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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
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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

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HOUSTON, TEXAS

DATA MANAGEMENT SERVICES

SPACE DIVISION  CHRYSLER
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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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by

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for

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Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

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

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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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ω

COEFFICIENT SCHEDULE:

A: CP vs. X/L

B: CP vs. PHI

NOMENCLATURE
General

<u>SYMBOL</u>	SADSAC <u>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
$\frac{l}{c}$ _{REF}	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; $\frac{\text{pitching moment}}{qS l_{\text{REF}}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qS b}$
C_l	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qS b}$
<u>Stability-Axis System</u>		
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; $\frac{\text{pitching moment}}{qS l_{\text{REF}}}$
C_n	CIN	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 I.

TEST #: IA16/0A26

DATE: 8

TEST CONDITIONS

BALANCE UTILIZED: None

CAPACITY: ACCURACY: COEFFICIENT
TOLERANCE:

NF	_____	_____	_____
SF	_____	_____	_____
AF	_____	_____	_____
PM	_____	_____	_____
RM	_____	_____	_____
YM	_____	_____	_____

COMMENTS:

TABLE II.

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)			TEST RUN NUMBERS
		α	β	ΔC_L	ΔC_D		5.3	7.9	10.3	
REMO01	$\emptyset T$	F	O	0	0	0				4
02		T	-2							5
03			+2							6
04		F	O							41
05		T	-2							38
06			+2							40
07		E	O				36			
08		T	-2				37			
09	$\emptyset T$		+2				35			
10	\emptyset	C	O							7
11		T	-2							11
12			+2							14
13		B	O				20			
14		T	-2				23			
15			+2				17			
16		A	O				..			
17		T	-2				25			
REMO18	\emptyset		+2				33			
1		7	13	19	25	31	37	43	49	55
										61
										67
										75 76
α OR β		A: 18, 22, 26			COEFFICIENTS			F: -10, -8, -4		
SCHEDULES		B: 26, 30, 34			C: 30, 32, 34			IDVAR (1) IDVAR (2) NDV		
		E: -8, -4, 0								

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	SR		5.3	7.4	10.3	
REMO19	\emptyset	C	0	-15	0	0				8
20		T	-2	T	T	T				12
21		T	+2	▼	▼	▼				13
22		B	0	-15	0	0				21
23		T	-2	T	T	T				22
24		T	+2	▼	▼	▼				16
25		R	0	-15	0	0				30
26		T	-2	T	T	T				26
27		T	+2	▼	▼	▼				34
28		C	0	10	0	0				9
29		T	-2	T	T	T				10
30		T	+2	▼	▼	▼				15
31		B	0	10	0	0				19
32		T	-2	T	T	T				24
33		T	+2	▼	▼	▼				18
34		C	0	10	0	0				28
35		T	-2	T	T	T				27
REMO36	\emptyset	T	+2	▼	▼	▼				32

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) NOV

A: 18, 22, 26 C: 30, 32, 34 F: -10, -8, -4
B: 26, 30, 34 E: -8, -4, 0

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 - E₂₆

GENERAL DESCRIPTION: Configuration 4

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

Model Scale = 0.015

VL70-000200

DRAWING NUMBER: VL70-000140 B

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

TABLE III. - Continued.

MODEL COMPONENT: Body Flap - F₈GENERAL 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	<u>1.42284</u>
Max Width in.	262.308	<u>3.943462</u>
Max Depth in.	23.000	<u>0.34500</u>
Fineness Ratio		
Area - ft ²		
Max Cross-Sectional		
Planform	158.85350	<u>0.03574</u>
Wetted		
Base	41.89642	<u>0.00943</u>

TABLE III. - Continued.

MODEL COMPONENT: OMS POD - M7GENERAL 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_O = 1233.0) - IN.	<u>327.000</u>	<u>4.9050</u>
Max Width (@ X_O = 1450.0) - IN.	<u>94.5</u>	<u>1.4175</u>
Max. Depth (@ X_O = 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 - R5GENERAL DESCRIPTION: 2A, 3 and 3A Configuration per Rockwell LinesVL70-000095Model Scale = 0.015DRAWING NUMBER: VL70-000095

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - FT ²	<u>106.38</u>	<u>0.02394</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 - T12GENERAL DESCRIPTION: External Oxygen Hydrogen TankNOTE: Identical to T11 with external fuel lines addedModel Scale = 0.015DRAWING NUMBER VL78-000031A
VL78-000041A

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

TABLE III. - Continued.

MODEL COMPONENT: VERTICAL - V8GENERAL DESCRIPTION: Configuration 3A

NOTE: Similar to V5 with radius on TE upper corner and LE lower corner
where vertical meets fuselage.

Model Scale = 0.015

DRAWING NUMBER: VL70-000146A
 VL70-000146A

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

TABLE III. - Continued.

MODEL COMPONENT: CANOPY - C₉GENERAL DESCRIPTION: Configuration 3AModel Scale = 0.015DRAWING 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 ($\ominus X_0=513.127$)	<u>152.412</u>	<u>2.28618</u>
Max Depth ($\ominus X_0=485.0$)	<u>25.000</u>	<u>0.37500</u>
Fineness Ratio	_____	_____
Area	_____	_____
Max Cross-Sectional	_____	_____
Planform	_____	_____
Wetted	_____	_____
Base	_____	_____

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		0.60525
Span (Theo) In.	936.6816	14.05022
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.200
Dihedral Angle, degrees	3.500	-3.500
Incidence Angle, degrees	0.500	0.500
Aerodynamic Twist, degrees	+ 3.000	+ 3.000
Sweep Back Angles, degrees		
Leading Edge	45.00	45.00
Trailing Edge	- 10.056	- 10.056
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.O.O.	689.2429	10.33864
Tip, (Theo) B.P.	137.8486	2.06773
MAC	474.8117	7.12218
Fus. Sta. of .25 MAC	1126.721	17.05082
W.P. of .25 MAC	291.00	4.36500
B.L. of .25 MAC	187.33491	2.81002

EXPOSED DATA

Area (Theo)	Ft ²	
Span, (Theo)	In. BP108	0.40775
Aspect Ratio	736.6816	11.05022
Taper Ratio	2.058	2.058
Chords		
Root BP108	570.6230	8.55934
Tip 1.00 b	137.8512	2.06777
MAC	354.2376	5.31356
Fus. Sta. of .25 MAC	1164.237	17.46356
W.P. of .25 MAC	292.00	4.38000
B.L. of .25 MAC	239.67786	3.59517

Airfoil Section (Rockwell Mod NASA)

XXXX-64

Root $\frac{b}{2}$ =	0.113	0.113
Tip $\frac{b}{2}$ =	0.12	0.12

Data for (1) or (2) Sides

Leading Edge Cuff		
Planform Area	Ft ²	0.0266
Leading Edge Intersects Fus M. L. @ Sta	118.333	7.57500
Leading Edge Intersects Wing @ Sta	505.0	15.05250
	1003.5	

Table IV. Pressure Tap Layout

x_o	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 $Z_o = 400$, $Y_o = 0.0$.

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

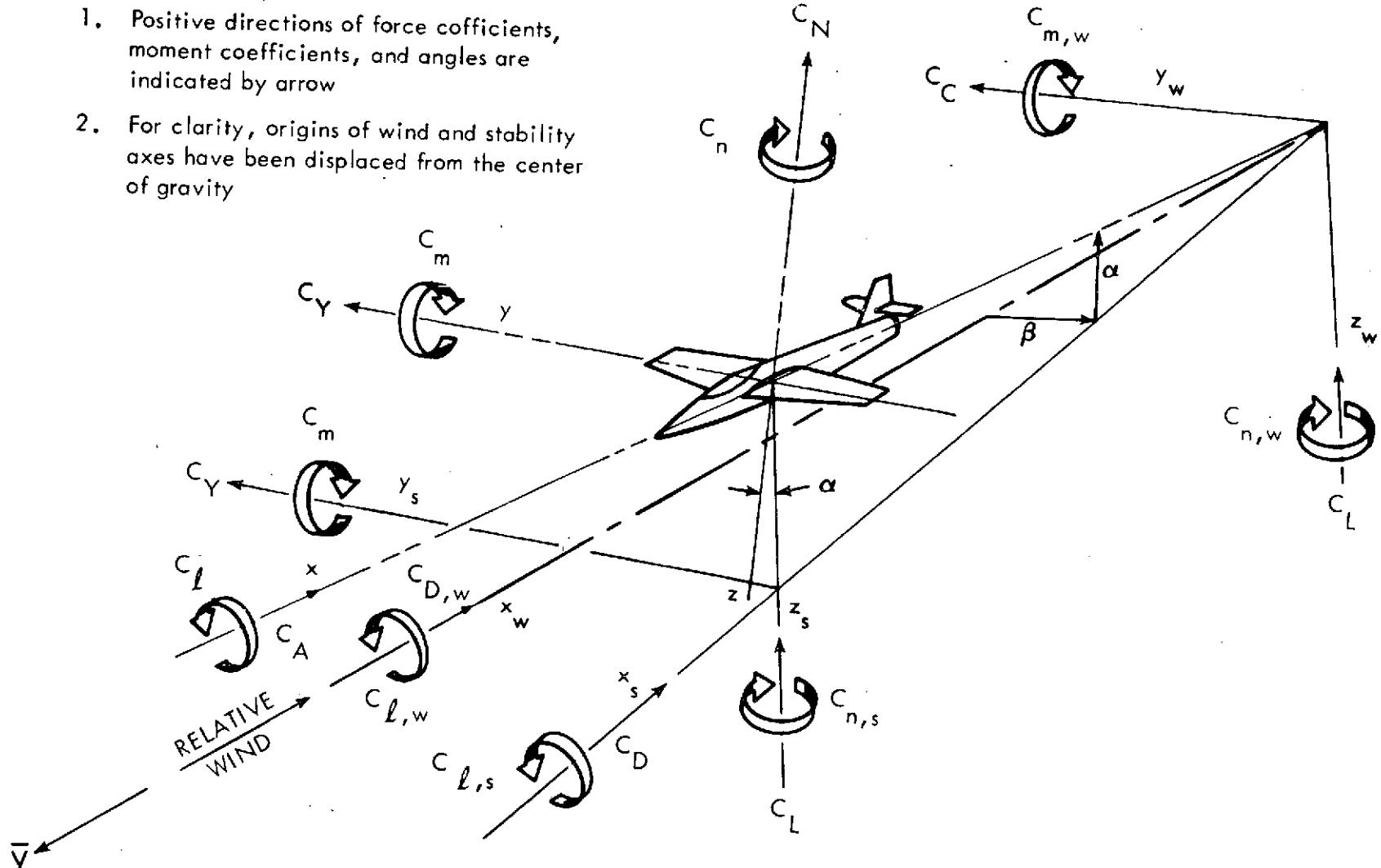


Figure 1. - Axis systems.

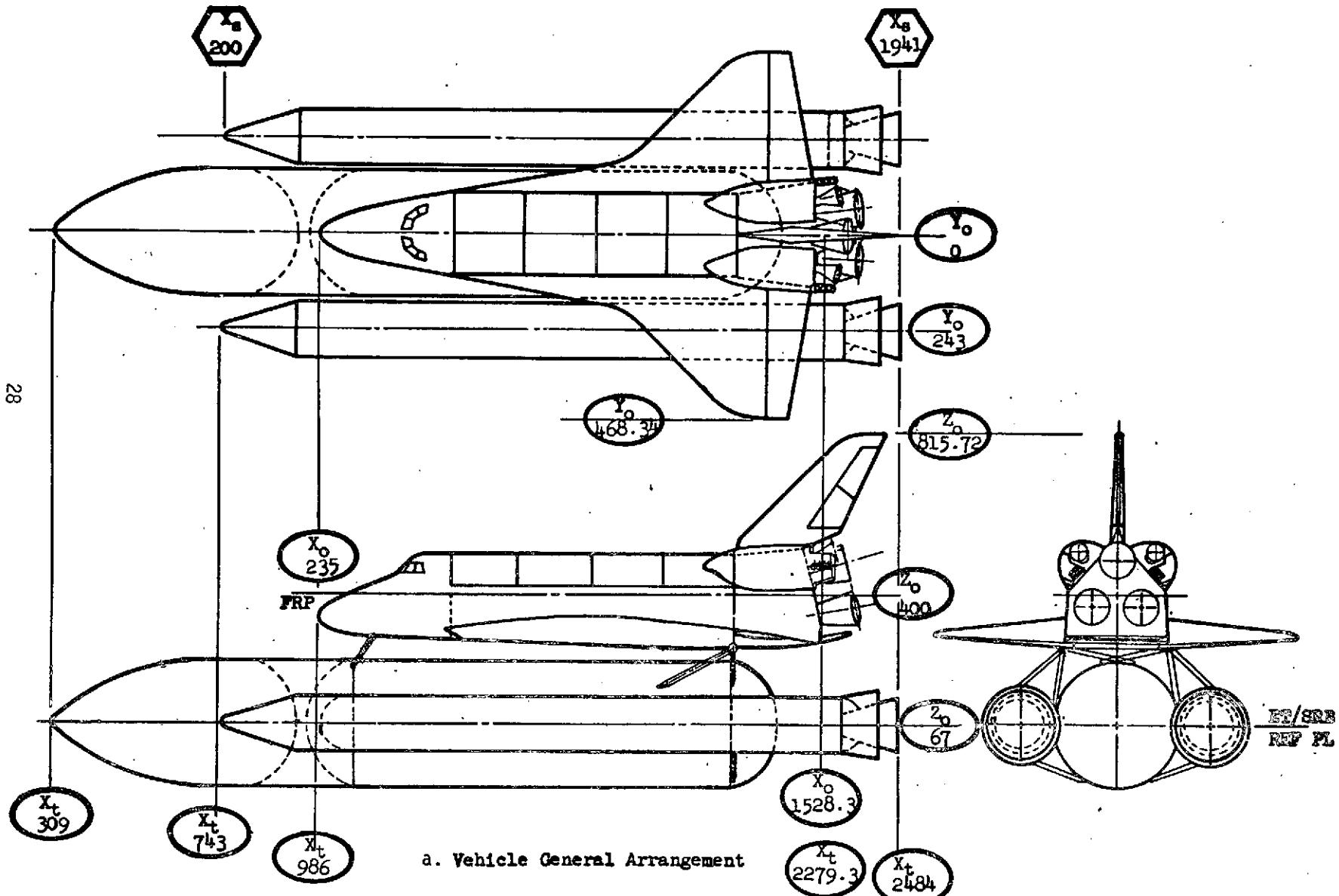
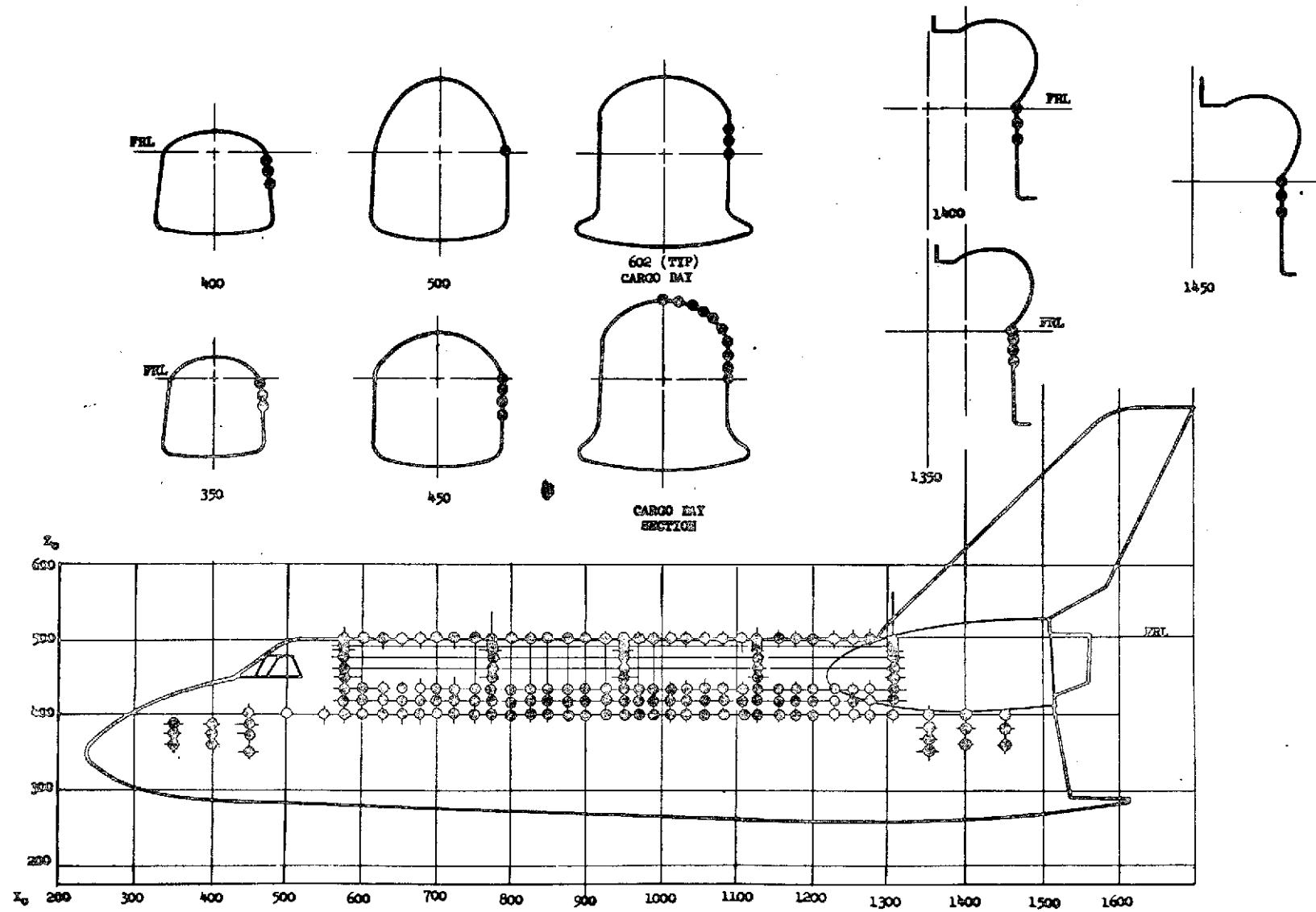


Figure 2. - Model sketches.



b. Pressure orifice locations

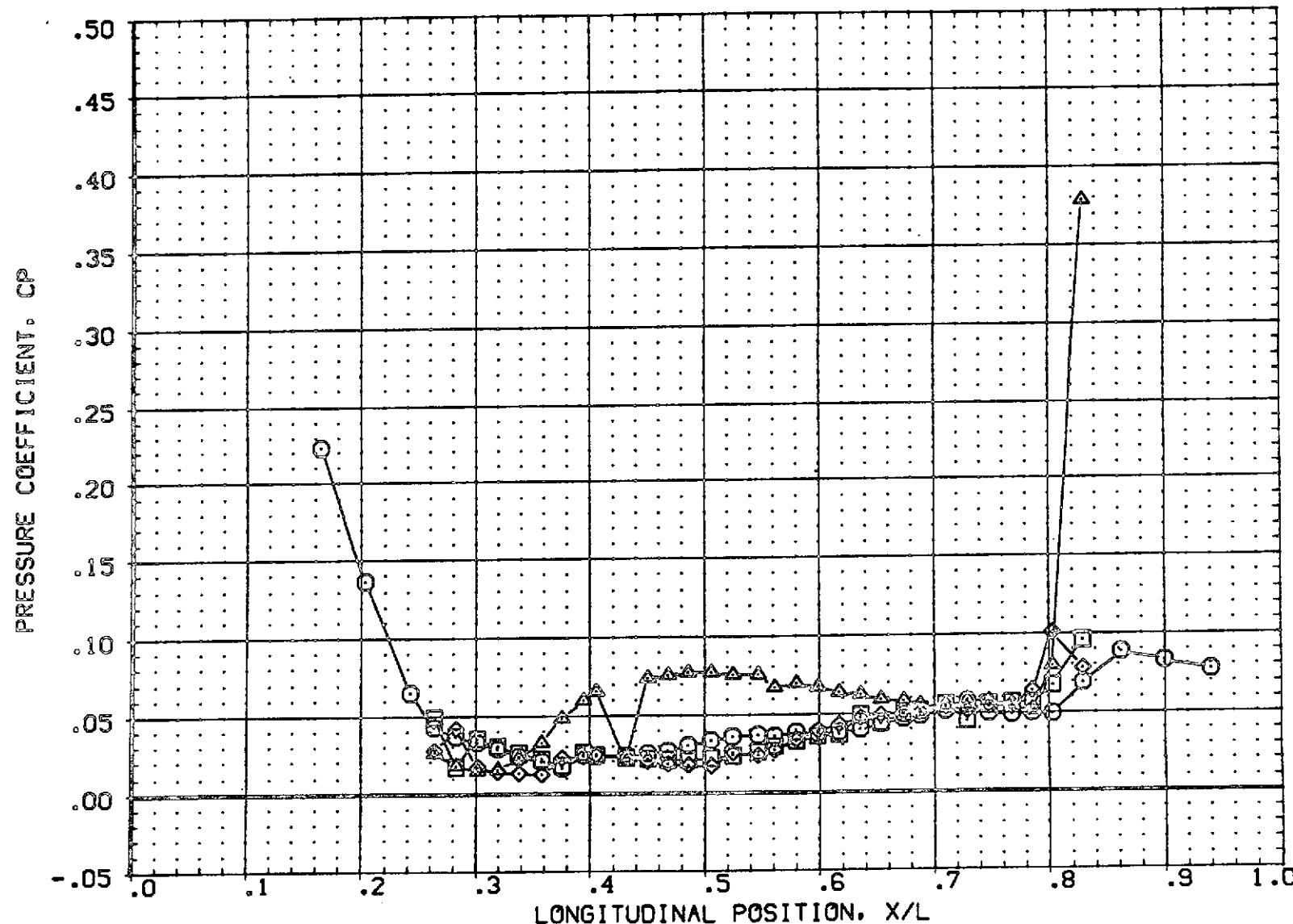
Figure 2. - Continued.

DATA FIGURES

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

SYMBOL	PHI	ALPHA	MACH
○	90.000	-7.582	5.300
□	100.000		
◊	110.000		
△	180.000		

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

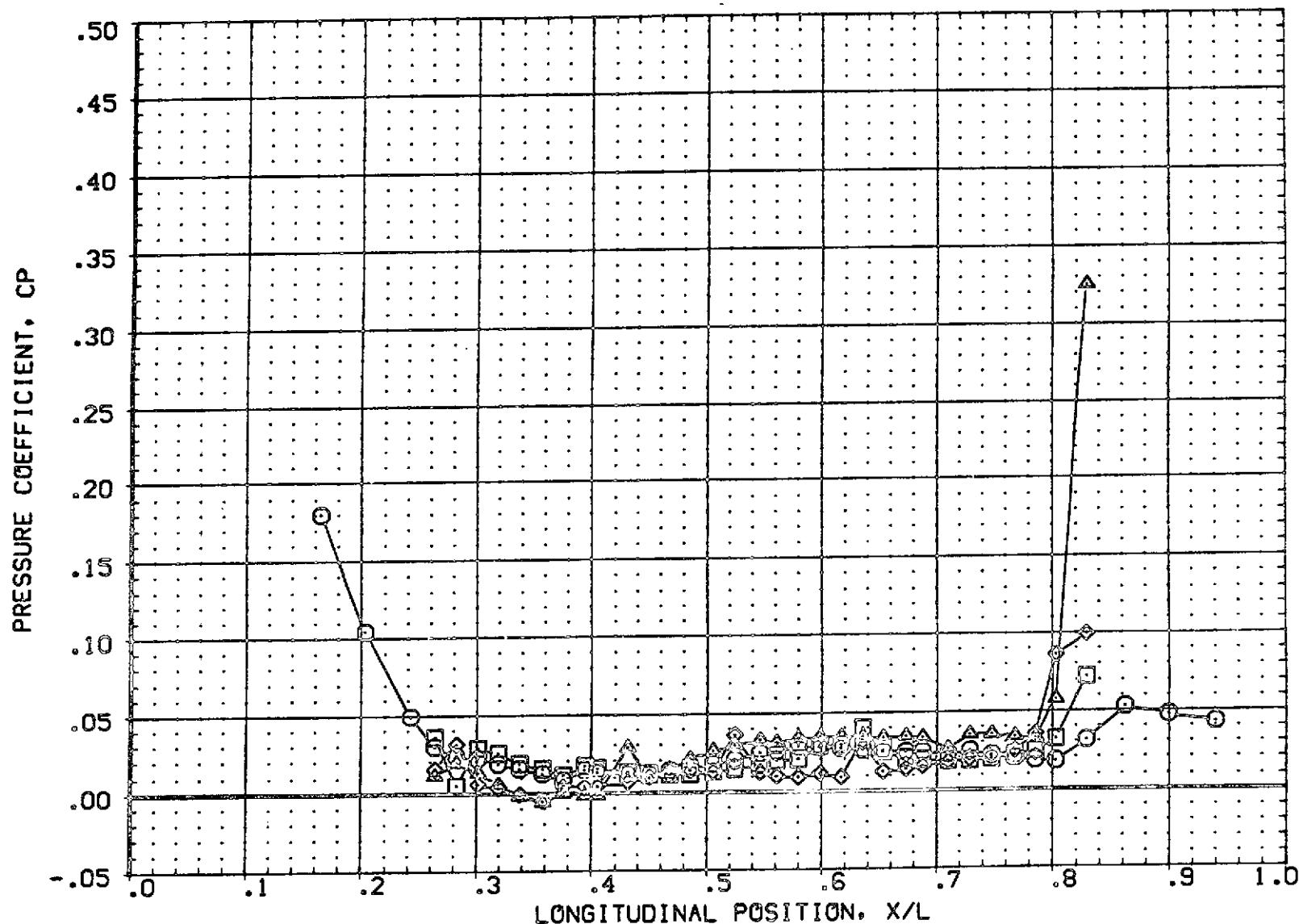


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

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

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

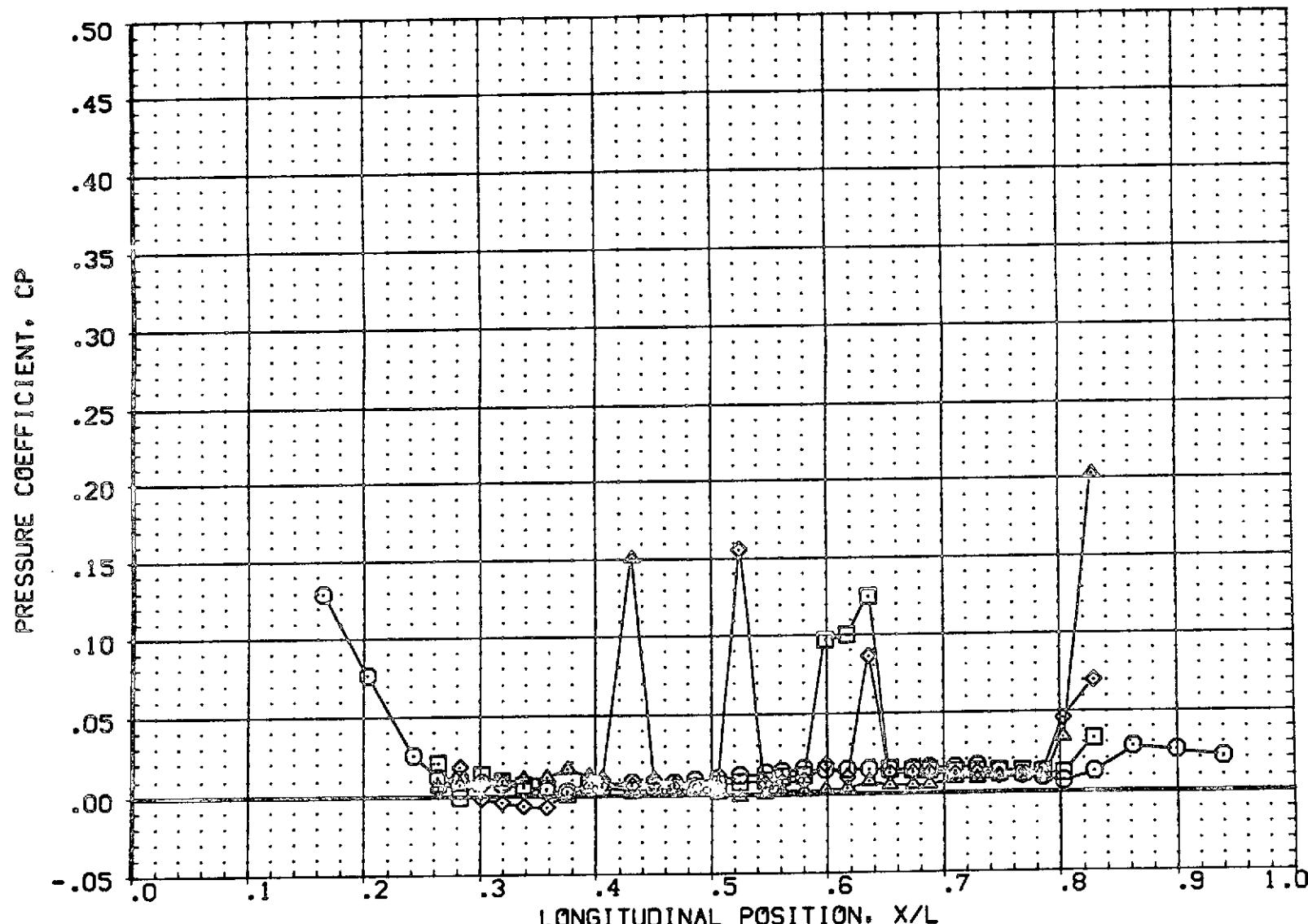


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL	PHI	ALPHA	MACH
○	90.000	.136	5.300
□	100.000		
◇	110.000		
△	180.000		

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

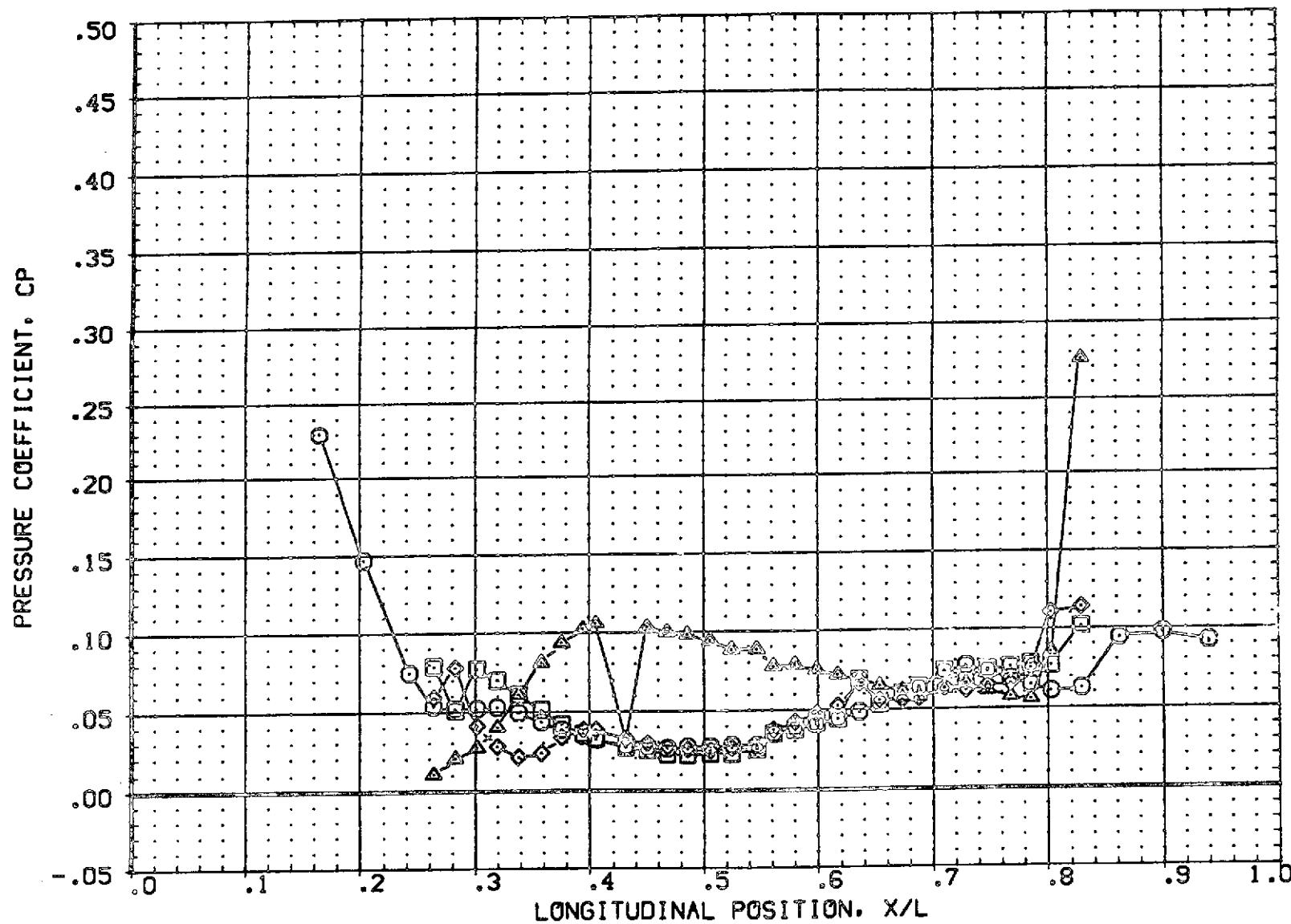


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL	PHI	ALPHA	MACH
○	90.000	-9.639	7.330
□	100.000		
◊	110.000		
△	180.000		

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

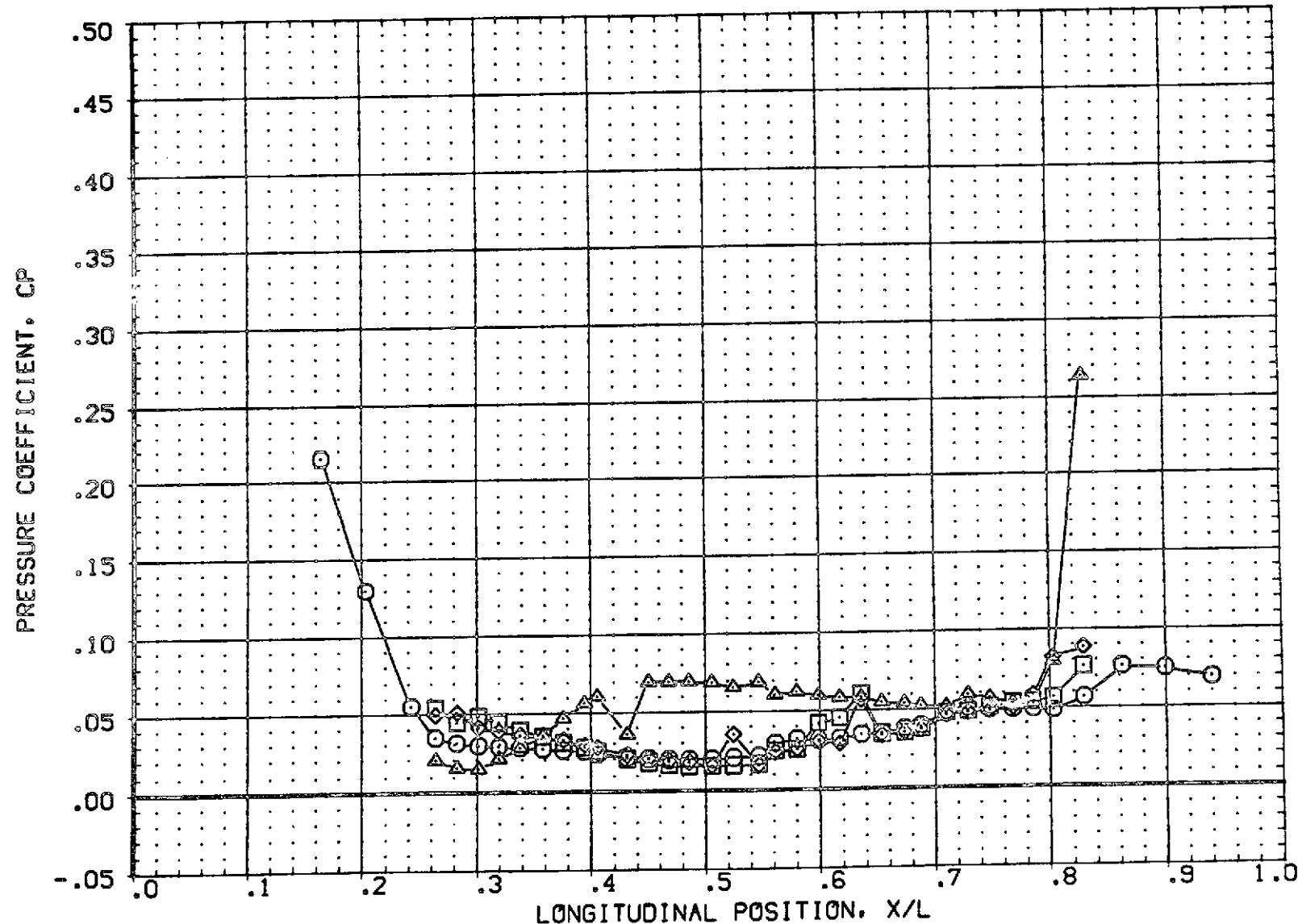


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL	PHI	ALPHA	MACH
○	90.000	-7.594	7.330
□	100.000		
◊	110.000		
△	180.000		

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

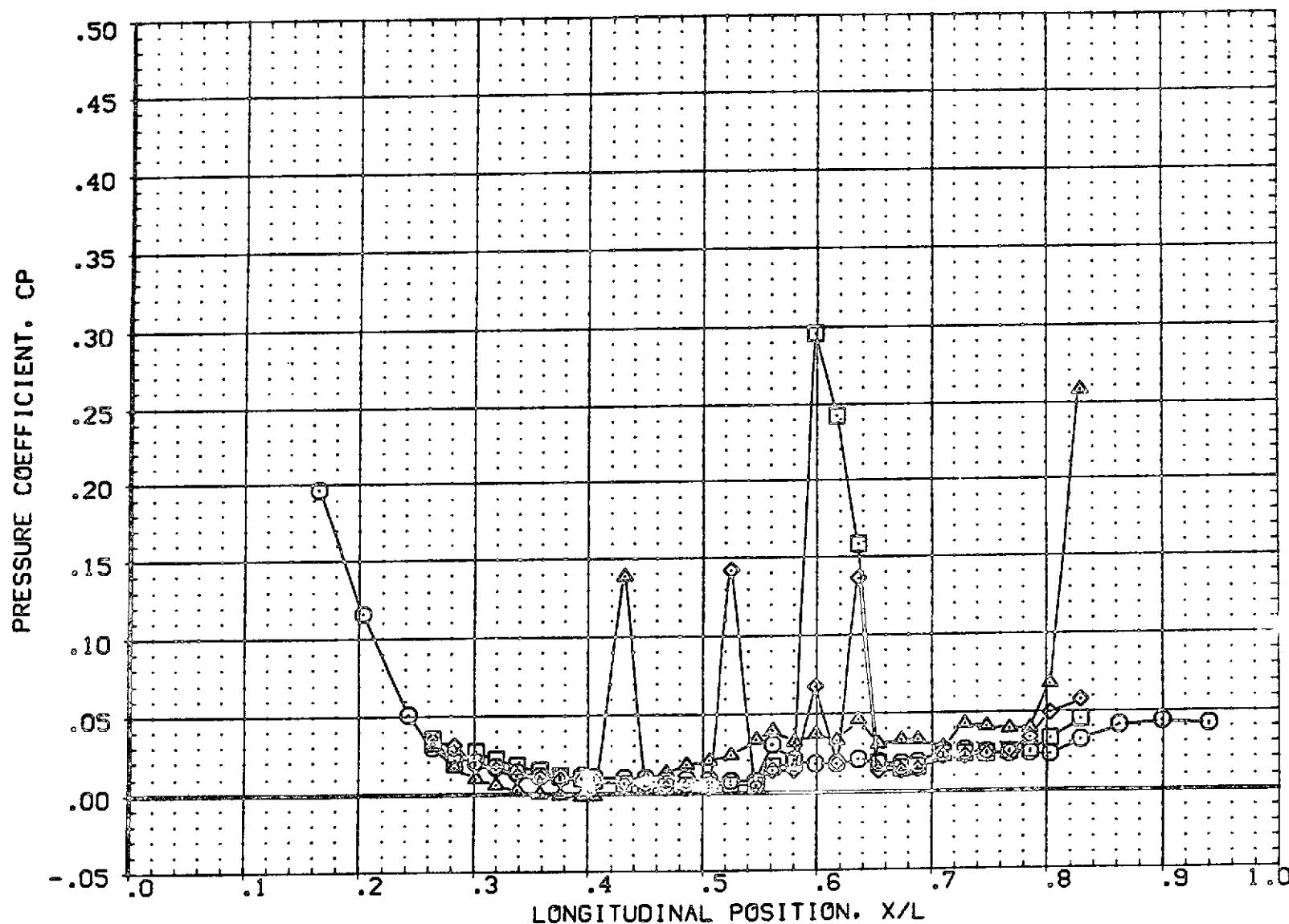


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL PHI 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

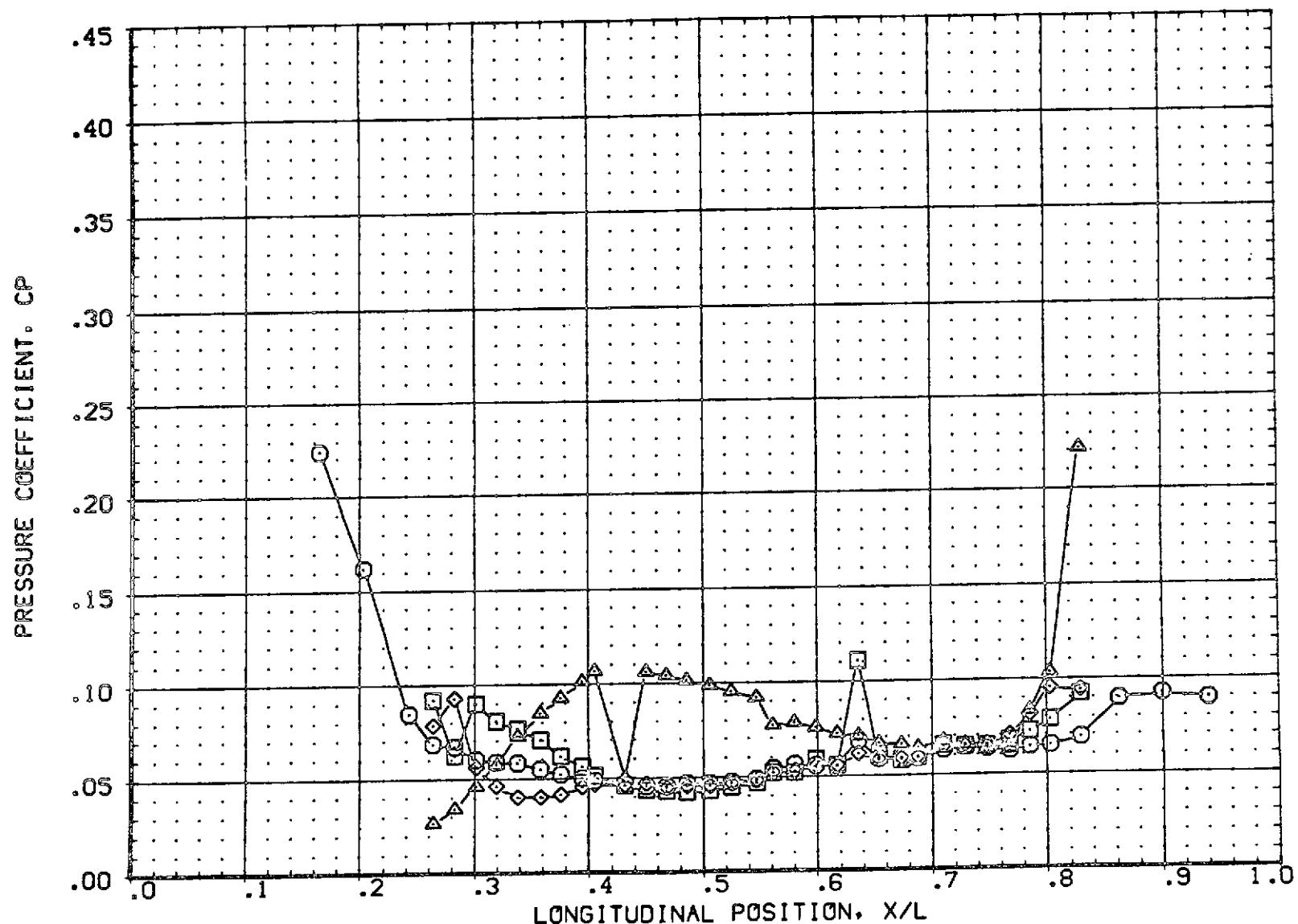
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6

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

SYMBOL	PHI	ALPHA	MACH
O	90.000	-9.870	10.290
□	100.000		
◇	110.000		
△	180.000		

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

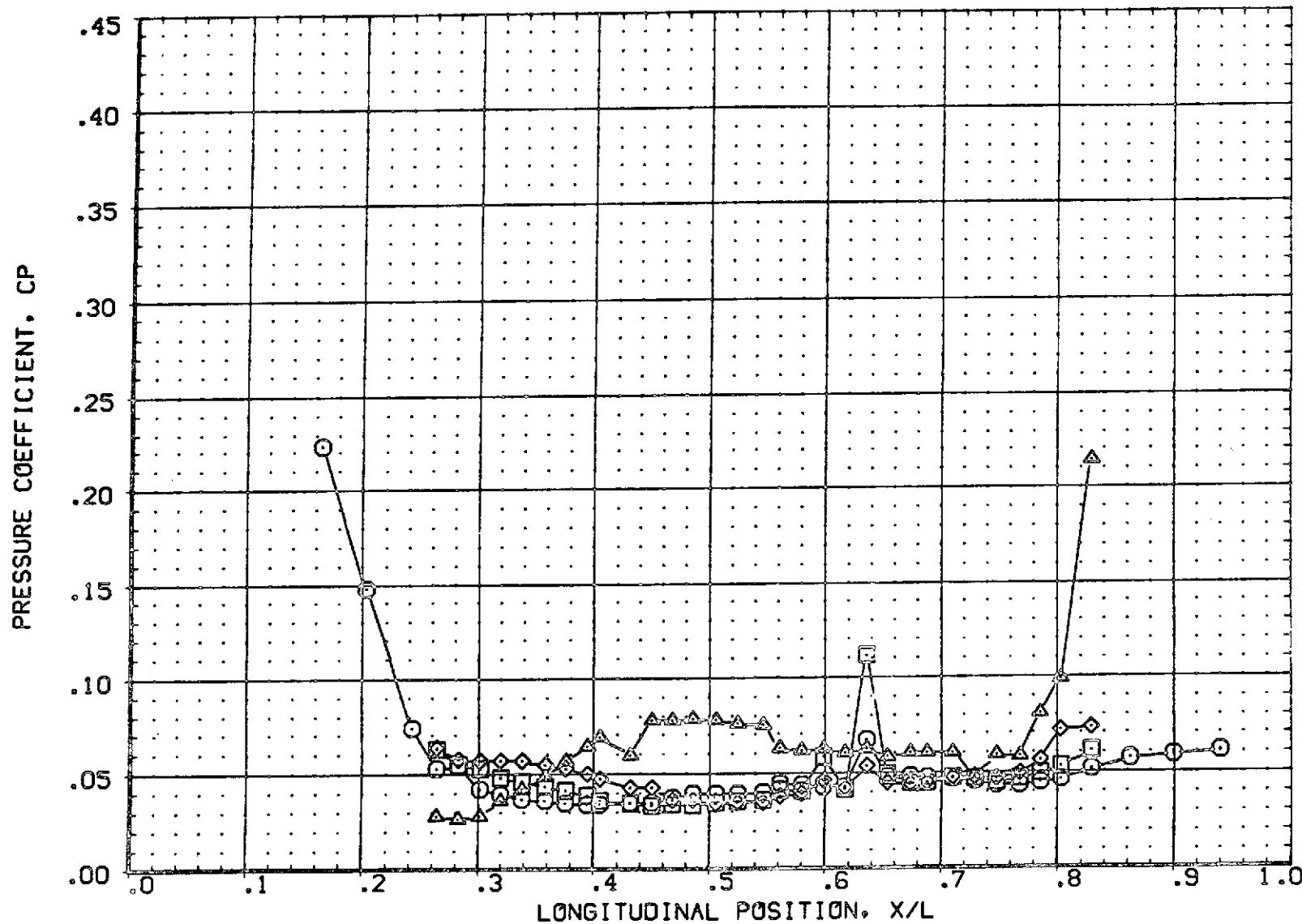


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL PHI ALPHA MACH
 ○ 90.000 -7.814 10.290
 □ 100.000
 ◇ 110.000
 △ 180.000

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

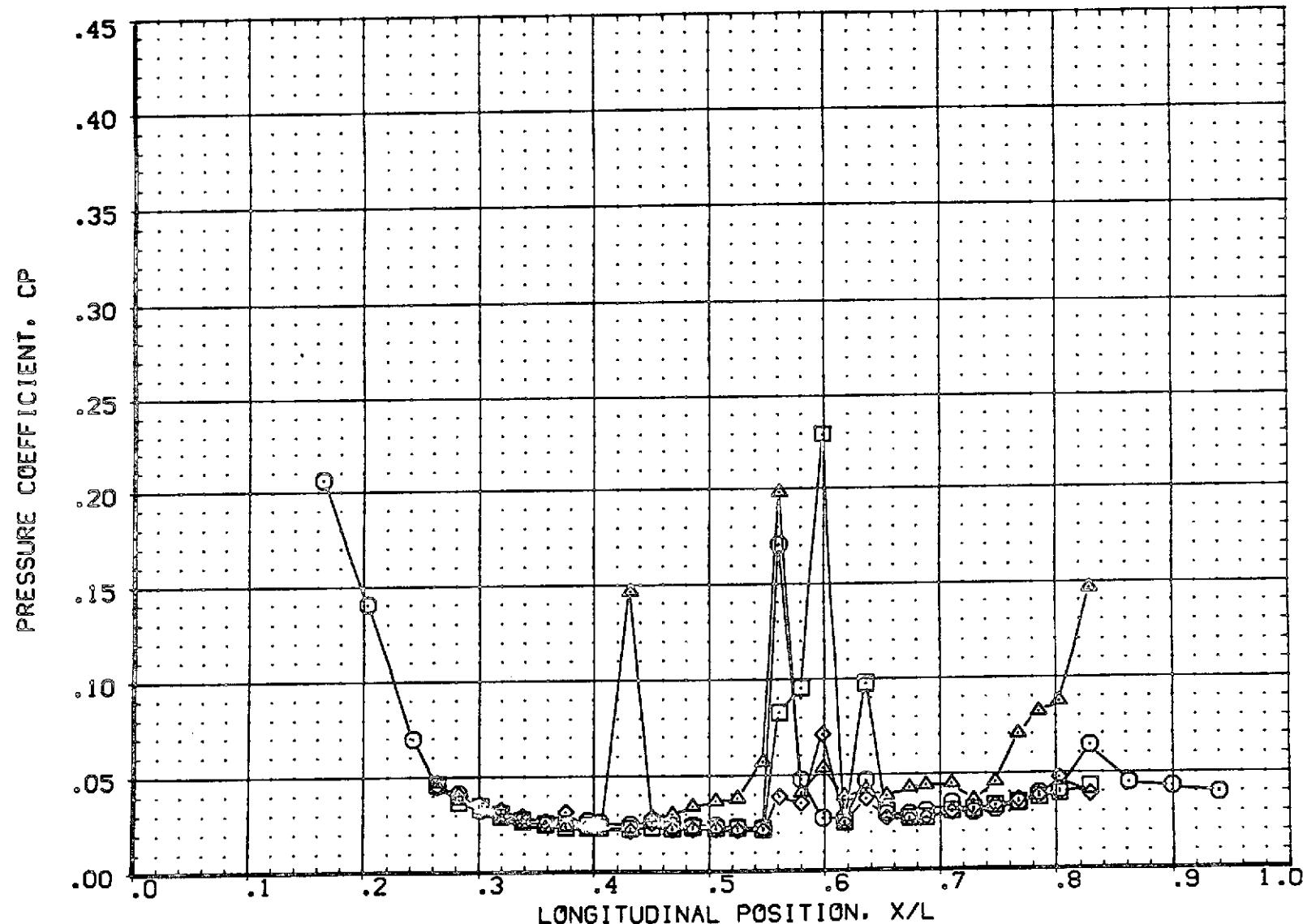


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL PHI ALPHA MACH
 ○ 90.000 -4.041 10.290
 □ 100.000
 ◇ 110.000
 △ 180.000

