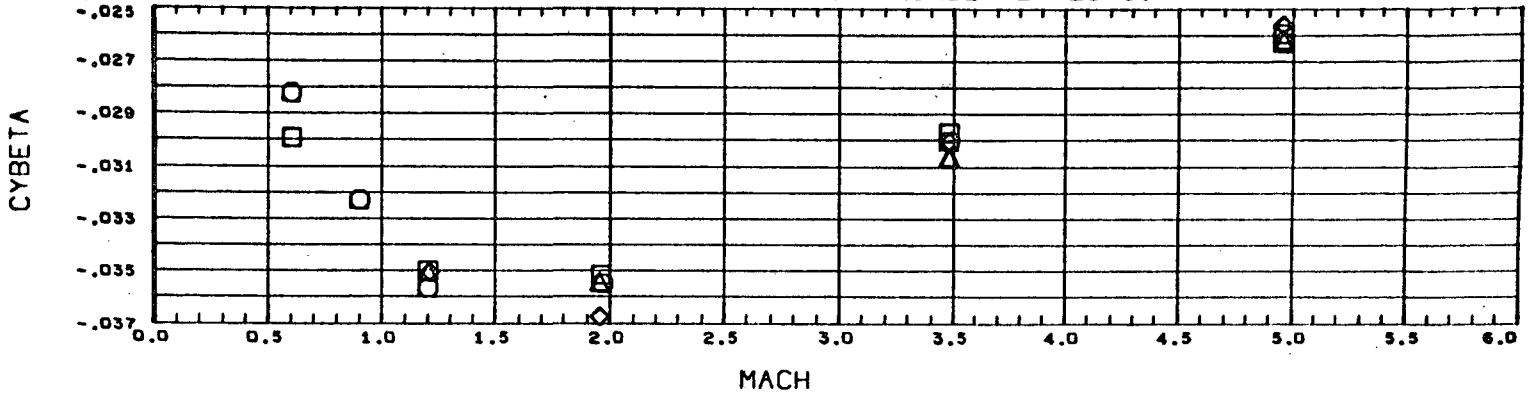
DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	T5S1	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION	
(A71076)	○	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T5S1	75.000	0.000	0.000	0.000	SREF	7.8800 SQ. IN
(A71078)	△	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501	75.000	0.000	0.000	0.000	LREF	2.0280 IN.
(A71048)	◇	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T501s1	75.000	0.000	0.000	0.000	BREF	4.4600 IN.
								XMRP	3.3600 IN.
								YMRP	0.0000 IN.
								ZMRP	0.2480 IN.
								SCALE	0.0040 SCALE

# BASELINE H0 TANK NOSE SHAPE AND LENGTH (MACH NUMBER EFFECTS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71033)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
(B71035)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(B71041)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	75.000	0.000	0.000	0.000	XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

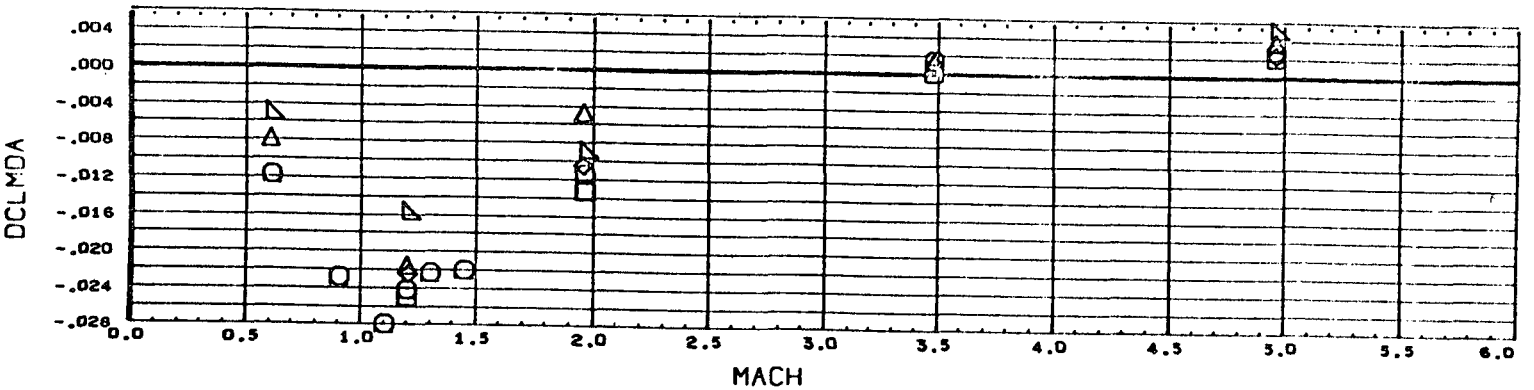
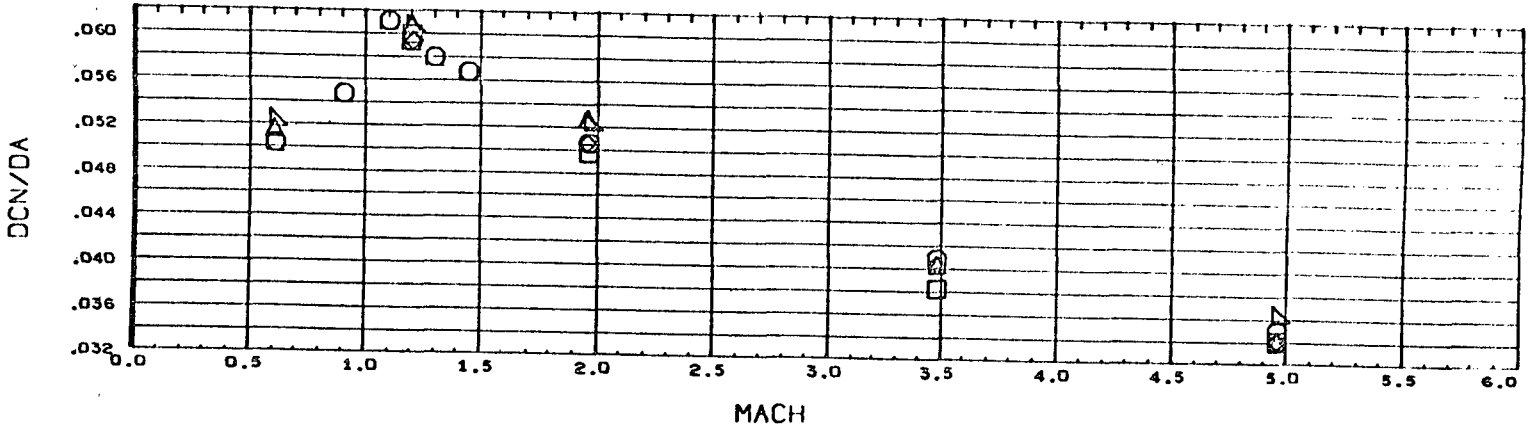
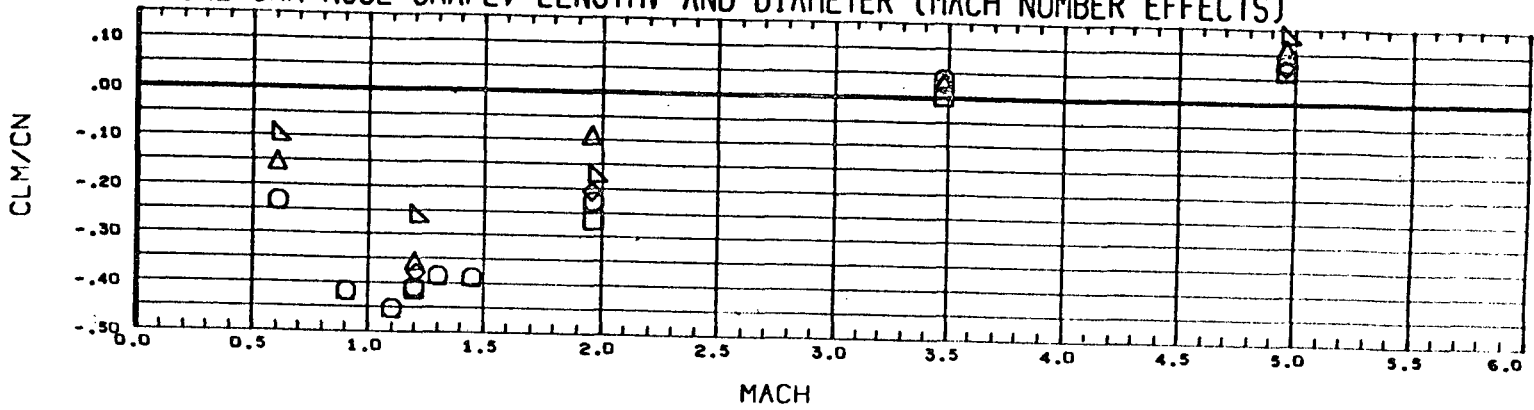
# BASELINE H0 TANK NOSE SHAPE AND LENGTH (MACH NUMBER EFFECTS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71034)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T201S1	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
(A71036)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T301S1	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(A71042)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T401S1	75.000	0.000	0.000	0.000	XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE



