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TLE: RESULTS OF AN INVESTIGATION OF HYPERSONIC VISC
EFFECTS ON AN 0.01 SCALE SPACE SHUTTLE ORBITER 51-O
AEDC-VKF HYPERVELOCITY WIND TUNNEL (0A81)

UMBER: DR-2152 DATE: October, 1974 BRANCH: Flig

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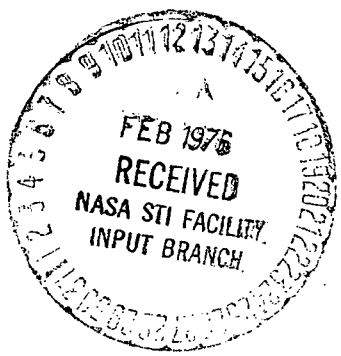

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

DATE: DECEMBER, 1975

PUBLICATION CHANGE

THE FOLLOWING CHANGES APPLY TO PUBLICATION: DMS-DR-2152

TITLE: RESULTS OF AN INVESTIGATION OF HYPERSONIC VISCOUS INTERACTION EFFECTS ON AN 0.01 SCALE SPACE SHUTTLE ORBITER 51-O MODEL IN THE AEDC-VKF HYPERVELOCITY WIND TUNNEL (OA81)

NUMBER: DR-2152 DATE: October, 1974 BRANCH: Flight Technology

The attached Revision A of DMS-DR-2152 completely replaces DMS-DR-2152 dated October, 1974.

This revision is published to:

1) incorporate the updated data released in May 1975 for Mach 16, Re/ft. 0.5×10^6.

2) correct the improper XCP/L values in the old report

3) add $\overline{V}'_\infty$ values to the data array

4) add contamination factor (F) to Mach 20 data

5) add data plots

Prepared by: Operations--John E. Vaughn

Reviewed by: G. G. McDonald

Approved: J. L. Glynn
J. L. Glynn, Manager
Data Operation

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

PAGE 1 OF 1

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DATA MANagement services
SPACE DIVISION CHRYSLER CORPORATION

December, 1975

REVISION A
DMS-DR-2152
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RESULTS OF AN INVESTIGATION OF HYPERSONIC VISCOUS INTERACTION EFFECTS ON AN 0.01 SCALE SPACE SHUTTLE ORBITER 51-O MODEL IN THE AEDC-VKF HYPERVELOCITY WIND TUNNEL (OA81)

By

D. J. Elder
Shuttle Aero Sciences
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:	AEDC F VA489
NASA Series Number:	OA81
Model Number:	51-0
Test Dates:	26 November through 27 December 1973
Occupancy Hours:	90

FACILITY COORDINATOR:

L. L. Trimmer
VKF-SH
ARO, Inc.
Arnold Air Force Station, Tenn. 37389

Phone: (615) 455-2611 x7377

PROJECT ENGINEERS:

E. C. Allen
Rockwell International
So. Regional Office
Suite 143
3322 S. Mem. Parkway SW
Huntsville, Ala. 35801

Phone: (205) 881-2200

L. G. Siler
J. D. Coats
VKF-ADP
ARO, Inc.
Arnold Air Force Sta.
Tenn. 37389

Phone: (615) 455-2611 x7154

AERODYNAMICS ANALYSIS ENGINEER:

D. J. Elder
Mail Code AC07
Rockwell International
Space Division
12214 Lakewood Blvd.
Downey, Calif. 90241

Phone: (213) 922-4730

DATA MANAGEMENT SERVICES:

Prepared by: Liaison--D. A. Sarver, M. J. Lanfranco
Operations--R. H. Lindahl

Reviewed by: D. E. Poucher

Approved: J. L. Glynn
J. L. Glynn, Manager
Data Operation

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

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

RESULTS OF AN INVESTIGATION OF HYPERSONIC VISCOUS INTERACTION EFFECTS ON AN 0.01 SCALE SPACE SHUTTLE ORBITER 51-0 MODEL IN THE AEDC-VKF HYPERVELOCITY WIND TUNNEL (0A81)

By

D. J. Elder, Rockwell International Space Division

ABSTRACT

The major hypersonic aerodynamic results obtained experimentally from the 0.010-scale (51-0) 140A/B Orbiter vehicle are presented herein. The results were obtained from the AEDC-VKF Hypervelocity Wind Tunnel F under test 0A81.

The test was conducted over an angle-of-attack range from 20 to 35 degrees for nominal Mach numbers of 16 and 20. The Mach 16 data were obtained at Reynolds numbers, based on model length, of nominally 0.54×10^6 and 1.18×10^6. The Mach number 20 data were obtained at nominal Reynolds numbers of 0.08×10^6 and 0.27×10^6. Various elevon deflections (δ_e = -40 degrees, 0 degrees, +15 degrees) and body flap deflections (δ_{BF} = -11.7 degrees, 0 degrees, +16.3 degrees) were tested for determination of control effectiveness. The test objectives were as follows:

1) Verify December 1973 Aerodynamic Design Data Book estimates for $M_\infty > 10$.

2) Determine configuration forward and aft trim boundaries and control characteristics.

3) Determine high Mach number - low Reynolds number effects.

4) Determine if positive control surface flow separation is present and magnitude of separation effects.

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TABLE OF CONTENTS

INDEX OF FIGURES

NOMENCLATURE
General

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

SUBSCRIPTS

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

NOMENCLATURE (Continued)

Body-Axis System

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

NOMENCLATURE - Continued
Additions to Standard List

Symbol	Plot Symbol	Definition
C_{A_E}	CAE	estimated axial-force coefficient, $(C_{A_{f_E}} + C_{A_b})$ M = 20 data only
$C_{A_{f_E}}$	CAFE	estimated forebody axial-force coefficient (see reference 1); M = 20 data only, see page 16
C_{A_f}	CAF	forebody axial-force coefficient, $(C_A - C_{A_b})$ or $(C_{A_p} + C_{A_V})$
C_{A_M}	CAM	experimental axial-force coefficient, Mach = 20 data only; includes viscous force produced by tunnel flow contamination (see reference 1) and base pressure drag
$C_{A_{f_M}}$	CAFM	experimental forebody axial-force coefficient, $(C_{A_M} - C_{A_b})$; M = 20 data only
C_{A_V}		viscous axial-force coefficient
C_{A_P}		pressure axial-force coefficient
C_{P_B}	CPB	base pressure coefficient, $(P_B - P_\infty)/q_\infty$
C_∞		Chapman-Rubesin viscosity coefficient, $(\mu_w/\mu_\infty)(T_\infty/T_w)$
C'_∞		factor of proportionality as defined in Data Reduction section
F	C-FCTR	AEDC contamination correction factor, $(C_{A_{f_M}}/C_{A_{f_E}}) - 1$; see reference 5; M = 20 data only
F_{A_C}		axial force resulting from flow contimination, $F_{A_C} = F_{A_{f_M}} - F_{A_{f_E}}$
F_{A_f}		forebody axial force corrected for tunnel flow contamination (M_∞ = 20 only)
C_{N_M}		measured normal force coefficient

NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
F_{A_M}		measured total axial force, lb
$F_{A_{f_M}}$		measured forebody axial force, lb
F_N		normal force, lb
F_{N_A}		normal force at aft normal-force gage location, lb
F_{N_F}		normal force at forward normal-force gage location, lb
h		enthalpy
ℓ_B	L	reference body length, 12.903 in.
M_∞	MACH	Mach number
MRP	MRP	moment reference point
M_y		pitching moment in the body axis system, in-lb $M_y = \left[\text{moment arm}_1\ \text{(in.)} \times F_{N_F}\right] - \left[\text{moment arm}_2\ \text{(in.)} \times F_{N_A}\right]$ $+ 0.25$ in. (F_{A_M} or F_{A_f}), in-lb
P_∞	P	free-stream static pressure, psia
P_o	PO	reservoir pressure, psi
P'_o	POP	total pressure behind normal shock in test section, psia
Pr		Prandtl number, 0.71
P_B		model base pressure, psia
$\dot{q}_o$	QO	stagnation heat-transfer rate on 1.0-in.-diam probe, Btu/ft^2-sec
$\dot{q}(I)$		stagnation heat-transfer rate inferred from shoulder heat gages of 1.0-in.-diam hemisphere-cylinder, Btu/ft^2sec

NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
$Re_{\infty L}$	RE-L	Reynolds number based on free-stream conditions and model length
S_{wet}		wetted area of model lower surface, in^2
St_{∞}		Stanton number, $\dot{q}_w/\rho_{\infty} U_{\infty} (h_0 - h_w)$
St_{∞} avg		average Stanton number acting on lower model surface
t	TIME	time, milliseconds
T_{∞}	T-INF	Free-stream temperature, ^oR
T_0	TO	reservoir temperature, ^oR
T_w		model surface temperature, ^oR
U_{∞}	U-INF	free-stream velocity, ft/sec
$\overline{V}_{\infty}$	V-INF	hypersonic viscous parameter, $M_{\infty}\sqrt{C_{\infty}} / \sqrt{RE\text{-}L}$
$\overline{V}'_{\infty}$	VLBAR	viscous interaction parameter, $M_{\infty}\sqrt{C'_{\infty}} / \sqrt{RE\text{-}L}$
X_{cp}/L_M		experimental center-of-pressure location, $(XMRP - CLM \times \ell_{ref}/CN)/L_B$
X_{cp}/L	XCP/L	corrected center-of-pressure location, (see reference 5) $XCP/L = 0.65 - \bar{c}/L_B) (CLM/CN)$
Z		vertical coordinate of model axis system, see Fig. 2
α_S		sector angle of attack, deg
β	BETA	sideslip angle, deg
δ		control surface deflection angle, deg; positive deflections are:
	AILRON	aileron-left trailing edge down
	ELEVTR	elevator-trailing edge down
	BDFLAP	bodyflap-trailing edge down
	SPDBRK	Speedbrake

NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
μ_∞		free-stream viscosity
μ_W		viscosity at wall temperature
τ		local shear stress, psi

Subscripts

e_L or e_R	elevon left and right, respectively
BF	bodyflap
M	experimental values
o	stagnation conditions
SB	speedbrake
∞	free-stream conditions

REMARKS

The data resulting from test OA81 contained several anomalies.

1) Tunnel flow was contaminated with fine dust particles produced by vaporization of copper, tungsten, and beryllium during electrical discharge in the tunnel arc chamber. The contamination problem was most severe at Mach 20/Reynolds number 0.27×10^6 and least severe at Mach 20/Reynolds number 0.08×10^6. These data have been empirically corrected for contamination effects according to the relationship given in Figure 4.

2) Data recorded at different times during a test shot for the same nominal test condition exhibited significant scatter. This is caused primarily by the timewise variation of freestream conditions (inherent in most hotshot facilities).

3) Flow in the tunnel core had a slightly non-uniform pressure profile. Corrections for flow non-uniformities were determined testing the model in an inverted position and applied to the data.

4) The test section flow was divergent (source flow) because the tunnel F nozzle is conical. Effects of source flow were empirically corrected by procedures developed by AEDC.

Data corrections are summarized in the Data Reduction section of this report. A detailed description of these corrections is given in Reference 1. References 3 through 5 provide detailed independent

analyses of these data, explanation of their anomalies, and judiciously plotted results.

CONFIGURATIONS INVESTIGATED

The model (designated no. 51-0) was an 0.010-scale representation of the Space Shuttle 140A/B Orbiter Configuration, fabricated from magnesium (to minimize weight). The model was comprised of the following components:

Symbol	Description
B_{26}	140A/B fuselage
C_9	Configuration 3A canopy
E_{26}	Configuration 4 elevon
F_7	Configuration 3A bodyflap
M_7	Configuration 3A OMS pods
N_{28}	Configuration 3A OMS nozzles
R_5	Configuration 3A rudder
V_8	Configuration 3A vertical stabilizer
W_{116}	Configuration 4 wing

Model elevon deflection angles of -40, 0 and 15 degrees were investigated. Bodyflap deflection angles of -11.7, 0, and 16.3 degrees were investigated. Speedbrake deflection angle was 55 degrees. Figure 2 presents a sketch of the model configuration. Table III provides detailed model component dimensional data.

INSTRUMENTATION

Arc chamber pressure, test section pitot pressure, and probe stagnation and cylindrical section heat transfer rates were measured to determine tunnel flow conditions (see reference 1). Pitot pressures were measured with ±15 psid strain gauge pressure transducers calibrated at the specific pressure level occurring during each test condition. The stagnation heat transfer rates used in determining the tunnel flow conditions were inferred from measurements made on the cylindrical sections of two 1-inch diameter hemisphere-cylinder probes using 10 mil resisitance thermometer slug calorimeters. Co-axial thermocouple gauges located at the stagnation points of these same probes were used as flow contamination monitors. The arc chamber reservoir pressure was measured using two strain gauge transducers, each having full-scale calibrated ranges of 5, 10, and 25 thousand psia.

Aerodynamic forces were measured using six-component force balances developed by AEDC VKF for use in hotshot-type tunnels. The balance load cells were instrumented with semiconductor strain gauges, and semiconductor accelerometers provided compensation for model inertia loads that result from vibrations of the model and its support hardware.

Base pressure measurements were made using Invar pressure transducers with a range of 0.001-0.1 psid and were mounted on the sting at the base of the model with the gauge orifice pointing downstream and protruding approximately 1/16-inch beyond the base of the model.

All test data were recorded on a 70-channel digital system capable of

scanning all channels in one msec and storing up to 150 scans of data. Basic data reduction was done off-line with a digital computer.

As a backup to the digital system, as well as to provide a quick-look at data results, output of each data channel was recorded on an oscillograph.

TEST FACILITY DESCRIPTION

The Hypervelocity Wind Tunnel F (reference 1) is an arc-driven wind tunnel of the hotshot type and capable of providing Mach numbers from about 8 to 20 over a Reynolds number per foot range from 0.05×10^6 to 70×10^6. Test sections of 108-inch diameter (M_∞ = 14 to 20) and 54-inch diameter (M_∞ = 10 to 17) are available using a four-degree half-angle conical nozzle. The range of Mach numbers at a particular test section in the conical nozzle is obtained by using various throat diameters. The M_∞ = 8 contoured nozzle has a 25-inch exit diameter which connects to the 54-inch diameter test section and provides a free-jet exhaust. Nitrogen is the test gas used for aerodynamic studies; air is used for combustion tests. The test gas is confined to either a 1.0-, 2.5-, or a 4.0-cu-ft arc chamber where it is heated and compressed by an electric arc discharge. The increase in pressure results in a diaphragm rupture with the subsequent flow expansion through the nozzle. Test times are typically from 40 to 200 msec. Shadowgraph and Schlieren coverage are available at both test sections.

This test was conducted in the 108-inch diameter test section of the conical nozzle for both the Mach 16 and 20 test conditions. The 2.5-ft^3 arc chamber was used and useful test times for Mach 16 and 20 were approximately 40 to 70 msec, respectively. Because of the relatively short test times, the model wall temperature remained essentially invariant from the initial value of approximately 540°R; thus, T_w/T_o = 0.15 which approximates the condition of practical interest for reentry vehicles.

DATA REDUCTION

Freestream test conditions were computed using timewise measurements of reservoir pressure, test section pitot pressure, and reference hemisphere cylinder stagnation and shoulder heat transfer rates. Fay and Riddell stagnation point heat transfer theory was used to compute reservoir enthalpy. Quasi-steady isentropic flow equations were used to compute other freestream parameters.

Balance data were reduced to coefficient form in body and stability axes by standard AEDC methods using the following constants:

Description	Value, full scale	Value, model scale
reference area, S, ft^2	2690.0	0.2690
reference chord, $\bar{c}$, in.	474.8	4.748
reference span, b, in.	936.7	9.367
reference body length, ℓ_B, in	1290.3	12.903
moment reference point		
XMRP, in. X_O	1076.7	10.767
YMRP, in. Y_O	0.0	0.0
ZMRP, in. Z_O	375.0	3.75
base area, $ft.^2$	417.4	4.174

Mach 16 data were corrected for source and non-uniform flow as follows:

$$C_N = \text{measured } C_N \, [1 + \text{source correction} \pm \text{non-uniform correction}]$$
$$= \text{measured } C_N \, [1 + 0.01 \pm 0.0175]$$

$$X_{cp}/\ell = \text{measured } X_{cp}/\ell + \text{source correction} \pm \text{non-uniform correction}$$

$$= \text{measured } X_{cp}/\ell + 0.002 \pm 0.005$$

$$C_m = \left[\frac{XMRP}{\ell_B} - X_{cp}/\ell \right] \frac{C_N \ell_B}{\bar{c}}$$

Mach 20 data contains an additional correction for contamination, computed as follows:

$\dot{q}_o/\dot{q}(I)$ = contamination factor

= ratio of heat transfer rate measured or facility hemisphere-cylinder probe stagnation point to heat transfer rate inferred by measurements on shoulder of probe.

so that;

$$C_{A_{f_E}} = \frac{C_{A_{f_M}}}{1+F}$$

where,

$C_{A_{f_M}}$ = balance measured forebody axial-force coefficient

F = AEDC contamination correction factor

= function of $\dot{q}_o/\dot{q}(I)$ from figure 4

and;

$$\Delta C_A = C_{A_{f_M}} - C_{A_{f_E}}$$

C_N = measured C_N [1 + (source correction) + (non-uniform correction)]

= measured C_N [1 + 0.01 $\pm$ 0.03]

X_{cp}/ℓ = measured X_{cp}/ℓ + source correction + non-uniform correction + contamination correction

$$X_{cp}/\ell = \text{measured } X_{cp}/\ell + 0.002 + 0.006 - \frac{\Delta C_A}{C_{N_M}} \frac{\ell_c}{\ell_B}$$

where

ℓ_c = empirical vertical length from contamination axial force center of pressure to moment reference point

= 1.0 inches model scale

$$C_m = \left[\frac{XMRP}{\ell_B} - X_{cp}/\ell\right] C_N \frac{\ell_B}{\bar{c}}$$

AEDC viscous parameter, which is derived and explained in reference 1, is computed as follows:

$$\bar{V}_\infty = \frac{M_\infty \sqrt{C_\infty}}{\sqrt{Re_{\infty L}}}$$

where $$C_\infty = \frac{\mu_{wall}\, T_\infty}{\mu_\infty\, T_{wall}}$$

The NASA/LaRC viscous interaction parameter is defined as:*

$$\bar{V}'_\infty = \frac{M_\infty \sqrt{C'_\infty}}{\sqrt{Re_{\infty L}}}$$

where $$C'_\infty = \left[\frac{T'}{T_\infty}\right]^K \left[\frac{T_\infty + 122.1 \times 10^{-(5/T_\infty)}}{T' + 122.1 \times 10^{-(5/T')}}\right]^J$$

with the Monaghan's empirical relationship (reference 6) given by:

$$\frac{T'}{T_\infty} = 0.468 + 0.532 \frac{T_W}{T_\infty} + 0.195 \frac{\gamma-1}{2} M_\infty^2$$

where

T_∞ = Freestream static temperature, degrees Kelvin
T_W = Wall temperature (367°K), degrees Kelvin
T' = Reference temperature, degrees Kelvin

and

K and J are empirical constants. For air, K = 0.5 and J = 1.0

* Equations below are based on temperature in °K, but tab. data are °R.

REFERENCES

1. Siler, L. G. and J. C. Coats, "Static-Stability and Axial-Force Characteristics of the NASA STS 0.010-Scale Model (51-0) of the Vehicle 4 Orbiter at Mach Numbers 16 and 20 (Test OA-81)," AEDC-DR-74-25 (March 15, 1974).

2. Allen, E. C., "Pretest Report for an Investigation in the AEDC-VKF Tunnel F to Verify the Hypersonic Stability and Control Characteristics of the 0.010-Scale Model (51-0) of the Vehicle 4 Orbiter (Test OA-81)," Rockwell International Space Division Report No. SD73-SH-0236 (October 1, 1974).

3. Pate, S. R., "Review of AEDC-VKF Tunnel F Force Data (OA-81)," ARO-Project No. VA 489 (March 19, 1974).

4. Griffith, B. J., "Preliminary Analysis of the Final Data from NASA/RI STS Orbiter (OA-81) Configuration," ARO (April 10, 1974).

5. Surber, T. E., "Hypersonic Test Results of the Space Division's 0.010-scale (51-0) 140A/B Orbiter Vehicle-Test OA81", Rockwell International Space Division Internal Letter No. SAS/AERO/74-482.

6. Bertram, Mitchel H., "Hypersonic Laminar Viscous Interaction Effects on the Aerodynamics of Two-Dimensional Wedge and Triangular Planform Wings," NASA TN D-3523, August 1966

TABLE I.

TEST : 0A81 (AEDC F VA 489) | DATE :

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER based on $\ell_B \times 10^6$	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Rankine)
16.0	0.54	0.90	4000
16.0	1.18	1.80	3700
20.0	.08	0.16	5600
20.0	.27	0.46	5300

BALANCE UTILIZED: AEDC VKF 6-component Hot Shot Tunnel Balance

ABSOLUTE UNCERTAINTIES
MACH 16 and 20
(α uncertainty ±.10 deg)

α (deg)	C_m	X_{cp}/ℓ
20	±0.0088	±0.0076
25	±0.0125	±0.0076
30	±0.0163	±0.0076
35	±0.0200	±0.0076

UNCERTAINTY, ± PERCENT

C_N, M = 16&20	6.0	P_∞	6.0
C_A, M = 16	7.0	P_o'	4.0
C_A, M = 20	16.0	$\dot{q}_o$	5.0
M_∞	1.5	T_o	4.0
$Re_{\infty L}$	10.0	P_o	5.0
T_∞	6.0	q_∞	4.0

COMMENTS: ℓ_B = 12.903 in

Balance gages instrumented with accelerometers to provide compensation for model inertial loads.

TABLE II. - DATASET/RUN NUMBER COLLATION SUMMARY

REV

TEST: 1A-81 AEDC | DATA SET/RUN NUMBER COLLATION SUMMARY | DATE: 1-15-74

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES RN/L	δe	δf	δSB	δBF	MACH	NO. OF RUNS	ANGLE OF ATTACK ~DEGS. 20	25	30	35	TEST RUN NUMBERS
S, RTØC01	(BCFMN)(WE)(VR)	A	0	1.1	-4c	c	55	-11.7	16	4	4	3	2	1	
02		A	0	.25	-40	0	55	-11.7	20	4	8	7	6	5	
03		B	0	1.1	0	0	55	-11.7	16	3		11	10	9	
04		A	0	1.1	0	0	55	0	16	4	15	14	13	12	
05		A	0	.25	0	0	55	0	20	4	19	18	17	16	
06		C	0	.25	0	0	55	0	20	2		48		21	
07		A	0	.50	0	0	55	0	16	4	25	24	23	22	
08		A	0	.07	0	0	55	0	20	4	29	28	27	26	
09		D	0	.5	0	0	55	0	16	1				30	
10		D	0	.07	0	0	55	0	20	2			49	31	
11		B	0	1.1	0	0	55	16.3	16	3		34	33	32	
12		A	0	1.1	15	0	55	16.3	16	4	38	37	36	35	
13		A	0	.25	15	c	55	16.3	20	4	42	41	40	39	
14	(INVERTED)	C	0	1.1	0	0	55	-11.7	16	2		43		44	
15		C	0	.25	0	0	55	-11.7	20	2		45		46	
16		D	0	.5	0	0	55	-11.7	16	1				47	

20

MACH

R SETS	TIME, CN, CLM, XCP/L, CL, CD, L/D, CA, CAF, VLBAR, MACH, ALPHA, 10	16
S SETS	TIME, PØ, P, Q(PSI), TØ, RE-L, CPB, V-INF, VLBAR, MACH, ALPHA, 9	16
R SETS	TIME, CN, CLM, XCP/L, CL, CD, L/D, CAF, CAM, CAFM, MACH, ALPHA, 10	20
S SETS	TIME, PØ, P, Q(PSI), TØ, RE-L, CPB, V-INF, VLBAR, C-ECTR, MACH, ALPHA, 10	20

SCH \ α	20°	25°	30°	35°
A	X	X	X	X
B		X	X	X
C		X		X
D				X

CONFIGURATION - (B26C9F7M7N28)(W116E26)(VERS)

*REVISED 4/24/74

TABLE III. - MODEL DIMENSIONAL DATA

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: 0.010 MODEL DRAWING: SS-A00147, RELEASE 12

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

DIMENSION:	FULL SCALE	MODEL SCALE
*Length (OML: Fwd Sta. X_o=235), In.	1293.3	12.933
*Length (IML: Fwd Sta. X_o=238), In.	1290.3	12.903
*Max Width (@ X_o = 1528.3), In.	264.0	2.640
Max Depth (@ X_o = 1464), In.	250.0	2.500
Fineness Ratio		
Area - Ft^2		
Max Cross-Sectional	340.88	0.0341
Planform		
Wetted		
Base		

TABLE III. - Continued.

*REVISED 4/24/74

MODEL COMPONENT: CANOPY - C_9

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

MODEL SCALE: 0.010 . MODEL DRAWING: SS-A00147, RELEASE 12

DRAWING NUMBER VL70-000143A

DIMENSION:	FULL SCALE	MODEL SCALE
*Length (X_o = 434.643 to 578)	143.357	1.434
Max Width (@ X_o = 513.127)	152.412	1.524
Max Depth (@ X_o = 485.0)	25.000	0.250
Fineness Ratio		
Area		
Max Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III. - Continued.

*REVISED 4/24/74

MODEL COMPONENT : ELEVON - E_{26}

GENERAL DESCRIPTION : Configuration 140A/B Orbiter elevons

Data are for one of two sides.

MODEL SCALE: 0.010 MODEL DRAWING: SS-A00148, RELEASE 6

DRAWING NUMBER VL70-000200, -006089, -006092

DIMENSIONS	FULL SCALE	MODEL SCALE
Area - Ft^2	210.00	0.0210
Span (equivalent) In.	349.2	3.492
Inb'd equivalent chord, In.	118.004	1.1180
Outb'd equivalent chord , In.	55.192	0.552
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Trailing Edge	- 10.056	- 10.056
Hingeline	0.00	0.00
* Area Moment (~~Normal to hinge line~~) (Product of area & $\bar{c}$), Ft^3	1528.25	0.0015
*Mean Aerodynamic Chord, In.	90.7	0.907

TABLE III. - Continued.

MODEL COMPONENT: BODY FLAP - F_7

GENERAL DESCRIPTION: Configuration140A/B Orbiter body flap

MODEL SCALE: 0.010 MODEL DRAWING: SS-A00147, RELEASE 12

DRAWING NUMBER VL70-000140A, VL70-000145

DIMENSION:	FULL SCALE	MODEL SCALE
Length (X_o=1520 to X_o= 1613), In.	93.000*	0.930
Max Width , In.	262.00	2.620
Max Depth (X_o = 1520), In.	23.00	0.230
Fineness Ratio		
Area - Ft^2		
Max Cross-Sectional		
Planform	142.6	0.143
Wetted		
Base		

*Model dim. measured from model sta. 15.20

TABLE III. - Continued.

MODEL COMPONENT : OMS/RCS PODS - M_7

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

MODEL SCALE: 0.010 MODEL DRAWING: SS-A00147, RELEASE 12

DRAWING NUMBER : VL70-000145

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta X_o=1233.0), In.	327.000	3.270
Max Width (@ X_o = 1450.0), In.	94.50	0.945
Max Depth (@ X_o = 1493.0), In.	109.000	1.090
Fineness Ratio		
Area		
Max. Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III. - Continued.

MODEL COMPONENT: NOZZLES - N_{28}

GENERAL DESCRIPTION: Configuration 140A/B Orbiter OMS Nozzles

MODEL SCALE: 0.010 MODEL DRAWING: SS-A00106, RELEASE 5 (Contour)

DRAWING NUMBER: VL70-000140A (Location)

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.		
~~Upper Nozzle~~ Left Nozzle, In.		
X	1518.00	15.180
Y	- 88.0	- 0.880
Z	492.00	4.920
Right ~~Lower~~ Nozzle, In.		
X	1518.00	15.180
Y	88.0	0.880
Z	492.0	4.920
Null Position - Deg.		
~~Upper Nozzle~~ Left Nozzle:		
Pitch	$15^{\circ}49'$	$15^{\circ}49'$
Yaw	$12^{\circ}17'$	$12^{\circ}17'$
Right ~~Lower~~ Nozzle		
Pitch	$15^{\circ}49'$	$15^{\circ}49'$
Yaw	$12^{\circ}17'$	$12^{\circ}17'$

TABLE III. - Continued.

*REVISED 4/24/74

MODEL COMPONENT: RUDDER - R_5

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

MODEL SCALE: 0.010

DRAWING NUMBER: VL70-000146B, VL70-000095

DIMENSIONS:	FULL-SCALE	MODEL SCALE
* Area - Ft^2	100.15	.010
Span (equivalent) , In.	201.0	2.010
Inb'd equivalent chord, In.	91.585	0.916
Outb'd equivalent chord , In.	50.833	0.508
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	34.83	34.83
Trailing Edge	26.25	26.25
Hingeline	34.83	34.83
* Area Moment (Product of Area & $\overline{c}$) (Normal to hinge line), Ft^3	610.92	0.00061
*Mean Aerodynamic Chord, In.	73.2	0.732

TABLE III. - Continued.

*REVISED 6/1/74

MODEL COMPONENT: VERTICAL - V_8

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

MODEL SCALE: 0.010

DRAWING NUMBER: VL70-000140C, VL70-000146B

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo) - Ft^2		
Planform	413.253	.04133
Span (Theo) - In.	315.72	3.157
Aspect Ratio	1.675	1.675
Rate of Taper	0.507	0.507
Taper Ratio	0.404	0.404
Sweep-Back Angles, Degrees.		
Leading Edge	45.000	45.000
Trailing Edge	26.25	26.25
0.25 Element Line	41.13	41.13
Chords:		
Root (Theo) WP	268.50	2.685
Tip (Theo) WP	108.47	1.085
MAC	199.81	1.998
Fus. Sta. of .25 MAC	1463.35	14.634
W.P. of .25 MAC	635.52	6.355
B.L. of .25 MAC	0.00	0.00
Airfoil Section		
Leading Wedge Angle - Deg.	10.00	10.00
Trailing Wedge Angle - Deg.	14.92	14.92
Leading Edge Radius	2.00	0.020
Void Area	13.17	0.0013
Blanketed Area	0.00	0.00

TABLE III. - Concluded.

*REVISED 4/24/74

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.

TEST NO. DWG. NO. VL70-000140A, -000200

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2		
Planform	2690.00	0.2690
Span (Theo In.	936.68	9.367
Aspect Ratio	1.177	1.177
Rate of Taper	0.200	0.200
Taper Ratio	3.500	3.500
Dihedral Angle, degrees	0.500	0.500
Incidence Angle, degrees	+ 3.000	+ 3.000
Aerodynamic Twist, degrees		
Sweep Back Angles, degrees		
Leading Edge	45.000	45.000
Trailing Edge	- 10.056	- 10.056
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.0.0.	689.24	6.892
Tip, (Theo) B.P.	137.85	1.379
MAC	474.81	4.748
* Fus. Sta. of .25 MAC	1136.83	11.368
* W.P. of .25 MAC	290.58	2.906
* B.L. of .25 MAC	182.13	1.821
EXPOSED DATA		
* Area (Theo) Ft^2	1751.50	0.175
* Span, (Theo) In. BP108	720.68	7.207
* Aspect Ratio	2.059	2.059
Taper Ratio	0.245	0.245
Chords		
* Root BP108	562.09	5.621
* Tip 1.00 $\frac{b}{2}$	137.85	1.379
* MAC	392.83	3.928
* Fus. Sta. of .25 MAC	1185.98	11.860
* W.P. of .25 MAC	294.30	2.943
* B.L. of .25 MAC	251.77	2.518
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	0.0113
*Leading Edge Intersects Fus M. L. @ Sta	500.00	5.000
*Leading Edge Intersects Wing @ Sta	1024.00	10.240

Notes:

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

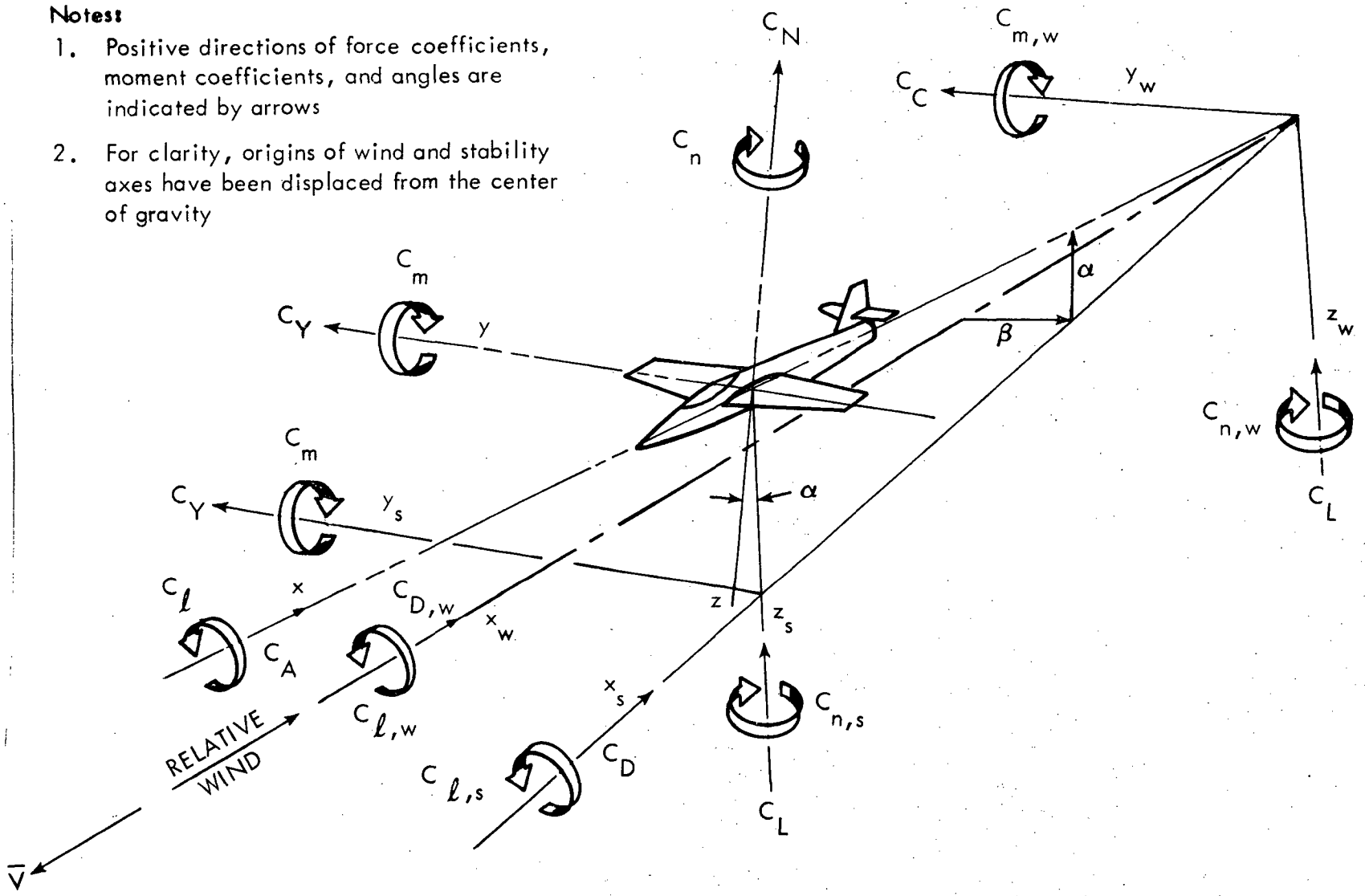
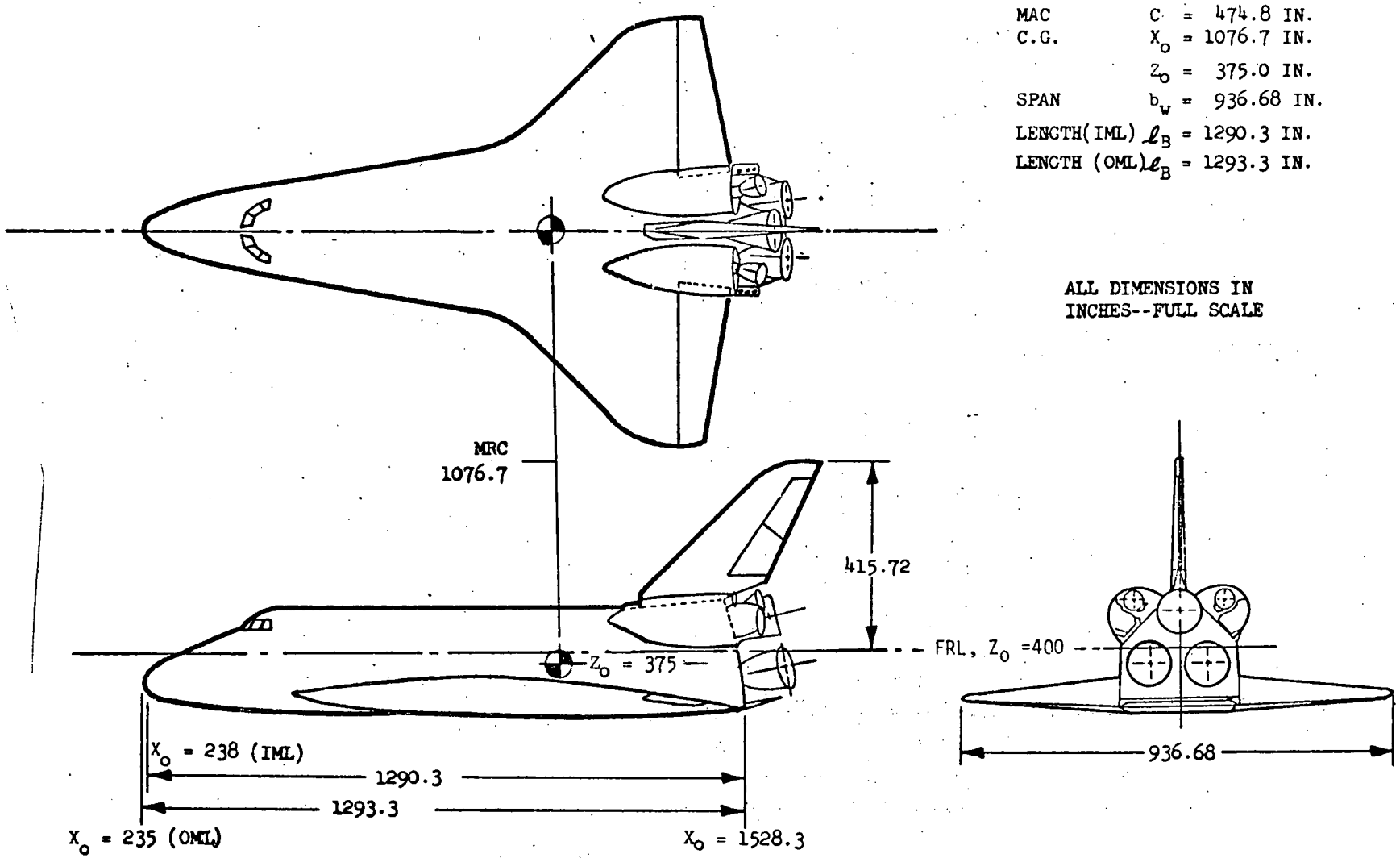


Figure 1.- Axis Systems.



REFERENCE	DIMENSIONS
AREA	S_w = 2690 FT^2
MAC	C = 474.8 IN.
C.G.	X_o = 1076.7 IN.
	Z_o = 375.0 IN.
SPAN	b_w = 936.68 IN.
LENGTH(IML)	ℓ_B = 1290.3 IN.
LENGTH (OML)	ℓ_B = 1293.3 IN.

ALL DIMENSIONS IN INCHES--FULL SCALE

Figure 2. - Model sketch.