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

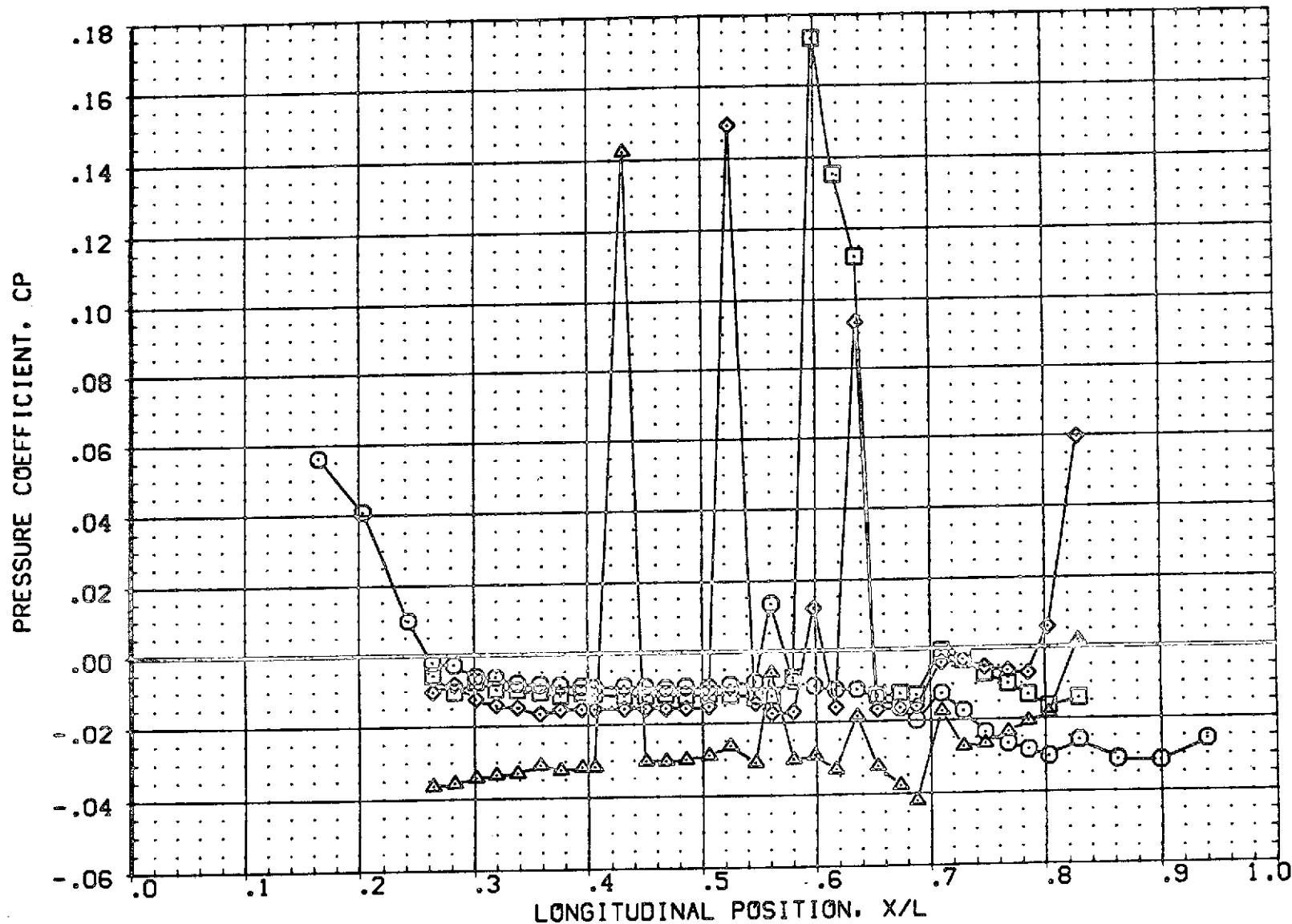


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL PHI ALPHA MACH
 ○ 90.000 18.255 5.299
 □ 100.000
 ◇ 110.000
 △ 180.000

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

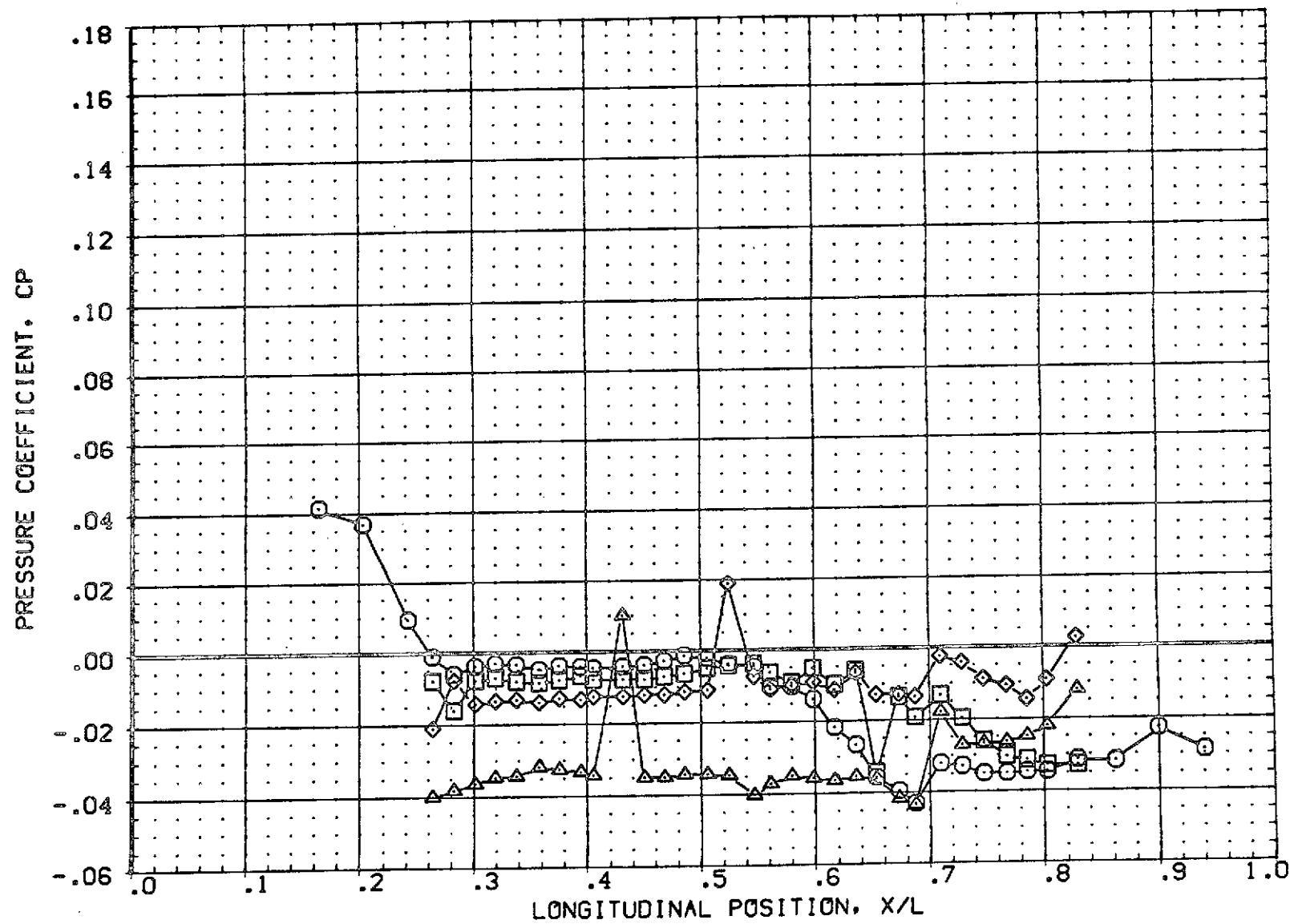


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

SYMBOL	PHI	ALPHA	MACH
○	90.000	22.158	5.299
□	100.000		
◊	110.000		
△	180.000		

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

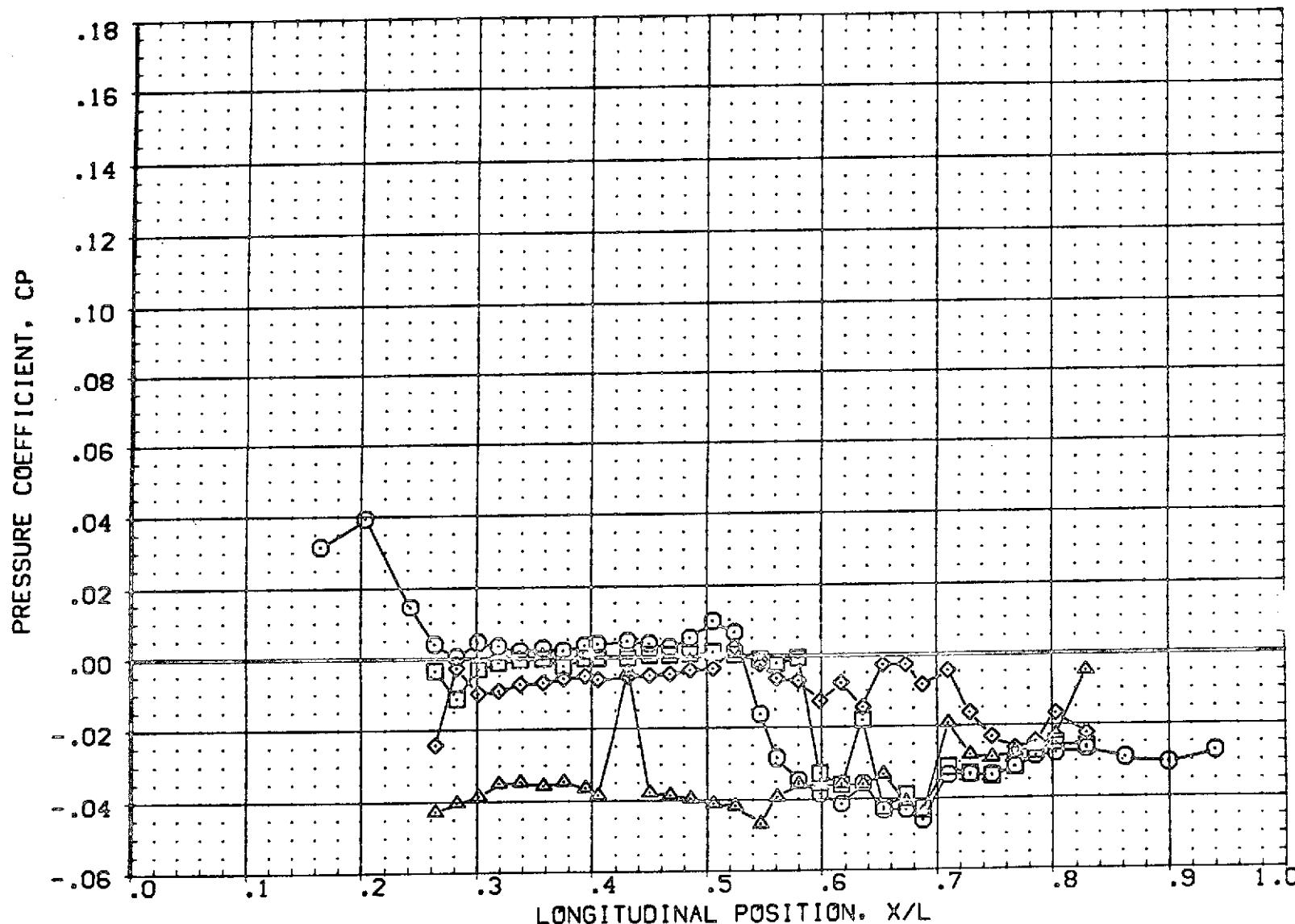


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

SYMBOL PH1 ALPHA MACH
 ○ 90.000 26.290 5.299
 □ 100.000
 ◇ 110.000
 △ 180.000

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

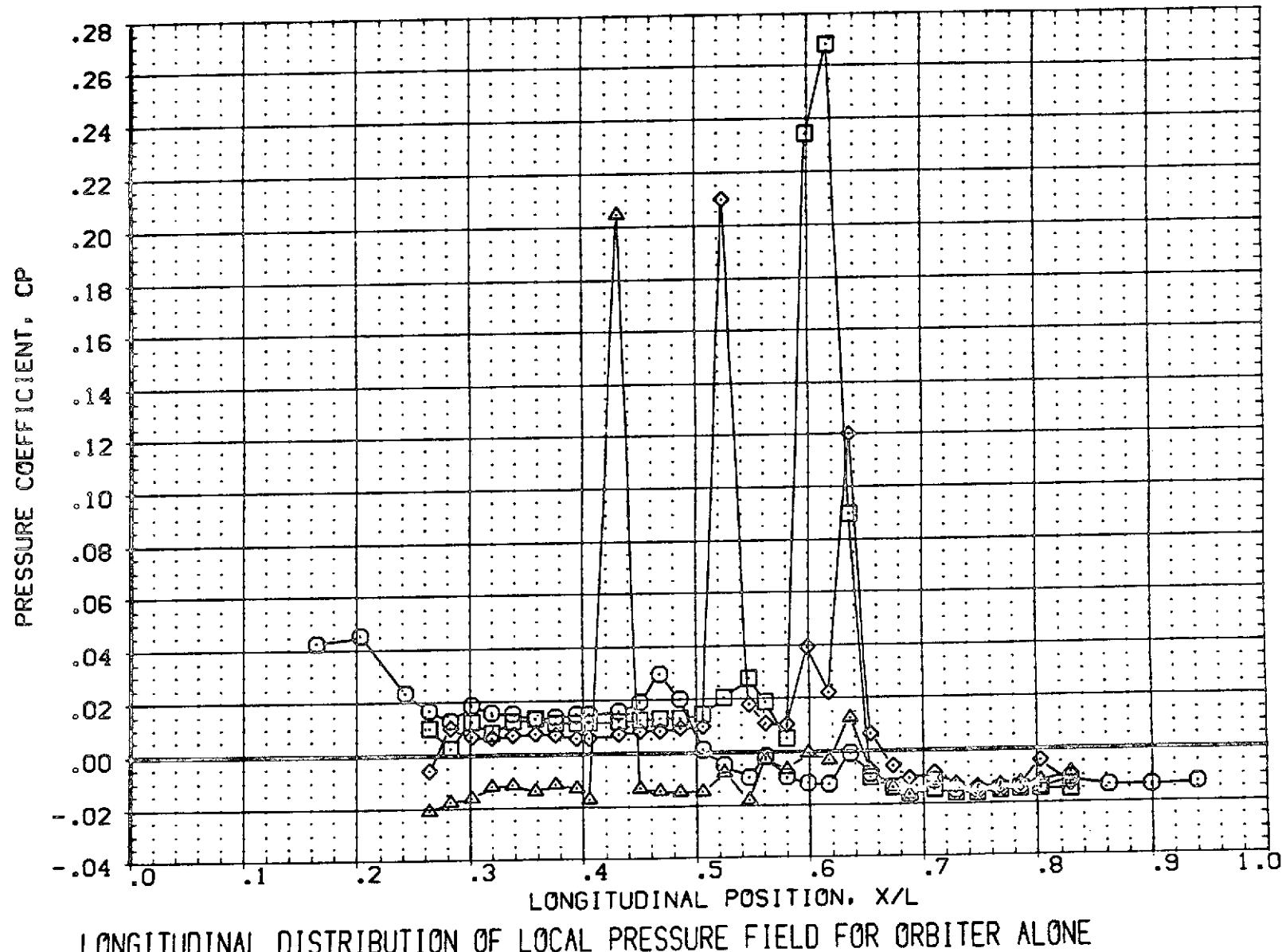


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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		

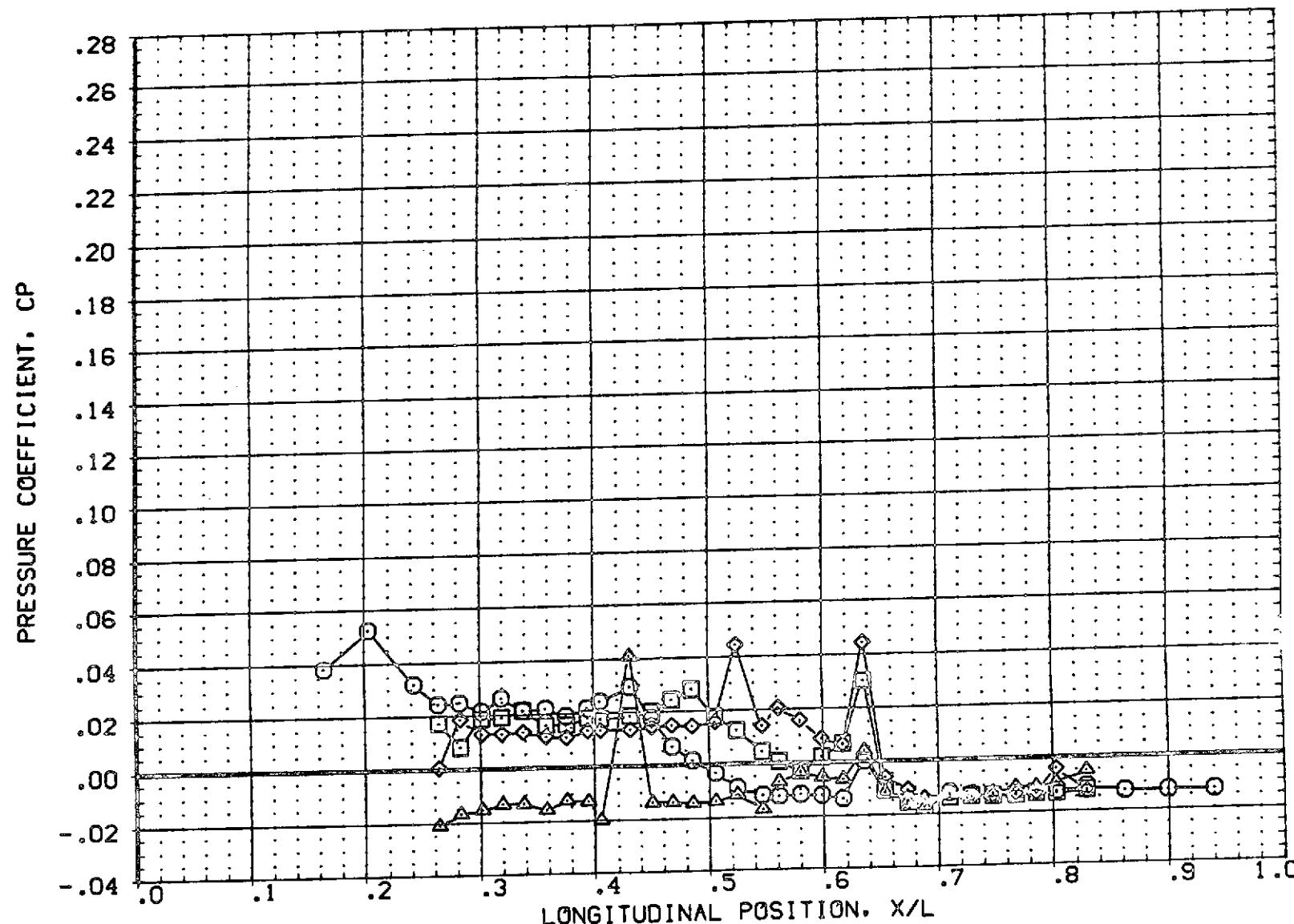
PARAMETRIC VALUES			
BETA	.000	ELEV-L	.000
ELEV-R	.000	RUDDER	.000



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

SYMBOL PHI ALPHA MACH
 ○ 90.000 30.244 7.330
 □ 100.000
 ◇ 110.000
 △ 180.000

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

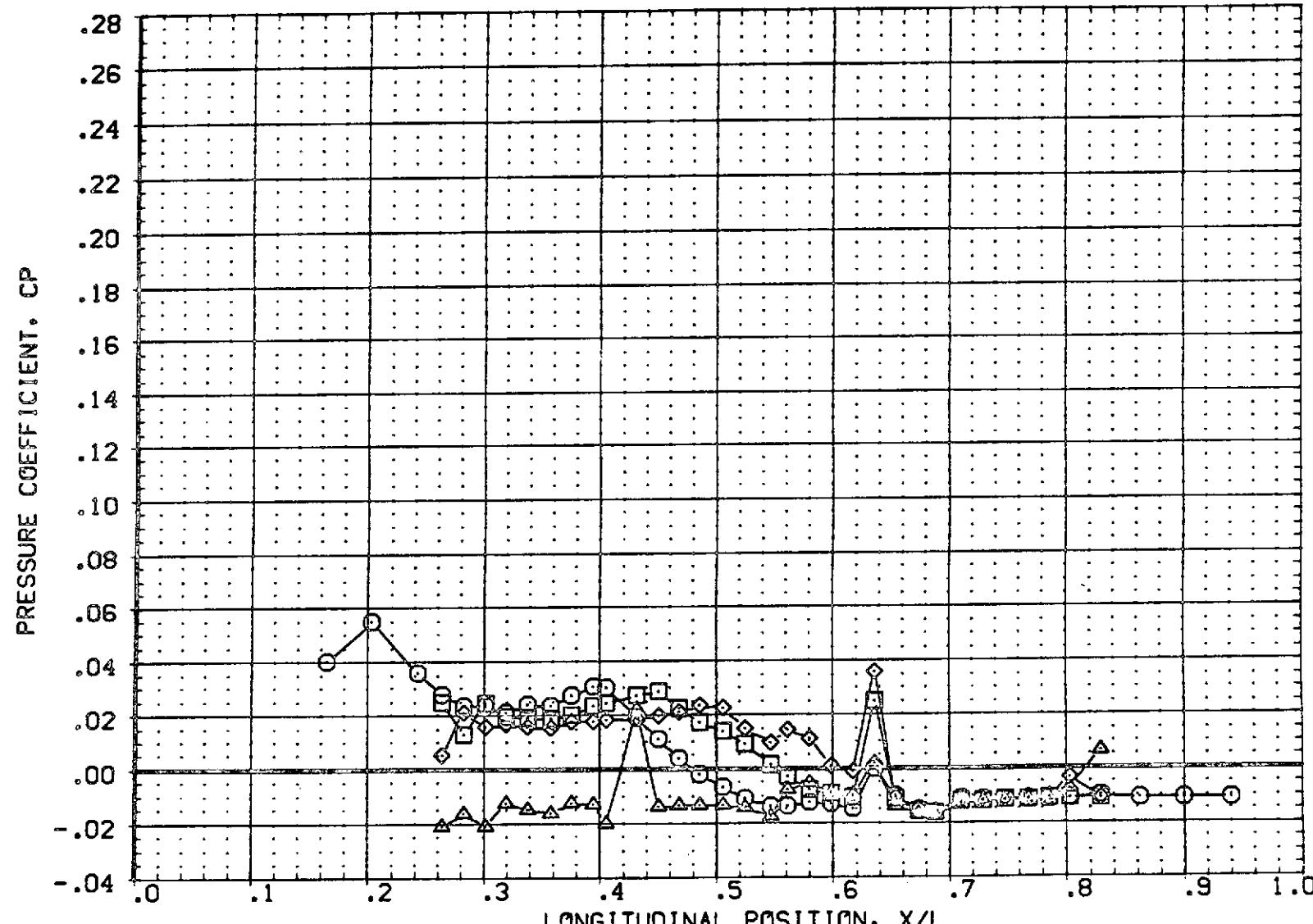


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

SYMBOL PHI ALPHA MACH
 ○ 90.000 34.191 7.330
 □ 100.000
 ◇ 110.000
 △ 180.000

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

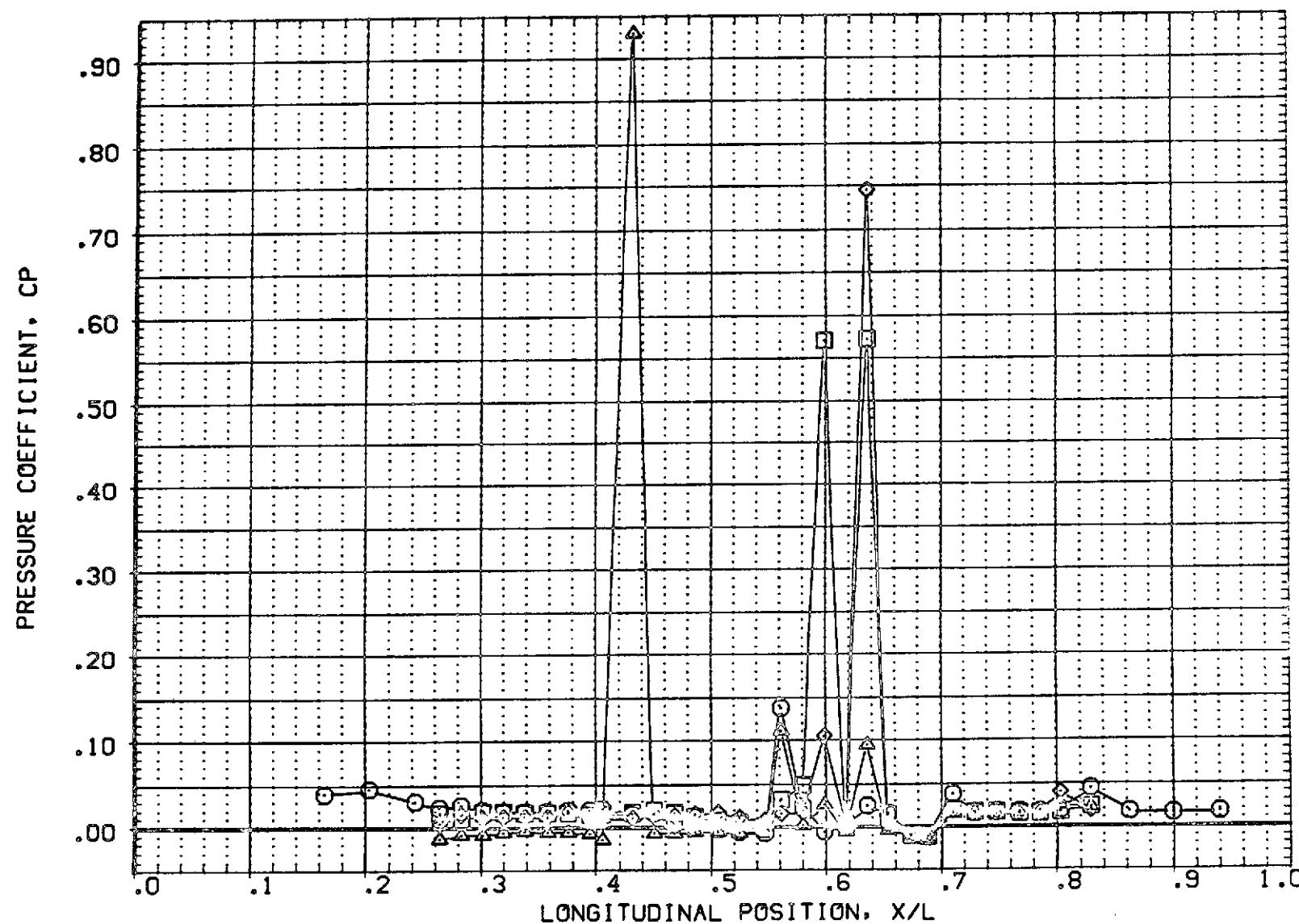


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL PHI ALPHA MACH
 90.000 30.319 10.290
 100.000
 110.000
 180.000

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

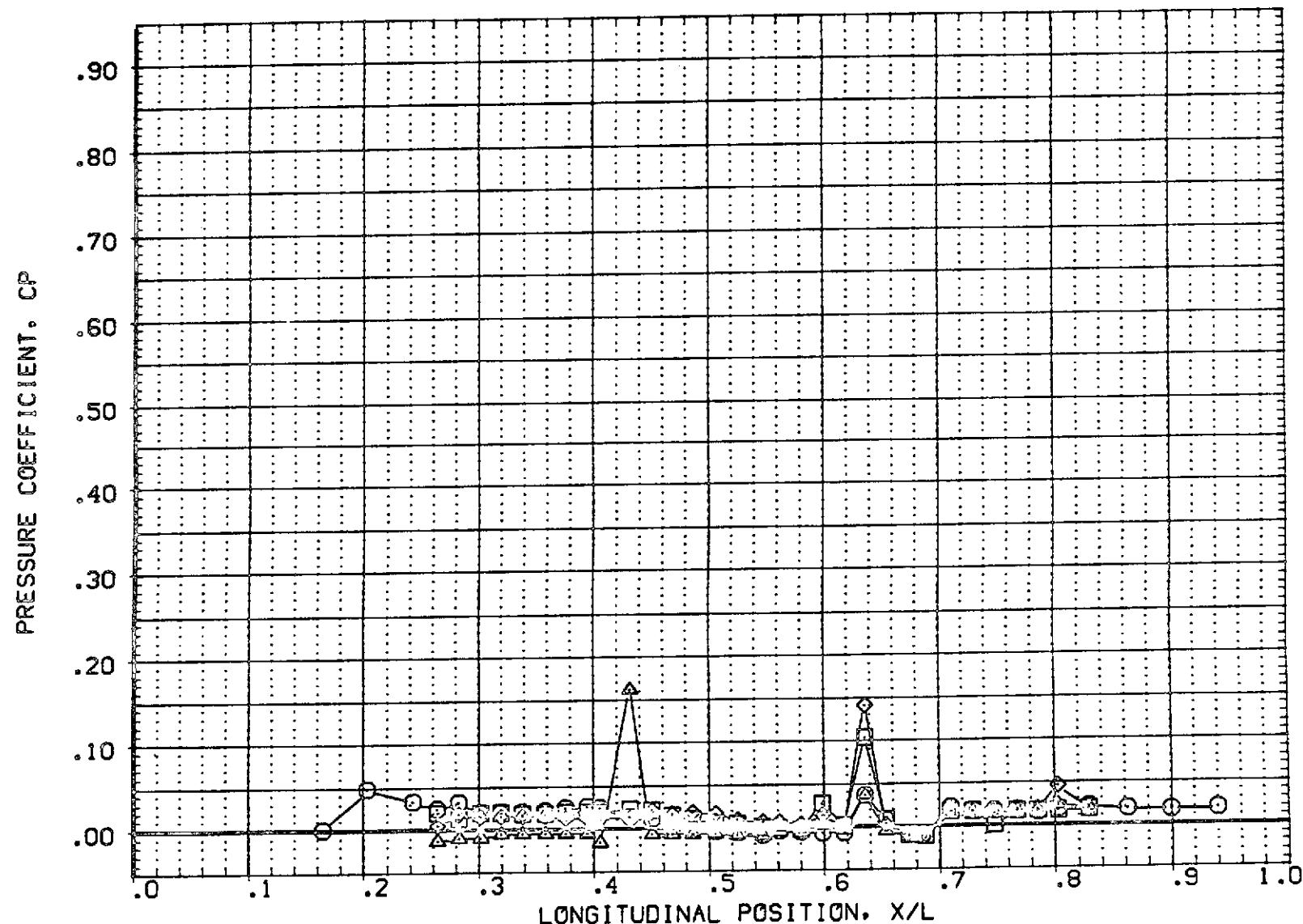


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL	PHI	ALPHA	MACH
○	90.000	32.195	10.290
□	100.000		
◇	110.000		
△	180.000		

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

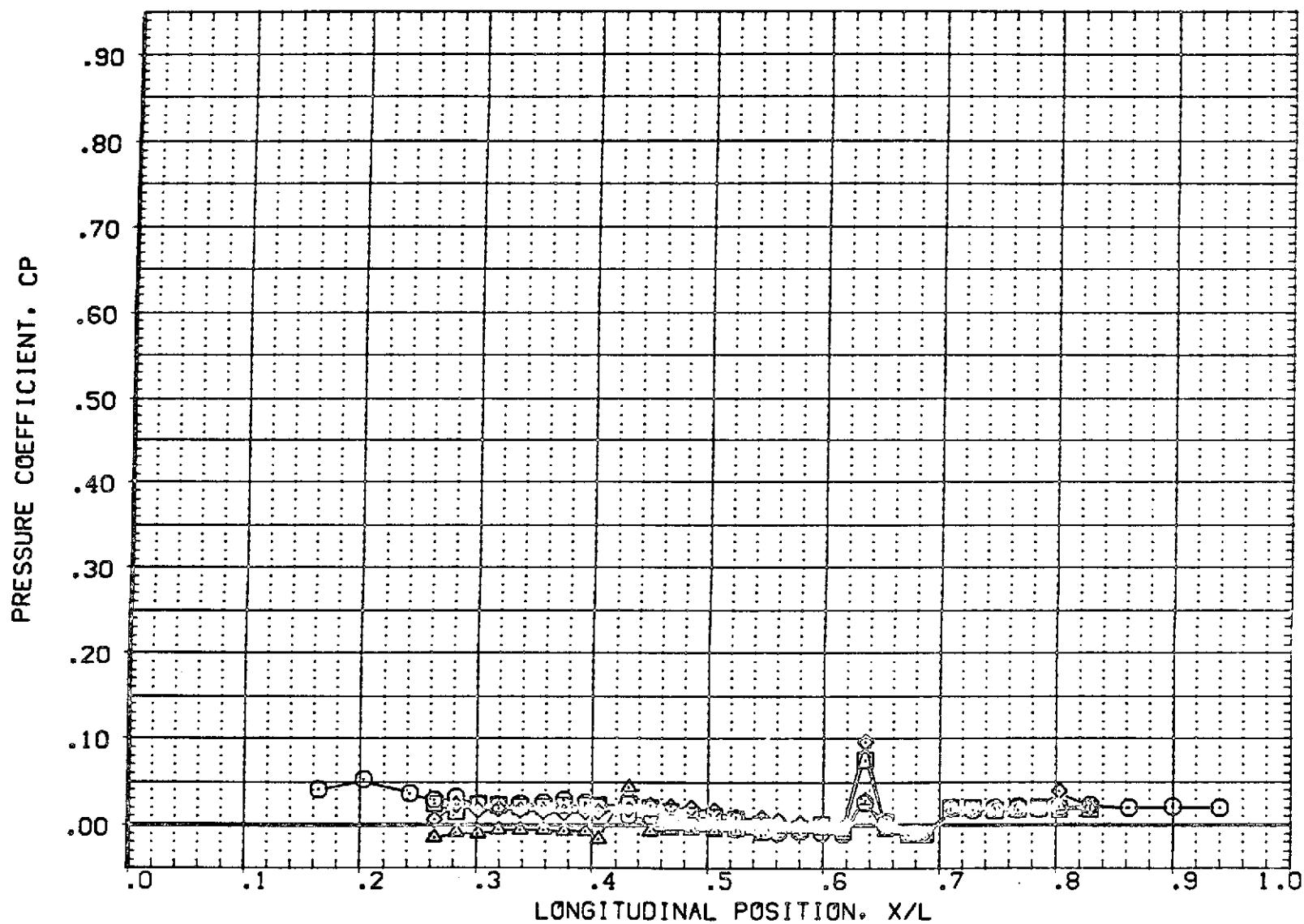


LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL PHI ALPHA MACH
 ○ 90.000 34.247 10.290
 □ 100.000
 ◇ 110.000
 △ 180.000

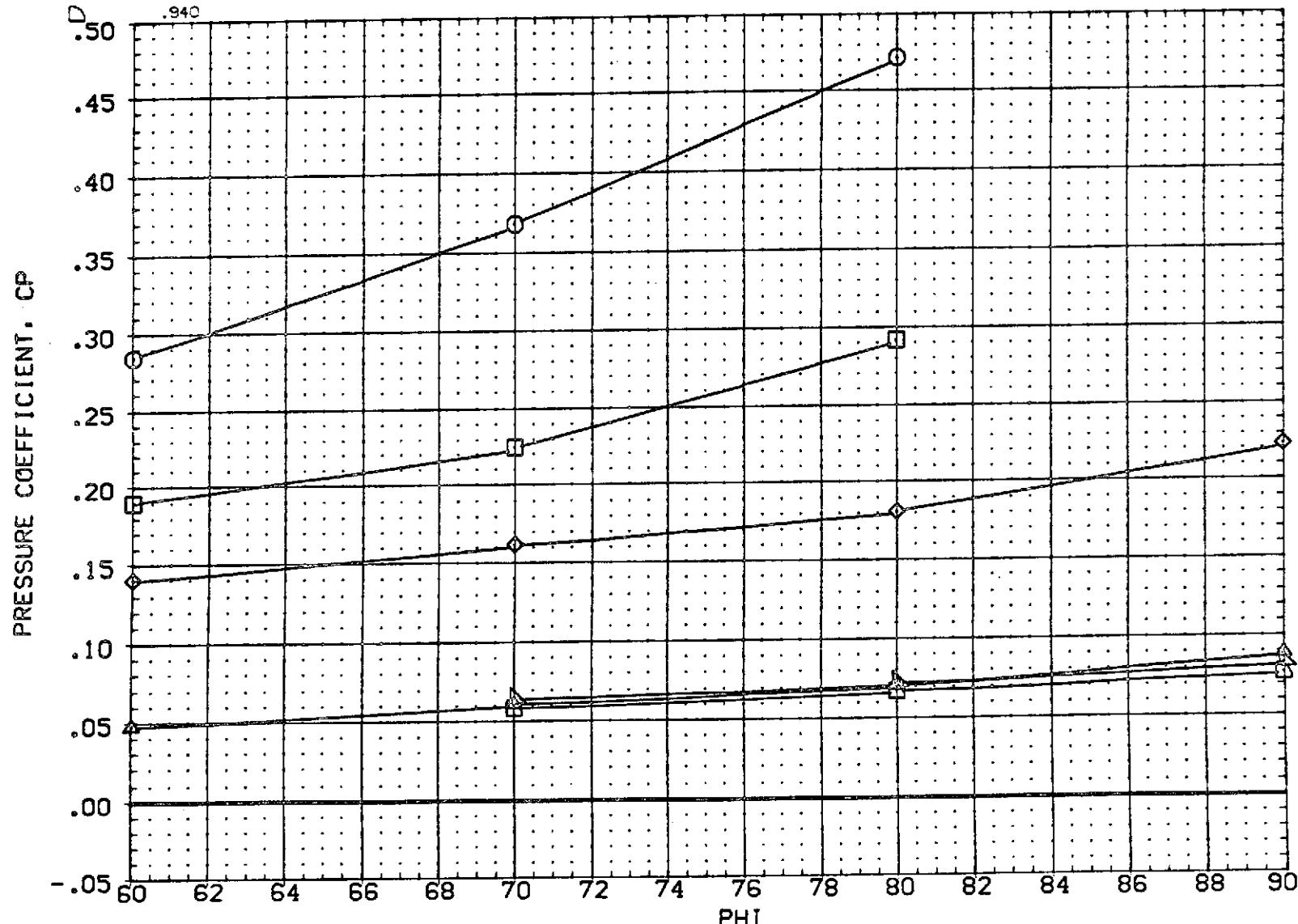
PARAMETRIC VALUES
 BETA .000 ELEV-L .000
 ELEV-R .000 RUDDER .000



LONGITUDINAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

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

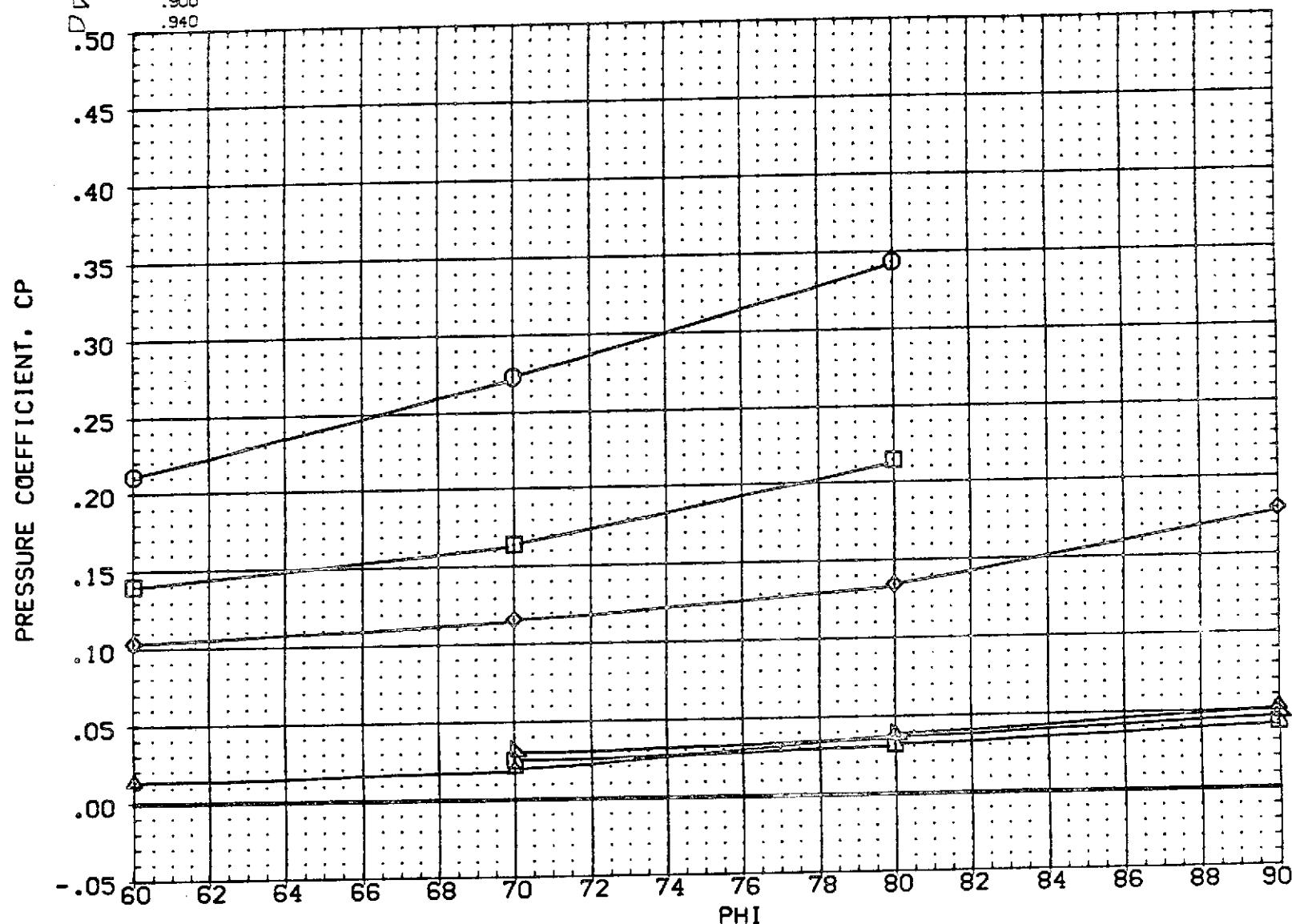


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 ○ .087 -3.669 5.300
 □ .126
 ◇ .164
 △ .862
 ▽ .900
 ▵ .940

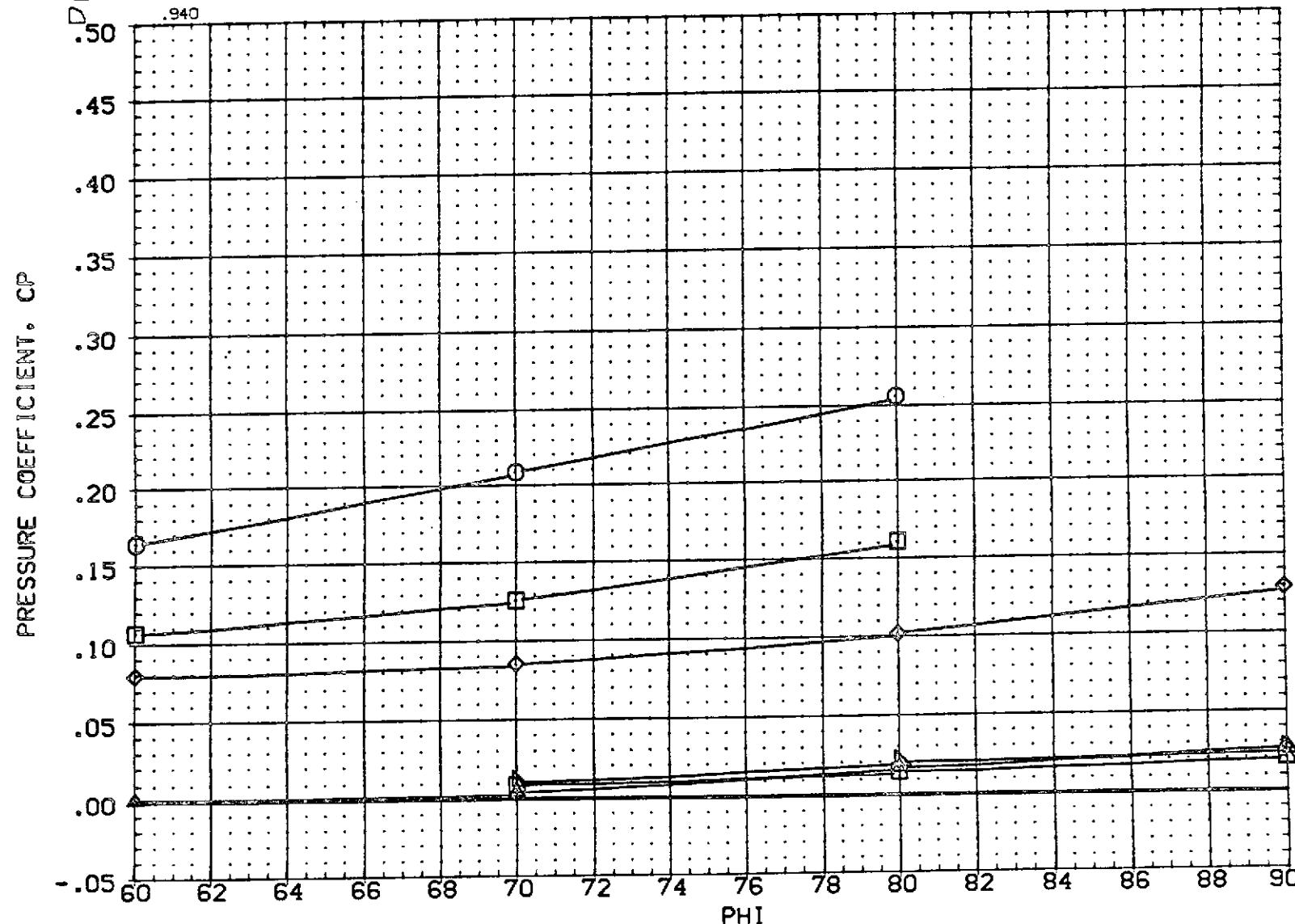
PARAMETRIC VALUES
 BETA .000 ELEV-L .000
 ELEV-R .000 RUDDER .000



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
○	.087	.136	5.300	BETA .000 ELEV-L .000
□	.126			ELEV-R .000 RUDDER .000
◊	.164			
△	.186			
▽	.900			
	.940			

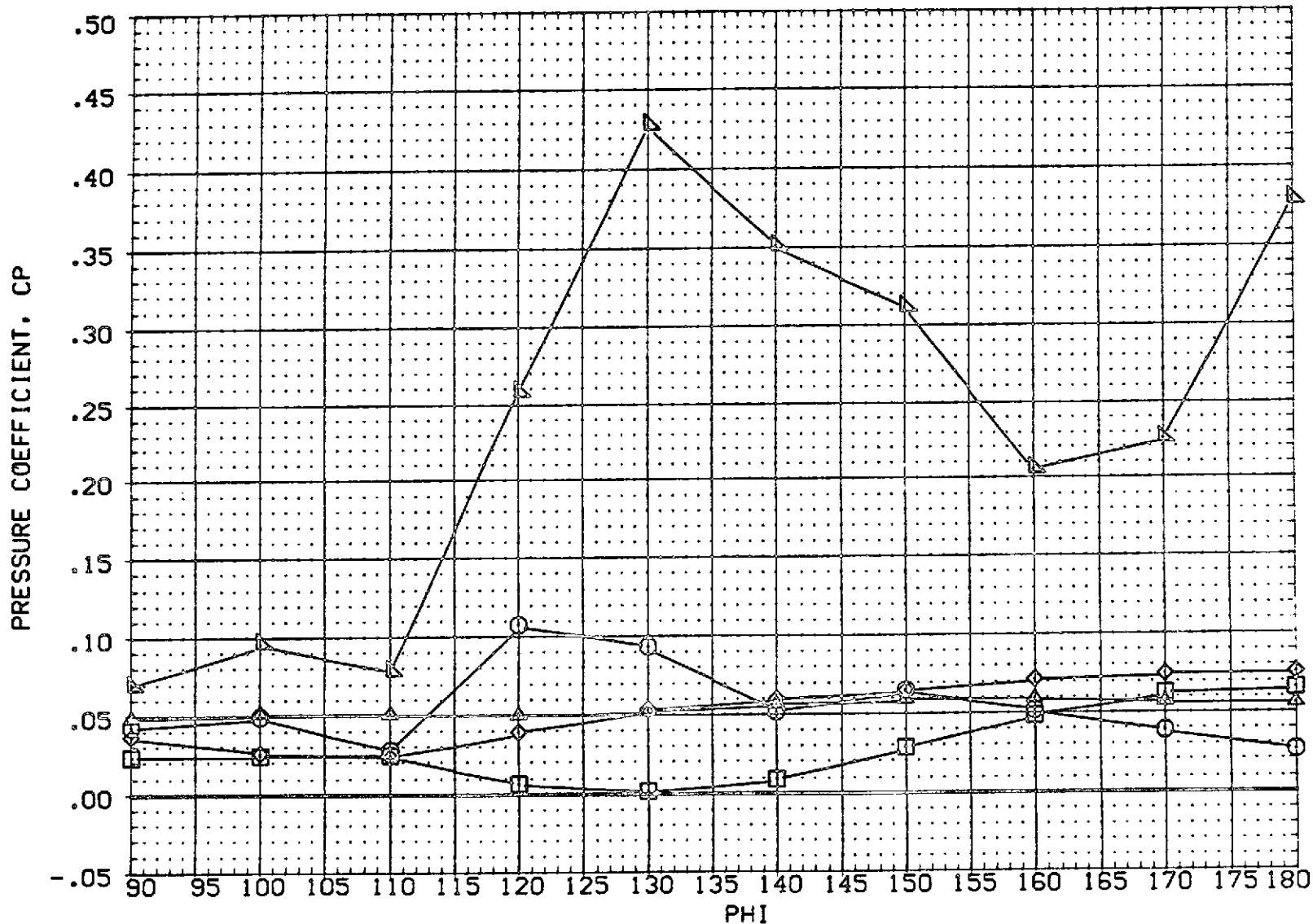


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 ○ .264 -7.582 5.300
 □ .405
 ▲ .546
 △ .688
 ▽ .829