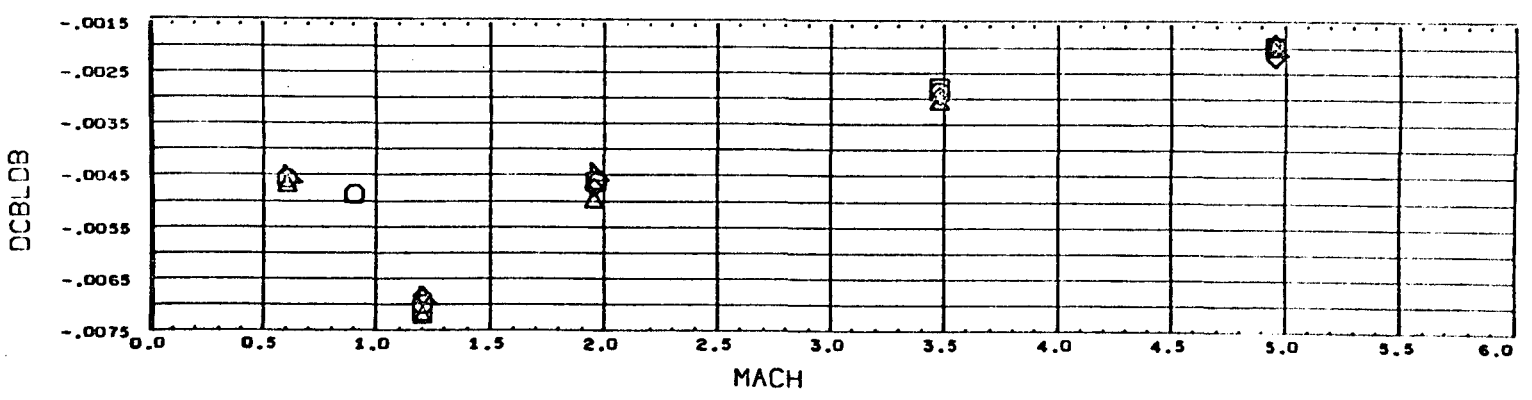
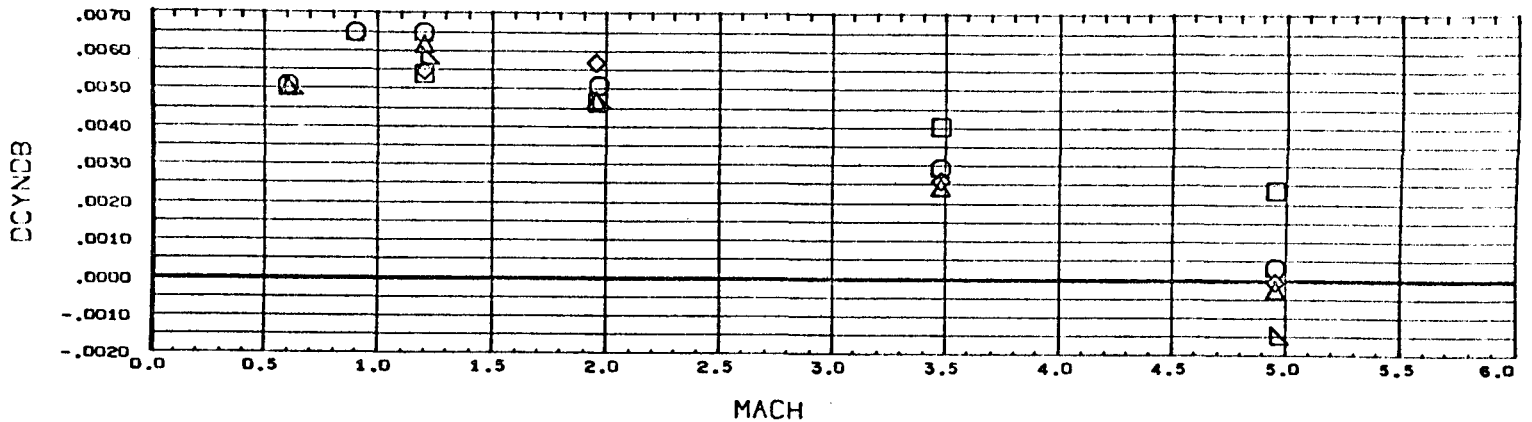
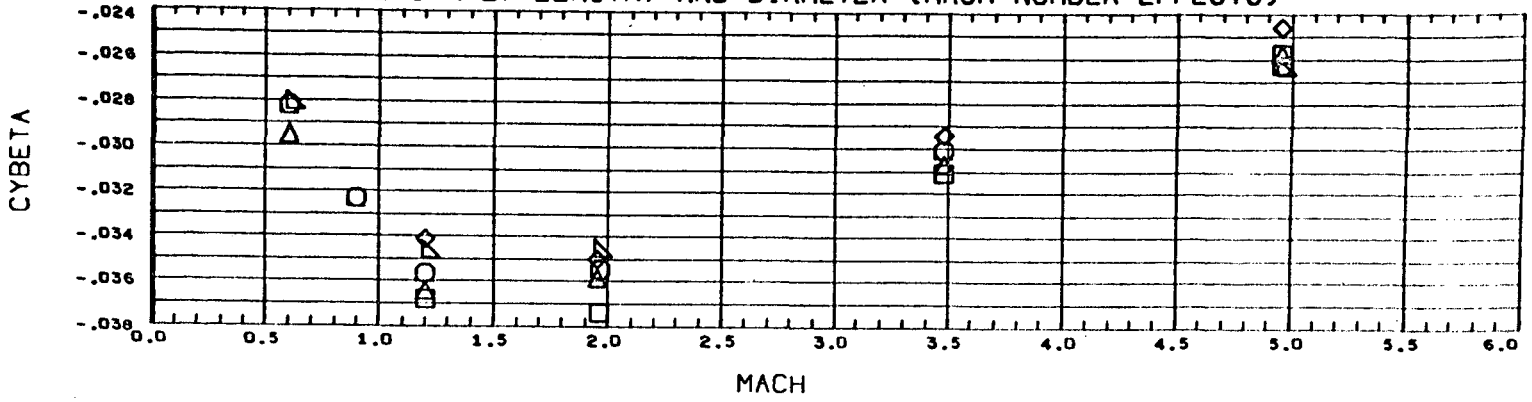
# BASELINE SRM NOSE SHAPE, LENGTH, AND DIAMETER (MACH NUMBER EFFECTS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71027)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
(B71021)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(B71023)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	0.000	0.000	0.000	XMRP 3.3600 IN.
(B71051)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	75.000	0.000	0.000	0.000	YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

