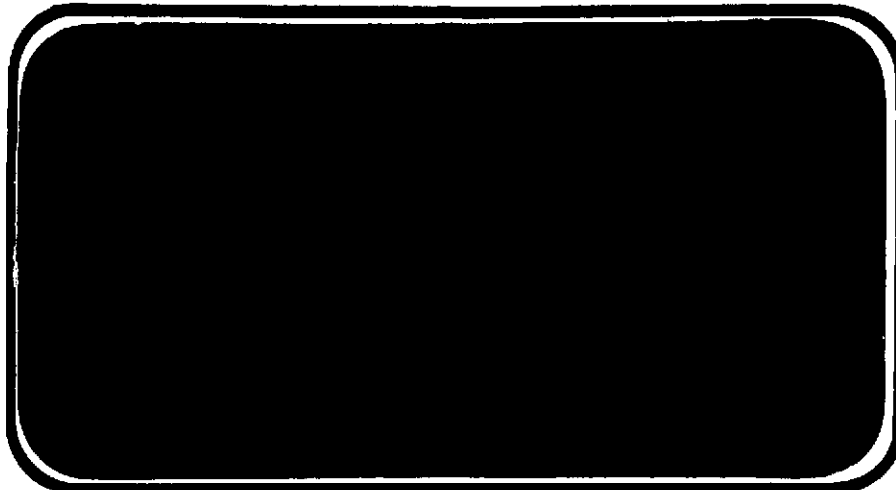


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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



(NASA-CR-134093) RESULTS OF TESTS OA26
AND IA16 IN THE NASA/ARC 3.5-FOOT
HYPERSONIC WIND TUNNEL ON AN 0.015-SCALE
MODEL (36-OTS) OF THE SPACE (Chrysler
Corp.) ~~203~~ p HC \$13.25 CSCL 22B

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA Management services

SPACE DIVISION



CHRYSLER
CORPORATION

April, 1974

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NASA CR-134,093

RESULTS OF TESTS OA26 AND IA16 IN THE NASA/ARC
3.5-FOOT HYPERSONIC WIND TUNNEL ON AN 0.015-SCALE
MODEL (36-OTS) OF THE SPACE SHUTTLE
CONFIGURATION 140A/B TO OBTAIN PRESSURES
FOR VENTING ANALYSIS

By

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Rockwell International-Space Division
Thomas E. Polek, NASA/Ames

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

i

WIND TUNNEL TEST SPECIFICS:

Test Number: ARC 3.5-180
NASA Series Number: OA26 and IA16
Model Number: 36-OTS
Test Dates: 15 November through 4 December 1973

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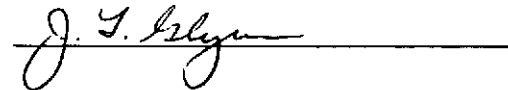
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This document has been reviewed and is approved for release.

FOR N. D. Kemp
Data Management Services



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

RESULTS OF TESTS OA26 AND IA16 IN THE NASA/ARC 3.5-FOOT
HYPERSONIC WIND TUNNEL ON AN 0.015-SCALE MODEL (36-OTS)
OF THE SPACE SHUTTLE CONFIGURATION 140A/B TO OBTAIN
PRESSURES FOR VENTING ANALYSIS

By

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ABSTRACT

Tests were conducted in the NASA/ARC 3.5-Foot Hypersonic Wind Tunnel from November 15 to December 4, 1973 to obtain surface pressure data on an 0.015-scale replica of the Space Shuttle Vehicle 4. Data were obtained at Mach numbers of 5.3, 7.4, and 10.3, to support the venting analysis for both launch and entry conditions. These tests were the final tests in a series covering a Mach number range from 0.6 to 10.3.

The model was instrumented with pressure orifices in the vicinity of the cargo bay door hinge and parting lines and on the side of the fuselage at the crew compartment and below the OMS pods at the aft compartment. The model was tested at angles of attack and sideslip consistent with expected divergencies from the nominal trajectory.



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COEFFICIENT SCHEDULE:

A: CP vs. X/L

B: CP vs. PHI

NOMENCLATURE
General

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(P_1 - P_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m^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
$\frac{l_{REF}}{c}$	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

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

Stability-Axis System

C_L	CL	lift coefficient; $\frac{\text{lift}}{qS}$
C_D	CD	drag coefficient; $\frac{\text{drag}}{qS}$
C_{D_b}	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS l_{REF}}$
C_n	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qS b}$
C_l	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qS b}$
L/D	L/D	lift-to-drag ratio; C_L/C_D

NOMENCLATURE (Continued)
 ADDITIONS TO STANDARD LIST

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
C_{p_i}	CP	pressure coefficient, $(P_i - P_s)/q$
ℓ	L	orbiter reference body length, in
P_i	P	pressure at station i, psia
X/ℓ	X/L	longitudinal location on orbiter fuselage, fraction of orbiter body length
ϕ	PHI	angular location on orbiter fuselage, degrees

CONFIGURATIONS INVESTIGATED

Two configurations were tested. These were the ascent configuration, consisting of the Orbiter with the External Tank attached (with all control surfaces set to 0° deflection) and the entry configuration (Orbiter alone). Off-blocks were used to cover ET mounting surfaces for the entry configuration testing and left elevon deflections of -15°, 0 and 10°, with all other control surfaces at 0° deflection, were investigated.

The models were 0.015-scale replicas of the 140A/B Orbiter configuration (test OA26) and Vehicle 4 External Tank plus 140A/B Orbiter (test IA16). SRB's were not tested. The ET to Orbiter attach points on the model were located properly but no attempt was made to simulate the actual attach hardware or the external feed and vent lines on the ET.

Some pressure orifices or associated tubing were restricted or developed leaks during the test. The following list presents these discrepancies, as determined by leak checks. The pressure measurement system was checked each time after it was disturbed.

Run 3	Plugged: none Leaked: 308, 309, 310, 311, 313, 319, 428, 432
Runs 4, 5 6, 7	Plugged: 221, 303, 317, 327 Leaked: 308, 309, 311, 313, 428
Runs 8 to 12	Plugged: 211, 221, 303, 317, 327, 328 Leaked: 308, 311, 428, 435
Runs 13 to 38	Plugged: 211, 221, 303, 317, 321, 327, 328 Leaked: 308, 311, 313, 428
Runs 38 to 41	Plugged: 221, 242, 317, 327, 328 Leaked: 308, 311, 313, 428, 435

CONFIGURATION INVESTIGATED (Concluded)

In addition to the above, calibration pressure tubing was pinched off during the sting change after run 34. Therefore, no calibration was available for runs 35, 36, 37, and 38. This was repaired subsequent to run 38.

INSTRUMENTATION

The Orbiter was instrumented with 176 pressure taps on the left side of the fuselage at the cargo bay door hinge and parting lines, the crew compartment and below the OMS pods. The ET was not instrumented. The pressures were measured by four 5 psia PM208TC Stathan pressure transducers housed in four internally mounted Scanivalve Type S pressure multiplexors. Reference and calibration pressures were measured by means of the facility Exactel micromanometers.

The interior of the model was air cooled to prevent damage to the internally mounted instrumentation system. The cooling air inlet line was water jacketed to prevent heat pickup in the sting. Four thermocouples were mounted in the immediate vicinity of the pressure transducers to determine if the thermal transients were sufficiently severe to significantly effect the pressure measurements.

TEST FACILITY DESCRIPTION

The NASA-Ames 3.5-Foot Hypersonic Wind Tunnel is a closed-circuit, blowdown-type tunnel capable of operating at nominal Mach numbers of 5, 7, and 10 at pressures to 1800 psia and temperatures to 3400°R for run times to four minutes. The major components of the facility include a gas storage system where the test gas is stored at 3000 psi, a storage heater filled with aluminum-oxide pebbles capable of heating the test gas to 3400°R, axisymmetric contoured nozzles with exit diameters of 42 inches for generating the desired Mach number, and a 900,000 ft³ vacuum storage system which operates to pressures of 0.3 psia. The test section itself is an open-jet type enclosed within a chamber approximately 12-feet in diameter and 40-feet in length, arranged transversally to the flow direction.

A model support system is provided that can pitch models through an angle-of-attack range of -20 to +18 degrees, in a vertical plane, about a fixed point of rotation on the tunnel centerline. This rotation point is adjustable from 1 to 5 feet from the nozzle exit plane. The model normally is out of the test stream (strut centerline 37-inches from tunnel centerline) until the tunnel test conditions are established after which it is inserted. Insertion time is adjustable to as little as 1/2 second and models may be inserted at any strut angle.

A high-speed, analog-to-digital data acquisition system is used to record test data on magnetic tape. The present system is equipped to measure and record the outputs from 80 transducers in addition to 20 channels of tunnel parameters.

TEST PROCEDURE

The model was sting supported from the base of the Orbiter. Wedge inserts were furnished for the sting (approximately 6 inches aft of the model base) to provide $\pm 2^\circ$ angles of sideslip. For test IA16 the ET was attached to the Orbiter by three struts at locations concurrent with the full scale attach points.

The sting housed electrical leads for the Scanivalves and transducers, pressure tubing for the calibration, reference and backing pressures for the Scanivalves and transducers, and the cooling air inlet and exhaust. The cooling air inlet tubing was water cooled.

The model was leveled in angle of attack prior to testing the Orbiter alone and again after the ET was installed. The sting was determined to be of sufficient stiffness to eliminate the need for re-leveling after addition of the ET weight. The pressure measurement systems were leak and continuity checked prior to testing by utilizing the following procedure: The test section was pumped down with the cooling air off and readings were taken to determine which tubes were plugged or restricted. The model cavity was then pressurized by means of the cooling air and readings were taken to determine which tubes were leaking. Continuity checks were made by pumping down each tube individually.

Configuration sequences were ordered to provide testing efficiency. Since internally mounted Scanivalve modules had never been used previously in this facility, operational procedures were established as the test progressed. The following items are worthy of note:

1. Three data points (angles of attack) were taken during each blow. The model was submerged in the flow for 90 to 100 seconds.
2. The cooling air was off during the data taking cycles to reduce the effects of model leaks.
3. Temperature changes in the vicinity of the pressure transducers were generally less than 20°F during the data taking cycle. Peak temperatures of approximately 175° F occurred 4 to 6 minutes after the run.
4. The cooling air intake and exhaust tubing was 0.250-in diameter with 0.035-in thick walls. Air was supplied at sufficient mass flow to maintain a pressure of approximately 5 psig in the model cavity.
5. The soak temperatures after a run were reduced by means of a blower directed on the model as well as applying wet cloths to the model surface.
6. Resenite (brand name) vinyl tubing was used to connect the Scanivalve modules to the model stainless steel tubing. No damage to this tubing due to heat was noted. However, care was taken to insulate it from direct contact with the cavity walls using fiber glass cloth.
7. A nine point calibration was run on the four transducers prior to each blow. The results of these calibrations were used to compute the following data. The dispersions of these calibration factors were generally less than $\pm 2\%$.

DATA REDUCTION

Standard Ames data reduction techniques were used to compute pressure coefficients for each measured pressure.

TABLE II.

TEST: <i>ARC 3.5-180</i>		DATA SET/RUN NUMBER COLLATION SUMMARY							DATE:					
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		CONTROL DEFLECTION			NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)						
		α	β	δ_L	δ_R	δ		5.3	7.9	10.3				
<i>REM001</i>	$\emptyset T$	<i>F</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>				<i>4</i>				
<i>02</i>	\vdash	\vdash	<i>-2</i>							<i>5</i>				
<i>03</i>		\vdash	<i>+2</i>							<i>6</i>				
<i>04</i>		<i>F</i>	<i>0</i>						<i>41</i>					
<i>05</i>		\vdash	<i>-2</i>						<i>38</i>					
<i>06</i>		\vdash	<i>+2</i>						<i>40</i>					
<i>07</i>		<i>E</i>	<i>0</i>					<i>36</i>						
<i>08</i>	\vdash	\vdash	<i>-2</i>					<i>37</i>						
<i>09</i>	$\emptyset T$	\vdash	<i>+2</i>					<i>35</i>						
<i>10</i>	\emptyset	<i>C</i>	<i>0</i>							<i>7</i>				
<i>11</i>	\vdash	\vdash	<i>-2</i>							<i>11</i>				
<i>12</i>		\vdash	<i>+2</i>							<i>14</i>				
<i>13</i>		<i>B</i>	<i>0</i>						<i>20</i>					
<i>14</i>		\vdash	<i>-2</i>						<i>23</i>					
<i>15</i>		\vdash	<i>+2</i>						<i>17</i>					
<i>16</i>		<i>A</i>	<i>0</i>											
\vdash <i>17</i>	\vdash	\vdash	<i>-2</i>					<i>25</i>						
<i>REM018</i>	\emptyset	\vdash	<i>+2</i>	\vdash	\vdash	\vdash		<i>33</i>						

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TEST RUN NUMBERS

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

α OR β SCHEDULES	COEFFICIENTS			IDVAR (1)	IDVAR (2)	NDV
	<i>A: 18, 22, 26</i>	<i>C: 30, 32, 34</i>	<i>F: -10, -8, -4</i>			
	<i>B: 26, 30, 34</i>	<i>E: -8, -4, 0</i>				

TABLE II. (Concluded)

TEST: ARC 3.5-180		DATA SET/RUN NUMBER COLLATION SUMMARY					DATE :													
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		CONTROL DEFLECTION			NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)												
		α	β	DEL	δ_{er}	δ_r		5.3	7.4	10.3										
REM019	\emptyset	C	0	-15	0	0						8								
20		T	-2	T	T	T						12								
21		T	+2	T	T	T						13								
22		B	0	-15	0	0			21											
23		T	-2	T	T	T			22											
24		T	+2	T	T	T			16											
25		A	0	-15	0	0		30												
26		T	-2	T	T	T		26												
27		T	+2	T	T	T		34												
28		C	0	10	0	0						9								
29		T	-2	T	T	T						10								
30		T	+2	T	T	T						15								
31		B	0	10	0	0			19											
32		T	-2	T	T	T			24											
33		T	+2	T	T	T			18											
34		C	0	10	0	0		28												
35		T	-2	T	T	T		27												
REM036	\emptyset	T	+2	T	T	T		32												

16

TEST RUN NUMBERS

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

α OR β SCHEDULES A: 18, 22, 26 C: 30, 32, 34 F: -10, -8, -4
 COEFFICIENTS B: 26, 30, 34 E: -8, -4, 0 IDVAR (1) IDVAR (2) NOV

TABLE III. - MODEL DIMENSIONAL DATA

MODEL COMPONENT: BODY - B₂₆

GENERAL DESCRIPTION: Orbiter Fuselage Configuration 140 A/B

NOTE: B₂₆ identical to B₂₄ except underside of fuselage refaired to accept W₁₁₆.

Model Scale = 0.015

DRAWING NUMBER: VL70-000193
VL70-000140A

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length (Body Fwd Sta X ₀ = 235) - in.	<u>1293.3</u>	<u>19.35450</u>
Max. Width (at X ₀ = 1520) - in.	<u>262.0</u>	<u>3.93000</u>
Max. Depth (at X ₀ = 1464) - in.	<u>250.0</u>	<u>3.75000</u>
Fineness Ratio	<u>0.26357</u>	<u>0.26357</u>
Area - ft ²		
Max. Cross-Sectional	<u>340.88462</u>	<u>0.07670</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. - Continued.

MODEL COMPONENT: ELEVON - E26GENERAL DESCRIPTION: Configuration 4

NOTE: VL70-000400 data for (1) of (2) sides. Identical to E25 except
airfoil thickness

Model Scale = 0.015

DRAWING NUMBER: VL70-000200
VL70-000140 B

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area	<u>223.5814</u>	<u>0.05031</u>
Span (equivalent)	<u>362.34</u>	<u>5.52510</u>
Inb'd equivalent chord	<u>119.623</u>	<u>1.79434</u>
Outb'd equivalent chord	<u>55.1922</u>	<u>0.82788</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.2096</u>	<u>0.2096</u>
At Outb'd equiv. chord	<u>0.4004</u>	<u>0.4004</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.00</u>	<u>0.00</u>
Tailing Edge	<u>-10.056</u>	<u>-10.056</u>
Hingeline	<u>0.00</u>	<u>0.00</u>
Area Moment (Normal to hinge line)	<u>851.1502</u>	<u>0.00287</u>

TABLE III. - Continued.

MODEL COMPONENT: Body Flap - F₈

GENERAL DESCRIPTION: Configuration 4

Model Scale - 0.015
 DRAWING NUMBER VL70-000140B, VL70-000200

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length in.	94.856	1.42284
Max Width in.	262.308	3.943462
Max Depth in.	23.000	0.34500
Fineness Ratio		
Area - ft ²		
Max Cross-Sectional		
Planform	158.85350	0.03574
Wetted		
Base	41.89642	0.00943

TABLE III. - Continued.

MODEL COMPONENT: OMS POD - M7

GENERAL DESCRIPTION: Configuration 3A

MODEL SCALE: 0.015

DRAWING NUMBER: VL70-000140A
VL70-000145

<u>DIMENSIONS:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length (OMS Fwd Sta $X_0 = 1233.0$) - IN.	<u>327.000</u>	<u>4.9050</u>
Max Width (@ $X_0 = 1450.0$) - IN.	<u>94.5</u>	<u>1.4175</u>
Max. Depth (@ $X_0 = 1493.0$) - IN.	<u>109.000</u>	<u>1.6350</u>
Area		
Max Max Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III. - Continued.

MODEL COMPONENT: RUDDER - R5

GENERAL DESCRIPTION: 2A, 3 and 3A Configuration per Rockwell Lines

VL70-000095

Model Scale = 0.015

DRAWING NUMBER: VL70-000095

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - FT ²	<u>106.38</u>	<u>0.02304</u>
Span (equivalent) - IN.	<u>201.0</u>	<u>3.01500</u>
Inb'd equivalent chord	<u>91.585</u>	<u>1.37378</u>
Outb'd equivalent chord	<u>50.833</u>	<u>0.76249</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>34.83</u>	<u>34.83</u>
Tailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline	<u>34.83</u>	<u>34.83</u>
Area Moment (Normal to hinge line)- FT ³	<u>526.13</u>	<u>0.00178</u>
Product of Area and Mean Chord		

TABLE III. - Continued.

MODEL COMPONENT: EXTERNAL TANK - T12

GENERAL DESCRIPTION: External Oxygen Hydrogen Tank

NOTE: Identical to T11 with external fuel lines added

Model Scale = 0.015

DRAWING NUMBER VL78-000031A
VL78-000041A

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length - IN. (Nose @ $X_T = 309$)	<u>1865</u>	<u>27.9750</u>
Max Width (Dia) - IN.	<u>324</u>	<u>4.860</u>
Max Depth	<u></u>	<u></u>
Fineness Ratio	<u>5.75617</u>	<u>5.75617</u>
Area - FT ²		
Max Cross-Sectional	<u>572.555</u>	<u>0.12882</u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>
WP of Tank Centerline (X_T) - IN.	<u>400.0</u>	<u>6.0000</u>

TABLE III. - Continued.

MODEL COMPONENT: VERTICAL - V_aGENERAL DESCRIPTION: Configuration 3ANOTE: Similar to V5 with radius on TE upper corner and LE lower cornerwhere vertical meets fuselage.Model Scale = 0.015DRAWING NUMBER: VL70-000146A
VL70-000146A

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
<u>TOTAL DATA</u>		
Area (Theo) Ft ²	<u>413.253</u>	<u>0.09298</u>
Planform		
Span (Theo) In	<u>315.720</u>	<u>4.73580</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>0.40399</u>	<u>0.40399</u>
Sweep Back Angles, degrees		
Leading Edge	<u>45.00</u>	<u>45.00</u>
Trailing Edge	<u>25.947</u>	<u>25.947</u>
0.25 Element Line	<u>41.130</u>	<u>41.130</u>
Chords:		
Root (Theo) WP	<u>268.500</u>	<u>4.02750</u>
Tip (Theo) WP	<u>108.470</u>	<u>1.62705</u>
MAC	<u>199.80756</u>	<u>2.99711</u>
Fus. Sta. of .25 MAC	<u>1463.50</u>	<u>21.95250</u>
W. P. of .25 MAC	<u>635.522</u>	<u>9.53283</u>
B. L. of .25 MAC	<u>0.00</u>	<u>0.00</u>
Airfoil Section		
Leading Wedge Angle Deg	<u>10.00</u>	<u>10.00</u>
Trailing Wedge Angle Deg	<u>14.920</u>	<u>14.920</u>
Leading Edge Radius (Min) - IN.	<u>2.00</u>	<u>0.0300</u>
Void Area	<u>13.17</u>	<u>0.00296</u>
Blanketed Area	<u>0.00</u>	<u>0.00</u>

TABLE III. - Continued.

MODEL COMPONENT: CANOPY - C₉

GENERAL DESCRIPTION: Configuration 3A

Model Scale = 0.015

DRAWING NUMBER VL70-000140A
VL70-000143A

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length ($X_0=434.643$ to 670)	<u>235.357</u>	<u>3.53036</u>
Max Width (@ $X_0=513.127$)	<u>152.412</u>	<u>2.28618</u>
Max Depth (@ $X_0=485.0$)	<u>25.000</u>	<u>0.37500</u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. - Concluded.

MODEL COMPONENT: WING-W₁₁₆

GENERAL DESCRIPTION: Configuration 4

NOTE: Identical to W₁₁₄ except airfoil thickness. Dihedral angle is along trailing edge of wing.

MODEL SCALE: 0.015

TEST NO.

VL70-000140B
DWG. NO. VL70-000200

DIMENSIONS:

FULL-SCALE

MODEL SCALE

TOTAL DATA

Area (Theo.) Ft^2

Planform

Span (Theo) In.

Aspect Ratio

Rate of Taper

Taper Ratio

Dihedral Angle, degrees

Incidence Angle, degrees

Aerodynamic Twist, degrees

Sweep Back Angles, degrees

Leading Edge

Trailing Edge

0.25 Element Line

Chords:

Root (Theo) B.P.O.O.

Tip, (Theo) B.P.

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

EXPOSED DATA

Area (Theo) Ft^2

Span, (Theo) In. BP108

Aspect Ratio

Taper Ratio

Chords

Root BP108

Tip $1.00 \frac{b}{2}$

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

Airfoil Section (Rockwell Mod NASA)
XXXX-64

Root $\frac{b}{2} =$

Tip $\frac{b}{2} =$

Data for (1) of (2) Sides

Leading Edge Cuff

Planform Area Ft^2

Leading Edge Intersects Fus M. L. @ Sta

Leading Edge Intersects Wing @ Sta

2690.00	0.60525
936.6816	14.05022
2.265	2.265
1.177	1.177
0.200	0.200
3.500	3.500
0.500	0.500
+ 3.000	+ 3.000
45.00	45.00
- 10.056	10.056
35.209	35.209
689.2429	10.33864
137.8486	2.06773
474.8117	7.12218
1126.721	17.05082
291.00	4.36500
187.33491	2.81002
1812.2205	0.40775
736.6816	11.05022
2.058	2.058
0.2451	0.2451
570.6230	8.55934
137.8512	2.06777
354.2376	5.31356
1164.237	17.46356
292.00	4.38000
239.67786	3.59517
0.113	0.113
0.12	0.12
118.333	0.0266
505.0	7.57500
1003.5	15.05250

Table IV. Pressure Tap Layout

X_0	X/L	$\phi = 60$	$\phi = 70$	$\phi = 80$	$\phi = 90$	$\phi = 100$	$\phi = 110$	$\phi = 120$	$\phi = 130$	$\phi = 140$	$\phi = 150$	$\phi = 160$	$\phi = 170$	$\phi = 180$
350	.087	102	103	104										
400	.126	105	106	107										
450	.164	108	109	110	111									
500	.203				112									
550	.242				113									
578	.264				114	115	116	117	118	119	120	121	122	123
602	.282				126	127	128							129
626	.301				130	131	132							133
650	.319				134	135	136							137
674	.338				138	139	140							141
698	.357				142	143	144							145
722	.375				146	147	202							203
746	.394				204	205	206							207
760	.405				208	209	210	211	212	213	214	215	216	217
794	.431				218	219	220							221
818	.450				222	223	226							227
842	.468				228	229	230							231
866	.486				232	233	234							235
890	.505				236	237	238							239
914	.524				240	241	242							243
942	.546				244	245	246	247	302	303	304	305	306	307
962	.561				308	309	310							311
986	.580				312	313	314							315
1010	.598				316	317	318							319
1034	.617				320	321	322							323
1058	.636				326	327	328							329
1082	.654				330	331	332							333
1106	.673				334	335	336							337
1125	.688				338	339	340	341	342	343	344	345	346	347
1154	.710				402	403	404							405
1178	.729				406	407	408							409
1202	.747				410	411	412							413
1226	.767				414	415	416							417
1250	.785				418	419	420							421
1274	.803				422	423	426							427
1307	.829				428	429	430	431	432	433	434	435	436	437
1350	.862	438	439	440	441									
1400	.900		442	443	444									
1450	.940		445	446	447									

ϕ in degrees, measured clockwise from bottom centerline (looking forward) about FRL at $Z_0 = 400$, $Y_0 = 0.0$.

Notes:

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

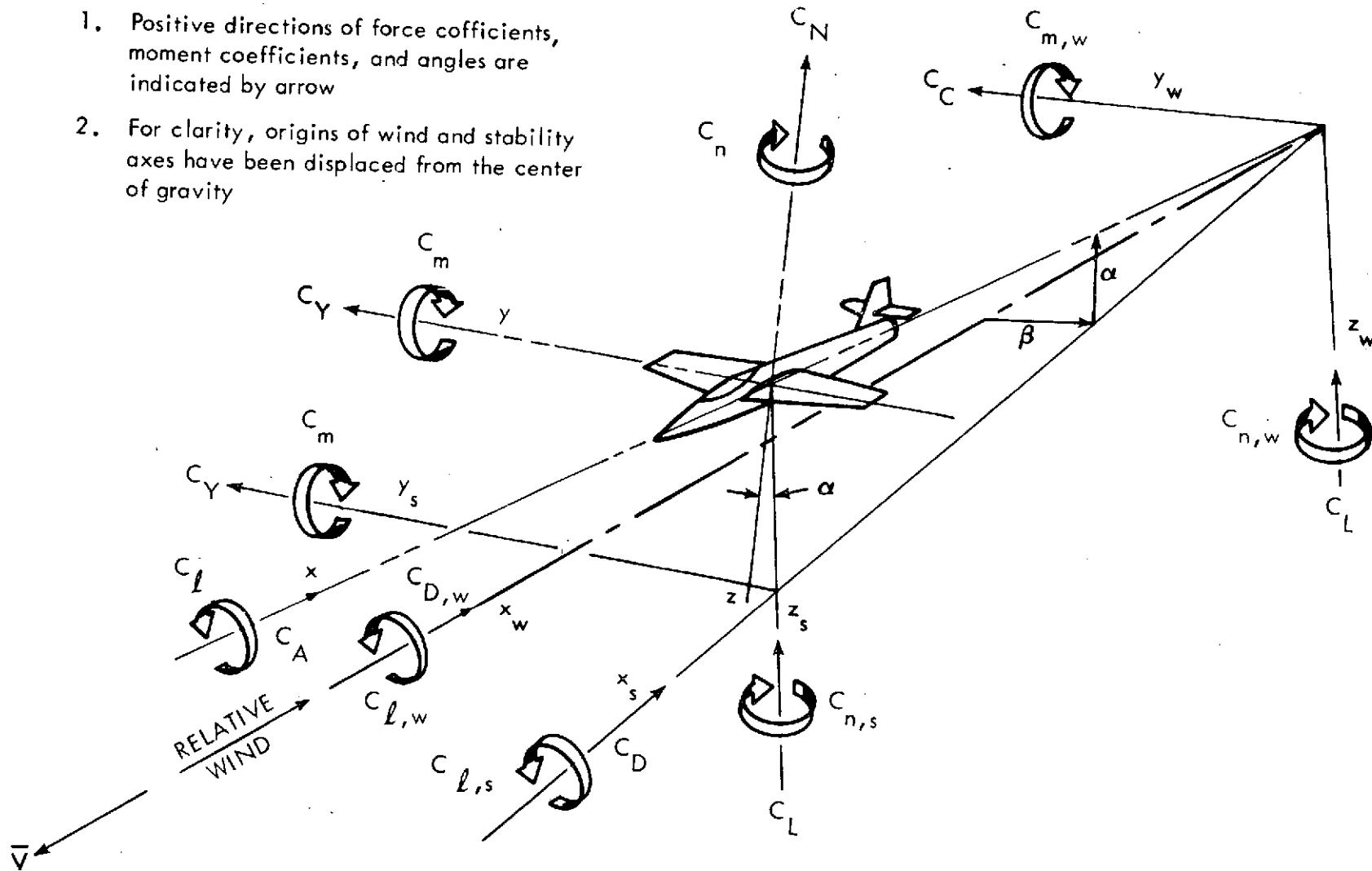
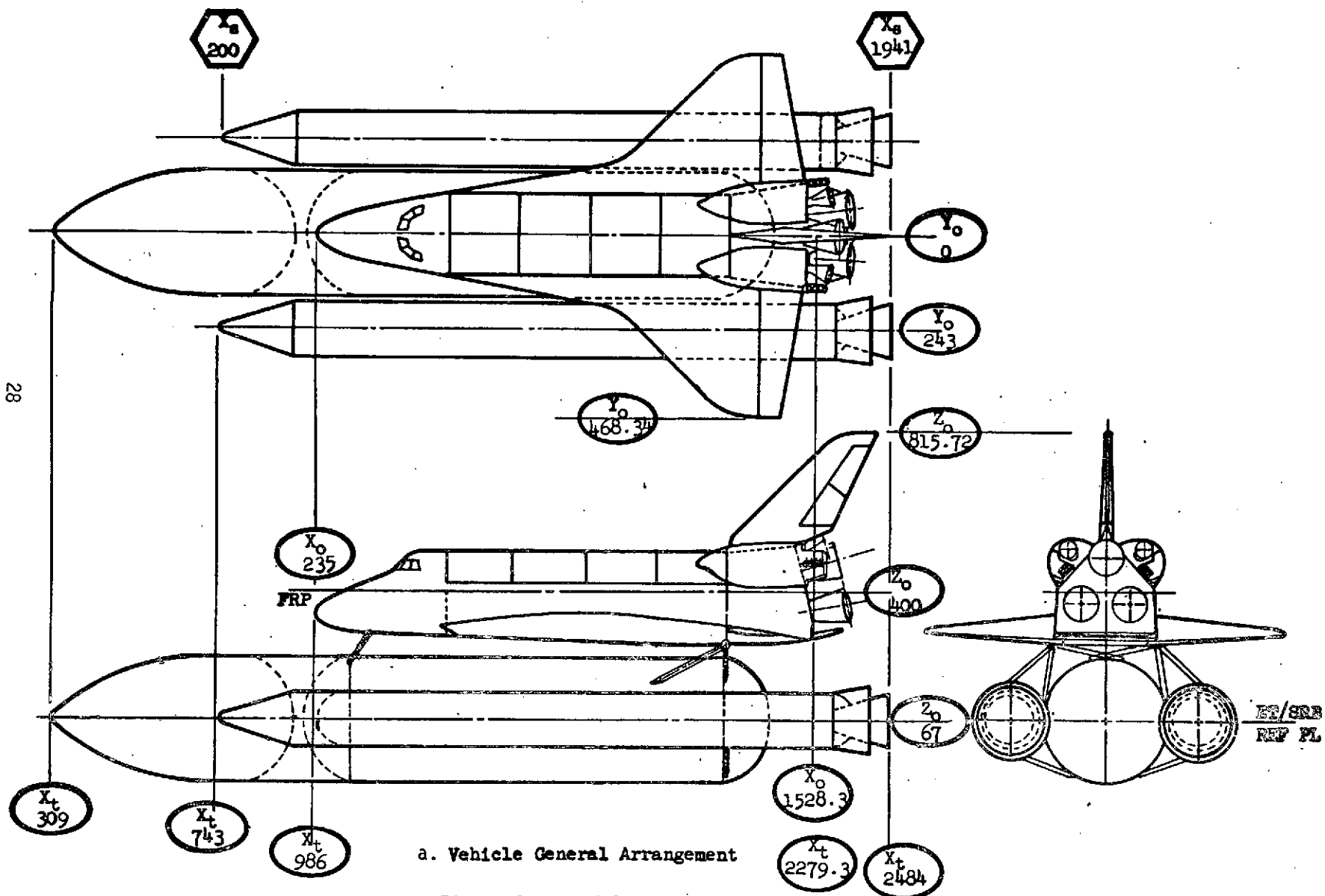
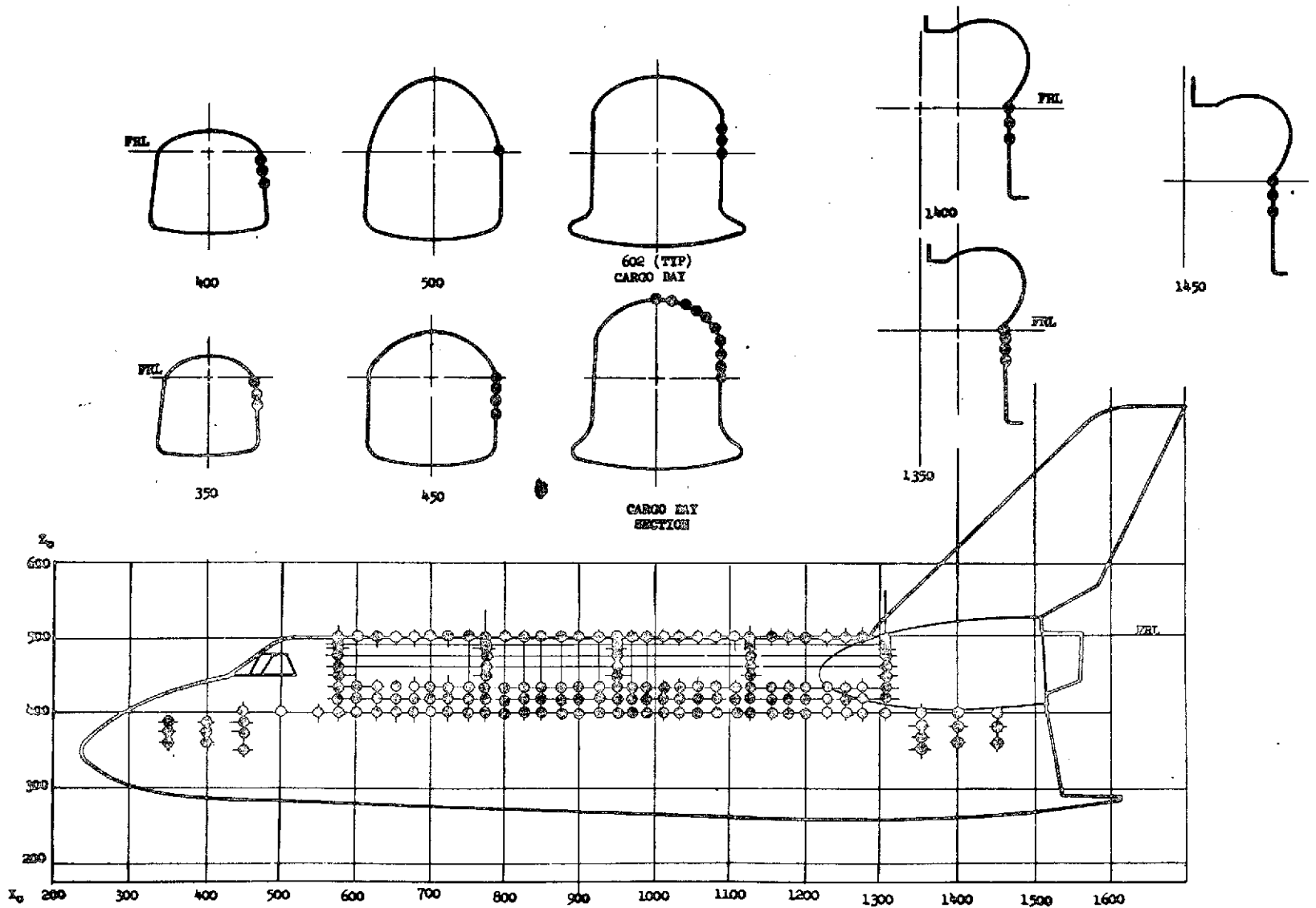


Figure 1. - Axis systems.



a. Vehicle General Arrangement

Figure 2. - Model sketches.



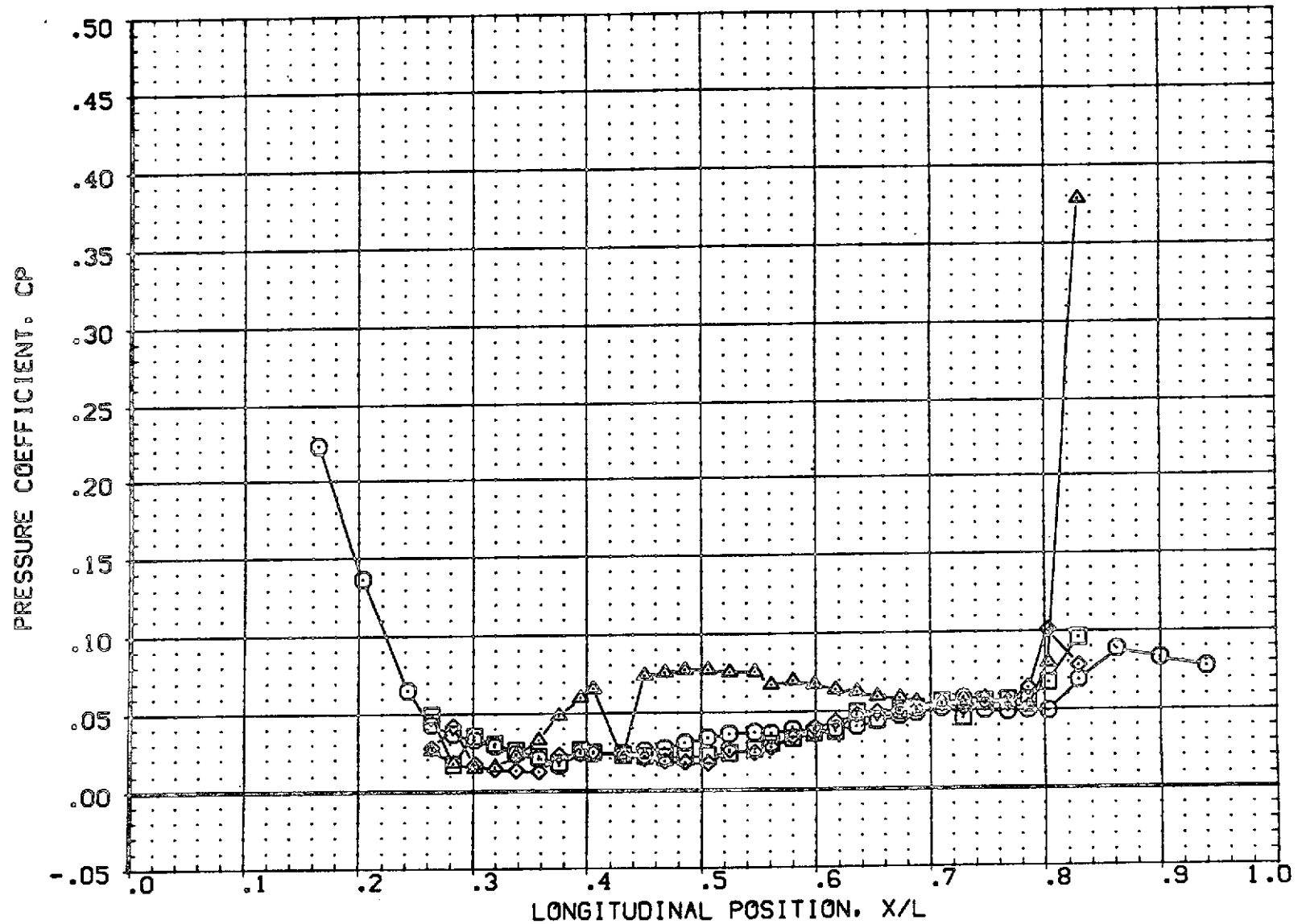
b. Pressure orifice locations

Figure 2. - Continued.

DATA FIGURES

ARC 3.5-180 IA16/0A26 ORBITER+ET (ORB FUSELAGE)(REM107)

SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	-7.582	5.300	.000	.000	.000
□	100.000			.000	.000	.000
◇	110.000					
△	180.000					

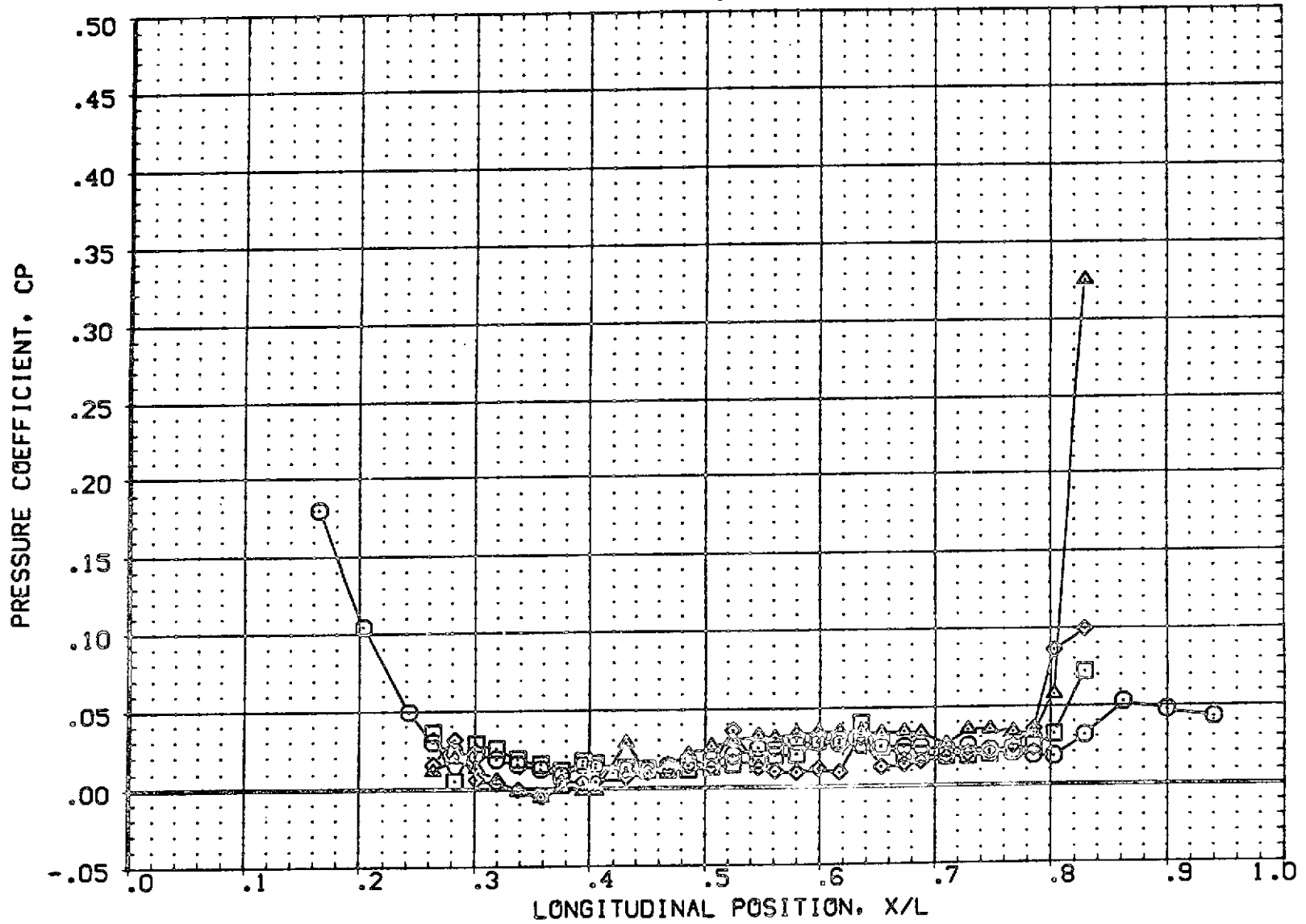


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)(REM107)

SYMBOL	PHI	ALPHA	MACH
○	90.000	-3.669	5.300
□	100.000		
◇	110.000		
△	180.000		

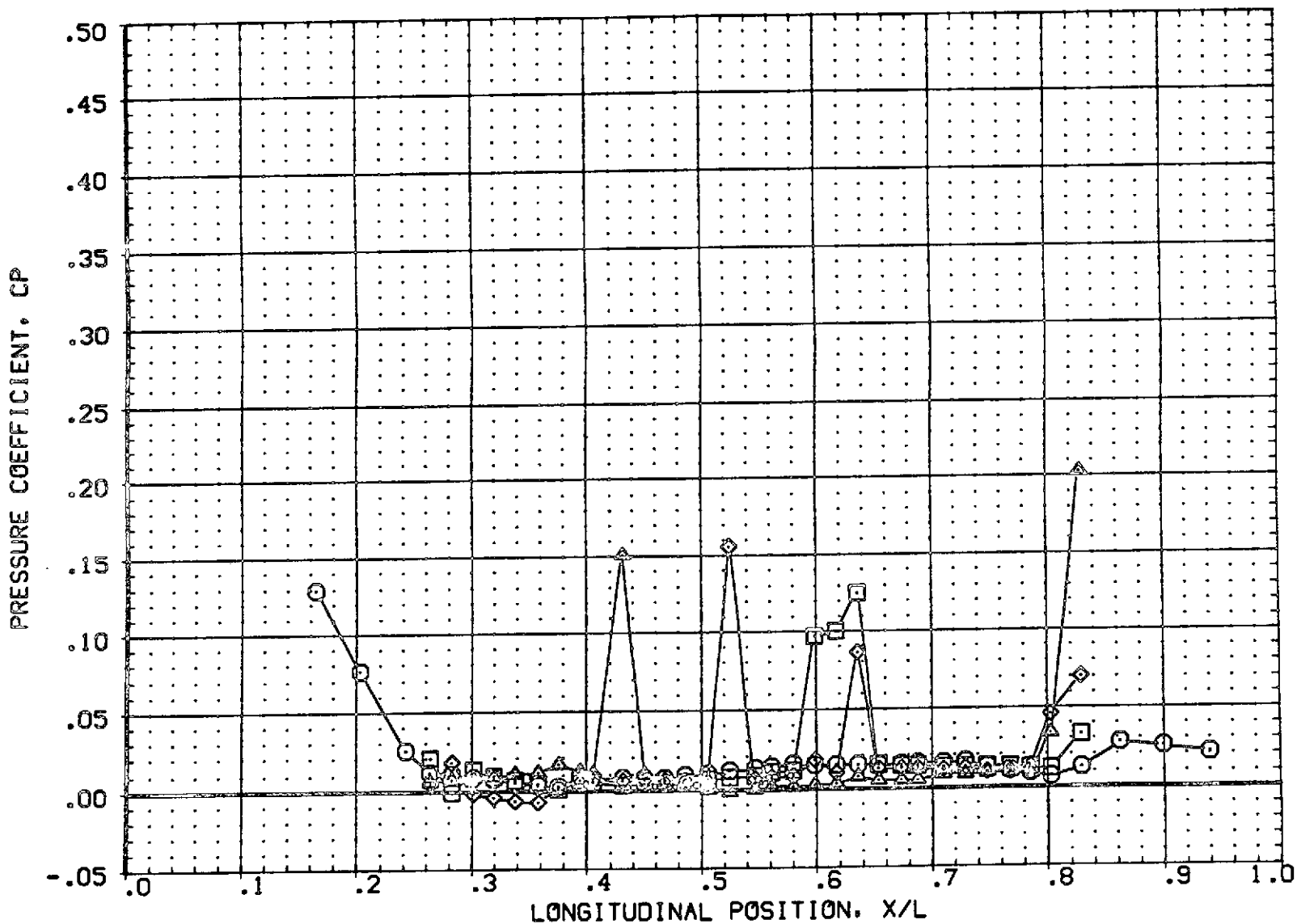
PARAMETRIC VALUES			
BETA	.000	ELEV-L	.000
ELEV-R	.000	RUDDER	.000