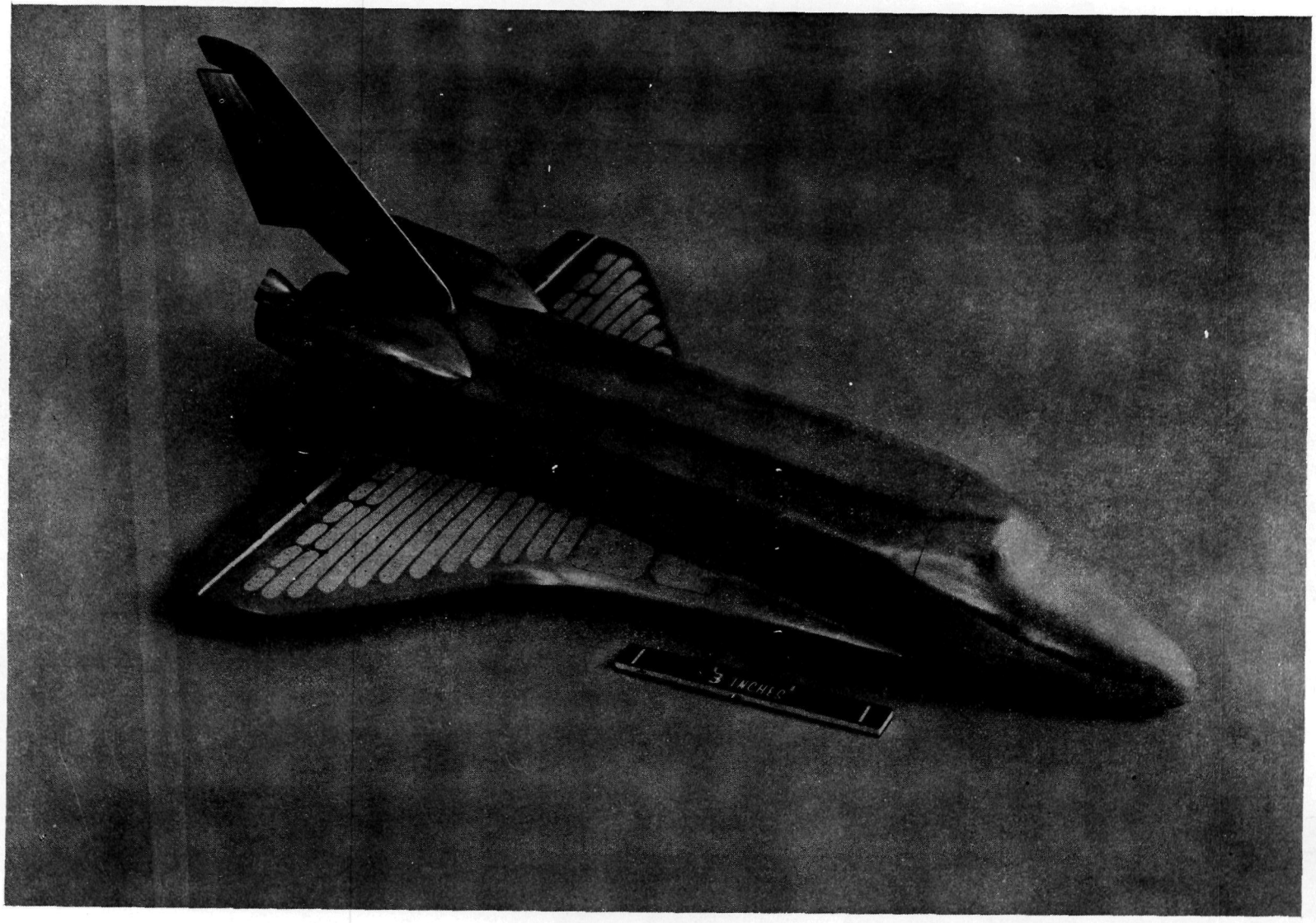


Figure 3. Model Photograph

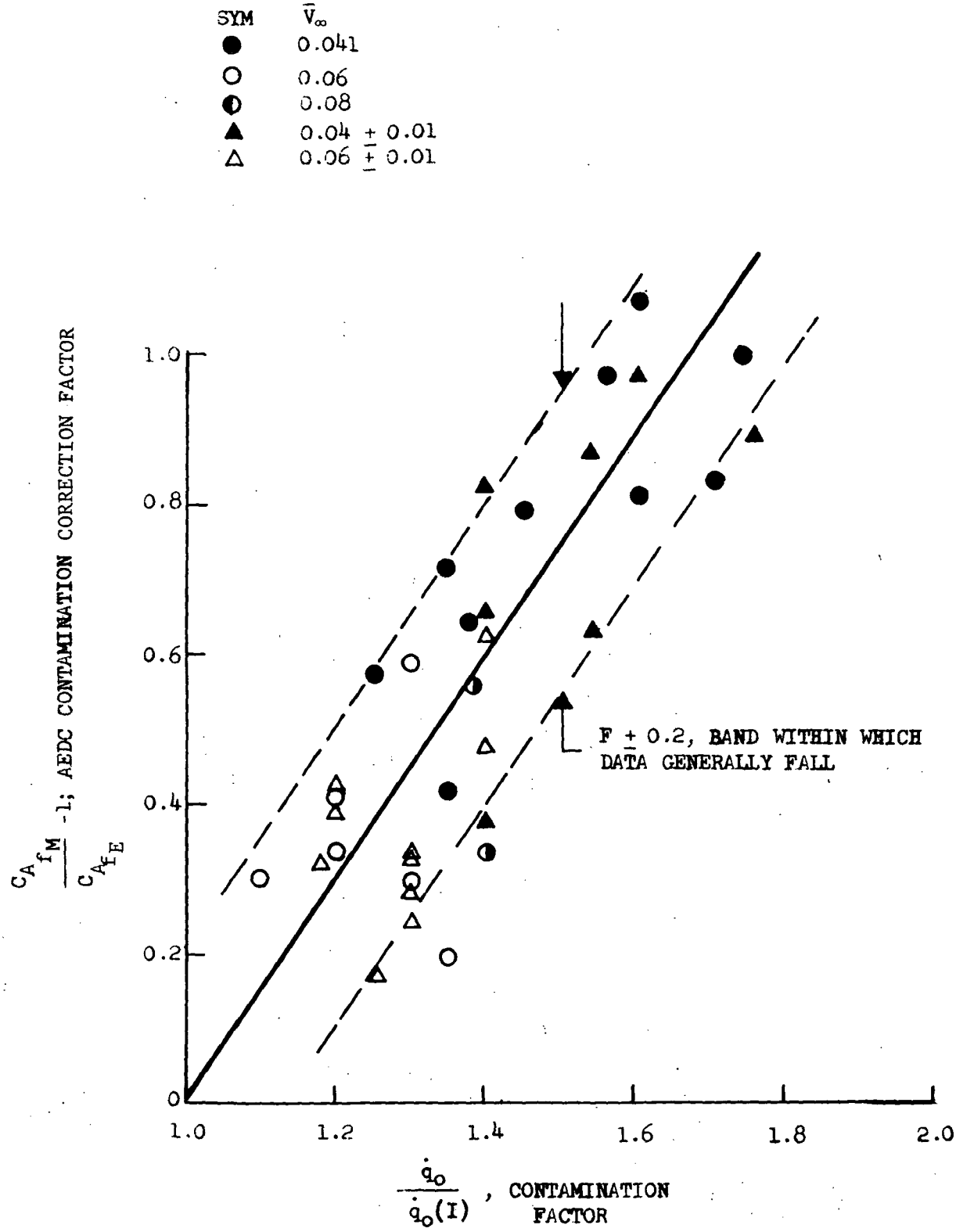


Figure 4. - AEDC Contamination Correction Factor.

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	1.100
□	25.000	ELEVTR	-40.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	-11.700	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

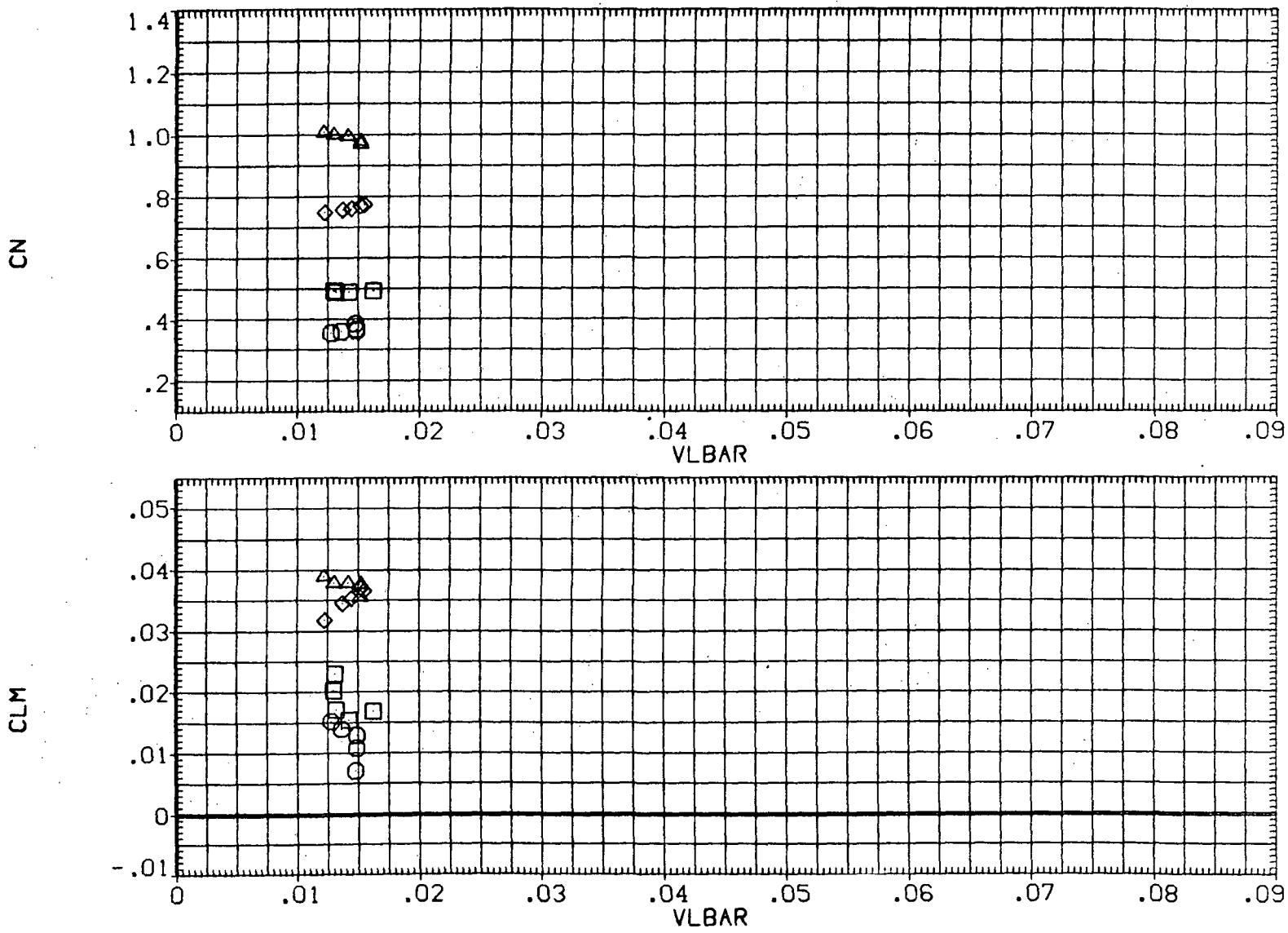


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

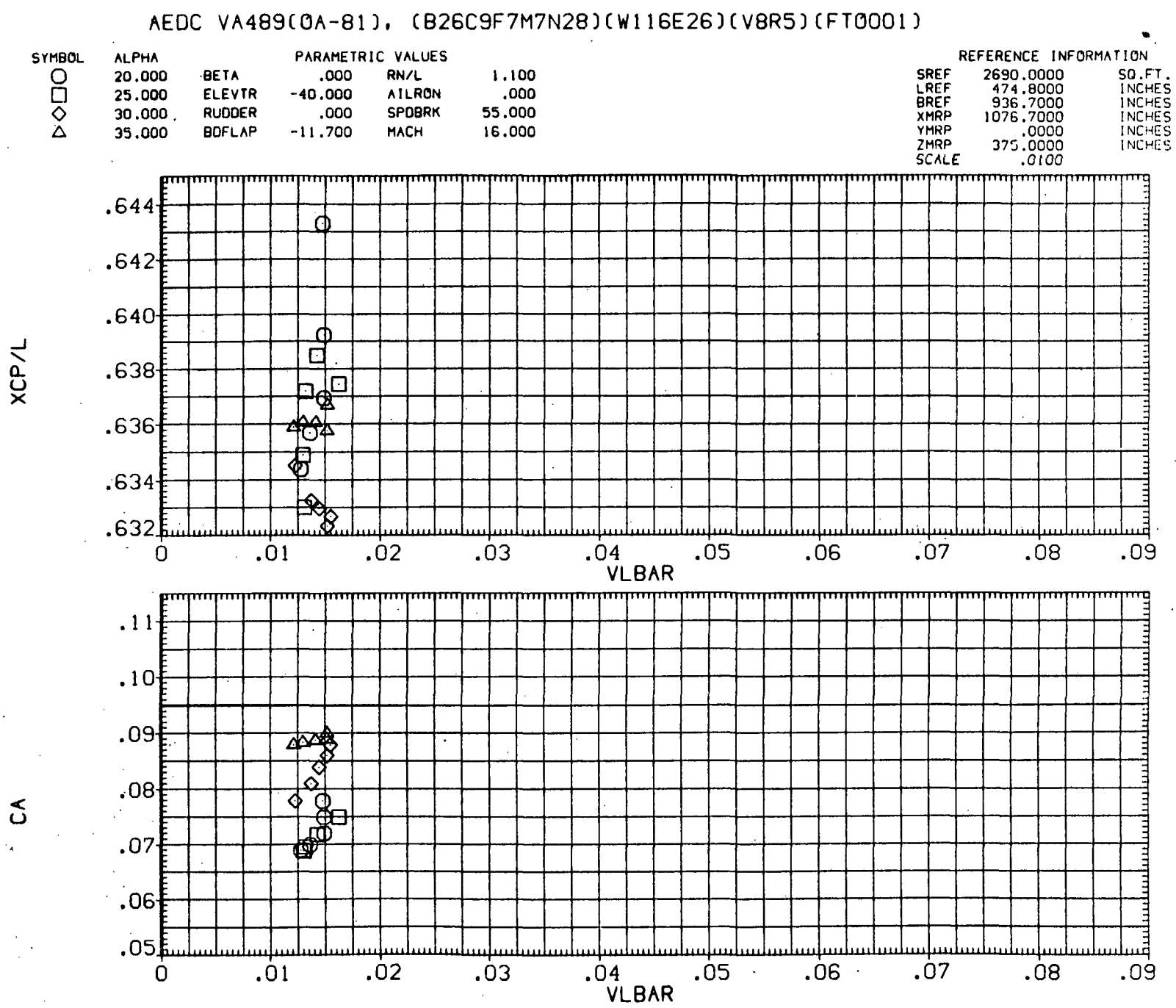
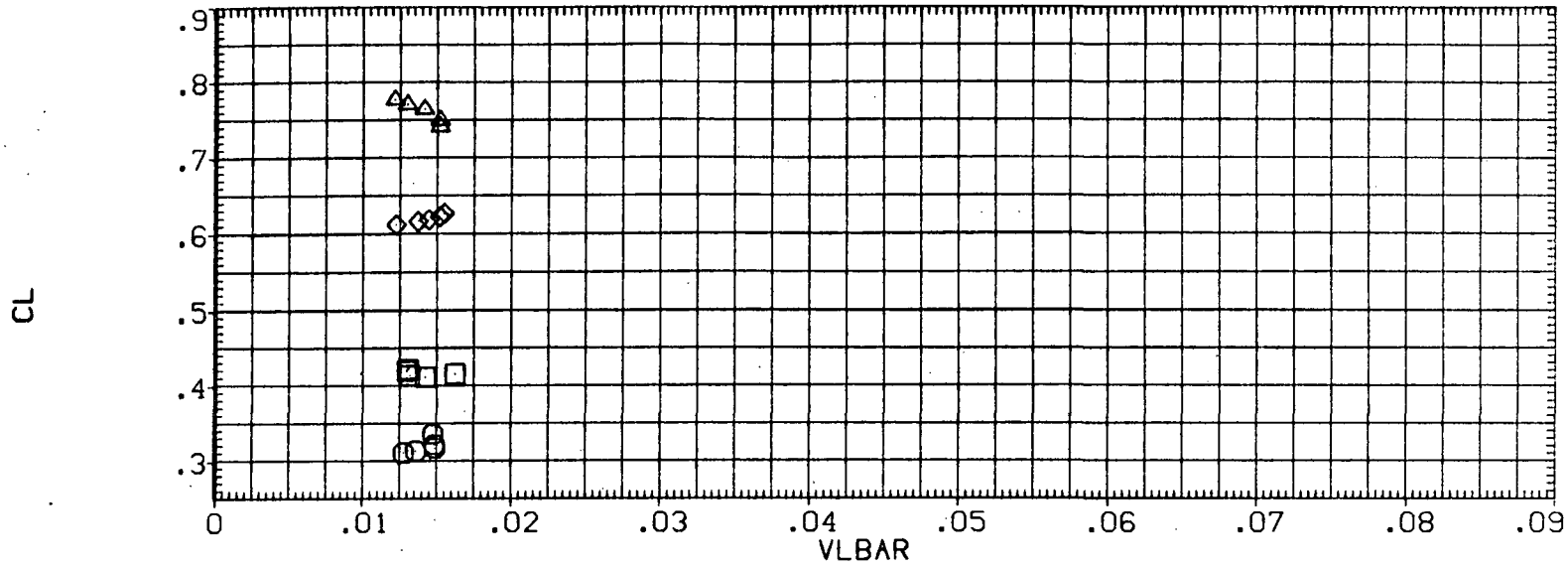


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0001)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	1.100
□	25.000	ELEVTR	-40.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	-11.700	MACH	16.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	



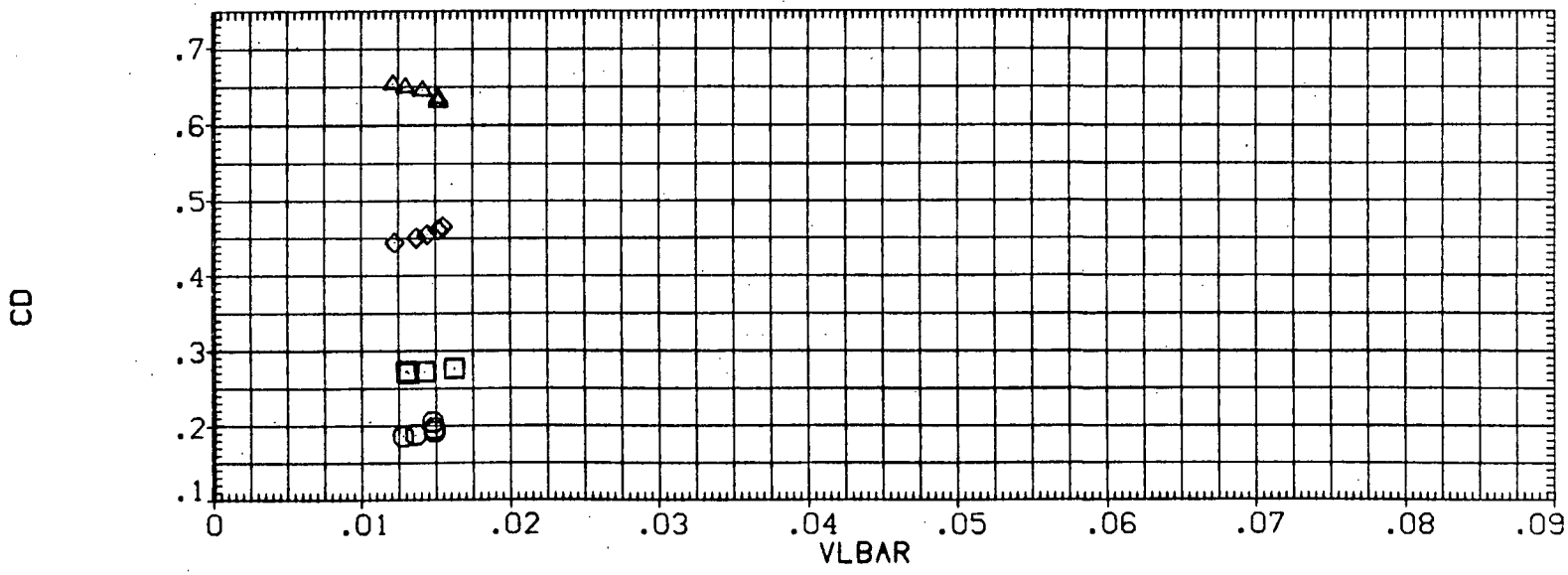


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81). (B26C9F7M7N28)(W116E26)(V8R5)(FT0002)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.250
□	25.000	ELEVTR	-40.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	-11.700	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

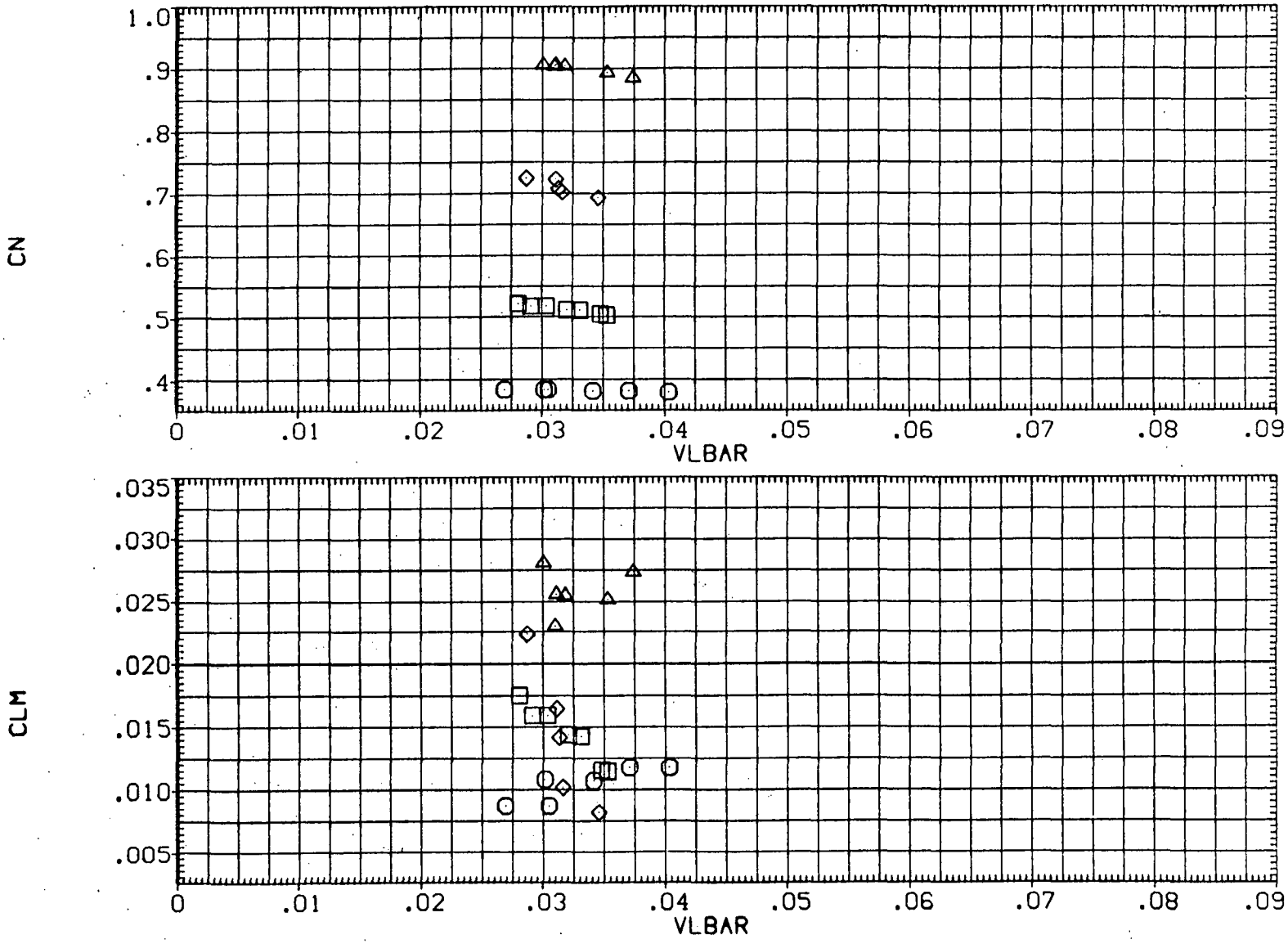


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

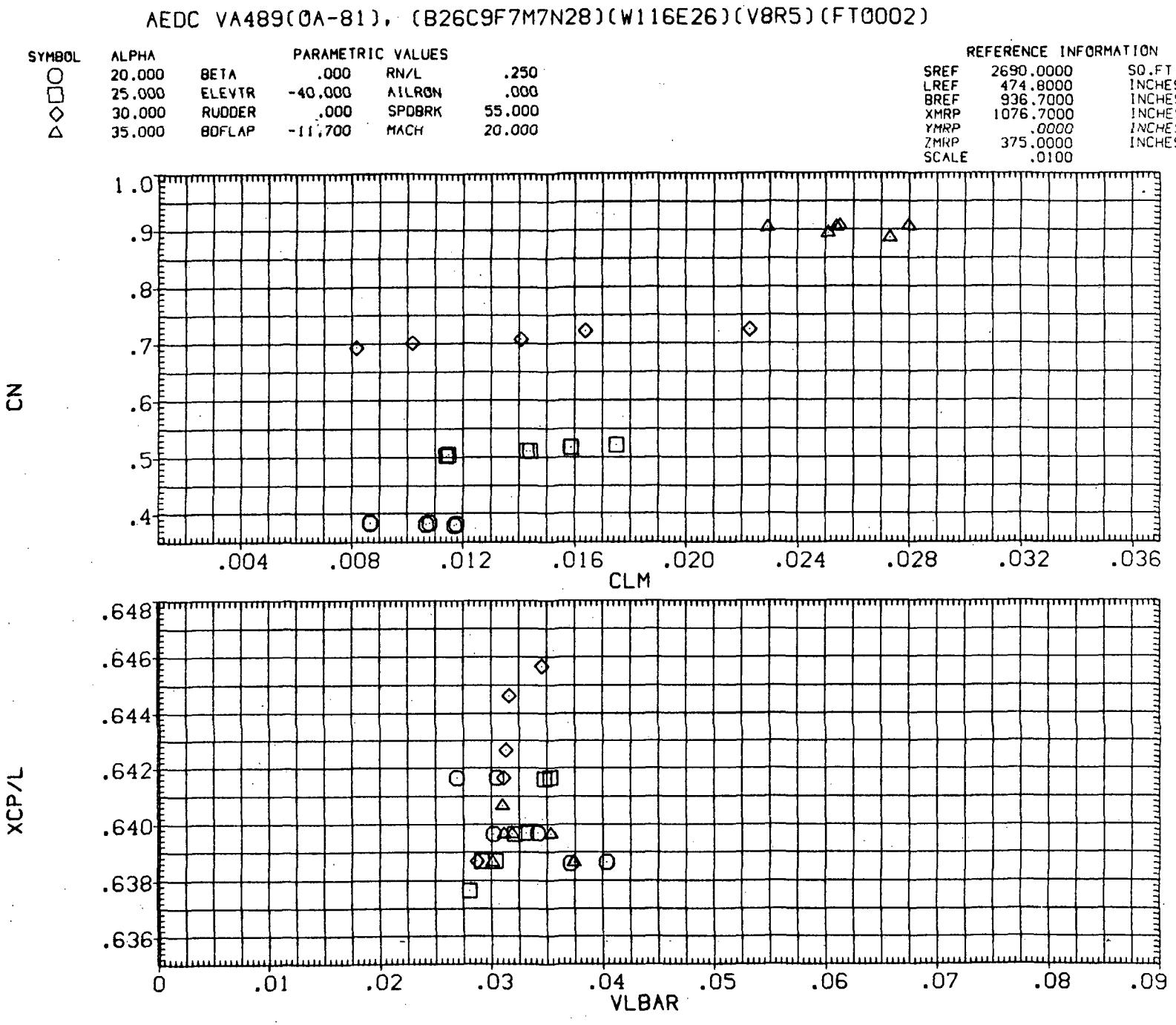


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0002)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.250
□	25.000	ELEVTR	-40.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	-11.700	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

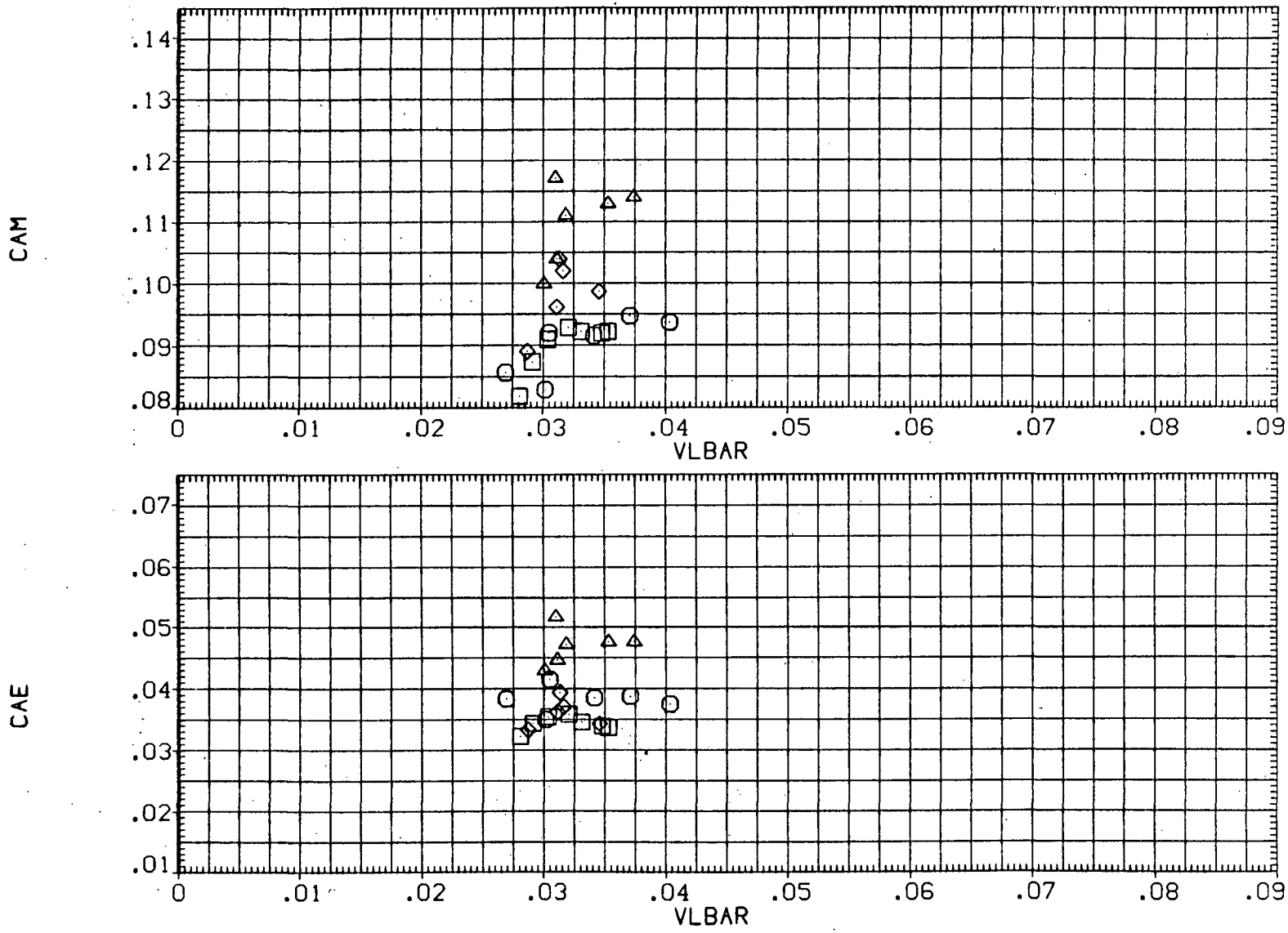


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0002)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.250
□	25.000	ELEVTR	-40.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	-11.700	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

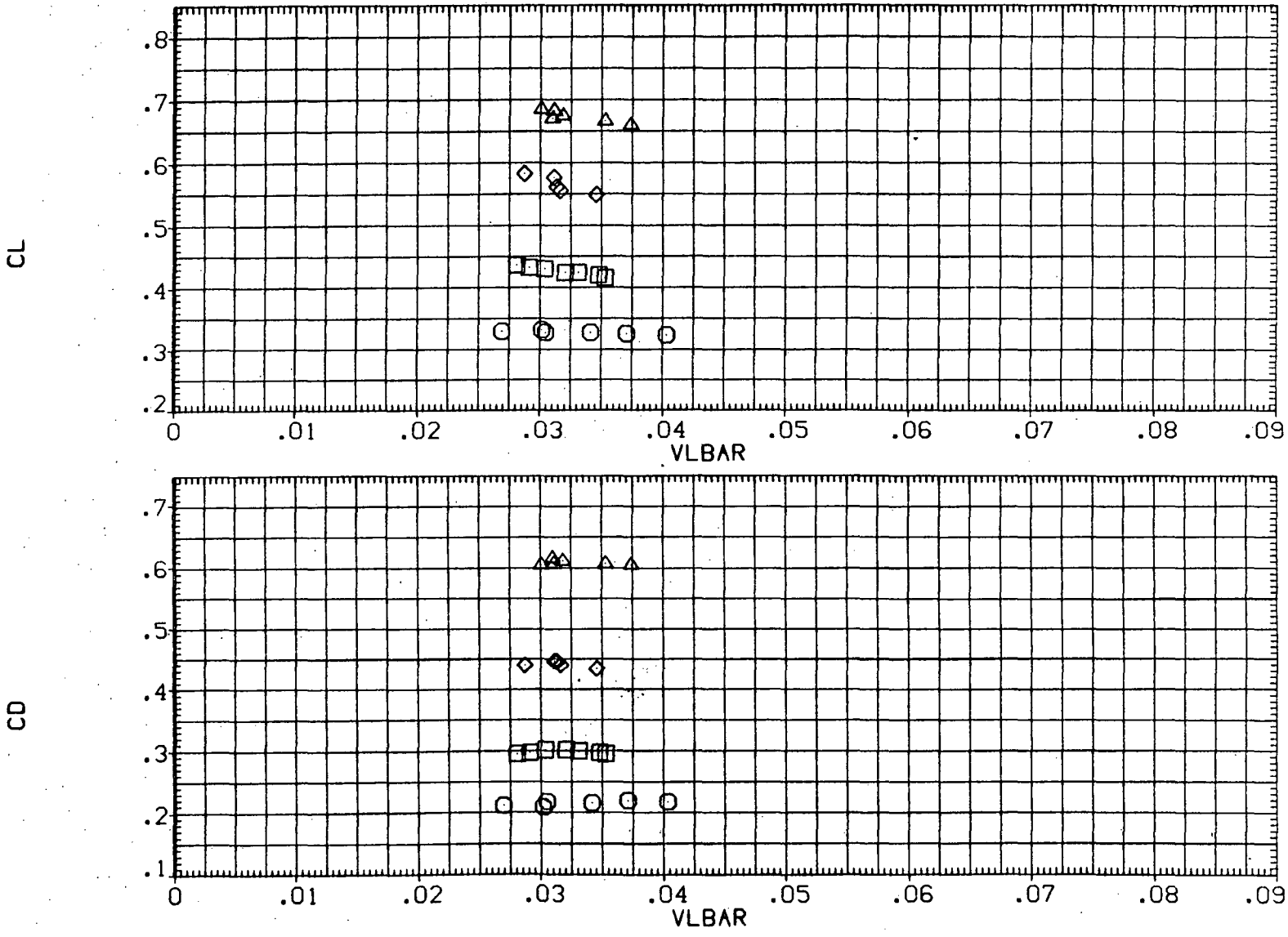


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

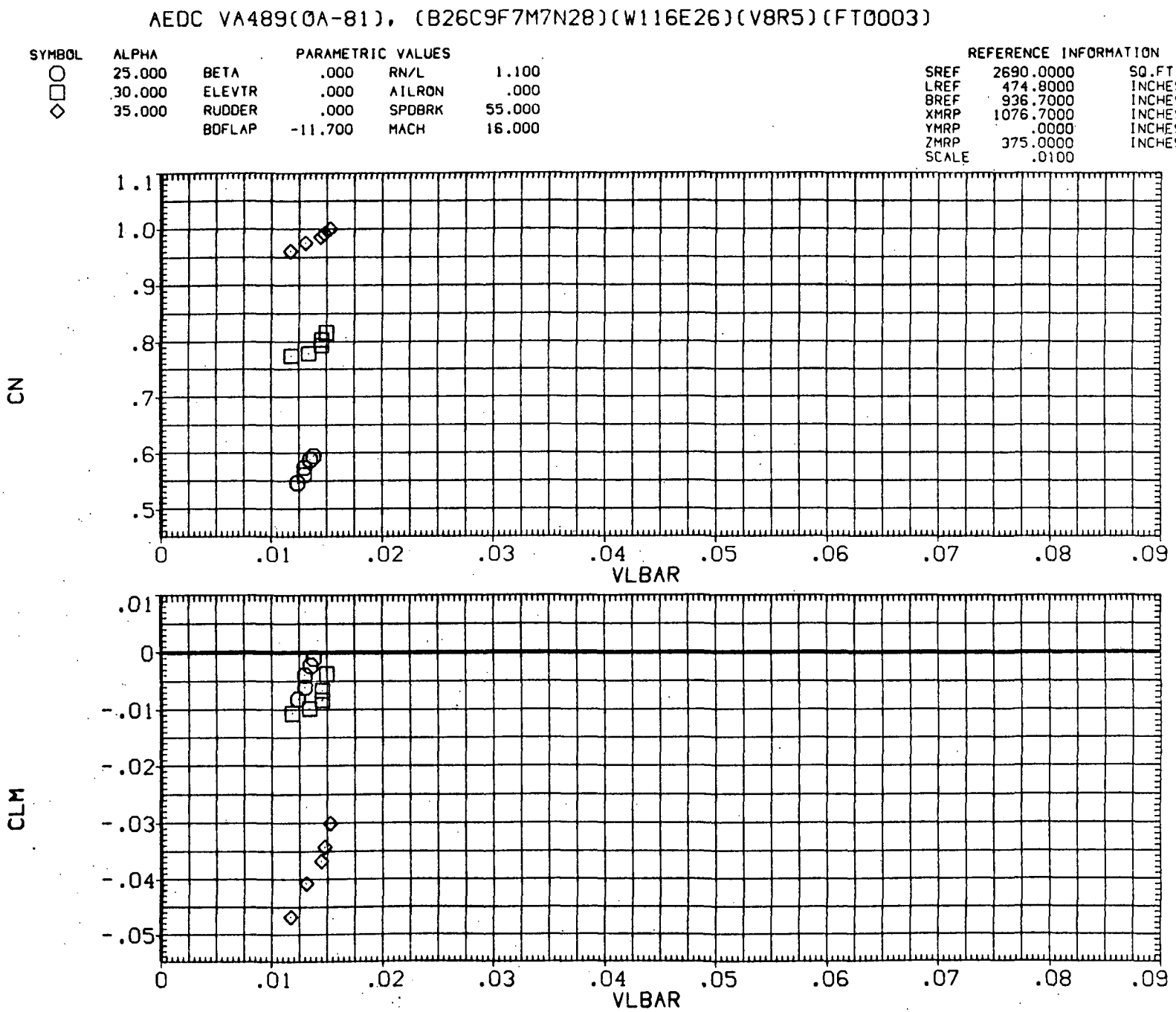


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0003)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	25.000	BETA	.000	RN/L	1.100
□	30.000	ELEVTR	.000	AILRON	.000
◇	35.000	RUDDER	.000	SPDBRK	55.000
		BDFLAP	-11.700	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

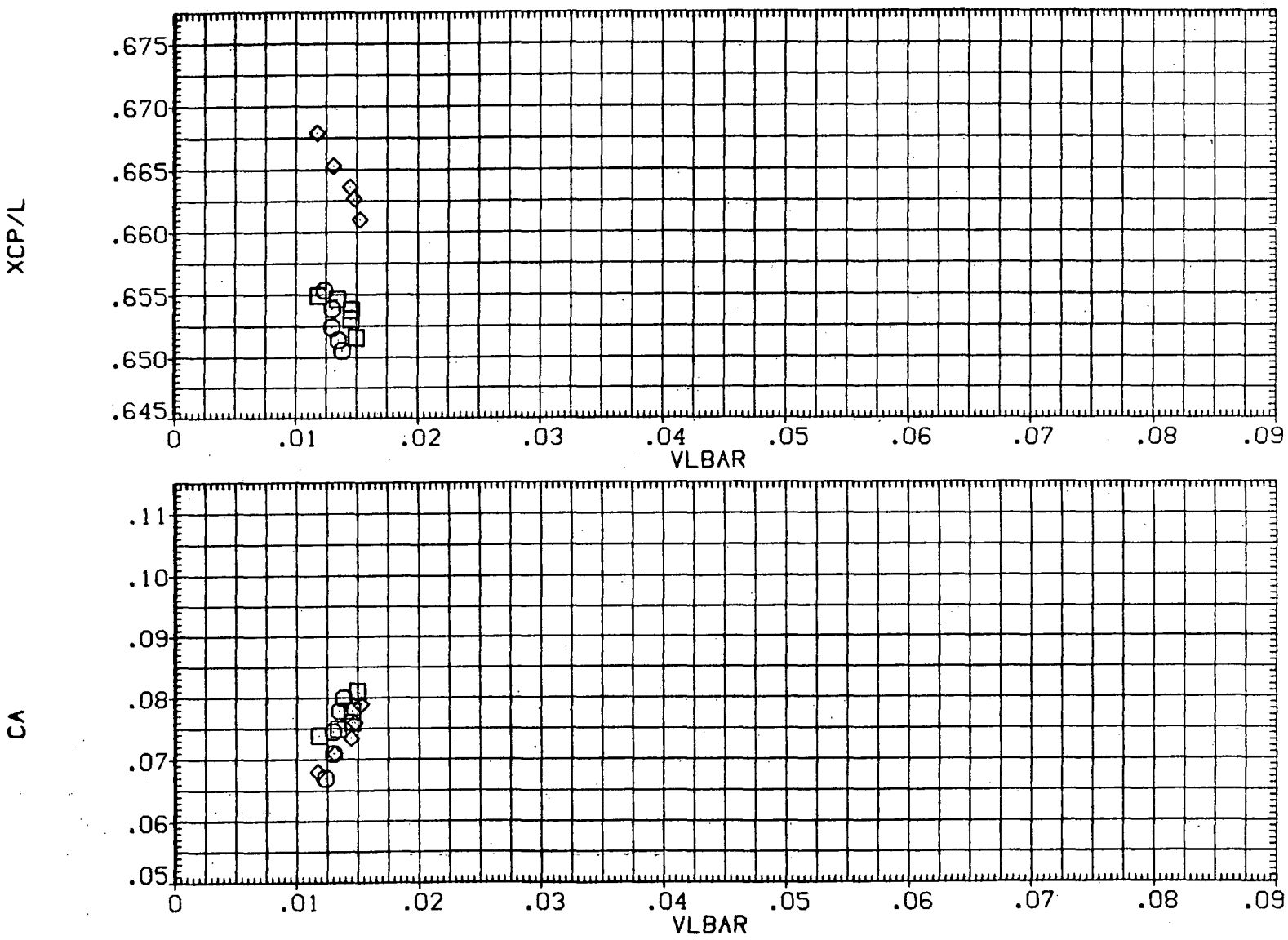


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0003)

SYMBOL	ALPHA
○	25.000
□	30.000
◇	35.000

PARAMETRIC VALUES

BETA	.000	RN/L	1.100
ELEVTR	.000	AILRON	.000
RUDDER	.000	SPDBRK	55.000
BDFLAP	-11.700	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