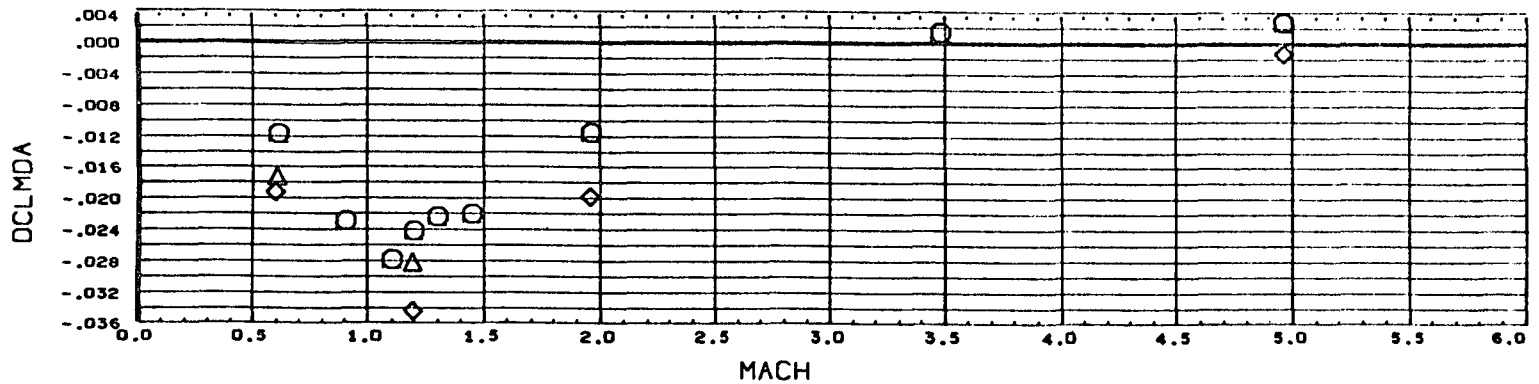
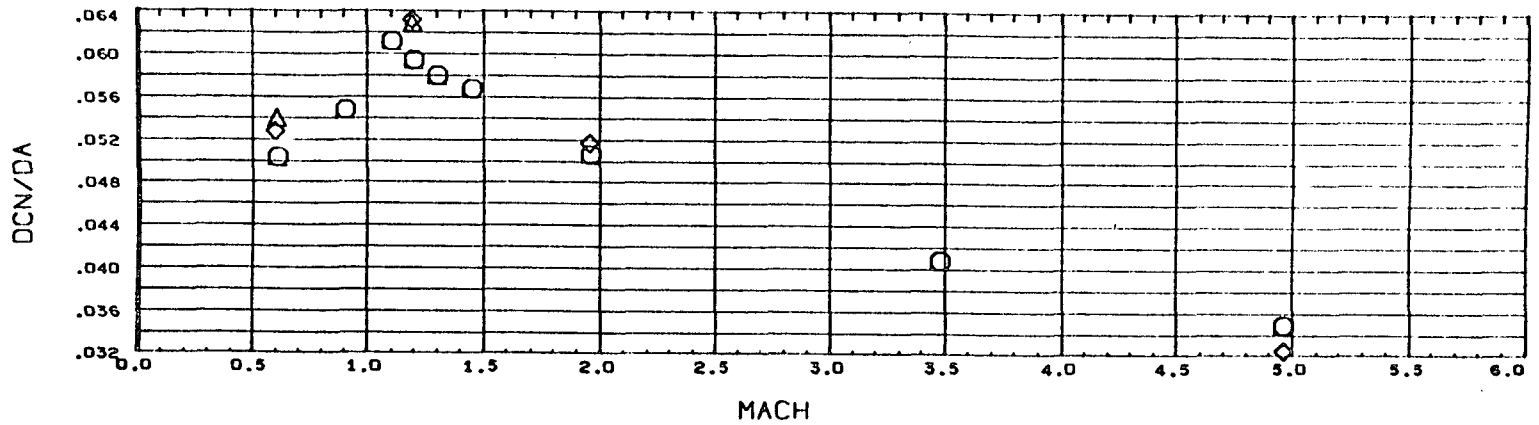
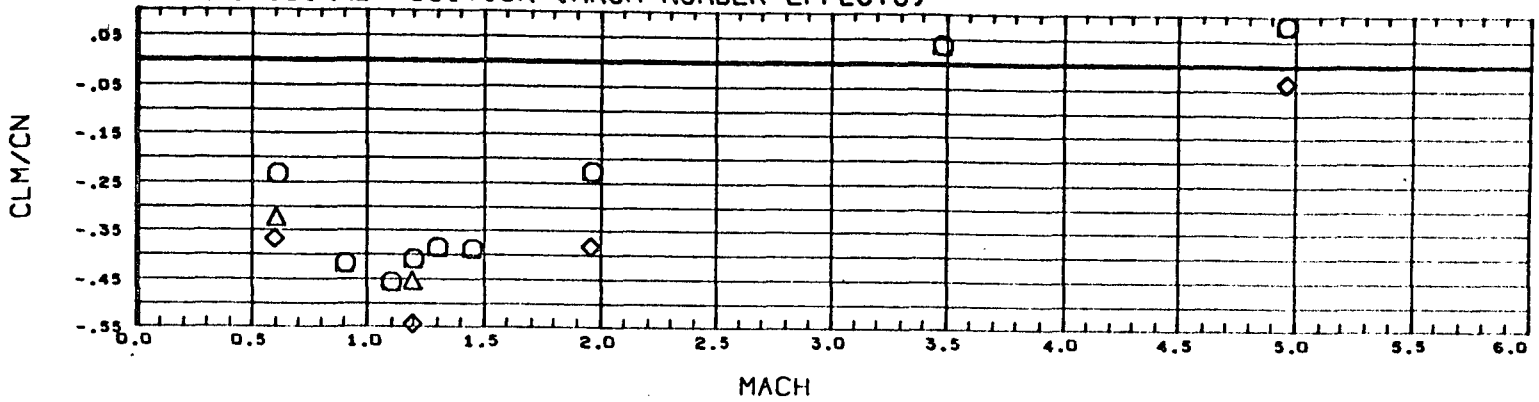
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# BASELINE SRM NOSE SHAPE, LENGTH, AND DIAMETER (MACH NUMBER EFFECTS)



