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(NASA-CR-147648) AN INVESTIGATION OF THE AERODYNAMIC CHARACTERISTICS OF A 0.00548 SCALE MODEL (MODEL NO. 486) OF THE SPACE SHUTTLE 146-INCH DIAMETER SOLID ROCKET BOOSTER AT ANGELS OF ATTACK FROM (Chrysler G3/16

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

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NASA CR-147,648

AN INVESTIGATION OF THE AERODYNAMIC CHARACTERISTICS OF A 0.00548 SCALE MODEL (MODEL NO. 486) OF THE SPACE SHUTTLE 146-INCH DIAMETER SOLID ROCKET BOOSTER AT ANGLES OF ATTACK FROM 113° TO 180° IN THE AEDC PWT 4-FOOT TRANSONIC WIND TUNNEL (SA16F)

by

Paul E. Ramsey, NASA/MSFC

Prepared under NASA Contract Number NAS9-13247

by

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

for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:	AEDC P41C-E3A
NASA Series Number:	SA16F
Model Number:	MSFC 486
Test Dates:	May 5-6, 1976
Occupancy Hours:	8.1

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AN INVESTIGATION OF THE AERODYNAMIC CHARACTERISTICS OF A 0.00548 SCALE MODEL (MODEL NO. 486) OF THE SPACE SHUTTLE 146-INCH DIAMETER SOLID ROCKET BOOSTER AT ANGLES OF ATTACK FROM 113° TO 180° IN THE AEDC PWT 4-FOOT TRANSONIC WIND TUNNEL (SA16F)

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ABSTRACT

An experimental investigation (SA16F) was conducted in the AEDC PWT 4T to determine the entry static stability of a 0.00548 scale Space Shuttle Solid Rocket Booster (SRB). The primary objective was to improve the definition of the aerodynamic characteristics in the angle of attack range beyond 90° in the vicinity of the entry trim point.

The SRB scale model consisted of the reentry configuration with all major protuberances. A simulated heat shield around the engine nozzle was also included.

Data were obtained for a 50° side mounted sting and a straight nose mounted sting. The angle of attack range for the side mounted sting was 113° to 147° and for the nose mounted sting 152° to 187°. The Mach number range consisted of 0.4 to 1.2 at roll angles of 0 and 90°.

The resulting 6-component aerodynamic force data was presented as the variation of coefficients with angle of attack for each Mach number and roll angle.

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PLOT SCHEDULE:

(A) C_{N_m}, C_{m_m}, C_A VERSUS α

(B) C_{Y_m}, C_{n_m}, C_ℓ VERSUS α

(C) x_{cp}/ℓ VERSUS α

NOMENCLATURE

General

PLOT SYMBOL	MNEMONIC	DEFINITION
AF		abbreviation for axial force
F_N		normal force, lbs
F_Y		side force, lbs
ℓ_B	L	length of SRB model,
ℓ_{ref}	LREF	reference length; diameter of the cylindrical section of the model, in.
MRP	MRP	moment reference point
M_y		pitching moment, in.-lbs
M_z		yawing moment, in.-lbs
NF		abbreviation for normal force
P_c		wind tunnel charge pressure, psi
P_t	PT	total pressure, psi
P_∞		static pressure, psi
PM		abbreviation for pitching moment
q_∞	Q	dynamic pressure, psi
R_N	RN	Reynolds Number (based on the model diameter)
M_r		abbreviation for rolling moment
SF		abbreviation for side force
SRB		Solid Rocket Booster
S_{ref}	SREF	reference area (cross-sectional area of the cylindrical section of the model), $in.^2$
T_t		total temperature, ^oF

NOMENCLATURE (Continued)

PLOT SYMBOL	MNEMONIC	DEFINITION
T_c		tunnel charge temperature, ^{o}F
X_m, Y_m, Z_m		missile axes system
x_{cp}/ℓ	XCP/L	longitudinal position of the center of pressure, expressed as a fraction of the SRB length measured from nose. $\frac{x_{cp}}{\ell} = \frac{XMRP}{\ell_B} - \left(\frac{C_{m_m}}{C_{N_m}}\right)\left(\frac{\ell_{ref}}{\ell_B}\right)$
XMRP ZMRP YMRP	XMRP ZMRP YMRP	abbreviations for location of the moment reference point in the missile axis system, measured from centerline of model at nose (XMRP measured in negative direction of X_m), in.
YM		abbreviation for yawing moment

COEFFICIENTS

PLOT SYMBOL	MNEMONIC	DEFINITION
C_{m_m}	CLMM	pitching moment coefficient in the missile axes system; $C_{m_m} = \frac{M_y}{q\, S_{ref}\, \ell_{ref}}$
C_{N_m}	CNM	normal force coefficient; $C_{N_m} = \frac{F_N}{q\, S_{ref}}$
C_{n_m}	CYNM	yawing moment coefficient; $C_{n_m} = \frac{M_z}{q\, S_{ref}\, \ell_{ref}}$
C_{Y_m}	CYM	side force coefficient; $C_{Y_m} = \frac{F_Y}{q\, S_{ref}}$
C_A	CA	axial force coefficient; $C_A = \frac{AF}{qS_{ref}}$
C_ℓ	CBL	rolling moment coefficient; $C_\ell = \frac{M_r}{q\, S_{ref}\, \ell_{ref}}$

NOMENCLATURE (Continued)

Greek Symbols

PLOT SYMBOL	MNEMONIC	DEFINITION
α		angle of attack of model, since there is no yaw angle (β), then α is the same as the total angle of attack (α_T), deg.
α_T	ALPHA	total angle of attack, deg.
β	BETA	angle of sideslip, deg.
M	MACH	Mach number
ϕ	PHI	roll angle, i.e., angle between the missile Y_m-axis and the plane defined by the missile X_m-axis and the relative wind vector (from a pilot's view oint) in an airplane, a positive roll angle is a clockwise rotation). Since the model was axisymmetric the roll angle was considered to be zero, deg.
γ		ratio of specific heats (for air $\gamma = 1.4$)

Subscripts

PLOT SYMBOL	MNEMONIC	DEFINITION
ref	REF	reference conditions
o		total conditions
c		charge conditions
B		model body
m		missile axis system
s		static conditions

INTRODUCTION

This report describes a wind tunnel test program to obtain the aerodynamic static stability characteristics of the 146-inch diameter Solid Rocket Booster (SRB) reentry configuration over a portion of its reentry flight regime. The model is representative of the latest SRB configuration and has been tested in the NASA MSFC 14 x 14-inch Trisonic Wind Tunnel.

The SRB model tested was a 0.00548 scale model of the 146-inch diameter right hand Solid Rocket Booster reentry configuration with all major protuberances. The SRB model was mounted onto a six-component strain-gage balance to obtain static stability force and moment data. The model balance was supported by either a straight or a side-mounted sting to achieve the desired angle-of-attack range. The SRB reentry test configuration included a simulated heat shield around the engine nozzle.

The Solid Rocket Booster model was tested at Mach numbers of 0.4 to 1.2 at angles-of-attack from 113° to 180°, and at roll angles of 0 and 90 degrees. The test program consisted of 32 α polars.

MODEL DESCRIPTION AND SUPPORT HARDWARE

The model tested was a 0.00548 scale model of the 146-inch diameter Space Shuttle Solid Rocket Booster with a truncated nozzle. The general model arrangement is shown in Figure 2. The SRB model was made of stainless steel and was designated MSFC Model Number 486. The model was an assembly of three components: a nose section, a center body section, and a tail section. There were two center body sections, a solid center body for use with the MSFC straight sting #102 and a center body with a cutout for use with the side mounted sting (No. 131). An engine nozzle insert and heat shield was installed in the tail section whenever the model was side mounted. The SRB model components are shown in Figure 2 and are detailed in the SRB model assembly and fabrication drawings.

There were nine major protuberances located on the SRB model. The relative position of the protuberances are shown in the general model arrangement drawing, Figure 2. All model protuberances were permanently attached to the model body except the section of the Cable Systems Tunnel located on the SRB center body. The permanently attached protuberances had either been machined on the model or soldered to it.

The Cable Systems Tunnel was the only protuberance on the SRB center body section and was the only removable model protuberance. This section of the tunnel had to be removable because of the method in which the model roll angles were simulated. The nose and tail sections were rotated relative to the center body section to simulate roll angles when the model was side mounted. A screw hole pattern was provided that

allowed the movable section of the Cable Systems Tunnel to be attached in increments of 45 degrees around the center body section.

The SRB model was mounted onto a six-component strain gage balance to obtain static stability data. The model balance used was MSFC balance number 239. MSFC side mounted sting 131 and straight sting 102 were used with the AEDC 1 1/2 inch diameter straight sting adapter to obtain the desired angle-of-attack of the model. The MSFC stings are shown in Figure 3 and 4. Using the initial 40^{o} offset of the MSFC side mounted sting with the AEDC 4T sector travel of 27^{o} to -7^{o} provided a model range of 113^{o} to 147^{o}. The use of the MSFC sting #102 with the AEDC 4T sector travel of -7 to 28^{o} provided a model angle-of-attack of 152^{o} to 187^{o}.

The six component force and moment data was measured using MSFC balance number 239. The estimated maximum loads for this test, along with the balance capabilities are presented in Table IV.

TEST FACILITY DESCRIPTION

The Aerodynamic Wind Tunnel (4T) is a closed-loop, continuous flow, variable-density tunnel with a Mach number range of 0.1 through 1.3. In addition, Mach number 1.6 and 2.0 can be obtained by the use of removable nozzle inserts. At all Mach numbers, the stagnation pressure can be varied from about 300 through 3700 psfa. The test section is 4 ft square and 12.5 ft long with perforated, variable porosity (0.5- to 10-percent open) walls. It is completely enclosed in a plenum chamber from which the air can be evacuated, allowing part of the tunnel airflow to be removed through the perforated walls of the test section. A more thorough description of the tunnel may be found in the Test Facilities Handbook (Ref. 1).

DATA REDUCTION

The wind tunnel test conditions were used to calculate the Mach number, the dynamic pressure, and the Reynolds number. The six-component force and moment data were resolved in the missile axis system, Figure 1, about the SRB Moment Reference Point (MRP)and presented in the form of nondimensional coefficients.

Model reference dimensions used are:

	FULL SCALE	MODEL SCALE
Reference Area (S_{ref}) (cross section area of cylindrical body)	116.26 Ft^2	0.503 $In.^2$
Reference Length (ℓ_{ref}) (diameter of cylindrical body)	146 In.	0.8 In.
Reference Span (b_{ref}) (diameter of cylindrical body)	146 In.	0.8 In.
Moment Reference Point (MRP)*		
XMRP	1055.84 In.	5.785 In.
YMRP		0.0 In.
ZMRP		0.0 In.
Body Length w/Nozzle (L)		9.806 In.

*The SRB Moment Reference Point is measured on the SRB centerline, aft from the nose.

Because the model was originally designed to be tested at angles-of-attack from 0 to 180^{o}, it was reversed on the balance for angles-of-attack greater than 90 degrees; consequently, a sign change was required during

data reduction of four of the forces and moments measured by the balance. These forces and moments were: axial force, side force, pitching moment, and rolling moment.

The model angle-of-attack was calculated using the pre-set model attitude inclination of model support mechanism (Sector Angle), and the support hardware deflection measurements due to model forces and moments.

The nondimensional coefficients, test conditions, and model attitude information are presented in a tabulation format in the Appendix.

REFERENCES

1. Test Facilities Handbook (Tenth Edition), Arnold Engineering Development Center, May 1974.

2. Streby, G. D., "A Pretest Report for an Aerodynamic Static Stability Wind Tunnel Test of a 0.00548 Scale Model of the Space Shuttle 146-Inch Diameter SRB, Without Nozzle Extension, at Reentry Attitudes," Northrop Services, Inc., Memorandum M-9230-75-474, November 20, 1975.

TABLE I.

TEST: SA 16 F DATE: 7/12/76

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq.inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)	STAGNATION PRESSURE (pounds/sq inch)
0.4	3.5×10^6	2.17	100	21.5
0.5	4.2	3.18	105	21.5
0.6	4.7	4.26	101	21.5
0.7	5.2	5.33	115	21.5
0.8	5.5	6.30	119	21.5
0.9	4.0	4.67	98	13.9
1.0	4.1	5.13	98	13.9
1.2	4.1	5.75	104	13.9

BALANCE UTILIZED: MSFC 239

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE: @ q = 5 Lbs./In.^{2}
NF	± 200 Lbs.	± 1.00 Lbs.	± 0.032
SF	± 100 Lbs.	± 0.50 Lbs.	± 0.016
AF	± 50 Lbs.	± 0.25 Lbs.	± 0.008
PM	± 196 IN.Lbs.	± 1.00 IN.Lbs.	± 0.006
RM	± 50 IN.Lbs.	± 0.25 IN.Lbs.	± 0.002
YM	± 98 IN.Lbs.	± 0.50 IN.Lbs.	± 0.004

COMMENTS: ACCURACY BASED ON ± 0.5% OF RANGE FULL LOAD CAPACITY.

MSFC - Form 263-1 (Rev. April 1973)

TABLE II.

TEST : AEDC P4IC - E3A (SA16F) DATA SET RUN NUMBER COLLATION SUMMARY DATE : 7/12/76

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES φ	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	TEST RUN NUMBERS
RVP001	SRB WITH PROTUB-	A	0	0		48	49	50	51	60	56	57	58	
RVP002	ERANCE ON BENT	A	0	90		37	38	40	41	42	43	44	45	
	STING													
RVP003	SRB WITH PROTUB-	B	0	0		3	4	5	6	8	12	13	14	
RVP004	ERANCE ON	B	0	90		26	27	28	29	30	31	32	33	
	STRAIGHT STING													

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

CNM CLMM CA CYM CYNM CBL 6

COEFFICIENTS IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULE: αA: 113° - 147° Δα = 2°
αB: 152° - 187° Δα = 2°

TABLE III. MODEL DIMENSIONAL DATA

MODEL COMPONENT: SOLID ROCKET BOOSTER NOSE

GENERAL DESCRIPTION: A CONICAL SECTION WITH A SPHERICAL RADIUS NOSE

MODEL SCALE: 0.00548 SCALE

REFERENCE DRAWING(S): MSFC #80M42805 & 80M42806

DIMENSIONS	THEORETICAL FULL SCALE	THEORETICAL MODEL SCALE
Spherical Nose Radius	13.27 in.	0.073 in.
Conical Nose Section Half Angle	18 degrees	18 degrees
SRB Nose Length	195 in.	1.069 in.
Forward Cylindrical Body Diameter	146 in.	0.8 in.

TABLE III. (Continued)

MODEL COMPONENT: SOLID ROCKET BOOSTER CYLINDRICAL BODY

GENERAL DESCRIPTION: THE CYLINDRICAL SECTION OF THE SRB BODY

MODEL SCALE: 0.00548 SCALE

REFERENCE DRAWING(S): MSFC #80M42802 & 80M42804

DIMENSIONS:	THEORETICAL FULL-SCALE	THEORETICAL MODEL-SCALE
Center Body Diameter	146 in.	0.8 in.
Center Body Length	1443.6 in.	7.910 in.

TABLE III (Concluded)

MODEL COMPONENT: SOLID ROCKET BOOSTER ENGINE SKIRT

GENERAL DESCRIPTION: A CONICAL FRUSTUM FLARING OUT FROM THE SRB BODY TO ENCLOSE THE ENGINE NOZZLE WITHOUT THE ENGINE EXTENSION

MODEL SCALE: 0.00548 SCALE

REFERENCE DRAWING(S): MSFC #80M51473

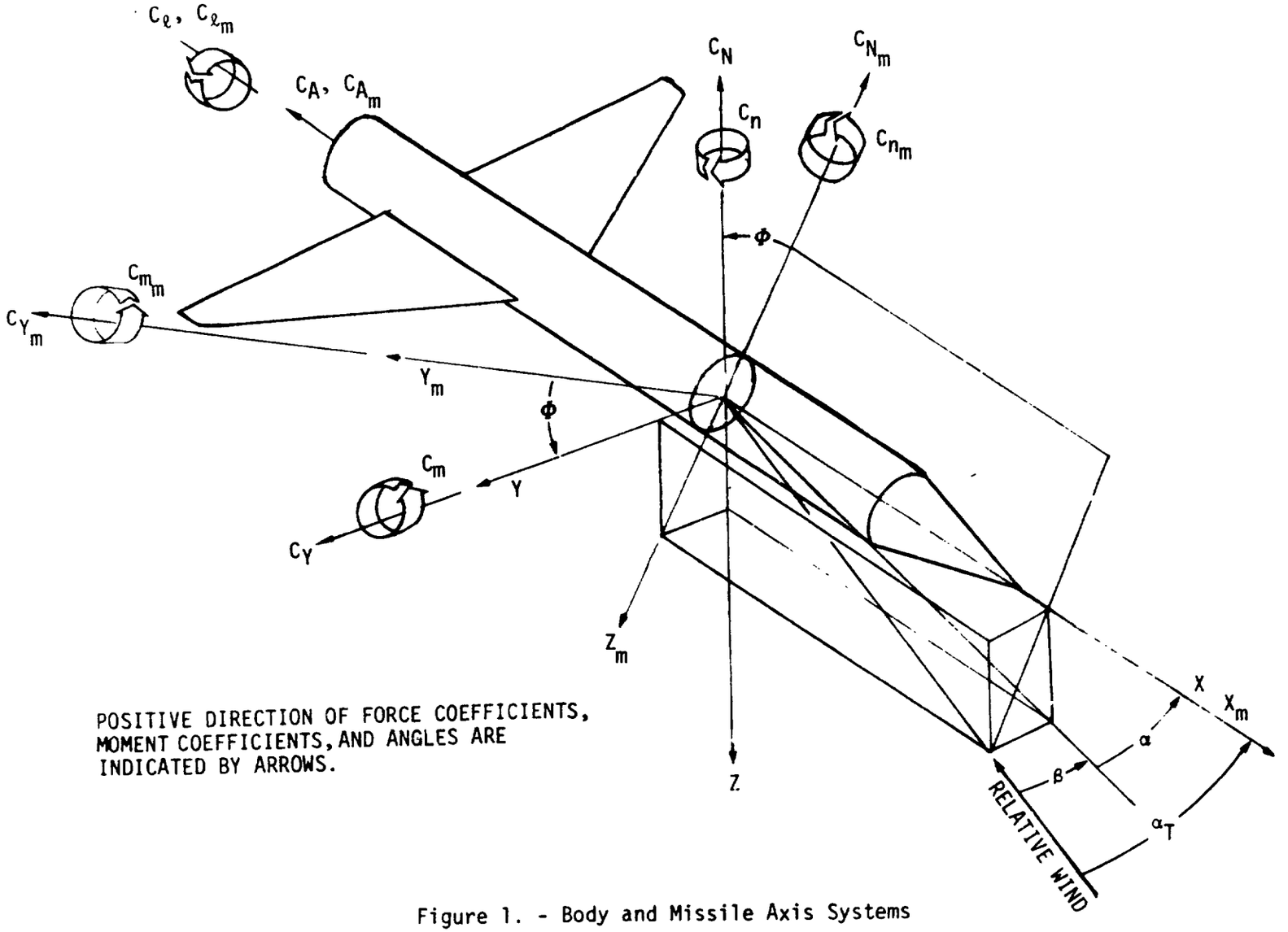
DIMENSIONS:	THEORETICAL FULL SCALE	THEORETICAL MODEL SCALE
Cylindrical Body Diameter	146 in.	0.8 in.
Engine Skirt Flare Angle	$18^{\circ}40'$	$18^{\circ}40'$
Engine Skirt Exit Diameter	208.20 in.	1.141 in.

TABLE IV

MODEL LOADS AND BALANCE CAPABILITY

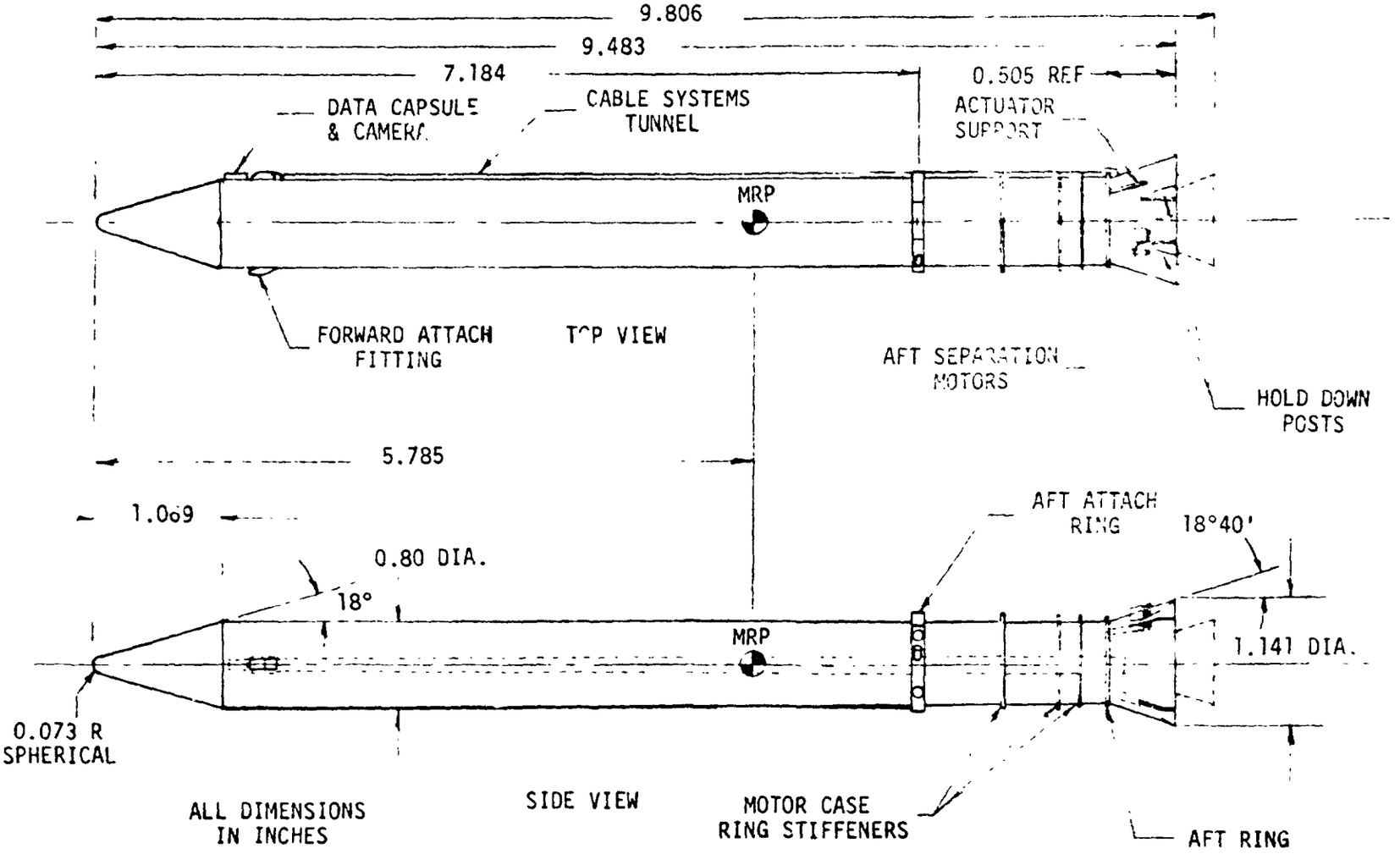
COMPONENT	MODEL/LOADS*	RATED BALANCE CAPACITY
Normal Force	100 Lbs.	± 200 Lbs.
Pitching Moment	60 in.-lbs	± 196 in.-lbs
Side Force	5 lbs	± 100 lbs.
Yawing Moment	5 in-lbs	± 98 in.-lbs
Rolling Moment	1 in.-lbs	± 50 in.-lbs
Axial Force	15 lbs	± 50 lbs.

*Moments are taken about balance center.



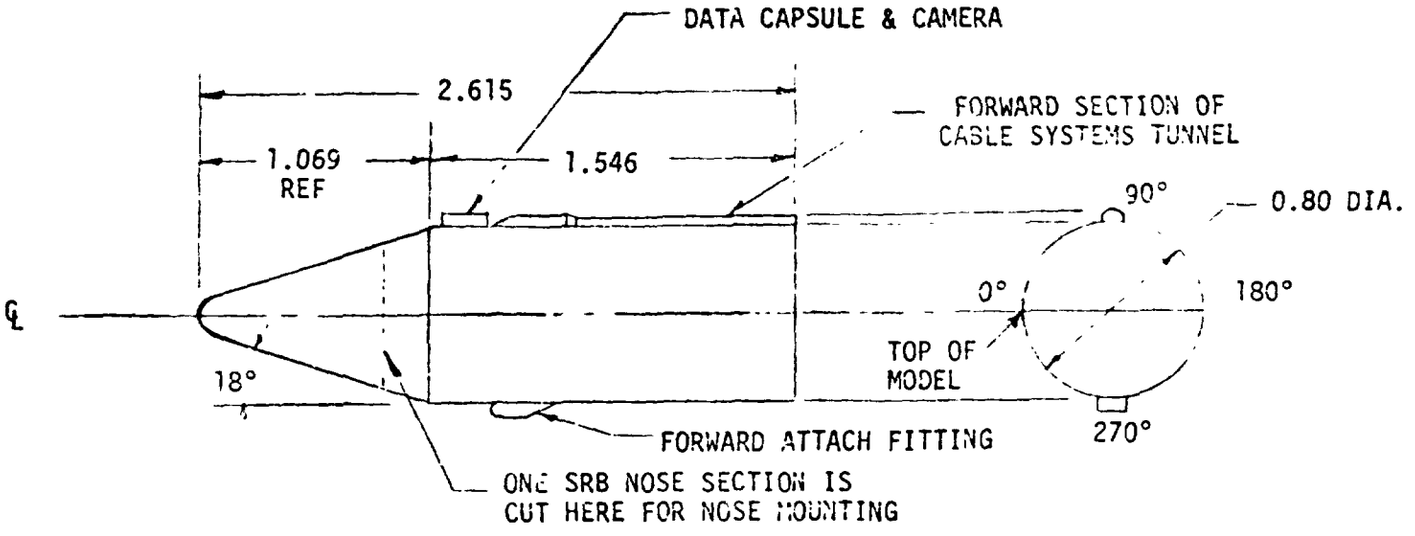
POSITIVE DIRECTION OF FORCE COEFFICIENTS, MOMENT COEFFICIENTS, AND ANGLES ARE INDICATED BY ARROWS.

Figure 1. - Body and Missile Axis Systems



a. General Model Arrangement

Figure 2

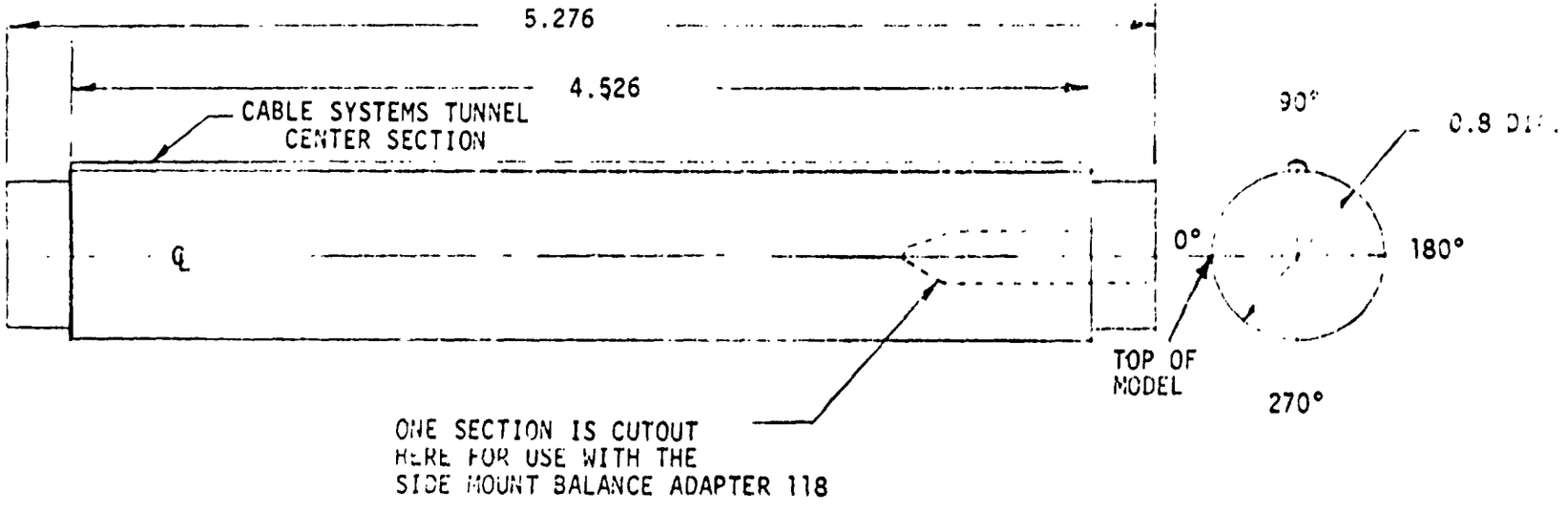


ALL DIMENSIONS IN INCHES

SRB MODEL NOSE SECTION

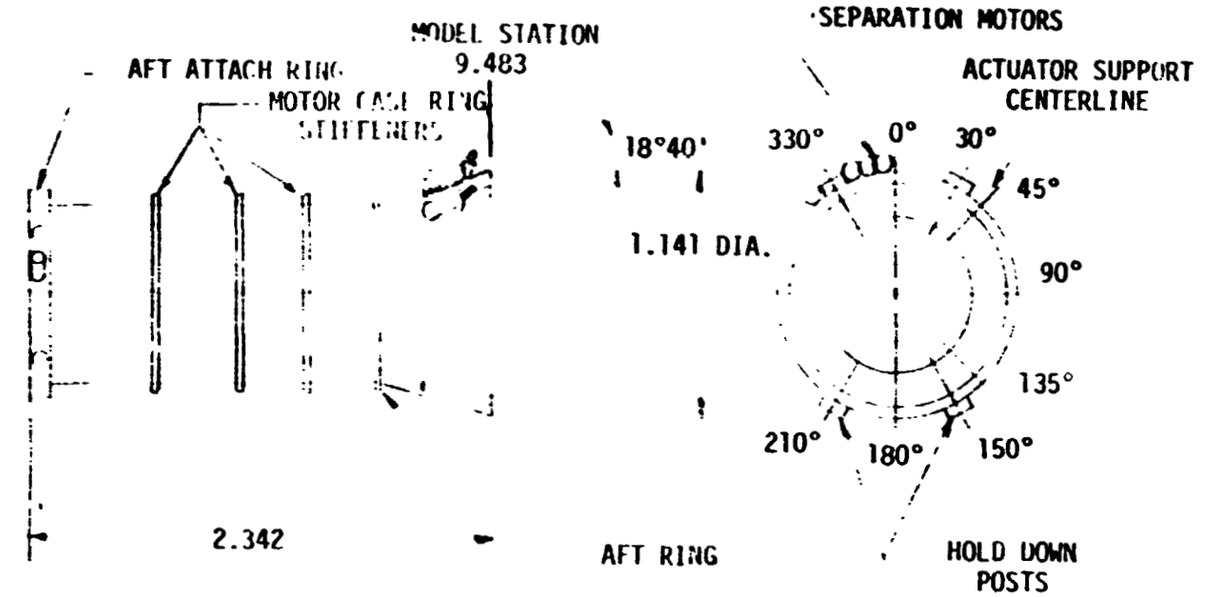
b. SRB Model Components

Figure 2. - (Continued)

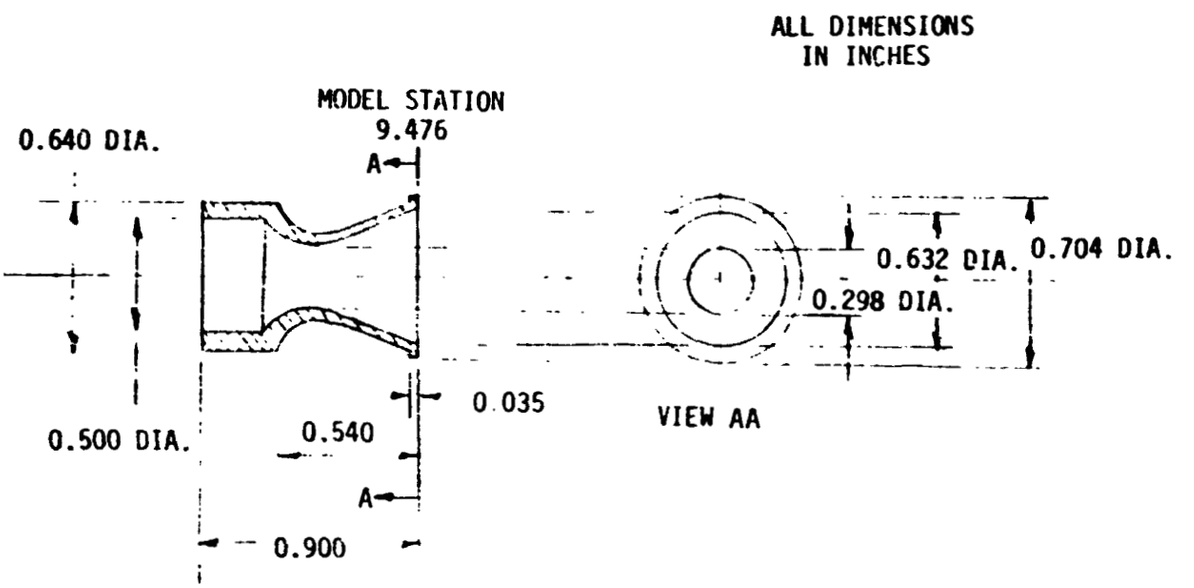


c. SRB Model Center Body Sections

Figure 2. - (Continued)



SRB MODEL TAIL SECTION



SRB MODEL ENGINE NOZZLE INSERT

d. SRB Model Tail Section

Figure 2. - (Concluded)

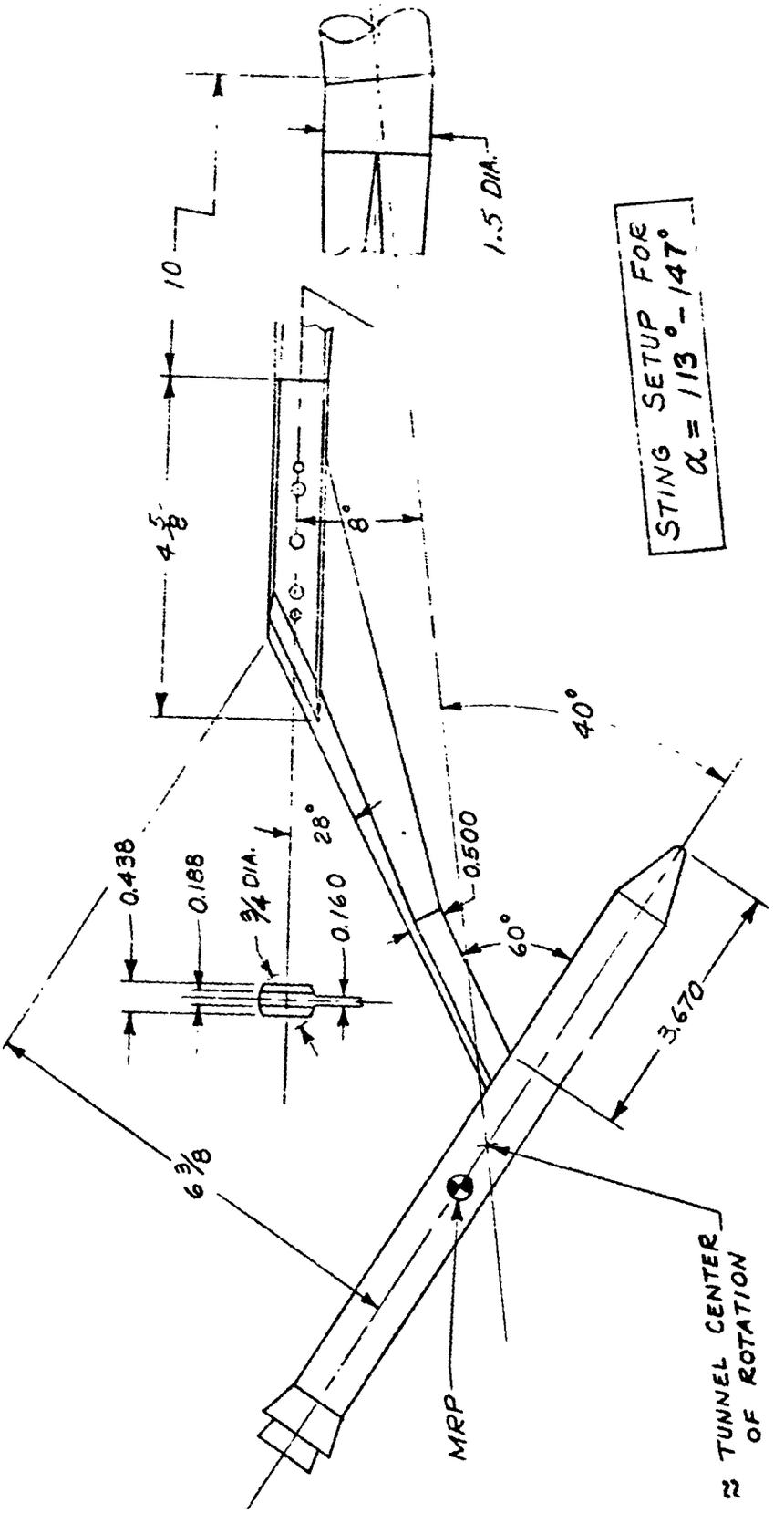


Figure 3. - Details of One Piece Side Mounted Sting, No. 131.

