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RESULTS OF TESTS USING A 0.030-SCALE MODEL (45-0) OF THE SPACE SHUTTLE VEHICLE ORBITER IN THE NASA/ARC 12-FOOT PRESSURE WIND TUNNEL (OA159)

by

J. Marroquin
Shuttle Aerosciences
Rockwell International Space Division

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:	ARC 12-078
NASA Series Number:	OA159
Model Number:	45-0
Test Dates:	June 23 - July 8, 1975
Occupancy Hours:	152

FACILITY COORDINATOR:

J. J. Brownson
Ames Research Center
Experimental Investigation Branch
Mail Stop 227-5, Room 202B
Moffett Field, California 94035

Phone: (415) 965-6262

PROJECT ENGINEERS:

C. Sutton
ARO Inc., P. O. Box #7
NASA/Ames Research Center
Moffett Field, Calif. 94035

Phone: (415) 965-5152

J. Marroquin, M. Milam
T. J. Dziubala
Rockwell International Space Division
12214 Lakewood Blvd.
Department 390, Mail Code AC07
Downey, California 90241

Phone: (213) 922-2849

AERODYNAMICS ANALYSIS ENGINEER:

W. M. Zeman
Rockwell International
12214 Lakewood Blvd.
Dept. 390, Mail Code AC07
Downey, California 90241

Phone: (213) 922-2849

DATA MANAGEMENT SERVICES:

Prepared by: Liaison--D. A. Sarver
Operations--D. B. Watson, Maurice Moser, Jr.

Reviewed by: G. G. McDonald

Approved: J. L. Glynn, Manager
Data Operations

Concurrence: for N. D. Kemp, Manager
Data Management Services

Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

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ABSTRACT

An experimental investigation (test OA159) was conducted in the NASA/ARC 12-foot Pressure Wind Tunnel from June 23 through July 8, 1975. Objective was to obtain detailed strut tare and interference effects of the support system used in the NASA/ARC 40 x 80-foot wind tunnel during 0.36-scale orbiter testing (OA100).

Six-component force and moment data were obtained through an angle-of-attack range from -9 through +18 degrees with 0° angle of sideslip and a sideslip angle range from -9 through +18 degrees at 9° angle of attack.

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SCHEDULE OF COEFFICIENTS PLOTTED:

(E) CN, CAU, CLM, CL, CD, CPB1, CPB2, CPB3, CPB4, CPB5 versus RN/L

(F) CN, CAU, CLM, CL, CD versus ALPHA

(G) CY, CYN, CBL versus ALPHA

(H) CN, CAU, CLM, CL, CD, CPB1, CPB2, CPB3, CPB4, CPB5 versus ALPHA

(I) CY, CYN, CBL versus BETA

INTRODUCTION

A 0.03-scale model Rockwell International Space Shuttle Vehicle Orbiter (configuration 140A/B) was tested in the NASA/ARC 12-foot Pressure Wind Tunnel. Test dates were from June 23, 1975, through July 8, 1975.

Primary objective was to determine strut tare and interference effects on the basic orbiter for application to test OA100 data obtained using a 0.36-scale orbiter model in the ARC 40' x 80' Wind Tunnel.

Data were obtained for pitch and yaw runs at a constant Mach number of .26 and Reynolds numbers of 8.0, 5.5, 4.0, 3.0, and 2.4 million per foot. Test variables included elevon deflections, body flap deflections, and speedbrake deflections. Figure 2a defines the control surface deflection axes.

Five base pressures and two cavity pressures were obtained in addition to the basic force measurements. Model 45-0 was used for these tests.

Fifty runs were accomplished in 152 tunnel occupancy hours. Thirty-four runs were tare and interference runs with the ground plane installed and struts on and off. The remainder of the runs were to determine effects of elevon, body flap, and speedbrake deflection, carrier/orbiter external attach fittings, and MPS nozzles. Several of these runs were made to evaluate Reynolds number effects at Mach .26. Figure 2d describes the orbiter/carrier attach points. The forward RCS jets (figure 2c) were open throughout the test. The MPS nozzles were removed prior to Run 48.

NOMENCLATURE

General

Symbol	Plot Symbol	Definition
a		speed of sound, m/sec, ft/sec
A_B		orbiter base area, ft^2
A_{SC}		sting cavity area, ft^2
b	BREF	reference wing span, in.
$\bar{c}$	LREF	reference mean aerodynamic chord, in.
$C_{p_{Bi}}$	CPBi	local base pressure coefficient, $(P_{Bi} - P)/q$
C_{p_B}	CPB	average (area weighted) base pressure coefficient
$C_{p_{SCi}}$	CPSCi	local sting cavity pressure coefficient, $(P_{SCi} - P)/q$
$C_{p_{SC}}$	CPSC	average (numerical average) sting cavity pressure coefficient
M	MACH	freestream Mach number
MPS		main propulsion system
MRC		moment reference center
OMS		orbital maneuvering system
P	P	freestream static pressure, psf
P_t	PT	freestream total pressure, psf
q	Q(PSF)	freestream dynamic pressure, $1/2\ \rho v^2$, psf
R_e/ft	RN/L	unit Reynolds number, $ft^{-1} \times 10^{-6}$

Symbol	Plot Symbol	Definition
S	SREF	reference wing area, ft^2
T_t	TT	freestream total temperature, °F
δ_r	RUDDER	rudder deflection, deg.
OML		outer mold line
IML		inner mold line
XCP/ℓ_B	XCP/LB	longitudinal center of pressure location, fraction of reference body length
ℓ_B	LB	reference body length, in.
X_{MRC}	XMRP	longitudinal station of moment reference center, in. X_o
Y_{MRC}	YMRP	lateral station of moment reference center in. Y_o
Z_{MRC}	ZMRP	vertical station of moment reference center, in. Z_o
X_o	XO	longitudinal orbiter station
Y_o	YO	lateral orbiter station
Z_o	ZO	vertical orbiter station
α	ALPHA	angle of attack, deg.
β	BETA	angle of sideslip, deg.
ρ		mass density, $slugs/ft^3$
δ_e	ELEVON	elevon deflection, deg.

NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
δ_{BF}	BDFLAP	body flap deflection, deg.
δ_{SB}	SPDBRK	speedbrake deflection, deg.
		Body-Axis System
C_{A_u}	CAU	axial-force coefficient unadjusted for base axial force, $\frac{\text{axial force}}{qS}$
C_{A_b}	CAB	base axial-force coefficient, $-\left[\frac{CPB(A_B)}{S} + \frac{CPSC(A_{SC})}{S}\right]$
C_{A_f}	CAF	forebody axial-force coefficient, CAU - CAB
$C_{A_{SC}}$	CASC	sting cavity axial-force coefficient, $-\frac{CPSC(A_{SC})}{S}$
C_ℓ	CBL	rolling-moment coefficient (orbiter reference), $\frac{\text{rolling moment}}{qSb}$
C_m	CLM	pitching-moment coefficient, $\frac{\text{pitching moment}}{qSb}$
C_n	CYN	yawing-moment coefficient, $\frac{\text{yawing moment}}{qSb}$
C_N	CN	normal-force coefficient, $\frac{\text{normal force}}{qS}$

NOMENCLATURE
(Continued)

Stability-Axis System

SYMBOL	Plot SYMBOL	DEFINITION
C_L	CL	lift coefficient, $\frac{\text{lift}}{qS}$
C_D	CD	drag coefficient, $\frac{\text{drag}}{qS}$
C_Y	CY	side-force coefficient, $\frac{\text{side force}}{qS}$
C_{D_b}	CDB	base-drag coefficient, $\frac{\text{base drag}}{qS}$
C_{D_f}	CDF	forebody drag coefficient, $C_D - C_{D_b}$
C_m	CLM	pitching-moment coefficient, $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CLN	yawing-moment coefficient, $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CSL	rolling-moment coefficient, $\frac{\text{rolling moment}}{qSb}$
L/D	L/D	lift-to-drag ratio, C_L/C_D
C_{D_u}	CDU	uncorrected drag force coefficient, $\frac{\text{drag}}{qS}$

NOMENCLATURE (Concluded)

SUBSCRIPTS

b	base
i	local
o	static
n	number of base pressures
t	total conditions
∞	free stream

CONFIGURATIONS INVESTIGATED

Model for these tests was a 0.030-scale replica of the Rockwell International Space Shuttle Vehicle Configuration 140A/B, designated Model 45-0. The SSV orbiter configuration is composed of the configuration control drawing VL70-000140A/B body and the VL70-000140A wing with modified OMS pods and elevons. A three-view drawing of the orbiter configuration is shown in figure 2b.

Basic orbiter model is of the blended wing-body design using a double-delta wing (81°/45°), modified full span elevons (unswept hinge-lines), a centerline vertical tail with zero- and 25-degree rudder deflections, a canopy, a body flap, and orbital maneuvering system pods (OMS) mounted on the aft fuselage walls. The fuselage base contains MPS and OMS nozzles.

Nomenclature below were used to designate the orbiter model configuration and components.

CONFIGURATION	
I	orbiter w/o ground plane
IA	orbiter w/o ground plane + external attach fittings
II	orbiter with ground plane
III	orbiter + struts in ground plane
IV	orbiter + strut tips w/o ground plane

CONFIGURATIONS INVESTIGATED (Concluded)

Orbiter components are defined as follows:

Symbol	Component	Configuration	Line Drawings
AT_{95}	aft attach structure between orbiter and carrier model		SS-A01360
B_{26}	body	-140A/B	VL70-000140A/B, SS-A01360
C_9	canopy	-140A/B	VL70-000140A/B, SS-A01360
E_{44}	elevon	--	VL70-000200, SS-A01360
F_8	body flap	--	VL70-000200, SS-A01360
M_{16}	OMS pod	140C-short	VL70-008401, VL70-008410
N_{24}	MPS nozzles	-140A	VL70-000140A, VL70-005030A SS-A01360
N_{28}	OMS nozzles	-140A	VL70-000140A, SS-A01360
R_5	rudder	-140A/B	VL70-000146A, SS-A01360
V_8	vertical	-140A	VL70-000140A, VL70-000146A
W_{116}	wing	-140B	VL70-000200, SS-A01360

TEST FACILITY DESCRIPTION

Ames 12-foot Pressure Wind Tunnel is a closed circuit, continuous flow, single return, variable-density, low-turbulence tunnel that operates at subsonic speeds up to slightly less than Mach 1.0.

Airflow is produced by a two-stage, axial-flow, variable-speed fan powered by electric motors which deliver 12,000 hp. Airspeed in the test section is controlled by variation of the rotational speed of the fan.

The test section is 11.3 feet in diameter and is 18 feet long. The combination of eight fine-mesh screens in the settling chamber and the contraction ratio of 25 to 1 provides an exceptionally low turbulence airstream. A special mounting drive system is available for high angle of attack. External and internal strain-gage balances are available.

Data are recorded on a Beckman 210 medium speed recorder and processed through a centrally located Honeywell H-800 computer system.

INSTRUMENTATION

Force data were measured with the NASA/ARC 2.5-inch diameter six-component MKIIIB balance. The balance moment center location is shown in figure 2b.

Five orbiter base pressures and two sting cavity pressures were measured. Locations of these pressure taps are shown in figure 2j. To measure these pressures, Ames personnel calibrated a body-mounted scanivalve pressure transducer.

A grounding (fouling) circuit was installed between strut tips and aft and forward struts as illustrated in figures 2f and 2g.

Ames supplied and installed a dangleometer in the sting housing for measuring angle of attack.

DATA REDUCTION

Standard Ames data reduction methods and the following constants were used to compute body and stability axis coefficients.

	Reference and C.G. Definition		
A_B	orbiter base area	0.3168	ft^2
A_{SC}	sting cavity area	0.0767	ft^2
b	reference wing span	28.100	in.
$\bar{c}$	reference MAC	14.244	in.
S	reference wing area	2.421	ft^2
ℓ_B	reference body length	38.709	in.
X_{MRC}	longitudinal station of moment ref. center (25.2504 in. from nose OML)	32.3004	in. X_o
Y_{MRC}	lateral station of moment ref. center (0.0000 in. from plane of symmetry)	0.0000	in. Y_o
Z_{MRC}	vertical station of moment ref. center (0.7500 in. below fuselage ref. plane)	11.250	in. Z_o

Center of pressure location was computed as a fraction of reference body length by:

$$XCP/\ell_B = \left[25.2504 - \frac{C_m\,\bar{c}}{C_N}\right]/\ell_B$$

where 25.2504 is the length from the orbiter nose OML to the moment reference center.

DISCUSSION OF RESULTS

A summary of 40 x 80 strut tare and interference results, based on the difference of struts-in minus struts-out data, is presented in figures 4a, b, and c. The solid curves represent the best approximation through the data obtained with various control surface settings. The dashed lines reflect the loads measured on the exposed strut tips in the 40 x 80 tunnel, prior to installation of the model. Comparison of the two sets of data indicate that the interference effects overshadow the direct tare loads on the struts.

The lift coefficient correction averages about -0.012 and is relatively insensitive to angle of attack. The value determined in the 40 x 80 tunnel, possibly due to circulation through the external balance, is +0.005.

The pitching moment coefficient correction averages about +0.015, again rather insensitive to angle of attack. Differences due to control surface settings are relatively small. The value determined in the 40 x 80 tunnel is -0.005.

The drag coefficient increment exhibits a strong α-dependence, varying from 0.0011 at $\alpha = 0°$ to about 0.0050 at higher angles of attack. The value established in the 40 x 80 tunnel is +0.0090.

Effects on the lateral-directional components are considered negligible. It should be noted that the drag and pitching moment tares measured in the 40 x 80 tunnel agree well with estimated values for circular cylinders in a stream and also with the increments obtained from run 49

of this test due to the addition of strut tips without the presence of windshield fairings.

A summary of pitching moment results of the test is presented in figure 4d. Elevon effectiveness is increased by 7%, body flap effectiveness is decreased by 21% and speed brake effect on pitching moment is essentially unchanged, as compared to the June, 1975 Aero Data Book.

REFERENCES

Drawings

Rockwell Drawing Number	Title
VL70-000140 A/B	Orbiter configuration control lines.
SS-A01548	Rework and Modif., 0.03 scale SSV orbiter 45-0 model dated 6-12-75.
SS-A01360	Model assy., 45-0, 0.03 scale SSV orbiter (140 A/B) dated 6-12-75.

Reports

Reports	Title
1L SAS/AERO/75-159	Model requirements for test OA159 in the NASA/ARC 12 foot tunnel, April 28, 1975.
1L SAS/AERO/75-345	Telecon to NASA/ARC (OA159), new blockage corrections, June 5, 1975.
1L SAS/WTO/74-173	Addendum #9, additional model design requirements for model 45-0 to support wind tunnel test OA159 (Task 20), dated May 12, 1975.
SD75-SH-0144	Pre-test information for tests of a 0.03 scale model (45-0) of the SSV orbiter in the NASA/ARC 12-foot pressure wind tunnel (OA159) June 30, 1975.
Speed letter, SAS/WTO/74-173	Addendum #10, additional model design requirements for model 45-0 to support wind tunnel test OA159, May 29, 1975.
NA74-541	Model 45-0 stress analysis of the 0.03 scale SSV model, dated July 23, 1974.

TABLE I

TEST : 04/59 | DATE : July 1975

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (10^6 PER FOOT)	DYNAMIC PRESSURE (POUNDS/SQ. FT.)	STAGNATION TEMPERATURE (degrees Fahrenheit)
.26	8.0	490	65°F — 100°F
.26	5.5	340	↓
.26	4.0	250	↓
.26	3.0	190	↓
.26	2.4	150	↓

BALANCE UTILIZED: NASA/AMES TASK MK IIIB 2.5" DIA

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	2800 LBS	± .5%	—
SF	1400 LBS	± .5%	—
AF	290 LBS	± .5%	—
PM	11900 IN. LBS	± .5%	—
RM	2000 IN. LBS	± .5%	—
YM	4900 IN. LBS	± .5%	—

COMMENTS:

TABLE II.

TEST : ΦA 159 (12-078) | DATA SET/RUN NUMBER COLLATION SUMMARY | DATE : JULY 1975

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_E	δ_{BF}	δ_{SB}	M	NO. OF RUNS	REYNOLDS NO. 1.73	2.4	3.0	4.0	5.5	8.0		STRUTS	STRUT TIPS	GRND. PLANE
$NG# 01	Ø3	0	0	0	0	25	0.26	1	1							ΦN	ΦN	IN
02				↓				4		5	4		3	2				
03				10	↓			1			6							
04				0	16.3			1			7							
05					↓			2			9		8*					
06				↓	0			2			11		10					
07		↓		10				2			13		12					
08		10		↓				1					14					
09				0	↓			4		18	17		16	15				
10		↓			16.3			1					19					
11		15		↓	↓			1					20					
12		↓		↓	0			3		23			22	21				
13		↓		10				1					24			↓	↓	↓
14		SW		↓				1					25			ΦFF	ΦFF	IN
15		↓		0	↓			3		28			27	26		↓	↓	↓
16		↓	↓	↓	16.3			1					29			↓	↓	↓
↓ 17	↓	15	6	↓	0	↓	↓	1					30			ΦN	ΦN	IN

TEST RUN NUMBERS

R:	CN	CA	CLM	CY	CYN	CBL	CAH	CASC	CAB	MACH	RN/L	ALPHA OR BETA	10		
A:	CL	CD	CLM	CY	CLN	CSL	CDH	L/D	XCP/L	BETA OR ALPHA	RN/L	ALPHA OR BETA	10		
B:	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)	RN/L	ALPHA OR BETA	10		

TYPE OF DATA α OR β SCHEDULES

COEFFICENT SCHEDULES

*: CORRECT LENGTH FOR FWD. AND AFT STRUT TIPS FROM RUN 8 ON

IDVAR (1) IDVAR (2) NDV

$: R, A, B

#: Q (WITH REPEAT POINTS), A (W/Φ REPEAT POINTS)

TABLE II - Concluded

TEST: ΦA159 (12-078) | DATA SET/RUN NUMBER COLLATION SUMMARY | DATE: JULY 1975

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	δ_{BF}	δ_{SB}	M	NO. OF RUNS	REYNOLDS NO. (OR ALTERNATE INDEPENDENT VARIABLE) 1.73	2.4	3.0	4.0	5.5	8.0		STRUTS	STRUT TIPS	GRND PLANE
ΦNG#18	Ø3	10	6	0	0	25	0.26	1					31			ΦN	ΦN	IN
19	↓	0	↓	↓	↓	↓	↓	1					32			ΦN	ΦN	IN
20		SW						1					33			ΦFF	ΦFF	IN
21		A	0					3		36			35	34		ΦFF	ΦFF	ΦUT
22	Ø3+AT95	C	↓					4		40		39	38	37		↓	↓	↓
23	Ø3	9	B					3		43			42	41				
24	Ø3+AT95	↓	↓		↓			1					44					
25	Ø3	C	0	↓	16.3			1					45					
26	↓		↓	10	0			2				47	46					
27	Ø3-N24	↓		0	↓	↓		1					48					
28	Ø3	D				↓		1					49			ΦFF	ΦN	ΦUT
29	↓	A	↓	↓	↓	0	↓	1					50			ΦFF	ΦFF	ΦUT

TEST RUN NUMBERS

A(α)** ⇒ α = 7½ WAS REPEATED 4 TIMES DURING RUN

α OR β SCHEDULES

COEFFICENT SCHEDULES

A(α)** = C(α) = -9, -7½, -5, -2½, 0, 2½, 5, 7½, 10, 12½, 15, 18, 0

B(β) = -9, -7½, -5, -2½, 0, 2½, 5, 7½, 10, 12½, 15, 18, 0

	IDVAR (1)	IDVAR (2)	NDV
D(α) = 0, 2½, 5, 7½, 10, 12½, 15, 18			
SW(α) = 0, 2, 4, 6, 8, 10, 12, 14, 15			

TABLE III (MODEL DIMENSIONAL DATA)

MODEL COMPONENT: ATTACH STRUCTURE - AT_{95} (-11)L, (-12)R

GENERAL DESCRIPTION: Aft attach structure between orbiter and carrier model.

MODEL SCALE: 0.030

DRAWING NO.: Boeing Dwg. 747-MD-658

DIMENSIONS:	FULL SCALE	MODEL SCALE
Aft attach point in the carrier axis system	BSTA 1607.0 BWL 400.0	BSTA 48.21 12.0
Aft attach point in the orbiter axis system	X_0 1317.0	39.51
	Y_0 96.51	2.895
	Z_0 267.5	8.025
Right and left member dia., In.	12.0	0.360
Side strut support dia., In.	12.0	0.360

TABLE III (Cont'd)

MODEL COMPONENT : BODY - B_{26}

GENERAL DESCRIPTION : Configuration 140A/B orbiter fuselage

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

MODEL SCALE: 0.030

DRAWING NUMBER : VL70-000143B, -000200, -000205, -006089, -000145, VL70-000140A, -000140B

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length: (IML: Fwd Sta X_0 = 238), In.	1290.3	38.709
Length (OML: Fwd Sta. X_0=235), In.	1293.3	38.799
Max Width (@ X_0 = 1528.3), In.	264.0	7.920
Max Depth (@ X_0 = 1464), In.	250.0	7.500
Fineness Ratio	0.264	0.264
Area - Ft^2		
Max. Cross-Sectional	340.88	0.307
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT : CANOPY - C_9

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

MODEL SCALE: 0.030 MODEL DRAWING NO.: SS-A00147, Release 12

DRAWING NUMBER : VL70-000143A

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (X_0 = 434.643 to 578.0), In.	143.357	4.301
Max Width (@ X_0 = 513.127), In.	152.412	4.572
Max Depth (@ X = 485.), In.	25.000	0.750
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT: ELEVON - E_{44}

GENERAL DESCRIPTION: 6.0 In. F.S. gaps machined into E_{26} elevon. Flipper doors, centerbody pieces, and tipseals are not simulated. (Data are for one side).

MODEL SCALE: 0.030

DRAWING NUMBER: Not available

DIMENSIONS:

	FULL-SCALE	MODEL SCALE
Area - Ft^2	210.0	0.189
Span (equivalent) , In.	349.2	10.476
Inb'd equivalent chord , In.	118.0	3.540
Outb'd equivalent chord , In.	55.19	1.656
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Tailing Edge	- 10.056	- 10.056
Hingeline	0.00	0.00
Area Moment (Product of area & $\bar{c}$) Normal to hinge line, Ft^3	1587.25	0.0429
Mean Aerodynamic Chord, In.	90.7	2.721

TABLE III (Cont'd)

MODEL COMPONENT : BODY FLAP - F_8

GENERAL DESCRIPTION : Configuration 140A/B orbiter body flap. Hingeline located at X_0 = 1528.3, Z_0 - 284.3

MODEL SCALE: 0.030 MODEL DRAWING: SS-A00147, Release 12

DRAWING NUMBER : VL70-000140A, -000145

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (X_0=1520 to X_0=1613), In.	93.00	2.79
Max Width (In.)	262.0	7.860
Max Depth (X_0 = 1520), In.	23.00	0.690
Fineness Ratio		
Area - Ft^2		
Max. Cross-Sectional		
Planform	150.525	0.406
Wetted		
Base	41.847	0.113

TABLE III (Cont'd)

MODEL COMPONENT : OMS POD - M_{16}

GENERAL DESCRIPTION : Configuration 140C orbiter OMS pod - short pod.

MODEL SCALE: 0.030

DRAWING NUMBER : VL70-008401, -008410

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta. X_0=1310.0), In.	258.50	7.755
Max Width (@ X_0 = 1511), In.	136.8	4.104
Max Depth (@ X_0 = 1511), In.	74.70	2.241
Fineness Ratio	2.484	2.484
Area - Ft^2		
Max. Cross-Sectional	58.864	0.053
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT: MPS NOZZLES - N_{24}

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

MODEL SCALE: 0.030 Model Dwg: SS-A00147, Release 12

DRAWING NUMBER: VL70-005030A, -000140A

DIMENSIONS:	FULL SCALE	MODEL SCALE
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane	157.0	4.710
Throat to Exit Plane	99.2	2.976
Diameter - In.		
Exit	91.000	2.730
Throat		
Inlet		
Area - ft^2		
Exit	45.166	0.0407
Throat		
Gimbal Point (Station) - In.		
Upper Nozzle		
X	1445.0	43.350
Y	0	0
Z	443.0	13.29
Lower Nozzles		
X	1468.170	44.045
Y	± 53.00	± 1.59
Z	342.640	10.279
Null Position - Deg.		
Upper Nozzle		
Pitch	16	16
Yaw	0	0
Lower Nozzle		
Pitch	10	10
Yaw	3.5	3.5

TABLE III (Cont'd)

MODEL COMPONENT: OMS NOZZLES - N_{28}

GENERAL DESCRIPTION: Configuration 140A/B orbiter OMS nozzles

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000140A (Location), SS-A00106, Release 5 (Contour)

DIMENSIONS:	FULL SCALE	MODEL SCALE
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane		
Throat to Exit Plane		
Diameter - In.		
Exit		
Throat		
Inlet		
Area - ft^2		
Exit		
Throat		
Gimbal Point (Station) - In.		
Left nozzle		
X_0	1518.0	45.54
Y_0	- 88.0	-- 2.64
Z_0	492.0	14.76
Right nozzle		
X_0	1518.0	45.54
Y_0	88.0	2.64
Z_0	492.0	14.76
Null Position - Deg.		
Left nozzle		
Pitch	15°49'	15°49'
Yaw	12°79'	12°79'
Right nozzle		
Pitch	15°49'	15°49'
Yaw	12°17	12°17

TABLE III (Cont'd)

MODEL COMPONENT: RUDDER - R_5

GENERAL DESCRIPTION: Configuration 140C orbiter rudder (identical to configuration 140A/B rudder)

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000146B, -000095

DIMENSIONS:

	FULL-SCALE	MODEL SCALE
Area - Ft^2	100.15	0.090
Span (equivalent) , In.	201.00	6.030
Inb'd equivalent chord , In.	91.585	2.748
Outb'd equivalent chord , In.	50.833	1.525
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge		
Tailing Edge	26.25	26.25
Hingeline	34.83	34.83
Area Moment (Product of area and $\overline{c}$), Ft^3	610.92	0.0165
Mean Aerodynamic Chord, In.	73.2	2.196

TABLE III (Cont'd)

MODEL COMPONENT: VERTICAL - V_8

GENERAL DESCRIPTION: Configuration 140C orbiter vertical tail (identical to configuration 140A/B vertical tail).

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000140C, -000146B

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo) - Ft^2		
Planform	413.253	0.372
Span (Theo) - In.	315.72	9.472
Aspect Ratio	1.675	1.675
Rate of Taper	0.507	0.507
Taper Ratio	0.404	0.404
Sweep-Back Angles, Degrees.		
Leading Edge	45.00	45.000
Trailing Edge	26.25	26.25
0.25 Element Line	41.13	41.13
Chords:		
Root (Theo) WP	268.50	8.055
Tip (Theo) WP	108.47	3.254
MAC	199.81	5.994
Fus. Sta. of .25 MAC	1463.35	43.901
W.P. of .25 MAC	635.52	19.066
B.L. of .25 MAC	0.0	0.0
Airfoil Section		
Leading Wedge Angle - Deg.	10.0	10.0
Trailing Wedge Angle - Deg.	14.92	14.92
Leading Edge Radius	2.00	0.060
Void Area	13.17	0.0019
Blanketed Area	0.0	0.0

TABLE III (Concluded)

MODEL COMPONENT: WING-W_{116}

GENERAL DESCRIPTION: Configuration 4

NOTE: (Identical to W_{114} except airfoil thickness. Dihedral angle is along trailing edge of wing.) Geometric twist = 0

MODEL SCALE: 0.030

TEST NO.

DWG. NO. VL70-000140A, -000200

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2		
Planform	2690.00	2.421
Span (Theo In.	936.68	28.100
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.200
Dihedral Angle, degrees	3.500	3.500
Incidence Angle, degrees	0.500	0.500
Aerodynamic Twist, degrees		
Sweep Back Angles, degrees		
Leading Edge	45.00	45.000
Trailing Edge	- 10.056	-10.056
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.0.0.	689.24	20.677
Tip, (Theo) B.P.	137.85	4.136
MAC	474.81	14.244
Fus. Sta. of .25 MAC	1136.83	34.105
W.P. of .25 MAC	290.58	8.717
B.L. of .25 MAC	182.13	5.464
EXPOSED DATA		
Area (Theo) Ft^2	1751.50	1.576
Span, (Theo) In. BP108	720.68	21.620
Aspect Ratio	2.059	2.059
Taper Ratio	0.245	0.245
Chords		
Root BP108	562.09	16.863
Tip 1.00 $\frac{b}{2}$	137.85	4.136
MAC	392.83	11.785
Fus. Sta. of .25 MAC	1185.98	35.579
W.P. of .25 MAC	294.30	8.829
B.L. of .25 MAC	251.77	7.553
Airfoil Section (Rockwell Mod NASA) XXXX-64		
Root $\frac{b}{2}$ =	0.113	0.113
Tip $\frac{b}{2}$ =	0.120	0.120
Data for (1) of (2) Sides		
Leading Edge Cuff Planform Area Ft^2	113.18	0.102
Leading Edge Intersects Fus M. L. @ Sta	500.00	15.000
Leading Edge Intersects Wing @ Sta	1024.00	30.72

Notes:

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

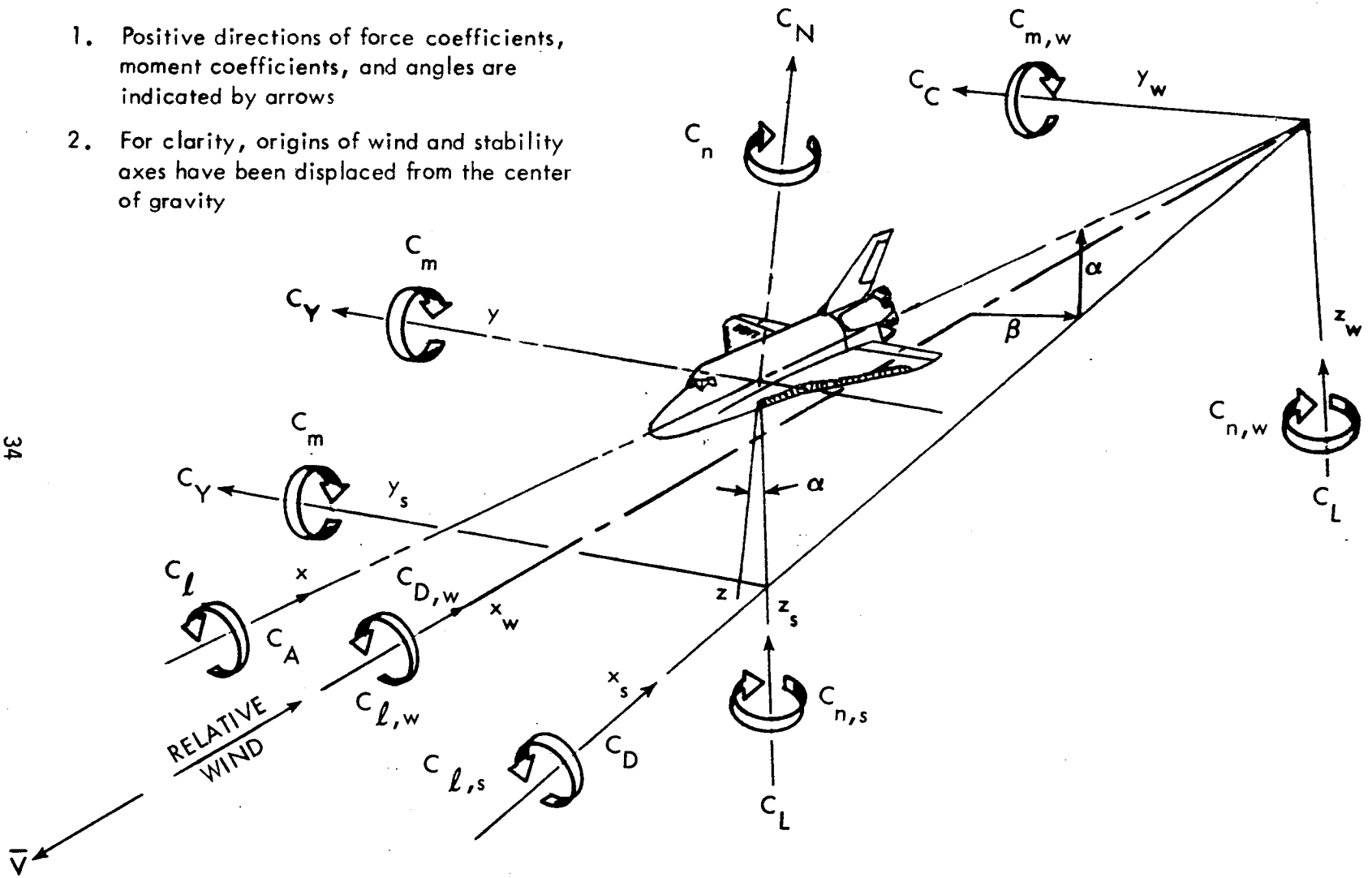
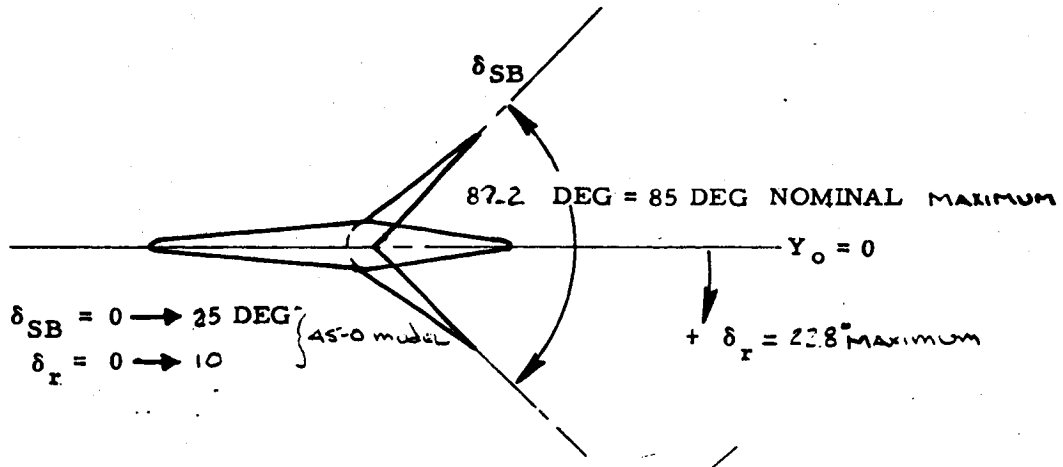
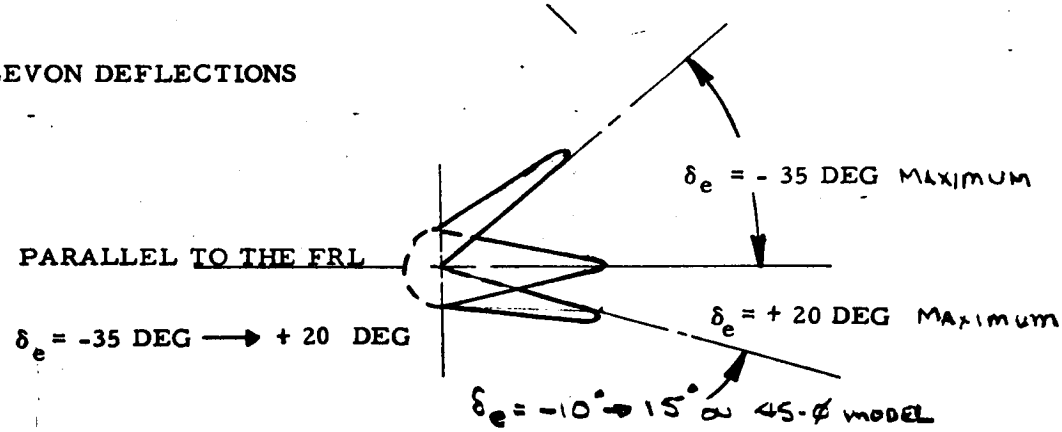


Figure 1. Model Axis Systems

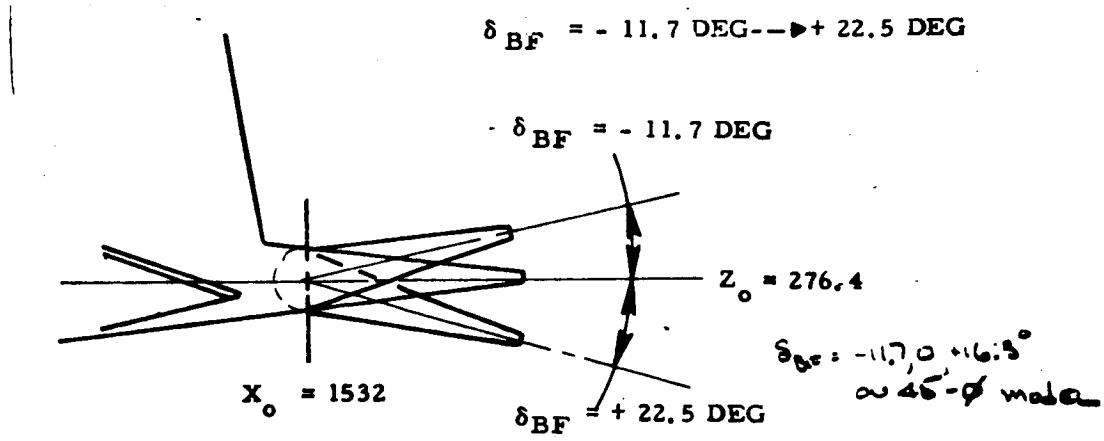
RUDDER AND SPEED BRAKE DEFLECTIONS
(PARALLEL TO THE FRL)



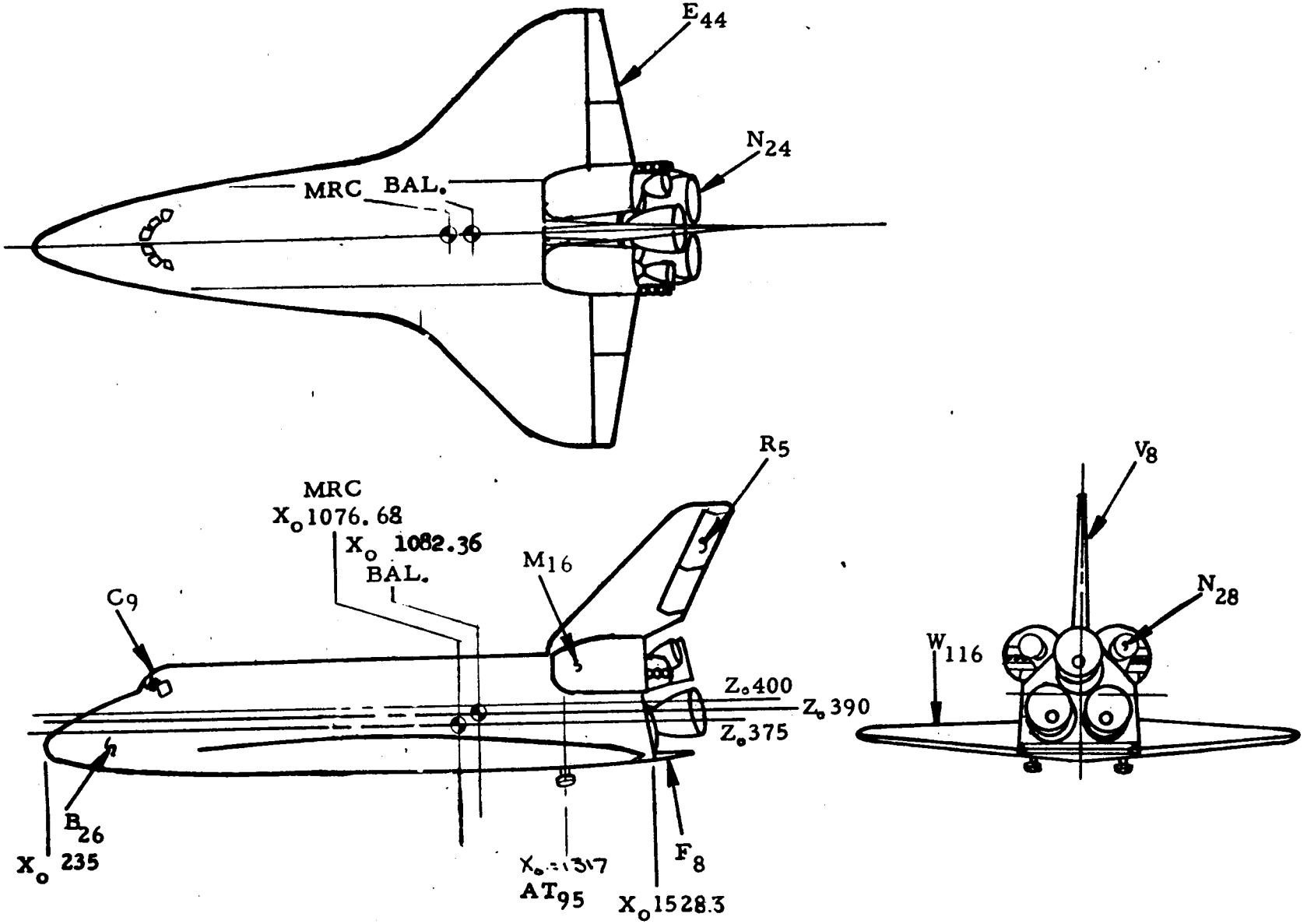
ELEVON DEFLECTIONS



BODY FLAP DEFLECTIONS

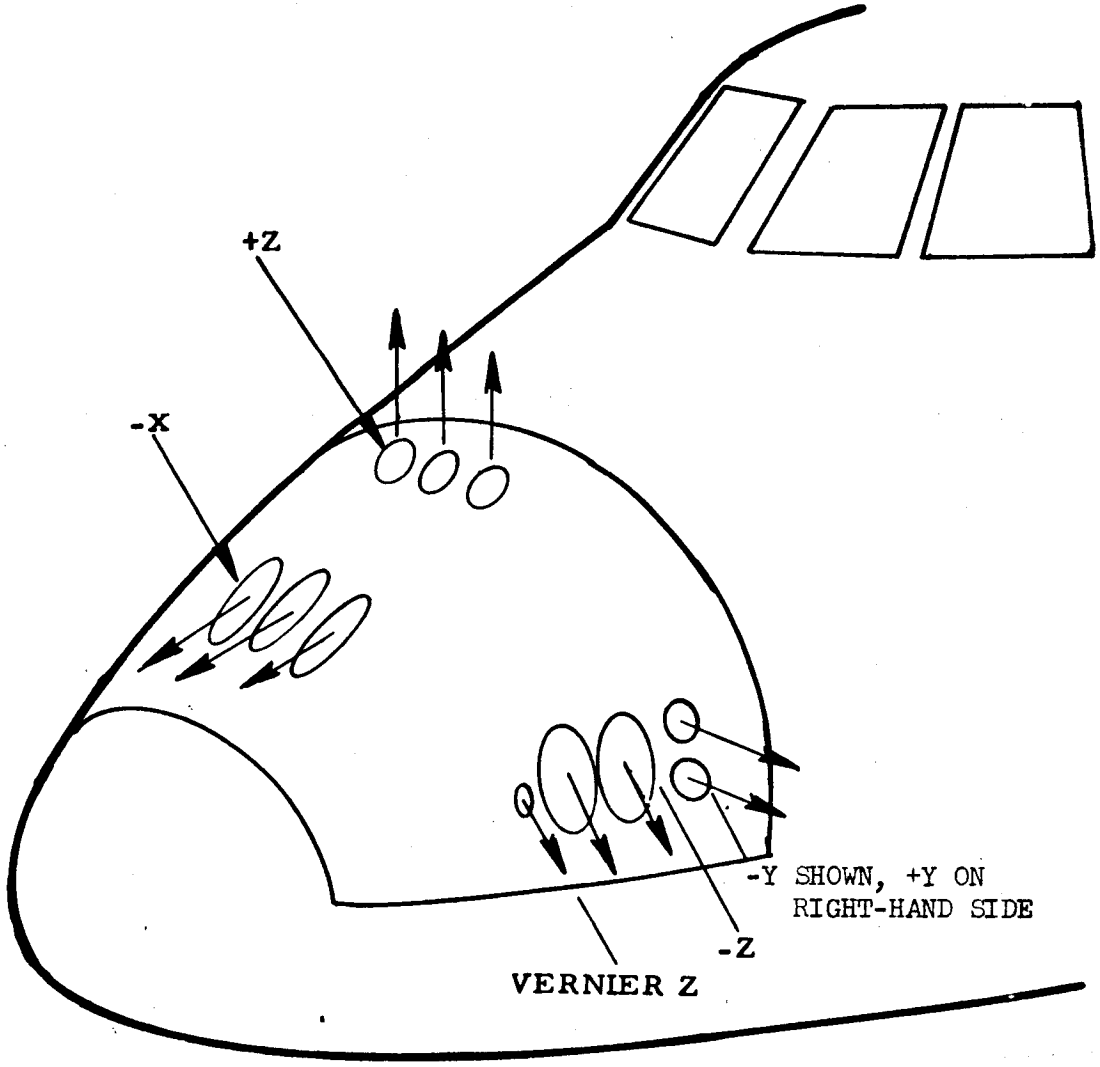


a. Control Surface Deflections
Figure 2. Model Sketches



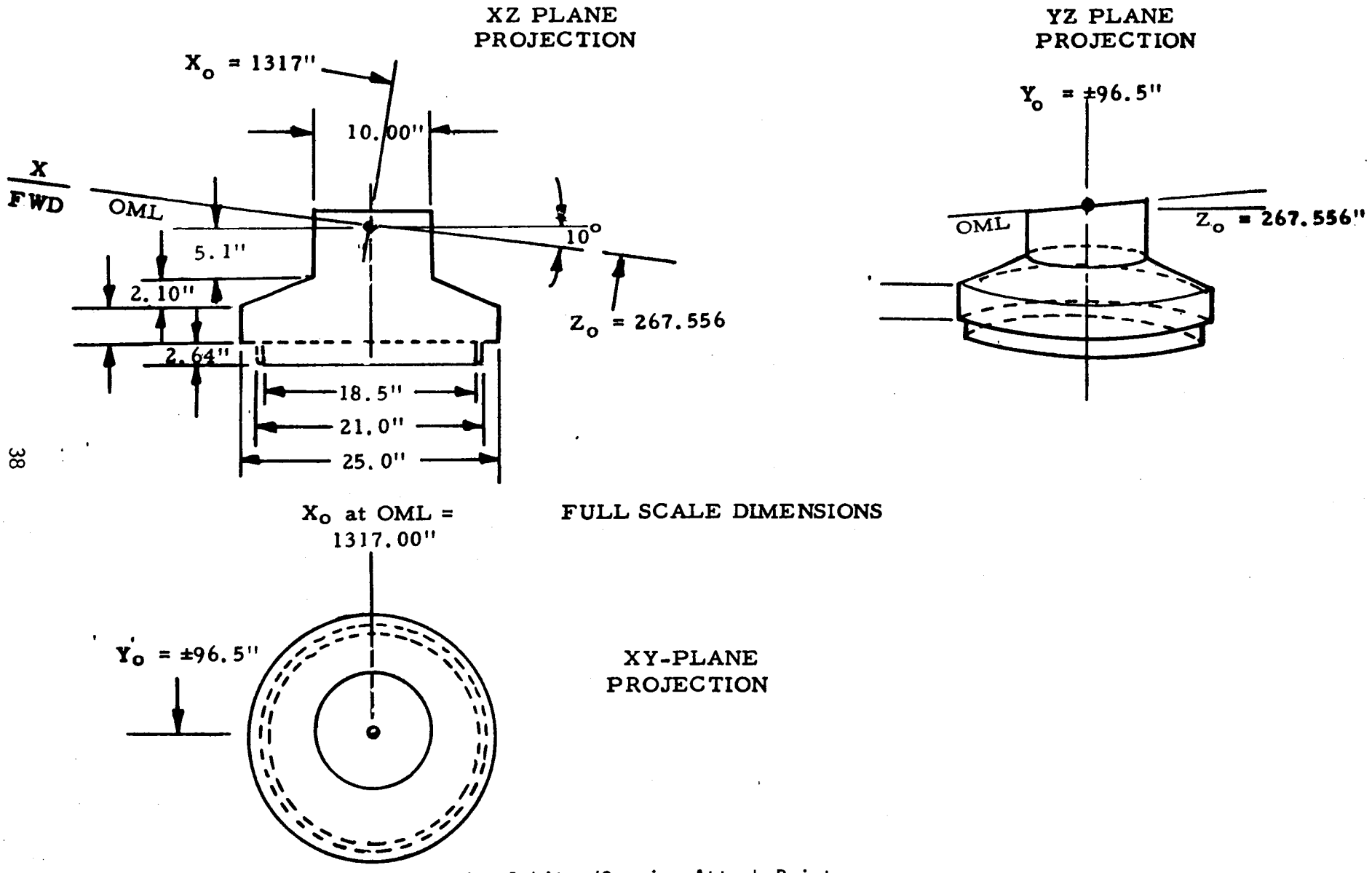
b. Orbiter Three-view

Figure 2. (Continued)



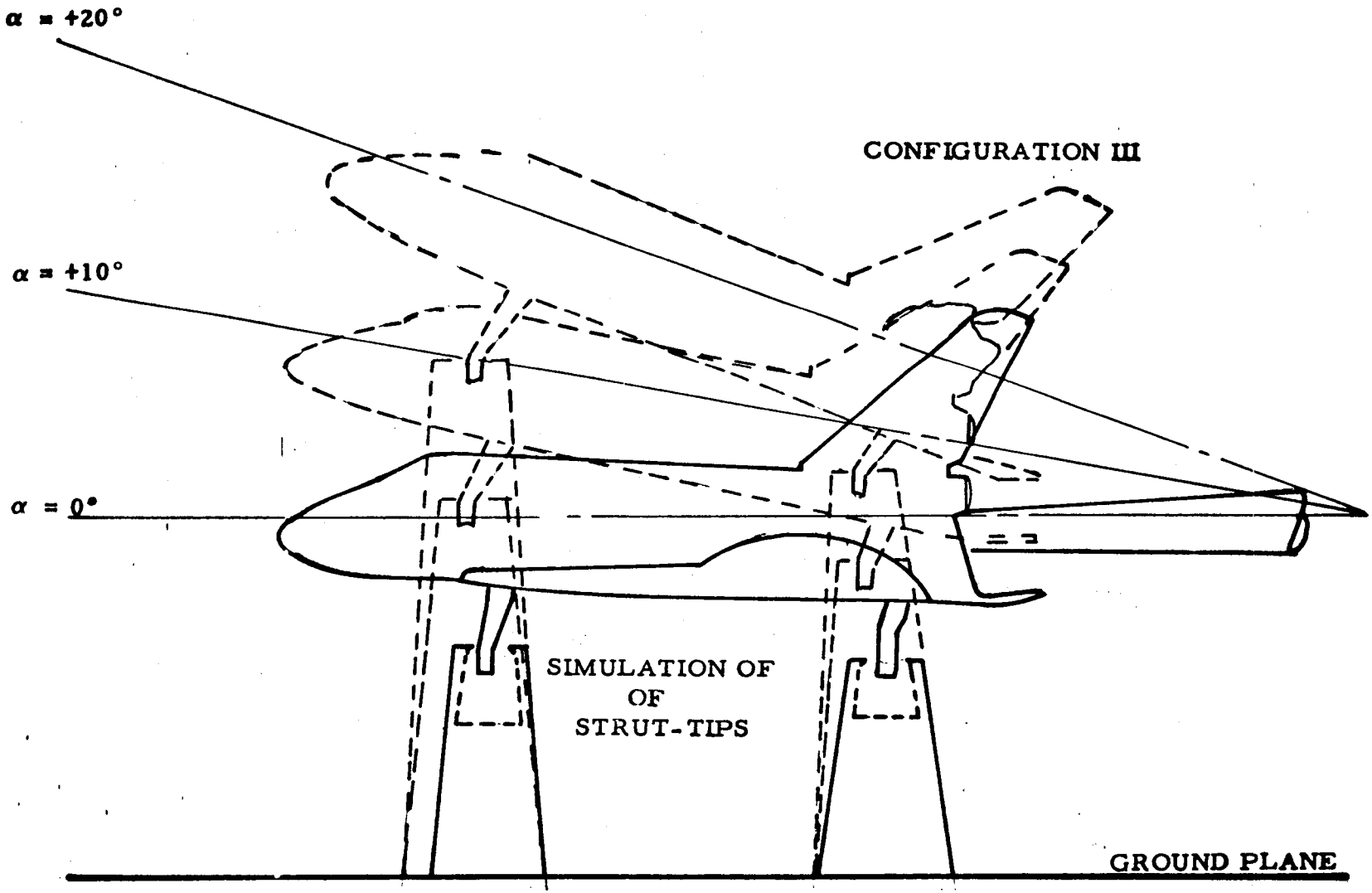
c. RCS Forward Fuselage Thruster Locations (No Doors)

Figure 2. (Continued)



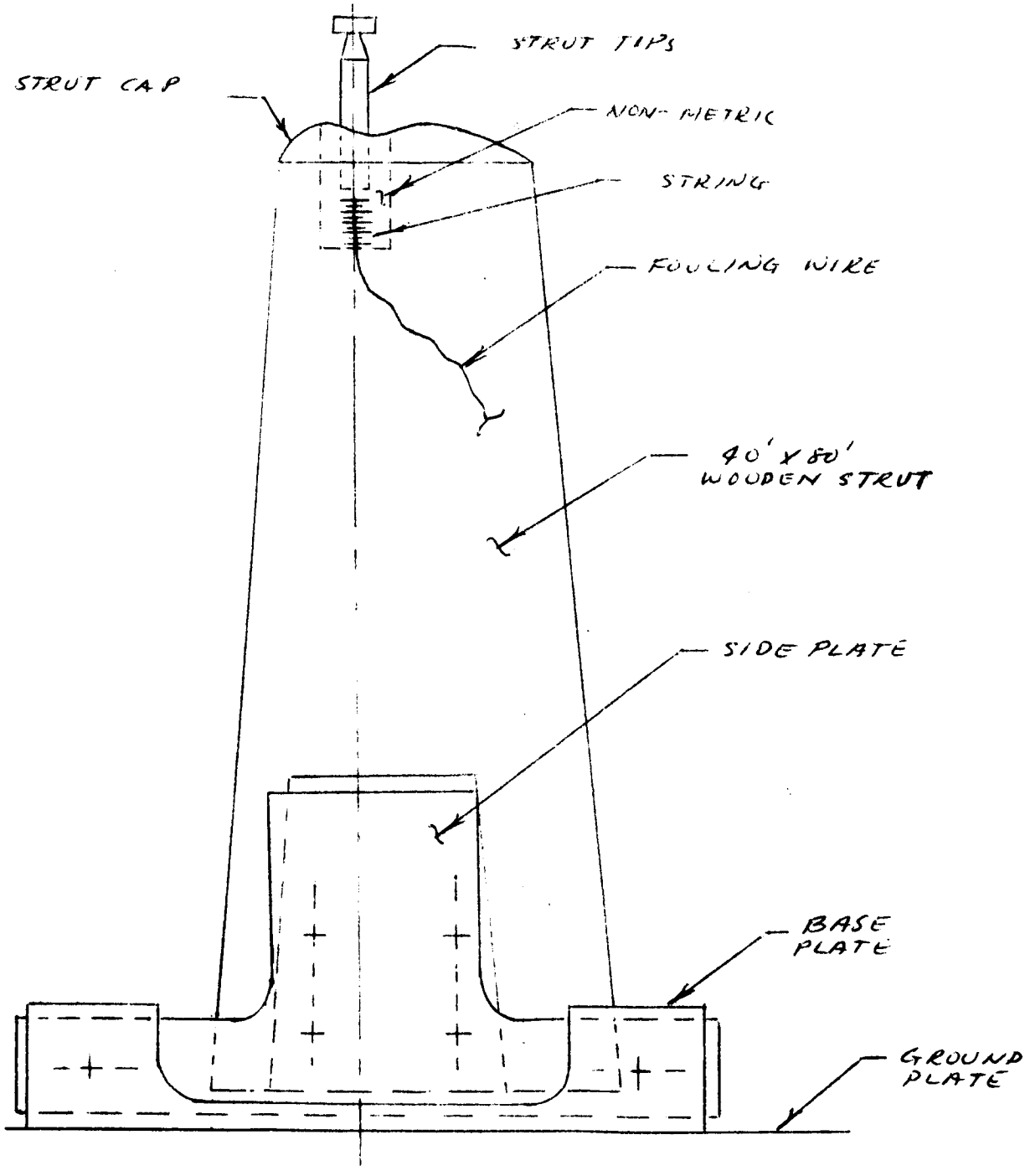
d. Orbiter/Carrier Attach Points

Figure 2. (Continued)



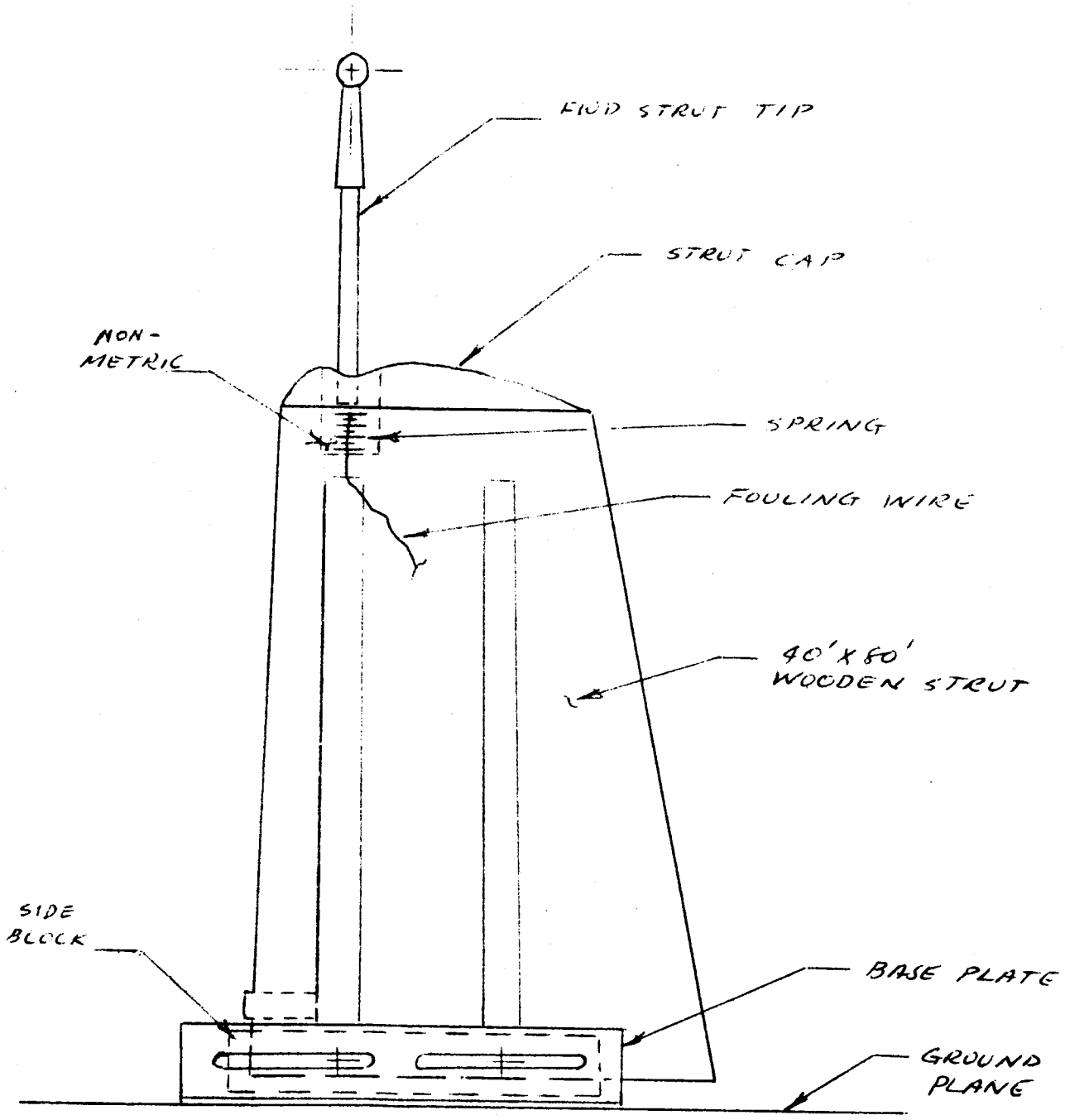
e. OA159 Model Simulation of OA100 Model at α = 0, 10, and 20 Degrees

Figure 2. (Continued)



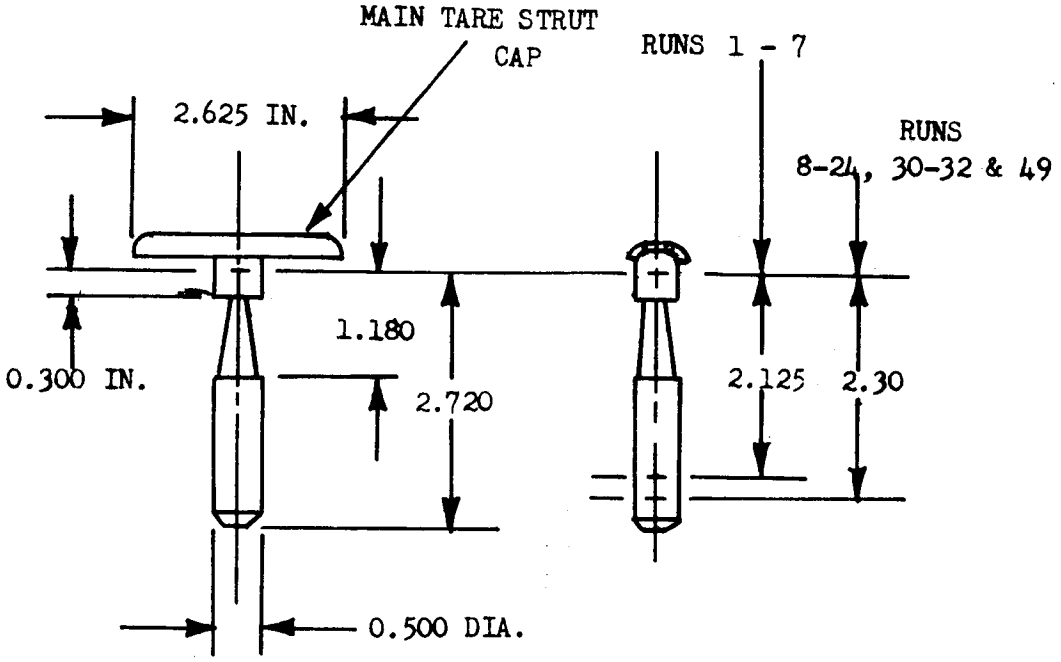
f. Main Strut (Typ.) with Fouling Circuit

Figure 2. (Continued)

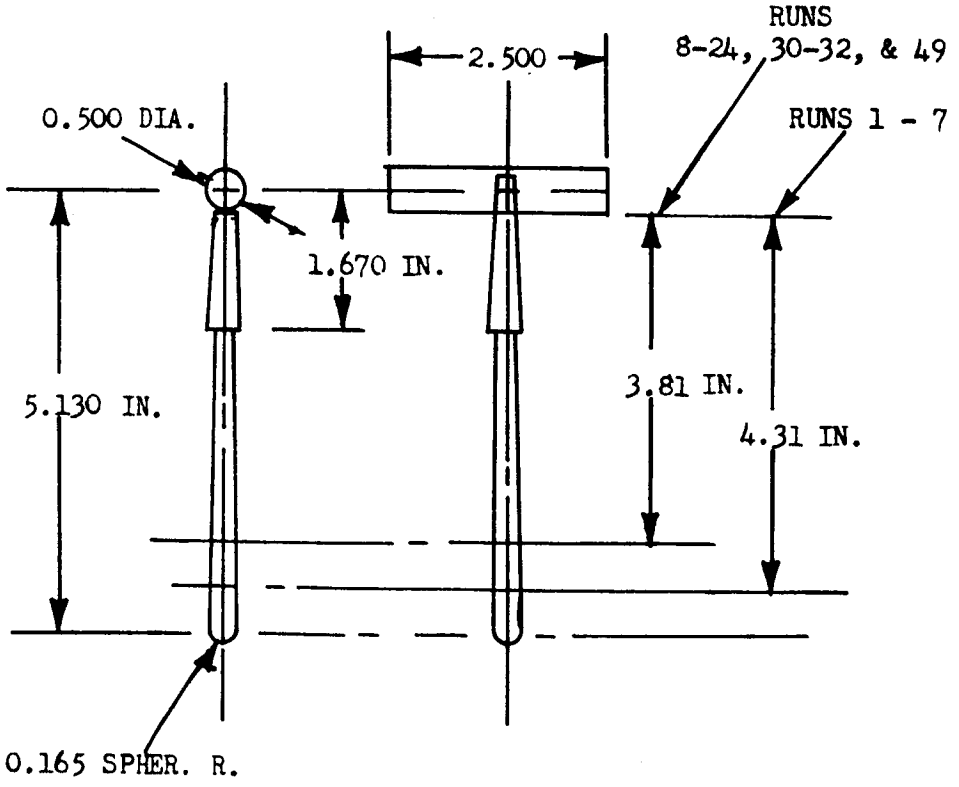


g. Pitch Strut

Figure 2. (Continued)

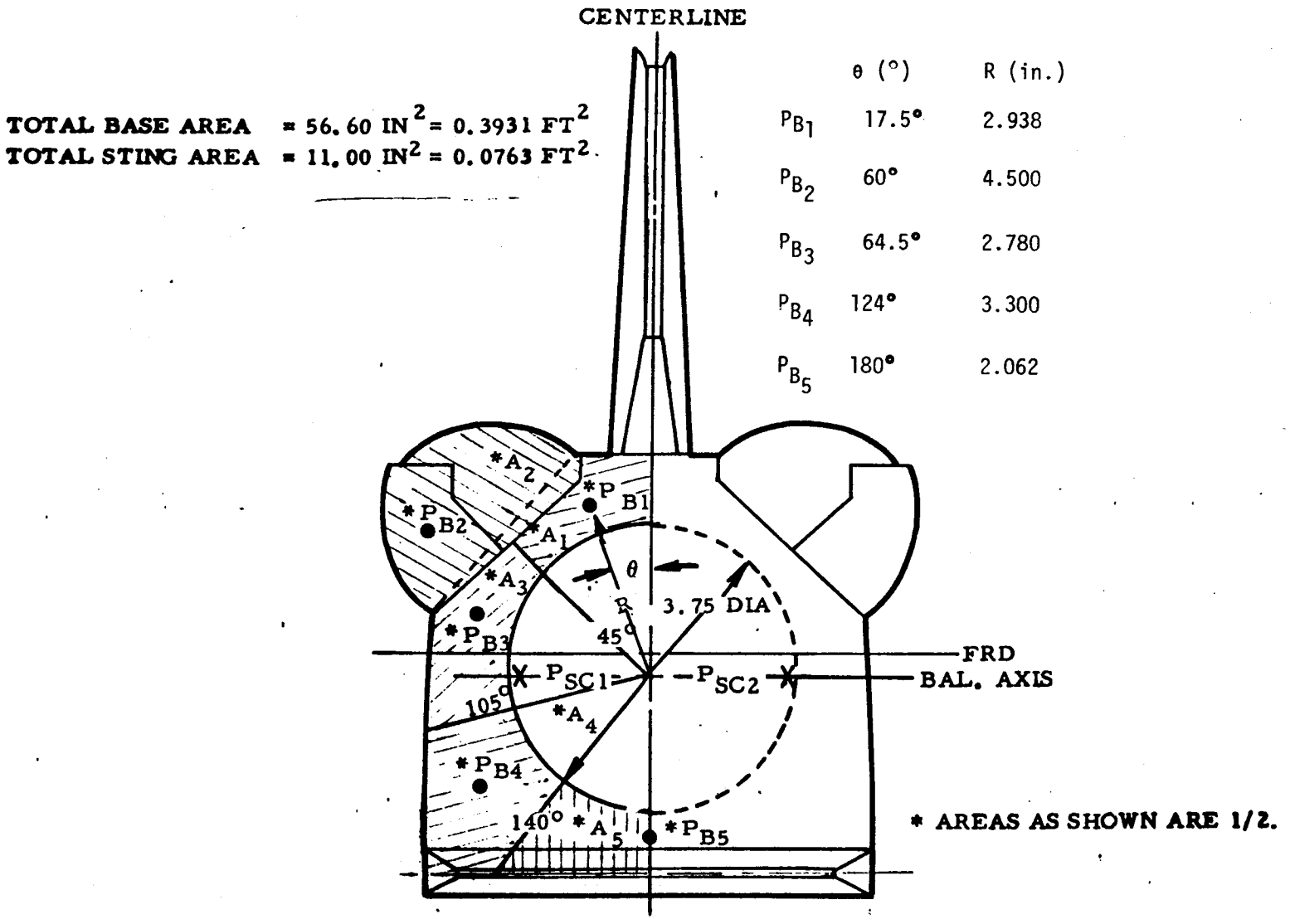


h. Main Tare Strut Tips



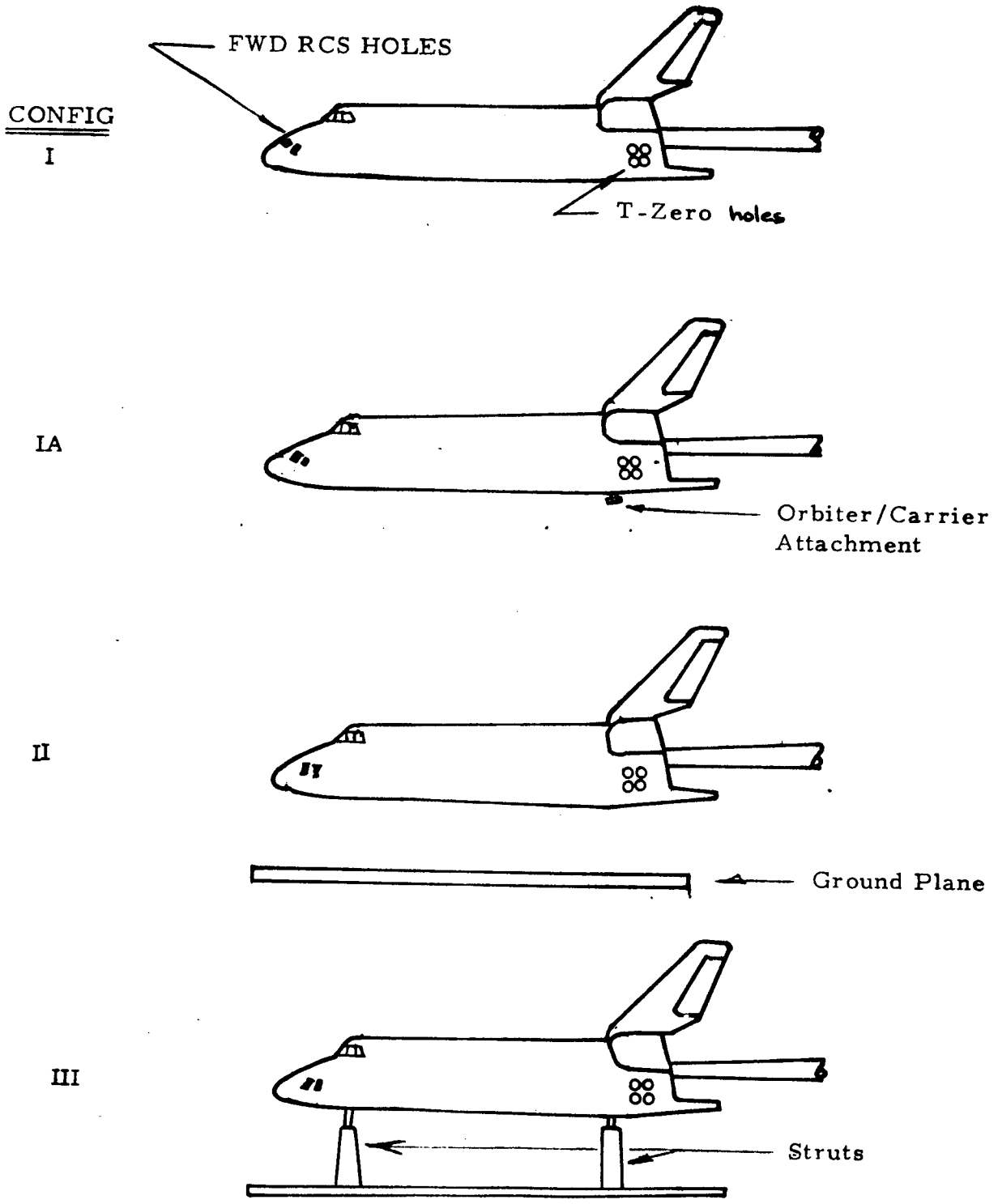
i. Forward Tare Strut Tips

Figure 2. (Continued)



j. Base Pressure Orifice Locations

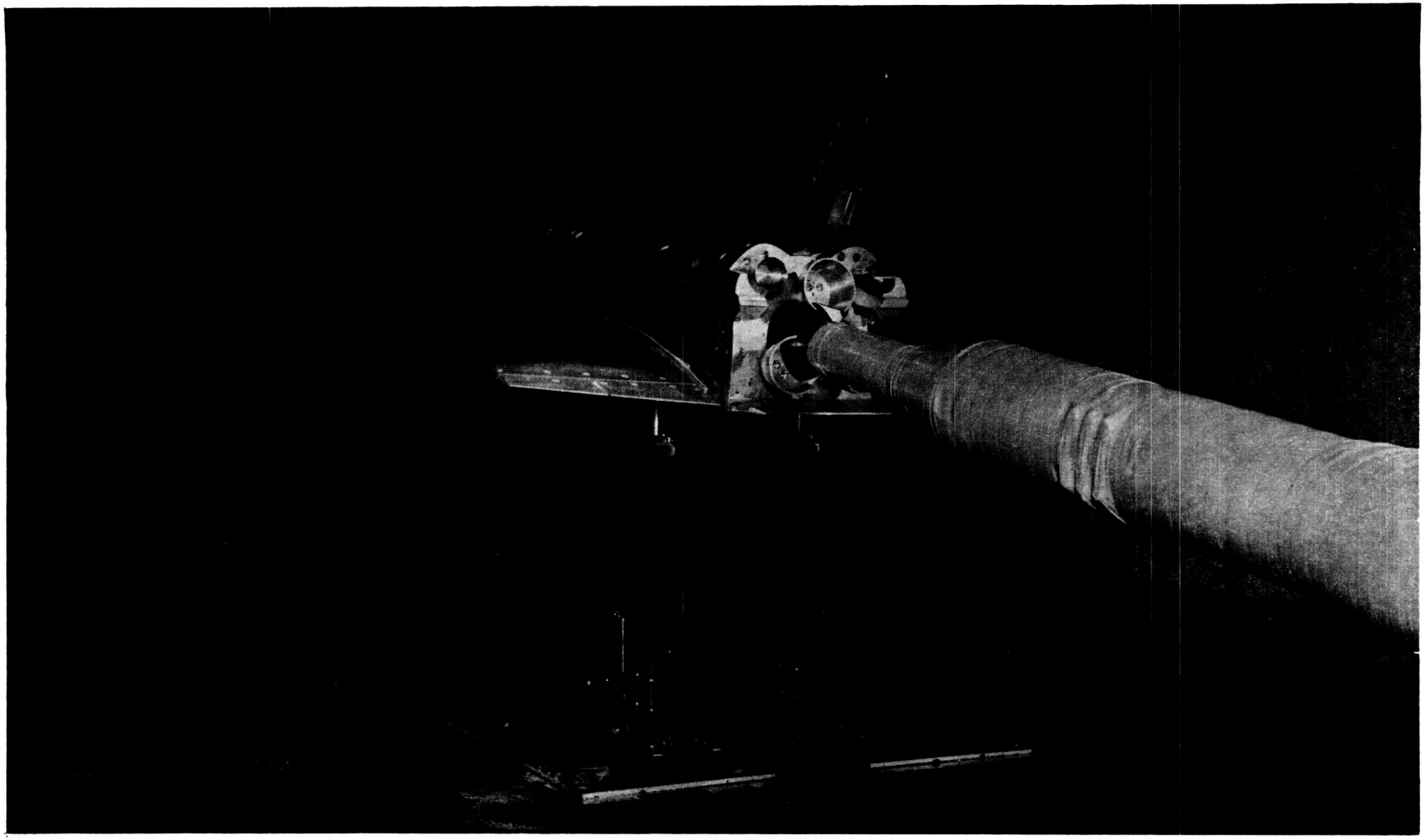
Figure 2. (Continued)



Forward RCS holes and aft "T-0" holes were used for config. I, II, III except once for config. I when the forward RCS holes were plugged to observe their effect.