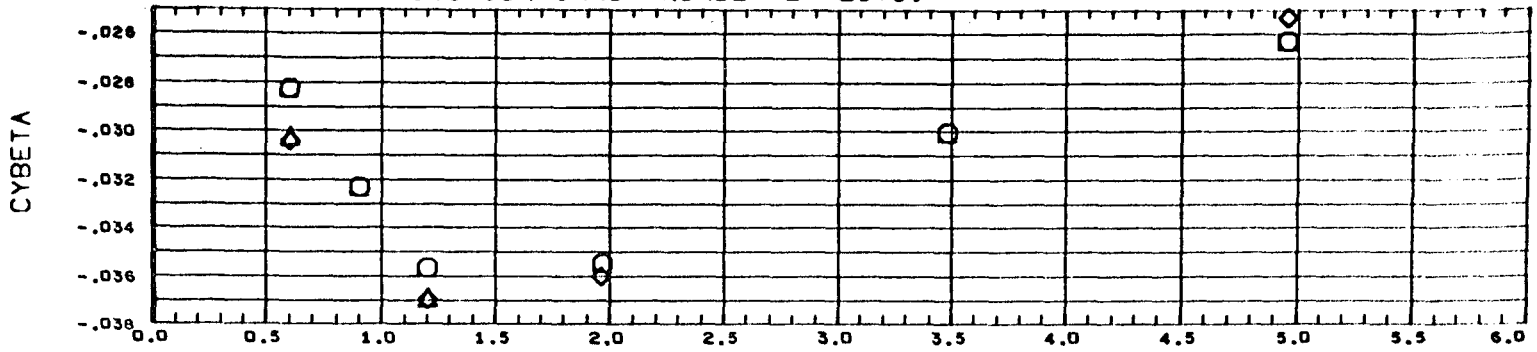
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PHIS	GAMZ	ELEVTR	RUDDER	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	75.000	0.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71028)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S2	75.000	0.000	0.000	0.000	LREF 2.0280 IN.
(A71022)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S3	75.000	0.000	0.000	0.000	BREF 4.4600 IN.
(A71024)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S4	75.000	0.000	0.000	0.000	XMRP 3.3600 IN.
(A71052)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S5	75.000	0.000	0.000	0.000	YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