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

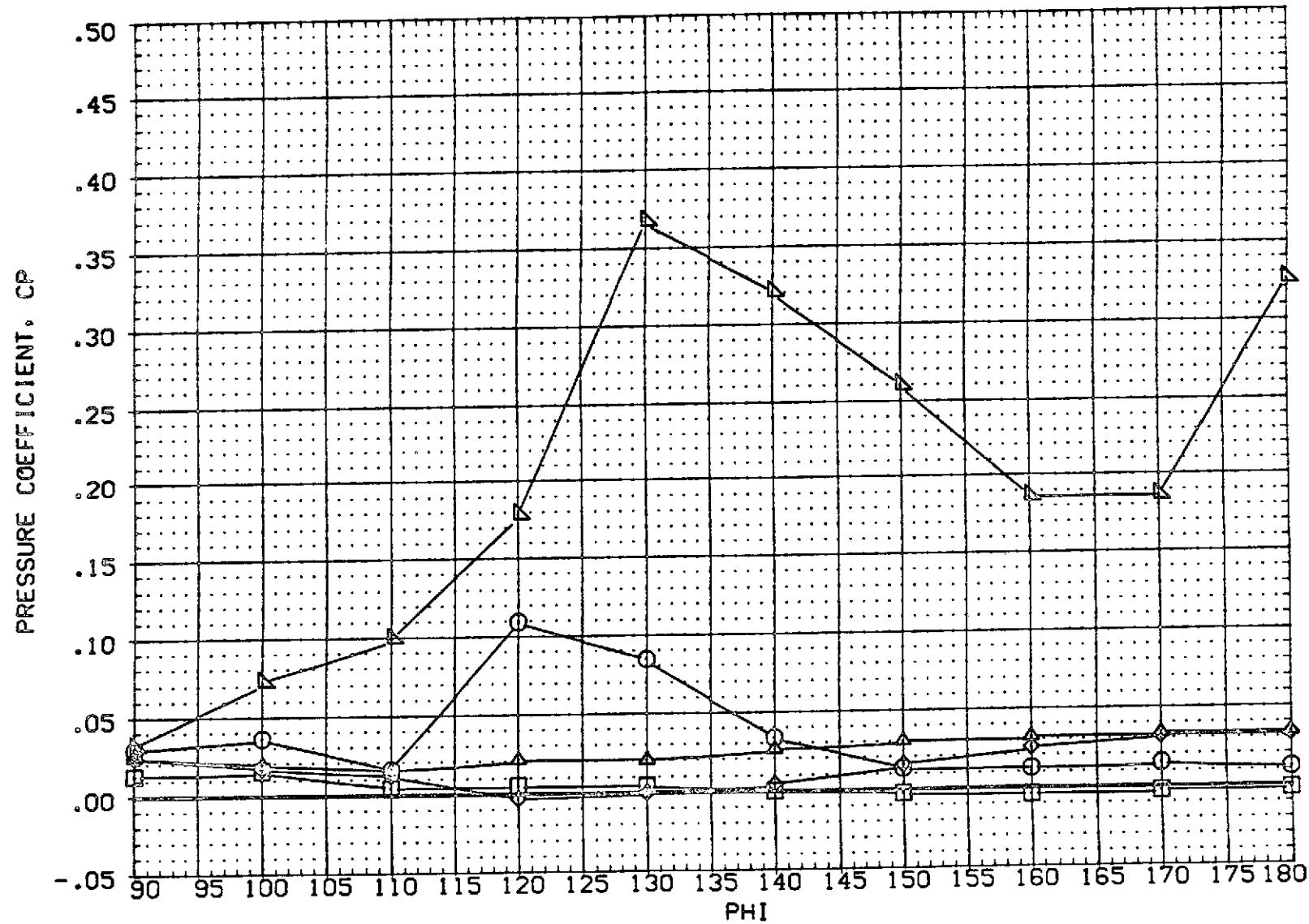


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL	X/L	ALPHA	MACH
○	.264	-3.669	5.300
□	.405		
◊	.546		
△	.688		
▽	.829		

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

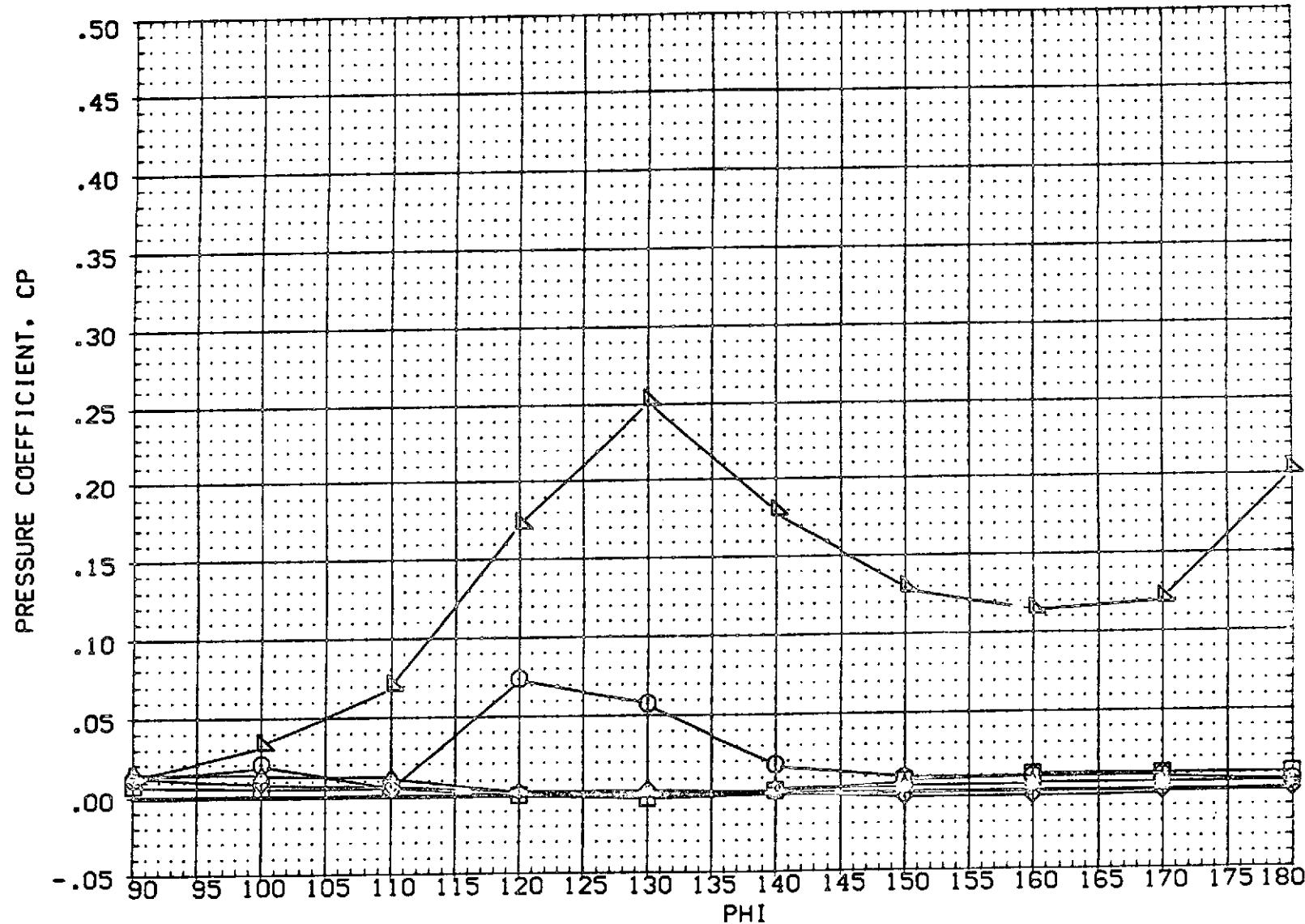


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 ○ .264 .136 5.300
 □ .405
 ◇ .546
 △ .688
 ▽ .829

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

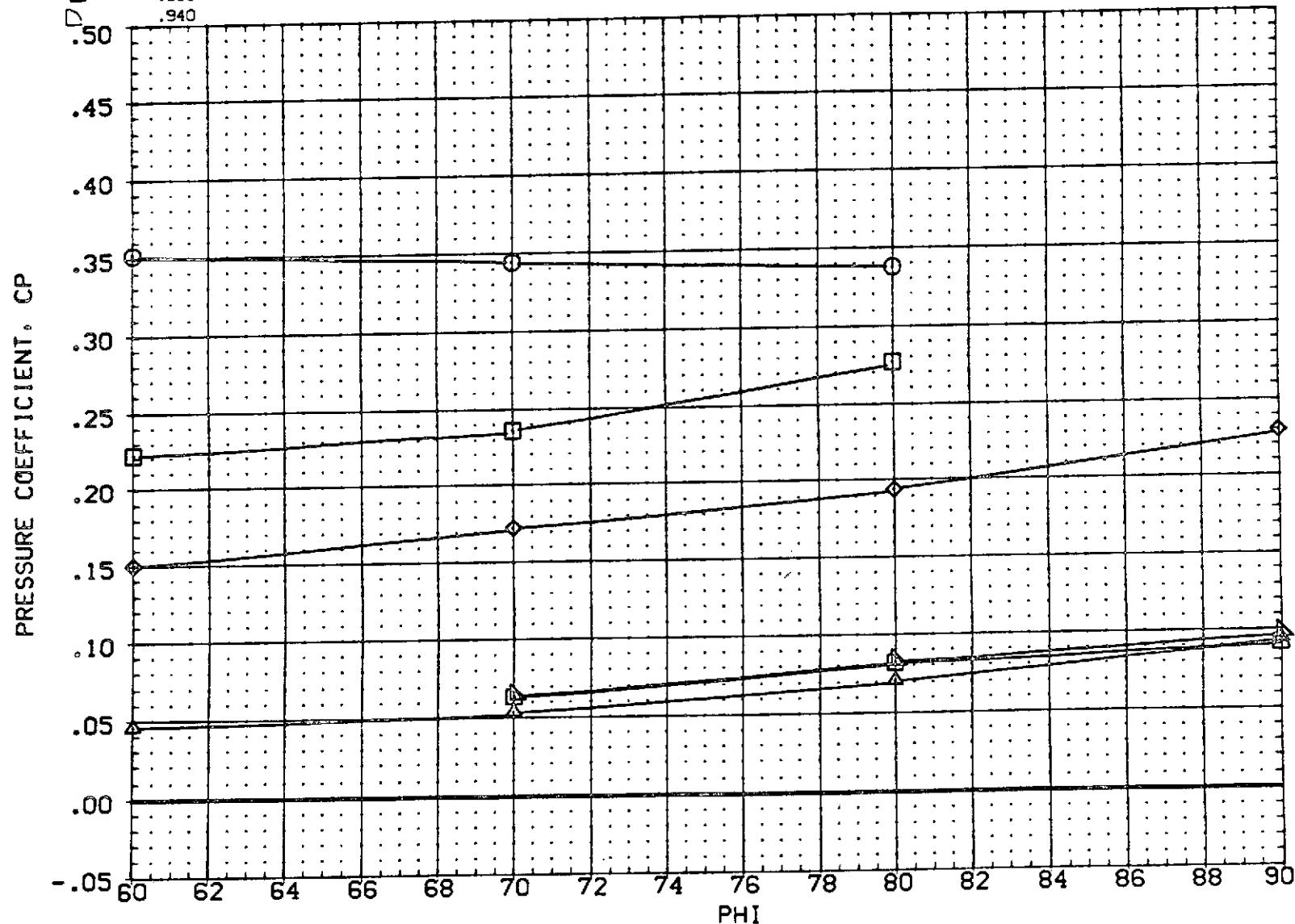


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL	X/L	ALPHA	MACH
O	.087	-9.639	7.330
□	.125		
◊	.164		
△	.862		
▽	.900		
▷	.940		

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

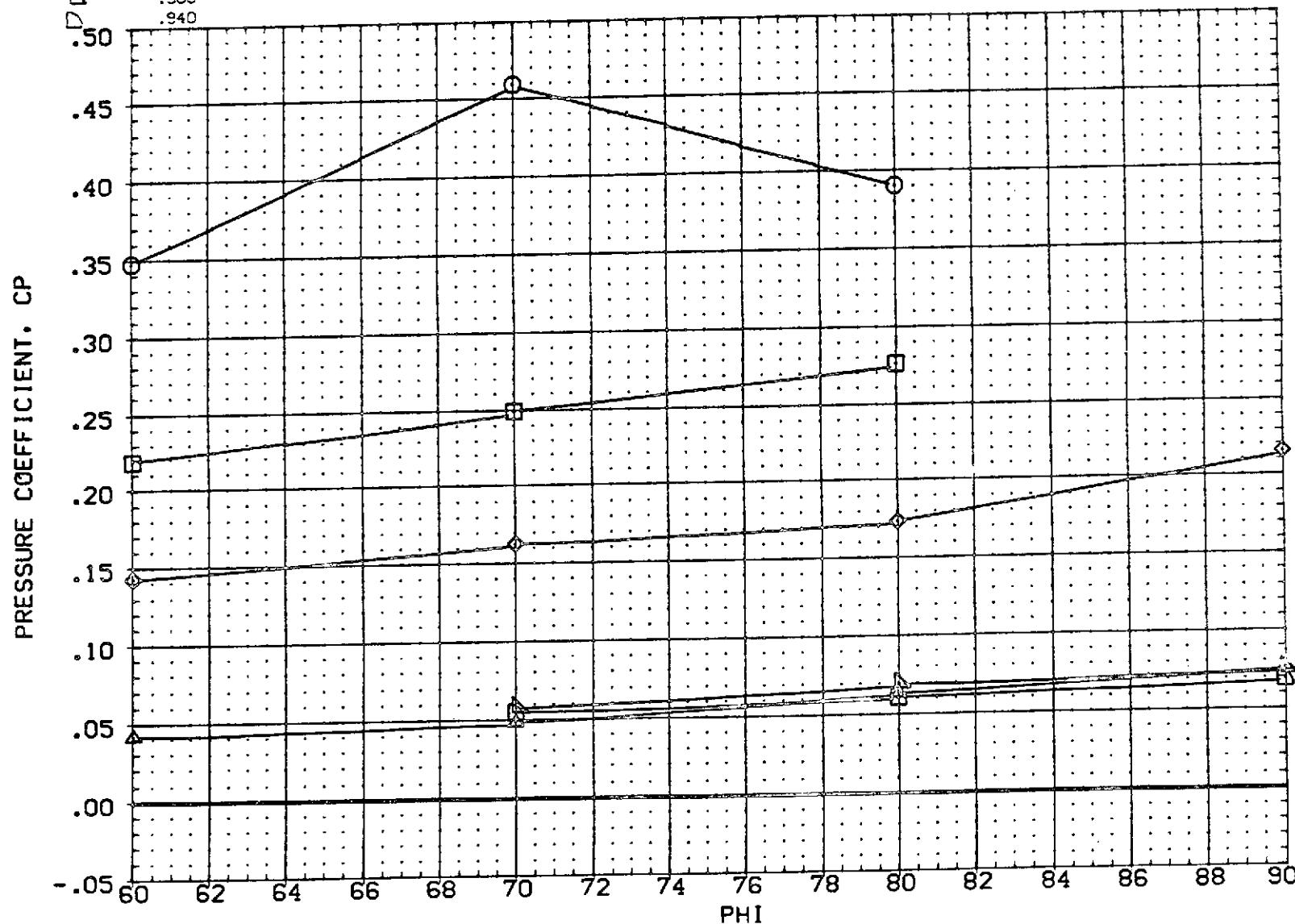


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 .087 -7.594 7.330
 .126
 .164
 .852
 .900
 .940

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

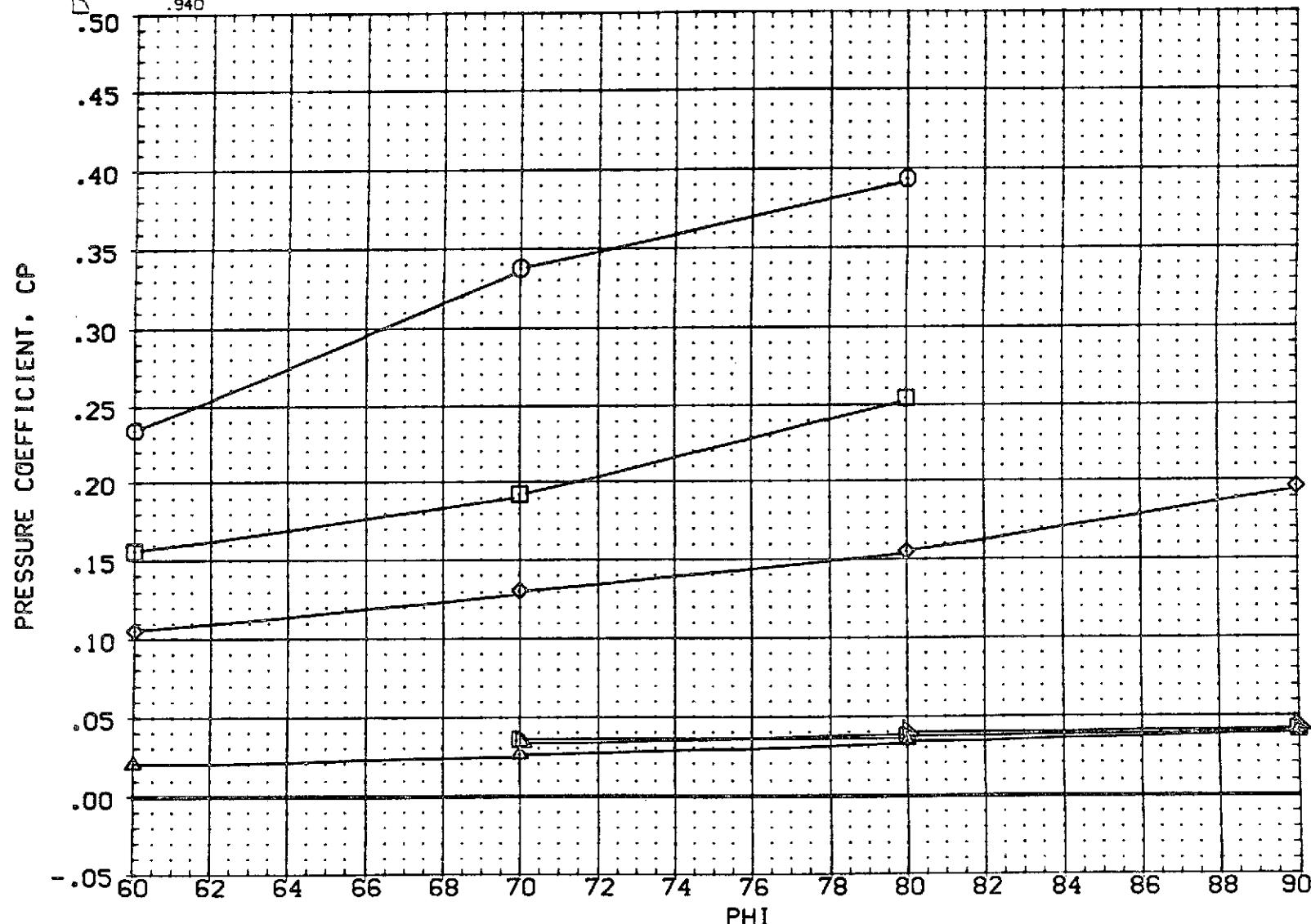


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL	X/L	ALPHA	MACH
O	.087	-3.651	7.330
D	.126		
◇	.164		
▽	.862		
□	.900		
△	.940		

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

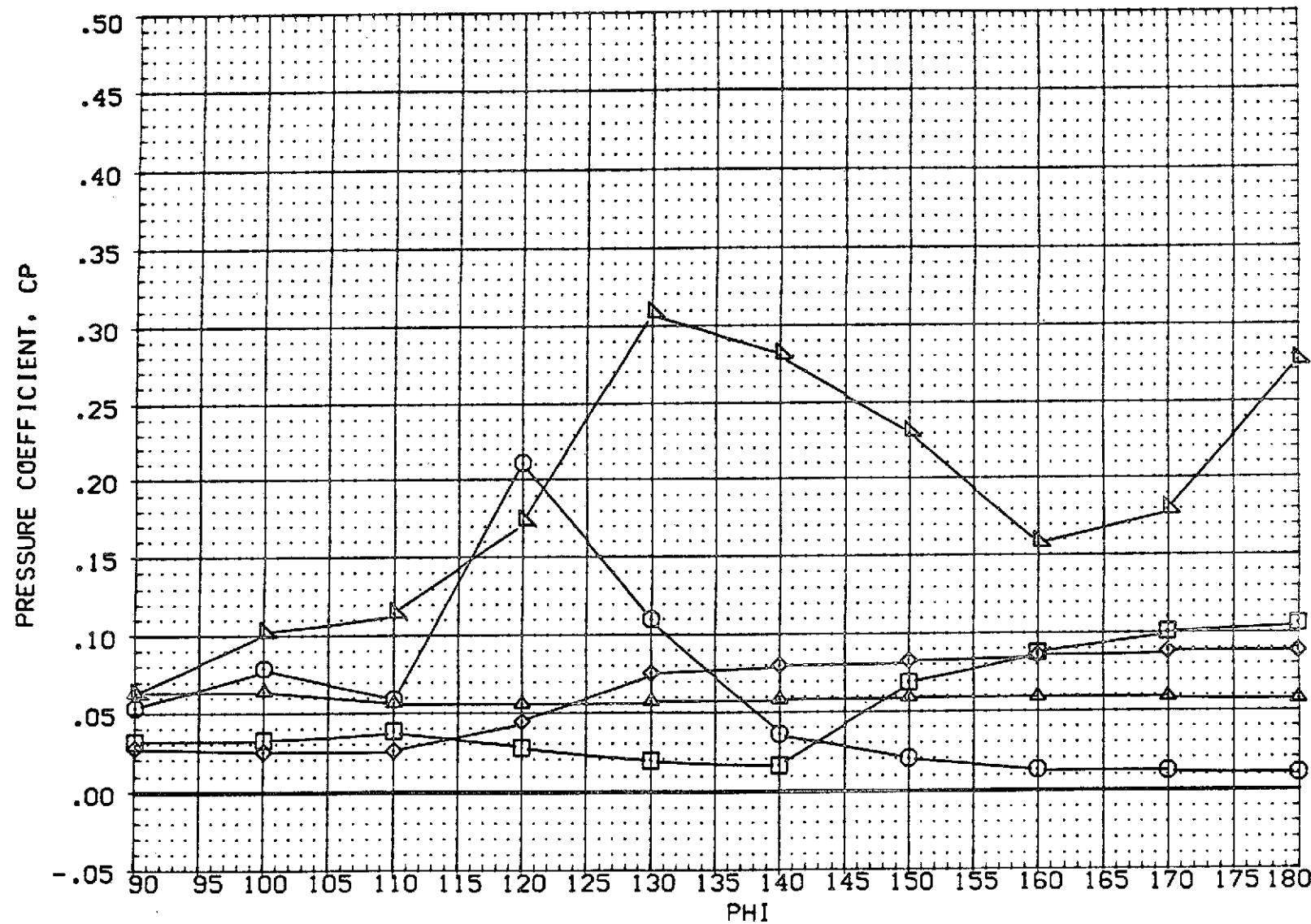


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 ○ .264 -9.639 7.330
 □ .405
 ◇ .546
 △ .688
 ▽ .829

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

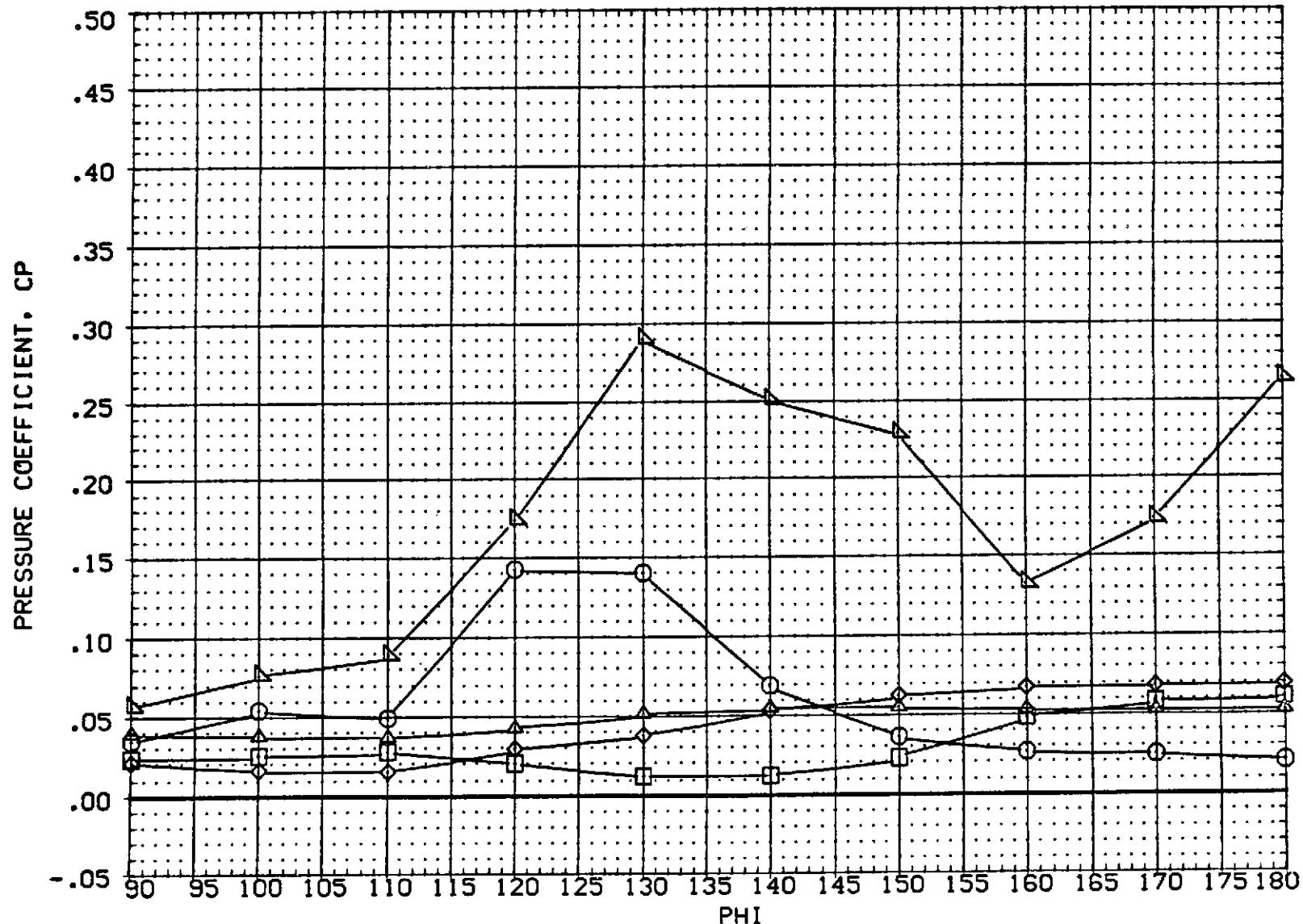


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL	X/L	ALPHA	MACH
○	.264	-7.594	7.330
□	.405		
◊	.546		
△	.688		
▽	.829		

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

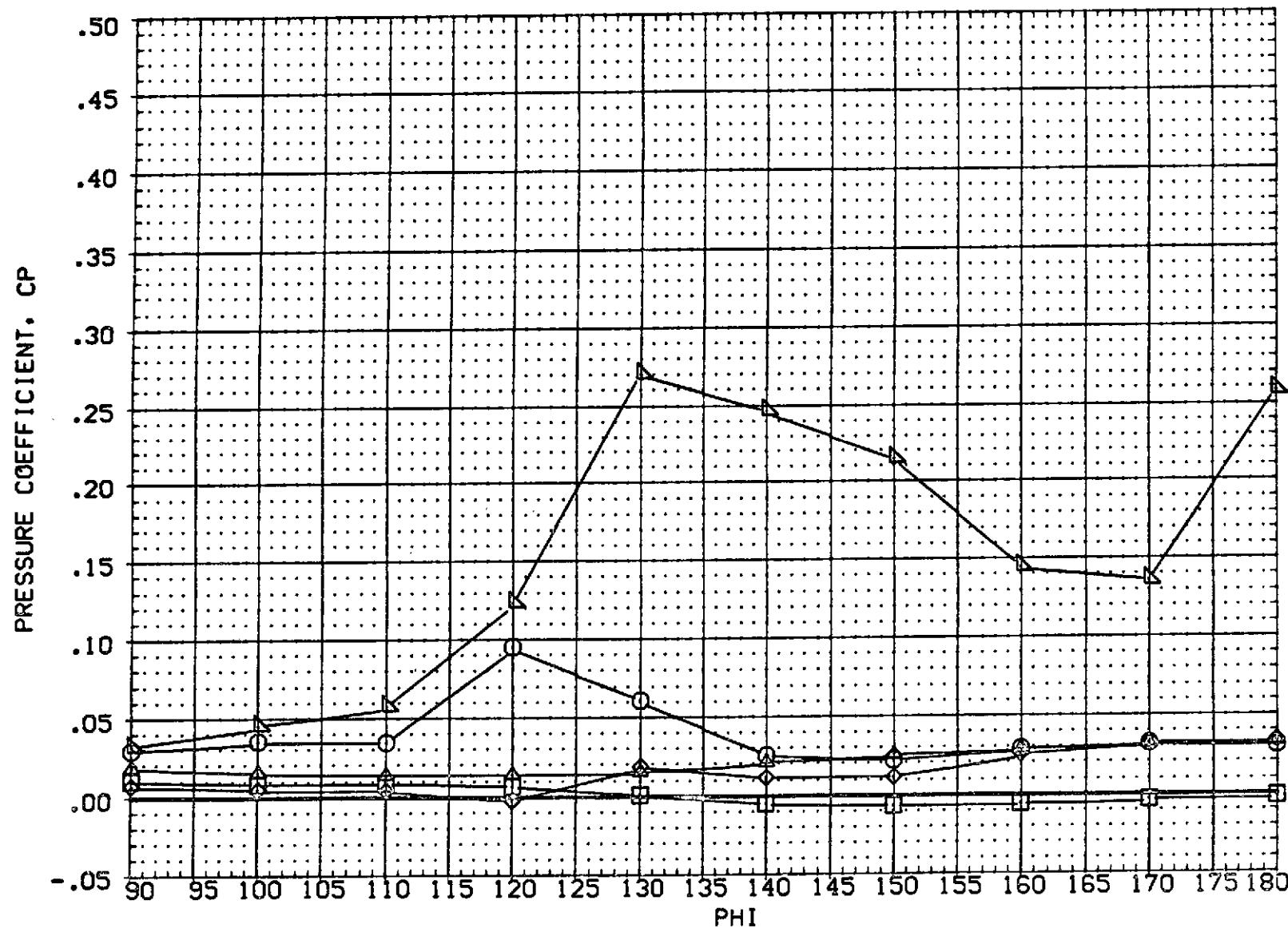


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 ○ .264 -3.651 7.330
 □ .405
 ◇ .546
 △ .688
 ▽ .829

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

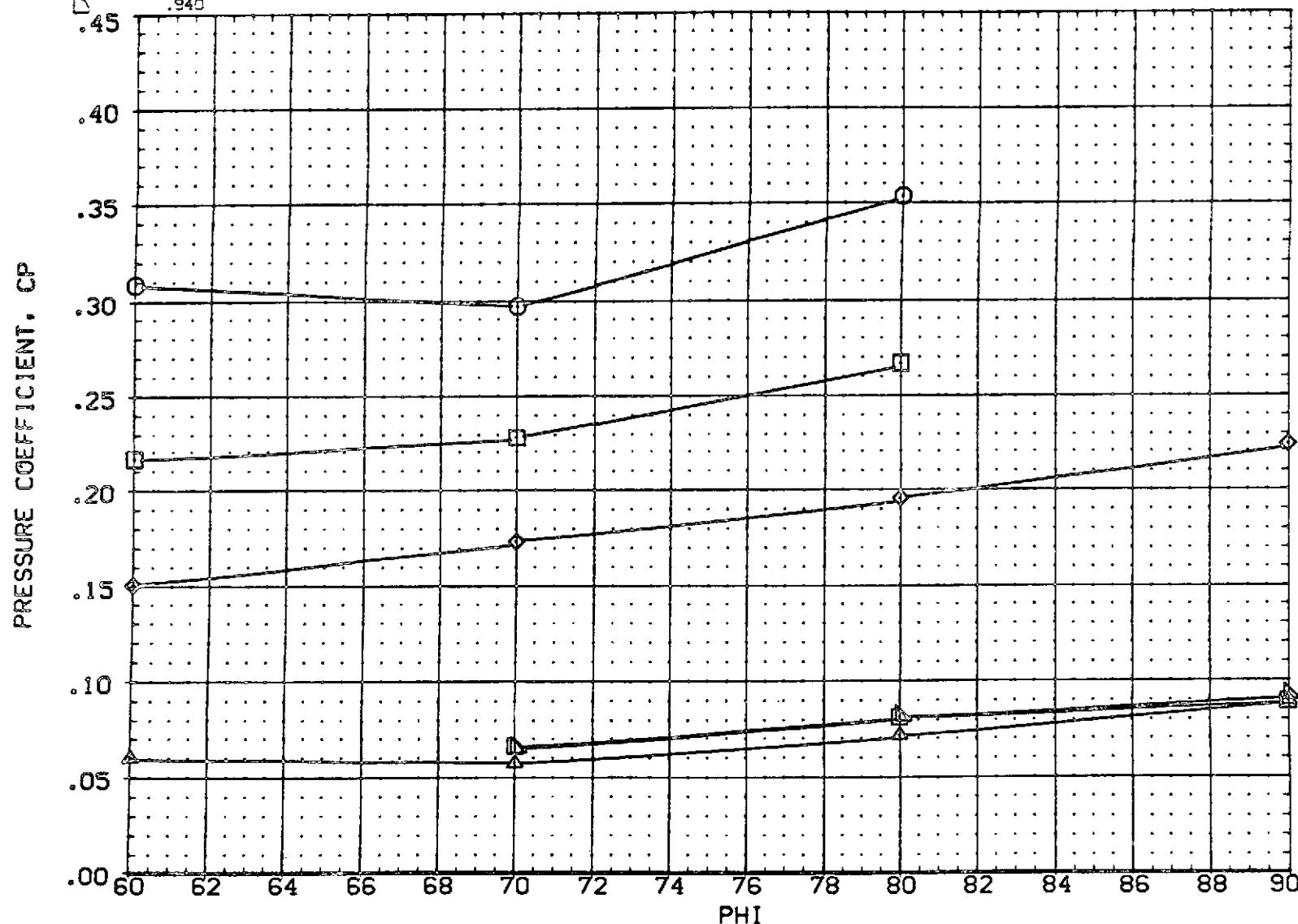


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL	X/L	ALPHA	MACH
○	.087	-9.870	10.290
□	.126		
◊	.164		
△	.862		
◆	.900		
▽	.940		

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

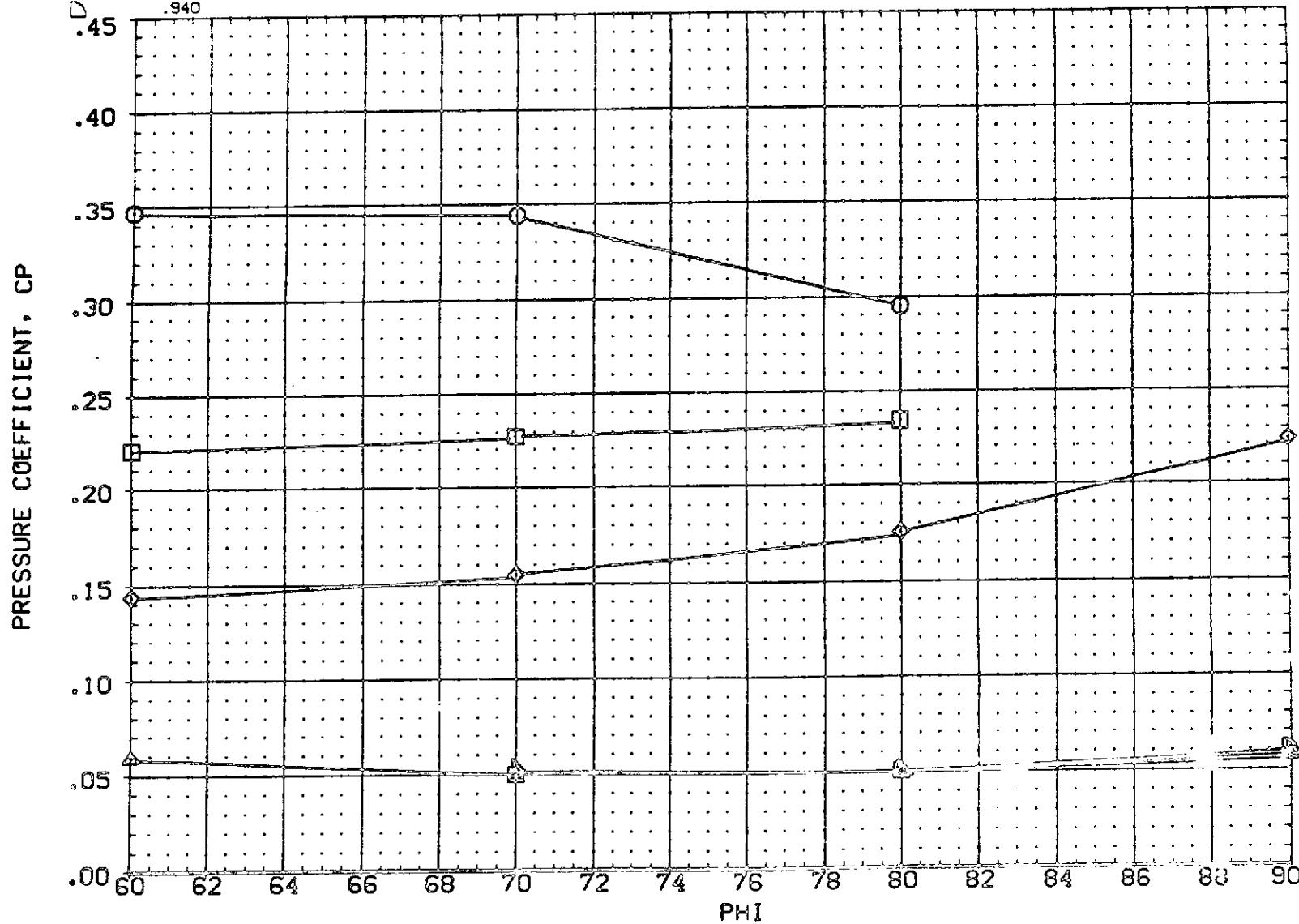


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 ○ .087 -7.814 10.290
 □ .126
 ◇ .164
 △ .862
 ▽ .900
 ▵ .940

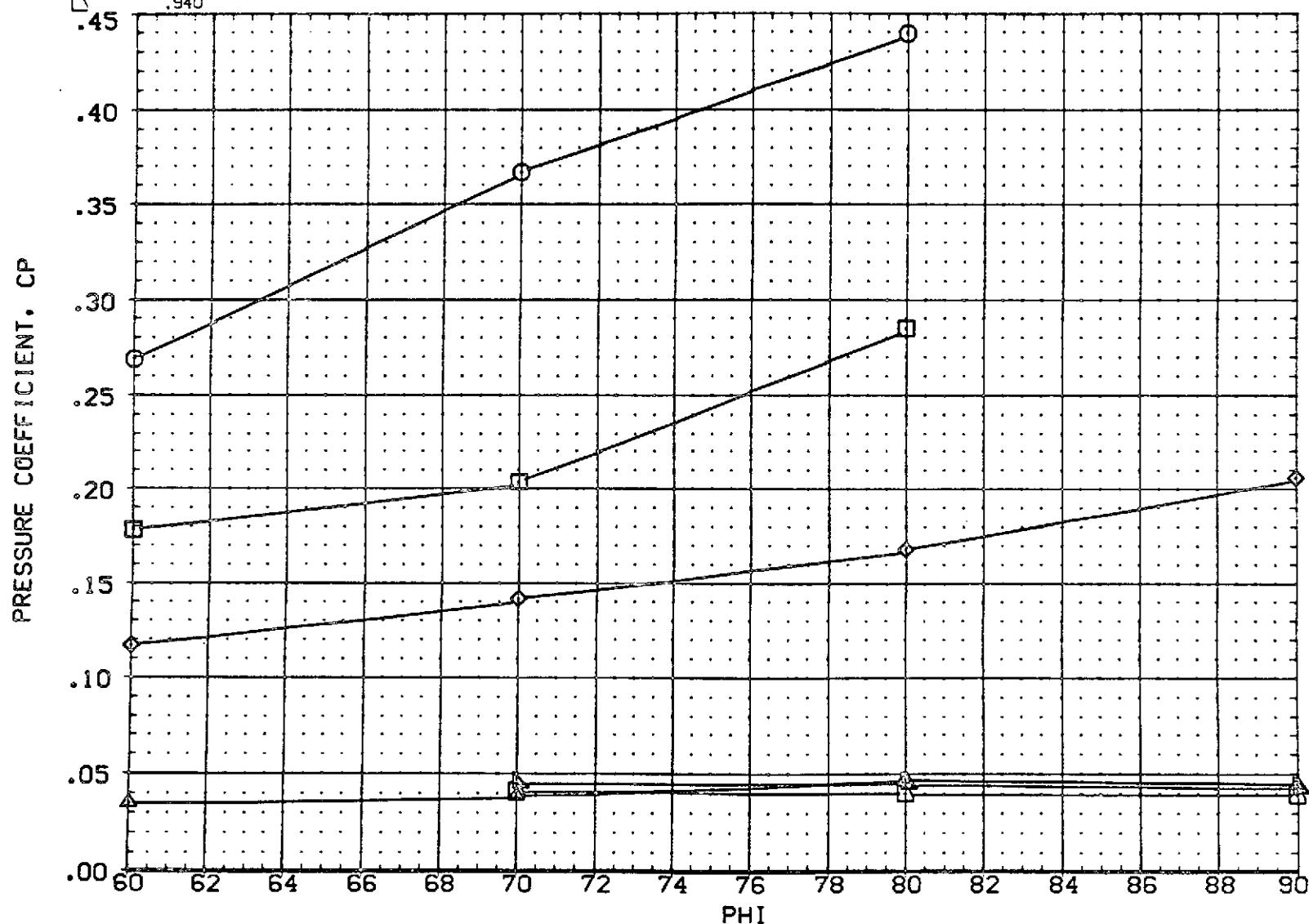
PARAMETRIC VALUES
 BETA .000 ELEV-L .000
 ELEV-R .000 RUDDER .000



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-18 IA16/0A26 ORBITER+ET (ORB FUSELAGE) (REM101)

SYMBOL	X/L	ALPHA	MACH	PARAMETRIC VALUES
\square	.087	-4.041	10.290	BETA .000
\diamond	.128			ELEV-L .000
\triangle	.164			ELEV-R .000
∇	.862			RUDDER .000
\diamond	.900			
\square	.940			

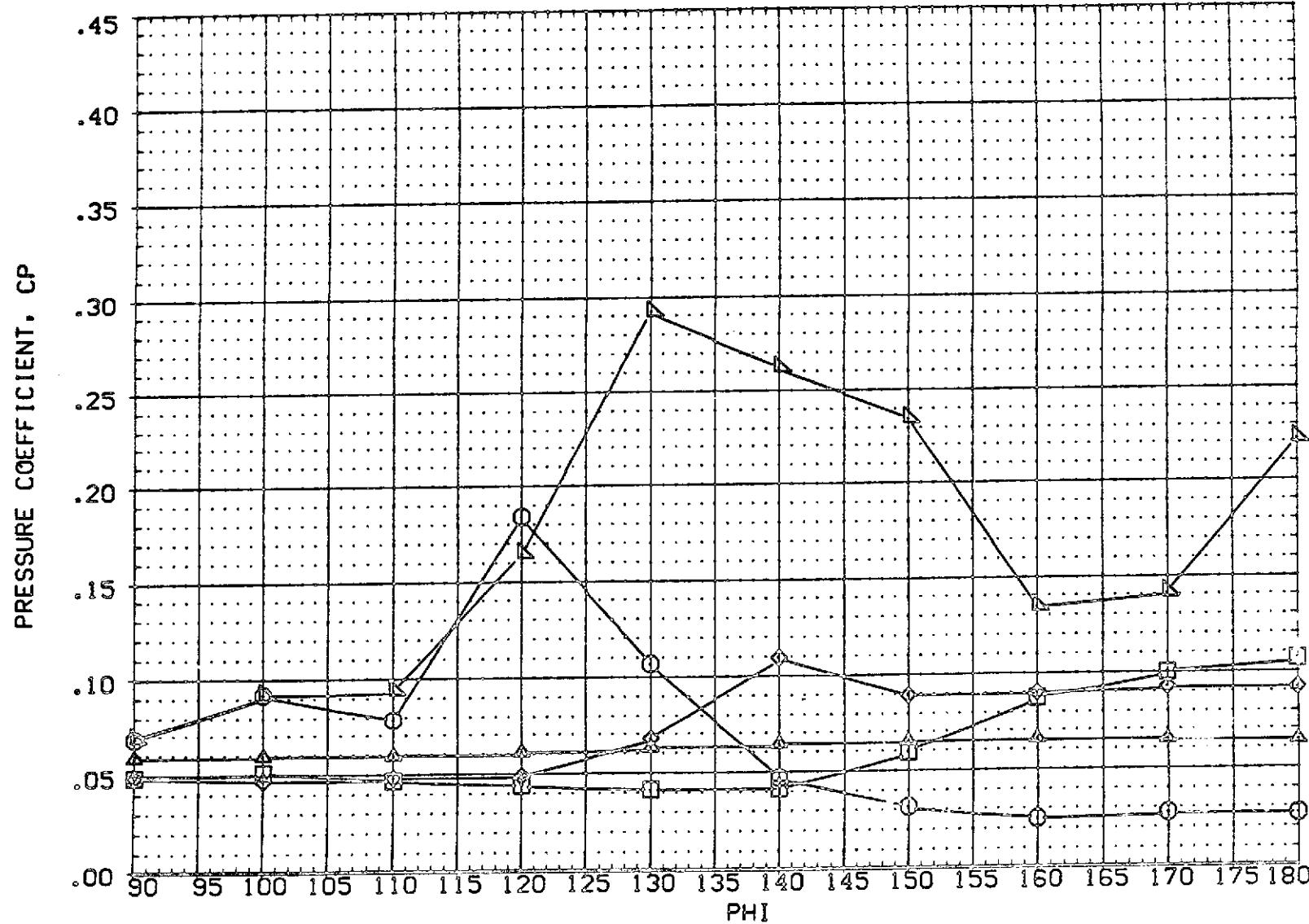


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 .264 -9.870 10.290
 .405
 .546
 .688
 .829

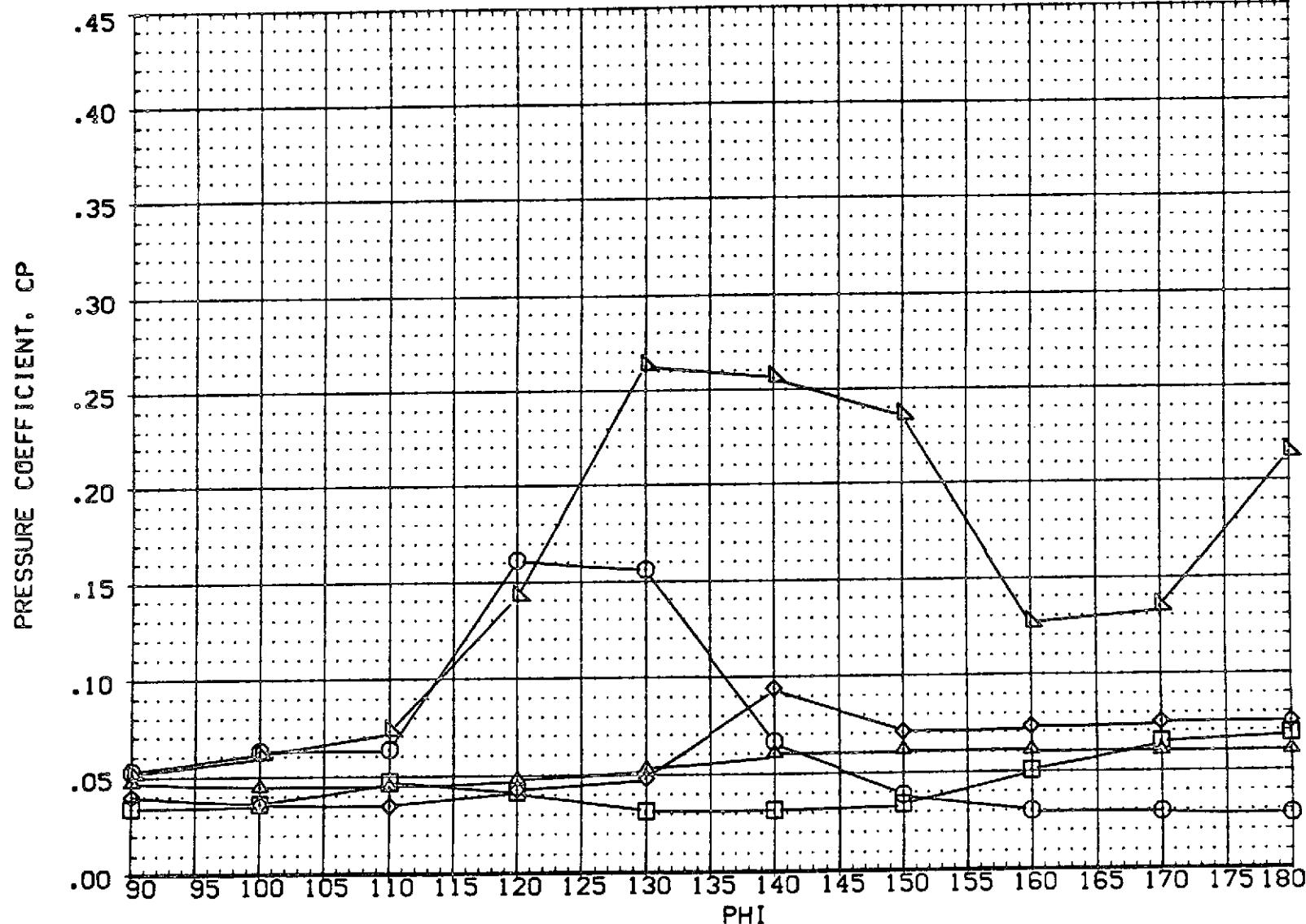
PARAMETRIC VALUES
 BETA .000 ELEV-L .000
 ELEV-R .000 RUDDER .000



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

ARC 3.5-150 IA16/0A26 (ORBITER+ET (ORB FUSELAGE)) (REM101)

