NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

(NASA-CR-147645) AERODYNAMIC CHARACTERISTICS OF A 0.00563 SCALE 142-INCH DIAMETER SOLID ROCKET BOOSTER (MSFC MODEL 449 AND 480) WITH SIDE MOUNTED STINGS IN THE NASA/MSFC 14-INCH TRISONIC WIND (Chrysler G3/02

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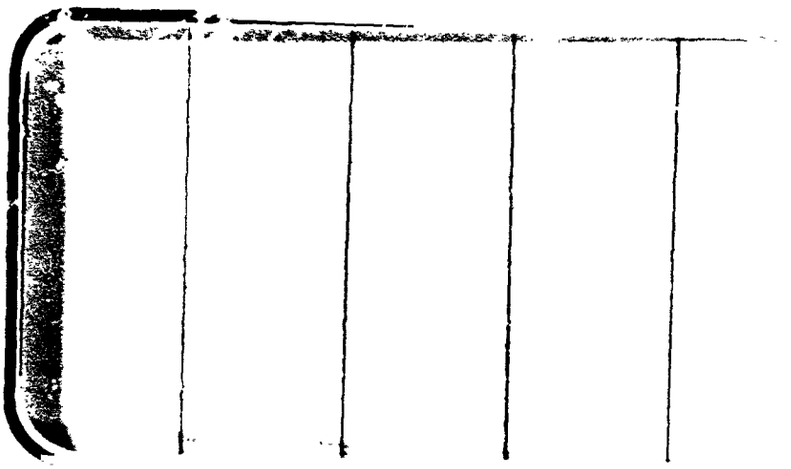

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

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AERODYNAMIC CHARACTERISTICS OF A 0.00563 SCALE 142-INCH DIAMETER SOLID ROCKET BOOSTER (MSFC MODEL 449 AND 480) WITH SIDE MOUNTED STINGS IN THE NASA/MSFC 14 INCH TRISONIC WIND TUNNEL (SA14FA)

by

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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:	MSFC TWT 620
NASA Series Number:	SA14FA
Model Number:	MSFC Model Number 449 and 480
Test Dates:	December 19, 1975 and March 11, 1976
Occupancy Hours:	144

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ABSTRACT

An experimental investigation (SA14FA, TWT 620) was conducted in the MSFC 14-inch TWT to determine the entry static stability of a 0.00563 scale Shuttle Solid Rocket Booster (SRB). The primary objective was to determine the effects of four side mounted sting configurations and to improve the definition of the aerodynamic characteristics in the vicinity of the SRB entry trim point.

Data were obtained for two 60 and two 90 degree side mounted stings and a straight nose mounted sting. The angle of attack range for the side-mounted stings was 100 to 170 degrees while that for the nose mounted sting was 150 to 170 degrees. The Mach number range consisted of 0.6 to 3.48. Except for the aft attach ring, no protuberances were considered and the side slip and roll angles were zero.

The test model was scaled from the 142-inch diameter SRB known as configuration 139 which was used during test TWT 572 (SA5F).

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(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, ^oF
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 viewpoint) 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 γ = 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

SRB force data obtained at the LaRC 8' TWT and the MSFC 14" TWT contains discontinuities and discrepancies in the angle-of-attack range of 100° to 140°. Since the SRB trims in this alpha range during entry, the trim point is ill-defined at subsonic and transonic Mach numbers. Examination of the data suggests that possible causes may be sting effects, tunnel blockage or wall effects, and model engine skirt/nozzle internal configuration differences.

To determine and define the causes of these uncertainties, an investigation was conducted in the MSFC 14" TWT (TWT 620). The approach was to simulate the LaRC test hardware as closely as possible without a major redesign and modification of existing hardware. The results provided a common ground for judging which of the potential problem areas should be corrected or improved. The 14" TWT simulation included a 60° side mounted sting scaled relative to model size and located at the proper model longitudinal station. Also, the LaRC model engine skirt/nozzle internal geometry was reproduced for the MSFC test model.

A second objective was to eliminate as many sources of error in the 14" TWT test setup as possible. To reduce sting effects, a new 90° side mounted balance adapter was designed with a smaller cross section than adapters used for past 14" TWT tests. Also, a new adapter hole pattern provided an alpha range that bridged the discontinuity at $\alpha = 130^{\circ}$ of past MSFC data. This problem area, which appeared in both the MSFC and LaRC data, occurs at the point where the sting was changed from a side

mounted to a nose mounted system. In addition, a new one piece, slender, side mounted sting was tried for a few runs.

MODEL AND SUPPORT HARDWARE

The test configuration which was the subject of the present investigation is the 142-inch diameter SRB with attach ring. Two 0.563% scale models of this SRB, MSFC model numbers 480 and 449, were used. Model 480 was top mounted while 449 was nose mounted. Details and dimensions of the stainless steel models are presented in Figures 2 and 3.

The models were fabricated of stainless steel in three major sections; nose, body and tail (engine nozzle/skirt) sections. The tail section was designed so that the internal volume under the skirt and inside the engine nozzle simulated the LaRC test configuration. The tail section which is interchangeable with both model 480 and 449 was used as part of both models during this study. The cylindrical body of model 480 contains a cutout on the top to accommodate the top mounted sting. Model 449 used a cut-away nose cone to accommodate the nose mounted sting. The attachment ring is the only protuberance which was used during this investigation. Details of the engine skirt and nozzle are presented in Figure 4. Model dimensional sheets are presented in Table III.

The model parts nomenclature is as follows:

N	nose
B	Cylindrical body
R	attachment ring
E	engine nozzle/skirt
M_{60}	60° side mounted sting (balance adapter 126, see Figures 5 and 11)

M_{90} — 90° side mounted sting (balance adapter 127, see Figures 6 and 12)

M_{0} — nose mounted sting (balance adapter 113A, see Figures 7 and 13)

M_{90S} — special 90° side mounted sting (balance adapter 130, see Figures 8 and 14)

M_{S} — one piece side mounted sting (sting 131, see Figure 15)

The stings, sting adapters and balance adapters which were used are:

Sting number 1

Sting adapter numbers 1 and 3

A new 60° balance adapter, number 126, depicted in Figure 5.

A new slim 90° balance adapter, number 127, depicted in Figure 6.

Balance adapter number 113A, depicted in Figure 7.

A special 90° balance adapter, number 130, depicted in Figure 8.

A one piece side mounted sting, number 131, depicted in Figure 15.

Table IV lists the combinations of support hardware and associated angle-of-attack ranges used in this test. It should be noted that for the 90° balance adapter, No. 127 and 130, the sting/sting adapter combination was rolled 180° from the normal setup to get α ranges which overlap previous α ranges and at the same time keep the model centered in the tunnel test section. The "sting adapters" shown in Figure 9 adapt the sting to the tunnel sector. Figure 10 shows the "sting" which uses different mounting hole combinations, to adjust the relative angle with both the sting adapters and the balance adapters.

MODEL AND SUPPORT HARDWARE (Concluded)

The "balance adapters" depicted in Figures 5, 6, 7, and 8 connect the balance to the sting. The four support hardware combinations used in these tests are shown in Figures 11, 12, 13, 14 and 15.

CONFIGURATIONS INVESTIGATED

The configurations tested are as follows:

NBRE M60

NBRE M90

NBRE M0

NBRE M90S

NBRE MS

The first two consisted of the SRB with the attach ring but without other protuberances mounted on 60^{o} and 90^{o} side mounted stings respectively. The third configuration was the same as the others except that it was nose mounted. The fourth and fifth were also the same SRB configuration but were mounted on a one piece sting respectively.

Boundary layer transistion was fixed with 0.05-inch wide strips of number 100 silicon carbide grit applied to model as shown in Figure 16.

A description of individual model components is given in Table III.

TEST FACILITY DESCRIPTION

The Marshall Space Flight Center 14 x 14 inch Trisonic Wind Tunnel is an intermittent blowdown tunnel which operates by high pressure air flowing from storage to either vacuum or atmospheric conditions. A Mach number range from .2 to 5.00 is covered by utilizing two interchangeable test sections. The transonic section permits testing at Mach 0.20 through 2.50, and the supersonic section permits testing at Mach 2.74 through 5.00. Mach numbers between .2 and .9 are obtained by using a controllable diffuser. The range from .95 to 1.3 is achieved through the use of plenum suction and perforated walls. Mach numbers of 1.46, 1.96 and 2.50 are produced by interchangeable sets of fixed contour nozzle blocks. Above Mach 2.50 a set of fixed contour nozzle blocks are tilted and translated automatically to produce any desired Mach number in .25 increments.

Air is supplied to a 6000 cubic foot storage tank at approximately -40 degrees Fahrenheit dew point and 500 pounds per square inch absolute. The compressor is a three-stage reciprocating unit driven by a 1500 horsepower motor.

The tunnel flow is established and controlled with a servo-actuated gate valve. The controlled air flows through the valve diffuser into the stilling chamber and heat exchanger where the air temperature can be controlled from ambient to approximately 200 degrees Fahrenheit. The air then passes through the test section which contains the nozzle blocks and test region.

TEST FACILITY DESCRIPTION (Continued)

Downstream of the test section is a hydraulically controlled pitch sector that provides a total angle of attack range of 20 degrees (± 10 degrees). Sting offsets are available for obtaining various maximum angles of attack up to 90 degrees.

The variable diffuser section has movable floor and ceiling panels which are the primary means of controlling the subsonic Mach numbers and permit more efficient running at supersonic Mach numbers. The sector assembly and diffuser telescope to allow easy access to the model and test section.

Tunnel flow is exhausted through an acoustically damped tower to atmosphere or into the vacuum field of 42,000 cubic feet. The vacuum tanks are evacuated by vacuum pumps driven by electric motors rated at a total of 500 horsepower.

Data are recorded by a solid-state digital data acquisition system. The digital data are transferred to punched cards during the run to be reduced later by a computer to proper coefficient form.

TEST CONDITIONS AND INSTRUMENTATION

The SRB Model 480 was mounted nose down on balance 239 which was mounted to either the 60° (#126), 90° (#127), or 90° (#130) balance adapters. Model 480 was also mounted on the one piece sting #131 for a few runs. Model 449 was mounted nose first on balance 239 which was mounted on balance adapter 113A. No base pressure measurements were made during this investigation.

The Mach number range consisted of 0.6, 0.9, 1.2, 1.46, 1.96, and 3.48. The complete tunnel test conditions are presented in Table I. The angle-of-attack range consisted of 100°-120°, 120°-140°, 140°-160°, and 130°-150° on the 90° adapters and 100°-120°, 120°-140°, and 140°-160° on the 60° adapter. The nose mounted configuration covered the 150°-170° angle range. The one piece sting (131) covered the 130°-150° angle range. The Run Summary/Collation is shown in Table III.

DATA REDUCTION

All model forces and moments were resolved in the missile axis system and presented in the form of nondimensional coefficients. The coefficients included in the tabulated data output are listed below:

$$CNM = \frac{NF_m}{Q\ SREF}, \qquad \text{normal force coefficient}$$

$$CLMN = \frac{PM_m}{Q\ SREF\ LREF}, \qquad \text{pitching moment coefficient}$$

$$CYM = \frac{SF_m}{Q\ SREF}, \qquad \text{side force coefficient}$$

$$CYNM = \frac{YM_m}{Q\ SREF\ BREF}, \qquad \text{yawing moment coefficient}$$

$$CBL = \frac{RM_m}{Q\ SREF\ BREF}, \qquad \text{rolling moment coefficient}$$

$$CA = \frac{AF_m}{Q\ SREF}, \qquad \text{total axial force coefficient}$$

$$XCP/L = \frac{XMRP}{L} - \left(\frac{CLMM}{CNM}\right)\left(\frac{LREF}{L}\right), \qquad \text{longitudinal center of pressure location in percent of body length from nose}$$

The usual tunnel parameters; P_∞, P_t, T_t, q_∞, RN, and α; were measured, computed and tabulated, along with the data. Because of the side mounted sting setups used, no base pressures were measured.

Model reference dimensions used for data reduction are presented below:

DATA REDUCTION (Continued)

Parameter	Symbol	Full Scale	0.00563 Scale
Reference Area (Based on body cross section)	SREF	109.98 ft^2	0.503 $in.^2$
Reference Length (body diameter)	LREF	142 in.	0.800 in.
Reference Span (body diameter)	BREF	142 in.	0.800 in.
Moment Reference Point (Measured from nose on body center line)	XMRP*	986.97 in.	5.560 in.
	YMRP	0	0
	ZMRP	0	0
Body Length (Measured from nose to end of nozzle)	L	1741 in.	9.808 in.

*XMRP - 56.69% of total length measured from nose to end of nozzle.

Data were corrected for weight tares and sting deflections.

REFERENCES

1. Simon, Erwin, "The George C. Marshall Space Flight Center's 14 x 14-Inch Trisonic Wind Tunnel Technical Handbook, NASA TMX-64624, November 5, 1971.

2. Johnson, Josh D. and Radford, Walter D., "Aerodynamic Characteristics of a 142-Inch-Diameter Solid Rocket Booster (Configurations 89B and 139), NASA CR-128,774 (DMS-DR-2051), August 1973.

3. Johnson, J. D., and Braddock, W. F., "Effect of Engine Shroud Configuration on the Static Aerodynamic Characteristics of a 0.00563 Scale 142-Inch-Diameter Solid Rocket Booster (SA10F)," NASA CR-134,116 (DMS-DR-2087), August 1974

4. Radford, Walter D. and Johnson, J. D., "Aerodynamic Characteristics of a 142-Inch-Diameter Solid Rocket Booster, Configuration 139 (SA2FA/SA2FB)," NASA CR-134,105 (DMS-DR-2088), June 1974.

TABLE I

TEST : TWT 620 DATE : 3/11/76

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
0.6	5.0×10^6	4.35	100
0.9	6.2	7.37	100
1.2	6.4	9.20	100
1.46	6.3	9.49	100
1.96	7.4	10.95	100
3.48	6.7	6.84	140

BALANCE UTILIZED: MSFC 239

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE: @ q = 10 lbs/in^2
NF	200 lbs	± 1.00 lbs.	± 0.016
SF	100 lbs	± 0.50 lbs	± 0.008
AF	50 lbs	± 0.25 lbs.	± 0.004
PM	196 in-lbs	± 1.00 in-lbs	± 0.003
YM	98 in-lbs	± 0.50 in-lbs	± 0.002
RM	50 in-lbs	± 0.25 in-lbs	± 0.001

COMMENTS: Accuracy based on ± 0.5% of balance full load capacity

TABLE II

TEST: MSFC TWT 620 — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: 4-13-76

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.9	1.2	1.46	1.96	3.48	TEST RUN NUMBERS
RIΦ001	NBRE M60	F	O			12/2	13/1	14/0		19/1	20/0	
02	↓	E				11/2	10/2	9/1		8/1	7/4	
03	↓	C				17/0	16/1	15/1		18/2	23/1	
04	NBRE M90	A				38/1	37/2	36/2	43/1	44/1	47/3	
05	↓	B				39/4	40/3	41/1	42/1	45/1	46/5	
06	↓	C				57/2	58/1	59/3	52/2	51/2	48/3	
07	↓	D				56/3	55/3	54/2	53/2	50/2	49/4	
08	NBREMO	E				1/1	2/0	3/0	4/0	5/0	6/1	
09	NBRE M90S	D				33/0	34/1	35/1	28/1	27/0	24/2	
10	NBRE M90S	E				32/0	31/1	30/0	29/0	26/1	25/1	
11	NBRE M5	D	↓			60/0	61/1	62/0	63/0	64/0	65/0	

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

CM CL CA CYM CYNM CBL YCP/L 7

α OR β SCHEDULES: COEFFICENTS A: 100°-120°; B: 120°-140°; C: 140-160°; D: 130-150; E: 150-170; Δα = 2°

IDVAR (1) IDVAR (2) NDV

TABLE III.

MODEL DIMENSIONAL DATA

MODEL COMPONENT : Nose-N

GENERAL DESCRIPTION : 142 inch SRB nose, conce angle is 18^{o} with a spherical radius nose cap. Scale 0.00563.

DRAWING NUMBER : 80M42755

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length	188.0 in.	1.059 in.
Max Width	142 in.	0.8 in.
Max Depth	142 in.	0.8 in.
Fineness Ratio	1.32	1.32
Area		
Max. Cross-Sectional	109.98 ft^2	0.503 $in.^2$
Planform		
Wetted		
Base	109.98 ft^2	0.503 $in.^2$

TABLE III. (Cont'd)

MODEL DIMENSIONAL DATA

MODEL COMPONENT : BODY-B

GENERAL DESCRIPTION : 142 inch diameter SRB body (this body was cut on its side for sting mounting for angles of attack from 100^{o} to 160^{o})

DRAWING NUMBER : 80M32753, 80M42756, 80M42755

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length	1407.8 in.	7.931 in.
Max Width	142 in.	0.8 in.
Max Depth	142 in.	0.8 in.
Fineness Ratio		
Area		
Max. Cross-Sectional	109.98 ft^2	0.503 in.
Planform		
Wetted		
Base	109.98 ft^2	0.503 in.

TABLE III. (Continued)

MODEL DIMENSIONAL DATA

MODEL COMPONENT : Attachment Ring - R

GENERAL DESCRIPTION : An attachment ring (used to attach SRB to ET) is located 1.127 inches model scale (200 inches full scale) forward of the shroud flare.

DRAWING NUMBER : 80M42756

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length		
Max Width	10.3 in	0.058 in.
Max Depth	10.6 in.	0.059 in.
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III (Continued)

MODEL COMPONENT: Engine Nozzle/Skirt - E

GENERAL DESCRIPTION: 142 inch diameter SRB engine nozzle/skirt combination. Both are symmetrical with the SRB body. The model was hollowed 0.938 inches inside the skirt and 1.166 inches inside the nozzle to simulate full scale.

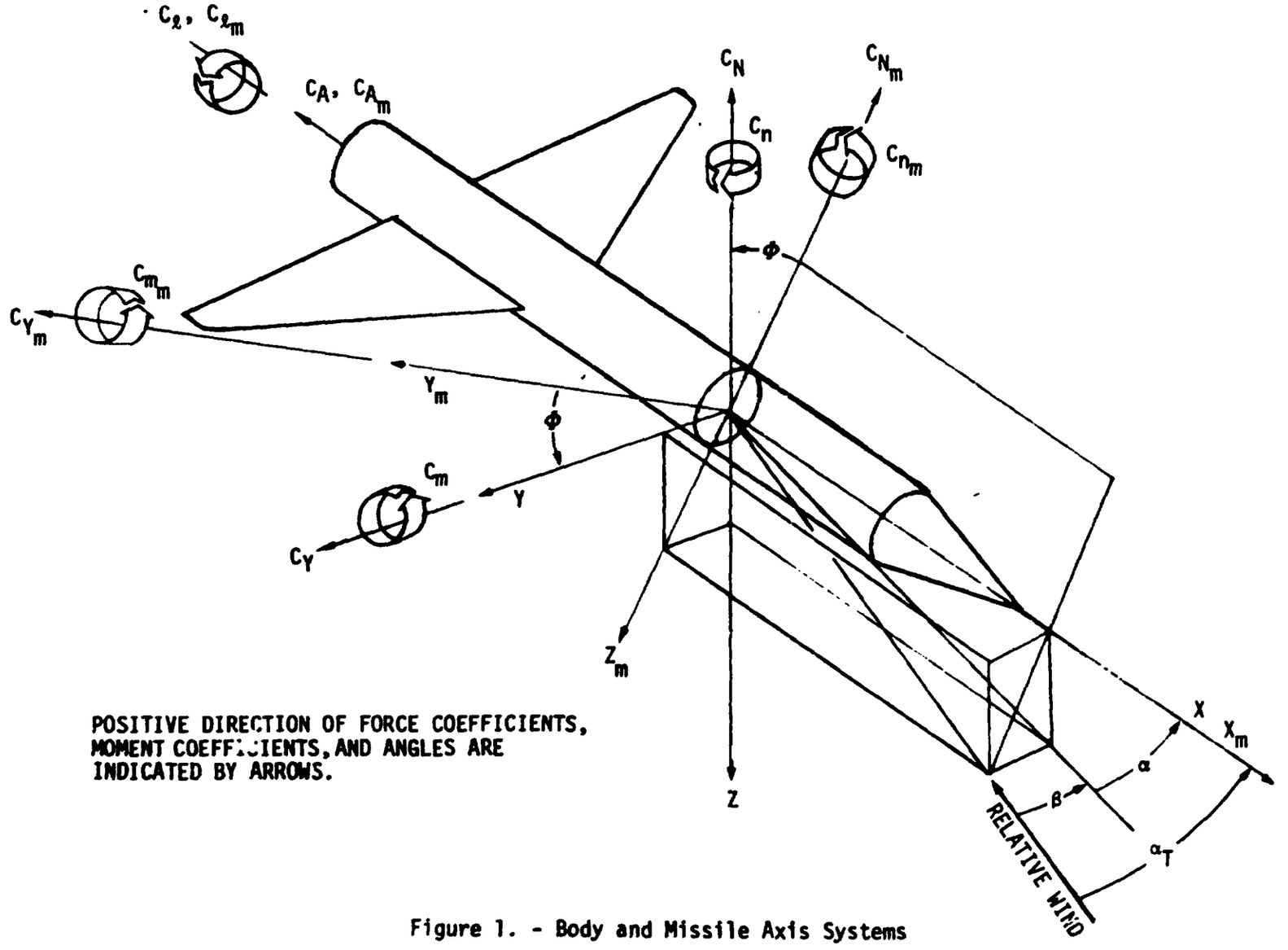
DRAWING NUMBER: 80M42757, 80M42760

DIMENSIONS:	FULL SCALE	THEORETICAL MODEL SCALE
Engine Skirt		
Flare Angle	$15^{o}03'$	$15^{o}03'$
Length	93 in	0.524 in.
Max. Width	192 in.	1.082 in.
Max. Depth	192 in.	1.082 in.
Max. Cross Sectional Area	201.1 ft^2	.920 $in.^2$
Engine Nozzle		
Exposed Length	52.2 in.	0.294 in.
Max. Width	141.6 in.	0.798 in.
Max. Depth	141.6 in.	0.798 in.
Base Area	109.52 ft^2	0.500 in^2

TABLE IV

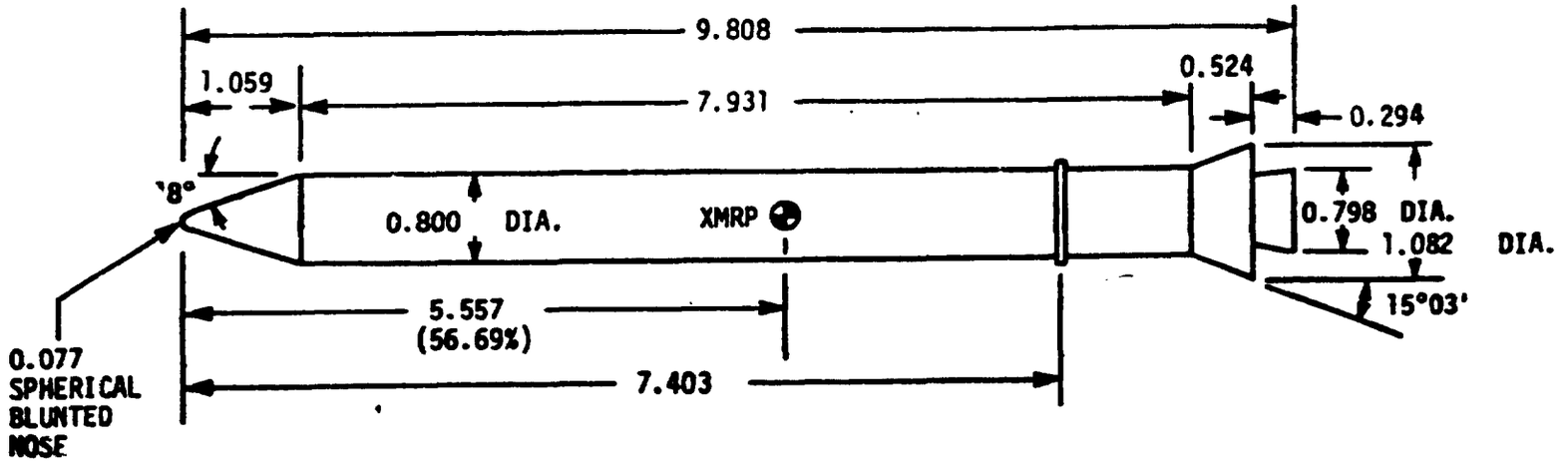
SUPPORT HARDWARE COMBINATIONS

Schedule	Range	Sting Adapter		Sting	Balance Adapter			Nose	Sting Adapter
		Adapter No.	Hole No.	No.	Angle	No.	Hole No.	Pos.	Roll
A	100°-120°	3	61	1	60°	126	1	Down	0°
B	120°-140°	1	53	1	60°	126	2	Down	0°
C	140°-160°	3	63	1	60°	126	3	Down	0°
A	100°-120°	1	53	1	90°	127	1	Down	0°
B	120°-140°	1	53	1	90°	127	2	Down	0°
C	140°-160°	3	61	1	90°	127	4	Down	180°
D	130°-150°	3	61	1	90°	127	3	Down	180°
E	150°-170°	1	51	1	0°	113A	3	Aft	0°
D	130°-150°	1	51	1	90°	130	1	Down	180°
E	150°-170°	1	51	1	90°	130	2	Down	180°
D	130°-150°	-	-	131	-	-	-	Down	0°



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

Figure 1. - Body and Missile Axis Systems



igure 2. 0.00563 Scale 142-Inch SRB Geometry (MSFC Model 480)

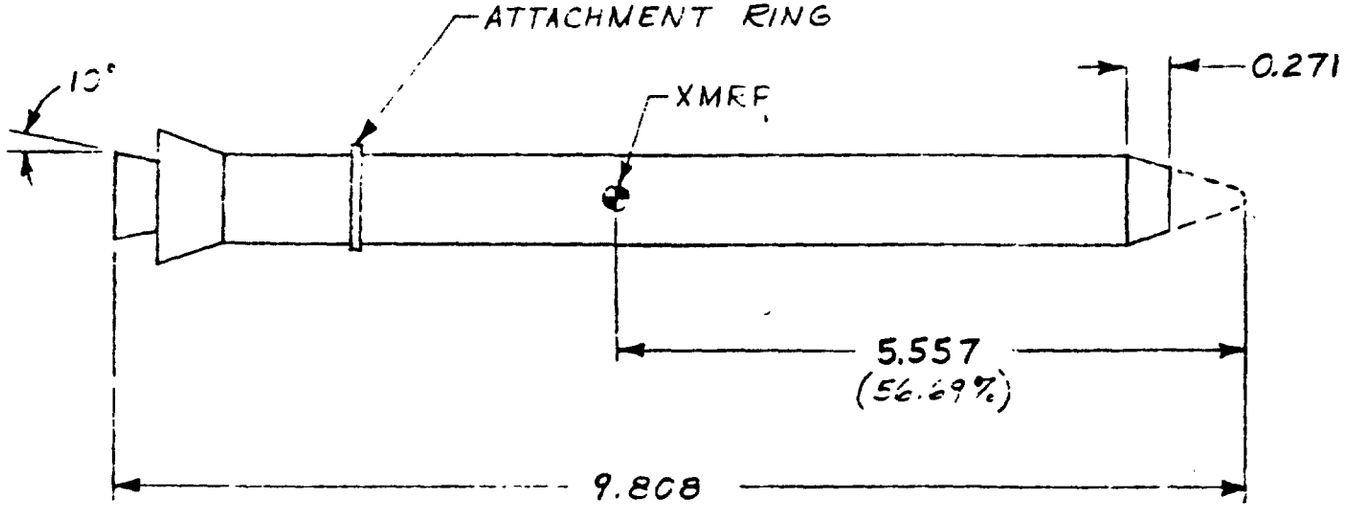


Figure 3. 0.00563 Scale 142-Inch SRB Geometry
(MSFC Model 449) Nose Mounted

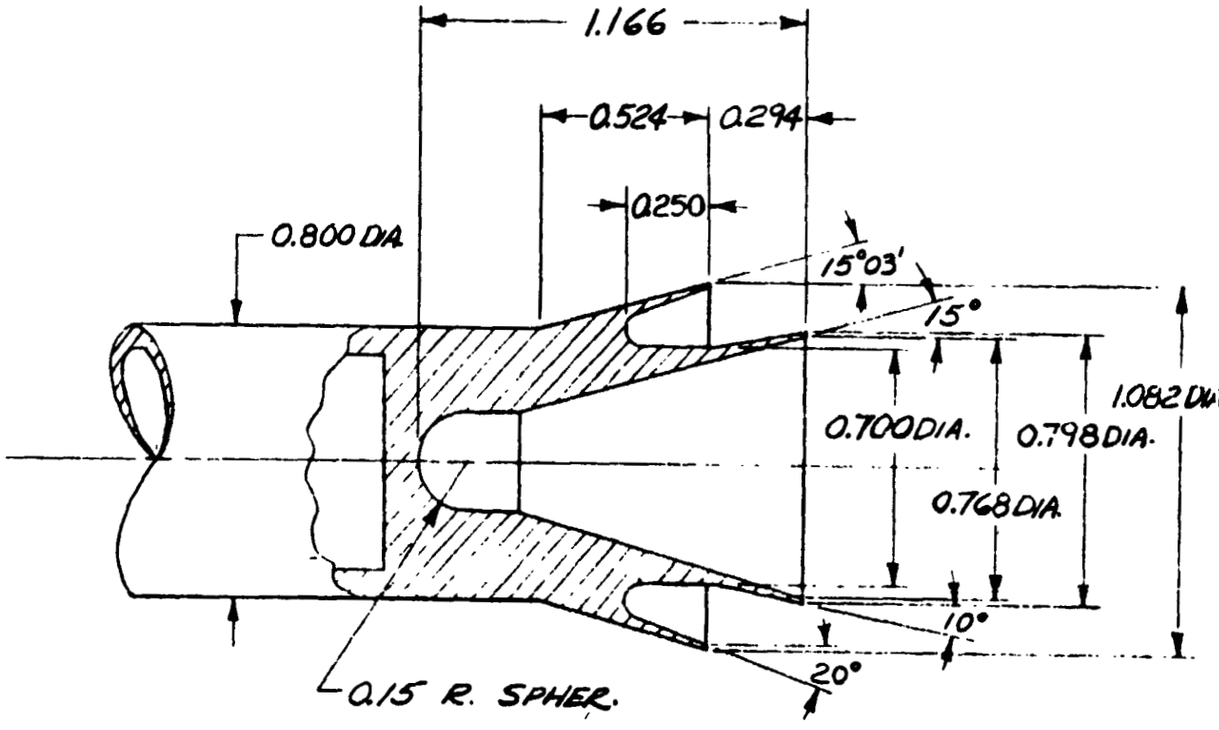


Figure 4. Engine Nozzle/Skirt Details

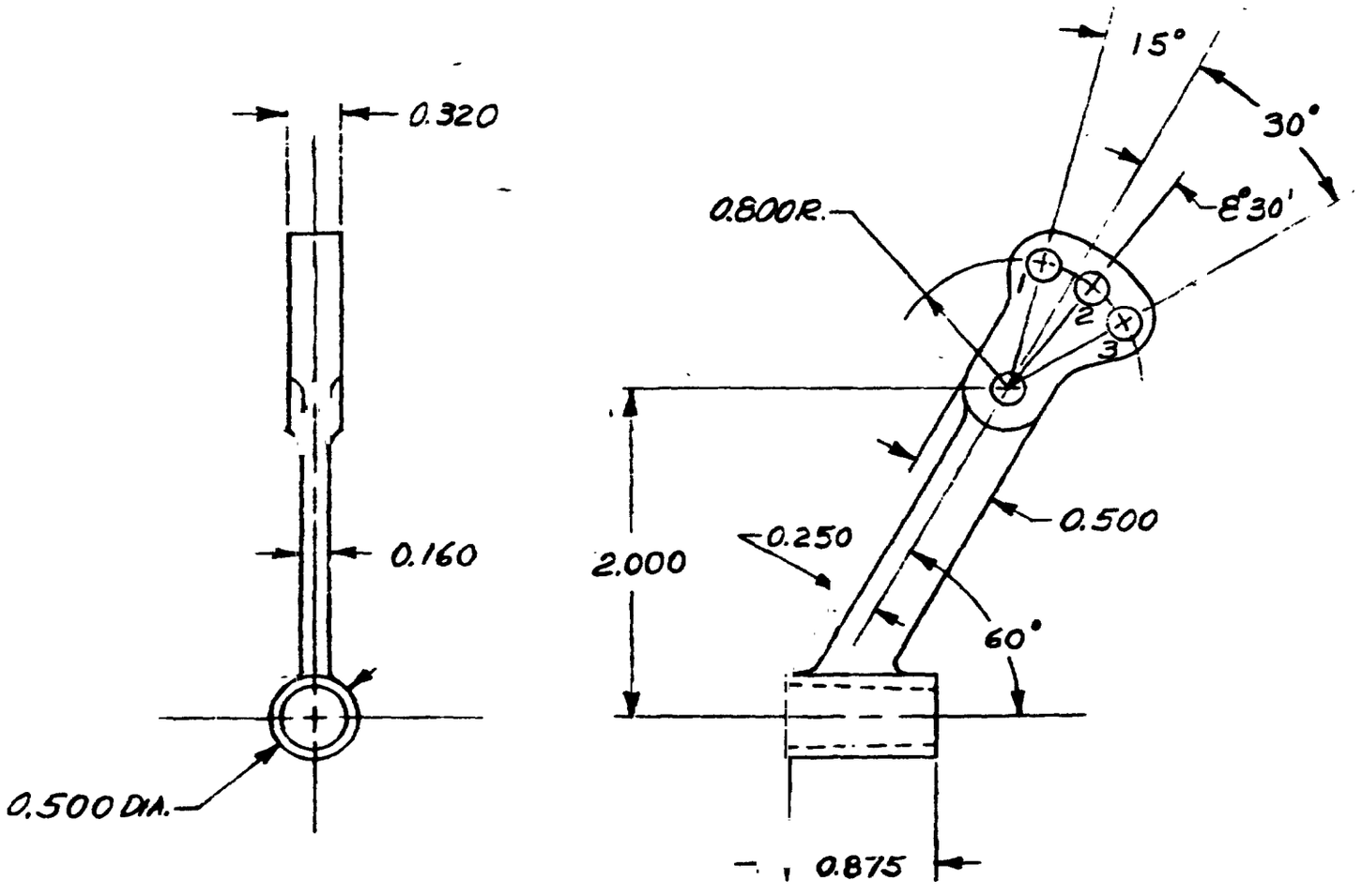


Figure 5. 60° Balance Adapter, No. 126

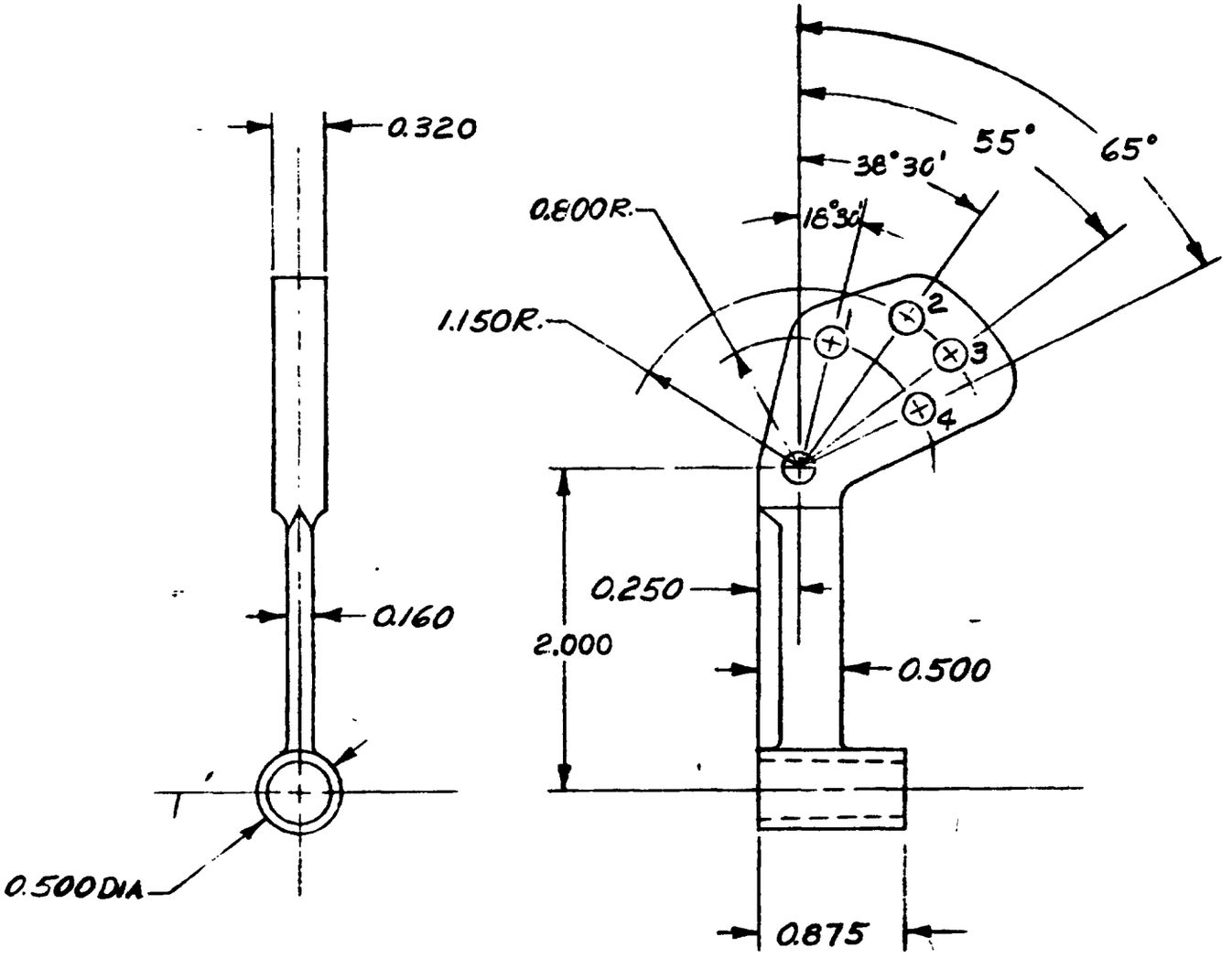


Figure 6. 90° Balance Adapter, No. 127

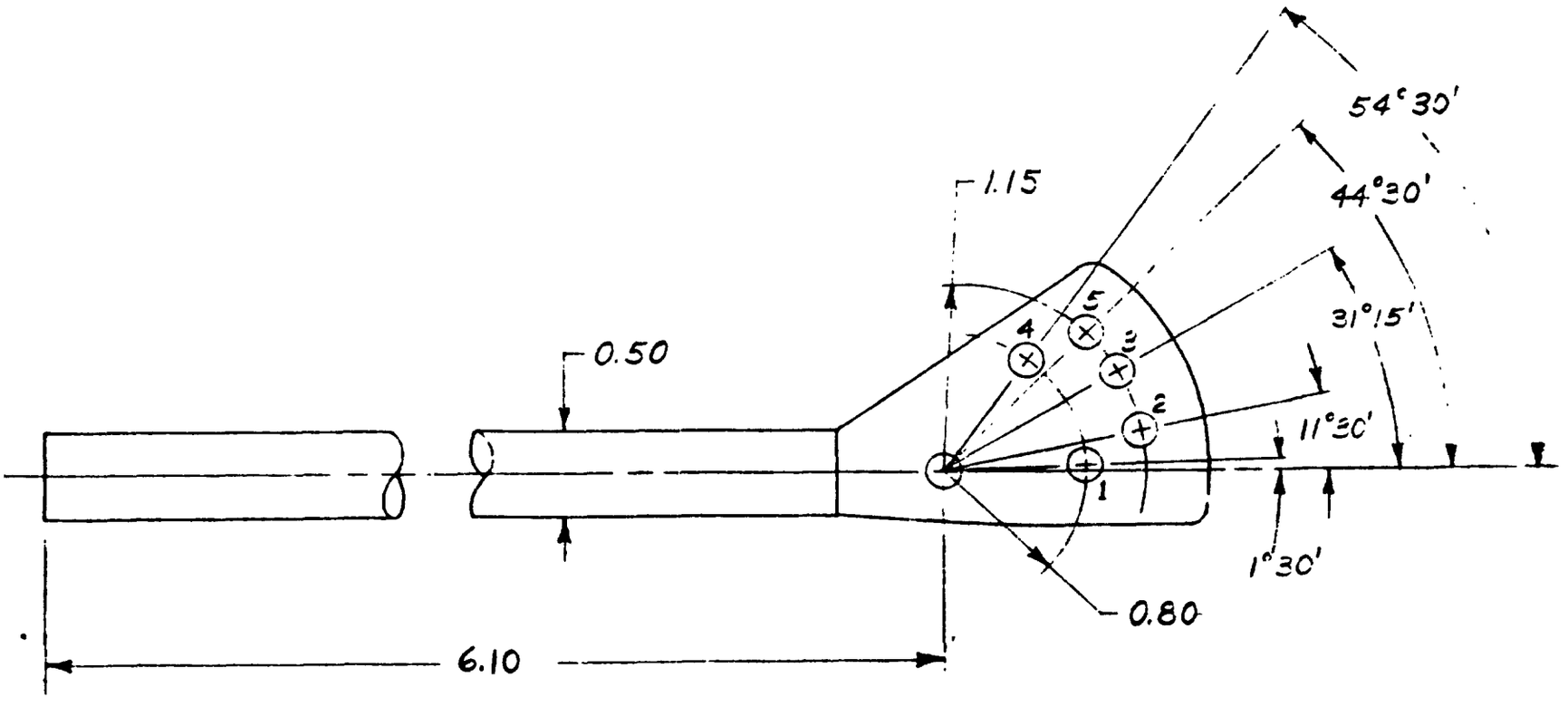


Figure 7. Balance Adapter, No. 113A

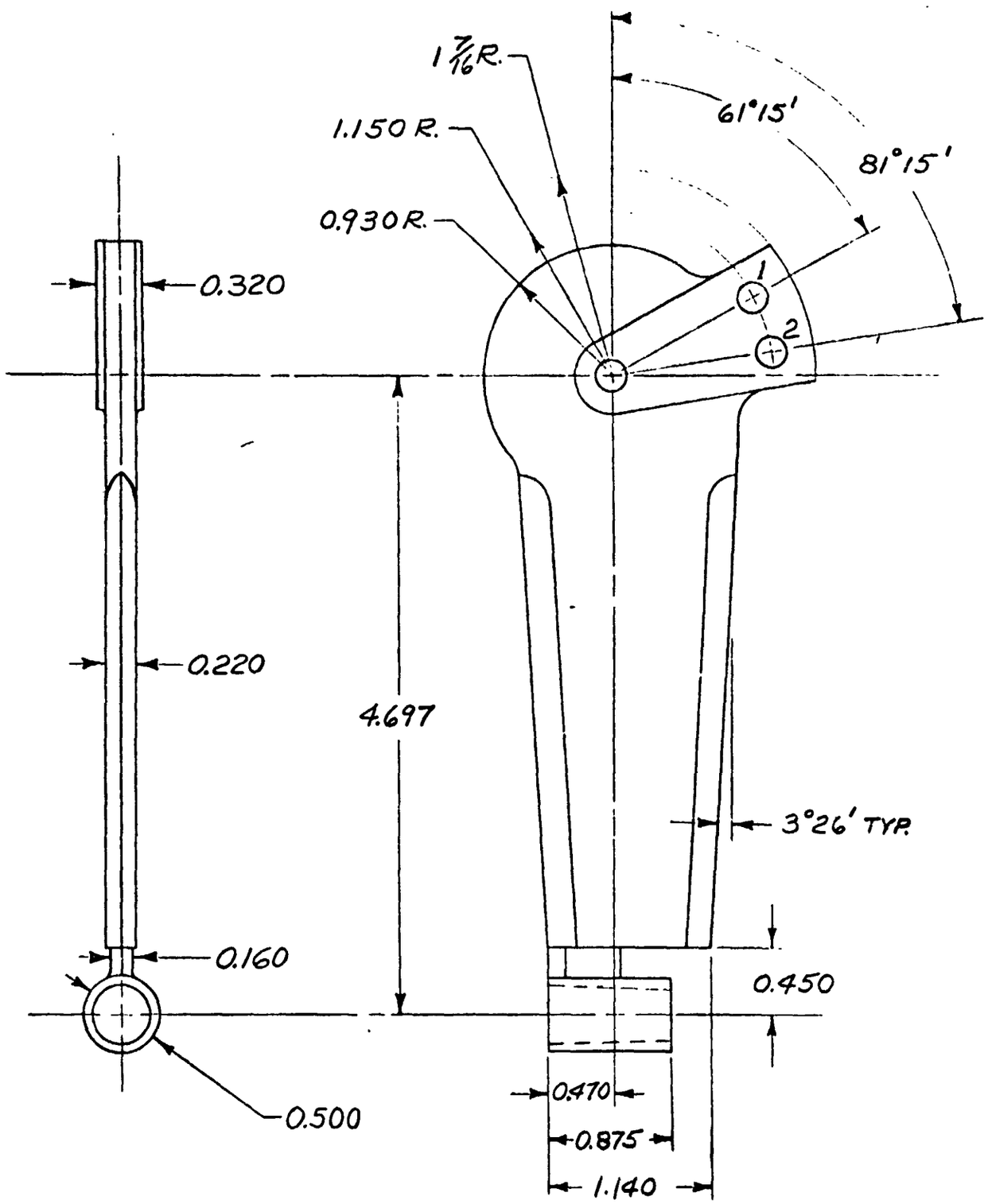


Figure 8. Special 90° Balance Adapter, No. 130

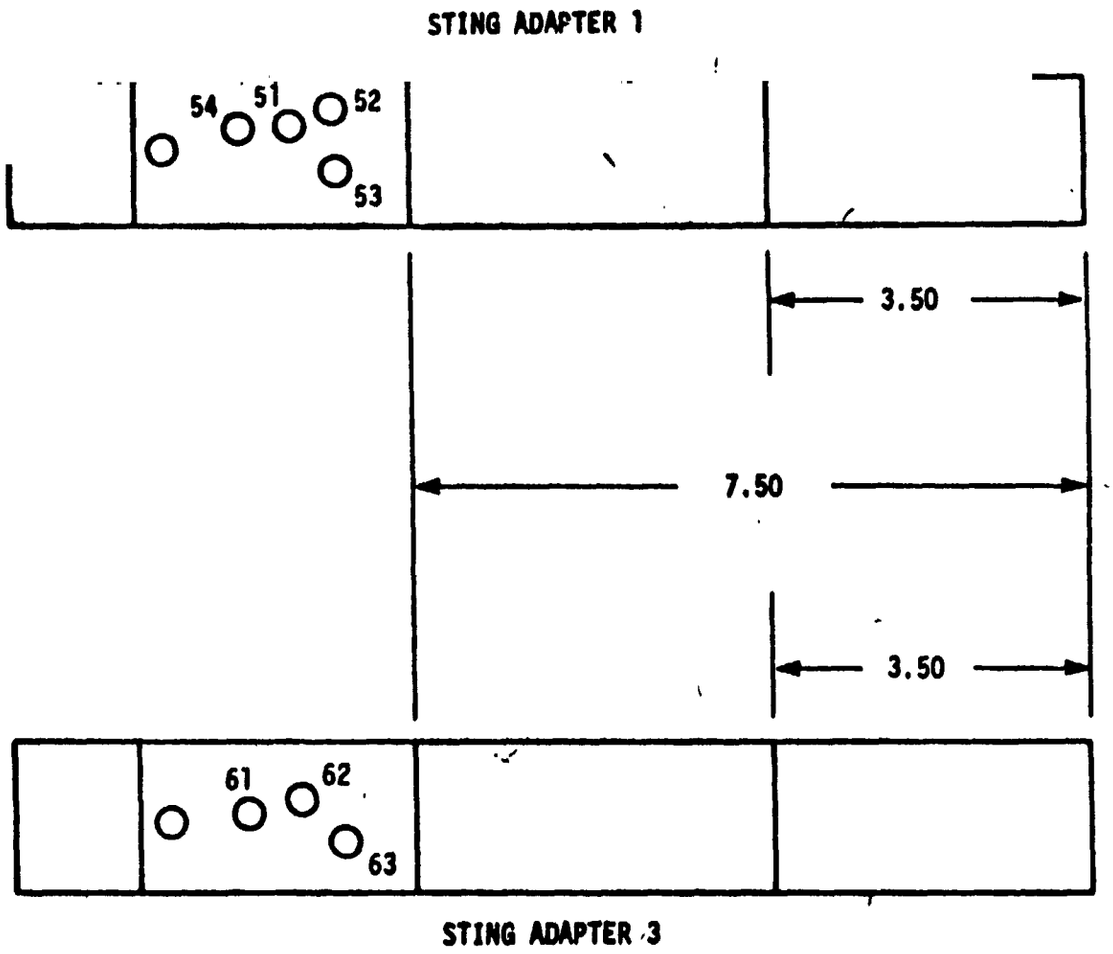


Figure 9. Sting Adapters

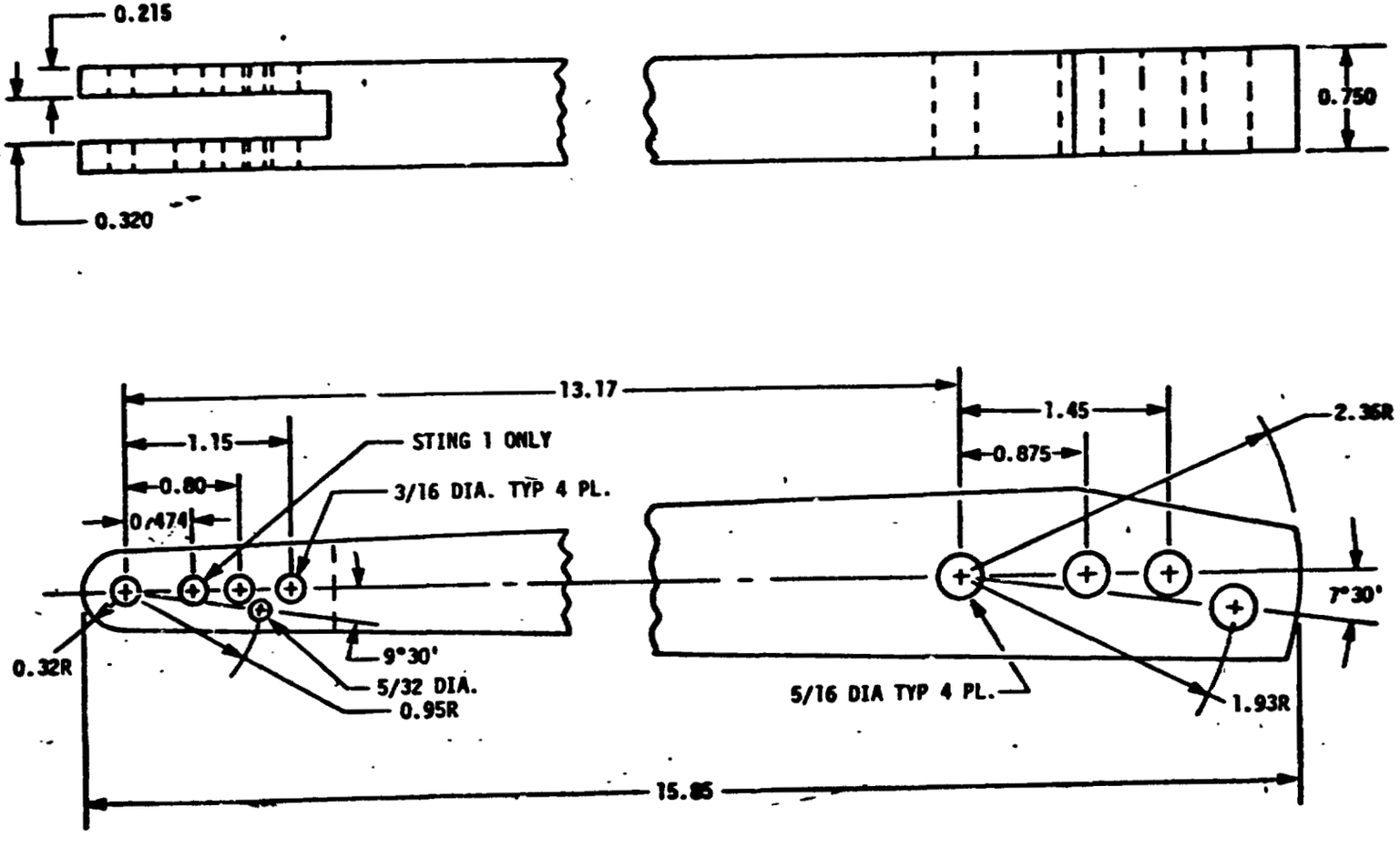


Figure 10. Stings 1 & 3

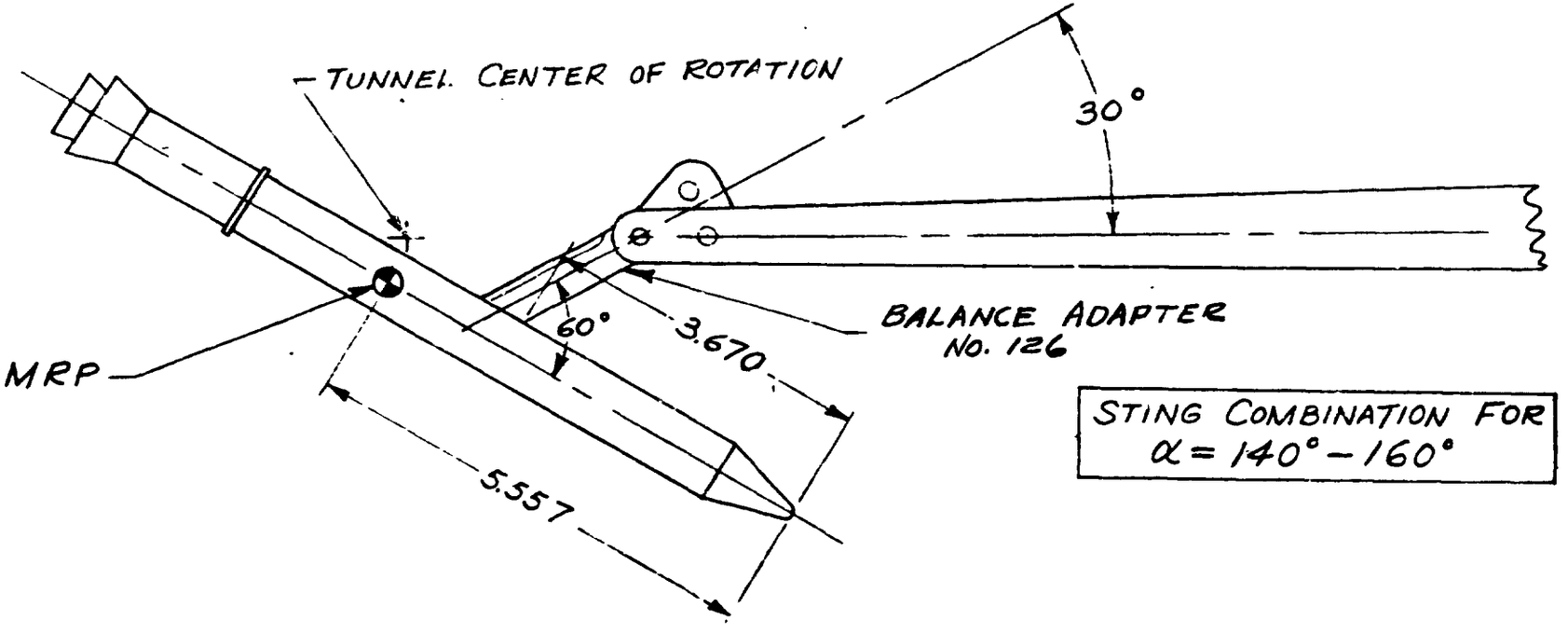


Figure 11. Typical Setup for 60° Side Mounted Sting

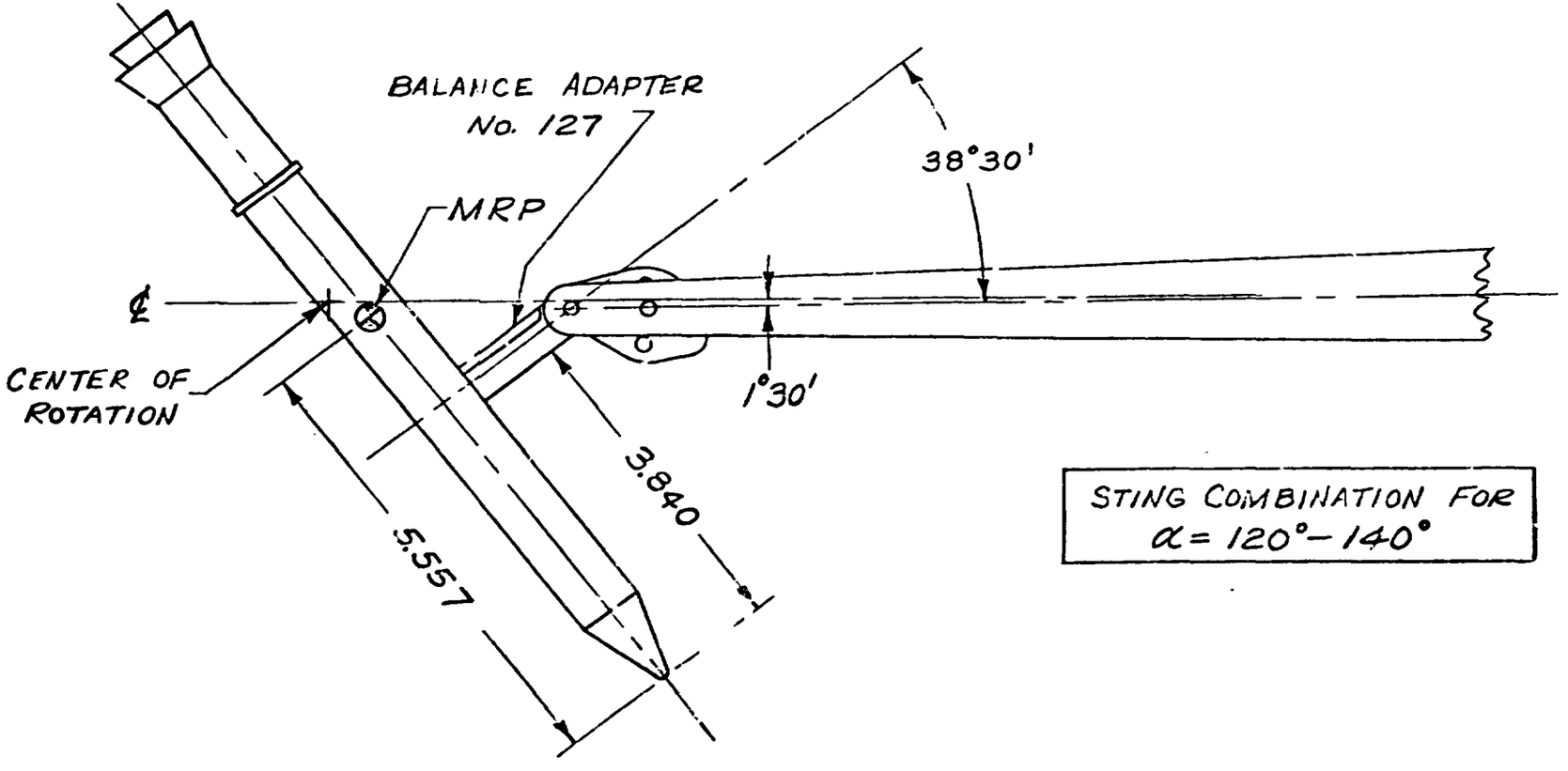


Figure 12. Typical Setup for 90° Side Mounted Sting.

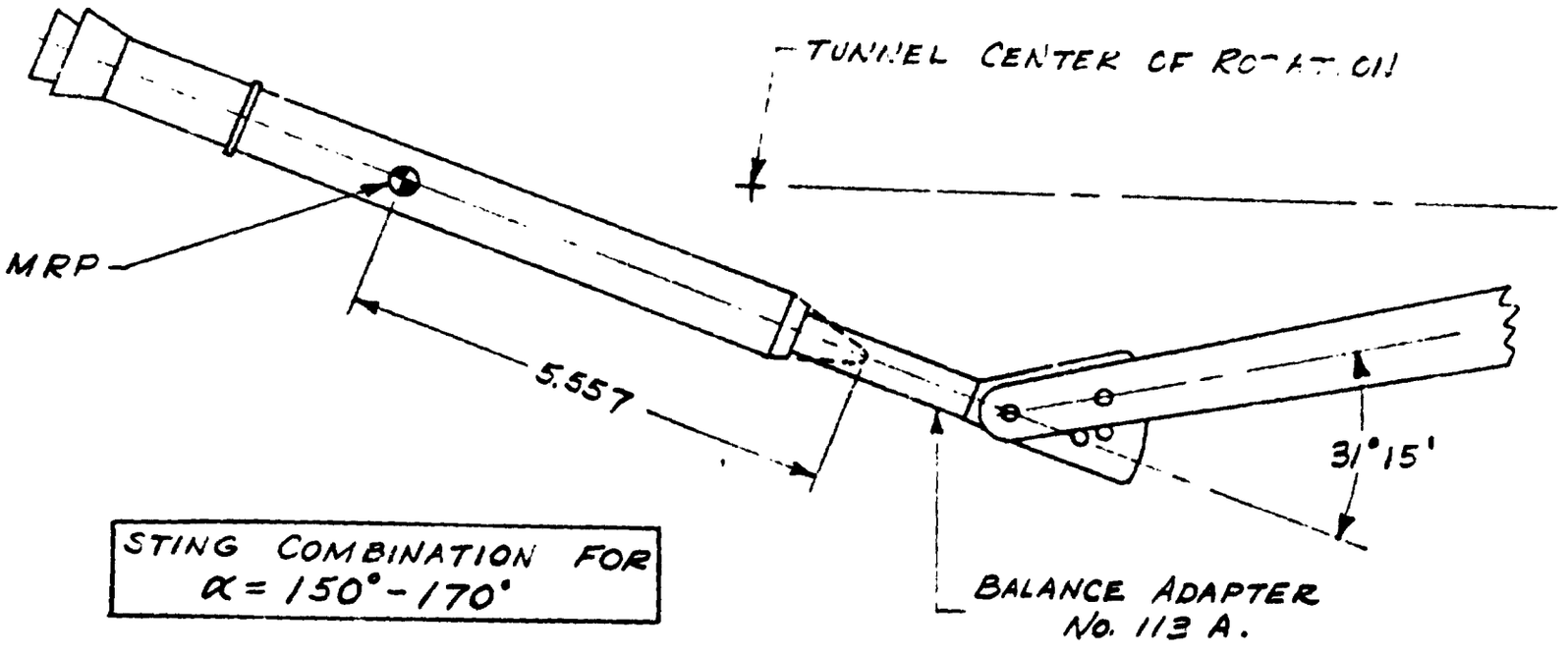


Figure 13. Setup for Nose Mounted Sting.

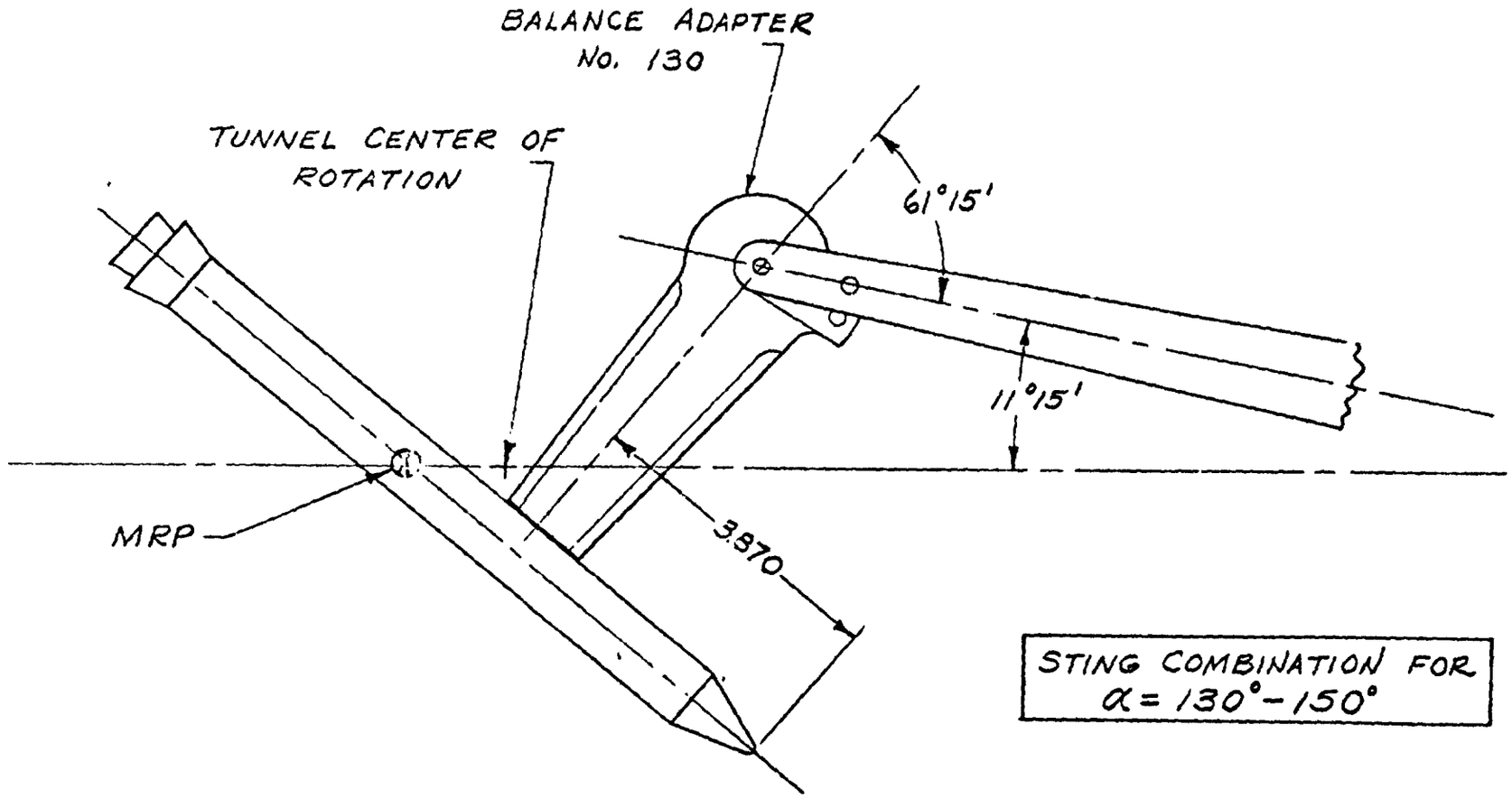


Figure 14. Typical Setup for Special 90° Side Mounted Sting.

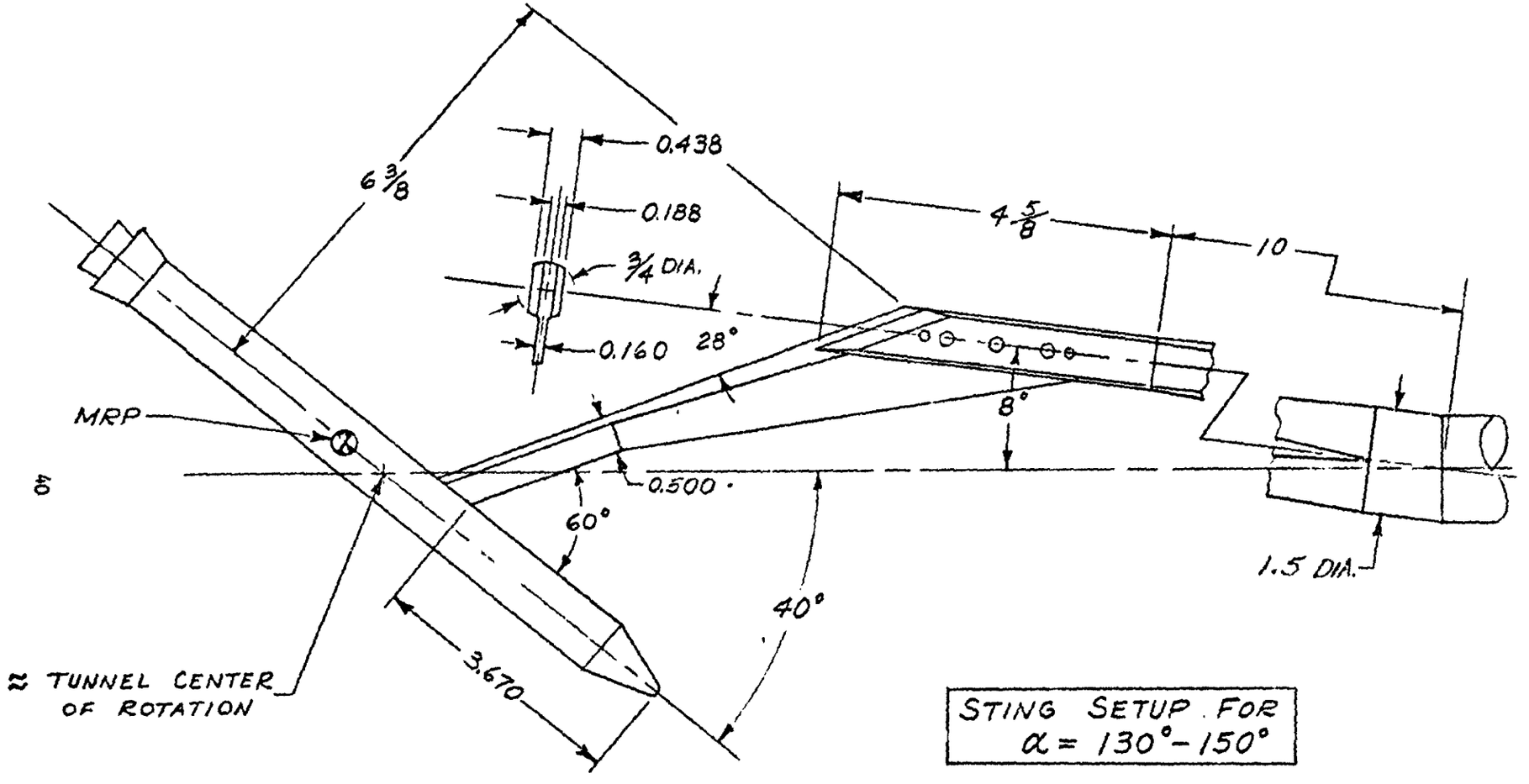


Figure 15. Details of One Piece Side Mounted Sting, No. 131.

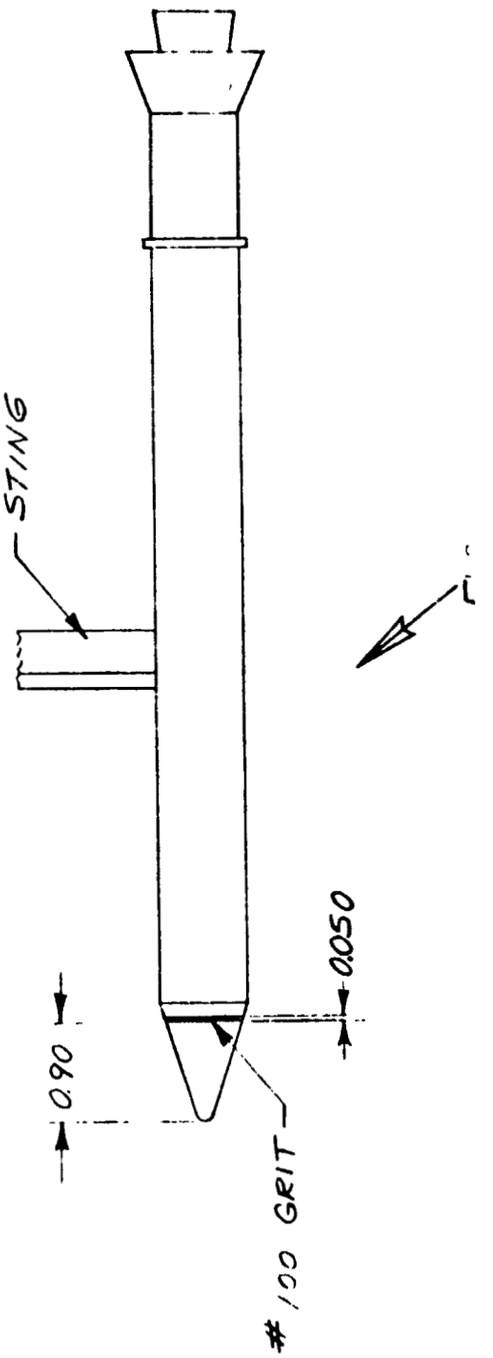


Figure 16. Grit Pattern Used for MSFC TWT 620.

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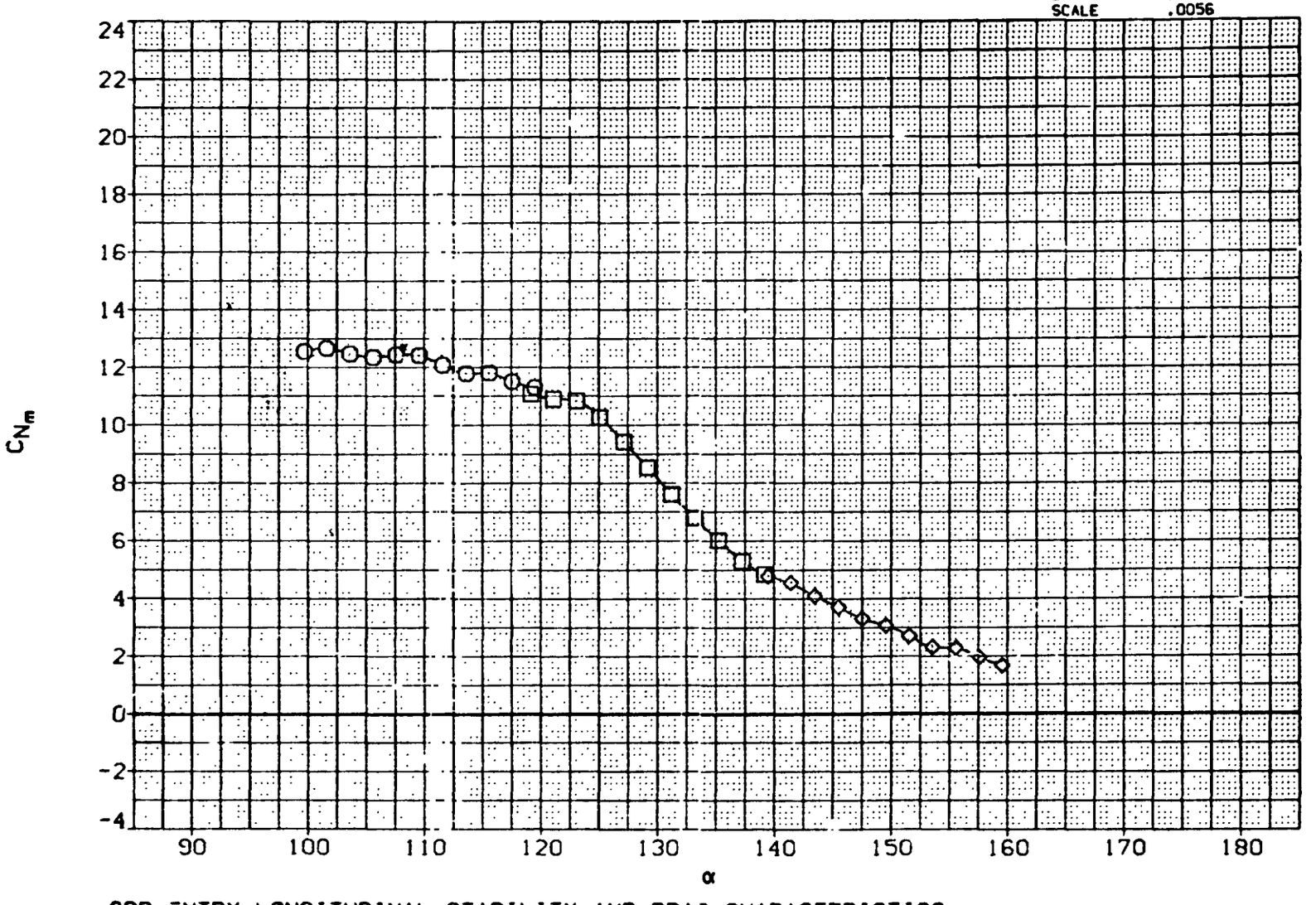
DATA FIGURES

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



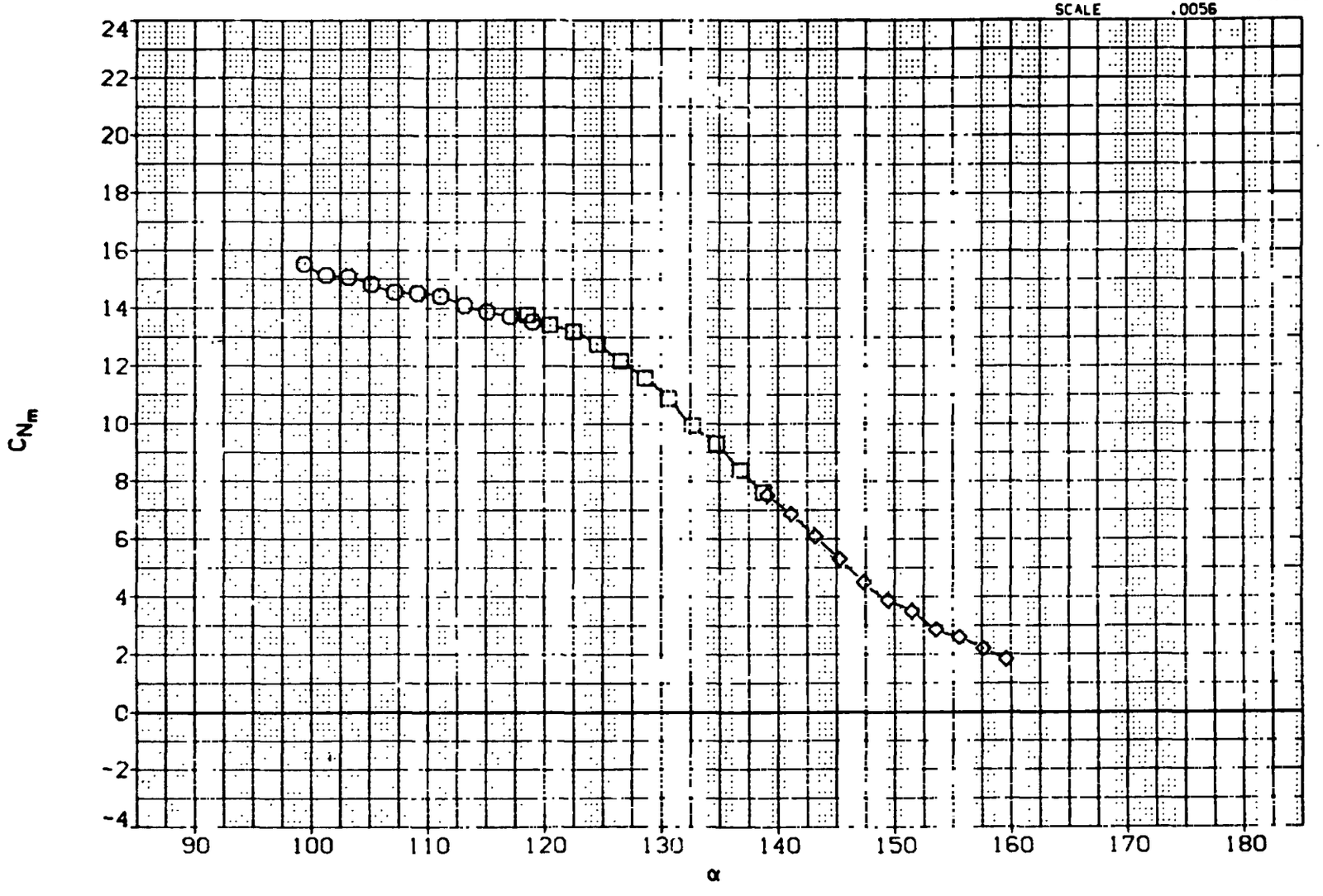
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9600	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



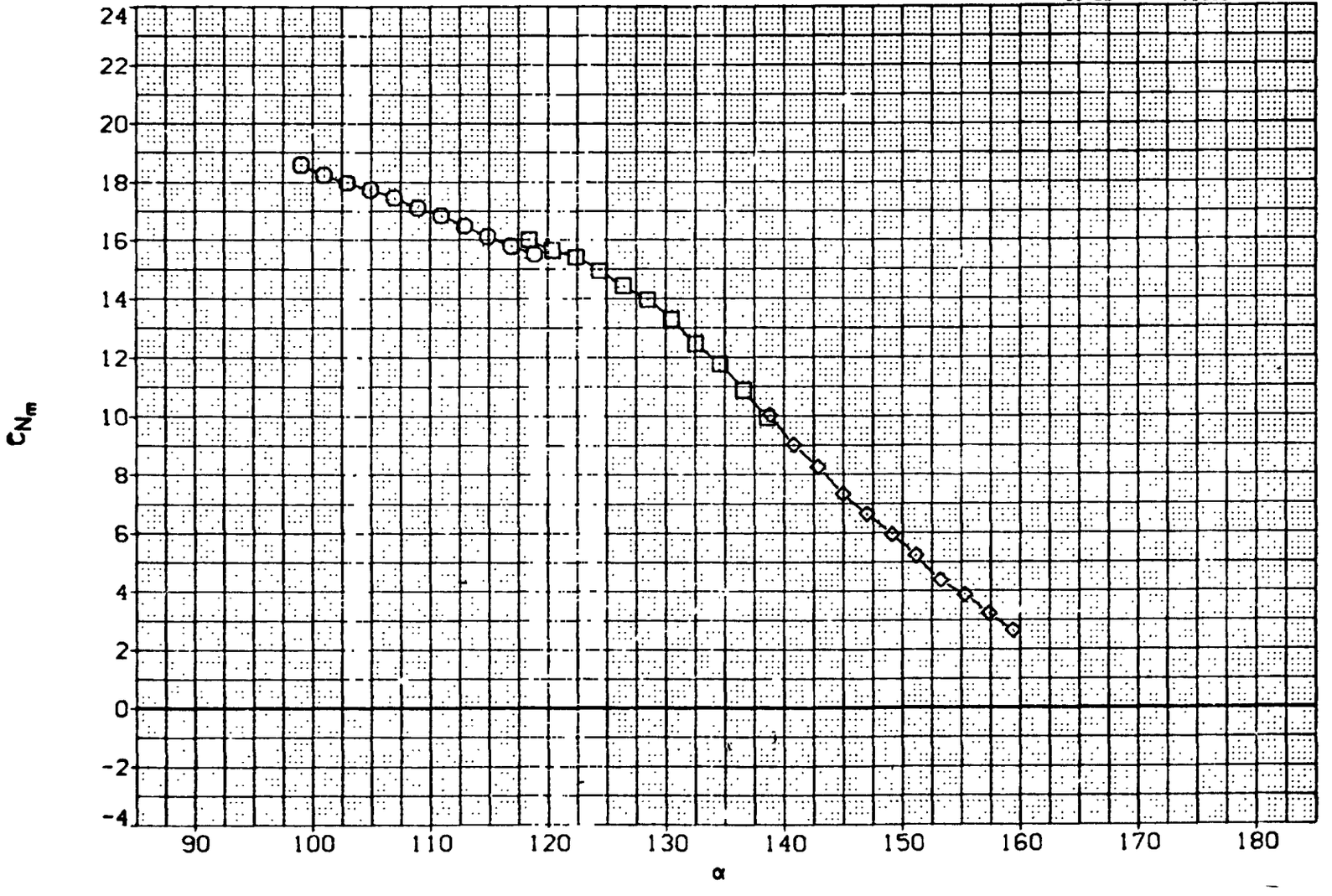
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



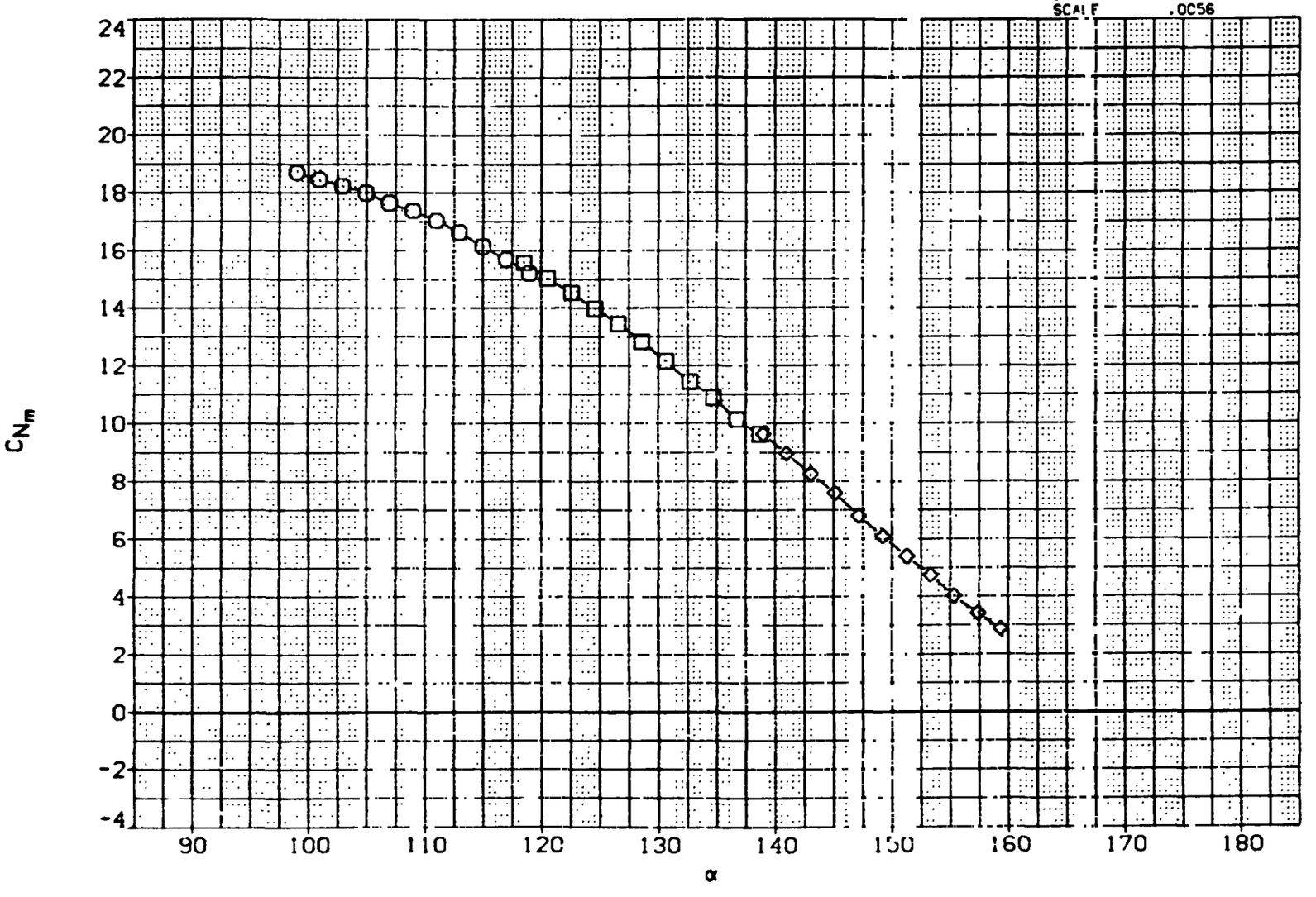
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)` STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



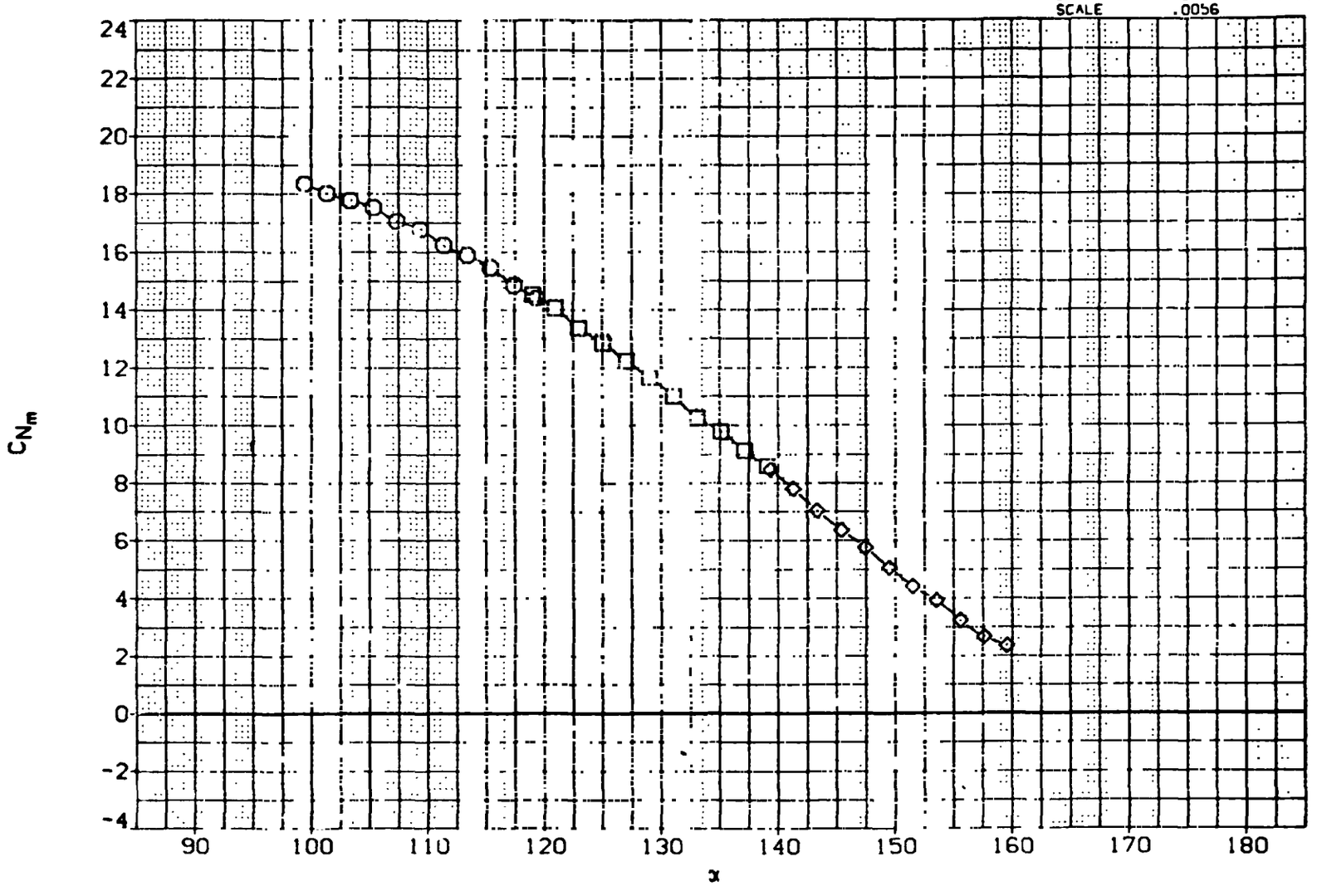
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



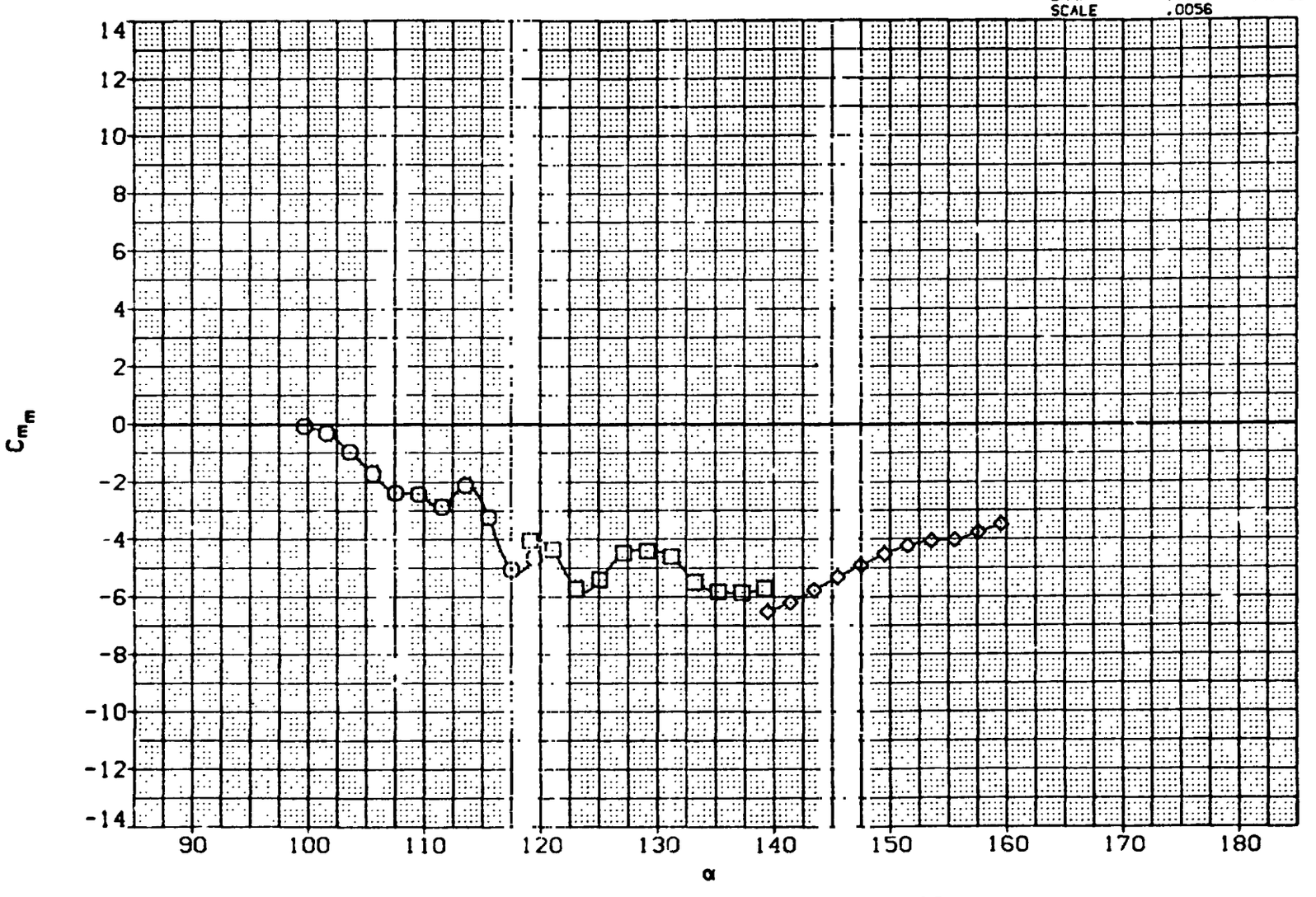
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



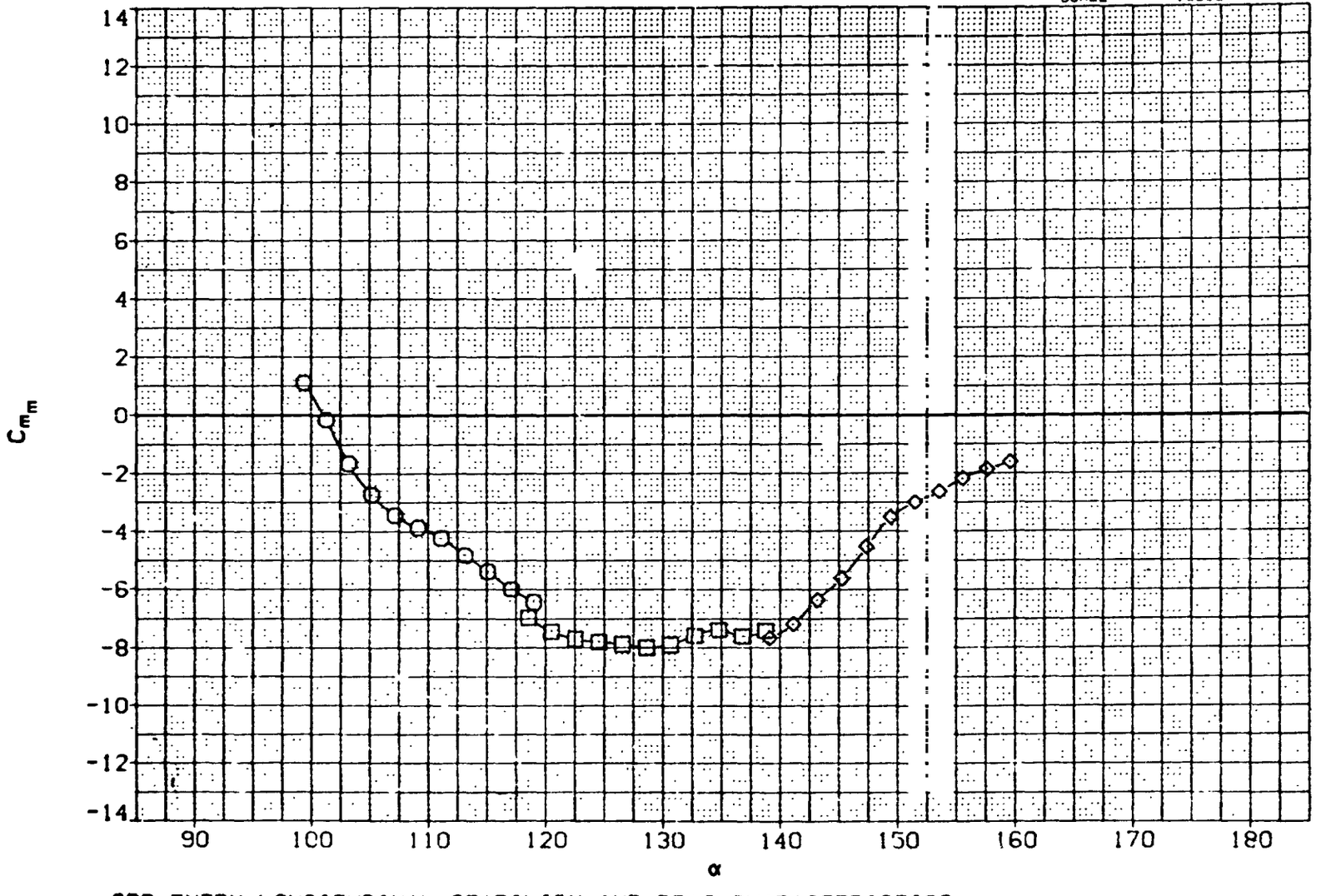
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



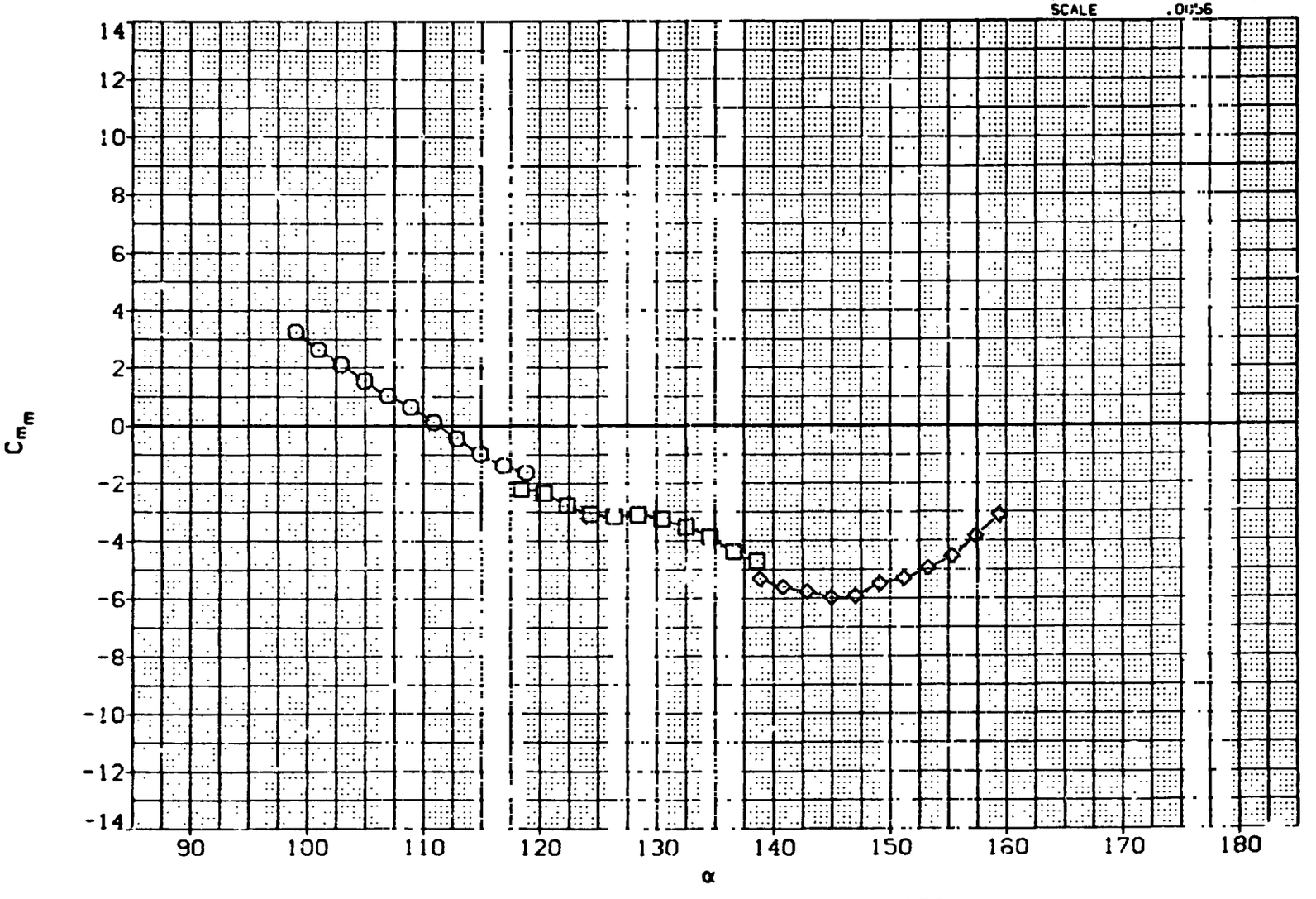
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



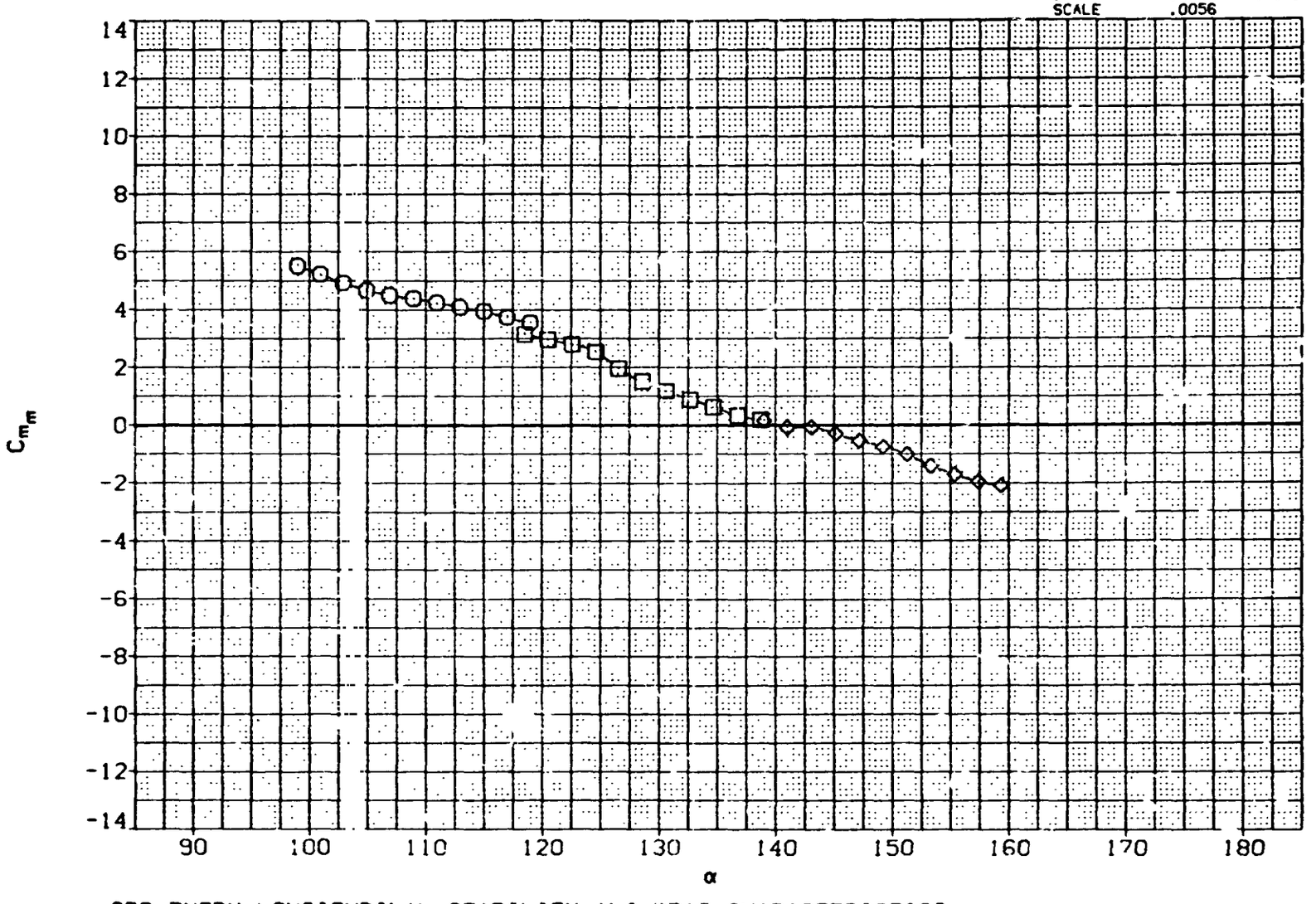
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

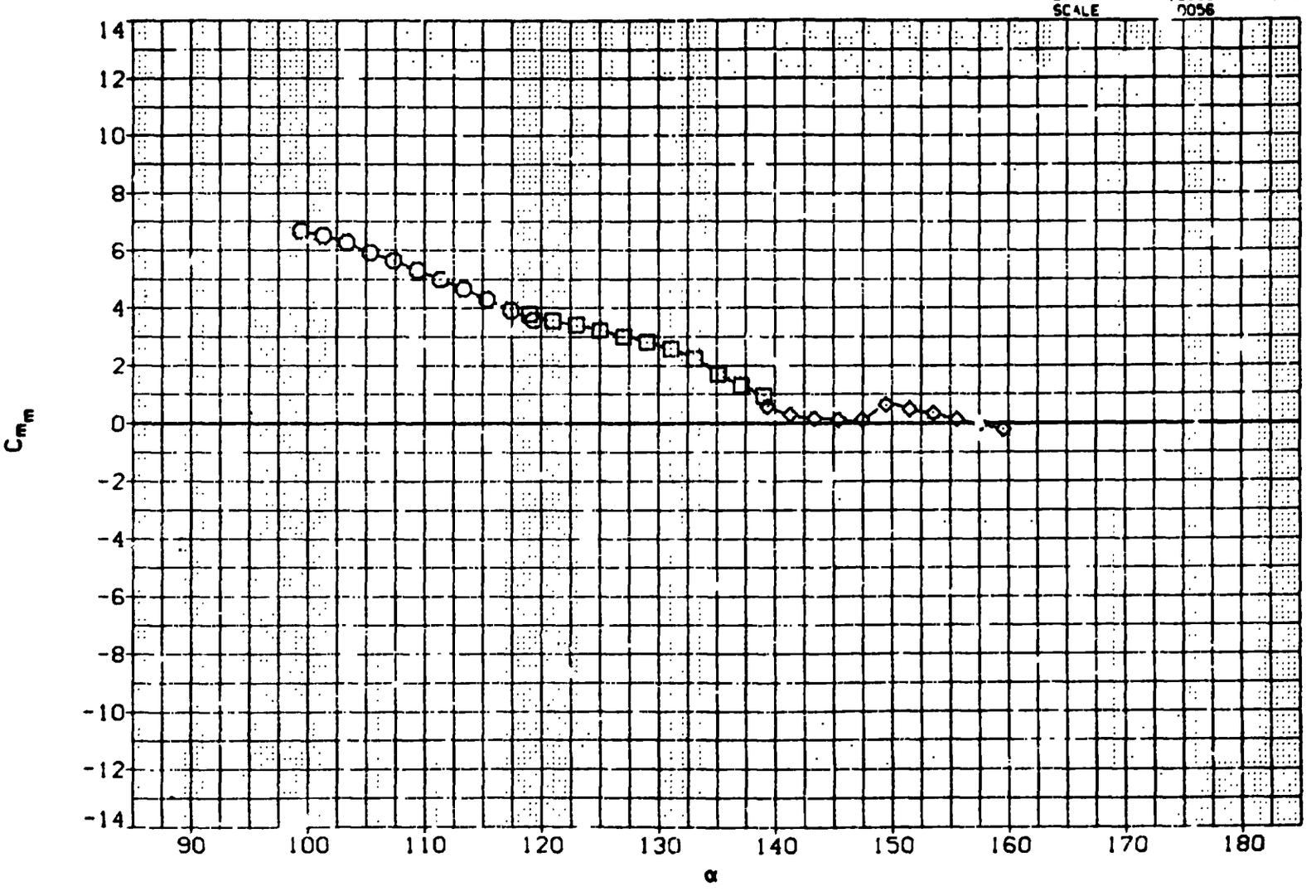


SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

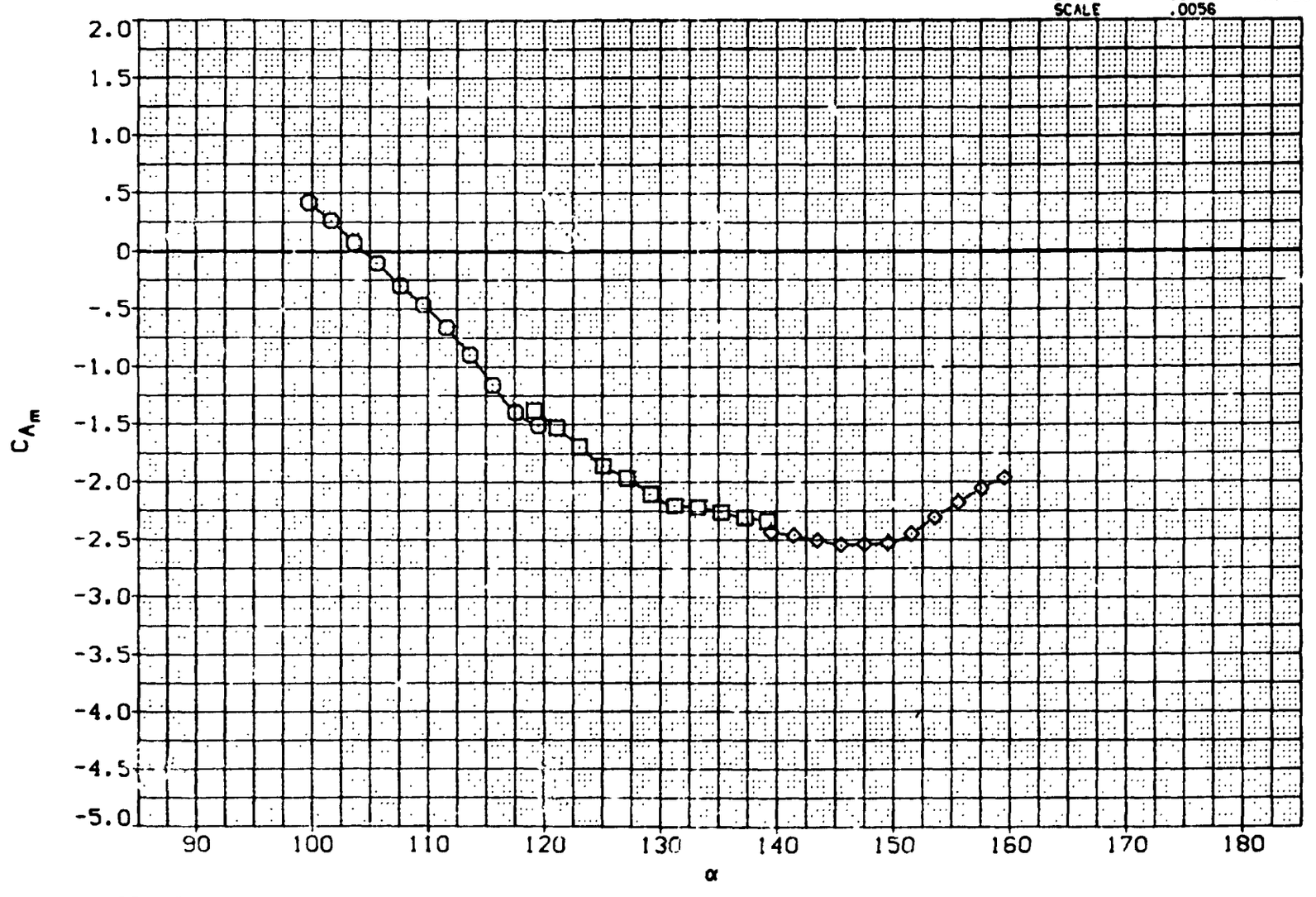


SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



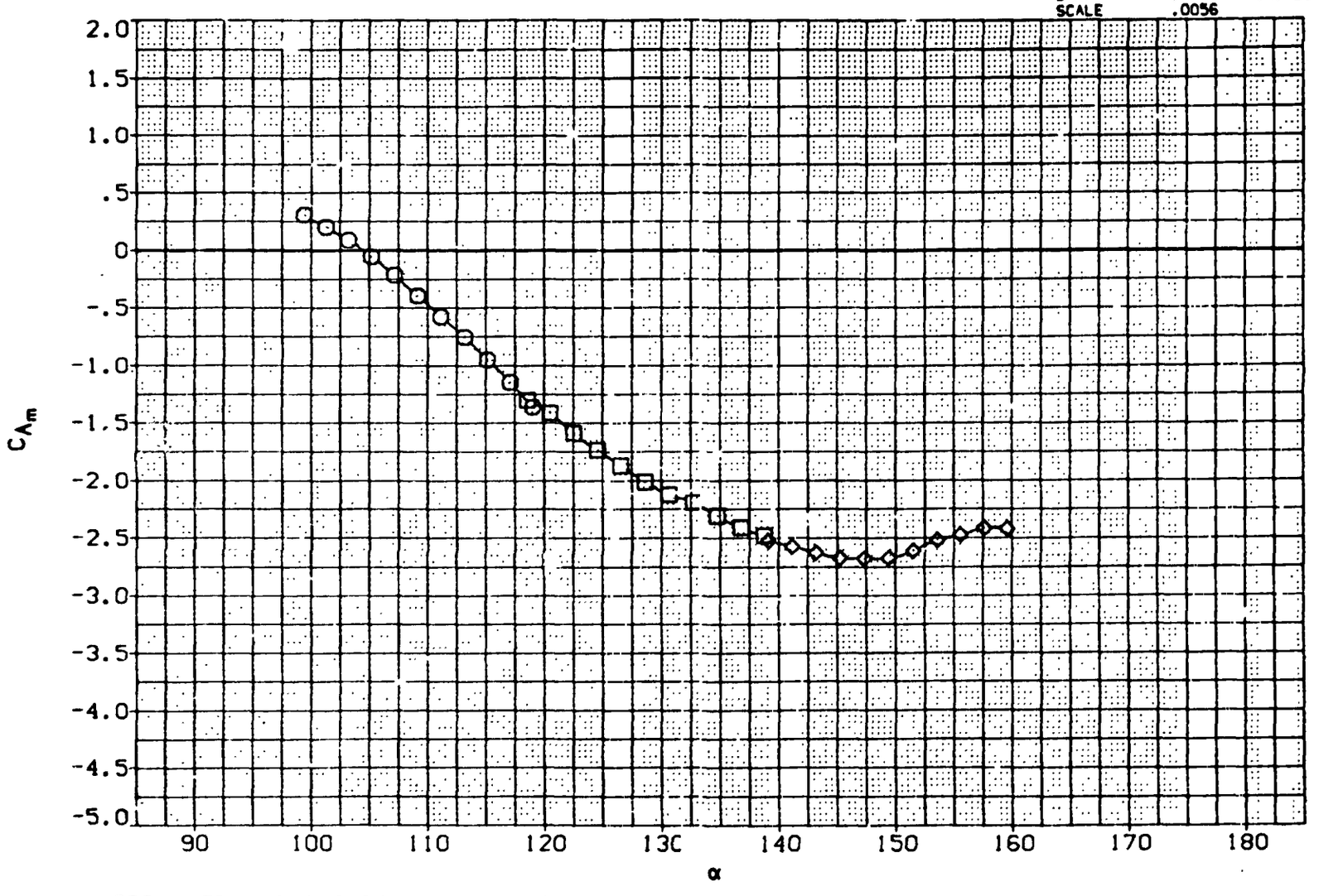
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