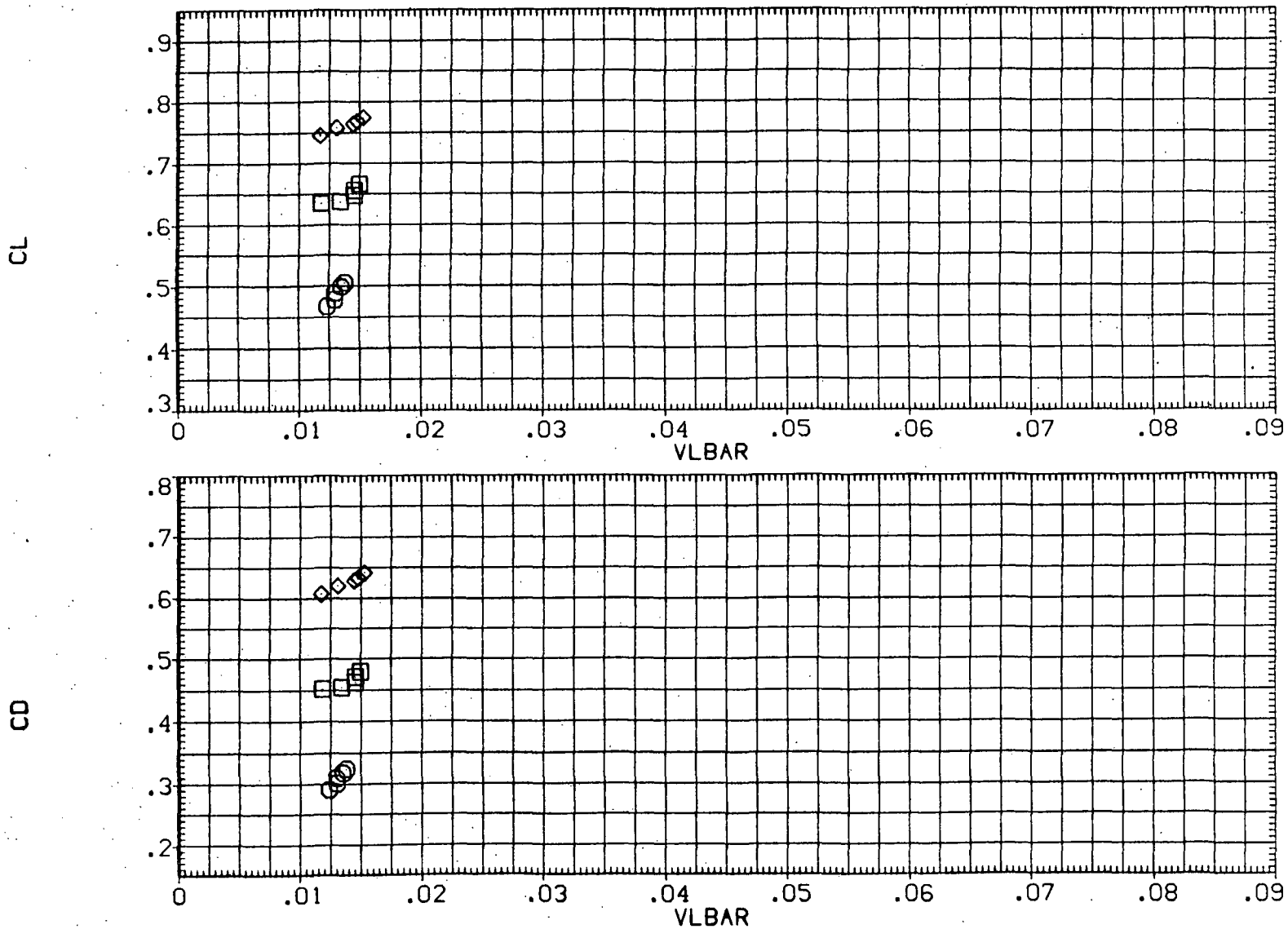


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	1.100
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	.000	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

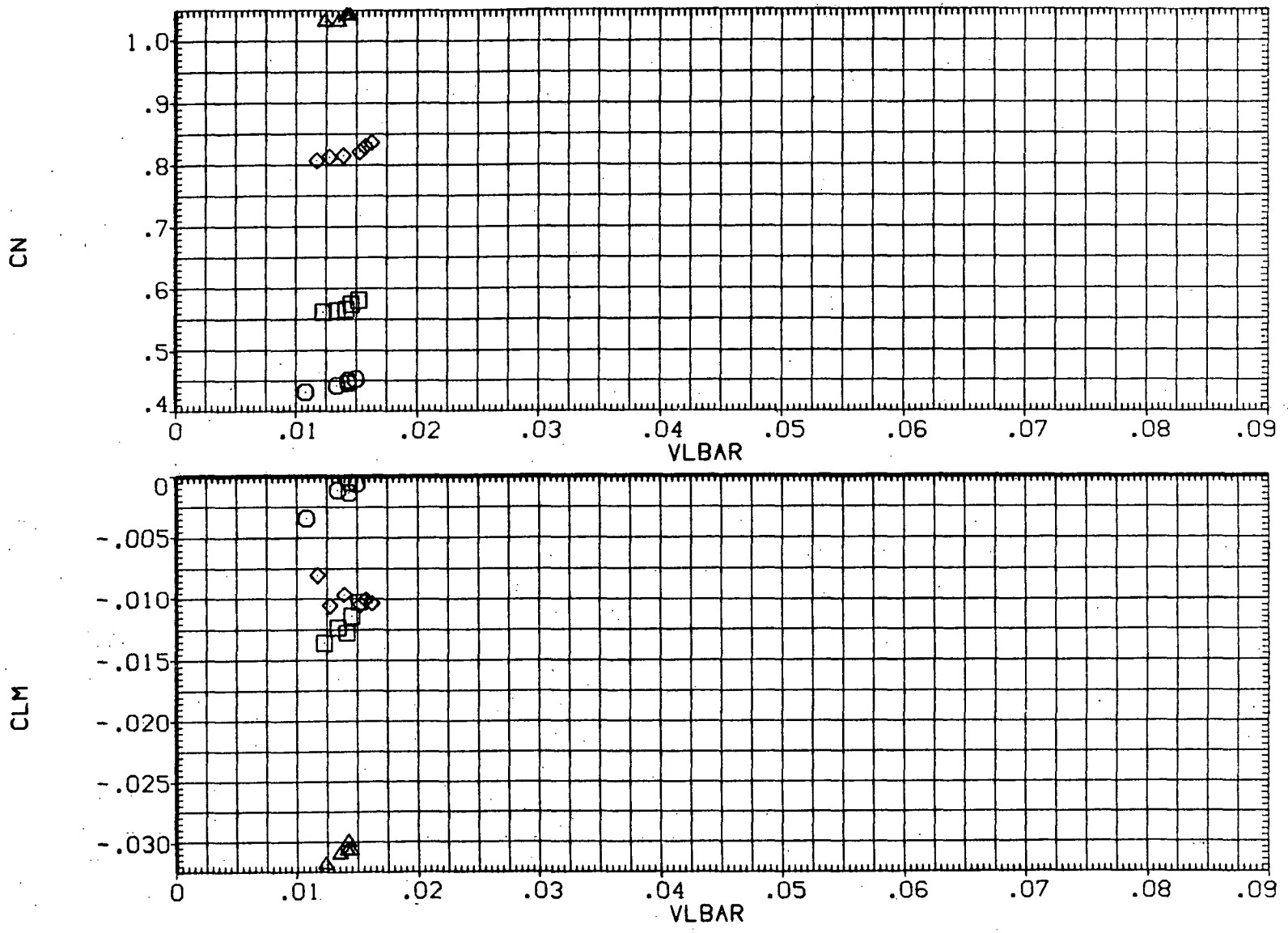


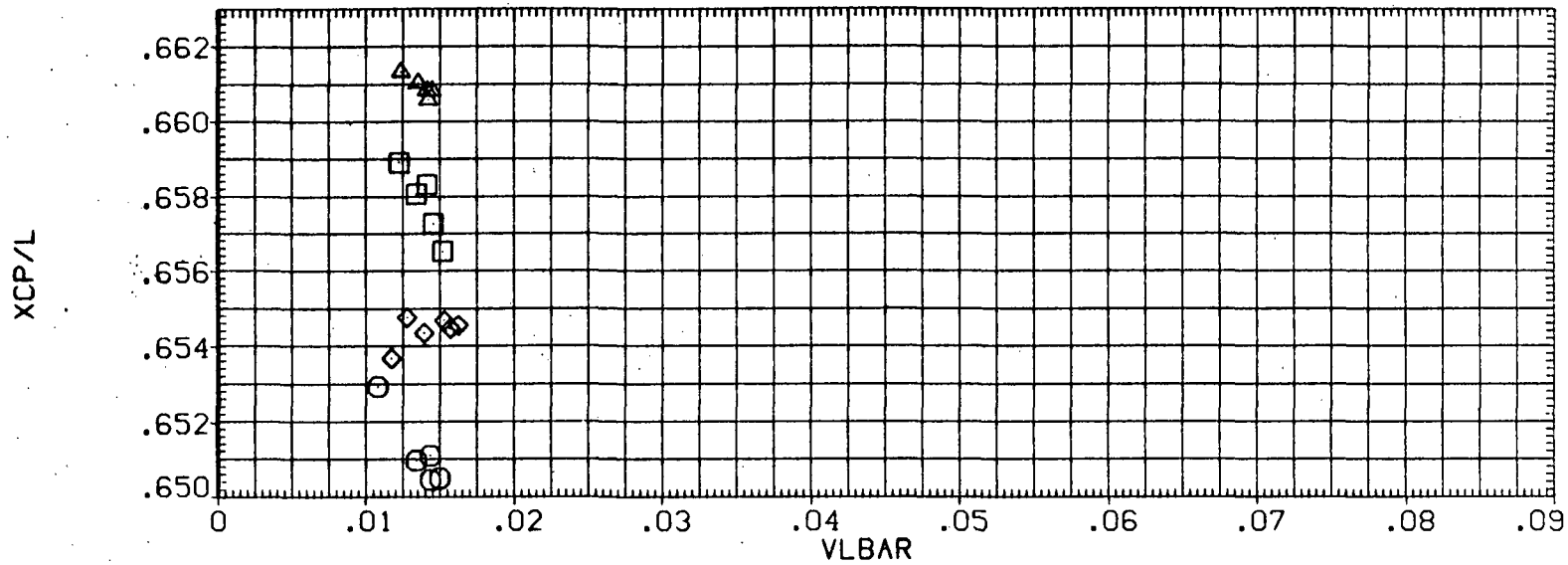
FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0004)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	1.100
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPOBRK	55.000
△	35.000	BDFLAP	.000	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	



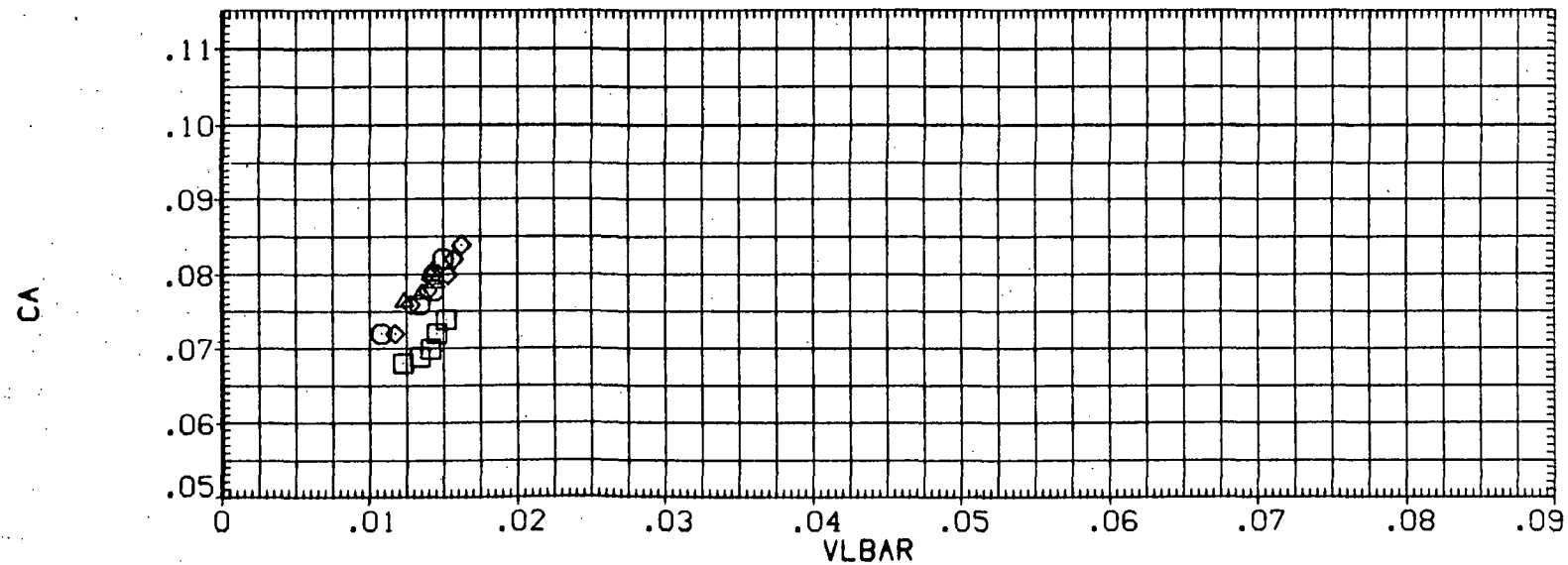


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0004)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	1.100
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	.000	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

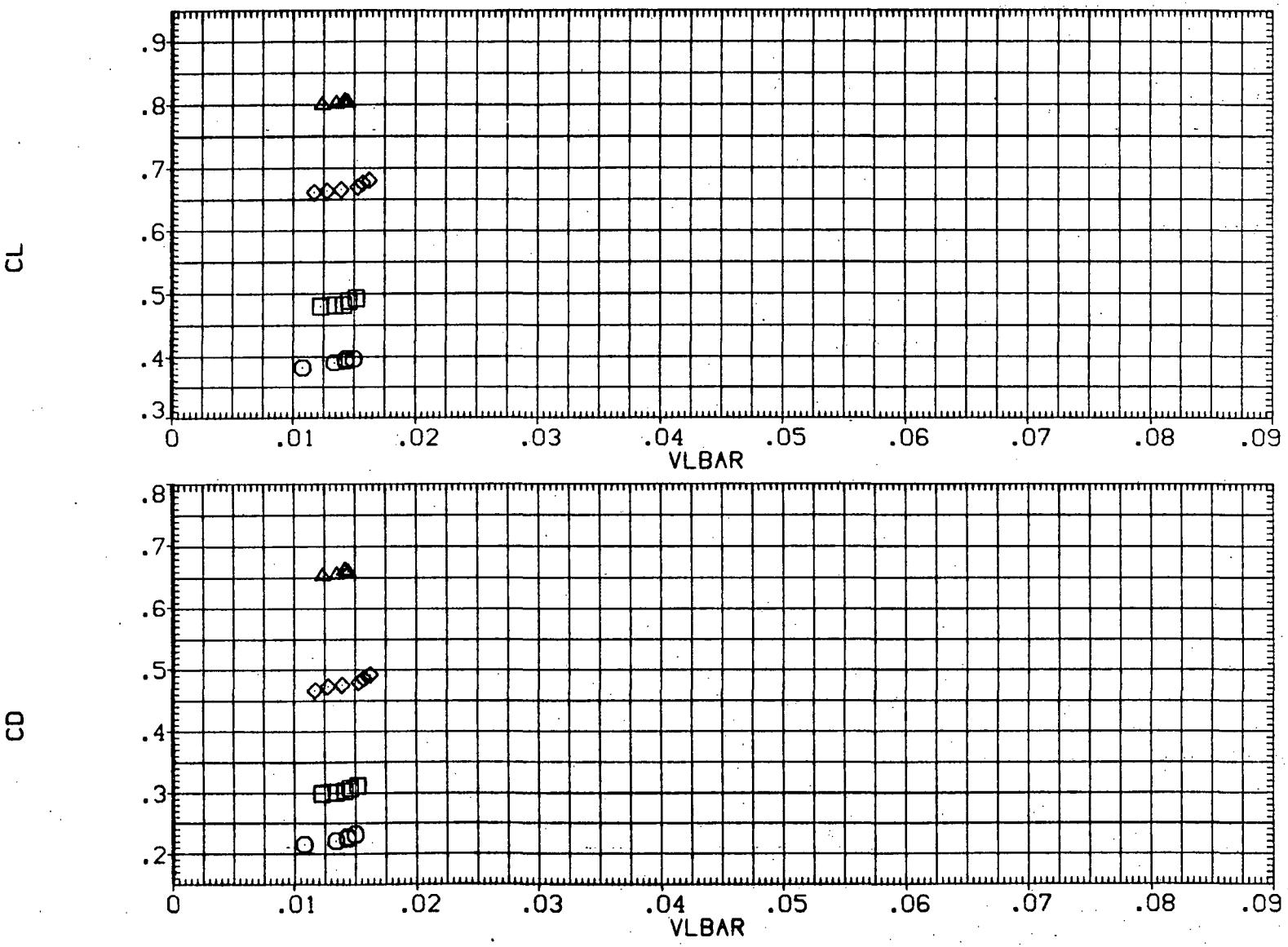


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

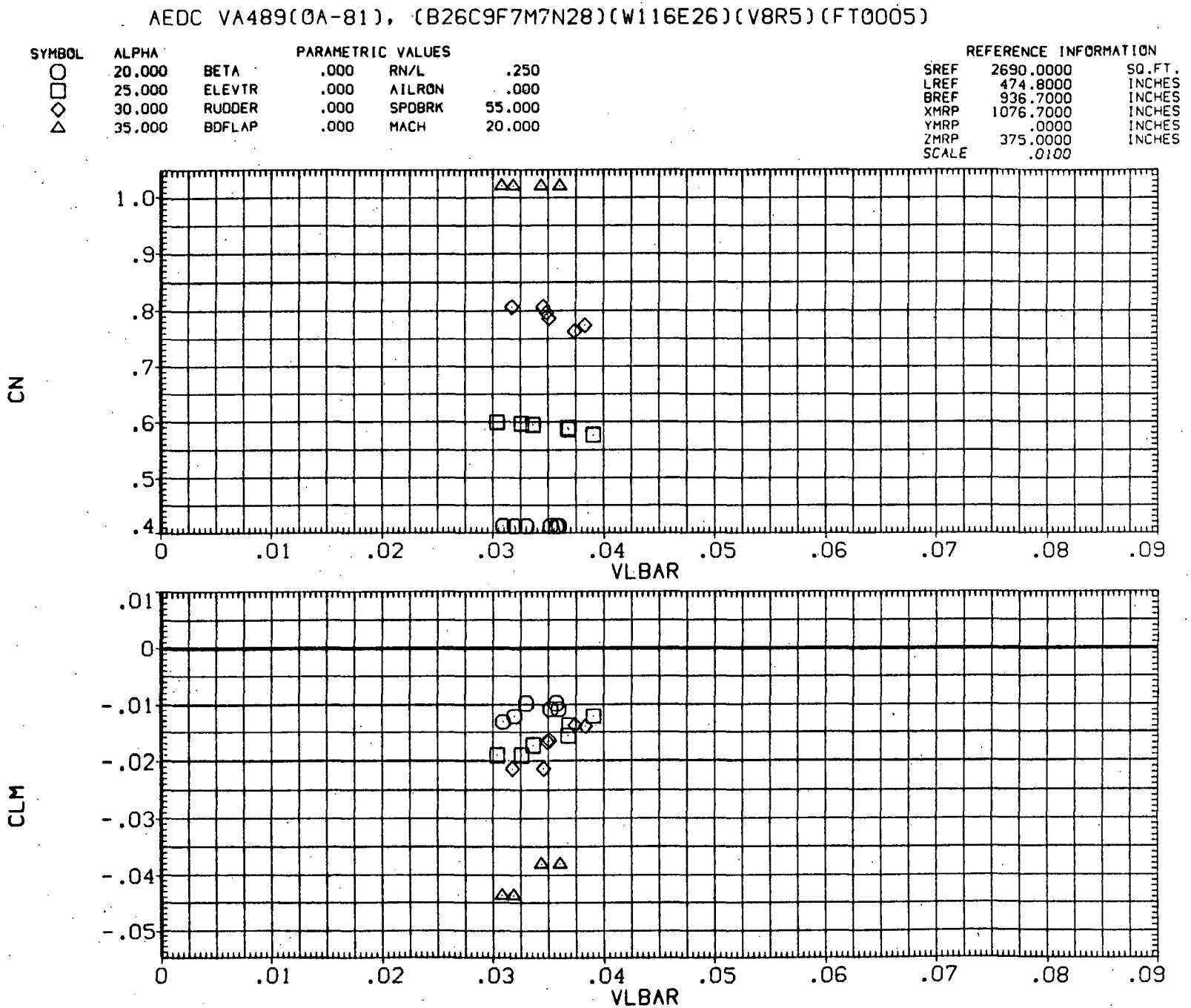


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.250
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

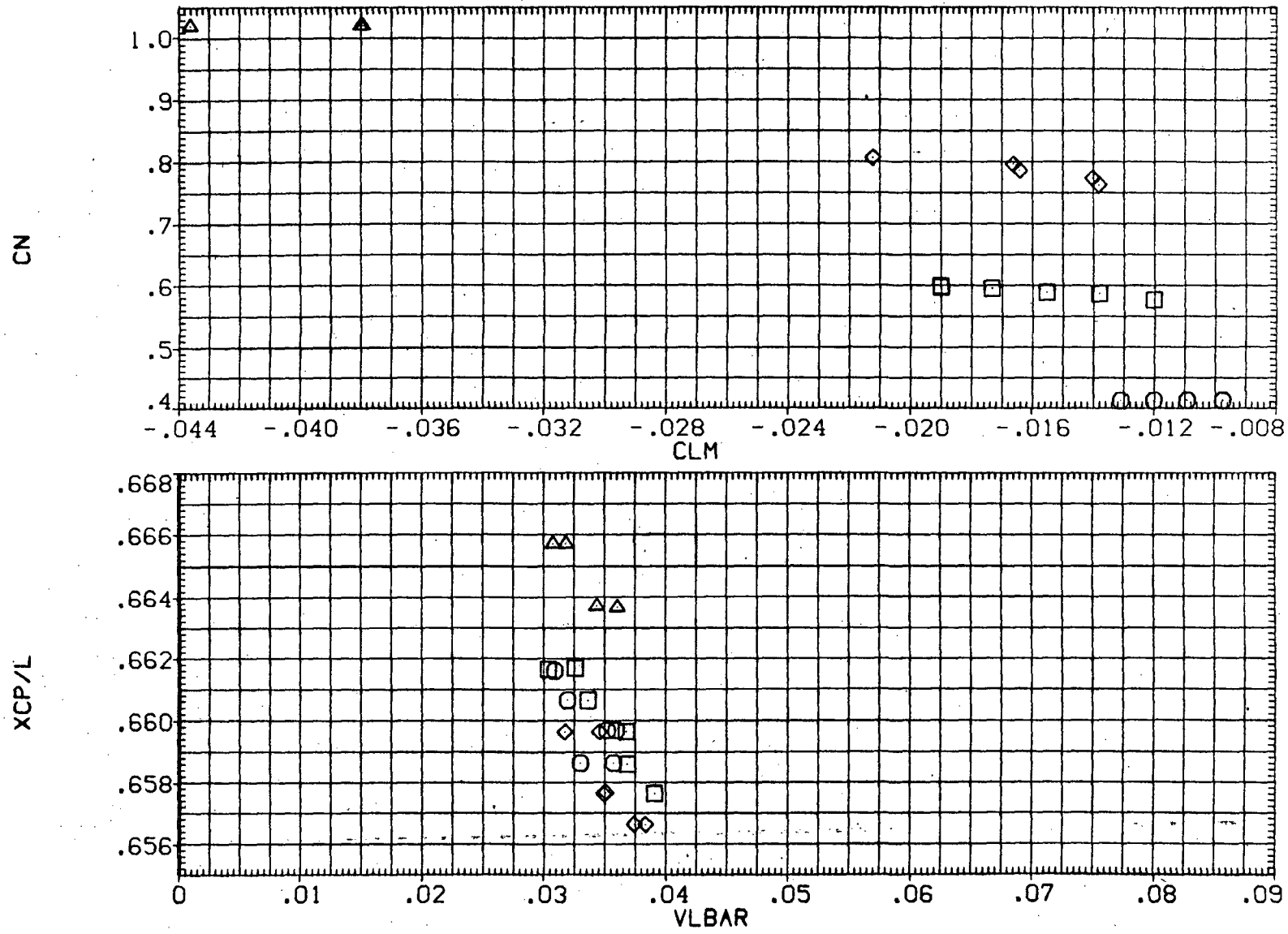


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

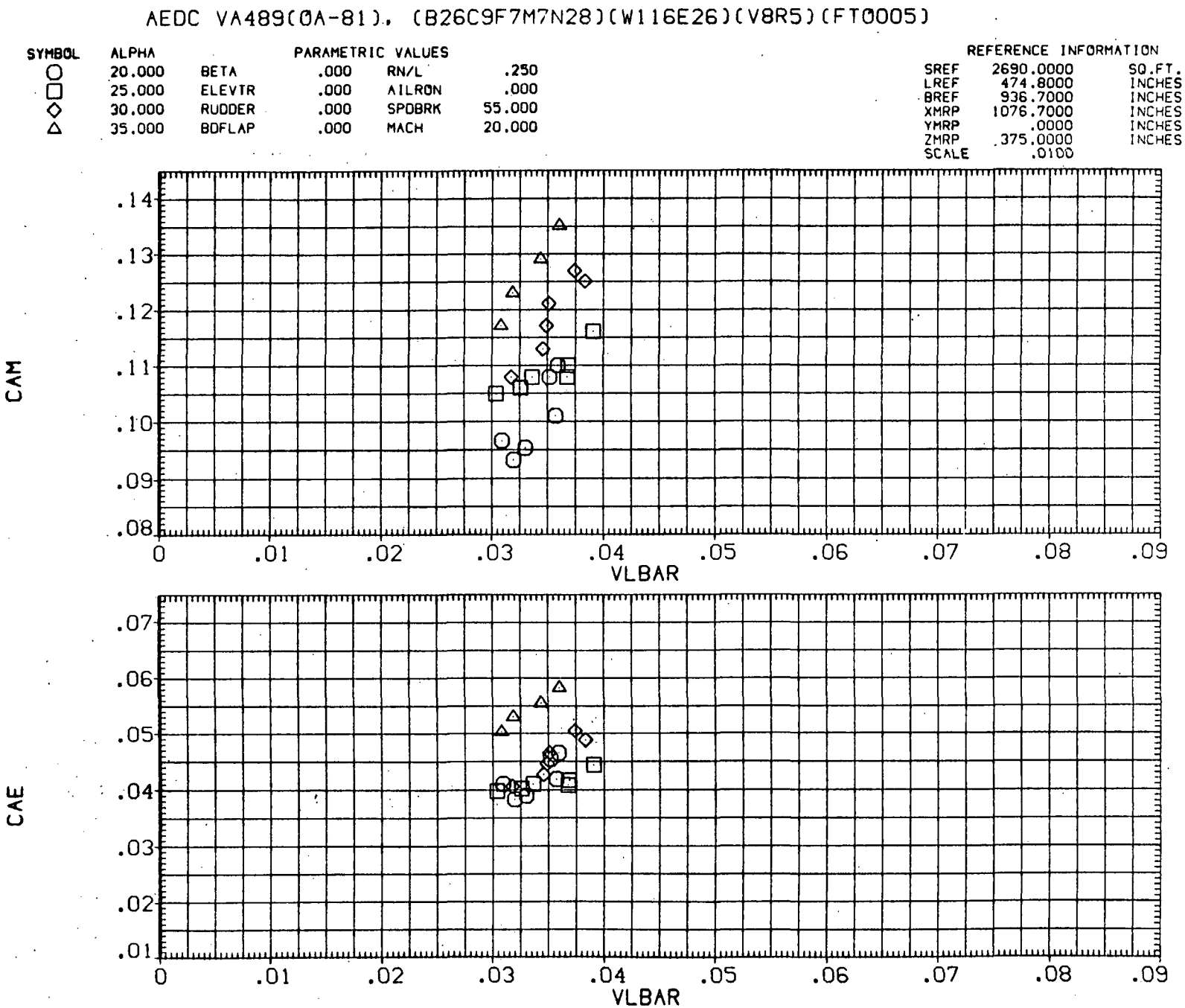


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0005)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.250
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

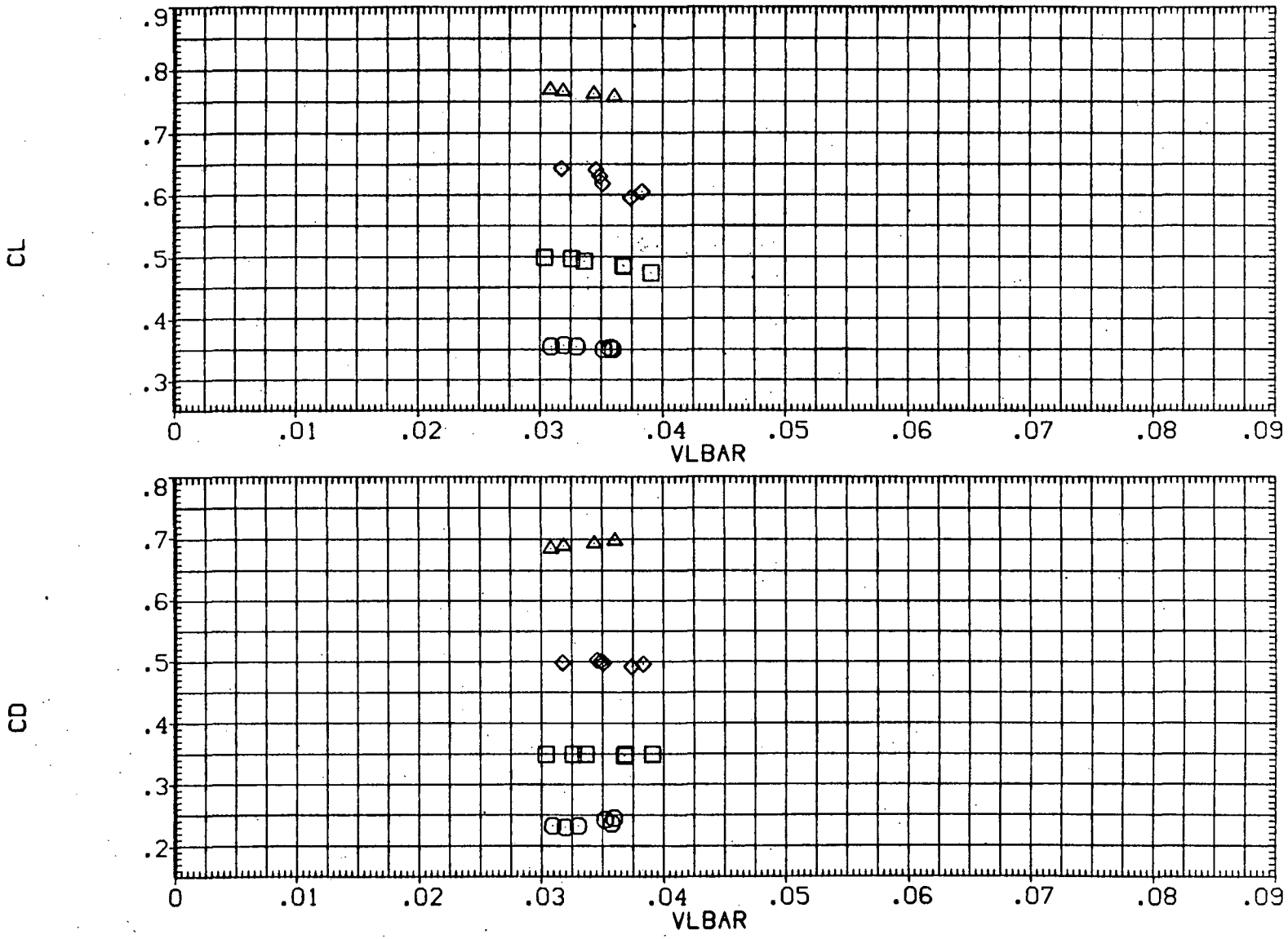


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0006)

SYMBOL	ALPHA
○	25.000
□	35.000

PARAMETRIC VALUES

BETA	.000	RN/L	.250
ELEVTR	.000	AILRON	.000
RUDDER	.000	SPDBRK	55.000
BOFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

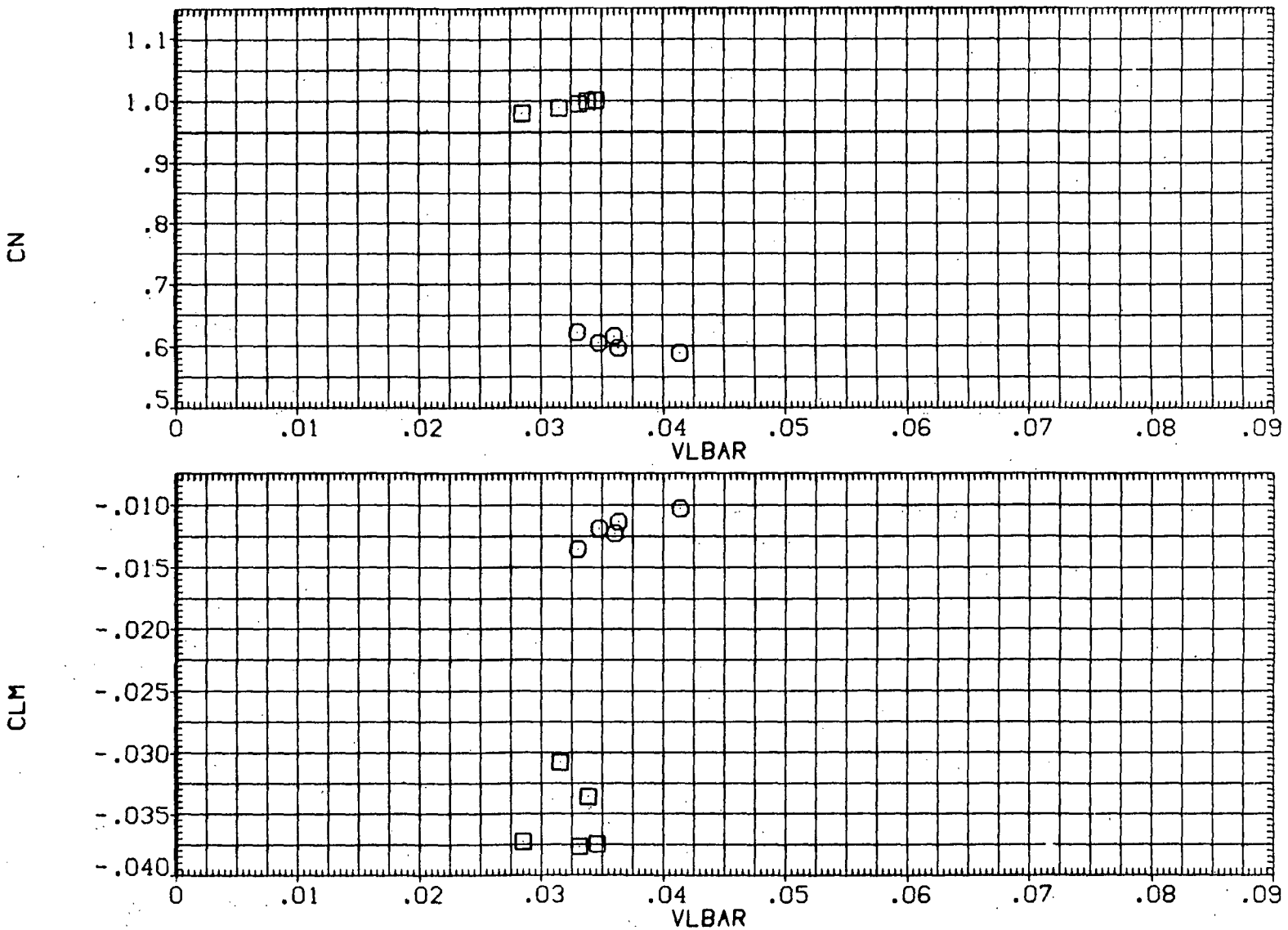


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0006)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	25.000	BETA	.000	RN/L	.250
□	35.000	ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

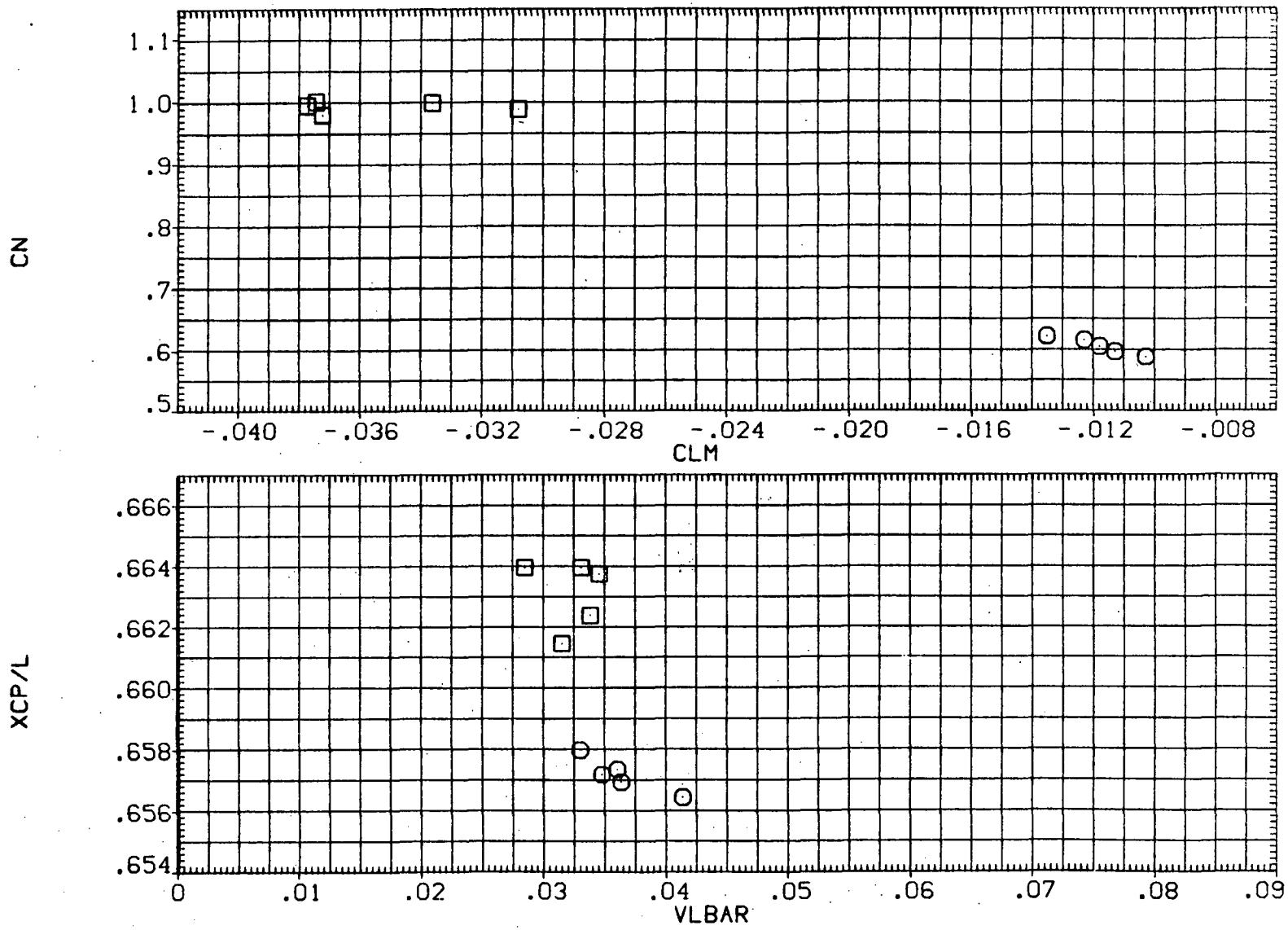


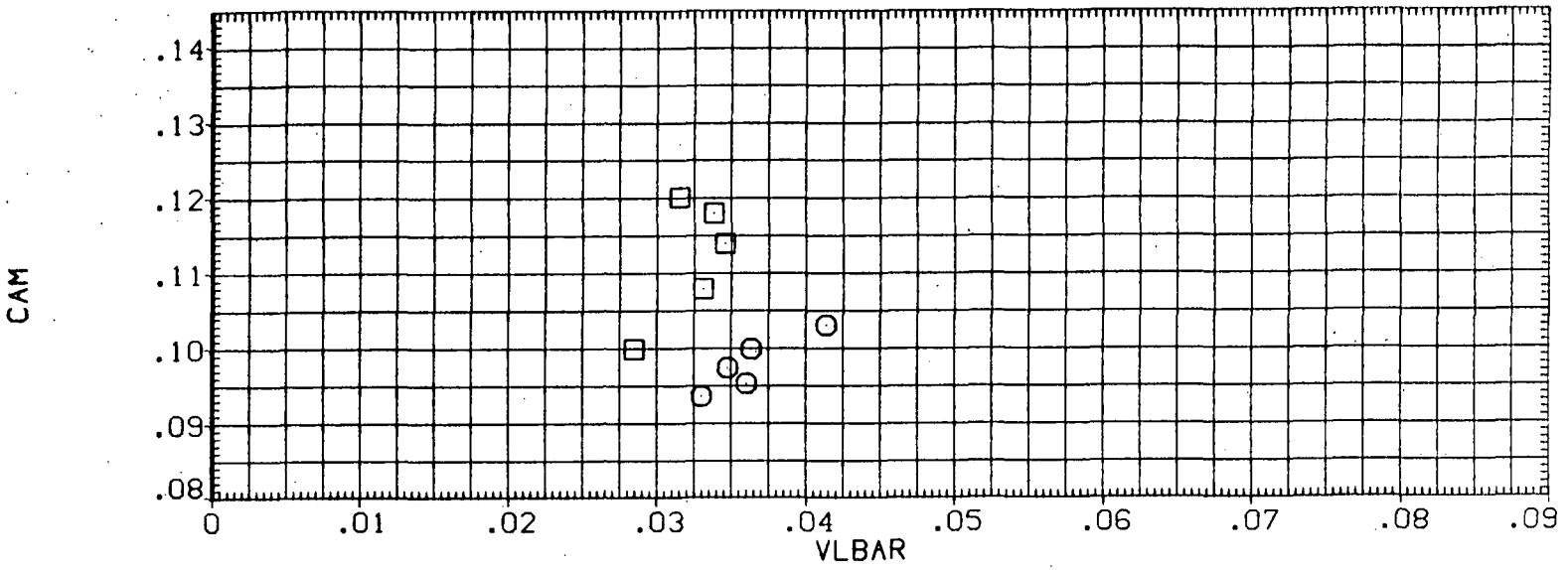
FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0006)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	25.000	BETA	.000	RN/L	.250
□	35.000	ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	