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

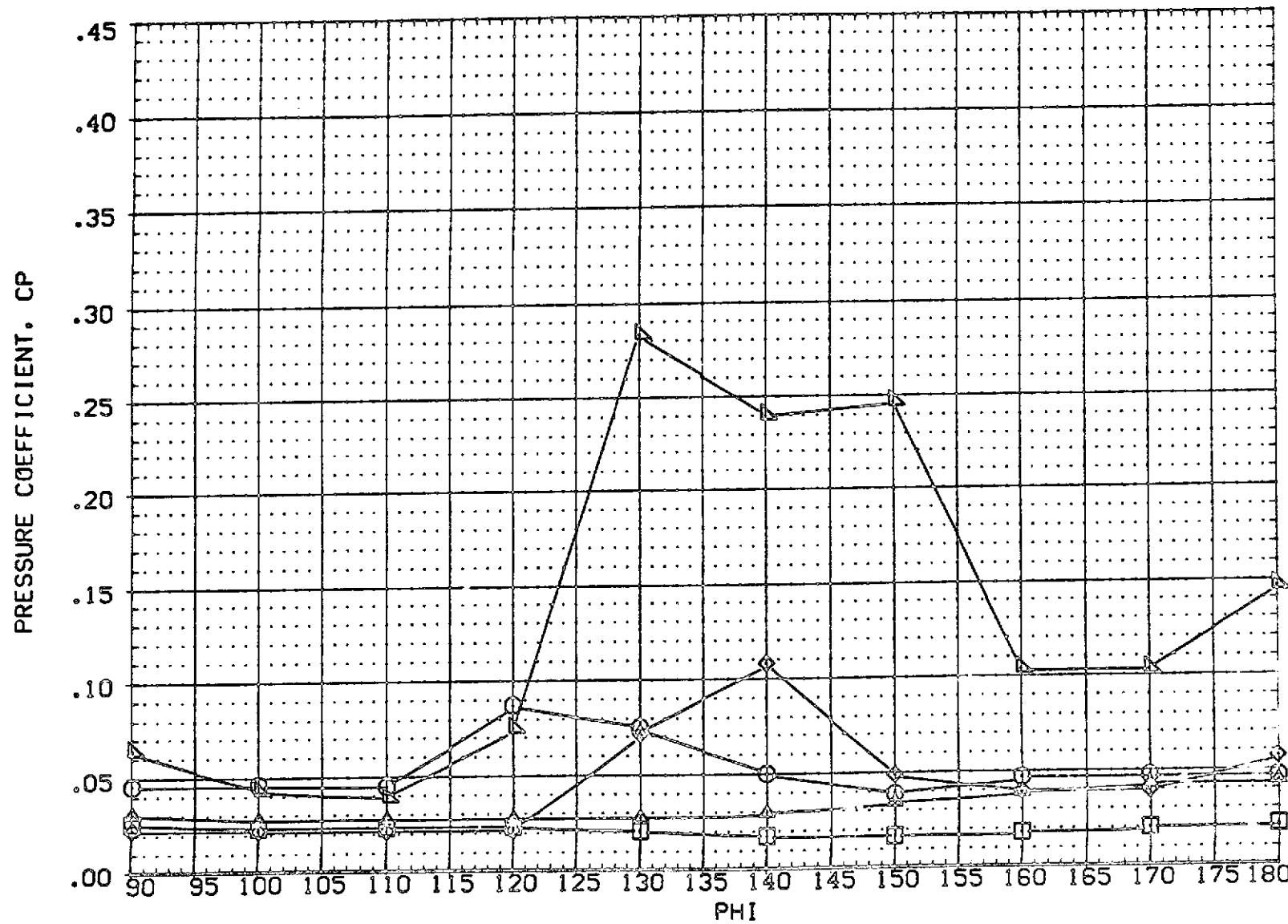


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 ○ .264 -4.041 10.290
 □ .405
 ◇ .546
 △ .688
 ▽ .829

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

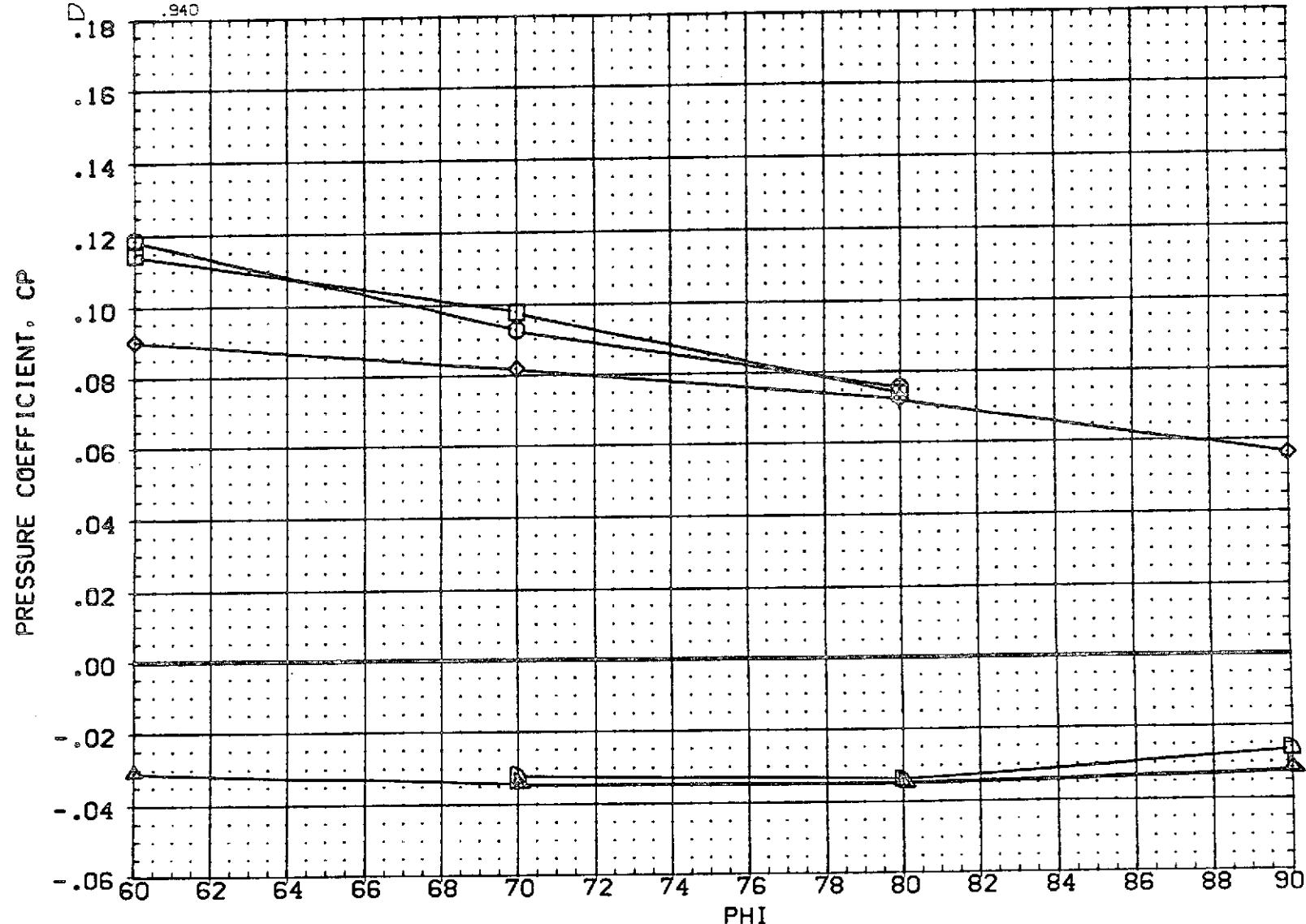


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR INTEGRATED VEHICLE

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

SYMBOL X/L ALPHA MACH
 □ .08 18.255 5.299
 △ .126
 ◇ .164
 ▽ .202
 ○ .240
 ▽ .278
 △ .316

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

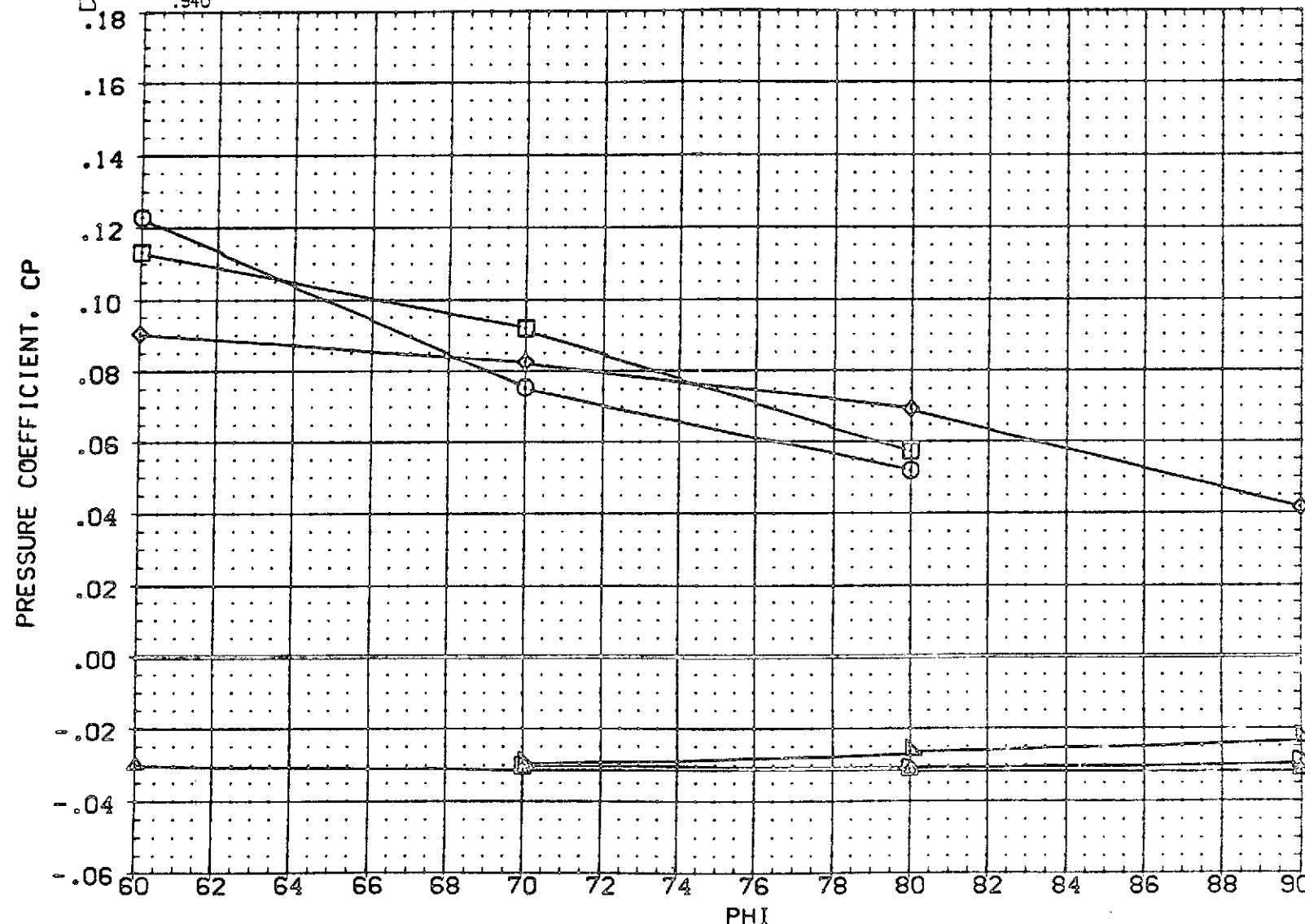


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

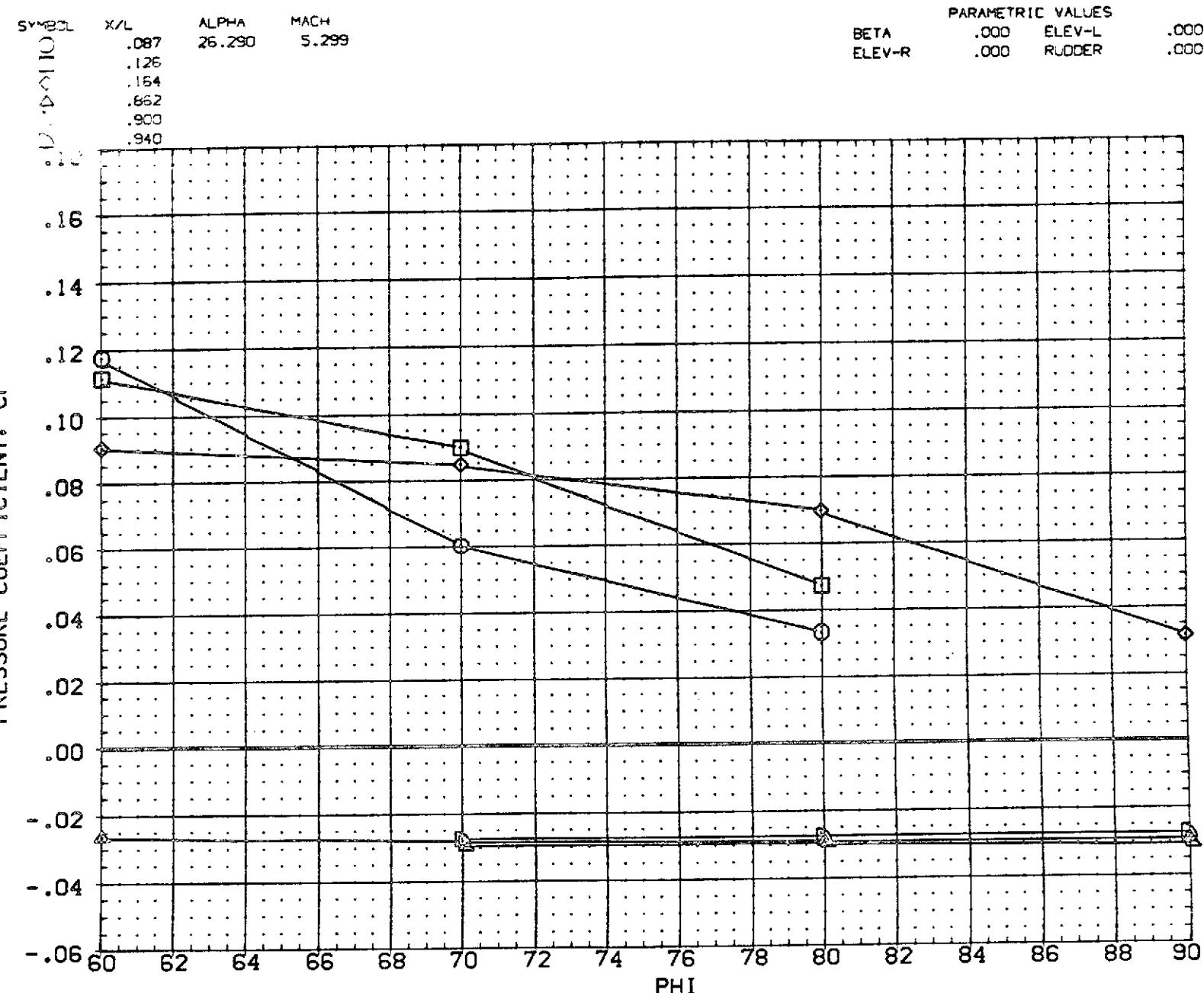
SYMBOL X/L ALPHA MACH
 .087 22.158 5.299
 .126
 .164
 .862
 .900
 .940

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



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

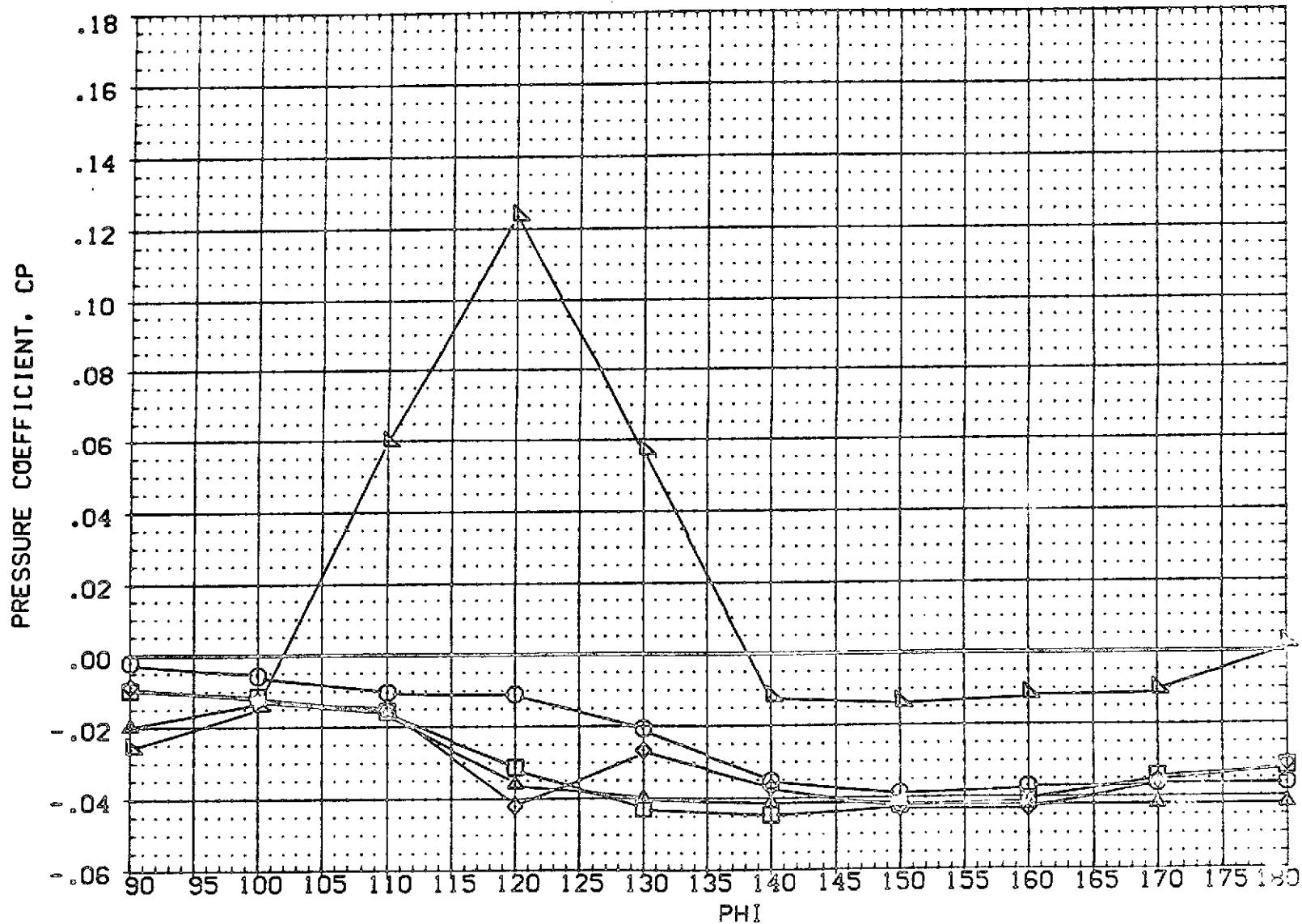
ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM116)



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

SYMBOL X/L ALPHA MACH
 ○ .264 18.255 5.299
 □ .405
 ◇ .546
 △ .688
 ▽ .829

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



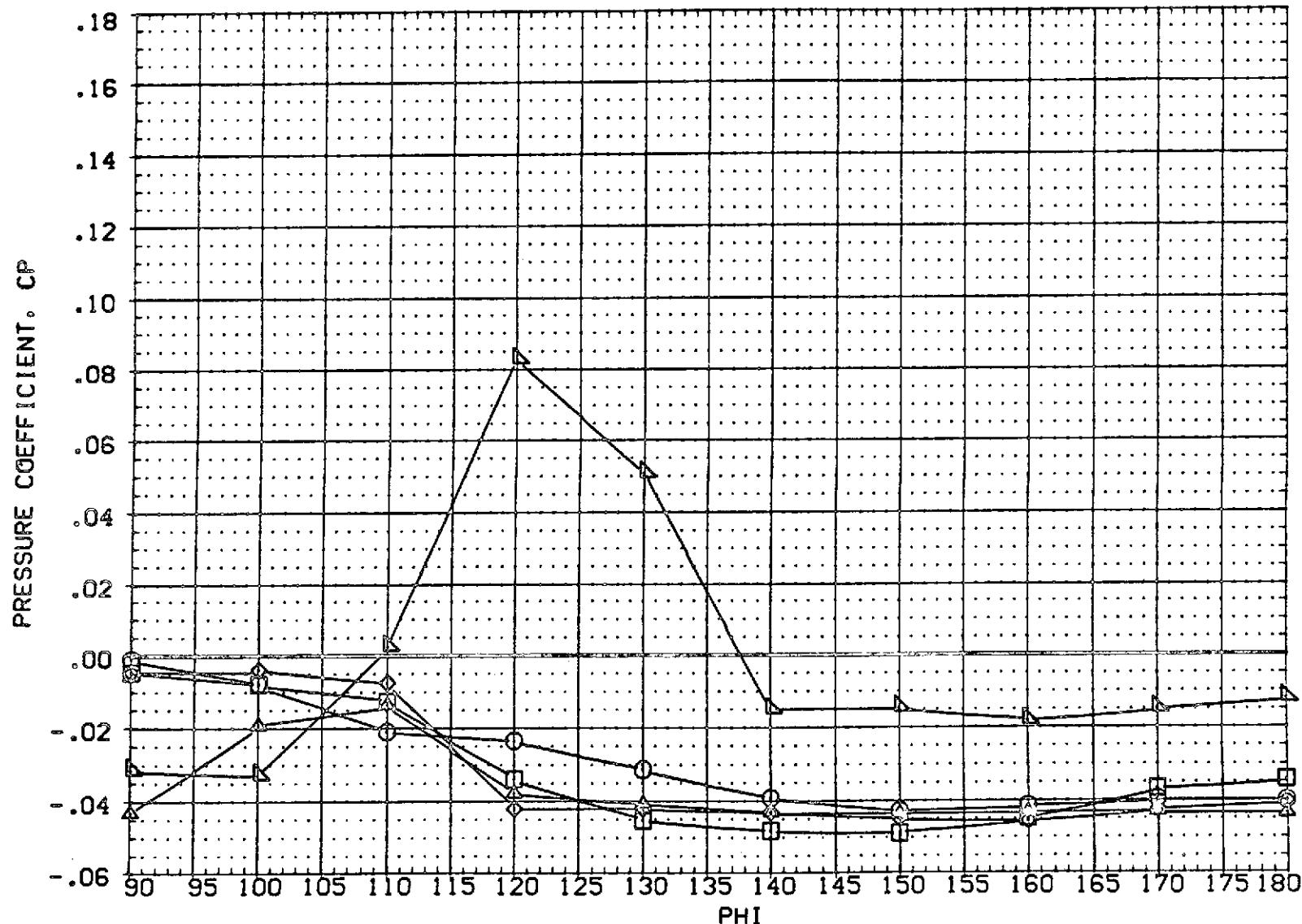
RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

SYMBOL X/Y
 ○ .264
 □ .405
 ◇ .546
 △ .688
 ▽ .829

ALPHA 22.158
 MACH 5.299

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

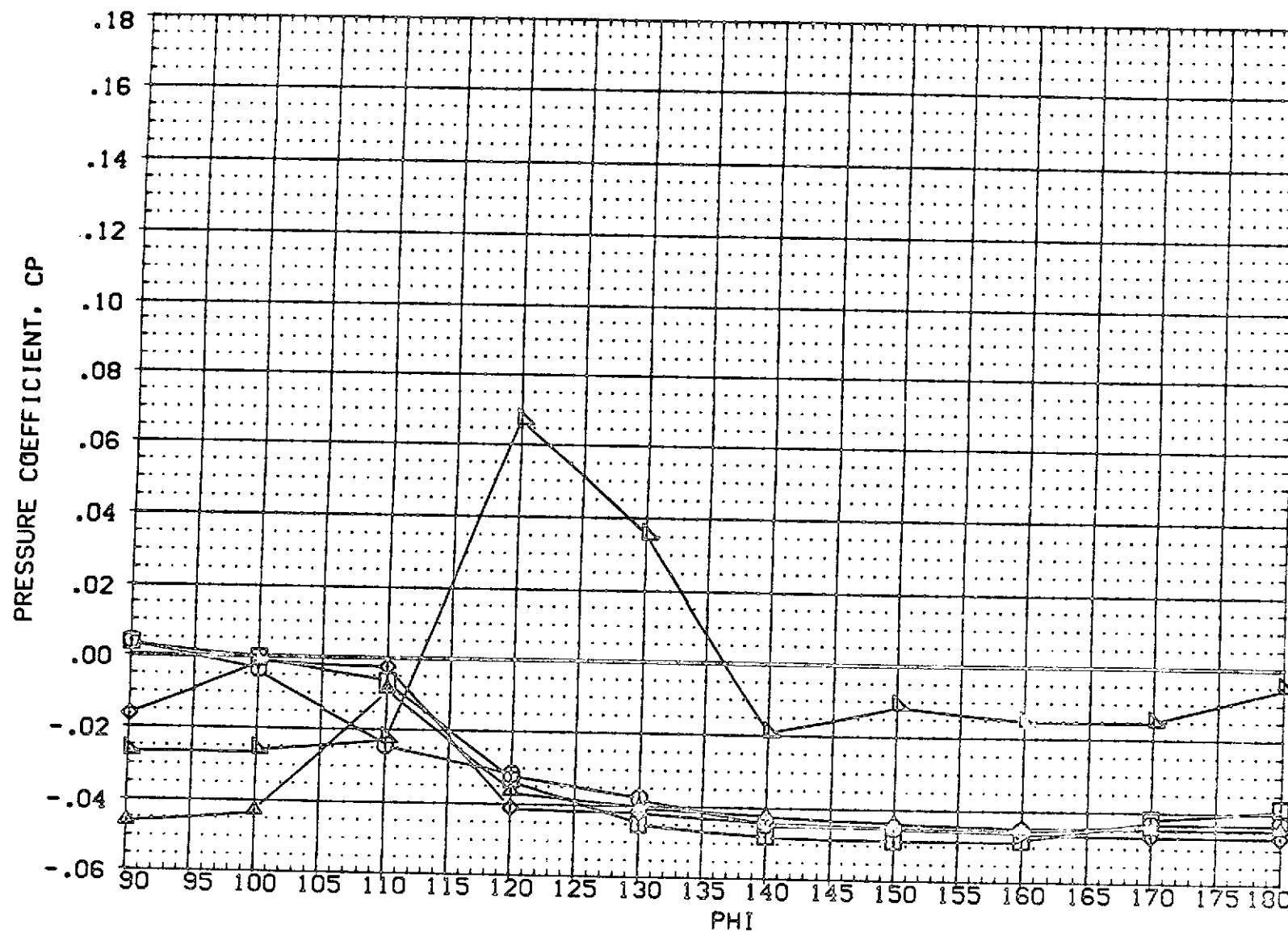


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

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

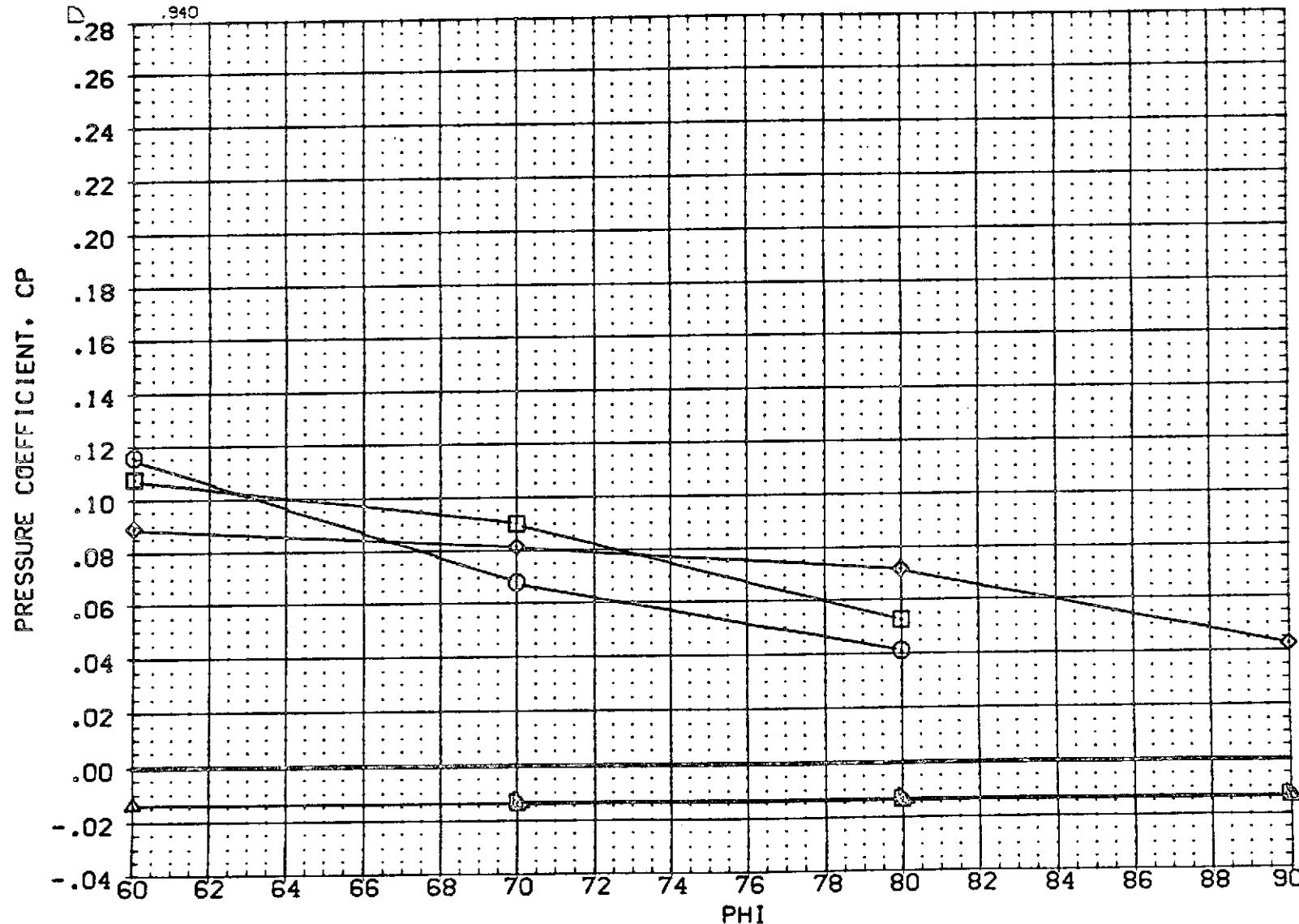


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 TA16/0A26 ORBITER (ORB FUSELAGE) (REM113)

SYMBOL	X/L	ALPHA	MACH
○	.087	26.187	7.330
□	.126		
◊	.164		
△	.862		
▽	.900		
■	.940		

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

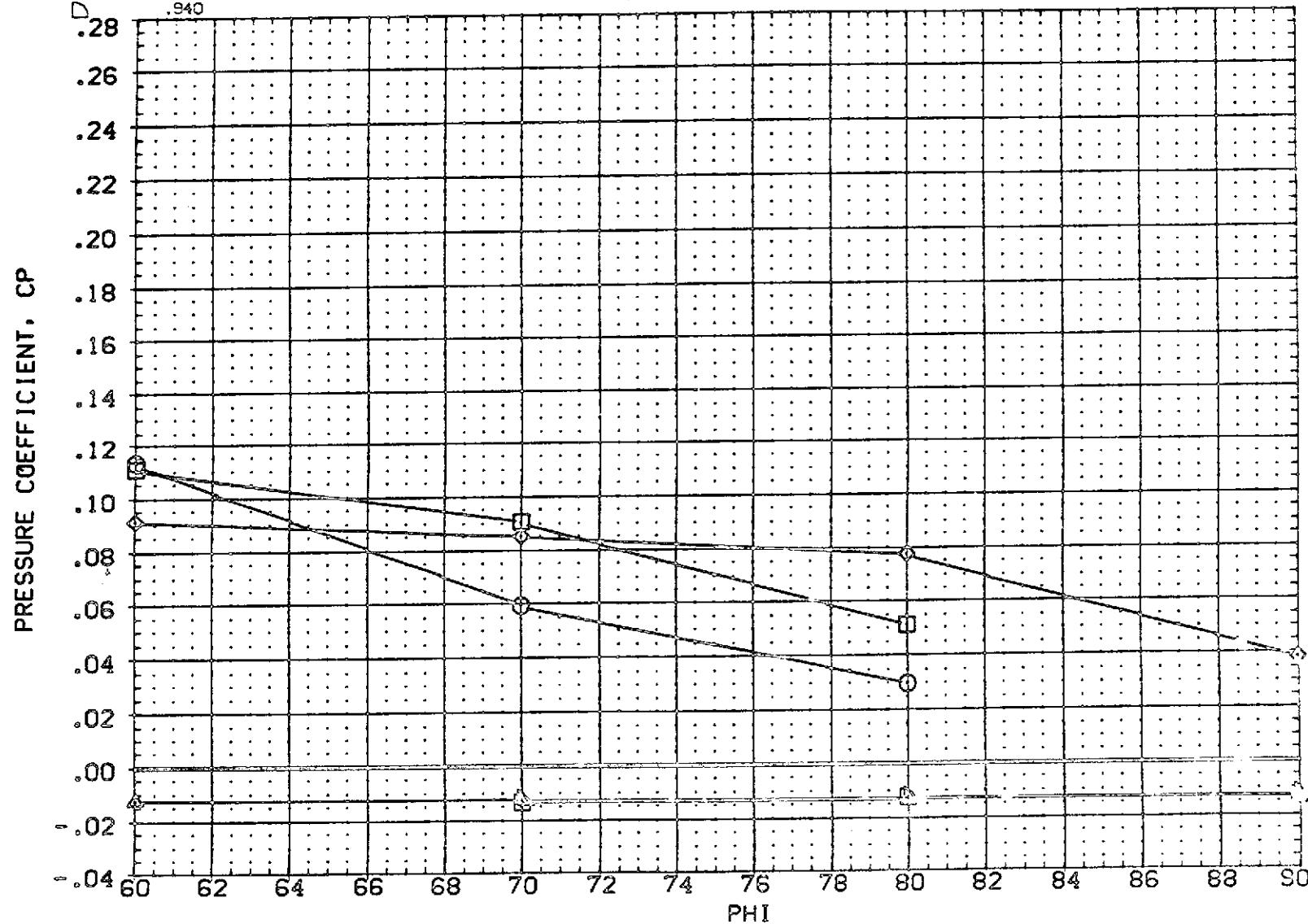


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

SYMBOL X/L ALPHA MACH
 □ .087 30.244 7.330
 ◇ .126
 ◆ .164
 ▲ .862
 ○ .900
 × .940

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

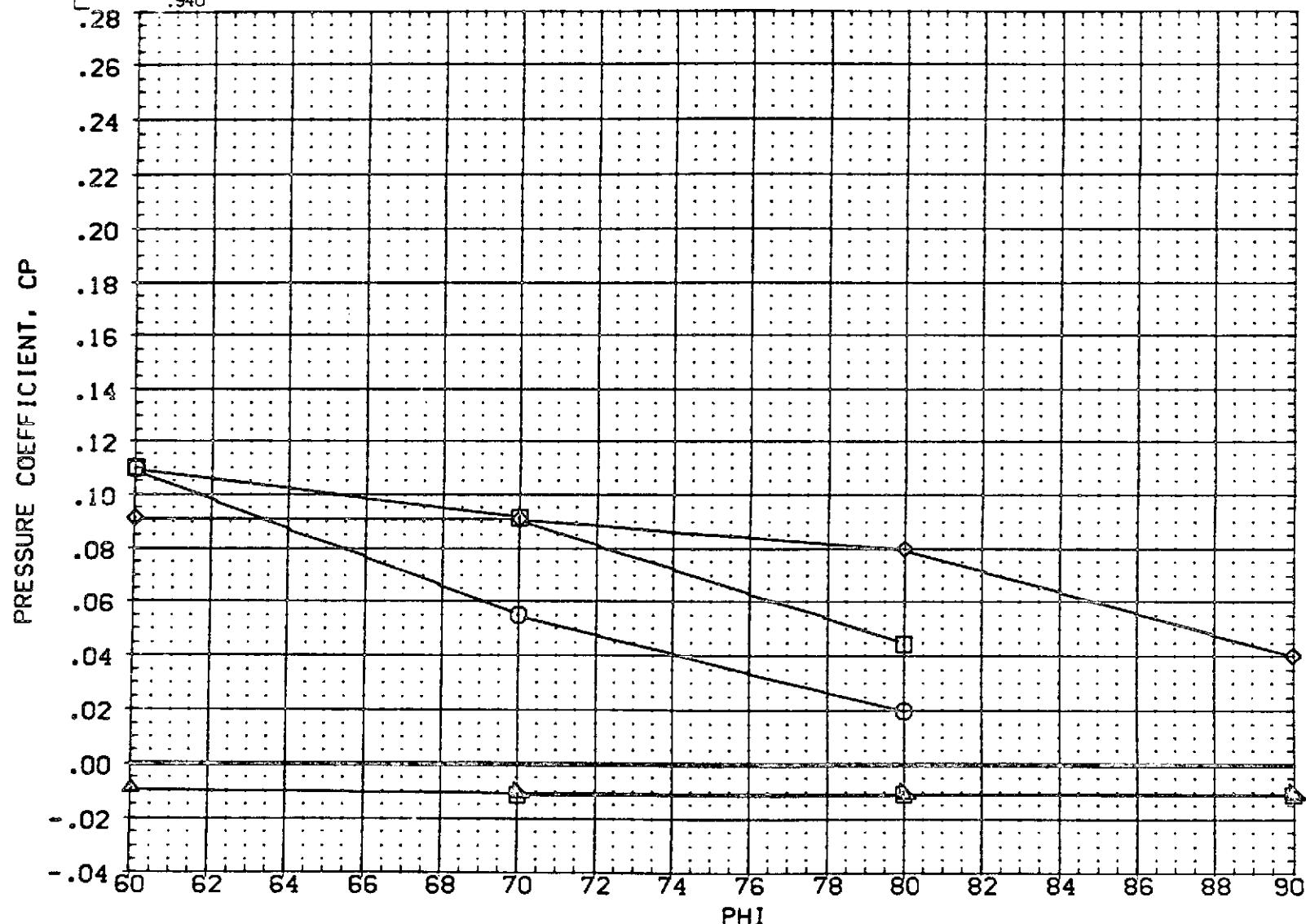


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

SYMBOL	X/L	ALPH	MACH
O	.087	34.19	7.330
□	.126		
◊	.164		
△	.862		
▽	.900		
■	.940		

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

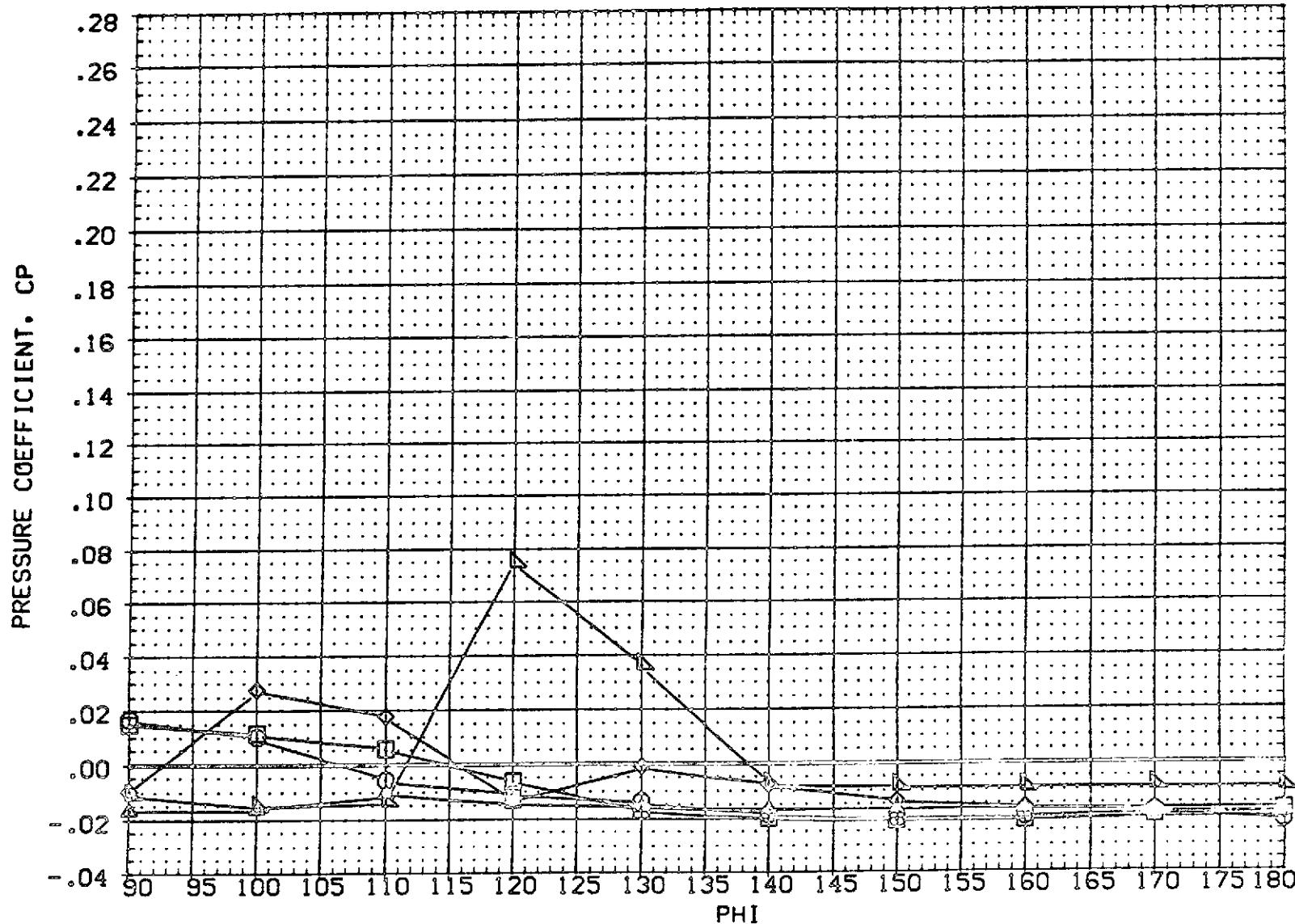


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

SYMBOL	X/L	ALPHA	MACH
○	.264	26.187	7.330
□	.405		
◊	.546		
△	.688		
▽	.829		

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

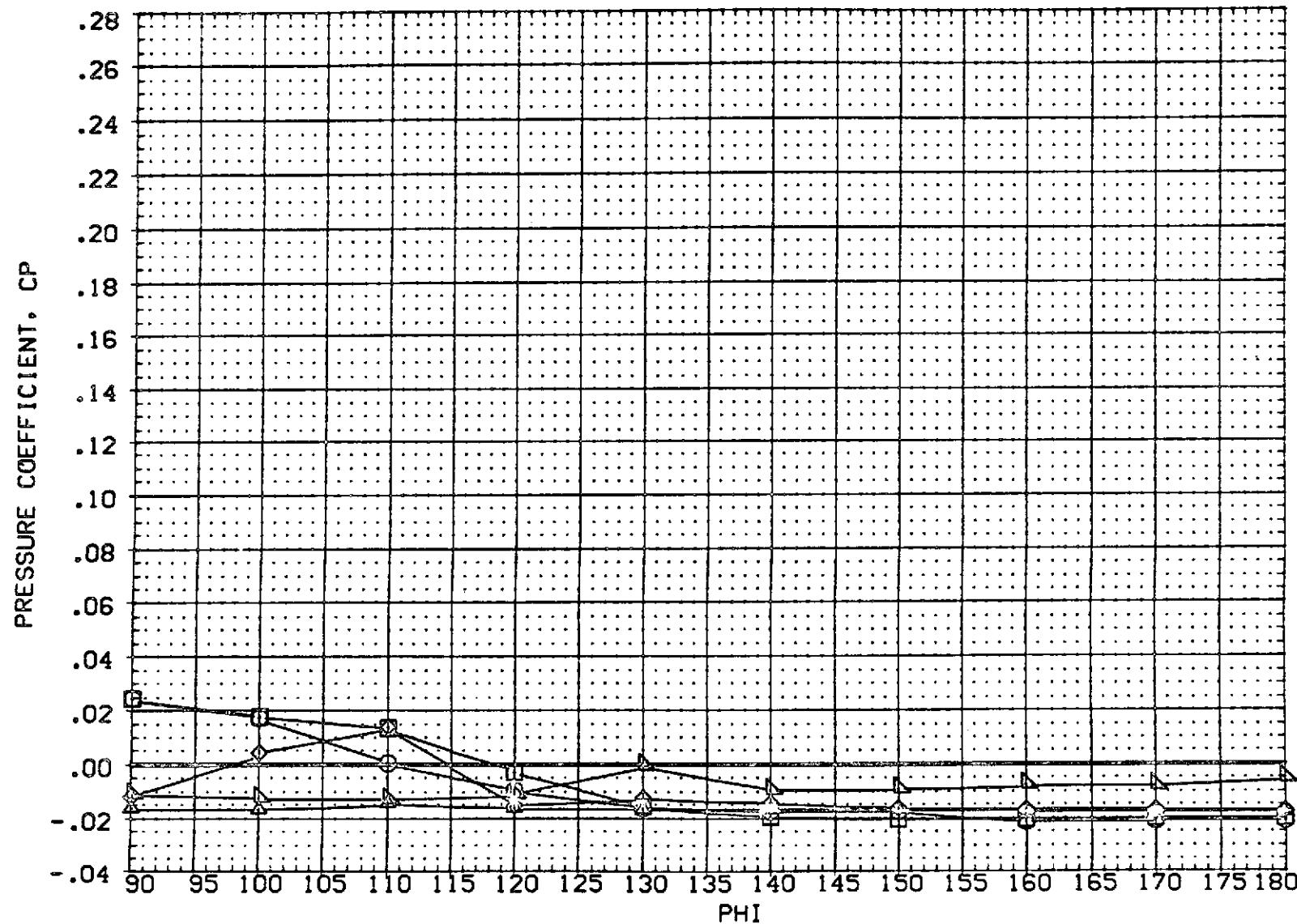


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

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

SYMBOL	X/L	ALPHA	MACH
○	.264	30.244	7.330
◊	.405		
◆	.546		
▽	.688		
□	.829		

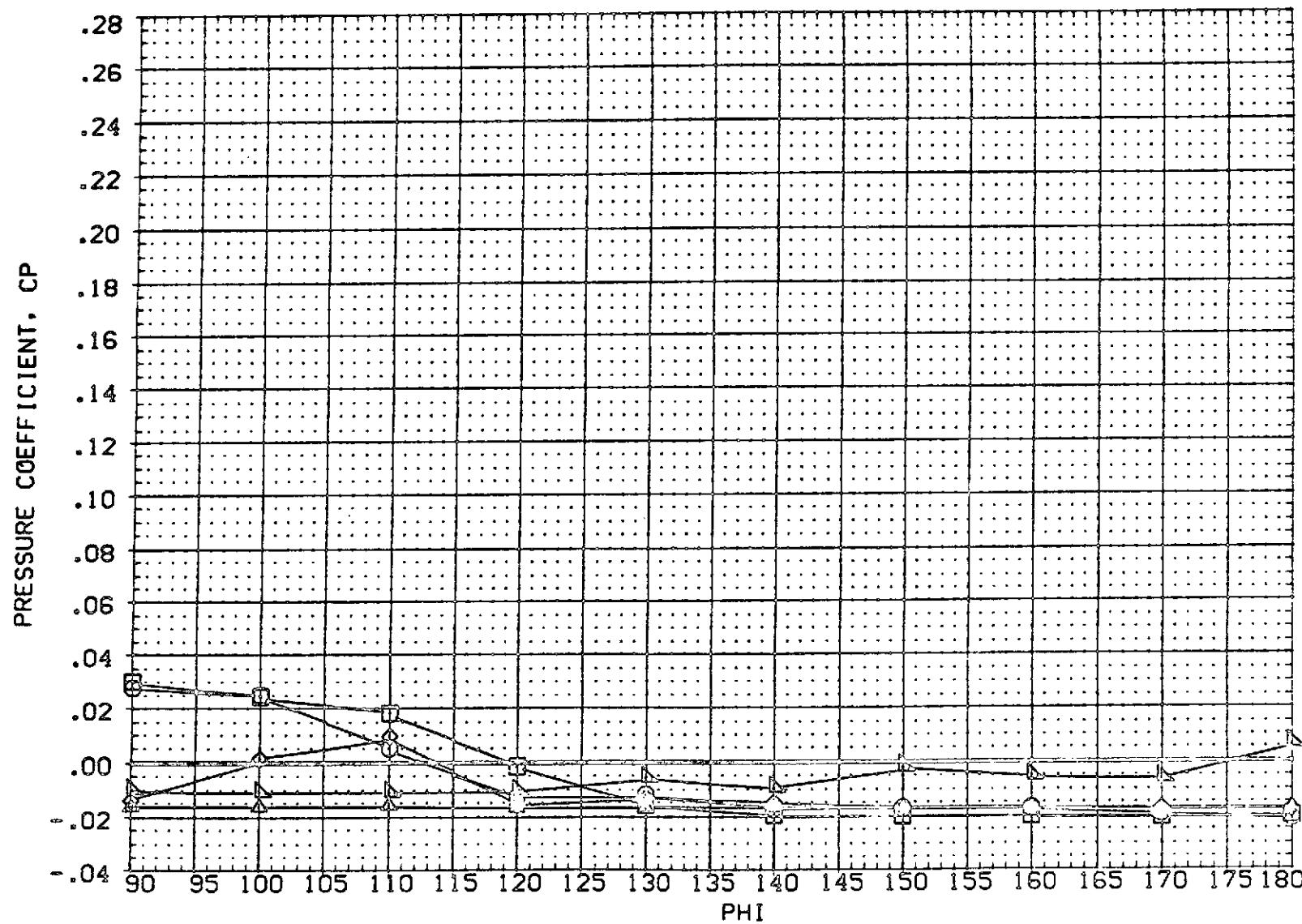
PARAMETRIC VALUES		
BETA	ELEV-L	.000
ELEV-R	RUDDER	.000



RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

SYMBOL	X/L	ALPHA	MACH
O	.264	34.191	7.330
□	.405		
◊	.546		
△	.688		
▽	.829		

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

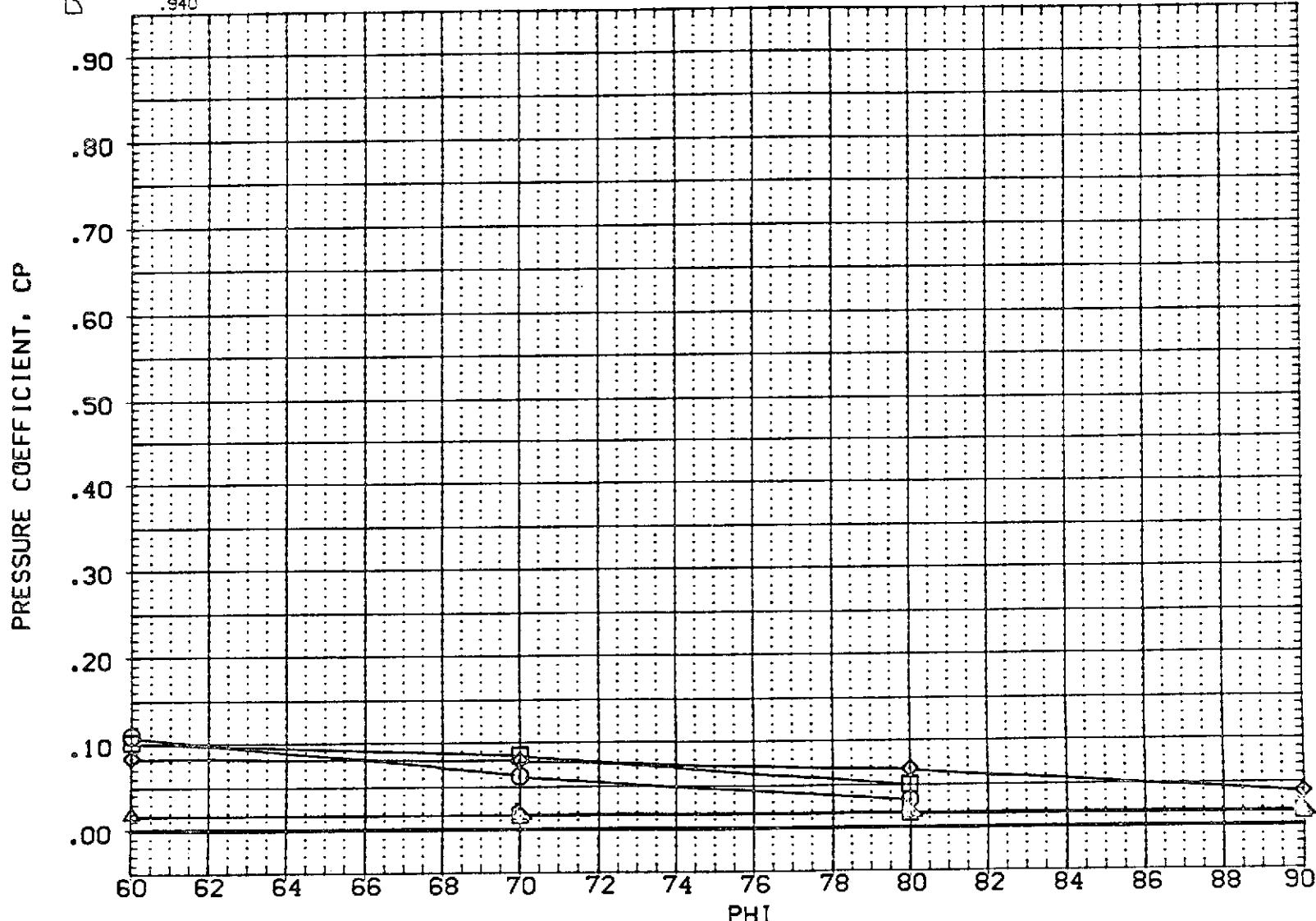


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL X/L ALPHA MACH
 .087 30.319 10.290
 .126
 .164
 .862
 .900
 .940