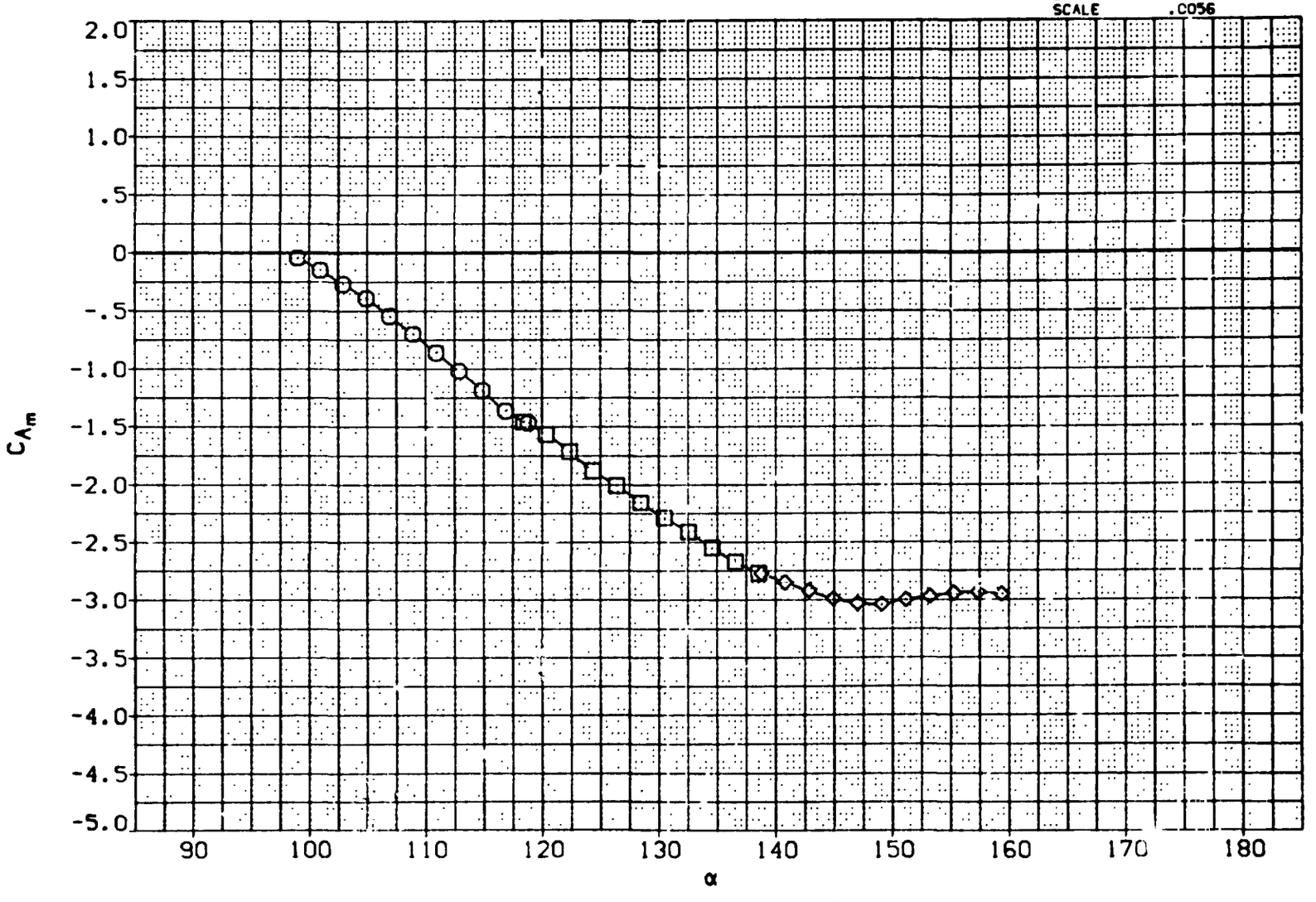
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



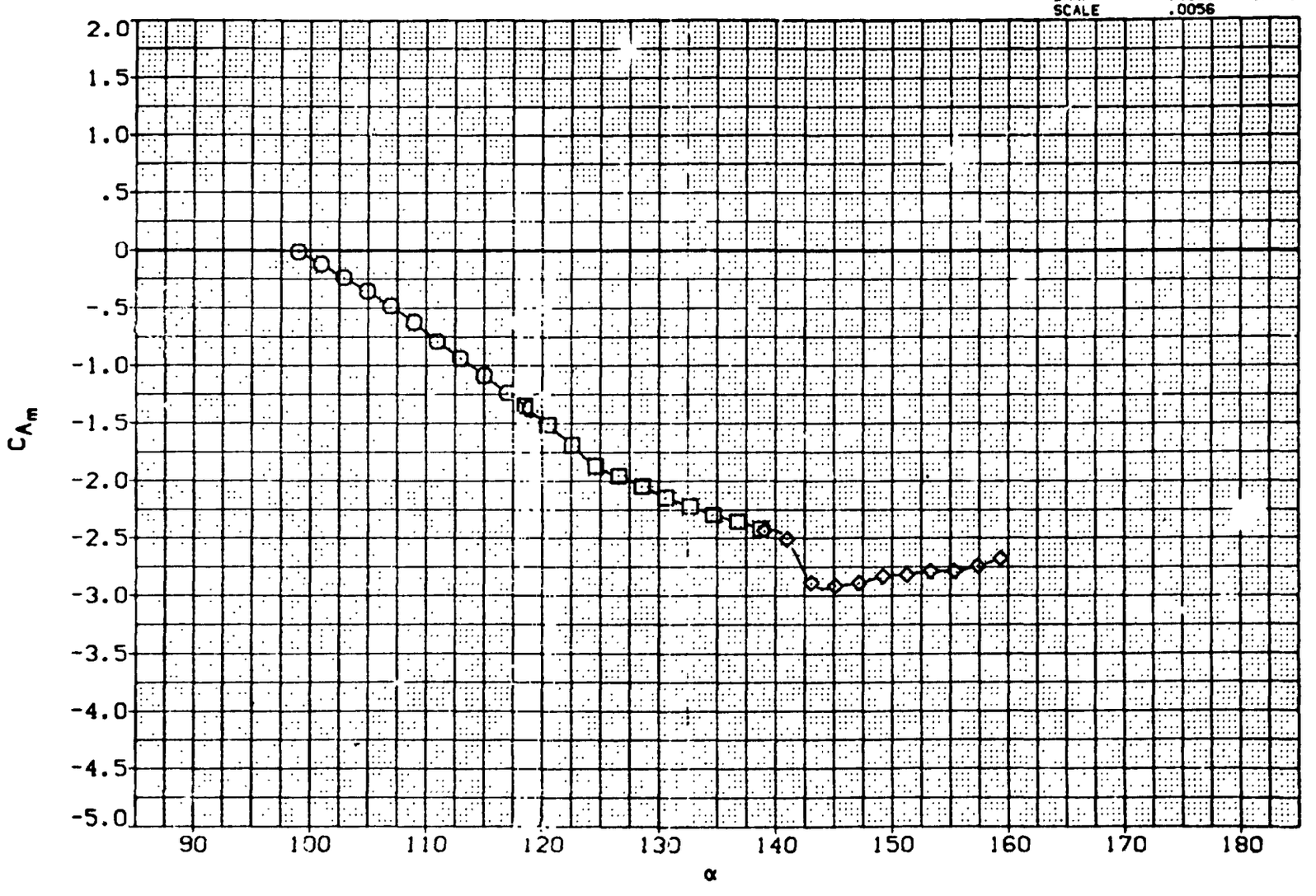
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

M = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)' STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



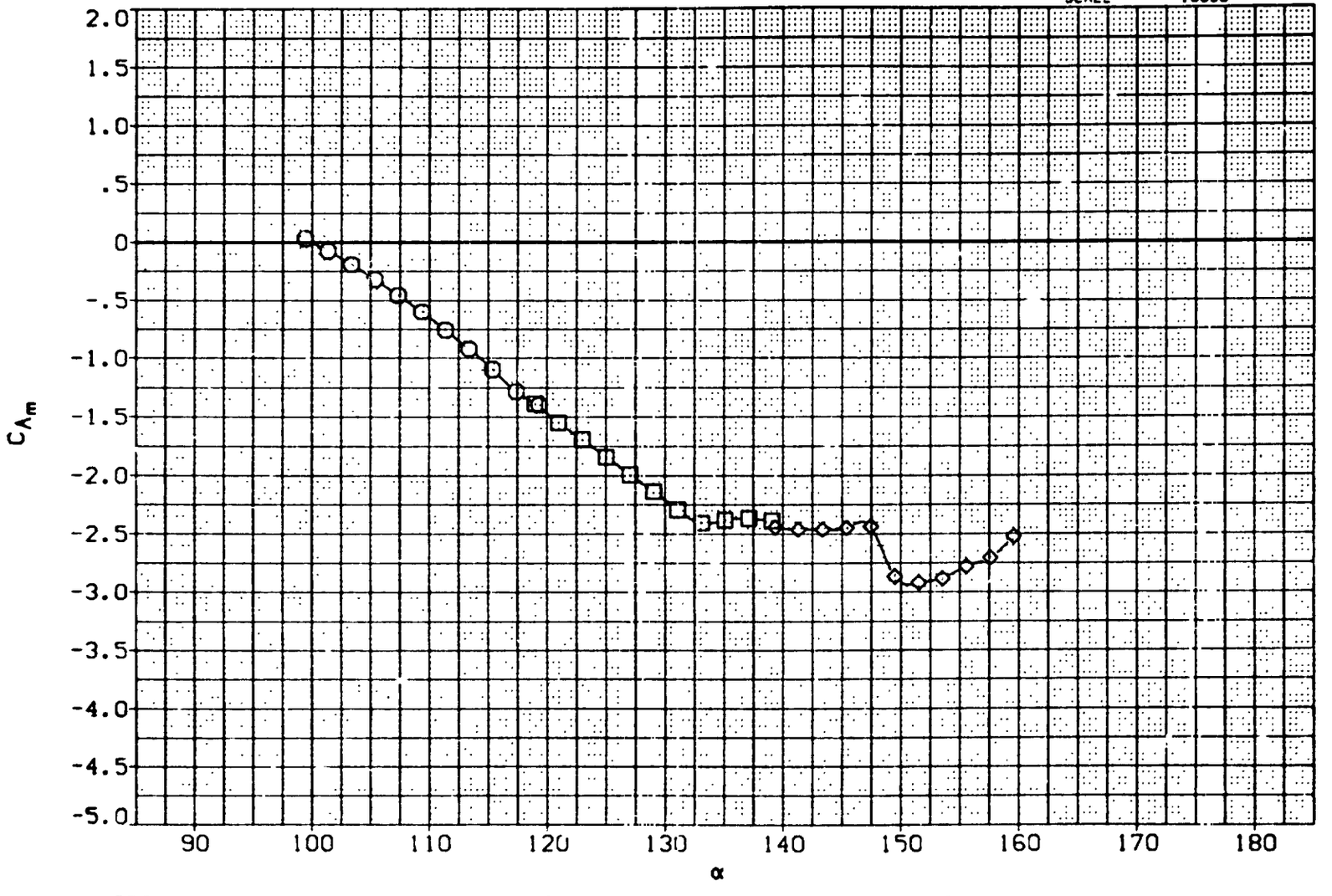
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



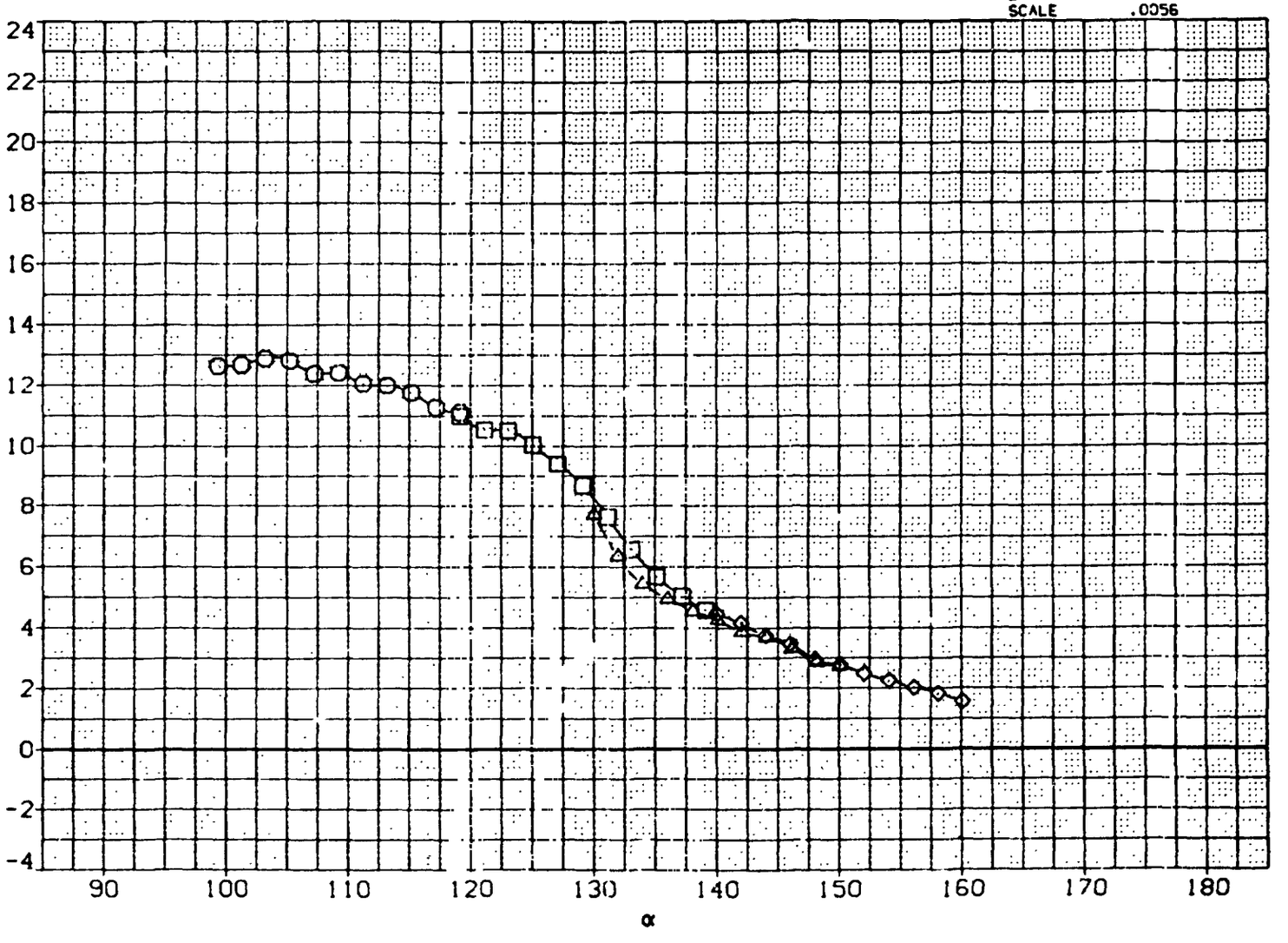
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

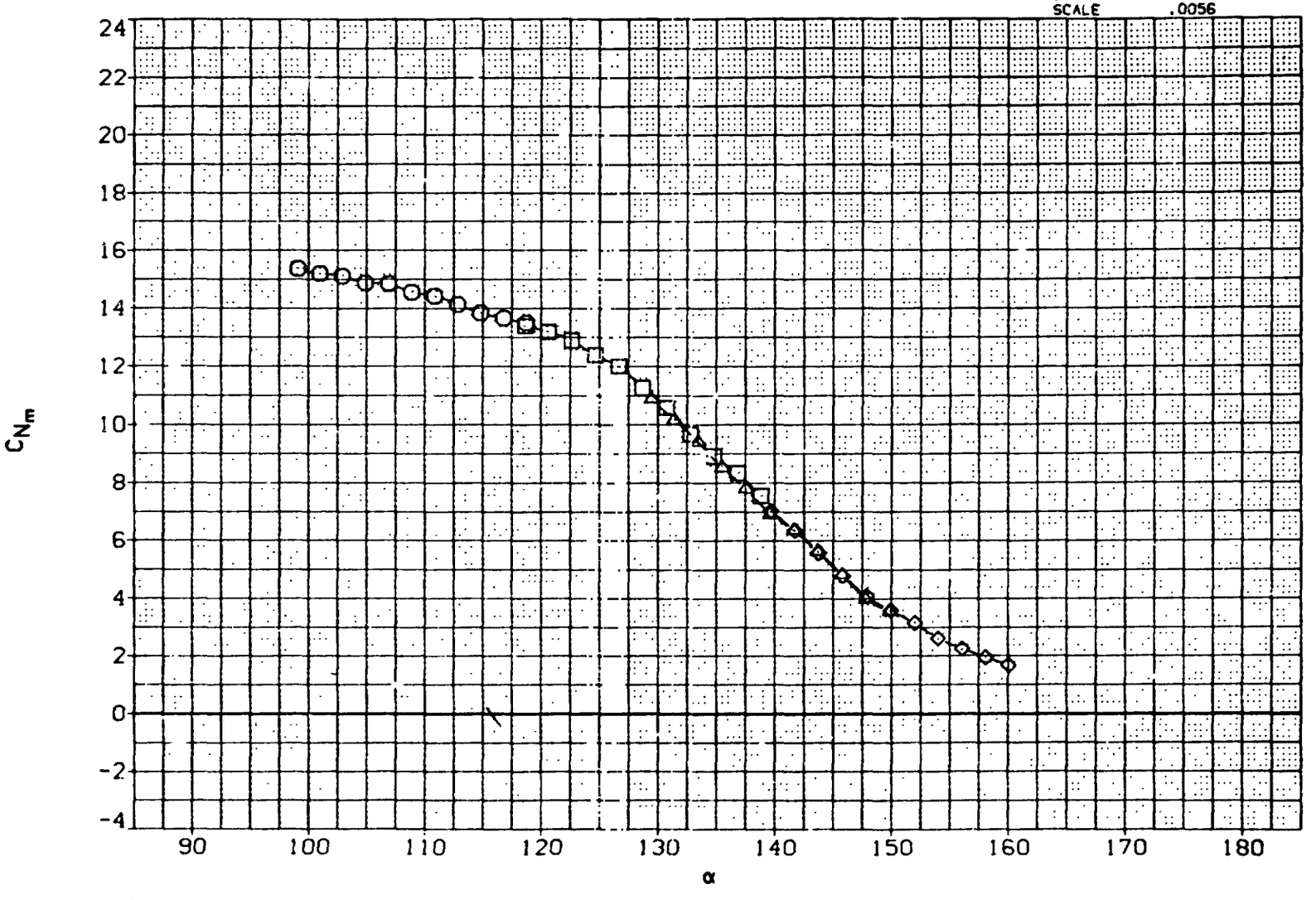


SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



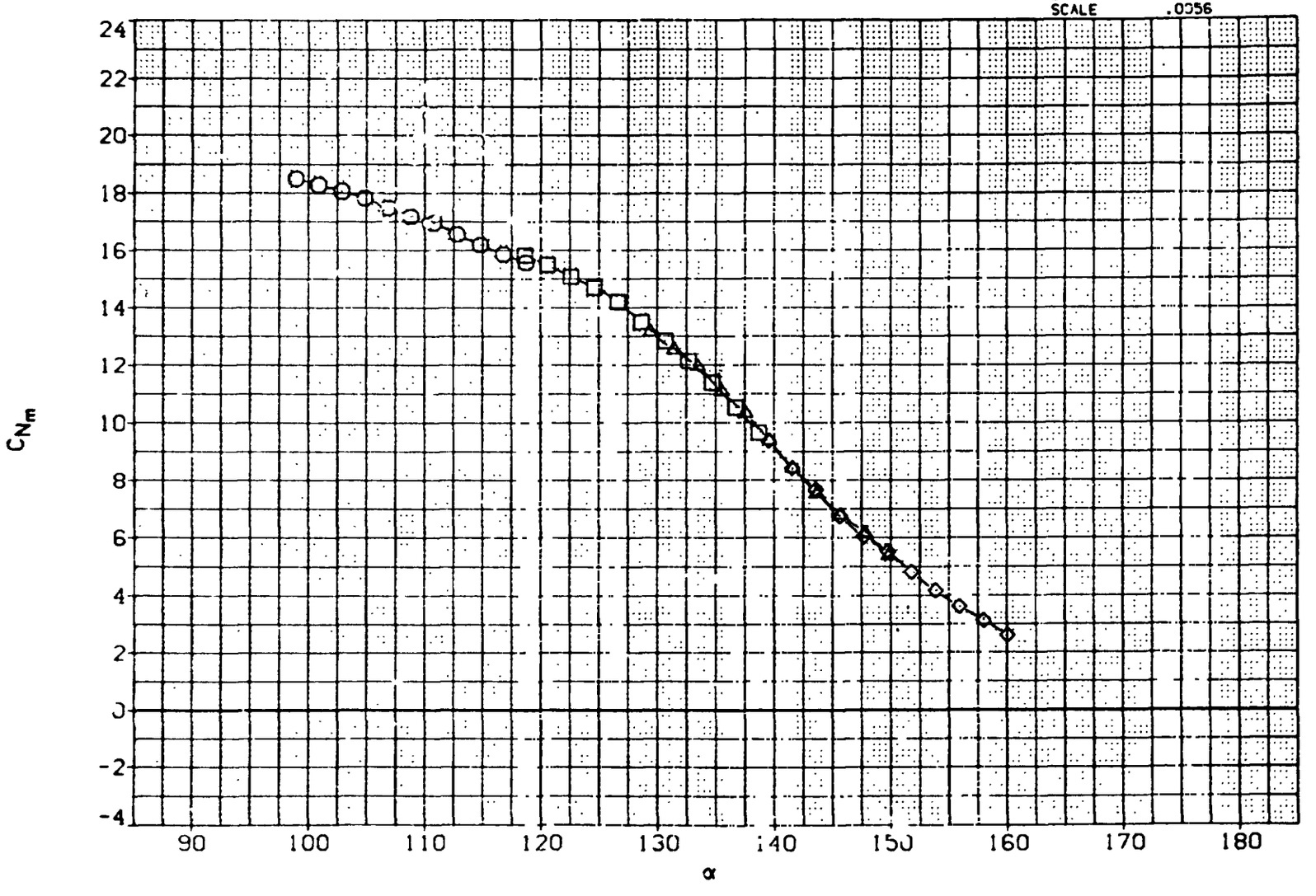
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



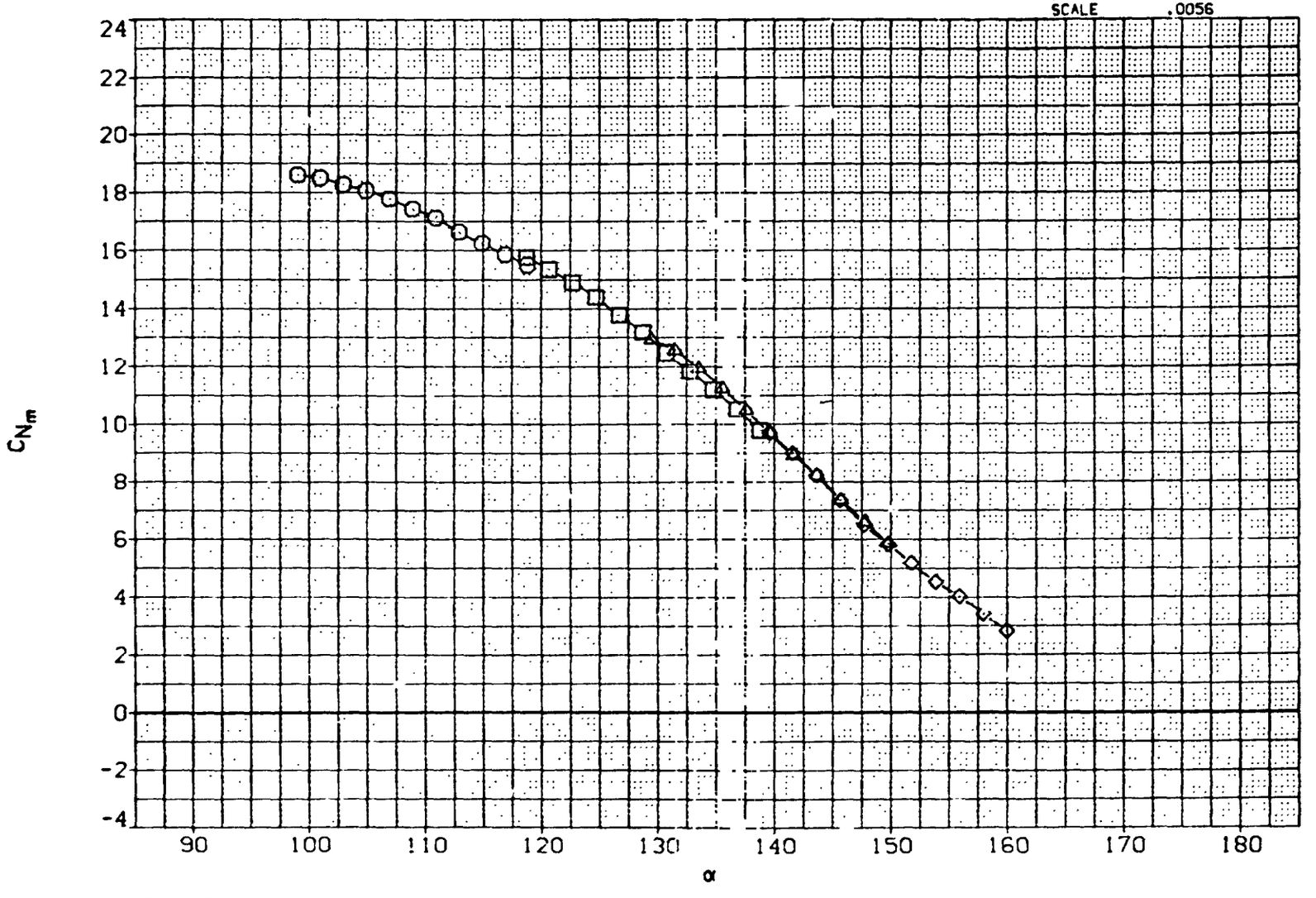
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



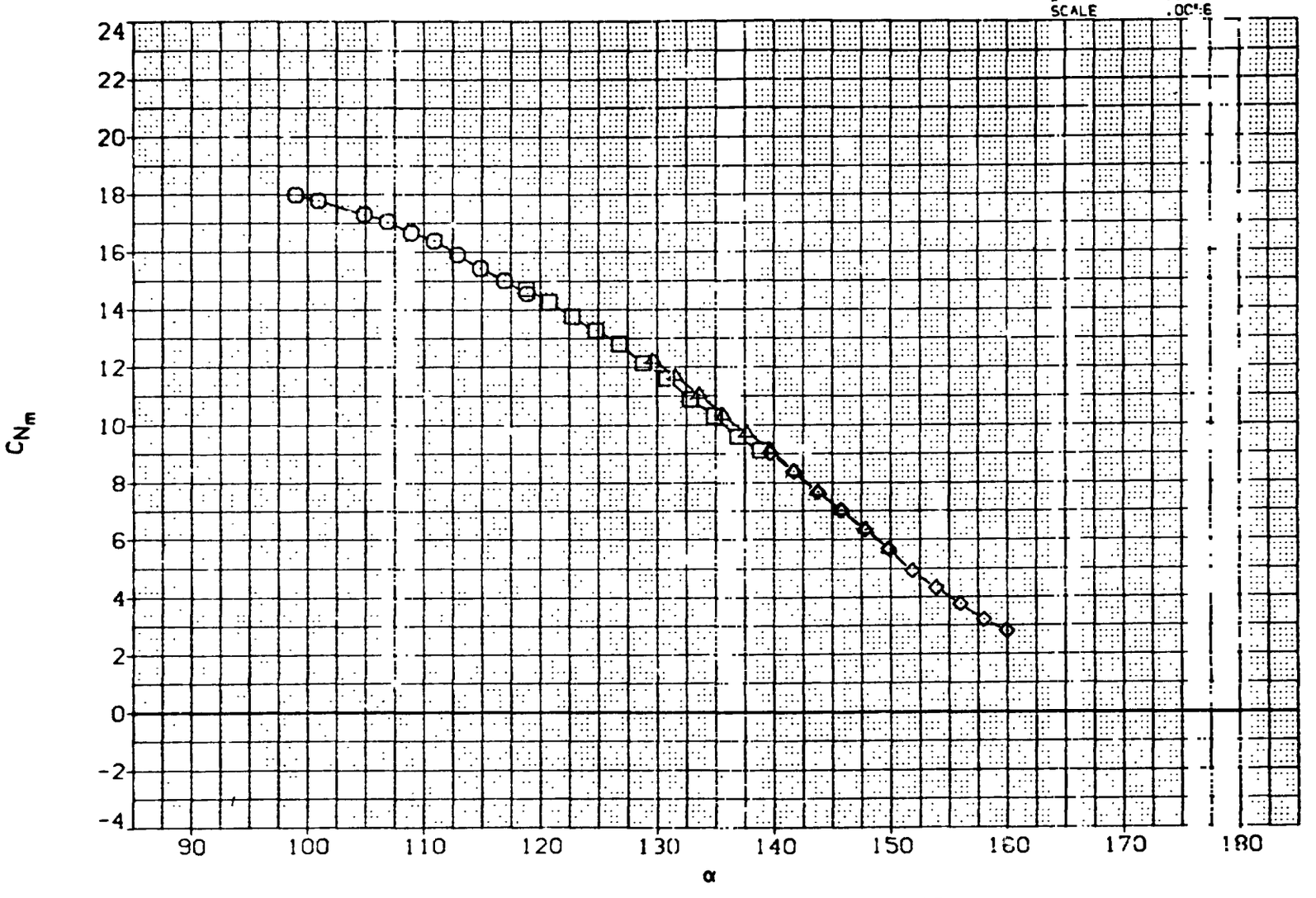
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0016	



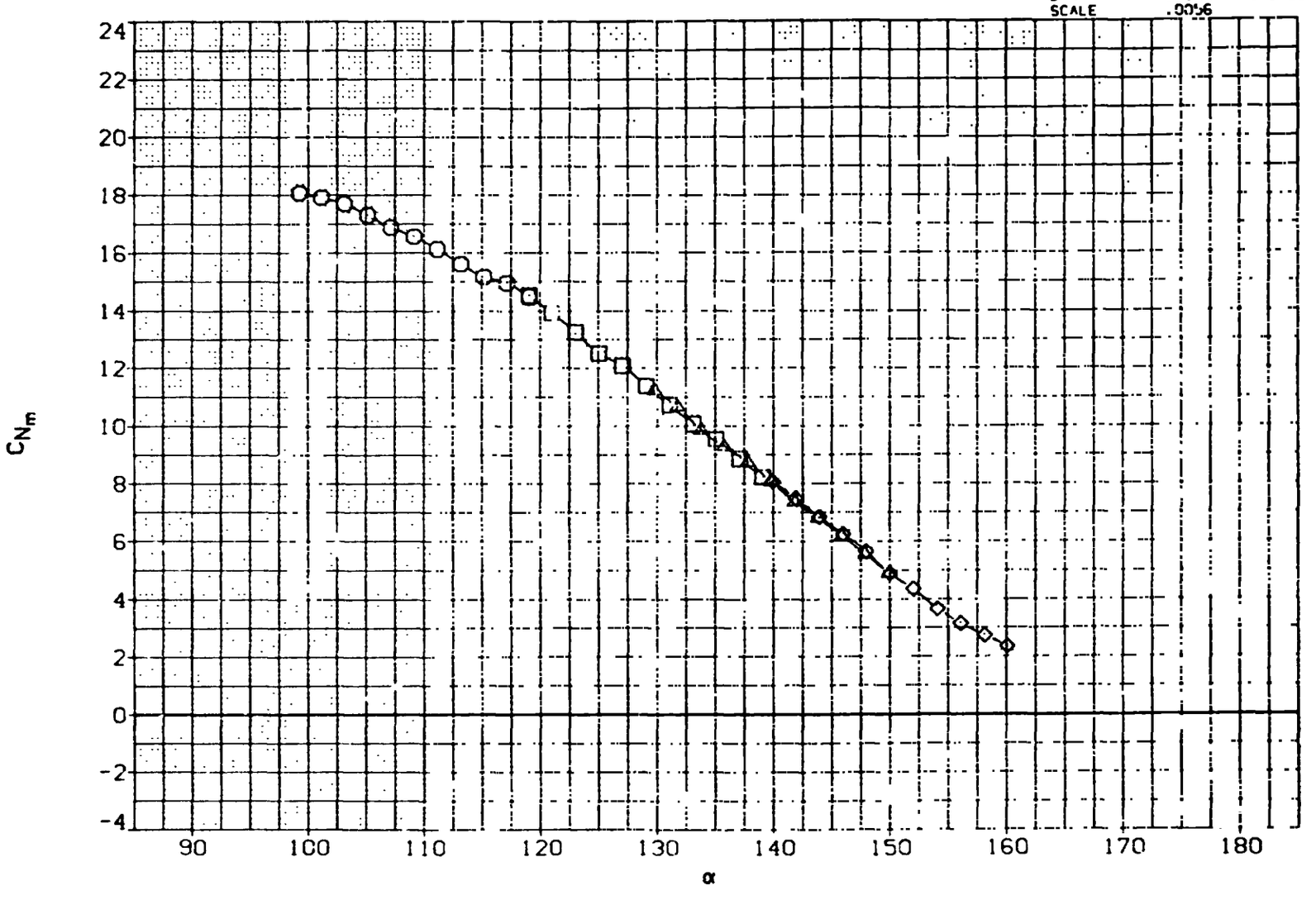
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



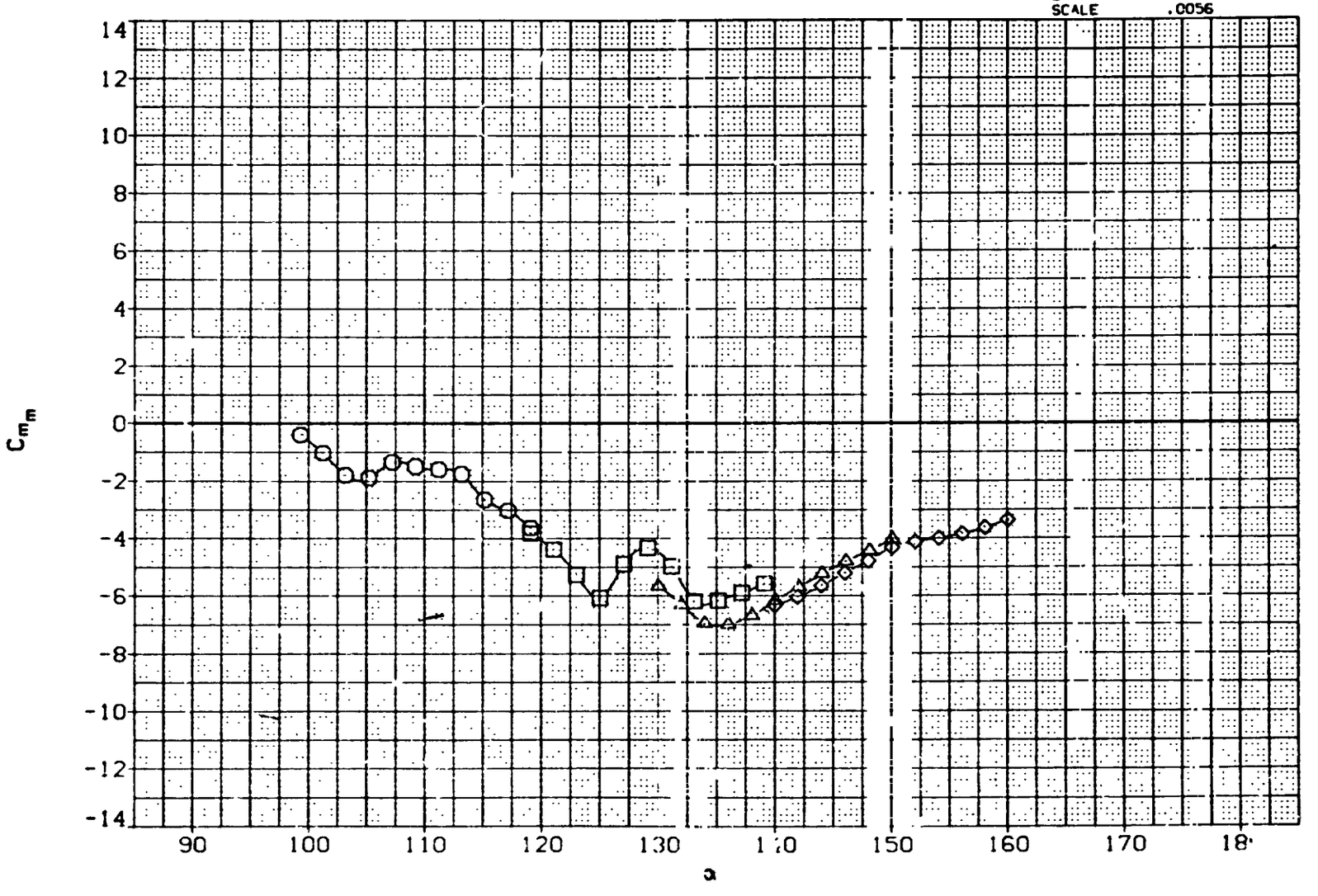
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



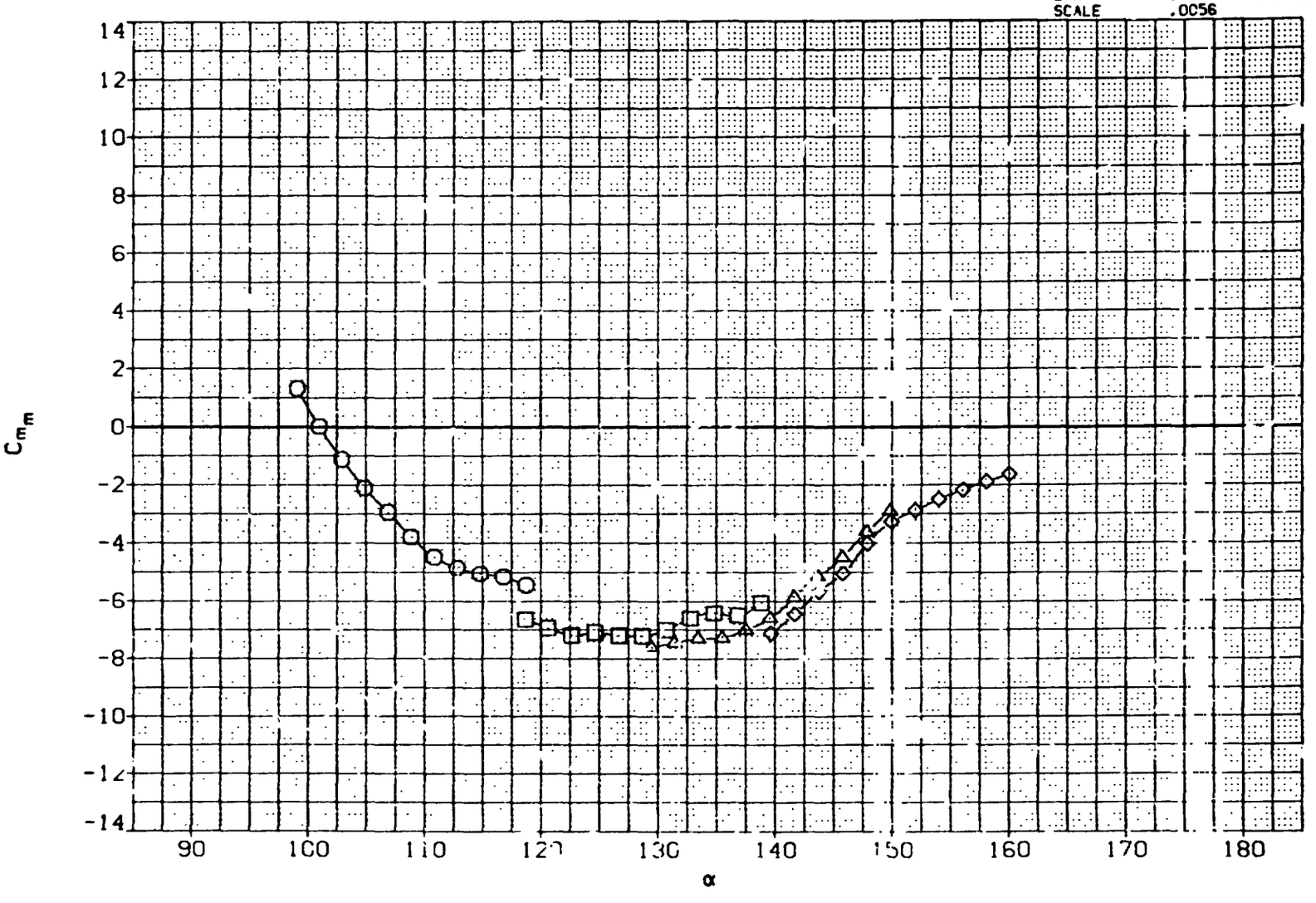
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

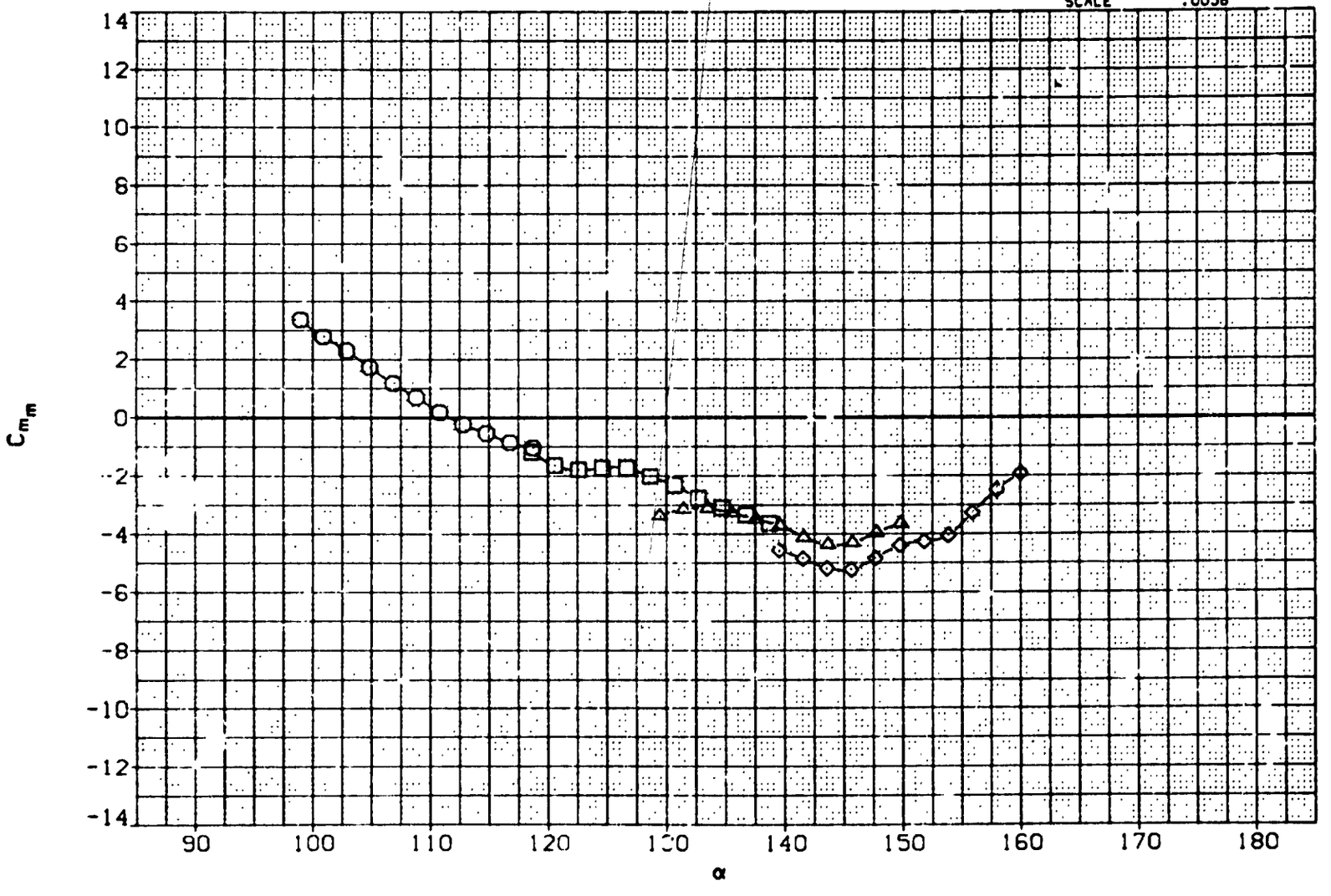


SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREP	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.F
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



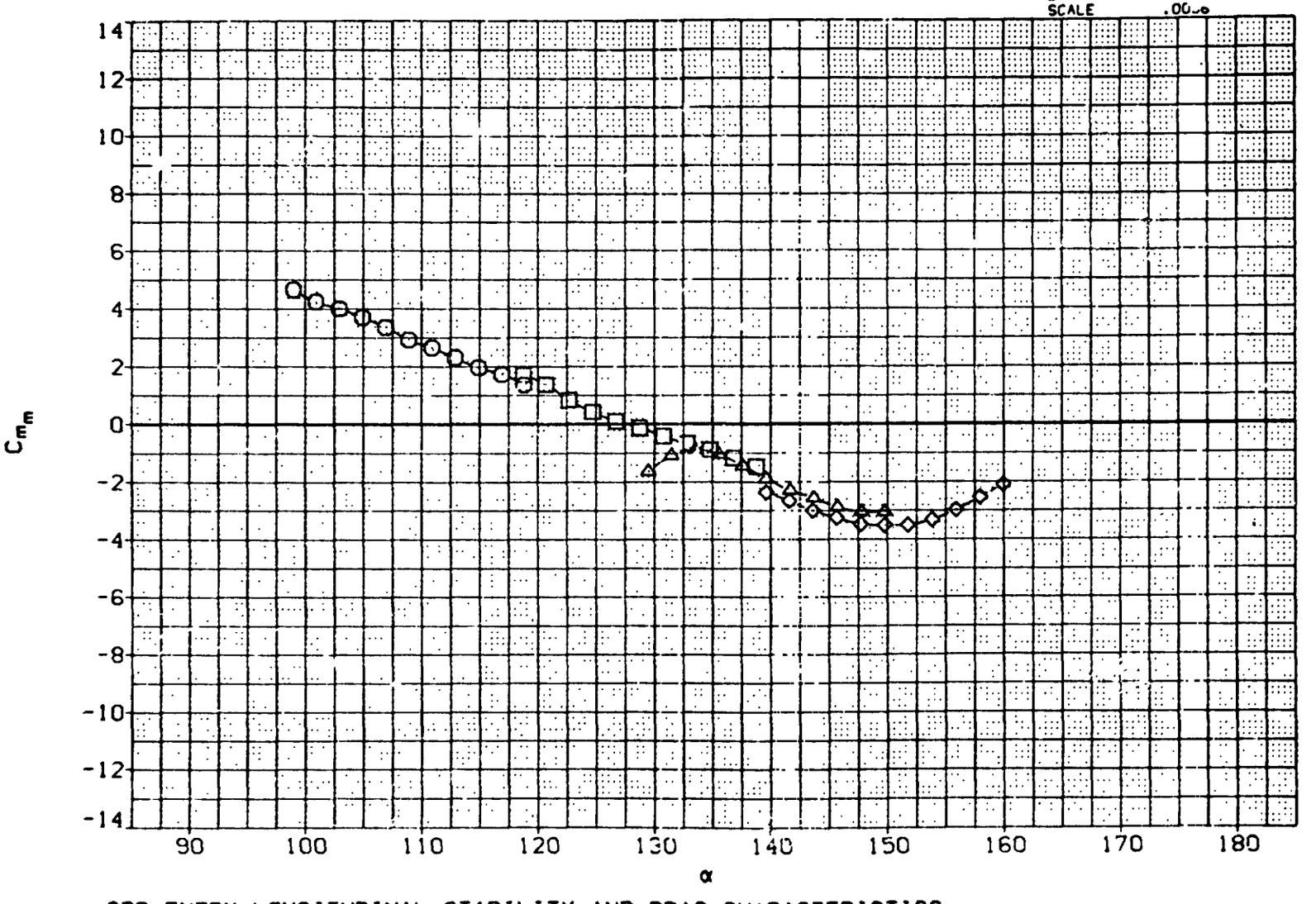
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	EETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0000	



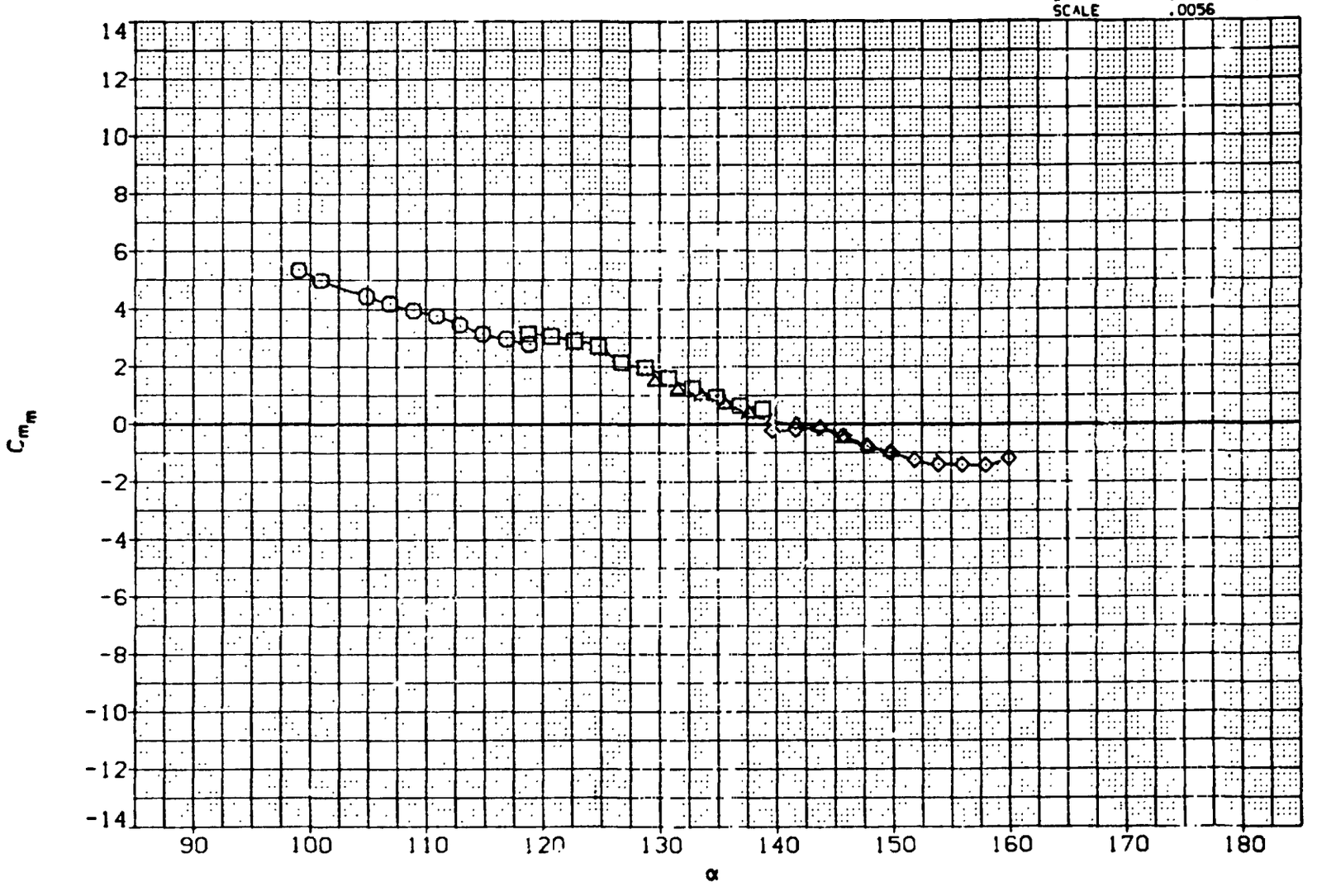
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



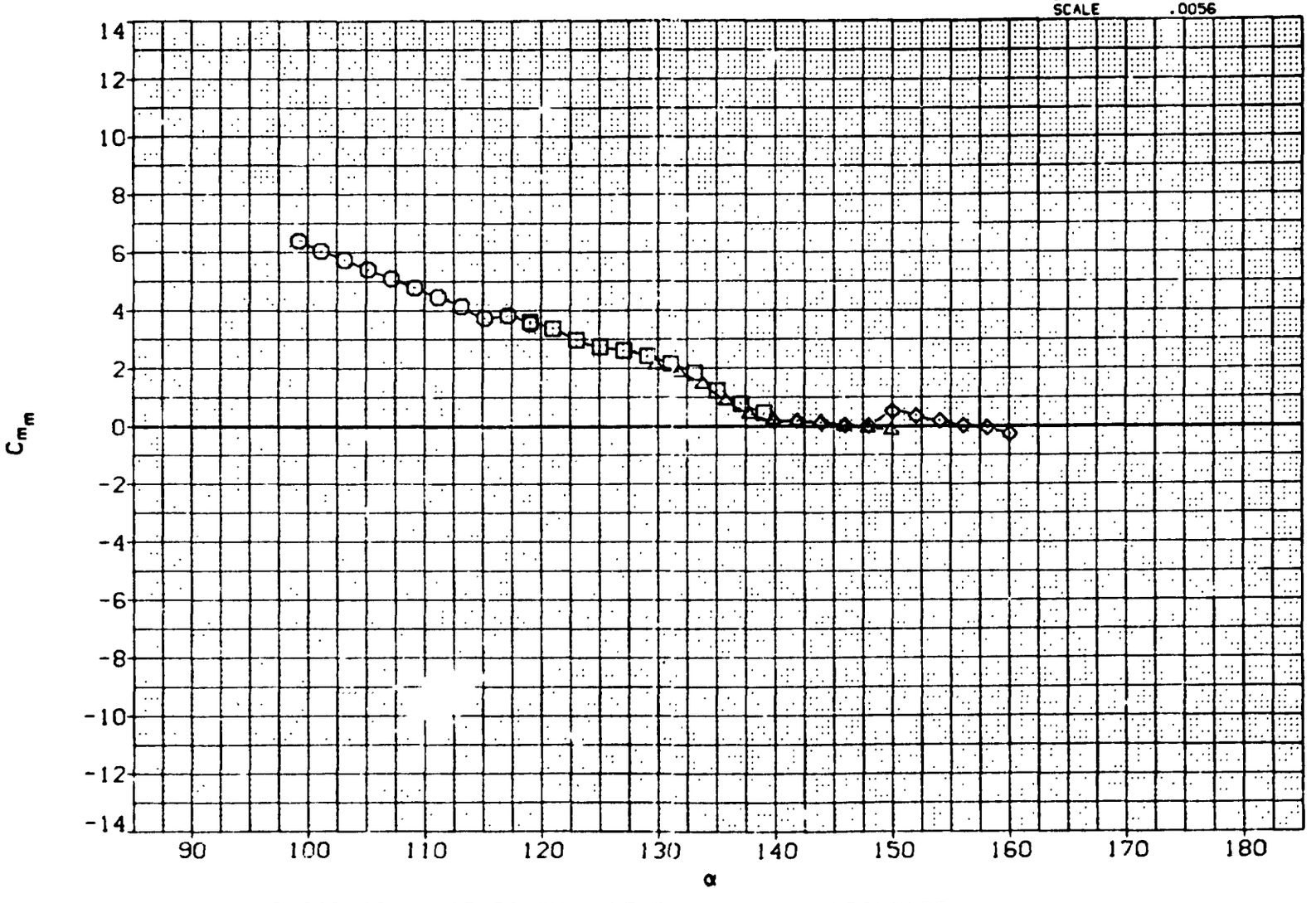
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



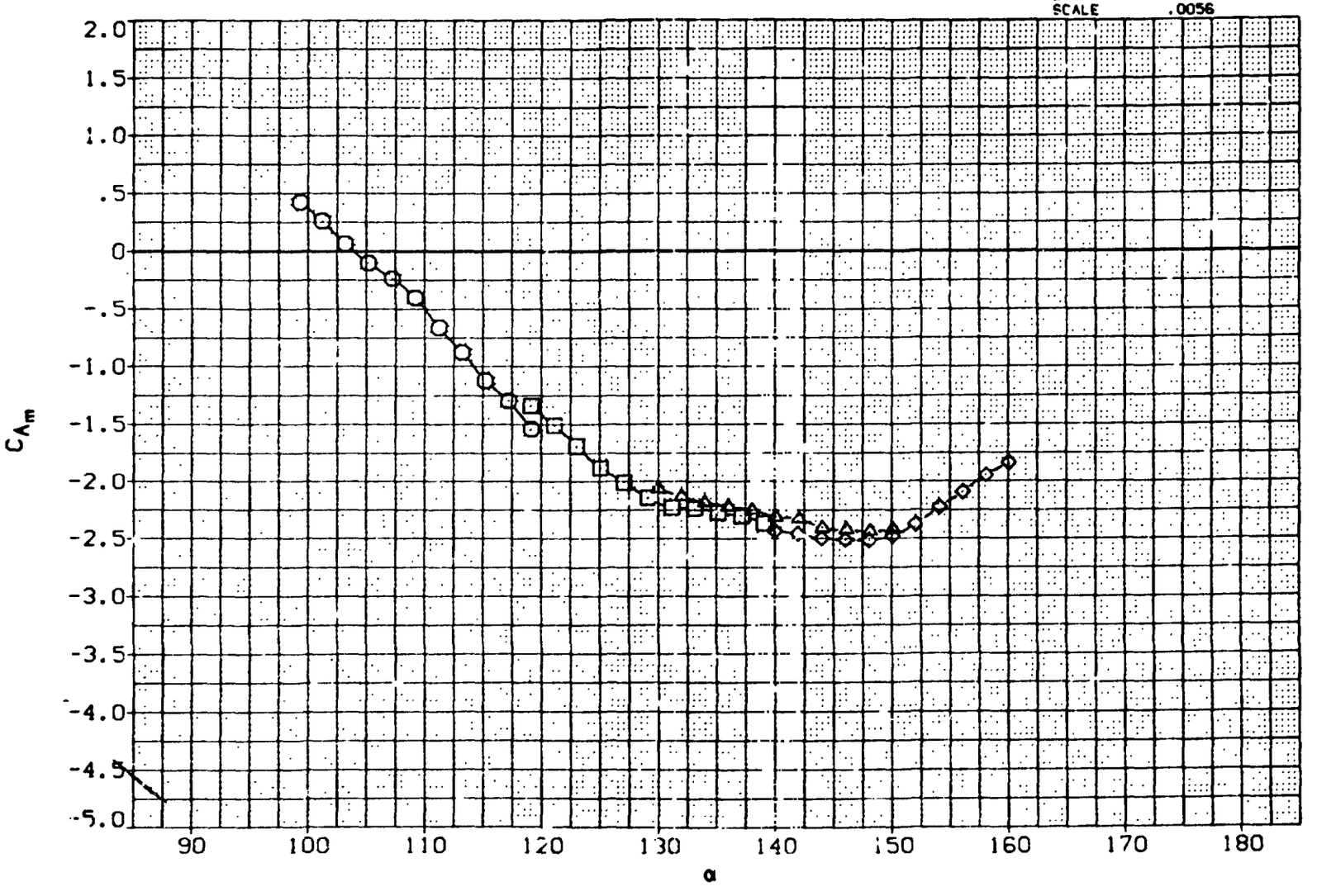
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



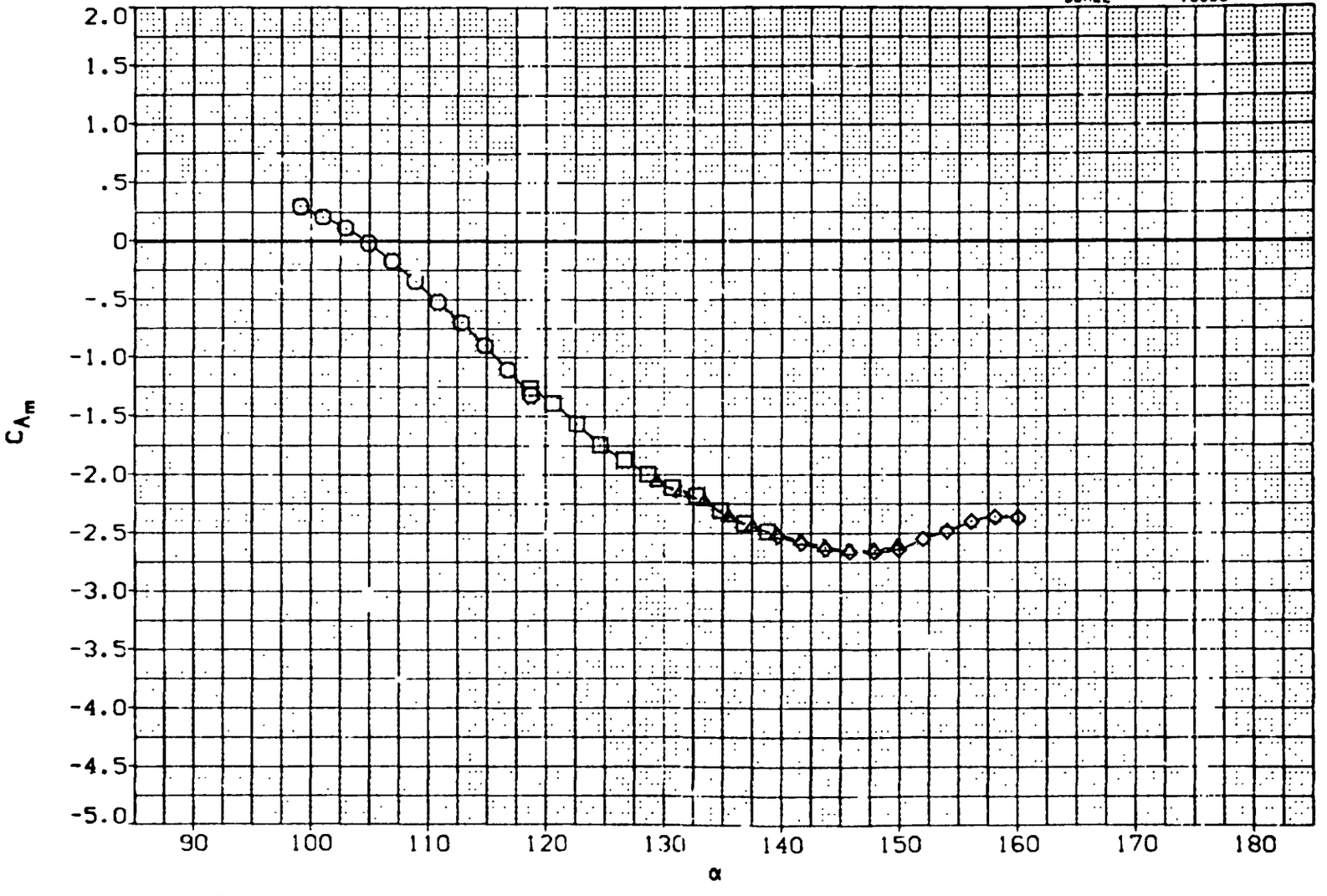
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



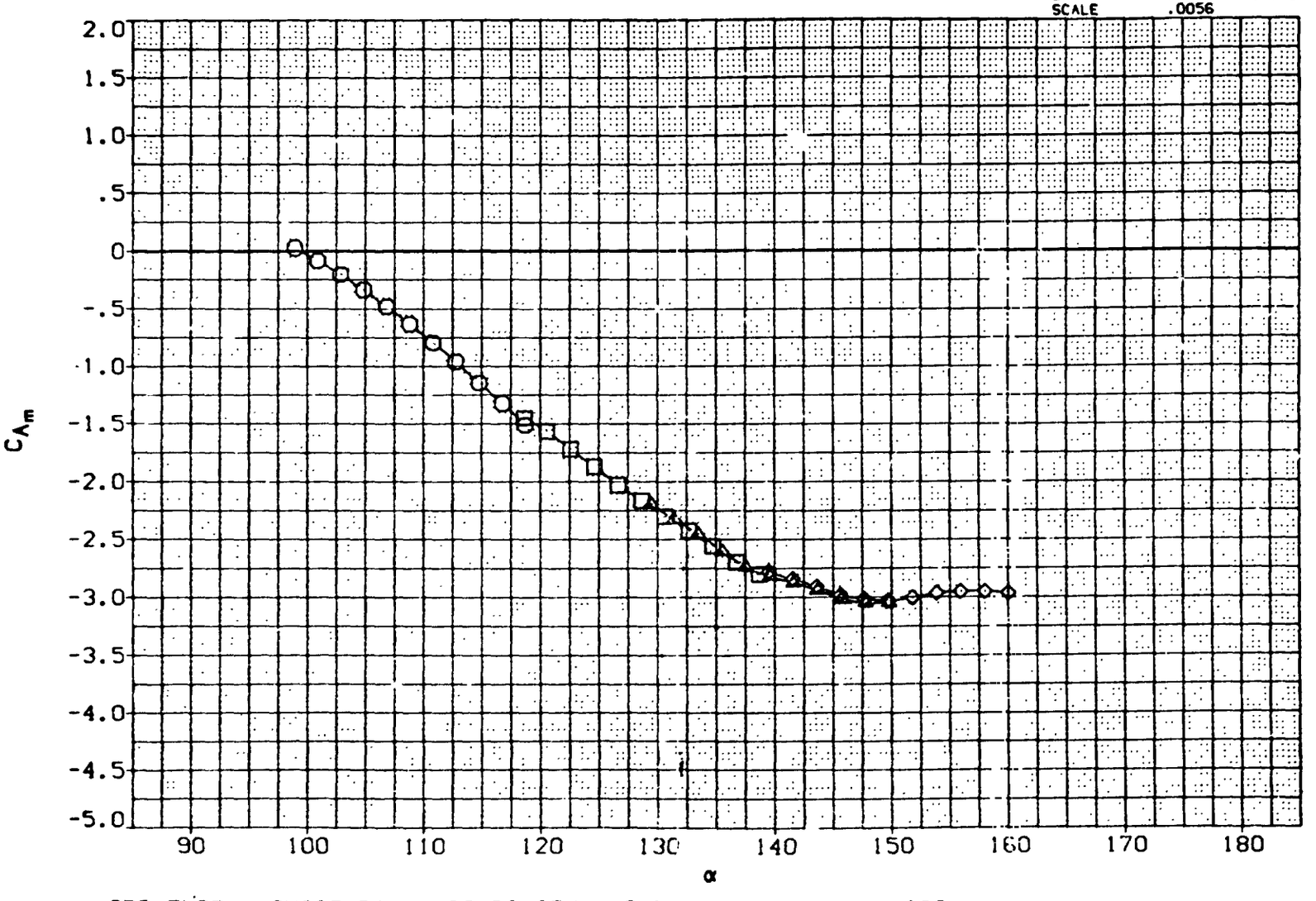
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



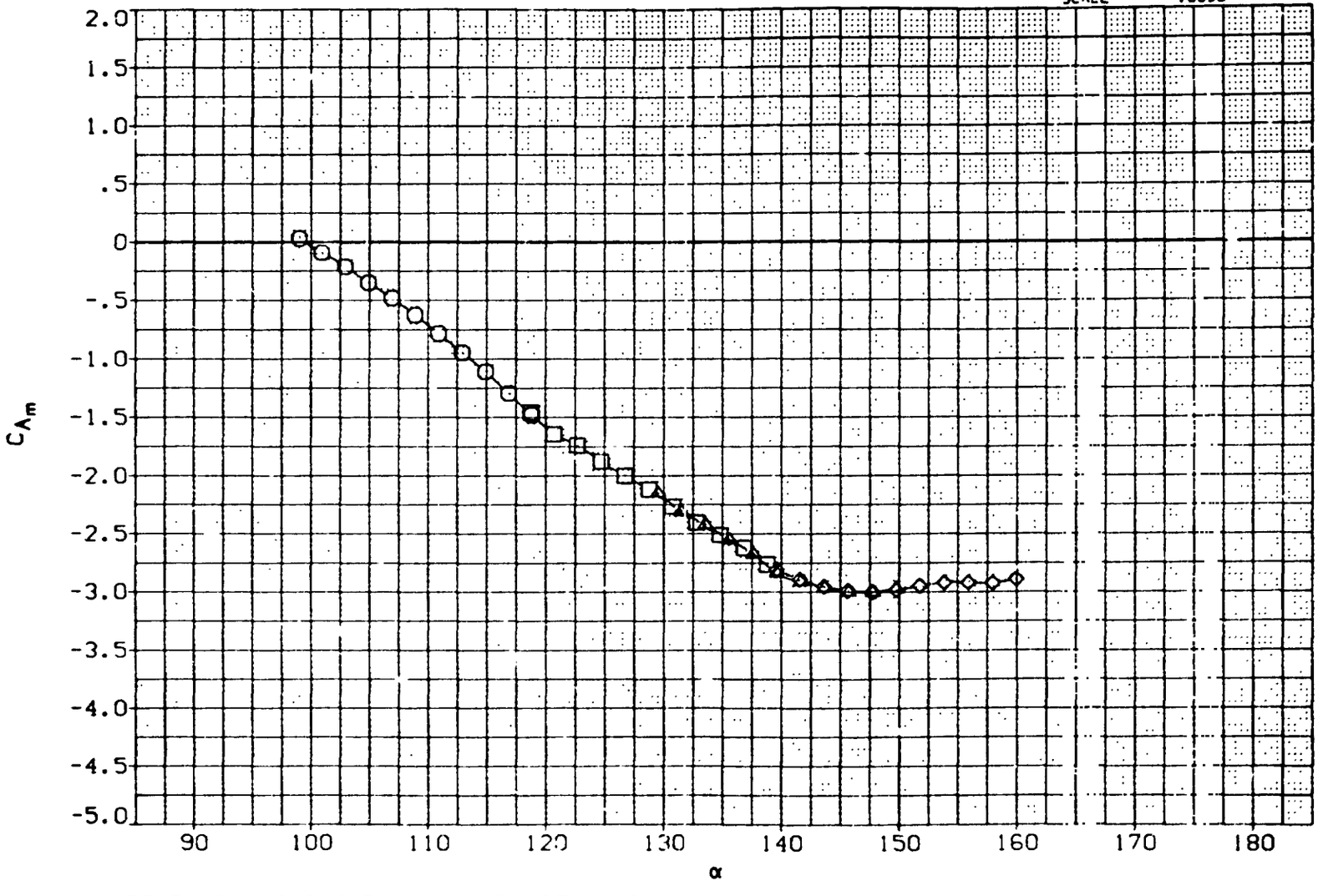
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



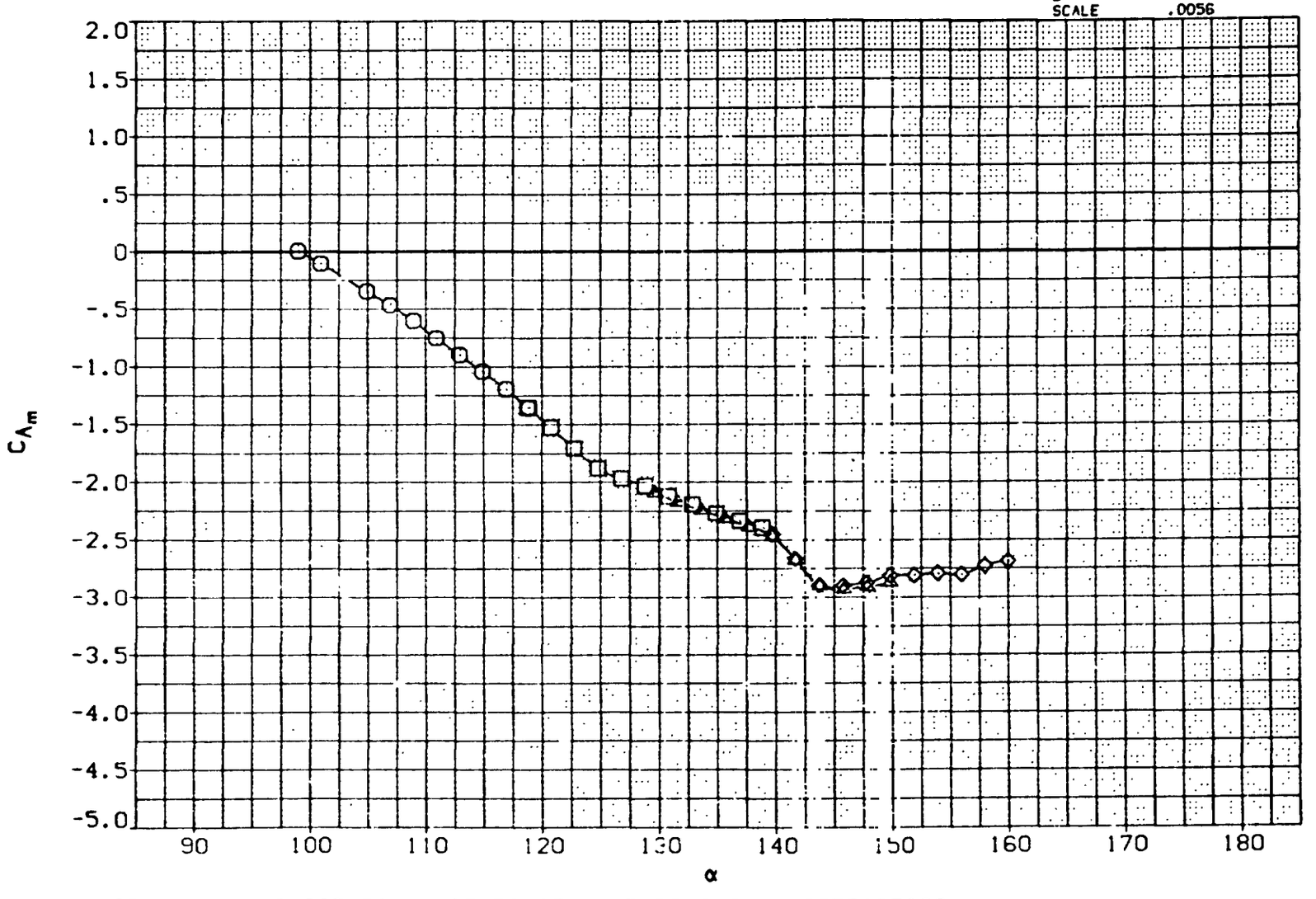
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

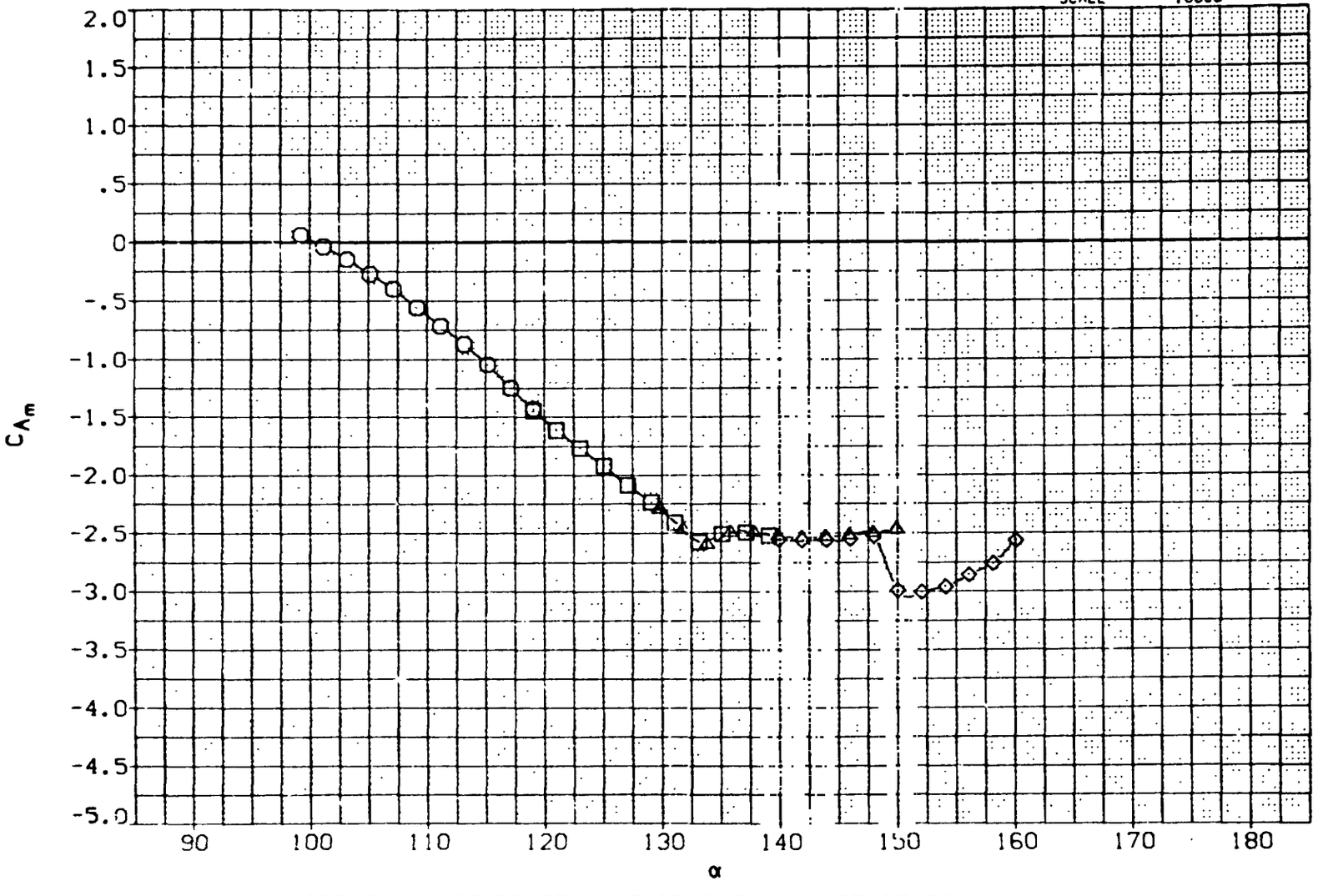


SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(*)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



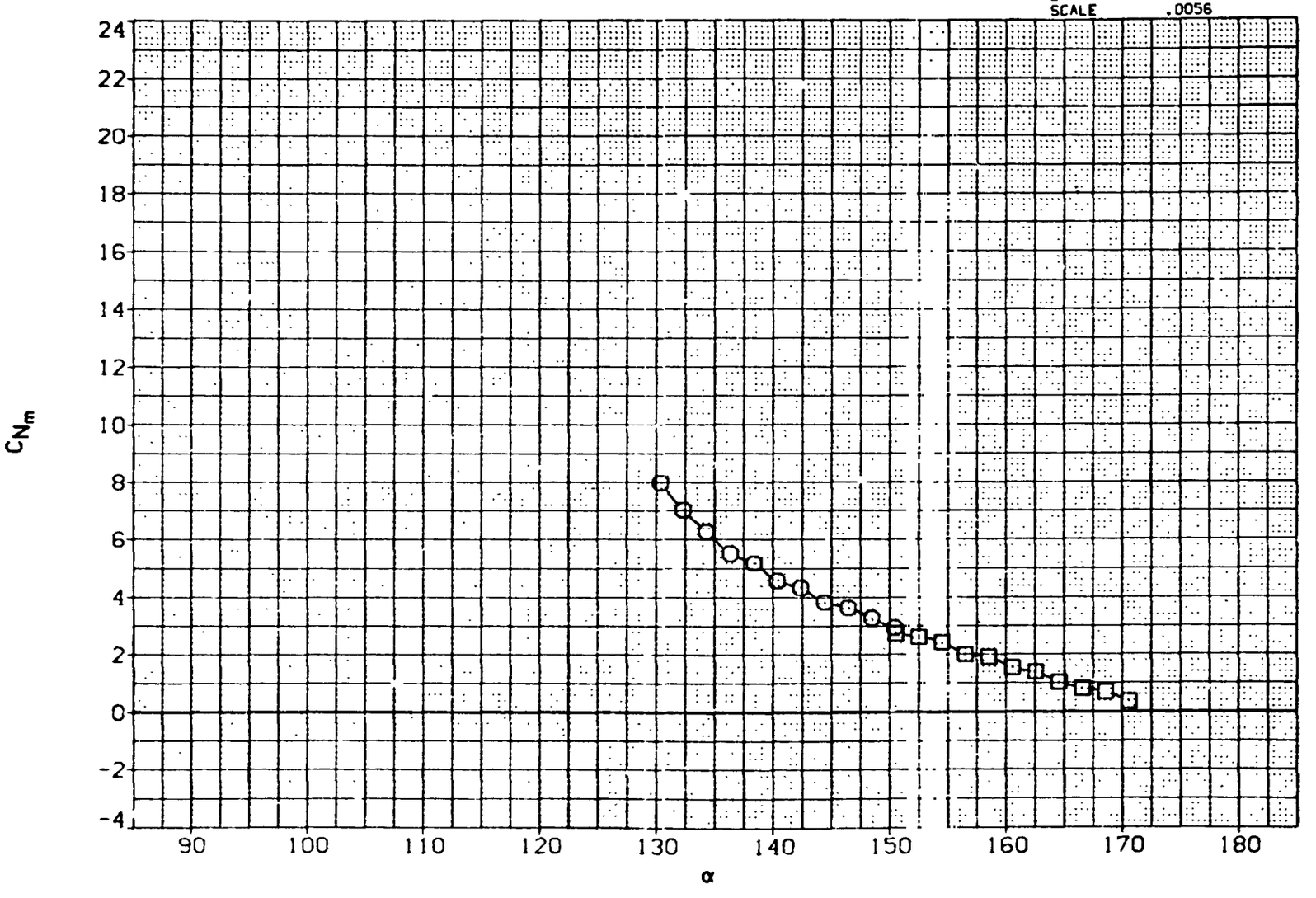
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. N8REM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. N8REM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



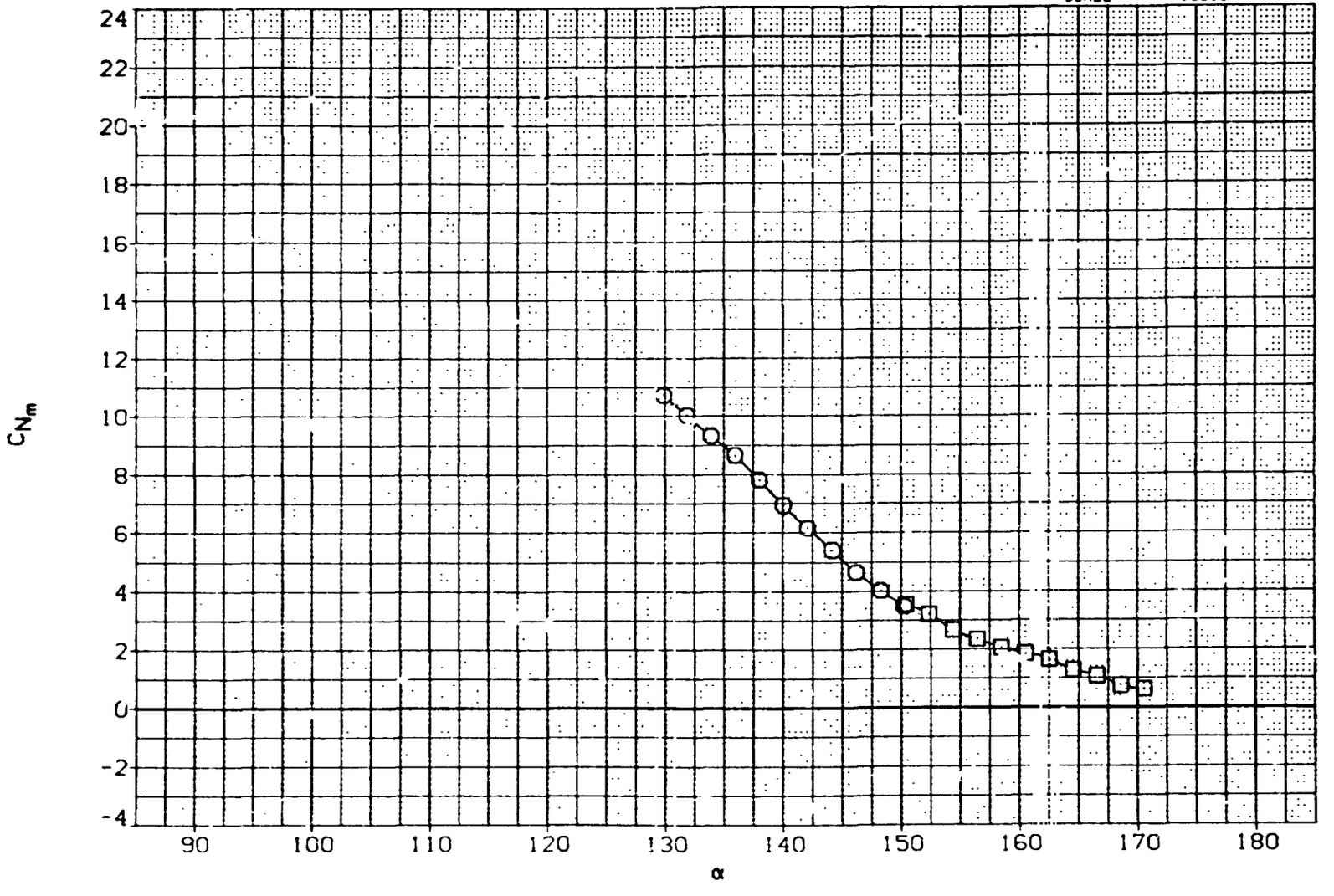
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



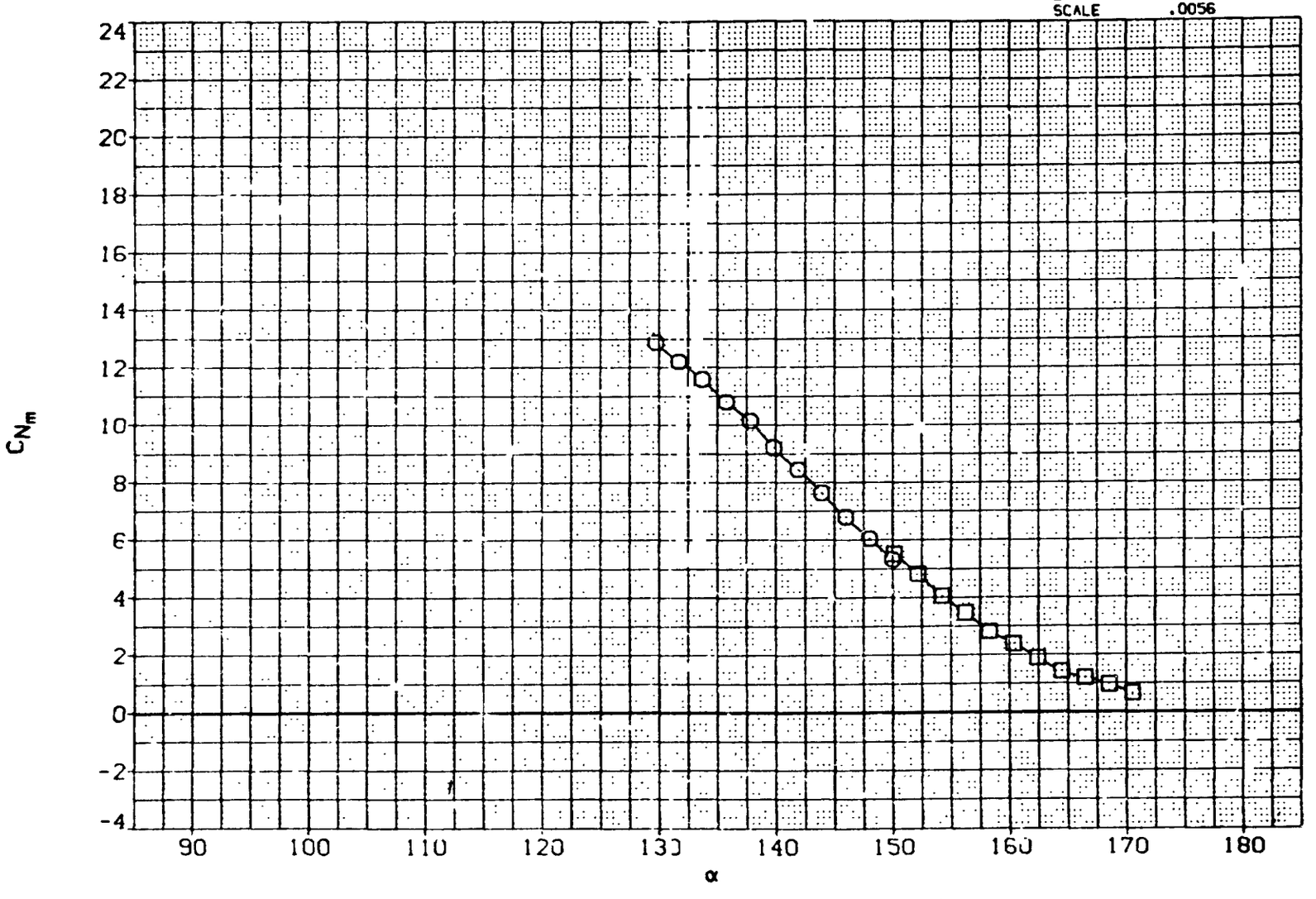
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



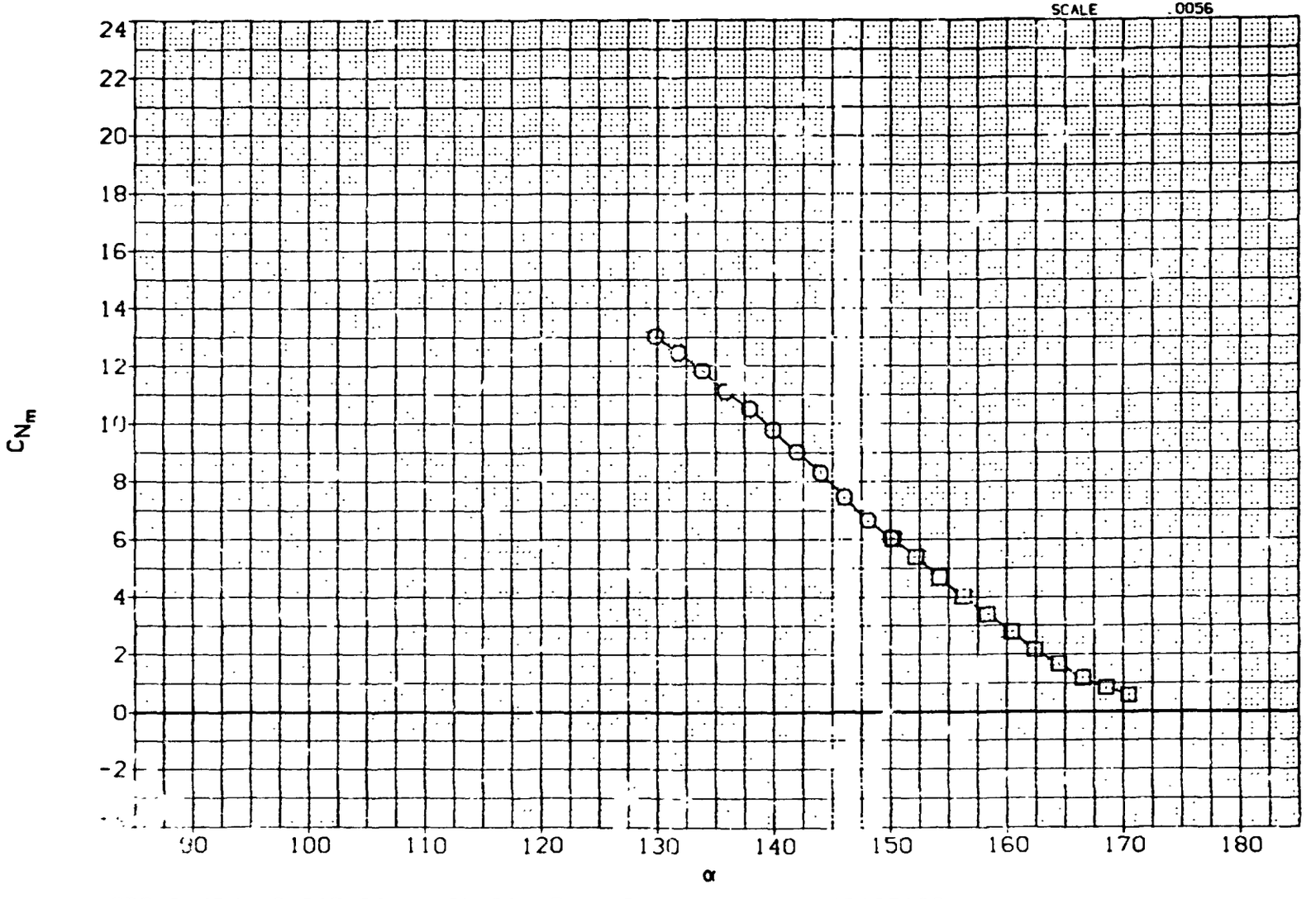
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



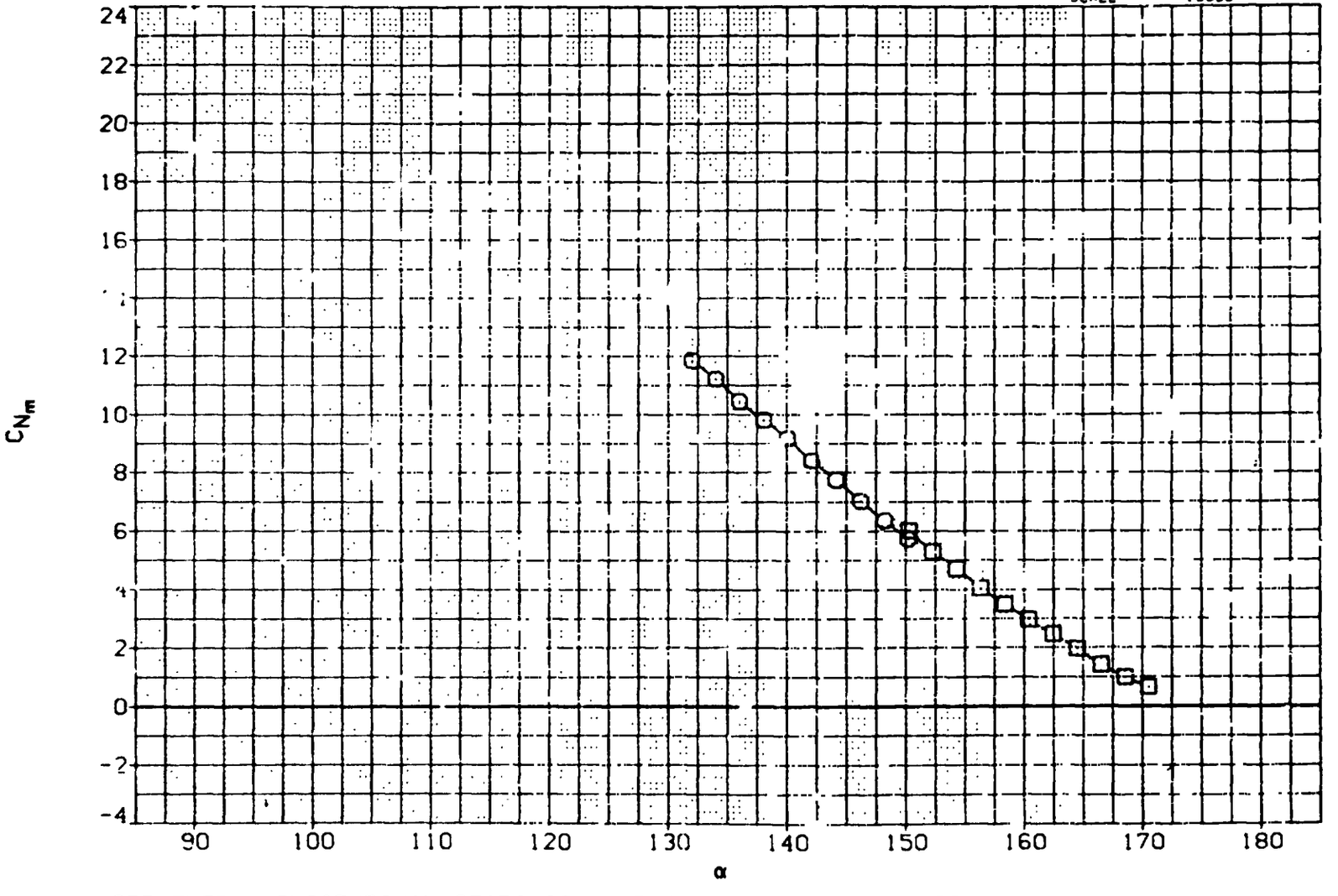
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A)0009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A)C 10)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



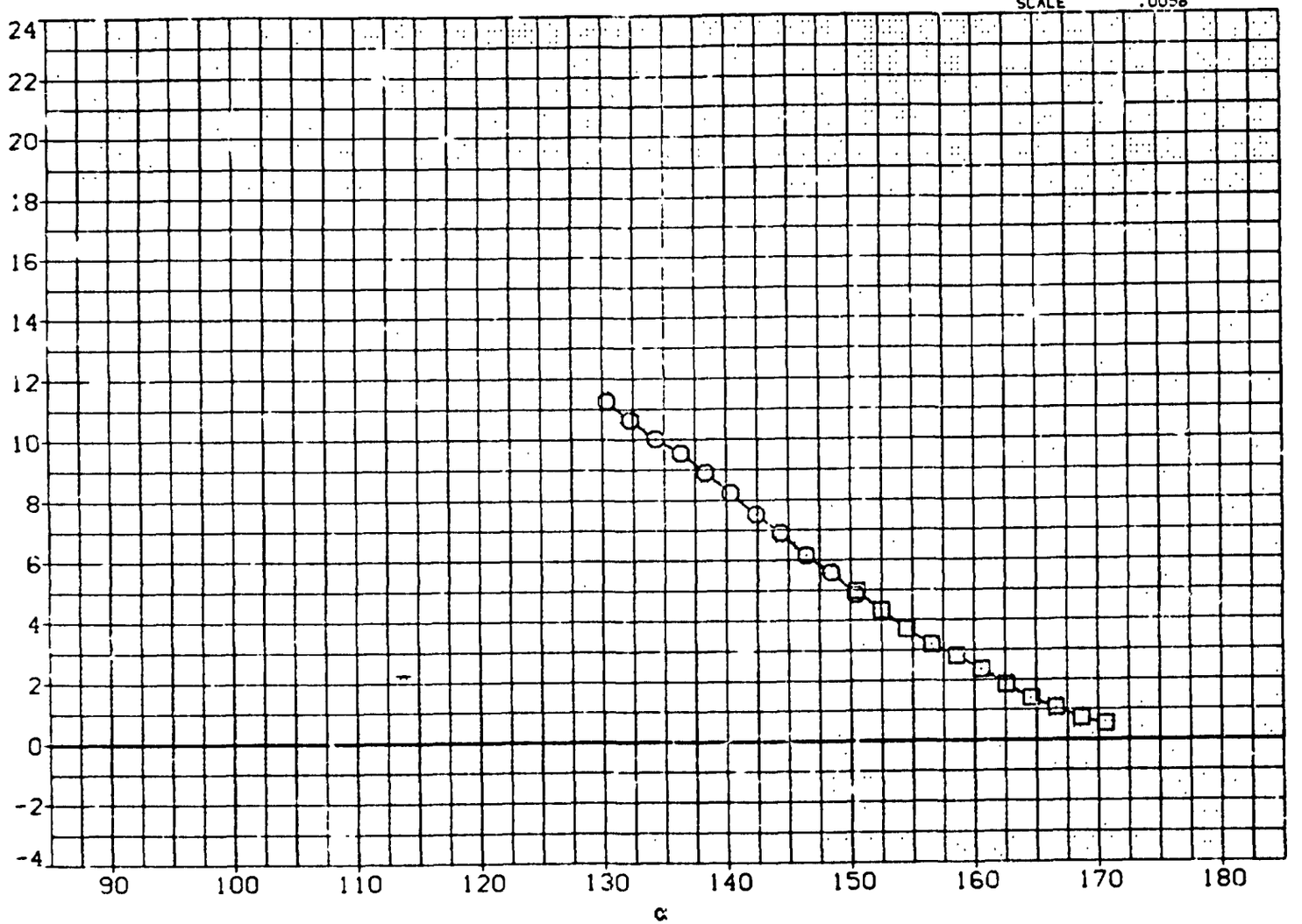
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 1.95

ATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	000
(10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



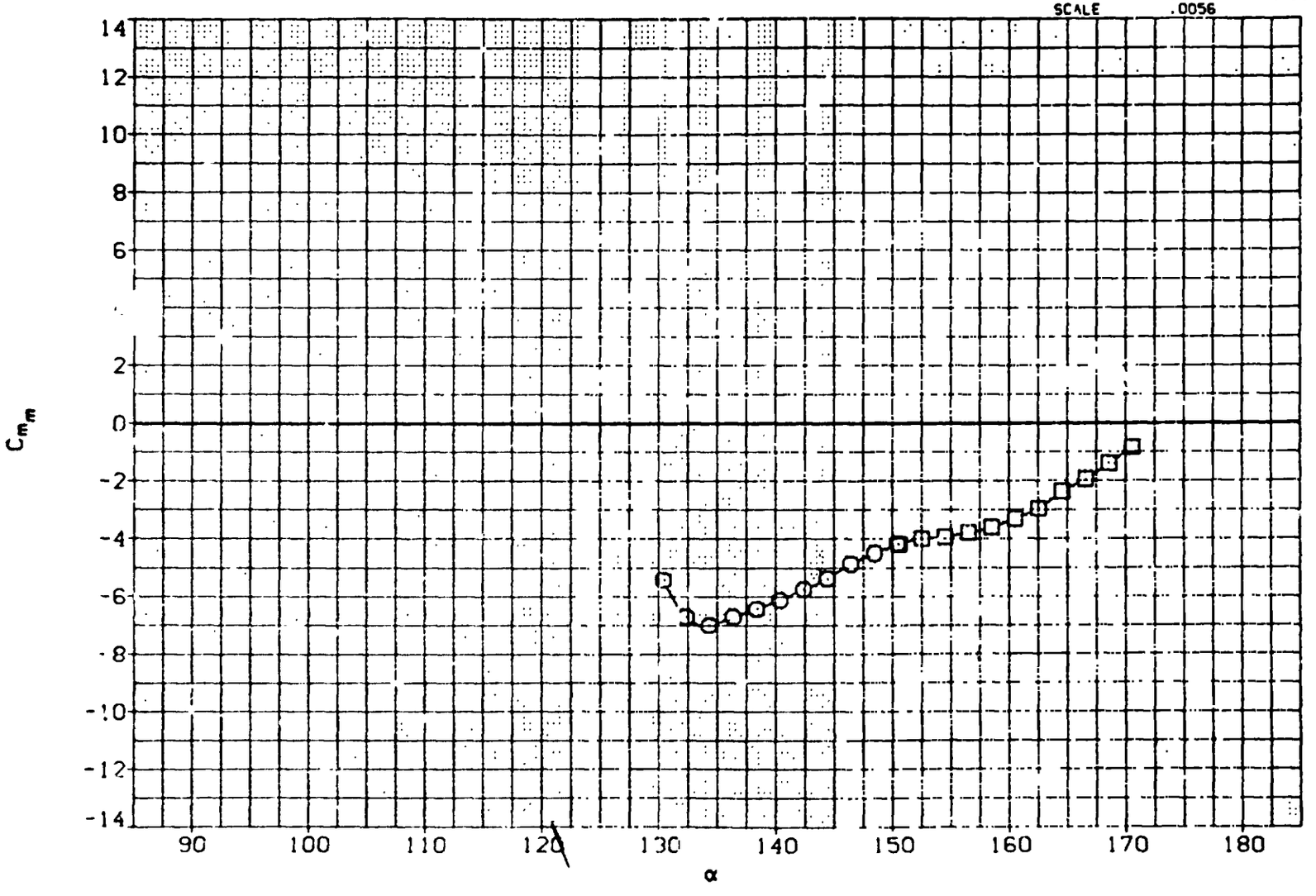
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

FS MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90_	.000
(A10010)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



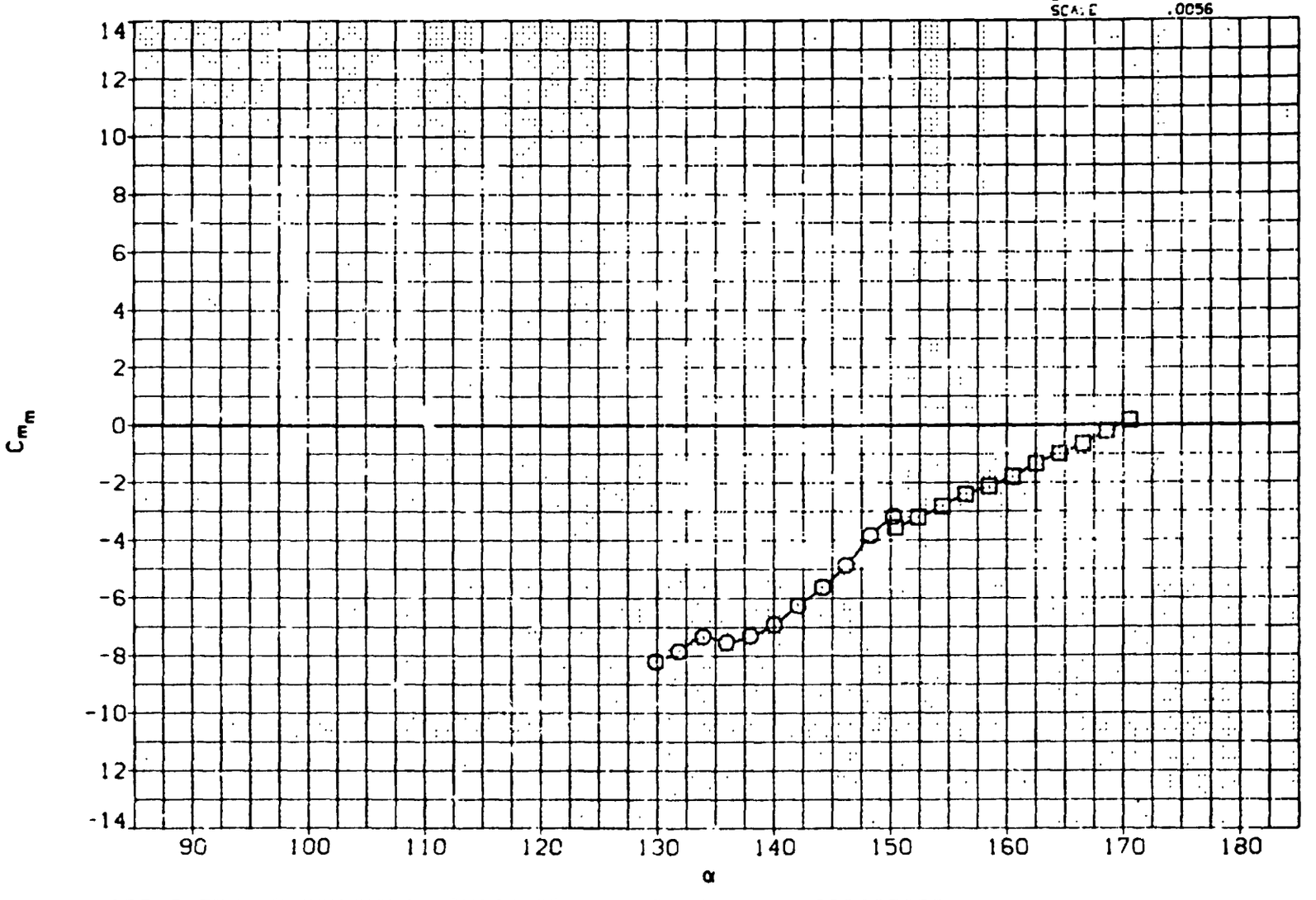
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



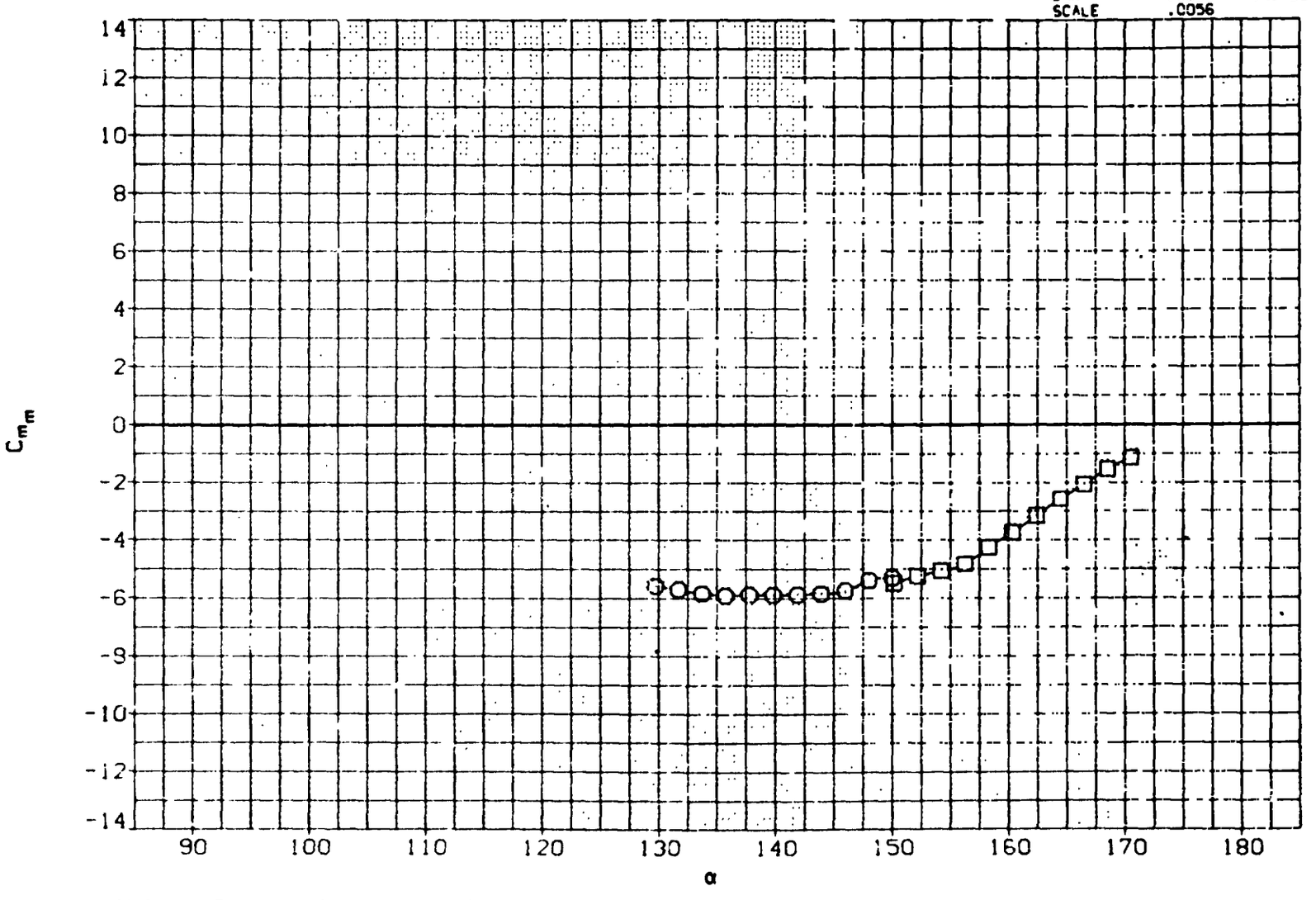
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMYOS	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