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

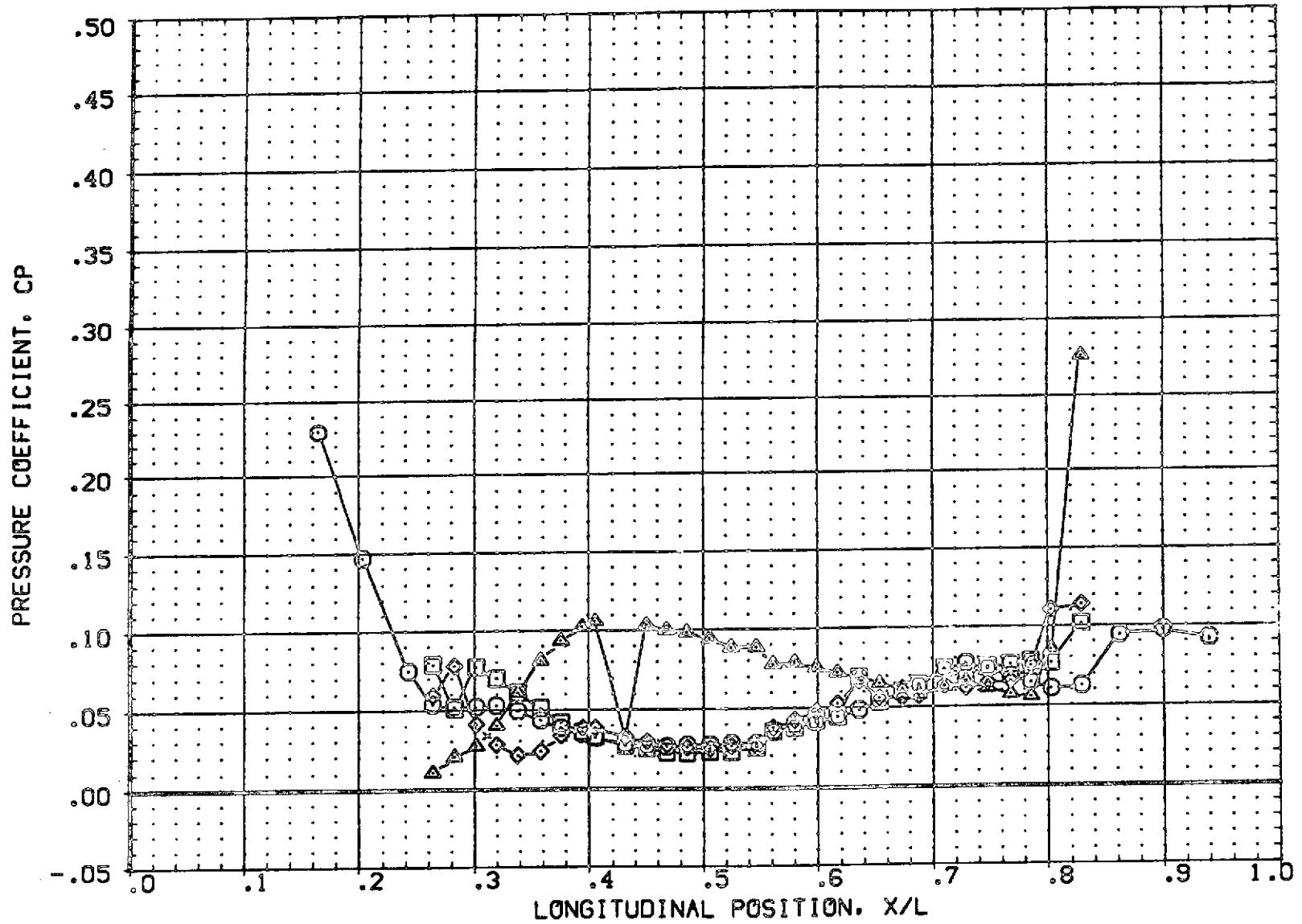
ARC 3.5-180 IA16/0A26 ORBITER+ET (ORB FUSELAGE)(REM107)

SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	.136	5.300	.000	.000	.000
□	100.000			.000	.000	.000
◇	110.000					
△	180.000					



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

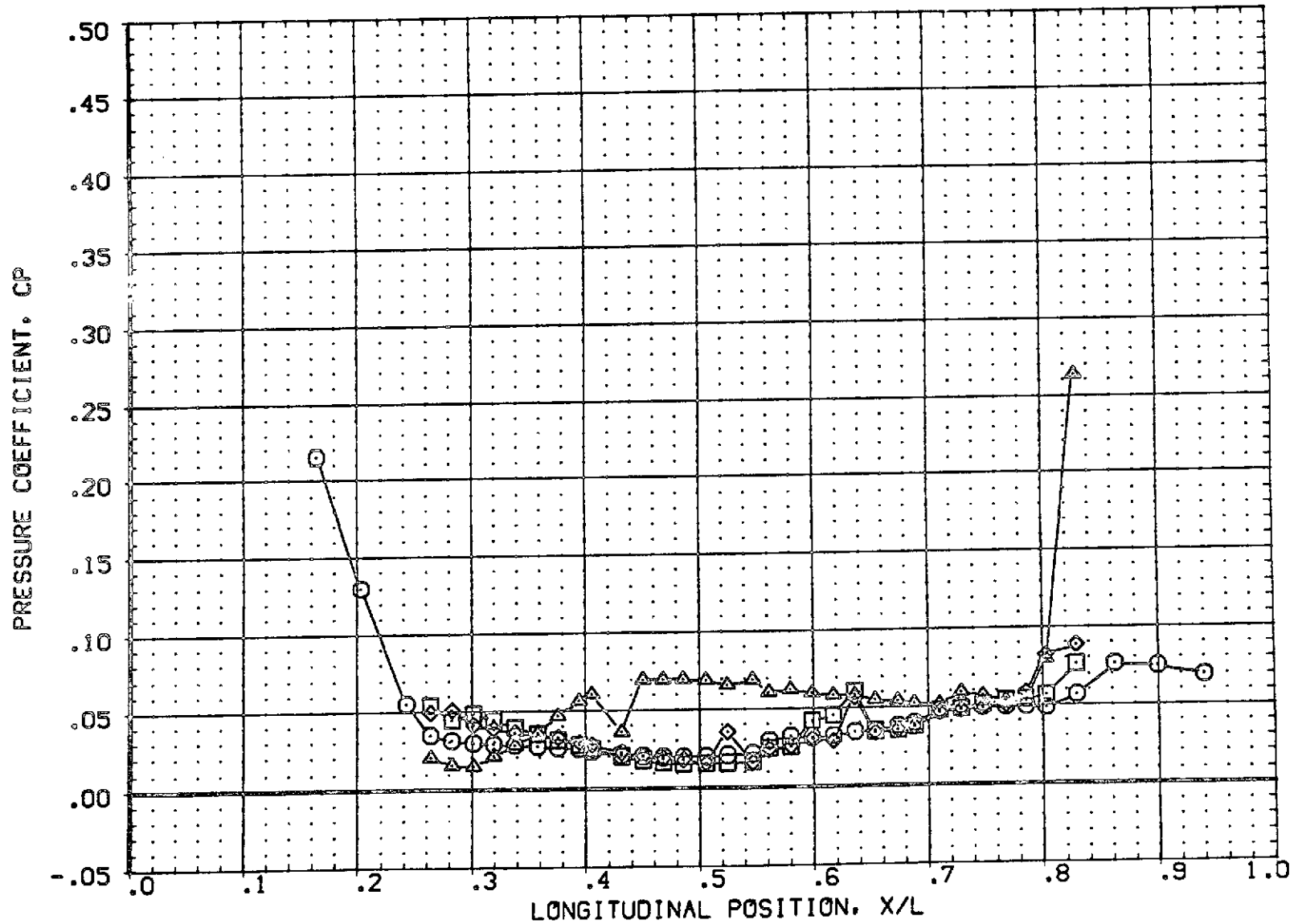
SYMBOL	PNT	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	-9.639	7.330	.000	.000	.000
□	100.000			.000	RUDDER	.000
◇	110.000					
△	180.000					



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 IA16/0A26 ORBITER+ET (ORB FUSELAGE)(REM104)

SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	-7.594	7.330	.000	.000	.000
□	100.000			.000	RUDDER	.000
◇	110.000					
△	180.000					

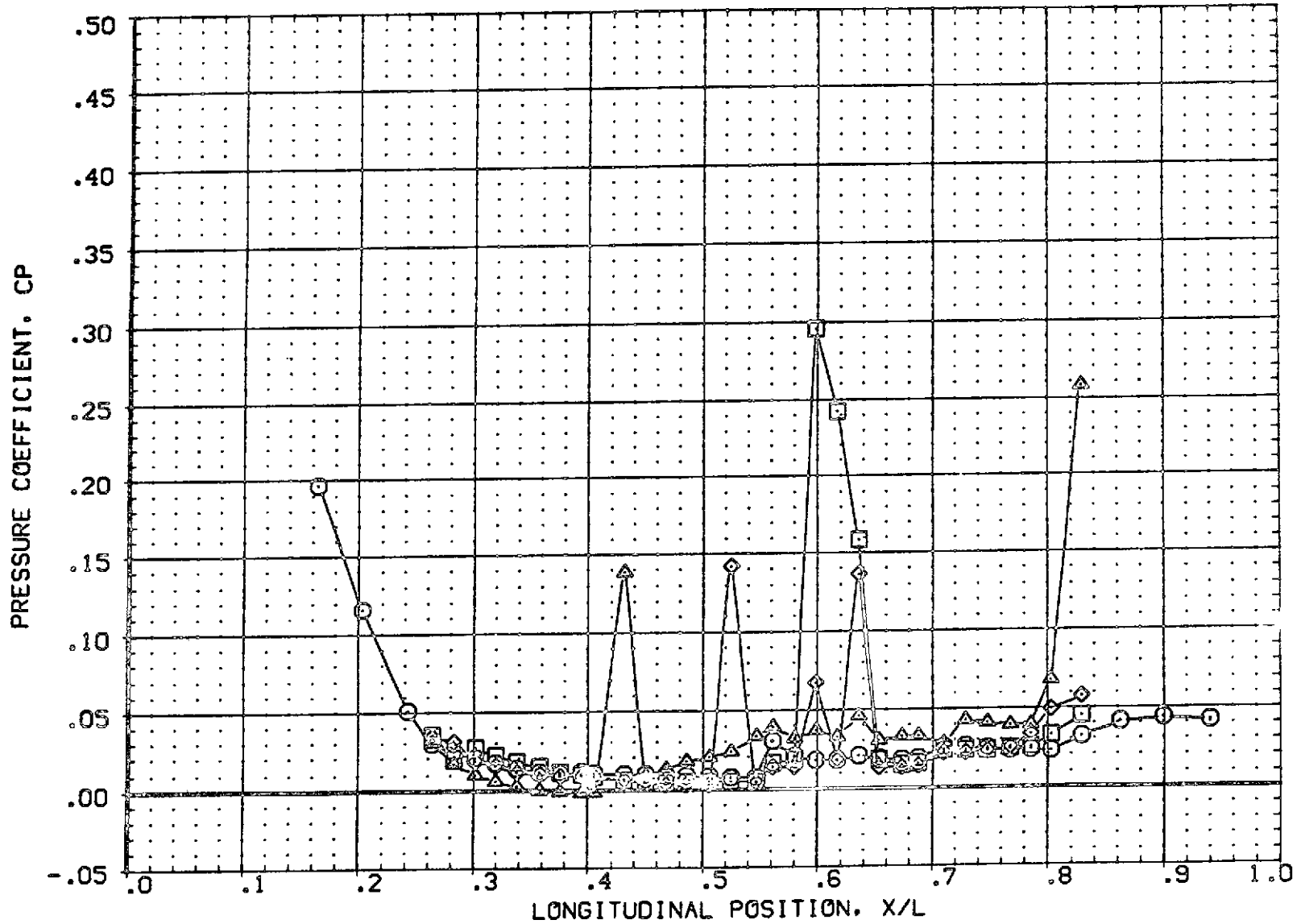


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 1A16/0A26 ORBITER+ET (ORB FUSELAGE) (REM104)

SYMBOL	PMI	ALPHA	MACH
○	90.000	-3.651	7.330
□	100.000		
◇	110.000		
△	180.000		

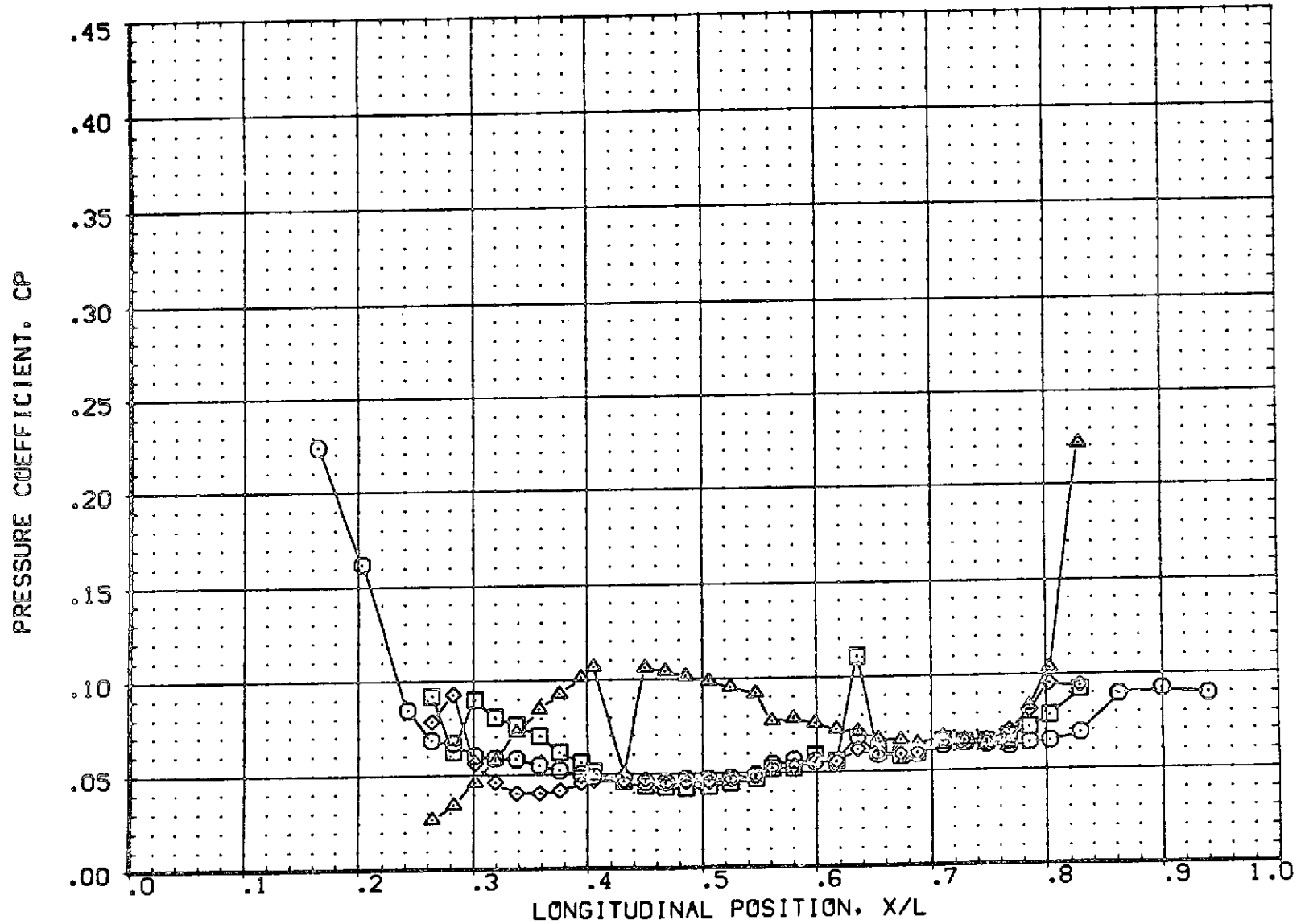
PARAMETRIC VALUES		
BETA	.000	ELEV-L .000
ELEV-R	.000	RUDDER .000



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

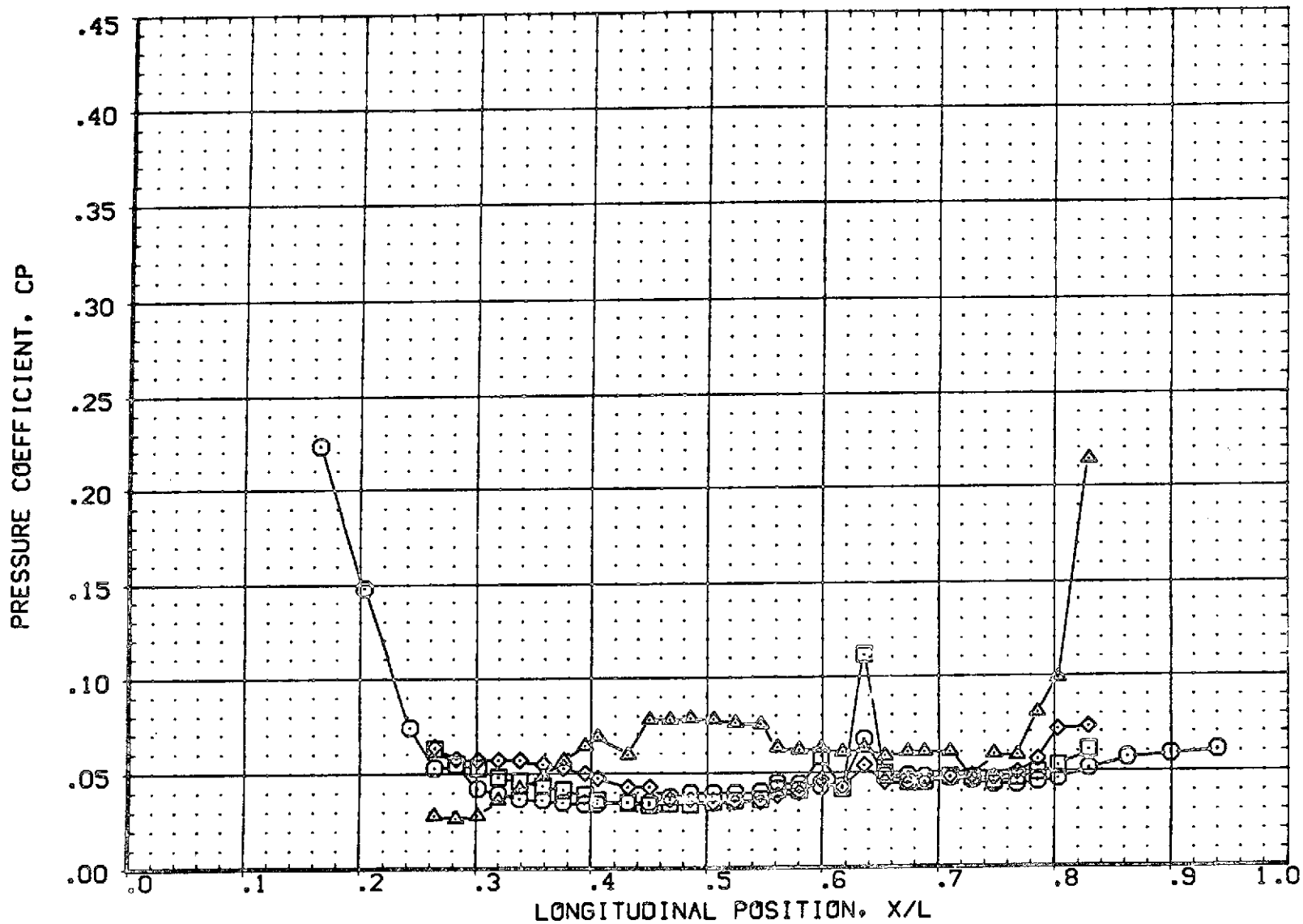
ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)(REM101)

SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	ELEV-L	ELEV-R	RUDDER
○	90.000	-9.870	10.290	.000	.000	.000	.000
□	100.000			.000	.000	.000	.000
◇	110.000						
△	180.000						



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

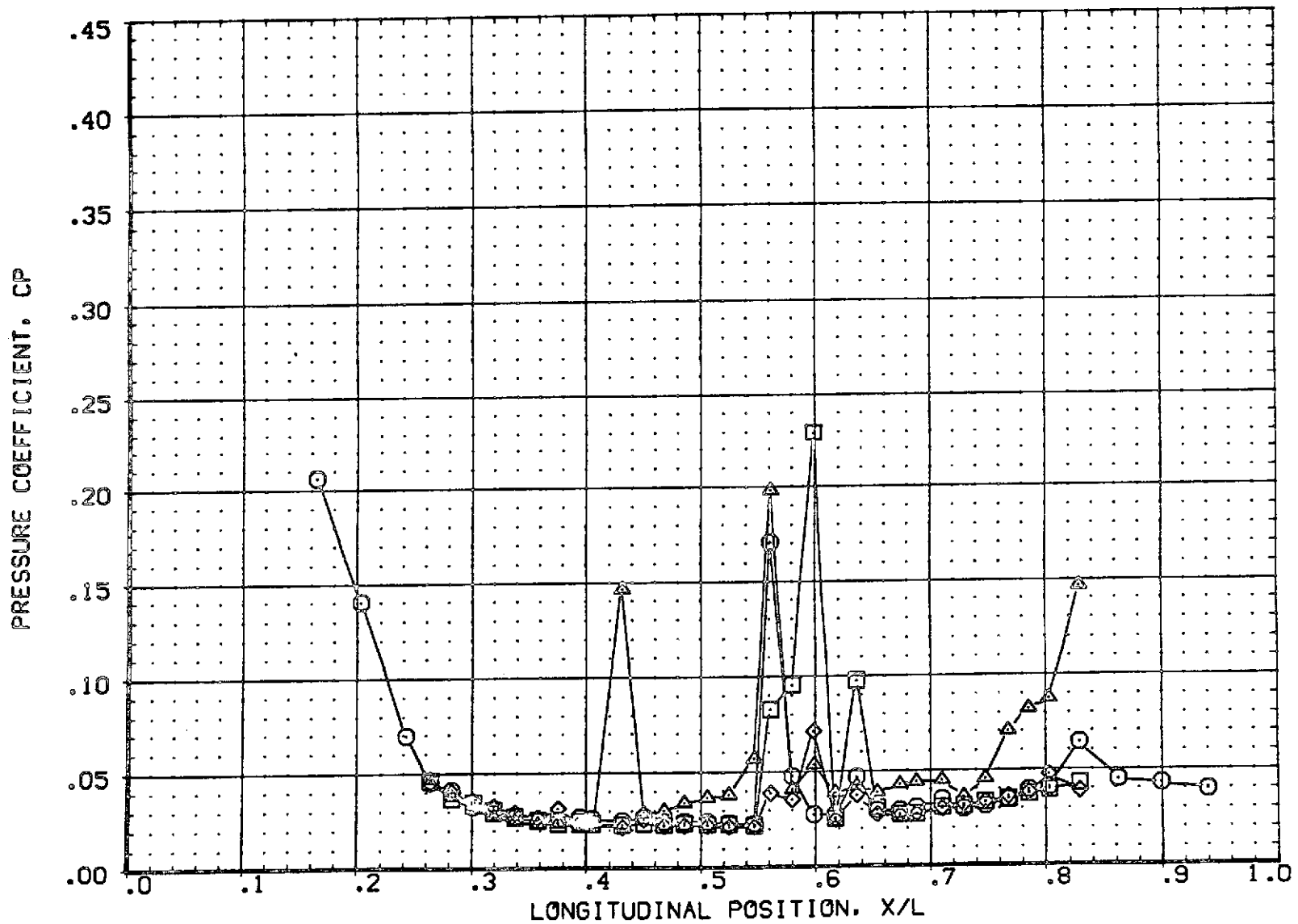
SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	-7.814	10.290	.000	.000	.000
□	100.000			.000	.000	.000
◇	110.000				RUDDER	.000
△	180.000					



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

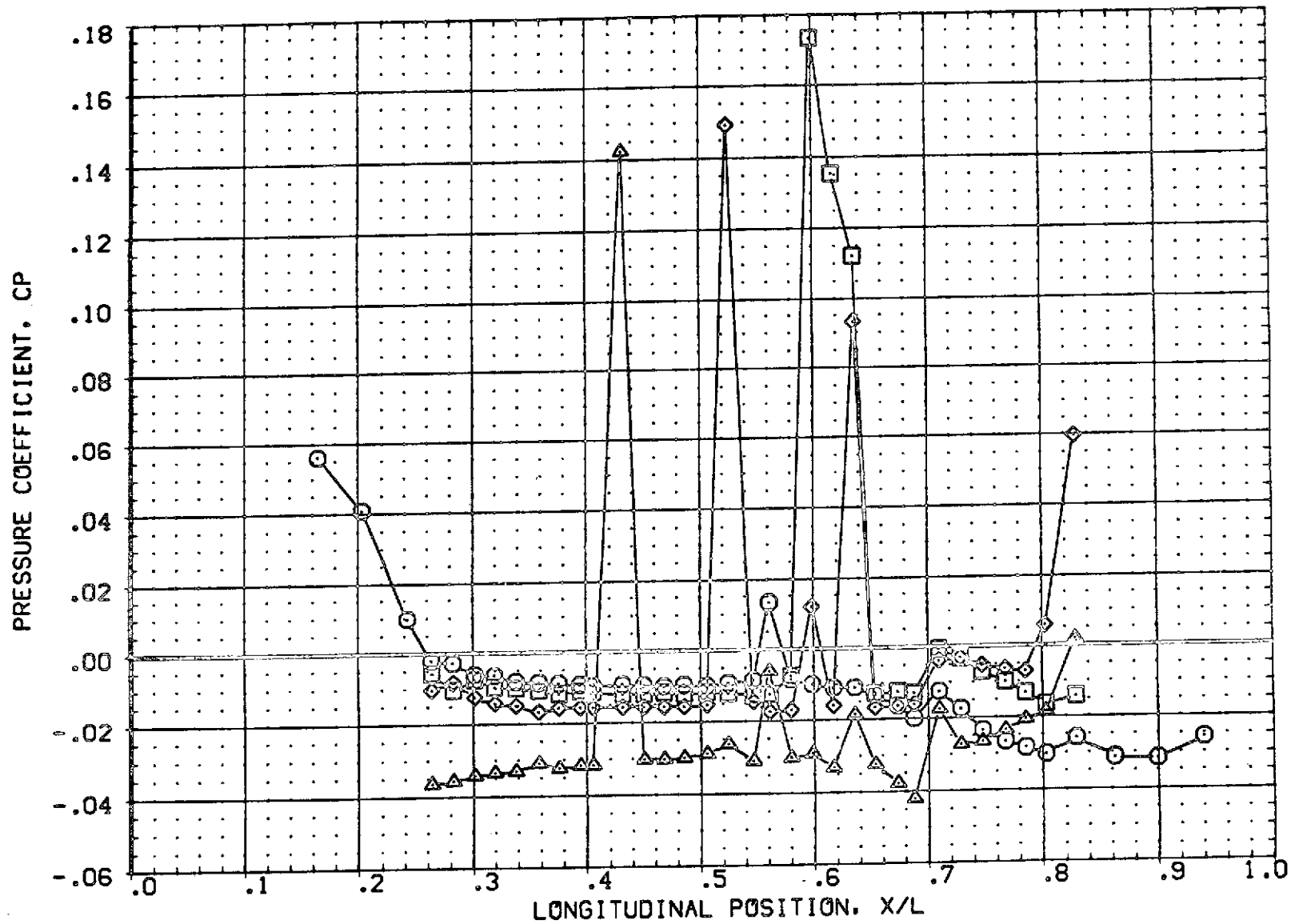
ARC 3.5-180 IA16/0A26 ORBITER+ET (ORB FUSELAGE)(REM101)

SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	-4.041	10.290	.000	.000	.000
□	100.000			.000	.000	.000
◇	110.000			.000	.000	.000
△	180.000			.000	.000	.000



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

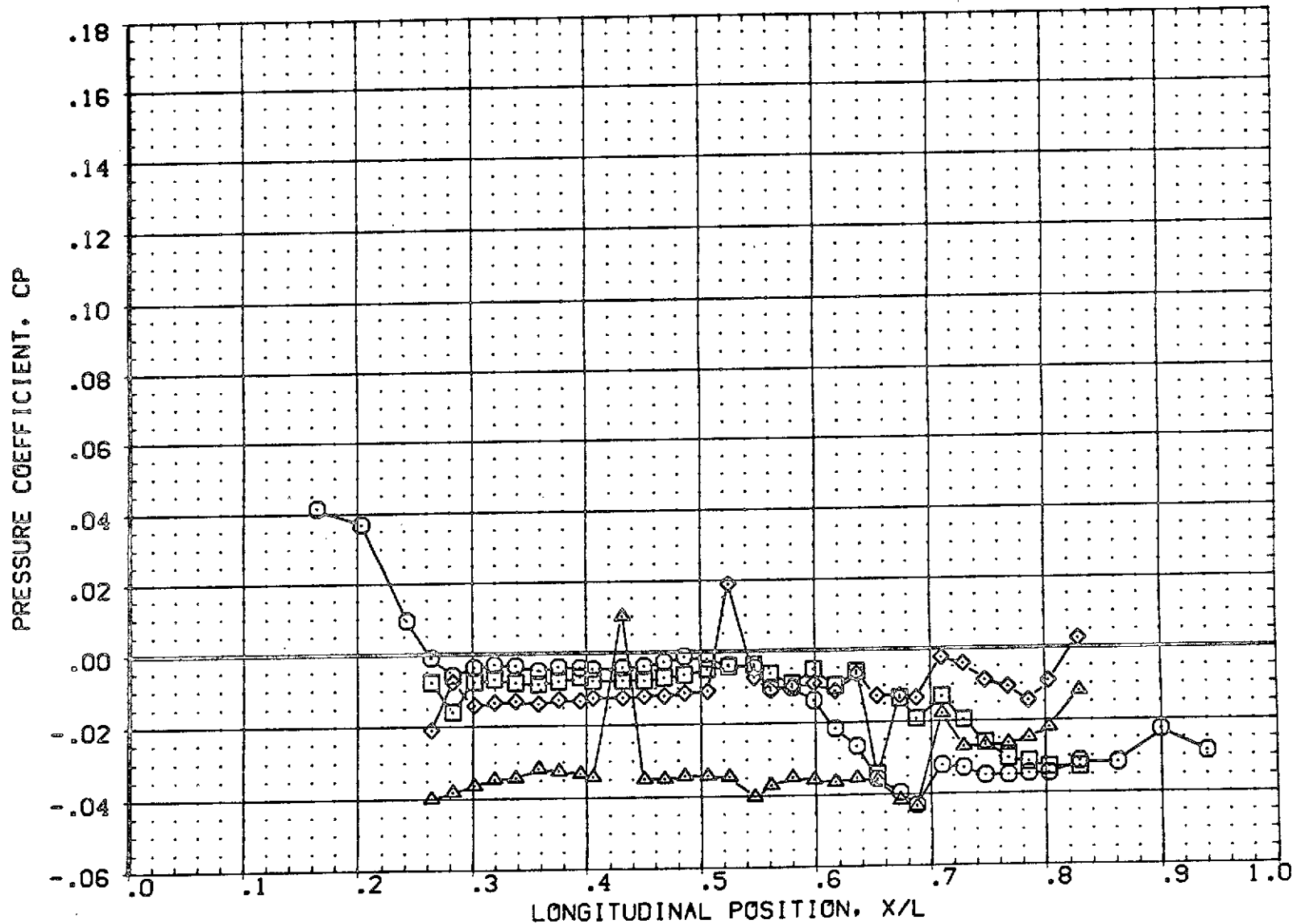
SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	18.255	5.299	.000	.000	.000
□	100.000			.000	.000	.000
◇	110.000				RUDDER	.000
△	180.000					



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM116)

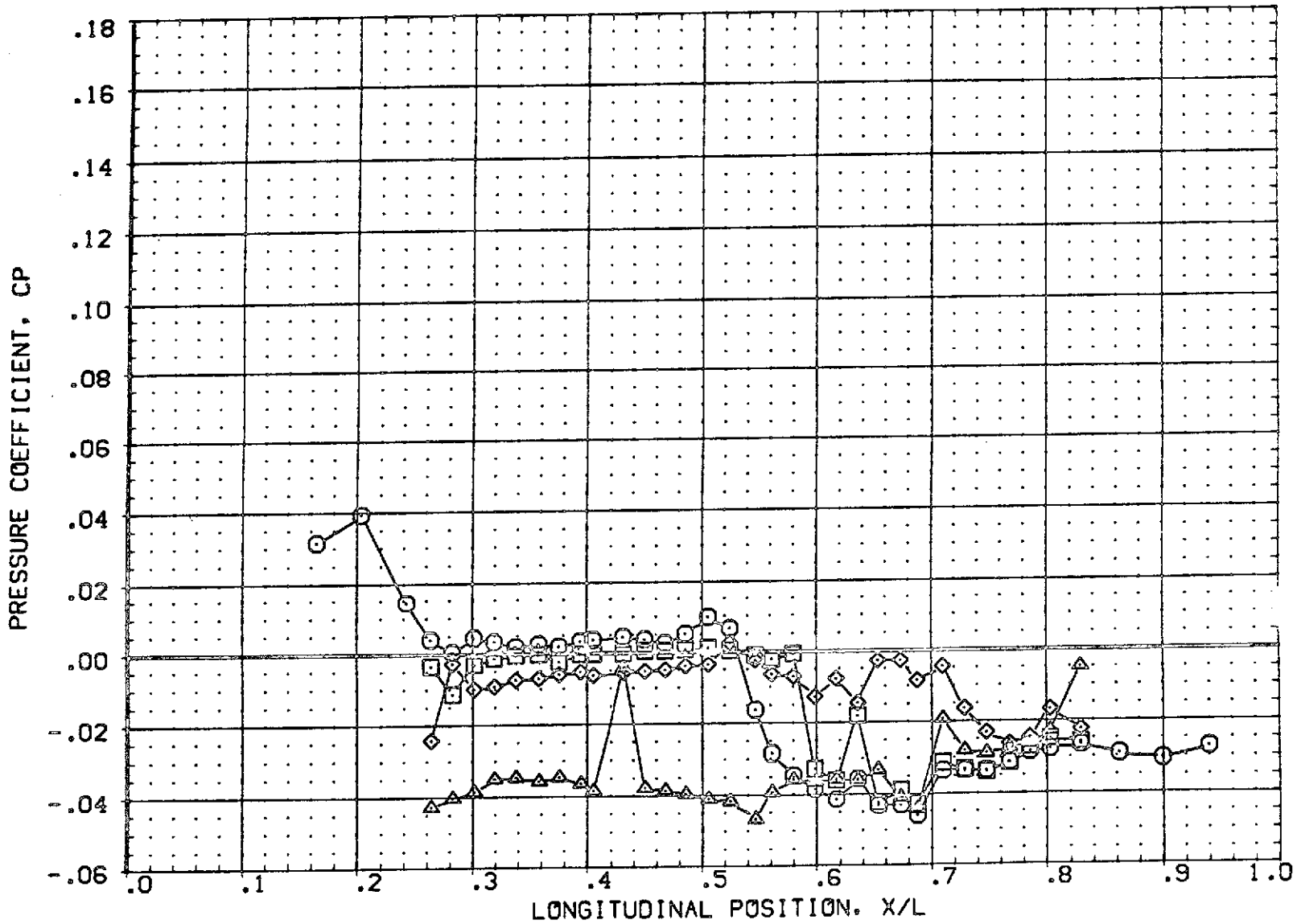
SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	22.158	5.299	.000	.000	.000
□	100.000			.000	.000	.000
◇	110.000					
△	180.000					



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE) (REM116)

SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	26.290	5.299	.000	.000	.000
□	100.000			.000	.000	.000
◇	110.000					
△	180.000					

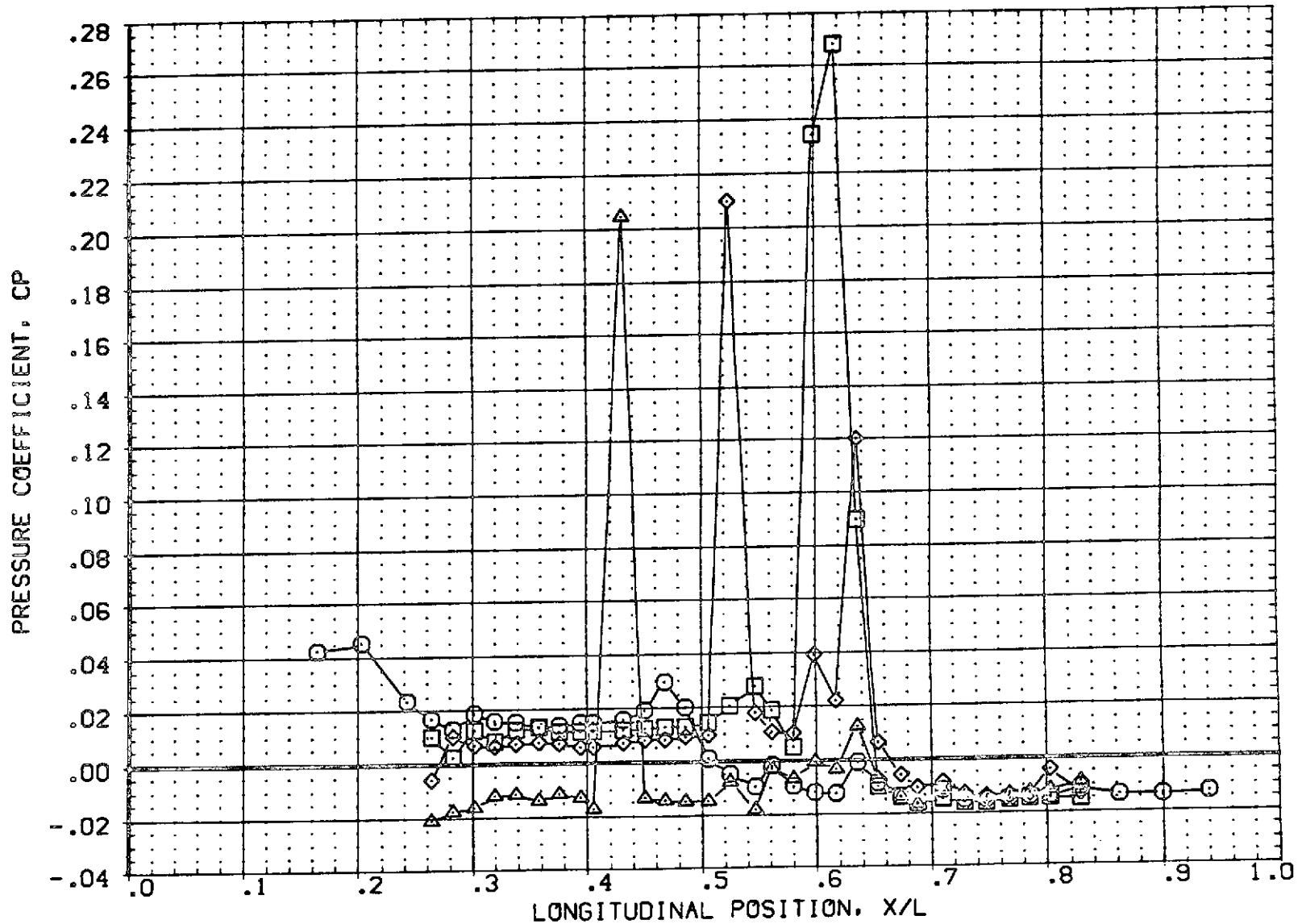


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM113)

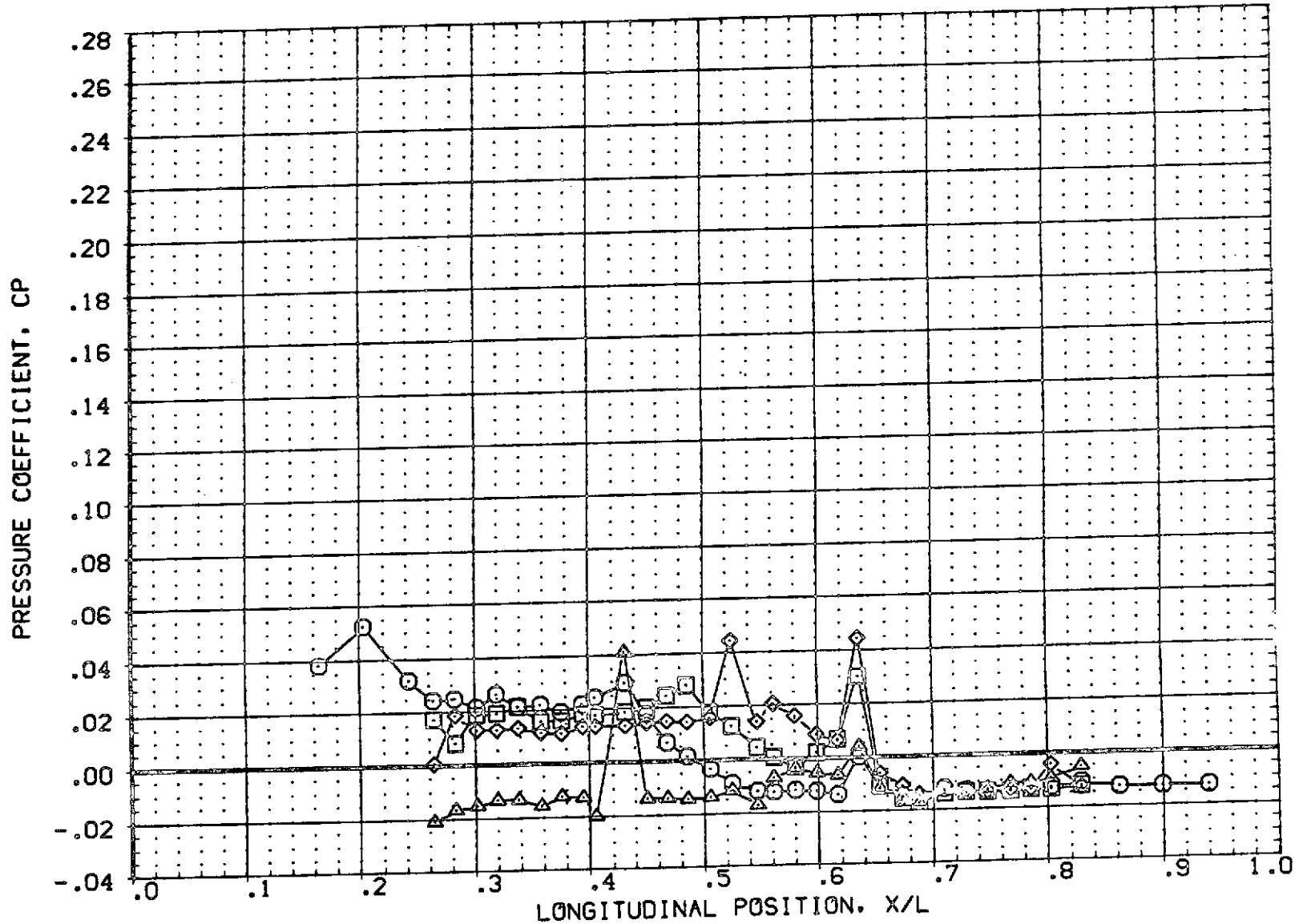
SYMBOL	PHI	ALPHA	MACH
○	90.000	26.187	7.330
□	100.000		
◇	110.000		
△	180.000		

PARAMETRIC VALUES			
BETA	.000	ELEV-L	.000
ELEV-R	.000	RUDDER	.000



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

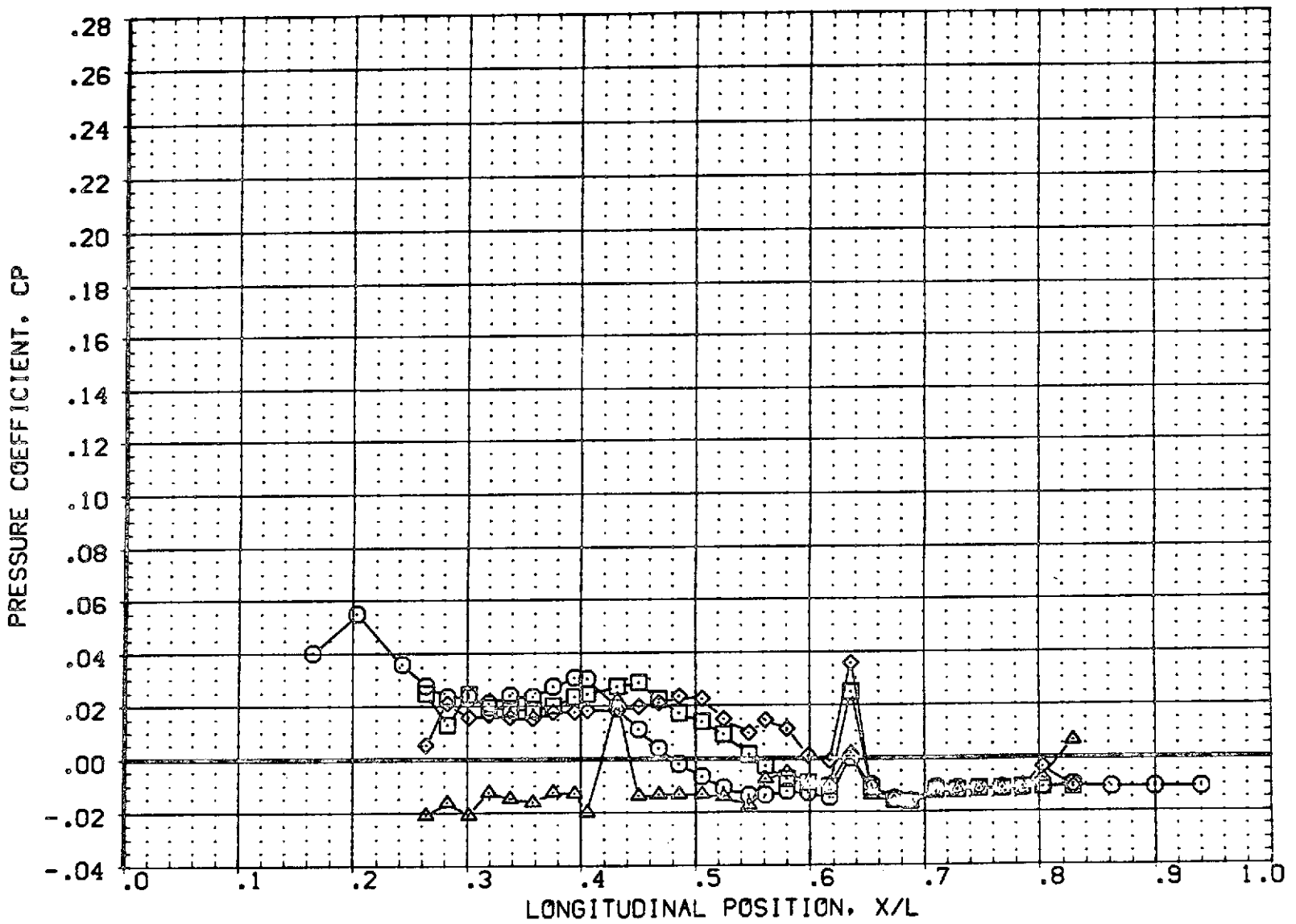
SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	30.244	7.330	.000	.000	.000
□	100.000			.000	.000	.000
◇	110.000				.000	.000
△	180.000				.000	.000