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



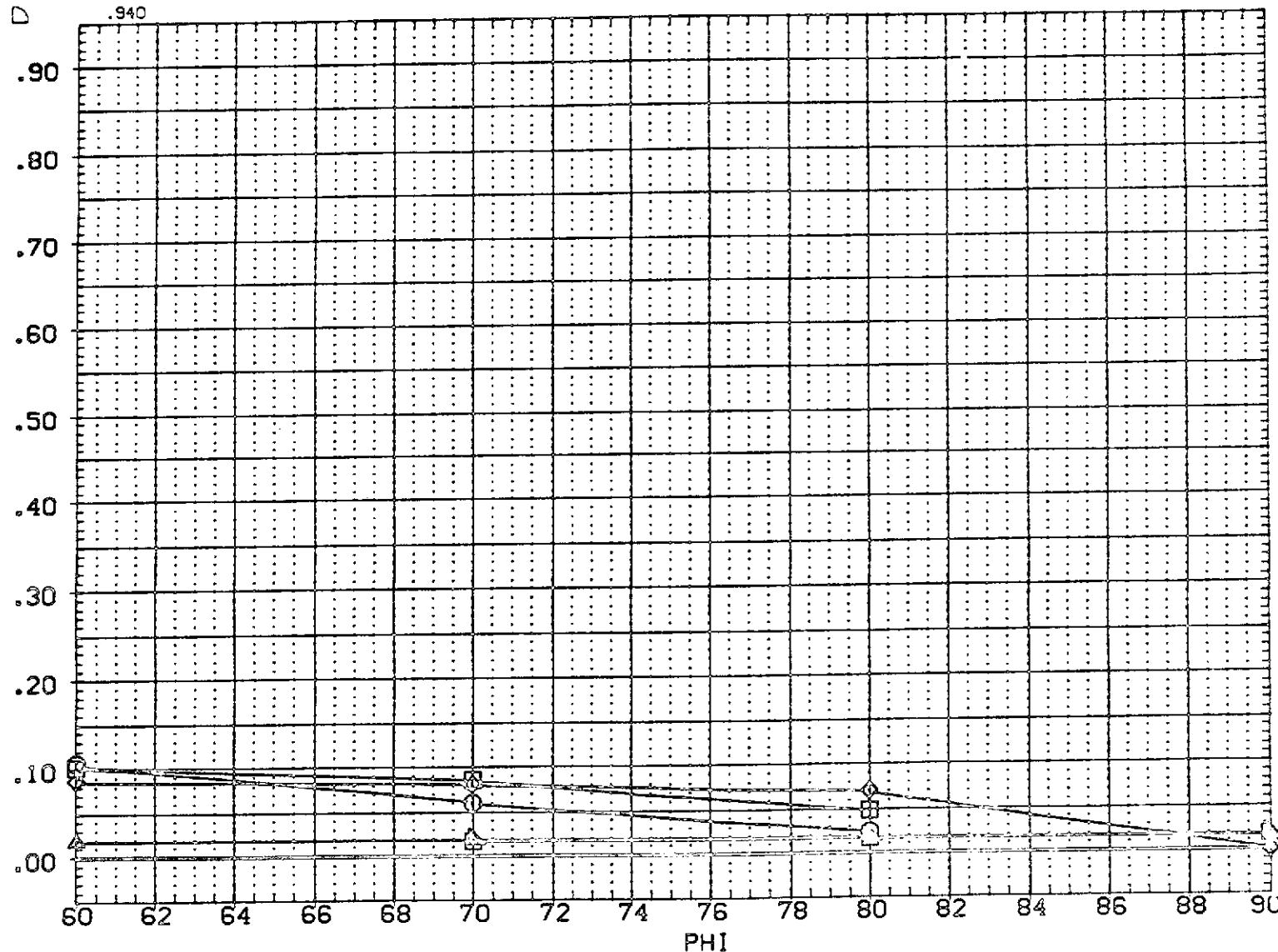
RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) [REM110]

SYMBOL X/L ALPHA MACH
 .087 32.195 10.290
 .126
 .164
 .862
 .900
 .940

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

PRESSURE COEFFICIENT, CP

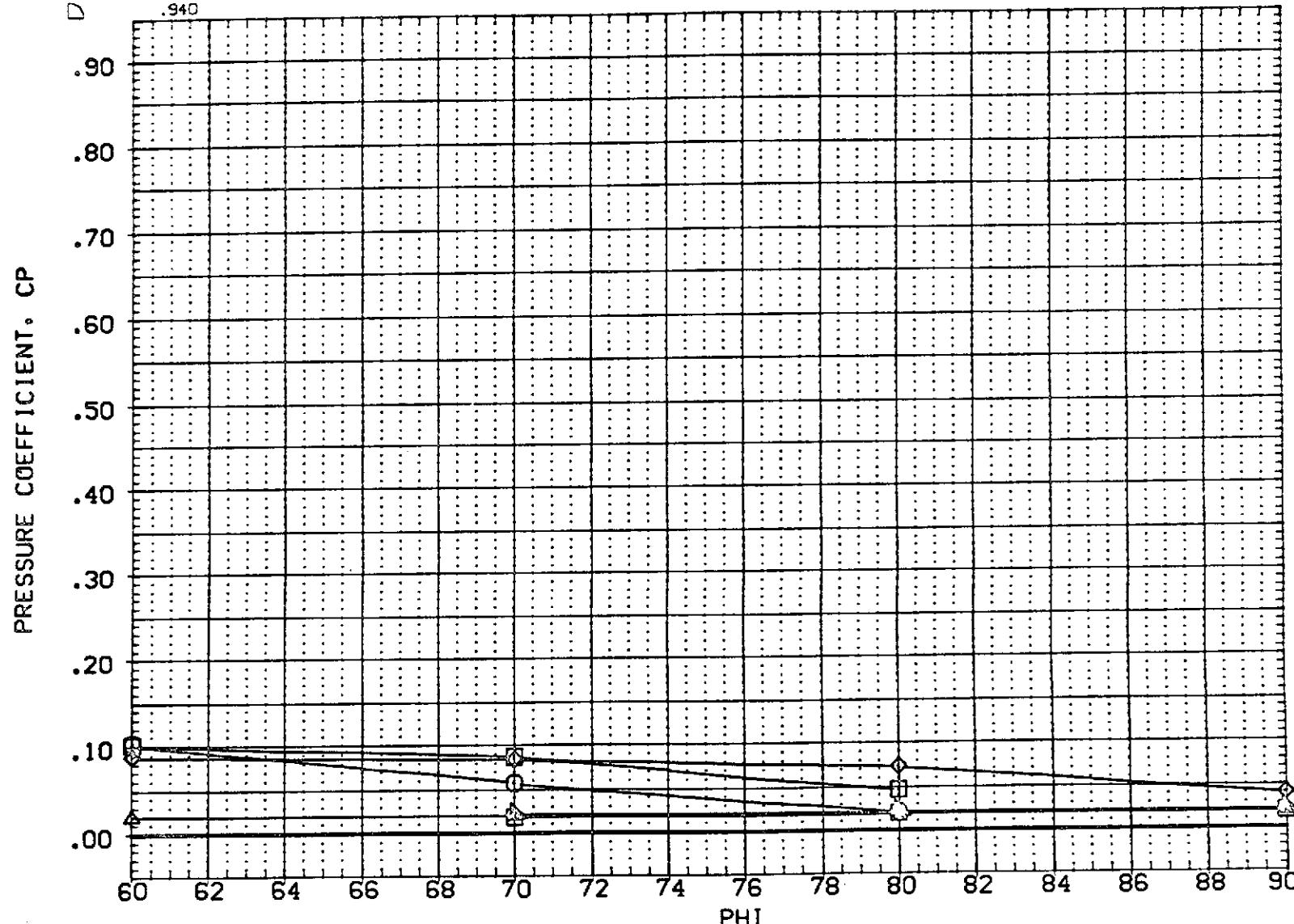


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-'80 IA16/0A26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL X/L ALPHA MACH
 ○ .087 34.247 10.290
 □ .126
 ◇ .164
 △ .852
 ▽ .900
 ▵ .940

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

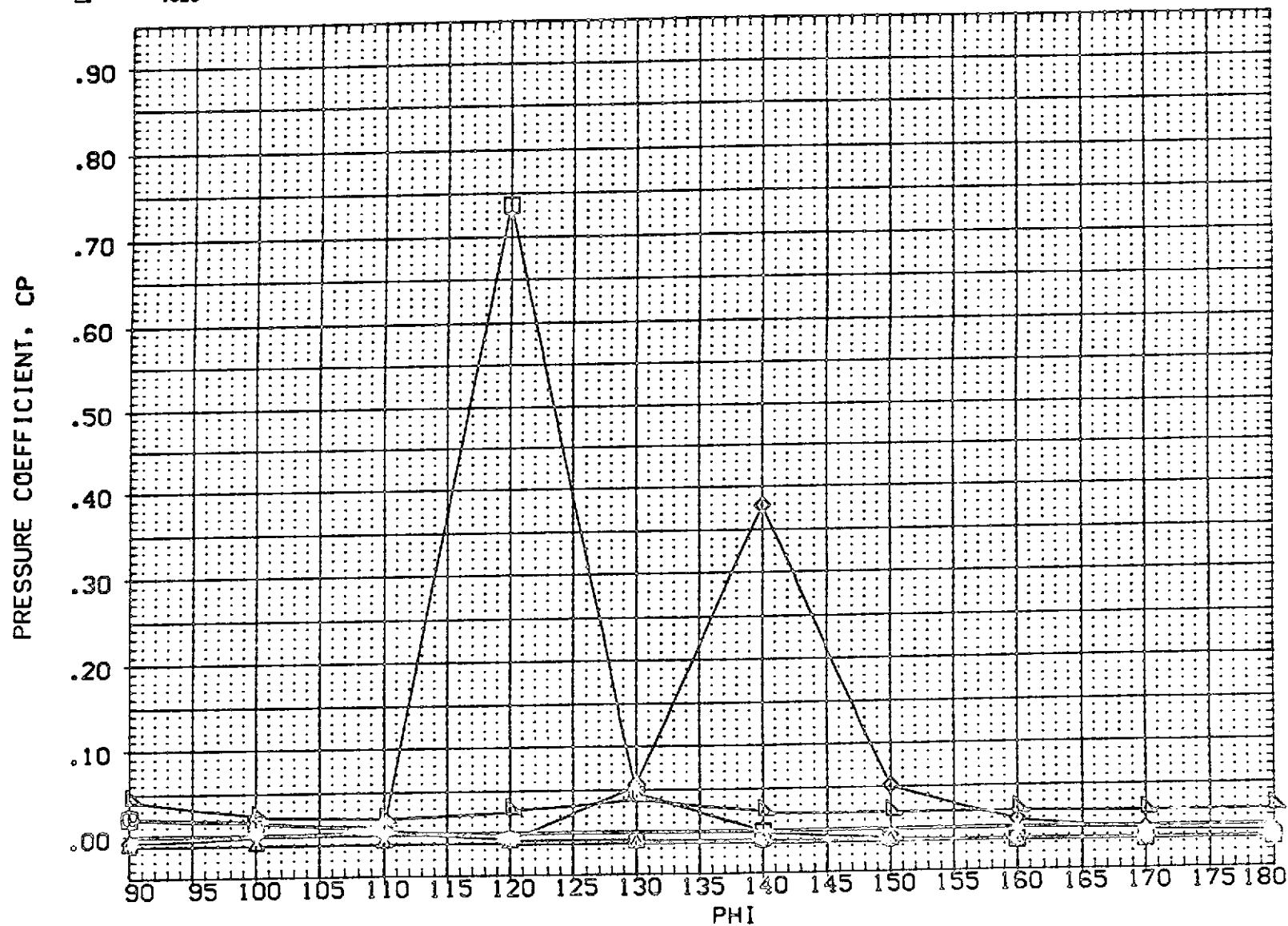


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL X/L ALPHA MACH
 ○ .264 30.319 10.280
 □ .405
 ◇ .546
 △ .688
 ▽ .829

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

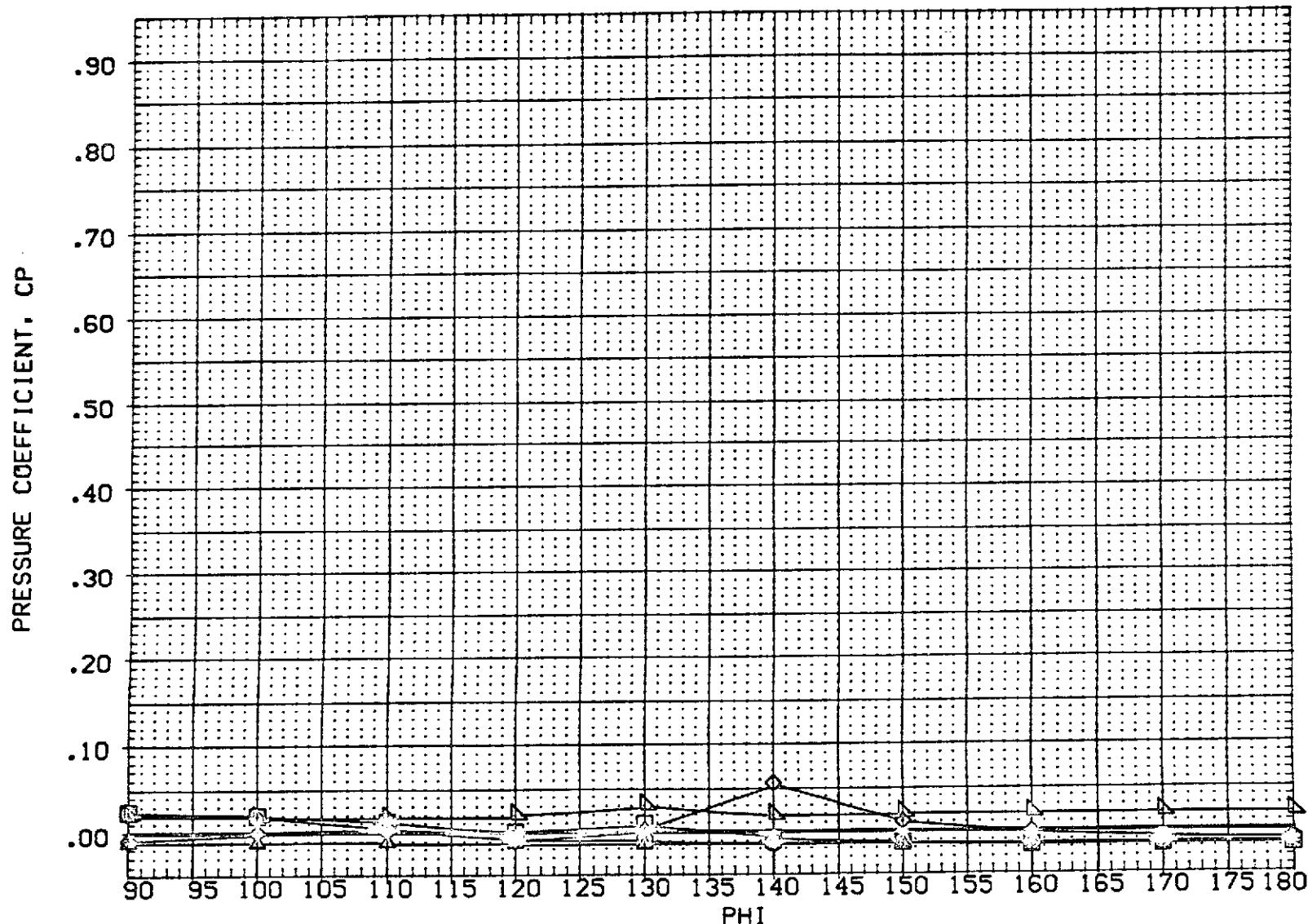


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL X/L ALPHA MACH
 ○ .264 32.195 10.290
 □ .405
 ◇ .546
 △ .688
 ▽ .829

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

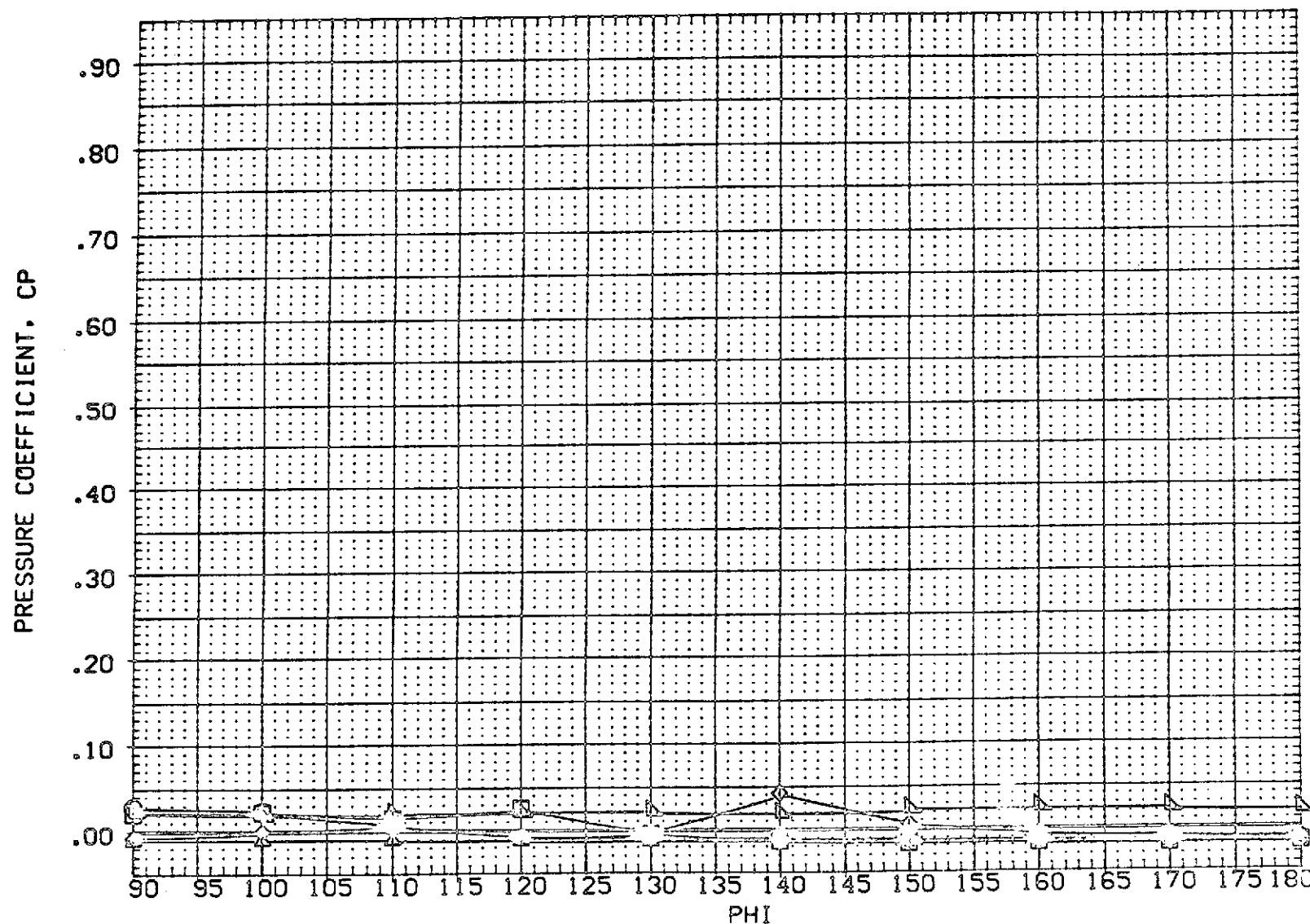


RADIAL DISTRIBUTION OF LOCAL PRESSURE FIELD FOR ORBITER ALONE

ARC 3.5-180 IA16/0A26 ORBITER (ORB FUSELAGE) (REM110)

SYMBOL	X/L	ALPHA	MACH
○	.264	34.247	10.290
□	.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

APPENDIX
TABULATED SOURCE DATA

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

ARC 3.5-180 TA16/OA26 ORBITER+ET (CRF FUSELAGE)

(REMB05)

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

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .7290 .7470 .7670 .7850 .8050 .8290 .8620 .9080 .9400

PHI

130,000		,2922
140,000		,2621
150,000		,2341
160,000		,1940
170,000		,1408
180,000	,0659 ,0655 ,0626 ,0632 ,1036	,2217

MACH (1) = 10.290 ALPHA (2) = -7.814 RN/L = 1.7957 Q = 2.4163 P = ,0530 BETA = ,0000

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L ,0670 ,1260 ,1640 ,2030 ,2420 ,2640 ,2820 ,3010 ,3190 ,3360 ,3570 ,3750 ,3940 ,4050 ,4310

PHI

60,000	,3465 ,2204 ,1433	
70,000	,3444 ,2273 ,1546	
80,000	,2951 ,2342 ,1755	
90,000	,2229 ,1476 ,0739 ,0529 ,0341 ,0420 ,0391 ,0364 ,0357 ,0348 ,0337 ,0339 ,0344	
100,000		,0628 ,0550 ,0525 ,0484 ,0460 ,0435 ,0415 ,0386 ,0360 ,0345
110,000		,0634 ,0576 ,0571 ,0571 ,0566 ,0551 ,0529 ,0503 ,0476 ,0424
120,000		,1611
130,000		,1556
140,000		,0666
150,000		,0390
160,000		,0297
170,000		,0295
180,000		,0279 ,0264 ,0261 ,0362 ,0422 ,0489 ,0570 ,0642 ,0687 ,0594

X/L ,4500 ,4680 ,4860 ,5050 ,5240 ,5450 ,5610 ,5800 ,5980 ,6170 ,6360 ,6540 ,6730 ,6880 ,7100

PHI

90,000	,0344 ,0372 ,0392 ,0392 ,0392 ,0400 ,0450 ,0442 ,0427 ,0430 ,0672 ,0462 ,0479 ,0477 ,0470	
100,000	,0334 ,0340 ,0335 ,0349 ,0358 ,0360 ,0411 ,0405 ,0580 ,0415 ,1111 ,0493 ,0448 ,0446 ,0475	
110,000	,0428 ,0363 ,0360 ,0359 ,0349 ,0344 ,0380 ,0395 ,0464 ,0421 ,0533 ,0446 ,0440 ,0444 ,0477	
120,000		,0425
130,000		,0482
140,000		,0936
150,000		,0713
160,000		,0730
170,000		,0751
180,000	,0779 ,0777 ,0783 ,0774 ,0760 ,0753 ,0690 ,0818 ,0624 ,0600 ,0624 ,0579 ,0605 ,0599 ,0599	

X/L .7290 .7470 .7670 .7850 .8050 .8290 .8620 .9080 .9400

PHI

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE

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

(REMI01)

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	.0468	.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	.0567	.0579	.0804	.0987	.2141				

MACH (1) = .10,290 ALPHA (3) = -4,041 ROLL = 1,7957 Q = 2,4183 P = .0330 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE OF

X/L	.4500	.4600	.4660	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0264	.0259	.0241	.0237	.0233	.0226	.0202	.0472	.0273	.0274	.0469	.0293	.0292	.0304	.0348
100,000	.0232	.0227	.0230	.0226	.0226	.0220	.0026	.0953	.2289	.0253	.0971	.0319	.0269	.0274	.0303
110,000	.0250	.0216	.0216	.0216	.0215	.0212	.0386	.0355	.0710	.0247	.0373	.0270	.0263	.0271	.0302
120,000							.0214								.0275
130,000								.0719							.0274
140,000									.1082						.0290
150,000										.0488					.0342

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TABULATED DATA LISTING FOR IA86/OA26 (ARC 3.5-100)

PAGE

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

(REMOVED)

MACH (3) = 10.290 ALPHA (3) = -4.041

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6790 .6880 .7100

PHI															
160,000							.0392								.0389
170,000							.0396								.0426
180,000	.0285	.0300	.0341	.0366	.0381	.0566	.1984	.0410	.0836	.0390	.0422	.0387	.0425	.0438	.0408

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

PHI										
60,000										.0346
70,000										.0387
80,000										.0474
90,000	.0301	.0314	.0345	.0392	.0407	.0645	.0447	.0425	.0393	
100,000	.0310	.0331	.0349	.0371	.0395	.0424				
110,000	.0317	.0334	.0358	.0383	.0473	.0390				
120,000						.0753				
130,000						.2635				
140,000						.2400				
150,000						.2468				
160,000						.1030				
170,000						.1025				

DATE 14 APR 74

TABULATED DATA LISTING FOR 1A16/OA26 (ARC 3.5-180)

PAGE

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

(REMH102) (02 APR 74)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRP = .0000 IN.
 BREF = 936.8800 IN. ZMRP = .0000 IN.
 SCALE = .0150

BETA = -2,000 ELEV-L = .000
ELEV-R = ,000 RUDDER = ,000

MACH (1) = 10.290 ALPHA (1) = -9.879 RN/L = 1.7707 Q = 2.4150 P = .0330 BETA = -1.9820

SECTION (1) SSV

DEPENDENT VARIABLE CF

x/L .0870 .1260 .1640 .2030 .2420 .2810 .3200 .3590 .3980 .3370 .3750 .3940 .4050 .4310

PHI

x/L .4300 .4680 .4860 .5050 .5240 .5430 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

90,000	.0523	.0522	.0532	.0530	.0539	.0544	.0595	.0656	.0652	.0664	.0767	.0705	.0693	.0696	.0869
100,000	.0500	.0480	.0469	.0470	.0488	.0506	.0590	.0599	.0686	.0661	.1214	.0725	.0695	.0702	.0896
110,000	.0507	.0483	.0485	.0491	.0499	.0522	.0604	.0623	.0658	.0663	.1405	.0690	.0695	.0702	.0881
120,000						.0578									.0701
130,000							.0620								.0728
140,000								.1085							.0734
150,000								.0932							.0721
160,000								.0925							.0712
170,000								.0941							.0694
180,000	.1030	.1008	.0999	.0975	.0926	.0945	.0778	.0829	.0800	.0776	.0927	.0720	.0700	.0677	.0833

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

PHI

60,000							.0786		
70,000							.0789	.0844	.0872
80,000							.0938	.0999	.1015
90,000	.0865	.0849	.0825	.0823	.0841	.0879	.1111	.1164	.1188
100,000	.0886	.0865	.0868	.0907	.0972	.1109			
110,000	.0889	.0877	.0905	.1033	.1224	.1326			
120,000						.1829			

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

(REN102)

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

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .7290 .7470 .7670 .7850 .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 G = 2.4150 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	.0576	.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							.0560			
140,000									.0668						.0314			
150,000									.0379						.0331			
160,000									.0277						.0465			
170,000									.0285						.0603			
180,000									.0266	.0251	.0266	.0359	.0414	.0487	.0565	.0624	.0645	.1210

X/L .4300 .4500 .4600 .4800 .5000 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

90,000	.0383	.0390	.0404	.0406	.0429	.0428	.0522	.0548	.0533	.0523	.0645	.0563	.0539	.0540	.0669
100,000	.0403	.0397	.0398	.0402	.0402	.0398	.0500	.0480	.0768	.0507	.1247	.0566	.0518	.0523	.0694
110,000	.0450	.0412	.0393	.0368	.0369	.0393	.0459	.0467	.0556	.0486	.1547	.0309	.0507	.0513	.0693
120,000							.0410								.0565
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	.0763

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

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 .7850 .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	.0803	.0845				
100,000	.0694	.0684	.0703	.0758	.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	.0363	.0349	.0326	.0305	.0261	.0255	.0254
110,000							.0583	.0483	.0462	.0427	.0379	.0354	.0335	.0273	.0244	.0231
120,000							.1004							.4062		
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	.0362	.0000	.0302	.5117	.0333	.0320	.0343	.0526	
120,000							.0190							.0361		
130,000							.0703							.0370		
140,000							.2283							.0362		
150,000							.0600							.0365		

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TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE

ARC 3.5-1811 IA16/OA26 ORBITER+ET (CRB FUSELAGE)

(REM102)

MACH (1) = 10.290 ALPHA (3) = -4.080

SECTION (1) SSV

DEPENDENT VARIABLE CP

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-18D)

PAGE 9

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

(REMH103) (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		

BETA = 2,000 ELEV-L = .000
ELEV-R = .000 RUDDER = .000

MACH (1) = .10.290 ALPHA (1) = -9.909 ROLL = 1.8563 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 .4050 .4310

PHE

x/l .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

FM

PHI										
60,000								.0625		
70,000								.0614	.0700	.0709
80,000								.0774	.0862	.0868
90,000	.0624	.0622	.0635	.0665	.0703	.0719	.0925	.0857	.0762	
100,000	.0619	.0620	.0634	.0663	.0744	.0856				
110,000	.0590	.0591	.0636	.0716	.0827	.0805				
120,000						.1266				

ARC 3.5-160 IA16/OA2G 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 = 1.6563 Q = 2.4287 P = .0390 ZETA = 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 .3123 .1896 .1228		
70,000 .3119 .1980 .1373		
80,000 .2596 .2152 .1635		
90,000 .2040 .1301 .0634	.0467 .0451 .0364 .0340 .0326 .0308 .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 .0431 .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 .0760 .1418		

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

PHI

90,000 .0348 .0350 .0368 .0362 .0362	.0370 .0419 .0432 .0414 .0416 .0566 .0482 .0482 .0463 .0464	
100,000 .0332 .0319 .0321 .0332 .0340	.0348 .0375 .0389 .0688 .0416 .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 .0531		.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 .0617 .0649 .0641 .0659	

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

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TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 11

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

(REM103)

MACH (1) = 10.290 ALPHA (2) = -7.809

SECTION (1)SSV

DEPENDENT VARIABLE CP

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

PHI

60,000							.0531							
70,000								.0459	.0467	.0473				
80,000								.0483	.0526	.0557				
90,000	.0455	.0445	.0440	.0463	.0465	.0480	.0606	.0701	.0700					
100,000	.0467	.0454	.0463	.0501	.0553	.0602								
110,000	.0466	.0466	.0503	.0575	.0644	.0575								
120,000							.1169							
130,000								.2368						
140,000									.2525					
150,000									.2318					
160,000									.1243					
170,000									.1263					
180,000	.0660	.0662	.0640	.0961	.1033	.1714								

MACH (1) = 10.290 ALPHA (3) = -4.062 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 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI

60,000	.2250	.1469	.1008											
70,000	.3172	.1804	.1176											
80,000	.3678	.2423	.1353											
90,000				.1790	.1132	.0581	.0401	.0367	.0275	.0244	.0221	.0219	.0217	.0252
100,000							.0403	.0304	.0292	.0255	.0231	.0212	.0196	.0232
110,000								.0408	.0338	.0275	.0254	.0230	.0211	.0348
120,000									.0827					.5579
130,000									.0682					.0666
140,000									.0473					.0286
150,000									.0471					.0235
160,000									.0516					.0236
170,000									.0514					.0260
180,000									.0496	.0363	.0312	.0268	.0248	.0230
												.0269	.0270	.0279
														.6855
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880
														.7100

PHI

90,000	.0319	.0245	.0243	.0233	.0232	.0222	.0274	.0544	.0290	.0310	.0473	.0409	.0295	.0300
100,000	.0231	.0234	.0230	.0224	.0216	.0213	.0734	.0975	.4770	.0280	.4790	.0402	.0265	.0267
110,000	.0271	.0218	.0214	.0211	.0218	.0207	.0369	.0399	.1137	.0251	.6042	.0289	.0252	.0253
120,000							.0218							.0241
130,000								.0821						.0244
140,000								.3283						.0295
150,000									.0750					.0361

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TABULATED DATA LISTING FOR IA18/OA26 (ARC 3.9-180)

PAGE 8

ARC 3.5-180 [A16/OA26 ORBITER+ET (ORB FUSELAGE)

(REMIOS

MACH (1) = 10.290 ALPHA (3) = -4.062

SECTION (1) SSV

DEPENDENT VARIABLE CP

DATE 04 APR 74

TABULATED DATA LISTING FOR TA16/0A26 (ARC 3.5-180)

PAGE 13

ARC 3.5-180 TA16/0A26 ORBITER+ET (ORB FUSELAGE)

(REMEDY) (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 = .000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 7.330 ALPHA (1) = -9.639 RN/L = 3.7740 Q = 4.6633 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
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PHI

60,000	.3515	.2218	.1502																
70,000	.3440	.2359	.1726																
80,000	.3379	.2768	.1936																
90,000		.2293	.1466	.0748	.0532	.0517	.0517	.0522	.0488	.0433	.0383	.0340	.0319	.0281					
100,000					.0789	.0906	.0772	.0692	.0606	.0510	.0415	.0359	.0324	.0269					
110,000						.0592	.0781	.0412	.0280	.0209	.0232	.0335	.0387	.0365	.0330				
120,000							.2110								.0275				
130,000								.1099							.0197				
140,000									.0361						.0165				
150,000										.0202					.0685				
160,000										.0126					.0875				
170,000										.0123					.1007				
180,000										.0104	.0200	.0266	.0397	.0608	.0813	.0935	.1022	.1057	.0330

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

90,000	.0271	.0264	.0271	.0266	.0276	.0275	.0350	.0393	.0410	.0440	.0485	.0532	.0590	.0628	.0738
100,000	.0255	.0231	.0221	.0226	.0231	.0249	.0351	.0372	.0417	.0443	.0689	.0531	.0597	.0636	.0734
110,000	.0294	.0265	.0248	.0241	.0258	.0265	.0378	.0423	.0471	.0523	.0664	.0554	.0560	.0562	.0630
120,000						.0442									.0557
130,000							.0754								.0573
140,000								.0799							.0585
150,000									.0830						.0591
160,000									.0860						.0586
170,000										.0885					.0586
180,000	.1032	.1002	.0981	.0944	.0887	.0889	.0778	.0790	.0753	.0718	.0685	.0645	.0617	.0577	.0623

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

60,000							.0461								
70,000								.0530	.0640	.0631					
80,000								.0704	.0827	.0816					
90,000	.0773	.0740	.0689	.0643	.0604	.0620	.0940	.0974	.0916						
100,000	.0706	.0743	.0764	.0778	.0770	.1015									
110,000	.0617	.0646	.0659	.0757	.1108	.1137									
120,000							.1730								

ARC 3.5-180 IA16/OA2G ORBITER+ET (CRB FUSELAGE)

(REH104)

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 .0852 .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 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3580 .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
130.000		.1405
140.000		.0688
150.000		.0362
160.000		.0260
170.000		.0242
180.000		.0203 .0150 .0149 .0213 .0280 .0358 .0468 .0561 .0607 .0560

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 .0155 .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 .0370 .0455
120.000		.0295
130.000		.0375
140.000		.0532
150.000		.0622
160.000		.0668
170.000		.0683
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

DATE 16 APR 74

TABULATED DATA LISTING FOR TA16/OA26 (ARC 3.5-180)

PAGE 15

ARC 3.5-180 TA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REH104)

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	.0622	.0889								
120,000							.1742							
130,000								.2895						
140,000									.2503					
150,000									.2282					
160,000									.1323					
170,000									.1732					
180,000	.0593	.0561	.0530	.0520	.0796	.2635								

MACH (1) = 7.330 ALPHA (3) = -3.651 RN/L = 3.7740 Q = 4.6633 P = .1240 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .0670 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3580 .3570 .3750 .3940 .4050 .4310

PHI

60,000	.2340	.1561	.1054															
70,000	.3376	.1921	.1306															
80,000	.3932	.2534	.1547															
90,000			.1964	.1155	.0508	.0290	.0242	.0200	.0167	.0135	.0116	.0107	.0112	.0108	.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	.1369

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	.0176	.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

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA2G (ARC 3,5-160)

PAGE 1

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

(REH104)

MACH (3) = 7.330 ALPHA (3) = -3.651

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .4500 .4600 .4660 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

P&I															
160,000							.0252								.0265
170,000							.0316								.0315
180,000	.0087	.0131	.0176	.0203	.0238	.0336	.0392	.0320	.0365	.0329	.0454	.0301	.0330	.0324	.0274

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

PHI									
60,000							,0205		
70,000							,0262	,0333	,0360
80,000							,0344	,0396	,0379
90,000	,0260	,0242	,0233	,0236	,0225	,0315	,0408	,0435	,0416
100,000	,0234	,0233	,0241	,0252	,0324	,0448			
110,000	,0220	,0226	,0252	,0335	,0490	,0573			
120,000						,1231			
130,000						,2703			
140,000						,2467			
150,000						,2139			
160,000						,1444			
170,000						,1356			
180,000	,0426	,0408	,0394	,0389	,0681	,2577			

DATE 04 APR 74

TABULATED DATA LISTING FOR 1A16/0A26 (ARC 3.5-180)

PAGE 27

ABC 3-5-180 TA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM105) (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

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

MACH (1) = 7.330 ALPHA (1) = -9.682 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 .2810 .3200 .3590 .3980 .3570 .3750 .3940 .4050 .4310

PHI

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

PHI

PHI											
60,000									,0552		
70,000									,0652	,0747	,0751
80,000									,0867	,0915	,0894
90,000	,0624	,0772	,0741	,0715	,0685	,0731	,1004	,1068	,1077		
100,000	,0617	,0843	,0825	,0802	,0786	,1078					
110,000	,0601	,0803	,0821	,0869	,1280	,1517					
120,000							,1873				

ARC 3.5-180 IA16/OA26 ORBITER+ET (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	.0884 .0647 .0806 .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 .2666 .1781
70,000	.5217 .2974 .1983
80,000	.4145 .3125 .2086
90,000	.2514 .1593 .0742 .0470 .0424 .0423 .0427 .0422 .0404 .0402 .0510 .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
130,000	.1620
140,000	.0726
150,000	.0417
160,000	.0304
170,000	.0277
180,000	.0238 .0176 .0193 .0235 .0318 .0384 .0601 .0701 .0753 .0457

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

PHI

90,000	.0471 .0462 .0465 .0470 .0468 .0510 .0504 .0549 .0532 .0530 .0529 .0531 .0599 .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
130,000	.0555
140,000	.0640
150,000	.0705
160,000	.0752
170,000	.0786
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 3.5-180 TA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM109)

MACH (1) = 7.330 ALPHA (3) = -3.629

SECTION (1) 85V

DEPENDENT VARIABLE CP

X/L	.4500	.4680	.4860	.5050	.5240	.5430	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6920	.7110
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PHI

160,000															.0388
170,000															.0406
180,000	.0216	.0264	.0320	.0366	.0389	.0433	.0418	.0428	.0432	.0425	.0444	.0419	.0430	.0419	.0365

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

60,000															.0263
70,000															.0367
80,000															.0476
90,000	.0374	.0353	.0340	.0331	.0320	.0398	.0562	.0592	.0566						.0577
100,000	.0345	.0339	.0340	.0334	.0386	.0527									.0576
110,000	.0296	.0288	.0300	.0431	.0575	.0761									.2151
120,000															.3789
130,000															.2687
140,000															.1435
150,000															.1448
160,000															.1313
170,000															.0459
180,000															.0444

X/L	.0423	.0437	.0759	.2714
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DATE 04 APR 74

TABULATED DATA LISTING FOR TA16/OA26 (ARC 3.5-180)

PAGE 21

ARC 3.5-180 TA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM106) (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 = 2.000 ELEV-L = .000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 7.330 ALPHA (2) = -9.622 RN/L = 4.0837 Q = 4.6800 P = .1243 BETA = 1.9833

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.0670	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4030	.4310
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PHI

60.000	.9002	.1890	.1222																	
70.000	.3035	.2008	.1493																	
80.000	.3098	.2464	.1615																	
90.000				.1992	.1275	.0643	.0469	.0438	.0435	.0426	.0397	.0343	.0293	.0246	.0223	.0177				
100.000							.0860	.0354	.0536	.0603	.0548	.0468	.0371	.0307	.0266	.0205				
110.000							.0458	.0649	.0289	.0195	.0105	.0071	.0092	.0152	.0190	.0229				
120.000									.1854							.0160				
130.000										.1004						.0105				
140.000											.0317					.0179				
150.000											.0184					.0747				
160.000											.0119					.0921				
170.000											.0117					.1056				
180.000											.0126	.0177	.0254	.0383	.0633	.0810	.0948	.1038	.1073	.0237

X/L

X/L	.4500	.4660	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6860	.7100	
PHI																
90.000	.0169	.0171	.0190	.0201	.0210	.0217	.0236	.0269	.0277	.0303	.0356	.0402	.0463	.0504	.0612	
100.000	.0176	.0161	.0199	.0166	.0182	.0204	.0239	.0262	.0291	.0317	.0576	.0404	.0461	.0473	.0536	
110.000	.0233	.0226	.0224	.0213	.0215	.0229	.0300	.0327	.0330	.0339	.0535	.0346	.0352	.0348	.0414	
120.000											.0500					.0365
130.000											.0616					.0403
140.000											.0662					.0453
150.000											.0741					.0478
160.000											.0798					.0495
170.000											.0835					.0513
180.000	.1070	.1056	.1034	.0987	.0924	.0880	.0746	.0752	.0710	.0669	.0636	.0587	.0567	.0528	.0499	

X/L

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400			
PHI												
60.000									.0393			
70.000									.0433	.0557	.0569	
80.000									.0613	.0757	.0662	
90.000	.0046	.0632	.0626	.0598	.0572	.0566	.0881	.0709	.0653			
100.000	.0524	.0527	.0554	.0576	.0604	.0825						
110.000	.0402	.0416	.0426	.0540	.0746	.0828						
120.000									.0986			

ARC 3.5-180 IA16/OA2G ORBITER+ET (ORG FUSELAGE)

(REH3DG)

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

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .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 = 4.0037 Q = 4.6600 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 .4050 .4310

PHI

60,000	.2804	.1781	.1132												
70,000	.3923	.2042	.1294												
80,000	.3570	.2371	.1424												
90,000		.1804	.1050	.0495	.0260	.0229	.0220	.0224	.0214	.0201	.0178	.0199	.0149	.0125	
100,000					.0407	.0272	.0343	.0302	.0263	.0233	.0204	.0190	.0167	.0117	
110,000					.0356	.0371	.0256	.0221	.0184	.0161	.0138	.0120	.0111	.0102	
120,000						.1225							.0365		
130,000						.1304							.0000		
140,000						.0398							.0080		
150,000						.0359							.0232		
160,000						.0239							.0491		
170,000						.0201							.0610		
180,000						.0201	.0020	.0143	.0198	.0274	.0386	.0805	.0613	.0657	.0297

X/L .4500 .4660 .4860 .5050 .5240 .5460 .5610 .5800 .5960 .6170 .6360 .6540 .6790 .6880 .7100

PHI

90,000	.0109	.0099	.0100	.0099	.0109	.0121	.0168	.0182	.0179	.0166	.0244	.0243	.0265	.0280	.0340
100,000	.0020	.0000	.0069	.0073	.0005	.0099	.0141	.0193	.0300	.0325	.0538	.0233	.0243	.0257	.0333
110,000	.0112	.0109	.0112	.0110	.0306	.0101	.0141	.0155	.0199	.0183	.0487	.0206	.0202	.0197	.0247
120,000						.0160							.0332		
130,000						.0379							.0364		
140,000						.0480							.0452		
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 .7850 .8030 .8290 .8620 .9000 .9400

DATE 14 APR 74

TABULATED DATA LISTING FOR 1A10/0A26 (ARC 9,9-100)

PAGE 2

ARC 3.5-180 TA18/042G ORBITER+ET (ORB FUSELAGE)

(REMOVED)

MACH (1) = 7.330 ALPHA (3) = -9.999

SECTION (1) SSW

DEPENDENT VARIABLE C

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 25

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

(REM107) (02 APR 74)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRF = .0000 IN.
 BREF = 938.6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

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

MACH (1) = 5.300 ALPHA (1) = -7.582 RN/L = 3.4637 Q = 7.0083 P = .3563 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
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PHI

60.000	.2646	.1895	.1400																
70.000	.3678	.2239	.1615																
80.000	.4714	.2919	.1808																
90.000		.2229	.1359	.0646	.0427	.0366	.0328	.0282	.0234	.0202	.0165	.0241	.0234	.0235					
100.000					.0493	.0173	.0354	.0300	.0259	.0218	.0178	.0260	.0248	.0224					
110.000						.0275	.0414	.0167	.0138	.0126	.0122	.0231	.0239	.0242	.0224				
120.000							.1078								.0063				
130.000								.0934							.0013				
140.000									.0519						.0089				
150.000										.0646					.0283				
160.000										.0516					.0479				
170.000										.0383					.0625				
180.000										.0263	.0178	.0143	.0156	.0228	.0323	.0483	.0600	.0651	.0205

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

90.000	.0250	.0273	.0305	.0332	.0358	.0370	.0360	.0385	.0378	.0382	.0400	.0434	.0464	.0486	.0516
100.000	.0217	.0211	.0208	.0219	.0237	.0258	.0294	.0325	.0358	.0364	.0488	.0440	.0501	.0515	.0558
110.000	.0203	.0187	.0178	.0168	.0248	.0232	.0270	.0335	.0388	.0436	.0477	.0495	.0508	.0508	.0538
120.000						.0392									.0495
130.000							.0531								.0520
140.000								.0599							.0563
150.000								.0650							.0589
160.000								.0709							.0586
170.000								.0749							.0563
180.000	.0741	.0751	.0767	.0771	.0750	.0755	.0672	.0695	.0668	.0642	.0619	.0593	.0578	.0553	.0542

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

60.000							.0472								
70.000								.0603	.0637	.0582					
80.000									.0702	.0720	.0672				
90.000	.0570	.0497	.0489	.0496	.0489	.0891	.0887	.0828	.0767						
100.000	.0448	.0556	.0564	.0565	.0675	.0957									
110.000	.0512	.0537	.0549	.0638	.1007	.0778									
120.000							.2579								

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-100)

PAGE 26

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

(REMH07)

MACH (1) = 9.300 ALPHA (1) = -7.562

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI

130,000	.4280
140,000	.3507
150,000	.3114
160,000	.2056
170,000	.2247
180,000	.0580 .0579 .0540 .0509 .0796 .3786

MACH (1) = 9.300 ALPHA (2) = -9.859 RN/L = 3.4637 0 = 7.0003 F = .3969 BETA = 1.9930

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2810 .3010 .3190 .3360 .3570 .3790 .3940 .4050 .4310

PHI

80,000	.2111 .1404 .1034
90,000	.2724 .1642 .1195
100,000	.3434 .2141 .1347
110,000	.1600 .1042 .0492 .0293 .0238 .0217 .0185 .0150 .0118 .0083 .0142 .0155 .0120
120,000	.0962 .0045 .0206 .0291 .0189 .0150 .0111 .0174 .0155 .0127
130,000	.0191 .0306 .0051 .0031 -.0007 -.0049 .0039 .0037 .0039 .0037
140,000	.0841
150,000	.0337
160,000	.0127
170,000	.0123
180,000	.0144
	.0112 .0199 .0127 .0055 -.0019 -.0057 -.0005 -.0025 -.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 .0276 .0270 .0262 .0251 .0245 .0241 .0228
100,000	.0117 .0110 .0110 .0129 .0147 .0160 .0197 .0202 .0264 .0295 .0403 .0246 .0205 .0199 .0169
110,000	.0095 .0115 .0136 .0128 .0350 .0125 .0093 .0089 .0114 .0091 .0312 .0120 .0140 .0154 .0177
120,000	-.0036
130,000	.0001
140,000	.0038
150,000	.0154
160,000	.0249
170,000	.0318
180,000	.0084 .0147 .0215 .0261 .0295 .0324 .0308 .0393 .0339 .0339 .0347 .0334 .0343 .0331 .0299

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

PHI

ARC 3.5-180 TA16/OA26 ORBITER+ET (ORB FUSELAGE)

(REM107)

MACH (1) = 5.300 ALPHA (2) = -3.669

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI

60,000								.0133
70,000								.0194
80,000								.0362
90,000	.0247	.0222	.0200	.0187	.0178	.0307	.0526	.0478
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	.0393	.0353	.0336	.0325	.0573	.3256		

MACH (1) = 5.300 ALPHA (2) = .136 RN/L = 3.4637 Q = 7.0083 P = .3563 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 .4210

PHI

60,000	.1642	.1067	.0792												
70,000	.2083	.1255	.0855												
80,000	.2555	.1611	.1016												
90,000				.1284	.0762	.0253	.0110	.0105	.0081	.0071	.0050	.0031	.0016	.0084	.0075
100,000							.0206	-.0011	.0127	.0091	.0060	.0038	.0002	.0065	.0050
110,000							.0049	.0176	-.0018	-.0040	-.0071	-.0078	.0024	.0050	.0053
120,000															-.0002
130,000															-.0026
140,000															.0014
150,000															.0075
160,000															.0107
170,000															.0103
180,000															.1506
X/L	.4500	.4660	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100

PHI

90,000	.0071	.0075	.0067	.0094	.0115	.0130	.0140	.0155	.0149	.0147	.0148	.0144	.0147	.0151	.0155
100,000	.0039	.0036	.0046	.0060	.0073	.0080	.0107	.0115	.0968	.1000	.1243	.0143	.0135	.0137	.0133
110,000	.0060	.0052	.0056	.0050	.1580	.0065	.0072	.0083	.0180	.0100	.0858	.0118	.0121	.0121	.0114
120,000															.0017
130,000															.0008
140,000															.0030
150,000															.0039
									-.0033						

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TABULATED DATA LISTING FOR IA1G/OA2G (ARC 3.9-100)

PAGE 2

ARC 3.9-180 IA18/OA26 ORBITER-ET (ORB FUSELAGE)

(REMOVED)

MACH (1) = 9.3000 ALPHA (3) = .196

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .4500 .4600 .4800 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6980 .7100

P&I														
180,000														.0044
170,000														.0047
180,000	.0093	.0093	.0022	-.0003	-.0017	-.0004	.0014	.0016	.0025	.0027	.0071	.0043	.0046	.0046

x/L .7250 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI										
60,000										.0007
70,000										.0042
80,000										.0101
										.0090
90,000	.0166	.0130	.0106	.0087	.0063	.0117	.0278	.0250	.0212	
100,000	.0132	.0131	.0133	.0125	.0115	.0323				
110,000	.0117	.0096	.0097	.0130	.0498	.0695				
120,000							.1722			
130,000							.2524			
140,000							.1769			
150,000							.1292			
160,000							.1142			
170,000							.1207			
180,000	.0083	.0086	.0088	.0084	.0335	.2031				

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TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 29

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

(REH108) (02 APR 74)

REFERENCE DATA

PARAMETRIC DATA

BREF = 2690,0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474,8100 IN. YMRF = .0000 IN.
 BREF = 936,6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

BETA = -2,000 ELEV-L = .000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 5,300 ALPHA (1) = -7,591 RN/L = 3,6237 Q = 7,0197 P = .3570 BETA = -1,9927