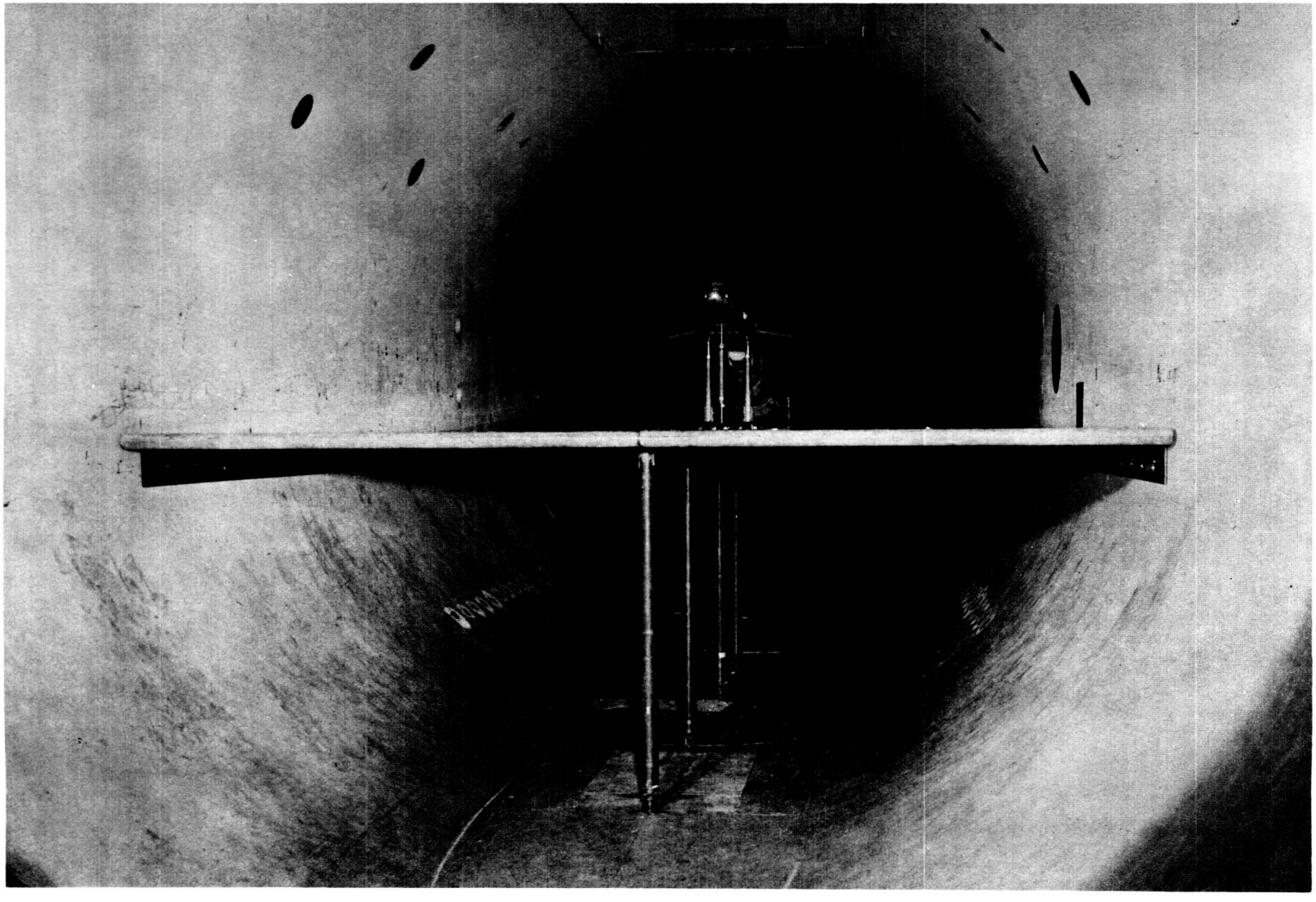
k. OA159 Orbiter Configurations

Figure 2. (Concluded)

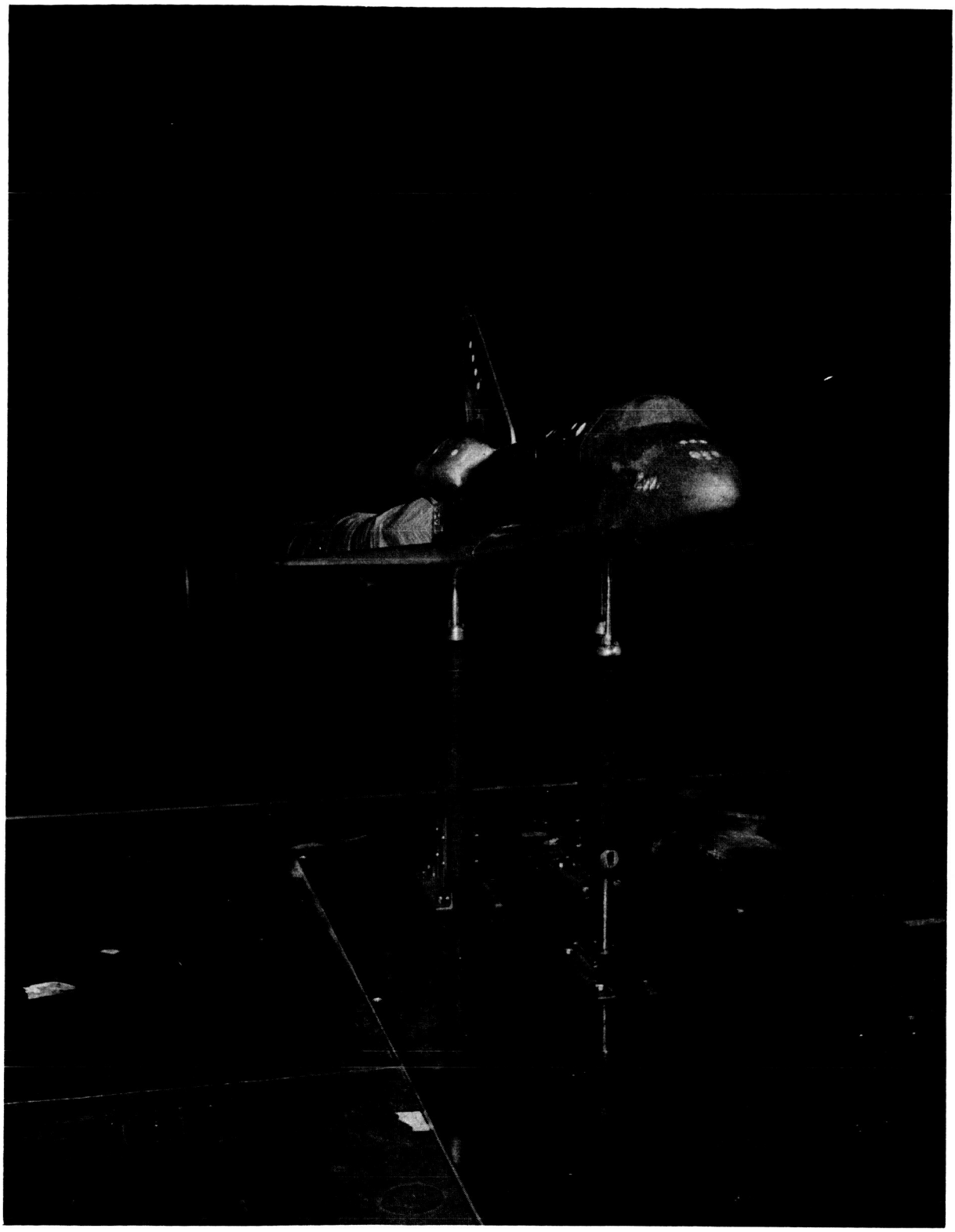


a. Configuration III, 3/4 Rear View

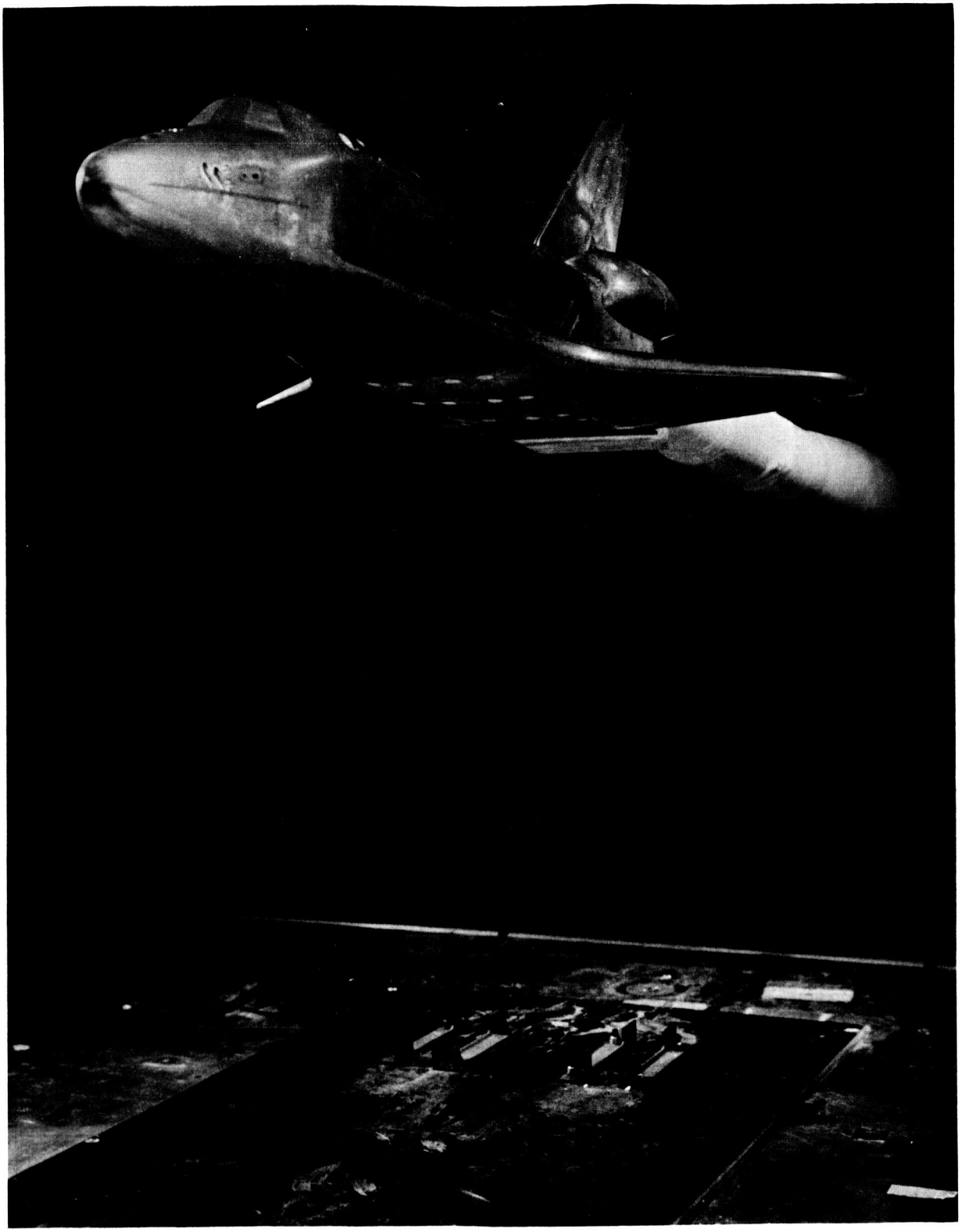
Figure 3. Model Installation Photographs



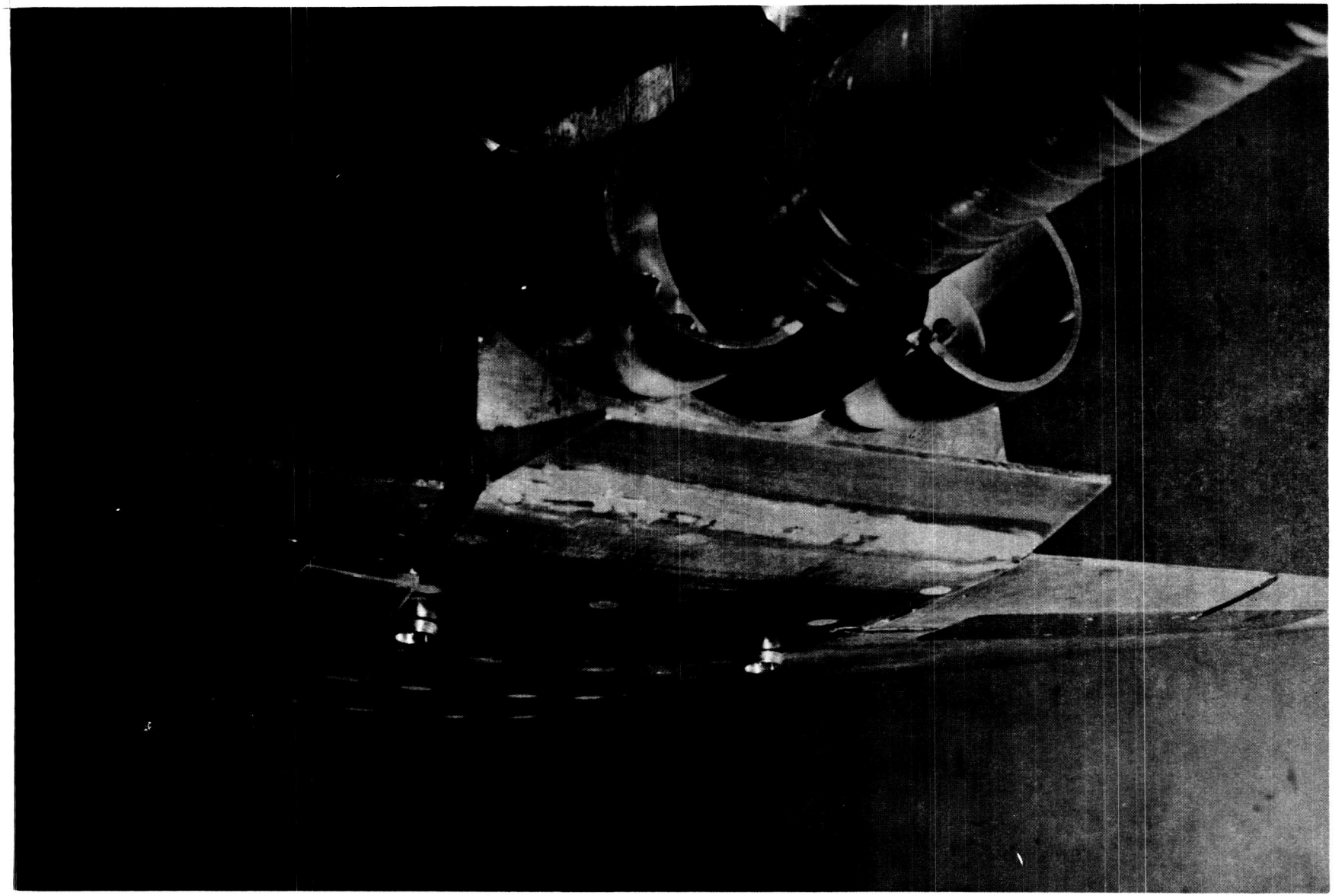
b. Configuration III with Ground Plane, Front View
Figure 3. (Continued)



c. Configuration III with Strut, 3/4 Front View
Figure 3. (Continued)

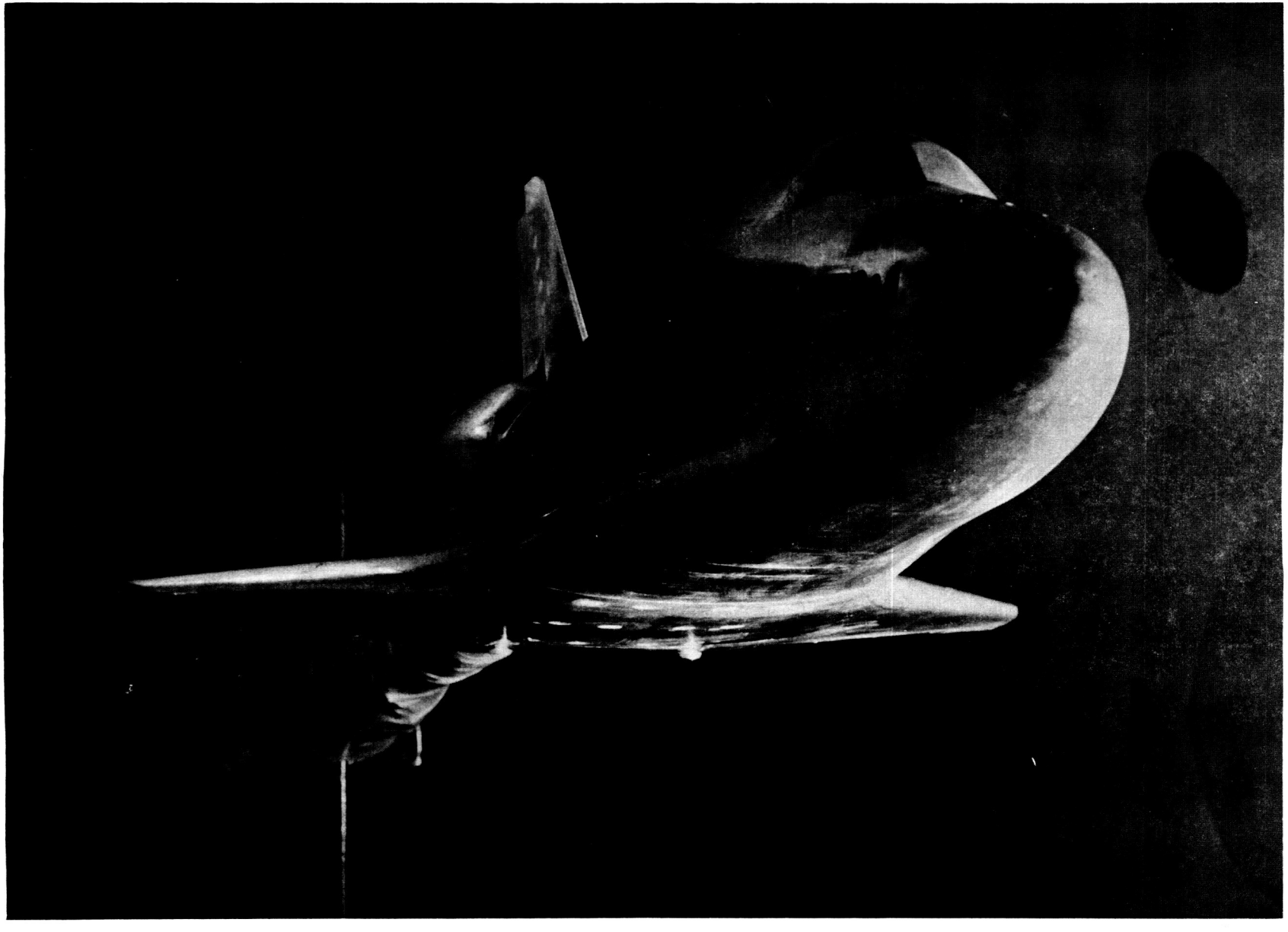


d. Configuration II, 3/4 Front View
Figure 3. (Continued)

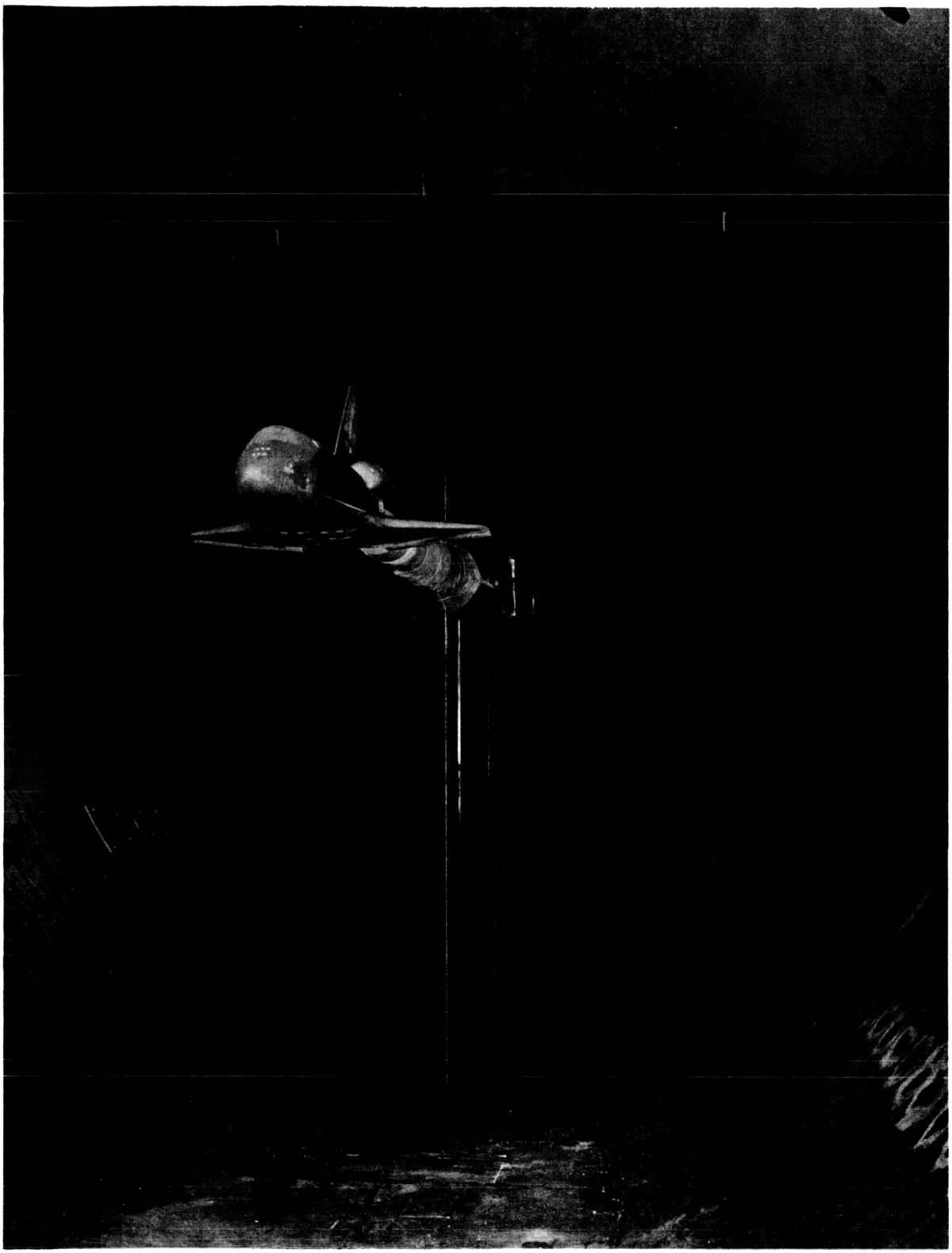


e. Configuration IA with Carrier Attachments, Lower Rear Surface

Figure 3. (Continued)

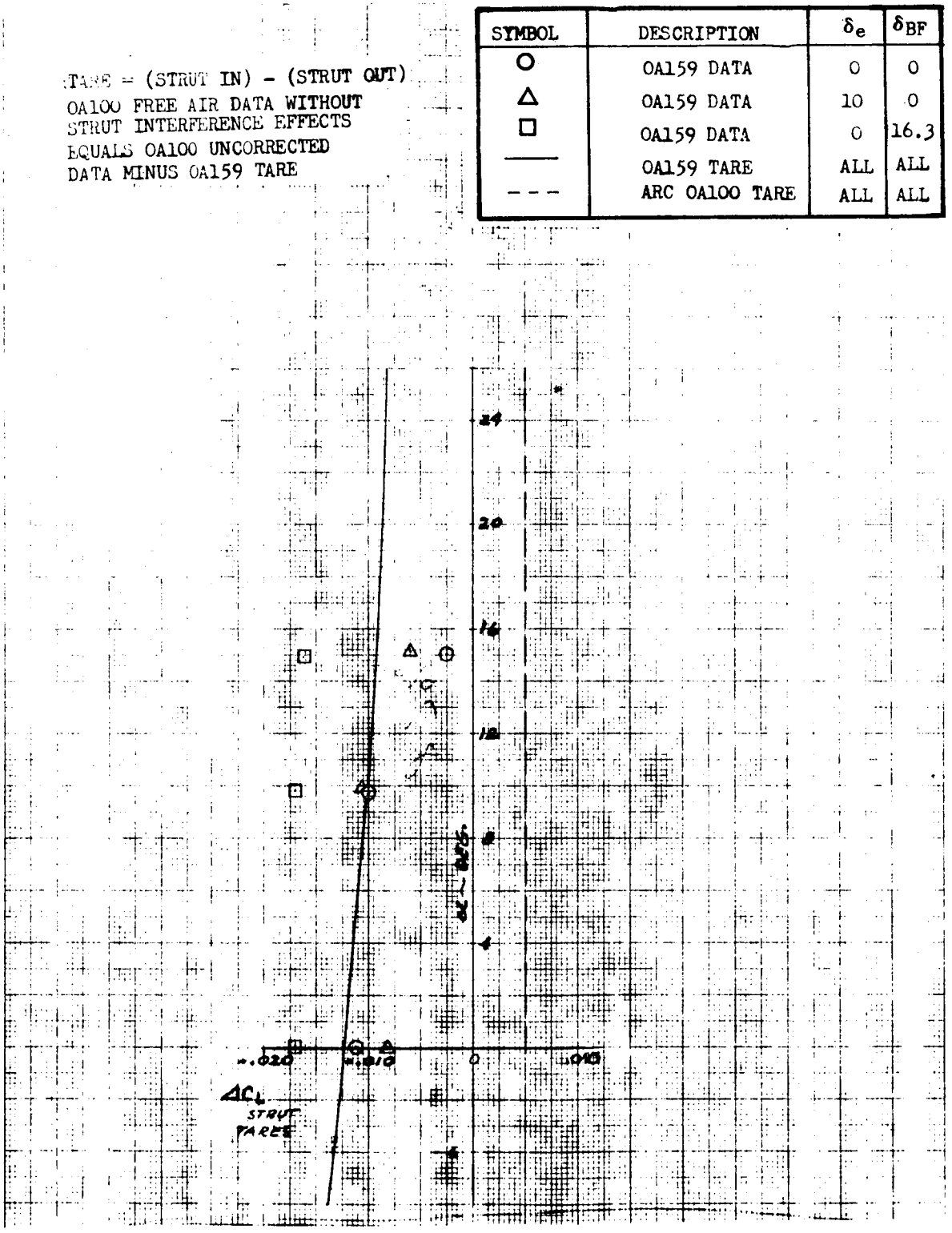


f. Configuration IA with Carrier Attachments, 3/4 Front View
Figure 3. (Continued)



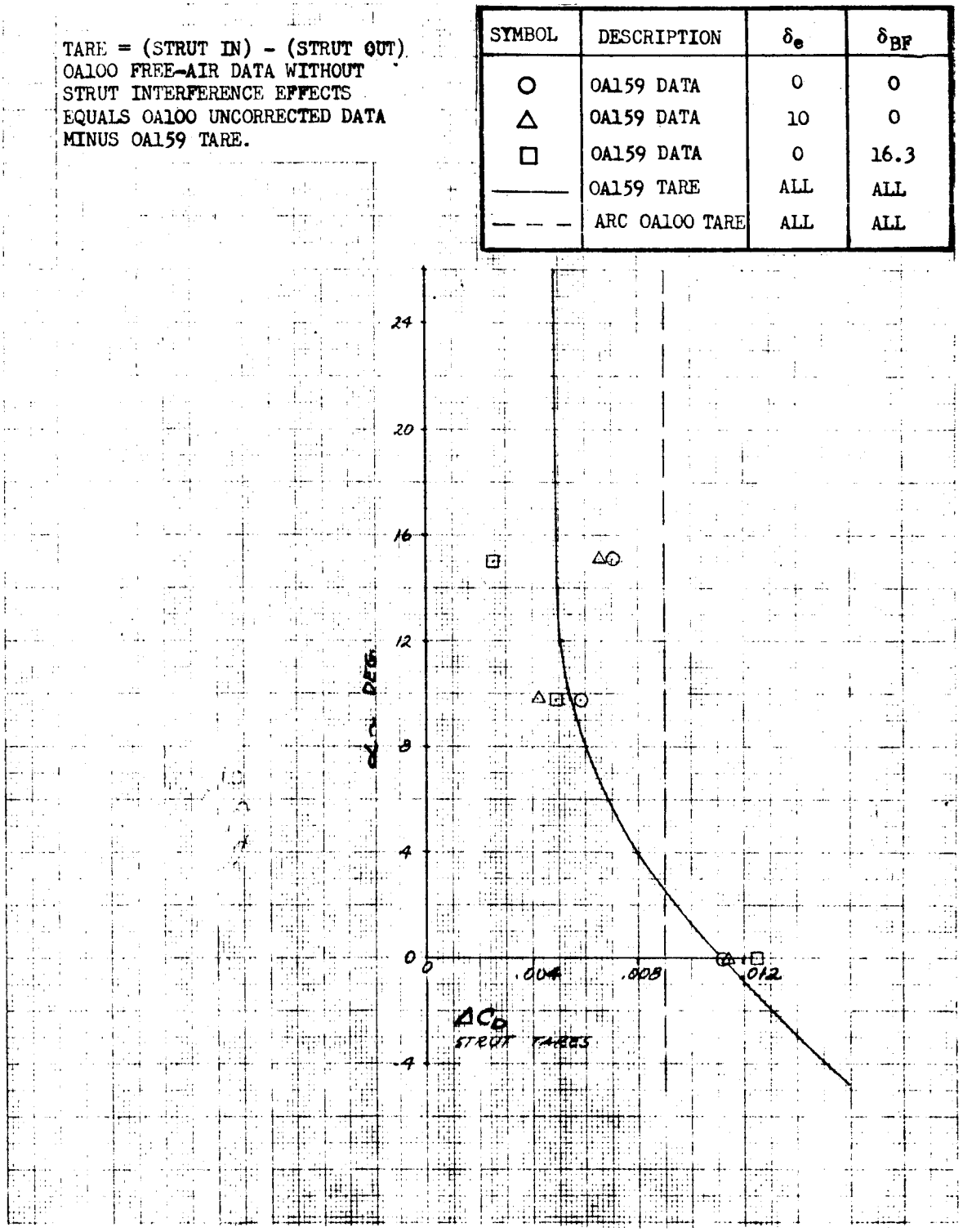
g. Configuration I without Ground Plane, 3/4 Front View

Figure 3. (Concluded)



a. Comparison Between the CL Tare Determined in OA159 and the One Used by ARC in OA100

Figure 4. Data Analysis Plots

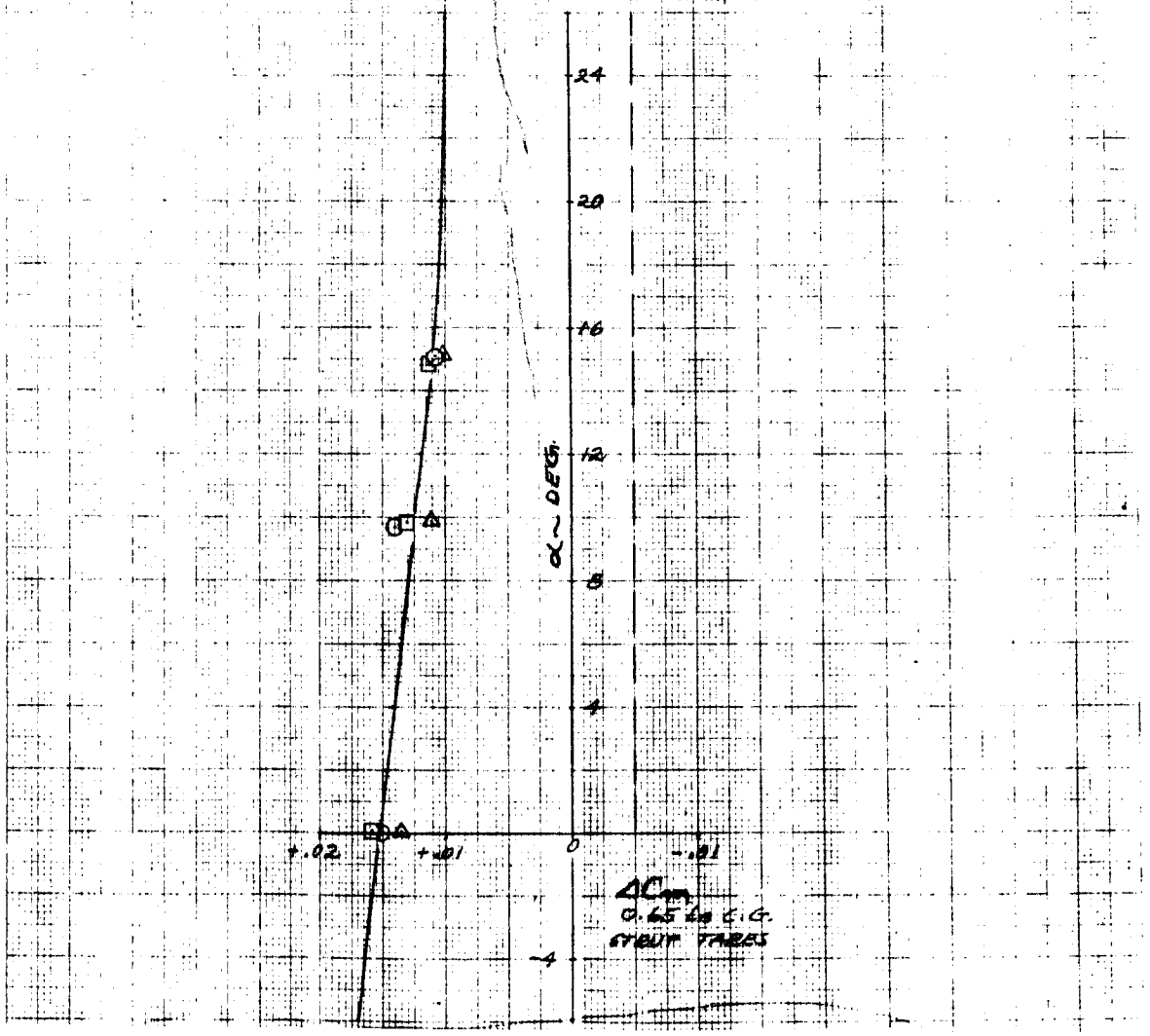


b. Comparison Between the CD Tare Determined in OA159 and the One Used by ARC in OA100

Figure 4. Continued

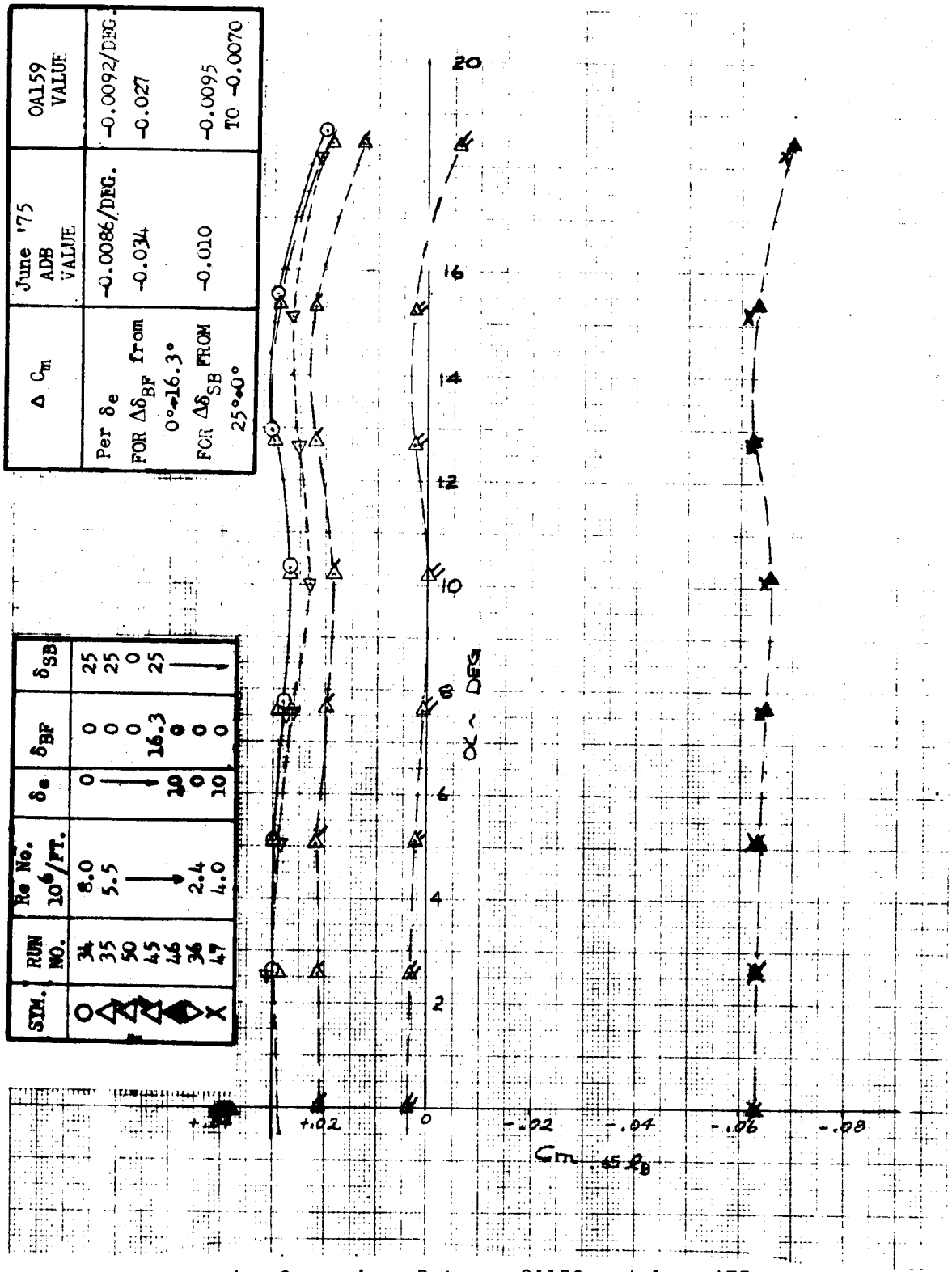
TARE = (STRUT IN) - (STRUT OUT)
OA100 FREE-AIR DATA WITHOUT
STRUT INTERFERENCE EFFECTS
EQUALS OA100 UNCORRECTED DATA
MINUS OA159 TARE.

SYMBOL	DESCRIPTION	δ_e	δ_{BF}
○	OA159 DATA	0	0
△	OA159 DATA	10	0
□	OA159 DATA	0	16.3
———	OA159 TARE	ALL	ALL
— — —	ARC OA100 TARE	ALL	ALL



c. Comparison Between the CLM Tare Determined in OA159 and the One Used by ARC OA100

Figure 4. Continued



d. Comparison Between OA159 and June '75 Aerodata Book Pitching Moment

Figure 4. Concluded

DATA FIGURES

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (FNGA02)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	.000	ELEVON	.000
		BDFLAP	.000	SPDBRK	25.000
		MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

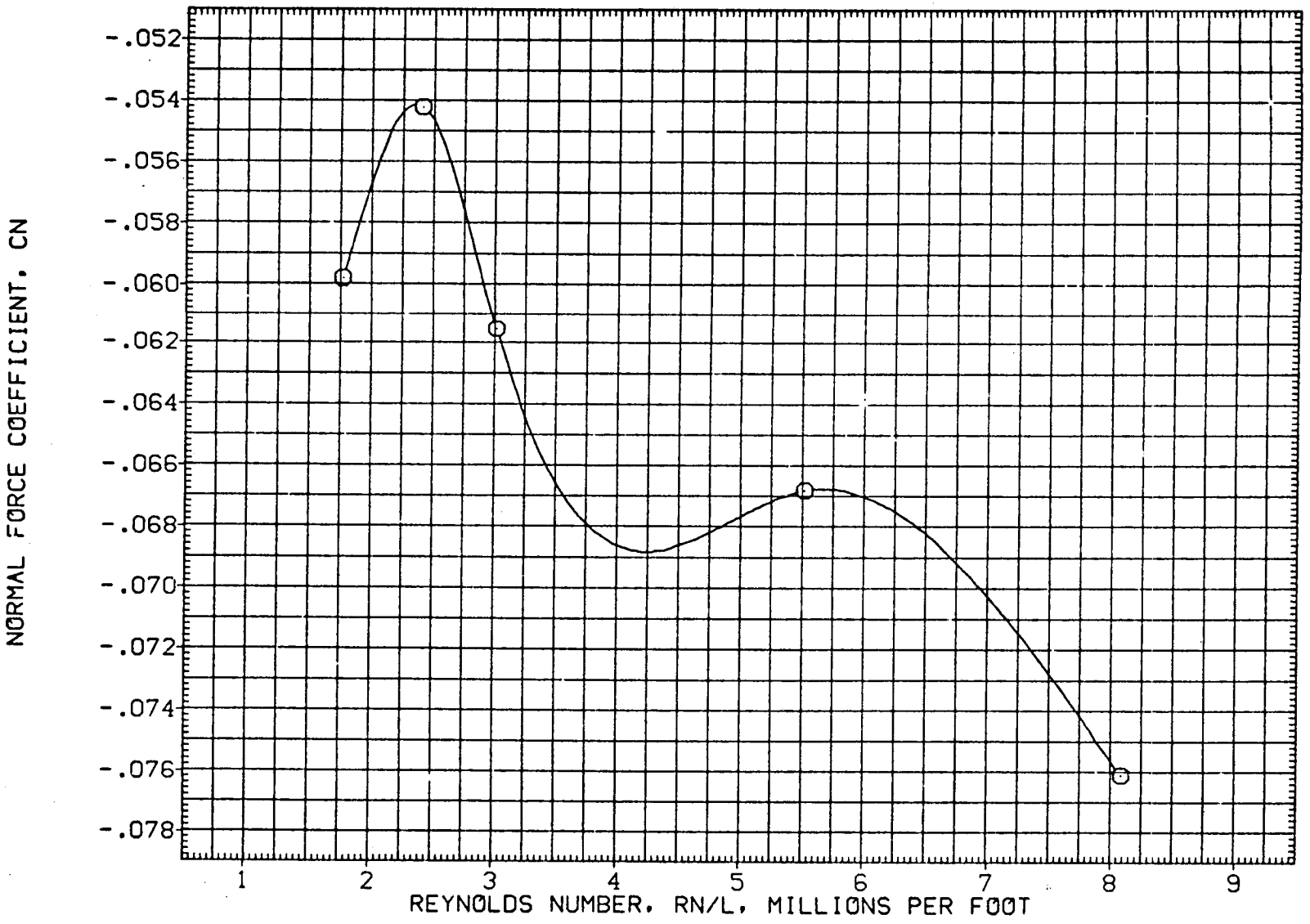


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (FNGA02)

SYMBOL	ALPHA
O	.000

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
BDFLAP	.000	SPDBRK	25.000
MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

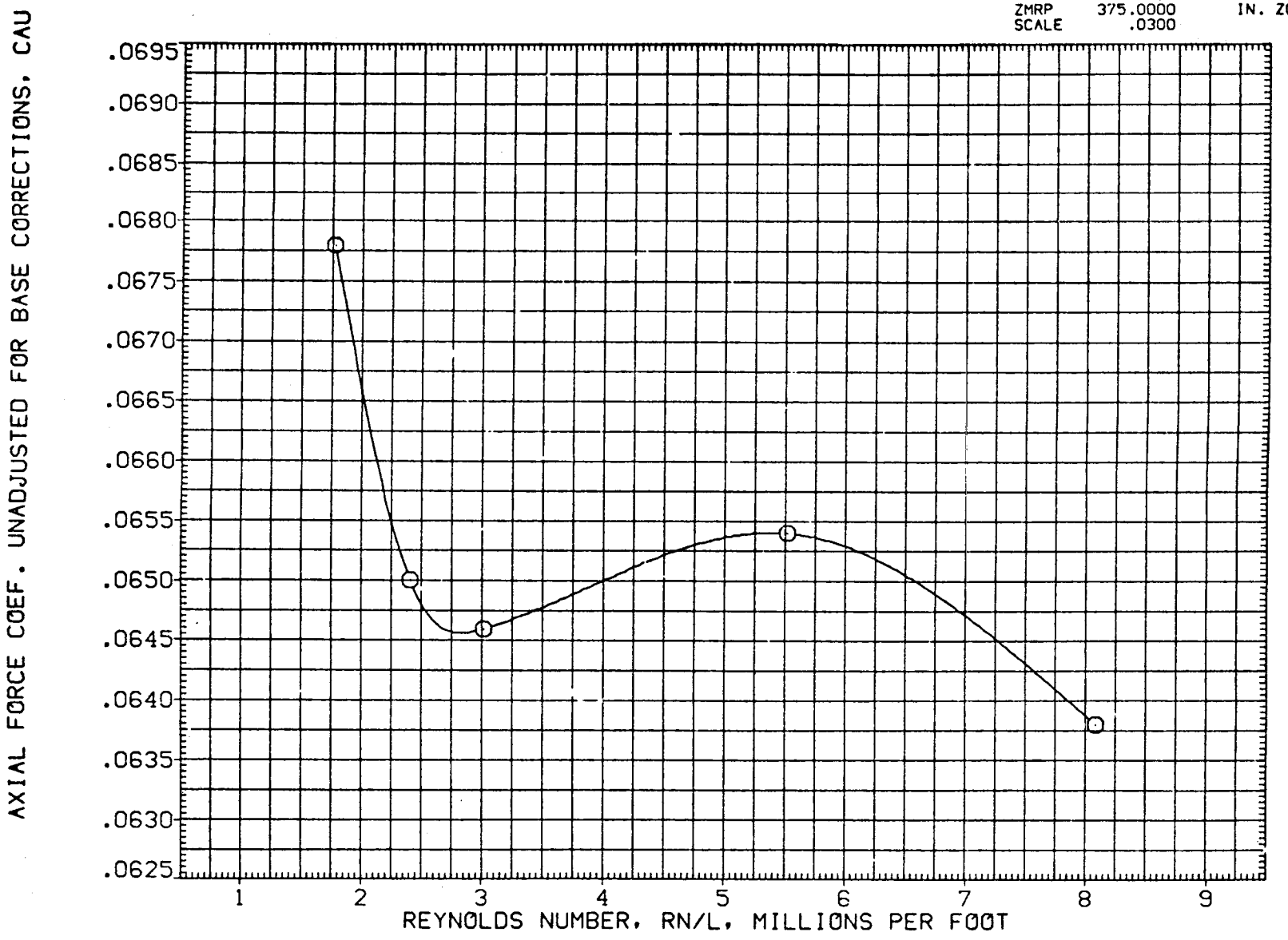


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (FNGA02)

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	.000	BETA	.000	ELEVON	.000
		BOFLAP	.000	SPOBRK	25.000
		MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

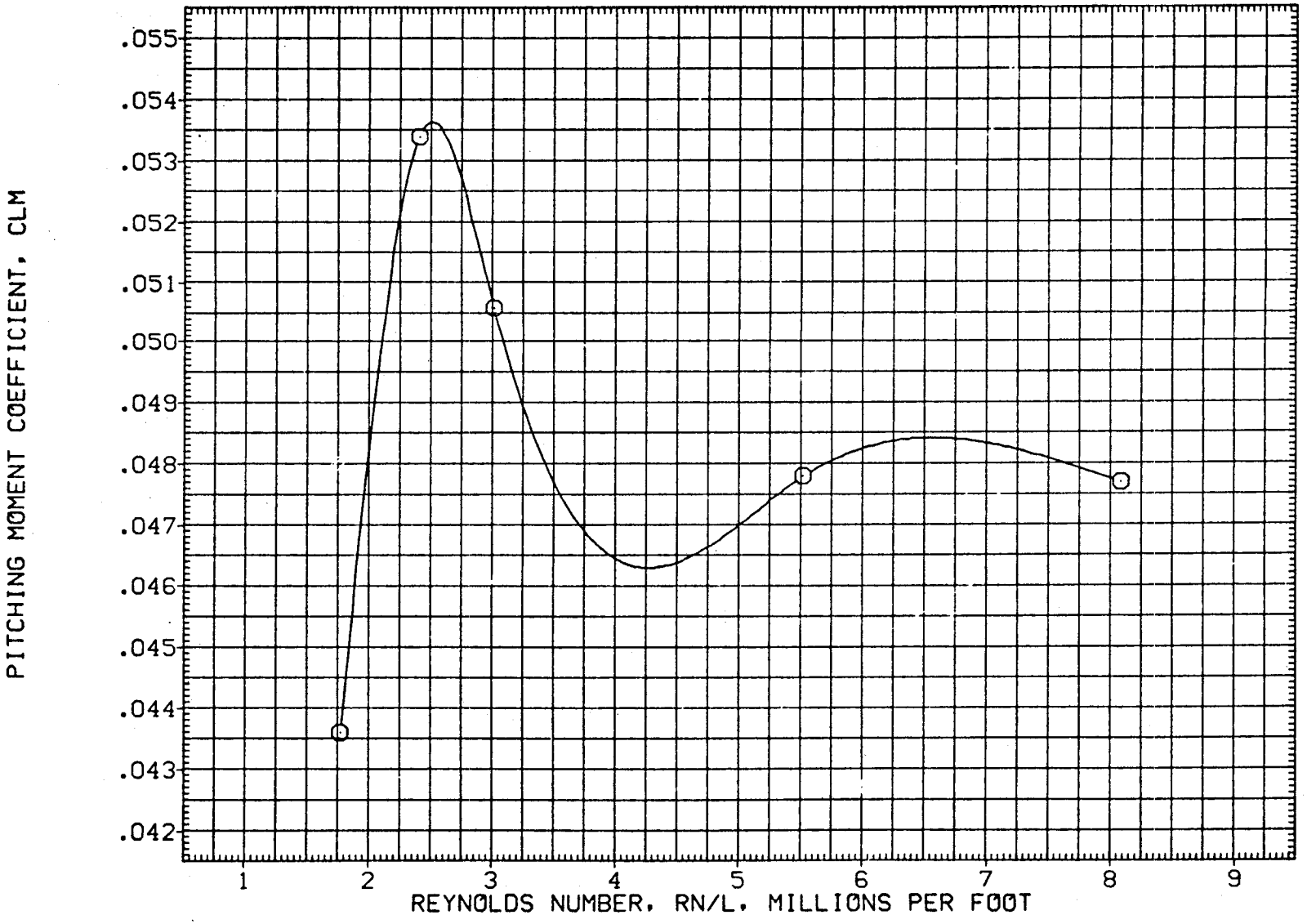


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

A/C 12-078/0A159 03 + STRUTS WITH GROUND PLANE (GNGA02)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	.000	ELEVON	.000
		BDFLAP	.000	SPDBRK	25.000
		MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

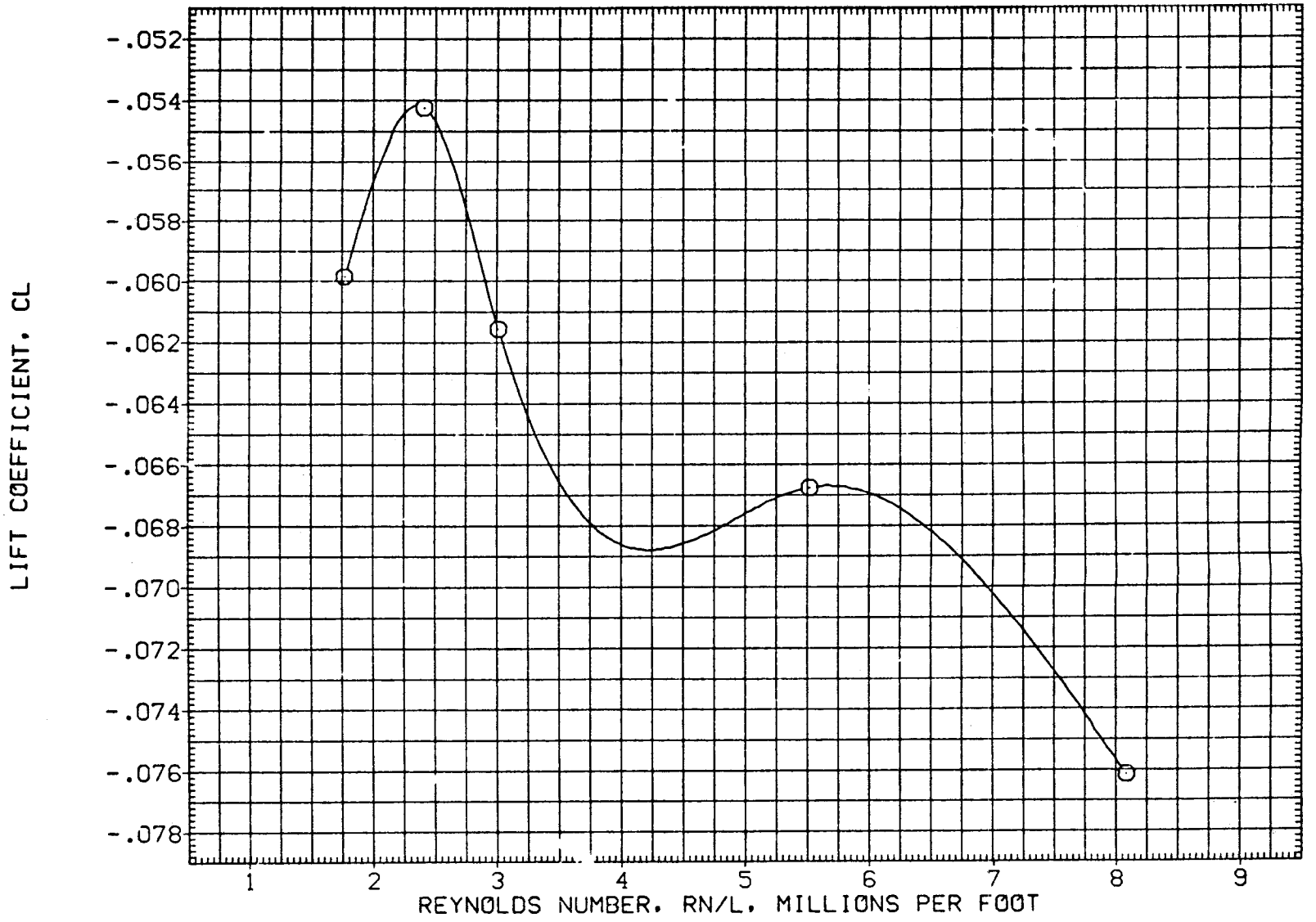


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (GNGA02)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	.000	ELEVON	.000
		BDFLAP	.000	SPDBRK	25.000
		MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

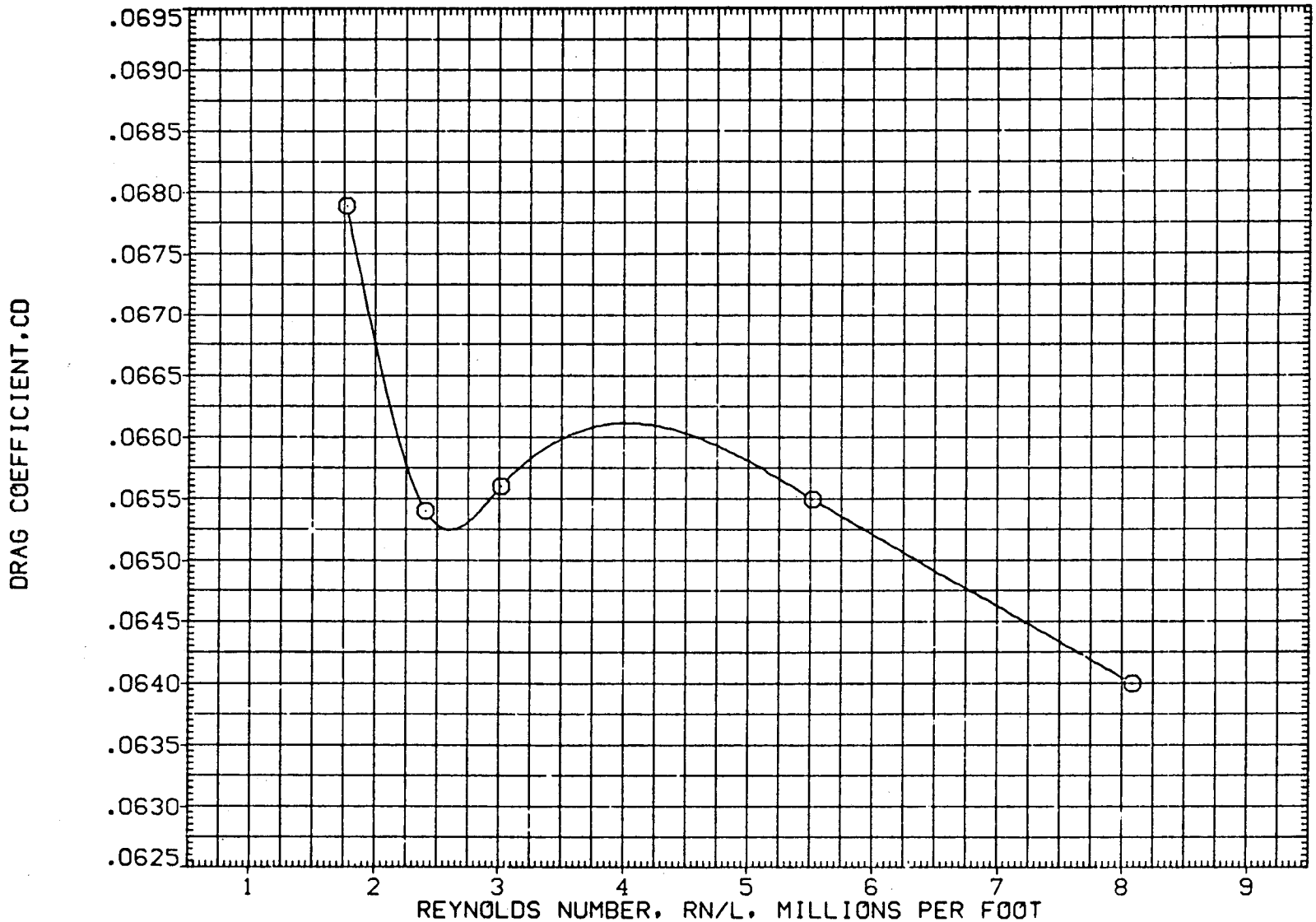


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (HNGA02)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	.000	ELEVON	.000
		BDFLAP	.000	SPOBRK	25.000
		MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

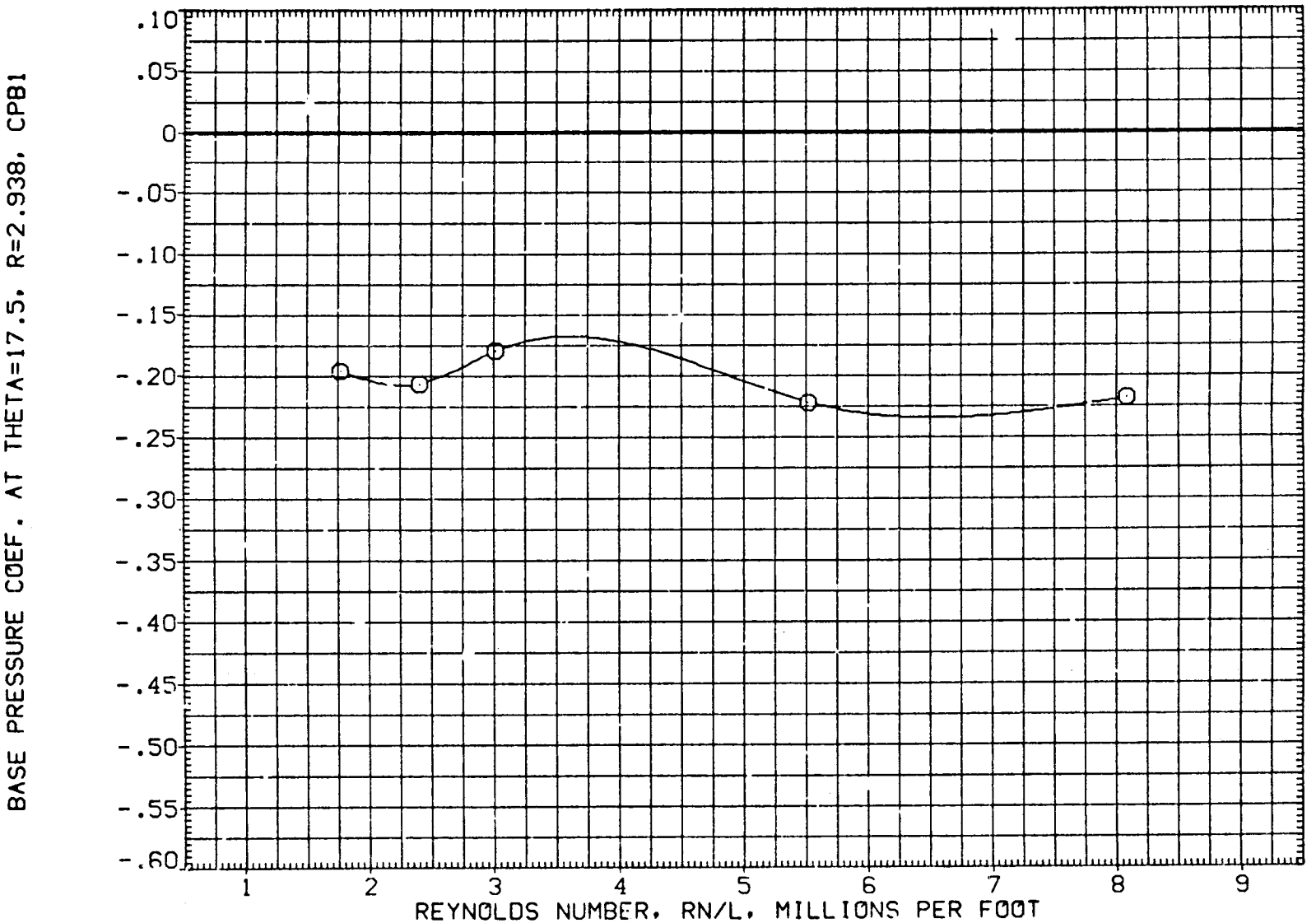


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (HNGA02)

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	.000	BETA	.000	ELEVON	.000
		BDFLAP	.000	SPDBRK	25.000
		MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

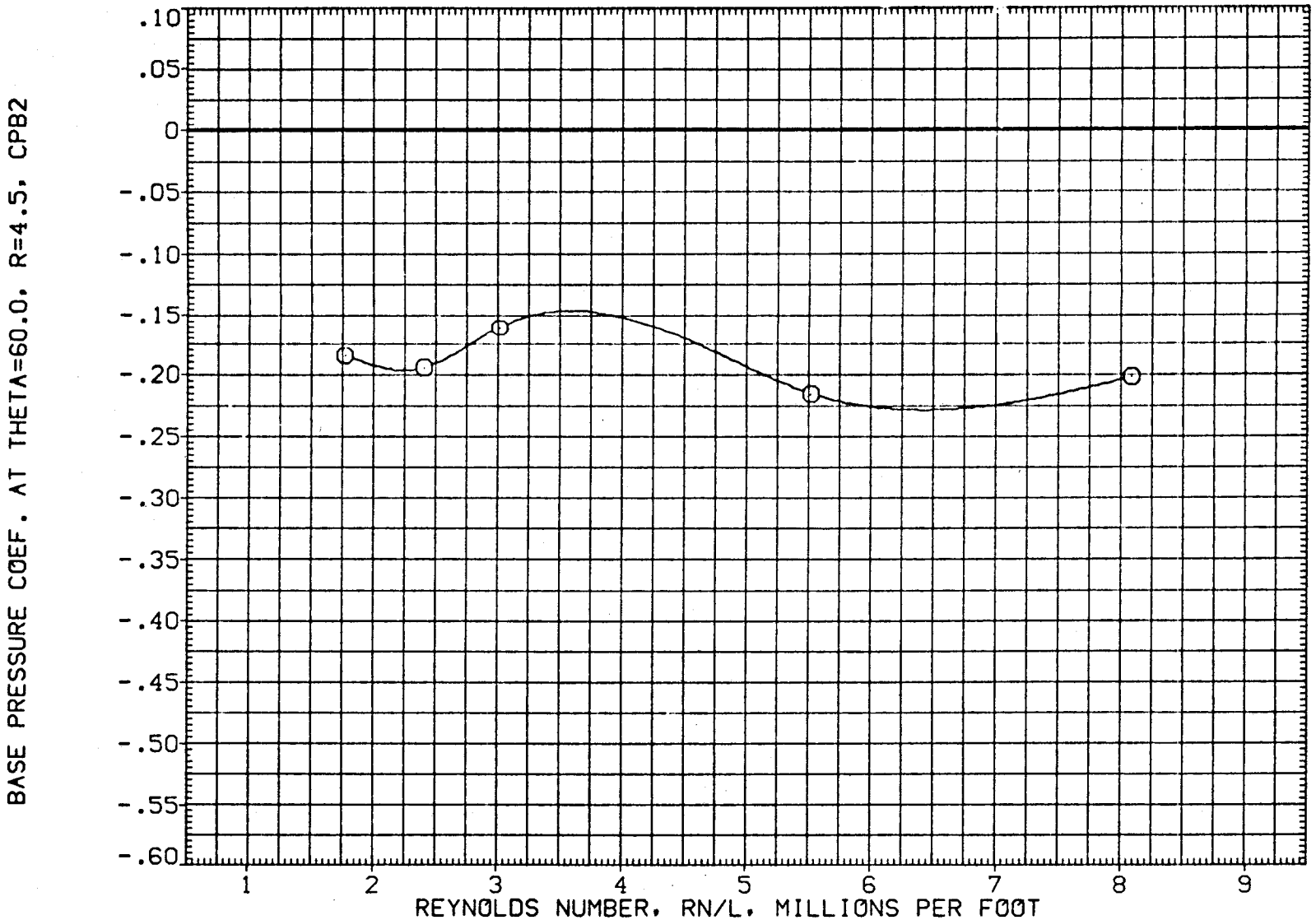


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (HNGA02)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	.000	ELEVON	.000
		BDFLAP	.000	SPDBRK	25.000
		MACH	.260		

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

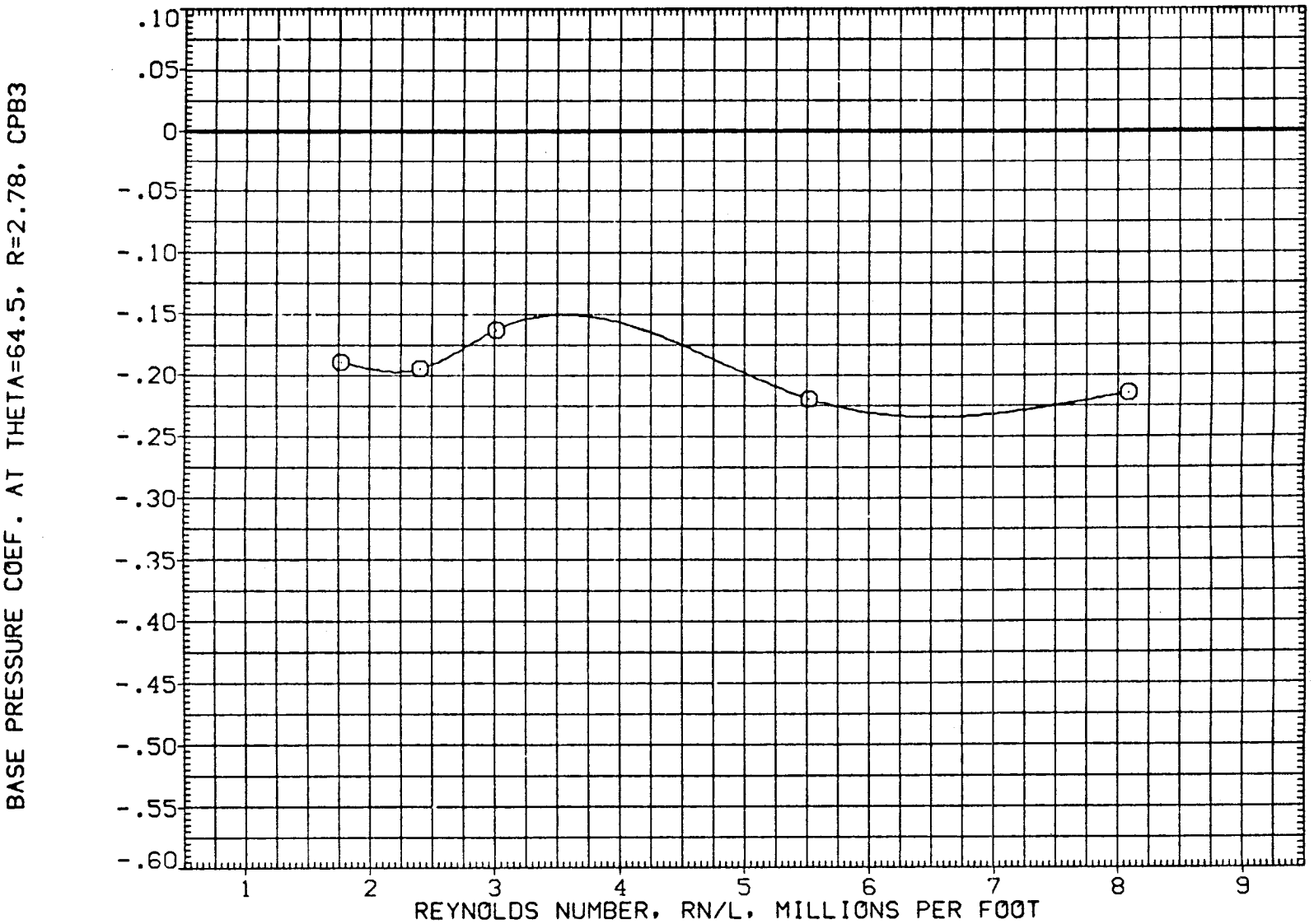


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (HNGA02)

SYMBOL	ALPHA		PARAMETRIC VALUES		
O	.000	BETA	.000	ELEVON	.000
		BDFLAP	.000	SPDBRK	25.000
		MACH	.26J		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

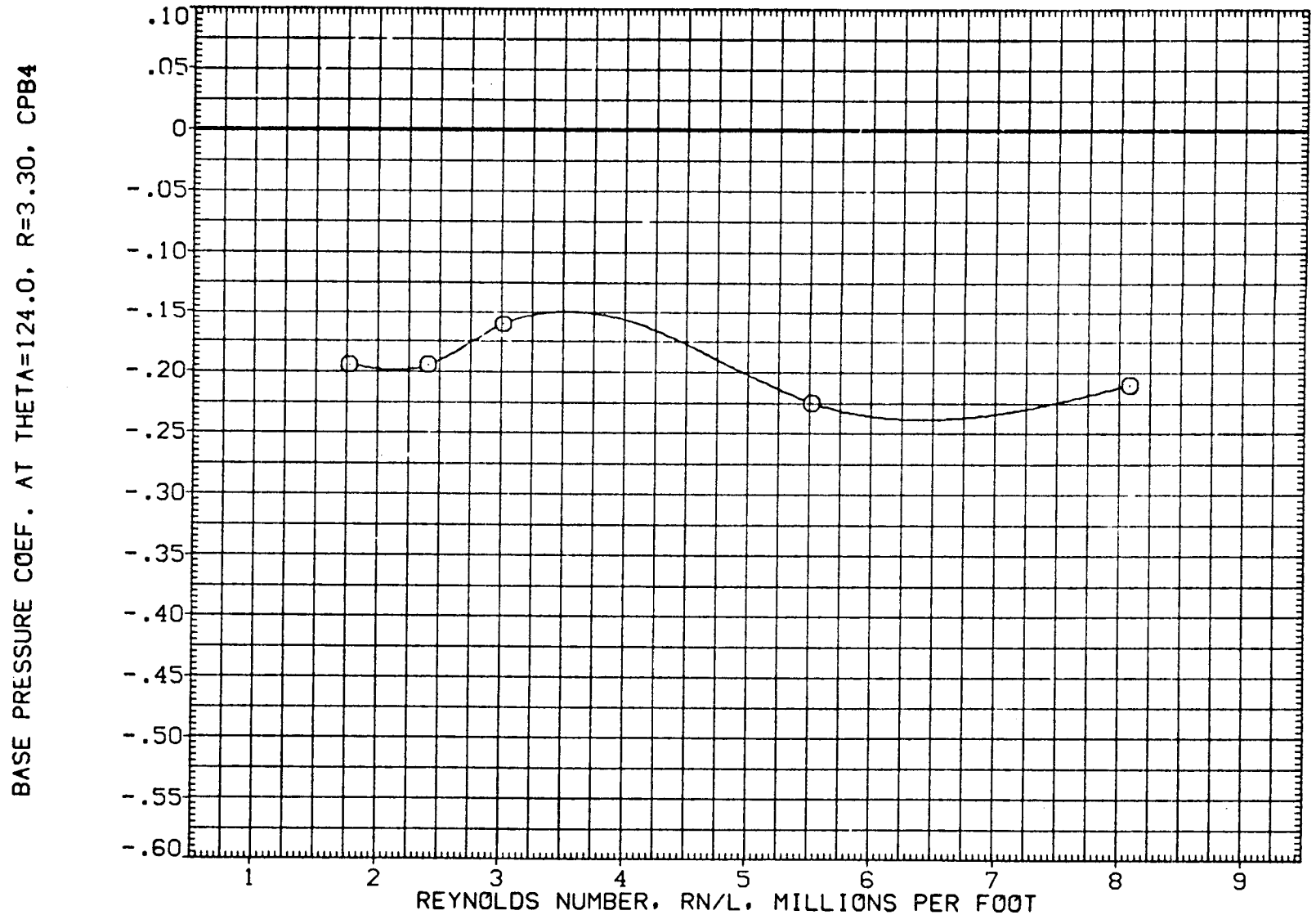


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (HNGA02)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	.000	ELEVON	.000
		BDFLAP	.000	SPDBRK	25.000
		MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

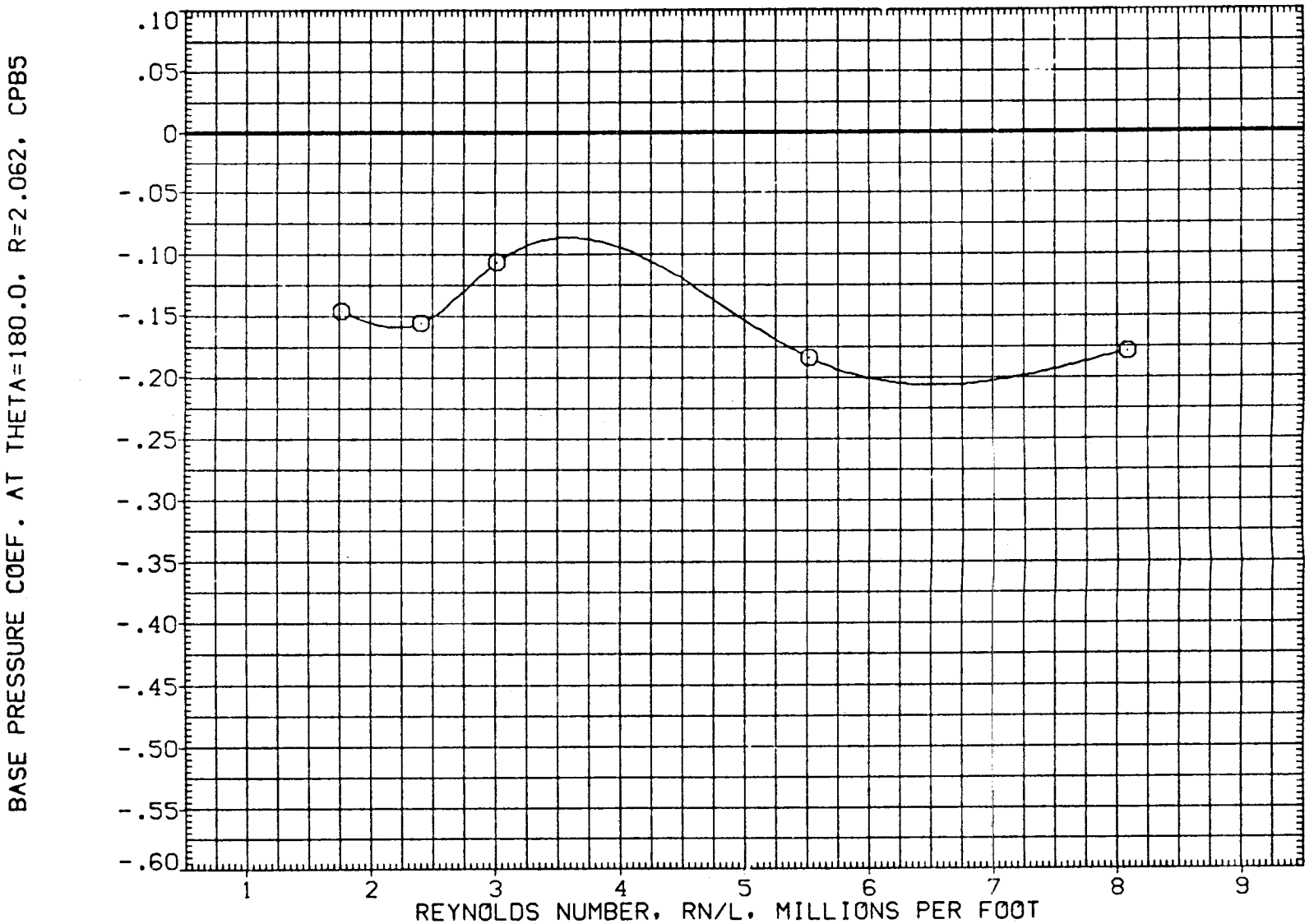


FIG. 5 EFFECT OF REYNOLDS NO. ON BASIC CONFIGURATION, LONGITUDINAL COEFFICIENTS

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG006)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

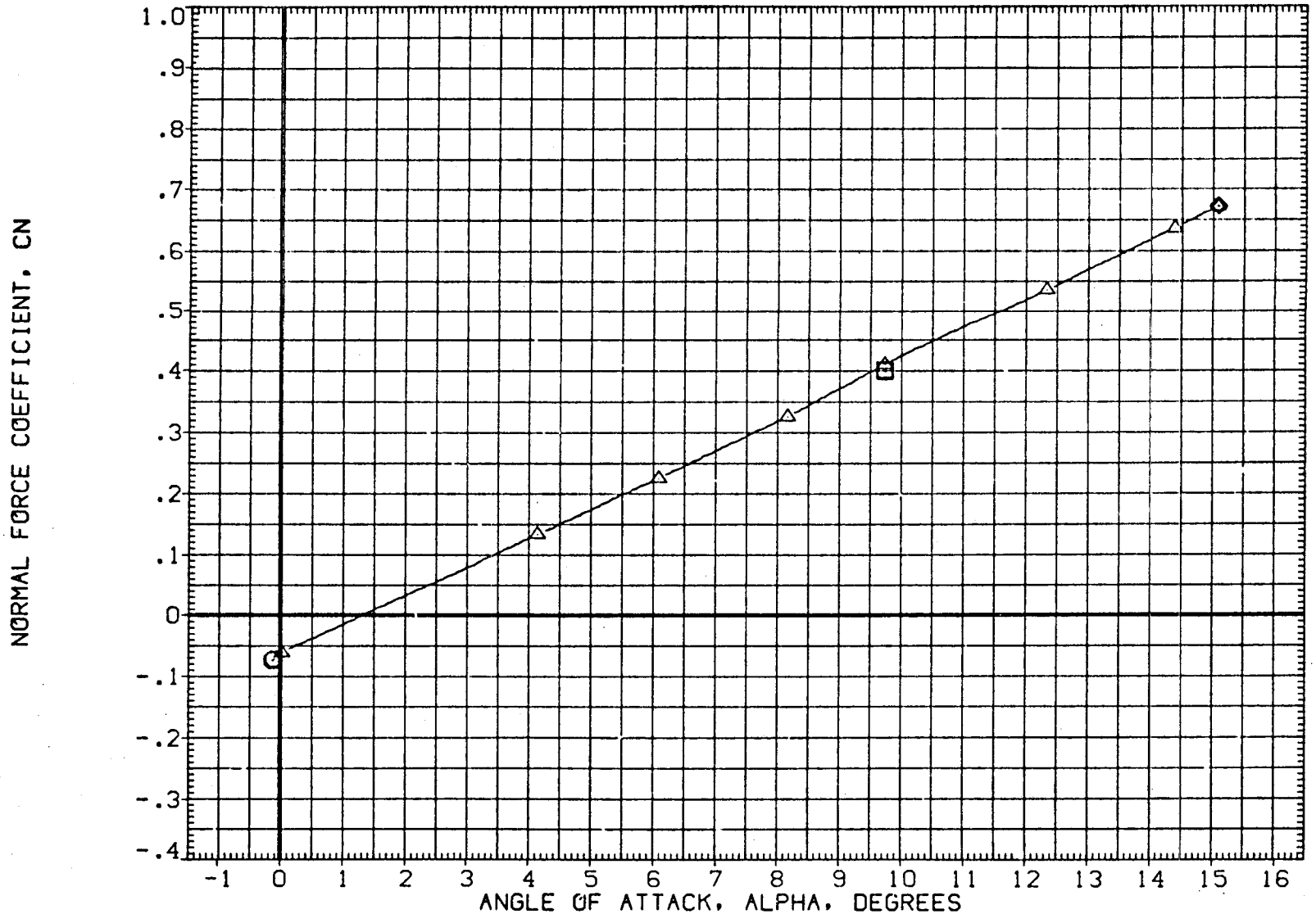


FIG. 6 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=5.5 (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG006)	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNGA15)	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

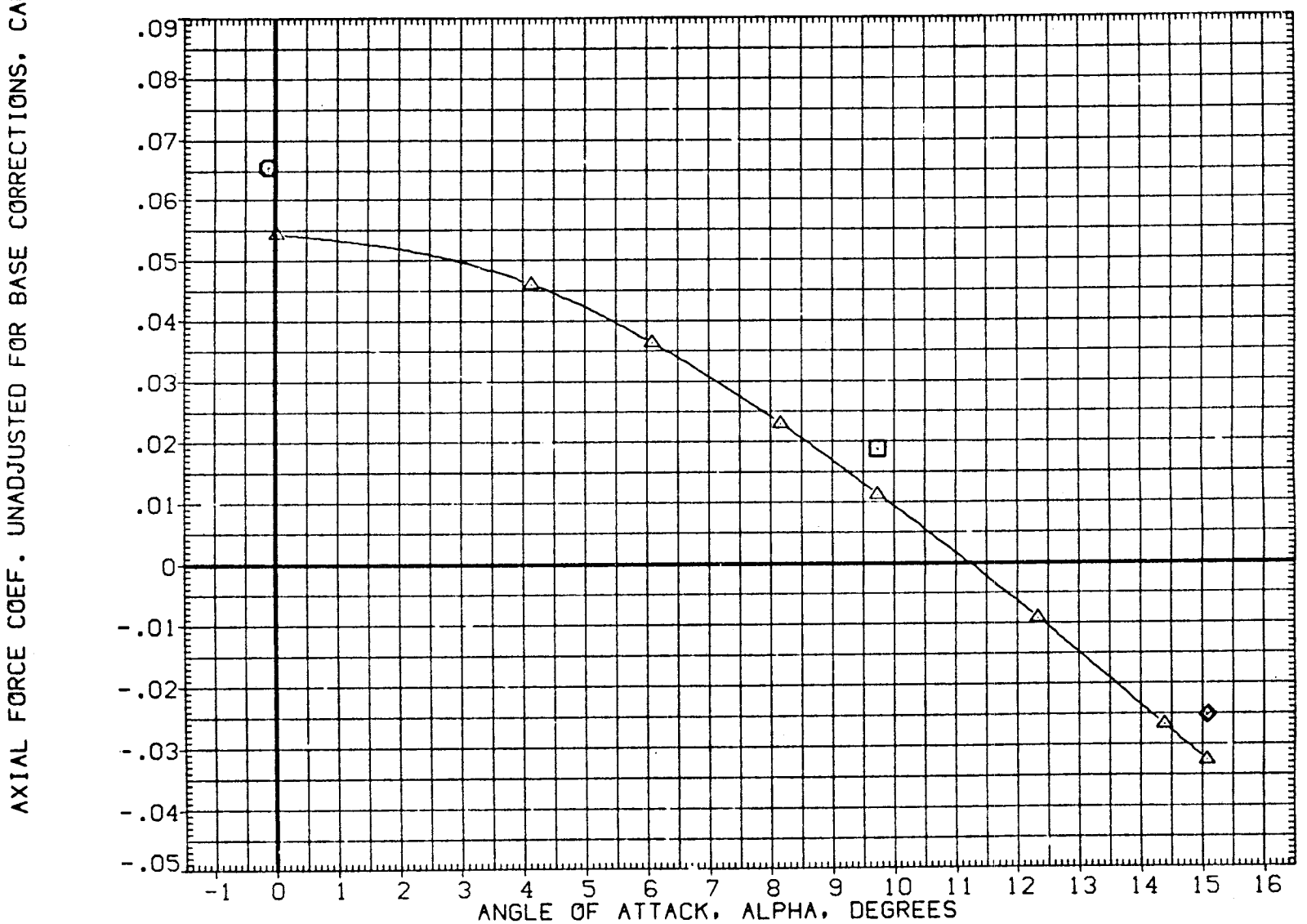


FIG. 6 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=5.5 (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG006)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	⊠	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

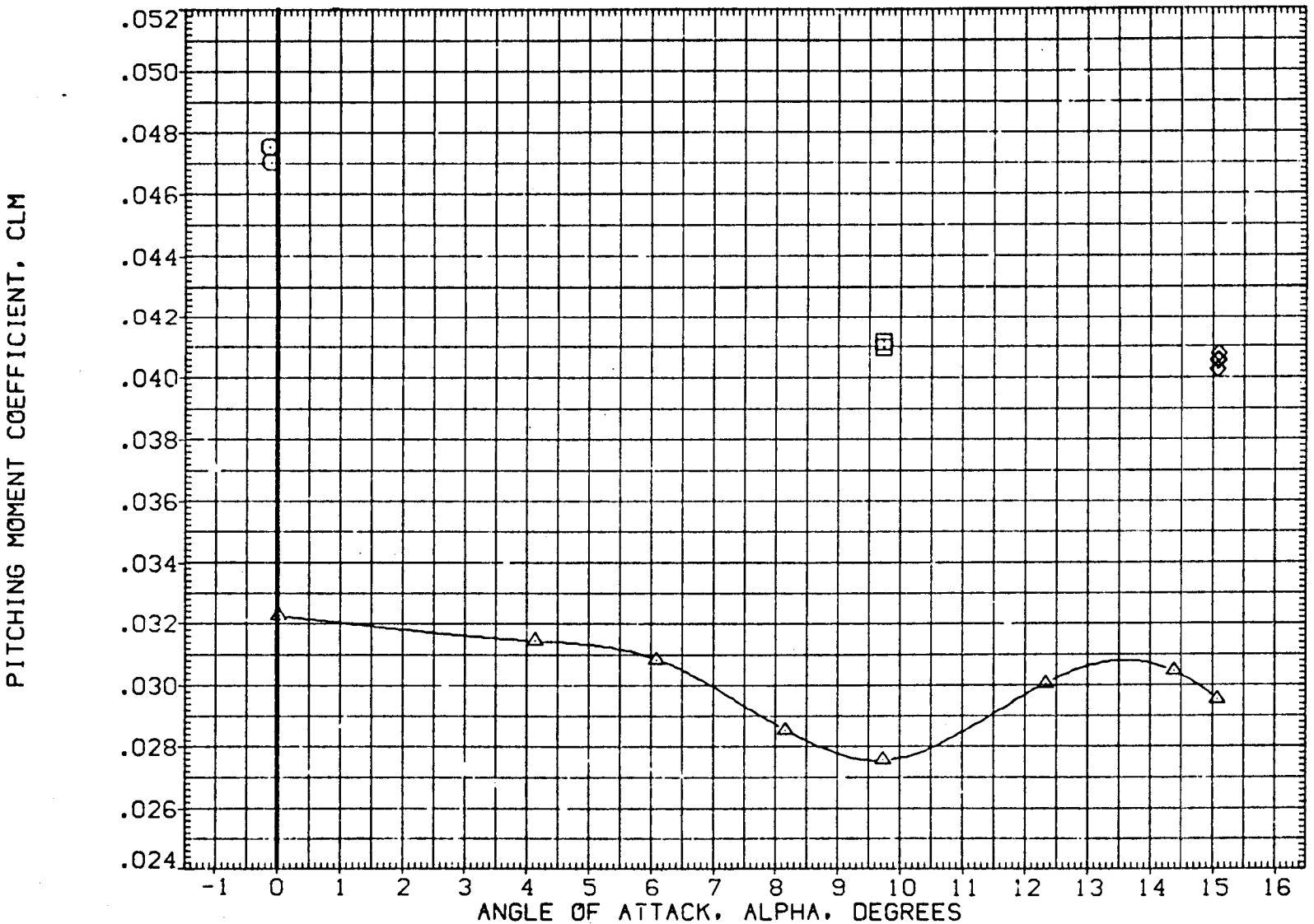


FIG. 6 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=5.5 (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG006)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG009)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG012)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANGA15)		ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