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE) (REM113)

SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	34.191	7.330	.000	.000	.000
□	100.000			.000	.000	.000
◇	110.000					
△	180.000					



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

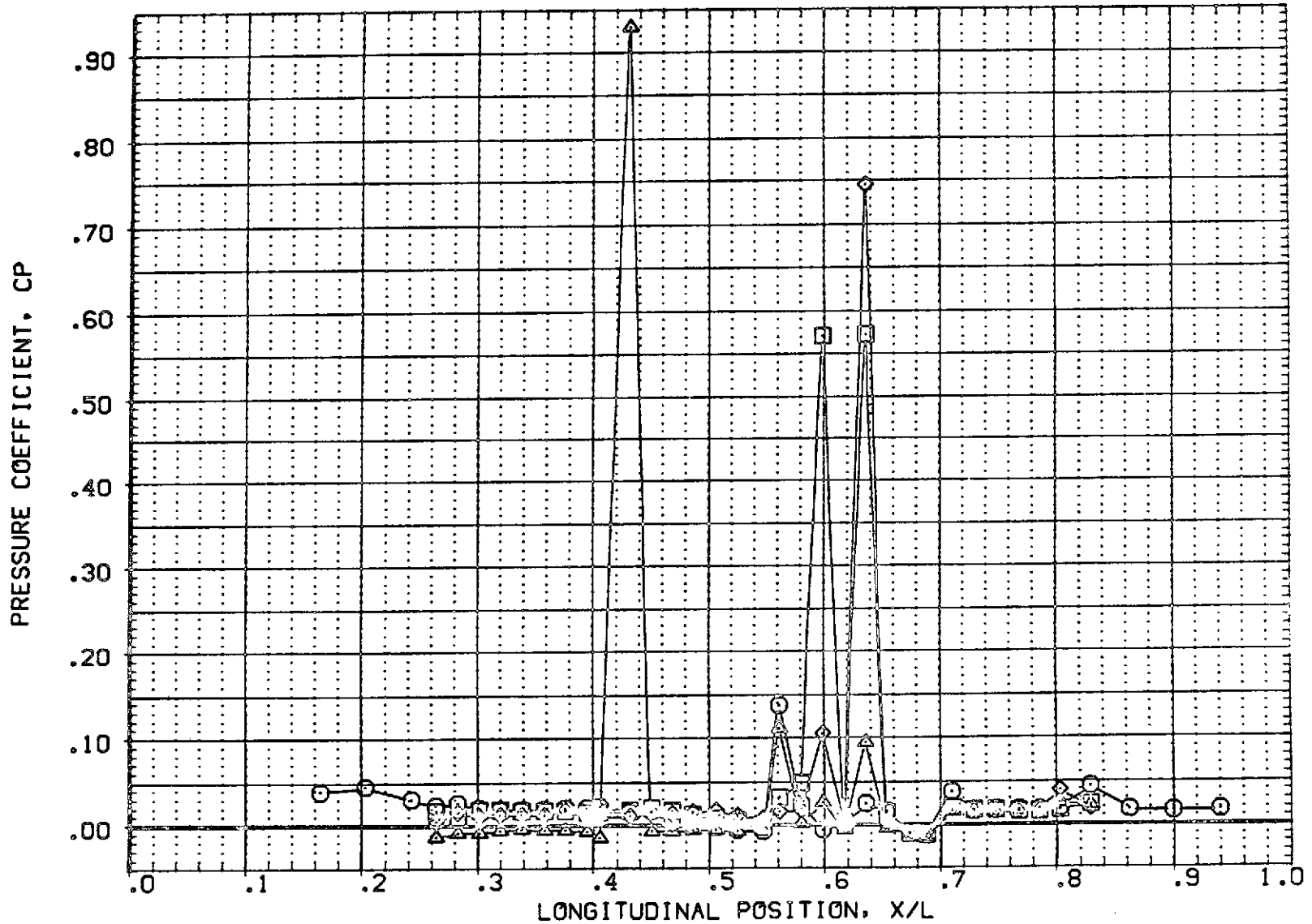
SYMBOL
 ○
 □
 ◇
 △

PHI
 90.000
 100.000
 110.000
 180.000

ALPHA
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MACH
 10.290

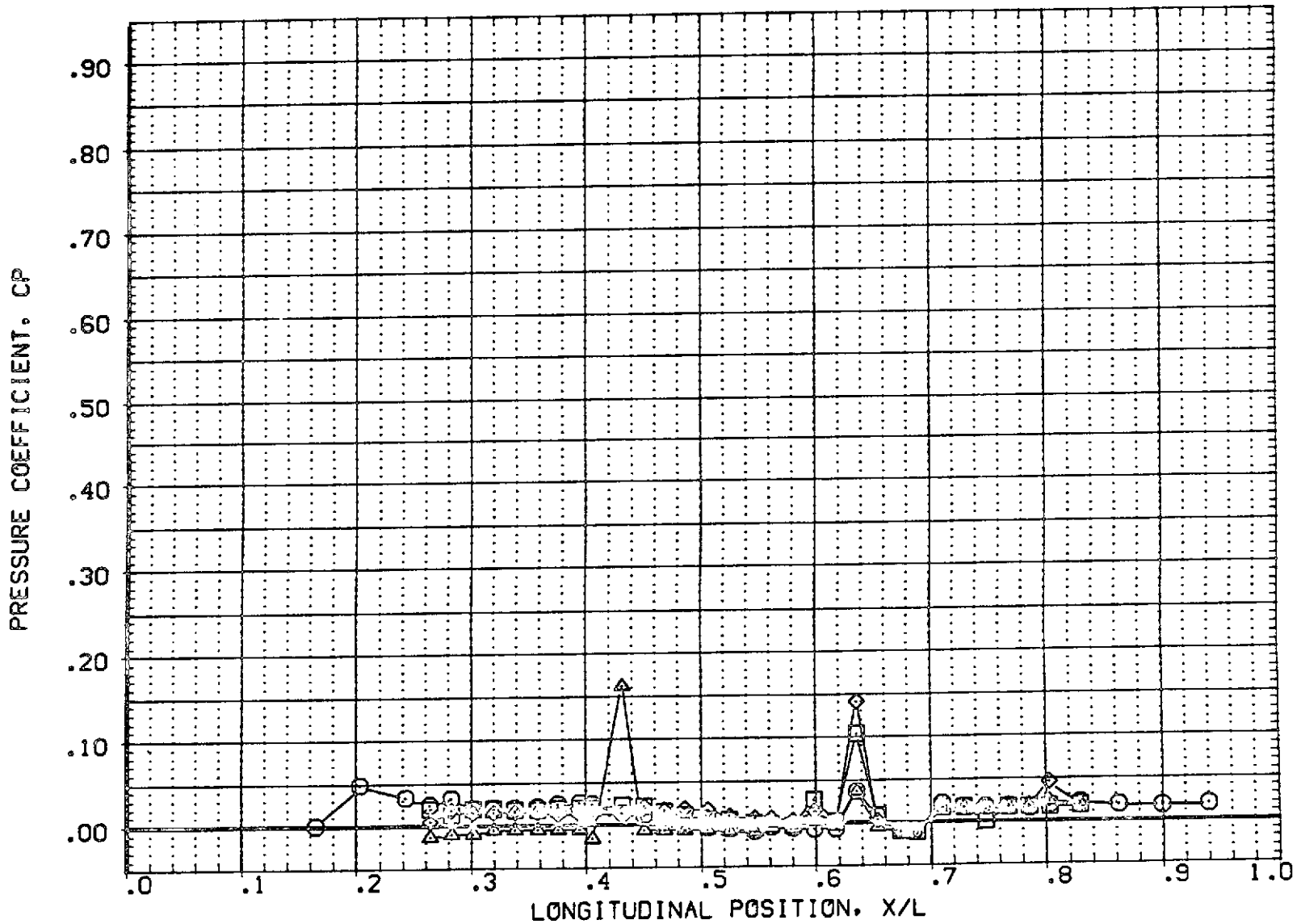
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 ELEV-R .000 RUDDER .000



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

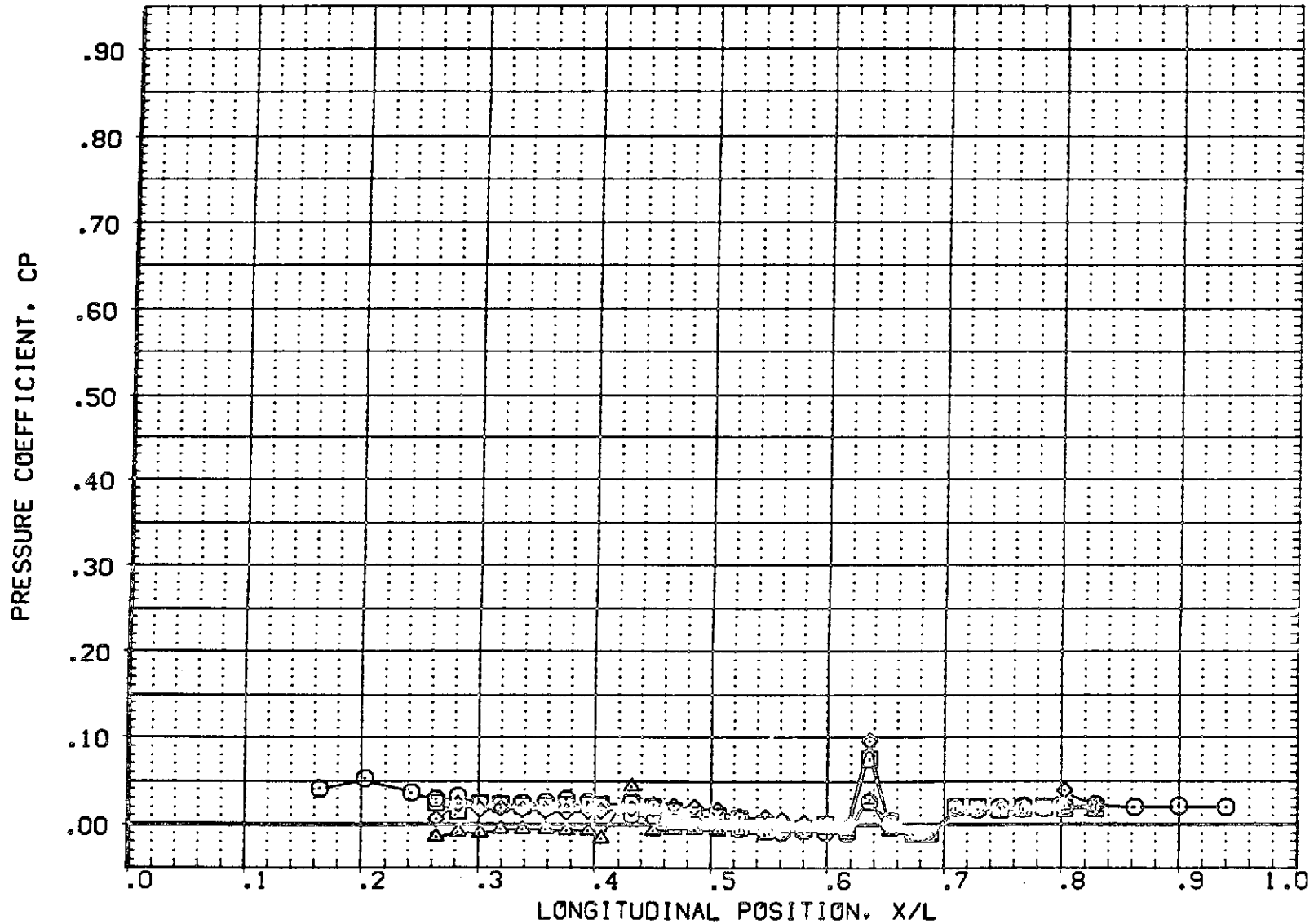
ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	90.000	32.195	10.290	.000	.000	.000
□	100.000			.000	RUDDER	.000
◇	110.000					
△	180.000					



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

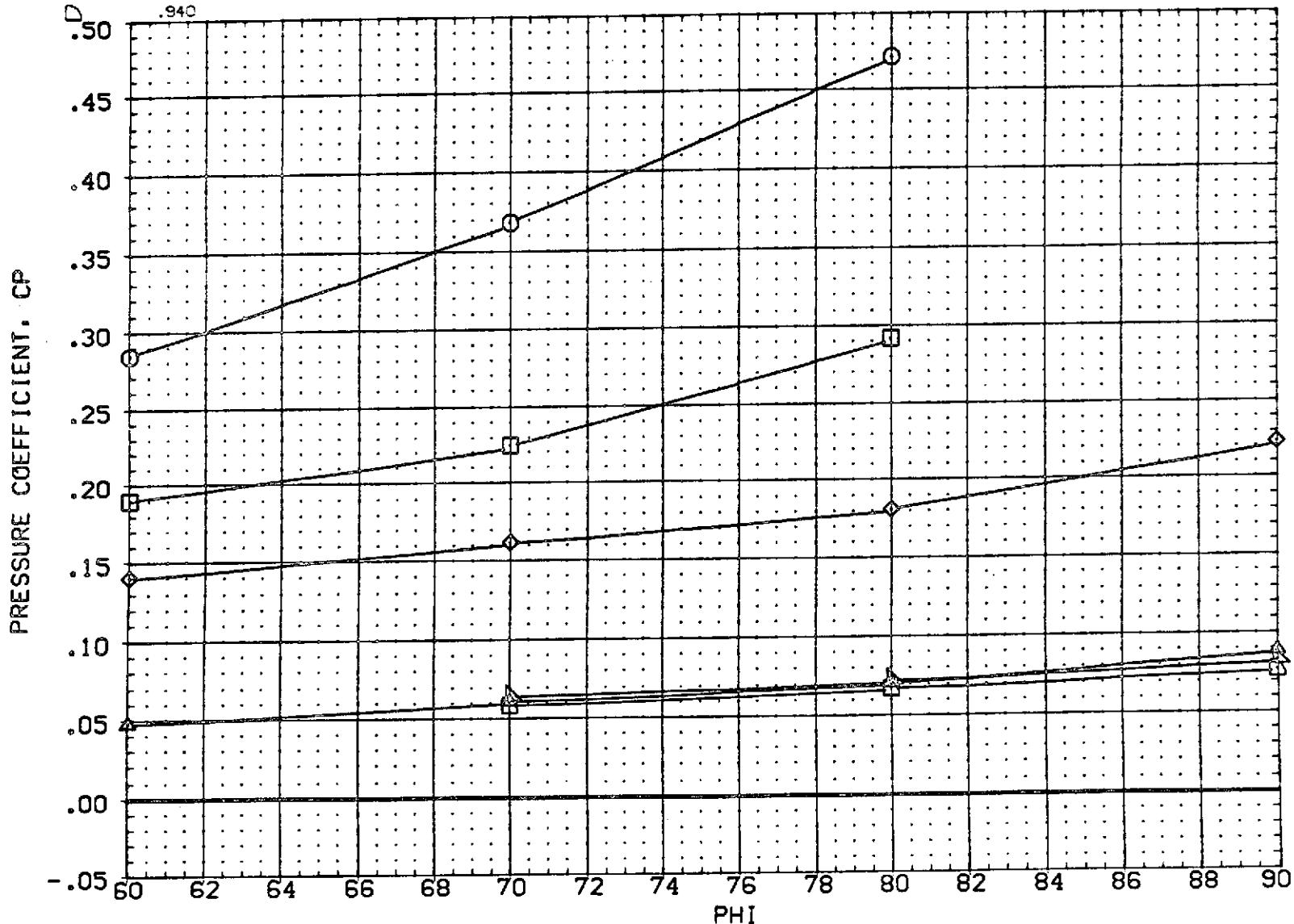
SYMBOL	PHI	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	ELEV-L	ELEV-R	RUDDER
○	90.000	34.247	10.290	.000	.000	.000	.000
□	100.000			.000	.000	.000	.000
◇	110.000						
△	180.000						



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 1A16/0A26 ORBITER+ET (ORB FUSELAGE)(REM107)

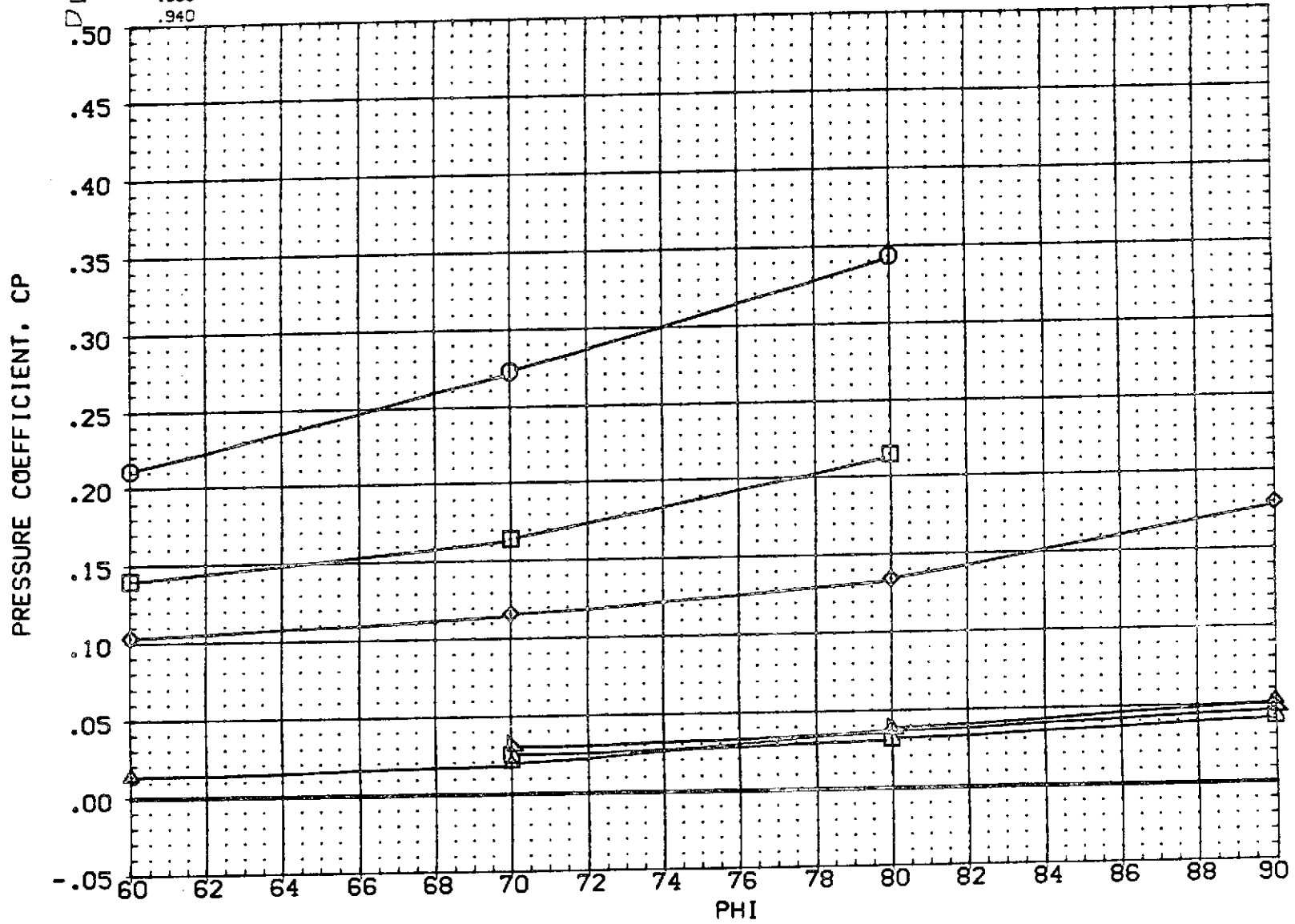
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	ELEV-R	ELEV-L	RUDDER
○	.087	-7.582	5.300	.000	.000	.000	.000
□	.126			.000	.000	.000	.000
◇	.164						
△	.862						
▽	.900						
◇	.940						



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 IA16/0A26 ORBITER+ET (ORB FUSELAGE) (REM107)

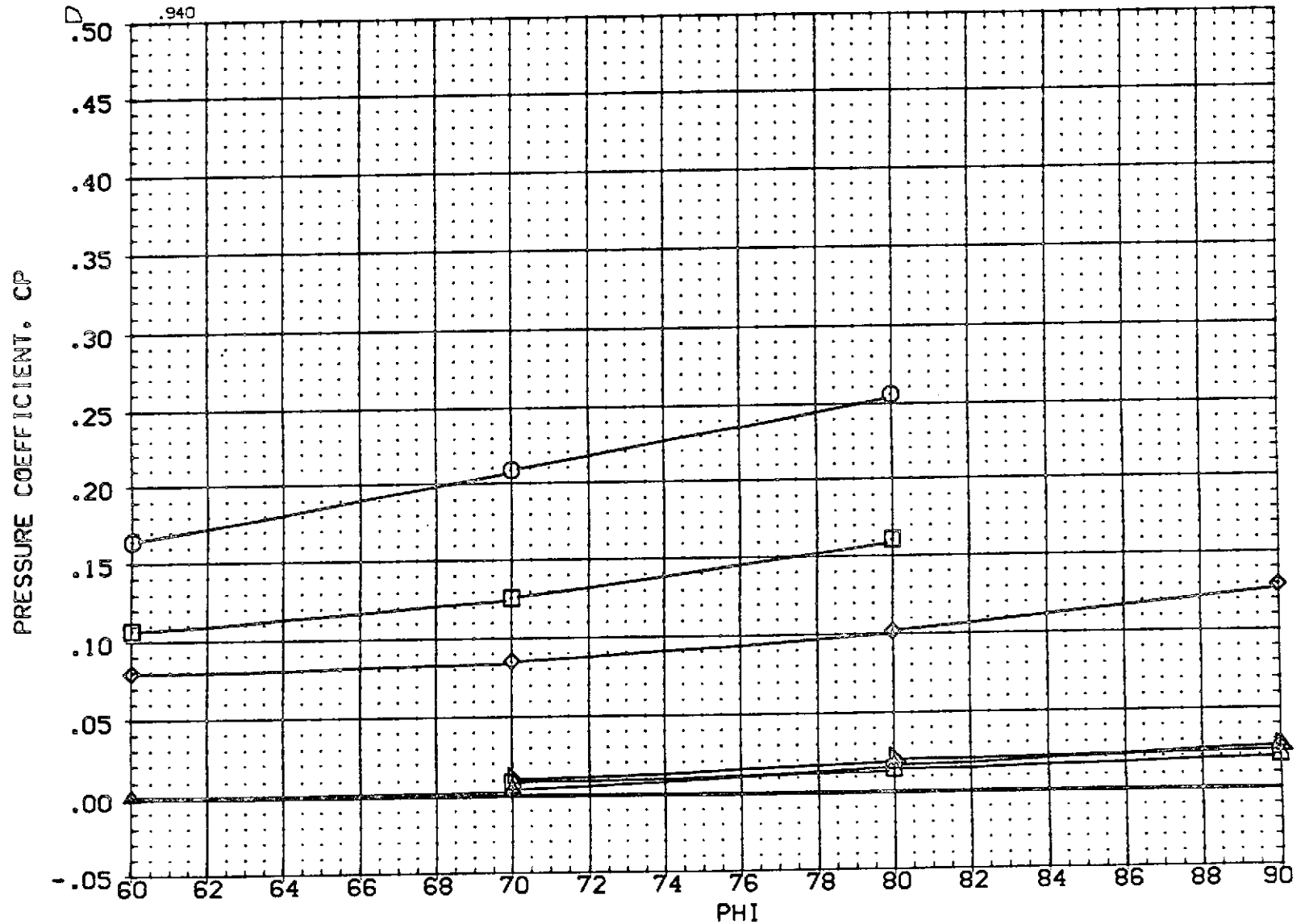
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	-3.669	5.300	.000	.000	.000
□	.126			.000	RUDDER	.000
◇	.164					
△	.862					
▽	.900					
◇	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 IA16/0A26 ORBITER+ET (ORB FUSELAGE)(REM107)

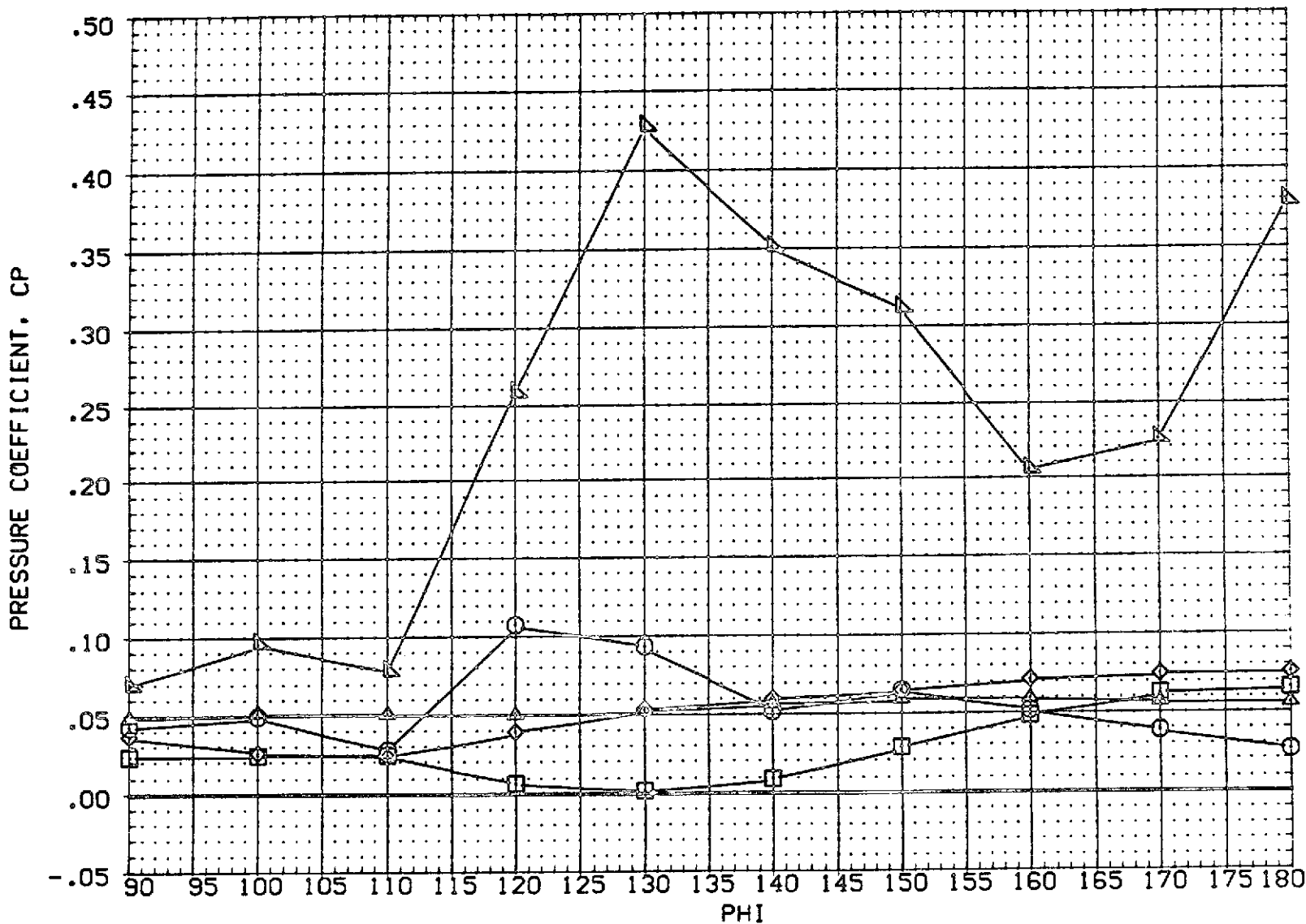
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	.136	5.300	.000	.000	.000
□	.126			.000	.000	.000
◇	.164					
△	.862					
▽	.900					
◇	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)(REM107)

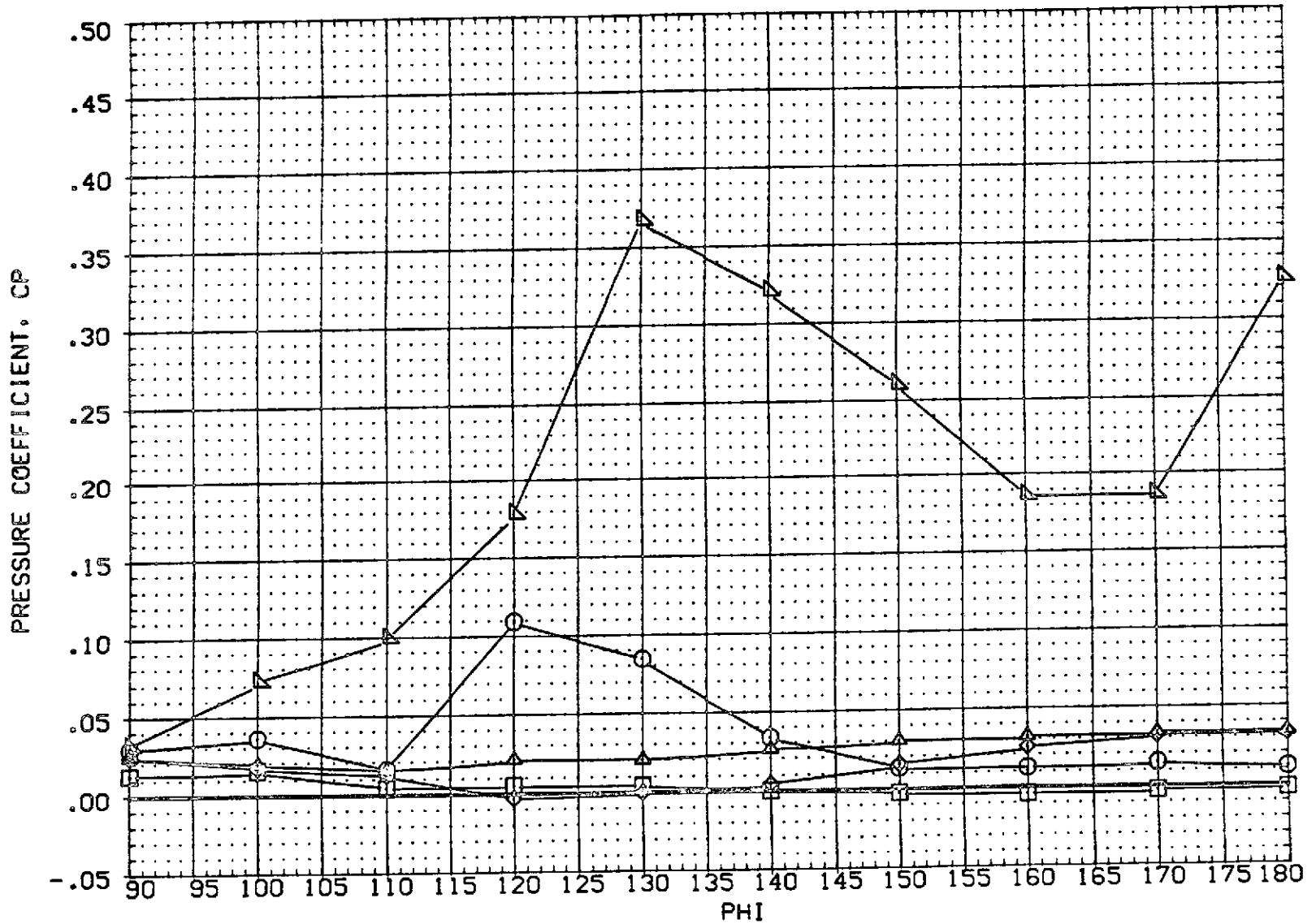
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	-7.582	5.300	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE) (REM107)

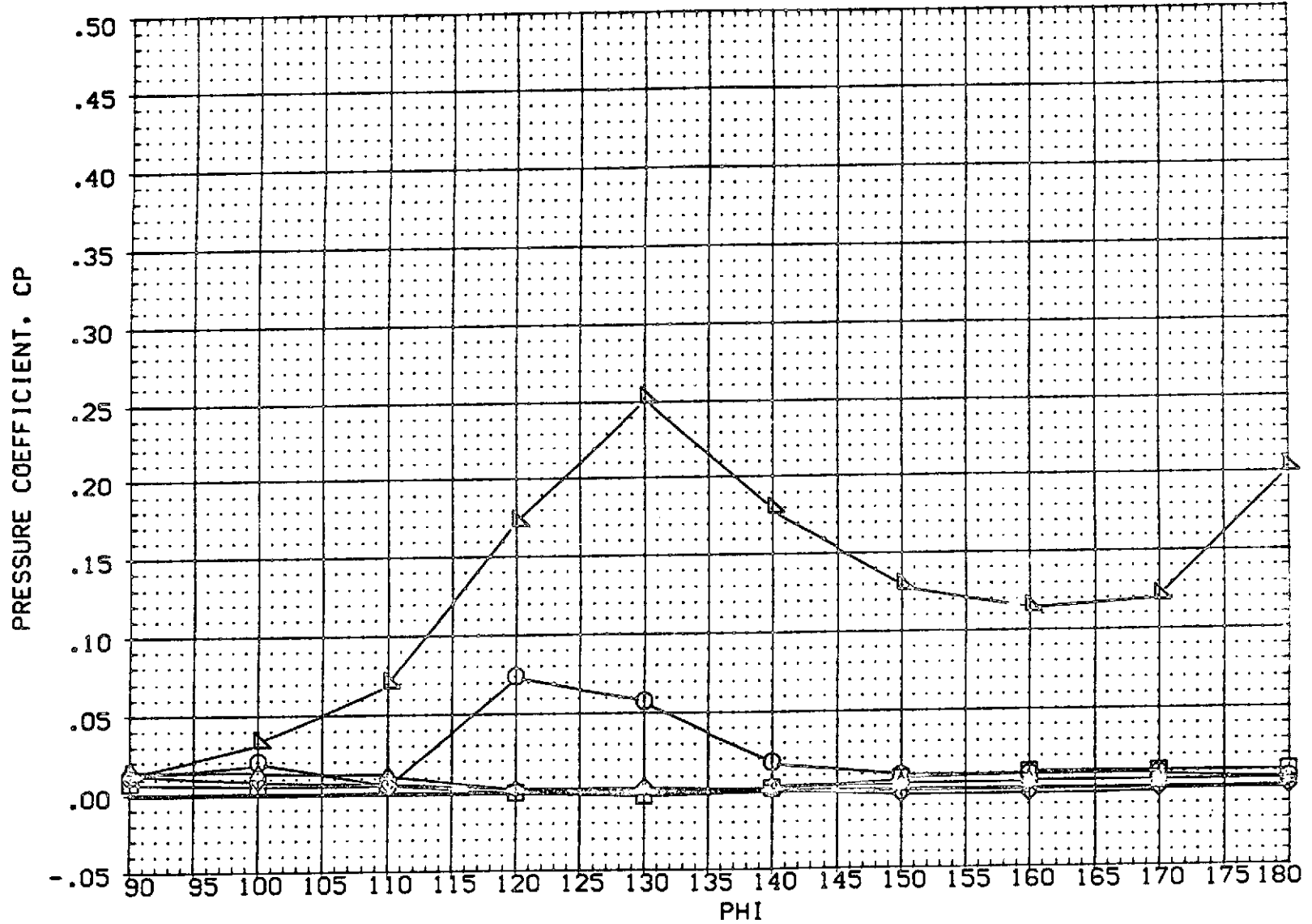
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	-3.669	5.300	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

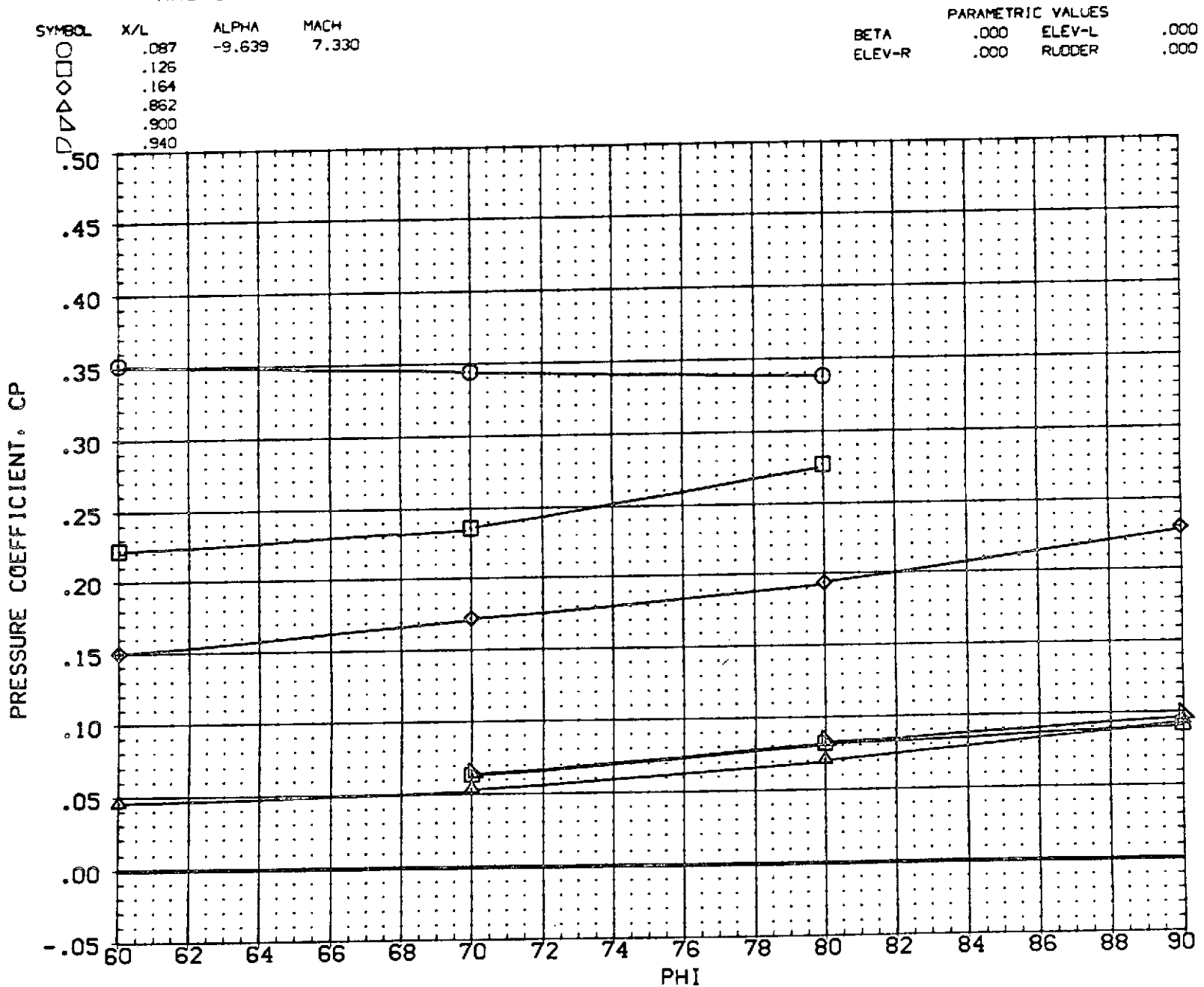
ARC 3.5-180 1A16/0A26 ORBITER+ET (ORB FUSELAGE)(REM107)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	.136	5.300	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

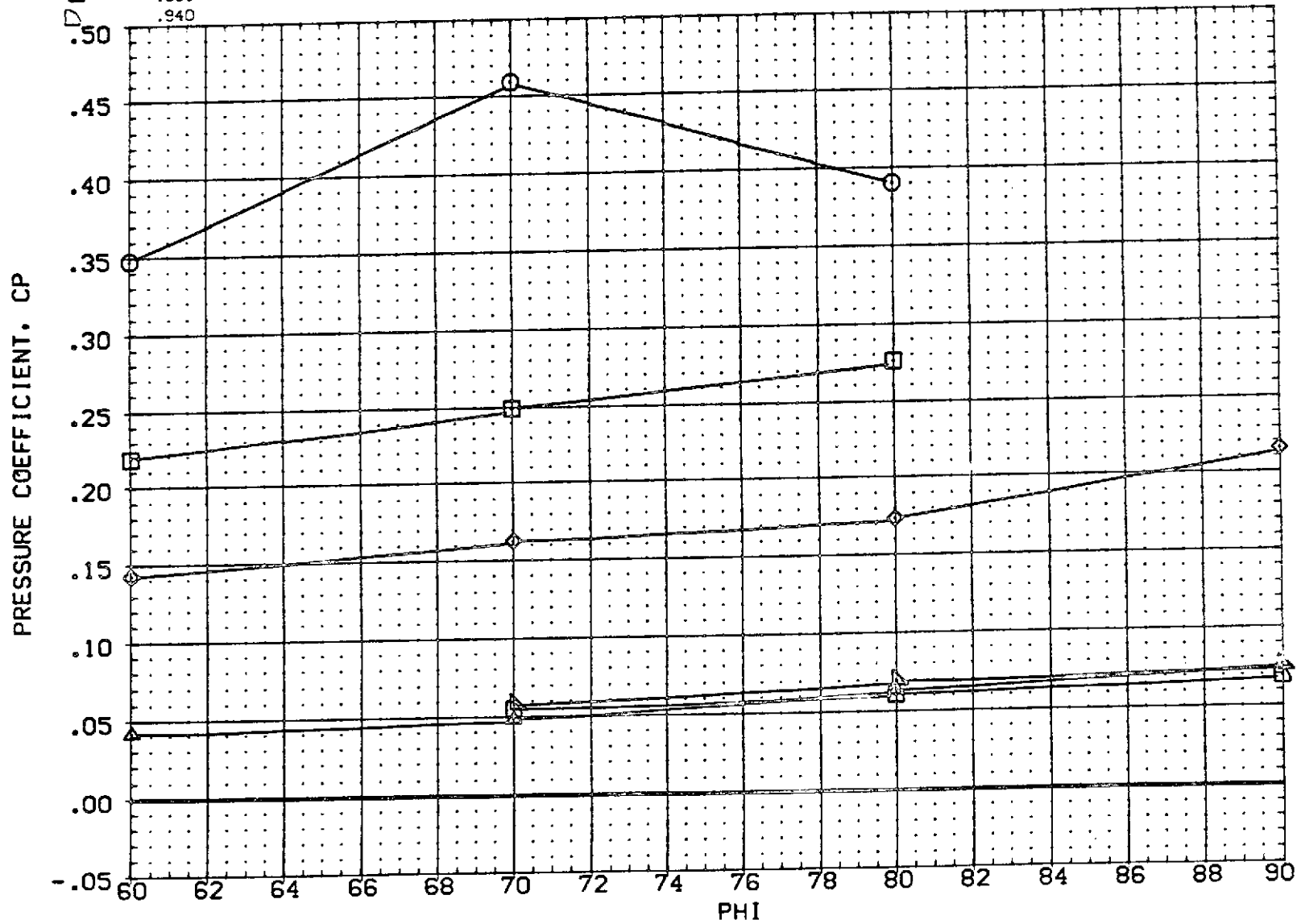
ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)(REM104)



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 1A16/0A26 ORBITER+ET (ORB FUSELAGE)(REM104)

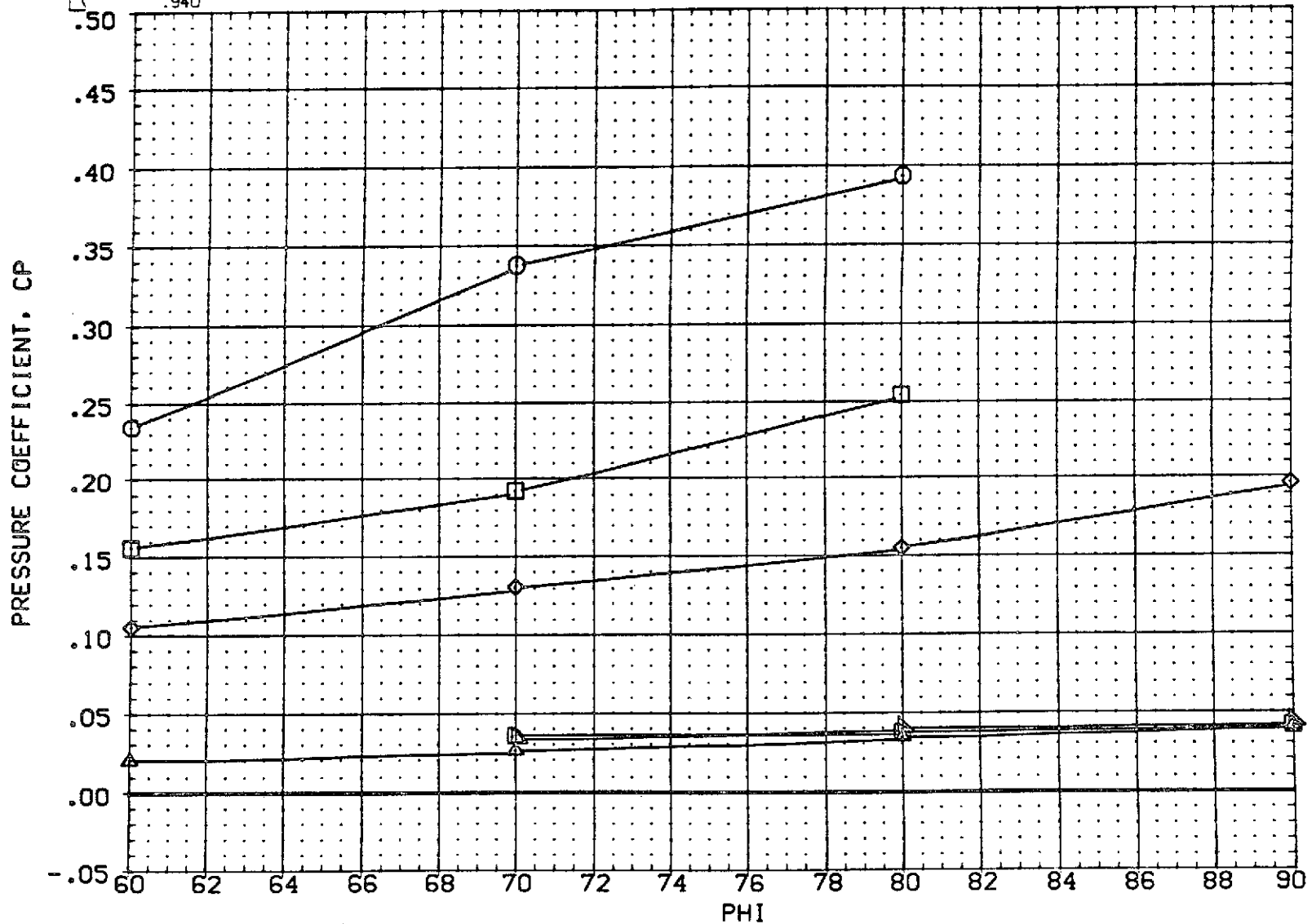
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	ELEV-L	.000	
○	.087	-7.594	7.330	ELEV-R	.000	RUDDER	.000
□	.126						
◇	.164						
△	.862						
▽	.900						
◇	.940						