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	.3213	.2249	.1641													
70,000	.4265	.2664	.1932													
80,000	.4922	.3370	.2220													
90,000		.2627	.1635	.0849	.0580	.0502	.0443	.0396	.0350	.0312	.0280	.0365	.0354	.0365		
100,000					.0666	.0376	.0501	.0431	.0380	.0341	.0297	.0384	.0366	.0329		
110,000					.0433	.0580	.0353	.0333	.0312	.0342	.0454	.0438	.0414	.0349		
120,000					.1353										.0242	
130,000					.1259										.0066	
140,000					.0700										.0116	
150,000					.0715										.0296	
160,000					.0503										.0449	
170,000					.0426										.0550	
180,000					.0310	.0196	.0133	.0139	.0198	.0302	.0468	.0590	.0644	.0383		
X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100	
PHI																
90,000	.0404	.0436	.0480	.0500	.0519	.0521	.0471	.0520	.0499	.0490	.0488	.0501	.0520	.0538	.0573	
100,000	.0316	.0315	.0325	.0355	.0388	.0411	.0438	.0427	.0477	.0472	.0500	.0499	.0560	.0586	.0630	
110,000	.0319	.0294	.0281	.0261	.0429	.0329	.0320	.0377	.0445	.0503	.0512	.0600	.0620	.0628	.0660	
120,000					.0448										.0631	
130,000					.0545										.0624	
140,000					.0606										.0646	
150,000					.0635										.0656	
160,000					.0674										.0633	
170,000					.0713										.0590	
180,000	.0733	.0735	.0742	.0743	.0718	.0728	.0631	.0673	.0648	.0629	.0599	.0585	.0563	.0537	.0581	
X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400							
PHI																
60,000								.0569								
70,000								.0815	.0804	.0697						
80,000								.0880	.0832	.0760						
90,000	.0616	.0564	.0568	.0566	.0563	.0834	.0913	.0901	.0897							
100,000	.0583	.0623	.0618	.0621	.0775	.1091										
110,000	.0623	.0647	.0655	.0742	.1327	.1215										
120,000						.3143										

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TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.9-180)

PAGE 30

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

(REMOVED)

MACH (1) = 5.300 ALPHA (1) = -7.591

SECTION (1)SSV

DEPENDENT VARIABLE CP

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

PHI

130,000	.4730
140,000	.3469
150,000	.2787
160,000	.1620
170,000	.2520
180,000	.0581 .0572 .0526 .0499 .0794 .3866

MACH (1) = 5.300 ALPHA (2) = -3.624 RN/L = 3.6237 Q = 7.0197 P = .3570 BETA = -1.9927

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1840 .2030 .2420 .2640 .2820 .3010 .3180 .3360 .3570 .3750 .3940 .4050 .4310

PHI

60,000	.2462 .1711 .1258
70,000	.3156 .2005 .1447
80,000	.3635 .2536 .1688
90,000	.2215 .1277 .0694 .0432 .0360 .0340 .0309 .0279 .0238 .0202 .0267 .0292 .0293
100,000	.0532 .0201 .0425 .0360 .0295 .0233 .0200 .0273 .0254 .0223
110,000	.0289 .0478 .0173 .0132 .0092 .0063 .0215 .0278 .0286 .0267
120,000	.1300
130,000	.1021
140,000	.0392
150,000	.0160
160,000	.0126
170,000	.0164
180,000	.0113 .0196 .0132 .0051 -.0013 -.0098 .0002 -.0015 -.0022 .0702

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

PHI

90,000	.0243 .0259 .0293 .0320 .0355 .0383 .0371 .0422 .0410 .0401 .0382 .0369 .0360 .0357 .0349
100,000	.0212 .0204 .0208 .0229 .0260 .0295 .0341 .0338 .0454 .0480 .0504 .0367 .0316 .0308 .0293
110,000	.0253 .0255 .0263 .0245 .0746 .0232 .0200 .0201 .0233 .0221 .0468 .0241 .0242 .0235 .0219
120,000	.0015
130,000	-.0024
140,000	.0023
150,000	.0076
160,000	.0191
170,000	.0270
180,000	.0049 .0114 .0182 .0233 .0262 .0306 .0280 .0318 .0321 .0323 .0532 .0324 .0325 .0314 .0276

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

PHI

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 39

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

(REMEMBER)

MACH (1) = 5.300 ALFAHA (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							.5082			
150,000							.1923			
160,000							.1791			
170,000							.1954			
180,000	.0352	.0349	.0325	.0312	.0570	.3365				

MACH (1) = 5.3000 ALPHA (3) = .174 RN/L = 3.6237 Q = 7.0197 P = .3570 BETA = -1.9927

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

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

PHI	.0204	.0209	.0226	.0237	.0247	.0254	.0244	.0270	.0256	.0246	.0236	.0232	.0236	.0237	.0238
90,000															
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

DATE 04 APR 74

TABULATED DATA LISTING FOR TA18/OA26 (ARC 3.5-160)

PAGE 32

ARC 3.5-160 TA18/OA26 ORBITER+ET (ORB FUSELAGE)

(REH106)

MACH (1) = 5.300 ALPHA (3) = .174

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.4500	.4600	.4800	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
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PHI

160,000

-.0014

.0045

170,000

-.0015

.0051

180,000

.0095	.0060	.0026	-.0000	-.0024	-.0008	-.0003	.0018	.0030	.0034	.0091	.0049	.0044	.0039	.0101
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X/L

PHI

80,000

.0095

70,000

.0112

.0190

.0203

60,000

.0239

.0283

.0265

50,000

.0238	.0198	.0160	.0152	.0134	.0184	.0431	.0365	.0345
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40,000

.0211	.0199	.0197	.0184	.0181	.0444			
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30,000

.0173	.0156	.0165	.0182	.0488	.0706			
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20,000

.2107

150,000

.2633

140,000

.1767

130,000

.0882

120,000

.1017

110,000

.1084

100,000

.0081	.0079	.0067	.0084	.0326	.2031			
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DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3,5-18D)

PAGE 33

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

(REMI09) (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 = 2,000 ELEV-L = .000
ELEV-R = .000 RUDDER = .000

MACH (1) = 5.3003 ALPHA (1) = -7.583 ROLL = 3.2400 Q = 6.9973 P = .3557 BETA = 1.9930

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .0670 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI	90,000	.0153	.0148	.0171	.0190	.0217	.0240	.0256	.0275	.0290	.0317	.0345	.0373	.0401	.0413	.0423
	100,000	.0150	.0122	.0117	.0123	.0134	.0169	.0207	.0254	.0278	.0300	.0400	.0376	.0406	.0417	.0421
	110,000	.0058	.0056	.0075	.0100	.0234	.0174	.0212	.0242	.0266	.0258	.0340	.0262	.0277	.0288	.0315

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

PHI									
60,000							.0357		
70,000							.0406	.0470	.0472
80,000							.0649	.0684	.0575
90,000	.0453	.0420	.0405	.0413	.0418	.0568	.0729	.0680	.0618
100,000	.0407	.0404	.0422	.0410	.0512	.0723			
110,000	.0297	.0325	.0340	.0463	.0720	.0547			
120,000						.1793			

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

(REH109)

MACH (1) = 0.300 ALPHA (1) = -7.583

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 Q = 6.9973 P = ,3997 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	,1779 ,1148 ,0881	
70,000	,2397 ,1397 ,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	,0880	,-,0043
130,000	,0691	,-,0010
140,000	,0280	,-,0003
150,000	,0129	,-,0015
160,000	,0123	,-,0011
170,000	,0118	,-,0007
180,000	,0113 ,0219 ,0181 ,0091 ,0020 ,-,0018 ,0020 ,0007 ,0010 ,0052	

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

PHI

90,000	,0034 ,0041 ,0057 ,0069 ,0083 ,0097 ,0117 ,0139 ,0140 ,0145 ,0141 ,0158 ,0134 ,0133 ,0119	
100,000	,0062 ,0051 ,0046 ,0048 ,0051 ,0050 ,0061 ,0063 ,0248 ,0287 ,0386 ,0133 ,0114 ,0128 ,0129	
110,000	-,0012 ,-,0006 ,0001 ,-,0003 ,0766 ,0010 ,0007 ,0003 ,0044 ,0017 ,0321 ,0080 ,0112 ,0132 ,0146	
120,000	-,0046	,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

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TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 35

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										.2889						
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 = 1.9930

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	.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	.0029				
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		

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 36

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

(REH109)

MACH (1) = 5.300 ALPHA (3) = .170

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .4500 .4380 .4660 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

x/L .7290 .7470 .7670 .7850 .8030 .8291 .8620 .9000 .9400

PHI											
60,000											.0029
70,000											.0010 .0040 .0006
80,000											.0078 .0082 .0053
90,000	.0048	.0034	.0014	.0003	-.0021	.0051	.0172	.0162	.0124		
100,000	.0020	.0020	.0034	.0043	.0080	.0271					
110,000	.0001	-.0000	.0012	.0089	.0329	.0426					
120,000							.0878				
130,000							.2052				
140,000							.1951				
150,000							.1759				
160,000							.0980				
170,000							.1131				
180,000	.0090	.0066	.0061	.0074	.0020	.2100					

DATE 04 APR 74

TABULATED DATA LISTING FOR TA16/OA26 (ARC 3.5-180)

PAGE 37

ARC 3.5-180 TA16/OA26 ORBITER (CRG FUSELAGE)

(REMI1D) (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 = .000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 10,290 ALPHA (1) = 30,319 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
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PHI	60,000	,1097	,1012	,0841																
	70,000	,0612	,0651	,0790																
	80,000	,0309	,0490	,0676																
	90,000				,0385	,0448	,0299	,0223	,0250	,0193	,0187	,0183	,0187	,0197	,0198	,0208	,0147			
	100,000							,0167	,0095	,0173	,0175	,0168	,0164	,0164	,0151	,0150	,0170			
	110,000							,0039	,0157	,0112	,0122	,0123	,0123	,0183	,0093	,0092	,0105			
	120,000								-,0081								,7368			
	130,000									-,0096							,0482			
	140,000										-,0097						-,0012			
	150,000										,0126						-,0105			
	160,000										,0134						-,0153			
	170,000										,0141						-,0152			
	180,000										,0134	-,0085	-,0094	-,0055	-,0048	-,0052	-,0054	-,0079	-,0156	,9305

X/L	,4500	,4680	,4860	,5050	,5240	,5460	,5610	,5800	,5980	,6170	,6360	,6540	,6730	,6880	,7100
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PHI	90,000	,0165	,0035	-,0000	-,0027	-,0056	-,0080	,1383	,0238	-,0053	,0002	,0234	,0145	-,0090	-,0124	,0374
	100,000	,0193	,0172	,0125	,0069	,0050	,0002	,0317	,0472	,5718	,0026	,5728	,0139	-,0101	-,0126	,0191
	110,000	,0147	,0132	,0149	,0164	,0105	,0074	,0151	,0167	,1045	,0013	,7466	,0022	-,0087	-,0108	,0181
	120,000							-,0094								-,0126
	130,000								,0564							-,0138
	140,000								,3775							-,0141
	150,000								,0506							-,0145
	160,000								,0090							-,0146
	170,000								-,0024							-,0143
	180,000	-,0068	-,0069	-,0062	-,0066	-,0076	-,0073	,1112	,0015	,0255	-,0053	,0936	-,0045	-,0110	-,0143	,0154

X/L	,7290	,7470	,7670	,7850	,8030	,8290	,8620	,9000	,9400							
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PHI	60,000									,0175						
	70,000									,0171	,0161	,0165				
	80,000									,0161	,0165	,0167				
	90,000	,0154	,0163	,0158	,0158	,0176	,0437	,0163	,0151	,0168						
	100,000	,0161	,0159	,0149	,0157	,0158	,0226									
	110,000	,0164	,0159	,0154	,0159	,0385	,0178									
	120,000									,0265						

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

(REMI10)

MACH (1) = 10.290 ALPHA (1) = 30.319

SECTION (1)SSV

DEPENDENT VARIABLE CP

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

PHI

130,000		.0406
140,000		.0219
150,000		.0198
160,000		.0204
170,000		.0187
180,000	.0159 .0134 .0156 .0173 .0236	.0217

MACH (1) = 10.290 ALPHA (2) = 32.195 RN/L = 1.8450 Q = 2,4267 P = .0330 BETA = .0000

SECTION (2)SSV

DEPENDENT VARIABLE CP

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

PHI

60,000	.1060 .1017 .0866	
70,000	.0601 .0854 .0613	
80,000	.0247 .0481 .0700	
90,000	.0000 .0484 .0332	.0247 .0318 .0193 .0168 .0195 .0209 .0246 .0255 .0243 .0192
100,000		.0191 .0114 .0195 .0190 .0182 .0163 .0195 .0194 .0196 .0218
110,000		.0043 .0182 .0147 .0154 .0146 .0167 .0128 .0126 .0127 .0135
120,000		-.0079
130,000		-.0108
140,000		-.0127
150,000		-.0134
160,000		-.0144
170,000		-.0151
180,000		-.0140 -.0099 -.0105 -.0063 -.0063 -.0062 -.0052 -.0054 -.0166 .1620

X/L .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6980 .7100

PHI

90,000	.0112 .0018 -.0020 -.0042 -.0062 -.0086 -.0043 -.0054 -.0078 -.0072 .0357 .0079 -.0092 -.0122 .0204	
100,000	.0207 .0150 .0105 .0065 .0046 -.0000 -.0015 -.0031 .0274 .0010 .1028 .0073 -.0103 -.0125 .0167	
110,000	.0209 .0165 .0178 .0163 .0087 .0060 .0058 .0030 .0134 .0005 .1401 .0009 -.0091 -.0114 .0177	
120,000		-.0103
130,000		.0016
140,000		.0550
150,000		.0101
160,000		-.0016
170,000		-.0076
180,000	-.0080 -.0075 -.0079 -.0073 -.0093 -.0102 .0000 -.0029 .0018 -.0051 .0367 -.0055 -.0118 -.0149 .0162	

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

PHI

DATE 3/4 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-1BD)

PAGE 39

ABC 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	.0161	.0162	.0163	.0151	.0182	.0216		.0175	.0165	.0181
100,000	.0161	.0000	.0171	.0163	.0172	.0180				
110,000	.0171	.0159	.0179	.0167	.0445	.0162				
120,000								.0169		
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

x/L .4500 .4680 .4860 .5050 .5240 .5430 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6980 .7100

PHI																
90,000	.0086	.0027	-.0003	-.0029	-.0051	-.0074	-.0088	-.0078	-.0086	-.0097	.0249	.0038	-.0090	-.0107	.0200	
100,000	.0197	.0148	.0111	.0064	.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	

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 40

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

(REMI 10)

MACH (1) = 16.295 ALPHA (3) = 34.247

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .4500 .4660 .4860 .5050 .5240 .5460 .5610 .5800 .5960 .6170 .6360 .6540 .6730 .6880 .7100

PMT														
160,000														-.0137
170,000														-.0138
180,000	-.0067	-.0060	-.0054	-.0059	-.0079	-.0126	-.0037	-.0045	-.0052	-.0072	.0266	-.0069	-.0112	-.0135

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

PHI								
60,000							.0189	
70,000							.0197	.0216
80,000							.0199	.0211
90,000	.0168	.0191	.0206	.0180	.0202	.0227	.0197	.0206
100,000	.0189	.0166	.0185	.0193	.0180	.0174		
110,000	.0174	.0186	.0170	.0204	.0393	.0189		
120,000							.0213	
130,000							.0214	
140,000							.0177	
150,000							.0221	
160,000							.0240	
170,000							.0220	
180,000	.0168	.0181	.0170	.0176	.0216	.0191		

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 41

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

(REM111) (02 APR 74)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2695.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRP = .0000 IN.
 BREF = 936.6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

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

MACH (1) = 10.290 ALFA (1) = 30.325 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	.2840	.3220	.3610	.3990	.3380	.3570	.3750	.3940	.4050	.4310
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PHI

60.000	.1316	.1223	.1078																			
70.000	.0765	.1037	.1023																			
80.000	.0481	.0637	.0886																			
90.000		.0537	.0601	.0439	.0332	.0851	.0317	.0285	.0287	.0318	.0297	.0298	.0313	.0344								
100.000					.0258	.0190	.0287	.0265	.0284	.0303	.0252	.0241	.0252	.0266								
110.000						.0111	.0278	.0219	.0253	.0248	.0231	.0235	.0187	.0196	.0193							
120.000							-.0021								.6443							
130.000								-.0031							.0379							
140.000									-.0078						.0003							
150.000										-.0077					-.0082							
160.000											-.0097				-.0111							
170.000												-.0100			-.0117							
180.000													-.0081	-.0057	-.0076	-.0010	-.0001	-.0005	-.0011	-.0024	-.0114	.8094

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

90.000	.0307	.0204	.0142	.0107	.0073	.0036	.0806	.0144	-.0007	.0017	.0269	.0151	-.0054	-.0080	.0100
100.000	.0276	.0310	.0322	.0282	.0227	.0183	.0263	.0308	.5813	.5971	.7850	.0137	-.0055	-.0079	-.0040
110.000	.0229	.0221	.0242	.0263	.0259	.0257	.0239	.0221	.0981	.0299	.8979	.0074	-.0020	-.0043	-.0030
120.000						-.0022									.0075
130.000							.0386								-.0095
140.000								.3150							-.0099
150.000								.0326							-.0105
160.000									.0055						-.0103
170.000									-.0035						-.0102
180.000	-.0032	-.0028	-.0023	-.0013	-.0012	-.0068	.0586	.0065	.0266	.0079	.0771	-.0008	-.0066	-.0104	-.0071

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

60.000							-.0063							
70.000								-.0047	-.0059	-.0054				
80.000									-.0052	-.0059	-.0037			
90.000	-.0058	-.0067	-.0077	-.0054	-.0054	.0093	-.0068	-.0032	-.0056					
100.000	-.0061	-.0073	-.0073	-.0057	-.0059	-.0027								
110.000	-.0044	-.0055	-.0056	-.0052	.0198	-.0017								
120.000						.0870								

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

(RENT111)

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 B2TA = -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

80,000	.1317	.1265	.1138																		
90,000	.0758	.1067	.1042																		
100,000	.0404	.0652	.0936																		
110,000				.0566	.0664	.0462	.0404	1.1249	1.5127	1.5122	1.5116	1.5115	1.5114	.0352	.0363	.0332					
120,000								.0326	1.5130	1.5125	1.5119	1.5115	1.5115	1.5110	.0288	.0300	.0321				
130,000								.0256	1.5128	1.5123	1.5118	1.5116	1.5115	.0222	.0223	.0231	.0238				
140,000									.0011						.0858						
150,000										-.0104						.0115					
160,000											-.0055						-.0046				
170,000											-.0081						-.0099				
180,000											-.0057						-.0112				
											-.0089						-.0118				
												-.0089	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	-.0015	-.0024	.0393	.0111	-.0054	-.0083	-.0052		
100,000	.0355	.0342	.0296	.0244	.0208	.0155	.0073	.0050	.0315	.0439	.1156	.0094	-.0063	-.0086	-.0045		
110,000	.0288	.0270	.0284	.0300	.0248	.0220	.0202	.0162	.0225	.0168	.1570	.0062	-.0032	-.0060	-.0012		
120,000																-.0088	
130,000																-.0106	
140,000																-.0109	
150,000																-.0108	
160,000																-.0111	
170,000																-.0109	
180,000	-.0026	-.0023	-.0023	-.0016	-.0023	-.0095	.0050	.0048	.0079	.0046	.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 (3) = 34.292

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .4500 .4660 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

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

PHI

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 45

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

(REM112) (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 = 2.000 ELEV-L = .000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 10.290 ALPHA (1) = 30.337 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
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PHI																
60.000	.1137	.1074	.0906													
70.000	.0723	.0912	.0896													
80.000	.0530	.0628	.0765													
90.000				.0546	.0604	.0448	.0417	.0474	.0352	.0371	.0363	.0391	.0413	.0194	.0173	.0082
100.000							.0348	.0323	.0373	.0371	.0360	.0377	.0367	.0164	.0168	.0183
110.000							.0236	.0348	.0298	.0337	.0329	.0353	.0166	.0104	.0117	.0132
120.000							.0183									.4834
130.000							.0173									.0372
140.000							.0159									.0027
150.000							.0127									-.0052
160.000							.0111									-.0176
170.000							.0128									-.0081
180.000							.0134	.0163	.0162	.0179	.0182	.0217	-.0003	-.0022	-.0084	.5977

X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
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PHI																
90.000	.0122	.0019	-.0002	-.0018	-.0036	-.0046	.0873	.0342	.0179	.0239	.0501	.0377	.0166	.0140	.0355	
100.000	.0160	.0108	.0077	.0051	.0027	.0009	.0422	.0433	.5231	.5870	.4094	.0344	.0152	.0140	.0220	
110.000	.0186	.0152	.0155	.0123	.0068	.0044	.0296	.0296	.1123	.0467	.6152	.0246	.0153	.0140	.0196	
120.000							-.0053									.0134
130.000							.0620									.0133
140.000							.2855									.0132
150.000							.0567									.0130
160.000							.0308									.0134
170.000							.0216									.0137
180.000	-.0018	-.0022	-.0026	-.0030	-.0043	.0183	.0708	.0226	.0488	.0287	.0941	.0195	.0141	.0137	.0196	

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

PHI									
60.000							.0209		
70.000							.0208	.0203	.0211
80.000							.0192	.0198	.0199
90.000	.0191	.0194	.0194	.0200	.0199	.0332	.0197	.0195	.0206
100.000	.0195	.0202	.0169	.0198	.0194	.0217			
110.000	.0189	.0193	.0188	.0196	.0427	.0198			
120.000						.0215			

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

(REM112)

MACH (1) = 10.290 ALPHA (1) = 30.337

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI

130,000		.0207
140,000		.0191
150,000		.0202
160,000		.0221
170,000		.0208
180,000	.0198 .0194 .0195 .0210 .0252	.0244

MACH (1) = 10.290 ALPHA (2) = 32.247 RN/L = 1.7403 0 = 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

80,000	.1084 .1083 .0912	
90,000	.0712 .0280 .0922	
100,000	.0472 .0597 .0846	
110,000	.0561 .0613 .0530	.0450 .0501 .0375 .0373 .0410 .0398 .0429 .0192 .0149 .0069
120,000		.0398 .0327 .0404 .0368 .0363 .0369 .0408 .0202 .0210 .0189
130,000		.0280 .0384 .0331 .0344 .0351 .0324 .0150 -.0088 .0151 .0168
140,000		.0180
150,000		.0157
160,000		.0129
170,000		.0107
180,000		.0150
		.0119 .0166 .0182 .0199 .0166 .0179 -.0017 -.0019 -.0088 .1073

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

PHI

90,000	.0118 .0022 -.0003 -.0020 -.0031 -.0047	.0184 .0182 .0159 .0186 .0497 .0313 .0165 .0139 .0252
100,000	.0148 .0103 .0070 .0046 .0028 .0000	.0200 .0198 .0461 .0613 .1134 .0295 .0152 .0140 .0208
110,000	.0219 .0168 .0141 .0117 .0062 .0040	.0230 .0218 .0369 .0329 .1373 .0228 .0147 .0139 .0209
120,000		-.0050
130,000		.0262
140,000		.0753
150,000		.0381
160,000		.0238
170,000		.0159
180,000	-.0007 -.0013 -.0019 -.0025 -.0046	.0155 .0210 .0182 .0252 .0230 .0657 .0190 .0141 .0133 .0204

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

PHI

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 47

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

(REMI12)

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	.0218	.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	.0406	.0368	.0371	.0385	.0375	.0245 .0244 .0199
110,000							.0270	.0390	.0344	.0362	.0351	.0345	.0165	.0166 .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	-.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	.0268	.0173	.0159 .0269
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	.0243	.0220	.0974	.0223	.0163	.0153 .0229
120,000						-.0062								.0141
130,000							.0229							.0138
140,000							.0668							.0138
150,000							.0331							.0138

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA2G (ARC 3.5-180)

PAGE 4

ARC 3.9-180 1A16/OA28 ORBITER (ORB FUSELAGE)

{REM112}

MACH (1) = 10.290 ALPHA (3) = 34.288

SECTION (1) 98V

DEPENDENT VARIABLE CP

x/L .4500 .4600 .4660 .5050 .5240 .5460 .5610 .5800 .5960 .6170 .6360 .6540 .6730 .6880 .7100

PHI															
160,000							.0230							.0137	
170,000							.0181							.0138	
180,000	.00005	.00009	.00018	.00029	.00040	.0163	.0211	.0202	.0198	.0190	.0489	.0190	.0148	.0139	.0240

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

PHI										
60,000								,0272		
70,000								,0252	,0256	,0256
80,000								,0241	,0247	,0254
90,000	,0236	,0232	,0231	,0237	,0236	,0269	,0253	,0252	,0267	
100,000	,0235	,0245	,0241	,0242	,0243	,0260				
110,000	,0229	,0239	,0247	,0238	,0477	,0256				
120,000						,0242				
130,000						,0249				
140,000						,0241				
150,000						,0272				
160,000						,0281				
170,000						,0284				
180,000	,0227	,0232	,0241	,0237	,0295	,0303				

DATE 04 APR 74

TABULATED DATA LISTING FOR 1A16/0A26 (ARC 3.5-180)

PAGE 49

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

(REM113) (02 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8109 IN. YMRF = .0000 IN.
 BREF = 936.6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

PARAMETRIC DATA

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

MACH (1) = 7.330 ALPHA (1) = 26.187 RN/L = 2.9457 Q = 4.6493 P = .1240 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.0370	.1250	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
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PHI

60.000	.1195	.0775	.0869																	
70.000	.0877	.0900	.0814																	
80.000	.0412	.0326	.0715																	
90.000				.0423	.0452	.0233	.0168	.0128	.0185	.0159	.0153	.0138	.0137	.0147	.0149	.0196				
100.000							.0098	.0023	.0125	.0081	.0124	.0133	.0113	.0116	.0113	.0117				
110.000								-.0058	.0100	.0065	.0062	.0071	.0074	.0073	.0055	.0058	.0072			
120.000									-.0111							-.0034				
130.000										-.0140						-.0171				
140.000											-.0189					-.0201				
150.000											-.0207					-.0212				
160.000											-.0196					-.0211				
170.000											-.0178					-.0190				
180.000											-.0212	-.0177	-.0164	-.0119	-.0115	-.0138	-.0116	-.0128	-.0172	.2047

X/L	.4500	.4680	.4860	.5050	.5240	.5430	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
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PHI

90.000	.0189	.0298	.0202	.0008	-.0049	-.0096	-.0021	-.0093	-.0122	-.0127	-.0011	-.0006	-.0139	-.0168	-.0115
100.000	.0129	.0150	.0150	.0148	.0203	.0276	.0185	.0049	.2341	.2684	.0896	-.0099	-.0141	-.0166	-.0149
110.000	.0079	.0081	.0090	.0095	.2097	.0176	.0103	.0101	.0391	.0221	.1198	.0061	-.0059	-.0105	-.0088
120.000									-.0135						-.0143
130.000										-.0039					-.0158
140.000										-.0075					-.0167
150.000										-.0138					-.0168
160.000										-.0164					-.0168
170.000										-.0176					-.0169
180.000	-.0137	-.0142	-.0148	-.0147	-.0076	-.0184	-.0030	-.0067	-.0006	-.0035	.0125	-.0070	-.0141	-.0169	-.0119

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

60.000							-.0137		
70.000							-.0139	-.0140	-.0136
80.000							-.0137	-.0138	-.0135
90.000	-.0154	-.0156	-.0147	-.0144	-.0144	-.0110	-.0139	-.0138	-.0132
100.000	-.0162	-.0165	-.0156	-.0148	-.0148	-.0155			
110.000	-.0130	-.0147	-.0145	-.0132	-.0043	-.0133			
120.000							.0746		

DATE 00 APR 70

TABULATED DATA LISTING FOR IA1G/OA2G (ARC 3.5-180)

PAGE 50

ARC 3.5-180 IA1G/OA2G ORBIITER (CRB FUSELAGE)

(REMB13)

MACH (1) = 7.330 ALPHA (1) = 26.187

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .7290 .7470 .7670 .7850 .8050 .8290 .8620 .9000 .9400

PHI

130,000		.0362				
140,000		-.0077				
150,000		-.0087				
160,000		-.0099				
170,000		-.0088				
180,000	-.0143	-.0158	-.0155	-.0151	-.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 .1640 .2050 .2420 .2340 .2620 .3040 .3150 .3360 .3570 .3790 .3940 .4050 .4310

PHI

60,000	.1132	.1111	.0914																
70,000	.0391	.0501	.0851																
80,000	.0298	.0511	.0776																
90,000		.0363	.0320	.0242	.0246	.0214	.0269	.0214	.0218	.0190	.0221	.0245	.0298						
100,000					.0172	.0082	.0105	.0190	.0215	.0157	.0199	.0162	.0179	.0166					
110,000						.0009	.0185	.0130	.0126	.0131	.0112	.0110	.0133	.0132	.0136				
120,000							-.0198							-.0027					
130,000								-.0169						-.0161					
140,000									-.0177					-.0197					
150,000										-.0180				-.0208					
160,000										-.0218				-.0206					
170,000											-.0209			-.0201					
180,000											-.0211	-.0166	-.0152	-.0153	-.0159	-.0124	-.0132	-.0199	.0421

X/L .4500 .4660 .4860 .5050 .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	.0129	.0042	.0004	-.0033	.0019	.0067	.0301	-.0112	-.0158	-.0167	-.0142
110,000	.0144	.0146	.0144	.0198	.0443	.0140	.0206	.0156	.0088	.0063	.0445	-.0065	-.0111	-.0145	-.0123
120,000								-.0153						-.0164	
130,000									-.0128					-.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	-.0038	-.0080	-.0067	.0037	-.0119	-.0152	-.0177	-.0136

X/L .7290 .7470 .7670 .7850 .8050 .8290 .8620 .9000 .9400

END

DATE 14 APR 74

TABULATED DATA LISTING FOR IA1G/OA26 (ARC 3.9-181)

PAGE 9

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

(REMI 13)

MACH (1) = 7.330 ALPHA (2) = 30.244

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI											
60,000											-.0123
70,000											-.0127
80,000											-.0130
90,000											-.0134
100,000	-.0134	-.0137	-.0135	-.0129	-.0132	-.0113	-.0128	-.0130	-.0126		
110,000	-.0140	-.0139	-.0137	-.0133	-.0135	-.0126					
120,000	-.0135	-.0139	-.0136	-.0134	-.0044	-.0128					
130,000											-.0110
140,000											-.0004
150,000											-.0094
160,000											-.0063
170,000											-.0079
180,000											-.0083
190,000	-.0145	-.0120	-.0113	-.0108	-.0084	-.0052					

MACH (.1) = .7330 ALPHA (.3) = 34.191 ROLL = 2.9457 Q = 4.6493 P = .1240 BETA = .0002

SECTION (3) SSY

DEPENDENT VARIABLE CP

100 0830 1260 1640 2030 2420 -2640 -2820 3010 3190 3360 3570 3750 3940 4090 4310

X/L .4900 .4660 .4660 .5030 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

DATE 14 APR 70

TABULATED DATA LISTING FOR IASG/OA2G (ARC 3.3-160)

PAGE 9

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

(REMI 13)

MACH (.9) = .990 ALPHA (3) = 34.191

SECTION (1) SSV

DEPENDENT VARIABLE C

x/L .48000 .46667 .4860 .50500 .5240 .5460 .5610 .58000 .5980 .6170 .6360 .6540 .6730 .6960 .7100

PHI
 160,000 -.0170 -.0173
 170,000 -.0174 -.0175
 180,000 -.0139 -.0133 -.0136 -.0139 -.0143 -.0176 -.0079 -.0091 -.0087 -.0084 .0019 -.0140 -.0167 -.0173 -.0122

.7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI											
60,000											-.0095
70,000											-.0109
80,000											-.0112
90,000											-.0113
95,000	-.0113	-.0117	-.0116	-.0117	-.0111	-.0100	-.0110	-.0110	-.0110	-.0109	
100,000	-.0118	-.0116	-.0116	-.0112	-.0112	-.0110					
110,000	-.0120	-.0117	-.0112	-.0115	-.0033	-.0111					
120,000							-.0109				
130,000							-.0099				
140,000							-.0093				
150,000							-.0021				
160,000							-.0051				
170,000							-.0062				
180,000	-.0122	-.0120	-.0116	-.0104	-.0079	.0061					

DATE 44 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 93

AEC 3 9-180 1A16/0A26 ORBITER (ORB FUSELAGE)

(REM114) (02 APR 74

REFERENCE DATA

SREF = 2690.0000 90.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRP = .0000 IN.
 BREF = 936.6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

PARAMETRIC DATA

MACH (1) = .7330 ALPHA (1) = 26.234 ROLL = 3.1633 Q = 4.6730 P = .1240 BETA = -1.7250

SECTION 4 ISSV

DEPENDENT VARIABLE CP

Table 1. Summary of the results of the 1960-61 survey of the population of the United States

PHI	.1403	.1339	.1199																		
80,000	.0888	.1149	.1059																		
80,000	.0556	.0726	.0938																		
90,000		.0567	.0204	.0369	.0264	.0270	.0267	.0260	.0262	.0242	.0240	.0258	.0250	.0259							
100,000					.0220	.0124	.0222	.0219	.0227	.0227	.0216	.0225	.0225	.0219							
110,000					.0144	.0218	.0136	.0143	.0199	.0171	.0168	.0173	.0159	.0160							
120,000						-.0081									.0019						
130,000							-.0106								-.0125						
140,000								-.0159							-.0192						
150,000									-.0173												
160,000										-.0168					-.0169						
170,000											-.0149				-.0168						
180,000												-.0153	-.0132	-.0125	-.0100	-.0094	-.0092	-.0081	-.0088	-.0153	.1881

Yield -45000 -44800 -44600 -44300 -40500 -52400 -54600 -56100 -56000 -59800 -61700 -63600 -69400 -67300 -68800 -71000

X/L	.7250	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
PHI									
60,000							-.0087		
70,000							-.0110	-.0107	-.0100
80,000							-.0109	-.0108	-.0114
90,000	-.0100	-.0122	-.0117	-.0114	-.0108	-.0056	-.0080	-.0098	-.0100
100,000	-.0081	-.0107	-.0113	-.0107	-.0097	-.0067			
110,000	.0198	.0092	.0000	-.0059	.0023	.0032			
120,000						.0920			

DATE 04 APR 74

TABULATED DATA LISTING FOR IAIIG/OAEG (ARC 9.9-100)

PAGE 94

ARC 9.9-100 IAIIG/OAEG ORBITER (ORG FUSELAGE)

(RZM814)

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

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .7290 .7470 .7650 .7830 .8010 .8190 .8370 .8550 .8730

PHI

130.000		.0632				
140.000		-.0024				
150.000		-.0037				
160.000		-.0057				
170.000		-.0057				
180.000	-.0058	+.0085	-.0084	-.0080	-.0069	.0003

MACH (1) = 7.330 ALPHA (2) = 30.284 RN/L = 3.1093 Q = 4.0750 P = .1240 BETA = -1.7250

SECTION (2) SSV

DEPENDENT VARIABLE CP

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

PHI

60.000	.1925	.1935	.1160													.0023	.0043
70.000	.0751	.1149	.1077													.0265	.0282
80.000	.0412	.0663	.0848	.0542	.0650	.0424	.0356	.0365	.0391	.0310	.0300	.0305	.0316	.0321			
90.000							.0267	.0201	.0205	.0299	.0295	.0298	.0279	.0265			
100.000							.0181	.0284	.0222	.0225	.0220	.0232	.0219	.0222	.0228	.0226	
110.000															.0042		
120.000															-.0119		
130.000															-.0162		
140.000															-.0145		
150.000															-.0169		
160.000															-.0180		
170.000															-.0145		
180.000															-.0156	-.0129	

X/L .4900 .4660 .4460 .4050 .3640 .3460 .3160 .2860 .2560 .2260 .1960 .1660 .1360 .1060 .0760 .0460 .0160

PHI

90.000	.0015	.0017	.0220	.0147	.0031	-.0009	-.0032	-.0059	-.0039	-.0003	.0024	-.0003	-.0101	-.0136	-.0006
100.000	.0264	.0279	.0291	.0354	.0300	.0344	.0254	.0143	.0007	-.0009	.0279	-.0084	-.0100	-.0130	-.0093
110.000	.0228	.0228	.0231	.0229	.0511	.0286	.0235	.0236	.0160	.0260	.0402	.0182	.0020	.0019	.0019
120.000															-.0090
130.000															-.0134
140.000															-.0143
150.000															-.0126
160.000															-.0139
170.000															-.0154
180.000															-.0160

X/L .7290 .7470 .7650 .7830 .8010 .8190 .8370 .8550 .8730 .8910 .9090 .9270 .9450 .9630 .9810 .9990 .0002

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.3-180)

PAGE 5

ABC S-3-160 IA16/OA2G ORBITER (ORB FUSELAGE)

(REM114)

MACH (1) = .7530 ALPHA (2) = 30.284

SECTION (1) SSV

DEPENDENT VARIABLE CP

~~.7220 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400~~

PH1									
60,000									-.0079
70,000									-.0085
80,000									-.0080
90,000	-.0098	-.0103	-.0099	-.0091	-.0080	-.0071	-.0075	-.0071	-.0079
100,000	-.0099	-.0101	-.0102	-.0096	-.0089	-.0092			
110,000	-.0094	-.0090	-.0073	-.0064	.0016	-.0083			
120,000							.0779		
130,000							.0492		
140,000							.0013		
150,000							.0052		
160,000							-.0031		
170,000							-.0037		
180,000	-.0109	-.0109	-.0088	-.0075	-.0058	-.0026			

MACH (.1) = .7330 ALPHA (.3) = 34.198 ROLL = 3.1893 Q = 4.6730 P = .1240 BETA = -8.7250

SECTION (1) SSV

DEPENDENT VARIABLE CP

**4* 06300 .1260 .1640 .2130 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

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

ARC 3.5-100 TA16/QA26 ORBITER (ORB FUSELAGE)

(REMS 24)

MACH (3) = .7330 ALPHA (3) = 34.198

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .4500 .4680 .4860 .5040 .5240 .5430 .5610 .5800 .6000 .6170 .6360 .6540 .6730 .6900 .7100

PHI
 160,000 -.0169 -.0149
 170,000 -.0170 -.0148
 180,000 -.0112 -.0102 -.0113 -.0104 -.0090 -.0169 -.0051 .0023 -.0034 -.0018 .0027 -.0055 -.0129 -.0152 -.00

YTD .7250 .7450 .7670 .7650 .80130 .8280 .8620 .9000 .9400

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/0A26 (ARC 3.5-180)

PAGE 57

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

(REH115) (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) = 7.330 ALPHA (1) = 26.201 RN/L = 2.4020 Q = 4.5757 P = .1220 BETA = 1.7253

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1200	.1040	.2030	.2420	.2840	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
-----	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PHI																
60,000	.0888	.0813	.0617													
70,000	.0469	.0675	.0566													
80,000	.0284	.0361	.0492													
90,000				.0227	.0293	.0094	.0028	.0016	.0002	-.0013	-.0019	-.0011	.0019	.0025	.0042	.0142
100,000							-.0030	-.0109	-.0035	-.0029	-.0024	-.0037	-.0018	-.0016	-.0011	-.0000
110,000							-.0147	-.0039	-.0089	-.0074	-.0058	-.0040	-.0051	-.0069	-.0058	-.0048
120,000								-.0203								-.0139
130,000									-.0232							-.0242
140,000										-.0278						-.0275
150,000											-.0283					-.0283
160,000											-.0276					-.0272
170,000											-.0270					-.0246
180,000											-.0277	-.0254	-.0255	-.0253	-.0253	.0833

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

PHI																
90,000	.0007	-.0121	-.0163	-.0194	-.0222	-.0241	.0162	-.0159	-.0227	-.0232	-.0087	-.0167	-.0250	-.0257	-.0177	
100,000	.0011	.0050	.0150	.0009	-.0090	-.0156	-.0094	-.0075	.0297	.0369	.0267	-.0196	-.0256	-.0259	-.0234	
110,000	-.0037	-.0035	-.0032	-.0025	.0219	-.0024	.0070	-.0021	.0024	-.0092	.0456	-.0208	-.0243	-.0255	-.0239	
120,000								-.0221							-.0247	
130,000									-.0222						-.0241	
140,000										-.0119					-.0237	
150,000										-.0201					-.0240	
160,000										-.0235					-.0249	
170,000										-.0253					-.0254	
180,000	-.0217	-.0219	-.0228	-.0231	-.0207	-.0259	.0073	-.0154	-.0141	-.0184	-.0039	-.0232	-.0254	-.0257	-.0234	

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9010	.9400
-----	-------	-------	-------	-------	-------	-------	-------	-------	-------

PHI												
60,000									-.0218			
70,000									-.0232	-.0238	-.0236	
80,000									-.0234	-.0234	-.0234	
90,000	-.0239	-.0242	-.0240	-.0237	-.0235	-.0177	-.0228	-.0232	-.0234			
100,000	-.0240	-.0241	-.0243	-.0239	-.0239	-.0226						
110,000	-.0247	-.0246	-.0240	-.0242	-.0142	-.0235						
120,000									-.0230			

ARC 3.5-100 IA1G/OA2G ORBITER (ORB 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		-,0151
170,000		-,0159
180,000	-,0240	-,0236
	-,0231	-,0214
	-,0191	-,0114

MACH (1) = 7.330 ALPHA (2) = 30.292 RN/L = 2.4020 0 = 4.5757 P = .1220 BETA = 1.7253

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2840 .3220 .3610 .3950 .3970 .3750 .3940 .4090 .4310

PHI

60,000	.0891	.0831	.0333												
70,000	.0409	.0656	.0619												
80,000	.0143	.0304	.0549												
90,000		.0203	.0333												
100,000			.0199												
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	.6980	.7100

PHI

90,000	-,0067	-,0347	-,0179	-,0210	-,0290	-,0249	-,0233	-,0226	-,0237	-,0246	-,0081	-,0181	-,0246	-,0252	-,0214
100,000	.0110	.0010	-,0048	-,0081	-,0125	-,0177	-,0198	-,0205	-,0160	-,0178	.0182	-,0192	-,0252	-,0253	-,0225
110,000	.0022	.0035	.0060	.0065	-,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	-,0206	-,0209	-,0226	-,0259	-,0189	-,0193	-,0208	-,0214	-,0028	-,0296	-,0251	-,0257	-,0228

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

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 9

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

(REM119)

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

SECTION 11 ISSY

DEPENDENT VARIABLE CP

~~.7220 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400~~

PHI											
60,000											-.0207
70,000											-.0223
80,000											-.0223
90,000	-.0228	-.0229	-.0232	-.0225	-.0221	-.0208	-.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 = .115 = 2.3300 ALPHA (3) = 34.236 ROLL = 2.4020 Q = 4.5757 P = .1220 BETA = 2.7295

SECTION (1) SSV

DEPENDENT VARIABLE CP

Table 1. Summary of the results of the simulation study

PHI																		
60,000	.0840	.0825	.0858															
70,000	.0852	.0896	.0828															
80,000	.0854	.0866	.0885															
90,000		.0211	.0363	.0169	.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

10000 10000 10000 50000 50000 50000 50000 50000 50000 50000 50000 50000 50000 50000 50000

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	-.0206	
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	

DATE 14 APR 74

TABULATED DATA LISTING FOR TA1G/OA2S (ARC 5.5-180)

PAGE 8

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

(REH129)

MACH (1) = 7.390 ALPHA (3) = 34.238

SECTION (2) SSV

DEPENDENT VARIABLE CF

x/l. .4500 .4600 .4660 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6920 .7100

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

PHI											
60,000											-.0184
70,000											-.0193
80,000											-.0197
90,000	-.0208	-.0207	-.0208	-.0204	-.0203	-.0186	-.0198	-.0198	-.0198	-.0192	
100,000	-.0205	-.0208	-.0202	-.0206	-.0201	-.0195					
110,000	-.0208	-.0202	-.0201	-.0204	-.0198	-.0195					
120,000							-.0199				
130,000								-.0196			
140,000									-.0196		
150,000										-.0149	
160,000										-.0162	
170,000										-.0174	
180,000	-.0212	-.0207	-.0202	-.0192	-.0165	-.0082					

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 61

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

(REH116) (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 = .000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 5.299 ALPHA (1) = 18.255 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	.1184	.1145	.0900																
70.000	.0925	.0977	.0819																
80.000	.0754	.0740	.0726																
90.000				.0680	.0409	.0099	-.0021	-.0028	-.0081	-.0062	-.0080	-.0066	-.0090	-.0091	-.0094	-.0091			
100.000							-.0055	-.0105	-.0075	-.0094	-.0099	-.0105	-.0118	-.0110	-.0114	-.0120			
110.000								-.0105	-.0081	-.0124	-.0141	-.0150	-.0167	-.0157	-.0158	-.0158			
120.000									-.0112							-.0314			
130.000										-.0207						-.0431			
140.000											-.0353					-.0448			
150.000											-.0390					-.0423			
160.000											-.0371					-.0406			
170.000											-.0364					-.0343			
180.000											-.0365	-.0357	-.0344	-.0336	-.0334	-.0311	-.0326	-.0320	.1426

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

PHI

90.000	-.0095	-.0100	-.0096	-.0100	-.0093	-.0085	.0134	-.0086	-.0099	-.0110	-.0111	-.0131	-.0164	-.0201	-.0126	
100.000	-.0121	-.0118	-.0119	-.0119	-.0122	-.0124	-.0123	-.0074	.1732	.1353	.1121	-.0129	-.0125	-.0128	-.0005	
110.000	-.0158	-.0159	-.0158	-.0153	.1492	-.0146	-.0174	-.0170	.0118	-.0160	.0935	-.0169	-.0165	-.0162	-.0037	
120.000										-.0421					-.0362	
130.000											-.0267					-.0400
140.000											-.0372					-.0414
150.000											-.0431					-.0415
160.000											-.0432					-.0421
170.000											-.0357					-.0423
180.000	-.0304	-.0304	-.0300	-.0291	-.0265	-.0310	-.0061	-.0305	-.0292	-.0333	-.0185	-.0326	-.0378	-.0421	-.0175	

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

PHI

60.000									-.0306		
70.000									-.0342	-.0342	-.0320
80.000									-.0346	-.0349	-.0336
90.000	-.0175	-.0236	-.0269	-.0285	-.0305	-.0260	-.0315	-.0320	-.0261		
100.000	-.0033	-.0070	-.0099	-.0131	-.0165	-.0144					
110.000	-.0030	-.0054	-.0064	-.0071	.0059	.0595					
120.000									.1236		

DATE 14 APR 74

TABULATED DATA LISTING FOR TA16/OA26 (ARC 3.5-100)

PAGE 02

ARC 3.5-100 TA16/OA26 ORBITER (ORB FUSELAGE)

(REMING)

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 -.0260 -.0237 -.0206 -.0187 -.0120

MACH (1) = 5.299 ALPHA (2) = 22.158 RN/L = 3.5639 0 = 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 .3760 .3940 .4030 .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 -.0081 -.0085 -.0079 -.0069 -.0078 -.0080
110,000	-.0212 -.0077 -.0143 -.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 -.0368 -.0346 -.0343 -.0319 -.0324 -.0333 -.0344 .0103

X/L .4500 .4660 .4860 .5050 .5240 .5460 .5610 .5800 .5960 .6170 .6360 .6540 .6730 .6880 .7200

PHI

90,000	-.0038 -.0026 -.0013 -.0022 -.0037 -.0047 -.0104 -.0101 -.0138 -.0217 -.0267 -.0397 -.0398 -.0432 -.0323
100,000	-.0077 -.0072 -.0069 -.0050 -.0042 -.0039 -.0064 -.0092 -.0052 -.0069 -.0059 -.0344 -.0135 -.0193 -.0131
110,000	-.0121 -.0119 -.0114 -.0109 -.0188 -.0075 -.0112 -.0100 -.0093 -.0114 -.0069 -.0130 -.0126
120,000	-.0421
130,000	-.0423
140,000	-.0434
150,000	-.0451
160,000	-.0459
170,000	-.0428
180,000	-.0590 -.0551 -.0543 -.0543 -.0547 -.0405 -.0372 -.0352 -.0358 -.0364 -.0353 -.0361 -.0420 -.0436 -.0179

-- -- .7060 .7420 .7690 .7850 .8050 .8290 .8620 .9000 .9400

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 6

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

(REMI) 15

MACH (.1) = .5299 ALPHA (.2) = 22.158

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/l .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

MACH (.1) = .3299 ALPHA (.3) = 26.290 ROLL = 3.5633 Q = 6.9363 P = .3530 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/1 .0820 .1260 .1640 .2130 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

16700 **16800** **16900** **17000** **17100** **17200** **17300** **17400** **17500** **17600** **17700** **17800** **17900** **18000** **18100** **18200** **18300** **18400** **18500**

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	

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA20 (ARC 3.3-180)

PAGE 3

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

{REM810}

MACH (1) = 5.299 ALPHA (3) = 26.291

SECTION (1) SSY

DEPENDENT VARIABLE CP

Exhibit 10 - **Annual Statement of Income and Expenses** - **Year Ended December 31, 2010**

PHI - .0462 **- .0447**
160,000 - .0470 **- .0446**
170,000 - .0470 **- .0445**
180,000 - .0380 - .0366 - .0398 - .0410 - .0417 **- .0470 - .0395 - .0359 - .0367 - .0386 - .0360 - .0353 - .0411 - .019**

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

PHI								
60,000								-.0266
70,000								-.0283
80,000								-.0289
90,000	-.0336	-.0337	-.0314	-.0267	-.0278	-.0270	-.0295	-.0307
100,000	-.0334	-.0339	-.0315	-.0271	-.0251	-.0263		
110,000	-.0163	-.0231	-.0263	-.0246	-.0169	-.0227		
120,000							.0670	
130,000							.0352	
140,000							-.0192	
150,000							-.0110	
160,000							-.0154	
170,000							-.0149	
180,000	-.0284	-.0268	-.0274	-.0263	-.0229	-.0051		

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/0A26 (ARC 3.5-18D)

PAGE 89

ABC 3-5-180 1A16/0A26 ORBITER (ORB FUSELAGE)

(REM117) (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 = .0100

BETA = -2,000 ELEV-L = .000
ELEV-R = -.000 RUDER = .000

HACH (1) = 5.365 ALPHA (1) = 18.298 RN/L = 2.7797 Q = 7.2963 P = .37013 BETA = -1.8465

SECTION (3) SSY

DEPENDENT VARIABLE CR

X-1 .0870 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

x/L .4500 .4600 .4660 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI	.0027	.0020	.0022	.0016	.0026	.0034	.0147	.0103	.0101	.0093	.0085	.0062	.0054	.0043	.0026
90,000	-.0005	-.0003	-.0001	.0001	.0000	-.0005	.0075	.0076	.1611	.1159	.1201	.0068	.0070	.0079	.0086
100,000	-.0052	-.0053	-.0049	-.0044	.1697	-.0025	.0028	.0027	.0221	.0022	.1517	.0026	.0030	.0031	.0035
110,000															-.0269
120,000															-.0297
130,000															-.0308
140,000															-.0311
150,000															-.0313
160,000															-.0322
170,000															-.0326
180,000	-.0308	-.0311	-.0307	-.0310	-.0299	-.0269	-.0129	-.0179	-.0164	-.0193	-.0112	-.0215	-.0275	-.0306	-.0153

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

PMI										
60,000										-.0274
70,000										-.0322
80,000										-.0297
90,000										-.0311
100,000	-.0025	-.0084	-.0127	-.0167	-.0196	-.0176	-.0194	-.0222	-.0144	
110,000	.0079	.0045	.0030	.0003	-.0032	.0044				
115,000	.0047	.0035	.0038	.0039	.0238	.1133				
120,000							.1647			

DATE 04 APR 74

TABULATED DATA LISTINGS FOR TA16/OA26 (ARC 3.5-180)

PAGE 66

ARC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REM117)

MACH (1) = 5.305 ALPHA (1) = 16.298

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI

130.000		,0766
140.000		-.0211
150.000		-.0211
160.000		-.0216
170.000		-.0267
180.000	-,0275	-,0266
	-,0234	-,0214
	-,0191	-,0015

MACH (1) = 5.305 ALPHA (2) = 22.192 RN/L = 2.7797 E = 7.2963 P = .3703 BETA = -1.6483

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .0670 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4030 .4310