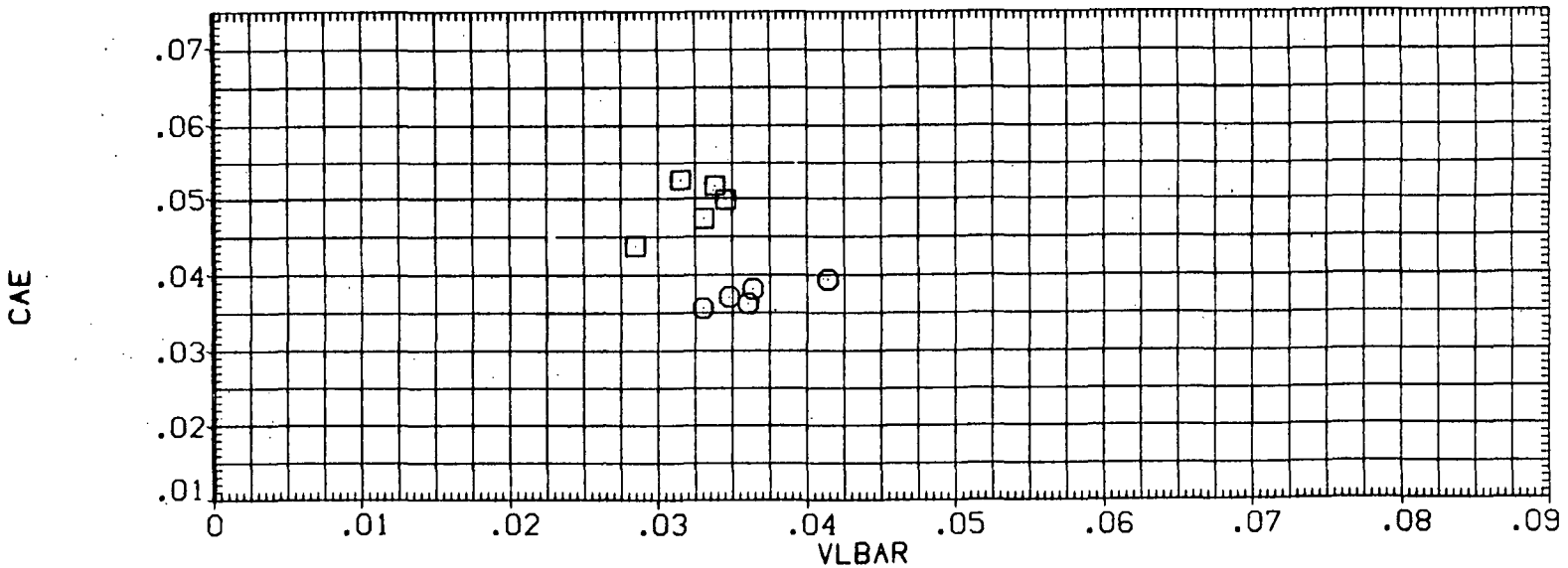


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0006)

SYMBOL	ALPHA
○	25.000
□	35.000

PARAMETRIC VALUES

BETA	.000	RN/L	.250
ELEVTR	.000	AILRON	.000
RUDDER	.000	SPOBRK	55.000
BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

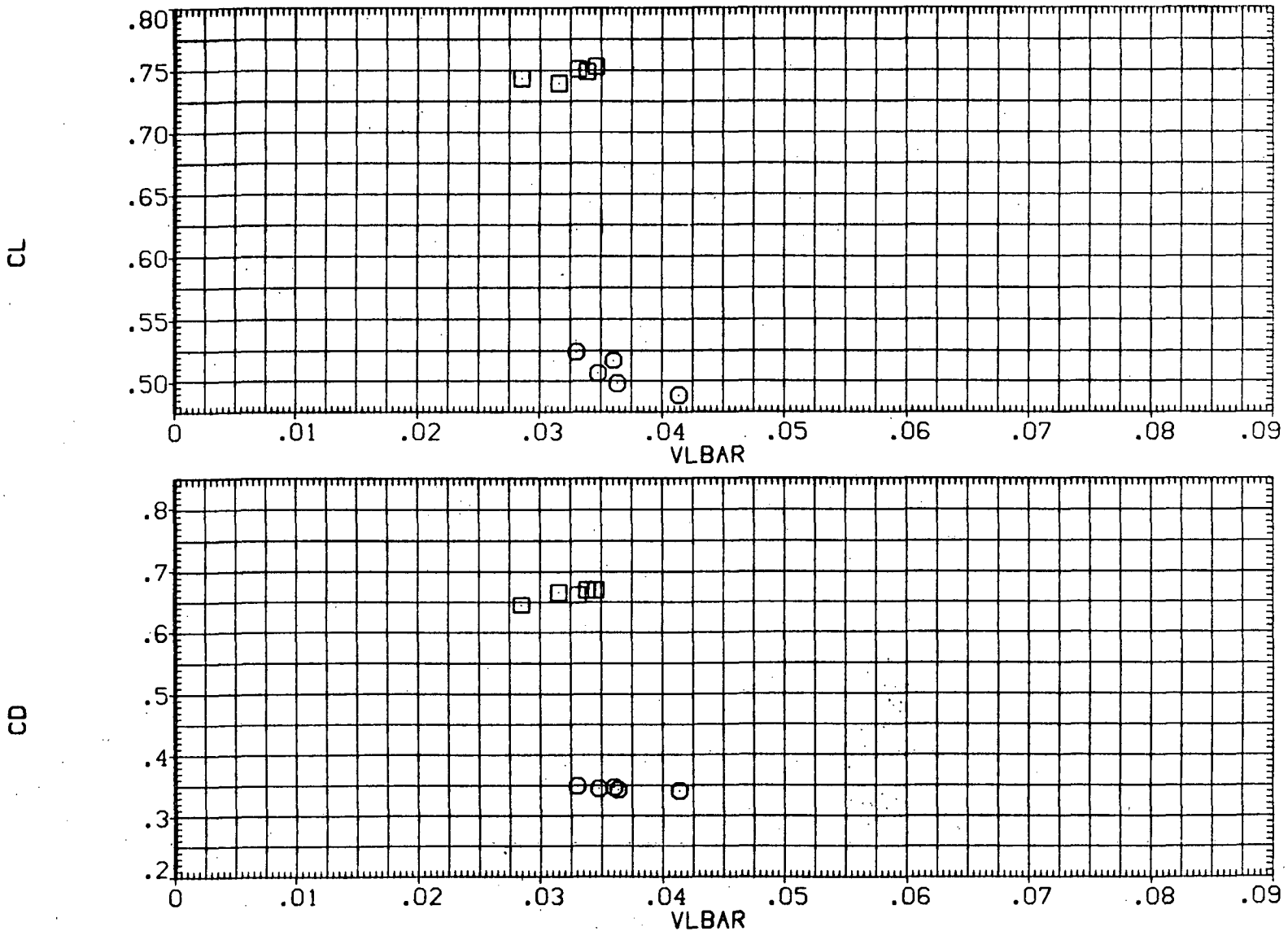


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0007)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.500
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	.000	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

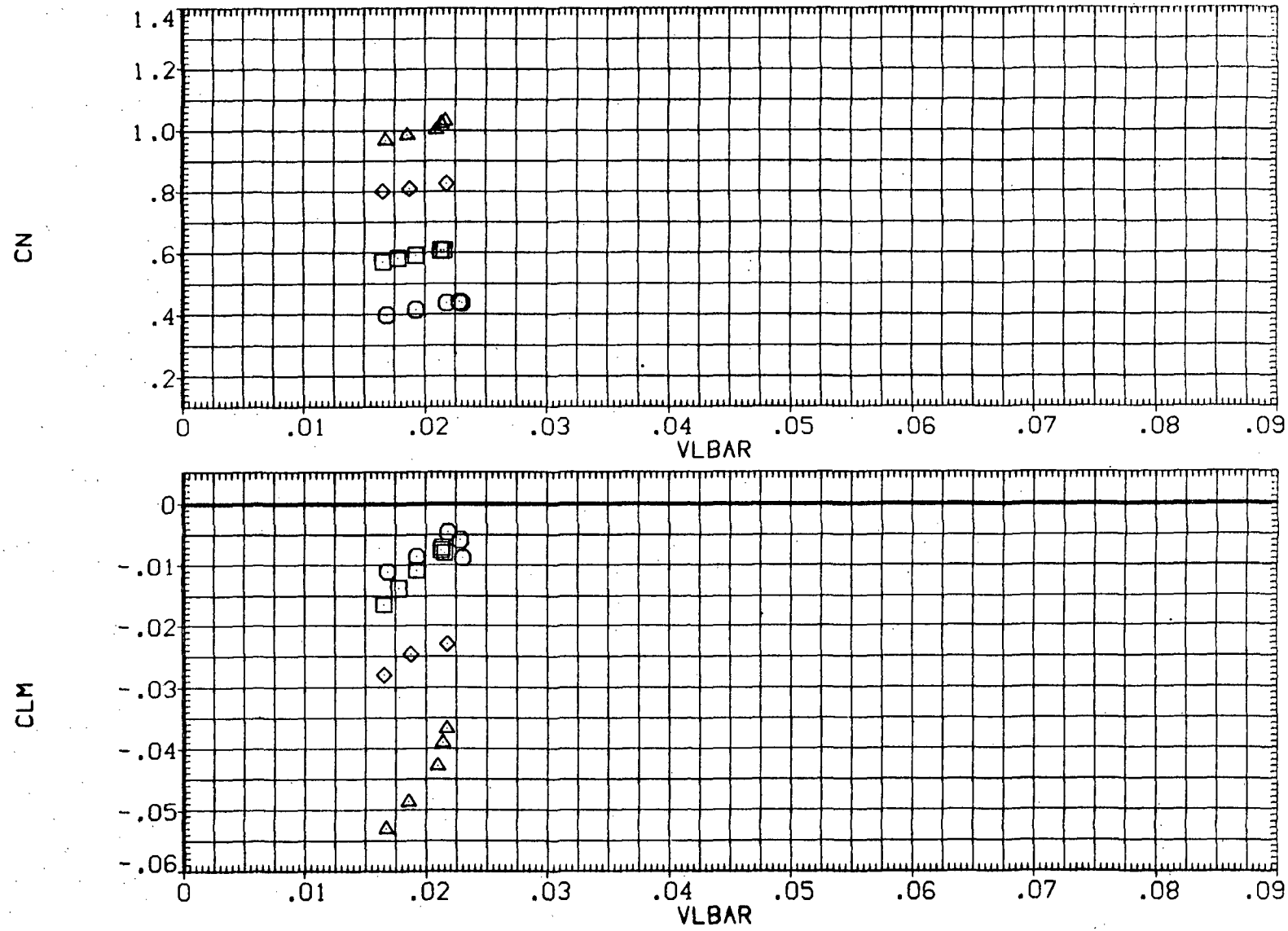


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

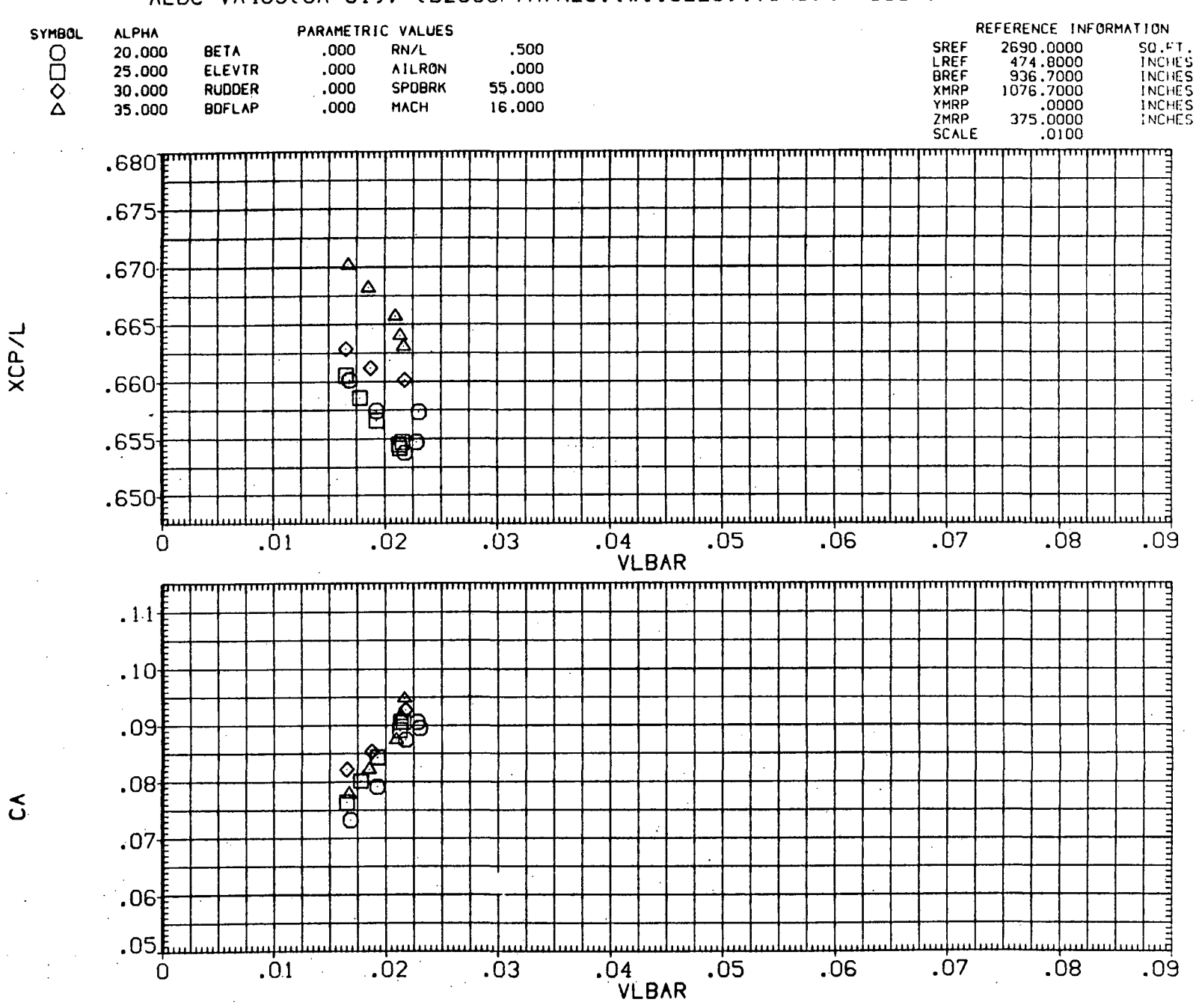


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0007)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.500
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	.000	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

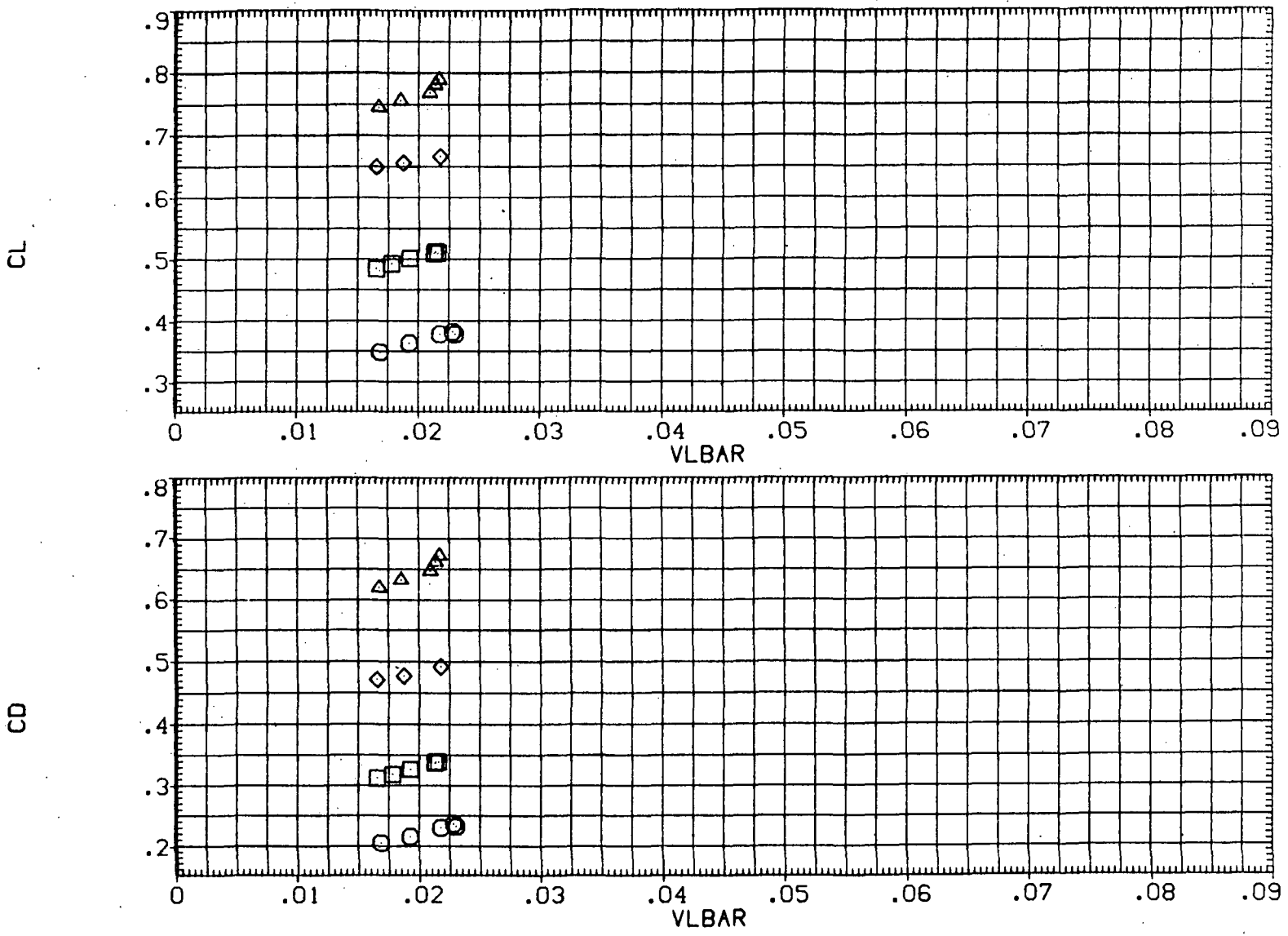


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0008)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.070
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

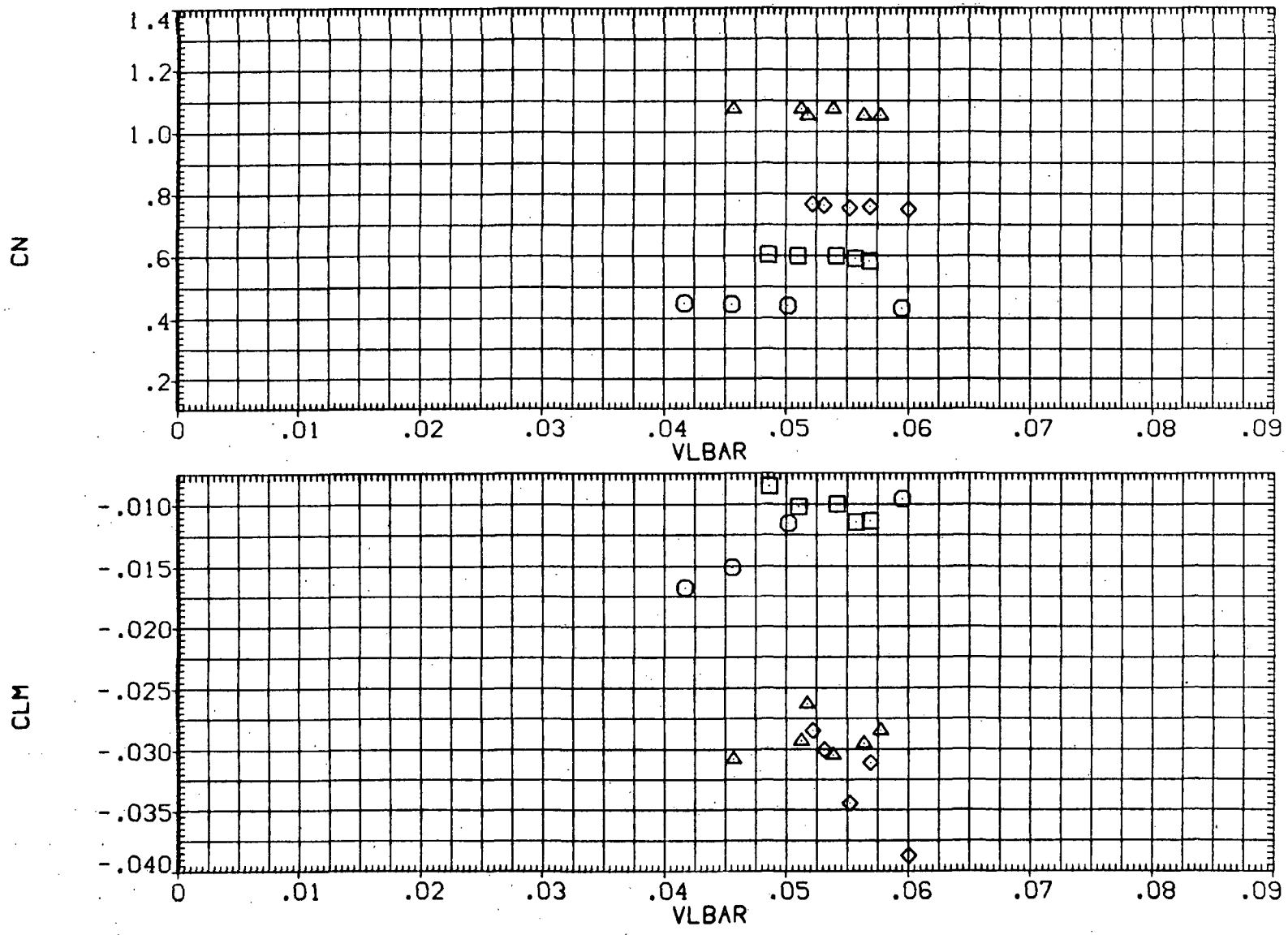


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

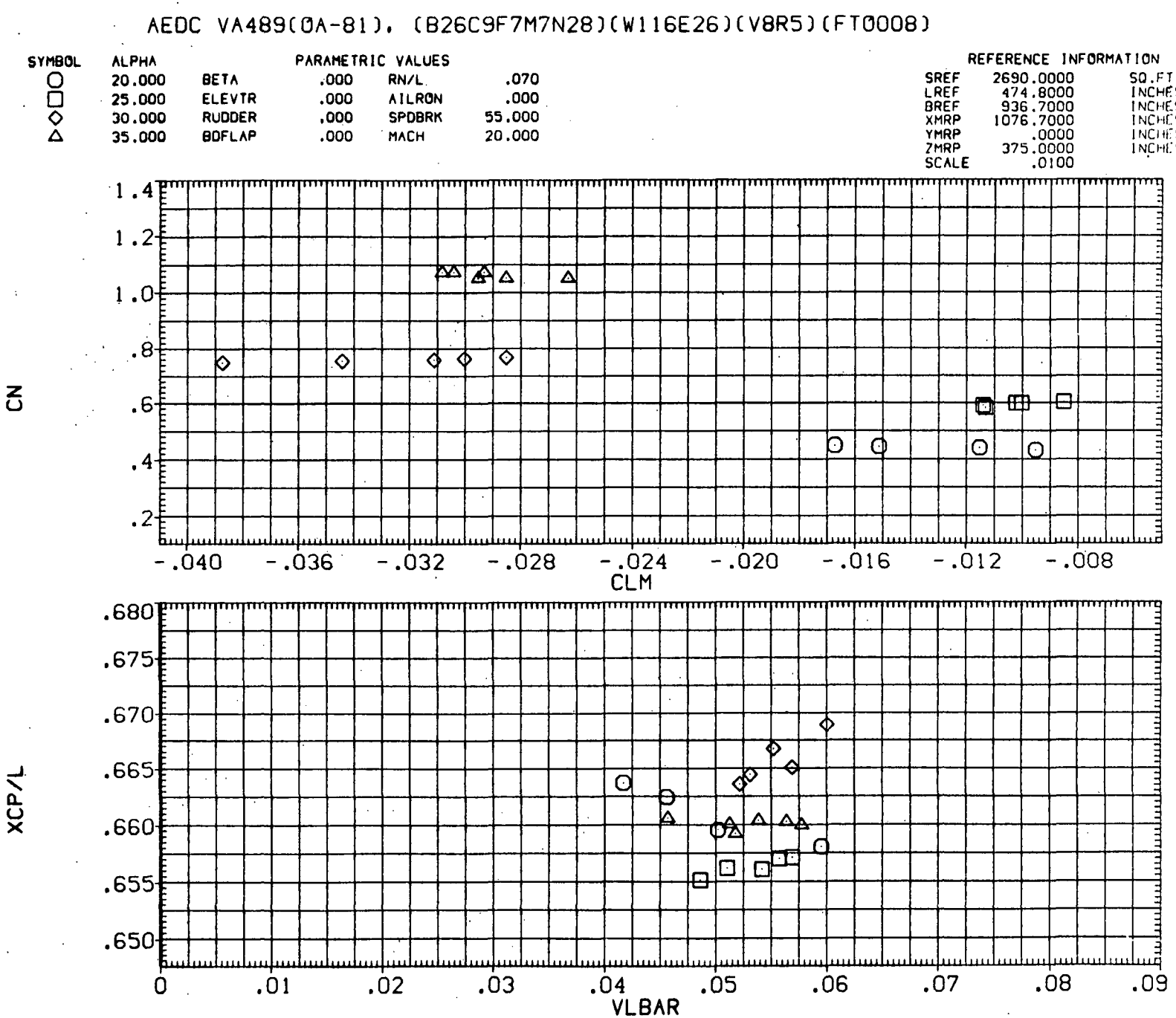


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0008)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.070
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

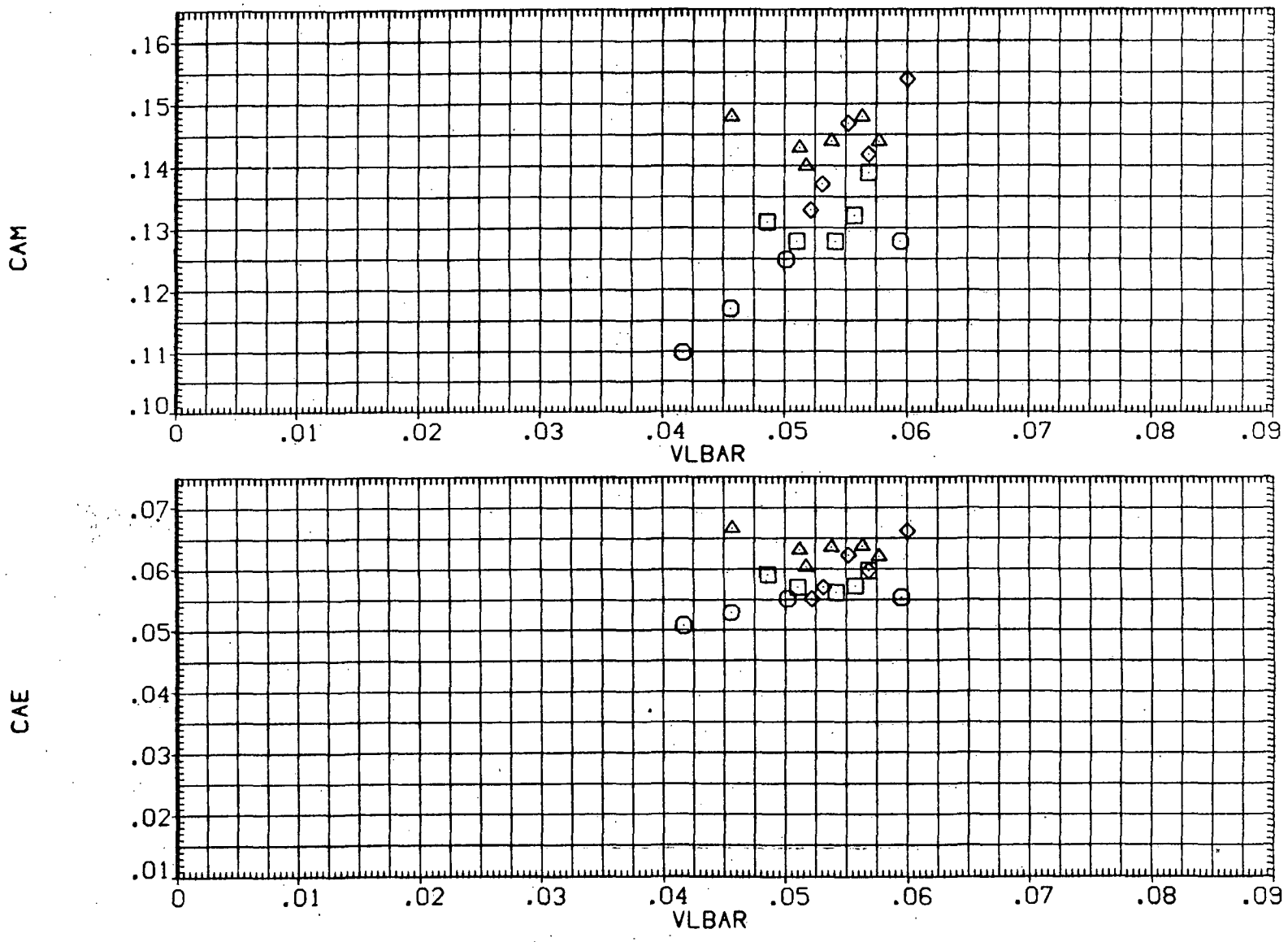


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0008)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.070
□	25.000	ELEVTR	.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

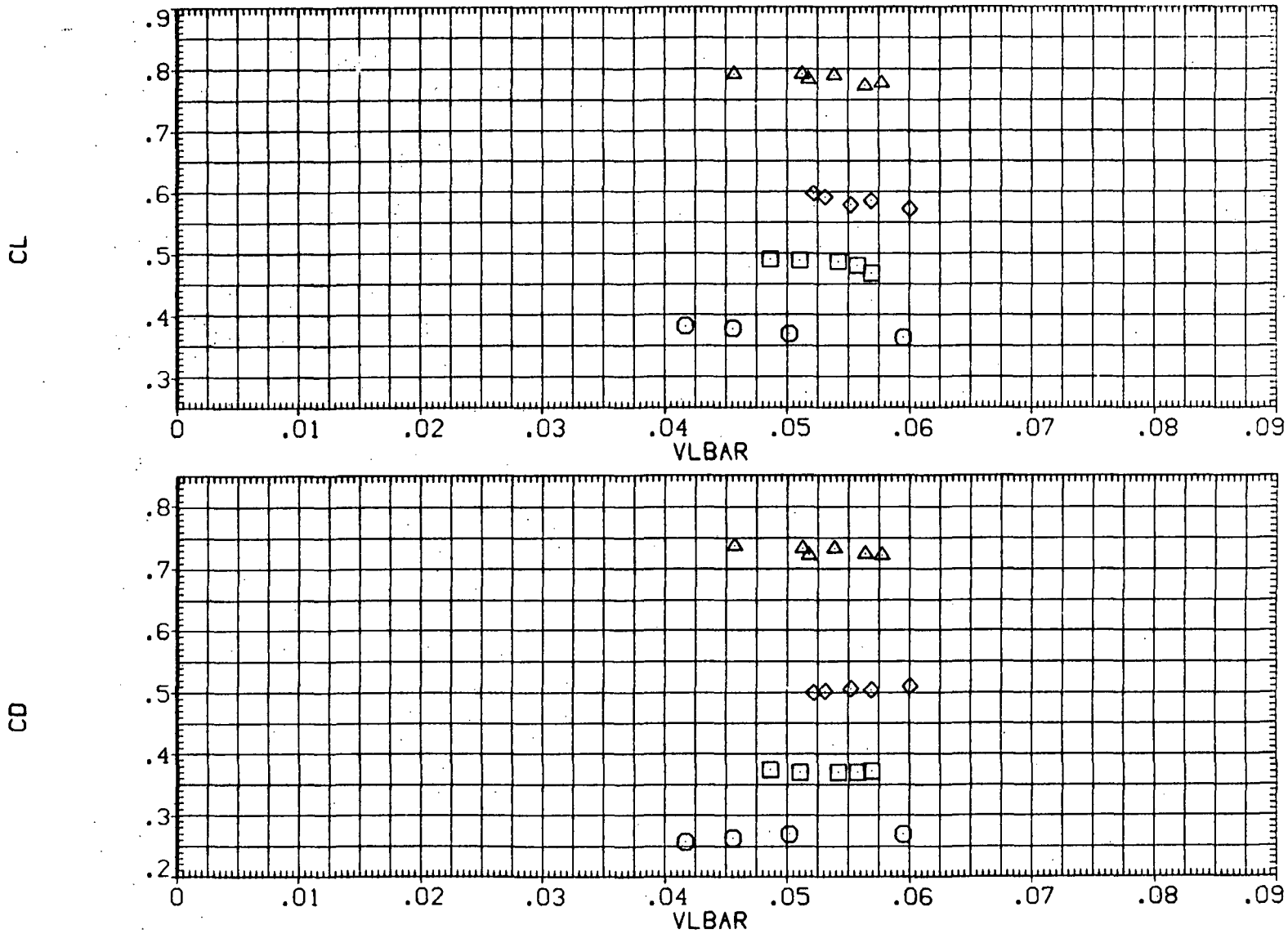


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0009)

SYMBOL	ALPHA		PARAMETRIC VALUES		
O	35.000	BETA	.000	RN/L	.500
		ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	.000	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

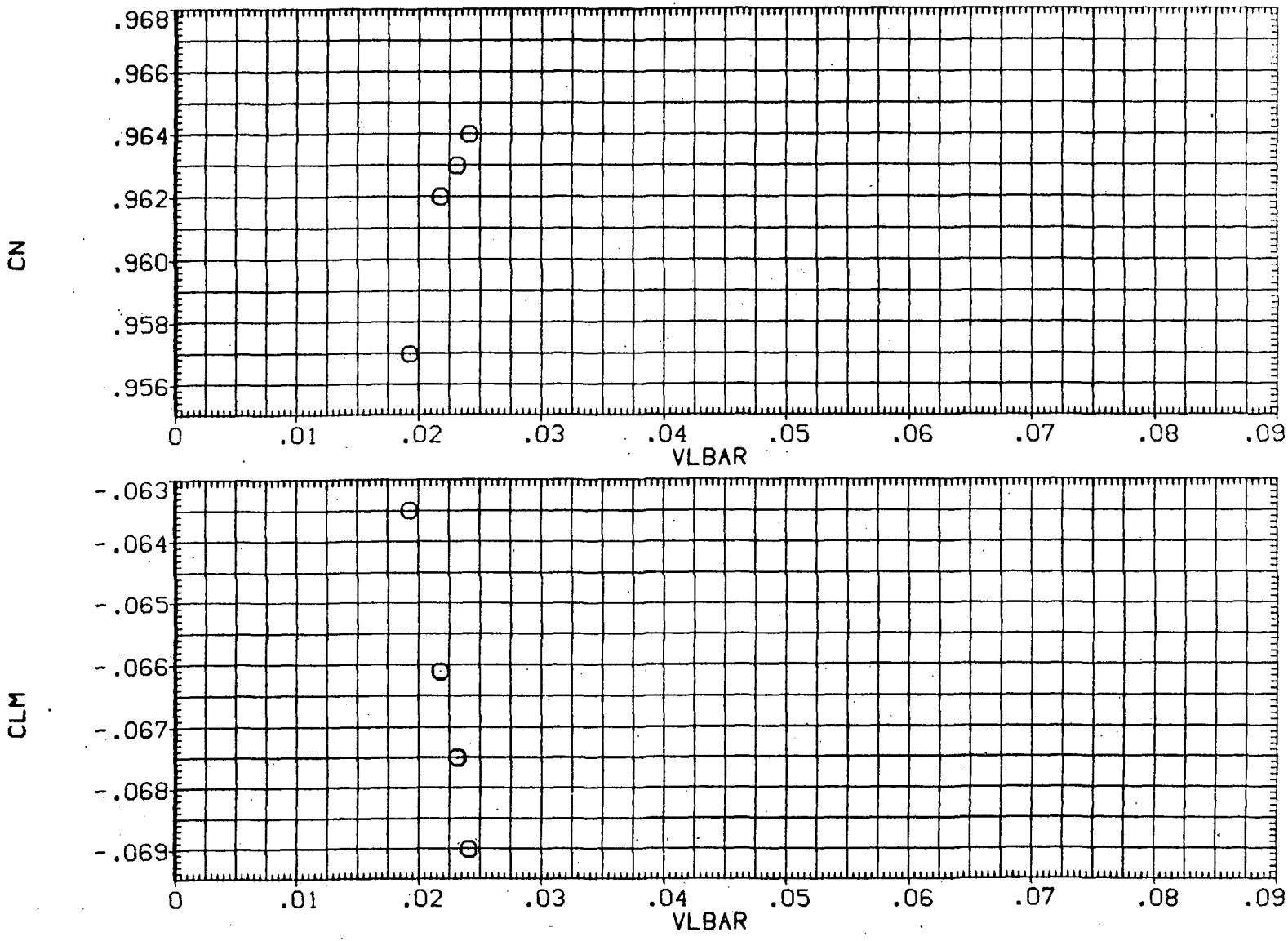
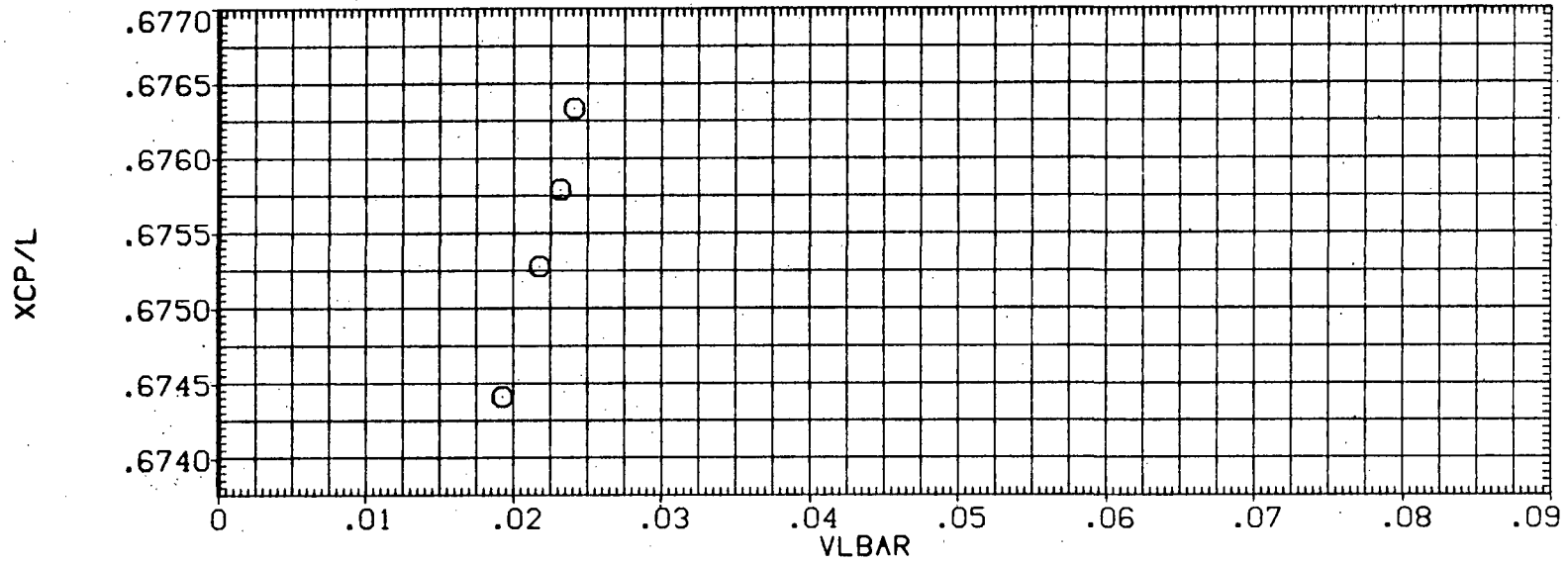


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0009)

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	35.000	BETA	.000	RN/L	.500
		ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	.000	MACH	16.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	



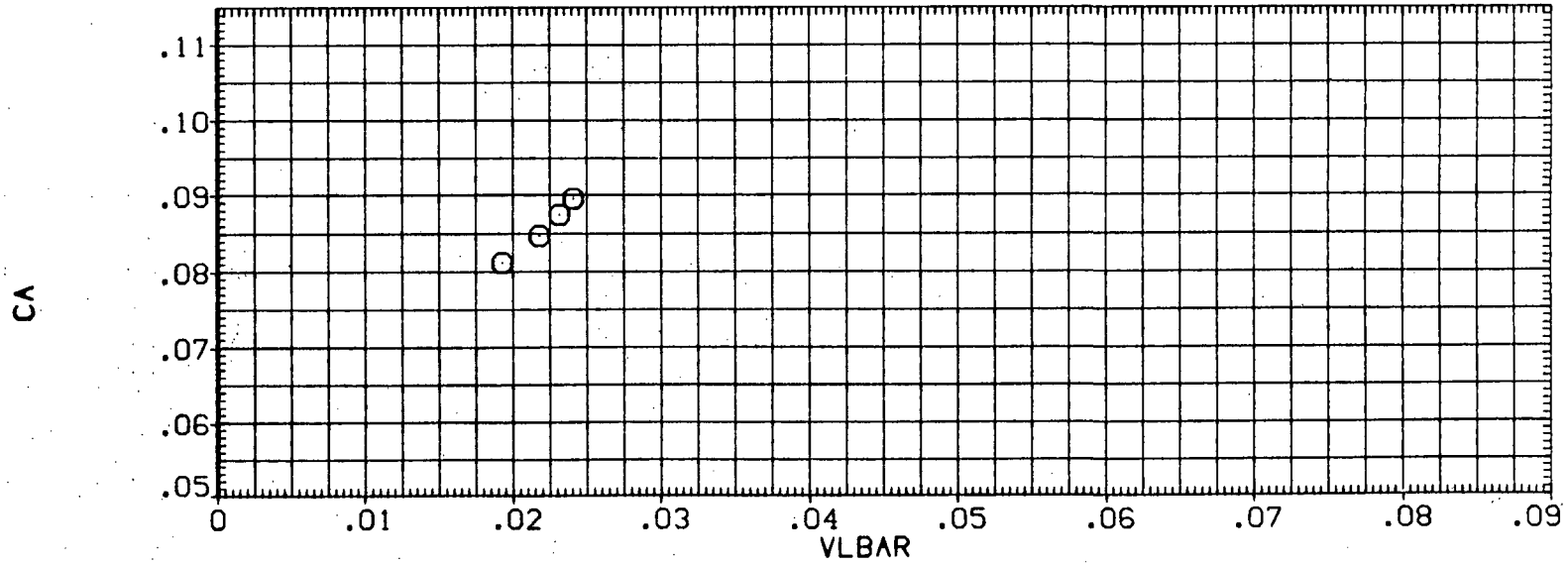


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81). (B26C9F7M7N28)(W116E26)(V8R5)(FT0009)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	35.000	BETA	.000	RN/L	.500
		ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	.000	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