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 1A16/0A26 ORBITER+ET (ORB FUSELAGE)(REM104)

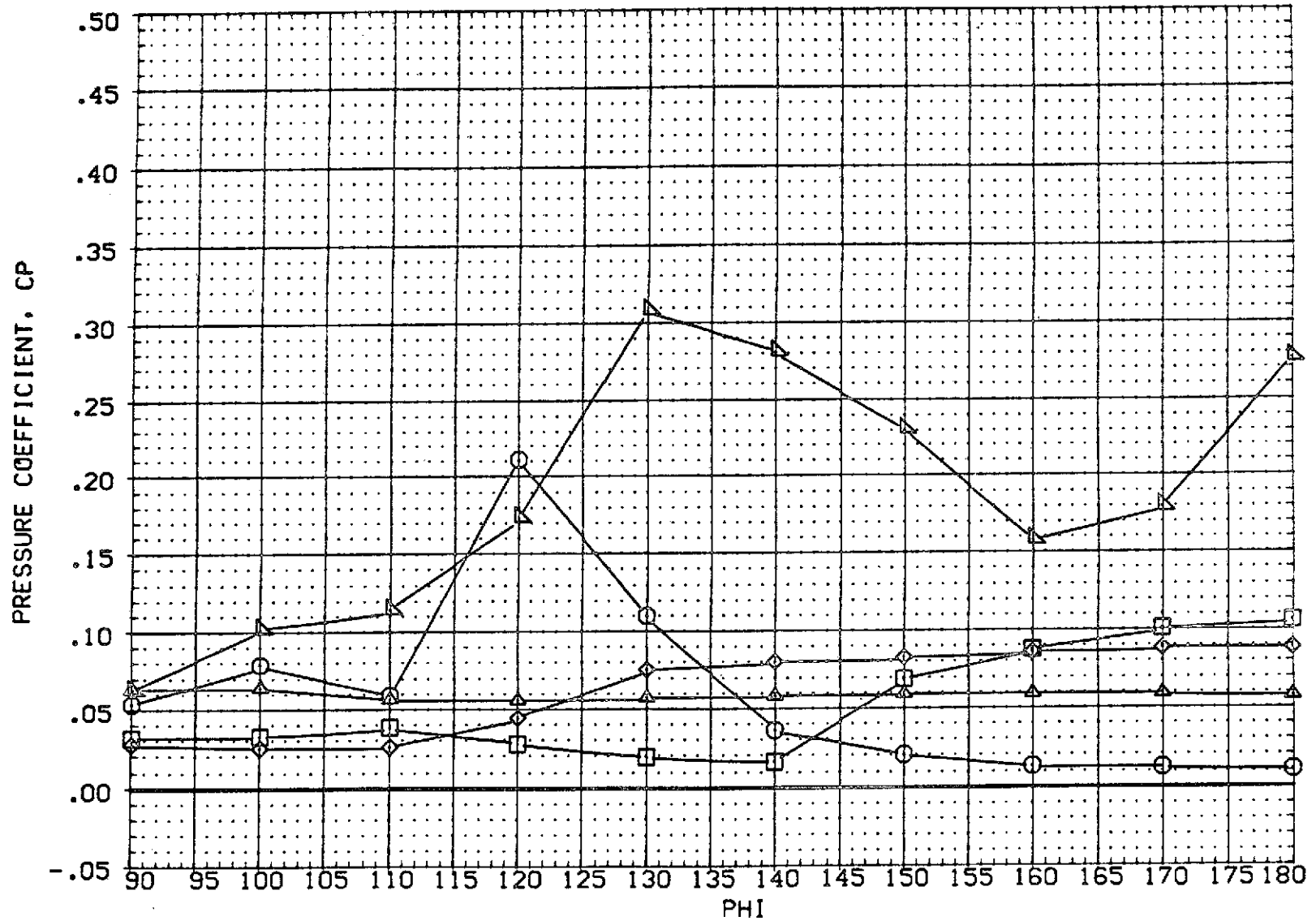
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	-3.651	7.330	.000	.000	.000
□	.126			.000	.000	.000
◇	.164					
△	.862					
▽	.900					
◇	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 1A16/0A26 ORBITER+ET (ORB FUSELAGE)(REM104)

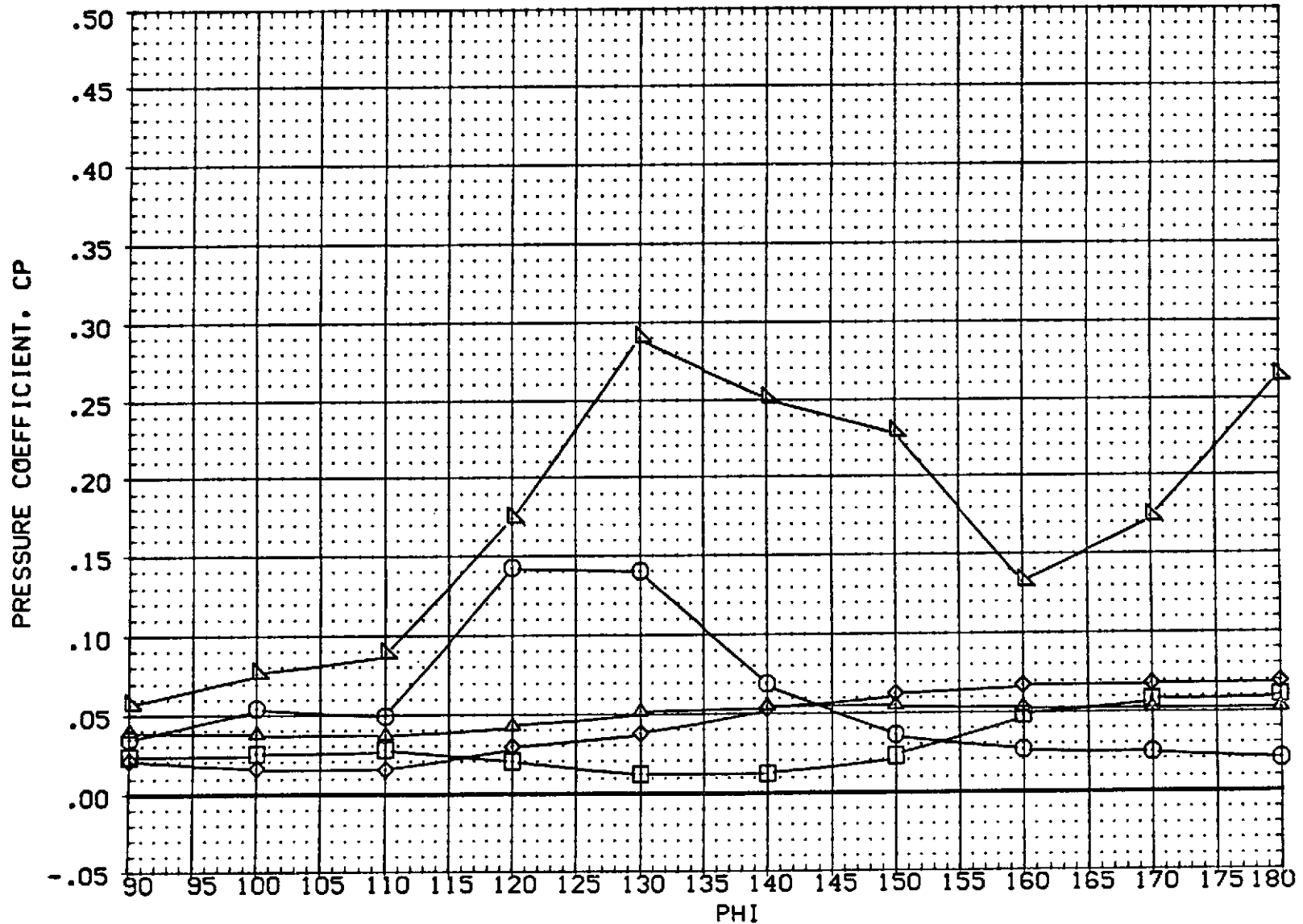
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	-9.639	7.330	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)(REM104)

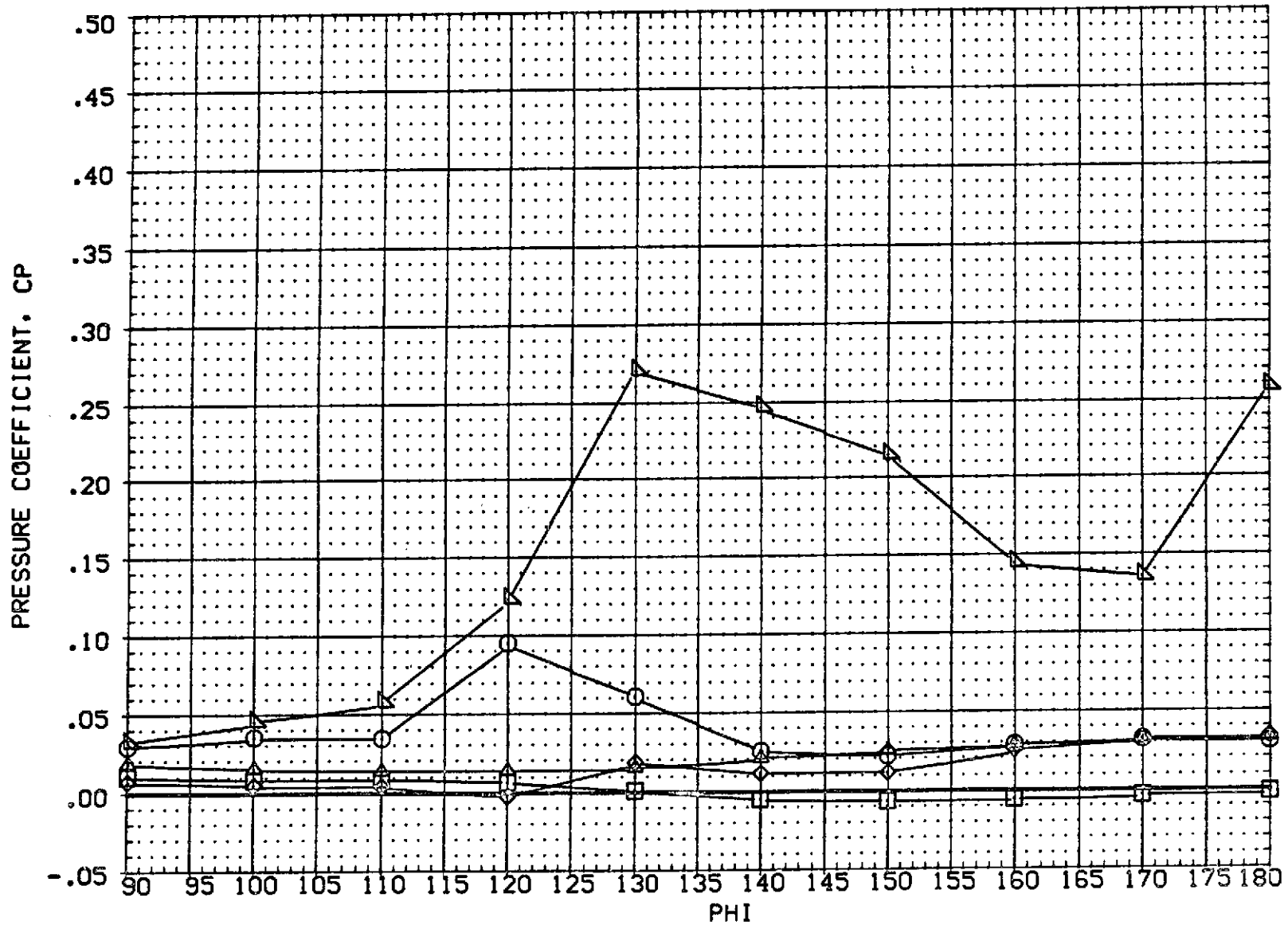
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	ELEV-L	ELEV-R	RUDDER
○	.264	-7.594	7.330	.000	.000	.000	.000
□	.405			.000	.000	.000	.000
◇	.546						
△	.688						
▽	.829						



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-180 IA16/0A26 ORBITER+ET (ORB FUSELAGE)(REM104)

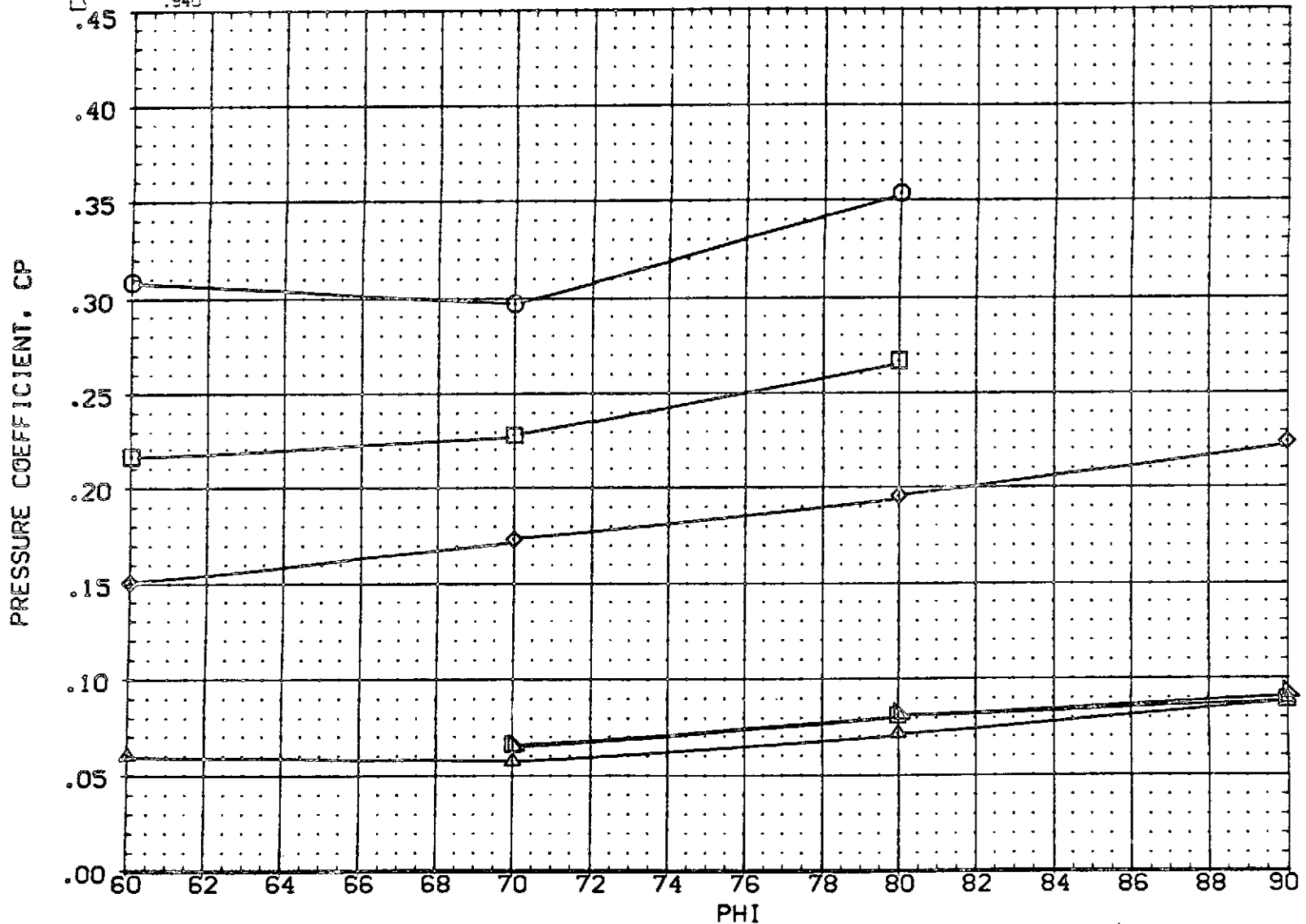
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	-3.651	7.330	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-160 IA16/0A26 ORBITER+ET (ORB FUSELAGE) (REM101)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	-9.870	10.290	.000	.000	.000
□	.126			.000	.000	.000
◇	.164					
△	.862					
▽	.900					
◇	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

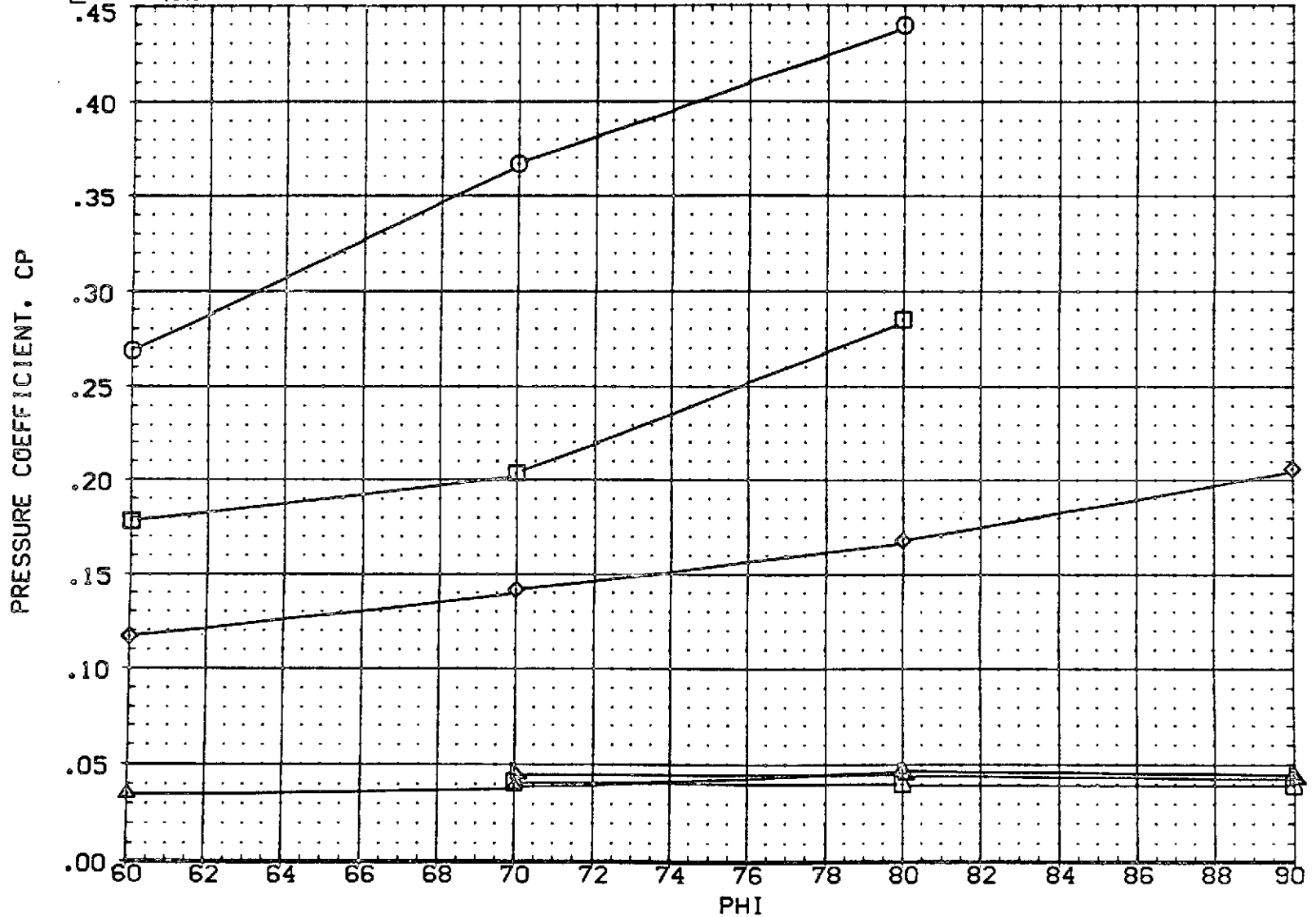
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	-7.814	10.290	.000	.000	.000
□	.126			.000	.000	.000
◇	.164					
△	.862					
▽	.900					
◁	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

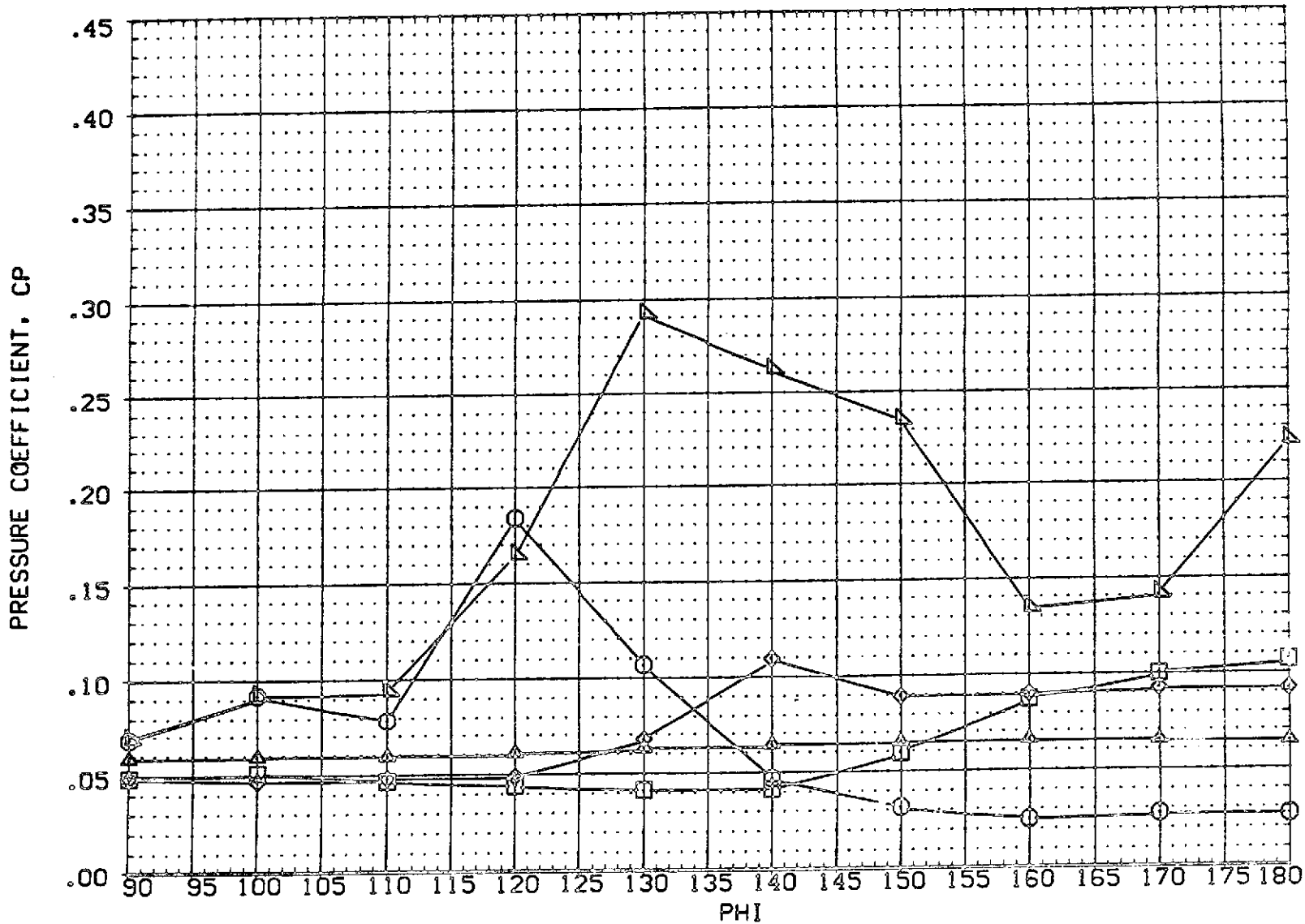
ARC 3.5-18J IA16/OA26 ORBITER+ET (ORB FUSELAGE)(REM101)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	ELEV-L	ELEV-R	RUDDER
○	.087	-4.041	10.290	.000	.000	.000	.000
□	.12E			.000	.000	.000	.000
◇	.164						
△	.852						
▽	.900						
◻	.940						



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

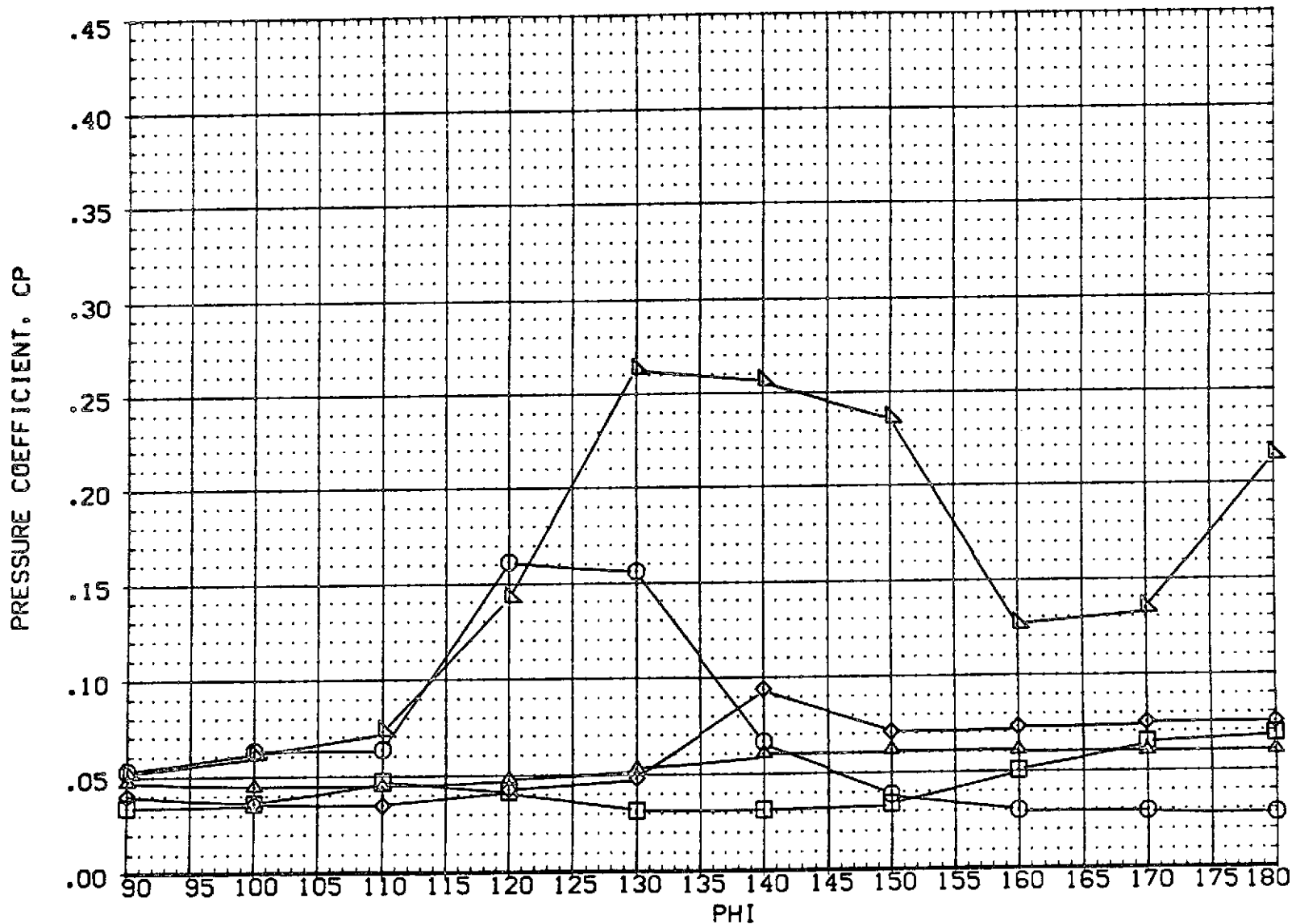
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	-9.870	10.290	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

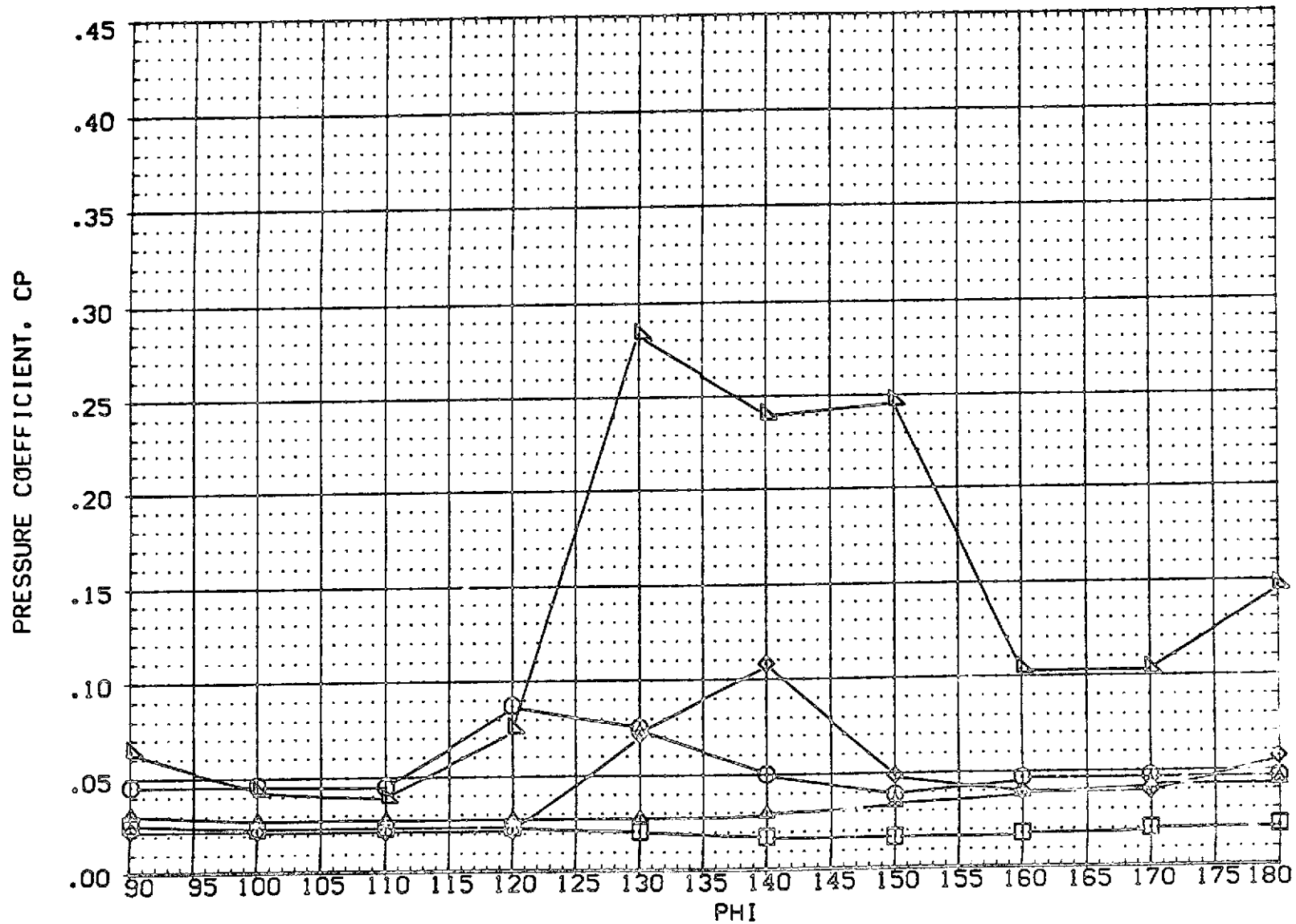
ARC 3.5-150 IA16/OA26 ORBITER+ET (ORB FUSELAGE)(REM101)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	ELEV-L	ELEV-R	RUDDER
○	.264	-7.814	10.290	.000	.000	.000	.000
□	.405			.000	.000	.000	.000
◇	.546						
△	.689						
▽	.829						



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

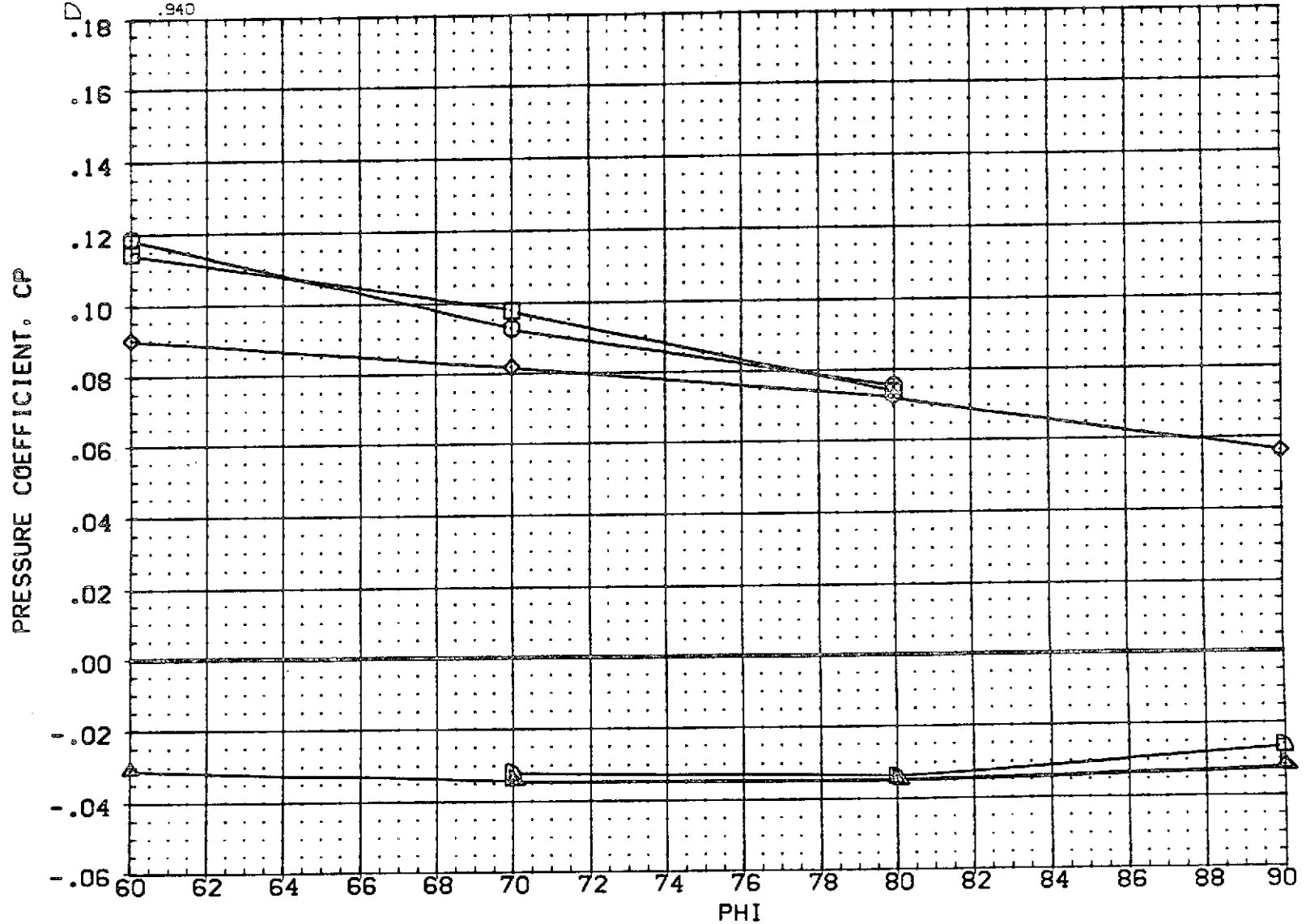
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	-4.041	10.290	.000	.000	.000
□	.405			.000	RUDDER	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

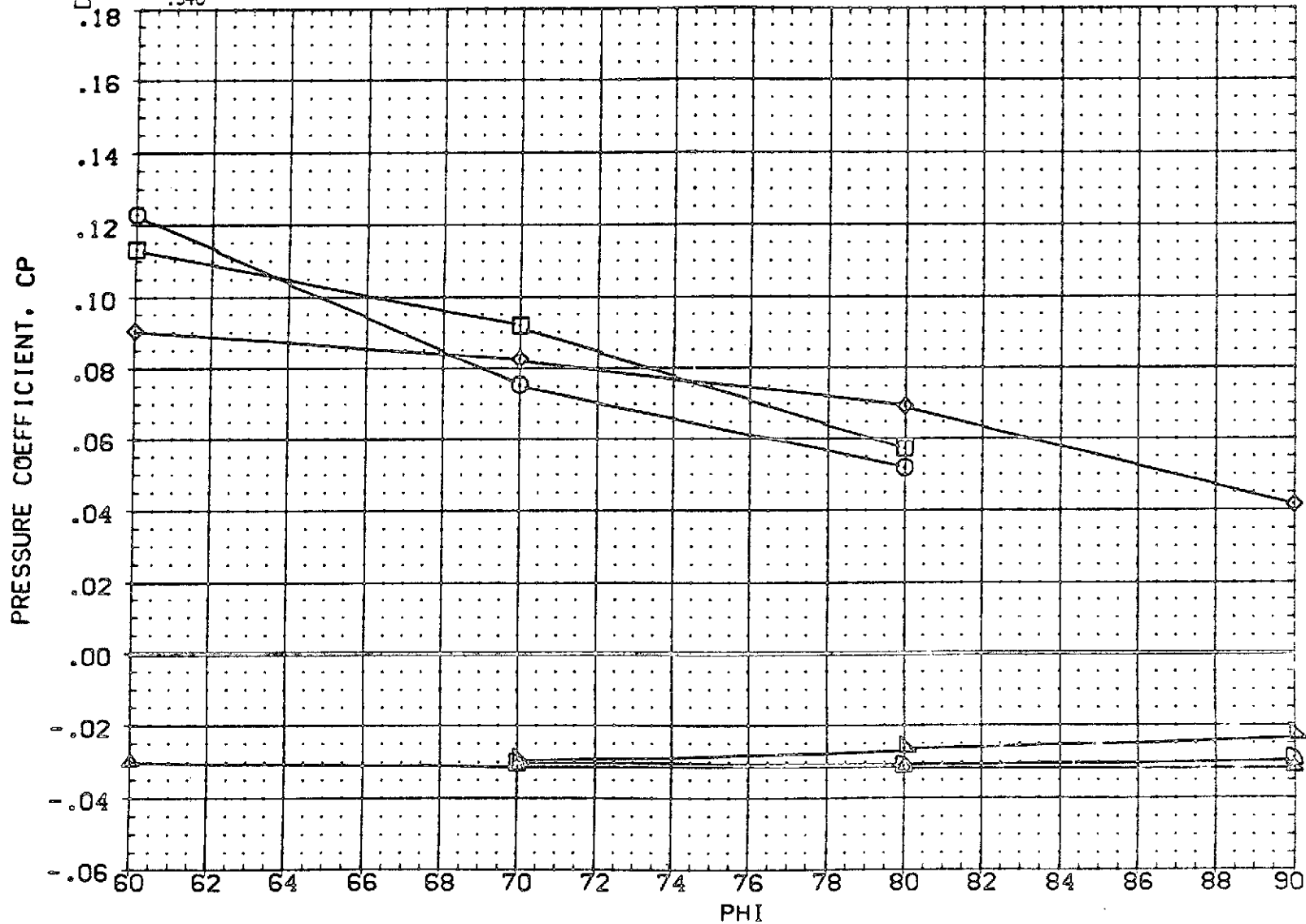
ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE) (REM116)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	18.255	5.299	.000	.000	.000
□	.126			.000	.000	.000
◇	.164					
△	.832					
▽	.900					
◇	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

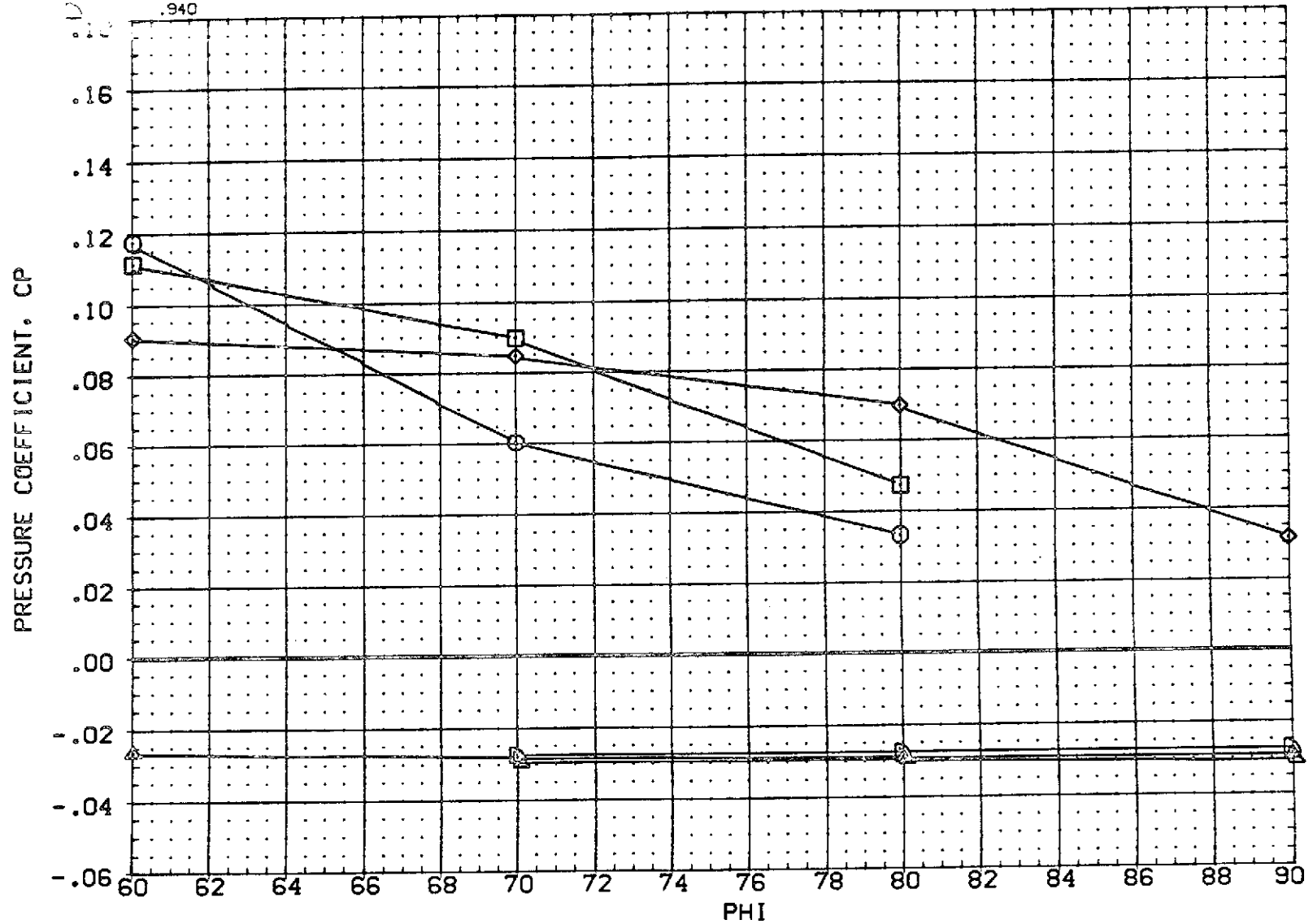
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	22.158	5.299	.000	.000	.000
□	.126			.000	.000	.000
◇	.164					
△	.862					
▽	.900					
◇	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

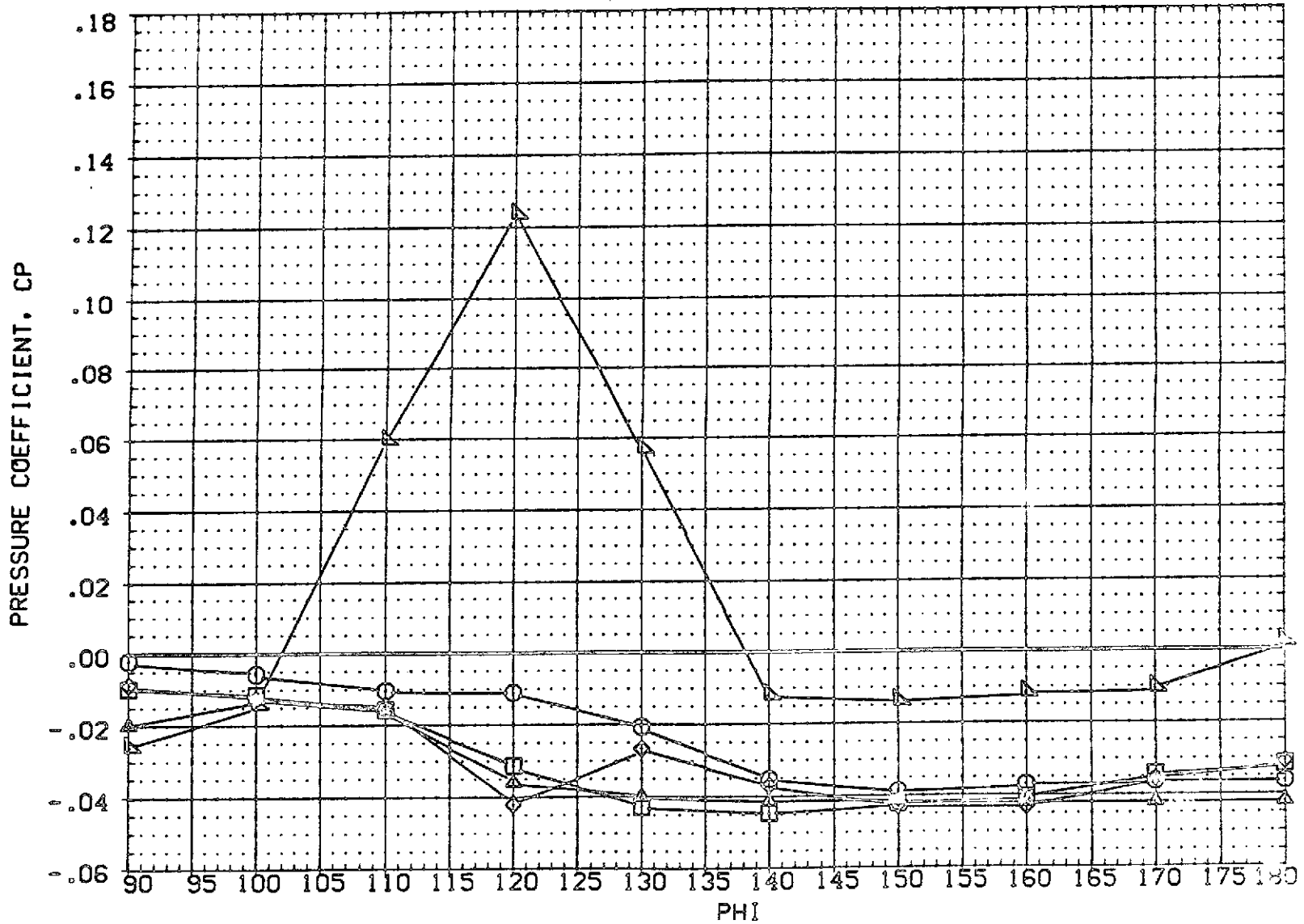
ARC 3.5-180 1A16/0A26 ORBITER (ORB FUSELAGE) (REM116)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	26.290	5.299	.000	.000	.000
□	.126			.000	.000	.000
◇	.154					
⊙	.662					
●	.900					
△	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