# SRM LONGITUDINAL POSITION (MACH NUMBER EFFECTS)

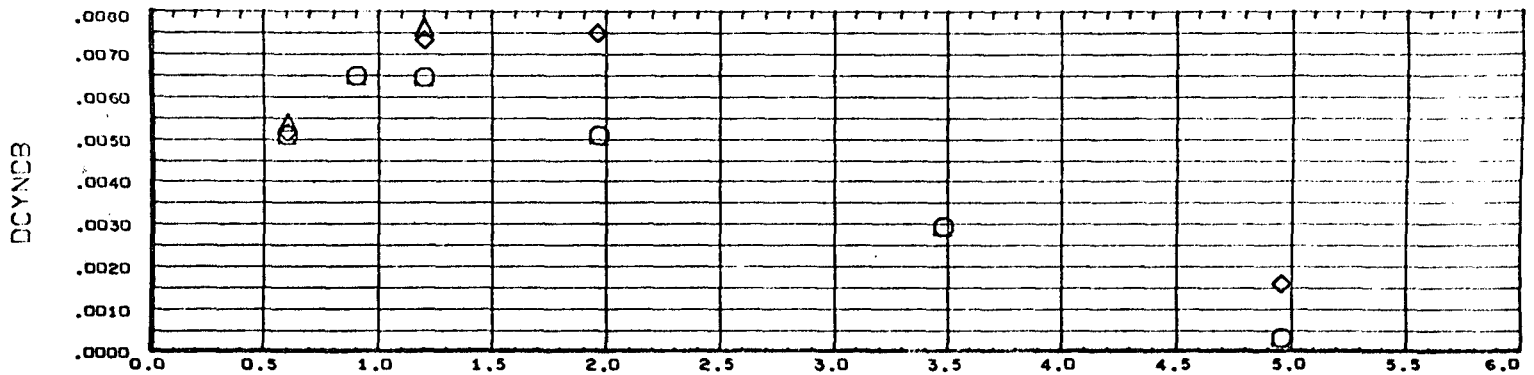


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	SREF 7.8800 Sq. IN
(B71013)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.624	LREF 2.0280 IN.
(B71003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.885	BREF 4.4600 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE

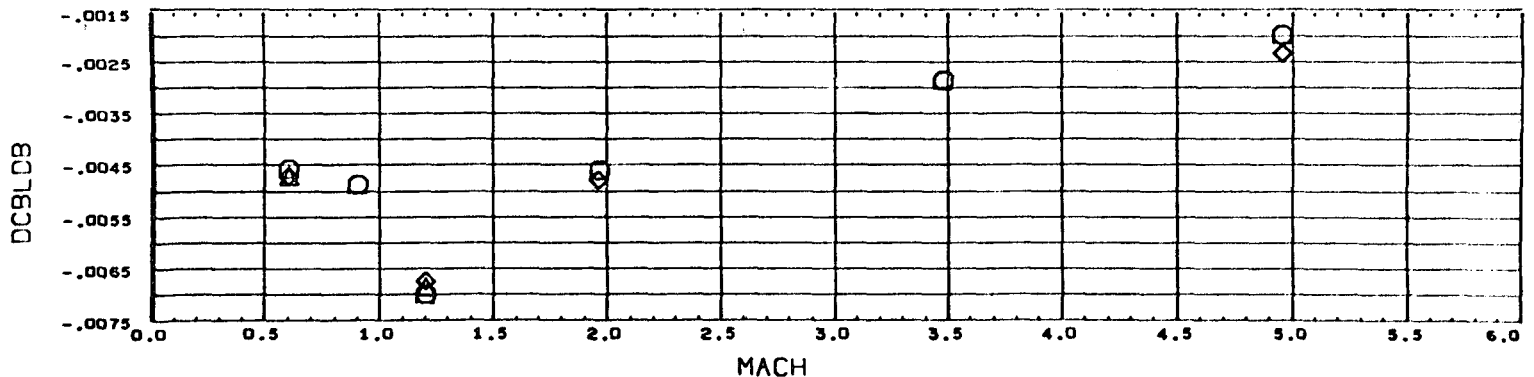
# SRM LONGITUDINAL POSITION (MACH NUMBER EFFECTS)