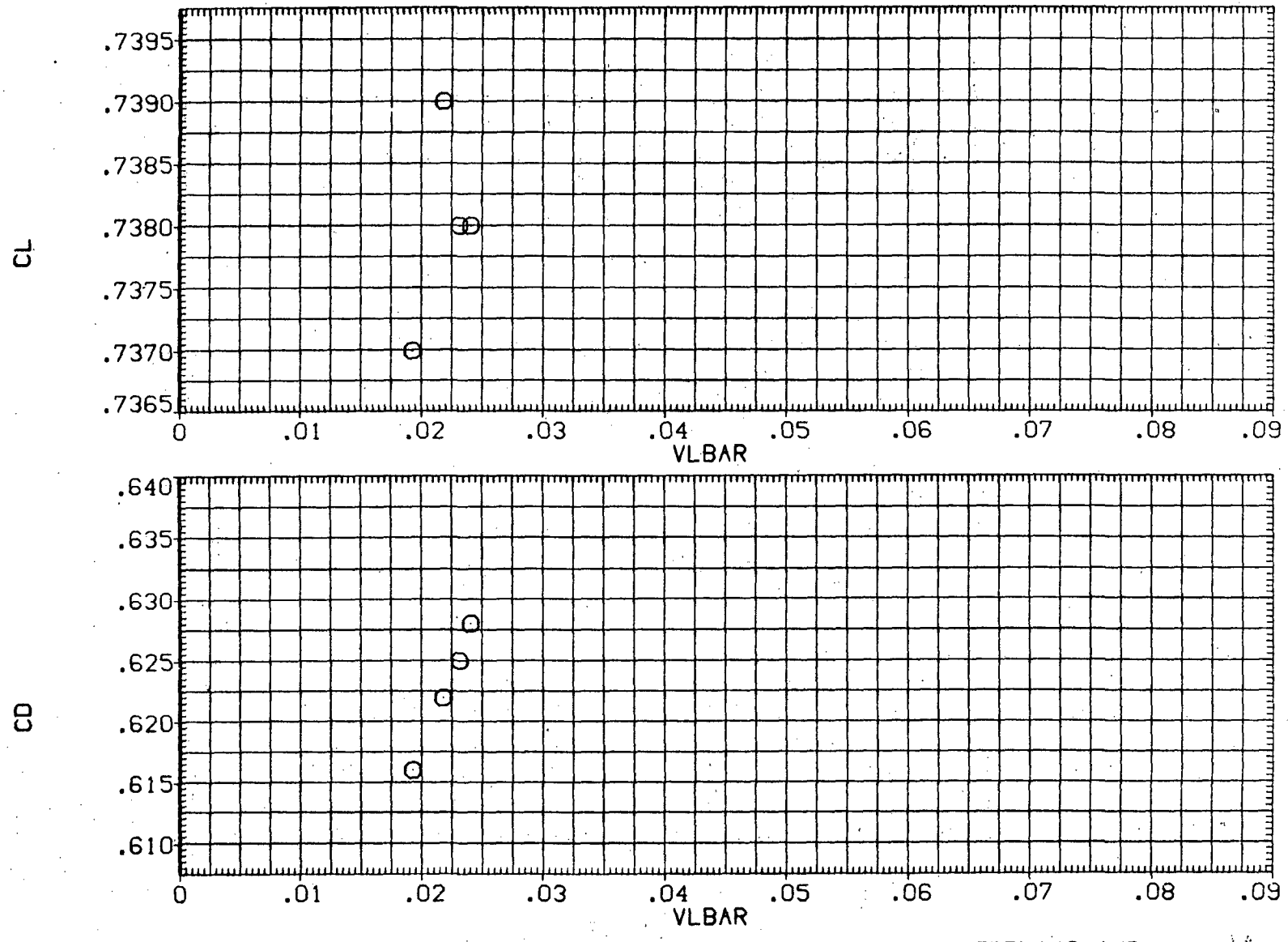


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

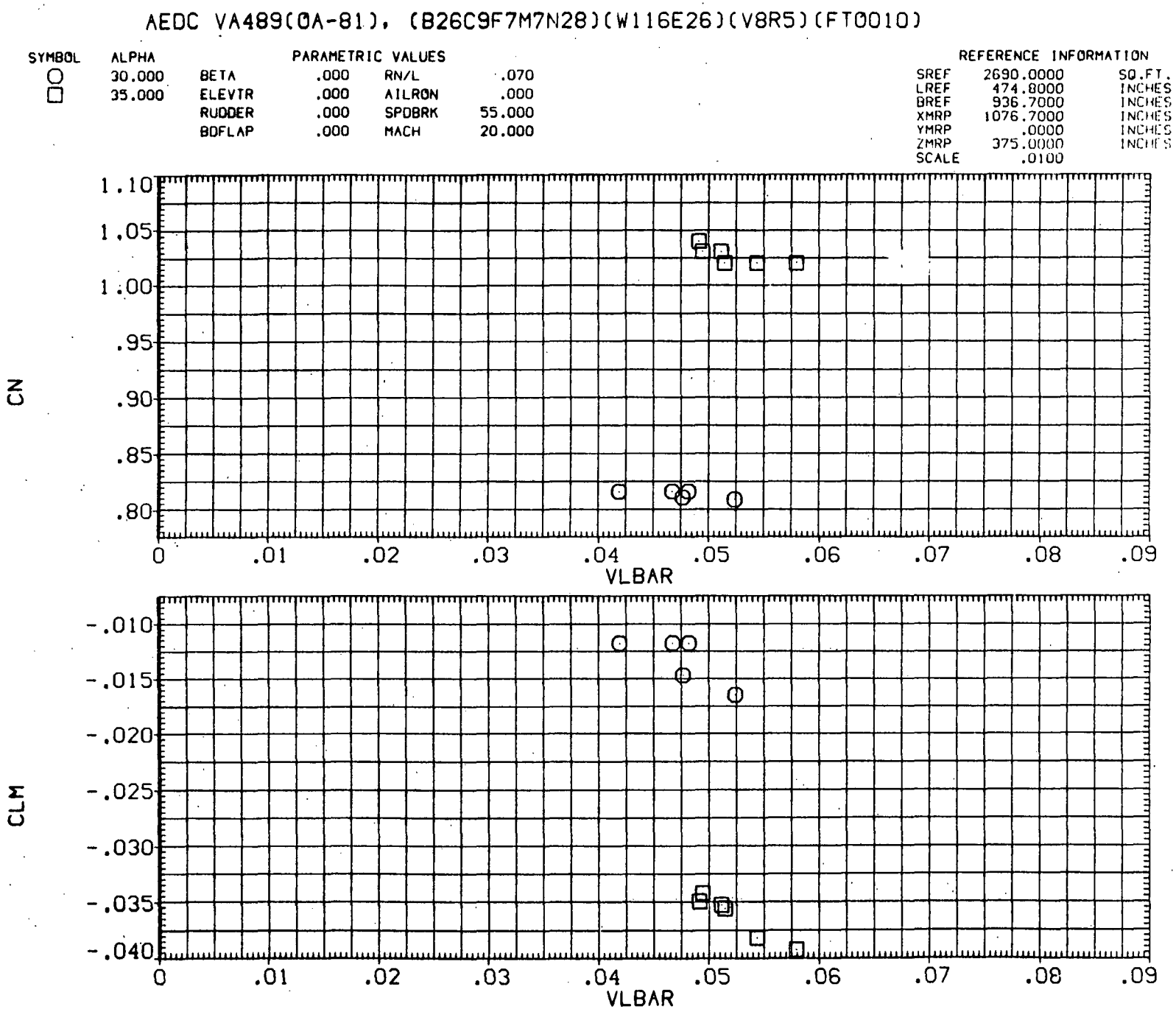


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0010)

SYMBOL	ALPHA
○	30.000
□	35.000

PARAMETRIC VALUES

BETA	.000	RN/L	.070
ELEVTR	.000	AILRON	.000
RUDDER	.000	SPDBRK	55.000
BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

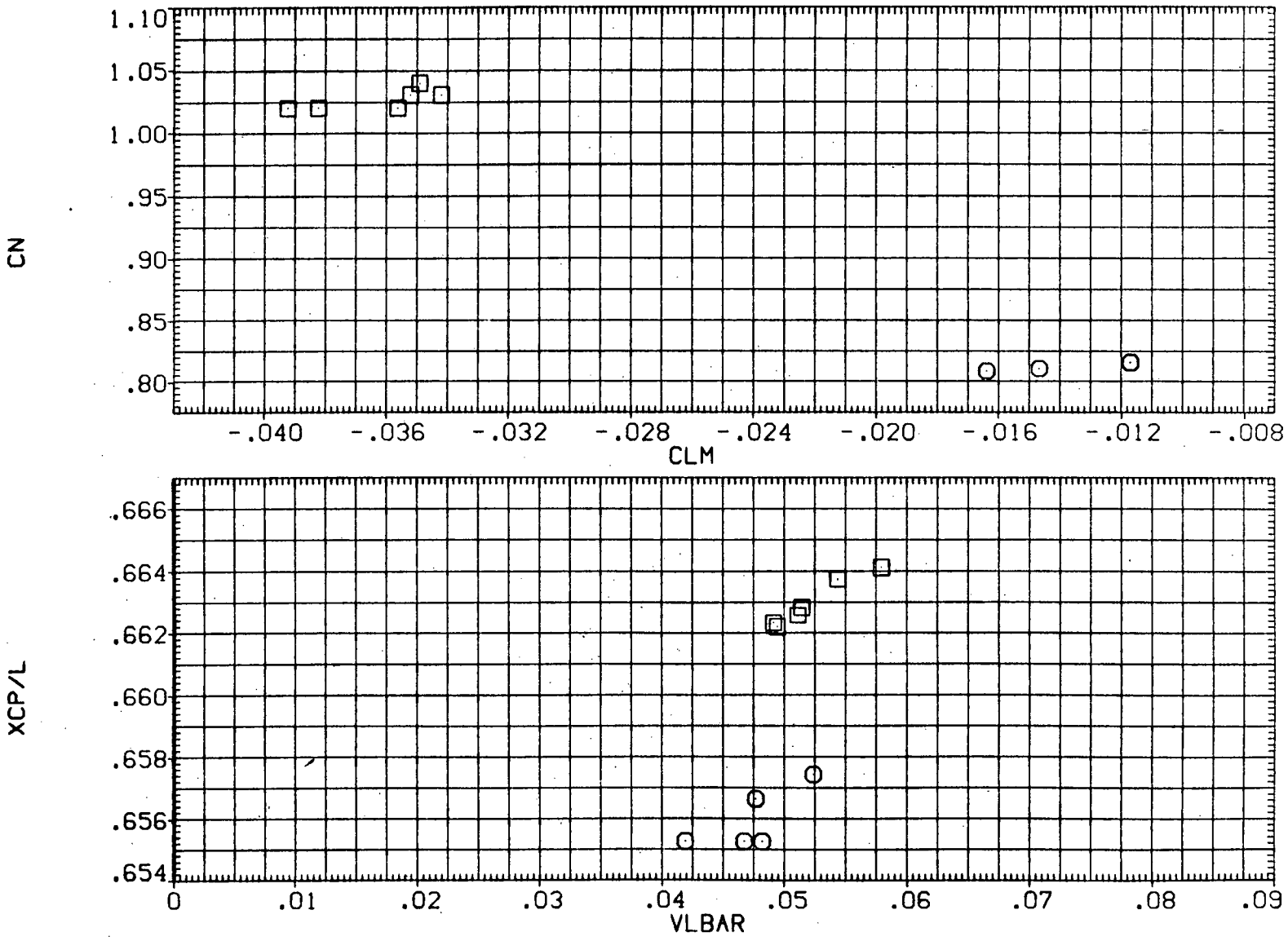


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

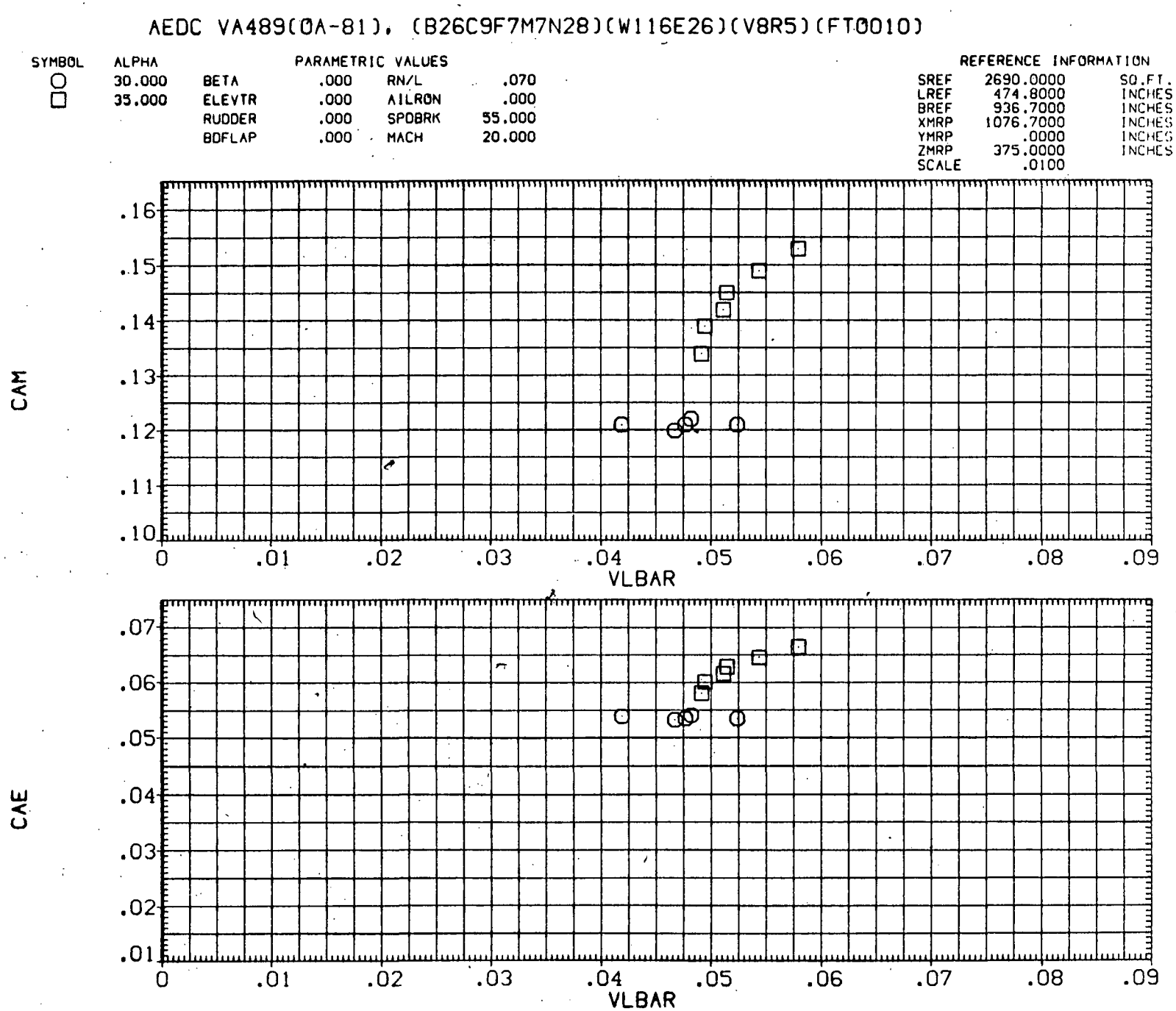


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0010)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	30.000	BETA	.000	RN/L	.070
□	35.000	ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	.000	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

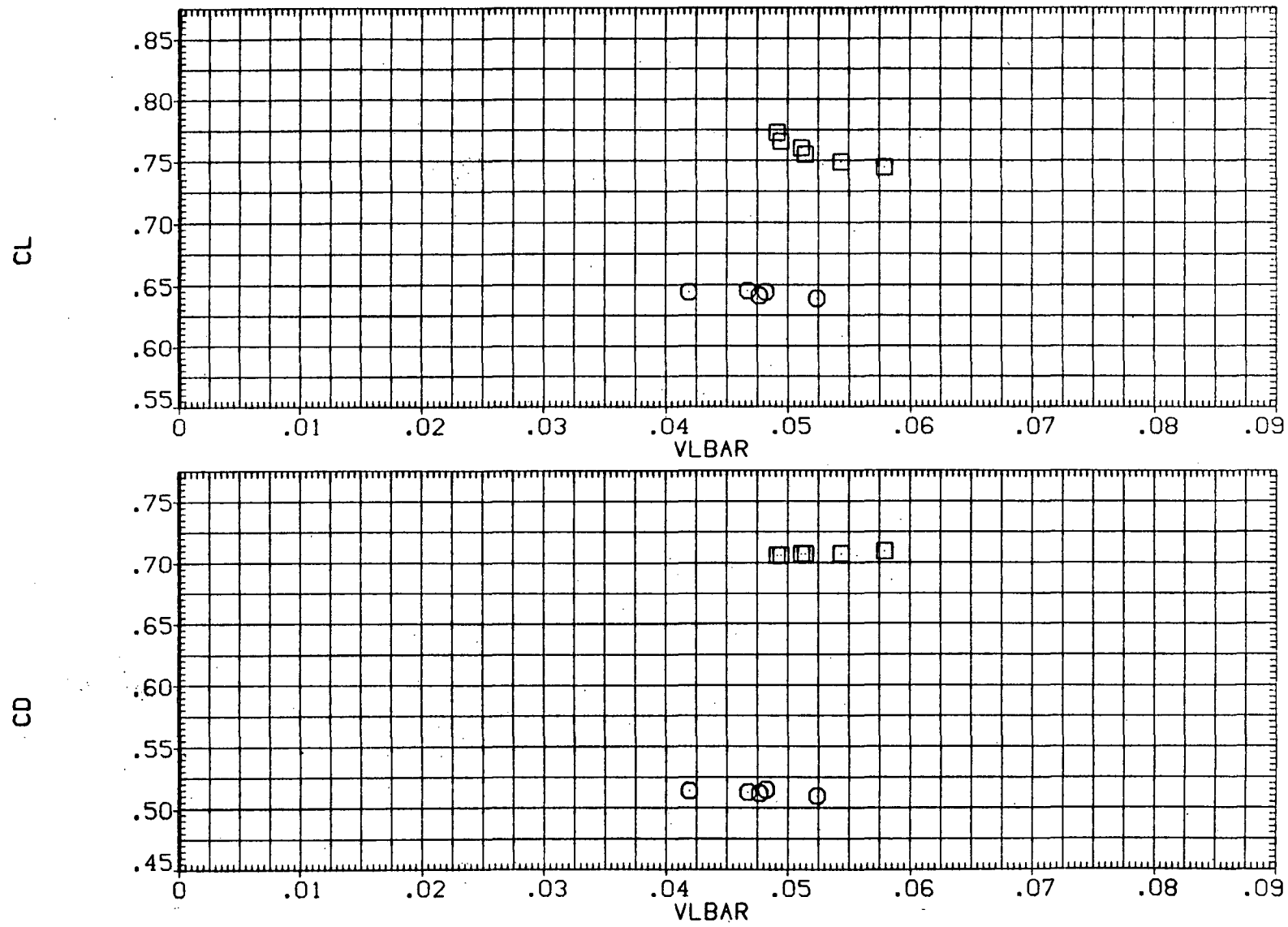


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

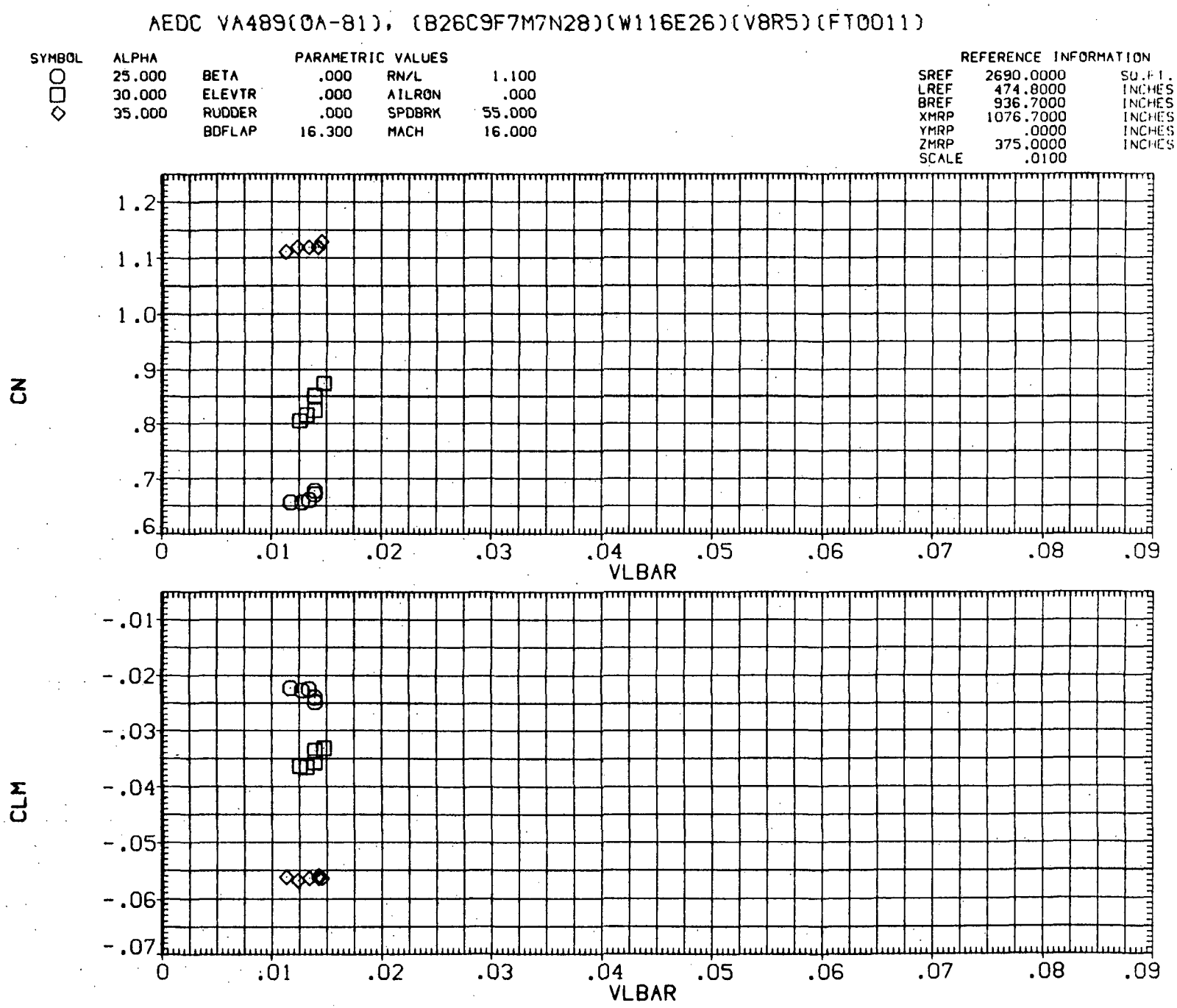


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

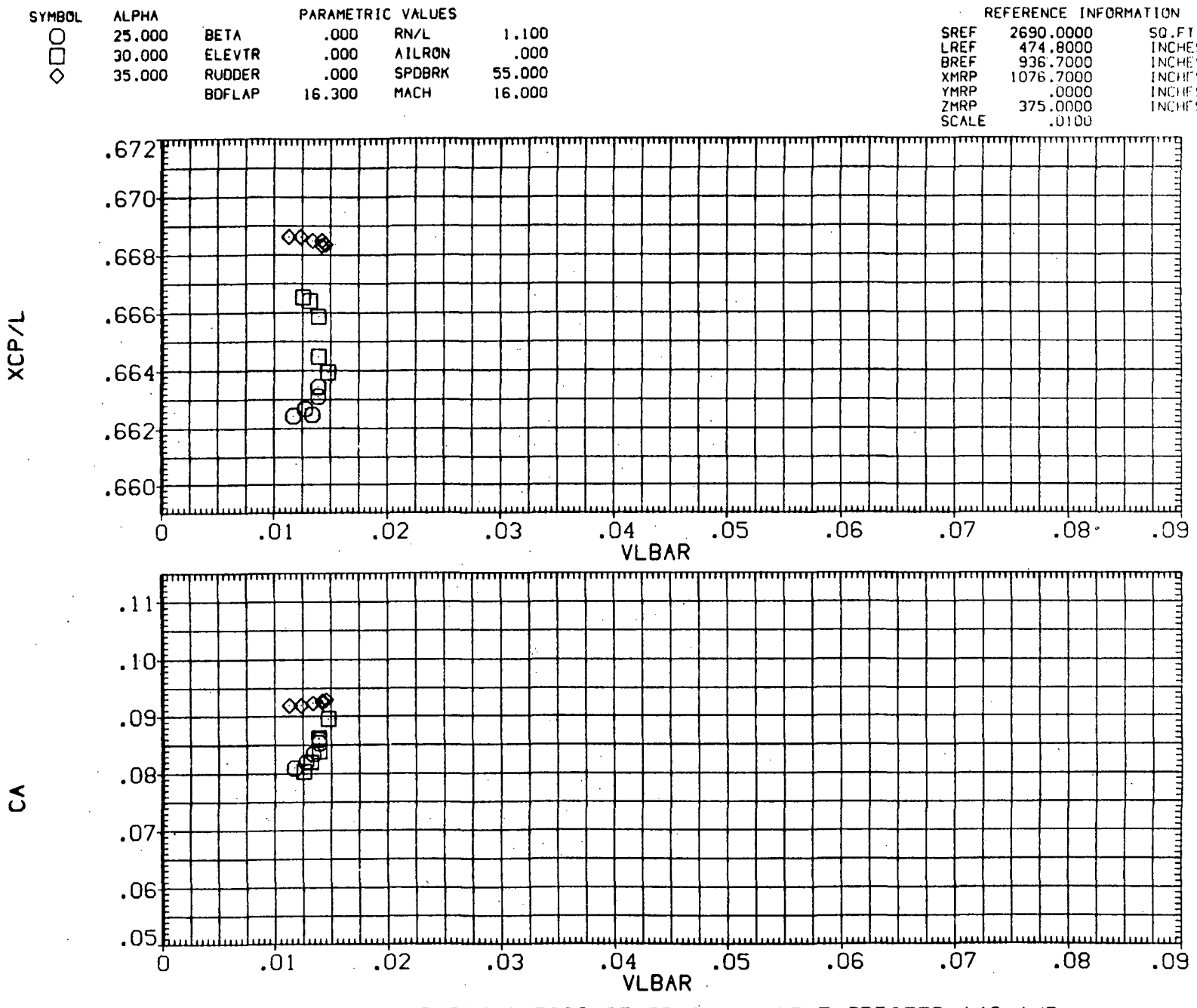


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0011)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	25.000	BETA	.000	RN/L	1.100
□	30.000	ELEVTR	.000	AILRON	.000
◇	35.000	RUDDER	.000	SPOBRK	55.000
		BDFLAP	16.300	MACH	16.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

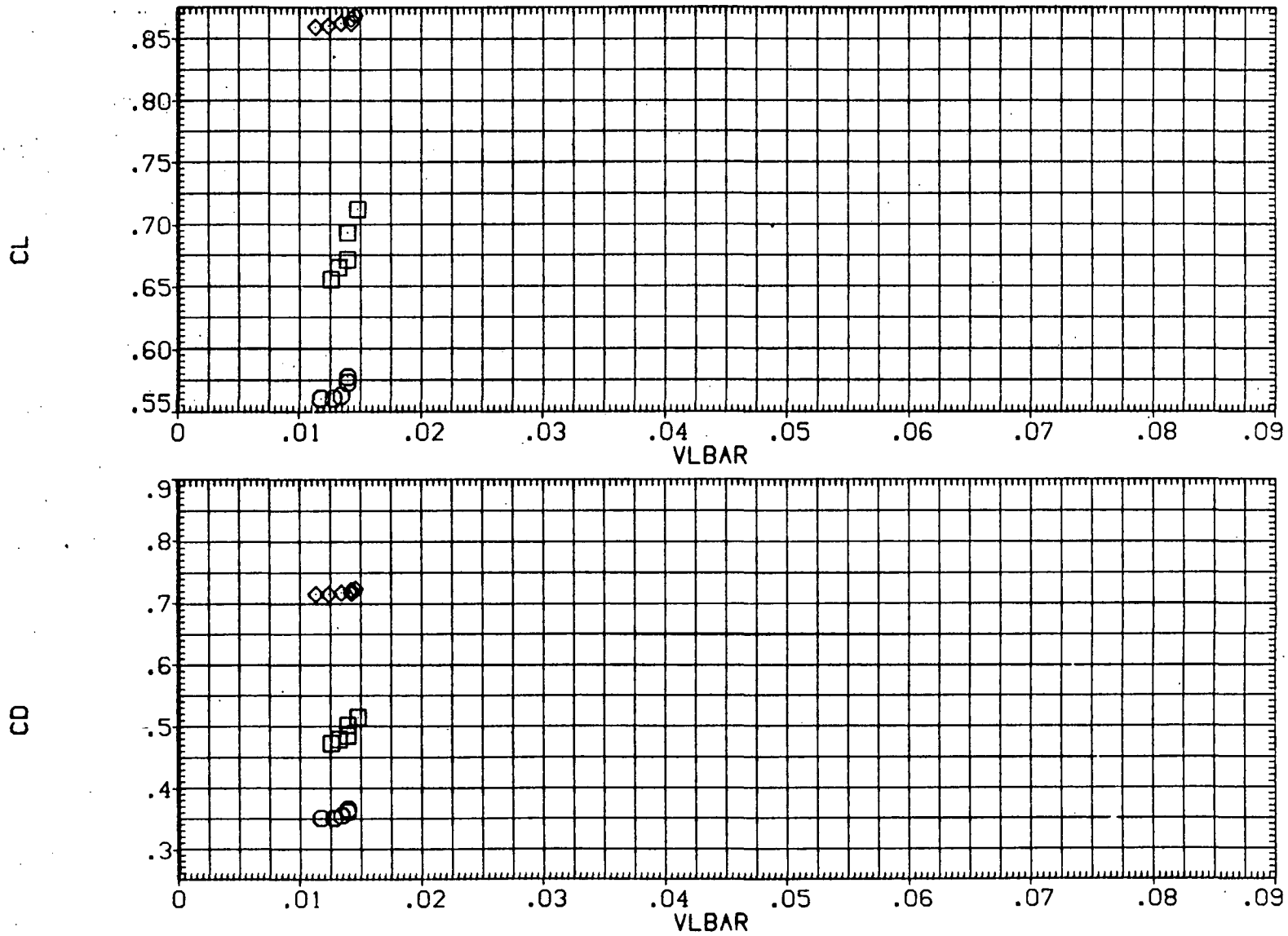


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

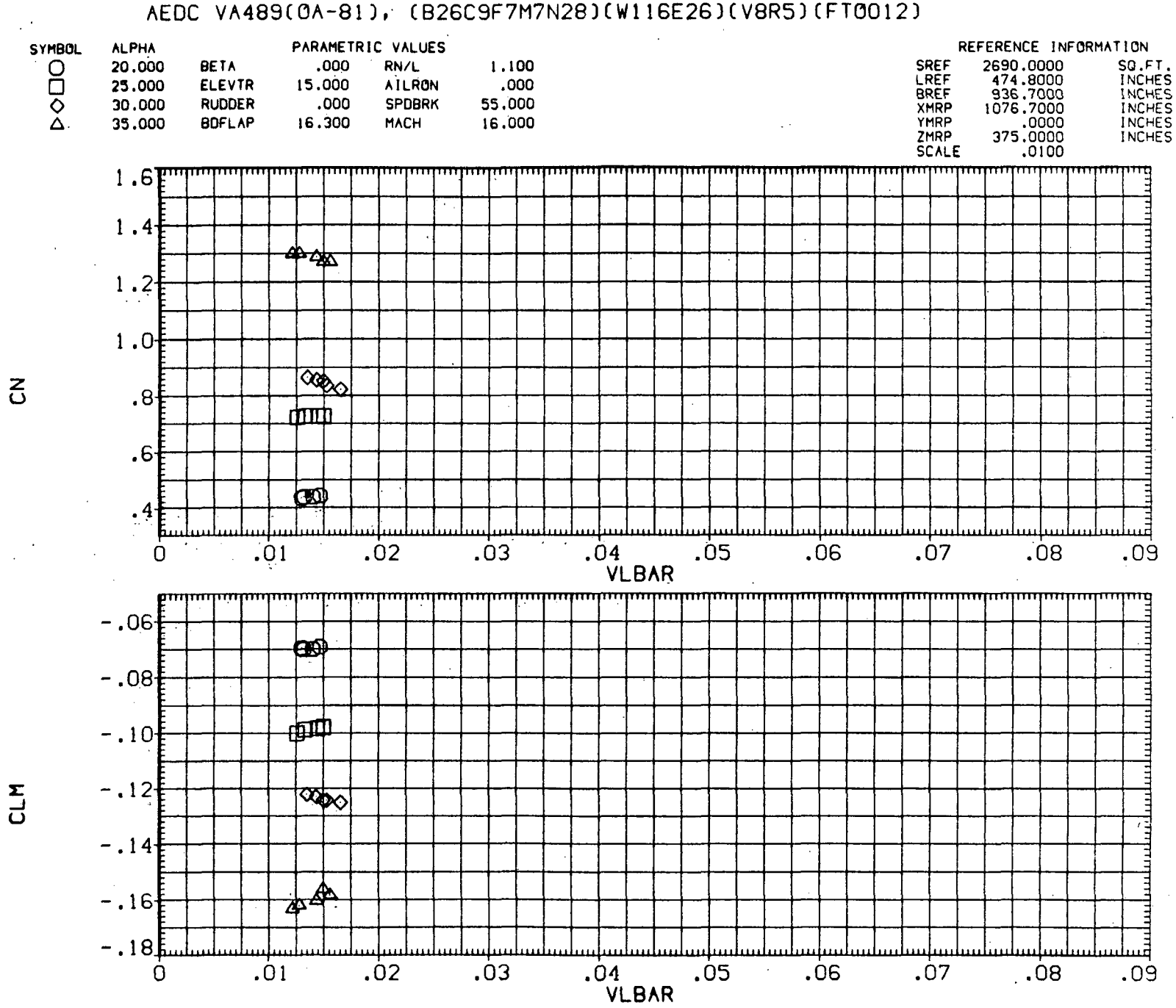


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

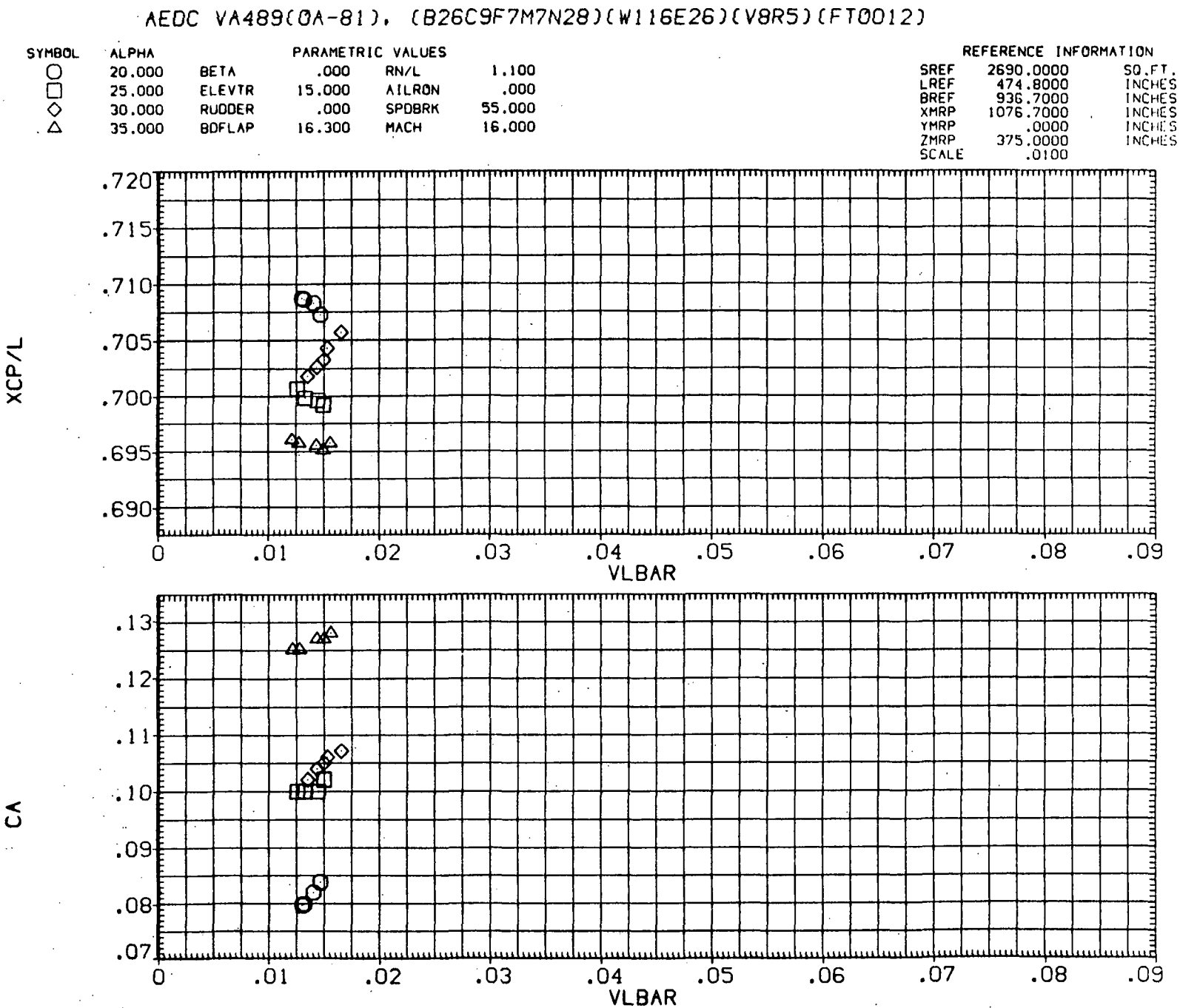


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	1.100
□	25.000	ELEVTR	15.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	16.300	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

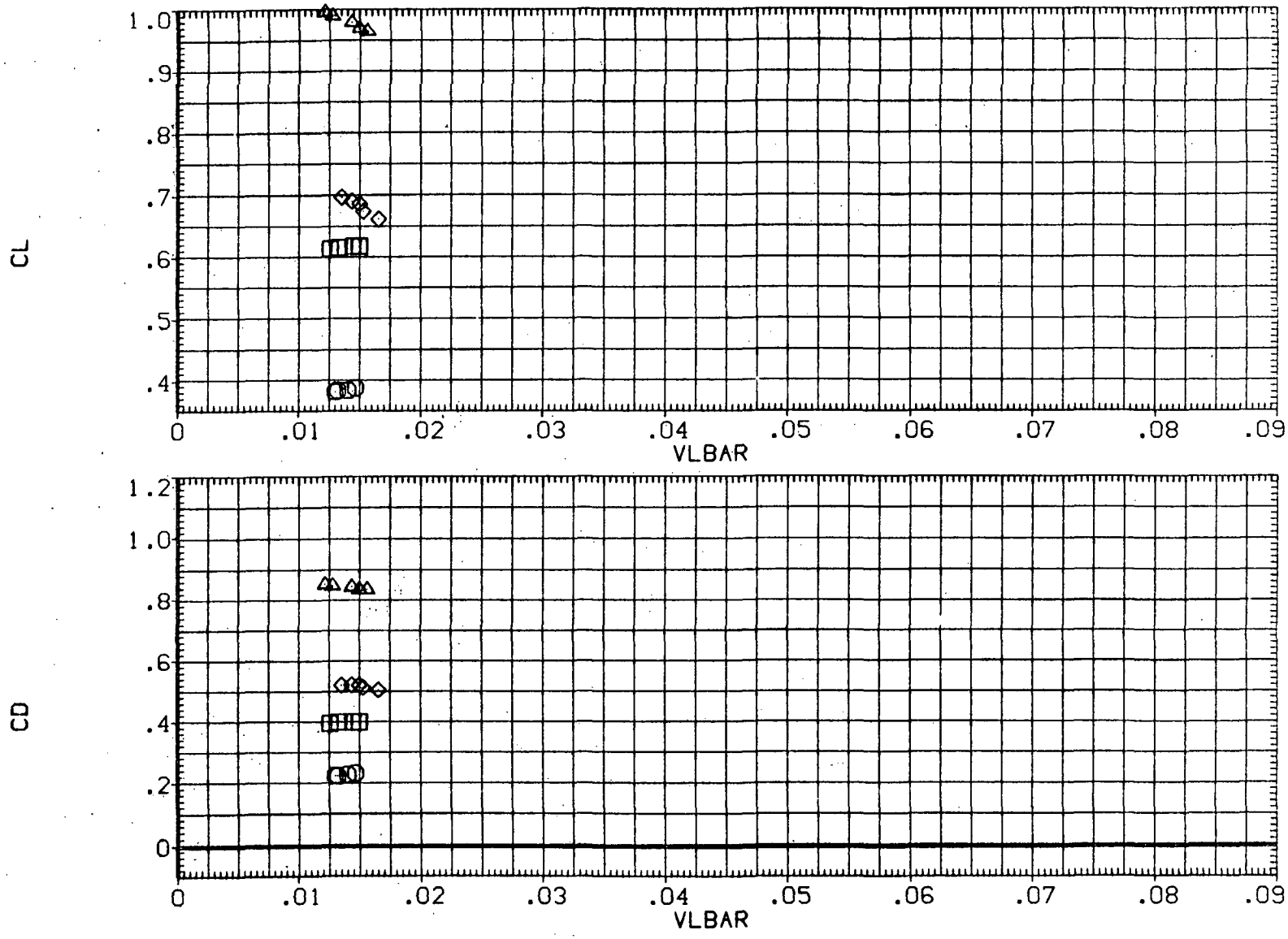


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0013)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.250
□	25.000	ELEVTR	15.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	16.300	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