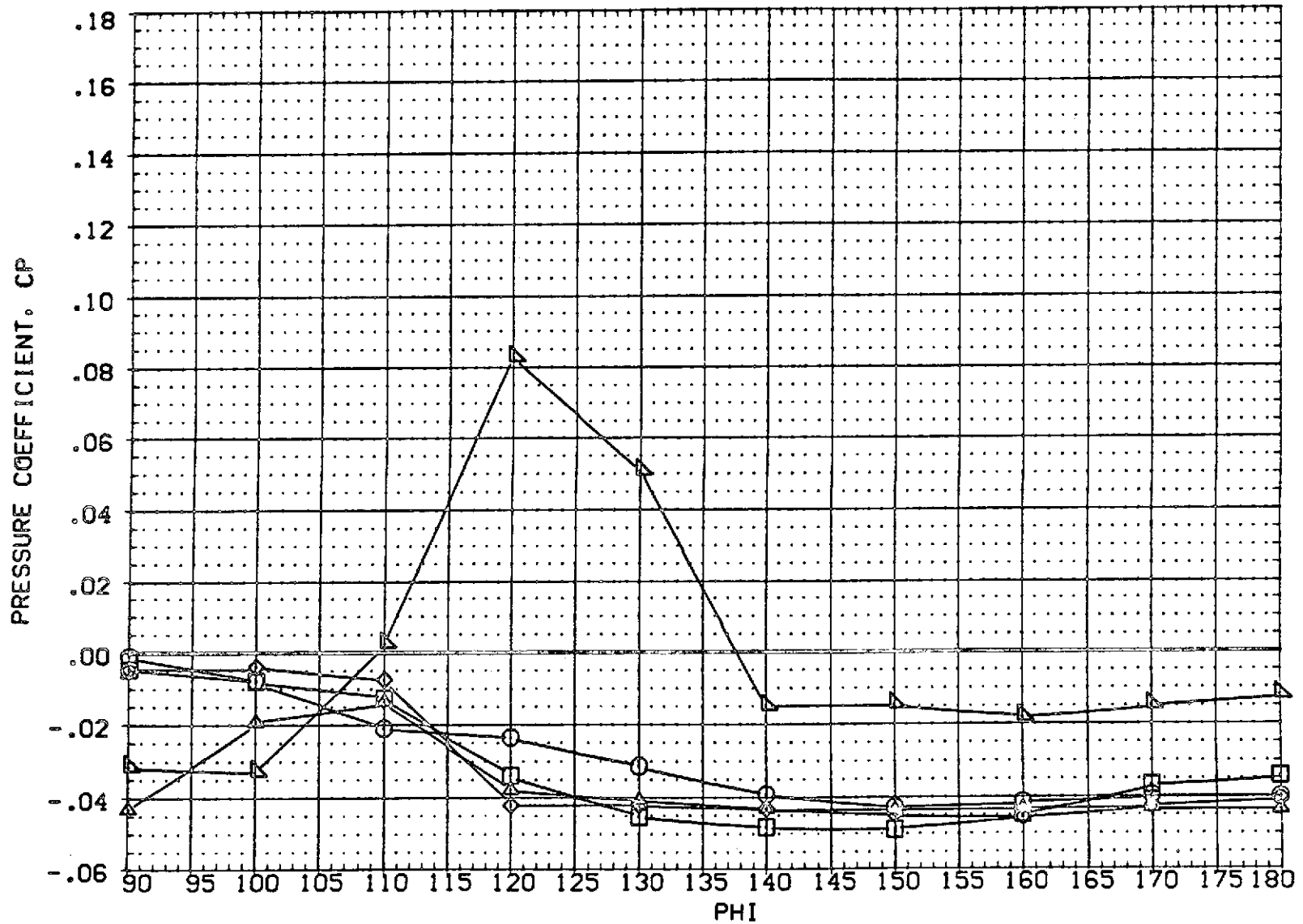
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	18.255	5.299	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

APC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE) (REM116)

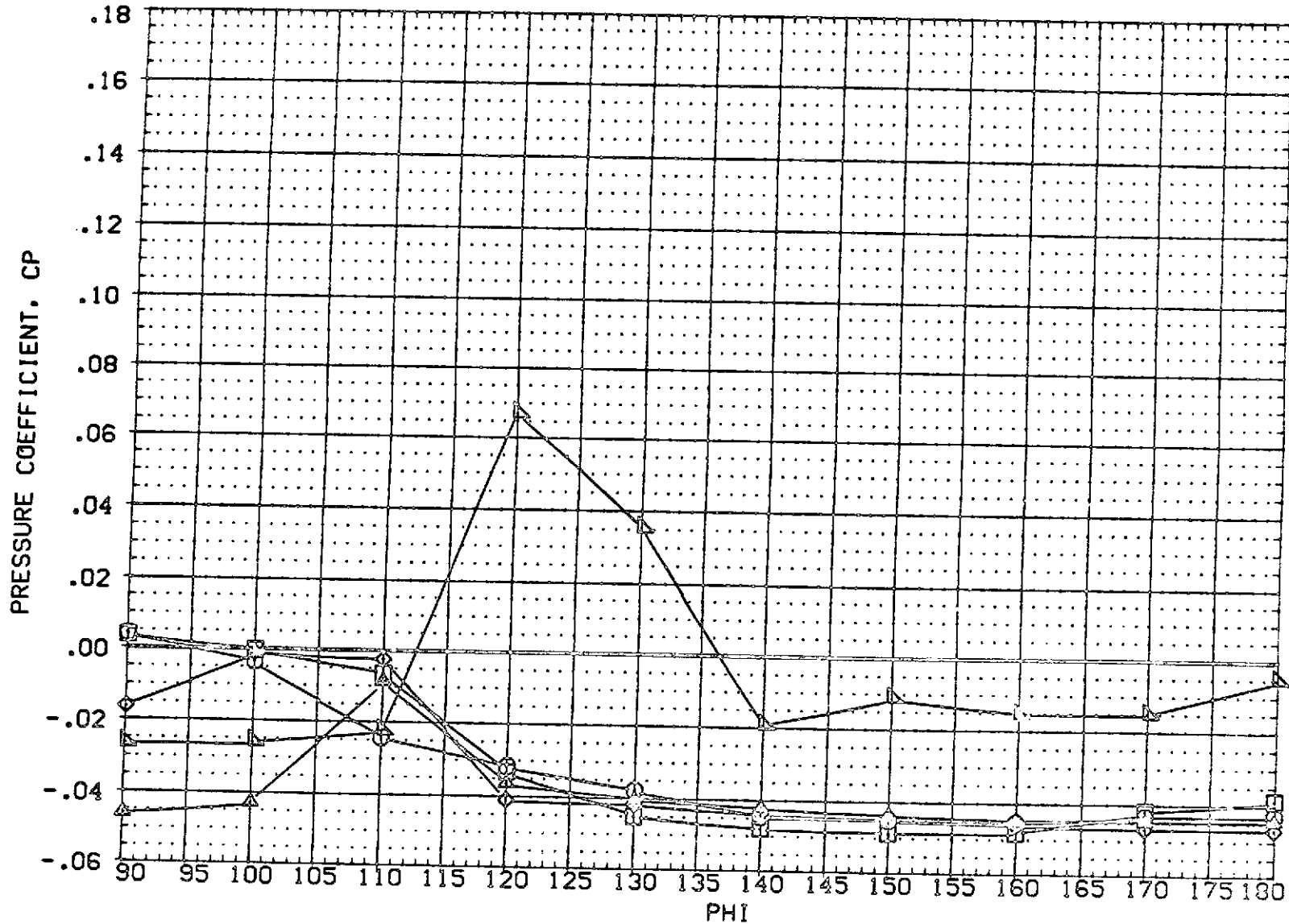
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	22.158	5.299	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

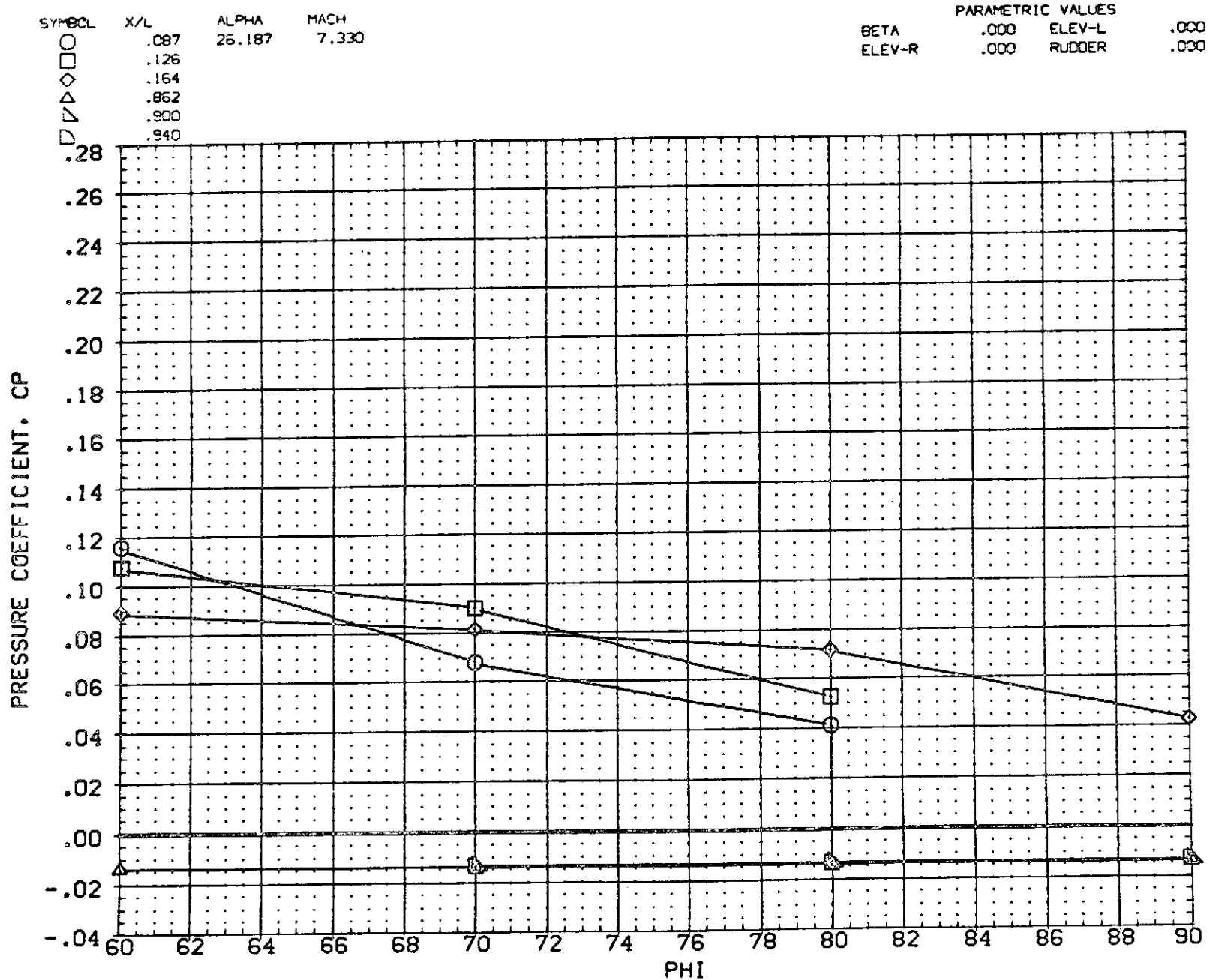
SYMBOL	X/L	ALPHA	MACH
○	.264	26.290	5.299
□	.405		
◇	.546		
△	.688		
▽	.829		

PARAMETRIC VALUES			
BETA	.000	ELEV-L	.000
ELEV-R	.000	RUDDER	.000



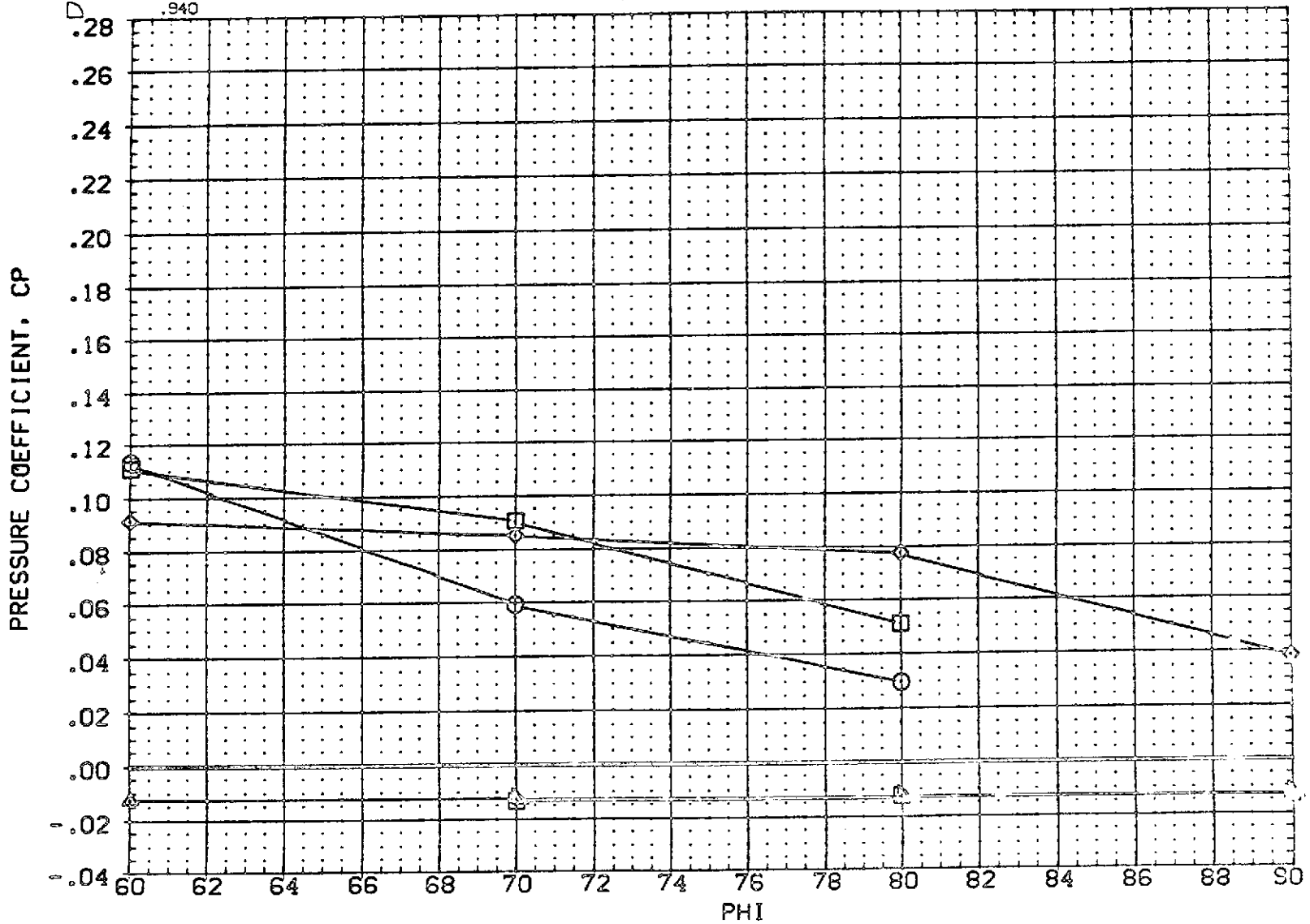
RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 1A16/0A26 ORBITER (ORB FUSELAGE) (REM113)



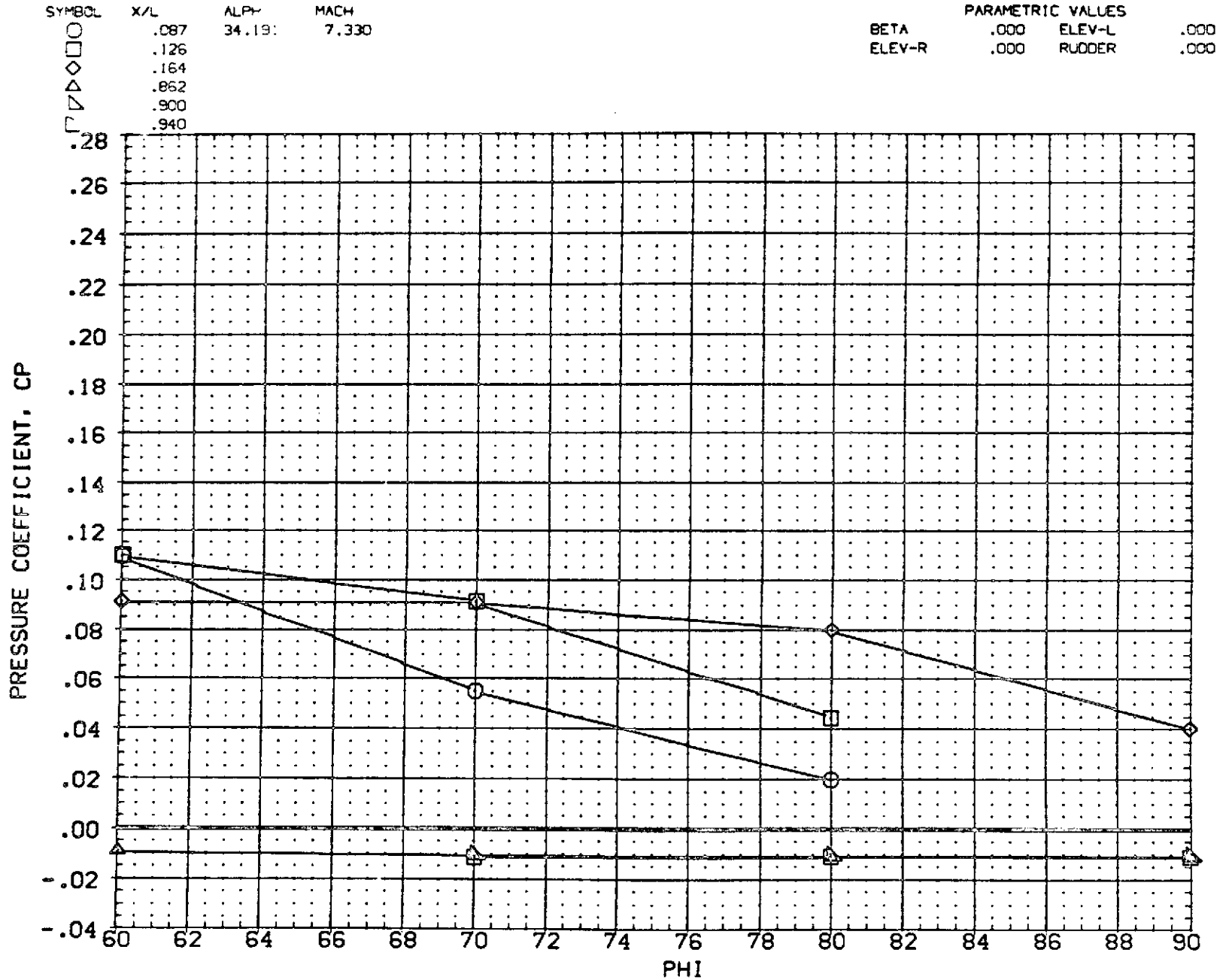
RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	30.244	7.330	.000	.000	.000
□	.126			.000	.000	.000
◇	.164					
△	.862					
▽	.900					
◇	.940					



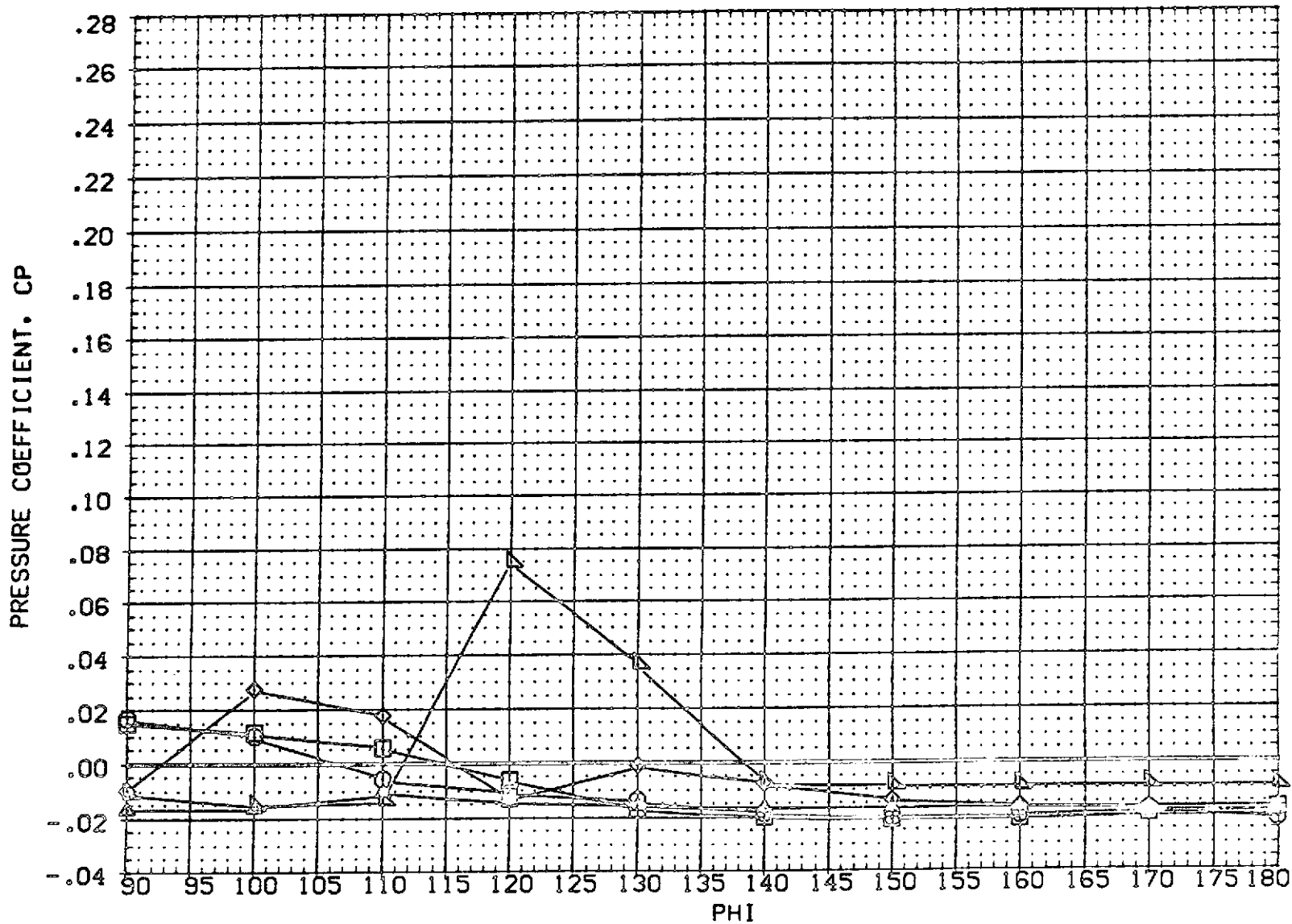
RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM113)



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

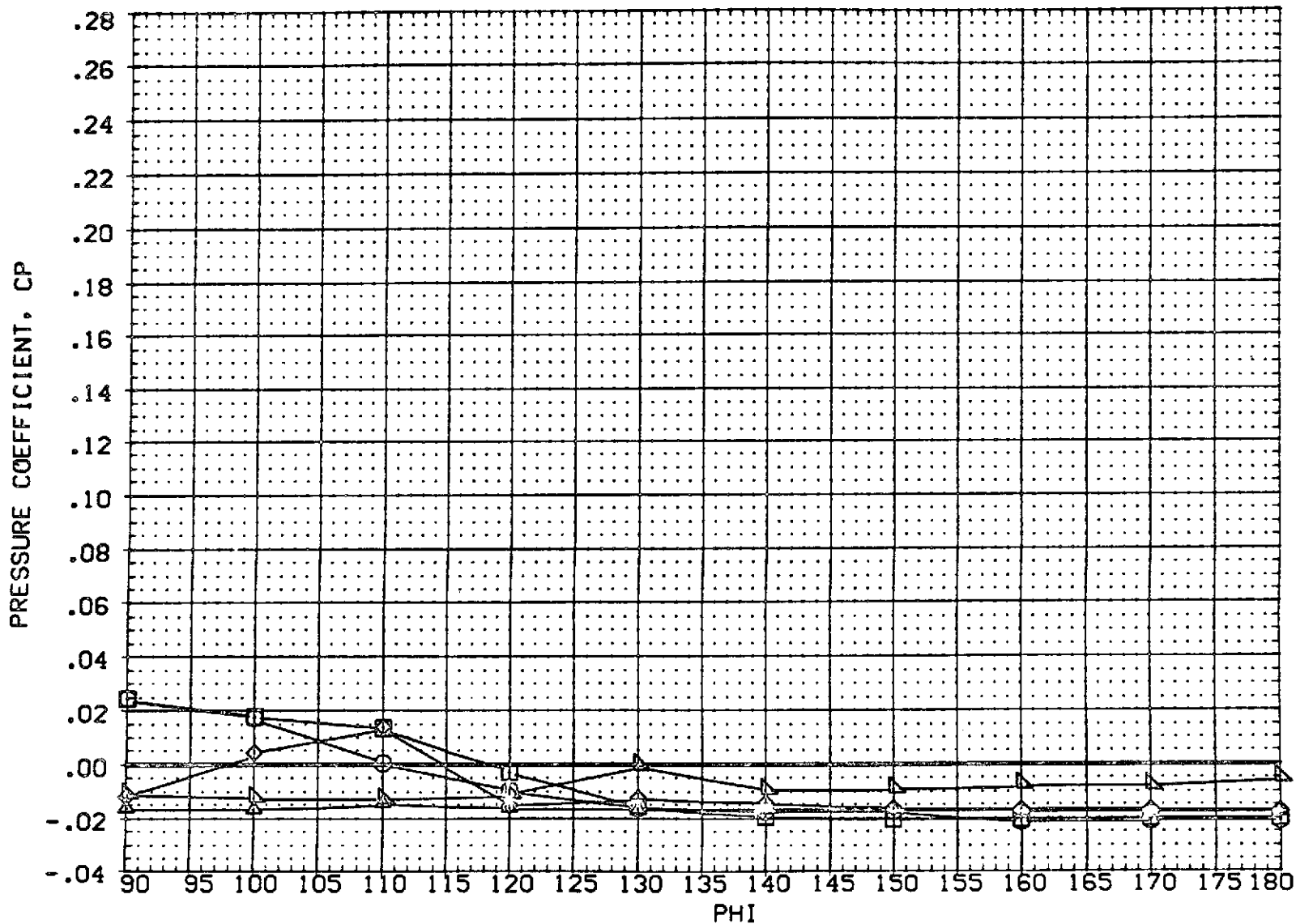
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	26.187	7.330	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

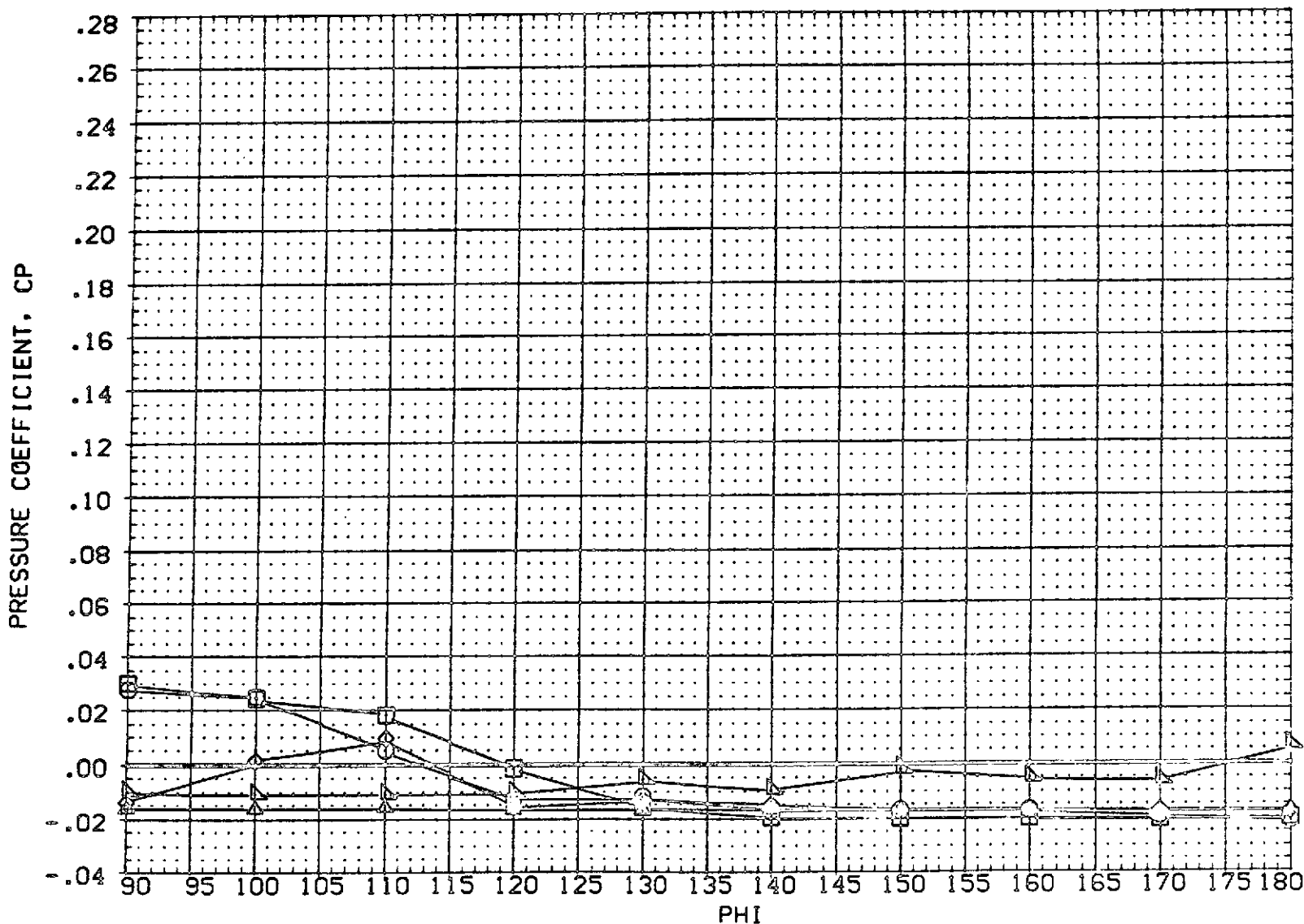
ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM113)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.254	30.244	7.330	.000	.000	.000
□	.405			.000	.000	.000
◇	.546				RUDDER	.000
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

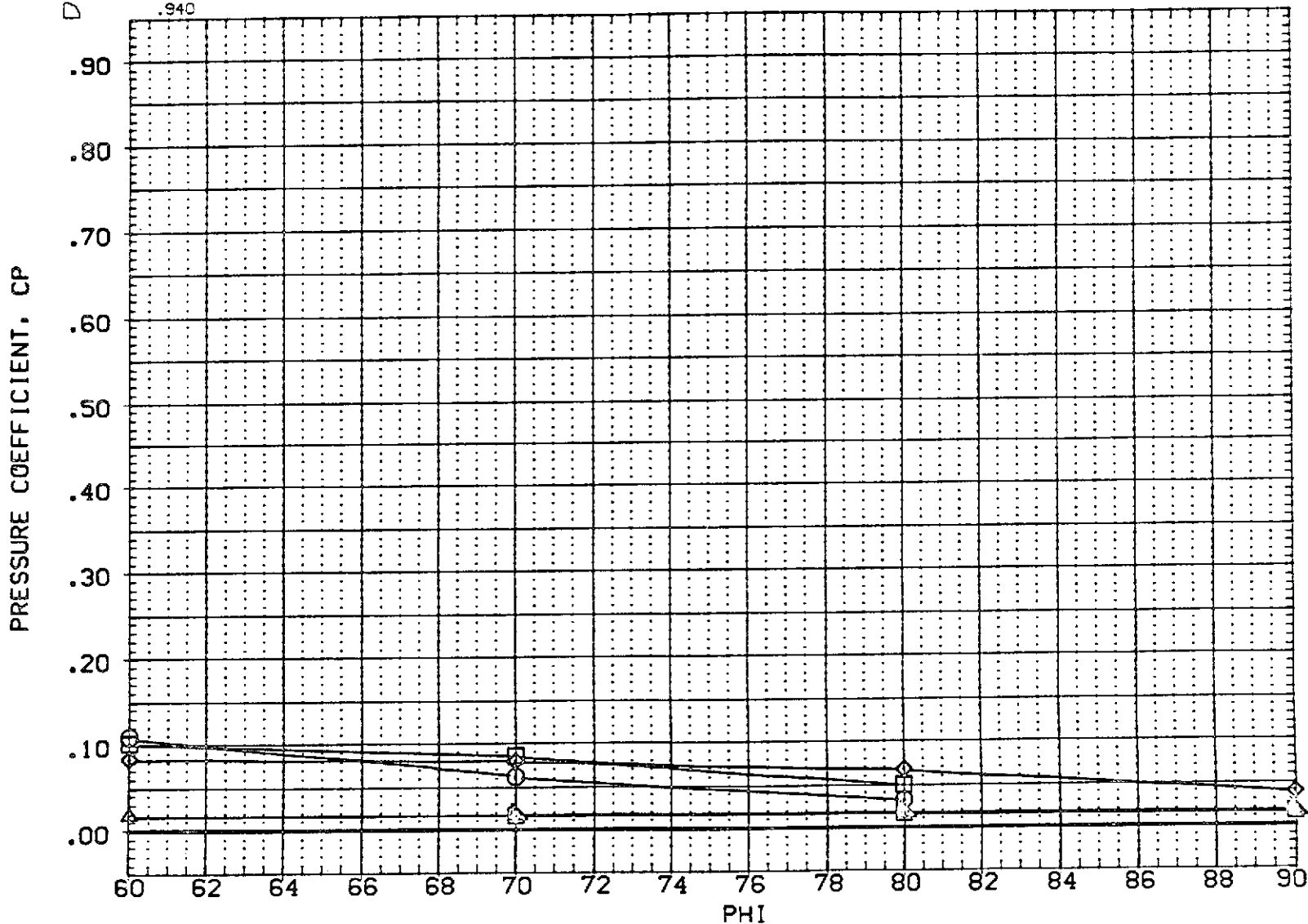
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES			
				BETA	ELEV-L	ELEV-R	RUDDER
○	.264	34.191	7.330	.000	.000	.000	.000
□	.405			.000	.000	.000	.000
◇	.546						
△	.688						
▽	.829						



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

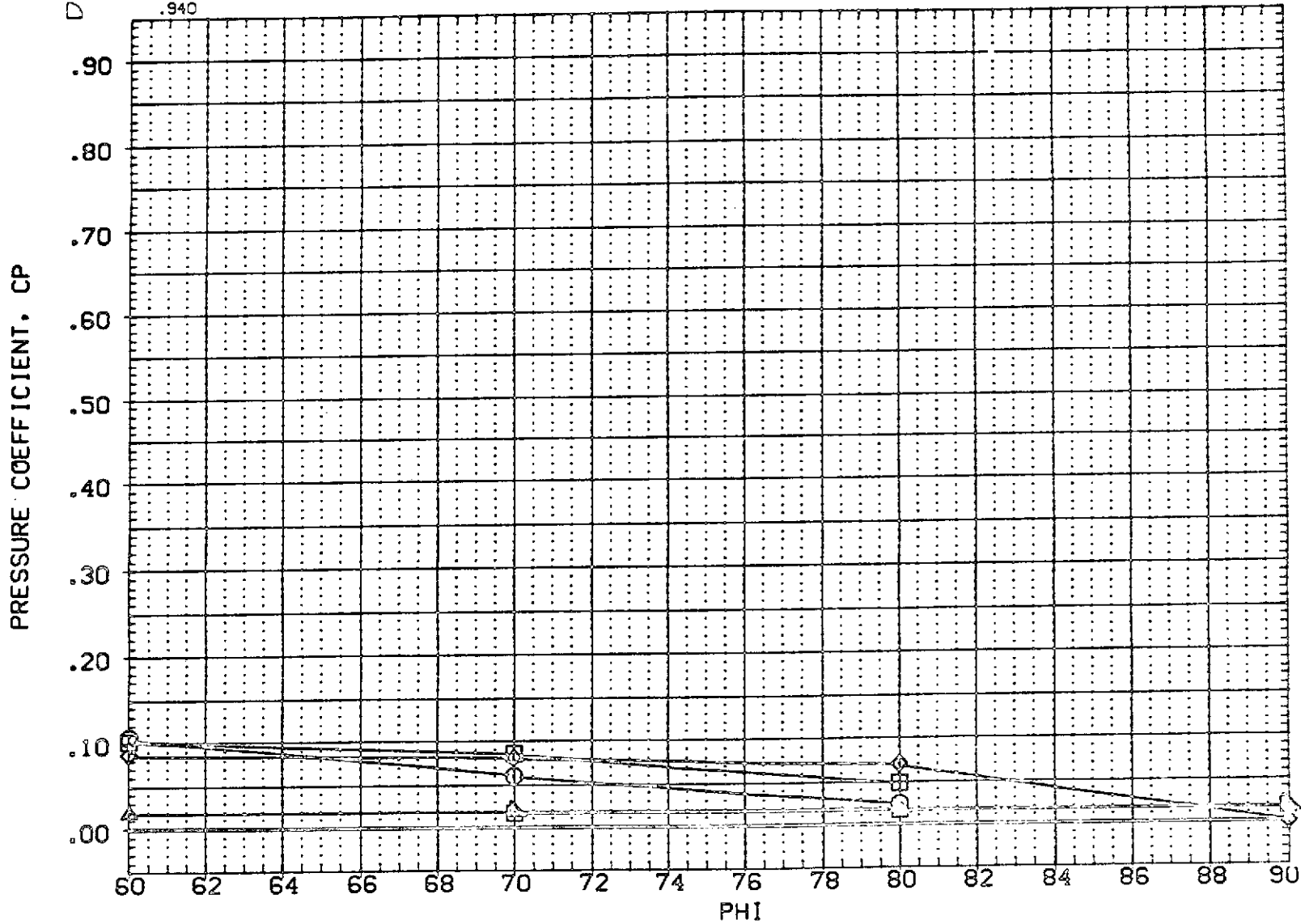
ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	30.319	10.290	.000	.000	.000
□	.126			.000	.000	.000
◇	.164				RUDDER	.000
▽	.862					
△	.900					
◇	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

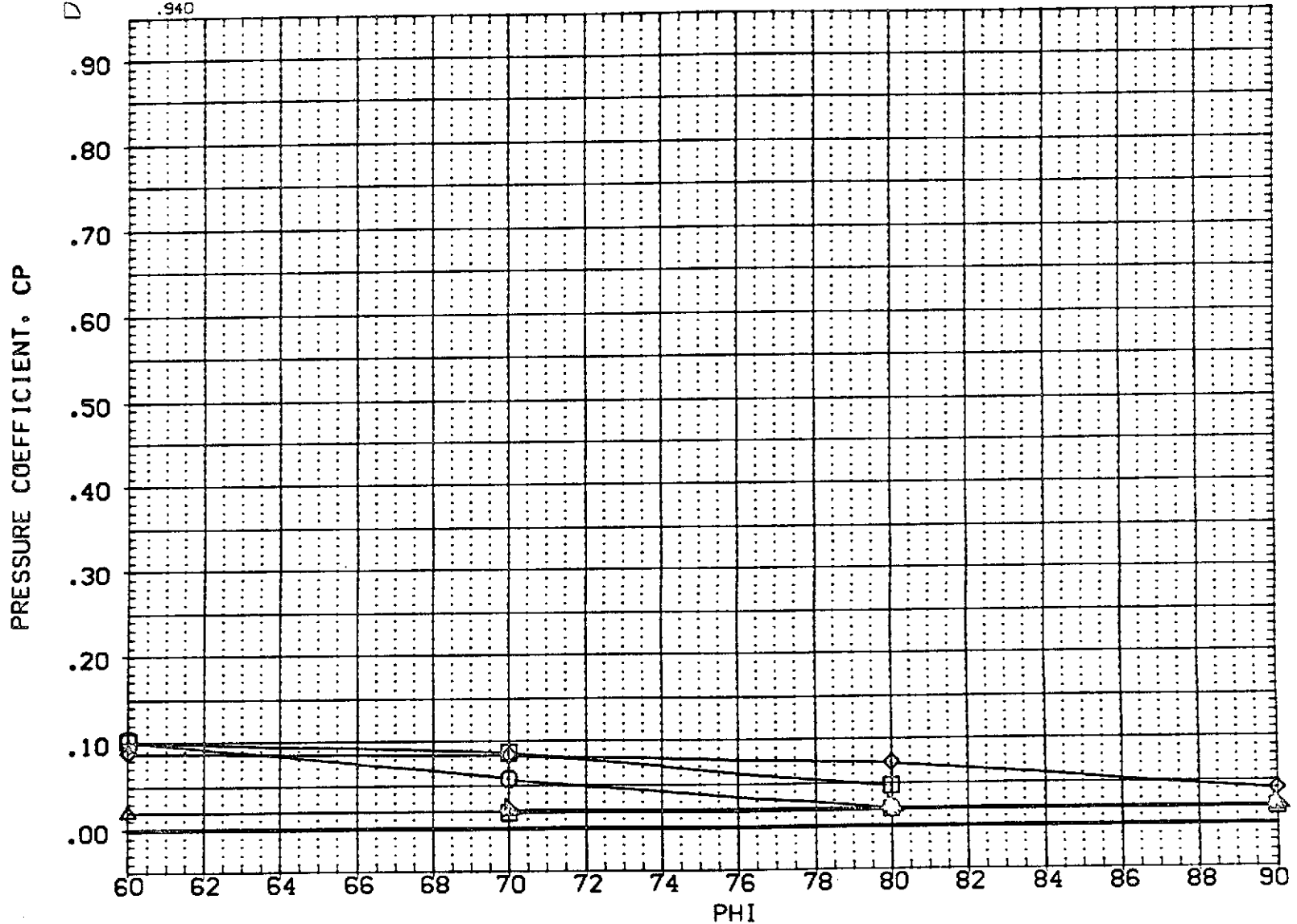
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	32.195	10.290	.000	.000	.000
◇	.126			.000	.000	.000
△	.164					
▽	.862					
□	.900					
◇	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-'30 1A16/0A26 ORBITER (ORB FUSELAGE) (REM110)

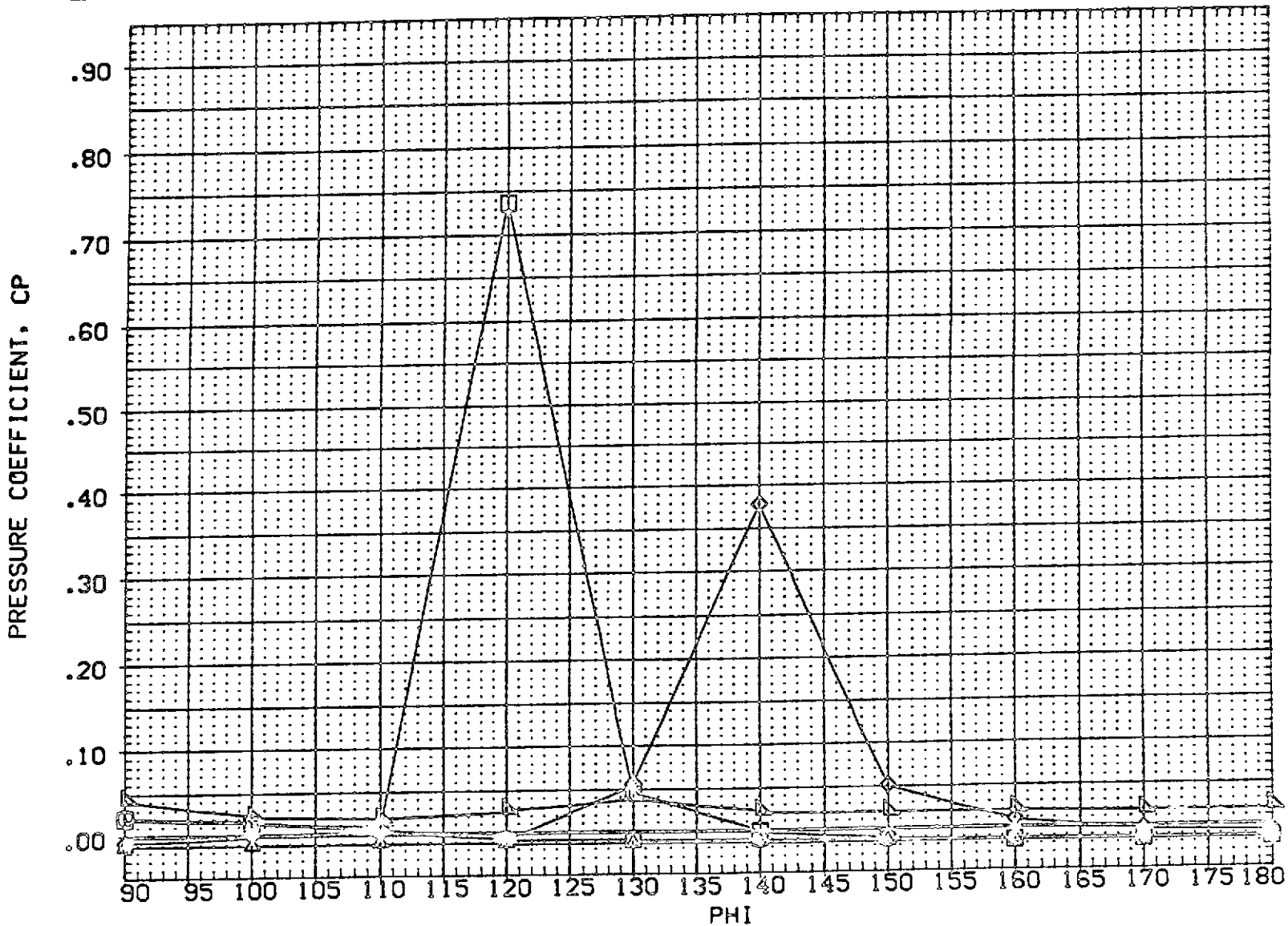
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.087	34.247	10.290	.000	.000	.000
□	.126			.000	.000	.000
◇	.164					
△	.852					
▽	.900					
◇	.940					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE) (REM110)