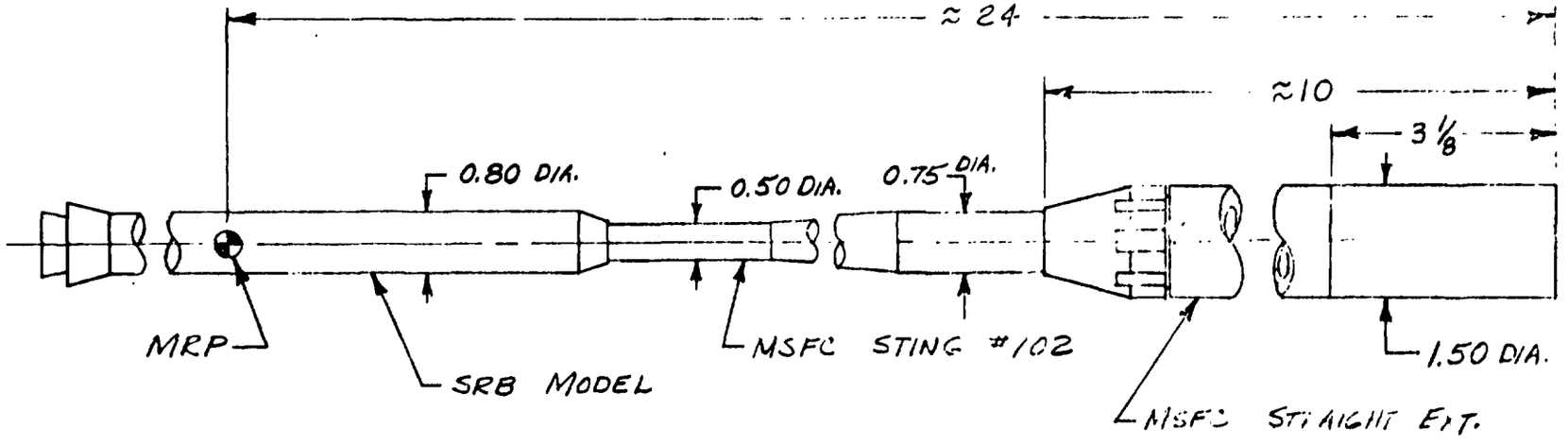


Figure 4. - Nose Mounted SRB and Sting Details

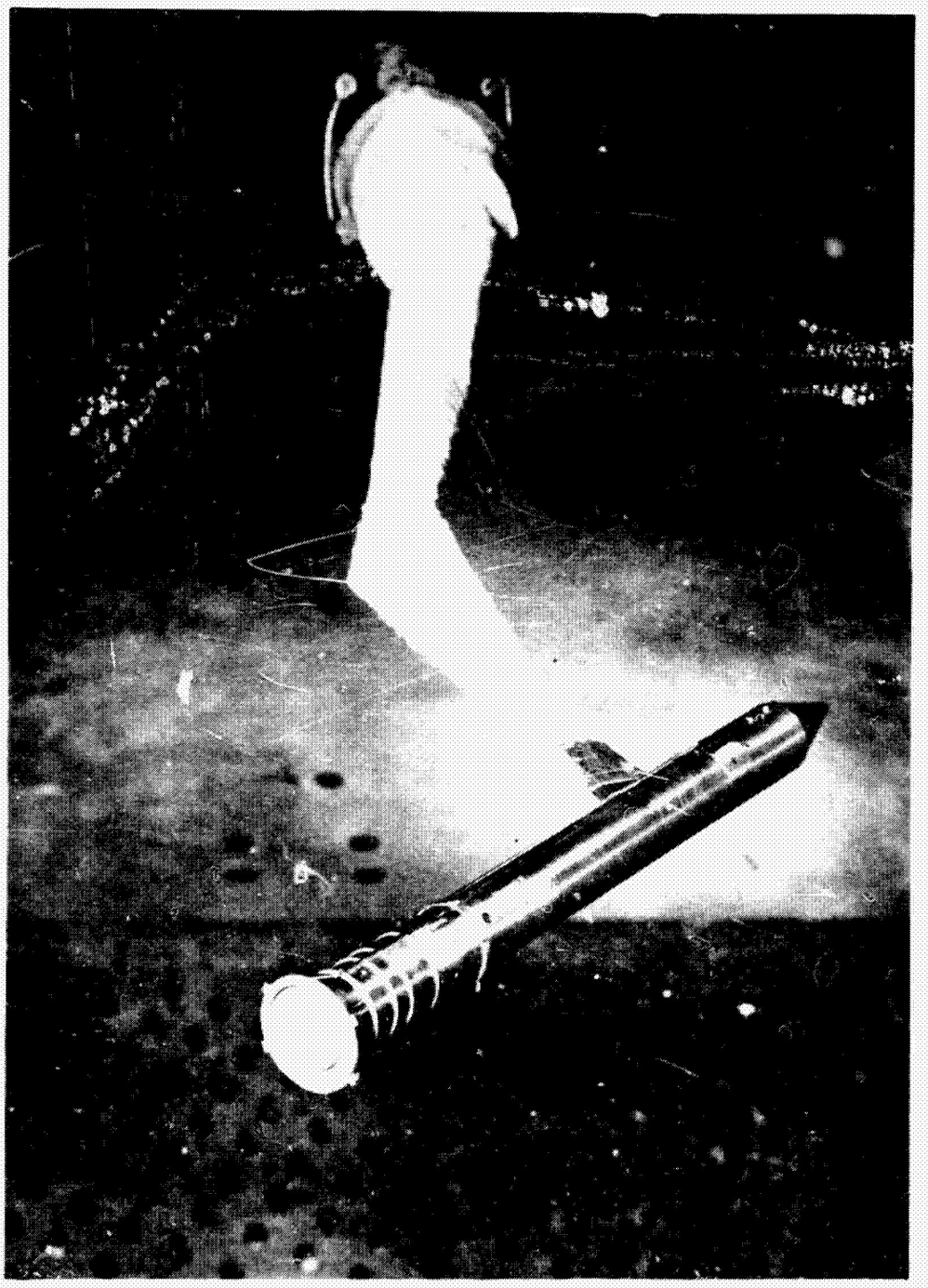


Figure 5. - SRB Mod 1 Installation in AEDC PWT 4T.

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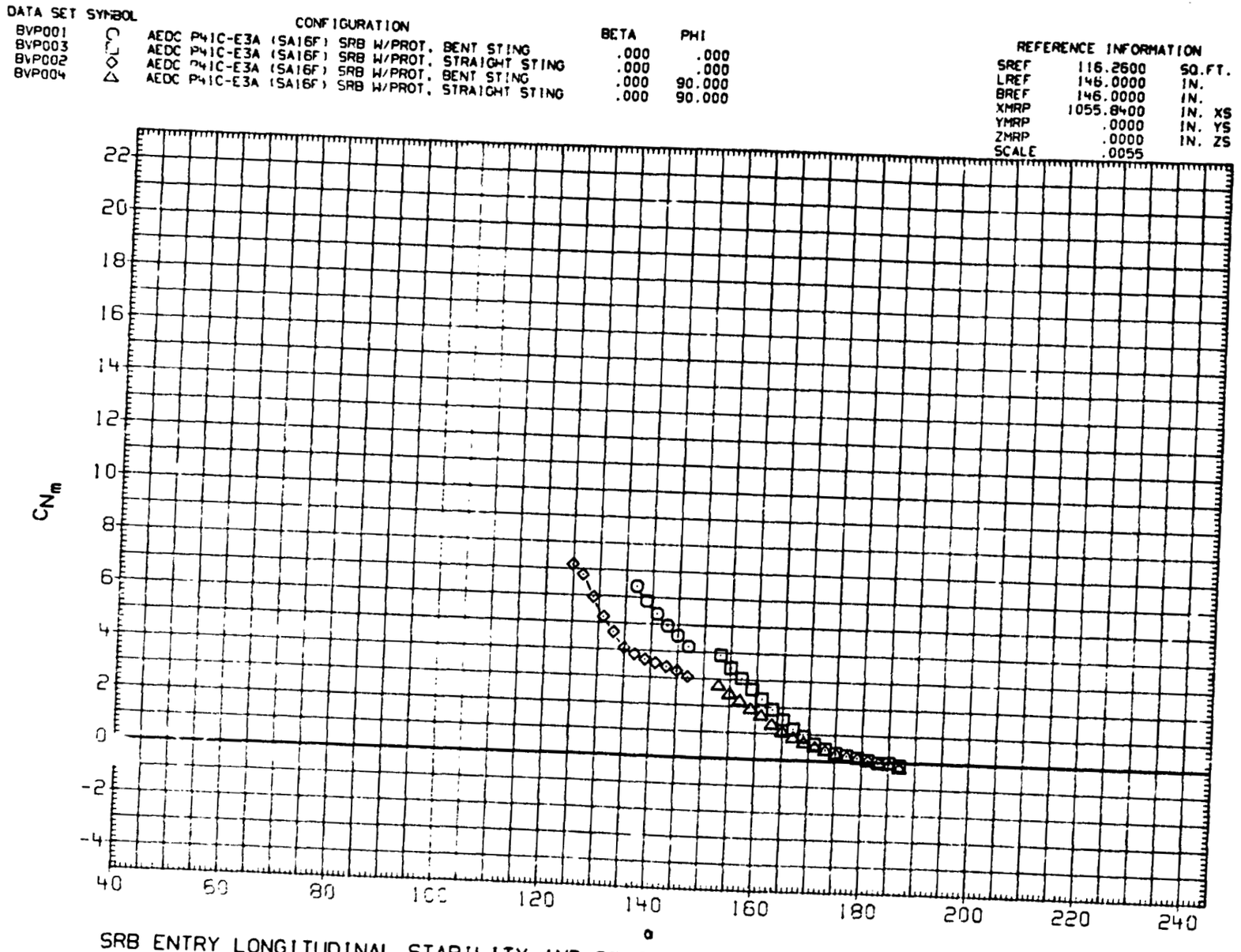
DATA FIGURES



SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A) MACH = .40

PAGE

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

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YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
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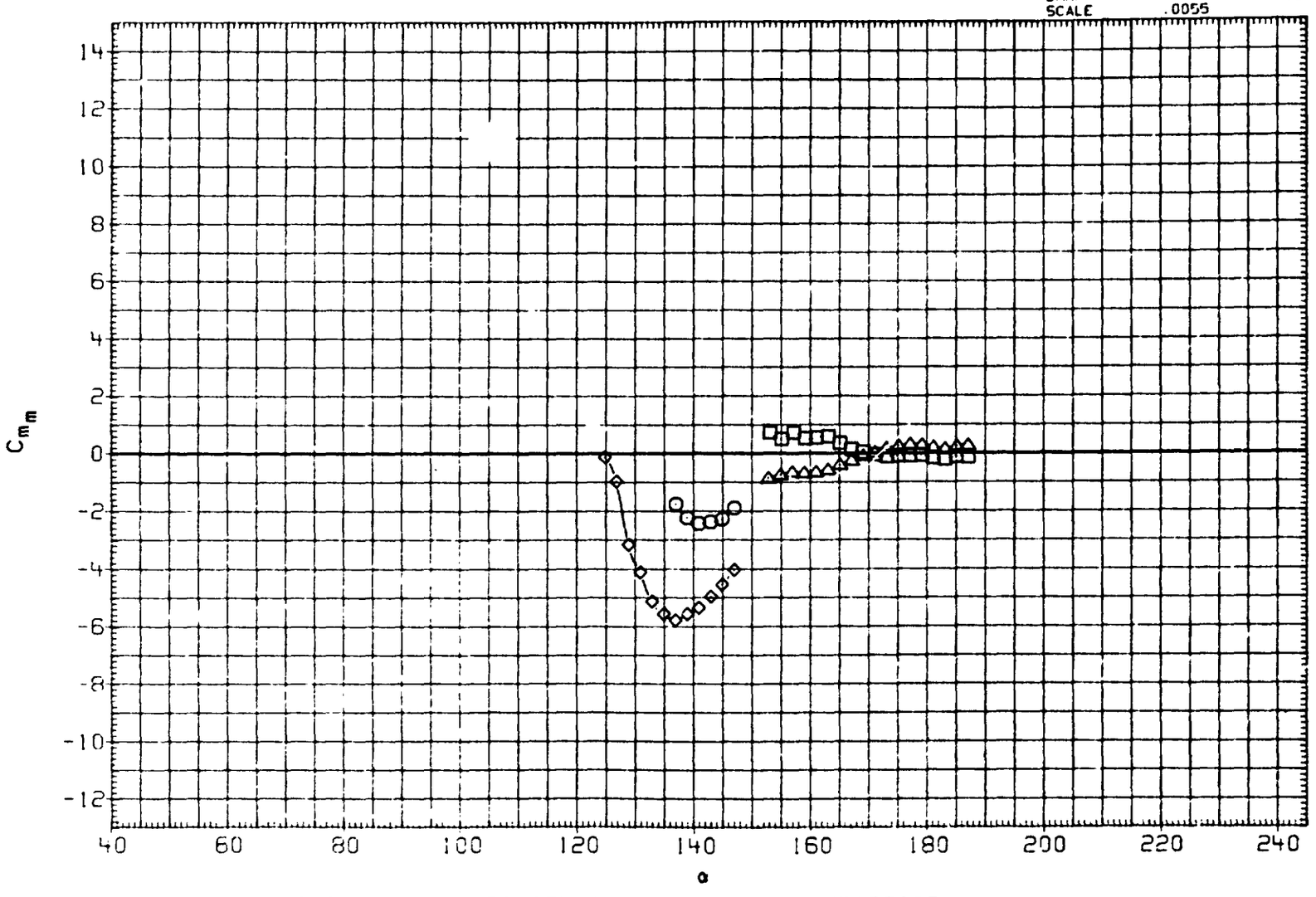

SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A) MACH = .40

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BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
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LREF	146.0000	IN.
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ZMRP	.0000	IN. ZS
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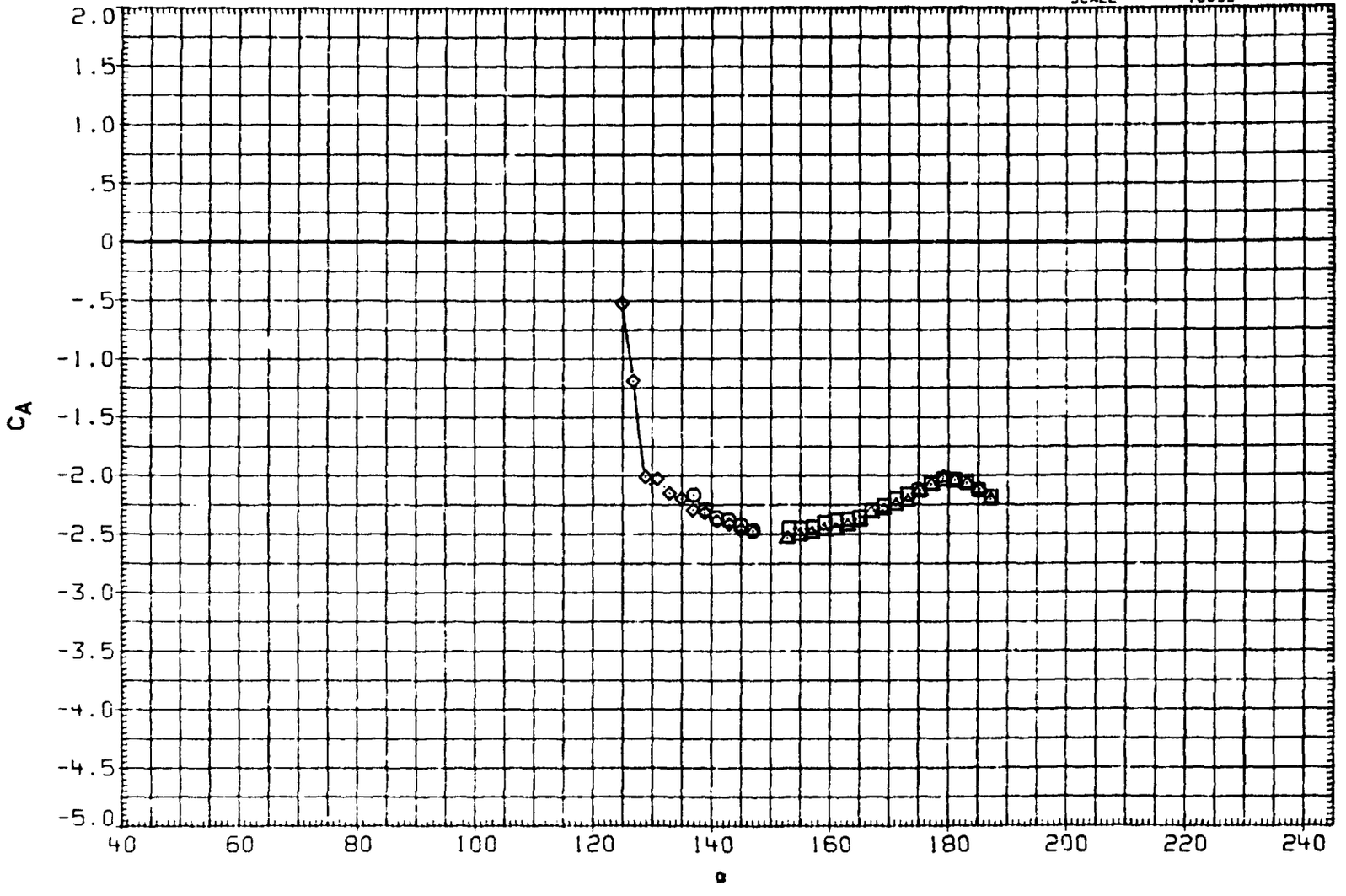

SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .40

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BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
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BREF	146.0000	IN.
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ZMRP	.0000	IN. ZS
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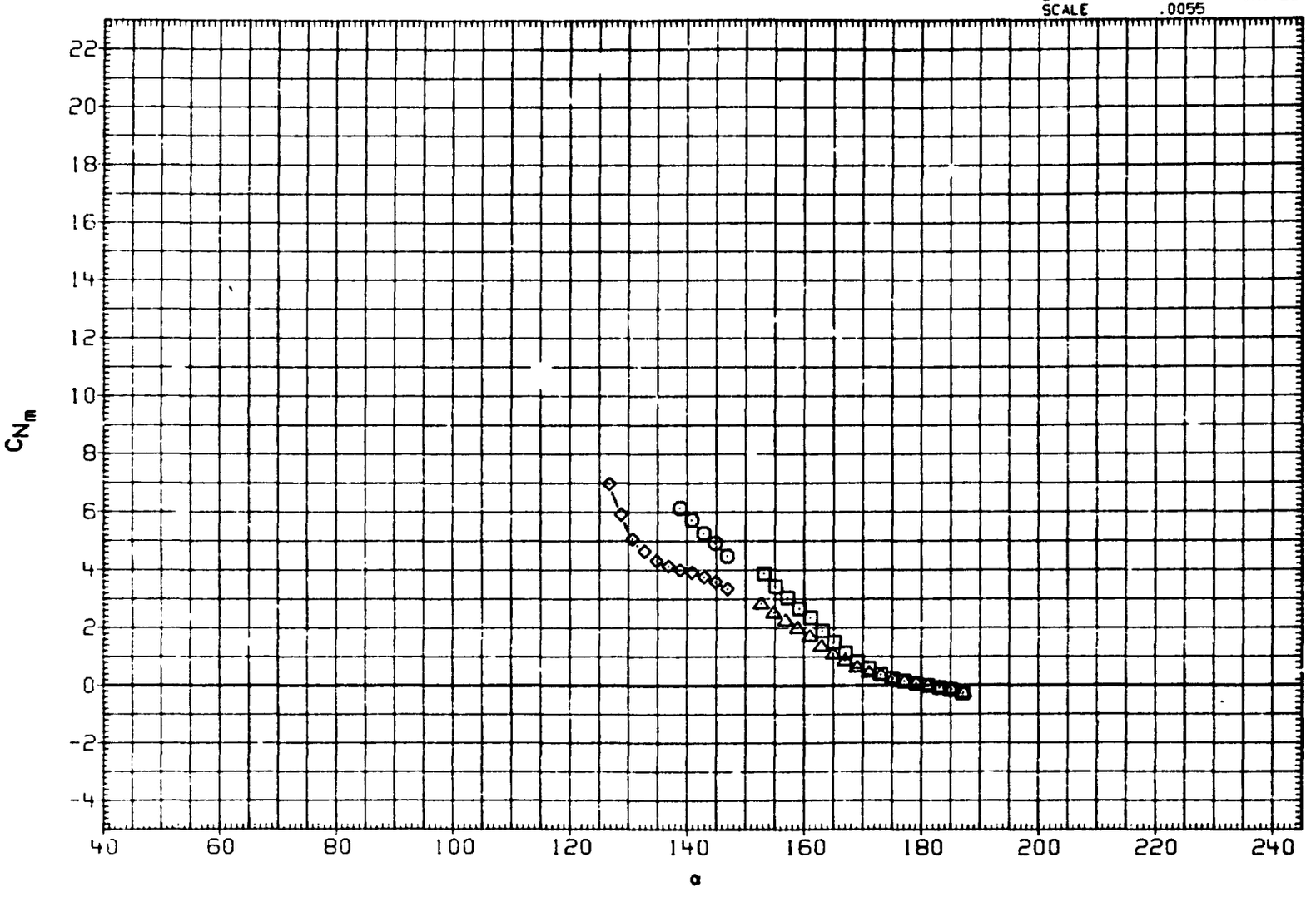

SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .50

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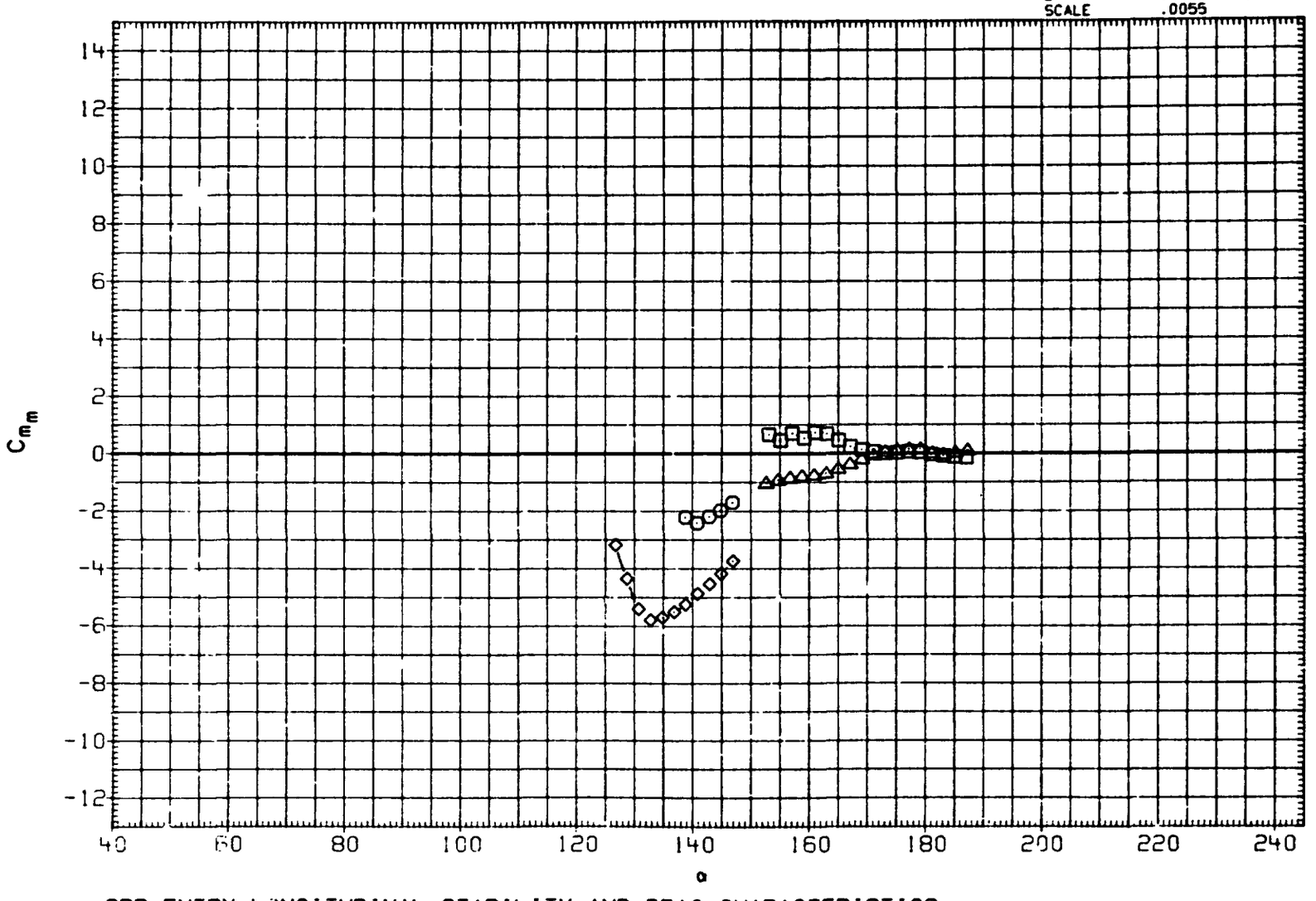
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

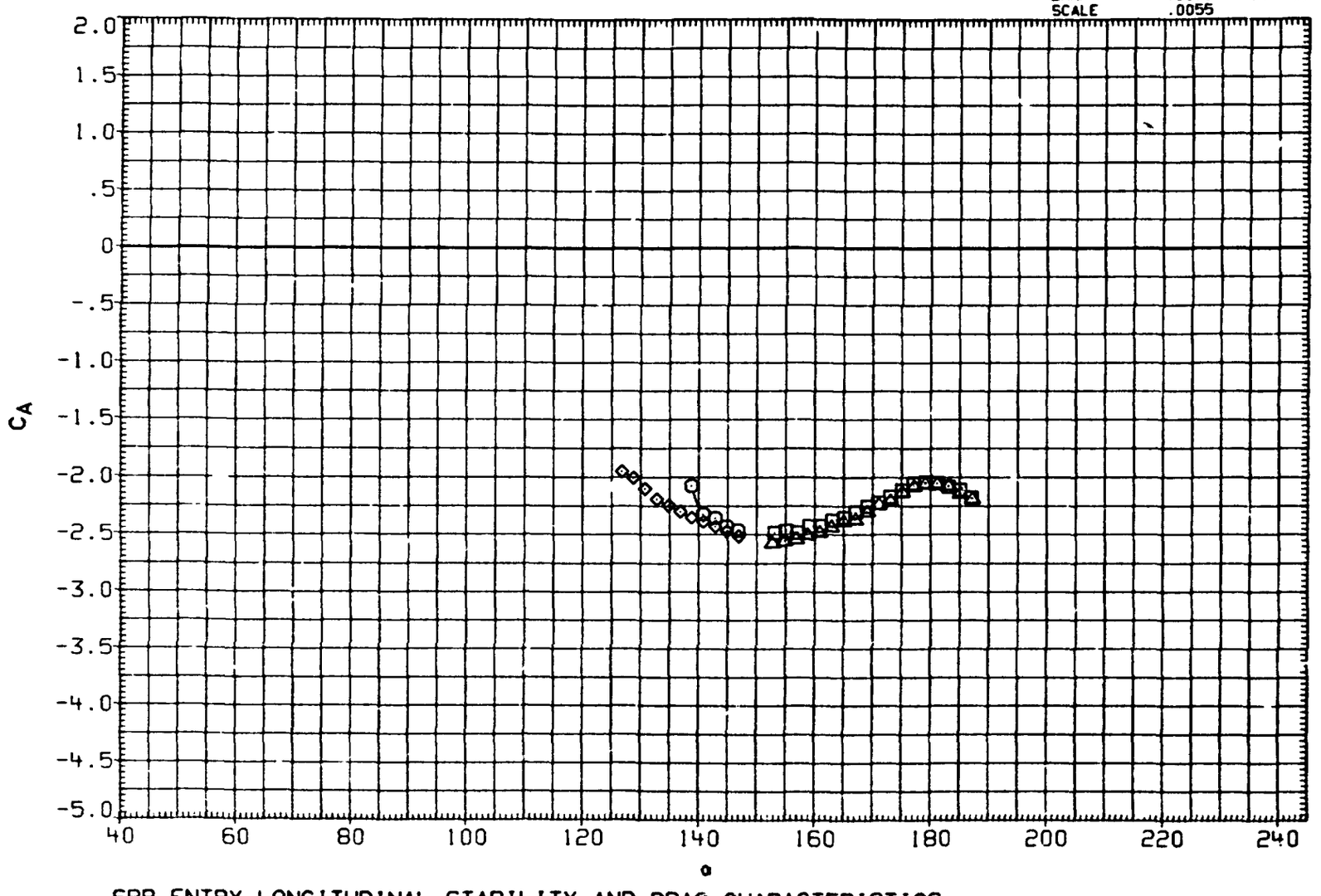


SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .50

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



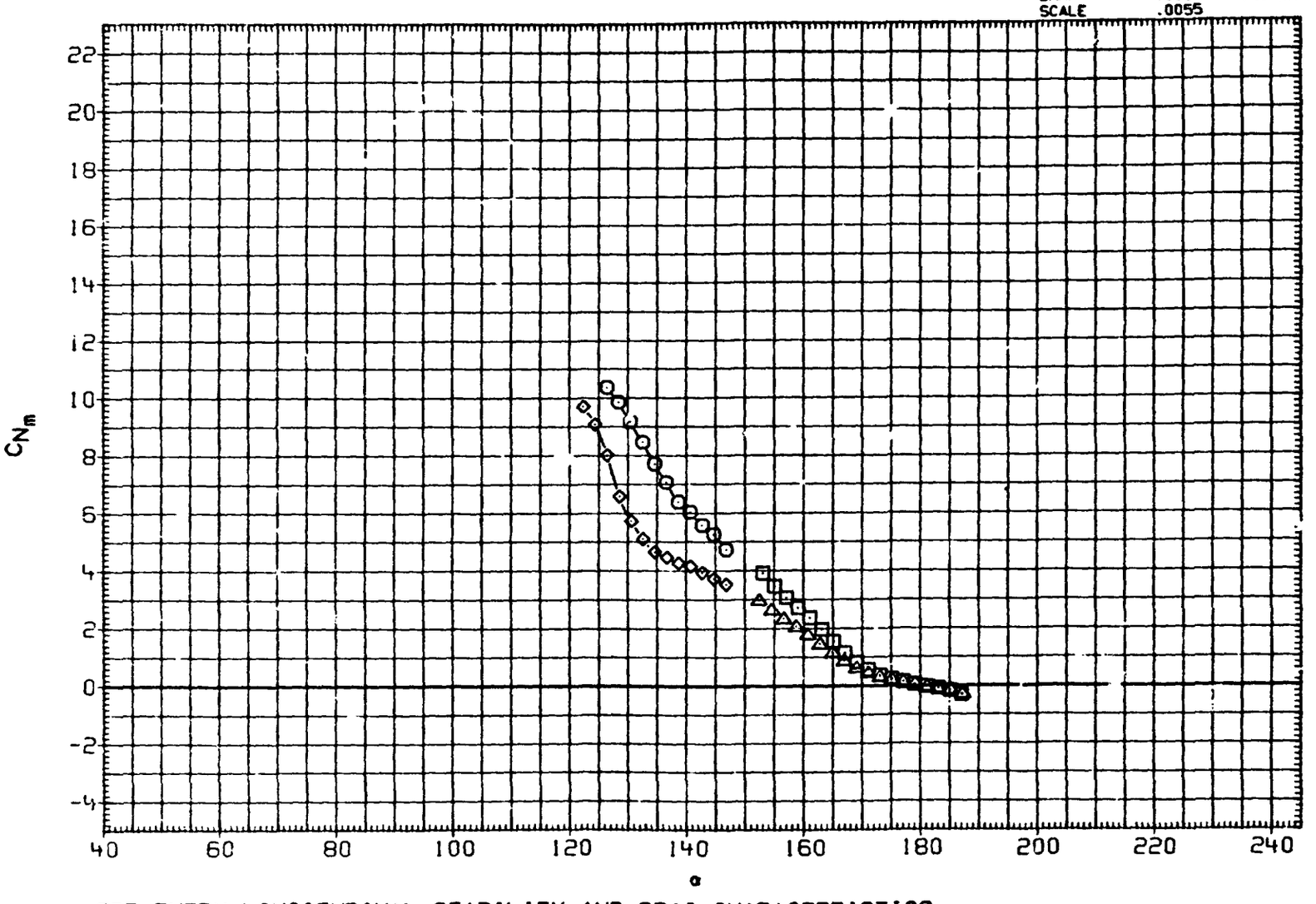
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .50

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



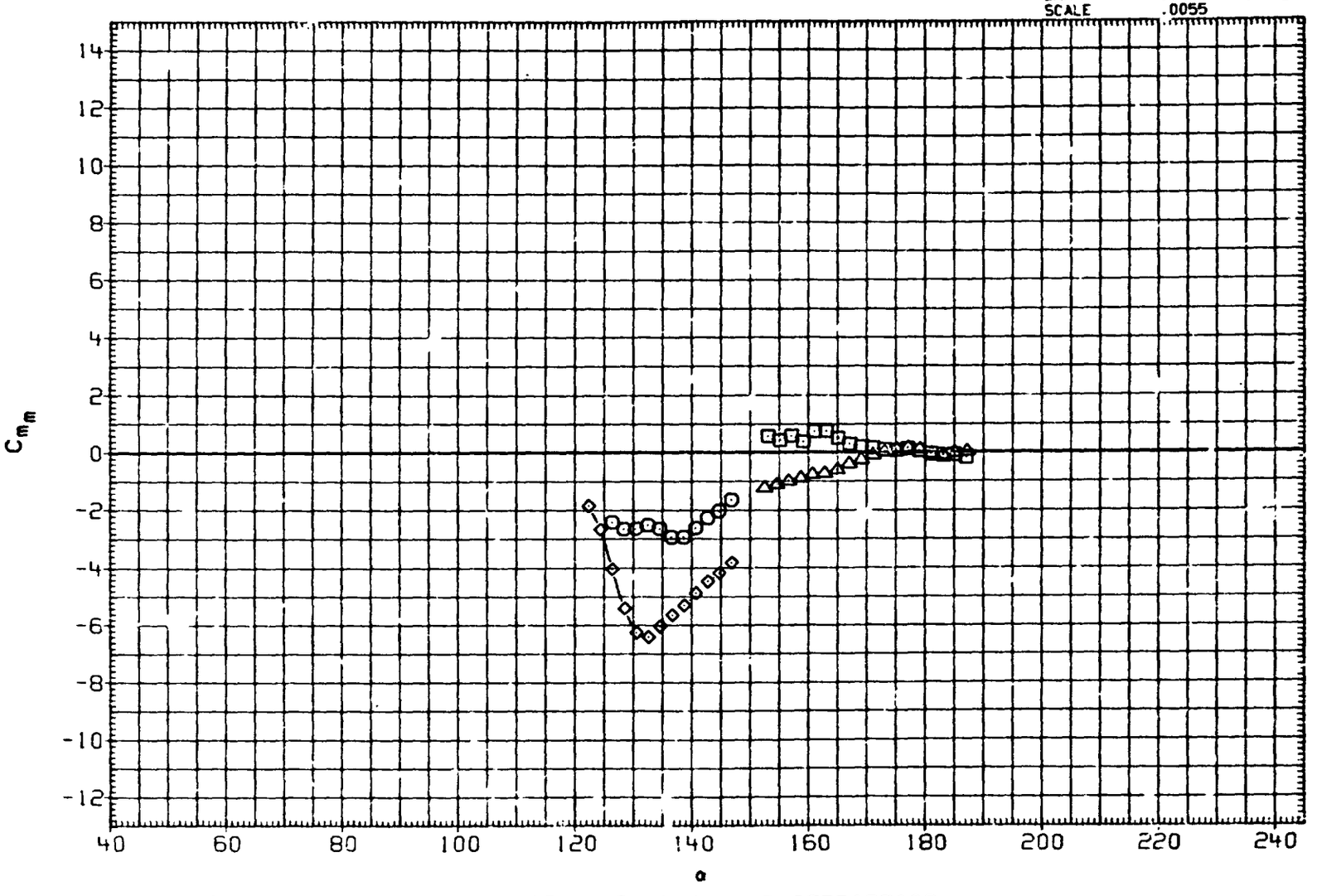
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = .59

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



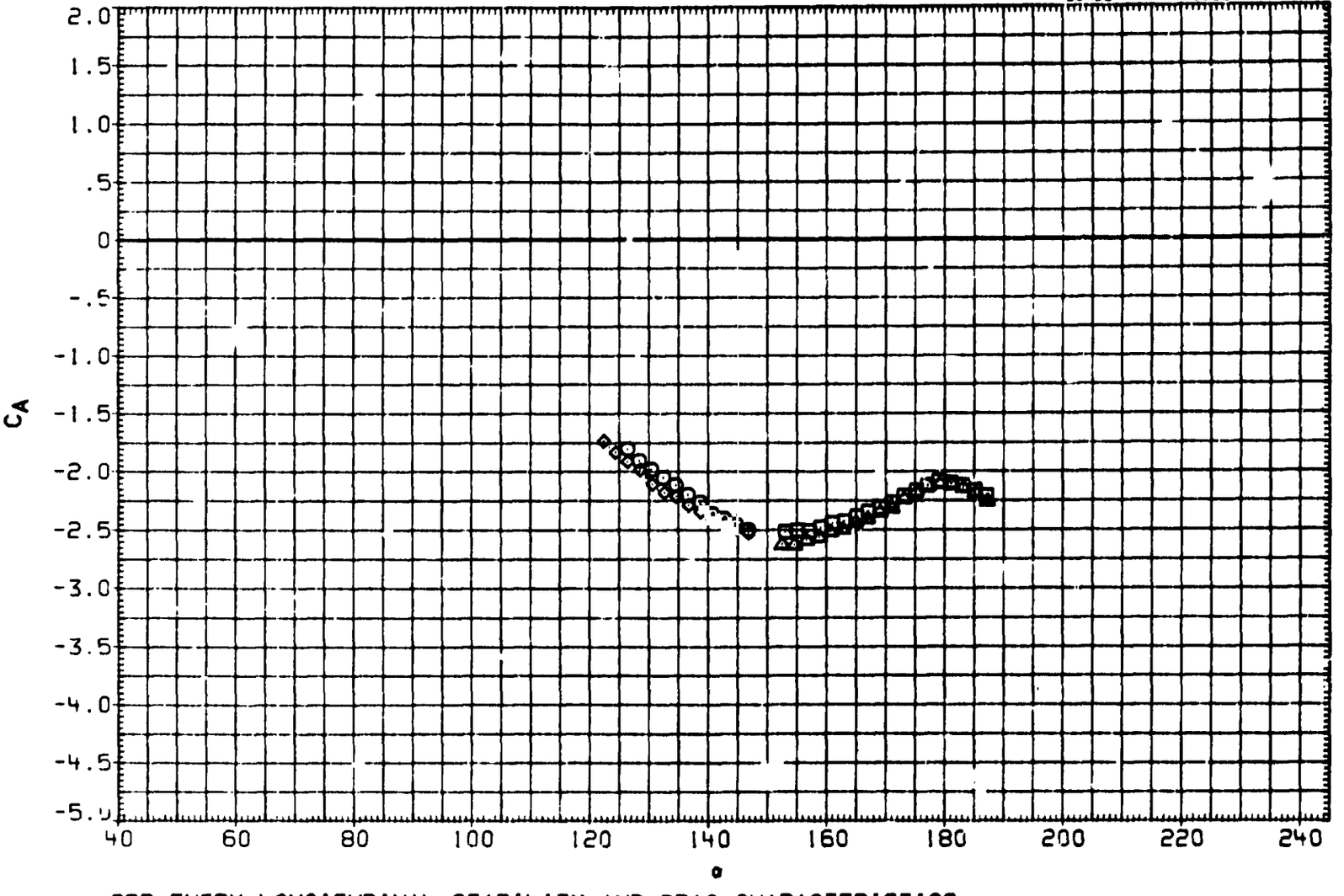
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = .59