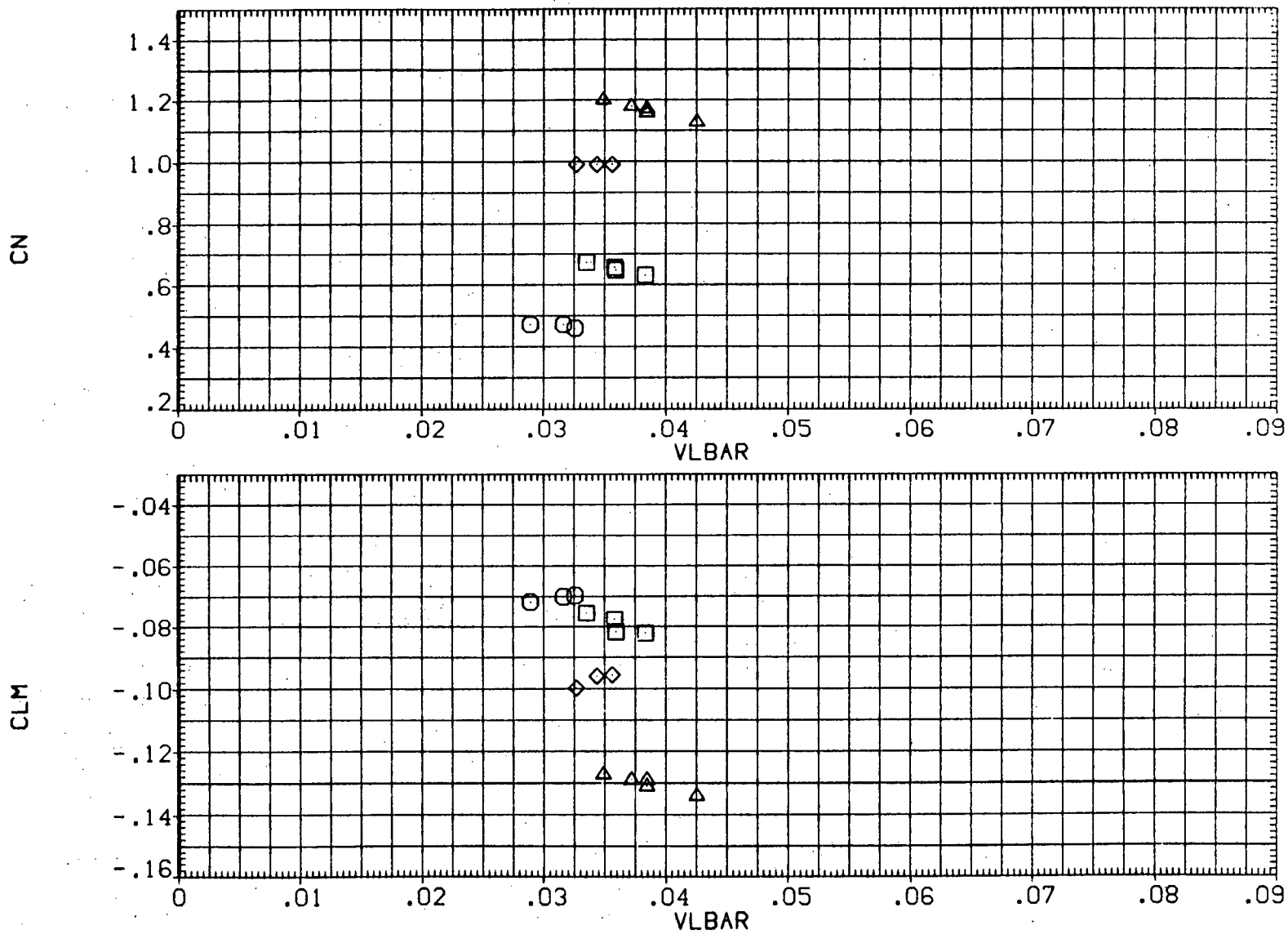


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0013)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.250
□	25.000	ELEVTR	15.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	16.300	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

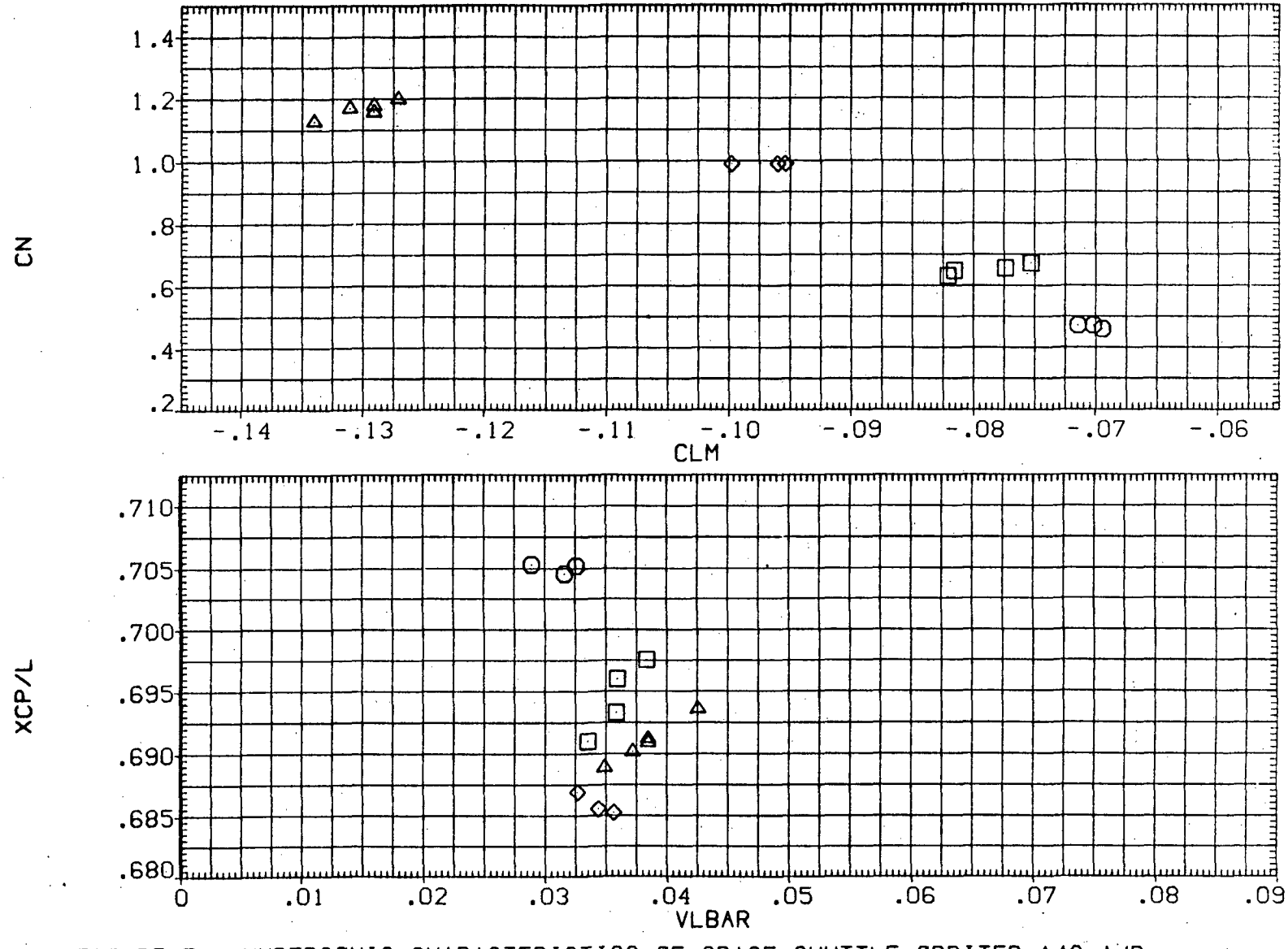


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0013)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.250
□	25.000	ELEVTR	15.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BDFLAP	16.300	MACH	20.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

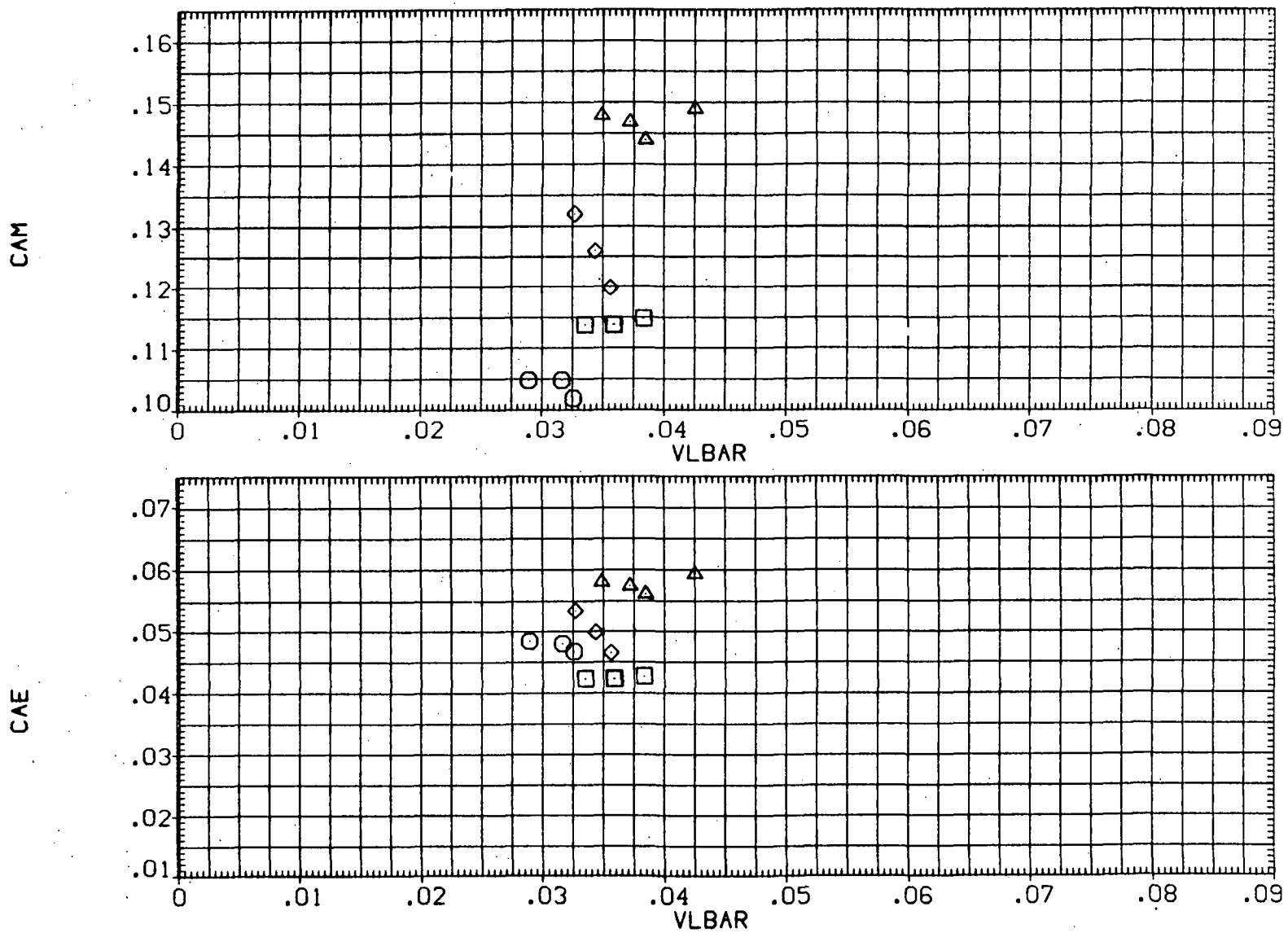


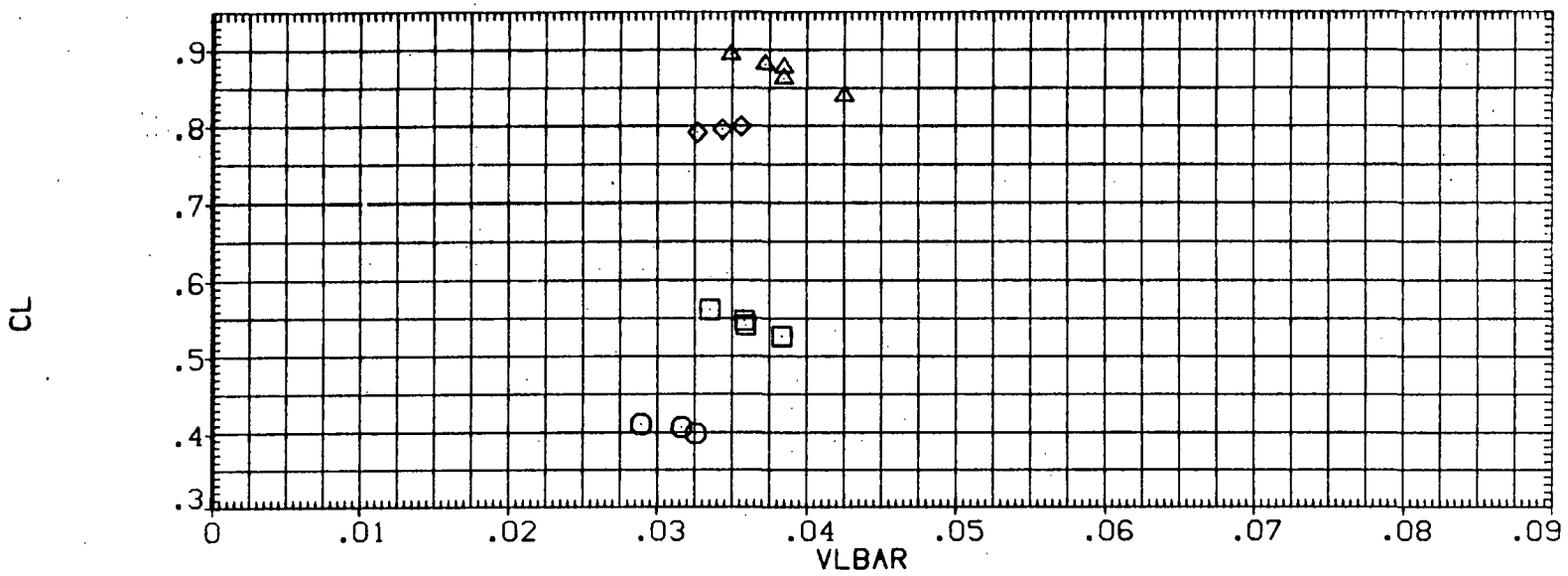
FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5)(FT0013)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	20.000	BETA	.000	RN/L	.250
□	25.000	ELEVTR	15.000	AILRON	.000
◇	30.000	RUDDER	.000	SPDBRK	55.000
△	35.000	BOFLAP	16.300	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	



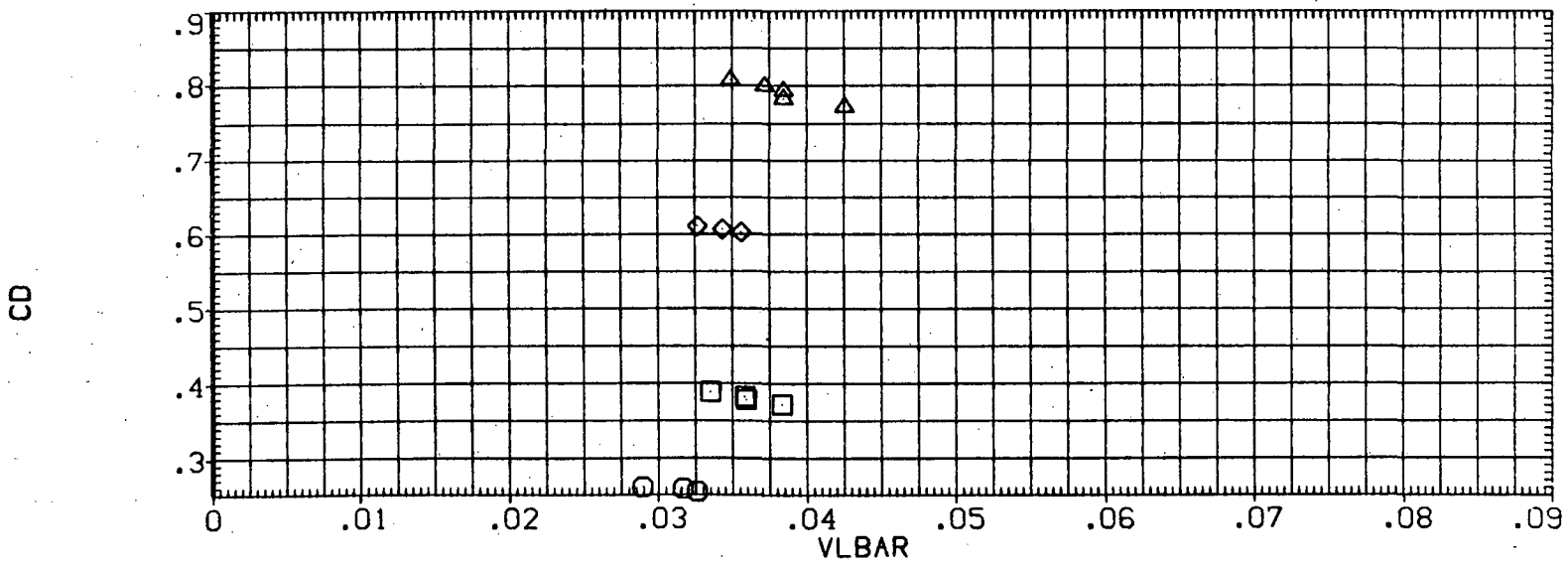


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED(FT0014)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	25.000	BETA	.000	RN/L	1.100
□	35.000	ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	-11.700	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

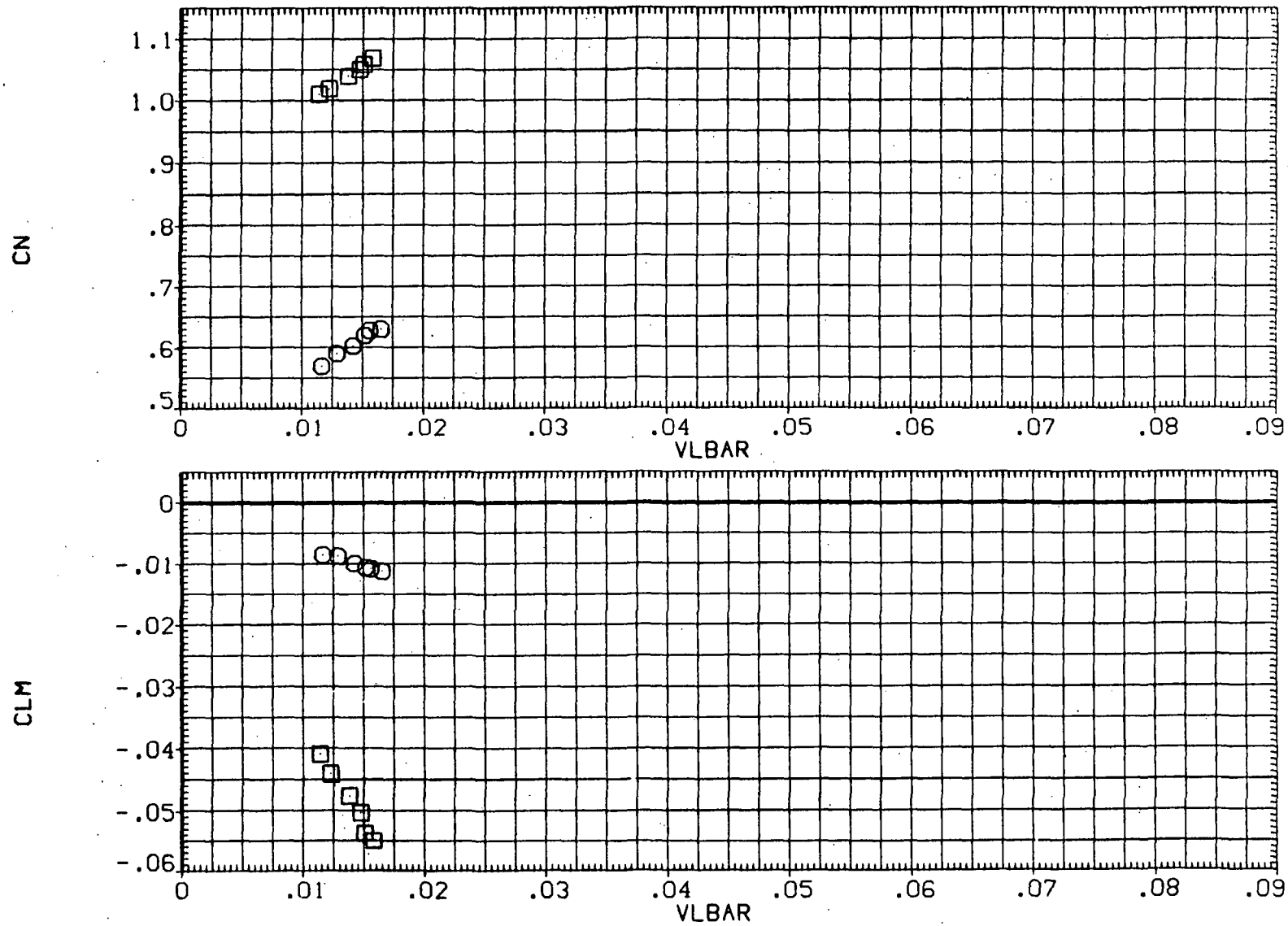


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED(FT0014)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	25.000	BETA	.000	RN/L	1.100
□	35.000	ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	-11.700	MACH	16.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

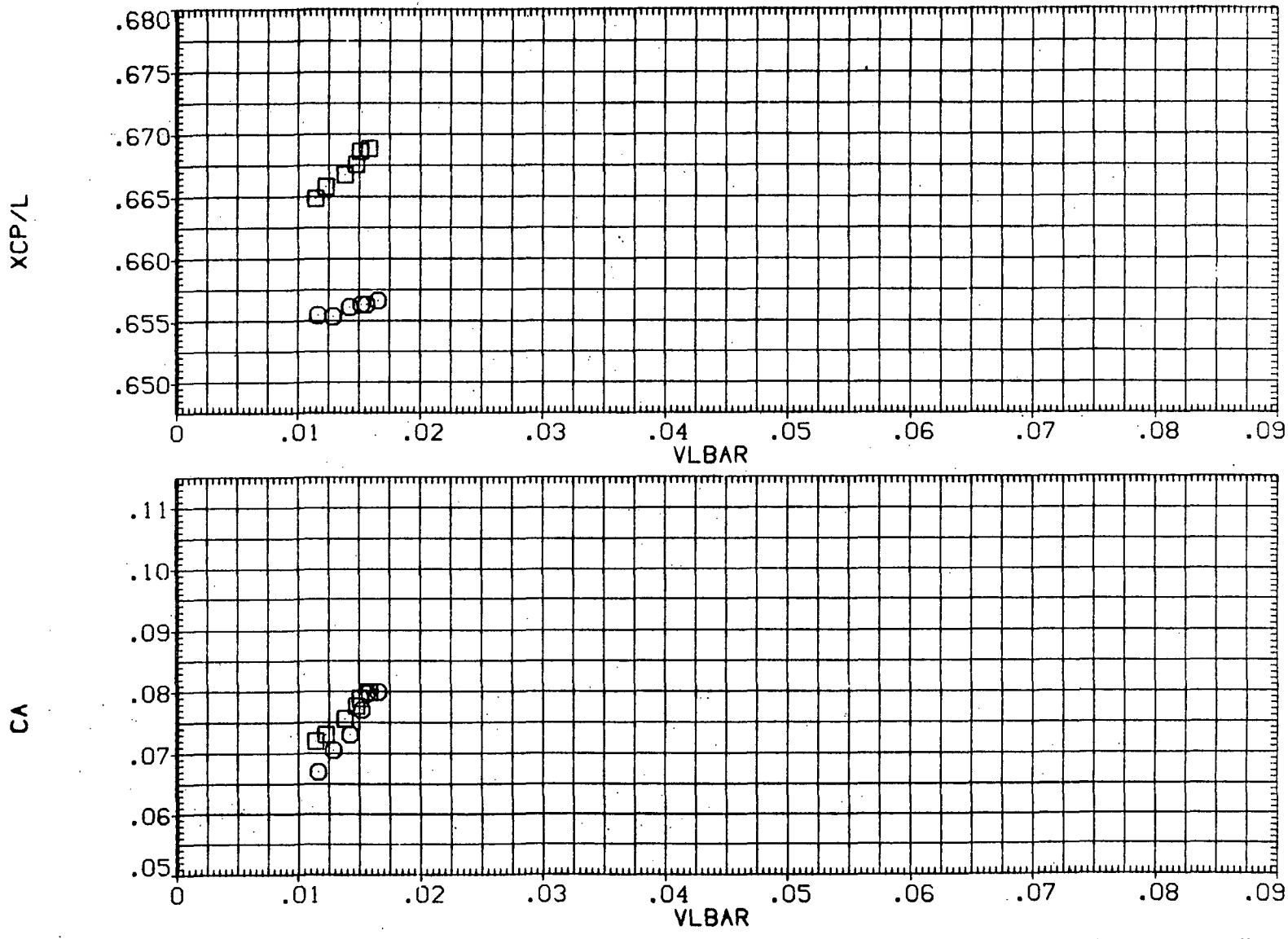


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED(FT0014)

SYMBOL	ALPHA
○	25.000
□	35.000

PARAMETRIC VALUES

BETA	.000	RN/L	1.100
ELEVTR	.000	AILRON	.000
RUDDER	.000	SPDBRK	55.000
BDFLAP	-11.700	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

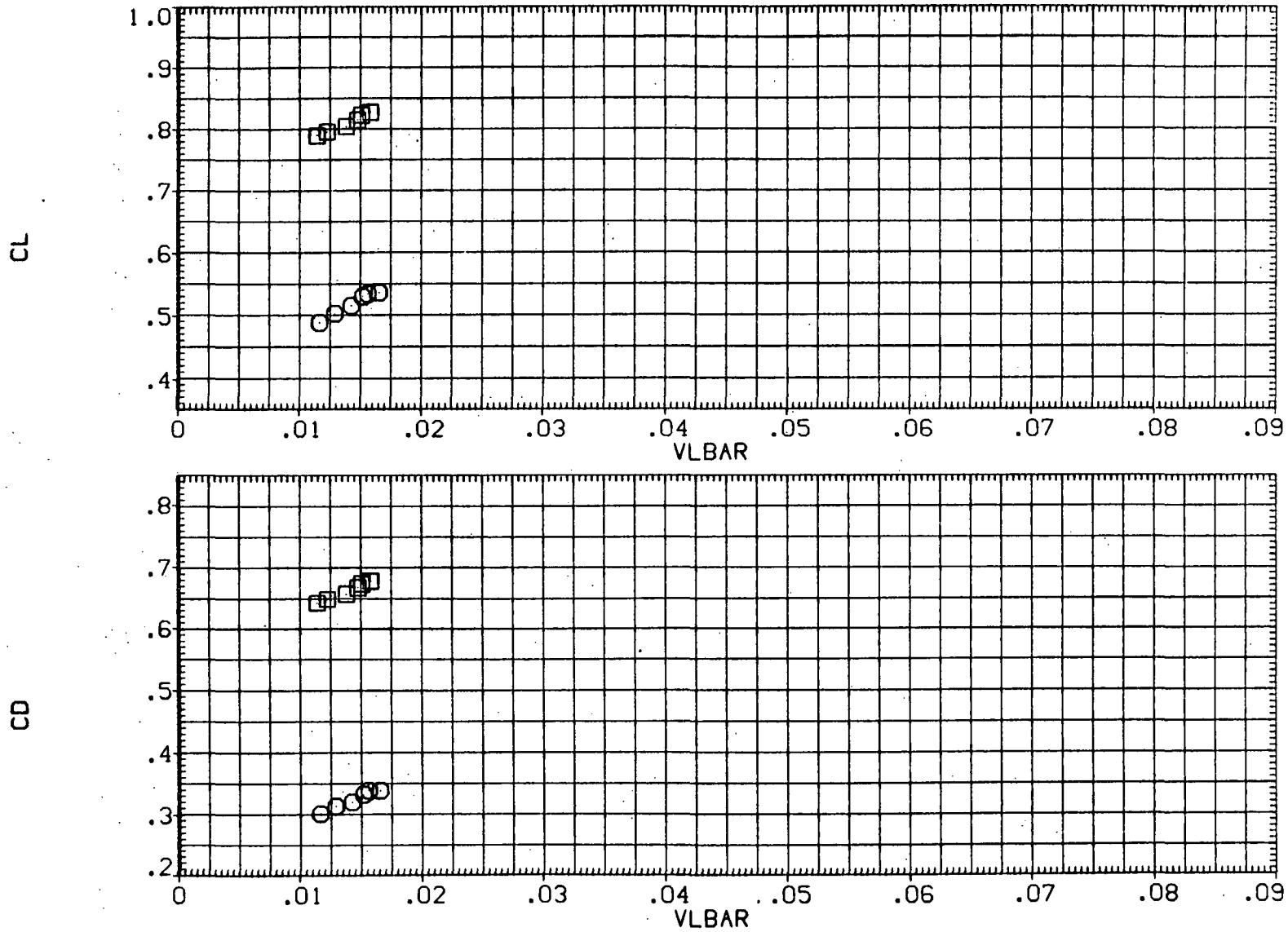


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED(FT0015)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	25.000	BETA	.000	RN/L	.250
□	35.000	ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	-11.700	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

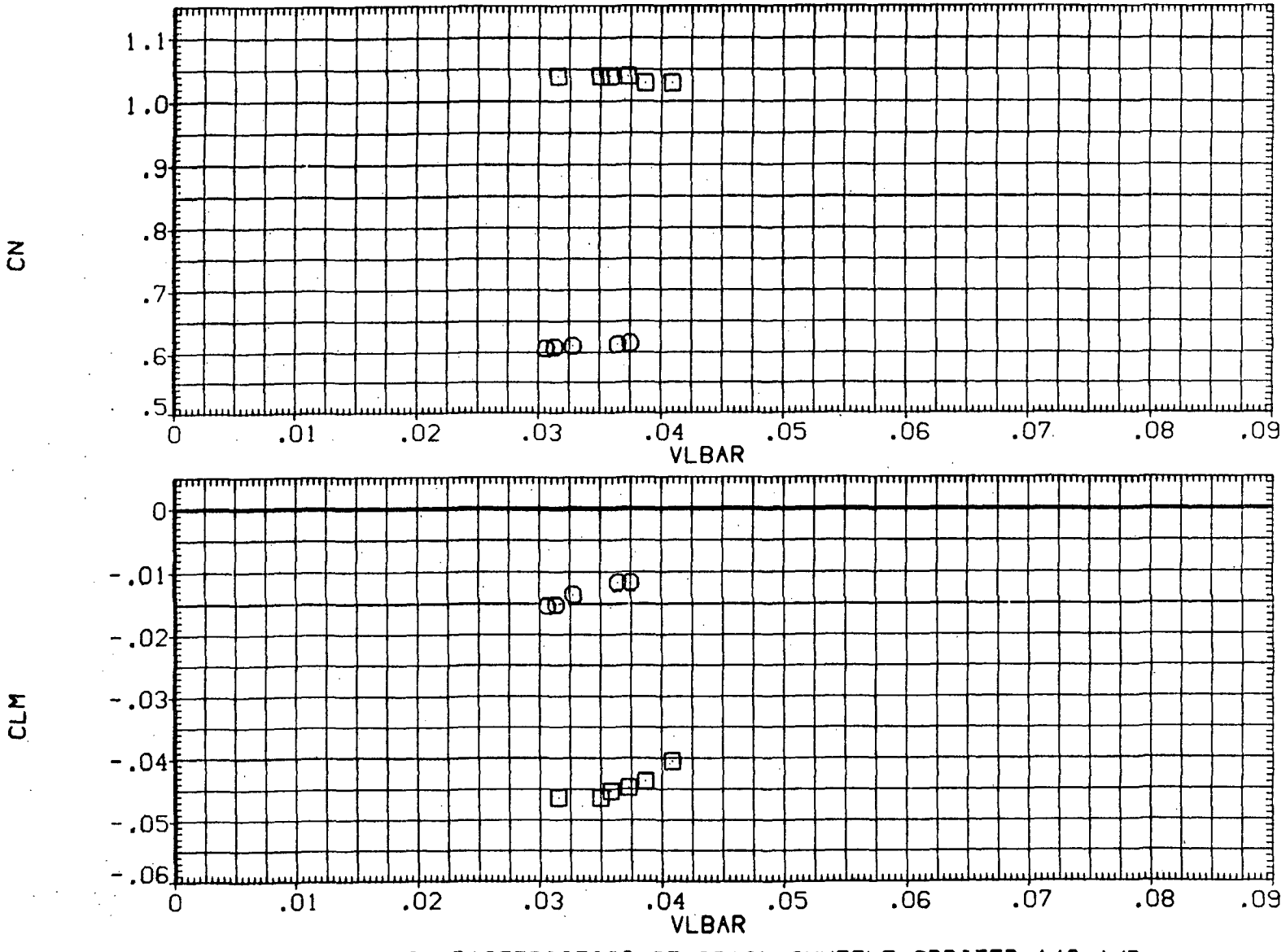


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED(FT0015)

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	25.000	BETA	.000	RN/L	.250
□	35.000	ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BOFLAP	-11.700	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

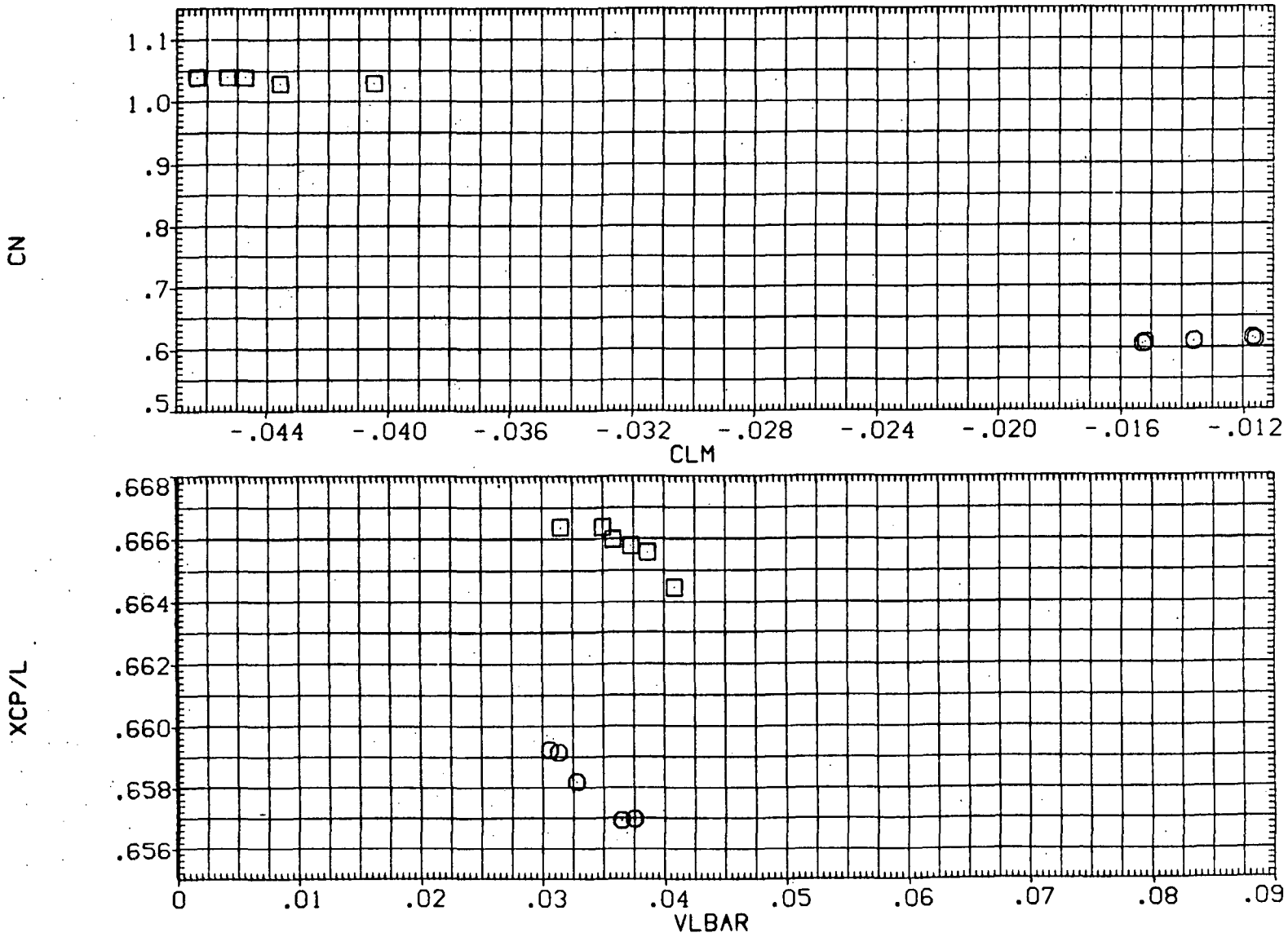


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED(FT0015)

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	25.000	BETA	.000	RN/L	.250
□	35.000	ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	-11.700	MACH	20.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

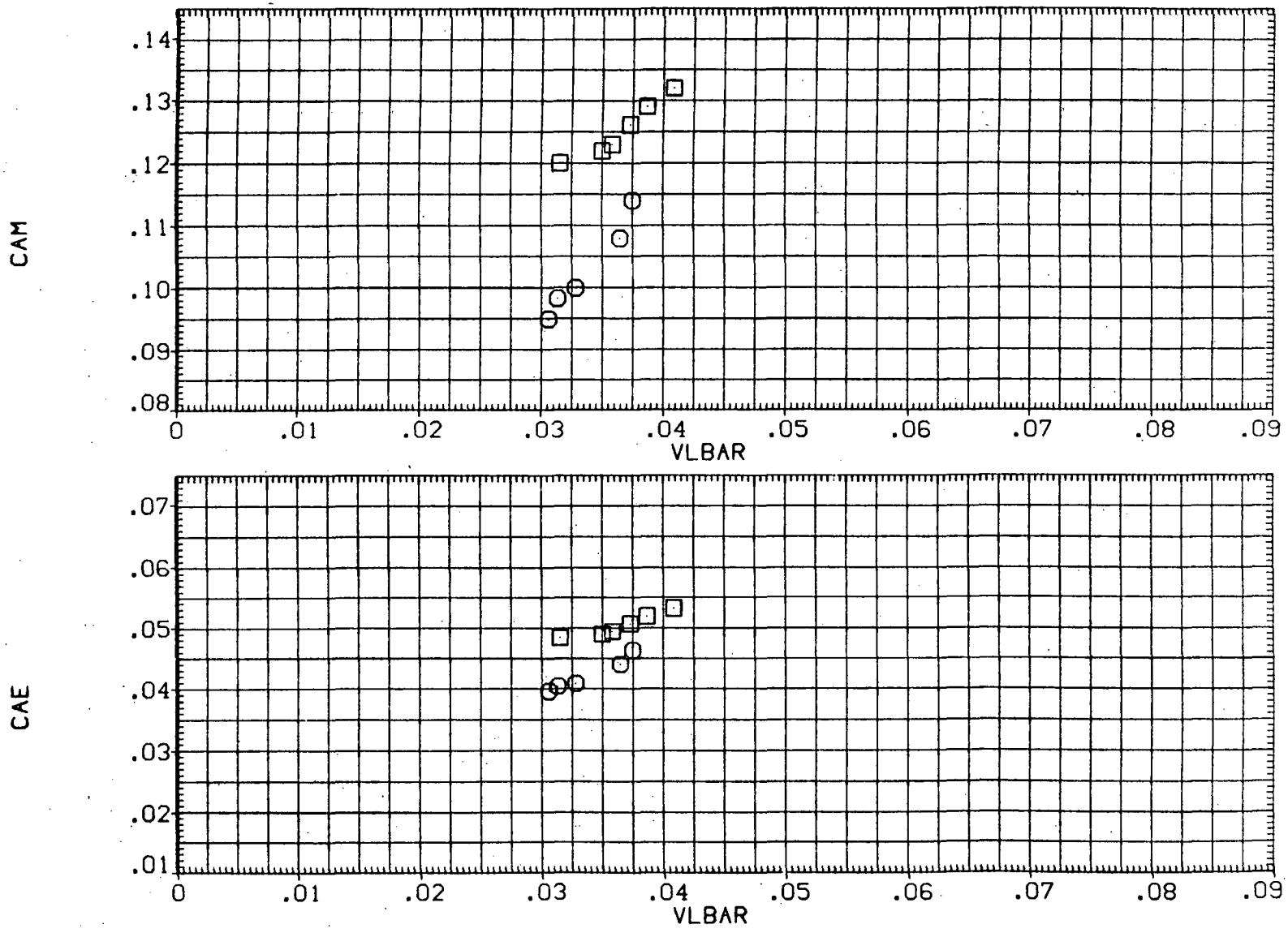


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED(FT0015)