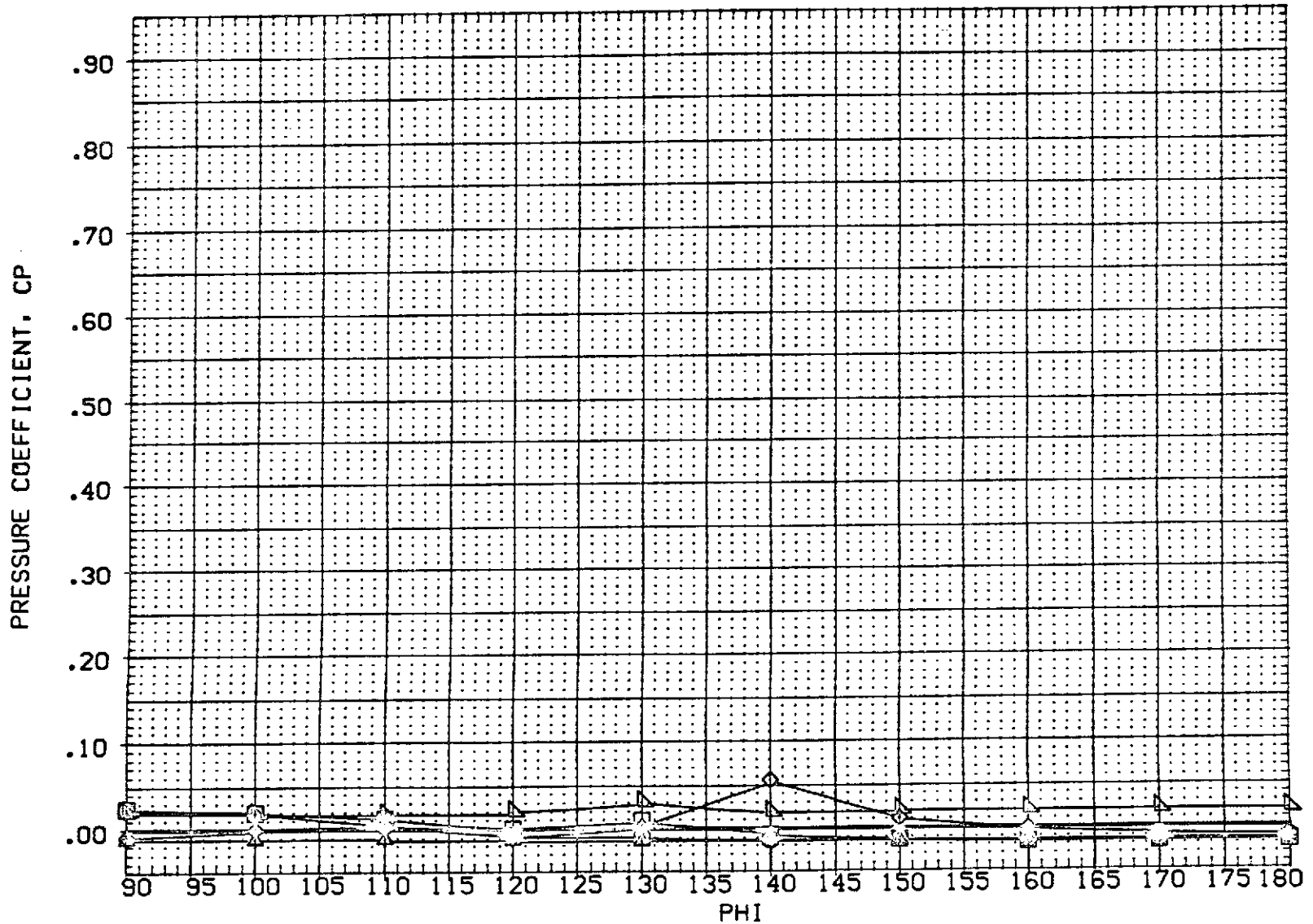
SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	30.319	10.290	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

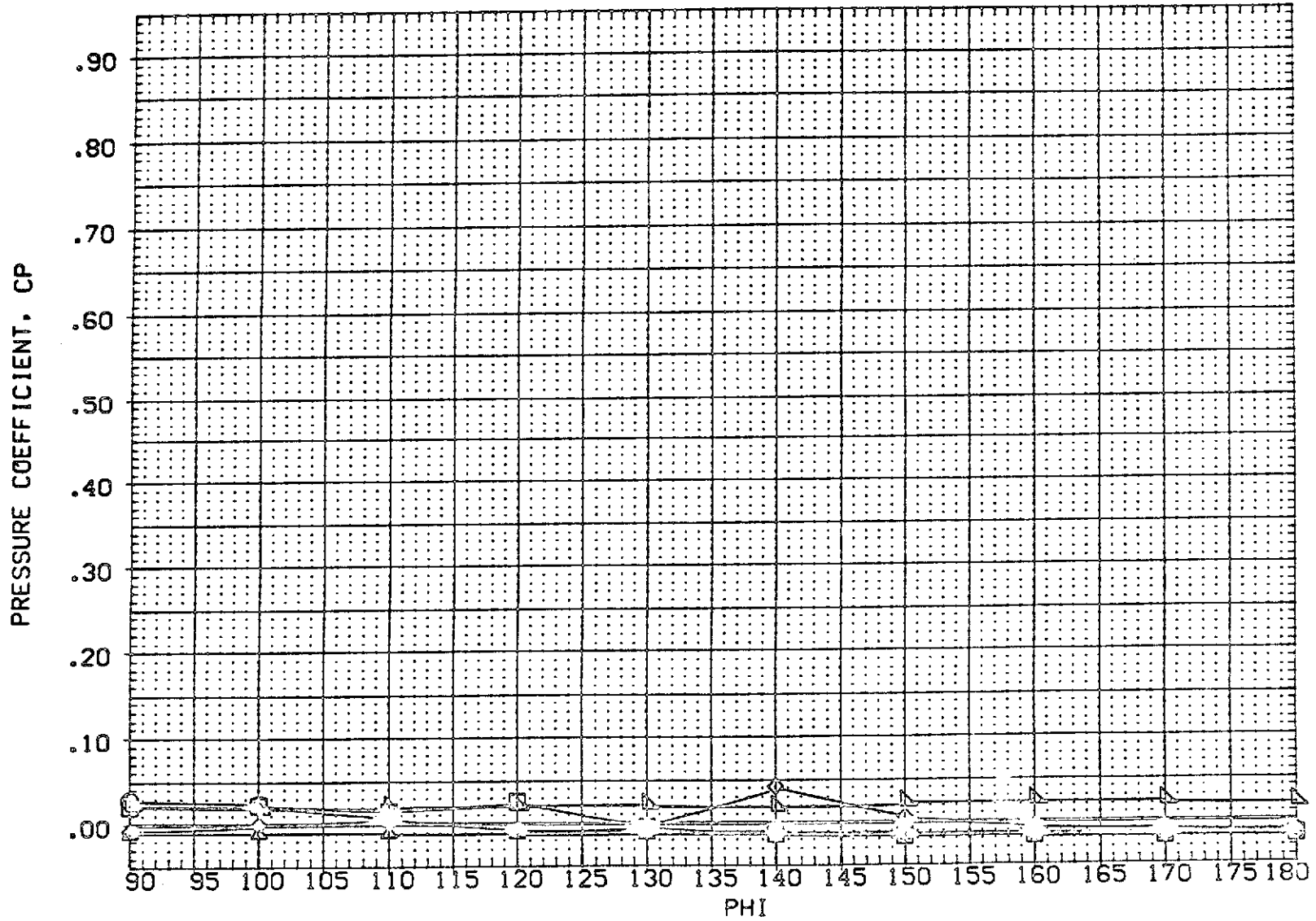
ARC 3.5-100 1A16/0A26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	32.195	10.290	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES		
				BETA	ELEV-L	ELEV-R
○	.264	34.247	10.290	.000	.000	.000
□	.405			.000	.000	.000
◇	.546					
△	.688					
▽	.829					



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

APPENDIX
TABULATED SOURCE DATA

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

ARC 3.5-180 IA16/OA26 ORBITER+ET (CRB FUSELAGE)

(REMI01)

MACH (1) = 10.290 ALPHA (1) = -9.870

SECTION (1) SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
130,000							.2922			
140,000							.2621			
150,000							.2341			
160,000							.1340			
170,000							.1408			
180,000	.0659	.0655	.0626	.0832	.1036		.2217			

MACH (1) = 10.290 ALPHA (2) = -7.814 RN/L = 1.7957 Q = 2.4103 P = .0330 BETA = .0000

SECTION (1) SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3360	.3570	.3750	.3940	.4090	.4310
PHI															
60,000	.3465	.2204	.1433												
70,000	.3444	.2273	.1346												
80,000	.2951	.2342	.1755												
90,000			.2229	.1476	.0739	.0329	.0341	.0420	.0391	.0364	.0357	.0348	.0337	.0339	.0344
100,000						.0628	.0550	.0525	.0484	.0460	.0439	.0415	.0386	.0360	.0345
110,000						.0634	.0576	.0571	.0571	.0566	.0551	.0529	.0503	.0476	.0424
120,000						.1611								.0413	
130,000						.1556								.0310	
140,000						.0666								.0314	
150,000						.0390								.0340	
160,000						.0297								.0509	
170,000						.0293								.0647	
180,000						.0279	.0264	.0261	.0362	.0422	.0489	.0570	.0642	.0687	.0594

X/L	.4500	.4660	.4860	.5030	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0344	.0372	.0392	.0392	.0392	.0400	.0450	.0442	.0427	.0430	.0672	.0482	.0479	.0477	.0470
100,000	.0334	.0340	.0335	.0349	.0356	.0360	.0411	.0405	.0580	.0415	.1111	.0493	.0448	.0446	.0475
110,000	.0428	.0363	.0360	.0339	.0345	.0344	.0380	.0395	.0464	.0421	.0533	.0446	.0440	.0444	.0477
120,000						.0425								.0483	
130,000						.0482								.0529	
140,000						.0936								.0601	
150,000						.0713								.0613	
160,000						.0730								.0608	
170,000						.0751								.0602	
180,000	.0779	.0777	.0783	.0774	.0760	.0753	.0830	.0818	.0624	.0600	.0624	.0579	.0605	.0599	.0599

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM101)

MACH (1) = 10.290 ALPHA (2) = -7.814

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							.0586			
70,000							.0499	.0519	.0501	
80,000							.0499	.0503	.0506	
90,000	.0452	.0434	.0433	.0449	.0462	.0514	.0569	.0591	.0606	
100,000	.0468	.0449	.0466	.0492	.0531	.0612				
110,000	.0477	.0466	.0494	.0561	.0717	.0727				
120,000						.1424				
130,000						.2629				
140,000						.2557				
150,000						.2355				
160,000						.1259				
170,000						.1340				
180,000	.0482	.0587	.0579	.0804	.0987	.2141				

MACH (1) = 10.290 ALPHA (3) = -4.041 RN/L = 1.7957 Q = 2.4183 P = .0330 BETA = .0000

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.2690	.1777	.1167												
70,000	.3668	.2036	.1413												
80,000	.4394	.2848	.1677												
90,000			.2062	.1399	.0695	.0457	.0409	.0326	.0290	.0264	.0254	.0253	.0267	.0262	.0248
100,000						.0459	.0369	.0348	.0306	.0272	.0250	.0232	.0246	.0231	.0225
110,000						.0450	.0398	.0350	.0326	.0293	.0267	.0315	.0241	.0234	.0213
120,000						.0869								.0231	
130,000						.0750								.0205	
140,000						.0503								.0171	
150,000						.0386								.0166	
160,000						.0469								.0175	
170,000						.0477								.0197	
180,000						.0466	.0380	.0310	.0275	.0247	.0232	.0240	.0215	.0213	.1465
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0264	.0239	.0241	.0237	.0233	.0226	.1702	.0472	.0273	.0274	.0469	.0293	.0292	.0304	.0348
100,000	.0232	.0227	.0230	.0226	.0226	.0220	.0826	.0953	.2289	.0253	.0971	.0309	.0269	.0274	.0303
110,000	.0250	.0216	.0216	.0218	.0213	.0212	.0386	.0355	.0710	.0247	.0373	.0270	.0263	.0271	.0302
120,000						.0214								.0273	
130,000						.0719								.0274	
140,000						.1082								.0290	
150,000						.0488								.0342	

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REMI02)

MACH (1) = 10.290 ALPHA (1) = -9.879

SECTION (1)SSV		DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7890	.8030	.8290	.8620	.9000	.9400	
PHI										
130,000						.3432				
140,000						.2862				
150,000						.2364				
160,000						.1479				
170,000						.1583				
180,000	.0834	.0805	.0816	.1062	.1206	.2238				

MACH (1) = 10.290 ALPHA (2) = -7.821 RN/L = 1.7707 @ = 2.0150 P = .0330 BETA = -1.9620

SECTION (1)SSV		DEPENDENT VARIABLE CP													
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.4211	.2706	.1790												
70,000	.3639	.2640	.1877												
80,000	.3011	.2662	.2086												
90,000			.2489	.1764	.0854	.0643	.0976	.0504	.0456	.0432	.0410	.0402	.0378	.0360	.0375
100,000						.0739	.0707	.0612	.0566	.0543	.0521	.0497	.0451	.0433	.0404
110,000						.0784	.0665	.0753	.0732	.0724	.0684	.0639	.0579	.0559	.0476
120,000						.1815								.0879	
130,000						.1701								.0360	
140,000						.0668								.0314	
150,000						.0379								.0331	
160,000						.0277								.0465	
170,000						.0285								.0603	
180,000						.0266	.0251	.0268	.0359	.0414	.0487	.0565	.0624	.0645	.1210

X/L	.4300	.4680	.4880	.5090	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0389	.0390	.0404	.0406	.0429	.0428	.0522	.0548	.0533	.0526	.0645	.0563	.0539	.0540	.0689
100,000	.0403	.0397	.0398	.0402	.0402	.0398	.0500	.0480	.0766	.0507	.1247	.0566	.0518	.0523	.0694
110,000	.0450	.0412	.0393	.0366	.0369	.0353	.0459	.0467	.0556	.0486	.1547	.0509	.0507	.0513	.0693
120,000						.0410								.0569	
130,000						.0539								.0583	
140,000						.1043								.0641	
150,000						.0720								.0672	
160,000						.0762								.0655	
170,000						.0787								.0633	
180,000	.0732	.0734	.0741	.0739	.0724	.0796	.0670	.0693	.0691	.0662	.0834	.0621	.0629	.0615	.0783

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM102)

MACH (1) = 10.290 ALPHA (2) = -7.821

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7830	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							.0696			
70,000							.0741	.0788	.0785	
80,000							.0789	.0783	.0784	
90,000	.0674	.0649	.0645	.0677	.0706	.0699	.0786	.0863	.0845	
100,000	.0694	.0684	.0703	.0738	.0819	.0902				
110,000	.0701	.0702	.0750	.0842	.0992	.1058				
120,000						.2327				
130,000						.3261				
140,000						.2740				
150,000						.2398				
160,000						.1284				
170,000						.1394				
180,000	.0759	.0750	.0917	.1048	.1118	.1829				

MACH (1) = 10.290 ALPHA (3) = -4.080 RN/L = 1.7707 Q = 2.4150 P = .0330 BETA = -1.9820

SECTION (1)SSV	DEPENDENT VARIABLE CP															
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310	
PHI																
60,000	.3381	.2190	.1476													
70,000	.4446	.2632	.1868													
80,000	.5481	.3579	.2160													
90,000			.2430	.1739	.0824	.0560	.0494	.0419	.0378	.0346	.0333	.0331	.0295	.0276	.0000	
100,000						.0571	.0495	.0431	.0383	.0349	.0326	.0305	.0261	.0253	.0254	
110,000						.0583	.0483	.0462	.0427	.0379	.0354	.0335	.0273	.0244	.0231	
120,000						.1004								.4082		
130,000						.0000								.0458		
140,000						.0553								.0172		
150,000						.0512								.0121		
160,000						.0503								.0121		
170,000						.0489								.0141		
180,000						.0466	.0384	.0320	.0277	.0250	.0236	.0198	.0181	.0160	.5220	
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90,000	.0275	.0245	.0244	.0243	.0243	.0246	.1913	.0496	.0323	.0333	.0497	.0410	.0329	.0342	.0530	
100,000	.0254	.0244	.0242	.0246	.0242	.0241	.0794	.0821	.4584	.0320	.3653	.0412	.0319	.0331	.0502	
110,000	.0255	.0228	.0232	.0225	.0241	.0238	.0419	.0382	.0000	.0302	.5117	.0333	.0320	.0343	.0526	
120,000						.0190								.0361		
130,000						.0703								.0370		
140,000						.2283								.0362		
150,000						.0600								.0365		

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM103) (02 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRP = .0000 IN.
 BREF = 936.6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

PARAMETRIC DATA

BETA = 2.000 ELEV-L = .000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 10.290 ALPHA (1) = -9.909 RN/L = 1.8563 Q = 2.4287 P = .0330 BETA = 1.9820

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2810	.3200	.3590	.3980	.4370	.4760	.5150	.5540	.5930	.6320
PHI															
60.000	.2738	.1875	.1326												
70.000	.2818	.2095	.1546												
80.000	.3222	.2458	.1763												
90.000			.2034	.1491	.0789	.0645	.0625	.0588	.0558	.0545	.0507	.0482	.0454	.0446	.0422
100.000						.0860	.0520	.0810	.0752	.0694	.0637	.0568	.0526	.0487	.0441
110.000						.0687	.0825	.0478	.0395	.0332	.0309	.0317	.0364	.0383	.0414
120.000						.1682								.0464	
130.000						.1004								.0390	
140.000						.0476								.0419	
150.000						.0342								.0741	
160.000						.0291								.0955	
170.000						.0315								.1078	
180.000						.0332	.0428	.0518	.0621	.0756	.0894	.1014	.1088	.1119	.0611
X/L	.4500	.4680	.4860	.5030	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90.000	.0415	.0436	.0460	.0461	.0473	.0491	.0481	.0533	.0518	.0521	.0648	.0576	.0558	.0565	.0611
100.000	.0429	.0428	.0437	.0446	.0465	.0477	.0476	.0476	.0558	.0518	.1114	.0591	.0553	.0559	.0623
110.000	.0448	.0441	.0449	.0451	.0461	.0461	.0462	.0475	.0503	.0500	.1304	.0530	.0531	.0536	.0596
120.000						.0521								.0545	
130.000						.0653								.0570	
140.000						.1069								.0614	
150.000						.0865								.0641	
160.000						.0899								.0657	
170.000						.0935								.0675	
180.000	.1139	.1123	.1092	.1064	.1020	.0953	.0785	.0795	.0775	.0742	.0873	.0685	.0703	.0683	.0717
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400						
PHI															
60.000							.0625								
70.000							.0614	.0700	.0709						
80.000							.0774	.0862	.0806						
90.000	.0824	.0822	.0835	.0865	.0703	.0719	.0925	.0857	.0762						
100.000	.0819	.0820	.0834	.0883	.0744	.0856									
110.000	.0590	.0591	.0636	.0716	.0827	.0805									
120.000						.1266									

ARC 3.5-160 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM103)

MACH (1) = 10.290 ALPHA (1) = -9.909

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

130,000									.2505
140,000									.2710
150,000									.2483
160,000									.1413
170,000									.1426
180,000	.0719	.0701	.0727	.0965	.1113				.2213

MACH (1) = 10.290 ALPHA (2) = -7.809 RN/L = 1.6363 Q = 2.4287 P = .0330 BETA = 1.9820

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2840 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4090 .4310

PHI

60,000	.3123	.1896	.1228												
70,000	.3119	.1980	.1373												
80,000	.2596	.2152	.1635												
90,000			.2040	.1301	.0634	.0467	.0451	.0364	.0340	.0326	.0306	.0297	.0319	.0331	.0332
100,000						.0573	.0422	.0478	.0442	.0415	.0398	.0370	.0381	.0381	.0343
110,000						.0545	.0515	.0443	.0442	.0421	.0417	.0438	.0431	.0416	.0388
120,000						.1488								.0931	
130,000						.1455								.0420	
140,000						.0665								.0353	
150,000						.0403								.0419	
160,000						.0313								.0606	
170,000						.0309								.0711	
180,000						.0308	.0295	.0324	.0387	.0457	.0536	.0645	.0734	.0764	.1418

X/L .4300 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

90,000	.0348	.0390	.0368	.0382	.0362	.0370	.0413	.0432	.0414	.0416	.0566	.0482	.0482	.0463	.0464
100,000	.0332	.0319	.0321	.0332	.0340	.0348	.0375	.0389	.0688	.0418	.1207	.0481	.0427	.0426	.0469
110,000	.0411	.0371	.0369	.0364	.0351	.0360	.0377	.0387	.0481	.0399	.1536	.0424	.0415	.0415	.0461
120,000						.0386								.0464	
130,000						.0428								.0522	
140,000						.0931								.0572	
150,000						.0730								.0592	
160,000						.0746								.0610	
170,000						.0775								.0630	
180,000	.0842	.0848	.0862	.0849	.0833	.0807	.0691	.0689	.0693	.0661	.0849	.0817	.0649	.0641	.0699

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REN104)

MACH (1) = 7.330 ALPHA (1) = -9.639

SECTION (1)SSV		DEPENDENT VARIABLE CP													
X/L		.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400					
PHI															
130,000											.3083				
140,000											.2812				
150,000											.2300				
160,000											.1574				
170,000											.1793				
180,000		.0651	.0613	.0576	.0559	.0652	.2759								

MACH (1) = 7.330 ALPHA (2) = -7.594 RN/L = 3.7740 Q = 4.6833 P = .1240 BETA = .0000

SECTION (1)SSV		DEPENDENT VARIABLE CP															
X/L		.0870	.1280	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310	
PHI																	
60,000		.3473	.2182	.1426													
70,000		.4596	.2492	.1624													
80,000		.3905	.2756	.1730													
90,000				.2149	.1295	.0551	.0339	.0311	.0297	.0288	.0280	.0269	.0257	.0250	.0238	.0213	
100,000							.0536	.0440	.0478	.0437	.0394	.0353	.0313	.0277	.0255	.0207	
110,000							.0487	.0510	.0409	.0382	.0356	.0346	.0323	.0293	.0275	.0228	
120,000							.1429									.0199	
130,000							.1405									.0118	
140,000							.0688									.0124	
150,000							.0362									.0226	
160,000							.0260									.0480	
170,000							.0242									.0583	
180,000							.0203	.0190	.0149	.0213	.0280	.0358	.0468	.0561	.0607	.0360	
X/L		.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																	
90,000		.0201	.0194	.0194	.0193	.0200	.0215	.0294	.0319	.0314	.0319	.0341	.0347	.0372	.0389	.0470	
100,000		.0179	.0164	.0153	.0152	.0154	.0158	.0246	.0252	.0420	.0451	.0607	.0345	.0353	.0376	.0478	
110,000		.0206	.0183	.0175	.0157	.0347	.0154	.0235	.0251	.0300	.0286	.0561	.0334	.0353	.0373	.0453	
120,000							.0295									.0428	
130,000							.0375									.0519	
140,000							.0532									.0550	
150,000							.0622									.0549	
160,000							.0668									.0535	
170,000							.0683									.0526	
180,000		.0693	.0694	.0698	.0687	.0656	.0690	.0609	.0619	.0599	.0581	.0578	.0547	.0544	.0520	.0516	

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM104)

MACH (1) = 7.330 ALPHA (2) = -7.594

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60.000							.0419			
70.000							.0480	.0570	.0550	
80.000							.0632	.0684	.0606	
90.000	.0501	.0487	.0489	.0490	.0486	.0563	.0758	.0749	.0689	
100.000	.0482	.0504	.0528	.0537	.0562	.0766				
110.000	.0475	.0479	.0496	.0583	.0822	.0889				
120.000						.1742				
130.000						.2895				
140.000						.2503				
150.000						.2282				
160.000						.1323				
170.000						.1732				
180.000	.0593	.0581	.0530	.0520	.0796	.2635				

MACH (1) = 7.330 ALPHA (3) = -3.651 RN/L = 3.7740 Q = 4.6833 P = .1240 BETA = .0000

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60.000	.2540	.1561	.1054												
70.000	.3378	.1921	.1306												
80.000	.3932	.2534	.1547												
90.000			.1964	.1155	.0508	.0290	.0242	.0200	.0167	.0135	.0116	.0107	.0112	.0109	.0098
100.000						.0350	.0201	.0268	.0220	.0178	.0142	.0111	.0093	.0077	.0052
110.000						.0340	.0311	.0184	.0150	.0115	.0101	.0092	.0091	.0084	.0060
120.000						.0952								.0061	
130.000						.0607								.0002	
140.000						.0249								-.0048	
150.000						.0222								-.0067	
160.000						.0284								-.0060	
170.000						.0316								-.0039	
180.000						.0305	.0170	.0097	.0052	.0021	-.0004	-.0010	-.0022	-.0021	.1389
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90.000	.0100	.0091	.0086	.0080	.0075	.0072	.0298	.0199	.0178	.0175	.0201	.0184	.0181	.0183	.0251
100.000	.0049	.0046	.0046	.0047	.0049	.0047	.0160	.0183	.2954	.2422	.1585	.0180	.0145	.0151	.0234
110.000	.0045	.0034	.0031	.0031	.1422	.0036	.0137	.0136	.0673	.0178	.1361	.0131	.0132	.0134	.0222
120.000						-.0030								.0140	
130.000						.0189								.0153	
140.000						.0116								.0208	
150.000						.0115								.0252	

ARC 3.5-180 IA16/OA26 ORBITER+EY (ORB FUSELAGE)

(REH105)

MACH (1) = 7.330 ALPHA (1) = -9.682

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

130.000						.3624									
140.000						.2985									
150.000						.2274									
160.000						.1475									
170.000						.1950									
180.000	.0684	.0647	.0606	.0590	.0899	.2916									

MACH (1) = 7.330 ALPHA (2) = -7.630 RN/L = 3.6960 Q = 4.6590 P = .1240 BETA = -1.9833

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI

60.000	.4107	.2668	.1781												
70.000	.5217	.2974	.1983												
80.000	.4145	.3125	.2086												
90.000			.2514	.1593	.0742	.0470	.0424	.0423	.0427	.0422	.0404	.0402	.0518	.0510	.0483
100.000						.0693	.0637	.0617	.0589	.0540	.0501	.0453	.0554	.0526	.0472
110.000						.0711	.0668	.0621	.0630	.0595	.0558	.0632	.0575	.0554	.0487
120.000						.1671								.0417	
130.000						.1620								.0323	
140.000						.0726								.0341	
150.000						.0417								.0384	
160.000						.0304								.0618	
170.000						.0277								.0693	
180.000						.0238	.0176	.0183	.0235	.0318	.0384	.0601	.0701	.0753	.0457

X/L .4500 .4680 .4860 .5030 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

90.000	.0471	.0462	.0465	.0470	.0488	.0510	.0504	.0549	.0532	.0530	.0529	.0531	.0539	.0546	.0549
100.000	.0447	.0428	.0421	.0419	.0417	.0417	.0437	.0432	.0507	.0509	.0524	.0526	.0513	.0529	.0554
110.000	.0456	.0431	.0417	.0397	.0426	.0389	.0392	.0400	.0443	.0439	.0514	.0483	.0508	.0528	.0558
120.000						.0483								.0646	
130.000						.0555								.0648	
140.000						.0640								.0703	
150.000						.0705								.0711	
160.000						.0752								.0682	
170.000						.0786								.0650	
180.000	.0845	.0844	.0844	.0838	.0808	.0788	.0709	.0724	.0704	.0686	.0659	.0640	.0639	.0620	.0581

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

ARC 3,5-100 IA16/OA20 ORBITER+ET (ORB FUSELAGE)

(REMI00)

MACH (1) = 7.330 ALPHA (1) = -9.622

SECTION (1)SSV		DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7890	.8030	.8290	.8620	.8900	.9400	
PHI										
130,000						.2359				
140,000						.2819				
150,000						.2414				
160,000						.1800				
170,000						.1694				
180,000	.0592	.0551	.0508	.0490	.0821	.2931				

MACH (1) = 7.330 ALPHA (2) = -7.618 RN/L = 4.0637 Q = 4.6800 P = .1243 BETA = 1.9633

SECTION (1)SSV		DEPENDENT VARIABLE CP													
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4090	.4310
PHI															
60,000	.2901	.1781	.1132												
70,000	.3923	.2042	.1294												
80,000	.3570	.2371	.1424												
90,000			.1804	.1056	.0435	.0260	.0229	.0220	.0224	.0214	.0201	.0178	.0159	.0146	.0125
100,000						.0407	.0272	.0343	.0302	.0265	.0233	.0204	.0180	.0167	.0117
110,000						.0356	.0371	.0236	.0221	.0184	.0161	.0138	.0120	.0111	.0102
120,000						.1225									.0365
130,000						.1304									.0000
140,000						.0308									.0080
150,000						.0339									.0232
160,000						.0239									.0491
170,000						.0201									.0610
180,000						.0201	.0000	.0143	.0196	.0274	.0366	.0505	.0613	.0697	.0297
X/L	.4500	.4660	.4860	.5090	.5240	.5460	.5610	.5800	.5960	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0109	.0099	.0100	.0099	.0109	.0121	.0165	.0182	.0179	.0186	.0244	.0243	.0265	.0280	.0348
100,000	.0080	.0000	.0069	.0073	.0085	.0099	.0101	.0193	.0300	.0325	.0338	.0233	.0243	.0257	.0333
110,000	.0112	.0109	.0112	.0110	.0306	.0101	.0101	.0155	.0199	.0183	.0487	.0206	.0202	.0197	.0247
120,000						.0160									.0332
130,000						.0379									.0364
140,000						.0480									.0402
150,000						.0562									.0427
160,000						.0604									.0436
170,000						.0638									.0453
180,000	.0749	.0747	.0746	.0727	.0682	.0659	.0575	.0565	.0548	.0523	.0000	.0497	.0494	.0471	.0394
X/L	.7290	.7470	.7670	.7890	.8030	.8290	.8620	.8900	.9400						

ARC 3.5-100 IA16/OA20 ORBITER+EY (ORB FUSELAGE)

(REM107)

MACH (1) = 5.300 ALPHA (1) = -7.582

SECTION (1)SSV		DEPENDENT VARIABLE CP									
X/L	.7250	.7470	.7670	.7850	.8030	.8250	.8620	.9000	.9400		
PHI											
130,000											.4280
140,000											.3507
150,000											.3114
160,000											.2056
170,000											.2247
180,000	.0980	.0979	.0940	.0909	.0796	.3786					

MACH (1) = 5.300 ALPHA (2) = -9.859 RN/L = 3.4637 Q = 7.0083 P = .5969 BETA = 1.9930

SECTION (1)SSV		DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3360	.3570	.3790	.3940	.4090	.4310	
PHI																
60,000	.2111	.1404	.1034													
70,000	.2724	.1642	.1155													
80,000	.3434	.2141	.1347													
90,000			.1600	.1042	.0492	.0293	.0238	.0217	.0185	.0154	.0118	.0093	.0142	.0139	.0120	
100,000						.0362	.0045	.0266	.0291	.0189	.0150	.0111	.0174	.0195	.0127	
110,000						.0191	.0316	.0091	.0031	-.00017	-.0049	.0035	.0037	.0039	.0067	
120,000						.1090									.0051	
130,000						.0841									.0040	
140,000						.0337									.0001	
150,000						.0127									-.0030	
160,000						.0123									-.0043	
170,000						.0144									-.0028	
180,000						.0112	.0199	.0127	.0095	-.0019	-.0057	-.0005	-.0015	-.0016	.0266	

X/L	.4500	.4660	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90,000	.0123	.0133	.0154	.0176	.0205	.0244	.0251	.0264	.0278	.0270	.0262	.0251	.0249	.0241	.0228	
100,000	.0117	.0110	.0110	.0129	.0147	.0166	.0197	.0202	.0284	.0295	.0403	.0246	.0205	.0199	.0189	
110,000	.0095	.0115	.0136	.0128	.0390	.0125	.0095	.0089	.0114	.0091	.0312	.0120	.0140	.0154	.0177	
120,000						-.0038									.0258	
130,000						.0001									.0199	
140,000						.0038									.0257	
150,000						.0154									.0298	
160,000						.0249									.0320	
170,000						.0318									.0331	
180,000	.0084	.0147	.0215	.0261	.0295	.0324	.0308	.0335	.0339	.0339	.0347	.0334	.0343	.0331	.0299	

X/L .7250 .7470 .7670 .7850 .8030 .8250 .8620 .9000 .9400

PHI

ARC 3.3-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM107)

MACH (1) = 5.300 ALPHA (2) = -3.889

SECTION (1) SSV	DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
60,000							.0133		
70,000							.0194	.0298	.0251
80,000							.0382	.0370	.0316
90,000	.0247	.0222	.0200	.0187	.0178	.0307	.0526	.0478	.0424
100,000	.0184	.0198	.0219	.0243	.0317	.0723			
110,000	.0193	.0209	.0244	.0354	.0860	.0990			
120,000						.1778			
130,000						.3670			
140,000						.3205			
150,000						.2594			
160,000						.1859			
170,000						.1856			
180,000	.0333	.0353	.0338	.0325	.0573	.3256			

MACH (1) = 5.300 ALPHA (3) = .136 RN/L = 3.4637 Q = 7.0083 P = .3583 BETA = 1.9930

SECTION (1) SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1842	.1067	.0792												
70,000	.2083	.1253	.0855												
80,000	.2555	.1611	.1016												
90,000			.1284	.0762	.0253	.0110	.0105	.0081	.0071	.0050	.0031	.0018	.0084	.0075	.0071
100,000						.0206	-.0011	.0127	.0091	.0060	.0036	.0002	.0065	.0050	.0034
110,000						.0049	.0176	-.0018	-.0040	-.0071	-.0078	.0024	.0050	.0053	.0052
120,000						.0737								-.0002	
130,000						.0569								-.0028	
140,000						.0179								.0014	
150,000						.0190								.0075	
160,000						.0091								.0107	
170,000						.0089								.0103	
180,000						.0059	.0073	.0076	.0088	.0101	.0110	.0165	.0121	.0107	.1506
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0071	.0075	.0087	.0094	.0115	.0130	.0140	.0155	.0149	.0147	.0148	.0144	.0147	.0151	.0155
100,000	.0039	.0038	.0046	.0060	.0073	.0080	.0107	.0115	.0068	.0000	.0243	.0143	.0135	.0137	.0133
110,000	.0060	.0052	.0056	.0050	.0580	.0065	.0072	.0083	.0180	.0100	.0858	.0118	.0121	.0121	.0114
120,000						.0019								.0017	
130,000						.0034								.0008	
140,000						.0006								.0030	
150,000						-.0033								.0039	

ARC 3.5-180 IA16/OA26 CRBITER+ET (ORB FUSELAGE)

(REM108)

MACH (1) = 5.300 ALPHA (2) = -3.624

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							.0224			
70,000							.0272	.0393	.0377	
80,000							.0460	.0500	.0436	
90,000	.0370	.0328	.0285	.0270	.0241	.0340	.0587	.0539	.0497	
100,000	.0288	.0288	.0288	.0280	.0305	.0682				
110,000	.0224	.0197	.0213	.0317	.0867	.1012				
120,000						.2790				
130,000						.4388				
140,000						.3082				
150,000						.1923				
160,000						.1791				
170,000						.1954				
180,000	.0352	.0349	.0325	.0312	.0570	.3365				

MACH (1) = 5.300 ALPHA (3) = .174 RN/L = 3.6237 Q = 7.0197 P = .3570 BETA = -1.9927

SECTION (1)SSV	DEPENDENT VARIABLE CP															
X/L	.0870	.1280	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310	
PHI																
60,000	.1988	.1380	.1015													
70,000	.2531	.1808	.1133													
80,000	.2909	.2003	.1294													
90,000			.1586	.1015	.0344	.0205	.0163	.0130	.0121	.0123	.0124	.0119	.0203	.0198	.0198	
100,000						.0282	.0136	.0235	.0199	.0164	.0133	.0098	.0173	.0161	.0147	
110,000						.0169	.0269	.0113	.0106	.0095	.0110	.0192	.0175	.0168	.0143	
120,000						.0852									.0118	
130,000						.0652									.0010	
140,000						.0198									.0024	
150,000						.0093									.0059	
160,000						.0077									.0084	
170,000						.0105									.0086	
180,000						.0066	.0057	.0059	.0070	.0079	.0083	.0158	.0117	.0099	.3282	
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90,000	.0204	.0209	.0228	.0237	.0247	.0254	.0244	.0270	.0256	.0246	.0236	.0232	.0236	.0237	.0238	
100,000	.0149	.0153	.0162	.0179	.0192	.0203	.0231	.0225	.2139	.2206	.2043	.0228	.0209	.0208	.0204	
110,000	.0136	.0134	.0136	.0134	.3329	.0168	.0169	.0180	.0313	.0193	.1771	.0193	.0188	.0181	.0167	
120,000						.0076									.0077	
130,000						.0066									.0003	
140,000						.0058									.0008	
150,000						.0013									.0032	

ARC 3.5-100 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM109)

MACH (1) = 3.300 ALPHA (1) = -7.983

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
130,000						.3574			
140,000						.3483			
150,000						.3255			
160,000						.2407			
170,000						.2243			
180,000	.0589	.0579	.0540	.0506	.0821	.3973			

MACH (1) = 5.300 ALPHA (2) = -3.648 RN/L = 3.2400 e = 6.9973 F = .3957 BETA = 1.9930

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4090	.4310
PHI															
60,000	.1779	.1148	.0881												
70,000	.2397	.1337	.0932												
80,000	.2966	.1832	.1109												
90,000			.1527	.0737	.0334	.0187	.0140	.0102	.0078	.0048	.0011	-.0021	.0053	.0041	.0031
100,000						.0181	-.0106	.0102	.0076	.0047	.0052	.0022	.0105	.0090	.0070
110,000						.0035	.0122	-.0096	-.0124	-.0145	-.0155	-.0060	-.0057	-.0048	-.0027
120,000						.0680								-.0043	
130,000						.0691								-.0010	
140,000						.0280								-.0000	
150,000						.0129								-.0015	
160,000						.0123								-.0011	
170,000						.0118								.0007	
180,000						.0113	.0219	.0181	.0091	.0020	-.0018	.0020	.0007	.0010	.0652
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6380	.6540	.6730	.6880	.7100
PHI															
90,000	.0034	.0041	.0057	.0069	.0083	.0097	.0117	.0139	.0140	.0145	.0141	.0138	.0134	.0133	.0119
100,000	.0062	.0051	.0046	.0048	.0051	.0050	.0081	.0085	.0248	.0287	.0386	.0133	.0114	.0128	.0129
110,000	-.0012	-.0006	.0001	-.0003	.0766	.0310	.0007	.0003	.0044	.0017	.0321	.0080	.0112	.0132	.0146
120,000						-.0048								.0117	
130,000						.0007								.0163	
140,000						.0040								.0224	
150,000						.0194								.0260	
160,000						.0266								.0291	
170,000						.0323								.0314	
180,000	.0151	.0208	.0254	.0289	.0313	.0334	.0308	.0339	.0339	.0340	.0347	.0337	.0340	.0324	.0266
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400						

ARC 3.5-180 IA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM109)

MACH (1) = 5.300 ALPHA (2) = -3.648

SECTION (1)SSV		DEPENDENT VARIABLE CP												
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400					
PHI														
60.000							.0070							
70.000							.0102	.0193	.0161					
80.000							.0246	.0290	.0270					
90.000	.0144	.0146	.0151	.0164	.0152	.0203	.0493	.0497	.0392					
100.000	.0144	.0154	.0186	.0217	.0282	.0556								
110.000	.0155	.0172	.0189	.0265	.0471	.0525								
120.000						.0886								
130.000						.3062								
140.000						.3150								
150.000						.2880								
160.000						.1793								
170.000						.1864								
180.000	.0364	.0358	.0340	.0322	.0564	.3430								

MACH (1) = 5.300 ALPHA (3) = .170 RN/L = 3.2400 Q = 6.9973 P = .3557 BETA = 1.9950

SECTION (1)SSV		DEPENDENT VARIABLE CP													
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60.000	.1309	.0829	.0623												
70.000	.1771	.0988	.0658												
80.000	.2092	.1296	.0831												
90.000			.1133	.0539	.0118	-.0037	-.0023	-.0009	-.0035	-.0050	-.0069	-.0076	-.0007	-.0014	-.0014
100.000						.0071	-.0146	.0016	-.0011	-.0041	-.0062	-.0076	-.0011	-.0024	-.0036
110.000						-.0041	.0044	-.0148	-.0188	-.0200	-.0215	-.0120	-.0111	-.0100	-.0075
120.000						.0576								-.0092	
130.000						.0414								-.0067	
140.000						.0094								-.0004	
150.000						.0020								.0072	
160.000						.0070								.0104	
170.000						.0058								.0111	
180.000						.0062	.0066	.0075	.0091	.0079	.0091	.0154	.0117	.0113	.4473
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90.000	-.0012	-.0005	.0000	.0007	.0014	.0025	.0037	.0047	.0050	.0048	.0052	.0046	.0047	.0051	.0032
100.000	-.0030	-.0025	-.0016	-.0006	.0004	.0009	.0029	.0033	.2805	.2679	.2418	.0045	.0046	.0048	.0020
110.000	-.0057	-.0051	-.0042	-.0039	.4560	-.0014	-.0009	-.0002	.0341	.0017	.1847	.0018	.0020	.0019	-.0001
120.000						-.0040								-.0001	
130.000						-.0025								-.0008	
140.000						-.0048								.0002	
150.000						-.0052								.0022	

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM110)

MACH (1) = 10.290 ALPHA (2) = 32.195

SECTION (1)SSV	DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
60,000							.0179		
70,000							.0175	.0173	.0169
80,000							.0168	.0184	.0164
90,000	.0181	.0182	.0163	.0151	.0182	.0216	.0175	.0165	.0181
100,000	.0181	.0000	.0171	.0163	.0172	.0180			
110,000	.0171	.0159	.0179	.0167	.0445	.0162			
120,000						.0189			
130,000						.0293			
140,000						.0178			
150,000						.0199			
160,000						.0201			
170,000						.0201			
180,000	.0167	.0141	.0165	.0181	.0224	.0201			

MACH (1) = 10.290 ALPHA (3) = 34.247 RN/L = 1.8450 Q = 2.4267 P = .0330 BETA = .0000

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1034	.1011	.0878												
70,000	.0565	.0866	.0843												
80,000	.0217	.0465	.0727												
90,000			.0402	.0521	.0362	.0282	.0315	.0239	.0232	.0239	.0256	.0286	.0249	.0206	.0111
100,000						.0233	.0149	.0233	.0221	.0209	.0209	.0220	.0220	.0232	.0234
110,000						.0067	.0229	.0172	.0180	.0167	.0153	.0136	.0147	.0150	.0174
120,000						-.0077								.0249	
130,000						-.0096								-.0039	
140,000						-.0111								-.0127	
150,000						-.0124								-.0159	
160,000						-.0133								-.0167	
170,000						-.0142								-.0172	
180,000						-.0145	-.0089	-.0098	-.0052	-.0058	-.0061	-.0076	-.0074	-.0169	.0433
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0088	.0027	-.0003	-.0029	-.0051	-.0074	-.0088	-.0078	-.0086	-.0097	.0249	.0038	-.0090	-.0107	.0200
100,000	.0197	.0148	.0111	.0084	.0059	.0006	-.0039	-.0047	-.0000	-.0071	.0742	.0037	-.0102	-.0110	.0190
110,000	.0223	.0211	.0190	.0159	.0092	.0071	.0046	.0021	.0015	-.0033	.0959	-.0013	-.0092	-.0103	.0187
120,000						-.0087								-.0123	
130,000						-.0041								-.0130	
140,000						.0416								-.0129	
150,000						.0062								-.0134	

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM111)

MACH (1) = 10.290 ALPHA (1) = 30.325

SECTION (1) SSV		DEPENDENT VARIABLE CP								
X/L		.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI										
130,000							.0463			
140,000							.0041			
150,000							-.0001			
160,000							-.0007			
170,000							-.0008			
180,000		-.0071	-.0073	-.0066	-.0049	-.0003	-.0018			

MACH (1) = 10.290 ALPHA (2) = 32.261 RN/L = 1.7460 Q = 2.4047 P = .0320 BETA = -1.6903

SECTION (1) SSV		DEPENDENT VARIABLE CP															
X/L		.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3360	.3570	.3750	.3940	.4050	.4310	
PHI																	
60,000		.1317	.1265	.1138													
70,000		.0758	.1067	.1042													
80,000		.0404	.0652	.0936													
90,000				.0566	.0664	.0462	.0404	1.1249	1.5127	1.5122	1.5116	1.5115	1.5114	.0352	.0383	.0332	
100,000							.0326	1.5130	1.5125	1.5119	1.5115	1.5115	1.5110	.0268	.0300	.0321	
110,000							.0156	1.5128	1.5123	1.5118	1.5116	1.5115	.0222	.0223	.0231	.0238	
120,000							.0011									.0858	
130,000							-.0104									.0115	
140,000							-.0055									-.0046	
150,000							-.0081									-.0099	
160,000							-.0057									-.0112	
170,000							-.0089									-.0118	
180,000							-.0080	1.5127	1.5124	1.5118	1.5116	1.5115	.0000	-.0008	-.0118	.1471	
X/L		.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																	
90,000		.0264	.0169	.0112	.0086	.0053	.0014	-.0015	-.0001	-.0013	-.0024	.0393	.0111	-.0054	-.0083	-.0052	
100,000		.0335	.0342	.0296	.0244	.0208	.0155	.0073	.0050	.0315	.0439	.1158	.0094	-.0063	-.0086	-.0045	
110,000		.0288	.0270	.0284	.0300	.0248	.0220	.0202	.0162	.0225	.0168	.1570	.0062	-.0032	-.0060	-.0012	
120,000							-.0035									-.0088	
130,000							.0016									-.0106	
140,000							.0519									-.0109	
150,000							.0098									-.0108	
160,000							-.0011									-.0111	
170,000							-.0068									-.0109	
180,000		-.0026	-.0023	-.0023	-.0018	-.0023	-.0093	.0050	.0048	.0079	.0048	.0411	-.0016	-.0075	-.0111	-.0067	
X/L		.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400							
PHI																	

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM111)

MACH (1) = 10.290 ALPHA (2) = 32.261

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							-.0029			
70,000							-.0032	-.0033	-.0034	
80,000							-.0044	-.0057	-.0041	
90,000	-.0070	-.0068	-.0052	-.0050	-.0061	-.0023	-.0028	-.0033	-.0021	
100,000	-.0044	-.0061	-.0054	-.0058	-.0062	-.0044				
110,000	-.0032	-.0033	-.0055	-.0039	.0281	-.0018				
120,000						.0714				
130,000						.0412				
140,000						.0038				
150,000						-.0014				
160,000						-.0004				
170,000						.0009				
180,000	-.0064	-.0052	-.0057	-.0019	.0008	.0009				