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2800	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



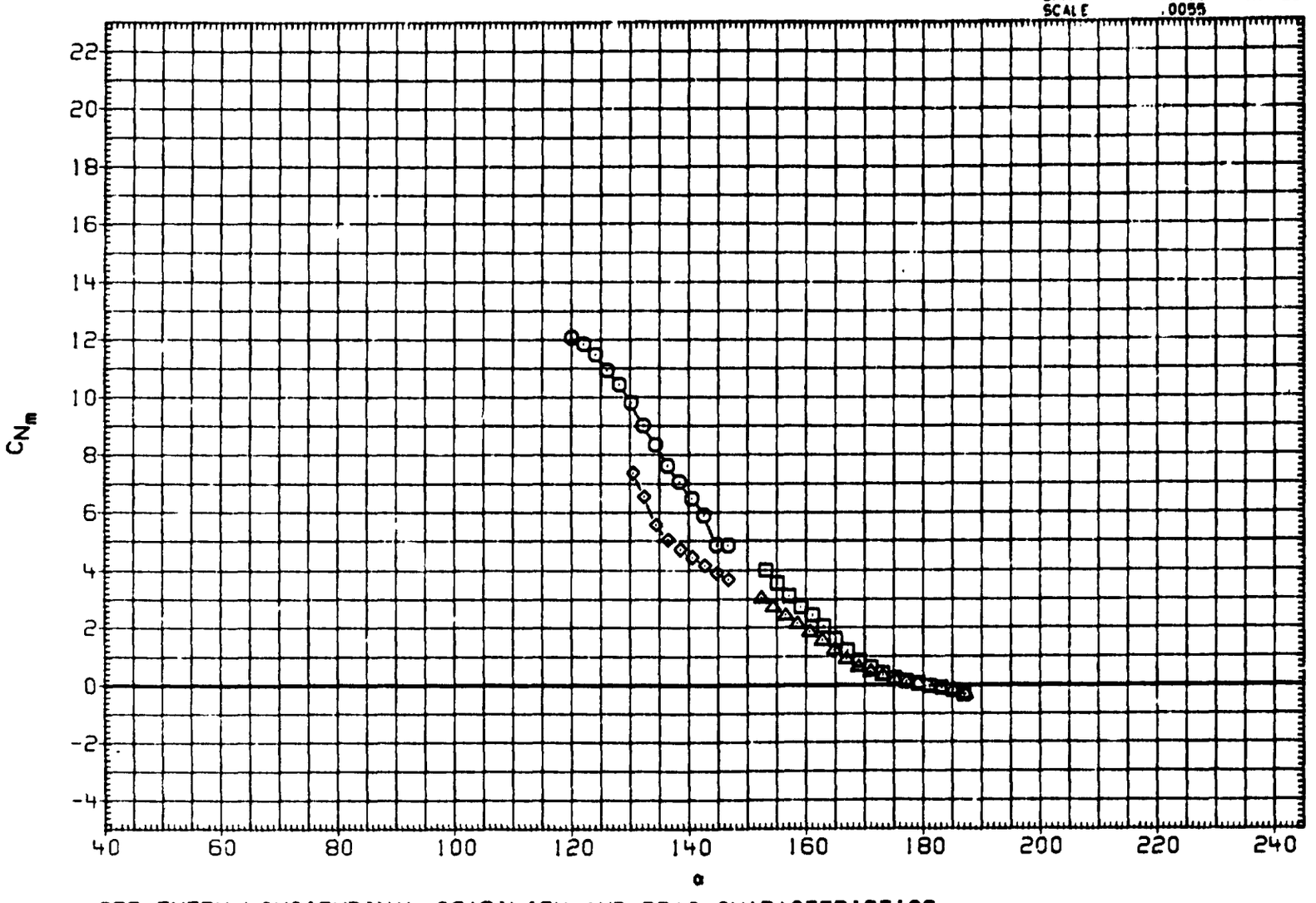
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = .59

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN ZS
SCALE	.0055	

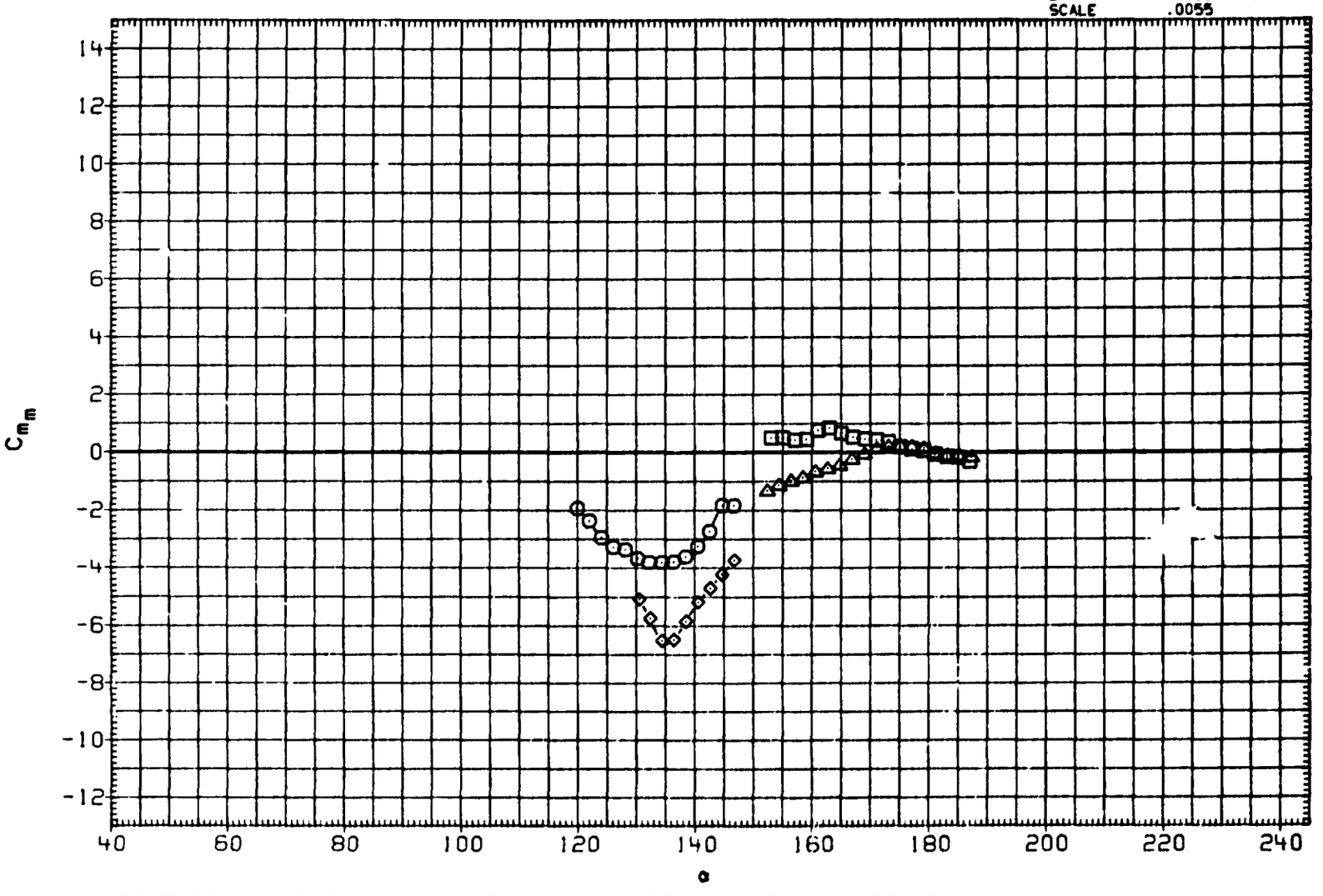


SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = .69

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

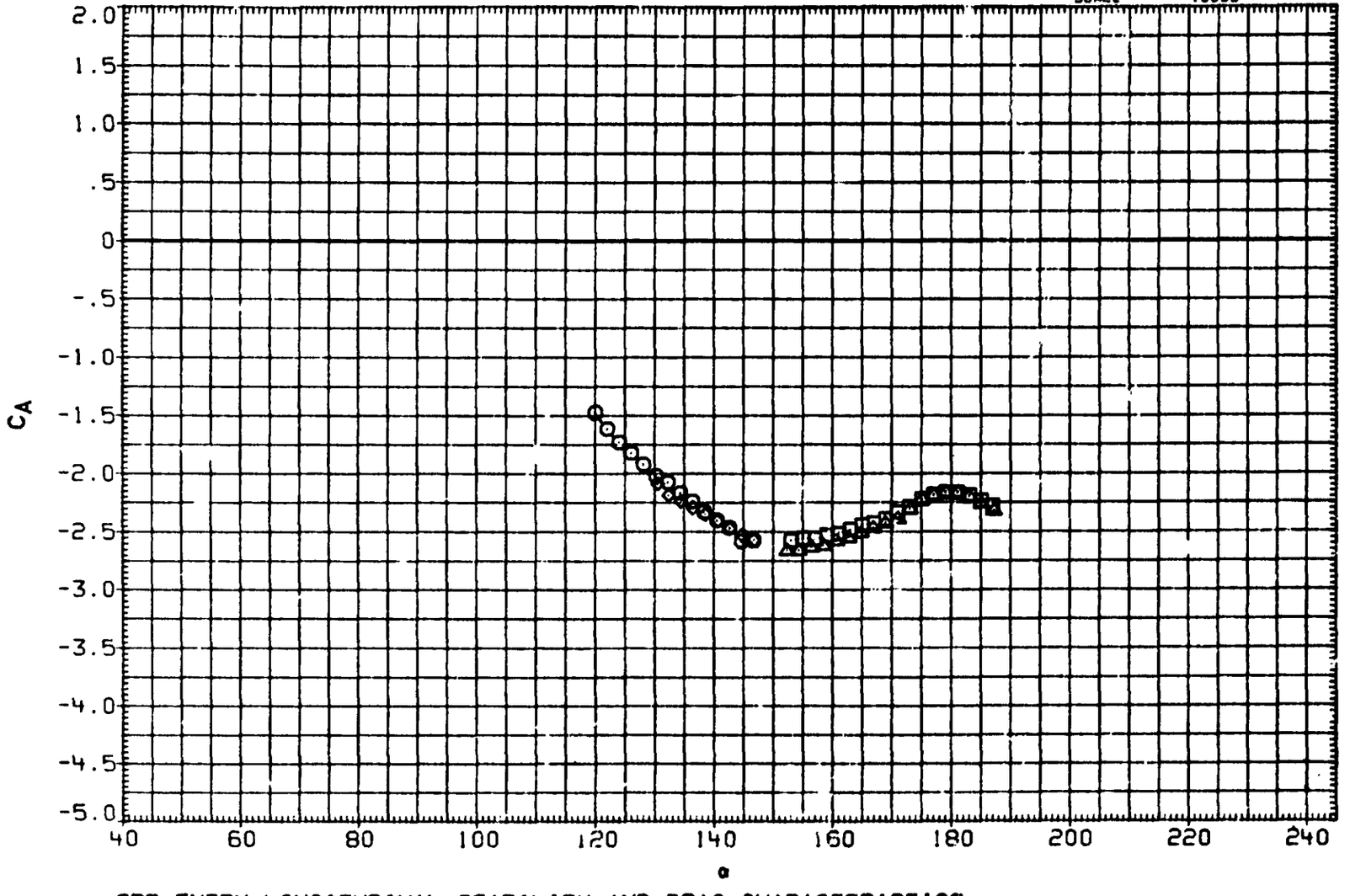


SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D) MACH = .69

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



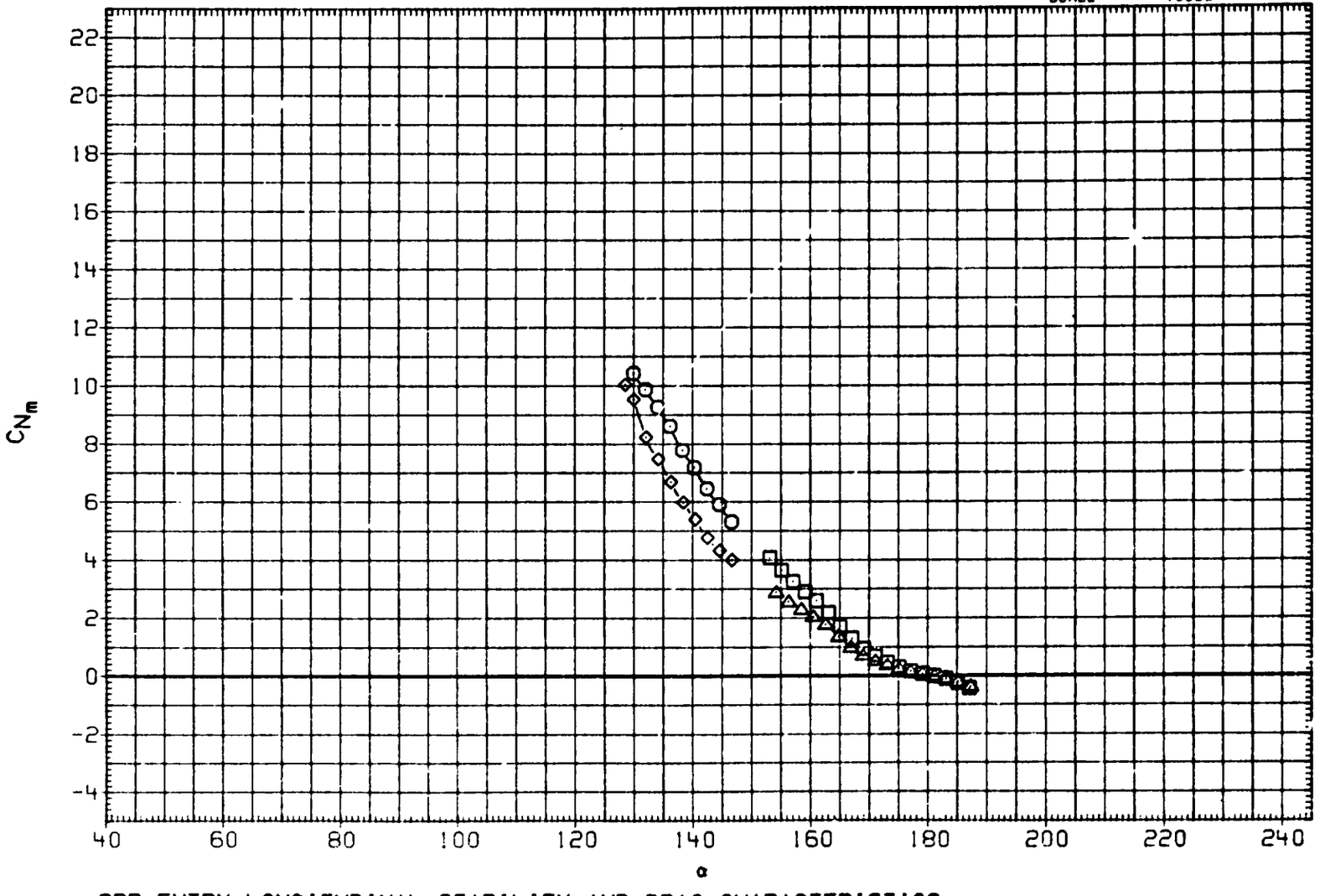
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = .69

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



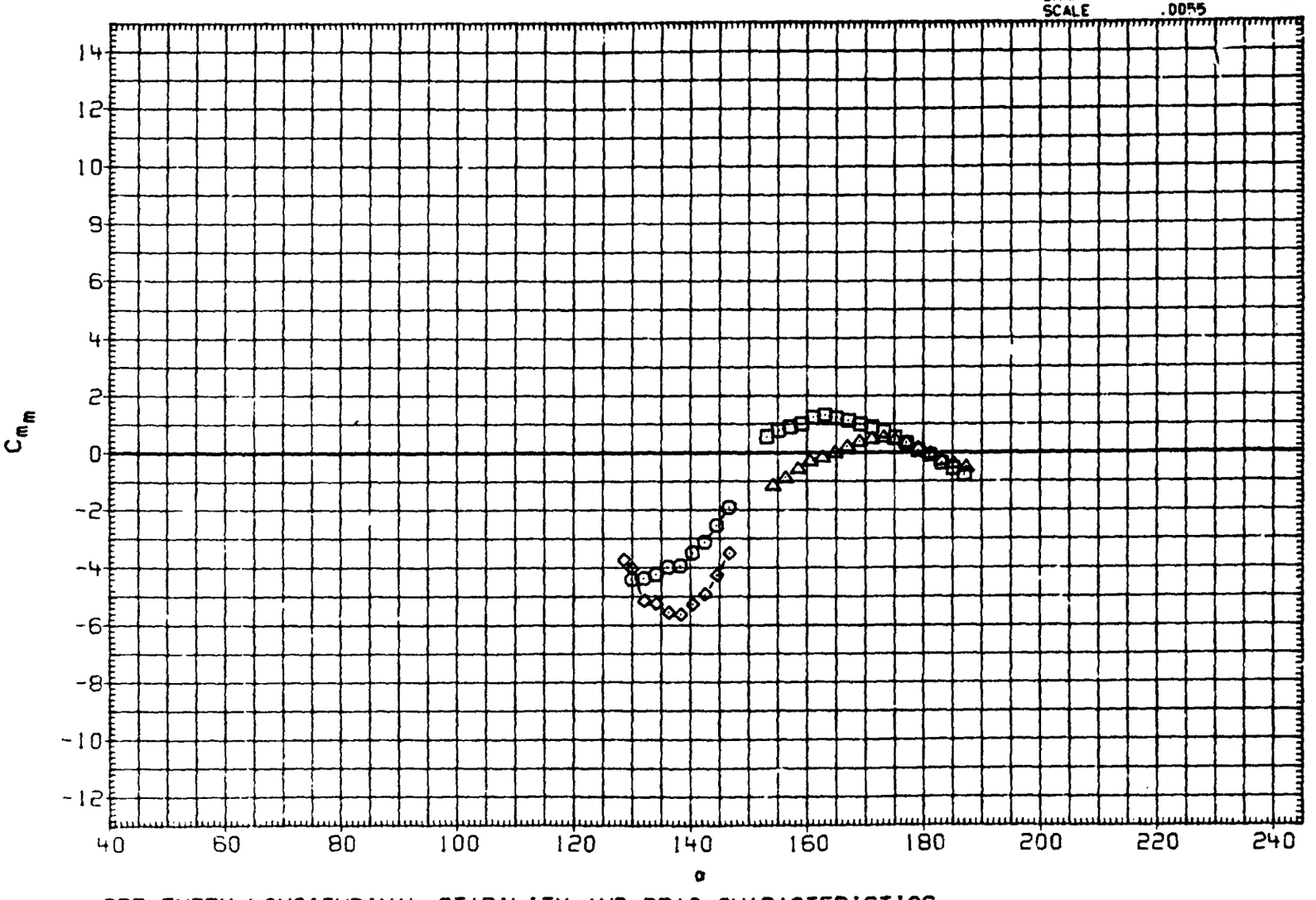
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = .79

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



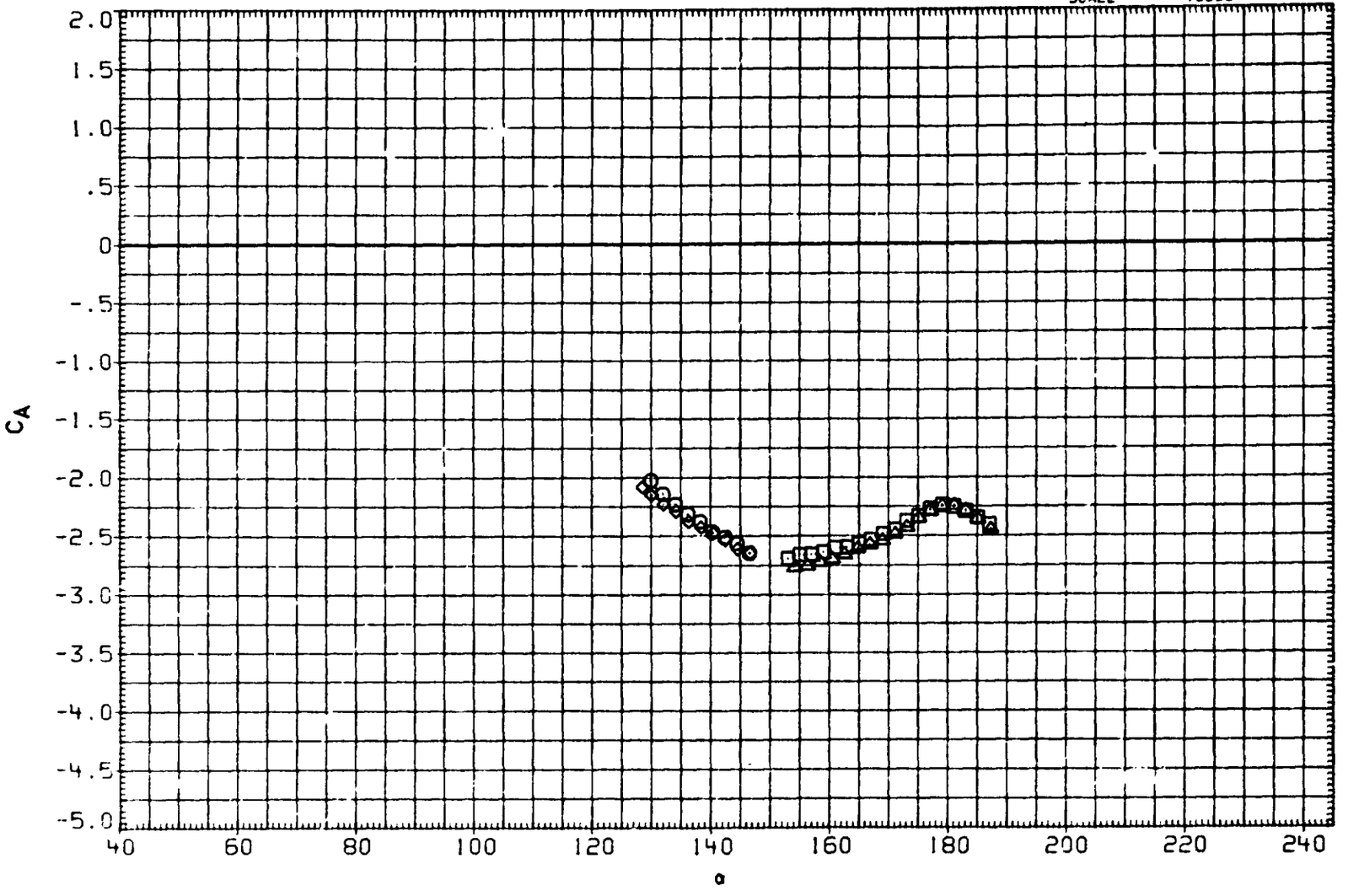
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = .79

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



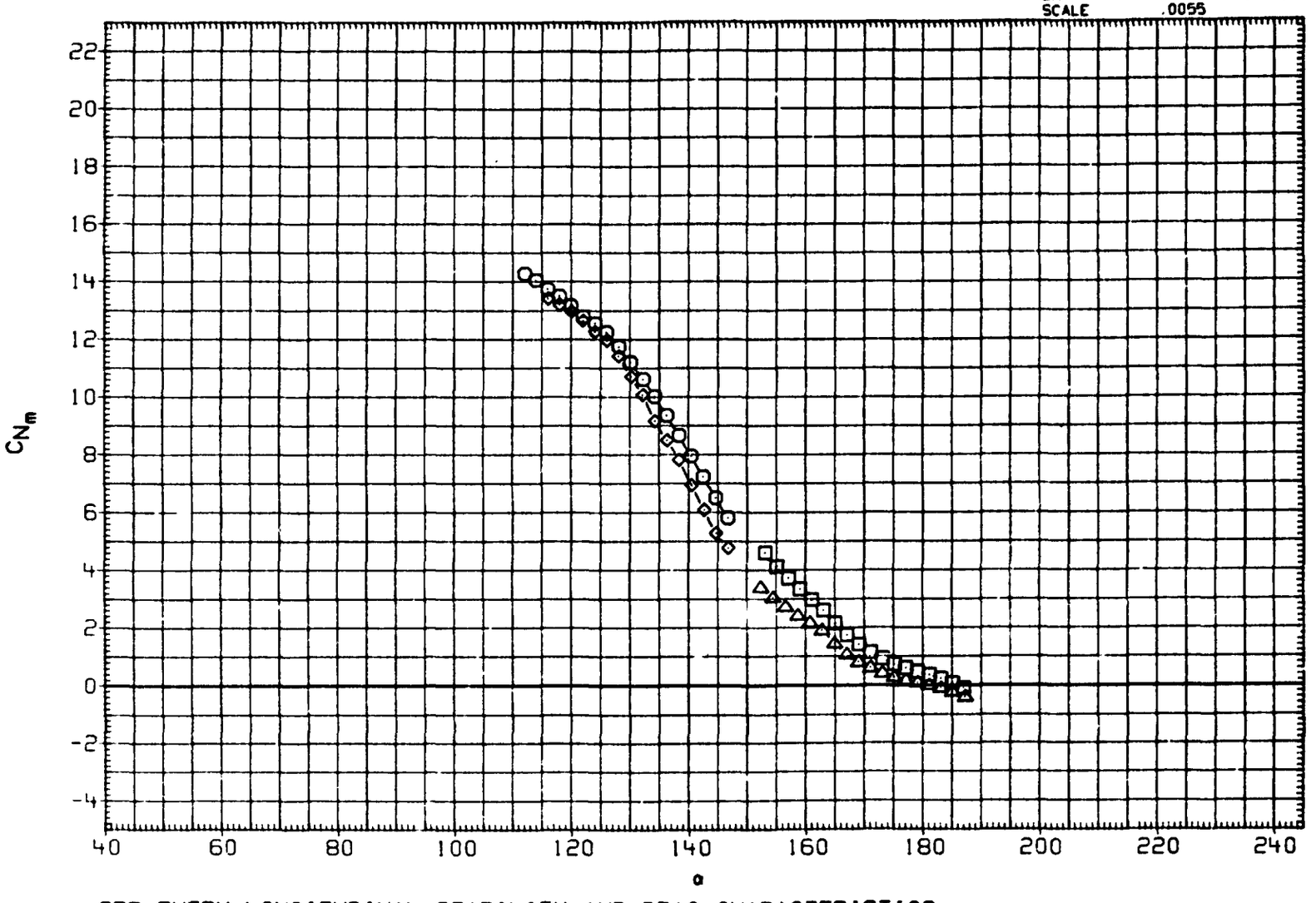
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = .79

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



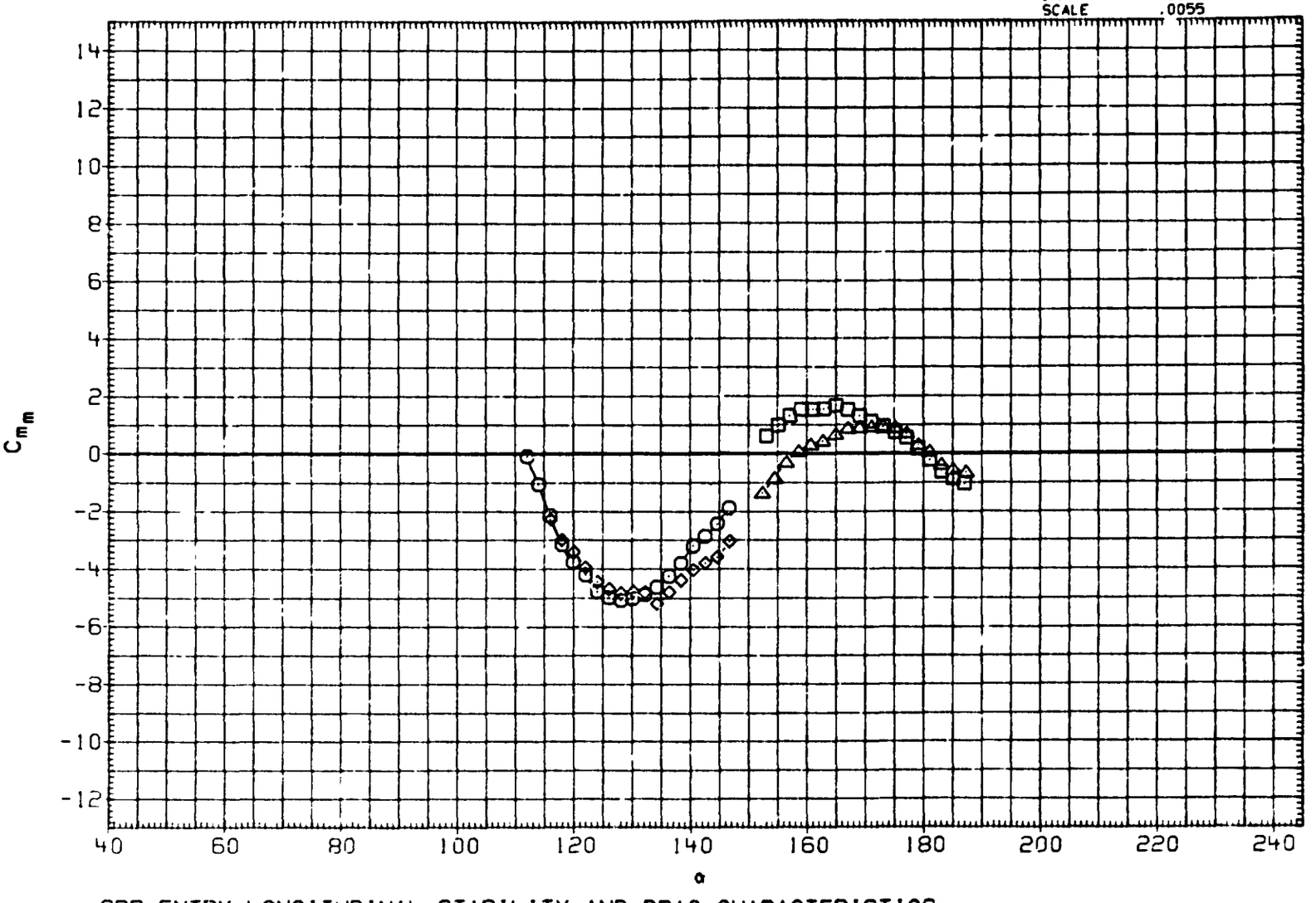
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = .89

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
8VP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
8VP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
8VP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
8VP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



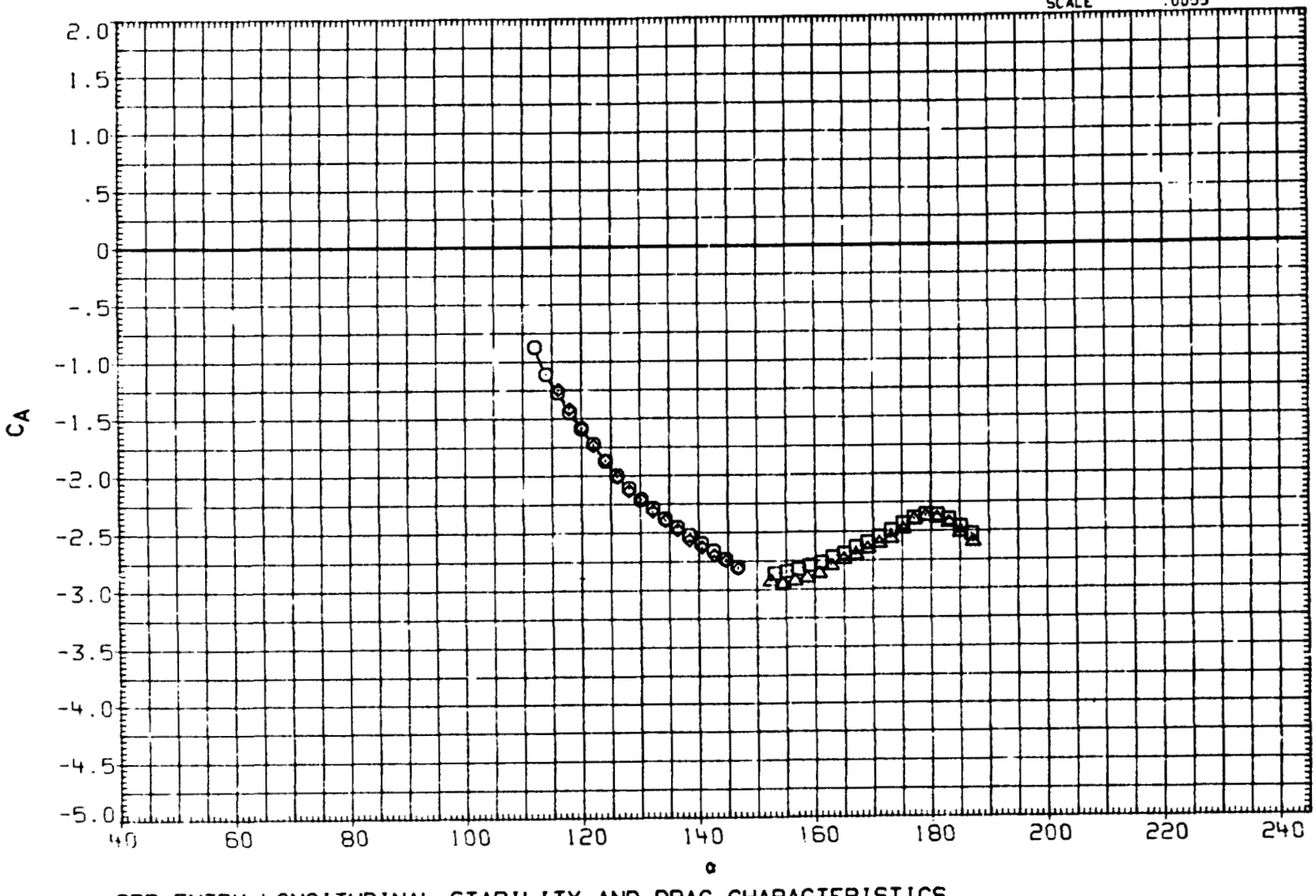
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = .89

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



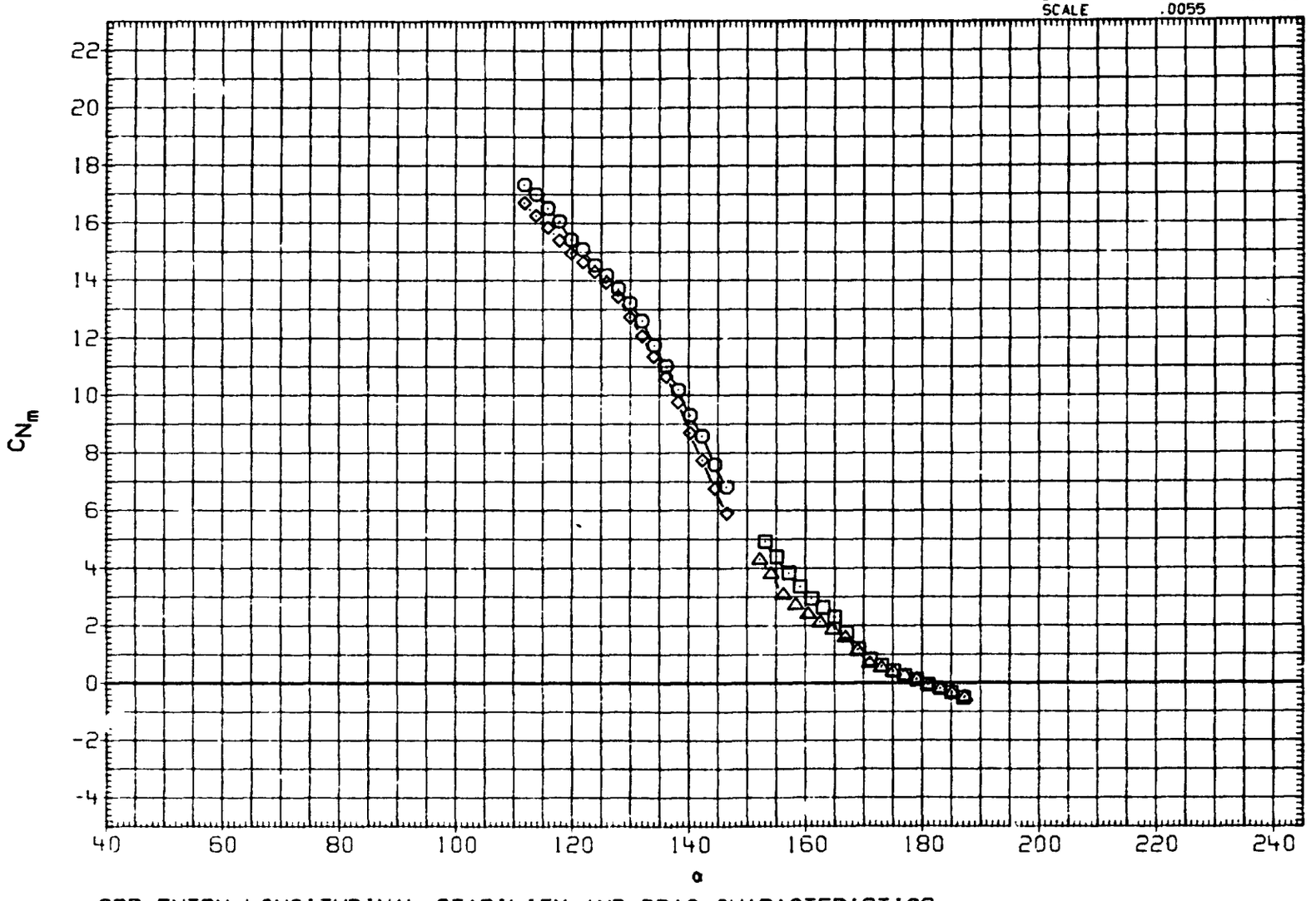
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = .89