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	25.000	BETA	.000	RN/L	.250
□	35.000	ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPDBRK	55.000
		BDFLAP	-11.700	MACH	20.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

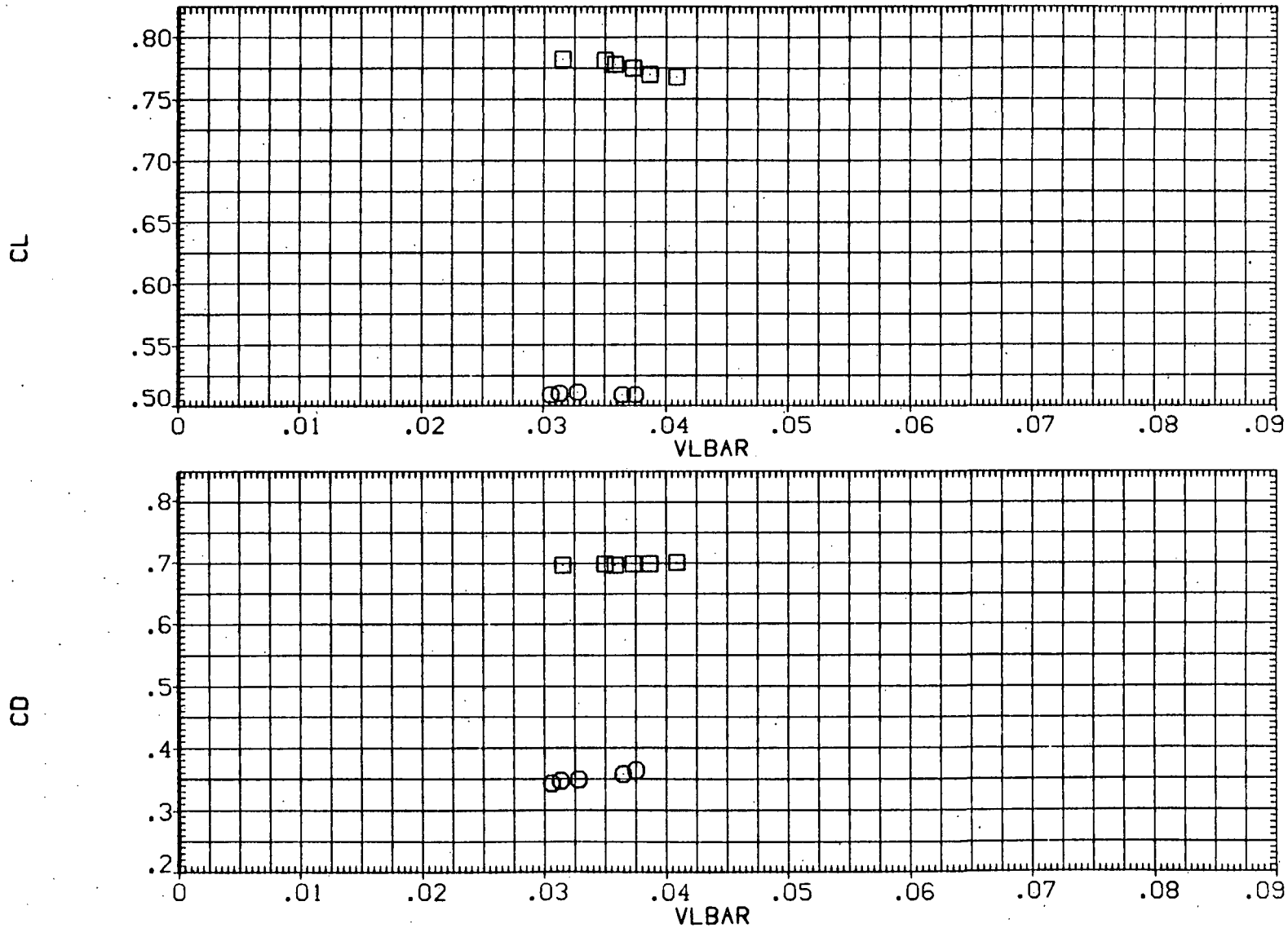


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED(FT0016)

SYMBOL	ALPHA		PARAMETRIC VALUES		
O	35.000	BETA	.000	RN/L	.500
		ELEVTR	.000	AILRON	.000
		RUDDER	.000	SPOBRK	55.000
		BDFLAP	-11.700	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

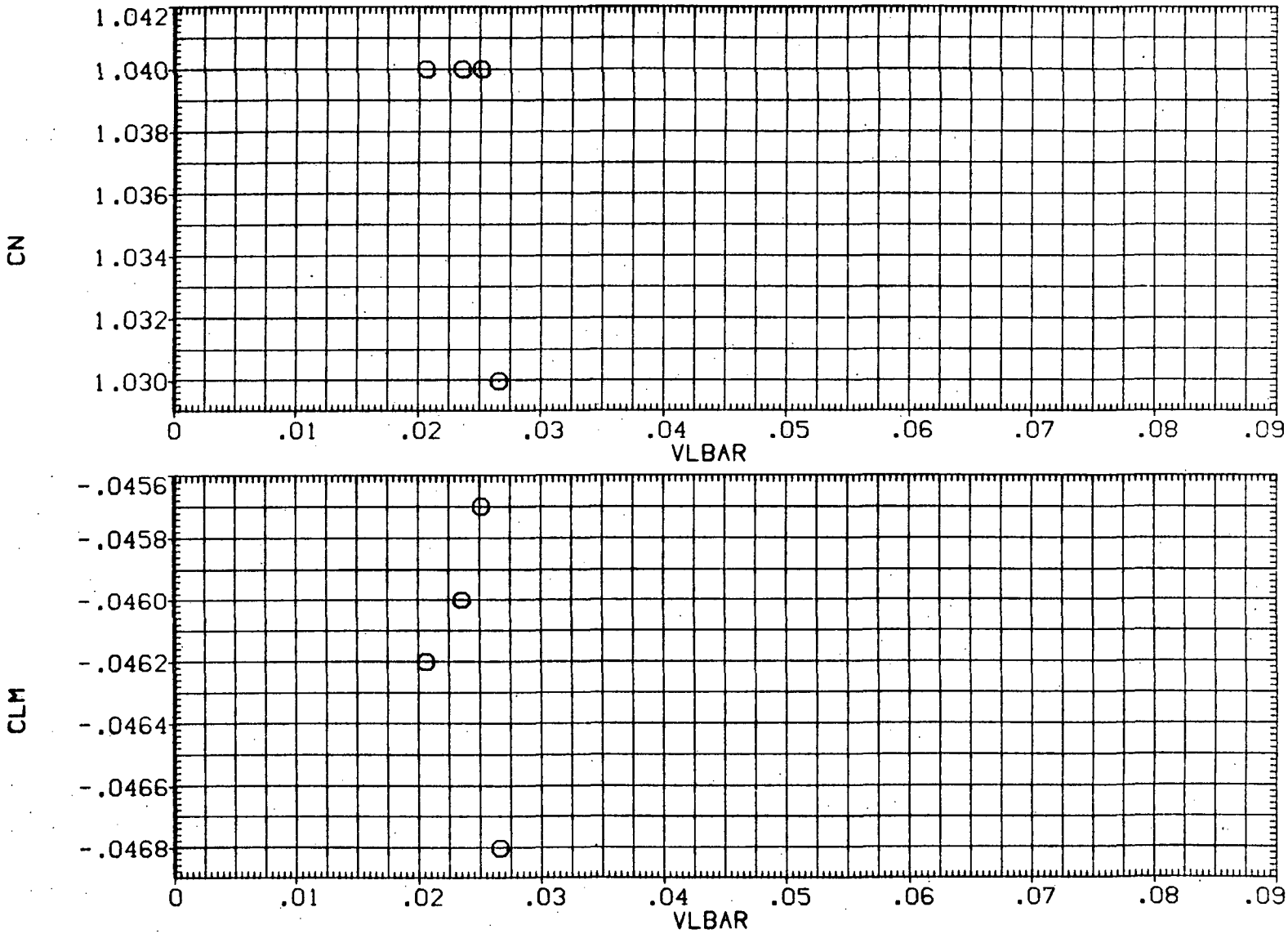


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

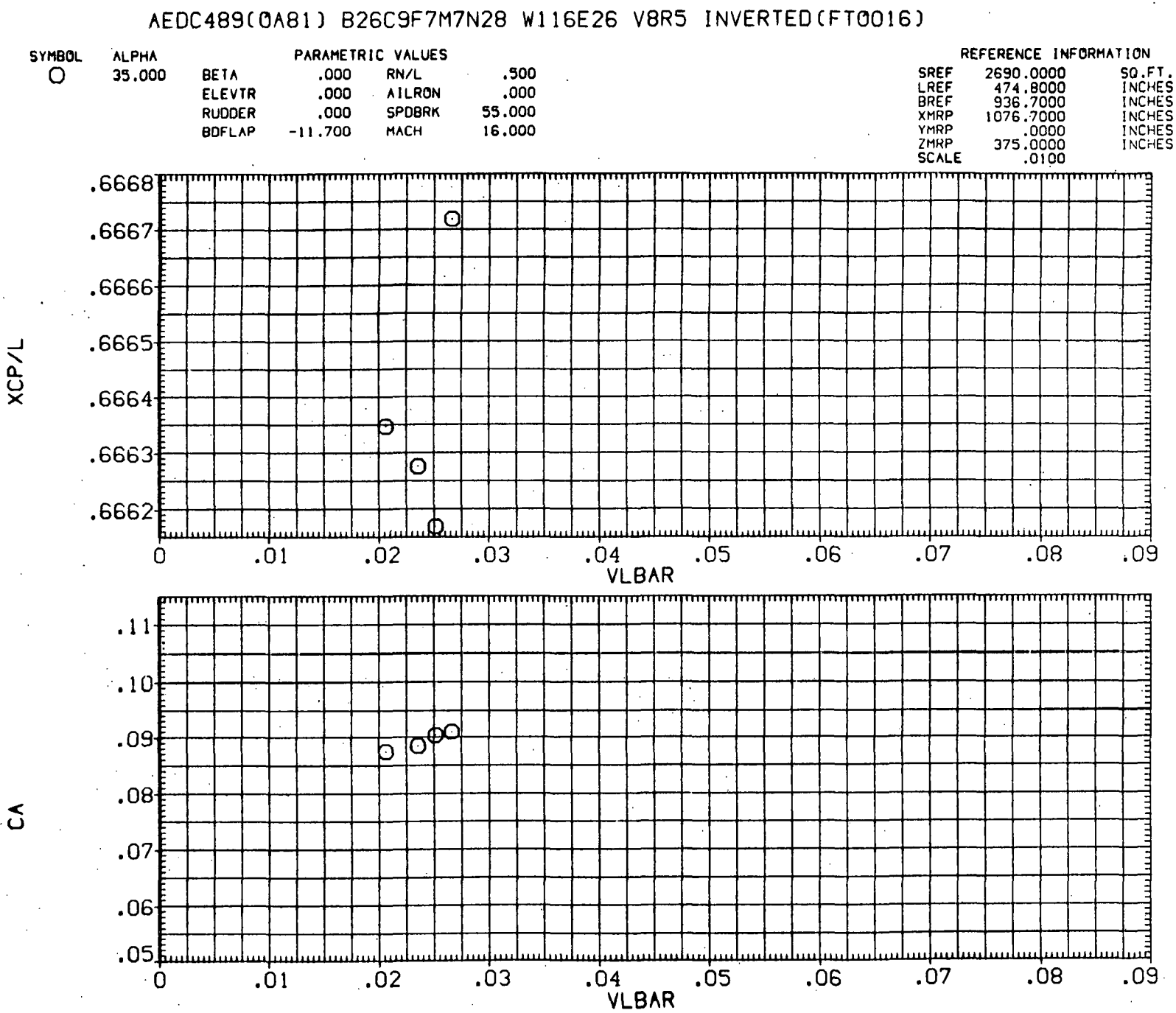


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED(FT0016)

SYMBOL	ALPHA
○	35.000

PARAMETRIC VALUES

BETA	.000	RN/L	.500
ELEVTR	.000	AILRON	.000
RUDDER	.000	SPDBRK	55.000
BDFLAP	-11.700	MACH	16.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	INCHES
BREF	936.7000	INCHES
XMRP	1076.7000	INCHES
YMRP	.0000	INCHES
ZMRP	375.0000	INCHES
SCALE	.0100	

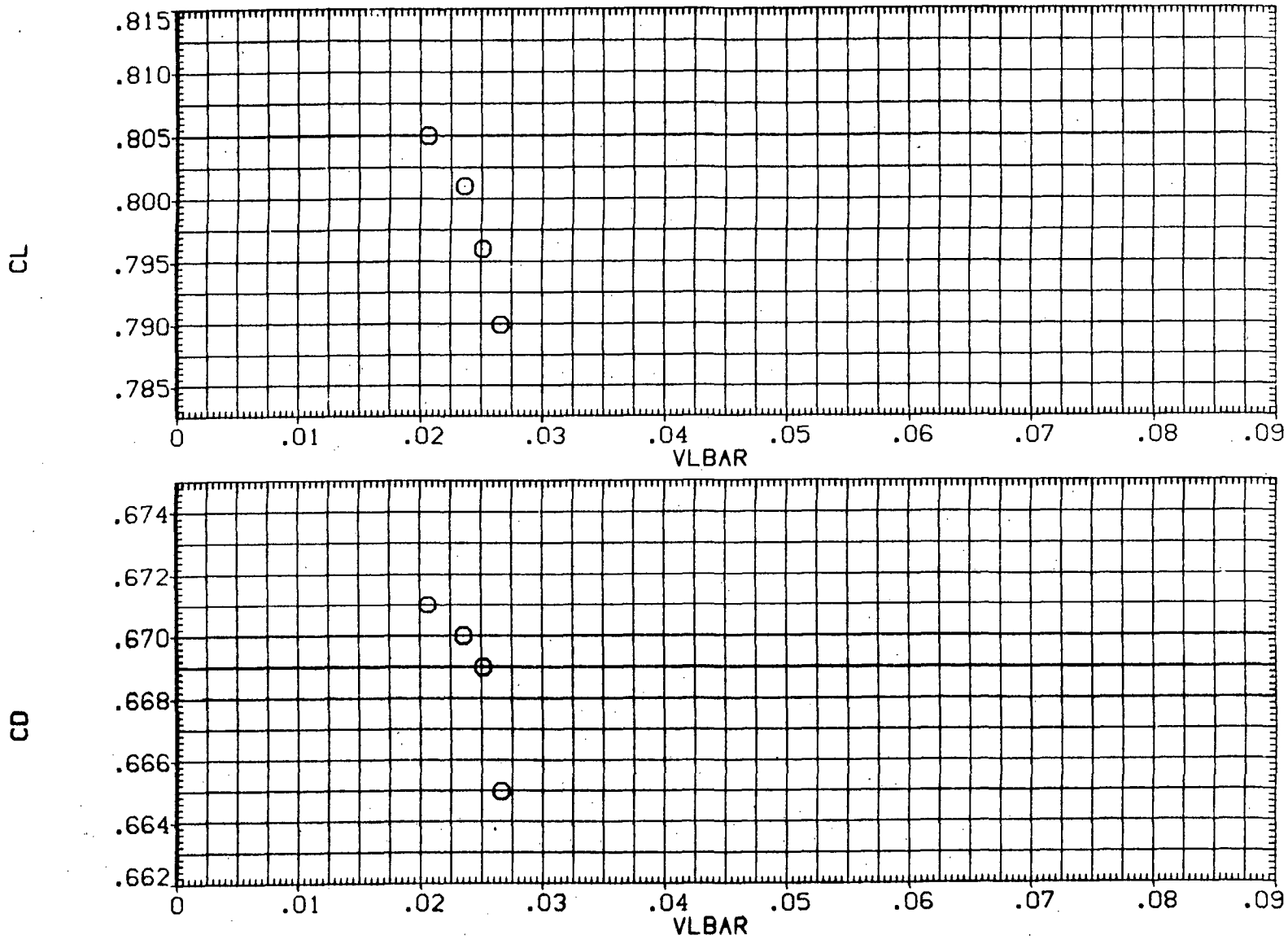


FIGURE 5. HYPERSONIC CHARACTERISTICS OF SPACE SHUTTLE ORBITER 140 A/B

APPENDIX

TABULATED SOURCE DATA

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0001) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = -40.000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = -11.700

RUN NO. 4/ 0 RN/L = .87 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.000	20.000	60.00000	.35600	.01510	.63439	.31100	.18600	1.67000	.06900	.06870	.01284
15.700	20.000	65.00000	.36000	.01400	.63569	.31400	.18900	1.67000	.07000	.06970	.01364
15.700	20.000	70.00000	.36400	.01290	.63696	.31700	.19200	1.65000	.07200	.07170	.01489
15.400	20.000	80.00000	.37000	.01080	.63926	.32200	.19700	1.64000	.07500	.07470	.01489
15.000	20.000	100.00000	.38600	.00700	.64333	.33600	.20500	1.64000	.07800	.07770	.01477
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 3/ 0 RN/L = 1.02 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.400	25.000	70.00000	.49700	.02290	.63304	.42200	.27300	1.55000	.06900	.06900	.01314
16.400	25.000	75.00000	.49500	.02030	.63491	.42000	.27200	1.54000	.06900	.06900	.01301
16.400	25.000	80.00000	.49100	.01710	.63718	.41500	.27000	1.54000	.06950	.06950	.01325
16.000	25.000	90.00000	.48900	.01530	.63849	.41300	.27200	1.52000	.07180	.07180	.01431
15.600	25.000	100.00000	.49500	.01690	.63744	.41700	.27700	1.50000	.07500	.07500	.01631
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 2/ 0 RN/L = .97 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.000	30.000	60.00000	.75200	.03160	.63454	.61200	.44400	1.38000	.07800	.07820	.01227
15.900	30.000	70.00000	.75900	.03450	.63327	.61700	.45000	1.37000	.08100	.08130	.01374
16.100	30.000	80.00000	.76300	.03530	.63298	.61900	.45500	1.36000	.08400	.08430	.01452
16.400	30.000	90.00000	.77000	.03690	.63237	.62300	.46000	1.36000	.08600	.08640	.01526
15.400	30.000	100.00000	.77600	.03650	.63269	.62800	.46400	1.35000	.08800	.08840	.01558
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 1/ 0 RN/L = .94 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.100	35.000	60.00000	1.01000	.03870	.63590	.77800	.65300	1.19000	.08800	.08860	.01223
15.700	35.000	65.00000	1.00000	.03780	.63609	.77200	.64900	1.19000	.08830	.08890	.01304
15.600	35.000	70.00000	.99800	.03780	.63606	.76500	.64500	1.19000	.08880	.08940	.01417
15.600	35.000	80.00000	.97900	.03540	.63669	.75100	.63500	1.18000	.08900	.08950	.01520
15.500	35.000	90.00000	.97000	.03750	.63577	.74300	.63000	1.18000	.09000	.09050	.01520
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0001) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	1.100
ELEVTR =	-40.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	-11.700		

RUN NO. 4/ 0 RN/L = .87 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.000	20.000	60.0000	11697.00000	.00998	1.87000	4041.00000	1.05000	-.00180	.01450	.01284
15.700	20.000	65.0000	11035.00000	.01010	1.74000	4303.00000	.88000	-.00180	.01570	.01364
15.700	20.000	70.0000	10470.00000	.00917	1.66000	4658.00000	.72000	-.00178	.01720	.01499
15.400	20.000	80.00000	9500.00000	.00958	1.58000	4695.00000	.69000	-.00175	.01720	.01489
15.000	20.000	100.00000	7771.00000	.00973	1.45000	4204.00000	.69000	-.00169	.01680	.01477
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 3/ 0 RN/L = 1.02 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.400	25.000	70.0000	10374.00000	.00796	1.46000	3599.00000	1.09000	-.00022	.01470	.01314
16.400	25.000	75.0000	10003.00000	.00765	1.43000	3526.00000	1.12000	-.00023	.01450	.01301
16.400	25.000	80.00000	9557.00000	.00746	1.41000	3397.00000	1.09000	-.00025	.01470	.01325
16.000	25.000	90.00000	8739.00000	.00734	1.34000	3860.00000	.86000	-.00025	.01610	.01431
15.600	25.000	100.00000	7984.00000	.00740	1.23000	4433.00000	.60000	-.00026	.01870	.01631
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 2/ 0 RN/L = .97 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.000	30.000	60.0000	11321.00000	.01010	1.80000	3710.00000	1.18000	.00160	.01370	.01227
15.900	30.000	70.0000	10185.00000	.00861	1.52000	4160.00000	.90000	.00187	.01560	.01374
16.100	30.000	80.00000	9293.00000	.00729	1.32000	4106.00000	.83000	.00215	.01650	.01452
16.400	30.000	90.00000	8550.00000	.00646	1.20000	3460.00000	.82000	.00243	.01690	.01526
16.400	30.000	100.00000	7806.00000	.00579	1.08000	3568.00000	.78000	.00274	.01730	.01558
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 1/ 0 RN/L = .94 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.100	35.000	60.0000	11397.00000	.00963	1.80000	3744.00000	1.20000	.00390	.01370	.01223
15.700	35.000	65.0000	10666.00000	.01030	1.75000	4036.00000	.98000	.00370	.01480	.01304
15.600	35.000	70.0000	10211.00000	.00968	1.68000	4391.00000	.80000	.00358	.01630	.01417
15.600	35.000	80.00000	9273.00000	.00870	1.53000	4481.00000	.69000	.00340	.01750	.01520
15.500	35.000	90.00000	8473.00000	.00842	1.39000	4314.00000	.69000	.00330	.01740	.01520
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0002) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = .250
ELEVTR = -40.000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = -11.700

RUN NO. 8/ 0 RN/L = .24 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.300	20.000	60.00000	.38400	.00869	.64167	.33100	.21200	1.56000	.03837	.08580	.08631
20.200	20.000	70.00000	.38400	.00869	.64167	.32900	.21800	1.51000	.04135	.09200	.09250
19.300	20.000	80.00000	.38400	.01080	.63965	.33200	.21000	1.58000	.03492	.08310	.08360
19.100	20.000	100.00000	.38300	.01070	.63972	.32800	.21700	1.51000	.03848	.09150	.09200
19.000	20.000	120.00000	.38200	.01180	.63863	.32600	.22000	1.48000	.03872	.09480	.09529
19.200	20.000	140.00000	.38000	.01170	.63867	.32500	.21800	1.49000	.03750	.09370	.09417
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 7/ 0 RN/L = .25 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
19.900	25.000	90.00000	.52200	.01750	.63766	.43800	.29500	1.49000	.03227	.08200	.08224
19.600	25.000	100.00000	.51800	.01590	.63870	.43200	.29800	1.45000	.03427	.08740	.08764
19.600	25.000	110.00000	.51800	.01590	.63870	.43100	.30100	1.43000	.03536	.09090	.09114
19.500	25.000	120.00000	.51300	.01440	.63967	.42500	.30100	1.41000	.03583	.09280	.09280
19.700	25.000	130.00000	.51100	.01430	.63970	.42400	.30000	1.41000	.03465	.09220	.09243
19.800	25.000	140.00000	.50600	.01150	.64164	.42000	.29800	1.41000	.03393	.09200	.09222
19.600	25.000	150.00000	.50300	.01140	.64166	.41700	.29600	1.41000	.03377	.09220	.09220
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 6/ 0 RN/L = .25 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
19.900	30.000	80.00000	.72500	.02230	.63868	.58300	.44000	1.32000	.03334	.08900	.08981
19.800	30.000	90.00000	.72300	.01640	.64165	.57800	.44500	1.30000	.03619	.09610	.09689
19.800	30.000	100.00000	.70900	.01410	.64268	.56200	.44500	1.26000	.03937	.10400	.10478
19.500	30.000	110.00000	.70200	.01020	.64465	.55700	.44000	1.26000	.03716	.10200	.10276
19.400	30.000	120.00000	.69400	.00816	.64567	.55100	.43300	1.27000	.03431	.09880	.09954
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 5/ 0 RN/L = .23 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.200	35.000	90.00000	.90800	.02800	.63865	.68600	.60400	1.14000	.04294	.10000	.10129
19.900	35.000	100.00000	.90700	.02550	.63965	.68300	.60600	1.13000	.04451	.10400	.10525
19.200	35.000	110.00000	.90400	.02290	.64068	.67200	.61600	1.09000	.05179	.11700	.11823
18.800	35.000	120.00000	.90400	.02540	.63966	.67600	.61000	1.11000	.04717	.11100	.11219
18.900	35.000	140.00000	.89500	.02510	.63968	.66800	.60700	1.10000	.04743	.11300	.11414
18.800	35.000	160.00000	.88700	.02730	.63867	.66000	.60400	1.09000	.04747	.11400	.11509
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (826C9F7M7N28)(W116E26)(V8R5) (ST0002) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.250
ELEVTR =	-40.000	AILRON =	.000
RUDDER =	.000	SPOBRK =	55.000
BDFLAP =	-11.700		

RUN NO. 8/ 0 RN/L = .24 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.300	20.000	60.0000	12189.00000	.00185	.54000	4610.00000	.37000	.00330	.03130	.02694	1.22000
20.200	20.000	70.0000	11672.00000	.00176	.53000	4934.00000	.28000	.00325	.03560	.03050	1.21000
19.300	20.000	80.0000	11458.00000	.00198	.51000	6269.00000	.24000	.00325	.03700	.03023	1.36000
19.100	20.000	100.0000	10578.00000	.00185	.48000	6634.00000	.18000	.00320	.04190	.03422	1.36000
19.000	20.000	120.00000	9912.00000	.00175	.44000	6837.00000	.15000	.00315	.04570	.03708	1.43000
19.200	20.000	140.00000	9427.00000	.00154	.40000	6747.00000	.13000	.00300	.04990	.04038	1.48000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 7/ 0 RN/L = .25 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
19.900	25.000	90.0000	13306.00000	.00215	.59000	5393.00000	.31000	.00152	.03320	.02812	1.53000
19.600	25.000	100.0000	13043.00000	.00208	.56000	6032.00000	.27000	.00153	.03530	.02916	1.54000
19.600	25.000	110.0000	12576.00000	.00203	.54000	5905.00000	.25000	.00153	.03700	.03042	1.56000
19.500	25.000	120.0000	12291.00000	.00202	.52000	6107.00000	.22000	.00000	.03860	.03205	1.59000
19.700	25.000	130.0000	11992.00000	.00182	.50000	6170.00000	.21000	.00149	.04030	.03309	1.65000
19.800	25.000	140.0000	11583.00000	.00168	.49000	6307.00000	.19000	.00145	.04190	.03482	1.70000
19.600	25.000	150.0000	11378.00000	.00177	.47000	6336.00000	.18000	.00000	.04280	.03537	1.73000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 6/ 0 RN/L = .25 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
19.900	30.000	80.0000	13329.00000	.00201	.58000	5779.00000	.29000	.00520	.03440	.02876	1.63000
19.800	30.000	90.0000	13007.00000	.00192	.55000	6178.00000	.24000	.00510	.03800	.03109	1.62000
19.800	30.000	100.0000	12773.00000	.00194	.52000	5900.00000	.24000	.00500	.03810	.03136	1.61000
19.500	30.000	110.0000	12304.00000	.00192	.50000	6524.00000	.22000	.00490	.03860	.03168	1.71000
19.400	30.000	120.0000	11866.00000	.00182	.48000	6870.00000	.18000	.00480	.04210	.03454	1.84000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 5/ 0 RN/L = .23 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.200	35.000	90.0000	10601.00000	.00162	.47000	4805.00000	.29000	.00830	.03470	.03010	1.29000
19.900	35.000	100.0000	10228.00000	.00167	.46000	5029.00000	.26000	.00805	.03650	.03110	1.30000
19.200	35.000	110.00000	9799.00000	.00181	.45000	5912.00000	.23000	.00790	.03740	.03105	1.23000
18.800	35.000	120.00000	9570.00000	.00185	.44000	6677.00000	.20000	.00770	.03880	.03191	1.32000
18.900	35.000	140.00000	9083.00000	.00176	.43000	6180.00000	.17000	.00735	.04300	.03531	1.35000
18.800	35.000	160.00000	8453.00000	.00175	.42000	6162.00000	.15000	.00700	.04570	.03737	1.37000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0003) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = -11.700

RUN NO. 11/ 0 RN/L = 1.18 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.500	25.000	60.00000	.54800	-.00801	.65538	.46800	.29200	1.60000	.06700	.06720	.01235
16.600	25.000	70.00000	.56200	-.00601	.65394	.47900	.30200	1.59000	.07100	.07120	.01308
16.500	25.000	80.00000	.57400	-.00390	.65250	.48900	.31000	1.58000	.07450	.07470	.01307
16.400	25.000	90.00000	.58800	-.00233	.65146	.50000	.31900	1.56000	.07800	.07820	.01351
16.200	25.000	95.00000	.59600	-.00094	.65058	.50600	.32500	1.56000	.08000	.08020	.01391
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 10/ 0 RN/L = 1.03 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.000	30.000	55.00000	.77600	-.01050	.65498	.63500	.45200	1.40000	.07400	.07450	.01190
16.200	30.000	60.00000	.78000	-.00979	.65462	.63800	.45500	1.40000	.07500	.07550	.01345
16.500	30.000	70.00000	.79300	-.00835	.65387	.64900	.46300	1.40000	.07600	.07660	.01460
16.500	30.000	80.00000	.80500	-.00671	.65307	.65700	.47000	1.40000	.07800	.07860	.01456
16.000	30.000	90.00000	.81700	-.00370	.65167	.66700	.47900	1.39000	.08100	.08160	.01502
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 9/ 0 RN/L = 1.01 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.100	35.000	50.00000	.96100	-.04680	.66792	.74700	.60700	1.23000	.06800	.06890	.01179
16.000	35.000	55.00000	.97600	-.04070	.66535	.75800	.61900	1.23000	.07100	.07190	.01316
16.300	35.000	60.00000	.98600	-.03670	.66370	.76500	.62700	1.22000	.07350	.07440	.01445
16.500	35.000	70.00000	.99300	-.03420	.66267	.76900	.63200	1.22000	.07600	.07700	.01482
16.000	35.000	90.00000	1.00000	-.03010	.66108	.77600	.64100	1.21000	.07900	.07990	.01533
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0003) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	1.100
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	-11.700		

RUN NO. 11/ 0 RN/L = 1.18 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.500	25.000	60.0000012258.00000		.00898	1.69000	3694.00000	1.24000	.00108	.01380	.01235
16.600	25.000	70.0000011090.00000		.00777	1.48000	3587.00000	1.13000	.00115	.01460	.01308
16.500	25.000	80.0000010171.00000		.00759	1.35000	3347.00000	1.14000	.00121	.01440	.01307
16.400	25.000	90.00000 9310.00000		.00728	1.30000	3384.00000	1.05000	.00127	.01490	.01351
16.200	25.000	95.00000 8959.00000		.00715	1.29000	3757.00000	.94000	.00131	.01560	.01391
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 10/ 0 RN/L = 1.03 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.000	30.000	55.0000011663.00000		.01040	1.87000	3666.00000	1.26000	.00340	.01330	.01190
16.200	30.000	60.0000011403.00000		.00893	1.65000	3935.00000	.99000	.00345	.01520	.01345
16.500	30.000	70.0000010181.00000		.00715	1.38000	3826.00000	.88000	.00355	.01640	.01460
16.500	30.000	80.00000 9341.00000		.00664	1.26000	3739.00000	.89000	.00367	.01630	.01456
16.000	30.000	90.00000 8496.00000		.00707	1.23000	4033.00000	.77000	.00380	.01690	.01502
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 9/ 0 RN/L = 1.01 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.100	35.000	50.0000012552.00000		.01090	1.93000	3729.00000	1.29000	.00560	.01320	.01179
16.000	35.000	55.0000011905.00000		.01020	1.70000	4150.00000	.99000	.00590	.01500	.01316
16.300	35.000	60.0000011543.00000		.00834	1.55000	4376.00000	.84000	.00610	.01660	.01445
16.500	35.000	70.0000010424.00000		.00700	1.33000	4048.00000	.84000	.00635	.01680	.01482
16.000	35.000	90.00000 8760.00000		.00715	1.25000	4040.00000	.74000	.00610	.01740	.01533
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0004) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = .000

RUN NO. 15/ 0 RN/L = 1.06 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
15.800	20.000	50.00000	.43300	-.00347	.65295	.38200	.21500	1.77000	.07200	.07180	.01083
15.800	20.000	60.00000	.44300	-.00119	.65099	.39000	.22300	1.75000	.07600	.07590	.01342
16.300	20.000	70.00000	.44700	-.00136	.65112	.39300	.22600	1.74000	.07800	.07790	.01440
16.200	20.000	80.00000	.45100	-.00061	.65050	.39700	.22900	1.73000	.08000	.07990	.01439
16.000	20.000	90.00000	.45300	-.00065	.65052	.39800	.23200	1.71000	.08200	.08190	.01499
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 14/ 0 RN/L = 1.03 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.300	25.000	60.00000	.56200	-.01360	.65890	.48100	.29900	1.61000	.06800	.06810	.01227
16.300	25.000	65.00000	.56500	-.01240	.65808	.48300	.30100	1.60000	.06900	.06910	.01342
16.400	25.000	70.00000	.56600	-.01280	.65832	.48300	.30300	1.60000	.07000	.07010	.01415
16.200	25.000	80.00000	.57400	-.01140	.65731	.49000	.30800	1.59000	.07200	.07210	.01458
16.400	25.000	90.00000	.58000	-.01030	.65653	.49400	.31200	1.58000	.07400	.07410	.01519
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 13/ 0 RN/L = .95 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.200	30.000	50.00000	.80700	-.00811	.65370	.66200	.46600	1.42000	.07200	.07240	.01174
16.100	30.000	55.00000	.81200	-.01060	.65480	.66500	.47200	1.41000	.07600	.07640	.01279
16.100	30.000	60.00000	.81400	-.00967	.65437	.66600	.47500	1.40000	.07800	.07350	.01395
15.800	30.000	70.00000	.82100	-.01050	.65471	.67100	.48000	1.40000	.08000	.08050	.01538
15.900	30.000	80.00000	.82900	-.01010	.65448	.67700	.48600	1.39000	.08200	.08250	.01572
16.000	30.000	90.00000	.83500	-.01040	.65458	.68100	.49100	1.39000	.08400	.08460	.01623
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 12/ 0 RN/L = 1.07 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.200	35.000	55.00000	1.03000	-.03180	.66136	.80100	.65300	1.23000	.07650	.07570	.01237
16.400	35.000	60.00000	1.03000	-.03100	.66108	.80200	.65500	1.22000	.07750	.07660	.01360
16.500	35.000	70.00000	1.04000	-.03070	.66086	.80400	.65800	1.22000	.07900	.07810	.01445
16.700	35.000	80.00000	1.04000	-.03070	.66086	.80500	.66000	1.22000	.08000	.07910	.01423
16.700	35.000	90.00000	1.04000	-.02990	.66058	.80600	.66200	1.22000	.08050	.07960	.01424
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (B26C9F7M7N28)(W116E26)(V8R5) (STO004) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = .000

RUN NO. 15/ 0 RN/L = 1.06 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
15.800	20.000	50.00000	12797.00000	.01310	2.24000	3642.00000	1.48000	-.00126	.01210	.01083
15.800	20.000	60.00000	11799.00000	.01050	1.78000	4296.00000	.92000	-.00084	.01530	.01342
16.300	20.000	70.00000	10566.00000	.00801	1.52000	3999.00000	.87000	-.00061	.01630	.01440
16.200	20.000	80.00000	9655.00000	.00780	1.40000	3844.00000	.87000	-.00050	.01620	.01439
16.000	20.000	90.00000	8744.00000	.00735	1.29000	4072.00000	.77000	-.00046	.01690	.01499
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 14/ 0 RN/L = 1.03 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.300	25.000	60.00000	11774.00000	.00924	1.68000	3668.00000	1.23000	.00060	.01380	.01227
16.300	25.000	65.00000	11027.00000	.00872	1.55000	3751.00000	1.02000	.00061	.01500	.01342
16.400	25.000	70.00000	10520.00000	.00753	1.46000	4035.00000	.91000	.00062	.01600	.01415
16.200	25.000	80.00000	9695.00000	.00737	1.32000	4011.00000	.84000	.00065	.01650	.01458
16.400	25.000	90.00000	8826.00000	.00651	1.22000	3718.00000	.81000	.00068	.01700	.01519
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 13/ 0 RN/L = .95 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.200	30.000	50.00000	12503.00000	.01040	1.90000	3624.00000	1.33000	.00273	.01310	.01174
16.100	30.000	55.00000	12066.00000	.01010	1.80000	4070.00000	1.04000	.00284	.01460	.01279
16.100	30.000	60.00000	11662.00000	.00943	1.71000	4203.00000	.89000	.00296	.01590	.01395
15.800	30.000	70.00000	10475.00000	.00888	1.52000	4529.00000	.69000	.00319	.01780	.01538
15.900	30.000	80.00000	9519.00000	.00801	1.34000	4304.00000	.68000	.00340	.01800	.01572
16.000	30.000	90.00000	8680.00000	.00713	1.24000	4209.00000	.65000	.00360	.01850	.01623
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 12/ 0 RN/L = 1.07 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.200	35.000	55.00000	12566.00000	.01010	1.89000	3824.00000	1.18000	-.00545	.01390	.01237
16.400	35.000	60.00000	12332.00000	.00895	1.68000	4084.00000	.98000	-.00550	.01540	.01360
16.500	35.000	70.00000	11047.00000	.00746	1.43000	4094.00000	.88000	-.00563	.01640	.01445
16.700	35.000	80.00000	10165.00000	.00662	1.32000	3681.00000	.96000	-.00575	.01600	.01423
16.700	35.000	90.00000	9344.00000	.00636	1.24000	3522.00000	.97000	-.00590	.01580	.01424
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0005) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = .250
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = .000

RUN NO. 19/ 0 RN/L = .23 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.000	20.000	90.00000	.41400	-.01310	.66164	.35600	.23300	1.53000	.04106	.09670	.09717
20.000	20.000	100.00000	.41400	-.01200	.66067	.35700	.23000	1.55000	.03828	.09330	.09377
20.000	20.000	110.00000	.41400	-.00975	.65867	.35600	.23200	1.54000	.03899	.09540	.09586
20.300	20.000	120.00000	.41400	-.00975	.65867	.35400	.23700	1.49000	.04181	.10100	.10146
19.800	20.000	130.00000	.41400	-.01090	.65969	.35200	.24300	1.45000	.04550	.10800	.10846
19.700	20.000	140.00000	.41400	-.01090	.65969	.35100	.24600	1.43000	.04655	.11000	.11045
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 18/ 0 RN/L = .22 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.000	25.000	84.00000	.60000	-.01900	.66165	.49900	.35000	1.43000	.03987	.10500	.10584
20.300	25.000	90.00000	.59800	-.01900	.66169	.49700	.35000	1.42000	.04027	.10600	.10681
19.700	25.000	100.00000	.59600	-.01730	.66068	.49400	.35000	1.41000	.04095	.10800	.10870
20.000	25.000	110.00000	.59000	-.01550	.65967	.48800	.34800	1.40000	.04080	.10800	.10867
19.500	25.000	120.00000	.58800	-.01380	.65864	.48600	.34900	1.39000	.04158	.11000	.11066
19.700	25.000	140.00000	.57700	-.01200	.65765	.47400	.35000	1.35000	.04441	.11600	.11662
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 17/ 0 RN/L = .20 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
19.900	30.000	90.00000	.80700	-.02120	.65967	.64500	.49000	1.30000	.04068	.10800	.10887
19.900	30.000	100.00000	.80700	-.02120	.65967	.64200	.50200	1.28000	.04278	.11300	.11384
19.500	30.000	110.00000	.79700	-.01660	.65766	.63100	.50100	1.26000	.04450	.11700	.11781
19.300	30.000	120.00000	.78500	-.01640	.65769	.61900	.49800	1.24000	.04641	.12100	.12179
19.600	30.000	140.00000	.77400	-.01400	.65666	.60700	.49600	1.23000	.04875	.12500	.12576
19.200	30.000	160.00000	.76200	-.01380	.65666	.59600	.49200	1.21000	.05035	.12700	.12774
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 16/ 0 RN/L = .24 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.200	35.000	100.00000	1.02000	-.04360	.66573	.77000	.68400	1.13000	.05025	.11700	.11809
19.900	35.000	110.00000	1.02000	-.04360	.66573	.76700	.68900	1.11000	.05286	.12300	.12409
19.700	35.000	120.00000	1.02000	-.03800	.66371	.76300	.69300	1.10000	.05547	.12900	.13009
19.700	35.000	130.00000	1.02000	-.03790	.66367	.75800	.69700	1.09000	.05808	.13500	.13609
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0005) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.250
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 19/ 0 RN/L = .23 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.000	20.000	90.00000	11471.00000	.00175	.47000	5382.00000	.26000	.00301	.03630	.03090	1.34000
20.000	20.000	100.00000	10885.00000	.00160	.45000	5586.00000	.24000	.00300	.03840	.03197	1.42000
20.000	20.000	110.00000	10703.00000	.00148	.44000	5994.00000	.22000	.00299	.04010	.03301	1.43000
20.300	20.000	120.00000	10306.00000	.00139	.42000	5440.00000	.20000	.00298	.04210	.03572	1.40000
19.800	20.000	130.00000	10116.00000	.00151	.41000	5929.00000	.19000	.00295	.04250	.03523	1.36000
19.700	20.000	140.00000	9789.00000	.00152	.40000	5975.00000	.18000	.00291	.04380	.03595	1.35000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 18/ 0 RN/L = .22 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.000	25.000	84.00000	11685.00000	.00178	.46000	5335.00000	.27000	.00540	.03600	.03038	1.60000
20.300	25.000	90.00000	11487.00000	.00152	.45000	5497.00000	.24000	.00520	.03870	.03257	1.60000
19.700	25.000	100.00000	11107.00000	.00164	.44000	6436.00000	.20000	.00449	.04100	.03364	1.61000
20.000	25.000	110.00000	10787.00000	.00152	.43000	5738.00000	.18000	.00435	.04460	.03679	1.62000
19.500	25.000	120.00000	10459.00000	.00156	.42000	6826.00000	.16000	.00423	.04560	.03685	1.62000
19.700	25.000	140.00000	9752.00000	.00143	.40000	6233.00000	.15000	.00400	.04760	.03913	1.59000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 17/ 0 RN/L = .20 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
19.900	30.000	90.00000	11579.00000	.00176	.45000	5659.00000	.24000	.00560	.03760	.03173	1.62000
19.900	30.000	100.00000	11066.00000	.00164	.44000	5843.00000	.20000	.00540	.04130	.03458	1.61000
19.500	30.000	110.00000	10877.00000	.00167	.43000	6645.00000	.18000	.00525	.04270	.03491	1.60000
19.300	30.000	120.00000	10552.00000	.00163	.42000	7081.00000	.17000	.00510	.04380	.03515	1.58000
19.600	30.000	140.00000	10039.00000	.00143	.40000	6757.00000	.15000	.00490	.04650	.03837	1.54000
19.200	30.000	160.00000	9269.00000	.00149	.39000	6924.00000	.15000	.00480	.04690	.03741	1.50000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 16/ 0 RN/L = .24 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.200	35.000	100.00000	10707.00000	.00156	.44000	5162.00000	.27000	.00700	.03630	.03085	1.30000
19.900	35.000	110.00000	10396.00000	.00160	.43000	5493.00000	.24000	.00700	.03810	.03191	1.30000
19.700	35.000	120.00000	9955.00000	.00159	.43000	5676.00000	.20000	.00700	.04060	.03442	1.30000
19.700	35.000	130.00000	9644.00000	.00149	.42000	5897.00000	.18000	.00700	.04290	.03605	1.30000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (B26C9F7M7N28)(W116E26)(V8R5) (RTO006) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = .250
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = .000