MACH



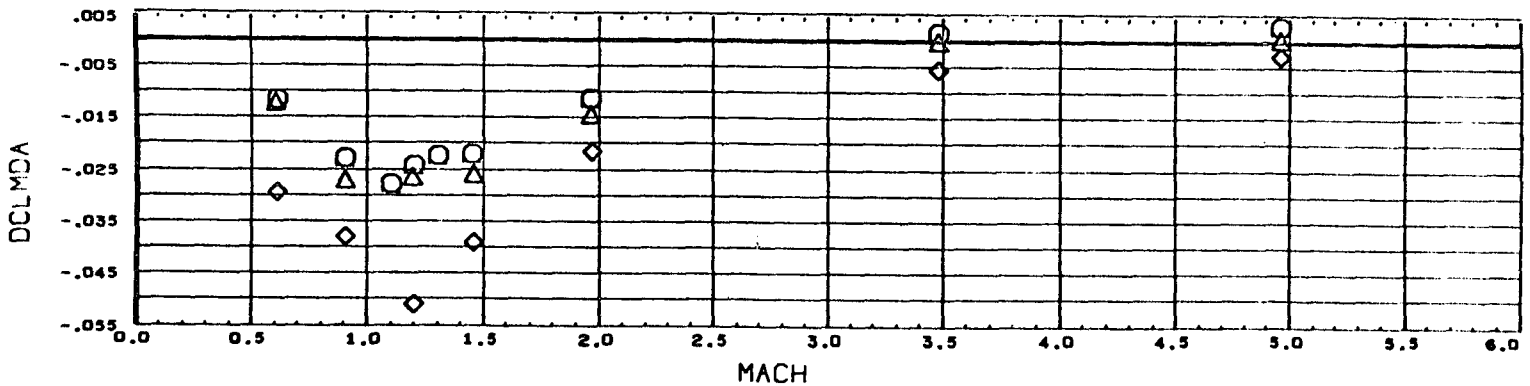
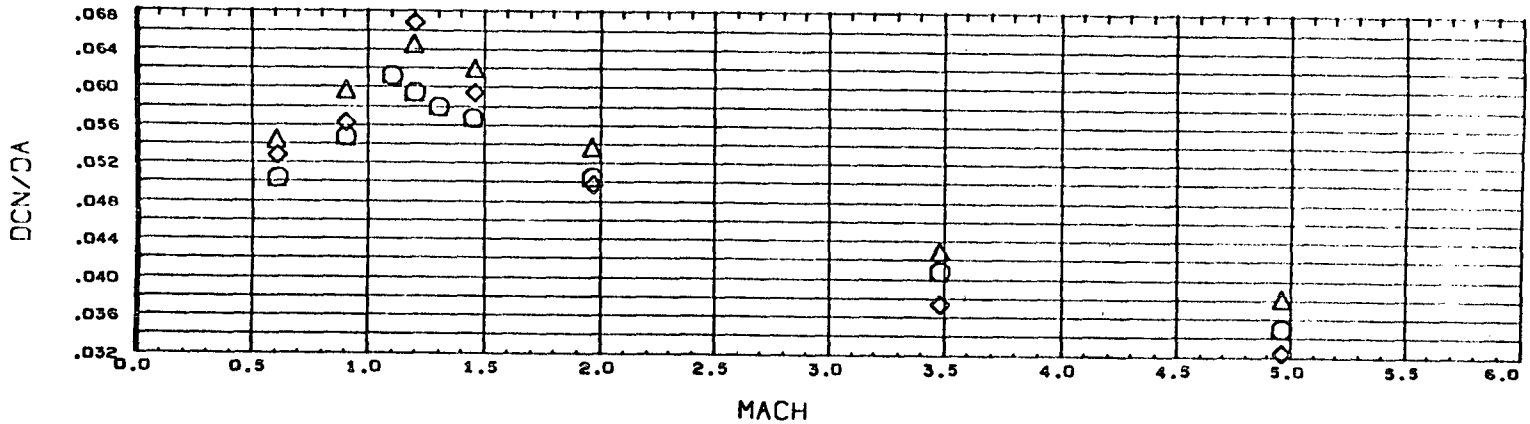
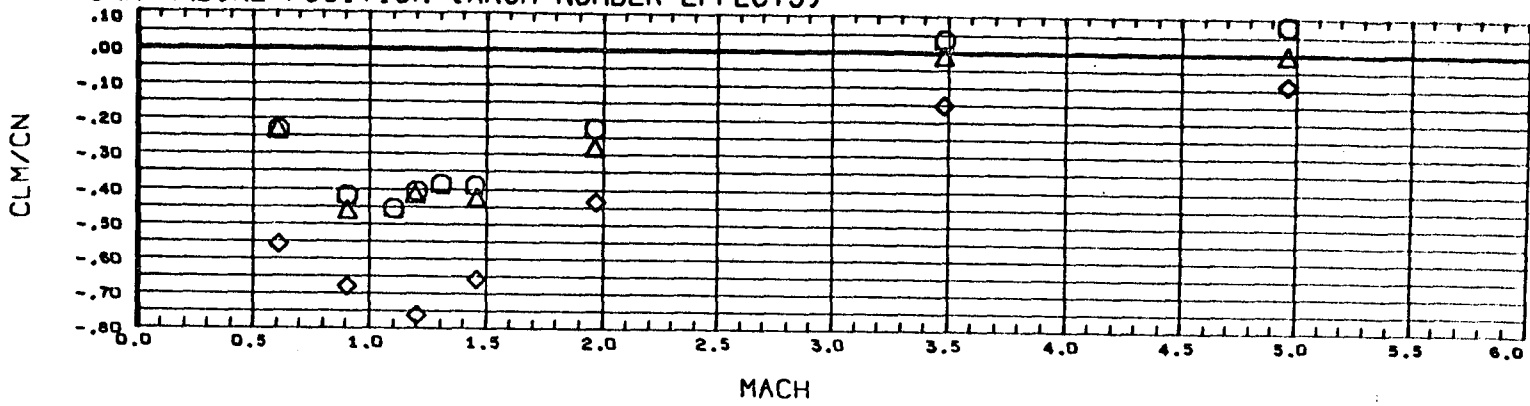
MACH



MACH

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71014)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.624	0.000	LREF 2.0280 IN.
(A71084)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.885	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