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



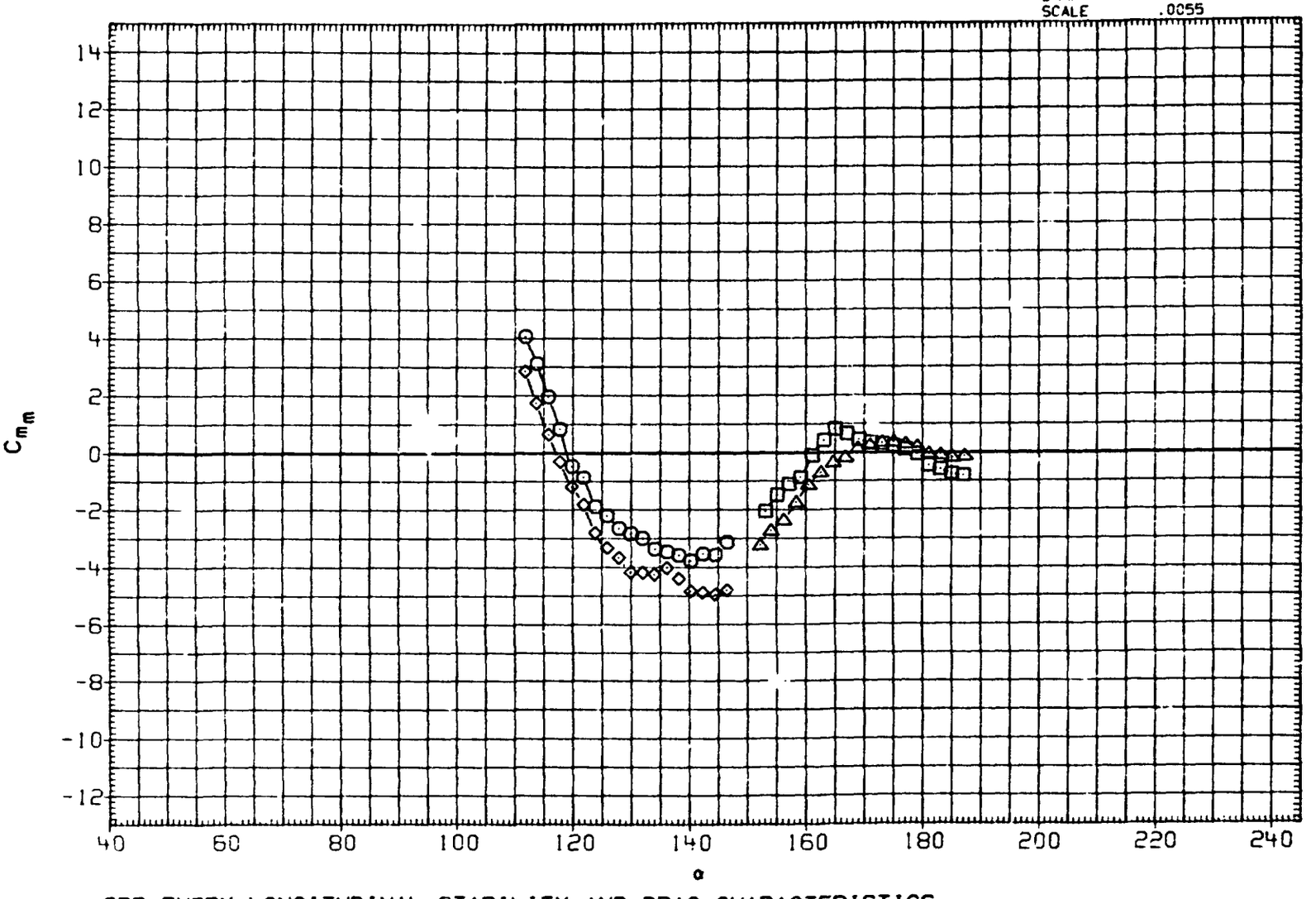
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(G)MACH = 1.02

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



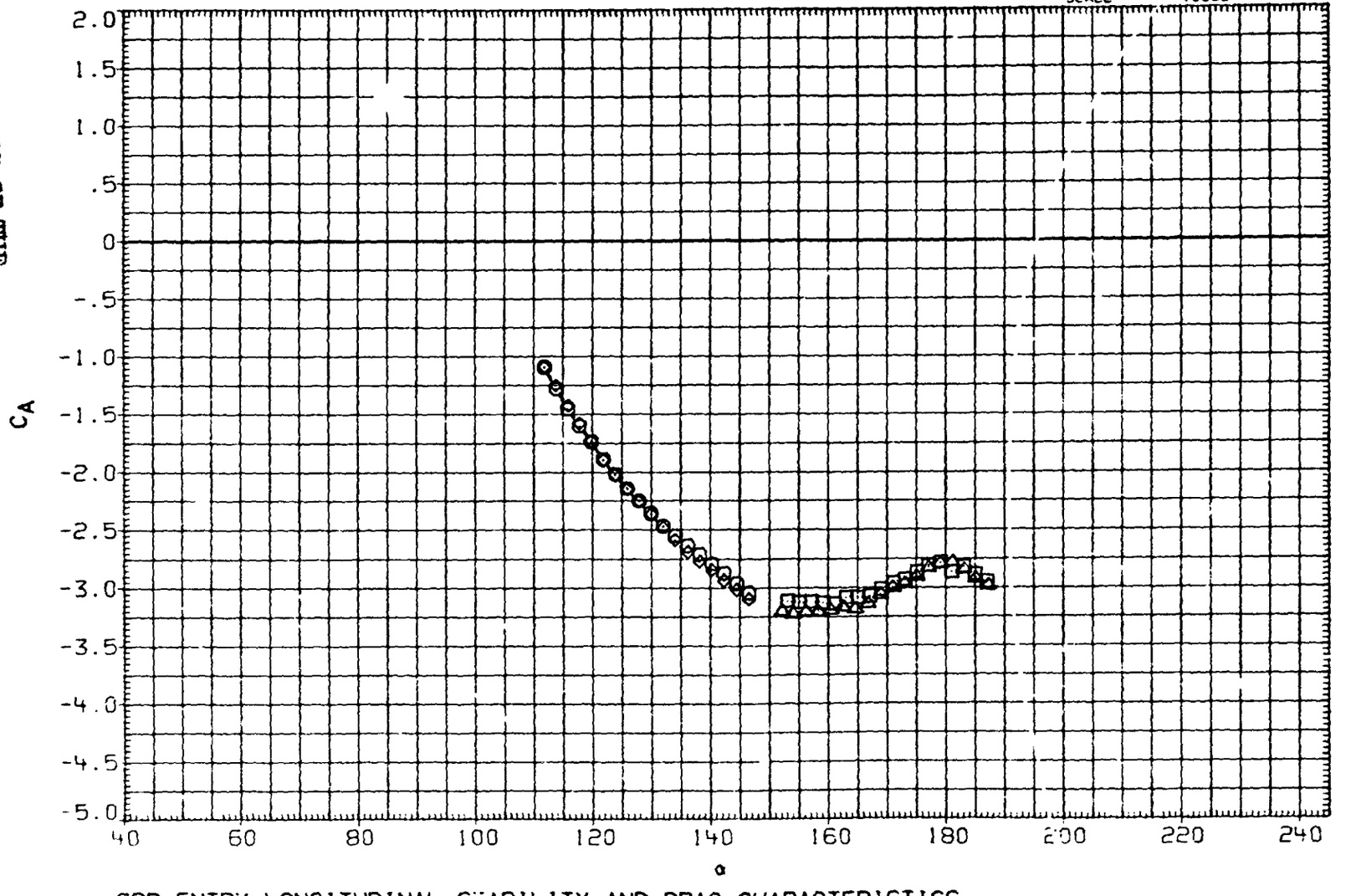
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(G)MACH = 1.02

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



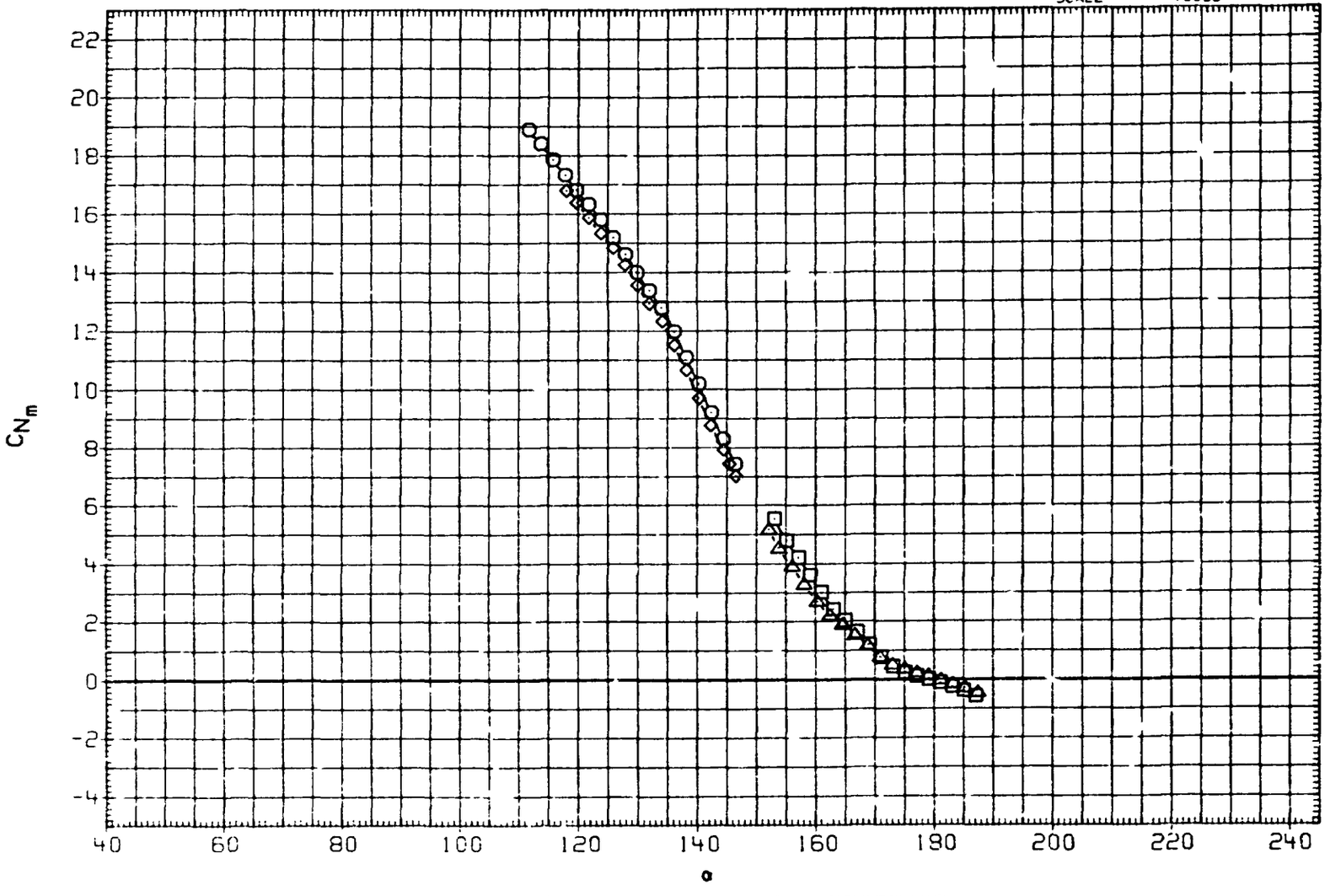
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(G)MACH = 1.02

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRF	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



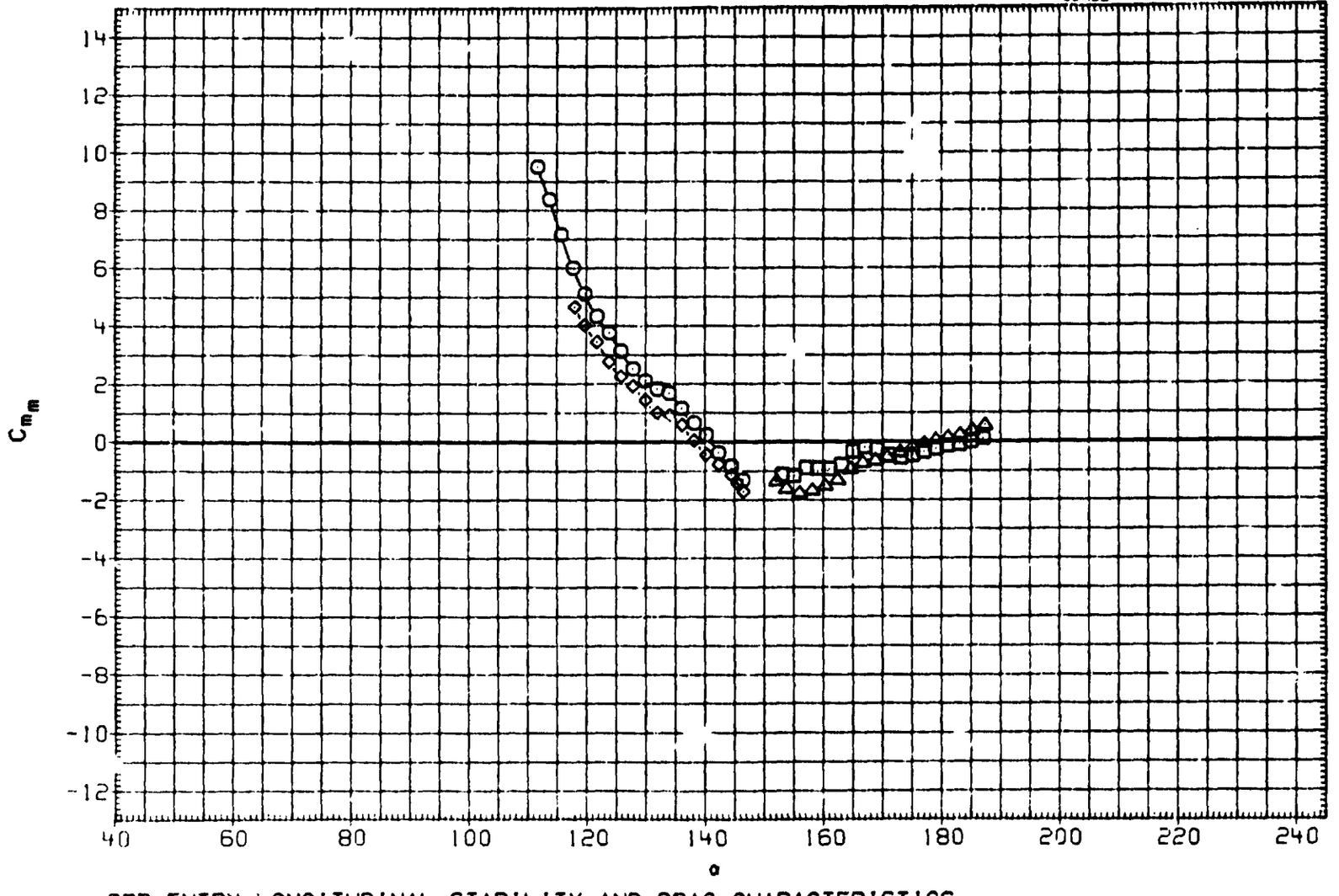
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(H)MACH = 1.19

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2800	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8000	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



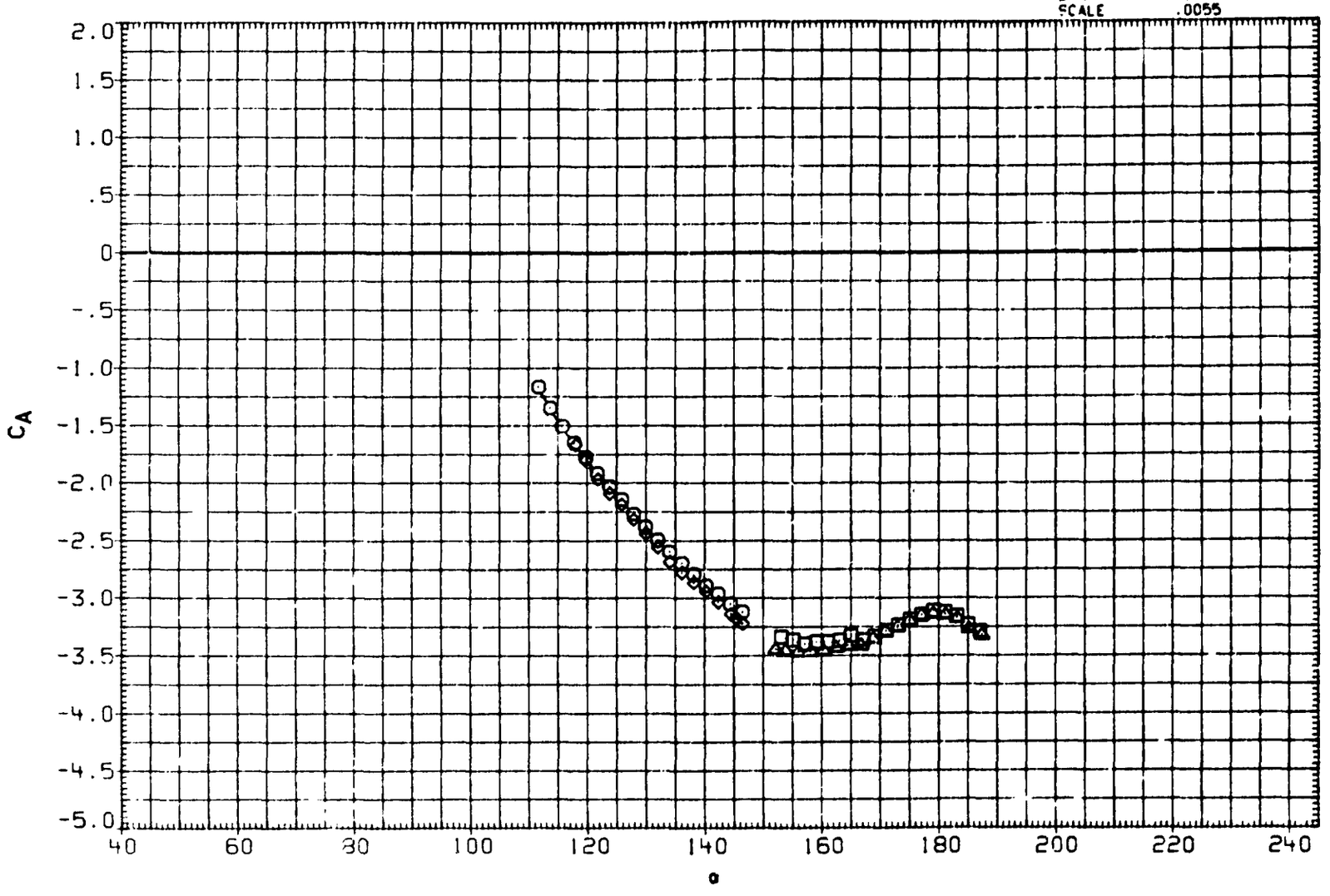
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(H)MACH = 1.19

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

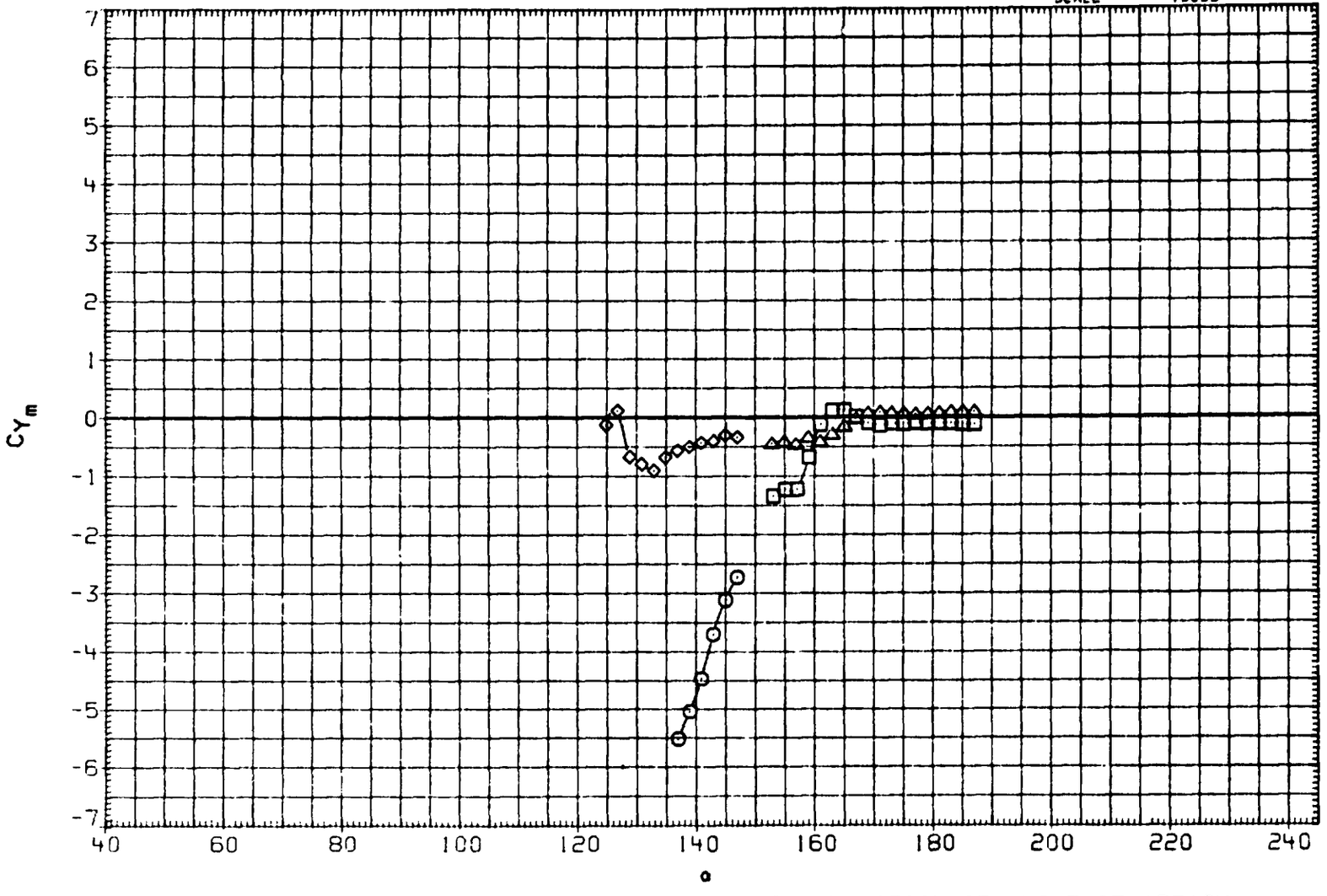


SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(H)MACH = 1.19

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	118.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

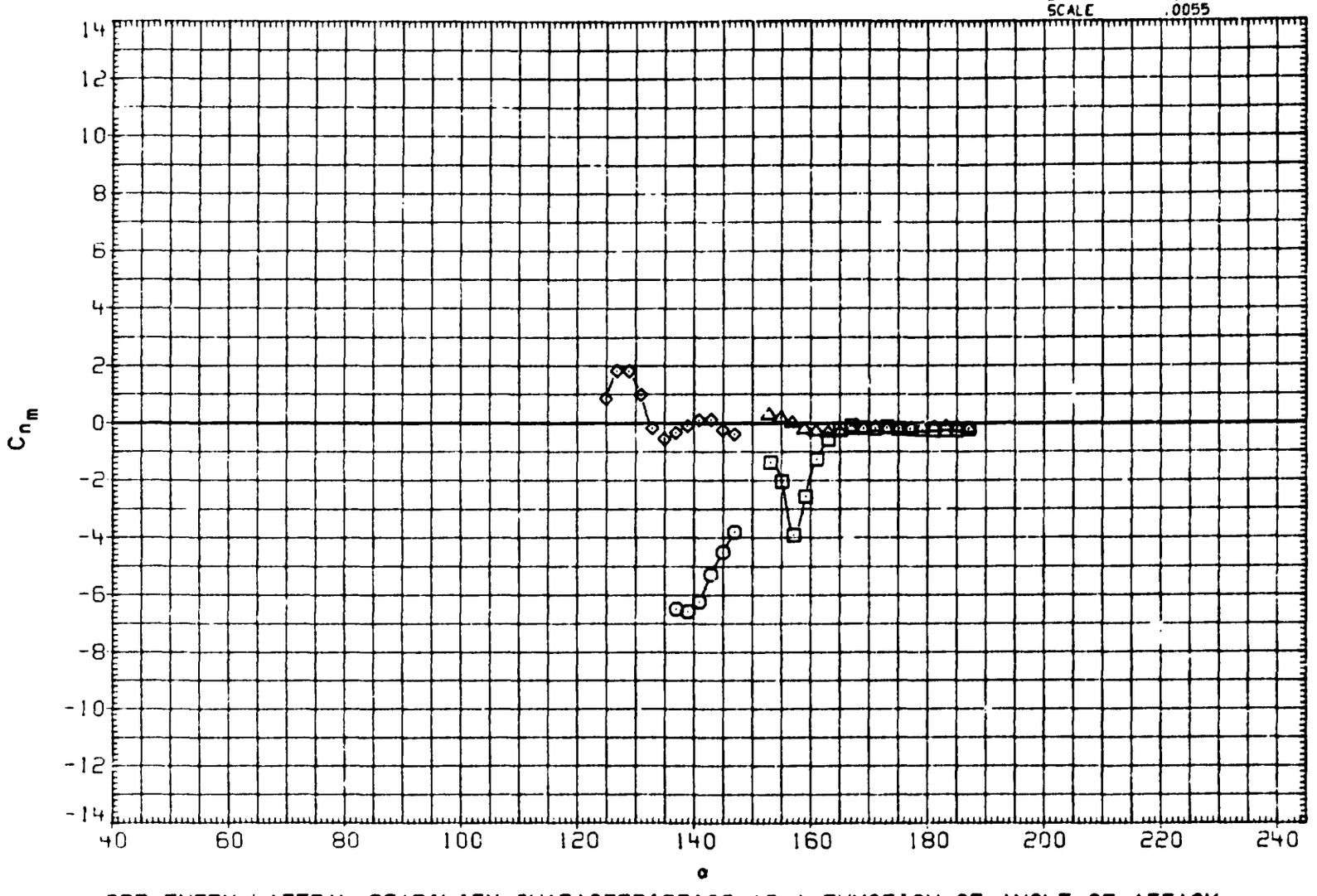


SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(A) MACH = .40

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORM.. 'ON		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

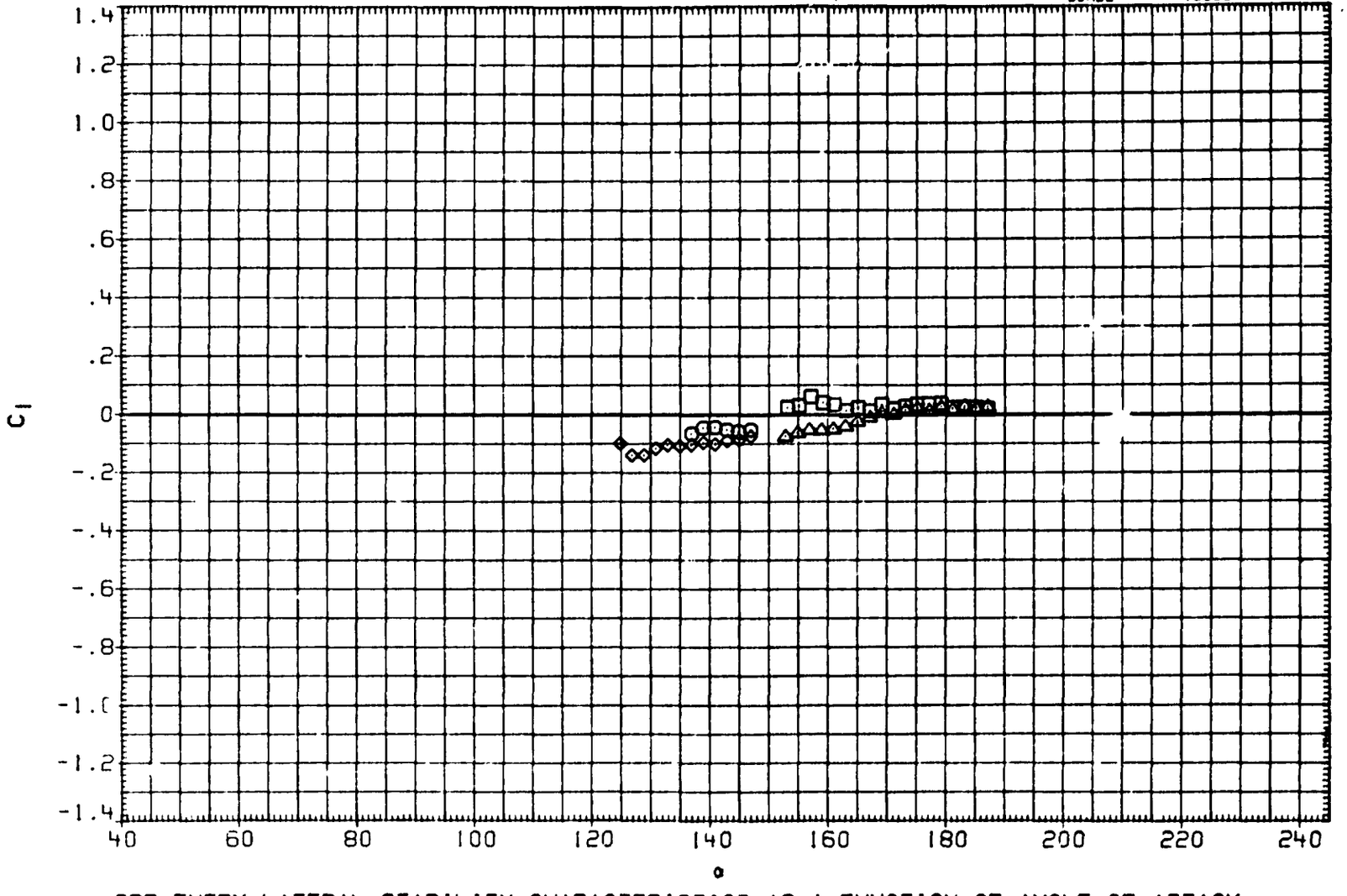


SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(A)MACH = .40

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



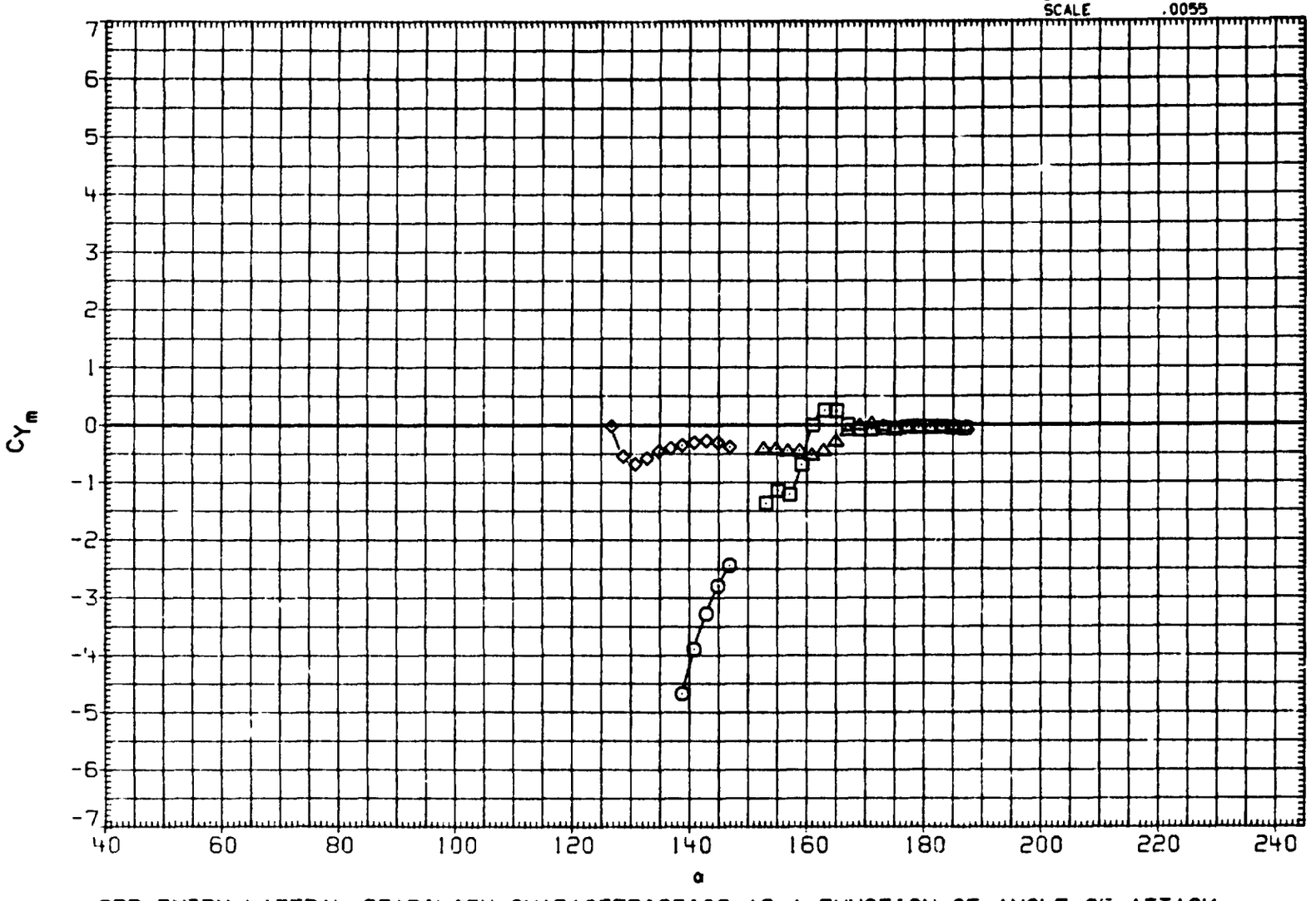
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(A) MACH = .40