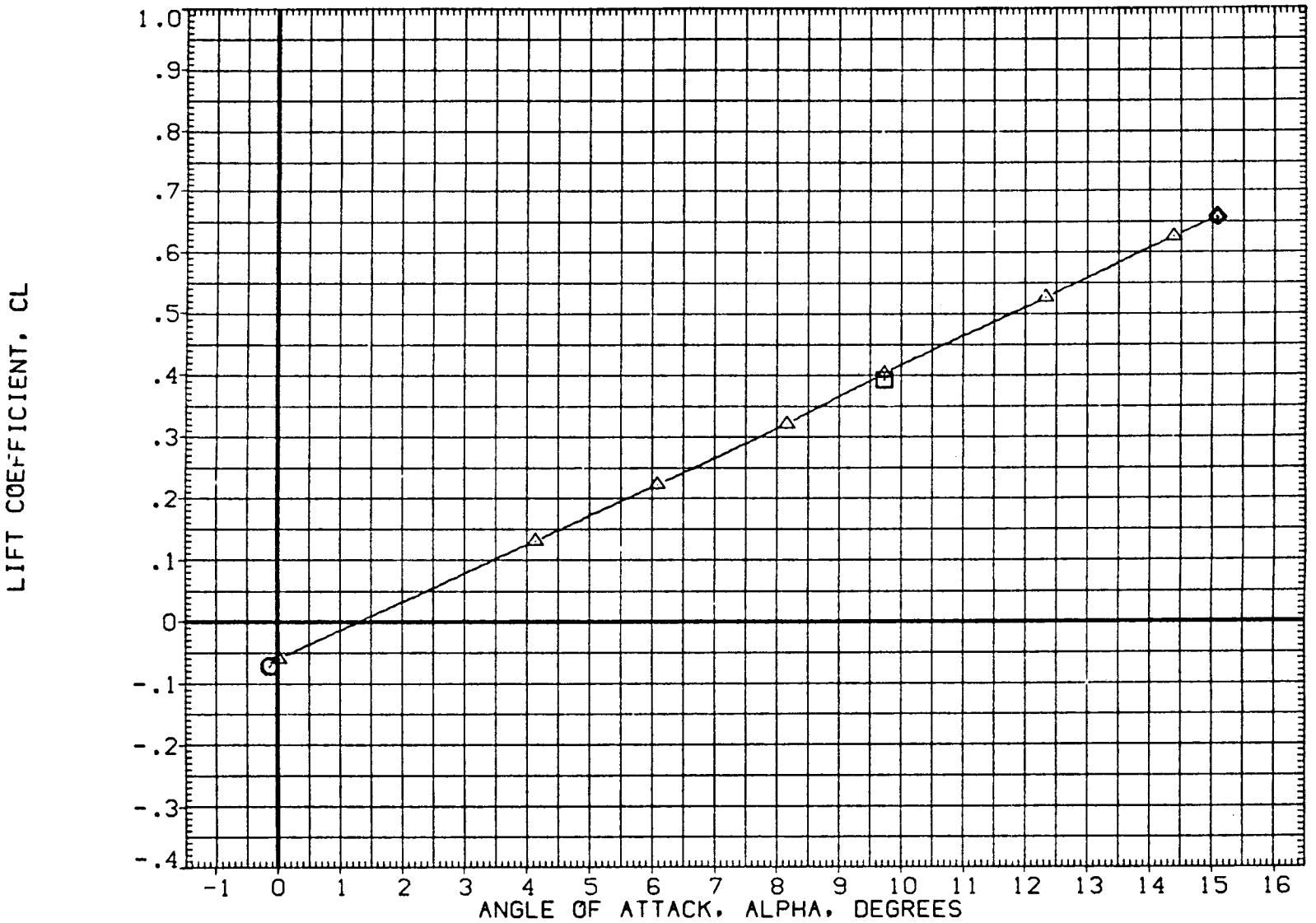


FIG. 6 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=5.5 (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG006)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

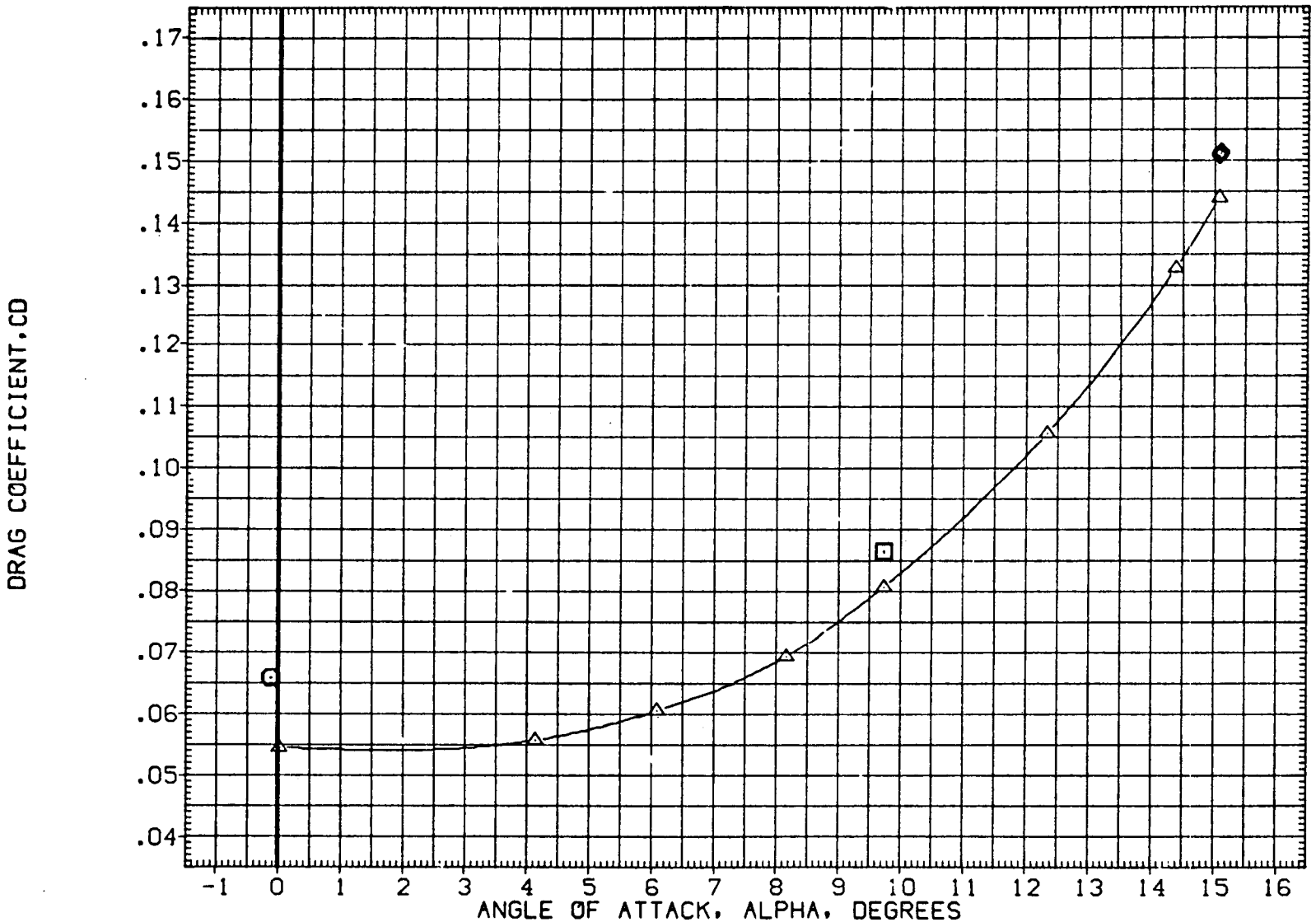


FIG. 6 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=5.5 (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BOFLAP	BETA	MACH
(RNG002)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN ZO
SCALE	.0300	

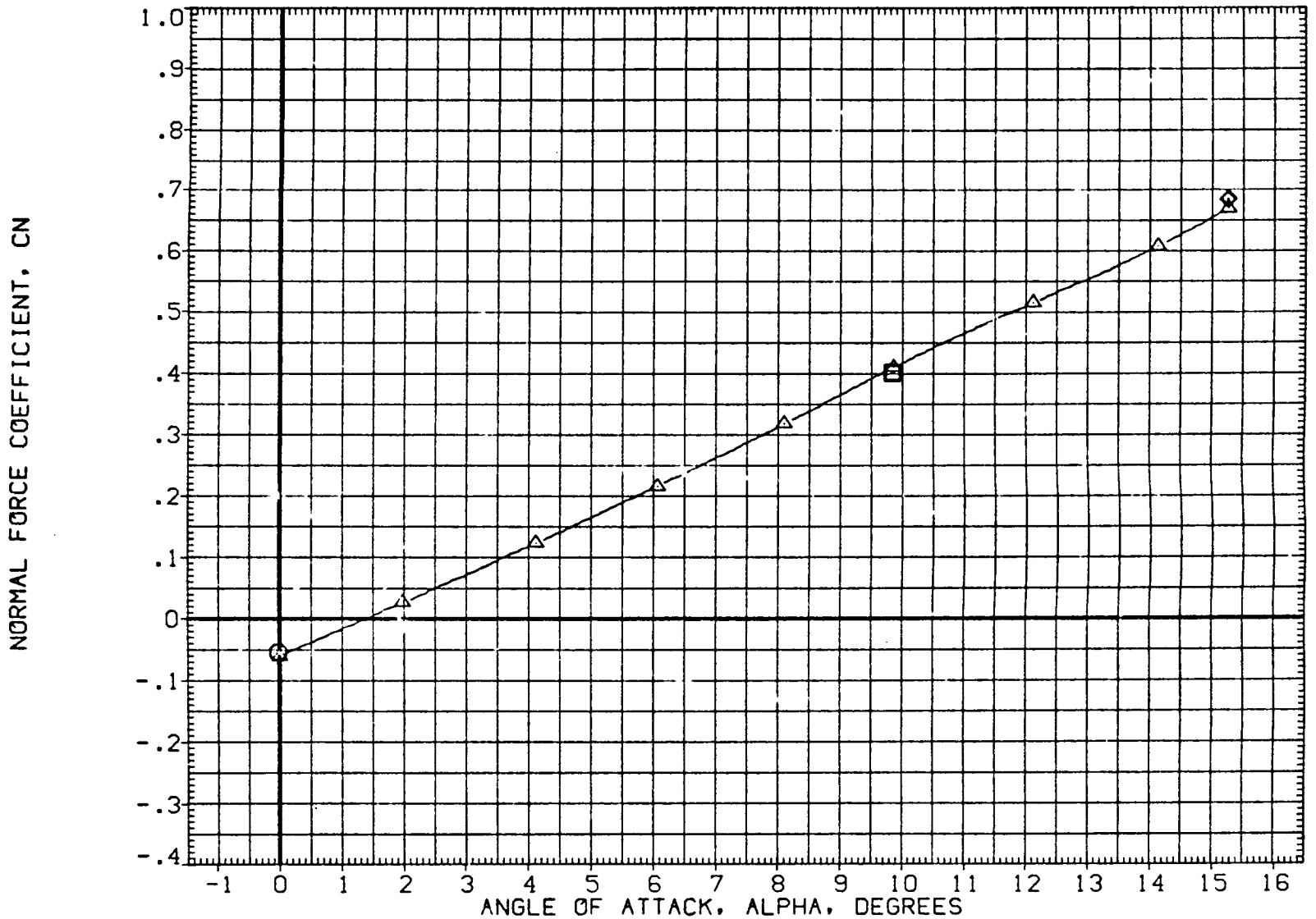


FIG. 7 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=2.4 (LONGITUDINAL COEFFS)

(A)RN/L = 2.40

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG002)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

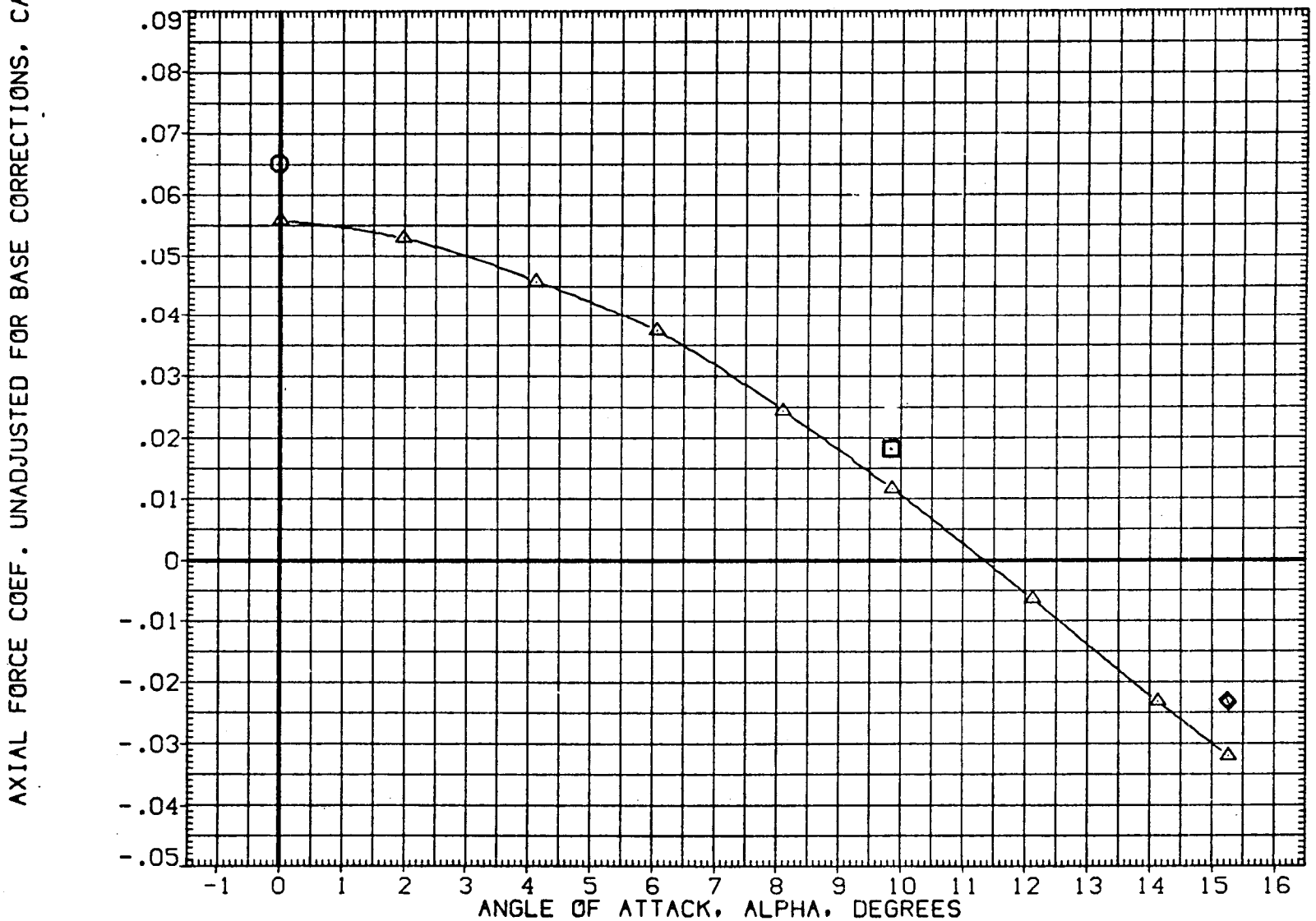


FIG. 7 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=2.4 (LONGITUDINAL COEFFS)

(A)RN/L = 2.40

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG002)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	◫	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	⋈	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

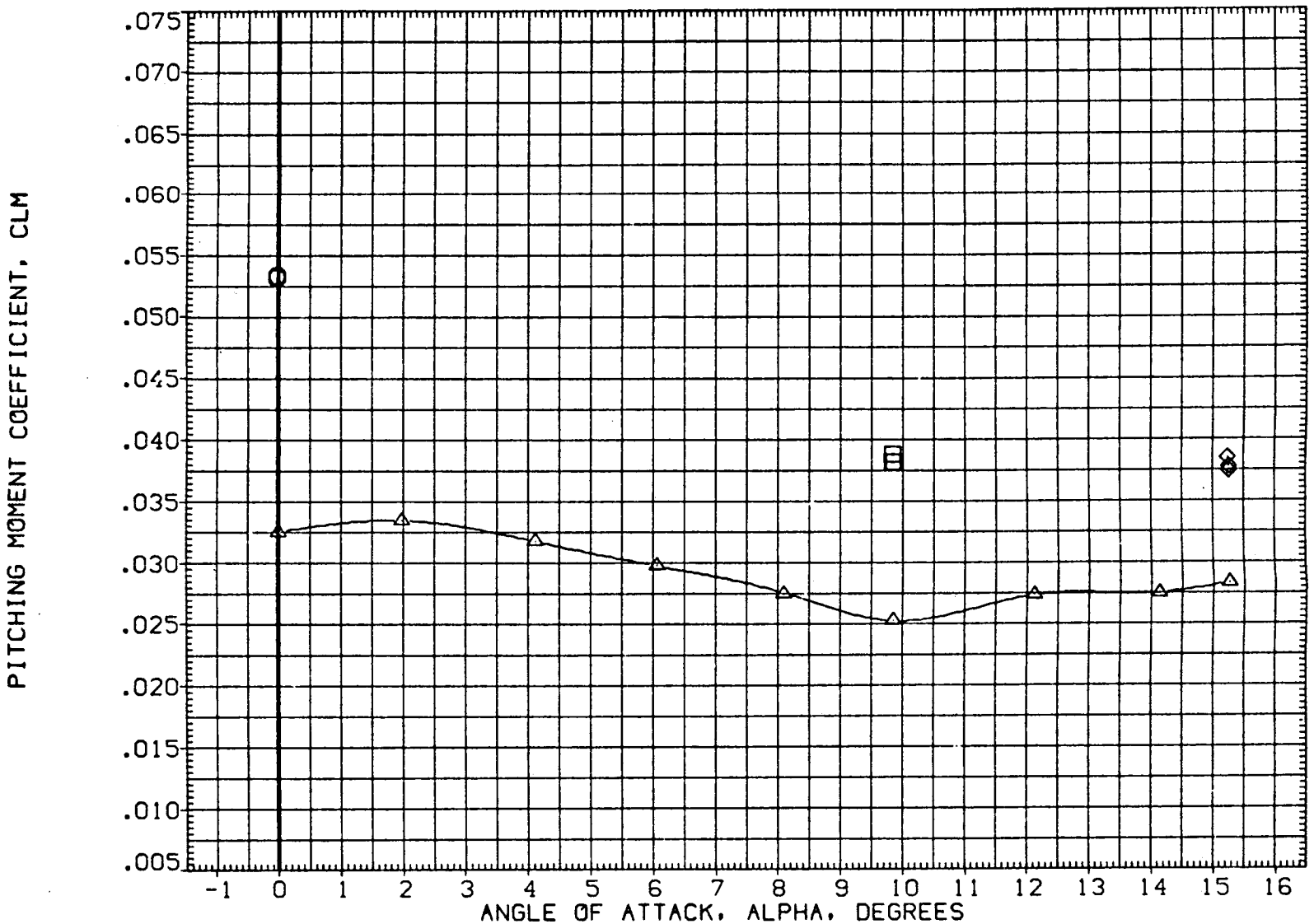


FIG. 7 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=2.4 (LONGITUDINAL COEFFS)

(A)RN/L = 2.40

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG002)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XC
YMRP	.0000	IN. YC
ZMRP	375.0000	IN. ZC
SCALE	.0300	

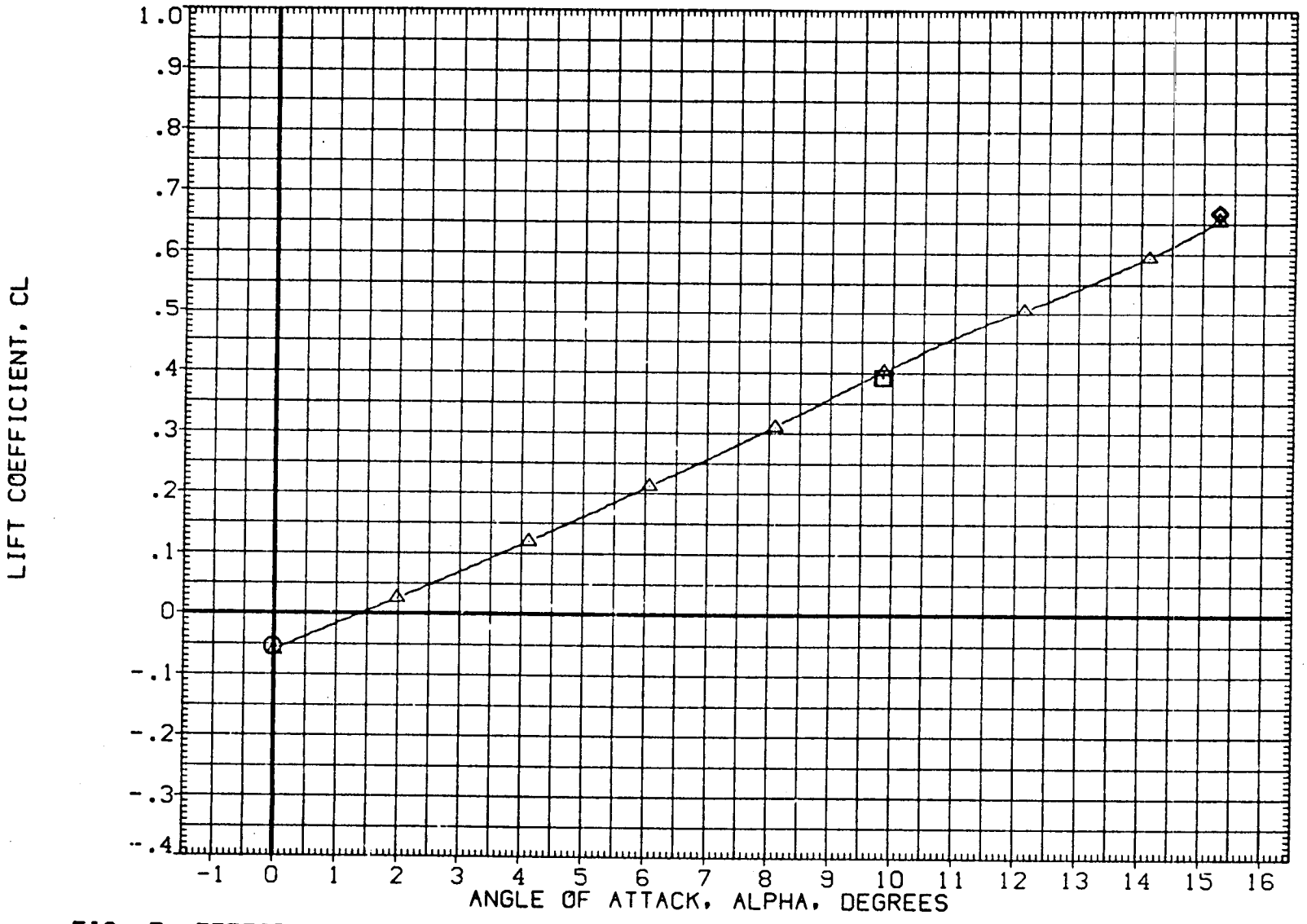


FIG. 7 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=2.4 (LONGITUDINAL COEFFS)

(A)RN/L = 2.40

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG002)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

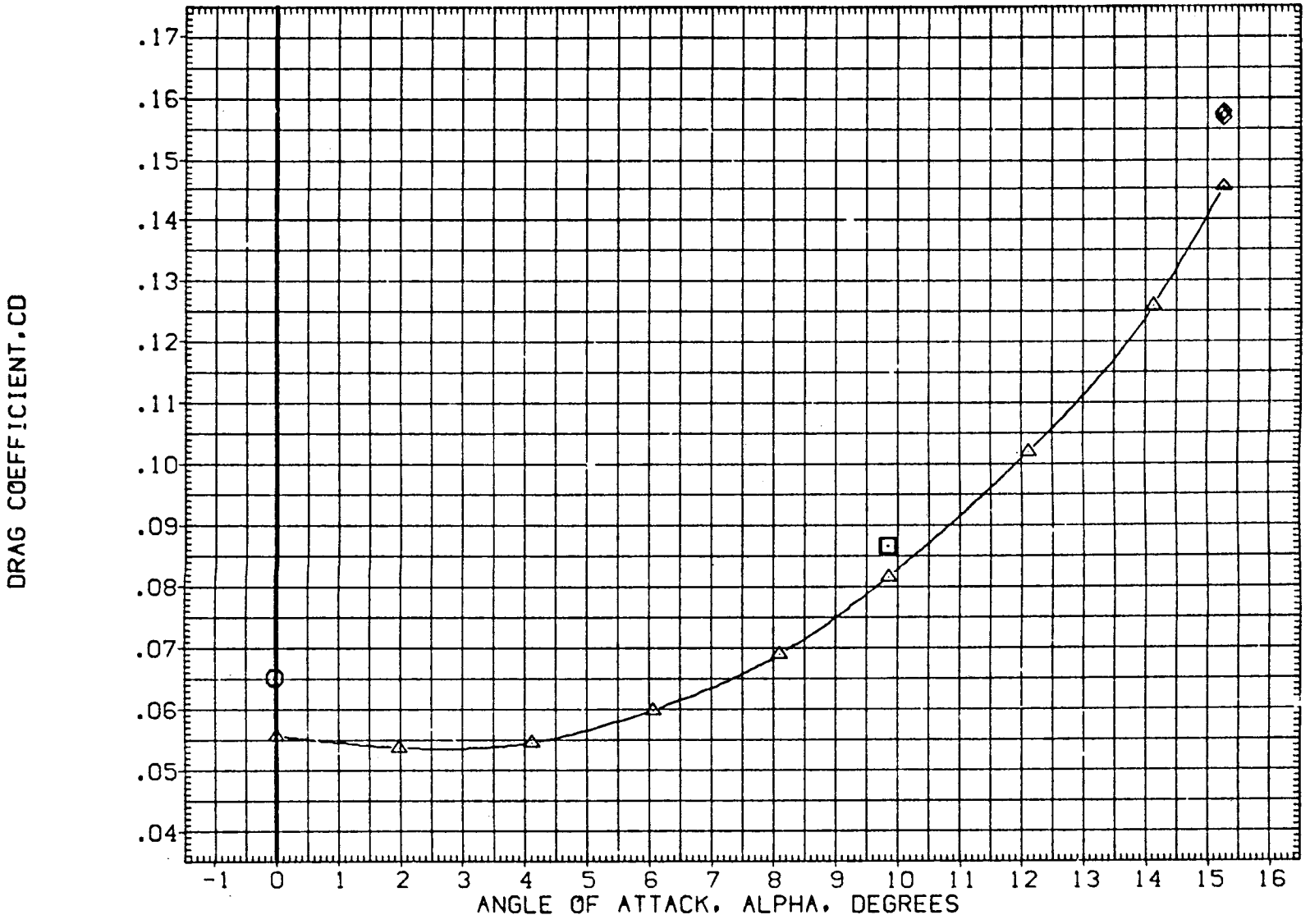


FIG. 7 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=2.4 (LONGITUDINAL COEFFS)

(A)RN/L = 2.40

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG002)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

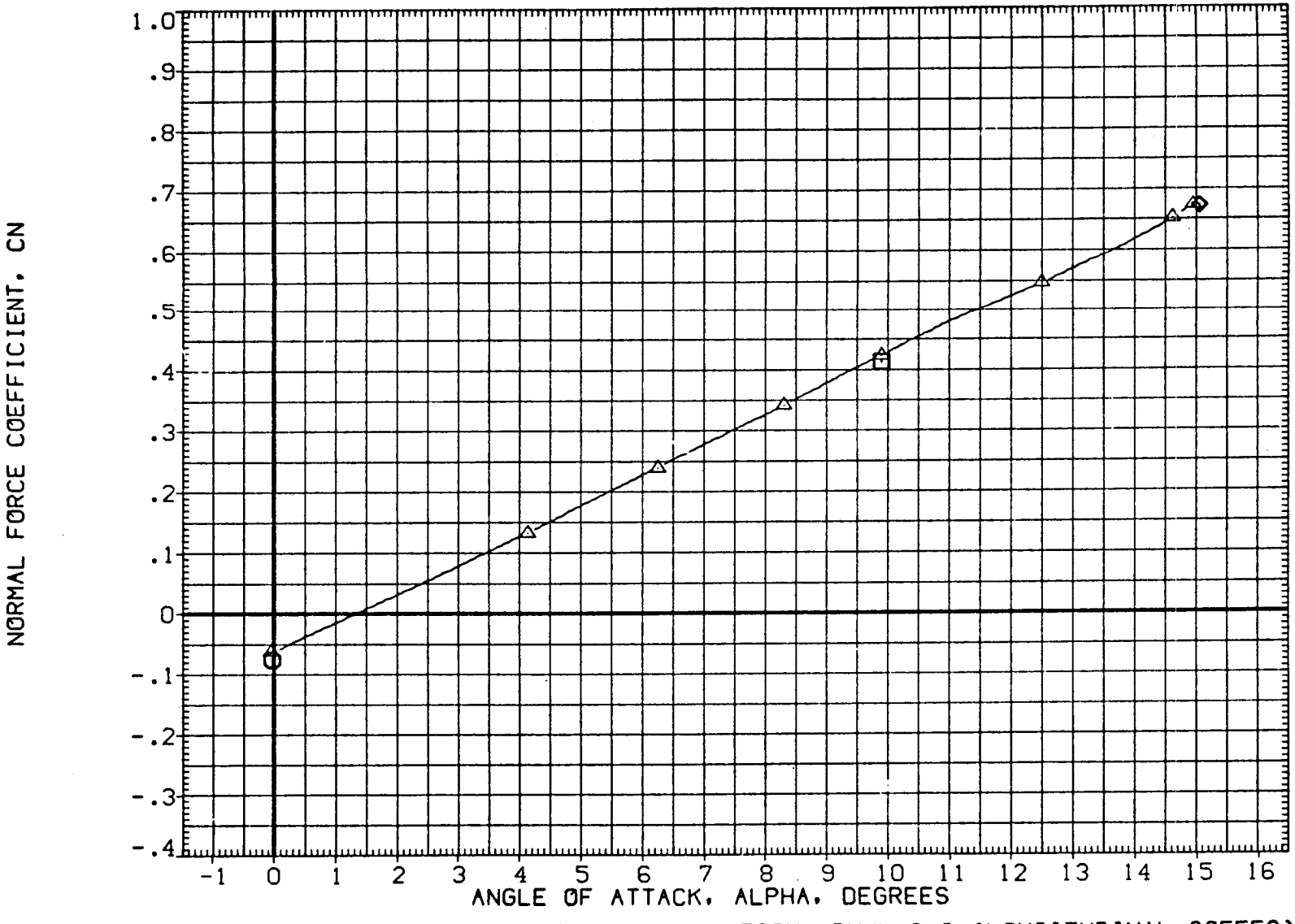


FIG. 8 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=8.0 (LONGITUDINAL COEFFS)

(A)RN/L = 8.00

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG002)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

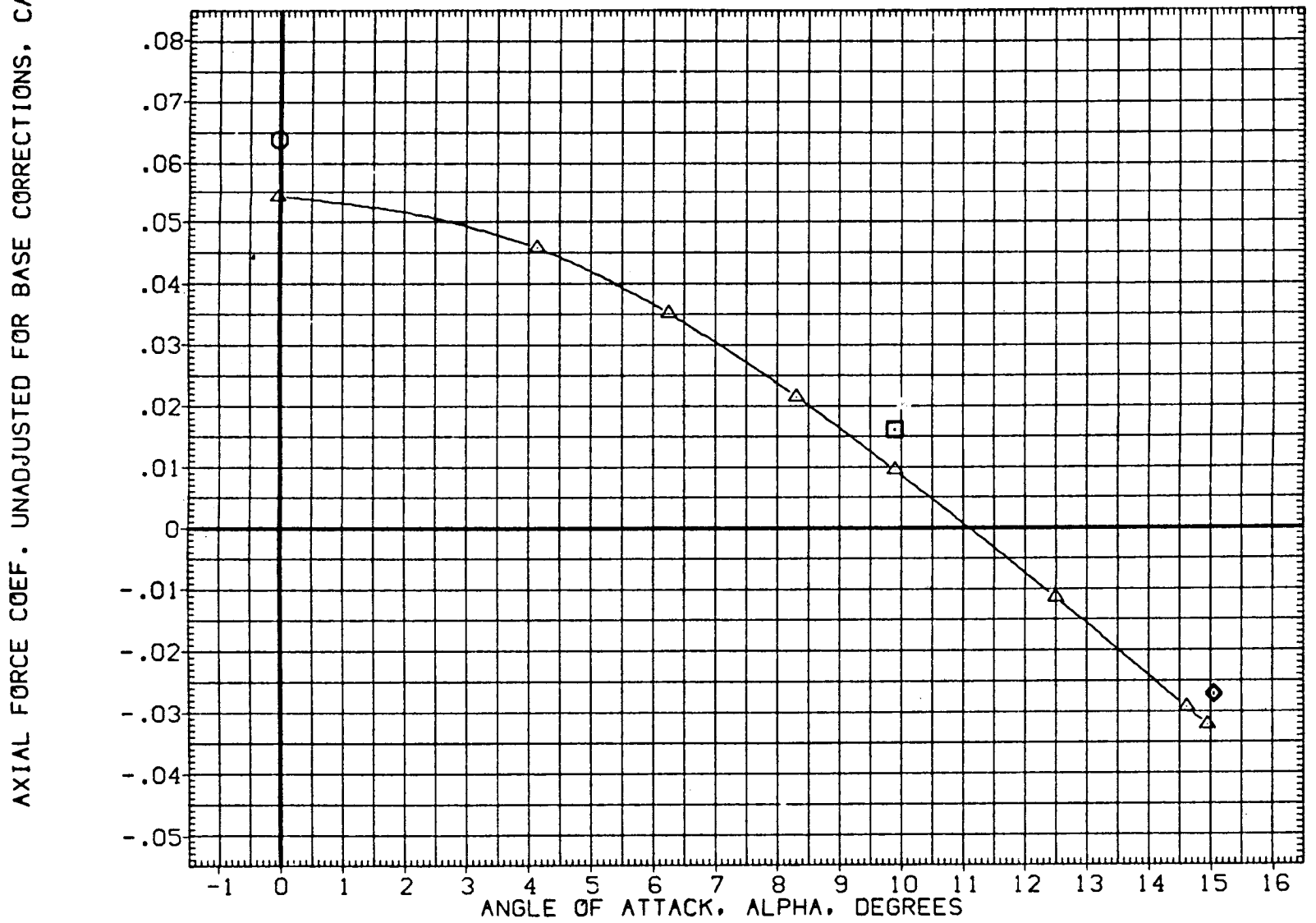


FIG. 8 EFFECT ØF STRUTS ØN BASIC CØNFIGURATIØN. RN/L=8.0 (LØNGITUDINAL CØEFFS)

(A)RN/L = 8.00

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG002)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	⋈	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

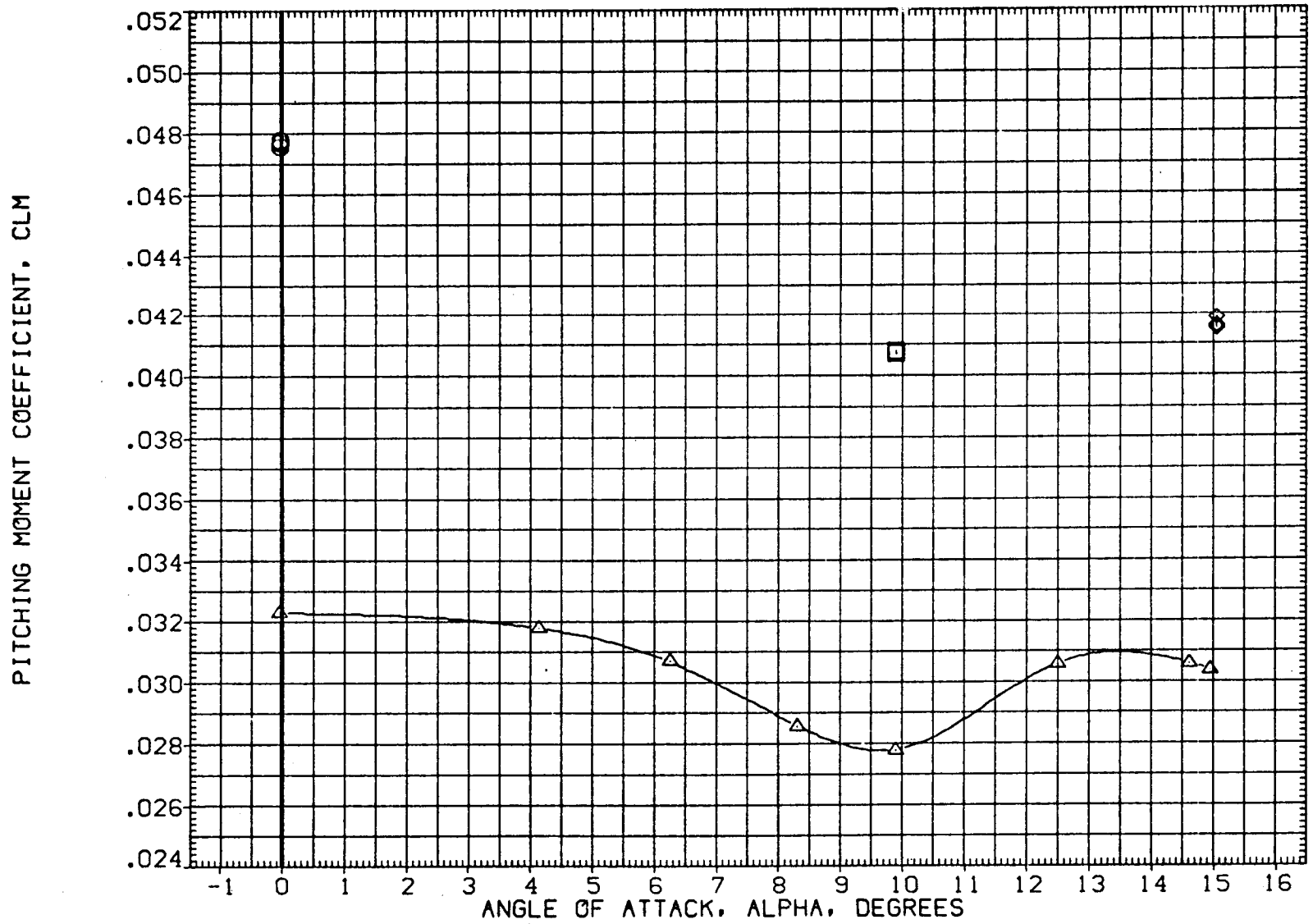


FIG. 8 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=8.0 (LONGITUDINAL COEFFS)

(A)RN/L = 8.00

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG002)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG009)	⊠	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

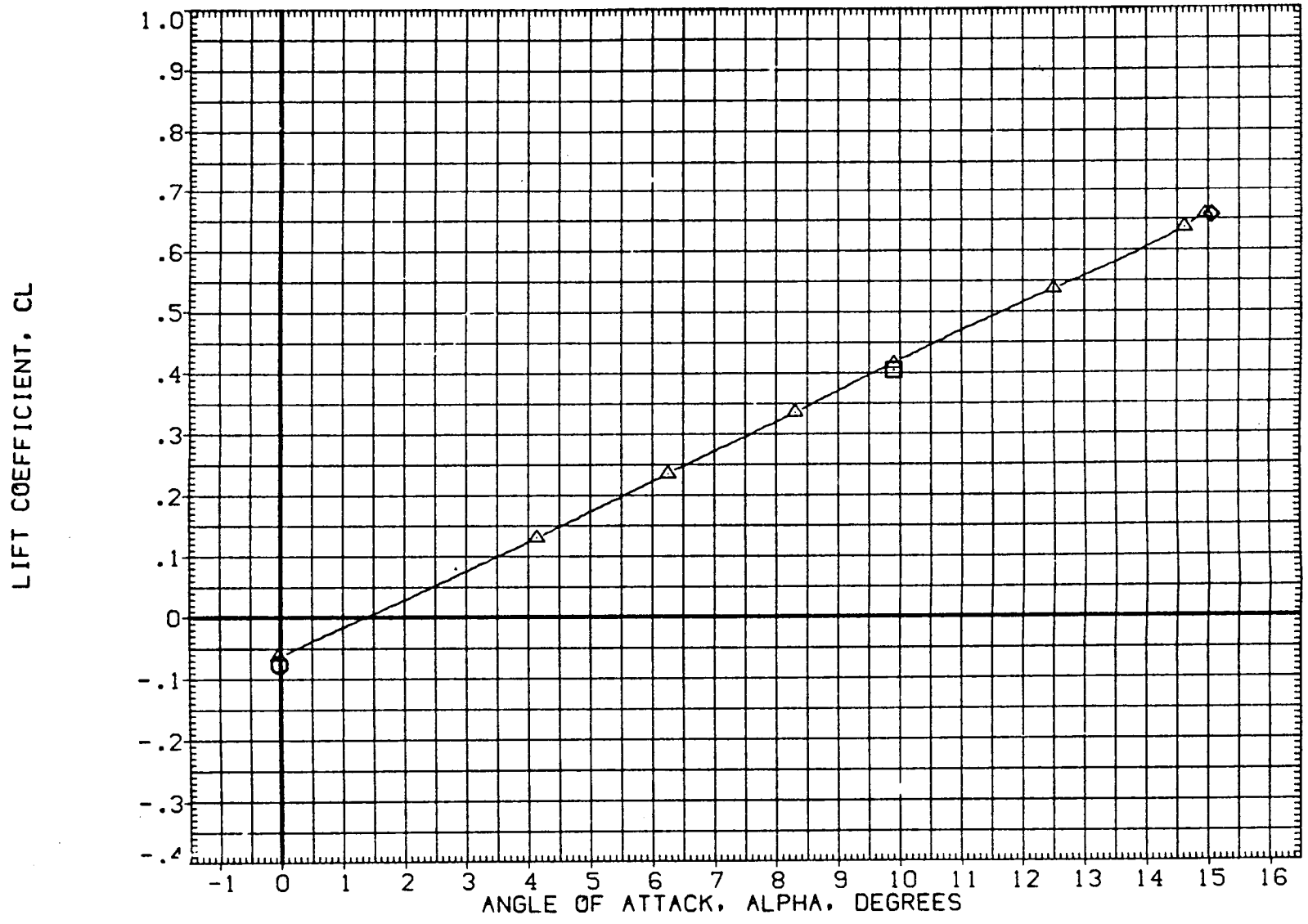


FIG. 8 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=8.0 (LONGITUDINAL COEFFS)

(A)RN/L = 8.00

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG002)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG009)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANG012)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(ANGA15)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

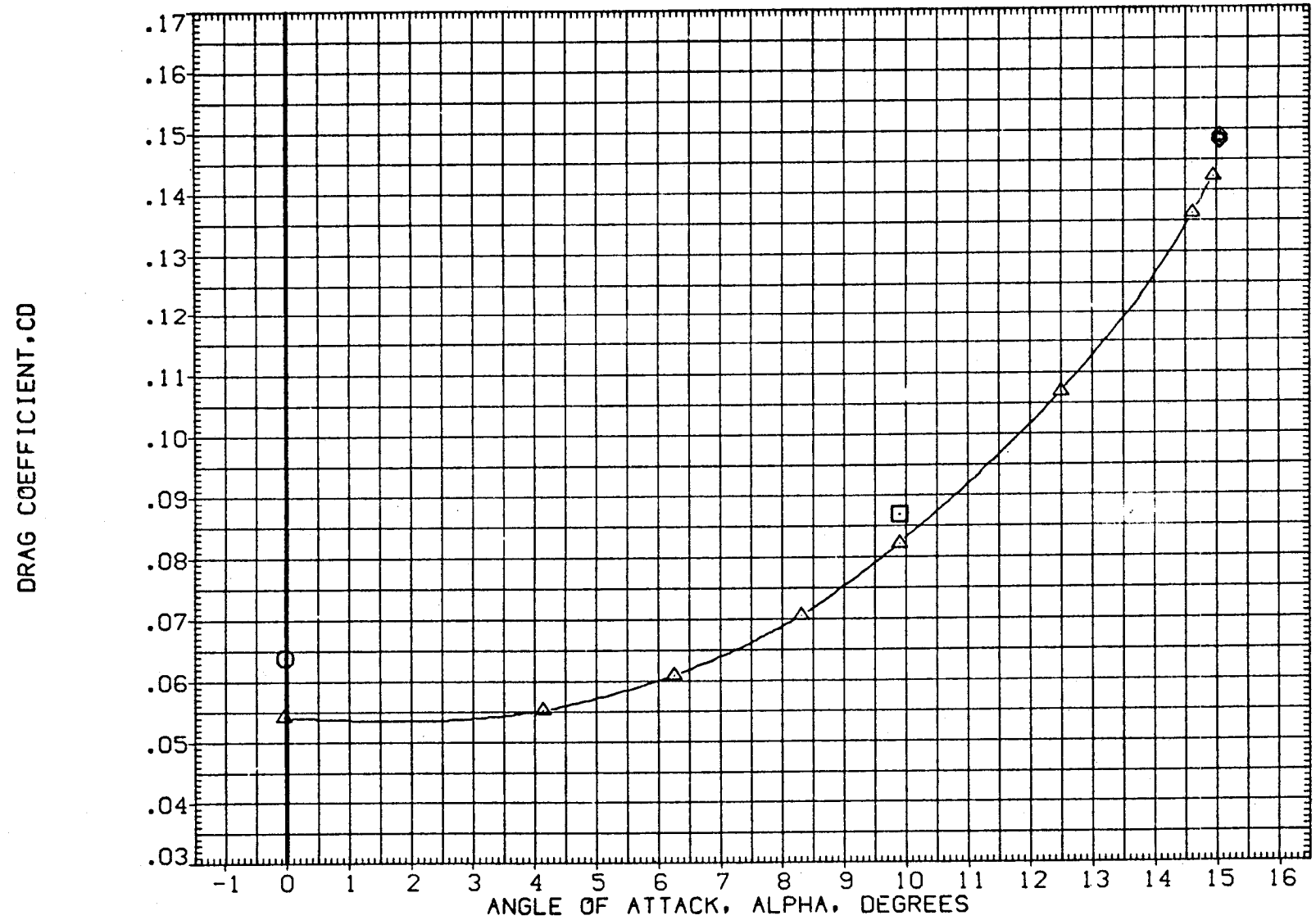


FIG. 8 EFFECT OF STRUTS ON BASIC CONFIGURATION, RN/L=8.0 (LONGITUDINAL COEFFS)

(A)RN/L = 8.00

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG005)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(RNG010)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(RNG011)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(RNGA16)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	16.300	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

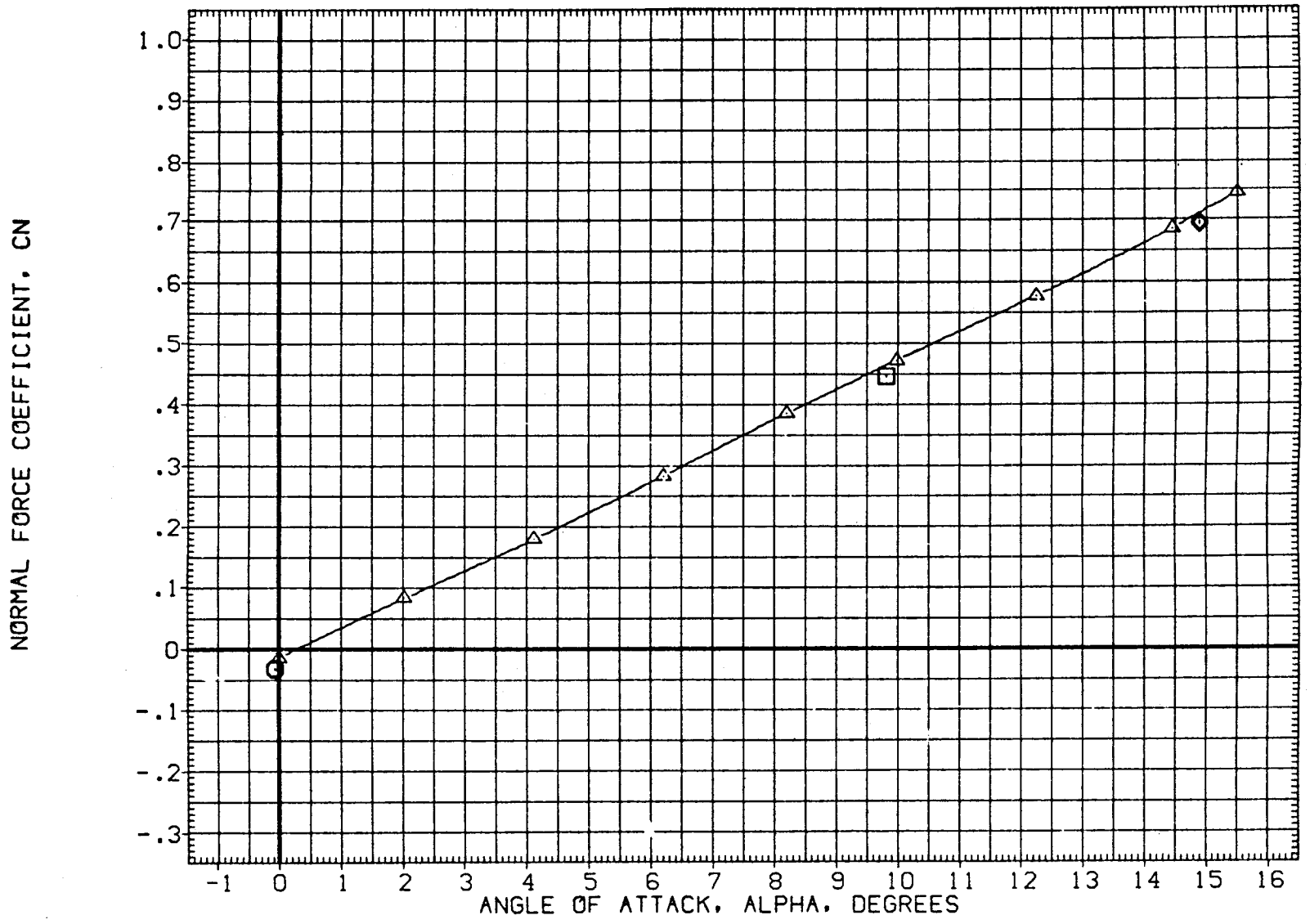


FIG. 9 EFFECT OF STRUTS ON ORBITER WITH BDFLAP=16.3 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG005)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(RNG010)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(RNG011)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(RNGA16)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	16.300	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

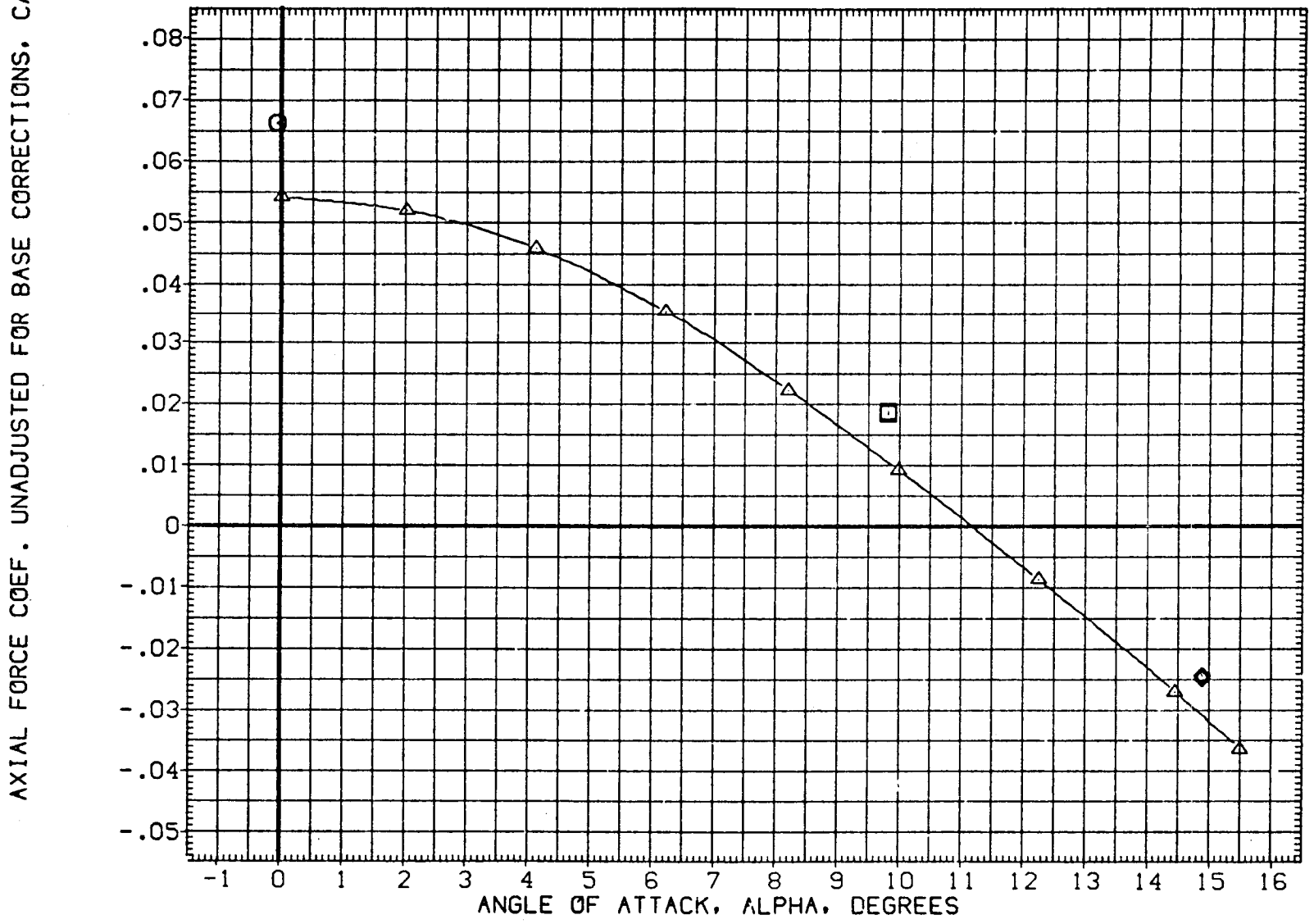


FIG. 9 EFFECT OF STRUTS ON ORBITER WITH BDFLAP=16.3 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG005)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(RNG010)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(RNG011)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(RNGA16)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	16.300	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

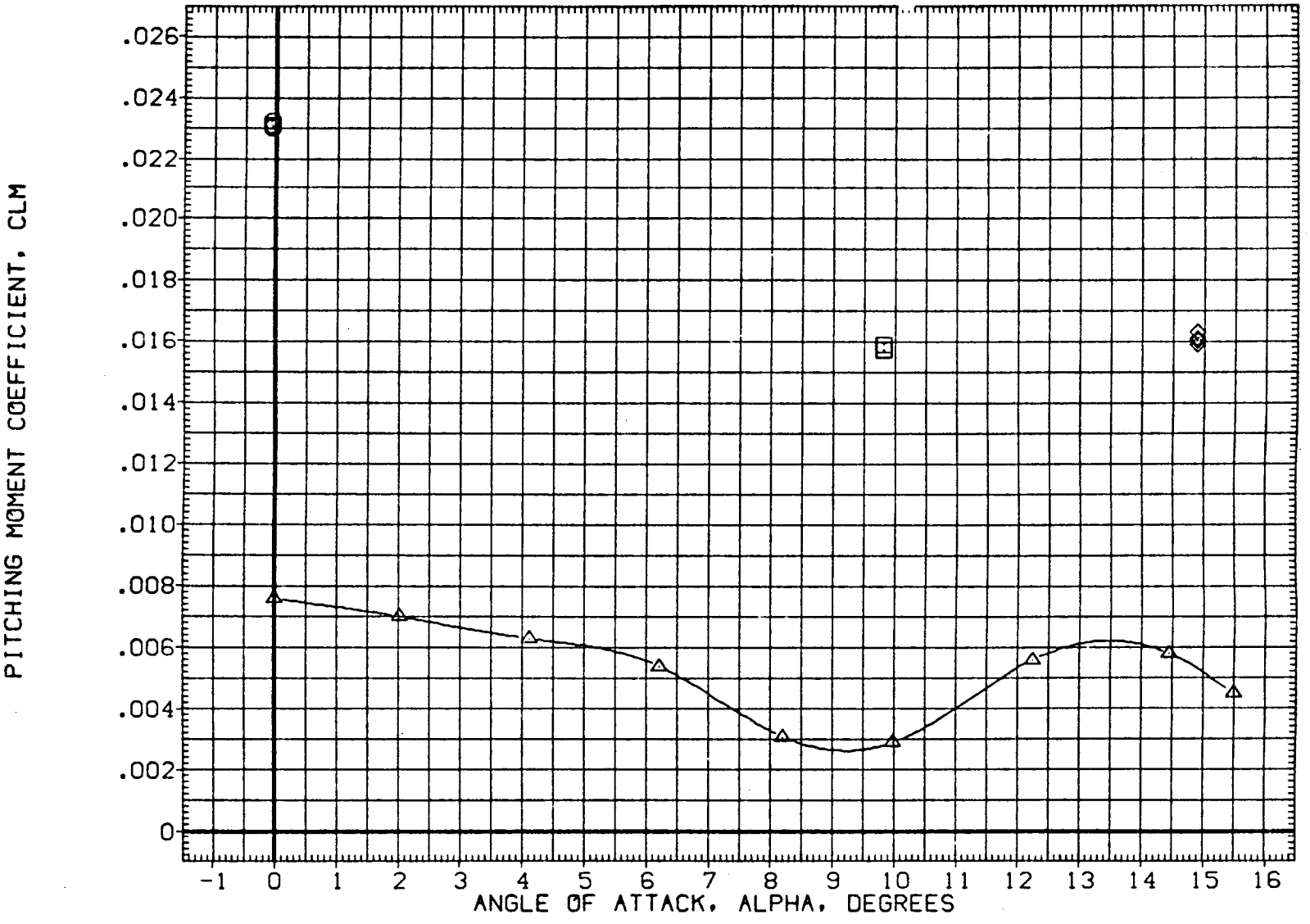


FIG. 9 EFFECT OF STRUTS ON ORBITER WITH BDFLAP=16.3 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG005)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(ANG010)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(ANG011)	⧖	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(ANGA16)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	16.300	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

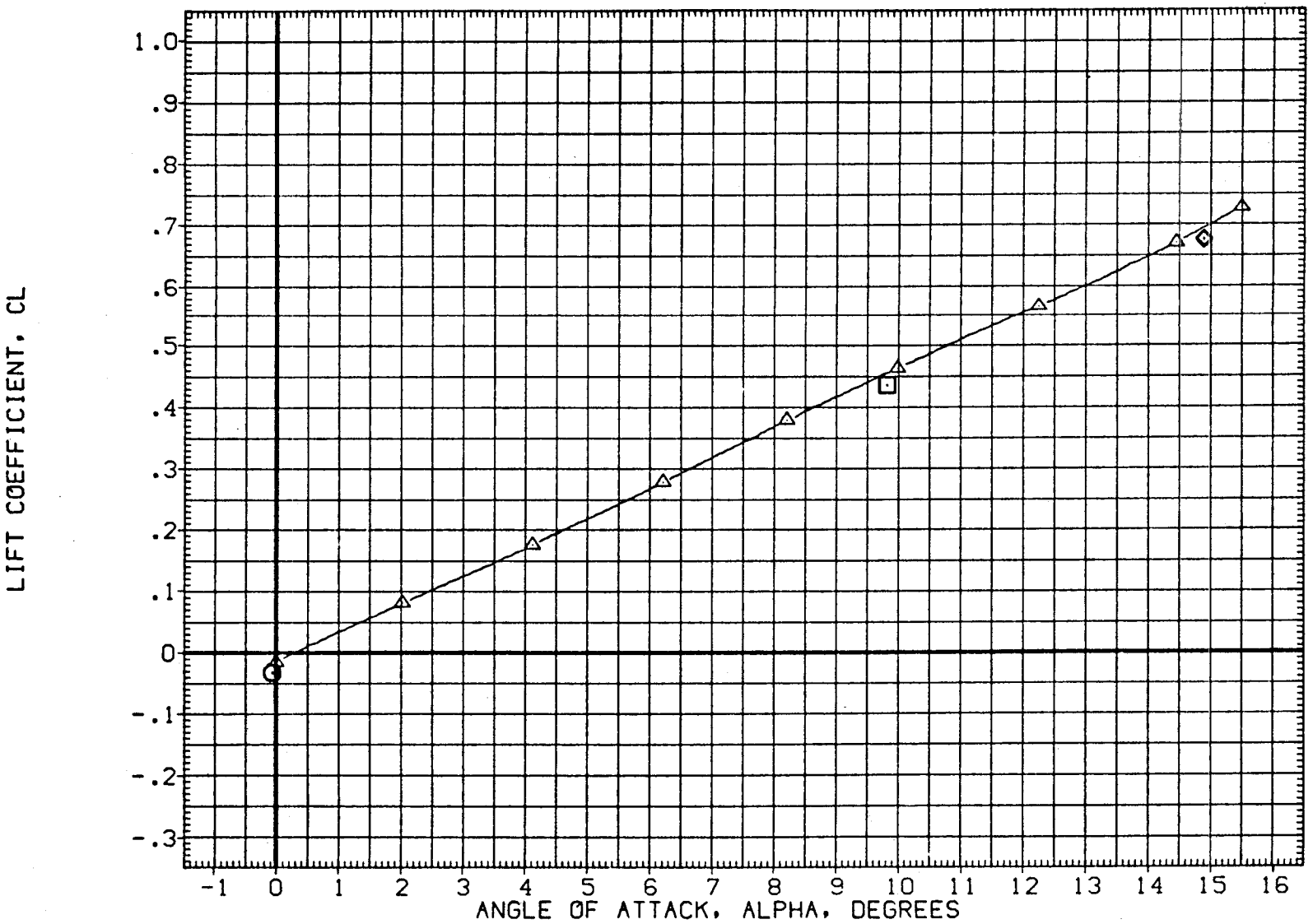


FIG. 9 EFFECT OF STRUTS ON ORBITER WITH BDFLAP=16.3 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG005)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(ANG010)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(ANG011)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	16.300	.000	.260
(ANGA16)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	16.300	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

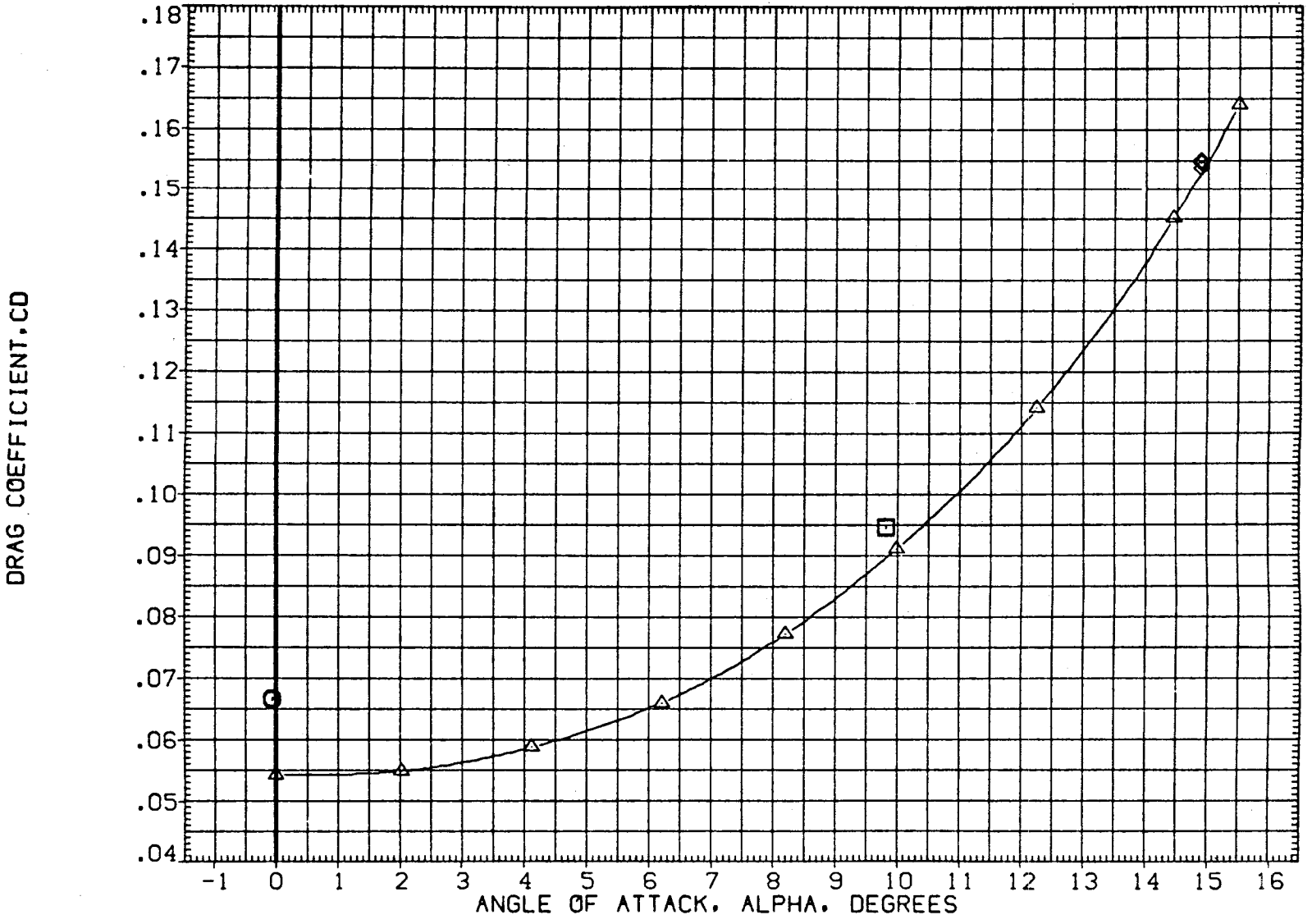


FIG. 9 EFFECT OF STRUTS ON ORBITER WITH BDFLAP=16.3 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG007)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(RNG008)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(RNG013)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(RNGA14)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	10.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

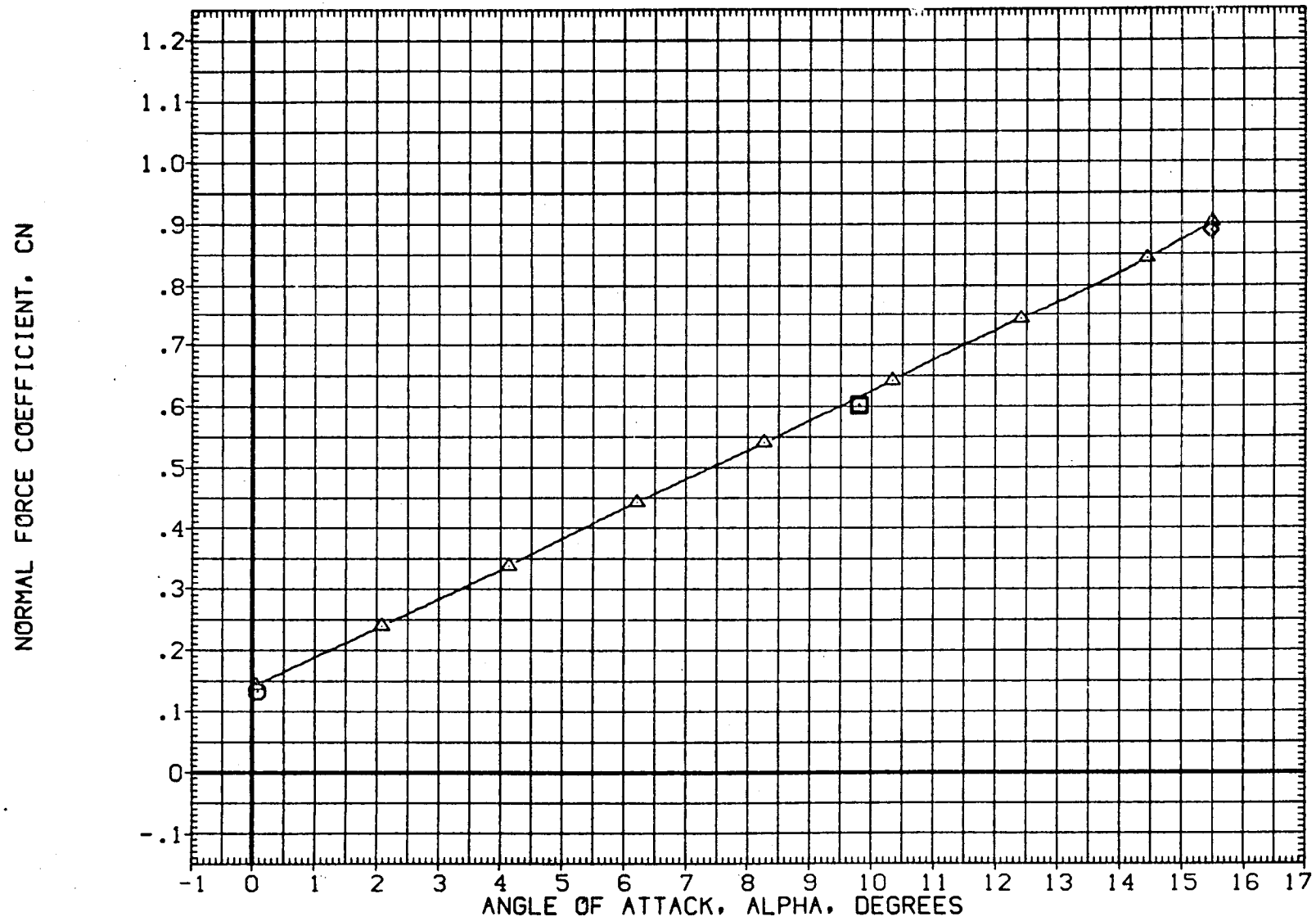


FIG. 10 EFFECT OF STRUTS ON ORBITER WITH ELEVON=10.0 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG007)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(RNG008)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(RNG013)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(RNGA14)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	10.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XC
YMRP	.0000	IN. YC
ZMRP	375.0000	IN. ZC
SCALE	.0300	

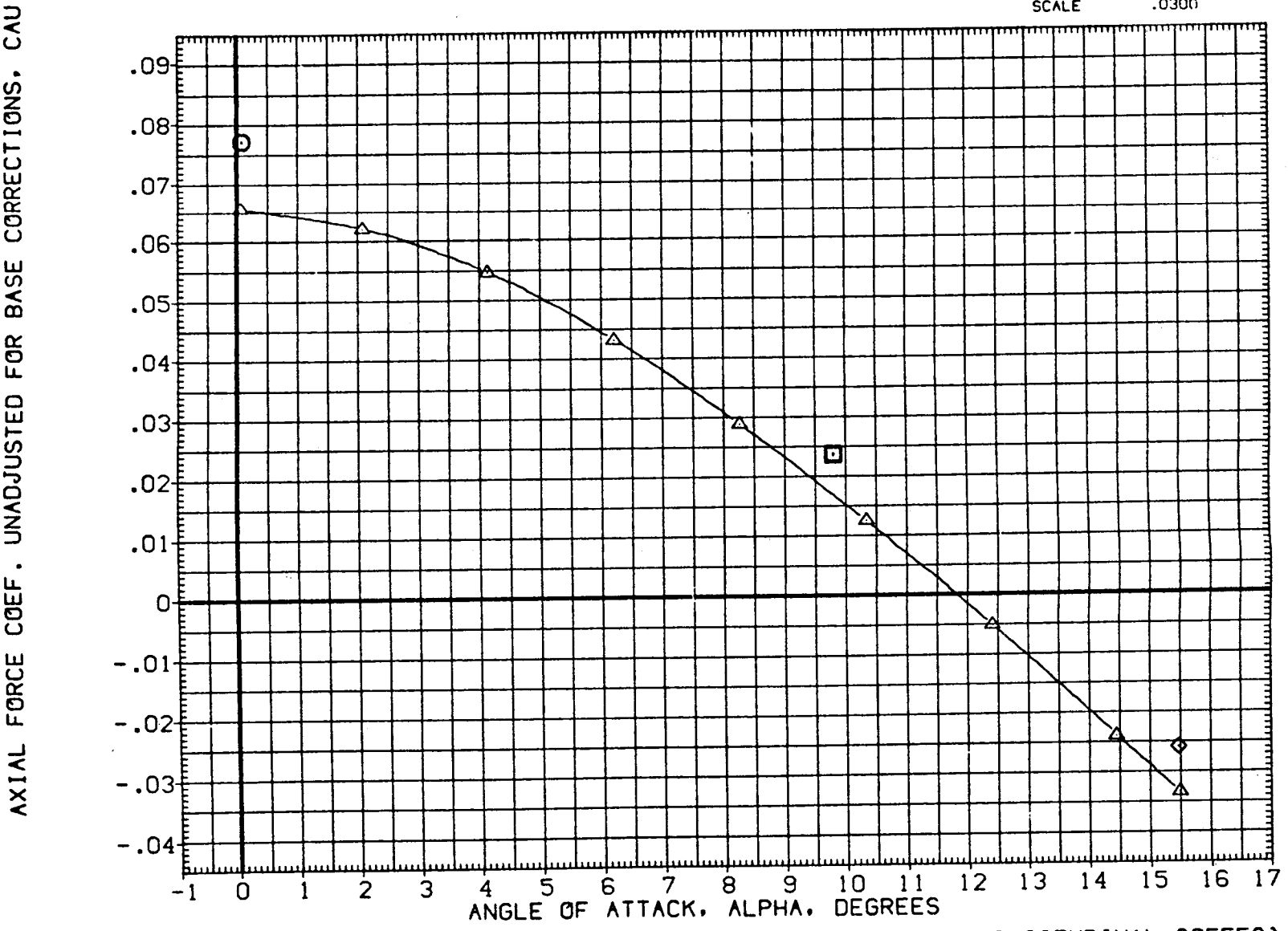


FIG. 10 EFFECT OF STRUTS ON ORBITER WITH ELEVON=10.0 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG007)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(RNG008)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(RNG013)	⋈	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(RNGA14)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	10.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

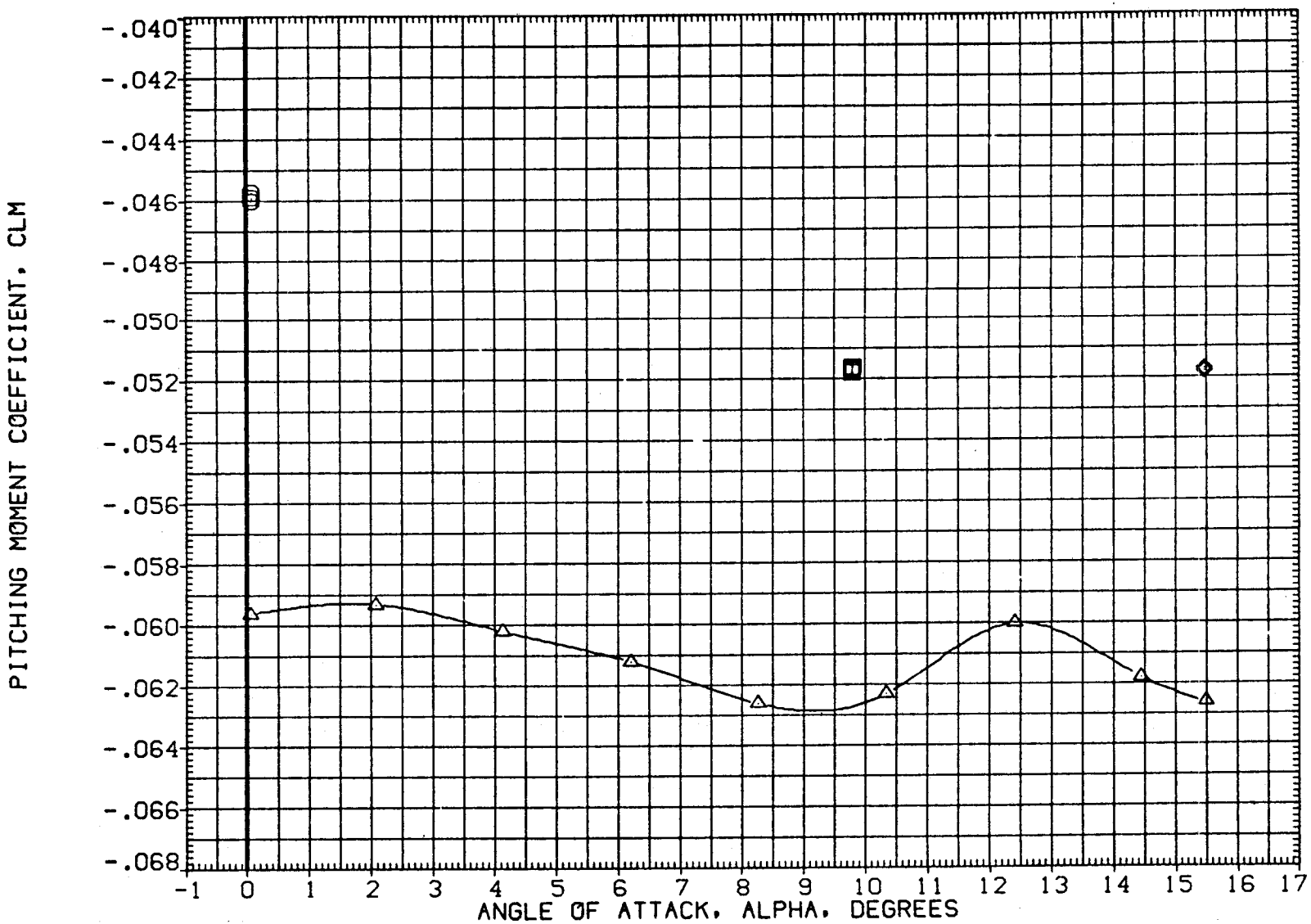


FIG. 10 EFFECT OF STRUTS ON ORBITER WITH ELEVON=10.0 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG007)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(ANG008)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(ANG013)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(ANGA14)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	10.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

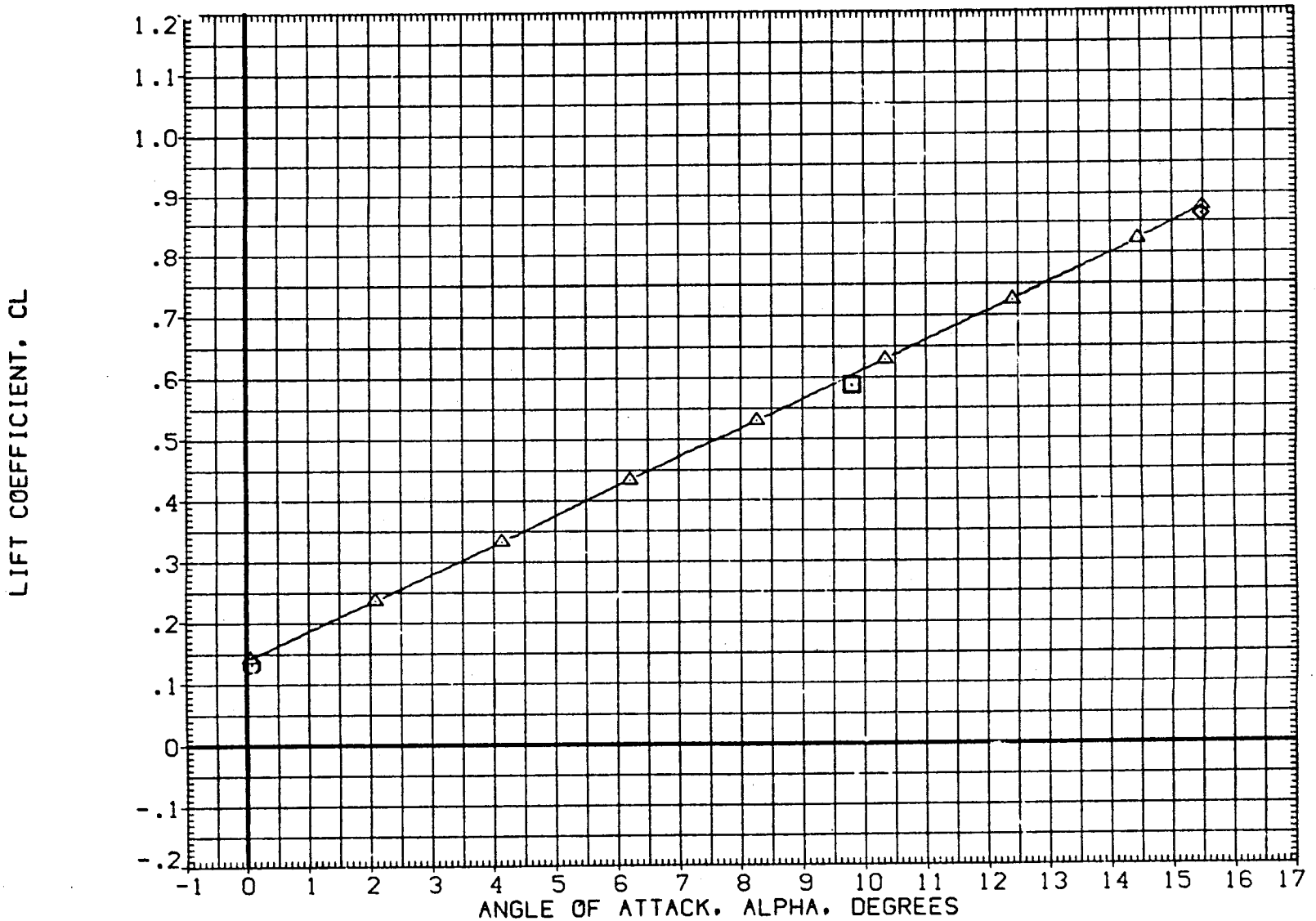


FIG. 10 EFFECT OF STRUTS ON ORBITER WITH ELEVON=10.0 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANG007)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(ANG008)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(ANG013)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	10.000	.000	.000	.260
(ANGA14)	△	ARC 12-078/0A159 03 WITH GROUND PLANE	10.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