MACH (1) = 10.290 ALPHA (3) = 34.292 RN/L = 1.7460 Q = 2.4047 P = .0320 BETA = -1.6903

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1280	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	1.5107	1.5104	1.5109												
70,000	1.5105	1.5103	1.5110												
80,000	1.5104	1.5105	1.5109												
90,000			1.5111	1.5111	1.5110	1.5112	.0467	.0336	.0322	.0337	.0336	.0366	.0423	.0405	.0313
100,000						1.5114	.0230	.0347	.0336	.0310	.0321	.0318	.0348	.0351	.0377
110,000						1.5115	.0320	.0266	.0278	.0263	.0248	.0252	.0272	.0278	.0288
120,000						1.5115								.0346	
130,000						1.5118								.0027	
140,000						1.5118								-.0067	
150,000						1.5122								-.0097	
160,000						1.5124								-.0105	
170,000						1.5126								-.0109	
180,000						1.4848	-.0076	-.0067	-.0004	-.0033	-.0019	.0023	.0013	-.0110	.0487
X/L	.4900	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0246	.0168	.0119	.0082	.0043	.0002	-.0031	-.0000	-.0009	-.0030	.0414	.0097	-.0042	-.0074	-.0005
100,000	.0377	.0345	.0283	.0237	.0201	.0136	.0063	.0045	.0067	.0050	.0838	.0085	-.0054	-.0071	-.0019
110,000	.0342	.0325	.0336	.0324	.0246	.0208	.0193	.0161	.0117	.0107	.1042	.0063	-.0024	-.0058	-.0028
120,000						-.0035								-.0086	
130,000						-.0007								-.0095	
140,000						.0400								-.0101	
150,000						.0081								-.0099	

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM111)

MACH (1) = 10.290 ALPHA (3) = 34.292

SECTION (1)SSV		DEPENDENT VARIABLE CP														
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
160,000																
170,000																
180,000	-.0002	-.0000	-.0004	-.0010	-.0023	-.0083	.0041	.0052	.0028	.0022	.0335	-.0005	-.0065	-.0107	-.0059	
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400							
PHI																
60,000																
70,000																
80,000																
90,000	-.0022	-.0041	-.0029	-.0035	-.0022	-.0033	-.0008	.0002	-.0008							
100,000	-.0047	-.0033	-.0029	-.0007	-.0021	-.0027										
110,000	-.0021	-.0027	-.0032	-.0047	.0280	-.0043										
120,000							.0225									
130,000							.0339									
140,000							.0037									
150,000							.0029									
160,000							.0035									
170,000							.0033									
180,000	-.0051	-.0047	-.0017	-.0024	.0005	.0021										

ARC 3,5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM112)

MACH (1) = 10.290 ALPHA (2) = 32.247

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							.0226			
70,000							.0218	.0226	.0220	
80,000							.0218	.0215	.0226	
90,000	.0214	.0207	.0211	.0213	.0219	.0250	.0230	.0228	.0230	
100,000	.0208	.0214	.0206	.0215	.0215	.0227				
110,000	.0205	.0209	.0214	.0215	.0452	.0213				
120,000						.0222				
130,000						.0230				
140,000						.0203				
150,000						.0216				
160,000						.0238				
170,000						.0231				
180,000	.0200	.0210	.0212	.0219	.0280	.0254				

MACH (1) = 10.290 ALPHA (3) = 34.288 RN/L = 1.7403 Q = 2.4093 P = .0327 BETA = 1.6903

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1109	.1070	.0938												
70,000	.0682	.0935	.0900												
80,000	.0428	.0584	.0820												
90,000			.0555	.0645	.0533	.0452	.0521	.0387	.0379	.0413	.0436	.0429	.0202	.0165	.0085
100,000						.0413	.0325	.0408	.0368	.0371	.0385	.0375	.0245	.0244	.0199
110,000						.0270	.0390	.0344	.0362	.0351	.0345	.0165	.0186	.0191	.0211
120,000						.0156								.0248	
130,000						.0155								.0022	
140,000						.0132								-.0052	
150,000						.0100								-.0070	
160,000						.0107								-.0079	
170,000						.0100								-.0080	
180,000						.0107	.0136	.0151	.0179	.0161	.0181	.0008	.0007	-.0082	.0354
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0082	.0033	.0007	-.0012	-.0027	-.0047	.0180	.0183	.0171	.0170	.0517	.0288	.0173	.0150	.0265
100,000	.0155	.0113	.0087	.0053	.0034	-.0001	.0198	.0194	.0250	.0252	.1059	.0274	.0165	.0153	.0243
110,000	.0243	.0177	.0141	.0116	-.0065	.0045	.0248	.0231	.0245	.0220	.0974	.0223	.0163	.0153	.0229
120,000						-.0062								.0141	
130,000						.0229								.0138	
140,000						.0668								.0138	
150,000						.0331								.0138	

ARC 3.9-180 IA16/OA26 ORBIYER (CR3 FUSELAGE)

(REH113)

MACH (1) = 7.330 ALPHA (1) = 24.187

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .7290 .7470 .7670 .7890 .8030 .8290 .8620 .9000 .9400

PHI

130,000							.0322								
140,000							-.0077								
150,000							-.0087								
160,000							-.0090								
170,000							-.0088								
180,000	-.0143	-.0138	-.0135	-.0131	-.0119	-.0091									

MACH (1) = 7.330 ALPHA (2) = 30.244 RN/L = 2.9497 Q = 4.6493 F = .1240 BETA = .0000

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .0670 .1260 .1840 .2030 .2420 .2340 .2820 .3010 .3150 .3380 .3570 .3790 .3940 .4050 .4310

PHI

60,000	.1132	.1111	.0914												
70,000	.0591	.0501	.0851												
80,000	.0298	.0311	.0776												
90,000			.0363	.0320	.0320	.0242	.0246	.0214	.0263	.0214	.0216	.0190	.0221	.0245	.0298
100,000						.0172	.0082	.0165	.0190	.0215	.0197	.0199	.0162	.0172	.0160
110,000						.0005	.0185	.0130	.0126	.0131	.0112	.0110	.0133	.0132	.0136
120,000						-.0098								-.0027	
130,000						-.0169								-.0161	
140,000						-.0177								-.0197	
150,000						-.0180								-.0208	
160,000						-.0218								-.0206	
170,000						-.0209								-.0201	
180,000						-.0211	-.0163	-.0162	-.0133	-.0136	-.0159	-.0124	-.0132	-.0199	.0411

X/L .4900 .4680 .4860 .5090 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

90,000	.0178	.0037	.0013	-.0036	-.0091	-.0121	-.0123	-.0118	-.0125	-.0140	-.0001	-.0104	-.0151	-.0164	-.0125
100,000	.0201	.0244	.0281	.0178	.0123	.0042	.0004	-.0033	.0019	.0067	.0301	-.0112	-.0158	-.0167	-.0142
110,000	.0144	.0146	.0144	.0198	.0443	.0140	.0206	.0196	.0088	.0063	.0445	-.0065	-.0111	-.0145	-.0123
120,000						-.0153								-.0164	
130,000						-.0126								-.0166	
140,000						-.0146								-.0168	
150,000						-.0165								-.0170	
160,000						-.0169								-.0174	
170,000						-.0169								-.0176	
180,000	-.0141	-.0139	-.0145	-.0140	-.0117	-.0173	-.0071	-.0036	-.0060	-.0037	.0037	-.0119	-.0152	-.0177	-.0136

X/L .7290 .7470 .7670 .7890 .8030 .8290 .8620 .9000 .9400

END

ARC 3.9-100 IA10/OA20 ORBITER (CR3 FUSELAGE)

(REF114)

MACH (1) = 7.330 ALPHA (1) = 26.234

SECTION (1) SSV	DEPENDENT VARIABLE CP								
X/L	.7250	.7470	.7670	.7850	.8030	.8200	.8320	.8400	.8400
PHI									
130.000						.0932			
140.000						-.0020			
150.000						-.0037			
160.000						-.0037			
170.000						-.0037			
180.000	-.0078	-.0055	-.0064	-.0050	-.0028	.0003			

MACH (1) = 7.330 ALPHA (2) = 30.284 RN/L = 3.1093 Q = 4.0790 P = .1240 BETA = -1.7290

SECTION (1) SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2840	.2820	.3010	.3190	.3300	.3370	.3790	.3840	.4080	.4510
PHI															
60.000	.1325	.1335	.1168												
70.000	.0751	.1149	.1077												
80.000	.0412	.0663	.0948												
90.000			.0542	.0630	.0424	.0396	.0365	.0331	.0318	.0300	.0303	.0316	.0321	.0323	.0343
100.000						.0287	.0201	.0285	.0299	.0295	.0288	.0273	.0285	.0283	.0282
110.000						.0081	.0284	.0222	.0223	.0220	.0232	.0215	.0222	.0228	.0228
120.000						-.0108								.0042	
130.000						-.0130								-.0119	
140.000						-.0145								-.0162	
150.000						-.0169								-.0173	
160.000						-.0180								-.0182	
170.000						-.0145								-.0184	
180.000						-.0158	-.0125	-.0104	-.0070	-.0082	-.0039	-.0091	-.0098	-.0171	.0458

X/L	.4900	.4880	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6380	.6540	.6790	.6880	.7100
PHI															
90.000	.0413	.0417	.0220	.0147	.0031	-.0009	-.0062	-.0039	-.0039	-.0053	.0024	-.0020	-.0101	-.0136	-.0088
100.000	.0204	.0279	.0291	.0334	.0400	.0344	.0294	.0143	.0007	-.0009	.0279	-.0084	-.0100	-.0130	-.0093
110.000	.0228	.0228	.0231	.0229	.0311	.0286	.0235	.0236	.0160	.0280	.0402	.0182	.0050	.0019	.0019
120.000						-.0097								-.0090	
130.000						-.0099								-.0134	
140.000						-.0128								-.0143	
150.000						-.0139								-.0152	
160.000						-.0154								-.0159	
170.000						-.0160								-.0160	
180.000	-.0101	-.0102	-.0104	-.0100	-.0089	-.0162	-.0054	-.0007	-.0027	.0005	.0034	.0002	-.0089	-.0161	-.0055

X/L	.7250	.7470	.7670	.7850	.8030	.8200	.8320	.8400	.8400
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ARC 3.3-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM114)

MACH (1) = 7.330 ALPHA (2) = 30.284

SECTION (1)SSV		DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400		
PHI											
60.000							-.0079				
70.000							-.0085	-.0081	-.0079		
80.000							-.0080	-.0080	-.0077		
90.000	-.0088	-.0103	-.0099	-.0091	-.0080	-.0071	-.0075	-.0071	-.0075		
100.000	-.0099	-.0101	-.0102	-.0096	-.0089	-.0092					
110.000	-.0044	-.0030	-.0073	-.0064	.0018	-.0083					
120.000						.0779					
130.000						.0492					
140.000						.0013					
150.000						.0052					
160.000						-.0031					
170.000						-.0037					
180.000	-.0103	-.0109	-.0088	-.0075	-.0058	-.0026					

MACH (1) = 7.330 ALPHA (3) = 34.198 RM/L = 3.1833 Q = 4.6730 P = .1240 ZETA = -1.7290

SECTION (1)SSV		DEPENDENT VARIABLE CP													
X/L	.0670	.1260	.1640	.2030	.2420	.2840	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4090	.4310
PHI															
60.000	.1259	.1298	.1146												
70.000	.0388	.1124	.1105												
80.000	.0273	.0802	.0990												
90.000			.0528	.0696	.0491	.0385	.0350	.0337	.0352	.0335	.0361	.0362	.0383	.0409	.0422
100.000						.0335	.0227	.0342	.0336	.0324	.0328	.0330	.0332	.0328	.0341
110.000						.0102	.0329	.0277	.0297	.0285	.0261	.0263	.0270	.0270	.0278
120.000						-.0126								.0038	
130.000						-.0128								-.0135	
140.000						-.0145								-.0171	
150.000						-.0144								-.0188	
160.000						-.0172								-.0184	
170.000						-.0172								-.0188	
180.000						-.0161	-.0143	-.0149	-.0097	-.0097	-.0092	-.0097	-.0105	-.0185	.0292
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90.000	.0321	.0218	.0163	.0091	.0021	-.0040	-.0088	-.0091	-.0093	-.0116	.0018	-.0095	-.0113	-.0134	-.0070
100.000	.0356	.0392	.0412	.0341	.0303	.0227	.0157	.0078	-.0065	-.0086	.0258	-.0100	-.0126	-.0137	-.0085
110.000	.0281	.0284	.0289	.0317	.0356	.0280	.0309	.0289	.0145	.0211	.0365	.0075	-.0035	-.0092	-.0058
120.000						-.0108								-.0133	
130.000						-.0119								-.0136	
140.000						-.0138								-.0138	
150.000						-.0152								-.0140	

ARC 3.5-100 IA16/OA26 ORBITER (CRB FUSELAGE)

(REMI19)

MACH (1) = 7.330 ALPHA (1) = 26.201

SECTION (1)SSV	DEPENDENT VARIABLE CP									
	X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI										
130,000										-.0211
140,000										-.0202
150,000										-.0137
160,000										-.0191
170,000										-.0159
180,000	-.0240	-.0236	-.0231	-.0214	-.0191	-.0114				

MACH (1) = 7.330 ALPHA (2) = 30.292 RN/L = 2.4020 C = 4.5797 P = .1220 QETA = 1.7293

SECTION (1)SSV	DEPENDENT VARIABLE CP															
	X/L	.0870	.1280	.1640	.2030	.2420	.2840	.3220	.3610	.3950	.4380	.4970	.5390	.5840	.6090	.6310
PHI																
60,000		.0691	.0631	.0553												
70,000		.0409	.0656	.0619												
80,000		.0143	.0304	.0540												
90,000				.0203	.0331	.0199	.0089	.0098	.0071	.0038	.0044	.0037	.0077	.0127	.0110	-.0026
100,000							.0043	-.0040	.0039	.0043	.0020	.0026	.0039	.0046	.0049	.0069
110,000							-.0127	.0034	.0002	-.0002	-.0007	-.0011	-.0017	.0001	.0004	.0010
120,000							-.0187									-.0119
130,000							-.0220									-.0237
140,000							-.0278									-.0274
150,000							-.0246									-.0285
160,000							-.0283									-.0283
170,000							-.0280									-.0278
180,000							-.0288	-.0216	-.0233	-.0213	-.0207	-.0216	-.0211	-.0218	-.0277	.0130
X/L	.4900	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6340	.6730	.6880	.7100	
PHI																
90,000	-.0087	-.0147	-.0179	-.0210	-.0230	-.0249	-.0233	-.0226	-.0237	-.0246	-.0081	-.0181	-.0246	-.0252	-.0214	
100,000	.0110	.0018	-.0048	-.0081	-.0125	-.0177	-.0198	-.0205	-.0160	-.0178	.0182	-.0192	-.0252	-.0253	-.0225	
110,000	.0022	.0035	.0080	.0069	-.0061	-.0107	-.0096	-.0132	-.0158	-.0180	.0303	-.0216	-.0251	-.0255	-.0232	
120,000							-.0228									-.0258
130,000							-.0185									-.0260
140,000							-.0212									-.0262
150,000							-.0238									-.0266
160,000							-.0249									-.0264
170,000							-.0253									-.0259
180,000	-.0212	-.0205	-.0208	-.0209	-.0228	-.0259	-.0189	-.0193	-.0208	-.0214	-.0028	-.0236	-.0251	-.0257	-.0228	
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400							

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM115)

MACH (1) = 7.330 ALPHA (2) = 30.292

SECTION (1) SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60.000							-.0207			
70.000							-.0223	-.0223	-.0221	
80.000							-.0223	-.0223	-.0219	
90.000	-.0228	-.0229	-.0232	-.0225	-.0221	-.0206	-.0226	-.0221	-.0221	
100.000	-.0235	-.0230	-.0233	-.0229	-.0231	-.0225				
110.000	-.0233	-.0235	-.0233	-.0229	-.0128	-.0230				
120.000						-.0219				
130.000						-.0192				
140.000						-.0220				
150.000						-.0215				
160.000						-.0178				
170.000						-.0190				
180.000	-.0231	-.0228	-.0219	-.0202	-.0191	-.0117				

MACH (1) = 7.330 ALPHA (3) = 34.238 RN/L = 2.4020 Q = 4.5797 P = .1220 BETA = 1.7293

SECTION (1) SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1280	.1640	.2030	.2420	.2840	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4090	.4310
PHI															
60.000	.0340	.0323	.0358												
70.000	.0352	.0396	.0328												
80.000	.0054	.0266	.0585												
90.000		.0211	.0333	.0189	.0118	.0100	.0090	.0074	.0075	.0109	.0130	.0092	.0048	-.0059	
100.000					.0077	-.0010	.0069	.0053	.0048	.0065	.0078	.0097	.0111	.0100	
110.000					-.0104	.0079	.0014	.0047	.0023	.0014	.0025	.0036	.0034	.0063	
120.000					-.0178									-.0114	
130.000					-.0220									-.0250	
140.000					-.0266									-.0284	
150.000					-.0282									-.0286	
160.000					-.0292									-.0284	
170.000					-.0305									-.0284	
180.000					-.0294	-.0270	-.0279	-.0227	-.0232	-.0229	-.0215	-.0220	-.0284	.0055	
X/L	.4900	.4680	.4880	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90.000	-.0107	-.0156	-.0194	-.0218	-.0235	-.0254	-.0245	-.0239	-.0246	-.0249	-.0079	-.0187	-.0245	-.0251	-.0199
100.000	.0043	-.0003	-.0044	-.0097	-.0134	-.0195	-.0223	-.0229	-.0219	-.0226	.0161	-.0196	-.0249	-.0249	-.0208
110.000	.0091	.0084	.0048	.0018	-.0095	-.0118	-.0112	-.0163	-.0206	-.0222	.0275	-.0227	-.0250	-.0249	-.0206
120.000						-.0248								-.0253	
130.000						-.0216								-.0252	
140.000						-.0239								-.0254	
150.000						-.0254								-.0259	

ARC 3.9-100 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM11G)

MACH (1) = 5.299 ALPHA (1) = 18.255

SECTION (1)SSV		DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7890	.8030	.8290	.8620	.9000	.9400		
PHI											
130,000											.0567
140,000											-.0123
150,000											-.0140
160,000											-.0118
170,000											-.0106
180,000	-.0274	-.0200	-.0237	-.0206	-.0187	.0020					

MACH (1) = 5.299 ALPHA (2) = 22.158 RN/L = 3.5633 Q = 0.9363 P = .3530 BETA = .0000

SECTION (1)SSV		DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4090	.4310	
PHI																
60,000	.1228	.1132	.0903													
70,000	.0755	.0919	.0827													
80,000	.0516	.0571	.0691													
90,000			.0414	.0366	.0095	-.0011	-.0061	-.0037	-.0030	-.0034	-.0048	-.0039	-.0043	-.0045	-.0041	
100,000						-.0077	-.0162	-.0076	-.0071	-.0061	-.0065	-.0079	-.0069	-.0076	-.0080	
110,000								-.0212	-.0077	-.0143	-.0134	-.0134	-.0139	-.0130	-.0132	
120,000										-.0236						
130,000										-.0314						
140,000										-.0395						
150,000										-.0431						
160,000										-.0416						
170,000										-.0398						
180,000						-.0401	-.0363	-.0363	-.0343	-.0343	-.0319	-.0324	-.0333	-.0344	.0103	
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5960	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90,000	-.0038	-.0026	-.0013	-.0022	-.0037	-.0047	-.0104	-.0101	-.0138	-.0217	-.0267	-.0357	-.0398	-.0432	-.0323	
100,000	-.0077	-.0072	-.0063	-.0050	-.0042	-.0039	-.0064	-.0092	-.0052	-.0099	-.0059	-.0344	-.0135	-.0193	-.0131	
110,000	-.0321	-.0119	-.0114	-.0109	.0188	-.0075	-.0112	-.0100	-.0093	-.0114	-.0089	-.0130	-.0128	-.0137	-.0024	
120,000										-.0421						
130,000										-.0423						
140,000										-.0434						
150,000										-.0451						
160,000										-.0459						
170,000										-.0428						
180,000	-.0390	-.0351	-.0343	-.0343	-.0347	-.0405	-.0372	-.0332	-.0358	-.0364	-.0353	-.0361	-.0420	-.0436	-.0179	

X/L	.7290	.7470	.7670	.7890	.8030	.8290	.8620	.9000	.9400
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ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM115)

MACH (1) = 5.299 ALPHA (2) = 22.158

SECTION (1)SSV	DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
60,000							-.0302		
70,000							-.0316	-.0298	-.0301
80,000							-.0313	-.0266	-.0309
90,000	-.0329	-.0330	-.0332	-.0346	-.0347	-.0316	-.0317	-.0227	-.0289
100,000	-.0198	-.0260	-.0304	-.0316	-.0330	-.0330			
110,000	-.0042	-.0090	-.0107	-.0148	-.0091	.0028			
120,000						.0831			
130,000						.0503			
140,000						-.0149			
150,000						-.0147			
160,000						-.0182			
170,000						-.0148			
180,000	-.0270	-.0269	-.0264	-.0251	-.0223	-.0120			

MACH (1) = 5.299 ALPHA (3) = 28.290 RN/L = 3.5633 Q = 6.9363 P = .3530 BETA = .0000

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1178	.1112	.0905												
70,000	.0802	.0897	.0849												
80,000	.0330	.0471	.0700												
90,000			.0314	.0392	.0145	.0042	.0004	.0045	.0034	.0018	.0025	.0018	.0035	.0036	.0042
100,000						-.0034	-.0113	-.0031	-.0014	-.0008	-.0004	-.0024	-.0002	-.0002	-.0003
110,000						-.0245	-.0029	-.0100	-.0091	-.0074	-.0069	-.0059	-.0055	-.0062	-.0057
120,000						-.0317								-.0334	
130,000						-.0381								-.0453	
140,000						-.0448								-.0481	
150,000						-.0450								-.0489	
160,000						-.0453								-.0483	
170,000						-.0433								-.0417	
180,000						-.0429	-.0406	-.0385	-.0351	-.0348	-.0359	-.0349	-.0365	-.0385	-.0041
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0036	.0027	.0052	.0096	.0067	-.0165	-.0285	-.0345	-.0385	-.0414	-.0359	-.0433	-.0432	-.0461	-.0335
100,000	.0004	.0006	.0008	.0010	.0003	-.0008	-.0022	-.0007	-.0328	-.0360	-.0183	-.0425	-.0389	-.0431	-.0315
110,000	-.0055	-.0046	-.0039	-.0035	.0027	-.0025	-.0064	-.0071	-.0128	-.0077	-.0148	-.0028	-.0026	-.0086	-.0045
120,000						-.0410								-.0365	
130,000						-.0419								-.0403	
140,000						-.0439								-.0422	
150,000						-.0453								-.0437	

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM118)

MACH (1) = 5.302 ALPHA (1) = 18.280

SECTION (1)SSV		DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
130,000						.0651				
140,000						.0021				
150,000						.0038				
160,000						-.0070				
170,000						-.0043				
180,000	-.0264	-.0300	-.0252	-.0210	-.0161	-.0057				

MACH (1) = 5.302 ALPHA (2) = 22.177 RV/L = 3.0320 Q = 7.1177 P = .3620 BETA = 1.8480

SECTION (1)SSV		DEPENDENT VARIABLE CP													
X/L	.0870	.1260	.1640	.2030	.2420	.2840	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1001	.0889	.0697												
70,000	.0348	.0726	.0632												
80,000	.0422	.0431	.0519												
90,000		.0263	.0256	-.0036	-.0081	.0049	.0000	.0000	-.0077	-.0101	-.0118	-.0110	-.0106	-.0083	
100,000					-.0121	-.0161	-.0146	-.0146	-.0117	-.0116	-.0146	-.0146	-.0146	-.0142	-.0137
110,000					-.0236	-.0173	-.0200	-.0173	-.0129	-.0179	-.0180	-.0183	-.0178	-.0178	-.0188
120,000					-.0211									-.0339	
130,000					-.0285									-.0440	
140,000					-.0361									-.0465	
150,000					-.0399									-.0439	
160,000					-.0385									-.0359	
170,000					-.0371									-.0324	
180,000					-.0374	-.0331	-.0364	-.0360	-.0372	-.0369	-.0357	-.0353	-.0379	-.0336	

X/L	.4900	.4660	.4460	.5050	.5240	.5460	.5610	.5600	.5960	.6170	.6360	.6540	.6750	.6880	.7100
PHI															
90,000	-.0068	-.0069	-.0079	-.0086	-.0082	-.0100	-.0029	-.0193	-.0290	-.0349	-.0296	.0000	.0000	-.0387	-.0342
100,000	-.0129	-.0119	-.0103	-.0068	-.0093	-.0112	-.0079	-.0071	-.0178	-.0201	-.0047	-.0345	-.0262	-.0342	-.0311
110,000	-.0177	.0000	.0000	-.0157	.0123	-.0123	-.0060	-.0067	-.0113	-.0110	-.0032	-.0131	-.0117	-.0130	-.0120
120,000						-.0399								-.0270	
130,000						-.0293								-.0276	
140,000						-.0332								-.0338	
150,000						-.0362								-.0350	
160,000						-.0351								-.0352	
170,000						-.0310								-.0360	
180,000	-.0390	-.0363	-.0377	-.0376	-.0376	-.0334	-.0217	-.0270	-.0279	-.0282	-.0286	-.0301	-.0352	-.0373	-.0216

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(RM118)

MACH (1) = 5.302 ALPHA (2) = 22.177

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							-.0302			
70,000							-.0306	-.0321	-.0324	
80,000							-.0309	-.0323	-.0329	
90,000	-.0331	-.0373	-.0372	-.0352	-.0333	-.0235	-.0309	-.0327	-.0328	
100,000	-.0342	-.0361	-.0379	-.0375	-.0339	-.0292				
110,000	-.0163	-.0217	-.0288	-.0324	-.0252	.0000				
120,000						.0741				
130,000						.0355				
140,000						-.0085				
150,000						.0000				
160,000						-.0149				
170,000						-.0120				
180,000	-.0275	-.0275	-.0209	-.0259	-.0236	-.0156				

MACH (1) = 5.302 ALPHA (3) = 26.282 RN/L = 3.0320 @ = 7.1177 P = .3620 BETA = 1.8480

SECTION (1)SSV	DEPENDENT VARIABLE CP															
X/L	.0670	.1280	.1640	.2000	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4030	.4310	
PHI																
60,000	.0979	.0899	.0731													
70,000	.0484	.0709	.0658													
80,000	.0207	.0353	.0328													
90,000			.0197	.0000	.0063	-.0015	-.0051	-.0032	-.0042	-.0027	-.0085	-.0033	-.0030	-.0026	-.0016	
100,000						-.0100	-.0195	-.0080	-.0098	-.0089	-.0107	-.0102	-.0071	-.0071	-.0067	
110,000						-.0281	-.0115	-.0169	-.0150	-.0144	-.0140	-.0120	-.0130	-.0131	-.0121	
120,000						-.0286								-.0358		
130,000						-.0392								.0000		
140,000						-.0406								-.0473		
150,000						-.0438								-.0484		
160,000						-.0430								-.0441		
170,000						-.0416								-.0393		
180,000						-.0398	-.0404	-.0398	-.0367	-.0379	-.0389	-.0374	-.0368	-.0408	-.0108	
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90,000	.0044	.0128	-.0150	-.0294	-.0358	-.0402	-.0205	.0000	-.0358	-.0372	-.0305	-.0375	-.0370	-.0393	-.0318	
100,000	-.0058	-.0080	-.0057	-.0040	.0013	.0060	.0061	-.0087	-.0320	-.0343	-.0145	-.0375	-.0383	-.0400	-.0347	
110,000	-.0112	-.0109	-.0103	-.0092	.0003	-.0027	-.0047	-.0054	-.0126	-.0013	-.0084	-.0071	-.0229	-.0321	-.0308	
120,000						-.0373								-.0316		
130,000						-.0252								-.0324		
140,000						-.0315								-.0333		
150,000						-.0342								-.0351		

ARC 3.9-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM120)

MACH (1) = 10.290 ALPHA (1) = 30.368

SECTION (1) SSV	DEPENDENT VARIABLE CP									
	X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI										
130,000							.0667			
140,000							.0249			
150,000							.0200			
160,000							.0202			
170,000							.0201			
180,000	.0153	.0134	.0141	.0151	.0203	.0188				

MACH (1) = 10.290 ALPHA (2) = 32.283 RN/L = 3.6097 Q = 2.4137 P = .0327 BETA = -1.6697

SECTION (1) SSV	DEPENDENT VARIABLE CP															
	X/L	.0670	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3790	.3940	.4050	.4310
PHI																
60,000	.1122	.1048	.0934													
70,000	.0553	.0871	.0866													
80,000	.0209	.0467	.0728													
90,000			.0348	.0443	.0274	.0199	.0259	.0129	.0161	.0148	.0161	.0198	.0298	.0320	.0284	
100,000						.0117	.0036	.0137	.0140	.0121	.0116	.0124	.0227	.0239	.0266	
110,000						-.0031	.0121	.0071	.0060	.0059	.0070	.0172	.0189	.0174	.0180	
120,000						-.0205								.0245		
130,000						-.0222								-.0052		
140,000						-.0253								-.0141		
150,000						-.0238								-.0171		
160,000						-.0262								-.0175		
170,000						-.0272								-.0175		
180,000						-.0271	-.0239	-.0229	-.0181	-.0192	-.0169	-.0061	-.0075	-.0173	.0361	

SECTION (1) SSV	DEPENDENT VARIABLE CP															
	X/L	.4500	.4680	.4860	.5050	.5240	.5480	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI																
90,000	.0213	.0132	.0080	.0054	.0016	-.0021	.0097	.0104	.0092	.0071	.0585	.0175	.0060	.0036	.0197	
100,000	.0299	.0289	.0263	.0202	.0172	.0114	.0191	.0165	.0177	.0179	.0853	.0164	.0099	.0037	.0180	
110,000	.0210	.0217	.0245	.0263	.0218	.0183	.0309	.0270	.0225	.0221	.1059	.0156	.0095	.0069	.0184	
120,000						-.0075								.0034		
130,000						.0124								.0019		
140,000						.0552								.0017		
150,000						.0194								.0014		
160,000						.0085								.0013		
170,000						.0034								.0013		
180,000	-.0075	-.0069	-.0065	-.0038	-.0003	.0012	.0146	.0142	.0123	.0124	.0411	.0095	.0051	.0007	.0148	

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM120)

MACH (1) = 10.290 ALPHA (2) = 32.283

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							.0173			
70,000							.0176	.0179	.0182	
80,000							.0166	.0194	.0165	
90,000	.0140	.0154	.0137	.0152	.0153	.0181	.0178	.0183	.0185	
100,000	.0130	.0152	.0146	.0160	.0162	.0176				
110,000	.0168	.0158	.0167	.0187	.0393	.0174				
120,000						.0601				
130,000						.0589				
140,000						.0237				
150,000						.0211				
160,000						.0216				
170,000						.0199				
180,000	.0142	.0134	.0193	.0158	.0206	.0188				

MACH (1) = 10.290 ALPHA (3) = 34.310 RN/L = 1.8037 Q = 2.4137 P = .0327 BETA = -1.6897

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1280	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
50,000	.1049	.1087	.0928												
70,000	.0531	.0901	.0835												
80,000	.0168	.0441	.0711												
90,000			.0338	.0476	.0285	.0225	.0271	.0181	.0164	.0157	.0209	.0222	.0359	.0353	.0243
100,000						.0152	.0052	.0138	.0160	.0125	.0162	.0140	.0299	.0295	.0332
110,000						-.0038	.0139	.0108	.0138	.0100	.0094	.0198	.0224	.0224	.0233
120,000						-.0234								.0235	
130,000						-.0249								-.0030	
140,000						-.0276								-.0125	
150,000						-.0274								-.0154	
160,000						-.0265								-.0163	
170,000						-.0263								-.0165	
180,000						-.0281	-.0216	-.0242	-.0151	-.0144	-.0173	-.0048	-.0032	-.0165	.0247
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0190	.0107	.0053	.0021	-.0022	-.0054	.0080	.0108	.0104	.0075	.0395	.0182	.0057	.0027	.0191
100,000	.0321	.0277	.0210	.0169	.0138	.0072	.0184	.0157	.0149	.0114	.0872	.0188	.0043	.0026	.0172
110,000	.0260	.0258	.0271	.0239	.0183	.0154	.0296	.0263	.0197	.0191	.1081	.0153	.0076	.0043	.0205
120,000						-.0081								.0023	
130,000						.0105								.0005	
140,000						.0515								.0004	
150,000						.0228								.0003	

ARC 3.5-180 IA18/OA26 ORBITER (ORS FUSELAGE)

(REM121)

MACH (1) = 10.290 ALPHA (1) = 30.311

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
130.000						.0135			
140.000						.0110			
150.000						.0117			
160.000						.0131			
170.000						.0128			
180.000	.0103	.0101	.0107	.0128	.0176	.0151			

MACH (1) = 10.290 ALPHA (2) = 32.229 RN/L = 1.0797 Q = 2.4267 P = .0330 BETA = 1.0907

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3360	.3570	.3750	.3940	.4090	.4310
PHI															
60.000	.0972	.0936	.0752												
70.000	.0584	.0794	.0752												
80.000	.0326	.0454	.0675												
90.000			.0406	.0470	.0362	.0290	.0308	.0244	.0236	.0243	.0235	.0262	.0250	.0215	.0142
100.000						.0230	.0182	.0231	.0214	.0218	.0220	.0241	.0254	.0263	.0264
110.000						.0117	.0247	.0203	.0207	.0198	.0171	.0188	.0192	.0205	.0224
120.000						.0051								.0260	
130.000						.0018								.0068	
140.000						-.0012								-.0000	
150.000						-.0037								-.0009	
160.000						-.0035								-.0017	
170.000						-.0029								-.0018	
180.000						-.0030	.0014	-.0002	.0026	.0023	.0026	.0038	.0042	-.0017	.0384

X/L	.4900	.4680	.4660	.5090	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90.000	.0134	.0069	.0069	.0090	.0037	.0026	.0054	.0048	.0033	.0032	.0074	.0164	.0098	.0021	.0173
100.000	.0215	.0172	.0145	.0115	.0104	.0069	.0069	.0065	.0126	.0126	.0839	.0150	.0031	.0020	.0135
110.000	.0266	.0235	.0209	.0183	.0128	.0111	.0103	.0094	.0111	.0095	.1037	.0093	.0030	.0021	.0125
120.000						.0015								.0015	
130.000						.0115								.0013	
140.000						.0565								.0013	
150.000						.0199								.0014	
160.000						.0087								.0014	
170.000						.0044								.0012	
180.000	.0054	.0049	.0045	.0041	.0025	.0021	.0083	.0053	.0067	.0055	.0402	.0057	.0023	.0017	.0122

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3.5-100 IA16/OA26 ORBITER (ORB FUSELAGE)

(REN121)

MACH (1) = 10.290 ALPHA (2) = 32.229

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							.0154			
70,000							.0145	.0149	.0144	
80,000							.0147	.0146	.0152	
90,000	.0128	.0136	.0135	.0132	.0155	.0183	.0147	.0154	.0155	
100,000	.0135	.0134	.0133	.0132	.0128	.0153				
110,000	.0125	.0135	.0138	.0131	.0366	.0144				
120,000						.0158				
130,000						.0160				
140,000						.0141				
150,000						.0138				
160,000						.0165				
170,000						.0157				
180,000	.0125	.0126	.0130	.0142	.0191	.0184				

MACH (1) = 10.290 ALPHA (3) = 34.294 RN/L = 1.8797 Q = 2.4287 P = .0330 BETA = 1.6907

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.0947	.0897	.0807												
70,000	.0548	.0817	.0764												
80,000	.0317	.0480	.0657												
90,000			.0420	.0501	.0379	.0289	.0345	.0227	.0251	.0257	.0283	.0279	.0243	.0205	.0132
100,000						.0273	.0193	.0265	.0269	.0243	.0223	.0261	.0291	.0290	.0257
110,000						.0132	.0257	.0194	.0212	.0208	.0196	.0207	.0235	.0243	.0262
120,000						.0032								.0246	
130,000						.0030								.0076	
140,000						-.0018								.0008	
150,000						-.0024								-.0007	
160,000						-.0044								-.0009	
170,000						-.0048								-.0013	
180,000						-.0042	.0020	.0009	.0044	.0022	.0046	.0049	.0051	-.0012	.0278
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0136	.0098	.0075	.0050	.0035	.0023	.0046	.0051	.0042	.0038	.0384	.0180	.0041	.0027	.0188
100,000	.0217	.0175	.0142	.0114	.0096	.0064	.0066	.0061	.0091	.0073	.0818	.0162	.0032	.0020	.0168
110,000	.0300	.0237	.0207	.0185	.0136	.0113	.0109	.0097	.0093	.0075	.1008	.0100	.0031	.0022	.0156
120,000						.0018								.0018	
130,000						.0101								.0017	
140,000						.0535								.0013	
150,000						.0233								.0014	

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM122) (02 APR 74)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRP = .0000 IN.
 BREF = 936.0800 IN. ZMRP = .0000 IN.
 SCALE = .0150

BETA = .000 ELEV-L = -15.000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 7.330 ALPHA (1) = 26.220 RN/L = 3.0493 Q = 4.6563 P = .1240 BETA = .0000

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2810 .3200 .3590 .3980 .4370 .4760 .5150 .5540 .5930 .6320 .6710

PHI
 60.000 .1150 .1097 .0896
 70.000 .0686 .0905 .0811
 80.000 .0440 .0534 .0733
 90.000 .0399 .0457 .0243 .0192 .0197 .0140 .0141 .0128 .0125 .0136 .0136 .0138 .0154
 100.000 .0112 .0022 .0108 .0106 .0108 .0122 .0093 .0108 .0105 .0107
 110.000 -.0037 .0109 .0057 .0056 .0054 .0070 .0057 .0045 .0048 .0064
 120.000 -.0102 -.0063
 130.000 -.0136 -.0176
 140.000 -.0186 -.0215
 150.000 -.0180 -.0218
 160.000 -.0196 -.0226
 170.000 -.0205 -.0196
 180.000 -.0188 -.0163 -.0169 -.0129 -.0127 -.0143 -.0132 -.0141 -.0179 1.0209

X/L .4500 .4880 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI
 90.000 .0177 .0265 .0191 -.0003 -.0067 -.0124 .0136 -.0004 -.0039 -.0040 .0070 .0014 -.0055 -.0086 -.0016
 100.000 .0115 .0114 .0112 .0125 .0178 .0255 .0300 .0154 .3994 .5919 .5587 .0003 -.0058 -.0063 -.0054
 110.000 .0066 .0065 .0071 .0078 .0292 .0147 .0183 .0174 .0601 .0299 .5651 .0153 .0034 -.0020 .0003
 120.000 -.0159
 130.000 .0089 -.0081
 140.000 .0014 -.0089
 150.000 -.0054 -.0093
 160.000 -.0082 -.0094
 170.000 -.0098 -.0095
 180.000 -.0149 -.0156 -.0162 -.0163 -.0149 -.0103 .0094 .0012 .0096 .0049 .0326 .0014 -.0058 -.0097 -.0018

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI
 60.000 -.0046
 70.000 -.0042 -.0037 -.0046
 80.000 -.0043 -.0031 -.0042
 90.000 -.0050 -.0055 -.0050 -.0045 -.0050 -.0018 -.0045 -.0041 -.0039
 100.000 -.0065 -.0067 -.0061 -.0055 -.0058 -.0050
 110.000 -.0033 -.0046 -.0053 -.0034 .0043 -.0060
 120.000 .0516

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(RM122)

MACH (1) = 7.330 ALPHA (1) = 26.220

SECTION (1)SSV DEPENDENT VARIABLE CP

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
130.000						.0487			
140.000						.0013			
150.000						.0004			
160.000						.0003			
170.000						.0000			
180.000	-.0045	-.0047	-.0041	-.0041	-.0030	-.0007			

MACH (1) = 7.330 ALPHA (2) = 30.277 RN/L = 3.0493 Q = 4.6503 P = .1240 BETA = .0000

SECTION (1)SSV DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60.000	.1125	.1086	.0910												
70.000	.0592	.0914	.0859												
80.000	.0289	.0483	.0758												
90.000			.0378	.0500	.0297	.0213	.0170	.0207	.0182	.0172	.0192	.0198	.0201	.0222	.0263
100.000						.0153	.0065	.0170	.0165	.0159	.0145	.0170	.0160	.0164	.0189
110.000						-.0019	.0157	.0104	.0122	.0123	.0108	.0098	.0112	.0115	.0119
120.000						-.0117								-.0036	
130.000						-.0144								-.0178	
140.000						-.0194								-.0217	
150.000						-.0213								-.0227	
160.000						-.0219								-.0227	
170.000						-.0209								-.0220	
180.000						-.0206	-.0185	-.0192	-.0135	-.0142	-.0142	-.0144	-.0152	-.0216	.1704

X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90.000	.0171	.0054	.0006	-.0049	-.0102	-.0136	-.0046	-.0040	-.0063	.0075	-.0014	-.0039	-.0083	-.0096	
100.000	.0180	.0221	.0271	.0173	.0117	.0041	.0086	.0045	.0169	.0333	.0575	-.0022	-.0077	-.0087	-.0054
110.000	.0120	.0124	.0130	.0143	.0157	.0135	.0287	.0240	.0189	.0152	.0840	.0014	-.0040	-.0067	-.0037
120.000						-.0162								-.0086	
130.000						-.0043								-.0086	
140.000						-.0067								-.0091	
150.000						-.0089								-.0094	
160.000						-.0094								-.0095	
170.000						-.0094								-.0098	
180.000	-.0162	-.0157	-.0159	-.0155	-.0151	-.0099	.0006	.0041	.0022	.0010	.0163	-.0040	-.0076	-.0099	-.0049

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM123)

MACH (1) = 7.330 ALPHA (1) = 26.212

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
130,000						.0633			
140,000						.0082			
150,000						.0040			
160,000						.0046			
170,000						.0045			
180,000	.0034	.0018	.0016	.0014	.0033	.0106			

MACH (1) = 7.330 ALPHA (2) = 30.285 RN/L = 3.3120 Q = 4.6803 P = .1243 BETA = -1.7247

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4090	.4310
PHI															
60,000	.1275	.1261	.1091												
70,000	.0677	.1037	.0996												
80,000	.0329	.0567	.0884												
90,000			.0443	.0574	.0329	.0243	.0209	.0233	.0231	.0196	.0213	.0222	.0210	.0213	.0233
100,000						.0171	.0063	.0200	.0189	.0197	.0171	.0220	.0174	.0169	.0172
110,000						-.0036	.0187	.0107	.0128	.0134	.0116	.0106	.0109	.0117	.0116
120,000						-.0215								-.0070	
130,000						-.0222								-.0230	
140,000						-.0268								-.0279	
150,000						-.0282								-.0291	
160,000						-.0283								-.0302	
170,000						-.0266								-.0296	
180,000						-.0268	-.0222	-.0226	-.0174	-.0176	-.0195	-.0203	-.0213	-.0292	.1907
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0312	.0318	.0128	.0049	-.0033	-.0105	-.0153	-.0161	-.0174	-.0197	-.0073	-.0163	-.0197	-.0227	.0025
100,000	.0173	.0174	.0185	.0232	.0304	.0261	.0170	.0051	.0033	.0148	.0392	-.0169	-.0196	-.0226	.0016
110,000	.0120	.0126	.0126	.0134	.0879	.0195	.0140	.0136	.0119	.0200	.0646	.0099	-.0029	-.0073	.0104
120,000						-.0201								-.0166	
130,000						-.0182								-.0230	
140,000						-.0215								-.0247	
150,000						-.0243								-.0253	
160,000						-.0255								-.0255	
170,000						-.0260								-.0257	
180,000	-.0210	-.0206	-.0212	-.0205	-.0145	-.0267	-.0153	-.0110	-.0114	-.0095	.0042	-.0092	-.0186	-.0258	.0036
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400						

PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM124)

MACH (1) = 7.330 ALPHA (1) = 26.221

SECTION (1) SSV		DEPENDENT VARIABLE CP													
X/L		.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400					
PHI															
130,000															
140,000															
150,000															
160,000															
170,000															
180,000															

MACH (1) = 7.330 ALPHA (2) = 30.256 RN/L = 2.8243 Q = 4.6033 P = .1223 BETA = 1.7290

SECTION (1) SSV		DEPENDENT VARIABLE CP														
X/L		.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3360	.3570	.3750	.3940	.4090	.4310
PHI																
60,000																
70,000																
80,000																
90,000																
100,000																
110,000																
120,000																
130,000																
140,000																
150,000																
160,000																
170,000																
180,000																

X/L		.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI																
90,000																
100,000																
110,000																
120,000																
130,000																
140,000																
150,000																
160,000																
170,000																
180,000																

X/L		.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM124)

MACH (1) = 7.330 ALPHA (2) = 30.256

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							-.0111			
70,000							-.0123	-.0125	-.0125	
80,000							-.0124	-.0125	-.0124	
90,000	-.0136	-.0132	-.0131	-.0129	-.0128	-.0103	-.0120	-.0121	-.0119	
100,000	-.0135	-.0135	-.0131	-.0128	-.0127	-.0123				
110,000	-.0140	-.0135	-.0133	-.0129	-.0029	-.0123				
120,000						-.0118				
130,000						-.0105				
140,000						-.0123				
150,000						-.0118				
160,000						-.0073				
170,000						-.0089				
180,000	-.0135	-.0135	-.0120	-.0113	-.0091	-.0020				

MACH (1) = 7.330 ALPHA (3) = 34.246 RN/L = 2.6243 Q = 4.6033 P = .1223 BETA = 1.7250

SECTION (1)SSV	DEPENDENT VARIABLE CP															
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310	
PHI																
60,000	.0903	.0863	.0689													
70,000	.0417	.0727	.0693													
80,000	.0110	.0327	.0626													
90,000			.0273	.0403	.0247	.0165	.0169	.0143	.0150	.0137	.0158	.0174	.0151	.0111	.0004	
100,000						.0127	.0061	.0141	.0122	.0118	.0110	.0115	.0153	.0167	.0159	
110,000						-.0043	.0133	.0102	.0096	.0080	.0065	.0081	.0090	.0092	.0113	
120,000						-.0130								.0110		
130,000						-.0169								-.0145		
140,000						-.0221								-.0213		
150,000						-.0241								-.0228		
160,000						-.0247								-.0230		
170,000						-.0223								-.0226		
180,000						-.0228	-.0217	-.0200	-.0179	-.0170	-.0182	-.0160	-.0164	-.0228	.0180	
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90,000	-.0049	-.0103	-.0145	-.0166	-.0183	-.0194	-.0168	-.0158	-.0170	-.0175	-.0003	-.0127	-.0170	-.0174	-.0105	
100,000	.0101	.0043	.0006	-.0057	-.0109	-.0152	-.0154	-.0156	-.0136	-.0143	.0229	-.0132	-.0174	-.0176	-.0119	
110,000	.0150	.0146	.0114	.0081	-.0046	-.0078	-.0082	-.0115	-.0132	-.0153	.0153	-.0160	-.0176	-.0174	-.0119	
120,000						-.0192								-.0181		
130,000						-.0139								-.0182		
140,000						-.0161								-.0186		
150,000						-.0177								-.0188		

ARC 3.5-180 IA16/OA20 ORBITER (ORB FUSELAGE)

(REM129)

MACH (1) = 5.300 ALPHA (1) = 18.286

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
130.000						.0373			
140.000						-.0133			
150.000						-.0136			
160.000						-.0119			
170.000						-.0118			
180.000	-.0273	-.0268	-.0233	-.0205	-.0188	.0074			