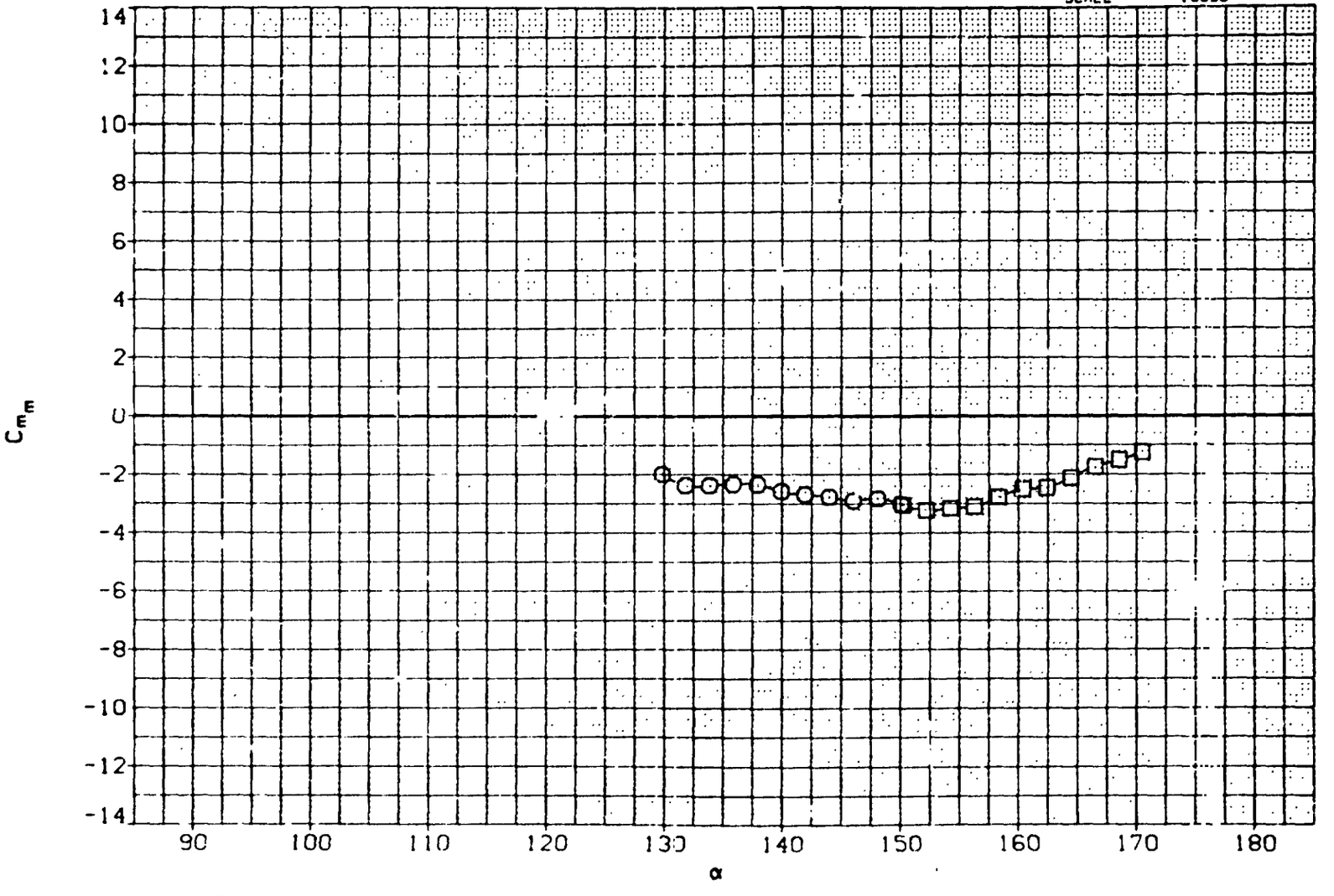
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



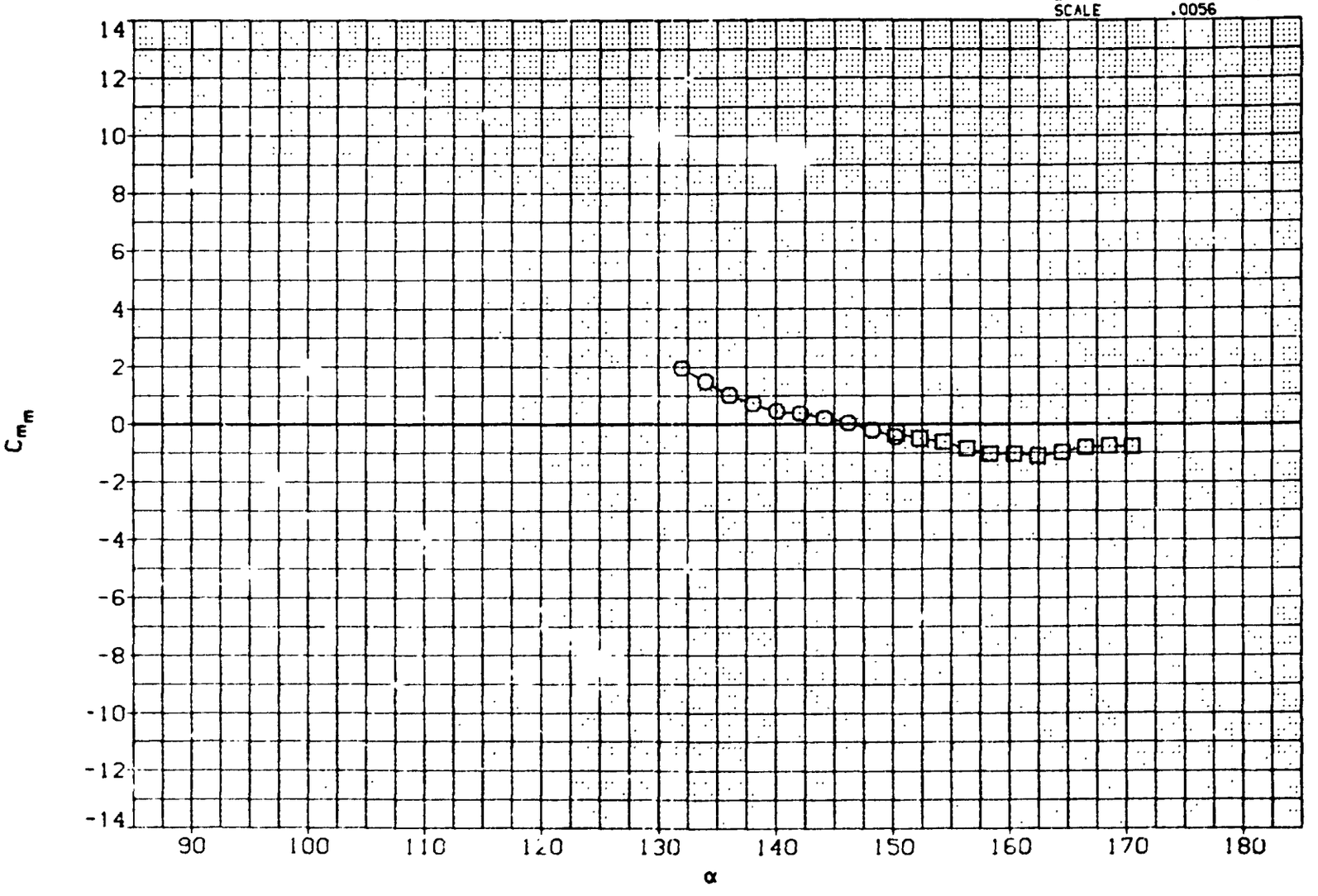
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



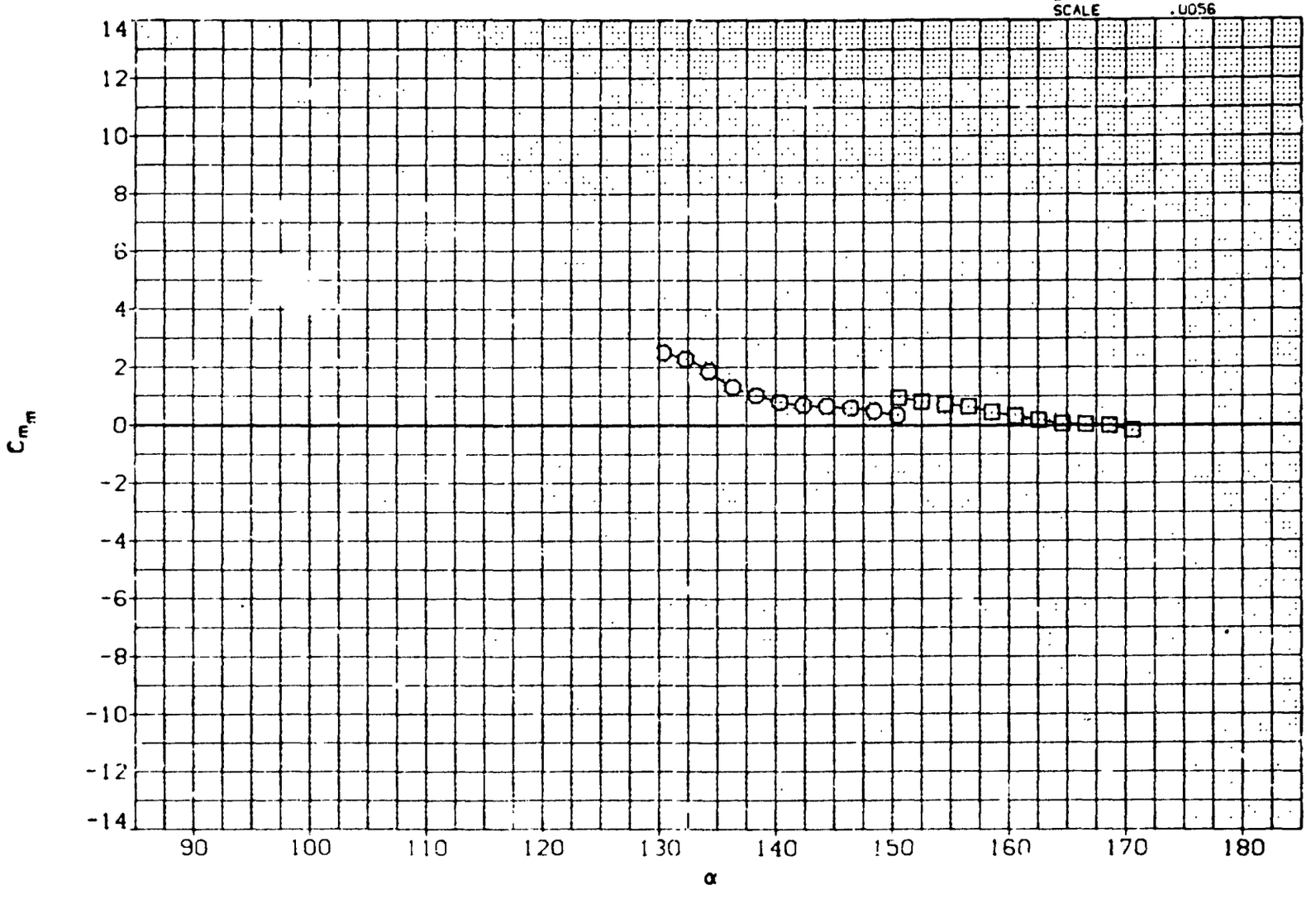
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10C^3)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



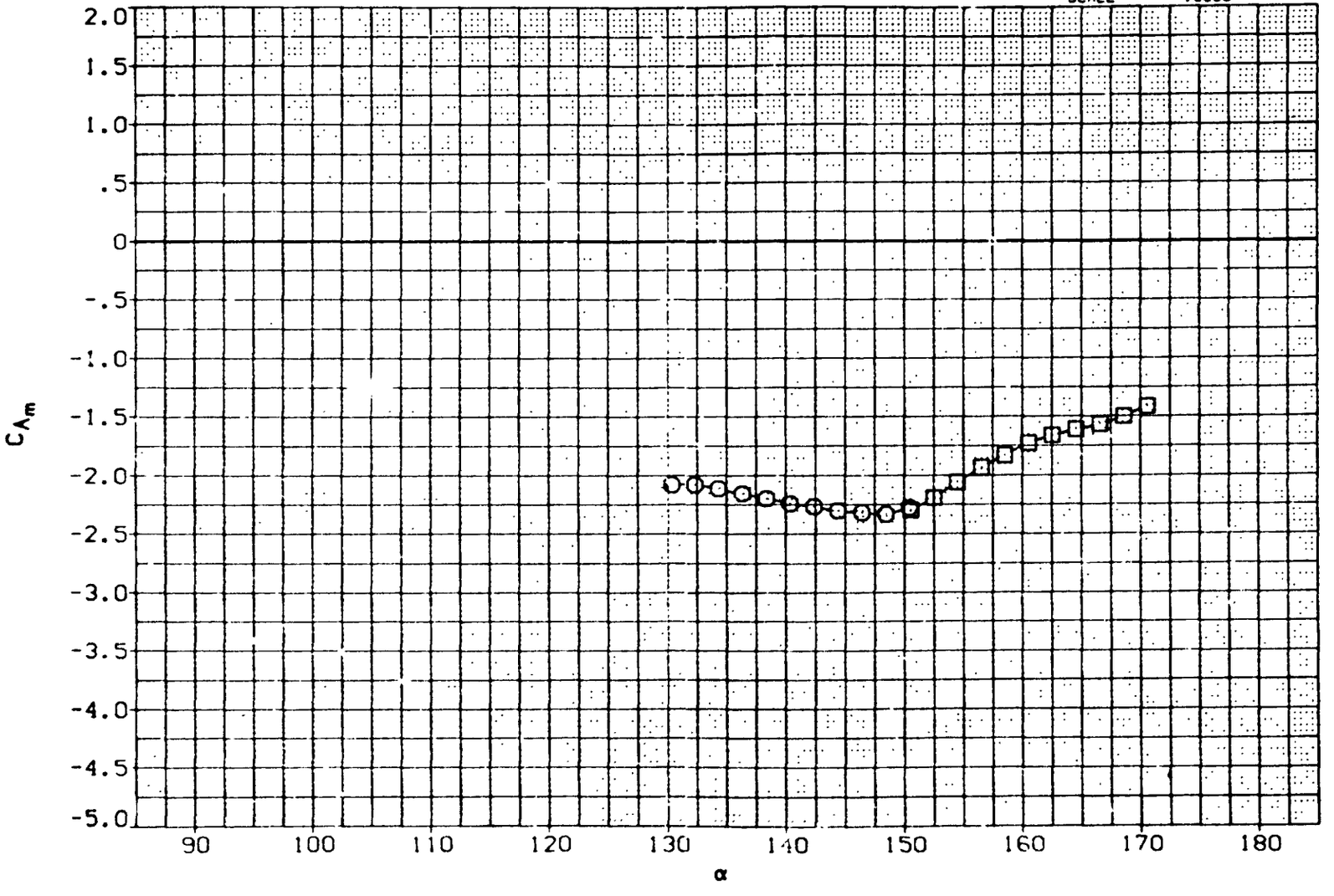
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



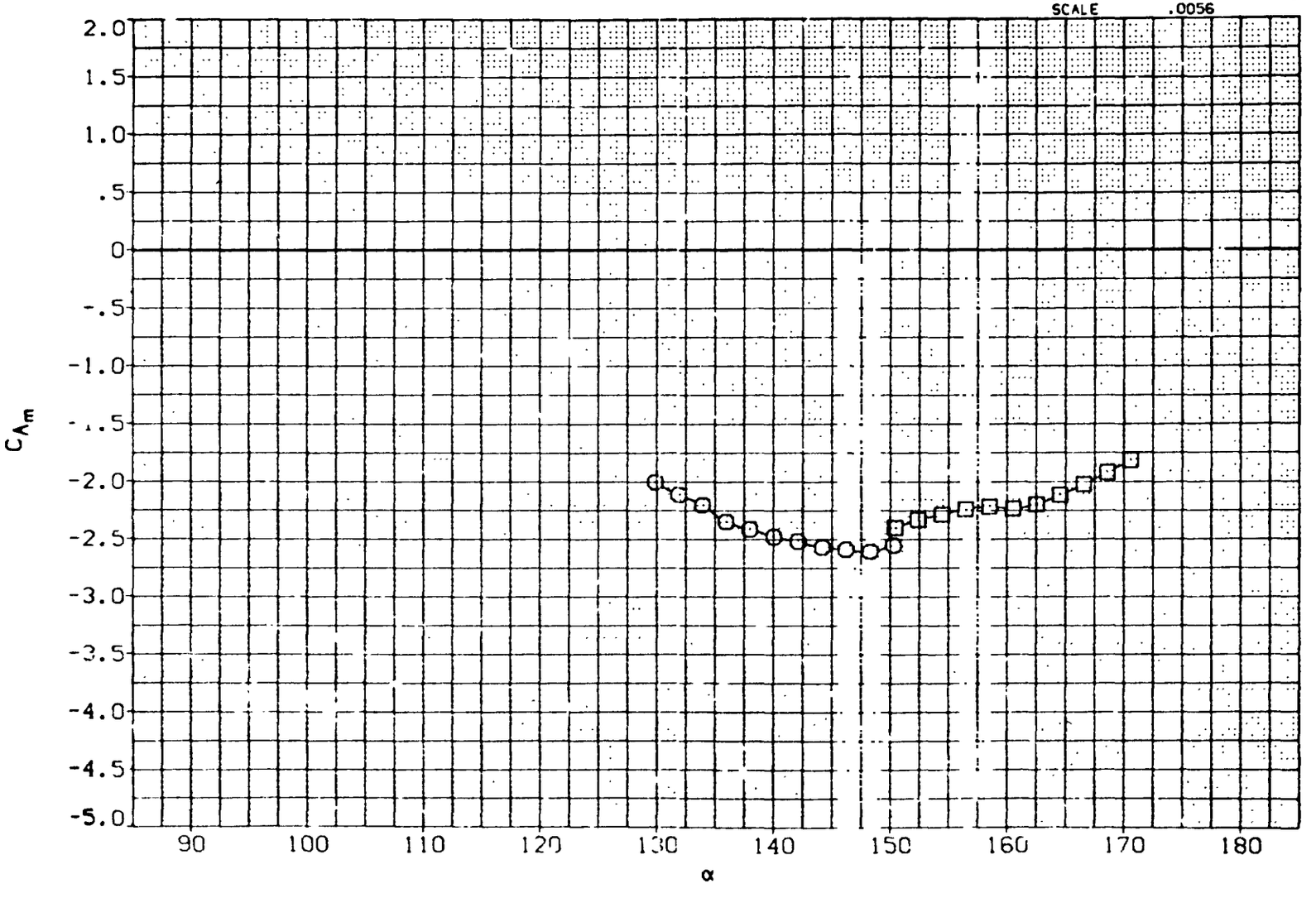
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



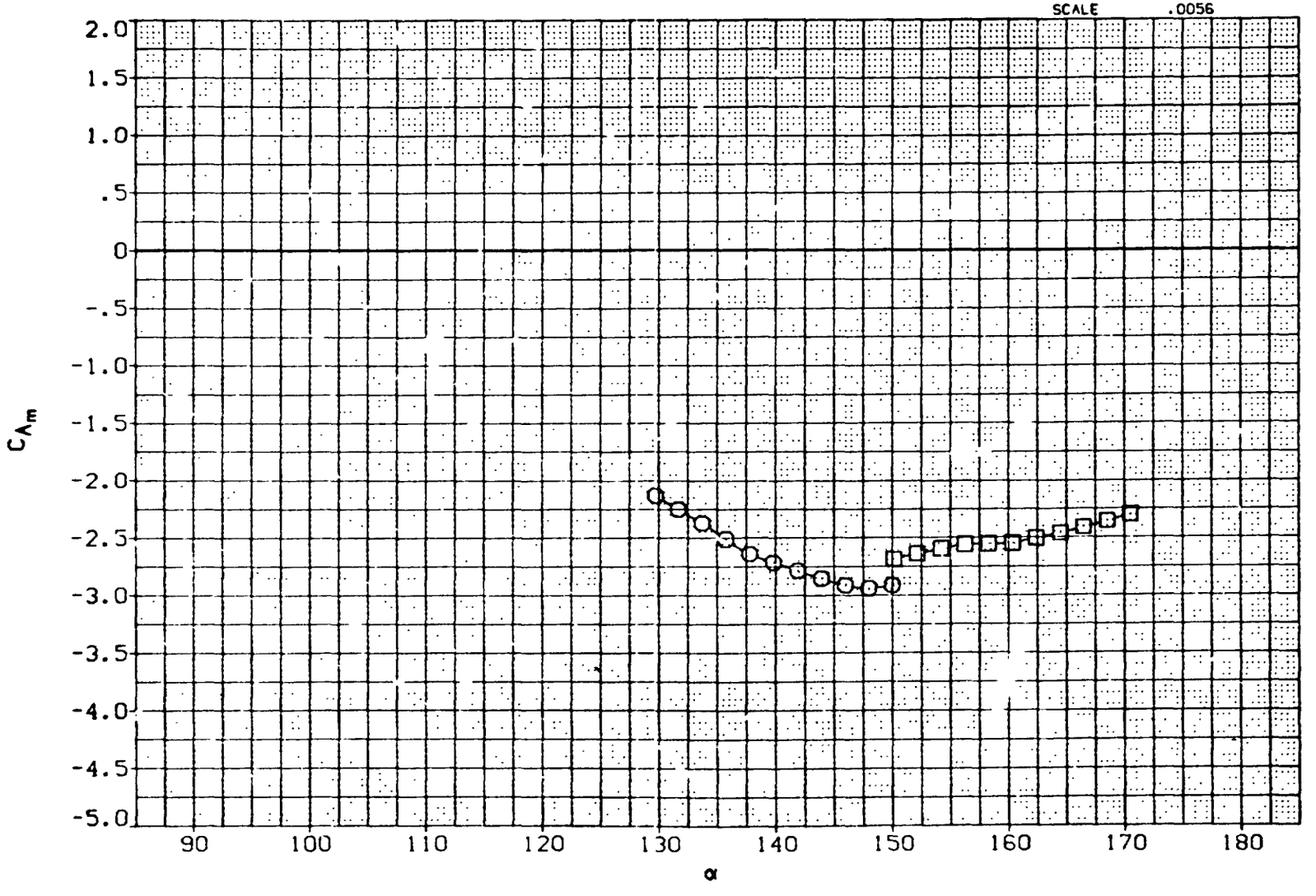
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



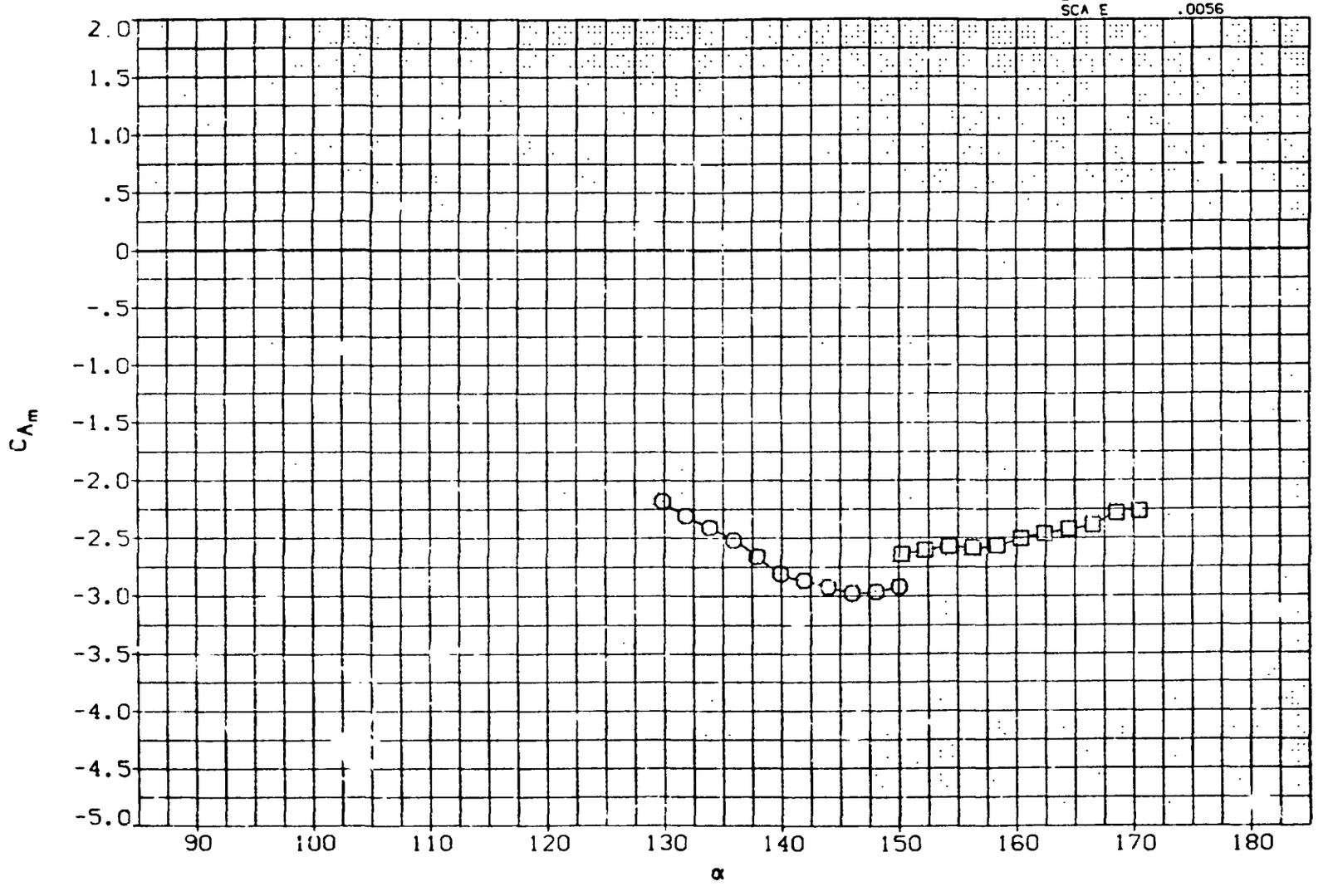
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

ATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
A1(0709)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
A1[illegible]	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



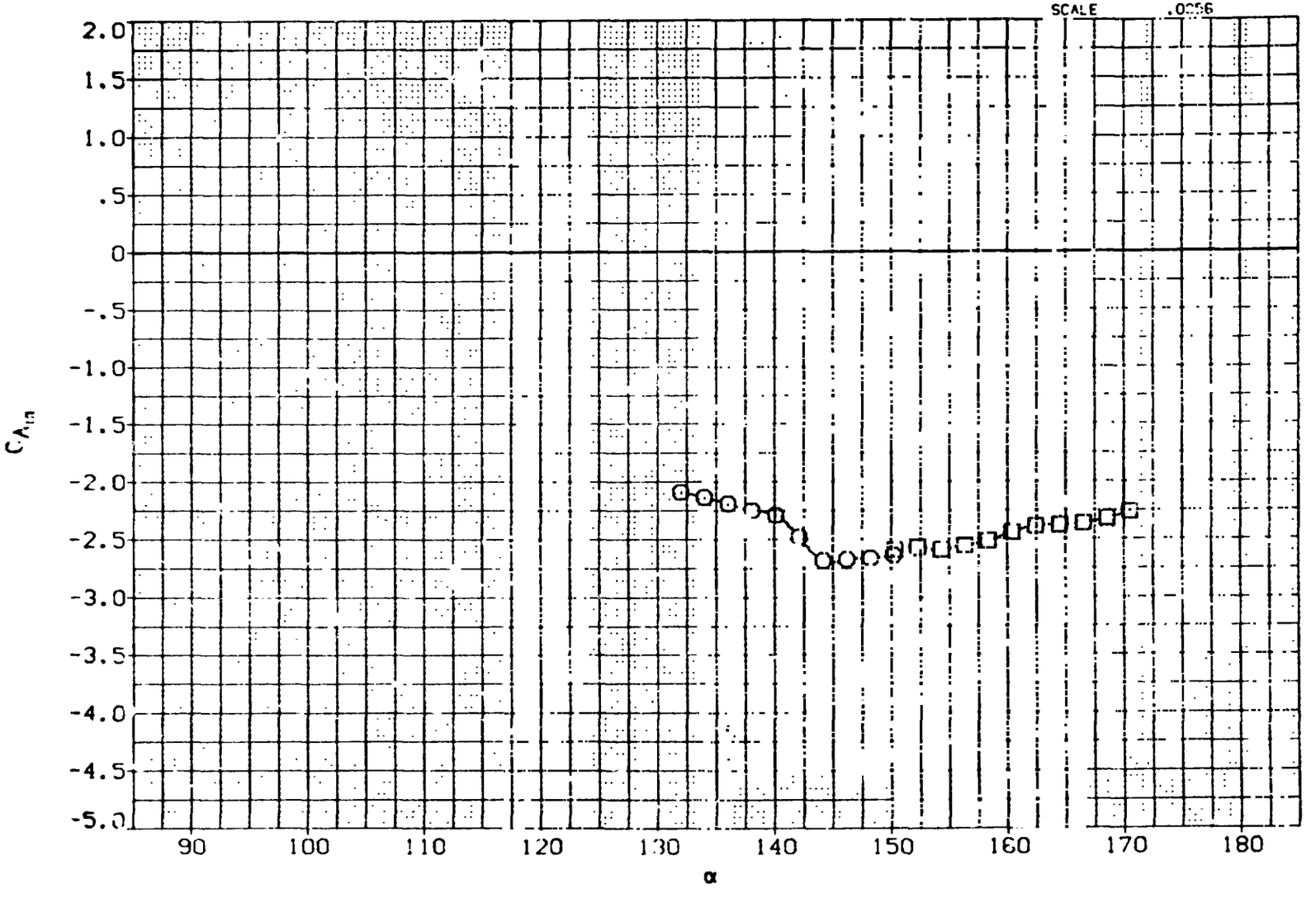
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

DJMACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	96.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



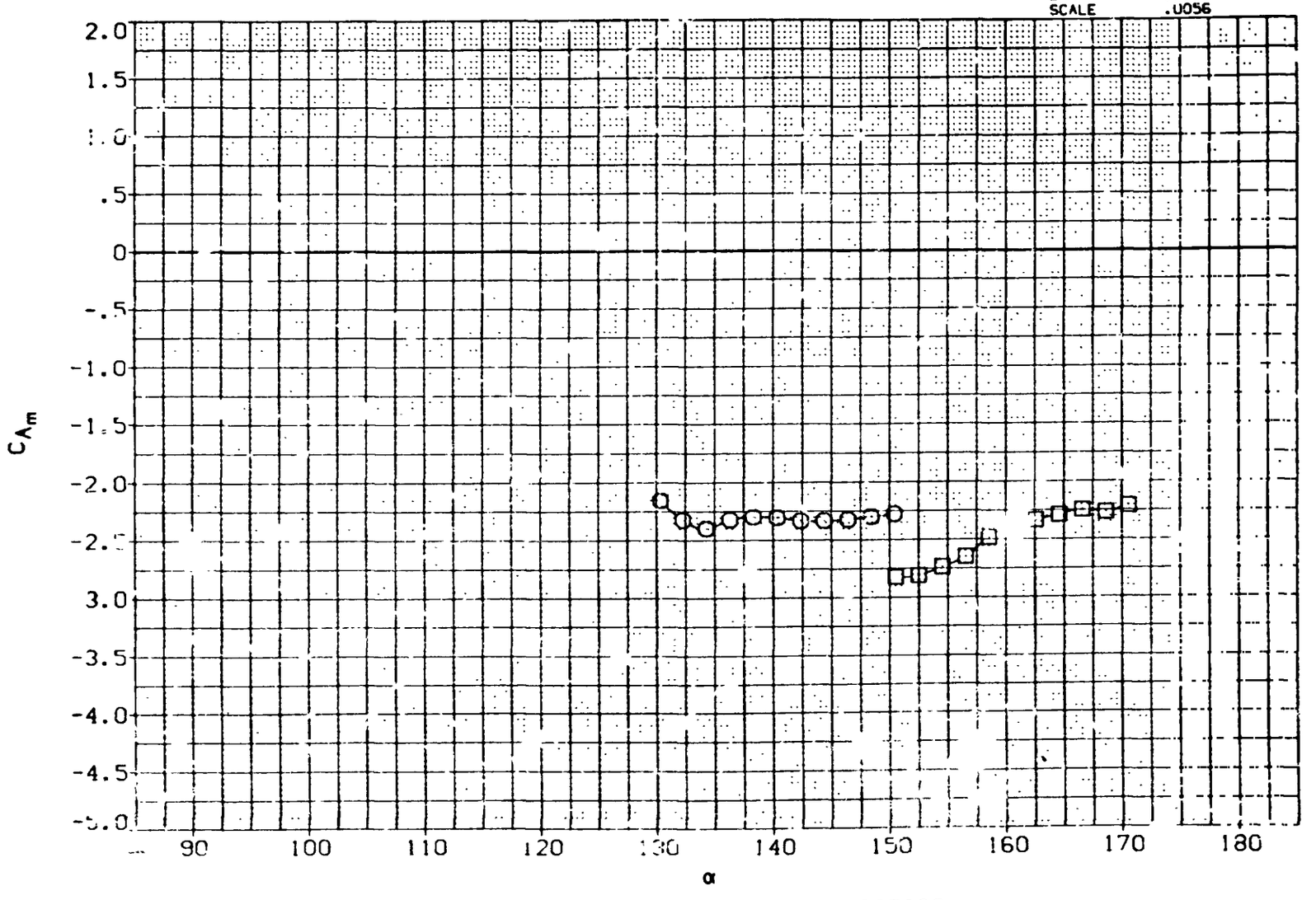
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 520 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



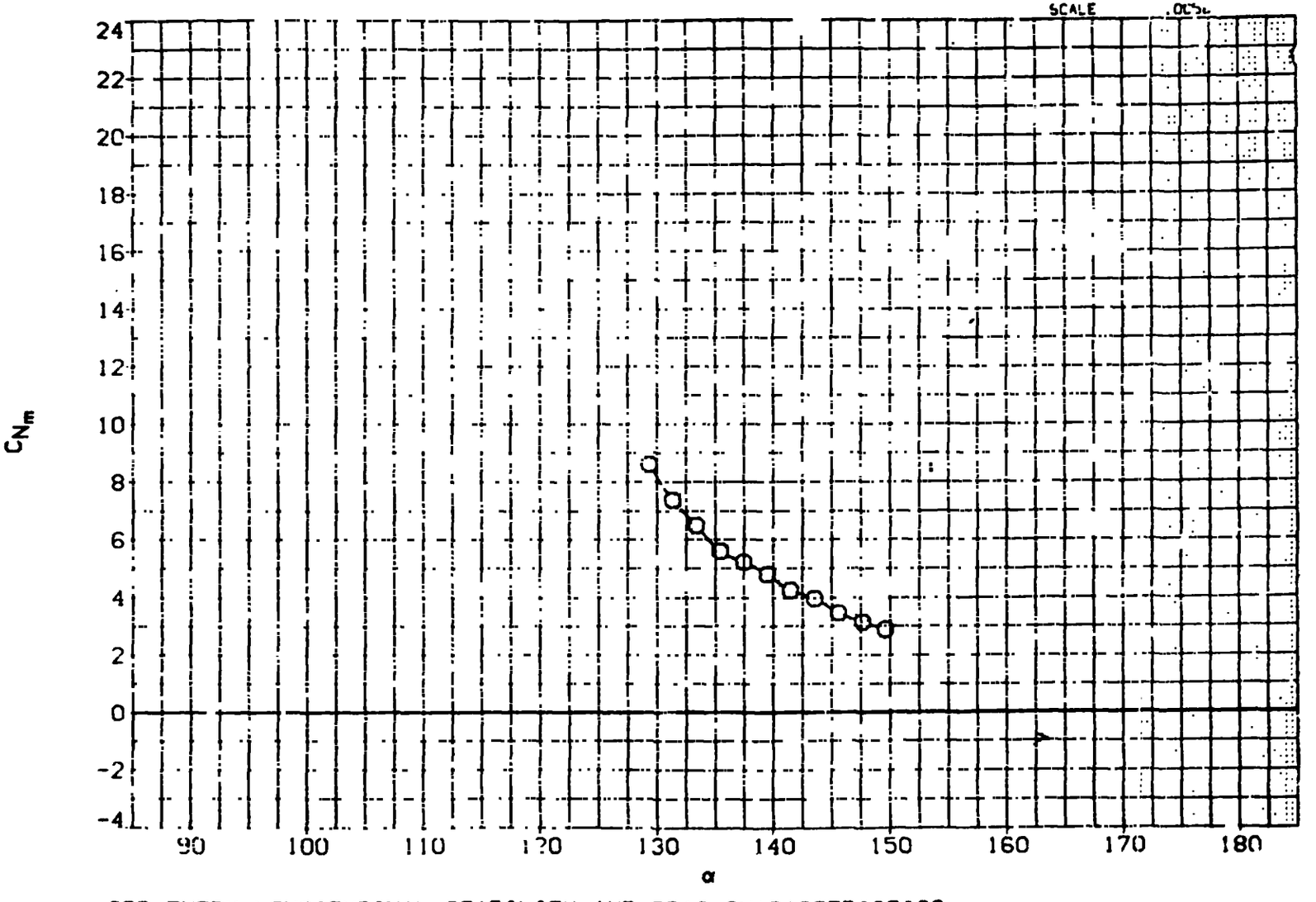
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A100111)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT
LREF	142.0000	IN
BREF	142.0000	IN
MRP	[illegible]	IN, XS
WBP	.0000	IN, YS
[illegible]	[illegible]	IN, ZS
SCALE	.0050	



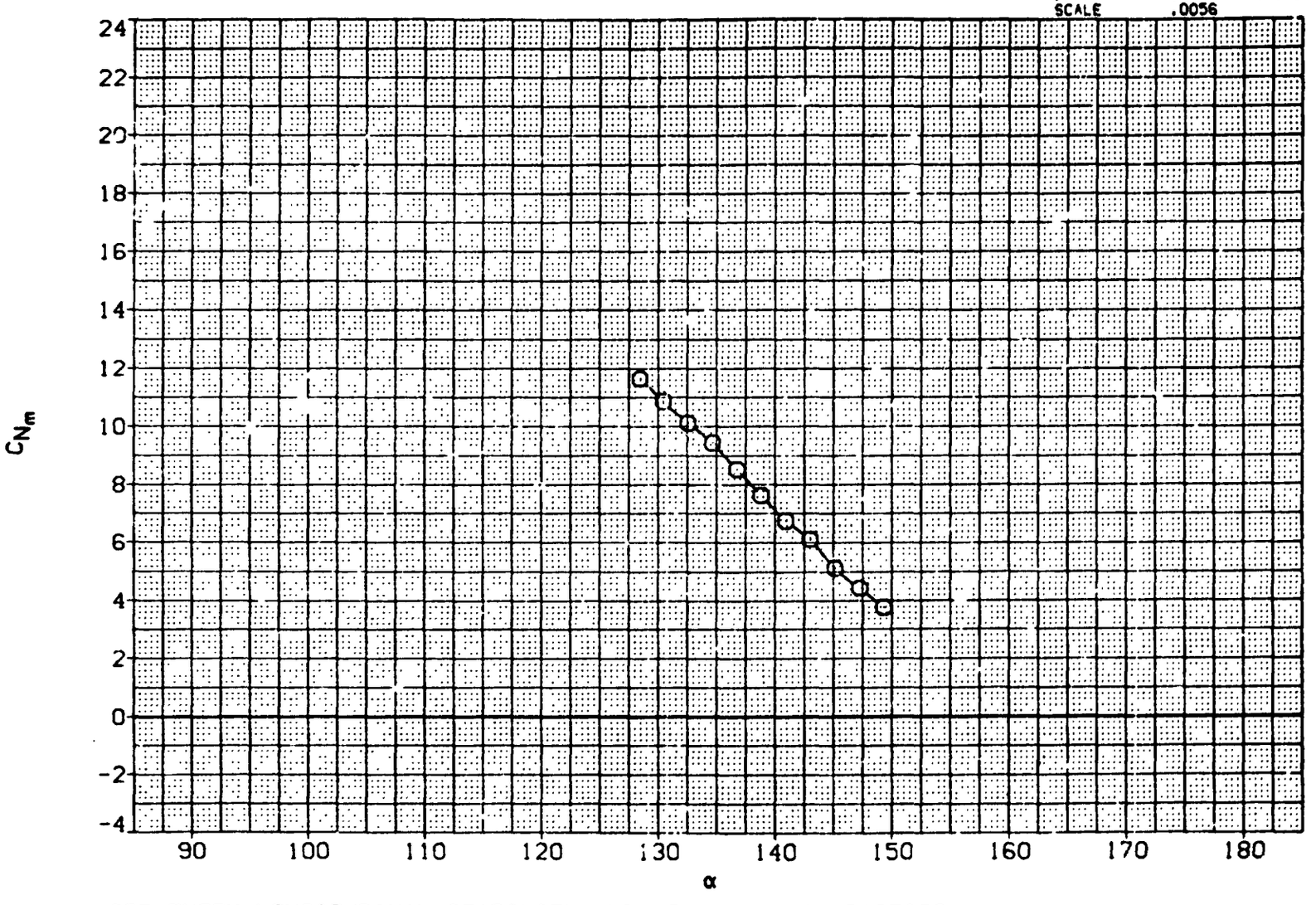
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142 0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



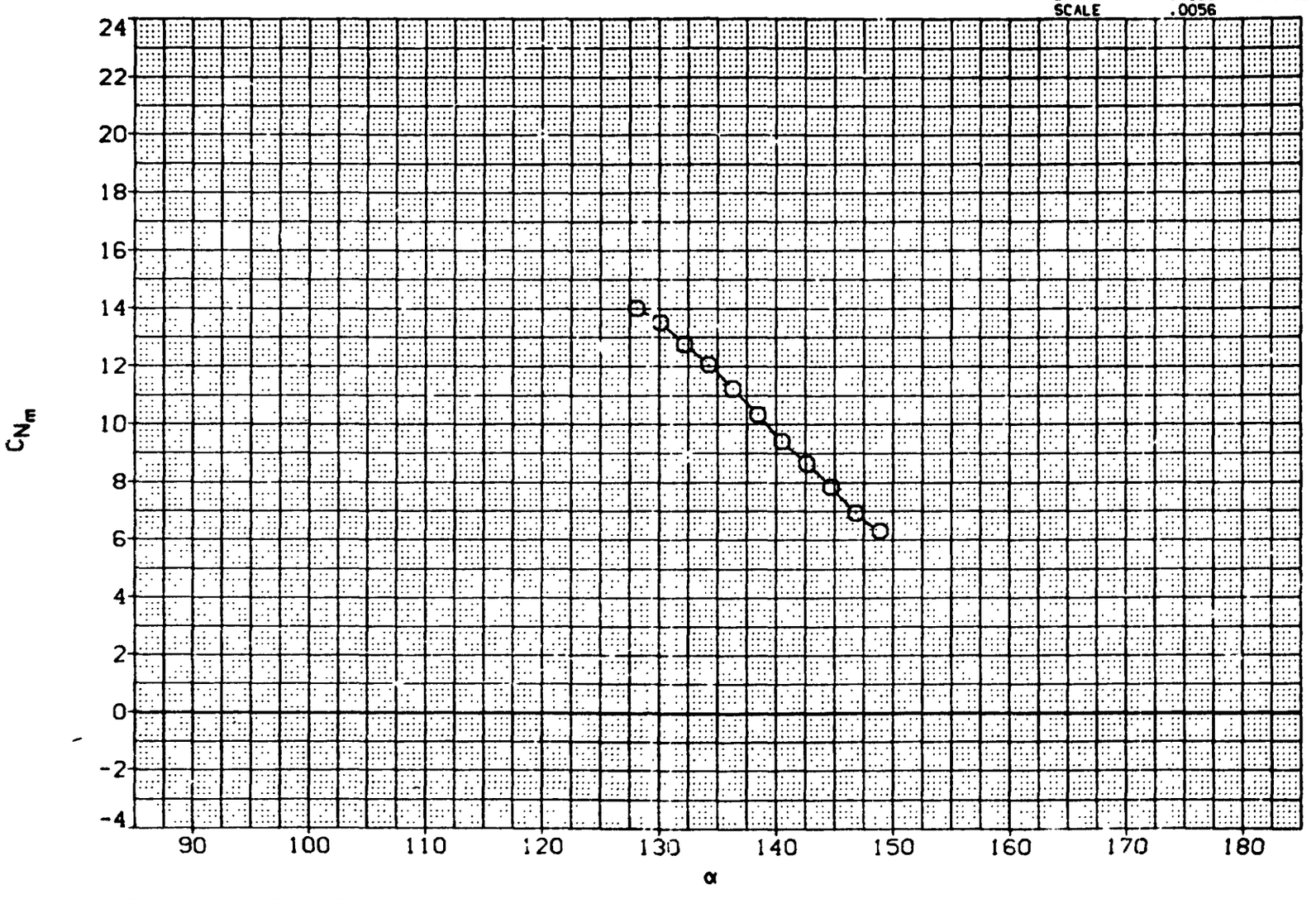
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A100111)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



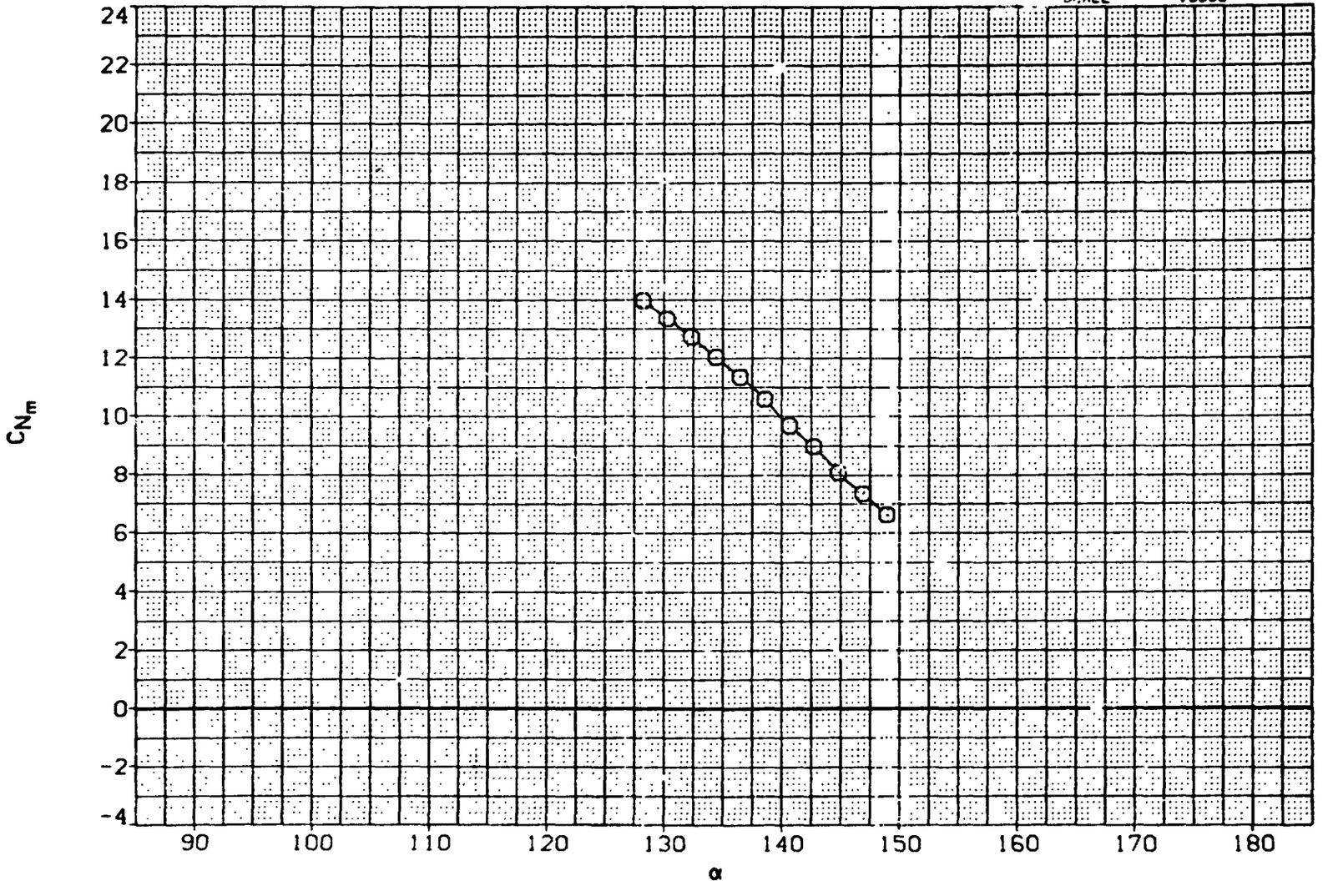
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



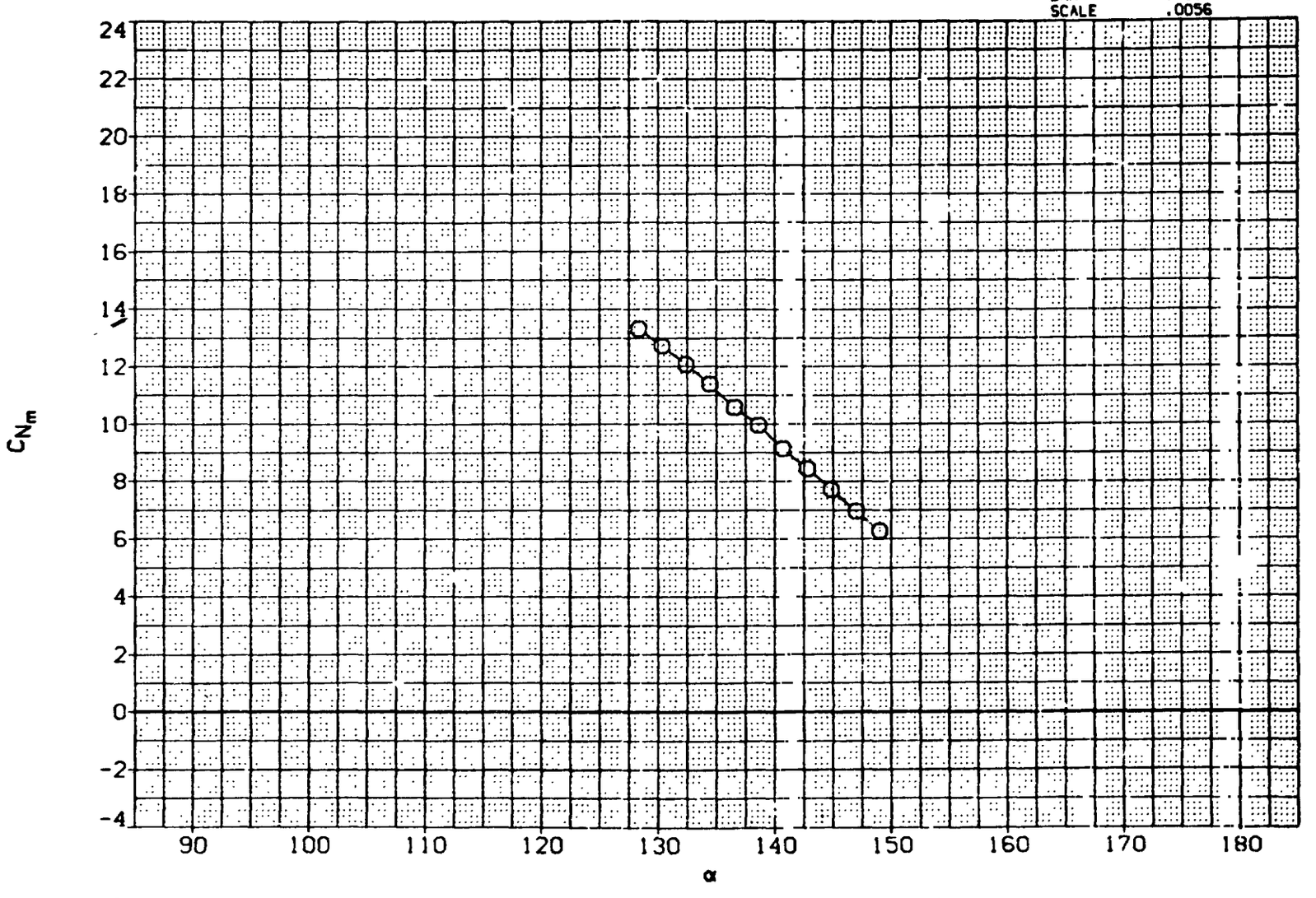
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



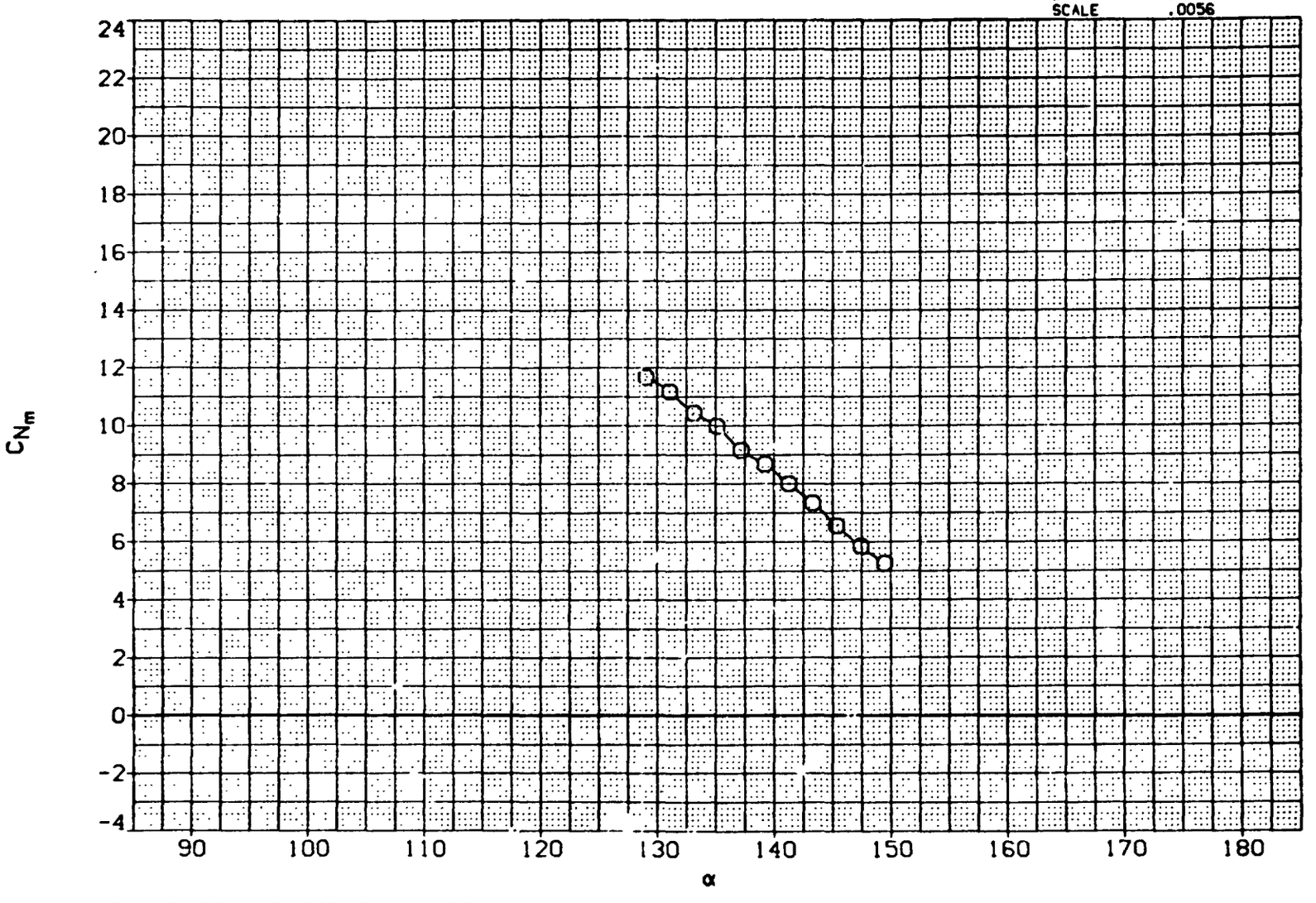
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A100I1)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



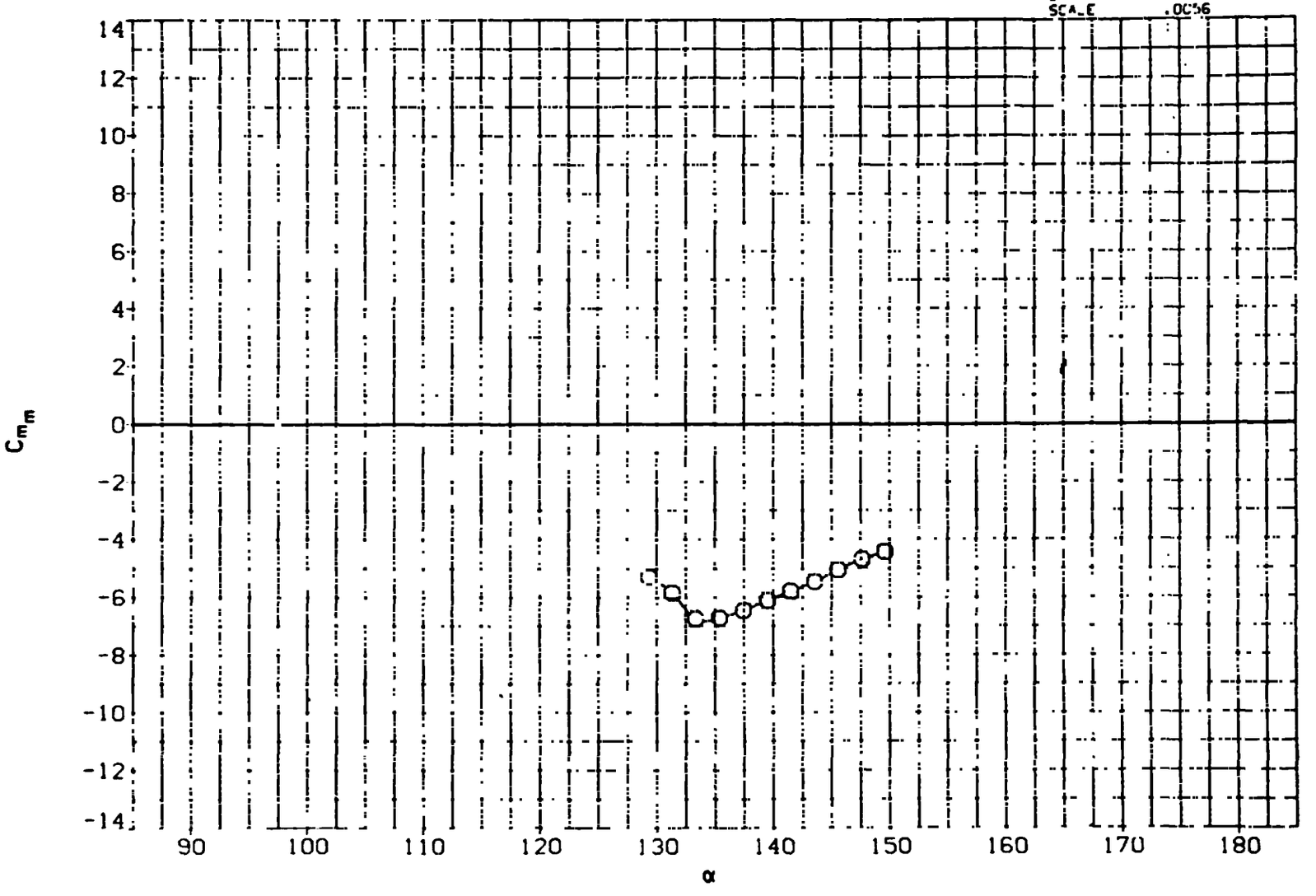
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



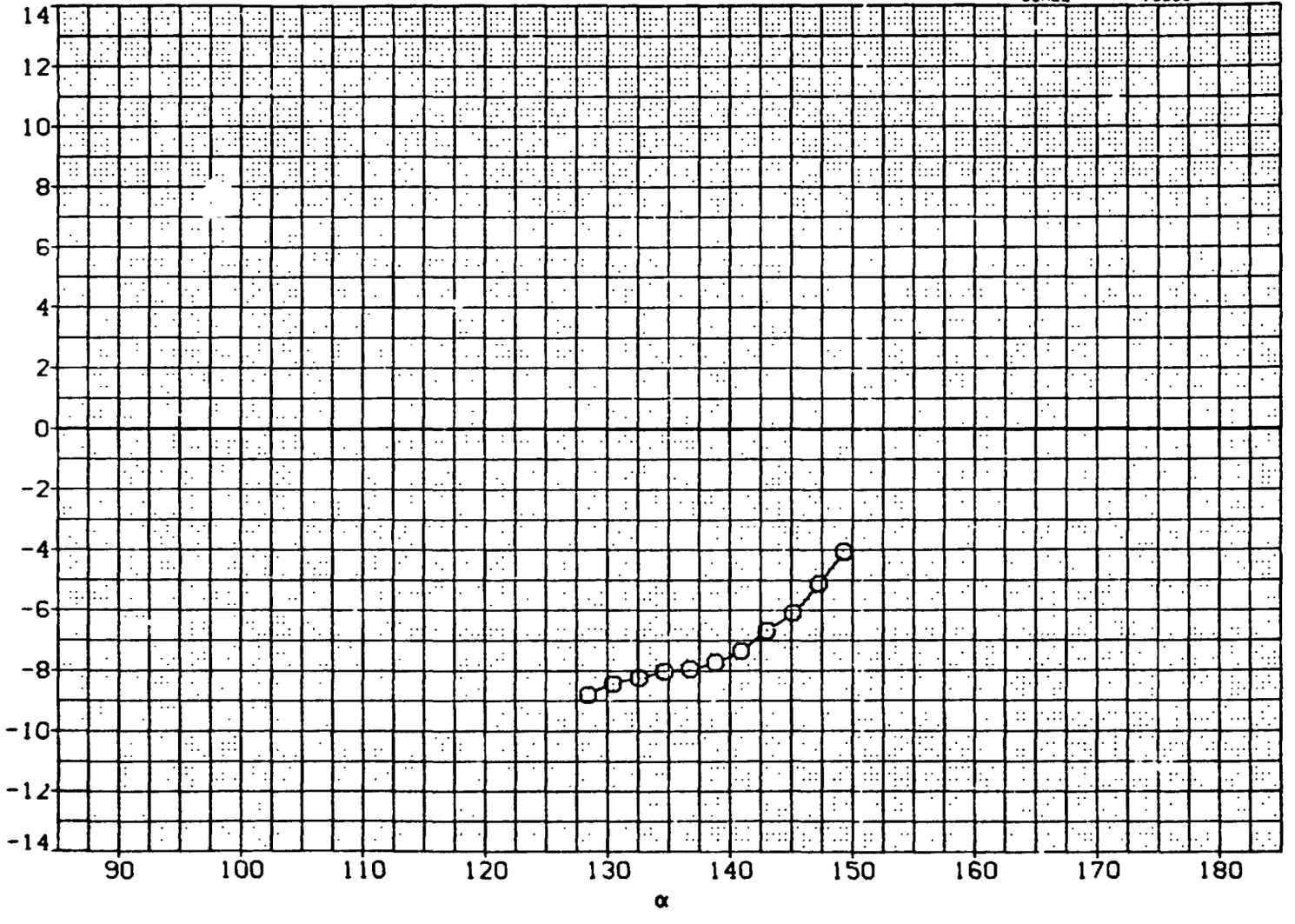
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .60

SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
3011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	42.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



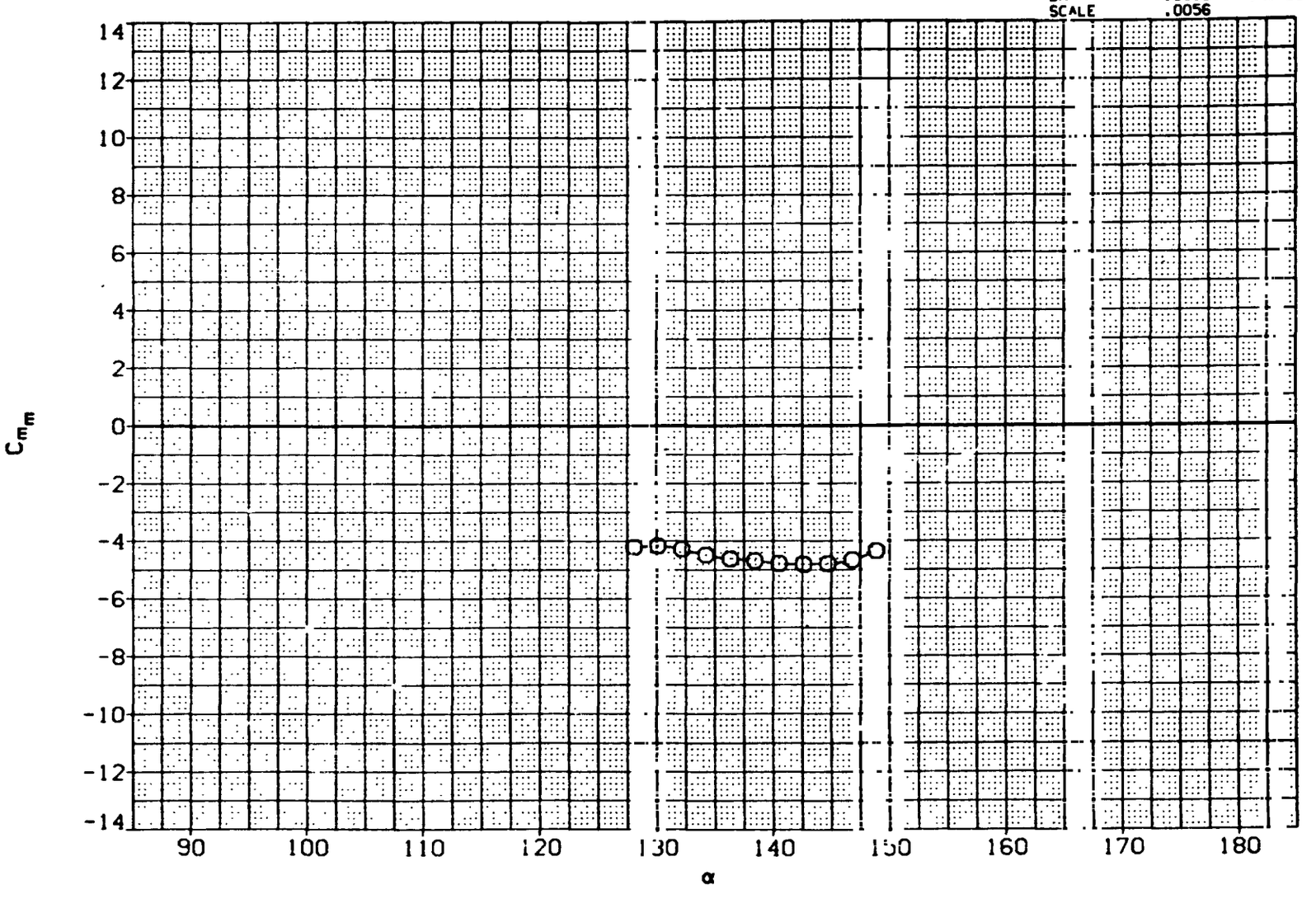
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



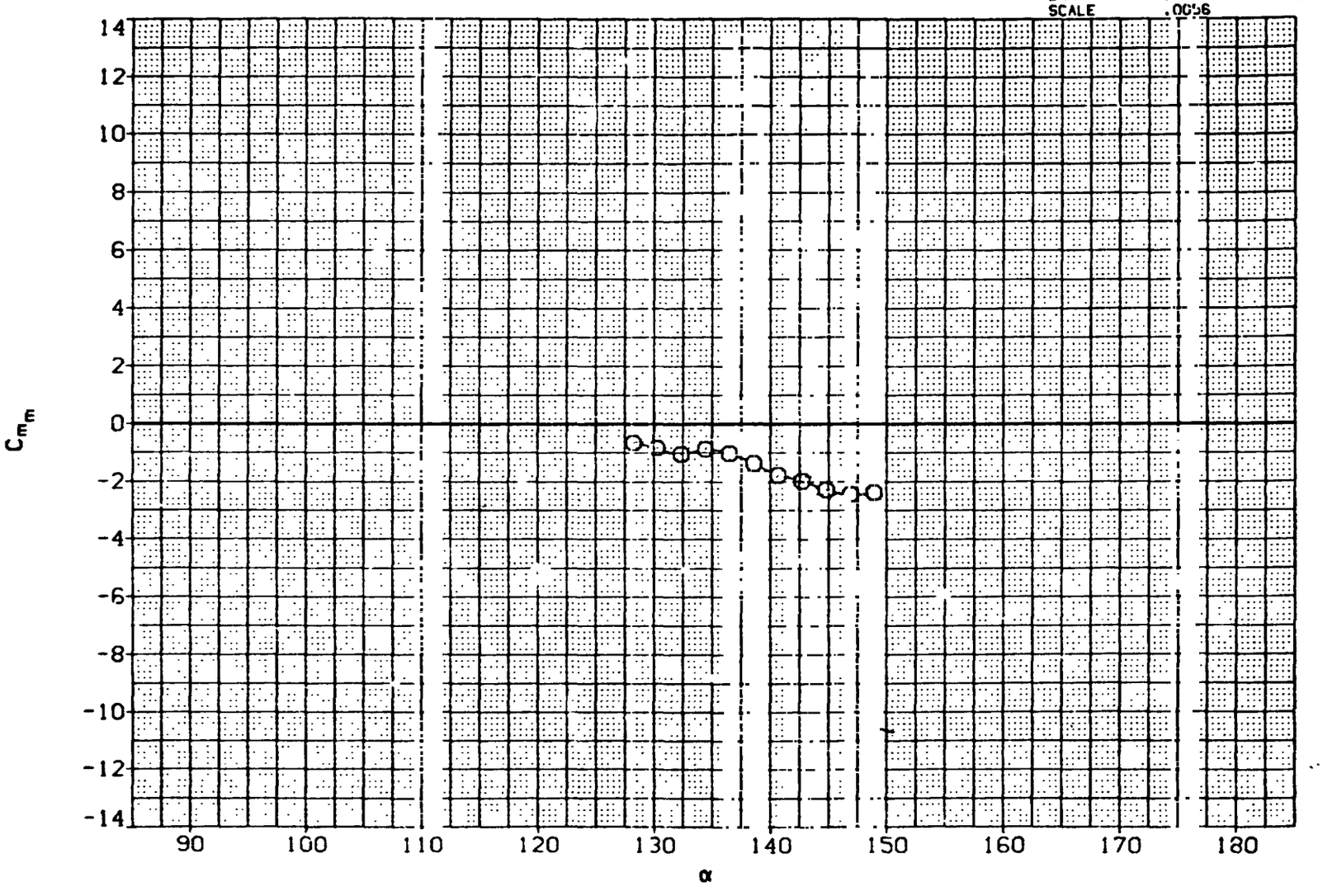
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



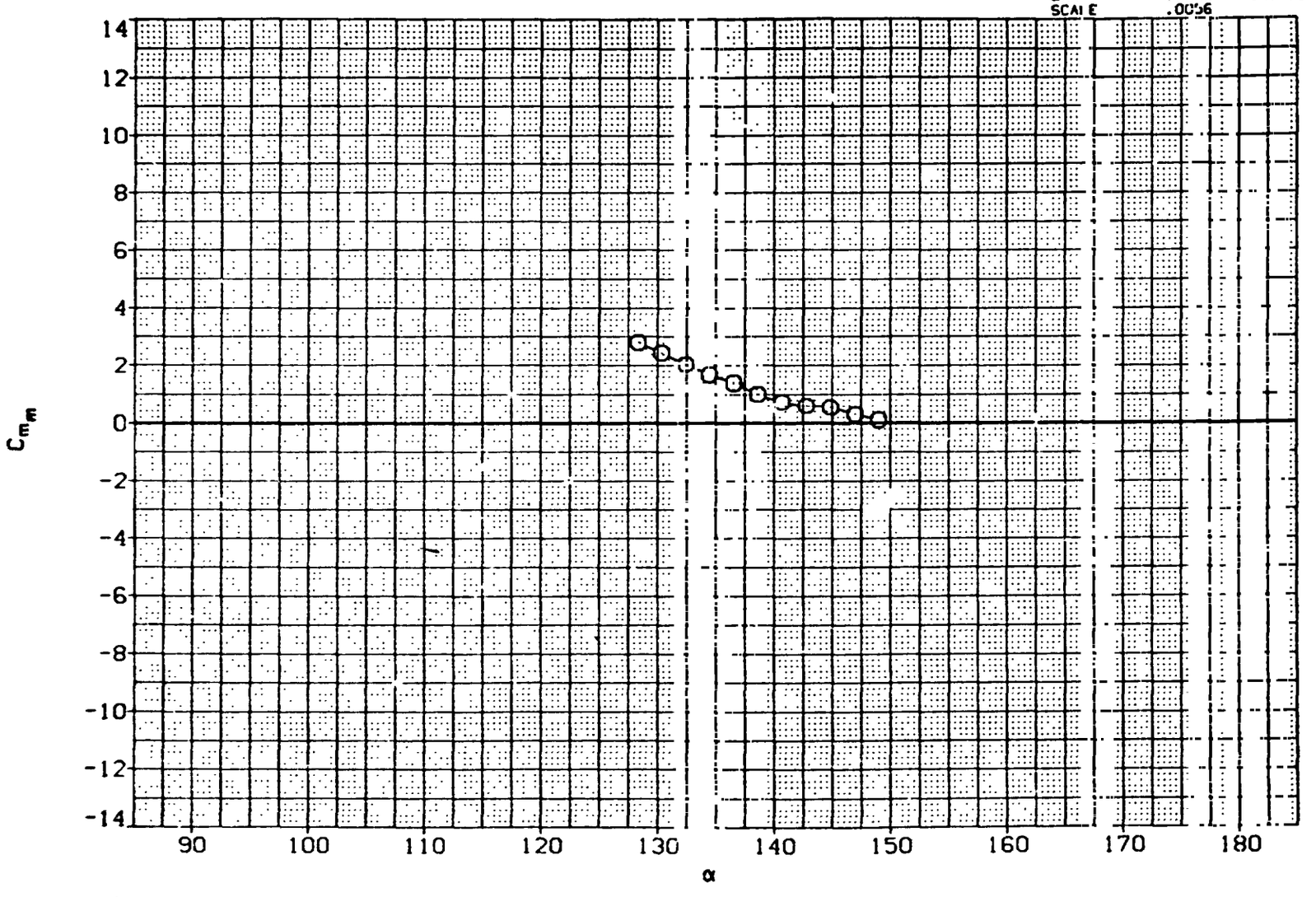
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A15011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



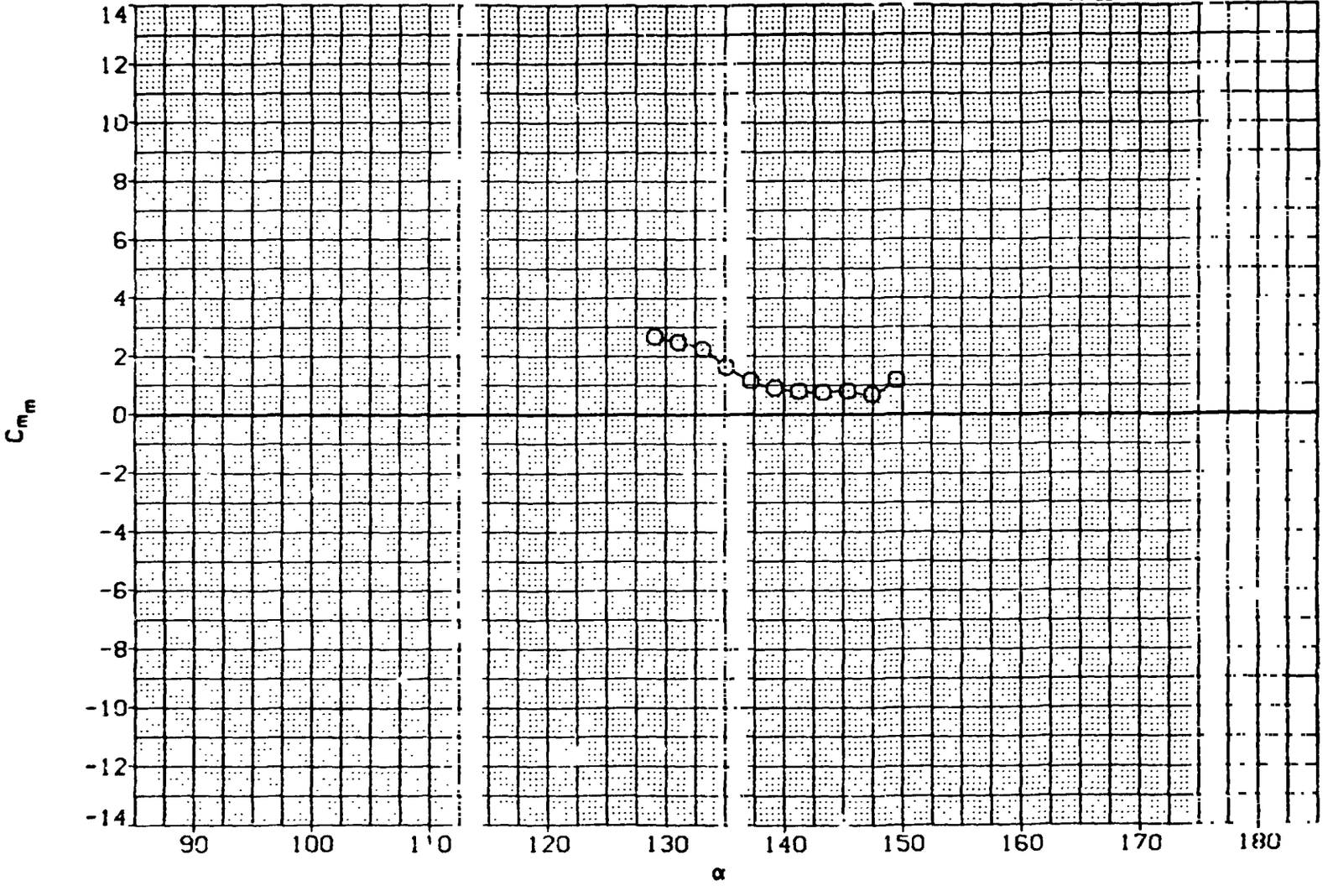
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0006	



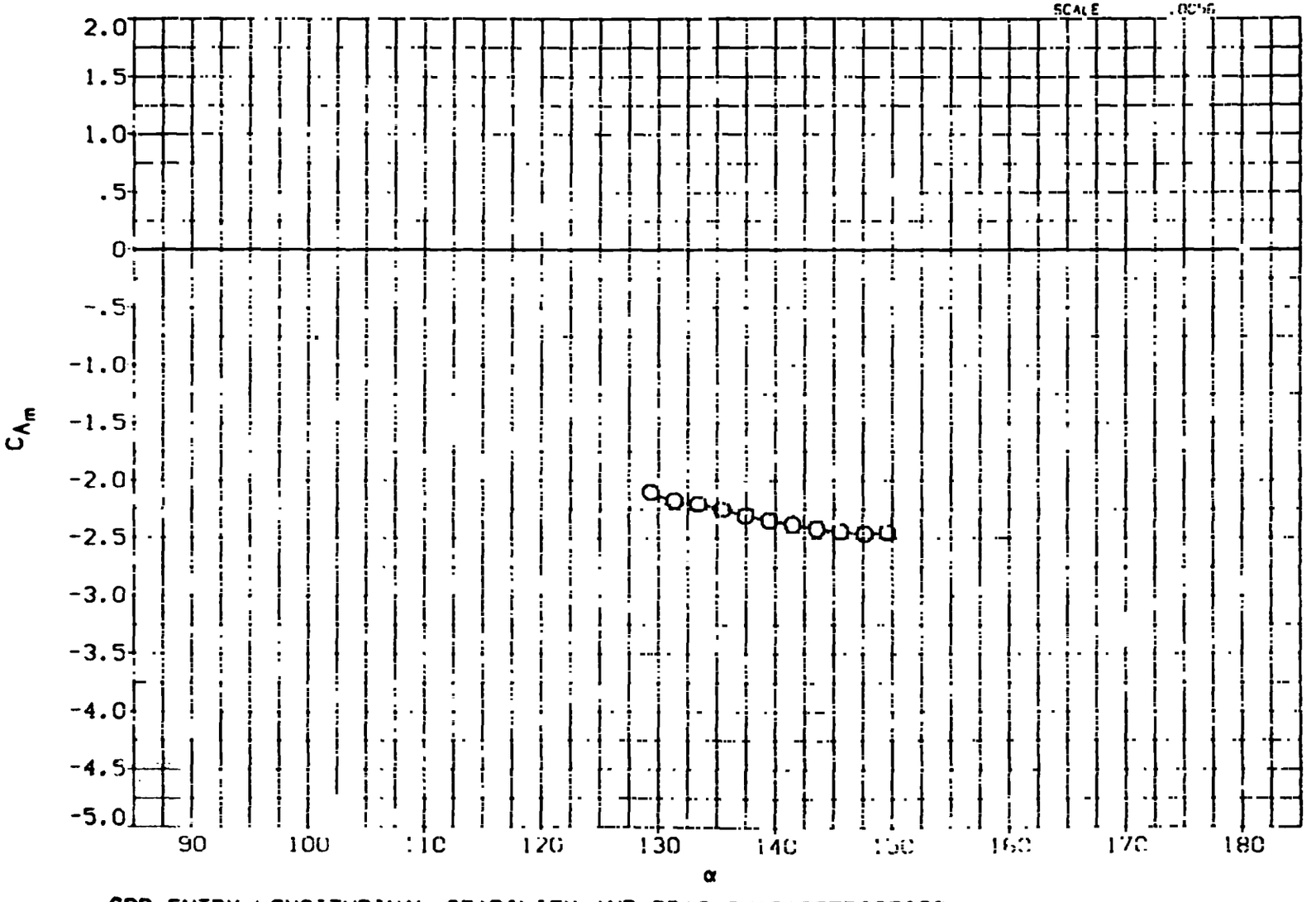
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0010	



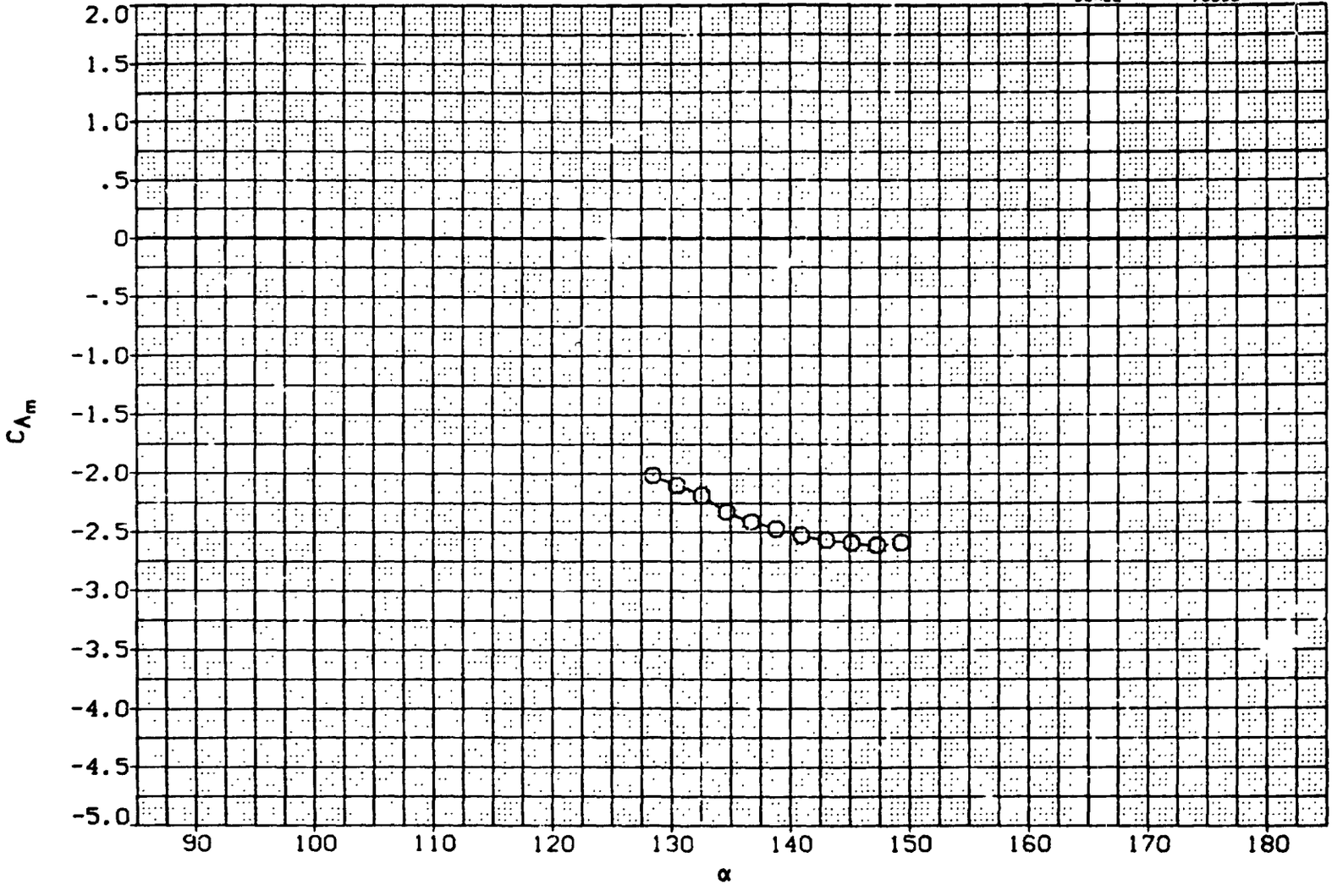
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



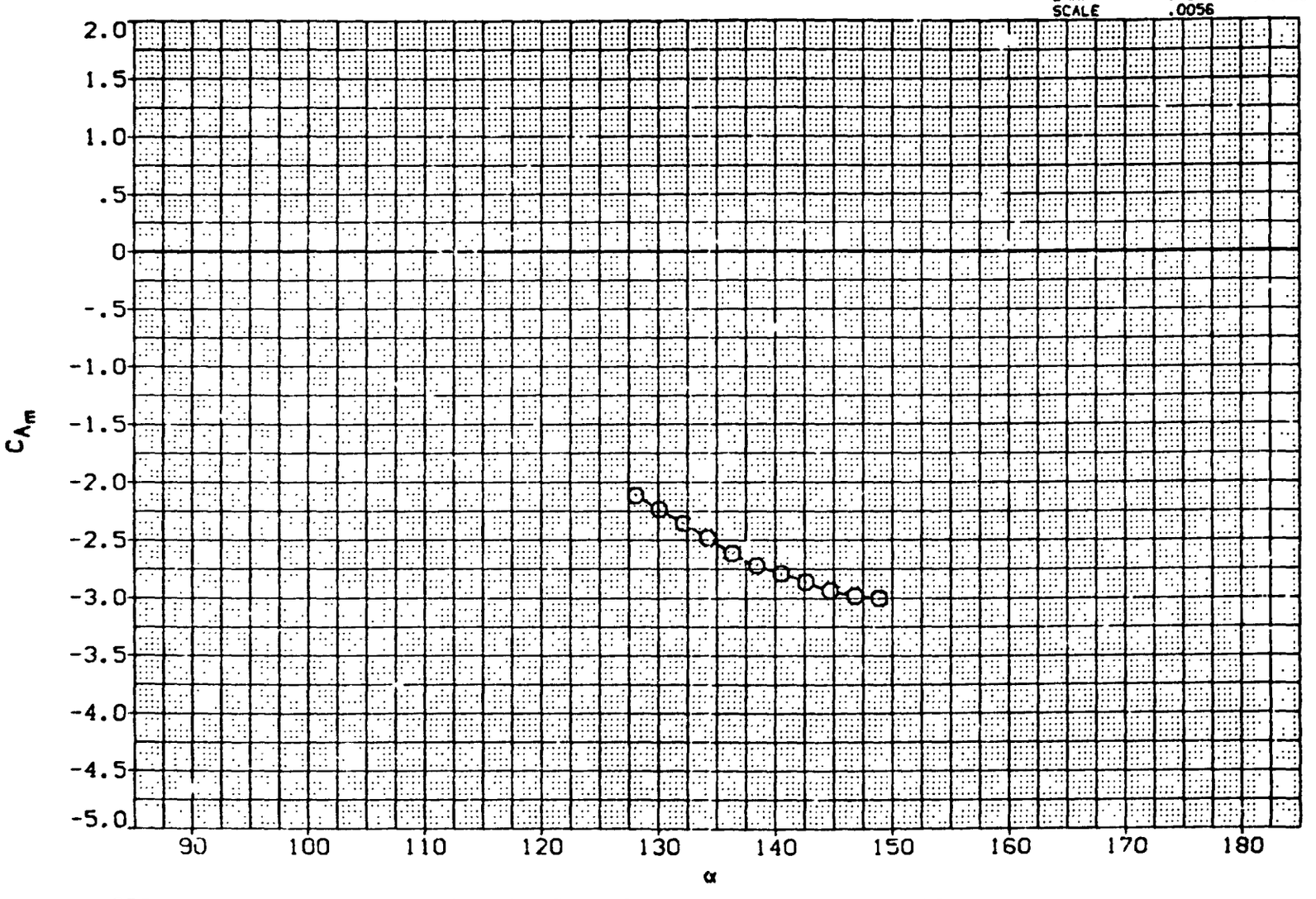
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



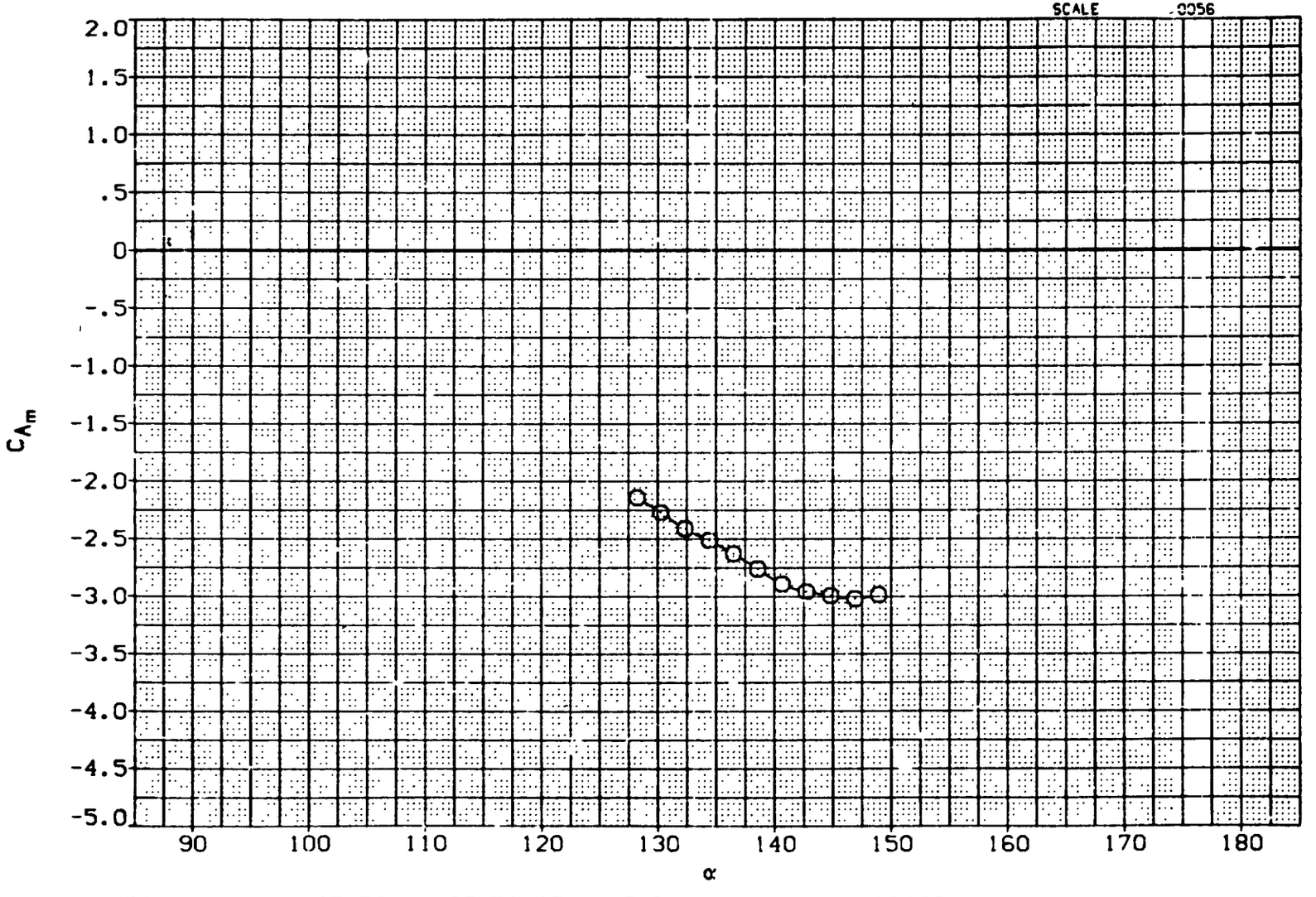
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



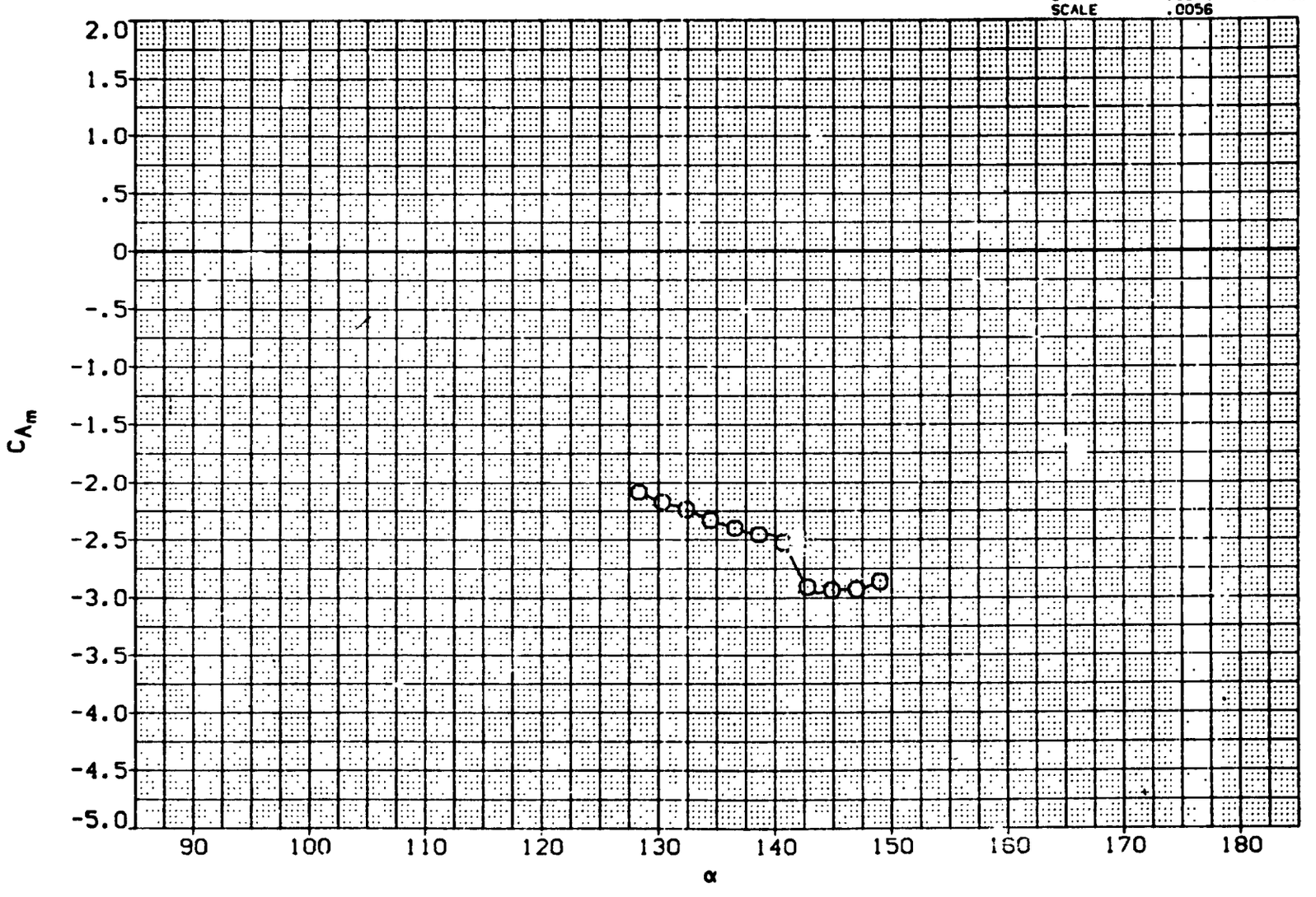
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A16011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(E)MACH = 1.96

DAT	SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(/100!1)		O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0050	

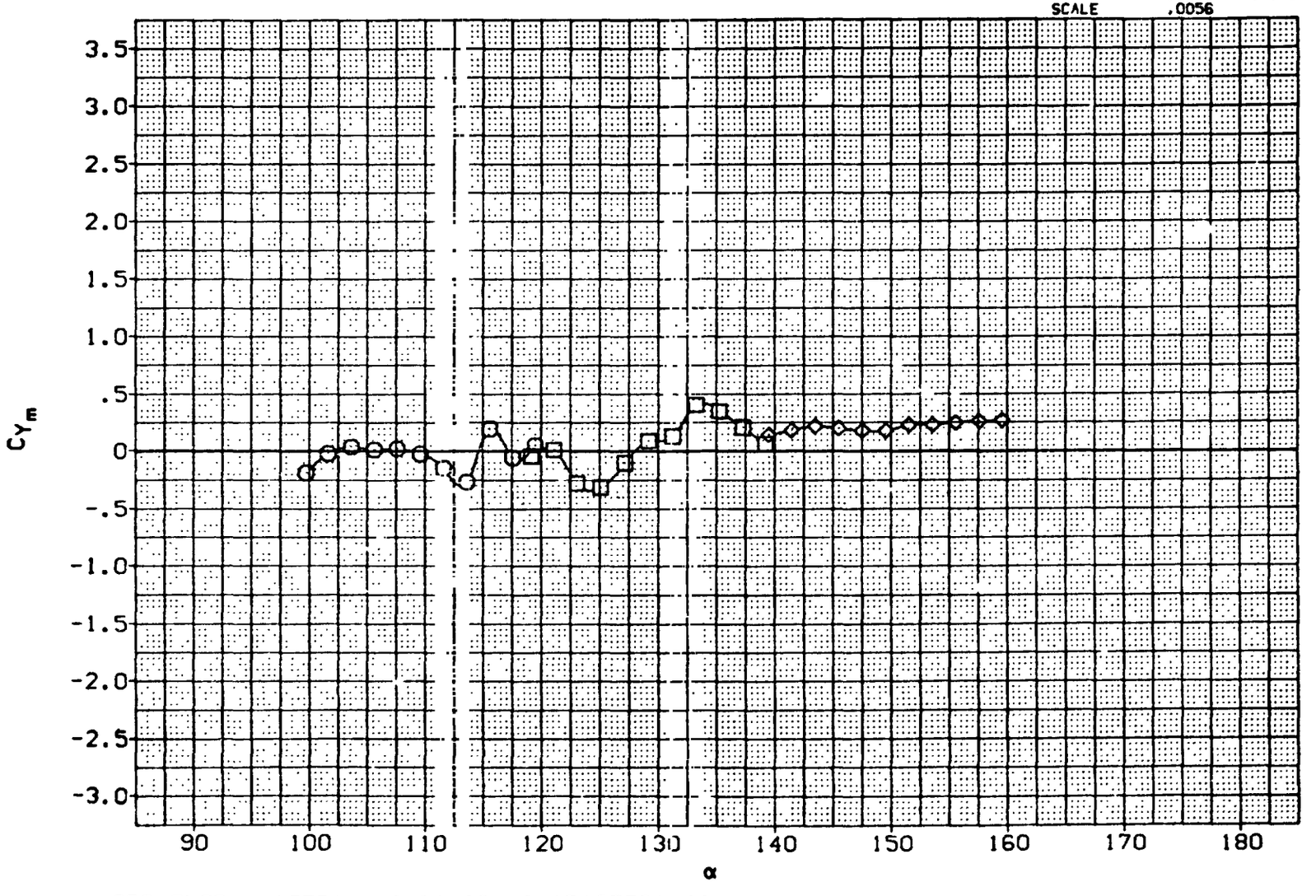
SRB ENTRY LONGITUDINAL STABILITY AND DRAG CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



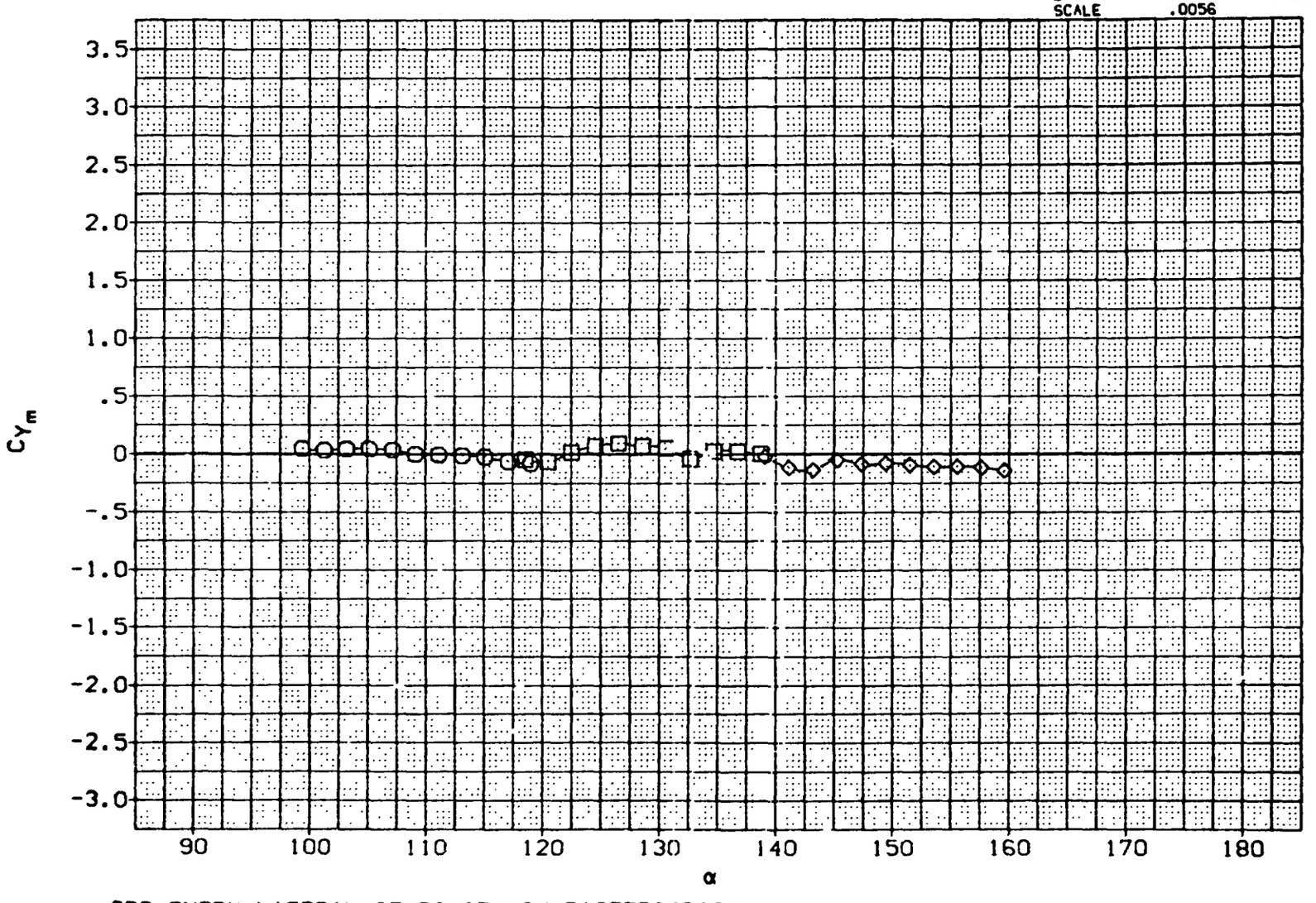
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



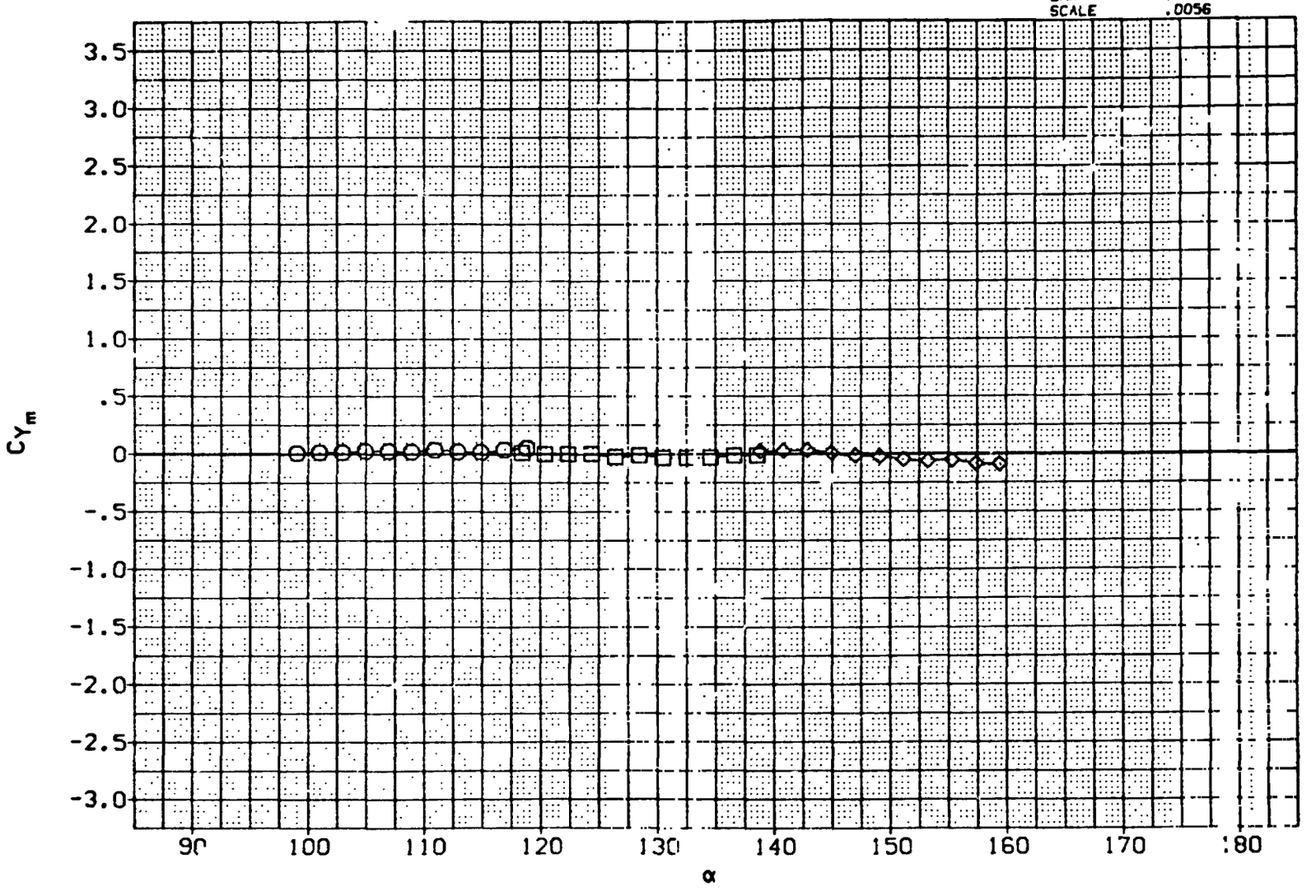
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

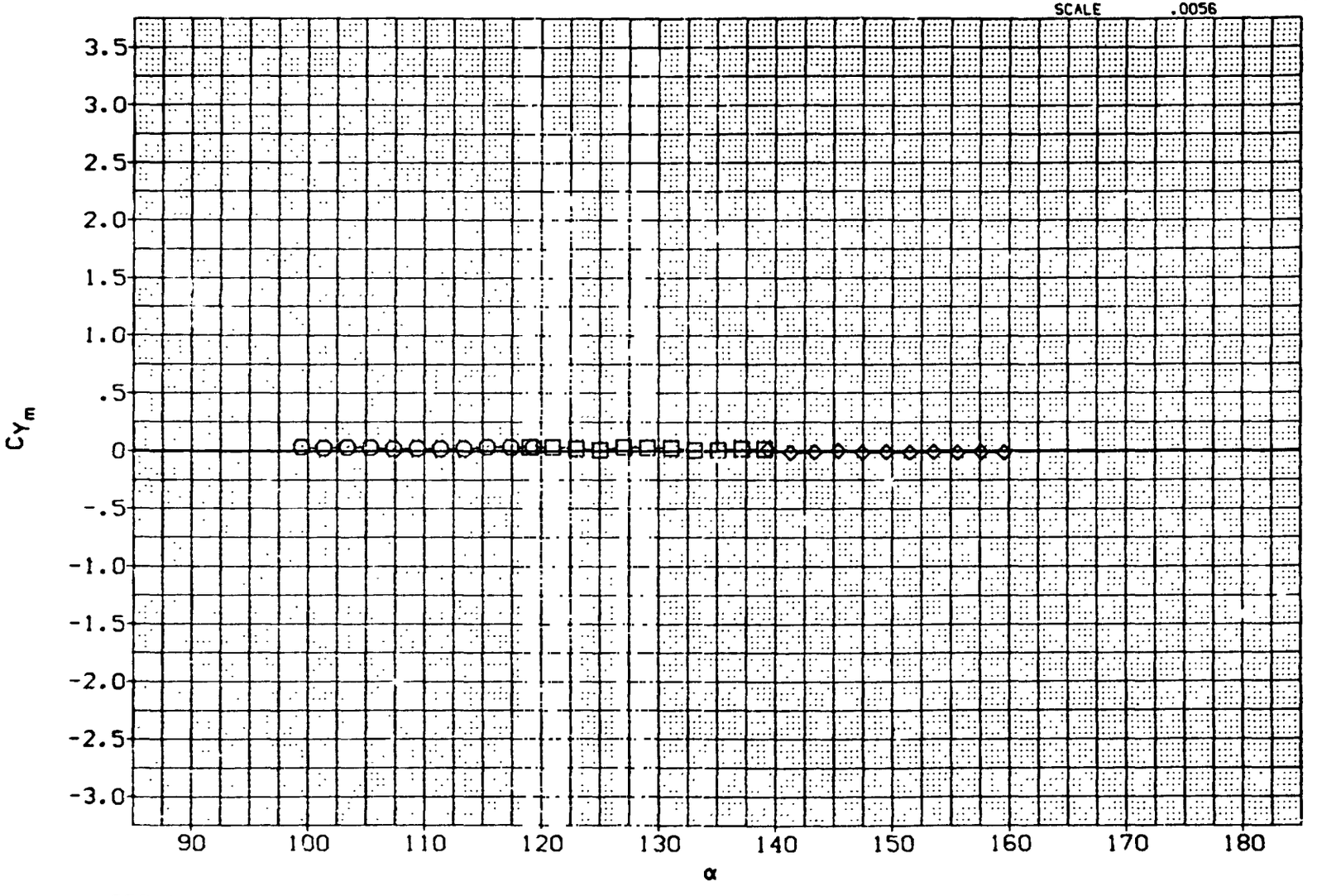
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



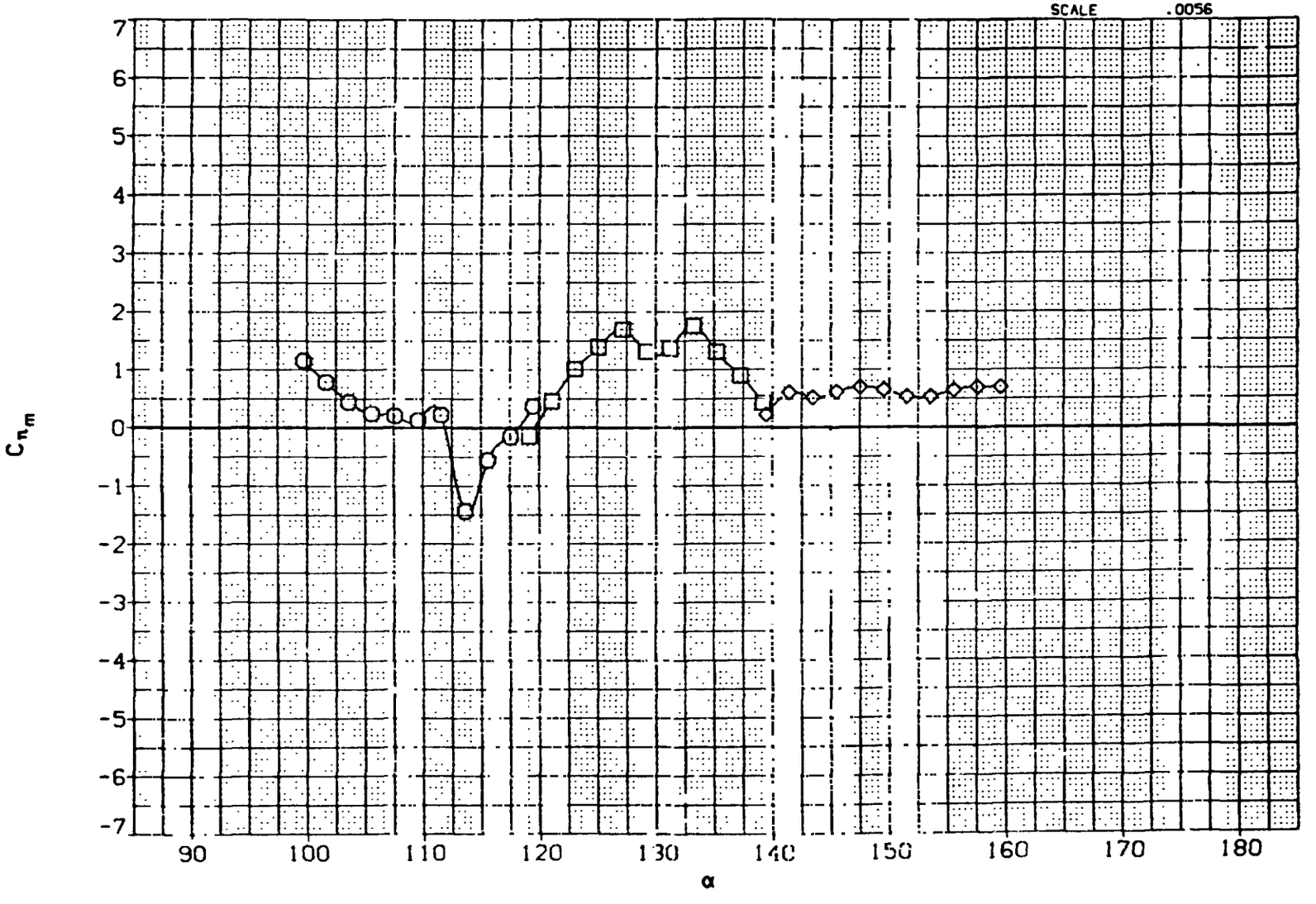
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◁	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