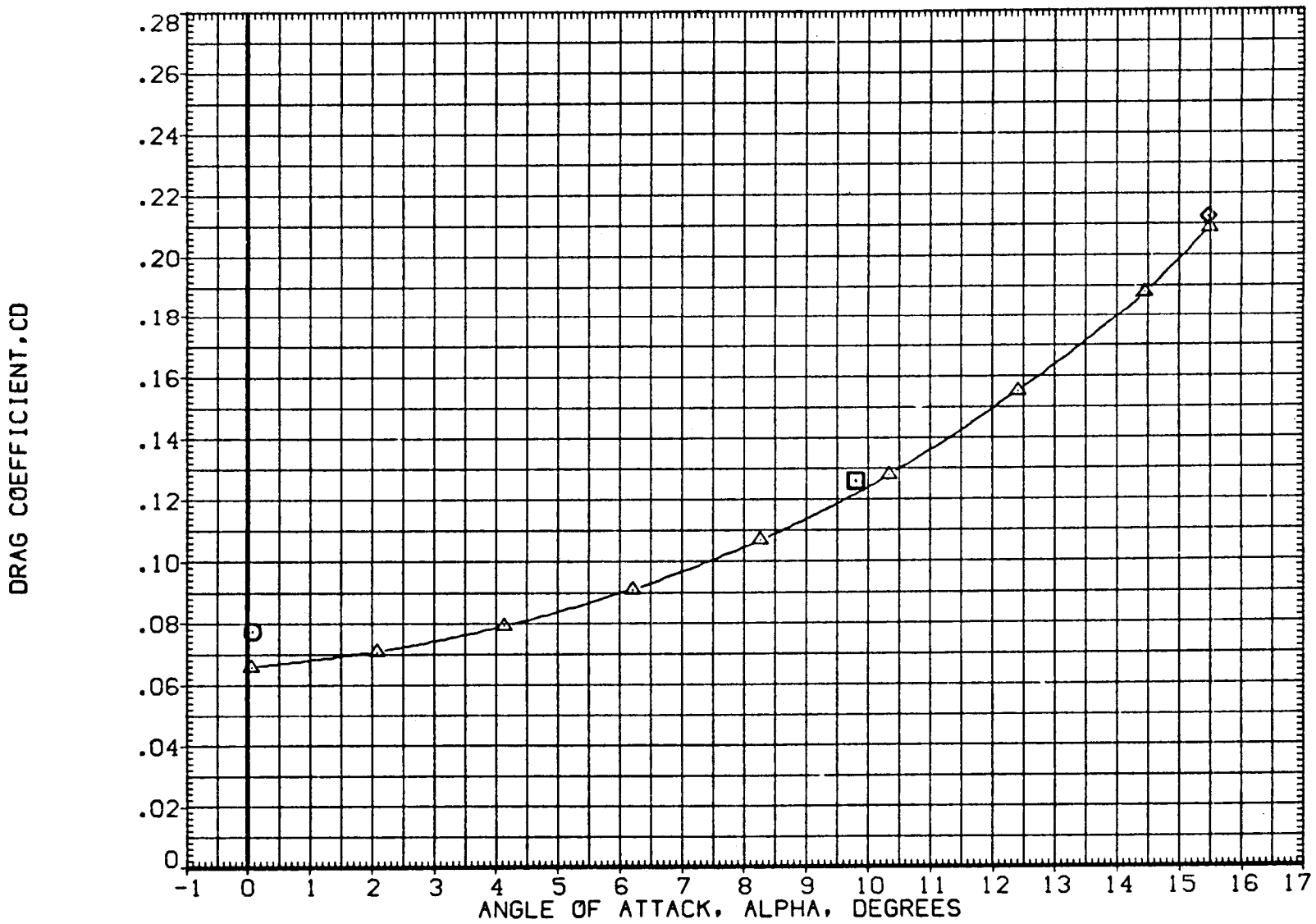


FIG. 10 EFFECT OF STRUTS ON ORBITER WITH ELEVON=10.0 DEG. (LONGITUDINAL COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG019)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	6.000	.260
(RNG018)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	6.000	.260
(RNG017)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	6.000	.260
(RNG006)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

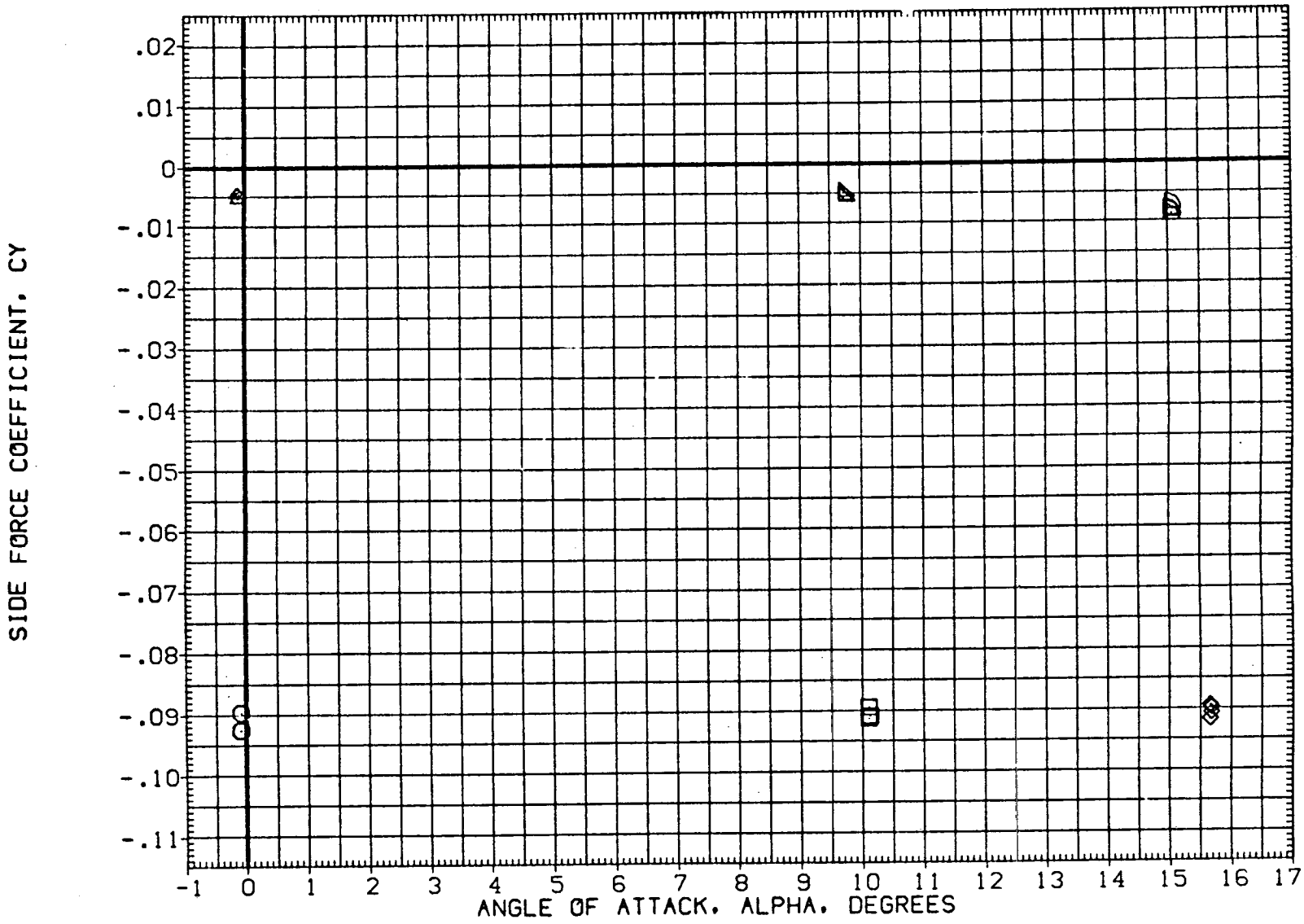


FIG. 11 EFFECT OF SIDESLIP ON BASIC CONFIGURATION WITH STRUTS, (LAT-DIR COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG019)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	6.000	.260
(RNG018)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	6.000	.260
(RNG017)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	6.000	.260
(RNG006)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)		ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

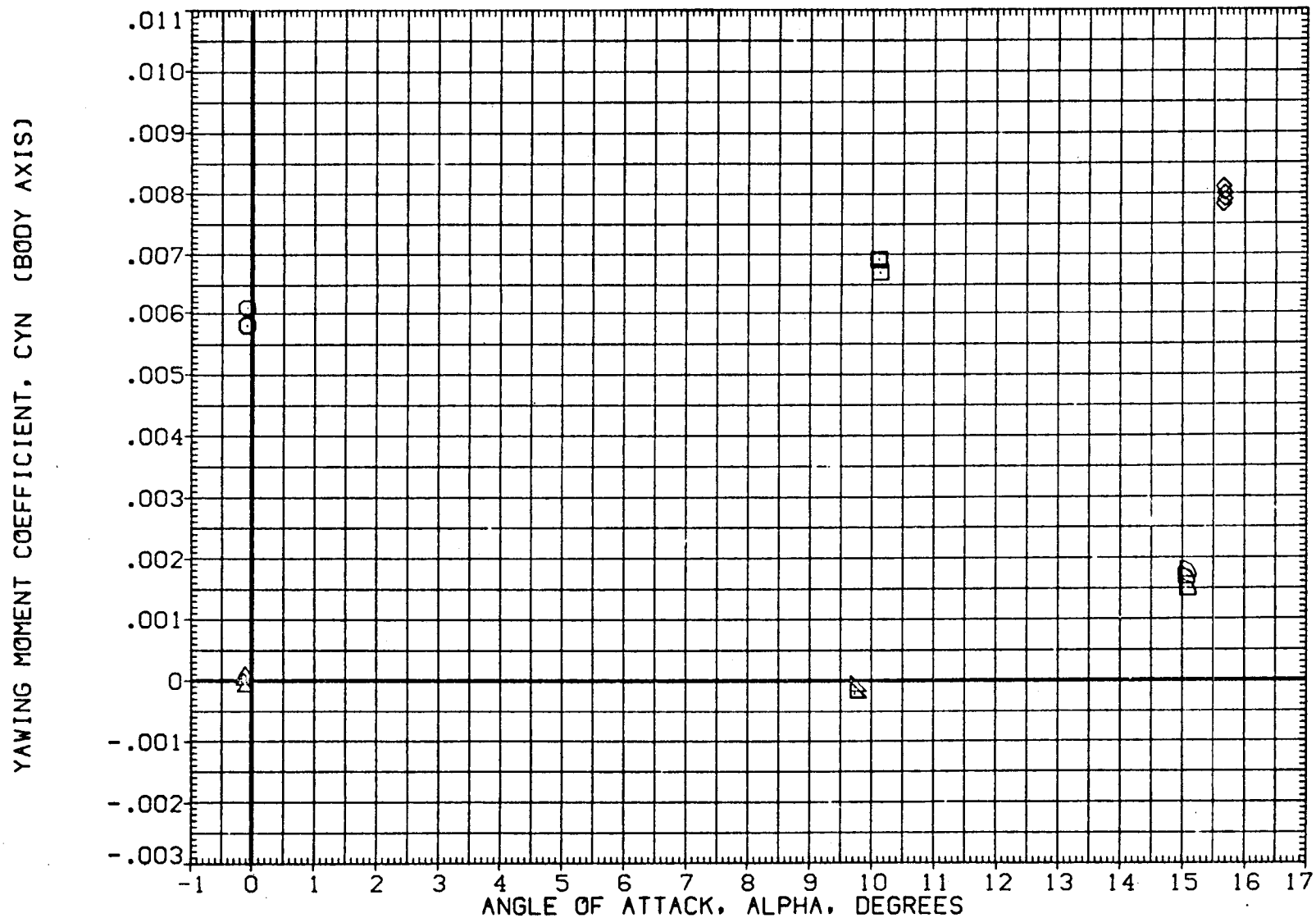


FIG. 11 EFFECT OF SIDESLIP ON BASIC CONFIGURATION WITH STRUTS, (LAT-DIR COEFFS)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNG019)	○	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	6.000	.260
(RNG018)	□	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	6.000	.260
(RNG017)	◇	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	6.000	.260
(RNG006)	△	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG009)	▷	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260
(RNG012)	⬠	ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

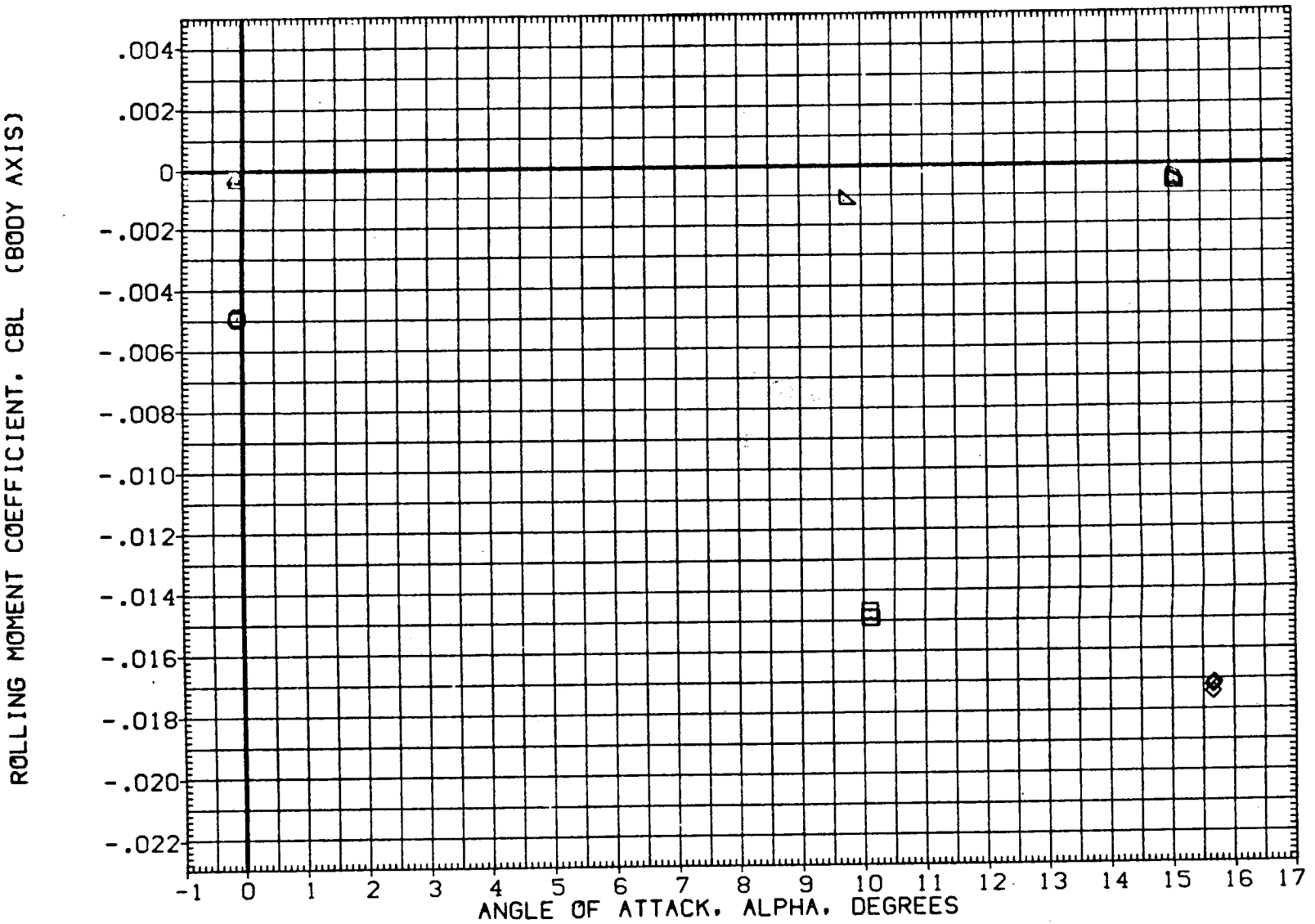


FIG. 11 EFFECT OF SIDESLIP ON BASIC CONFIGURATION WITH STRUTS, (LAT-DIR COEFFS)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA20) ○	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	6.000	.260
(RNGA15) □	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

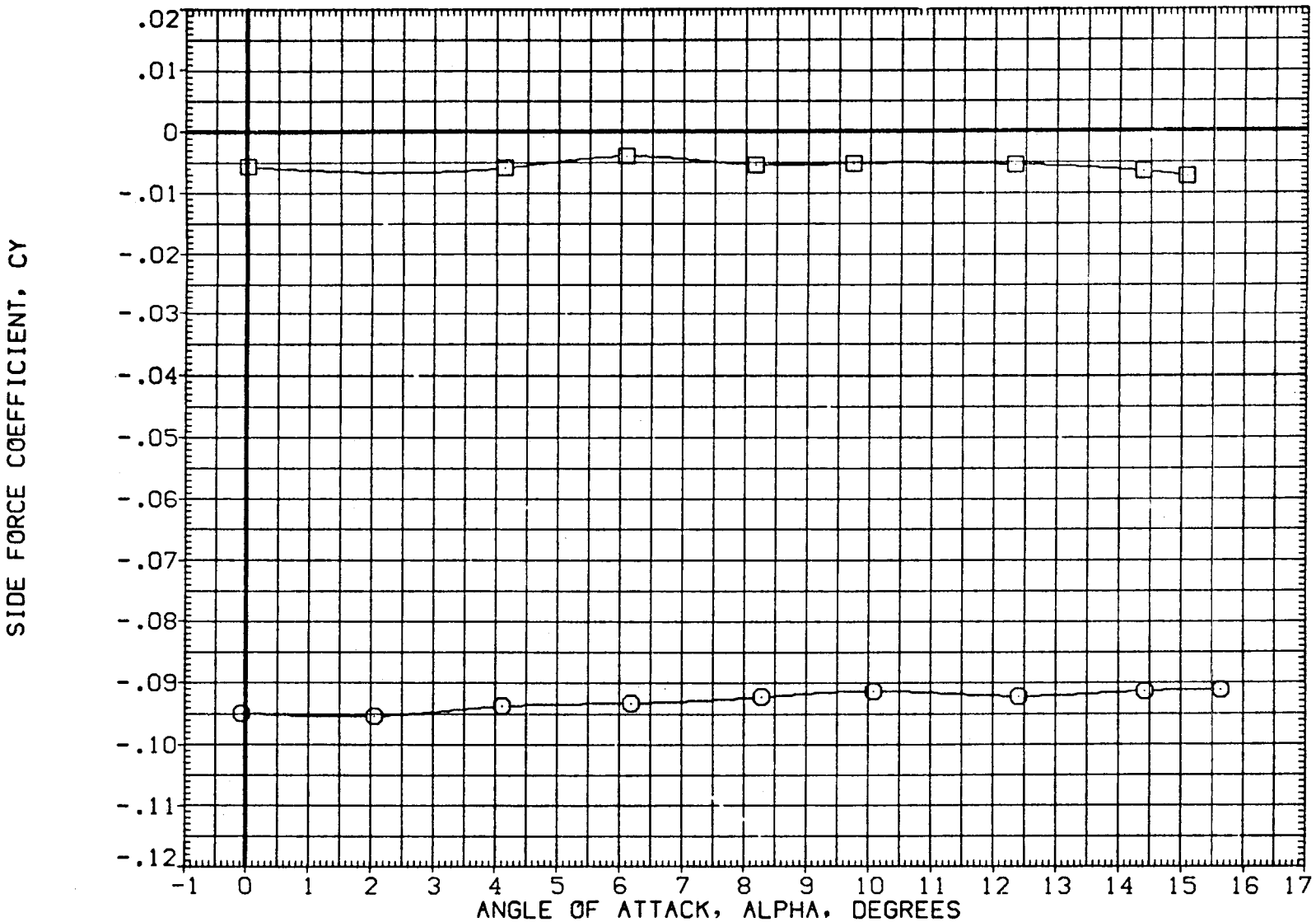


FIG. 11 EFFECT OF SIDESLIP ON BASIC CONFIGURATION WITH STRUTS, (LAT-DIR COEFFS)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA20)	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	6.000	.260
(RNGA15)	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

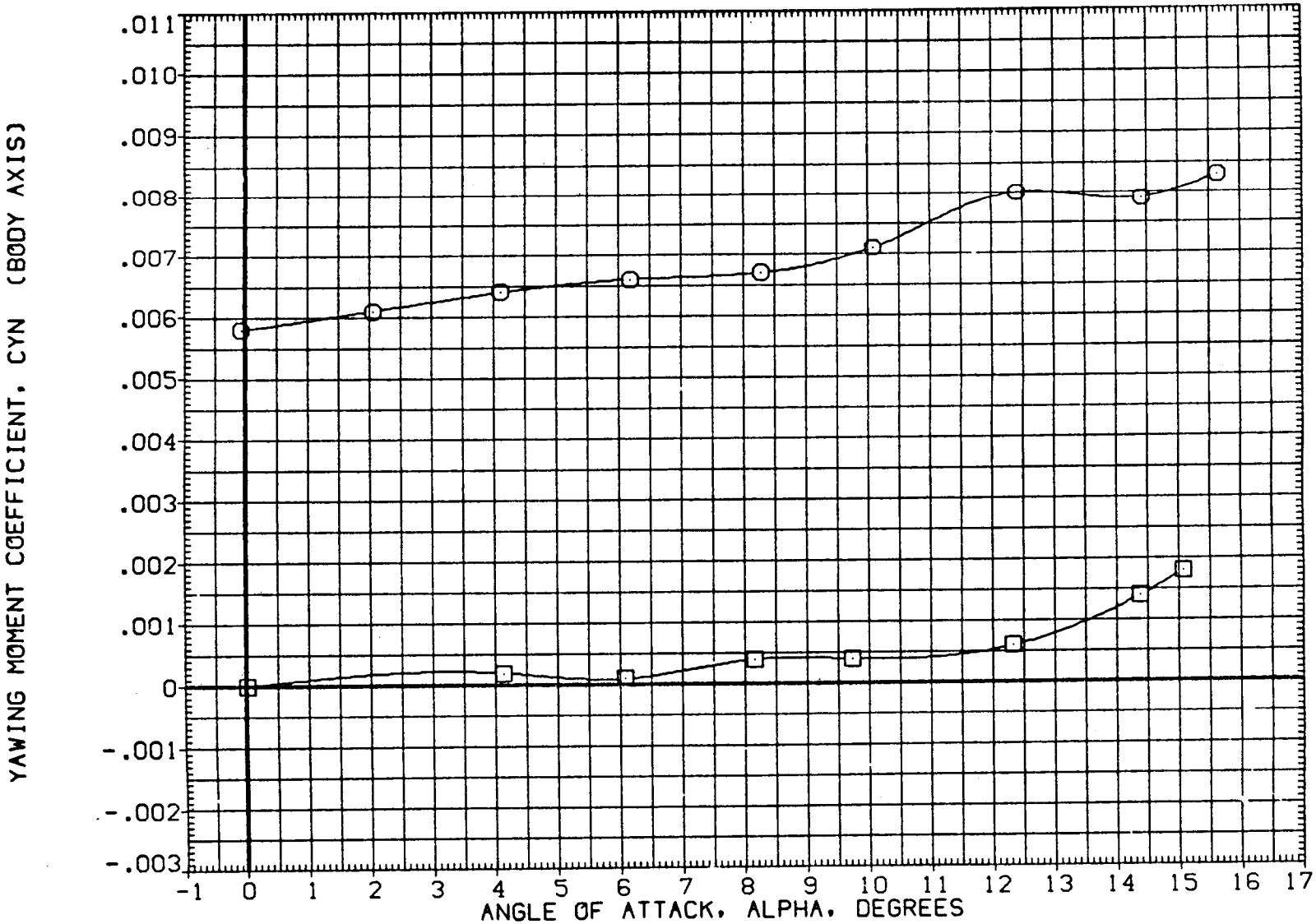


FIG. 11 EFFECT OF SIDESLIP ON BASIC CONFIGURATION WITH STRUTS, (LAT-DIR COEFFS)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA20)	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	6.000	.260
(RNGA15)	ARC 12-078/0A159 03 WITH GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

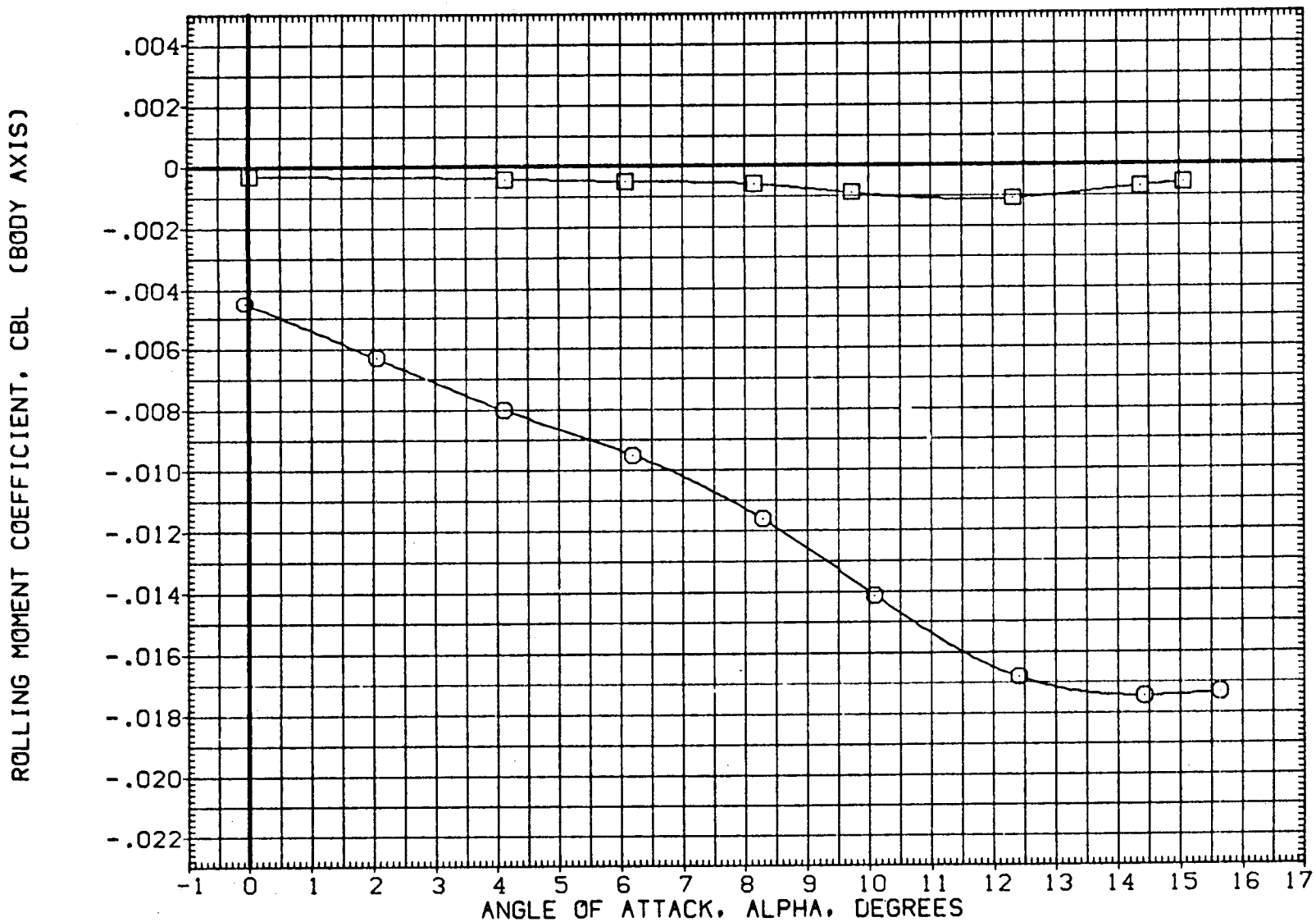


FIG. 11 EFFECT ØF SIDESLIP ØN BASIC CØNFIGURATIØN WITH STRUTS, (LAT-DIR CØEFFS)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA27)	ARC 12-078/0A159 03 - N24 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN ZO
SCALE	.0300	

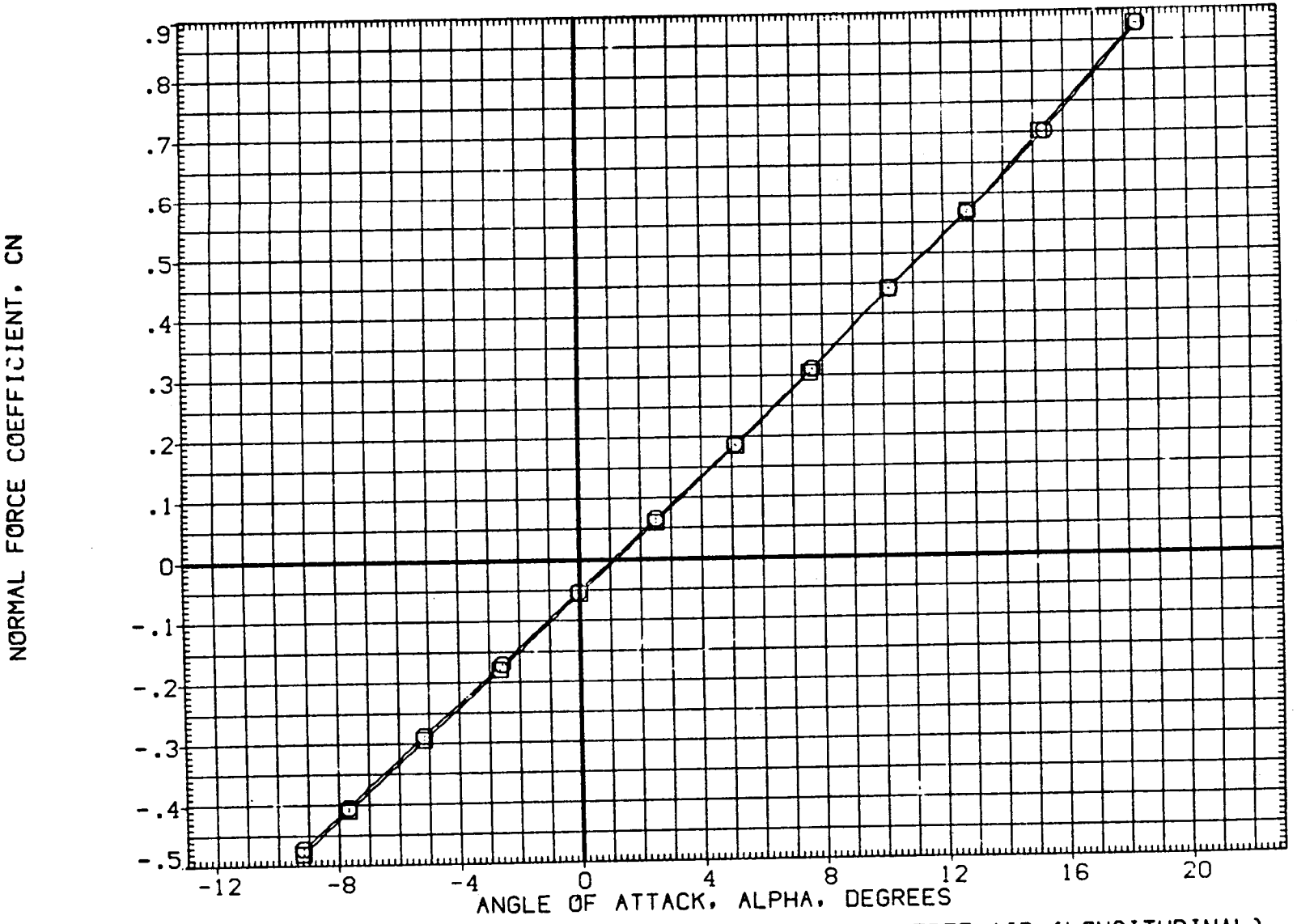


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA21)	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260
(RNGA27)	ARC 12-078/0A159 03 - N24 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

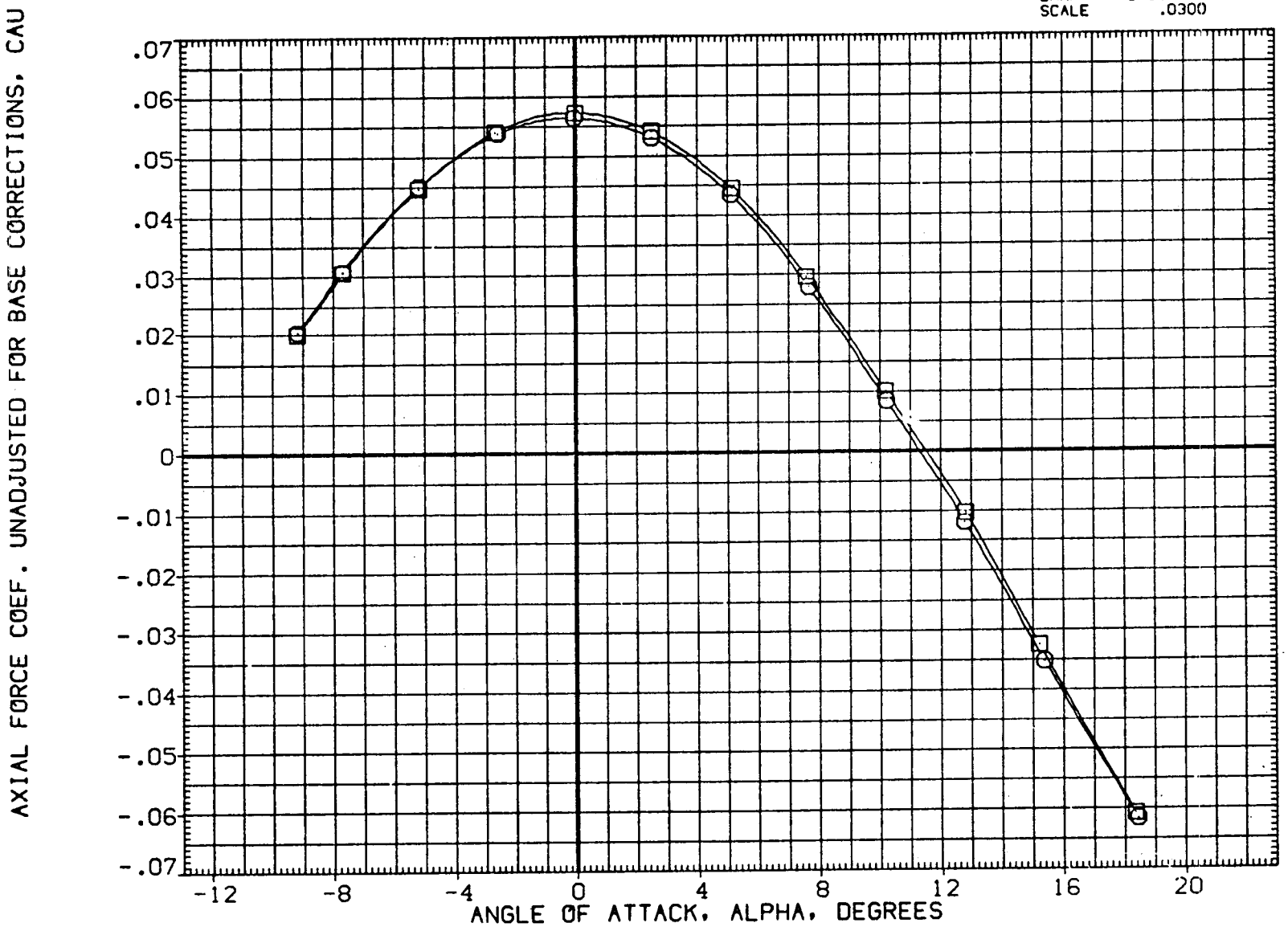


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA27)	ARC 12-078/0A159 03 - N24 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.5700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

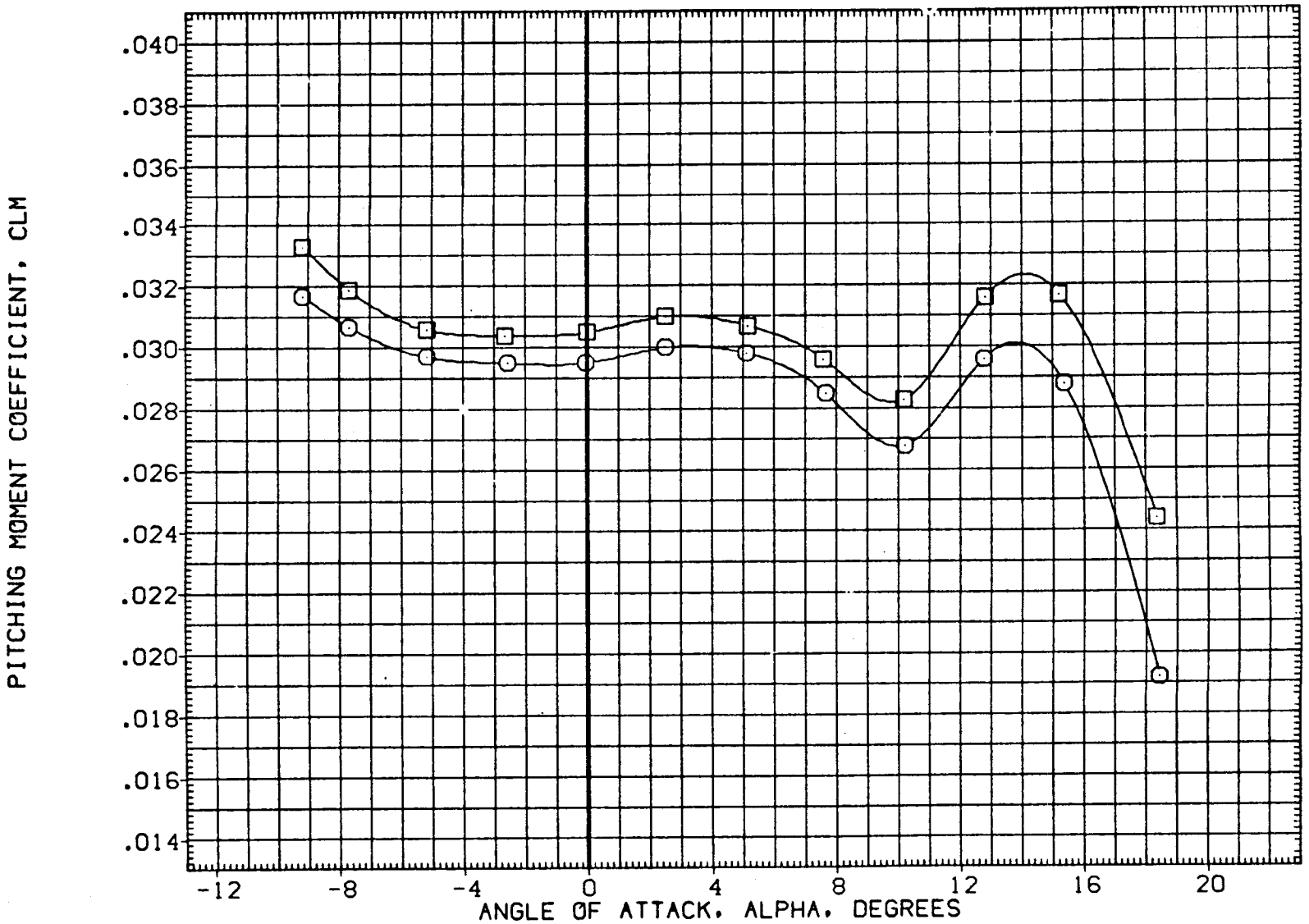


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVON	BOFLAP	BETA	MACH
(ANGA21)	○	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(ANGA27)	□	ARC 12-078/0A159 03 - N24 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

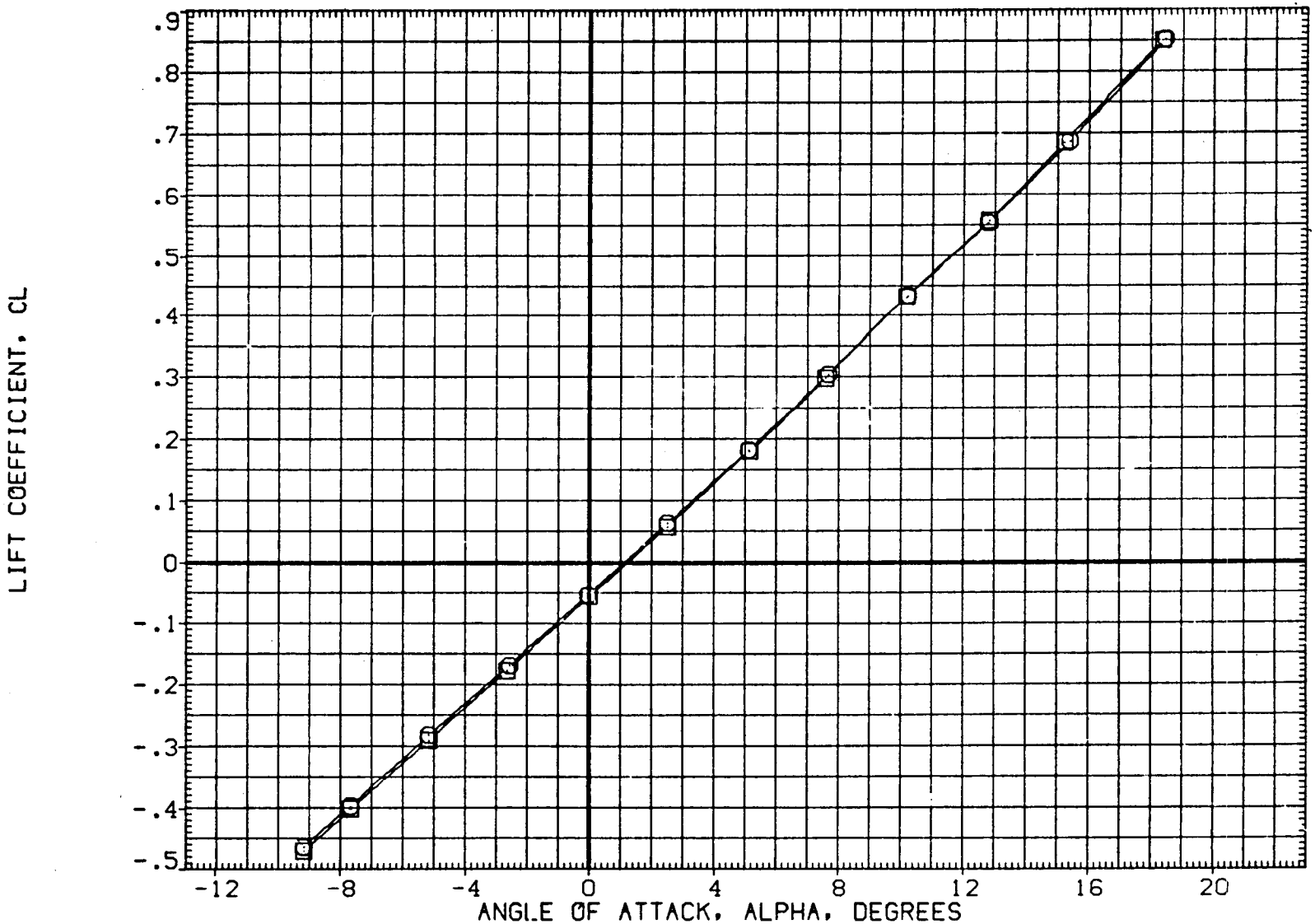


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(ANGA27)	ARC 12-078/0A159 03 - N24 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

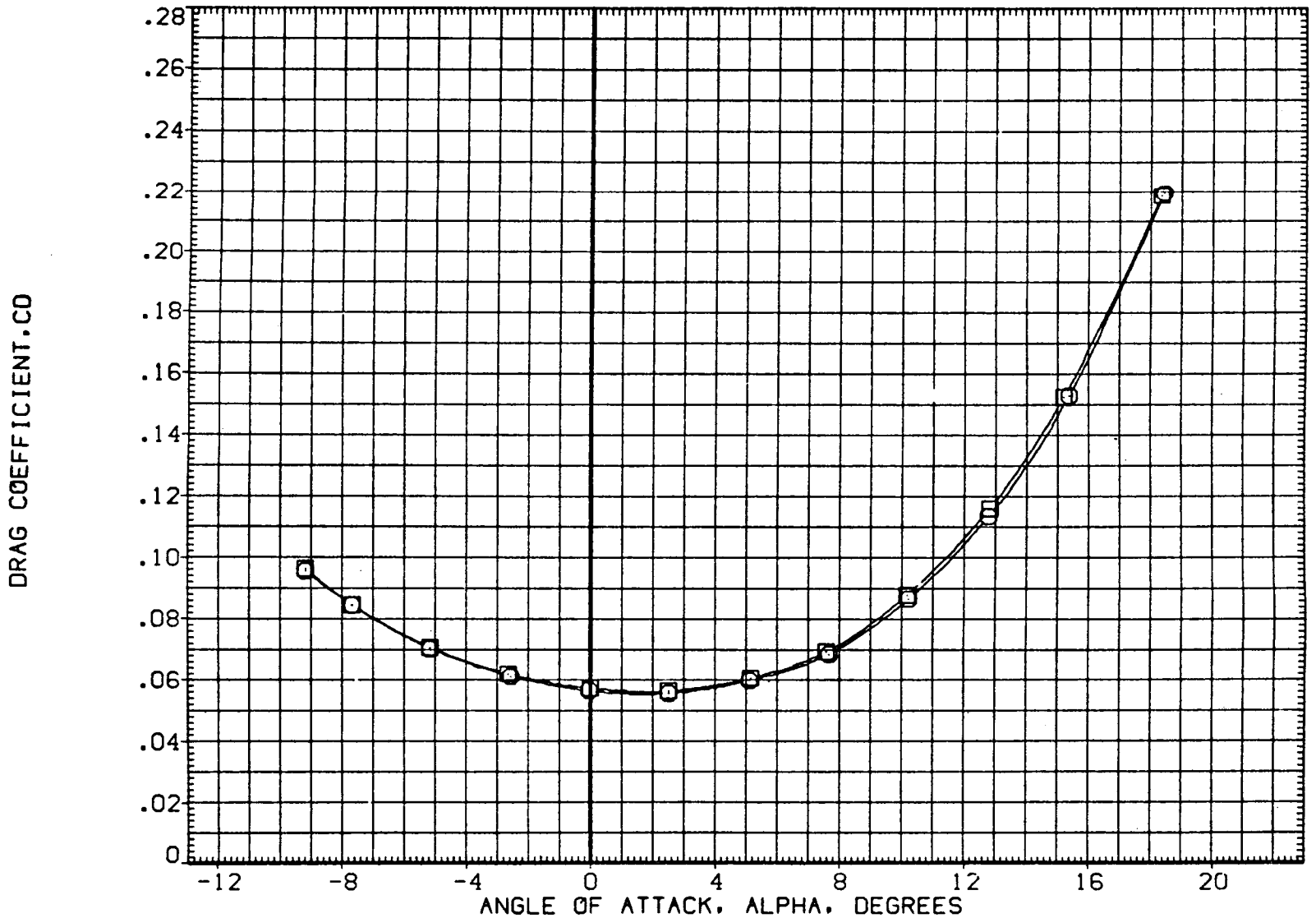


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(BNGA21)	○	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260
(BNGA27)	□	ARC 12-078/0A159 03 - N24 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

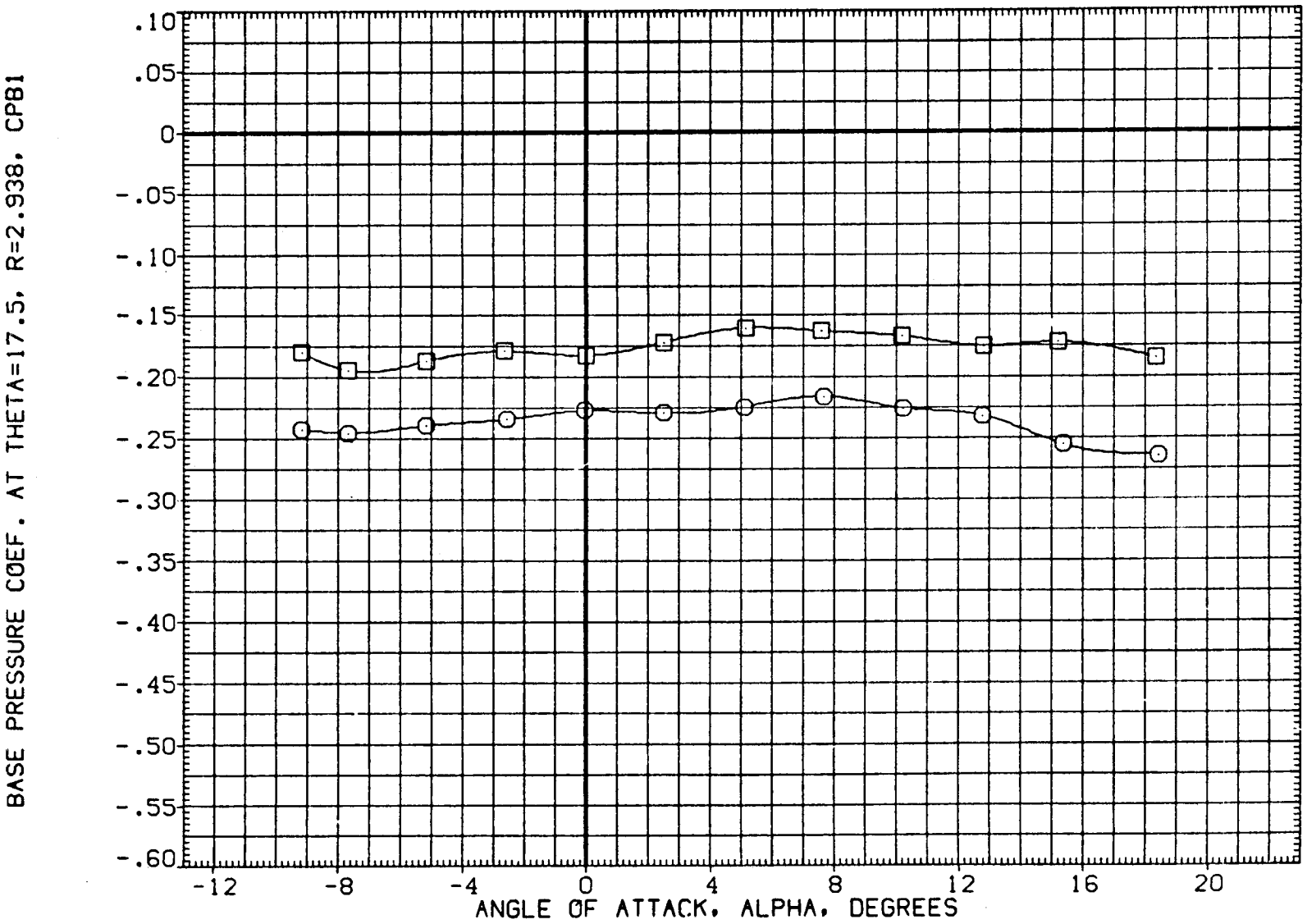


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(BNGA21)	○	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(BNGA27)	□	ARC 12-078/0A159 03 - N24 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

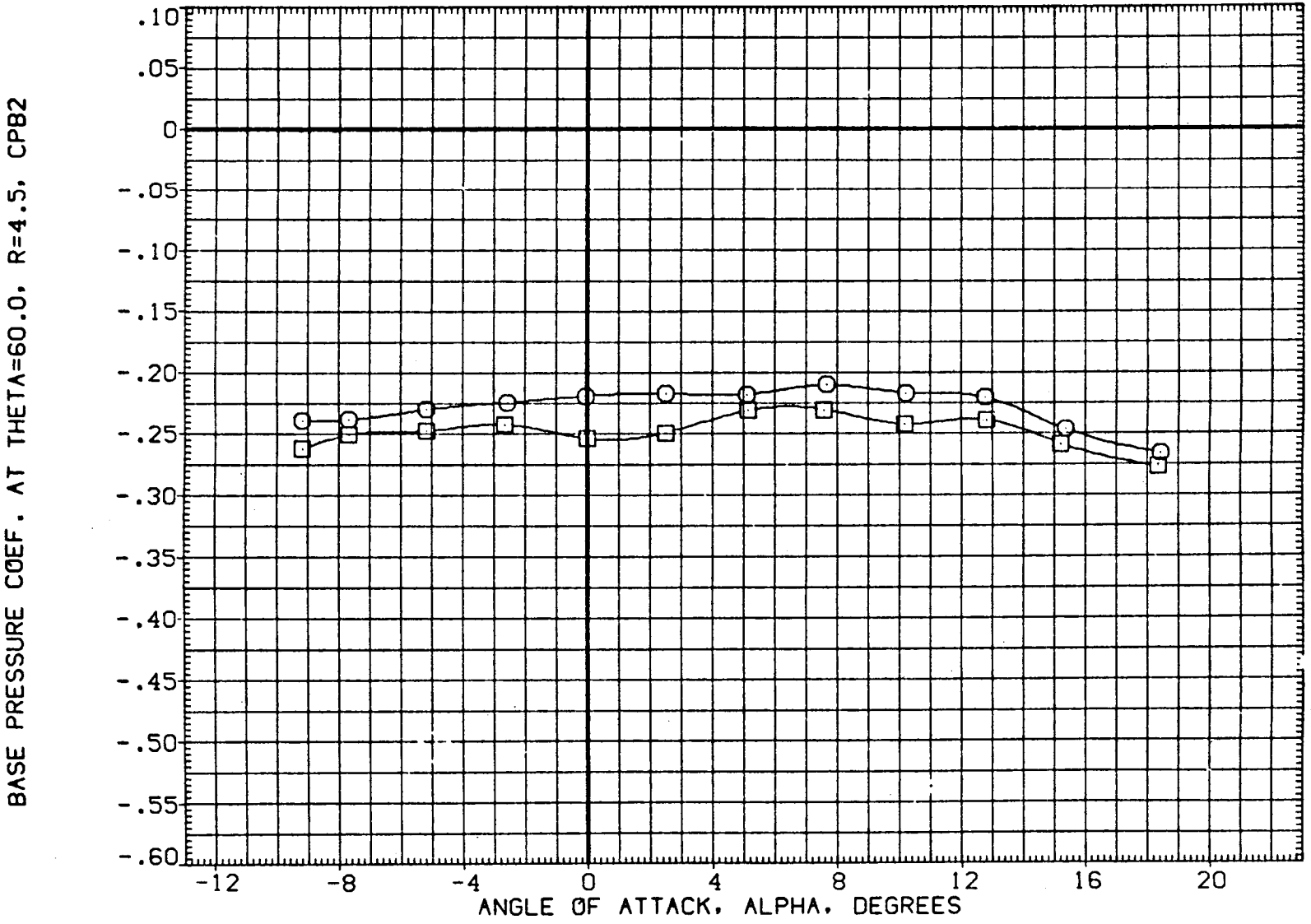


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(BNGA21)	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260
(BNGA27)	ARC 12-078/0A159 03 - N24 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

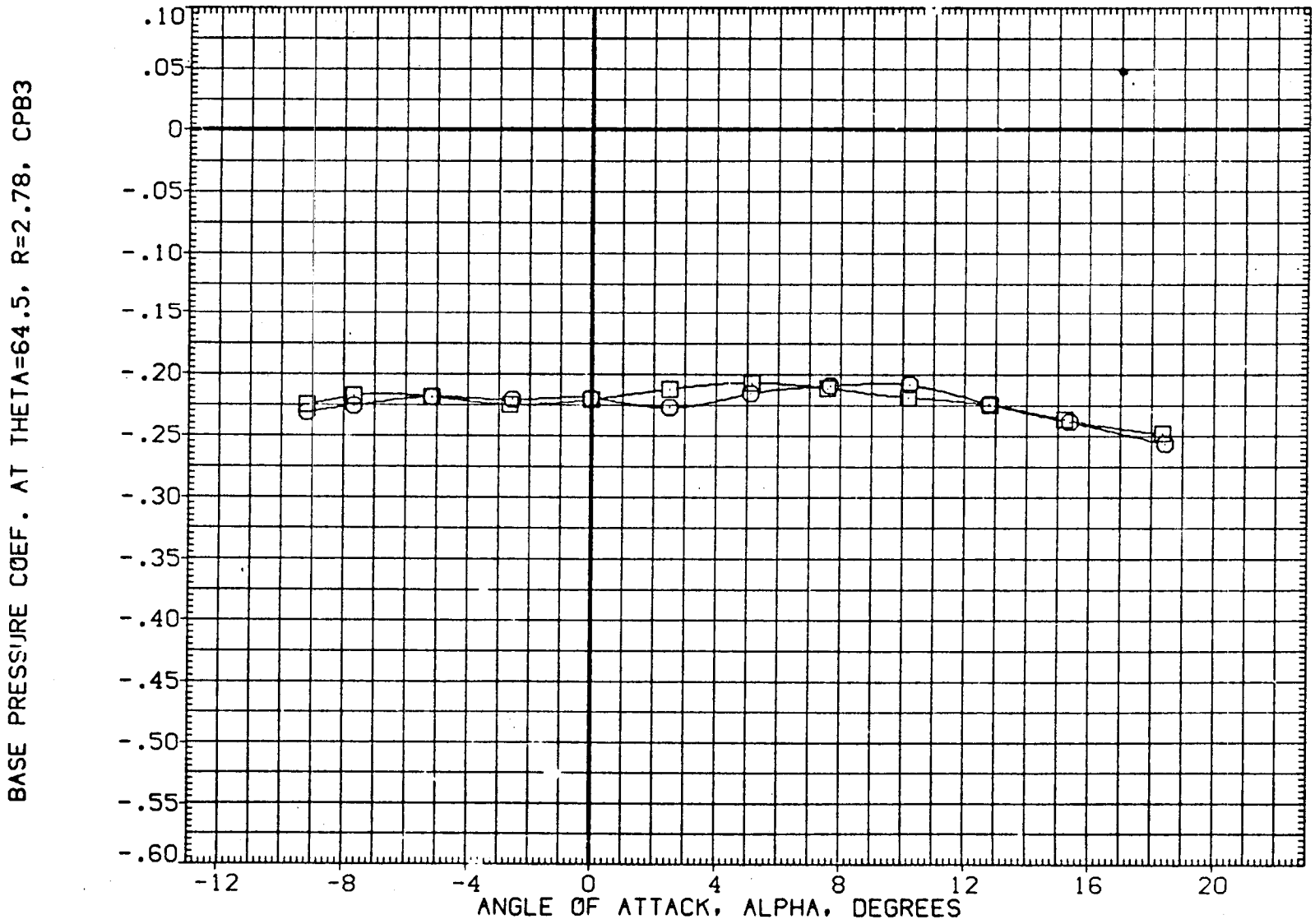


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(BNGA21)	⊡	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(BNGA27)	□	ARC 12-078/0A159 03 - N24 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

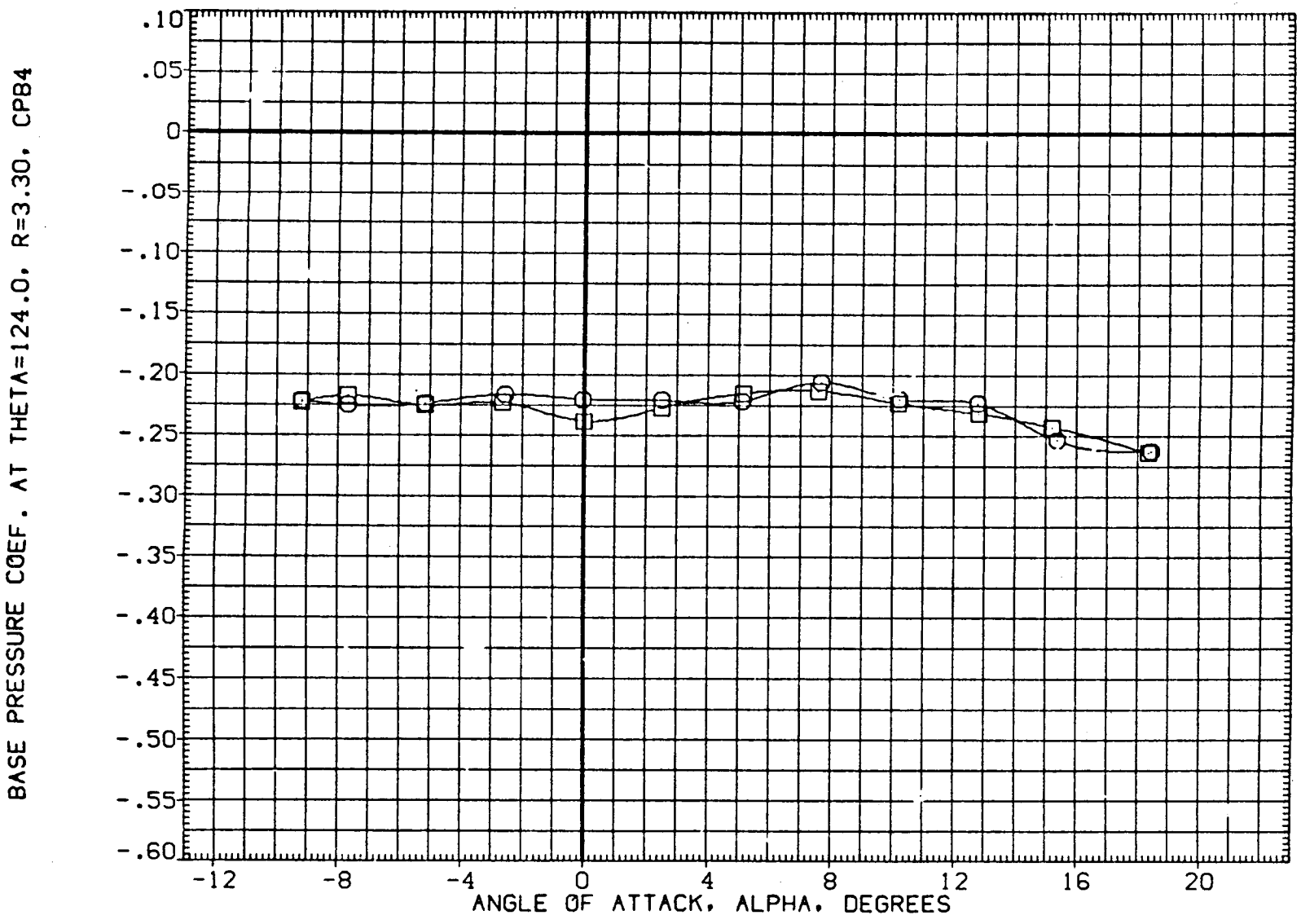


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(BNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(BNGA27)	ARC 12-078/0A159 03 - N24 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

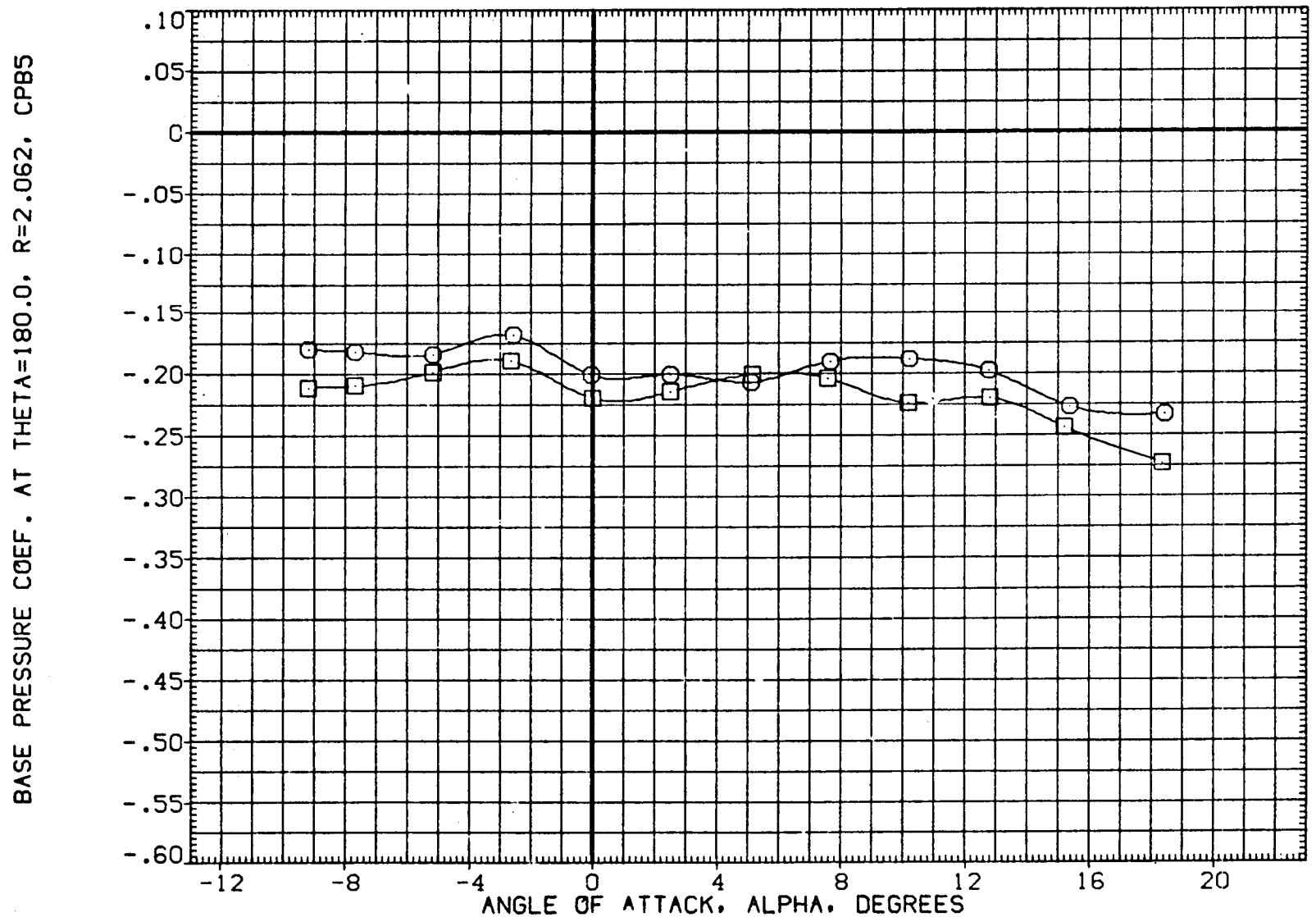


FIG. 12 EFFECT OF REMOVAL OF MAIN PROPULSION NOZZLES, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA22)	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

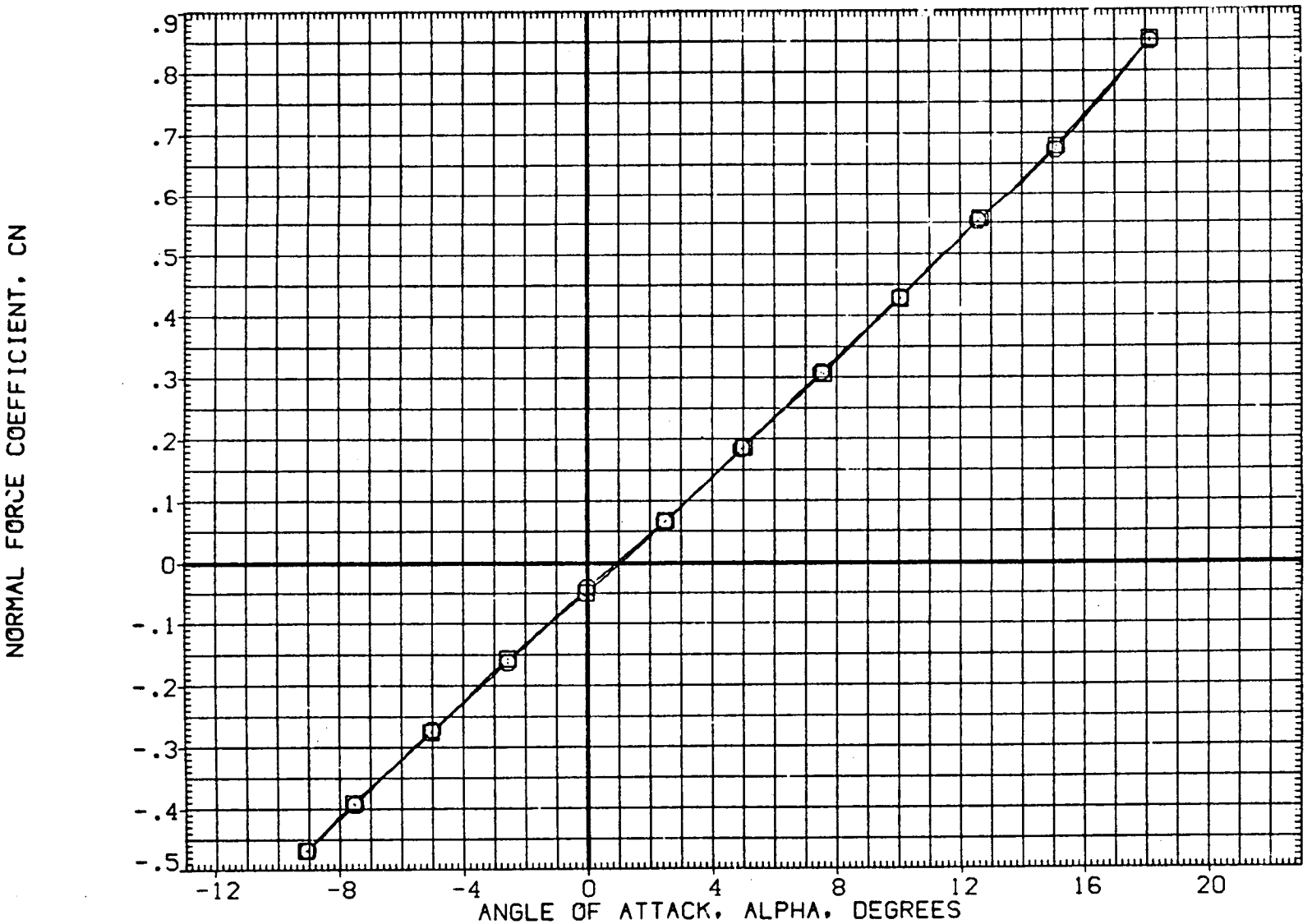


FIG. 13 EFFECT OF CARRIER-ATTACH FITTINGS, FREE AIR RN/L=2.4 (LONGITUDINAL)

(A) RN/L = 2.40

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA22)	○	ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE	.000	.000	.000	.260
(RNGA21)	□	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

FIG. 13 EFFECT OF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=2.4 (LONGITUDINAL.)