PHI

60.000	.1588	.1477	.1251																	
70.000	.1058	.1258	.1124																	
80.000	.0765	.0864	.1001																	
90.000		,0673	,0609	,0261	,0170	,0134	,0156	,0161	,0158	,0190	,0135	,0093	,0098	,0096						
100.000						,0103	-,0001	,0099	,0099	,0098	,0109	,0106	,0059	,0053	,0061					
110.000							-,0080	,0096	,0019	,0038	,0032	,0032	-,0015	-,0007	-,0001					
120.000								-,0148						-,0265						
130.000									-,0218						-,0423					
140.000										-,0339						-,0453				
150.000											-,0362						-,0461			
160.000											-,0361						-,0456			
170.000											-,0337						-,0425			
180.000											-,0307	-,0311	-,0299	-,0277	-,0268	-,0293	-,0320	-,0323	-,0338	,0241

X/L .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6860 .7100

PHI

90.000	,0094	,0095	,0106	,0100	,0098	,0067	,0071	,0098	,0058	,0049	,0031	-,0009	-,0009	-,0127	-,0177				
100.000	,0063	,0056	,0061	,0070	,0075	,0060	,0144	,0126	,0126	,0115	,0133	,0003	,0032	,0050	,0027				
110.000	,0001	,0007	,0010	,0011	,0325	,0040	,0038	,0099	,0104	,0099	,0129	,0068	,0068	,0074	,0031				
120.000								-,0417							-,0261				
130.000									-,0315							-,0299			
140.000										-,0323							-,0304		
150.000											-,0342							-,0318	
160.000											-,0348							-,0318	
170.000											-,0350							-,0318	
180.000	-,0358	-,0338	-,0336	-,0332	-,0335	-,0303	-,0249	-,0221	-,0226	-,0290	-,0220	-,0222	-,0297	-,0321	-,0139				

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

PHI

DATE 14 APR 74

TABULATED DATA LISTING FOR 1A16/0A26 (ARC 3.5-180)

PAGE 61

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

(REMI 17)

MACH / 11.3 5.303 ALPHA (2) = 22.192

SECTION (1) SSY

DEPENDENT VARIABLE CP

~~.77290 .74720 .76700 .78500 .80300 .82900 .86200 .90000 .94000~~

PHT											
60,000											-.0284
70,000											-.0277
80,000											-.0269
90,000	-.0225	-.0271	-.0291	-.0299	-.0308	-.0278	-.0295	-.0248	-.0220		
100,000	-.0021	-.0075	-.0123	-.0161	-.0195	-.0187					
110,000	.0035	.0003	-.0019	-.0032	.0108	.0536					
120,000							.1294				
130,000							.0772				
140,000							-.0189				
150,000							-.0187				
160,000							-.0178				
170,000							-.0181				
180,000	-.0262	-.0256	-.0252	-.0240	-.0213	-.0122					

MAGN. = .33 E = 5.305 ALPHAS (3) = 26.225 RNL = 2.7797 Q = 7.2963 P = .3703 BETA = -1.8483

SECTION 4.1188V

DEPENDENT VARIABLE (C)

2010 **2011** **2012** **2013** **2014** **2015** **2016** **2017** **2018** **2019** **2020** **2021** **2022** **2023**

x/L .4500 .4600 .4700 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6750 .6880 .7100

DATE 4-4 APR 74

TABULATED DATA LISTING FOR IA16/0A2G (ARC 3.5-100)

PAGE 5

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

(REMI 17)

MACH (1) = 5.303 ALPHA (5) = 26.225

SECTION (1) SSY

DEPENDENT VARIABLE CP

x/L .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6860 .7100

PMS **160,000** **170,000** **180,000** **190,000** **200,000** **210,000** **220,000** **230,000** **240,000** **250,000** **260,000** **270,000** **280,000** **290,000** **300,000** **310,000** **320,000** **330,000** **340,000** **350,000** **360,000** **370,000** **380,000** **390,000** **400,000** **410,000** **420,000** **430,000** **440,000** **450,000** **460,000** **470,000** **480,000** **490,000** **500,000** **510,000** **520,000** **530,000** **540,000** **550,000** **560,000** **570,000** **580,000** **590,000** **600,000** **610,000** **620,000** **630,000** **640,000** **650,000** **660,000** **670,000** **680,000** **690,000** **700,000** **710,000** **720,000** **730,000** **740,000** **750,000** **760,000** **770,000** **780,000** **790,000** **800,000** **810,000** **820,000** **830,000** **840,000** **850,000** **860,000** **870,000** **880,000** **890,000** **900,000** **910,000** **920,000** **930,000** **940,000** **950,000** **960,000** **970,000** **980,000** **990,000** **1,000,000**

~~x 4~~ .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PMI										
60,000										-.0228
70,000										-.0225
80,000										-.0230
90,000	-.0307	-.0330	-.0328	-.0318	-.0298	-.0222	-.0215	-.0267	-.0283	
100,000	-.0170	-.0246	-.0278	-.0290	-.0288	-.0212				
110,000	.0061	.0004	-.0053	-.0097	-.0052	.0193				
120,000							.1009			
130,000							.0543			
140,000							-.0186			
150,000							-.0162			
160,000							-.0148			
170,000							-.0143			
180,000	-.0268	-.0270	-.0252	-.0235	-.0204	-.0057				

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 69

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

(REM118) (02 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRF = .0000 IN.
 LREF = 474.6100 IN. YMRF = .0000 IN.
 BREF = 936.6800 IN. ZMRF = .0000 IN.
 SCALE = .0150

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

MACH (1) = 5.302 ALPHA (1) = 16.280 RN/L = 3.0320 Q = 7.1177 P = .3620 BETA = 1.8400

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.0670	.1250	.1640	.2030	.2420	.2840	.2820	.3010	.3190	.3580	.3570	.3750	.3940	.4050	.4310
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PHI

60.000	.1183	.0950	.0721																
70.000	.0791	.0786	.0637																
80.000	.0645	.0578	.0580																
90.000				.0451	.0268	.0051	-.0089	-.0129	-.0101	-.0122	-.0114	-.0129	-.0154	-.0143	-.0142	-.0143			
100.000							-.0111	-.0133	-.0139	-.0127	-.0154	-.0152	-.0173	-.0157	-.0161	-.0176			
110.000								-.0126	-.0110	-.0138	-.0142	-.0193	-.0165	-.0184	-.0194	-.0195	-.0205		
120.000									-.0106								-.0328		
130.000										-.0179							-.0424		
140.000											-.0346						-.0391		
150.000											-.0358						-.0378		
160.000											-.0364						-.0320		
170.000											-.0347						-.0304		
180.000											-.0350	-.0346	-.0352	-.0337	-.0357	-.0344	-.0339	-.0339	.1328

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

PHI

90.000	-.0148	-.0147	-.0141	-.0137	-.0122	-.0115	.0094	-.0067	-.0085	-.0108	-.0118	-.0170	-.0226	-.0270	-.0284		
100.000	-.0169	-.0170	-.0167	-.0167	-.0166	-.0163	-.0091	-.0051	.1626	.1412	.1101	-.0163	-.0112	-.0126	-.0108		
110.000	-.0205	-.0210	-.0201	-.0199	.1405	-.0187	-.0143	-.0140	.0059	-.0131	.0879	-.0129	-.0122	-.0122	-.0079		
120.000										-.0391						-.0272	
130.000											-.0244						-.0289
140.000											-.0307						-.0308
150.000											-.0339						-.0320
160.000											-.0283						-.0326
170.000											-.0230						-.0317
180.000	-.0347	-.0348	-.0352	-.0350	-.0336	-.0282	-.0093	-.0272	-.0251	-.0282	-.0179	-.0282	-.0319	-.0335	-.0192		

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

60.000									-.0331		
70.000									-.0344	-.0336	-.0327
80.000									-.0359	-.0314	-.0288
90.000	-.0309	-.0336	-.0347	-.0348	-.0353	-.0276	-.0363	-.0312	-.0264		
100.000	-.0151	-.0200	-.0233	-.0268	-.0282	-.0294					
110.000	-.0094	-.0126	-.0148	-.0141	-.0063	.0141					
120.000						.0894					

DATE 04 APR 74

TABULATED DATA LISTING FOR TA16/OA26 (ARC 3.5-180)

PAGE 70

ARC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REM116)

MACH (1) = 5.302 ALPHA (1) = 16.280

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		-.0143				
180,000	-.0284	-.0300	-.0252	-.0210	-.0161	-.0057

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

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .0070 .1260 .1640 .2030 .2420 .2640 .2920 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI

60,000	.1001	.0689	.0697																
70,000	.0548	.0726	.0632																
80,000	.0422	.0431	.0519																
90,000		.0263	.0258	-.0036	-.0031	.0049	.0000	.0000	-.0077	-.0101	-.0118	-.0110	-.0108	-.0083					
100,000						-.0121	-.0161	-.0146	-.0146	-.0117	-.0118	-.0146	-.0148	-.0137					
110,000						-.0256	-.0173	-.0200	-.0176	-.0129	-.0179	-.0160	-.0163	-.0176	-.0188				
120,000							-.0211								-.0339				
130,000								-.0285							-.0440				
140,000									-.0361						-.0465				
150,000										-.0399					-.0439				
160,000										-.0385					-.0399				
170,000										-.0371					-.0324				
180,000										-.0374	-.0391	-.0384	-.0369	-.0372	-.0369	-.0357	-.0363	-.0379	.0036

X/L .4300 .4660 .4960 .5050 .5240 .5460 .5610 .5600 .5620 .6170 .6360 .6340 .6750 .6880 .7100

PHI

90,000	-.0068	-.0069	-.0079	-.0066	-.0032	-.0100	-.0029	-.0193	-.0290	-.0349	-.0256	.0000	.0000	-.0387	-.0342									
100,000	-.0129	-.0119	-.0103	-.0068	-.0093	-.0112	-.0079	-.0071	-.0178	-.0201	-.0047	-.0346	-.0262	-.0342	-.0311									
110,000	-.0177	.0000	.0000	-.0157	-.0125	-.0123	-.0060	-.0087	-.0113	-.0110	-.0032	-.0131	-.0117	-.0190	-.0120									
120,000							-.0393								-.0270									
130,000								-.0293							-.0276									
140,000									-.0332						-.0338									
150,000										-.0362					-.0390									
160,000										-.0351					-.0352									
170,000										-.0310					-.0360									
180,000										-.0360	-.0383	-.0377	-.0378	-.0378	-.0334	-.0217	-.0270	-.0279	-.0262	-.0266	-.0301	-.0352	-.0379	-.0216

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

PHI

DATE 04 APR 74

TABLED DATA LISTING FOR IA16/OA26 (ARC 3.5-160)

PAGE 7

ARC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REMI 18)

MACH (1) = 9.302 ALPHA (2) = 22.177

SECTION 119SY

DEPENDENT VARIABLE CP

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

PMI									
60,000									-.0302
70,000									-.0306
80,000									-.0309
90,000	-.0361	-.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	-.0273	-.0269	-.0259	-.0236	-.0156			

MACH (1) = .9302 ALPHA (3) = 26.282 RN/L = 3.0320 Q = 7.1177 P = .3620 BETA = 1.8460

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .0670 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI															
60,000	.0979	.0899	.0731												
70,000	.0484	.0709	.0658												
80,000	.0207	.0353	.0528												
90,000			.0197	.0000	.0063	-.0015	-.0051	-.0032	-.0042	-.0027	-.0085	-.0093	-.0090	-.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

✓ 4500 .4680 .4860 .5050 .5240 .5460 .5610 .5810 .5960 .6170 .6360 .6540 .6730 .6880 .7100

PMI	.0044	.0126	-.0150	-.0294	-.0356	-.0402	-.0205	.0000	-.0358	-.0372	-.0305	-.0373	-.0370	-.0393	-.0318
90,000															
100,000	-.0058	-.0060	-.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

DATE 04 APR 74

TABULATED DATA LISTING FOR IA1G/OA2G (ARC 9.5-1001)

PAGE 7

ARC 3.3-180 TA1G/OA26 ORBITER (ORS FUSELAGE)

(REH118)

MACH (1) = 5.302 ALPHA (3) = 26.282

SECTION (1) 33V

DEPENDENT VARIABLE CP

x/L .4500 .4660 .4830 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6920 .7110

PW1 -.0357 -.0369
160,000 -.0363 -.0368
170,000
180,000 -.0395 -.0395 -.0403 -.0406 -.0401 -.0374 -.0198 -.0290 -.0301 -.0284 -.0279 -.0264 -.0342 -.0365 -.0300

1000 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI									
60,000									-.0293
70,000									-.0301
80,000									-.0302
90,000									-.0299
100,000	-.0342	-.0352	-.0327	-.0319	-.0311	-.0214	-.0293	-.0303	-.0293
110,000	-.0350	-.0339	-.0328	-.0319	-.0311	-.0303			
120,000	-.0336	.0000	-.0324	-.0296	-.0297	-.0312			
130,000							-.0172		
140,000							.0154		
150,000							-.0179		
160,000							-.0081		
170,000							-.0078		
180,000							-.0103		
	-.0297	-.0284	-.0271	-.0254	-.0219	-.0394			

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/CA26 (ARC 3.5-180)

PAGE 73

ARC 3.5-180 TA16/0426 ORBITER (ORB FUSELAGE)

(REMI 19) (02 APR 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRF = .0000 IN.
 BREF = 936.6800 IN. ZMRF = .0000 IN.
 SCALE = .0150

PARAMETRIC DATA

* .000 ELEV-L = -15.000
* .000 RUDDER = .000

MACH (1) = 10.290 ALPHA (1) = 30.319 RN/L = 1.8457 Q = 2.4203 P = .0330 BETA = .0000

SECTION (1) 55V

DEPENDENT VARIABLE CP

II/L .0870 .1260 .1640 .2030 .2420 .2840 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

84

✓ 4500 ✓ 4600 ✓ 4700 ✓ 4800 ✓ 5050 ✓ 5240 ✓ 5450 ✓ 5610 ✓ 5800 ✓ 5880 ✓ 6120 ✓ 6360 ✓ 6540 ✓ 6750 ✓ 6880 ✓ 7100

849

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

PML

60,000								.0178		
70,000								.0163	.0167	.0161
80,000								.0158	.0165	.0164
90,000	.0151	.0151	.0153	.0156	.0163	.0265	.0161	.0159	.0161	
100,000	.0150	.0148	.0156	.0158	.0160	.0163				
110,000	.0150	.0149	.0147	.0155	.0300	.0171				
120,000						.0202				

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

(REMS19)

MACH (1) = 10.200 ALPHA (1) = 30.319

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI

130.000									.0334
140.000									.0193
150.000									.0163
160.000									.0194
170.000									.0165
180.000	.0143	.0139	.0148	.0156	.0200	.0214			

MACH (2) = 10.200 ALPHA (2) = 32.165 RM/L = 1.0457 Q = 2.4200 P = .0330 QETA = .0000

SECTION (2) SSV

DEPENDENT VARIABLE CP

X/L .0970 .1260 .1640 .2030 .2420 .2840 .3220 .3610 .3950 .3960 .3970 .3750 .3940 .4050 .4330

PHI

60.000	.1144	.1116	.0963													
70.000	.0662	.0644	.0611													
80.000	.0360	.0371	.0602													
90.000			.0476	.0972	.0459	.0341	.0386	.0307	.0265	.0279	.0295	.0000	.0343	.0330	.0235	
100.000						.0291	.0193	.0270	.0273	.0274	.0247	.0264	.0283	.0280	.0311	
110.000						.0144	.0263	.0215	.0240	.0231	.0210	.0217	.0222	.0224	.0236	
120.000							.0005									
130.000								.0003								
140.000									.0027							
150.000										.0025						
160.000										.0030						
170.000											.0043					
180.000												.0056				
X/L	.4500	.4680	.4660	.5050	.5240	.5460	.5610	.5600	.5920	.6170	.6360	.6840	.6750	.6880	.7100	

PHI

90.000	.0203	.0124	.0091	.0070	.0047	.0031	.0065	.0039	.0034	.0044	.0272	.0100	.0093	.0012	.0197
100.000	.0303	.0262	.0213	.0184	.0163	.0119	.0117	.0100	.0174	.0093	.0361	.0100	.0024	.0014	.0170
110.000	.0267	.0270	.0288	.0267	.0203	.0000	.0198	.0169	.0166	.0111	.0418	.0084	.0029	.0019	.0170
120.000							.0013								
130.000								.0137							
140.000									.0251						
150.000										.0120					
160.000										.0068					
170.000										.0028					
180.000	.0021	.0026	.0026	.0032	.0029	.0066	.0103	.0091	.0092	.0036	.0211	.0046	.0011	.0002	.0159

PHI

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 75

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

(REM119)

MACH (1) = 10.290 ALPHA (2) = 32.165

SECTION (1)SSV

DEPENDENT VARIABLE CP

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

PHI

60,000									.0197
70,000									.0180
80,000									.0184
90,000	.0160	.0165	.0168	.0157	.0171	.0210	.0185	.0184	.0179
100,000	.0168	.0168	.0170	.0175	.0178	.0194			
110,000	.0164	.0162	.0164	.0162	.0310	.0189			
120,000						.0210			
130,000						.0325			
140,000						.0206			
150,000						.0214			
160,000						.0220			
170,000						.0213			
180,000	.0158	.0147	.0160	.0177	.0208	.0224			

MACH (1) = 10.290 ALPHA (3) = 34.229 RN/L = 1.8457 Q = 2.4200 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	.1105	.1102	.0958																	
70,000	.0629	.0938	.0915																	
80,000	.0518	.0543	.0806																	
90,000				.0465	.0593	.0423	.0366	.0000	.0300	.0300	.0268	.0327	.0352	.0348	.0308	.0224				
100,000							.0304	.0216	.0304	.0261	.0307	.0283	.0300	.0316	.0326	.0343				
110,000							.0137	.0295	.0244	.0258	.0239	.0236	.0227	.0244	.0254	.0282				
120,000								.0013								.0282				
130,000									.0011							.0046				
140,000										.0086						-.0033				
150,000											.0033					-.0046				
160,000											.0054					-.0052				
170,000											.0060					-.0054				
180,000											.0065	-.0017	-.0016	.0042	.0023	.0030	.0027	.0026	-.0051	.0379

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

PHI

90,000	.0192	.0130	.0096	.0072	.0049	.0014	.0031	.0058	.0051	.0039	.0000	.0092	.0034	.0025	.0211
100,000	.0308	.0255	.0211	.0177	.0148	.0103	.0089	.0084	.0092	.0064	.0308	.0093	.0030	.0024	.0205
110,000	.0000	.0308	.0292	.0257	.0191	.0162	.0175	.0155	.0127	.0107	.0333	.0083	.0036	.0024	.0190
120,000								.0004							.0006
130,000									.0069						-.0003
140,000										.0185					-.0002
150,000											.0085				-.0005

ARC 3,5-18D IA16/OA26 ORBITER (ORB FUSELAGE)

(REH319)

MACH (1) = 10.290 ALPHA (3) = 34.229

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6920 .7100

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

PHI										
60,000								.0211		
70,000								.0212	.0206	.0210
80,000								.0202	.0216	.0207
90,000	.0192	.0192	.0199	.0210	.0204	.0212	.0205	.0208	.0203	
100,000	.0196	.0191	.0190	.0202	.0202	.0218				
110,000	.0205	.0194	.0186	.0204	.0000	.0205				
120,000							.0219			
130,000							.0263			
140,000							.0222			
150,000							.0243			
160,000							.0234			
170,000							.0220			
180,000	.0174	.0174	.0199	.0199	.0237	.0248				

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 7

ABC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REH120) (02 APR 74

REFERENCE DATA

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

PARAMETRIC DATA

MACH (1) = 10.290 ALPHA (1) = 30.368 RN/L = 1.8057 Q = 2.4137 P = .0327 BETA = -1.6897

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/l .0870 .1260 .1640 .2030 .2420 .2810 .3200 .3590 .3980 .4370 .4760 .5150 .5540 .5930

PHI																								
60,000	.1062	.1068	.0923																					
70,000	.0590	.0591	.0841																					
80,000	.0345	.0319	.0597																					
90,000				.0356	.0479	.0237	.0186	.0164	.0128	.0121	.0125	.0102	.0120	.0255	.0269	.0303								
100,000							.0105	.0002	.0099	.0076	.0082	.0091	.0088	.0206	.0218	.0213								
110,000								-.0018	.0079	.0026	.0030	.0027	.0047	.0176	.0190	.0156								
120,000									-.0172							.0870								
130,000										-.0210						.0081								
140,000											-.0236					-.0091								
150,000												-.0254				-.0144								
160,000													-.0290			-.0161								
170,000														-.0274		-.0165								
180,000															-.0271	-.0233	-.0241	-.0180	-.0204	-.0199	-.0058	-.0062	-.0162	.1314

x/l .4500 .4600 .4660 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI																
90,000	.0275	.0171	.0100	.0049	.0016	-.0031	.1282	.0307	.0121	.0116	.0389	.0198	.0066	.0037	.0300	
100,000	.0250	.0269	.0279	.0232	.0176	.0107	.0394	.0581	.0768	.0958	.1062	.0180	.0057	.0034	.0161	
110,000	.0198	.0177	.0185	.0211	.0191	.0187	.0358	.0370	.0484	.0338	.1398	.0176	.0099	.0072	.0188	
120,000						-.0092									.0034	
130,000							.0507								.0014	
140,000							.1092								.0011	
150,000							.0291								.0008	
160,000							.0126								.0003	
170,000							.0063								.0001	
180,000	-.0072	-.0073	-.0078	-.0077	-.0081	.0035	.1040	.0193	.0241	.0179	.0487	.0106	.0053	.0000	.0145	

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

PHI											
60,000							.0162				
70,000								.0158	.0167	.0159	
80,000								.0152	.0162	.0155	
90,000	.0125	.0142	.0141	.0150	.0151	.0343	.0163	.0150	.0161		
100,000	.0135	.0141	.0135	.0144	.0149	.0189					
110,000	.0156	.0159	.0155	.0156	.0390	.0180					
120,000						.1023					

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 78

ARC 3,5-180 IA16/DA26 ORBITER (ORG FUSELAGE)

(REMI 2D)

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

SECTION 3 ISSW

DEPENDENT VARIABLE CP

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

P+1

130,000						.0667
140,000						.0245
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 = .1.6057 Q = 2.4137 P = .0327 BETA = -1.6697

SECTION (1) SSV

DEPENDENT VARIABLE C

Estimated Number of Deaths from Tuberculosis in the United States, 1900-1940

PHI

YTD .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5820 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PWJ

90,000	.0213	.0132	.0080	.0054	.0016	-.0021	.0097	.0104	.0092	.0071	.0085	.0175	.0060	.0096	.0197
100,000	.0299	.0269	.0263	.0202	.0172	.0114	.0191	.0165	.0177	.0179	.0853	.0164	.0059	.0037	.0160
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	-.0028	-.0069	-.0165	-.0158	-.0043	-.0012	-.0146	-.0142	-.0125	.0124	.0411	.0095	.0051	.0007	.0148

7250 **7470** **7570** **7650** **8030** **8290** **8620** **9000** **9400**

PHI

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 7

ARC 3.5-18D IA18/OA26 ORBITER (ORB FUSELAGE)

(REV 12-01)

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

SECTION (3) SSY

DEPENDENT VARIABLE C

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

PMI

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	.0150	.0152	.0146	.0160	.0162	.0176					
110,000	.0168	.0158	.0167	.0167	.0393	.0174					
120,000								.0601			
130,000								.0589			
140,000								.0237			
150,000								.0211			
160,000								.0216			
170,000								.0199			
180,000	.0142	.0134	.0153	.0156	.0206	.0188					

MACH (1) = .10,290 ALPHA (3) = 34.310 ROLL = 1.8057 Q = 2.4137 P = .0327 BETA = -.1.66931

SECTION (1) SSV

DEPENDENT VARIABLE OF

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

FH

X/L .4500 .4600 .4660 .4800 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA2G (ARC 3.3-180)

PAGE 81

ARC 3.5-18D IA18/OA26 ORBITER (ORB FUSELAGE)

(REH320)

MACH (1) = 10.290 ALPHA (3) = 34.310

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .4500 .4600 .4660 .5050 .5240 .5460 .5810 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI
 160,000 .0099 .0003
 170,000 .0059 .0001
 180,000 -.0051 -.0050 -.0049 -.0057 -.0060 .0033 .0158 .0140 .0118 .0114 .0468 .0094 .0038 -.0001 .0163

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

PHI									
60,000							.0189		
70,000							.0186	.0193	.0176
80,000							.0188	.0188	.0199
90,000	.0186	.0184	.0190	.0197	.0191	.0215	.0188	.0180	.0195
100,000	.0171	.0184	.0178	.0187	.0193	.0199			
110,000	.0171	.0179	.0166	.0160	.0414	.0172			
120,000						.0291			
130,000						.0508			
140,000						.0260			
150,000						.0219			
160,000						.0219			
170,000						.0221			
180,000	.0156	.0161	.0166	.0182	.0226	.0205			

DATE 04 APR 74

TABULATED DATA LISTING FOR TA16/0A26 (ARC 3.5-180)

PAGE 61

ARC 3.5-180 TA16/0A26 ORBITER (ORB FUSELAGE)

(REM121) (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 = -15.000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 10.290 ALPHA (1) = 30.311 RN/L = 1.6797 Q = 2.4287 P = .0530 BETA = 1.6907

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

60.000	.0964	.0897	.0747																	
70.000	.0575	.0773	.0708																	
80.000	.0383	.0464	.0548																	
90.000				.0390	.0469	.0312	.0249	.0318	.0225	.0214	.0243	.0239	.0245	.0260	.0240	.0150				
100.000							.0205	.0157	.0212	.0207	.0196	.0201	.0212	.0225	.0233	.0248				
110.000								.0096	.0215	.0155	.0171	.0174	.0163	.0235	.0173	.0180	.0190			
120.000									.0030							.0932				
130.000										.0025						.0203				
140.000											-.0013					.0039				
150.000											-.0010					-.0003				
160.000											-.0038					-.0013				
170.000											-.0001					-.0015				
180.000											-.0009	.0051	-.0006	.0033	.0024	.0052	.0065	.0046	-.0018	.1221

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

90.000	.0158	.0061	.0057	.0037	.0021	.0008	.0668	.0201	.0052	.0071	.0366	.0157	.0033	.0017	.0269	
100.000	.0226	.0176	.0130	.0107	.0083	.0055	.0253	.0278	.0651	.0695	.0825	.0139	.0021	.0016	.0137	
110.000	.0247	.0220	.0215	.0181	.0117	.0094	.0171	.0168	.0349	.0205	.0983	.0090	.0025	.0019	.0118	
120.000									.0001						.0009	
130.000										.0477					.0007	
140.000											.0740					-.0000
150.000											.0258					.0003
160.000											.0126					.0005
170.000											.0068					.0010
180.000	.0041	.0038	.0028	.0025	.0010	.0044	.0533	.0094	.0181	.0113	.0389	.0053	.0020	.0006	.0112	

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

60.000							.0129		
70.000							.0126	.0124	.0123
80.000							.0119	.0124	.0125
90.000	.0110	.0110	.0112	.0106	.0118	.0240	.0122	.0120	.0133
100.000	.0110	.0109	.0116	.0107	.0117	.0146			
110.000	.0104	.0107	.0108	.0114	.0350	.0124			
120.000							.0127		

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 02

ARC 3.5-180 IA16/OA26 ORBITER (ORB 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		.0195				
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 = 1.6797 Q = 2.4287 P = .0330 BETA = 1.0907

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2840 .2820 .3010 .3190 .3500 .3570 .3750 .3940 .4050 .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	.0218	.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		-.0016	
180.000														-.0030	.0384	

X/L .4500 .4860 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6750 .6880 .7100

PHI

90.000	.0134	.0068	.0069	.0050	.0037	.0026	.0054	.0048	.0033	.0032	.0374	.0164	.0058	.0021	.0173
100.000	.0215	.0172	.0145	.0115	.0104	.0069	.0069	.0065	.0126	.0128	.0839	.0150	.0031	.0020	.0135
110.000	.0286	.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

PHI

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-100)

PAGE 03

ARC 3.5-100 TA1G/OA26 ORBITER (ORB FUSELAGE)

{REH121}

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

SECTION 111 ASSAY

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	.0126	.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 ROLL = 1.8797 Q = 2.4287 P = .0330 BETA = 1.6907

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/4 .00870 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI																			
60,000	.0947	.0897	.0807																
70,000	.0548	.0617	.0764																
80,000	.0317	.0480	.0657																
90,000		.0420	.0501	.0379	.0289	.0345	.0227	.0251	.0257	.0263	.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

1500 **1600** **1650** **1700** **1800** **1900** **2000** **2100** **2200** **2300** **2400** **2500** **2600** **2700** **2800** **2900** **3000**

DA FORM APR 74

TABLE 4 (FO DATA LISTING FOR TA16/OA26 (ARC 9.9-180)

PAGE 89

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

(RE4122) (02 APR 74

REFERENCE 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) = .7330 ALPHA (1) = 26.220 ROLL = 3.0493 Q = 4.6563 P = .1240 BETA = .0000

SECTION (1) SSY

DEPENDENT VARIABLE OF

x/1 .08700 .12600 .16400 .20300 .24200 .28100 .32000 .35800 .39700 .43500 .47400 .51300

Exhibit 10.1 **2010 Annual Report** **of the** **U.S. Small Business** **Administration**

Y-1 **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	-.0055	-.0034	.0043	-.0060					
120,000							.0516				

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 66

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

(REH122)

MACH (1) = .7330 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) = .7330 ALPHA (2) = 30.277 RN/L = 3.0493 Q = 4.6503 P = .1240 BETA = .0000

SECTION (2)SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2840 .2820 .3010 .3190 .3580 .3570 .3750 .3940 .4030 .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	.0283							
100.000					.0153	.0065	.0170	.0165	.0199	.0145	.0170	.0160	.0164	.0169							
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	-.0183	-.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	-.0042	-.0040	-.0063	.0075	-.0014	-.0039	-.0083	-.0096
100.000	.0180	.0221	.0271	.0173	.0117	.0041	.0086	.0045	.0169	.0353	.0575	-.0022	-.0077	-.0087	-.0054
110.000	.0128	.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

PHI

DATE APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3,5-180)

PAGE 8

ARC 3.5-180 IA96/0A26 ORBITER (ORB FUSELAGE)

(REH122)

MACH (1) = 7.330 ALPHA (2) = 30.277

SECTION (1) SSN

DEPENDENT VARIABLE CP

x/l .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

<i>Psi</i>								
65,000							-.0029	
70,000							-.0035	-.0036
85,000							-.0037	-.0035
90,000	-.0048	-.0050	-.0048	-.0039	-.0037	-.0027	-.0035	-.0035
100,000	-.0056	-.0052	-.0048	-.0043	-.0042	-.0035		
110,000	-.0053	-.0054	-.0047	-.0044	.0042	-.0036		
120,000							-.0013	
130,000							.0095	
140,000							-.0005	
150,000							-.0002	
160,000							.0009	
170,000							.0006	
180,000	-.0055	-.0038	-.0029	-.0022	-.0010	.0033		

MACH (.1) = .7330 ALPHA (.3) = 34.253 RN/L = 3.0493 Q = 4.6583 P = .1240 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .0670 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

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

DATE 4-4 APR 74

TABULATED DATA LISTING FOR IA18/0426 (ARC 3.5-180)

PAGE 84

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

(REM122)

MACH (1) = 7.330 ALPHA (3) = 34.253

SECTION (1) ISSY

DEPENDENT VARIABLE CP

x/L .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6980 .7100

PHI
 160,000 - .0087 -.0100
 170,000 - .0100 -.0100
 180,000 -.0169 -.0161 -.0159 -.0157 -.0166 -.0100 -.0008 .0018 -.0021 -.0030 .0089 -.0071 -.0094 -.0099 -.004

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

PHI									
60,000									-.0002
70,000									-.0021 -.0024 -.0022
80,000									-.0023 -.0019 -.0022
90,000	-.0033	-.0033	-.0033	-.0031	-.0031	-.0012	-.0023	-.0021	-.0020
100,000	-.0035	-.0033	-.0032	-.0030	-.0031				-.0027
110,000	-.0034	-.0031	-.0030	-.0030	.0055	-.0025			
120,000									-.0019
130,000									.0015
140,000									-.0014
150,000									.0056
160,000									.0032
170,000									.0026
180,000	-.0039	-.0038	-.0033	-.0020	.0007	.0147			

DATE 14 APR 74

TABULATED DATA LISTING FOR IA1G/OA26 (ARC 3.5-180)

PAGE 69

ARC 3.5-180 IA1G/OA26 ORBITER (ORB FUSELAGE)

(REM123) (02 APR 74)

REFERENCE DATA

BREF = 2690.0000 SQ.FT., XMRP = .0999 IN.
 LREF = 474.8100 IN., YMRF = .0000 IN.
 BREF = 936.6800 IN., ZMRP = .0000 IN.
 SCALE = .0150

PARAMETRIC DATA

BETA = -2.000 ELEV-L = -15.000
 ELEV-R = .000 RUDDER = .000

MACH (1) = 7.330 ALPHA (1) = 26.212 RN/L = 3.3120 Q = 4.6803 F = .1243 BETA = -1.7247

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2810	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
-----	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PHI

80.000	.1443	.1298	.1055											
70.000	.0773	.1092	.0972											
60.000	.0526	.0668	.0860											
50.000				.0505	.0519	.0506	.0186	.0258	.0166	.0174	.0183	.0149	.0172	.0153
100.000							.0114	.0026	.0123	.0102	.0117	.0127	.0109	.0117
110.000								-.0060	.0116	.0043	.0052	.0064	.0072	.0060
120.000														-.0069
130.000														-.0221
140.000														-.0274
150.000														-.0283
160.000														-.0291
170.000														-.0283
180.000														-.0257 1.0191

X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6980	.7100
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PHI

90.000	.0158	.0148	.0161	.0254	.0280	.0020	.1252	-.0018	-.0147	-.0153	-.0008	-.0115	-.0192	-.0220	.0056
100.000	.0114	.0119	.0124	.0120	.0115	.0116	.0166	.0595	.3593	.4897	.4851	-.0120	-.0169	-.0194	.0049
110.000	.0086	.0060	.0071	.0077	.0017	.0098	.0060	.0098	.0597	.0078	.5694	.0046	.0083	.0060	.0343
120.000														-.0171	
130.000														-.0220	
140.000														-.0239	
150.000														-.0254	
160.000														-.0258	
170.000														-.0258	
180.000	-.0219	-.0215	-.0223	-.0224	-.0145	-.0260	.1154	-.0106	.0008	-.0111	.0174	-.0129	-.0168	-.0258	.0169

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

80.000									.0024		
70.000									.0016	.0031	.0016
60.000									.0003	.0016	.0031
50.000	.0008	-.0007	-.0003	.0007	-.0005	.0187	.0017	.0012	.0020		
100.000	.0019	.0000	-.0001	.0003	.0012	.0049					
110.000	.0280	.0187	.0109	.0054	.0160	.0122					
120.000									.1054		

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 90

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		.0635
140.000		.0062
150.000		.0040
160.000		.0046
170.000		.0045
180.000	.0034	.0018
	.0016	.0014
	.0033	.0108

MACH (2) = 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 .1261 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4030 .4310

PHI

60.000	.1275	.1261	.1091												
70.000	.0677	.1057	.0996												
80.000	.0329	.0567	.0684												
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	
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	.0126	.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	.0846	.0099	-.0029	-.0073	.0104
120.000									-.0201						-.0186
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

'HI

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 91

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

(REM123)

MACH (1) = 7.330 ALPHA (2) = 30.285

SECTION (1)SSV

DEPENDENT VARIABLE CP

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

PHI

60,000									.0027
70,000									.0023
80,000									.0024
90,000	.0011	.0009	.0008	.0014	.0015	.0033	.0029	.0042	.0037
100,000	.0009	.0005	.0004	.0015	.0017	.0020			
110,000	.0055	.0030	.0017	.0026	.0119	.0018			
120,000						.0618			
130,000						.0649			
140,000						.0116			
150,000						.0151			
160,000						.0075			
170,000						.0067			
180,000	-.0001	-.0006	.0012	.0019	.0035	.0077			

MACH (1) = 7.330 ALPHA (3) = 34.276 RN/L = 3.3120 Q = 4.6003 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 .4050 .4310

PHI

60,000	.1205	.1225	.1077											
70,000	.0622	.1039	.1018											
80,000	.0203	.0498	.0887											
90,000				.0407	.0623	.0345	.0303	.0297	.0292	.0276	.0274	.0258	.0272	.0267
100,000							.0245	.0151	.0252	.0244	.0222	.0224	.0254	.0231
110,000								-.0013	.0232	.0166	.0202	.0186	.0166	.0166
120,000										.0068				
130,000										-.0244				
140,000										-.0232				
150,000										-.0250				
160,000										-.0244				
170,000										-.0290				
180,000										-.0284	-.0229	-.0228	-.0158	-.0190

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

PHI

90,000	.0228	.0130	.0077	-.0002	-.0074	-.0137	-.0193	-.0164	-.0184	-.0208	-.0070	-.0178	-.0199	-.0228
100,000	.0262	.0292	.0310	.0251	.0215	.0135	.0070	-.0013	-.0138	-.0150	.0197	-.0185	-.0216	-.0228
110,000	.0162	.0187	.0190	.0210	.0298	.0186	.0216	.0204	.0044	.0117	.0220	-.0043	-.0154	-.0194
120,000										.0196				
130,000										-.0209				
140,000										-.0253				
150,000										-.0252				

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 9

ARC 3.5-187 IA1G/OA26 ORBITER (ORB FUSELAGE)

(REMI24) (102 AFR 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

MACH (1) = .7330 ALPHA (1) = 26.221 ROLL = 2,6243 Q = 4.6033 P = .1223 BETA = 1.7250

SECTION (1) SSY

DEPENDENT VARIABLE OF

x/L .0670 .1260 .1640 .2030 .2420 .2640 .2620 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PMT	.1089	.1039	.0840																	
60,000																				
70,000	.0733	.0903	.0639																	
80,000	.0559	.0646	.0542																	
90,000		.0275	.0317	.0150	.0079	.0061	.0054	.0055	.0040	.0036	.0041	.0362	.0350	.0202						
100,000					.0025	-.0049	.0021	.0035	.0029	.0013	.0015	.0349	.0043	.0054						
110,000					-.0104	.0022	-.0031	-.0012	-.0007	-.0011	.0355	.0299	-.0003	.0008						
120,000						-.0130									.2083					
130,000							-.0169								.0001					
140,000								-.0202							-.0162					
150,000									-.0222						-.0209					
160,000										-.0219					-.0206					
170,000										-.0214					-.0190					
180,000											-.0213	-.0192	-.0190	-.0174	-.0179	-.0179	.0181	.0162	-.0196	.3303

YTD -4500 -4680 -4860 -5050 -5240 -5460 -5610 -5800 -5980 -6170 -6360 -6540 -6730 -6880 -7100

PHI											
60,000											-.0116
70,000											-.0134 -.0135 -.0136
80,000											-.0132 -.0135 -.0136
90,000	.0205	-.0138	-.0140	-.0137	-.0135	-.0045	-.0129	-.0132	-.0126		
100,000	.0199	-.0140	-.0139	-.0138	-.0136	-.0120					
110,000	.0191	-.0140	-.0140	-.0136	-.0000	-.0126					
120,000							-.0110				

DATE 14 APR 74

TELEGRAMMED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 9

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

(REM124)

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

SECTION (1) SSV

DEPENDENT VARIABLE (C)

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

PHI						
130,000						-.0102
140,000						-.0117
150,000						-.0060
160,000						-.0043
170,000						-.0055
180,000	-.0138	-.0136	-.0132	-.0114	-.0087	-.0027

MU1 = .117 X 320 ALPHA(1,2) = 30.256 RN/L = 2.6243 Q = 4.6033 P = .1223 BETA = 1.1250

SECTION 4.11SSV

DEPENDENT VARIABLE

1300 **1320** **1340** **1360** **1380** **1400** **1420** **1440** **1460** **1480** **1500** **1520** **1540** **1560** **1580** **1600**

PHI														
60,000	.0919	.0872	.0681											
70,000	.0461	.0714	.0662											
80,000	.0207	.0351	.0588											
90,000		.0245	.0362	.0202	.0132	.0122	.0098	.0079	.0080	.0090	.0111	.0179	.0177	.0039
100,000					.0080	-.0008	.0083	.0079	.0066	.0058	.0071	.0099	.0104	.0149
110,000					-.0077	.0071	.0026	.0050	.0037	.0026	.0035	.0053	.0080	.0065
120,000					-.0121								.0255	
130,000					-.0162								-.0119	
140,000					-.0220								-.0197	
150,000					-.0234								-.0224	
160,000					-.0223								-.0219	
170,000					-.0229								-.0216	
180,000					-.0223	-.0203	-.0203	-.0173	-.0177	-.0178	-.0196	-.0198	-.0217	.0565

1950 **1951** **1952** **1953** **1954** **1955** **1956** **1957** **1958** **1959** **1960** **1961** **1962** **1963** **1964** **1965**

Y-4 .2290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.9-18D)

PAGE 9

ARC 3,5-180 IA16/0A26 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

MACH (.1) = .7330 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 .2840 .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	.0115							
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

Yield .4500 .4680 .4860 .5020 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

DATE 04 APR 74

TABLETED DATA LISTING FOR TA16/0A26 (ARC B.5-180)

PAGE 96

ABC 3.5-18D 1A16/0A26 ORBITER (ORB FUSELAGE)

(REMI24)

MACH (3) = 7.330 ALPHA (3) = 34.246

SECTION 1 ISSY

DEPENDENT VARIABLE CP

Y-1 .4500 .4680 .4860 .5050 .5240 .5480 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI - .0190 - .0184
160,000 - .0193 - .0180
170,000
180,000 - .0159 - .0155 - .0164 - .0162 - .0177 - .0196 - .0137 - .0153 - .0160 - .0168 - .0044 - .0169 - .0176 - .0178 - .0121

x/L .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9430

PHI								
60,000	-							-.0086
70,000							-.0102	-.0106
80,000							-.0105	-.0102
90,000	-.0117	-.0117	-.0113	-.0108	-.0105	-.0090	-.0102	-.0100
100,000	-.0114	-.0117	-.0110	-.0107	-.0105	-.0104		
110,000	-.0116	-.0111	-.0109	-.0108	-.0098	-.0104		
120,000							-.0100	
130,000							-.0098	
140,000							-.0095	
150,000							-.0048	
160,000							-.0064	
170,000							-.0081	
180,000	-.0126	-.0118	-.0108	-.0094	-.0064	.0018		

DATE 04 APR 74

TABULATED DATA LISTING FOR TA16/OA26 (ARC 3.5-180)

PAGE 97

ARC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REM125) (02 APR 74)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.8100 IN. YMRF = .0000 IN.
 BREF = 936.6600 IN. ZMRF = .0000 IN.
 SCALE = .0150

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

MACH (1) = 5.000 ALPHA (1) = 18.286 RN/L = 3.2450 Q = 6.9940 P = .5557 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2810	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
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PHI																			
60.000	.1395	.1214	.1026																
70.000	.1028	.1065	.0898																
80.000	.0841	.0851	.0814																
90.000				.0640	.0481	.0194	.0093	.0072	.0033	.0019	.0017	.0020	.0011	-.0065	-.0072	-.0067			
100.000							.0050	-.0015	.0010	-.0003	-.0013	-.0001	-.0002	-.0090	-.0093	-.0100			
110.000								-.0011	.0016	-.0034	-.0040	-.0049	-.0046	-.0134	-.0136	-.0140	-.0138		
120.000									-.0013							-.0297			
130.000										-.0102						-.0420			
140.000											-.0246					-.0432			
150.000											-.0282					-.0403			
160.000											-.0278					-.0387			
170.000											-.0275					-.0323			
180.000											-.0270	-.0262	-.0269	-.0262	-.0236	-.0224	-.0310	-.0302	.1302

X/L	.4500	.4680	.4860	.5050	.5240	.5430	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
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PHI															
90.000	-.0070	-.0073	-.0069	-.0071	-.0059	-.0058	.0113	.0024	.0018	.0003	-.0006	-.0022	-.0057	-.0087	-.0128
100.000	-.0095	-.0093	-.0094	-.0089	-.0091	-.0092	-.0012	.0000	.1620	.1169	.1010	-.0021	-.0006	-.0005	.0008
110.000	-.0138	-.0136	-.0132	-.0121	.1374	-.0113	-.0057	-.0053	.0120	-.0051	.0855	-.0051	-.0044	-.0040	-.0028
120.000											-.0407				-.0260
130.000											-.0235				-.0285
140.000											-.0295				-.0296
150.000											-.0334				-.0296
160.000											-.0329				-.0303
170.000											-.0237				-.0307
180.000	-.0286	-.0285	-.0276	-.0269	-.0253	-.0195	-.0090	-.0192	-.0189	-.0219	-.0134	-.0227	-.0275	-.0303	-.0168

X/L	.7290	.7470	.7670	.7850	.8030	.8290	.8620	.9000	.9400
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PHI												
60.000										-.0298		
70.000										-.0320	-.0307	-.0283
80.000										-.0337	-.0326	-.0280
90.000	-.0165	-.0225	-.0259	-.0286	-.0302	-.0268	-.0307	-.0315	-.0244			
100.000	-.0029	-.0071	-.0092	-.0134	-.0165	-.0141						
110.000	-.0022	-.0047	-.0055	-.0062	.0080	.0823						
120.000										.1257		

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3,5-180)

PAGE 98

ARC 3,5-180 IA16/OA26 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 = 0.9940 P = .3557 ZETA = .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	.1293	.1204	.0974											
70,000	.0812	.1015	.0899											
80,000	.0615	.0672	.0785											
90,000		.0494	.0457	.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									-.0466
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 .5960 .6170 .6360 .6540 .6730 .6880 .7100

PHI

90,000	-.0011	-.0009	.0001	-.0005	-.0036	-.0075	-.0020	-.0016	-.0024	-.0045	-.0063	-.0182	-.0249	-.0291	-.0308
100,000	-.0049	-.0048	-.0042	-.0031	-.0025	-.0025	.0043	.0008	.0051	.0039	.0113	-.0176	-.0043	-.0091	-.0113
110,000	-.0092	-.0093	-.0091	-.0087	.0162	-.0055	.0002	.0009	.0017	.0001	.0089	-.0030	-.0029	-.0050	-.0060
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	-.0226	-.0230	-.0249	-.0305	-.0316	-.0182

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

PHI

DATE 06 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 9

ARC 3.5-100 TA16/OA26 ORBITER (ORB FUSELAGE)

(REH125)

MACH (1) = 5.5000 ALPHA (2) = 22.196

DEPENDENT VARIABLE CP

• 129

PHI

MACH (1) = .5300 ALPHA (3) = 26.310 ROLL = 3.2450 Q = 6.9940 P = .3557 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .0870 .1260 .1640 .2030 .2420 .2810 .3200 .3590 .3980 .3570 .3750 .3940 .4050 .4310

PHI

YTD -4,200 -4,680 -4,860 -5,050 -5,240 -5,460 -5,610 -5,800 -5,980 -6,170 -6,360 -6,540 -6,730 -6,880 -7,100

PHI

DATE 14 APR 74

TABULATED DATA LISTING FOR IA1G/OA2G (ARC 3.5-16D)

PAGE 100

ARC 3,9-18D IA18/OA26 ORBITER (ORB FUSELAGE)

(REM125)

MACH (1) = 5.300 ALPHA (3) = 26.310

SECTION (1) 55V

DEPENDENT VARIABLE CP

x/L .4500 .4680 .4860 .5050 .5240 .5430 .5610 .5800 .5990 .6170 .6360 .6540 .6730 .6920 .7110

PHI
 160,000 -.0349 -.0936
 170,000 -.0358 -.0357
 180,000 -.0360 -.0368 -.0365 -.0397 -.0404 -.0358 -.0256 -.0247 -.0257 -.0246 -.0251 -.0229 -.0298 -.0330 -.0162

X/L .7290 .7470 .7670 .7850 .8130 .8290 .8320 .9000 .9400

DATE 104 APR 74

TABLED DATA LISTING FOR 1A16/0A26 (ARC 3.5-100)

PAGE 10

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

(REMH126) (02 APR 74)

REFERENCE DATA

SREF = 2090.0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474.0100 IN. YMRP = .0000 IN.
 BREF = 936.0000 IN. ZMRP = .0000 IN.
 SCALE = .050

BETA = -2,000 ELEV-L = -15,000
ELEV-R = ,000 RUDDER = ,000

MACH (1) = 5.302 ALPHA (1) = 18.279 ROLL = 3.5597 Q = 7.1637 P = .3640 BETA = -1.3460

SECTION (1) SSW

DEPENDENT VARIABLE OF

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

PHI

x4 .4500 .4680 .4861 .5050 .5240 .5430 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6980 .7100

81

90,000	-.0024	-.0026	-.0027	-.0030	-.0022	-.0012	.0070	.0106	.0102	.0109	.0105	.0106	.0097	.0083	.0063
100,000	-.0047	-.0049	-.0048	-.0048	-.0046	-.0050	.0066	.0058	.3977	.4151	.3752	.0105	.0075	.0065	.0106
110,000	-.0097	-.0095	-.0094	-.0087	.6415	-.0079	.0022	.0025	.0272	.0026	.3214	.0023	.0027	.0028	.0047
120,000						-.0464								-.0268	
130,000							-.0313								-.0300
140,000								-.0332							-.0308
150,000									-.0355						-.0313
160,000									-.0368						-.0316
170,000									-.0346						-.0325
180,000										-.0325					-.0314

10000 11000 12000 13000 14000 15000 16000 17000 18000 19000 20000

End 3

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 102

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

(REM126)

MACH (1) = 5.302 ALPHA (1) = 18.279

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI

130,000		.0745				
140,000		-.0215				
150,000		-.0204				
160,000		-.0205				
170,000		-.0257				
180,000	-.0268	-.0261	-.0226	-.0204	-.0177	-.0009

MACH (1) = 5.302 ALPHA (2) = 22.209 RN/L = 3.5597 G = 7.1637 P = .3640 BETA = -1.8480

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	.1491	.1404	.1150																
70,000	.0933	.1163	.1045																
80,000	.0669	.0771	.0898																
90,000				.0564	.0507	.0190	.0058	.0055	.0054	.0046	.0040	.0038	.0040	.0040	.0047	.0045			
100,000										-.0005	-.0095	-.0014	-.0008	-.0010	-.0005	.0002	.0021	.0012	.0006
110,000										-.0194	-.0012	-.0091	-.0080	-.0083	-.0074	-.0057	-.0045	-.0049	-.0045
120,000																			-.0328
130,000																			-.0473
140,000																			-.0605
150,000																			-.0512
160,000																			-.0505
170,000																			-.0482
180,000																			.1073

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

PHI

90,000	.0046	.0051	.0070	.0077	.0082	.0075	.0140	.0180	.0164	.0125	.0049	-.0058	-.0153	-.0209	-.0229				
100,000	.0010	.0005	.0014	.0019	.0026	.0035	.0157	.0141	.0319	.0360	.0348	-.0039	.0148	.0145	.0111				
110,000	-.0044	-.0050	-.0042	-.0040	.1222	-.0011	.0086	.0093	.0126	.0101	.0317	.0098	.0100	.0092	.0094				
120,000																		-.0267	
130,000																			-.0304
140,000																			-.0311
150,000																			-.0321
160,000																			-.0321
170,000																			-.0320
180,000	-.0390	-.0394	-.0388	-.0388	-.0380	-.0312	-.0243	-.0223	-.0225	-.0230	-.0197	-.0222	-.0298	-.0322	-.0324				

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

PHI

DATE 64 APR 78

TABULATED DATA LISTING FOR 1A16/0A26 (ARC 3.5-180)

PAGE 103

ARC 3.9-160 TA16/QA26 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

MACH (.1) = .53012 ALPHA (.3) = 26.293 ROLL = 3.5597 G = 7.1637 P = .3640 BETA = -1.8460

SECTION (1) SSY

DEPENDENT VARIABLE

x 1 .08771 .1269 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

W. H. BROWN & CO., NEW YORK

PHI	.0122	.0112	.0119	.0117	.0178	.0188	.0168	.0043	-.0105	-.0212	-.0199	-.0267	-.0282	-.0313	-.0291
90,000															
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	.0146	.0139	.0089	.0111	.0002	.0125	.0154	.0152	.0149
120,000									-.0431						-.0243
130,000									-.0291						-.0304
140,000									-.0313						-.0305
150,000									-.0339						-.0320