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

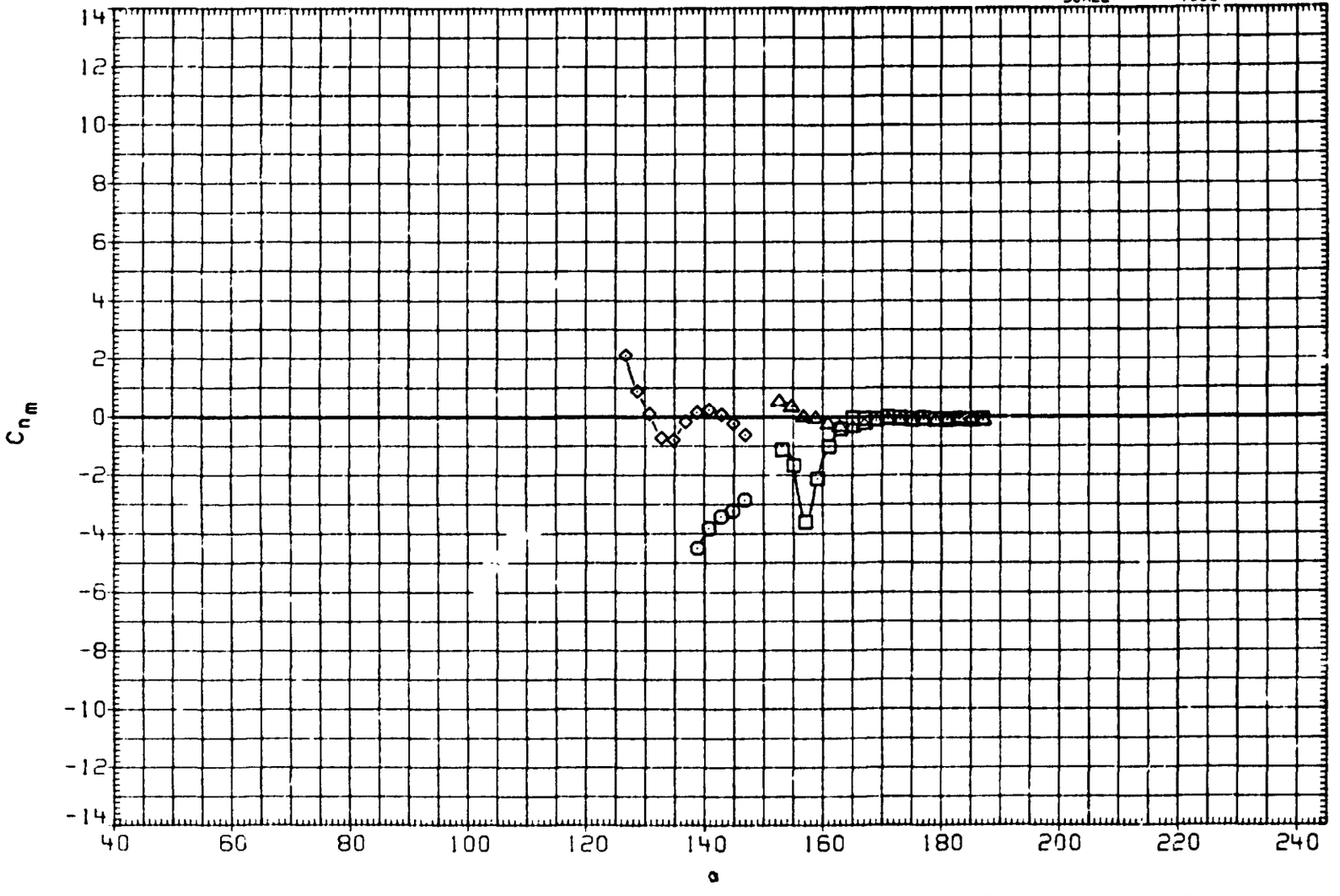


SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(B)MACH = .50

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



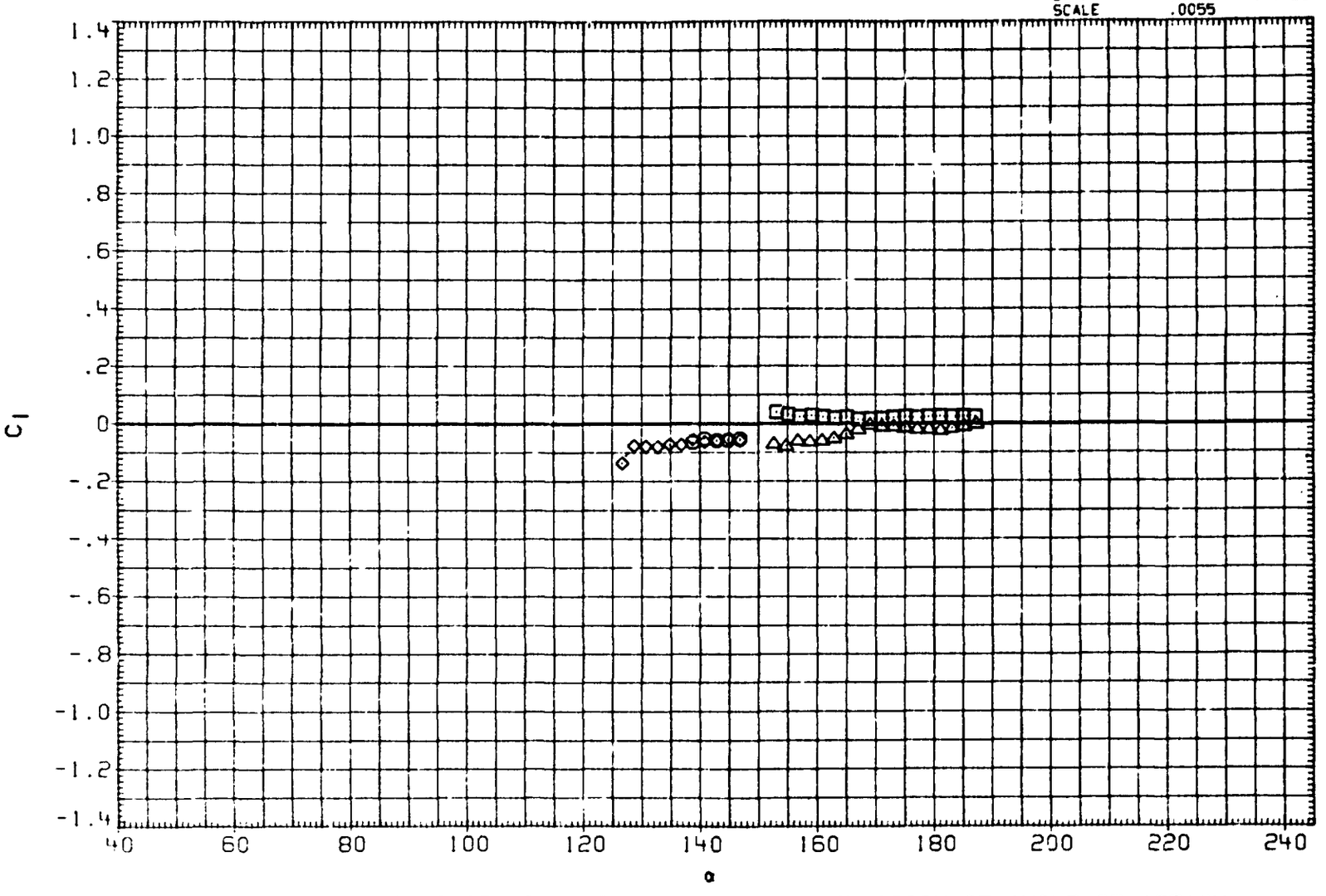
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(B)MACH = .50

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

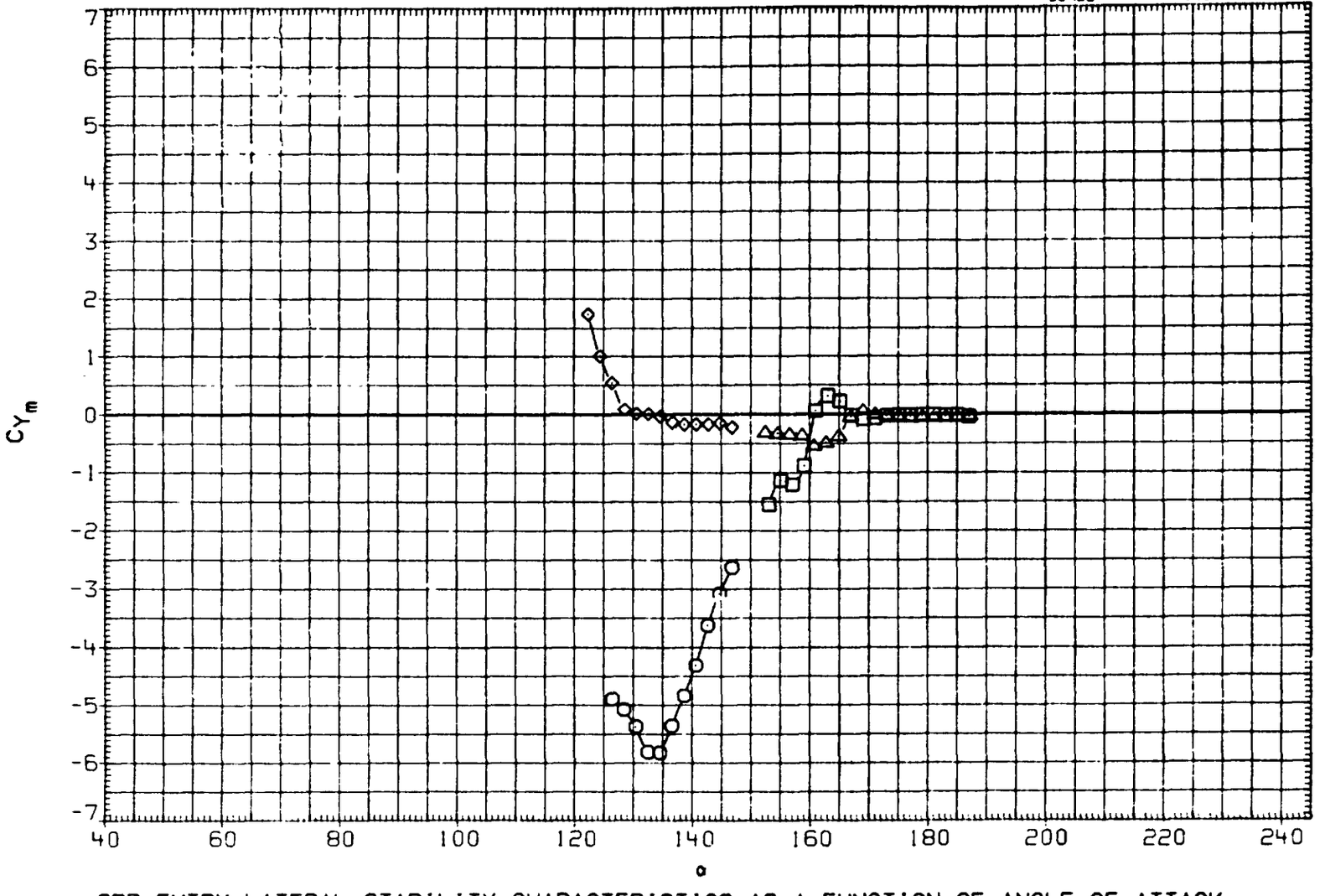


SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(B)MACH = .50

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/FROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



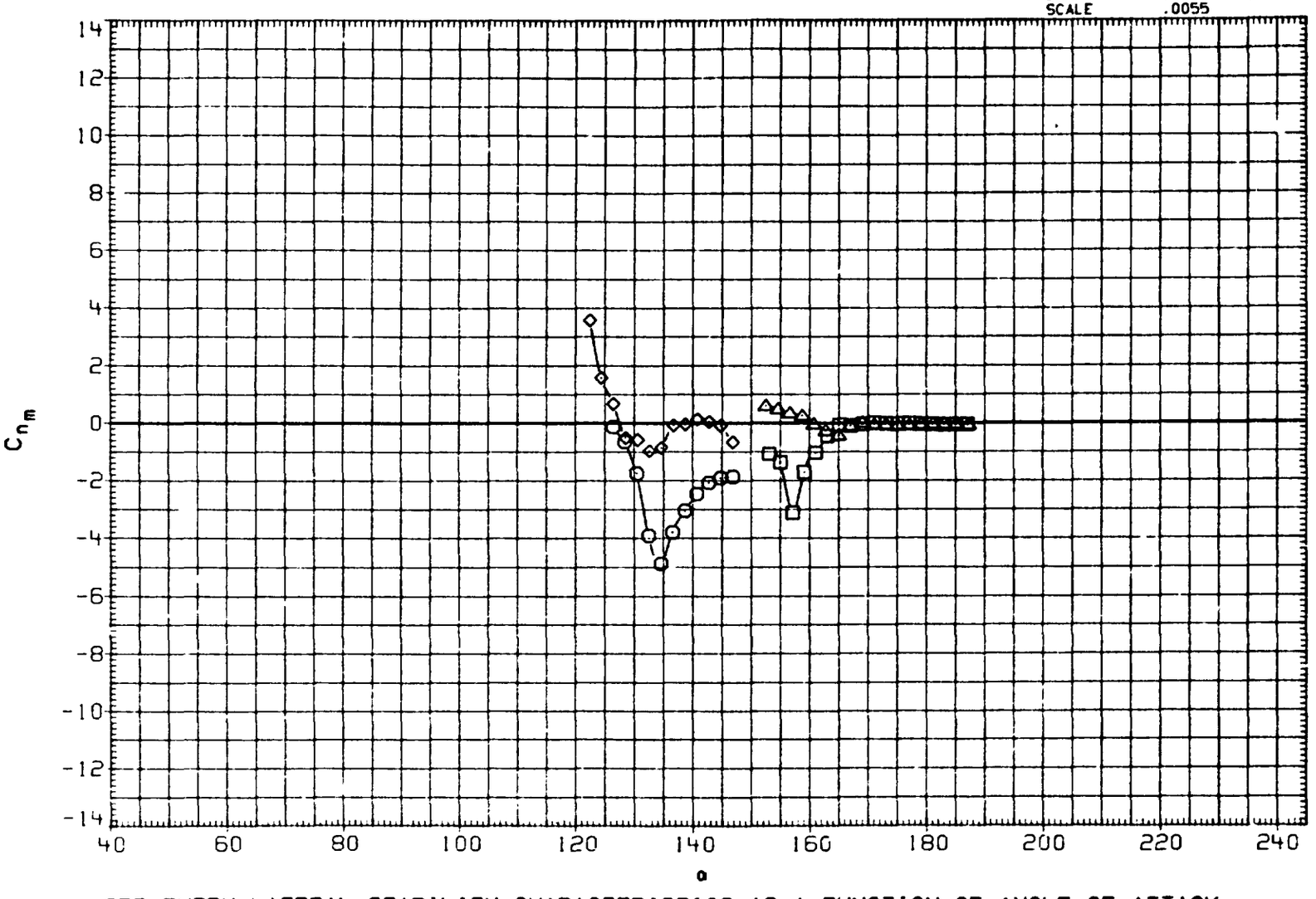
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(C) MACH = .59

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



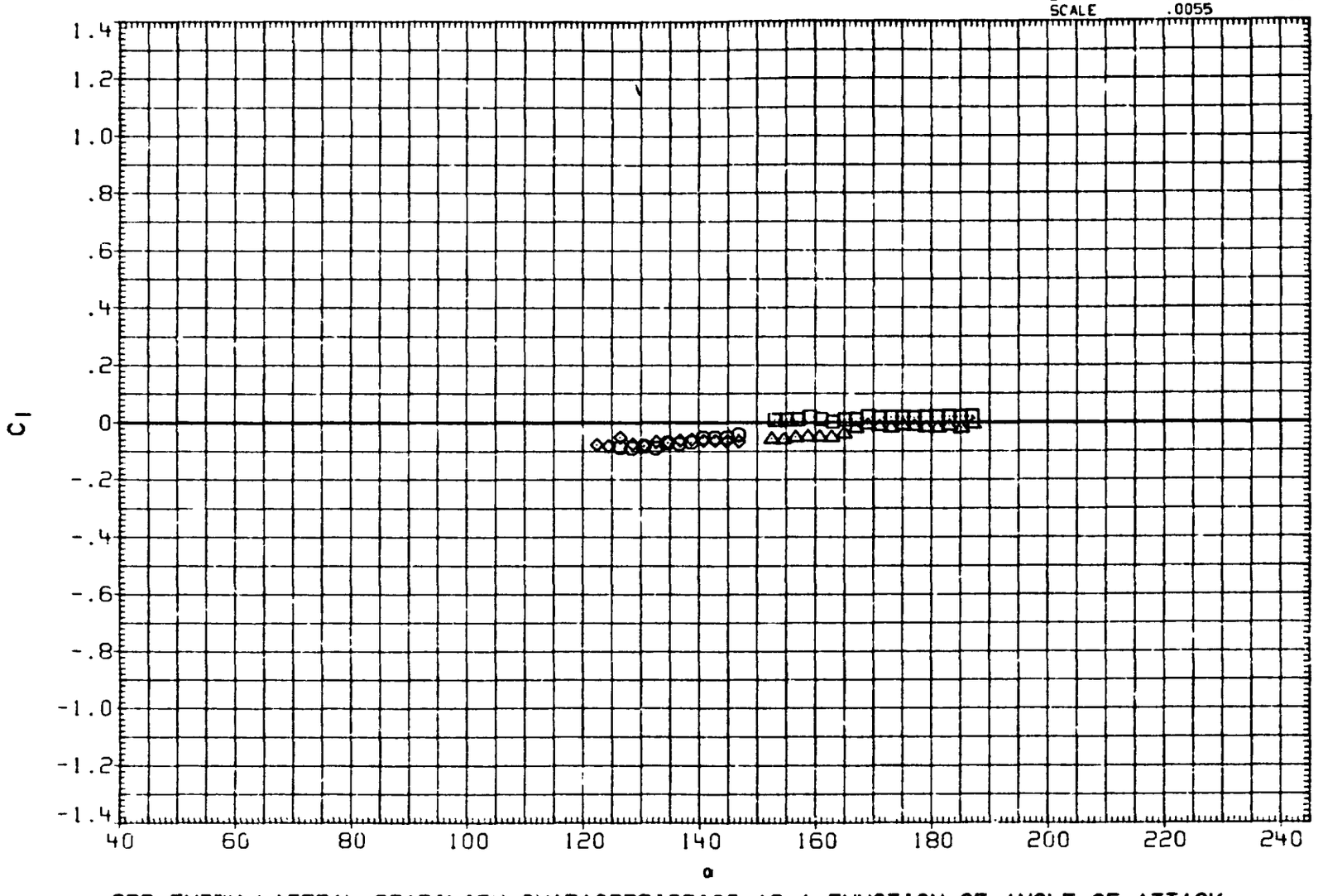
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(C)MACH = .59

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



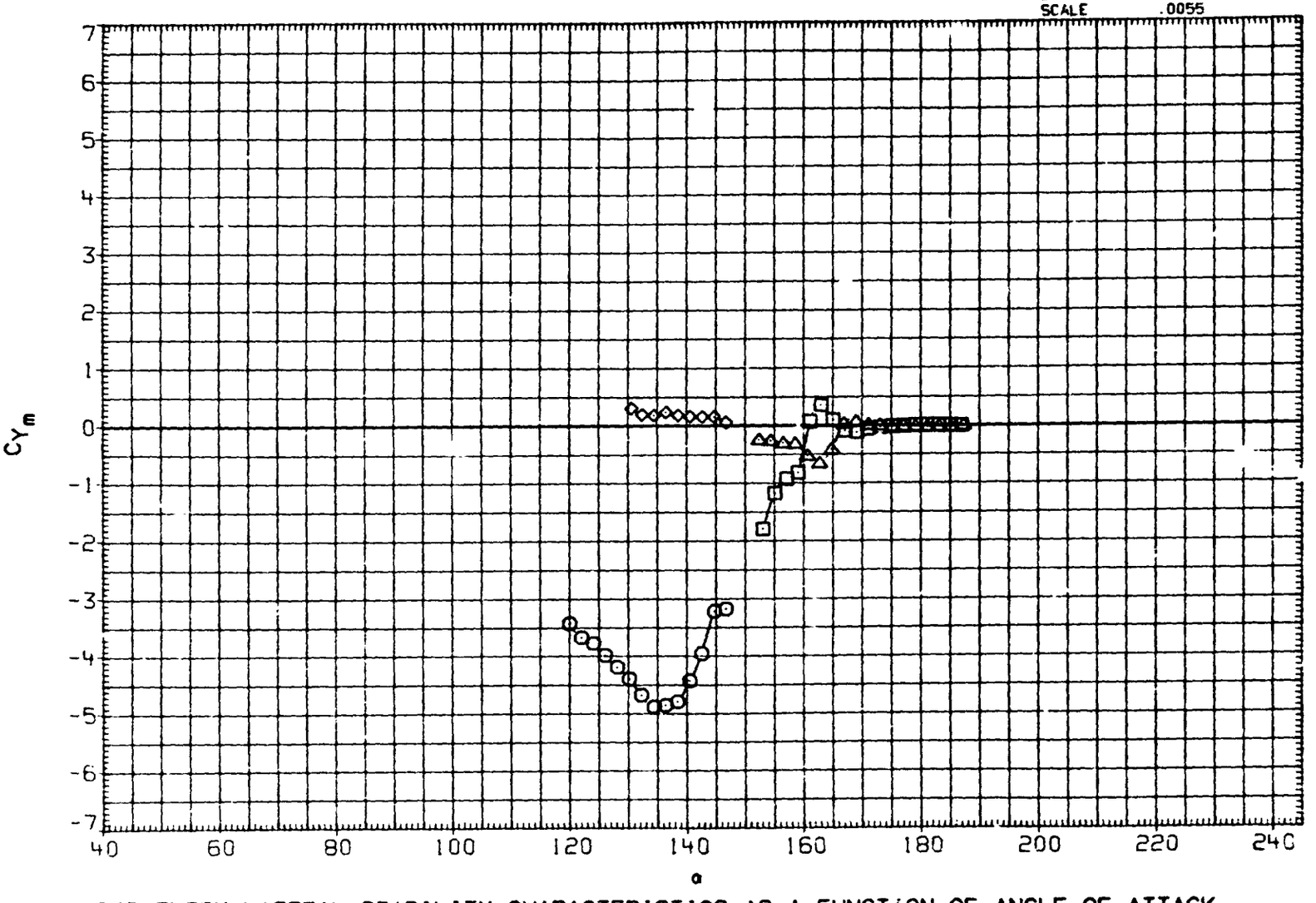
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(C)MACH = .59

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	)00	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



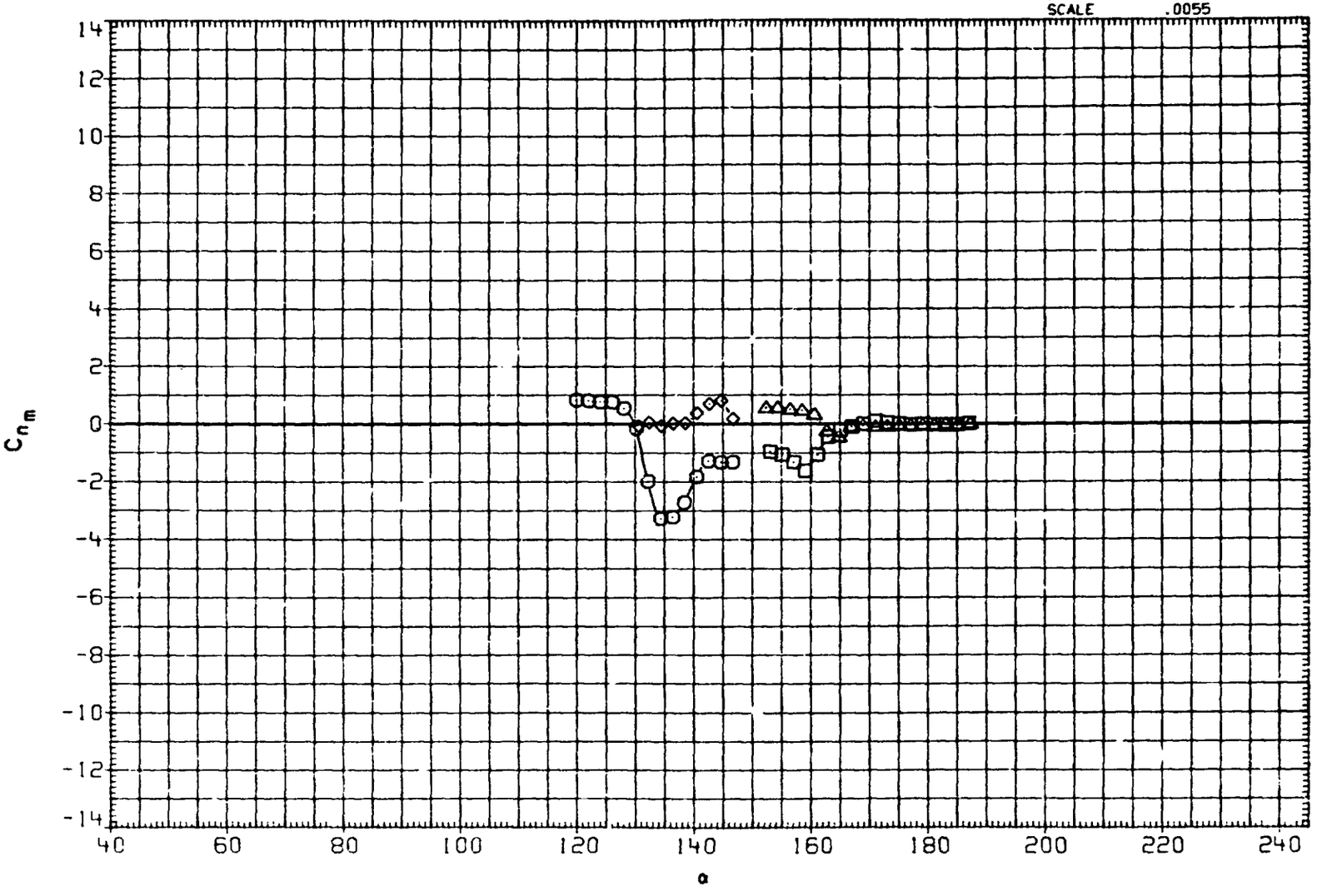
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(D)MACH = .69

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN ZS
SCALE	.0055	



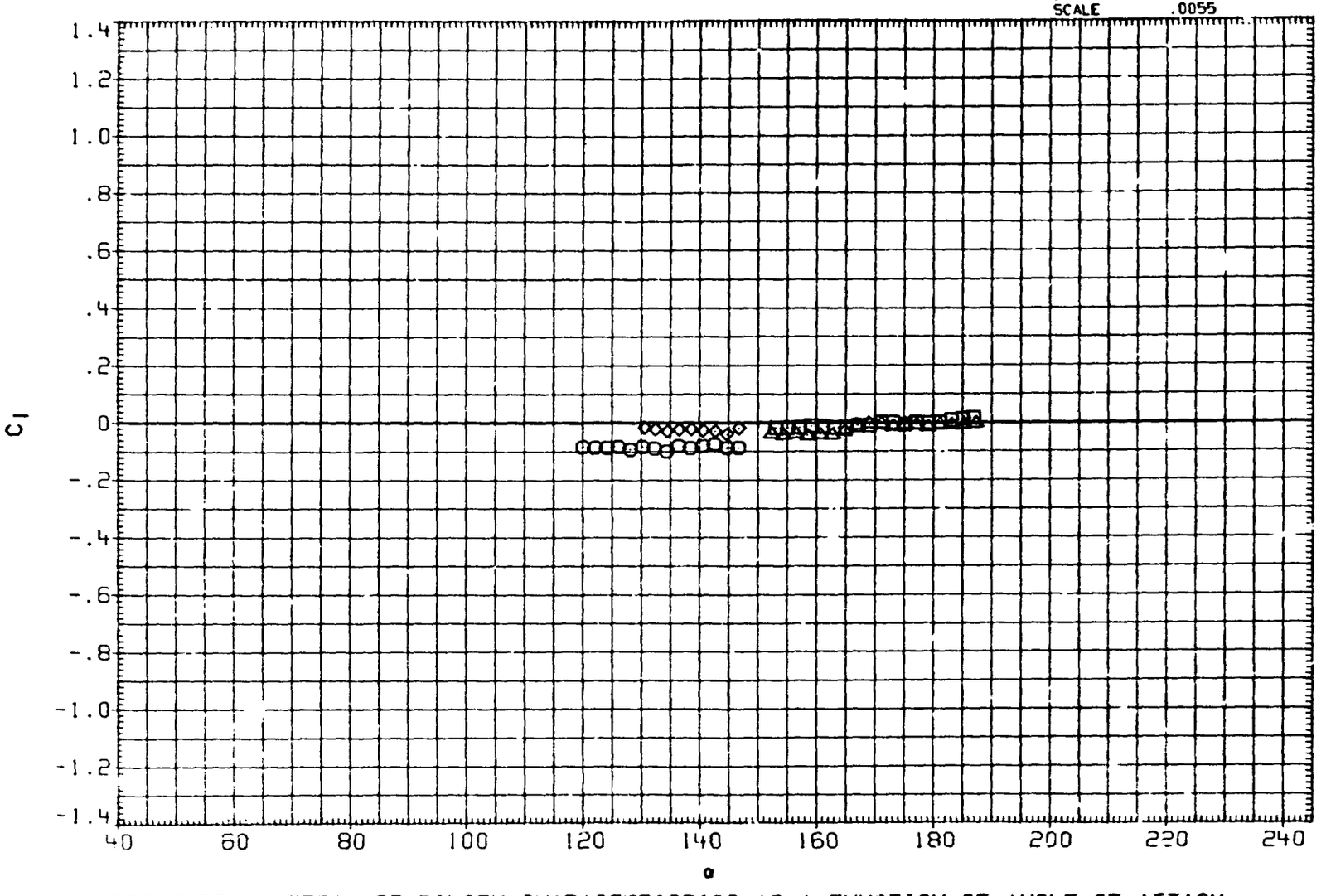
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(D) MACH = .69

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BE T STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BE T STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	N. ZS
SCALE	.0055	



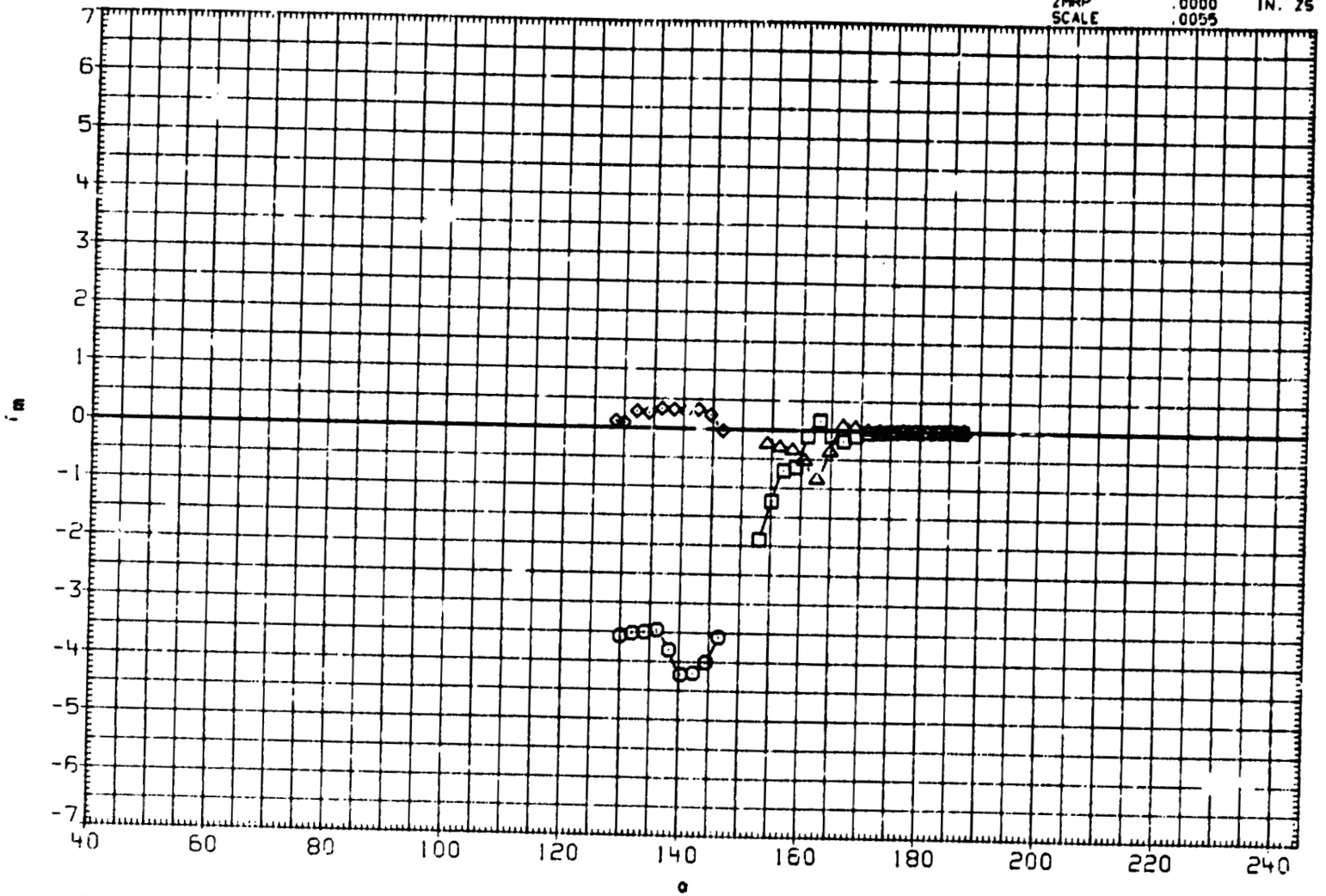
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(D)MACH = .69

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



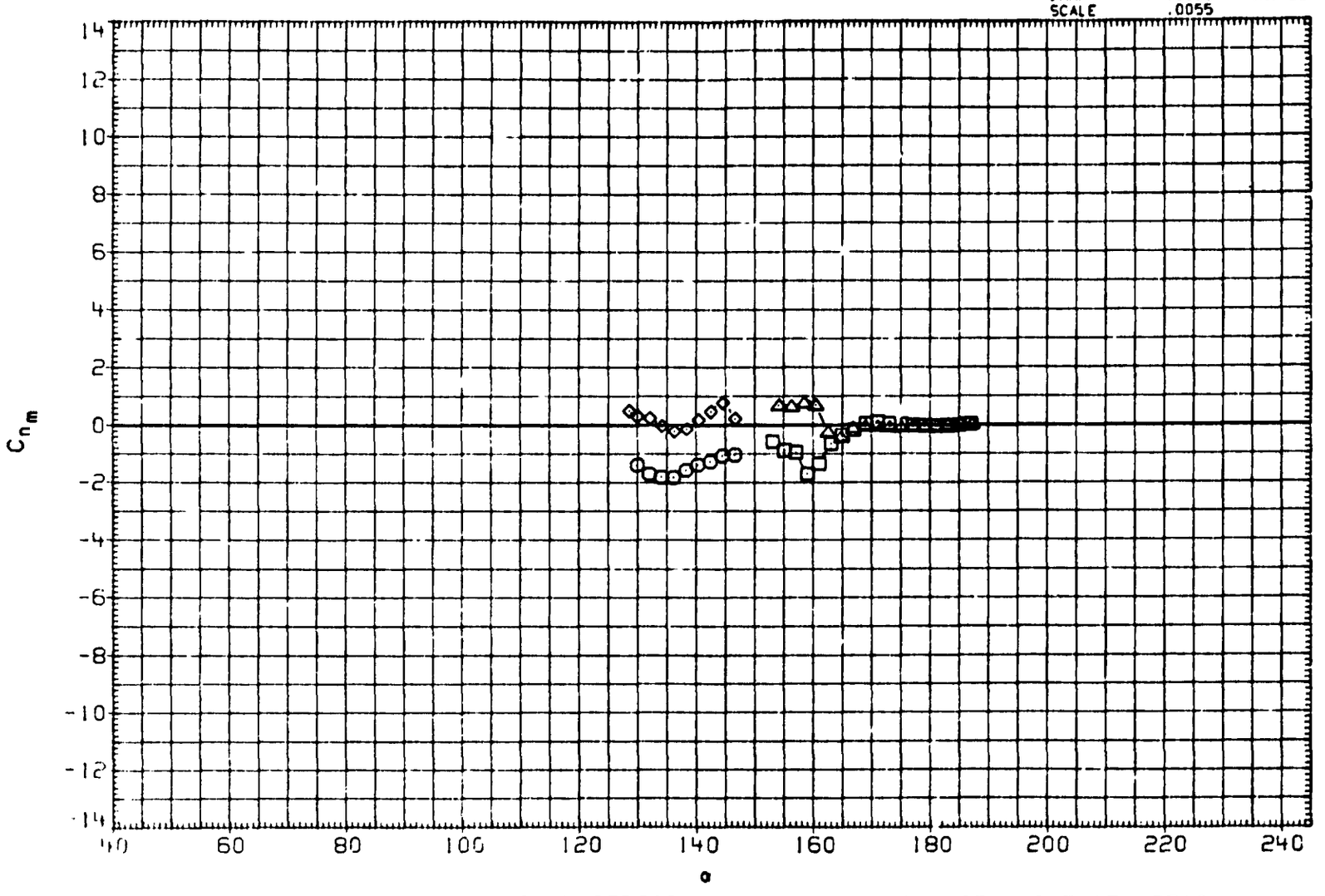
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(E)MACH .79

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



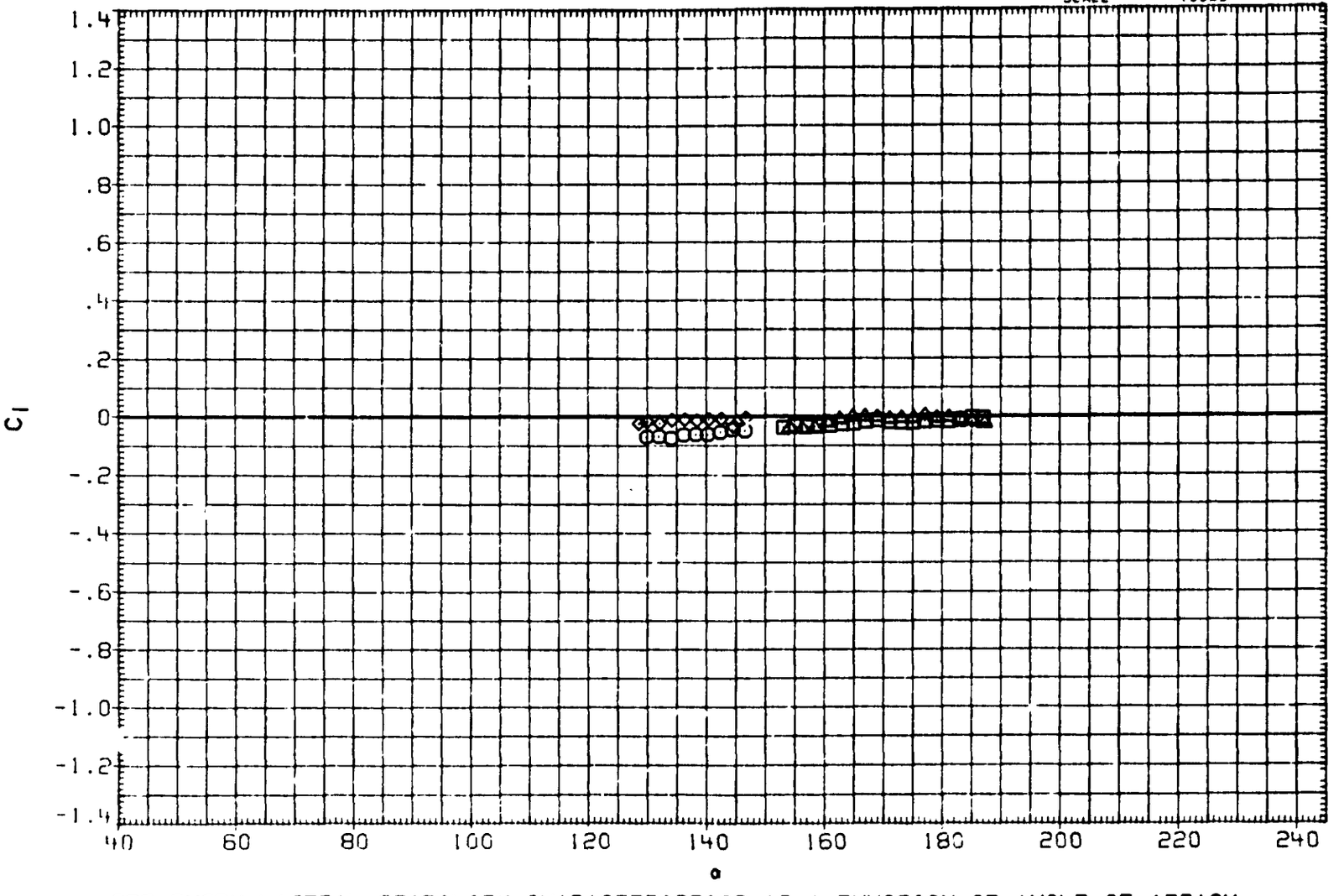
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(E)MACH - .79