(A)RN/L = 2.40

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA22)	8	ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE	.000	.000	.000	.260
(RNGA21)	□	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

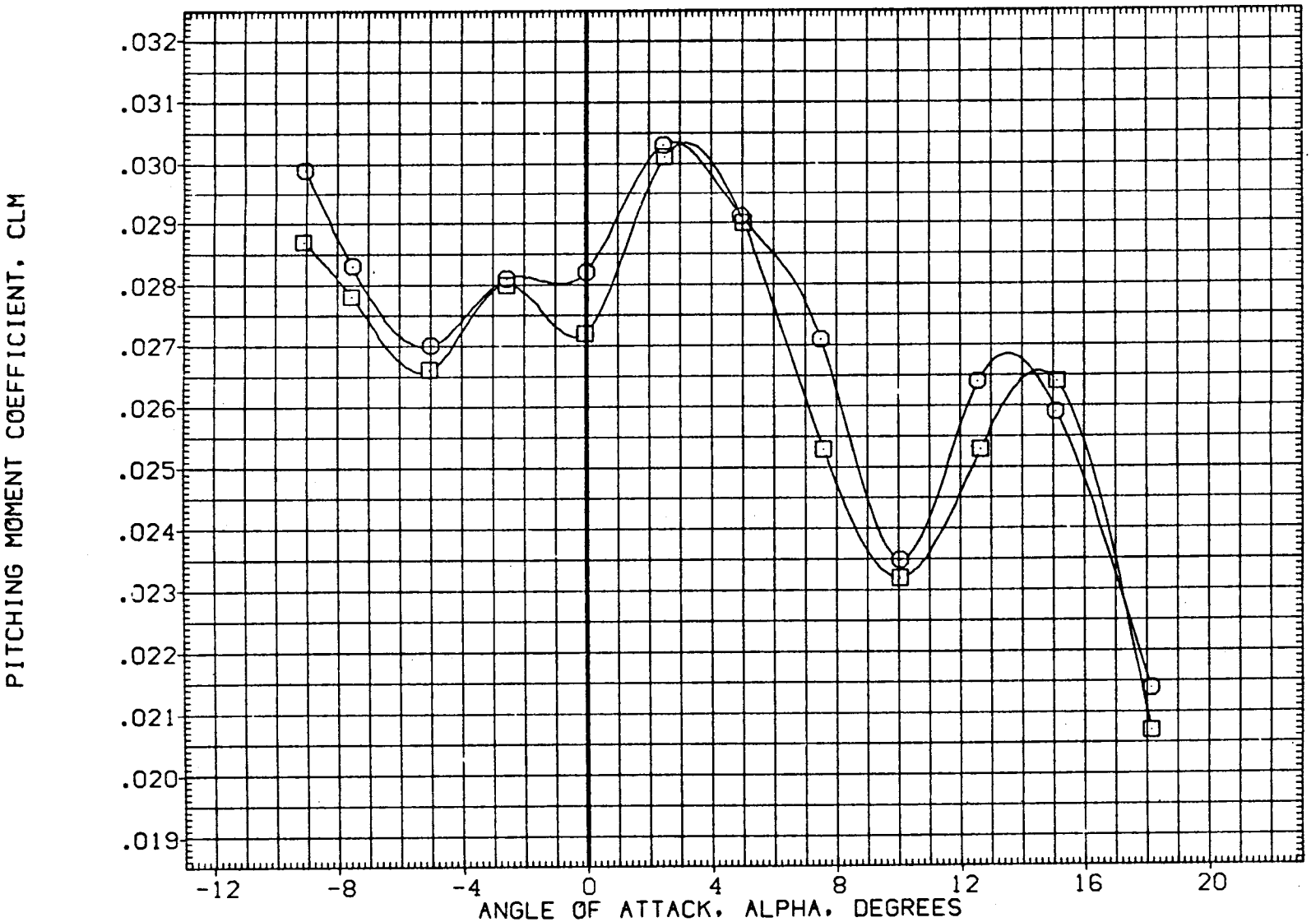


FIG. 13 EFFECT OF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=2.4 (LONGITUDINAL)

(A)RN/L = 2.40

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA22)	ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE	.000	.000	.000	.260
(ANGA21)	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

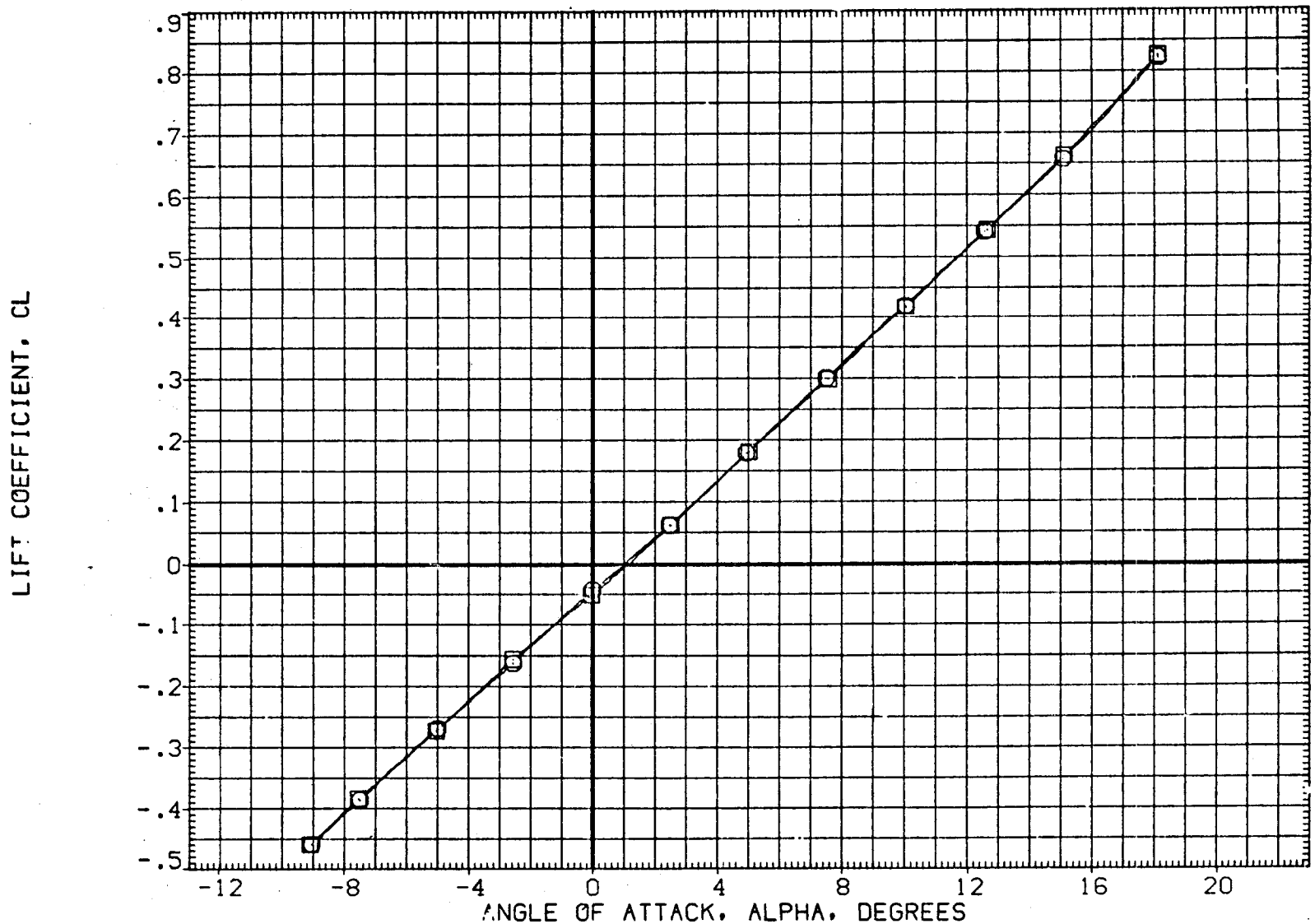


FIG. 13 EFFECT ØF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=2.4 (LØNGITUDINAL)

(A)RN/L = 2.40

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA22)	8	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	.000	.260
(ANGA21)	□	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

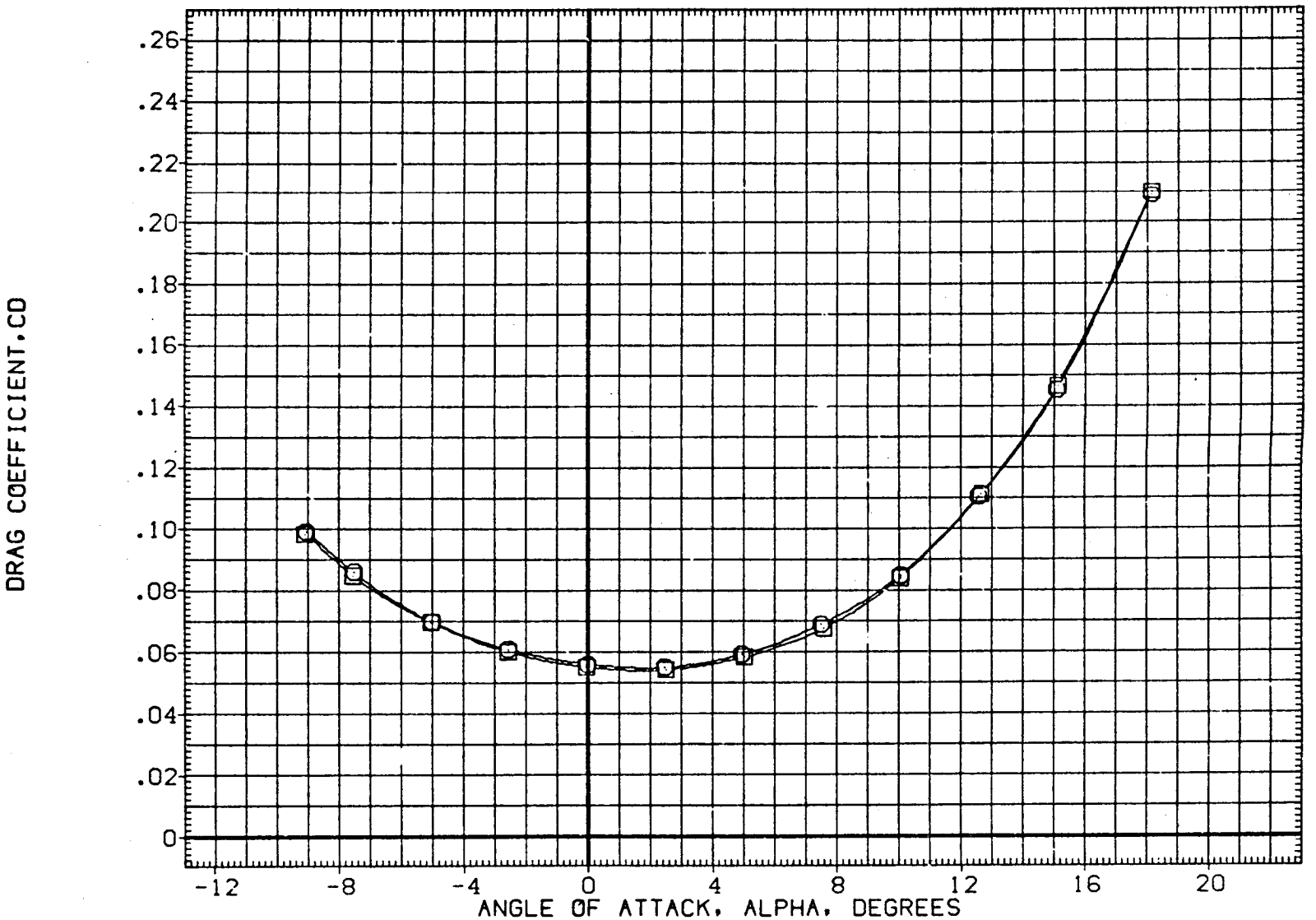


FIG. 13 EFFECT OF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=2.4 (LONGITUDINAL)

(A)RN/L = 2.40

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA22)	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

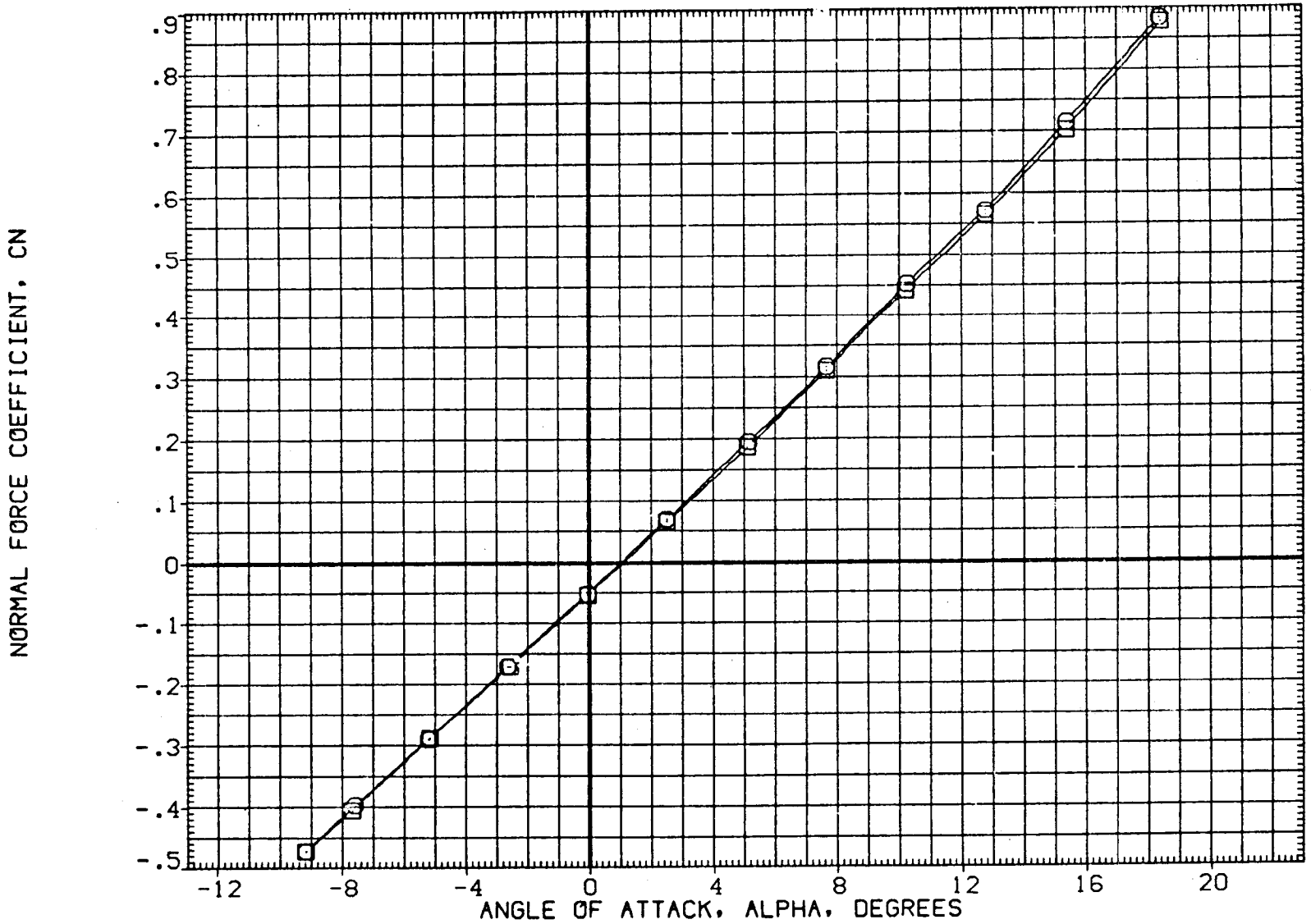


FIG. 14 EFFECT OF CARRIER-ATTACH FITTINGS, FREE AIR RN/L=5.5 (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA22)	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6600	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

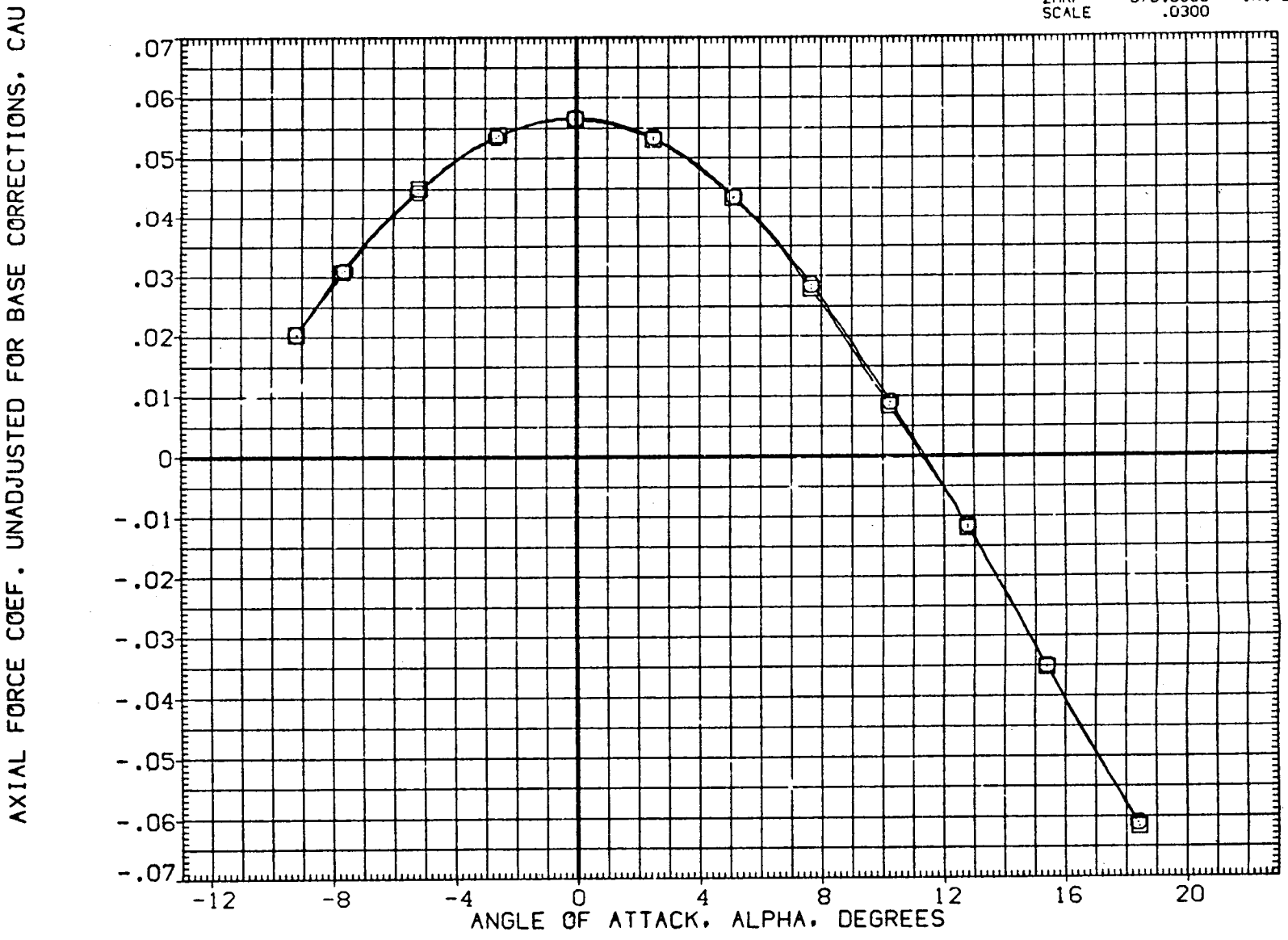


FIG. 14 EFFECT ØF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=5.5 (LØNGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA22)	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

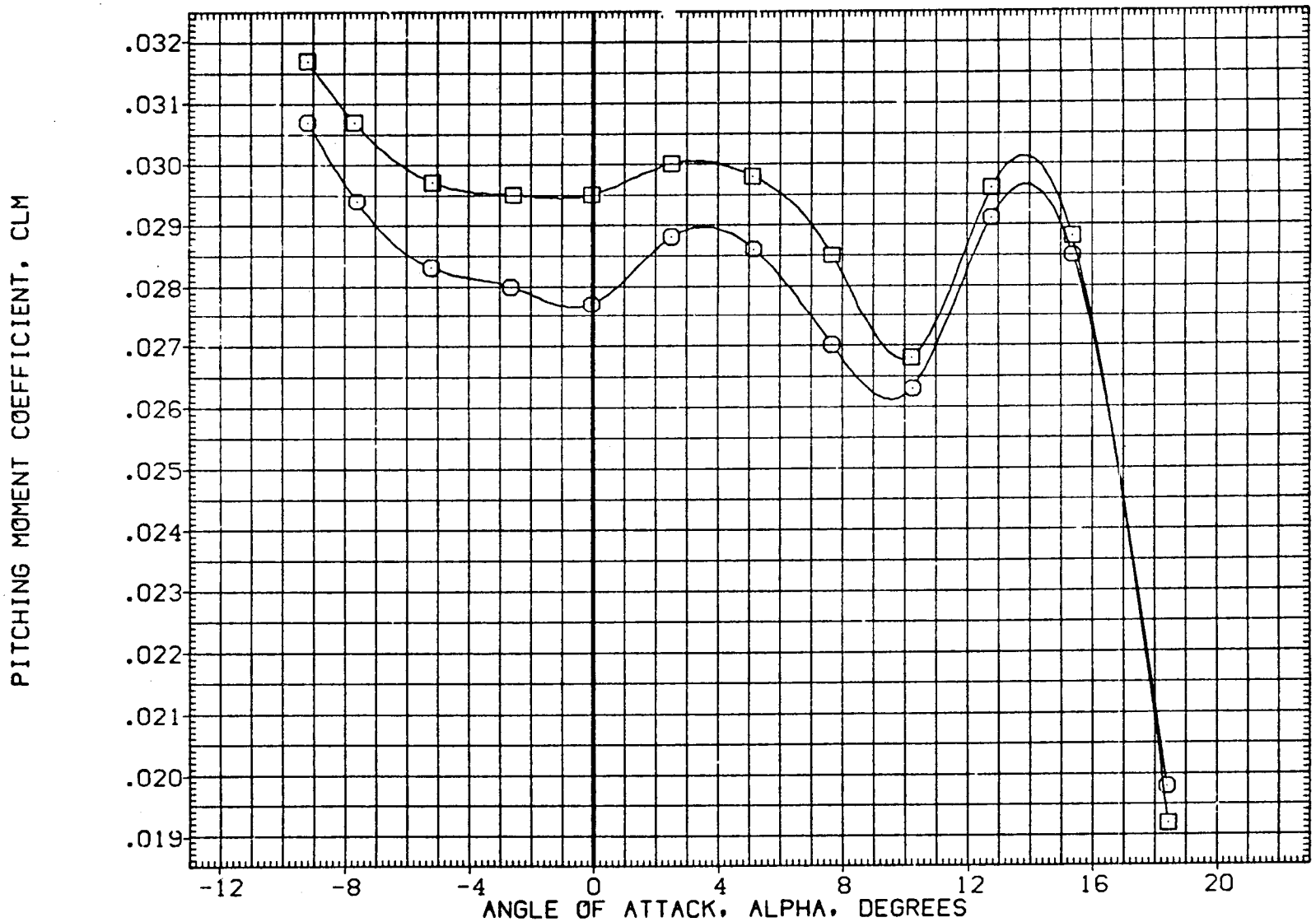


FIG. 14 EFFECT OF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=5.5 (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA22)	○	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	.000	.260
(ANGA21)	□	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

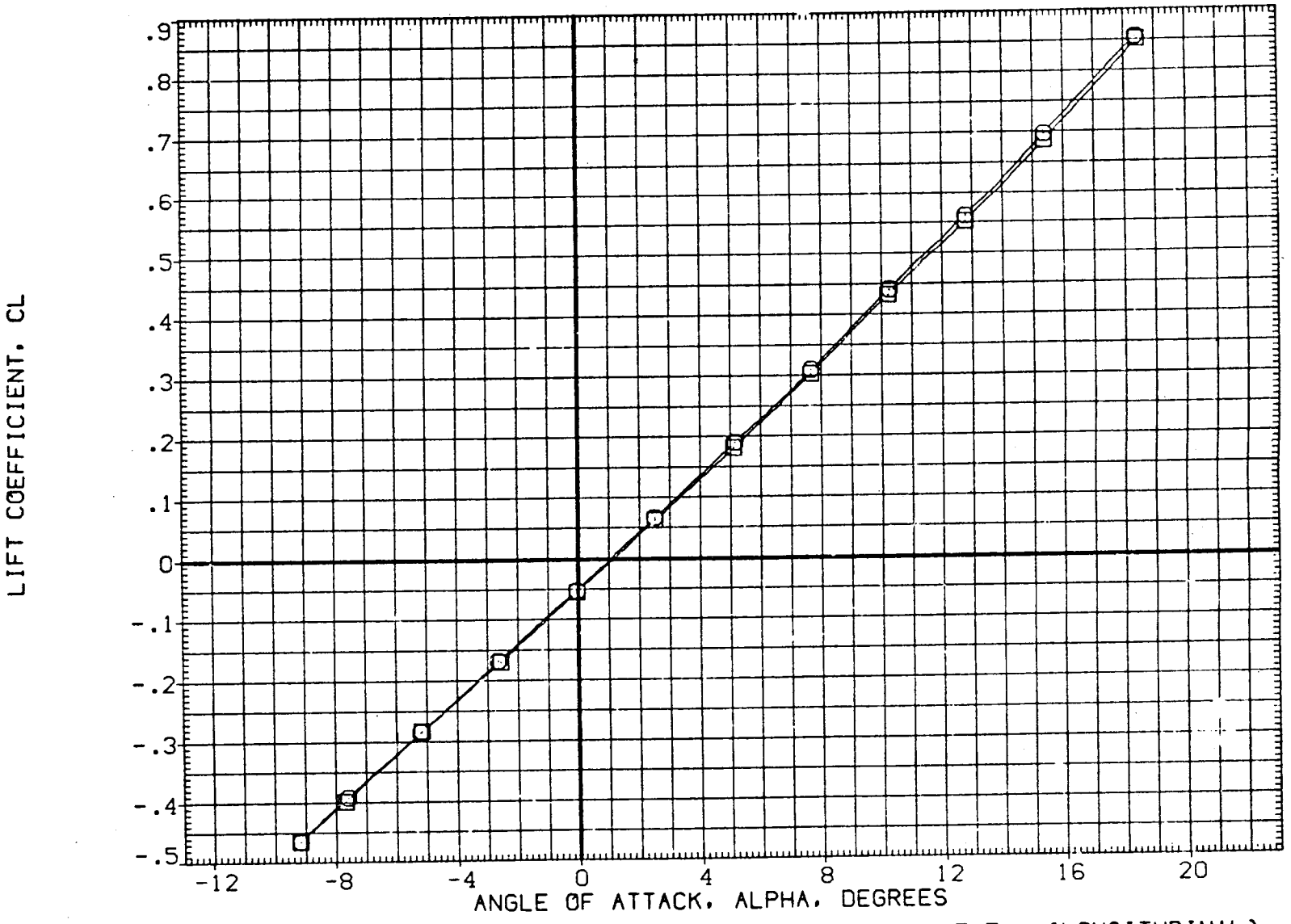


FIG. 14 EFFECT OF CARRIER-ATTACH FITTINGS, FREE AIR RN/L=5.5 (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA22)	ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE	.000	.000	.000	.260
(ANGA21)	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

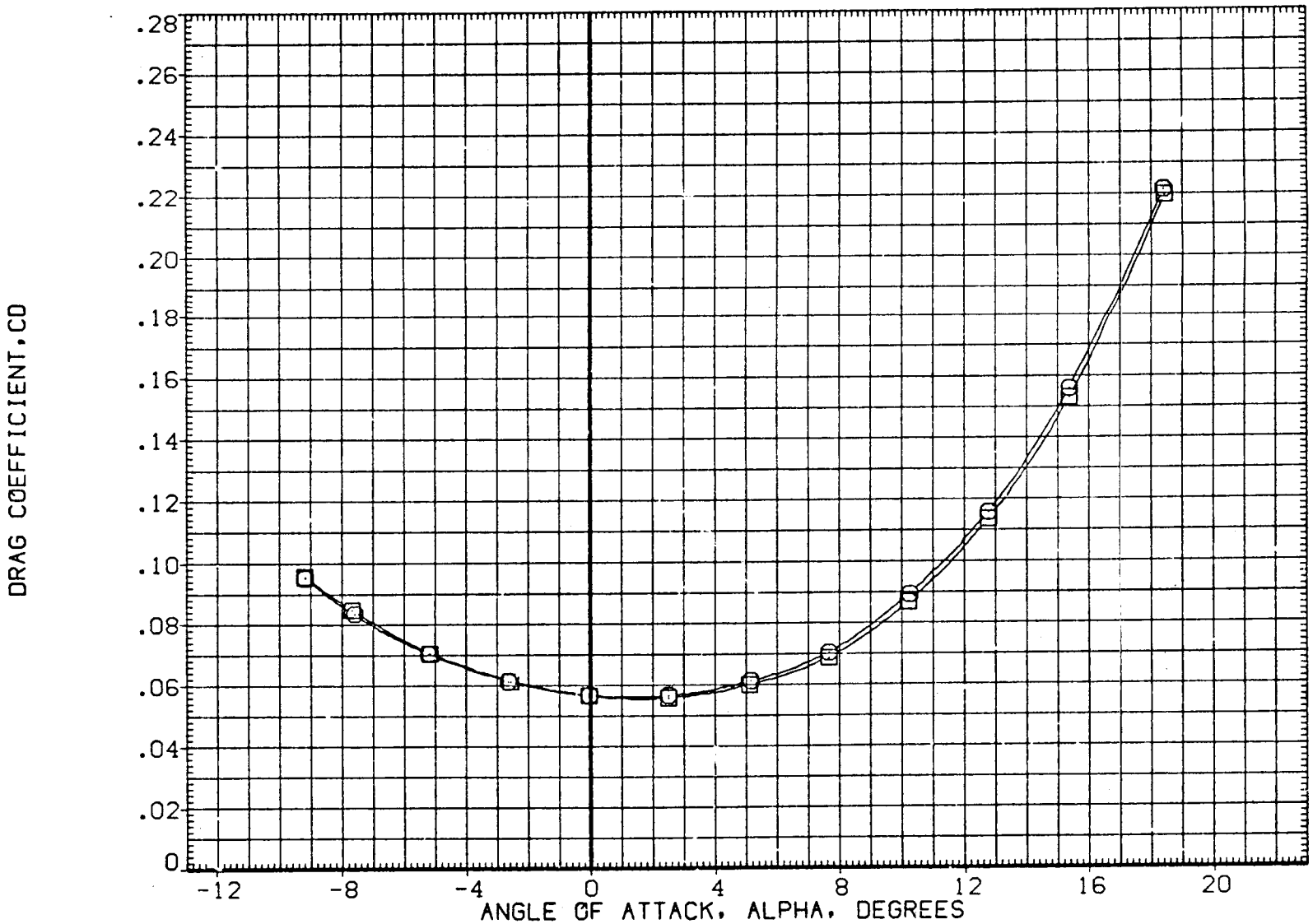


FIG. 14 EFFECT ØF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=5.5 (LØNGITUDINAL)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA22)	○	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA21)	□	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

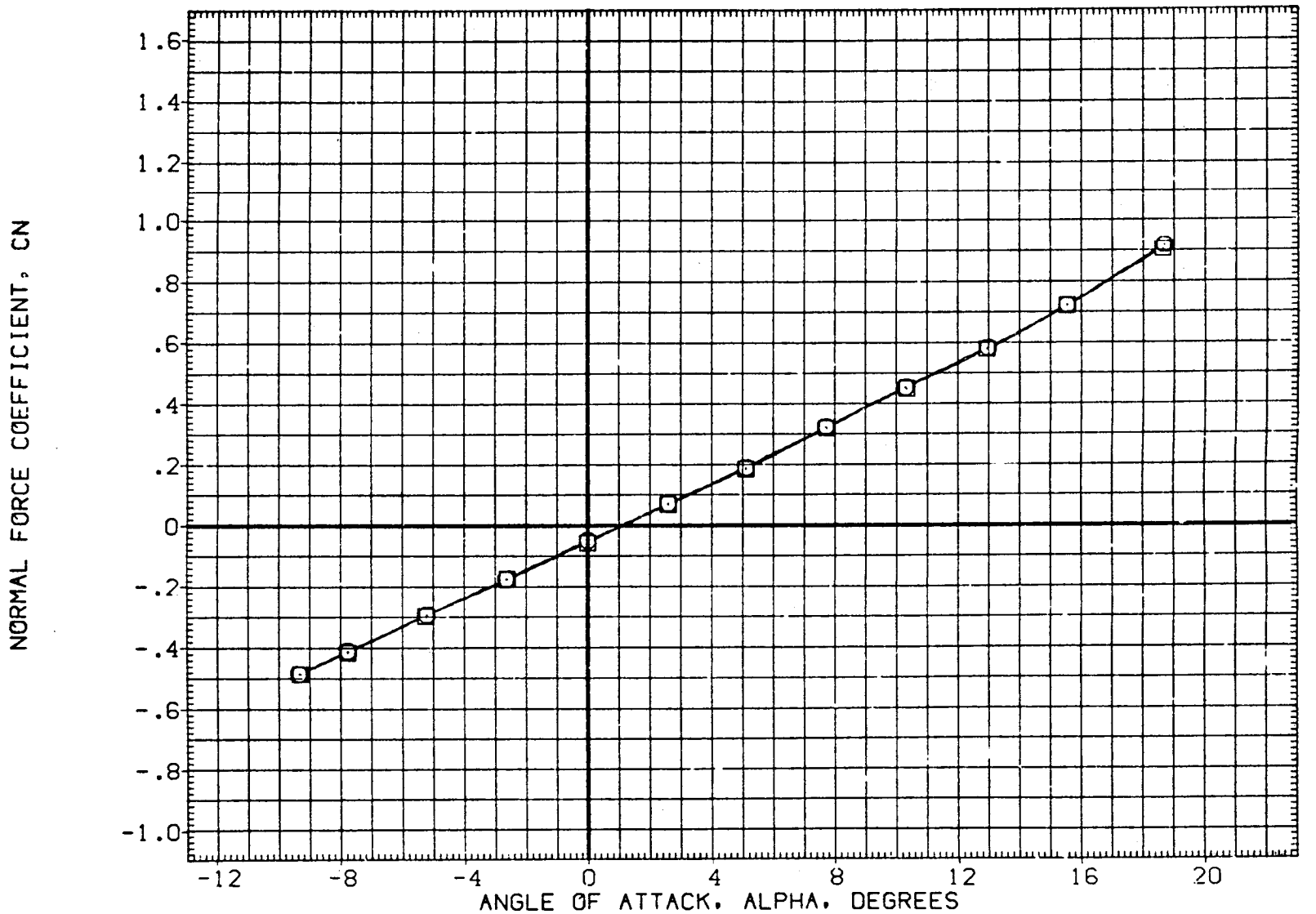


FIG. 15 EFFECT OF CARRIER-ATTACH FITTINGS, FREE AIR RN/L=8.0 (LONGITUDINAL)

(A)RN/L = 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA22) ○	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA21) □	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

FIG. 15 EFFECT OF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=8.0 (LONGITUDINAL)

(A)RN/L = 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA22)	ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE	.000	.000	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

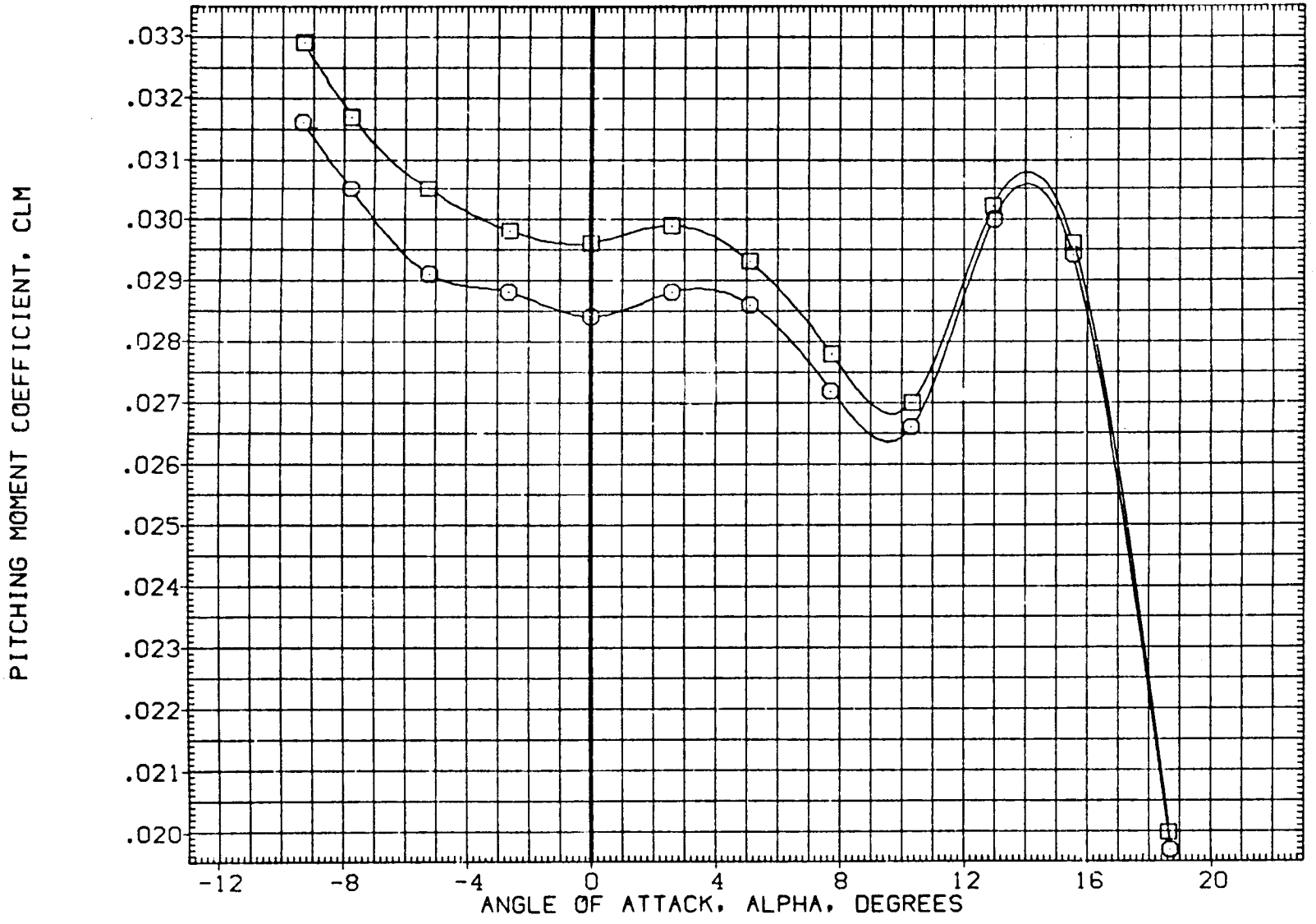


FIG. 15 EFFECT OF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=8.0 (LONGITUDINAL)

(A)RN/L = 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA22) ○	ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE	.000	.000	.000	.260
(ANGA21) □	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

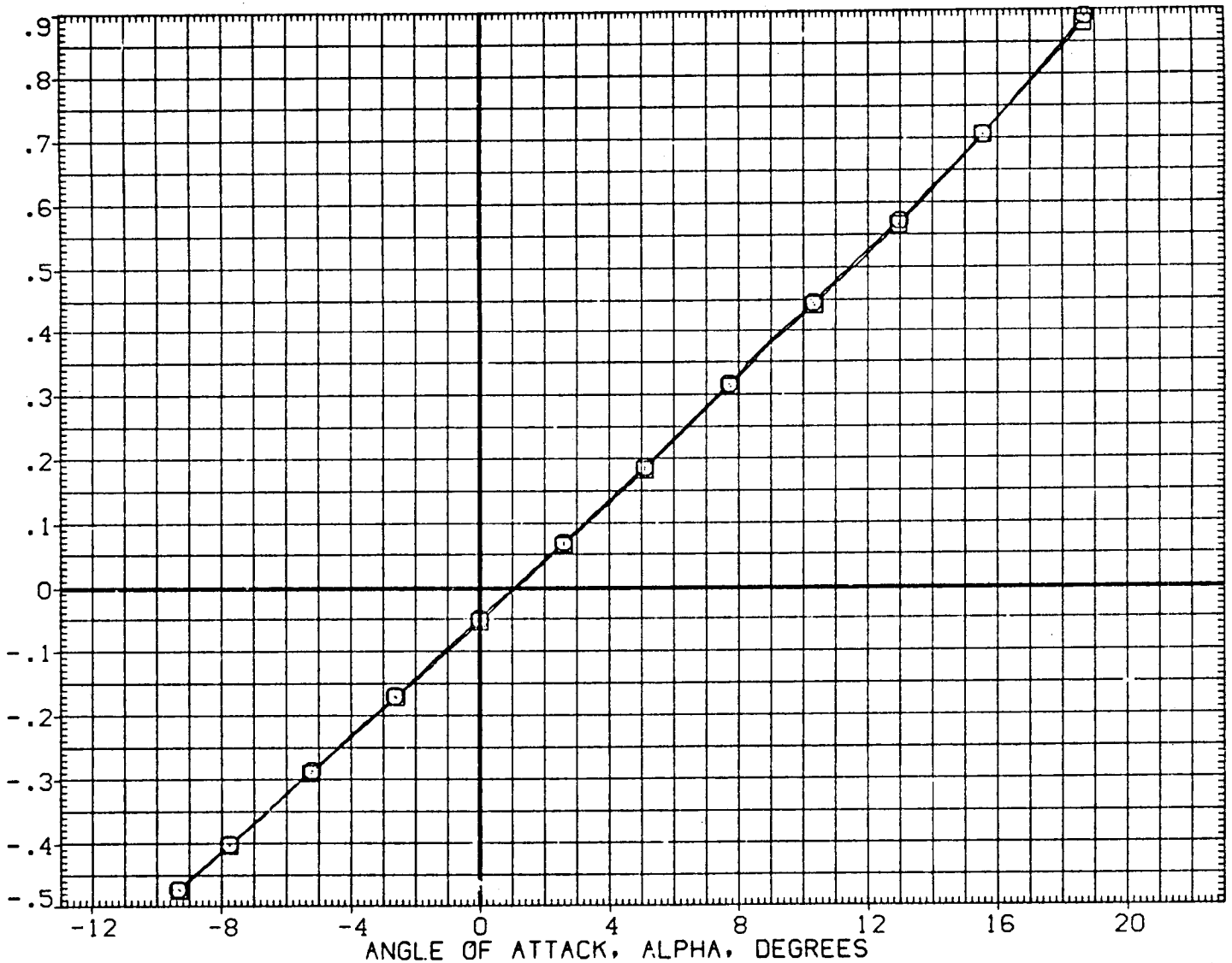


FIG. 15 EFFECT OF CARRIER-ATTACH FITTINGS, FREE AIR RN/L=8.0 (LONGITUDINAL)

(A)RN/L = 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA22)	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	.000	.260
(ANGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

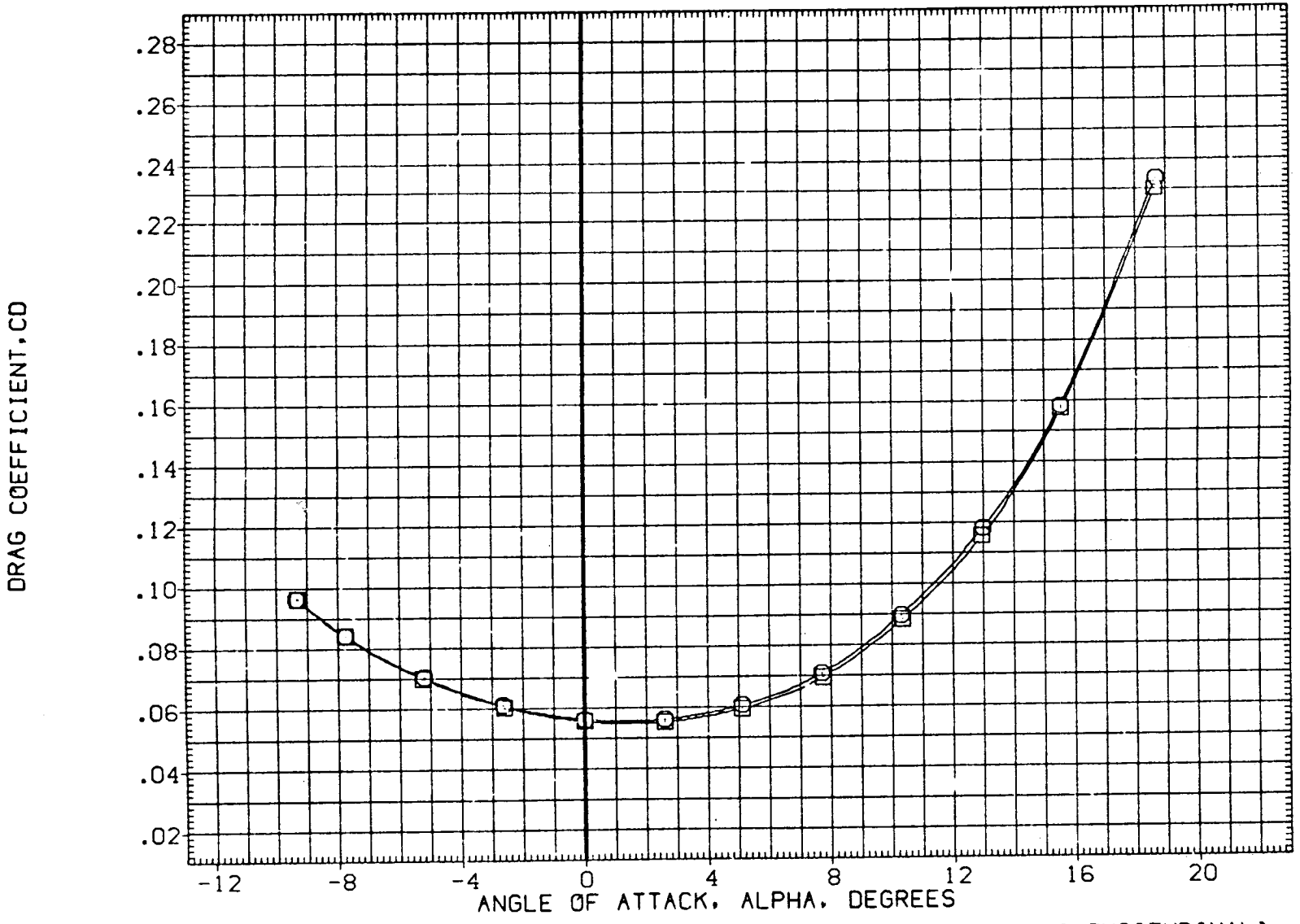


FIG. 15 EFFECT OF CARRIER-ATTACH FITTINGS, FREE AIR RN/L=8.0 (LONGITUDINAL)

(A)RN/L = 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	ALPHA	MACH
(RNGA24) ○	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	9.000	.260
(RNGA23) □	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	9.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

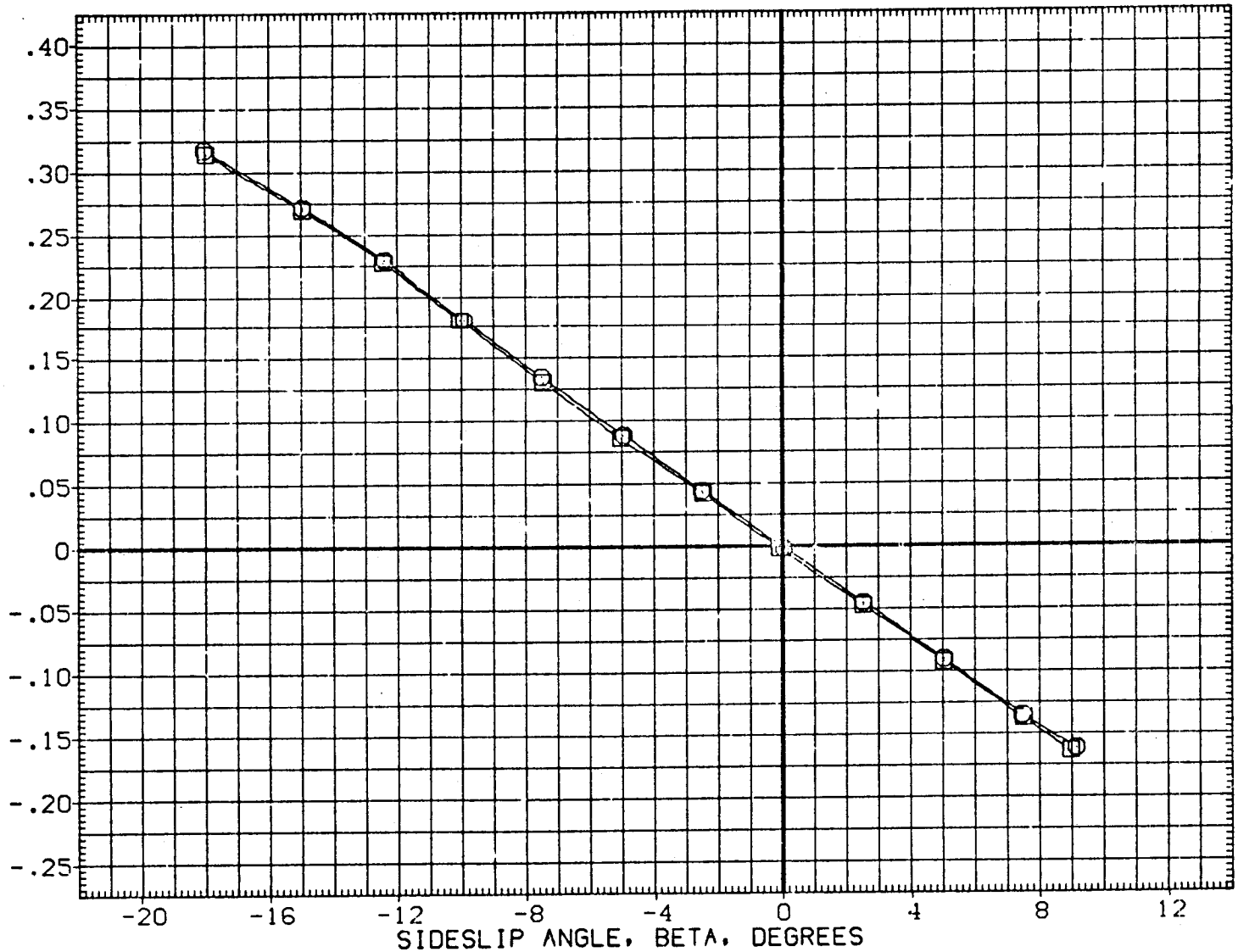


FIG. 16 EFFECT OF CARRIER-ATTACH FITTINGS,FREE AIR RN/L=5.5 (LAT-DIR.)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	ALPHA	MACH
(RNGA24)	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	9.000	.260
(RNGA23)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	9.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

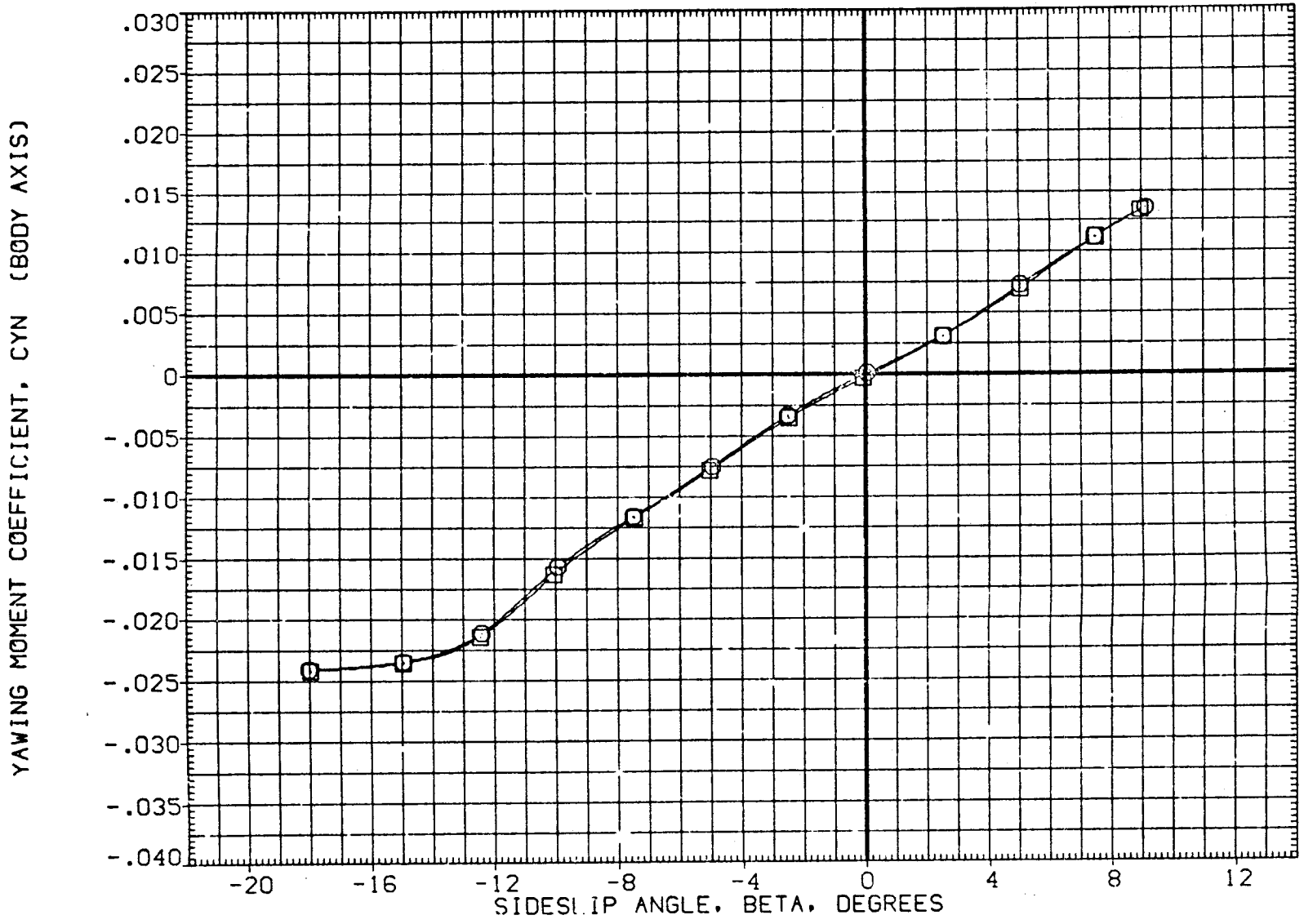


FIG. 16 EFFECT OF CARRIER-ATTACH FITTINGS, FREE AIR RN/L=5.5 (LAT-DIR.)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	ALPHA	MACH
(RNGA24)	ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE	.000	.000	9.000	.260
(RNG/23)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	9.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

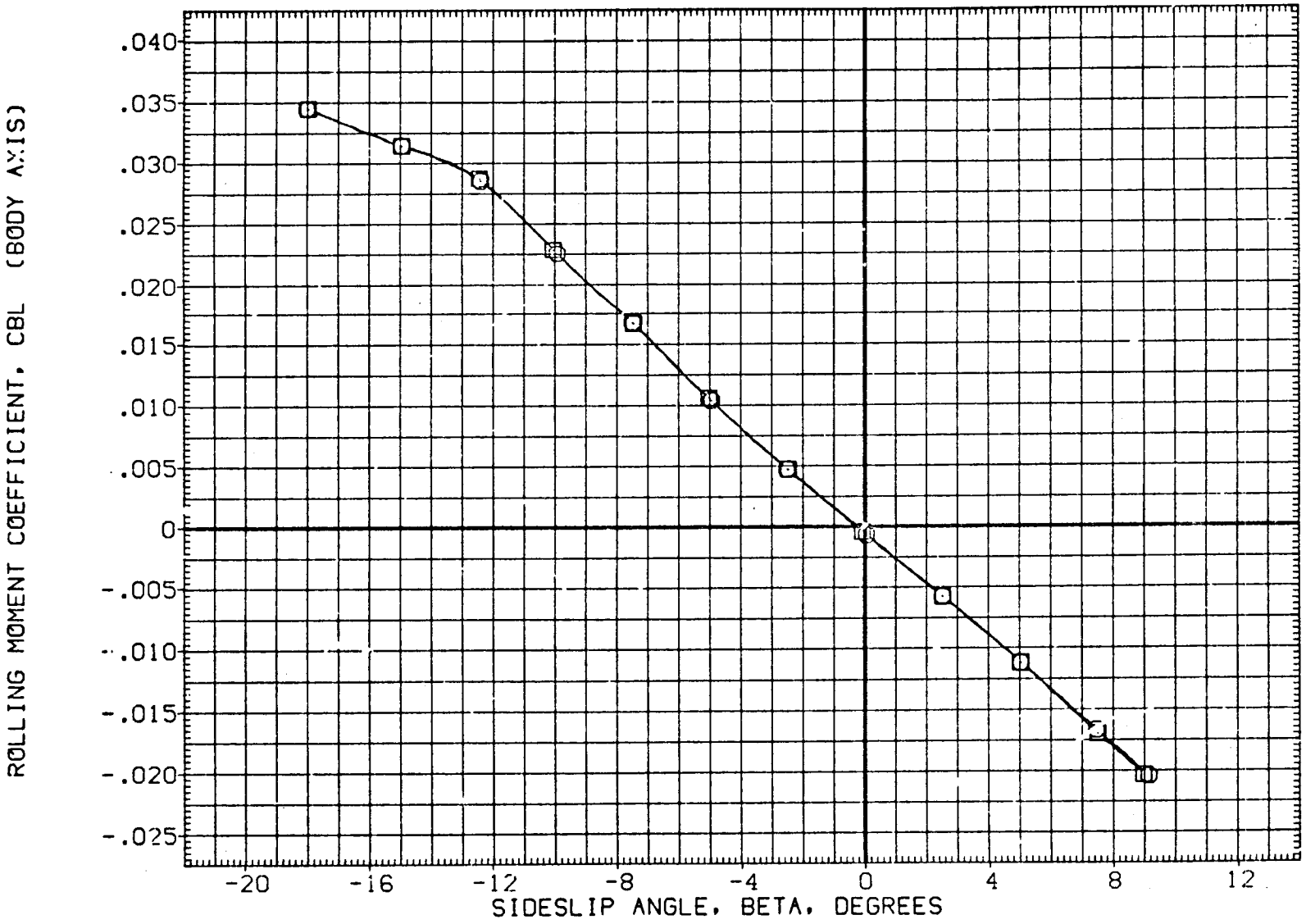


FIG. 16 EFFECT OF CARRIER-ATTACH FITTINGS, FREE AIR RN/L=5.5 (LAT-DIR.)

(A)RN/L = 5.50

ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE (RNGA22)

SYMBOL	RN/L		PARAMETRIC VALUES		
○	2.395	BETA	.000	ELEVON	.000
□	4.016	BDFLAP	.000	SPDBRK	25.000
◇	5.525	MACH	.260		
△	8.071				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

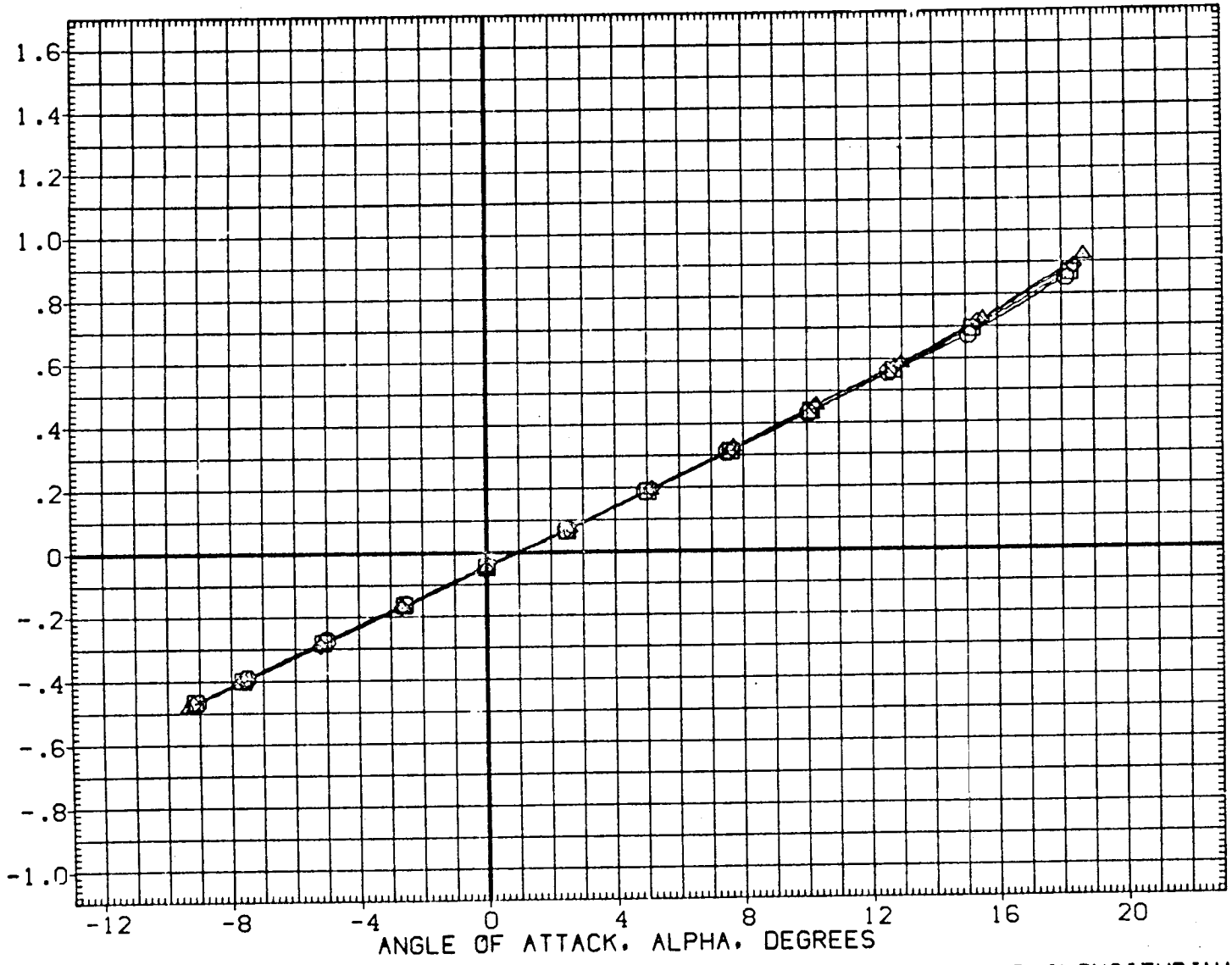


FIG. 17 EFFECT OF REYNOLDS NO. ON CARRIER ATTACH FITTINGS, FREE AIR (LONGITUDINAL

ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE (RNGA22)

SYMBOL	RN/L	PARAMETRIC VALUES			
○	2.395	BETA	.000	ELEVON	.000
□	4.016	BOFLAP	.000	SPOBRK	25.000
◇	5.525	MACH	.260		
△	8.071				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

FIG. 17 EFFECT OF REYNOLDS NO. ON CARRIER ATTACH FITTINGS, FREE AIR (LONGITUDINAL

ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE (RNGA22)

SYMBOL	RN/L		PARAMETRIC VALUES		
○	2.395	BETA	.000	ELEVON	.000
□	4.016	BDFLAP	.000	SPDBRK	25.000
◇	5.525	MACH	.260		
△	8.071				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

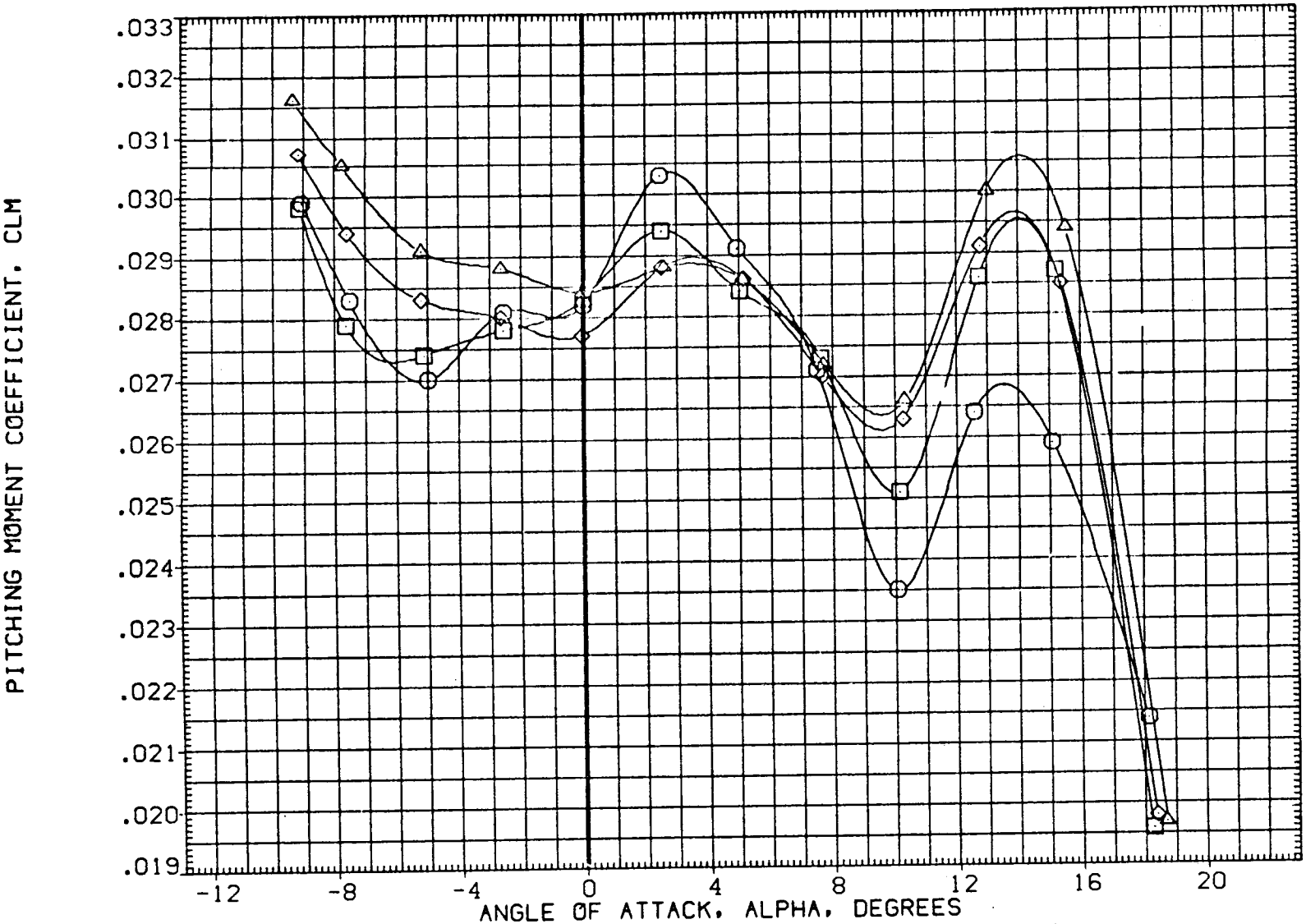


FIG. 17 EFFECT OF REYNOLDS NO. ON CARRIER ATTACH FITTINGS,FREE AIR (LONGITUDINAL

ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE (ANGA22)

SYMBOL	RN/L	PARAMETRIC VALUES			
○	2.395	BETA	.000	ELEVON	.000
□	4.016	BDFLAP	.000	SPDBRK	25.000
◇	5.525	MACH	.260		
△	8.071				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

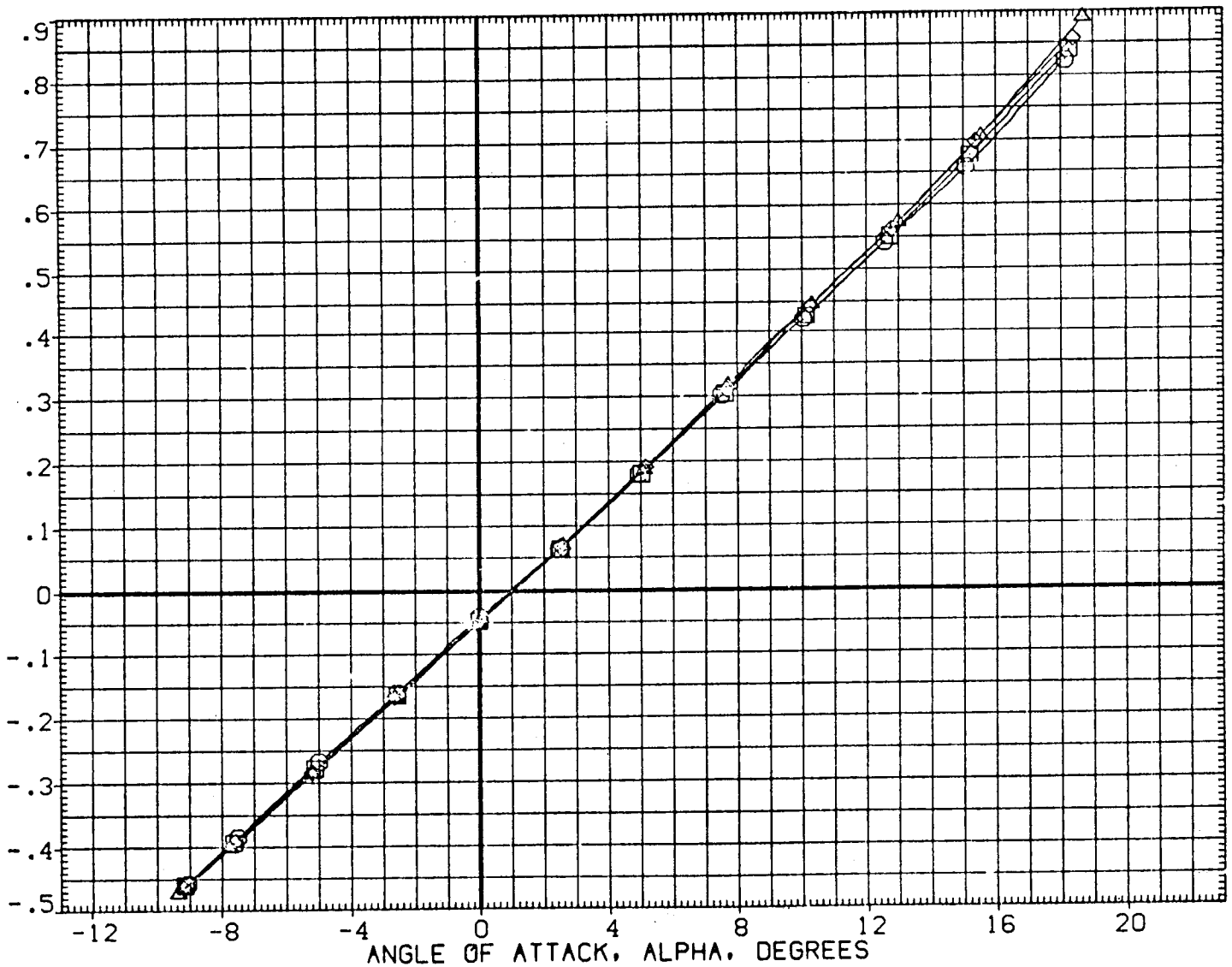


FIG. 17 EFFECT OF REYNOLDS NO. ON CARRIER ATTACH FITTINGS, FREE AIR (LONGITUDINAL

ARC 12-078/0A159 03 + AT93 W/0 GROUND PLANE (ANGA22)

SYMBOL	RN/L
○	2.395
□	4.016
◇	5.525
△	8.071

PARAMETRIC VALUES

BETA	.000	ELEVON	.000
BDFLAP	.000	SPDBRK	25.000
MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

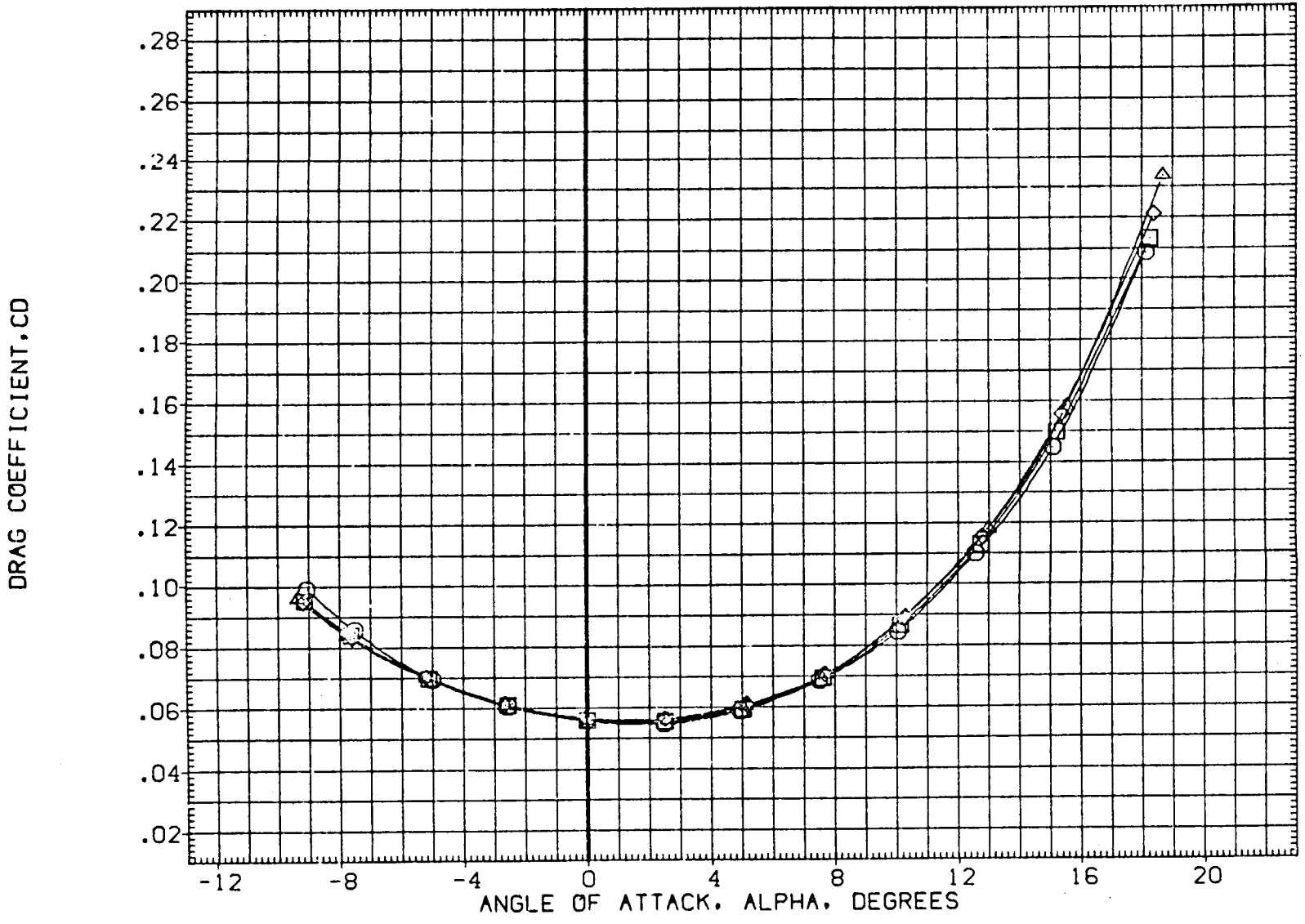


FIG. 17 EFFECT OF REYNOLDS NO. ON CARRIER ATTACH FITTINGS,FREE AIR (LONGITUDINAL

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	SPDBRK	ELEVON	BDFLAP	MACH
(RNGA29)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

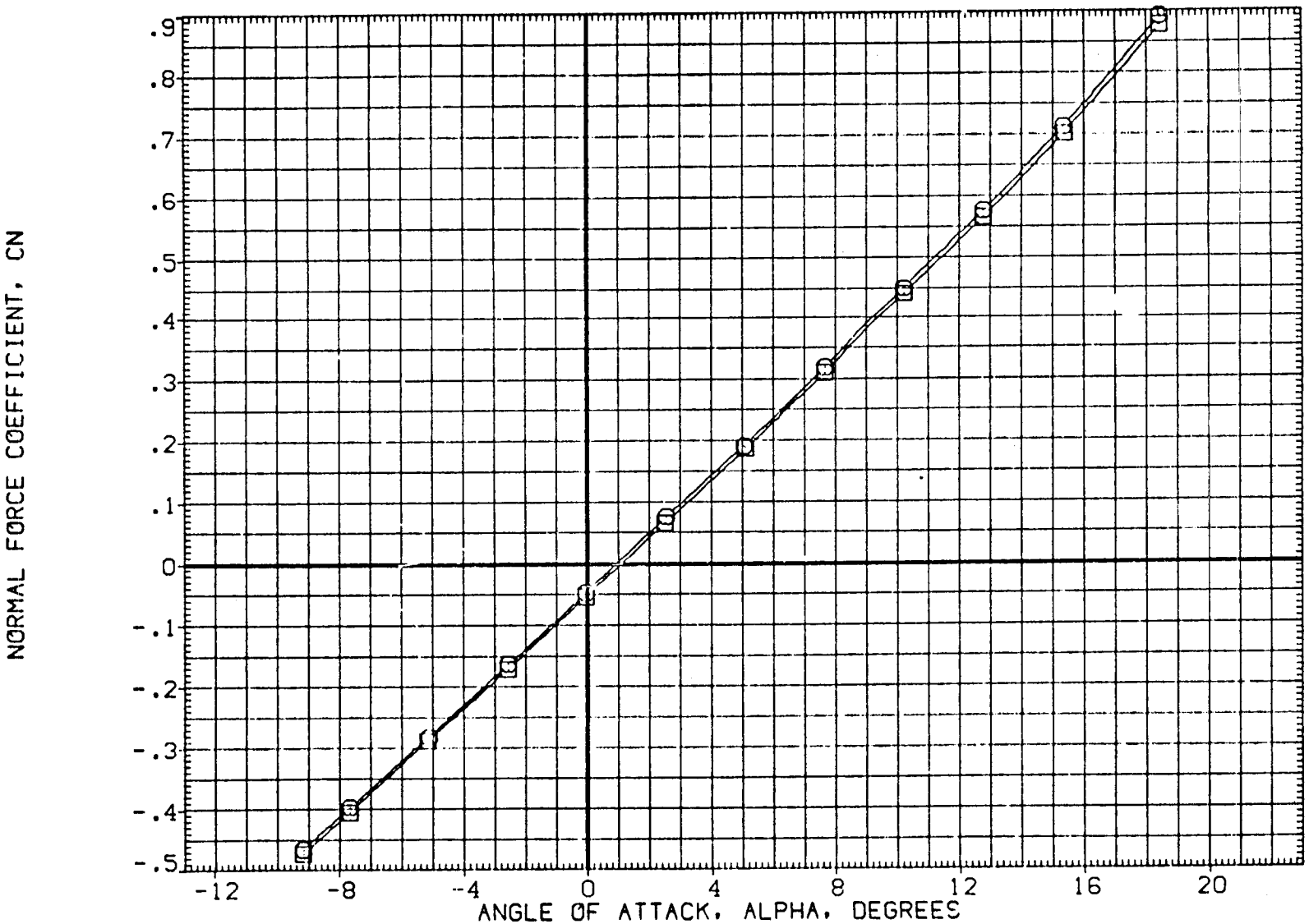


FIG. 18 EFFECT OF SPEEDBRAKE, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	SPDBRK	ELEVON	BDFLAP	MACH
(RNGA29)	○	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA21)	□	ARC 12-078/0A159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

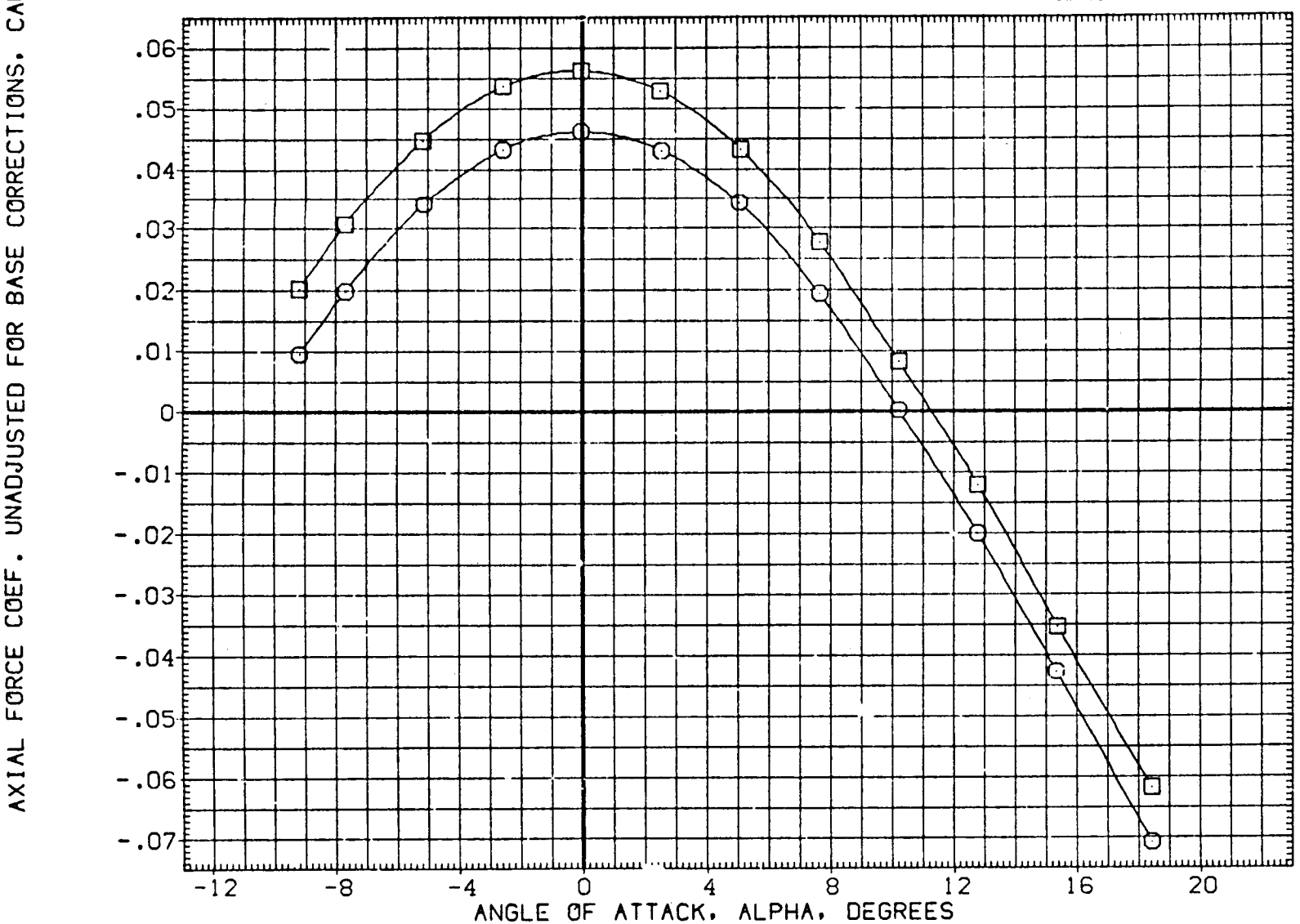


FIG. 18 EFFECT OF SPEEDBRAKE. FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	SPDBRK	ELEVON	BDFLAP	MACH
(RNGA29)	○	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(RNGA21)	□	ARC 12-078/0A159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

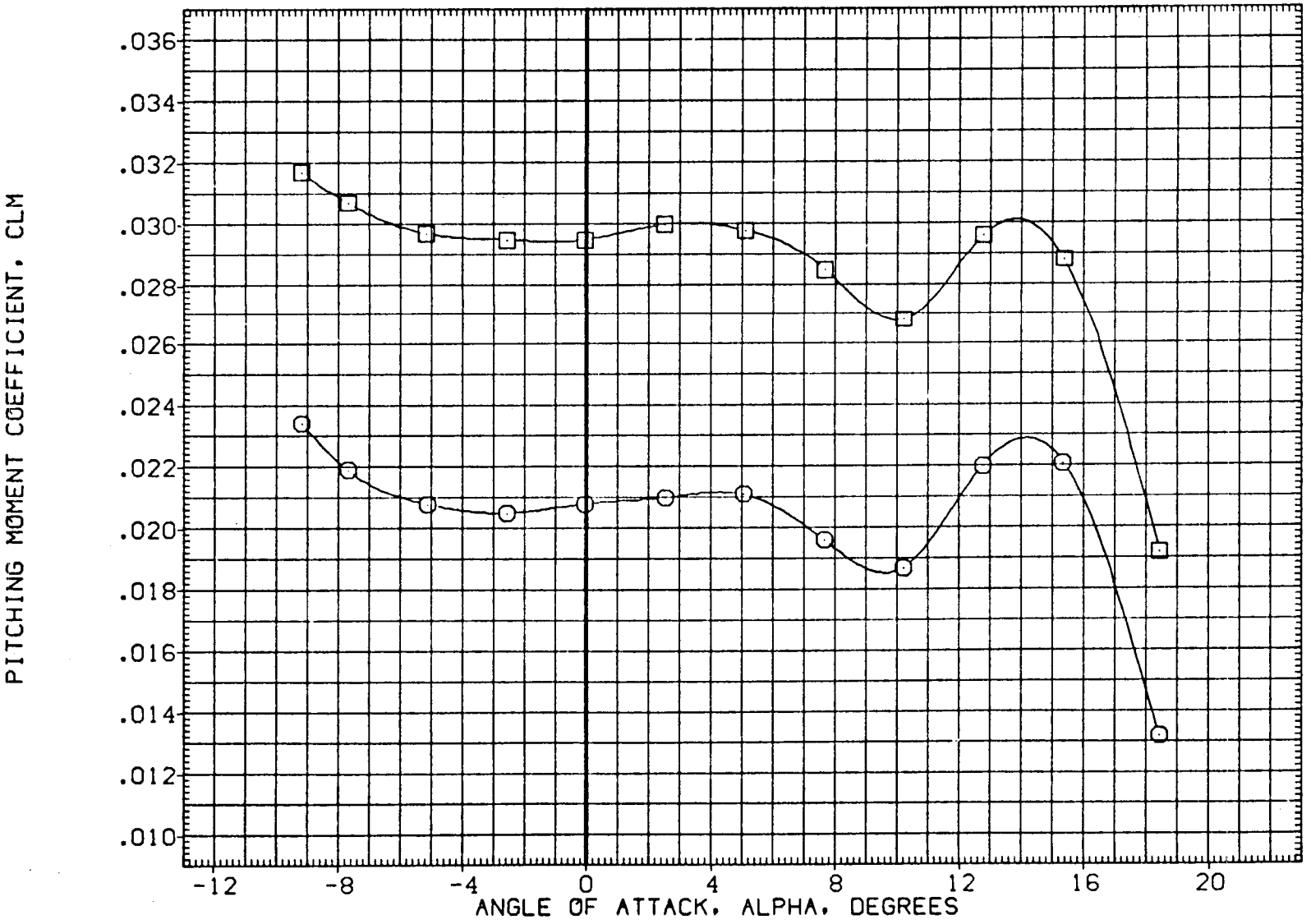


FIG. 18 EFFECT ØF SPEEDBRAKE, FREE AIR (LØNGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	SPDBRK	ELEVON	BDFLAP	MACH
(ANGA29)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(ANGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

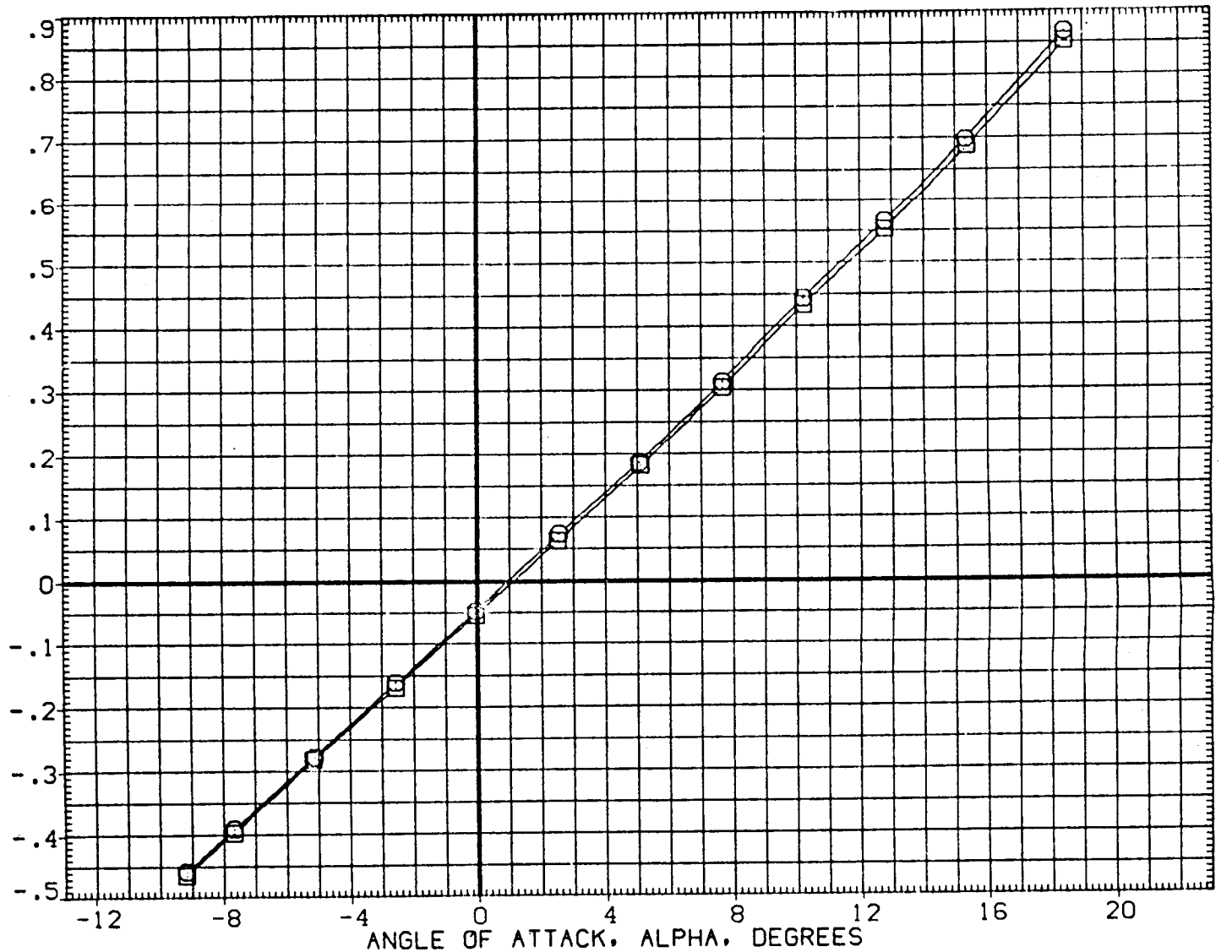


FIG. 18 EFFECT OF SPEEDBRAKE, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	SPOBRK	ELEVON	BOFLAP	MACH
(ANGA29)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(ANGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

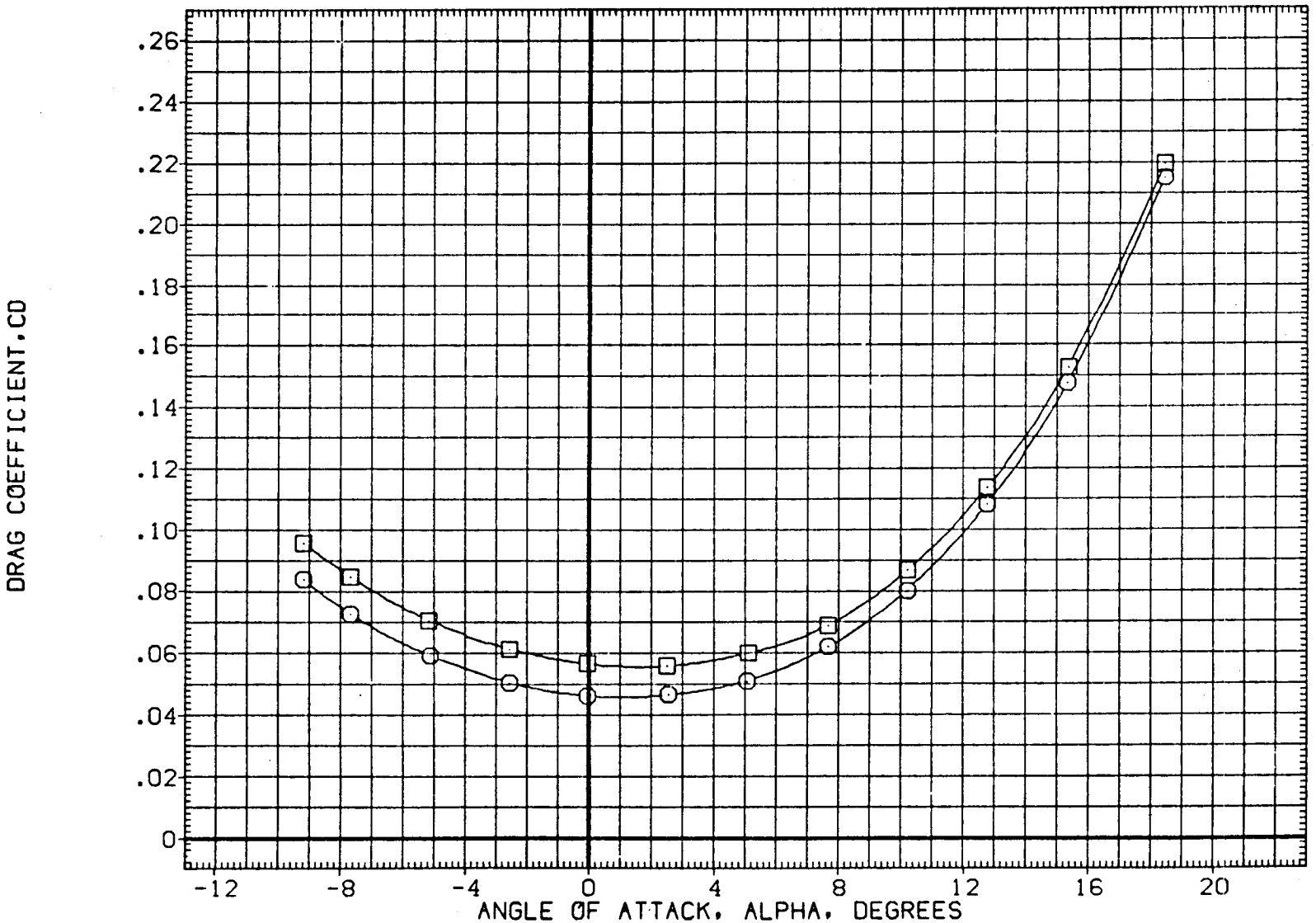


FIG. 18 EFFECT OF SPEEDBRAKE, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	SPDBRK	ELEVON	BDFLAP	MACH
(BNGA29)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(BNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