RUN NO. 48/ 0 RN/L = .20 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.200	25.000	80.00000	.62300	-.01350	.65797	.52500	.34900	1.50000	.03565	.09370	.09433
20.400	25.000	90.00000	.61600	-.01230	.65735	.51700	.34700	1.49000	.03630	.09530	.09588
19.400	25.000	100.00000	.60500	-.01180	.65718	.50700	.34500	1.47000	.03713	.09740	.09794
19.400	25.000	110.00000	.59700	-.01130	.65697	.49900	.34300	1.45000	.03815	.10000	.10051
19.900	25.000	120.00000	.58800	-.01030	.65645	.48900	.34200	1.43000	.03931	.10300	.10350
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 21/ 0 RN/L = .24 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
19.900	35.000	90.00000	.98000	-.03720	.66397	.74400	.64500	1.15000	.04368	.10000	.10137
20.300	35.000	100.00000	.99400	-.03770	.66396	.75100	.66000	1.14000	.04724	.10800	.10937
20.100	35.000	110.00000	1.00000	-.03740	.66376	.75300	.66900	1.13000	.04991	.11400	.11537
19.700	35.000	120.00000	.99800	-.03360	.66239	.74900	.67000	1.12000	.05168	.11800	.11937
18.300	35.000	130.00000	.98800	-.03080	.66147	.74000	.66600	1.11000	.05257	.12000	.12137
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (B26C9F7M7N28)(W116E26)(V8R5) (STO006) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = .250
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = .000

RUN NO. 48/ 0 RN/L = .20 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.200	25.000	80.00000	11196.00000	.00153	.44000	5554.00000	.23000	.00405	.03890	.03304	1.60000
20.400	25.000	90.00000	10826.00000	.00145	.42000	5254.00000	.20000	.00375	.04230	.03610	1.60000
19.400	25.000	100.00000	10583.00000	.00166	.42000	6642.00000	.18000	.00350	.04300	.03475	1.60000
19.400	25.000	110.00000	10221.00000	.00156	.41000	7082.00000	.16000	.00330	.04540	.03639	1.60000
19.900	25.000	120.00000	9911.00000	.00146	.40000	5849.00000	.14000	.00325	.04910	.04134	1.60000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (STO006) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.250
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 21/ 0 RN/L = .24 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
19.900	35.000	90.00000	11457.00000	.00176	.47000	5550.00000	.30000	.00880	.03400	.02848	1.25000
20.300	35.000	100.00000	11457.00000	.00154	.46000	5555.00000	.23000	.00880	.03980	.03317	1.25000
20.100	35.000	110.00000	10830.00000	.00159	.44000	5343.00000	.21000	.00880	.04060	.03461	1.25000
19.700	35.000	120.00000	10767.00000	.00158	.43000	6296.00000	.20000	.00880	.04130	.03382	1.25000
18.300	35.000	130.00000	10328.00000	.00180	.42000	9535.00000	.17000	.00880	.04150	.03152	1.25000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RTO007) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.500
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 25/ 0 RN/L = .39 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
15.400	20.000	55.00000	.39900	-.01100	.66014	.35000	.20500	1.70000	.07330	.07320	.01688
15.400	20.000	60.00000	.41500	-.00843	.65747	.36300	.21600	1.68000	.07910	.07900	.01927
15.600	20.000	70.00000	.43500	-.00447	.65378	.37800	.23100	1.64000	.08750	.08740	.02185
15.700	20.000	80.00000	.44100	-.00572	.65477	.38300	.23600	1.62000	.09070	.09060	.02286
15.600	20.000	90.00000	.43600	-.00878	.65741	.37900	.23300	1.62000	.08960	.08950	.02310
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 24/ 0 RN/L = .45 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
15.800	25.000	50.00000	.57100	-.01650	.66063	.48500	.31100	1.56000	.07650	.07660	.01659
15.800	25.000	55.00000	.58300	-.01370	.65865	.49400	.31900	1.55000	.08010	.08020	.01785
15.600	25.000	60.00000	.59300	-.01070	.65664	.50200	.32700	1.53000	.08440	.08450	.01926
15.900	25.000	70.00000	.60600	-.00747	.65454	.51100	.33700	1.52000	.08910	.08920	.02128
15.900	25.000	80.00000	.60900	-.00709	.65428	.51300	.34000	1.51000	.09070	.09080	.02142
15.900	25.000	90.00000	.60700	-.00791	.65480	.51100	.33900	1.51000	.09070	.09090	.02159
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M/N28)(W116E25)(V8R5) (RT0007) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.500
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 23/ 0 RN/L = .48 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
15.500	30.000	55.00000	.79900	-.02800	.66290	.65000	.47100	1.38000	.08230	.08230	.01660
15.600	30.000	60.00000	.80700	-.02460	.66122	.65600	.47800	1.37000	.08540	.08540	.01876
15.900	30.000	80.00000	.82400	-.02290	.66023	.66700	.49200	1.35000	.09280	.09280	.02185
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 22/ 0 RN/L = .44 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
15.900	35.000	55.00000	.96700	-.05310	.67021	.74700	.61900	1.21000	.07800	.07890	.01682
15.800	35.000	60.00000	.98300	-.04860	.66819	.75700	.63200	1.20000	.08230	.08320	.01854
15.800	35.000	70.00000	1.00000	-.04280	.66575	.77000	.64700	1.19000	.08750	.08840	.02095
15.800	35.000	80.00000	1.02000	-.03890	.66403	.78200	.66100	1.18000	.09170	.09260	.02143
16.000	35.000	90.00000	1.03000	-.03670	.66311	.79100	.67100	1.18000	.09490	.09580	.02174
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0007) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.500
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 25/ 0 RN/L = .39 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
15.400	20.000	55.00000	5908.00000	.00588	.95000	3940.00000	.57000	-.00066	.01910	.01688
15.400	20.000	60.00000	5744.00000	.00530	.89000	4500.00000	.42000	-.00067	.02230	.01927
15.600	20.000	70.00000	5144.00000	.00442	.75000	4675.00000	.33000	-.00065	.02510	.02185
15.700	20.000	80.00000	4681.00000	.00379	.67000	4507.00000	.31000	-.00059	.02630	.02286
15.600	20.000	90.00000	4219.00000	.00362	.62000	4486.00000	.30000	-.00051	.02660	.02310
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0007) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = .500
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = .000

RUN NO. 24/ 0 RN/L = .45 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
15.800	25.000	50.00000	6366.00000	.00567	.98000	3733.00000	.63000	.00063	.01850	.01659
15.800	25.000	55.00000	5979.00000	.00509	.91000	4073.00000	.53000	.00069	.02020	.01785
15.600	25.000	60.00000	5814.00000	.00519	.84000	4212.00000	.44000	.00072	.02190	.01926
15.900	25.000	70.00000	5264.00000	.00399	.76000	4394.00000	.37000	.00080	.02450	.02128
15.900	25.000	80.00000	4768.00000	.00367	.66000	4219.00000	.37000	.00089	.02440	.02142
15.900	25.000	90.00000	4394.00000	.00347	.60000	4003.00000	.37000	.00097	.02430	.02159
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 23/ 0 RN/L = .48 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
15.500	30.000	55.00000	5791.00000	.00581	.96000	3839.00000	.60000	.00026	.01860	.01660
15.600	30.000	60.00000	5601.00000	.00505	.87000	4160.00000	.47000	.00026	.02120	.01876
15.900	30.000	80.00000	4564.00000	.00366	.65000	4034.00000	.36000	.00026	.02460	.02185
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 22/ 0 RN/L = .44 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
15.900	35.000	55.00000	6006.00000	.00507	.93000	3749.00000	.62000	.00591	.01880	.01682
15.800	35.000	60.00000	5871.00000	.00502	.87000	4104.00000	.49000	.00601	.02090	.01854
15.800	35.000	70.00000	5354.00000	.00434	.76000	4268.00000	.38000	.00612	.02380	.02095
15.800	35.000	80.00000	4895.00000	.00387	.66000	4406.00000	.36000	.00612	.02450	.02143
16.000	35.000	90.00000	4460.00000	.00344	.62000	3973.00000	.37000	.00610	.02460	.02174
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0008) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = .070
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = .000

RUN NO. 29/ 0 RN/L = .11 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.100	20.000	70.00000	.44700	-.01670	.66375	.38200	.25700	1.49000	.05059	.11000	.11062
19.600	20.000	80.00000	.44600	-.01510	.66246	.37900	.26300	1.44000	.05284	.11700	.11762
19.100	20.000	100.00000	.44100	-.01150	.65960	.37100	.26900	1.38000	.05496	.12500	.12562
18.900	20.000	120.00000	.43400	-.00951	.65806	.36300	.26900	1.35000	.05530	.12800	.12862
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 28/ 0 RN/L = .09 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
19.500	25.000	80.00000	.60300	-.00848	.65517	.49100	.37500	1.31000	.05905	.13100	.13190
19.400	25.000	90.00000	.60100	-.01020	.65625	.49000	.37100	1.32000	.05692	.12800	.12887
19.500	25.000	100.00000	.59800	-.01000	.65615	.48700	.37000	1.32000	.05617	.12800	.12884
19.100	25.000	110.00000	.59300	-.01140	.65707	.48100	.37100	1.30000	.05719	.13200	.13281
18.500	25.000	120.00000	.58200	-.01130	.65714	.46900	.37200	1.26000	.05972	.13900	.13981
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 27/ 0 RN/L = .08 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
19.100	30.000	90.00000	.76600	-.02850	.66369	.59700	.50000	1.19000	.05505	.13300	.13443
19.100	30.000	100.00000	.76200	-.03000	.66449	.59100	.50100	1.18000	.05697	.13700	.13844
19.200	30.000	110.00000	.75900	-.03110	.66508	.58600	.50400	1.16000	.05959	.14200	.14346
19.000	30.000	120.00000	.75500	-.03440	.66677	.58000	.50600	1.14000	.06224	.14700	.14849
19.000	30.000	130.00000	.75100	-.03870	.66896	.57200	.51100	1.12000	.06610	.15400	.15551
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 26/ 0 RN/L = .09 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
19.200	35.000	80.00000	1.07000	-.03080	.66059	.79200	.73700	1.08000	.06663	.14800	.14918
19.300	35.000	90.00000	1.07000	-.02930	.66008	.79300	.73100	1.08000	.06290	.14300	.14418
19.200	35.000	100.00000	1.07000	-.03040	.66045	.79100	.73100	1.08000	.06334	.14400	.14518
18.900	35.000	120.00000	1.05000	-.02630	.65922	.78300	.72100	1.09000	.06020	.14000	.14118
19.200	35.000	140.00000	1.05000	-.02850	.65999	.77700	.72100	1.08000	.06195	.14400	.14517
17.700	35.000	160.00000	1.05000	-.02950	.66034	.77300	.72300	1.07000	.06369	.14800	.14916
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (826C9F7M7N28)(W116E26)(V8R5) (ST0008) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.070
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 29/ 0 RN/L = .11 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.100	20.000	70.00000	4456.00000	.00064	.19000	4868.00000	.15000	.00400	.04870	.04169	1.16000
19.600	20.000	80.00000	3971.00000	.00067	.18000	4830.00000	.12000	.00400	.05320	.04553	1.20000
19.100	20.000	100.00000	3712.00000	.00068	.17000	5510.00000	.09000	.00400	.06080	.05014	1.26000
18.900	20.000	120.00000	3323.00000	.00062	.15000	6176.00000	.06000	.00400	.06920	.05949	1.30000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 28/ 0 RN/L = .09 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
19.500	25.000	80.00000	3988.00000	.00066	.17000	5468.00000	.10000	.00580	.05680	.04859	1.20000
19.400	25.000	90.00000	3812.00000	.00064	.17000	5464.00000	.09000	.00560	.06170	.05100	1.23000
19.500	25.000	100.00000	3589.00000	.00058	.16000	5560.00000	.08000	.00540	.06500	.05418	1.26000
19.100	25.000	110.00000	3429.00000	.00059	.15000	6154.00000	.07000	.00520	.06740	.05574	1.29000
18.500	25.000	120.00000	3277.00000	.00064	.15000	7037.00000	.06000	.00520	.06790	.05689	1.31000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 27/ 0 RN/L = .08 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
19.100	30.000	90.00000	3891.00000	.00068	.17000	6145.00000	.08000	.00920	.06420	.05214	1.38000
19.100	30.000	100.00000	3647.00000	.00067	.17000	5528.00000	.08000	.00930	.06500	.05316	1.37000
19.200	30.000	110.00000	3492.00000	.00063	.16000	5624.00000	.07000	.00940	.06660	.05690	1.35000
19.000	30.000	120.00000	3337.00000	.00059	.15000	6314.00000	.07000	.00960	.06910	.05519	1.33000
19.000	30.000	130.00000	3191.00000	.00058	.15000	6052.00000	.06000	.00970	.07420	.06006	1.30000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 26/ 0 RN/L = .09 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
19.200	35.000	80.00000	3981.00000	.00074	.19000	5426.00000	.11000	.00760	.05320	.04566	1.20000
19.300	35.000	90.00000	3887.00000	.00070	.18000	5137.00000	.09000	.00760	.05960	.05126	1.25000
19.200	35.000	100.00000	3636.00000	.00068	.17000	5275.00000	.08000	.00760	.06140	.05382	1.25000
18.900	35.000	120.00000	3337.00000	.00064	.16000	6002.00000	.08000	.00760	.06190	.05179	1.30000
19.200	35.000	140.00000	3023.00000	.00056	.14000	5190.00000	.07000	.00755	.06820	.05770	1.30000
17.700	35.000	160.00000	2819.00000	.00057	.13000	9670.00000	.05000	.00750	.07520	.05631	1.30000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0009) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.500
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 30/ 0 RN/L = .36 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
15.900	35.000	70.00000	.95700	-.06350	.67442	.73700	.61600	1.20000	.08120	.08240	.01929
15.900	35.000	80.00000	.96200	-.06610	.67528	.73900	.62200	1.19000	.08490	.08610	.02178
16.000	35.000	90.00000	.96300	-.06750	.67579	.73800	.62500	1.18000	.08750	.08870	.02316
16.100	35.000	100.00000	.96400	-.06900	.67634	.73800	.62800	1.18000	.08960	.09080	.02417
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0009) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.500
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 30/ 0 RN/L = .36 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
15.900	35.000	70.00000	5381.00000	.00436	.75000	4068.00000	.46000	.00745	.02180	.01929
15.900	35.000	80.00000	4872.00000	.00382	.67000	4131.00000	.36000	.00759	.02470	.02178
16.000	35.000	90.00000	4410.00000	.00323	.60000	4250.00000	.32000	.00770	.02630	.02316
16.100	35.000	100.00000	4028.00000	.00289	.53000	4127.00000	.30000	.00784	.02740	.02417
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0010) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.070
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 49/ 0 RN/L = .11 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
19.000	30.000	80.00000	.81600	-.01170	.65528	.64500	.51400	1.26000	.05380	.12100	.12228
19.200	30.000	90.00000	.81600	-.01170	.65528	.64600	.51300	1.26000	.05311	.12000	.12128
19.300	30.000	100.00000	.81600	-.01170	.65528	.64500	.51500	1.25000	.05400	.12200	.12328
19.000	30.000	110.00000	.81100	-.01470	.65667	.64100	.51200	1.25000	.05331	.12100	.12228
19.500	30.000	120.00000	.80900	-.01640	.65746	.63900	.51000	1.25000	.05331	.12100	.12228
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 31/ 0 RN/L = .10 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.000	35.000	80.00000	1.04000	-.03490	.66235	.77300	.70700	1.09000	.05795	.13400	.13546
19.700	35.000	90.00000	1.03000	-.03420	.66222	.76600	.70700	1.08000	.06015	.13900	.14046
19.500	35.000	100.00000	1.03000	-.03520	.66258	.76100	.70800	1.08000	.06146	.14200	.14347
19.500	35.000	110.00000	1.02000	-.03560	.66284	.75500	.70800	1.07000	.06276	.14500	.14649
19.500	35.000	120.00000	1.02000	-.03820	.66378	.74900	.70800	1.06000	.06450	.14900	.15051
19.400	35.000	130.00000	1.02000	-.03920	.66414	.74500	.71000	1.05000	.06624	.15300	.15454
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0010) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.070
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 49/ 0 RN/L = .11 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
19.000	30.000	80.00000	3740.00000	.00075	.19000	5169.00000	.13000	.00825	.04970	.04193	1.22000
19.200	30.000	90.00000	3598.00000	.00072	.19000	4724.00000	.11000	.00825	.05320	.04670	1.23000
19.300	30.000	100.00000	3363.00000	.00059	.18000	5443.00000	.10000	.00825	.05620	.04814	1.23000
19.000	30.000	110.00000	3206.00000	.00064	.17000	5272.00000	.10000	.00825	.05690	.04764	1.24000
19.500	30.000	120.00000	3048.00000	.00054	.17000	4786.00000	.09000	.00825	.06190	.05236	1.24000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (B26C9F7M7N28)(W116E26)(V8R5) (STO010) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.070
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	.000		

RUN NO. 31/ 0 RN/L = .10 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.000	35.000	80.00000	4071.00000	.00063	.18000	4418.00000	.11000	.00940	.05580	.04916	1.28000
19.700	35.000	90.00000	3969.00000	.00063	.17000	5219.00000	.10000	.00943	.05800	.04948	1.28000
19.500	35.000	100.00000	3731.00000	.00061	.16000	5536.00000	.09000	.00950	.06000	.05111	1.28000
19.500	35.000	110.00000	3529.00000	.00058	.15000	5334.00000	.09000	.00960	.06200	.05146	1.28000
19.500	35.000	120.00000	3410.00000	.00056	.15000	5422.00000	.08000	.00970	.06430	.05440	1.28000
19.400	35.000	130.00000	3257.00000	.00055	.14000	5392.00000	.07000	.00990	.06840	.05795	1.28000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (B26C9F7M7N28)(W116E26)(V8R5) (RTO011) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	1.100
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	16.300		

RUN NO. 34/ 0 RN/L = 1.22 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.300	25.000	60.00000	.65700	-.02220	.66243	.56100	.35100	1.60000	.08100	.08120	.01174
16.600	25.000	65.00000	.65800	-.02270	.66269	.56100	.35200	1.59000	.08200	.08220	.01279
16.800	25.000	70.00000	.66100	-.02240	.66247	.56300	.35500	1.59000	.08350	.08370	.01350
17.000	25.000	80.00000	.67300	-.02400	.66312	.57400	.36200	1.58000	.08550	.08570	.01396
16.700	25.000	90.00000	.67800	-.02480	.66346	.57800	.36500	1.58000	.08600	.08630	.01395
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 33/ 0 RN/L = 1.07 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.400	30.000	60.00000	.80500	-.03620	.66655	.65600	.47200	1.39000	.08050	.08110	.01256
16.300	30.000	65.00000	.81600	-.03640	.66641	.66500	.47900	1.39000	.08200	.08260	.01320
16.500	30.000	70.00000	.82500	-.03560	.66588	.67200	.48600	1.38000	.08400	.08460	.01395
16.300	30.000	80.00000	.85200	-.03360	.66451	.69400	.50100	1.38000	.08630	.08700	.01398
16.400	30.000	90.00000	.87400	-.03310	.66394	.71200	.51500	1.38000	.08960	.09030	.01485
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0011) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = .000 AILRON = .00
RUDDER = .000 SPDBRK = 55.000
BDFLAP = 16.300

RUN NO. 32/ 0 RN/L = 1.11 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.000	35.000	50.00000	1.11000	-.05620	.66863	.86000	.71600	1.20000	.09200	.09290	.01139
15.900	35.000	55.00000	1.12000	-.05670	.66863	.86100	.71600	1.20000	.09200	.09290	.01239
16.100	35.000	60.00000	1.12000	-.05640	.66853	.86300	.71800	1.20000	.09230	.09320	.01344
16.400	35.000	70.00000	1.12000	-.05640	.66853	.86300	.71800	1.20000	.09250	.09340	.01426
16.500	35.000	80.00000	1.12000	-.05580	.66833	.86600	.72100	1.20000	.09270	.09360	.01424
16.300	35.000	90.00000	1.13000	-.05640	.66837	.96900	.72300	1.20000	.09300	.09400	.01456
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0011) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = 16.300

RUN NO. 34/ 0 RN/L = 1.22 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.300	25.000	60.00000	12259.00000	.00970	1.76000	3679.00000	1.34000	.00133	.01310	.01174
16.600	25.000	65.00000	11482.00000	.00812	1.56000	3689.00000	1.17000	.00138	.01430	.01279
16.800	25.000	70.00000	11036.00000	.00725	1.43000	3531.00000	1.09000	.00143	.01500	.01350
17.000	25.000	80.00000	10114.00000	.00623	1.29000	3448.00000	1.05000	.00153	.01540	.01396
16.700	25.000	90.00000	9309.00000	.00644	1.25000	3397.00000	1.02000	.00163	.01540	.01395
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 33/ 0 RN/L = 1.07 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.400	30.000	60.00000	12298.00000	.00934	1.73000	3728.00000	1.18000	.00363	.01410	.01256
16.300	30.000	65.00000	11495.00000	.00879	1.60000	3936.00000	1.04000	.00382	.01490	.01320
16.500	30.000	70.00000	11093.00000	.00805	1.52000	3832.00000	.96000	.00400	.01570	.01395
16.300	30.000	80.00000	10119.00000	.00795	1.40000	3751.00000	.94000	.00437	.01570	.01398
16.400	30.000	90.00000	9259.00000	.00672	1.28000	3831.00000	.84000	.00472	.01670	.01485
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0011) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = 16.300

RUN NO. 32/ 0 RN/L = 1.11 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.000	35.000	50.00000	12680.00000	.01150	2.05000	3689.00000	1.37000	.00580	.01280	.01139
15.900	35.000	55.00000	12123.00000	.01070	1.87000	4086.00000	1.11000	.00588	.01410	.01239
16.100	35.000	60.00000	11771.00000	.00941	1.70000	4194.00000	.96000	.00590	.01530	.01344
16.400	35.000	70.00000	10451.00000	.00790	1.50000	3690.00000	.92000	.00600	.01590	.01426
16.500	35.000	80.00000	9601.00000	.00700	1.30000	3494.00000	.95000	.00610	.01580	.01424
16.300	35.000	90.00000	8722.00000	.00676	1.24000	3720.00000	.87000	.00620	.01630	.01456
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(OA-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0012) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = 15.000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = 16.300

RUN NO. 38/ 0 RN/L = 1.05 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.700	20.000	65.00000	.43600	-.06960	.70874	.38200	.22400	1.71000	.07980	.07990	.01307
16.400	20.000	70.00000	.43800	-.06980	.70864	.38400	.22500	1.71000	.08000	.08010	.01325
16.200	20.000	80.00000	.44000	-.06980	.70837	.38500	.22800	1.69000	.08200	.08210	.01406
16.300	20.000	90.00000	.44400	-.06910	.70727	.38800	.23100	1.68000	.08400	.08410	.01474
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 37/ 0 RN/L = .99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.200	25.000	60.00000	.72400	-.09980	.70072	.61400	.39700	1.55000	.10000	.10000	.01256
15.900	25.000	65.00000	.72700	-.09860	.69991	.61700	.39800	1.55000	.10000	.10000	.01338
16.200	25.000	70.00000	.72800	-.09820	.69964	.61800	.39900	1.55000	.10000	.10100	.01447
16.300	25.000	80.00000	.73000	-.09770	.69925	.61800	.40100	1.54000	.10200	.10200	.01497
16.400	25.000	90.00000	.73000	-.09770	.69925	.61800	.40100	1.54000	.10200	.10200	.01503
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0012) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	1.100
ELEVTR =	15.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	16.300		

RUN NO. 36/ 0 RN/L = .82 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.300	30.000	70.00000	.86500	-.12200	.70190	.69800	.52100	1.34000	.10200	.10200	.01351
15.900	30.000	75.00000	.85900	-.12300	.70269	.69200	.52000	1.33000	.10400	.10400	.01435
16.000	30.000	80.00000	.85500	-.12400	.70337	.68800	.51900	1.33000	.10500	.10500	.01500
15.600	30.000	90.00000	.83900	-.12400	.70439	.67400	.51200	1.32000	.10600	.10600	.01536
15.500	30.000	100.00000	.82600	-.12500	.70569	.66200	.50600	1.31000	.10700	.10700	.01655
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 35/ 0 RN/L = .99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.200	35.000	55.00000	1.30000	-.16300	.6961[illegible]	.99600	.85100	1.17000	.12500	.12600	.01217
15.800	35.000	60.00000	1.30000	-.16200	.[illegible]86	.99100	.84700	1.17000	.12500	.12600	.01281
16.000	35.000	70.00000	1.29000	-.16000	.69564	.98100	.84200	1.16000	.12700	.12800	.01434
16.100	35.000	80.00000	1.27000	-.15600	.69520	.96900	.83500	1.16000	.12700	.12800	.01502
16.600	35.000	90.00000	1.27000	-.15800	.69578	.96600	.83300	1.16000	.12800	.12900	.01568
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0012) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	1.100
ELEVTR =	15.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	16.300		

RUN NO. 38/ 0 RN/L = 1.05 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.700	20.000	65.00000	12026.00000	.00828	1.60000	3607.00000	1.14000	.00038	.01460	.01307
16.400	20.000	70.00000	11338.00000	.00808	1.54000	4010.00000	1.04000	.00038	.01500	.01325
16.200	20.000	80.00000	10449.00000	.00826	1.43000	4017.00000	.90000	.00038	.01590	.01406
16.300	20.000	90.00000	9531.00000	.00695	1.32000	4038.00000	.83000	.00038	.01670	.01474
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (ST0012) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = 15.000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = 16.300

RUN NO. 37/ 0 RN/L = .99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.200	25.000	60.00000	11626.00000	.00977	1.80000	3638.00000	1.16000	.00041	.01400	.01256
15.900	25.000	65.00000	11256.00000	.00986	1.63000	4249.00000	.94000	.00048	.01520	.01338
16.200	25.000	70.00000	10658.00000	.00840	1.52000	4004.00000	.85000	.00055	.01640	.01447
16.300	25.000	80.00000	9633.00000	.00728	1.37000	3783.00000	.82000	.00068	.01680	.01497
16.400	25.000	90.00000	8893.00000	.00668	1.22000	3666.00000	.83000	.00080	.01670	.01503
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 36/ 0 RN/L = .82 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.300	30.000	70.00000	11378.00000	.00839	1.56000	4118.00000	.98000	.00125	.01540	.01351
15.900	30.000	75.00000	10689.00000	.00907	1.54000	4229.00000	.82000	.00113	.01640	.01435
16.000	30.000	80.00000	10230.00000	.00811	1.50000	4409.00000	.75000	.00102	.01720	.01500
15.600	30.000	90.00000	9426.00000	.00879	1.45000	4598.00000	.67000	.00088	.01770	.01536
15.500	30.000	100.00000	8622.00000	.00858	1.40000	4160.00000	.59000	.00080	.01890	.01655
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 35/ 0 RN/L = .99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.200	35.000	55.00000	12503.00000	.01070	1.96000	3579.00000	1.24000	.00408	.01360	.01217
15.800	35.000	60.00000	11587.00000	.01050	1.83000	4274.00000	1.01000	.00419	.01460	.01281
16.000	35.000	70.00000	10781.00000	.00885	1.60000	4394.00000	.82000	.00430	.01640	.01434
16.100	35.000	80.00000	9754.00000	.00766	1.39000	4196.00000	.77000	.00440	.01710	.01502
16.600	35.000	90.00000	8955.00000	.00613	1.20000	3695.00000	.78000	.00460	.01750	.01568
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (RT0013) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = .250
ELEVTR = 15.000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = 16.300

RUN NO. 42/ 0 RN/L = .28 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.300	20.000	120.00000	.47500	-.07140	.70531	.41100	.26100	1.57000	.04844	.10500	.10531
19.500	20.000	130.00000	.47200	-.07010	.70465	.40800	.26000	1.57000	.04799	.10500	.10531
19.600	20.000	140.00000	.46200	-.06940	.70528	.39900	.25500	1.57000	.04662	.10200	.10231
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 41/ 0 RN/L = .19 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.100	25.000	90.00000	.67400	-.07520	.69106	.56200	.38900	1.45000	.04220	.11400	.11454
19.600	25.000	100.00000	.65700	-.07730	.69330	.54700	.38200	1.43000	.04222	.11400	.11450
19.400	25.000	110.00000	.65100	-.08150	.69607	.54100	.37900	1.43000	.04225	.11400	.11447
19.600	25.000	120.00000	.63400	-.08200	.69759	.52600	.37300	1.41000	.04264	.11500	.11543
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 40/ 0 RN/L = .22 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.000	30.000	100.00000	.99200	-.09970	.68698	.79300	.61100	1.30000	.05339	.13200	.13282
19.800	30.000	110.00000	.99300	-.09600	.68558	.79700	.60700	1.31000	.04992	.12600	.12681
19.600	30.000	120.00000	.99400	-.09530	.68528	.80100	.60200	1.33000	.04639	.12000	.12080
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 39/ 0 RN/L = .17 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.000	35.000	90.00000	1.20000	-.12700	.68894	.89400	.80800	1.11000	.05790	.14800	.14899
20.000	35.000	100.00000	1.18000	-.12900	.69023	.88300	.79900	1.11000	.05730	.14700	.14795
19.600	35.000	110.00000	1.17000	-.13100	.69120	.87800	.79200	1.11000	.05614	.14400	.14492
19.300	35.000	120.00000	1.16000	-.12900	.69092	.86400	.78200	1.10000	.05615	.14400	.14490
19.500	35.000	140.00000	1.13000	-.13400	.69364	.84000	.77100	1.09000	.05912	.14900	.14981
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC VA489(0A-81), (B26C9F7M7N28)(W116E26)(V8R5) (STO013) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = .250
ELEVTR = 15.000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = 16.300

RUN NO. 42/ 0 RN/L = .28 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.300	20.000	120.00000	10122.00000	.00148	.43000	4707.00000	.32000	.00203	.03340	.02891	1.16000
19.500	20.000	130.00000	9757.00000	.00165	.43000	5746.00000	.23000	.00203	.03780	.03170	1.18000
19.600	20.000	140.00000	9575.00000	.00154	.43000	5717.00000	.22000	.00203	.03930	.03264	1.18000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 41/ 0 RN/L = .19 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.100	25.000	90.00000	10548.00000	.00149	.43000	5588.00000	.22000	.00350	.04020	.03357	1.68000
19.600	25.000	100.00000	10194.00000	.00163	.42000	5947.00000	.18000	.00325	.04250	.03580	1.68000
19.400	25.000	110.00000	9722.00000	.00157	.41000	6425.00000	.17000	.00300	.04430	.03596	1.68000
19.600	25.000	120.00000	9604.00000	.00139	.40000	6729.00000	.15000	.00277	.04640	.03837	1.68000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 40/ 0 RN/L = .22 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.000	30.000	100.00000	10456.00000	.00156	.41000	5528.00000	.23000	.00530	.03880	.03271	1.45000
19.800	30.000	110.00000	10098.00000	.00152	.40000	5839.00000	.20000	.00520	.04150	.03443	1.50000
19.600	30.000	120.00000	9740.00000	.00150	.39000	6143.00000	.18000	.00517	.04280	.03563	1.56000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 39/ 0 RN/L = .17 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.000	35.000	90.00000	10297.00000	.00147	.42000	5744.00000	.20000	.00640	.04180	.03487	1.53000
20.000	35.000	100.00000	10238.00000	.00136	.40000	6305.00000	.17000	.00610	.04500	.03722	1.54000
19.600	35.000	110.00000	9648.00000	.00139	.38000	6691.00000	.15000	.00590	.04720	.03843	1.54000
19.300	35.000	120.00000	9648.00000	.00145	.37000	7397.00000	.14000	.00580	.04810	.03841	1.54000
19.500	35.000	140.00000	9000.00000	.00133	.35000	6877.00000	.12000	.00520	.05160	.04250	1.50000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED (RT0014) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	1.100
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	-11.700		

RUN NO. 43/ 0 RN/L = .97 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.400	25.000	60.00000	.57100	-.00853	.65550	.48900	.30200	1.62000	.06700	.06720	.01169
16.100	25.000	65.00000	.59000	-.00870	.65543	.50400	.31300	1.61000	.07050	.07070	.01295
16.300	25.000	70.00000	.60300	-.01000	.65610	.51600	.32100	1.61000	.07300	.07320	.01424
16.200	25.000	80.00000	.62100	-.01060	.65628	.53000	.33300	1.60000	.07700	.07720	.01527
16.200	25.000	90.00000	.62900	-.01080	.65632	.53600	.33800	1.59000	.07980	.08000	.01563
15.900	25.000	100.00000	.63000	-.01130	.65660	.53700	.33900	1.58000	.08000	.08020	.01660
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 44/ 0 RN/L = 1.03 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
16.200	35.000	55.00000	1.01000	-.04090	.66490	.78900	.64100	1.23000	.07200	.07280	.01145
16.000	35.000	60.00000	1.02000	-.04400	.66587	.79700	.64800	1.23000	.07300	.07380	.01226
16.300	35.000	70.00000	1.04000	-.04750	.66681	.80400	.65600	1.23000	.07550	.07630	.01383
16.300	35.000	80.00000	1.05000	-.05020	.66759	.81500	.66700	1.22000	.07760	.07840	.01476
16.200	35.000	90.00000	1.06000	-.05370	.66864	.82300	.67400	1.22000	.07900	.07980	.01515
15.800	35.000	100.00000	1.07000	-.05480	.66885	.82800	.67800	1.22000	.08000	.08080	.01584
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED (ST0014) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	1.100
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	-11.700		

RUN NO. 43/ 0 RN/L = .97 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.400	25.000	60.00000	12480.00000	.01000	1.87000	3462.00000	1.39000	.00125	.01300	.01169
16.100	25.000	65.00000	11689.00000	.00948	1.72000	4113.00000	1.04000	.00125	.01470	.01295
16.300	25.000	70.00000	11220.00000	.00840	1.56000	4129.00000	.88000	.00130	.01610	.01424
16.200	25.000	80.00000	10226.00000	.00780	1.40000	4247.00000	.75000	.00130	.01740	.01527
16.200	25.000	90.00000	9288.00000	.00697	1.30000	4187.00000	.72000	.00125	.01780	.01563
15.900	25.000	100.00000	8467.00000	.00697	1.22000	4319.00000	.61000	.00125	.01890	.01660
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED (ST0014) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = 1.100
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = -11.700

RUN NO. 44/ 0 RN/L = 1.03 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
16.200	35.000	55.00000	12729.00000	.01070	1.96000	3672.00000	1.39000	.00500	.01280	.01145
16.000	35.000	60.00000	12065.00000	.00994	1.75000	4198.00000	1.14000	.00510	.01400	.01226
16.300	35.000	70.00000	11097.00000	.00808	1.50000	4194.00000	.93000	.00516	.01580	.01383
16.300	35.000	80.00000	10160.00000	.00787	1.35000	3814.00000	.84000	.00520	.01660	.01476
16.200	35.000	90.00000	9282.00000	.00710	1.29000	4128.00000	.77000	.00523	.01710	.01515
15.800	35.000	100.00000	8373.00000	.00746	1.25000	4134.00000	.67000	.00530	.01800	.01584
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC489(0A81) B26C9F7M7N28 W116E26 V8R5 INVERTED (RT0015) (04 NOV 75)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = 1076.7000 INCHES
LREF = 474.8000 INCHES YMRP = .0000 INCHES
BREF = 936.7000 INCHES ZMRP = 375.0000 INCHES
SCALE = .0100

PARAMETRIC DATA

BETA = .000 RN/L = .250
ELEVTR = .000 AILRON = .000
RUDDER = .000 SPDBRK = 55.000
BDFLAP = -11.700

RUN NO. 45/ 0 RN/L = .23 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
20.300	25.000	100.00000	.60800	-.01530	.65926	.51000	.34400	1.49000	.03950	.09500	.09571
19.800	25.000	110.00000	.61000	-.01520	.65917	.51100	.34700	1.47000	.04051	.09820	.09890
19.600	25.000	120.00000	.61200	-.01360	.65818	.51200	.35000	1.46000	.04091	.10000	.10070
19.400	25.000	140.00000	.61300	-.01160	.65696	.51000	.35700	1.43000	.04404	.10800	.10868
19.500	25.000	160.00000	.61600	-.01170	.65699	.51000	.36400	1.40000	.04633	.11400	.11467
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 46/ 0 RN/L = .19 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CAE	CAM	CAFM
19.700	35.000	80.00000	1.04000	-.04630	.66638	.78300	.69700	1.12000	.04826	.12000	.12121
19.700	35.000	90.00000	1.04000	-.04630	.66638	.78200	.69800	1.12000	.04908	.12200	.12321
19.600	35.000	100.00000	1.04000	-.04530	.66603	.77900	.69700	1.12000	.04949	.12300	.12421
19.400	35.000	120.00000	1.04000	-.04470	.66582	.77500	.69900	1.11000	.05071	.12600	.12721
19.500	35.000	140.00000	1.03000	-.04360	.66558	.77000	.69800	1.10000	.05194	.12900	.13021
19.300	35.000	160.00000	1.03000	-.04050	.66447	.76800	.70100	1.10000	.05316	.13200	.13321
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC489(OA81) B26C9F7M7N28 W116E26 V8R5 INVERTED (ST0015) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.250
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	-11.700		

RUN NO. 45/ 0 RN/L = .23 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
20.300	25.000	100.00000	10903.00000	.00154	.46000	5007.00000	.28000	.00460	.03590	.03061	1.38000
19.800	25.000	110.00000	10658.00000	.00163	.44000	5865.00000	.24000	.00454	.03800	.03138	1.40000
19.600	25.000	120.00000	10274.00000	.00157	.43000	6282.00000	.21000	.00450	.04020	.03284	1.42000
19.400	25.000	140.00000	9652.00000	.00161	.40000	5979.00000	.17000	.00440	.04430	.03646	1.43000
19.500	25.000	160.00000	9208.00000	.00148	.38000	6226.00000	.16000	.00430	.04590	.03747	1.44000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

RUN NO. 46/ 0 RN/L = .19 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR	C-FCTR
19.700	35.000	80.00000	11079.00000	.00177	.46000	5583.00000	.24000	.00780	.03780	.03152	1.45000
19.700	35.000	90.00000	10773.00000	.00167	.46000	5951.00000	.19000	.00780	.04170	.03502	1.45000
19.600	35.000	100.00000	10225.00000	.00165	.44000	5932.00000	.18000	.00780	.04330	.03580	1.45000
19.400	35.000	120.00000	9737.00000	.00159	.42000	6197.00000	.16000	.00780	.04510	.03734	1.45000
19.500	35.000	140.00000	9188.00000	.00143	.40000	6274.00000	.15000	.00780	.04730	.03869	1.45000
19.300	35.000	160.00000	8577.00000	.00143	.38000	6440.00000	.13000	.00780	.05000	.04090	1.45000
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC489(OA81) B26C9F7M7N28 W116E26 V8R5 INVERTED (RT0016) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.500
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	-11.700		

RUN NO. 47/ 0 RN/L = .29 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	CN	CLM	XCP/L	CL	CD	L/D	CA	CAF	VLBAR
15.700	35.000	80.00000	1.04000	-.04620	.66635	.80500	.67100	1.20000	.08750	.08830	.02070
15.800	35.000	90.00000	1.04000	-.04600	.66628	.80100	.67000	1.20000	.08860	.08940	.02356
15.800	35.000	100.00000	1.04000	-.04570	.66617	.79600	.66900	1.19000	.09050	.09130	.02520
16.000	35.000	110.00000	1.03000	-.04680	.66672	.79000	.66500	1.19000	.09100	.09180	.02659
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

AEDC489(0A81) B26C9F7M7N29 W116E26 V8R5 INVERTED (ST0016) (04 NOV 75)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	1076.7000 INCHES		
LREF =	474.8000 INCHES	YMRP =	.0000 INCHES		
BREF =	936.7000 INCHES	ZMRP =	375.0000 INCHES		
SCALE =	.0100				

PARAMETRIC DATA

BETA =	.000	RN/L =	.500
ELEVTR =	.000	AILRON =	.000
RUDDER =	.000	SPDBRK =	55.000
BDFLAP =	-11.700		

RUN NO. 47/ 0 RN/L = .29 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	TIME	PO	P	Q(PSI)	TO	RE-L	CPB	V-INF	VLBAR
15.700	35.000	80.00000	4959.00000	.00402	.70000	4453.00000	.38000	.00506	.02370	.02070
15.800	35.000	90.00000	4504.00000	.00365	.63000	4295.00000	.30000	.00513	.02680	.02356
15.800	35.000	100.00000	4128.00000	.00323	.57000	4424.00000	.26000	.00517	.02880	.02520
16.000	35.000	110.00000	3598.00000	.00271	.49000	4385.00000	.24000	.00524	.03030	.02659
	GRADIENT	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000