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



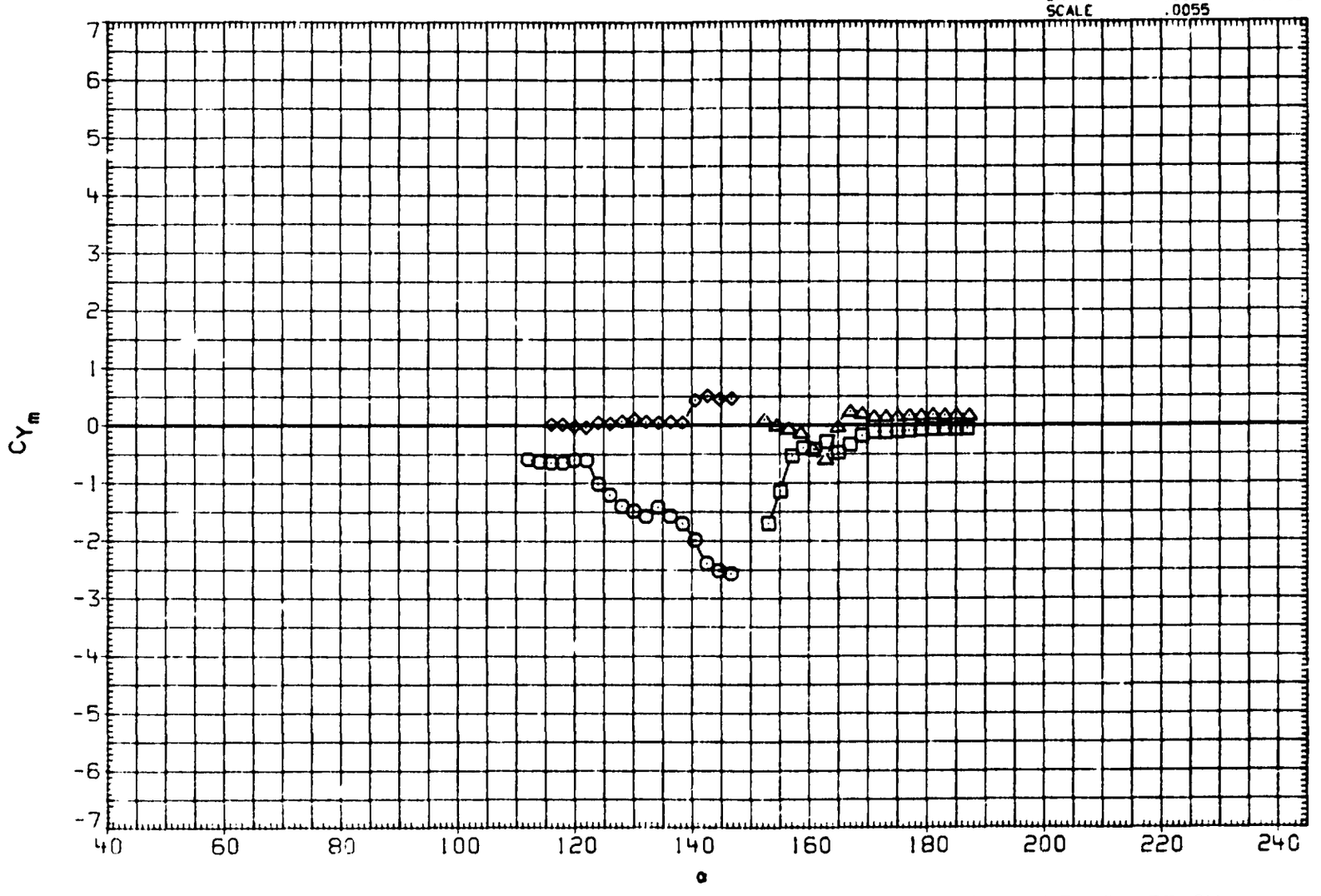
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(E)MACH = .79

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



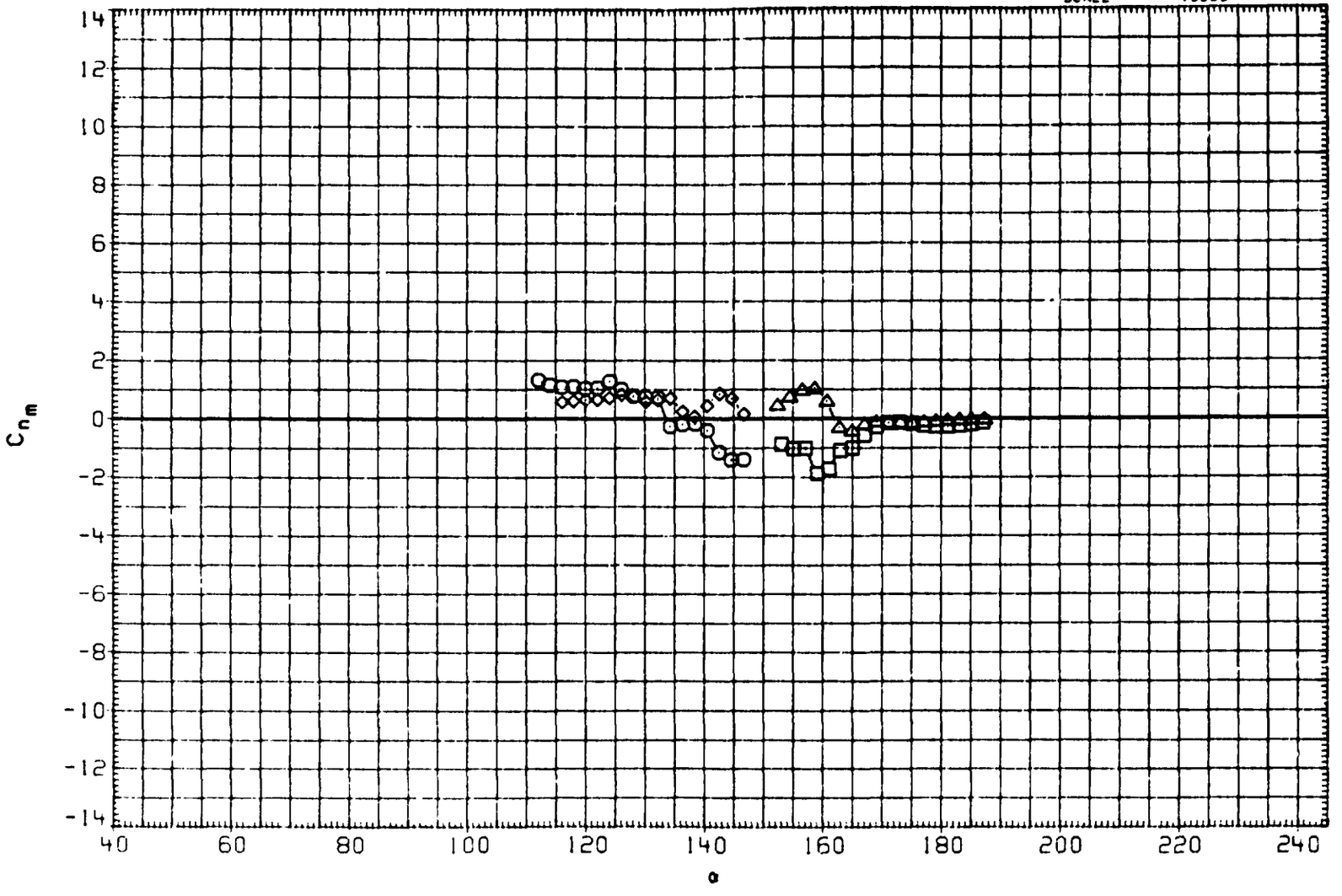
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(F)MACH = .89

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



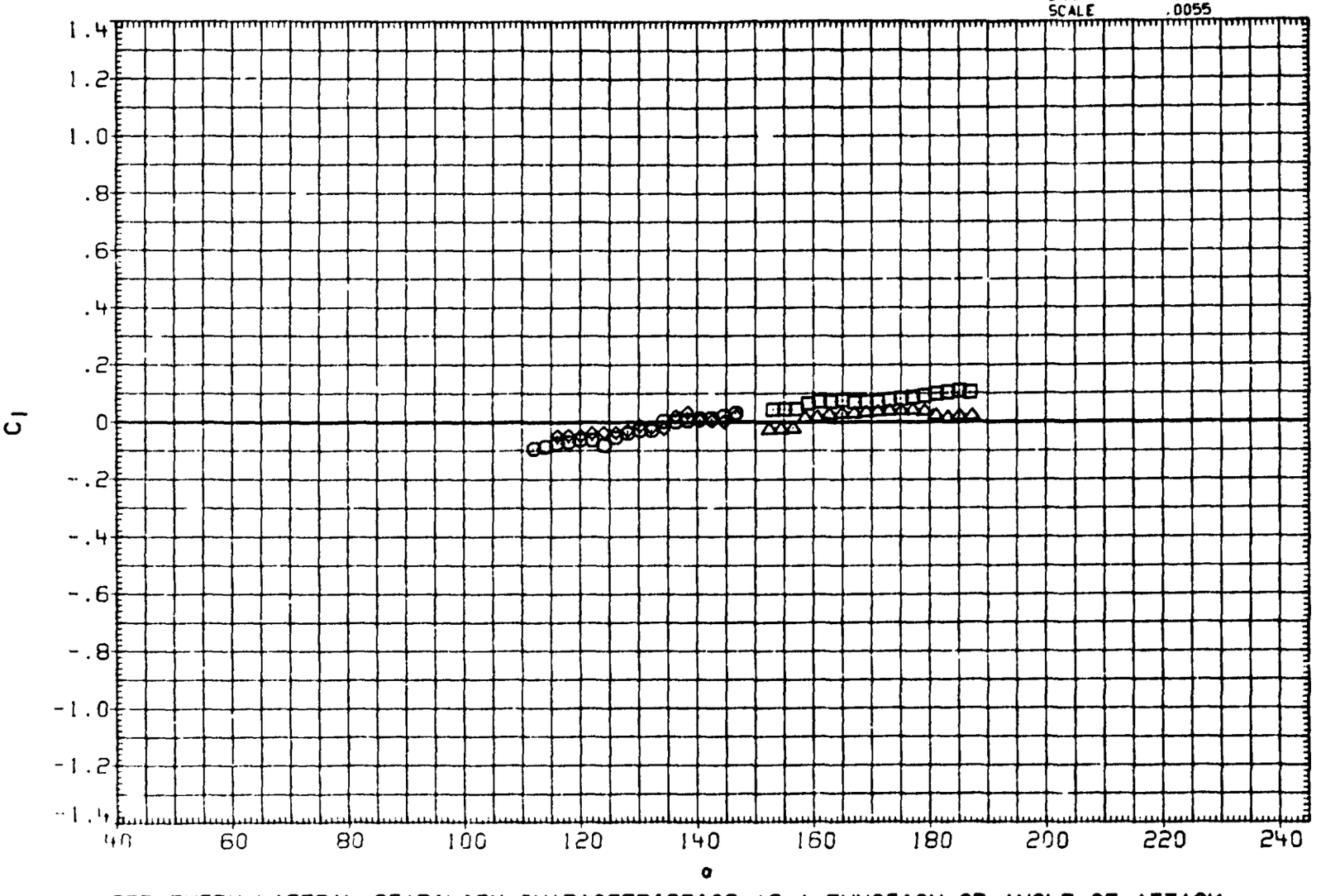
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(F)MACH = .89

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	118.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



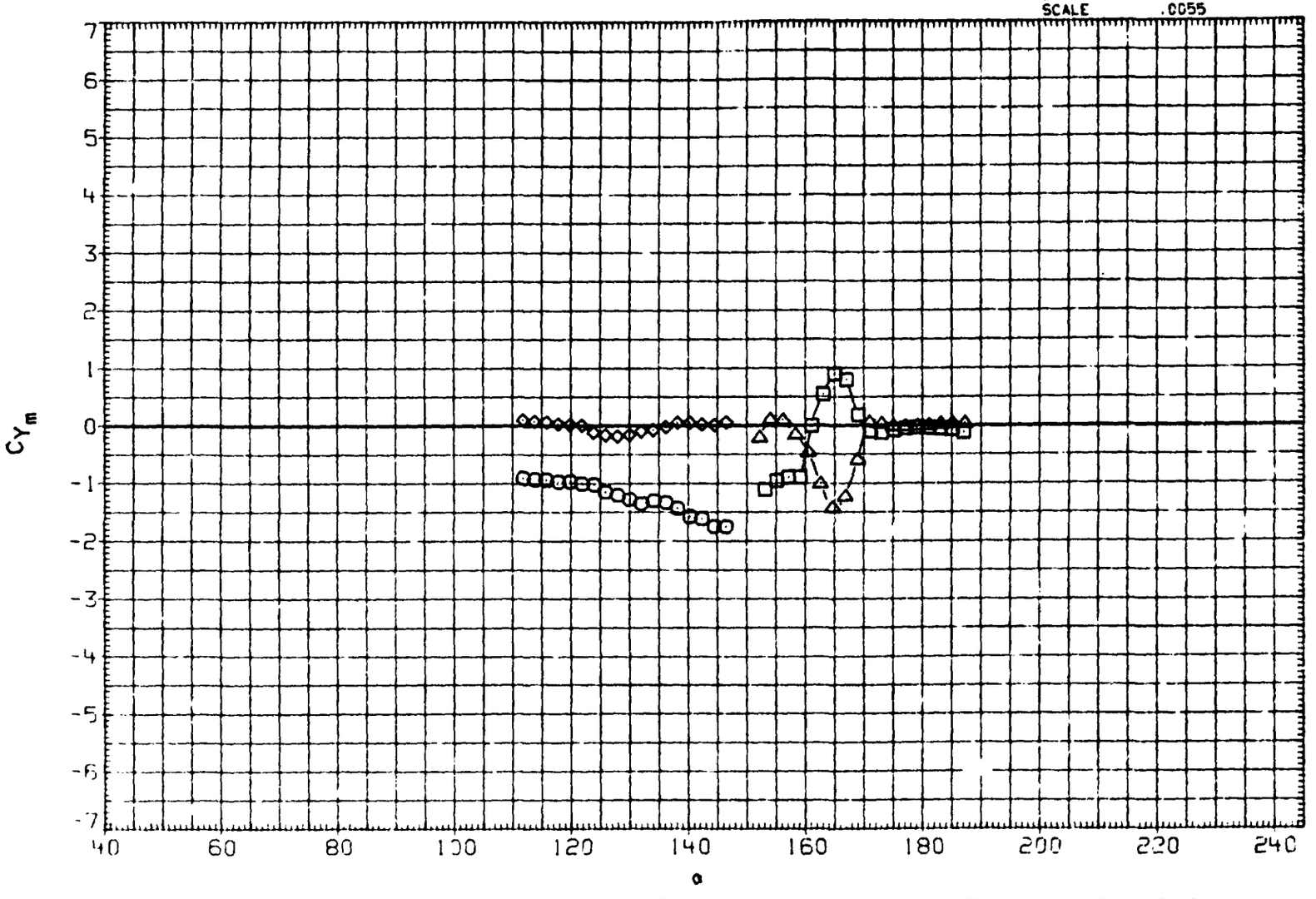
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(F)MACH = .89

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



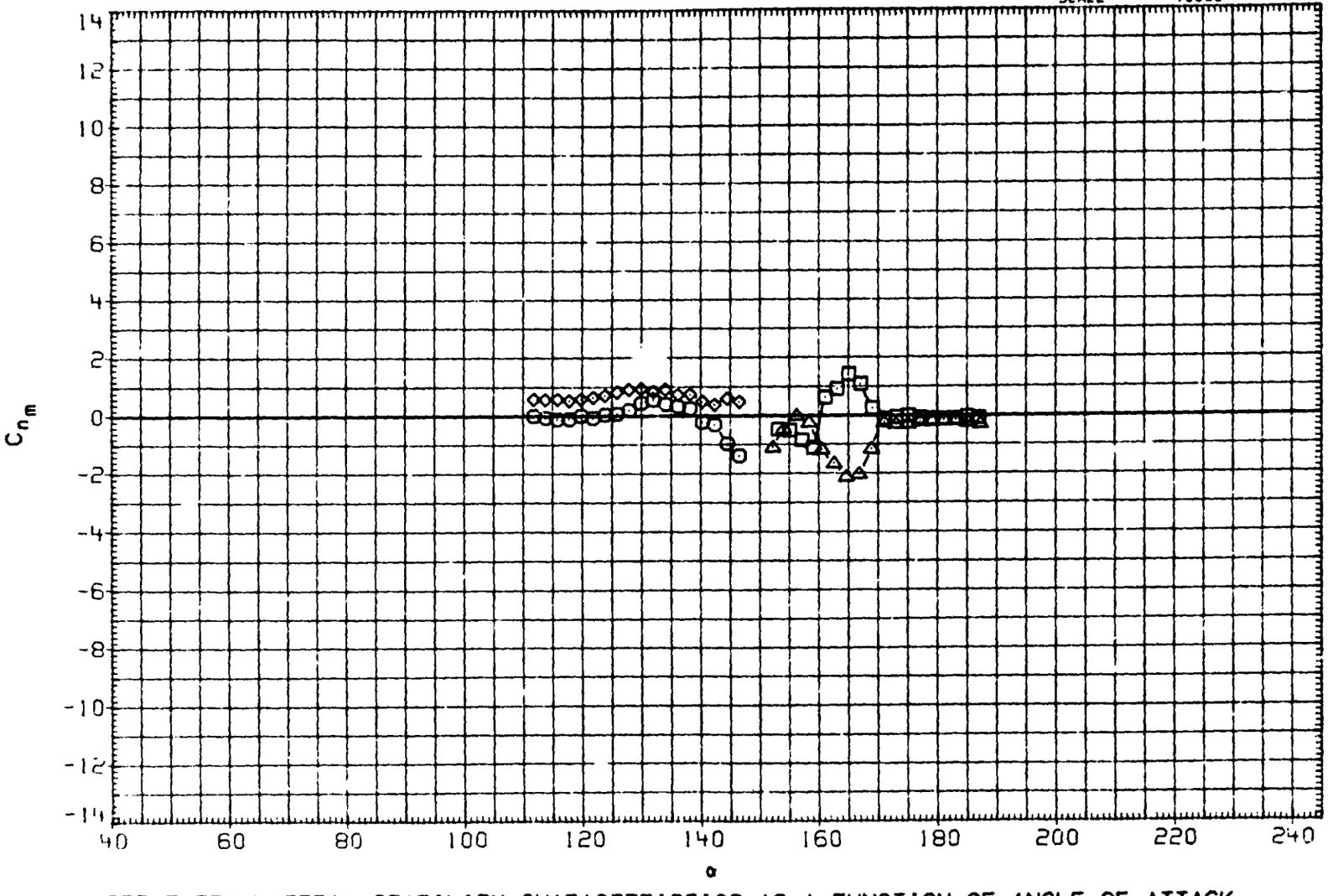
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(G)MACH = 1.02

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



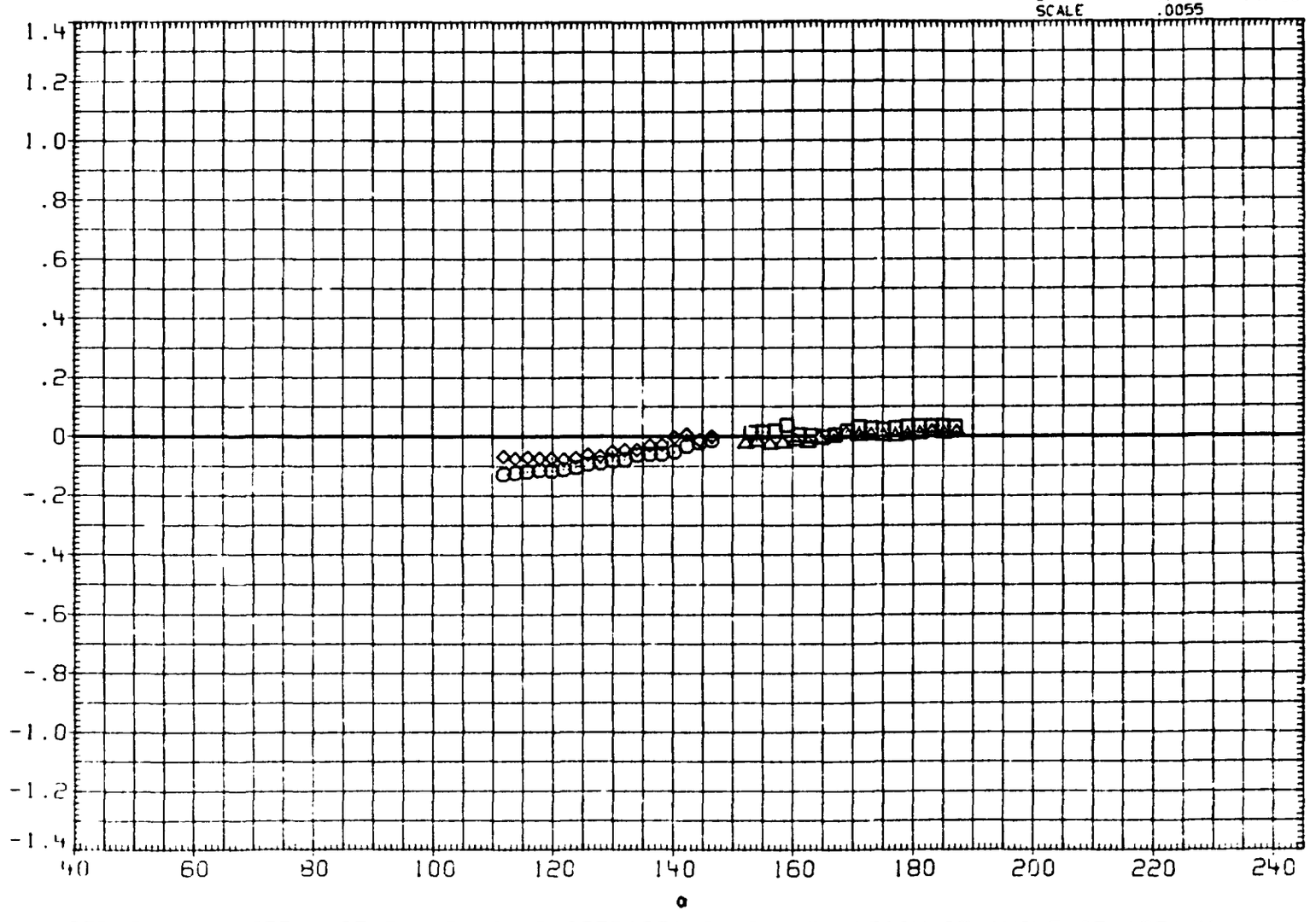
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(G)MACH = 1.02

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC PWIC-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC PWIC-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC PWIC-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC PWIC-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

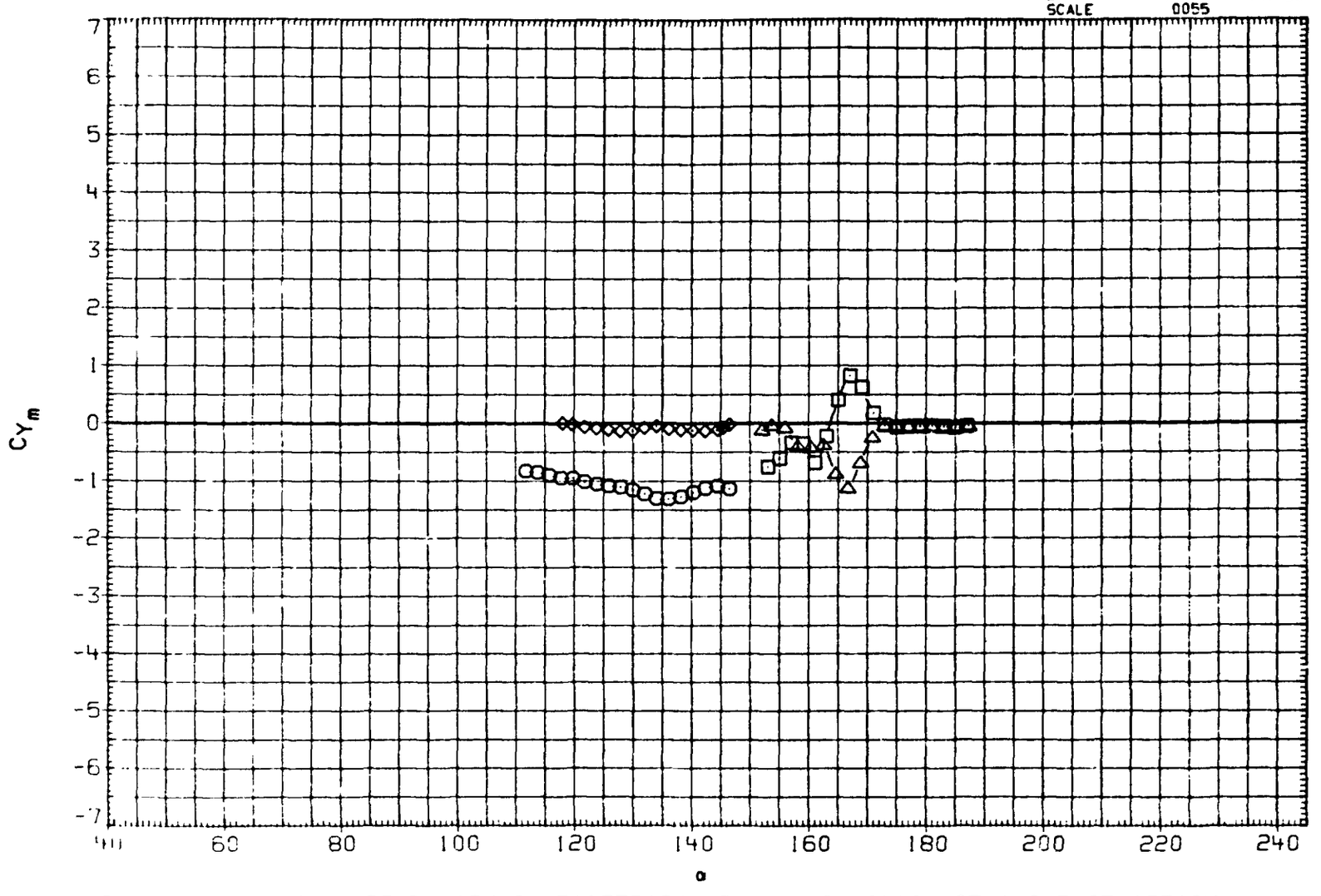


SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(G)MACH 1.02

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BRCF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	0055	



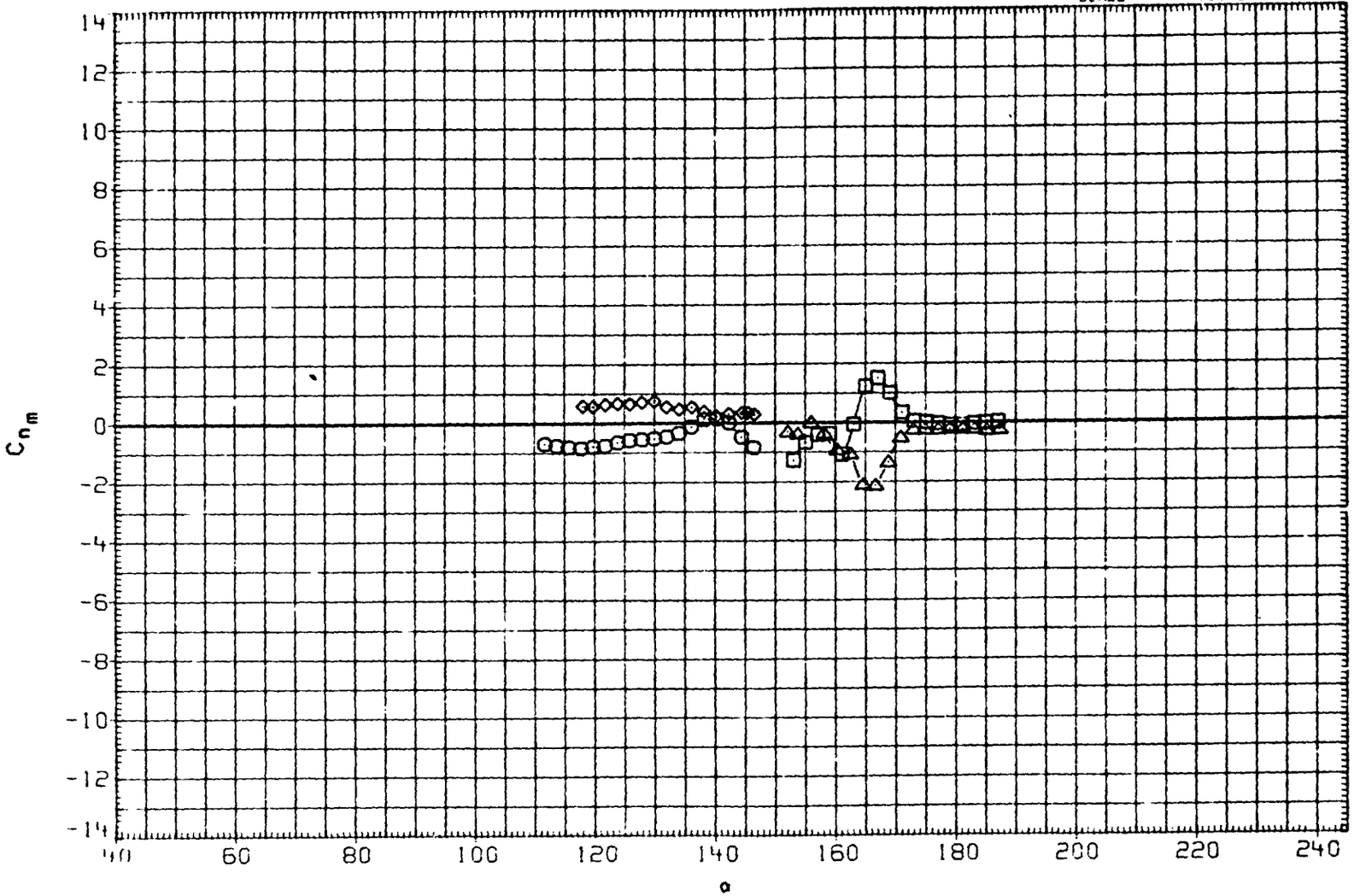
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(H) MACH 1.19

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

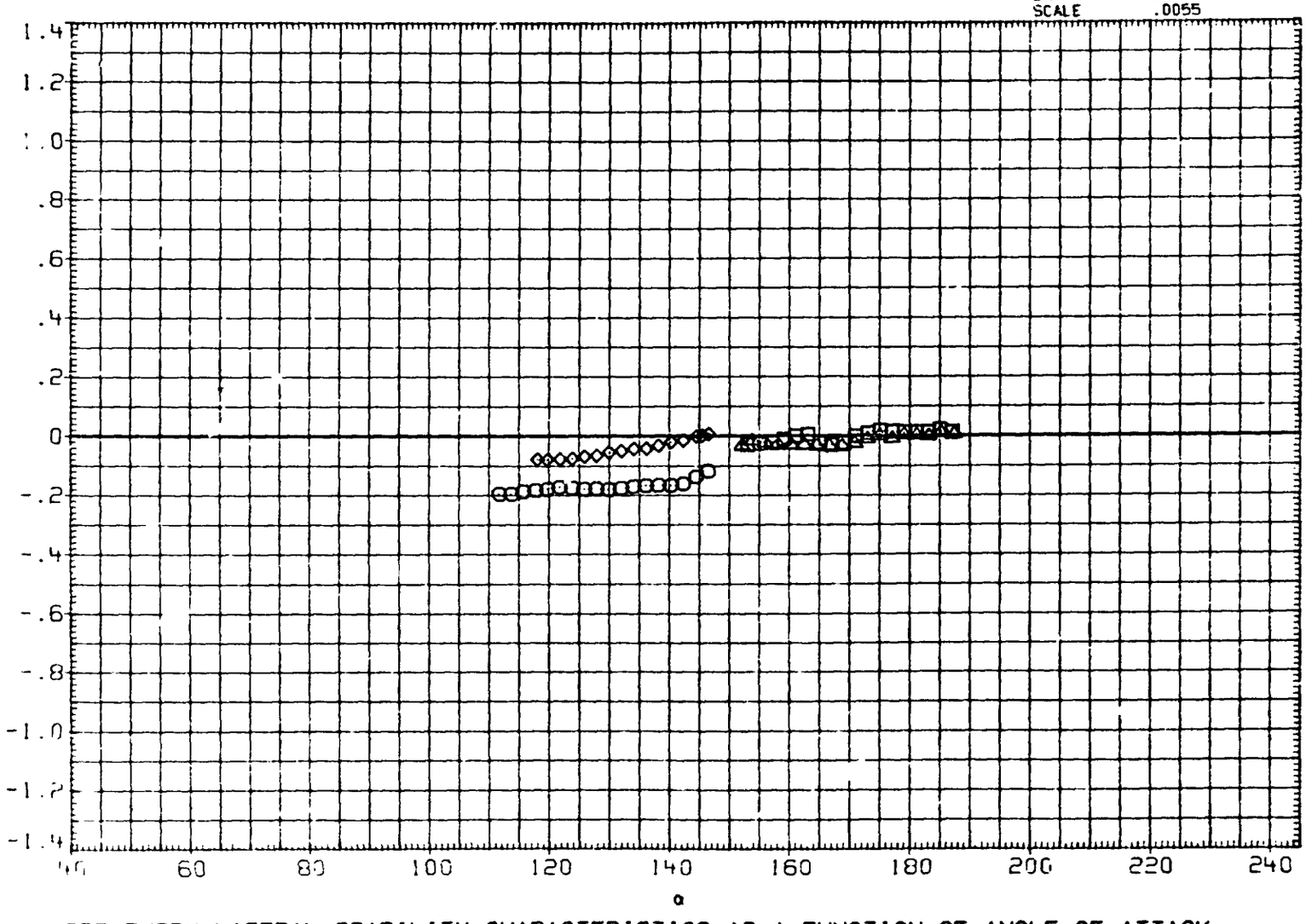


SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



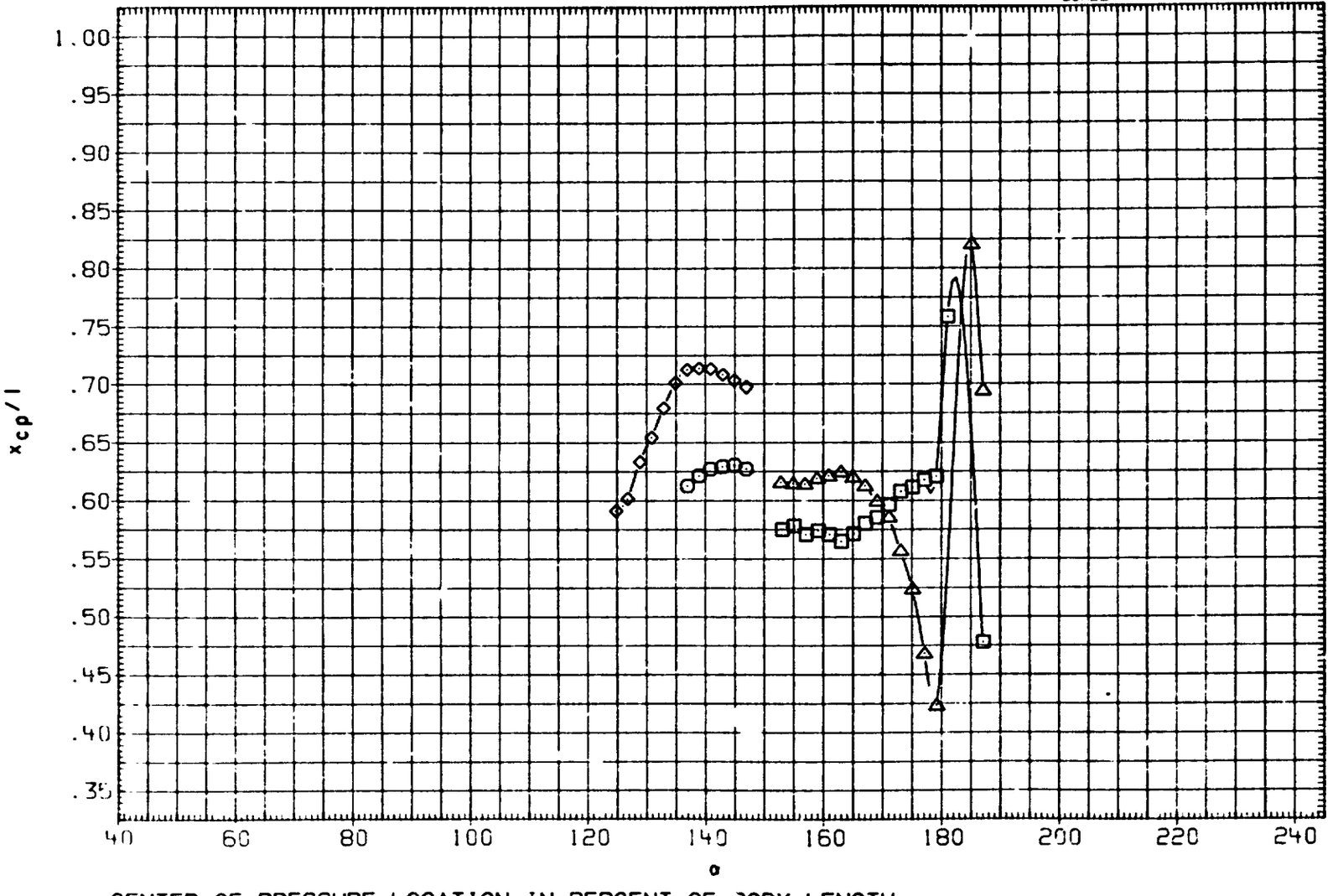
SRB ENTRY LATERAL STABILITY CHARACTERISTICS AS A FUNCTION OF ANGLE OF ATTACK

(H)MACH = 1.19

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



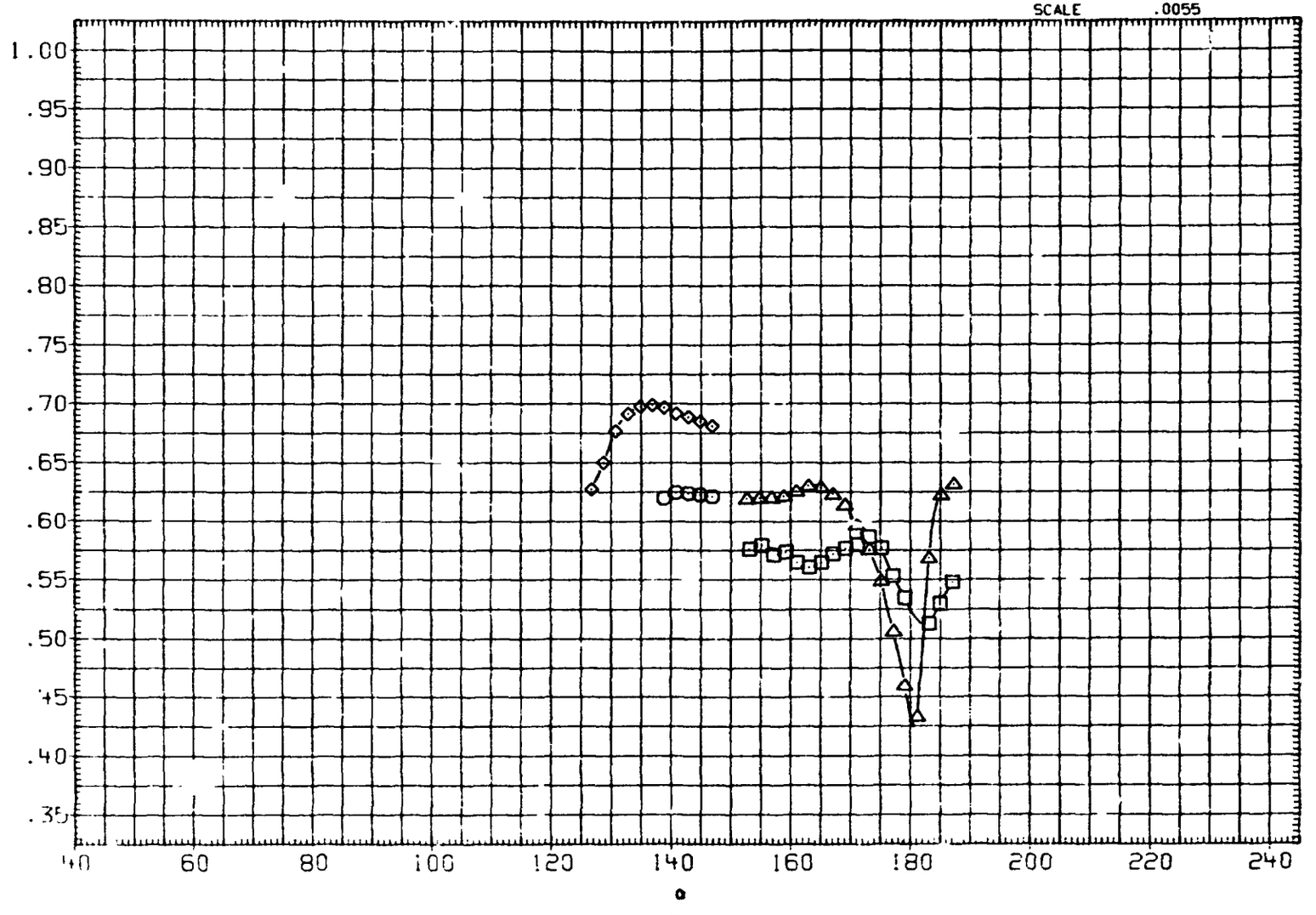
CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(A)MACH = .40