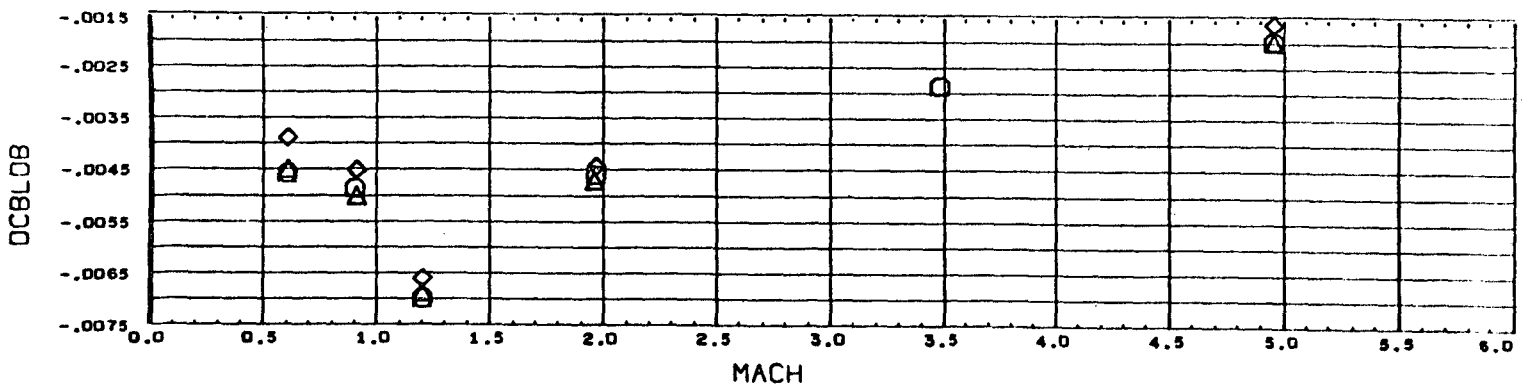
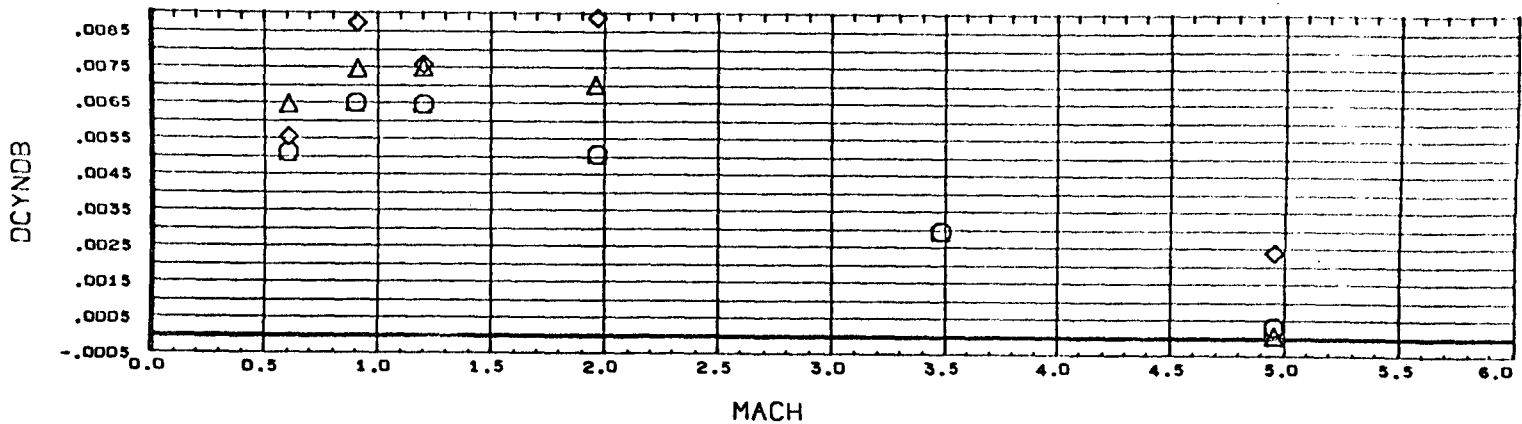
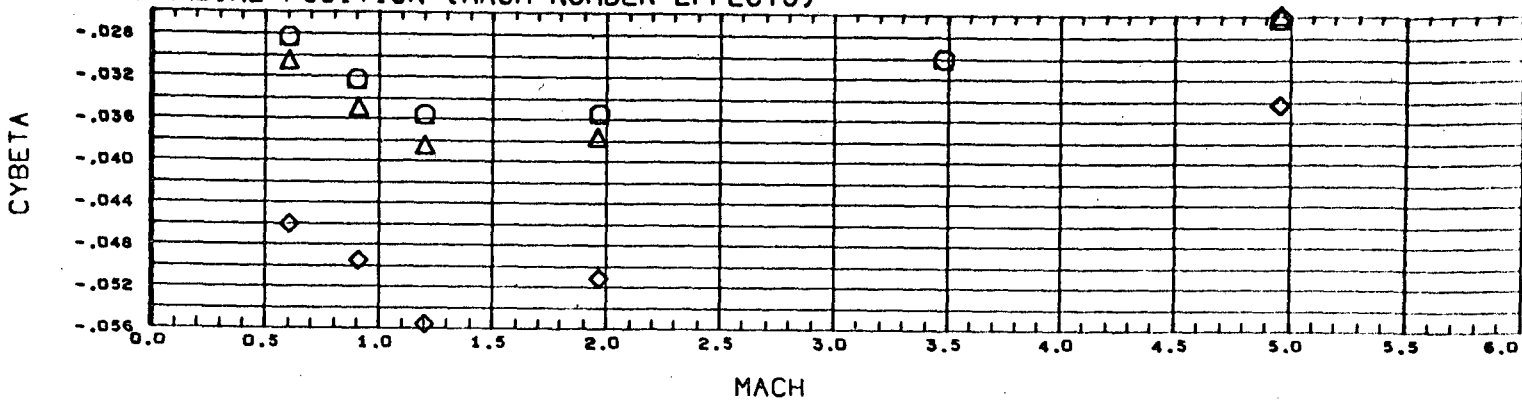
# SRM RADIAL POSITION (MACH NUMBER EFFECTS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	TIOIS1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(B71002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIOIS1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(B71005)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIOIS1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(B71008)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	TIOIS1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN.
							XMRP 3.3600 IN.
							YMRP 0.0000 IN.
							ZMRP 0.2480 IN.
							SCALE 0.0040 SCALE