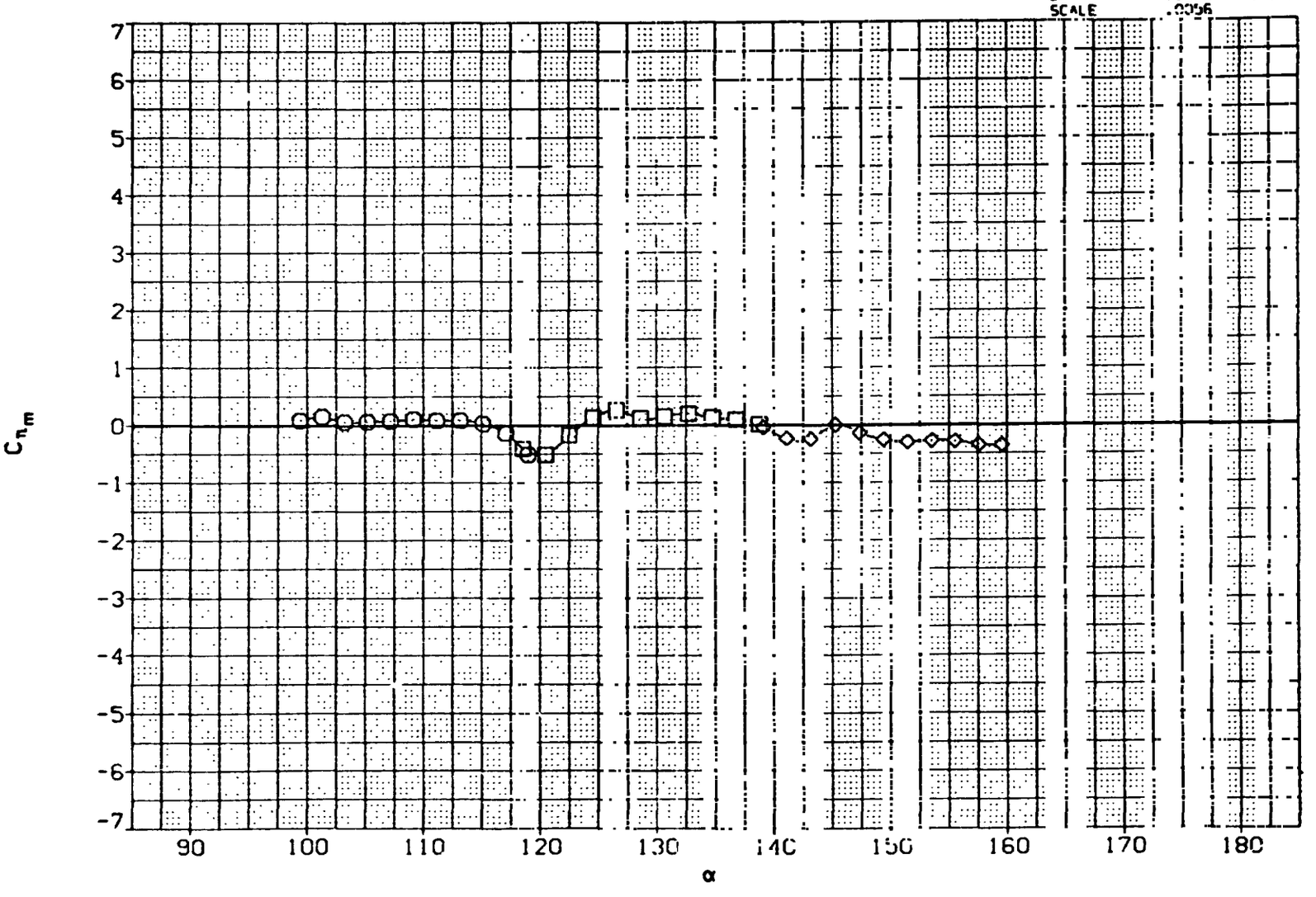
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



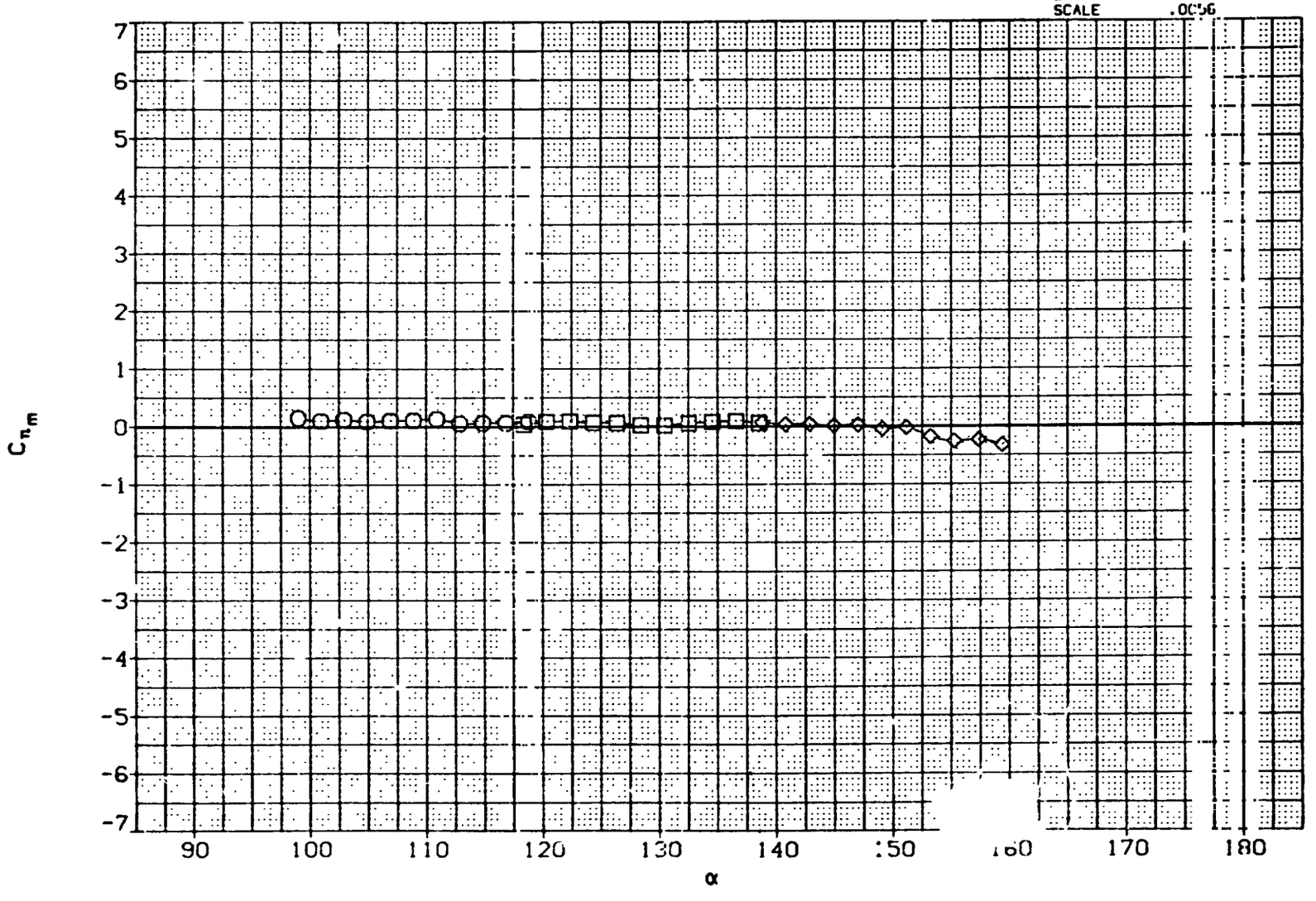
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



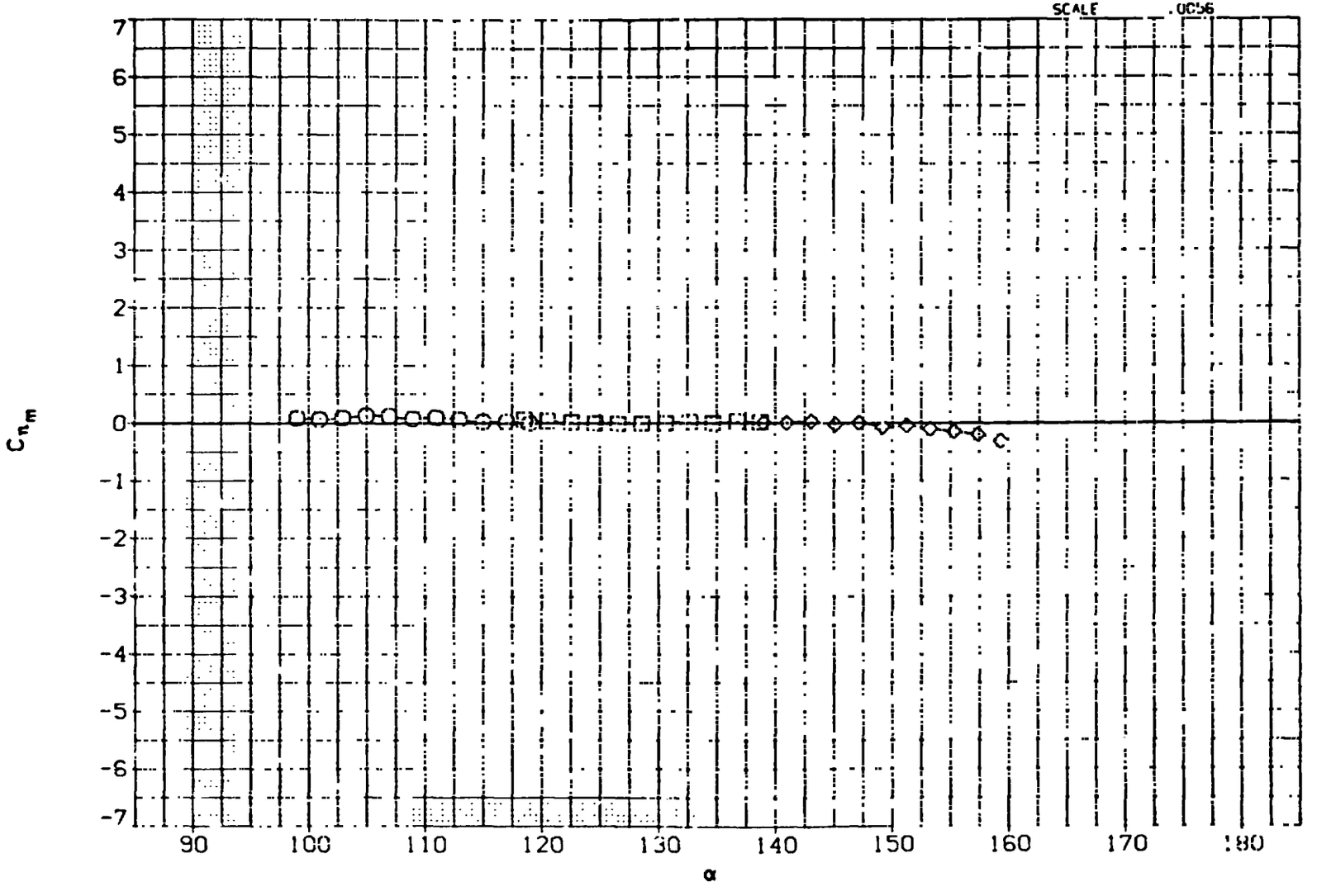
SRB ENTR'' LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 6[illegible] (SA14F(1)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

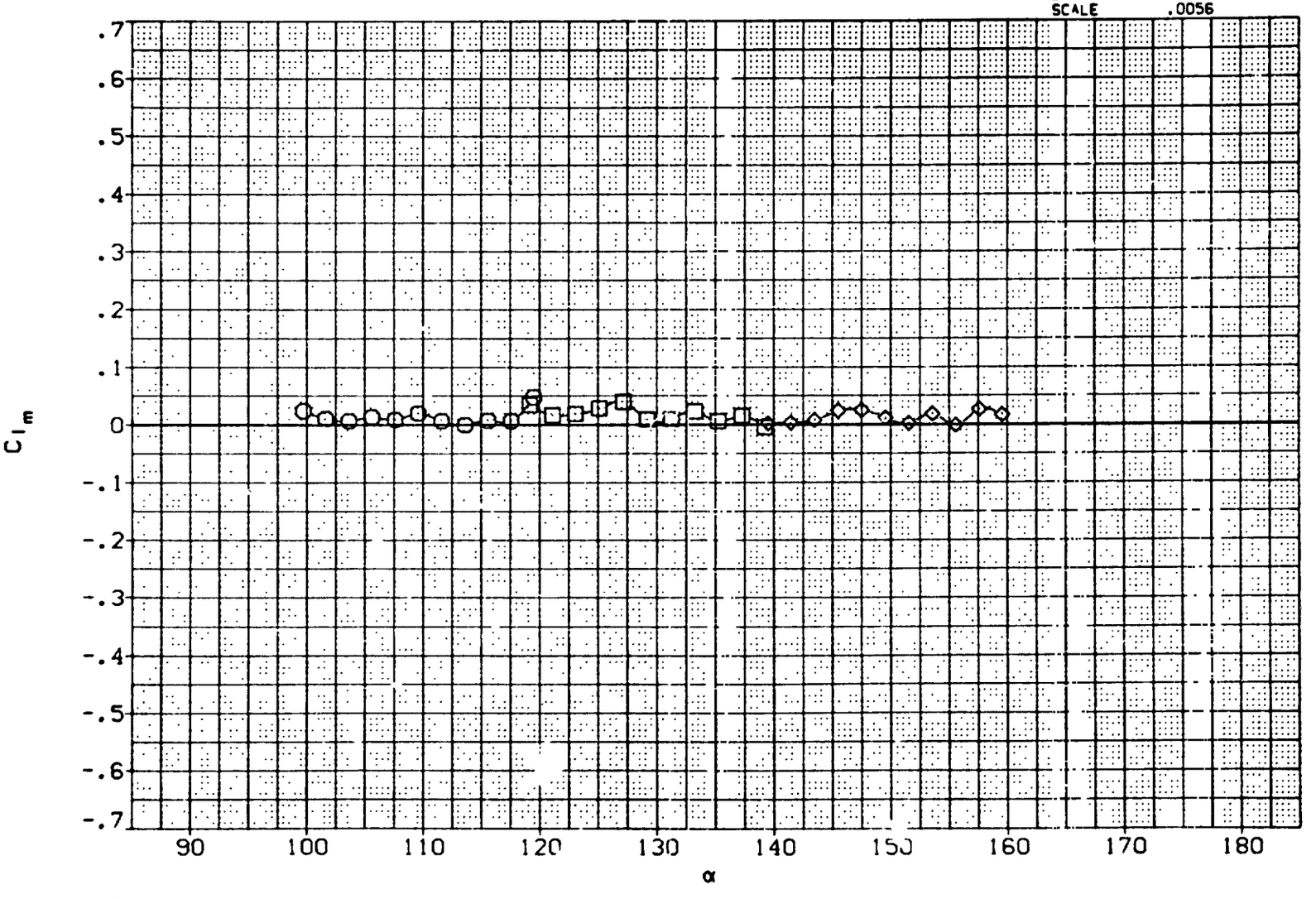
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBRE 160	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



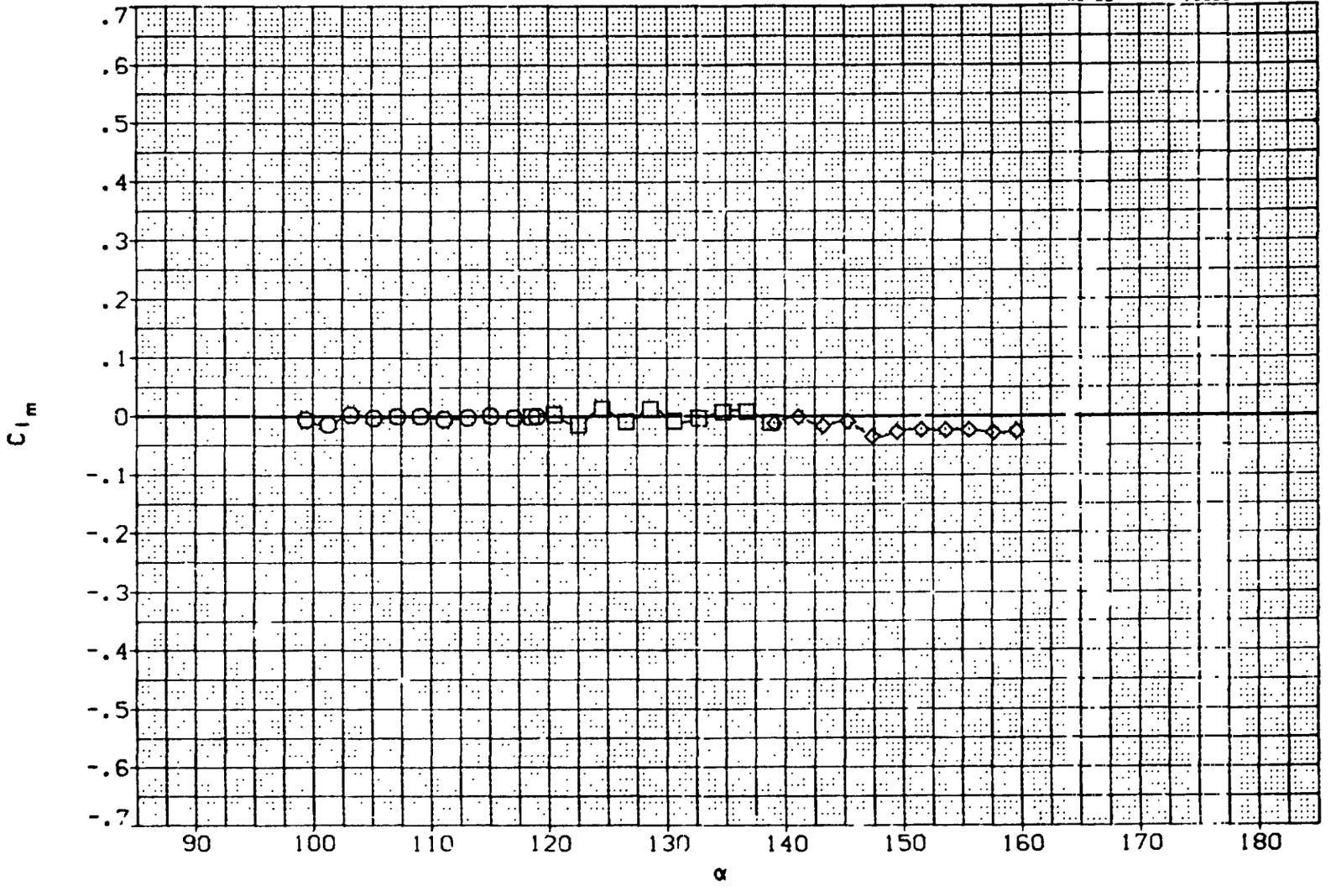
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



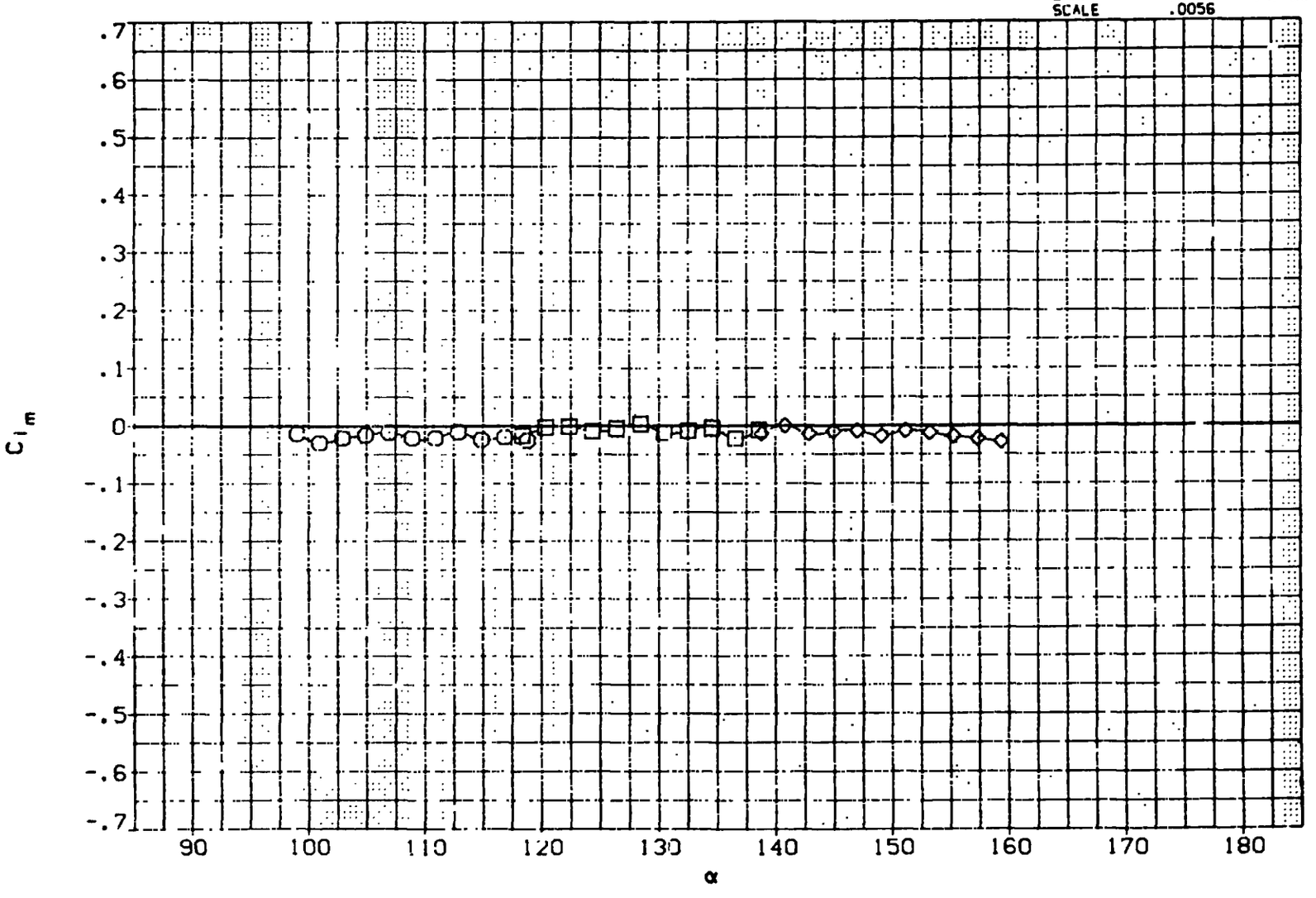
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



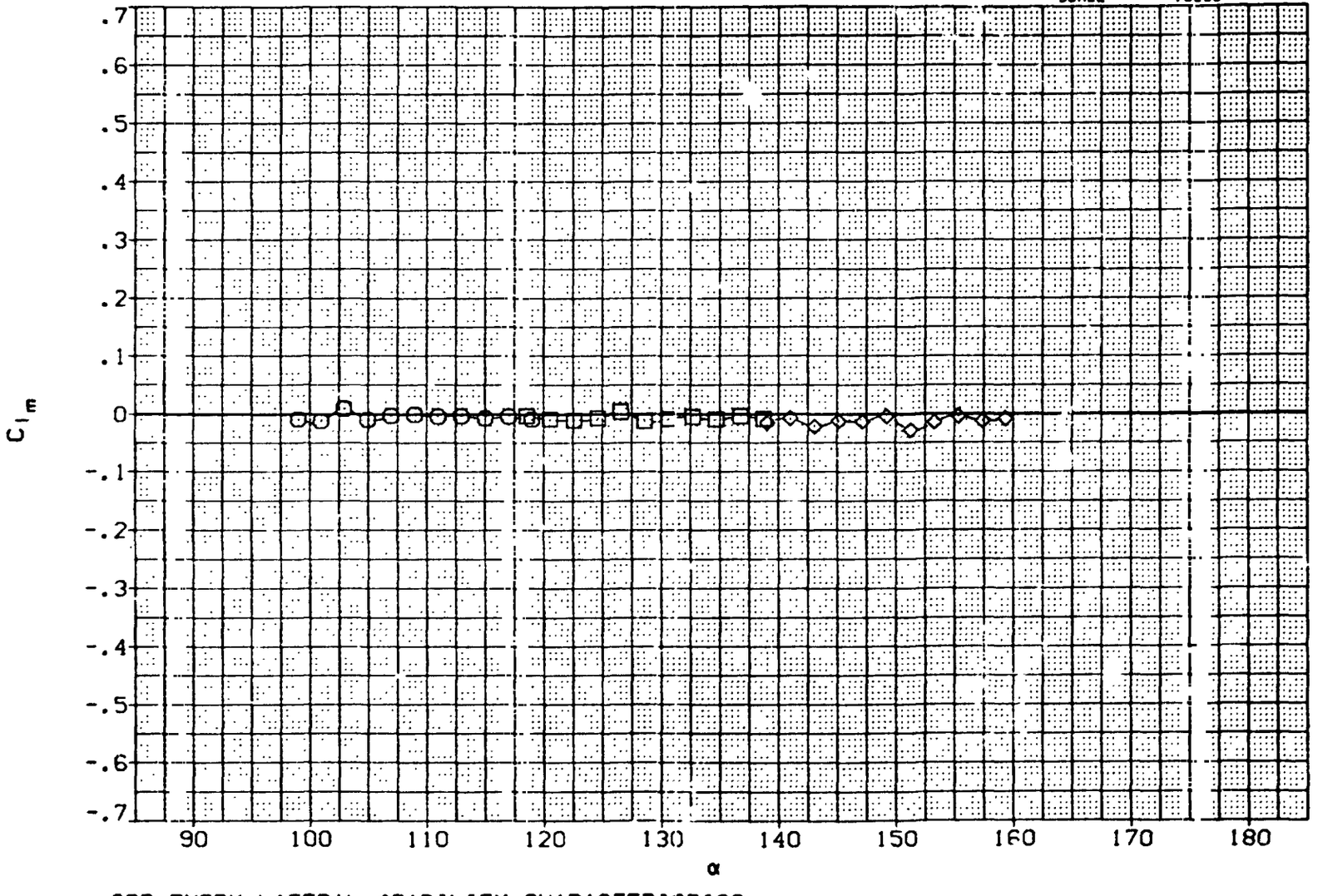
SRB ENTRY L[illegible]RAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.2056	



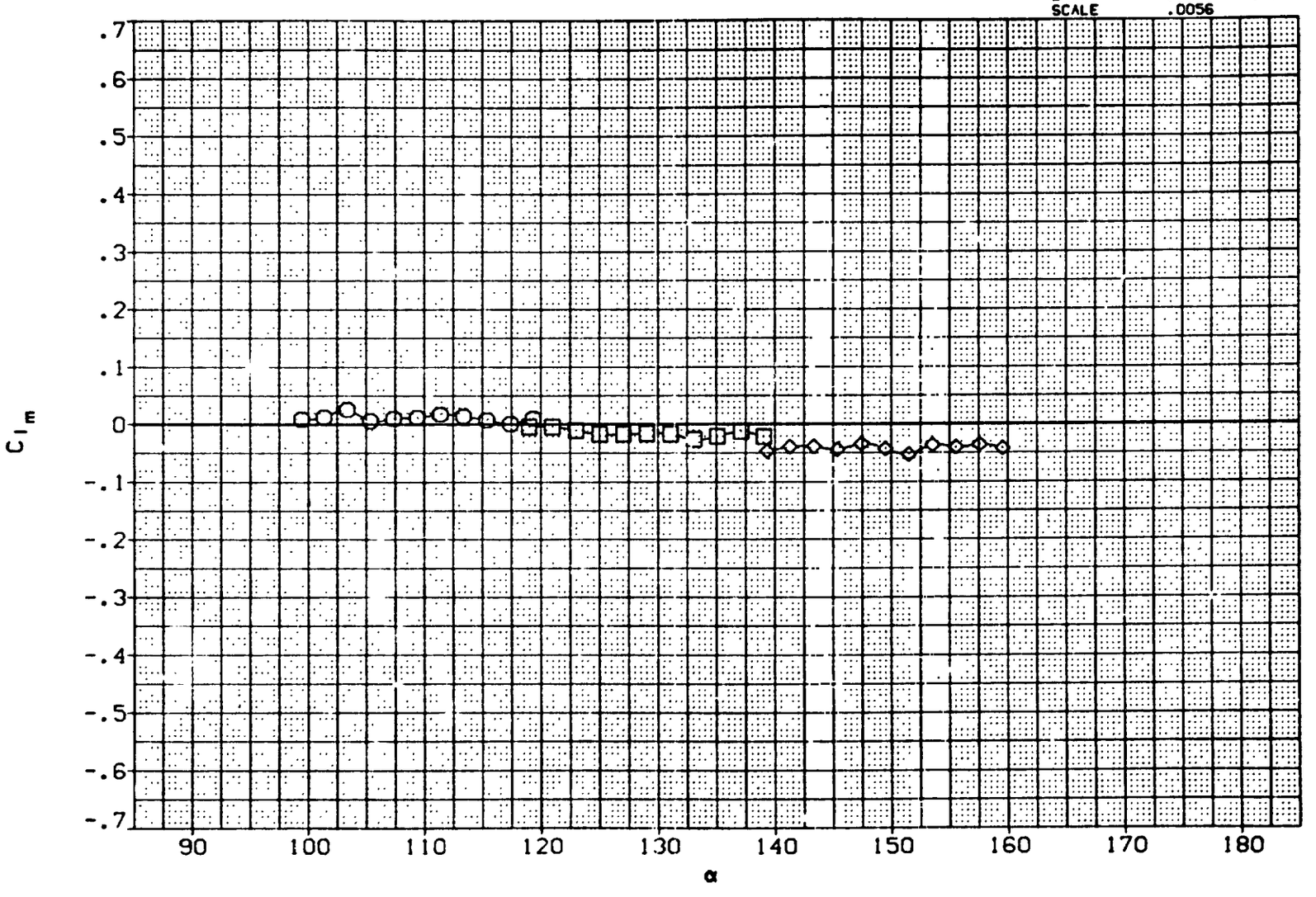
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

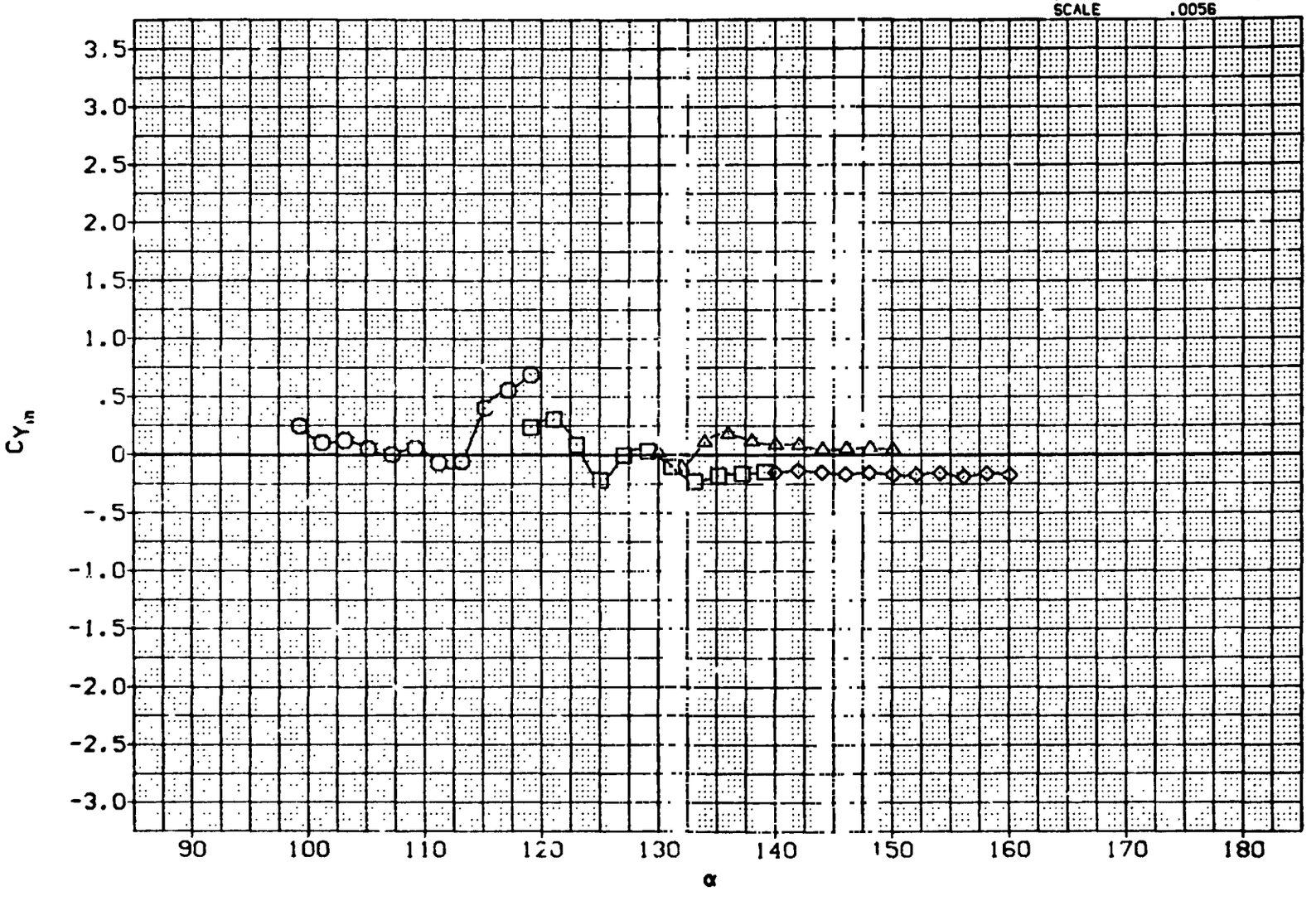


SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



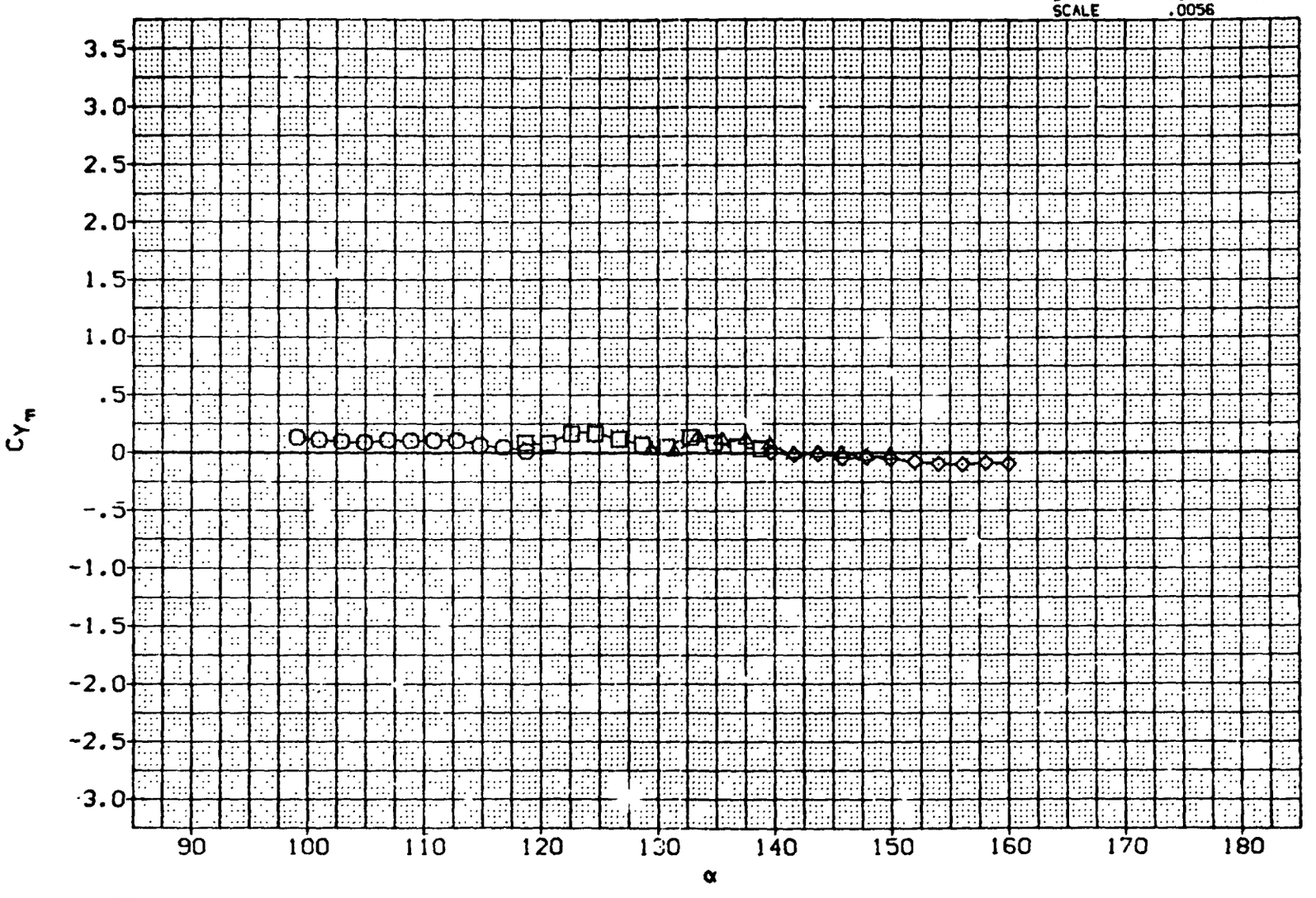
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	IBETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



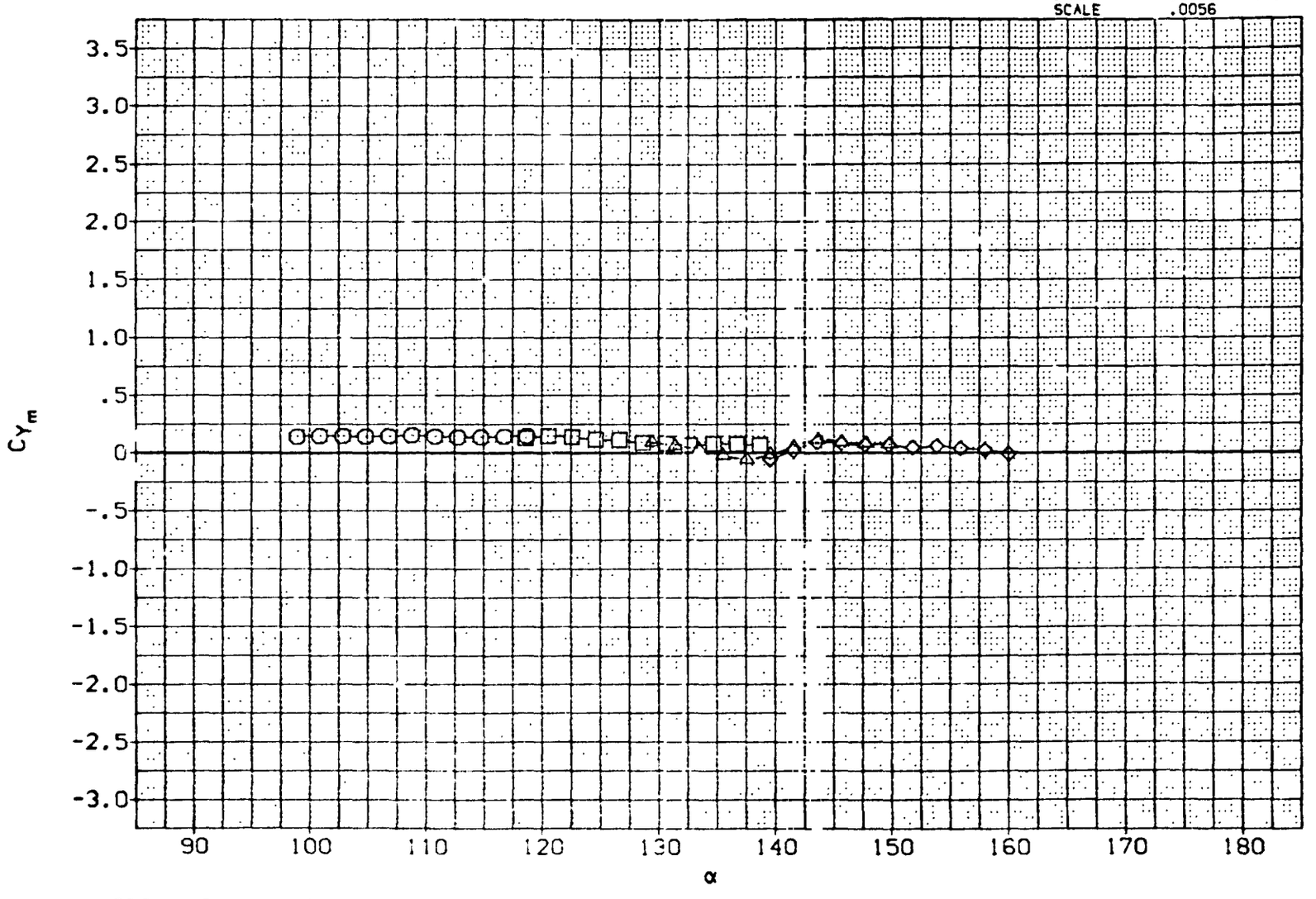
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ETA
(C10004)	○	MSFC TWT 620 (SA14F(\)) STING EFFECTS, NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



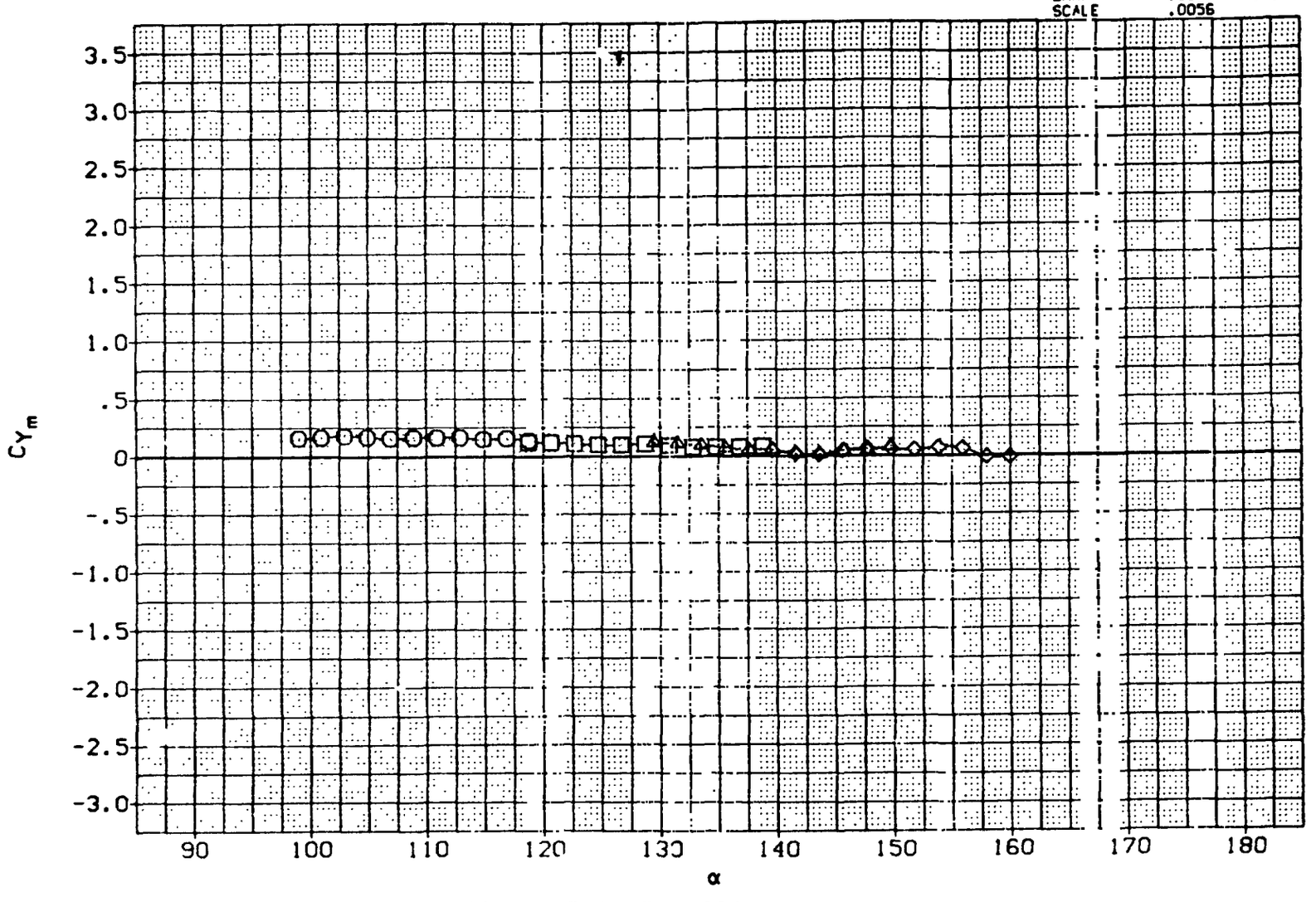
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

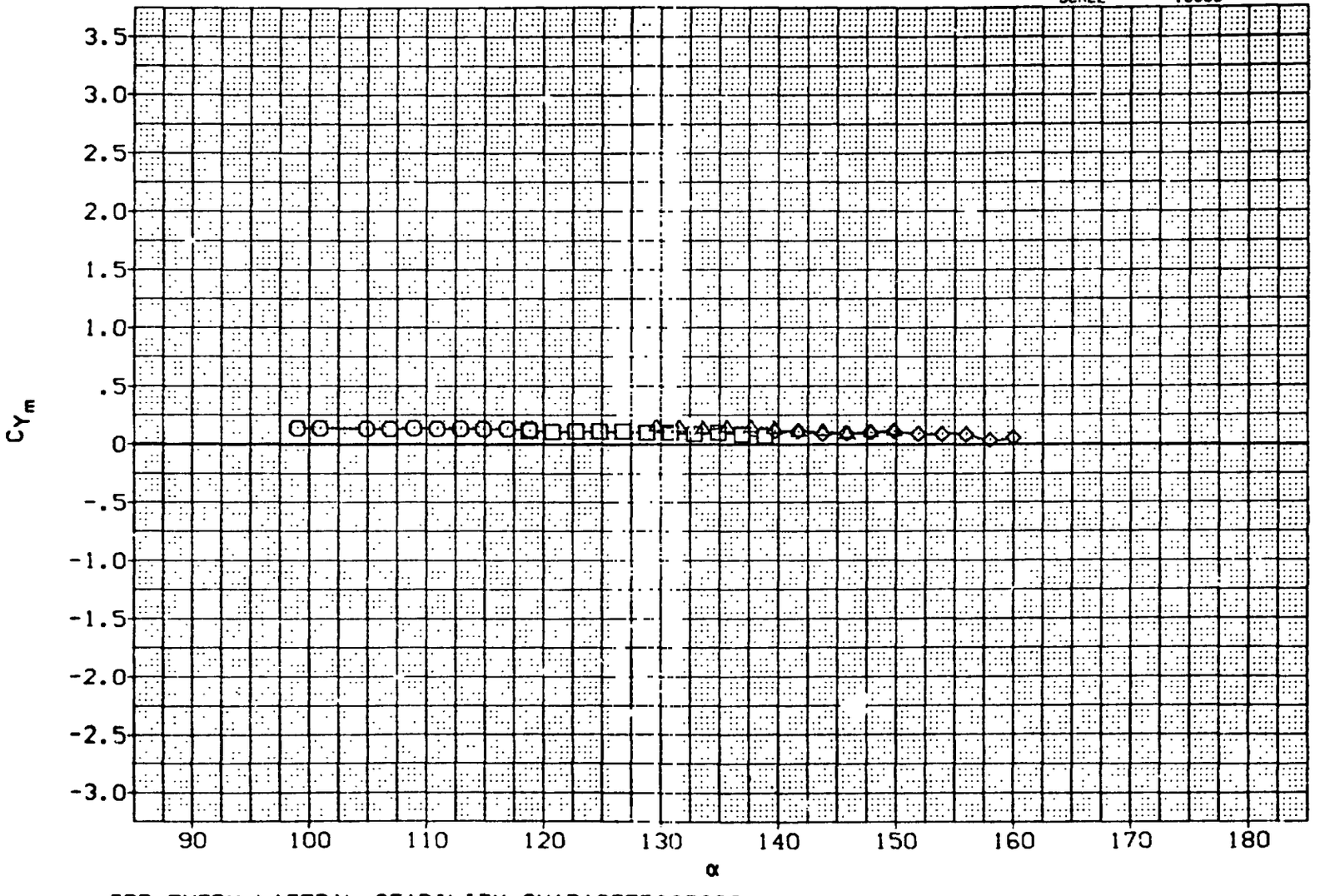


SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



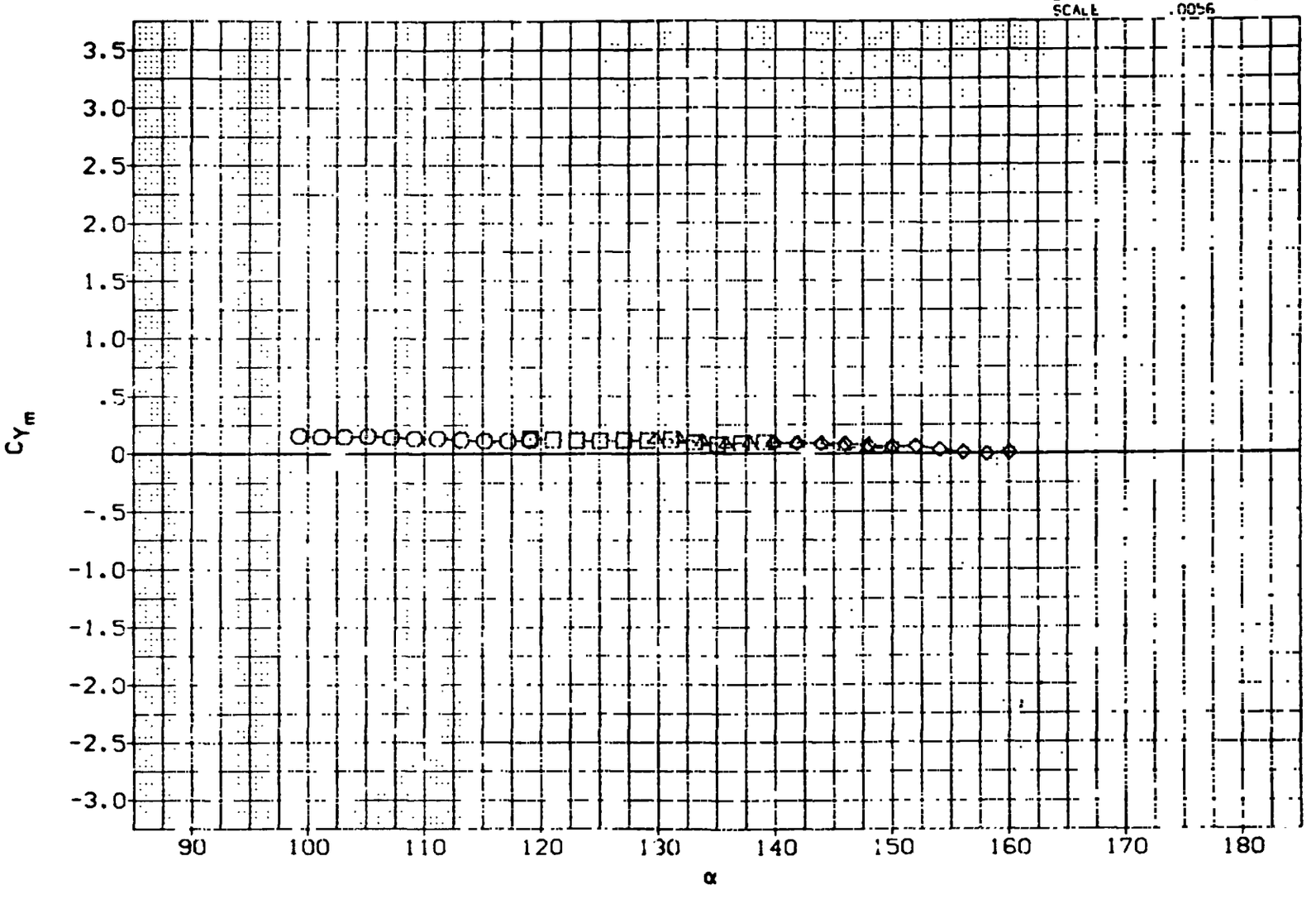
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NOREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



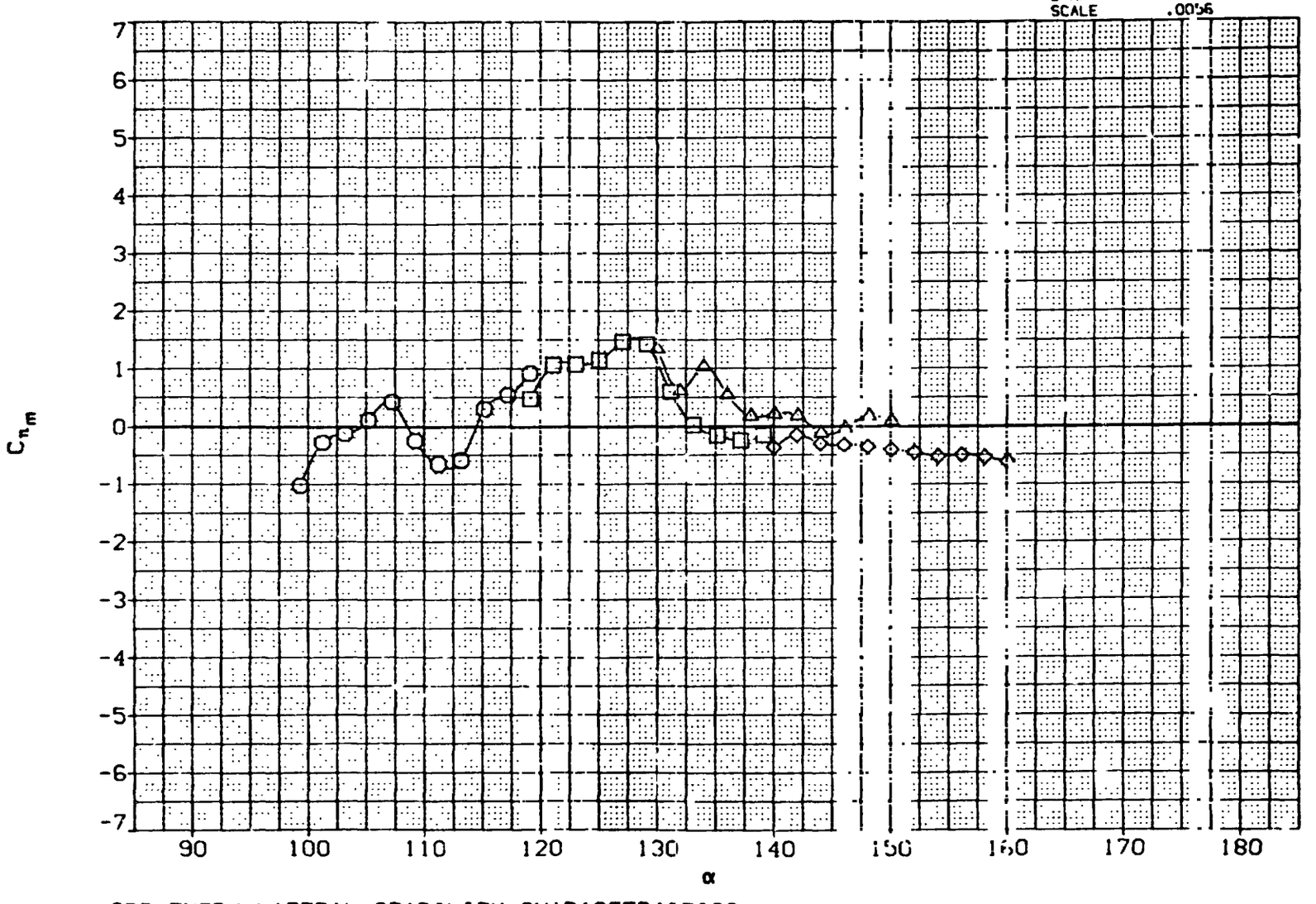
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) [illegible]NG EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



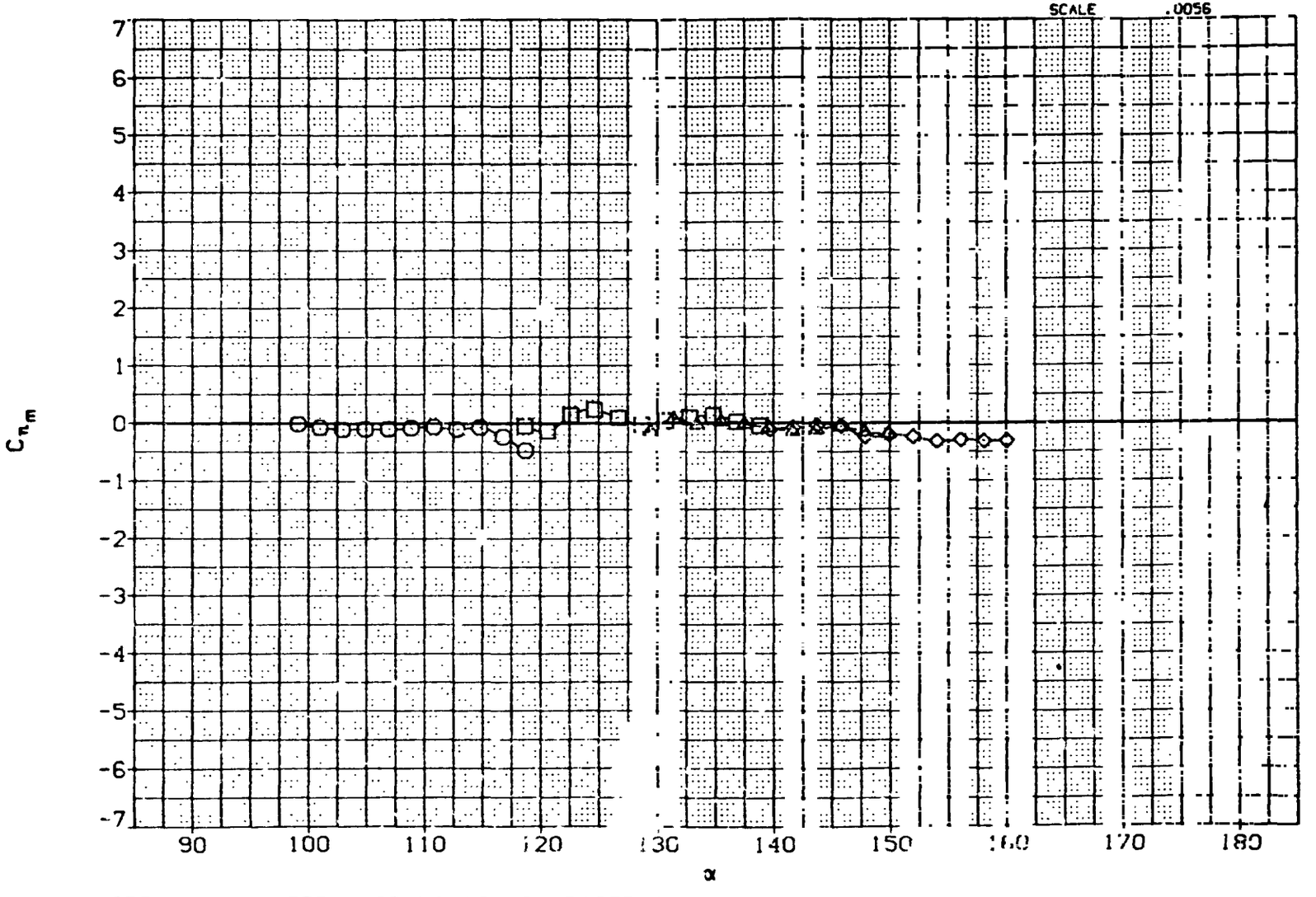
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM[illegible]	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM[illegible]	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

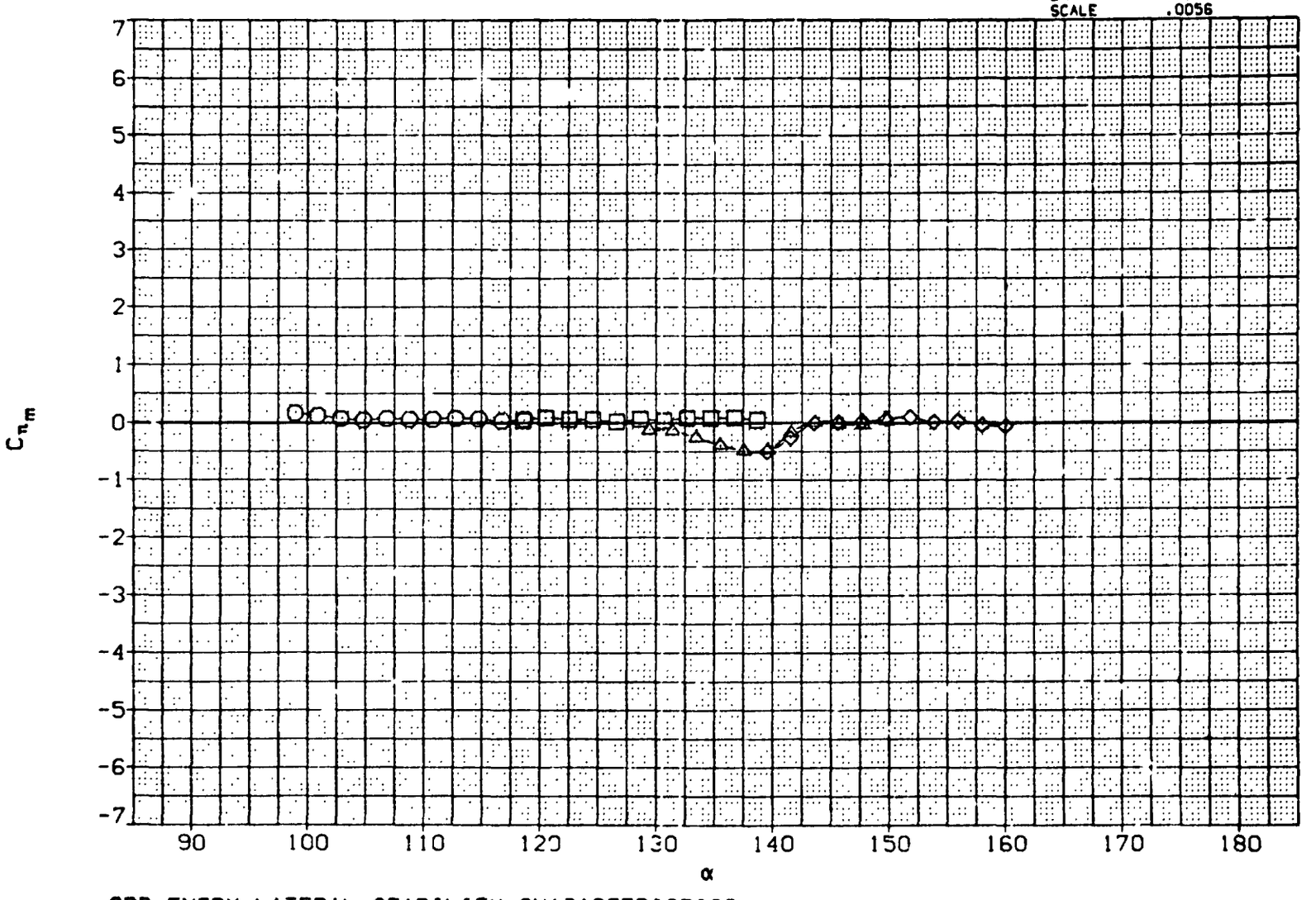


SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	EETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



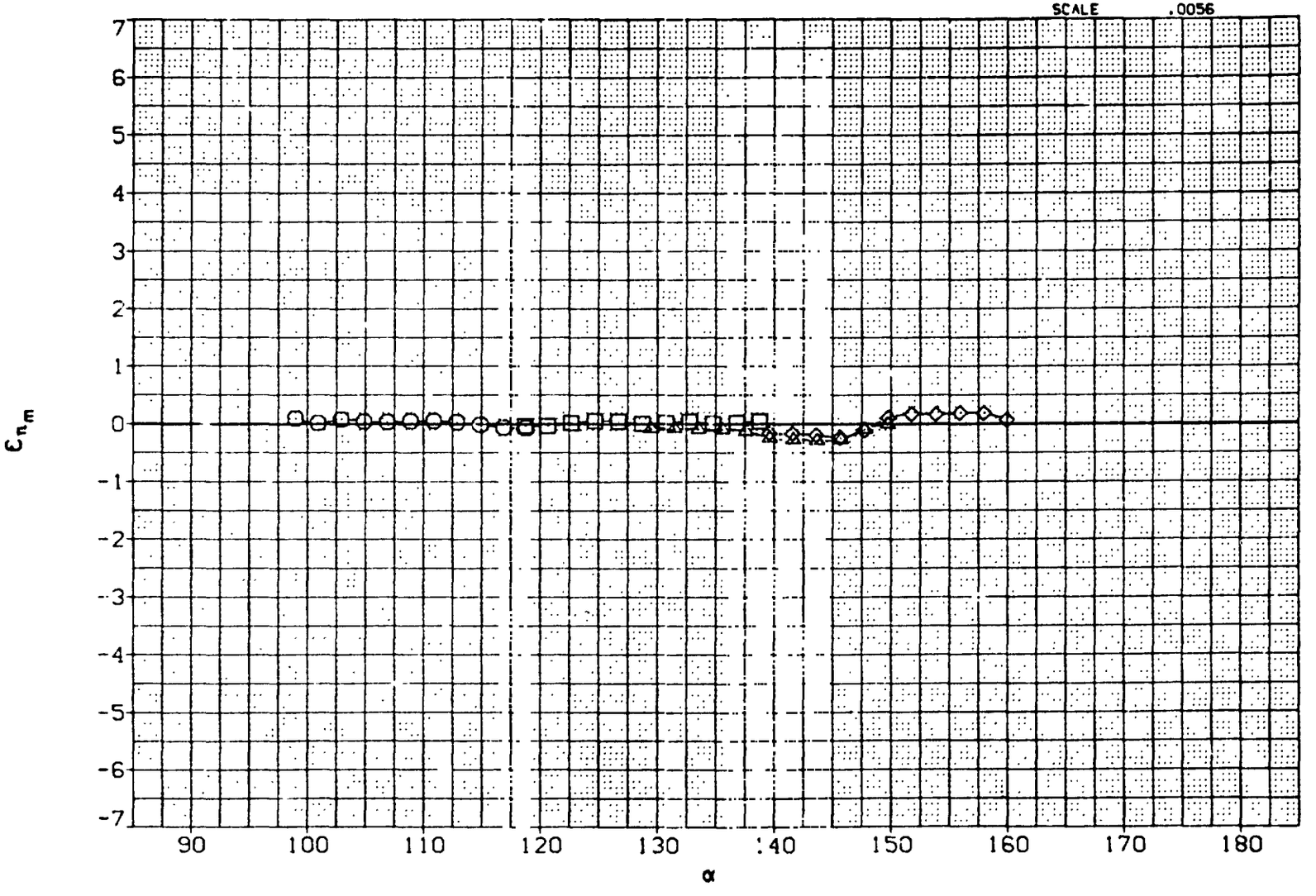
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A')06)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(.0007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



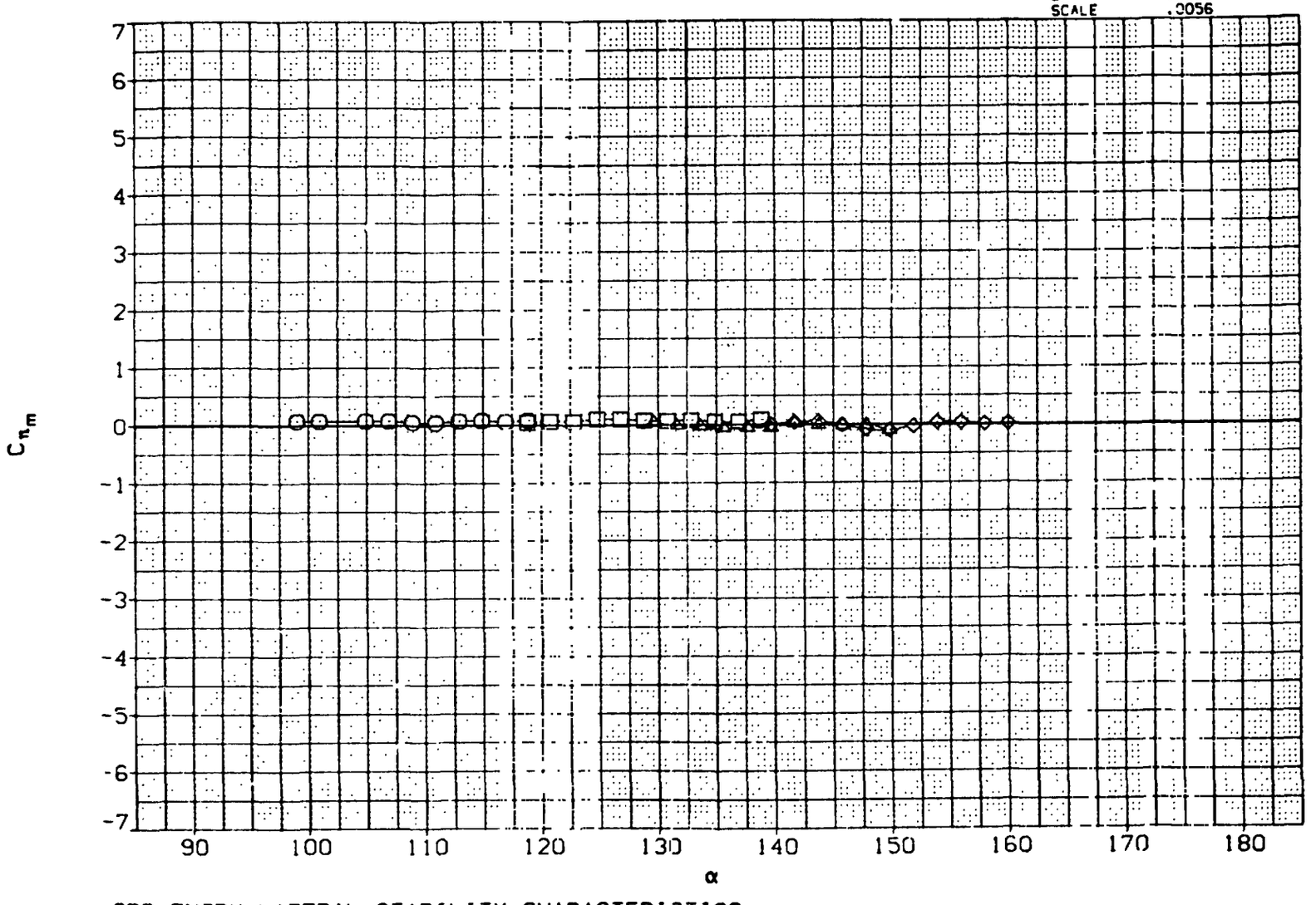
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



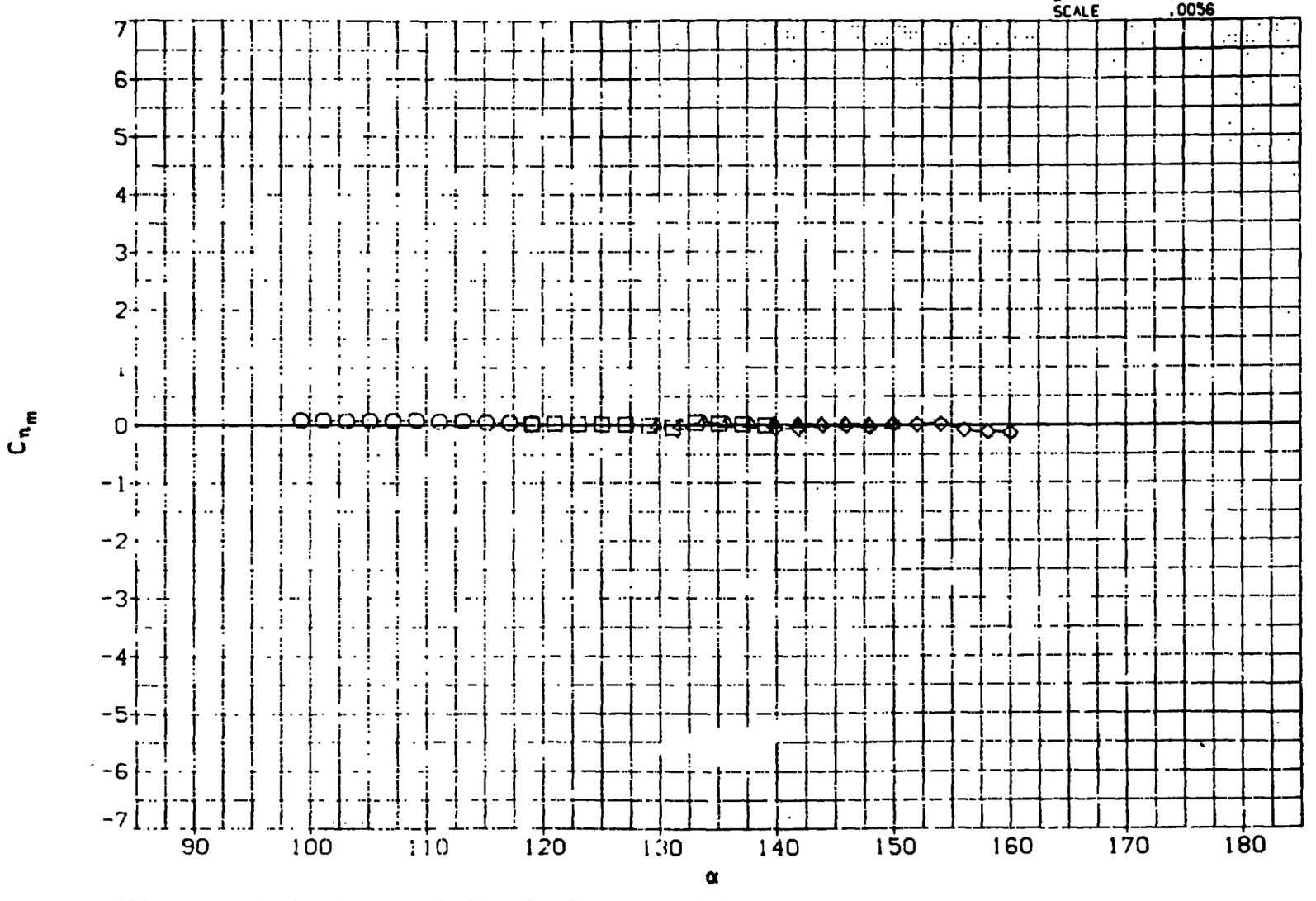
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



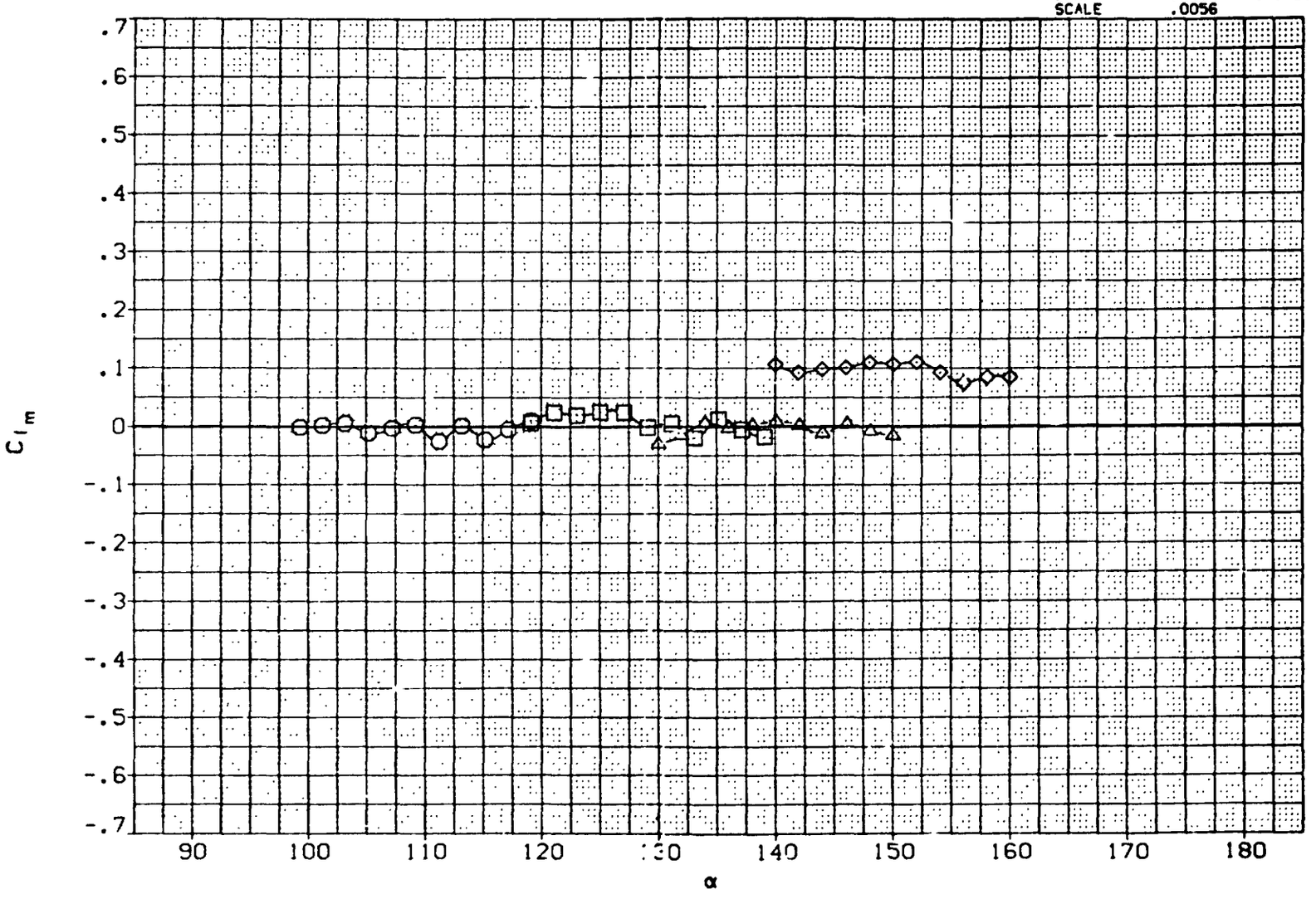
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



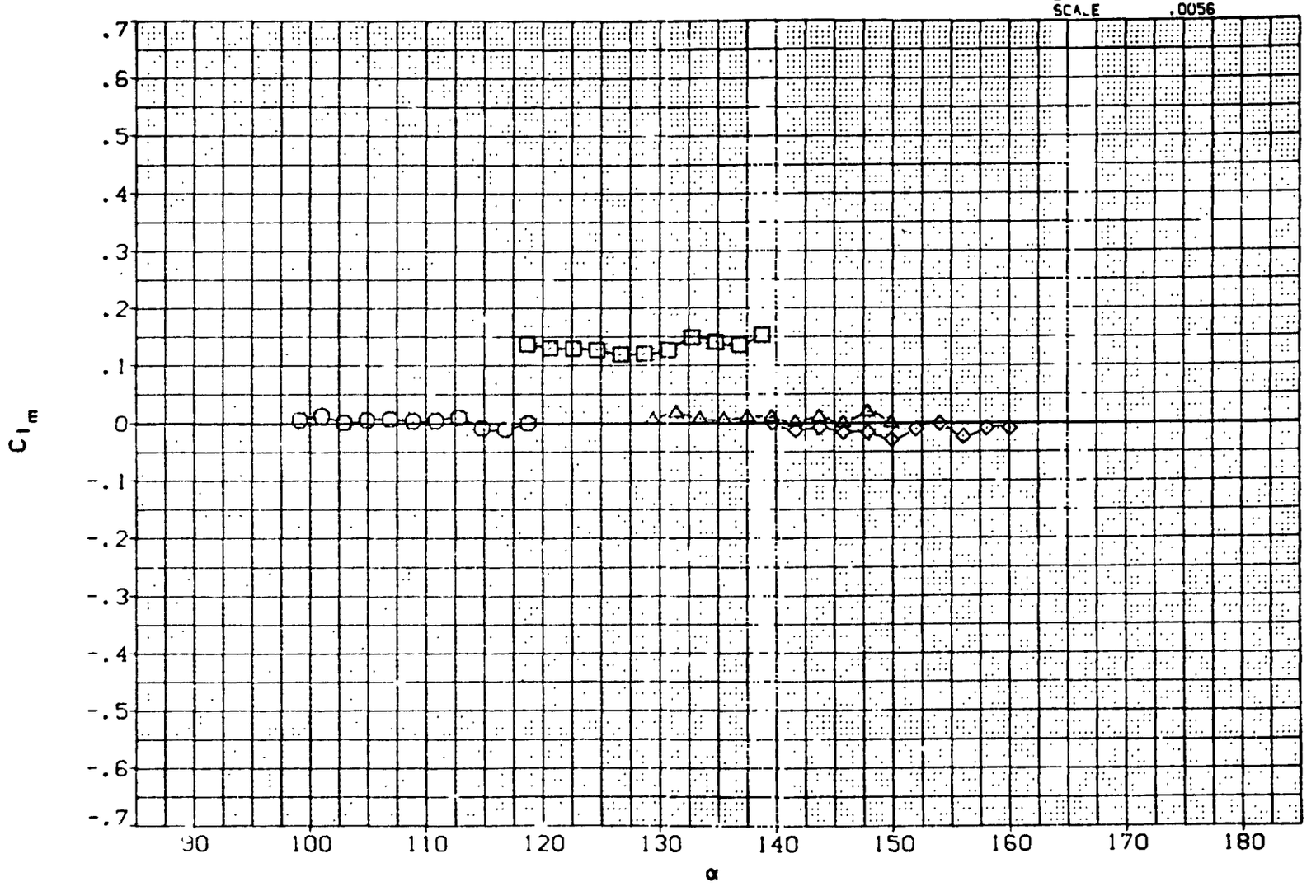
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



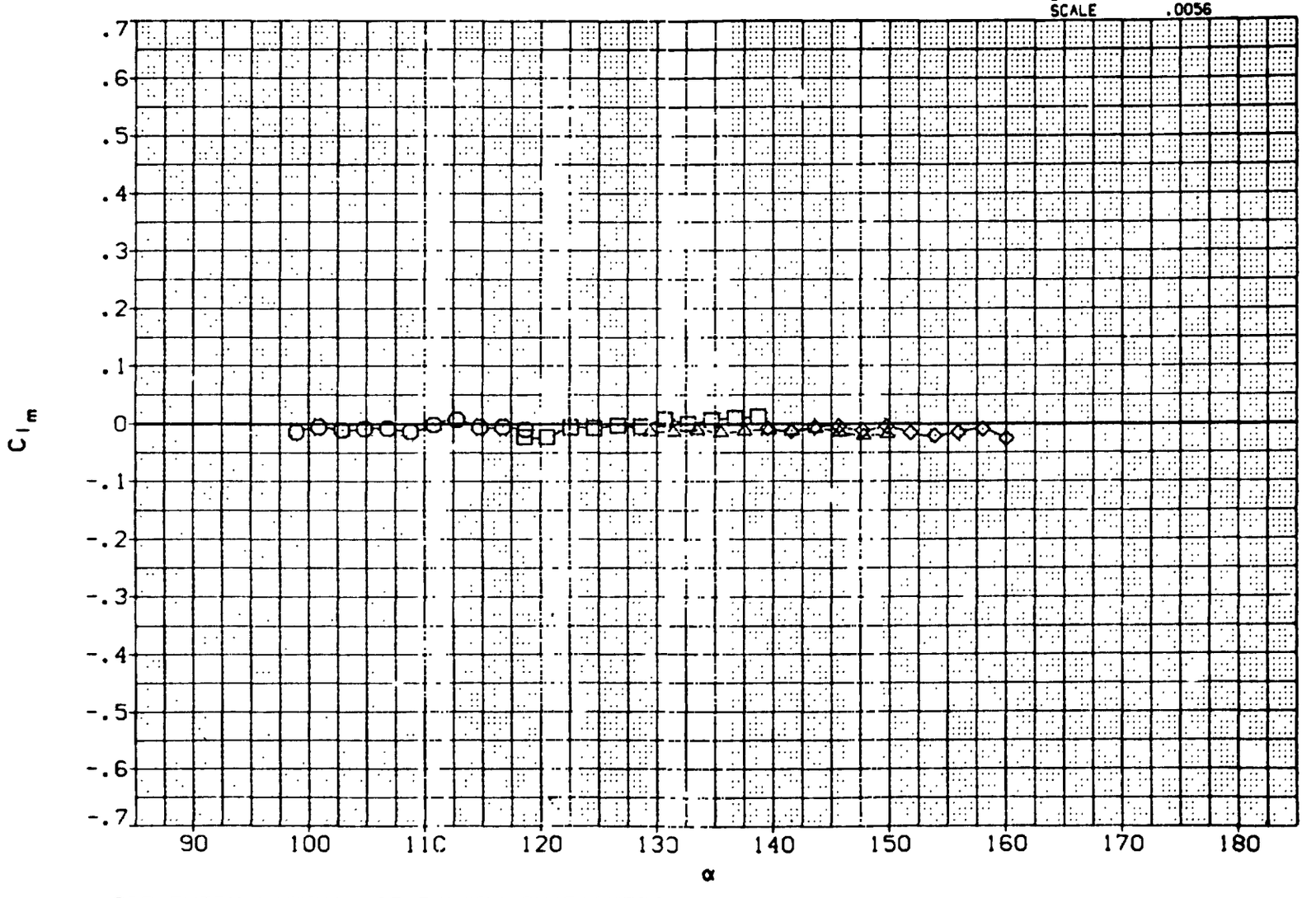
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

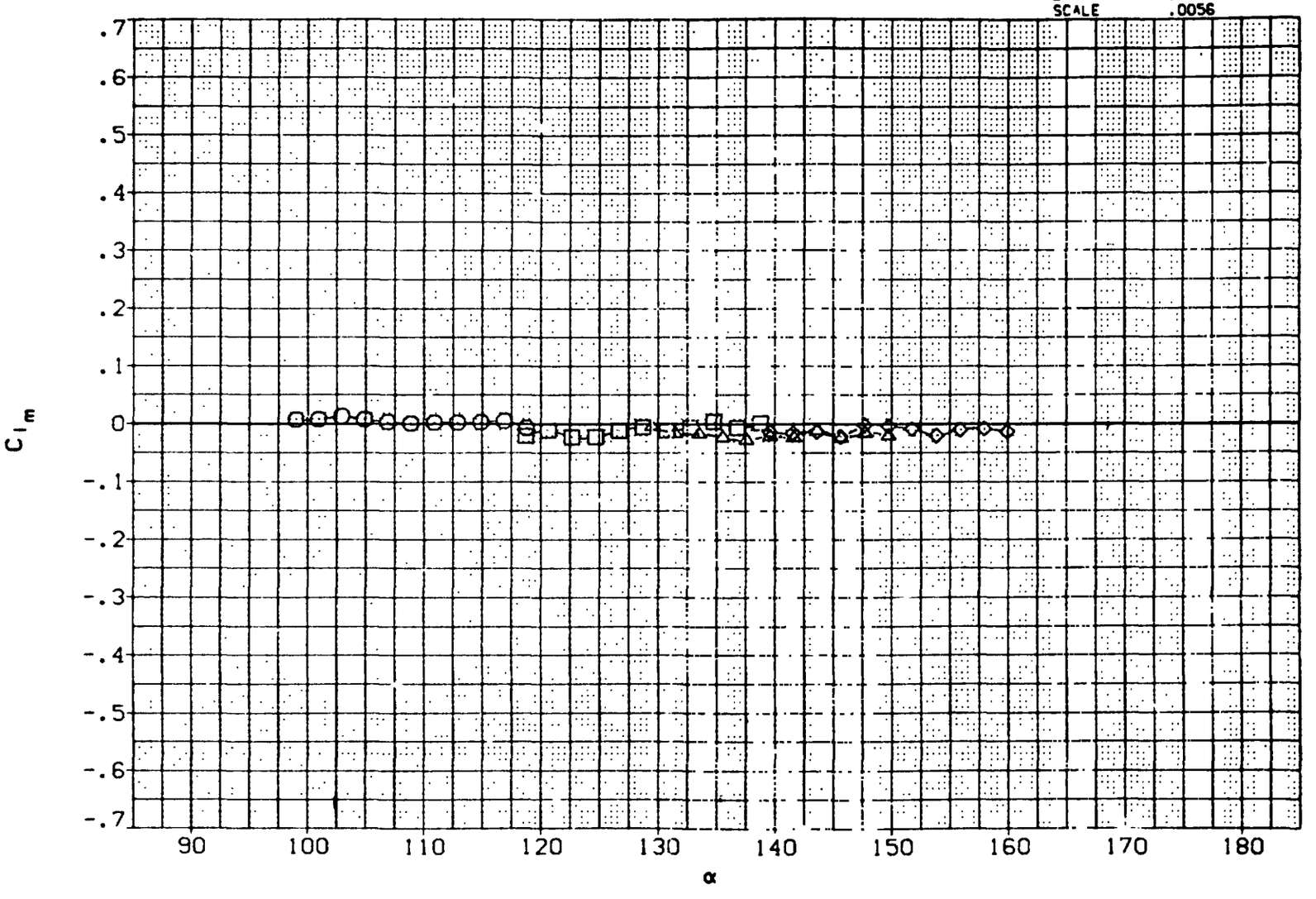


SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

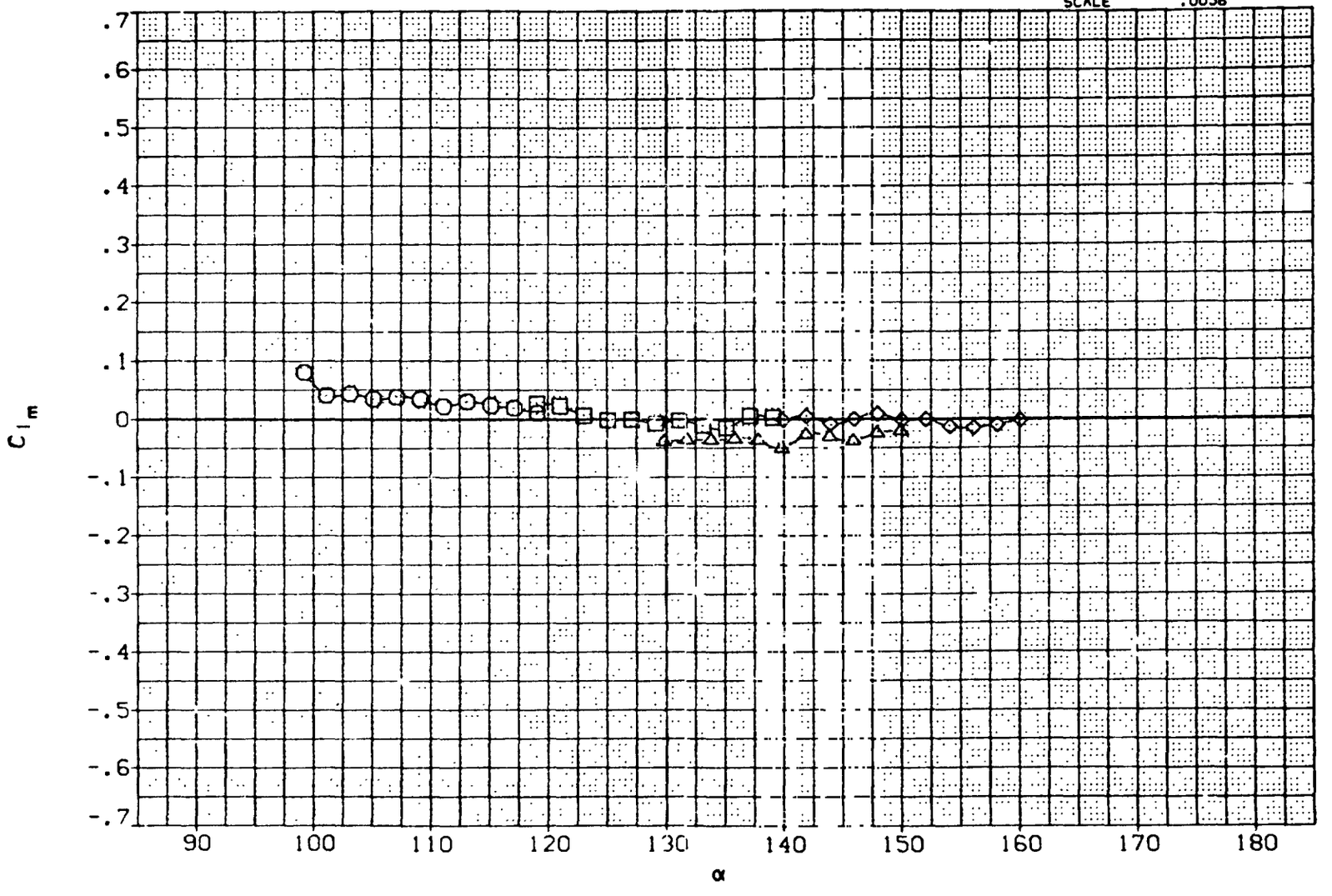
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



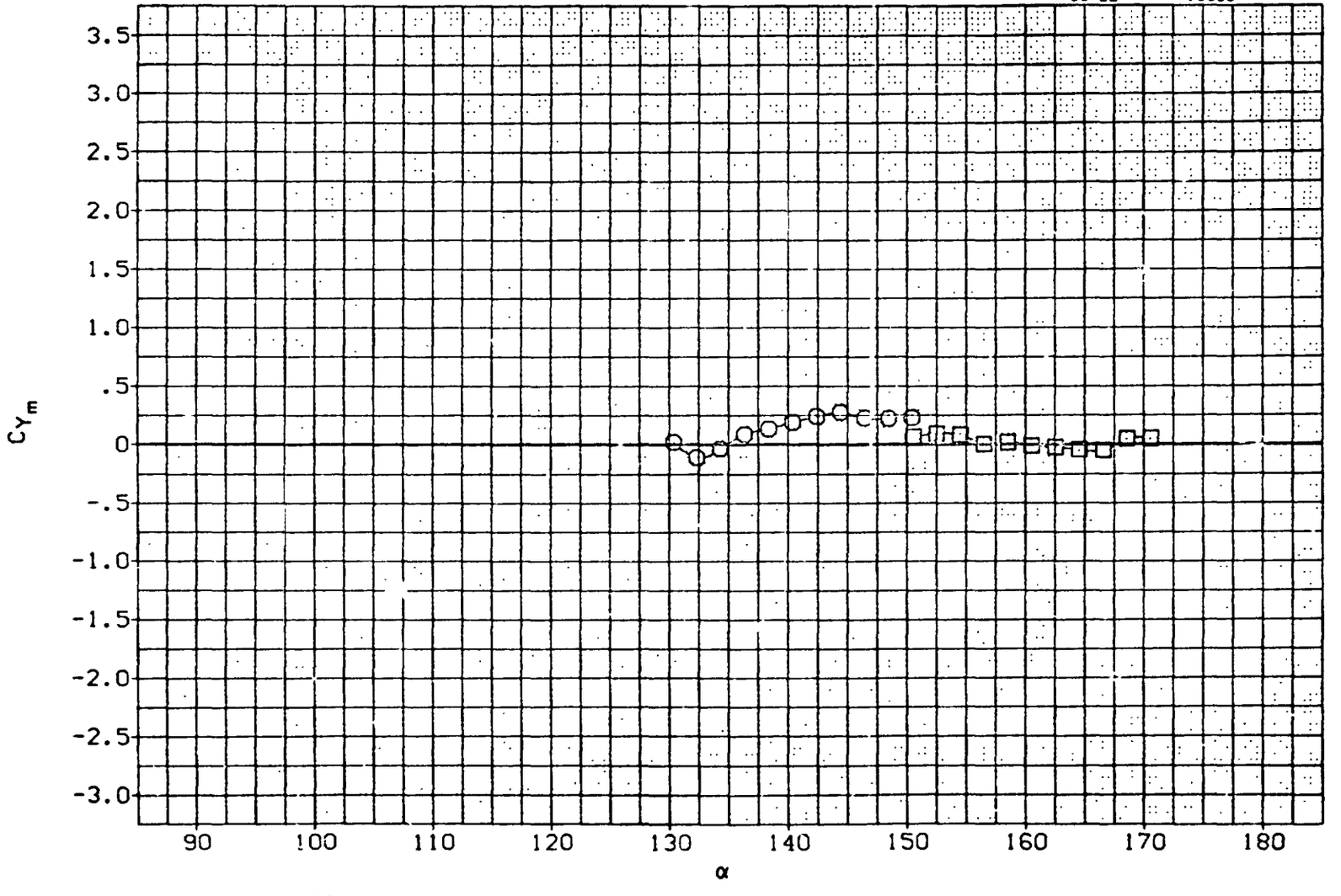
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



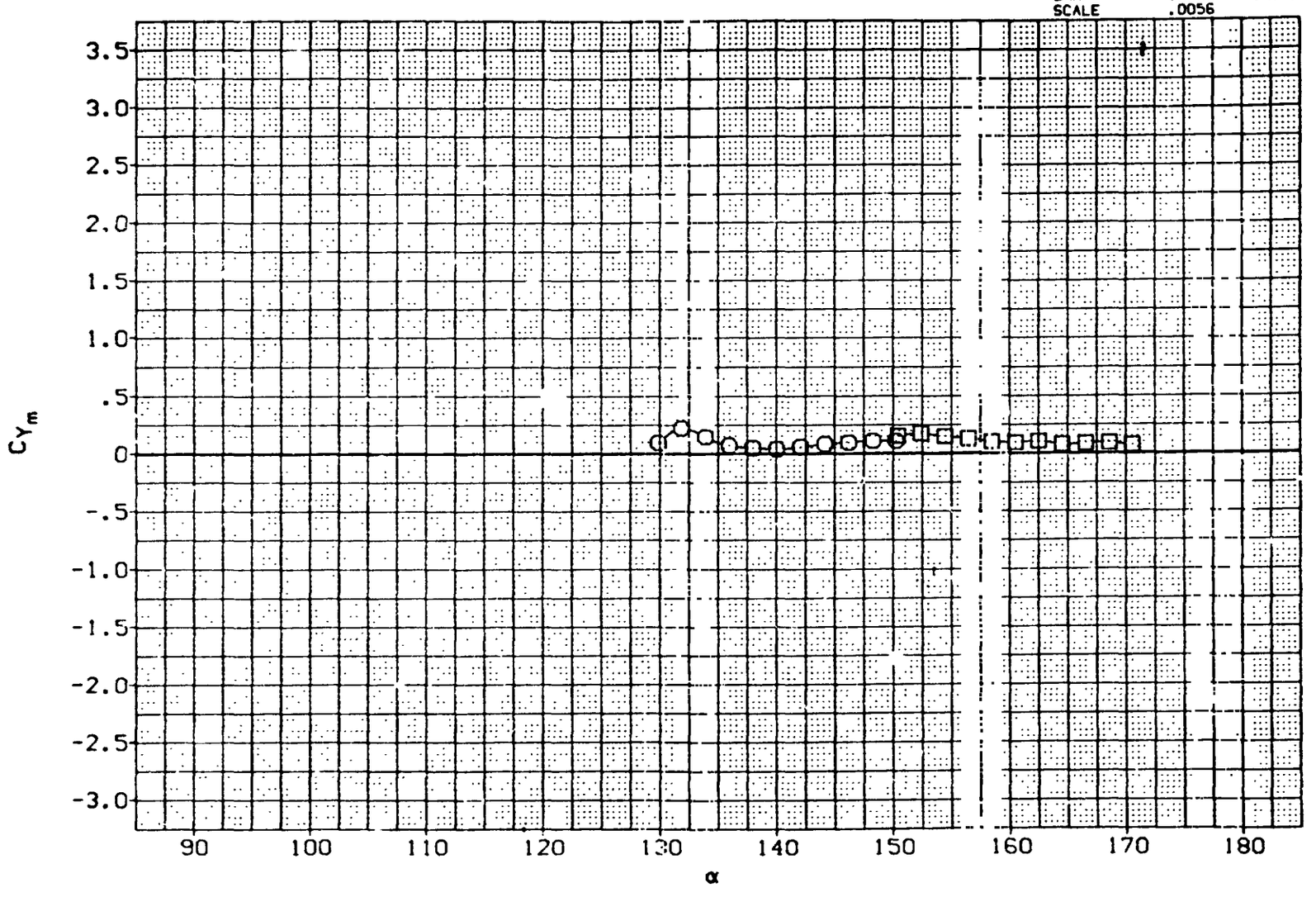
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



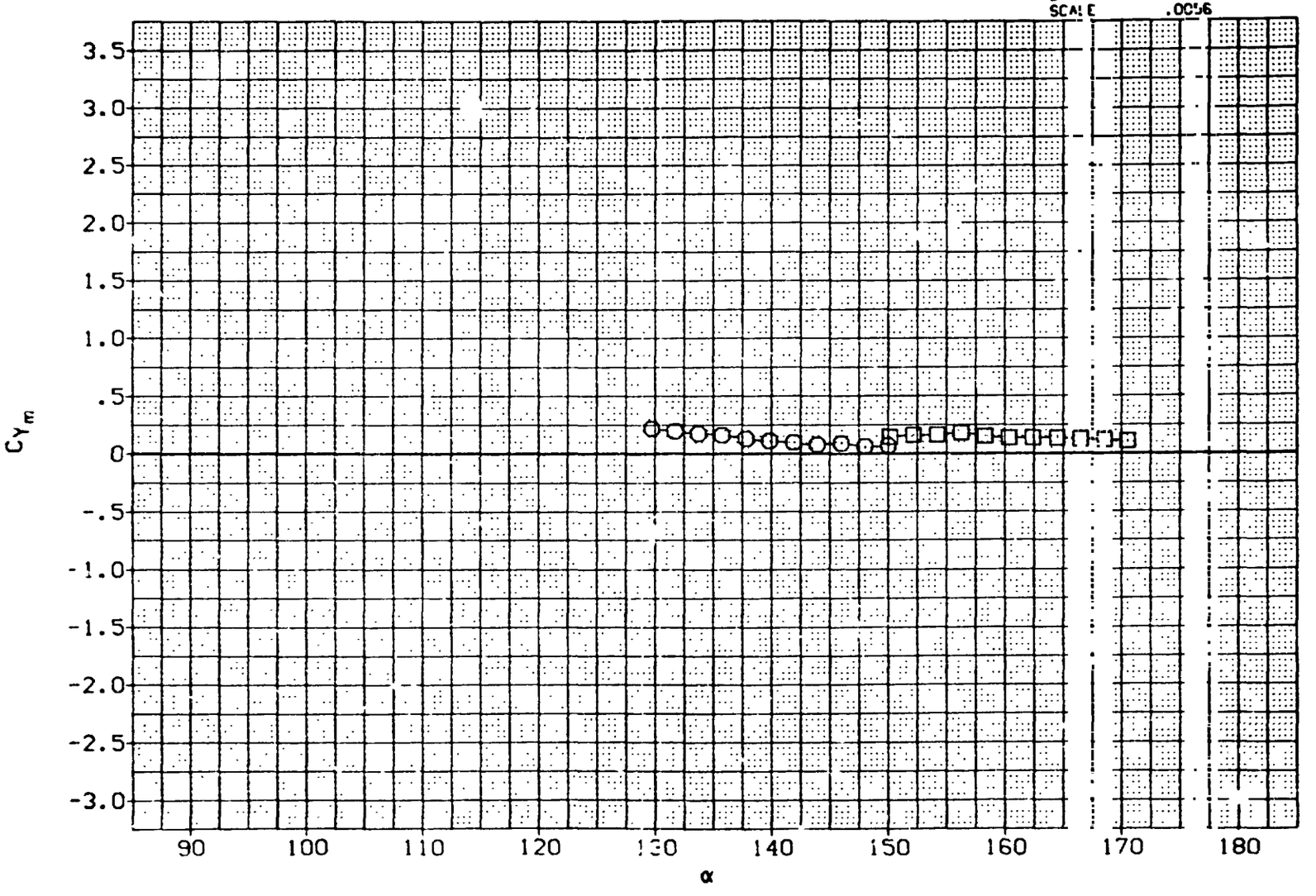
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONF	ION DESCRIPTION	BETA
(A10009)	⊡	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S		.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S		.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATIO. DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A;0010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

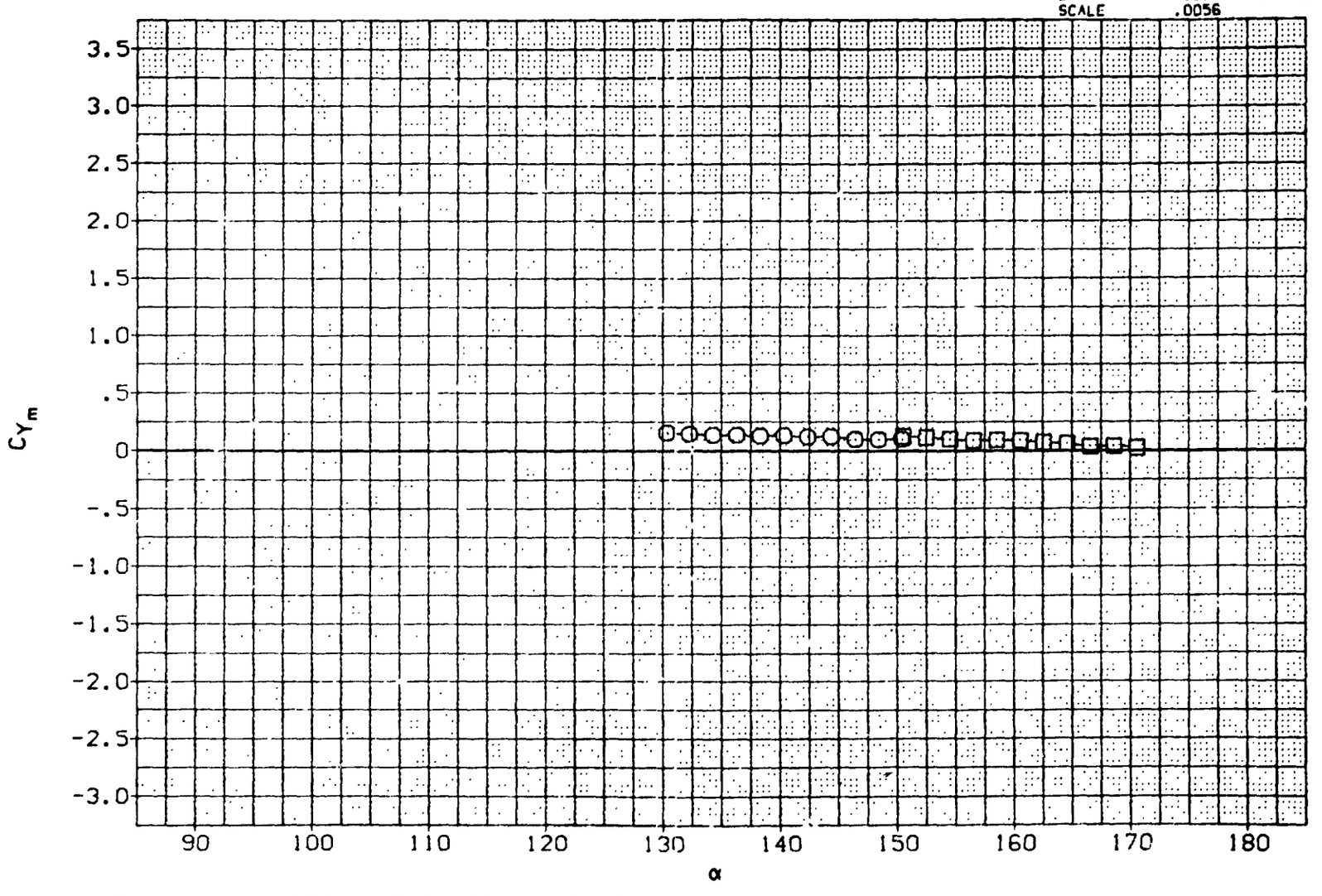
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



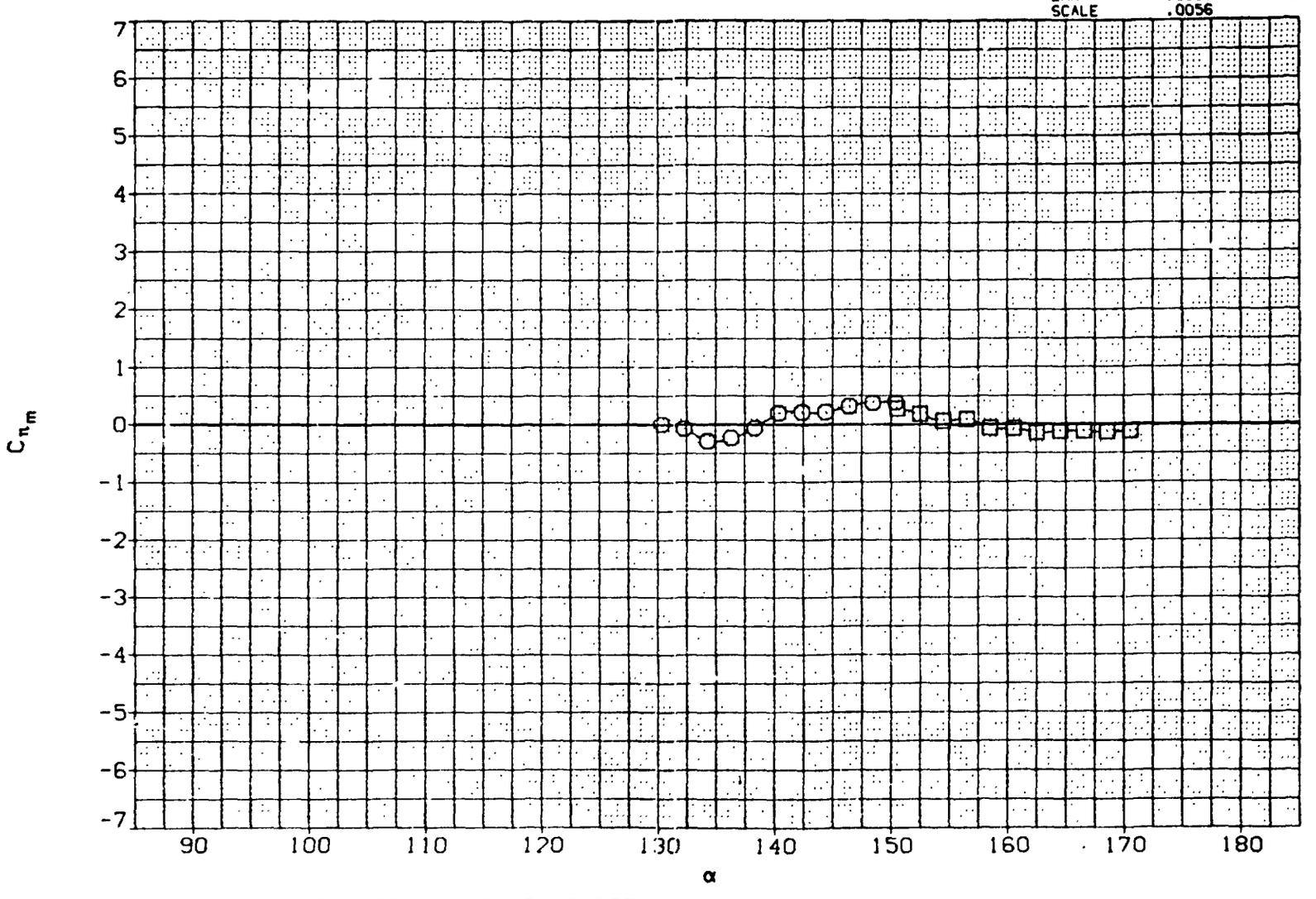
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



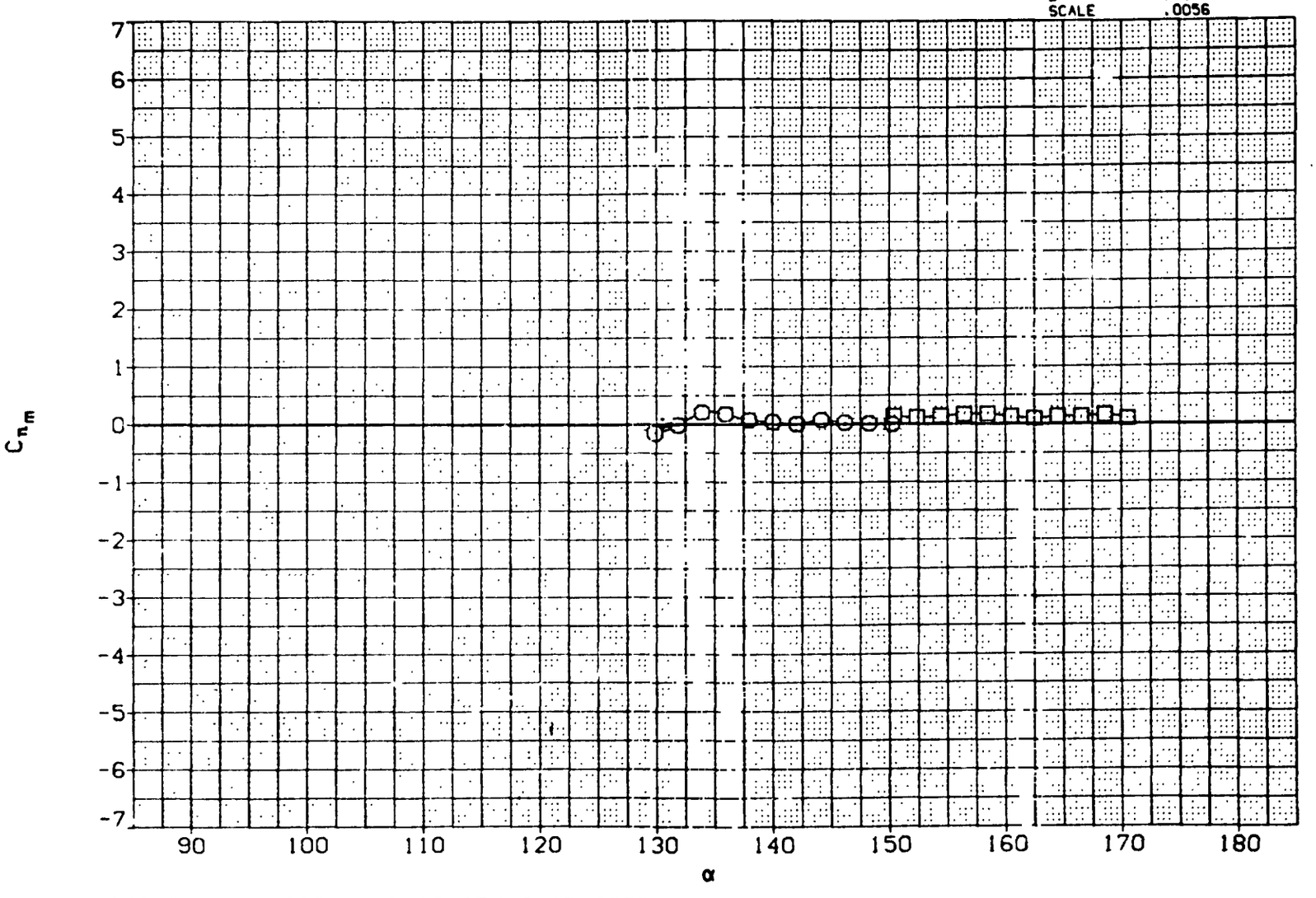
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