DATE 44 APR 74

TABULATED DATA LISTING FOR 1A16/0A26 (ARC 3.5-100)

PAGE 10

ARC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REH126)

MACH (1) = 9.302 ALPHA (3) = 26.293

SECTION 4 ISSV

DEPENDENT VARIABLE CP

x/L .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6900 .7100

PHI

180,166 - .0404 - .0406 - .0416 - .0422 - .0415 - .0352 - .0266 - .0230 - .0234 - .0232 - .0218 - .0185 - .0270 - .0325 - .0319

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

Pwi

- 120 -

70-1000 - .019

80,000 - .023

~~202-3223~~ - .0299 - .0316 - .0317 - .0304 - .0261 - .0199 - .022

100.000 = .0229 = .1279 = .0291 = .0294 = .0267 = .0179

110-222 110-222 110-222 110-222 110-222 110-222

120,000 - 1165

130,000 - 0555

100-1000 **10000** **-0186**

1200 (XII) = B147

1995
- 1996

100,000 **-0139**

~~123.123.123.123~~ = ~~123.123.123.123~~ = ~~123.123.123.123~~ = ~~123.123.123.123~~ = ~~123.123.123.123~~

-0.0250 -0.0250 -0.0254 -0.0254 -0.0254 -0.0254 -0.0254

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-100)

PAGE 105

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

(REM127) (02 APR 74)

REFERENCE DATA

BREF = 2690,0000 SQ.FT. XMRP = .0000 IN.
 LRCF = 474,8114 IN. YMRF = .0000 IN.
 BREF = 936,6800 IN. ZMRP = .0000 IN.
 SCALE = .0150

PARAMETRIC DATA

BETA = 2,000 ELEV-L = -15,000
 ELEV-R = ,000 RUDDER = ,000

MACH (1) = 5,302 ALPHA (1) = 16,257 RN/L = 3,8290 Q = 7,1847 P = ,3647 BETA = 1,8480

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	,0870	,1260	,1640	,2030	,2420	,2810	,3200	,3190	,3380	,3570	,3750	,3940	,4050	,4310
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PHI

60,000	,1107	,0936	,0750																
70,000	,0763	,0797	,0649																
80,000	,0680	,0615	,0572																
90,000				,0441	,0298	,0046	-,0046	-,0040	-,0082	-,0084	-,0082	-,0100	-,0104	-,0134	-,0138	-,0141			
100,000							-,0070	-,0107	-,0089	-,0106	-,0110	-,0117	-,0116	-,0148	-,0154	-,0168			
110,000								-,0087	-,0094	-,0120	-,0132	-,0144	-,0149	-,0178	-,0182	-,0188	-,0199		
120,000									-,0080							-,0304			
130,000										-,0149						-,0401			
140,000										-,0315						-,0384			
150,000										-,0316						-,0369			
160,000										-,0302						-,0310			
170,000										-,0307						-,0297			
180,000										-,0302	-,0309	-,0308	-,0298	-,0300	-,0294	-,0325	-,0326	-,0331	,1464

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

90,000	-,0144	-,0143	-,0133	-,0126	-,0109	-,0100	,0063	-,0086	-,0107	-,0136	-,0161	-,0224	-,0283	-,0322	-,0312
100,000	-,0169	-,0167	-,0163	-,0162	-,0162	-,0156	-,0117	-,0083	,1754	,1584	,1232	-,0224	-,0127	-,0143	-,0143
110,000	-,0197	-,0199	-,0197	-,0195	,1567	-,0180	-,0165	-,0162	,0144	-,0144	,1000	-,0155	-,0141	-,0136	-,0116
120,000									-,0370						-,0286
130,000										-,0212					-,0314
140,000										-,0299					-,0330
150,000										-,0345					-,0339
160,000										-,0302					-,0346
170,000										-,0260					-,0333
180,000	-,0335	-,0338	-,0340	-,0339	-,0306	-,0304	-,0167	-,0295	-,0264	-,0304	-,0142	-,0290	-,0328	-,0353	-,0223

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

60,000									-,0359						
70,000									-,0362	-,0354	-,0318				
80,000									-,0371	-,0346	-,0298				
90,000	-,0346	-,0374	-,0365	-,0379	-,0363	-,0342	-,0392	-,0347	-,0301						
100,000	-,0188	-,0246	-,0285	-,0318	-,0344	-,0341									
110,000	-,0126	-,0158	-,0174	-,0184	-,0104	,0111									
120,000									,0880						

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 106

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

(REM127)

MACH (1) = 5.302 ALPHA (1) = 18.257

SECTION (1)SSV

DEPENDENT VARIABLE CP

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

PHI

130,000		.0576				
140,000		-.0004				
150,000		.0007				
160,000		-.0133				
170,000		-.0191				
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 EETA = 1.8480

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2840 .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	-.0083	-.0083	-.0091	-.0123	-.0127	-.0125						
110,000					-.0207	-.0087	-.0139	-.0126	-.0131	-.0130	-.0163	-.0160	-.0158	-.0166						
120,000						-.0184							-.0308							
130,000							-.0240						-.0415							
140,000								-.0325					-.0441							
150,000									-.0365				-.0418							
160,000										-.0340			-.0343							
170,000										-.0337			-.0308							
180,000											-.0333	-.0333	-.0317	-.0322	-.0309	-.0329	-.0339	-.0348	-.0360	.0076

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	-.0368	-.0365	-.0358	-.0358	-.0356	-.0348	-.0308	-.0286	-.0296	-.0294	-.0294	-.0307	-.0356	-.0380	-.0237

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

PHI

DA FORM 1-4 APR 74

TABLED DATA LISTING FOR IA1G/OA26 (ARC 3.9-100)

PAGE 101

AEC 3-2-180 IA1G/OA26 ORBITER (ORB FUSELAGE)

{REM127}

MACH (1) = 5.302 ALPHA (2) = 22.199

DEPENDENT VARIABLE CP

x cl .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI											
60,000											-.0317
70,000											-.0296 -.0343 -.0336
80,000											-.0324 -.0331 -.0333
90,000	-.0390	-.0398	-.0388	-.0369	-.0350	-.0316	-.0338	-.0343	-.0341		
100,000	-.0378	-.0399	-.0403	-.0386	-.0346	-.0311					
110,000	-.0192	-.0263	-.0316	-.0342	-.0272	-.0273					
120,000							.0657				
130,000							.0323				
140,000							-.0135				
150,000							-.0001				
160,000							-.0208				
170,000							-.0160				
180,000	-.0306	-.0307	-.0301	-.0291	-.0264	-.0174					

MACH (3) = .3302 ALPHA (3) = 26.303 ROLL = 3.8290 Q = 7.1847 P = .3647 BETA = 1.8480

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	.0986	.0910	.0757																	
70,000	.0506	.0737	.0690																	
80,000	.0275	.0363	.0572																	
90,000		.0224	.0290	.0096	.0018	.0058	.0002	.0014	.0019	-.0001	.0012	-.0018	-.0018	-.0009						
100,000					-.0042	-.0127	-.0030	-.0010	-.0009	-.0017	-.0035	-.0060	-.0060	-.0055						
110,000						-.0225	-.0035	-.0103	-.0090	-.0069	-.0059	-.0102	-.0113	-.0116	-.0108					
120,000							-.0270								-.0329					
130,000								-.0324							-.0430					
140,000									-.0366						-.0452					
150,000										-.0400					-.0465					
160,000										-.0385					-.0424					
170,000										-.0370					-.0377					
180,000											-.0349	-.0336	-.0333	-.0297	-.0285	-.0295	-.0357	-.0374	-.0394	-.0086

x/L .4500 .4660 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6980 .7100

DATE 5-4 APR 74

TABULATED DATA LISTING FOR IA98/OA26 (ARC 3.5-100)

PAGE 108

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

(REM127)

MACH (1) = 5.902 ALPHA (3) = 26.303

SECTION (1) SSY

DEPENDENT VARIABLE CP

x/L .4500 .4600 .4660 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6900 .7100

PHI
 160,000 - .0371
 170,000 - .0376
 180,000 - .0387 - .0384 - .0391 - .0395 - .0388 - .0386 - .0383 - .0307 - .0317 - .0299 - .0305 - .0308 - .0361 - .0374 - .0

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

PHI							
60,000							-.0332
70,000							-.0326
80,000							-.0329
90,000	-.0357	-.0354	-.0346	-.0344	-.0347	-.0324	-.0333
100,000	-.0352	-.0346	-.0343	-.0344	-.0339	-.0342	
110,000	-.0335	-.0342	-.0341	-.0329	-.0296	-.0344	
120,000							-.0279
130,000							.0028
140,000							-.0224
150,000							-.0127
160,000							-.0155
170,000							-.0131
180,000	-.0330	-.0324	-.0315	-.0291	-.0255	-.0085	

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 109

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

(REM128) (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) = 10.290 ALPHA (1) = 30.315 RN/L = 1.0613 Q = 2.4213 P = .0330 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L	.0870	.1260	.1640	.2030	.2420	.2840	.3200	.3190	.3380	.3570	.3750	.3940	.4050	.4310
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PHI

60.000	.1201	.1122	.0958															
70.000	.0722	.1005	.0946															
80.000	.0469	.0643	.0854															
90.000				.0509	.0578	.0465	.0402	.5776	.0330	.0387	.0398	.0376	.0345	.0267	.0278	.0223		
100.000							.0335	-.0014	.0285	.0344	.0400	.0308	.0356	.0215	.0228	.0000		
110.000							.0206	.0332	.0274	.0333	.0322	.0271	.0251	.0161	.0180	.0186		
120.000							.0104									.3868		
130.000								.0072								.0452		
140.000									.0000							.0049		
150.000									.0028							-.0042		
160.000									.0002							-.0072		
170.000									-.0001							-.0077		
180.000									-.0015	.0044	.0047	.0174	.0127	.0128	.0017	-.0004	-.0086	.5101

X/L	.4500	.4680	.4860	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6860	.7100
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PHI

90.000	.0230	.0110	.0077	.0051	.0027	.0001	.1187	.0360	.0126	.0169	.0412	.0297	.0091	.0061	.0402
100.000	.0271	.0258	.0208	.0159	.0135	.0087	.0361	.0535	.1838	.1772	.2377	.0289	.0077	.0057	.0219
110.000	.0226	.0210	.0234	.0240	.0177	.0156	.0296	.0318	.0827	.0403	.3636	.0191	.0088	.0068	.0204
120.000							-.0018								.0051
130.000								.0686							.0044
140.000								.2418							.0043
150.000								.0528							.0041
160.000								.0215							.0045
170.000								.0133							.0044
180.000	.0013	.0014	.0013	.0017	.0002	.0087	.0940	.0185	.0000	.0214	.0087	.0131	.0071	.0043	.0171

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

60.000								.0194		
70.000								.0181	.0165	.0180
80.000								.0185	.0194	.0200
90.000	.0179	.0181	.0181	.0174	.0175	.0390	.0169	.0178	.0199	
100.000	.0175	.0175	.0177	.0000	.0181	.0230				
110.000	.0182	.0182	.0176	.0179	.0405	.0180				
120.000								.0399		

DATE 04 APR 74

TABULATED DATA LISTING FOR TA16/OA26 (ARC 3.5-180)

PAGE 110

ARC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REV128)

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 BZTA = .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	.0426	.0674	1.4995												
90,000			1.4994	1.4991	1.4989	.0516	.0477	.0000	.0361	.0367	.0364	.0391	.0312	.0261	.0196
100,000						.0309	.0268	.0364	.0391	.0335	.0310	.0325	.0246	.0254	.0280
110,000						.0174	.0390	.0292	.0291	.0263	.0285	.0180	.0178	.0193	.0201
120,000							.0036							.0570	
130,000								.0064							.0080
140,000									.0063						
150,000										.0025					-.0051
160,000											.0009				-.0085
170,000												.0010			-.0095
180,000													.0027		-.0099
														.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	.0167	.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	.0010	.0245	.0230	.0157	.0135	.0223	.0195	.0219	.0178	.1203	.0152	.0082	.0077	.0203
120,000															.0057
130,000															.0052
140,000															.0045
150,000															.0046
160,000															.0043
170,000															.0045
180,000	-.0009	-.0009	-.0009	-.0011	-.0026	.0051	.0146	.0129	.0137	.0113	.0463	.0105	.0061	.0043	.0186

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

PHI

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-101)

PAGE 11

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

(REMI28)

MACH (1) = 10.296 ALPHA (2) = 32.189

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI

80,000							.0244			
70,000							.0242	.0233	.0242	
60,000							.0238	.0242	.0243	
50,000	.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

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

FHI

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	.0155	.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

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 11

ARC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REH128)

MACH (2) = 10.290 ALPHA (3) = 34.256

SECTION 4.155V

DEPENDENT VARIABLE C

x/L .4500 .4660 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI
 160,000 .0138 .0051
 160,000 .0087 .0053
 170,000 .0067 .0200
 180,000 .0020 .0029 .0018 .0007 .0001 .0056 .0132 .0125 .0112 .0099 .0512 .0112 .0067 .0055 .0200

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

PHI										
60,000								.0260		
70,000								.0254	.0258	.0258
80,000								.0255	.0254	.0263
90,000	.0252	.0244	.0250	.0251	.0245	.0270	.0250	.0261	.0275	
100,000	.0246	.0243	.0246	.0252	.0245	.0257				
110,000	.0243	.0258	.0245	.0260	.0450	.0264				
120,000							.0270			
130,000							.0249			
140,000							.0226			
150,000							.0262			
160,000							.0293			
170,000							.0283			
180,000	.0228	.0241	.0213	.0239	.0292	.0304				

DATE 24 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 114

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	-.0050	-.0026

MACH (1) = 10.290 ALPHA (2) = 32.248 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 .2840 .2820 .3010 .3190 .3580 .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	.0332	.0331	.0322	.0337	.0368	.0298	.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	.0150				
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	.0167	.0138	.0184	.0146	.0097	.0089	.0926	.0021	-.0045	-.0078	-.0059
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

DATE 24 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 119

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

(REM129)

MACH (1) = 10,290 ALPHA (2) = 32,248

DEPENDENT VARIABLE CP

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

PHI										
60,000										-.0059
70,000										-.0049 -.0059 -.0057
80,000										-.0039 -.0066 -.0043
90,000	-.0078	-.0078	-.0070	-.0061	-.0045	-.0023	-.0045	-.0031	-.0055	
100,000	-.0062	-.0069	-.0062	-.0064	-.0060	-.0049				
110,000	-.0058	-.0057	-.0070	-.0045	.0186	-.0050				
120,000							.0624			
130,000							.0384			
140,000							.0028			
150,000							-.0003			
160,000							-.0008			
170,000							-.0028			
180,000	-.0073	-.0074	-.0069	-.0051	-.0016	-.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 OF

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

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

PMI	.0158	.0084	.0035	-.0006	-.0056	-.0088	-.0061	-.0031	-.0034	-.0059	.0275	.0055	-.0067	-.0091	-.0011
90,000															
100,000	-.0297	-.0280	.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	-.0076	-.0011
120,000						-.0125									-.0111
130,000							-.0041								-.0121
140,000								.0397							-.0121
150,000									.0063						-.0127

DATE 14 APR 74

TABULATED DATA LISTING FOR TA16/OA26 (ARC 3.5-100)

PAGE 314

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

(REH129)

MACH (1) = 10,290 ALPHA (3) = 34,285

SECTION { 1 } SSV

DEPENDENT VARIABLE CF

X/L .4500 .4680 .4860 .5050 .5240 .5430 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6920 .7110

PRI - .0045 - .0089 - .0011 .0004 .0026 -.0011 -.0010 .0288 -.0036 -.0069 -.0132 -.0051
160,000 - .0085 - .0067 - .0097 -.0095 -.0116 -.0111 .0004 .0026 -.0011 -.0010 .0288 -.0036 -.0069 -.0132 -.0051
170,000 - .0089 - .0011 .0004 .0026 -.0011 -.0010 .0288 -.0036 -.0069 -.0132 -.0051

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

PHI											
60,000									,0001		
70,000									-,0013	-,0009	-,0001
80,000									-,0013	-,0015	-,0022
90,000	-,0015	-,0021	-,0027	-,0024	-,0013	,0009		-,0010	-,0005	-,0010	
100,000	-,0034	-,0027	-,0026	-,0013	-,0016			-,0005			
110,000	-,0023	-,0041	-,0023	-,0021	,0193			-,0030			
120,000								,0046			
130,000								,0138			
140,000								,0006			
150,000								,0043			
160,000								,0025			
170,000								,0028			
180,000	-,0049	-,0043	-,0032	-,0028	,0013	,0038					

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 117

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

(REMH3D) (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 = 2.000 ELEV-L = 10.000
 ELEV-R = .000 RUDDER = .000

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

60.000	.1089	.1038	.0840																	
70.000	.0733	.0903	.0880																	
80.000	.0559	.0646	.0806																	
90.000				.0480	.0565	.0512	.0392	.0480	.0362	.0337	.0308	.0316	.0334	.0382	.0350	.0259				
100.000							.0262	.0227	.0264	.0308	.0296	.0295	.0286	.0349	.0354	.0360				
110.000							.0235	.0324	.0303	.0297	.0264	.0260	.0355	.0299	.0299	.0303				
120.000								.0167								1.6349				
130.000									.0153							.0633				
140.000										.0077						.0225				
150.000											.0107					.0140				
160.000											.0072					.0104				
170.000											.0056					.0099				
180.000											.0068	.0093	.0129	.0173	.0148	.0136	.0181	.0162	.0103	2.0001

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

90.000	.0299	.0183	.0170	.0151	.0144	.0135	.0822	.0335	.0181	.0244	.0496	.0381	.0174	.0147	.0331	
100.000	.0337	.0283	.0243	.0229	.0203	.0181	.0371	.0422	.8141	1.1579	1.1196	.0356	.0155	.0146	.0215	
110.000	.0359	.0335	.0325	.0294	.0257	.0219	.0293	.0303	.1236	.0481	1.0267	.0253	.0158	.0147	.0195	
120.000									.0125							.0139
130.000										.0594						.0137
140.000										.8116						.0139
150.000										.0613						.0141
160.000										.0317						.0140
170.000										.0224						.0144
180.000	.0163	.0159	.0155	.0154	.0152	.0185	.0674	.0232	.0503	.0297	.0997	.0199	.0147	.0145	.0199	

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

60.000							.0207		
70.000							.0220	.0201	.0199
80.000							.0195	.0217	.0215
90.000	.0205	.0203	.0204	.0213	.0196	.0322	.0193	.0199	.0203
100.000	.0193	.0195	.0196	.0195	.0195	.0228			
110.000	.0191	.0190	.0193	.0199	.0414	.0197			
120.000						.0233			

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 186

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

(REM130)

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									.0238
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 ZETA = 1.9903

SECTION (1)SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2840 .3220 .3610 .3980 .3360 .3570 .3790 .3940 .4050 .4310

PHI

60.000	.1080	.1018	.0869											
70.000	.0677	.0688	.0644											
80.000	.0419	.0546	.0768											
90.000		.0506	.0543	.0474	.0383	.0425	.0336	.0341	.0315	.0357	.0422	.0362	.0347	.0266
100.000					.0356	.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	.3486

X/L .4900 .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	.0339	.0262	.0247	.0217	.0200	.0163	.0217	.0212	.0612	.0992	.1440	.0266	.0153	.0144	.0201
110.000	.0397	.0348	.0307	.0279	.0255	.0206	.0256	.0241	.0427	.0368	.1359	.0225	.0156	.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

DATE 54 APR 74

TABULATED DATA LISTING FOR EA18/OA26 (ARC 3.5-180)

PAGE 11

ARC 3.3-180 TA16/0A26 ORBITER (ORB FUSELAGE)

(REMI 30)

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

SECTION (1) 93V

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	.0218	.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 ROLL = 1.7697 Q = 2.4110 P = .0330 BETA = 1.69033

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/L .0670 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

x/L .4500 .4680 .4860 .5050 .5240 .5430 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

DATE 14 APR 74

TABULATED DATA LISTING FOR IA16/OA20 (ARC 3.5-180)

PAGE 120

ARC 3.5-180 1A16/OA26 ORBITER (ORB FUSELAGE)

(REMSU)

MACH (1) = 10.290 ALPHA (3) = 34.247

SECTION (1) SSY

DEPENDENT VARIABLE CFA

DATE 54 APR 74

TABULATED DATA LISTING FOR IA16/OA20 (ARC 3.5-100)

PAGE 12

ARC 3.9-190 IA16/OA26 ORBITER (ORD FUSELAGE)

(REM131) (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

BETA = .000 ELEV-L = 10,000
ELEV-R = .000 RUDDER = ,000

MACH (1) = .7330 ALPHA (1) = 26.165 ROLL = 3.0547 Q = 4.6593 P = .1240 BETA = .0000

SECTION (1) 33

DEPENDENT VARIABLE CF

X/L .0870 .1260 .1640 .2030 .2420 .2810 .3200 .3580 .3970 .4350 .4740 .5130

PHI

x/l .4500 .4660 .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	.0263	.0178	.0111	.0102	.0173	.0206	.0593	.0063	-.0053	-.0096	-.0109
120,000						-.0129								-.0135	
130,000							.0023								-.0146
140,000								-.0055							-.0157
150,000									-.0125						-.0161
160,000									-.0155						-.0160
170,000									-.0170						-.0164
180,000										-.0175					-.0140
190,000											.0020	-.0059	-.0040	-.0031	.0058
200,000												-.0064	-.0131	-.0163	-.0140

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

PHI

PAGE 94 APR 74

TABULATED DATA LISTING FOR IA18/OA20 (ARC 3.5-180)

PAGE 122

ABC 3.5-19D 1A18/OA26 ORBITER (ORG FUSELAGE)

(REN131)

MACH (1) = 7.330 ALPHA (1) = 26.165

SECTION 1333V

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						-.0106
170,000						-.0108
180,000	-.0156	-.0158	-.0156	-.0149	-.0141	-.0111

MACH (2) = .7330 ALPHA (2) = 30.273 ROLL = 3.0547 Q = 4.6593 P = .1240 BETA = .0000

SECTION (1) SSY

DEPENDENT VARIABLE OF

x/4 .0870 .1260 .1640 .2030 .2420 .2640 .2620 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

Yield .4500 .4620 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6820 .7100

1993 1994 1995 1996 1997 1998 1999 2000 2001 2002

Put

DATE 14 APR 74

TABULATED DATA LISTING FOR IA86/OA26 (ARC 3.5-180)

PAGE 12

ABC 3.3-180 IA16/0A26 ORBITER (ORB FUSELAGE)

REM131

MACH (1) = 7.330 ALPHA (2) = 30.273

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI											
60,000											-.0143
70,000											-.0149
80,000											-.0150
90,000	-.0155	-.0158	-.0154	-.0150	-.0148	-.0137	-.0147	-.0149	-.0146	-.0146	
100,000	-.0156	-.0158	-.0156	-.0155	-.0155	-.0147					
110,000	-.0157	-.0158	-.0161	-.0152	-.0099	-.0148					
120,000							-.0134				
130,000							-.0003				
140,000							-.0106				
150,000							-.0112				
160,000							-.0101				
170,000							-.0104				
180,000	-.0162	-.0147	-.0136	-.0127	-.0112	-.0077					

MACH (1) = .7330 ALPHA (3) = 34.190 ROLL = 3.0547 Q = 4.6593 P = .1240 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE OF

x/L .0870 .1260 .1640 .2030 .2420 .2810 .3200 .3590 .3980 .3570 .3750 .3940 .4050 .4310

X/L	.4500	.4600	.4660	.5050	.5240	.5460	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
PHI															
90,000	.0101	.0051	-.0024	-.0070	-.0106	-.0135	-.0140	-.0125	-.0131	-.0148	-.0009	-.0129	-.0154	-.0160	-.0132
100,000	.0275	.0218	.0168	.0146	.0098	.0025	-.0053	-.0088	-.0110	-.0128	-.0004	-.0134	-.0157	-.0158	-.0138
110,000	.0192	.0203	.0235	.0233	.0101	.0103	.0134	.0096	-.0008	-.0035	.0009	-.0125	-.0149	-.0154	-.0163
120,000								-.0145							-.0164
130,000									-.0130						-.0165
140,000									-.0147						-.0165
150,000									-.0167						-.0167

DATE 5-4 APR 74

TABULATED DATA LISTING FOR IA16/OA28 (ARC 3.5-180)

PAGE 124

ARC 3.5-183 TA16/OA26 ORBITER (ORB FUSELAGE)

CREM131

MACH (1) = 7.330 ALPHA (3) = 34.190

SECTION (1) SSV

DEPENDENT VARIABLE CF

x/L .4500 .4680 .4860 .5050 .5240 .5420 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6920 .7110

PHI
 160,000 - .0172 - .0171
 170,000 - .0177 - .0172
 180,000 - .0141 - .0135 - .0133 - .0129 - .0140 - .0176 - .0064 - .0042 - .0063 - .0099 - .0088 - .0146 - .0163 - .0170 - .0144

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

PMI											
60,000											-.0102
70,000											-.0128
80,000											-.0132
90,000											-.0127
90,000	-.0140	-.0140	-.0137	-.0136	-.0135	-.0116	-.0128	-.0127	-.0126		
100,000	-.0139	-.0140	-.0139	-.0138	-.0138	-.0131					
110,000	-.0141	-.0140	-.0136	-.0135	-.0060	-.0132					
120,000							-.0124				
130,000							-.0099				
140,000							-.0119				
150,000							-.0047				
160,000							-.0075				
170,000							-.0077				
180,000	-.0145	-.0143	-.0139	-.0129	-.0102	.0048					

DATE 10 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 125

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

(REM132) (02 APR 74)

REFERENCE DATA

PARAMETRIC DATA

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

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	.1260	.1640	.2030	.2420	.2640	.2820	.3010	.3190	.3380	.3570	.3750	.3940	.4050	.4310
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PHI

60,000	.1385	.1303	.1129																
70,000	.0809	.1105	.1025																
80,000	.0501	.0674	.0879																
90,000				.0530	.0560	.0323	.0218	.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							-.0052			
130,000										-.0173							-.0200		
140,000										-.0234							-.0234		
150,000										-.0227							-.0248		
160,000										-.0221							-.0255		
170,000										-.0227							-.0241		
180,000										-.0203	-.0193	-.0185	-.0163	-.0168	-.0158	-.0151	-.0163	-.0223	.1933

X/L	.4500	.4680	.4860	.5050	.5240	.5430	.5610	.5800	.5980	.6170	.6360	.6540	.6730	.6880	.7100
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PHI

90,000	.0199	.0192	.0207	.0314	.0341	.0062	.0162	.0040	-.0002	-.0009	.0081	.0001	-.0044	-.0070	.0013	
100,000	.0199	.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							-.0175								-.0010	
130,000								.0080							-.0068	
140,000									.0004						-.0081	
150,000									-.0069						-.0091	
160,000									-.0091						-.0099	
170,000									-.0108						-.0100	
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
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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		

DATE 14 APR 74

TABLETED DATA LISTING FOR IA16/OA2G (ARC 3.5-18U)

PAGE 126

ABC 3-5-180 1A16/0426 ORBITER (ORB FUSELAGE)

(REM132)

MACH (1) = .7330 ALPHA (1) = 26.209

SECTION A: ASSY

DEPENDENT VARIABLE CR

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

PMI						
130,000						.0611
140,000						.0058
150,000						.0014
160,000						.0018
170,000						.0021
180,000	-.0003	-.0017	-.0018	-.0012	.0005	.0085

ALPHA = .21 = .30 .217 RNL = .5.1237 Q = 4.6657 P = .1240 BETA = -1.7260

SECTION 4 (3) SSY

DEPENDENT VARIABLE OF

0.870 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI	1.0264	1.0264	1.0264																	
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	.0276	.0258	.0271	.0266	.0250	.0255	.0281						
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

15200 **16000** **16500** **50500** **5240** **.5461** **.5610** **.5800** **.5980** **.6170** **.6360** **.6540** **.6730** **.6880** **.7100**

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

PHI

DATE 10 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 12

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

(REM132)

MACH (1) = 7.330 ALPHA (2) = 30.217

SECTION (1) 98V

DEPENDENT VARIABLE CP

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

PHI								
60,000							-.0004	
70,000							-.0006	-.0006
80,000							-.0003	-.0005
90,000	-.0024	-.0027	-.0026	-.0021	-.0014	.0003	-.0005	.0002
110,000	-.0026	-.0025	-.0028	-.0016	-.0011	-.0015		
115,000	.0039	.0016	.0007	.0016	.0101	.0003		
120,000							.0904	
130,000							.0566	
140,000							.0077	
150,000							.0129	
160,000							.0047	
170,000							.0043	
180,000	-.0023	-.0024	-.0007	.0003	.0016	.0053		

MACH (1) = .7350 ALPHA (3) = 34.185 ROLL = 3.1237 Q = 4.6657 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	.1274	.1296	.1133																			
60,000	.0624	.1064	.1048																			
60,000	.0224	.0532	.0942																			
90,000		.0477	.0664	.0361	.0339	.0373	.0321	.0321	.0311	.0323	.0332	.0334	.0357	.0360								
100,000					.0307	.0169	.0311	.0298	.0279	.0291	.0280	.0265	.0266	.0279								
110,000						.0035	.0299	.0227	.0251	.0252	.0222	.0201	.0205	.0208	.0215							
120,000							-.0187								-.0034							
130,000								-.0182							-.0199							
140,000									-.0200						-.0238							
150,000										-.0192					-.0249							
160,000											-.0209				-.0248							
170,000												-.0239			-.0250							
180,000													-.0223	-.0202	-.0192	-.0149	-.0129	-.0149	-.0162	-.0173	-.0250	.0234

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

PHI																
90,000	.0256	.0160	.0107	.0030	-.0040	-.0098	-.0035	-.0037	-.0043	-.0059	.0077	-.0041	-.0055	-.0080	.0004	
100,000	.0306	.0338	.0345	.0282	.0242	.0166	.0209	.0129	-.0002	-.0020	.0311	-.0044	-.0067	-.0081	-.0009	
110,000	.0226	.0229	.0234	.0257	.0299	.0224	.0364	.0339	.0200	.0257	.0373	.0135	.0036	-.0032	.0019	
120,000						-.0174									-.0071	
130,000							-.0065								-.0061	
140,000								-.0085							-.0084	
									-.05						-.0084	

DATE 04 APR 74

TABLETED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 126

ABC 3-5-181 TA16/OA26 ORBITER (ORB FUSELAGE)

(REN132)

MACH (.1) = 7.330 ALPHA (.3) = 34.185

SECTION / 1155Y

DEPENDENT VARIABLE CP

YTD .4500 .4680 .4860 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI
 160,000 - .0109
 170,000 - .0114
 180,000 - .0115 - .0004 .0057 .0021 .0037 .0073 .0008 -.0060 -.0093 .0001

~~✓~~ ✓ .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PHI										
60,000								.0020		
70,000								.0014	.0013	.0011
80,000								.0013	.0012	.0011
90,000	-.0007	-.0008	-.0008	-.0005	.0002	.0020	.0016	.0012	.0013	
100,000	-.0016	-.0008	-.0001	.0002	.0029	.0012				
110,000	.0001	-.0008	-.0002	.0009	.0089	.0009				
120,000							.0193			
130,000							.0368			
140,000							.0060			
150,000							.0061			
160,000							.0061			
170,000							.0063			
180,000	-.0016	-.0013	-.0007	.0011	.0031	.0146				

DATE G4 APR 74

TABULATED DATA LISTING FOR TA16/OA26 (ARC 3.5-18D)

PAGE 129

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

(REM133) (02 APR 74

REFERENCE DATA

SREP = 2690.0000 SQ.FT. XMRP = .0000 IN.
 LREP = 474.8100 IN. YMRP = .0000 IN.
 BREP = 936.6000 IN. ZMRP = .0000 IN.
 SCALE = .0150

PARAMETRIC DATA

MACH (1) = 7.330 ALPHA (1) = 26.214 RN/L = 3.2267 Q = 4.6747 P = .1240 BETA = 1.7293

SECTION (1) SSV

DEPENDENT VARIABLE CP

x/1 .0870 .1260 .1640 .2030 .2420 .2640 .2620 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PMI																					
60,000	.0990	.0920	.0733																		
70,000	.0578	.0764	.0677																		
80,000	.0376	.0445	.0601																		
90,000		.0329	.0362	.0197	.0134	.7268	1.0200	1.0201	1.0202	1.0200	1.0202	.0106	.0124	.0251							
100,000					.0079	1.0197	1.0202	1.0198	1.0202	1.0201	1.0202	.0080	.0081	.0087							
110,000						-.0035	1.0196	1.0202	1.0199	1.0202	1.0201	.0041	.0029	.0036	.0043						
120,000							-.0065								-.0061						
130,000								-.0104							-.0146						
140,000									-.0150						-.0171						
150,000										-.0163					-.0177						
160,000										-.0152					-.0168						
170,000											-.0147				-.0150						
180,000												-.0145	1.0197	1.0202	1.0201	1.0202	1.0202	-.0107	-.0118	-.0154	.6780

4500 **4680** **4860** **5050** **5240** **5460** **5610** **5800** **5980** **6170** **6360** **6540** **6730** **6880** **7100**

130,000	.0049														
140,000	-.0028											-.0133			
150,000	-.0098											-.0137			
160,000	-.0128											-.0144			
170,000	-.0142											-.0149			
180,000	-.0126	-.0126	-.0134	-.0134	-.0081	-.0151	-.0043	-.0034	.0026	-.0064	.0282	-.0120	-.0148	-.0151	-.0107

12901 **24711** **76793** **78311** **8030** **82911** **8620** **9000** **94000**

PHI											
60,000											-.0094
70,000											-.0106
80,000											-.0104
90,000	-.0107	-.0109	-.0109	-.0107	-.0104	-.0066	-.0103	-.0105	-.0101		
100,000	-.0110	-.0110	-.0109	-.0110	-.0107	-.0100					
110,000	-.0116	-.0114	-.0109	-.0110	-.0018	-.0104					
120,000							-.0095				

DATE 14 APR 74

EMULATED DATA LISTING FOR IA16/OA26 (ARC 3,5-180)

PAGE 13

ABC 3 S-100 TA16/0A26 ORBITER (ORB FUSELAGE)

(REG#133)

MAGM (1) = 7.330 ALFMA (1) = 26.214

SECTION 1185W

DEPENDENT VARIABLE C

X-1 .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 = .115 Z = 7.330 ALPHA (2) = 30.237 RN/L = 3.2267 Q = 4.6747 P = .1240 BETA = 1.122

SECTION 6.18 SW

DEPENDENT VARIABLE 9

10870 **.1260** **.1640** **.2030** **.2420** **.2640** **.2620** **.3010** **.3190** **.3380** **.3570** **.3750** **.3940** **.4030** **.4210**

2010 **.6150** **.6240** **.5460** **.4610** **.5800** **.5980** **.6170** **.6360** **.6540** **.6730** **.6880** **.7100**

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

PH 1

DATE 14 APR 74

TABLED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 13

ABC 3-2-180 TA16/0A26 ORBITER (ORB FUSELAGE)

(REH133)

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

DEPENDENT VARIABLE CP

~~.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) = .7530 ALPHA (.3) = 34.204 RN/L = 3.2267 Q = 4.6747 P = .1240 BETA = 1.7253

SECTION 111SSV

DEPENDENT VARIABLE CP

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

1500 **1600** **1650** **1700** **1750** **1800** **1850** **1900** **1950** **2000** **2050** **2100** **2150** **2200** **2250** **2300**

PHI																	
90,000	-.00015	-.0056	-.0093	-.0120	-.0136	-.0150	-.0156	-.0130	-.0138	-.0142	.0020	-.0063	-.0138	-.0143	-.0073		
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	

DATE 14 APR 74

TABULATED DATA LISTING FOR 1A18/OA26 (ARC 3.9-180)

PAGE 132

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

(RE4133)

MACH (3) = 7.330 ALPHA (3) = 34.204

SECTION (1) SSY

DEPENDENT VARIABLE CP

x/L .4500 .4600 .4660 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PMT = .0151
 180,000 = .0159
 170,000 = .0163
 160,000 = .0166
 150,000 = .0171
 140,000 = .0175
 130,000 = .0181
 120,000 = .0186
 110,000 = .0191
 100,000 = .0196
 90,000 = .0201
 80,000 = .0205
 70,000 = .0211
 60,000 = .0215
 50,000 = .0221
 40,000 = .0226
 30,000 = .0231
 20,000 = .0235
 10,000 = .0241
 0 = .0246

~~.7220 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400~~

FHI									
60,000									-.0054
70,000									-.0072
80,000									-.0074
90,000	-.0083	-.0083	-.0084	-.0081	-.0078	-.0060	-.0072	-.0076	-.0073
100,000	-.0084	-.0083	-.0082	-.0081	-.0082	-.0076			
110,000	-.0083	-.0083	-.0081	-.0082	.0009	-.0078			
120,000							-.0080		
130,000							-.0078		
140,000							-.0080		
150,000							-.0023		
160,000							-.0033		
170,000							-.0049		
180,000	-.0091	-.0085	-.0083	-.0069	-.0039	.0057			

DATE 14 APR 74

TABULATED DATA LISTING FOR TA116/OA26 (ARC 3.5-180)

PAGE 133

ABC 3 S-180 TA16/0426 OSBITER (CRS FUSELAGE)

(REM134) (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

BETA = .010 ELEV-L = 10,000
ELEV-R = .000 RUDDER = .000

MACH (.1) = .5299 ALPHA (.1) = 18.308 ROLL = 3.3683 Q = 6.9260 P = .3520 BETA = .0000

SECTION 1155W

DEPENDENT VARIABLE CP

x/1 .0871 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3360 .3570 .3750 .3940 .4050 .4310

PHI

1700 **1600** **1500** **1400** **1300** **1200** **1100** **1000** **900** **800** **700** **600** **500** **400** **300** **200** **100** **0**

卷二

90,000	-.0010	-.0016	-.0014	-.0016	-.0010	-.0003	-.0022	.0022	.0015	.0006	-.0014	-.0033	-.0065	-.0089	-.0125
100,000	-.0036	-.0034	-.0036	-.0038	-.0039	-.0037	-.0021	-.0028	.1519	.0742	.0761	-.0036	-.0016	-.0015	-.0022
110,000	-.0075	-.0079	-.0075	-.0068	.1355	-.0058	-.0059	-.0057	.0122	-.0053	.0647	-.0054	-.0050	-.0048	-.0042
120,000						-.0339								-.0260	
130,000							-.0309							-.0286	
140,000								-.0323						-.0296	
150,000									-.0334					-.0297	
160,000									-.0322					-.0303	
170,000									-.0233					-.0308	
180,000	-.0212	-.0216	-.0213	-.0206	-.0188	-.0196	-.0191	-.0186	-.0184	-.0213	-.0138	-.0223	-.0274	-.0304	-.0184

✓ 4 89000 84,700 76,700 78,500 80,300 82,900 86,200 90000 94,000

84

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 134

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

(REM134)

MACH (1) = 5.299 ALPHA (1) = 18.308

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI

130,000		,0576				
140,000		-,0131				
150,000		-,0140				
160,000		-,0125				
170,000		-,0122				
180,000	-,0270	-,0263	-,0232	-,0203	-,0187	,0049

MACH (1) = 5.299 ALPHA (2) = 22.204 RN/L = 3.3663 Q = 6.9261 P = .3520 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	,1340	,1209	,1009																
70,000	,0883	,1007	,0924																
80,000	,0632	,0685	,0790																
90,000		,0802	,0463	,0203	,0080	,0137	,0078	,0096	,0053	,0135	,0074	,0046	,0043	,0051					
100,000					,0039	-,0064	,0219	,0050	,0080	,0056	,0046	,0017	,0012	,0013					
110,000						-,0124	,0045	,0102	,0010	,0028	,0029	-,0042	-,0041	-,0035	-,0035				
120,000							-,0120								-,0230				
130,000								-,0197							-,0355				
140,000									-,0293						-,0384				
150,000										-,0331					-,0394				
160,000										-,0308					-,0356				
170,000										-,0290					-,0275				
180,000										-,0280	-,0270	-,0240	-,0203	-,0210	-,0222	-,0227	-,0234	-,0250	,0167

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

PHI

90,000	,0056	,0056	,0063	,0049	,0030	-,0006	-,0044	,0041	-,0018	-,0067	-,0078	,0194	,0254	-,0296	-,0322
100,000	,0017	,0016	,0025	,0031	,0039	,0039	,0040	,0022	,0051	-,0019	,0105	,0165	-,0059	,0090	-,0132
110,000	-,0026	-,0027	-,0026	-,0019	,0238	,0014	,0004	,0018	,0026	,0006	,0084	-,0033	-,0035	-,0053	-,0016
120,000								-,0325							-,0260
130,000									-,0313						-,0283
140,000										-,0320					-,0357
150,000										-,0336					-,0315
160,000										-,0343					-,0309
170,000										-,0314					-,0309
180,000	-,0249	-,0249	-,0242	-,0240	-,0245	-,0290	-,0245	-,0211	-,0219	-,0222	-,0225	-,0243	-,0299	-,0313	-,0167

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

PHI

DATE 14 APR 74

TABLED DATA LISTING FOR TAIS/OA26 (ABC 3,3-100)

PAGE 139

ABC 3 5-180 TA16/0A26 ORBITER (ORG FUSELAGE)

REF ID: 341

MACH (1) = 5.299 ALPHA (2) = 22.204

SECTION (1) SSV

DEPENDENT VARIABLE CP

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

PHI											
60,000											-.0288
70,000											-.0295
80,000											-.0294
90,000											-.0310
90,000	-.0327	-.0343	-.0346	-.0340	-.0341	-.0305	-.0271	-.0255	-.0299		
100,000	-.0181	-.0269	-.0302	-.0321	-.0326	-.0307					
110,000	-.0082	-.0071	-.0154	-.0147	-.0069	.0097					
120,000							.0805				
130,000								.0516			
140,000									-.0146		
150,000									-.0156		
160,000									-.0180		
170,000									-.0140		
180,000	-.0286	-.0260	-.0259	-.0243	-.0220	-.0116					

MACH (.3) = .5299 ALPHA (.3) = 26.306 ROLL = 3.3683 Q = 6.9260 P = .3520 BETA = .0000

SECTION (1) SSV

DEPENDENT VARIABLE OF

✓ 4 .0830 .1260 .1640 .2030 .2420 .2640 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .4310

PHI																			
60,000	.1263	.1253	.1026																
70,000	.0712	.1019	.0987																
80,000	.0449	.0633	.0797																
90,000				.0452	.0487	.0306	.0153	.0168	.0151	.0125	.0152	.0171	.0132	.0111	.0111				
100,000							.0102	.0026	.0117	.0103	.0130	.0120	.0140	.0077	.0078				
110,000								-.0110	.0078	.0023	.0061	.0116	.0049	.0019	.0026				
120,000									-.0204						-.0245				
130,000										-.0238					-.0362				
140,000										-.0316					-.0387				
150,000										-.0327					-.0399				
160,000										-.0312					-.0388				
170,000										-.0316					-.0324				
180,000										-.0313	-.0270	-.0289	-.0233	-.0241	-.0201	-.0259	-.0272	-.0290	.0039

~~4500~~ ~~4580~~ ~~4860~~ ~~5050~~ ~~5240~~ ~~5460~~ ~~5610~~ ~~5800~~ ~~5980~~ ~~6170~~ ~~6360~~ ~~6540~~ ~~6730~~ ~~6880~~ ~~7100~~

PHE																
90,000	.0107	.0114	.0128	.0160	.0173	-.0055	-.0129	-.0228	-.0272	-.0294	-.0236	-.0312	-.0313	-.0339	-.0333	
100,000	.0087	.0097	.0098	.0091	.0092	.0075	.0031	.0039	-.0216	-.0242	-.0051	-.0305	-.0263	-.0312	-.0314	
110,000	.0052	.0039	.0047	.0052	.0105	.0061	.0028	.0033	-.0020	.0029	-.0023	.0072	.0078	.0042	-.0008	
120,000									-.0318						-.0245	
130,000									-.0306						-.0284	
140,000									-.0323						-.0302	
150,000									-.0316						-.0320	

DATE 04 APR 74

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 137

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

(REM135) (02 APR 74)

REFERENCE DATA

BREF = 2690,0000 SQ.FT. XMRP = .0000 IN.
 LREF = 474,8100 IN. YMRF = .0000 IN.
 BREF = 936,6600 IN. ZMRF = .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	.0088
100,000							.0107	.0030	.0080	.0069	.0063	.0061	.0051	.0060	.0058
110,000								.0014	.0091	.0028	.0025	.0003	.0010	.0002	.0002
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	-.0266	-.0254	-.0251
															-.0258
															.5799

X/L	.4500	.4680	.4860	.5050	.5240	.5430	.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	.0050	.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	.0025
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									
70,000									
80,000									
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									

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ZARIALIZED DATA LISTING FOR JA16/OA26 (ARC 3.5-189)

PAGE 138

ABC 3-3-180 TA16/OA26 ORBITER (ORB FUSELAGE)

REF ID: B67135

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

SECTION (1) SSM

DEPENDENT VARIABLE CP

.7290 .7470 .7670 .7850 .8030 .8290 .8620 .9000 .9400

PMT							
190,000							.0741
140,000							-.0237
150,000							-.0236
160,000							-.0237
170,000							-.0288
180,000	-.0291	-.0287	-.0280	-.0223	-.0196		-.0049

MACH (1) = .5299 ALPHA (2) = 22.229 RN/L = 3.1753 Q = 6.9137 P = .3517 BETA = -1.8477

SECTION 6.11 SSV

DEPENDENT VARIABLE CP

11.1 .00700 .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	.0506	.0176	.0169	.0156	.0146	.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
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

*4.4500 .4680 .4660 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI	.0145	.0147	.0165	.0169	.0174	.0180	.0089	.0131	.0102	.0048	.0032	-.0058	-.0158	-.0232	-.0261
90,000															
100,000	.0108	.0000	.0112	.0121	.0127	.0133	.0120	.0114	.0252	.0282	.0327	-.0052	.0121	.0100	.0063
110,000	.0057	.0056	.0059	.0060	.0143	.0092	.0061	.0069	.0098	.0084	.0290	.0077	.0082	.0076	.0064
120,000							-.0354								-.0280
130,000								-.0331							-.0320
140,000								-.0343							-.0328
150,000								-.0365							-.0349
160,000								-.0374							-.0341
170,000								-.0374							-.0340
180,000	-.0284	-.0283	-.0285	-.0277	-.0279	-.0299	-.0265	-.0243	-.0245	-.0249	.0000	-.0241	-.0316	-.0340	-.0144

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

PM3

ARC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REM135)

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

SECTION (1) SSV

DEPENDENT VARIABLE CF

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

PHI											
60,000											-.0316
70,000											-.0338
80,000											-.0339
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								
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 .5430 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI	.0218	.0204	.0208	.0204	.0233	.0258	.0144	.0078	-.0111	-.0222	-.0212	-.0294	-.0306	-.0336	-.0315
90,000															
100,000	.0179	.0166	.0189	.0168	.0183	.0162	.0141	.0145	-.0062	-.0148	-.0023	-.0264	-.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

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TABULATED DATA LISTING FOR 1A16/OA26 (ARC 3.3-160)

PAGE 14

ARC 3,3-160 IA16/OA26 ORBITER (ORB FUSELAGE)

(REMI35)

MACH (1) = 5.299 ALPHA (3) = 26.356

SECTION (1) SSY

DEPENDENT VARIABLE CP

x/L .4500 .4600 .4800 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHT
 160,000 - .0370 - .0349
 170,000 - .0379 - .0348
 180,000 -.0292 -.0295 -.0309 -.0318 -.0316 -.0376 -.0282 -.0245 -.0254 -.0246 -.0228 -.0201 -.0289 -.0349 -.0131

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

PHI										
60,000										-.0270
70,000										-.0276
80,000										-.0258
90,000	-.0322	-.0342	-.0342	-.0337	-.0323	-.0237	-.0243	-.0292	-.0304	
100,000	-.0263	-.0301	-.0319	-.0327	-.0319	-.0232				
110,000	.0068	-.0014	-.0093	-.0150	-.0108	.0026				
120,000							.1040			
130,000								.0533		
140,000									-.0216	
150,000									-.0176	
160,000									-.0165	
170,000									-.0169	
180,000	-.0287	-.0286	-.0275	-.0259	-.0225	-.0068				

ARC 9.9-100 TA16/OA2G ORBITER (CRD FUSELAGE)

(REMOVED)

MACH (1) = 9.902 ALPHA (1) = 16.260

SECTION (1) SSV

DEPENDENT VARIABLE CP

X/L .7260 .7470 .7670 .7880 .8090 .8290 .8520 .8800 .9400

PHI

130,000	.0312
140,000	.0009
150,000	.0018
160,000	-.0112
170,000	-.0087
180,000	-.0094
190,000	-.0027
200,000	-.0034
210,000	-.0009
220,000	-.0047
230,000	-.0016

MACH (2) = 9.902 ALPHA (2) = 22.217 RN/L = 9.1793 0 = 7.1243 P = .3620 BETA = 1.0400

SECTION (2) SSV

DEPENDENT VARIABLE CP

X/L .0870 .1260 .1640 .2030 .2420 .2840 .3230 .3610 .3900 .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	-.0083	-.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	-.0351	-.0362	-.0381

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

PHI

90,000	-.0055	-.0055	-.0063	-.0070	-.0048	-.0083	-.0099	-.0227	-.0316	-.0367	-.0322	-.0365	-.0394	-.0416	-.0371									
100,000	-.0110	-.0104	-.0086	-.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	-.0153									
120,000								.0367							-.0288									
130,000									.0299						-.0354									
140,000										.0355					-.0362									
150,000											.0384				-.0380									
160,000											.0375				-.0382									
170,000											.0340				-.0391									
180,000												.0364	-.0359	-.0354	-.0349	-.0346	-.0341	-.0335	-.0321	-.0311	-.0301	-.0298	-.0291	-.0286

X/L .7260 .7470 .7670 .7880 .8090 .8290 .8520 .8800 .9400

PHI

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TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

PAGE 143

ARC 3.5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REM) 36

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

DEFENDANT VARIABLE CP

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

MACH (1) = .5302 ALPHA (3) = 26.282 RN/L = 3.1753 Q = 7.1243 P = .3620 BETA = 1.8480

x/L .0870 .1260 .1640 .2030 .2420 .2840 .2820 .3010 .3190 .3380 .3570 .3750 .3940 .4050 .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	-.0050	-.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	-.0389	-.0085	

X/L .4500 .4680 .4860 .5050 .5240 .5430 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

TABULATED DATA LISTING FOR IA16/OA26 (ARC 3.5-180)

ABC 3 5-180 TA16/OA26 ORBITER (ORB FUSELAGE)

(REM136)

NaOH (1) = 9.302 ALPHA (3) = 26.282

SECTION (1) SSV

DEFFENTNT VARIABLE CP

44430 .4680 .4660 .5050 .5240 .5460 .5610 .5800 .5980 .6170 .6360 .6540 .6730 .6880 .7100

PHI - .0389 -.0392
100,000 -.0392 -.0391
170,000 -.0381 -.0376 -.0386 -.0391 -.0388 -.0404 -.0237 -.0320 -.0329 -.0311 -.0314 -.0308 -.0373 -.0391 -.0334

x/l .7290 .7470 .7670 .7850 .8030 .8290 .8620 .9040 .9460

PHI							
60,000							-.0327
70,000							-.0336
80,000							-.0336
90,000	-.0380	-.0374	-.0367	-.0354	-.0352	-.0255	-.0341
100,000	-.0383	-.0373	-.0364	-.0351	-.0350	-.0343	
110,000	-.0370	-.0368	-.0359	-.0329	-.0291	-.0348	
120,000							-.0179
130,000							.0119
140,000							-.0221
150,000							-.0115
160,000							-.0109
170,000							-.0126
180,000	-.0332	-.0323	-.0308	-.0291	-.0251	-.0094	