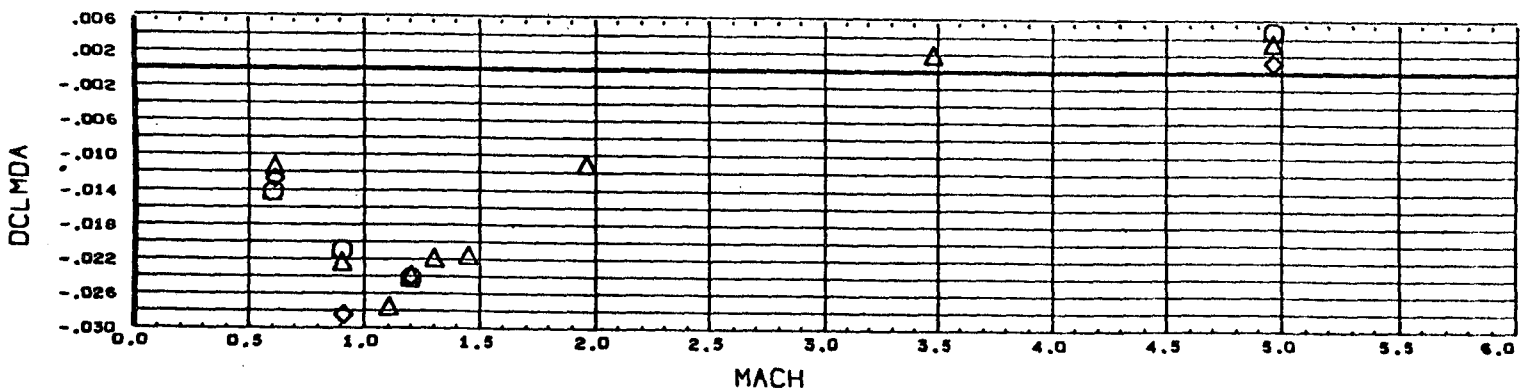
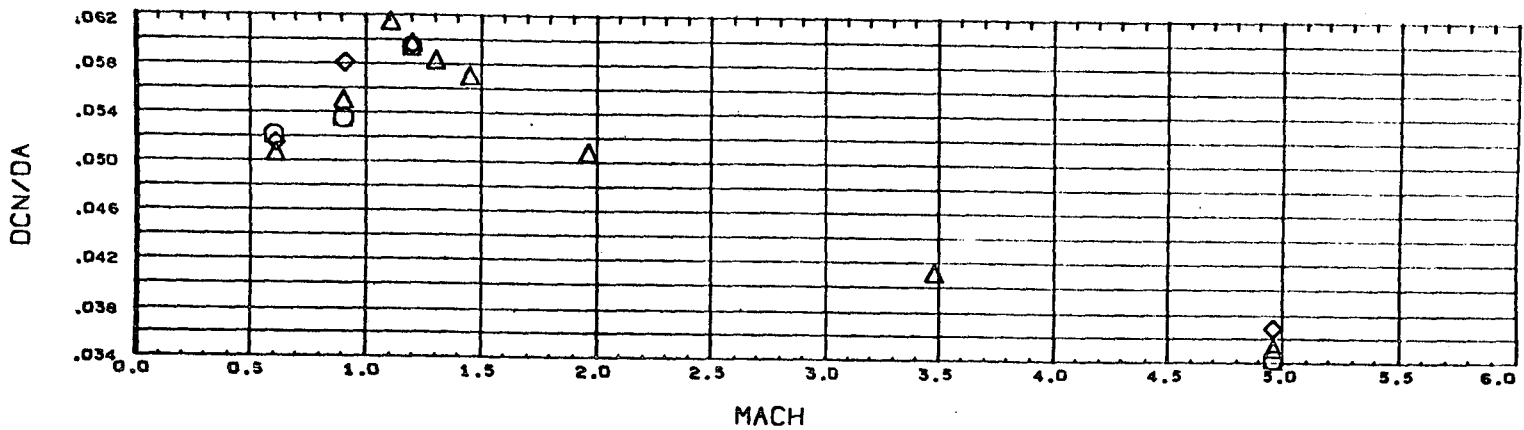
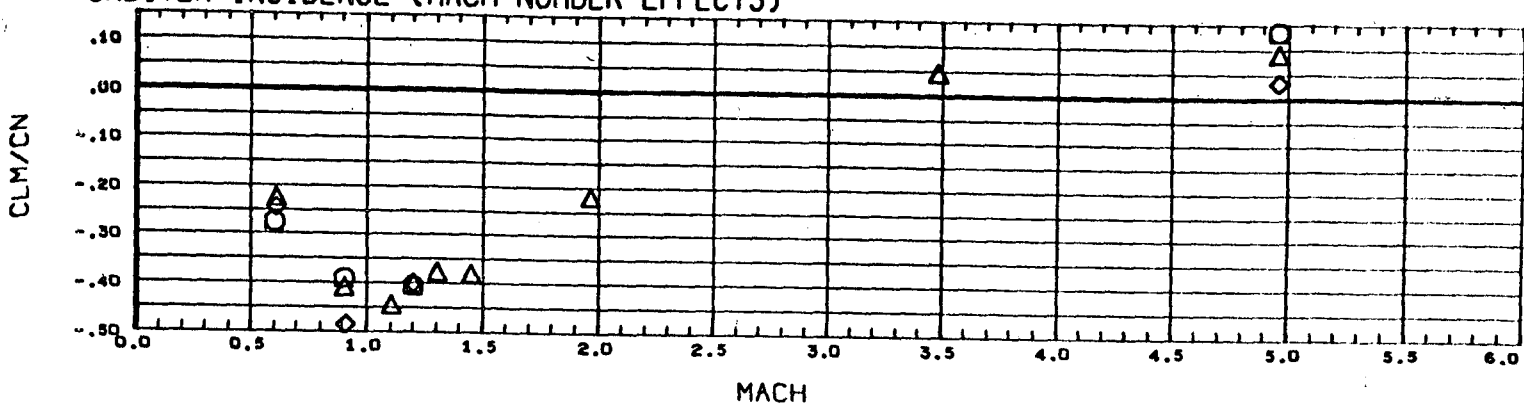


# SRM RADIAL POSITION (MACH NUMBER EFFECTS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	T101S1	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(A71010)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(A71011)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	90.000	0.000	0.000	LREF 2.0280 IN.
(A71012)	MSFC TWT 544 LAUNCH VEHICLE STUDIES	T101S1	-1.500	135.000	0.000	0.000	BREF 4.4600 IN. XMRP 3.3600 IN. YMRP 0.0000 IN. ZMRP 0.2480 IN. SCALE 0.0040 SCALE

# ORBITER INCIDENCE (MACH NUMBER EFFECTS)



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBINC	PHIS	XS	ELEVTR	REFERENCE INFORMATION
(871001)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	0.000	75.000	0.000	0.000	SREF 7.8800 SQ. IN
(871002)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-1.500	75.000	0.000	0.000	LREF 2.0280 IN.
(871003)	MSFC TWT 544 LAUNCH VEHICLE STUDIES T101S1	-3.000	75.000	0.000	0.000	BREF 4.4800 IN.
						XMRP 3.3600 IN.
						YMRP 0.0000 IN.
						ZMRP 0.2480 IN.
						SCALE 0.0040 SCALE