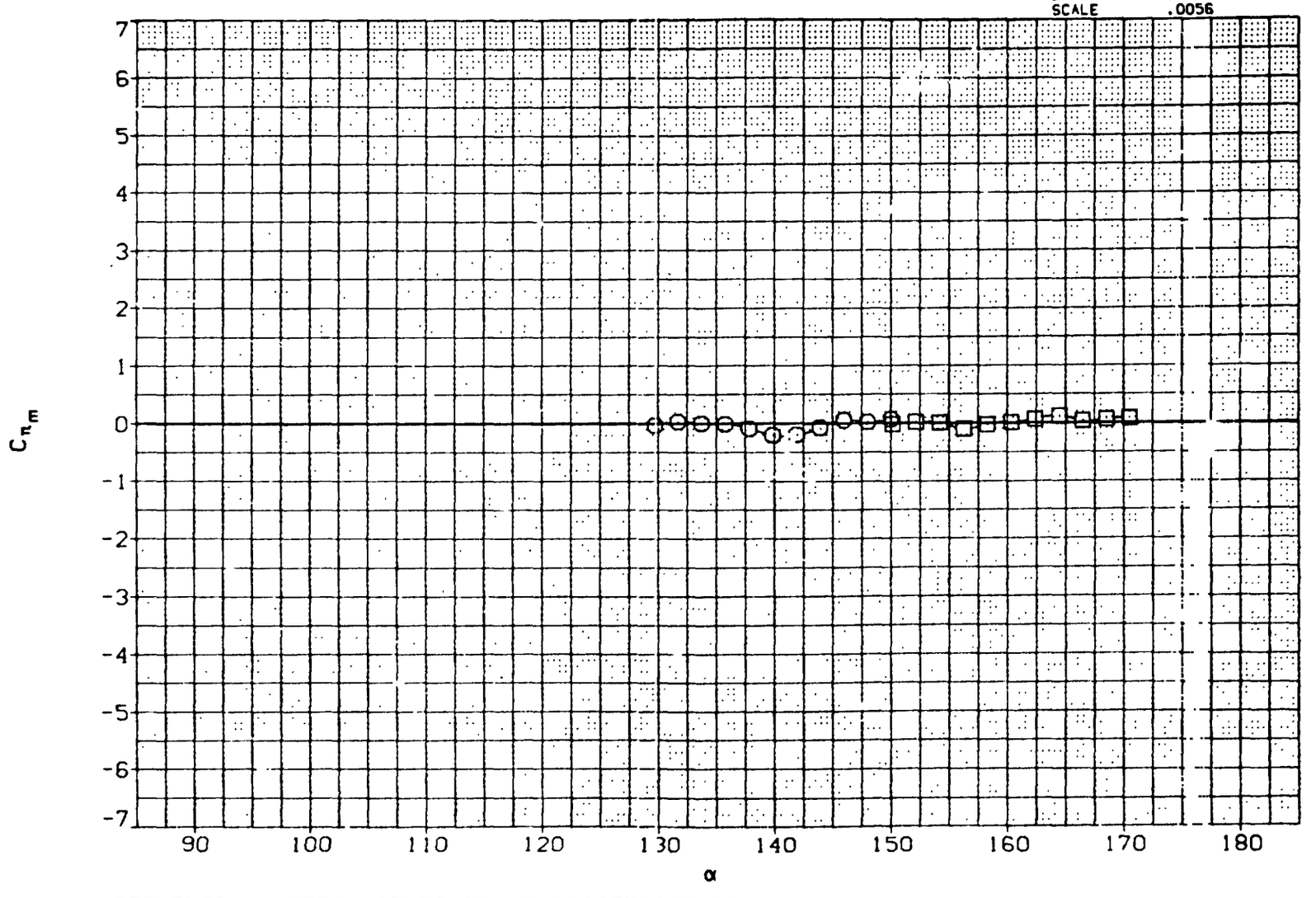
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



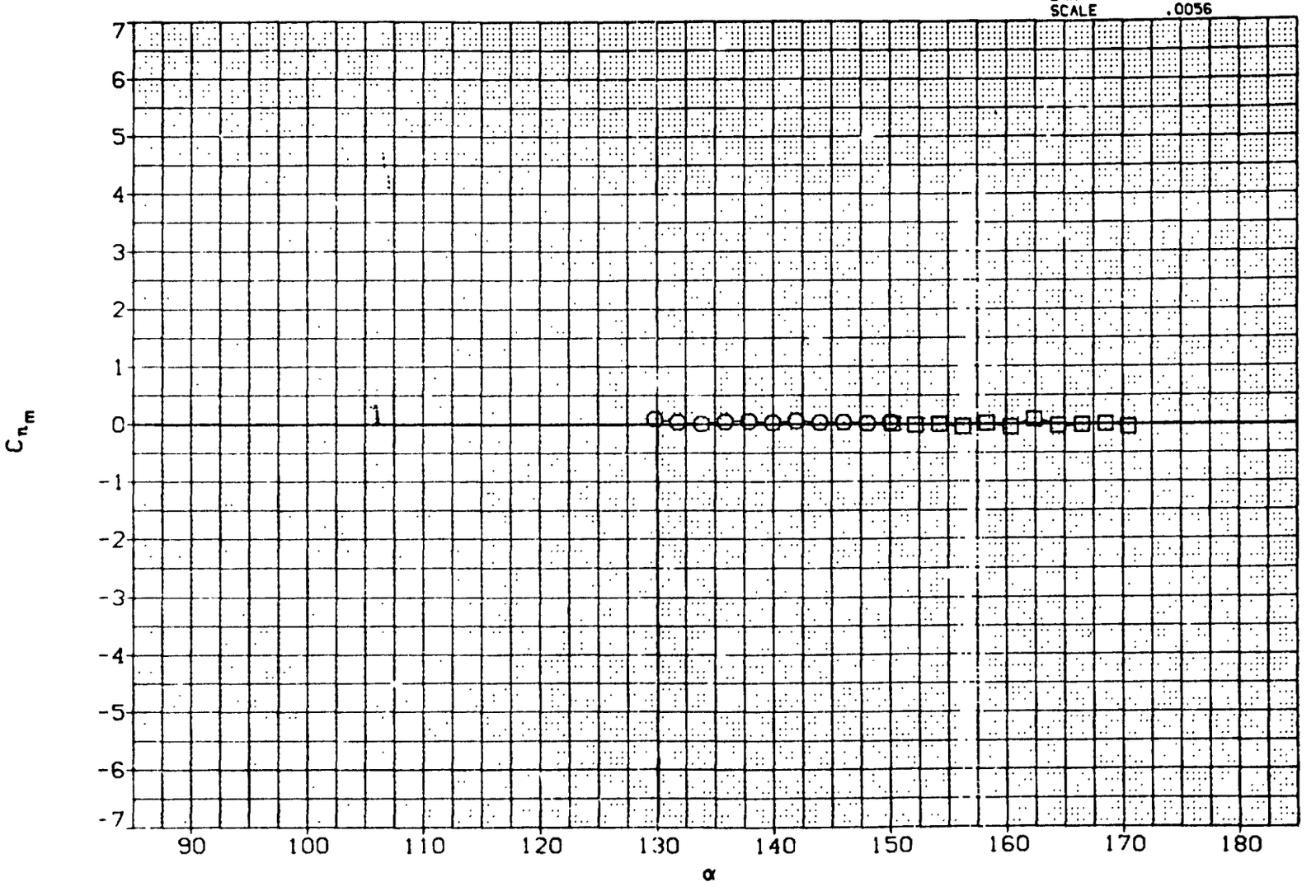
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBRL190S	.000
(A10010)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



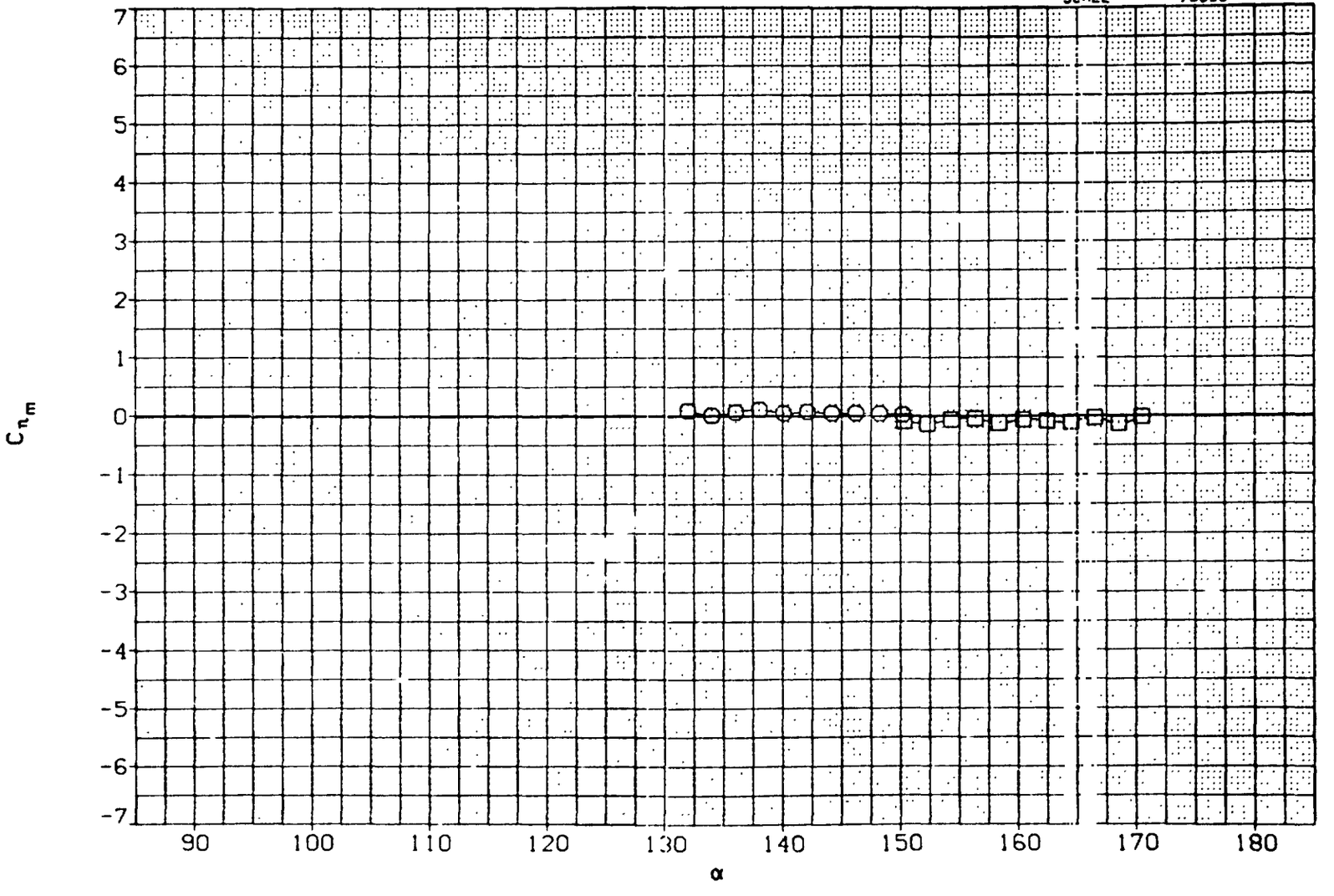
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN, XS
YMRP	.0000	IN, YS
ZMRP	.0000	IN, ZS
SCALE	.0056	



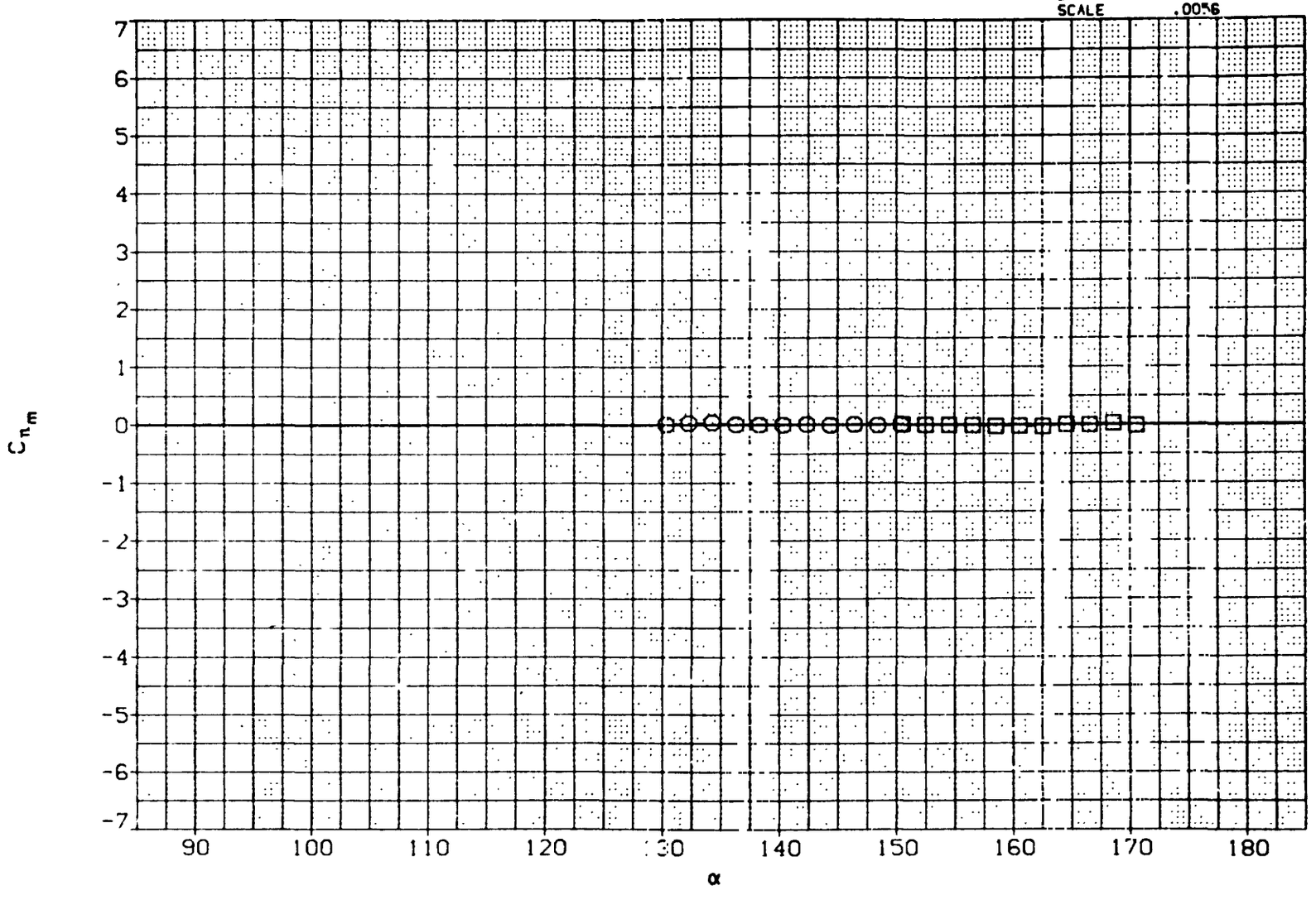
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



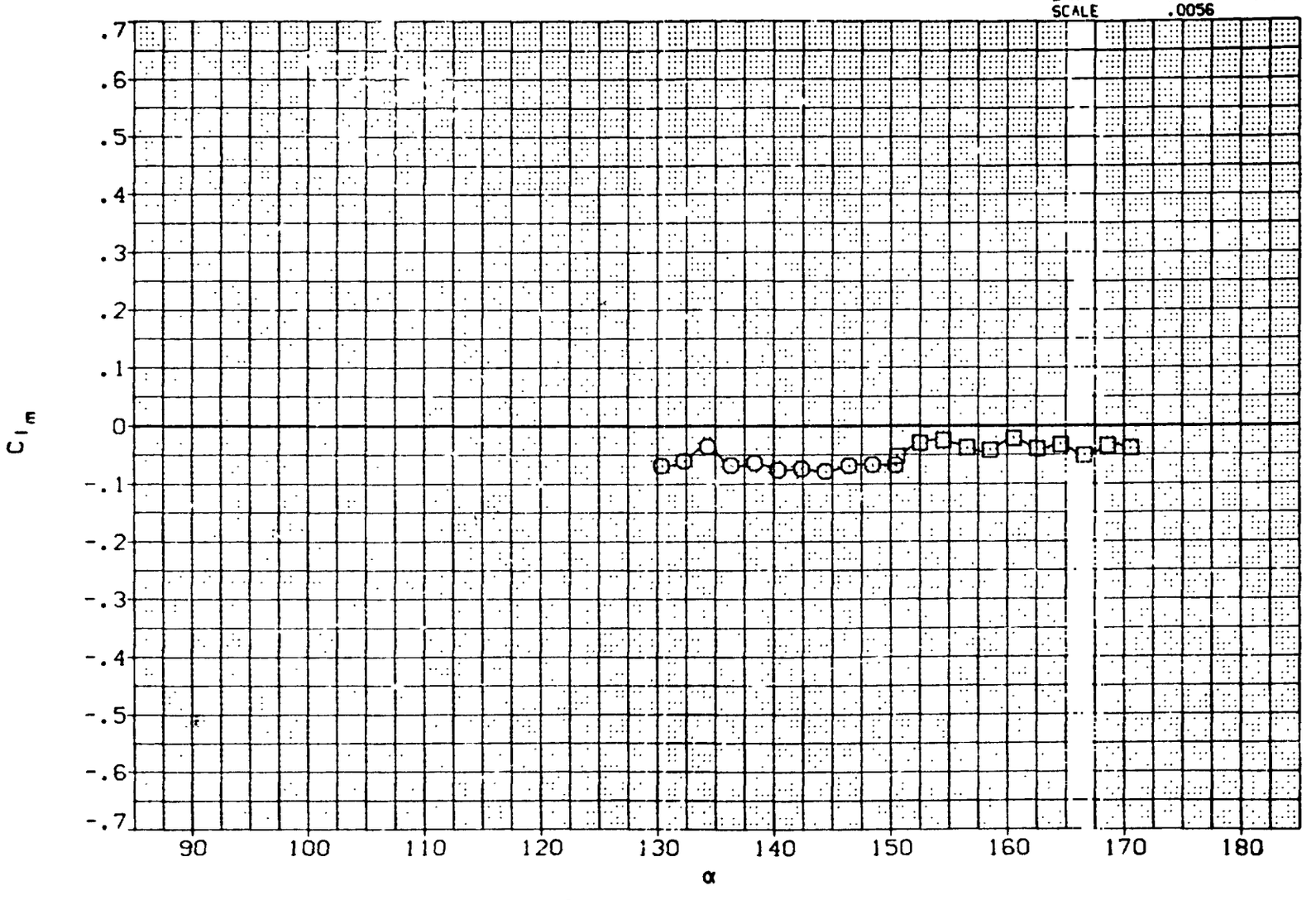
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



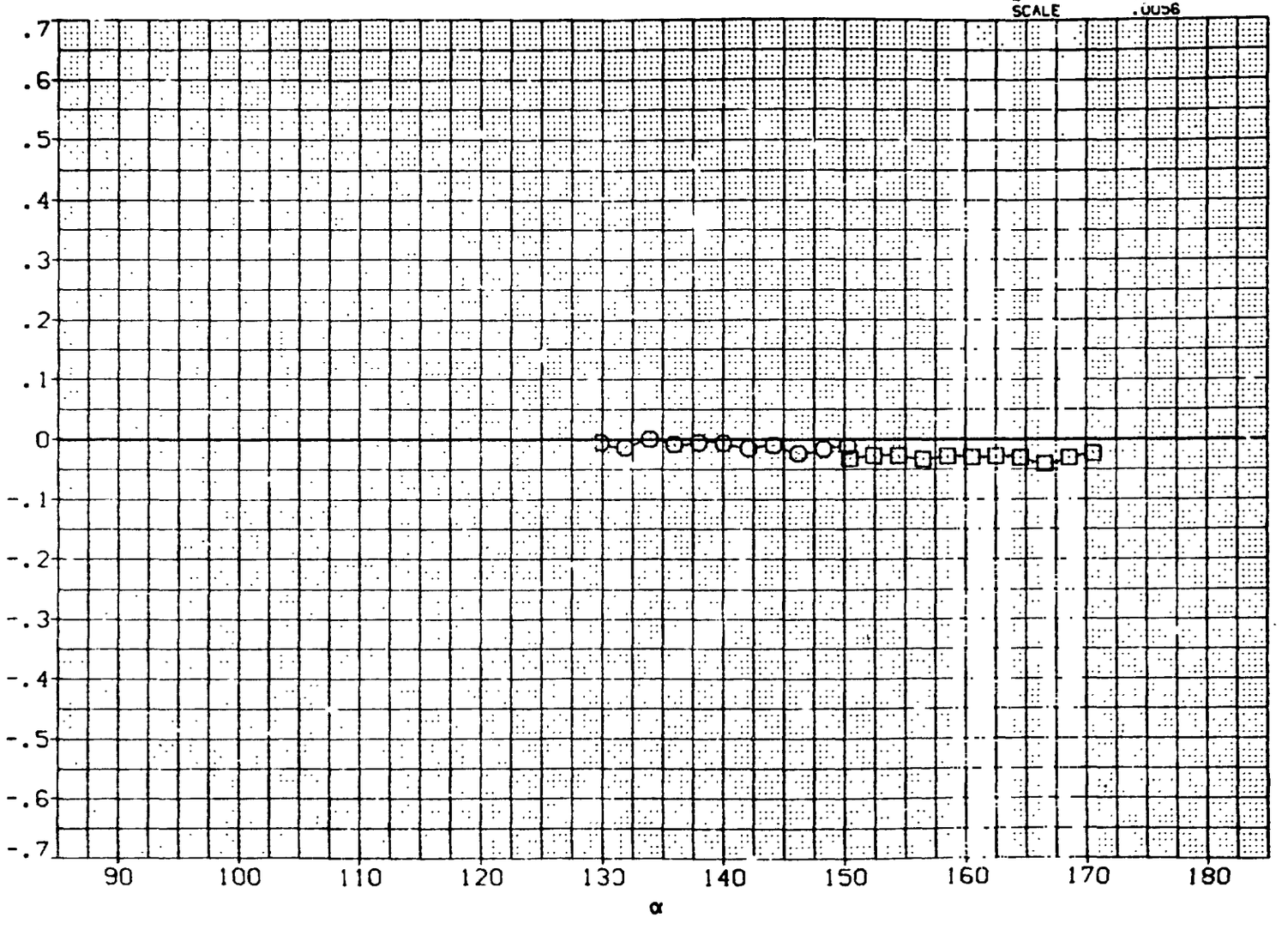
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	996.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



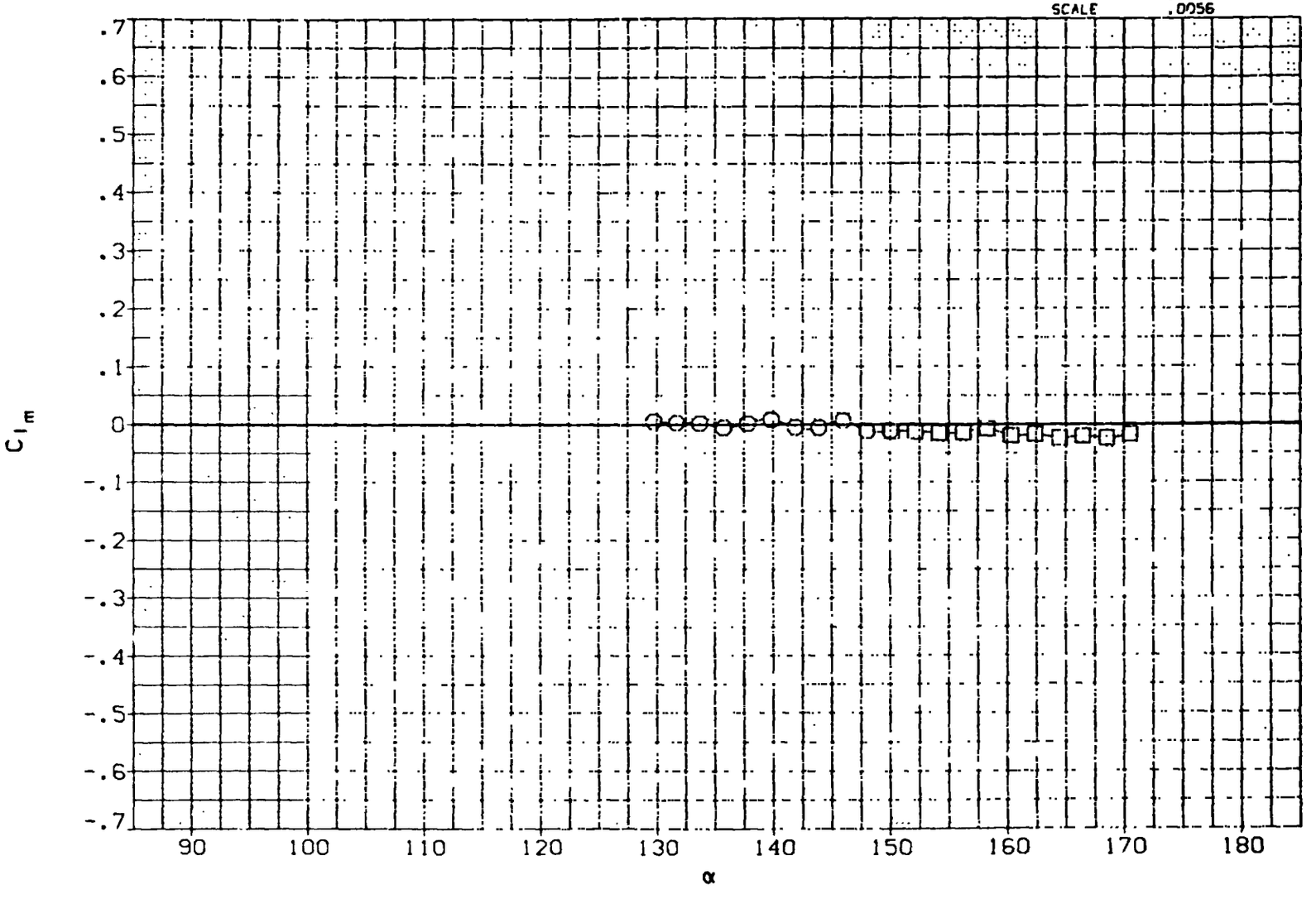
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10079)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

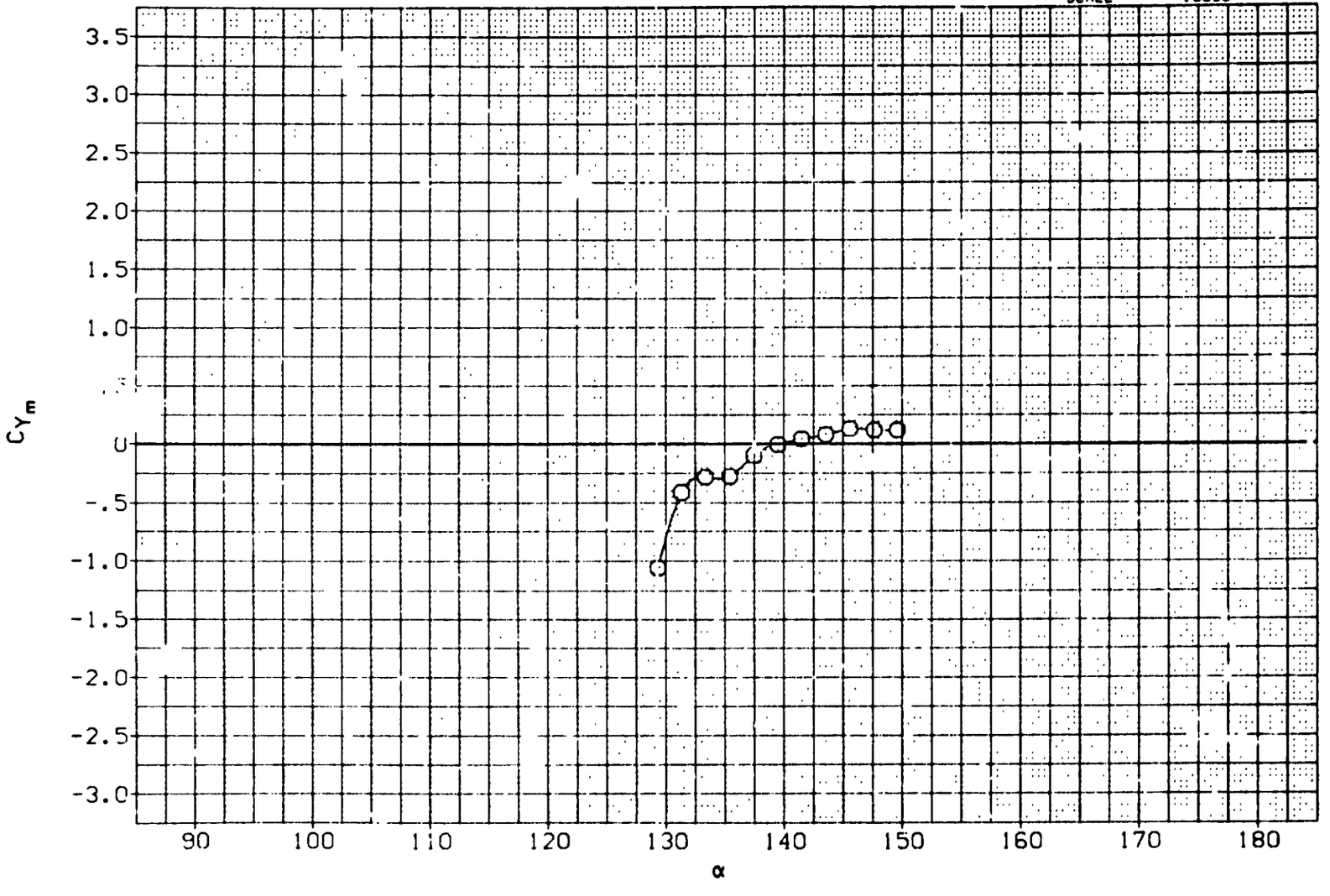
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



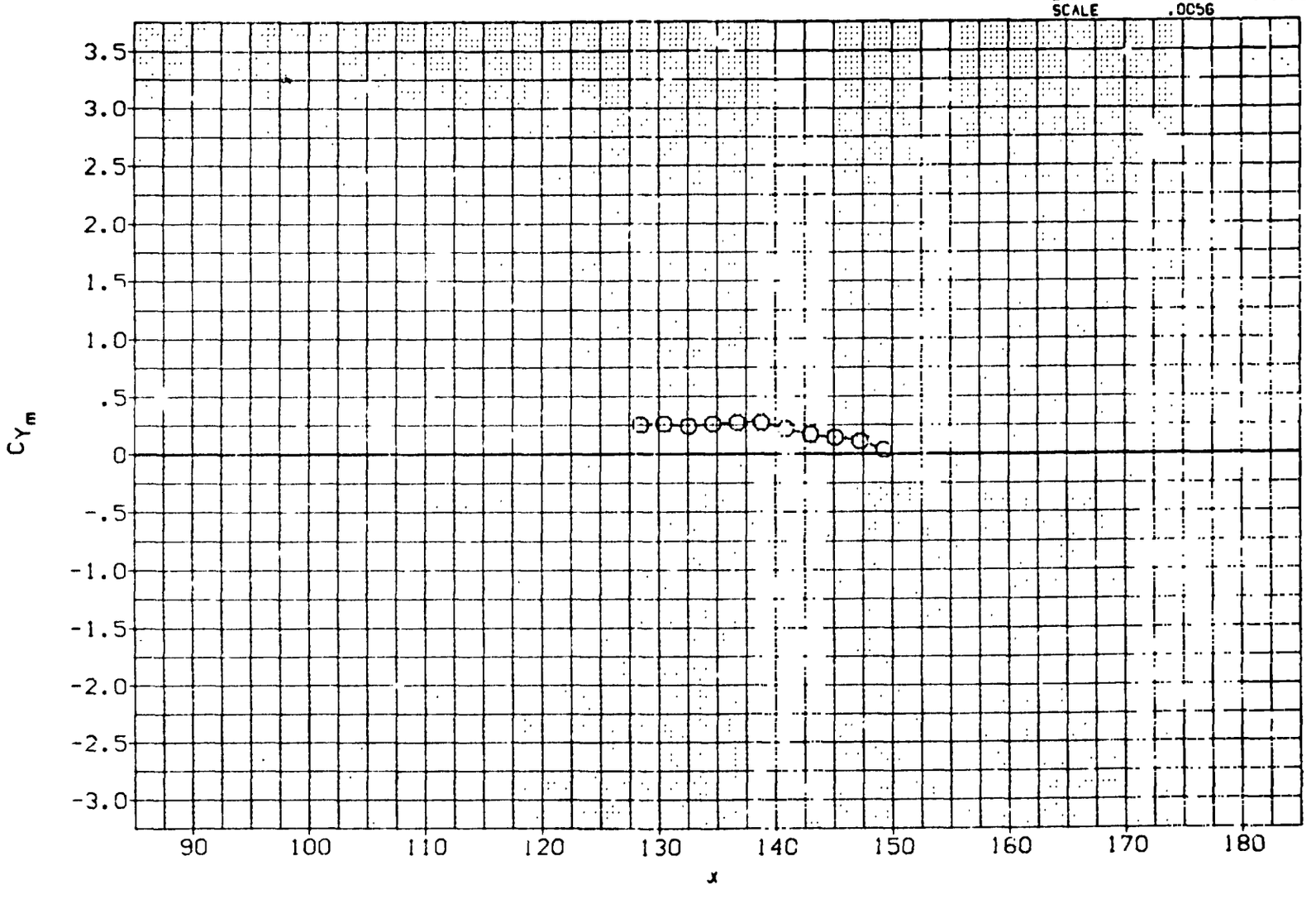
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



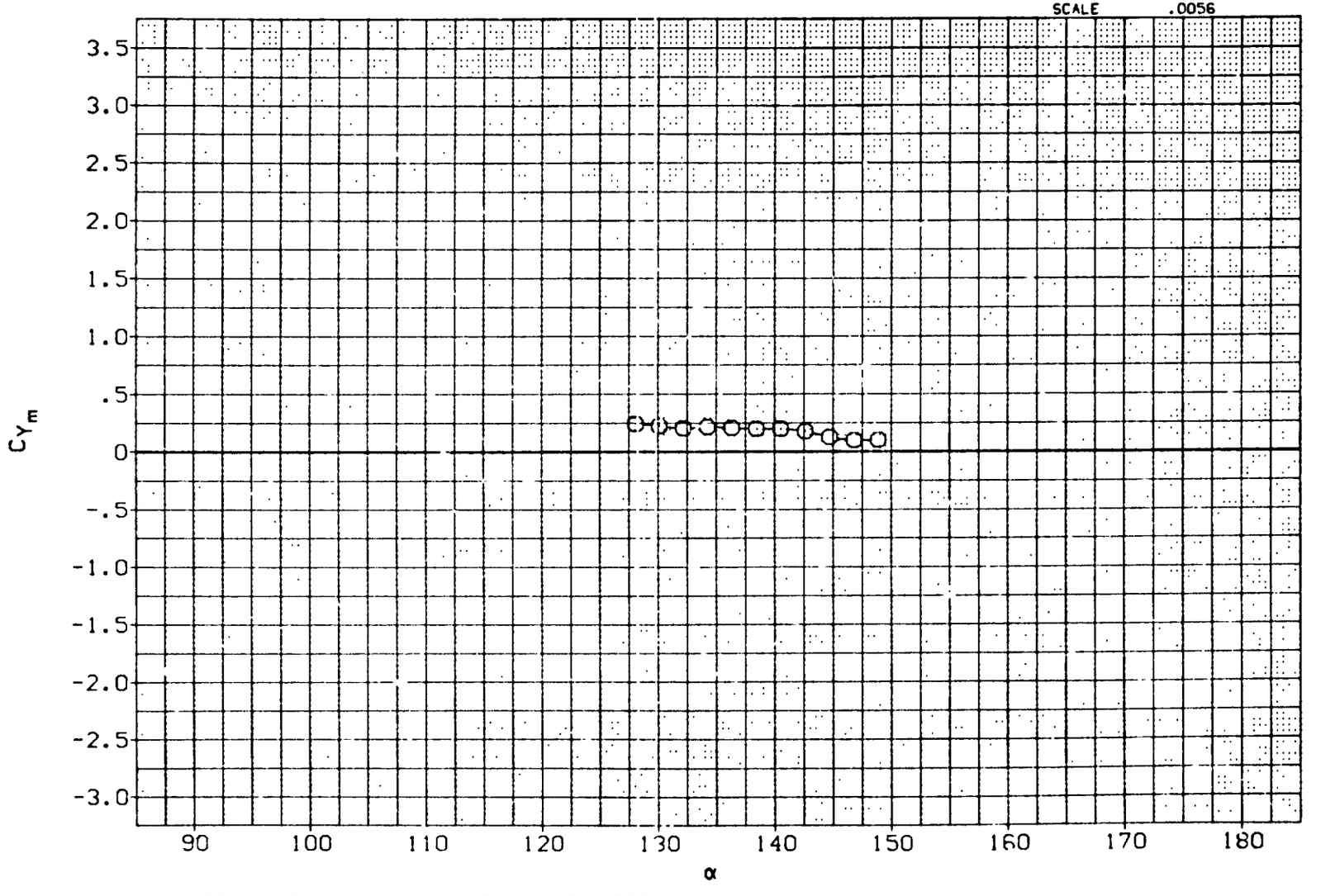
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



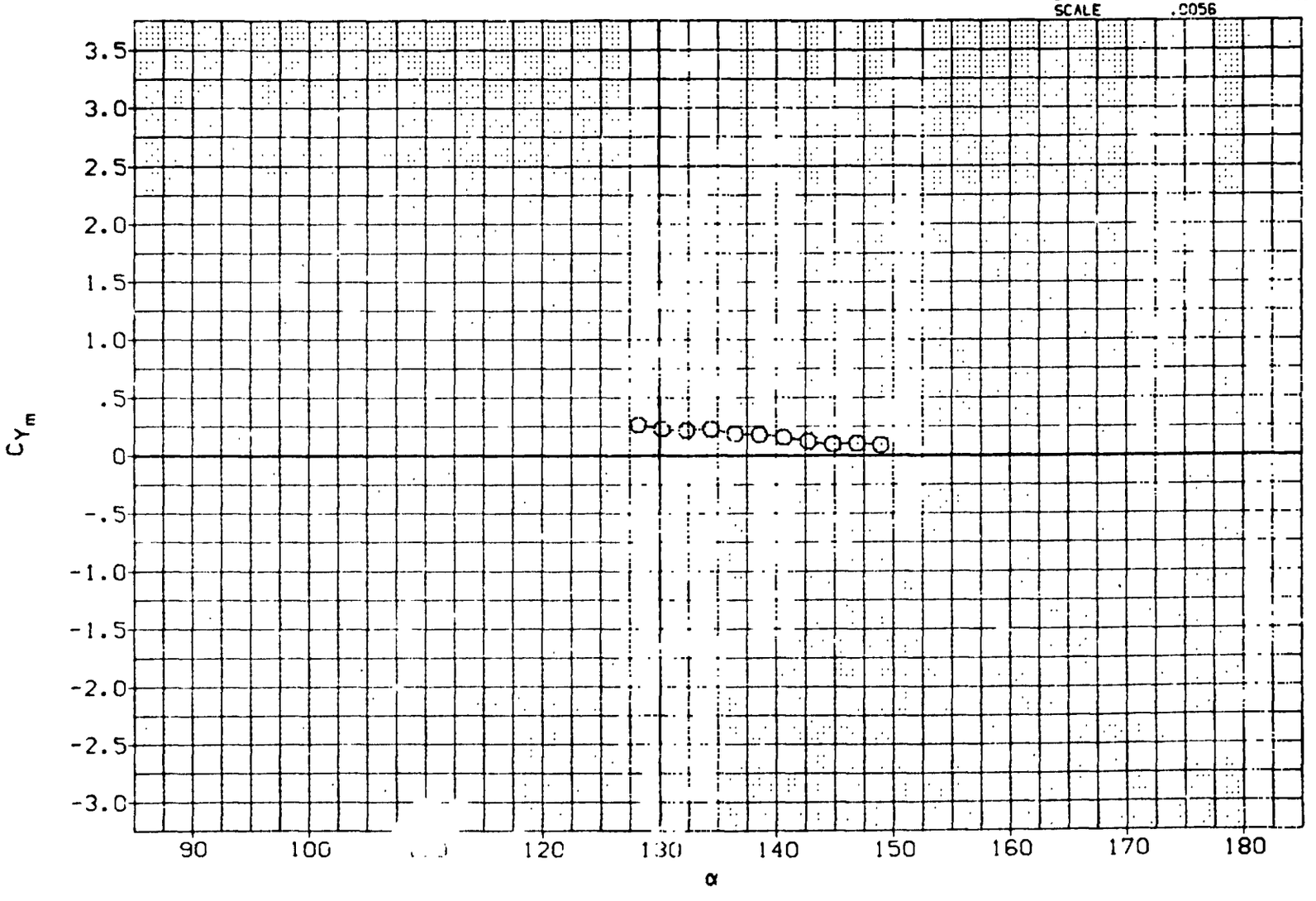
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



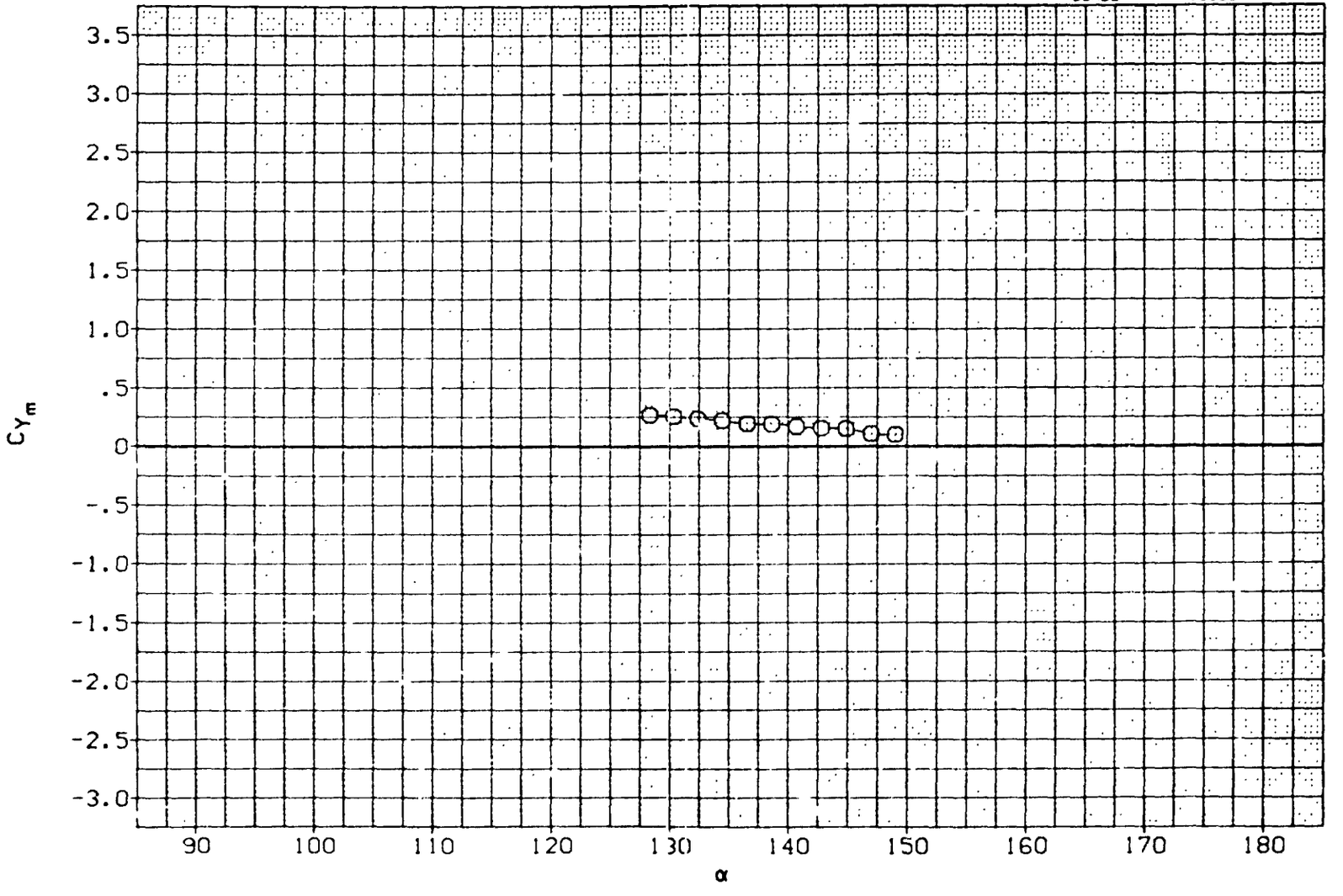
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



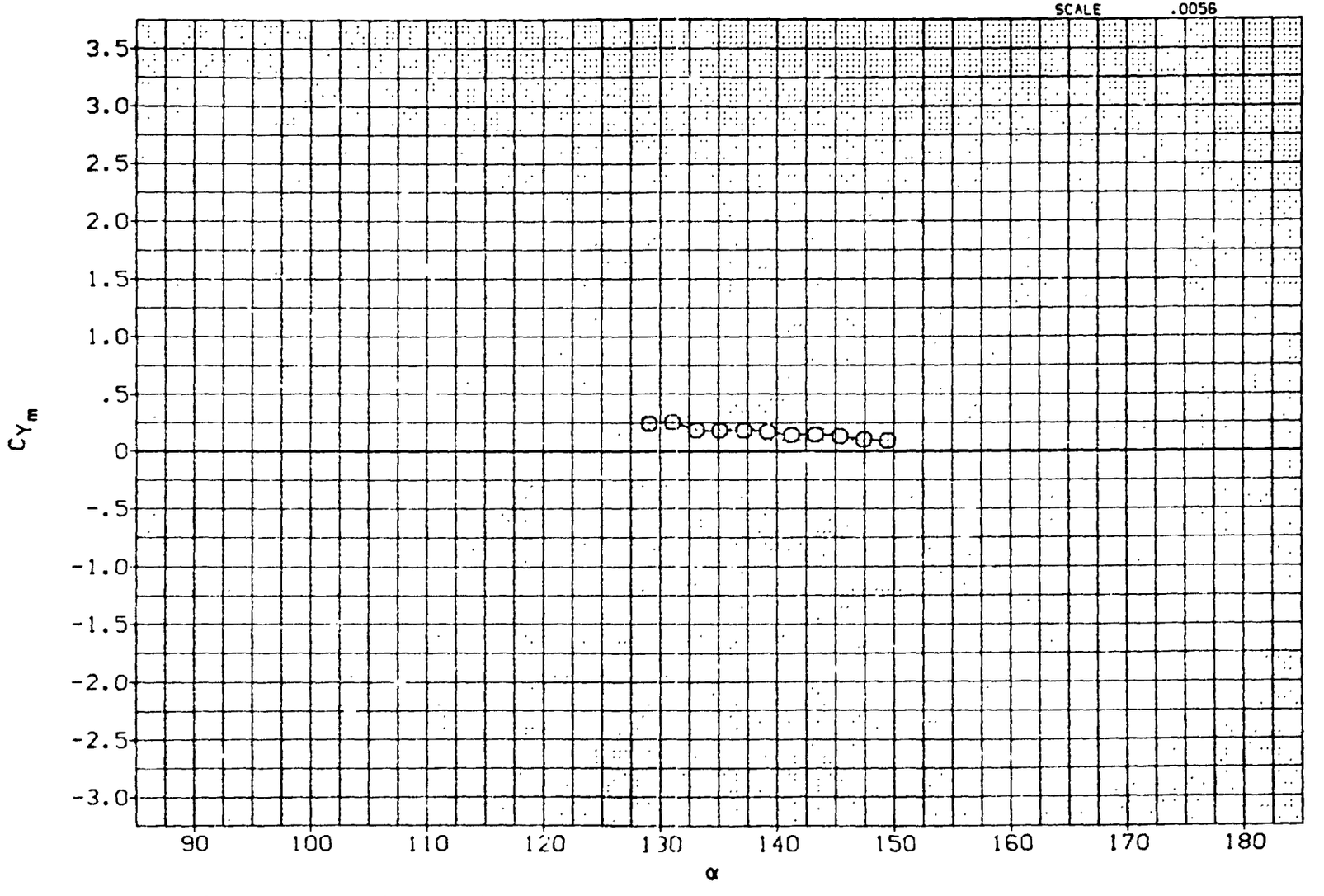
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A1001I)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



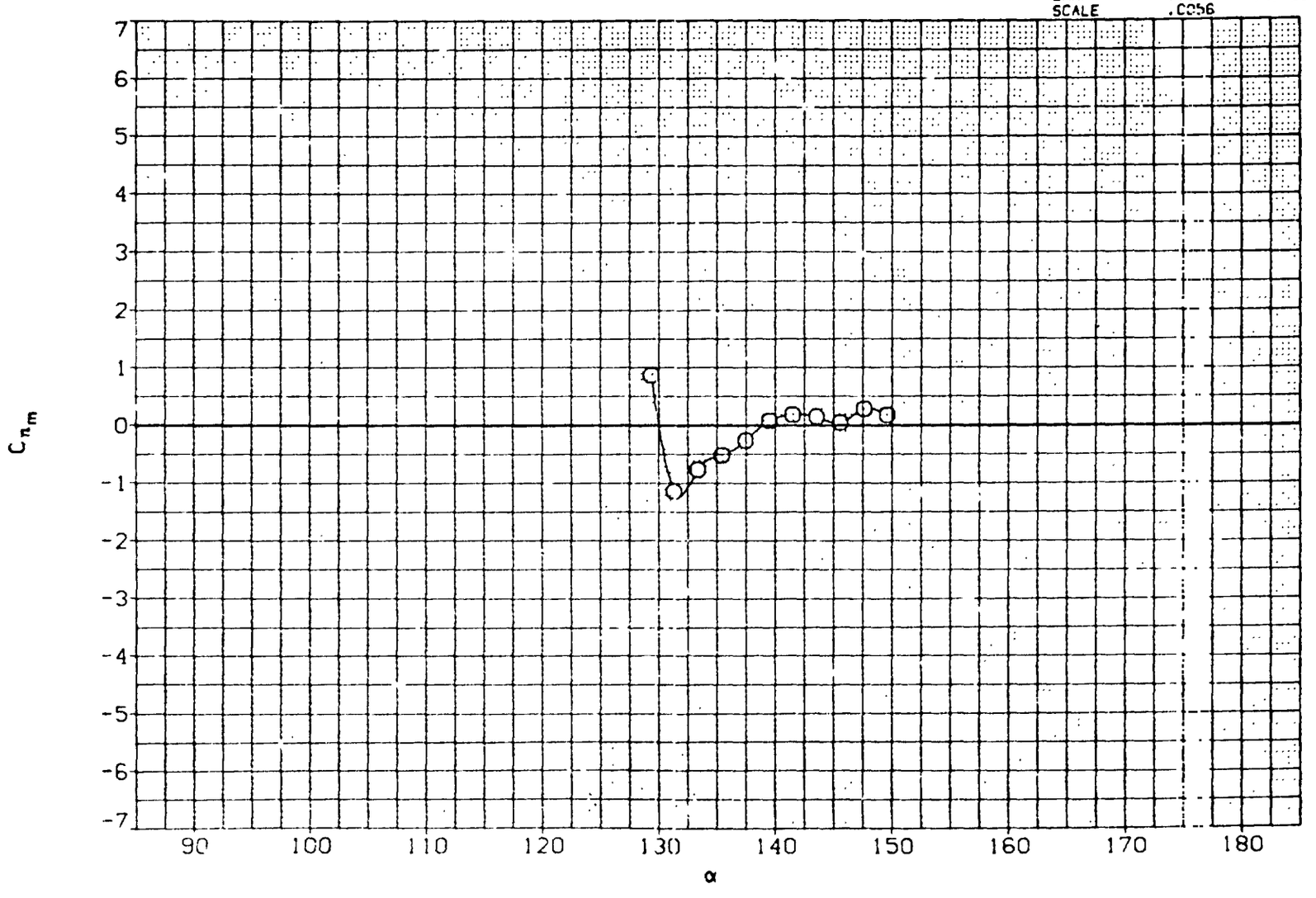
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



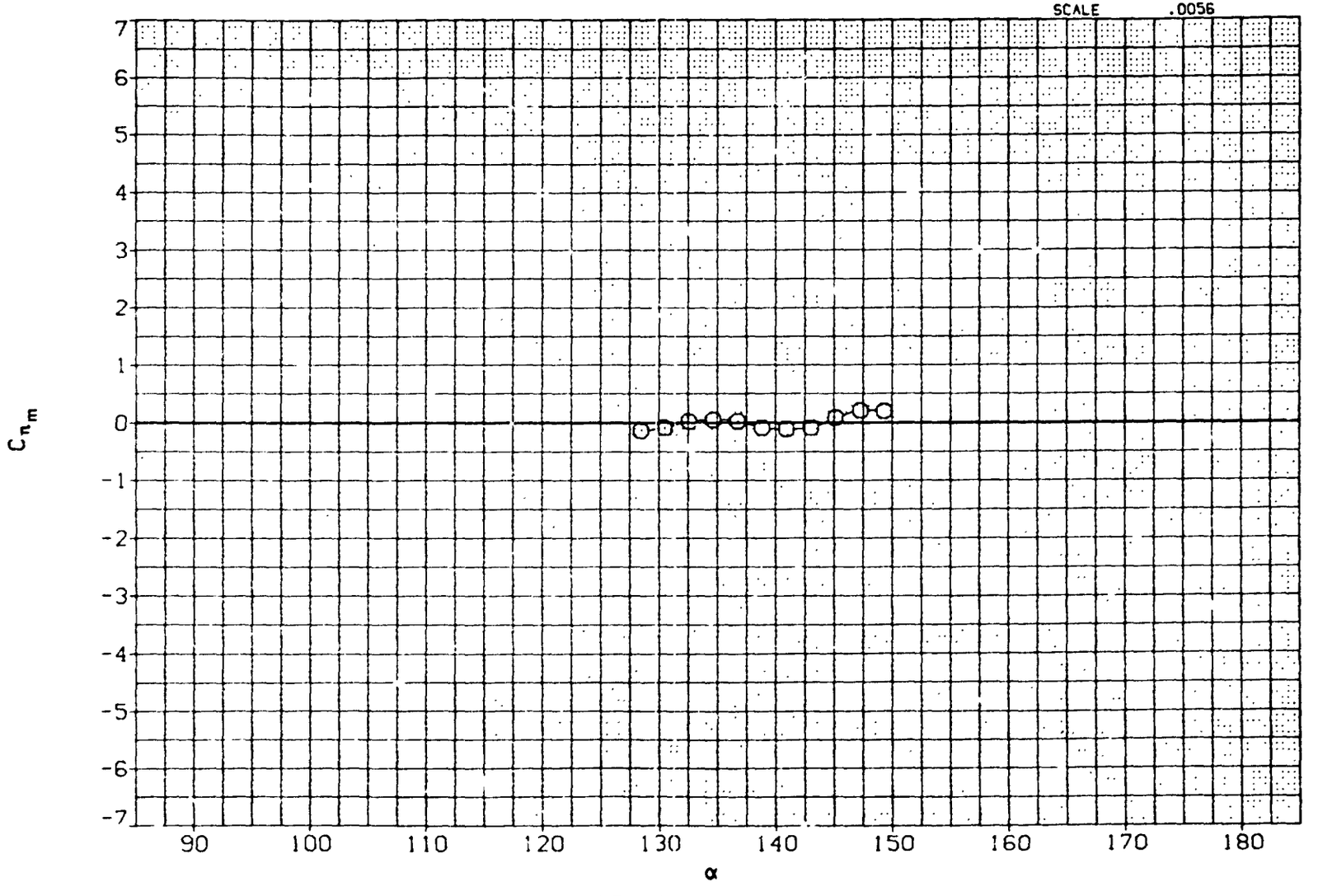
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



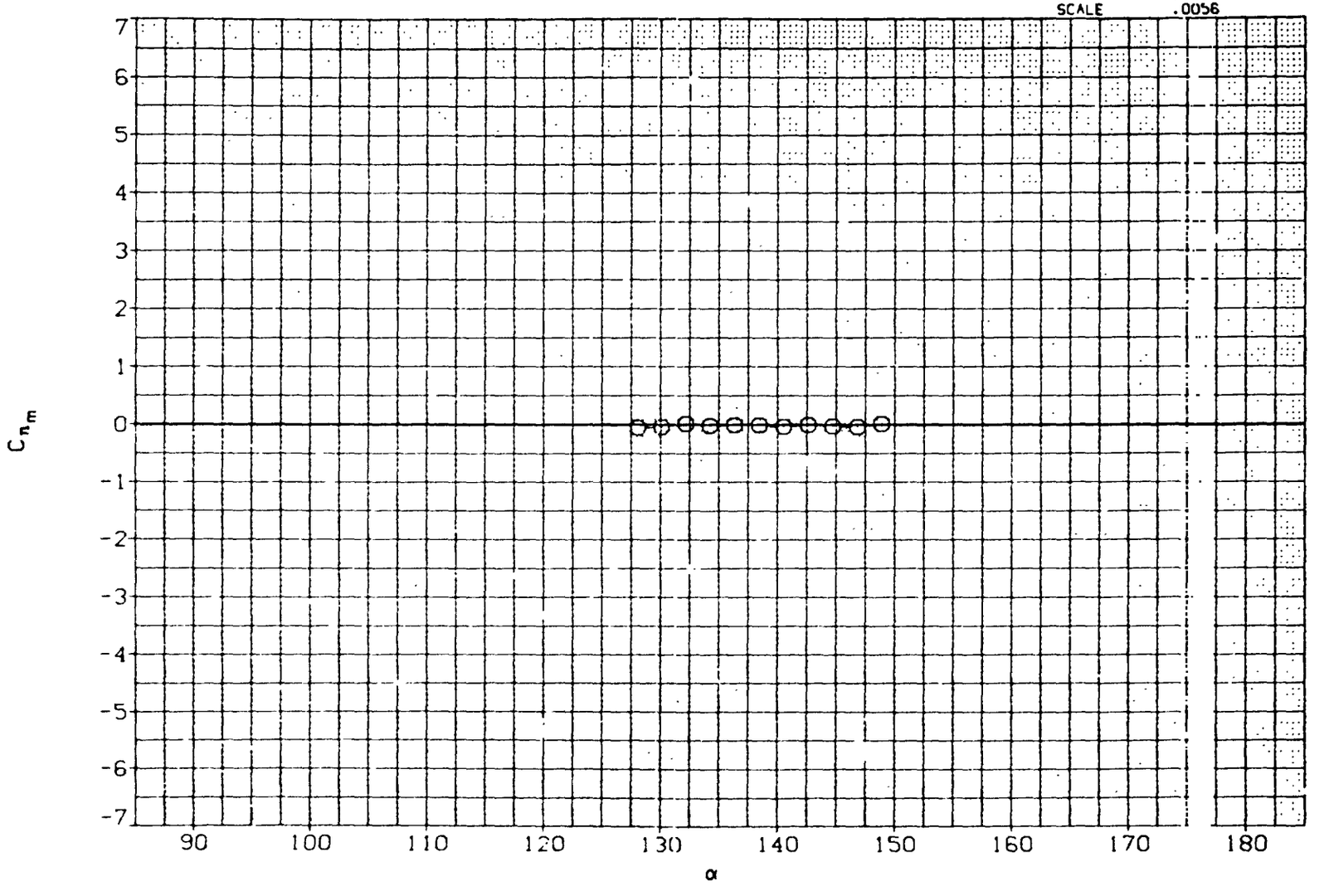
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



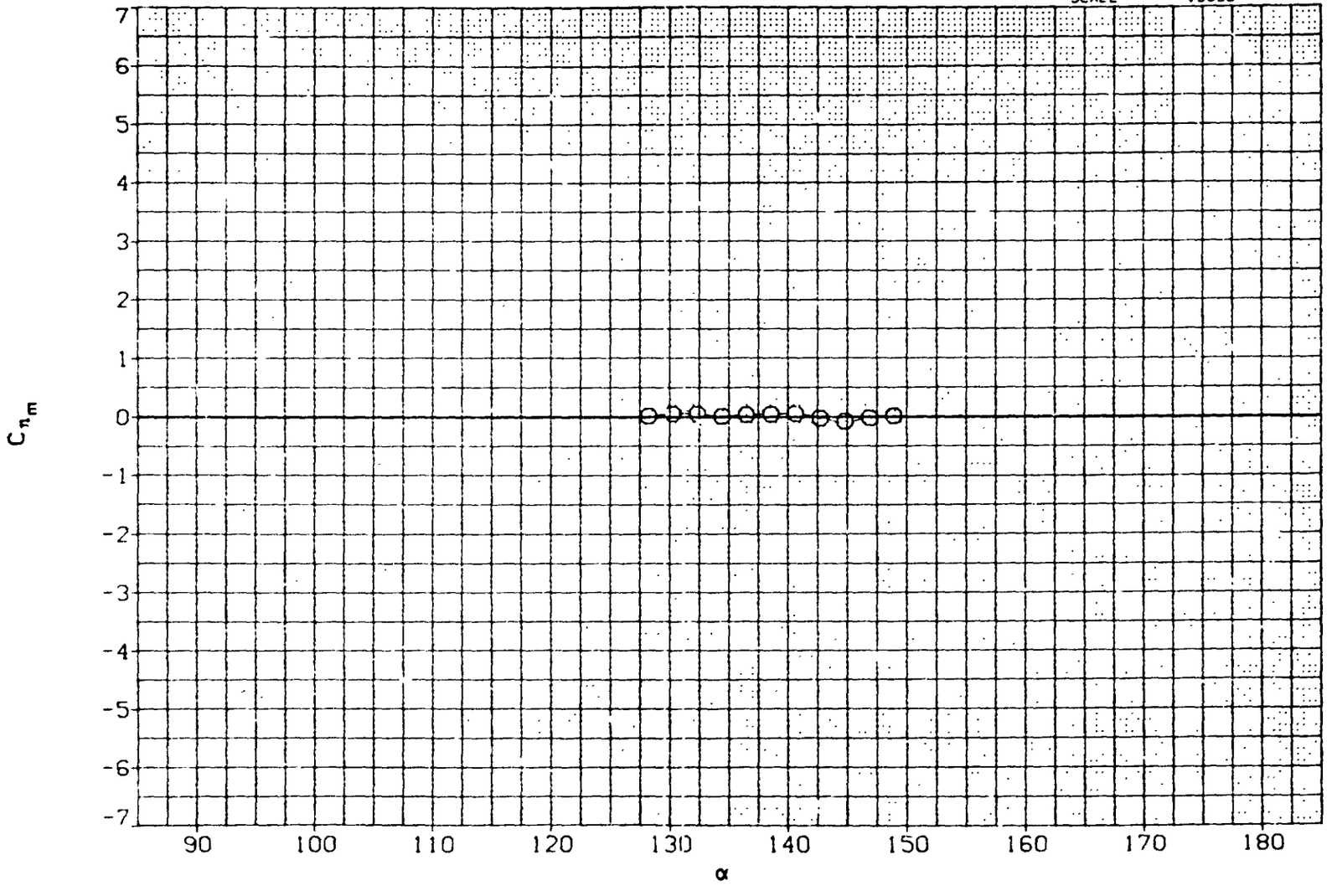
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



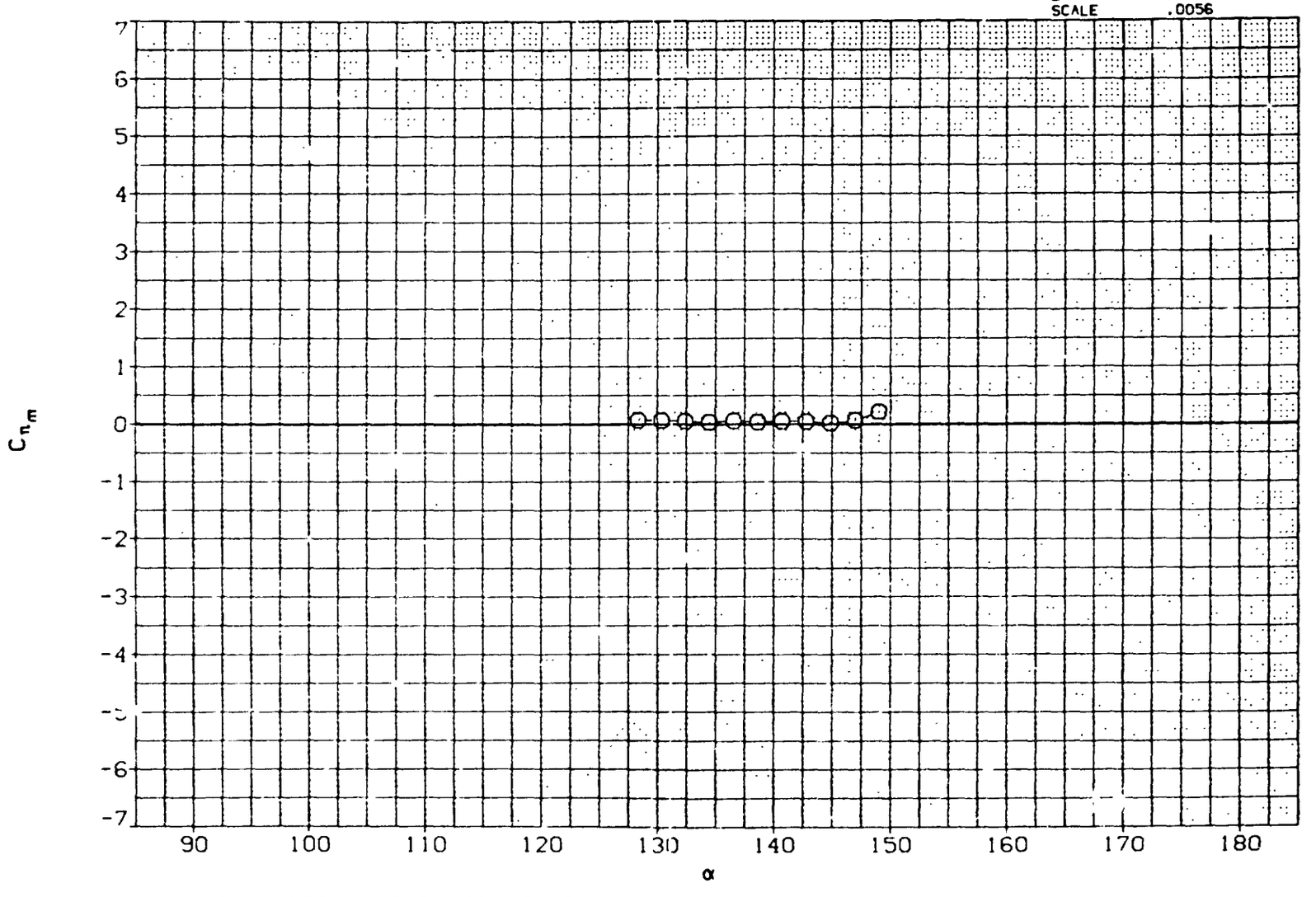
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



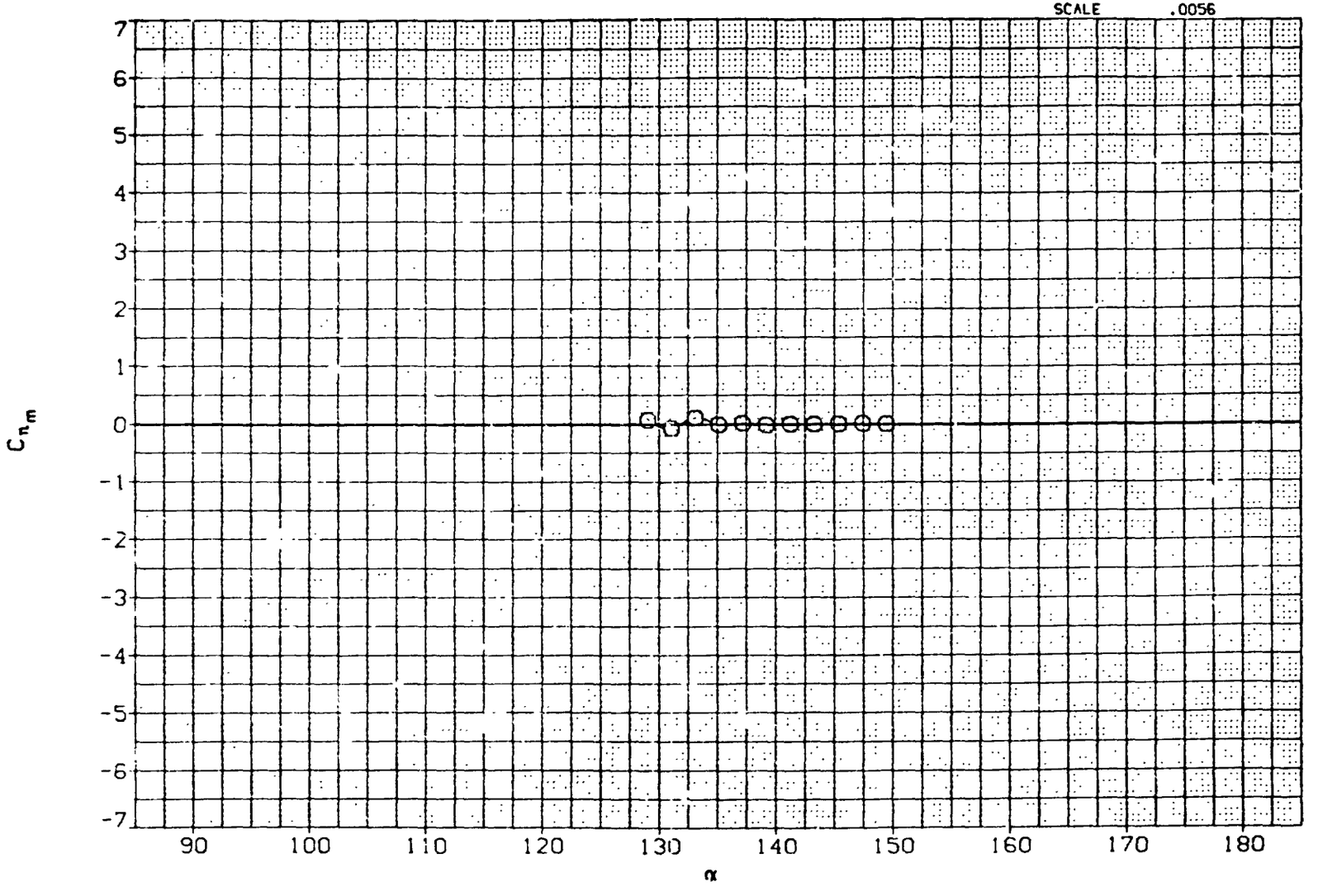
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



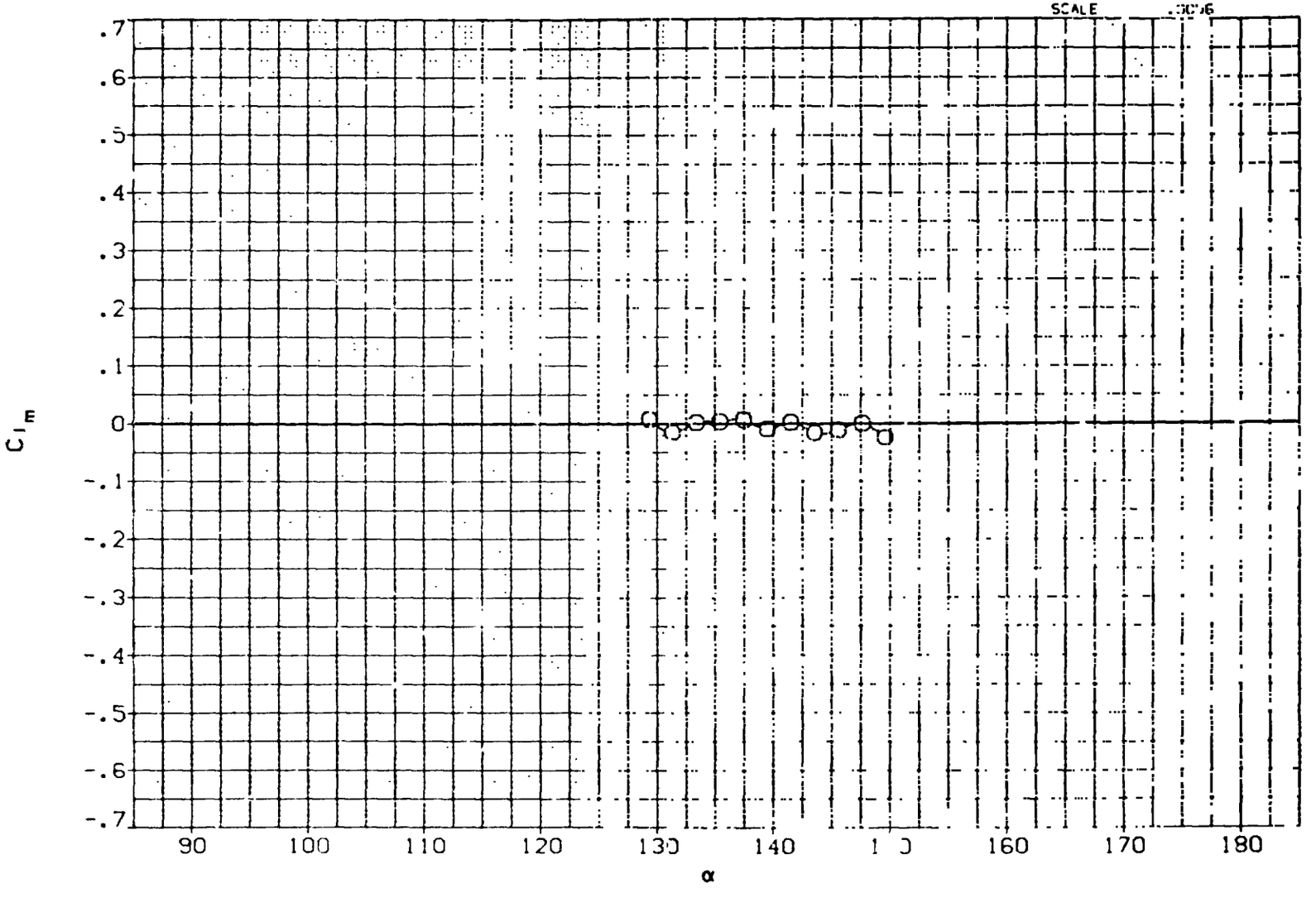
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0006	



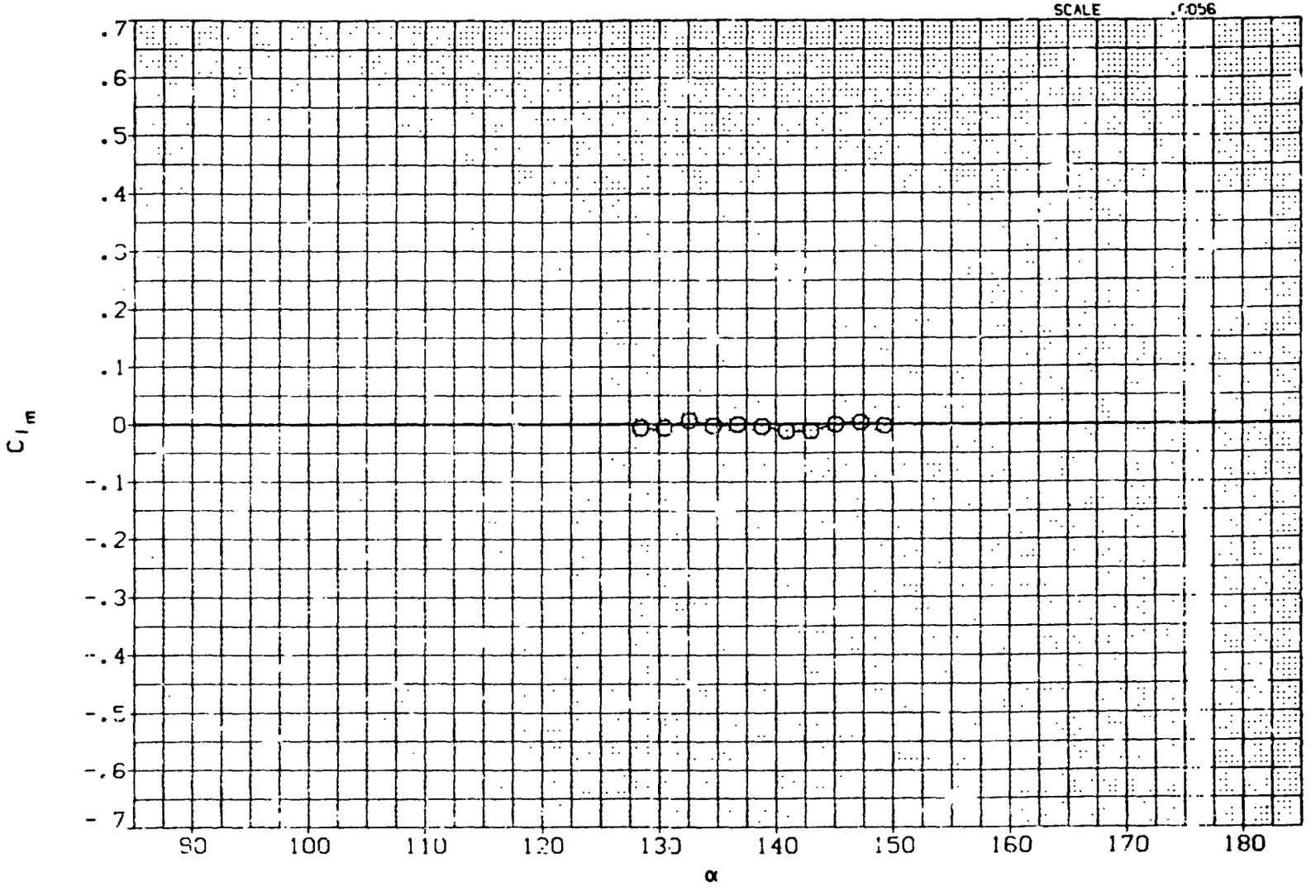
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A1D011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



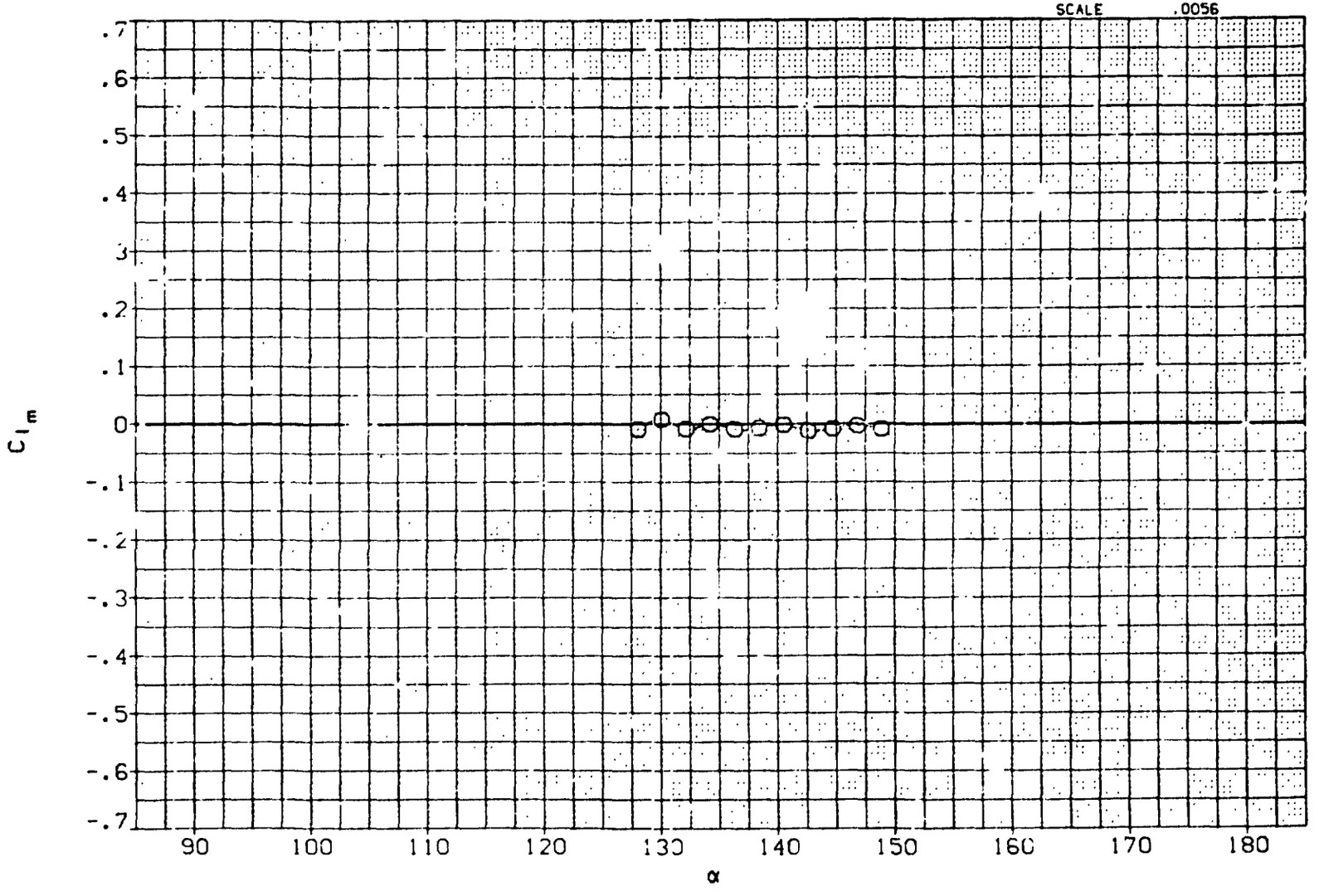
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(B)MACH .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10,11)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMPP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



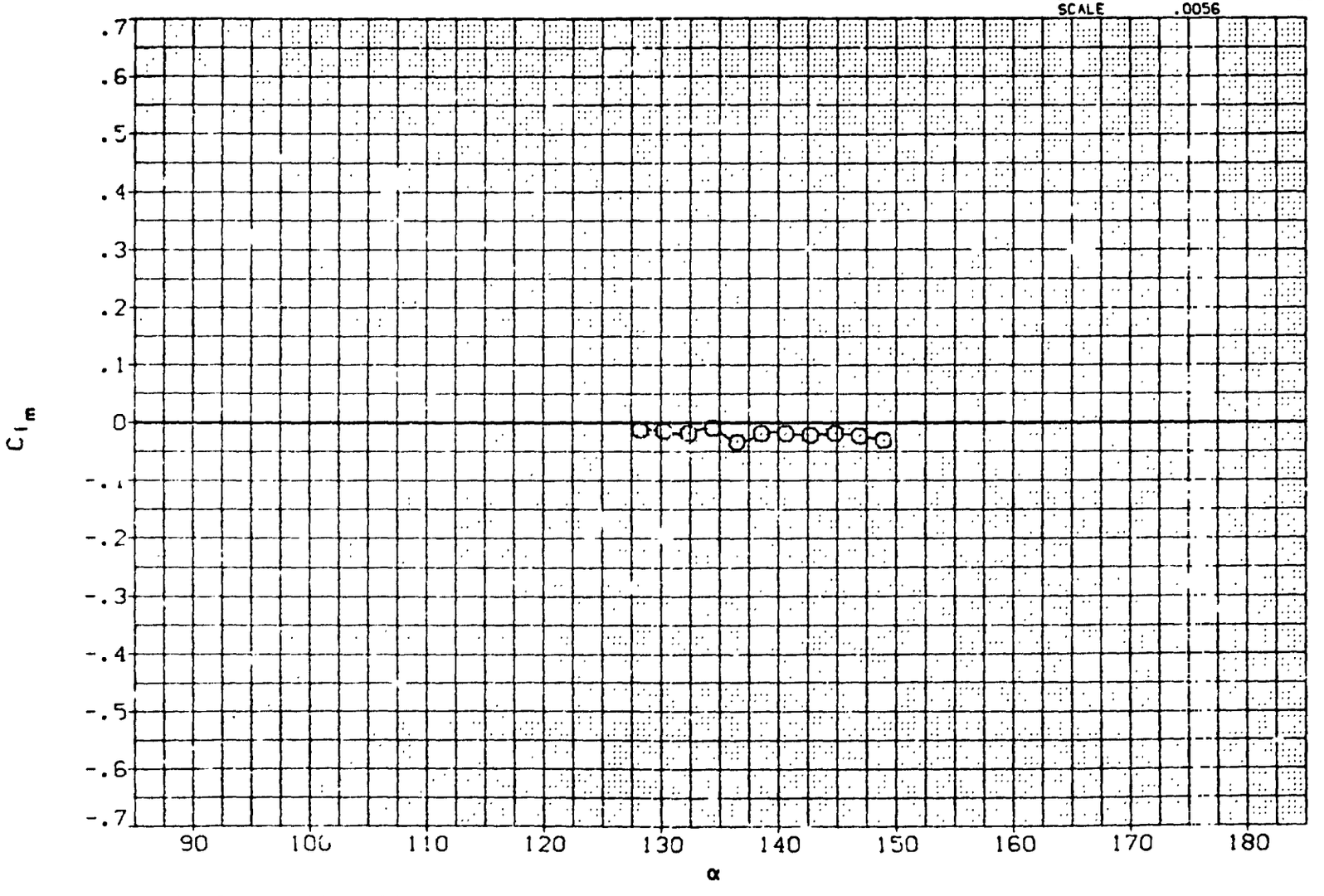
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14P(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



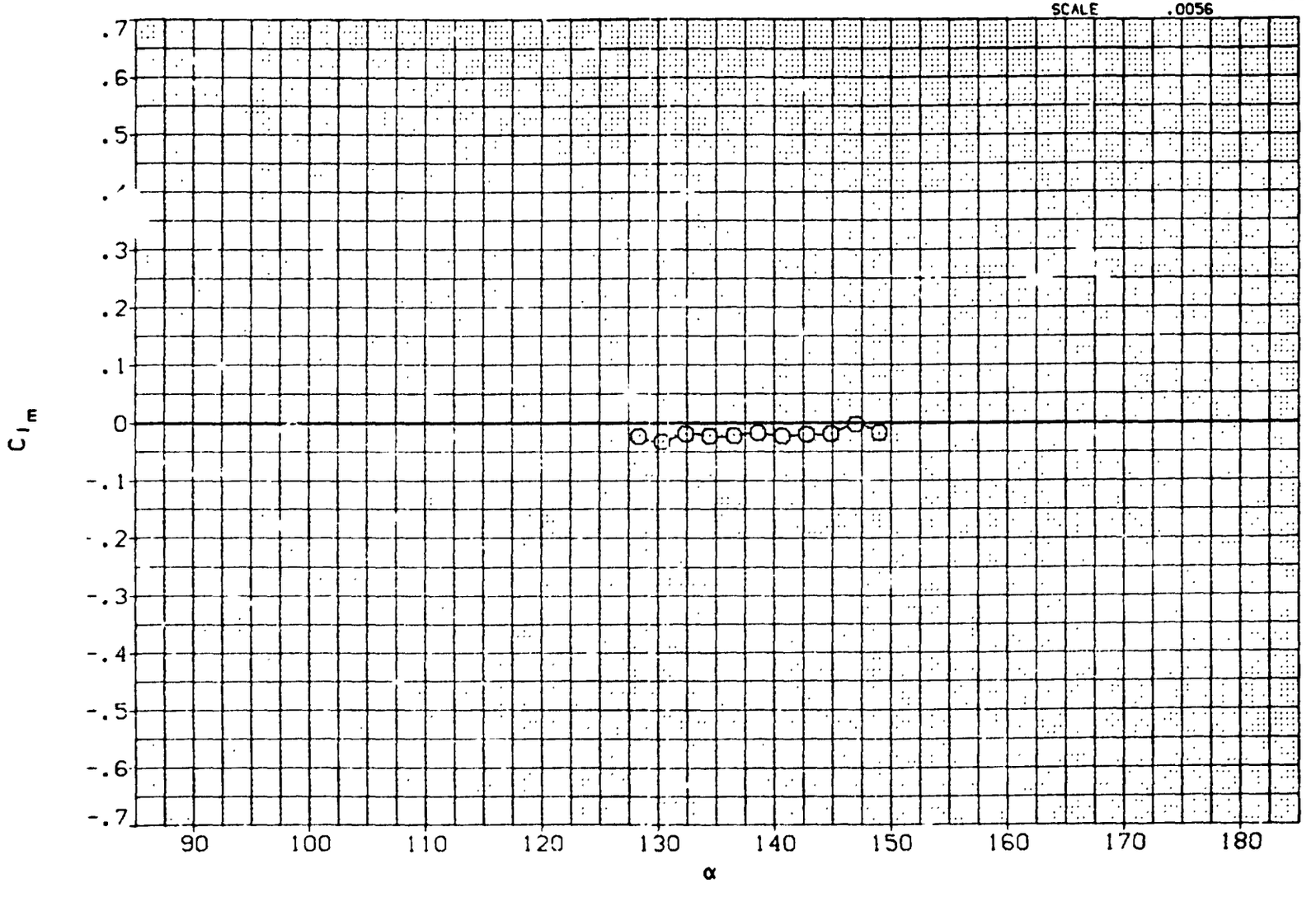
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



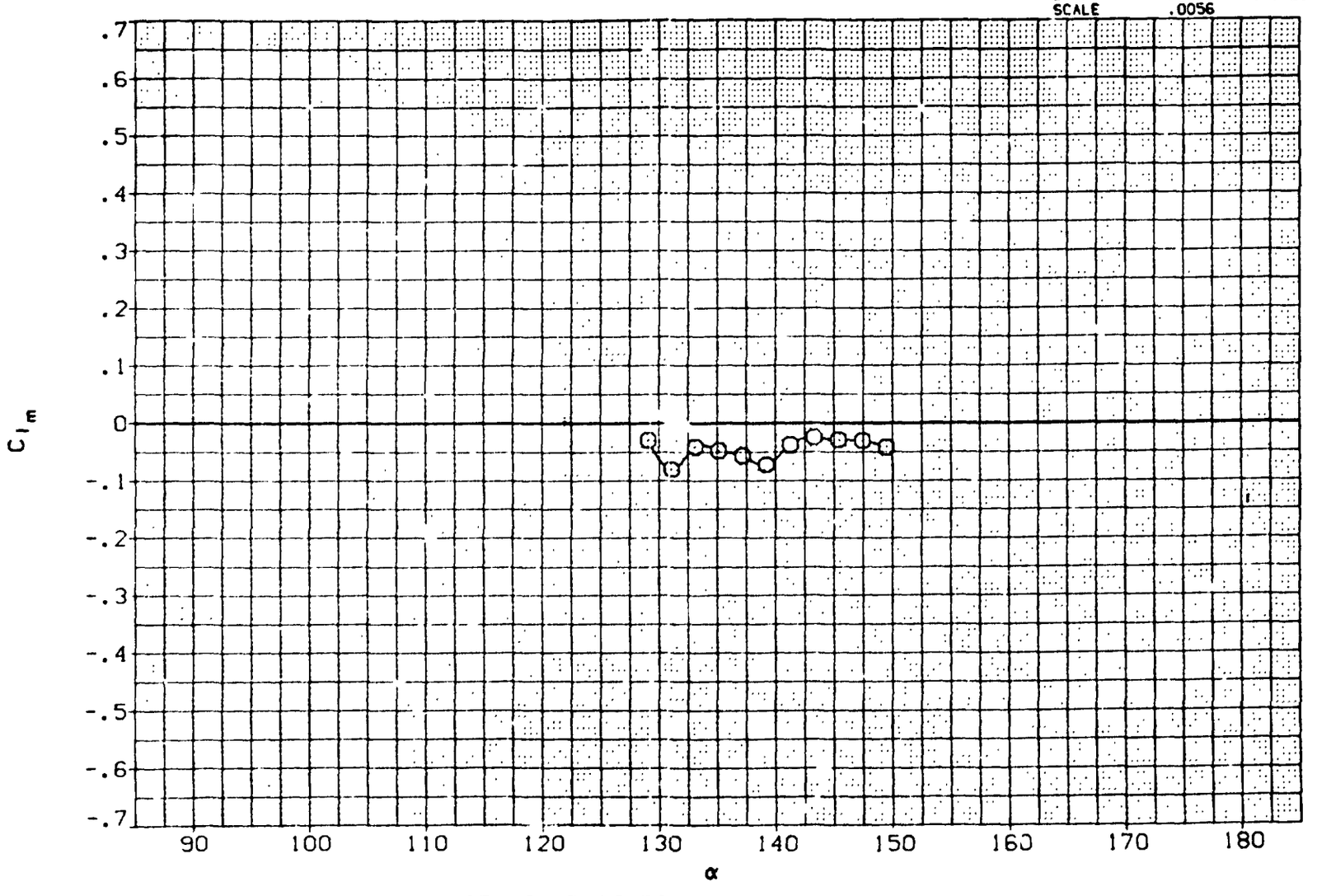
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(E)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



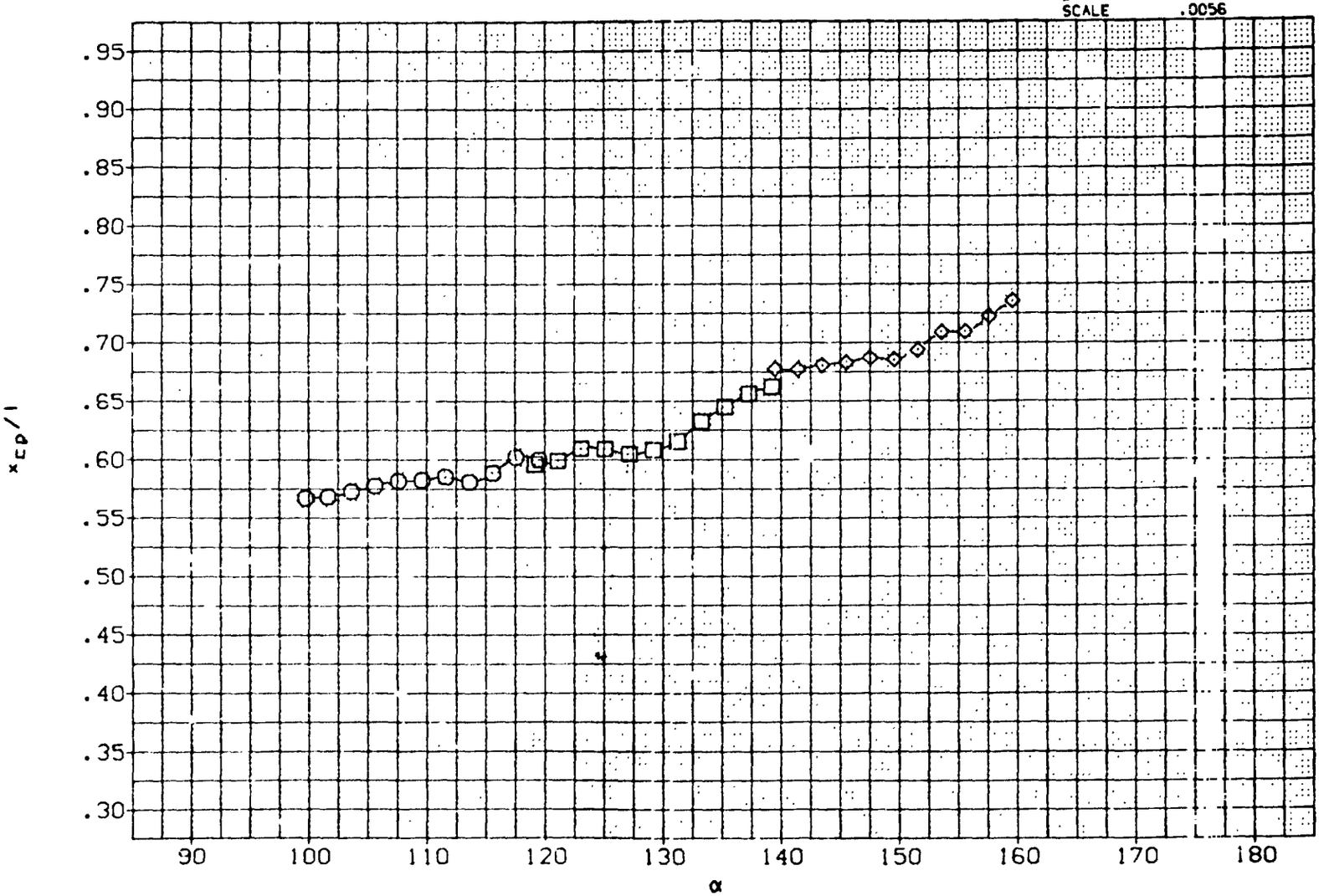
SRB ENTRY LATERAL STABILITY CHARACTERISTICS

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



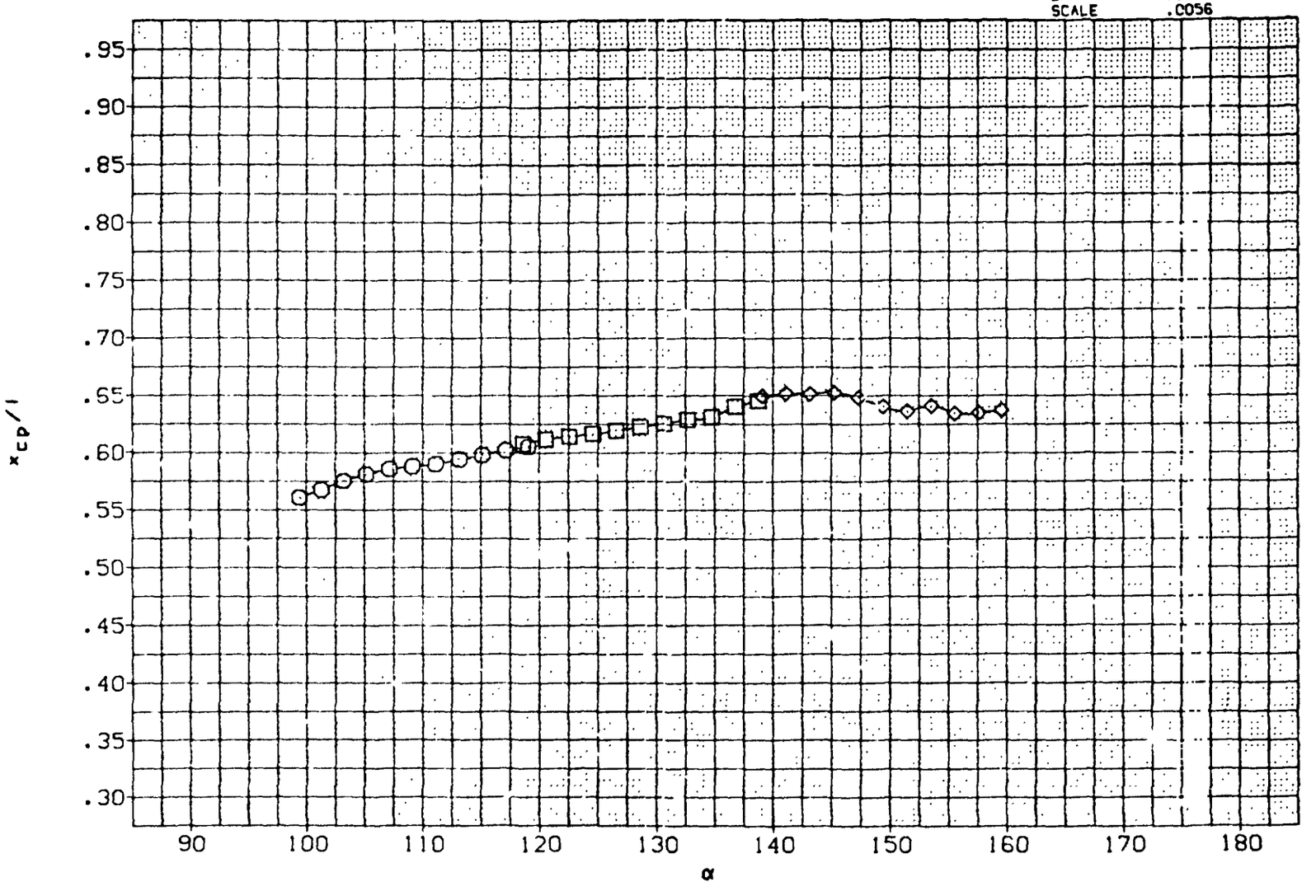
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



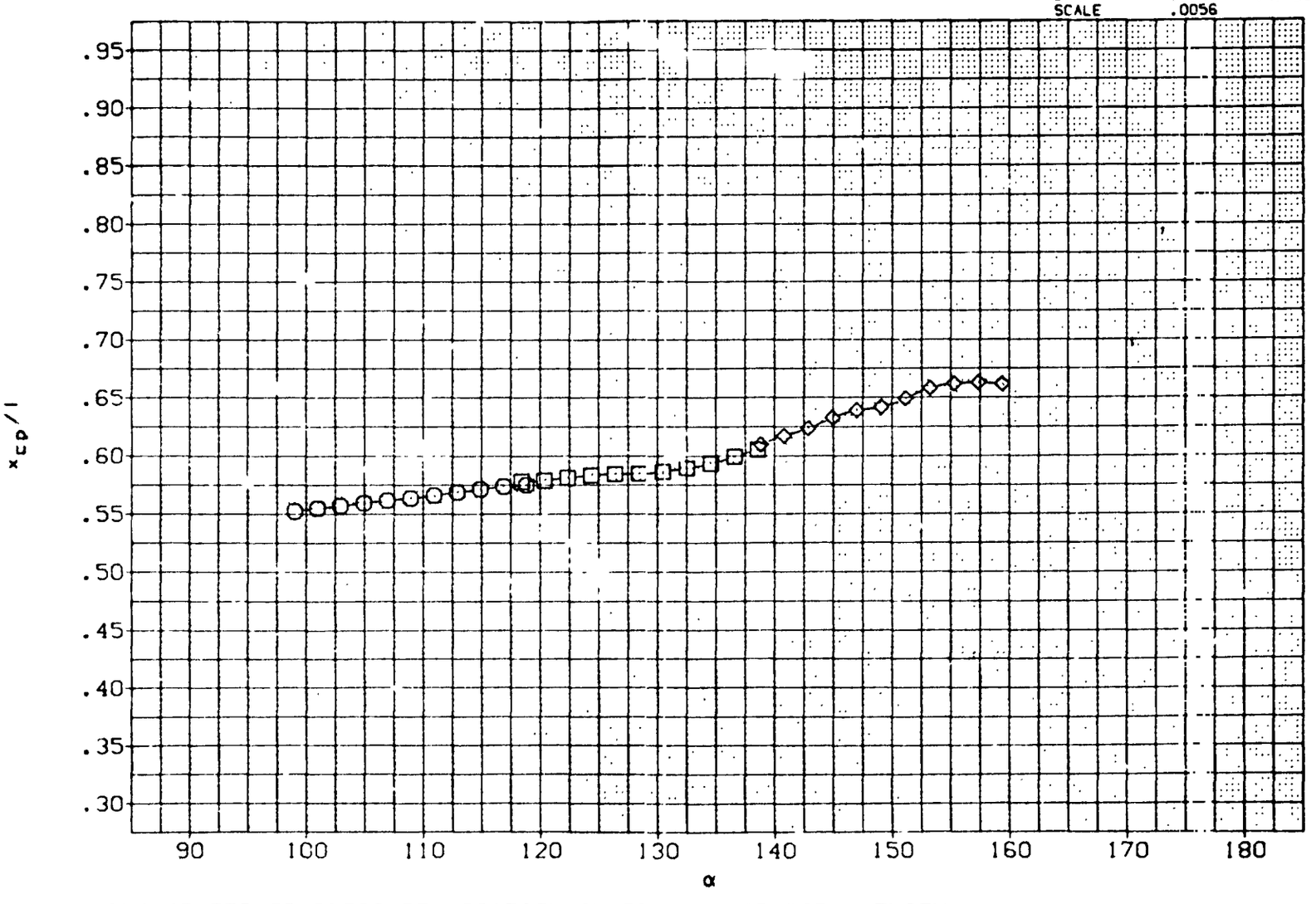
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14-(A)) STING EFFECTS. NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN.. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



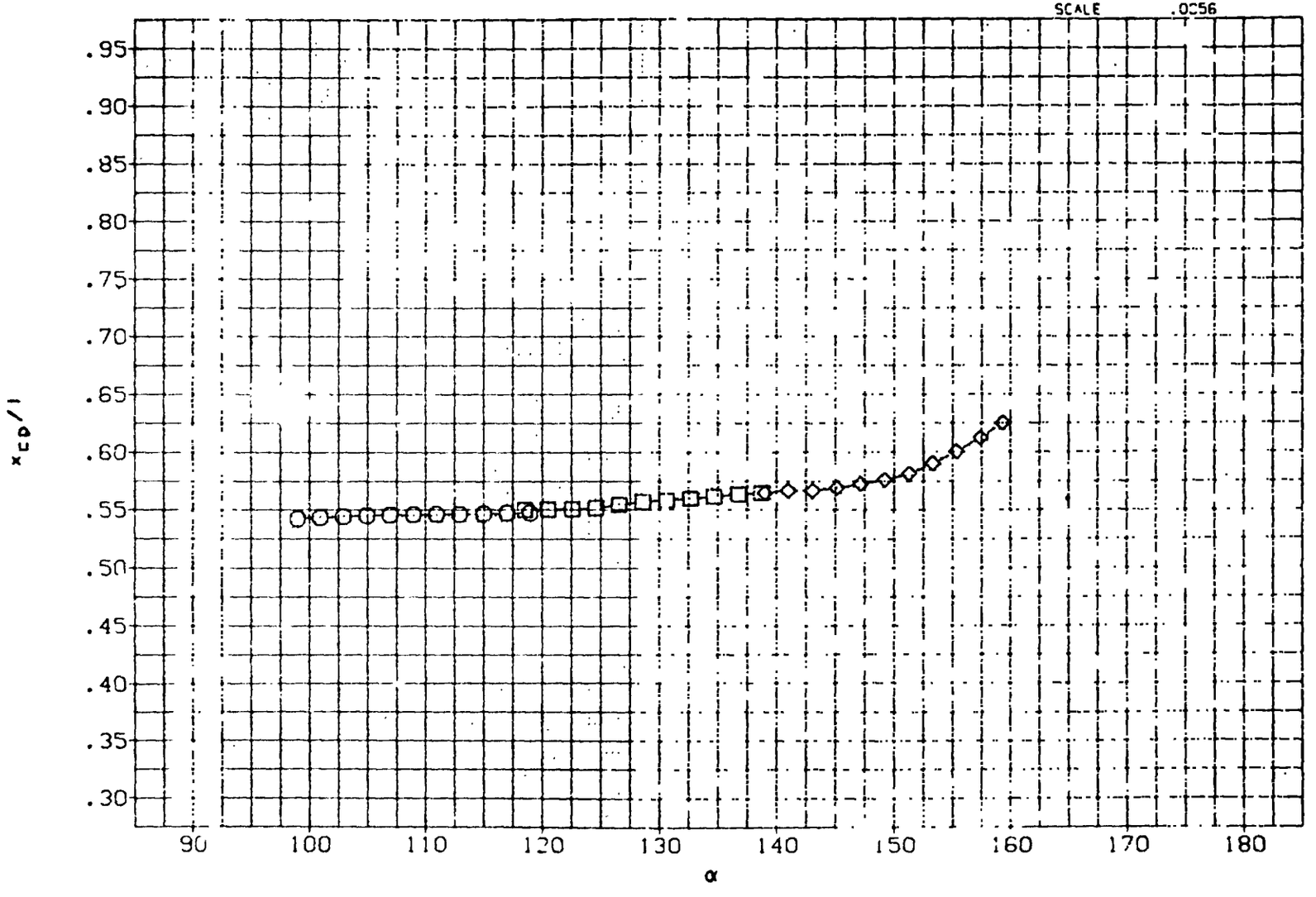
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	,FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



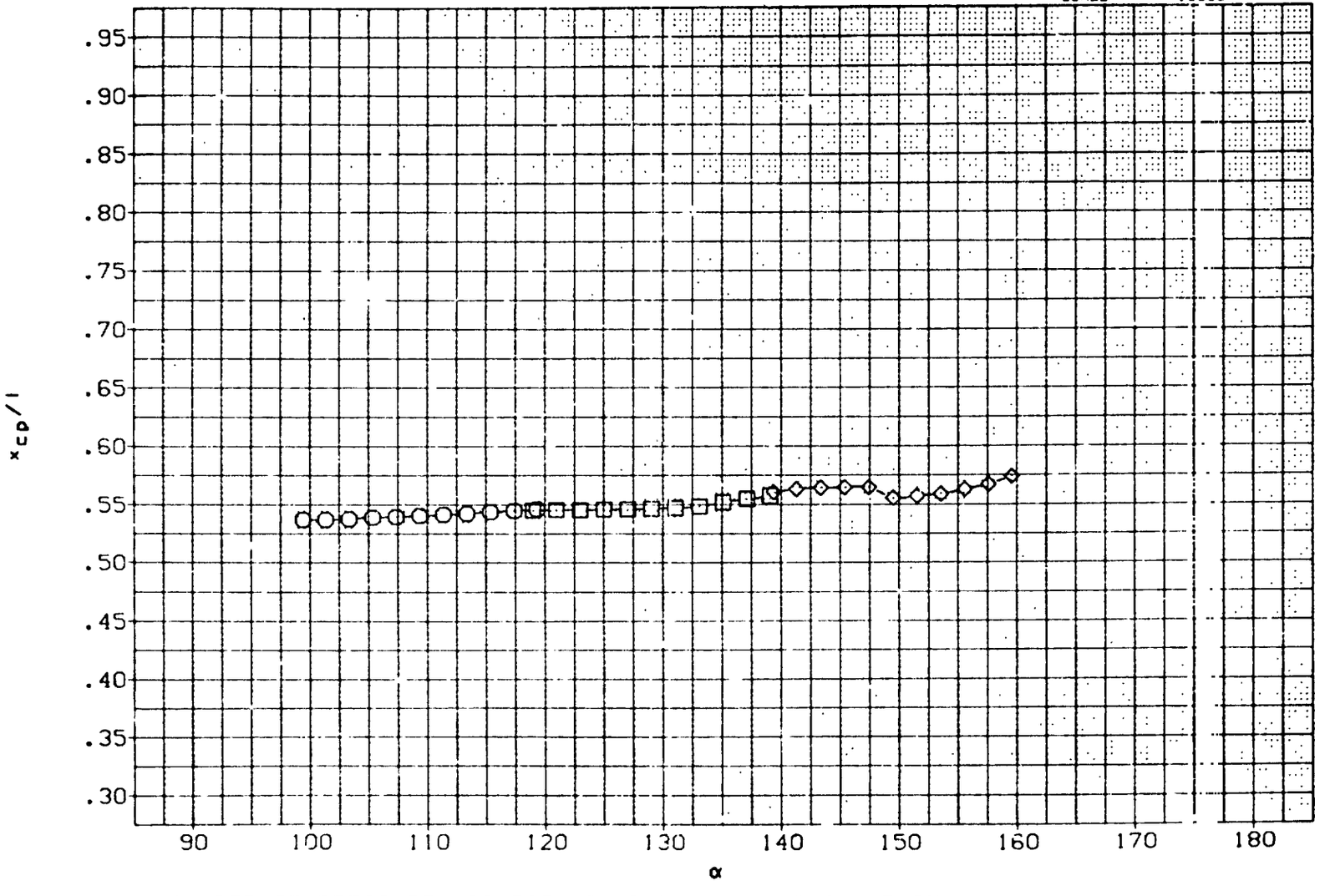
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(D)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A'0001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10002)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



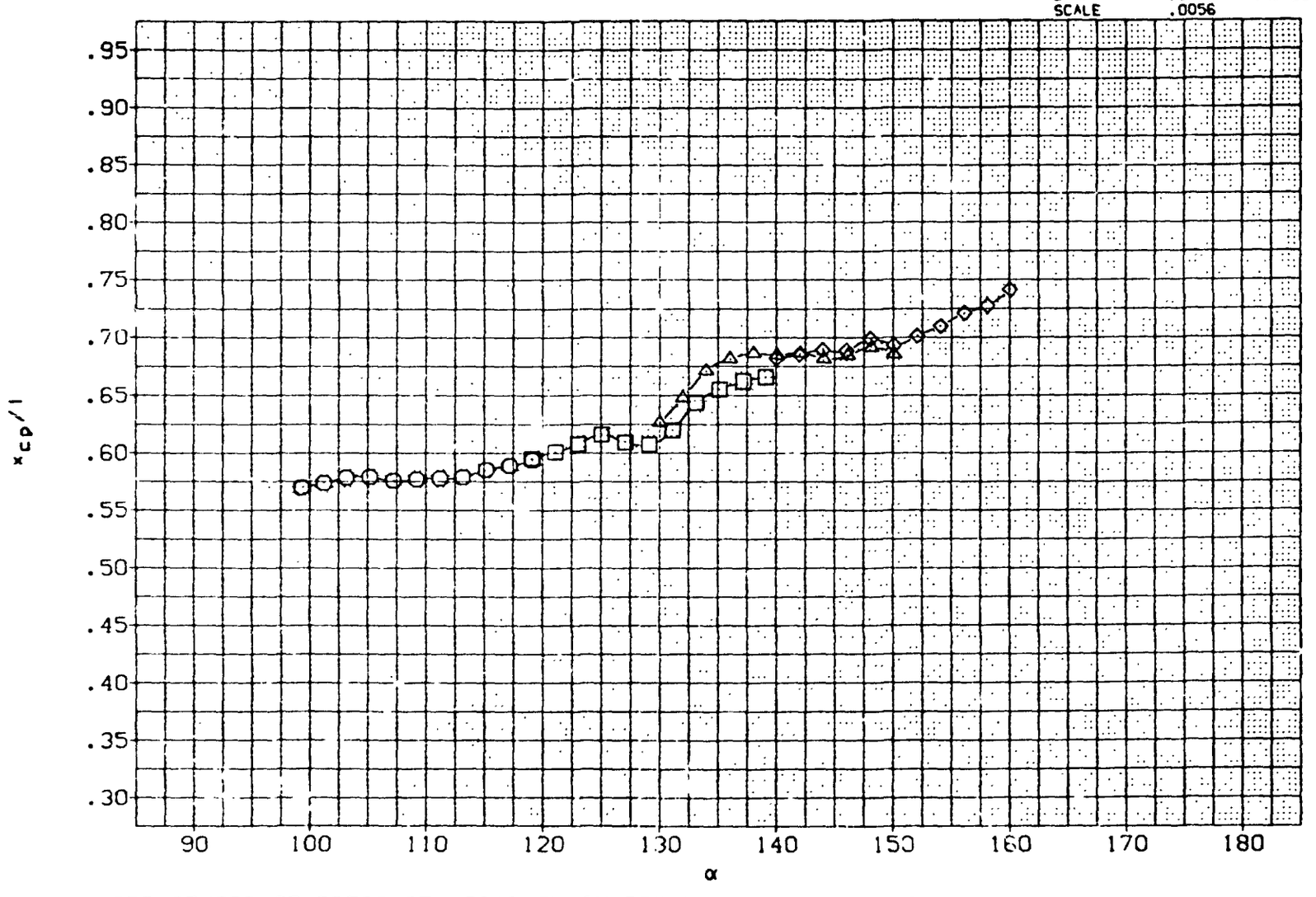
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(E.MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