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT. STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



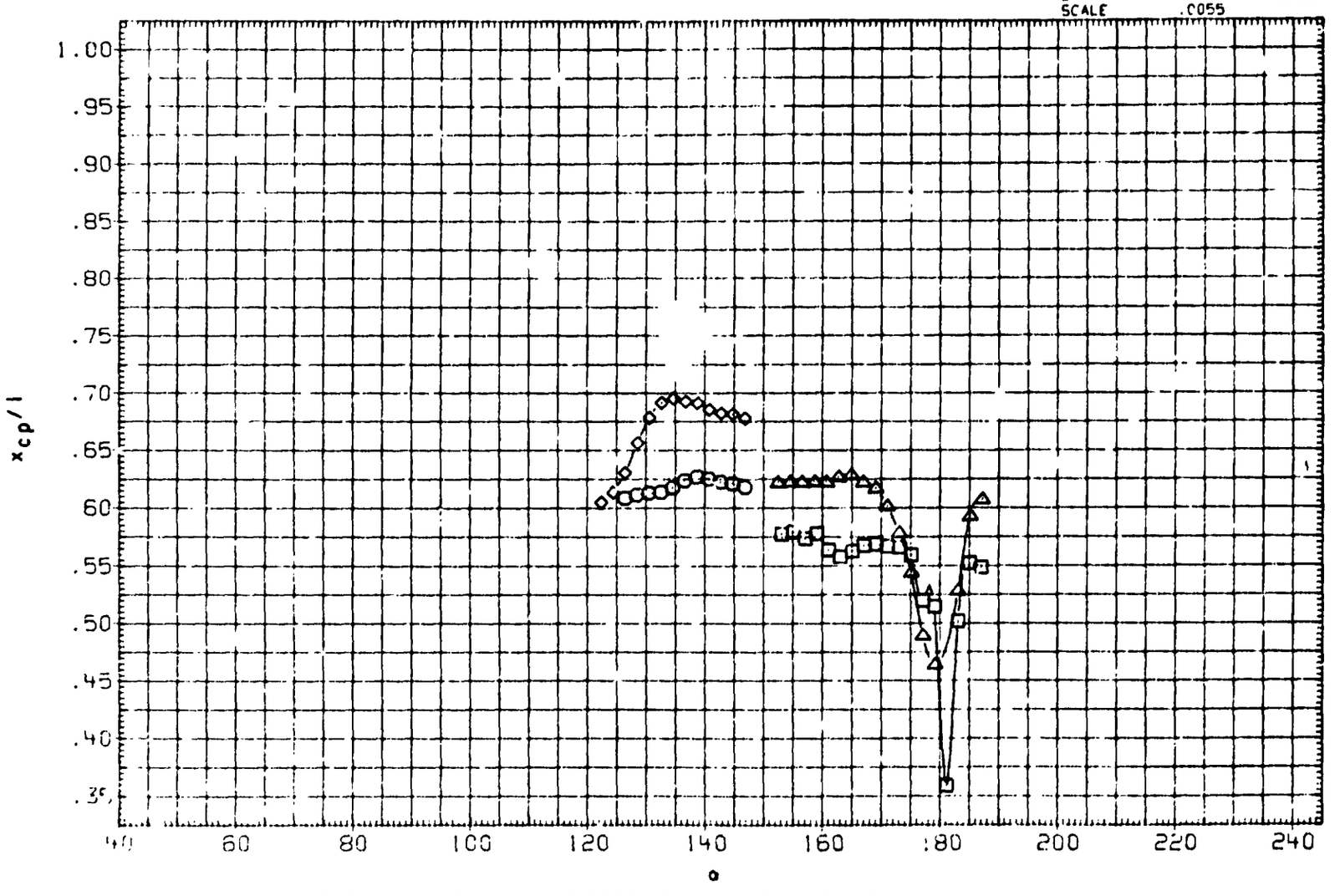
CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(B)MACH = .50

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



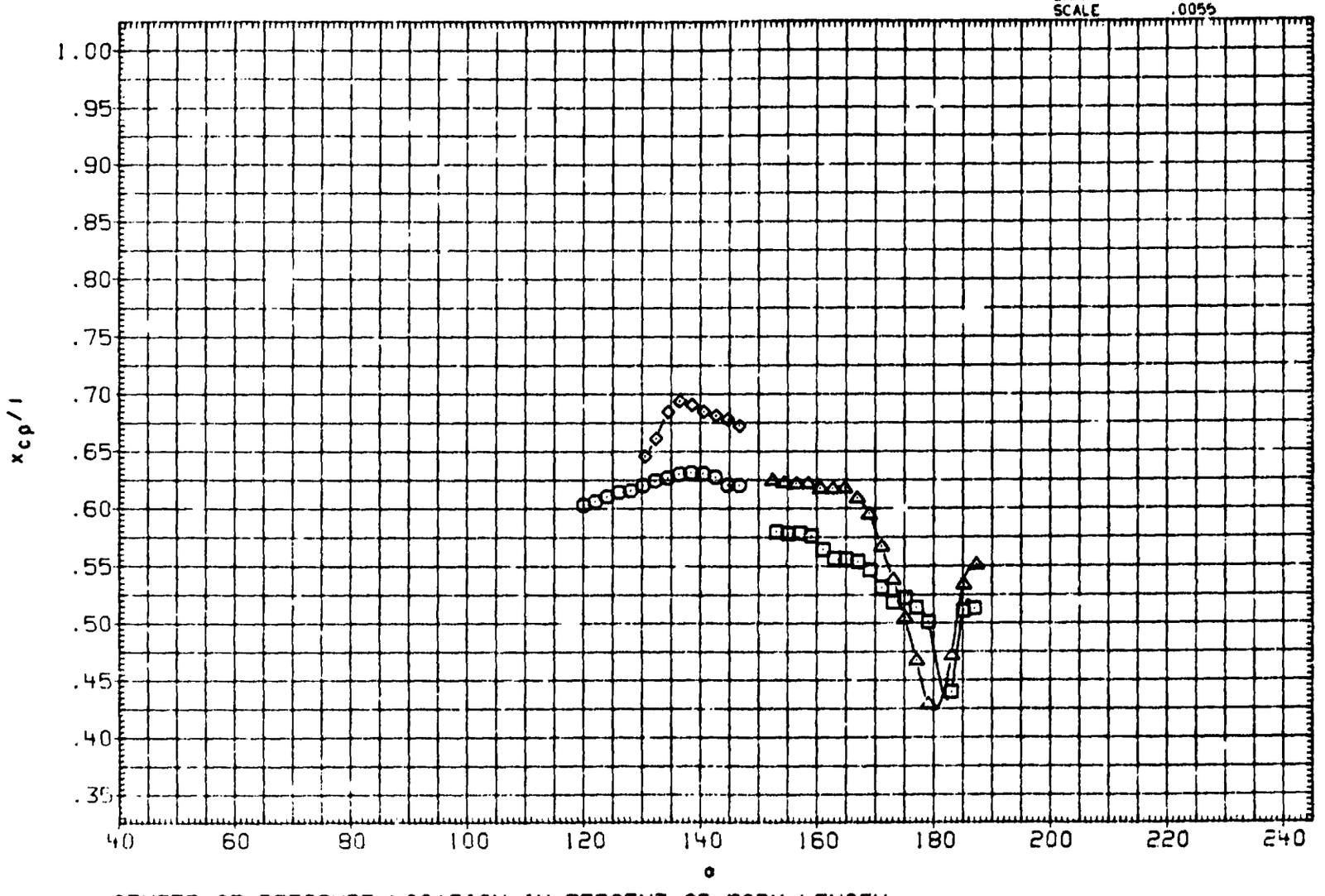
CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(C)MACH .59

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION

SREF	116.2600	SQ.FT
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

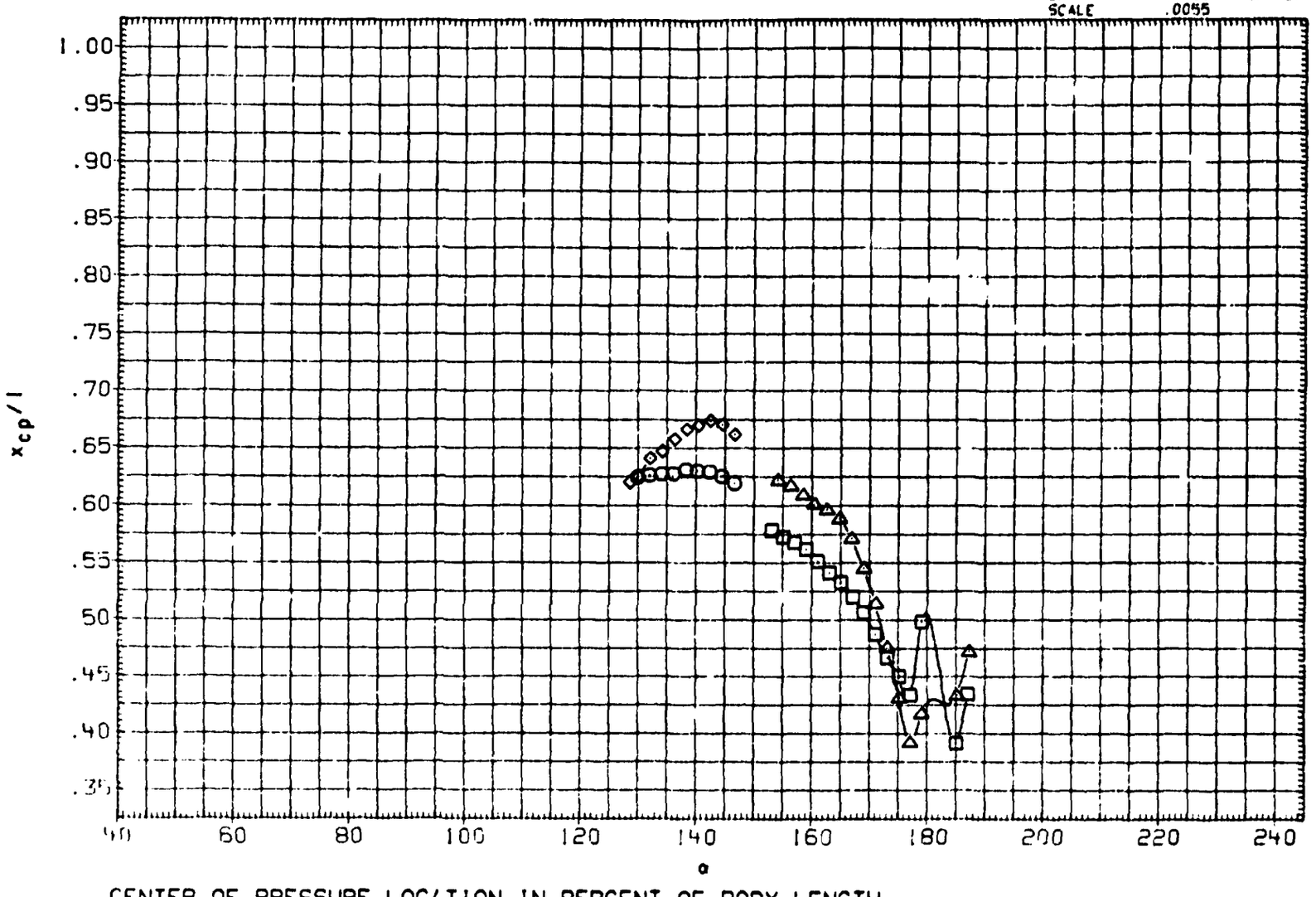


CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(D)MACH = .69

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

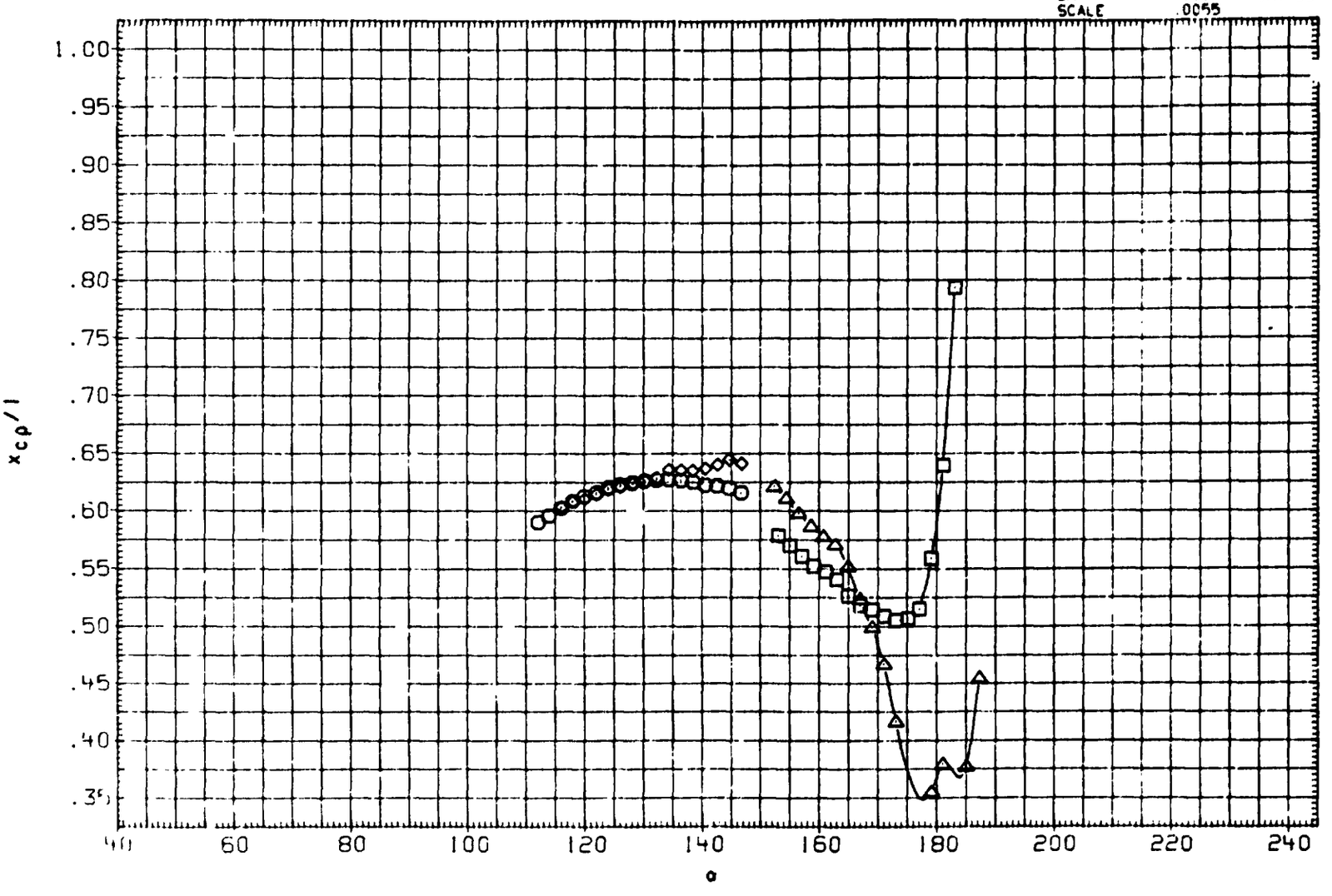


CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(E)MACH .79

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
3VP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
3VP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
3VP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
3VP004	△	AEDC P41C-E3A (S 6F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.9400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

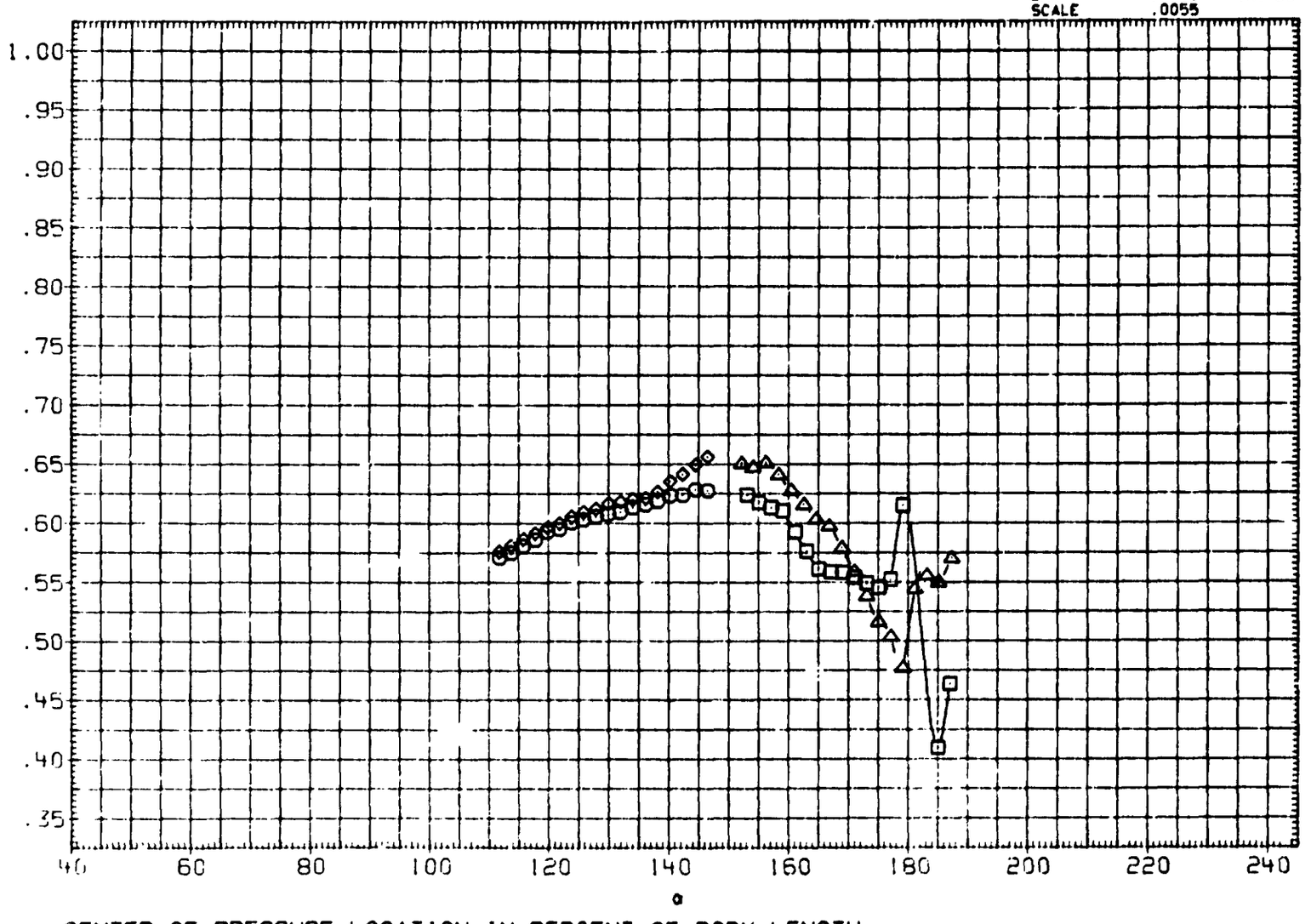


CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(F) MACH = .89

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	

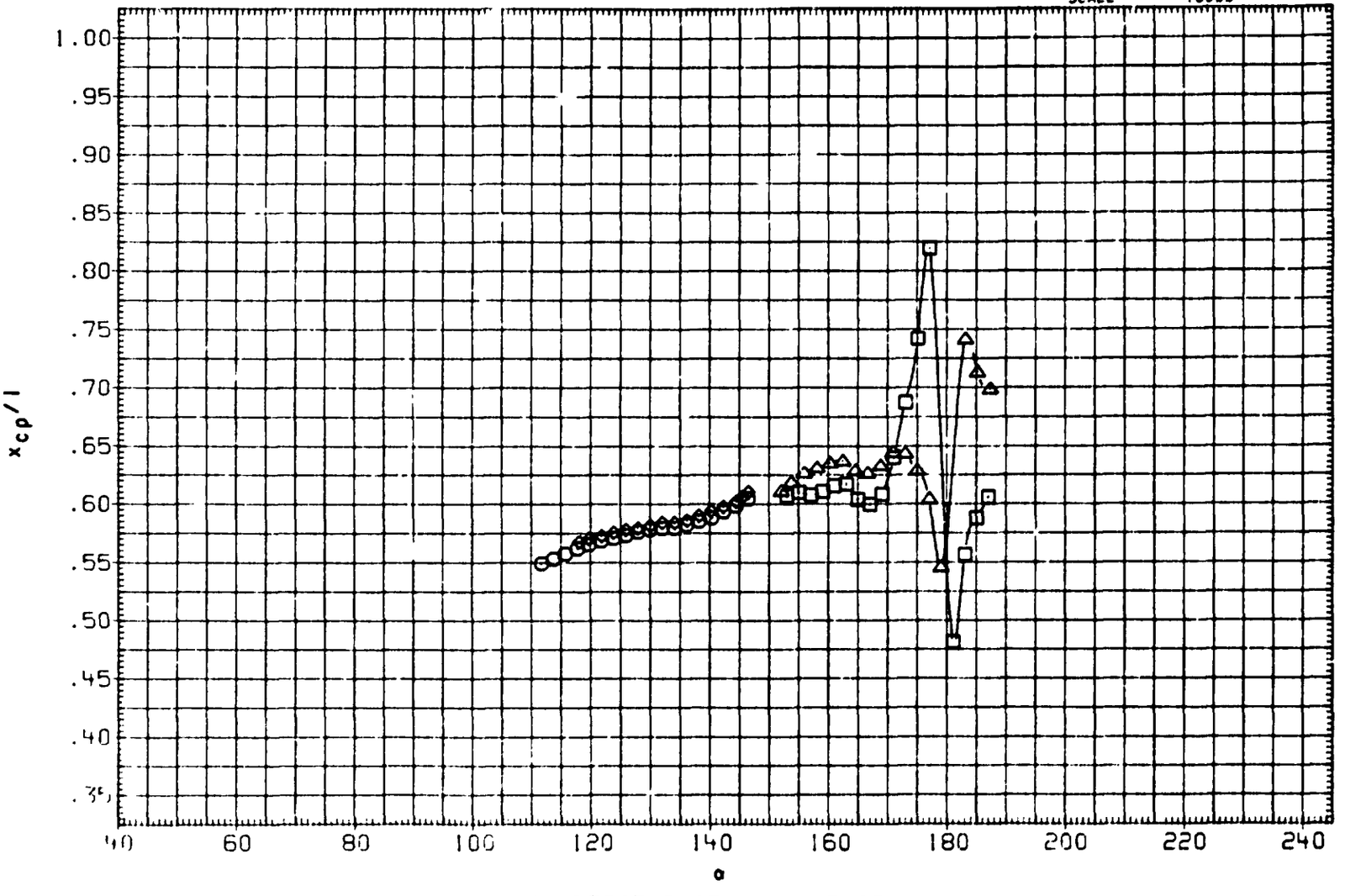


CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(G)MACH = 1.02

DATA SET	SYMBOL	CONFIGURATION	BETA	PHI
BVP001	○	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	.000
BVP003	□	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	.000
BVP002	◇	AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING	.000	90.000
BVP004	△	AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING	.000	90.000

REFERENCE INFORMATION		
SREF	116.2600	SQ.FT.
LREF	146.0000	IN.
BREF	146.0000	IN.
XMRP	1055.8400	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(H) MACH = 1.19

APPENDIX

TABULATED SOURCE DATA

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

AEDC P41C-E3A (SA16F) SRB W/PROT. BENT STING (RVP001) (06 AUG 78)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 48/ 0 RN/L = 3.51 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.397	146.900	4.19370	-1.90320	-2.47260	-2.72860	-3.79550	-.05290
.397	144.860	4.59780	-2.28370	-2.42710	-3.11430	-4.48150	-.05890
.397	142.850	4.95800	-2.38060	-2.38540	-3.69400	-5.27720	-.05340
.397	140.810	5.37530	-2.44110	-2.36310	-4.46180	-6.22020	-.04460
.397	138.820	5.84290	-2.23630	-2.29240	-5.04100	-6.56850	-.04510
.397	136.820	6.39550	-1.76150	-2.16910	-5.51990	-6.48130	-.06610
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 49/ 0 RN/L = 4.19 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.495	146.800	4.47800	-1.69020	-2.46410	-2.43810	-2.85230	-.05200
.495	144.770	4.92700	-1.98950	-2.42680	-2.79330	-3.23370	-.05660
.495	142.770	5.27000	-2.18070	-2.35320	-3.27360	-3.43150	-.05790
.495	140.720	5.73100	-2.41030	-2.32000	-3.89500	-3.82230	-.05250
.495	138.650	6.13160	-2.21990	-2.07500	-4.67670	-4.50830	-.06490
	GRADIENT	.00000	.00000	.00000	.00000	00000	.00000

RUN NO. 50/ 0 RN/L = 4.74 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.594	146.710	4.74240	-1.64540	-2.49640	-2.62800	-1.86540	-.04250
.594	144.630	5.25740	-2.01200	-2.45290	-3.08210	-1.90780	-.05280
.594	142.620	5.58000	-2.25740	-2.40330	-3.62640	-2.07240	-.05240
.594	140.600	6.04210	-2.61590	-2.35890	-4.30820	-2.46870	-.05200
.594	138.570	6.39510	-2.93630	-2.26250	-4.83720	-3.04680	-.06770
.594	136.500	7.06810	-2.93520	-2.19540	-5.35890	-3.79950	-.07420
.594	134.450	7.72140	-2.63060	-2.11270	-5.82560	-4.87050	-.07340
.594	132.420	8.46350	-2.50330	-2.04710	-5.81130	-3.91150	-.08830
.594	130.330	9.17640	-2.63470	-1.97850	-5.37450	-1.75190	-.08230
.594	128.300	9.85590	-2.64910	-1.90300	-5.08180	-.65000	-.08860
.594	126.270	10.36660	-2.40880	-1.80270	-4.89280	-.13920	-.08640
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PR T, BENT STING (RVP001) (06 AUG 76)

REFERENCE DATA

SREF = 11[illegible].2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 51/ 0 RN/L = 5.18 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.693	146.630	4.85050	-1.82760	-2.57010	-3.17560	-1.30940	-.08570
.693	144.650	4.87180	-1.83520	-2.57290	-3.21870	-1.31760	-.08590
.693	142.480	5.91350	-2.73720	-2.45790	-3.96180	-1.28090	-.07360
.693	140.430	6.48330	-3.24120	-2.39660	-4.42930	-1.83270	-.07960
.693	138.340	7.08100	-3.60050	-2.32580	-4.79250	-2.70630	-.08710
.693	136.310	7.63140	-3.77990	-2.23780	-4.85330	-3.22640	-.07910
.693	134.270	8.35800	-3.79830	-2.16410	-4.88130	-3.26770	-.09880
.693	132.130	9.01320	-3.80700	-2.06880	-4.67410	-1.98550	-.09840
.693	130.110	9.81340	-3.66240	-2.01330	-4.39160	-.15260	-.08330
.693	128.060	10.44800	-3.34920	-1.91770	-4.19180	.55060	-.09120
.693	126.030	10.93170	-3.26330	-1.81860	-3.98780	.76210	-.08240
.693	123.980	11.49550	-2.94870	-1.72630	-3.77470	.77660	-.08530
.693	121.960	11.85090	-2.35900	-1.61120	-3.67330	.80450	-.08500
.693	119.900	12.07570	-1.93720	-1.47040	-3.42260	.82320	-.08310
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 60/ 0 RN/L = 5.61 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.791	146.510	5.30720	-1.92640	-2.64400	-3.57320	-1.03650	-.04890
.791	144.390	5.90410	-2.55280	-2.56670	-4.00480	-1.06020	-.04430
.791	142.310	6.46200	-3.12870	-2.51070	-4.18860	-1.26400	-.05360
.791	140.220	7.18570	-3.51030	-2.46300	-4.21690	-1.37690	-.06160
.791	138.150	7.77770	-3.95110	-2.38050	-3.80470	-1.57260	-.06160
.791	136.060	8.61430	-3.97900	-2.31270	-3.45720	-1.81440	-.06390
.791	133.980	9.26340	-4.24810	-2.23360	-3.49770	-1.80250	-.07430
.791	131.900	9.86950	-4.38740	-2.14300	-3.52110	-1.71000	-.06780
.791	129.820	10.42560	-4.42170	-2.02380	-3.57350	-1.38860	-.06880
	GRAD'ENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING (RVP001) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 56/ 0 RN/L = 4.01 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.889	146.620	5.80340	-1.87100	-2.80230	-2.55670	-1.39920	.03030
.889	144.530	6.49910	-2.42120	-2.73050	-2.51040	-1.41010	.01950
.889	142.460	7.22680	-2.85390	-2.65810	-2.38520	-1.15720	.01140
.889	140.390	7.94560	-3.19370	-2.59360	-1.97630	-.40890	.01050
.889	138.310	8.66600	-3.78100	-2.52210	-1.69250	-.18960	.00590
.889	136.250	9.35350	-4.24140	-2.45280	-1.56390	-.20490	.00190
.889	134.190	10.02030	-4.61300	-2.37970	-1.41220	-.26270	.00170
.889	132.120	10.61390	-4.87350	-2.28800	-1.56750	.72030	-.02820
.889	130.070	11.20420	-5.00190	-2.21150	-1.47970	.72720	-.02870
.889	128.030	11.74860	-5.07370	-2.10950	-1.38780	.76350	-.03890
.889	125.970	12.23920	-4.97790	-1.99930	-1.19490	.98250	-.05320
.889	123.970	12.54860	-4.76540	-1.87220	-1.00450	1.27030	-.08110
.889	121.970	12.77610	-4.20220	-1.72040	- 60230	1.04390	-.06330
.889	119.900	13.15790	-3.74110	-1.58950	-.59170	1.01370	-.06300
889	117.920	13.48350	-3.14120	-1.44660	.63730	1.07530	-.07170
.889	115.940	13.72360	-2.12200	-1.27240	-.63990	1.06000	-.07520
.889	113.930	14.04620	-1.03850	-1.10890	-.62250	1.13850	-.08740
.889	111.930	14.27380	-.08780	-.87400	-.58100	1.29650	-.09370
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING (RVP001) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 57/ 0 RN/L = 4.12 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
1.019	146.460	6.83490	-3.12930	-3.04320	-1.75340	-1.37430	-.01310
1.019	144.390	7.59690	-3.56470	-2.96190	-1.74900	-.95760	-.02060
1.019	142.280	8.58760	-3.52980	-2.87460	-1.61750	-.29790	-.03240
1.019	140.210	9.30640	-3.77590	-2.79240	-1.57900	-.21870	-.05120
1.019	138.120	10.18290	-3.58080	-2.71060	-1.43550	.25410	-.05920
1.019	136.070	11.01960	-3.46540	-2.63960	-1.33910	.32700	-.06060
1.019	134.010	11.76880	-3.36480	-2.55410	-1.30500	.40630	-.06260
1.019	131.930	12.60570	-2.99650	-2.46590	-1.35270	.55250	-.07760
1.019	129.880	13.21530	-2.83280	-2.35610	-1.28160	.45440	-.08200
1.019	127.840	13.71850	-2.65810	-2.25200	-1.20720	.19170	-.08940
1.019	125.810	14.18850	-2.21470	-2.13970	-1.14970	.07240	-.09260
1.019	123.790	14.54790	-1.89190	-2.01630	-1.02130	.04740	-.10470
1.019	121.750	15.09590	-.86380	-1.88580	-1.00250	-.05860	-.11090
1.019	119.740	15.42520	-.46110	-1.73950	-.97120	.02050	-.11510
1.019	117.720	16.06610	.83710	-1.60250	-.97110	-.09990	-.11470
1.019	115.730	16.52870	1.95170	-1.45450	-.94470	-.10990	-.11900
1.019	113.710	17.01270	3.12580	-1.28100	-.92890	-.05610	-.12350
1.019	111.700	17.35020	4.05380	-1.09190	-.90740	.00190	-.12730
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING (RVP001) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 58/ 0 RN/L = 4.08 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
1.192	146.400	7.42450	-1.31110	-3.11950	-1.13060	-.83070	-.11930
1.192	144.350	8.29410	-.83430	-3.04930	-1.08000	-.46600	-.13750
1.192	142.250	9.21120	-.37760	-2.95960	-1.11870	.01680	-.16270
1.192	140.180	10.19010	.24490	-2.88790	-1.18900	.15190	-.16720
1.192	138.090	11.08540	.64100	-2.79430	-1.26320	.13070	-.16730
1.192	136.030	11.97870	1.15920	-2.69800	-1.30440	-.11410	-.16840
1.192	133.960	12.79820	1.68350	-2.59620	-1.29380	-.33280	-.17200
1.192	131.910	13.39020	1.82260	-2.49430	-1.21040	-.45990	-.17750
1.192	129.860	13.99300	2.10510	-2.38280	-1.14620	-.50850	-.18020
1.192	127.810	14.60540	2.52550	-2.26970	-1.09880	-.54680	-.17900
1.192	125.760	15.18986	3.12630	-2.14360	-1.07560	-.56900	-.17980
1.192	123.730	15.81060	3.75870	-2.03010	-1.04440	-.64530	-.17570
1.192	121.680	16.32260	4.32330	-1.91540	-1.01160	-.76340	-.17300
1.192	119.620	16.80850	5.10380	-1.77420	-.94320	-.78490	-.17930
1.192	117.650	17.33220	6.00540	-1.64810	-.93480	-.84320	-.18430
1.192	115.630	17.86620	7.15370	-1.50740	-.88580	-.80030	-.18760
1.192	113.610	18.40200	8.38430	-1.34700	-.84360	-.75100	-.19770
1.192	111.590	18.88620	9.50430	-1.16780	-.82150	-.69720	-.19700
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC PWIC-E3A (SA16F) SRB W/PROT, BENT STING (RVP002) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETΦ = .000 PHI = 90.000