MACH (1) = 5.300 ALPHA (2) = 22.196 RN/L = 3.2450 Q = 0.9340 P = .3957 BETA = .0000

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3330	.3570	.3750	.3940	.4050	.4310
PHI															
60.000	.1293	.1204	.0974												
70.000	.0812	.1015	.0899												
80.000	.0615	.0672	.0785												
90.000			.0494	.0437	.0184	.0094	-.0036	.0047	.0079	.0064	.0051	.0032	-.0019	-.0020	-.0017
100.000						.0031	-.0061	.0020	.0038	.0029	.0017	.0010	-.0058	-.0063	-.0050
110.000						-.0131	.0022	-.0051	-.0020	-.0056	-.0054	-.0110	-.0110	-.0110	-.0104
120.000						-.0163								-.0308	
130.000						-.0211								-.0431	
140.000						-.0320								-.0458	
150.000						-.0338								-.0468	
160.000						-.0326								-.0431	
170.000						-.0306								-.0345	
180.000						-.0310	-.0291	-.0266	-.0248	-.0240	-.0233	-.0300	-.0304	-.0323	.0102

X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90.000	-.0011	-.0009	.0001	-.0005	-.0036	-.0075	-.0020	-.0016	-.0024	-.0045	-.0083	-.0182	-.0249	-.0291	-.0308
100.000	-.0049	-.0046	-.0042	-.0031	-.0025	-.0025	.0043	.0008	.0051	.0039	.0113	-.0176	-.0043	-.0091	-.0113
110.000	-.0092	-.0093	-.0091	-.0087	.0182	-.0055	.0002	.0009	.0017	.0001	.0089	-.0030	-.0025	-.0050	-.0030
120.000						-.0399								-.0265	
130.000						-.0313								-.0286	
140.000						-.0322								-.0315	
150.000						-.0339								-.0319	
160.000						-.0349								-.0314	
170.000						-.0315								-.0315	
180.000	-.0321	-.0323	-.0312	-.0313	-.0319	-.0293	-.0241	-.0219	-.0224	-.0228	-.0230	-.0249	-.0309	-.0316	-.0182

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3,5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM126)

MACH (1) = 5.302 ALPHA (2) = 22.209

SECTION (1)SSV	DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
60,000							-.0278		
70,000							-.0256	-.0261	-.0188
80,000							-.0264	-.0237	-.0202
90,000	-.0256	-.0293	-.0306	-.0311	-.0316	-.0281	-.0291	-.0213	-.0198
100,000	.0024	-.0074	-.0135	-.0185	-.0230	-.0224			
110,000	.0073	.0037	.0019	.0010	.0116	.0694			
120,000						.1321			
130,000						.0792			
140,000						-.0201			
150,000						-.0182			
160,000						-.0164			
170,000						-.0173			
180,000	-.0255	-.0254	-.0251	-.0236	-.0207	-.0112			

MACH (1) = 5.302 ALPHA (3) = 26.293 RN/L = 3.5597 Q = 7.1637 P = .3640 BETA = -1.8480

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1280	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1368	.1378	.1175												
70,000	.0770	.1142	.1081												
80,000	.0425	.0633	.0896												
90,000			.0448	.0518	.0246	.0105	.0112	.0140	.0110	.0118	.0095	.0101	.0116	.0118	.0126
100,000						.0041	-.0091	.0056	.0068	.0054	.0051	.0063	.0079	.0073	.0077
110,000						-.0211	.0034	-.0047	-.0011	-.0016	-.0002	.0004	.0014	.0014	.0009
120,000						-.0369								-.0314	
130,000						-.0375								-.0466	
140,000						-.0491								-.0500	
150,000						-.0519								-.0514	
160,000						-.0485								-.0517	
170,000						-.0473								-.0491	
180,000						-.0456	-.0432	-.0422	-.0377	-.0388	-.0400	-.0382	-.0395	-.0427	.0176
X/L	.4500	.4880	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6380	.6540	.6730	.6880	.7100
PHI															
90,000	.0122	.0112	.0119	.0117	.0178	.0188	.0168	.0043	-.0105	-.0212	-.0199	-.0267	-.0282	-.0313	-.0291
100,000	.0078	.0086	.0095	.0100	.0095	.0077	.0179	.0169	-.0044	-.0129	-.0015	-.0242	-.0028	-.0141	-.0162
110,000	.0017	.0019	.0032	.0045	.0284	.0055	.0148	.0139	.0089	.0111	.0002	.0125	.0154	.0152	.0149
120,000						-.0431								-.0243	
130,000						-.0291								-.0304	
140,000						-.0313								-.0305	
150,000						-.0339								-.0320	

ARC 3.5-100 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM127)

MACH (1) = 5.302 ALPHA (1) = 16.257

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
130,000							.0578		
140,000							-.0004		
150,000							.0007		
160,000							-.0133		
170,000							-.0101		
180,000	-.0320	-.0331	-.0286	-.0249	-.0225	-.0119			

MACH (1) = 5.302 ALPHA (2) = 22.199 RN/L = 3.8290 Q = 7.1847 P = .3647 ETA = 1.8480

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3360	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1046	.0949	.0746												
70,000	.0845	.0788	.0685												
80,000	.0454	.0470	.0559												
90,000			.0310	.0269	.0062	-.0025	-.0109	-.0052	-.0040	-.0058	-.0068	-.0068	-.0097	-.0093	-.0071
100,000						-.0077	-.0155	-.0091	-.0078	-.0093	-.0083	-.0091	-.0123	-.0127	-.0125
110,000						-.0207	-.0087	-.0139	-.0126	-.0131	-.0130	-.0163	-.0160	-.0159	-.0166
120,000						-.0184									-.0308
130,000						-.0240									-.0415
140,000						-.0323									-.0441
150,000						-.0365									-.0418
160,000						-.0340									-.0343
170,000						-.0337									-.0308
180,000						-.0333	-.0333	-.0317	-.0322	-.0309	-.0323	-.0339	-.0348	-.0360	.0078
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	-.0059	-.0062	-.0066	-.0072	-.0054	-.0094	-.0152	-.0238	-.0308	-.0356	-.0271	-.0365	-.0373	-.0395	-.0386
100,000	-.0116	-.0106	-.0091	-.0075	-.0081	-.0097	-.0091	-.0099	-.0187	-.0201	-.0055	-.0363	-.0297	-.0352	-.0356
110,000	-.0161	-.0157	-.0151	-.0141	.0169	-.0110	-.0095	-.0101	-.0128	-.0122	-.0067	-.0138	-.0118	-.0133	-.0130
120,000						-.0372									-.0279
130,000						-.0340									-.0282
140,000						-.0358									-.0350
150,000						-.0376									-.0362
160,000						-.0363									-.0364
170,000						-.0326									-.0371
180,000	-.0366	-.0363	-.0358	-.0358	-.0356	-.0348	-.0308	-.0286	-.0296	-.0294	-.0294	-.0307	-.0358	-.0380	-.0237
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400						

PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM126)

MACH (1) = 10.290 ALPHA (1) = 30.315

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
130,000						.0445				
140,000						.0244				
150,000						.0195				
160,000						.0218				
170,000						.0218				
180,000	.0172	.0172	.0171	.0185	.0244	.0241				

MACH (1) = 10.290 ALPHA (2) = 32.189 RN/L = 1.6913 Q = 2.4213 F = .0330 BETA = .0000

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1200	.1246	.1099												
70,000	.0730	.1056	1.4997												
80,000	.0428	.0674	1.4995												
90,000			1.4994	1.4991	1.4989	.0516	.0477	.0000	.0361	.0367	.0364	.0391	.0312	.0281	.0196
100,000						.0309	.0268	.0364	.0391	.0335	.0310	.0325	.0246	.0254	.0280
110,000						.0174	.0390	.0292	.0291	.0293	.0285	.0180	.0178	.0193	.0201
120,000						.0036								.0370	
130,000						.0064								.0080	
140,000						.0063								-.0051	
150,000						.0025								-.0085	
160,000						.0009								-.0095	
170,000						.0010								-.0099	
180,000						.0027	.0121	.0049	.0095	.0060	.0071	-.0008	-.0007	-.0097	.0971
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0187	.0093	.0059	.0035	.0005	-.0015	.0111	.0110	.0093	.0091	.0415	.0000	.0091	.0073	.0257
100,000	.0273	.0222	.0180	.0147	.0116	.0072	.0146	.0132	.0249	.0267	.0944	.0210	.0087	.0077	.0232
110,000	.0251	.0000	.0245	.0230	.0157	.0135	.0223	.0195	.0219	.0178	.1203	.0152	.0082	.0077	.0205
120,000						-.0034								.0057	
130,000						.0159								.0052	
140,000						.0642								.0045	
150,000						.0245								.0046	
160,000						.0125								.0043	
170,000						.0074								.0045	
180,000	-.0009	-.0009	-.0009	-.0011	-.0026	.0091	.0146	.0129	.0137	.0113	.0463	.0105	.0061	.0043	.0188
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400						

PHI

ARC 3.5-100 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM120)

MACH (1) = 10.290 ALPHA (2) = 32.189

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							.0244			
70,000							.0242	.0233	.0242	
80,000							.0236	.0242	.0243	
90,000	.0199	.0218	.0221	.0233	.0235	.0264	.0250	.0242	.0244	
100,000	.0215	.0215	.0229	.0216	.0235	.0236				
110,000	.0196	.0220	.0233	.0232	.0440	.0000				
120,000						.0235				
130,000						.0252				
140,000						.0202				
150,000						.0216				
160,000						.0248				
170,000						.0252				
180,000	.0210	.0191	.0201	.0223	.0274	.0266				

MACH (1) = 10.290 ALPHA (3) = 34.256 RN/L = 1.8613 Q = 2.4213 P = .0330 BETA = .0000

SECTION (1)SSV	DEPENDENT VARIABLE CP															
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310	
PHI																
60,000	.1156	.1150	.1007													
70,000	.0696	.0991	.0971													
80,000	.0403	.0613	.0883													
90,000			.0574	.0635	.0519	.0432	1.5014	1.5012	1.5010	1.5012	.1397	.0412	.0305	.0261	.0165	
100,000						.0404	1.5015	1.5010	1.5012	1.5011	.0338	.0371	.0291	.0298	.0299	
110,000						.0219	1.5016	1.5010	1.5012	1.5011	.0280	.0195	.0214	.0224	.0241	
120,000						.0059								.0274		
130,000						.0028								.0038		
140,000						.0014								-.0058		
150,000						.0039								-.0075		
160,000						.0005								-.0096		
170,000						.0002								-.0091		
180,000						.0027	1.5015	1.5011	1.5013	1.5008	.0080	-.0005	-.0003	-.0093	.0363	
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90,000	.0159	.0093	.0064	.0036	.0016	-.0013	.0085	.0106	.0094	.0086	.0422	.0232	.0094	.0084	.0279	
100,000	.0273	.0218	.0173	.0136	.0117	.0056	.0129	.0125	.0135	.0138	.0908	.0231	.0096	.0088	.0233	
110,000	.0292	.0271	.0254	.0224	.0153	.0133	.0210	.0177	.0167	.0142	.1119	.0161	.0092	.0084	.0236	
120,000						-.0021								.0065		
130,000						.0133								.0061		
140,000						.0597								.0058		
150,000						.0272								.0055		

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM129)

MACH (1) = 10.290 ALPHA (1) = 30.326

SECTION (1) SSV		DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
130.000						.0474				
140.000						.0026				
150.000						-.0011				
160.000						-.0020				
170.000						-.0038				
180.000	-.0083	-.0094	-.0074	-.0062	-.0030	-.0026				

MACH (1) = 10.290 ALPHA (2) = 32.248 RM/L = 1.7673 Q = 2.4087 P = .0323 BETA = -1.6907

SECTION (1) SSV		DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2840	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310	
PHI																
60.000	.1278	.1261	.1099													
70.000	.0768	.1066	.1027													
80.000	.0391	.0639	.0919													
90.000			.0539	.0638	.0449	.0361	.0406	.0352	.0331	.0322	.0337	.0368	.0296	.0308	.0255	
100.000						.0307	.0211	.0316	.0310	.0296	.0298	.0314	.0229	.0226	.0230	
110.000						.0110	.0313	.0239	.0257	.0268	.0276	.0147	.0160	.0154	.0190	
120.000						-.0043									.0229	
130.000						-.0056									-.0065	
140.000						-.0084									-.0157	
150.000						-.0091									-.0192	
160.000						-.0088									-.0197	
170.000						-.0097									-.0202	
180.000						-.0098	-.0070	-.0046	-.0006	-.0009	-.0036	-.0083	-.0087	-.0205	.0344	
X/L	.4900	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90.000	.0173	.0096	.0034	.0003	-.0040	-.0072	-.0028	-.0014	-.0028	-.0056	.0251	.0035	-.0087	-.0109	-.0043	
100.000	.0257	.0259	.0210	.0147	.0124	.0071	.0066	.0041	.0061	.0048	.0714	.0027	-.0085	-.0111	-.0067	
110.000	.0185	.0172	.0195	.0220	.0187	.0138	.0184	.0146	.0097	.0089	.0926	.0021	-.0045	-.0078	-.0039	
120.000						-.0121									-.0109	
130.000						.0002									-.0129	
140.000						.0449									-.0127	
150.000						.0082									-.0133	
160.000						-.0031									-.0131	
170.000						-.0079									-.0135	
180.000	-.0112	-.0112	-.0111	-.0102	-.0108	-.0097	.0022	.0027	-.0002	-.0008	.0271	-.0047	-.0093	-.0131	-.0078	
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400							

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM129)

MACH (1) = 10.290 ALPHA (2) = 32.248

SECTION (1)SSV		DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000										-.0059
70,000										-.0049
80,000										-.0039
90,000	-.0078	-.0078	-.0070	-.0061	-.0045	-.0025	-.0045	-.0031	-.0055	-.0045
100,000	-.0062	-.0069	-.0062	-.0064	-.0060	-.0049				-.0049
110,000	-.0058	-.0057	-.0070	-.0045	.0186	-.0050				-.0050
120,000						.0624				.0624
130,000						.0384				.0384
140,000						.0028				.0028
150,000						-.0003				-.0003
160,000						-.0008				-.0008
170,000						-.0028				-.0028
180,000	-.0075	-.0074	-.0069	-.0051	-.0016	-.0007				-.0007

MACH (1) = 10.290 ALPHA (3) = 34.285 RN/L = 1.7673 Q = 2.4087 P = .0323 BETA = -1.6907

SECTION (1)SSV		DEPENDENT VARIABLE CP													
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1254	.1285	.1111												
70,000	.0699	.1061	.1068												
80,000	.0369	.0809	.0943												
90,000			.0536	.0664	.0445	.0395	.0408	.0352	.0330	.0335	.0341	.0362	.0329	.0326	.0230
100,000						.0339	.0224	.0333	.0314	.0316	.0303	.0306	.0257	.0266	.0300
110,000						.0146	.0328	.0250	.0269	.0270	.0262	.0170	.0171	.0179	.0201
120,000						-.0032								.0195	
130,000						-.0087								-.0075	
140,000						-.0087								-.0157	
150,000						-.0094								-.0186	
160,000						-.0094								-.0197	
170,000						-.0102								-.0201	
180,000						-.0109	-.0065	-.0063	-.0022	-.0018	-.0013	-.0081	-.0089	-.0198	.0228
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0158	.0084	.0035	-.0006	-.0056	-.0088	-.0061	-.0031	-.0034	-.0059	.0275	.0055	-.0067	-.0091	-.0011
100,000	-.0297	-.0260	.0190	.0141	.0108	.0044	.0046	.0020	.0016	-.0012	.0730	.0047	-.0071	-.0089	-.0023
110,000	.0240	.0245	.0244	.0230	.0147	.0121	.0159	.0133	.0076	.0070	.0933	.0027	-.0051	-.0078	-.0011
120,000						-.0125								-.0111	
130,000						-.0041								-.0121	
140,000						.0397								-.0121	
150,000						.0065								-.0127	

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REMI30)

MACH (1) = 10.290 ALPHA (1) = 30.334

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
130,000						.0207				
140,000						.0197				
150,000						.0199				
160,000						.0228				
170,000						.0208				
180,000	.0195	.0203	.0197	.0200	.0257	.0230				

MACH (1) = 10.290 ALPHA (2) = 32.243 RN/L = 1.7897 Q = 2.4110 P = .0330 BETA = 1.6903

SECTION (1)SSV	DEPENDENT VARIABLE CP															
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310	
PHI																
60,000	.1080	.1018	.0869													
70,000	.0677	.0888	.0844													
80,000	.0419	.0546	.0768													
90,000			.0508	.0543	.0474	.0383	.0425	.0336	.0341	.0315	.0357	.0422	.0362	.0347	.0286	
100,000						.0336	.0272	.0345	.0430	.0315	.0269	.0418	.0387	.0392	.0380	
110,000						.0195	.0331	.0278	.0272	.0221	.0376	.0321	.0330	.0336	.0347	
120,000						.0131								.1969		
130,000						.0112								.0430		
140,000						.0091								.0188		
150,000						.0078								.0130		
160,000						.0074								.0107		
170,000						.0071								.0101		
180,000						.0047	.0112	.0160	.0143	.0155	.0161	.0176	.0173	.0095	.3488	
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90,000	.0298	.0202	.0171	.0148	.0137	.0120	.0204	.0198	.0177	.0202	.0510	.0311	.0165	.0145	.0244	
100,000	.0333	.0282	.0247	.0217	.0200	.0163	.0217	.0212	.0612	.0992	.1440	.0288	.0153	.0144	.0201	
110,000	.0397	.0348	.0307	.0279	.0233	.0206	.0256	.0241	.0427	.0368	.1359	.0225	.0196	.0145	.0206	
120,000						.0110								.0140		
130,000						.0259								.0137		
140,000						.0832								.0131		
150,000						.0373								.0130		
160,000						.0240								.0131		
170,000						.0192								.0135		
180,000	.0185	.0154	.0145	.0133	.0123	.0168	.0230	.0199	.0289	.0256	.0577	.0189	.0145	.0139	.0199	
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400							

ARC 3.3-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM130)

MACH (1) = 10.290 ALPHA (2) = 32.243

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							.0225			
70,000							.0220	.0221	.0217	
80,000							.0206	.0217	.0211	
90,000	.0200	.0199	.0208	.0207	.0217	.0247	.0219	.0215	.0221	
100,000	.0216	.0195	.0200	.0213	.0202	.0219				
110,000	.0200	.0204	.0202	.0199	.0440	.0203				
120,000						.0228				
130,000						.0221				
140,000						.0209				
150,000						.0215				
160,000						.0232				
170,000						.0229				
180,000	.0198	.0205	.0200	.0209	.0253	.0244				

MACH (1) = 10.290 ALPHA (3) = 34.247 RN/L = 1.7897 Q = 2.4110 P = .0330 BETA = 1.6903

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1096	.1071	.0891												
70,000	.0756	.0946	.0924												
80,000	.0428	.0566	.0834												
90,000			.0510	.0601	.0521	.0474	.0564	.0402	.0374	.0389	.0413	.0382	.0373	.0330	.0256
100,000						.0394	.0349	.0351	.0370	.0342	.0381	.0365	.0412	.0418	.0363
110,000						.0290	.0419	.0311	.0338	.0285	.0296	.0331	.0351	.0359	.0377
120,000						.0160								.0555	
130,000						.0130								.0236	
140,000						.0099								.0134	
150,000						.0108								.0103	
160,000						.0102								.0094	
170,000						.0115								.0097	
180,000						.0101	.0147	.0098	.0223	.0147	.0136	.0173	.0173	.0090	.0905
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0267	.0200	.0163	.0141	.0134	.0113	.0178	.0188	.0180	.0175	.0520	.0284	.0169	.0149	.0255
100,000	.0321	.0278	.0242	.0211	.0195	.0160	.0200	.0197	.0267	.0303	.1033	.0265	.0160	.0149	.0245
110,000	.0411	.0336	.0299	.0268	.0229	.0204	.0248	.0225	.0251	.0236	.0924	.0211	.0155	.0149	.0238
120,000						.0106								.0144	
130,000						.0230								.0140	
140,000						.0400								.0138	
150,000						.0253								.0137	

ARC 3.5-100 IA16/OA20 ORBITER (ORB FUSELAGE)

(REN131) (02 APR 74)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRP = .0000 IN.
 BREF = 936.6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

BETA = .000 ELEV-L = 10.000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 7.330 ALPHA (1) = 26.165 RN/L = 3.0547 Q = 4.6593 P = .1240 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2810 .3200 .3590 .3980 .4370 .4760 .5150 .5540 .5930 .6320 .6710

PHI

60.000 .1180 .1188 .0911
 70.000 .0663 .1047 .1018
 80.000 .0669 .0583 .0921
 90.000 .0426 .0498 .0243 .0173 .0223 .0137 .0202 .0222 .0215 .0214 .0156 .0159 .0166
 100.000 .0131 .0058 .0147 .0259 .0184 .0188 .0182 .0125 .0123 .0122
 110.000 -.0033 .0378 .0199 .0135 .0077 .0182 .0081 .0063 .0063 .0082
 120.000 -.0108
 130.000 -.0112
 140.000 -.0107
 150.000 -.0162
 160.000 -.0186
 170.000 -.0087
 180.000 -.0137 -.0077 -.0083 -.0076 -.0027 .0026 -.0104 -.0116 -.0167 .1994

X/L .4500 .4880 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

90.000 .0188 .0307 .0207 .0015 -.0041 -.0092 .0053 -.0075 -.0113 -.0125 -.0049 -.0096 -.0129 -.0160 -.0128
 100.000 .0129 .0133 .0136 .0152 .0213 .0285 .0220 .0073 .0289 .0483 .0359 -.0103 -.0134 -.0156 -.0165
 110.000 .0084 .0087 .0099 .0103 .0283 .0178 .0111 .0102 .0173 .0206 .0593 .0063 -.0053 -.0096 -.0109
 120.000 -.0129
 130.000 .0023
 140.000 -.0055
 150.000 -.0125
 160.000 -.0155
 170.000 -.0170
 180.000 -.0129 -.0130 -.0134 -.0136 -.0121 -.0175 .0020 -.0059 -.0040 -.0031 .0058 -.0064 -.0131 -.0163 -.0140

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

60.000 -.0156
 70.000 -.0159 -.0158 -.0153
 80.000 -.0155 -.0157 -.0154
 90.000 -.0176 -.0177 -.0170 -.0166 -.0171 -.0136 -.0159 -.0158 -.0154
 100.000 -.0180 -.0185 -.0178 -.0172 -.0166 -.0171
 110.000 -.0149 -.0164 -.0171 -.0154 -.0086 -.0151
 120.000 .0727

ARC 3.5-180 IA16/OA26 ORBITER (ORS FUSELAGE)

(REM131)

MACH (1) = 7.330 ALPHA (1) = 26.185

SECTION (1)SSV		DEPENDENT VARIABLE CP													
X/L		.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400					
PHI															
130,000											.0344				
140,000											-.0090				
150,000											-.0103				
160,000											-.0108				
170,000											-.0108				
180,000		-.0156	-.0158	-.0156	-.0149	-.0141	-.0111								

MACH (2) = 7.330 ALPHA (2) = 30.273 RN/L = 3.0547 Q = 4.6593 P = .1240 BETA = .0000

SECTION (1)SSV		DEPENDENT VARIABLE CP														
X/L		.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3360	.3570	.3750	.3940	.4050	.4310
PHI																
60,000	1.0159	1.0162	.2154													
70,000	1.0159	.8342	.0679													
80,000	1.0160	.9386	.0736													
90,000			.0438	.0514	.0349	.0259	.0349	.0310	.0239	.0457	.0328	.0277	.0224	.0243	.0298	
100,000						.0266	.0118	.0247	.0257	.0288	.0275	.0283	.0183	.0178	.0190	
110,000						.0058	.0287	.0170	.0157	.0222	.0255	.0113	.0137	.0135	.0139	
120,000						.0038									-.0030	
130,000						-.0061									-.0152	
140,000						-.0120									-.0190	
150,000						-.0160									-.0203	
160,000						-.0106									-.0203	
170,000						-.0063									-.0197	
180,000						-.0117	-.0065	-.0139	-.0102	-.0084	.0016	-.0123	-.0125	-.0193	.0417	

X/L		.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI																
90,000	.0180	.0068	.0012	-.0040	-.0090	-.0118	-.0125	-.0111	-.0113	-.0132	-.0045	-.0133	-.0148	-.0162	-.0143	
100,000	.0202	.0259	.0280	.0172	.0123	.0042	.0004	-.0031	-.0072	-.0072	.0005	-.0136	-.0158	-.0167	-.0158	
110,000	.0145	.0142	.0142	.0152	.0155	.0142	.0199	.0149	.0037	.0046	.0034	-.0074	-.0114	-.0144	-.0143	
120,000						-.0132									-.0160	
130,000						-.0114									-.0167	
140,000						-.0138									-.0169	
150,000						-.0156									-.0171	
160,000						-.0165									-.0174	
170,000						-.0167									-.0174	
180,000	-.0122	-.0123	-.0128	-.0125	-.0121	-.0170	-.0065	-.0032	-.0071	-.0069	-.0064	-.0113	-.0148	-.0175	-.0153	

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

ARC 3.9-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM132) (02 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRP = .0000 IN.
 BREF = 936.6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

PARAMETRIC DATA

BETA = -2.000 ELEV-L = 10.000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 7.330 ALPHA (1) = 26.209 RN/L = 3.1237 Q = 4.6657 P = .1240 BETA = -1.7260

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .0870 .1200 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI

60,000 .1385 .1303 .1129
 70,000 .0809 .1105 .1025
 80,000 .0501 .0874 .0879
 90,000 .0530 .0560 .0323 .0216 .0261 .0224 .0206 .0200 .0182 .0188 .0193 .0187 .0198
 100,000 .0164 .0059 .0179 .0165 .0161 .0166 .0169 .0156 .0158 .0152
 110,000 -.0028 .0148 .0095 .0104 .0113 .0119 .0103 .0106 .0092 .0107
 120,000 -.0145
 130,000 -.0173
 140,000 -.0234
 150,000 -.0227
 160,000 -.0221
 170,000 -.0227
 180,000 -.0203 -.0193 -.0185 -.0163 -.0168 -.0156 -.0151 -.0163 -.0223 .1933

X/L .4500 .4880 .4880 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

90,000 .0199 .0192 .0207 .0314 .0341 .0062 .0162 .0040 -.0002 -.0009 .0081 .0001 -.0044 -.0070 .0013
 100,000 .0139 .0165 .0167 .0169 .0167 .0166 .0245 .0278 .2466 .2238 .1112 -.0002 -.0022 -.0039 .0025
 110,000 .0105 .0104 .0116 .0127 .1972 .0147 .0223 .0228 .0643 .0220 .1903 .0198 .0255 .0230 .0323
 120,000 -.0173
 130,000 .0080
 140,000 .0004
 150,000 -.0069
 160,000 -.0091
 170,000 -.0108
 180,000 -.0174 -.0173 -.0179 -.0175 -.0112 -.0117 .0073 .0021 .0092 .0017 .0233 .0023 -.0031 -.0099 .0119

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

60,000 -.0010
 70,000 -.0033 -.0032 -.0020
 80,000 -.0023 -.0036 -.0026
 90,000 -.0022 -.0047 -.0046 -.0039 -.0024 .0031 -.0012 -.0031 -.0016
 100,000 .0001 -.0028 -.0035 -.0035 -.0014 .0028
 110,000 .0251 .0157 .0076 .0017 .0099 .0135
 120,000 .1001

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM132)

MACH (1) = 7.330 ALPHA (1) = 26.209

SECTION (1) SSV		DEPENDENT VARIABLE CP												
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400					
PHI														
130,000							.0611							
140,000							.0056							
150,000							.0014							
160,000							.0016							
170,000							.0021							
180,000	-.0003	-.0017	-.0016	-.0012	.0005	.0085								

MACH (1) = 7.330 ALPHA (2) = 30.217 RN/L = 3.1237 Q = 4.6697 P = .1240 BETA = -1.7260

SECTION (1) SSV		DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310	
PHI																
60,000	1.0264	1.0264	1.0264													
70,000	1.0263	1.0264	.1726													
80,000	1.0264	1.0264	.0910													
90,000			.0462	.0597	.0354	.0276	.0316	.0260	.0278	.0258	.0271	.0266	.0250	.0255	.0261	
100,000						.0216	.0110	.0225	.0245	.0242	.0214	.0227	.0214	.0215	.0224	
110,000						.0003	.0211	.0155	.0175	.0180	.0192	.0143	.0156	.0160	.0164	
120,000						-.0182								-.0035		
130,000						-.0174								-.0195		
140,000						-.0223								-.0233		
150,000						-.0238								-.0246		
160,000						-.0241								-.0254		
170,000						-.0221								-.0250		
180,000						-.0213	-.0192	-.0194	-.0148	-.0194	-.0142	-.0164	-.0171	-.0243	.0415	

X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0363	.0360	.0163	.0094	.0009	-.0060	-.0004	-.0013	-.0025	-.0047	.0078	-.0023	-.0048	-.0060	-.0021
100,000	.0229	.0227	.0236	.0291	.0353	.0288	.0304	.0191	.0120	.0131	.0359	-.0028	-.0037	-.0070	-.0017
110,000	.0170	.0175	.0176	.0182	.0579	.0232	.0283	.0287	.0264	.0351	.0304	.0233	.0116	.0079	.0099
120,000						-.0175								-.0043	
130,000						-.0060								-.0078	
140,000						-.0084								-.0086	
150,000						-.0098								-.0090	
160,000						-.0108								-.0096	
170,000						-.0115								-.0097	
180,000	-.0179	-.0171	-.0176	-.0172	-.0139	-.0118	-.0006	.0043	.0057	.0060	.0101	.0039	-.0045	-.0096	.0021

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(RM133)

MACH (1) = 7.330 ALPHA (1) = 26.214

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
130,000										-.0082
140,000										-.0063
150,000										-.0037
160,000										-.0030
170,000										-.0042
180,000	-.0110	-.0108	-.0099	-.0084	-.0067	-.0021				

MACH (1) = 7.330 ALPHA (2) = 30.237 RN/L = 3.2267 Q = 4.6747 P = .1240 BETA = 1.7253

SECTION (1)SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3360	.3570	.3750	.3940	.4050	.4210
PHI															
60,000	1.0199	1.0199	1.0198												
70,000	1.0198	1.0200	1.0198												
80,000	1.0198	1.0200	1.0199												
90,000			1.0198	1.0198	1.0200	1.0200	1.0202	1.0202	.0144	.0140	.0135	.0164	.0198	.0197	.0079
100,000						1.0200	1.0202	1.0202	.0141	.0124	.0115	.0115	.0123	.0123	.0158
110,000						1.0200	1.0202	.0803	.0093	.0107	.0104	.0072	.0082	.0083	.0087
120,000						1.0200									-.0043
130,000						1.0200									-.0154
140,000						1.0200									-.0178
150,000						1.0200									-.0192
160,000						1.0200									-.0183
170,000						1.0201									-.0178
180,000						1.0201	1.0202	-.0145	-.0102	-.0108	-.0116	-.0104	-.0112	-.0177	.1103

X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0010	-.0050	-.0084	-.0114	-.0131	-.0145	-.0127	-.0123	-.0134	-.0134	.0074	-.0063	-.0143	-.0148	-.0085
100,000	.0187	.0119	.0061	.0032	-.0009	-.0062	-.0095	-.0108	.0084	.0174	.0468	-.0077	-.0147	-.0149	-.0099
110,000	.0111	.0106	.0144	.0150	.0139	.0009	.0030	-.0010	.0013	-.0048	.0700	-.0106	-.0145	-.0149	-.0102
120,000						-.0128									-.0155
130,000						-.0090									-.0156
140,000						-.0113									-.0155
150,000						-.0137									-.0159
160,000						-.0145									-.0156
170,000						-.0146									-.0157
180,000	-.0131	-.0130	-.0130	-.0124	-.0120	-.0152	-.0072	-.0078	-.0071	-.0099	.0091	-.0152	-.0150	-.0152	-.0101

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REN133)

MACH (1) = 7.330 ALPHA (2) = 30.237

SECTION (1) SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60,000							-.0075			
70,000							-.0090	-.0092	-.0089	
80,000							-.0093	-.0090	-.0090	
90,000	-.0098	-.0098	-.0098	-.0098	-.0095	-.0077	-.0091	-.0089	-.0087	
100,000	-.0100	-.0100	-.0098	-.0097	-.0096	-.0090				
110,000	-.0103	-.0100	-.0095	-.0096	.0031	-.0091				
120,000						-.0093				
130,000						-.0090				
140,000						-.0096				
150,000						-.0086				
160,000						-.0051				
170,000						-.0059				
180,000	-.0100	-.0100	-.0095	-.0083	-.0060	.0004				

MACH (1) = 7.330 ALPHA (3) = 34.204 RN/L = 3.2267 Q = 4.6747 P = .1240 BETA = 1.7253

SECTION (1) SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	1.0205	1.0208	1.0209												
70,000	1.0207	1.0208	1.0210												
80,000	1.0208	1.0208	1.0210												
90,000			1.0210	1.0211	1.0212	1.0213	1.0215	1.0215	1.0219	1.0216	1.0217	1.0218	.0180	.0140	.0046
100,000						1.0213	1.0214	1.0216	1.0219	1.0218	1.0217	1.0220	.0185	.0188	.0181
110,000						1.0213	1.0215	1.0216	1.0218	1.0219	1.0218	.0117	.0121	.0122	.0139
120,000						1.0213								-.0041	
130,000						1.0214								-.0155	
140,000						1.0213								-.0180	
150,000						1.0214								-.0184	
160,000						1.0214								-.0181	
170,000						1.0215								-.0182	
180,000						1.0214	1.0216	1.0216	1.0216	1.0219	1.0220	-.0118	-.0122	-.0187	.0286
X/L	.4300	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	-.0005	-.0056	-.0093	-.0120	-.0136	-.0150	-.0136	-.0130	-.0138	-.0142	.0020	-.0083	-.0138	-.0143	-.0077
100,000	.0132	.0090	.0062	.0010	-.0036	-.0092	-.0118	-.0122	-.0093	-.0090	.0296	-.0091	-.0142	-.0140	-.0082
110,000	.0169	.0162	.0142	.0113	.0004	-.0013	-.0010	-.0059	-.0088	-.0110	.0422	-.0122	-.0144	-.0138	-.0083
120,000						-.0144								-.0144	
130,000						-.0108								-.0145	
140,000						-.0129								-.0148	
150,000						-.0147								-.0150	

ARC 3.9-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM135) (02 APR 74)

REFERENCE DATA

SREF = 2090.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRP = .0000 IN.
 BREF = 936.6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

PARAMETRIC DATA

BETA = -2.000 ELEV-L = 10.000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 5.299 ALPHA (1) = 18.316 RN/L = 3.1733 Q = 6.9137 P = .3517 BETA = -1.8477

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI

60.000 .1642 .1468 .1213
 70.000 .1217 .1278 .1105
 80.000 .0947 .1012 .1011
 90.000 .0810 .0641 .0288 .0148 .0133 .0112 .0102 .0102 .0085 .0091 .0091 .0089 .0098
 100.000 .0107 .0030 .0080 .0069 .0063 .0061 .0051 .0060 .0058 .0055
 110.000 .0014 .0091 .0028 .0025 .0003 .0010 .0002 .0002 .0002 .0004
 120.000 .0005 .0196
 130.000 -.0095 -.0348
 140.000 -.0273 -.0370
 150.000 -.0321 -.0351
 160.000 -.0316 -.0348
 170.000 -.0288 -.0324
 180.000 -.0291 -.0280 -.0282 -.0269 -.0271 -.0268 -.0254 -.0251 -.0258 .5799

X/L .4500 .4680 .4860 .5030 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

90.000 .0077 .0071 .0074 .0067 .0072 .0079 .0213 .0098 .0094 .0097 .0098 .0092 .0044 .0039 .0025
 100.000 .0054 .0030 .0051 .0048 .0046 .0042 .0058 .0076 .3642 .3789 .3404 .0087 .0053 .0059 .0093
 110.000 .0008 .0006 .0001 .0009 .0296 .0020 .0009 .0010 .0235 .0013 .2933 .0011 .0008 .0008 .0023
 120.000 -.0357 -.0284
 130.000 -.0235 -.0318
 140.000 -.0299 -.0327
 150.000 -.0354 -.0333
 160.000 -.0375 -.0336
 170.000 -.0357 -.0344
 180.000 -.0244 -.0245 -.0247 -.0250 -.0247 -.0289 -.0065 -.0207 -.0193 -.0222 -.0095 -.0229 -.0291 -.0329 -.0148

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

60.000 -.0318
 70.000 -.0340 -.0331 -.0335
 80.000 -.0311 -.0319 -.0308
 90.000 -.0010 -.0097 -.0150 -.0189 -.0225 -.0214 -.0221 -.0230 -.0175
 100.000 .0070 .0040 .0021 -.0007 -.0044 .0025
 110.000 .0039 .0022 .0020 .0024 .0189 .1050
 120.000 .1600

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM135)

MACH (1) = 5.299 ALPHA (1) = 18.316

SECTION (1)SSV	DEPENDENT VARIABLE CP									
	X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI										
130,000							.0741			
140,000							-.0237			
150,000							-.0236			
160,000							-.0237			
170,000							-.0288			
180,000	-.0291	-.0287	-.0250	-.0223	-.0196	-.0049				

MACH (1) = 5.299 ALPHA (2) = 22.229 RN/L = 3.1733 Q = 6.9137 P = .3517 BETA = -1.8477

SECTION (1)SSV	DEPENDENT VARIABLE CP															
	X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI																
60,000	.1582	.1492	.1232													
70,000	.1030	.1253	.1127													
80,000	.0757	.0862	.0990													
90,000			.0662	.0615	.0306	.0176	.0169	.0156	.0148	.0149	.0145	.0151	.0138	.0142	.0142	
100,000						.0115	.0001	.0100	.0102	.0101	.0104	.0110	.0108	.0100	.0109	
110,000						-.0078	.0096	.0019	.0032	.0037	.0036	.0035	.0041	.0042	.0047	
120,000						-.0142									-.0223	
130,000						-.0206									-.0365	
140,000						-.0327									-.0397	
150,000						-.0354									-.0404	
160,000						-.0346									-.0397	
170,000						-.0320									-.0370	
180,000						-.0315	.0000	-.0297	-.0284	-.0263	-.0268	-.0266	-.0269	-.0285	.0933	

SECTION (1)SSV	DEPENDENT VARIABLE CP															
	X/L	.4500	.4880	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI																
90,000	.0145	.0147	.0165	.0169	.0174	.0160	.0089	.0131	.0102	.0048	.0032	-.0058	-.0158	-.0232	-.0261	
100,000	.0108	.0000	.0112	.0121	.0127	.0133	.0128	.0114	.0252	.0282	.0327	-.0052	.0121	.0100	.0063	
110,000	.0057	.0058	.0059	.0080	.0143	.0092	.0061	.0069	.0098	.0084	.0290	.0077	.0082	.0078	.0064	
120,000						-.0354									-.0280	
130,000						-.0331									-.0320	
140,000						-.0343									-.0328	
150,000						-.0365									-.0340	
160,000						-.0374									-.0341	
170,000						-.0374									-.0340	
180,000	-.0281	-.0283	-.0275	-.0277	-.0279	-.0329	-.0265	-.0243	-.0245	-.0249	.0000	-.0241	-.0316	-.0340	-.0144	

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM135)

MACH (1) = 5.299 ALPHA (2) = 22.229

SECTION (1) SSV	DEPENDENT VARIABLE CP								
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
60,000							-.0316		
70,000							-.0338	-.0312	-.0269
80,000							-.0339	-.0292	-.0241
90,000	-.0279	-.0314	-.0330	-.0335	-.0338	-.0307	-.0330	-.0245	-.0236
100,000	-.0021	-.0110	-.0158	-.0206	-.0259	.0000			
110,000	.0027	.0005	-.0018	-.0040	.0093	.0637			
120,000						.1300			
130,000						.0757			
140,000						-.0220			
150,000						-.0211			
160,000						-.0193			
170,000						-.0201			
180,000	-.0278	-.0278	-.0273	-.0257	-.0234	-.0139			

MACH (1) = 5.299 ALPHA (3) = 26.306 RN/L = 3.1733 Q = 6.9137 P = .3517 BETA = -1.8477

SECTION (1) SSV	DEPENDENT VARIABLE CP														
X/L	.0870	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
PHI															
60,000	.1494	.1467	.1255												
70,000	.0861	.1231	.1156												
80,000	.0539	.0727	.0989												
90,000			.0548	.0623	.0356	.0216	.0216	.0226	.0225	.0226	.0213	.0210	.0212	.0210	.0227
100,000						.0141	.0023	.0161	.0165	.0173	.0173	.0172	.0176	.0167	.0173
110,000						-.0091	.0142	.0070	.0086	.0090	.0106	.0100	.0108	.0102	.0111
120,000						-.0244								-.0228	
130,000						-.0284								-.0358	
140,000						-.0370								-.0392	
150,000						-.0381								-.0405	
160,000						-.0372								-.0409	
170,000						-.0357								-.0379	
180,000						-.0345	-.0318	-.0306	-.0275	-.0271	-.0267	-.0276	-.0283	-.0314	.0239
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0218	.0204	.0208	.0204	.0233	.0258	.0144	.0078	-.0111	-.0222	-.0212	-.0294	-.0306	-.0336	-.0315
100,000	.0179	.0186	.0189	.0188	.0183	.0162	.0141	.0145	-.0062	-.0148	-.0023	-.0284	-.0072	-.0177	-.0201
110,000	.0113	.0118	.0126	.0137	.0161	.0143	.0115	.0119	.0072	.0090	.0010	.0109	.0133	.0123	.0127
120,000						-.0323								-.0261	
130,000						-.0310								-.0324	
140,000						-.0328								-.0327	
150,000						-.0359								-.0345	

ARC 9.9-160 IA16/OA26 ORBITER (ORB FUSELAGE)

(REMI96)

MACH (1) = 9.902 ALPHA (1) = 16.200

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.7250	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
130.000						.0612			
140.000						.0009			
150.000						.0018			
160.000						-.0112			
170.000						-.0087			
180.000	-.0927	-.0334	-.0209	-.0247	-.0216	-.0094			

MACH (1) = 9.902 ALPHA (2) = 22.217 RV/L = 9.1795 Q = 7.1245 P = .9620 BETA = 1.6400

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1280	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3790	.3940	.4050	.4310
PHI															
60.000	.0993	.0964	.0789												
70.000	.0637	.0828	.0707												
80.000	.0469	.0577	.0573												
90.000			.0402	.0343	.0078	.0009	.0440	-.0013	-.0013	-.0044	-.0053	-.0079	-.0069	-.0082	-.0067
100.000						-.0076	.0041	-.0073	-.0042	-.0071	-.0039	-.0077	-.0115	-.0116	-.0115
110.000						-.0150	-.0006	-.0126	-.0075	-.0107	-.0094	-.0157	-.0154	-.0153	-.0164
120.000						-.0135									-.0328
130.000						-.0212									-.0416
140.000						-.0263									-.0447
150.000						-.0317									-.0420
160.000						-.0264									-.0336
170.000						-.0330									-.0307
180.000						-.0304	-.0323	-.0273	-.0260	-.0290	-.0265	-.0342	-.0331	-.0362	.0091

X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
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PHI

90.000	-.0053	-.0055	-.0063	-.0070	-.0048	-.0083	-.0099	-.0227	-.0316	-.0367	-.0322	-.0385	-.0394	-.0416	-.0371
100.000	-.0110	-.0104	-.0088	-.0071	-.0078	-.0097	-.0098	-.0091	-.0201	-.0229	-.0096	-.0379	-.0316	-.0372	-.0355
110.000	-.0157	-.0154	-.0151	-.0142	.0138	-.0110	-.0102	-.0111	-.0147	-.0138	-.0104	-.0150	-.0139	-.0151	-.0133
120.000						-.0367									-.0288
130.000						-.0299									-.0304
140.000						-.0355									-.0362
150.000						-.0364									-.0380
160.000						-.0375									-.0382
170.000						-.0340									-.0391
180.000	-.0364	-.0359	-.0354	-.0356	-.0349	-.0368	-.0296	-.0317	-.0323	-.0328	-.0301	-.0311	-.0365	-.0401	-.0246

X/L	.7290	.7470	.7670	.7890	.8030	.8290	.8620	.9000	.9400
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PHI

ARC 3.5-180 IA16/OA26 ORBITER (ORB FUSELAGE)

(REM136)

MACH (1) = 5.302 ALPHA (2) = 22.217

SECTION (1)SSV	DEPENDENT VARIABLE CP									
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400	
PHI										
60.000							-.0347			
70.000							-.0345	-.0359	-.0372	
80.000							-.0348	-.0361	-.0376	
90.000	-.0391	-.0406	-.0401	-.0383	-.0372	-.0280	-.0343	-.0366	-.0369	
100.000	-.0385	-.0405	-.0411	-.0410	-.0379	-.0327				
110.000	-.0196	-.0264	-.0323	-.0355	-.0308	-.0287				
120.000						.0683				
130.000						.0311				
140.000						-.0117				
150.000						.0011				
160.000						-.0183				
170.000						-.0156				
180.000	-.0315	-.0312	-.0305	-.0295	-.0275	-.0186				

MACH (1) = 5.302 ALPHA (3) = 26.282 RN/L = 3.1753 Q = 7.1243 P = .3620 BETA = 1.8480

SECTION (1)SSV	DEPENDENT VARIABLE CP															
X/L	.0970	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4030	.4310	
PHI																
60.000	.1024	.0983	.0773													
70.000	.0542	.0775	.0746													
80.000	.0303	.0438	.0644													
90.000			.0245	.0297	.0116	.0035	.0074	-.0016	.0009	-.0009	-.0016	-.0008	-.0012	-.0009	.0005	
100.000						-.0041	-.0136	-.0055	-.0053	-.0054	-.0041	-.0042	-.0030	-.0051	-.0046	
110.000						-.0234	-.0055	-.0124	-.0105	-.0102	-.0107	-.0097	-.0110	-.0107	-.0098	
120.000						-.0252									-.0331	
130.000						-.0326									-.0427	
140.000						-.0396									-.0450	
150.000						-.0393									-.0461	
160.000						-.0377									-.0418	
170.000						-.0345									-.0368	
180.000						-.0364	-.0365	-.0344	-.0323	-.0333	-.0350	-.0355	-.0365	-.0369	-.0085	
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90.000	.0068	.0131	-.0127	-.0260	-.0327	-.0373	-.0239	-.0359	-.0395	-.0408	-.0332	-.0401	-.0400	-.0422	-.0367	
100.000	-.0058	-.0034	-.0035	-.0015	.0040	.0071	.0026	-.0118	-.0352	-.0372	-.0152	-.0403	-.0413	-.0427	-.0388	
110.000	-.0088	-.0084	-.0076	-.0070	.0027	-.0013	-.0080	-.0082	-.0130	-.0037	-.0105	-.0104	-.0242	-.0342	-.0335	
120.000						-.0355									-.0341	
130.000						-.0308									-.0350	
140.000						-.0354									-.0359	
150.000						-.0376									-.0373	