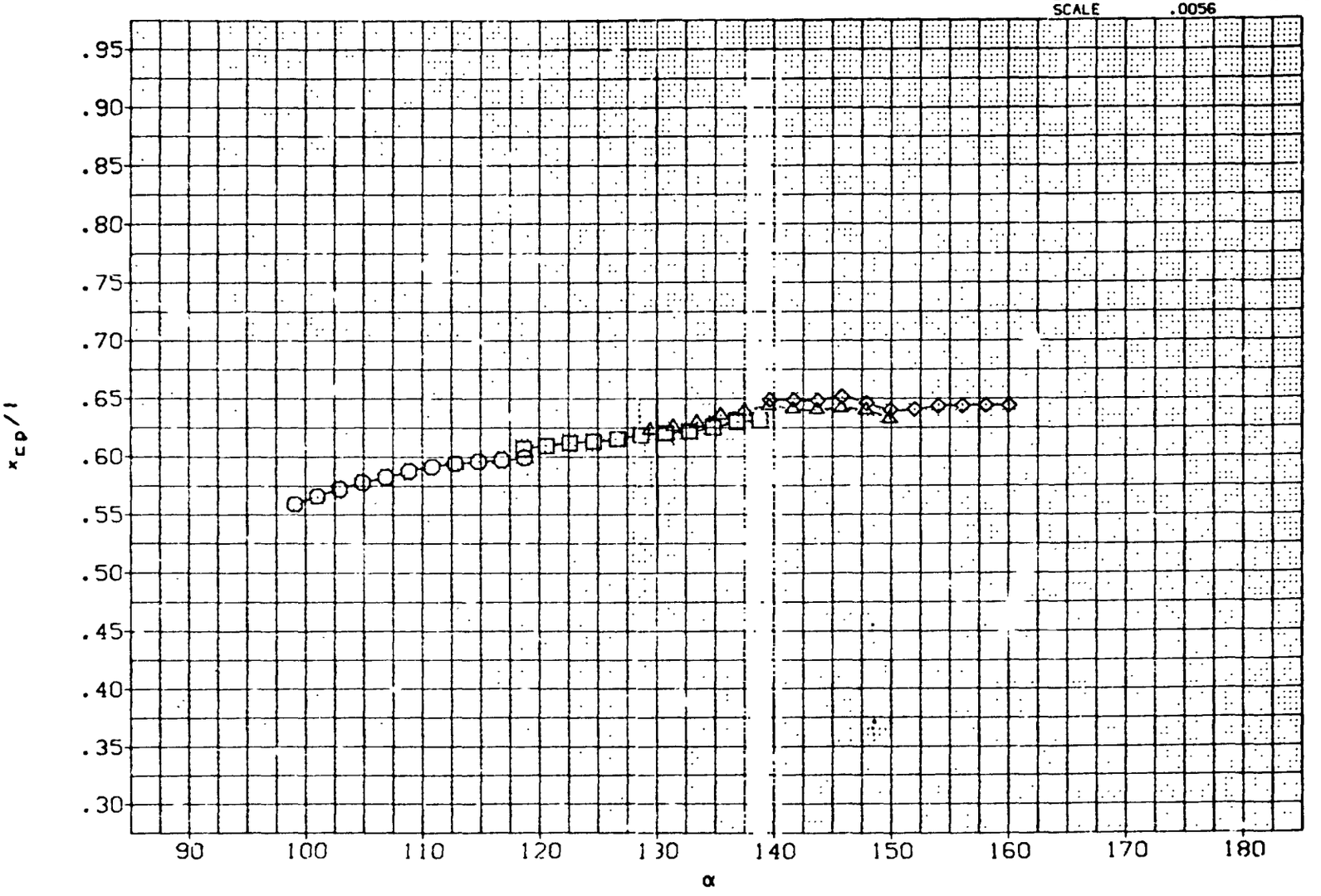
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C[illegible]04)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



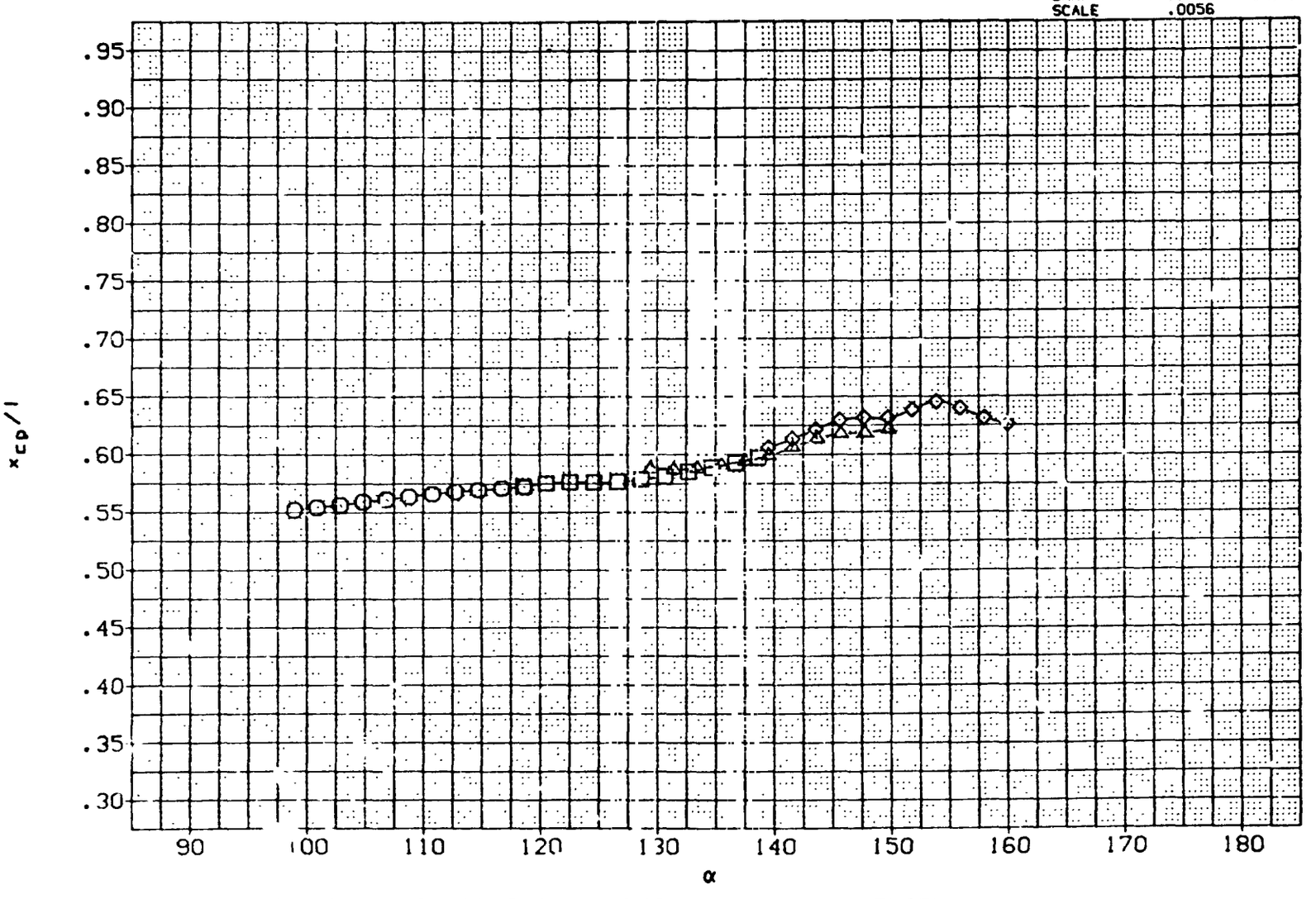
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10[illegible])	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM9C	000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



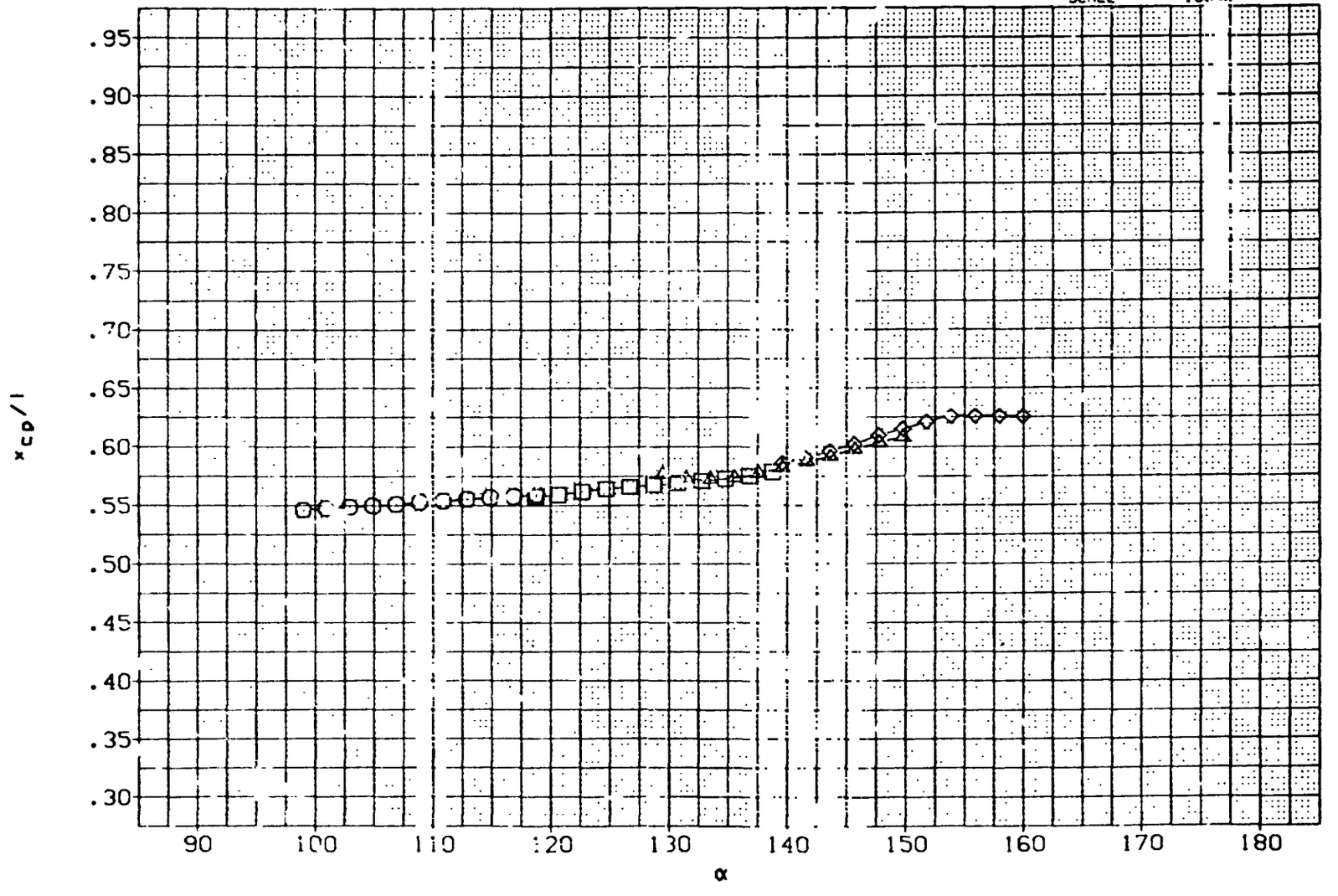
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0006	



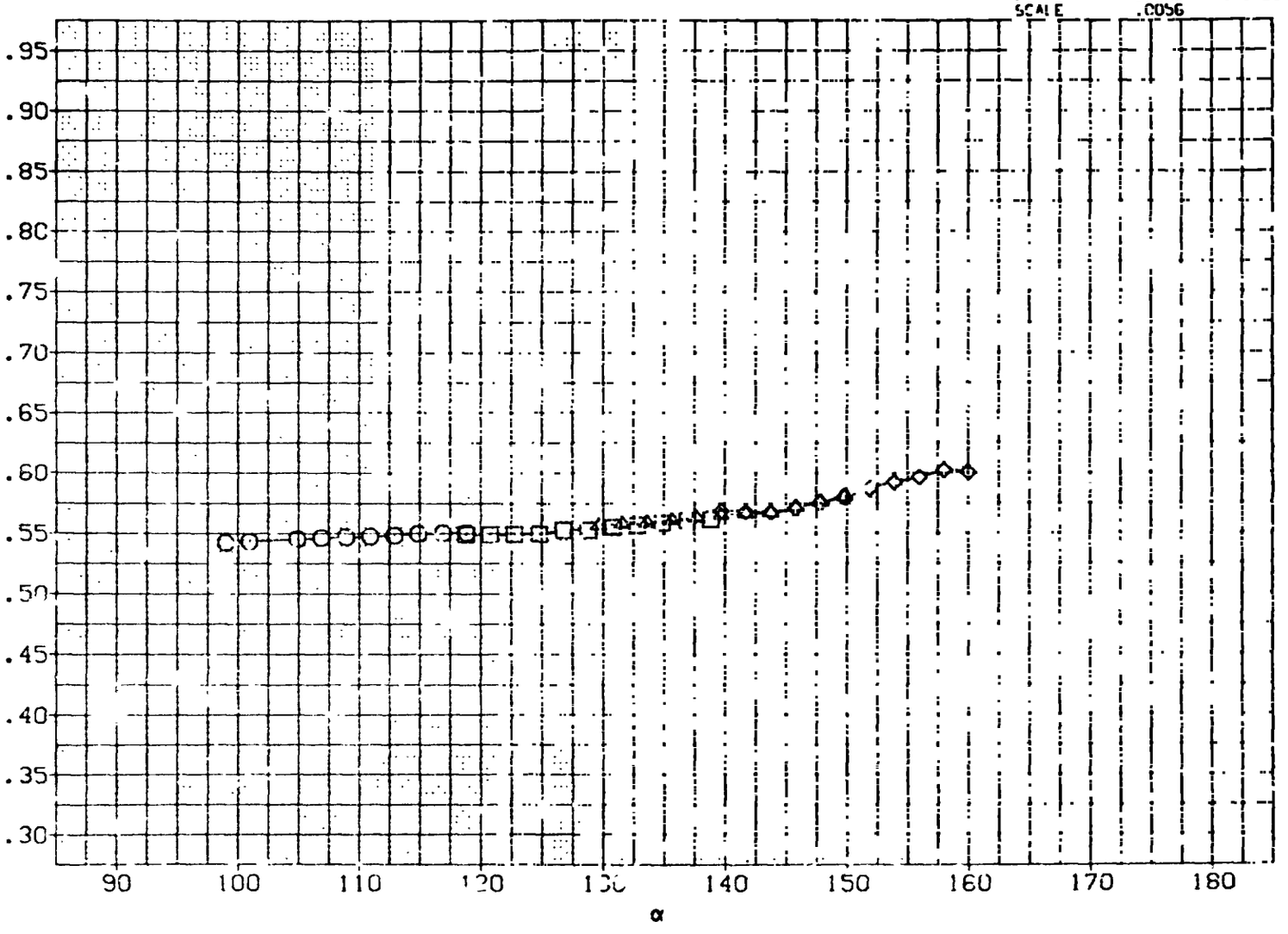
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(D)MACH = 1.10

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA1.(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9600	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



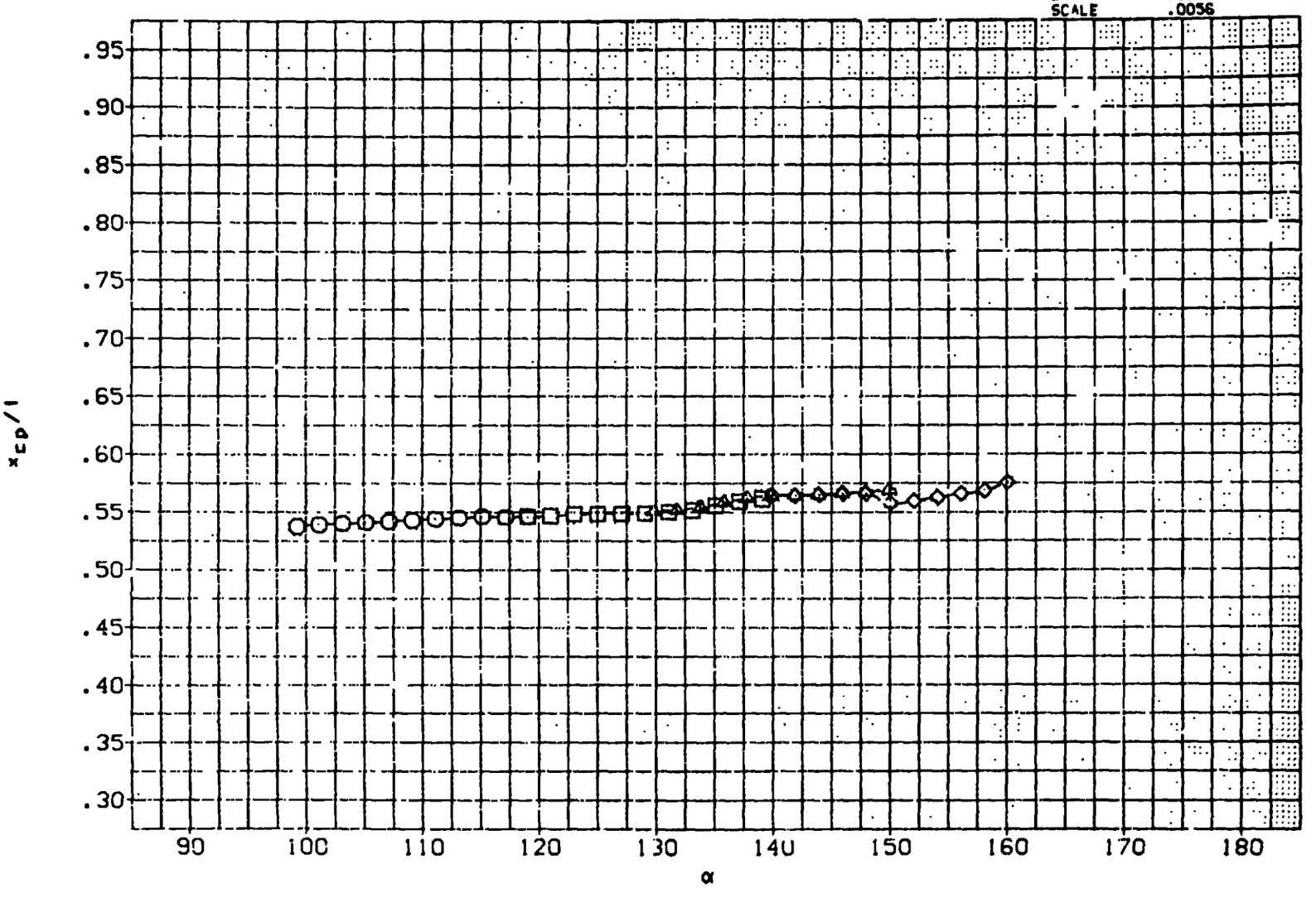
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(C10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10005)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10006)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10007)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



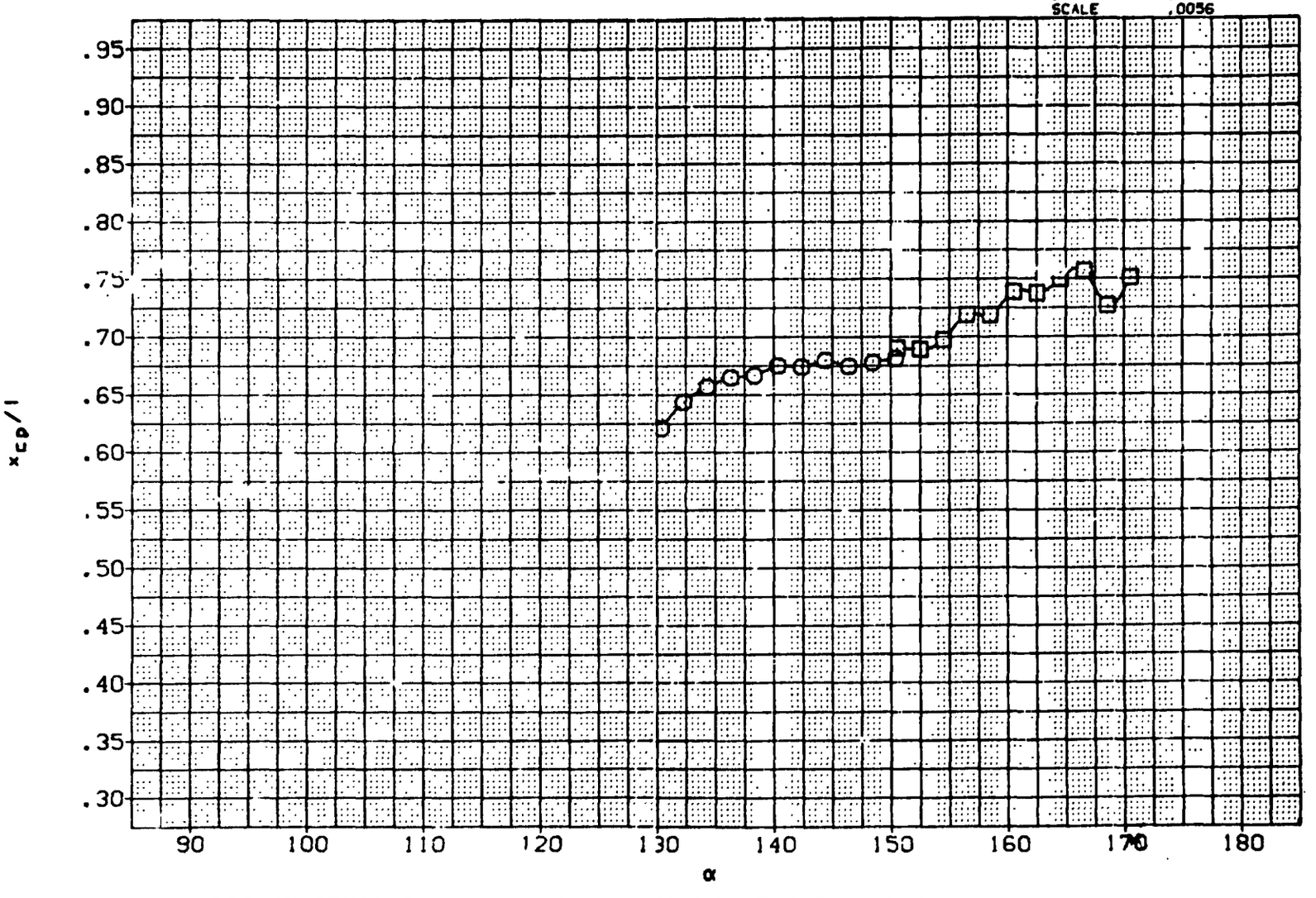
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	8	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



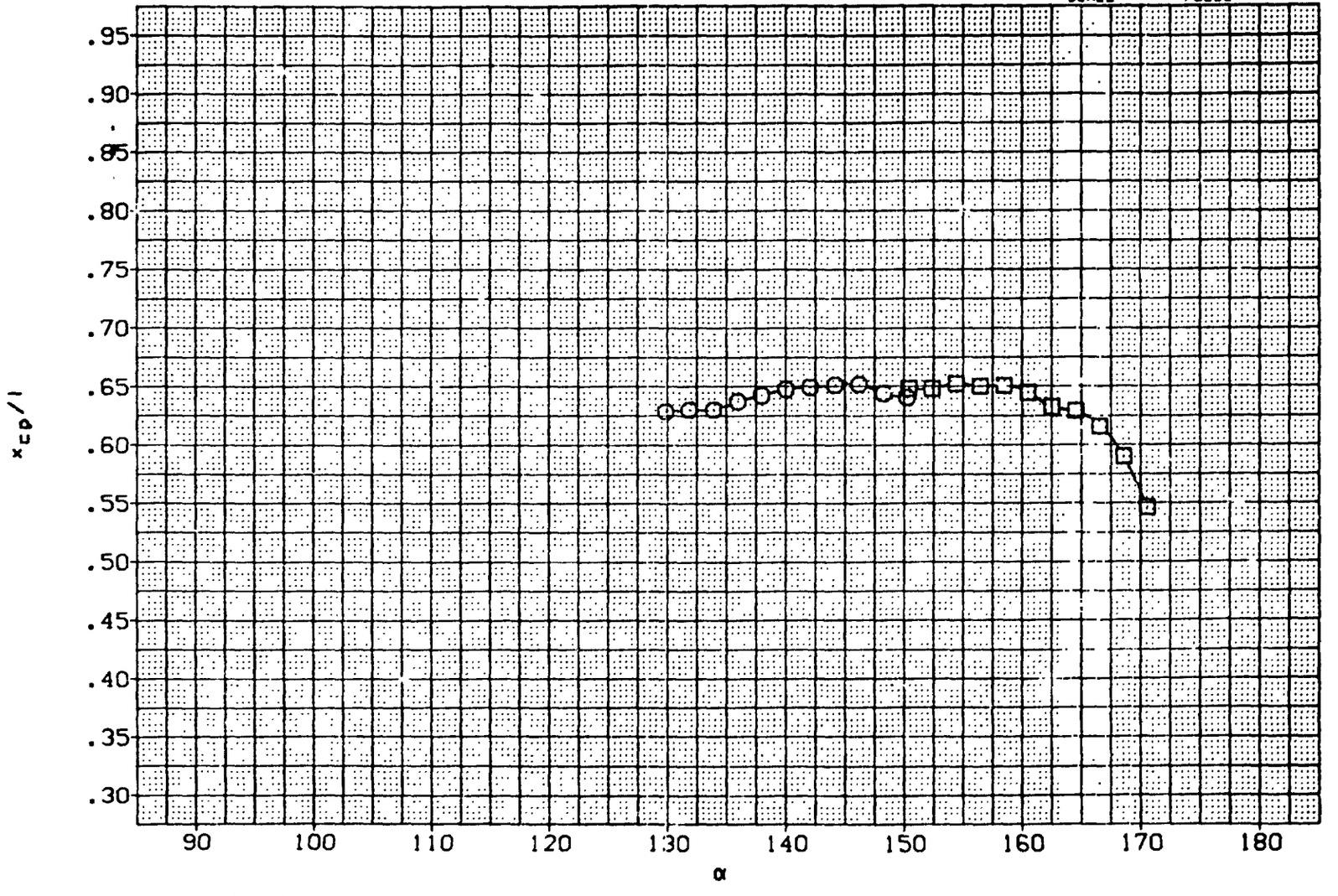
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



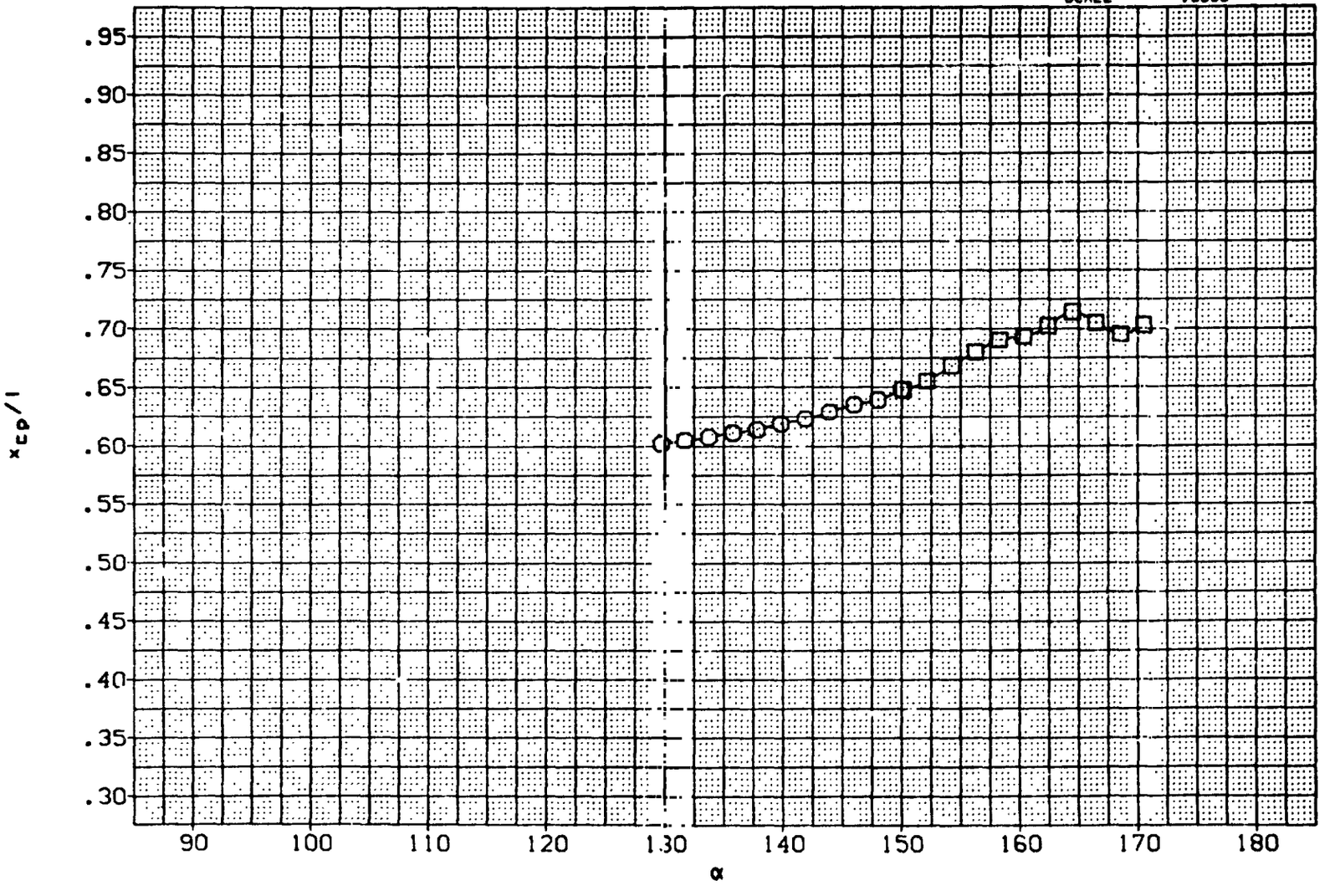
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM30S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



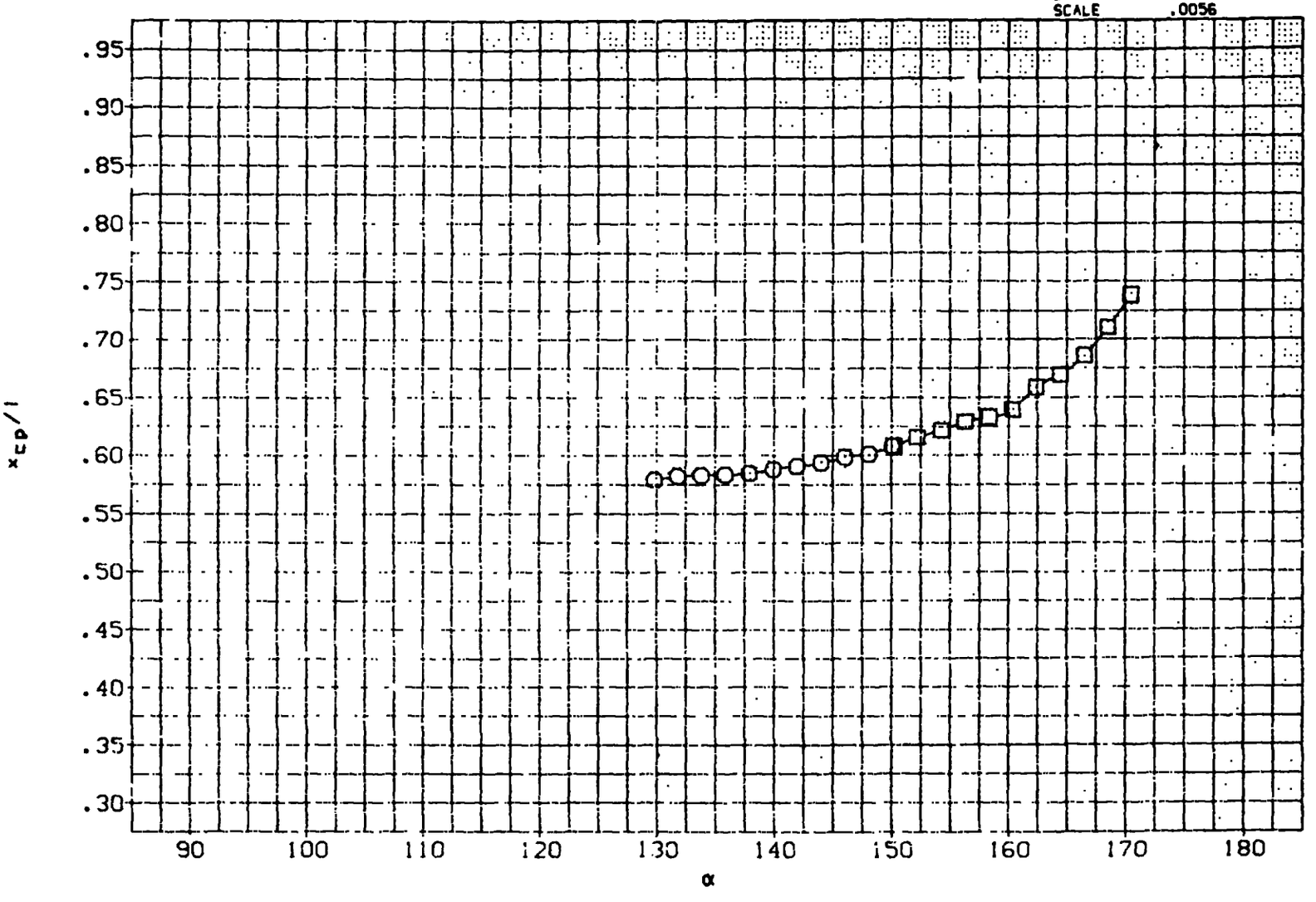
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000

REFERENCE INFORMATION

SREF	39.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



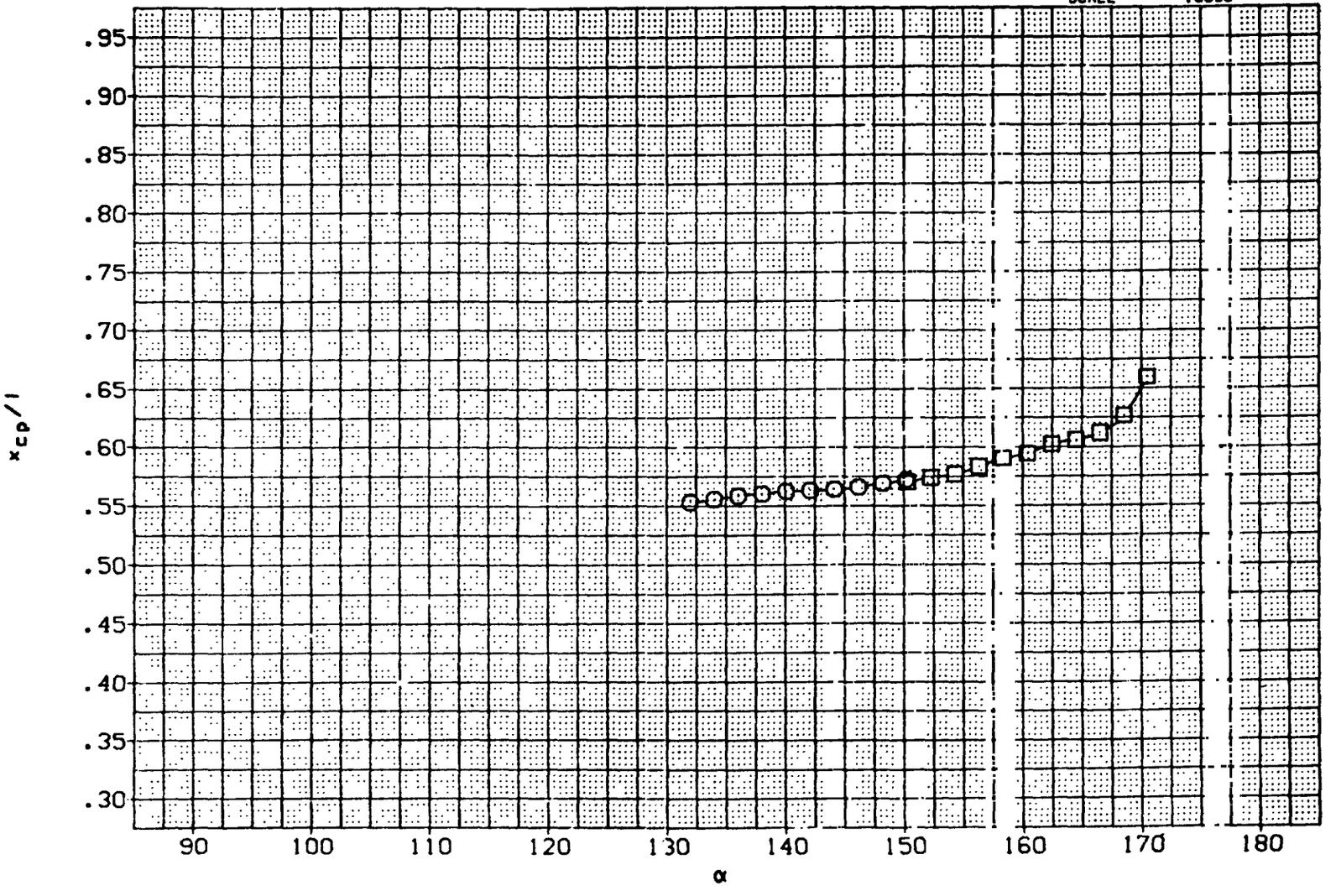
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN, XS
YMRP	.0000	IN, YS
ZMRP	.0000	IN, ZS
SCALE	.0056	



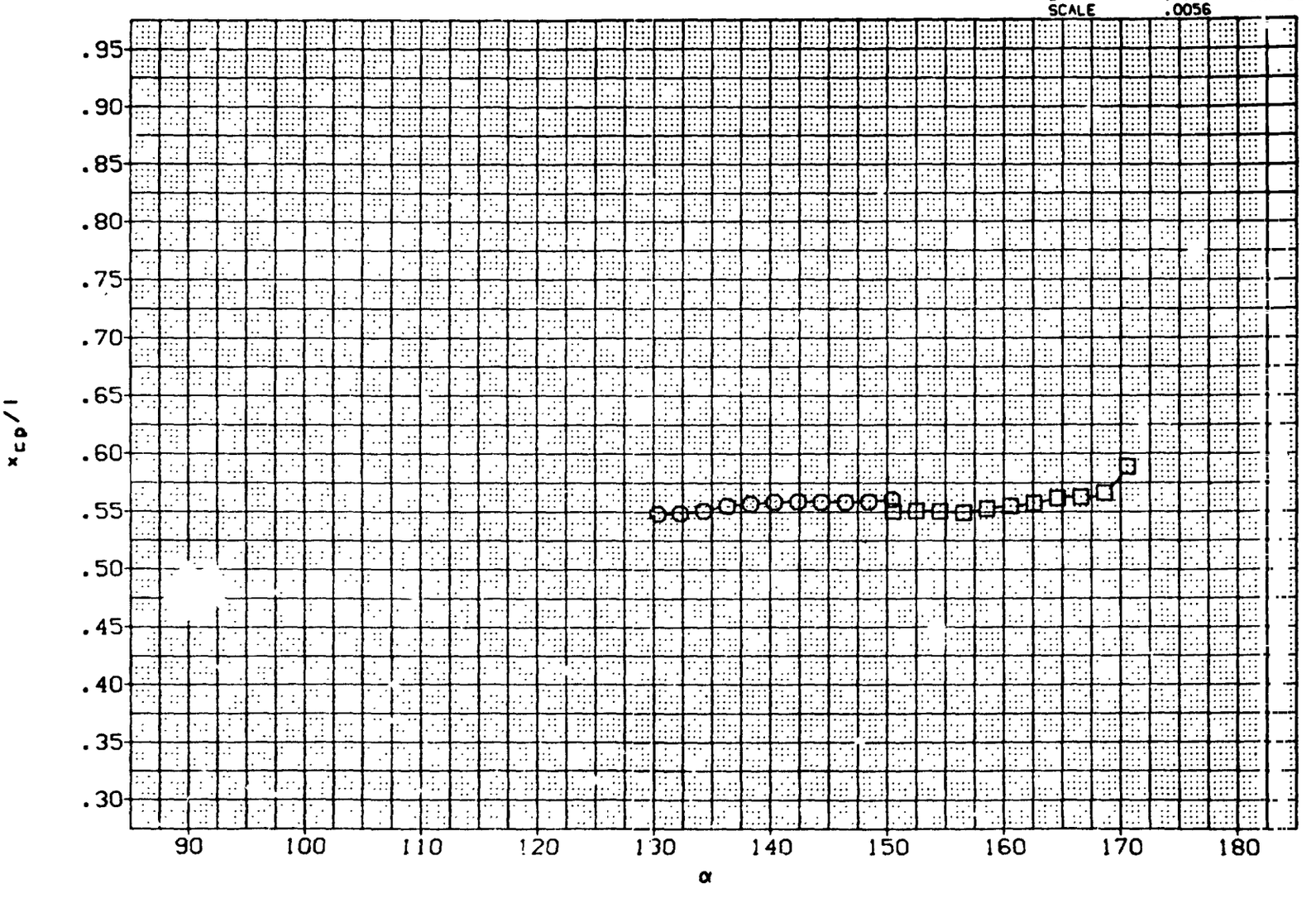
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10009)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



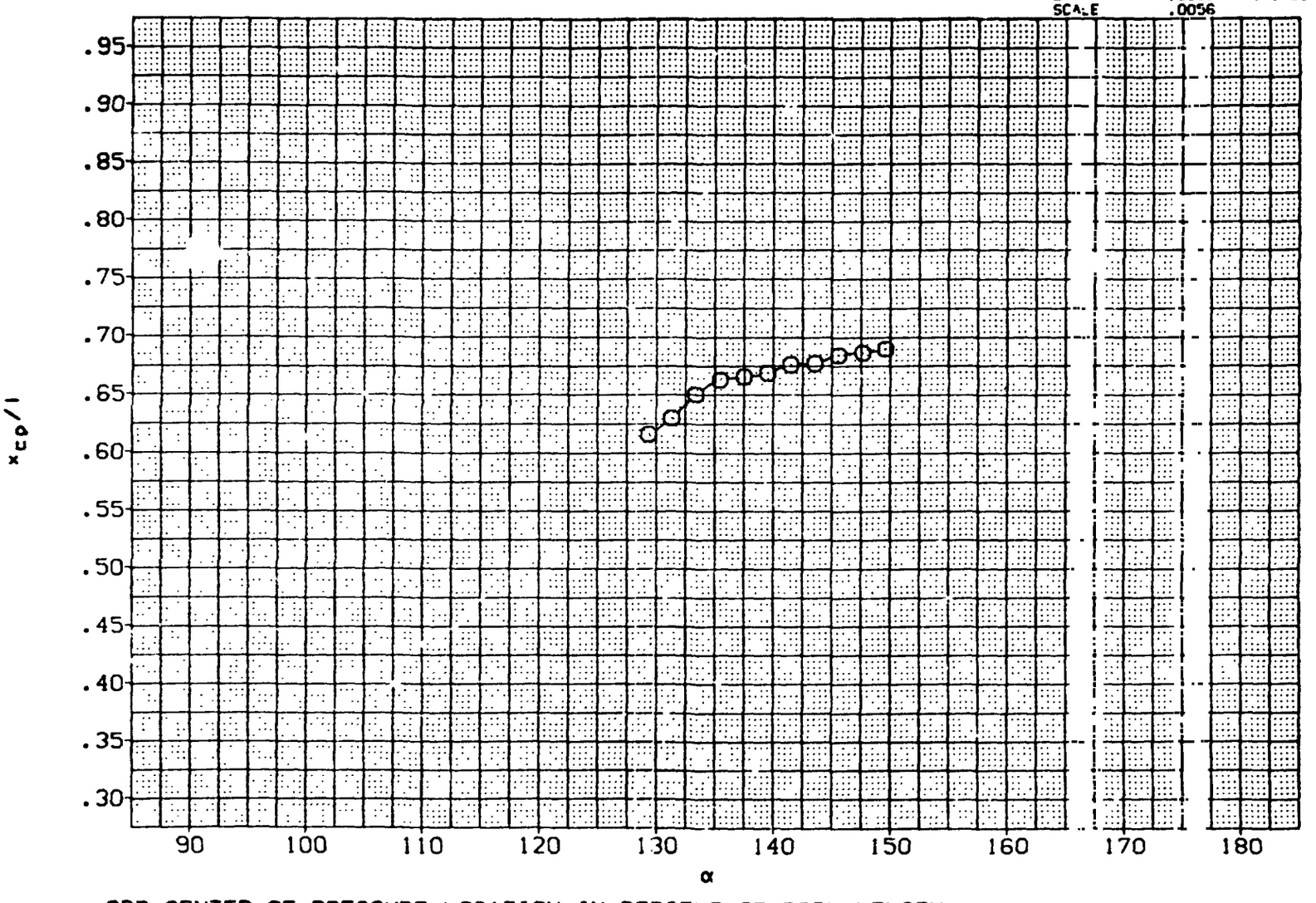
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



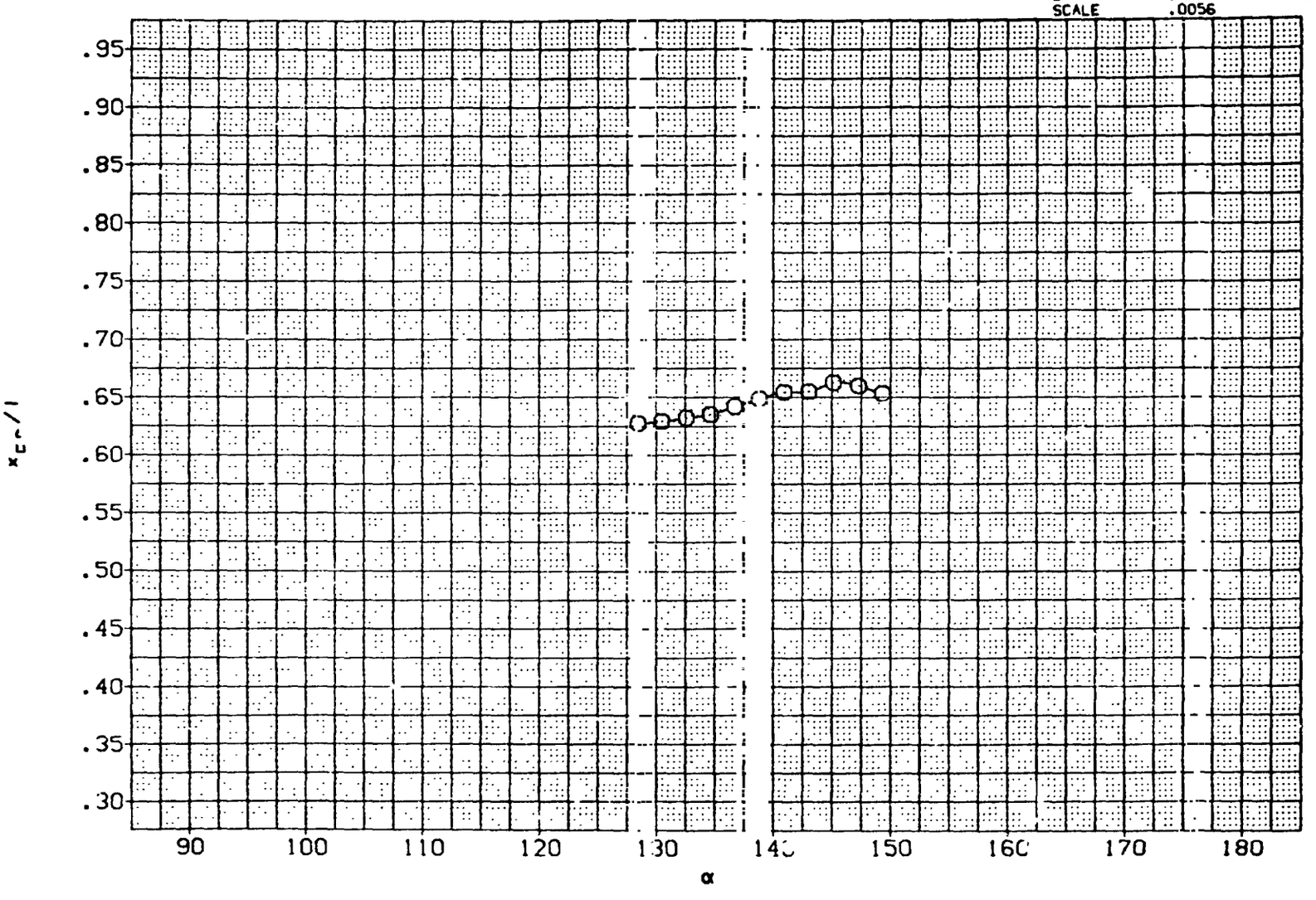
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



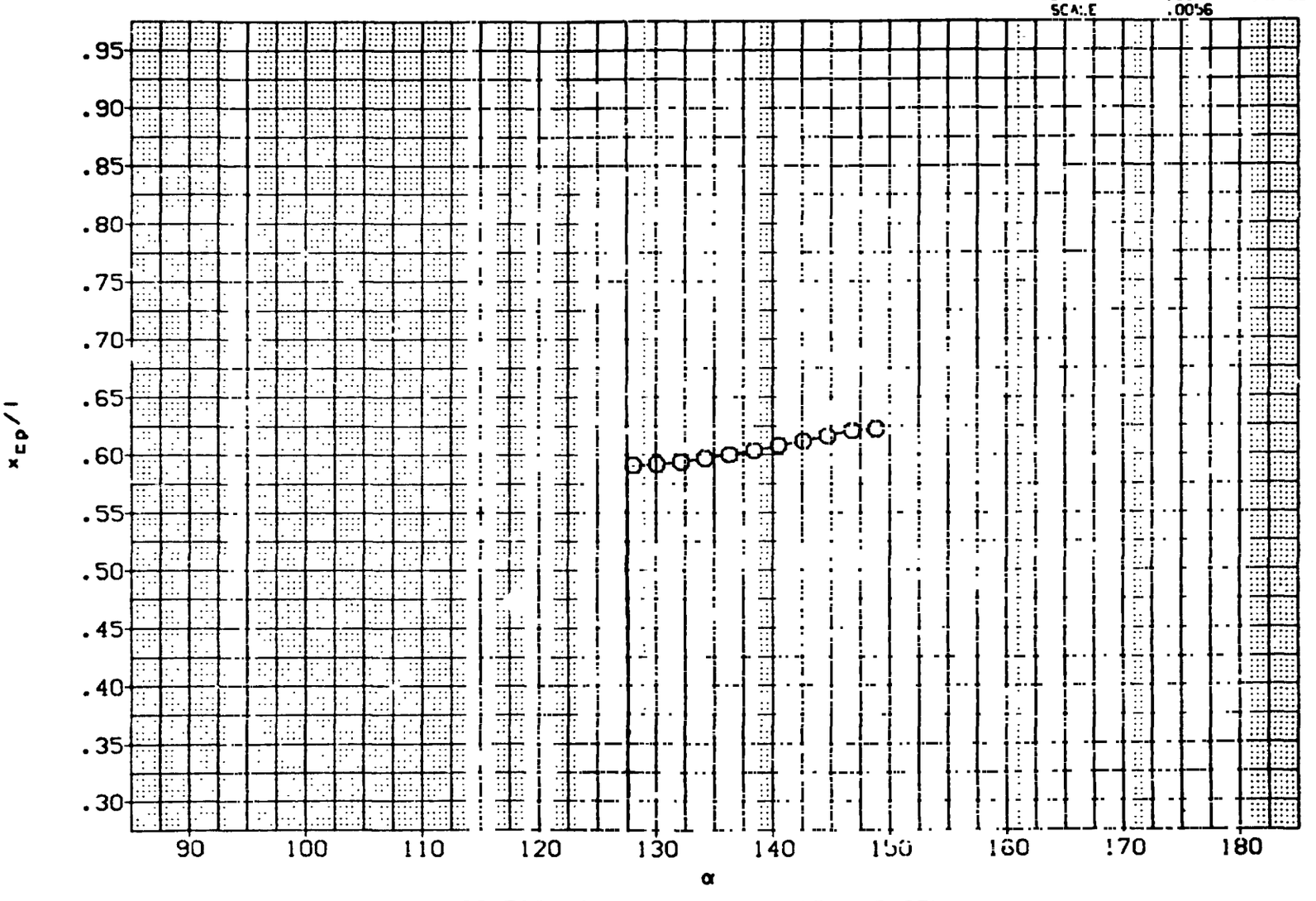
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



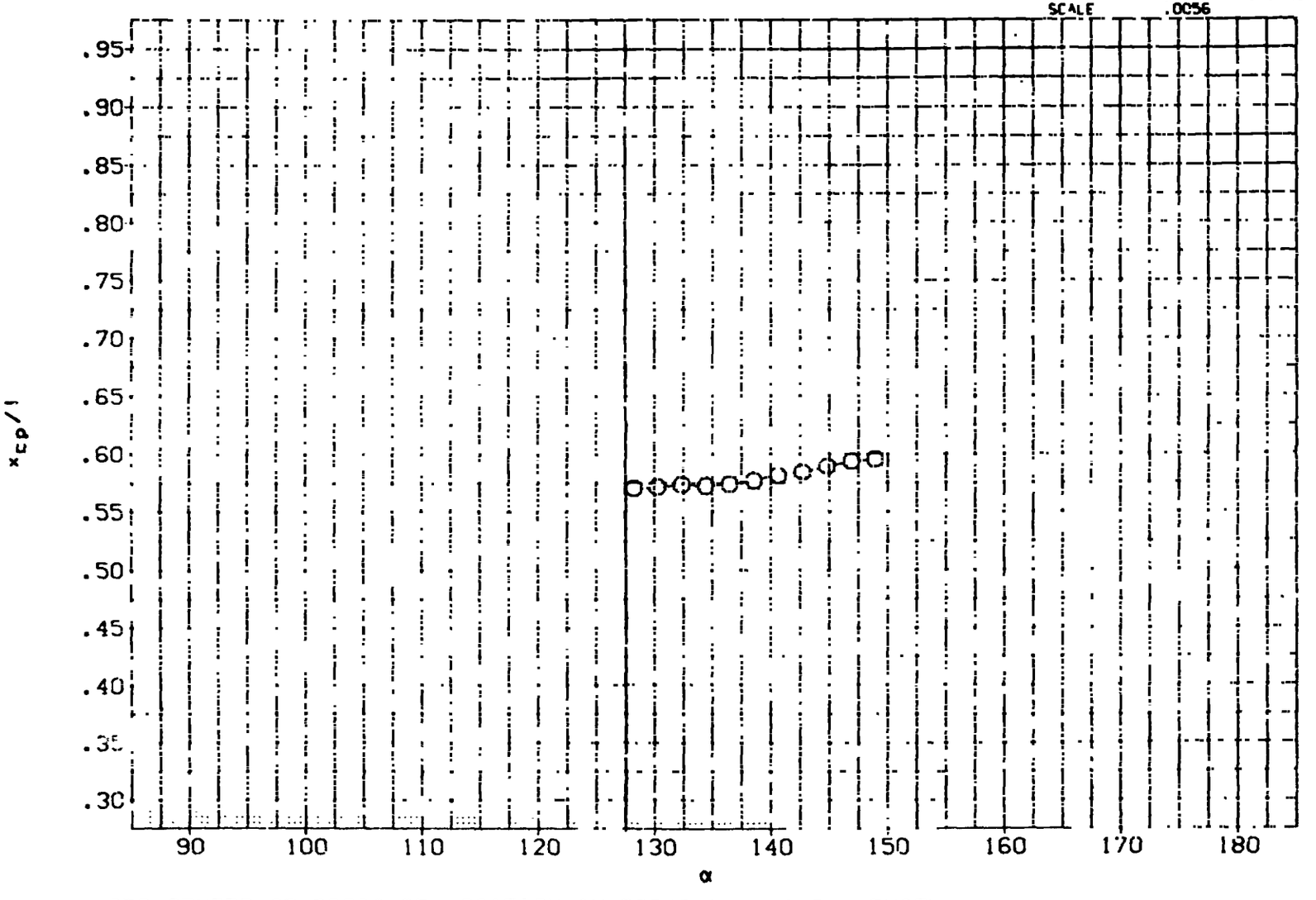
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(C)MACH = 1.20

DATA SET SYMBOL CONFIGURATION DESCRIPTION BETA
(A10011) O MSFC IWT 62C (SA14F:A)) STING EFFECTS. NBREMS .000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



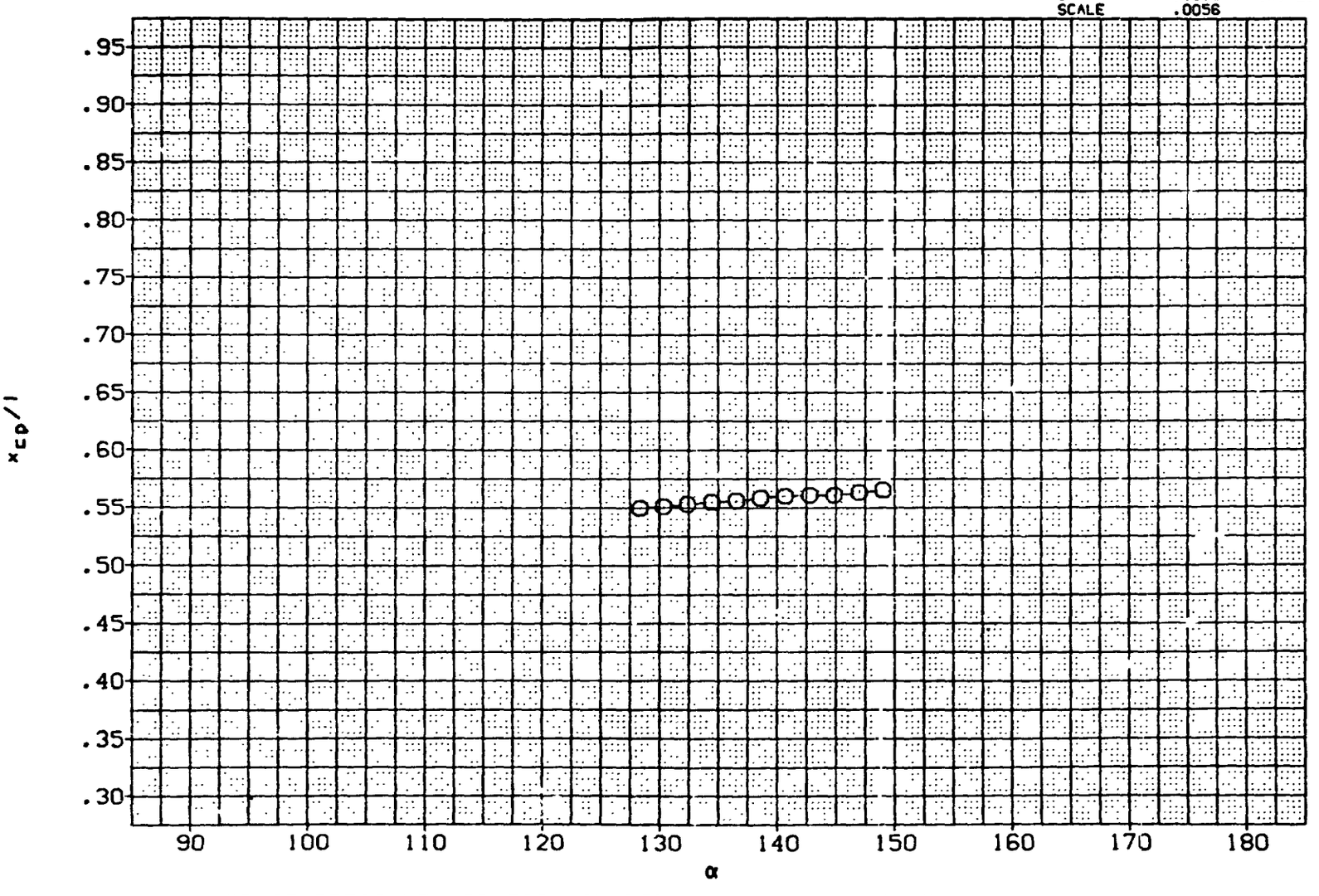
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	O	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



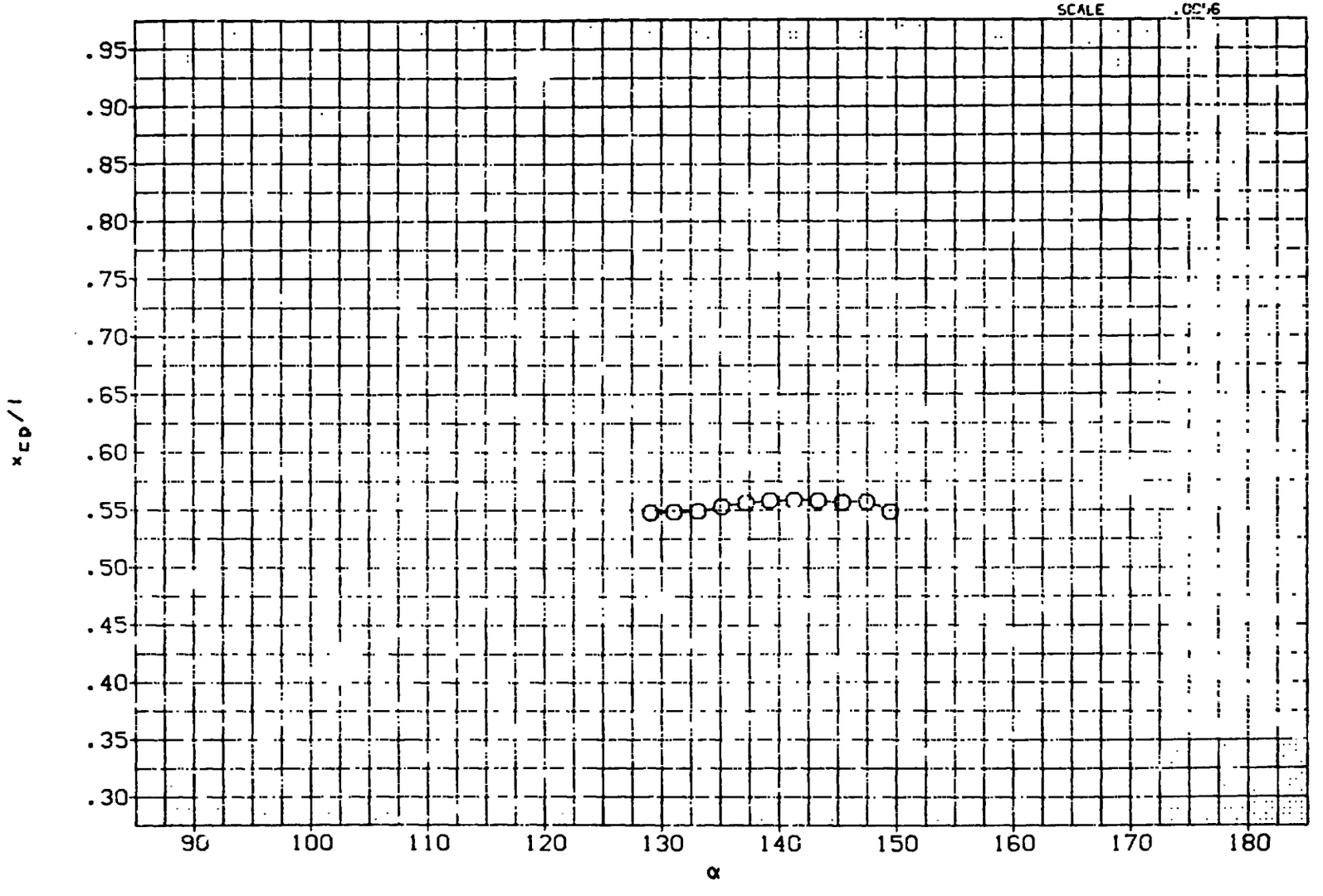
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(E)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(A10011)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000

REFERENCE INFORMATION

SREF	109.9600	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0016	



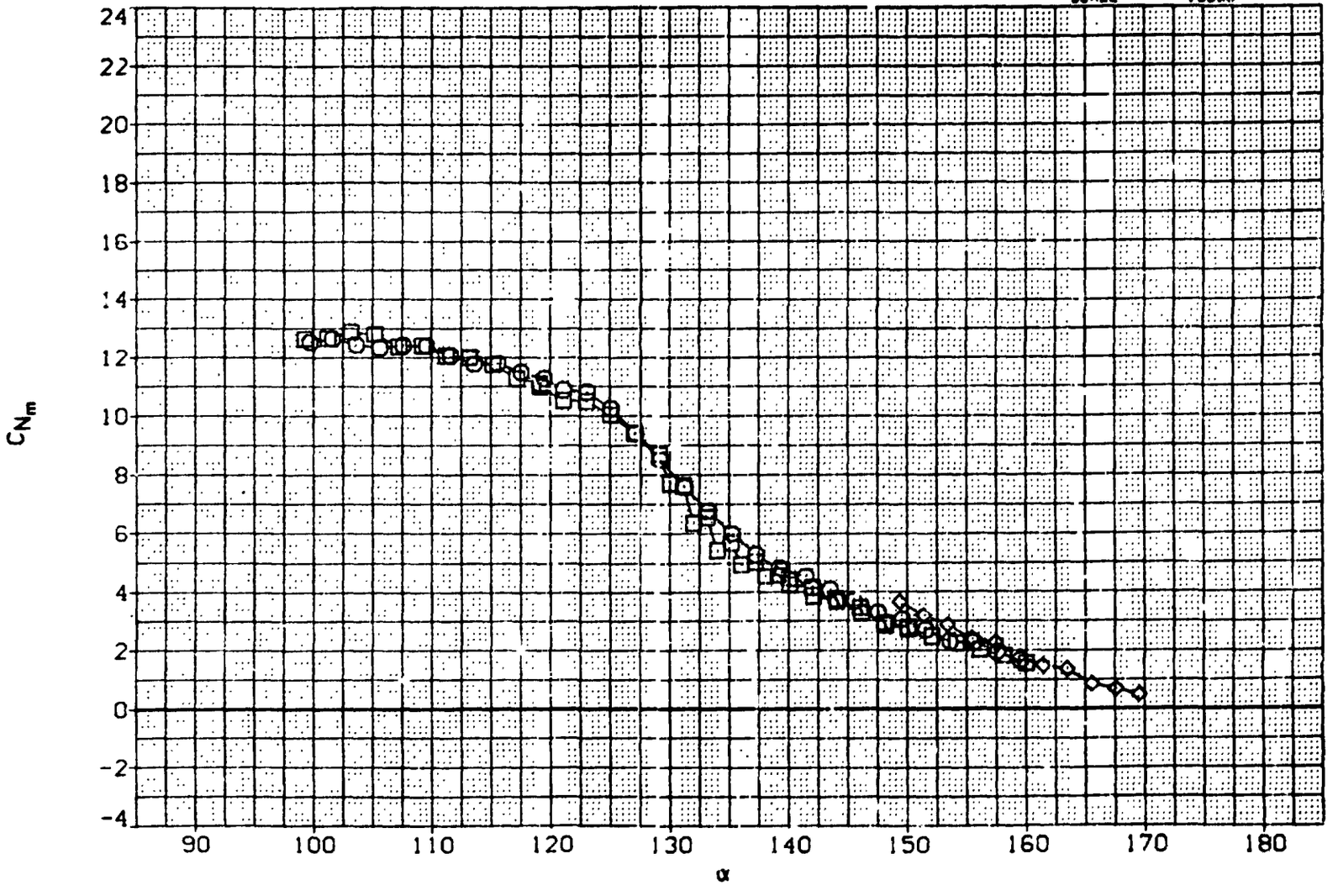
SRB CENTER OF PRESSURE LOCATION IN PERCENT OF BODY LENGTH

(F)M/CH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

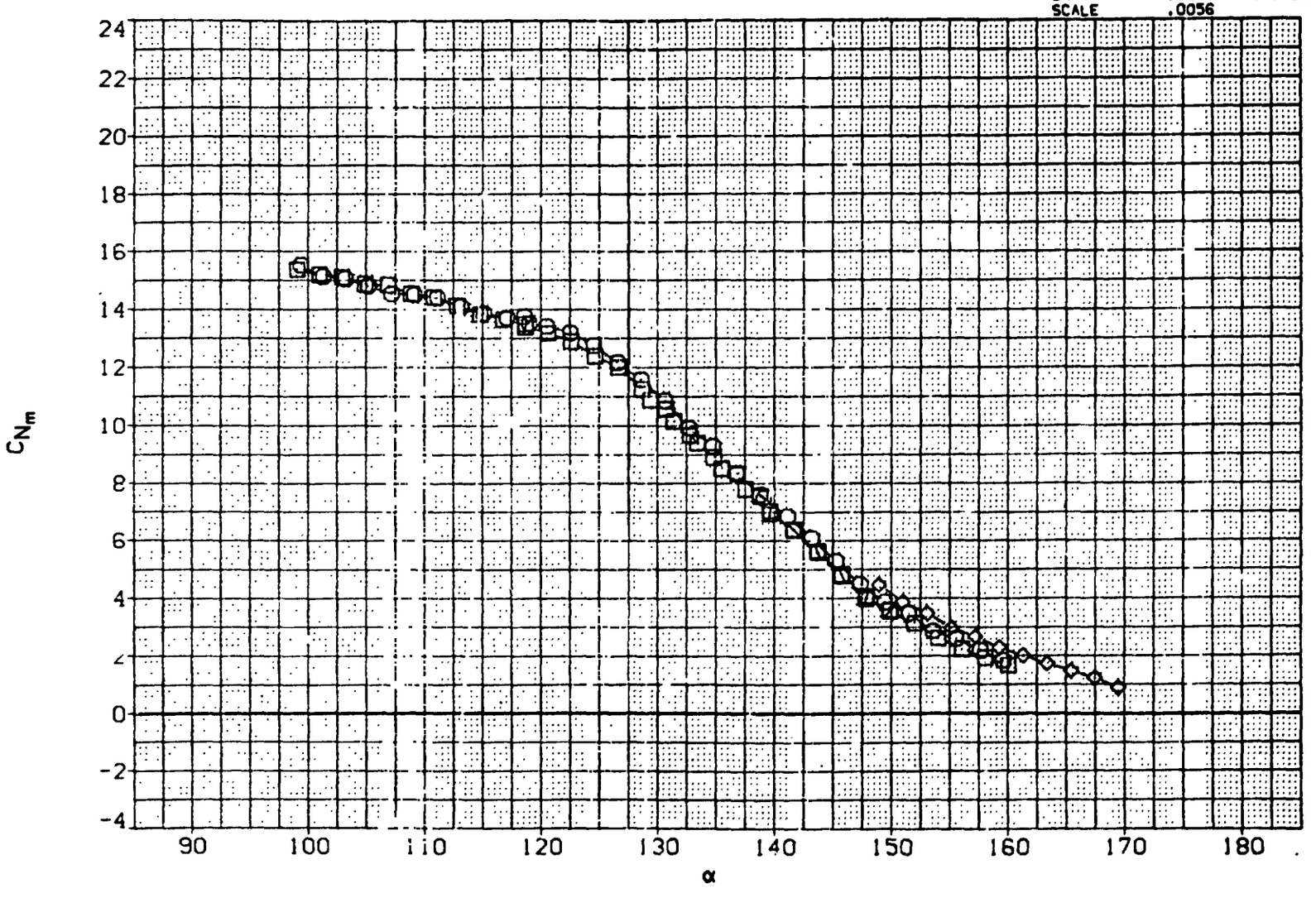


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	▽	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



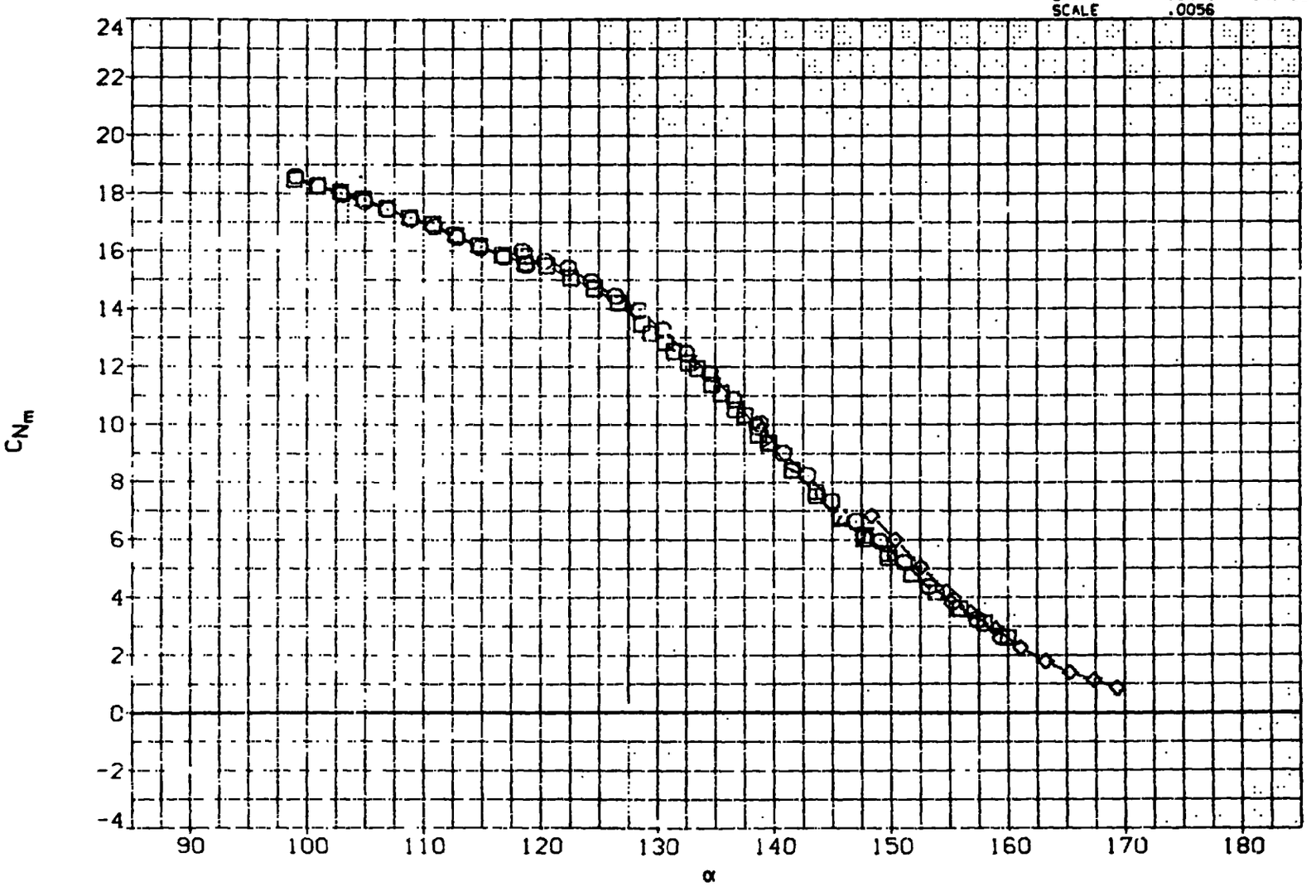
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



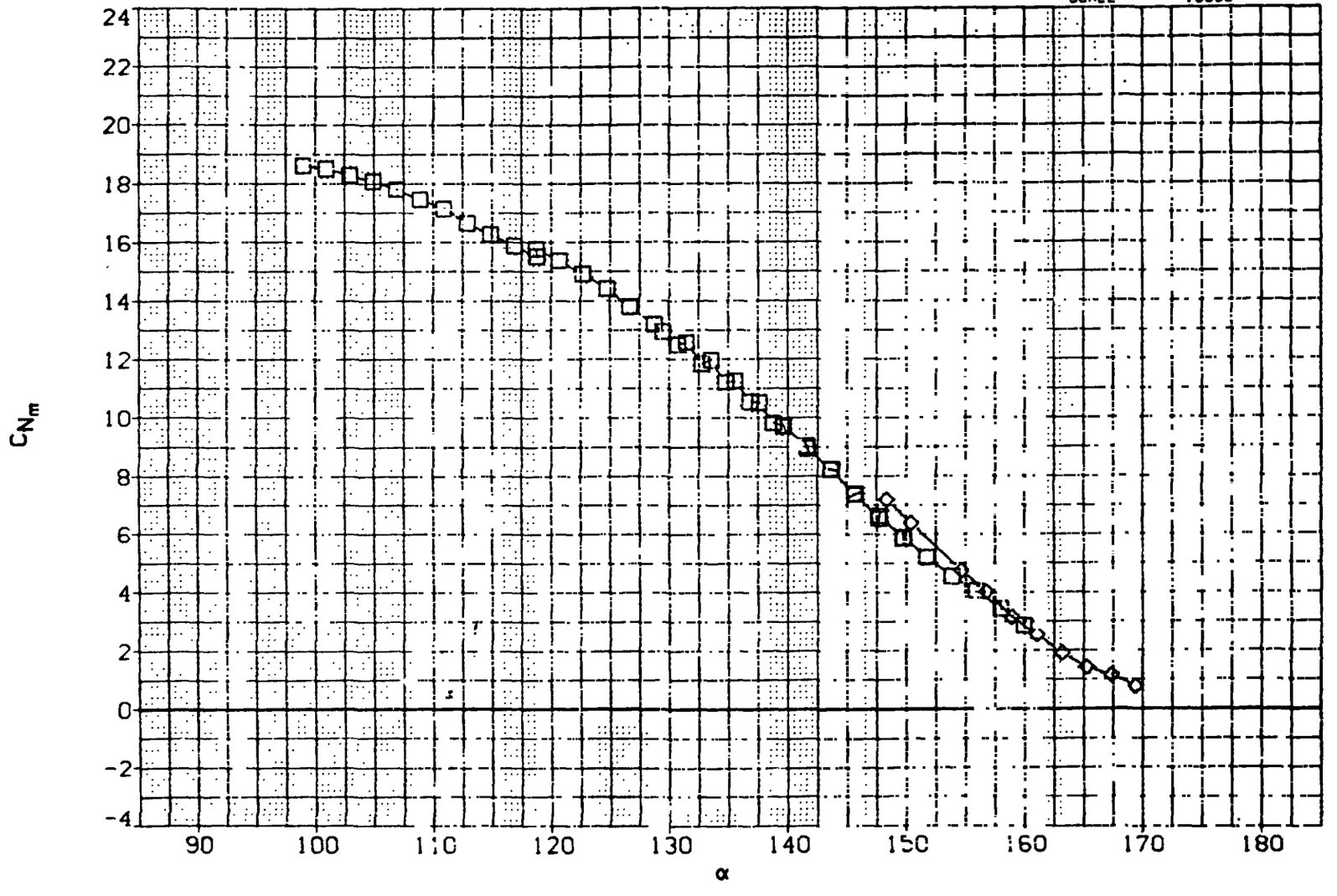
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	DATA NOT AVAILABLE	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



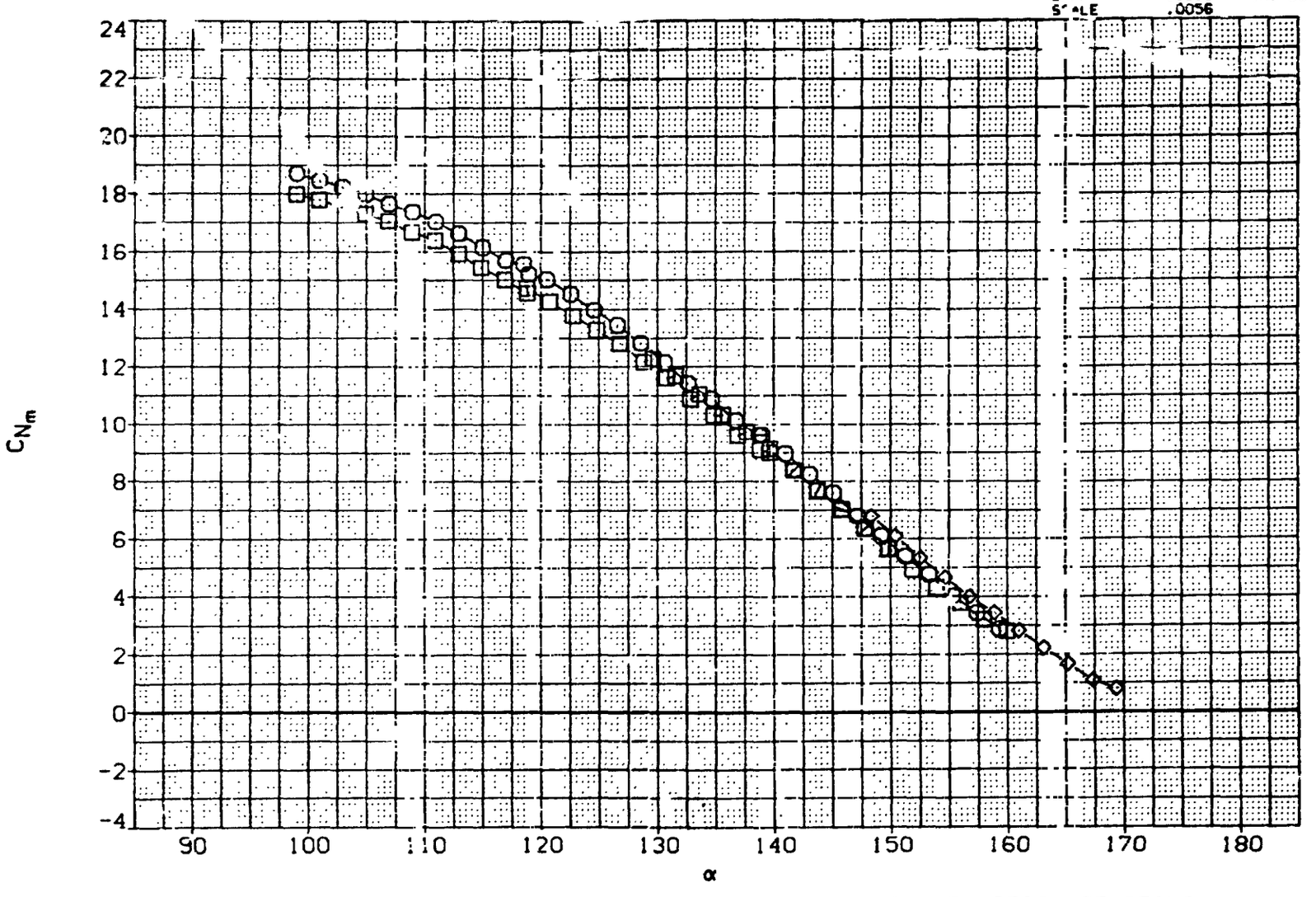
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

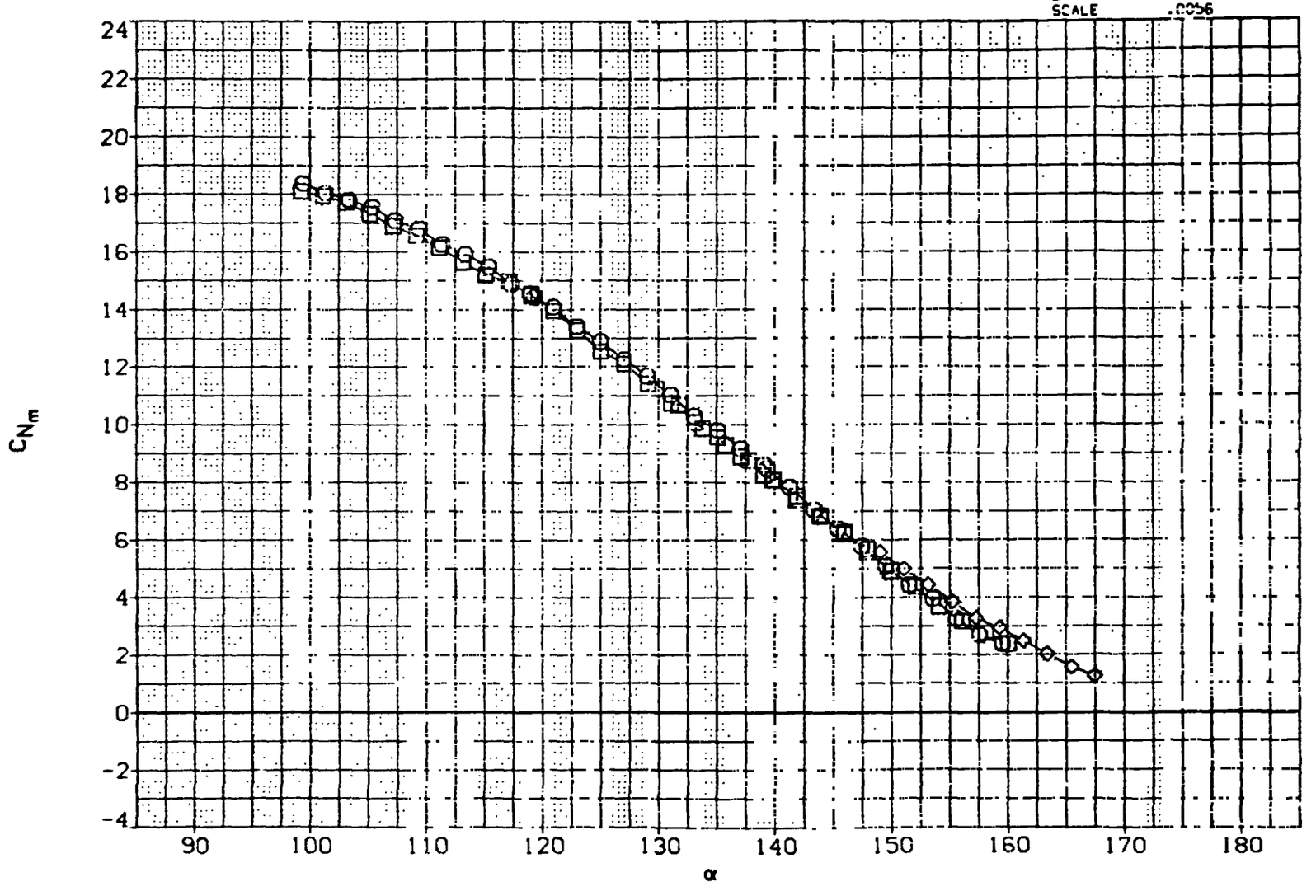


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(E)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



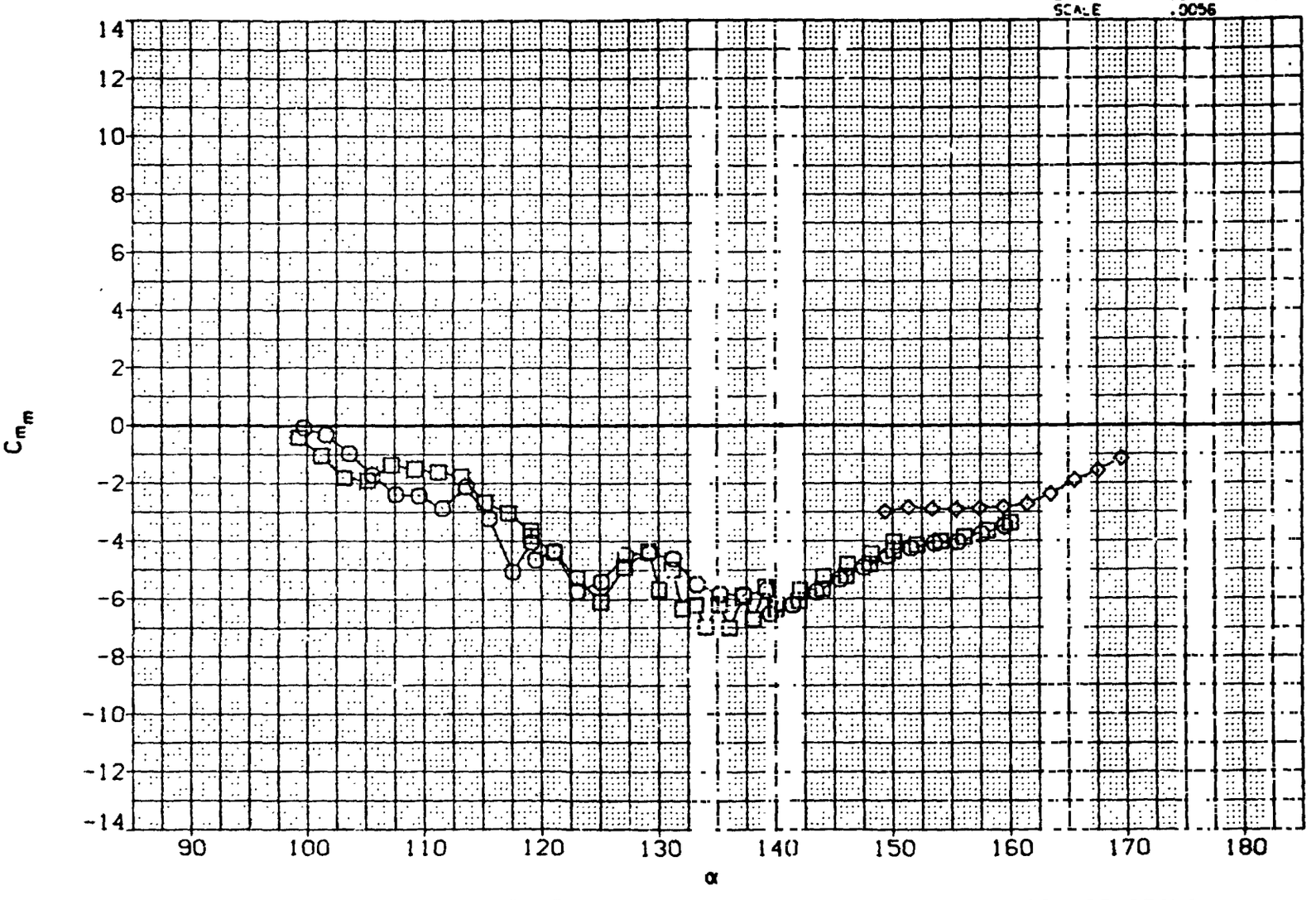
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



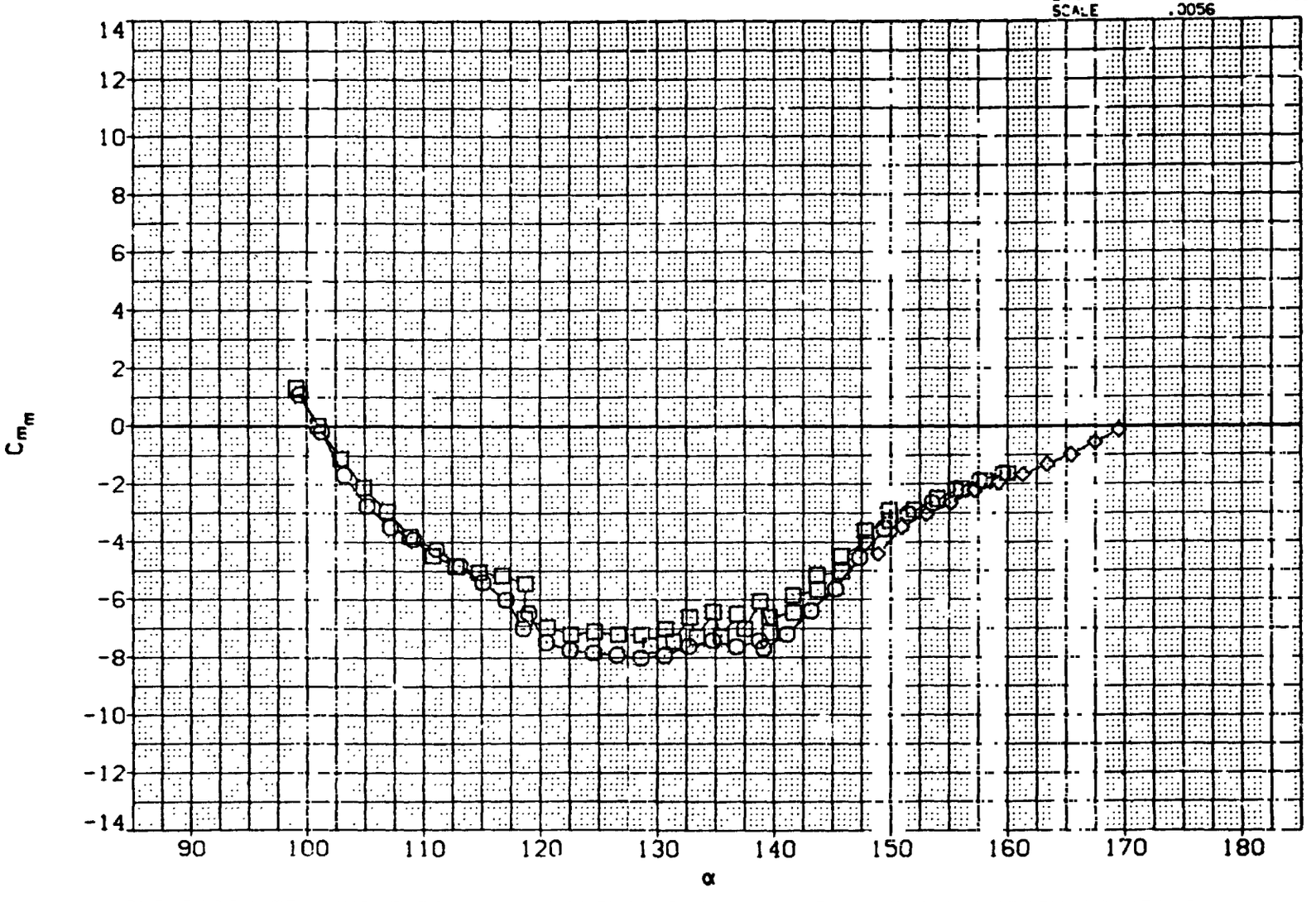
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	0000	IN. ZS
SCALE	.3056	



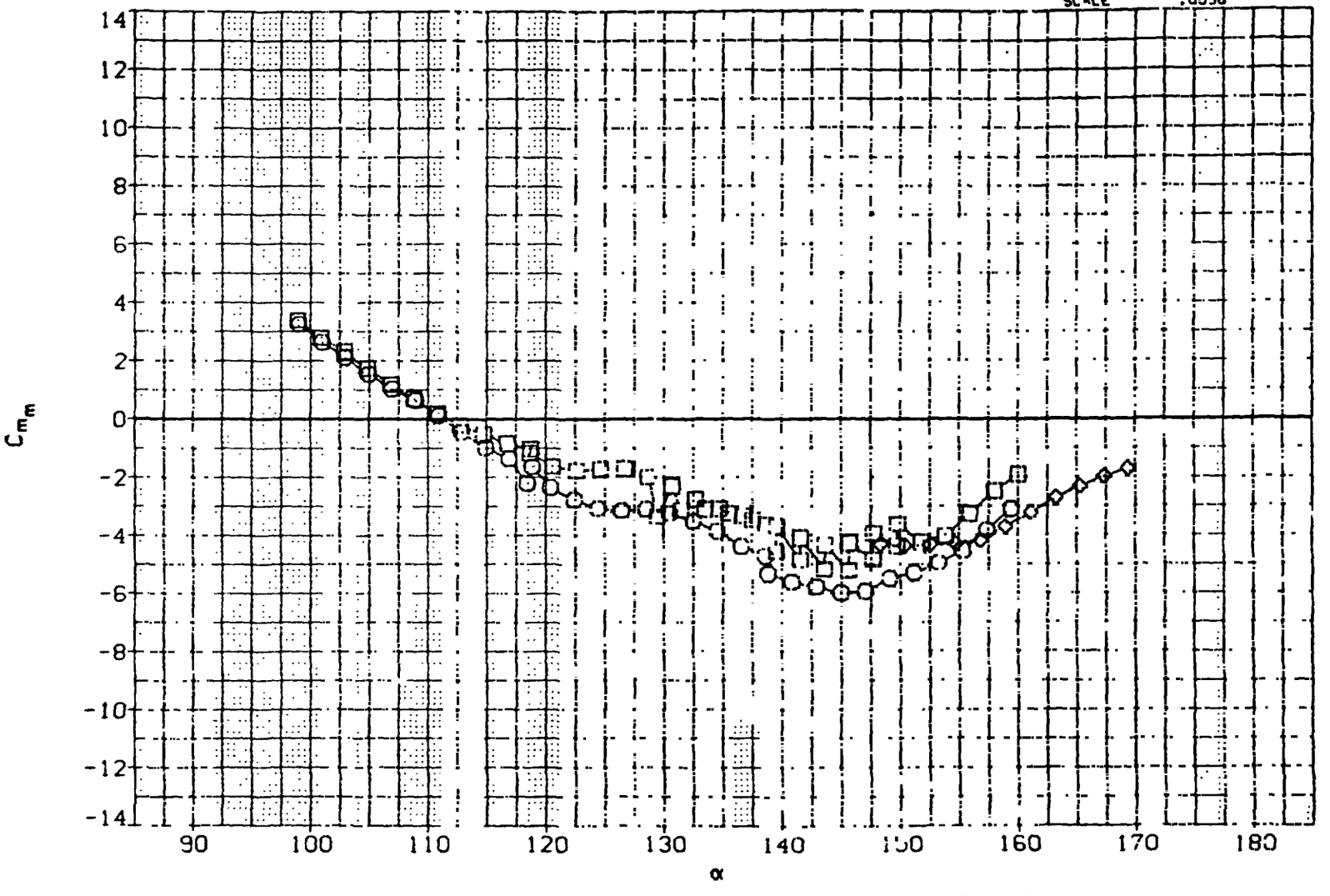
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(B)MACH = .90

DA... SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



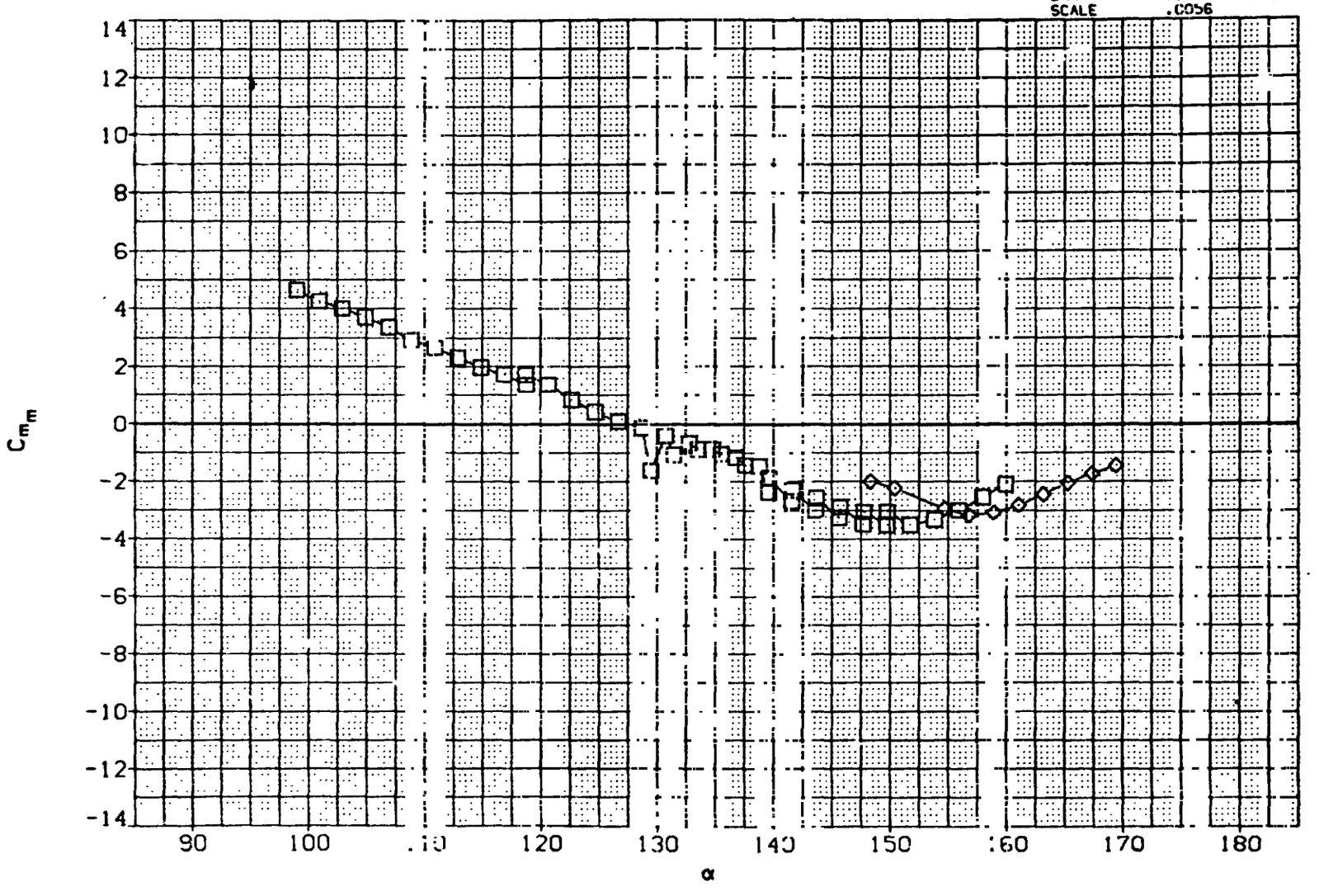
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	DATA NOT AVAILABLE	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMO	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



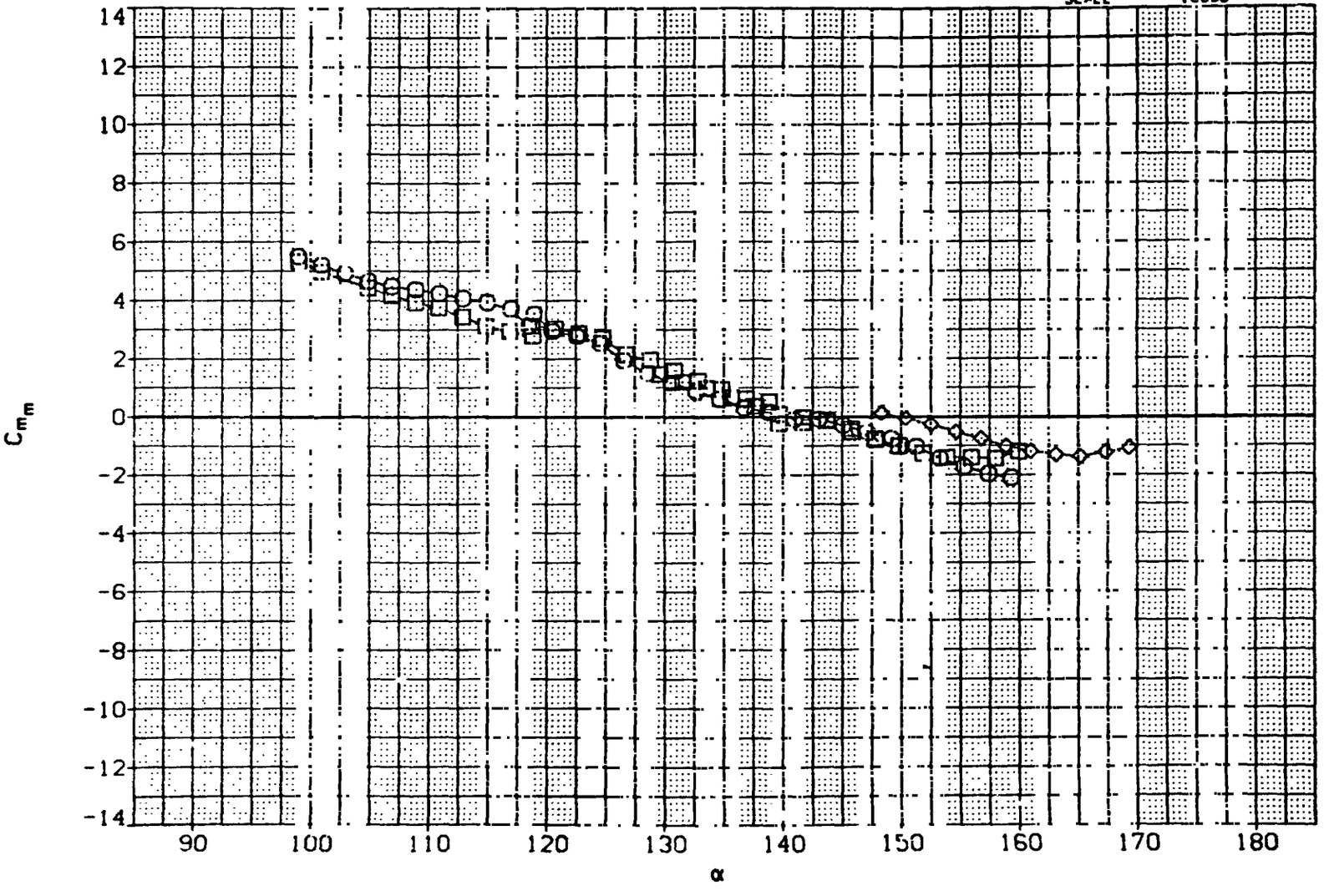
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. N" EM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NdkEM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



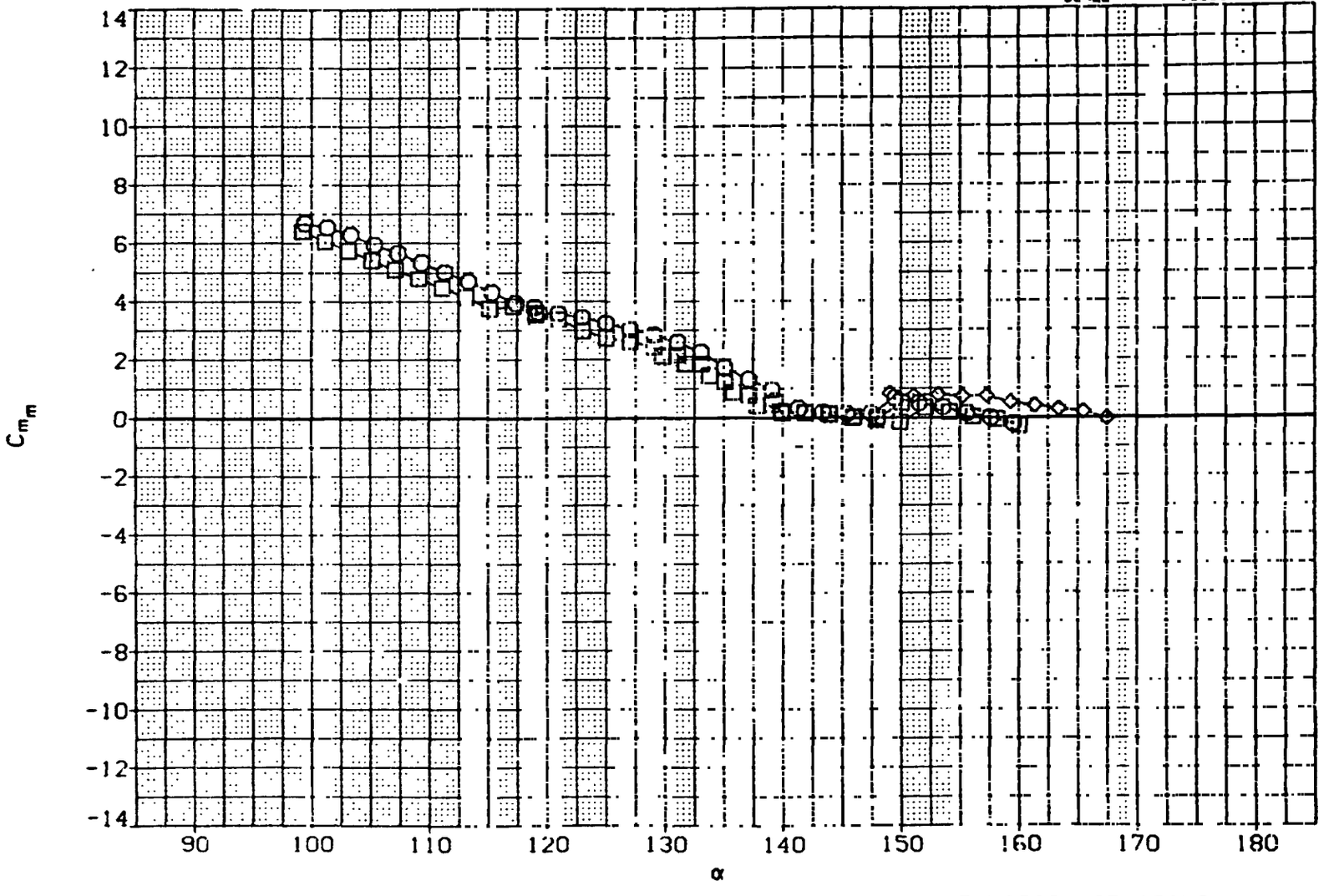
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(E)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



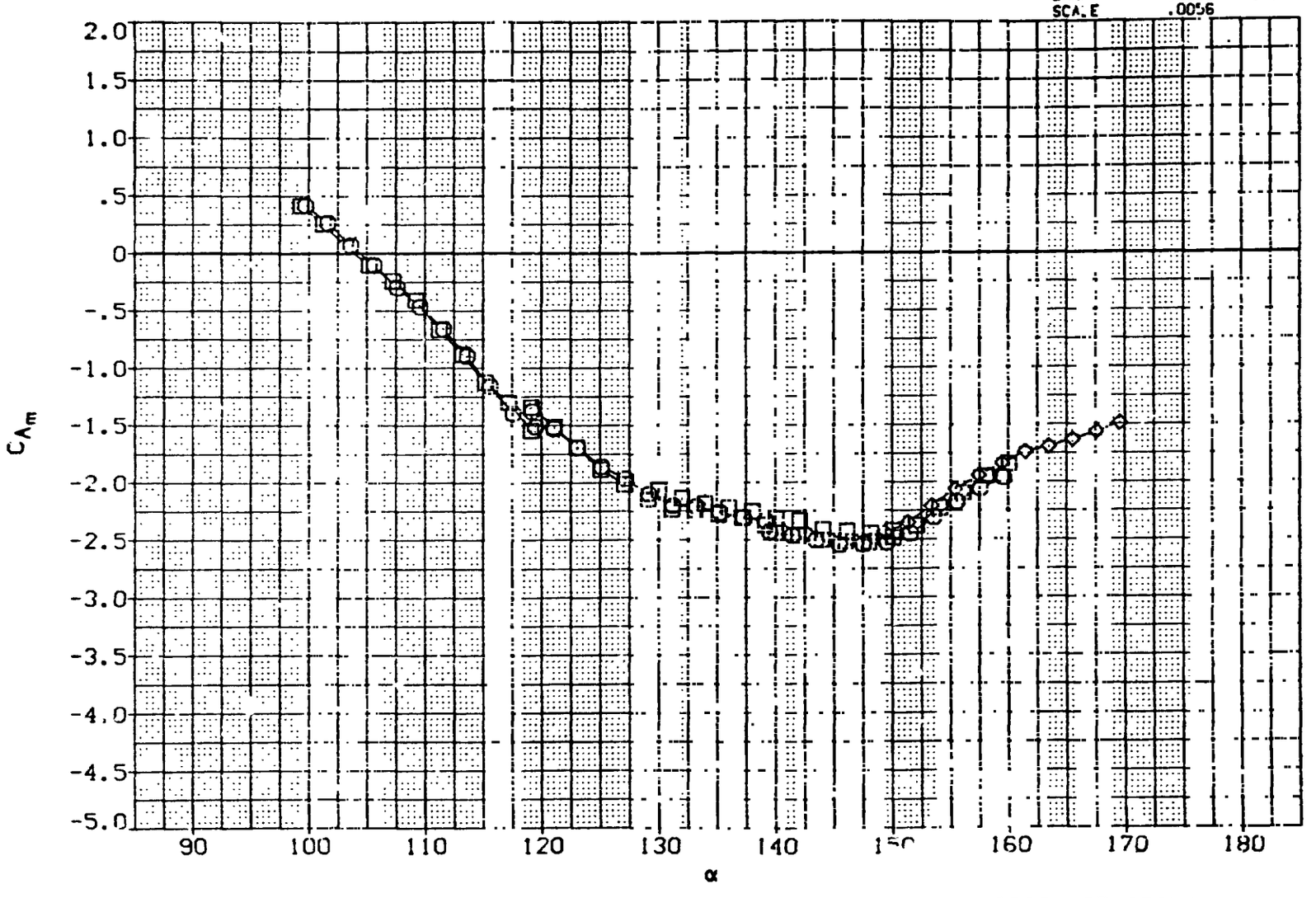
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS.	NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS.	NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS.	NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



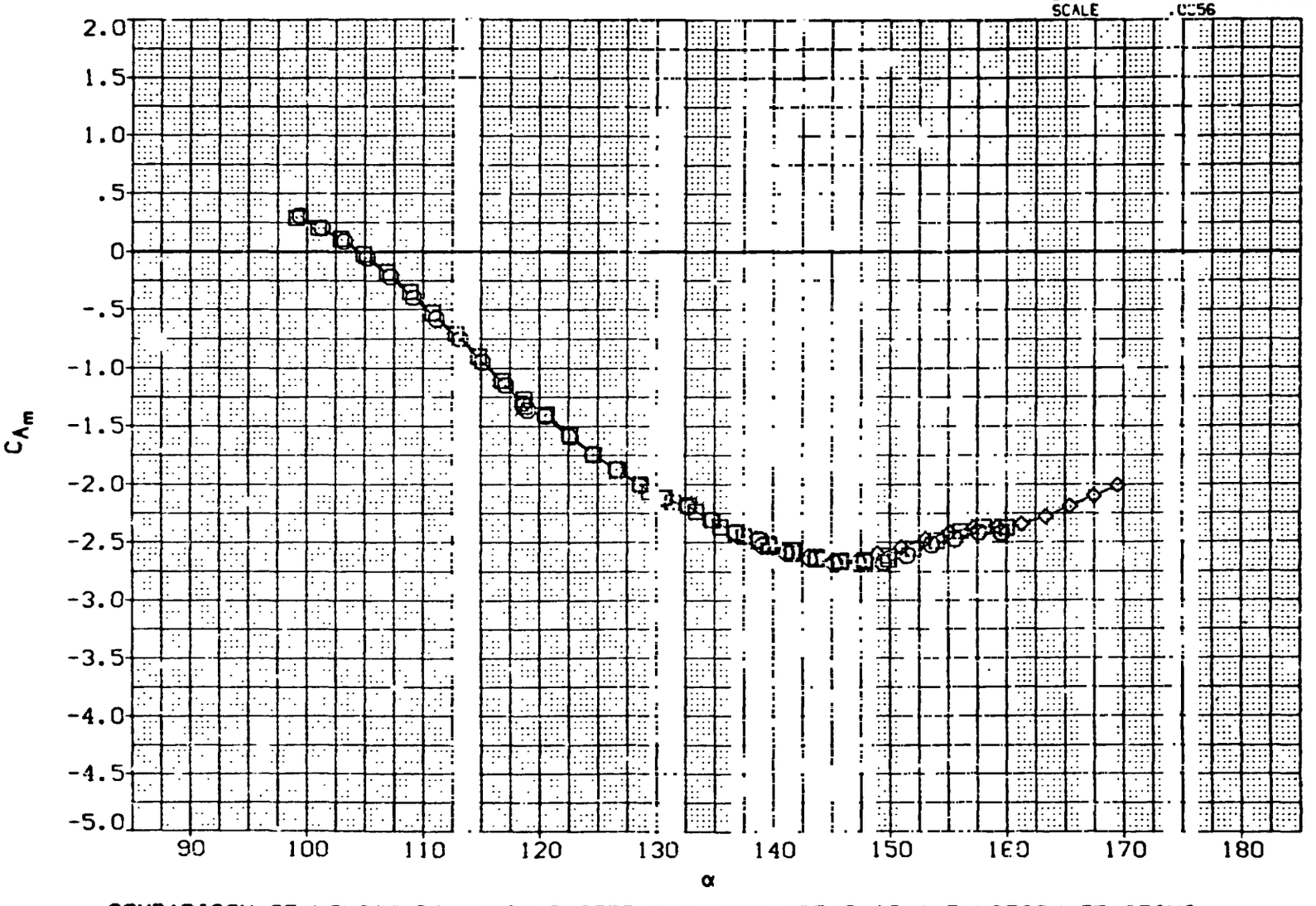
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG A A FUNCTION OF STING CONFIGURATION