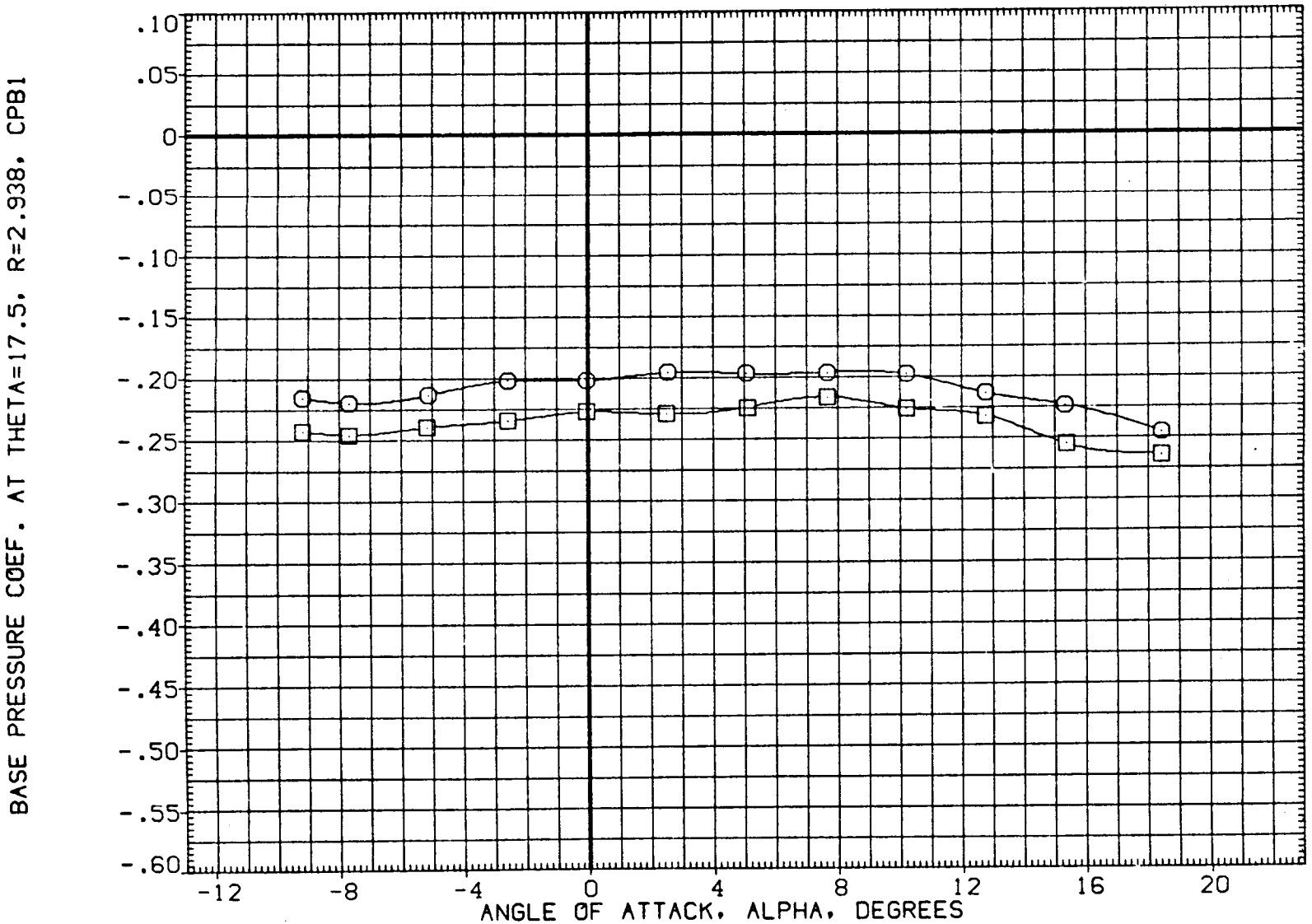


FIG. 18 EFFECT OF SPEEDBRAKE, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	SPDBRK	ELEVON	BDFLAP	MACH
(BNGA29) ○	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(BNGA21) □	ARC 12-078/0A159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

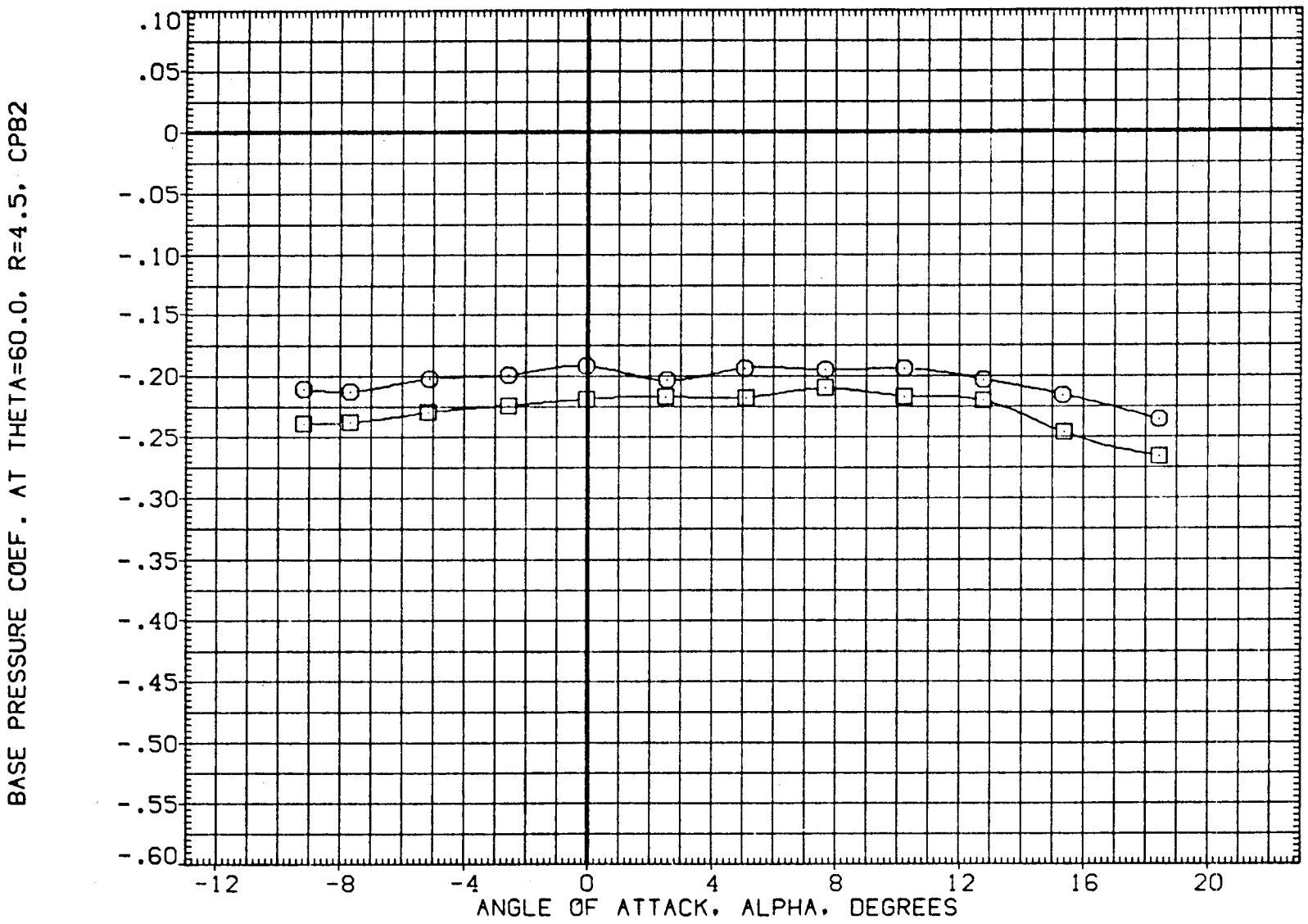


FIG. 18 EFFECT OF SPEEDBRAKE, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	SPDBRK	ELEVON	BDFLAP	MACH
(BNGA29) ○	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(BNGA21) □	ARC 12-078/0A159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

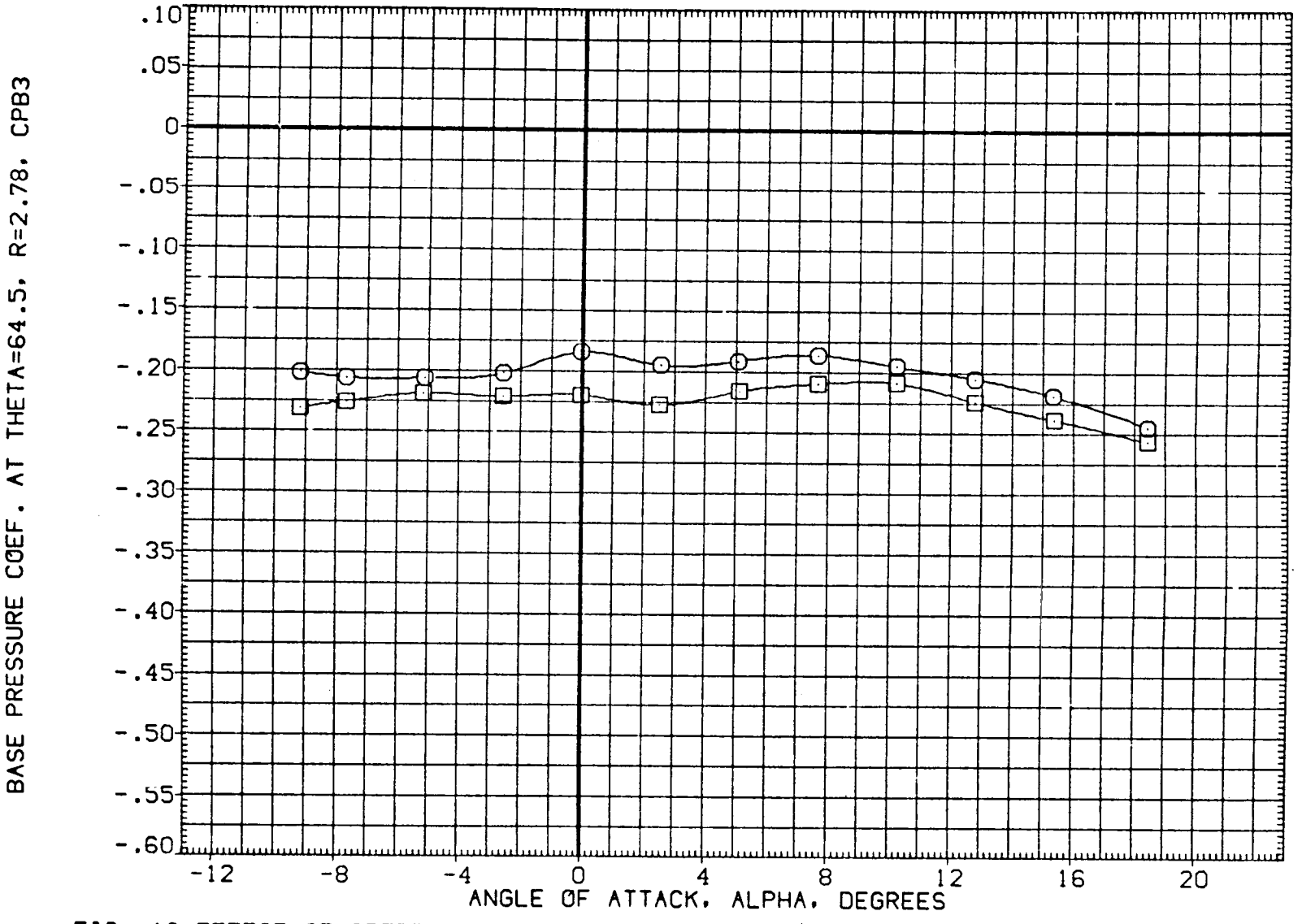


FIG. 18 EFFECT OF SPEEDBRAKE, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	SPDBRK	ELEVON	BDFLAP	MACH
(BNGA29)	ARC 12-078/DA159 03 W/O GROUND PLANE	.000	.000	.000	.260
(BNGA21)	ARC 12-078/DA159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

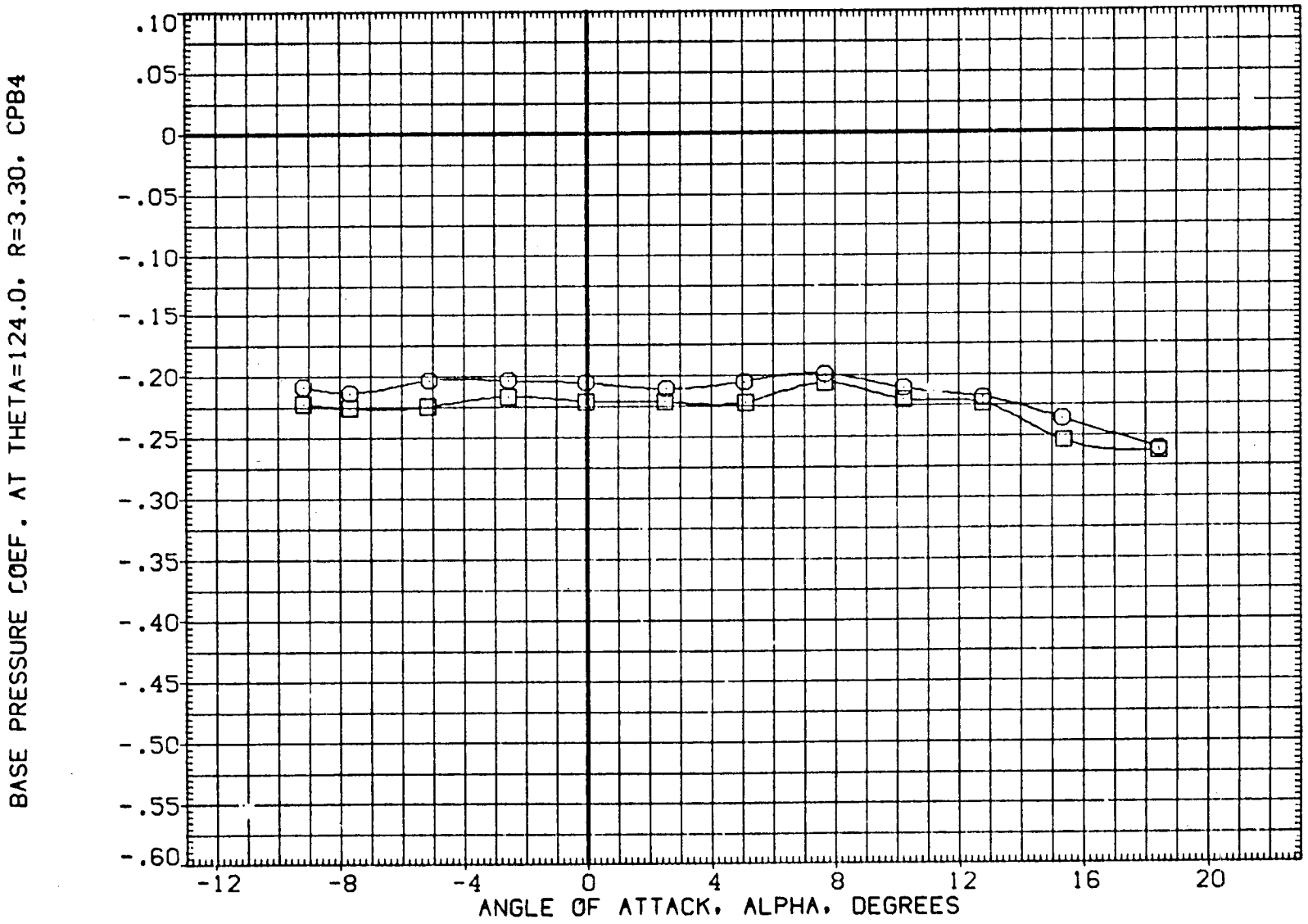


FIG. 18 EFFECT OF SPEEDBRAKE, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	SPDBRK	ELEVON	BDFLAP	MACH
(BNGA29)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260
(BNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	25.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

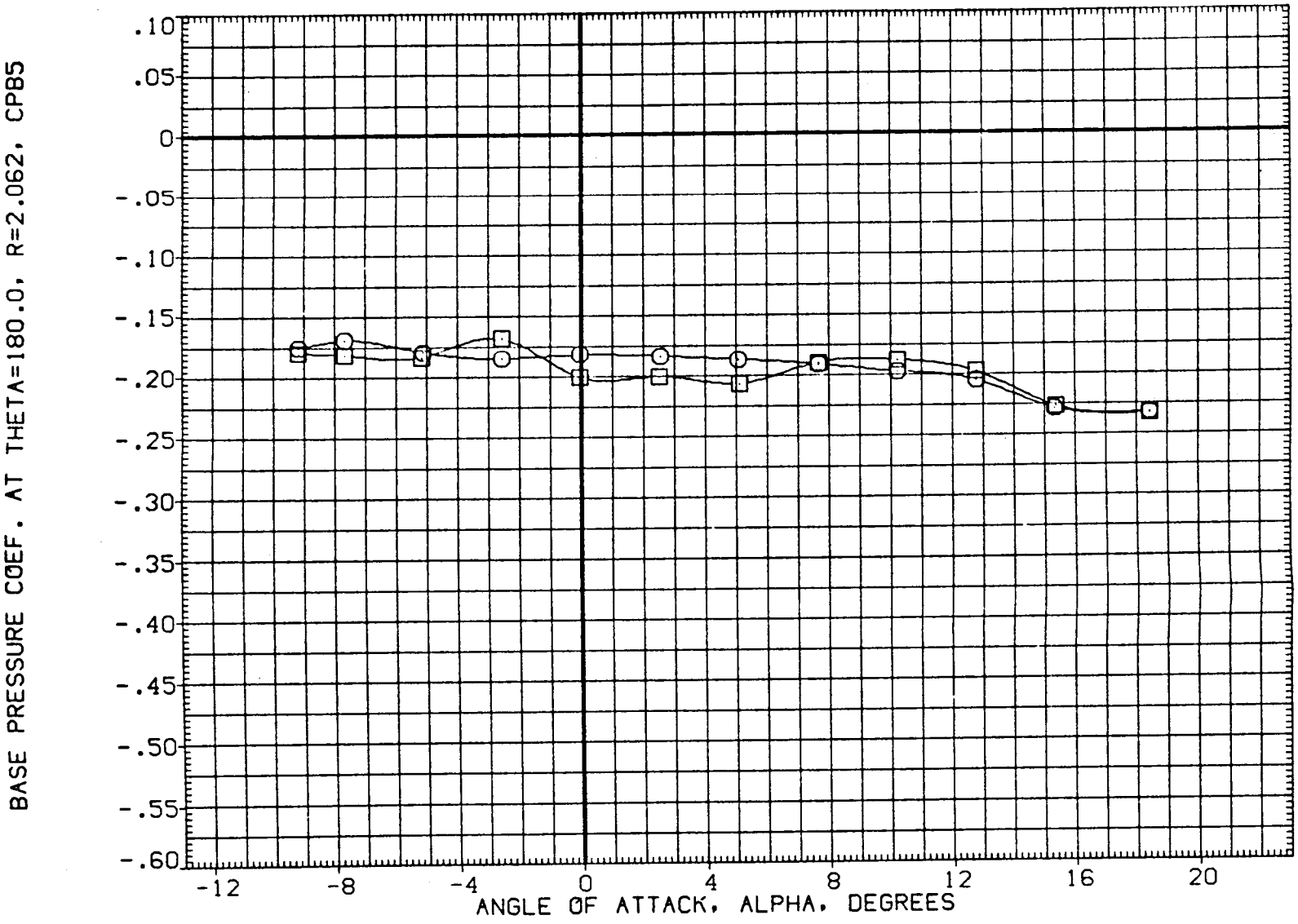


FIG. 18 EFFECT OF SPEEDBRAKE, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA28)	ARC 12-078/0A159 03 + STRUT TIPS W/O GROUNDPLANE	.000	.000	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

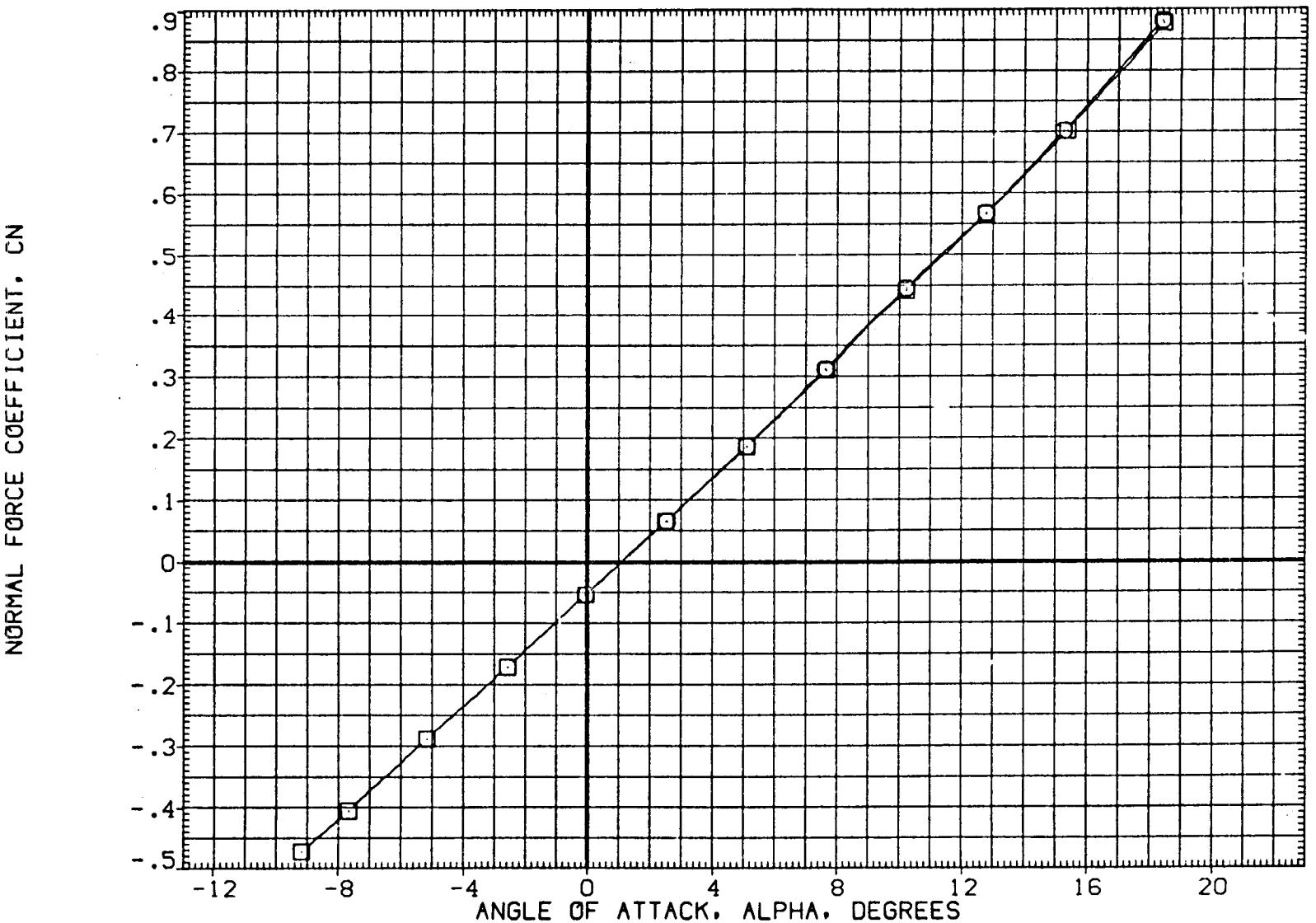


FIG. 19 STRUT-TIP EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA28)	ARC 12-078/0A159 03 + STRUT TIPS W/O GROUNDPLANE	.000	.000	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

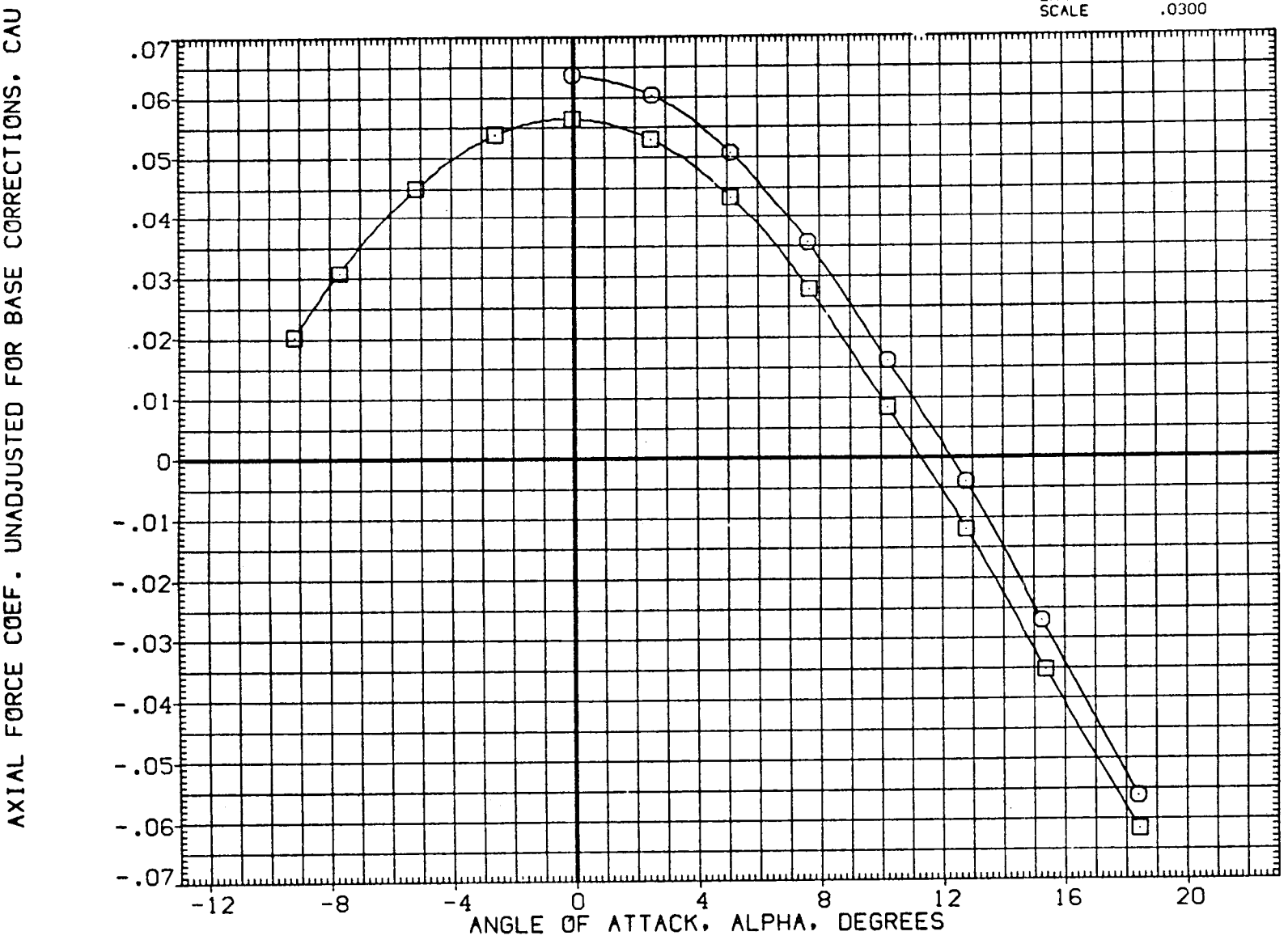


FIG. 19 STRUT-TIP EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA28) ○	ARC 12-078/0A159 03 + STRUT TIPS W/O GROUNDPLANE	.000	.000	.000	.260
(RNGA21) □	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

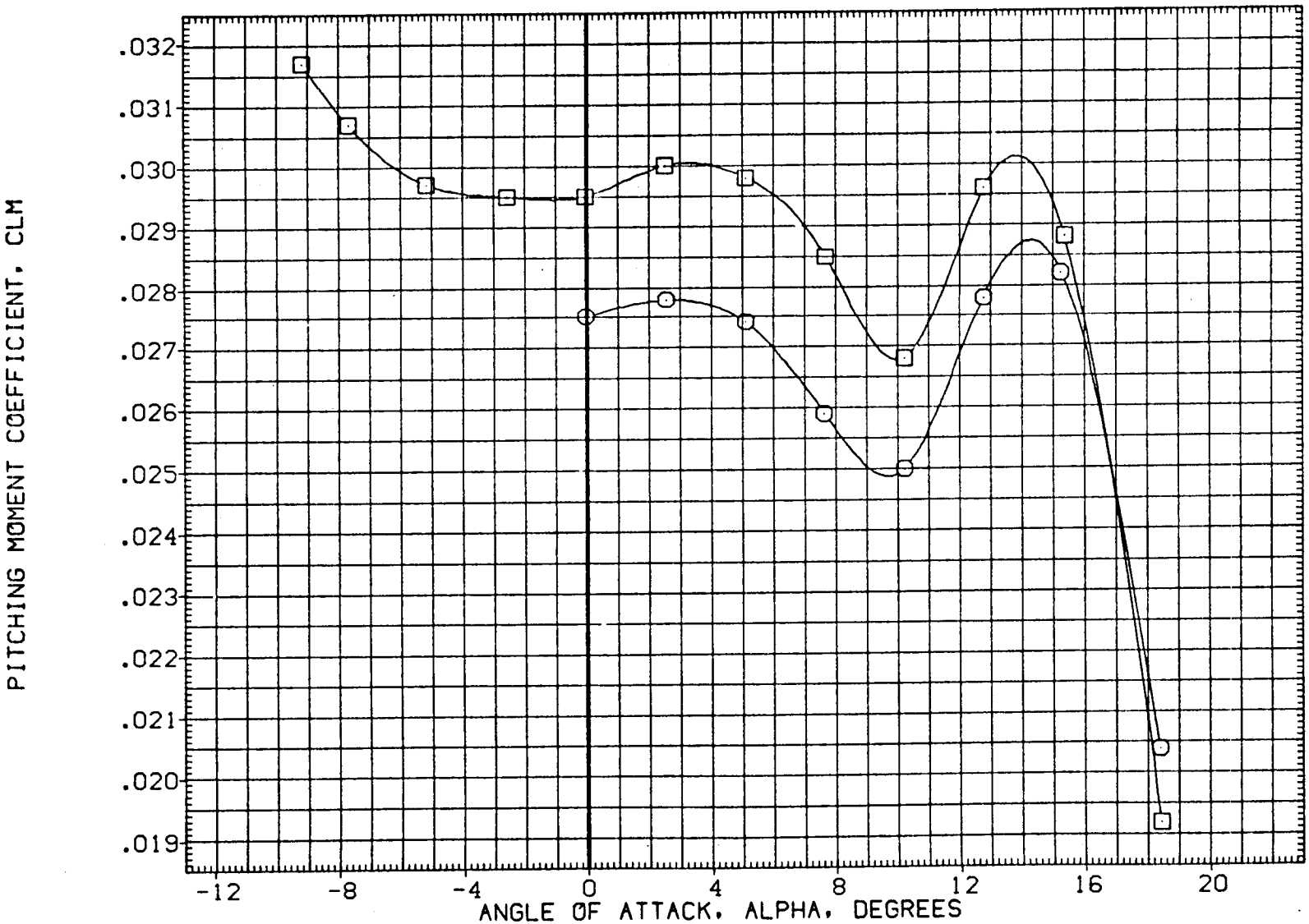


FIG. 19 STRUT-TIP EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA28)	ARC 12-078/0A159 03 + STRUT TIPS W/O GROUNDPLANE	.000	.000	.000	.260
(ANGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

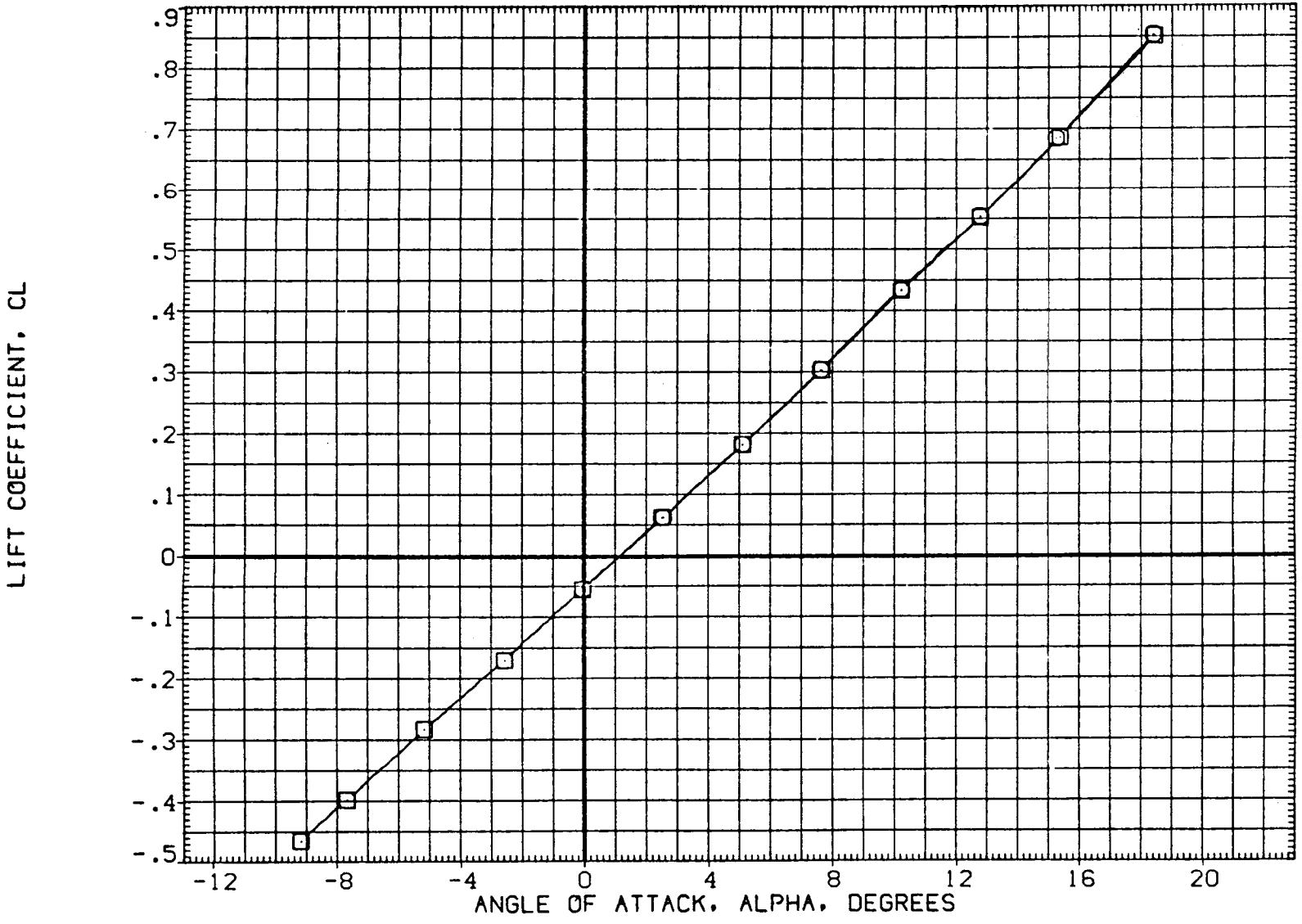


FIG. 19 STRUT-TIP EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA28)	○	ARC 12-078/0A159 03 + STRUT TIPS W/O GROUNDPLANE	.000	.000	.000	.260
(ANGA21)	□	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

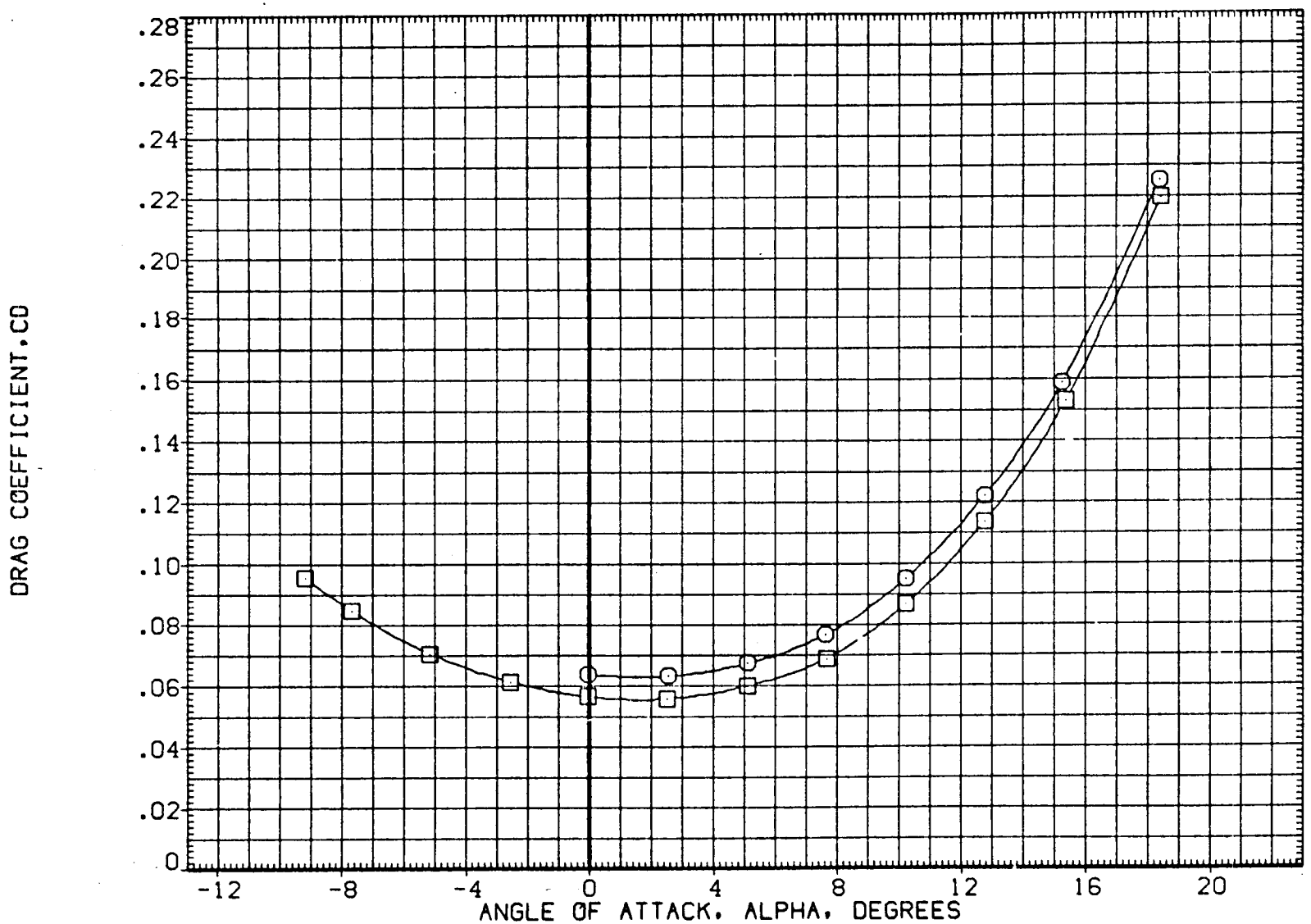


FIG. 19 STRUT-TIP EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA25) ○	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	16.300	.000	.260
(RNGA21) □	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

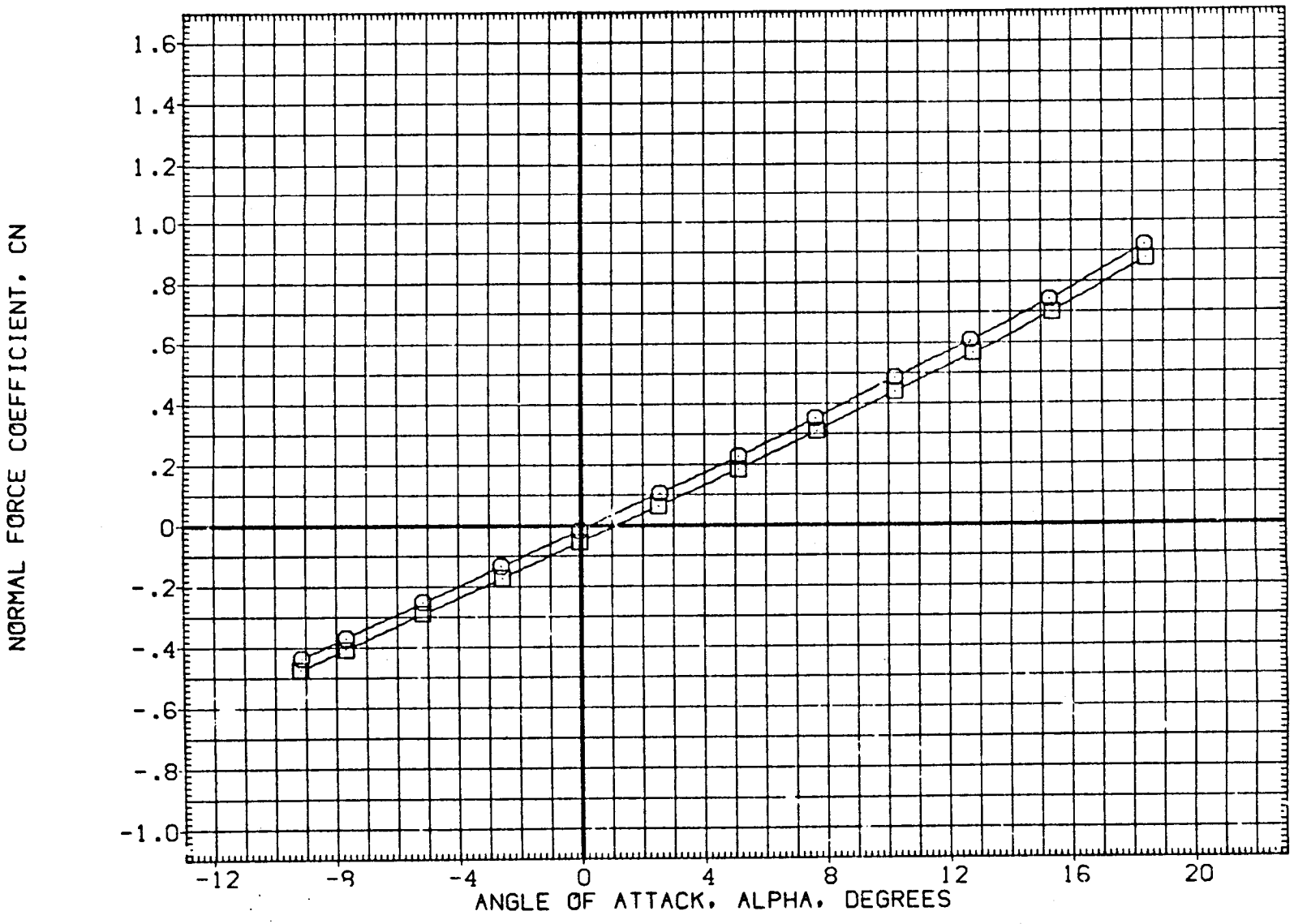


FIG. 20 BODYFLAP EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA25)	○	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	16.300	.000	.260
(RNGA21)	□	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

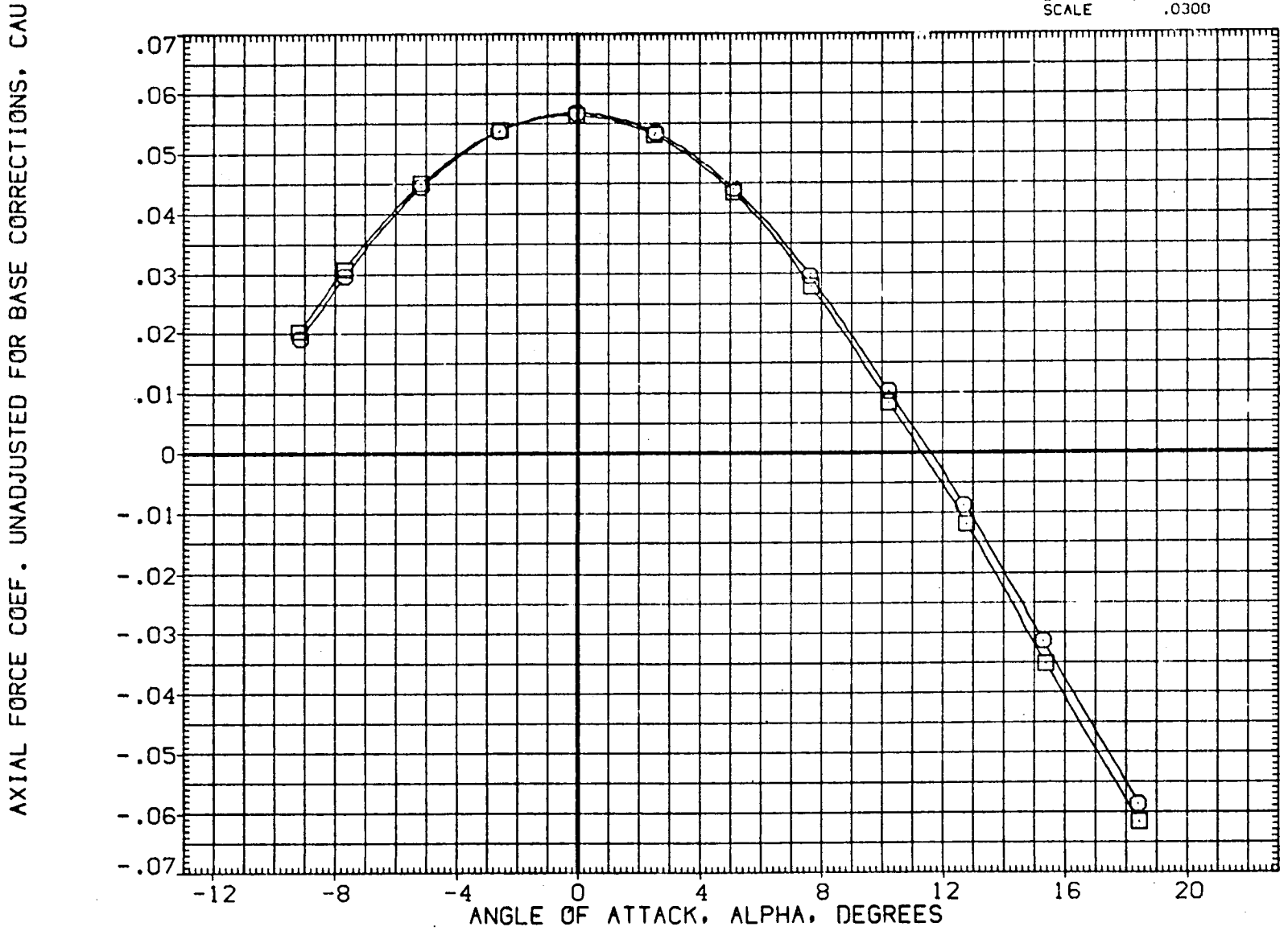


FIG. 20 BODYFLAP EFFECTS. FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA25)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	16.300	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

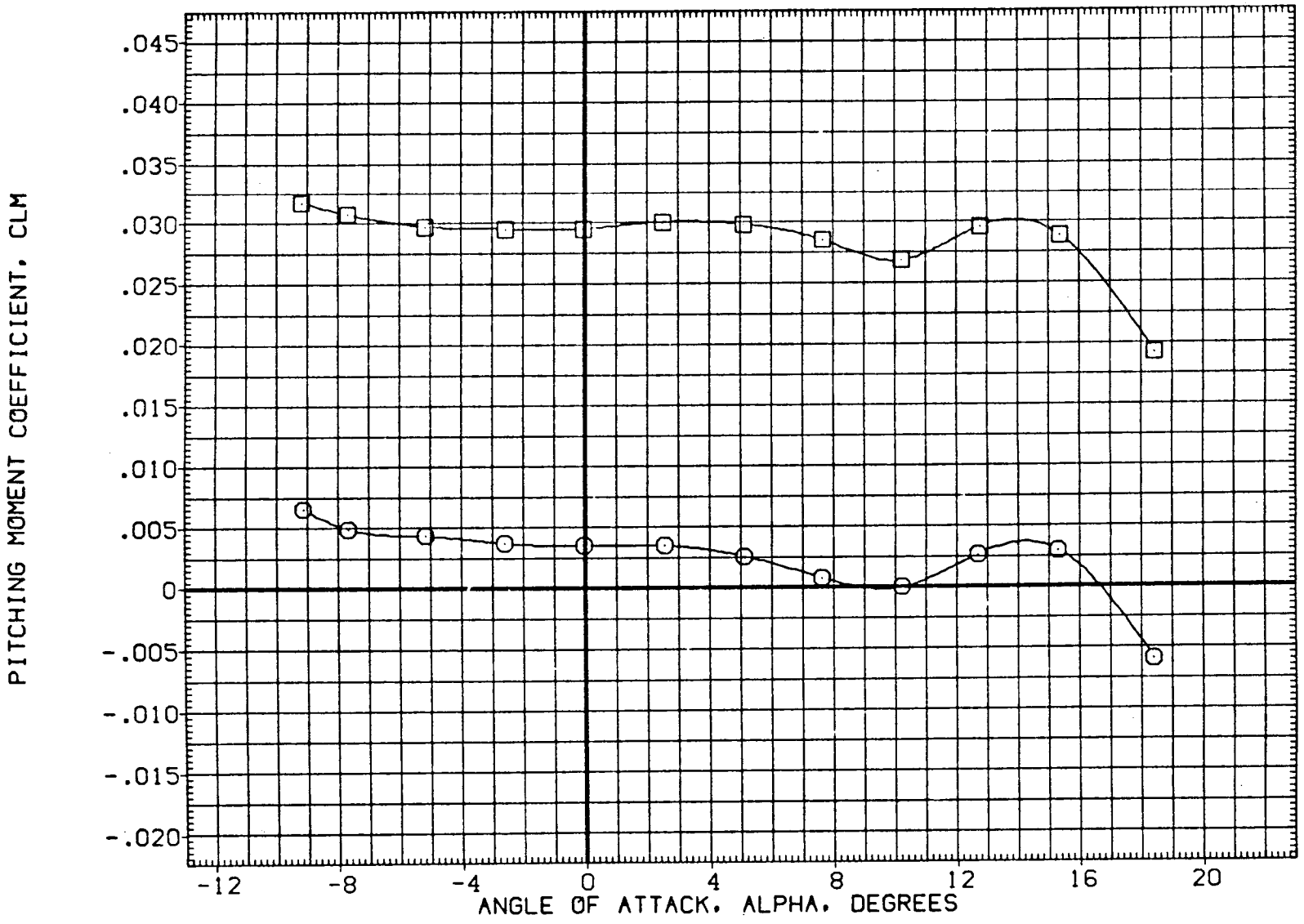


FIG. 20 BODYFLAP EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA25) ⊡	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	16.300	.000	.260
(ANGA21) □	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

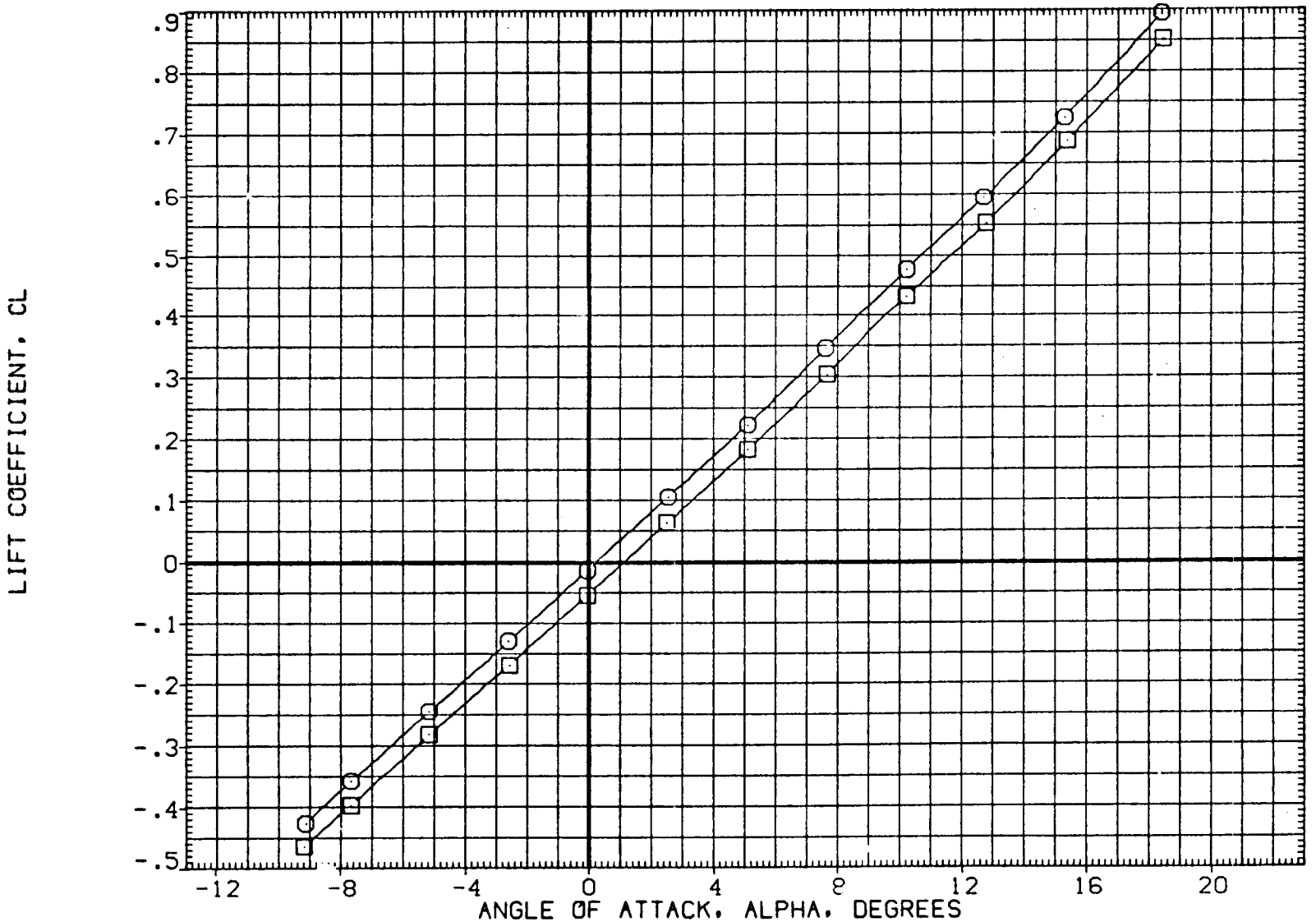


FIG. 20 BØDYFLAP EFFECTS, FREE AIR (LØNGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA25)	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	16.300	.000	.260
(ANGA21)	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

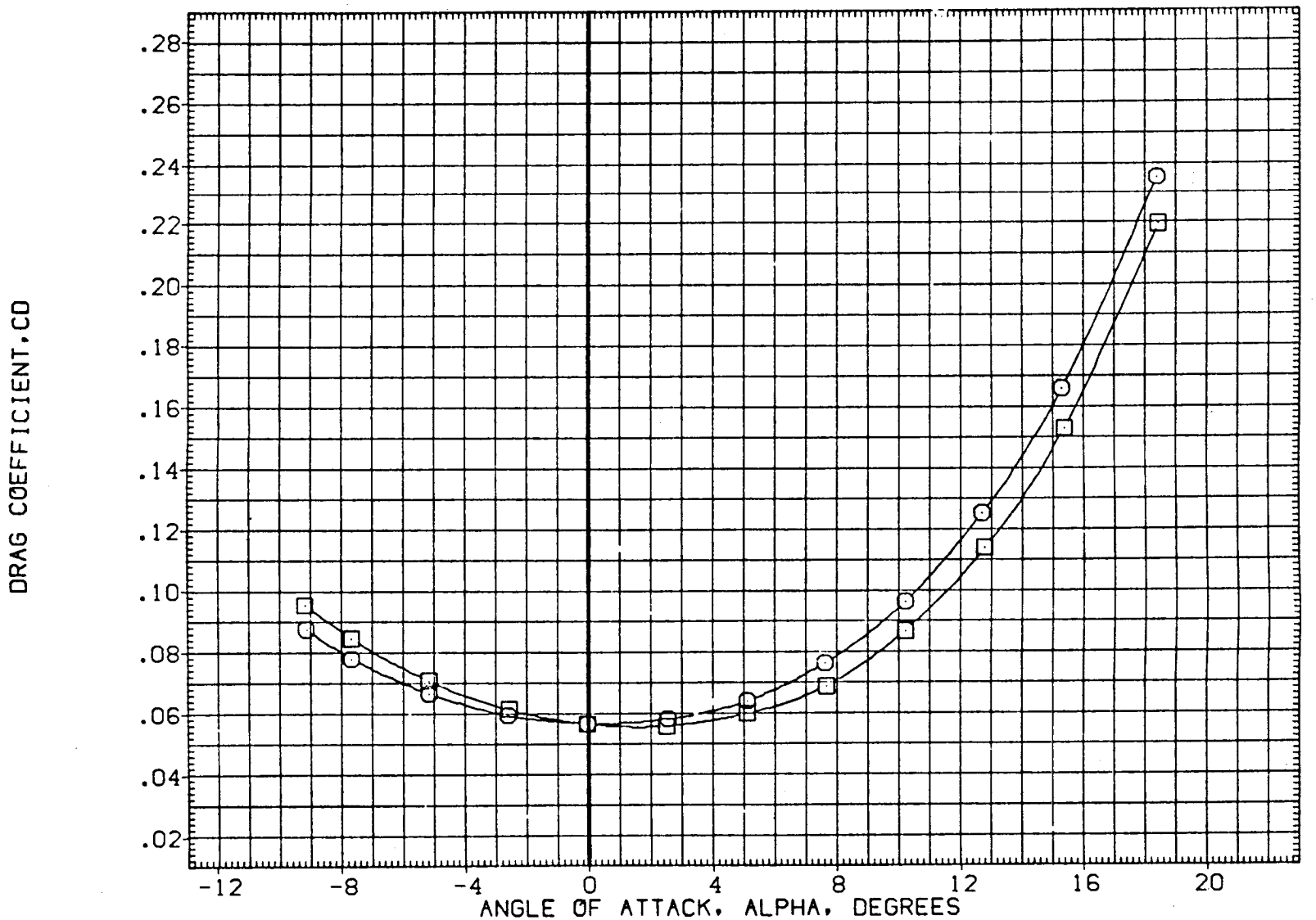


FIG. 20 BODYFLAP EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RNGA26)	ARC 12-078/0A159 03 W/O GROUND PLANE
(RNGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE

ELEVON	BDFLAP	BETA	MACH
10.000	.000	.000	.260
.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

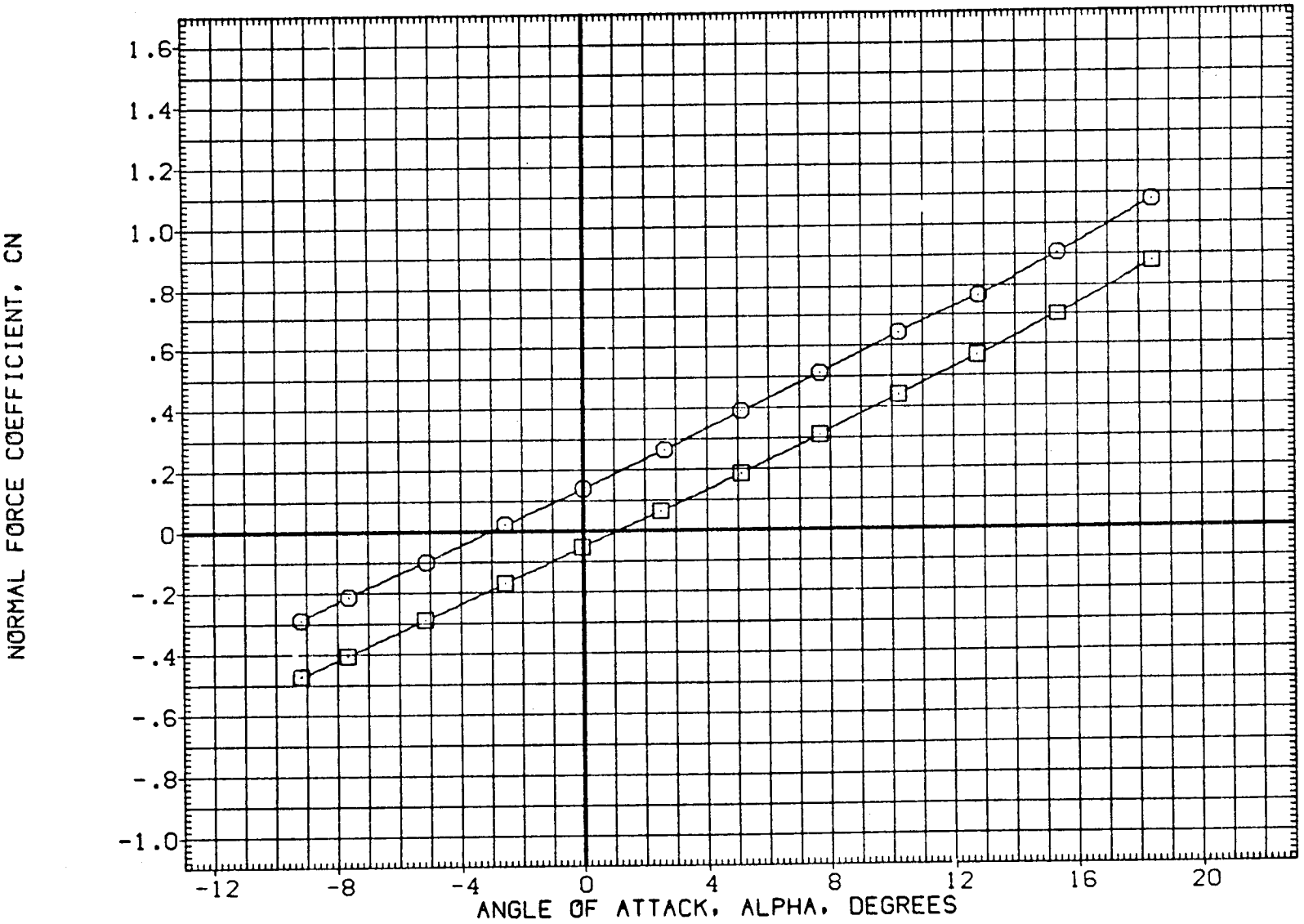


FIG. 21 ELEVON EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA26)	ARC 12-078/0A159 03 W/0 GROUND PLANE	10.000	.000	.000	.260
(RNGA21)	ARC 12-078/0A159 03 W/0 GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

FIG. 21 ELEVØN EFFECTS, FREE AIR (LØNGITUDINAL)

(A)RN/L = 5.50

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(RNGA26)	○	ARC 12-078/0A159 03 W/O GROUND PLANE	10.000	.000	.000	.260
(RNGA21)	□	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

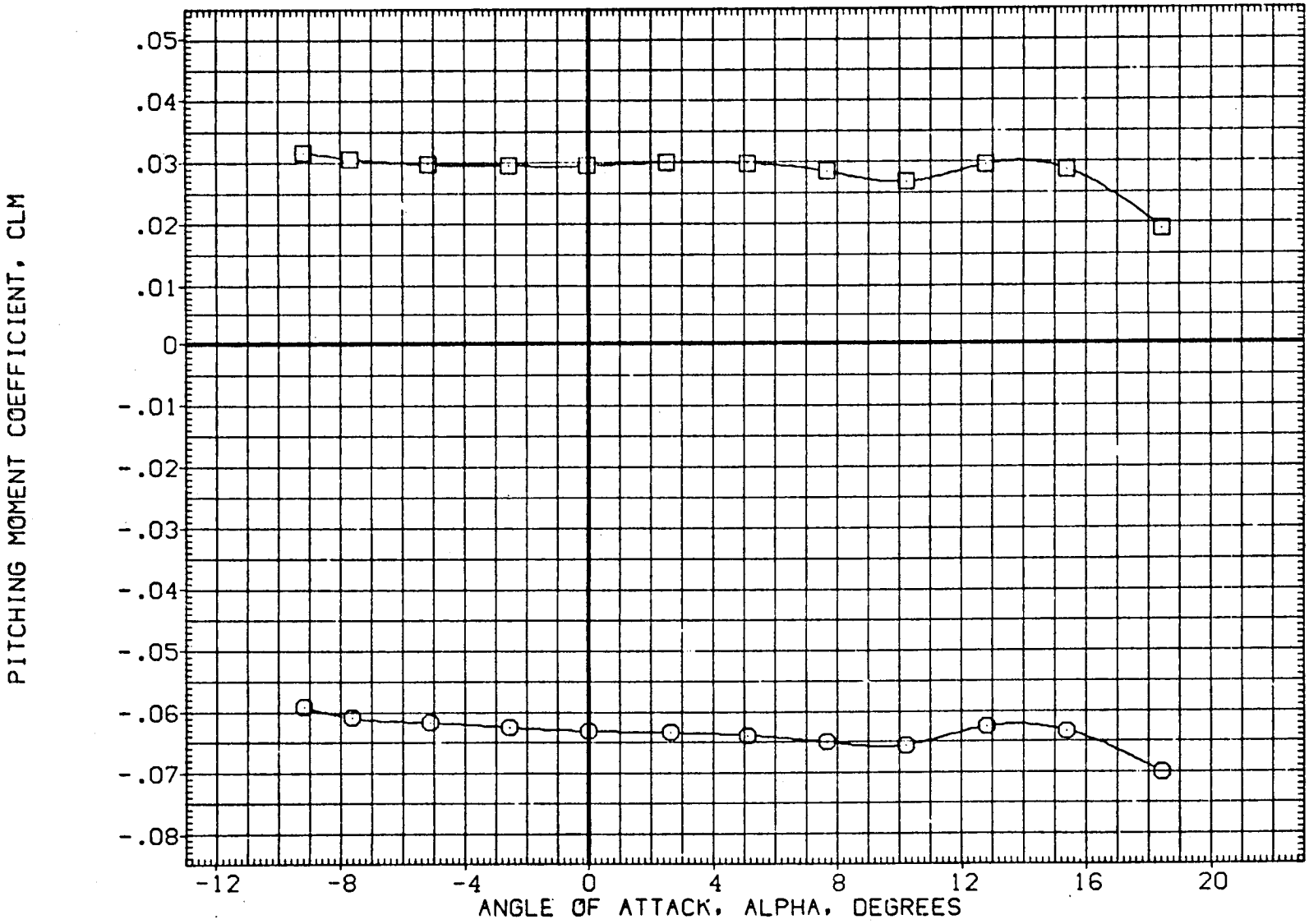


FIG. 21 ELEVON EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	BDFLAP	BETA	MACH
(ANGA26)	ARC 12-078/0A159 03 W/O GROUND PLANE	10.000	.000	.000	.260
(ANGA21)	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

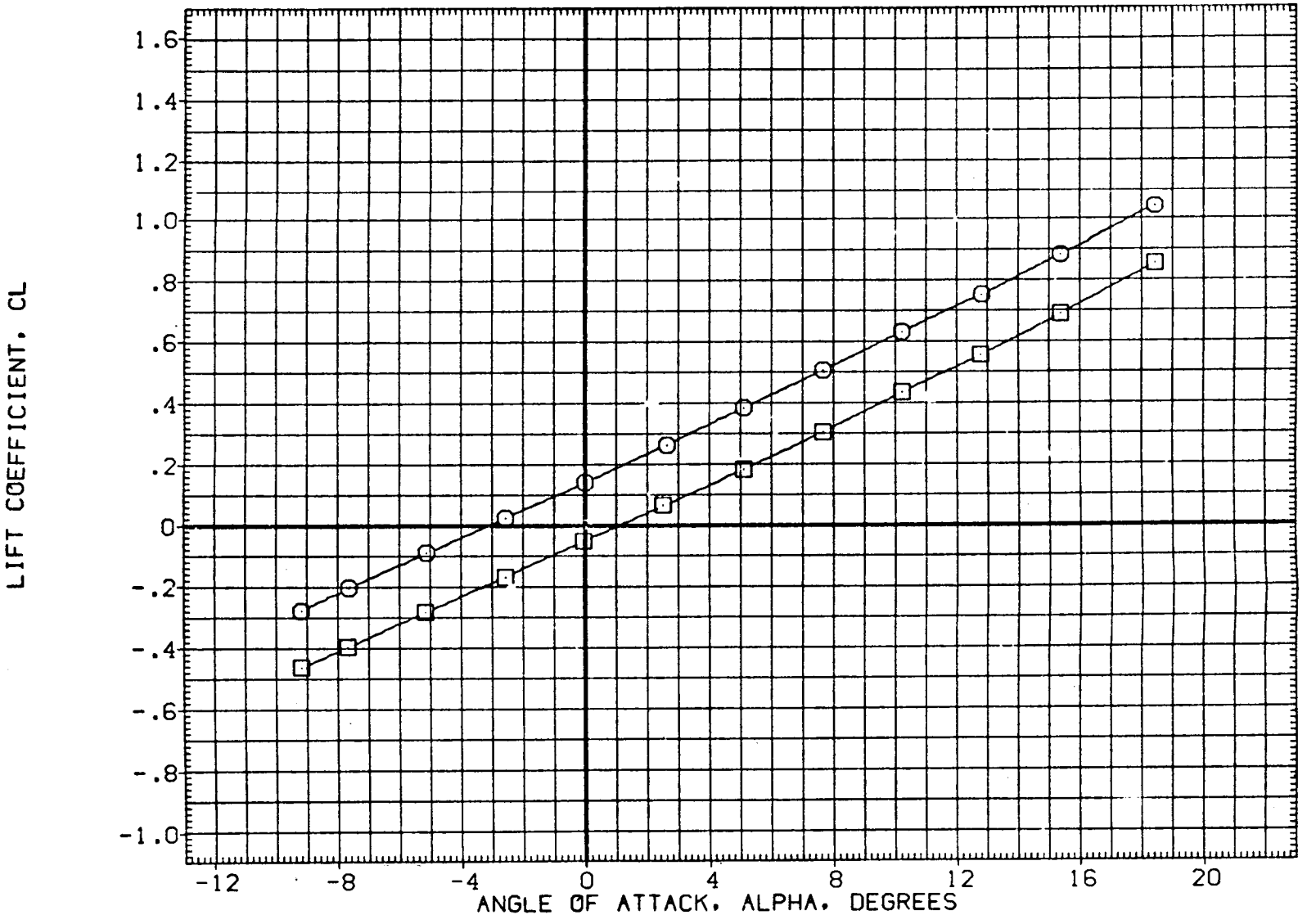


FIG. 21 ELEVON EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	ELEVON	BOFLAP	BETA	MACH
(ANGA26)	○	ARC 12-078/0A159 03 W/O GROUND PLANE	10.000	.000	.000	.260
(ANGA21)	□	ARC 12-078/0A159 03 W/O GROUND PLANE	.000	.000	.000	.260

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

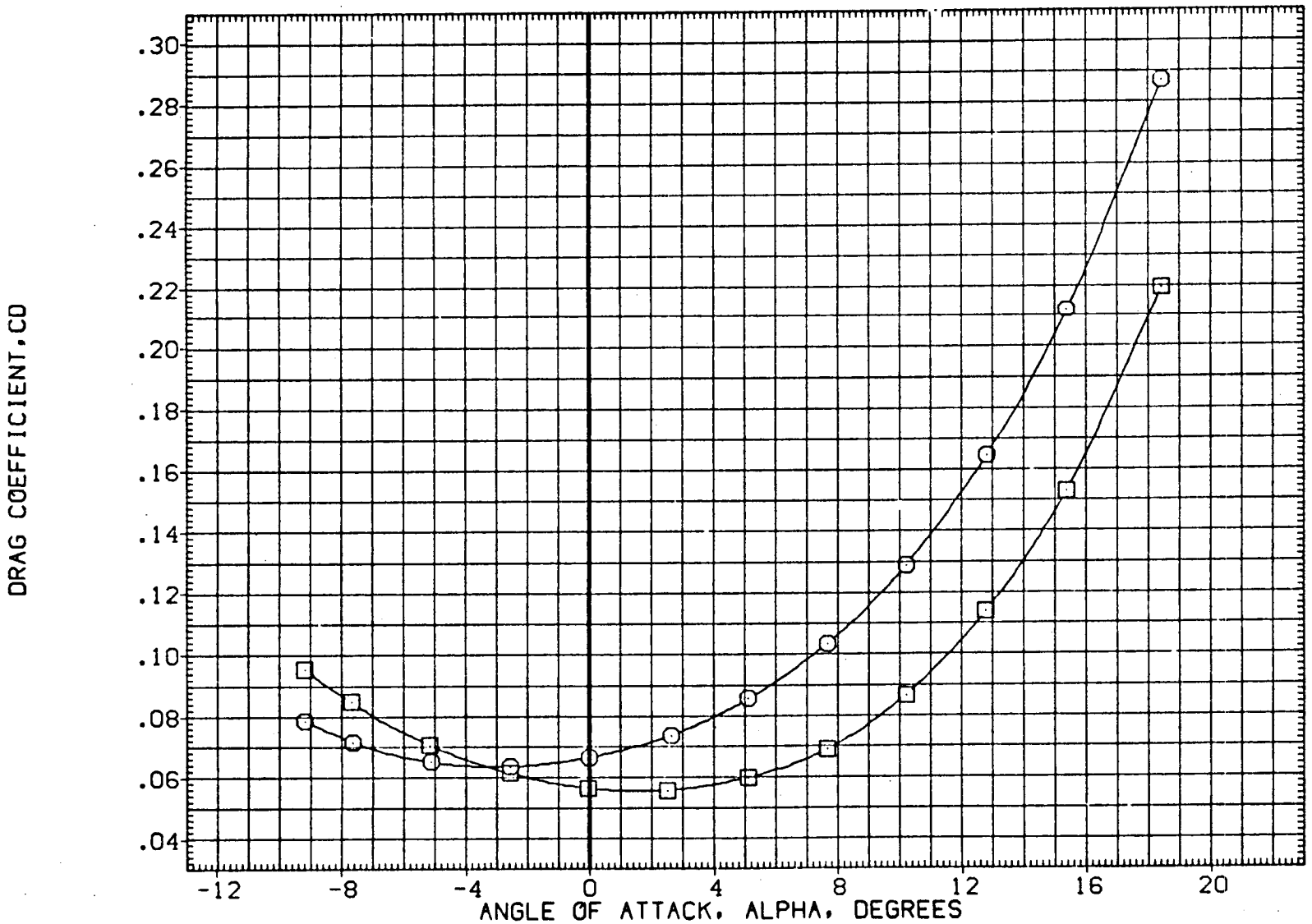


FIG. 21 ELEVON EFFECTS, FREE AIR (LONGITUDINAL)

(A)RN/L = 5.50

ARC 12-078/0A159 03 W/0 GROUND PLANE (RNGA23)

SYMBOL	RN/L		PARAMETRIC VALUES		
○	2.366	ALPHA	9.000	ELEVON	.000
□	5.441	BDFLAP	.000	SPDBRK	25.000
◇	7.877	MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

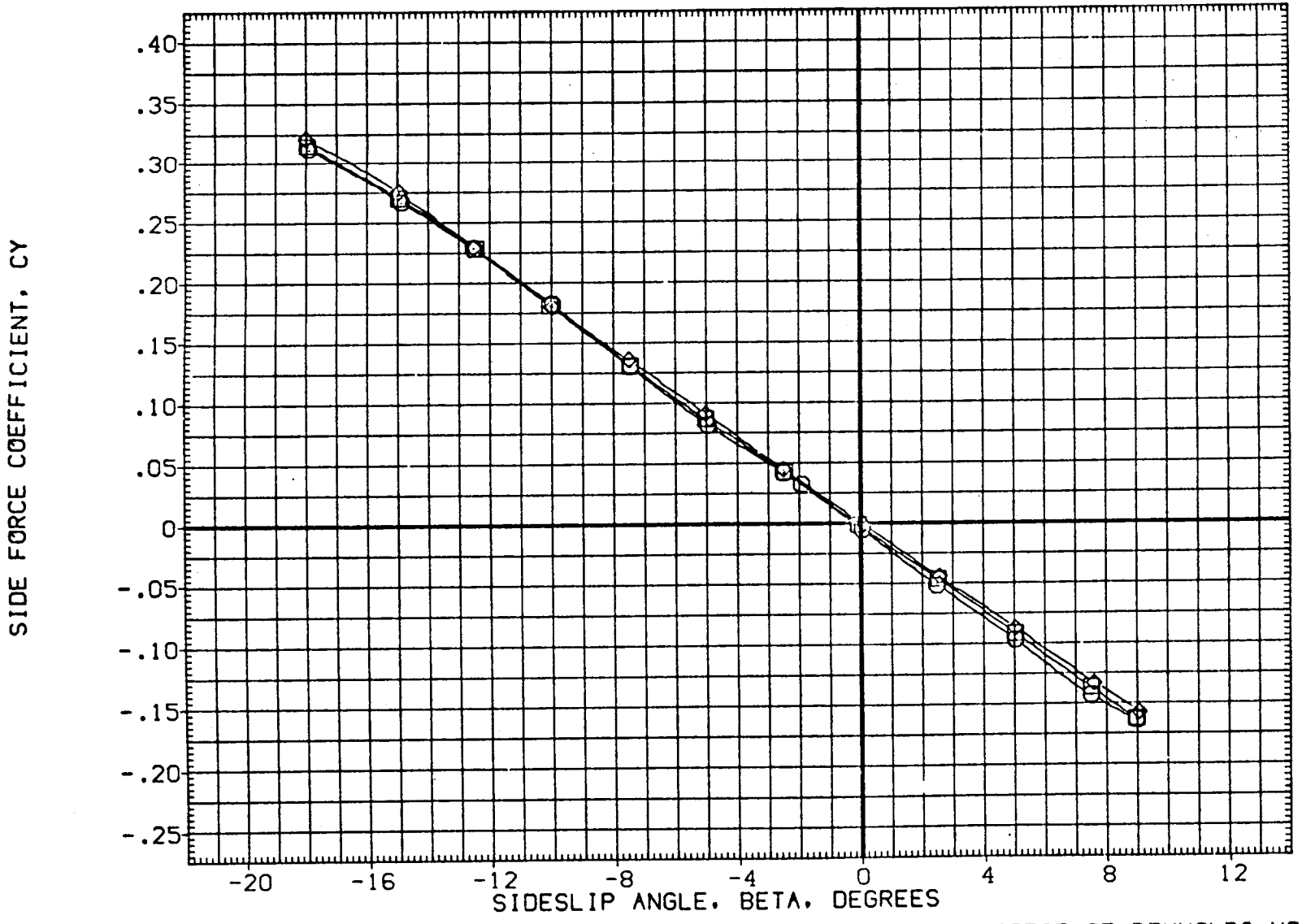


FIG. 22 BASIC ØRBITER LAT-DIR CHARACTERISTICS IN FREE-AIR, EFFECT ØF REYNØLDS NØ.

ARC 12-078/0A159 03 W/0 GROUND PLANE (RNGA23)

SYMBOL	RN/L		PARAMETRIC VALUES		
○	2.366	ALPHA	9.000	ELEVON	.000
□	5.441	BDFLAP	.000	SPDBRK	25.000
◇	7.877	MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

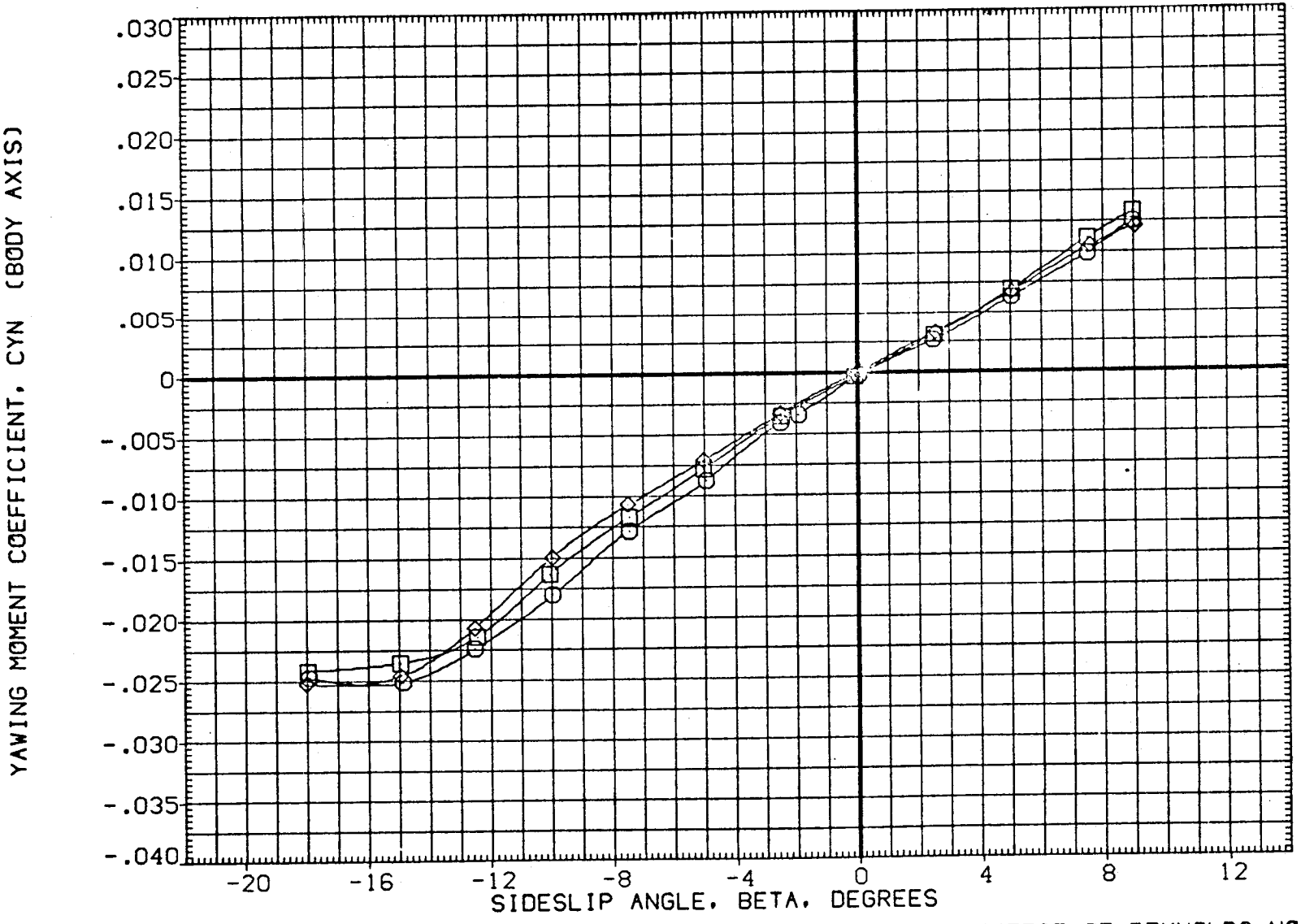


FIG. 22 BASIC ØRBITER LAT-DIR CHARACTERISTICS IN FREE-AIR, EFFECT ØF REYNØLDS NØ.