RUN NO. 37/ 0 RN/L = 3.45 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.396	146.900	3.06140	-4.03450	-2.48260	-.33120	-.39190	-.07360
.396	144.880	3.27970	-4.55030	-2.46620	-.29730	-.24240	-.08520
.396	142.880	3.42450	-4.96310	-2.42150	-.39850	.13260	-.08870
.396	140.830	3.54820	-5.35520	-2.39180	-.42540	.12300	-.10110
.396	138.860	3.65750	-5.55370	-2.32160	-.49640	- 09380	-.09490
.396	136.830	3.84380	-5.78340	-2.29720	-.56610	-.32960	-.10270
.396	134.830	4.07800	-5.55990	-2.19970	-.67780	-.55210	-.10780
.396	132.800	4.66410	-5.12720	-2.15060	-.89840	-.17920	-.10420
.396	130.770	5.21540	-4.12040	-2.02650	-.78940	.98620	-.11500
.396	128.810	5.95440	-3.15750	-2.01260	-.67220	1.83440	-.13840
.396	126.740	6.77760	-.98130	-1.19110	.12000	1.83660	-.13780
.396	124.790	7.17560	-.12790	-.52490	-.11930	.84890	-.09830
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 38/ 0 RN/L = 4.12 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.495	146.830	3.35120	-3.73070	-2.51100	-.38290	-.61720	-.05630
.495	144.830	3.58680	-4.16950	-2.46550	-.30960	-.21410	-.05260
.495	142.810	3.75550	-4.52700	-2.42880	-.27850	.08620	-.05960
.495	140.770	3.91420	-4.86160	-2.38530	-.30540	.23830	-.06280
.495	138.750	3.99820	-5.22690	-2.34770	-.35350	.14850	-.05350
.495	136.760	4.12760	-5.49450	-2.29570	-.40400	-.16830	-.07230
.495	134.740	4.31750	-5.68210	-2.24280	-.46010	-.79900	-.07140
.495	132.690	4.64450	-5.76890	-2.18700	-.57530	-.73140	-.07910
.495	130.680	5.08130	-5.38870	-2.09860	-.67620	.10450	-.07860
.495	128.670	5.91860	-4.34220	-2.00360	-.54070	.87230	-.07570
.495	126.600	6.97370	-3.16590	-1.94540	-.02270	2.11770	-.13550
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING (RVP002) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 .N. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 90.000

RUN NO. 40/ 0 RN/L = 4.73 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.594	146.750	3.53260	-3.80700	-2.52290	-.22160	-.65830	-.06580
.594	144.710	3.72410	-4.16870	-2.48890	-.14760	-.09520	-.06520
.594	142.720	3.94130	-4.47100	-2.43900	-.17260	.04350	-.06260
.594	140.680	4.15280	-4.87540	-2.40080	-.17000	.13120	-.06230
.594	138.660	4.26120	-5.30080	-2.34070	-.17540	-.05080	-.05890
.594	136.630	4.46810	-5.63780	-2.28540	-.13870	-.08220	-.06190
.594	134.570	4.65660	-6.02460	-2.21120	-.03860	-.85210	-.06970
.594	132.550	5.10060	-6.38830	-2.17570	.00940	-.96080	-.06650
.594	130.500	5.73270	-6.22830	-2.10330	.01360	-.58170	-.08020
.594	128.490	6.58460	-5.39780	-1.98140	08840	-.51560	-.07450
.594	126.360	8.01910	-4.02280	-1.91280	.53770	.68000	-.05150
.594	124.340	9.08100	-2.65760	-1.82960	1.00650	1.58620	-.08110
.594	122.320	9.69860	-1.84670	-1.73320	1.73930	3.57600	-.07690
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 41/ 0 RN/L = 5.17 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.693	146.670	3.68080	-3.72090	-2.56940	.05260	.18380	-.01780
.693	144.620	3.91450	-4.23110	-2.51890	.15110	.80310	-.03800
.693	142.610	4.19050	-4.69350	-2.46740	.15120	.70390	-.02750
.693	140.540	4.45770	-5.17550	-2.39940	.15750	.37450	-.02510
.693	138.510	4.72260	-5.83920	-2.34510	.17840	.03900	-.02100
.693	136.400	5.05910	-6.46320	-2.29620	.23640	.01290	.02220
.693	134.410	5.58810	-6.50390	-2.27430	.17710	-.06060	-.02710
.693	132.330	6.55000	-5.73270	-2.11130	.19680	.04750	-.02240
.693	130.480	7.38980	-5.07920	-2.08420	.30600	-.05720	-.01550
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC PWIC-E3A (SA16F) SRB W/PROT, BENT WING RVP00B) (06 AUG 78)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 0.000

RUN NO. 42/ 0 RN/L = 5.52 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.791	146.590	4.00980	-3.52590	-2.64440	-.02820	.22100	-.00600
.791	144.510	4.33800	-4.27650	-2.61070	.23120	.[illegible]760	-.03370
.791	142.440	4.76700	-4.92740	-2.53070	.32570	.[illegible]00	-.00660
.791	140.340	5.40460	-5.29260	-2.47920	.28340	[illegible]	-.01100
.791	138.310	5.98420	-5.63970	-2.42810	.31920	-.[illegible]530	-.01480
.791	136.230	6.69590	-5.57320	-2.37490	.32720	-.22130	-.01200
.791	134.100	7.47420	-5.26860	-2.29020	.25600	-.02040	-.01180
.791	132.040	8.23940	-5.16660	-2.22930	.28020	.24260	-.02300
.791	129.940	9.54620	-4.04090	-2.14760	.08080	.29800	-.01780
.791	128.500	10.05720	-3.73430	-2.08050	.10990	.50300	-.02340
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 43/ 0 RN/L = 3.89 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.791	146.650	4.78380	-3.03660	-2.81480	.47280	.14610	.02080
.891	144.610	5.27450	-3.57020	-2.74470	.45600	.67420	.00020
.891	142.540	6.09140	-3.77720	-2.69880	.51600	.84220	.00550
.891	140.450	6.93800	-4.02740	-2.62680	.43580	.42120	.00490
.891	138.350	7.80780	-4.37050	-2.56550	.05240	.05100	.03290
.891	136.310	8.50100	-4.78500	-2.47880	.06320	.21850	.01860
.891	134.250	9.17930	-5.19180	-2.39550	.05210	.69240	-.02370
.891	132.130	10.07910	-4.78830	-2.31410	.06720	.83280	-.02000
.891	130.110	10.71000	-4.76660	-2.21010	.11510	.56820	-.01460
.891	128.040	11.42840	-4.81500	-2.13200	.07390	.74540	-.03100
.891	126.000	11.97130	-4.67570	-2.01290	.03820	.79860	-.03710
.891	124.000	12.25870	-4.44530	-1.86490	.05160	.69840	-.03630
.891	121.970	12.63700	-3.93510	-1.73720	-.02830	.63160	-.03350
.891	119.960	12.96750	-3.39870	-1.58440	-.01680	.62810	-.04870
.891	117.920	13.20010	-2.98370	-1.41690	.02560	.57950	-.04690
.891	115.980	13.40670	-2.26040	-1.24720	.02610	.54960	-.04790
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, BENT STING (RVP002) (08 AUG 78)

REFERENCE DATA

SREF = 118.2600 SQ.FT XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 90.000

RUN NO. 44/ 0 RN/L = 4.08 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
1.017	146.450	5.91010	-4.80580	-3.09310	.05170	.48420	-.00210
1.017	144.410	6.77900	-4.95340	-3.01400	.00830	.60110	-.01260
1.017	142.280	7.74880	-4.87990	-2.93880	.01280	.39060	.00620
1.017	140.210	8.69670	-4.84240	-2.84820	.04810	.49490	-.00380
1.017	138.130	9.75500	-4.38270	-2.77000	.04840	.74950	-.02900
1.017	136.100	10.65810	-4.02560	-2.69300	-.02790	.73580	-.02940
1.017	133.970	11.36160	-4.23960	-2.58750	-.07620	.91280	-.04530
1.017	131.930	12.08540	-4.17980	-2.47760	-.10080	.84090	-.04560
1.017	129.900	12.73320	-4.17340	-2.36430	-.15930	.95630	-.05060
1.017	127.860	13.43780	-3.66750	-2.25960	-.19060	.91300	-.06720
1.017	125.810	13.94250	-3.32460	-2.14530	-.16770	.82920	-.06150
1.017	123.770	14.30620	-2.79810	-2.02030	-.12160	.72150	-.07240
1.017	121.770	14.65070	-1.82210	-1.89170	.00310	.65800	-.07700
1.017	119.770	14.95910	-1.19240	-1.73160	.01350	.59030	-.07410
1.017	117.730	15.40590	-.29670	-1.58020	.03250	.54200	-.07370
1.017	115.750	15.84400	.64890	-1.42520	.05710	.59390	-.07080
1.017	113.680	16.27520	1.75070	-1.25010	.07660	.58100	-.07470
1.017	111.720	16.71440	2.84910	-1.08920	.10030	.58690	-.08820
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 45/ 0 RN/L = 4.17 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
1.192	145.390	7.42620	-1.41270	-3.17590	-.06930	.35670	-.00150
1.192	146.430	7.02480	-1.72420	-3.22000	-.02220	.30090	.00490
1.192	144.390	7.90960	-1.13110	-3.13600	-.11040	.35570	-.00260
1.192	142.260	8.76130	-.77310	-3.03460	-.12590	.32110	-.01730
1.192	140.200	9.70450	-.44710	-2.94110	-.11680	.23810	-.02190
1.192	138.130	10.64730	.04430	-2.86460	-.10870	.40400	-.03390
1.192	136.060	11.50090	.58630	-2.77760	-.09320	.55760	-.04490
1.192	133.990	12.33490	.93170	-2.68550	-.04320	.48300	-.04510
1.192	131.940	12.93500	1.00280	-2.55640	-.07240	.55230	-.05250
1.192	129.870	13.55810	1.44770	-2.43820	-.12860	.75670	-.05740
1.192	127.820	14.25260	1.93370	-2.31770	-.13460	.72560	-.06780
1.192	125.780	14.82750	2.25230	-2.18560	-.10360	.67210	-.07010
1.192	123.750	15.32810	2.77720	-2.08830	-.08070	.67680	-.07840
1.192	121.730	15.85760	3.44090	-1.96720	-.06250	.65040	-.07910
1.192	119.620	16.37690	4.01870	-1.79590	-.01560	.57930	-.08110
1.192	117.950	16.80030	4.65870	-1.66580	.00570	.59950	-.08070
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP003) (08 AUG 76)

REFERENCE DATA

SREF = 118.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 3/ 0 RN/L = 3.53 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.396	187.000	-.10180	-.13980	-2.18340	-.11510	-.20400	.02070
.396	184.980	-.01050	-.12340	-2.12670	-.10460	-.25340	.02600
.396	183.000	-.00800	-.20660	-2.08430	-.09270	-.25260	.02510
.396	180.990	.08140	-.16790	-2.04110	-.09340	-.25430	.02520
.396	179.010	.16870	-.08340	-2.03350	-.09480	-.23150	.03720
.396	177.000	.24230	-.08200	-2.07070	-.08570	-.21280	.03620
.396	175.000	.32830	-.08630	-2.12820	-.10630	-.19760	.03540
.396	173.000	.48490	-.10460	-2.15940	-.09680	-.11820	.02880
.396	171.010	.65200	-.05090	-2.20070	-.12500	-.18090	.02070
.396	168.990	.92160	.05040	-2.25640	-.08680	-.16850	.03430
.396	167.000	1.19310	.13870	-2.30400	.01130	-.08830	.01340
.396	165.000	1.54450	.35220	-2.35980	.12330	-.19460	.02390
.396	162.990	1.91310	.58870	-2.37780	.11870	-.57080	.01570
.396	160.950	2.29780	.53940	-2.38320	-.11530	-1.25150	.03500
.396	159.040	2.64260	.51960	-2.40620	-.87560	-2.56750	.04060
.396	157.010	3.05410	.72230	-2.44570	-1.22240	-3.91650	.06170
.396	155.010	3.43350	.49460	-2.45320	-1.22730	-2.02850	.03060
.396	153.000	3.90240	.72110	-2.45370	-1.34160	-1.36750	.02510
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP003) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 4/ 0 RN/L = 4.18 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.495	186.970	-.28540	-.14810	-2.17580	-.06660	-.08790	.02420
.495	184.960	-.14880	-.11040	-2.10790	-.04560	-.09990	.02510
.495	183.010	-.07460	-.07090	-2.07910	-.03260	-.08800	.02400
.495	181.010	-.00230	-.03390	-2.05000	-.03940	-.10260	.02510
.495	179.010	.07070	.04840	-2.03860	-.03360	-.09770	.02450
.495	177.010	.15390	.07010	-2.05110	-.03470	-.05130	.02050
.495	175.010	.24800	.04030	-2.10970	-.06110	-.08460	.02430
.495	173.000	.39260	.01670	-2.18900	-.05420	-.05450	.02240
.495	171.000	.59020	.07580	-2.21860	-.07810	-.01270	.01890
.495	169.000	.82470	.13660	-2.25080	-.08150	-.08240	.01580
.495	166.980	1.13590	.25160	-2.29970	.00560	-.06390	.01470
.495	165.000	1.51150	.46930	-2.34850	.25080	-.03850	.02350
.495	163.000	1.90250	.63290	-2.37270	.25660	-.41550	.01920
.495	160.950	2.35020	.73130	-2.42400	-.00360	-1.01470	.02440
.495	159.030	2.67040	.53960	-2.42840	-.68600	-2.12720	.02840
.495	157.000	3.04870	.70810	-2.48480	-1.21550	-3.60550	.02440
.495	155.000	3.42780	.48150	-2.46990	-1.14200	-1.66270	.03160
.495	153.010	3.87430	.66650	-2.48260	-1.36620	-1.13530	.03970
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA18F) SRB W/PROT, STRAIGHT STING (RVP003) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 5/ 0 RN/L = 4.73 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.594	186.950	-.31030	-.15690	-2.21080	-.03950	-.05600	.02180
.594	184.970	-.16320	-.07510	-2.16130	-.01490	-.04510	.02050
.594	183.000	-.08170	-.08760	-2.11700	-.01900	-.06680	.02250
.594	181.020	-.01740	-.04920	-2.09920	-.00960	-.04630	.02050
.594	179.000	.06380	.05850	-2.07960	-.00580	-.04310	.01990
.594	177.030	.14390	.12330	-2.11900	-.01220	-.02030	.01800
.594	175.010	.23250	.08710	-2.15920	-.01650	-.02440	.01910
.594	173.000	.38420	.10960	-2.20760	-.02710	-.01710	.01890
.594	171.000	.57690	.16070	-2.26630	-.06930	.00720	.01690
.594	169.000	.82280	.21160	-2.31340	-.08450	-.04340	.02180
.594	166.990	1.14400	.30910	-2.34250	-.01690	-.09340	.01230
.594	164.990	1.55330	.51770	-2.38150	.22640	-.06450	.01100
.594	163.000	1.96700	.76890	-2.42370	.32040	-.44630	.00300
.594	160.990	2.36890	.75660	-2.43990	.05810	-1.02880	.01230
.594	158.980	2.70950	.39390	-2.47420	-.88780	-1.70540	.02000
.594	157.020	3.07320	.60500	-2.50600	-1.20890	-3.11580	.01050
.594	155.000	3.46230	.44760	-2.50260	-1.13550	-1.36580	.00980
.594	153.000	3.92050	.58540	-2.51520	-1.55010	-1.07370	.00980
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA18F) SRB W/PROT, STRAIGHT STING (RVP003) (08 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 6/ 0 RN/L = 5.18 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.692	186.930	-.33120	-.31210	-2.27780	-.01050	.01830	.01620
.692	184.970	-.18680	-.18070	-2.23230	-.00280	-.01800	.01320
.692	183.000	-.08510	-.15640	-2.18470	-.00260	-.02770	.00810
.692	181.010	-.02000	-.08150	-2.16310	-.00390	-.02030	.00130
.692	179.020	.05930	.06440	-2.15980	-.00170	-.00470	-.00050
.692	177.010	.13690	.12740	-2.17920	-.01440	-.01720	.00070
.692	175.030	.23710	.19560	-2.21680	-.01960	.00070	-.00860
.692	173.010	.41470	.36300	-2.28390	-.03530	.05160	.00040
.692	171.000	.61260	.43690	-2.32830	-.06200	.10160	.00180
.692	168.990	.86730	.46250	-2.38670	-.11330	.00860	-.00690
.692	166.980	1.22060	.53690	-2.42260	-.09080	-.09500	-.00870
.692	164.980	1.61370	.66750	-2.43820	.09530	-.20770	-.01450
.692	162.960	2.06370	.84270	-2.47660	.35360	-.43720	-.01490
.692	161.020	2.45660	.77290	-2.51080	.06280	-1.05320	-.01180
.692	159.000	2.73600	.45590	-2.52610	-.82690	-1.61090	-.00980
.692	157.010	3.11840	.42740	-2.55690	-.93250	-1.30850	-.01470
.692	154.990	3.56990	.51230	-2.55020	-1.17870	-1.05570	-.01590
.692	152.990	4.02240	.50230	-2.56880	-1.79870	-.95480	-.01620
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP003) (08 AUG 78)

REFERENCE DATA

SREF = 118.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 8/ 0 RN/L = 5.53 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.791	186.940	-.41290	-.78700	-2.40340	-.01620	.02530	-.00630
.791	184.970	-.23490	-.57220	-2.34460	-.00420	-.00040	-.00470
.791	183.010	-.09810	-.36670	-2.29140	-.00940	-.02680	-.01310
.791	181.020	-.00510	-.09300	-2.25160	-.01590	-.04250	-.01760
.791	179.010	.07350	.08230	-2.23840	-.01500	-.03030	-.01440
.791	177.030	.17020	.32530	-2.27150	-.01510	-.01570	-.01620
.791	175.010	.30890	.52930	-2.33050	-.02230	.02820	-.02050
.791	173.000	.48300	.72880	-2.37490	-.02920	.06440	-.01920
.791	170.980	.70500	.88650	-2.44800	-.04260	.11050	-.01850
.791	169.000	.95910	.98260	-2.48270	-.10100	.05400	-.01340
.791	166.980	1.30630	1.12220	-2.53350	-.18290	-.17420	-.01710
.791	164.970	1.72680	1.20760	-2.56790	-.09630	-.35670	-.02400
.791	162.980	2.19550	1.30560	-2.59530	.15850	-.64470	-.02480
.791	160.980	2.60270	1.23530	-2.60330	-.10910	-1.34220	-.02970
.791	158.990	2.90010	.99860	-2.63510	-.64220	-1.70030	-.03250
.791	156.980	3.25880	.88780	-2.65580	-.69950	-.94760	-.03320
.791	154.980	3.66110	.77780	-2.66180	-1.22810	-.87850	-.03200
.791	153.050	4.08400	.56070	-2.68930	-1.89540	-.57460	-.03750
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP003) (08 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 12/ 0 RN/L = 3.96 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.890	186.900	-.09590	-1.03150	-2.52720	-.04910	-.16480	.10370
.890	184.970	.09280	-.84840	-2.46210	-.05510	-.21600	.10820
.890	183.010	.25080	-.62730	-2.39680	-.05240	-.24790	.10370
.890	181.030	.36520	-.22400	-2.35920	-.05640	-.28560	.09880
.890	179.030	.48770	.18550	-2.35660	-.06620	-.29180	.09130
.890	177.020	.60340	.55110	-2.38570	-.08160	-.26020	.08740
.890	175.010	.73210	.74270	-2.43670	-.09490	-.19780	.08120
.890	173.000	.92270	.95210	-2.49220	-.10840	-.15260	.07690
.890	171.000	1.13660	1.12110	-2.54880	-.11010	-.16660	.07150
.890	168.990	1.41460	1.30540	-2.59210	-.17430	-.30550	.07050
.890	166.990	1.73940	1.52810	-2.63380	-.32870	-.59020	.06910
.890	164.980	2.15310	1.66950	-2.68780	-.46940	-1.02480	.07570
.890	162.930	2.59480	1.56260	-2.71910	-.27850	-1.10510	.07170
.890	161.040	2.97310	1.53600	-2.76380	-.41160	-1.74300	.07100
.890	159.000	3.34570	1.53200	-2.79100	-.38450	-1.88190	.06450
.890	157.000	3.71490	1.32290	-2.82330	-.52650	-1.02520	.04510
.890	154.990	4.11480	.99430	-2.84360	-1.13410	-1.03940	.04490
.890	152.970	4.61210	.61760	-2.86210	-1.69440	-.89030	.04370
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP003) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 13/ 0 RN/L = 4.10 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
1.019	186.950	-.50430	-.78080	-2.95210	-.12210	-.08030	.03140
1.019	184.960	-.32770	-.72510	-2.88530	-.06850	-.03430	.03310
1.019	183.010	-.18230	-.57320	-2.81820	-.05520	-.10610	.03300
1.019	181.020	-.05370	-.42650	-2.86640	-.03960	-.11150	.03370
1.019	179.020	.12420	-.03870	-2.78270	-.03590	-.10970	.03180
1.019	177.020	.27290	.12650	-2.81070	-.05209	-.06780	.02770
1.019	175.020	.44080	.24050	-2.86730	-.08050	-.00250	.02170
1.019	173.000	.62720	.31470	-2.93110	-.12640	-.05220	.02650
1.019	171.010	.84740	.37390	-2.96290	-.10080	-.09710	.03090
1.019	168.990	1.20170	.46590	-3.01360	.17870	.26720	.01730
1.019	166.970	1.77700	.68390	-3.06950	.79300	1.10320	.00400
1.019	164.980	2.32200	.82210	-3.07930	.89360	1.43140	-.00120
1.019	162.980	2.64550	.43880	-3.07910	.54220	.93150	.00180
1.019	161.010	2.95320	-.08670	-3.13260	-.00920	.64140	.00380
1.019	158.980	3.37070	-.85820	-3.12430	-.89470	-1.10800	.03690
1.019	157.010	3.85240	-1.09660	-3.11830	-.89540	-.83870	.01890
1.019	154.970	4.39780	-1.48340	-3.12090	-.95240	-.50340	.01380
1.019	153.000	4.92510	-2.05670	-3.11070	-1.10980	-.46620	.01190
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP003) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = .000

RUN NO. 14/ 0 RN/L = 4.09 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
1.193	186.950	-.56650	.10750	-3.28630	-.05060	.02310	.01060
1.193	184.960	-.37630	-.01130	-3.22820	-.06310	-.00130	.01850
1.193	183.010	-.23340	-.09640	-3.15570	-.04540	-.02860	.01060
1.193	181.020	-.10090	-.13470	-3.12180	-.04350	-.07490	.00970
1.193	179.020	.00490	-.25230	-3.11170	-.04520	-.08500	.01120
1.193	177.030	.12350	-.34690	-3.14520	-.04900	-.02290	.01160
1.193	175.020	.24790	-.46060	-3.18440	-.05950	.01120	.01470
1.193	172.990	.44900	-.53480	-3.23470	-.03270	.04510	.00720
1.193	171.000	.76640	-.46760	-3.28080	.17490	.34760	-.00310
1.193	168.990	1.21180	-.26670	-3.33260	.62880	1.02440	-.02530
1.193	166.990	1.64440	-.18680	-3.36370	.82340	1.51530	-.03170
1.193	164.980	2.03470	-.33530	-3.32590	.40530	1.24740	-.02490
1.193	162.980	2.42420	-.79050	-3.36870	-.22220	-.05610	.00250
1.193	160.950	3.01510	-.93020	-3.37770	-.67840	-1.07190	-.00150
1.193	158 980	3.60260	-.90690	-3.37890	-.34430	-.36420	-.01160
1.193	157.020	4.22200	-.90140	-3.39430	-.33530	-.39670	-.02410
1.193	155.000	4.79360	-1.16270	-3.36220	-.60480	-.66360	-.02670
1.193	152.980	5.53370	-1.12560	-3.33620	-.74750	-1.26100	-.03070
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP004) (08 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 90.000

RUN NO. 26/ 0 RN/L = 3.48 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.396	187.030	-.20640	.26510	-2.20460	.09470	-.15840	.02910
.396	185.040	-.08110	.22950	-2.11340	.09990	-.12950	.02440
.396	183.060	-.01670	.15040	-2.06620	.09380	-.09010	.03060
.396	181.060	.06250	.20080	-2.04320	.06800	-.13510	.02070
.396	179.060	.14000	.28550	-2.01770	.06030	-.14440	.02810
.396	177.050	.20350	.30380	-2.07750	.05610	-.15320	.01520
.396	175.050	.29680	.24010	-2.12810	.06490	-.16440	.02370
.396	173.030	.41890	.16970	-2.22120	.07060	-.17710	.01740
.396	171.010	.54220	.02920	-2.25500	.09110	-.18500	.00400
.396	168.990	.68720	-.08080	-2.29120	.07490	-.17710	.00810
.396	166.970	.87450	-.24290	-2.32070	-.01400	-.21300	-.00710
.396	164.950	1.07930	-.39920	-2.38980	-.14150	-.28300	-.02160
.396	162.910	1.33910	-.56690	-2.42810	-.27600	-.29450	-.03780
.396	160.830	1.68200	-.64610	-2.48220	-.40060	-.25610	-.04660
.396	158.890	1.92480	-.67990	-2.46720	-.33530	-.19450	-.05070
.396	156.800	2.20110	-.65140	-2.[illegible]620	-.45200	.03690	-.05010
.396	154.800	2.45710	-.74600	-2.[illegible]190	-.40850	.21060	-.06020
.396	152.740	2.75220	-.86240	-2.53490	-.44030	.31820	-.07230
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP004) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 90.000

RUN NO. 27/ 0 RN/L = 4.13 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.495	187.120	-.24070	.12390	-2.18270	-.03340	-.10890	.00090
.495	185.030	-.12070	.04800	-2.13550	-.02110	-.06550	-.00730
.495	183.010	-.06240	-.01650	-2.06730	-.03850	-.04990	-.01400
.495	181.060	.01180	.02270	-2.05050	-.04590	-.08720	-.02070
.495	179.040	.10460	.16720	-2.04850	-.05460	-.11530	-.01760
.495	177.040	.16610	.17070	-2.07400	-.03630	-.09810	-.01730
.495	175.030	.25580	.12920	-2.12290	-.05740	-.13020	-.01140
.495	173.010	.38050	.06630	-2.19830	-.02160	-.10850	-.00760
.495	170.990	.47610	-.03790	-2.23110	.02840	-.08630	-.00750
.495	168.970	.65560	-.19100	-2.29160	-.00270	-.13760	-.00210
.495	166.910	.87890	-.35390	-2.36250	-.09820	-.24900	-.01710
.495	164.880	1.10240	-.52890	-2.37990	-.2[illegible]700	-.34820	-.03380
.495	162.830	1.37490	-.67810	-2.42880	-.43960	-.31950	-.04860
.495	160.780	1.71980	-.74490	-2.47450	-.52350	-.21940	-.05640
.495	158.730	2.00070	-.77230	-2.49830	-.44250	-.01330	-.06050
.495	156.690	2.26320	-.82400	-2.53370	-.44550	.02960	-.05650
.495	154.640	2.52200	-.90810	-2.55230	-.41200	.36920	-.07610
.495	152.590	2.83910	-1.00770	-2.56530	-.40900	.55090	-.06770
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP004) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 90.000

RUN NO. 28/ 0 RN/L = 4.69 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.594	187.140	-.27100	.06020	-2.24900	-.02460	-.05820	-.00430
.594	185.050	-.13500	.00620	-2.17680	-.03770	-.02480	-.01810
.594	183.050	-.07100	-.05260	-2.13210	-.04410	-.02820	-.00960
.594	181.050	-.00960	-.03540	-2.10190	-.04090	-.02580	-.01580
.594	179.040	.08970	.13580	-2.10040	-.04110	-.04320	-.01510
.594	177.020	.14850	.18120	-2.11620	-.04690	-.07170	-.01090
.594	175.030	.22630	.12530	-2.16980	-.02760	-.08380	-.00880
.594	173.000	.32420	.04310	-2.22790	-.01940	-.05090	-.01640
.594	170.960	.45570	-.06950	-2.30630	.00280	-.04730	-.01230
.594	168.930	.63480	-.21940	-2.34190	.06420	.01630	-.00480
.594	166.890	.88160	-.35800	-2.39590	-.04160	-.09800	-.01780
.594	164.820	1.16350	-.56310	-2.42810	-.36770	-.42370	-.03680
.594	162.780	1.46310	-.67790	-2.48770	-.48040	-.25250	-.04900
.594	160.730	1.78470	-.72500	-2.50830	-.53950	-.02390	-.04820
.594	158.630	2.07040	-.85300	-2.55730	-.35350	.26360	-.04700
.594	156.540	2.34490	-.95630	-2.58180	-.33650	.35760	-.05060
.594	154.470	2.63980	-1.07180	-2.62090	-.32220	.49690	-.05520
.594	152.410	2.98050	-1.20160	-2.61760	-.30350	.61780	-.05450
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA18F) SRB W/PROT, STRAIGHT STING (RVP004) (08 AUG 78)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 90.000

RUN NO. 29/ 0 RN/L = 5.15 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.693	187.180	-.29260	-.13780	-2.31110	.00190	.01530	.00090
.693	185.030	-.15060	-.10220	-2.24920	-.02630	-.02050	-.00280
.693	183.050	-.07120	-.10270	-2.18990	-.01940	-.00520	-.00380
.693	181.040	-.00760	-.02820	-2.15750	-.02550	-.03090	-.00320
.693	179.040	.07370	.14460	-2.15370	-.01810	-.03920	-.01060
.693	177.030	.13830	.20700	-2.18020	-.01000	-.04270	-.00520
.693	175.010	.21850	.22700	-2.21890	-.01780	-.05030	-.00330
.693	173.000	.34560	.21660	-2.29660	-.00150	-.07780	-.01010
.693	170.960	.48220	.13390	-2.38090	.00580	-.08460	-.00030
.693	168.900	.65830	-.04380	-2.41680	.06650	-.04700	.00030
.693	166.840	.93070	-.22320	-2.45760	.03080	-.08100	-.00530
.693	164.750	1.26360	-.43900	-2.50070	-.41400	-.44970	-.02540
.693	162.640	1.58550	-.54860	-2.54020	-.65490	-.23580	-.03770
.693	160.550	1.88140	-.61730	-2.58930	-.52720	.33690	-.03820
.693	158.440	2.16210	-.85300	-2.60740	-.31190	.47510	-.04070
.693	156.380	2.45060	-.96240	-2.62060	-.29850	.51360	-.03480
.693	154.290	2.75180	-1.11910	-2.65020	-.25830	.57660	-.03870
.693	152.300	3.06270	-1.31880	-2.65080	-.24050	.57090	-.03480
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 30/ 0 RN/L = 5.51 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.792	187.190	-.35950	-.51740	-2.43940	.01830	.02950	-.02220
.792	185.030	-.20650	-.39580	-2.35030	.02180	.04280	-.01740
.792	183.040	-.08920	-.27300	-2.28110	.00450	.00790	-.00710
.792	181.030	-.00560	-.04630	-2.23560	.00300	-.02390	-.00150
.792	179.020	.07520	.15860	-2.24070	.00190	-.04010	-.00230
.792	177.030	.14960	.36200	-2.28280	.00730	-.04300	.00660
.792	175.030	.24000	.46570	-2.34360	-.00710	-.06760	-.00340
.792	173.000	.37960	.52790	-2.42040	.00950	-.06150	-.00260
.792	170.960	.53180	.49050	-2.48180	.01850	-.05130	-.00640
.792	168.890	.72170	.39360	-2.53390	.07140	-.04130	-.00110
.792	166.820	.99900	.22580	-2.56780	.08540	-.10160	.00220
.792	164.720	1.37250	.00890	-2.60230	-.35390	-.44830	.00130
.792	162.560	1.77450	-.15230	-2.65010	-.82960	-.24230	-.00660
.792	160.380	2.05740	-.29510	-2.68930	-.50720	.69300	-.01890
.792	158.380	2.30210	-.55940	-2.71500	-.32790	.77670	-.03420
.792	156.220	2.57050	-.87280	-2.74770	-.28420	.65070	-.03870
.792	154.100	2.88720	-1.15140	-2.75840	-.22700	.69700	-.03640
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA18F) SRB W/PROT, STRAIGHT STING (RVP0004) (08 AUG 78)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 90.000

RUN NO. 31/ 0 RN/L = 3.86 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
.890	187.210	-.38350	-.63270	-2.59080	.18500	-.04000	.02340
.890	185.020	-.21260	-.55320	-2.51070	.18590	-.02340	.02290
.890	183.020	-.08480	-.38800	-2.42330	.18240	-.04260	.01690
.890	181.020	.02160	.05560	-2.38510	.19040	-.06280	.02390
.890	179.020	.10820	.31040	-2.36900	.18120	-.09910	.04040
.890	177.030	.20620	.71000	-2.39730	.18220	-.13490	.04400
.890	175.050	.30400	.89710	-2.48040	.16510	-.16790	.04160
.890	173.030	.44770	.94840	-2.56060	.15910	-.14530	.03950
.890	171.000	.62790	.94160	-2.60320	.15680	-.14580	.03850
.890	168.940	.82110	.90630	-2.64410	.21500	-.12290	.03430
.890	166.910	1.08400	.87740	-2.69680	.24250	-.20060	.03110
.890	164.840	1.46610	.67250	-2.73730	-.02700	-.42240	.03140
.890	132.710	1.92800	.44130	-2.79030	-.58490	-.30690	.02730
.890	160.600	2.18600	.30630	-2.85740	-.40520	.59570	.01780
.890	158.540	2.43540	.07840	-2.89630	-.12660	1.02900	.01470
.890	156.470	2.73830	-.28610	-2.92150	-.06010	.97120	-.01950
.890	154.350	3.06600	-.82710	-2.94850	.00260	.73390	-.02280
.890	152.320	3.40620	-1.34300	-2.92260	.10380	.44200	-.02430
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA16F) SRB W/PROT, STRAIGHT STING (RVP004) (06 AUG 76)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 655.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 90.000

RUN NO. 32/ 0 RN/L = 4.03 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
1.017	187.210	-.46250	-.10820	-2.97700	.04010	-.27290	.01670
1.017	185.080	-.31110	-.15100	-2.91840	.04030	-.21730	.01120
1.017	183.080	-.17840	-.07450	-2.83890	.03490	-.15220	.01670
1.017	181.060	-.04340	-.02400	-2.77310	.00720	-.14460	.00800
1.017	179.020	.15880	.21870	-2.78390	-.00410	-.18150	.00540
1.017	177.020	.29210	.30730	-2.82480	-.01680	-.18740	.00130
1.017	174.980	.42850	.38390	-2.90110	-.00780	-.27990	.00260
1.017	172.950	.57390	.36120	-2.95840	.03730	-.27310	.00610
1.017	170.920	.73090	.27500	-2.99360	.05880	-.21430	.00350
1.017	168.820	1.18620	.15140	-3.04900	-.59210	-1.14170	.01130
1.017	166.700	1.63560	-.15960	-3.13130	-1.22690	-2.01160	.00780
1.017	164.590	1.90710	-.32930	-3.17550	-1.41300	-2.09780	-.00860
1.017	162.480	2.14620	-.68410	-3.15570	-.99650	-1.64160	-.01920
1.017	160.420	2.44150	-1.13860	-3.18450	-.49690	-1.16240	-.01440
1.017	158.280	2.75630	-1.75160	-3.19930	-.14860	-.22390	-.02090
1.017	156.140	3.12020	-2.35860	-3.19880	.09690	.01820	-.02390
1.017	153.970	3.83850	-2.73040	-3.21930	.11090	-.44540	-.01770
1.017	152.100	4.31740	-3.22970	-3.19230	-.20140	-1.08110	-.02160
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000

AEDC P41C-E3A (SA18F) SRB W/PROT, STRAIGHT STING (RVP004) (08 AUG 78)

REFERENCE DATA

SREF = 116.2600 SQ.FT. XMRP = 1055.8400 IN. XS
LREF = 146.0000 IN. YMRP = .0000 IN. YS
BREF = 146.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0055

PARAMETRIC DATA

BETA = .000 PHI = 90.000

RUN NO. 33/ 0 RN/L = 4.14 GRADIENT INTERVAL = 165.00/175.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL
1.193	187.280	-.43450	.57770	-3.31700	-.03860	-.24210	.00770
1.193	185.120	-.26680	.40440	-3.25980	-.04220	-.26190	.01160
1.193	183.110	-.14150	.26280	-3.17180	-.04160	-.21620	.00220
1.193	181.060	-.00640	.18090	-3.13960	-.04180	-.21240	.00430
1.193	179.000	.15130	.08200	-3.13080	-.04420	-.21000	.00490
1.193	176.980	.25590	-.04480	-3.14610	-.04810	-.23220	-.00710
1.193	174.930	.38010	-.18060	-3.19060	-.02830	-.23240	.00170
1.193	172.880	.52360	-.34490	-3.24460	-.03670	-.22550	-.00820
1.193	170.820	.77770	-.52360	-3.28430	-.23540	-.49810	-.02470
1.193	168.710	1.18660	-.62720	-3.34880	-.67400	-1.32070	-.03320
1.193	166.590	1.55180	-.69740	-3.40620	-1.10900	-2.11860	-.03320
1.193	164.500	1.90770	-.90440	-3.40620	-.88150	-2.08840	-.03190
1.193	162.350	2.21650	-1.28680	-3.42380	-.37080	-1.05180	-.02840
1.193	160.240	2.69770	-1.49490	-3.44820	-.40740	-.91770	-.02840
1.193	158.040	3.29570	-1.65400	-3.45700	-.38960	-.352)	-.02610
1.193	155.880	3.91310	-1.74830	-3.46180	-.06790	.02200	-.02250
1.193	153.720	4.53180	-1.59340	-3.44870	-.03020	-.36210	-.01510
1.193	151.990	5.18230	-1.33170	-3.43750	-.10890	-.30000	-.03210
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000