(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

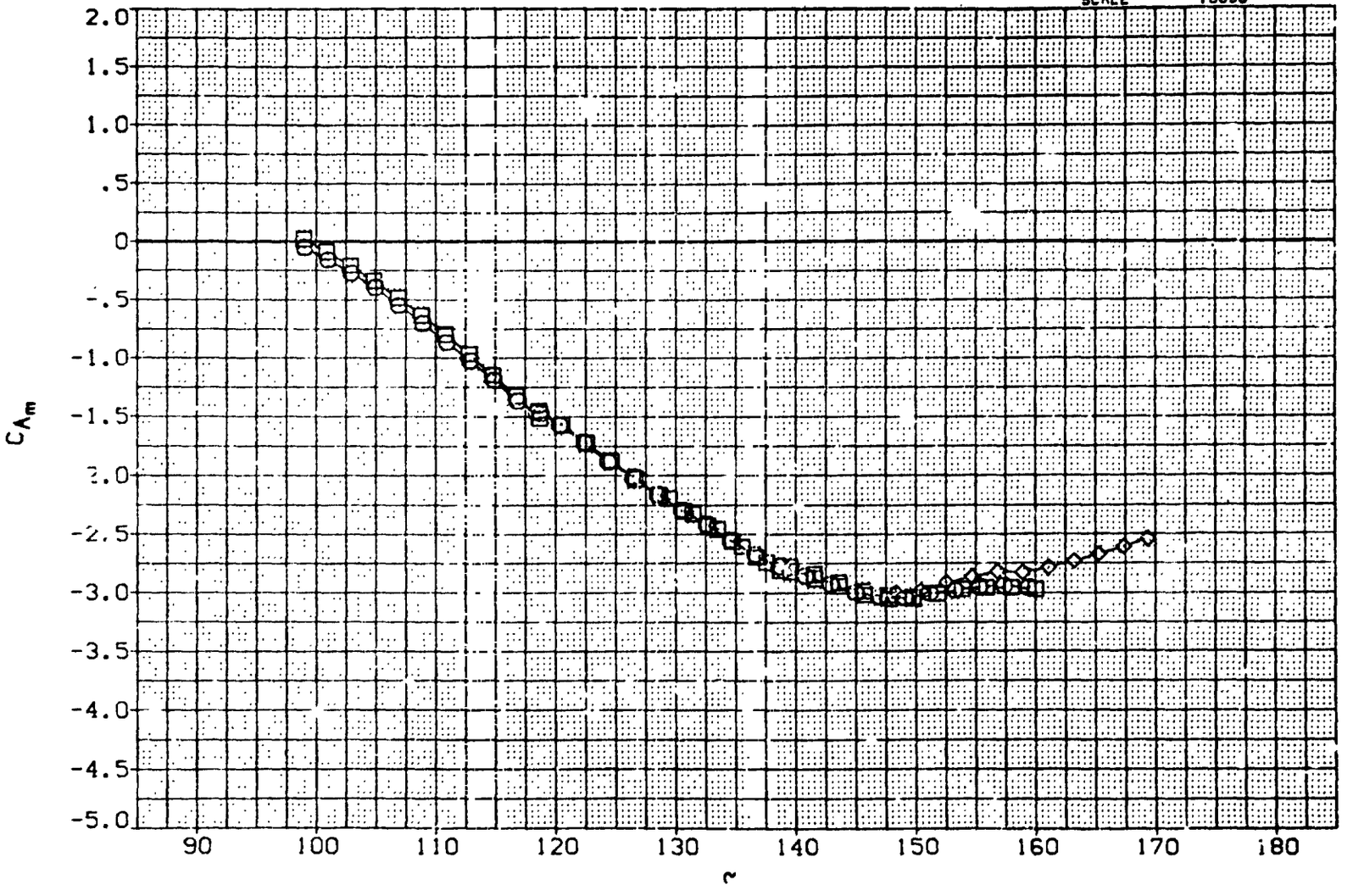


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



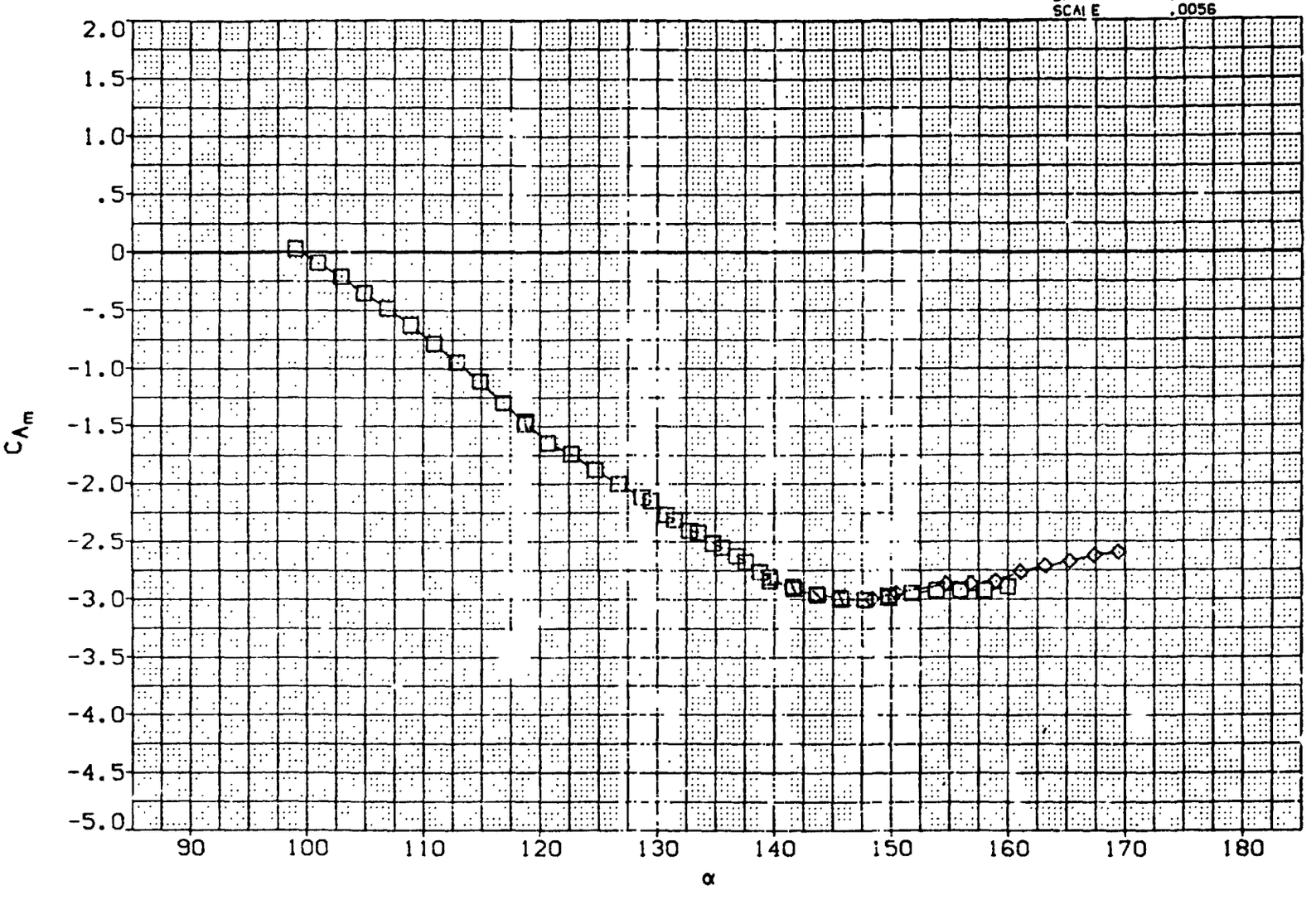
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	DATA NOT AVAILABLE	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMD	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRF	986.9700	IN. XS
YMRF	.0000	IN. YS
ZMRF	.0000	IN. ZS
SCALE	.0056	



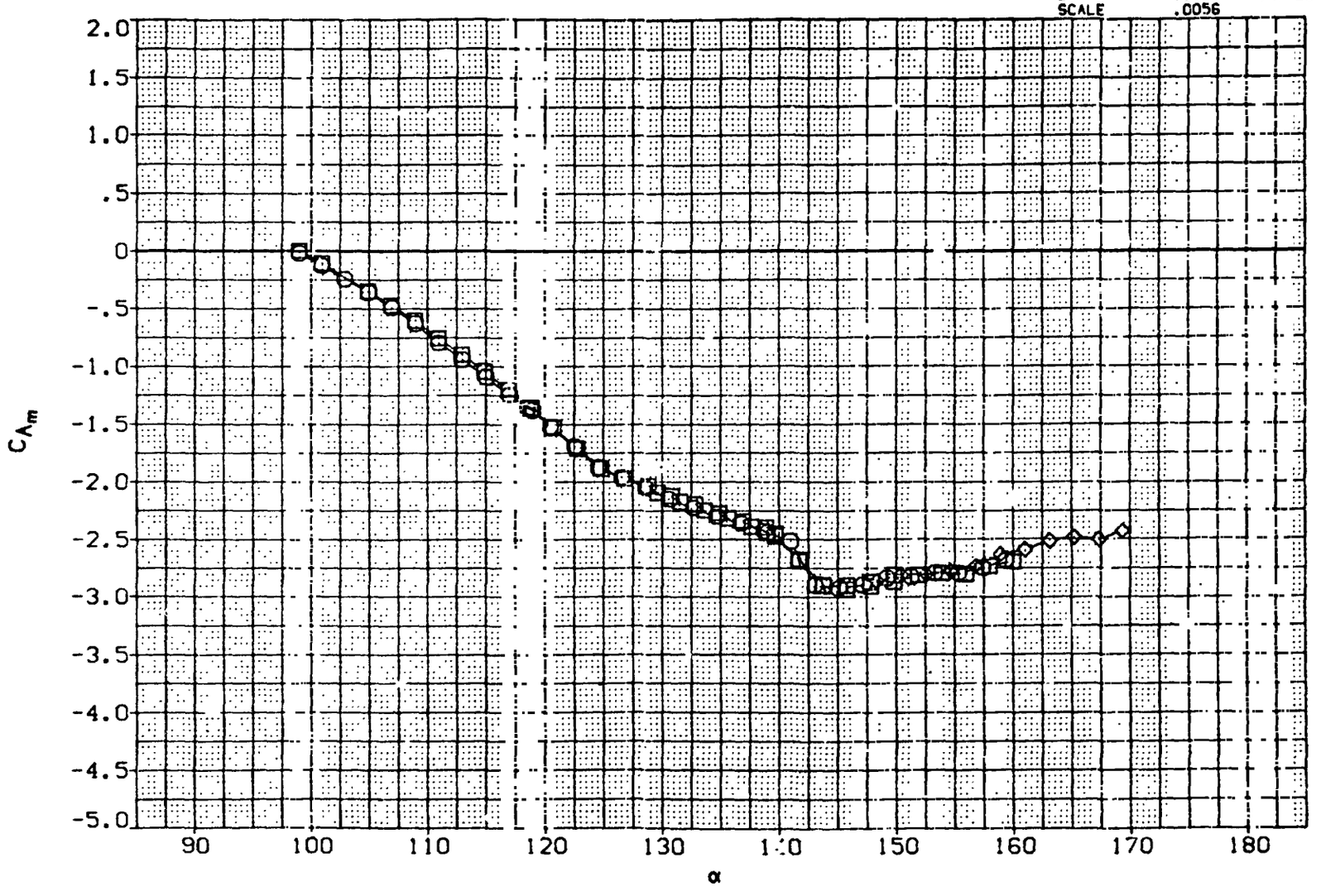
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



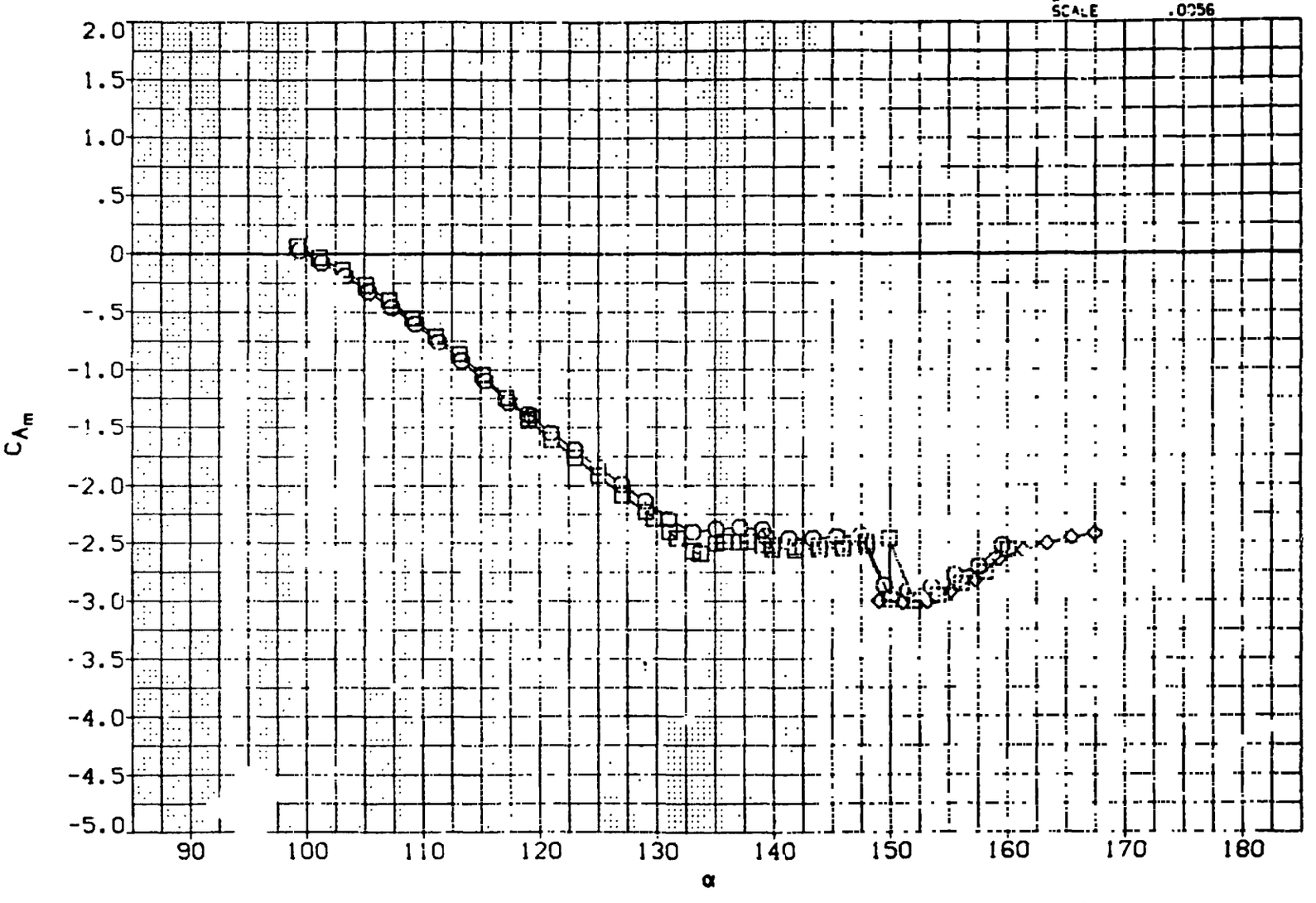
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(E)MACH = 1.96

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10001)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(B10008)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMO	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

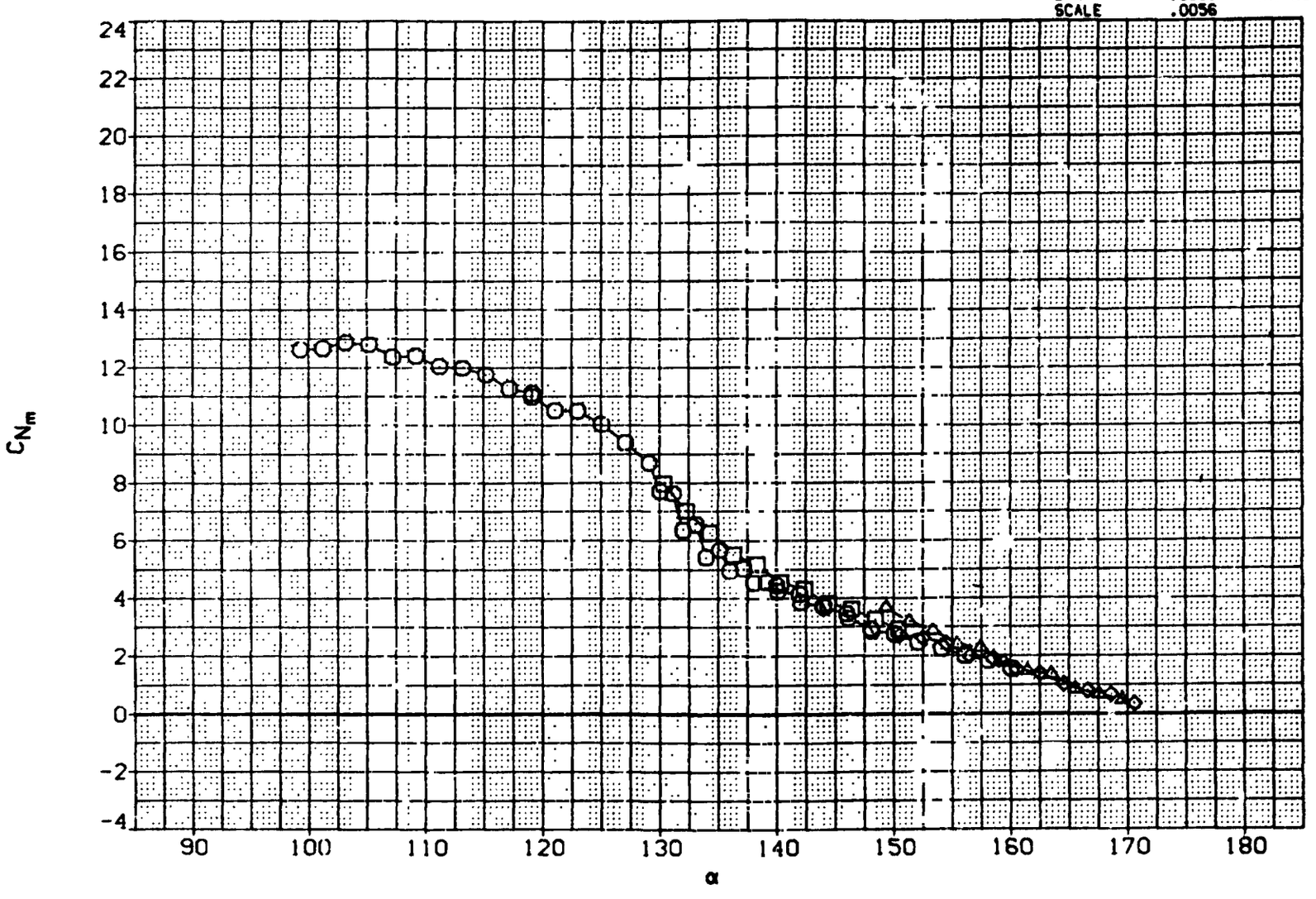


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



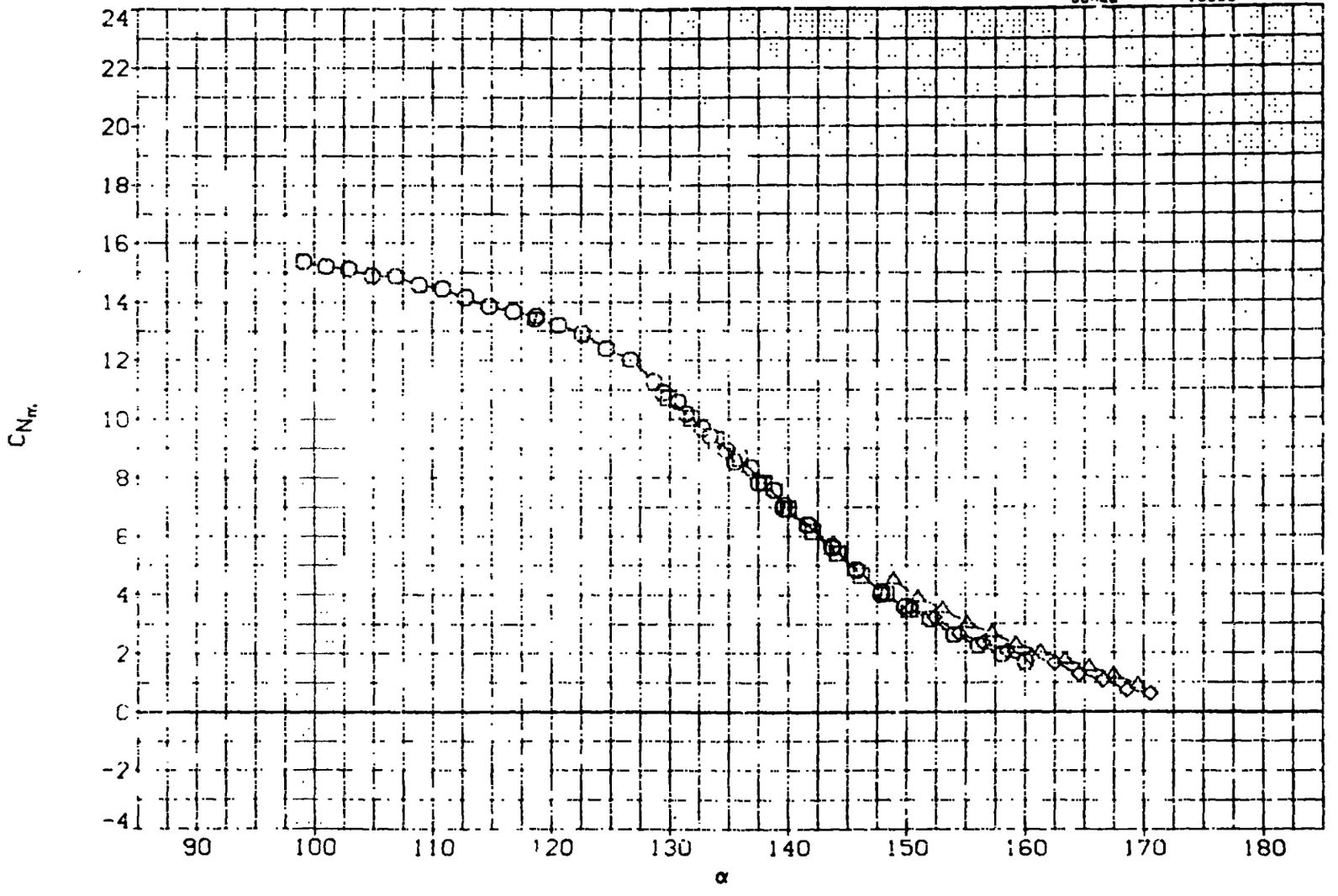
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	⋈	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



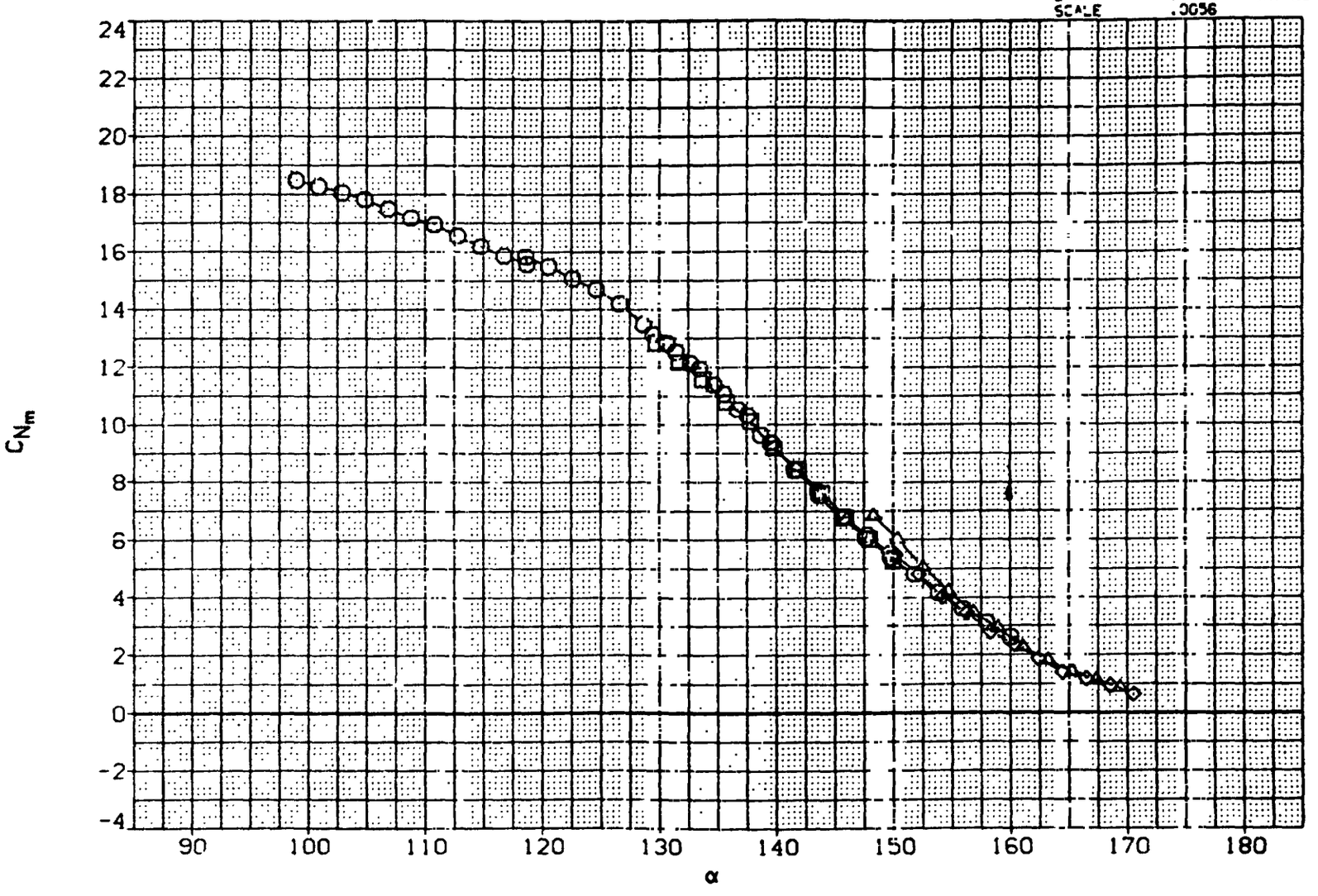
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

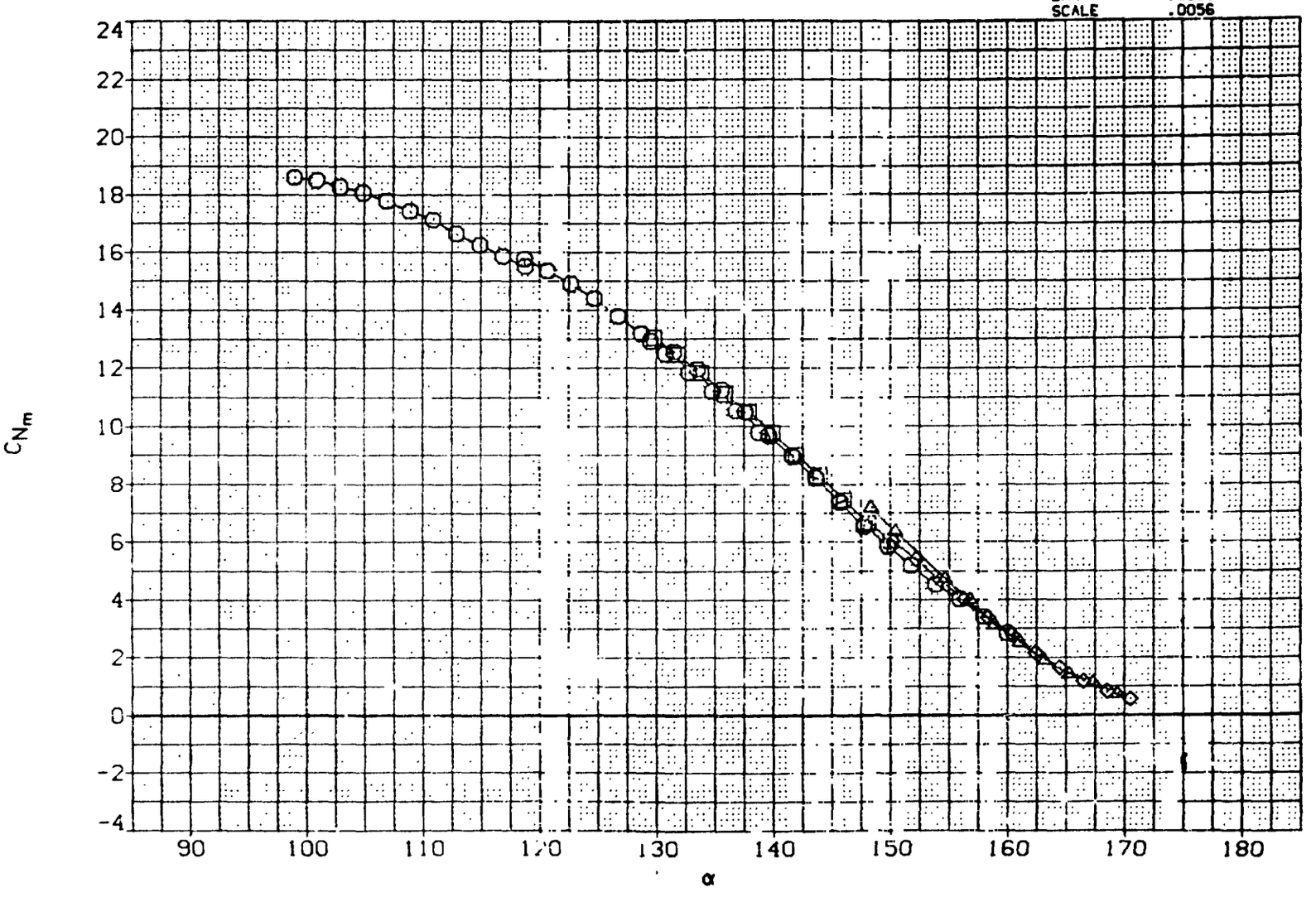


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

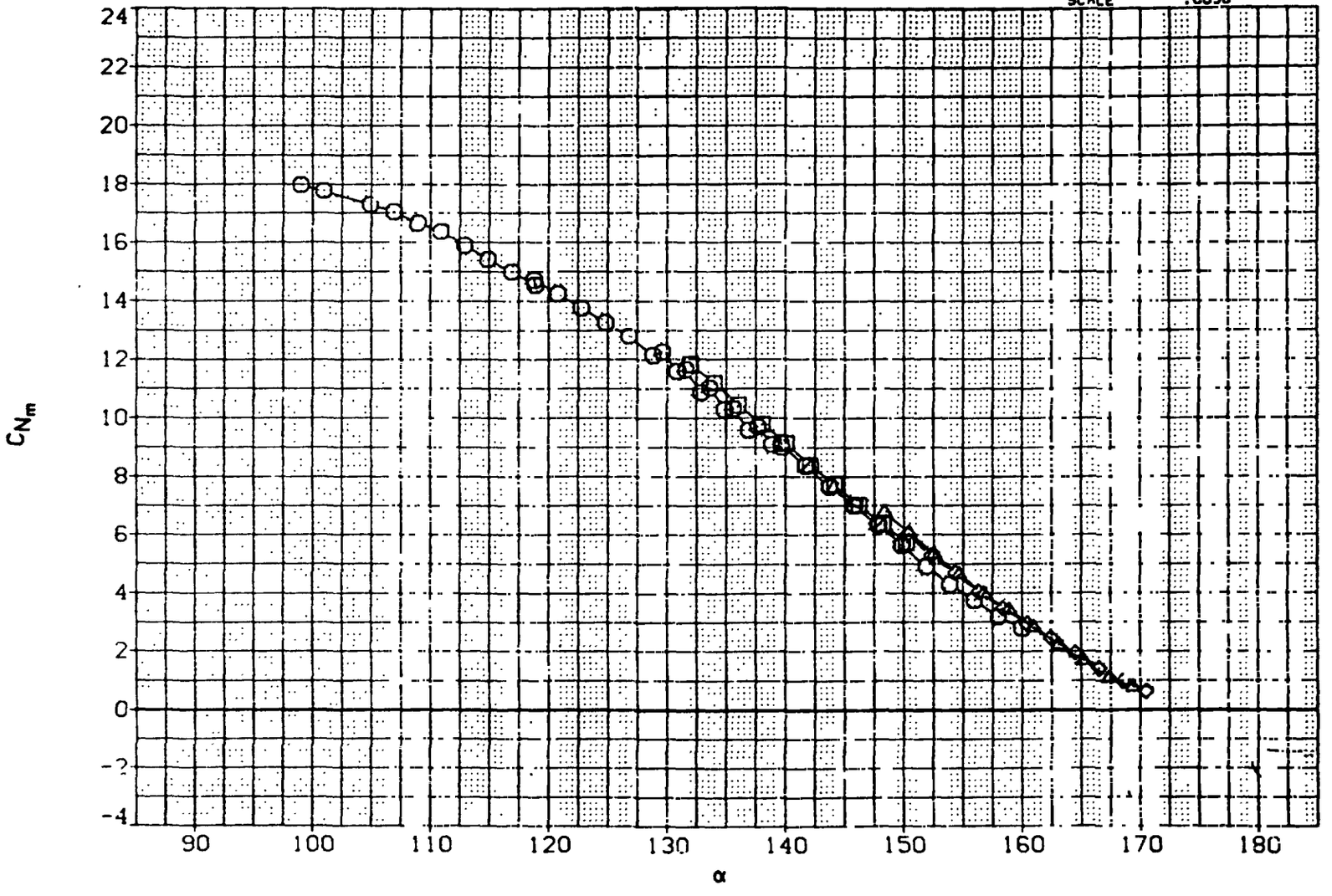


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

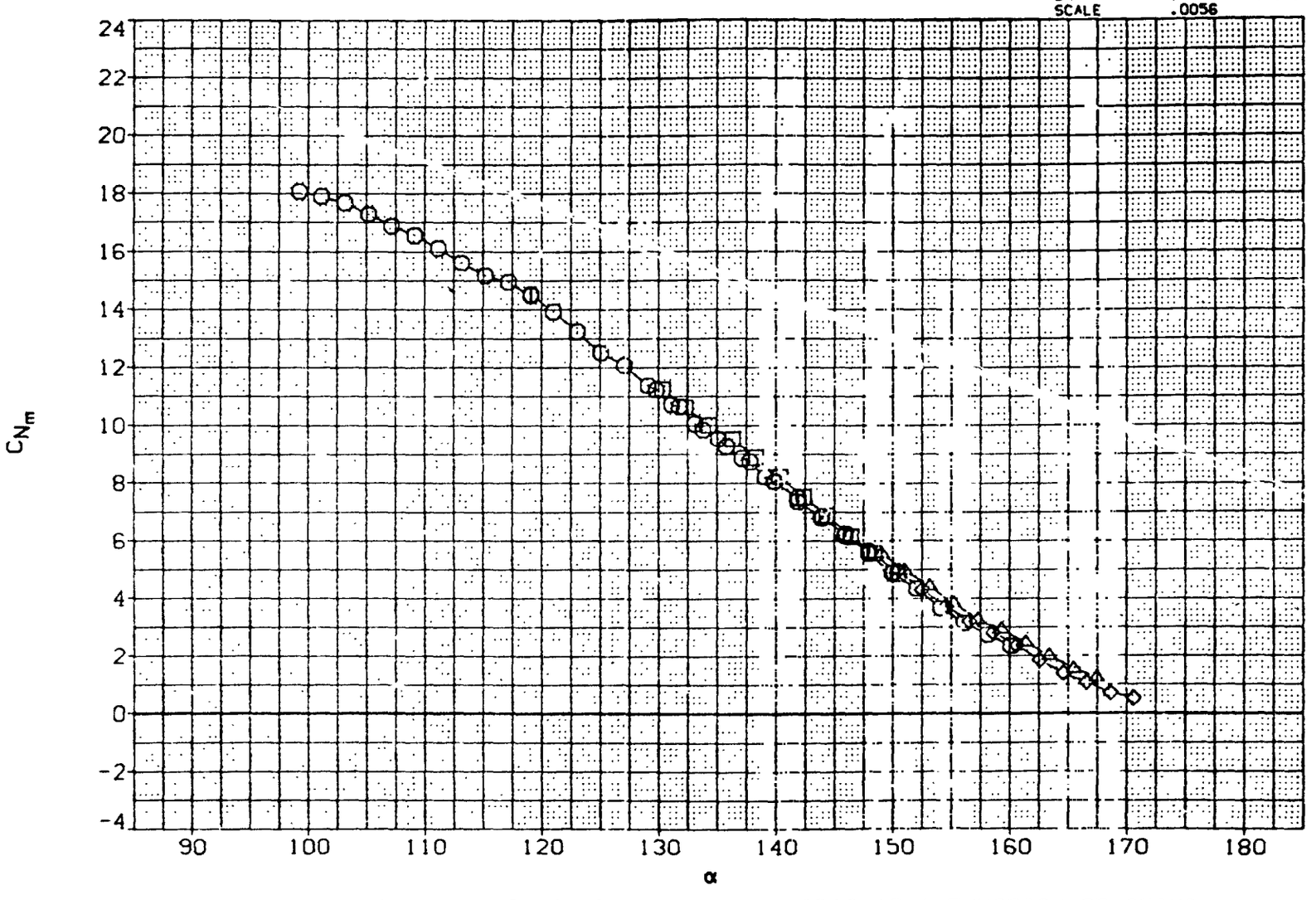


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



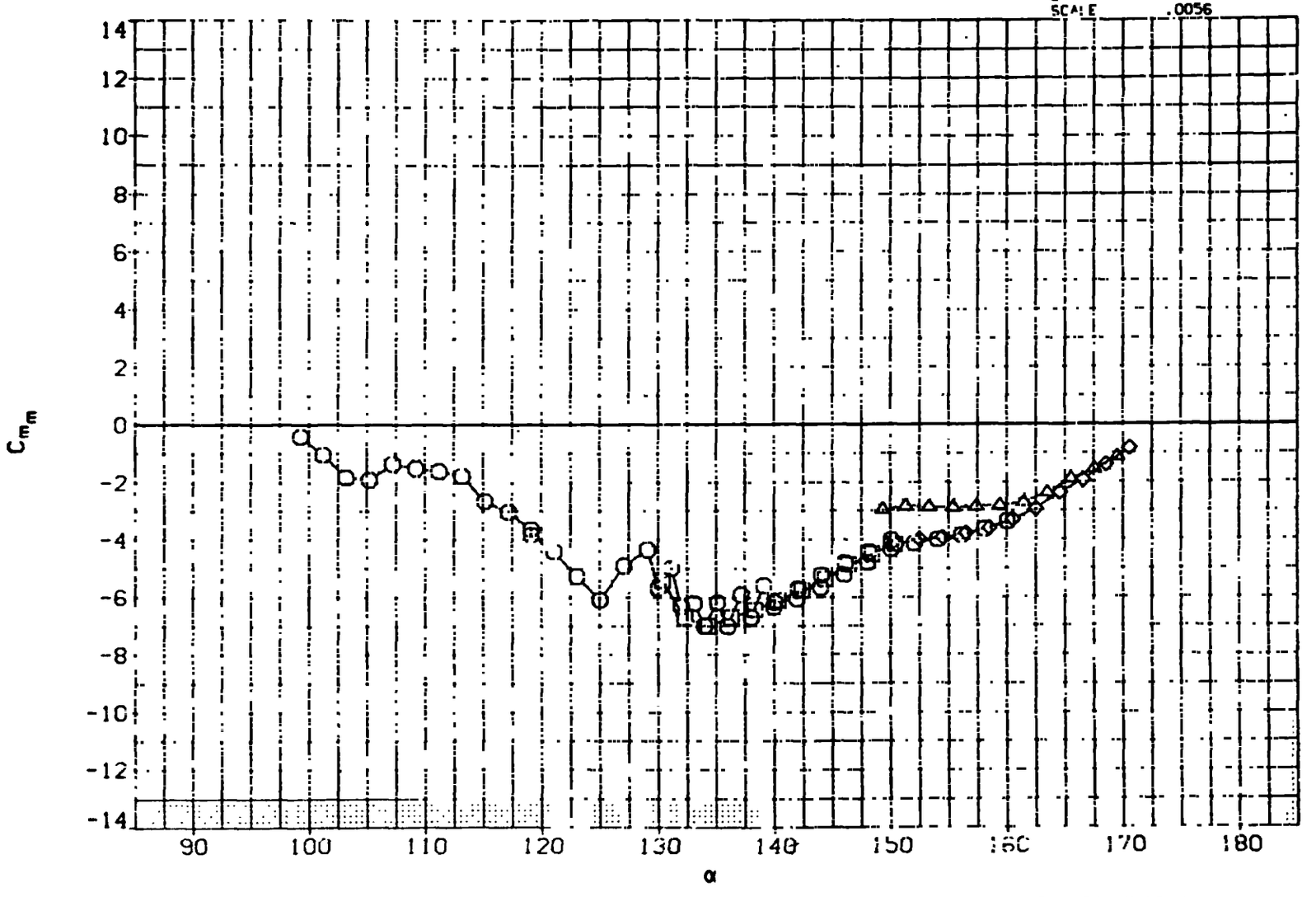
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

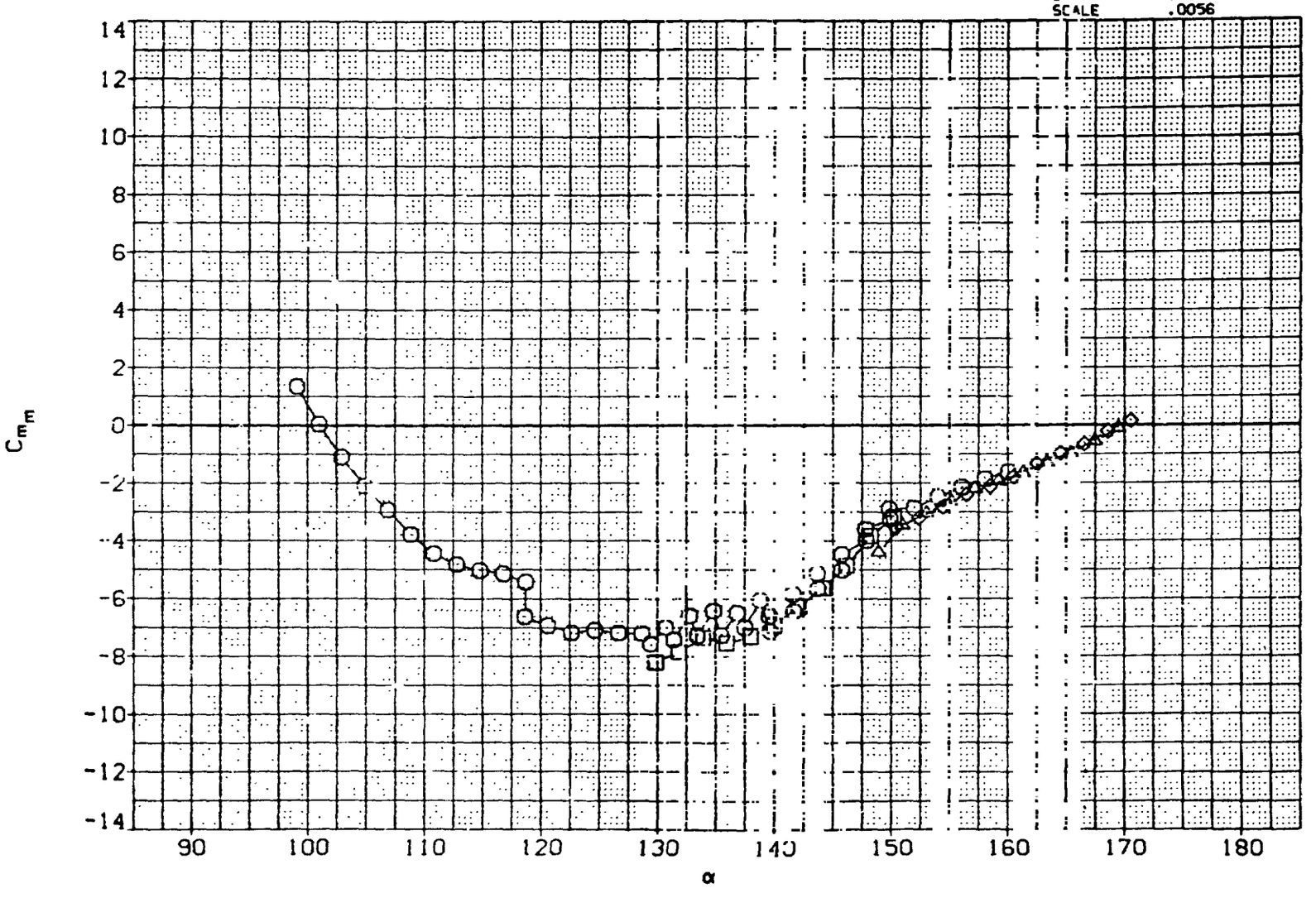


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

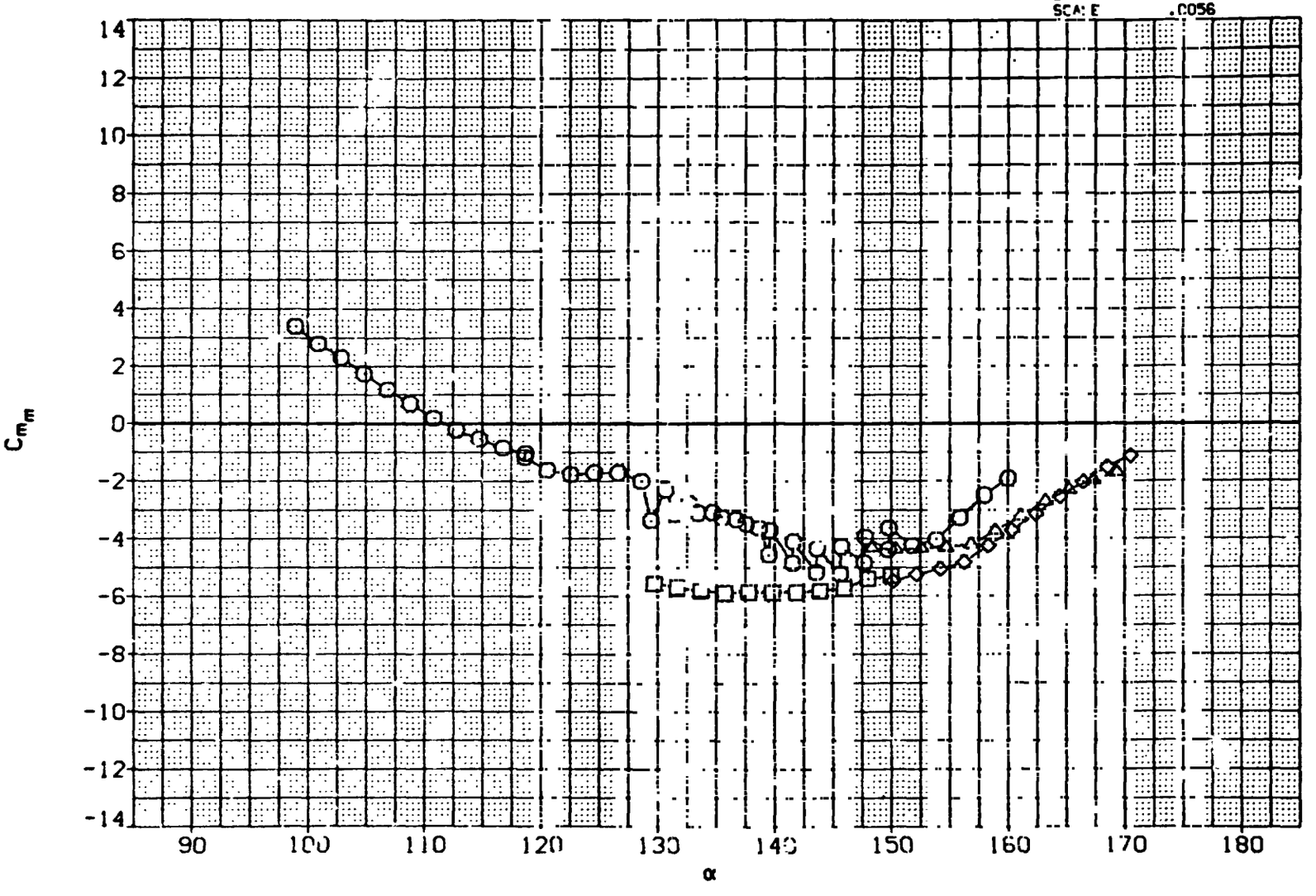


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000

REFERENCE INFORMATION		
SREF	109.9600	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



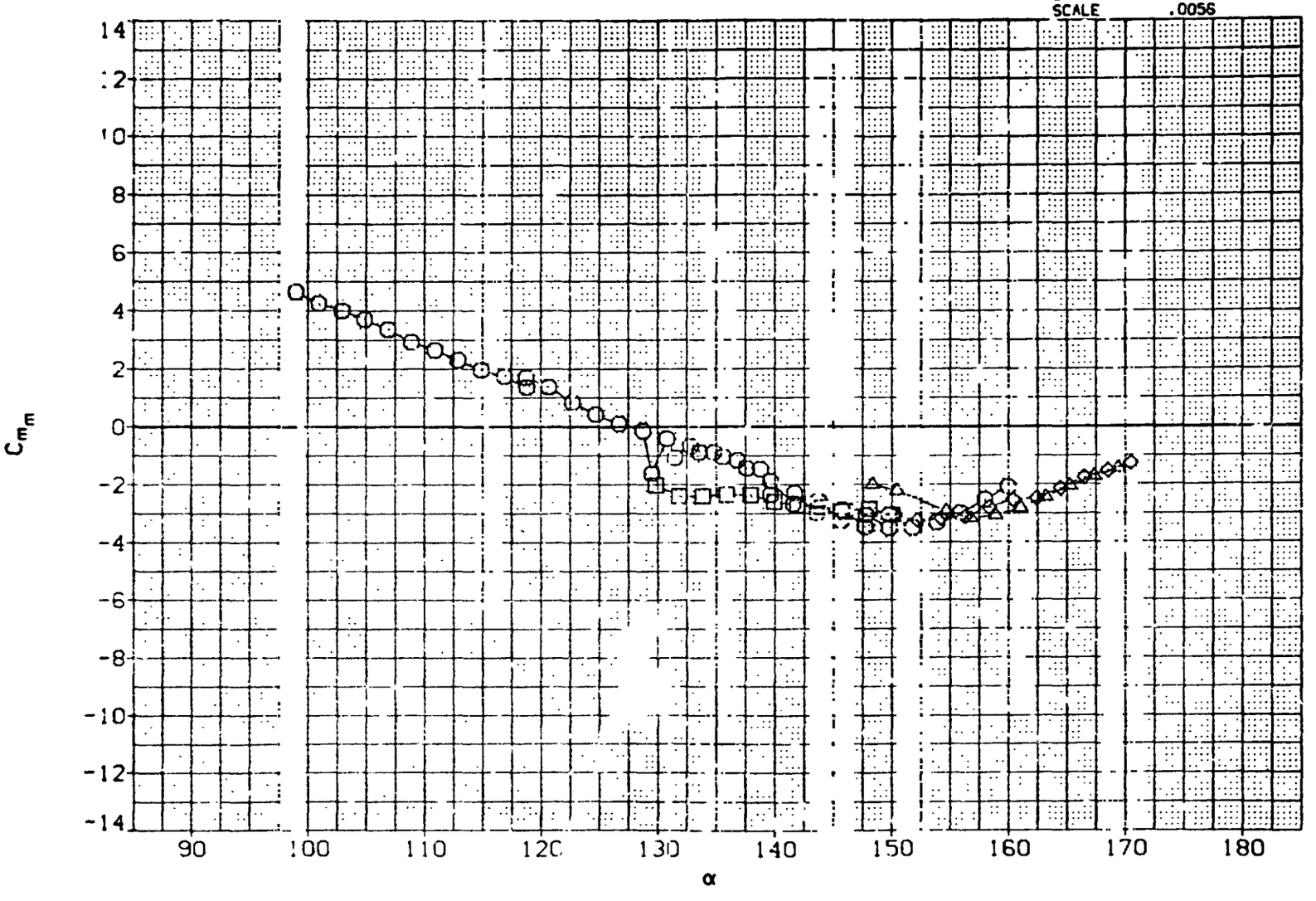
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBR2M90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM0	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

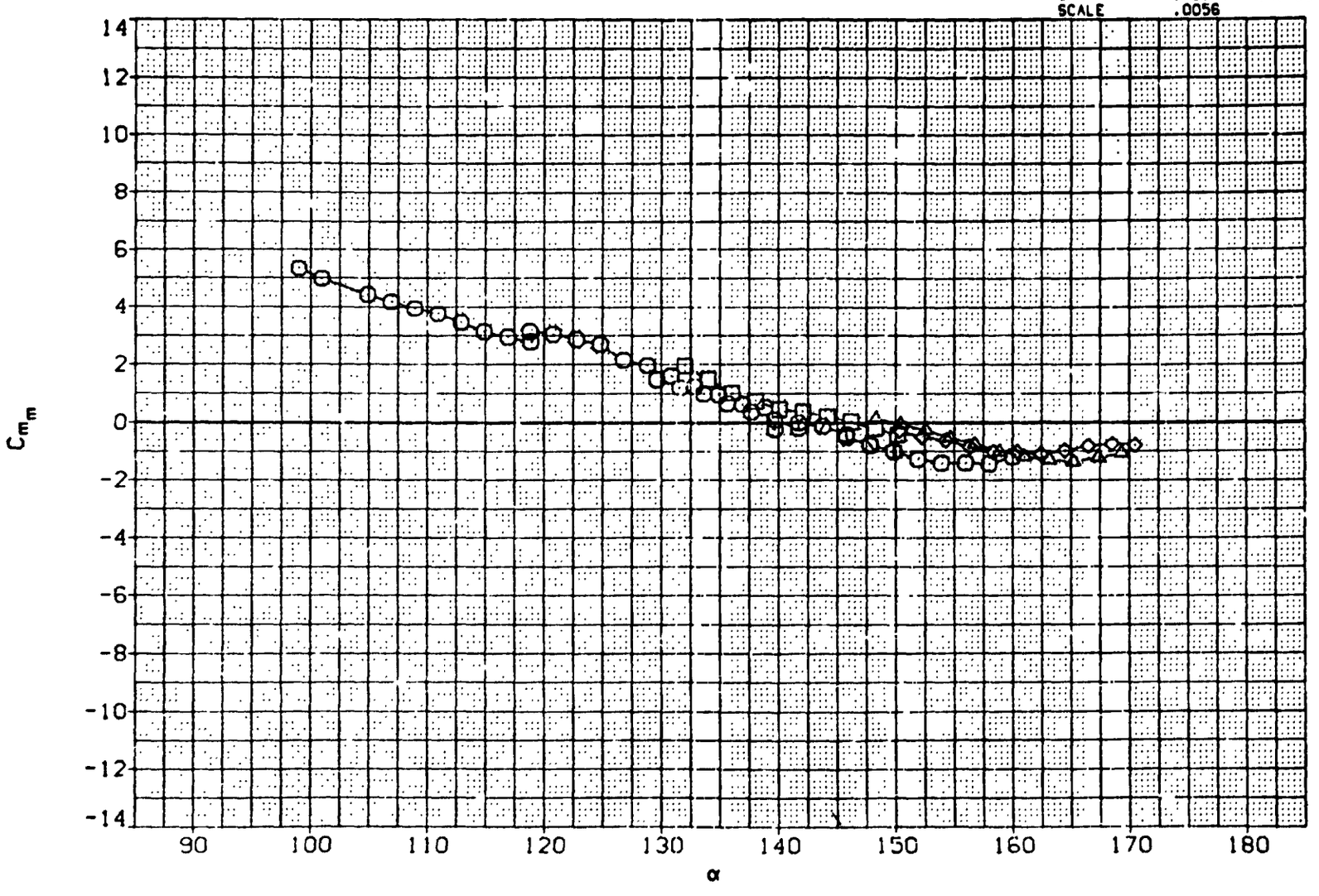


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



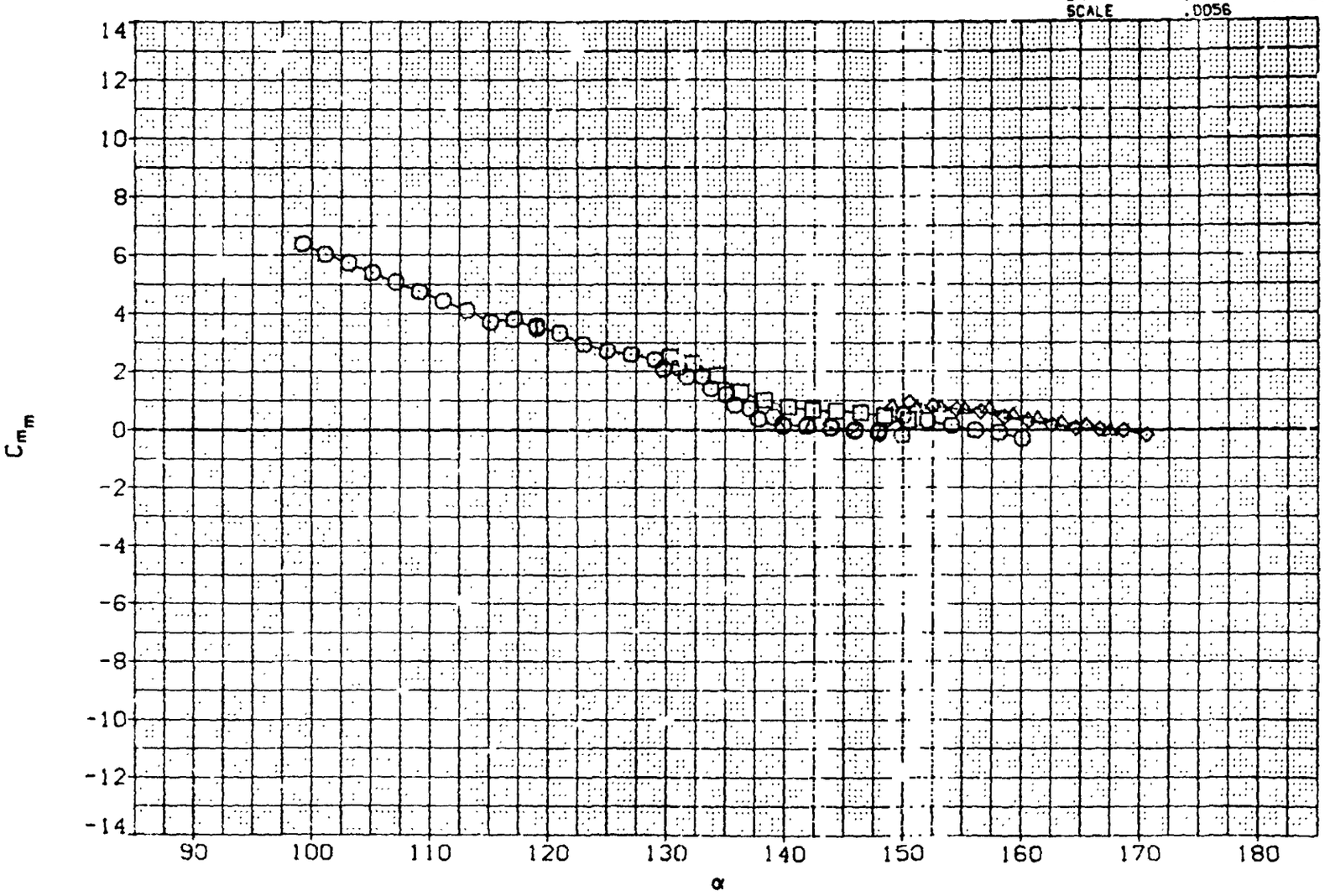
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(A10010)	⋈	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMO	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

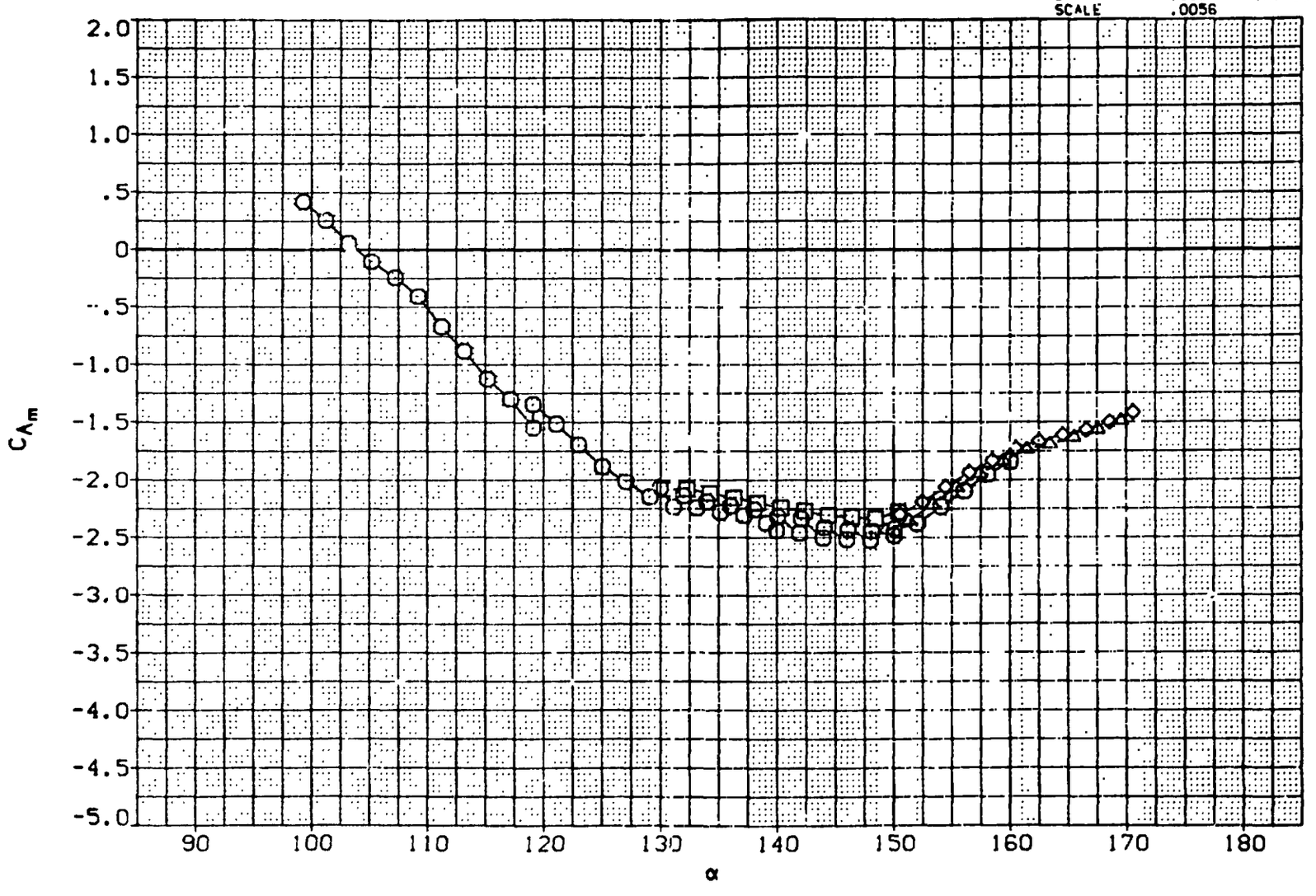


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

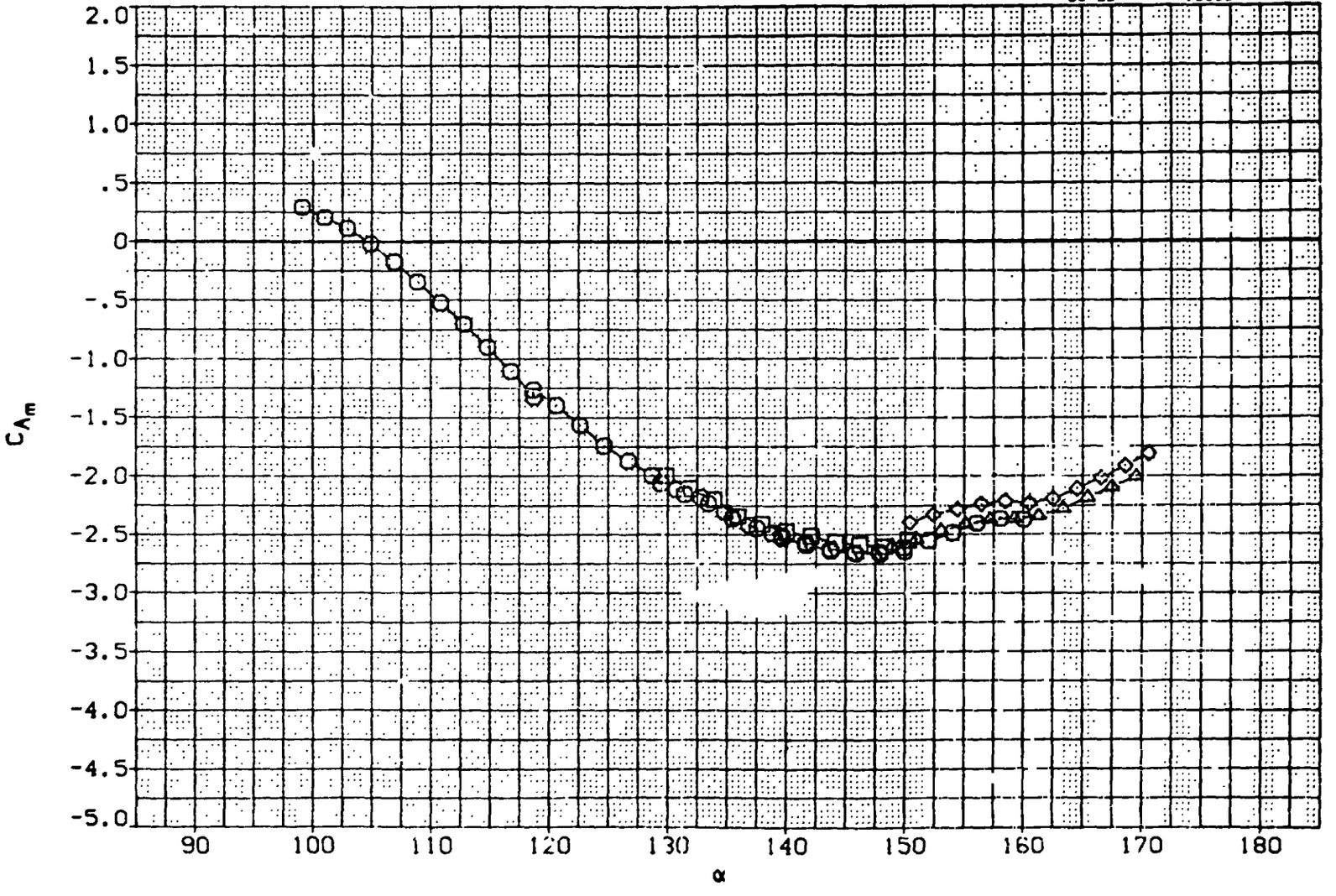


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	⊠	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

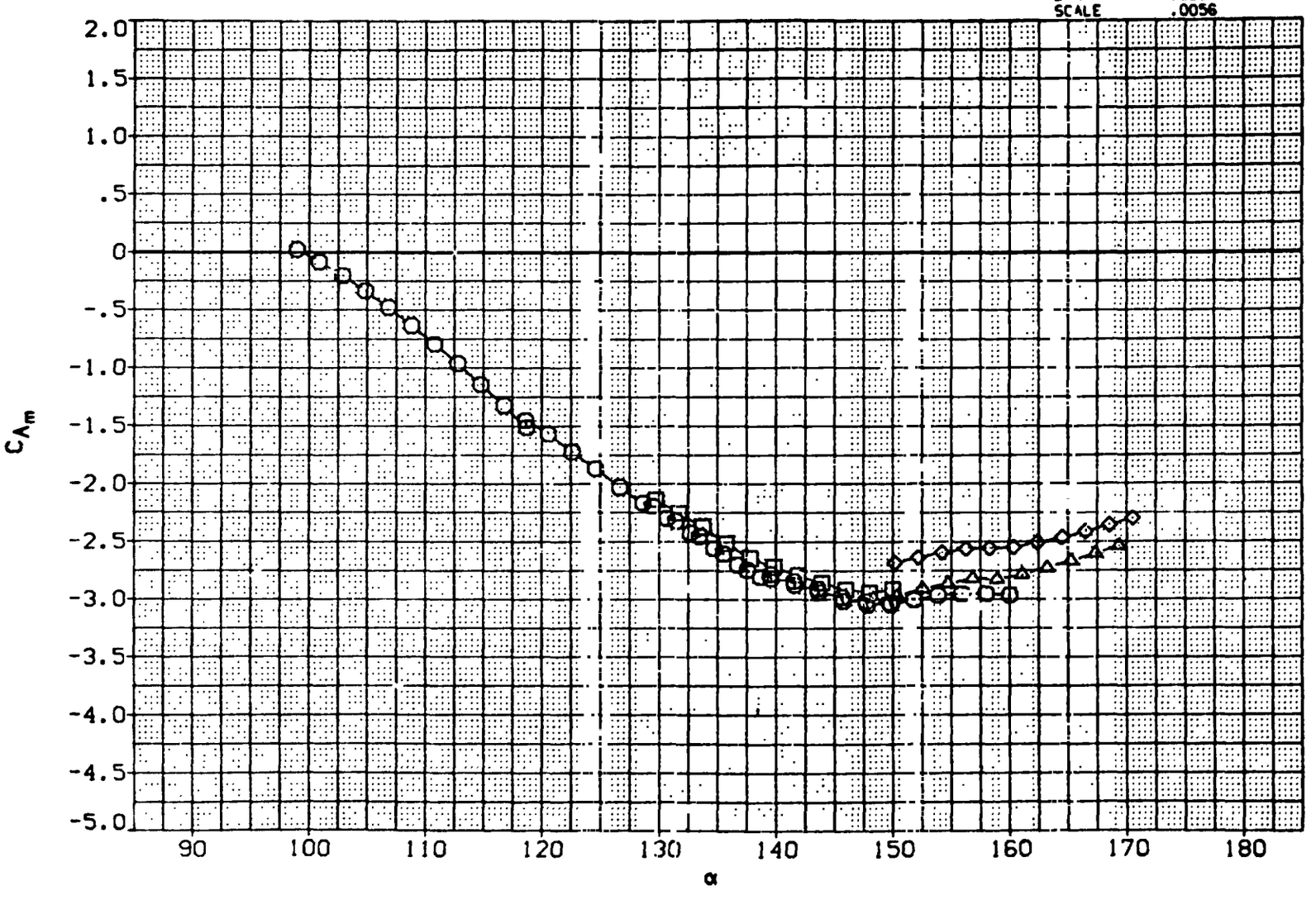


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	⊠	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

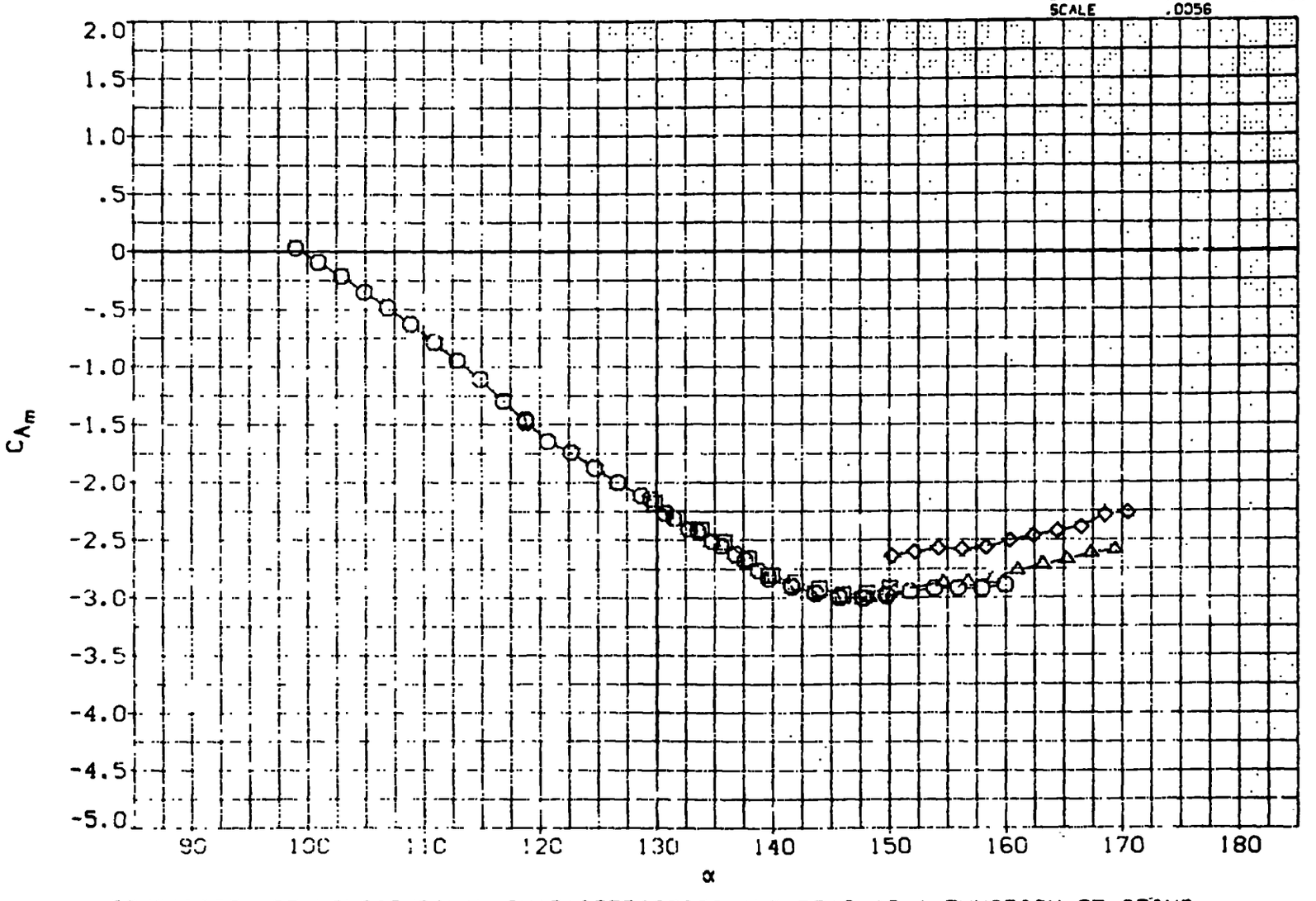


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F'A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

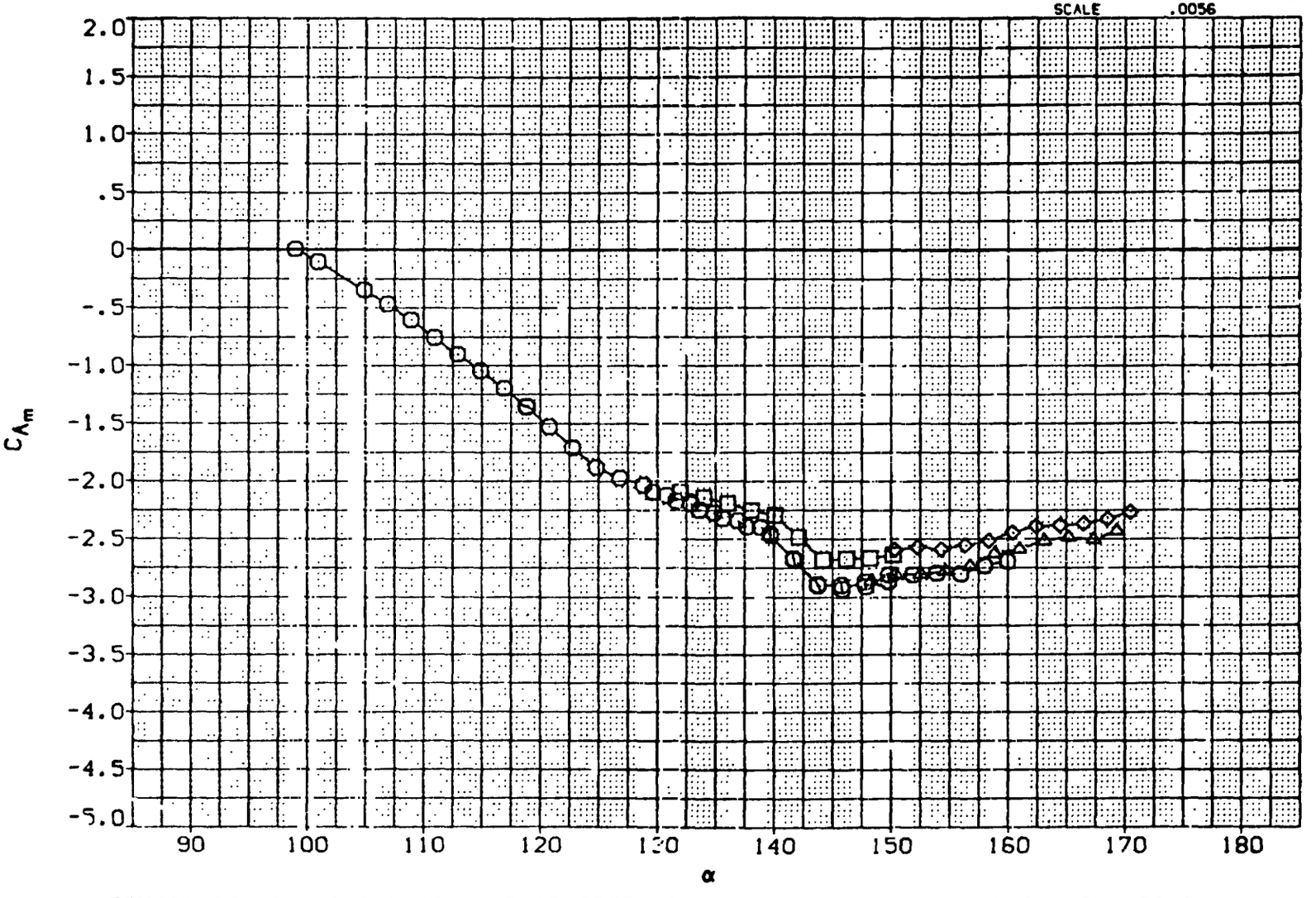


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM0	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



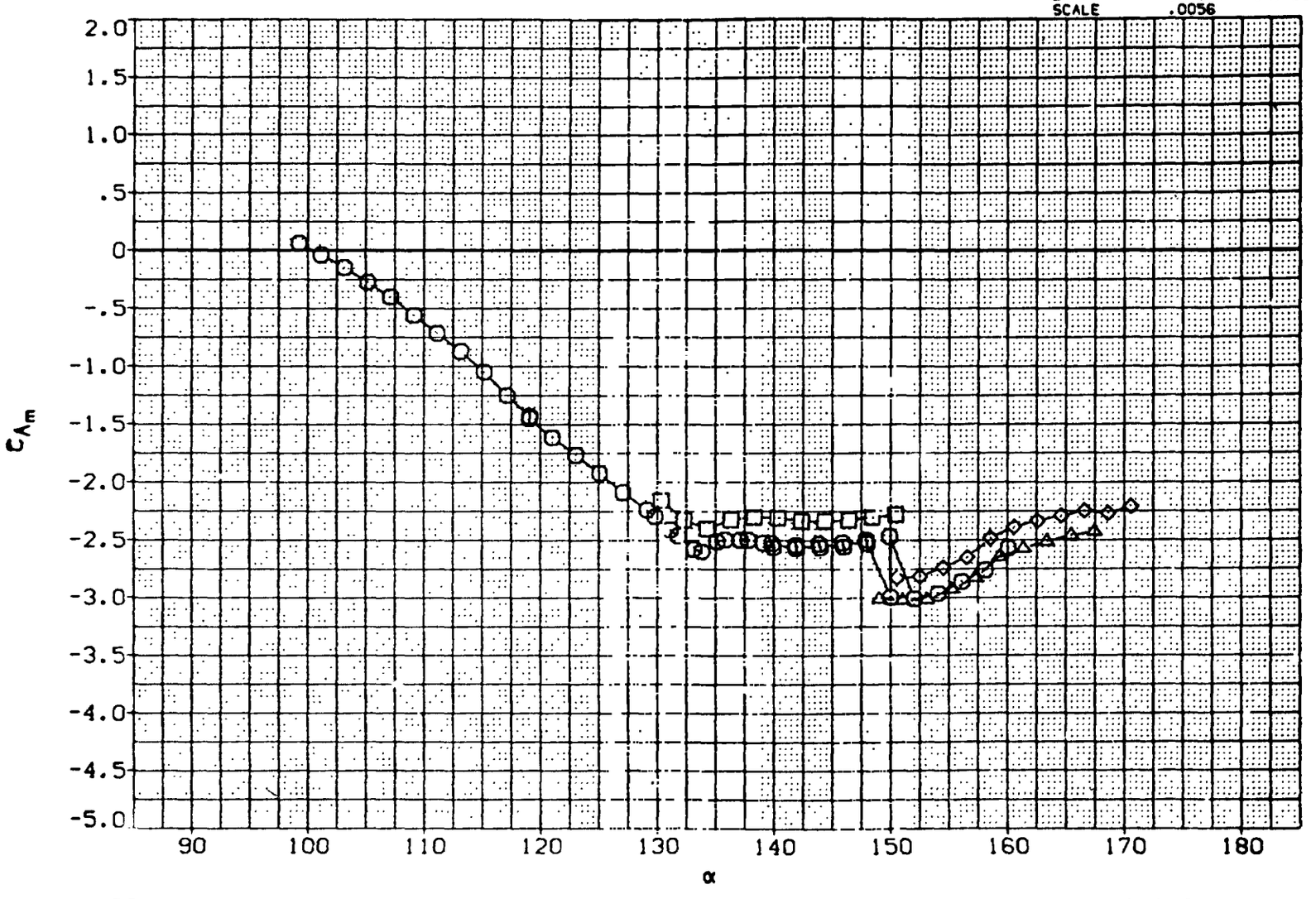
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10009)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(A10010)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90S	.000
(B10008)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMD	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

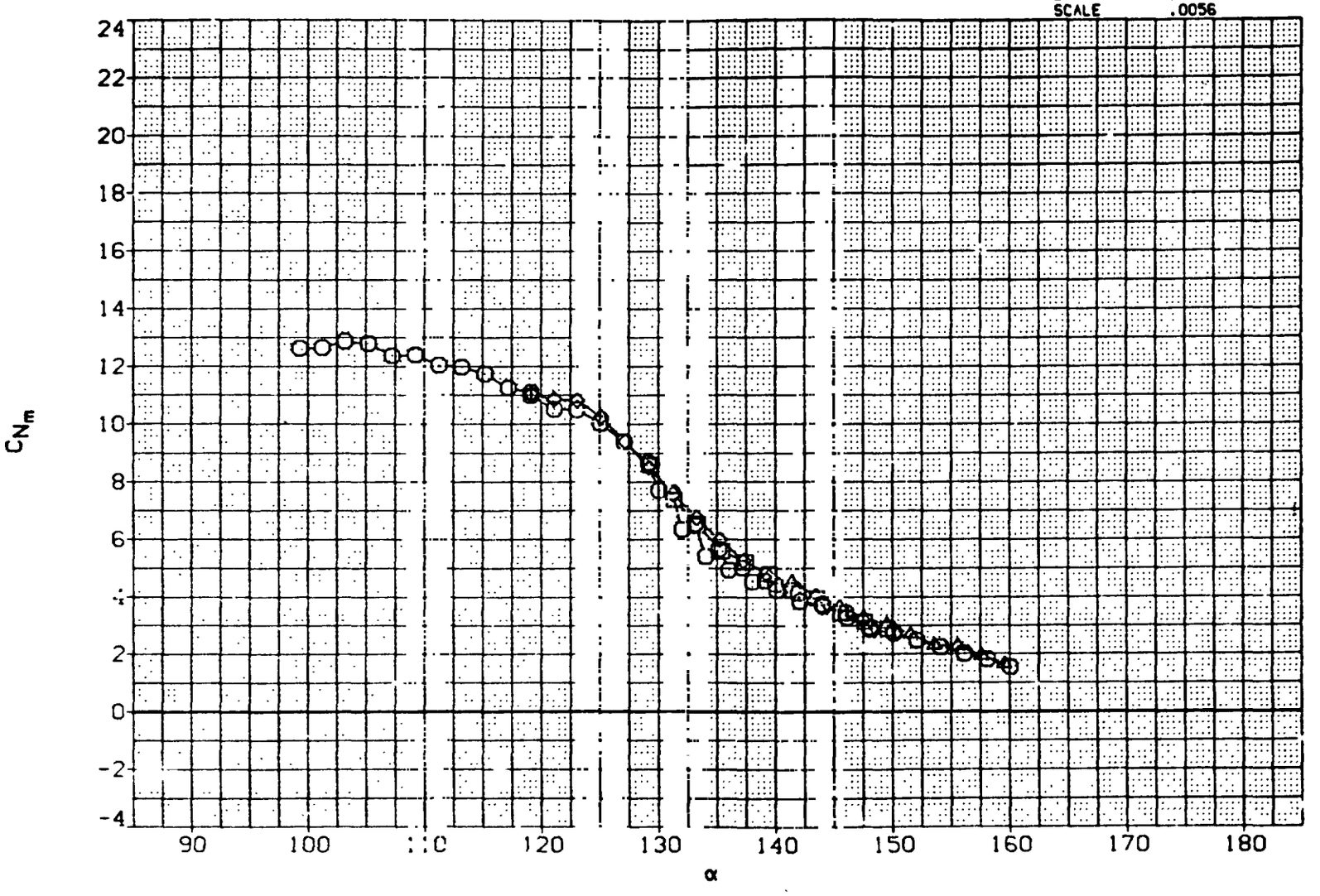


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

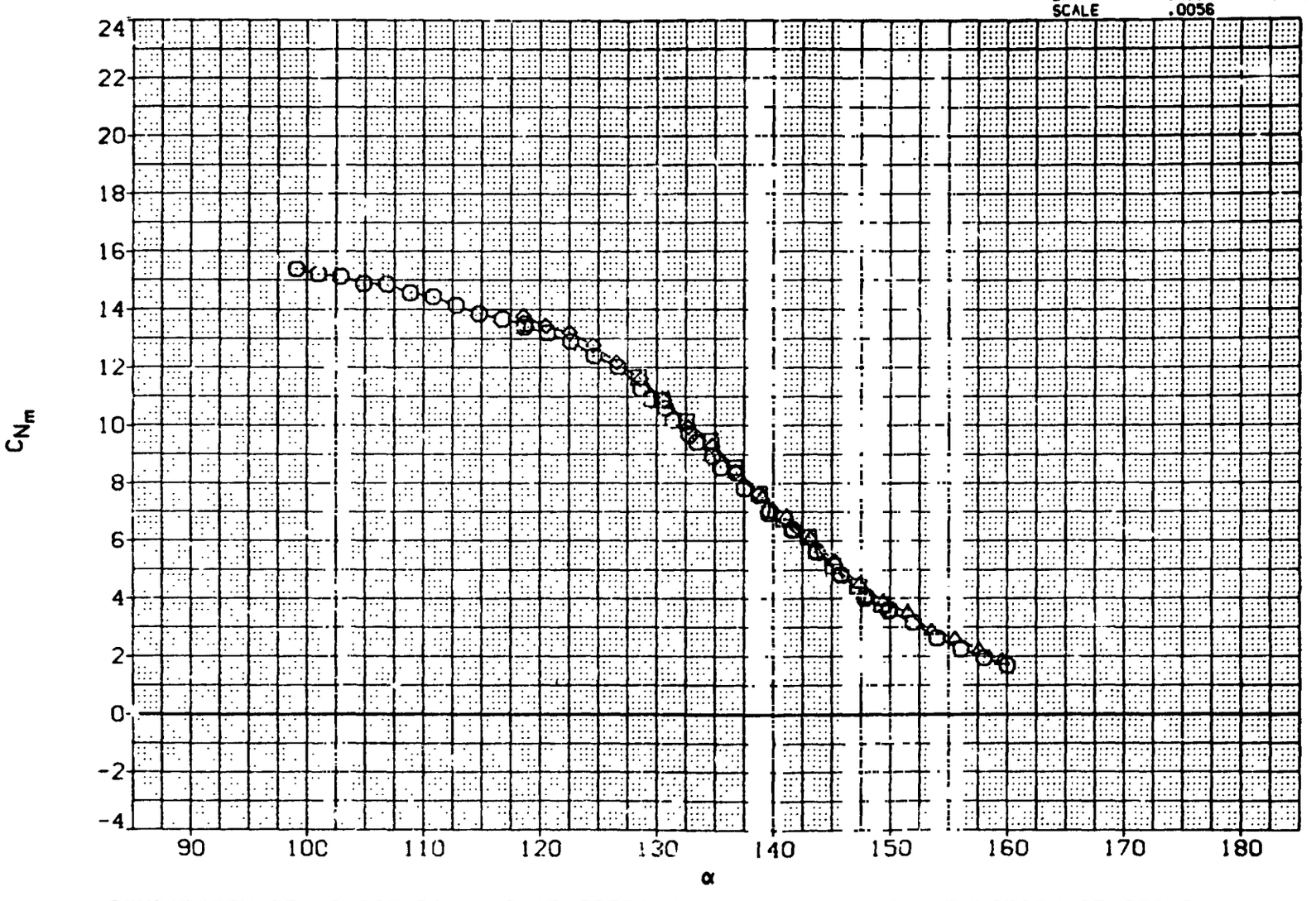


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

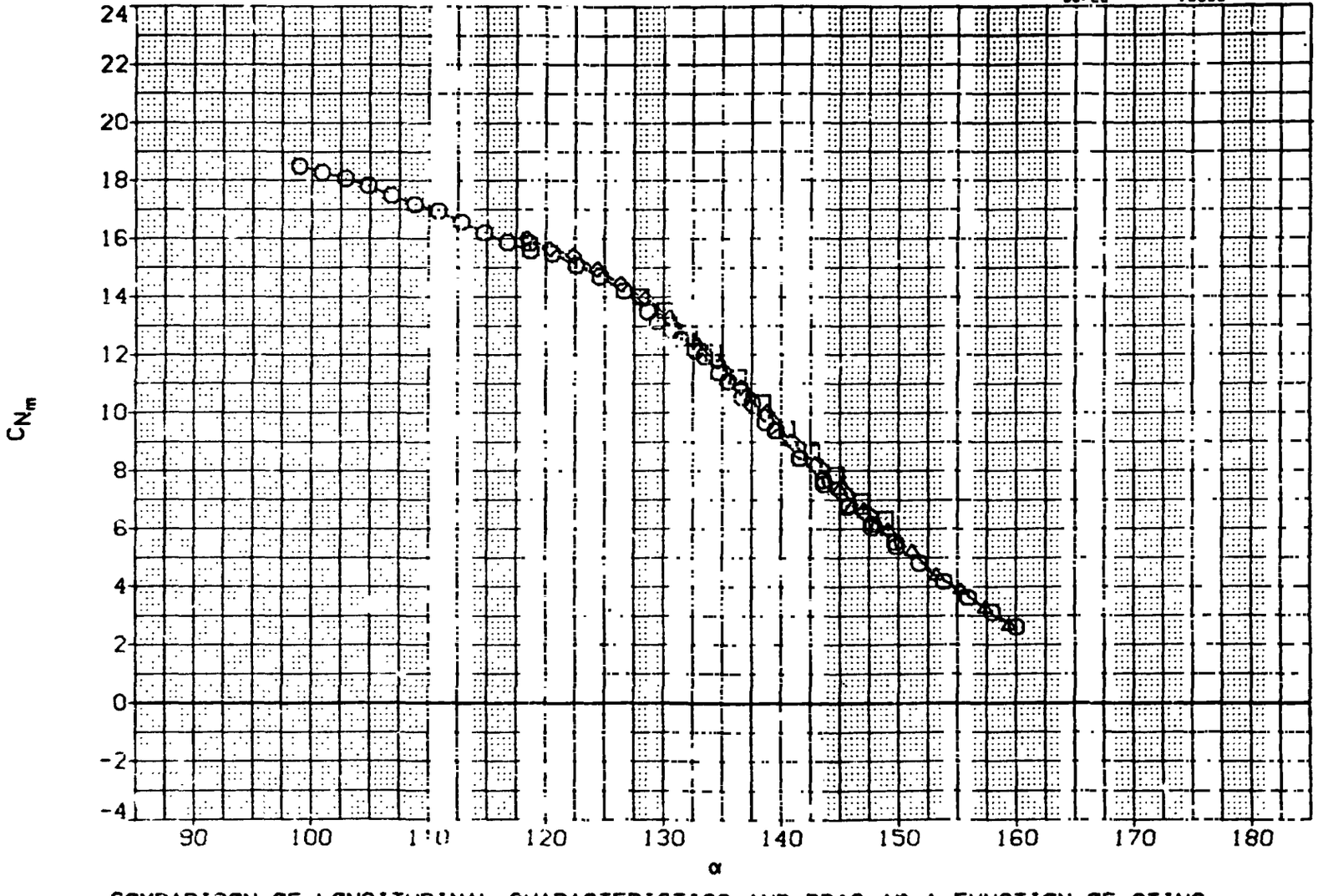


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



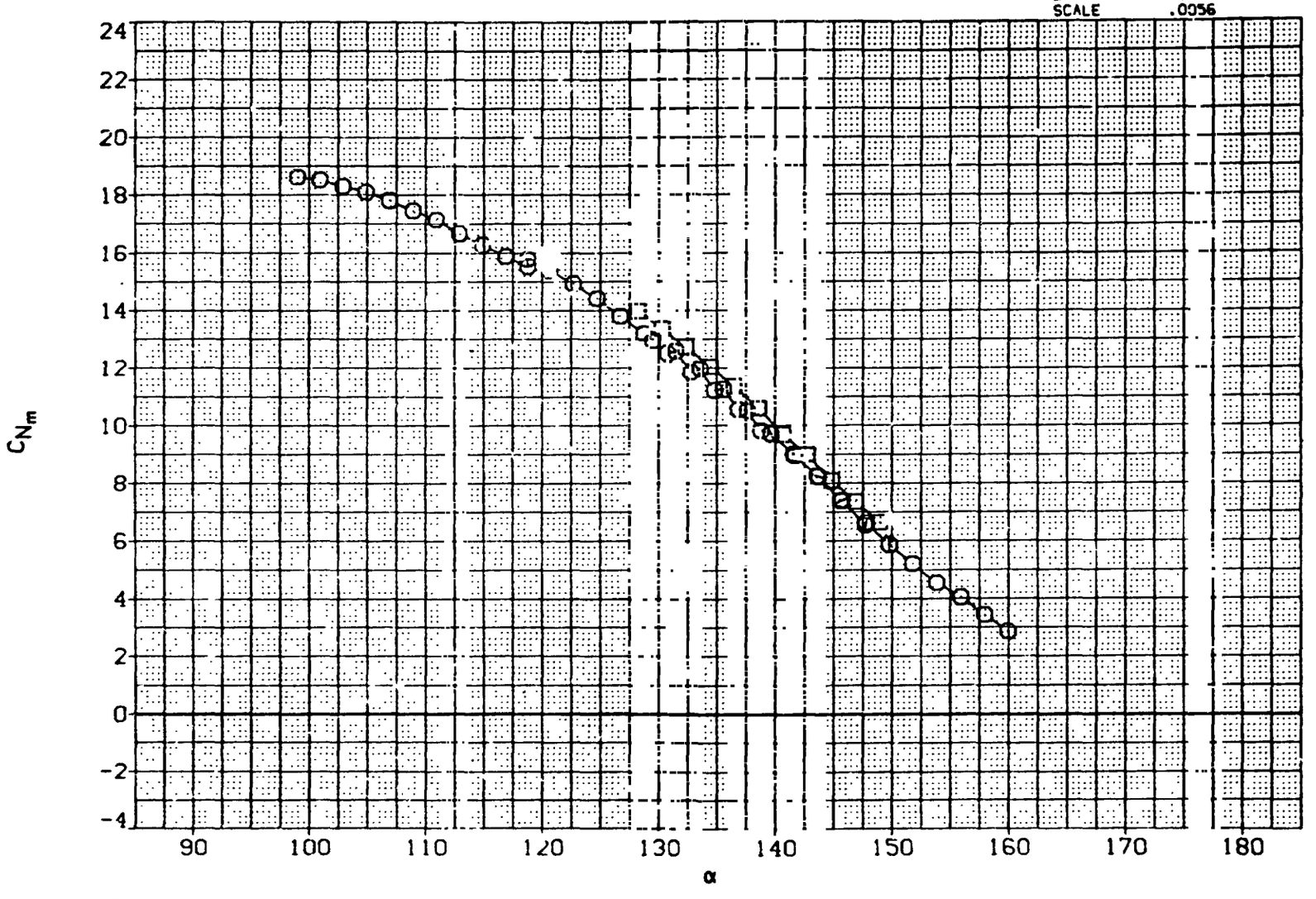
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000
(A10002)	◇	DATA NOT AVAILABLE	.000
(A10003)	△	DATA NOT AVAILABLE	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



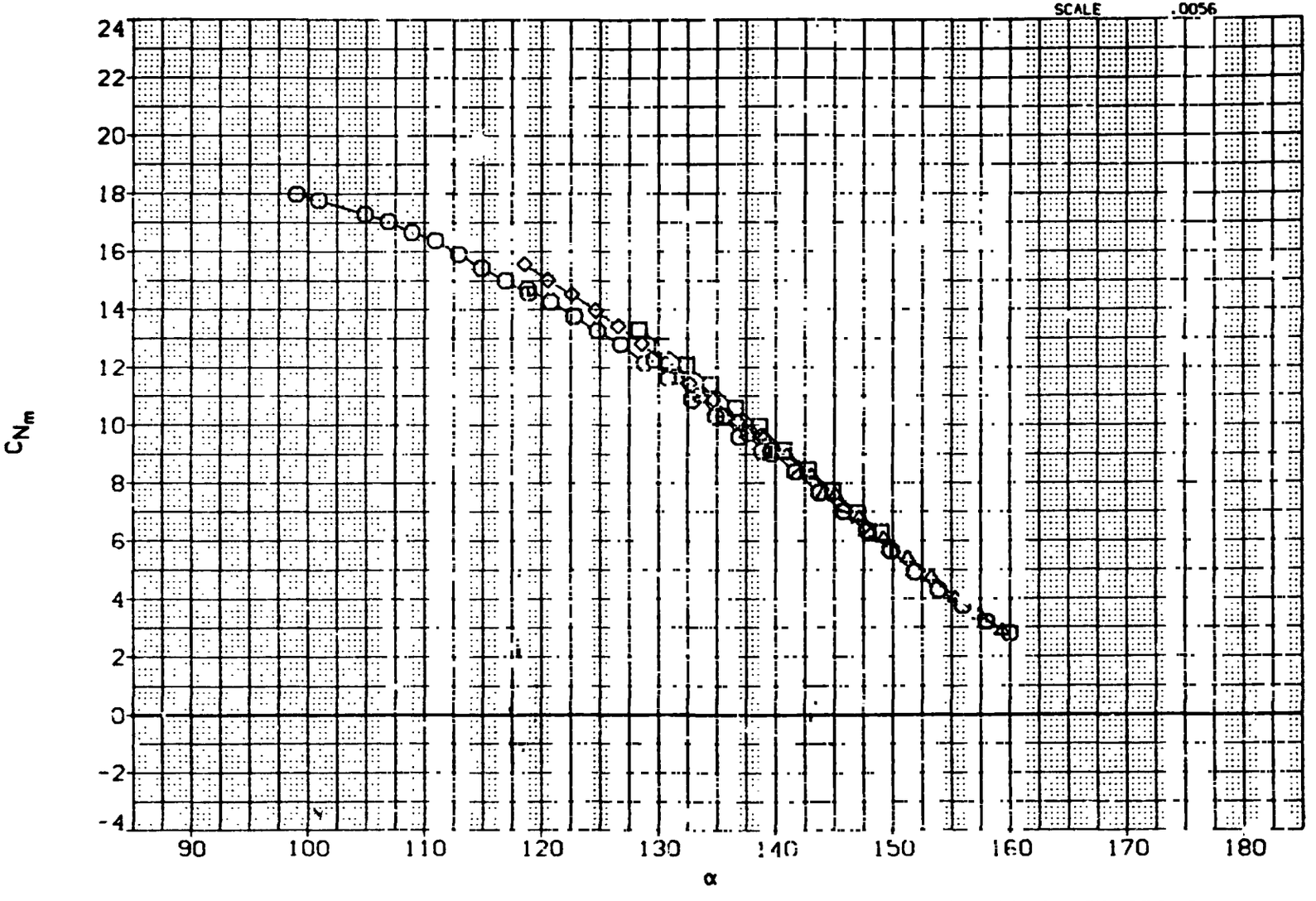
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(D)MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

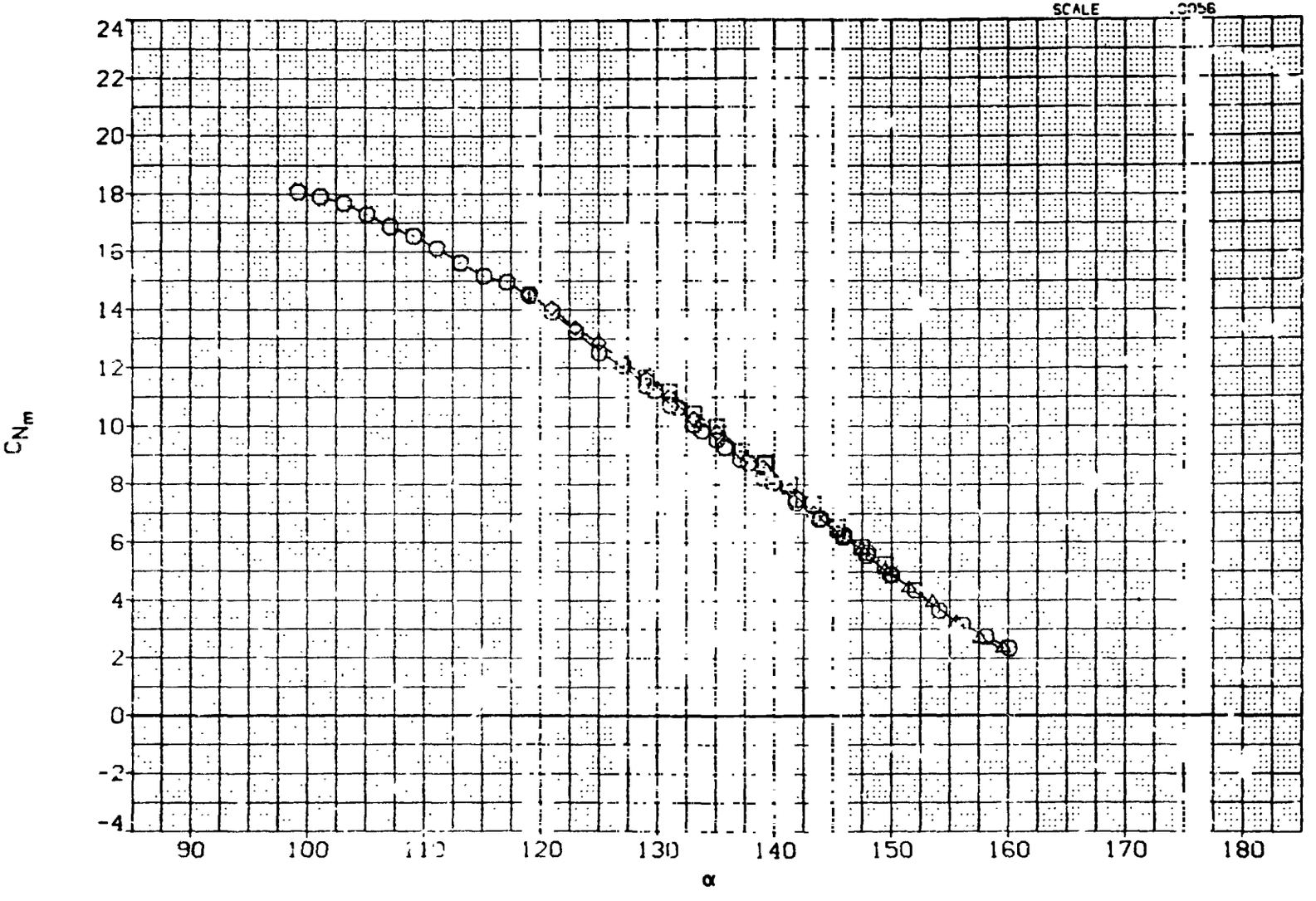


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBKEM60	.000

REFERENCE INFORMATION		
SREF	109.9600	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

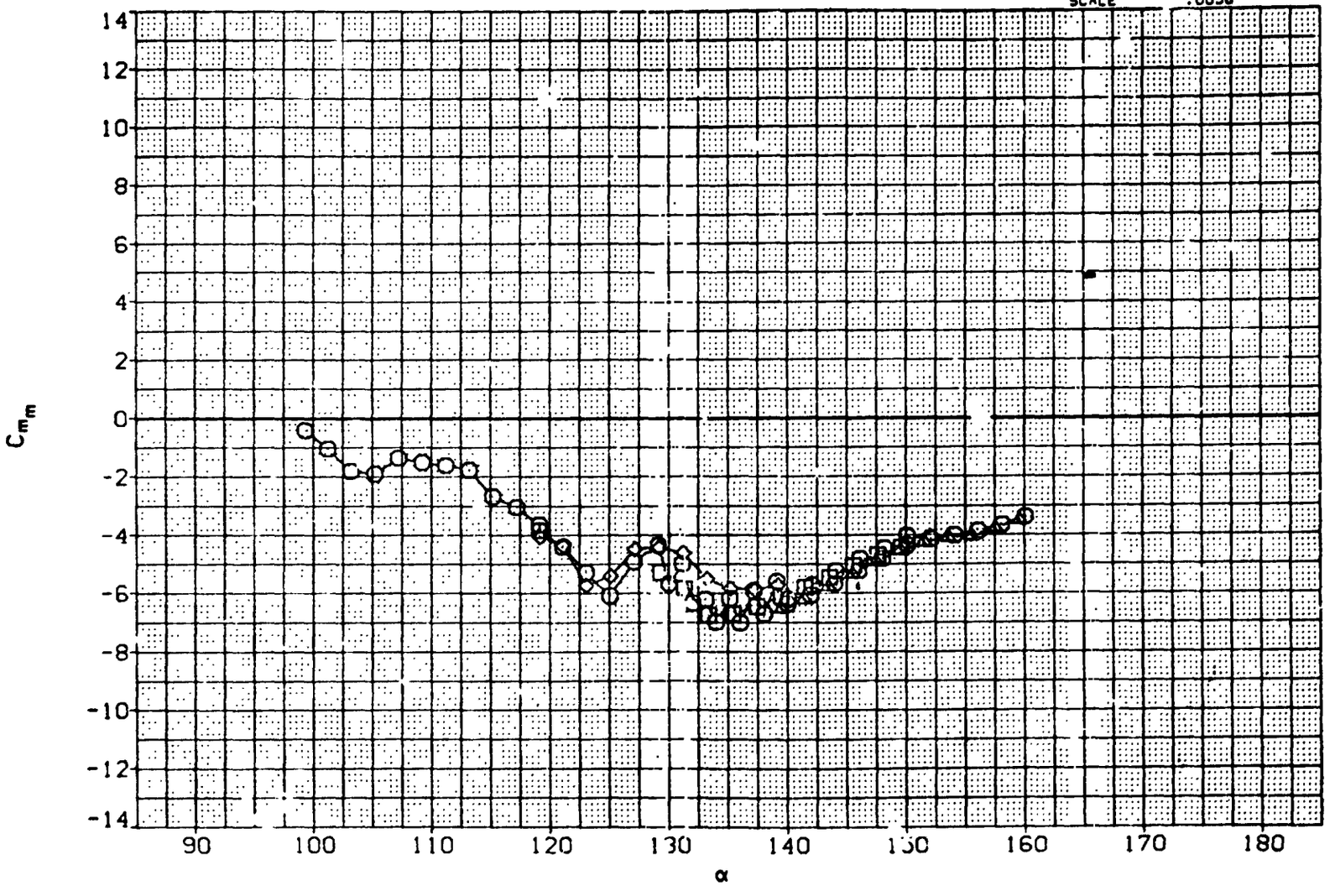


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(F)MACH = 3.43

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBR.490	.000
(A10011)	◇	MSFC TWT 620 (SA 4F(A)) STING EFFECTS. NBREMS	.000
(A10002)	◇	MSFC TWT 620 (S 1F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (S 4F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

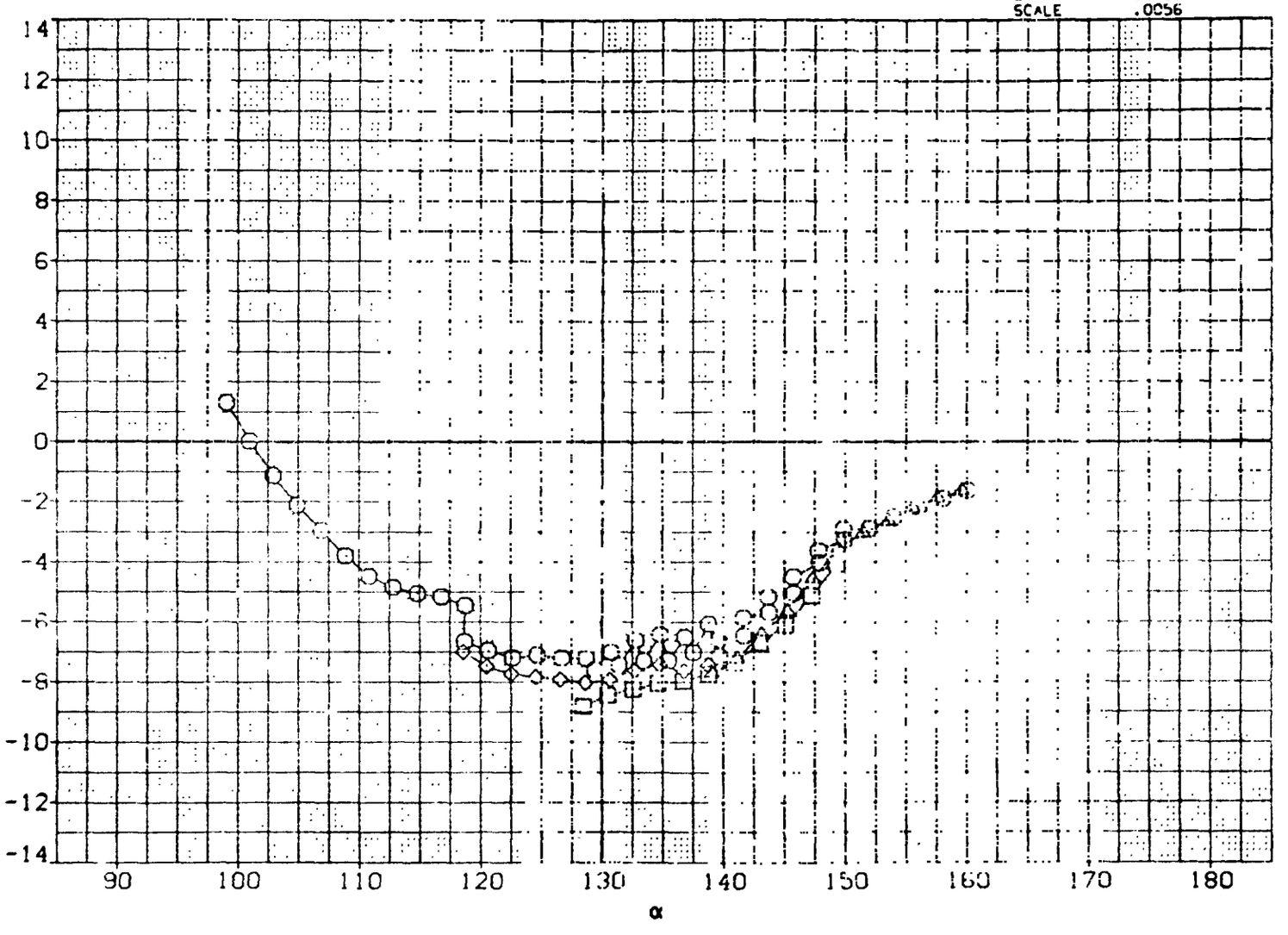


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	⋈	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



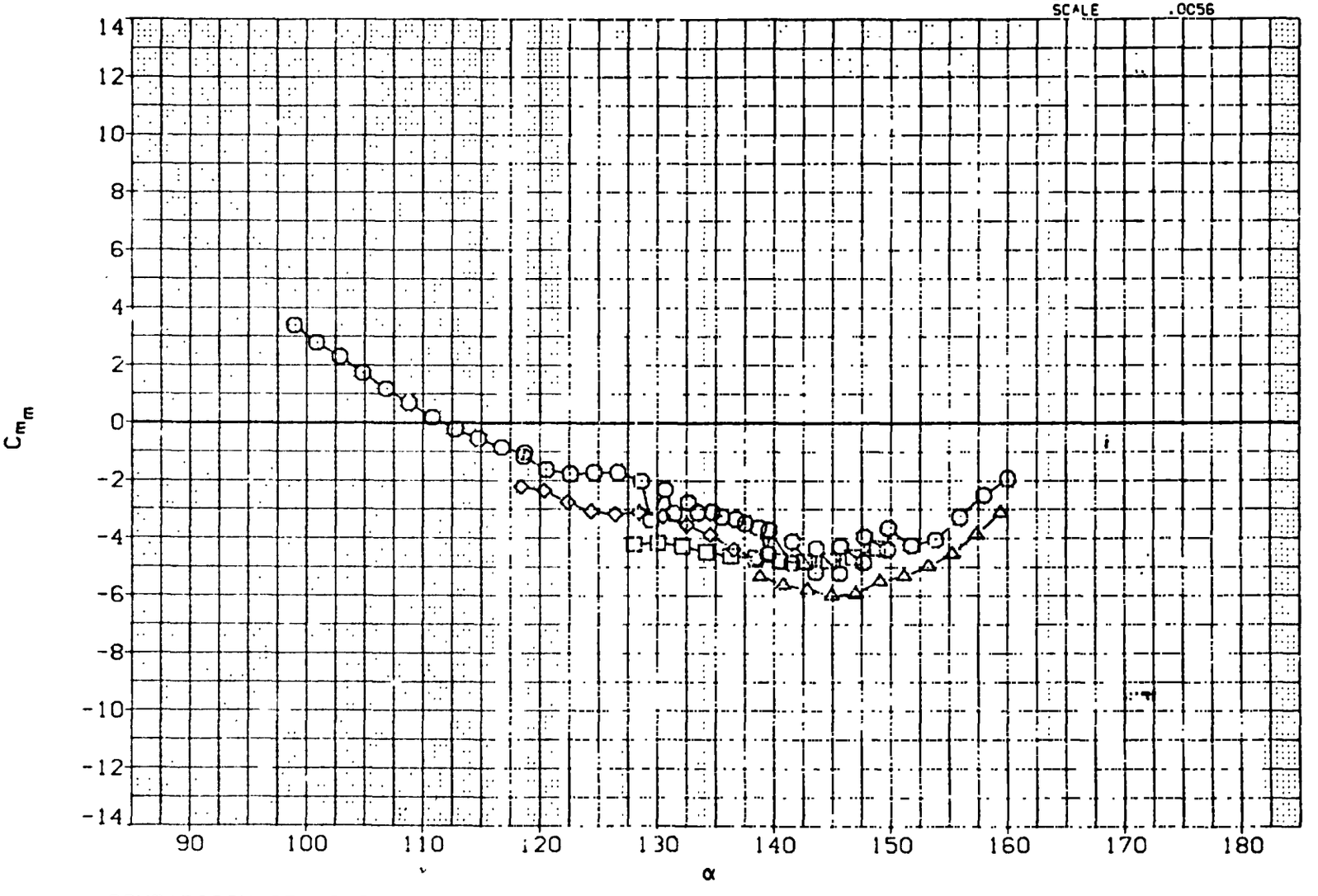
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