ARC 12-078/0A159 03 W/0 GROUND PLANE (RNGA23)

SYMBOL	RN/L		PARAMETRIC VALUES		
○	2.366	ALPHA	9.000	ELEVON	.000
□	5.441	BDFLAP	.000	SPDBRK	25.000
◇	7.877	MACH	.260		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6700	IN.
XMRP	1076.6800	IN. XØ
YMRP	.0000	IN. YØ
ZMRP	375.0000	IN. ZØ
SCALE	.0300	

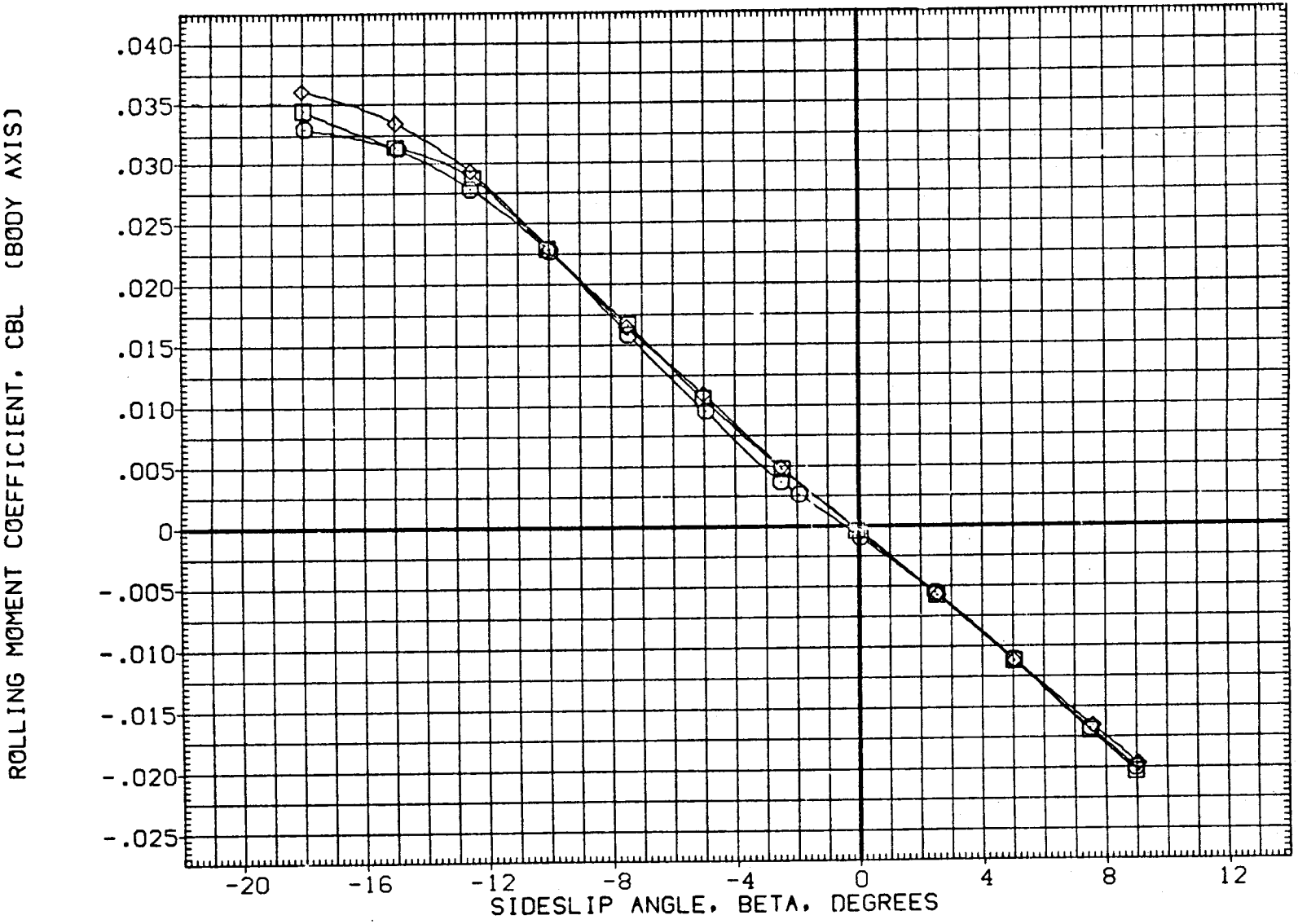


FIG. 22 BASIC ØRBITER LAT-DIR CHARACTERISTICS IN FREE-AIR, EFFECT ØF REYNØLDS NØ.

TABULATED SOURCE DATA

Tabulations of plotted data are available from DMS upon request.

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG001) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 1/ 0 RN/L = 1.77

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
1.774	-.001	-.05980	.06790	.04360	-.00050	-.00010	.00050	.06780	-.00010	.03000	.26370
1.766	-.007	-.05710	.06790	.04360	-.00020	-.00010	.00050	.06780	-.00010	.03150	.26380
1.769	-.008	-.06150	.06760	.04480	.00140	.00000	.00050	.06740	-.00020	.03090	.26440

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG002) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 5/ 0 RN/L = 2.41

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
2.408	-.021	-.05420	.06540	.05340	-.01740	-.00070	-.00090	.06500	-.00040	.03080	.26300
2.406	-.021	-.05430	.06530	.05320	-.01580	-.00070	-.00080	.06500	-.00030	.03000	.26350
2.402	-.020	-.05340	.06540	.05320	-.01530	-.00060	-.00080	.06520	-.00010	.03040	.26320

RUN NO. 4/ 0 RN/L = 3.01

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
3.016	-.023	-.06150	.06560	.05060	-.01170	-.00040	-.00080	.06460	-.00090	.02470	.26370
3.004	-.016	-.05920	.06540	.05120	-.01150	-.00030	-.00070	.06480	-.00050	.02740	.26310
3.010	-.025	-.05790	.06560	.05070	-.01080	-.00040	-.00070	.06520	-.00040	.02770	.26410

RUN NO. 3/ 0 RN/L = 5.53

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.522	-.026	-.06680	.06550	.04780	-.00580	.00000	-.00040	.06540	-.00010	.03490	.26230
5.550	-.033	-.06820	.06550	.04790	-.00680	.00010	-.00040	.06540	-.00020	.03210	.26390
5.543	-.030	-.06850	.06580	.04800	-.00660	.00000	-.00030	.06580	.00000	.03090	.26390
5.521	-.033	-.06780	.06580	.04800	-.00680	-.00020	-.00030	.06550	-.00030	.03180	.26310

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG002) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 2/ 0 RN/L = 8.08

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
8.081	-.031	-.07610	.06390	.04770	-.00650	.00030	-.00030	.06380	-.00020	.03330	.26350
8.086	-.032	-.07710	.06400	.04780	-.00630	.00020	-.00040	.06370	-.00020	.03280	.26390
8.063	-.030	-.07500	.06410	.04760	-.00680	.00030	-.00030	.06380	-.00020	.03250	.26360

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG003) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 6/ 0 RN/L = 3.02

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
3.025	-.017	.13510	.07640	-.04430	-.00520	-.00060	-.00010	.07610	-.00020	.03580	.26370
3.027	-.010	.13550	.07620	-.04420	-.00420	-.00050	.00000	.07620	.00000	.03500	.26400
3.023	-.010	.13600	.07690	-.04430	-.00340	-.00050	.00000	.07640	-.00040	.03540	.26370

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG004) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 7/ 0 RN/L = 3.00

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
3.008	-.043	-.03160	.06620	.02400	-.00550	-.00040	-.00060	.06600	-.00020	.03060	.26340
3.007	-.043	-.03160	.06610	.02390	-.00410	-.00040	-.00060	.06590	-.00020	.03020	.26360
2.999	-.043	-.03250	.06610	.02420	-.00450	-.00040	-.00060	.06590	-.00020	.03080	.26290
3.003	-.039	-.03110	.06620	.02370	-.00310	-.00030	-.00060	.06600	-.00020	.03080	.26370

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG005) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 9/ 0 RN/L = 3.01

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
3.023	-.073	-.02530	.06730	.02340	-.00600	-.00020	-.00040	.06630	-.00100	.02070	.26350
3.012	-.073	-.02580	.06760	.02360	-.00530	-.00030	-.00040	.06660	-.00100	.02380	.26290
3.008	-.073	-.02640	.06700	.02370	-.00660	-.00040	-.00030	.06640	-.00060	.02620	.26310

RUN NO. 8/ 0 RN/L = 5.51

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.504	-.061	-.03230	.06680	.02300	-.00580	-.00020	-.00040	.06640	-.00050	.03150	.26370
5.507	-.066	-.02990	.06660	.02310	-.00610	-.00010	-.00040	.06620	-.00030	.03130	.26400
5.505	-.066	-.02990	.06650	.02320	-.00650	-.00020	-.00030	.06620	-.00030	.03200	.26390

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG006) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 11/ 0 RN/L = 3.01

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
3.017	-.131	-.06420	.06570	.04650	-.00450	-.00010	-.00030	.06560	-.00010	.02920	.26330
3.005	-.128	-.06430	.06600	.04680	-.00590	.00000	-.00020	.06570	-.00020	.03130	.26280
3.002	-.128	-.06460	.06590	.04690	-.00650	-.00010	-.00030	.06570	-.00020	.03100	.26280

RUN NO. 10/ 0 RN/L = 5.52

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.523	-.112	-.07120	.06570	.04710	-.00460	-.00010	-.00040	.06560	-.00010	.03300	.26410
5.531	-.120	-.07270	.06580	.04760	-.00540	.00010	-.00020	.06570	-.00010	.03170	.26460
5.518	-.129	-.07270	.06560	.04760	-.00460	.00000	-.00030	.06540	-.00020	.03200	.26420

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG007) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 13/ 0 RN/L = 3.02

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
3.020	.055	.13890	.07690	-.04550	-.00230	-.00010	-.00030	.07670	-.00030	.03590	.26290
3.014	.052	.13910	.07690	-.04530	-.00160	-.00010	-.00040	.07660	-.00030	.03620	.26250
3.013	.052	.13940	.07680	-.04560	-.00250	-.00010	-.00050	.07660	-.00020	.03630	.26250

RUN NO. 12/ 0 RN/L = 5.55

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.543	.071	.13390	.07740	-.04590	-.00290	-.00020	-.00060	.07710	-.00030	.03750	.26340
5.545	.068	.13440	.07710	-.04600	-.00390	-.00020	-.00050	.07710	.00000	.03810	.26370
5.556	.071	.13330	.07750	-.04570	-.00320	-.00010	-.00050	.07730	-.00020	.03690	.26450

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG008) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 14/ 0 RN/L = 5.54

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.544	9.808	.60140	.02370	-.05160	-.00380	.00030	-.00110	.02370	.00000	.03410	.26330
5.557	9.789	.60150	.02410	-.05180	-.00350	.00020	-.00100	.02400	-.00020	.03290	.26450
5.530	9.785	.60380	.02380	-.05160	-.00360	.00030	-.00110	.02350	-.00020	.03440	.26360
5.523	9.781	.60120	.02380	-.05170	-.00420	.00020	-.00120	.02370	-.00010	.03300	.26370

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG009) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 18/ 0 RN/L = 2.42

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
2.419	9.841	.40180	.01830	.03820	-.01120	-.00030	-.00120	.01820	-.00020	.02870	.26380
2.416	9.844	.40100	.01850	.03880	-.01140	-.00040	-.00110	.01830	-.00020	.02980	.26370
2.416	9.844	.40180	.01840	.03820	-.01090	-.00030	-.00120	.01820	-.00020	.02910	.26370

RUN NO. 17/ 0 RN/L = 3.02

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
3.025	9.847	.40280	.01860	.03910	-.00700	-.00010	-.00120	.01850	-.00010	.02890	.26240
3.021	9.844	.40330	.01890	.03910	-.00780	.00000	-.00130	.01860	-.00030	.02960	.26230
3.023	9.845	.40380	.01870	.03920	-.00780	-.00030	-.00130	.01870	.00010	.02900	.26270
3.016	9.842	.40110	.01950	.03960	-.00980	-.00030	-.00130	.01930	-.00020	.03010	.26330

RUN NO. 16/ 0 RN/L = 5.55

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.552	9.722	.40150	.01900	.04120	-.00570	-.00010	-.00120	.01870	-.00030	.03080	.26350
5.549	9.729	.40050	.01900	.04120	-.00590	-.00020	-.00120	.01870	-.00030	.03100	.26360
5.551	9.726	.40080	.01900	.04100	-.00510	-.00020	-.00120	.01870	-.00030	.03060	.26390

RUN NO. 15/ 0 RN/L = 8.10

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
8.109	9.893	.41350	.01630	.04070	-.00410	.00030	-.00110	.01610	-.00020	.03090	.26290
8.105	9.893	.41330	.01640	.04080	-.00260	.00020	-.00100	.01620	-.00020	.03070	.26290
8.086	9.892	.41350	.01630	.04070	-.00250	.00010	-.00120	.01610	-.00010	.03120	.26250

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG010) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 19/ 0 RN/L = 5.53

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.534	9.812	.44620	.01890	.01570	-.00400	.00020	-.00120	.01860	-.00030	.03030	.26390
5.525	9.812	.44660	.01880	.01590	-.00400	.00010	-.00130	.01860	-.00020	.03050	.26360
5.525	9.809	.44570	.01920	.01570	-.00440	.00000	-.00120	.01890	-.00030	.02990	.26370

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG011) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 20/ 0 RN/L = 5.55

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.553	14.876	.69430	-.02400	.01590	-.00730	.00130	-.00060	-.02410	-.00010	.03280	.26350
5.551	14.876	.69220	-.02390	.01630	-.00890	.00140	-.00050	-.02410	-.00010	.03230	.26350
5.558	14.878	.69380	-.02420	.01600	-.00750	.00130	-.00050	-.02430	-.00010	.03300	.26410
5.535	14.879	.69140	-.02460	.01610	-.00860	.00160	-.00060	-.02480	-.00030	.03280	.26350

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG012) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 23/ 0 RN/L = 2.41

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
2.428	15.248	.68220	-.02320	.03750	-.01190	.00050	-.00060	-.02340	-.00010	.03030	.26490
2.415	15.245	.68530	-.02310	.03780	-.00980	.00060	-.00060	-.02340	-.00030	.03150	.26390
2.388	15.234	.68360	-.02300	.03850	-.01160	.00030	-.00070	-.02300	.00000	.03200	.26240

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (RNG012) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 22/ 0 RN/L = 5.55

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.572	15.057	.67400	-.02500	.04060	-.00880	.00170	-.00060	-.02530	-.00040	.03280	.26380
5.554	15.064	.67160	-.02480	.04030	-.00800	.00170	-.00050	-.02510	-.00020	.03310	.26330
5.540	15.077	.67240	-.02480	.04060	-.00810	.00180	-.00040	-.02500	-.00030	.03310	.26280
5.524	15.077	.67350	-.02460	.04080	-.00700	.00150	-.00060	-.02490	-.00030	.03480	.26230

RUN NO. 21/ 0 RN/L = 8.08

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
8.072	15.038	.67170	-.02680	.04160	-.00970	.00180	-.00070	-.02720	-.00040	.03390	.26310
8.087	15.038	.67110	-.02680	.04150	-.00810	.00170	-.00050	-.02700	-.00020	.03310	.26390
8.074	15.039	.67340	-.02680	.04190	-.01060	.00180	-.00060	-.02680	.00000	.03320	.26360

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (RNG013) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 24/ 0 RN/L = 5.55

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.554	15.457	.88960	-.02540	-.05180	-.00780	.00240	-.00030	-.02570	-.00030	.03560	.26310
5.544	15.461	.88720	-.02540	-.05170	-.00970	.00240	-.00050	-.02570	-.00030	.03590	.26330

ARC 12-078/OA159 03 WITH GROUND PLANE (RNG014) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 25/ 0 RN/L = 5.54

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.596	.054	.14330	.06590	-.05960	-.00290	-.00020	-.00060	.06560	-.00030	.03520	.26380
5.583	2.092	.24030	.06240	-.05930	-.00420	.00000	-.00070	.06210	-.00030	.03400	.26430
5.561	4.146	.33910	.05500	-.06020	-.00430	.00000	-.00070	.05480	-.00020	.03250	.26390
5.549	6.213	.44320	.04350	-.06120	-.00450	.00010	-.00100	.04330	-.00020	.03360	.26400
5.547	8.268	.54090	.02940	-.06260	-.00490	.00020	-.00090	.02900	-.00030	.03290	.26440
5.519	10.326	.64240	.01280	-.06230	-.00360	.00020	-.00130	.01260	-.00020	.03270	.26340
5.509	12.407	.74300	-.00460	-.06000	-.00390	.00030	-.00130	-.00490	-.00030	.03260	.26350
5.489	14.446	.84330	-.02350	-.06180	-.00750	.00120	-.00070	-.02370	-.00020	.03460	.26330
5.480	15.486	.90060	-.03300	-.06260	-.00930	.00190	-.00030	-.03320	-.00020	.03480	.26300

ARC 12-078/OA159 03 WITH GROUND PLANE (RNG015) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 28/ 0 RN/L = 2.40

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
2.404	.004	-.05920	.05590	.03260	-.01010	.00030	-.00040	.05580	-.00010	.02920	.26430
2.419	1.986	.02720	.05310	.03350	-.01140	.00020	-.00040	.05280	-.00020	.02830	.26630
2.399	4.119	.12350	.04600	.03180	-.01200	.00040	-.00070	.04580	-.00030	.02700	.26420
2.397	6.063	.21640	.03750	.02980	-.01180	.00050	-.00080	.03730	-.00020	.02650	.26420
2.393	8.105	.31810	.02450	.02760	-.01030	.00080	-.00100	.02440	-.00020	.02760	.26390
2.396	9.855	.41060	.01170	.02530	-.00890	.00090	-.00120	.01160	-.00010	.02720	.26440
2.391	12.107	.51490	-.00610	.02740	-.01090	.00090	-.00150	-.00640	-.00030	.02770	.26400
2.387	14.129	.60670	-.02270	.02760	-.01080	.00120	-.00130	-.02320	-.00040	.02970	.26380
2.385	15.255	.66900	-.03170	.02840	-.00930	.00150	-.00120	-.03190	-.00020	.02980	.26370
2.389	.042	-.06060	.05560	.03220	-.00960	.00070	-.00030	.05540	-.00020	.02890	.26500
2.387	.012	-.06440	.05510	.03170	-.01080	.00050	-.00030	.05500	-.00010	.02870	.26490

ARC 12-078/OA159 03 WITH GROUND PLANE (RNG015) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 27/ 0 RN/L = 5.50

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.552	.019	-.05900	.05460	.03230	-.00570	.00000	-.00030	.05440	-.00020	.03050	.26360
5.515	4.141	.13450	.04620	.03150	-.00590	.00020	-.00040	.04600	-.00020	.02900	.26350
5.515	6.095	.22780	.03660	.03090	-.00400	.00010	-.00050	.03630	-.00030	.02900	.26400
5.509	8.150	.32760	.02320	.02860	-.00540	.00040	-.00060	.02300	-.00010	.02820	.26430
5.509	9.736	.41100	.01150	.02760	-.00520	.00040	-.00090	.01130	-.00020	.02850	.26470
5.477	12.319	.53550	-.00890	.03010	-.00540	.00060	-.00110	-.00900	-.00020	.02940	.26370
5.469	14.377	.63790	-.02650	.03050	-.00650	.00140	-.00070	-.02670	-.00020	.03150	.26360
5.475	15.067	.67230	-.03200	.02960	-.00730	.00180	-.00060	-.03250	-.00050	.03110	.26420

RUN NO. 26/ 0 RN/L = 7.99

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
8.090	-.048	-.06300	.05430	.03230	-.00420	-.00010	-.00020	.05420	.00000	.03160	.26350
8.057	4.134	.13350	.04590	.03180	-.00420	.00000	-.00050	.04570	-.00010	.02990	.26400
8.028	6.245	.24000	.03520	.03070	-.00340	.00000	-.00050	.03510	-.00020	.03020	.26370
8.020	8.312	.34240	.02150	.02860	-.00300	.00010	-.00070	.02150	.00000	.02940	.26390
7.971	9.887	.42400	.00970	.02780	-.00310	.00030	-.00100	.00950	-.00020	.02950	.26360
7.967	12.486	.54620	-.01140	.03060	-.00390	.00060	-.00070	-.01140	-.00010	.02960	.26410
7.924	14.599	.65090	-.02890	.03060	-.00650	.00170	-.00030	-.02920	-.00030	.03260	.26310
7.925	14.931	.67170	-.03180	.03040	-.00690	.00190	-.00040	-.03200	-.00020	.03220	.26340
7.910	15.070	.67940	-.03330	.03050	-.00740	.00210	-.00030	-.03360	-.00030	.03370	.26300

ARC 12-078/OA159 03 WITH GROUND PLANE (RNG016) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 29/ 0 RN/L = 5.54

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.594	-.009	-.01310	.05440	.00760	-.00430	-.00030	-.00030	.05430	-.00010	.02960	.26370
5.588	2.025	.08320	.05200	.00700	-.00410	-.00020	-.00040	.05200	.00000	.02770	.26420
5.579	4.130	.18040	.04600	.00630	-.00410	-.00010	-.00040	.04590	-.00010	.02850	.26430
5.551	6.209	.28340	.03570	.00540	-.00370	.00010	-.00050	.03550	-.00020	.02940	.26340
5.544	8.201	.38570	.02250	.00310	-.00380	.00010	-.00080	.02240	-.00010	.02830	.26370
5.534	9.978	.47170	.00950	.00290	-.00340	.00040	-.00100	.00940	-.00010	.02920	.26380
5.494	12.244	.57670	-.00840	.00560	-.00410	.00030	-.00130	-.00850	-.00010	.02690	.26230
5.515	14.448	.68540	-.02670	.00580	-.00710	.00130	-.00070	-.02680	-.00020	.03070	.26380
5.512	15.495	.74390	-.03600	.00450	-.00830	.00210	-.00050	-.03620	-.00020	.03230	.26400
5.478	.039	-.01240	.05420	.00750	-.00350	-.00020	-.00020	.05400	-.00020	.02930	.26470

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (RNG017) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 30/ 0 RN/L = 5.60

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.596	15.659	.70320	-.03610	.03260	-.09160	.00780	-.01740	-.03640	-.00030	.03370	.26360
5.597	15.658	.70520	-.03610	.03260	-.08930	.00810	-.01720	-.03640	-.00030	.03180	.26380
5.592	15.663	.70410	-.03570	.03260	-.09060	.00790	-.01710	-.03630	-.00060	.03360	.26370
5.600	15.666	.70500	-.03600	.03250	-.08980	.00800	-.01710	-.03650	-.00040	.03260	.26430

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG018) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 31/ 0 RN/L = 5.56

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.571	10.116	.42690	.01400	.03280	-.09080	.00670	-.01490	.01380	-.00020	.03300	.26410
5.563	10.112	.42560	.01390	.03290	-.09120	.00690	-.01470	.01360	-.00020	.03340	.26380
5.550	10.099	.42640	.01390	.03300	-.08930	.00690	-.01490	.01360	-.00030	.03390	.26360

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (RNG019) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 32/ 0 RN/L = 5.59

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.592	-.088	-.06290	.06060	.03950	-.08960	.00610	-.00490	.06020	-.00050	.03420	.26440
5.593	-.089	-.06300	.06040	.03900	-.09260	.00580	-.00500	.06020	-.00020	.03400	.26450
5.593	-.088	-.06250	.06050	.03940	-.09240	.00580	-.00500	.06010	-.00040	.03260	.26470

ARC 12-078/OA159 03 WITH GROUND PLANE (RNG020) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 33/ 0 RN/L = 5.51

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.597	-.070	-.05280	.05010	.02490	-.09470	.00580	-.00450	.04980	-.00040	.03320	.26450
5.568	2.064	.04200	.04800	.02430	-.09520	.00610	-.00630	.04760	-.00040	.03260	.26420
5.532	4.119	.12580	.04190	.01980	-.09360	.00640	-.00800	.04170	-.00020	.03340	.26400
5.524	6.199	.22330	.03280	.01740	-.09310	.00660	-.00950	.03260	-.00030	.03250	.26420
5.524	8.274	.32850	.01970	.01720	-.09210	.00670	-.01160	.01930	-.00040	.03270	.26490
5.493	10.083	.41700	.00520	.01730	-.09120	.00710	-.01410	.00480	-.00040	.03340	.26390
5.490	10.080	.41760	.00520	.01730	-.09090	.00720	-.01410	.00480	-.00040	.03300	.26380
5.471	12.402	.53170	-.01490	.01620	-.09200	.00800	-.01680	-.01520	-.00030	.03330	.26350
5.467	14.414	.62850	-.03380	.01790	-.09120	.00790	-.01740	-.03410	-.00030	.03130	.26380
5.454	15.637	.69070	-.04450	.01740	-.09100	.00830	-.01730	-.04490	-.00040	.03190	.26330
5.446	15.635	.68950	-.04490	.01730	-.09070	.00830	-.01720	-.04480	.00010	.03140	.26310

ARC 12-078/OA159 03 W/O GROUND PLANE (RNG021) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 36/ 0 RN/L = 2.40

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
2.431	-9.075	-.46750	.02500	.02870	-.00830	.00090	.00090	.02480	-.00020	.03320	.26260
2.408	-7.535	-.39000	.03400	.02780	-.00890	.00030	.00030	.03370	-.00030	.03350	.26050
2.400	-5.030	-.27590	.04560	.02660	-.00890	-.00020	-.00020	.04540	-.00030	.03440	.26000
2.400	-2.540	-.15580	.05330	.02800	-.00980	-.00030	-.00040	.05300	-.00030	.03350	.26040
2.403	-.040	-.04930	.05510	.02720	-.01000	-.00020	-.00050	.05490	-.00020	.03280	.26080
2.404	2.525	.06720	.05130	.03010	-.01050	-.00030	-.00060	.05120	-.00010	.03340	.26110
2.406	5.033	.18800	.04210	.02900	-.01110	-.00030	-.00090	.04180	-.00020	.03200	.26140
2.402	7.565	.30760	.02720	.02530	-.01210	-.00030	-.00110	.02710	-.00010	.03180	.26110
2.400	7.562	.30650	.02760	.02690	-.01090	-.00020	-.00120	.02750	-.00010	.03210	.26090
2.399	7.563	.31020	.02770	.02630	-.01160	-.00030	-.00120	.02750	-.00020	.03220	.26100
2.397	7.563	.30770	.02820	.02720	-.01210	-.00030	-.00110	.02790	-.00030	.03220	.26080
2.386	10.038	.42890	.00950	.02320	-.01100	-.00050	-.00110	.00930	-.00010	.03260	.25990
2.380	12.654	.55690	-.01110	.02530	-.01140	-.00020	-.00180	-.01120	-.00010	.03440	.25930
2.378	15.094	.67980	-.03160	.02640	-.01230	.00030	-.00130	-.03170	-.00010	.03570	.25910
2.377	18.137	.85230	-.05840	.02070	-.01390	.00150	-.00070	-.05870	-.00030	.03970	.25920
2.398	-.003	-.04280	.05640	.02910	-.00870	-.00050	-.00040	.05630	-.00010	.03260	.26180

RUN NO. 35/ 0 RN/L = 5.50

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.525	-9.179	-.47200	.02060	.03170	-.00560	.00010	-.00040	.02030	-.00020	.03670	.26090
5.515	-7.678	-.40420	.03120	.03070	-.00380	.00000	-.00040	.03080	-.00030	.03670	.26070
5.513	-5.138	-.28700	.04520	.02970	-.00480	-.00010	-.00040	.04490	-.00030	.03590	.26090
5.519	-2.574	-.17030	.05390	.02950	-.00480	-.00010	-.00040	.05370	-.00030	.03500	.26130
5.515	-.047	-.05280	.05660	.02950	-.00480	-.00010	-.00050	.05630	-.00030	.03520	.26120
5.501	2.527	.06610	.05310	.03000	-.00420	-.00010	-.00050	.05290	-.00020	.03550	.26080
5.507	5.102	.18710	.04360	.02980	-.00540	.00000	-.00070	.04330	-.00030	.03510	.26120
5.502	7.653	.31130	.02780	.02850	-.00400	-.00010	-.00070	.02790	.00010	.03380	.26120
5.505	7.657	.31100	.02800	.02830	-.00370	-.00010	-.00070	.02790	-.00010	.03380	.26140
5.491	7.652	.31020	.02800	.02820	-.00440	-.00010	-.00070	.02780	-.00020	.03450	.26090
5.493	7.656	.30990	.02800	.02810	-.00390	.00000	-.00070	.02770	-.00030	.03440	.26110
5.479	10.214	.44270	.00850	.02680	-.00420	.00010	-.00120	.00830	-.00020	.03460	.26060
5.465	12.780	.56610	-.01170	.02960	-.00520	.00040	-.00150	-.01190	-.00010	.03570	.26000
5.454	15.351	.70310	-.03460	.02880	-.00830	.00140	-.00100	-.03510	-.00050	.03950	.25970
5.506	18.427	.87760	-.06100	.01920	-.00970	.00320	-.00160	-.06160	-.00060	.04150	.26240
5.495	-.012	-.05360	.05540	.02960	-.00430	-.00010	-.00050	.05540	.00000	.03420	.26220

ARC 12-078/0A159 03 W/O GROUND PLANE (RNG021) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 34/ 0 RN/L = 8.00

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
8.040	-9.311	-.48250	.01870	.03290	-.00430	-.00010	-.00040	.01830	-.00040	.03710	.26100
8.022	-7.729	-.40970	.02930	.03170	-.00430	.00000	-.00030	.02890	-.00030	.03740	.26070
7.986	-5.253	-.29490	.04340	.03050	-.00340	-.00020	-.00020	.04320	-.00020	.03740	.25980
8.011	-2.582	-.17390	.05280	.02980	-.00470	-.00020	-.00040	.05260	-.00020	.03690	.26090
8.023	-.011	-.05400	.05570	.02960	-.00460	-.00020	-.00030	.05560	-.00010	.03550	.26150
8.019	2.576	.06860	.05220	.02990	-.00490	-.00010	-.00050	.05220	-.00010	.03520	.26150
8.030	5.107	.18740	.04300	.02930	-.00420	-.00010	-.00070	.04280	-.00020	.03450	.26200
8.018	7.729	.32050	.02670	.02780	-.00510	.00010	-.00100	.02650	-.00020	.03460	.26180
8.013	7.729	.32050	.02700	.02770	-.00290	.00000	-.00080	.02660	-.00040	.03530	.26180
7.998	7.732	.32130	.02660	.02790	-.00400	.00000	-.00100	.02650	-.00010	.03480	.26130
8.006	7.733	.32110	.02650	.02800	-.00420	.00020	-.00080	.02640	-.00010	.03490	.26170
7.994	10.319	.45200	.00740	.02700	-.00420	.00020	-.00130	.00710	-.00030	.03500	.26150
7.978	12.949	.57850	-.01440	.03020	-.00380	.00050	-.00120	-.01440	.00000	.03480	.26110
7.937	15.531	.72210	-.03740	.02960	-.00840	.00200	-.00080	-.03780	-.00040	.04020	.25980
7.930	18.646	.90840	-.06370	.02000	-.01360	.00510	-.00170	-.06420	-.00040	.04250	.25960
7.982	-.019	-.05230	.05540	.02980	-.00460	.00000	-.00040	.05520	-.00030	.03530	.26180

ARC 12-078/OA159 03 + AT93 W/O GROUND PLANE (RNG022) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 40/ 0 RN/L = 2.38

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
2.395	-9.042	-.46740	.02610	.02990	-.00480	.00150	.00090	.02580	-.00030	.03220	.26020
2.387	-7.513	-.39260	.03490	.02830	-.00310	.00090	.00050	.03450	-.00030	.03430	.26000
2.383	-4.976	-.27160	.04640	.02700	-.00180	.00030	-.00010	.04610	-.00020	.03390	.26020
2.371	-2.544	-.16160	.05380	.02810	-.00140	.00030	-.00030	.05360	-.00020	.03480	.25910
2.378	-.006	-.04160	.05610	.02820	-.00300	.00030	-.00030	.05570	-.00050	.03370	.26020
2.377	2.474	.06630	.05220	.03030	-.00400	.00020	-.00050	.05210	-.00020	.03350	.26020
2.382	4.956	.18540	.04350	.02910	-.00510	.00020	-.00070	.04320	-.00030	.03350	.26110
2.381	7.491	.30850	.02880	.02710	-.00550	.00030	-.00100	.02860	-.00020	.03280	.26100
2.376	10.034	.43100	.00990	.02350	-.00420	.00030	-.00130	.00990	.00000	.03240	.26070
2.371	12.574	.55390	-.01040	.02640	-.00430	.00040	-.00160	-.01050	-.00010	.03400	.26010
2.367	15.083	.67370	-.03130	.02590	-.00660	.00080	-.00130	-.03160	-.00030	.03810	.25970
2.369	18.105	.84870	-.05780	.02140	-.00840	.00220	-.00080	-.05830	-.00050	.04000	.26020
2.375	.000	-.04390	.05670	.02910	-.00350	-.00020	-.00040	.05650	-.00020	.03490	.26140

RUN NO. 39/ 0 RN/L = 3.98

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
4.016	-9.130	-.46770	.02140	.02980	-.00350	.00020	.00000	.02120	-.00030	.03510	.26120
3.993	-7.639	-.39930	.03140	.02790	-.00330	.00020	-.00020	.03130	-.00020	.03600	.26020
3.988	-5.112	-.28330	.04510	.02740	-.00220	.00000	-.00020	.04480	-.00030	.03450	.26020
3.981	-2.562	-.16590	.05390	.02780	-.00320	.00000	-.00040	.05340	-.00050	.03560	.26010
3.975	.003	-.04640	.05630	.02830	-.00440	.00010	-.00050	.05590	-.00040	.03590	.25990
3.982	2.500	.06650	.05290	.02940	-.00480	.00010	-.00060	.05280	-.00010	.03450	.26050
3.984	5.015	.18640	.04370	.02840	-.00460	.00010	-.00080	.04340	-.00030	.03430	.26080
3.975	7.601	.31060	.02860	.02730	-.00420	.00020	-.00110	.02840	-.00020	.03440	.26030
3.982	10.135	.43610	.01030	.02510	-.00380	.00020	-.00120	.01000	-.00030	.03480	.26090
3.970	12.710	.56280	-.01080	.02860	-.00420	.00040	-.00160	-.01110	-.00030	.03660	.26040
3.973	15.187	.69310	-.03260	.02870	-.00530	.00100	-.00100	-.03290	-.00030	.03740	.26070
3.968	18.240	.86520	-.06090	.01960	-.00690	.00280	-.00100	-.06130	-.00040	.04040	.26050
3.978	-.063	-.05140	.05640	.02850	-.00440	.00010	-.00040	.05610	-.00030	.03500	.26160

ARC 12-078/OA159 03 + AT93 W/O GROUND PLANE (RNG022) (05 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.6800 IN. XO		
LREF =	474.8000 IN.	YMRP =	.0000 IN. YO		
BREF =	936.6700 IN.	ZMRP =	375.0000 IN. ZO		
SCALE =	.0300				

PARAMETRIC DATA

BETA =	.000	ELEVON =	.000
BDFLAP =	.000	SPDBRK =	25.000
MACH =	.260		

RUN NO. 38/ 0 RN/L = 5.47

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.525	-9.178	-.47170	.02030	.03070	-.00320	.00020	-.00040	.02020	-.00020	.03590	.26150
5.514	-7.585	-.39690	.03120	.02940	-.00310	.00010	-.00030	.03090	-.00030	.03530	.26130
5.486	-5.185	-.28920	.04450	.02830	-.00240	.00000	-.00020	.04430	-.00020	.03590	.26040
5.492	-2.632	-.16980	.05370	.02800	-.00360	.00000	-.00030	.05340	-.00030	.03590	.26090
5.490	-.062	-.05030	.05690	.02770	-.00360	.00000	-.00040	.05660	-.00030	.03540	.26120
5.478	2.526	.07070	.05360	.02880	-.00390	.00010	-.00050	.05330	-.00030	.03550	.26080
5.478	5.155	.19670	.04370	.02860	-.00420	.00010	-.00060	.04350	-.00020	.03510	.26090
5.469	7.678	.31670	.02870	.02700	-.00300	.00000	-.00060	.02840	-.00030	.03470	.26070
5.471	10.234	.45220	.00930	.02630	-.00410	.00030	-.00120	.00910	-.00020	.03560	.26110
5.435	12.746	.57320	-.01100	.02910	-.00370	.00030	-.00140	-.01150	-.00050	.03550	.26090
5.420	15.352	.71440	-.03440	.02850	-.00530	.00140	-.00090	-.03490	-.00050	.03900	.26020
5.403	18.378	.88410	-.06060	.01980	-.00950	.00320	-.00160	-.06100	-.00040	.04260	.25950
5.432	.004	-.04650	.05660	.02860	-.00300	.00000	-.00030	.05640	-.00020	.03640	.26140

RUN NO. 37/ 0 RN/L = 8.00

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
8.071	-9.341	-.48110	.01850	.03160	-.00530	.00010	-.00030	.01820	-.00030	.03750	.26150
8.048	-7.749	-.40890	.02920	.03050	-.00390	-.00010	-.00030	.02900	-.00020	.03760	.26120
8.033	-5.202	-.29040	.04420	.02910	-.00330	-.00020	-.00020	.04380	-.00040	.03670	.26100
8.001	-2.621	-.17130	.05330	.02880	-.00340	-.00020	-.00030	.05310	-.00030	.03680	.26010
8.021	.008	-.04850	.05640	.02840	-.00420	.00000	-.00030	.05620	-.00020	.03570	.26100
8.017	2.589	.07280	.05310	.02880	-.00470	.00000	-.00050	.05280	-.00030	.03610	.26100
8.009	5.093	.19280	.04370	.02860	-.00410	.00000	-.00080	.04360	-.00010	.03570	.26090
8.011	7.719	.32470	.02750	.02720	-.00350	.00010	-.00080	.02740	-.00010	.03550	.26120
7.991	10.299	.45640	.00840	.02660	-.00400	.00020	-.00120	.00800	-.00040	.03600	.26070
7.963	12.966	.58490	-.01350	.03000	-.00360	.00030	-.00100	-.01380	-.00030	.03660	.25990
7.948	15.507	.72290	-.03640	.02940	-.00670	.00190	-.00070	-.03650	-.00010	.03830	.25970
7.921	18.682	.91830	-.06360	.01970	-.01180	.00500	-.00150	-.06410	-.00050	.04270	.25900
7.986	-.034	-.04900	.05620	.02890	-.00450	.00000	-.00040	.05600	-.00020	.03700	.26170

DATE 07 NOV 75

TABULATED SOURCE DATA, ARC 12-708 (OA159)

ARC 12-078/OA159 03 W/O GROUND PLANE

(RNG023) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 43/ 0 RN/L = 2.38

RN/L	BETA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
2.406	8.940	.36890	.01250	.01980	-.16370	.01250	-.01990	.01240	-.00010	.03760	.26160
2.403	7.480	.36820	.01310	.02240	-.14310	.00990	-.01670	.01270	-.00030	.03640	.26200
2.393	5.001	.37130	.01430	.02470	-.09670	.00630	-.01100	.01400	-.00030	.03520	.26130
2.393	2.481	.37120	.01560	.02820	-.05130	.00260	-.00550	.01530	-.00030	.03350	.26170
2.380	-1.947	.37420	.01580	.02890	.03250	-.00340	.00270	.01600	.00020	.03230	.26080
2.380	-2.495	.37320	.01580	.02830	.04200	-.00410	.00370	.01580	.00000	.03240	.26100
2.380	-4.960	.37700	.01480	.02570	.08140	-.00880	.00960	.01470	-.00010	.03470	.26120
2.374	-7.446	.37890	.01400	.02460	.13020	-.01280	.01590	.01370	-.00030	.03810	.26070
2.376	-9.974	.38200	.01220	.02140	.18140	-.01800	.02270	.01180	-.00040	.04080	.26110
2.368	-12.498	.38550	.00990	.01950	.22770	-.02240	.02780	.00930	-.00060	.04220	.26040
2.365	-14.880	.38660	.00880	.01880	.26700	-.02510	.03120	.00800	-.00070	.04560	.26020
2.366	-17.899	.38260	.01000	.01850	.31150	-.02470	.03300	.00880	-.00110	.05060	.26050
2.367	.033	.37640	.01720	.03060	-.00550	-.00020	-.00090	.01680	-.00040	.03260	.26120

RUN NO. 42/ 0 RN/L = 5.47

RN/L	BETA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.526	8.956	.38780	.00910	.02080	-.16290	.01330	-.02020	.00880	-.00020	.03940	.26200
5.513	7.485	.38570	.01010	.02370	-.13670	.01110	-.01690	.00970	-.00040	.03830	.26190
5.491	5.018	.38760	.01150	.02780	-.09150	.00690	-.01110	.01130	-.00030	.03710	.26120
5.488	2.524	.38820	.01290	.03060	-.04640	.00310	-.00570	.01270	-.00020	.03530	.26130
5.473	-.082	.38950	.01330	.03190	-.00160	-.00030	-.00030	.01310	-.00020	.03460	.26080
5.466	-2.459	.38950	.01280	.03050	.04210	-.00350	.00480	.01280	.00000	.03520	.26060
5.472	-5.044	.39100	.01060	.02740	.08630	-.00780	.01060	.01040	-.00030	.03670	.26110
5.461	-7.452	.39580	.00840	.02400	.13060	-.01170	.01670	.00790	-.00050	.03940	.26080
5.445	-10.059	.39830	.00640	.02080	.18110	-.01630	.02290	.00600	-.00040	.04270	.26030
5.451	-12.439	.40480	.00270	.01590	.22810	-.02140	.02870	.00190	-.00070	.04500	.26070
5.442	-14.947	.40370	.00150	.01480	.26970	-.02350	.03150	.00070	-.00080	.04690	.26050
5.441	-17.977	.40430	.00280	.01430	.31450	-.02410	.03450	.00190	-.00100	.05220	.26070
5.439	.001	.39040	.01370	.03210	-.00240	-.00040	-.00060	.01350	-.00030	.03480	.26110

ARC 12-078/0A159 03 W/O GROUND PLANE (RNG023) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 41/ 0 RN/L = 7.94

RN/L	BETA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
8.024	9.036	.39510	.00490	.01760	-.15680	.01210	-.01960	.00470	-.00020	.03890	.26180
7.995	7.587	.39660	.00660	.02170	-.13270	.01050	-.01650	.00620	-.00040	.03920	.26110
7.971	5.019	.39590	.00990	.02710	-.08710	.00670	-.01110	.00940	-.00040	.03750	.26080
7.971	2.536	.39570	.01150	.03120	-.04440	.00330	-.00570	.01130	-.00020	.03620	.26100
7.960	.041	.39750	.01150	.03270	-.00050	.00010	-.00040	.01150	.00000	.03530	.26100
7.952	-2.502	.39750	.01100	.03120	.04440	-.00330	.00490	.01110	.00010	.03570	.26090
7.934	-5.007	.40390	.00840	.02750	.09030	-.00710	.01100	.00840	.00000	.03830	.26050
7.933	-7.490	.40690	.00540	.02180	.13530	-.01070	.01650	.00510	-.00030	.04040	.26070
7.913	-9.973	.41110	.00270	.01720	.17960	-.01490	.02290	.00210	-.00060	.04340	.26020
7.899	-12.534	.41400	-.00020	.01470	.22910	-.02070	.02930	-.00110	-.00080	.04560	.26000
7.881	-14.958	.41740	-.00250	.01180	.27470	-.02460	.03350	-.00330	-.00080	.04820	.25950
7.877	-18.009	.41610	-.00200	.01160	.32070	-.02520	.03610	-.00290	-.00090	.05270	.25950
7.904	.013	.40040	.01190	.03260	-.00110	-.00010	-.00030	.01170	-.00020	.03460	.26100

ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE (RNG024) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 44/ 0 RN/L = 5.47

RN/L	BETA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.494	9.122	.38510	.00960	.02070	-.16060	.01350	-.02030	.00940	-.00020	.03990	.25990
5.516	8.928	.38650	.00960	.02120	-.15790	.01330	-.02000	.00940	-.00020	.03960	.26130
5.518	7.465	.38130	.01090	.02390	-.13400	.01110	-.01660	.01060	-.00030	.03850	.26170
5.498	5.026	.38360	.01270	.02750	-.08960	.00720	-.01110	.01230	-.00040	.03740	.26110
5.487	2.500	.38660	.01400	.03030	-.04390	.00310	-.00570	.01360	-.00040	.03590	.26080
5.478	.060	.38340	.01470	.03120	-.00110	.00010	-.00070	.01460	-.00010	.03510	.26060
5.477	-2.502	.38580	.01380	.03010	.04500	-.00330	.00480	.01380	.00000	.03440	.26090
5.464	-4.954	.39020	.01180	.02770	.08880	-.00750	.01040	.01140	-.00040	.03630	.26050
5.460	-7.496	.39340	.00970	.02370	.13480	-.01160	.01680	.00930	-.00040	.03990	.26050
5.463	-9.937	.39540	.00760	.01990	.18110	-.01570	.02260	.00700	-.00060	.04250	.26090
5.441	-12.400	.39930	.00430	.01590	.23000	-.02110	.02850	.00370	-.00060	.04520	.26100
5.432	-14.953	.40060	.00270	.01480	.27210	-.02340	.03150	.00200	-.00080	.04690	.26080
5.410	-17.998	.39780	.00430	.01410	.31750	-.02400	.03450	.00330	-.00090	.05270	.25990
5.432	-.023	.38830	.01420	.03140	.00160	-.00010	-.00040	.01420	.00000	.03380	.26150

ARC 12-078/0A159 03 W/O GROUND PLANE (RNG025) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 45/ 0 RN/L = 5.44

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.458	-9.135	-.43350	.01900	.00650	-.00400	-.00030	-.00010	.01900	.00000	.03480	.26100
5.463	-7.652	-.36410	.03000	.00490	-.00410	-.00040	-.00010	.02980	-.00020	.03360	.26140
5.455	-5.131	-.24910	.04470	.00430	-.00470	-.00040	-.00020	.04430	-.00030	.03440	.26120
5.460	-2.590	-.13190	.05370	.00370	-.00580	-.00020	-.00030	.05360	-.00010	.03460	.26160
5.458	-.038	-.01290	.05680	.00350	-.00520	-.00010	-.00060	.05670	-.00010	.03330	.26160
5.459	2.542	.10850	.05340	.00350	-.00540	-.00010	-.00070	.05340	.00000	.03350	.26170
5.448	5.112	.22850	.04410	.00260	-.00470	-.00010	-.00080	.04400	-.00010	.03390	.26130
5.453	7.611	.35310	.02980	.00080	-.00440	.00010	-.00080	.02960	-.00020	.03380	.26170
5.439	7.608	.35460	.02950	.00090	-.00600	.00020	-.00090	.02940	-.00010	.03410	.26120
5.421	10.207	.48790	.01010	.00000	-.00670	.00040	-.00160	.01020	.00010	.03530	.26040
5.413	12.700	.60870	-.00850	.00270	-.00560	.00080	-.00170	-.00870	-.00010	.03620	.26010
5.405	15.283	.74410	-.03130	.00300	-.00750	.00200	-.00110	-.03140	-.00010	.03850	.25980
5.417	18.386	.92250	-.05850	-.00590	-.01320	.00490	-.00130	-.05850	.00000	.04300	.26050
5.417	-.039	-.01500	.05540	.00370	-.00580	-.00010	-.00050	.05530	-.00010	.03530	.26080

ARC 12-078/0A159 03 W/O GROUND PLANE (RNG026) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 47/ 0 RN/L = 4.01

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
4.033	-9.050	-.27740	.03520	-.05910	-.00480	-.00010	-.00040	.03490	-.00030	.03980	.26160
4.023	-7.526	-.20490	.04510	-.06100	-.00440	-.00010	-.00040	.04470	-.00040	.03960	.26120
4.016	-5.061	-.09280	.05690	-.06150	-.00400	-.00020	-.00060	.05680	-.00020	.03920	.26100
4.010	-2.533	.02410	.06450	-.06250	-.00500	-.00010	-.00080	.06430	-.00020	.03880	.26080
4.012	-.004	.14310	.06640	-.06320	-.00610	.00010	-.00100	.06600	-.00030	.03950	.26110
4.017	2.617	.26800	.06160	-.06330	-.00680	.00020	-.00110	.06130	-.00030	.03940	.26160
4.014	5.106	.38620	.05160	-.06310	-.00680	.00050	-.00150	.05140	-.00020	.03840	.26160
4.015	7.640	.51250	.03600	-.06420	-.00720	.00090	-.00140	.03590	-.00010	.03710	.26180
4.000	10.200	.64290	.01640	-.06440	-.00720	.00100	-.00160	.01620	-.00020	.03830	.26090
3.989	12.706	.76190	-.00440	-.06210	-.00670	.00110	-.00210	-.00440	.00000	.03920	.26030
3.988	15.196	.89550	-.02750	-.06150	-.00840	.00210	-.00110	-.02770	-.00020	.04040	.26030
3.991	18.271	1.06270	-.05560	-.06790	-.01190	.00450	-.00070	-.05610	-.00040	.04300	.26070
3.992	.010	.14700	.06600	-.06330	-.00480	.00000	-.00080	.06560	-.00040	.03920	.26100

RUN NO. 46/ 0 RN/L = 5.44

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.466	-9.179	-.28480	.03390	-.05900	-.00580	-.00020	-.00040	.03350	-.00030	.04020	.26180
5.450	-7.601	-.20970	.04430	-.06070	-.00510	-.00020	-.00050	.04410	-.00030	.04010	.26120
5.438	-5.099	-.09580	.05690	-.06150	-.00460	-.00030	-.00050	.05670	-.00020	.04070	.26070
5.443	-2.548	.02190	.06470	-.06230	-.00570	-.00010	-.00080	.06450	-.00030	.04000	.26110
5.453	.005	.14140	.06660	-.06290	-.00660	.00000	-.00090	.06640	-.00020	.04050	.26170
5.456	2.632	.26720	.06170	-.06320	-.00750	.00020	-.00100	.06140	-.00030	.03970	.26190
5.450	5.122	.39080	.05120	-.06370	-.00760	.00040	-.00090	.05100	-.00020	.03840	.26180
5.450	7.667	.51520	.03510	-.06490	-.00690	.00050	-.00130	.03500	-.00010	.03810	.26180
5.434	10.206	.64260	.01540	-.06540	-.00630	.00080	-.00160	.01520	-.00020	.03880	.26110
5.420	12.799	.77010	-.00640	-.06230	-.00610	.00110	-.00210	-.00670	-.00030	.03930	.26050
5.407	15.381	.90620	-.02960	-.06310	-.00890	.00260	-.00120	-.02990	-.00030	.04180	.25990
5.405	18.401	1.07980	-.05710	-.06980	-.01500	.00540	-.00070	-.05760	-.00050	.04480	.25990
5.432	.040	.14240	.06580	-.06320	-.00750	.00020	-.00090	.06550	-.00030	.04020	.26150

ARC 12-078/0A159 03 - N24 W/O GROUND PLANE (RNG027) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 48/ 0 RN/L = 5.51

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.526	-9.168	-.47990	.02020	.03330	-.00450	-.00010	-.00020	.01990	-.00030	.03670	.26090
5.525	-7.643	-.40900	.03060	.03190	-.00480	-.00010	-.00010	.03060	.00000	.03640	.26100
5.524	-5.163	-.29470	.04470	.03060	-.00520	-.00010	-.00020	.04460	-.00010	.03600	.26130
5.525	-2.646	-.17940	.05410	.03040	-.00620	.00000	-.00030	.05400	-.00010	.03540	.26150
5.515	.010	-.05550	.05740	.03050	-.00640	.00000	-.00040	.05720	-.00020	.03700	.26110
5.518	2.500	.06010	.05410	.03100	-.00690	.00020	-.00060	.05390	-.00020	.03580	.26140
5.528	5.129	.18550	.04440	.03070	-.00670	.00030	-.00060	.04430	.00000	.03380	.26200
5.513	7.590	.30530	.02950	.02960	-.00690	.00040	-.00080	.02950	.00000	.03400	.26140
5.503	10.167	.44180	.01040	.02830	-.00620	.00060	-.00120	.01010	-.00030	.03540	.26100
5.493	12.807	.57000	-.01030	.03160	-.00670	.00070	-.00140	-.01030	.00000	.03610	.26060
5.490	15.197	.70140	-.03230	.03170	-.00870	.00210	-.00110	-.03240	-.00010	.03810	.26060
5.492	18.352	.87720	-.06070	.02440	-.01410	.00460	-.00080	-.06070	-.00010	.04110	.26080
5.499	-.015	-.05400	.05720	.03070	-.00610	.00010	-.00040	.05710	.00000	.03570	.26150

ARC 12-078/0A159 03 + STRUT TIPS W/O GROUNDPLANE (RNG028) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 49/ 0 RN/L = 5.53

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.566	-.042	-.05260	.06370	.02750	-.00680	.00030	-.00030	.06370	.00000	.03390	.26210
5.542	2.536	.06680	.06030	.02780	-.00730	.00040	-.00050	.06030	-.00010	.03490	.26130
5.523	5.090	.18820	.05090	.02740	-.00750	.00040	-.00070	.05070	-.00020	.03490	.26050
5.534	7.630	.31260	.03560	.02590	-.00580	.00050	-.00080	.03550	-.00010	.03330	.26120
5.511	10.212	.44740	.01620	.02500	-.00550	.00060	-.00130	.01610	-.00010	.03620	.26020
5.526	12.758	.56800	-.00360	.02780	-.00600	.00080	-.00140	-.00390	-.00030	.03730	.26110
5.523	15.255	.70250	-.02680	.02820	-.00770	.00200	-.00090	-.02710	-.00030	.03850	.26100
5.495	18.359	.88180	-.05580	.02040	-.01260	.00490	-.00080	-.05610	-.00030	.04220	.25970
5.512	-.044	-.05170	.06370	.02790	-.00660	.00030	-.00030	.06360	-.00010	.03570	.26110

ARC 12-078/0A159 03 W/O GROUND PLANE (RNG029) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = .000
MACH = .260

RUN NO. 50/ 0 RN/L = 5.50

RN/L	ALPHA	CN	CA	CLM	CY	CYN	CBL	CAU	CASC	CAB	MACH
5.536	-9.174	-.46490	.00980	.02340	-.00550	-.00010	.00000	.00970	-.00020	.03320	.26150
5.522	-7.673	-.39690	.02000	.02190	-.00570	-.00010	.00000	.01990	-.00010	.03360	.26100
5.506	-5.130	-.28160	.03430	.02080	-.00640	-.00010	-.00010	.03410	-.00030	.03260	.26050
5.512	-2.543	-.16230	.04340	.02050	-.00570	-.00010	-.00020	.04340	.00000	.03230	.26090
5.514	-.048	-.04680	.04630	.02080	-.00730	.00010	-.00020	.04620	-.00010	.03140	.26120
5.510	2.562	.07610	.04330	.02100	-.00710	.00020	-.00050	.04320	-.00010	.03230	.26120
5.509	5.045	.19180	.03430	.02110	-.00660	.00020	-.00060	.03430	.00000	.03170	.26130
5.504	7.657	.31950	.01960	.01960	-.00560	.00010	-.00070	.01940	-.00030	.03130	.26120
5.499	7.660	.31930	.01940	.01970	-.00590	.00020	-.00070	.01930	-.00010	.03160	.26110
5.502	7.659	.32220	.01910	.01970	-.00730	.00020	-.00090	.01890	-.00020	.03130	.26130
5.496	7.662	.32160	.01900	.01990	-.00760	.00020	-.00080	.01880	-.00020	.03180	.26110
5.493	10.194	.45130	.00060	.01870	-.00790	.00040	-.00120	.00050	-.00010	.03220	.26110
5.482	12.761	.57650	-.01960	.02200	-.00730	.00060	-.00140	-.01980	-.00020	.03370	.26070
5.472	15.319	.71290	-.04230	.02210	-.01020	.00190	-.00050	-.04240	-.00010	.03620	.26030
5.475	18.422	.89170	-.07030	.01320	-.01380	.00480	-.00090	-.07050	-.00020	.03940	.26060
5.467	-.039	-.04690	.04630	.02060	-.00750	.00010	-.00040	.04590	-.00040	.03270	.26060

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (ANG001) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 1/ 0 RN/L = 1.77

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
1.774	-.001	-.05980	.06790	.04360	-.00050	-.00010	.00050	.06780	-.88090	.67470	.00010
1.766	-.007	-.05710	.06790	.04360	-.00020	-.00010	.00050	.06780	-.84170	.67570	.00010
1.769	-.008	-.06150	.06760	.04480	.00140	.00000	.00050	.06740	-.90910	.67460	-.00020

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG002) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 5/ 0 RN/L = 2.41

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
2.408	-.021	-.05420	.06540	.05340	-.01740	-.00070	-.00090	.06510	-.82860	.68250	.00430
2.406	-.021	-.05430	.06530	.05320	-.01580	-.00070	-.00080	.06500	-.83110	.68230	.00400
2.402	-.020	-.05340	.06540	.05320	-.01530	-.00060	-.00080	.06520	-.81690	.68290	.00390

RUN NO. 4/ 0 RN/L = 3.01

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
3.016	-.023	-.06150	.06560	.05060	-.01170	-.00040	-.00080	.06470	-.93660	.67760	.00350
3.004	-.016	-.05920	.06540	.05120	-.01150	-.00030	-.00070	.06490	-.90550	.67880	.00340
3.010	-.025	-.05790	.06570	.05070	-.01080	-.00040	-.00070	.06530	-.88150	.67920	.00340

RUN NO. 3/ 0 RN/L = 5.53

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.522	-.026	-.06670	.06550	.04780	-.00580	.00000	-.00040	.06540	-1.01900	.67430	.00290
5.550	-.033	-.06820	.06560	.04790	-.00680	.00010	-.00040	.06540	-1.03950	.67390	.00340
5.543	-.030	-.06850	.06580	.04800	-.00660	.00000	-.00030	.06580	-1.04040	.67380	.00350
5.521	-.033	-.06780	.06590	.04800	-.00680	-.00020	-.00030	.06550	-1.02890	.67400	.00380

RUN NO. 2/ 0 RN/L = 8.08

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
8.081	-.031	-.07610	.06400	.04770	-.00650	.00030	-.00030	.06380	-1.18920	.67150	.00430
8.086	-.032	-.07700	.06400	.04780	-.00630	.00020	-.00040	.06380	-1.20330	.67130	.00440
8.063	-.030	-.07500	.06410	.04760	-.00680	.00030	-.00030	.06390	-1.16970	.67180	.00460

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (ANG003) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 6/ 0 RN/L = 3.02

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
3.025	-.017	.13510	.07630	-.04430	-.00520	-.00060	-.00010	.07610	1.77040	.66240	.00190
3.027	-.010	.13550	.07620	-.04420	-.00420	-.00050	.00000	.07620	1.77850	.66230	.00160
3.023	-.010	.13600	.07680	-.04430	-.00340	-.00050	.00000	.07640	1.77020	.66230	.00130

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (ANG004) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 7/ 0 RN/L = 3.00

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
3.008	-.043	-.03160	.06630	.02400	-.00550	-.00040	-.00060	.06610	-.47640	.67550	.00190
3.007	-.043	-.03150	.06610	.02390	-.00410	-.00040	-.00060	.06590	-.47650	.67550	.00150
2.999	-.043	-.03240	.06610	.02420	-.00450	-.00040	-.00060	.06590	-.49020	.67520	.00160
3.003	-.039	-.03100	.06620	.02370	-.00310	-.00030	-.00060	.06600	-.46860	.67570	.00110

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (ANG005) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 9/ 0 RN/L = 3.01

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
3.023	-.073	-.02520	.06740	.02340	-.00600	-.00020	-.00040	.06630	-.37480	.68070	.00190
3.012	-.073	-.02570	.06760	.02360	-.00530	-.00030	-.00040	.06660	-.37970	.68040	.00170
3.008	-.073	-.02630	.06700	.02370	-.00660	-.00040	-.00030	.06650	-.39290	.67990	.00220

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG005) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 8/ 0 RN/L = 5.51

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.504	-.061	-.03220	.06690	.02300	-.00580	-.00020	-.00040	.06640	-.48220	.67410	.00330
5.507	-.066	-.02990	.06660	.02310	-.00610	-.00010	-.00040	.06630	-.44850	.67590	.00340
5.505	-.066	-.02990	.06650	.02320	-.00650	-.00020	-.00030	.06630	-.44870	.67610	.00370

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG006) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 11/ 0 RN/L = 3.01

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
3.017	-.131	-.06400	.06590	.04650	-.00450	-.00010	-.00030	.06570	-.97230	.67450	.00140
3.005	-.128	-.06410	.06610	.04680	-.00590	.00000	-.00020	.06590	-.97000	.67470	.00170
3.002	-.128	-.06450	.06600	.04690	-.00650	-.00010	-.00030	.06580	-.97640	.67460	.00200

RUN NO. 10/ 0 RN/L = 5.52

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.523	-.112	-.07110	.06580	.04710	-.00460	-.00010	-.00040	.06570	-1.08100	.67260	.00270
5.531	-.120	-.07260	.06590	.04760	-.00540	.00010	-.00020	.06580	-1.10120	.67240	.00270
5.518	-.129	-.07250	.06580	.04760	-.00460	.00000	-.00030	.06560	-1.10260	.67240	.00240

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG007) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 13/ 0 RN/L = 3.02

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
3.020	.055	.13880	.07710	-.04550	-.00230	-.00010	-.00030	.07680	1.80130	.66230	.00080
3.014	.052	.13910	.07700	-.04530	-.00160	-.00010	-.00040	.07670	1.80530	.66230	.00050
3.013	.052	.13930	.07690	-.04560	-.00250	-.00010	-.00050	.07670	1.81130	.66230	.00080

RUN NO. 12/ 0 RN/L = 5.55

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.543	.071	.13380	.07750	-.04590	-.00290	-.00020	-.00060	.07730	1.72600	.66280	.00190
5.545	.068	.13430	.07730	-.04600	-.00390	-.00020	-.00050	.07730	1.73870	.66280	.00240
5.556	.071	.13320	.07770	-.04570	-.00320	-.00010	-.00050	.07750	1.71430	.66280	.00200

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG008) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 14/ 0 RN/L = 5.54

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.544	9.808	.58850	.12580	-.05160	-.00380	.00050	-.00100	.12580	4.67800	.65490	.00040
5.557	9.789	.58860	.12600	-.05180	-.00350	.00040	-.00100	.12590	4.67000	.65500	.00050
5.530	9.785	.59100	.12600	-.05160	-.00360	.00050	-.00110	.12580	4.68900	.65490	.00030
5.523	9.781	.58840	.12560	-.05170	-.00420	.00050	-.00120	.12550	4.68350	.65500	.00060

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG009) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 18/ 0 RN/L = 2.42

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
2.419	9.841	.39270	.08670	.03820	-.01120	-.00010	-.00120	.08660	4.52800	.64940	.00230
2.416	9.844	.39200	.08680	.03880	-.01140	-.00020	-.00120	.08660	4.51540	.64930	.00240
2.416	9.844	.39270	.08680	.03820	-.01090	-.00010	-.00130	.08670	4.52260	.64940	.00220

RUN NO. 17/ 0 RN/L = 3.02

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
3.025	9.847	.39370	.08720	.03910	-.00700	.00010	-.00120	.08720	4.51320	.64930	.00140
3.021	9.844	.39410	.08760	.03910	-.00780	.00030	-.00130	.08730	4.49840	.64930	.00150
3.023	9.845	.39470	.08740	.03920	-.00780	.00000	-.00130	.08750	4.51450	.64930	.00170
3.016	9.842	.39190	.08780	.03960	-.00980	.00000	-.00130	.08760	4.46470	.64930	.00230

RUN NO. 16/ 0 RN/L = 5.55

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.552	9.722	.39250	.08650	.04120	-.00570	.00010	-.00120	.08630	4.53600	.64920	.00210
5.549	9.729	.39160	.08640	.04120	-.00590	.00000	-.00120	.09610	4.53210	.64920	.00220
5.551	9.726	.39180	.08640	.04100	-.00510	.00000	-.00120	.08610	4.53360	.64920	.00180

RUN NO. 15/ 0 RN/L = 8.10

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
8.109	9.893	.40450	.08710	.04070	-.00410	.00050	-.00110	.08690	4.64230	.64930	.00080
8.105	9.893	.40440	.08710	.04080	-.00260	.00040	-.00090	.08690	4.64150	.64930	.00000
8.086	9.892	.40450	.08710	.04070	-.00250	.00040	-.00120	.08690	4.64680	.64930	-.00020

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (ANG010) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 19/ 0 RN/L = 5.53

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.534	9.812	.43650	.09460	.01570	-.00400	.00040	-.00120	.09430	4.61220	.65120	.00060
5.525	9.812	.43680	.09470	.01590	-.00400	.00030	-.00120	.09450	4.61470	.65120	.00070
5.525	9.809	.43590	.09480	.01570	-.00440	.00020	-.00120	.09450	4.59630	.65120	.00110

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (ANG011) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 20/ 0 RN/L = 5.55

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.553	14.876	.67720	.15500	.01590	-.00730	.00140	-.00020	.15490	4.36840	.65160	.00100
5.551	14.876	.67510	.15460	.01630	-.00890	.00150	-.00010	.15440	4.36810	.65160	.00190
5.558	14.878	.67670	.15470	.01600	-.00750	.00140	-.00020	.15460	4.37320	.65160	.00130
5.535	14.879	.67450	.15380	.01610	-.00860	.00170	-.00020	.15350	4.38560	.65160	.00140

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (ANG012) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 23/ 0 RN/L = 2.41

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
2.428	15.248	.66430	.15700	.03750	-.01190	.00060	-.00040	.15690	4.23100	.65060	.00210
2.415	15.245	.66730	.15790	.03780	-.00980	.00070	-.00040	.15770	4.22510	.65060	.00150
2.388	15.234	.66560	.15750	.03850	-.01160	.00050	-.00060	.15750	4.22690	.65060	.00200

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG012) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 22/ 0 RN/L = 5.55

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.572	15.057	.65730	.15100	.04060	-.00880	.00180	-.00010	.15060	4.35360	.65050	.00130
5.554	15.064	.65500	.15060	.04030	-.00800	.00180	-.00010	.15040	4.34960	.65050	.00090
5.540	15.077	.65570	.15100	.04060	-.00810	.00190	.00010	.15070	4.34240	.65050	.00100
5.524	15.077	.65670	.15140	.04080	-.00700	.00160	-.00020	.15110	4.33680	.65050	.00070

RUN NO. 21/ 0 RN/L = 8.08

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
8.072	15.038	.65570	.14840	.04160	-.00970	.00190	-.00020	.14810	4.41720	.65040	.00210
8.087	15.038	.65510	.14820	.04150	-.00810	.00180	-.00010	.14800	4.41930	.65040	.00130
8.074	15.039	.65730	.14890	.04190	-.01060	.00190	-.00010	.14890	4.41450	.65040	.00320

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG013) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 24/ 0 RN/L = 5.55

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.554	15.457	.86420	.21260	-.05180	-.00780	.00240	.00030	.21230	4.06410	.65410	.00010
5.544	15.461	.86190	.21200	-.05170	-.00970	.00240	.00020	.21180	4.06490	.65410	.00100

ARC 12-078/0A159 03 WITH GROUND PLANE (ANG014) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 25/ 0 RN/L = 5.54

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.596	.054	.14330	.06600	-.05960	-.00290	-.00020	-.00060	.06570	2.16940	.66510	.00180
5.583	2.092	.23790	.07110	-.05930	-.00420	.00000	-.00070	.07090	3.34400	.65990	.00210
5.561	4.146	.33420	.07930	-.06020	-.00430	.00000	-.00070	.07910	4.21320	.65780	.00220
5.549	6.213	.43590	.09120	-.06120	-.00450	.00020	-.00090	.09100	4.77760	.65650	.00180
5.547	8.268	.53110	.10690	-.06260	-.00490	.00030	-.00090	.10650	4.96960	.65590	.00170
5.519	10.326	.62970	.12770	-.06230	-.00360	.00040	-.00130	.12750	4.92950	.65530	.00040
5.509	12.407	.72660	.15520	-.06000	-.00390	.00050	-.00120	.15490	4.68320	.65480	.00020
5.489	14.446	.82250	.18760	-.06180	-.00750	.00130	-.00040	.18740	4.38460	.65460	.00140
5.480	15.486	.87670	.20860	-.06260	-.00930	.00190	.00020	.20840	4.20190	.65440	.00200

ARC 12-078/0A159 03 WITH GROUND PLANE (ANG015) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 28/ 0 RN/L = 2.40

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
2.404	.004	-.05920	.05590	.03260	-.01010	.00030	-.00040	.05570	-1.05970	.66920	.00220
2.419	1.986	.02540	.05400	.03350	-.01140	.00020	-.00040	.05370	.46980	.61460	.00260
2.399	4.119	.11990	.05480	.03180	-.01200	.00040	-.00060	.05450	2.18790	.64440	.00250
2.397	6.063	.21120	.06010	.02980	-.01180	.00060	-.00070	.06000	3.51270	.64810	.00230
2.393	8.105	.31150	.06920	.02760	-.01030	.00090	-.00090	.06900	4.50420	.64970	.00170
2.396	9.855	.40260	.08180	.02530	-.00890	.00110	-.00100	.08170	4.91950	.65040	.00110
2.391	12.107	.50480	.10200	.02740	-.01090	.00120	-.00130	.10170	4.94720	.65070	.00130
2.387	14.129	.59390	.12600	.02760	-.01080	.00150	-.00090	.12560	4.71200	.65090	.00110
2.385	15.255	.65370	.14540	.02840	-.00930	.00170	-.00070	.14520	4.49670	.65100	.00060
2.389	.042	-.06060	.05550	.03220	-.00960	.00070	-.00030	.05530	-1.09170	.66860	.00180
2.387	.012	-.06440	.05510	.03170	-.01080	.00050	-.00030	.05500	-1.16820	.66740	.00220

ARC 12-078/OA159 03 WITH GROUND PLANE (ANG015) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 27/ 0 RN/L = 5.50

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.552	.019	-.05900	.05460	.03230	-.00570	.00000	-.00030	.05440	-1.08040	.66910	.00320
5.515	4.141	.13080	.05580	.03150	-.00590	.00020	-.00040	.05560	2.34570	.64510	.00280
5.515	6.095	.22260	.06060	.03090	-.00400	.00010	-.00050	.06030	3.67580	.64810	.00180
5.509	8.150	.32110	.06940	.02860	-.00540	.00050	-.00050	.06930	4.62600	.64960	.00190
5.509	9.736	.40310	.08080	.02760	-.00520	.00050	-.00080	.08060	4.98710	.65030	.00150
5.477	12.319	.52510	.10560	.03010	-.00540	.00080	-.00100	.10540	4.97220	.65060	.00070
5.469	14.377	.62450	.13270	.03050	-.00650	.00150	-.00030	.13260	4.70430	.65080	.00060
5.475	15.067	.65750	.14390	.02960	-.00730	.00190	-.00010	.14340	4.57050	.65100	.00060

RUN NO. 26/ 0 RN/L = 7.99

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
8.090	-.048	-.06290	.05430	.03230	-.00420	-.00010	-.00020	.05430	-1.15900	.66800	.00360
8.057	4.134	.12990	.05540	.03180	-.00420	.00000	-.00050	.05520	2.34520	.64500	.00310
8.028	6.245	.23480	.06110	.03070	-.00340	.00010	-.00050	.06100	3.84000	.64840	.00230
8.020	8.312	.33570	.07080	.02860	-.00300	.00020	-.00070	.07080	4.74010	.64980	.00130
7.971	9.887	.41600	.08230	.02780	-.00310	.00050	-.00090	.08210	5.05250	.65030	.00040
7.967	12.486	.53580	.10700	.03060	-.00390	.00070	-.00060	.10690	5.00710	.65060	.00050
7.924	14.599	.63720	.13610	.03060	-.00650	.00170	.00020	.13580	4.68050	.65090	.00110
7.925	14.931	.65730	.14230	.03040	-.00690	.00200	.00010	.14210	4.61760	.65090	.00050
7.910	15.070	.66470	.14450	.03050	-.00740	.00210	.00030	.14420	4.59870	.65090	.00090

ARC 12-078/0A159 03 WITH GROUND PLANE (ANG016) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 29/ 0 RN/L = 5.54

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.594	-.009	-.01310	.05440	.00760	-.00430	-.00030	-.00030	.05430	-.23990	.67010	.00290
5.588	2.025	.08130	.05490	.00700	-.00410	-.00020	-.00040	.05490	1.48080	.64970	.00250
5.579	4.130	.17660	.05890	.00630	-.00410	-.00010	-.00040	.05870	3.00070	.65120	.00230
5.551	6.209	.27790	.06610	.00540	-.00370	.00010	-.00050	.06590	4.20110	.65170	.00160
5.544	8.201	.37850	.07730	.00310	-.00380	.00020	-.00070	.07720	4.89800	.65210	.00130
5.534	9.978	.46290	.09110	.00290	-.00340	.00050	-.00090	.09100	5.08210	.65210	.00040
5.494	12.244	.56540	.11410	.00560	-.00410	.00060	-.00120	.11400	4.95570	.65200	.00030
5.515	14.448	.67040	.14520	.00580	-.00710	.00140	-.00030	.14500	4.61710	.65210	.00110
5.512	15.495	.72650	.16400	.00450	-.00830	.00210	.00000	.16380	4.42960	.65210	.00070
5.478	.039	-.01240	.05420	.00750	-.00350	-.00020	-.00020	.05400	-.22860	.67090	.00220

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (ANG017) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 30/ 0 RN/L = 5.60

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.596	15.659	.68690	.15500	.03260	-.09160	.01230	-.01460	.15480	4.43050	.65090	5.79980
5.597	15.658	.68880	.15560	.03260	-.08930	.01240	-.01440	.15530	4.42640	.65090	5.79860
5.592	15.663	.68760	.15570	.03260	-.09060	.01220	-.01430	.15510	4.41640	.65090	5.79970
5.600	15.666	.68860	.15570	.03250	-.08980	.01230	-.01430	.15530	4.42300	.65090	5.79910

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG018) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 31/ 0 RN/L = 5.56

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.571	10.116	.41780	.08880	.03280	-.09080	.00920	-.01340	.08860	4.70530	.65000	5.93580
5.563	10.112	.41650	.08840	.03290	-.09120	.00930	-.01330	.08810	4.71350	.64990	5.93590
5.550	10.099	.41730	.08840	.03300	-.08930	.00940	-.01340	.08810	4.71850	.64990	5.93500

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (ANG019) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 32/ 0 RN/L = 5.59

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.592	-.088	-.06280	.06070	.03950	-.08960	.00610	-.00490	.06030	-1.03410	.67160	6.03910
5.593	-.089	-.06290	.06050	.03900	-.09260	.00580	-.00500	.06030	-1.03990	.67130	6.04110
5.593	-.088	-.06240	.06060	.03940	-.09240	.00580	-.00500	.06020	-1.03020	.67170	6.04110

ARC 12-078/0A159 03 WITH GROUND PLANE (ANG020) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 33/ 0 RN/L = 5.51

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.597	-.070	-.05280	.05020	.02490	-.09470	.00580	-.00450	.04980	-1.05110	.66680	6.04160
5.568	2.064	.04030	.04950	.02430	-.09520	.00630	-.00610	.04910	.81430	.63460	6.03720
5.532	4.119	.12250	.05080	.01980	-.09360	.00690	-.00750	.05060	2.40980	.64750	6.02370
5.524	6.199	.21840	.05670	.01740	-.09310	.00760	-.00870	.05650	3.84930	.64990	6.00260
5.524	8.274	.32230	.06680	.01720	-.09210	.00830	-.01050	.06630	4.82810	.65070	5.97290
5.493	10.083	.40960	.07810	.01730	-.09120	.00950	-.01260	.07770	5.24340	.65100	5.93870
5.490	10.080	.41020	.07820	.01730	-.09090	.00960	-.01260	.07780	5.24820	.65100	5.93840
5.471	12.402	.52250	.09960	.01620	-.09200	.01140	-.01470	.09940	5.24420	.65140	5.88680
5.467	14.414	.61720	.12370	.01790	-.09120	.01200	-.01490	.12340	4.99020	.65140	5.83640
5.454	15.637	.67720	.14330	.01740	-.09100	.01260	-.01440	.14300	4.72520	.65150	5.80280
5.446	15.635	.67610	.14260	.01730	-.09070	.01260	-.01440	.14270	4.74080	.65150	5.80260

ARC 12-078/0A159 03 W/O GROUND PLANE (ANG021) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 36/ 0 RN/L = 2.40

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
2.431	-9.075	-.45770	.09840	.02870	-.00830	.00110	.00070	.09820	-4.65040	.65420	.00080
2.408	-7.535	-.38220	.08490	.02780	-.00890	.00040	.00020	.08460	-4.50350	.65450	.00160
2.400	-5.030	-.27080	.06960	.02660	-.00890	-.00020	-.00020	.06940	-3.88970	.65530	.00210
2.400	-2.540	-.15320	.06010	.02800	-.00980	-.00030	-.00040	.05980	-2.54940	.65780	.00240
2.403	-.040	-.04920	.05510	.02720	-.01000	-.00020	-.00050	.05490	-.89330	.66930	.00240
2.404	2.525	.06480	.05420	.03010	-.01050	-.00020	-.00060	.05410	1.19720	.63860	.00250
2.406	5.033	.18360	.05840	.02900	-.01110	-.00020	-.00090	.05820	3.14240	.64760	.00260
2.402	7.565	.30140	.06750	.02530	-.01210	-.00010	-.00110	.06730	4.46650	.64980	.00260
2.400	7.562	.30020	.06770	.02690	-.01090	.00000	-.00120	.06760	4.43280	.64960	.00230
2.399	7.563	.30390	.06820	.02630	-.01160	-.00010	-.00120	.06810	4.45280	.64970	.00250
2.397	7.563	.30130	.06840	.02720	-.01210	-.00020	-.00110	.06810	4.40210	.64960	.00270
2.386	10.038	.42070	.08410	.02320	-.01100	-.00030	-.00110	.08400	5.00260	.65070	.00240
2.380	12.654	.54580	.11120	.02530	-.01140	.00020	-.00180	.11110	4.90780	.65090	.00180
2.378	15.094	.66460	.14650	.02640	-.01230	.00060	-.00120	.14650	4.53470	.65110	.00190
2.377	18.137	.82810	.20990	.02070	-.01390	.00160	-.00020	.20960	3.94630	.65160	.00190
2.398	-.003	-.04280	.05640	.02910	-.00870	-.00050	-.00040	.05630	-.75940	.67320	.00240

RUN NO. 35/ 0 RN/L = 5.50

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.525	-9.179	-.46270	.09560	.03170	-.00560	.00010	-.00050	.09540	-4.83930	.65440	.00300
5.515	-7.678	-.39640	.08490	.03070	-.00380	-.00010	-.00040	.08460	-4.67000	.65460	.00220
5.513	-5.138	-.28180	.07070	.02970	-.00480	-.00010	-.00040	.07040	-3.98430	.65550	.00280
5.519	-2.574	-.16780	.06150	.02950	-.00480	-.00020	-.00040	.06130	-2.72670	.65760	.00280
5.515	-.047	-.05280	.05660	.02950	-.00480	-.00010	-.00050	.05630	-.93170	.66950	.00270
5.501	2.527	.06370	.05590	.03000	-.00420	-.00010	-.00050	.05580	1.13850	.63840	.00230
5.507	5.102	.18250	.06000	.02980	-.00540	.00000	-.00070	.05980	3.03990	.64740	.00260
5.502	7.653	.30480	.06900	.02850	-.00400	.00000	-.00070	.06910	4.41700	.64950	.00180
5.505	7.657	.30450	.06920	.02830	-.00370	.00000	-.00070	.06910	4.39980	.64950	.00160
5.491	7.652	.30370	.06900	.02820	-.00440	.00000	-.00070	.06880	4.40120	.64950	.00190
5.493	7.656	.30340	.06910	.02810	-.00390	.00010	-.00070	.06880	4.39290	.64950	.00150
5.479	10.214	.43420	.08690	.02680	-.00420	.00030	-.00120	.08670	4.99900	.65050	.00090
5.465	12.780	.55460	.11380	.02960	-.00520	.00070	-.00140	.11360	4.87530	.65070	.00030
5.454	15.351	.68720	.15280	.02880	-.00830	.00160	-.00060	.15230	4.49820	.65110	.00090
5.506	18.427	.85190	.21950	.01920	-.00970	.00360	-.00050	.21890	3.88090	.65160	-.00240
5.495	-.012	-.05360	.05540	.02960	-.00430	-.00010	-.00050	.05540	-.96630	.66930	.00240

ARC 12-078/OA159 03 W/O GROUND PLANE (ANG021) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 34/ 0 RN/L = 8.00

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
8.040	-9.311	-.47310	.09650	.03290	-.00430	-.00010	-.00040	.09610	-4.90440	.65440	.00380
8.022	-7.729	-.40200	.08410	.03170	-.00430	.00000	-.00030	.08380	-4.78070	.65470	.00350
7.986	-5.253	-.28960	.07020	.03050	-.00340	-.00030	-.00020	.07000	-4.12760	.65550	.00330
8.011	-2.582	-.17130	.06060	.02980	-.00470	-.00020	-.00040	.06040	-2.82610	.65760	.00410
8.023	-.011	-.05400	.05570	.02960	-.00460	-.00020	-.00030	.05570	-.96780	.66920	.00390
8.019	2.576	.06610	.05530	.02990	-.00490	-.00010	-.00050	.05520	1.19660	.63900	.00380
8.030	5.107	.18280	.05960	.02930	-.00420	.00000	-.00070	.05930	3.06980	.64750	.00300
8.018	7.729	.31400	.06950	.02780	-.00510	.00030	-.00100	.06940	4.51600	.64970	.00250
8.013	7.729	.31390	.06990	.02770	-.00290	.00010	-.00080	.06950	4.49230	.64970	.00130
7.998	7.732	.31480	.06960	.02790	-.00400	.00010	-.00100	.06950	4.52260	.64970	.00200
8.006	7.733	.31460	.06950	.02800	-.00420	.00030	-.00080	.06930	4.52900	.64960	.00200
7.994	10.319	.44340	.08830	.02700	-.00420	.00050	-.00120	.08790	5.02260	.65050	.00080
7.978	12.949	.56700	.11560	.03020	-.00380	.00070	-.00100	.11560	4.90460	.65070	-.00030
7.937	15.531	.70580	.15740	.02960	-.00840	.00210	-.00020	.15700	4.48490	.65110	.00070
7.930	18.646	.88110	.23000	.02000	-.01360	.00530	.00000	.22960	3.83000	.65160	-.00470
7.982	-.019	-.05220	.05550	.02980	-.00460	.00000	-.00040	.05520	-.94180	.66980	.00370

ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE (ANG022) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 40/ 0 RN/L = 2.38

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
2.395	-9.042	-.45750	.09920	.02990	-.00480	.00160	.00070	.09890	-4.61160	.65430	-.00040
2.387	-7.513	-.38460	.08590	.02830	-.00310	.00090	.00030	.08560	-4.47740	.65450	-.00010
2.383	-4.976	-.26660	.06970	.02700	-.00180	.00030	-.00010	.06950	-3.82230	.65540	.00020
2.371	-2.544	-.15910	.06090	.02810	-.00140	.00030	-.00030	.06070	-2.61290	.65760	.00010
2.378	-.006	-.04160	.05610	.02820	-.00300	.00030	-.00030	.05570	-.74060	.67310	.00050
2.377	2.474	.06400	.05500	.03030	-.00400	.00020	-.00040	.05490	1.16260	.63830	.00070
2.382	4.956	.18090	.05930	.02910	-.00510	.00030	-.00070	.05900	3.04960	.64750	.00090
2.381	7.491	.30220	.06880	.02710	-.00550	.00040	-.00100	.06860	4.39350	.64960	.00080
2.376	10.034	.42270	.08480	.02350	-.00420	.00060	-.00120	.08480	4.98280	.65060	.00020
2.371	12.574	.54290	.11040	.02640	-.00430	.00070	-.00150	.11040	4.91630	.65090	-.00010
2.367	15.083	.65860	.14510	.02590	-.00660	.00110	-.00100	.14480	4.53960	.65110	.00030
2.369	18.105	.82460	.20880	.02140	-.00840	.00240	.00000	.20830	3.94880	.65150	.00010
2.375	.000	-.04390	.05670	.02910	-.00350	-.00020	-.00040	.05650	-.77400	.67260	.00090

RUN NO. 39/ 0 RN/L = 3.98

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
4.016	-9.130	-.45840	.09540	.02980	-.00350	.00020	-.00010	.09510	-4.80530	.65430	.00100
3.993	-7.639	-.39160	.08420	.02790	-.00330	.00020	-.00020	.08410	-4.64920	.65450	.00110
3.988	-5.112	-.27810	.07020	.02740	-.00220	.00000	-.00020	.06980	-3.96290	.65530	.00090
3.981	-2.562	-.16340	.06130	.02780	-.00320	.00000	-.00040	.06080	-2.66620	.65750	.00130
3.975	.003	-.04640	.05630	.02830	-.00440	.00010	-.00050	.05590	-.82510	.67100	.00160
3.982	2.500	.06420	.05570	.02940	-.00480	.00010	-.00060	.05570	1.15140	.63880	.00160
3.984	5.015	.18190	.05980	.02840	-.00460	.00020	-.00080	.05950	3.04200	.64760	.00140
3.975	7.601	.30410	.06950	.02730	-.00420	.00040	-.00110	.06920	4.37720	.64960	.00080
3.982	10.135	.42750	.08690	.02510	-.00380	.00040	-.00110	.08660	4.91810	.65050	.00040
3.970	12.710	.55140	.11330	.02860	-.00420	.00070	-.00150	.11300	4.86690	.65080	-.00020
3.973	15.187	.67740	.15010	.02870	-.00530	.00130	-.00070	.14990	4.51170	.65100	-.00010
3.968	18.240	.84080	.21300	.01960	-.00690	.00300	-.00010	.21260	3.94810	.65160	-.00160
3.978	-.063	-.05130	.05650	.02850	-.00440	.00010	-.00040	.05620	-.90870	.66930	.00160

ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE (ANG022) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 38/ 0 RN/L = 5.47

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.525	-9.178	-.46240	.09530	.03070	-.00320	.00020	-.00040	.09510	-4.85180	.65430	.00160
5.514	-7.585	-.38940	.08330	.02940	-.00310	.00010	-.00030	.08300	-4.67540	.65460	.00170
5.486	-5.185	-.28400	.07040	.02830	-.00240	.00000	-.00020	.07020	-4.03310	.65530	.00130
5.492	-2.632	-.16720	.06150	.02800	-.00360	.00000	-.00030	.06120	-2.72050	.65740	.00200
5.490	-.062	-.05020	.05690	.02770	-.00360	.00000	-.00040	.05670	-.88250	.66920	.00190
5.478	2.526	.06830	.05660	.02880	-.00390	.00010	-.00050	.05640	1.20630	.63980	.00190
5.478	5.155	.19190	.06120	.02860	-.00420	.00010	-.00060	.06100	3.13640	.64780	.00190
5.469	7.678	.31000	.07070	.02700	-.00300	.00010	-.00060	.07050	4.38220	.64970	.00120
5.471	10.234	.44330	.08950	.02630	-.00410	.00050	-.00120	.08930	4.95410	.65050	.00050
5.435	12.746	.56150	.11570	.02910	-.00370	.00060	-.00120	.11530	4.85180	.65080	-.00020
5.420	15.352	.69810	.15600	.02850	-.00530	.00160	-.00050	.15550	4.47540	.65110	-.00050
5.403	18.378	.85810	.22120	.01980	-.00950	.00350	-.00050	.22080	3.87950	.65160	-.00240
5.432	.004	-.04650	.05660	.02860	-.00300	.00000	-.00030	.05640	-.82140	.67120	.00160

RUN NO. 37/ 0 RN/L = 8.00

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
8.071	-9.341	-.47170	.09630	.03160	-.00530	.00010	-.00030	.09610	-4.89650	.65430	.00410
8.048	-7.749	-.40120	.08410	.03050	-.00390	-.00010	-.00030	.08390	-4.77240	.65460	.00340
8.033	-5.202	-.28520	.07040	.02910	-.00330	-.00030	-.00020	.07000	-4.05390	.65540	.00320
8.001	-2.621	-.16870	.06110	.02880	-.00340	-.00020	-.00030	.06080	-2.76010	.65750	.00310
8.021	.008	-.04850	.05640	.02840	-.00420	.00000	-.00030	.05620	-.85960	.67030	.00340
8.017	2.589	.07030	.05630	.02880	-.00470	.00000	-.00050	.05600	1.24870	.64020	.00350
8.009	5.093	.18810	.06070	.02860	-.00410	.00000	-.00080	.06060	3.10070	.64780	.00270
8.011	7.719	.31800	.07090	.02720	-.00350	.00020	-.00080	.07080	4.48610	.64970	.00160
7.991	10.299	.44750	.08990	.02660	-.00400	.00040	-.00120	.08950	4.97840	.65050	.00090
7.963	12.966	.57310	.11800	.03000	-.00360	.00060	-.00090	.11780	4.85440	.65070	.00010
7.948	15.507	.70630	.15820	.02940	-.00670	.00200	-.00020	.15810	4.46440	.65110	-.00040
7.921	18.682	.89030	.23390	.01970	-.01180	.00530	.00020	.23340	3.80620	.65170	-.00560
7.986	-.034	-.04900	.05620	.02890	-.00450	.00000	-.00040	.05600	-.87200	.67040	.00350

ARC 12-078/OA159 03 W/O GROUND PLANE (ANG023) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 43/ 0 RN/L = 2.38

RN/L	BETA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	ALPHA
2.406	8.940	.36230	.07060	.01980	-.16370	.01550	-.01770	.07060	5.12950	.65070	9.09730
2.403	7.480	.36150	.07110	.02240	-.14310	.01240	-.01490	.07080	5.08280	.65050	9.09630
2.393	5.001	.36440	.07290	.02470	-.09670	.00790	-.00980	.07250	5.00140	.65030	9.09470
2.393	2.481	.36410	.07410	.02820	-.05130	.00350	-.00500	.07380	4.91440	.65000	9.09470
2.380	-1.947	.36700	.07480	.02890	.03250	-.00380	.00210	.07500	4.90800	.64990	9.09560
2.380	-2.495	.36600	.07460	.02830	.04200	-.00460	.00300	.07460	4.90380	.65000	9.09560
2.380	-4.960	.36990	.07420	.02570	.08140	-.01020	.00800	.07410	4.98370	.65020	9.09800
2.374	-7.446	.37190	.07380	.02460	.13020	-.01520	.01370	.07340	5.04030	.65030	9.10140
2.376	-9.974	.37520	.07250	.02140	.18140	-.02130	.01960	.07210	5.17460	.65060	9.10670
2.368	-12.498	.37910	.07080	.01950	.22770	-.02660	.02390	.07030	5.35290	.65080	9.11240
2.365	-14.880	.38030	.06990	.01880	.26700	-.02970	.02690	.06920	5.43910	.65080	9.11810
2.366	-17.899	.37620	.07050	.01850	.31150	-.02960	.02870	.06940	5.33490	.65080	9.12380
2.367	.033	.36900	.07650	.03060	-.00550	-.00010	-.00100	.07610	4.82490	.64980	9.09670

RUN NO. 42/ 0 RN/L = 5.47

RN/L	BETA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	ALPHA
5.526	8.956	.38130	.07120	.02080	-.16290	.01630	-.01780	.07100	5.35440	.65070	9.24180
5.513	7.485	.37910	.07190	.02370	-.13670	.01370	-.01490	.07150	5.27090	.65040	9.23780
5.491	5.018	.38080	.07360	.02780	-.09150	.00850	-.00980	.07330	5.17580	.65010	9.23380
5.488	2.524	.38110	.07500	.03060	-.04640	.00400	-.00510	.07480	5.08110	.64990	9.23260
5.473	-.082	.38230	.07560	.03190	-.00160	-.00030	-.00030	.07540	5.05860	.64980	9.23260
5.466	-2.459	.38240	.07510	.03050	.04210	-.00430	.00420	.07510	5.09210	.64990	9.23300
5.472	-5.044	.38430	.07330	.02740	.08630	-.00940	.00920	.07300	5.24350	.65020	9.23730
5.461	-7.452	.38930	.07190	.02400	.13060	-.01420	.01460	.07140	5.41530	.65050	9.24460
5.445	-10.059	.39210	.07040	.02000	.18110	-.01970	.02000	.07000	5.57110	.65080	9.25380
5.451	-12.439	.39900	.06780	.01590	.22810	-.02570	.02490	.06710	5.88310	.65110	9.26900
5.442	-14.947	.39810	.06660	.01480	.26970	-.02830	.02730	.06580	5.97770	.65120	9.27990
5.441	-17.977	.39850	.06810	.01430	.31450	-.02930	.03020	.06710	5.85220	.65120	9.29740
5.439	.001	.38320	.07620	.03210	-.00240	-.00030	-.00070	.07600	5.02800	.64980	9.23430

ARC 12-078/OA159 03 W/O GROUND PLANE (ANG023) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1078.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 41/ 0 RN/L = 7.94

RN/L	BETA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	ALPHA
8.024	9.036	.38900	.06900	.01760	-.15680	.01510	-.01730	.06890	5.63580	.65090	9.35340
7.995	7.587	.39020	.07090	.02170	-.13270	.01310	-.01450	.07050	5.50430	.65060	9.34980
7.971	5.019	.38910	.07400	.02710	-.08710	.00840	-.00990	.07360	5.25540	.65020	9.34470
7.971	2.536	.38860	.07560	.03120	-.04440	.00420	-.00500	.07540	5.14290	.64990	9.34400
7.960	.041	.39040	.07590	.03270	-.00050	.00010	-.00040	.07590	5.14290	.64980	9.34550
7.952	-2.502	.39050	.07540	.03120	.04440	-.00410	.00430	.07550	5.17590	.64990	9.34600
7.934	-5.007	.39710	.07390	.02750	.09030	-.00880	.00970	.07390	5.37230	.65020	9.35280
7.933	-7.490	.40060	.07150	.02180	.13530	-.01330	.01460	.07120	5.60350	.65070	9.36040
7.913	-9.973	.40520	.06960	.01720	.17960	-.01850	.02010	.06900	5.82100	.65100	9.37390
7.899	-12.534	.40850	.06740	.01470	.22910	-.02520	.02560	.06650	6.06360	.65120	9.39500
7.881	-14.958	.41220	.06580	.01180	.27470	-.02980	.02910	.06500	6.26640	.65140	9.41420
7.877	-18.009	.41080	.06630	.01160	.32070	-.03070	.03150	.06540	6.20000	.65150	9.43750
7.904	.013	.39320	.07680	.03260	-.00110	.00000	-.00030	.07660	5.12250	.64980	9.34850

ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE (ANG024) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 44/ 0 RN/L = 5.47

RN/L	BETA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	ALPHA
5.494	9.122	.37860	.07130	.02070	-.16060	.01660	-.01790	.07110	5.31100	.65070	9.24010
5.516	8.928	.38000	.07160	.02120	-.15790	.01640	-.01760	.07140	5.30780	.65060	9.24320
5.518	7.465	.37470	.07190	.02390	-.13400	.01360	-.01460	.07170	5.20890	.65040	9.23750
5.498	5.026	.37660	.07410	.02750	-.08960	.00890	-.00980	.07370	5.08500	.65010	9.23360
5.487	2.500	.37940	.07580	.03030	-.04390	.00400	-.00510	.07550	5.00340	.64990	9.23290
5.478	.060	.37610	.07600	.03120	-.00110	.00020	-.00070	.07590	4.95000	.64980	9.23050
5.477	-2.502	.37860	.07550	.03010	.04500	-.00410	.00420	.07550	5.01380	.64990	9.23310
5.464	-4.954	.38320	.07430	.02770	.08880	-.00900	.00910	.07390	5.15720	.65010	9.23750
5.460	-7.496	.38670	.07280	.02370	.13480	-.01410	.01470	.07240	5.31230	.65050	9.24460
5.463	-9.937	.38900	.07110	.01990	.18110	-.01920	.01980	.07050	5.47450	.65080	9.25440
5.441	-12.400	.39340	.06850	.01590	.23000	-.02540	.02480	.06790	5.73930	.65110	9.26790
5.432	-14.953	.39490	.06730	.01480	.27210	-.02820	.02730	.06660	5.86640	.65120	9.28060
5.410	-17.998	.39190	.06840	.01410	.31750	-.02920	.03020	.06750	5.72540	.65120	9.29390
5.432	-.023	.38100	.07640	.03140	.00160	.00000	-.00040	.07640	4.98830	.64980	9.23480

ARC 12-078/0A159 03 W/O GROUND PLANE (ANG025) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 45/ 0 RN/L = 5.44

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.458	-9.135	-.42500	.08760	.00650	-.00400	-.00030	.00000	.08760	-4.85070	.65280	.00230
5.463	-7.652	-.35680	.07820	.00490	-.00410	-.00040	-.00010	.07800	-4.56510	.65270	.00260
5.455	-5.131	-.24410	.06680	.00430	-.00470	-.00040	-.00020	.06640	-3.65500	.65280	.00300
5.460	-2.590	-.12930	.05960	.00370	-.00580	-.00020	-.00030	.05950	-2.17020	.65320	.00340
5.458	-.038	-.01290	.05680	.00350	-.00520	-.00010	-.00060	.05670	-.22680	.66070	.00290
5.459	2.542	.10610	.05820	.00350	-.00540	-.00010	-.00070	.05810	1.82360	.65130	.00300
5.448	5.112	.22370	.06420	.00260	-.00470	.00000	-.00080	.06410	3.48220	.65200	.00230
5.453	7.611	.34600	.07630	.00080	-.00440	.00020	-.00080	.07610	4.53630	.65220	.00170
5.439	7.608	.34760	.07620	.00090	-.00600	.00030	-.00080	.07610	4.56380	.65220	.00240
5.421	10.207	.47840	.09640	.00000	-.00670	.00070	-.00150	.09650	4.96420	.65230	.00140
5.413	12.700	.59570	.12550	.00270	-.00560	.00110	-.00150	.12540	4.74620	.65220	-.00010
5.405	15.283	.72600	.16590	.00300	-.00750	.00220	-.00060	.16590	4.37570	.65220	-.00050
5.417	18.386	.89390	.23550	-.00590	-.01320	.00510	.00030	.23550	3.79630	.65250	-.00240
5.417	-.039	-.01500	.05540	.00370	-.00580	-.00010	-.00050	.05530	-.27110	.65990	.00330

ARC 12-078/OA159 03 W/O GROUND PLANE (AN0026) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPOBRK = 25.000
MACH = .260

RUN NO. 47/ 0 RN/L = 4.01

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
4.033	-9.050	-.26840	.07840	-.05910	-.00480	-.00020	-.00040	.07810	-3.42360	.64580	.00200
4.023	-7.526	-.19720	.07160	-.06100	-.00440	-.00010	-.00040	.07120	-2.75480	.64320	.00180
4.016	-5.061	-.08740	.06490	-.06150	-.00400	-.00030	-.00050	.06470	-1.34660	.63200	.00190
4.010	-2.533	.02690	.06330	-.06250	-.00500	-.00020	-.00080	.06310	.42470	.73190	.00210
4.012	-.004	.14310	.06630	-.06320	-.00610	.00010	-.00100	.06600	2.15740	.66580	.00230
4.017	2.617	.26490	.07380	-.06330	-.00680	.00030	-.00110	.07350	3.59100	.65960	.00220
4.014	5.106	.38010	.08580	-.06310	-.00680	.00060	-.00140	.08560	4.43060	.65730	.00170
4.015	7.640	.50320	.10380	-.06420	-.00720	.00100	-.00120	.10370	4.84900	.65620	.00120
4.000	10.200	.62980	.13000	-.06440	-.00720	.00120	-.00140	.12980	4.84370	.65540	.00070
3.989	12.706	.74420	.16330	-.06210	-.00670	.00160	-.00180	.16330	4.55720	.65480	-.00040
3.988	15.196	.87140	.20820	-.06150	-.00840	.00230	-.00050	.20800	4.18490	.65440	.00000
3.991	18.271	1.02660	.28030	-.06790	-.01190	.00450	.00070	.27990	3.66190	.65430	-.00100
3.992	.010	.14700	.06600	-.06330	-.00480	.00000	-.00080	.06560	2.22690	.66550	.00190

RUN NO. 46/ 0 RN/L = 5.44

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.466	-9.179	-.27580	.07890	-.05900	-.00580	-.00020	-.00040	.07850	-3.49730	.64600	.00340
5.450	-7.601	-.20190	.07170	-.06070	-.00510	-.00030	-.00050	.07140	-2.81760	.64340	.00310
5.438	-5.099	-.09040	.06520	-.06150	-.00460	-.00040	-.00050	.06500	-1.38570	.63260	.00300
5.443	-2.548	.02480	.06370	-.06230	-.00570	-.00020	-.00080	.06340	.38920	.73940	.00330
5.453	.005	.14140	.06670	-.06290	-.00660	.00000	-.00090	.06640	2.12120	.66600	.00340
5.456	2.632	.26410	.07390	-.06320	-.00750	.00030	-.00090	.07360	3.57360	.65960	.00340
5.450	5.122	.38470	.08580	-.06370	-.00760	.00050	-.00090	.08570	4.48090	.65730	.00300
5.450	7.667	.50590	.10350	-.06490	-.00690	.00070	-.00120	.10340	4.88760	.65620	.00200
5.434	10.206	.62970	.12900	-.06540	-.00630	.00110	-.00140	.12880	4.88050	.65540	.00060
5.420	12.799	.75240	.16440	-.06230	-.00610	.00150	-.00180	.16410	4.57780	.65480	-.00090
5.407	15.381	.88160	.21180	-.06310	-.00890	.00280	-.00050	.21150	4.16190	.65440	-.00070
5.405	18.401	1.04260	.28670	-.06980	-.01500	.00540	.00100	.28620	3.63660	.65430	-.00100
5.432	.040	.14240	.06590	-.06320	-.00750	.00020	-.00090	.06560	2.16040	.66590	.00370

ARC 12-078/0A159 03 - N24 W/O GROUND PLANE (ANG027) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 48/ 0 RN/L = 5.51

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.526	-9.168	-.47050	.09640	.03330	-.00450	-.00010	-.00010	.09610	-4.88050	.65440	.00240
5.525	-7.643	-.40130	.08470	.03190	-.00480	-.00010	-.00010	.08470	-4.73750	.65470	.00250
5.524	-5.163	-.28950	.07110	.03060	-.00520	-.00010	-.00020	.07100	-4.07270	.65550	.00290
5.525	-2.646	-.17670	.06230	.03040	-.00620	.00000	-.00030	.06220	-2.83580	.65750	.00330
5.515	.010	-.05560	.05740	.03050	-.00640	.00000	-.00040	.05720	-.96790	.65910	.00340
5.518	2.500	.05770	.05660	.03100	-.00690	.00020	-.00060	.05650	1.01840	.63650	.00340
5.528	5.129	.18080	.06080	.03070	-.00670	.00040	-.00060	.06070	2.97390	.64720	.00290
5.513	7.590	.29870	.06960	.02960	-.00690	.00050	-.00080	.06960	4.29480	.64930	.00270
5.503	10.167	.43300	.08820	.02830	-.00620	.00080	-.00110	.08790	4.91100	.65030	.00140
5.493	12.807	.55820	.11630	.03160	-.00670	.00100	-.00120	.11630	4.79940	.65060	.00090
5.490	15.197	.68540	.15270	.03170	-.00870	.00230	-.00050	.15260	4.48910	.65090	.00010
5.492	18.352	.85170	.21860	.02440	-.01410	.00460	.00070	.21850	3.89620	.65150	-.00050
5.499	-.015	-.05400	.05720	.03070	-.00610	.00010	-.00040	.05710	-.94470	.66970	.00320

ARC 12-078/0A159 03 + STRUT TIPS W/O GROUNDPLANE. (ANG028) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 49/ 0 RN/L = 5.53

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.566	-.042	-.05260	.06370	.02750	-.00680	.00030	-.00030	.06370	-.82460	.66840	.00330
5.542	2.536	.06400	.06320	.02780	-.00730	.00040	-.00050	.06320	1.01240	.63960	.00330
5.523	5.090	.18300	.06740	.02740	-.00750	.00050	-.00070	.06720	2.71390	.64780	.00320
5.534	7.630	.30510	.07680	.02590	-.00580	.00060	-.00070	.07670	3.97470	.64980	.00200
5.511	10.212	.43750	.09520	.02500	-.00550	.00080	-.00110	.09520	4.59370	.65060	.00090
5.526	12.758	.55480	.12190	.02780	-.00600	.00110	-.00120	.12160	4.55190	.65080	.00030
5.523	15.255	.68470	.15900	.02820	-.00770	.00220	-.00030	.15870	4.30620	.65110	.00000
5.495	18.359	.85440	.22480	.02040	-.01260	.00490	.00080	.22450	3.80120	.65160	-.00170
5.512	-.044	-.05170	.06370	.02790	-.00660	.00030	-.00030	.06360	-.81090	.66880	.00310

ARC 12-078/0A159 03 W/O GROUND PLANE (ANG029) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = .000
MACH = .260

RUN NO. 50/ 0 RN/L = 5.50

RN/L	ALPHA	CL	CD	CLM	CY	CLN	CSL	CDU	L/D	XCP/L	BETA
5.536	-9.174	-.45740	.08380	.02340	-.00550	-.00010	.00000	.08370	-5.45720	.65390	.00270
5.522	-7.673	-.39070	.07280	.02190	-.00570	-.00010	.00000	.07270	-5.36610	.65400	.00290
5.506	-5.130	-.27740	.05940	.02080	-.00640	-.00010	-.00010	.05910	-4.67080	.65460	.00330
5.512	-2.543	-.16020	.05060	.02050	-.00570	-.00010	-.00020	.05050	-3.16930	.65620	.00320
5.514	-.048	-.04680	.04630	.02080	-.00730	.00010	-.00020	.04620	-1.00990	.66600	.00370
5.510	2.562	.07410	.04660	.02100	-.00710	.00020	-.00050	.04650	1.58980	.64380	.00350
5.509	5.045	.18800	.05110	.02110	-.00660	.00030	-.00060	.05110	3.68350	.64890	.00290
5.504	7.657	.31400	.06200	.01960	-.00560	.00020	-.00060	.06180	5.06200	.65040	.00250
5.499	7.660	.31380	.06180	.01970	-.00590	.00030	-.00060	.06160	5.08020	.65040	.00250
5.502	7.659	.31680	.06190	.01970	-.00730	.00030	-.00080	.06170	5.12110	.65040	.00310
5.496	7.662	.31620	.06170	.01990	-.00760	.00030	-.00070	.06150	5.12140	.65040	.00330
5.493	10.194	.44410	.08040	.01870	-.00790	.00060	-.00120	.08030	5.52240	.65100	.00250
5.482	12.761	.56660	.10820	.02200	-.00730	.00090	-.00120	.10810	5.23460	.65110	.00130
5.472	15.319	.69870	.14750	.02210	-.01020	.00200	.00000	.14750	4.73570	.65140	.00200
5.475	18.422	.86830	.21510	.01320	-.01380	.00490	.00070	.21490	4.03640	.65190	-.00120
5.467	-.039	-.04680	.04640	.02060	-.00750	.00010	-.00040	.04600	-1.00960	.66580	.00380

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG001) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 1/ 0 RN/L = 1.77

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
1.774	-.001	-.18300	-.18480	-.19570	-.18500	-.18900	-.19440	-.14630	-.17970	-.18640	98.84000
1.766	-.007	-.19110	-.19420	-.21180	-.19450	-.19980	-.19580	-.15840	-.18780	-.19450	98.84000
1.769	-.008	-.18600	-.19150	-.20130	-.19330	-.19330	-.20000	-.15480	-.18800	-.18400	99.34200

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG002) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 5/ 0 RN/L = 2.41

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
2.408	-.021	-.18030	-.19200	-.20570	-.19480	-.19480	-.19480	-.15590	-.17780	-.18280	132.86000
2.406	-.021	-.17720	-.18650	-.19750	-.18960	-.18860	-.19060	-.15200	-.17970	-.17480	133.87000
2.402	-.020	-.18400	-.18820	-.19590	-.19290	-.19790	-.18790	-.15020	-.18000	-.18790	133.66000

RUN NO. 4/ 0 RN/L = 3.01

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
3.016	-.023	-.12790	-.15790	-.17890	-.16060	-.16300	-.16140	-.10720	-.12710	-.12870	165.22000
3.004	-.016	-.15470	-.17180	-.19220	-.17540	-.17140	-.17700	-.12430	-.15390	-.15550	164.79000
3.010	-.025	-.16030	-.17270	-.19080	-.17500	-.17740	-.17580	-.12900	-.15680	-.16390	166.31000

RUN NO. 3/ 0 RN/L = 5.53

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.522	-.026	-.21180	-.21530	-.22130	-.21520	-.21960	-.22480	-.18440	-.21090	-.21260	305.41000
5.550	-.033	-.19340	-.19860	-.21100	-.19850	-.20790	-.20240	-.16180	-.19260	-.19430	309.51000
5.543	-.030	-.18910	-.19010	-.20720	-.18890	-.18760	-.20040	-.15560	-.18500	-.19320	310.03000
5.521	-.033	-.18720	-.19810	-.21210	-.19880	-.19960	-.19920	-.17260	-.18720	-.18720	308.51000

RUN NO. 2/ 0 RN/L = 8.08

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
8.081	-.031	-.20100	-.20580	-.21800	-.20230	-.21430	-.21030	-.17840	-.19800	-.20400	461.09000
8.086	-.032	-.19550	-.20320	-.20820	-.20650	-.20370	-.21110	-.17280	-.19590	-.19510	462.97000
8.063	-.030	-.19400	-.20160	-.21580	-.19950	-.20690	-.20670	-.17120	-.19300	-.19500	463.26000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG003) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 6/ 0 RN/L = 3.02

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
3.025	-.017	-.21490	-.22170	-.23030	-.21920	-.22720	-.23200	-.19070	-.21370	-.21610	167.51000
3.027	-.010	-.21460	-.21520	-.22920	-.21740	-.21260	-.22290	-.18020	-.20870	-.22050	167.94000
3.023	-.010	-.20660	-.22060	-.22560	-.22400	-.22240	-.22560	-.19230	-.20340	-.20970	167.80000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG004) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 7/ 0 RN/L = 3.00

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
3.008	-.043	-.18330	-.18980	-.19630	-.18290	-.18530	-.20330	-.18370	-.18060	-.18610	169.00000
3.007	-.043	-.18080	-.18740	-.19840	-.18670	-.16950	-.20080	-.17730	-.17570	-.18590	169.36000
2.999	-.043	-.18510	-.19040	-.20430	-.18550	-.17130	-.20750	-.18310	-.18310	-.18700	168.71000
3.003	-.039	-.18530	-.19050	-.19810	-.18100	-.18800	-.21300	-.17160	-.18180	-.18880	170.01000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG005) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 9/ 0 RN/L = 3.01

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
3.023	-.073	-.10080	-.13350	-.16180	-.13770	-.11520	-.13460	-.10740	-.10040	-.10120	169.00000
3.012	-.073	-.12160	-.15230	-.17380	-.14810	-.14810	-.15750	-.13100	-.12550	-.11770	168.79000
3.008	-.073	-.14660	-.16470	-.17850	-.16140	-.16220	-.17540	-.13960	-.14270	-.15050	169.44000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG005) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 8/ 0 RN/L = 5.51

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.504	-.061	-.18190	-.19670	-.19770	-.19220	-.19720	-.21610	-.17380	-.17670	-.18720	316.42000
5.507	-.066	-.18440	-.19480	-.20280	-.18730	-.19480	-.21070	-.17770	-.18230	-.18640	317.22000
5.505	-.066	-.19060	-.19860	-.20680	-.19810	-.19180	-.20770	-.18260	-.18640	-.19470	317.29000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG006) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 11/ 0 RN/L = 3.01

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
3.017	-.131	-.17630	-.18070	-.19330	-.18020	-.18020	-.18710	-.15400	-.17020	-.18250	170.58000
3.005	-.128	-.18650	-.19390	-.20010	-.19310	-.20010	-.19780	-.17130	-.18530	-.18770	170.30000
3.002	-.128	-.18600	-.19200	-.20470	-.19150	-.19850	-.19770	-.15650	-.18680	-.18530	170.44000

RUN NO. 10/ 0 RN/L = 5.52

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.523	-.112	-.20080	-.20360	-.21070	-.20490	-.20700	-.21150	-.17150	-.19830	-.20330	321.39000
5.531	-.120	-.19250	-.19560	-.21200	-.19880	-.19350	-.19680	-.16480	-.18980	-.19510	322.98000
5.518	-.129	-.19130	-.19820	-.20180	-.19940	-.20720	-.20180	-.17020	-.18820	-.19440	322.25000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG007) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 13/ 0 RN/L = 3.02

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
3.020	.055	-.21420	-.22290	-.23580	-.22290	-.21680	-.23350	-.19560	-.20850	-.21990	174.54000
3.014	.052	-.21450	-.22460	-.23810	-.22670	-.22440	-.22820	-.19400	-.21530	-.21380	174.25000
3.013	.052	-.21850	-.22480	-.23330	-.22720	-.22800	-.22950	-.19300	-.21200	-.22490	174.40000

RUN NO. 12/ 0 RN/L = 5.55

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.543	.071	-.22360	-.23240	-.24880	-.23120	-.23410	-.24060	-.19640	-.22380	-.22340	323.52000
5.545	.068	-.23510	-.23430	-.25160	-.22870	-.23410	-.24870	-.20180	-.23120	-.23890	324.75000
5.556	.071	-.22170	-.22810	-.24150	-.22650	-.22900	-.23670	-.19820	-.21640	-.22690	326.99000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG008) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 14/ 0 RN/L = 5.54

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.544	9.808	-.20900	-.21000	-.21890	-.20290	-.21930	-.21550	-.19440	-.20880	-.20920	314.60000
5.557	9.789	-.19770	-.20340	-.20480	-.20270	-.20150	-.20980	-.19520	-.20060	-.19480	317.91000
5.530	9.785	-.20580	-.21320	-.22530	-.20650	-.21780	-.22530	-.18760	-.20560	-.20610	316.18000
5.523	9.781	-.20000	-.20390	-.21610	-.19600	-.21610	-.21270	-.17630	-.20400	-.19600	316.98000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BN0009) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 18/ 0 RN/L = 2.42

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
2.419	9.841	-.17260	-.17780	-.18700	-.17930	-.17650	-.18130	-.15640	-.17070	-.17460	138.64000
2.416	9.844	-.17870	-.18420	-.19020	-.18730	-.18440	-.18440	-.16620	-.17770	-.17960	138.57000
2.416	9.844	-.17490	-.18040	-.18930	-.18450	-.17490	-.18540	-.15580	-.17300	-.17680	138.64000

RUN NO. 17/ 0 RN/L = 3.02

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
3.025	9.847	-.17590	-.17810	-.18610	-.17280	-.18060	-.18920	-.15960	-.17830	-.17360	170.18000
3.021	9.844	-.17390	-.18380	-.19570	-.18170	-.18480	-.19110	-.15920	-.17470	-.17310	170.33000
3.023	9.845	-.17970	-.17800	-.18890	-.17580	-.17650	-.18510	-.15870	-.18040	-.17890	170.91000
3.016	9.842	-.18010	-.18610	-.19280	-.18440	-.17970	-.19280	-.17970	-.18360	-.17670	172.43000

RUN NO. 16/ 0 RN/L = 5.55

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.552	9.722	-.18250	-.19140	-.19910	-.19330	-.19170	-.19250	-.17260	-.17880	-.18630	319.52000
5.549	9.729	-.18280	-.19290	-.19460	-.19260	-.19050	-.20170	-.17970	-.18840	-.17720	320.09000
5.551	9.726	-.18090	-.19000	-.19480	-.18570	-.19640	-.19810	-.17200	-.17820	-.18360	321.03000

RUN NO. 15/ 0 RN/L = 8.10

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
8.109	9.893	-.18410	-.19170	-.20290	-.19240	-.18680	-.19470	-.17640	-.18590	-.18230	470.71000
8.105	9.893	-.18450	-.19020	-.19770	-.18840	-.19090	-.19460	-.17600	-.18310	-.18590	471.21000
8.086	9.892	-.18820	-.19250	-.20620	-.19010	-.18950	-.19910	-.17370	-.18810	-.18840	469.92000

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (BNG010) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 19/ 0 RN/L = 5.53

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.534	9.812	-.17920	-.18840	-.20000	-.18640	-.17610	-.19630	-.18220	-.18270	-.17560	321.56000
5.525	9.812	-.18280	-.18870	-.19000	-.18220	-.17720	-.20780	-.18920	-.18670	-.17880	320.99000
5.525	9.809	-.17600	-.18620	-.18880	-.18260	-.16690	-.20450	-.18960	-.17810	-.17390	321.49000

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (BNG011) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 20/ 0 RN/L = 5.55

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.553	14.876	-.19880	-.20230	-.19230	-.18940	-.18520	-.23020	-.22940	-.19810	-.19940	318.34000
5.551	14.876	-.19510	-.19960	-.19240	-.19410	-.16620	-.22910	-.22280	-.19570	-.19450	318.56000
5.558	14.878	-.19980	-.20410	-.18670	-.20210	-.19090	-.22410	-.21870	-.20120	-.19830	319.99000
5.535	14.879	-.19460	-.20380	-.20720	-.19480	-.18150	-.22590	-.21890	-.19310	-.19600	319.20000

ARC 12-078/OA159 03 + STRUTS WITH GROUND PLANE (BNG012) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 23/ 0 RN/L = 2.41

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
2.428	15.248	-.18300	-.18710	-.19820	-.18550	-.18550	-.19430	-.16590	-.18350	-.18260	135.83000
2.415	15.245	-.18660	-.19530	-.20630	-.19160	-.20330	-.20630	-.16010	-.18860	-.18470	135.11000
2.388	15.234	-.19650	-.19710	-.20690	-.19900	-.20500	-.20000	-.16140	-.19700	-.19600	134.11000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG012) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 22/ 0 RN/L = 5.55

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.572	15.057	-.19270	-.20400	-.20200	-.20080	-.19990	-.21370	-.20490	-.19330	-.19200	318.46000
5.554	15.064	-.19730	-.20490	-.21460	-.19870	-.20670	-.20710	-.20250	-.19870	-.19580	317.90000
5.540	15.077	-.19660	-.20560	-.20880	-.20500	-.19540	-.21040	-.20920	-.19910	-.19410	317.25000
5.524	15.077	-.20590	-.21570	-.22310	-.21520	-.20800	-.22610	-.20050	-.20090	-.21100	316.32000

RUN NO. 21/ 0 RN/L = 8.08

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
8.072	15.038	-.19880	-.21120	-.21610	-.20500	-.21580	-.21460	-.20920	-.20010	-.19750	465.02000
8.087	15.038	-.19880	-.20500	-.21140	-.20630	-.19670	-.21370	-.18930	-.20550	-.19220	467.98000
8.074	15.039	-.20350	-.20430	-.21670	-.19620	-.20110	-.21240	-.20080	-.20160	-.20530	467.55000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG013) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 24/ 0 RN/L = 5.55

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.554	15.457	-.21020	-.22110	-.23120	-.22910	-.21800	-.22420	-.18390	-.21270	-.20770	322.43000
5.544	15.461	-.21440	-.22250	-.23550	-.22440	-.22770	-.22930	-.17980	-.21460	-.21420	323.81000

ARC 12-078/OA159 03 WITH GROUND PLANE (BNG014) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 25/ 0 RN/L = 5.54

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.596	.054	-.20880	-.21850	-.22620	-.21670	-.22660	-.22830	-.18400	-.20630	-.21130	320.53000
5.583	2.092	-.20230	-.21090	-.21870	-.21210	-.21500	-.21780	-.17850	-.19860	-.20590	323.05000
5.561	4.146	-.19500	-.20100	-.21710	-.18920	-.21100	-.20970	-.18220	-.19460	-.19540	322.71000
5.549	6.213	-.20090	-.20850	-.21560	-.20700	-.20950	-.21270	-.19430	-.20130	-.20050	323.69000
5.547	8.268	-.19400	-.20490	-.21230	-.20170	-.21230	-.20700	-.18870	-.19110	-.19680	324.87000
5.519	10.326	-.19540	-.20230	-.21060	-.19790	-.20690	-.21190	-.18020	-.19300	-.19790	322.94000
5.509	12.407	-.19380	-.20240	-.21250	-.20020	-.20630	-.20670	-.18170	-.19320	-.19440	323.46000
5.489	14.446	-.20800	-.21380	-.22180	-.21400	-.21680	-.21680	-.19260	-.20450	-.21150	323.12000
5.480	15.486	-.20790	-.21550	-.21830	-.22860	-.21010	-.21790	-.17810	-.20760	-.20810	322.65000

ARC 12-078/OA159 03 WITH GROUND PLANE (BNG015) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 28/ 0 RN/L = 2.40

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
2.404	.004	-.17610	-.18070	-.18410	-.18130	-.18790	-.19070	-.14640	-.17090	-.18130	140.62000
2.419	1.986	-.16810	-.17560	-.18390	-.17460	-.18210	-.18020	-.14950	-.16630	-.17000	142.63000
2.399	4.119	-.15970	-.16760	-.17390	-.16540	-.17200	-.17390	-.14840	-.15970	-.15970	140.52000
2.397	6.063	-.15870	-.16410	-.17050	-.16390	-.16680	-.16680	-.14690	-.16110	-.15640	140.50000
2.393	8.105	-.16550	-.17110	-.18110	-.16880	-.16410	-.17830	-.16130	-.16510	-.16600	140.16000
2.396	9.855	-.16390	-.16810	-.17000	-.17290	-.16250	-.17000	-.15680	-.16530	-.16250	140.69000
2.391	12.107	-.16260	-.17260	-.17680	-.17210	-.17490	-.17400	-.16260	-.16260	-.16260	140.20000
2.387	14.129	-.17190	-.18540	-.18990	-.18800	-.18900	-.18900	-.16060	-.17190	-.17190	140.02000
2.385	15.255	-.17870	-.18450	-.19060	-.18960	-.17920	-.18490	-.16880	-.17920	-.17820	139.92000
2.389	.042	-.17320	-.17890	-.19150	-.18210	-.18500	-.18590	-.13130	-.17270	-.17370	140.83000
2.387	.012	-.17370	-.17740	-.19020	-.17610	-.16860	-.18830	-.15720	-.16860	-.17890	140.68000

ARC 12-078/0A159 03 WITH GROUND PLANE (BNG015) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 27/ 0 RN/L = 5.50

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.552	.019	-.18200	-.18890	-.19890	-.19040	-.19240	-.19650	-.15230	-.17770	-.18630	323.71000
5.515	4.141	-.17350	-.17980	-.18860	-.17880	-.17430	-.19230	-.15640	-.17310	-.17390	324.83000
5.515	6.095	-.17060	-.18020	-.19010	-.17460	-.18560	-.18680	-.16280	-.16770	-.17340	326.34000
5.509	8.150	-.17020	-.17460	-.18090	-.16950	-.17600	-.18170	-.16590	-.16910	-.17120	327.02000
5.509	9.736	-.17050	-.17680	-.18430	-.17860	-.17380	-.18060	-.15880	-.16810	-.17300	328.14000
5.477	12.319	-.17610	-.18210	-.19270	-.18620	-.16670	-.18750	-.16870	-.17930	-.17280	325.83000
5.469	14.377	-.18890	-.19520	-.20320	-.18890	-.19830	-.20400	-.18240	-.19050	-.18730	325.70000
5.475	15.067	-.17930	-.19390	-.20190	-.19790	-.18780	-.19340	-.18130	-.18450	-.17400	327.17000

RUN NO. 26/ 0 RN/L = 7.99

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
8.090	-.048	-.19350	-.19480	-.20910	-.19810	-.19550	-.20200	-.15180	-.18840	-.19860	467.01000
8.057	4.134	-.18050	-.18480	-.19050	-.18150	-.18430	-.19450	-.17000	-.18100	-.18010	472.15000
8.028	6.245	-.18160	-.18710	-.18880	-.19020	-.18340	-.18820	-.17980	-.17890	-.18430	472.39000
8.020	8.312	-.17950	-.18090	-.18700	-.18280	-.17720	-.18250	-.16960	-.17950	-.17950	473.73000
7.971	9.887	-.17610	-.18260	-.18440	-.17940	-.18470	-.18840	-.17630	-.17910	-.17300	474.38000
7.967	12.486	-.18040	-.18250	-.18750	-.18140	-.17640	-.19000	-.17500	-.18030	-.18050	476.52000
7.924	14.599	-.19300	-.20240	-.20930	-.20250	-.19780	-.20870	-.18800	-.19920	-.18690	473.39000
7.925	14.931	-.19220	-.19950	-.20570	-.20160	-.19400	-.20880	-.17700	-.19510	-.18930	474.43000
7.910	15.070	-.19940	-.20920	-.21000	-.21450	-.20690	-.21310	-.18980	-.19520	-.20360	473.26000

ARC 12-078/0A159 03 WITH GROUND PLANE (BNG016) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 29/ 0 RN/L = 5.54

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.594	-.009	-.17920	-.18280	-.19140	-.18250	-.16990	-.19100	-.17600	-.17680	-.18170	325.75000
5.588	2.025	-.17130	-.16990	-.18400	-.16460	-.16740	-.17630	-.15770	-.16940	-.17310	327.39000
5.579	4.130	-.17160	-.17610	-.18290	-.17400	-.15870	-.19020	-.17360	-.16510	-.17810	327.92000
5.551	6.209	-.17520	-.18270	-.19140	-.17470	-.17600	-.19390	-.18330	-.17350	-.17680	326.16000
5.544	8.201	-.17210	-.17430	-.18450	-.17640	-.14600	-.18690	-.17360	-.17190	-.17230	326.82000
5.534	9.978	-.17750	-.18030	-.18240	-.17430	-.17220	-.19170	-.18640	-.17430	-.18080	327.13000
5.494	12.244	-.16330	-.16570	-.16600	-.16800	-.13070	-.18240	-.18070	-.16390	-.16270	323.68000
5.515	14.448	-.18400	-.18980	-.19410	-.18800	-.15320	-.20870	-.20910	-.18280	-.18520	327.20000
5.512	15.495	-.19410	-.20010	-.19010	-.19660	-.17960	-.22650	-.20870	-.19660	-.19170	327.62000
5.478	.039	-.17550	-.18180	-.18800	-.18640	-.16580	-.19120	-.16700	-.17140	-.17950	328.63000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG017) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 30/ 0 RN/L = 5.60

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.596	15.659	-.20060	-.20900	-.21150	-.20620	-.20540	-.21690	-.20540	-.20910	-.19210	321.42000
5.597	15.658	-.18720	-.19760	-.20390	-.19280	-.19440	-.20760	-.18990	-.18620	-.18820	322.28000
5.592	15.663	-.19210	-.21030	-.21160	-.20880	-.21660	-.21860	-.18900	-.19680	-.18740	322.14000
5.600	15.666	-.18930	-.20310	-.20930	-.19620	-.20560	-.21500	-.18970	-.19620	-.18230	323.86000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG018) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 31/ 0 RN/L = 5.56

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.571	10.116	-.19670	-.20430	-.20840	-.19850	-.20390	-.22150	-.18540	-.20100	-.19240	322.61000
5.563	10.112	-.19910	-.20680	-.20920	-.20830	-.20090	-.21290	-.19680	-.20460	-.19350	322.25000
5.550	10.099	-.20070	-.21050	-.21060	-.20890	-.21220	-.21670	-.20110	-.21100	-.19040	322.24000

ARC 12-078/0A159 03 + STRUTS WITH GROUND PLANE (BNG019) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 32/ 0 RN/L = 5.59

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.592	-.088	-.19860	-.21310	-.21310	-.20900	-.21270	-.22300	-.20850	-.20480	-.19250	321.87000
5.593	-.089	-.20430	-.21010	-.20260	-.20800	-.20630	-.22490	-.20670	-.20800	-.20050	322.38000
5.593	-.088	-.19140	-.20260	-.20500	-.19430	-.20580	-.21650	-.19430	-.19220	-.19060	322.89000

ARC 12-078/OA159 03 WITH GROUND PLANE (BNG020) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = 6.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 33/ 0 RN/L = 5.51

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.597	-.070	-.19520	-.20640	-.19690	-.20950	-.20740	-.21370	-.19690	-.20530	-.18510	316.39000
5.568	2.064	-.19130	-.20300	-.20420	-.19470	-.20970	-.21090	-.20170	-.19760	-.18510	317.84000
5.532	4.119	-.20010	-.20650	-.20880	-.19550	-.20840	-.22170	-.20550	-.20210	-.19800	318.96000
5.524	6.199	-.19300	-.20170	-.20290	-.19210	-.20830	-.21290	-.19790	-.19750	-.18840	319.98000
5.524	8.274	-.19090	-.20380	-.20530	-.19540	-.20690	-.21760	-.19710	-.19620	-.18550	322.25000
5.493	10.083	-.19520	-.20840	-.20370	-.20830	-.20290	-.22110	-.20120	-.20080	-.18960	320.33000
5.490	10.080	-.19380	-.20530	-.20210	-.20460	-.20380	-.21580	-.19590	-.20050	-.18720	320.18000
5.471	12.402	-.19770	-.20660	-.20680	-.20850	-.21140	-.21010	-.18820	-.20100	-.19440	320.03000
5.467	14.414	-.18560	-.19430	-.19330	-.19000	-.19040	-.20810	-.18950	-.19040	-.18090	320.89000
5.454	15.637	-.18730	-.19860	-.19330	-.19160	-.20950	-.20990	-.19080	-.19240	-.18210	319.95000
5.446	15.635	-.19450	-.19290	-.19490	-.18490	-.19240	-.20860	-.18620	-.19570	-.19320	319.38000

ARC 12-078/0A159 03 W/O GROUND PLANE (BNG021) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 36/ 0 RN/L = 2.40

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
2.431	-9.075	-.19840	-.20570	-.22570	-.21200	-.20520	-.20810	-.15650	-.19250	-.20420	136.00000
2.408	-7.535	-.19820	-.20820	-.22390	-.21990	-.20810	-.20020	-.16670	-.19230	-.20410	134.37000
2.400	-5.030	-.20520	-.21330	-.22890	-.22100	-.20920	-.20420	-.19140	-.20220	-.20820	134.05000
2.400	-2.540	-.19820	-.20780	-.21940	-.21250	-.21150	-.20660	-.17500	-.19370	-.20260	134.52000
2.403	-.040	-.19600	-.20300	-.21560	-.20780	-.20580	-.20190	-.16950	-.19600	-.19600	135.03000
2.404	2.525	-.20360	-.20620	-.21630	-.21140	-.20550	-.20750	-.17620	-.20160	-.20550	135.38000
2.406	5.033	-.19050	-.19840	-.20460	-.19880	-.19780	-.20750	-.17340	-.18900	-.19190	135.86000
2.402	7.565	-.19210	-.19620	-.20290	-.19220	-.20390	-.19900	-.18240	-.19120	-.19310	135.59000
2.400	7.562	-.19450	-.19820	-.20670	-.19400	-.19790	-.20380	-.18910	-.19700	-.19210	135.45000
2.399	7.563	-.19360	-.19900	-.20980	-.19710	-.19510	-.20390	-.18630	-.19120	-.19610	135.52000
2.397	7.563	-.19080	-.20010	-.21180	-.20100	-.19610	-.20300	-.18150	-.19130	-.19030	135.38000
2.386	10.038	-.19730	-.20140	-.21700	-.19630	-.20220	-.20420	-.18840	-.19630	-.19830	134.66000
2.380	12.654	-.20870	-.21250	-.21810	-.21110	-.20920	-.21710	-.20520	-.20620	-.21110	134.10000
2.378	15.094	-.21700	-.22000	-.23040	-.22450	-.21460	-.22640	-.18980	-.21550	-.21850	133.97000
2.377	18.137	-.23670	-.24620	-.25450	-.24370	-.24960	-.25650	-.21890	-.23870	-.23480	134.11000
2.398	-.003	-.19860	-.20120	-.21020	-.20340	-.20540	-.20830	-.16370	-.19660	-.20050	136.76000

RUN NO. 35/ 0 RN/L = 5.50

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.525	-9.179	-.22010	-.22740	-.24260	-.23830	-.23070	-.22180	-.18020	-.21330	-.22690	312.85000
5.515	-7.678	-.21760	-.22780	-.24540	-.23770	-.22580	-.22540	-.18170	-.21230	-.22290	312.65000
5.513	-5.138	-.21320	-.22260	-.23940	-.22930	-.21870	-.22380	-.18360	-.20810	-.21830	313.28000
5.519	-2.574	-.20870	-.21690	-.23440	-.22350	-.22090	-.21630	-.16870	-.20540	-.21210	314.52000
5.515	-.047	-.20860	-.21840	-.22740	-.21850	-.21940	-.22020	-.20080	-.20590	-.21140	314.56000
5.501	2.527	-.21410	-.21960	-.22950	-.21640	-.22740	-.22110	-.20080	-.21050	-.21770	313.75000
5.507	5.102	-.20910	-.21780	-.22440	-.21730	-.21560	-.22150	-.20670	-.20800	-.21010	314.83000
5.502	7.653	-.21050	-.20750	-.21600	-.20970	-.20930	-.20590	-.18990	-.20800	-.21310	315.21000
5.505	7.657	-.20510	-.20880	-.21850	-.20840	-.20800	-.20930	-.19670	-.20380	-.20630	315.86000
5.491	7.652	-.20790	-.21360	-.21740	-.21360	-.20890	-.21990	-.20430	-.20850	-.20730	314.78000
5.493	7.656	-.20360	-.21370	-.22150	-.21430	-.20840	-.22110	-.19580	-.20340	-.20380	315.28000
5.479	10.214	-.20890	-.21380	-.22570	-.21600	-.20840	-.21980	-.18820	-.21140	-.20630	314.18000
5.465	12.780	-.21600	-.22070	-.23210	-.21980	-.22400	-.22320	-.19820	-.21850	-.21340	313.04000
5.454	15.351	-.23140	-.24560	-.25560	-.24630	-.23860	-.25350	-.22670	-.23220	-.23050	312.36000
5.506	18.427	-.24010	-.25920	-.26420	-.26540	-.25670	-.26210	-.23340	-.24170	-.23840	318.88000
5.495	-.012	-.20920	-.21040	-.22240	-.21070	-.21440	-.21690	-.17530	-.20570	-.21280	318.70000

ARC 12-078/0A159 03 W/O GROUND PLANE (BNG021) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 34/ 0 RN/L = 8.00

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
8.040	-9.311	-.21900	-.23030	-.24710	-.24010	-.22700	-.22700	-.18960	-.20940	-.22840	454.17000
8.022	-7.729	-.22200	-.23210	-.24890	-.23950	-.22780	-.23040	-.19650	-.21490	-.22900	453.64000
7.986	-5.253	-.22490	-.23150	-.24790	-.24350	-.22710	-.23030	-.18280	-.21950	-.23030	451.73000
8.011	-2.582	-.22140	-.22820	-.24260	-.23150	-.23070	-.23070	-.19050	-.21930	-.22340	455.83000
8.023	-.011	-.21620	-.21920	-.23080	-.21430	-.22470	-.22820	-.19370	-.21170	-.22070	458.13000
8.019	2.576	-.21460	-.21730	-.23050	-.21800	-.22290	-.22290	-.17930	-.21310	-.21600	458.61000
8.030	5.107	-.20670	-.21390	-.22350	-.20890	-.21380	-.21920	-.20630	-.20770	-.20570	460.82000
8.018	7.729	-.20870	-.21390	-.22100	-.20860	-.21460	-.21900	-.20970	-.20740	-.21000	460.69000
8.013	7.729	-.20680	-.21980	-.22640	-.22120	-.22180	-.22410	-.19590	-.20540	-.20830	460.76000
7.998	7.732	-.21200	-.21430	-.22090	-.21280	-.20530	-.22060	-.21110	-.21050	-.21340	459.31000
8.006	7.733	-.21160	-.21580	-.22270	-.21750	-.21030	-.22130	-.20020	-.20950	-.21380	461.03000
7.994	10.319	-.20660	-.21750	-.22390	-.22130	-.21030	-.22040	-.20310	-.20570	-.20750	460.59000
7.978	12.949	-.21490	-.21430	-.22760	-.20850	-.21370	-.22300	-.19810	-.21570	-.21400	459.35000
7.937	15.531	-.23720	-.24970	-.26150	-.24750	-.24280	-.25710	-.23670	-.23240	-.24200	455.27000
7.930	18.646	-.25010	-.26390	-.26590	-.26320	-.25860	-.27520	-.25160	-.25480	-.24550	454.98000
7.982	-.019	-.21060	-.21870	-.23050	-.22100	-.21870	-.22270	-.18860	-.20500	-.21610	462.97000

ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE (BNG022) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 40/ 0 RN/L = 2.38

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
2.395	-9.042	-.19080	-.20020	-.21040	-.21140	-.20260	-.19570	-.15830	-.18590	-.19570	134.84000
2.387	-7.513	-.20250	-.21290	-.23480	-.22500	-.20450	-.21040	-.16440	-.19960	-.20550	135.43000
2.383	-4.976	-.20340	-.21010	-.22000	-.22190	-.20150	-.20730	-.18000	-.20150	-.20540	135.98000
2.371	-2.544	-.20930	-.21500	-.23480	-.21610	-.21610	-.21710	-.17880	-.20340	-.21520	135.07000
2.378	-.006	-.19550	-.21000	-.22320	-.21250	-.21160	-.21450	-.17460	-.19010	-.20090	136.23000
2.377	2.474	-.20230	-.20720	-.21940	-.20570	-.21060	-.21640	-.17360	-.19890	-.20570	136.37000
2.382	4.956	-.19810	-.20770	-.20780	-.20590	-.22030	-.20880	-.19230	-.19620	-.20010	137.28000
2.381	7.491	-.19600	-.20290	-.20760	-.20670	-.19890	-.20860	-.18160	-.19320	-.19890	137.30000
2.376	10.034	-.19970	-.19960	-.21040	-.19300	-.19970	-.20550	-.19300	-.19680	-.20260	137.02000
2.371	12.574	-.20740	-.20990	-.21760	-.20880	-.21470	-.21850	-.18070	-.20980	-.20500	136.52000
2.367	15.083	-.22710	-.23650	-.23970	-.24070	-.23390	-.24260	-.21340	-.22800	-.22610	136.18000
2.369	18.105	-.23200	-.24920	-.25380	-.25670	-.24320	-.25380	-.22190	-.22960	-.23450	136.68000
2.375	.000	-.20920	-.21630	-.22410	-.22020	-.21160	-.22790	-.18090	-.20390	-.21450	137.96000

RUN NO. 39/ 0 RN/L = 3.98

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
4.016	-9.130	-.20870	-.21780	-.23410	-.23000	-.20760	-.21910	-.17300	-.19780	-.21970	229.78000
3.993	-7.639	-.21720	-.22260	-.23160	-.23220	-.22530	-.22120	-.18070	-.20730	-.22700	228.75000
3.988	-5.112	-.20360	-.21420	-.23480	-.22330	-.20710	-.21170	-.17470	-.20070	-.20650	229.19000
3.981	-2.562	-.20700	-.22180	-.23760	-.22080	-.22430	-.22370	-.19600	-.20230	-.21160	229.18000
3.975	.003	-.21150	-.22310	-.23700	-.22140	-.22480	-.23230	-.19010	-.21150	-.21150	228.92000
3.982	2.500	-.21070	-.21260	-.21960	-.21160	-.21270	-.22370	-.18620	-.21160	-.20980	230.13000
3.984	5.015	-.20370	-.21250	-.21950	-.21040	-.22070	-.21840	-.18680	-.20400	-.20350	230.73000
3.975	7.601	-.20570	-.21310	-.21380	-.21780	-.21550	-.21490	-.19250	-.20740	-.20400	230.00000
3.982	10.135	-.20560	-.21620	-.22170	-.21940	-.21420	-.22050	-.19470	-.20730	-.20390	231.12000
3.970	12.710	-.21680	-.22710	-.23440	-.22460	-.22860	-.23440	-.20960	-.21710	-.21650	230.22000
3.973	15.187	-.22270	-.23190	-.24050	-.23480	-.22780	-.24330	-.19800	-.22500	-.22040	230.90000
3.968	18.240	-.23770	-.25100	-.25610	-.25720	-.24800	-.26070	-.21350	-.23650	-.23880	230.61000
3.978	-.063	-.20790	-.21680	-.23260	-.22010	-.21610	-.22290	-.17570	-.20700	-.20870	232.45000

ARC 12-078/OA159 03 + AT93 W/O GROUND PLANE (BN0022) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1078.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 38/ 0 RN/L = 5.47

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.525	-9.178	-.21690	-.22190	-.24210	-.23540	-.21850	-.21980	-.16420	-.20930	-.22440	314.65000
5.514	-7.585	-.21070	-.21900	-.23630	-.22880	-.21110	-.21830	-.17960	-.20400	-.21740	315.37000
5.486	-5.185	-.21640	-.22180	-.23950	-.22440	-.22390	-.22440	-.18260	-.20960	-.22310	314.18000
5.492	-2.632	-.21330	-.22270	-.23330	-.22400	-.22700	-.22820	-.18840	-.20730	-.21940	315.86000
5.490	-.062	-.21140	-.21950	-.23420	-.21530	-.23000	-.22870	-.17940	-.20870	-.21410	316.69000
5.478	2.526	-.21170	-.22010	-.22720	-.22260	-.22880	-.22800	-.17690	-.20830	-.21500	316.10000
5.478	5.155	-.21000	-.21760	-.22670	-.22170	-.21540	-.22130	-.19030	-.20790	-.21210	316.53000
5.469	7.678	-.20600	-.21510	-.22300	-.21420	-.21330	-.22090	-.19910	-.20540	-.20660	316.05000
5.471	10.234	-.21350	-.22030	-.22390	-.21770	-.22020	-.22640	-.21180	-.20970	-.21720	317.11000
5.435	12.746	-.20660	-.22100	-.23050	-.22540	-.21620	-.22840	-.18950	-.20830	-.20490	316.89000
5.420	15.352	-.22790	-.24310	-.25160	-.24620	-.24200	-.24370	-.22350	-.22770	-.22810	315.48000
5.403	18.378	-.25230	-.26470	-.26960	-.26540	-.25690	-.27420	-.25100	-.25610	-.24850	313.80000
5.432	.004	-.21870	-.22500	-.24140	-.22510	-.22600	-.23470	-.18390	-.21720	-.22010	318.19000

RUN NO. 37/ 0 RN/L = 8.00

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
8.071	-9.341	-.22430	-.23240	-.24940	-.23820	-.23250	-.23190	-.19260	-.21430	-.23420	464.20000
8.048	-7.749	-.22600	-.23250	-.24950	-.23750	-.23610	-.22640	-.19950	-.22300	-.22900	464.25000
8.033	-5.202	-.21560	-.22810	-.24210	-.23810	-.22810	-.22260	-.18980	-.20890	-.22230	463.80000
8.001	-2.621	-.21910	-.22800	-.24280	-.23360	-.23110	-.23680	-.17190	-.21270	-.22560	461.05000
8.021	.008	-.21540	-.22040	-.23650	-.22050	-.22220	-.23110	-.17630	-.21000	-.22080	464.36000
8.017	2.589	-.21430	-.22390	-.23070	-.22700	-.22210	-.23130	-.19530	-.21440	-.21410	464.56000
8.009	5.093	-.21660	-.22030	-.23400	-.21780	-.22030	-.22550	-.19920	-.21490	-.21830	464.39000
8.011	7.719	-.21490	-.21910	-.22930	-.21990	-.20680	-.22870	-.20450	-.21420	-.21560	465.63000
7.991	10.299	-.21130	-.22430	-.23990	-.22360	-.22390	-.22680	-.20050	-.21110	-.21160	464.10000
7.963	12.966	-.21790	-.22670	-.23440	-.22060	-.22950	-.23720	-.21140	-.21890	-.21690	461.63000
7.948	15.507	-.23200	-.23660	-.24420	-.23850	-.23040	-.24250	-.21980	-.23650	-.22750	460.95000
7.921	18.682	-.24950	-.26590	-.26910	-.26740	-.25780	-.27260	-.25730	-.24970	-.24920	458.61000
7.986	-.034	-.22300	-.22890	-.24270	-.23450	-.22910	-.23190	-.18830	-.21890	-.22710	468.23000

ARC 12-078/0A159 03 W/O GROUND PLANE (BNG023) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 43/ 0 RN/L = 2.38

RN/L	BETA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
2.406	8.940	-.22970	-.23190	-.22670	-.22180	-.24340	-.24530	-.22770	-.22870	-.23060	135.64000
2.403	7.480	-.21520	-.22580	-.22150	-.21960	-.23230	-.23620	-.22150	-.21760	-.21280	136.35000
2.393	5.001	-.20770	-.21840	-.21700	-.21890	-.21990	-.22380	-.20720	-.20920	-.20620	135.88000
2.393	2.481	-.19850	-.20760	-.20780	-.21070	-.20390	-.21260	-.19510	-.19800	-.19900	136.42000
2.380	-1.947	-.20430	-.19780	-.21460	-.18520	-.18520	-.21260	-.20280	-.20280	-.20570	135.76000
2.380	-2.495	-.19830	-.19940	-.21340	-.19290	-.18120	-.20660	-.21240	-.19970	-.19680	136.03000
2.380	-4.960	-.21120	-.21410	-.22540	-.21470	-.20100	-.21370	-.21660	-.20880	-.21370	136.24000
2.374	-7.446	-.22540	-.23640	-.24010	-.24300	-.22150	-.23710	-.23320	-.22640	-.22440	135.83000
2.376	-9.974	-.24050	-.25330	-.24590	-.26930	-.23420	-.25170	-.24880	-.24100	-.24010	136.28000
2.368	-12.498	-.24540	-.26330	-.25860	-.28010	-.24290	-.26050	-.25660	-.24390	-.24680	135.59000
2.365	-14.880	-.26160	-.28510	-.27540	-.30180	-.26650	-.28710	-.27440	-.25480	-.26850	135.49000
2.366	-17.899	-.28230	-.31820	-.31650	-.36150	-.27440	-.31260	-.27050	-.26960	-.29500	135.78000
2.367	.033	-.19100	-.20300	-.21190	-.20030	-.19540	-.20710	-.20220	-.19350	-.18860	136.62000

RUN NO. 42/ 0 RN/L = 5.47

RN/L	BETA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.526	8.956	-.23670	-.24410	-.24130	-.24040	-.24870	-.25210	-.23790	-.24040	-.23290	318.52000
5.513	7.485	-.22510	-.23850	-.24250	-.23750	-.24210	-.24090	-.22590	-.22800	-.22210	318.90000
5.491	5.018	-.22140	-.22960	-.23050	-.22590	-.23010	-.24350	-.21380	-.22430	-.21840	317.69000
5.488	2.524	-.21220	-.21840	-.22220	-.21560	-.22770	-.22390	-.19800	-.21390	-.21060	318.17000
5.473	-.082	-.20800	-.21410	-.22030	-.21190	-.20980	-.22200	-.20400	-.20400	-.21190	317.21000
5.466	-2.459	-.21740	-.21670	-.22660	-.21070	-.20610	-.22370	-.22370	-.21700	-.21780	316.95000
5.472	-5.044	-.21890	-.22760	-.24260	-.22840	-.21090	-.22680	-.22970	-.21550	-.22220	318.33000
5.461	-7.452	-.22970	-.24580	-.24970	-.25050	-.22880	-.25140	-.24180	-.22720	-.23220	317.66000
5.445	-10.059	-.25160	-.26530	-.25560	-.27610	-.24550	-.27070	-.26690	-.24890	-.25430	316.59000
5.451	-12.439	-.25770	-.28120	-.27230	-.30280	-.25860	-.27360	-.27780	-.25480	-.26060	317.62000
5.442	-14.947	-.26880	-.29360	-.28880	-.31810	-.26380	-.28880	-.28210	-.26590	-.27170	317.20000
5.441	-17.977	-.29670	-.32690	-.32760	-.36140	-.29510	-.32340	-.28010	-.29260	-.30090	317.69000
5.439	.001	-.20790	-.21590	-.22250	-.21170	-.21420	-.22130	-.21170	-.20750	-.20840	318.65000

ARC 12-078/OA159 03 W/O GROUND PLANE (BNG023) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 41/ 0 RN/L = 7.94

RN/L	BETA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
8.024	9.036	-.23520	-.24030	-.24250	-.23620	-.24360	-.24560	-.23470	-.23470	-.23560	462.50000
7.995	7.587	-.23180	-.24350	-.24000	-.24320	-.24290	-.25070	-.23800	-.23510	-.22850	460.52000
7.971	5.019	-.21990	-.23340	-.23900	-.23300	-.23880	-.23820	-.21080	-.22260	-.21710	459.98000
7.971	2.536	-.21760	-.22410	-.21870	-.22220	-.22650	-.23570	-.21380	-.21960	-.21560	461.14000
7.960	.041	-.21620	-.21770	-.22220	-.21590	-.20960	-.22480	-.21620	-.21590	-.21650	461.31000
7.952	-2.502	-.22070	-.21910	-.23220	-.21440	-.20720	-.22500	-.22160	-.21810	-.22330	461.22000
7.934	-5.007	-.23590	-.23580	-.25060	-.23530	-.21750	-.23850	-.23850	-.23530	-.23650	459.98000
7.933	-7.490	-.24060	-.25090	-.25460	-.25710	-.23010	-.25460	-.25170	-.23960	-.24160	460.80000
7.913	-9.973	-.25160	-.27070	-.27010	-.28130	-.25360	-.27180	-.26400	-.25220	-.25100	459.43000
7.899	-12.534	-.25920	-.28570	-.28100	-.30120	-.27120	-.28130	-.27660	-.25470	-.26360	458.68000
7.881	-14.958	-.27620	-.30140	-.29390	-.32180	-.27910	-.29710	-.29390	-.27530	-.27710	457.05000
7.877	-18.009	-.30210	-.32960	-.33260	-.36080	-.29810	-.33090	-.28050	-.29260	-.31150	457.39000
7.904	.013	-.20780	-.21410	-.21410	-.21440	-.20640	-.22210	-.21090	-.20610	-.20950	462.52000

ARC 12-078/0A159 03 + AT93 W/O GROUND PLANE (BNG024) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
BOFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 44/ 0 RN/L = 5.47

RN/L	BETA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.494	9.122	-.24120	-.24660	-.25400	-.23310	-.25230	-.26110	-.24190	-.24100	-.24140	317.46000
5.516	8.928	-.23790	-.24510	-.24160	-.23830	-.24740	-.25610	-.24660	-.23750	-.23830	321.05000
5.518	7.465	-.23000	-.23840	-.23640	-.23350	-.24380	-.24960	-.22780	-.23230	-.22780	321.95000
5.498	5.026	-.21940	-.23240	-.23270	-.23020	-.23890	-.24090	-.21360	-.22190	-.21700	320.68000
5.487	2.500	-.21130	-.22300	-.22370	-.22130	-.22750	-.22660	-.21420	-.21630	-.20630	320.00000
5.478	.060	-.21320	-.21670	-.22480	-.21270	-.21980	-.21900	-.20820	-.21270	-.21360	319.64000
5.477	-2.502	-.21210	-.21190	-.21750	-.21090	-.19600	-.21880	-.21840	-.21130	-.21300	320.23000
5.464	-4.954	-.21360	-.22550	-.23630	-.22760	-.20800	-.22670	-.22800	-.21090	-.21630	319.31000
5.460	-7.496	-.23480	-.24840	-.25850	-.25810	-.21900	-.25140	-.24400	-.23230	-.23730	319.37000
5.463	-9.937	-.24740	-.26510	-.25510	-.27990	-.24430	-.26750	-.26290	-.24840	-.24640	320.32000
5.441	-12.400	-.26220	-.28200	-.27560	-.29590	-.26110	-.28140	-.28270	-.26360	-.26070	320.42000
5.432	-14.953	-.26950	-.29340	-.29090	-.30750	-.27640	-.28840	-.29000	-.26970	-.26930	320.00000
5.410	-17.998	-.30060	-.32980	-.33230	-.35860	-.30310	-.32480	-.29180	-.29050	-.31060	317.85000
5.432	-.023	-.20720	-.20790	-.21460	-.20840	-.20310	-.21300	-.19520	-.20930	-.20510	321.58000

ARC 12-078/0A159 03 W/O GROUND PLANE (BNG025) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = 16.300 SPDBRK = 25.000
MACH = .260

RUN NO. 45/ 0 RN/L = 5.44

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.458	-9.135	-.21390	-.21410	-.23790	-.21070	-.21500	-.22450	-.17150	-.20290	-.22490	307.57000
5.463	-7.652	-.20230	-.20810	-.23000	-.20850	-.20680	-.21670	-.16350	-.19950	-.20510	308.88000
5.455	-5.131	-.20320	-.21370	-.23150	-.21950	-.20620	-.21520	-.18080	-.19590	-.21050	308.56000
5.460	-2.590	-.20980	-.21350	-.22670	-.21420	-.20740	-.22540	-.18170	-.20100	-.21850	309.72000
5.458	-.038	-.20220	-.20590	-.22210	-.20630	-.19650	-.21360	-.18230	-.19770	-.20670	309.90000
5.459	2.542	-.20570	-.20600	-.21210	-.19840	-.20520	-.21760	-.20010	-.20860	-.20270	310.45000
5.448	5.112	-.20650	-.20950	-.22210	-.19470	-.20710	-.22120	-.21700	-.20500	-.20800	309.71000
5.453	7.611	-.20270	-.20890	-.22700	-.19800	-.19760	-.22100	-.21040	-.20350	-.20180	310.67000
5.439	7.608	-.20860	-.21030	-.22200	-.20320	-.20020	-.21950	-.21310	-.20920	-.20790	309.87000
5.421	10.207	-.22030	-.21670	-.22800	-.21380	-.19100	-.22930	-.22500	-.21730	-.22330	308.18000
5.413	12.700	-.21940	-.22350	-.22730	-.21100	-.22470	-.23810	-.22690	-.21870	-.22000	307.61000
5.405	15.283	-.23520	-.23710	-.23760	-.23110	-.21390	-.25920	-.24920	-.23370	-.23670	307.22000
5.417	18.386	-.26560	-.26430	-.25680	-.25510	-.25000	-.29420	-.27010	-.26970	-.26160	308.96000
5.417	-.039	-.21560	-.21730	-.22820	-.21580	-.20940	-.22730	-.20080	-.21230	-.21880	309.85000

ARC 12-078/0A159 03 W/O GROUND PLANE (BN0026) (05 NOV 75)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = 1078.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = 10.000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 47/ 0 RN/L = 4.01

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
4.033	-9.050	-.23750	-.24680	-.25570	-.25460	-.25220	-.24410	-.20870	-.23830	-.23660	228.18000
4.023	-7.526	-.23370	-.24630	-.25460	-.25520	-.24710	-.24530	-.20990	-.23550	-.23200	227.92000
4.016	-5.061	-.23640	-.24210	-.25300	-.24660	-.24710	-.24660	-.19950	-.23440	-.23840	228.02000
4.010	-2.533	-.23370	-.23990	-.25260	-.24450	-.24620	-.24620	-.18920	-.22880	-.23870	227.87000
4.012	-.004	-.23510	-.24510	-.25100	-.24410	-.25450	-.25220	-.21330	-.23250	-.23770	228.56000
4.017	2.617	-.23500	-.24460	-.24480	-.24480	-.25110	-.25520	-.21590	-.23210	-.23780	229.57000
4.014	5.106	-.23160	-.23760	-.24610	-.23220	-.24380	-.24720	-.21550	-.23280	-.23050	229.61000
4.015	7.640	-.22650	-.22870	-.23400	-.22300	-.23460	-.23280	-.22130	-.23050	-.22250	230.10000
4.000	10.200	-.22980	-.23690	-.24340	-.23700	-.23240	-.24340	-.22250	-.23470	-.22480	228.70000
3.989	12.706	-.23980	-.24120	-.24710	-.23310	-.25460	-.24770	-.22500	-.23900	-.24070	227.83000
3.988	15.196	-.24300	-.25020	-.25960	-.24740	-.25730	-.26360	-.21130	-.24330	-.24270	227.94000
3.991	18.271	-.25350	-.26730	-.28220	-.27170	-.26940	-.27520	-.21730	-.25780	-.24910	228.60000
3.992	.010	-.23220	-.24360	-.24660	-.24830	-.24830	-.25120	-.20560	-.23500	-.22930	229.26000

RUN NO. 46/ 0 RN/L = 5.44

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.466	-9.179	-.23830	-.24930	-.26420	-.25490	-.24340	-.25360	-.21330	-.24130	-.23540	312.36000
5.450	-7.601	-.24020	-.24860	-.26090	-.25360	-.24720	-.25020	-.21650	-.23960	-.24080	311.04000
5.438	-5.099	-.24540	-.25130	-.25910	-.24880	-.26000	-.26040	-.21930	-.24330	-.24760	310.29000
5.443	-2.548	-.23980	-.24780	-.25900	-.25090	-.24370	-.26150	-.20580	-.23730	-.24240	311.31000
5.453	.005	-.24310	-.25040	-.26050	-.25410	-.25280	-.25660	-.21130	-.24350	-.24270	312.85000
5.456	2.632	-.23580	-.24630	-.25190	-.24550	-.24930	-.25480	-.22140	-.23960	-.23200	313.61000
5.450	5.122	-.23180	-.23710	-.24470	-.22900	-.23660	-.24930	-.22860	-.23240	-.23110	313.52000
5.450	7.667	-.23130	-.23540	-.24030	-.22770	-.23480	-.24750	-.23060	-.23150	-.23100	313.67000
5.434	10.206	-.23370	-.24000	-.24160	-.24330	-.23950	-.24620	-.21870	-.23390	-.23350	312.21000
5.420	12.799	-.23510	-.24340	-.25300	-.24450	-.23980	-.25430	-.21340	-.23600	-.23430	310.90000
5.407	15.381	-.24940	-.25920	-.27040	-.26090	-.26560	-.26730	-.21510	-.25070	-.24810	309.72000
5.405	18.401	-.26220	-.27910	-.28440	-.27200	-.29300	-.29680	-.24080	-.26260	-.26180	309.94000
5.432	.040	-.23930	-.24970	-.26270	-.25000	-.25640	-.25640	-.20910	-.23950	-.23910	313.83000

ARC 12-078/0A159 03 - N24 W/O GROUND PLANE (BNG027) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 48/ 0 RN/L = 5.51

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.526	-9.168	-.21870	-.22790	-.18040	-.26160	-.22540	-.22250	-.21080	-.21660	-.22080	317.73000
5.525	-7.643	-.22370	-.22400	-.19500	-.25030	-.21790	-.21750	-.20960	-.21870	-.22870	318.33000
5.524	-5.163	-.21840	-.22210	-.18730	-.24700	-.21880	-.22540	-.19850	-.21550	-.22130	318.97000
5.525	-2.646	-.21650	-.21850	-.17920	-.24170	-.22470	-.22310	-.18950	-.21350	-.21930	319.64000
5.515	.010	-.22260	-.22890	-.18270	-.25330	-.22050	-.23800	-.21970	-.22300	-.22220	318.82000
5.518	2.500	-.21560	-.22120	-.17230	-.24850	-.21210	-.22700	-.21450	-.21660	-.21450	319.68000
5.528	5.129	-.20690	-.20820	-.16080	-.23040	-.20690	-.21510	-.20070	-.20850	-.20520	321.27000
5.513	7.590	-.21050	-.20910	-.16330	-.22960	-.21130	-.21300	-.20430	-.21510	-.20600	319.78000
5.503	10.167	-.21100	-.21950	-.16760	-.24150	-.21860	-.22280	-.22400	-.21240	-.20950	318.97000
5.493	12.807	-.22220	-.22190	-.17560	-.23800	-.22470	-.23130	-.21970	-.22380	-.22050	318.04000
5.490	15.197	-.23160	-.23530	-.17270	-.25800	-.23670	-.24220	-.24380	-.23630	-.22680	318.29000
5.492	18.352	-.25170	-.25340	-.18520	-.27620	-.24840	-.26370	-.27290	-.24960	-.25380	318.82000
5.499	-.015	-.21880	-.21990	-.18190	-.24760	-.22030	-.21780	-.19710	-.21950	-.21820	320.40000

ARC 12-078/0A159 03 + STRUT TIPS W/O GROUNDPLANE (BNG028) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = 25.000
MACH = .260

RUN NO. 49/ 0 RN/L = 5.53

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.566	-.042	-.20830	-.20890	-.21900	-.20950	-.21650	-.22020	-.16210	-.20830	-.20830	321.71000
5.542	2.536	-.21320	-.21500	-.22380	-.21180	-.22300	-.22670	-.17990	-.21180	-.21470	320.18000
5.523	5.090	-.20990	-.21560	-.21860	-.21440	-.21570	-.22320	-.20110	-.21070	-.20900	318.67000
5.534	7.630	-.20200	-.20560	-.21270	-.20240	-.20610	-.21360	-.19000	-.20280	-.20120	320.35000
5.511	10.212	-.22080	-.22290	-.22980	-.21890	-.22480	-.23100	-.20810	-.22310	-.21850	318.24000
5.526	12.758	-.22190	-.23110	-.23870	-.22500	-.23700	-.24080	-.21260	-.22130	-.22260	320.33000
5.523	15.255	-.22860	-.23920	-.24120	-.23580	-.24530	-.24950	-.21970	-.22670	-.23040	320.44000
5.495	18.359	-.25100	-.26170	-.26120	-.26000	-.26660	-.26750	-.25040	-.25240	-.24950	317.56000
5.512	-.044	-.21720	-.21990	-.23270	-.22320	-.22320	-.22860	-.17320	-.21540	-.21910	320.82000

ARC 12-078/0A159 03 W/O GROUND PLANE (BNG029) (05 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.6800 IN. XO
LREF = 474.8000 IN. YMRP = .0000 IN. YO
BREF = 936.6700 IN. ZMRP = 375.0000 IN. ZO
SCALE = .0300

PARAMETRIC DATA

BETA = .000 ELEVON = .000
BDFLAP = .000 SPDBRK = .000
MACH = .260

RUN NO. 50/ 0 RN/L = 5.50

RN/L	ALPHA	CPSC	CPB	CPB1	CPB2	CPB3	CPB4	CPB5	CPC1	CPC2	Q(PSF)
5.536	-9.174	-.20020	-.20520	-.21530	-.21020	-.20210	-.20850	-.17540	-.19790	-.20260	312.33000
5.522	-7.673	-.20400	-.20740	-.21970	-.21200	-.20610	-.21290	-.16950	-.19890	-.20910	311.83000
5.506	-5.130	-.19350	-.20220	-.21330	-.20180	-.20650	-.20310	-.17960	-.18990	-.19710	310.80000
5.512	-2.543	-.19800	-.19910	-.20200	-.19860	-.20200	-.20330	-.18500	-.19860	-.19730	312.04000
5.514	-.048	-.19060	-.19380	-.20200	-.19140	-.18460	-.20540	-.18250	-.19220	-.18890	312.87000
5.510	2.562	-.19610	-.19970	-.19560	-.20330	-.19480	-.21050	-.18380	-.19690	-.19520	313.15000
5.509	5.045	-.19510	-.19500	-.19700	-.19320	-.19100	-.20460	-.18680	-.19700	-.19320	313.52000
5.504	7.657	-.18590	-.19390	-.19630	-.19500	-.18610	-.19840	-.19120	-.18780	-.18400	313.40000
5.499	7.660	-.19120	-.19520	-.19610	-.19100	-.19700	-.19820	-.19820	-.19190	-.19060	313.18000
5.502	7.659	-.18790	-.19370	-.19660	-.19110	-.19150	-.19910	-.19110	-.19030	-.18560	313.82000
5.496	7.662	-.18970	-.19710	-.19370	-.19920	-.19500	-.20260	-.18910	-.19120	-.18820	313.31000
5.493	10.194	-.19570	-.19850	-.19780	-.19360	-.19490	-.21050	-.19740	-.19660	-.19490	313.45000
5.482	12.761	-.20230	-.20820	-.21350	-.20250	-.20460	-.21820	-.20510	-.20080	-.20380	312.52000
5.472	15.319	-.22090	-.22290	-.22350	-.21500	-.21880	-.23540	-.22900	-.22090	-.22090	311.84000
5.475	18.422	-.23780	-.24330	-.24530	-.23550	-.24440	-.26050	-.23170	-.23720	-.23850	312.64000
5.467	-.039	-.19090	-.20400	-.20530	-.20620	-.20450	-.20920	-.18670	-.19220	-.18960	312.78000