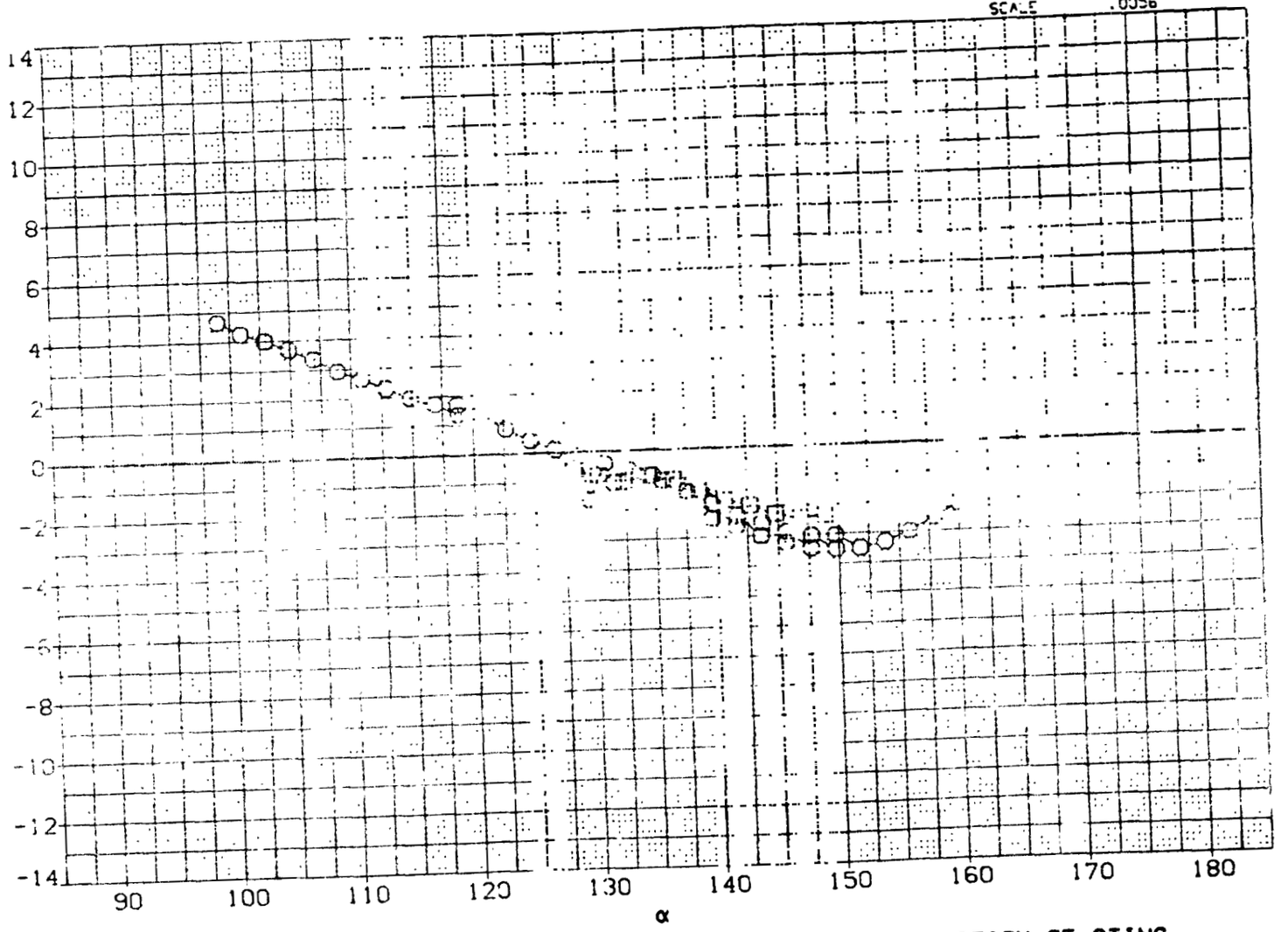
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(810004)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM9C	.000
(A10011)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS	.000
(A10002)		DATA NOT AVAILABLE	.000
(A10003)		DATA NOT AVAILABLE	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



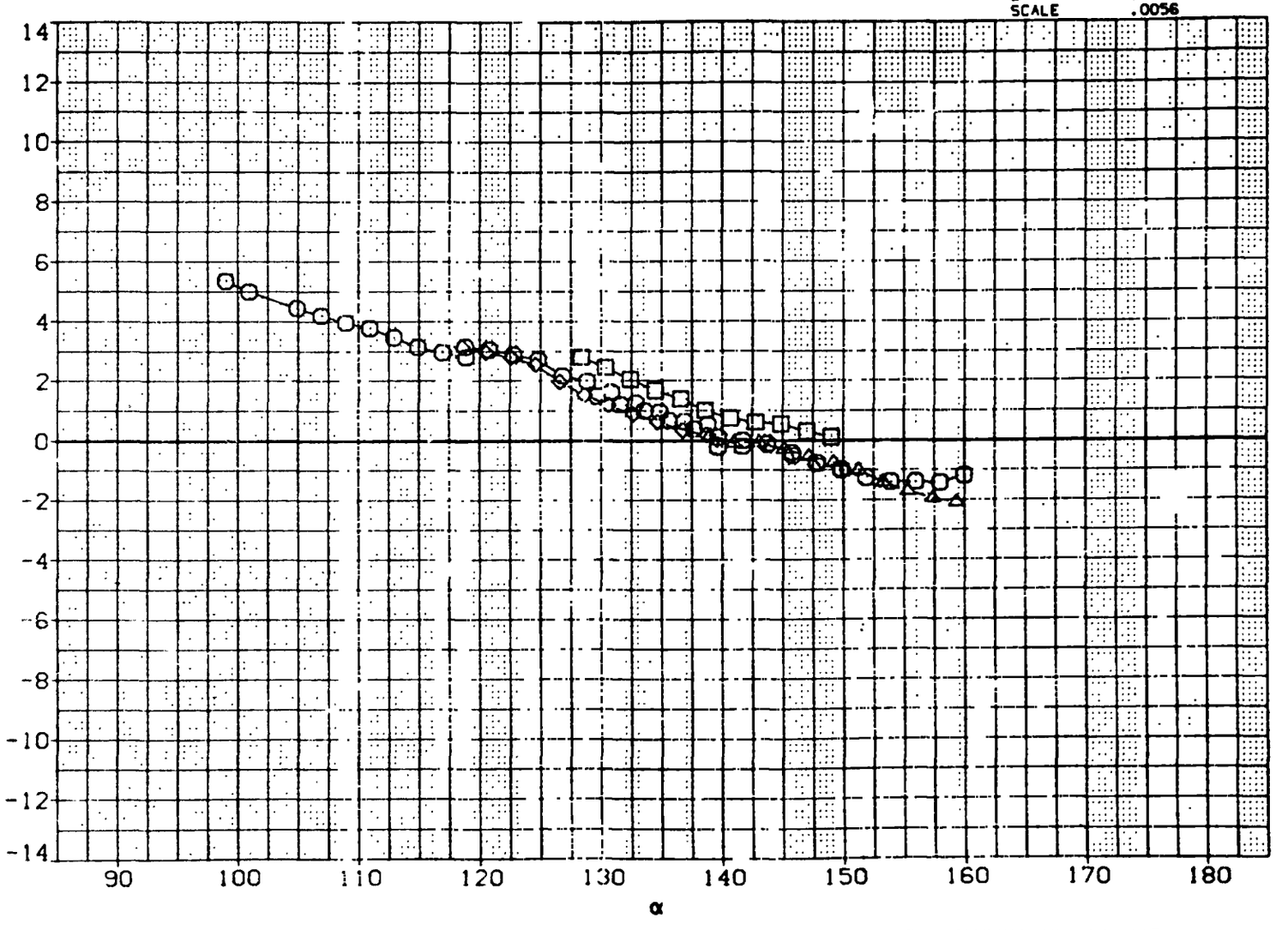
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG A, A FUNCTION OF STING CONFIGURATION

MACH = 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

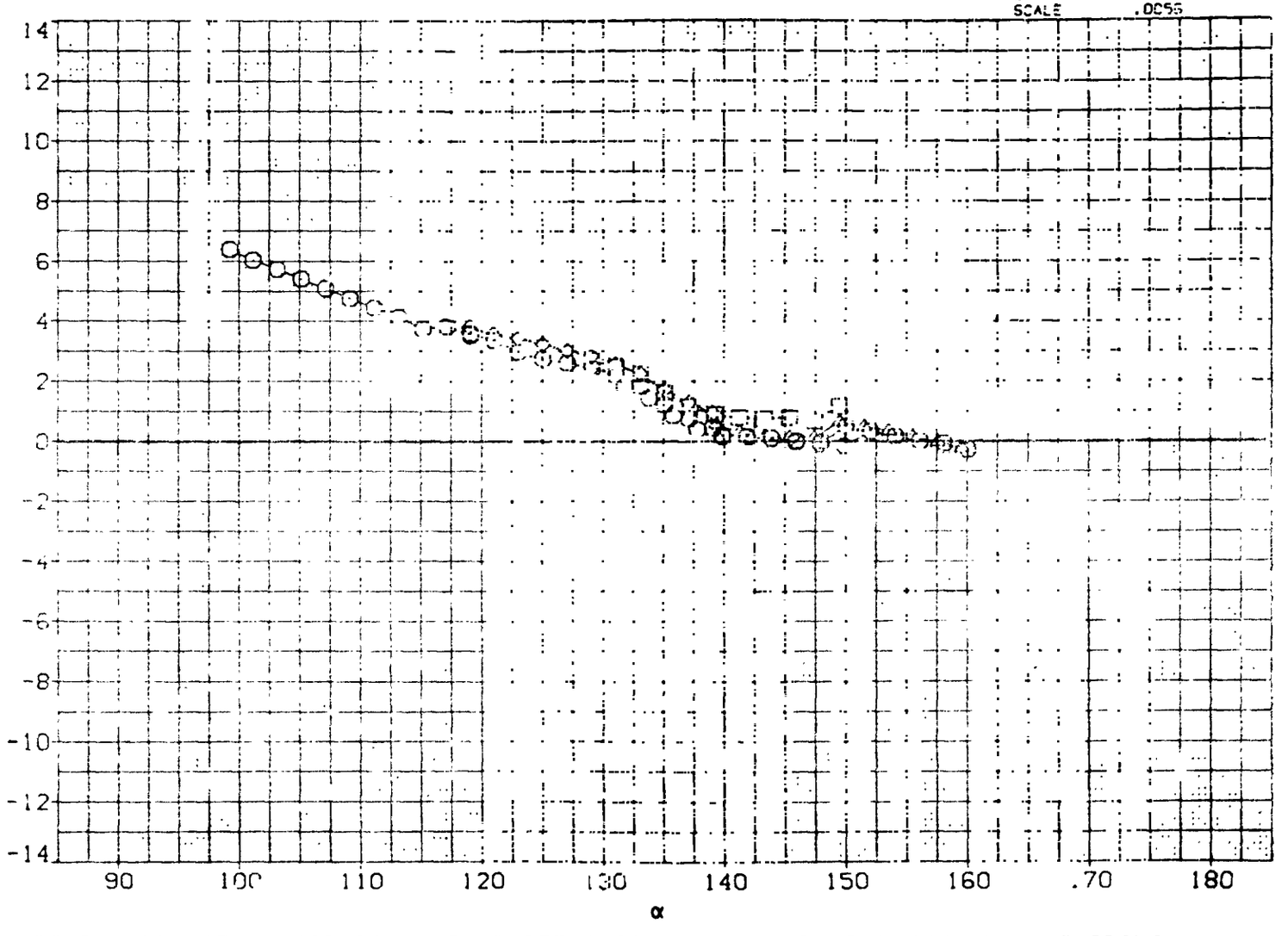


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0055	



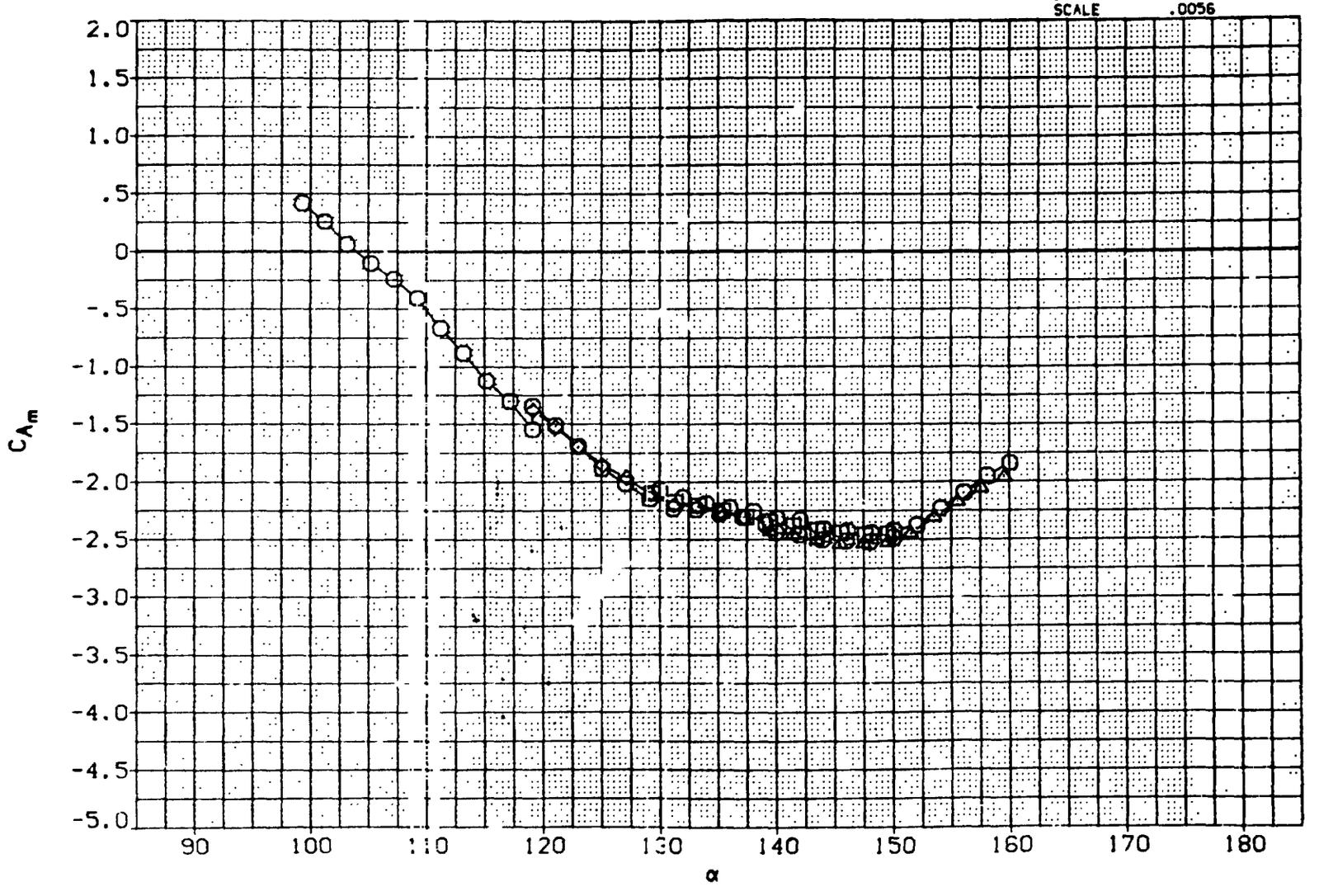
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(F)MACH = 3.48

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	

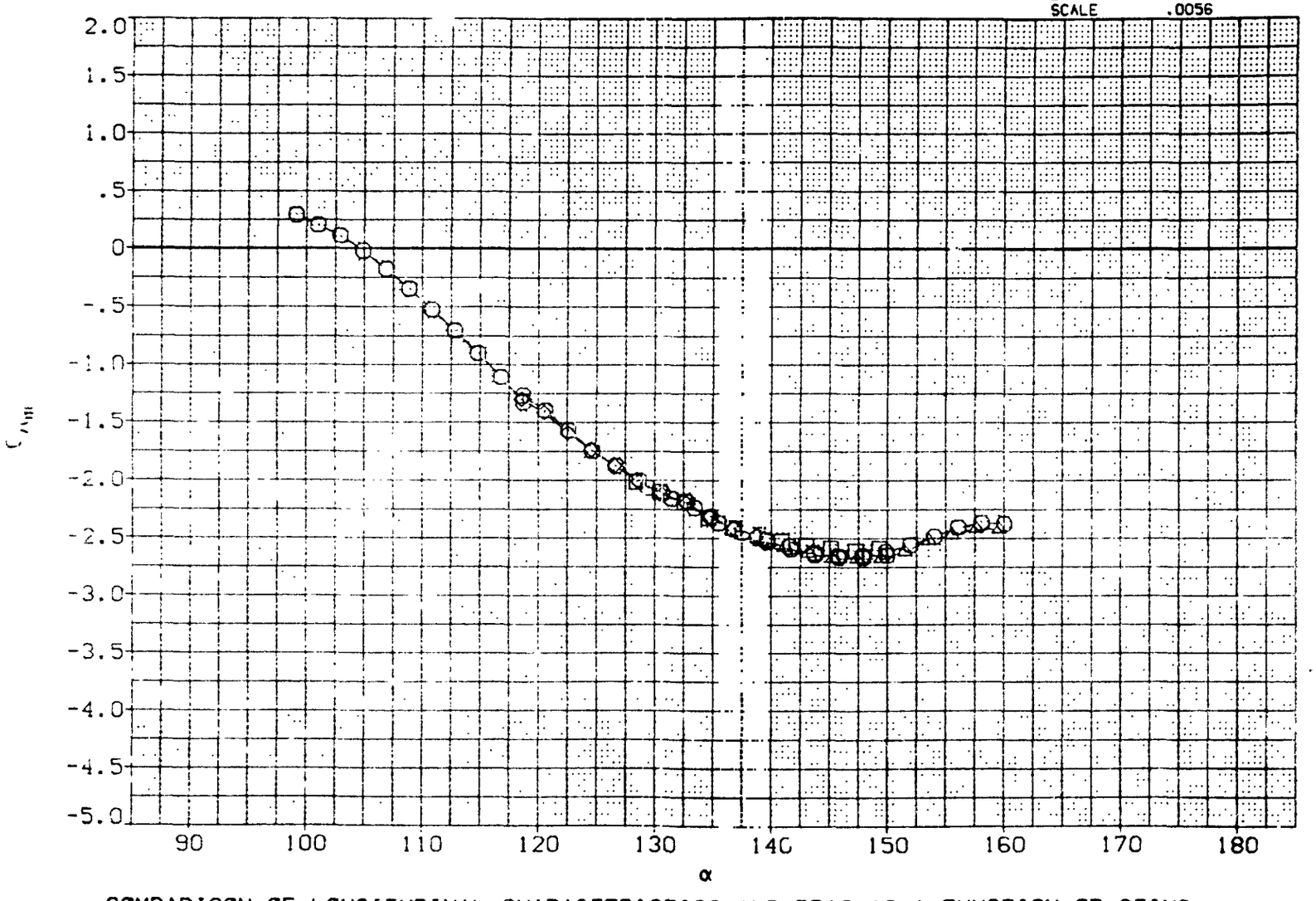


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(A)MACH = .59

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREMS	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



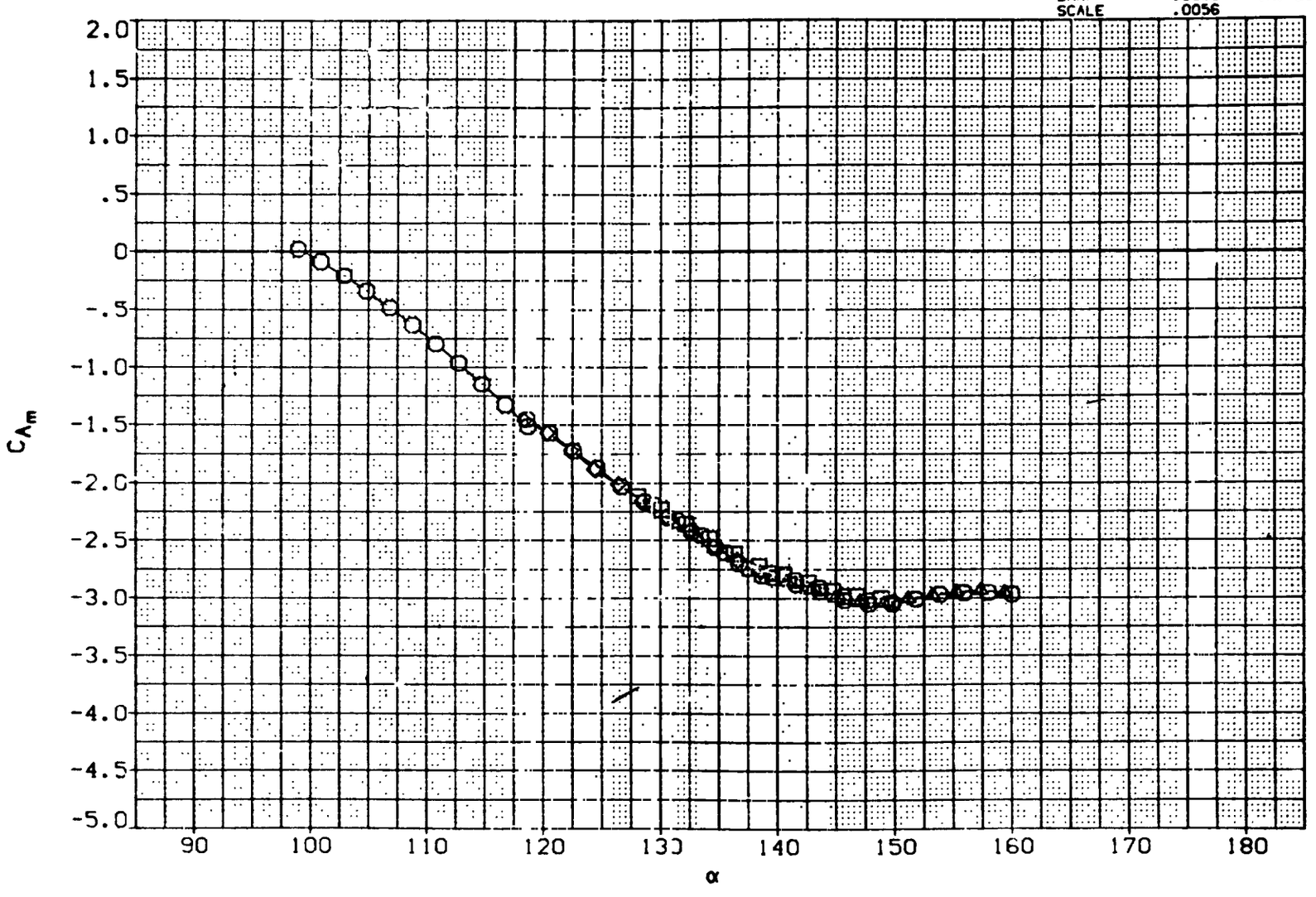
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(B)MACH = .90

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



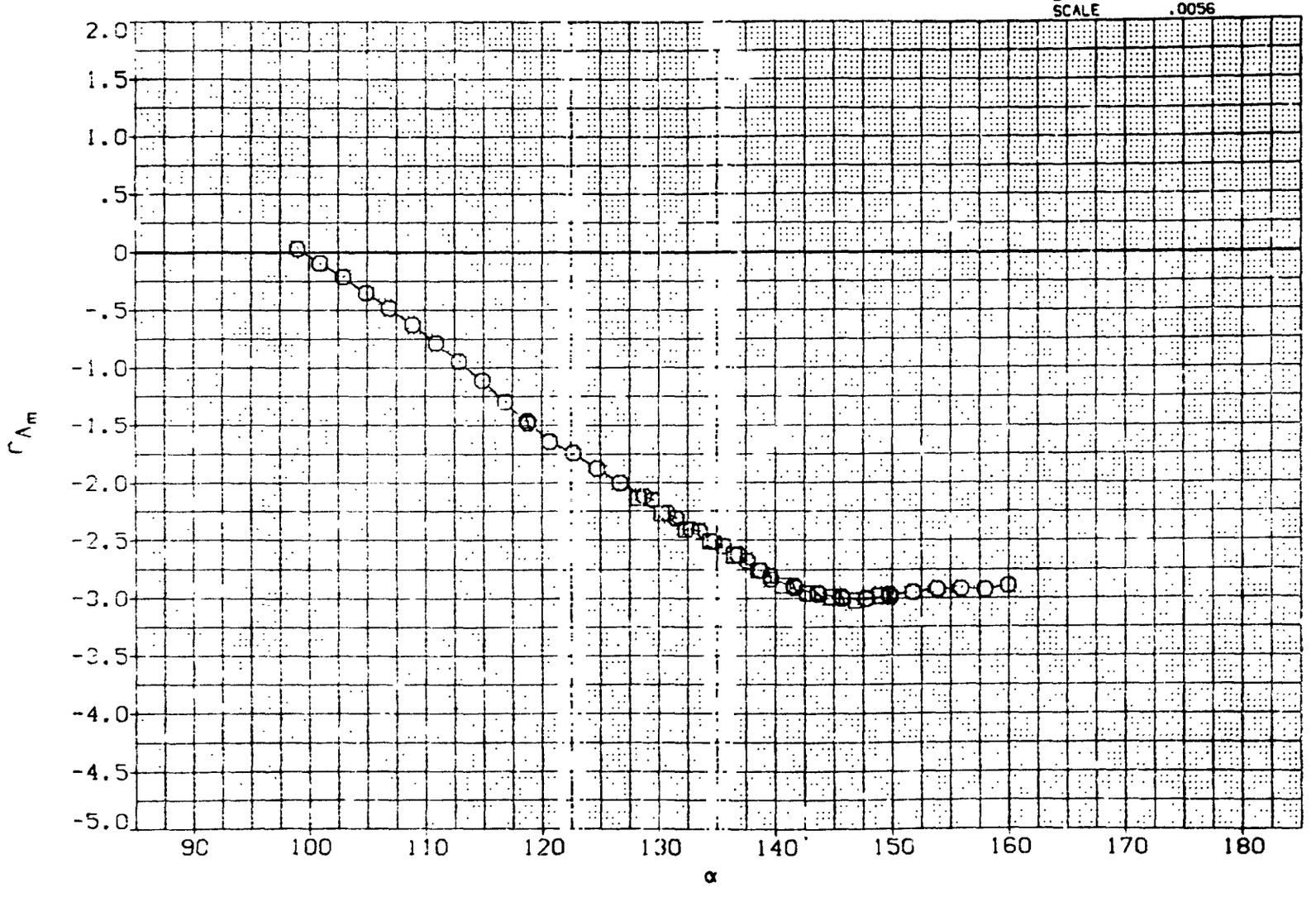
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(C)MACH = 1.20

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	◇	DATA NOT AVAILABLE	.000
(A10003)	△	DATA NOT AVAILABLE	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN, XS
YMRP	.0000	IN, YS
ZMRP	.0000	IN, ZS
SCALE	.0056	

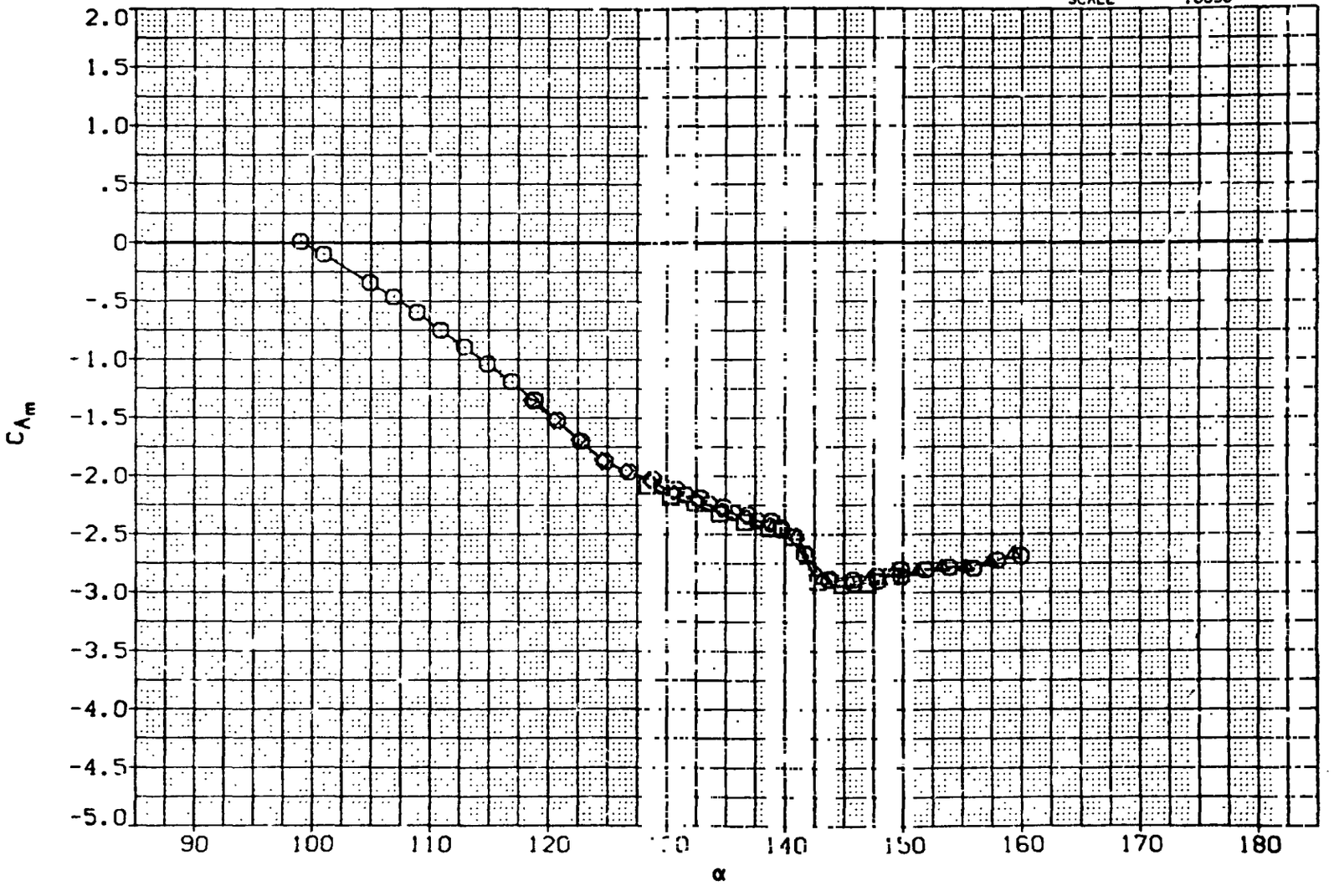


COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(D)MACH 1.46

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000
(A10003)	⧖	MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM60	.000

REFERENCE INFORMATION		
SREF	109.9800	SQ.FT.
LREF	142.0000	IN.
BREF	142.0000	IN.
XMRP	386.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0056	



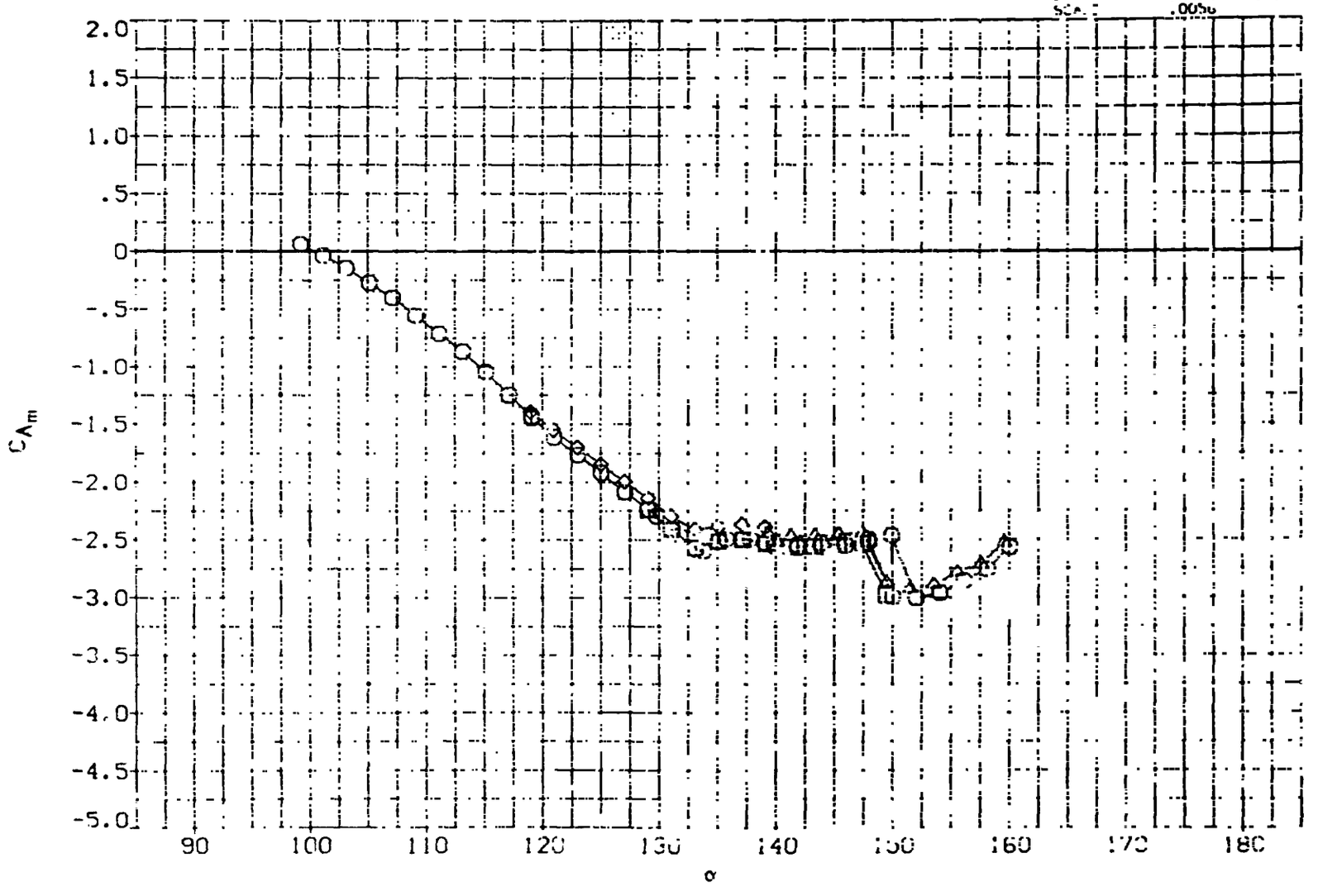
COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(E)MACH = 1.95

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	BETA
(B10004)	○	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90	.000
(A10011)	□	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM5	.000
(A10002)	◇	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000
(A10003)	△	MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60	.000

REFERENCE INFORMATION

SREF	109.9800	SQ.FT.
LREF	12.0000	IN.
BREF	142.0000	IN.
XMRP	986.9700	IN. XS
YMRP	.0000	IN. YS
ZMRP	.0000	IN. ZS
SCALE	.0050	



COMPARISON OF LONGITUDINAL CHARACTERISTICS AND DRAG AS A FUNCTION OF STING CONFIGURATION

(F)MACH = 3.48

APPENDIX

TABULATED SOURCE DATA

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

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60 (R10001) (14 JUN 76)

REFERENCE DATA

SREF = 109.3800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 12/ 2 RN/L = 4.92 GRADIENT INTERVAL = 105.00/115.00

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.598	117.560	11.50850	-5.05480	-1.39210	-.05520	-.15240	.00690	.60270
.598	115.600	11.80300	-3.21830	-1.15420	.19870	-.55580	.00780	.58910
.598	113.620	11.78460	-2.11400	-.89210	-.26610	-1.43100	.00010	.58150
.598	111.590	12.07870	-2.85130	-.65570	-.14680	.21560	.00690	.58610
.598	109.600	12.39870	-2.42900	-.46390	-.02440	.12340	.02030	.58280
.598	107.600	12.43280	-2.36920	-.29370	.02340	.20240	.00940	.58240
.598	105.620	12.34620	-1.71000	-.10010	.01380	.23830	.01370	.57810
.598	103.630	12.46510	-.95140	.07500	.01510	.44220	.00680	.57310
.598	101.640	12.66700	-.29390	.26760	-.00030	.79030	.01070	.55870
.598	99.710	12.54060	-.06570	.42190	-.18580	1.15550	.02440	.56730
.598	109.600	12.29370	-2.44850	-.45560	-.01360	.23080	-.01510	.58[illegible]
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 13/ 1 RN/L = 6.24 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.900	119.040	13.53900	-6.41460	-1.35740	-.07310	-.50170	.00100	.60570
.900	117.110	13.73410	-5.97910	-1.14400	-.05950	-.13160	-.00140	.60230
.900	115.120	13.88510	-5.37920	-.94370	-.01950	.03580	.00210	.59840
.900	113.160	14.11080	-4.82190	-.74[illegible]	-.00710	.09340	-.00120	.59470
.900	111.150	14.43500	-4.22540	-.57150	-.00120	.09370	-.00450	.59070
.900	109.150	14.52850	-3.87380	-.39290	.00780	.11360	.00150	.58860
.900	107.170	14.56590	-3.46210	-.21320	.04020	.07940	.00100	.58620
.900	105.190	14.83300	-2.73410	-.05060	.05210	.07180	-.00220	.58190
.900	103.220	15.07860	-1.66330	.09210	.05230	.06660	.00360	.57580
.900	101.300	15.15520	-.17530	.20400	.03750	.15310	-.01340	.56780
.900	99.380	15.03290	1.11360	.31160	.05070	.09270	-.00480	.56100
.900	109.150	14.56360	-3.94200	-.38590	.03150	.08530	.00220	.58890
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM80 (R10001) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 14/ 0 RN/L = 6.78 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.196	118.830	15.54070	-1.62940	-1.46530	.05570	.08260	-.02450	.57540
1.196	116.890	15.81110	-1.36010	-1.35960	.03950	.06090	-.01880	.57380
1.196	114.890	16.12470	-.95950	-1.18390	.02090	.08160	-.01[illegible]0	.57170
1.196	112.900	16.48940	-.44040	-1.01770	.02480	.05580	-.00990	.56900
1.196	110.910	16.86100	.11300	-.85880	.03850	.13050	-.02080	.56630
1.196	108.920	17.12890	.64410	-.69550	.02430	.10840	-.02040	.56380
1.196	106.920	17.46620	1.04580	-.54180	.02980	.10190	-.01070	.56190
1.196	104.930	17.74220	1.54390	-.39070	.02820	.08790	-.01570	.55970
1.196	102.940	17.99120	2.11980	-.26750	.01900	.11870	-.02040	.55720
1.196	100.960	18.26050	2.64150	-.14980	.01770	.09720	-.02880	.55500
1.196	99.030	18.61000	3.25400	-.04320	.01290	.15050	-.01310	.55260
1.196	108.920	17.24180	.78450	-.38650	.02720	.11730	-.02520	.56310
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 19/ 1 RN/L = 7.45 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.963	118.980	15.22110	3.55780	-1.37230	.04790	.00600	-.00920	.54780
1.963	117.000	15.69690	3.73890	-1.23610	.04750	.03550	-.00450	.54740
1.963	115.000	16.15760	3.96110	-1.08380	.05810	.02830	-.00650	.54680
1.963	112.960	16.63150	4.10250	-.93580	.05820	.07020	-.00300	.54670
1.963	110.960	17.05650	4.25660	-.78970	.04[illegible]	.10660	-.00400	.54650
1.963	108.940	17.39460	4.39530	-.62220	.06090	.08110	-.00100	.54620
1.963	106.930	17.65860	4.51020	-.48170	.05660	.12960	-.00320	.54600
1.963	104.920	18.00260	4.68270	-.35300	.05730	.14050	-.00960	.54560
1.963	102.890	18.24180	4.93860	-.23580	.05370	.09840	.00320	.54470
1.963	100.920	18.47260	5.24500	-.11880	.05510	.07380	-.01290	.54370
1.963	98.980	18.71990	5.52350	-.01180	.04460	.09240	-.00920	.54280
1.963	108.950	17.45580	4.41620	-.42920	.04610	.10210	-.01020	.54620
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60 (R10001) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 20? 0 RN/L = 6.80 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	119.350	14.42900	3.59440	-1.40080	.03740	.02390	.01090	.54650
3.480	117.350	14.88130	3.93610	-1.28220	.03880	.04260	.00160	.54530
3.480	115.370	15.47890	4.31010	-1.09390	.04060	.00230	.00790	.54410
3.480	113.370	15.91320	4.69090	-.92170	.02490	.03220	.01490	.54280
3.480	111.370	16.25230	5.01480	-.75790	.02720	.03250	.01830	.54170
3.480	109.360	16.79480	5.32910	-.60150	.02950	.01130	.01240	.54090
3.480	107.360	17.07580	5.65710	-.45590	.02400	.01170	.01120	.53980
3.480	105.350	17.54510	5.93810	-.32120	.03410	.03030	.00650	.53920
3.480	103 350	17.78710	6.28490	-.18870	.03670	.02180	.02660	.53800
3.480	101.350	18.04520	6.53260	-.07510	.03190	.04110	.01330	.53730
3.480	99.400	18.36870	6.67960	.03020	.03620	.06000	.00990	.53720
3.480	109.360	16.78660	5.44800	-.37680	.04350	.01360	.02720	.54040
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60 (R10002) (09 JUL 76)

REFERENCE DATA

SREF = 109.9600 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 11/ 2 RN/L = 4.94 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.598	139.210	4.84660	-5.68910	-2.33390	.06530	.42370	-.00410	.66260
.598	137.270	5.30460	-5.85090	-2.30400	.20850	.89750	.01600	.65680
.598	135.230	6.02450	-5.81260	-2.25930	.34900	1.31570	.00620	.64550
.598	133.230	6.78230	-5.47240	-2.21070	.40550	1.75860	.02400	.63260
.598	131.230	7.60820	-4.59910	-2.19890	.13250	1.37900	.01030	.61610
.598	129.200	8.52910	-4.39760	-2.09900	.09020	1.31830	.00970	.60890
.598	127.170	9.42300	-4.46020	-1.96430	-.10090	1.69540	.04050	.60540
.598	125.120	10.28120	-5.39230	-1.85740	-.31360	1.39900	.02880	.60960
.598	123.090	10.84230	-5.71800	-1.69070	-.27570	1.01710	.01970	.60990
.598	121.100	10.89250	-4.34540	-1.52280	.01220	.45930	.01730	.59940
.598	119.170	11.06820	-4.03850	-1.37600	-.04120	-.14450	.03530	.59660
.598	129.170	8.59740	-4.62400	-2.08710	.33100	-.10850	.01330	.61070
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 10/ 2 RN/L = 6.23 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.899	138.760	7.63470	-7.39960	-2.47330	.00830	.01790	-.00990	.64590
.899	136.790	8.40010	-7.60530	-2.40600	.02870	.10600	.00900	.64070
.899	134.750	9.30270	-7.39200	-2.30420	.02940	.13920	.00830	.63160
.899	132.700	9.95070	-7.59350	-2.18680	-.03210	.20010	-.00230	.62900
.899	130.640	10.88480	-7.89270	-2.11650	.06010	.15680	-.00690	.62600
.899	128.620	11.60970	-7.99020	-2.00880	.07440	.12640	.01320	.62300
.899	126.570	12.18460	-7.88380	-1.86620	.09740	.26940	-.00830	.61960
.899	124.560	12.77770	-7.80380	-1.73330	.07460	.13930	.01380	.61660
.899	122.540	13.21640	-7.70540	-1.58350	.01940	-.16570	-.01310	.61440
.899	120.530	13.43680	-7.44910	-1.40830	-.05850	-.50140	.00400	.61210
899	118.570	13.77650	-6.96360	-1.29540	-.03910	-.40160	.00040	.60810
.899	128.600	11.73560	-8.04040	-1.99810	.04330	.18700	-.00480	.62270
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60 (R10002) (09 JUL 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
DREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 9/ 1 RN/L = 6.65 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.196	138.560	9.95280	-4.70110	-2.76890	-.00880	.05320	-.00710	.60540
1.196	136.600	10.89290	-4.37430	-2.67050	-.01110	.08630	-.02140	.59960
1.196	134.560	11.78240	-3.86460	-2.54630	-.02690	.07730	-.00360	.59360
1.196	132.530	12.47980	-3.51410	-2.40650	-.02730	.05290	-.00820	.58980
1.196	130.490	13.29480	-3.23200	-2.28270	-.02690	.01300	-.01170	.58670
1.196	128.450	13.95960	-3.09590	-2.15200	-.00710	.01820	.00350	.58490
1.196	126.410	14.45130	-3.14460	-2.00500	-.02150	.05950	-.00420	.58460
1.196	124.380	14.96260	-3.05140	-1.87900	.00530	.06540	-.00850	.58350
1.196	122.370	15.43050	-2.75350	-1.71200	.00490	.08710	-.00090	.58140
1.196	120.390	15.67310	-2.33650	-1.56260	.00450	.08090	-.00220	.57900
1.196	118.420	16.01710	-2.20180	-1.45590	.01470	.03500	-.01600	.57800
1.196	128.440	14.07620	-3.15600	-2.14670	-.01860	.00980	-.01050	.58510
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 8/ 1 RN/L = 7.52 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.959	138.720	9.64550	.19870	-2.42110	.00090	.02570	-.00930	.56510
1.959	136.760	10.15510	.34290	-2.35550	-.00810	.03620	-.00390	.56410
1.959	134.690	10.89690	.64130	-2.29500	.00620	.00860	-.00910	.56210
1.959	132.680	11.44760	.89650	-2.21890	.02040	.03150	-.00500	.56040
1.959	130.620	12.15230	1.19590	-2.14300	.00950	.01050	-.00870	.55880
1.959	128.600	12.83610	1.52150	-2.04510	.02820	.00200	-.01280	.55720
1.959	126.590	13.46640	1.96490	-1.95440	.02000	-.00490	.00440	.55490
1.959	124.590	13.98540	2.35400	-1.87050	.02540	.00020	-.00690	.55190
1.959	122.560	14.54050	2.81430	-1.68790	.01900	.02340	-.01110	.55100
1.959	120	15.04870	2.98000	-1.51290	.02430	.04050	-.00870	.55070
1.959	118	15.57820	3.15020	-1.34960	.01930	.07020	-.00330	.55030
1.959	12.	12.72730	1.59520	-2.03730	.03900	-.03370	-.01060	.55660
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60 (R10002) (09 JUL 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 7/ 4 RN/L = 6.70 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	139.060	8.61280	.94610	-2.38500	.02050	.04000	-.02070	.55790
3.480	137.130	9.14440	1.30550	-2.36550	.02230	.02900	-.01180	.55520
3.480	135.110	9.80450	1.72060	-2.37850	.01460	.03620	-.02020	.55250
3.480	133.110	10.28700	2.26250	-2.40630	.01220	.11410	-.02520	.54890
3.480	131.080	11.03010	2.59290	-2.29250	.03180	.02320	-.01580	.54770
3.480	129.060	11.65870	2.83020	-2.13550	.03340	.05110	-.01510	.54700
3.480	127.040	12.25540	3.02770	-1.99000	.03680	.03930	-.01610	.54670
3.480	125.010	12.87680	3.24190	-1.84110	.01550	.03750	-.01610	.54630
3.480	123.000	13.39870	3.44420	-1.69410	.02640	.05610	-.00980	.54590
3.480	120.970	14.07690	3.57880	-1.54840	.03920	.01430	-.00370	.54610
3.480	119.010	14.55440	3.79870	-1.38600	.04140	.05270	-.00380	.54550
3.480	129.050	11.91610	2.75920	-1.85990	.02520	.03130	-.01200	.54790
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60 (R10003) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 17/ 0 RN/L = 4.97 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.597	159.550	1.67610	-3.47810	-1.98040	.26770	.69660	.01690	.73610
.597	157.600	1.96230	-3.75070	-2.05370	.25860	.69680	.02670	.72270
.597	155.560	2.29280	-4.01100	-2.17090	.24980	.64490	-.00090	.70950
.597	153.560	2.32170	-4.05600	-2.30480	.22810	.53710	.01900	.70930
.597	15..540	2.70550	-4.22480	-2.44480	.22960	.53280	.00230	.69420
.597	149.540	3.07630	-4.50550	-2.52220	.17770	.65330	.01220	.68630
.597	147.520	3.31720	-4.90280	-2.53350	.18130	.70030	.02570	.68740
.597	145.490	3.71360	-5.30820	-2.53740	.20050	.62020	.02440	.68340
.597	143.470	4.08940	-5.74660	-2.50120	.21970	.52000	.00800	.68150
.597	141.420	4.56090	-6.18410	-2.45860	.18290	.60820	.00390	.67740
.597	139.480	4.77710	-6.50400	-2.42880	.14530	.21690	.00270	.67790
.597	149.530	3.04020	-4.61640	-2.52980	.22150	.51450	.01380	.69070
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 16/ 1 RN/L = 6.25 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.899	159.580	1.85840	-1.60340	-2.41490	-.13590	-.35200	-.02450	.63720
.899	157.610	2.21100	-1.85640	-2.41120	-.11170	-.34650	-.02660	.63530
.899	155.570	2.61370	-2.17670	-2.46820	-.10250	-.28510	-.02270	.63480
.899	153.550	2.87360	-2.63050	-2.51370	-.10550	-.27040	-.02270	.64150
.899	151.480	3.50880	-3.00130	-2.60710	-.08690	-.29430	-.02200	.63660
.899	149.430	3.88930	-3.52250	-2.66940	-.07390	-.25140	-.02550	.64070
.899	147.350	4.51380	-4.52130	-2.67240	-.08130	-.13100	-.03340	.64850
.899	145.250	5.31030	-5.60780	-2.67060	-.04320	.00810	-.00750	.65300
.899	143.170	6.10820	-6.36620	-2.62420	-.12790	-.23710	-.01540	.65180
.899	141.110	6.87330	-7.18170	-2.56970	-.11210	-.23380	-.00050	.65210
.899	139.090	7.52400	-7.66500	-2.52120	-.01580	-.03830	-.01140	.64990
.899	149.430	3.90920	-3.63840	-2.68630	-.09640	-.19760	-.03320	.64270
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60 (R10003) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 15/ 1 RN/L = 6.71 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.200	159.390	2.66830	-3.09910	-2.94860	-.08580	-.33130	-.02730	.66160
1.200	157.370	3.24490	-3.83390	-2.93200	-.08080	-.24140	-.02240	.66320
1.200	155.280	3.87540	-4.53250	-2.93900	-.04910	-.26210	-.01760	.66220
1.200	153.220	4.40430	-4.94410	-2.96670	-.05940	-.18490	-.01150	.65840
1.200	151.140	5.23230	-5.29740	-2.99480	-.04320	-.02810	-.00790	.64940
1.200	149.090	5.96340	-5.48550	-3.03520	-.01840	-.04840	-.01690	.64190
1.200	146.990	6.66320	-5.91330	-3.02590	-.01100	.02060	-.00800	.63920
1.200	144.940	7.36170	-5.96900	-2.98870	.01180	.00190	-.00940	.63300
1.200	142.870	8.26900	-5.76990	-2.91750	.03560	.03470	-.01310	.62370
1.200	140.820	9.03980	-5.60620	-2.84690	.03080	.03200	.00090	.61740
1.200	138.820	10.05380	-5.32420	-2.76990	.02900	.06420	-.01320	.61000
1.200	149.050	6.11850	-5.52670	-3.02750	-.04070	-.11540	-.01290	.64050
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 18/ 2 RN/L = 7.52 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.959	159.340	2.88830	-2.07940	-2.67570	-.13970	-.30950	-.00790	.62560
1.959	157.380	3.44120	-1.93790	-2.74190	-.08030	-.19540	-.01190	.61280
1.959	155.340	4.03820	-1.69190	-2.78520	-.03140	-.14240	-.00340	.60100
1.959	153.290	4.76820	-1.40140	-2.78460	-.02870	-.09050	-.01420	.59080
1.959	151.250	5.41150	-1.01070	-2.81790	.01330	-.04440	-.02820	.58210
1.959	149.200	6.11270	-.73360	-2.82940	.02780	-.05870	-.00450	.57660
1.959	147.150	6.80950	-.52820	-2.89010	.02120	.01120	-.01310	.57320
1.959	145.110	7.60750	-.28030	-2.91540	.04130	-.01690	-.01190	.56990
1.959	143.060	8.26880	-.06310	-2.88560	.03510	.03550	-.02190	.56750
.959	140.990	8.97870	-.07670	-2.50950	.03740	.00920	-.00720	.56750
1.959	139.000	9.64080	.16260	-2.43630	.05700	.01240	-.01510	.56550
1.959	149.190	6.19040	-.80020	-2.84070	.01880	-.07210	-.01230	.57740
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM60 (R10003) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 23/ 1 RN/L = 6.80 GRADIENT INTERVAL = 145.00/155 00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	159.550	2.37640	-.21110	-2.52240	-.00660	-.00980	-.04110	.57410
3.480	157.580	2.66550	-.02100	-2.70470	-.00200	.00820	-.03440	.56750
3.480	155.560	3.26550	.14090	-2.77900	-.00670	.04450	-.03910	.56330
3.480	153.540	3.94410	.35840	-2.88290	-.00310	.03120	-.03510	.55940
3.480	151.500	4.42880	.50220	-2.91960	-.00640	.02810	-.05180	.55760
3.480	149.490	5.09120	.66030	-2.86760	-.00240	.01580	-.04200	.55630
3.480	147.430	5.78370	.14070	-2.43600	-.00680	.00290	-.03290	.56480
3.480	145.370	6.38560	.14180	-2.44700	.00810	-.03060	-.04280	.56500
3.480	143.350	7.06030	.18010	-2.46050	-.00250	-.03400	-.03770	.56470
3.480	141.290	7.83510	.31440	-2.46190	-.00640	-.04780	-.03820	.56360
3.480	139.350	8.48300	.59380	-2.44100	.01910	-.01120	-.04610	.56110
3.480	149.450	5.38310	-.00700	-2.40250	-.00240	-.04510	-.04330	.56690
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10004) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 38/ 1 RN/L = 4.80 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.591	119.140	11.12410	-3.63590	-1.54070	.69030	.91200	.00990	.59350
.591	117.190	11.28550	-3.02680	-1.29570	.56210	.53500	-.00520	.58870
.591	115.210	11.76870	-2.64800	-1.12100	.40670	.29740	-.02270	.58520
.591	113.210	12.01300	-1.74600	-.87670	-.05250	-.58820	.00120	.57870
.591	111.230	12.07290	-1.59020	-.66380	-.06640	-.65090	-.02570	.57760
.591	109.230	12.43060	-1.49130	-.40380	.06340	-.25250	.00280	.57660
.591	107.230	12.39670	-1.34470	-.23830	.00550	.41850	-.00320	.57570
.591	105.210	12.82560	-1.88170	-.10090	.05760	.11190	-.01150	.57880
.591	103.190	12.90430	-1.79050	.06360	.12650	-.12640	.00460	.57810
.591	101.230	12.68650	-1.02460	.25950	.10790	-.28110	.00170	.57340
.591	99.290	12.65660	-.40330	.42110	.24820	-1.02750	-.00220	.56940
.591	109.210	12.34090	-1.47430	-.39810	.00030	.19310	-.01590	.57660
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 37/ 2 RN/L = 6.10 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.895	118.760	13.51400	-5.42310	-1.32060	.01820	-.46640	.00140	.59960
.895	116.810	13.67550	-5.14350	-1.10500	.05240	-.22930	-.00950	.59750
.895	114.810	13.85830	-5.02830	-.89840	.06810	-.06410	-.00680	.59640
.895	112.820	14.14710	-4.82380	-.70210	.11020	-.09990	.01170	.59460
.895	110.840	14.44300	-4.45310	-.52240	.11050	-.05340	.00580	.59200
.895	108.870	14.56330	-3.77540	-.34110	.10880	-.06910	.00510	.58800
.895	106.890	14.86960	-2.92450	-.17210	.11230	-.09440	.00860	.58290
.895	104.910	14.89550	-2.09180	-.01730	.09320	-.09070	.00710	.57830
.895	102.940	15.13260	-1.10060	.11420	.10190	-.09720	.00290	.57280
.895	100.980	15.22070	.04240	.20790	.11560	-.06510	.01420	.56660
.895	99.090	15.38720	1.33530	.29480	.13480	-.00580	.00710	.55970
.895	108.840	14.57910	-3.86820	-.32390	.11740	-.06930	.00970	.58850
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10004) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 36/ 2 RN/L = 6.50 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.196	118.730	15.58520	-1.02240	-1.50640	.15100	.06270	-.00950	.57220
1.196	116.790	15.88250	-.84330	-1.31920	.14810	.04110	-.00420	.57120
1.196	114.790	16.20750	-.52860	-1.14100	.14130	.07810	-.00500	.56950
1.196	112.790	16.57600	-.21580	-.95770	.14180	.08660	.00810	.56790
1.196	110.800	16.95980	.20070	-.78930	.14750	.07180	-.00110	.56590
1.196	108.810	17.19060	.70830	-.63010	.15730	.07210	-.01240	.56350
1.196	106.830	17.50580	1.19020	-.47630	.15000	.08100	-.00700	.56130
1.196	104.840	17.83930	1.73920	-.33350	.14770	.05940	-.00780	.55890
1.196	102.850	18.08150	2.31680	-.20220	.14980	.08980	-.00980	.55640
1.196	100.870	18 29210	2.80160	-.07920	.15360	.13580	-.00470	.55430
1.195	98.920	18.51100	3.39230	.02810	.14430	.17420	-.01400	.55190
1.196	108.830	17.17790	.70720	-.61820	.16280	.07980	-.00180	.56350
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 43/ 1 RN/L = 6.25 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.461	118.810	15.52530	1 37360	-1.47550	.14580	-.05500	-.00530	.55960
1.461	116 900	15.87900	1.74760	-1.29300	.16260	-.05420	.00630	.55790
1.461	114.900	16.27120	1.98900	-1.10860	.15630	-.00470	.00420	.55690
1.461	112.900	16.65710	2.31960	-.94200	.17230	.04500	.00370	.55550
1.461	110.890	17.14820	2.67180	-.77990	.17110	.05860	.00360	.55410
1.461	108.890	17.46420	2.94290	-.62200	.17180	.05840	.00170	.55310
1.461	106.900	17.80790	3.38750	-.47870	.16490	.04480	.00490	.55130
1.461	104.910	18.08460	3.71900	-.34680	.17650	.05230	.00880	.55010
1.461	102.940	18.29670	4.02580	-.20840	.18800	.08980	.01440	.54890
1.461	100.920	18.51620	4.26770	-.08800	.17360	.02460	.00860	.54800
1.461	99.000	18.62090	4.68190	03130	.16580	.10460	.00790	.54630
1.461	108.890	17.44270	2.76140	-.62390	.16950	.02960	.00170	.55390
	GRADIENT	.00000	.00000	.00000	.00000	00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10004) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 44/ 1 RN/L = 7.11 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.947	118.860	14.57730	2.80400	-1.35290	.12510	.09590	.01200	.55110
1.947	116.930	15.03200	2.96300	-1.19320	.13190	.07620	.01480	.55080
1.947	114.900	15.45450	3.15120	-1.03820	.13240	.10000	.00410	.55020
1.947	112.920	15.92430	3.47450	-.89470	.13590	.08720	.01230	.54900
1.947	110.920	16.39570	3.77510	-.75040	.13720	.06150	.01220	.54800
1.947	108.910	16.68740	3.96950	-.59860	.13780	.06760	.01660	.54740
1.947	106.910	17.06430	4.20010	-.46230	.13230	.09190	.01930	.54680
1.947	104.890	17.30780	4.44980	-.34150	.13740	.09080	.00370	.54590
1.947	102.610	17.54430	-.24550	-.00990	.20900	.05150	.02950	.56800
1.947	100.920	17.79920	5.00380	-.09950	.13890	.08570	.01090	.54390
1.947	98.990	18.00210	5.35810	.01000	.13900	.08650	.00590	.54260
1.947	108.920	16.69260	4.05970	-.59870	.12740	.06180	.00810	.54700
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 47/ 3 RN/L = 6.70 GRADIENT INTERVAL = 105.00/115.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	119.090	14.50340	3.52840	-1.42580	.12600	.04220	.01210	.54700
3.480	117.170	14.97610	3.82970	-1.24450	.11990	.05200	.02040	.54600
3.480	115.160	15.18580	3.74160	-1.04370	.11960	.06170	.02520	.54670
3.480	113.160	15.63760	4.14140	-.86510	.12800	.08150	.03100	.54520
3.480	111.160	16.13850	4.45970	-.71000	.13830	.07040	.02370	.54430
3.480	109.150	16.57350	4.78070	-.55270	.13980	.09020	.03550	.54330
3.480	107.160	16.89680	5.10440	-.39580	.15050	.08060	.03910	.54220
3.480	105.160	17.30970	5.42340	-.26770	.16070	.07990	.03620	.54130
3.480	103.160	17.70310	5.74730	-.13840	.15490	.08000	.04520	.54030
3.480	101.160	17.92900	6.05520	-.03270	.15770	.09010	.04250	.53930
3.480	99.230	18.08930	6.40500	.06580	.16020	.09270	.08270	.53790
3.480	109.160	16.49250	4.74410	-.54580	.14850	.08300	.08850	.54340
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10005) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 39/ 4 RN/L = 4.76 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.592	139.130	4.58710	-5.56190	-2.36890	-.13980	-.15390	-.01760	.66570
.592	137.170	5.05200	-5.99900	-2.30260	-.16060	-.25150	-.00600	.66210
.592	135.150	5.69160	-6.16150	-2.27260	-.17570	-.16060	.01210	.65510
.592	133.130	6.57720	-6.18580	-2.23480	-.22310	.02400	-.01920	.64350
.592	131.150	7.65800	-4.97200	-2.22710	-.10030	.59500	.00470	.61980
.592	129.120	8.70920	-4.32770	-2.14310	.03580	1.41390	-.00190	.60740
.592	127.090	9.41740	-4.85530	-2.00950	.00040	1.45950	.02370	.60920
.592	125.050	10.05910	-6.06850	-1.88100	-.21300	1.14030	.02440	.61600
.592	123.060	10.52710	-5.20470	-1.68830	.08830	1.07320	.01880	.60760
.592	121.100	10.54500	-4.38840	-1.51010	.30960	1.05770	.02390	.60080
.592	119.140	11.00680	-3.82100	-1.33700	.23740	.47110	.00570	.59510
592	129.130	8.59290	-4.20880	-2.15080	.09510	1.06760	.01640	.60680
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 40/ 3 RN/L = 6.07 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.897	138.820	7.57680	-6.03990	-2.48440	.03670	- 04320	.15460	.63190
.897	136.830	8.34510	-6.48490	-2.41570	.06070	.02370	.13690	.63020
.897	134.810	8.92500	-6.39620	-2.30510	.09200	.14170	.14240	.62530
.897	132.790	9.68530	-6.57730	-2.17670	.13710	.10930	.15010	.62220
.897	130.740	10.60660	-6.98680	-2.10990	.05850	.04760	.12780	.62060
.897	128.680	11.28130	-7.18330	-1.98440	.07510	-.01150	.12170	.61880
.897	126.690	11.87580	-7.17530	-1.87020	.12220	.10520	.12080	.61550
.897	124.650	12.41520	-7.07570	-1.73970	.16870	.24290	.12790	61330
.897	122.640	12.91060	-7.16250	-1.56650	.16970	.14770	.13060	.61210
.897	120.620	13.19800	-6.92250	-1.39070	.08940	-.12760	.13220	.60960
.897	118.680	13.40800	-6.62120	-1.26180	.08990	-.04390	.13800	.60710
.897	128.680	11.40880	-7.17240	-1.99630	.07420	.00610	.11990	.61810
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10005) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 41/ 1 RN/L = 6.40 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.195	138.700	9.66800	-3.62150	-2.80020	.07480	.05920	.01350	.59740
1.195	136.730	10.54750	-3.32880	-2.69490	.07910	.09270	.01080	.59260
1.195	134.700	11.40150	-3.07720	-2.55640	.09460	.08880	.00760	.58680
1.195	132.680	12.15830	-2.75270	-2.42200	.07170	.09420	.00130	.585_
1.195	130.670	12.85320	-2.30410	-2.29690	.08890	.04870	.00870	.58150
1.195	128.650	13.50750	-2.00310	-2.16120	.09350	.06760	-.00440	.57890
1.195	126.650	14.22020	-1.70290	-2.02360	.11820	.02870	-.00190	.57660
1.195	124.630	14.71050	-1.70250	-1.86810	.12130	.06340	-.00660	.57630
1.195	122.610	15.09050	-1.76320	-1.71740	.14490	.06970	-.00560	.57640
1.195	120.570	15.50940	-1.61440	-1.56330	.15280	.09770	- 02220	.57530
1.195	118.540	15.84800	-1.15280	-1.44470	.13440	.04610	-.02250	.57280
1.195	128.650	13.59260	-1.98890	-2.15440	.09350	.04420	-.01830	.57880
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 42/ 1 RN/L = 6.22 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.469	138.780	9.81570	-1.44700	-2.75850	.09090	.05330	00250	.57850
1.469	136.820	10.54780	-1.14180	-2.61990	.08490	.02940	-.00510	.57570
1.469	134.800	11.21820	-.86090	-2.50820	.08480	.01330	.00510	.57310
1.469	132.780	11.85360	-.65050	-2.40140	.08450	.05350	-.00470	.57130
1.469	130.760	12.50160	-.38530	-2.26490	.10280	.02980	-.01040	.56930
1.469	128.740	13.19980	-.12190	-2.11120	.11430	.01360	-.00500	.56768
1.469	126.720	13.79470	.11690	-1.99730	.10790	.05430	-.01080	.56610
1.469	124.700	14.41500	.43990	-1.87410	.10710	.05930	-.02180	.56430
1.469	122.700	14.92900	.86410	-1.73380	.11780	.02280	-.02230	.56210
1.469	120.700	15.37190	1.39140	-1.63810	.12780	-.02660	-.01040	.55940
1.469	118.760	15.78130	1.73330	-1.45410	.12750	-.02720	-.02010	.55790
1.469	128.730	13.29220	-.18200	-2.10920	.10880	.01990	-.00900	.56790
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (P10005) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 45/ 1 RN/L = 7.22 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.967	138.830	9.12810	.53210	-2.39220	.07230	.[illegible]480	-.00130	.56210
1.967	136.890	9.61230	.65290	-2.33320	.08500	.06590	.00610	.56130
1.967	134.870	10.32430	.96480	-2.26680	.10360	.06280	.00160	.55920
1.967	132.850	10.89760	1.26820	-2.18830	.09160	.09210	.00370	.55730
1.967	130.830	11.62910	1.62140	-2.11890	.10510	.08380	.00660	.55550
1.967	128.820	12.16350	1.98520	-2.02780	.10290	.09470	.00610	.55350
1.967	126.790	12.82520	2.16380	-1.96560	.11320	.11400	-.05200	.55310
1.967	124.790	13.29060	2.72290	-1.87630	.11340	.11580	.00330	.55010
1.967	122.780	13.78430	2.89910	-1.70380	.11480	.07770	.00800	.54970
1.967	120.760	14.28490	3.06990	-1.52240	.11080	.07660	.00660	.54930
1.967	118.790	14.75050	3.16350	-.35060	.11820	.05640	-.00020	.54930
1.967	128.820	12.29660	1.33450	-2.04210	.12140	.05820	.00860	.55400
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 46/ 5 RN/L = 6.70 GRADIENT INTERVAL = 125.00/135.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	139.060	8.23670	.46590	-2.51700	.10170	.00090	.00450	.56220
3.480	137.120	8.88090	.76310	-2.49320	.09520	.01840	.00620	.55980
3.480	135.100	9.55730	1.23760	-2.50260	.08650	.03520	-.01360	.55630
3.480	133.120	10.08990	1.83680	-2.56960	.10090	.05380	-.00970	.55200
3.480	131.110	10.73730	2.15040	-2.40520	.12870	-.03620	-.00060	.55050
3.480	129.090	11.39760	2.42640	-2.22940	.12160	.00120	-.00550	.54950
3.480	127.070	12.10210	2.62040	-2.08030	.12390	.01830	.00110	.54920
3.480	125.060	12.54220	2.74500	-1.91560	.12020	.02750	-.00040	.54900
3.480	123.040	13.26780	2.97810	-1.75940	.12250	.02550	.00780	.54850
3.480	121.030	13.94510	3.37160	-1.60710	.13060	.03450	.02450	.54710
3.480	119.080	14.54270	3.60820	-1.44150	.14150	.[illegible]310	.02790	.54660
3.480	129.090	11.42800	2.38570	-2.22360	.10550	.0[illegible]190	.01590	.54980
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10006) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 57/ 2 RN/L = 4.86 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.597	160.060	1.57130	-3.35680	-1.83720	-.7170	-.61940	.08440	.74110
597	158.100	1.84570	-3.62970	-1.94730	-.15720	-.54250	.08460	.72770
597	156.110	2.03450	-3.84560	-2.09340	-.18250	-.50160	.07480	.72100
.597	154.100	2.27330	-3.989[illegible]	-2.22600	-.15540	-.53640	.09230	.71000
.597	152.070	2.49630	-4.110[illegible]	-2.37350	-.16850	-.45850	.11080	.70110
597	150.060	2.78460	-4.31630	-2.47700	-.16820	-.41560	.10700	.69330
.597	148.040	2.95270	-4.77930	-2.5181[illegible]	-.15230	-.35710	.11030	.69890
.597	146.010	3.48300	-5.19660	-2.5095	-.16170	-.32990	.10090	.68840
.597	143.990	3.77260	-5.64760	-2.4962	-.14480	-.30200	.09830	.68890
.597	141.970	4.16870	-6.04180	-2.4586	-.13130	-.14810	.0926.0	.68510
.597	140.000	4.48160	-6.31900	-2.43309	-.11930	-.36970	.10660	.68180
.597	150.080	2.78170	-4.30980	-2.48130	-.15510	-.41520	.10580	.69320
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO 58/ 1 RN/L = 6.11 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.901	160.030	1.70050	-1.61780	-2.36930	-.09180	-.30510	-.00760	.64440
.901	158.070	1.95950	-1.86730	-2.36160	-.08190	-.30760	-.00760	.64460
.901	156.060	2.26380	-2.14320	-2.40120	-.09400	-.29130	-.02210	.64410
.901	154.020	2.63370	-2.48580	-2.48130	-.08900	-.31940	.00030	.64380
.901	151.980	3.15490	-2.86230	-2.50030	-.07290	-.23330	-.00850	.64080
.901	149.940	3.61080	-3.25020	-2.64260	-.04730	-.20200	-.02750	.64030
.901	147.880	4.10750	-3.99460	-2.66230	-.03150	-.23520	-.01430	.64620
.901	145.800	4.81140	-5.02000	-2.66120	-.04030	-.04200	-.01420	.65190
.901	143.740	5.60430	-5.64180	-2.63900	-.00540	-.03920	-.00660	.64890
.901	141.690	6.37670	-6.43920	-2.58720	-.01220	-.07370	-.01100	.64920
.901	139.660	7.05700	-7.11460	-2.52700	.01010	-.10670	.00130	.64910
901	149.960	3.58740	-3.20040	-2.63340	-.04020	-.21950	-.01220	.63960
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS. NBREM90 (R10008) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 59/ 3 RN/L = 6.66 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.199	160.000	2.62860	-1.90420	-2.96250	-.00570	-.04640	-.02550	.62590
1.199	157.990	3.14080	-2.48220	-2.94810	.02960	-.02850	-.00890	.63130
1.199	155.900	3.63450	-3.25820	-2.94870	.04240	.03970	-.01420	.64000
1.199	153.830	4.18290	-4.03650	-2.96320	.06330	.01820	-.01990	.64550
1.199	151.780	4.82800	-4.23650	-3.00140	.04970	.10300	-.01530	.63840
1.199	149.740	5.54740	-4.37530	-3.02580	.07380	.07600	-.00400	.63120
1.199	147.680	6.06780	-4.82220	-3.01180	.07300	.03440	-.01120	.63170
1.199	145.620	6.76790	-5.20640	-2.97700	.08790	.02240	-.00340	.62960
1.199	143.560	7.68780	-5.16100	-2.90190	.09650	.01050	-.00500	.62160
1.199	141.550	8.45070	-4.83670	-2.83930	.02400	-.25810	-.01240	.61350
1.199	139.520	9.37570	-4.54370	-2.77670	-.04920	-.49710	-.00710	.60640
1.199	149.750	5.49570	-4.36180	-3.03360	.07550	.01090	.00970	.63160
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 52/ 2 RN/L = 6.49 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.460	159.960	2.85170	-2.07260	-2.88570	-.00650	.07430	-.01240	.62610
1.460	157.960	3.43730	-2.51740	-2.91880	-.00560	.19100	-.00740	.62660
1.460	155.900	4.05130	-2.96270	-2.91510	.06800	.19260	-.00930	.62650
1.460	153.840	4.54340	-3.29300	-2.91580	.07710	.17390	-.01940	.62600
1.460	151.770	5.20490	-3.48320	-2.94330	.05980	.17710	-.00740	.62140
1.460	149.750	5.85200	-3.48570	-2.98060	.06520	.10900	-.00310	.61540
1.460	147.700	6.53740	-3.45330	-2.99770	.06780	-.10140	-.00070	.60990
1.460	145.660	7.38010	-3.24150	-2.98320	.05390	-.22740	-.02100	.60270
1.460	143.590	8.25070	-2.98110	-2.95190	.01740	-.18770	-.01310	.59630
1.460	141.570	9.02640	-2.64400	-2.88610	.02720	-.16200	-.01560	.59070
1.460	139.600	9.71970	-2.33590	-2.80070	.05550	-.15720	-.01350	.58640
1.460	149.740	5.88420	-3.57350	-2.96070	.03730	.10140	-.00730	.61640
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10006) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 51/ 2 RN/L = 7.54 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.959	159.970	2.82040	-1.18020	-2.68720	.05720	.02600	-.01270	.60100
1.959	157.990	3.21990	-1.41460	-2.72470	.03390	.02270	-.01360	.60270
1.959	155.950	3.77700	-1.37800	-2.79600	.08640	.04980	-.01540	.59660
1.959	153.900	4.31700	-1.38010	-2.78670	.08950	.05300	-.01360	.59290
1.959	151.960	4.93790	-1.23870	-2.80330	.09230	-.01190	-.02280	.58730
1.959	149.820	5.68130	-.97620	-2.80530	.11320	-.08880	-.02010	.58080
1.959	147.800	6.35260	-.73720	-2.86280	.10780	-.07300	-.01730	.57630
1.959	145.770	7.04160	-.39740	-2.89280	.09950	.00970	-.01780	.57140
1.959	143.740	7.67770	-.11740	-2.88710	.09210	.06900	-.01680	.56810
1.959	141.680	8.39600	-.18950	-2.66340	.11540	.05940	-.02020	.56870
1.959	139.680	9.06610	-.22390	-2.44850	.11410	.02000	-.02060	.56890
1.959	149.820	5.67010	-1.00640	-2.80710	.10500	-.12540	-.00600	.58130
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 48/ 3 RN/L = 6.78 GRADIENT INTERVAL = 145.00/155.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	160.060	2.37390	-.27270	-2.56120	.01310	-.12700	-.00020	.57620
3.480	158.110	2.75970	-.06620	-2.75470	.00120	-.10990	-.00800	.56880
3.480	156.090	3.16390	.02220	-2.85610	.01420	-.07330	-.01380	.56630
3.480	154.090	3.68310	.16950	-2.95610	.04040	.03230	-.01170	.56310
3.480	152.050	4.36080	.34770	-3.00250	.06840	.01940	.00100	.56030
3.480	150.020	4.90840	.50900	-2.98710	.06460	.01700	.00000	.55840
3.480	147.970	5.67020	.00800	-2.52100	.07650	-.02550	.01050	.56670
3.480	145.960	6.28190	.02990	-2.54730	.09000	-.00970	.00130	.56640
3.480	143.930	6.86290	.11150	-2.55580	.09490	-.00320	-.00630	.56550
3.480	141.880	7.50750	.16970	-2.56370	.09310	-.04550	.00670	.56500
3.480	139.920	8.08880	.15200	-2.55370	.09950	-.04910	.00010	.56530
3.480	149.980	5.24840	-.11740	-2.49250	.07090	-.00420	-.00020	.56870
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10007) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 56/ 3 RN/L = 4.95 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.599	150.110	2.75730	-4.01240	-2.41940	.04660	.07990	-.01620	.68550
.599	148.160	2.88290	-4.41410	-2.43880	.06180	.17110	-.00800	.69170
.599	146.130	3.32340	-4.78850	-2.42320	.05750	-.03410	.00380	.68440
.599	144.090	3.71280	-5.21910	-2.40660	.05110	-.11650	-.01170	.68150
.599	142.080	3.88040	-5.69560	-2.32970	.08730	.17740	.00140	.68660
.599	140.070	4.28060	-6.16950	-2.31170	.09140	.20610	.00810	.68440
.599	138.050	4.56940	-6.68050	-2.25040	.12310	.17010	.00210	.68610
.599	136.030	4.97500	-6.98490	-2.21890	.17990	.53910	-.00290	.68140
.599	134.000	5.44400	-6.94860	-2.18200	.11450	1.03370	.00570	.67090
.599	132.010	6.36480	-6.31380	-2.13170	-.10160	.61230	-.01530	.64770
.599	130.030	7.72700	-5.65320	-2.06300	.01920	1.33780	-.03060	.62650
.599	140.07	4.29310	-6.18150	-2.30020	.06570	.21910	.00060	.68430
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 55/ 3 RN/L = 6.10 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.896	149.840	3.58220	-2.89280	-2.60920	-.01640	-.18340	.00060	.63280
.896	147.830	4.00710	-3.59240	-2.64520	-.02470	-.15070	.01980	.64000
.896	145.750	4.86230	-4.46470	-2.64950	-.00310	-.05800	.00140	.64180
.896	143.690	5.66180	-5.12670	-2.62210	.00380	-.11050	.01180	.64070
.896	141.640	6.40420	-5.83840	-2.56410	-.00380	-.14500	.00230	.64120
.896	139.590	6.95670	-6.58550	-2.50780	.07020	-.07540	.01150	.64410
.896	137.530	7.82290	-6.98600	-2.44320	.11580	-.00890	.01110	.63970
.896	135.480	8.53980	-7.25530	-2.36250	.11580	.03250	.00710	.63620
.896	133.440	9.42730	-7.27110	-2.23170	.13640	-.01790	.00840	.62980
.896	131.400	10.17720	-7.42400	-2.15190	.01300	.08060	.01870	.62640
.896	129.420	10.90630	-7.55840	-2.06200	.02490	-.12690	.00540	.62340
.896	139.570	7.16050	-6.49710	-2.48530	.08170	-.01400	-.00090	.64090
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10707) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 54/ 2 RN/L = 6.64 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.199	149.780	5.40050	-3.61600	-3.04470	.08350	.04980	-.01690	.62140
1.199	147.770	6.17320	-3.93610	-3.04490	.08480	-.01490	-.01940	.61880
1.199	145.720	6.81160	-4.27090	-3.00900	.10080	-.00440	-.01360	.61800
1.199	143.650	7.55360	-4.34530	-2.93430	.12250	.02130	-.00710	.61380
1.199	141.610	8.44020	-4.09070	-2.87190	.06030	-.15960	-.01170	.60640
1.199	139.590	9.39380	-3.69870	-2.81370	-.00690	-.45790	-.00980	.59890
1.199	137.540	10.34230	-3.47760	-2.73600	-.04880	-.47660	-.01160	.59430
1.199	135.510	11.10250	-3.24500	-2.59880	-.01490	-.37610	-.01450	.59070
1.199	133.470	11.96760	-3.10490	-2.44890	.03700	-.24680	-.00980	.58800
1.199	131.430	12.54830	-3.12140	-2.32130	.06820	-.12420	-.01320	.58710
1.199	129.440	13.16910	-3.34560	-2.18860	.09860	-.11310	-.01350	.58760
1.199	139.580	9.47840	-3.81440	-2.81910	-.01160	-.46730	-.01240	.59970
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 53/ 2 RN/L = 6.49 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.460	149.760	5.88560	-3.01770	-2.96440	.08510	.00270	-.01950	.60860
1.460	147.770	6.63290	-3.02850	-2.99760	.05570	-.07960	-.01490	.60410
1.460	145.710	7.39850	-2.85920	-2.99640	.04970	-.25500	-.02340	.59840
1.460	143.680	8.24010	-2.54330	-2.95850	.01990	-.27900	-.01040	.59200
1.460	141.650	8.94410	-2.27250	-2.90510	.02520	-.26040	-.02280	.58760
1.460	139.640	9.69740	-1.86300	-2.83390	.06310	-.23420	-.02030	.58250
1.460	137.610	10.50990	-1.41310	-2.67110	.06290	-.11540	-.02710	.57780
1.460	135.590	11.27030	-1.02210	-2.54780	.07770	-.08890	-.02260	.57420
1.460	133.550	11.96410	-.85700	-2.41960	.10180	-.08420	-.01600	.57270
1.460	131.500	12.57930	-1.04710	-2.30560	.11900	-.06630	-.01610	.57360
1.460	129.510	12.94380	-1.60340	-2.14340	.12460	-.06890	-.00350	.57690
1.460	139.630	9.79710	-1.93920	-2.82890	.05830	-.24920	-.01850	.58300
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90 (R10007) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 50/ 2 RN/L = 7.54 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.959	149.820	5.66010	-.97790	-2.86220	.11380	-.08860	-.00710	.58090
1.959	147.840	6.38480	-.77410	-2.90110	.10160	.00000	-.01360	.57670
1.959	145.810	7.03330	-.49610	-2.92560	.09090	-.00250	-.01190	.57260
1.959	143.780	7.69320	-.09420	-2.89080	.11340	.00760	-.01120	.56780
1.959	141.720	8.40540	.00740	-2.67590	.10870	.03590	-.01490	.56680
1.959	139.690	9.15280	.11800	-2.46310	.13110	-.03410	-.00550	.56580
1.959	137.680	9.74070	.38360	-2.38510	.14540	-.03630	-.00900	.56360
1.959	135.640	10.34420	.68490	-2.31400	.14440	-.04400	-.00120	.56140
1.959	133.610	11.06390	1.01090	-2.23990	.13180	-.00370	-.01030	.55940
1.959	131.570	11.69260	1.22330	-2.16520	.14620	.00630	-.00210	.55830
1.959	129.630	12.28350	1.48820	-2.08630	.15410	.05930	-.00720	.55690
1.959	139.700	9.24460	.11520	-2.43980	.13540	-.02210	-.00390	.56580
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 49/ 4 RN/L = 6.80 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	149.900	4.90820	-.14730	-2.46130	.04790	.00680	-.01950	.56930
3.480	147.910	5.57430	-.06780	-2.49200	.05250	.02280	-.02290	.56780
3.480	145.880	6.20510	-.00720	-2.51420	.06580	.02860	-.03660	.56690
3.480	143.860	6.81700	.11330	-2.52600	.08640	.02580	-.02920	.56550
3.480	141.840	7.38500	.15570	-2.53590	.09210	.02290	-.02540	.56510
3.480	139.830	8.07650	.21360	-2.52050	.09710	.02810	-.04900	.56470
3.480	137.800	8.76980	.41020	-2.48970	.10020	.02570	-.03530	.56300
3.480	135.800	9.30070	.86920	-2.48820	.09220	.03440	-.03310	.55920
3.480	133.790	9.80570	1.44780	-2.59140	.10690	.05240	-.03450	.55490
3.480	131.770	10.67410	1.85690	-2.45820	.13210	.00060	-.03480	.55260
3.480	129.820	11.23550	2.11550	-2.28820	.13430	.00900	-.03760	.55150
3.480	139.820	8.22060	.18840	-2.51810	.08940	-.00120	-.02470	.56500
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMO (R10008) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 1/ 1 RN/L = .98 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.598	169.560	.50200	-1.13540	-1.48730	.19730	-.12210	.06800	.75130
.596	167.580	.70310	-1.54450	-1.56160	.17610	-.11030	.04470	.74600
.598	165.550	.87850	-1.88890	-1.62820	.16680	-.09640	.06150	.74220
.598	163.500	1.37200	-2.36380	-1.68850	.14760	-.11660	.08340	.70740
.598	161.480	1.49870	-2.70800	-1.73500	.15050	-.07230	.07160	.71420
.598	159.440	1.78320	-2.81300	-1.83310	.16380	-.05980	.06070	.69550
.598	157.410	2.29000	-2.84850	-1.94150	.19990	-.03170	.07060	.66830
.598	155.420	2.41770	-2.88370	-2.05990	.20030	-.03320	.07030	.66410
.598	153.370	2.88310	-2.87620	-2.20830	.15980	.02560	.05900	.64820
.599	151.340	3.21730	-2.81860	-2.34820	.17940	.19730	.09890	.63830
.598	149.360	3.68850	-2.95720	-2.43340	.19950	.45990	.07280	.63220
.598	149.360	3.68850	-2.95720	-2.43340	.19950	.45990	.07280	.63220
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 2/ 0 RN/L = 6.30 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.903	169.480	.92210	-.11560	-2.00470	.03920	.04570	-.02000	.57710
.903	167.470	1.26280	-.56160	-2.09500	.03650	.05070	-.01930	.60310
.903	165.420	1.50420	-.97100	-2.18290	.04180	.02950	-.01680	.61950
.903	163.370	1.76420	-1.29220	-2.27140	.04460	.06290	-.01960	.62660
.903	161.320	2.03190	-1.64910	-2.33780	.01840	.07780	-.02770	.63300
.903	159.270	2.31020	-1.94610	-2.36120	.02190	.05680	-.02060	.63550
.903	157.180	2.68900	-2.19830	-2.36710	.04670	.03580	-.01550	.63350
.903	155.140	3.00610	-2.62620	-2.41090	.07150	.12310	-.01970	.63810
.903	153.050	3.50870	-3.03020	-2.46550	.11550	.29060	-.02380	.63730
.903	150.980	3.89870	-3.46300	-2.53820	.01350	.08760	-.01510	.63930
.903	148.910	4.49860	-4.38310	-2.59110	.08910	.15390	-.01070	.64630
.903	159.200	2.49750	.07800	-2.44840	.03770	.07400	-.01870	.63470
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMO (R10008) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 3/ 0 RN/L = 6.70 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
[illegible]46	169.350	.88990	-1.70020	-2.53310	.04450	-.04820	-.01460	.72270
[illegible]	167.350	1.15800	-1.95930	-2.60000	.06480	-.02920	-.02150	.70480
[illegible]	165.280	1.42680	-2.30850	-2.66440	.08620	-.00970	-.00860	.69880
1.196	163.210	1.82460	-2.71280	-2.72260	.04420	-.10230	-.00760	.68810
1.196	161.080	2.28600	-3.21700	-2.78110	.04250	-.07010	-.00940	.68160
1.196	158.950	2.93020	-3.70870	-2.82270	.06950	-.00920	-.00870	.67010
1.196	156.820	3.49610	-4.19350	-2.81440	.06410	.14120	-.00930	.66470
1.196	154.710	4.23370	-4.31100	-2.85760	.10570	.14380	-.01400	.64990
1.196	152.540	5.08630	-4.33420	-2.90420	.12250	.09330	-.02030	.63630
1.196	150.380	6.03600	-4.36310	-2.97110	.16110	.13910	-.02200	.62580
1.196	148.320	6.85830	-4.30080	-2.98830	.12640	-.06430	-.01800	.61800
1.196	158.850	3.16620	-3.85430	-2.85140	.08870	-.01190	-.01780	.66610
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 4/ 0 RN/L = 6.46 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.461	169.400	.76420	-1.42360	-2.58590	.02860	-.02440	-.01230	.71880
1.461	167.350	1.14050	-1.70510	-2.61570	.06580	-.02020	-.00010	.68880
1.461	165.280	1.43390	-2.02990	-2.66670	.07600	-.05920	-.00430	.68230
1.461	163.190	1.91350	-2.41210	-2.70780	.10130	.00010	-.01130	.66970
1.461	161.040	2.54650	-2.78360	-2.76090	-.01490	-.12560	-.01240	.65600
1.461	158.920	3.14180	-3.05410	-2.83790	-.00500	.01260	-.00340	.64610
1.461	156.760	4.01300	-3.14480	-2.85710	.04020	-.00020	-.00720	.63080
1.461	154.650	4.74750	-2.89480	-2.86290	.04530	.03220	-.00530	.61660
1.461	153.340	94170	-2.43330	-2.76270	.06530	.18380	-.00120	.77760
1.461	150.400	6.37950	-2.19790	-2.93950	.06490	.07540	.00170	.59490
1.461	148.330	7.20100	-1.97580	-2.99690	.10050	.06340	-.01060	.59920
1.461	158.840	3.42280	-2.97260	-2.84670	.02630	.07540	-.00120	.63770
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMU (R10008) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 5/ 0 RN/L = 7.39 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.964	169.360	.80530	-1.05680	-2.42460	.03180	-.18430	-.04050	.67390
1.964	167.350	1.10760	-1.20100	-2.49700	-.07490	-.09550	-.08250	.65530
1.964	165.220	1.69070	-1.33980	-2.47690	-.23320	-.63330	-.04280	.63150
1.964	163.130	2.24410	-1.28150	-2.51010	.01340	-.11410	-.06320	.61340
1.964	160.990	2.84690	-1.16370	-2.58330	-.09230	-.04800	-.04240	.60020
1.964	158.880	3.45860	-.99660	-2.62230	-.01110	.16420	-.03110	.59030
1.964	156.780	4.00690	-.74190	-2.72760	.09380	-.01160	-.04240	.58190
1.964	154.670	4.66860	-.51520	-2.76980	.08870	-.00240	-.04520	.57580
1.964	152.550	5.35210	-.23700	-2.79930	.09200	.04420	-.03920	.57040
1.964	150.410	6.09920	-.02420	-2.80170	.10200	.02240	-.03060	.56720
1.964	148.340	6.81050	.15630	-2.85580	.09040	.11710	-.04430	.56500
1.964	58.810	3.70380	-.89120	-2.70640	-.00320	.17120	-.04700	.58650
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 6/ 1 RN/L = 6.74 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	169.470	.80610	-.04490	-.45380	-.00140	.02150	-.01990	.57140
3.480	167.470	1.26180	-.03680	-2.42250	.04300	-.02130	-.01670	.56920
3.480	165.480	1.56840	.19200	-2.45590	.04650	.00690	-.02100	.55680
3.480	163.390	2.01920	.27710	-2.50690	.04410	.00440	-.02160	.55560
3.480	161.360	2.47310	.40260	-2.56480	.07350	.00120	-.03560	.55350
3.480	159.300	2.93950	.52750	-2.64250	.07000	.01900	-.02260	.55220
3.480	157.270	3.27690	.73480	-2.82130	.07500	.00670	-.02900	.54850
3.480	155.220	3.84290	.71860	-2.91910	.08160	.01250	-.03650	.55160
3.480	153.140	4.43950	.77990	-3.00870	.08740	-.00070	-.03200	.55250
3.480	151.050	4.98660	.74340	-3.01550	.07790	.00560	-.03790	.55470
3.480	149.040	5.58340	.82500	-3.00280	.09060	.01300	-.02520	.55480
3.480	159.250	3.05010	.54330	-2.78450	.05380	.01680	-.04280	.55230
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S (R10009) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 33/ 0 RN/L = 4.96 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.595	150.410	2.94370	-4.15220	-2.27190	.23180	.38970	-.06800	.68190
.595	148.440	3.28530	-4.48970	-2.32830	.22300	.38760	-.06650	.67830
.595	146.420	3.64730	-4.85120	-2.31410	.22810	.32160	-.06830	.67530
.595	144. 00	3.84160	-5.34390	-2.30180	.27540	.22450	-.07850	.68030
.595	142.380	4.34290	-5.72610	-2.26280	.23960	.22020	-.07410	.67440
.595	140.370	4.58350	-6.09940	-2.23590	.19310	.20280	-.07590	.67540
.595	138.350	5.19450	-6.40900	-2.19280	.13690	-.05270	-.06390	.66750
.595	136.330	5.52810	-6.69260	-2.15230	.09210	-.22780	-.06810	.66540
.595	134.310	6.29522	-6.97880	-2.10830	-.03330	-.27730	-.03600	.65720
.595	132.300	7.03090	-6.67820	-2.07500	-.10950	-.06180	-.06040	.64430
.595	130.360	7.99520	-5.39960	-2.07700	.02260	.01530	-.06860	.62190
.595	140.360	4.81230	-6.15230	-2.23150	.07860	.13880	-.06030	.67110
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 34/ 1 RN/L = 6.24 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.899	150.250	3.47950	-3.17410	-2.54530	.11060	-.00020	-.01070	.64120
.899	148.270	4.02530	-3.83910	-2.59830	.10990	.01210	-.01530	.64460
.899	146.180	4.64800	-4.86270	-2.58280	.09800	.03210	-.02300	.65220
.899	144.170	5.41090	-5.61390	-2.56310	.08170	.07260	-.00910	.65150
.899	142.090	6.15250	-6.25390	-2.51320	.05910	.00180	-.01420	.64970
.899	140.030	6.93730	-6.90530	-2.47140	.04150	.04090	-.00540	.64800
.899	137.980	7.81870	-7.30540	-2.40730	.05030	.07220	-.00420	.64300
.899	135.940	8.65360	-7.52270	-2.34130	.06990	.18470	-.00730	.63770
.899	133.920	9.32110	-7.32480	-2.19650	.14620	.21010	.00150	.63090
.899	131.870	10.02570	-7.84590	-2.10730	.22370	-.01510	-.01260	.63070
.899	129.870	10.72380	-8.19650	-1.99710	.09420	-.14660	-.00430	.62920
.899	140.040	6.87030	-7.02540	-2.46740	.02110	.00520	-.00970	.65020
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S (R10009) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 35/ 1 RN/L = 6.65 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.198	150.000	5.32330	-5.28460	-2.91280	.06830	.06760	-.01030	.64780
1.198	148.000	6.04430	-5.37670	-2.93670	.06220	.02600	-.01110	.63940
1.198	145.950	6.79360	-5.72620	-2.91280	.08760	.05890	.00720	.63560
1.198	143.920	7.63720	-5.83190	-2.85270	.07720	-.07250	-.00470	.62910
1.198	141.880	8.45530	-5.85470	-2.78400	.09590	-.19530	-.00450	.62330
1.198	139.840	9.19000	-5.86630	-2.71330	.11150	-.19820	.00860	.61890
1.198	137.790	10.13640	-5.85640	-2.63510	.12940	-.08500	.00220	.61400
1.198	135.750	10.80290	-5.88010	-2.50920	.16170	-.00720	-.00500	.61120
1.198	133.720	11.55580	-5.81750	-2.37210	.17580	.00440	.00240	.60780
1.198	131.690	12.13810	-5.67560	-2.24940	.19460	.03890	.00350	.60480
1.198	129.720	12.87200	-5.55390	-2.13190	.21650	-.03000	.00590	.60200
1.198	133.830	9.23740	-5.84750	-2.71280	.08740	-.21350	-.00390	.61850
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 28/ 1 RN/L = 6.40 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.459	150.030	6.05200	-3.02630	-2.91440	.09560	.03060	-.02310	.60760
1.459	148.070	6.67180	-2.81540	-2.95700	.10310	.01290	-.03200	.60130
1.459	146.020	7.47460	-2.89750	-2.96970	.12460	.02970	-.02930	.59850
1.459	143.980	8.31980	-2.76130	-2.91760	.14300	.03310	-.02210	.59390
1.459	141.950	9.03800	-2.68010	-2.86120	.15050	.05130	-.01500	.59100
1.459	139.930	9.79750	-2.57440	-2.80140	.16470	.02610	-.01990	.58830
1.459	137.910	10.52130	-2.33630	-2.65440	.16970	.05210	-.02140	.58490
1.459	135.870	11.13380	-2.32650	-2.51380	.17320	.04230	-.02210	.58390
1.459	133.830	11.83580	-2.36560	-2.40560	.19560	.00340	-.01820	.58310
1.459	131.800	12.49470	-2.36940	-2.30310	.21560	.03550	.02450	.58230
1.459	129.830	13.06090	-2.00170	-2.17830	.20170	.08490	-.01550	.57930
1.459	139.930	9.77020	-2.61290	-2.79730	.17110	.01240	-.00380	.58860
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S (R10009) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 27/ 0 RN/L = 7.34 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.952	150.180	5.75120	-.40980	-2.62920	.09720	.03260	.02410	.57260
1.952	148.210	6.37800	-.19260	-2.65960	.11240	.04660	-.01030	.56930
1.952	146.180	7.04690	.04730	-2.66750	.11180	.05590	-.01040	.56630
1.952	144.150	7.76740	.23600	-2.67570	.11190	.05300	.00030	.56440
1.952	142.110	8.41460	.39840	-2.47700	.12680	.07490	-.01110	.56310
1.952	140.070	9.18890	.47430	-2.28710	.14320	.05380	-.00630	.56260
1.952	138.050	9.82440	.75180	-2.24570	.14090	.11260	-.00730	.56060
1.952	136.040	10.46890	1.03680	-2.18520	.15560	.07300	-.01110	.55880
1.952	134.000	11.23680	1.50180	-2.13310	.17790	.01600	.00440	.55590
1.952	131.980	11.86620	1.96820	-2.08690	.17690	.09320	.00000	.55330
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 24/ 2 RN/L = 6.80 GRADIENT INTERVAL = 35.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	150.400	4.85760	.35150	-2.27220	.10570	.01070	.00040	.56090
3.480	148.410	5.60050	.50670	-2.29490	.10170	-.00300	-.00510	.55940
3.480	146.400	6.16650	.60900	-2.32070	.10630	.01300	-.01900	.55880
3.480	144.370	6.91160	.66580	-2.32980	.12770	-.00070	-.01590	.55900
3.480	142.350	7.54110	.70650	-2.33010	.12460	.01620	-.00280	.55920
3.480	140.320	9.25320	.80350	-2.30050	.13740	.00270	-.00440	.55890
3.480	138.310	8.91510	1.04080	-2.29520	.13200	.00920	-.01740	.55750
3.480	136.310	9.55800	1.31870	-2.31900	.14220	.01640	-.01620	.55560
3.480	134.290	10.02950	1.88150	-2.39390	.14090	.04510	-.01690	.55150
3.480	132.280	10.66420	2.29880	-2.31960	.14970	.03390	-.00890	.54920
3.480	130.330	11.27480	2.51490	-2.15220	.16110	.01180	-.02010	.54860
3.480	140.320	8.21880	.80410	-2.32470	.11310	.01260	-.00850	.55880
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S (R10010) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 32/ 0 RN/L = 4.98 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.598	170.580	.36700	-.83100	-1.41000	.05430	-.10910	-.03950	.75150
.598	168.600	.70180	-1.37940	-1.49800	.04820	-.12910	-.03480	.72720
.598	166.580	.82320	-1.92300	-1.56470	-.04790	-.11680	-.05140	.75740
.598	164 570	1.04370	-2.34560	-1.60890	-.04230	-.11800	-.0332C	.75010
.598	162.550	1.40020	-2.94480	-1.65880	-.02230	-.13830	-.03960	.73840
.598	160.530	1 55520	-3.29250	-1.72460	-.00750	-.06240	-.02210	.73950
.598	158.520	1.92160	-3.59690	-1.82720	.02050	-.05180	-.04190	.71950
.598	156.530	2.01430	-3.76900	-1.92990	.00620	.10230	-.03800	.71950
.598	154.500	2.43960	-3.92380	-2.05500	.08430	.06830	- 02530	.69800
.598	152.490	2.63550	-3.97510	-2.18790	.09420	.19020	-.02950	.68990
.598	150.550	2.74890	-4.18400	-2.29300	.06930	.28230	-.05240	.69100
.598	160.540	1.51730	-3.33380	-1.75030	.07060	-.11000	-.02430	.74610
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 31/ 1 RN/L = 6.33 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.900	170.560	.62250	15260	-1.80870	.07310	.09600	-.02260	.54680
.900	168.600	.74280	-.21600	-1.91240	.09070	.16600	-.02970	.59060
.900	166.570	1.07960	-.65380	-2.01660	.08940	.13490	-.04050	.61620
.900	164.550	1 27580	-.98220	-2.10850	.07720	.14000	-.02940	.62960
.900	162 500	1.65220	-1.34200	-2.19040	.10420	.09970	-.02740	.63310
.900	160.500	1.85950	-1.78570	-2.22730	.09360	.13310	-.02830	.64520
.900	158.480	2.05560	-2.12050	-2.21100	.10360	.17660	-.02720	.65100
.900	156.450	2 34580	-2.40740	-2.23240	.12930	.16460	-.03260	.65050
900	154.430	2.67680	-2.82080	-2.27840	.14910	.14290	-.02640	.65280
.900	152.390	3 20630	-3.20700	-2.32540	.17560	.12010	-.02600	.64840
.900	150.420	3.54040	-3.55350	-2.39390	.15630	.14420	-.03100	.64870
900	160 500	1.85220	-1.82710	-2.23150	.11720	.11500	-.02850	.64730
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA 4F(A)) STING EFFECTS, NBREM90S (R100!0) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 30/ 0 RN/L = 6.42 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.195	170.520	.66890	-1.11730	-2.29520	.10690	.08230	-.01720	.70310
1.195	168.530	.96300	-1.51500	-2.35540	.11790	.06370	-.02340	.69520
1.195	166.490	1.20510	-2.14090	-2.40990	.12440	.03770	-.02000	.70500
1.195	164.480	1.41120	-2.54770	-2.46190	.13420	.12310	-.02330	.71410
1.195	162.400	1.88380	-3.12680	-2.50220	.13550	.06640	-.01680	.70220
1.195	160.350	2.38230	-3.69420	-2.54660	.13650	.01680	-.01890	.69330
1.195	158.300	2.80880	-4.24410	-2.55140	.14930	-.02410	-.00690	.69010
1.195	156.260	3.47310	-4.80870	-2.55600	.18070	-.09760	-.01360	.67980
1.195	154.200	4.05470	-5.04790	-2.59180	.16080	.00970	-.01410	.66840
1.195	152.150	4.82950	-5.23410	-2.63320	.16050	.01950	-.01190	.65520
1.195	150.160	5.50900	-5.46640	-2.68170	.14420	-.01480	-.01190	.64780
1.195	160.340	2.47510	-3.73890	-2.57250	.12610	-.04270	-.00860	.69000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO 29/ 0 RN/L = 6.25 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.459	170.490	.59460	-1.25100	-2.25890	.06780	-.05050	-.02780	.73840
1.459	168.530	.85330	-1.50070	-2.27760	.08070	-.00280	-.02500	.71030
1.459	166.500	1.18990	-1.74240	-2.38130	.04240	-.01350	.03220	.68630
1.459	164.450	1.67950	-2.11760	-2.41660	.01690	-.03180	-.02770	.66270
1.459	162.410	2.17750	-2.45740	-2.45740	-.01200	.07810	-.03500	.65390
1.459	160.370	2.80420	-2.80430	-2.49500	.08320	-.05490	-.03540	.63970
1.459	158.320	3.40660	-2.77730	-2.56360	.05400	.01240	-.02410	.63330
1.459	156.270	4.03410	-3.09930	-2.57680	.11020	-.04980	-.02300	.62950
1.459	154.230	4.69870	-3.15990	-2.56890	.11350	-.00350	-.02460	.62170
1.459	152.180	5.41090	-3.23940	-2.60030	.10680	-.02160	-.01220	.61570
1.459	150.220	6.02990	-3.07120	-2.63210	.13080	.00360	-.01870	.60800
1.459	160.370	2.37610	-2.45240	-2.52610	.05810	-.01890	-.02560	.63640
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREM90S (R10010) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 26/ 1 RN/L = 7.34 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.951	170.500	.67120	-.76750	-2.25960	-.00630	-.01320	-.01050	.66010
1.951	168.540	1.00620	-.74240	-2.31860	-.01990	-.12860	.04280	.62700
1.951	166.510	1.43790	-.80060	-2.36010	.00710	-.03030	-.00800	.61220
1.951	164.480	1.97670	-.95750	-2.37330	.01420	-.10160	-.01210	.60630
1.951	162.420	2.47960	-1.08840	-2.38180	-.11650	-.07980	-.01000	.60260
1.951	160.400	2.97570	-1.01410	-2.43500	-.05930	-.05830	-.02130	.59460
1.951	158.360	3.50610	-1.01130	-2.50940	.11570	-.12380	-.01150	.59040
1.951	156.330	4.07010	-.82810	-2.54980	.10440	-.04080	-.01360	.58340
1.951	154.300	4.73090	-.60400	-2.58110	.12040	-.06250	-.01840	.57720
1.951	152.270	5.30870	-.47350	-2.56550	.14320	-.13250	-.01550	.57410
1.951	150 300	6.03850	-.27330	-2.58440	.12770	-.08680	-.01100	.57050
1.951	160.390	3.03720	-1.08790	-2.47270	-.00290	-.07460	-.06450	.59600
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 25/ 1 RN/L = 6.82 GRADIENT INTERVAL = 155.00/165.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	170.580	.55300	-.15390	-2.20400	.03000	-.00680	-.02010	.58950
3.480	168.620	.73110	.00060	-2.26010	.04260	.03200	-.01530	.56680
3.480	166.600	1.08590	.04810	-2.24270	04160	.00080	-.01280	.56320
3.480	164.590	1.41090	.07870	-2.28470	.06430	.00770	-.03180	.56230
3 480	162.580	1.87960	.20250	-2.32760	.07810	-.02370	-.02080	.55800
3.480	160.560	2.38070	.32650	-2.38300	.09100	-.01670	-.02380	.55560
3.480	158.550	2.83270	.47140	-2.47690	.09590	-.01930	-.02550	.55330
3.480	156.540	3.21950	.65840	-2.64510	.09230	-.00230	-.03390	.55010
3.480	154.520	3.73840	.72310	-2.73020	.10600	.00420	-.03700	.55110
3.480	152.500	4.33640	.82450	-2.80760	.11900	.00110	-.02890	.55130
3.480	150.530	4.98060	.96400	-2.81880	.13070	.01770	-.02780	.55100
3.480	160.560	2.34860	.30770	-2.39630	.09140	-.01690	-.02910	.55610
	GRADIENT	.00000	.00000	.00000	00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS (R10011) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 60/ 0 RN/L = 4.94 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.598	149.580	2.90800	-4.41000	-2.44980	.12540	.18700	-.02320	.69050
.598	147.610	3.16310	-4.66540	-2.45740	.12500	.29520	.00070	.68710
.598	145.570	3.48240	-5.04180	-2.43870	.13500	.05710	-.01030	.68490
.598	143.530	3.99680	-5.44160	-2.41520	.08460	.16310	-.01500	.67790
.598	141.500	4.27600	-5.76580	-2.38020	.04840	.19300	.00290	.67680
.598	139.480	4.82140	-6.08230	-2.34370	.00200	.09390	-.00850	.66970
.598	137.450	5.24800	-6.42180	-2.29950	-.08800	-.25190	.00680	.66660
.598	135.420	5.62880	-6.68250	-2.24760	-.27140	-.50420	.00440	.66370
.598	133.360	6.51160	-6.71300	-2.19860	-.27700	-.75250	.00270	.65100
.598	131.340	7.40630	-5.81760	-2.17120	-.41000	-1.12840	-.01430	.63090
.598	129.330	8.62050	-5.26370	-2.09470	-1.05540	.87470	.00790	.61660
.598	139.490	4.50540	-6.12600	-2.34330	.00400	.09390	.00830	.67580
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 61/ 1 RN/L = 6.22 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
.898	149.290	3.79640	-4.04990	-2.58260	.04080	.20790	-.00170	.65380
.899	147.260	4.44710	-5.09730	-2.60400	.11220	.21830	.00380	.66030
.899	145.120	5.13640	-6.07220	-2.58300	.14820	.09050	.00040	.66330
.899	143.000	6.12840	-6.65600	-2.56010	.17160	-.07390	-.01030	.65540
.899	140.910	6.77950	-7.33300	-2.52000	.22440	-.09860	-.01110	.65510
.899	138.810	7.64920	-7.70250	-2.46380	.27590	-.07660	-.00290	.64900
.899	136.730	8.54320	-7.93210	-2.40360	.27400	.03720	.00050	.64260
.899	134.640	9.46660	-8.01220	-2.31680	.26460	.06040	-.00220	.63590
.899	132.560	10.13970	-8.21340	-2.17980	.24230	.02930	.00690	.63290
.899	130.450	10.88230	-8.41500	-2.09480	.26610	-.07680	-.00560	.62990
.899	128.440	11.67550	-8.78330	-2.01040	.25700	-.12770	-.00520	.62820
.899	138.800	7.80200	-7.72460	-2.48850	.27580	-.05970	-.00970	.64760
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NSREMS (RICD11) (14 JUN 76)

REFERENCE DATA

SREF = 109.9800 SQ.FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 62/ 0 RN/L = 6.66 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.200	148.960	6.34760	-4.33430	-2.99540	.10810	.02750	-.00800	.62250
1.200	146.820	6.96470	-4.64380	-2.97610	.10530	-.02830	-.00280	.62120
1.200	144.690	7.87810	-4.76930	-2.93100	.13400	-.01900	-.00750	.61620
1.200	142.600	8.68270	-4.78600	-2.85800	.18500	.00580	-.01180	.61180
1.200	140.500	9.45900	-4.76950	-2.78440	.20660	-.02720	-.00060	.60600
1.200	138.430	10.35170	-4.66310	-2.71670	.20740	.00520	-.00630	.60360
1.200	136.320	11.25780	-4.59840	-2.61110	.21530	.00070	-.00900	.60010
1.200	134.240	12.08390	-4.46850	-2.47730	.22320	-.00930	.00050	.59700
1.200	132.170	12.78880	-4.26320	-2.35250	.21080	.02450	-.00800	.59400
1.200	130.080	13.54070	-4.15290	-2.22790	.23180	-.02940	.00840	.59180
1.200	128.070	14.03470	-4.19000	-2.10990	.24920	-.03980	-.00880	.59120
1.200	138.410	10.46870	-4.66600	-2.71430	.21400	-.03910	.00470	.60320
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 63/ 0 RN/L = 6.43 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.459	148.920	6.63410	-2.34110	-2.97540	.09120	.01500	-.02920	.59560
1.459	146.880	7.35400	-2.40370	-3.01210	.10800	-.01770	-.02150	.59350
1.459	144.810	8.09240	-2.24260	-2.98570	.09910	-.07800	-.01740	.58940
1.459	142.720	8.99560	-1.93770	-2.95120	.12580	-.02480	-.02030	.58440
1.459	140.650	9.68510	-1.73970	-2.88300	.15970	.05100	-.01730	.58150
1.459	138.560	10.6.060	-1.33560	-2.75310	.18020	.04050	-.01790	.57710
1.459	136.490	11.36210	-1.00190	-2.62540	.19070	.03750	-.03300	.57400
1.459	134.420	12.04510	-.85100	-2.50520	.22750	.00720	-.00890	.57260
1.459	132.330	12.73350	-1.01570	-2.40570	.22060	.04590	-.01690	.57330
1.459	130.260	13.35580	-.80630	-2.26280	.23270	.05120	-.01320	.57180
1.459	128.240	13.97570	-.62640	-2.13310	.26960	.01330	-.01130	.57050
1.459	138.570	10.60450	-1.20680	-2.74160	.17800	.06260	-.01640	.57610
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

MSFC TWT 620 (SA14F(A)) STING EFFECTS, NBREMS (R10011) (14 JUN 76)

REFERENCE DATA

SREF = 109.5800 SQ. FT. XMRP = 986.9700 IN. XS
LREF = 142.0000 IN. YMRP = .0000 IN. YS
BREF = 142.0000 IN. ZMRP = .0000 IN. ZS
SCALE = .0056

PARAMETRIC DATA

BETA = .000

RUN NO. 64/ 0 RN/L = 7.49 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
1.959	149.000	6.29830	.11290	-2.86310	.10020	.21360	-.01650	.56540
1.959	146.970	6.98940	.31170	-2.92820	.10920	.06250	-.00260	.56320
1.959	144.870	7.73240	.56280	-2.93320	.15000	.02140	-.01820	.55090
1.959	142.790	8.47560	.61490	-2.90890	.15610	.04200	-.01950	.56090
1.959	140.700	9.15820	.75160	-2.52420	.17110	.04670	-.02230	.56010
1.959	138.610	9.97780	1.02270	-2.45410	.18980	.03740	-.01640	.55850
1.959	136.550	10.61780	1.39810	-2.39580	.19230	.05370	-.02140	.55610
1.959	134.460	11.42090	1.68340	-2.32560	.22160	.03200	-.02200	.55480
1.959	132.390	12.10500	2.05780	-2.23570	.23390	.04860	-.01810	.55300
1.959	130.330	12.75220	2.45670	-2.17310	.25600	.06430	-.03160	.55110
1.959	128.330	13.34080	2.80710	-2.08440	.26920	.06300	-.02270	.54970
1.959	138.610	9.96250	.97810	-2.45870	.19140	.03170	-.01240	.55880
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 65/ 0 RN/L = 7.02 GRADIENT INTERVAL = 135.00/145.00

MACH	ALPHA	CNM	CLMM	CA	CYM	CYNM	CBL	XCP/L
3.480	149.440	5.27970	1.17070	-2.97650	.09550	.00550	-.04130	.54870
3.480	147.430	5.85890	.67640	-2.53270	.10660	.01320	-.03010	.55740
3.480	145.370	6.57010	.79410	-2.53390	.13510	.00950	-.02860	.55700
3.480	143.300	7.36390	.75070	-2.55520	.14950	-.00480	-.02470	.55850
3.480	141.260	8.02140	.78950	-2.55830	.14670	.00090	-.03700	.55880
3.480	139.210	8.70490	.90770	-2.52770	.17570	-.01380	-.07140	.55830
3.480	137.180	9.17700	1.14980	-2.49480	.18590	.01470	-.05570	.55660
3.480	135.130	10.00970	1.64000	-2.50770	.18570	-.00740	-.04690	.55350
3.480	133.120	10.45980	2.24380	-2.56180	.18960	.11050	-.04060	.54930
3.480	131.060	11.20400	2.49200	-2.40890	.26060	-.07150	-.07930	.54870
3.480	129.070	11.89380	2.67970	-2.23790	.24470	.06780	-.02900	.54910
3.480	139.210	8.70430	1.00750	-2.52980	.18190	-.00180	-.03140	.55710
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000